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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 1.—1862.] SATURDAY, JANUARY 4. {Price Fivepence. STAMPED EDITION, 6*d*.

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ROYAL HORTICULTURAL SOCIETY.
ARRANGEMENTS for 1862.
March 19.—HYACINTHS and CAMELLIA SHOW.
April 9.—AZALEA SHOW.
May 21.—FIRST GREAT SHOW.
*** During the Season the Inauguration of the Memorial of the Exhibition of 1851 is expected to take place.
June 11.—SECOND GREAT SHOW.
*** In June a Show of AMERICAN PLANTS, by Messrs. WATERER & GODFREY, of Woking.
June 26.—ROSE SHOW.
July 2.—THIRD GREAT SHOW.
Sept. 10.—AUTUMN SHOW.
October 8, 9, and 10.—GREAT INTERNATIONAL FRUIT, VEGETABLE, ROOT, CEREAL, and GOURD SHOW. The Roots, Cereals, and Gourds will remain on view until the 18th.
ANDREW MURRAY, Assistant Secretary.

GARDENERS' BENEVOLENT INSTITUTION.—The VOTES of the Subscribers are earnestly solicited for the poor Blind Candidate, JAMES WALLACE, aged 84, whose family are quite unable to support him.

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To the Trade.

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The same, mixed .. .. .. 2 0 „
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CHOICE SEEDS.—Per packet. s. d.

MONRO'S RABLEY CUCUMBER 2 6
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TELEGRAPH IMPROVED do., and other finest frame sorts 1 0
HERTFORDSHIRE dwarf hardy CAULIFLOWER (the best Cauliflower) 1 0
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Every description of VEGETABLE and FLOWER SEEDS, principally grown by or under the supervision of the Subscriber.

CATALOGUE free on application.

WM. PAUL, Nurseries and Seed Warehouse, Waltham Cross, N.

Hurst House Seedling Pine (Fairrie's Queen).

B. S. WILLIAMS begs to announce that he has to offer a large stock of this new SEEDLING PINE. Habit dwarf and compact; fruit large, handsome shape, very juicy, and well flavoured. Price 15s., 21s., and 42s. each.

Also some fine plants of SMOOTH CAYENNE PINES in Stock.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New General Catalogue for 1861–1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Road, Holloway, London, N.

Russell's Pyramidal Primulas.

GEO. CLARKE has much pleasure in calling attention to the above magnificent strain, new Seed of which is now ready in packets, price 2s. 6d.

Those who are desirous of satisfying themselves of the peculiar excellence of these PRIMULAS, are invited to see them here in bloom now or any time during the winter months.

Fine young plants for spring blooming, 12s. per dozen.

Nursery, Streatham Place, Brixton Hill, near London, S.

SAPONARIA CALABRICA ALBA, Pure White. —This beautiful New Annual is of very dwarf habit, and being pure white, contrasts most admirably with the Saponaria calabrica rosea. It produces blossoms in great profusion, and remains in flower during the whole summer and late in autumn. It is invaluable for beds, or as edgings for borders.

Price to the Trade on application to

JOHN GEORGE WAITE, Seed Merchant, 181, High Holborn, London, W.C.

HARDY JAPANESE PLANTS, NEW ROSES, &c.

JOHN STANDISH

HAS great pleasure in submitting to the consideration of his friends and the public in general the following List of NEW PLANTS, ROSES, &c., far exceeding in interest any that he has ever before had the opportunity of sending out at any one time; he would particularly direct attention to the Variegated and other JAPANESE PLANTS, which he believes will effect quite a revolution in Gardening, as their complete hardiness has in many instances been quite established. Obtained by that indefatigable and successful collector, Mr. Robert Fortune, they were sent home in such excellent condition as to excite the wonder of all who saw them at the opening fête of the Royal Horticultural Society, and were universally acknowledged to be the most remarkable collection ever imported into England.

The NEW ROSES have been exhibited in the winning stands both at the Crystal Palace and Royal Horticultural Society, and the entire stock is in the hands of J. S.

Amongst the NEW FERNS will be found many of great interest and novelty.

HARDY JAPANESE PLANTS.

THUJOPSIS DOLABRATA VARIEGATA.—It is impossible to speak in too high terms of this variegated plant. Those who know T. dolabrata can form some idea of it when J. S. states that every shoot is terminated by beautiful silvery leaves; its hardiness is established from the fact that it stood all last winter at Elvaston, when the Common Holly and Portugal Laurels were killed to the ground. Plants 63s. each in the spring.

RETINOSPORA OBTUSA.—An evergreen shrub of the Arborvitæ race, growing from 60 to 80 feet high, stiffer in its foliage than anything known, having the character of Cedar of Lebanon with Cypress leaves. The wood is used by the Japanese in various ways, shines beautifully without any polish when worked up. Plants now ready, 21s each.

RETINOSPORA OBTUSA VARIEGATA.—Same species, with beautifully white variegation regularly occurring all over the plant. 31s. 6d. in April.

RETINOSPORA PISIFERA.—A very beautiful slender looking tree with sharp pinnated leaves. 21s. each.

RETINOSPORA PISIFERA AUREA.—Same species, but instead of the white variegation the terminal shoots are of a beautiful golden hue. Nothing can be more exquisite than this plant. 31s. 6d. in April.

RETINOSPORA PISIFERA VARIEGATA.—The same species with beautifully white variegated foliage. 31s. 6d. in April.

SCIADOPITYS VERTICILLATA.—This, the Umbrella Pine, as it is sometimes called, is one of the most remarkable of all the Coniferæ, described (by Siebold) as a very singular shrub or small tree, but in reality growing to the height of 100 to 150 feet, with its whorls arranged in the form of an extended parasol. As J. S. has several imported plants, the character of it can be well seen by any of his friends who may favour him with a visit. Seedling plants in the seed leaf, 42s. each; or a few imported plants, about 1 foot high, 10 guineas each.

EURYA LATIFOLIA.—A most exquisitely variegated shrub, the young shoots being of a brilliant rose colour, changing to white; when this becomes large and well established it will be one of the most beautiful plants known. 31s. 6d. each in April.

OSMANTHUS VARIEGATUS NANUS.—A dwarf Holly-like looking plant, perfectly hardy, and from the freeness of its growth likely to supersede many of the variegated species of Ilex now in our gardens. 31s. 6d. each, in April.

AUCUBA JAPONICA (true).—The shrub hitherto known under this name is merely a variegated variety of the one now introduced; it is covered with beautiful red berries about the size of the common Sorbus. 21s. each.

TAXUS FORTUNII.—An erect-growing species, somewhat similar in habit to the Irish Yew, but with very long leaves. Plants in spring. 21s. each in April.

BAMBUSA VARIEGATA.—A very beautiful dwarf growing plant, perfectly hardy. 21s. each, in April.

CAMPANUMŒA LANCEOLATA.—From N. China, probably hardy, but at any rate most useful as a greenhouse creeper. Peculiar bell-shaped flower, green and black, produced very freely all over the plant. Plants in Spring, 10s. 6d.

NEW FERNS.

LOMARIA FLUVIATILIS.—A very distinct species from New Zealand. Fronds nearly 1 foot long. 42s. each.

LOMARIA ELONGATA.—New Zealand. Pinnate leaves, 2 feet long, stouter than other Lomarias; very striking and beautiful. 42s. each.

NEW FERNS.

LOMARIA MAGELLANICA.—Perfectly hardy; stood all last winter, even in Yorkshire. 3s. 6d. to 10s. 6d. each.

CYATHEA DEALBATA.—Nice seedling plants, with fronds from 15 to 18 inches long, in 32-pots. 7s. 6d. each.

CYATHEA SMITHII.—Seedling plants. From 2 to 5 guineas.

CYATHEA CUNNINGHAMII.—A beautiful tree Fern, of not very large growth, suitable for small greenhouse. 2 to 5 guineas.

LASTREA ATRATA.—North China, very hardy, dark green foliage. 10s. 6d. each.

WOODWARDIA JAPONICA.—Hardy. From Japan and North China. 21s. each.

WOODWARDIA ORIENTALE.—Hardy. From North China, one of the finest of all hardy Ferns. 21s. to 31s. 6d. each.

TODEA PELLUCIDA.—A very beautiful tree Fern. 5s. to 10 guineas each.

CAMELLIA RETICULATA FLORE PLENO.—The largest and finest of all Camellias for effect. 31s. 6d. to 3 guineas each.

NEW ROSES.

COMTE DE FALLOUX, H. P.—A most free blooming variety of the Géant race, admirably adapted for a pot Rose or for bedding, as it never at any time of the year throws up a shoot without a bloom. Colour, bright scarlet crimson. 10s. 6d. each.

REYNOLDS HOLE, H. P.—A very strong and free blooming variety, throwing its blooms up well and very erect. Colour very lively pink, increasing in brilliancy as the flower gets age. For effect in gardens unrivalled; figured in the *Floral Magazine* for November, 1861. 10s. 6d. each.

GREGOIRE BOURDILLON, H. P.—A seedling from the Géant, very vigorous habit, larger and brighter than its parent: colour scarlet crimson. 10s. 6d.

MARGUERITE APPERT, H. P.—Large blush, shading off to white, beautifully cupped shape, vigorous habit. 10s. 6d. each.

ANDRÉ DESPORTES, H. P.—A seedling from Lord Raglan, very vigorous in habit, large rose-coloured flower. Admirably adapted for a pillar Rose. 10s. 6d. each.

JOHN STANDISH, H. P.—Deep violet crimson, very dark, perfectly imbricated, and blooming in clusters, vigorous habit, first rate Rose. 10s. 6d. each.

Plants of Comte de Falloux now ready. Strong plants of the others will be ready the first week of May.

Besides the above J. S. can supply all the New Roses of this and last year, fine strong plants on their own roots, or grafted, from 2s. to 3s. 6d. each, or by the hundred at a considerable reduction.

VINES.

MUSCAT TROVERON.—One of the finest of all the White Grapes; as such it received a First-class Certificate at the July Show of the Royal Botanic Society. As large as a Black Hamburgh, bunches 15 to 20 inches long, with a fine rich acid and slight Frontignan flavour; one of the finest Grapes for Exhibition purposes. 10s. 6d. to 15s. 6d.

INGRAM'S HARDY PROLIFIC MUSCAT.—This Grape has fully sustained the character given to it by John Standish, as it has obtained the 5l. Prize given by Mr. Saunders for the finest Seedling Grape of last year; a First-class Certificate from the Fruit Committee of the Royal Horticultural Society and an extra Prize from the Royal Horticultural Opening Show. 21s. to 63s. each.

In addition to the above a fine collection of all the leading kinds either as Fruiting Canes or small plants for planting out.

J. S. begs to intimate that he has a fine stock of all the leading HYBRID RHODODENDRONS, from 12l. to 20l. per hundred; a fine collection of HARDY ORNAMENTAL SHRUBS and TREES, and the finest GLADIOLI in the world. Also all the new PHLOXES of 1860 and 1861, raised by Lierval and others, from 1s. 6d. to 3s. 6d. each, and assures his friends and the public in general that everything sent out by him will be in the best possible condition, and will not fail to give satisfaction.

JOHN STANDISH, THE ROYAL NURSERY, BAGSHOT, SURREY.

BARR & SUGDEN 12 KING ST. COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

For STRIKING LIST of NOVELTIES, see last page of *Gardeners' Chronicle*.

Ready in a few days, and forwarded free and post paid,

SPRING SEED CATALOGUE, or Guide to the Kitchen Garden, For 1862,

Showing How, When, and What things should be done to secure a regular supply of the best Vegetables from January to December.

GUIDE to the FLOWER GARDEN,

Showing how a rich display of floral beauty may be maintained from April to November.

*** The above are Arranged and Classified on an entirely new principle.

All Orders amounting to 21s. sent Carriage Paid to any Railway Station in the Kingdom.

FRAME CUCUMBERS.

To the indefatigable exertion of Robert Hogg, Esq., LL.D., F.R.H.S., the public are indebted for the following classification and selection. Of 118 (said to be distinct) varieties, he reduced that number to 36, and of the 36 he only recommends the following 15 varieties. We quote his words:—

"The following sorts are those most worthy of cultivation; and as they furnish every quality and requirement which are to be found in any of the other varieties, they may very safely be chosen as the kinds best fitted to form a select and distinct list."

Having a fine stock of these varieties, TRUE, we can forward them at once by post at the price quoted per packet. Prices to the Trade of those marked * forwarded on application.

I.—NON-GLAUCOUS VARIETIES.

	Per packet—s.	d.
* CARTER'S CHAMPION.—The best of the smooth Sion House race	1	0
* CUTHILL'S HIGHLAND MARY.—A good bearer, and early	1	0
* KENYON'S IMPROVED.—The best of the white-spined Sion House race	1	0
KIRKLEES HALL DEFIANCE.—The second best of the white spined Sion House race	1	0

II.—GLAUCOUS VARIETIES.

	Per packet—s.	d.
* DR. LIVINGSTONE.—The best of the black-spined varieties	1	0
HENDERSON'S A 1.—The second best of the black-spined varieties	1	0
JENNING'S WORCESTER CHAMPION.—One of the best of the black-spined varieties, but for its yellow-coloured point, which places it as the third best	1	0
HAMILTON'S MARKET FAVOURITE.—The best and handsomest Cucumber in the whole collection, and the best of the tipped-spined varieties	1	0
*PHENOMENON.—A very handsome Cucumber, and the second best of the tipped-spined varieties	1	0
*HAMILTON'S SURPRISE.—A handsome and good Cucumber, the third best of the tipped-spined vars.	1	0
*BUTLER'S EMPRESS EUGENIE.—A very handsome fruit, and the plant is an abundant bearer. The best of the white-spined sorts	1	0
DICKSON'S NEWTOWN HERO.—The second best of the white-spined sorts	1	0
*GODFREY'S WHITE SPINE.—A very handsome Cucumber of a fine dark green colour	1	0
*HIMALAYA.—A handsome white-spined variety	1	0
*IMPROVED MANCHESTER PRIZE.—A very excellent and generally useful sort, and one of the best of the white-spined varieties	1	0

NEW HYBRID MELONS.

BARR AND SUGDEN have just received from their SARDINIAN CORRESPONDENT the following first-class MELONS, which have been carefully tested during the last two seasons against all the known favourites of this class. B. & S. therefore feel the greatest confidence in recommending them to their numerous patrons. Sent by post, each sort 2s. 6d. per packet, or a packet each of the 4 varieties for 7s. 6d.

MELON EMPRESS EUGENIE.—"This variety is a hybrid between Veitch's Perfection (green flesh) and Turner's Scarlet Gem; it has all the desirable characteristics of the former, having a lemon-coloured rind beautiful netted, and being rich and melting in flavour, but the flesh is of a brilliant scarlet. This received a First-class Certificate."

MELON PRINCESS ALICE.—"A most exquisite variety, of truly unique character, to be chosen out among a thousand: form nearly round, rind transparent pale buff, beautifully laced, and so thin that the colour of the flesh, a beautiful rosy pink, is seen through it. The flavour is most delicious, and the flesh is thick, melting, and somewhat resembling Turner's Scarlet Gem, but not so close in texture. It has received a First-class Certificate from the Horticultural Society of Nice, 20 other varieties being shown."

MELON PRINCE IMPERIAL.—"A magnificent scarlet-fleshed Beechwood, from which variety it could not externally be distinguished. A most remarkable Melon, sugary and melting"

MELON QUEEN VICTORIA.—"It needs no further description of this Melon than to say that in appearance and quality it is a perfect 1st-class Bromham Hall in every respect, except the colour of the flesh, which is a fine deep red, melting and delicious. It has received a First-class Certificate."

NEW AND GENUINE SEEDS, CROP 1861.

COLLECTIONS of VEGETABLE SEEDS suitable for Small, Medium, and Large Sized Gardens, 10s. 6d., 15s. 6d., 21s., 30s., 42s., 50s., and 63s.

All Orders Amounting to 21s. sent Carriage Paid to any Railway Station in the Kingdom. No charge made for Package or Packing.

GLADIOLI, SEEDLINGS of GANDAVENSIS.

	£	s.	d.
100 in 100 splendid named varieties	£4	4	0
100 in 50 splendid named varieties	3	3	0
50 in 50 splendid named varieties	2	2	0
50 in 25 splendid named varieties	£1	10	0
25 in 25 splendid named varieties 15s. to	1	1	0
12 in 12 splendid named varieties, 6s., 9s., 12s., 18s., &	1	4	0

SURPLUS STOCK of BULBS.

The following quantities, 42s.; Half, 21s.; Quarter, 10s. 6d., *all sound Roots.*

300 DOUBLE and SINGLE TULIPS, in 40 varieties
200 BORDER NARCISSUS, in varieties
50 HYACINTHS, in varieties
30 LILIUMS, in varieties
200 CROCUS, in varieties
100 SCILLAS and HYACINTHS, in varieties
40 Mixed IRIS

BARR AND SUGDEN, 12, KING STREET, COVENT GARDEN, W.C.
(OPPOSITE THE GARRICK CLUB).

DOUBLE ITALIAN TUBEROSES just imported in fine condition. Per dozen, 3s.
Price to the Trade on application.

CLIANTHUS DAMPIERI. Fresh English saved Seed. Per packet, 2s. 6d.

LOBELIA SPECIOSA (Crystal Palace variety), 6d. and 1s. per packet.

CELOSIA AUREA PYRAMIDALIS; 1s. per packet.

CELOSIA, New Crimson Feathered, 1s. per packet.

TRITOMA UVARIA GRANDIFLORA (Seed), 1s. per packet.

JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

OLD CHESHUNT NURSERIES, HERTS.

Gladiolus.

PAUL AND SON'S fine Collection of this superb Flower, of which the Bulbs are now ready.

Hollyhocks.

PAUL AND SON'S fine Collection of this noble Flower; fine Plants of which are now ready. Also SEED in packets of 12 fine distinct sorts at 5s. each, and mixed seed in 2s. 6d. and 1s. packets.

Roses.

PAUL AND SON'S splendid Collection of Dwarf Plants in Pots, of all the finest new kinds, with extra size plants for Forcing.

Vines.

FINE PLANTS for Fruiting in Pots or planting out.

CATALOGUES of each may be had on application by post.

Fruit Trees.

WM. PAUL (Successor to the late A. PAUL), CHESHUNT NURSERIES, Waltham Cross, London, N.

Gladioli.

WM. PAUL (Successor to the late A. PAUL), CHESHUNT NURSERIES, Waltham Cross, London, N.

Roses.

WM. PAUL (Successor to the late A. PAUL), CHESHUNT NURSERIES, Waltham Cross, London, N.

Ornamental Trees and Shrubs.

WM. PAUL (Successor to the late A. PAUL), CHESHUNT NURSERIES, Waltham Cross, London, N.

Hollyhocks.

WM. PAUL (Successor to the late A. PAUL), CHESHUNT NURSERIES, Waltham Cross, London, N.

Fruit Trees.

JAMES GARAWAY AND CO. call attention to their stock of the above, comprising

APRICOTS NECTARINES PEACHES	Standard and Dwarf-trained	APPLES CHERRIES PEARS PLUMS	Dwarf-trained, Standard, and Dwarf-quarter.

All of first-rate quality and in good condition.

The STANDARD PEARS are unusually fine, and will be sold at a very low rate to purchasers of quantities.

CATALOGUES and prices free by post.

JAMES GARAWAY & Co., Durdham Down Nurseries, Bristol.

Royal Exotic Nursery, Chelsea, S.W.

JAMES VEITCH, JUN., respectfully announces that his CATALOGUE of KITCHEN GARDEN and FLOWER SEEDS for 1862, with a List of Implements and other Garden requisites, is now published, and will be forwarded post free on application.

J. V., Jun., devoting his personal attention to this department of his business, can warrant his SEEDS TRUE TO NAME, and of the MOST GENUINE description.—Jan. 4.

SUTTON'S SEED CATALOGUE for 1862 is now ready, and will be sent gratis and post free.

SUTTON & SONS, Seed Growers and Merchants, Reading.

The Gardeners' Chronicle.

SATURDAY, JANUARY 4, 1862.

AT a Special Meeting of the Committee appointed to erect a Memorial of the Great Exhibition of 1851, held on Thursday, a communication was read from the PRINCE OF WALES, which we are sure will meet with the deepest sympathy. Our readers are aware that the first suggestion of a Memorial of the Great Exhibition of 1851 was closely coupled with the name of the departed PRINCE. Most of the money for it was subscribed under the impression that the Memorial would comprise a statue of the Founder of the Great Exhibition. That idea was abandoned out of deference to the PRINCE. "Men," he said, "should not have statues raised to them while they are living." A statue of the QUEEN was consequently substituted; and the Memorial

has been brought by Mr. DURHAM to the verge of completeness on that understanding, and the principal figures are at this moment being cast in bronze at Birmingham. But the PRINCE'S death has changed the situation. That attempt to do him honour, which, living, he rejected, others, in their grief and admiration, have a right to renew. The desire of HER MAJESTY and the PRINCE OF WALES—and, we may add with certainty, that of the whole country—is expressed in HIS ROYAL HIGHNESS'S most affecting communication:—

"Gentlemen,—Prostrated with overwhelming grief, and able, at present, to turn Her thoughts but to one object, The QUEEN, my mother, has constantly in her mind the anxious desire of doing honour to the memory of Him whose great and glorious character the whole Nation in its sorrow so justly appreciates. Actuated by this constantly-recurring wish, the QUEEN has commanded me to recall to your recollection that HER MAJESTY had been pleased to assent to a proposal to place a Statue of Herself upon the Memorial of the Great Exhibition of 1851, which it was intended to erect in the New Horticultural Gardens. The characteristic modesty and self-denial of my deeply-lamented and beloved Father had induced Him to interpose to prevent his own Statue from filling that position, which properly belonged to it, upon a Memorial to that great undertaking which sprang from the thought of his enlightened mind, and was carried through, to a termination of unexampled success, by his unceasing superintendence. It would, however, now, HER MAJESTY directs me to say, be most hurtful to Her feelings were any other Statue to surmount this Memorial but that of the great good PRINCE, my dearly-beloved Father, to whose honour it is, in reality, raised. The QUEEN, therefore, would anxiously desire that, instead of Her Statue, that of Her beloved Husband should stand upon the Memorial. Anxious, however, humbly, to testify my respectful and heartfelt affection for the best of Fathers, and the gratitude and devotion of my sorrowing heart, I have sought, and have, with thankfulness, obtained, the permission of The QUEEN, my mother, to offer the feeble tribute of the admiration and love of a bereaved son, by presenting the Statue thus proposed to be placed in the Gardens under your management.

(Signed) "ALBERT EDWARD."

It seems superfluous to add that the Memorial Committee, together with the Committee of the Royal Horticultural Society (to whom a similar letter was addressed), unanimously agreed to carry out the wishes of HER MAJESTY.

THE Royal Horticultural Society has decided upon offering prizes next autumn for GOURDS: quite a new feature in English Exhibitions, and one that will doubtless be well represented. Not that mere novelty will have the effect of exciting competition, but because the subject is one of great interest, and suited to very humble means. In the first place many of the smaller sorts are extremely ornamental; their foliage is broad and handsome, their habit of growth graceful, and their fruit of permanent beauty. In the second place the larger kinds form one of the more valuable articles of food, when properly cooked. In fact among the *purées*, or thick soups, that from Gourds is about the best—not indeed from all Gourds, but from some. And it has the inestimable advantage of suiting the means of the poorest cottager. A few pieces of Gourd, with some of the cheapest vegetables, and no meat, when skilfully put together, form a mess that might be placed on a Royal Table.* Even as a test of gardening Gourds have their value. To be sure they are not so bad to grow as Balsams or Cockscombs, but the skill that places a Cucumber-grower at the head of his competitors will equally avail a Gourd-grower. He who can produce the largest Cucumber may have the finest Gourd; and in exhibitions of this sort of fruit the heaviest specimens carry off the prizes. In Paris these are the subject of an annual festival, the heaviest Gourd is the "King" for the season, and is paraded in triumph through the streets. We may depend upon it that he who gains the crown is no mean hand at cultivation.

* *To make first quality of Gourd Soup.*—Take Carrots, Turnips, Celery, Onions; peel them and make them fit for use. Cut them to pieces and fill a good sized basin. Empty the basin and fill it with water, in which boil the pieces until no goodness is left in the vegetables. Cleanse the vegetables through a sieve. Fill the same basin with pieces of Gourd. Boil them in water till they will pass through a sieve. Mix the first and second boiling together; season with pepper, salt and sugar. If not thick enough, add butter and flour. If milk is used with the Gourd the soup will be all the better. Under any circumstances some butter ought to be employed. Observe that it is necessary to boil the soup for at least an hour after the ingredients are mixed together.

Such we may suppose have been the reasons that have led the Council of the Royal Horticultural Society to take up the patronage of the great race of Cucurbits. They propose moreover to make the Exhibition open to all nations, so that the foreigners who will be here in crowds at the time may bring their own productions into the field and see whether they can beat us English.

It is understood that the time of the exhibition will be the second week in October, when 30*l.* will be distributed in prizes, according to the following scheme, in which the Exhibitors are divided into three classes:—

CLASS I. *Gourds eatable when ripe.*

The finest collection of foreign growth.
The finest collection of home growth.
The heaviest single specimen of home growth.
The heaviest single specimen of foreign growth.

The last prize of 5*l.* is offered by Dr. LINDLEY.

CLASS II. *Gourds for Ornament, or merely curious, and never eatable.*

The most extensive collection, without regard to cultivation.

CLASS III. *Mixed Collections.*

Six Ornamental Gourds, whether eatable or not.

Prizes for this are offered by Mr. WILSON SAUNDERS.

By this plan the cottager who can only grow a Pumpkin or two will have a chance of distinguishing himself as much as the owner of a great garden who has every appliance at command. The Garden of the Society will provide the largest variety that it is possible to get together; and this should form a standard of comparison for the smaller groups.

One most essential point for intending exhibitors of single specimens to attend to is the selection of sorts, upon which, and the general nature of collections of this kind, we shall have some full advice to offer next week.

THAT INDOOR PLANTS and FLOWERS, at least when in health and beauty, are thought to be luxuries worth an effort to obtain, and are moreover a wide-spread source of pleasurable home emotions, almost every living-room bears witness. Nor can it be a source of wonder that the beauteous forms of vegetation everywhere surrounding us—not only those yielded by our native soil, but those also which have been borne hither from every latitude and every clime—should be welcomed around and within our dwellings; for the secret of this hearty welcome, accorded to them alike from the palace to the cottage, lies in their true loveableness, which harmonizes so completely with all the purer elements and better feelings of our nature.

Alas! they tell us truly there is no enjoyment without its vexation; and the culture of indoor flowers at least is no exception to the rule. The very indoor elements are antagonistic to them. The atmospheric dryness necessary to our health, is destructive to theirs; the warmth we enjoy they too often languish under; and the little atomic impurities which somehow or other we manage to battle against without being much the worse for the conflict, are sadly damaging to them. The remedy is to shut them in. Hence, the glass case in its varied forms and applications, from the little bell-glass which shelters the handful of cut flowers to the greenhouse in miniature, has become familiar in our houses.

The preservation of a bouquet of cut flowers in a living-room, for any length of time, in freshness and beauty, is, doubtless, a great victory over the adverse conditions we have alluded to; but the preservation in health and vigour of living growing plants in such a situation is a victory still greater, and it is this which we have at the present moment more particularly in view. Let us see, then, what are some of the more essential conditions which should be complied with in attempting to realise this latter object. Given, the drawing-room and the plants: what are we to do with the plants in order to keep them fresh and healthy while they remain in the room, that is, throughout their blooming period, or longer, if need be? Why, if in a town, we must battle with the insidious sooty smoky atmosphere, which is the first and most material enemy that comes in our way, but which is not our only foe, for it is but too ably seconded by the dust—sometimes impalpable, but often too grossly palpable—which attends our every movement, and which is up in arms like a cloud of Arabs whenever the genius of cleanliness is busy with its duties. The latter foe, moreover, is not confined to a town residence, but meets us in every country dwelling. The same must be said of the scarcely less formidable opponents, atmospheric aridity and excess or fluctuations of heat, to whose attacks plants kept in living rooms without shelter are exposed. Well, then, these are our principal foes, and truly they form a formidable phalanx. But the remedy, as we have said, is to shut in the plants. We must, in fact, provide them with a fortress in which they may be sheltered from attack, and their "holding out" depends entirely upon the combination of science and common sense in the construction and command of this their citadel. What they really want is shelter—first from the projectiles which fall thick around them in the shape of soot and dust, and next from the parching influences of exposure to a fire-dried, or a gas-dried, or over-heated atmosphere. They *don't* want to be immured as in a dungeon. Neither do they need that the natural atmosphere of the room should be shut away entirely, except when circumstances are specially unfavourable, as for instance when it is greatly heated, or when it is very dry, as in a warm room on a frosty day, or when either smoke or fog or dust unusually prevails. They *do* require that as far as possible the material impurities alluded to above should be kept out; and they require also that a moderate degree of moisture should be maintained in the atmosphere about them, and that the drier atmosphere of the apartment should be prevented from sucking out of them too rapidly the moisture contained in their own tissues. These are conditions essential to success, and they are all met by the shelter afforded by a covering of glass—not kept too continuously or rigidly closed around them. The cultural attentions required in addition to such a covering, so managed, are few and simple enough, and consist chiefly of watering and removing any exhausted or decaying parts; together with potting, and the application and regulation of heat when the plants are entirely grown—as they may be, bulbs especially—in these Plant cases.

Probably the most delicate of all the requisite operations is the proper regulation of the supply of moisture to root and branch. A certain amount of moisture is essential to the health of all plants, and this amount varies in different cases; but with few exceptions, certainly as a rule in the case of flowering plants, this must not approach to the state of wetness. Formerly it was thought that these Plant cases, or Wardian cases, required to be kept constantly closed, and then the plants were continually in a vapour bath, and as a consequence they were as continually "damping off." It is now better understood that ventilation is absolutely necessary to the growth of plants in glass cases; and one object of ventilation is to regulate the atmospheric moisture by carrying off the excess, which would cause the flowers and leaves, and in extreme cases the stem itself to rot. Experience alone, but experience soon to be gained by an intelligent and watchful eye, can teach a safe lesson as to how much moisture is necessary in particular instances. Probably the safest rule is to allow the plants only the smallest quantity of water which will keep them from drooping, and in winter at least it will be found that within the shelter of the glazed covering the soil will dry so slowly that weeks may intervene between the waterings, especially if the pots are plunged in some such material as damp sand, which is desirable. When artificial heat is employed, as when bulbs are forced into bloom, a greater amount of moisture will of course become necessary.

Attention to small matters is often the secret of success; and this applies to the growth of plants in glass cases, as truly as to any other object. The utmost regard should be given to the removal of every decaying leaf or flower, and fresh air should be given to a small extent daily. Fresh air should in fact be given whenever the interior begins to look rather steamy, and when any plants show signs of decaying, mildewy, or spotted leaves, it is a tolerably certain sign that more fresh air is needed; though individual instances may occur in which defects like those alluded to may be traced to something wrong at the root. The use of a sun shade is seldom necessary, as the dewy mist which "goes up from the earth" under the influence of warm sunshine, effectually breaks the most penetrating rays. No plant should, however, touch the glass, for the moisture which condenses on its surface would soon destroy the parts thus circumstanced.

The arrangements which may be made when the glass case is intended for the preservation of plants in flower, which is its most legitimate and appropriate object when introduced to the drawing-room or parlour, may very well be something like those sketched out below, which are in substance recommended by Miss MALING, as she tells us after many trials and many failures, in a pleasant little book, entitled "Flowers and Foliage for Indoor Plant Cases," which we notice elsewhere. The case should have its lower or box-like portion—a necessary part of the construction, for which a convenient depth is eight inches, lined with zinc. This part may be advantageously filled in with a layer two or three inches thick of broken charcoal, and over this may be put another layer, an inch thick, of silver sand. The charcoal in this position serves a double purpose; it fills out a portion of the space with a light absorbent material, and occupying a position where superfluous water, if any, is most of all likely to collect, it exerts upon it a purifying influence. Then,

as the plants will have to be exchanged from time to time, as they go out of flower, for others coming into bloom, provision should be made to admit of this being done with the least possible disarrangement of the interior. A very good and a ready plan of accomplishing this is found to consist in arranging on the sand-layer already mentioned a number of empty flower pots, which should be so placed as to fill out the available space, leaving but small vacancies between them. Larger pots should be put where it is designed to place the larger plants, and smaller ones should be distributed over the intervening parts. The vacancies between the pots are to be filled in with silver sand, in which with a little Cocoa-nut refuse intermixed towards the top, some of the dwarf spreading evergreen Lycopods, such as Selaginella denticulata and uncinata (Cæsia) are to be planted. These Lycopods will furnish a living carpet of the freshest green, amongst which such small bulbs as Scillas, Snowdrops, &c., also planted in the sand, will thrive admirably. The more prominent subjects are to be set in the sunken pots, their own pots being by this means and by the aid of the Lycopods, hidden completely from view. The preparatory layers and interstitial fillings in above referred to, should before planting receive a sufficient watering to wet them thoroughly, but not to excess.

It is a golden rule not to overcrowd a plant case. If the case looks well without crowding there can be no good end gained by thrusting in additional plants, but there will be a tolerable certainty of marring the whole effect. If it does not look well when moderately filled, it is a proof that the principles of tasteful arrangement have to be more deeply studied. Besides, whether in glass cases or in glass houses, plants thrive the better for not being overcrowded, in consequence of their being then more completely exposed to air and light, and they are also less liable to "damp off." Crowding is moreover, at the best, but a vulgar substitute for tasteful arrangement.

THE WEATHER OF 1861.

January.—The mean temperature 32°.49 was 4°.55 below the average of the last 35 years; notwithstanding the brilliant sunny weather experienced after the 24th, there were only four years in which the mean was so low, namely, 1815, 1820, 1838, and 1830, the mean temperature of January being in these years respectively 20°.87, 24°, 27°.29, 39°.75. The period of extraordinary severity which commenced so early as the 16th of December, 1860, may be said to have fairly ended on the 19th of the present month. The day temperature then rose considerably, and the weather in the last week was perhaps the finest ever experienced in the first month of the year.

February.—Winds from the warm quarters of S. and S.W. were most prevalent, and the mean temperature 41°.03 was nearly 2½° above the average. The lowest point reached by the thermometer was 20° on the nights of the 11th and 13th. With the exception of the nights between the 10th and 14th, the temperature was rarely below the freezing point throughout the month.

March.—The mean temperature was 1°.42 above the average, and more owing to the greater heat of the days than to that of the nights. The extreme highest was 64° on the 24th; the lowest at night, 21° on the 13th. The thermometer indicated below freezing on 10 nights. This had the effect of keeping vegetation in check without being so severe as to injure it. The ground at 1 foot deep average 45.°68, being 3°.84 above the average. The barometer averaged low; and it was extremely so on the 19th. Rain was frequent; but the amount, 1.89, was little more than ½ inch below the average. W., S.W., and N.W. winds prevailed for 27 days.

April.—This was a very cold and dry month. Severe frosts at night were of frequent occurrence, and proved very injurious to the blossoms of many kinds of fruit trees. On 15 nights the thermometer was below freezing. On three consecutive nights, the 8th, 9th, and 10th, the minimum was respectively 24°, 23°, 22°; the extreme lowest, 20°, occurred on the night of the 20th; but so late as the 29th, the indication was 23°. In short, with the exception of April 1860, the nights were colder than in any corresponding month for the last 35 years. The mean temperature was lower than that of March. N.N.E. and E. winds prevailed for 21 days.

May.—The mean temperature was about 1⅓° below the average. The day temperature was rather higher than usual; but the nights were generally cold, and sometimes even frosty. The thermometer indicated 6° below freezing on the 6th, and 5° on the 13th. With a change of wind from N.E. to W. on the 20th, a great rise of temperature took place; on the 23d the thermometer in the shade was as high as 81°. The quantity of rain was more than ½ inch below the usual quantity.

June.—The mean temperature was about ½ degree above the average; that of the nights 1° below; but the day temperature was 2° higher than usual, owing to powerful sunshine rather than to winds from warm quarters, for those from the opposite directions prevailed for half the month. The great amount of sunshine had a most beneficial effect on vegetation generally. In the third week the days were very warm. The highest in the shade was 89° on the 19th, a temperature which was again reached on the 12th of August, and was the highest registered in the year. The amount of rain was four-tenths of an inch above the average; but it was wanted in order to make up for deficiency in the preceding months and to correspond with the high day temperature in this. The ground at 1 foot deep was 61°.68, or 1°.23 above the average; at 2 feet it was 57°.05, or about 1¼° below the average at that depth in June.

July.—The highly favourable conditions for the substantial growth of vegetation which prevailed throughout the preceding month were not so well maintained in the present one. Instead of progressing above the average, the mean temperature of this month was a degree short of its usual rate. This was chiefly owing to the cold at night, for the days maintained nearly their average heat. The weather was however favourable compared with sunless days and cold nights experienced in July 1860, when the day temperature was more than 3½°, and that of the night between 6° and 7° below the average. Rain more or less fell on 24 days, but not in any of these periods in large quantity, so that the total amount was fully ½ inch below the usual depth for the month. S. and S.W. winds prevailed for 22 days.

August.—The days were generally very fine, and the mean maximum was upwards of 3½° above the usual mean; but the nights were frequently cool, and averaging nearly 2⅔° lower than usual. The mean temperature was about ½° above the average. On comparing the mean maxima of the days of this month with the same for August 1860, it appears that the latter was nearly 10° lower; and it may also be observed that the thermometer in the shade stood on 10 days at 80° or upwards, and on the 12th as high as 89°; whereas, in the same situation, the highest point reached at any time in the summer of 1860 was 77°. At 1 foot deep the ground temperature was 64°.43; at 2 feet it was 3½° colder, or nearly a degree below the average for the month at that depth. It appears that below 2 feet the earth had not recovered the heat abstracted by the severe winter and spring. Only ½ inch of rain fell. Owing to the coldness of the nights, moisture was condensed as dew; the air was thus kept dry, and consequently little rain fell, notwithstanding that W. and S.W. winds prevailed for 27 days.

TABLE SHOWING THE HEIGHT OF THE BAROMETER AND THERMOMETER, AND DEPTH OF RAIN, AT CHISWICK, FOR EACH MONTH OF 1861, COMPARATIVELY WITH THE AVERAGE OF 35 YEARS.

1861	Barometer.			Thermometer.								Rain.	
	Mean.	Extreme Highest.	Extreme Lowest.	Mean Max.	Above (+) or below (–) the average.	Mean Min.	Above (+) or below (–) the average.	Mean.	Above (+) or below (–) the average.	Extreme Highest.	Extreme Lowest.	Amount.	Above (+) or below (–) the Average.
	Ins.	Ins.	Ins.	Degrees.	Degrees.	Degrees.	Degrees.	Degrees.	Degrees.	Degrees.	Degrees.	Inches.	Inches.
January ..	30.095	30.423	29.122	40.19	–2.69	24.80	–6.40	32.49	–4.55	56	6	0.82	–0.83
February ..	29.776	30.618	29.296	49.03	+3.40	33.03	+1.39	41.03	+2.40	57	20	1.41	–0.05
March ..	29.716	30.372	28.936	53.32	+2.62	33.58	+0.22	43.45	+1.42	64	21	1.89	+0.60
April ..	30.089	30,500	29.641	55.63	–1.86	31.20	–5.12	43.41	–3.49	66	20	1.44	–0.14
May	30.021	30.371	29.539	65.03	+0.42	39.03	–3.06	52.03	–1.32	81	26	1.31	–0.62
June	29.887	30.172	29.565	73.93	+2.01	47.63	–1.04	60.78	+0.48	89	38	2.35	+0.40
July	29.727	30.161	29.275	74.55	–0.06	49.29	–2.07	61.92	–1.06	81	39	1.90	–0,58
August ..	29.967	30 327	29.663	77.00	+3.67	47.87	–2.70	62.43	+0.48	89	35	0.50	–1.98
September	29.808	30.173	29.190	69.60	+1.99	42.37	–3.66	55.98	–0.84	83	32	1.78	–0.70
October ..	29.933	30.260	29.391	66.68	+7.66	42.58	+1.53	54.63	+4.60	80	29	1.04	–1.70
November ..	29.653	30.495	28.912	49.63	–0.05	28.13	–7.28	38.88	–3.66	58	13	4.10	+1 90
December ..	30.048	30.499	29.195	47.80	+2.52	30.93	–2.44	39.36	+0.03	60	16	0.91	–0.55
	29.893	30.864	29.310	60.20	+1.64	37.54	–2.55	48.87	–0.46	*89	*6	19.48	–4.28

* Extremes of the Year.

September.—The days were warm, especially in the beginning of the month, and were on the whole about 2° above the average; but the nights were generally cold for the period of the season, even although S.W. winds were prevalent. On the night of the 26th the thermometer was at freezing, and frequently it was within a few degrees of that point. The temperature of the ground at 2 feet deep reached the average, although for the previous six months it was below it at that depth. The quantity of rain was less than usual, and fell chiefly between the 21st and 25th.

October.—This month was remarkably warm and fine. The mean maximum of the days, 66°.68, was no less than 7°.66 above the average, being higher than in any October for the last 64 years; that of the nights was not so high in proportion; yet it may be remarked that, on the whole, the nights were warmer than those of the preceding month. The thermometer stood as high as 80° on the 14th. Only two such instances occurred in October within the last 54 years, viz. on the 5th, 1834, and 4th, 1859. The mean temperature was higher than that of any corresponding month since 1797 except that of 1811 and 1831. The ground at 1 foot deep was warmer than in any year of the preceding 17. The number of days with wind from S.W., and its opposite N.E. was equal; but from S. the wind was more than usually prevalent, and to this circumstance may be attributed the extraordinary high temperature of the month.

November.—The mean minimum of this month was nearly as much below the average as the mean maximum of the preceding one was above it. The mean lowest at night, 28°.13, was lower than it was in November, in any year of the last 64, except 1851, when it was 27°.76. On 24 nights the thermometer was below the freezing point; on the night of the 18th it was as low as 13°. and on various other occasions the frost was very severe for the period of the season. The quantity of rain was nearly 2 inches above the average. On the 13th alone there fell upwards of an inch, the barometer at the time being remarkably low.

December.—Sharp frosts at night were experienced in the beginning; but from the 6th to the 24th the weather was not so cold as usual in this month. On the 7th the temperature was 60° in the shade. which is higher than it has reached in any corresponding month for the last 35 years, with the exception of the 1st in 1857, when it was 62°. In the third week the wind changed to N.E., the temperature in consequence gradually lowered, and frost again set in with considerable severity on the 25th. On the 29th the highest temperature by day was below freezing: and the year ended dry and cold. Scarcely any rain fell after the 16th, and the total amount was fully half an inch below the average. It fell when the temperature was comparatively high, so that the ground was not chilled, and accordingly its heat at 1 foot deep was nearly 3° warmer than usual.

THE YEAR.—The mean temperature was nearly ½° below the average, owing to the coldness of the nights, for the day temperature averaged higher than usual. It was below the average in Jan., April, July, and Nov. From April all the months of the growing season were on the whole favourable to the crops. Instead of this having been the case, if the summer had been cold and sunless like that of 1860, the consequences would have been very serious, for that year entailed a weakness on vegetation which it required the splendid weather and bright sunshine of last June to overcome. Many kinds of seeds were so deficient in vitality that even if they did vegetate, the plants were of weakly growth. The weather of last summer has produced very different effects. The shoots of fruit trees and their buds have acquired a degree of maturity and firmness which heat and sunshine in large amount can only ensure; and the same remark applies to seeds generally, including grain crops. If therefore the growing season of 1862 should prove as favourable as that of the year which has just closed, a still more abundant produce may be confidently expected.

The annexed table will afford a comprehensive view of the leading characteristics of each month.

THE TRADE IN ORANGES.

NEVER were the holiday folk more cheaply and plentifully supplied with Oranges than at the present time, although these early arrivals are seldom ripe enough to be very pleasant as a table fruit. To the costermongers and small retail fruit shops who can vend them as low as three and four for a penny, they are however, a perfect godsend for increasing their trade. Only those who have opportunities of looking into the official statistics and customs returns, have any conception of the large extent and value of the commerce in this fruit. In the Board of Trade returns, the Lemons imported

are mixed up with the Oranges, but the quantity of these and of Seville Oranges bear so small a proportion to the great bulk of sweet Oranges received, that we scarcely need make any deduction. Oranges are imported in boxes containing from 250 and more, and in chests holding 500 to 1000.

The quantity of this fruit imported has been steadily increasing for some years past. In the three years ending with 1842 the average imports were 334,070 boxes; in the five years ending with 1850 they had increased to 380,000 boxes. Since then the quantity has been computed in bushels. The average annual imports in the five years ending with 1860 were 977,440 bushels. The quantity taken for consumption has now reached upwards of 1,000,000 bushels, and assuming each bushel to contain 650, this would give 650 millions of Oranges, or about 22 for each soul of the population in the kingdom. For a long time a duty of from 2*s.* 6*d.* per box was levied on this fruit, which brought in from 70,000*l.* to 76,000*l.* revenue per annum. On the 11th June, 1853, this duty was reduced to 8*d.* a bushel, and in March last year, on the revision of the tariff, the duty was removed altogether.

The decennial progress of supply and consumption (for nearly all are used here) is shown by the following figures :—

	Imports.	Value.
1845	411,975 chests	
1850	402,748 ,, ...	£358,522
1855	806,152 bushels	439,349
1860	1,154,410 ,, ...	590,333

Speedy and regular steam communication with the producing countries offers great facilities for the shipment from the Continent and Mediterranean; but with the Azores the trade is carried on by clipper schooners, to the number of from 200 to 250, from November till May; these run to Liverpool, London, Bristol, and Hull, and also to the United States.

The appended figures indicate the source of supply of this fruit to Great Britain in bushels :—

	1855.	1860.
Portugal	265,222	218,480
Azores	369,060	627,709
Spain	72,928	158,674
Sicily	85,927	140,983
Other quarters	13,615	8,564
	806,152	1154,410

The Azores or Western Islands, from whence the finest or St. Michael's Oranges come, it will be seen furnish us with the largest supply. The imports from thence have doubled in the last five years.

St. Michael's, the largest and wealthiest of these islands, has an area of 229 square miles, and a population of about 100,000. The staple article of commerce there is the Orange crop.

The expense of walling and planting an acre of Orange garden is stated to be about 15*l.* for the wall, 8*l.* for 65 trees, and 2*l.* for labour. It yields half a crop of Beans or Indian corn during seven years, but no Oranges; from eight to eleven years half a crop of Oranges is obtained. Afterwards a full crop, which is sold for 10*l.* to 15*l.* Each tree on arriving at maturity will produce annually, on an average, 12,000 to 16,000 Oranges; one grower is said to have picked 26,000 from a single tree. The trees bloom in March and April, and Oranges are gathered for the London market as early as November. The Portuguese never eat them before the end of January, at which time they possess their full flavour. There are only two kinds of Oranges cultivated in the island, namely, the Portugal and the Mandarin; many varieties of the former exist, and they are greatly improved by the genial climate of St. Michael's. The destructive Coccus hesperidum, or C. arboreum linearis of Geoffroy, still appears partially on some of the Orange trees, though not in the virulent character which in years past committed such ravages.

In the season of 1851, which produced by no means an unusually large crop, not less than 353 cargoes of Oranges, containing about 200,000 large boxes, holding 800 Oranges, were shipped from the Western Islands. Fayal formerly exported a great many Oranges, but the insect pest, which appeared in 1840, in a few years killed all the trees there. The Coccus attacked all parts of the tree, but the trunk in the greatest abundance; it was found on the leaves, the blossoms, and the fruit. Many trees died rapidly as a consequence of the attack, whilst others languished and bore fruit only partially.

Terceira annually exports about 30 cargoes, and St. Mary's a few cargoes, but St. Michael's is the great mart. In 1801 the value of the fruit imported from thence was but 10,000*l.*; in 1850, 65,000*l.*, and in 1859, 84,123*l.* It was estimated that the produce of fruit in this island during 1859 was 252,000,000 of Oranges and 40,000 Lemons; of these all the Lemons and 49,000,000 Oranges were consumed on the island. The export of Oranges from St. Michael's was 179,379 boxes in 1852; 123,327 boxes in 1855-56; 100,079 in 1856-57; 179,922 in 1857-58; and 130,858 boxes in 1858-59. The trade has been suffering for several years from severe depression, owing to the low prices obtained for the fruit in England. In the season 1858-59 the growers obtained an average of 10*s.* 5*d.* per box, which is considered a very fair remunerative price by the proprietors of Orange gardens. More than half the Orange crop is shipped in the months of November and December.

The statistical details here given will at least serve to show that the Orange trade furnishes employment to a very large number of hands in the labour of picking, packing, and shipping; and that the importance of the trade is considerable, seeing that the value of the fruit imported now reaches nearly 600,000*l.* annually. *P. L. S.*

Home Correspondence.

Prussian Mode of Orchid Growing.—The climate of Germany is so very different from that of this country that it is found necessary to modify to a great extent the mode in which some plants are treated under cultivation. And as no gardener knows where, or under what circumstances, he may some day be called upon to act, I thought it might, therefore, be interesting to some of your readers to hear of a plan upon which Orchids are pretty generally grown in Prussian gardens. During the summer months the climate is so intensely hot and dry that if air be given to the houses the plants are dried up immediately —no amount of syringing or wetting the walls and paths can keep the atmosphere moist—the plants look flaccid, and soon become yellow. Consequently it has been found advisable to keep the houses quite closed during the day, and to give air at night only; but then in order to keep down the temperature of the houses, it is necessary to shade to such an extent that it shall be almost as dark as at night. This shading is usually put on between 7 and 8 o'clock in the morning, and taken off again about 6 o'clock in the evening, so that the plants still get a good many hours of daylight. Air may be safely enough given in the evening and left on all night. Under this mode of treatment the plants look as well as I have ever seen them elsewhere; this was particularly the case in the establishment of Herr Augustin, at Wildpark-station, near Potsdam, about 18 miles westward from Berlin. At the time of my visit (early in 1857), the Orchids there were under the charge of a young English gardener named Thomson, and I never saw a collection which did more credit to their cultivator. Under the stage in one of the Orchid houses, treated upon this plan of keeping them dark during the day, was a plant of Cissus discolor, rambling over some rock work; the leaves of this plant were more brilliantly coloured than I ever saw them either before or since. And what made them appear more beautiful still, was the contrast they made to a plant of the old Selaginella cæsia arborea, with which it was mixed. This Selaginella is now more generally known as S. lævigata; it is remarkable for the blue metallic lustre of its leaves *C. W. C.*

My Man John.—Just what might have been expected: John was recommended to me by a friend who knew nothing of him, further than that he had lived as head gardener to Sir Somebody Something, at —— Hall, and that he was sent there by a London nurseryman. When John received the "ticket of leave" from the baronet, he asked my good natured friend if he would assist him, which he promised to do, by writing to me. How kind! The motive was truly noble, and bespoke a man at heart; but the principle, which my friend never dreamed of, bore a very different aspect, and should be a lesson to every well disposed person. To recommend a man we must know him, and even then doubts and misgivings will arise in the mind, calling to recollection the old saying—"to err is human, to forgive divine." My friend took it for granted that John must be a superior man; and John, no less sure of success, arrived here next day before my letter had left the mail-bag, having come a distance of some 70 or 80 miles. "Bad start this," thought I to myself; "come before you are sent for." However, I had promised to take him, only I did not expect him so soon. John was a strong muscular man, rather corpulent, which together with a large red face, betrayed his intimate acquaintance with the baronet's butler. To enable him to get about a little more comfortable I set him to work in the hothouses; but here, John still fancying himself head-man began to usurp, giving orders to the men he was sent to assist. Of course John knew everything. He had paid 10*l.* to the Duke of B——'s gardener to teach him, and when his time was up (to make room for another) was sent up to London "to finish off." Works began to bear witness that John was not perfect in all things, especially plant growing, so I whispered in his ear I had got another job for him. Taking him out to a bit of enclosed ground (14 by 16 yards), I said "I want you to level this. I am very particular; nothing short of right will satisfy me." "Where 'ill I get stuff?" said John rather dryly. "Stuff," said I; "what do you mean?"—"Stuff to do it with." Finding John was rather out at the elbows, I said I want nothing added—nothing taken away; yet I must have the ground perfectly level. "Fill the hollows from the heights; what more do you want? If you cannot depend on your own eyes for the rest, why not," said I in a laughing joke, "take a spirit level at once." John took me at my word, and spent the day in the fruitless endeavour to find a starting point. Next morning I said, "John, how is this you have not done what I told you?"—"Why, sir, I couldn't hit on the plan." "Nonsense," said I; "you want no level here; but were I to use such a thing, I would get a few pegs and put them in, then by levelling them I would see at a glance what I had got to do. A labourer requires a level or line to guide him in his work; but the well trained eye of a gardener disdains both." However, John was not long before he had 28 pegs, and after spending another day levelling them, appeared in a greater dilemma than ever. I asked him how he was getting on, when he, for the first time, seeming sensible of his ignorance, replied in a low tone, "I don't see that I'm any the forwarder." "Now, John," said I, "look you here. If you cannot make use of these pegs in any other way, measure them, then you will see exactly the height every peg ought to be. The thing is simple enough, as I will show you. Having taken the measure of each in inches I add them up, as a schoolboy would do his first sum—this you will see gives 504; now by dividing that by 28 (the number of your pegs), you have 18. All you have got to do is to make your pegs stand 18 inches out of the ground—you understand me?"—"O yes," said John, seizing hold of a mallet, and was actually going to drive in all the tall pegs to the required height. "Stop, stop," said I, "dont touch these, you must remove the soil where the pegs are not 18 inches out, but make them so with your spade; by the time you have done that, you will find stuff enough to answer your purpose. This you will find is the way all ground levels are taken. The instruments may be unlike each other, and the way of going to work may be different; still the principle is the same, with which every man who calls himself a gardener ought to be acquainted." Poor John went to work for a few hours as if he meant it; but whether the ground was too hard or his hands too soft I cannot tell; suffice it to say, that after spending a whole week, I was under the necessity of removing him, and sending a boy of 12 years of age to finish. John's next job was trenching and removing large trees along with a gang of rough labourers, men who would do their part, and not scruple to help a lame dog over a style beside. This was too much, nor did he wait for his ticket, but quietly left on Saturday evening. *An Old Showman.* [This is, we understand, a true story in all but the names.]

Gas Heating.—In reference to an article on this subject in your paper of Dec. 28, I beg to say that I have had one of Thomson's (of Dalkeith) gas boilers or heaters in use in a small conservatory during the last five years without the least injury to the plants, and it maintains a heat of 40° or 50° if required. *An Old Subscriber.* [We thought well of these, but some correspondent condemned them.]

Muscat Hamburgh Grape.—I have a large house of Grapes just now stoning; along the back border I have planted 20 canes of Black Hamburghs, one of Muscat Hamburgh, and one of Golden Hamburgh. Of course this is a bad season of the year for forcing; but the Black Hamburghs have broken very badly; the Golden Hamburgh somewhat better; but the Muscat Hamburgh broke well, and showed 18 bunches, of which I have left five on; it looks better than all of them, and the bunches promise to be finely shouldered. They are just coming into flower, so it will be seen that I cannot say anything yet as to the setting qualities. I may add that the cane of the Muscat Hamburgh was the thinnest of any of them, which makes me the more surprised that the plant should have done so well. *J. E. F., Prescot.*

Fungi.—My experience is the same as that of your correspondent "A. J., Tottenham Park, Wilts," with regard to few Fungi having appeared last autumn, notwithstanding the wetness of the season; and I am inclined to agree with him in thinking that the cold and wet of 1860 must have had an injurious effect on the spawn (or on the spores) of this class of plants. I hardly saw any of the common Mushroom last year, but it is not a common species in this neighbourhood, as we have little old pasture ground; and almost the only species that were at all plentiful were the common Agaricus fascicularis, one or two of the Lactarii (as L. subdulcis and another), a few Boleti (as B. subtomentosus) and Cantharellus cibarius. Some of the Russulæ, I should mention, however, were abundant, as R. fragilis, integra, and the small variety of fretens; but these species hardly ever fail. I also observed in one locality an abundance of Agaricus lacrymabundus growing on Grass. "A. J." seems to think the two species he mentions (Agaricus comatus and fusipes) are not edible; but the latter is stated by Dr. Badham, in his "Esculent Funguses of England," to be an "excellent Fungus," and the former is stated by the same authority to be used for making catsup. *A. J., Roxburghshire.*

Grapes.—I have forwarded two bunches of early Black Hamburgh Grapes, and two bunches (late) of Tokay, for your inspection. The house the Black Grapes are cut from is an old lean-to, and the only way of heating is from two flows, and two return flues, and back wall. The White Grapes are cut from our old Vine (planted in the year 1783). Four years ago I lifted the roots of this old Vine, and renewed the border, as for 8 or 10 years previous it had been a complete failure, the bunches shanked and all sorts of diseases attacked it. Since I lifted the roots, &c., it has progressed beyond all expectation, there being no unsound berries to cut from any of the bunches, and this season it has produced 300 bunches, all good and well swelled

which will be seen by their size, colour, and flavour. *James Fowler, Gardener to the Right Hon. Earl of Harewood, Dec.* 30. [These were excellent specimens of cultivation. The Muscats, called Tokay, well swelled and ripened in every respect. The new Grapes as well flavoured as if ripened in June, with the stalks green, fresh, and without a sign of unhealthiness.]

Mistletoe.—In August, 1857, while staying with a party at Malvern Wells, I drove over to Eastnor Castle, and there on an Oak along the carriage drive, inside the Park, I saw two plants of Mistletoe. The driver pointed them out to us, and I and several of our party got out and satisfied ourselves of their genuineness. *Luttenbury.*

Mushrooms.—Purposing to make arrangements for the cultivation of Mushrooms, and knowing the vast increased acquaintance made with Fungi generally during the last few years, I beg leave to state that before I decide upon erecting a house for the purpose with stages, I would be glad to benefit by the advice of those (provided they will allow me to do so) who have had opportunities of making better acquaintance with the cultivation of Mushrooms than it has been my lot to acquire. If it would not be too personal and soliciting too great a favour, would Mr. W. Ingram favour us with the benefit of his advice and experience, more particularly upon the amount of light and ventilation, and the method he would adopt to admit each. *W. C. E.*

Societies.

ROYAL HORTICULTURAL: *Dec.* 30.—C. W. Dilke, Esq., V.P., in the chair. The Chairman addressed the meeting on this occasion relative to the great loss the Society had sustained by the lamented death of its late President H.R.H. the Prince Consort, and read the spontaneous and gracious communication of Her Majesty to the Society, a copy of which appeared in last week's Number. The following address of condolence to Her Majesty, prepared by the Council, and forwarded in the usual way, was also read.

ADDRESS FROM THE ROYAL HORTICULTURAL SOCIETY TO THE QUEEN.

MAY IT PLEASE YOUR MAJESTY,

WE, your Majesty's dutiful subjects, the Vice-Presidents and Members of Council of the Royal Horticultural Society, humbly approach your Majesty in your deep affliction, trusting that our profound respect for the memory of his Royal Highness, our late lamented President, and our loyal devotion to your Majesty, may entitle us to offer our tribute of condolence and sympathy.

While, in common with our fellow subjects, we grieve the loss of his Royal Highness to the nation, and as the consort of your Majesty, and while with others we respected and admired his character, the kindly courtesy which marked his intercourse with the Royal Horticultural Society had generated amongst us feelings of personal attachment, which are now followed by deep and heartfelt sorrow for his loss.

In our late President we have to mourn one who—when the Society which we represent was on the point of extinction—raised, revived, and guided it through difficulties, which he alone would have enabled it to surmount, and it is with the deepest gratitude that we acknowledge our obligation to his late Royal Highness for assistance given at a period when he must have been convinced that laborious personal exertion on his part could alone restore this Society to prosperity.

Although the present condition of the Society is such, that the Gardens at South Kensington constitute a worthy monument of the genius and skill of our late President, we cannot but perceive that our work is not yet finished; that while great difficulties have been overcome, much remains to be accomplished, and that we have to lament the loss of our President at a moment when his directing mind and fostering care are doubly necessary.

We humbly assure your Majesty, that it will be our unceasing endeavour to complete the various unfinished designs of our late lamented President, and that we feel that, by executing them with fidelity, we shall best testify the profound respect we entertain for his memory.

Whilst we bow submissively to the Divine will, we earnestly pray that he who has smitten may also heal, and that your Majesty may experience in this hour of bitter trial the fulness of those consolations which The Comforter alone can give.

The cordial thanks of the meeting were on the motion of Judge de Barres, seconded by the Rev. Joshua Dix, tendered to the Council for the promptitude with which they had acted for the Society on this melancholy occasion. The following candidates were then balloted for and duly elected, viz.:—

Lieut-General the Hon. Thomas Ashburnham, C.B.; W. H. Michael, Esq.; Jose de Murrieta, Esq.; J. C. C. Bell, Esq.; Mrs. E. Saunders, Countess of Shaftesbury, Rev. J. C. Simpson, Rev. S. F. Slade, R. George, Esq.; S. H. Twining, Esq.; Mrs. E. Walker, Mrs. T. Walrond, C. L. Webb, Esq.; Messrs. E. Brodrick, Earl Brownlow, A. C. Colquhoun, Esq.; B. Combe, Esq.; Mrs. G. Coster, Captain A. Cunninghame, Captain S. Damer, M.P.; B. Field, Esq.; B. Garrett, Esq.; W. F. Gostling, Esq.; F. W. Gray, Esq.; Lady Hamilton, Lady F. Vernon Harcourt; Mrs. A. Hawkshaw, Sir R. Howard, Bt.; Mrs. Kendall, Mrs. G. Jameson, C. Lambert, Esq.; R. R. Dees, Esq.; D. G. Lee, Esq.; W. Malings, Esq.; F. J. Masson, Esq.; Mrs. Leech, W. Leech, Esq.; Major-General W. L. G. Williams, E. Barker, Esq.; T. F. Wilding, Esq.; Lady Easthope, G. Hutchinson, Esq.; Mrs. Armstrong, the Dowager Viscountess Ashbrook, A. C. Burnand, Esq.; G. C. Oliver, Esq.; G. W. Binns, Esq.; P. H. Bird, F.R.C.S., F.L.S.; Miss Blamire, Lieut.-General Sir G. Bowles, K.C.B.; and Mrs. J. Moses.

Notices of Books.

Sowerby's Grasses of Great Britain (Kent & Co.) now form a very handsome large 8vo. volume, containing 144 good coloured plates. The distinctions by which the species of this important tribe of plants are known from each other are so difficult for the unlearned to understand that a work like this, which removes every impediment, will, we doubt not, prove most acceptable to all who are interested in our native botany. It is the best book by far that we have on the subject. But the pages are by no means occupied by systematical discussions only. On the contrary, they are quite a repertory of information concerning the qualities of different Grasses, whether healthy or diseased. As an instance of the way in which this highly interesting part of the subject is treated, the following account of what follows the use of spurred or Ergotised Wheat may be selected, as a warning to every one that all diseased corn, of whatever kind, is to be dreaded; and especially that it is a great mistake to imagine that the spurs of Rye are alone capable of producing fearful consequences:—

"Wheat is no less liable than Rye, and, indeed, all kinds of corn and other cultivated vegetables, to disorders associated with the development of minute species of fungi; and though ergot is less frequent in its attacks upon it than is the case with the last-mentioned grain, several other equally destructive members of the class, known by the more familiar names of smut, rust, and mildew, seem always ready to avail themselves of every opportunity, that weakness engendered by adverse season or circumstances presents. Straw, foliage, husk, and grain afford in turn a subject for their insidious depredations, which are always more or less injurious, not to the quantity alone of the crop, but to its nutritive and healthful quality. Instances of this deterioration are shown in the analyses of our agricultural chemists, as in that of blighted Wheat, grown in 1804, by Sir H. Davy, which presented the average quantity of 955 parts of nutritive matter in the 1000 reduced to 650, while a sample of mildewed Wheat, in 1806, yielded only 210 in the 1000. The consequence of using such Wheat as food, especially the last-mentioned, would, of course, be a step toward starvation, even though no greater evil resulted. It is, however, well known to be highly prejudicial to health; and the higher standard of living among the poorer classes of our population, compared with those of some continental countries, is the only cause of their exemption from the dreadful disease mentioned above, as resulting from the use of bad Rye. That such disease might occasionally prevail among them here from similar causes, under a more restricted form of diet, is evident from a record in the Philosophical Transactions for the year 1762. The case in question occurred in the village of Wallisham, about 15 or 16 miles from Bury St. Edmund's, Suffolk, and the report of it was forwarded to the Royal Society by Dr. Wollaston, attested by the Rev. Mr. Bone, the curate of the parish, and is abridged as follows:—Some of the Wheat belonging to a farmer in the neighbourhood, being laid or beaten down by bad weather, and the grain much damaged in consequence, was collected and threshed apart from the remainder. Being unfit for the market, it was sold at a low price to any of the farm-labourers, and other people of the village who might be inclined to purchase. The sale of this corn commenced about Christmas, and to one poor family, whose chief, or possibly sole, support it was for some time, the result was most alarming and unparalleled. It appears that the consumption of the clog-wheat or rivets, as it is termed, by the father, mother, and five children, was about 2 bushels in the fortnight; the same being eaten in the form of bread and puddings, both of them very indifferent in quality. But to poverty, cheapness, and sufficiency of food are always irresistible inducements, and this unwholesome fare was continued, without intermission, until the mother and her children were attacked, within a very few days of each other, with gangrenous ergotism. The first indication of the disease, intense pains in the lower limbs, occurred on the 10th of January, which were probably mistaken for rheumatism; and when these subsided within the course of the week, numbness and insensibility of the parts succeeded, terminating in mortification. The condition of the family, at the time Dr. Wollaston made his report to the Society, is here subjoined:—

"'Mary, the mother, aged 40. Right foot off at the ankle; left leg mortified, a mere bone, but not off.

"'Elizabeth, aged 13. Both legs off below the knees.

"'Sarah, aged 10. One foot off at the ankle.

"'Robert, aged 8. Both legs off below the knees.

"'Edward, aged 4. Both feet off at the ankles.

"'An infant, aged 4 months. Dead.

"'The father was not attacked until about a fortnight after his wife and children, and in a slighter degree. In him the pain was confined to two fingers of his right hand, which turned blackish, and withered. Another labouring man, in the same parish, who had eaten of this bread, suffered from numbness in both his hands for above a month. They were constantly cold, and his finger-ends peeled; one thumb, he says, remains without any sensation.'

"In several instances, where bread made from the same corn was eaten in the farmer's own family, as well as by other persons, no prejudicial effects were noticed, probably in consequence of such bread being only occasionally used, and as an adjunct to other wholesome and nourishing food. The nature of the disease with which the Wheat was affected, in this lamentable case, does not appear to have been ascertained; but the circumstances are well authenticated, and were in my boyhood, the early part of the present century, the subject of local tradition in the part of the county of Suffolk in which they took place. It is possible that the fatality attendant upon the use of the damaged grain, in the unfortunate family above mentioned, arose quite as much from the absolute deficiency of proper nourishment, as from the alleged poisonous quality of the mildewed fungus; but, with such examples before us, too great caution cannot be enforced regarding the use of grain or flour of suspicious character."

Flowers and Foliage for Indoor Plant Cases. By E. A. Maling. London: Smith, Elder, & Co.

The authoress tells us that the object of the book is to teach inexperienced persons how to preserve and arrange their plants, when they have grown them, the latter being the lesson attempted to be taught in a previous brochure entitled "Indoor Plants." The present work brings prominently before us a modified form of glazed case for plants, which is called the Indoor Plant Case, "the original idea of which was of course taken from the Wardian case," to which the chief addition seems to be the provision of a simple plan for heating, so arranged that the plants may either be cool if they are of a nature to bear a low temperature; or "at 10 minutes' notice the heat can be raised to any degree up to 90°." When we think of the fleeting plants and flowers that during summer ornament our open drawing-room stands, it must be admitted that something more is wanted. "I have till quite lately," writes Miss Maling, "been interesting myself in these cases, contriving to work them up to something like completeness, without much noting the time the flowers lasted; still the lamentations of friends who found time after time this flower and that flower and another flower lasting with me, while theirs meanwhile had gone through many a change—all this made it quite evident that two months were long for Primroses, and five weeks for Hyacinths; while for Geraniums and Gloxinias, Fuchsias and Begonias, I venture not to speak. I may say, most truly, that I know no other means of keeping flowers anything like so long as two months, either in a drawing-room with its dry air, or in a greenhouse with its passing currents, and certainly not in a garden bed in the finest season. Yet, after all, the secret is a very simple one. It is merely the stillness around them which preserves the flowers so very long unchanged; while the peculiar arrangement by which the heat is supplied provides that soft, dewy atmosphere in which so many of the prettiest plants delight."

This passage gives a very good idea of the object and style of the book, which abounds in scraps of useful advice, but which would be improved in another edition by a greater regard to correct orthography in the names of the plants mentioned.

A Handbook of Descriptive and Practical Astronomy. By George F. Chambers, F.R.G.S. Murray. Fcp. 8vo. Pp. 514.

A really good handbook of astronomy, not too mathematical on the one hand, and not popular in the sense of inaccurate, loose, and unsatisfactory on the other, is sure to be acceptable. The excellent "Outlines of Astronomy," by Sir Wm. Herschel, and the useful "Handbook of Astronomy" by the late Dr. Lardner, have no doubt supplied the want which was so greatly felt a few years ago by a large class of people in this country; but notwithstanding the existence of those works, there was still abundant room for another if really good and well done. This has been seen by the author of the work before us. He says, and says truly, with respect to English works on astronomy, "Our choice is limited either to purely elementary books, few in number, on the one hand; or to advanced treatises, of which there is a similar paucity, on the other. The present work is designed to occupy a middle position between these two classes; to be attractive to the general reader, useful to the amateur, and handy also as an occasional book of reference to the professional astronomer. In pursuance of the plan laid down from the first, theoretical matter is as a rule excluded; but in many cases it has been thought desirable not to abide with perfect strictness to the limitation. All speculations, however, bearing on the origin of the created universe have been carefully avoided, sufficient mischief having already been done by the artful sophistries of those who delight in what they are pleased to term free philosophical inquiry."

The most recent discoveries in all branches of the science will be found incorporated with information of older date. The author's style is clear and concise, the illustrations are excellent and numerous. Useful tables for reference are inserted where they are wanted, and there is a good table of contents and index. The work

is eminently one for study and for use; and whilst it is sufficiently elementary for the purposes of the general reader, it will prove really serviceable to those who take sufficient interest in astronomy to study it with attention.

The following account of a remarkable display of shooting stars will probably be new to most of our readers.

"By far the most splendid display of shooting meteors on record was that of Nov. 13, 1833, and one which from its occurring after so exact an interval of time served to point out a periodicity in the phenomenon. It seems to have been visible over nearly the whole of the northern portion of the American continent, or more exactly from the Canadian lakes nearly to the equator. Over this immense area a sight of the most imposing grandeur seems to have been witnessed. The phenomenon commenced at about midnight, and was at its height at about 5 A.M. Several of the meteors were of peculiar form and considerable magnitude. One was especially remarked from its remaining for some time in the zenith over the falls of Niagara, emitting radiant streams of light. In many parts of the country the population were terror-struck by the beauty and magnificence of the spectacle before them. A planter of South Carolina thus narrates the effect of the phenomenon on the minds of the ignorant blacks. 'I was suddenly awakened by the most distressing cries that ever fell on my ears. Shrieks of horror and cries for mercy I could hear from most of the negroes of the three plantations, amounting in all to about six or eight hundred. While earnestly listening for the cause, I heard a faint voice near the door, calling my name; I arose, and taking my sword, stood at the door. At this moment I heard the same voice still beseeching me to rise, and saying, 'O my God, the world is on fire!' I then opened the door, and it is difficult to say which excited me the most—the awfulness of the scene, or the distressed cries of the negroes. Upwards of 100 lay prostrate on the ground—some speechless, and some with the bitterest cries, but with their hands raised imploring God to save the world and them. The scene was truly awful; for never did rain fall much thicker than the meteors fell towards the earth; east, west, north, and south it was the same."

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Where proper means are allowed this structure should soon be getting gay; Chinese Primulas, Daphnes, early flowering Heaths and plants of that description which should be in flower, make a good display. Large plants of Rhododendrons or Camellias that have been some time in their pots or tubs will require more attention than people commonly imagine; weak tepid liquid manure may be given them occasionally with advantage. In stoves heat must be indulged in, more particularly while the present cold weather lasts. To obtain this keep rather a lively fire from 7 in the morning until 11 o'clock, from which time it may be allowed to decline until evening. Forcing-pits should now be in full activity to furnish plants in bloom. If required in sitting rooms care should be taken before they are removed there to gradually harden them for a day or two either by placing them in the conservatory or intermediate house. In addition to keeping the conservatory gay with blooming plants, let the arrangement of the house be occasionally changed, by grouping the plants somewhat differently, and adding a few striking ones for effect. Hyacinths should be protected by a frame; as they begin to grow remove the plunging material down to the surface of the pots to prevent them rooting upwards. Mignonette will require attention to keep it from damping. As with the exception of forced plants most other things are now in an inactive state, the temperature of plant houses should fall to its minimum point consistent with the safety of their various inmates; as has often been insisted on, nothing can well be worse for the development of a healthy vigorous habit in plants than subjecting them to a high temperature at the present dull season. When Achimenes are required to bloom early a few pots may now be started for that purpose.

FORCING DEPARTMENT.

PINERY.—Have soil in readiness for shifting when required; keep up a moist heat in the fruiting house, syringing occasionally if much fire heat is employed. Plants intended for fruiting may soon be planted out into beds of good porous loam mixed with well rotted manure. Pines are often deficient in flavour at this season; this is improved by exposing the ripening fruit to all the light you can command, and giving but little water. A good supply of air is likewise essential at all times for high flavour, but it must be given with caution during the present cold weather. Continue an increase of heat to Pines now wanted to start, employing it principally by day. Attend to linings for plants grown in dung pits, and keep the atmosphere in which they grow dry.

VINERY.—Such shoots as have more than one bunch should have them reduced to that number, selecting the one likeliest to form the handsomest cluster. Tying in the young wood should be managed carefully, bringing the shoots to their proper position by degrees, to avoid the danger of their breaking. After the buds are started a few inches the syringe may be gradually withheld; as too much humidity at this season will sometimes retard both the foliage and bunches, and a sufficient degree of moisture can easily be kept by sprinkling the floors and heating apparatus. Gradually advance the night temperature to 60° and then to 65° by the time the flowers are ready to open, keeping the thermometer from 10° to 15° higher by day according to the amount of light you can command. Where outside borders are not warmed by hot water, keep up the heat by additions of fermenting material, bearing in mind the injurious effects any sudden check to the roots now in action will produce on the coming crop. Bring succession Vineries into work as wanted. Late Vineries in which Grapes are still hanging will require fires daily to keep the house and fruit dry; remove decayed berries and dead leaves, and well protect the roots from frost.

PEACH HOUSES.—Peaches and Nectarines which have been forced for several years oftentimes produce a large excess of fruit-buds, and this more especially on weakly trees; a natural consequence of allowing these to remain are weak flowers and inferior fruit and wood. When, therefore, such is the case the trees will be greatly benefited by well thinning the bloom-buds, leaving the largest and those most favourably placed; of course a considerable number will be still left to allow for casualties. Syringe twice or oftener daily till the bloom is ready to expand, when it must be discontinued. The night temperature may advance to 45°, with an increase by day accompanied with a proportionate admission of air.

FIGS.—See that trees planted out are properly moist at the roots, and also keep those in pots and tubs carefully supplied with water, for any excess as respects the presence or absence of moisture at the root is dangerous after the appearance of fruit, and is the frequent cause of its dropping off. Maintain a moist atmosphere, and if necessary to water the border, use tepid water.

STRAWBERRIES in bottom heat for forcing will require air daily to prevent drawing in those earliest started; when they show the truss of flower they should be removed to shelves in the Vineries and Peach houses to bloom.

FLOWER GARDEN AND SHRUBBERIES.

Except in the most favoured localities little can be done in this department at present. The bedding plants, however, must have attention, for in all likelihood many things are suffering, and such plants as appear most affected should be removed to other quarters where a higher temperature is kept. Keep the stock in pits and frames well protected and the surface soil of the pots frequently stirred. Dust with sulphur Verbenas and similar plants attacked with mildew. Be particular in keeping the interior of pits containing plants of the above description as dry as circumstances will permit.

HARDY FRUIT AND KITCHEN GARDEN.

Pruning of orchard trees will now require attention; it is a matter which is too frequently neglected, and the result is that the heads of the trees get so crowded with wood as to render a crop of fruit, except upon the extremities of the outer branches, not to be expected, and the thicket of worse than useless spray which the trees have to support is injurious both to the size and quality of the fruit, and also to the general health of the tree. When this state of things has been allowed to prevail, advantage should be taken of the first opportunity to give the trees a careful pruning, thinning out the inner branches severely. In the case of large branches being cut off, the surface of the wound should be neatly trimmed off with a sharp chisel and covered with a coat of paint. Push forward all kinds of wheeling while the ground is in a proper state for such work. Soils of a heavy tenacious character are improved by working and exposing them to the action of frost. Look well to the protection of Lettuce, Cauliflowers, &c., under glass. Some of the strongest roots of early Rhubarb might be covered with pots or boxes, and sufficient leaves and stable litter to produce a gentle warmth; this would save injuring the roots by removing them for forcing, but where there is a good stock of roots this is of little importance, and is hardly worth the trouble and litter which it causes. Get ground prepared by heavy manuring and trenching for fresh plantations of Rhubarb, Seakale and Asparagus, and remember that the ground for these things can hardly be made too rich.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the Week ending Jan. 2, 1862. as observed at the Horticultural Garden

December and January.	Moon's Age.	Barometer.		Temperature					Wind	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 27	25	30.499	30.433	40	25	32.5	42	43	N.E.	.00
Satur. 28	26	30.454	30.409	39	30	34.5	42	43	E.	.00
Sunday 29	27	30.414	30.327	31	22	26.5	41	42	N.E.	.00
Mon. 30	28	30.380	30.336	36	24	30.0	41	42	N.E.	.01
Tues. 31	●	30.368	30.339	39	29	34.0	41½	42	N.E.	.00
Wed. 1	1	30.352	30.279	33	30	31.5	41	41½	N.	.01
Thurs. 2	2	30.361	30.255	45	29	37.0	41	41½	N.E.	.00
Average		30.404	30.339	38.4	27.0	32.7	41.3	42.1		02

Dec 27—Thick fog; hazy; densely overcast, frosty.
— 28—Hazy; slight haze; densely overcast.
— 29—Foggy; densely overcast; foggy; frosty and foggy.
— 30—Foggy; hazy; densely overcast; frosty; slight rain at night.
— 31—Hazy, cloudy and fine, overcast at night.
Jan. 1—Uniformly overcast; dry air; drizzly.
— 2—Cloudy, fine; overcast at night.

Mean temperature of the week 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Jan. 11, 1862.

January.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 5 ..	41.4	30.5	36.0	13	0.40 in.	6	5	7	1	1	12	3	1
Mon. 6 ..	41.0	29.5	35.2	13	0.33	4	7	4	4	4	10	3	—
Tues. 7 ..	41.1	29.0	35.0	13	0.34	3	5	4	3	4	7	6	4
Wed. 8 ..	40.3	30.3	35.3	11	0.26	4	4	8	4	—	14	1	1
Thurs. 9 ..	40.5	30.5	35.5	14	0.71	1	7	4	3	4	10	6	1
Friday 10 ..	41.4	30.0	35.7	16	0.40	3	9	3	4	5	6	4	2
Satur. 11 ..	41.2	30.9	36.1	18	0.77	1	6	4	1	6	8	5	2

The highest temperature during the above period occurred on the 5th, 1844, and 6th and 7th, 1845—therm. 54 deg.: and the lowest on the 7th and 8th, 1841, and 8th, 1861—therm. 6 deg.

MONTHLY DEPTH OF RAIN, in inches and hundredth parts of an inch, which fell at Chiswick in the years 1841 to 1861 inclusive.

	1841.	1842.	1843.	1844.	1845.	846.	1847.	1848.	1849.	1850.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
January	2.60	1.06	1.33	2.25	2.97	2.85	1.31	1.16	1.73	1.43
February ..	0.76	1.32	2.35	2.27	0.93	1.47	1.34	3.12	2.52	0.95
March	1.32	1.81	0.47	2.44	1.25	1.09	0.41	3.05	0.85	0.13
April	1.58	0.15	1.62	0.33	0.95	3.93	0.92	3.06	2.21	1.79
May	2.16	1.73	5.26	0.25	2.89	1.35	1.59	0.28	3.53	1.84
June	2.45	1.58	1.62	0.97	1.36	0.80	1.31	3.20	0.31	1.40
July	3.56	1.52	1.67	2.10	2.31	1.78	0.79	2.21	2.82	2.68
August	2.69	2.81	3.28	1.84	2.79	4.50	1.50	4.70	1.60	0.97
September..	3.71	3.39	0.98	1.31	1.77	1.76	1.66	2.20	2.49	2.36
October	4.61	1.71	4.19	4.13	1.39	5.54	1.75	2.93	2.18	1.55
November ...	3.41	4.43	2.13	3.06	2.11	1.43	2.26	0.90	1.32	2.03
December ..	2.12	0.76	0.58	0.39	2.61	1.21	1.81	2.03	1.28	1.15
Annual amount	30.97	22.27	25.48	21.34	23.33	27.71	16.65	28.34	22.84	18.28

	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.
	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.	Ins.
January	3.07	2.72	2.14	1.92	0.10	1.76	2.09	0.41	0.61	2.18	0.82
February ..	0.90	1.06	0.59	0.78	1.35	0.62	0.31	1.48	1.31	1.20	1.41
March	3.57	0.25	1.48	0.42	1.75	0.97	0.73	0.88	0.77	1.63	1.89
April	1.65	0.52	2.58	0.30	0.26	1.97	1.77	2.13	2.01	0.95	1.44
May	0.74	1.74	1.60	4.03	1.94	4.38	0.87	2.05	1.80	3.04	1.31
June	1.33	4.69	2.54	1.53	1.48	0.88	1.91	0.78	3.10	5.15	2.35
July	3.90	2.28	4.17	2.40	6.30	1.43	1.22	2.55	2.18	2.72	1.90
August	2.03	3.71	1.87	1.77	1.45	3.50	2.80	1.46	2.49	4.16	0.50
September..	0.42	3.54	2.41	0.58	1.15	1.99	3.52	1.05	4.05	2.82	1.78
October	2.01	3.87	3.78	2.61	6.15	2.40	4.01	1.36	2.55	1.60	1.04
November ...	0.55	6.20	0.91	1.31	1.34	0.94	1.53	0.10	2.72	2.60	4.10
December ..	0.62	1.97	0.30	1.27	1.11	1.88	0.30	1.53	1.95	2.03	0.94
Annual amount	20.79	32.55	24.37	18.92	24.38	22.72	21.06	15.78	25.54	30.08	19.48

The amount of rain which fell in 1861 was 19.48 inches, or 4.28 inches below the average of the preceding 35 years.

Notices to Correspondents.

BOOKS: *H W C.* The "Transactions of the Scottish Aboricultural Society" are to be purchased at 6, York Place, Edinburgh.

FRENCH BEANS. Will the correspondent who has sent two packets of these be so good as give us his name and address, and state the object he had in sending them.

GARDENERS' CROPS: *H P.* We by no means wish to discourage you, but we, for very obvious reasons, cannot publish any one's report upon his own success.

NAMES OF PLANTS: *Alex. R.* You are quite misinformed. The first name has nothing to do with your plant. Your gardener is right. The name he has given you is correct, and he deserves praise for his accuracy.—*A C.* Dendrobium aqueum is an uncommon species.

NEAL PASTIL. Mr. Neal writes as follows:—Allow me to explain to your correspondent "J. R. T." that he mistakes the character of the Neal pastil. The pastils contain no ingredient that is not regularly used by gardeners in fumigation, but they contain these in a concentrated form. A cubic foot of smoke from a pastil is a cubic foot of the same kind of smoke that "J. R. T." probably always uses with his fumigating pot. The difference is this: a pastil will give more smoke than twice its value of tobacco, and saves all trouble, neither has the smoke so disagreeable a smell. As to its economy, my books will show that dozens of little nurserymen who know to a farthing what fumigation ought to cost, use them solely because they are the cheapest way of smoking their plants. I am however sorry to say that at present I have not been able to prevent their being spoiled by damp, they are better warmed before being used, and I fancy "J. R. T." has been misled owing to this unfortunate peculiarity in my pastils.

SALSAFY: *Clericus* asks why the seed of this plant and of Scorzonera, bought in England, never grows; while that bought in Paris is always good. Can any correspondent explain the mystery.

SCOTCH FIR: *E T.* A very remarkable tree. We will make up our minds about it soon, and publish the account you have been good enough to send, along with a wood engraving of the photograph.

MISC.: *Agaricus.* The spores of a Mushroom are what are commonly called the seed; the mycelium is the spawn

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E.C.
Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.
Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

ANDROMEDA FORMOSA. — A most beautiful Plant for the Lawn or Shrubbery, producing immense corymbs of blossom, and evergreen foliage like Arbutus.
Strong bushy Plants, 12s. per dozen, or extra fine selected specimens, 2s. 6d. each.
A CATALOGUE of GENERAL NURSERY STOCK, extending over 60 acres, may be had on application.
W. H. ROGERS, Red Lodge Nursery, Southampton.

Muscat Escholata Grape.

MESSRS. J. AND C. LEE have the pleasure to offer strong well ripened Canes of this
THE FINEST OF ALL MUSCAT GRAPES,
which, though little known to Grape growers in general, deserves to be extensively cultivated. It combines the desirable qualities of setting freely with a large well shouldered handsome bunch, with berries of a rich amber colour almost as large again as those of the Muscat of Alexandria, and of the most luscious Muscat flavour.

Planting Canes	.. .. ..	15s. 0d. each
Fruiting Canes	.. .. ..	21 0 „
Extra strong Fruiting Canes	..	31 6 „

Vineyard Nursery, Hammersmith, London, W.

Pearson's Long Gun Cucumber.

HURST AND McMULLEN, 6, Leadenhall Street, London, E.C., having purchased a considerable portion of the above beg to offer it to the Trade (see their List).
The raiser describes it as being most difficult to seed, from its fruiting so quickly. The gardeners in the neighbourhood where it is known consider it surpasses all others. It is the heaviest bearer in point of number ever known; fruit from 24 to 30 inches, white spines, little or no handle, skin a bright green.
The quality is also described to be far superior to all others. The texture is as fine as a Melon, and there is a total absence of all bitter flavour. The fruit is much sought after by the salesmen at Nottingham. As many as 150 per day have been supplied, and it commands half as much more as any other kind in its neighbourhood.

"Yorkshire Hero" Cucumber.

EDMUND PHILIP DIXON AND SONS beg to offer Seed of the "YORKSHIRE HERO" CUCUMBER, which has been proved during the past season to be the most useful and prolific Cucumber in cultivation. It is a very long White-spined variety, of a dark green colour, producing three to four fruit at a joint, and, as will be seen from the Testimonials following, possesses all the qualities the grower can possibly desire.

From Mr. THOMAS GIBB, *Gardener to the Right Honourable the Earl of Yarborough.*

Long Cucumbers are generally shy bearers, but the "Yorkshire Hero" produces abundantly, besides being a Cucumber of excellent quality.
Brocklesby Park Gardens, October 21st, 1861.

From Mr. GEORGE McGILLAVRAY, *Gardener to Sir John Nelthorpe, Bart.*

The "Yorkshire Hero" Cucumber, I without hesitation say, is possessed of every qualification to be desired in a Cucumber, being a most prolific bearer, at all times showing as many as three and four fruit at a joint. It is a thick Cucumber with very short neck, and grew with us from 20 to 24 inches, and plenty of them to satisfy any one: I could not get any seed from those I saved for that purpose, they being so solid there was no room for seed.
Scawby Hall Gardens, October 24, 1861.
Price 2s. per packet.
London Agents for the sale of the above:—Messrs. HURST & McMULLEN, 6, Leadenhall Street, E.C.; Messrs. COOPER & BOLTON, 152, Fleet Street, E.C.
E. P. DIXON & SONS' DESCRIPTIVE PRICED CATALOGUE of SEEDS is now ready, and may be had on receipt of one stamp
Yorkshire Seed Establishment, 57, Queen Street, Hull.

CUCUMBERS and MELONS.—The SENSATION CUCUMBER, a superb black spine, exhibition variety, quite as productive as any of the common Ridge varieties; its qualities are such as will be certain to render it a No. 1 with all growers. Length 24 to 28 inches, short-necked, dark green, and very regular spine; carries its bloom well to the last. Price 2s. 6d. per packet.
TILEY'S WHITE SPINE CUCUMBER.—The same character as the foregoing, with the exception of being white spine and a lighter green. Price 2s. 6d. per packet.
TILEY'S WONDERFUL RIDGE CUCUMBER.—A beautiful black spine. Average length 15 to 18 inches. As an out-door variety not to be surpassed for productiveness or quality, having always been taken when cut as one of the fine frame kinds. It grows very even from stem to point, and rarely ever seeds. Price 2s. 6d. per packet.
NEW MELON, "NONSUCH."—E. T. having purchased the entire stock of Seed of this superb new Melon, begs to offer it to the public as a great acquisition, especially to those who have not the command of a strong heat; it will grow well and ripen perfectly with merely the assistance of a cold frame. The raiser has always cultivated it on a spent dung bed with every success (on which early Potatoes had been grown); it is short-jointed, a free setter, fruit round, green flesh, thin skinned and solid, weight from 2 to 3 lbs., beautifully netted, and a splendid aromatic flavour. It is such that must be certain to give every satisfaction to all purchasers, having been grown well in pots in a cold greenhouse. Price 2s. 6d. per packet.
CUCUMBERS.—General Outram, 2s. 6d. per packet. The following sorts 1s. per packet:—Sir Colin Campbell, General Canrobert, Victory of Bath, Gordon's White Spine, Lord Kenyon's Favourite, Phenomenon, Captivation, Rifleman, Mills, Jewess, Manchester Prize, Hunter's Prolific, Incomparable, Sion House, Ipswich Standard, Ayres' Prolific, Cuthill's Island Mary, Manchester Prize, Hamilton's Black Spine, Kilway's Victory, and all other varieties worthy of cultivation.
MELONS.—Garibaldi, 1s. 6d. per packet. The following, 1s. per packet:—Gen. Havelock, M'Ewen's Green and Scarlet Flesh, Monroe's Greengage, Golden Drop, Golden Perfection, Scarlet King, Incomparable, Golden Ball, Bromham Hall, Austen's Incomparable, Queen, Blackall's Green Flesh, Bowood Green Flesh, Beechwood, Windsor Prize, and all other varieties worthy of cultivation.
A packet of each of the new varieties of Cucumbers and Melons for 7s. 6d., or a packet of either of the new Cucumbers and a packet of the Melon, 4s.
The Emperor Red Celery, the best grown, 1s. per packet. The Solid White Celery, extra fine, 1s. The true old Bath Cos Lettuce, 1s. per packet. Griffin's Alma Lettuce, 1s. per packet.
The true Red Currant Rhubarb, the best grown for early forcing or preserving. This variety is red quite through, and a delicious acid. Price 1s. per root.
A remittance is expected from all unknown correspondents by Post Office Order or penny postage stamps.
EDWARD TILEY, Nurseryman, Seedsman and Florist, 14, Abbey Churchyard, Bath.

Seeds of Crop 1861.

CHARLES SHARPE and CO., having completed the Harvesting of their Seeds, comprising Turnip, Mangel, Carrot, Peas, Beans, and all other varieties of Culinary and Agricultural Seeds, will be glad to forward post free on application their WHOLESALE PRICED CATALOGUE for the present season.
Sleaford.—January 4.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.
The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.
The American Nursery, Bagshot, Surrey, near the Sunningpale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

J. H. WOOD, BOWER NURSERIES, Maidstone, offers to the Trade in 60-sized pots, really fine healthy stuff, at 50s. per 100 for cash, the following AZALEAS:—

Iveryana	Rosalie
Zotteriana	Roi Leopold
Grand Monarch	Standard of Perfection
Colorans	Sir Charles Napier
Queen of Perfection	Brilliant
Souvenir de l'Exposition	Baronne de Ferrière
Petuniæflora	General Havelock
Napoleon III.	

Princess Royal, 9d. each.
Several specimens of the above are now well set with flower-buds, and will be offered at reasonable prices.
Specimen DRACÆNA TERMINALIS, 3s. 6d. to 5s. each.
GLADIOLUS BRENCHLEYENSIS, 20s. per 100.
My NURSERY STOCK in general is healthy and fine, and well worthy of inspection.

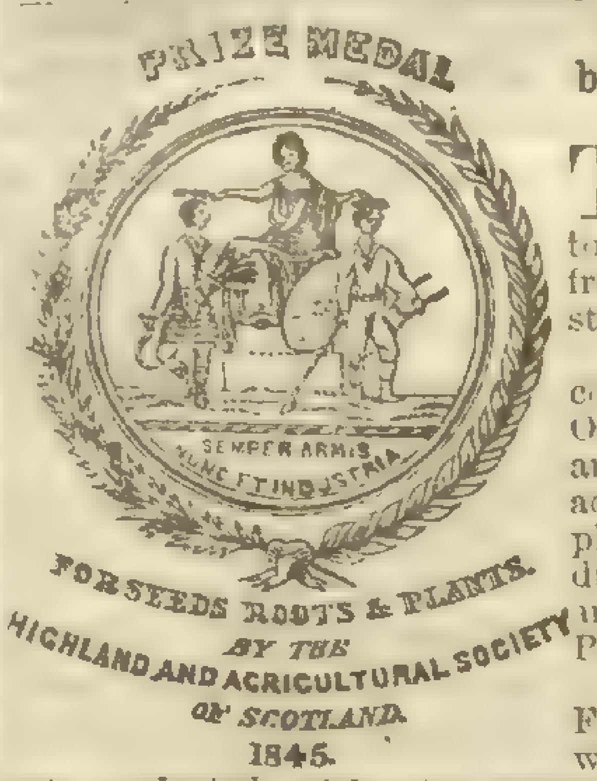
GENUINE ITALIAN RYE-GRASS, produced from the second cut of Foreign "Italian," weighing up to 21 lbs. per bushel, and "Pacey's" and "Evergreen" Perennial Rye-grass, weighing up to 28 lbs. per bushel, can be supplied direct from the Grower either now or in March (at the option of the purchaser), and samples will be forwarded free on application.
Address SIMON A. DAINTREE, Fendrayton, St. Ives, Hunts.

To the Seed Trade.

THOMAS AYRES, SEEDSMAN and GROWER, Biggleswade, Beds., has to offer WHITE SPANISH ONION SEED, ALTRINGHAM and WHITE BELGIAN CARROT SEED; YELLOW GLOBE, ORANGE GLOBE, RED GLOBE, LONG YELLOW, LONG RED MANGEL WURZEL SEED; also several varieties of SWEDE and WHITE TURNIP SEED.
Prices forwarded on application.

The "Student" Parsnip.

MESSRS. SUTTON AND SONS have the honour of offering to the public the Stock of SEED of this delicious and finely formed Parsnip, which was ennobled from the wild Parsnip by Professor Buckman, F.L.S., &c., of the Royal Agricultural College, Cirencester, who kindly entrusted to them the Seed, originally produced by himself, from which the present stock has been raised by Messrs. SUTTON & SONS, and who having sown it in their Trial Grounds have found it to be superior to any of the other sorts sown by the side of it.
This is exclusively in their possession; and may be had in Packets of 1s. each, containing 1000 Seeds (post free), direct from SUTTON & SONS, or through the undermentioned Firms who have ordered a supply. Additional names will be published in future Advertisements:—
Messrs. Hurst & M'Mullen, Leadenhall Street, London.
„ Beck, Henderson, & Co., Adelphi, London.
„ Noble, Cooper, & Co., Fleet Street, London.
„ James Carter & Co., High Holborn, London.
„ Wheeler & Son, Gloucester.
„ Barr & Sugden, King Street, London, W.C.
„ Butler & McCulloch, Covent Garden, London, W.C.
„ Charlwood & Cummins, Tavistock Row, Covent Garden, London, W.C.
„ Dicksons & Brown, Corporation Street, Manchester.
„ W. Drummond & Sons, Dawson Street, Dublin.
„ Dickson, Hogg, & Robertson, Dublin.
„ Wood & Son, Maresfield, near Uckfield
Mr. John Bell, Exchange Street, Norwich.
„ Charles Turner, Royal Nursery, Slough.
„ H. Brown, 4, Commutation Row, Liverpool.
„ Jno. Perkins, 52, Market Square, Northampton.
„ John Cattell, Westerham, Kent.
„ James Veitch, Jun., King's Road, Chelsea.
„ Robert Parker, Tooting, Surrey, S.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.



Nursery and Seed Establishment, Dumfries, N.B.
(ESTABLISHED 1787.)

THOMAS KENNEDY AND CO. beg respectfully to direct the attention of their friends and the public to their stock of
NURSERY PLANTS,
comprising FOREST, FRUIT and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, &c., adapted either for extensive planting, or for giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c.
Also to their stock of
FARM and GARDEN SEEDS,
which are very extensive, and being selected with the greatest possible care from SEED GROWERS of the highest standing in this and other countries, are guaranteed to be of first-class quality.
FREE DELIVERY.
All SEEDS (not Plants), under certain limitations, are delivered free of Carriage to the principal Railway Stations in GREAT BRITAIN and Steam Ports in IRELAND.
*** PRICED CATALOGUES will be sent, post free, on application.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,
And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.
We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage-free by rail, and allow 5 per cent. discount for cash.
Our Book of FARM SEEDS sent free for 3 stamps.
J. C. WHEELER & SON, Seed Growers, Gloucestershire.

Sharpe's Improved Swede.

CHARLES SHARPE and CO., SEED GROWERS, Sleaford, beg to inform their friends and the public that they have this year grown and secured in fine condition a large breadth of the above valuable variety of SWEDE, and they will now be able to execute all orders entrusted to them, which, in consequence of the scanty supply the last two seasons, they were not always in a position to do.
C. S. & Co. take the present opportunity of remarking that extended cultivation has proved decisively the superior merit of their Swede, which has in all competitions with other kinds been placed in the first rank. Price on application.
CHARLES SHARPE & Co., Seed Growers, Sleaford.

CHOICE PRIZE SWEDES (DICKSON'S Selected) at the Birmingham Show.—The SWEDE TURNIPS exhibited by the Right Honourable the Earl of Lichfield—entry 105—at the show held at Bingley Hall, Birmingham, during the first week of the present month, and which took the Frst Prize there (the entries at the same time, and many by eminent agriculturalists, being very numerous) were from seed which we had the honour of supplying to his Lordship. Their quality in every way, as was universally admitted, was most excellent, at once showing the great advantage of having Seed saved in a proper manner from carefully selected and transplanted bulbs.
We have again saved in the most careful manner, from picked and transplanted bulbs, a large and fine lot of Seed for the sowing season of 1862, for which we are now booking orders at 1s. per pound, for delivery in the Spring, or sooner if desired.
PRICE LISTS of SEEDS, TREES, and PLANTS on application.
JAMES DICKSON & SONS, Seed Merchants, &c. 102, Eastgate Street, and "Newton" Nurseries, Chester.

NEW APPLE, "BARON WARD." — The very best late keeping variety in cultivation.

	Each—s.	d.
Strong plants, two years, unpruned, suitable for pyramids or bushes	2	6
Strong plants, dwarfs	1	6

Description, &c. forwarded post free on application to R. BRADLEY & SON, Halam Nursery, near Southwell, Notts.

Quick.

H. AND F. SHARPE are prepared to offer of the finest quality,
Strong 2-years' Transplanted QUICK, 3 feet high,
Strong 2-years' Seedling do., 2 feet high,
at very moderate prices, which may be had, with samples, on application.—Seed Growing Establishment, Wisbeach.

Four Millions of Transplanted Quicks.

GEORGE CHIVAS offers the above, Two Millions of which are suitable for Railways, and Two Millions varying from strong to exceeding strong—a portion having been twice Transplanted. A bale containing 100 of each, five sizes, forwarded on receipt of 15s.; orders for 10,000 delivered free at any railway station.
Also Half a Million of Transplanted SPRUCE, and one of the largest general Nursery Stocks in the North-Western counties.
Chester, Jan. 4.

Forest Trees and Coniferæ.

ALEXANDER PONTEY, of the Plymouth Nursery and Seed Establishment, begs to inform gentlemen intending to Plant and the Trade generally that his Nursery abounds with several hundred thousand TREES, which have been frequently transplanted to insure their growth.
A. P. also offers an immense stock of the finest and most useful CONIFERÆ for ornament and shelter, delivered free on any of the North Devon, South Devon, or Cornish Lines of Rail.
CATALOGUES with prices to be had on application.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.
STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. HALL DARE, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, JANUARY 4, 1862.

IT was a favourite and almost characteristic practice of the late Mr. PUSEY to take periodical reviews of agricultural Progress, to look back from time to time over the tale of years, and call up the arrear which memory is ever making, and which soon slips beyond its grasp. A real lover of the soil, and all its manifold and varied interests, he was skilled enough to know that your only practical prophet of the future is the man who can turn the most comprehensive gaze backward; that he must know how to look into the seed-bed of time who would "say which grain will grow and which will not," in time to come. Keeping this principle in mind, as year after year has opened we have endeavoured to review the contributions it has made to the general fund of what we call agricultural advancement: but there are times when we are beckoned by events to take a broader survey, and years themselves become in their turn, the units of our summary. Such is the present period: but if our retrospect is no longer confined to a single year, neither is it any longer dependent as formerly on the pen. Collaterally with the most remarkable career of improvement which Agriculture has ever seen in this country, there has arisen a new Indicator, on a scale as practical as it is extensive, of the decennial,—or to speak more exactly the *un*decennial progress of Art and Industry in this

and other countries; and instead of those periodical efforts of an authorship such as that just named, presenting with a master's hand, the record of statistical facts in the form of easy narrative, the better to awaken our notice to subjects so important and interesting to ourselves; the tables are turned, and we are summoned to the bar of a Comparative Exhibition of national and international industry; where we are not invited to hear, but summoned to deliver our account, before a tribunal that will neither flatter nor extenuate,—the best of all judges or juries—that of the congregated ranks of Exhibitors in general.

It is a period when under any circumstances we could hardly have failed to pay tribute to the wise and happy thought which suggested, and set on foot an Institution, for so it may now be called, unknown and unthought of before by the people of this country, the most industrious and hard-working in the world, and heretofore perhaps the least rewarded of any by the aggregated display of their own productive powers; but the very approaches to the subject which would have been nearest to our thoughts, are darkened by a recent sorrow, a sudden and almost incalculable loss occurring on the very threshold of the year which would have brought into the most prominent and valued presence one whose name—the foremost in activity as in honour in every public institution promotive of the good, the true and the Beautiful—has now become a sacred and solemn memory, to a mourning nation.

There is scarcely a reader any more than a writer who does not feel that it would be an affectation to attempt to enter upon the topics which the opening year suggests—above all to the agriculturist and the man of science—without feeling himself brought face to face with that keenest of all reminders of a recent sorrow, an accustomed place no longer filled, a well known name no longer spoken as before, an acting influence for good not indeed extinguished—for that is beyond the power of the grave, but changed to sadness even by that which intensifies it.

Men note and measure most blessings, as they do Time, chiefly by its loss: we have had recent experience of this: but the time may be yet to come when we shall be able to estimate at its full worth what the industry of this country in each branch has derived from the system of public Exhibition, open to all, and comprehending all. Read the history of Invention, or ask any individual inventor whence he first acquired the idea which has led him to success, and you will in the great majority of cases find that it was from the contemplation of some process or mechanism in a branch of art remote from his own, in which there lurked an analogy which he only claims the merit of having been the first to see and apply. The faculty which gives this power is the Imagination; a faculty standing almost in the opposite scale to those practical qualities which bring the greatest amount of average success in the ordinary walks of business, but which has its appointed place and task in the great hive of human activity, and finds its highest stimulant in that arena where all the diversified forms and ranks of industrial art are brought together. Those only who have taken measure of the natural indolence even of minds that appear to go through a fair routine of daily labour, can best appreciate the value of such a stimulant.

Surrounded by the evidences of energetic intelligence and activity which we see on all sides, it might seem unfair to revert to what men have been, and would be, were the stimulants absent which are in fact the causes of these effects: but it is exactly because that activity exists, and in the full daylight of effects, the causes are most apt to be overlooked, that we draw attention to them, as in no instance better exemplified than in the wholesome and friendly challenge of industry to industry and nation to nation which the year just born will reinaugurate.

It is not too much to say that on no occasion ever will such a time-test have been presented to the husbandry of this nation, such a complete and exhaustive display of all that practical experience on the one side, or inventive skill and science on the other can produce in assertion of our claim to relative—perhaps more than relative progress with other arts, and with the other peoples of the earth. A metropolitan meeting of the Royal Agricultural Society to be held in Battersea Park, will in the month of June bring perhaps the grandest specimen yet seen of its ever-increasing annual Show of Stock and Implements into near proximity with the International Exhibition itself, where, though pent in amongst the other pressing claimants of "space," British Agriculture will again appear, occupying an area of some thirty thousand square feet with a selected show of Implements, many of them actually unknown to practical use, even at the last Exhibition, eleven years ago.

The dream of Mr. Pusey will henceforward probably be more than fulfilled. The decennial review which his pen so well depicted and suggested, has taken a tangible and bodily form, which the pen may indeed assist and illustrate on points which implement or machine fail to convey to the eye, but which nothing could so effectively express as the ocular demonstration afforded by a general display of results.

First, and foremost in the list which our review would include come the various new applications of Steam Power to the work of the Farm. It is not difficult to recal the day when this, especially as applied to cultivation, was literally a subject of common ridicule amongst agriculturists. The quiet unobtrusive way in which it superseded horse power for the Threshing Machine, the Winnower, the Chaff-cutter and other processes more obviously mechanical in their nature, was scarcely accepted as any cogent indication of its coming application to a task more strictly agricultural. Yet the extent to which the use of the steam plough has already reached, the acreage which already owns its sovereignty over the heavier descriptions of soil, even in remote districts, would cause surprise, could the particulars be fully brought together, even to those prepared to believe in it. If it have not answered all that was required of it, either in point of process, or comparative economy, it has yet mastered one desideratum, the avoidance of the tread-hardened furrow, coupled with an almost equivalent advantage of increased facility in 'smashing up' (such is the term in fashion) the long accumulated results of this hardening, which some soils almost defied the nature of horse power to accomplish. Viewed in the former case in the light of an Auxiliary for the pressing seasons of Spring and Autumn cultivation on stiff soils, and in the latter as affording a concentrated power equal to a task otherwise almost impracticable, it is past question that it has even at its present stage been a practical addition to our national wealth, in the sense in which everything is so which developes the power of the soil or removes an element of injury and loss.

Next in the order of interest attaching to recent invention and improvement will stand a class of implements applicable not to the soil but to the crops it yields—the horse-power Reapers and Mowers: that the latter should have reached earlier maturity and more absolute success will not surprise any who reflect how far more complicate the task is of garnering an ear-laden crop of which the mere severance from the ground is but one and a small operation amongst others requiring more delicacy and care, compared with that in which the mere severance is itself the main object.

Indeed the mechanism of the hayfield, if one may venture on a phrase so revolutionary of our early recollections, is, taking the implements concerned as a whole, no unimportant feature in modern husbandry improvements. It is hardly as well known as it should be that July, the general haymaking month, is by the longest meteorological statistics we possess, the wettest, and the most capricious of the English year; and the triple aid of the Horse-Mower, followed by the horse-haymaker and horse-rake, with good judgment in the choice of time, affords a process so compendious that 'damaged hay' is almost left without excuse.

Great however as will be the interest attached, by their novelty, to the above classes of implements, there is none which for thorough excellence of finish, will bring more credit upon English workmanship, than that always imposing-looking assemblage falling under the very comprehensive term of Drills. With a rivalry so close, and varieties of purpose almost as undistinguishable to the eye, as the degrees of merit amongst the celebrated firms that have taken precedence in this manufacture, the exhibition in this class will present a feature even in the limited allotment of 'international' area, that will bid fair to bear away the palm of undisputed excellence. One thought will hardly fail to strike the thoughtful observer, who can compare the Exhibition of 1862 with that of eleven years ago, that while the space for their display is actually smaller, the Implements themselves have been growing portentously larger! Compare the gigantic implement with which a Smith or a Fowler is now subduing the earth with the once 'new-and-improved' pair-horse plough, the mowing-machine of Cranstoun or of Burgess with a Scythe, or the combined-threshing-and-dressing Machine of Hornsby, Shuttleworth, or Garrett with a Winnower and a Flail, and some idea may be not inadequately or exaggeratedly formed of the comparative space required for a modern show of Agricultural Implements!

But not less striking is the reflection that what is true of the allotted area of a mere Exhibition of the present day compared with that of ten years past, is scarcely less true of the whole area of the soil we cultivate. While our numbers are so rapidly increasing that he who can look back forty years, looks upon a population less than the half of that we now have to provide for, our producing area is little altered in extent. What may be the possible limit of the powers of the soil we know not, and perhaps shall never know, but as the demands upon its resources have increased from year to year, the ratio of improvement, great as that has been, may not perhaps have been in excess, of what the exigencies of national condition have made necessary.

—— The following significant sentence occurs in the Registrar-General's report of last week:—"The fever of London assumes three forms, which are respectively designated typhus, typhoid (typhia), and relapsing fever (typhinia). Fifty persons died of these fevers last week. The typhoid fever, sometimes called gastric fever, for it affects the intestines, is propagated in air and water by the excretions which are accumulated in the cesspools and sewers of cities. Its ravages will be reduced effectually when this matter is restored every day to the cultivated soil, of which it is a natural constituent."

—— The judges of roots in the competition for the Faringdon Agricultural Society's premiums—Messrs. J. B. Spearing and W. J. Edmonds—declare that in their opinion the determination of the Committee to abandon the system of judging by weight will be found satisfactory, and facilitate the carrying out more fully the objects of the Society; for although that system may be good in those localities where the soil growing roots for competition is of one uniform description, yet weight can be no criterion to judge by on lands varying much in character, and in value to the amount of from 20s. to 25s. per acre. The judges also suggest to the Society the necessity of discussing the mode of cultivating the Swedish Turnip. No one can travel far in the spring of the year, after a frost, without being painfully struck with the immense loss incurred in this country by the injudicious cultivation of a root which, in its natural state, is able to with stand a more severe climate than our own. What they suggest is, that the Swede should be cultivated with one or two objects in view, viz., for storing in autumn, or for feeding off on the land in spring. For the former purpose, the mode of cultivating on the ridge, or of placing the whole of the manure immediately under the plants, may be considered good; but for the latter purpose it is very certain that Swedes or Turnips, grown with as much manure placed immediately under them as they require for their food, are not induced to throw out those roots in search of nourishment which is absolutely necessary for the safety of the plants, to enable them to withstand even an ordinary frost.

—— On Monday last the magistrates of Berkshire in Quarter Sessions assembled at Reading discussed the question put to them by the Home Office whether or not they would sanction the employment of the rural police in the collection of agricultural statistics. The decision would probably have been adverse to this proposal, and by inference therefore adverse to the collection of agricultural statistics in any way, had it not been for a very able speech by Lord Overstone, of which as once more stating the case for the utility of Agricultural Statistics we shall now present an abstract.—His Lordship said that in every other branch of industry in this country it had been found uniformly desirable to collect the best information that could be gained, and the interests of those engaged in such pursuits had been promoted. Could any reasonable man doubt that that which was true of other industrial interests could be otherwise than true of agriculture? It was a trading interest as much as any other, and its success depended on the same principles—upon the exertion of the same wisdom, prudence, forethought, and contrivance—and it might be taken for certain on general grounds that in proportion as the information published was correct, it would be valuable to all

engaged in the business to which it related. And as to the assertion that the statistics collected would not be sufficiently accurate to be useful, the history of agriculture would follow the history of everything else. The first effect would be incomplete, but as confidence was obtained and prejudice obliterated we should find that these statistics increased in their accuracy.

The resolution ultimately arrived at by a small majority declared that "this Court will readily give its best assistance to the Government in any efforts which it may make for the purpose of collecting agricultural statistics throughout the kingdom, but that in the opinion of this Court the responsibility of deciding upon the best means for accomplishing that object rests with the Government."

—— We published a week or two ago the announcement of the International Show of Fat Stock at Poissy in April next. At the request of the French Consulate we again name the date of the show, 13th to 16th of April, 1862, and the conditions imposed upon exhibitors. An extremely liberal prize list, to which reference was previously made, has been published, and may be had on application to the French Consulate, London.

The conditions are as follow:—

Every steer, heifer, or cow shown for a prize must have been in the possession of the exhibitor at least four months previous to the show.

The sheep and pigs must have been in the possession of the exhibitor at least two months previous to the show.

The five sheep in each pen must all have been lambed in the same year and bred by the same person.

Sheep must be sheared, one small lock being left behind the left shoulder.

All classes are without restrictions as to feeding, yet the kind or kinds of food must be certified.

An exhibitor can only receive one prize in each class, but he will be permitted to exhibit as many animals as he may think proper in each of the classes.

Declarations of entry must be made before the 15th March, 1862.

The ages of all animals must be calculated up to the 1st Jan., 1862, and must be inserted in the certificates in writing.

The exhibitors of cross-bred animals are required to specify the exact nature of the cross; that is the breed of the sire and dam respectively, and whether the animal is the result of a first or more remote cross.

No certificates of entry will be admitted at the office of the Ministry of Agriculture at Paris after the 15th March, 1862.

All animals intended to be exhibited at the show can arrive at Poissy, where comfortable byres will be provided for them, from the 10th April; they must be at their place on the 13th at 6 o'clock in the morning.

The French Government will pay the cost of transport within their own frontier, and will provide for the keep of all animals. In order to afford every facility to exhibitors, special orders will be sent by the French Government to the officers of the custom-house and to the officials of the railway company at Boulogne-sur-Mer. Thus it is desirable the exhibitors should disembark their animals at Boulogne-sur-Mer.

Our plans for the new year's Volume of this Journal, to be weekly issued during the period which would have been that of the Prince Consort's Presidency over the Royal Agricultural Society, included the publication of fuller reports than had yet appeared of the Royal Farms. They have long maintained a high agricultural reputation, and the names of those who have carried out his Royal Highness's plans upon them have long been well known in the agricultural world. The great interest which thus attached to the Prince's agricultural career has been only intensified by its sad and sudden close; and the account of his agricultural proceedings which would have been read with interest under any circumstances, will be looked for with even greater interest now that we are all mourning over his loss. To-day, accordingly, we so far carry out a plan which had long ago been formed as to give an account of the farm at Barton, on the Royal estate near Cowes. This, the personal property of the Royal family, has been directly under the personal management of the Prince since its purchase many years ago, and in its present condition it is as perfect an illustration as we know of good estate and farm management, so that in itself as well as for its connection with the agricultural career of an illustrious man it well deserves the attention of agricultural readers.

THE ROYAL FARMS.

Barton Farm, Osborne, Isle of Wight.—The Osborne estate, purchased by the Royal Family nearly 20 years ago, occupies the height and eastern side of that promontory of land which lies between the Medina River at Cowes and King's Quay on the north coast of the Isle of Wight. The district is in geological maps coloured as belonging to the Headon marlstone and Binstead freshwater formation; but the whole is here obscured by a great depth of gravelly detritus, which again is covered by a soil everywhere more or less gravelly, but in some fields stiff and intractable, and in others light and loamy according as the gravel is filled in with clay or sand. It is very seldom naturally a rich and fertile soil; generally, as proved by the character of the pasture and the stunted growth of the timber on the estate, it is naturally poor and infertile. On the highest ground of the estate and at the head of a valley sloping eastwards towards Spithead stands Osborne House; the Royal standard appropriately floating within sight of one of the great centres of England's power, and one of her great channels of communication with foreign parts.

Since the purchase of the estate its buildings, divisions, and general equipment have been entirely re-arranged. This has been done under the direction of her Majesty and the late Prince Consort by Mr. Andrew Toward, who has been the resident manager of the property from the beginning, and to whom much of the substantial excellence as well as the elegance and polish of its present condition is due. Nowhere are better roads to be seen; the fences are perfect illustrations of what fences ought to be; the land is divided by them into fields of useful and convenient size; these are drained, and cleanly deeply cultivated by horse and steam and hand; and the buildings designed by Mr. Toward and erected under his superintendence are well adapted for the safety of the live and deadstock of the farm, and the economical manufacture of meat and of manure.

Knowing how high the agricultural reputation of the estate has been, it was desired that during the year when the Agricultural Society was to have had the honour of the illustrious Prince's Presidency, the public interest in his agricultural career should be gratified by a more detailed report than had hitherto appeared of the farm management of his Royal Highness's estates. The great loss we have suffered by his death has not diminished the interest taken in any of the many evidences which exist of his earnest wish, both by precept and example, to benefit his fellow countrymen. And the agricultural illustrations of that desire thus now possess even more than their original value. It was resolved therefore if possible to carry out the intended plan, and Mr. Toward, to whom the management of the Osborne estate has been solely confided, was cordially willing that some such report as had been intended of the Barton Farm should appear in our columns.

THE PARK.

It must be understood, then, that the Osborne estate is for the most part a high lying tract of land, about 1800 acres in extent, of which some 400 acres are the park around the house and between it and the sea—200 or 300 acres are woodland, principally in woods around the park—and 400 acres are arable, lying chiefly on the inland or southern side of the estate. Besides this there is another detached farm a mile or two away, also the Royal property. On walking from the farm buildings across the high land to the north of them you come upon the edge of the valley at the head of which stands Osborne House; its terraces, garden, woods, and the lines of its own fine architectural elevation giving quite the impression of a palatial residence. Grassy slopes tend eastward from it valleywise in the midst of woods on either side, over which the waters and the shipping of Spithead are visible. We must not forget however that we are here as agriculturists, and that which most interests the farmer at this place is the contrast which at one point is seen between the generally poor and mossy pasture, and some acres of much greener Grass in its midst. This is owing to a surface irrigation, by natural flow with the drainage of the offices above. The whole waste of the house is conducted to a filter, which had been designed by the Prince, in order that the water escaping from it, though carrying much valuable fertilising material with it, should leave all offensive matters behind. It consists of a deep tank, about 4 feet wide and 30 feet long, divided by a double transverse wall into two parts, and furnished with a double transverse wall at the near end of it. Into the space between this double wall at the end of the tank the drain delivers its contents, which thus sink to the bottom and flow under that into the inner tank. Thence it rises through three successive sets of trays or false bottoms, each carrying a layer of mould, through which the water ascends and fills the first division of the tank. It then flows over into the second space between transverse walls, and in like manner rises through mould in the second half of the tank, and then flows nearly clear on to the ground, which it reaches through subterranean pipes and a terminal hose, by which it is allowed to empty itself for several hours at a time—first over one spot and then over another—over some acres of ground. At intervals of two or three weeks the tank and its trays are cleared of all mud and sludge, which is mixed with earth and forms a useful compost, and is carted away for application elsewhere. The success of the scheme and the simple manner in which it is carried out seem to prove its adaptability to the cases of all large establishments, as workhouses, gaols, and barracks, wherever sloping land exists on which matter at present wasted could be turned to profitable account. The land thus manured, eaten barer than that by which it is surrounded, affords a much larger quantity of food for cattle.

THE FARM BUILDINGS.

Let us now walk back to the buildings. They are hidden by their sunken site, and by plantations of many choice shrubs and coniferous trees, from any one approaching them from the house. The Farm-house, a mansion rebuilt in Elizabethan style on the site of an old monastery, contains rooms for Her Majesty and her attendants, besides the suite set apart for the residence of the manager. It stands on one side of the buildings of which a plan is given; but between the two, on either side of the road which is a continuation of that between *a*, *b*, *c*, and *p*, *q*, *r*, *s* in the plan, is a double row of shedding, &c., set apart on the one side as the house, stable, coach-house, &c., and on the other as implement shed.

A little study of this plan will show how easy is the communication between those parts which are connected in use. The rick yard and root stores lie on the farther (western) side of the threshing barns, so that corn is easily brought to the threshing engine, and roots are easily brought to the Turnip store. These roots are cut by an oscillating Turnip cutter, and filled into a truck upon a tram road by which all kinds of food areeasily conveyed to their destination: and straw is easily thrown into yards or stables, and through the chaff-cutter into the store-house for litter. The machinery too is well arranged. Shafting fixed wherever necessary, affords easy means by drum and strap for driving all kinds of machines, and Messrs. Clayton and Shuttleworth's threshing machine with straw elevator, &c., Garrett's chaffcutter, Burgess and Key's oscillating Turnip cutter, Hughes' millstones, Parsson's saw-bench, Biddell's cake crusher, and Ransomes' corn crusher are all worked in convenient places. The 8-horse-power engine and the selection and fitting of all the other machinery was the work of Messrs. Easton and Amos. In the sheds we saw Burgess and Key's mower and reaper, various ploughs and harrows, Crosskill's clod crusher, Chandler's water drill (which however on the clay lands of Barton had not been found useful), Garrett's horse-hoe, Chambers' manure distributor, Howard's horse-rake, and an old and clumsy but most efficient two-rowed manure and Turnip seed distributor, brought from Fifeshire many years ago by General Wemyss and used every season still. This list of implements shows how willingly the Royal patronage had been extended over the whole catalogue of the Agricultural Society's Implement Yard—the commission having, we believe, been given to Mr. Amos to choose for purchase whatever at the time was deemed a good and useful implement by whomsoever made.

Among the machines must not be forgotten Smith's grubber and cultivator and windlass and wire-rope worked by an 8-horse power movable engine.

The stock upon the farm includes a dairy of 16 Alderney cows, with young heifers and heifer calves enough to keep the herd good; about 90 head of cattle two years old and upwards, many of them (Galloways) ripe for the butcher; about 900 head of sheep, viz., a breeding flock of 300 West County Down ewes, and about 100 Dorset and Somerset horned ewes with lambs a month and six weeks old, together with the tegs of last year, and fatting sheep, some of them lambed the year before. Eight breeding sows (the small black Essex breed) with 100 pigs or thereabouts, of all ages, just farrowed, young, and fatting porkers from 4 to 8 scores each. Two Alderney bulls of pure descent are kept for use upon the estate, and for the use of neighbours. The whole of the sheds and stalls are most conveniently and satisfactorily watered from cisterns supplying troughs in stall boxes, &c. The horse stock includes about 20 animals, chiefly Clydesdales, and a pure-bred Clydesdale stallion, brother to the prize filly at Leeds, and son of the prize stallion at Chelmsford. The number of the farm horses is considerable, but it must be remembered that besides the strictly farm work, there are 300 acres of woodland, connected with which there is a good deal of carriage to do, and there are miles of roads to be kept in order.

The neat and perfect condition in which all these roads and all the premises and fields are kept, though not a very costly thing to insist upon, yet tends a good deal to the increase of the horse labour of the farm, and to the justification therefore of so large a stable. Within the last two years the steam-drawn grubber has been imported from Woolston, and though in the meantime the number of the horses worked upon the land has not yet been consequently diminished, it is nevertheless expected that this result will ultimately follow, and that four to six horses may ultim tely be disposed of.

In the meantime the effect has been to accomplish this season especially a good deal of most useful thorough autumn cultivation. About 100 acres have been thus grubbed from 6 to 9 inches deep in 20 days, at an expenditure of 15*l.* in wages and about one-half of that sum in coals and fuel, and not more than 1*l.* in repairs, by an 8-horse-power moveable engine. Very little was done in 1860, owing to the wetness of the season; but a good deal was accomplished in the spring of this year, and preparations for the Turnip sowing had thus never been so forward as they were this spring.

THE FIELD CULTIVATION.

Let us now walk across the fields—they lie for the most part level and open, from 15 to 25 acres in extent, and surrounded by straight well grown fences occupying a minimum of room. The cultivation is for the most part on the four-course system—the cropping in 1860 having been as follows:—Wheat, 95 acres; Turnips and Swedes, 77 acres; Mangel Wurzel, 22; Carrots, 2; Potatoes, 3; Barley and Oats, 48 acres each; Clover and Trifolium, 60 acres; Vetches, 18; Beans and Peas, 20. Last year, again, the Mangel Wurzel was considerably less, only 12 acres—many acres after having been sown and failed being ploughed up for Swedes, of which there is an admirable crop.

The produce varies from 4 to 5 quarters for Wheat, from 4½ to 6 for Barley, and from as low as 4½ to 7 or 8 for Oats. A few acres of Cabbages are grown, and

yield most useful autumn produce; Mustard is also occasionally grown as a stolen or catch-crop. The Swedish Turnips, of which there are this year an unusual extent, are grown either in rows sown by the Suffolk drill upon the flat, or on the raised drill system adopted in Scotland, of which, as the crop has followed a failing Mangel plant, there is this year a considerable extent. In general, superphosphate and ashes are depended on for a crop of Swedes—the dung of the boxes and yards is applied upon the Clover for the Wheat crop, and for Mangels, Cabbages, and Carrots. A large quantity of manure is thus provided, and as a considerable quantity of oil-cake as cattle food, and of superphosphate for the Turnip crop, is also purchased, the farm is growing in fertility. The manure from the Royal Mews is also purchased for the farm, and this is a clear addition to the land, as all the hay and straw of the farm is consumed in the courts and buildings of the farm itself. As much as 700*l.* a year has been occasionally spent on manure: but this sum, now that the land has reached a high fertility, is now much reduced. The Belgian Carrot is successfully grown for use as dairy food, running much less risk than other green crops of giving a disagreeable taste to dairy produce.

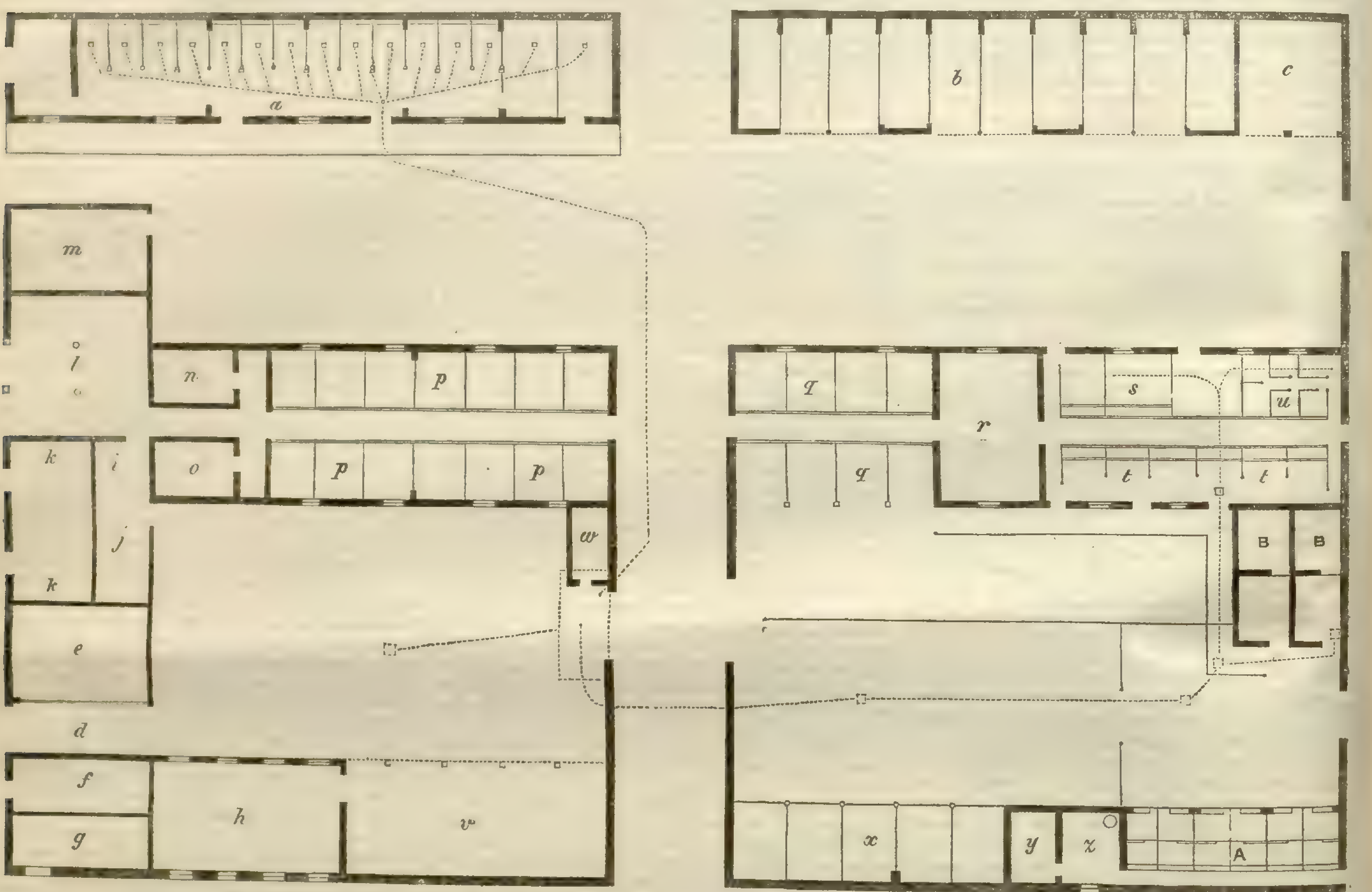
On walking over the fields you are struck with the excellence of the roads and fences. These last are almost entirely new, *i.e.* made since the purchase of the estate; they were planted a single row of Thorns in lines prepared carefully for them by deep digging and manuring; and they have since been kept perfectly clean and well trimmed. They are now a good sheep fence, occupying not more than 2 feet width, and being about 3 feet or 3½ feet high. The land is cultivated close up to them, and the fields are clean. The plant of Wheat is as promising as it can be; the young seeds look well, and the Swedes, the only other crop now upon the ground, are a remarkably full and even crop, not a blank being visible in the planting, and a good average size of bulb prevailing throughout the fields. The kinds—both of Swedish Turnip and Mangel, adopted—taken from Mr. Standish, of Bagshot, are, so far as could be judged both in the field and at the Turnip-cutter, good, well grown and sound.

The ewes to lamb in spring are now spread over the pastures, but the early horned ewes with their lambs have been for some time upon the Turnips, the mothers receiving about ½ lb. of oilcake and a few Peas daily apiece, the lambs receiving as many Peas as they choose, and both thus fatting together. The fatting and other tegs are also folded on the Swedes—a portion of the crop being drawn for use in yards, and the remainder being pulled and topped and cut by Gardner's cutter and given to the sheep in the field.

THE LABOUR OF THE FARM.

The cultivation of the land is expensive as regards manual labour—from 1000*l.* to 1100*l.* are paid annually in this way. Piece-work is adopted wherever possible, as in the case of Turnip and corn hoeing, and that of tying and stooking corn after the reaping machine. From 10*s.* to 11*s.* are paid for two hoeings of the Turnip crop, and 4*s.* to 4*s.* 6*d.* per acre for this harvest work. The mowing machine and the reaper and Garrett's horse hoe have somewhat diminished the expense of labour and at the same time increased the efficiency of the work done.

NORTH.



BARTON FARM BUILDINGS.—THE FOLLOWING IS THE KEY TO THE LIST OF INDEX LETTERS:—

a. 13-stall stable, with corn room, boxes, &c.
b. Cart-shed, with vermin-and-fire-proof granary above.
c. Shed for portable steam-engine, &c.
d. e. Straw barn.
e. Ditto, ditto, and threshing barn.
f. Engine-house.
g. Boiler-house.
h. Carpenter's shed and saw bench.
i. j. k. Ground-floor on which corn is received from the threshing-machine, where also oilcake-breaker, corn-crusher, pair of stones, &c., stand.
l. Store of roots, and Turnip cutter.
m. Store-house for straw.
n. Store-house for hay chaff.
o. Store-house for litter (cut straw).
p. Fatting boxes.
q. Ditto, Ditto,
r. Store for cake and hay, &c.
s. Cows, &c, in boxes.
t. Ditto, in stalls.
u. Calves' house.
v. Store cattle yards, and shed.
w. Poultry house—Tank underneath, receiving drainage of liquid manure from yards and stalls and stables as indicated by the dotted lines of drainage to it,
x. Young cattle (yard and shed).
y. Slaughtering house.
z. Boiling house for pigs.
A. Pigs' houses.
B. Bulls' houses.
Below *z* and A on the plan is a shed and yard for lambing ewes.

In no particular is Barton Farm more interesting than as an illustration of the relations which ought to subsist between a master and his servants. Mr. Toward has always received personal instruction from the late Prince Consort, and now from her Majesty, who desires that everything shall be retained and carried out as the Prince had willed it, and these instructions are carried out by foremen, each responsible in his own department. This arrangement, by which the full use is made of all the ability of the men, and by which the position of the foremen over them is efficiently maintained, in no degree interferes with the personal interest directly taken by the Queen in the fortunes and affairs of all the labourers and cottagers on the Royal property. Many a delightful instance is related of the kindly sympathy both actively exercised and most touchingly claimed by her Majesty in intercourse with her humbler neighbours. No wonder that the sore affliction which has befallen her is felt as having also befallen the whole community, and especially those, from the highest to the lowest, in more immediate contact with the Royal family.

A large number of labourers are employed on the estate and farm, and provision is made for their accommodation by recently elected blocks of large and roomy cottages, each containing two, sometimes three apartments below, and three bedrooms above, and all supplied with good and useful gardens. About seven carters and 10 regular farm labourers, and 12 or 14 who may be called "navvies," are regularly employed, and the field work of women is also an assistance.

The wages of the men are 14*s.* weekly, and they pay 2*s.* weekly for their cottages: they have almost in every case been on the estate from the commencement of the present Ownership. They are all English, and for the most part natives of the locality. In no particular was the practical oversight of the late Prince Consort more marked than in the weekly personal examination by him given of the farm accounts. Details and abstracts of all the expenditure were weekly submitted to him; the labour expended, the sales and purchases were thus recorded and reported, and the totals carried out from week to week. And the annual summary, including valuation at the beginning and close of the year, furnished a detailed and precisely constructed annual balance sheet. And it is to the credit of the management, that a large annual sum has always been derived from the farm management of the estate. The valuations on which the nature of the balance so materially depends are most strictly and carefully conducted. Mr. Toward was good enough to show us his accounts, and some of the successive valuations. They have been increasing in amount from year to year, as might have been expected on a farm which has been rising so rapidly into fertility by dint of drainage,* cultivation, and continual purchases of cattle food and manure. At a recent autumnal valuation there were 1000*l.* worth of farm-houses, 1200*l.* of cattle, 1400*l.* of sheep, 200*l.* worth of pigs on the land—and a farm capital of at least 8000*l.* invested on the 800 acres was on the whole represented.

It is not fair to conclude this report of a perfect and well organised management, with its results on the Osborne estate, without remarking on the great contrast which the Property exhibits, now with the date of its purchase. This is attributable of course, originally, to the good judgment displayed in the plans adopted by the late Prince Consort, and since then to the liberal and constant countenance and support given to Mr. Andrew Toward by both her Majesty and his Royal Highness in carrying them to their present successful issue. Fields of all shapes and sizes, surrounded by ragged and broken fences, bad roads, poor cottages and buildings, have been replaced by trim and shapely enclosures, good cultivation, the best possible accommodation for both inhabitants and farm stock, and every

* All the estate is drained from 3½ to 4 feet deep, from 18 to 30 feet apart, according to the nature of the soil.

other evidence of intelligence and liberality in the owner, and of welfare and contentment among the labourers.

Home Correspondence.

"A Protest against Steam Cultivation," in your paper of the 7th ult., seems to me so utterly untenable in the present day, that had your "Known Correspondent" not told us that he had cultivated a heavy clay farm for 19 years, I should have thought the "protest" had come from the man in the moon. Now, what has "your "Known Correspondent" done to justify his attack on steam. Let us see: he has since the 30th July harvested—

6	acres Peas
160	do. Wheat (say 3 loads straw per acre)
18	do. Oats
100	do. Beans
Total 284	acres of corn.

To harvest that would take him five days, possibly six, if not too sticky. He has ploughed 691 acres; of course from his statement the 691 acres are made up out of the 272 acres, therefore some may have been ploughed once, some twice, and some three times. To do this he must have averaged nearly 9 acres a day with 21 horses; because, as I shall show in my statement below, he could not have more than 77 days to do it in, so I will leave your readers to judge whether this heavy land has been ploughed or scratched over; 200 loads of lime and earth, and 660 loads of dung were carted—for this work I shall allow 6 days; clearing out yards, fetching stones, furniture, coals, jobbing, &c, I shall say 4 days; for drilling I shall say 12 days. I have with 10 horses, not 12*l.* 13*s.* 4*d.* ones, drilled 10 acres a day.

Working days.		Work done.	
August,	27 ..	Harvested 284 acres of corn..	.. 5 days
Sept.,	26 ..	"Ploughed" 691 do.	.. 77 „
Oct.,	27 ..	Dung and lime cart ..	.. 6 „
Nov.,	24 ..	Jobbing, &c., as above	.. 7 „
		Drilling	.. 12 „
	104		104

He keeps 21 horses, light Suffolk, all his own breeding; he has only bought three during 19 years—for one he gave 12*l.*, one 16*l.*, and one 10*l.*, averaging 12*l.* 13*s.* 4*d.* [He bought them colts and bred them up.] These of course were to match his own light-bred Suffolks, certainly a good specimen for heavy land, and 21 of them well up to plough 9 acres a day. He states he has grown 2113 acres of Wheat during the 19 years, let him kindly tell us the average per acre of the corn and straw which he can do, as he sold almost all the latter during the time. He is also an extensive grower of roots—"having 32 acres of Turnips and Mangels;" these must greatly benefit his farm and tend much to help keep it clean, with the 215 acres fallowed in 19 years. Now what on earth has all this to do with a "protest against steam cultivation?" Let your "Known Correspondent" in his protest send us the size of his farm, the course of cropping, the average yield per acre of his corn and straw, the breadth of roots he takes each year, the depth of his cultvation, the quantity of dung applied, the cost of his horse and manual labour, and then we shall be able to judge whether his "protest" be justifiable or not. When he does this I have little doubt we shall be able to smash up his "protest" as the steam does the heavy land. *H. L. T. L.*

Fowler's New Windlass.—In a recent *Agricultural Gazette* Mr. Smith of Woolston volunteers some remarks on the new windlass Mr. Fowler worked at Ealing during the Baker Street show, some part of which he owns he does not clearly understand. And as it is very important that parties like Mr. Smith, who write for the benefit of the public, should be thoroughly acquainted with their subject, I am very desirous to give him the imformation he requires. The windlass in question is somewhat similar to that supplied by John Fowler to Mr. Smith when he, Mr. Smith, commenced steam cultivation in the autumn of 1855, with this exception—that it contains a simple device by which the slack rope can be kept to any desired tightness without, save in the slightest degree, taxing the power of the engine. This is effected by connecting the two drums in such a way that the pressure of retarding the slack rope drum is tending with the same pressure to drive the pulling drum, thus balancing the two. By this means there is a saving of nearly two horse power according to Mr. Smith's account, which I have no doubt is correct. But should Mr. Smith desire to become thoroughly master of the question to which he refers, if he can conveniently pay me a visit at Leeds I would be most happy to give him the fullest information and allow him the opportunity of testing the practical working of the machine, after which examination I have little doubt that he will come to the conclusion that improvements may be introduced even in so perfect a machine as that first sent to him. With reference to the clip-drum or rope-destroying machine, as Mr. Smith humorously describes it, upon inspection he will at once be satisfied from outward signs that there is not the slightest fear of Mr. Fowler's abandoning a scheme which is in every case giving entire satisfaction. And after obtaining such experience Mr. Smith will most likely come to the conclusion that he has been misinformed, or writing on a subject with the facts of which he is unacquainted. Allow me to apologise for trespassing so far upon your space, but I have been induced to do so from the desire to give Mr. Smith every possible information on a subject which he has of late so disinterestedly brought before the public. *David Greig.* P.S. I cannot but think that Mr. Smith is rather premature in alleging that Mr. Fowler's showing the little windlass proves that system to be the best, and I would recommend to the public caution in coming to this conclusion. I am also sure that were Mr. Smith to take the trouble to inquire more fully into the merits of the "rope destroying" machine, he would most likely alter his opinion. Such inquiry is very necessary, more especially in the case of a gentleman whose letters appear so often in print, and which contain such valuable information when written on subjects with which the writer is practically acquainted.

Calendar of Operations.

DECEMBER.

WESTER ROSS, *Dec.* 23.—We have now had three weeks uncommonly fine for December, and a large amount of out-door labour has been very satisfactorily accomplished. In the beginning of November a large breadth of Wheat remained to be sown, but so incessant was the rain throughout that whole month—upwards of 6 inches having fallen,—that field labour was arrested, and additional sowing of Wheat was rendered impracticable. And so thoroughly saturated was the soil that two weeks of fine weather were needed to make it at all fit to be trodden by horses. Latterly, however, a good deal of Wheat has been sown in fair condition, and with a continuance of fine weather, and the prospect of a lamentable war with America, a considerable breadth might yet be laid down. Seldom have we seen the sowing of Wheat so late as it has been this season, mainly arising from November having been very much lost for this purpose. The earlier sowings are at length making their appearance, and look thick and healthy. A pretty large breadth of lea has been seed-furrowed for Oats. As thrashing proceeds we are increasingly convinced of the unusual shortcoming in our cereal crops. Barley particularly astonishes every one. Although promising well when growing, and bulking respectably when stacked, the yield is little more than one-half of a full crop. And we suspect that Wheat, although not quite so bad, will be greatly deficient also. If a very dry year be disastrous this season's experience satisfies us that a very wet one is scarcely less so. The weather has been so fine of late that our Turnips have been improving up till now. Folded upon the Turnip field, which is now dry and comfortable, the sheep are making satisfactory progress, and cattle where sufficiently sheltered are thriving abundantly. Only a small quantity of Potatoes have been, or can be shipped from the north this season, the disease having performed its work so thoroughly that very few are fortunate enough to have any to sell.

STATE OF THE WEATHER—BERKSHIRE.

For the week ending Tuesday, December 31, 1861; observed by Mr. J. B. Spearing, Moulsford, Wallingford.

		Temperature of Air.				Temperature of Soil 1 foot below the Surface.	Rain.	Wind	Barometer.
		Max. in Sun.	Max. in Shade.	Min.	Mean.				
		Degs.	Degs.	Degs	Degs.	Degs.	Ins.		
Friday	27 ..	37.0	32.0	23.5	29.0	39.0	..	N.E.	30.42
Saturday	28 ..	49.0	37.0	25.5	34.2	38.5	..	E.	30.40
Sunday	29 ..	36.0	37.0	27 5	32.0	38.0	..	E.	30.34
Monday	30 ..	27.0	30.0	20.5	24.5	38.0	..	N.E.	30.30
Tuesday	31 ..	31.0	34.0	23.0	27.7	38.0	..	N.E.	30.30

The readings are taken at 9 A.M. on the days named, and the Maxima and Minima recorded relate, therefore, to the preceding 24 hours. The Thermometers are placed 4 feet from the ground. The Rain-gauge is 7 feet from the ground.

REMARKS.

Amount of Rain Registered during the Year.

January	0.69
February	1.73
March	2.06
April	0.81
May	1.07
June	2.47
July	3.53
August	0.78
September	1.73
October	1.14
November	3.05
December	1.70
	20.76

Notices to Correspondents.

LAMB DISEASE: *C H O.* It has been a very prevalent disease, and was the subject of a leading article some months ago. The disease is similar in its character to the gapes in chickens, and the hoose in calves, and as in them should be treated by adopting means for the destruction of the entozoa, whose presence may perhaps be indirectly ascribed to the wet seasons which prevailed up to the present summer, and the unwholesome provender thereby produced. Any medicine given to destroy worms in the air passages acts by being absorbed into the system. In the case of worms in the windpipe two objects should be sought for—one to destroy the enemy, and the other to strengthen and support the system which is being subjected to such debilitating and exhausting influences. In the case of chickens some speak of the good effects of Tobacco smoke introduced so as to almost produce suffocation, albeit the creatures some times die of the remedy. In calves a cure has been effected by administering lime water, and probably it would be equally effectual for lambs. The dose for a lamb would be about two ounces daily, and about 2 drachms of salt should be given at another portion of the day. This treatment should be followed for some days. Better still is the plan of administering oil of turpentine, which being taken into the stomach is soon absorbed throughout the system. The dose for a lamb is 2 drachms, which should be given with an ounce of Linseed oil, a scruple of ginger and five drops of oil of Carraways, mixed up with two or three tablespoonfuls of Linseed gruel. This dose may be repeated if required several times, with intervals of some days. The lambs should be allowed half a pound of Linseed cake per diem, and should be otherwise carefully tended and liberally fed. By such a course of treatment many valuable animals may be saved.

MILCH COWS: *Jones.* Your question had been mislaid. Brewers' grains will not much help the butter. Get some rape cake and boil a cake along with some carrots for each cow daily, and mash it all up along with some hay chaff. That will enrich the milk. The cows will not eat the cake unless it be boiled or steamed to get rid of its hot aroma. Swedes and Mangels are hardly to be eaten without spoiling the taste of the butter, though if steamed or boiled they are less likely to affect it.

THE LONDON MANURE COMPANY
(ESTABLISHED 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE of LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

POTTER'S GUANO.—Established Twenty Years. Agents Wanted.
Factory: 28, Clapham Road Place, S.

LAWES'S MANURES.
The Manures manufactured by J. B. LAWES for the present season of 1861 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0
These Manures can be obtained of MR. LAWES, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and Liffey Buildings, Eden Quay, Dublin.

PATENT WOOL MANURE.—AGENTS WANTED in the Agricultural Districts for the Sale of Artificial Manures, Superphosphate, Bones, Oil of Vitriol, Linseed Cake, &c. Only parties of established reputation treated with.—Apply to Messrs. C. H. TIDBURY & Co., Patentees and Sole Manufacturers of the Patent Wool Manure, Jamaica Coffee House, London, E.C., or at their Wharf.

Soot.
WANTED, 5000 BUSHELS, of first quality, in quantities of not less than 1000.
Address, stating price, delivery, &c. to Mr. SIMON A. DAINTREE, Fendrayton, St. Ives, Hunts.

Drainage Season.
MR. BAILEY DENTON undertakes the DRAINAGE of ESTATES by Commission or Contract.
52, Parliament Street, Westminster, S.W.

DRAINAGE OUTFALLS.—The most simple, expeditious, and inexpensive powers for obtaining the right of making Outfall Drains, Cuttings, &c., through the Lands of adjoining Proprietors, are under the WEST of ENGLAND DRAINAGE and INCLOSURE COMPANY'S ACT, and there is no necessity for separate proceedings such as Petitions, Special Act of Parliament, Commissions of Sewers, or Drainage Boards, &c.
Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements executed on Entailed, Mortgaged, or other Properties; the whole cost can be a Charge on the Lands permanently, or it might be made redeemable at any fixed time in one or more sums or by half-yearly instalments over any term of years, at the option of Proprietors.
FREDERICK BRODIE, Secretary.
Offices—Exeter, and 30, Parliament Street, London, S.W.

Land Drainage.
WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.
Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.
No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.
Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.
Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.
Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
TO LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &C. IN ENGLAND AND WALES AND IN SCOTLAND.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS

HAVE the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

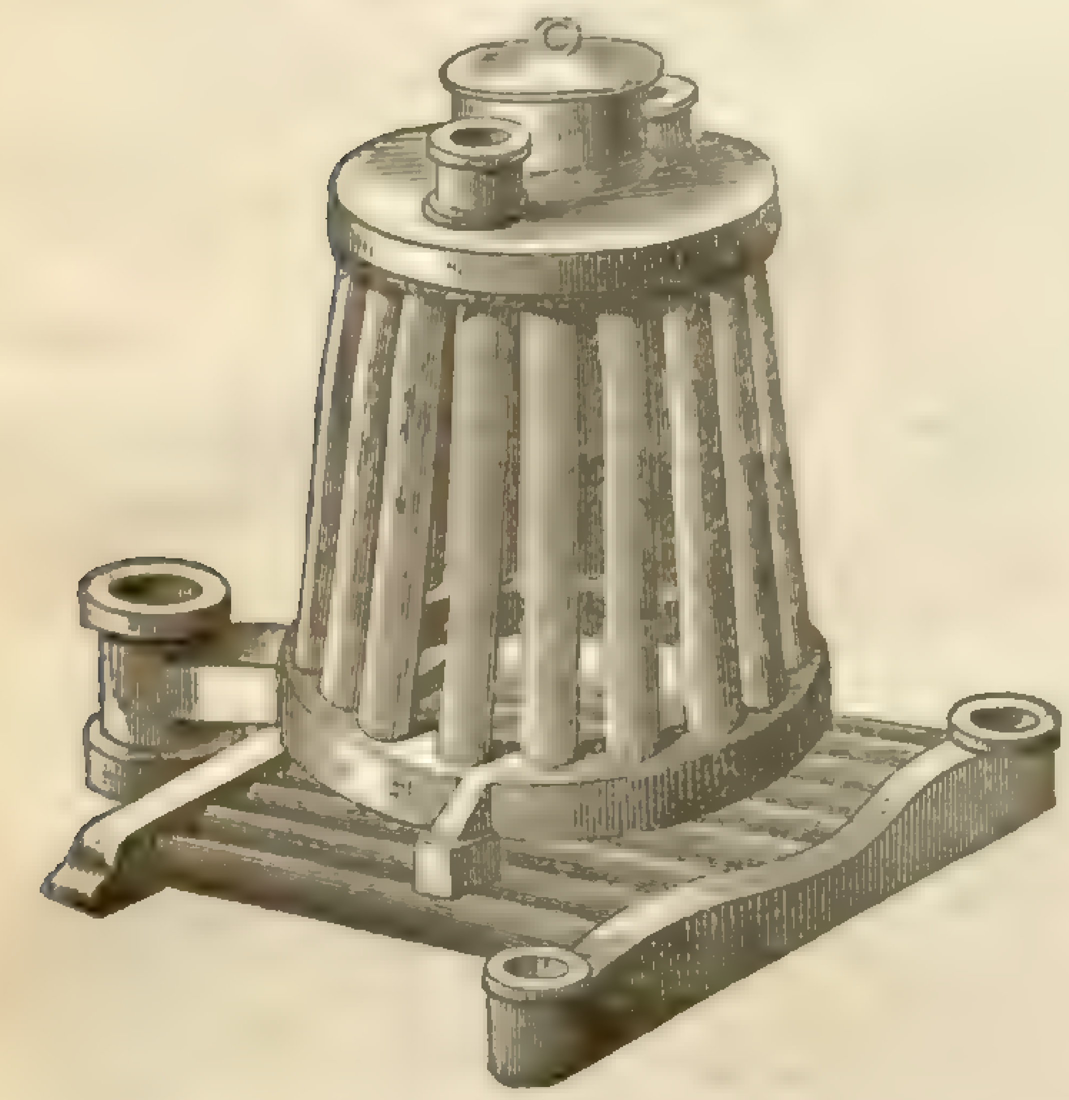
West of England, Ireland, and Wales.

VINCENT SKINNER (*late Partner with J. Weeks & Co.*), erects CONSERVATORIES, HOTHOUSES, and HOT-WATER APPARATUS. His improved Pipe Boilers, which give such universal satisfaction for Warming Churches and Hothouses, will heat from 100 to 2000 feet of Pipe.

Plans and Estimates on application to V. Skinner, Bridewell Street, Bristol.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ORMSON'S PATENT JOINTLESS TUBULAR BOILER,
AN ORIGINAL INVENTION,



Brought out for the purpose, and is now fully acknowledged to surpass the OLD-FASHIONED JOINTED TUBULAR BOILERS, which have been made for the last 20 or 30 years by all other manufacturers. The ADVANTAGES of this PATENT will be manifest to every person's understanding from the following FACTS. For instance, one of the OLD-FASHIONED JOINTED BOILERS with 50 TUBES would have 100 JOINTS made of rope yarn and cement, exposed to the direct action of the FIRE, whereas in my PATENT there is NOT ONE JOINT so exposed. And it should be fully understood that as the OLD-FASHIONED JOINTED TUBULAR BOILER increases in SIZE, number of TUBES and JOINTS, its liability to LEAKAGE also increases, consequently

THE FOLLOWING IS THE REASON WHY

ORMSON'S ONE-BOILER SYSTEM

AND PATENT JOINTLESS TUBULAR BOILERS

have become so universally adopted on account of their superior power, great safety, and economy,

ORMSON'S No. 1 BOILERS	are heating upwards of	250 feet of Pipe.
ORMSON'S No. 2 BOILERS	,, ,,	600 ,,
ORMSON'S No. 3 BOILERS	,, ,,	1300 ,,
ORMSON'S No. 4 BOILERS	,, ,,	3000 ,,
ORMSON'S No. 5 BOILERS	,, ,,	5000 ,,

Boilers of larger sizes if required to heat 12,000 or 15,000 feet of Pipe.

H. Ormson having a most complete Set of Steam-power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, Horticultural Builder to Her Majesty,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

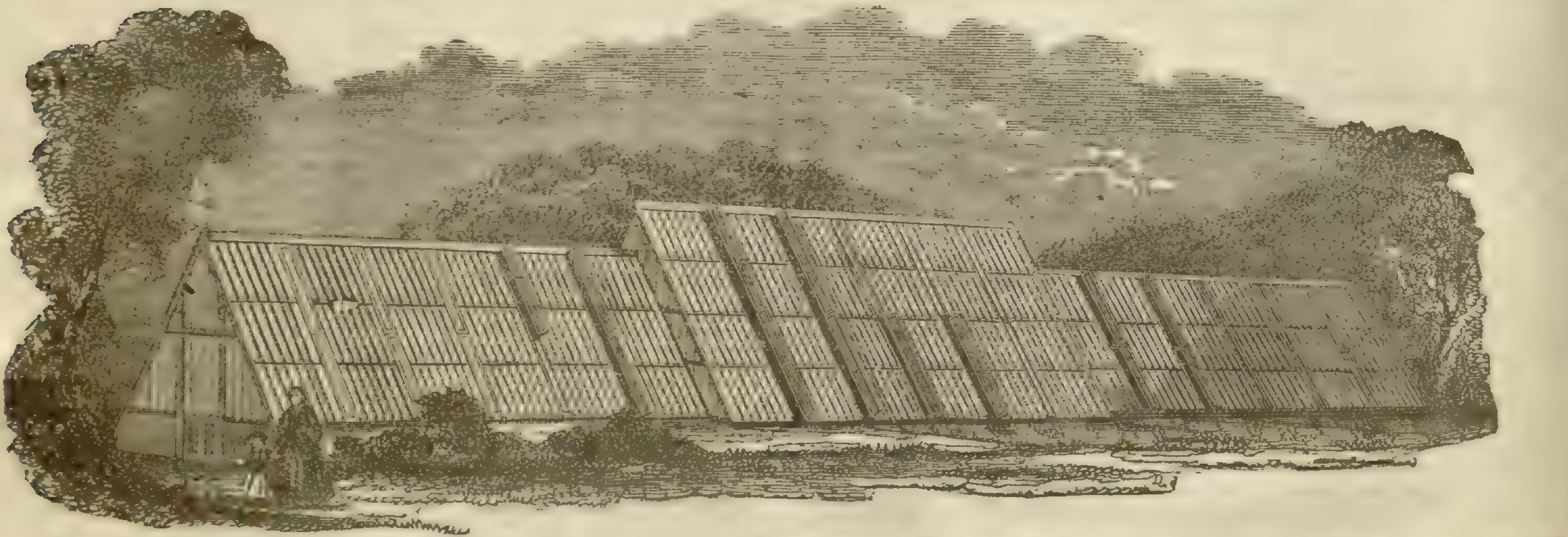
HOTHOUSES FOR THE MILLION,

ON THE PRINCIPLE INVENTED AND PATENTED BY

SIR JOSEPH PAXTON, M.P.

COMBINING SIMPLICITY, CHEAPNESS, EXCELLENCE, AND DURABILITY,

BEING CAPABLE OF FULFILLING IN THE MOST PERFECT MANNER ALL THE REQUIREMENTS OF HORTICULTURE.



The Prices of Lean-to Houses complete are as follows:—

Ft.	In.		8 ft. Lights	10 ft. Lights	12 ft. Lights	14 ft. Lights	16 ft. Lights
20	7	in length	£12 0 0	£16 0 0	£21 0 0	£28 10 0	£34 5 0
31	3	in length	16 10 0	21 2 6	26 10 0	37 12 0	45 16 0
41	11	in length	20 18 0	26 18 6	33 7 6	46 14 0	57 7 0
52	7	in length	25 12 6	32 15 0	40 5 0	55 16 0	68 18 0
63	3	in length	30 6 0	38 10 0	47 2 6	64 18 0	80 10 0
73	11	in length	34 12 6	43 15 0	53 7 6	74 0 0	92 0 0
84	7	in length	39 6 0	49 11 6	60 5 0	83 2 0	103 11 0
95	3	in length	43 19 0	55 10 0	67 2 6	92 5 0	115 2 0
105	11	in length	48 17 6	60 12 6	73 10 0	101 10 0	126 13 0

The Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are as follows:—

Ft.	In.		8 ft. Lights	10 ft. Lights	12 ft. Lights	14 ft. Lights	16 ft. Lights
20	7	in length	£24 0 0	£32 0 0	£42 0 0	£57 0 0	£68 10 0
31	3	in length	33 0 0	42 5 0	53 0 0	75 4 0	91 12 0
41	11	in length	41 16 0	53 17 0	66 15 0	93 8 0	114 14 0
52	7	in length	51 5 0	65 10 0	80 10 0	111 12 0	137 16 0
63	3	in length	60 12 0	77 0 0	94 5 0	129 16 0	161 0 0
73	11	in length	69 5 0	87 10 0	106 15 0	148 0 0	184 0 0
84	7	in length	78 12 0	99 3 0	120 10 0	166 4 0	207 2 0
95	3	in length	87 18 0	111 0 0	134 5 0	184 10 0	230 4 0
105	11	in length	97 15 0	121 5 0	147 0 0	203 0 0	253 6 0

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

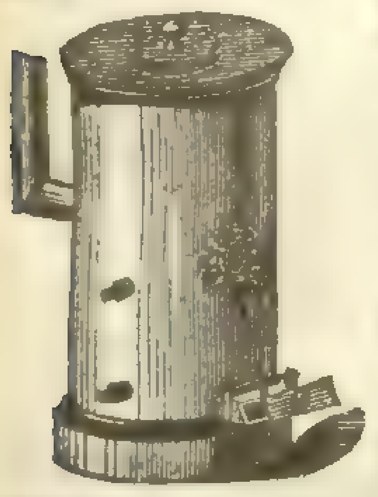
The above prices do not include package, railway freight, heating apparatus, or erection, but we have made arrangements with Mr. Jones, of 6, Bankside, Southwark, London, to heat our houses on economical principles under our direction.

Illustrated Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

SAMUEL HEREMAN, 7, PALL MALL EAST, LONDON, S.W

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 12s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3l. 10s.

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

JOSEPH HAYWOOD AND CO.,

MANUFACTURERS OF

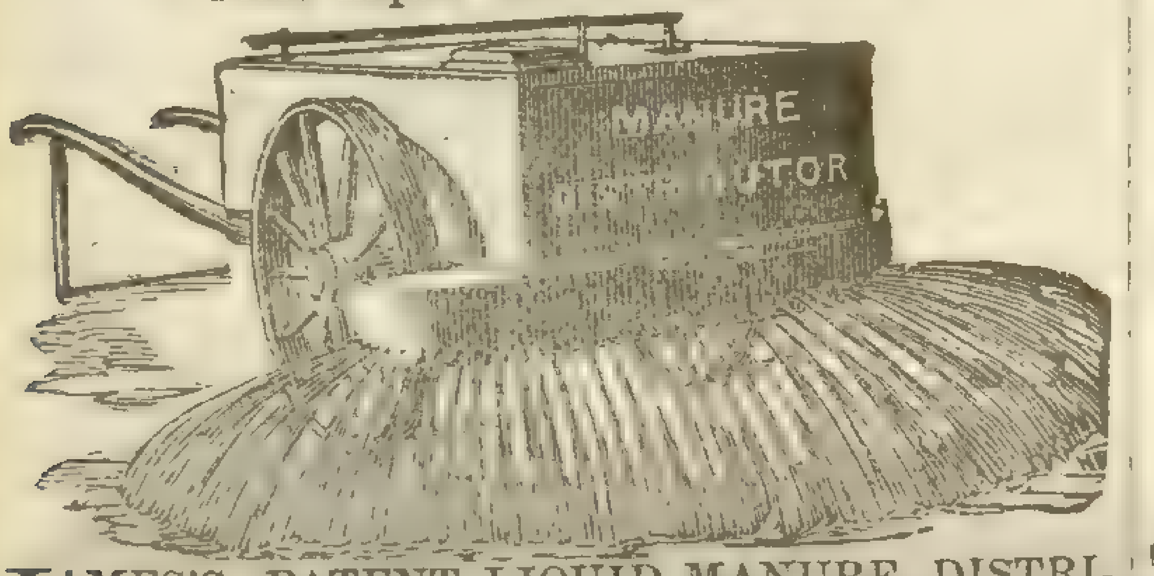
PRUNING and BUDDING KNIVES,

SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

Prize Liquid Manure Distributor.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR OR WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded NINE FIRST PRIZES.

Full Particulars and Testimonials may be obtained of the Patentee, ISAAC JAMES, Tivoli Waggon Works, Cheltenham.

N.B.—Improved LIQUID MANURE PUMPS, either fixed or portable.

J. TYLOR AND SONS' PATENT IRON PUMP with reversible handle, for Shallow Wells, Hot-Houses, &c. Price 25s. 6d. each.

IRON YARD and GARDEN PUMPS

3 feet 6 inches under spout

2½	3	3½ inch
43s.	53s.	60s. each.

J. TYLOR and SONS manufacture PUMPS for DEEP WELLS which do not require any fixing below the level of the ground.

PUMPS of J. TYLOR & SONS' manufacture to be obtained of Plumbers in all parts of the United Kingdom.

J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

Paxton Works, Sheffield, Established 1738.

SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.

Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an article superior in quality to anything we have hitherto been able to offer, in PRUNING, BUDDING, and GRAFTING KNIVES, VINE and PRUNING SCISSORS, GARDEN SHEARS, &c., owing to their being tempered under an entirely new process, which renders the blade tough and not liable to break, and also gives the edge a lasting keenness which we can warrant them to retain for at least double the time they would under the old method of tempering, thus facilitating the work and saving the time usually lost by having constantly to renew the edge by sharpening, consequently making them more durable in wear and better adapted for all kinds of work, every blade being guaranteed of the same temper.

CAUTION. None are genuine except marked SAYNOR, or SAYNOR, Maker. Other marks would cause the purchaser disappointment.

MUSGRAVE'S PATENT STABLE FITTINGS and HARMLESS LOOSE BOXES, PATENT IRON COW HOUSE FITTINGS, and IRON PIGGERIES.

These inventions are recommended as possessing numerous advantages not to be found in anything hitherto made. At the late Meeting of the Royal Agricultural Society at Leeds, MUSGRAVE BROTHERS received a Silver Medal, and two Awards of "Highly Commended," being the only Prizes conferred on any competitor in this class.

Particulars sent on application to the Inventors and Makers, MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

JOHN WARNER AND SONS, BELL and BRASS FOUNDERS to HER MAJESTY, HYDRAULIC ENGINEERS, BRAZIERS, &c., 8, Crescent, Cripplegate, London, E.C.

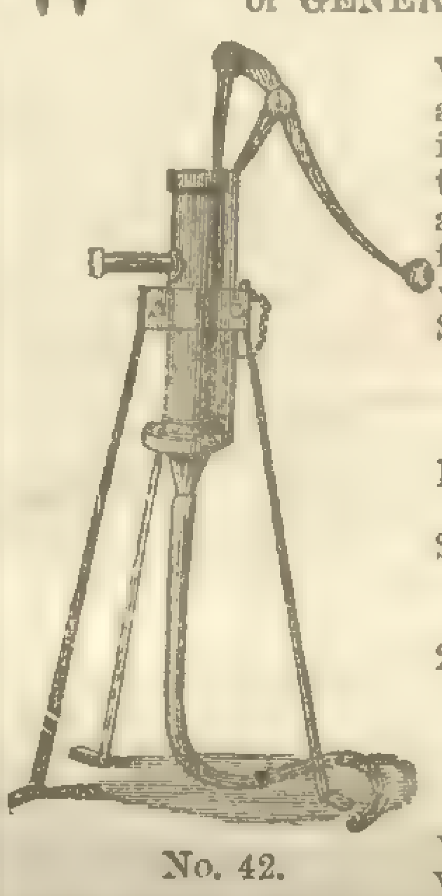
No. 35.

WARNER'S PATENT CAST-IRON PUMP, for raising Water from Wells not exceeding 25 feet in depth.

Diameter of Barrel.	Height.		£ s. d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1 1 0
2½ ,, long	3 ,, 3 ,,		1 10 0
3 ,, ditto	3 ,, 6 ,,		2 4 0
3½ ,, ditto	3 ,, 6 ,,		2 9 0
4 ,, ditto	3 ,, 6 ,,		2 18 0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2 0 0
2½ ,, long ditto ditto ditto			2 14 0

This Pump is fitted with J. W. & SONS' Patent Vibrating Standard, Improved Revolving Cap, Metal Bucket, and Brass Suction Valve. By means of the Revolving Cap the handle can be shifted to the right or left hand, or opposite the nose, as desired.

WARNER'S IMPROVED LIQUID MANURE or GENERAL PORTABLE PUMP.



No. 42.

This Pump is fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

	£ s. d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2 15 0
If fitted with Barrel of Planished Copper	3 4 0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2 9 0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires, in either 10, 12, or 15 feet lengths .. per foot	0 2 5

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2l. 5s.

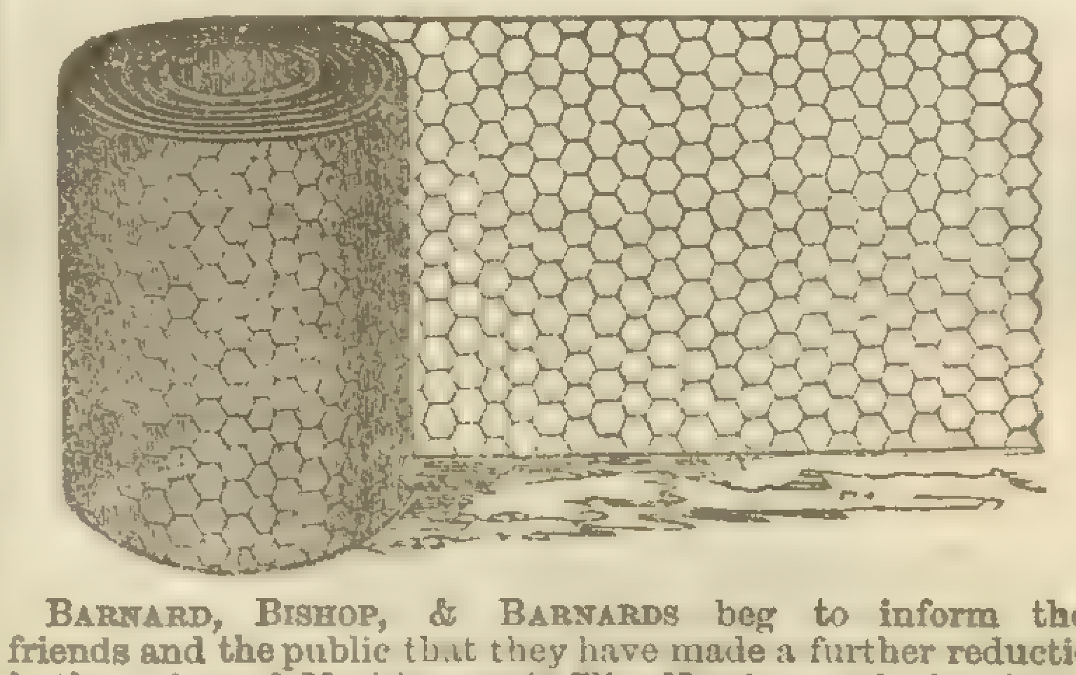
Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.

J. W. & SONS' Illustrated Catalogue forwarded post free on application.

The above may be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Cripplegate, London, E.C.

BARNARD, BISHOP, AND BARNARDS, Norwich.

FURTHER REDUCTION in the PRICE of WIRE NETTING.—APRIL, 1861.

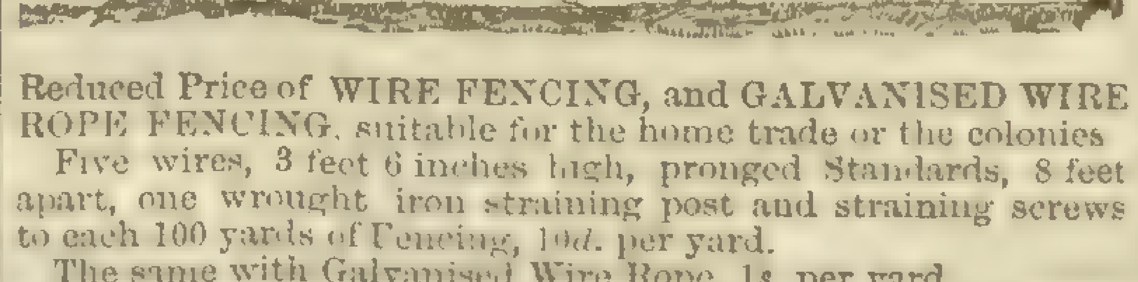


BARNARD, BISHOP, & BARNARDS beg to inform their friends and the public that they have made a further reduction in the prices of Machine made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch mesh, 24 inches wide ..	No. 19	.. 4½d.	.. 3½d.
2-inch ,, ,, ,, ..	,, 18	.. 5	.. 4
2-inch ,, ,, ,, ..	,, 17	.. 6¼	.. 5
2-inch ,, ,, ,, ..	,, 16	.. 8	.. 6½
1⅝-inch ,, ,, ,, ..	,, 19	.. 4¾	.. 4
1⅝-inch ,, ,, ,, ..	,, 18	.. 6	.. 4¾
1⅝-inch ,, ,, ,, ..	,, 17	.. 7	.. 5½
1⅝-inch ,, ,, ,, ..	,, 16	.. 9	.. 7

All the above kinds can be made any width (under 6 feet), at proportionate prices.

Strong Galvanised Poultry Netting, 7½d. per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11d. per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.



Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.

Five wires, 3 feet 6 inches high, pronged Standards, 8 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10d. per yard.

The same with Galvanised Wire Rope, 1s. per yard.

Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.

, Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

WOODEN FENCING.—The cheapest lasting—TALLOW STAVES, 5s. per 100, at PRICE'S PATENT CANDLE COMPANY, LIMITED, Belmont, Vauxhall, London, S.

Garden Border Edging Tiles.

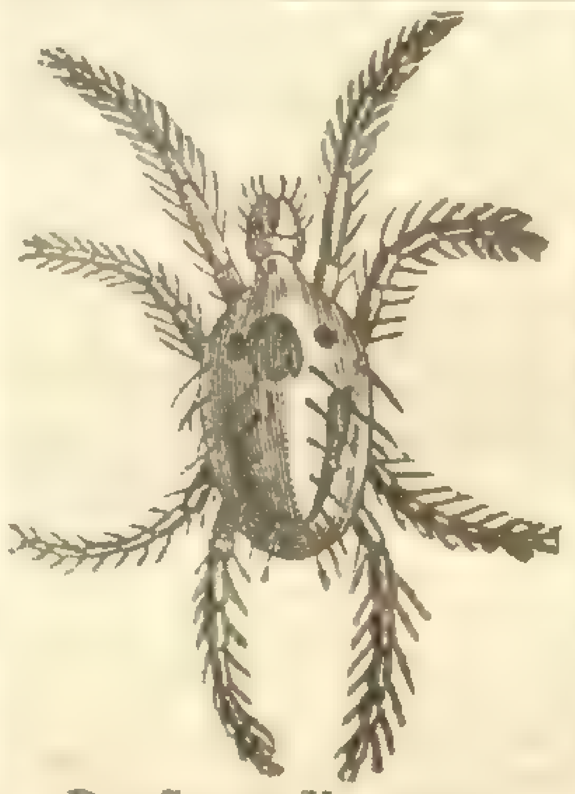
F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases and Ornamental Flower Boxes for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen-ranges, &c. Grooved Terro-metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall-Copings, Glazed Drain Pipes, &c. To be obtained of F. & G. ROSHER, at their Premises as above.



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Winter wash with GISHURST COMPOUND, recommended by Mr. Rivers. See "Orchard House," ninth edition; and see Mr. Pearson's recommendation in the *Journal of Horticulture*, 10th Sept., 1861.

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The following is one of upwards of 70 Testimonials received by J. NEAL from gentlemen personally unknown to him.

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"JAMES SANDERS,
"Nursery Grounds, Abergavenny."

Sold by all principal Seedsmen.

Price 1s. and 2s. per packet.

Magnified Aphides. Patentee, J. NEAL, Birmingham.

TO BE LET, a SMALL FARM, adjoining a Railway Station, within a few minutes by rail of a large manufacturing population; well adapted for Market Gardening. Address, for particulars, C. T., Post Office, Lawton, Cheshire.

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TO BE LET on LEASE or by the Year, 13 Acres of unexceptionable LAND, fronting a Turnpike Road, close to the Wolverton Station, and in the midst of a large and increasing population. A portion of Freehold Land abutting on the ground could be purchased for Building. This offers a remarkably advantageous opening for a Market Garden; 8 acres adjoining Let in Allotments.

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TO BE LET, under Lease, with immediate possession, a small and compact NURSERY, situate in the North Riding of Yorkshire. The extent of the Nursery is about 4 acres, with 8 acres of excellent Grass land adjoining. The Nursery is well stocked with Timber and Fruit trees in a very thriving condition, and has Greenhouses and Forcing House well filled with Bedding and other Plants. The whole can be taken at Valuation. There is an excellent Dwelling House and Stable on the Premises. The Nursery is situate within two minutes' walk of the North Eastern Railway and has excellent road accommodation.

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TO BE DISPOSED OF, owing to the Decease of the Proprietor, a compact and long established NURSERY and SEED BUSINESS at Middlewich, commanding an extensive trade. The Stock is young and healthy. The Nurseries extend over 15 acres, are situated in a good locality, and within two miles and a quarter from the Winsford Station on the London and North Western Railway, and near to the Trent and Mersey Canal.

For particulars apply to Mr. JOHN TAYLOR, Croxton Hall, near Middlewich, or to Mr. C. F. BARKER, Solicitor, Middlewich.

Important Sale of Plants.

GRAINSBY HALL, NEAR GRIMSBY, LINCOLNSHIRE.

MR. DAVID THOMPSON will SELL by AUCTION, without reserve, on the Premises of Geo. Haigh, Esq., Grainsby Hall, Lincolnshire, on THURSDAY, Jan. 16, at 11 o'Clock precisely, a Choice and Valuable Collection of STOVE and GREENHOUSE PLANTS, FERNS, BEDDING PLANTS, FRUITING and SUCCESSION PINES, &c. The above consist of choice Exhibition Plants, viz., Allamandas, Stephanotis, Hoyas, a splendid specimen of Cycas revoluta, the Sago Palm, a fine Pitcher Plant, the whole consisting of about 165 lots, well worthy the attention of Exhibitors and others. Also a good substantial Span-roofed Greenhouse, and several Pits and Frames, with Heating Apparatus, Boiler, &c.

Further particulars and Catalogues may be had on application to WM. GRAINGE, Esq., Solicitor, Grimsby; Messrs. E. P. DIXON & SONS, Nurserymen, Hull; or the Auctioneer, Mr. D. THOMPSON, Grimsby.

STRIKING NOVELTIES FOR 1862.

BARR & SUGDEN, SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

In the Press, and will be Published in a few days,

SPRING SEED CATALOGUE, or GUIDE to the KITCHEN and FLOWER GARDEN for 1862,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

STRIKING NOVELTIES FOR 1862,

Which BARR & SUGDEN have received from their SPECIAL SARDINIAN CORRESPONDENT, who has for many years devoted his attention to improving the CARNATION, PICOTEE, and PELARGONIUM, and who has also been eminent for his success in saving Seeds from rare and choice Plants, and thus secured for himself a European reputation.

STRIKING NOVELTIES FOR 1862.

ABUTILON, Nat. Ord. *Malvaceæ.*

Plants of an unusually ornamental character, with drooping, delicate, wax-like flowers, veined and striped in the most beautiful manner, and succeeding during summer against a south wall.

ABUTILON ALBA, pure white with dark pencilling, very fine effect.
„ ALPHONSE KARR, orange veined with crimson, very fine.
„ MANETTI, yellow, veined with vermillion, distinct and beautiful.
„ SOUVENIR D'ARAGO, buff, veined with maroon, superb.
„ SOUVENIR DE CAUCHY, vermilion, striped maroon, larger and finer than Duc de Malakoff.
„ VAN HOUTTEI, orange, veined mulberry, splendid.

ACACIA, Nat. Ord. *Leguminosæ.*

Elegant and ornamental plants with more graceful and varied foliage than any other class of shrubs.

ACACIA CHRYSOSTACHYS, golden yellow, splendid species.
„ LANIGERA, flowers yellow, and very striking foliage.
„ MULTINERVIA, flowers pale yellow, a beautiful species.
„ PANICULATA, flowers yellow, very handsome foliage.
„ PETIOLARIS, flowers yellow, an elegant and distinct variety.
„ PLECTOCARPA, flowers yellow.
„ RICHARDSONI, flowers yellow, very fine species.
„ XYLOPHYLLOIDES, golden yellow, flowering in clusters, very fine.

AMPHICOME, Nat. Ord. *Bignoniaceæ.*

A pretty greenhouse evergreen shrub with Pentstemon-like flowers.

AMPHICOME ARGUTA, lilac, very beautiful.

ANTHYLLIS, Nat. Ord. *Leguminosæ.*

A pretty shrub with silvery foliage.

ANTHYLLIS CYTISOIDES, yellow, silvery green foliage, very fine.

BRUGMANSIA, Nat. Ord. *Solanaceæ.*

Noble Conservatory plants of the most ornamental character with delightful odoriferous flowers.

BRUGMANSIA KNIGHTII, double white, magnificent large flower, fine for winter conservatory.
„ SUAVEOLENS, magnificent trumpet-shaped flowers upwards of a foot in length, the effect of which is grand beyond description.

CÆSALPINIA, Nat. Ord. *Leguminosæ.*

CÆSALPINIA SINENSIS, a very interesting evergreen shrub, with long spikes of yellow flowers.

CANNA, Nat. Ord. *Marantaceæ.*

Magnificent objects for conservatory or out-door decoration; the Oriental character of their foliage, and their brilliant spikes of bloom impart to the parterre and flower garden an unusually ornamental and striking appearance.

CANNA ELEGANTISSIMA NANA, spikes of carmine flowers.
„ GLAUCA MAGNIFICA, silvery foliage, producing a grand effect.
„ GIGANTEA NOVA, vivid scarlet flowers, magnificent foliage.
„ HOOKERI, very fine carmine flowers, beautiful foliage.
„ LINDLEYANA, remarkable foliage.
„ ROSEA MULTIFLORA, salmon-coloured flowers, very free bloomer.

CENTAUREA, Nat. Ord. *Compositæ.*

CENTAUREA GYMNOCARPA, flowers rose-coloured and in panicles, with fine silvery leaves.

CELOSIA, Nat. Ord. *Amarantaceæ.*

Magnificent, free flowering, graceful growing plants, producing in the greatest profusion spikes of the most beautiful feathery looking flowers, ranking amongst the most elegant greenhouse and conservatory plants; in flower during the autumn and winter months.

CELOSIA ATROSANGUINEA PYRAMIDALIS, deep carmine flowers, charming variety.
„ COCCINEA AURANTIACA, scarlet shaded orange, very beautiful.

The above are in the style of aurea pyramidalis; dried specimens may be seen at our Establishment.

CLITORIA, Nat. Ord. *Leguminosæ.*

A charming climber.

CLITORIA TERNATEA VIOLACEA fl. pl., one of the greatest novelties of the season, being the only double variety yet obtained.

CONVOLVULUS, Nat. Ord. *Convolvulaceæ.*

CONVOLVULUS CANTABRICUS STELLATUS NOVUS. In growth and habit resembling C. Cantabricus, but with flowers and foliage perfectly distinct; the flowers are of a beautiful pink, with a pure white double star in the centre, and are produced in the greatest profusion; it forms a splendid bedding plant, and is exceedingly elegant in hanging baskets.

CHOROZEMA, Nat. Ord. *Leguminosæ.*

This genus is among the prettiest and easiest cultivated of greenhouse shrubs. "M. Labillardière discovered this plant on the S.W. coast of New Holland, near a spot where after having been tantalized with finding many salt springs, his party had just met with an ample supply of fresh water," hence the allusion of the name to joy at finding fresh water.

CHOROZEMA ERICOIDES, distinct and beautiful, the finest of the class.

DOLICHOS, Nat. Ord. *Leguminosæ.*

A beautiful tribe of quick-growing ornamental Climbers for conservatory or out-door decoration.

DOLICHOS AUREUS, golden yellow, very fine.
„ FRAGRANS ALBUS, white, beautiful.

The above were introduced from China by the Société d'Acclimatation of Paris.

ERODIUM, Nat. Ord. *Geraniaceæ.*

A genus of pretty rock plants.

ERODIUM PELARGONIÆFLORUM, pretty lilac and white flowers.

GREVILLEA, Nat. Ord. *Porteaceæ.*

A genus of handsome, free-flowering, New Holland plants, with remarkably beautiful flowers and foliage.

GREVILLEA ROBUSTA, the most magnificent of the genus.

GUILANDINA, Nat. Ord. *Leguminosæ.*

Pretty Indian evergreen shrubs.

GUILANDINA GLABRA.
„ MICROPHYLLA.

HELIANTHUS, Nat. Ord. *Compositæ.*

Plants of large growth and noble flowers.

HELIANTHUS ARGENTEUS GRANDIFLORUS NOVUS, remarkable for its large flowers and beautiful silvery foliage, far superior to H. argyrophyllus.

HELIPTERUM, Nat. Ord. *Compositæ.*

HELIPTERUM ANTHEMOIDES, a very pretty little shrub.

HIBISCUS, Nat. Ord. *Malvaceæ.*

One of the most ornamental, beautiful, and showy tribe of plants.

HIBISCUS GRANDIFLORUS HYBRIDUS ROSEUS, beautiful rose coloured flowers, 7 inches in diameter, and blooms the first year.
„ PUNICEUS, flower of a dazzling scarlet, shaded purple and of enormous size; blooms profusely during the autumn and winter months.

INDIGOFERA, Nat. Ord. *Leguminosæ.*

A genus of elegant profuse blooming greenhouse shrubs.

INDIGOFERA NAPOLEONEANA, new, rose, flowers very beautiful.

ISOLOMA, Nat. Ord. *Gesneraceæ.*

ISOLOMA DECAISNEANA, hybridised with the choicest Tydæas.

KENNEDYA, Nat. Ord. *Leguminosæ.*

A genus of extremely handsome ornamental plants.

KENNEDYA SEMPERFLORENS VIOLACEA, an exquisite variety, new, with long bunches of flowers, a free bloomer.

LATANIA, Fan Palm, Nat. Ord. *Palmaceæ.*

LATANIA BOURBONICA, a handsome Palm with curiously plaited fanlike fronds.

LOPHOSPERMUM, Nat. Ord. *Scrophulariaceæ.*

Splendid ornamental climbers.

LOPHOSPERMUM MAGNIFICUM, very fine large crimson purple flowers.

MIMOSA, Nat. Ord. *Leguminosæ.*

MIMOSA HORRIDA, Large handsome golden ball like flowers, stems garnished with long white spines, fine dark foliage, a charming and effective plant.

PENTSTEMON, Nat. Ord. *Scrophulariaceæ.*

A highly ornamental and remarkably beautiful genus of plants.

PENTSTEMON LIABAUD, spotted scarlet, new and beautiful.
„ ROSEUM MAGNIFICUM.

PHLOX, Nat. Ord. *Polemoniaceæ.*

PHLOX DRUMMONDI MARS, superb Carmine scarlet, with dark eye.

PITTOSPORUM, Nat. Ord. *Pittosporaceæ.*

A handsome genus of profuse flowering greenhouse shrubs, with beautiful orange-scented flowers and fine glossy green foliage.

PITTOSPORUM JAPONICUM, flowers with scented-like orange blossom.

RHAMNUS, Nat. Ord. *Rhamnaceæ.*

RHAMNUS CALIFORNICUS, fine hardy shrub, with dazzling red berries.

RICINUS, Nat. Ord. *Euphorbiaceæ.*

The Giant Ricinus, for decorative purposes, are unequalled, whether in select plantations, shrubbery, or large mixed borders; their picturesque foliage and brilliant-coloured fruit imparting quite an oriental aspect. In the gardens around Paris they form one of the principal attractions.

RICINUS GIGANTEUS MORUS SUPERBUS, fine mulberry-coloured fruit and foliage.
„ SULPHUREUS, yellow fruit and handsome foliage.

The dwarf Ricinus are of a compact habit of growth, with rich coloured foliage, stems and fruit, being highly ornamental and effective, are desirable for small gardens or exposed situations, where the tall varieties would be unsuitable.

NANUS AURANTIACUS RUBER, fine yellow tinted fruit.
„ NIGER, black fruit with yellow spine.
„ SULPHUREUS ROSEUS, yellow fruit, shaded red.
„ VIRIDUS SPINOSUS, green shining fruit.

SANVITALIA, Nat. Ord. *Compositæ.*

A genus of pretty low growing annuals, continuing in bloom for months in succession.

SANVITALIA MEXICANA, orange petals spotted with red.

SCILLA, Nat. Ord. *Liliaceæ.*

SCILLA IMPERATRICE EUGENIE.

"This beautiful species, discovered by a French soldier, who had fallen down a ravine when wounded, and afterwards introduced by him into France, is of a superb porcelain blue, flowers in winter, and is very attractive for conservatory decoration.

SOLANUM, Nat. Ord. *Solanaceæ.*

A genus of highly ornamental fruit-bearing plants, embracing Climbers and Shrubs of great beauty.

SOLANUM MARGINATUM, purple flowers, bordered with white.
„ PURPUREUM, the most beautiful of the genus, of neat compact growth, covered with a rich profusion of elegant flowers, and in bloom from June to December.

TROPÆOLUM, Nat. Ord. *Tropæolaceæ.*

A splendid tribe, valuable alike for bedding, ornamenting Conservatories, or covering west walls or trellis work. The following are perhaps the most novel and beautiful yet introduced, both as to model, form, rich colouring, and markings.

TROPÆOLUM CAROLINE SMITH, var. PUNCTATUM, spotted with maroon, beautiful.
„ MADAME GAVINI, orange-spotted vermilion.
„ MDLLE ROUHER, delicate sulphur, spotted carmine.
„ PRINCE LOUIS, rich dark ruby, spotted maroon, fine form.

TYDÆA, Nat. Ord. *Gesnerianaceæ.*

TYDÆA DUCHESSE DE BRABANT, rare and beautiful.

VERONICA, Nat. Ord. *Scrophulariaceæ.*

VERONICA SOLFERINO, the finest of this splendid genus, with beautiful spikes of carmine flowers.

VINCA, Nat. Ord. *Apocynaceæ.*

A genus of the most beautiful greenhouse plants, succeeding out of doors in warm sheltered situations. Seed sown early will bloom the same season.

VINCA ALBA-NOVA, pure white, without eye, a new exquisite variety of this favourite genus.

ZINNIA, Nat. Ord. *Compositæ.*

A tribe of well known, much admired, and extremely beautiful autumn blooming plants.

ZINNIA ELEGANS fl. pl. NOVA, in 24 distinct varieties, saved only from extremely double flowers, remarkable for their fine shape and great size, so that the seed we offer may be depended upon, yielding at least from 80 to 90 per cent. of splendid double flowers.

BARR AND SUGDEN, SEED MERCHANTS AND FLORISTS, 12, KING STREET, COVENT GARDEN, W.C.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 19, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, January 4, 1862.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 2.—1862.] SATURDAY, JANUARY 11. {Price Fivepence. STAMPED EDITION, 6*d*.

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ROYAL HORTICULTURAL SOCIETY.—An ORDINARY GENERAL MEETING for the ELECTION of FELLOWS will be held in the Council Room at the Garden, South Kensington, on MONDAY, January 20. The Chair will be taken at 2 o'clock.
ANDREW MURRAY, Assistant Secretary.

Roses.

GEO. CLARKE can still supply STANDARD and DWARF HYBRID PERPETUALS of the leading varieties. Also fine strong DWARF TEAS and NOISETTES in pots. PRICED CATALOGUES gratis on application.
Nursery, Streatham Place, Brixton Hill, London, S.

Manetti Stocks.

WANTED to Purchase (for cash) 2000 MANETTI STOCKS, potted ready for working.
Apply, stating lowest price, to GODWIN & PADMAN, Broadfield Nursery, Sheffield.

Notice.

B. S. WILLIAMS' PRICED and DESCRIPTIVE CATALOGUE of CHOICE VEGETABLE and FLOWER SEEDS for 1862 will be issued early in January, and forwarded post free to all customers and applicants.
Paradise Nursery, Holloway, London, N.

Sarracenia Purpurea (Purple Side-Saddle Flower).

B. S. WILLIAMS begs to intimate that he has just received in fine condition a large importation of this beautiful plant. Price on application.
Paradise Nursery, Holloway, London, N.

Double Dwarf Poppies.

HOOPER AND CO., SEEDSMEN, Covent Garden Market, London, W.C., offer Seed of their superb stock of DOUBLE DWARF FRENCH POPPIES, unrivalled for their extreme doubleness, and variety, and brilliancy of colours. Price 1*s*. per packet, post free. To the Trade, 5*s*. per ounce.

To the Trade.

CONTINENTAL, FLOWER, GARDEN, AND AGRICULTURAL SEEDS.
GEO. MACINTOSH, Agent for Mr. F. W. Wendel, begs to announce that CATALOGUES of the above are now ready, and will be forwarded free on application. Early orders solicited.
All Communications to be addressed, Nursery, High Road, Hammersmith, W.

CLIANTHUS DAMPIERI. English-saved Seed.—The Trade may have price quoted per 100 or 1000 Seeds on application to Messrs. E. G. HENDERSON & SON.
Wellington Nursery, St. John's Wood, London, N.W.

To the Trade.

KALMIA LATIFOLIA for Potting, from 18 inches to 2 feet, and bushy, well set with Flower Buds. Samples sent if required.
Price on application to JAMES VEITCH & SON, Nursery, Exeter.

TRITOMA UVARIA. For strong plants of this splendid flower apply to JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

AZALEAS, CAMELLIAS, EPACRIS, and ERICAS.—We respectfully invite an inspection of our Stock of the above, which is large, in the finest health, and full of flower buds.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

VERY STRONG TRANSPLANTED THORNS, in large quantities. Samples with price on application to WATERER & GODFREY, Knap Hill Nursery, Woking, Surrey.

TO BE SOLD CHEAP, the ground being wanted, TRANSPLANTED BEECH, 1 to 4 feet, stout and well rooted. Cash or reference.
G. FROST, The Nurseries, Brushford, Tiverton.

WANTED, 100,000 LARCH, 2½ feet full. State lowest price per 1000.—Address, in the first instance, Y. Z., Post Office, Beverley, Yorkshire.

WANTED, 10,000 PLANTS.—
5500 SPRUCE .. .. .. from 2 to 3 feet.
3500 LARCH .. .. .. „ 3 to 4 „
1000 SCOTCH .. .. .. „ 2 to 3 „
All clean and good rooted.
Address, with Cash price, to J. JEFFRIES & SON, Seed Merchants and Florists, Woodbridge, Suffolk.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situatien, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.
RICHARD SMITH, Nurseryman, Worcester.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

New Garden Seeds.

JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

DOUBLE TUBEROSES, Just arrived. Price 3*s*. per dozen.
BUTLER & McCULLOCH, Seedsmen, Covent Garden Market, W.C.

Now Ready.

BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See long Advertisement.
Covent Garden Market, W.C.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.—
50 in 50 well selected vars. £2 2 0
50 in 25 ditto ditto 1 10 0
25 in 25 ditto ditto 0 15 0
12 in 12 ditto ditto .. 6*s*., 9*s*., and 0 12 0
Mixed, 3*s*. 6*d*. per dozen; 25*s*. per 100.
BUTLER & McCULLOCH, Seedsmen, Covent Garden Market, W.C.

Ready in Two or Three Days,

BARR AND SUGDEN'S SPRING SEED CATALOGUE, or GUIDE to the KITCHEN and FLOWER GARDEN, and will be forwarded to their patrons and numerous applicants.
BARR & SUGDEN, 12, King Street, Covent Garden, W.C.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

Seeds, Seeds, Seeds.

WM. CUTBUSH AND SON'S CATALOGUE is now ready, post free on application.
Seed Establishment, Highgate, London, N.

Fine Stock Verbenas.

GEORGE SMITH, FLORIST, &c., Lorrimore Road, Walworth, S., has a large Stock of the above in fine health, and in very great variety, True, from 6*s*. per dozen. CATALOGUES by inclosing stamp.

PROLIFIC RASPBERRY CANES, 3*s*. & 4*s*. per 100. True GRAPE CURRANT TREES, 12*s*. and 16*s*. per 100. MORELLO CHERRY, strong, 1*s*. each. PRINCE ARTHUR and other STRAWBERRY Plants. LAURELS, ARBORVITÆ, &c.
HENRY WARNER, Jun., Cranford, near Hounslow.

FRUIT TREES in POTS, very fine.—PEACHES, NECTARINES, APRICOTS, APPLES, PEARS, PLUMS, CHERRIES, &c., 3*s*. 6*d*. to 7*s*. 6*d*. each.
E. P. DIXON & SONS, Exotic Nursery, Sculcoates, Hull.

STRONG FRUITING VINES, 7*s*. 6*d*. and 10*s*. 6*d*. LIST gratis and post free.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

Strong Vines from Eyes.

GEORGE S. DODS can supply Strong VINES of all the leading kinds for immediate Planting.
A PRICE LIST forwarded on application.
Epsom Nursery, Surrey.

Strong Vines from Eyes.

J. IVERY AND SON beg most respectfully to inform their patrons that they have now ready for planting out, strong Plants of all the best varieties.
A PRICED LIST will be forwarded on application.
Dorking Nursery.—Jan. 11.

Strong Grape Vines from Eyes.

R. GLENDINNING begs to offer strong GRAPE VINES from Eyes of all the leading sorts, fit for immediate planting. The Eyes were taken from Vines which bear fruit on the Premises.
PRICED LISTS on application.
Chiswick Nursery, W.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, JUN., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.
CATALOGUES on application.

HOLLAND AND BAYLEY can now supply from their unrivalled collection the heaviest and finest-flavoured LANCASHIRE SHOW GOOSEBERRIES, in strong 3 and 4 years old plants, at 6*s*. per dozen.
CATALOGUES, containing Priced Lists of Florists' Flowers, Fruits, &c., on application.
Bradshaw Gardens, Chadderton, near Manchester.

DWARF-TRAINED FRUIT TREES. PLUMS, PEACHES, NECTARINES, and APRICOTS, 36*s*. per dozen.
DWARF ROSES, 60*s*. per 100.
STANDARD APPLES, 75*s*. per 100.
WILLIAM EPPS, Jun., Nurseryman and Seedsman, Ashford, Kent.

Fruit Trees, Dwarf-trained and Pyramid Apples, Pears, Plums, and Cherries.

JOHN CRANSTON has to offer excellent plants of the above, which cannot fail to give the greatest satisfaction. Also strong VINES in pots.
A LIST of SORTS will be sent on application.
Nurseries, King's Acre, near Hereford.

Good Seeds, Carriage Free.

SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds.

GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, and MANURE COMPANY, Limited, Union Road, Plymouth.

New Seeds on Sale by the

PLYMOUTH SEED COMPANY, "Limited."—For prices and particulars see their GENERAL PRICE CURRENT, which is now ready.
Address Plymouth Seed Company, Plymouth.

PLYMOUTH SEED COMPANY, "Limited."—The GENERAL PRICE CURRENT is now ready, and can be had DIRECT, or of Messrs. SIMPKIN & Co., 4, Stationers Court, London, E.C., for six postage stamps.
Plymouth Seed Company, Plymouth.

Agricultural and Garden Seeds.

H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

CHARLES NOBLE'S NURSERY is Ten Minutes' walk from Sunningdale Station, South-Western Railway.

Seed Catalogue, Post Free.

J. DOBSON AND SONS' LIST is now ready and will be forwarded post free. Seeds are unusually fine this season and moderate in price.
Woodlands Nursery, Isleworth, and High Street, Hounslow.

PURCHASERS of GERANIUMS and CINERARIAS should send for our DESCRIPTIVE CATALOGUE, containing all the best kinds cheap. Catalogues Free.
JOHN DOBSON & SONS, Woodlands Nursery, Isleworth, W.

FIRST-CLASS NEW PELARGONIUMS. — See J. DOBSON & SONS' CATALOGUE, forwarded Post Free to any address.
Woodlands Nursery, Isleworth, W.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1861 and SPRING 1862, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.
Woking Nursery, Surrey.

CUTHILL'S Superior BLACK SPINE CUCUMBER.—The Trade can be supplied by the ounce, or 1*s*. per packet. HIGHLAND MARY, 1*s*. Best MELONS, 1*s*. Best MUSHROOM SPAWN. CUTHILL'S Five Pamphlets, free by post, 5*s*.
JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

Bellamy's Early Green Marrow Peas.

CHARLES SHARPE and CO., SEED GROWERS, Sleaford, have the above to offer to the Trade, of first-rate quality. Price on application.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 18[illegible]0

Extra Large Sea Kail.

GEO. CLARKE has to offer a large quantity of very fine roots, clean and sound, 1 to 2 inches in diameter. Prices on application. The Trade also supplied.
Nursery, Streatham Place, Brixton Hill, S.

ASPARAGUS and SEA KALE.—
Large ASPARAGUS for Forcing.
Large SEA KALE for Forcing.
Large RHUBARB for Forcing.
VICTORIA and LINNÆUS RHUBARB for planting, very low.
J. LANCASTER, 7, Alpha Street, New Peckham, S.E.

WANTED, the address of GROWERS of CLOVER and TREFOIL SEED. None but real Growers need apply. A large quantity of the above Seed is wanted.
Address A. B. C., Post Office, Exbridge, Tiverton.

Seed Potatoes.

H. AND F. SHARPE are now prepared to take orders at very moderate prices for all the leading sorts of POTATOES, including MYATT'S Prolific ASH-LEAVED KIDNEY, the finest and most prolific in cultivation.
Prices may be had on application.
Seed Growing Establishment, Wisbeach.

POTATOES.— Handsworth, Fortyfold, Dalmahoy, Shaw, Regent, White Farmer, Blues, Ashleaf, Fluke, and Kidney. Cash price at per sack.
RASPBERRIES, STRAWBERRIES, CURRANTS, GOOSEBERRIES, &c.
GEORGE CORNWELL, Barnet, Herts, N.

SEED POTATOES. — The undersigned has an extensive Stock of all the leading kinds of the above grown, especially for Seed, which he can offer at very cheap rates. Prices on application.
GEORGE NEWELL, Corn, Grain, and Seed Factor, 19, Lower Bridge Street, Chester.

Vegetable Seeds Saved during the unusually fine Season of 1861.

BARR AND SUGDEN'S COLLECTIONS of VEGETABLE SEEDS.

No. 1 contains 20 quarts of PEAS and other Seeds in proportion, 3*l.* 3*s.*

No. 2 contains smaller quantities, 2*l.* 2*s.*; No. 3, 1*l.* 10*s.*; No. 4, 1*l.* 1*s.*; No. 5, 15*s.* 6*d.*; No. 6, 10*s.* 6*d.* For particulars see SPRING CATALOGUE.

BARR & SUGDEN, 12, King Street, Covent Garden, W.C.

GENUINE GARDEN SEEDS. COLLECTIONS.

No. 1 contains 20 quarts of PEAS and other Seeds in proportion for one year's supply	£2 0 0
No. 2. Smaller quantities	2 10 0
No. 3. Do. do.	2 0 0
No. 4, Do. do.	1 1 0

Carriage free to any Railway Station in England or Scotland, or to the Steam Ports in Ireland, and the Isle of Man.

PRICED DESCRIPTIVE CATALOGUES post free on application.

A large Stock of superior SEED POTATOES.

Apply to HENRY BROWN, Seedsman, 4, Commutation Row, Liverpool.

THE PLYMOUTH SEED COMPANY "Limited," are now sending out their COLLECTIONS of SEEDS, which have hitherto given great satisfaction.

	£ s. d.
No. 1. Complete Collection for a large Garden, for one year's supply	3 0 0
No. 2. Complete Collection for a moderate size Garden, for one year's supply	2 0 0
No. 3. Complete Collection for do., smaller quantities, for one year's supply	1 0 0
No. 4. Complete Collection for a Small Garden	0 15 0
No. 5. Complete Collection for a Small Gardon	0 10 6
Extra large Collection, containing double the quantities contained in No. 1	5 0 0

Extra Collection carriage free to any Railway Station in England and Wales, and to any Steam Port in England, Wales, Scotland, and Ireland.

No. 1 carriage free to most Stations and Ports in the Kingdom.

No. 2 carriage free to Broad Gauge Stations and Steam Ports.

No. 3 carriage free to any Station between Plymouth and Paddington.

Address, Plymouth Seed Company, Plymouth.

SEEDSMEN BY APPOINTMENT. Sutton AND Sons

SUTTON'S COLLECTIONS of GARDEN SEEDS.—Carriage free (with Instructions on Cultivation).

No. 1.—A COMPLETE COLLECTION of KITCHEN GARDEN SEEDS for a Large Garden, for one whole year's supply	£3 0 0
No. 2.—A COMPLETE COLLECTION of ditto, in quantities proportionately reduced	2 0 0
No. 3.—A COMPLETE COLLECTION of ditto ditto	1 0 0
No. 4.—A COMPLETE COLLECTION of ditto ditto	0 10 6

The Sorts of Vegetable included in these Collections are those which we have proved to be the most prolific, best flavoured, and most worthy of general cultivation, and of which sorts we have, therefore, grown large crops of Seed; by this means we are enabled to furnish "A Complete Collection for One Year's Supply," of superior quality, and at much less expense than when a Gentleman or his Gardener makes his own selection.

Collections of Flower Seeds to be sent Free by Post.

The best 100 sorts of FLOWER SEEDS, hardy, half-hardy, and tender, with instructions	£1 1 0
The best 50 sorts of ditto, with instructions	0 10 6
The best 36 sorts ditto ditto	0 7 6
The best 24 sorts ditto ditto	0 5 0

Also Natural Grasses for Lawns and Meadows, Fine Mangel Wurzel, Turnip, and other Agricultural Seeds.

☞ *Sutton's General Priced Catalogue gratis and post free.*

Post Office Orders payable to SUTTON & SONS, Seed Growers Reading, Berks.

Genuine Seeds for the Kitchen Garden, the Flower Garden, and the Farm.

For prices of the above and a Select List of all the most approved varieties both new and old, see

WM. WOOD AND SON'S CATALOGUE for the present season, copies of which may be obtained free on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Seeds of Crop 1861.

CHARLES SHARPE AND CO., having completed the Harvesting of their Seeds, comprising Turnip, Mangel, Carrot, Peas, Beans, and all other varieties of Culinary and Agricultural Seeds, will be glad to forward post free on application their WHOLESALE PRICED CATALOGUE for the present season.

Sleaford.—January 11.

CHOICE SEEDS.—Per packet. *s. d.*

MONRO'S RABLEY CUCUMBER	2 6
(See fuller Advertisement in November and December last.)	
TELEGRAPH IMPROVED do., and other finest frame sorts	1 0
HERTFORDSHIRE dwarf hardy CAULIFLOWER (the best Cauliflower)	1 0
MELON SCARLET GEM, true	1 0
HOLLYHOCK (WM. PAUL's Collection of 12 superb named sorts)	5 0

Every description of VEGETABLE and FLOWER SEEDS, principally grown by or under the supervision of the Subscriber. CATALOGUE free on application.

WM. PAUL, Nurseries and Seed Warehouse, Waltham Cross, N.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and other FLOWER SEEDS, Choice GLADIOLI, &c., is now ready, and will be forwarded post free on application.

The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices.

An inspection and comparison with prices in other Catalogues is respectfully solicited.

The following, of which descriptions will be found in Catalogues, are specially recommended:—

	Per oz., *s. d.*
BEET, Compact Topped or Pine Apple Short Top	0 6
" Selected Dwarf Red (Nutting's)	0 9
CAULIFLOWER, Early Dwarf Erfurt	2 0
" New Early Mammoth or Frogmore Forcing	3 6
CELERY, Imperial Dwarf Red (Hood's)	1 0
CHÆROPHYLLUM BULBOSUM	2 0
CUCUMBER, TELEGRAPH	2 0
LETTUCE, MOOR PARK per packet	1 6
PEAS, GENERAL WYNDHAM per oz.	2 0
per quart	1 3

Exotic Nursery, Tooting, Surrey, S.

BARR & SUGDEN 12 KING ST COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

FOR COLLECTIONS of CARNATIONS, PICOTEES, and PELARGONIUMS,

Received from our SARDINIAN CORRESPONDENT, a gentleman who for many years has given his special attention to improving these popular and exquisitely beautiful flowers, and thus has secured for himself the reputation of being one of the most distinguished raisers of new varieties, see last page of *Gardeners' Chronicle.*

For STRIKING LIST of NOVELTIES, see last page of *Gardeners' Chronicle* of the 4th inst.

Ready in two or three days, and will be forwarded to our patrons and numerous applicants, our

SPRING SEED CATALOGUE, or Guide to the Kitchen Garden, For 1862,

Showing How, When, and What things should be done to secure a regular supply of the best Vegetables from January to December.

GUIDE to the FLOWER GARDEN,

Showing how a rich display of floral beauty may be maintained from April to November.

⁂ The above are Arranged and Classified on an entirely new principle.

All Orders amounting to 21s. sent Carriage Paid to any Railway Station in the Kingdom.

FRAME CUCUMBERS.

To the indefatigable exertion of Robert Hogg, Esq., LL.D., F.R.H.S., the public are indebted for the following classification and selection. Of 118 (said to be distinct) varieties, he reduced that number to 36, and of the 36 he only recommends the following 15 varieties. We quote his words:—

"The following sorts are those most worthy of cultivation; and as they furnish every quality and requirement which are to be found in any of the other varieties, they may very safely be chosen as the kinds best fitted to form a select and distinct list."

Having a fine stock of these varieties, TRUE, we can forward them at once by post at the price quoted per packet. Prices to the Trade of those marked * forwarded on application.

I.—NON-GLAUCOUS VARIETIES.

	Per packet—*s. d.*
* CARTER'S CHAMPION.—The best of the smooth Sion House race	1 0
* CUTHILL'S HIGHLAND MARY.—A good bearer, and early	1 0
* KENYON'S IMPROVED.—The best of the white-spined Sion House race	1 0
KIRKLEES HALL DEFIANCE.—The second best of the white-spined Sion House race	1 0

II.—GLAUCOUS VARIETIES.

	Per packet—*s. d.*
* DR. LIVINGSTONE.—The best of the black-spined varieties	1 0
HENDERSON'S A 1.—The second best of the black-spined varieties	1 0
JENNING'S WORCESTER CHAMPION.—One of the best of the black-spined varieties, but for its yellow-coloured point, which places it as the third best	1 0
HAMILTON'S MARKET FAVOURITE.—The best and handsomest Cucumber in the whole collection, and the best of the tipped-spined varieties	1 0
*PHENOMENON.—A very handsome Cucumber, and the second best of the tipped-spined varieties	1 0
*HAMILTON'S SURPRISE.—A handsome and good Cucumber, the third best of the tipped-spined vars.	1 0
*BUTLER'S EMPRESS EUGENIE.—A very handsome fruit, and the plant is an abundant bearer. The best of the white-spined sorts	1 0
DICKSON'S NEWTOWN HERO.—The second best of the white-spined sorts	1 0
*GODFREY'S WHITE SPINE.—A very handsome Cucumber of a fine dark green colour	1 0
*HIMALAYA.—A handsome white-spined variety	1 0
*IMPROVED MANCHESTER PRIZE.—A very excellent and generally useful sort, and one of the best of the white-spined varieties	1 0

NEW HYBRID MELONS.

BARR AND SUGDEN have just received from their SARDINIAN CORRESPONDENT the following first-class MELONS, which have been carefully tested during the last two seasons against all the known favourites of this class. B. & S. therefore feel the greatest confidence in recommending them to their numerous patrons. Sent by post, each sort 2*s.* 6*d.* per packet, or a packet each of the 4 varieties for 7*s.* 6*d.*

MELON EMPRESS EUGENIE.—"This variety is a hybrid between Veitch's Perfection (green flesh) and Turner's Scarlet Gem; it has all the desirable characteristics of the former, having a lemon-coloured rind beautiful netted, and being rich and melting in flavour, but the flesh is of a brilliant scarlet. This received a First-class Certificate."

MELON PRINCESS ALICE.—"A most exquisite variety, of truly unique character, to be chosen out among a thousand: form nearly round, rind transparent pale buff, beautifully laced, and so thin that the colour of the flesh, a beautiful rosy pink, is seen through it. The flavour is most delicious, and the flesh is thick, melting, and somewhat resembling Turner's Scarlet Gem, but not so close in texture. It has received a First-class Certificate from the Horticultural Society of Nice, 20 other varieties being shown."

MELON PRINCE IMPERIAL.—"A magnificent scarlet-fleshed Beechwood, from which variety it could not externally be distinguished. A most remarkable Melon, sugary and melting."

MELON QUEEN VICTORIA.—"It needs no further description of this Melon than to say that in appearance and quality it is a perfect 1st-class Bromham Hall in every respect, except the colour of the flesh, which is a fine deep red, melting and delicious. It has received a First-class Certificate."

NEW and GENUINE SEEDS, CROP 1861.

COLLECTIONS of VEGETABLE SEEDS suitable for Small, Medium, and Large Sized Gardens, 10*s.* 6*d.*, 15*s.* 6*d.*, 21*s.*, 30*s.*, 42*s.*, 50*s.*, and 63*s.*

All Orders Amounting to 21s. sent Carriage Paid to any Railway Station in the Kingdom. No charge made for Package or Packing.

GLADIOLI, SEEDLINGS of GANDAVENSIS.

100 in 100 splendid named varieties	£4 4 0
100 in 50 splendid named varieties	3 3 0
50 in 50 splendid named varieties	2 2 0
50 in 25 splendid named varieties	£1 10 0
25 in 25 splendid named varieties	15*s.* to 1 1 0
12 in 12 splendid named varieties, 6*s.*, 9*s.*, 12*s.*, 18*s.*, & 1 1 0

BARR AND SUGDEN, 12, KING STREET, COVENT GARDEN, W.C.

(OPPOSITE THE GARRICK CLUB).

ESTABLISHED UPWARDS OF A CENTURY.

COVENT GARDEN MARKET, LONDON, W.C.

BUTLER & McCULLOCH'S

COLLECTIONS OF VEGETABLE SEEDS,

Consisting of the most approved varieties, Carriage Free.

No. 1.	A Complete Collection for One Year's Supply	£4	0	0
No. 2.	Ditto ditto smaller quantities	2	0	0
No. 3.	Ditto ditto ditto	1	0	0

For full particulars, see CATALOGUE (page 91), which will be forwarded free and post paid upon application.

NOVELTIES AND CHOICE SEEDS

OFFERED BY

BUTLER & McCULLOCH, Seedsmen,

COVENT GARDEN MARKET, W.C.

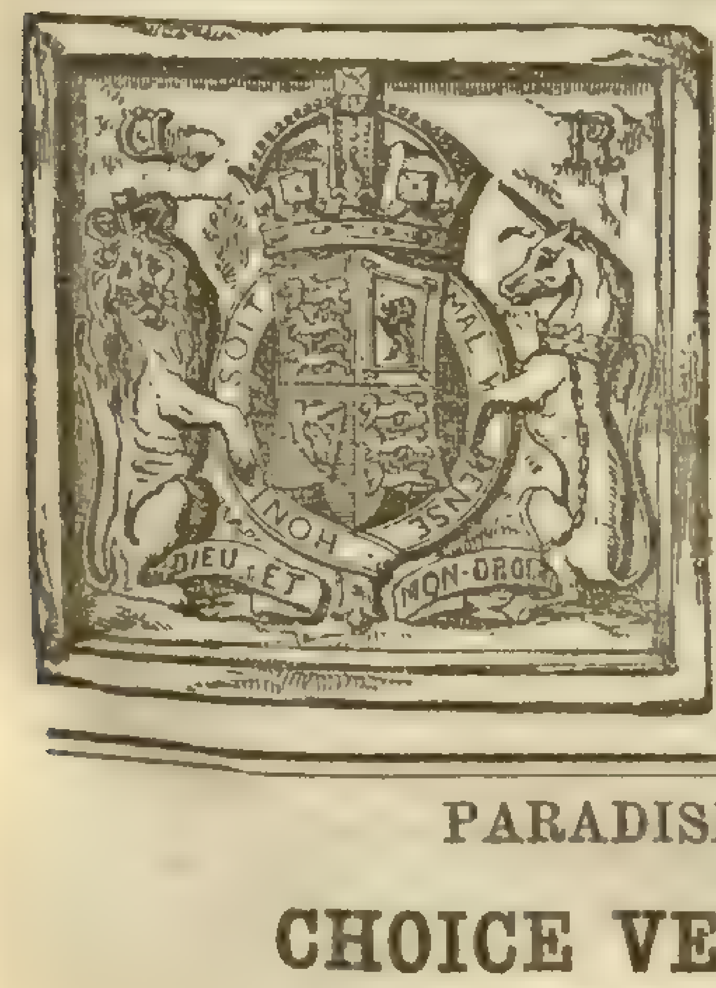
	Per Packet—s.	d.
ABUTILON, "DUC DE MALAKOFF," orange, richly veined, the finest of the Abutilons	1	0
ACACIA ACANTHOCARPA, splendid blossoms and very graceful foliage	1	0
ACACIA COCCINEA, the most novel of the Acacias, colour bright rose, with bunches of ball-shaped blossoms	1	0
ACACIA XYLOPHYLLOIDES, a magnificent showy species with rich clusters of golden blossoms	1	0
ALYSSUM SAXATILE COMPACTUM, profusely covered with rich golden blossoms, a suitable companion to Arabis alpina and Saponaria ocymoides	1	0
AQUILEGIA CARYOPHYLLOIDES, fine hardy perennial, blossoms richly striped	0	6
ARCTOTIS GRANDIFLORA, splendid bedding plant after the character of Gazanea splendens, but the blooms remaining always open	0	6
CANNA GIGANTEA, the finest foliage of all the Cannas, admirably adapted for centres of beds in warm situations	0	6
CELOSIA AUREA PYRAMIDALIS	1	0
„ KERMESINA PYRAMIDALIS. These plants are among the finest yet produced for conservatory, greenhouse, or drawing-room decoration, their compact habit and graceful feathery spikes of bloom have a most elegant appearance; colour, rich golden yellow and bright crimson	1	0
CLARKIA PULCHELLA FLORE PLENO, a new and desirable plant for ornamental purposes; colour a rich magenta	1	0
CLINTONIA PULCHELLA ATROCINEREA	0	6
„ „ GRANDIFLORA	0	6

	Per packet.—s.	d.
CLITORIA GESNATIA ATROCŒRULEA, splendid greenhouse or conservatory climber, rich cerulean blue	1	0
HIBISCUS GIGANTEUS, splendid greenhouse plant, seed very scarce	1	0
IPOMŒA LEARII, superb greenhouse variety, rich blue, shading to red	1	0
IPOMŒA LIMBATA ELEGANTISSIMA, the finest outdoor variety; an intense purple centre, in the form of a star, with a broad pure white margin	0	6
JACOBÆA, new double magenta	1	0
LINUM FLAVUM, rich golden yellow, the best in habit of all the Linums, forms an admirable pot plant ..	1	0
LINUM LUTEUM CORYMBIFLORUM, straw-coloured variety, more diffuse in habit than the preceding ..	0	6
NEMESIA COMPACTA INSIGNIS, bright blue	1	0
„ „ LA SUPERBE, delicate rose-coloured	1	0
ŒNOTHERA CAMPYLOCARPA GRANDIFLORA, crimson orange, very striking	1	0
ŒNOTHERA LAMARCKIANA, bright golden yellow, a profuse bloomer, with extraordinary large flowers ..	1	0
SOLANUM JASMINOIDES, splendid half-hardy climber, climber, producing large bunches of white Jessamine-like blossoms	1	0
TROPÆOLUM CRYSTAL PALACE GEM	1	0
ZINNIA ELEGANS FLORE PLENO, the finest novelty that has been introduced for many years, blooming from July until the frost. The seed we offer is saved from the finest double varieties only, and cannot fail to give satisfaction .. .. 6d. and	1	0
TRIFOLIUM ARVENSE, a beautiful miniature ornamental Arabian grass; the foliage is of a light gray colour, and the bloom consists of a multitude of small tufts like minute hares' tails	0	6

BUTLER & McCULLOCH'S SEED CATALOGUE FOR 1862,

Containing a List of all the Novelties and most approved varieties of FLOWER and VEGETABLE SEEDS, may be had free and post paid.

BUTLER AND McCULLOCH, SEEDSMEN, COVENT GARDEN MARKET, W.C.



PETER LAWSON & SON,

THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

PARADISE NURSERY, HOLLOWAY, LONDON, N.

CHOICE VEGETABLE AND FLOWER SEEDS.

BENJAMIN S. WILLIAMS

BEGS to inform his Friends, Patrons, and the Public that he is now prepared to execute with NEW and GENUINE SEEDS all orders he may be favoured with.

Collections of Kitchen Garden Seeds for One Year's Supply,

Containing none but the most useful and approved sorts, proportioned to suit Gardens of various sizes, at the following prices:—1*l*., 2*l*., 3*l*., and 4*l*. each.

Any kinds not required should be named, so that they may be omitted from the Collection.

Now ready, post free on application,

A PRICED AND DESCRIPTIVE CATALOGUE FOR 1862.

Containing all New Seeds of the season proved to be good, and the best of the older varieties, with useful suggestions for the guidance of Amateur Cultivators.

PARADISE NURSERY, SEVEN SISTERS AND HORNSEY ROADS, HOLLOWAY, LONDON, N.

New Celery, "Coles' White Perfection."

WM. COLE has much pleasure in offering the above superior WHITE CELERY, feeling confident it will give equal satisfaction to those previously sent out by him. In size and quality it surpasses that of his solid red. Sealed half oz. packets free per post, 2*s*. 6*d*. Price to the Trade upon application.

Nurseries, Withington, near Manchester.

To the Trade.

Kirklees Hall Defiance Cucumber (true).

WILLIAM DEAN, Bradford Nursery, Shipley, Yorkshire, begs to offer SEED of this first-class CUCUMBER, which has for three years past beaten all other sorts at the different Exhibitions where it has been shown, not because it is a remarkably long kind, but because it is a handsome, smooth, thin-skinned kind with very little heel, of first-class flavour, and in length varies from 15 to 24 inches. It is a variety at which you can always "cut and come again." and nothing can beat it for winter work and every other purpose, as it is such a prolific bearer, and has a great reputation in this neighbourhood. Retail price, 1*s*. per packet.

To the Trade, 100 seeds. 6*s*. 1000 seeds, 50*s*., postage free.

Pearson's Long Gun Cucumber.

HURST and McMULLEN, 6, Leadenhall Street, London, E.C., having purchased a considerable portion of the above beg to offer it to the Trade (see their LIST).

The raiser describes it as being most difficult to seed, from its fruiting so quickly. The gardeners in the neighbourhood where it is known consider it surpasses all others. It is the heaviest bearer in point of number ever known; fruit from 24 to 30 inches, white spines, little or no handle, skin a bright green.

The quality is also described to be far superior to all others. The texture is as fine as a Melon, and there is a total absence of all bitter flavour. The fruit is much sought after by the salesmen at Nottingham. As many as 150 per day have been supplied, and it commands half as much more as any other kind in its neighbourhood.

"Yorkshire Hero" Cucumber.

EDMUND PHILIP DIXON and SONS beg t offer Seed of the "YORKSHIRE HERO" CUCUMBER, which has been proved during the past season to be the most useful and prolific Cucumber in cultivation. It is a very long White-spined variety, of a dark green colour, producing three to four fruit at a joint, and, as will be seen from the Testimonials following, possesses all the qualities the grower can possibly desire.

From Mr. Thomas Gibb, *Gardener to the Right Honourable the Earl of Yarborough.*

Long Cucumbers are generally shy bearers, but the "Yorkshire Hero" produces abundantly, besides being a Cucumber of excellent quality.

Brocklesby Park Gardens, October 21st, 1861.

From Mr. George McGillavray, *Gardener to Sir John Nelthorpe, Bart.*

The "Yorkshire Hero" Cucumber, I without hesitation say, is possessed of every qualification to be desired in a Cucumber, being a most prolific bearer, at all times showing as many as three and four fruit at a joint. It is a thick Cucumber with very short neck, and grew with us from 20 to 24 inches, and plenty of them to satisfy any one: I could not get any seed from those I saved for that purpose, they being so solid there was no room for seed.

Scawby Hall Gardens, October 24, 1861.

Price 2*s*. per packet.

London Agents for the sale of the above:—Messrs. Hurst & McMullen, 6, Leadenhall Street, E.C.; Messrs. Cooper & Bolton, 152, Fleet Street, E.C.

E. P. Dixon & Sons' DESCRIPTIVE PRICED CATALOGUE of SEEDS is now ready, and may be had on receipt of one stamp

Yorkshire Seed Establishment, 57, Queen Street, Hull.

CUCUMBERS and MELONS.—The SENSATION CUCUMBER, a superb black spine, exhibition variety, quite as productive as any of the common Ridge varieties; its qualities are such as will be certain to render it a No. 1 with all growers. Length 24 to 28 inches, short-necked, dark green, and very regular spine; carries its bloom well to the last. Price 2*s*. 6*d*. per packet.

TILEY'S WHITE SPINE CUCUMBER.—The same character as the foregoing, with the exception of being white spine and a lighter green. Price 2*s*. 6*d*. per packet.

TILEY'S WONDERFUL RIDGE CUCUMBER.—A beautiful black spine. Average length 15 to 18 inches. As an out-door variety not to be surpassed for productiveness or quality, having always been taken when cut as one of the fine frame kinds. It grows very even from stem to point, and rarely over seeds. Price 2*s*. 6*d*. per packet.

NEW MELON, "NONSUCH."—E. T. having purchased the entire stock of Seed of this superb new Melon, begs to offer it to the public as a great acquisition, especially to those who have not the command of a strong heat; it will grow well and ripen perfectly with merely the assistance of a cold frame. The raiser has always cultivated it on a spent dung bed with every success (on which early Potatoes had been grown); it is short-jointed, a free setter, fruit round, green flesh, thin skinned and solid, weight from 2 to 3 lbs., beautifully netted, and a splendid aromatic flavour. It is such that must be certain to give every satisfaction to all purchasers, having been grown well in pots in a cold greenhouse. Price 2*s*. 6*d*. per packet.

CUCUMBERS.—General Outram, 2*s*. 6*d*. per packet. The following sorts 1*s*. per packet:—Sir Colin Campbell, General Canrobert, Victory of Bath, Gordon's White Spine, Lord Kenyon's Favourite, Phenomenon, Captivation, Rifleman, Mills, Jewess, Manchester Prize, Hunter's Prolific, Incomparable, Sion House, Ipswich Standard, Ayres' Prolific, Cuthill's Island Mary, Manchester Prize, Hamilton's Black Spine, Kilway's Victory, and all other varieties worthy of cultivation.

MELONS.—Garibaldi, 1*s*. 6*d*. per packet. The following, 1*s*. per packet:—Gen. Havelock, M'Ewen's Green and Scarlet Flesh, Monroe's Greengage, Golden Drop, Golden Perfection, Scarlet King, Incomparable, Golden Ball, Bromham Hall, Austen's Incomparable, Queen, Blackall's Green Flesh, Bowood Green Flesh, Beechwood, Windsor Prize, and all other varieties worthy of cultivation.

A packet of each of the new varieties of Cucumbers and Melons for 7*s*. 6*d*., or a packet of either of the new Cucumbers and a packet of the Melon, 4*s*.

The Emperor Red Celery, the best grown, 1*s*. per packet. The Solid White Celery, extra fine, 1*s*. The true old Bath Cos Lettuce, 1*s*. per packet. Griffin's Alma Lettuce, 1*s*. per packet.

The true Red Currant Rhubarb, the best grown for early forcing or preserving. This variety is red quite through, and a delicious acid. Price 1*s*. per root.

A remittance is expected from all unknown correspondents by Post Office Order or penny postage stamps.

Edward Tiley, Nurseryman, Seedsman and Florist, 14, Abbey Churchyard, Bath.

New Cinerarias, Gloxinias, and Pelargoniums.

F. AND A. SMITH can still supply a few sets of their New GLOXINIAS, CINERARIAS, and PELARGONIUMS.
See *Gardeners' Chronicle* of Oct. 5, 1861, and CATALOGUE, which may be had gratis.
Dulwich, Surrey, S.

Superb Balsams.

F. AND A. SMITH are now sending out Seed of their Superior BALSAMS in collections of

9 Colours, separate	2s. 6d.	each.
The same, mixed	2 0	"
Half the quantity	1 0	"

The above are in 18 distinct and bright colours, of carefully selected Seed, from the most double varieties.
Dulwich, Surrey.

New Azalea indica.

J. IVERY AND SON feel much pleasure in offering their two beautiful Seedlings, CARNATION and TRICOLOR, small plants at 10s. 6d., and larger at 21s. each. They are fully described in our CATALOGUE, with all other Novelties of the Season, which will be forwarded post free upon application.
A fine lot of half Specimens and Standards for Sale.
Dorking Nursery.—Jan. 11.

Seed Catalogue.

LOUIS VAN HOUTTE, NURSERYMAN and SEEDSMAN, Ghent, Belgium, begs to advertise that his SEED PRICE CURRENT, No. 90, is to be had at his Agent's Office, Mr. R. SILBERRAD, 5, Harp Lane, Great Tower Street, E.C.
N.B. All Seed ordered is delivered at London free of all expense, freight, Custom House duties, agency salary, &c., whatever.

Gladioli.

GODWIN AND PADMAN have great pleasure in inviting the attention of their customers and the public generally, to their beautiful collection (50 varieties) of HYBRID GLADIOLI.
GANDAVENSIS HYBRIDS, per name, 9s., 12s., 15s. per dozen.
RAMOSUS HYBRIDS, per name, 9s., 12s. per dozen.
GANDAVENSIS, fine bulbs, 2s. per dozen.
Other varieties, fine bulbs, from 1s. per dozen.
CATALOGUE on application at
Broadfield Nursery, Sheffield.

Russell's Pyramidal Primulas.

GEO. CLARKE has much pleasure in calling attention to the above magnificent strain, new Seed of which is now ready in packets, price 2s. 6d.
Those who are desirous of satisfying themselves of the peculiar excellence of these PRIMULAS, are invited to see them here in bloom now or any time during the winter months.
Fine young plants for spring blooming, 12s. per dozen.
Nursery, Streatham Place, Brixton Hill, near London, S.

Pelargoniums.

WILLIAM HUSSEY begs to offer the under-named Collection, good established plants, in 3-inch pots, for 30s., basket, &c., included, viz.:—King of Purples, Lord Clyde, Othello, Rifleman, Lady Craven, Musjid, Leviathan, Peacock, Euphemia, Acme, Lady Canning, Mrs. Turner, Douglas, Cynthia, Monarch, Prince of Prussia, King of Scarlets, Evening Star, Queen of May, Agnes, Bracelet, Rose Celestial, Competitor, Richard Benyon, Seraph, Mazeppa, Etna, Viola, Zeno, Fire Queen, Marchioness of Tweedale, Beadsman, Unique, Negro, Beauty, Autocrat, Czar, Eastern Beauty, Ivanhoe, Omega.
Horticultural Gardens, Norwich.

CALCEOLARIA, CINERARIA, and PRIMULA.—Lovers of really fine varieties of the above should secure a packet of our Seed, which is unequalled for quality, being saved exclusively by ourselves from all the leading varieties. In Sealed Packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. Upwards of 3000 Packets sold in 1861.
JOHN DOBSON & SONS, Seedsmen, Isleworth, W.

J. HOLMES WOOD, BOWER NURSERIES, Maidstone (adjoining the Railway Station).
All the leading varieties of AZALEAS, in 60's, at 50s. per 100.
Standard and Trained FRUIT TREES of every description, 30s. per dozen.
Every description of CONIFERS, EVERGREEN and DECIDUOUS TREES, and SHRUBS at moderate prices.

N. LAWRENCE begs to inform his Friends and the Public generally that his CATALOGUE of NURSERY STOCK is now ready, and will be sent gratis on application, including Seedling and Transplanted Forest Trees and Shrubs, Evergreens, Conifers, Hardy Climbers, &c.; together with a Descriptive List of Roses and Fruit Trees.
The Nurseries, New Road, Chatteris, Cambridgeshire.

RHODODENDRONS. — An immense Stock of Hybrid and Common RHODODENDRONS, 9 inches to 3 feet, is offered at a low price, by W. H. ROGERS, Red Lodge Nursery, Southampton; also a fine collection of SCARLET and other beautiful varieties, under name.
A CATALOGUE of General NURSERY STOCK, extending over 60 acres, may be had on application.

New General Catalogue for 1861–1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

SAPONARIA CALABRICA ALBA, Pure White. —This beautiful New Annual is of very dwarf habit, and being pure white, contrasts most admirably with the Saponaria calabrica rosea. It produces blossoms in great profusion, and remains in flower during the whole summer and late in autumn. It is invaluable for beds, or as edgings for borders.
Price to the Trade on application to
JOHN GEORGE WAITE, Seed Merchant, 181, High Holborn, London, W.C.

CRYPTOMERIA JAPONICA (a Bargain).—The Subscribers having a very large stock of the above, perfectly healthy and uninjured by frost, offer them on the following terms, viz.:—

	per doz.	per 100.
Stout plants, 1 foot	3s. ..	20s.
" 1½ to 2 feet	4 ..	25
" 3 to 4 feet	6 ..	40

Extra plants presented to defray cost of carriage.
Address to WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Can be Seen at Sunningdale Nursery, Sunningdale Station, South-Western Railway.

CHARLES NOBLE invites inspection, and would remind all interested, that his RHODODENDRONS have taken First Prizes at the opening Show of the Royal Horticultural Society, and every other show at which they have been exhibited during the last two years.
RHODODENDRONS for forcing; KALMIAS for forcing; and a magnificent stock of all the finest kinds of Rhododendrons in the world. CONIFERS and Hardy EVERGREENS by the 100 or 1000. ROSES and a General Nursery Stock well worthy the inspection of intending Planters or Nurserymen.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England. The Catalogue may also be had at Mr. MAY's, 1, Wellington Street, Strand, W.C.
Knap Hill Nursery, near Woking, Surrey.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.
The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.
The American Nursery, Bagshot, Surrey, near the Sunningpale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

NEW APPLE, "BARON WARD."—The very best late keeping variety in cultivation.

	Each—s. d.
Strong plants, two years, unpruned, suitable for pyramids or bushes	2 6
Strong plants, dwarfs	1 6

Description, &c. forwarded post free on application to R. BRADLEY & SON, Halam Nursery, near Southwell, Notts.

Magnificent Dwarf-trained Peaches, Nectarines, and Pears, &c.

WM. WOOD AND SON refer with much pleasure to their extensive and well grown Stock of the above; the Trees are remarkably healthy, and are as handsome as can possibly be desired. Early Orders are solicited to ensure the best trees.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

FRUIT TREES.

APPLE, PLUM, PIN DAMSON, and PEAR TREES,	s. d.
Standards .. .. Per dozen	12 0
New large DUTCH CURRANT, Fruiting Trees .. per 100	10 0
HAUGHTON, or RABY CASTLE RED CURRANT do. "	10 0
Large BLACK CURRANT, Fruiting Trees .. .. "	10 0
BLACK NAPLES CURRANT, do. do. .. .. "	10 0
GOOSEBERRY TREES, of sorts .. .. .. "	12 6

WM. JACKSON & Co., Nurserymen and Seed Merchants, Bedale, Yorkshire.

THE SUBSCRIBER is anxious to dispose of the fruit-bearing Standard and Dwarf-trained PEACH and NECTARINE TREES now growing in his Winter Garden. To those planting a Peach House this is an opportunity rarely to be met with, for some of the Trees are of large size and literally full of fruit buds, and having only been planted in the present situation two years, they will remove admirably. An inspection is invited, or for price and particulars apply to
WILLIAM BULL, Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

PINE GOLDEN PIPPIN APPLE; Dwarf Maiden and Dwarf-trained Trees.
GENERAL TODTLEBEN PEAR; Dwarf Maiden Trees.
BEURRÉ STERKSMAN PEAR; Dwarf Maiden Trees.
R. GLENDINNING has still a few Plants of the above named NEW FRUIT TREES. For their descriptions see Dr. Hogg's remarks. Price on application.
Chiswick Nursery, London, W.

Fruit Trees.

R. GLENDINNING begs to offer the under-mentioned FRUIT TREES, which are strong, healthy, and true to name:—
Standard-trained PEACHES } in all the leading kinds with
Dwarf-trained " } well ripened wood, from walls.
Dwarf-trained APPLES, in all the leading kinds.
" PEARS " "
" PLUMS " "
Standard Mdn. " " "
Dwarf Mdn. " " "
Standard Mdn. CHERRIES " "
Dwarf Mdn. " " "
Standard APPLES " "
PYRAMIDAL PEARS on Quince and Pear Stocks in a fruiting condition.
PRICED LISTS on application.
Chiswick Nursery, London, W.

Fruit Trees.

JAMES GARAWAY AND CO. call attention to their stock of the above, comprising

APRICOTS NECTARINES PEACHES	Standard and Dwarf-trained	APPLES CHERRIES PEARS PLUMS	Dwarf-trained, Standard, and Dwarf-quarter.

All of first-rate quality and in good condition.
The STANDARD PEARS are unusually fine, and will be sold at a very low rate to purchasers of quantities.
CATALOGUES and prices free by post.
JAMES GARAWAY & Co., Durdham Down Nurseries, Bristol.

Muscat Escholata Grape.

MESSRS. J. AND C. LEE have the pleasure to offer strong well ripened Canes of this
THE FINEST OF ALL MUSCAT GRAPES,
which, though little known to Grape growers in general, deserves to be extensively cultivated. It combines the desirable qualities of setting freely with a large well shouldered handsome bunch, with berries of a rich amber colour almost as large again as those of the Muscat of Alexandria, and of the most luscious Muscat flavour.

Planting Canes	15s. 0d.	each
Fruiting Canes	21 0	"
Extra strong Fruiting Canes ..	31 6	"

Vineyard Nursery, Hammersmith, London, W.

60,000 Dwarf Roses in pots on their own roots.

WM. WOOD AND SON have much pleasure in offering selections of ROSES from their enormous stock at the following rates:

	Per doz.
Tea Scented Roses	18s.
Bourbon and Noisette do.	18
China and Climbing do. .. ..12s. to	18
Tea Scented and Bourbon Roses, established in 6-inch pots, for immediate forcing or greenhouse culture ..	30

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Standard Roses.

A LARGE IMPORTATION OF STANDARD ROSES.
WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.
WM. WOOD AND SON beg to inform the Nobility, Gentry, and Amateurs that they have imported a large quantity of STANDARD ROSES from the Continent, comprising all the best sorts. The plants are remarkably strong, and cannot fail to give the greatest satisfaction.

Standard Summer Flowering Roses .. per dozen	24s.
Standard Perpetual and Bourbon Roses "	30
Dwarf Summer Roses .. .. "	12
Dwarf Perpetual Roses .. .. .. "	18
New Roses of 1861 .. .. .. each	3s. 6d. to 5

Early orders are respectfully solicited.

New Rose, Beauty of Waltham.

WM. PAUL respectfully announces that he is now taking orders for this superb NEW ROSE, which received a FIRST-CLASS CERTIFICATE from the Royal Horticultural Society in June last. For description, see Rose Catalogue —Section Hybrid Perpetual: it is also figured in the "ROSE ANNUAL," just published. Plants in April, 5s. each; the usual discount to the Trade on six or more plants.
WM. PAUL, Cheshunt Nurseries, Waltham Cross, N.

Standard and Dwarf Roses.

JOHN CRANSTON has no hesitation in stating that he holds the largest stock of STANDARD ROSES in the kingdom, and plants of the finest growth possible. These he is now offering at the following prices:—
STANDARDS, finest Hybrid Perpetual and Bourbon, 30s. per dozen.
HALF-STANDARDS, do., 24s. to 30s. do.
STANDARD TEA SCENTED, the best and most hardy sorts, 36s. to 42s. do.
DWARF HYBRID PERPETUAL, strong on Manetti Stock, 15s. to 24s. do.
DWARF HYBRID PERPETUAL, own roots, 12s. to 18s. do.
DWARF TEA SCENTED, 18s. to 24s. do.
PILLAR ROSES, extra strong on Manetti Stock, 18s. to 24s. do.
NEW ROSES of 1860 and 1861, 3s. 6d. to 5s. each.
A DESCRIPTIVE LIST will be forwarded free on application.
Nurseries, King's Acre, near Hereford.

Mitchell's Unrivalled Collection of Roses.

THE LARGEST STOCK AND THE BEST PLANTS IN ENGLAND, JUSTLY PRONOUNCED BOTH BY ENGLISH AND FOREIGN GROWERS.
JAMES MITCHELL has the honour of informing his kind patrons that he has succeeded in obtaining the FIRST PRIZES at the principal Shows throughout the season, viz.:—
July 10.—The Grand National Rose Show, Royal Horticultural Society's Garden, Kensington Gore, 96 varieties, 3 trusses of each, First Prize.
September 11.—Forty-eight varieties, 3 trusses of each, First Prize.
July 3.—The Royal Botanic Society, Regent's Park, London, 50 varieties, 3 trusses of each, First Prize.
July 6.—The Great Rose Show, Crystal Palace, 96 varieties, 1 truss of each, First Prize.
June 19.—Brighton Horticultural Society, 50 varieties, 3 trusses of each, First Prize.
September 18.—Fifty varieties, 3 trusses of each, First Prize.
August 28.—Lewes Horticultural Society, 36 varieties, 3 trusses of each, First Prize.
J. M. respectfully informs the Nobility and Gentry he can supply the best perpetual BLOOMING ROSES in Standards, Half-Standards, and Dwarfs, healthy good rooted plants.
Standards, 30s. per dozen.
Half ditto, from 24s. to 30s. per dozen.
Dwarfs, from 18s., 24s., to 30s. per dozen.
New Varieties of 1861, 42s. per dozen.
Pilt Down Nurseries, Maresfield, Sussex.
N.B. These Nurseries are 2½ miles from the Uckfield Station, on the London, Brighton, and South Coast Railway.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.
For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.
Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.
The Royal Nursery, Bagshot, Surrey.

MESSRS. E. G. HENDERSON AND SON recommend the following to be Sown as soon after Christmas as possible, to ensure their early flowering, and a continuous after season of bloom.
COBŒA SCANDENS, 6d., 1s., and 1s. 6d.
MAURANDYA, 6d., or in six colours separate, 2s. 6d.
LOPHOSPERMUM, 6d., or three varieties, 1s. 6d.
THUNBERGIA, 6d., or in six sorts, 2s. 6d.
CALAMPELIS SCABER, 6d. and 1s. each.
The above Ornamental-flowering CLIMBERS for Garden and House-decoration Blooming through the Summer.
CANNA species, 6d., or in six sorts, 2s.
PERILLA NANKINENSIS (dark leaves), 6d. and 1s.
These two for Garden Summer-decoration.
LOBELIA SPECIOSA, (true), 6d. and 1s.
PETUNIA, choice varieties, 1s.
VERBENA, " " 1s.
ANAGALLIS, large blue, 6d.
" " red, 6d.
DIANTHUS HEDDEWIGI, 6d., 1s.
SAPONARIA CALABRICA, 6d.
SAPONARIA CALABRICA ALBA, new pure white, 6d., 1s.
ANTIRRHINUM, choice, extra, 6d. and 1s.
ZINNIA ELEGANS, double, extra selected, 6d., 1s.
ŒNOTHERA LAMARCKIANA (new large yellow), 1s.
Shrubby habit, with flowers like Œ. macrocarpa.
PANSY, extra first quality, 1s.
" " new blotched French varieties, 1s. 6d.
The above 12 kinds are for general Bedding, and all Ornamental effect in Pots, Vases, and House-decoration, as well as for the open Garden.
CLIANTHUS DAMPIERI, 5 English saved seeds, 2s. 6d.
CYCLAMEN PERSICUM, 1s.
CYCLAMEN ATKINSI, 1s.
LILIUM GIGANTEUM, 6d., 1s.
Wellington Road, St. John's Wood, London, N.W.

OLD CHESHUNT NURSERIES, HERTS.

Gladiolus.

PAUL AND SON'S fine Collection of this superb Flower, of which the Bulbs are now ready.

Hollyhocks.

PAUL AND SON'S fine Collection of this noble Flower; fine Plants of which are now ready. Also SEED in packets of 12 fine distinct sorts at 5s. each, and mixed seed in 2s. 6d. and 1s. packets.

Roses.

PAUL AND SON'S splendid Collection of Dwarf Plants in Pots, of all the finest new kinds, with extra size plants for Forcing.

Vines.

FINE PLANTS for Fruiting in Pots or planting out.

CATALOGUES of each may be had on application by post.

New Pear, "Matthews' Eliza."

WILLIAM BULL begs to announce that the entire stock of this excellent NEW PEAR has been placed in his hands for distribution by Mr. Matthews, and from the high character it has received from the best pomologists, W. B. has no hesitation in very strongly recommending it.

This Pear was highly commended when exhibited before the Pomological Society, and the *Florist*, in its report, thus speaks of it:—

"Mr. Matthews, of Clapham, brought a Seedling Pear, which he called 'Matthews' Eliza,' of which we are enabled, through our artist, to give a most excellent representation. This was considered to be of the race of Easter Beurré, and was raised by his father-in-law, the late Mr. Groom. The fruit, as will be seen, is very handsome, and will rank among the large Pears. In shape it has much of the appearance of White Doyenné, with the features of the Easter Beurré about the stalk end, though not towards the eye. The skin, when ripe, is of a pale citron, or straw yellow, with faintest tinge of green. The flesh has an orange-yellow tint, is quite melting, juicy, and sugary, with a fine mixture of vinous acid, which gives it a refreshing and lively piquant flavour. This was considered, and justly, a most excellent Pear. The fruit was grown on a standard."

Extract from the *National Garden Almanac* for 1858.

"It is not often that we find new fruit of such decisive merit as 'Matthews' Eliza,' raised, we learn, by the late Mr. Henry Groom, and now exclusively in the possession of his son-in-law and successor, Mr. H. Matthews, Clapham Rise, Surrey. The fruit is of large size, of the White Doyenné form; rich, buttery, melting, and aromatic, with sufficient piquancy to free it of that cloying flavour so common to over-sweet subjects. Its season seems December and January. We feel we may fairly attribute to this Pear a first-class character in every respect, convinced that it is one of the greatest acquisitions rendered to us for many years."

Price 10s. 6d. each.

Well ripened Canes of all the best VINES can be supplied.

Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Royal Exotic Nursery, Chelsea, S.W.

JAMES VEITCH, JUN., respectfully announces that his CATALOGUE of KITCHEN GARDEN and FLOWER SEEDS for 1862, with a List of Implements and other Garden requisites, is now published, and will be forwarded post free on application.

J. V., Jun., devoting his personal attention to this department of his business, can warrant his SEEDS TRUE TO NAME, and of the MOST GENUINE description.—Jan. 11.

SUTTON'S SEED CATALOGUE for 1862 is now ready, and will be sent gratis and post free.

SUTTON & SONS, Seed Growers and Merchants, Reading.

The Gardeners' Chronicle.

SATURDAY, JANUARY 11, 1862.

THOSE who propose to take a part in the great EXHIBITION OF GOURDS next October will have to fall into two distinct sections; the right will consist of those who go in for collections of Ornamental sorts, the left of the growers who compete for best specimens of eatable kinds. We venture upon a few words of advice to both.

As to collections of the ORNAMENTAL VARIETIES of these plants, all that can be suggested is to obtain the seeds of as many kinds as possible. This can be best done through the Nurserymen, and now is the time to order the seeds; for they will have to be obtained from the Continent. It takes time to procure such things, and the young plants ought to be above ground by the middle of April. It is useless to give lists of these; the varieties are innumerable, and we know little or nothing of their foreign garden names. All that the great body of cultivators can undertake is to prepare for a struggle in the two classes of EATABLE GOURDS and SETS OF SIX.

The following is we believe a pretty complete list of such as are best suited for those purposes.

Potirons or *Pumpkins*, yellow, green and white. These acquire on the Continent an enormous size, if cleverly grown. In a late number of the *Gardeners' Chronicle* one is mentioned, grown at Orleans, weighing above 240 lbs. and measuring more than 10 feet in circumference. Another raised in a Paris garden this autumn weighed 220 lbs., and measured 8½ feet round, a magnitude very nearly attained by Lord RODNEY's Gardener in 1834. Of these Pumpkins there are other varieties more esteemed than the common green, yellow, and white kinds. Such is the "Spanish" Pumpkin (*Potiron d'Espagne*) and the "great yellow stalked" (*Potiron gros à pédoncule jaune*), which is said to be the hugest of all. It will, doubtless, be among such monsters that the struggle for prizes for the heaviest specimens will take place.

Gourds, or *Courges*, properly so called, never acquire dimensions like the last; but they are better for the table, keep better, and are handsomer. Of these we regard the great *Egg Gourd*, a very fine deep orange egg-shaped sort with very solid dark salmon-coloured flesh, the best; it is sweet, farinaceous, somewhat dry, and keeps well after having been cut; growers will probably have some difficulty in procuring the seed genuine. Then there is the *Cyprus Gourd*, a middle sized round fruit, marbled and variegated with many colours; the *Melon Gourd of Marseilles*, rather perfumed, but too tender for this climate; we mention it in order that it may be avoided; the *Barbary Gourd*, a long fruit, marbled and banded with yellow and black; the *Patagonian Gourd*, something like the last, but longer, and repeatedly and deeply furrowed; the *Neapolitan* or *Portmanteau Gourd*, an excellent, long sort, with red flesh, solid almost to the centre. To these may be added the *Gourds of Valparaiso*, and *Ohio*, with the *Sugar Gourd of Brazil*, described as having an exceedingly sweet flesh of a yellow colour. These appear to represent the best of the eatable Gourds, with the exception of the *Patissons* or Tart Gourds, of which the *Custard Marrow* is an example, and the little *Vegetable Marrows*.

Those who may undertake the growth of these fruits must take care to distinguish the wholesome from the unwholesome; otherwise consequences may follow their being eaten which, without being dangerous, would be extremely unpleasant. Fortunately the two races are separable by the simple test of taste; the uneatable and unwholesome sorts are bitter in even their youngest leaves; the wholesome have no bitterness whatever. For this reason, and because of the tenderness of their substance when young, the ends of the shoots of the latter, if pinched off to the length of 3 or 4 inches, form the best substitute for Spinach, or as many say are superior to that esculent.

Some may think that any body can grow Gourds; that a plant found in half the cottagers' gardens is in no need of good cultivation. In fact it is a belief with some that Gourds will take care of themselves. The result of next autumn's competition will teach those who think so that they are much mistaken. Skill will tell as unmistakeably on Gourds as on Melons. Perhaps the following description of the manner in which a Paris market gardener won his prizes will afford useful hints to others. We borrow the statement from the Transactions of the Imperial Horticultural Society.

The reporter states that he found in M. SOMVEILLE's place six fruits, placed against a wall, the heaviest of which weighed above 200 lbs., and the lightest 160 lbs. All were perfectly regular in form. On comparison with those sent to the Paris Horticultural Exhibition the smallest of M. SOMVEILLE's was finer than the best at the Exhibition; although that gardener had no protecting places whatever, neither handlights nor frames, nor any other apparatus with which to shelter either the young plants or the seedlings. He sows his seeds in pots about the 15th March (a fortnight too early for us), and covers them with litter. In about a month, when the night frosts are nearly over, he puts them out, still, however, drawing round and over each plant litter enough to guard it from cold; and when the litter gets wet he changes it for such as is dry. Only one fruit is allowed to swell upon the principal branch, which does not ramble about as with us, but is led circularly round the root so as to prevent the branches of different plants becoming entangled or the footpaths choked up. The Gourds are planted 2 yards apart in the rows, and 4 yards from row to row.

In the warm dry soil of Paris this is what may be regarded as most essential. But in our watery climate great attention must be paid to prevent the action of damp. If the ground is permanently damp and cold the roots will rot off. If there are heavy rains when the fruit is ripening, that also will decay when it touches the ground. And yet no plants demand a more constant supply of water. The remedy is obvious. A bank sloping to the south, thoroughly well drained, for the roots; and some hard material such as slate placed between the fruit and the ground; bricks will not answer, they are too absorbent; flints would probably be as good as slates.

A CORRESPONDENT in our *Chronicle* of Dec. 21, 1861, inquires whether there has been a scarcity or not in the Fungus tribe generally during the past season. The answer to this question will depend entirely upon the particular point from whence observation has been made, as the weather has been so extremely different in different localities during the autumnal months, which are most productive. Up to the end of July extreme moisture was the general rule, but after that period, either total drought, or continued wet were prevalent in different districts. In our own neighbourhood, where for many weeks there was scarcely any rain, Fungi were extremely scarce. A few true Mushrooms were occasionally gathered, but the fields which last year produced such enormous crops of *Agaricus arvensis* and its varieties, scarcely exhibited a single trace of Mushrooms, while the woods and open pastures were less productive than we ever before experienced. At the end of October and in the first week of November a few interesting species made their appearance, but a sharp frost at once put an end to their growth, insomuch that where the week before we made one or two interesting excursions, there was nothing to be found.

As regards districts where moisture abounded, as the temperature was not low, so far as our information goes, the production was enormous. In Sutherland, Ayrshire, and Fifeshire the woods teemed with various species, and we have reason to believe that the same exuberance of Fungi existed elsewhere.

In the "Botanische Zeitung" for 1861, p. 160, there are some observations in point. The unusual moisture of the past summer, says the writer, speaking of Germany, seems to have been favourable to Fungi in general and Truffles in particular. The Truffle harvest indeed in autumn (1860) was very limited, in consequence of the early accession of cold, but it was so much the richer at the commencement of fine weather. At the beginning of February so many Truffles were found in a single verderer's range (Waldrevier) as were scarcely ever seen before. A single specimen occurred which weighed 1 lb. 7 oz., though still larger were formerly found in Thuringia. WALLROTH speaks of Truffles weighing 2 lbs. (Pl. Crypt, vol. 2, p. 868). They often occurred in little nests, and many were simply covered with leaves. *Tuber excavatum* grows frequently with us amongst the black Truffles, and is generally called false Truffle, and is partially mixed with the food of the Truffle dogs, but at present other species have not been observed.

We have no information about the Truffle harvest in England during the present season, but doubtless it has been scanty wherever the drought prevailed.

There is not however any reason for believing, as our Correspondent suggests, that the damp cold weather of 1860, and the severe winter, killed the spawn of Fungi in general, though possibly in the case of a few more delicate species it may have been injurious. Where the weather was genial, there has been no want of Fungi from the old beds or rings, and where no Fungi have been produced this season, the spawn itself, when examined, was as sound and healthy as ever.

While speaking of Fungi, we take the opportunity of mentioning a use to which some of the large Polypori, such as *P. igniarius* and *fomentarius*, are put in Bohemia, which may be new to many of our readers. The spores and part of the substance of the Fungus are removed, and the pileus is then fastened in an inverted position to the wall by the part where it originally adhered to the wood. *The cavity is then filled with mould, and the Fungus is used with good effect instead of flower pots for the cultivation of such Creepers as require but little moisture. M. J. B.*

FOR the last 12 or 15 years, or more, there has been cultivated in our greenhouses a small group of plants resembling Yuccas or Dracænas in habit, but remarkable for the bulbiform base of their arborescent stems. These plants have been hitherto known by the unintelligible name PINCENECTITIA (or, as variously written, Pincecnitia, Pincinectia, and Pincenectia)—a name which has not, as far as we know, been recognised by any scientific botanist, and which, it is stated, originated

in a miswriting of *Freycinelia* on some garden label. With *Freycinetia*, a genus of the Screw Pine family, it was at least known that these plants could have no relationship; and so in the absence of materials for determination, they have for these several years remained as a botanical problem waiting a solution.

It would seem that the plants are not of very rapid growth, and they appear to be still more tardy in the production of flowers; for though pretty well distributed throughout the gardens of the country and of the continent, we have never heard of any of them having flowered, until the past autumn, when at a horticultural exhibition at Audenarde, a Belgian town not far from Ghent, a flowering specimen of the plant known as *Pincenectitia tuberculata* was produced by M. BEAUCARNE, a notary of Eename, near that place. This specimen was afterwards examined by M. LEMAIRE, who, regarding it as constituting a new genus related to *Dasylirium*, proposes that it should bear the name of BEAUCARNEA, in honour of the amateur cultivator by whom its flowers were at least first made known. M. LEMAIRE proposes the following species :—

B. RECURVATA = *Pincenectitia tuberculata* : this has the leaves long, *strongly recurved*, and channelled.

B. STRICTA = *Pincenectitia glauca* : this has the leaves straiter and more erect, *plane*, and slightly glaucescent.

B. GRACILIS = *Pincenectitia gracilis* : this has the leaves *quite erect* and very straight and sharp, rounded behind, and slight channelled in front.

These Beaucarneas are all natives of Mexico, and are very elegant objects of the ornamental-foliaged class now so fashionable, in which they well deserve to find a place. The earliest of them were supposed to have been introduced about 1845; and it is stated that they were first received on the continent in the establishment of VAN DER MAELEN, of Brussels.

—— The winter-flowering character of BOUGAINVILLÆA GLABRA may now be considered as established. It will be recollected that the species was bloomed and exhibited by Mr. DANIELS of Swyncombe House, during the past autumn, as mentioned in our previous Volume (p. 944, 1861), and that as there stated it had previously been spoken of by Mr. DUNCAN as a continuous bloomer in the climate of the Mascaren Islands; besides which it had bloomed in the autumn of 1860, as one of our Correspondents writing from Holkham reported (*Gardeners' Chronicle*, 1860, p. 875). Within the last week or two, Mr. EYLES has handed to us fresh flowering specimens, which had been produced by Mr. G. RUSHMORE, gardener to Lady ROMLEY, Tendring Hall, Stoke-by-Nayland, Suffolk, who had also been successful in obtaining the flowering specimens of *Allamanda violacea*, which were exhibited at the great fruit show of the Royal Horticultural Society last November.

We learn, moreover, from Mr. DANIELS, that his plant, which commenced flowering at the end of August, continued blooming on until the beginning of December, when the flowers were all cut for purposes of decoration.' These several instances leave no reason to doubt that the plant is one which can at least be made to develope its lovely inflorescence in the dreary winter months, and this is a property which it will be admitted greatly enhances its value. The plant at Swyncombe was indeed only stopped in its flowering career by having its branches stripped of these wreaths of bracts and blossoms.

We further learn from Mr. DANIELS that his experience, so far, goes to corroborate the statement made by Mr. DUNCAN as to this Bougainvillæa having a tendency to bloom continually. "The plant," he writes in a letter before us, "although confined in a pot, threw up numbers of strong shoots after it had commenced blooming, and these were all, in their turn, covered with flowers. Generally, the growth of the shoots was effected, and the blossoms produced, within the space of about a month; and this continued until the plant seemed to have become almost exhausted, owing, I have no doubt, to its not being able to find a sufficient amount of nutriment in the small quantity of earth in which it was growing. I have now planted it out in the stove." He goes on to say, "I should have no hesitation in stating, that considering the facility with which it blooms, together with its perfectly distinct habit and season of blooming, Bougainvillæa glabra is quite worthy of being placed side by side with Bougainvillæa speciosa. Imagine a plant of the size of my large specimen, with a cart-load of bloom upon it at this season of the year—and of that being the case I have no fear—what plant could we then put on an equality with it?"

—— Since the publication a few years ago in Paxton's "Flower Garden," of a figure of LIMATODES ROSEA, an Eastern Orchid related to the Calanthes, we have heard but little of the plant, which appears to have acquired a bad character amongst cultivators on account of some supposed difficulty in inducing the development of its flowers. This is unfortunate, as it is certainly a very beautiful plant, and one of the best Orchids for winter decorative uses, perhaps, as yet known in our gardens. Of this no one would entertain a doubt, who could see them as now blooming by scores at least, in the nursery of Messrs. Low & Co. of Clapton.

Like many other Orchids, this species of Limatodes yields several varieties amongst the imported plants. The differences consist in the density of the flower spikes, in the relative size of the parts of the flowers, and in their colour. The flower spikes which spring from the base of the pseudo-bulbs, vary from about a foot to nearly 2 feet in height, and in the majority, which are of the dwarfer stature, terminate in a close well-furnished spike of about two dozen flowers. In these the colour is of a delicate pink deepening into a brighter ring around the mouth of the tubulose basal portion of the lip, which is pure white inside, while the front of the lip is of an oblong or parallelogrammoid form with rounded corners, and fully half as much more in length as in breadth. In one of the varieties which Messrs. Low call SUPERBA the flower is quite distinct in colour and in form, the colour being a deep bright pink (with the white throat and deeper ring as before), the lip smaller and narrower, of a squarish oblong form, and the spike not so closely furnished. These are the more decided of the forms, but in others the colour is intermediate, and in some the lip is rather square than oblong. Of the durability of the flowers a fair notion may be formed when we state, that some of the spikes which commenced blooming towards the middle of November are now scarcely beginning to show symptoms of decay.

The lively colour of the flowers of this Limatodes rosea, whose spikes are somewhat comparable to those of Hyacinths, the long persistence of the flowers themselves, and the facility with which the plants may be grown in small-sized pots, so as to admit of their being arranged without inconvenience in drawing-room or conservatory flower-stands, prove it to be in reality one of the best of winter decorative plants instead of being worthless or nearly so, as it has been considered. When cultivated for this purpose single bulbs will probably be found preferable; these may be grown successfully grown in five-inch pots, and with good management may each be depended on for the production of a spike of flowers.

The secret of successful cultivation, as explained to us, consists in NOT partially drying and restoring the plants as soon as the leaf-growth ripens off, but continuing the same amount of moisture as is necessary through the growing season, until after the blooming period. The failures which have occurred, and which have gained for the plant an undeserved bad name, have resulted from starving the plants just at the time when the flower-scapes were forming. This is by all means to be avoided. The proper course of treatment is to rest the plants after their winter flowering until April, and then to repot as necessary and start them into growth, obtaining by all available means a vigorous growth in the foliage and pseudo-bulbs. Towards autumn the leaves will decay, and the flower-spikes will commence pushing from the base of the bulbs, and until these latter have been perfected, the ordinary supply of moisture is to be kept up. The plants require a growing temperature of from 65° to 70°, and about 55° during the resting period. ——*

THE HORTICULTURE OF THE FAR EAST.

THAT there is nothing new under the sun is an old proverb, the truth of which is denied as often as it is admitted, and yet how often do we find its veracity confirmed most unexpectedly. A case of this kind has recently occurred; with us the passion for plants having variegated foliage is but the growth of the last few years, but in Japan these plants have been quite as popular for ages probably as they are now here. Many of their favourites have already been imported into this country, but it is highly probable that there are yet many more to come. Thus we had first the yellow blotched Farfugium grande, which found its way to us through China. More recently we have had a Bamboo, the foliage of which is clearly and distinctly striped with white; one of the dwarf Fan Palms marked in the same way; a pretty form of Serissa fœtida with a narrow white margin to the leaves, as well as a line along the midrib; two variegated varieties of Osmanthus aquifolius, a Holly like shrub, one of which is much more dwarf and dense-growing than the other; a pretty little bushy plant called Damnacanthus spinosus; a new Box tree, introduced under the name of Buxus obcordata variegata; a variegated variety of the old Illicium anisatum; Sedum carneum, the glaucous leaves of which are edged with creamy white; a variegated Maple (Acer heterophyllum); two species of Podocarpus, with foliage more or less blotched, and several other allied trees remarkable for the same thing, as Thujopsis dolabrata, Retinospora obtusa, and R. pisifera, and Salisburia adiantifolia—the Fern-like leaves of which, striped with radiating white lines, have a beautiful effect. We should not forget, too, that the common kind of Aucuba which has been so long a favourite shrub in our gardens came originally from Japan; all the plants, propagated probably from a single stock, were males; we have now the fruiting plant, and its plain green leaves and orange berries will ensure for it as great a share of popular favour as that enjoyed by its predecessors.

Some plants which have recently been sent to this country enable us to form an idea of the state of horticulture better than any description could have done. We had all heard of the dwarfed trees of China and Japan, but few of us ever had the chance of seeing and examining them until this last year. It is perfectly astonishing to see the amount of industry and perseverance which the Japanese must have devoted to the production of these plants. There were some little Fir trees, not more than a foot in height, and yet I counted upwards of 50 ties by means of which the shoots were bent backward and forward in a zig-zag way. These little Pines must have been very old, and many years must have been spent in bringing them to this state, as their growth under these unfavourable circumstances must have been slow in the extreme. There was also a specimen of a Podocarpus, or Dammara, with oval leaves beautifully striped with pure white. This was a large plant 2½ feet high, and nearly as much through. It was evident that an old narrow-leaved Podocarpus, with a stem 2 inches in diameter, had been taken up, the roots cut in, and the stem headed down to within about 18 inches of the soil, and then the roots crammed into as small a pot as possible. The stem had been cut off horizontally, and a circle of scions of the oval-leaved species inserted between the bark and the wood. Most of these had grown, and as they grew the shoots were bent downwards, and twisted in and out, so that the stem was completely hidden in a dense mass of foliage. This interesting plant is now in the Royal garden at Osborne. There were many other plants which proved that the Japanese gardeners are very clever in grafting, and employ many modes of performing the operation. There was one specimen of a Retinospora, the branches of which were bent backwards and forwards as usual, and these branches had been grafted with dozens of scions, at intervals of about an inch apart. It was only one here and there which had failed; nearly all had grown well and made little tufts of shoots. Unfortunately this plant had died upon its voyage to England, and it is now deposited, with some other interesting examples of dwarfed trees, in the Coniferous case in the Museum at the Royal Botanic Gardens at Kew. Some Camellias which were sent home at the same time show that the Japanese understand and sometimes practise the inarching of plants.

Artificial rock-work is very popular in Japan, and the same idea is carried out among pot-plants, for it seems to be a very fashionable mode of cultivating plants to introduce a conical piece of rough sandstone, green with mosses, and to train the plant over and around it. In this way we have seen some examples of a new species of Rhynchospermum, with much smaller leaves, and not so strong a grower as the old and useful R. jasminoides; whether it will prove to be as free flowering as the latter remains to be seen, but should this be the case it will be a valuable addition to our collections. There was, also, a small-leaved Gaultheria-like plant, which had been trained in the same manner over a bit of stone.

The pots in which some of the Japanese plants were sent home, were almost as worthy of examination as the plants themselves. They were of very various, and, no doubt, of what is there considered very ornamental forms; but we should look upon them as being both inconvenient and ugly. In some directions the Japanese seem lavish of their labour; but in others they are very economical, if not niggardly. Thus, some of the larger plants were trained so as to exhibit one side only, and the surface of the porcelain pot on that side was decorated with paintings in that peculiar style, of which the willow-pattern plate may be taken as the type. The backs of these pots were left quite plain.

We should hardly have expected that a nation devoting so much attention to horticulture—a nation where every cottage has its own garden, where avenues of stately trees line all the principal roads, and where the whole surface of the country appears to be under cultivation—should be so far behind with regard to culinary vegetables and fruits, and yet all travellers who have visited Japan agree in their opinions concerning them, and declare that they are all insipid and flavourless. Our government officers have, however, already introduced all the most esteemed European fruits and vegetables, and they will, no doubt, soon be disseminated through these islands.

The most valuable plants which have hitherto been introduced from Japan are the Conifers, of which there are many distinct kinds, some of them differing so widely from anything we already possess that they will form quite a new feature in our landscapes. The nurserymen to whose exertions we are indebted for these new hardy trees are real benefactors to their country. These Conifers have recently been described at length in these pages, as have also some curious new forms of Chrysanthemums, which will probably produce new strains in this favourite flower, as the Chusan Daisy did a few years ago. *C. W. C.*

EXTRACTS FROM MR. J. G. VEITCH'S LETTERS ON JAPAN.

[We have again the satisfaction of giving a continuation of this very interesting correspondence.]

YOKUHAMA, JAPAN, *August* 15, 1861.

No. XIII.—ADMIRAL HOPE having kindly offered me a passage on board his flag ship the "Imperieuse," I completed all my arrangements for starting on the 17th ult., on the morning of which day we left for the Island of Formosa. We had rather a long voyage to this island, and did not make land until the 24th, when

we sighted the harbour of Jamsui on the N.W. coast, lat. 25° 12. We ran in as near the shore as possible, but did not land.

Jamsui is a small village in possession of the Chinese. At the present time no trade is carried on with Europeans. From this place we steamed up the coast to Ke-lung, one of the most northerly ports in Formosa. Large quantities of coal having been known to exist in the immediate neighbourhood of this place, the Admiral was desirous of inspecting the mines. The village of Ke-lung is situated at the base of a range of mountains from 1000 to 1500 feet in height. These hills are apparently extremely rich in coal; small holes are to be seen in all directions which have been made by the Chinese as entrances to their mines.

The inhabitants have little or no knowledge of mining. They dig up the surface coal until water drives them away, and then another mine is commenced. The mineral we saw however was very soft and poor, and offered but little encouragement to vessels going there to coal.

The country appeared to be in a high state of cultivation. The first crop of Rice had been gathered, and the second sown. The mountains were covered with brushwood, and here and there occasional clumps of trees. In the interior there is a high ridge of mountains running north and south, and said to divide the island into two almost equal parts. Peaks of this ridge attain an elevation of from 10,000 to 12,000 feet. The inhabitants of the interior and the east coast are savages, belonging to the Malay race. These Malays have a great hatred to white men, and murder all who fall into their hands. This I fear will prove a serious impediment to the island being explored for many years to come. The west coast alone is in the hands of the Chinese.

From Formosa we continued our voyage to Japan, passing through the Cecille Archipelago. These islands are apparently all of volcanic origin; several craters were distinctly visible, two of which emit smoke. No sign of inhabitants or the slightest particle of vegetation were to be seen.

We had a very pleasant run up to Yokuhama, where we safely arrived on the 5th inst., and I shall ever feel grateful to Admiral Hope for his kindness in taking me up with him, and giving me the opportunity of becoming acquainted with the management of a British man-of-war, where everything is carried out in the most perfectly systematic order, so different from a merchant ship, and even from the magnificently appointed steamers of the Peninsular and Oriental Steam Navigation Company. I must not fail also to express my best thanks for the attention and kindness shown me by the officers of the "Imperieuse."

The news from Yeddo is not very encouraging. You will, doubtless, have heard of the attack on the English Legation, and of Mr. Oliphant being wounded.

The opinions and views respecting this affair are very varied. Some think the Japanese Government have something to do with it; others that it was done at the instigation of one of the Princes (Dimus) hostile to foreigners. It appears that the high officers of Japan object to foreigners living in the capital of the empire, and that their wish is not so much to expel foreigners from the country as to confine them to a few ports. Mr. Alcock is still in Yeddo with a guard of 30 marines. Mr. Oliphant goes home again by this mail.

Business is tolerably brisk at the present time. Two vessels are now loading for London direct. Mr. Fortune left here on the 29th ult., so I have not had the pleasure of seeing him. Mr. Oldham, the gardener sent out from Kew, was here when I arrived, but has since left for Nagasaki. I have also had the pleasure of meeting Dr. Siebold here.

My enclosures in this letter are not large. The seeds were given me by an officer on board the Imperieuse. The woodcut I send is a perfect representation of a tree of Sciadopitys verticillata, growing in the garden of a Temple near here. It stands alone with nothing near it, and forms one of the most perfect and densest pyramids I ever saw. It struck me as being an interesting subject for representation in the *Gardeners' Chronicle*. J. G. VEITCH.

FACSIMILE OF A JAPANESE WOODCUT REPRESENTING A TREE OF SCIADOPITYS VERTICILLATA, FROM 40 to 50 FEET HIGH, NOW GROWING AT BOCHENJEE TEMPLE, NEAR KANAGAWA.

YOKUHAMA, *September* 4, 1861.

No. XIV.—Since my letter of August 15th I have received your letters of the 19th and 26th of June, for which I thank you. I am sorry that the 10th of June's letters have never come to hand. I regret this very much, as your letter of that date will probably contain a list of my last year's seeds that are growing. The letter may however, still turn up, and whether it does or not we must not complain, as we have been singularly fortunate hitherto, that being the only omission during 18 months.

Among the inclosures in this letter is a sketch of the Japanese mode of training fruit trees, to which I will refer more at length hereafter. An envelope contains a flower of a Rose found by Mr. Gower (probably Rosa microphylla), when he accompanied Mr. Alcock overland from Nagasaki to Yeddo. He has given me a plant, and should it prove a new one I should like it to be called R. Goweriana. Mr. Alcock has been exceedingly kind to me. I have been staying ten days at Yeddo with him.

The Legation House still bears marks of the late desperate attack. Walls besmeared with blood, cut screens and musquito contains, &c., are more or less visible in every room. It is a miracle that every one was not murdered. Mr. Alcock has now a guard of 30 marines with him, as well as some 500 Japanese soldiers who constantly surround the grounds. A second attack at present is scarcely probable. The greatest danger now appears to be that Mr. A. may be attacked when walking or riding out. The Japanese are very revengeful, and swear never to forgive a wrong. If a man is murdered his friends do not rest until they have had blood for blood. Months may elapse, but the day is almost sure to come.

Mr. Alcock gave me a guard of 10 Yaconins, all mounted and armed, to conduct me to the nurseries situated at Ogee, about 10 miles from the English Legation. I looked upon myself as a "most distinguished foreigner," as I beheld the 10 mounted soldiers behind me, and evidently greatly astonishing the inhabitants of that part of the city through which we passed. Our road lay through the same suburbs which I described to you last year. We passed by the immense moats which encircle the Emperor's palace, and which just now are covered with Nelumbium speciosum, with thousands of flowers open and in bud. Before arriving at the nurseries we had to pass by the establishments of three of the most powerful princes in Japan. These Dimus are believed to be hostile to foreigners, and as one is not so safe as formerly in Yeddo I must confess I felt pleased when I dismounted and walked into the first nursery.

I was more impressed than ever with the enormous extent of ground devoted to the culture of plants. It is difficult to form an opinion as to the quantity of land they cover, but they establish beyond any doubt the fact that the Japanese must be great amateur gardeners, and that large sums must be spent annually to support such numerous establishments.

The Japanese appear to prefer Evergreens, all kinds of Conifers, plants with variegated foliage, curiously trained plants, &c., and such as are ornamental in appearance, and can be seen all the year round, rather than flowering plants and such as lose their beauty with the flowers. I walked the whole day from one establishment to another, purchasing plants at each nursery as I went on. My impression is that a person might walk for six or eight days and still visit new ground.

All the proprietors received me most kindly, many remembering me as having been there last year. Tea was offered before leaving each establishment, and the good people seemed vexed if you did not take some My great regret during the whole time was that I could not find the means of transporting plants by hundreds and thousands to London. One canny

visit these places without being struck with their order, cleanliness, and general arrangement—different species of plants classed by themselves, so that one sees at a glance the extent of the whole collection. Every walk looked as if only just swept, and yet all were the same. The different proprietors of establishments appear to live in perfect harmony with each other, and there is apparently very little rivalry; upon one subject however, they are invariably unanimous, viz., to get as much out of the Tojen (foreigner) as they can.

In riding from Kanagawa to Yeddo, you pass through a village called Kawasaki, situated on the banks of the river Logo. People coming and going having to cross this river in a ferry boat, has caused this village to become of some importance. There are large numbers of Tea houses and gardens where travellers rest and refresh themselves. Amongst other things for which this village is famous are its fruit gardens. A large extent of ground is devoted to the culture of Pears, Plums and Peaches, a sketch of which I shall send in my next.

I am at present busy filling glass cases with various plants. I also hope shortly to send you a box of Ferns and one of Bamboos. I am also preparing one of bulbs, which shall be sent as soon as ready. Seeds will soon be coming ripe, and I hope to get a good collection of them for you before I leave. I am glad to hear that the Albion has arrived with so many plants alive.

J. G. VEITCH.

THE YEAR 1861 AT WEYBRIDGE HEATH, SURREY.

Wind.		Weather.	Departure from average of last six years. +, *above*; —, *below*.
Prevailing Winds.	On Days.	Mean height of barometer inches 29.8714	inches .0174+
		Mean height of thermometer:	
		Highest in the sun, 67°.2974	1°.1364+
N.	19	Highest in the	
N.E.	48	shade .. .. 59°.0056	.5457—
E.	5	Lowest .. .. 40°.7092	.2142+
S.E.	10	Mean temperature .. 49°.9231	.1157—
S.	16	Rainfall .. inches 21.0525	inches 3.3152—
S.W.	111	Number of wet days, 37	days .16 —
W	9	Number of days on	
N.W.	36	which rain, &c.,	
		fell 191	days 3. +
		Driest month, August	
		Wettest ditto, November.	
Highest Winds.			
January 26.		Range of barometer, inches 1.57	inches .24 —
February 21.		Range of thermometer, 79°.5	1°.33 —
March 8, 6, 7, 11, 12, 19, 20, & 21.		April 9 and 10. Barometer highest, inches 30.48	inches .095 —
August 3.		March 19. Barometer lowest .. inches 28 91	inches .145 +
September 14.		August 12. Thermometer highest:	
		In the sun .. .. 99°.	2°.3 —
November 5, 10, 13, and 14.		In the shade .. 90°.	2°.3 —
		Jan. 9. Thermometer lowest (in the night of) 10.5	1°.56 —

W. F. Harrison, Bartropps, Weybridge Heath, Jan. 1.

Home Correspondence.

Gourd Growing.—As the Royal Horticultural Society has decided upon offering prizes for the heaviest specimens of Gourds, it would not be inopportune to inquire how far, or if in any way, increase of size may be aided by conducting water or any other fluid to the Gourd by means of a piece of rag inserted in the peduncle. On the Continent this is commonly done, in the firm belief that the size and bulk of the fruit may thereby be increased to any desired extent. When quite a boy I used to feed my Gourds in this manner, either with water or milk, and they appeared to consume a good deal. I had forgotten all about it, when some time ago I saw the idea ridiculed in the *Gardeners' Chronicle*, on being brought forward by some Belgian Gourd grower. In my boyish days I was too much pleased with the success of my experiment to take into account how much of my milk and water was absorbed by the rays of the sun, but if I were to give my attention to the subject once more, I should certainly try again my former feeding process. Two basins full of water, placed side by side, and the one connected with the Gourd, the other not, would soon decide the point, whether the fruit derived any additional nourishment from the fluid especially provided. *Berthold Seemann.*

Trees for the Sea Coast.—Some of the correspondents of the *Gardeners' Chronicle* who have lately asked to be informed as to the trees best fitted for planting near the sea, may like to see the accompanying list of those that can be recommended as having stood the test of experience. Near the sea the young shoots of trees are as much hurt by the saline quality as by the mere force of the storms, summer or winter:—Evergreen Oak, best of all; Turkey Oak, Lucombe Oak, Pinaster, Austrian Pine, Pinus halepensis, Pinus Brutia, Pinus muricata, Ontario Poplar, Carolina Poplar, Black Poplar, Beech, Elm, Sycamore, Hippophae, Holly. Ash, bad; common Oak, worst of all. *S.*

Mildness of the Season in the West of Ireland.—The Primrose is frequently even now to be met with in full bloom; the spring Gentian (Gentiana verna), is well above ground in several places, although it does not generally appear till March, and the blackbird and thrush may be heard singing sweetly. Unhurt by frost, the long delicate fronds of the Maidenhair Fern are as green as at midsummer, and yesterday I gathered the Water Avens (Geum rivale) in good flower. The modest little flowers of the Spring Draba (D. verna), and the Rue-leaved Saxifrage (S. tridactylites), are everywhere to be seen in abundance. *F. T. Foot (Geological Survey).*

Notes and Queries about Ferns.—Could we get an occasional column devoted to jottings upon Ferns, I believe that many interesting facts might be collected together. This delicate and graceful family of plants now engrosses so much public favour, and Ferns are so easily imported, either by their dormant rhizomes or by spores, that we often find that a plant, unknown to the rest of the gardening world, has found its way into one or two gardens, and is cultivated there only until some nurseryman's traveller, or other person who knows its value, sees it and introduces it to the public. I know of several gardens where unique examples of Ferns exist—plants which it has never been attempted to propagate, and no means taken by which other gardens might be enriched by them. Without presuming to be masters of their subject, like Smith or Moore, there are few gardeners who really study their profession *con amore* who could not give some little scraps of information which would be not only interesting but valuable. There are points connected with the introduction and history of Ferns, peculiarities in their mode of growth, descriptions of those little details of treatment upon which success depends; upon these and many other topics the practical cultivator could give useful information. While at the same time there may be an equal number of subjects upon which he might like to ask questions, these by drawing forth replies might furnish information to others as well as to himself. There are a few points which suggest themselves to me while I write, upon which I should be very thankful for information. If the stems of some of the Tree Ferns be examined there will be found two or three small holes (usually three, arranged somewhat triangularly), just below the point of attachment of the base of the stipes. These holes vary in size; generally the middle one is the largest; I have seen them nearly the eighth of an inch in diameter, but most of them are much smaller. They are well seen in Cyathea canaliculata (from the Mauritius), and by rubbing off the silvery scales in the West Indian C. elegans; they exist also in many other species. By examining some dead stems which were collected on the sides of Clarence Peak, Fernando Po, and are now preserved in the Museum of the Royal Botanic Gardens at Kew, I found that the orifice communicated with a little closed chamber, as it were, just within the stem; these chambers were spherical in form and of about twice the diameter of the orifice. Now, I should like to know what office they perform—what is their use? No one who has studied Nature ever so superficially can doubt but that they serve some purpose; but what that purpose may be, I candidly confess I cannot imagine. The only plausible idea that ever occurred to me was that they might, perhaps, serve as reservoirs of water to encourage the growth of the aërial roots upon which Tree Ferns depend so much for their nourishment. Some of our readers may be able to furnish us with more definite information, or some botanist whose works I have never seen may have explained their mission, in either case I should be very glad of information on the point. The common Adder's tongue (Ophioglossum vulgatum) is a very difficult plant to cultivate. Why is this? Mr. Moore in his "Handbook of British Ferns" says, "It is one of those plants which seem to derive benefit from the shade of surrounding herbage, and in consequence gardenesque neatness is inimical to it." Acting upon this suggestion I covered some pans in which the Ophioglossum roots were planted, with the common Selaginella, thinking it would look more neat and serve the same purpose as the coarse Grass among which the plants originally grew. I tried many plans, but never could say that I had succeeded in growing this plant to my own satisfaction. It will be recollected that Dr. Seemann in the letter published in these pages describing his voyage to the Fiji Islands, mentioned a variety of the Ophioglossum which he saw growing in the Botanic Garden at the Mauritius. That plant was shortly afterwards sent by Mr. Duncan, the Curator, to the Royal Gardens at Kew. It had only one frond upon it, and although not differing much from the normal form of O. vulgatum, it was interesting as coming from so distant a habitat. I was accordingly very anxious to save it, if possible, as the plant was placed under my charge, and it was potted with as little disturbance to the soil about the roots as could be managed. The pot was placed on a shelf near the glass in the warm propagating-house, and the frond, which had looked rather shivelled when it arrived, soon gained substance and became of a darker green colour. Six months had not passed away before that plant had made more than a dozen fronds. In the same house were some Japanese plants which were kept there to encourage a free growth. Nothing had been done to disturb the soil in which they had been originally cultivated, and we were much pleased one day on finding that several fronds of an Ophioglossum were making their appearance around the stem of one of these plants. These plants were both nearly allied to our British form—would it not be worth while trying if it, too, would succeed better in heat than it does under cool treatment? Should this prove to be the case it will not be the only British Fern which can be more successfully cultivated in the stove than in a cool house or frame. There is, for example, Asplenium marinum, which in a stove temperature will make fronds three or four times as large as the finest native specimens. I have never yet tried the British form of the Ophioglossum under these circumstances, but it is evidently a plant which can adapt itself to a higher temperature, or it would not be found so widely diffused through the world, and therefore we have tolerably good grounds for believing that the experiment would succeed if fairly tried. *C. W. C.*

Mushrooms.—Your correspondent "W. C. E." may see here, if he comes this way, a house for the growth of Mushrooms quite as good as need be. It is 24 feet long, 11 feet wide, and 6½ feet high, with a walk in the centre 3 feet in width, and two beds 4 feet wide on either side; the bottom bed is on the floor; the second on wooden stages 3 feet from the ground. Ventilation is effected at both ends, and the house is heated with one 4-inch flow and return pipe. This house, though small, keeps us well supplied with Mushrooms all the year round, and notwithstanding a daily demand from the kitchen, I could now go and cut 40 dozen of Mushrooms. On referring to my vegetable book I find that since October 27, 1861, we have cut from this house 1121 dozen Mushrooms. As regards culture, I leave that to Mr. Ingram, who has far more skill and experience in such matters than myself. I may, however, just add that I get my spawn from Mr. Veitch at 5*s*. per bushel, and that I have always found it good. *J. Dell, Stoke Rochfort, Grantham, Jan.* 7.

Gas Heating.—Having noticed a statement in your paper to the effect "that there is no gas stove to be depended upon for use in a greenhouse," I beg leave to direct attention to "the Patent Heat Disseminator." Having one in my shop, and having seen one in use this and last winter in a friend's greenhouse, I feel some confidence in making the following statement. The Patent Heat Disseminator is a gas stove, invented by Mr. C. R. Wessel, of London; it requires no flue, and is so constructed as to be perfectly free from all noxious effluvium; it affords great warmth at a small expenditure of gas. The heated air given off is so pure as not to cause a leaf to fall, or even turn colour; it is in use in several greenhouses in this neighbourhood, and has in all cases given perfect satisfaction. This is certainly the great desideratum required for small greenhouses. *C. B. Dunn, Seedsman and Florist,* 10, *St. James's Street, Weston-super-Mare.* [If there is no mistake here the stove in question is important. But we should like to see its effects on a greenhouse after having been used there for a few months, no plants having been removed in that time.]

Neal's Pastils (see p. 1136, 1861).—I quite agree with what your Correspondent "J. R. T." states respecting these. I have used them with great caution three or four times, and in every case they have done a great deal more harm than good. In the first case I fumigated a 6-light Cucumber pit with only half a pastil, and the result was that every leaf was browned, leaving most of the insects alive. The second trial was with 60 fine Cinerarias and a quantity of Verbenas, and to my great disappointment next morning they were nearly as black as sweeps. It is also right to state that the pastils were only allowed to remain in the pits a short time. I have a quantity of them by me, but not upon any consideration would I use them, as I consider them injurious to any living plant. I am in no way desirous of injuring the sale of such an article, for if the patentee can manufacture a pastil that will kill insects as effectually as Tobacco and not injure foliage it would be a boon to gardeners, provided it was cheaper than Tobacco. *J. B., Caythorpe.*——Some time ago I procured two packets, each containing six pastils, for trial. My house is a low span-roofed one, 54 feet long and 13 feet wide. Intending to test the pastils well I procured three 48-sized pots, which I placed on the floor at regular distances apart. According to the directions I lighted three pastils and waited the result outside. When consumed the house was quite full of smoke. On entering I found the sensation anything but agreeable, the smoke causing such a tickling unpleasantness in the throat that I felt sure all insect life must be destroyed. Coming that way again after a lapse of 40 minutes I looked in to watch progress, when although there was plenty of smoke the aphis seemed unhurt. Resolved to effect a cure I lighted three more pastils and left them again; judge of my surprise when an hour afterwards I found the aphis still alive, the pastils gone, and plenty of smoke with a most disagreeable smell. Now the cost of these pastils was 2*s*., which at ordinary shops is the price of ½ a lb. of Tobacco; the latter has always been ample for my house, and the effects of it certain death to the insects. The pastils are therefore no cheaper, much less effectual, and 10 times more disagreeable than Tobacco. Many condemn the use of Tobacco by their gardener as extravagant, but I must hear better accounts of the pastils before I try them again. *P. B., Acton Hall, Notts.* [We hope it will be observed that we have never said one word in favour of the invention.]

Mistletoe on the Oak.—Until a few years since, a plant

of Mistletoe grew upon an Oak in the parish of Goitre, in Monmouthshire. I have myself never seen it *in situ*, but its existence was a matter of common notoriety, and I have seen branches which were brought from it. I believe the plant was wantonly destroyed. *C. A. B., Jan. 6.*

Muscat Hamburgh Grape.—To the evidence already educed in favour of this Grape, I may add that I purchased one in the autumn of 1860; I cut it down and grew it this last summer along with various other sorts of Vines. For pot culture I considered it quite useless, as it produced a very thin weakly cane compared with the other sorts grown in the same place. I however thought that I would see what it would come to. I placed it in a stove on the 3d of December last, with 18 other Vines in pots, and to my surprise the Black Hamburgh and Royal Muscadines did not break at all well. But the Muscat Hamburgh broke beautifully, producing two large bunches to every break; thus covering the little Vine with 18 splendid bunches, while at the same time the plant looked healthy and strong. I am therefore of opinion that this variety will never fail to be a good bearer. *G. C. T.*

Alva.—I find the upholsterers stuffing mattresses with Alva (as they call it), of which I enclose a specimen. Will you kindly tell me—1. Is it not chiefly Zostera marina with some seaweed mixed? 2. Whence comes the name Alva?" Is it a corruption of Alga? Your "Vegetable Kingdom" tells me that Z. marina is used for stuffing cottagers' cushions. If this is it, it has been promoted in the social scale. *R. C. B.* [It is Zostera marina undoubtedly. We imagine Alva to be a corruption of either Ulva or Alga; probably the latter, for Zostera is the Alga of Ray.

Societies.

ENTOMOLOGICAL: *Dec.* 2—J. W. Douglas, Esq., President, in the Chair. Mr. Adam White exhibited specimens of a species of Mantispa, of which a considerable number had been discovered alive on cutting open the remarkable nest of a honey-making species of wasp, Myrapetra scutellaris, recently received by the British Museum from Monte Video. It was supposed that the Mantispæ (of whose habits in the preparatory states nothing had previously been known) had parasitically destroyed the wasp brood. Mr. White also exhibited a new species of the family Buprestidæ allied to the genus Anthaxia, differing from every known species of the family in having horns upon the head. Mr. D'Urban exhibited a beautiful series of Lepidoptera from South Africa, collected by himself, and a memoir was read by Mr. R. Trimen, of Cape Town, containing descriptions of a number of the new species of butterflies in his own and Mr. D'Urban's collection. Mr. Barnard exhibited a fine series of beetles from Smyrna, and Mr. Stevens a number of beautiful butterflies collected at Mysol near New Guinea, by Mr. A. R. Wallace, who was stated to be on his way home from the Eastern Archipelago. A paper by Mr. Francis Walker was read, containing descriptions of new species of Lepidoptera in the collections of Messrs. Fry and W. W. Saunders. Mr. George R. Waterhouse read a paper on the British species of the genus Gyrophæna, belonging to the family Staphylinidæ, and Dr. Wallace communicated a letter on the capture of several specimens of Papilio Podalirius in Kent. It was announced that in future the monthly meetings of the Society will commence at 7 instead of 8 o'clock. This resolution is understood to have been adopted in consequence of so many of the members residing in the outskirts of London.

PUTNEY GARDENERS' FRIENDLY SOCIETY.—At a general meeting of this Society held on Tuesday evening last for the purpose of determining by ballot the propriety of adopting a motion brought forward in committee at a previous meeting by Mr. J. Gray, and seconded by Mr. R. Goddard, that the superannuation pay should be increased from 4*s.* to 6*s.* per week, Mr. Gray, in support of his motion, in a brief but statistical speech congratulated the Society upon its gradual but steady increase of members since its formation, now 30 years ago, as well as upon the satisfactory state of its funds. Several members followed, some for, others against the proposed advance of pay. Mr. W. Digby objected to the motion, on the ground of the already increasing expenditure. Mr. Wm. Cale strongly recommended caution and wise consideration before approaching the ballot-box, lest, like many other similar societies, once as prosperous as this, it should be betrayed into future and irretrievable difficulties. Mr. Gray then took the sense of the meeting, when there appeared a majority of 21 against the motion.

Notices of Books.

The Alps; or Sketches of Life and Nature in the Mountains. By H. Berlepsch. Translated by the Rev. L. Stephen. Longman & Co. 8vo.

This book is a welcome addition to our literature of the Alps, and one that will be read with interest by all who have visited Switzerland, or who hope some day to do so. And in one or other of these two classes may not the greater number of us be ranked? To those who have once gazed on those noble mountains, there is a charm in their very name; and the slightest and flimsiest diary of a few weeks' tour in Switzerland is sure to be read. But the volume before us is not a mere itinerary; indeed it can in no sense be called a book of travels; for though it is obviously written by one who has often visited the Alps, nay more, who must have penetrated to secluded districts rarely reached by strangers, this is only left to be inferred. The author is nowhere prominent; seldom indeed even mentioning himself. He has made the Alps his study, and in this volume has set before himself the task of describing them under all their various aspects, with their inhabitants, and the different modes of life pursued there. To fulfil this task he brings a keen appreciation of the beauties of Nature, with considerable powers of observation, and an intense love of his subject; and if to English ears his glowing descriptions are at times somewhat prolix, this must be partly laid at the door of the translator, who has not sufficiently borne in mind that German should not be literally translated, but freely rendered into English. In consequence, many portions of the book are not only heavy, but involved, occasionally indeed so much so, as to raise a suspicion that the translator has failed to catch his author's meaning.

An idea of the poetical but rather ponderous style of M. Berlepsch, will be best conveyed to our readers by a few examples. Take, for instance, his description of "granite."

"Granite is a symbolic substance—it, in common with marble, is the historic stone. As amongst beasts the lion ranks as king, being the representative of noble qualities and physical power, as amongst plants the Oak presents a picture of firmness and endurance, of proud contempt of storm and weather, so granite represents all that is unconquerable and unchangeable in the kingdom of dead inorganic matter: it is, in the narrow material sense, a substance of eternal duration. Where monuments were to be erected for the most distant human races, visible pillars for the annals of history,—where Egyptian dynasties raised the colossal tombs of their kings in those pyramids which are still wondered at, on the borders of the desert, as the mightiest works of human power,—there the bold architect grasped the granite rock and thought that he had saved a scrap from the destruction that awaits everything wrought by human hands. The earlier inquiries into natural science constructed our earth's kernel of granite, and saw in it the grandfather of the whole mineral kingdom, and naïvely called it the "Urgestein," the primeval stone. And yet it only marks one punctuation in the history of the world's creation, an unimportant second in the cipher of eternity, a thing of the past, which will dissolve as it has arisen."

"The Fabric of the Alps" is the title of the first chapter, and this is succeeded by several more, in which M. Berlepsch investigates the geology of the different portions of the chain: indeed, from th prominence given to this subject, it would appear to b the author's favourite study. Even amid the mysteries of granite and limestone, however, he has still an eye for the picturesque; beauties are sought for in a loving spirit, and found in the most unpromising scenes; and where absolutely none exist, a wild legend of the peasantry keeps the attention alive, and fixes the scene in the mind. Thus "a legend tells how the Schrattenfluh at Entlebuch was once one of the best pasturages in the country, and belonged to two brothers who ruled over it in common. One of them having become blind, they resolved to divide their possessions, and the one who could still see was intrusted with the division. He however took advantage of his blind brother, put the boundary stones wrong, and took for himself the largest and best part of the Alp. When the blind man was told of this, he spoke to his brother about it. The brother however forswore himself, saying, 'the devil might take him and destroy his meadow, if he had not shared it quite fairly.' Then arose a fearful storm, the hills shook, Satan appeared, and the oath was fulfilled. The devil stripped off all the turf and useful soil from the mountain, and that with such zeal and envy, that the marks of his claws are still to be seen in the slope of the channels in the rock. Whilst the blind man's meadow remained unhurt his brother was carried off to hell. If we except the machinery of the story, there is real and deep sense at the bottom of this legend. The unreasoning hand of man, which robbed the mountains of their forests, so that the ground was left unprotected to be destroyed by the weather, was the devil's fist which laid waste the mountain."

The various phenomena of the Alps, their landslips, avalanches, thunder and snow-storms are vividly described, and many fearful catastrophes and striking adventures narrated; but for these we must refer our readers to the book, as they are mostly too lengthy for extraction. Nor are the more peaceful aspects of Nature overlooked: the forests, the waterfalls, the glaciers, all are appreciated and commented on; though it must be admitted that the details given are rather those which would be observed by one who admires, than by one who really understands. We allude more particularly to the account of the glaciers, which shows but a superficial knowledge of the subject. Indeed, though M. Berlepsch seems to have studied many German works on the different phenomena of the Alps, he does not appear to know much of what has been written and done by Englishmen; his references to English ascents and observations being chiefly confined to Prof. Forbes' work, and to such notices as he has gleaned from newspapers. As a proof of this, it may be noticed that Dr. Tyndall's name does not once appear in the body of the work!

Of the various subjects treated of, probably the "Ban-forests" are the least familiar to the "roving Englishman," especially those few which claim to be considered as primeval forests, for these "are only to be found in the rarely populated and densely wooded cantons of the Valais and the Grisons; and even there only in the territory of those communes which have had a superabundance of wood, or whose forests lie in part so deeply sunk in inaccessible mountains, that the expense of transporting the wood when cut down would eat up the profit derivable from its actual market value."

These, however, are exceptional; in the ordinary sense of the word "every mountain village has ban-forests, if it is shut in by steep valley walls, and therefore exposed to avalanches, falls of stones, or land-slips. These ban-forests are kept up from motives of prudence, not from neglect of the forests on account of superabundance of wood. . . The office of the ban-forest is to hinder by its mass of strong upright stems, the breaking loose and sliding down of the vast heaps of snow that accumulate in the winter, and thus to prevent the formation of "ground avalanches," not, as is commonly supposed, to hold up avalanches already started, like a dam. . . . The inhabitants of the Alps saw this necessity centuries ago, and therefore spared particular forests, placing them under the 'ban,' *i. e.*, declaring it unlawful to touch them." M. Berlepsch's description of one of these forests may interest some of our readers, and we will therefore give it, though necessarily in an abridged form. "All ban-forests consist almost entirely of "needle" wood, especially of Pines (Pinus cembra) and Larches (Pinus Larix), which predominate in the Eastern Alps, and rise in close masses to a height of 6000 feet above the sea; and of Firs (Pinus Abies) and "Kiefern" (Pinus sylvestris), which form a larger part of the western forests, and whose boundary is at 5500 feet above the sea. The wood of the Alpine trees, which has grown much more slowly under the hindering climatic influence of long winters, is far tougher, harder, and firmer, showing narrower yearly rings than that of the quick-growing forests of the hill country or lowlands, with their roots in richer soil. Therefore not only does the tree of the Alpine forest have a far rougher appearance at an age when, in the lowlands, it is looked upon as already grown up ready for felling, but its growth is also more repressed, more self-willed and stubborn; although, when it has arrived at its growth of many centuries, it is not shorter on that account than the Pines and Larches of the lowlands. Very little of the 'leaf-wood' occurs in the high forest-lands. The only trees which are extended to some degree here and there are the mountain Sycamore (Acer pseudo-platanus) and the white-stemmed Birch (Betula alba), which grow up to 5000 feet. Farther up above these limits, the forest ceases; the trees stand no longer in continuous ranks; they are in scattered groups, and at length pass into dwarf forms, or the so-called "knee-timber." The life of the smallest and lowest vegetable organisms of the 'leaf' and 'liver' Mosses, and of the Lichens, is most strongly developed in these woods. Rich fields of discovery are open to the lovers of Mosses on the granite backbone and watersheds of the Alpine chain. People have scarcely a right conception of the luxuriant fulness of the cushion, often swelling a foot in height, which the Mosses form on the ground over considerable tracts. In the lighter places and open forest glades the grey-green Bilberry bushes (Vaccinium Myrtillus), Wood-Sorrel (Oxalis acetosella), the common Spurge Laurel (Daphne mezereum), the bullet-headed Burdock (Carduus personata ?), the creeping snake-like Earth-Moss (Lycopodium annotinum), the boldly rising circles of Fern, the Aspidium lonchitis, lobatum, Cystopteris montana, and Polypodium alpestre, the white Veratrum album, and in still more open places, the low creeping Juniper (Juniperus nana), the Hypericum montanum, the Meadow-Rose (Epilobium alpestre ? and Gesneri ?), with its carmine-coloured coronals, the charming Heath-like Azalea procumbens with its leathery leaves, and many other Alpine plants, have climbed up and predominate over the Mosses.

"The grey-green Bearded Lichens (Usnea barbata) hang down in long rough tufts from the withered boughs; not a thread of these lazy streamers moves in the calm mid-day heat, but if only a light breath of wind stirs in the forest, it swings and waves strangely through the deep twilight. In the Engadine forests a variety (Usnea longissima) occurs, which spins long streamers several yards in length. On the Larches, on the contrary, grow especially the ochre-yellow Riband Lichens (Evernia divaricata ?), and mixed with them the mane-like Moss-beard (Bryopogon jubatus ?), called also Black-bearded Lichens (Alectoria jubata), because their extremely fine hairs, more than a yard long, have a deep brown colour." In the above extract we have placed a query against several of the botanical names; whether these mistakes have been made by M. Berlepsch or his translator we cannot say, but they are by no means exceptional instances; many lists of plants are given in the book, but nearly all contain one or more errors.

With equal vigour and minuteness the inhabitants of these regions are described. Chalet life is stripped of its romance, and depicted as it really is, a hard, monotonous round of existence, with scanty fare and dirty huts. The goat-boy, the wild-hay cutter, the timber feller and floater, the chamois hunter, are all touched upon, and their precarious and perilous occupations described; but for all this we must refer our readers to

the pages of the book itself; it will amply repay a perusal.

We cannot conclude without noticing the illustrations, which are apparently fac-similes of those in the German edition. They are unequal in execution, but the greater part are excellent and characteristic, and far superior to the gaudy chromo-lithographs which have of late been such favourites with English publishers.

A Popular Account of Missionary Travels and Researches in South Africa. By David Livingstone, M.D. Murray. Fcap. 8vo., pp. 436.

This is a smaller and slightly abridged edition of Dr. Livingstone's celebrated "Missionary Travels." All the best plates and cuts contained in the larger edition, and also Arrowsmith's capital map of the Doctor's route, are reproduced; and so far as we have been able to discover nothing of any real value has been omitted from the present volume. The "Popular Account," though smaller than the original work, is as useful and interesting, as it is more readable from being less prolix.

In the *Botanical Magazine* for January we find the following subjects figured:—*Stanhopea Wardii*, a fine and fragrant species from Guatemala, in this instance having golden yellow flowers, with numerous small spots on the sepals and petals. "One of the most striking features of this flower is the colour of the cavity formed at the base of the lip, lined, as it were, with dark velvety purple, reflecting a silvery light, and giving it the appearance of being frosted." *Rhodanthe Manglesii maculata*, the *R. maculata* of Drummond, and the finest of the Rhodanthes yet discovered. It differs from the common form in being everywhere about twice the size, in having more ovate leaves, and in the base of the involucral rays being much deeper coloured, showing a dark blood-crimson ring around the yellow disk. This plant, which has been obtained by Mr. Thompson, of Ipswich, from Western Australia, obtained a First-class Certificate from the Royal Horticultural Society's Floral Committee. *Malortiea gracilis*, an elegant dwarf and very graceful Palm from Guatemala. It has the broad lobes of its scarcely pinnated leaves, split up at the base so as to become fenestrated, whence it has sometimes got the name of Chamædorea fenestrata. *Anemiopsis californica*, a curious perennial herb belonging to the order Saururee. It has blunt elliptic leaves, and the oblong spadix, which terminates the flowering scape, is subtended by an involucre of about six petal-like whitish spotted bracts, the whole inflorescence having very much the aspect of one of the flower-heads of those composites—Obeliscaria, for example—in which the disk is columnar. It is not an ornamental plant. *Oncidium cucullatum*, a handsome species, one of the finest of the genus, from its ample panicle, its large-sized golden-yellow flowers, and their bright cinnamon spotting. The base of the lip is "excavated with a deep pit on the under side," which has suggested the name.

With the present year is commenced the *Florist and Pomologist*, a monthly periodical, which though a continuation of, and based upon the "Florist," established by the late Mr. Beck, is so far different in form and character, as to be the commencement of a new work rather than of a new series, having, as the editors express themselves, "higher aspirations, and greater obligations to fulfil." It had been previously announced that the book was to be enlarged to a royal octavo size, in order to give more scope for the illustrations, and obviate the cramping and crowding of the subjects which in many cases were too obvious in the plates of the old series; that two plates were to be the monthly instalment; and that the important subject of Pomology was to have an equal share of favour with that of which the work had hitherto been immediately the organ, namely Floriculture.

The first issue, now before us, is of this increased size, with fewer pages indeed, but with about the same amount of reading matter in consequence of the larger page and some changes of typography. The illustrations consist of an admirably drawn and coloured figure, by Mr. Fitch, of Sunset Pelargonium, one of a new race of golden tricolor-leaved varieties of great beauty independent of their flowers; and the Northern Spy Apple, by Mr. Andrews, not quite so satisfactory as the former in the adjuncts, though the fruit itself is very well represented. In addition to the articles referring to these illustrations, some of the more important are those on the Trebbiano Grape, which Mr. Tillery calls "one of the most valuable white Grapes grown, for keeping late;" a thoroughly practical paper on Chrysanthemums, by Mr. Holmes; on small *versus* large pots in the culture of Pine Apples, in which Mr. D. Thomson decides in favour of the first, and promises some reasons hereafter; some notes relative to Roses, by the Rev. W. F. Radclyffe; and the results of an attempt at Indoor Gardening in a locality "bounded by Drury Lane on the east, and St. Giles's on the west," of which the auther writes hopefully. There are besides Contemporary Notices, Notes on Nurseries, and Calendar of Operations, which latter we perceive is supplied by some leading hands. Altogether this is a good shilling's worth, and we wish the work in its new form all success.

TRADE LISTS RECEIVED.—Plymouth Seed, Agricultural Implement and Manure Company. General Price Current for 1862.——Langlois and Jamin, Marchants Grainiers, 5 Quai aux Fleurs, Paris. Trade Price List (Prix Courant pour Marchands).——Butler and McCulloch's Spring Catalogue of Choice Flower, Shrub, Tree, and Vegetable Seeds, Covent Garden Market. We find here a fine set of Ornamental Gourds, &c. The total number of seed articles offered is 2347.——Catalogue of Hymeno-phyllums and Trichomanes. By J. Backhouse & Son. York, 1861. This pamphlet of 15 pages is much more than a mere trade catalogue, though prepared and issued for trade purposes. The Film Ferns have always been recognised, as indeed they richly deserve to be, as "the gems of the Fern tribe"—to use Messrs. Backhouse's expression; and these gentleman have long been known as the possessors of one of the most extensive collections of them. The result is before us in the shape of a descriptive list, in which are recorded no fewer than 27 species of Hymenophyllum, and 43 of Trichomanes, a number which, even allowing for diversity of opinion as to the value of the differences between some of the plants, would have been regarded as incredible but few years since. "All these," they tell us, "are in our possession as *living* plants." In a low span-roofed house, heated by warm water circulating in open brick tanks, and slightly shaded, the tropical species are found to thrive well without glass shades or other special means of protection. This list cannot fail to interest those who admire the group of Film Ferns.

Miscellaneous.

Mosquitoes.—But of all the insect pests that beset an unseasoned European the most provoking by far is the truculent mosquito. Next to the torture which it inflicts, the most annoying peculiarities are the booming hum of its approach, its cunning, its audacity, and the perseverance with which it renews its attacks however frequently repulsed. These characteristics are so remarkable as fully to justify the conjecture that the mosquito, and not the ordinary fly, constituted the plague inflicted upon Pharaoh and the Egyptians. Even in the midst of endurance from their onslaughts one cannot but be amused by the ingenuity of their movements: as if aware of the risk incident to an open assault, a favourite mode of attack is, when concealed by a table, to assail the ankles through the meshes of the stocking, or the knees which are ineffectually protected by a fold of Russian duck. When you are reading, a mosquito will rarely settle on that portion of your hand which is within range of your eyes, but cunningly stealing by the underside of the book fastens on the wrist or little finger, and noiselessly inserts his proboscis there. I have tested the classical expedient recorded by Herodotus, who states that the fishermen inhabiting the fens of Egypt, cover their beds with their nets, knowing that the mosquitoes, although they bite through linen robes, will not venture through a net. But, notwithstanding the opinion of Spence, that nets with meshes an inch square will effectually exclude them, I have been satisfied by painful experience that (if the theory be not altogether fallacious) at least the modern mosquitoes of Ceylon are uninfluenced by the same considerations which restrained those of the Nile under the successors of Cambyses. *Sir J. E. Tennent's Natural History of Ceylon.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Watering should now be conducted with great care. Keep newly potted plants close, and when the weather is favourable syringe a little, so as to maintain a healthy condition; until the growth of the plants, however, shall have indicated that they have taken to the fresh soil apply water very sparingly at the root. Luculias in pots should be encouraged in order to get them in flower before those planted in the conservatory border, for it is desirable to prolong the blooming season. In stoves an increase of night temperature may now be allowed. Maintain a moist atmosphere, and give no quarter to insects of any kind. Auriculas in pits or frames must now be looked over; give them air during the day. Pot Tuberoses, and when fine give air to Mignonette and Stocks; Neapolitan Violets in frames may be forwarded by being closed early in the afternoon and in pots by keeping them in a temperature of 55°. Examine buds of forced Roses for caterpillars, and fumigate occasionally for green-fly.

FORCING DEPARTMENT.

PINERIES.—Young plants growing in open beds that have been some time planted will be benefited by having the soil loosened up as deeply as can be done without injuring the roots, giving it a liberal soaking of tepid water if it be found to be too dry. The water should be applied by means of a pot with a rose on it, and not so fast as to flood the surface, for if this is done the soil will be rendered almost as close as before forking up; indeed, careless watering is the great cause of the surface of the soil becoming close and hard, and should be carefully avoided. Endeavour to afford a nice regular bottom-heat, with a thoroughly moist atmosphere, and keep the plants growing as freely as may be consistent with preserving them dwarf and bushy. Have a constant eye to maintaining a succession of fruit, or securing a supply at the season when it may be most wanted, and let the treatment of the plants be regulated according to your circumstances; this is a matter which demands considerable forethought, and which can be successfully managed only by careful observation and attention.

VINERIES.—Take advantage of all favourable opportunities to admit fresh air as freely as can be done with safety, and be satisfied with as low a temperature from fire-heat as may be considered safe under the state of the Vines, but shut up early, allowing the thermometer to rise considerably. This will to some extent economise fuel, and will be much more congenial than much fire-heat. Except where Vines are in flower keep the atmosphere moist, but the foliage should always be allowed to become perfectly dry in the course of the day. As the Grapes are cleared from late houses, prune and wash the Vines with soft soap, and a little soot and lime; also thoroughly clean the woodwork, glass, &c., and have everything clean and ready for next campaign.

PEACHES.—Admit air freely whenever the weather is mild, and keep the atmosphere moist, maintaining a steady night temperature of about 50°. Very early houses in which the fruit is set should be afforded a nice growing temperature, syringing liberally to prevent red spider, and keeping the border in a healthy state as to moisture, to secure a vigorous root action.

CUCUMBERS.—These may now be kept at from 50° to 55° by night, and 65° to 70° by day, with a steady bottom-heat of about 80°, which, combined with a thoroughly moist atmosphere, will induce free growth. Keep the shoots thin near the glass, and attend to stopping, &c., as may be necessary.

MELONS.—For early crops sow now; pot in small pots when strong enough; keep near the glass, and either plant out or pot into large pots, using properly warmed, rather strong turfy soil. Sow for succession at intervals of about a month until May.

FLOWER GARDEN AND SHRUBBERIES.

Now that there is no frost look over beds planted with bulbs, and where necessary stir the surface, so as to keep the soil open and friable, and also to give it a fresh appearance. Trap mice, which are often very destructive to bulbous plants. Look well to Dahlias and Hollyhocks; the latter when planted skilfully produce an excellent effect, and therefore especial attention should be paid to having a good supply of them.

HARDY FRUIT AND KITCHEN GARDEN.

Push forward all alterations requiring attention here with the least possible delay. Manure and dress Asparagus beds and pay every attention to Cauliflower plants under hand-glasses in order to forward them as much as possible. Bush fruit, such as Gooseberries and Currants, may now be pruned; also get the ground amongst them manured and lightly dug, but in doing that take care not to injure the roots. See that early Peas are not injured by mice or birds.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the Week ending Jan. 9, 1862, as observed at the Horticultural Garden

January.		Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind	Rain.
Friday	3	3	30.078	29.745	43	27	35.0	41	41½	S.W.	.00
Satur.	4	4	29.830	29.713	45	26	35.5	41	41	N.	.00
Sunday	5	5	29.835	29.677	50	21	35.5	41½	41	W.	.00
Mon.	6	6	30.052	30.044	48	30	39.0	41½	41	N.W.	.00
Tues.	7	☽	30.061	29.897	52	27	39.5	41½	41	N.W.	.16
Wed.	8	8	29.725	29.619	50	27	38.5	42	41	W.	.14
Thurs.	9	9	29.697	29.568	54	43	48.5	43	41½	S.W.	.08
Average			29.897	29.756	48.8	28.7	38.8	41.6	46.1		0.38

Jan. 3—Uniformly overcast, hazy; overcast.
— 4—Clear and fine, densely overcast, slight frost,
— 5—Cloudy and fine, frosty at night.
— 6—Sharp frost; very fine, overcast.
— 7—Overcast and fine, cloudy, slight frost; rain at night.
— 8—Rain; overcast; fine, clear; slight frost, rain.
— 9—Rain; drizzly; fine in the evening; rain at night.
Mean temperature of the week 2¾ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Jan. 18, 1862.

January.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	12	42.1	30.7	36.4	15	0.76 in.	2	7	3	3	6	10	4	1
Mon.	13	42.3	31.9	37.1	16	0.29	5	5	5	4	6	6	3	2
Tues.	14	41.9	29.5	35.7	15	0.80	6	6	[illegible]	4	3	6	3	[illegible]
Wed.	15	41.4	28.9	35.1	12	0.54	3	4	1	3	4	8	[illegible]	3
Thurs.	16	41.7	30.9	36.3	19	0.31	1	8	5	1	5	9	4	3
Friday	17	42.6	31.0	36.8	12	0.48	3	7	2	3	3	10	4	4
Satur.	18	42.5	31.5	37.1	15	0.55	1	[illegible]	1	4	7	10	6	4

(The wind columns N. to N.W. are headed "Prevailing Winds.")

The highest temperature during the above period occurred on the 14th, 1849, and 15th 1834 and 1852—therm. 56 deg.; and the lowest on the 11th, 1838—therm. 4 deg.

Notices to Correspondents.

ANTI CORROSION PAINT: *Noco.* We use it and are well satisfied.

BOOKS: *G H P.* Williams on Orchids is the best at present. We contemplate a complete series of articles on the subject very soon, by one of the best growers in England.

COTTON: *C J.* Eriophorum will not answer; nor could it be collected profitably. Improvement of such a plant is we fear hopeless. Three qualities are essential in paper materials. 1, Long staple; 2, felting quality; 3, fair strength.

GLAZING: *J S.* Unless you are subject to severe hailstorms we should say that Hartley's rough 16 oz. glass is strong enough. If you can by paint prevent iron cisterns from rusting they will do to hold water for plants. But you had better not try the experiment. You should use slate; or bricks set in good *genuine* Portland cement.

HEATING. *W B.* The plan, as far as we understand it, is complicated, and we do not see its advantages.

NAMES OF PLANTS. *Rochester*: 1. Perhaps A. melanoxylon; 2. A. armata; 3. Too young to be named.

RAMPION: *A Young Gardener* will never get or keep a place unless he writes better and more neatly. Mix the seed with river sand. Sow in fine light land in the end of May, but do not rake it in. Keep the bed moist. Thin to 4 inches apart. Draw the roots in November and during winter. In April the crop is over.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E C.
Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.
Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

Sharpe's Improved Swede.

CHARLES SHARPE AND CO., SEED GROWERS, Sleaford, beg to inform their friends and the public that they have this year grown and secured in fine condition a large breadth of the above valuable variety of SWEDE, and they will now be able to execute all orders entrusted to them, which, in consequence of the scanty supply the last two seasons, they were not always in a position to do.

C. S. & Co. take the present opportunity of remarking that extended cultivation has proved decisively the superior merit of their Swede, which has in all competitions with other kinds been placed in the first rank. Price on application.

CHARLES SHARPE & Co., Seed Growers, Sleaford.

CHOICE PRIZE SWEDES (DICKSON'S Selected) at the Birmingham Show.—The SWEDE TURNIPS exhibited by the Right Honourable the Earl of Lichfield—entry 105—at the show held at Bingley Hall, Birmingham, during the first week of the present month, and which took the First Prize there (the entries at the same time, and many by eminent agriculturalists, being very numerous) were from seed which we had the honour of supplying to his Lordship. Their quality in every way, as was universally admitted, was most excellent, at once showing the great advantage of having Seed saved in a proper manner from carefully selected and transplanted bulbs.

We have again saved in the most careful manner, from picked and transplanted bulbs, a large and fine lot of Seed for the sowing season of 1862, for which we are now booking orders at 1s. per pound, for delivery in the Spring, or sooner if desired.

PRICE LISTS of SEEDS, TREES, and PLANTS on application.

JAMES DICKSON & SONS, Seed Merchants, &c. 102, Eastgate Street, and "Newton" Nurseries, Chester.

NEW SEEDS for the KITCHEN GARDEN, the FLOWER GARDEN, and the FARM.

NEW PEAS raised by Dr. MacLean.—The two varieties now offered for the first time have been the admiration of all that saw them growing, both in 1860 and 1861. See "Gardeners' Year Book," pages 84 and 86. The stock is but limited.

WONDERFUL.—A first class second early white wrinkled Pea of robust branching habit, growing only 3 feet high, and producing a mass of pods from the bottom of the haulm, each pod containing from 7 to 9 large Peas of the most delicate flavour. In half-pint packets, 1s. 6d.

LITTLE GEM.—A dwarf green wrinkled Marrow of the height of Tom Thumb, more prolific, and earlier. A great acquisition, being very early, very dwarf, with the fine flavour of our best Marrow Peas. In half-pint packets, 1s. 6d.

BROCCOLI, GEORGE'S LATE WHITE.—A great acquisition. Per packet, 2s. 6d.

See opinion of Mr. THOMAS SMITH, Gardener to the Marquis of Londonderry, who says:—"I have grown it several years, and it is the best late sort I know. Heads white, large, and fine, to the end of May."

PARSNIP CHERVIL (Chærophyllum bulbosum).—Figured in *Gardeners' Chronicle*, October 5, 1861, which see. 6d. per pkt.

CUCUMBER, WILSON'S PROLIFIC.—A first rate variety for summer or winter use. 1s. per packet.

MELON, ECLIPSE.—This superior green flesh variety is a cross between Scarlet Gem and Orion, partaking of the rich flavour of the former, and the fine melting properties of the latter. It obtained a Certificate of Merit at the Botanic Society, and First Prize for green flesh at Brighton, the only two places exhibited. Highly recommended. 2s. 6d. per pkt.

BETTERIDGE'S FINE QUILLED ASTERS.—The Seed saved from this splendid collection—so successful in maintaining the leading position at the great Exhibitions—is entirely in CHARLES TURNER'S hands for distribution.

12 distinct varieties (with hints for their culture) .. 3s.
Fine Mixed Seed, per packet .. .. 1s.

And all NEW ANNUALS worthy of cultivation.

TURNER'S GOLIATH SWEDE, 10d. per lb.

Mr. WILLIAM STATHAM, of South Lea Farm, Datchet, thus writes of the Goliath Purple Top Swede:—"I have 15 acres all equally good, grown without artificial manure, and with only a moderate cost of farm dung. Although my neighbours complain generally of their Swedes this year, I never grew finer, and approve very much of this sort."

TURNER'S WHITE SWEDE, 10d. per lb.
FISHER HOBBS' ORANGE GLOBE MANGEL, 8d. per lb.
ELVETHAM LONG RED MANGEL, 8d. per lb.

These are all saved from carefully selected stocks, and have been harvested in fine condition.

The GENERAL SEED CATALOGUE, containing all that is new and good in each class, as well as all the useful Culinary Roots, is just published, and will be forwarded gratis and post free to any address.

CHARLES TURNER, The Royal Nurseries, Slough.

Forest Trees and Coniferæ.

ALEXANDER PONTEY, of the Plymouth Nursery and Seed Establishment, begs to inform gentlemen intending to Plant and the Trade generally that his Nursery abounds with several hundred thousand TREES, which have been frequently transplanted to insure their growth.

A. P. also offers an immense stock of the finest and most useful CONIFERÆ for ornament and shelter, delivered free on any of the North Devon, South Devon, or Cornish Lines of Rail.

CATALOGUES with prices to be had on application.

Forest Trees, Ornamental and Hedge Plants, Fruit Trees, &c.

THE SUBSCRIBERS call the attention of intending Planters to the under-noted Stock at their Nursery, Longniddry Station. The plants are fine, and as the grounds have to be cleared they offer them at the following low prices. Terms cash, or three months acceptance.

TRANSPLANTED, the 1000.—Norway Spruce, 9 to 18 inches, 9s.; English Oak, 15 to 18 inches, 10s.; Laburnum, 10s.; Service, 8s.; Thorn Quick, 12 to 18 inches, 7s. 6d.; Beech, 10s.; Common Laurel, 60s.

TRANSPLANTED, the 100.—Irish Yews, 4 to 5 feet, 60s.; Cedrus Deodara, 24 to 30 inches, 200s.; Red Cedars, 9 to 24 inches, 5s.; Aucuba japonica, 20s.; Pinus Cembra, 3 to 4 inches, 3s.; Pinus Cephalonica, 10s.; American Arborvitæ, 18 to 24 inches, 10s.

SEEDLINGS, 2-years-old, per 1000.—Scots Fir, native, 1s.; Norway Spruce, 1s.; Austrian Pine, 2s. 6d.; Pinus maritima, 2s.; Balm of Gilead, 5s.; Chinese Arborvitæ, 10; Pears, 5s.

TRANSPLANTED FRUIT TREES, &c.—Pear Stocks, 15s. per 1000; Apple Stocks, 12s. 6d. per 1000; Gooseberries and Currants, of sorts, 60s. per 1000; Dwarf Apples, of sorts, 25s. per 100; Dwarf Pears, of sorts, 40s. per 100; Trained Pears, of sorts, 100s. per 100.

Besides the above a few other articles, see CATALOGUE.

DAVID REID & SON, Nurserymen and Seedsmen, Edinburgh.

To the Seed Trade.

THOMAS AYRES, SEEDSMAN and GROWER, Biggleswade, Beds., has to offer WHITE SPANISH ONION SEED, ALTRINGHAM and WHITE BELGIAN CARROT SEED; YELLOW GLOBE, ORANGE GLOBE, RED GLOBE, LONG YELLOW, LONG RED MANGEL WURZEL SEED; also several varieties of SWEDE and WHITE TURNIP SEED. Prices forwarded on application.

The "Student" Parsnip.

MESSRS. SUTTON AND SONS have the honour of offering to the public the Stock of SEED of this delicious and finely formed Parsnip, which was ennobled from the wild Parsnip by Professor Buckman, F.L.S., &c., of the Royal Agricultural College, Cirencester, who kindly entrusted to them the Seed, originally produced by himself, from which the present stock has been raised by Messrs. SUTTON & SONS, and who having sown it in their Trial Grounds have found it to be superior to any of the other sorts sown by the side of it.

This is exclusively in their possession; and may be had in Packets of 1s. each, containing 1000 Seeds (post free), direct from SUTTON & SONS, or through the undermentioned Firms who have ordered a supply. Additional names will be published in future Advertisements:—

Messrs. Hurst & M'Mullen, Leadenhall Street, London.
„ Beck, Henderson, & Co., Adelphi, London.
„ Noble, Cooper, & Co., Fleet Street, London.
„ James Carter & Co., High Holborn, London.
„ Wheeler & Son, Gloucester.
„ Barr & Sugden, King Street, London, W.C.
„ Butler & McCulloch, Covent Garden, London, W.C.
„ Charlwood & Cummins, Tavistock Row, Covent Garden, London, W.C.
„ Dicksons & Brown, Corporation Street, Manchester.
„ W. Drummond & Sons, Dawson Street, Dublin.
„ Dickson, Hogg, & Robertson, Dublin.
„ Wood & Son, Maresfield, near Uckfield
„ Peter Lawson & Son, 27, Great George Street, Westminster, London, W.C.
„ James Dickson & Son, 102, Eastgate Street, Chester.
„ James Garaway & Co., Durdham Down Nursery, Bristol.
„ Toole & Co., Seedsmen, Westmoreland Buildings, Dublin.
Mr. John Bell, Exchange Street, Norwich.
„ Charles Turner, Royal Nursery, Slough.
„ H. Brown, 4, Commutation Row, Liverpool.
„ Jno. Perkins, 52, Market Square, Northampton.
„ John Cattell, Westerham, Kent.
„ James Veitch, Jun., King's Road, Chelsea.
„ Robert Parker, Tooting, Surrey, S.
„ Robert P. Ker, 4, Basnett Street, Church Street, Liverpool.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Nursery and Seed Establishment, Dumfries, N.B. (ESTABLISHED 1787.)

THOMAS KENNEDY AND CO. beg respectfully to direct the attention of their friends and the public to their stock of NURSERY PLANTS, comprising FOREST, FRUIT and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, &c., adapted either for extensive planting, or for giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c.

Also to their stock of FARM and GARDEN SEEDS, which are very extensive, and being selected with the greatest possible care from SEED GROWERS of the highest standing in this and other countries, are guaranteed to be of first-class quality.

FREE DELIVERY.

All SEEDS (not Plants), under certain limitations, are delivered free of Carriage to the principal Railway Stations in GREAT BRITAIN and Steam Ports in IRELAND.

*** PRICED CATALOGUES will be sent, post free, on application.

Stirling, Scotland.

OUR CATALOGUE of SELECT VEGETABLE and FLOWER SEEDS, POTATOES, GARDEN TOOLS, &c., for 1862, is now ready, and may be had on application.

The distinctive features of this Catalogue are such as have commended themselves alike to the Gardener and Amateur. Being simple in arrangement, and sufficiently descriptive, a selection from its columns is rendered easy and satisfactory. Moreover, we still adhere to the system introduced by us several years since, of discarding, in the various sections, all comparatively inferior varieties, as well as omitting what are mere repetitions of the same sorts under different names.

*** Seeds Carriage Paid, as formerly.

W. DRUMMOND & SONS, Seed and Implement Warehouse, Stirling.

SEED ESTABLISHMENT, STIRLING.—In tendering our thanks to the many Noblemen and Gentlemen who have, for a long series of years, intrusted us with their orders for AGRICULTURAL SEEDS, we have satisfaction in stating, that to enable us to meet a large increase of business, we have greatly extended our arrangements for raising and otherwise securing more ample supplies of the leading kinds, all bearing the usual trustworthy character, thus enabling us to execute with certainty, all orders however extensive, with which we may be favoured. Our DESCRIPTIVE PRICED CATALOGUE will be ready in February, and, as heretofore, will be sent to our customers; also, post free to any address, on application.

In the meantime, we claim special attention to our ROOT SEEDS, which embrace several improved stocks of SWEDES and other TURNIPS, MANGEL WURZEL, &c; also to remarkably fine samples of all the varieties of CLOVERS, PERENNIAL and ITALIAN RYE-GRASS, NATURAL GRASSES, &c.

The Assortments of Seeds prescribed by us for laying down land to Permanent Pasture or Meadow, are the result of a lengthened experience, which, with the fact of our annually supplying seeds for several thousand acres, warrant us in recommending them with every degree of confidence.

W. DRUMMOND & SONS, Seed and Implement Warehouses, Stirling and Dublin, January, 1, 1862.

*** Stirling is most favourably placed in point of Railway accommodation, there being direct and constant traffic to all the principal Stations in Scotland and England, and by Steamers (via Glasgow), almost daily to the chief Ports in Ireland, thereby ensuring a speedy delivery of Goods, all of which (with certain limitations) we forward carriage paid.

GENUINE ITALIAN RYE-GRASS, produced from the second cut of Foreign "Italian," weighing up to 21 lbs. per bushel, and "Pacey's" and "Evergreen" Perennial Rye-grass, weighing up to 28 lbs. per bushel, can be supplied direct from the Grower either now or in March (at the option of the purchaser), and samples will be forwarded free on application.

Address SIMON A. DAINTREE, Fendrayton, St. Ives, Hunts.

LATE DRUMHEAD or CATTLE CABBAGE SEED.—The Subscriber has now for Sale a few Tons of the Seed of his well-known Late Cabbage, of Crop 1861, carefully selected and grown by himself, and which cannot be surpassed for purity of stock, size, quality, and hardiness. The seed is a fine sample, and having been in granary since harvest, is in fine condition and ready for immediate delivery.

Orders will be executed on receipt of cash, or a satisfactory reference to respectable parties in Edinburgh or Leith; and intending purchasers who may not be acquainted with the stock can be referred for information to some of the most respectable Seedsmen in England, Scotland, and Ireland.

Present price, in quantities of not less than 4 cwt., 5l. 10s. per cwt., put free on board at Leith or Granton, or on the Rail at Edinburgh. For price of larger quantities apply to the Subscriber.

Also for Sale, a few cwt. of EARLY and LATE or LARGE YORK CABBAGE SEED, carefully selected and grown by

JOHN GIBSON, Woolmet, Dalkeith, N.B.

WHEELER'S ORANGE GLOBE MANGEL.
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage-free by rail, and allow 5 per cent. discount for cash.

Our Book of FARM SEEDS sent free for 3 stamps.

J. C. WHEELER & SON, Seed Growers, Gloucestershire.

Change your Seed.

WM. JACKSON AND CO., NURSERYMEN and SEED MERCHANTS, Bedale, Yorkshire, beg to inform Agriculturists that they have grown large stocks of the following articles, all of prime quality, which are recommended. Orders should be sent now to secure a supply.

	per cwt.	p. ton.
YORKSHIRE REGENT POTATOES, seed sets	7s. 6d.	£6 10
DALMAHOY WHITE do.	8 0	7 10
FLUKE KIDNEY do.	9 0	8 0

JACKSON'S CHAMPION PURPLE-TOP SWEDE TURNIP.—For 15 years this kind has proved to be the safest and best cropping Swede, and is truly the Farmer's friend. Fine Seed, 1s. per lb.; much cheaper by the cwt.

JACKSON'S NEW GREEN-TOP SWEDE.—The best keeper known, and of extra quality. 1s. per lb.; cheaper by the cwt.

JACKSON'S IMPROVED GREEN-TOP YELLOW.—Very hardy, large, and of fine quality, a real yellow. 1s. per lb.; much cheaper by the cwt.

JACKSON'S IMPERIAL PURPLE-TOP HYBRID YELLOW. In feeding quality next to the Swede, which it much resembles. 1s. per lb.; much cheaper by the cwt.

JACKSON'S WHITE GLOBE, the best kind known. 9s. per lb.; cheaper by the cwt.

The prices by the cwt. can be had on application.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.

STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. HALL DARE, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, JANUARY 11, 1862.

THE exceptions to ordinary agricultural experience well deserve examination. Almost every instance of real improvement in the agricultural world has had its first illustration in an exception to the general practice, and though as progress advances it may ultimately happen that the old rule itself becomes the exception in the midst of a prevailing novelty, yet even here the instances which survive are instructive for the examples which they give of the influence of circumstances or the force of character.

One of the novelties of recent years is the Lois Weedon culture of clay soils—that form of the old Tullian husbandry by which it is alleged that successive crops of Wheat may be successfully grown from the same land year after year on all Wheat soils. And one of the strongest of our old beliefs—prejudice shall we call it?—which is only beginning to yield before the obviousness of the success which has at length rewarded the pioneers of steam cultivation—is in the especial fitness and economy of horse power for the tillage of the land.

The belief in horse power is certainly very far as yet from dying out, and that in Lois Weedon husbandry is hitherto by no means common; but both are together strikingly illustrated on a farm which we have lately visited in the county of Essex, and of which some account must now be given. It is not Lois Weedon husbandry which is here adopted, but it is a remarkably efficient tillage of the land by which fertility is on the same principle secured, so that though nearly all the straw and much of the hay made upon the land is annually sold, and though no manure is purchased in its place; and though Wheat and Beans and Peas are almost the only crops grown, and though very little bare fallow is either permitted or required, yet horse power well managed does so effectively maintain the cleanness and fertility of the land, that only recently its tenant described what he

had done with horses since harvest time as a "Protest against steam culture." We entirely believe in the success of steam cultivation, which he does not, and do not therefore see anything in his success which makes it an efficient protest against steam cultivation; nevertheless it is undoubtedly a remarkable specimen of successful horse cultivation, and we are therefore glad of his permission more fully to describe it.

The land, about 600 acres, upwards of 80 of which are pasture, lies upon the London clay formation—the greater portion of it being directly upon the clay, the remainder upon a greater or less thickness of intervening gravel. In some parts the soil where deep over this drifted material is as good and useful a loam as could be desired; elsewhere it is a stiffer gravelly adhesive soil, and over a great extent it is exceedingly difficult clay land. It lies on a gently undulating surface, so that surface water easily drains from it. Neither the Grass lands nor the fences on the clay portion of the farm indicate much natural fertility; and a great deal of the arable land in the neighbourhood is in a miserable plight—foul, wet, and badly cultivated. There is only a surface drainage of the land, except over the gravel subsoil, which provides a natural "thorough" drainage for only a small part of the estate; and where the surface drainage therefore is neglected, as it has been in some neighbouring fields, cultivation at once lands them in a perfect mess.

The farm is a remarkable illustration of the way in which good and energetic management has done all that agriculture is required to do, with hardly any aid whatever from the more modern methods and resources by which the farming of the present day differs from that of a quarter of a century ago. An exact record has been kept of its cropping since the present tenant has been in the occupation of it.

An abstract of this record will be found in the opposite page, and it will be at once admitted that the farm has been doing its share of the work of English soil in feeding the people. It is moreover one of the few cases which exist where the tenant of a farm has ultimately become its purchaser—so that profit as well as food has been derived from the cultivation of it. And all this has been done without the aid of artificial manure—with scarcely any use of town dung, with the help of hardly any purchased food—the only oilcake and grain bought or used as food being for fatting calves and pigs. The only purchase of any consequence has been of lime, which is most years bought in some quantity and made into compost with the headland furrow slice and applied on land either in fallow or for Beans or Peas. Very little land, however, is fallowed—many years none at all—and not half the farm, or about 215 acres altogether, during the whole 19 years to which the record relates.

Steam-power is comparatively little used upon the farm. All Peas, Beans, and Oats, are threshed by flail, the moveable steam engine being used only for threshing the Wheat. The plough is the principal, almost the only implement of tillage—the scarifier is hardly ever used—the harrow is of course employed before and after the drill to form and cover in the seed bed, but it is less used as a tillage implement than is commonly the case. Root weeds are dug and forked and picked out by hand, men and women following the plough for that purpose; and surface weeds are kept down in spring by a great deal of hired labour at the hoe. The roller is of course constantly at work during the proper season, and this with ploughings in narrow ridges and reploughings (rarely cross ploughings late in the autumn or wet weather), and with frequent hand-pickings, is the ordinary system of cultivation.

The farm is worked by 21 home bred Suffolks: 8 to 10 mares are put to the horse every year, so that horse breeding occupies a good share of the attention of the tenant. The young horses are worked for a year or two, and sold when they reach their full value. Only one yearling and two foals (fillies) have been bought during the whole period of the record, at prices 16*l.*, 12*l.*, 10*l.* Of course considerable sales have annually taken place, and the teams at present upon the farm are a remarkably fine stud of what is undoubtedly one of the best breeds for agricultural purposes in the country; and they do great credit to the judgment and skill of the breeder. It is difficult, perhaps impossible, under these circumstances, to estimate the cost of horse labour on the farm; because on the one hand it is not fair to deduct the profits of breeding from the expense of horse keep; and on the other it is not easy to estimate the loss of time and ability which a brood mare suffers during the year. The number, however—21 working horses (4 or 5 colts being taken every year)—is not large for 600 acres of stiff land, so that its cultivation must be considered cheaply done. And there is no wonder that the tenant, an energetic man, attached to the system under which he has so efficiently and so profitably to himself done his best towards feeding his countrymen, and reading every week in our columns reports of the success of steam culture—"one way" calculations, as a Correspondent in this day's Paper is pleased to call them—almost unanimous in their favourable verdict—should speak of his performances as a protest in favour of the olden system and against this innovation on it.

Our Correspondent "H. L. T. L.," at page 13, declared last week that the statement of this cropping and cultivation has nothing whatever to do with steam culture; but taken in connection with the recent reports of success in steam culture, with which we had been trying to satisfy the curiosity of our readers, it seems plain that if any one should be able to declare that with hardly any bare fallow or any green fallow crop, with almost constant grain crops through a series of 19 years, with hardly any purchase of manure or food for stock upon the farm, he had by horse-power maintained the fertility and the *cleanness* of the land, he might very well state it as a protest against those exaggerated notions, as his experience might lead him to believe them, of the superiority of steam power which we had been trying to teach.

What has our "Known Correspondent" accomplished since the end of July?—He has carted 66 acres of Peas, 168 acres of Wheat, 100 acres of Beans, and 18 acres of Oats. He has ploughed 54 acres of Pea stubble four times, 12 acres three times, 100 acres of Bean stubble three times, 80 acres of Wheat stubble once, and 32 acres of it a second time; and 27 acres of fallowed land once. In all he has thus ploughed close upon 700 acres of land, besides 6 acres scarified, and besides rollings and harrowing in getting in close upon 200 acres of Wheat after Beans, Peas, and fallow. He has also carried out 200 loads of lime and earth, and 660 loads of dung from yards and headlands, on to land for Wheat, besides sending carriage of coals, lime and corn, and furniture. This work he has done between July 30 and Nov. 30, by 21 horses. Let it be admitted that we have had an unparalleled autumnal season for field work, and that the ploughing is for the most part shallow, 4 and 5 inches deep, yet this no doubt is a great performance. Consider that this style of management has been continued now for 19 years, that it has been found possible under all sorts of seasons, and that at the close of that long period the land is clean and retains its fertility notwithstanding a great sale annually of straw and hay—as much sometimes as 600*l.* or 700*l.* worth per annum—and it must be admitted that in the hands of an active man, a quick and active stud of horses are a most efficient power for the tillage of even clay soil.

The horses are fed liberally during periods of heavy work, receiving then 2 bushels of Oats, ½ bushel of old Beans, and three trusses of Clover hay weekly each. In mid winter, when the work is not so hard, half that quantity of Oats, no Beans, two trusses of hay, and Bean and Pea cavings *ad lib.*, are given weekly. During summer time a good deal of dependence is placed on Lucerne, of which a considerable extent is grown, as will be seen in the tabular statement of the cropping. Lucerne is given in the morning, and again with a feed of Oats (1 bushel per week) when the horses come in from work; and they are then turned out to Grass for the night. The practice is to go out at six in summer, at seven later in the year, and shortly after daylight during winter; and they do the day's work set for them before they come in—not coming in till that is finished, at whatever hour it may be. A certain quantity of work is thus got out of them, and it is so arranged that they shall be all at work together, so as to be continually under the eye of the foreman. The men, one to every team of three, receive 12*s.* a week throughout the year, and house rent, and a ton of coals. Most of the other labour of the farm is paid by the piece, and it is hired just for the time it is required from amongst the large floating population always at hand in the neighbourhood of London.

The stock upon the farm includes a flock of 225 well-bred Kentish long-woolled ewes, 70 ewe tegs, and 40 cows, and a number of breeding sows. A considerable number of rams are bred and sold annually—a large number of calves are fattened—some few heifers are reared, and a number of porkers are fattened. Oilcake and grain are used in fatting pork and veal. Hay, Oat, Pea, and Bean straw are the winter food of the cattle. No roots are grown. Careful water furrowing for drainage—thorough tillage though to only a shallow depth—care in removing root weeds by hand and fork, and perseverance in surface hoeing during early spring and summer—the application of yard dung to Clover, Beans, and Peas, and in smaller quantity to Wheat—and frequent dressings with lime, are the means which are found efficient here in maintaining a high degree of fertility, and in preserving the cleanness of the land.

We do not publish this history as a protest against steam cultivation, but simply as a recital of positive agricultural experience, which we are always glad to learn and to describe whatever the tale it tells.

We believe in the profitableness of thorough drainage, notwithstanding that the specimens in the neighbourhood of this farm have not been very successful—and in the advantage of deep stirring the soil, notwithstanding that here is a case in which thorough tillage though shallow has been found to answer well. And we believe in the greater efficiency and economy of steam tillage on clay soils, notwithstanding that in the case just described horse power has been found both efficient and economical, and notwithstanding that another Correspondent has in this day's *Agricultural Gazette* condemned our conclusions in favour of it, and tried to upset our calculations.

—— Rather too late in the season to be of service a discussion has arisen on the folly of using poisonous material in pickling Wheat for seed in order to destroy the Fungus on its surface which ripens at harvest time into the disease called bunt. Mr. Hewitt Davis speaks of the practice as attended with danger to human life, and as destructive of game. His own practice as a farmer for many years was to use copperas, arsenic, and other mineral poisons in preparing Wheat for seed, as a means of preventing smut, burnt ear, &c. He was told that these powerful mineral poisons destroyed the germs of the disease without injuring the sound seed. But seeing the sad consequences in the game field and rookeries, and one year losing nearly all his young turkeys from their getting into a field newly sown with Wheat, he was led to ask how it was possible that seed corn could be benefited and the seed of parasites be destroyed by the use of poisons shown by the growth of the corn to be so innocuous to vegetable life; and he came to the conclusion that the benefit from dressing of seed corn was due to the cleansing that it got in the process, and not to any effect of the poison upon the seed; and for many years afterwards his practice was to well wash the seed corn in sufficient water to cover it, and allow all the lighter grains and seeds, &c., to float, and be skimmed off. In this way a complete separation of the sound grain from the diseased and noxious matter that often accompany it takes place; for the former all sink, while the latter float, and are easily separated by well stirring and skimming. From this practice he found all the success he ever had from using poisons; indeed, much more, for in this way all that was obnoxious was more easily got rid of.

His conclusion was, we believe, correct. The arsenic wash is utterly indefensible. The caustic copperas has, we believe, as much the effect of removing the viscosity which attaches the germs of the Fungus to the surface of the grain, and so of ensuring their detachment from the seed with the first shower which moistens the ground, as of directly destroying the life of the mischievous parasite. This use of copperas is the most common because of its great facility, but we used formerly with complete success to soak seed corn in salt water, which floated all light and worthless grain, and afterwards dry it with lime dust, whose causticity appeared to be perfectly efficient.

The best method, however, which has yet been devised for the removal of the plague is to soak the seed in a solution of Glauber's salts (sulphate of soda). On drying this afterwards with slaked lime, the sulphate of soda with which each grain is covered becomes decomposed, and the sulphate of lime and caustic soda are produced, the latter being particularly efficient both in the detachment and destruction of the mischievous germ.

We add here a letter received last year from M. Léluz, a former pupil of the Agricultural Institute of Beauvais, and Professor of Agriculture and Chemistry. He says:—

"Having just read in your Cyclopedia of

Agriculture, Art. "Bunt," that the writer of this article was in doubt as to the right proportion of sulphate of soda generally used in France for the process of pickling, I take the liberty of offering you some explanations about it. For many years my father has been using most successfully the following mixture upon his farm. He takes about 1 kilogramme of commercial sulphate of soda for every hectolitre of corn, dissolves it with 10 litres of boiling water; pours the solution when warm only (tiède), over the heap of Wheat, mixes well, and then adds 2 kilogrammes of dried quicklime reduced to powder beforehand." This is at the rate of 1 lb. of the salt to a gallon of water poured over about a sack of Wheat, and dried with 2 lbs. of the slaked lime powder.

NINETEEN YEARS OF THE CULTIVATION OF AN ESSEX CLAY LAND FARM.

CROPPING DURING THE PAST 19 YEARS.

ARABLE LAND:—

Fields. No.	No. of acres.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	For 1862.	No. of Ploughings since Harvest 1861.	No. of Acres Ploughed since Harvest 1861. A. R. P.
1	17¾	Fallow	Wheat	Clover	Wheat	Peas	Wheat	Beans	Wheat	Rye-grass	Fed	Fed	Fed	Beans	Wheat	Peas	Wheat	Beans	Wheat	Peas	Wheat	4	68 0 0
3	9½	Rye-grass	Fed	Beans	Wheat	Beans	Wheat	Peas	Wheat	Tares	Wheat	Clover	Wheat	Peas	Wheat	Beans	Wheat	Beans	Wheat	Peas	Wheat	4 }	56 0 0
4	10	Peas	Barley	Rye-grass	Fed	Fed	Fed	Fed	Fed	Beans	Wheat	Peas	Wheat	Clover	Wheat	Tares	Wheat	Beans	Wheat	Peas	Wheat	4 }	
5	8½	Rye-grass	Fed	Fed	Fed	Fed	Oats	Beans	Wheat	Peas	Wheat	Clover	Wheat	Beans	Wheat	Rye-grass	Fed	Fed	Beans	Fallow	Wheat	1	8 2 0
6	5¾	Wheat	Tares	Wheat	Beans	Wheat	Tares	Oats	Peas	Wheat	Beans	Wheat	Peas	Wheat	Clover	Wheat	Beans	Wheat	Lucerne	Lucerne	Lucerne	..	..
7	16½	Wheat	Beans	Fallow	Wheat	Beans	Wheat	Beans	Wheat	Peas	Wheat	Rye-grass	Fed	Fed	Fed	Beans	Wheat	Beans	Fallow	Wheat	..	..	..
8	15	Wheat	Beans	Wheat	Peas	Oats	Beans	Wheat	Beans	Wheat	Peas	Wheat	Beans	Wheat	Clover	Wheat	Fallow	Wheat	Beans	Wheat	..	..	..
9	21	Beans, Clover	Fallow Wheat	Oats	Peas	Wheat	Beans	Wheat	Tares	Wheat	Barley	Clover	Wheat	Peas	Wheat	Beans	Wheat	Peas	Wheat	Peas	Wheat	..	56 0 0
10	14	Tares	Wheat	Clover	Wheat	Beans	Wheat	Tares	Wheat	Clover	Wheat	Beans	Wheat	Peas	Wheat	Clover	Wheat	Peas	Wheat	Beans	Wheat	3	39 0 0
12	10½	Wheat	Peas	Wheat	Rye-grass	Fed	Oats	Tares	Wheat	Clover	Wheat	Beans	Wheat	Rye-grass	Fed	Beans	Wheat	Peas	Wheat	Beans	Wheat	3	30 0 0
13	11	Wheat	Tares	Wheat	Beans	Wheat	Peas	Wheat	Beans	Wheat	Clover	Wheat	Beans	Wheat	Beans	Wheat	Tares	Wheat	Rye-grass	Fed	..	..	..
14	11	Wheat	Tares	Wheat	Fallow	Oats	Beans	Wheat	Peas	Wheat	Beans	Wheat	Beans	Wheat	Beans	Wheat	Peas	Wheat	Beans	Oats	..	..	..
16	7½	Wheat	Tares	Wheat	Beans	Wheat	Beans	Wheat	Peas	Wheat	Clover	Wheat	Beans	Wheat	Fallow	Wheat	Clover	Wheat	Peas	Wheat	..	..	..
17	9½	Wheat	Beans	Wheat	Tares	Wheat	Beans	Oats	Tares	Wheat	Clover	Wheat	Beans	Wheat	Fallow	Wheat	Clover	Wheat	Fallow Beans Fallow	Wheat	Rye-grass	..	..
18	17¾	Rye-grass	Fed	Beans	Fallow	Wheat	Clover	Wheat	Beans	Wheat	Tares	Oats	Beans	Wheat	Fallow	Wheat	Clover	Wheat	Fallow	Wheat	Rye-grass	..	..
19	16	Wheat	Tares	Wheat	Beans	Barley	Peas	Wheat	Beans	Wheat	Beans	Wheat	Tares	Wheat	Clover	Wheat	Beans	Wheat	Rye-grass	Fed	..	..	..
20	16	Clover	Wheat	Beans	Wheat	Tares	Wheat	Beans	Wheat	Rye-grass	Fed	Fed	Fed	Beans	Wheat	Peas	Wheat	Beans	Wheat	Beans	Wheat	3	36 0 0
21	18	Wheat	Clover	Wheat	Beans	Wheat	Tares	Wheat	Beans	Wheat	Rye-grass	Fed	Fed	Beans	Wheat	Fallow	Wheat	Clover	Wheat	Beans	Wheat	3 }	
22	9½	Barley	Clover	Wheat	Beans	Wheat	Tares	Oats	Beans	Wheat	Rye-grass	Fed	Fed	Beans	Wheat	Fallow	Wheat	Clover	Wheat	Beans	Wheat	3 }	60 0 0
23	10½	Wheat	Beans	Wheat	Tares	Wheat	Beans	Wheat	Beans	Wheat	Rye-grass	Fed	Fed	Beans	Wheat	Fallow	Wheat	Clover	Wheat	Beans	Wheat	3 }	
24	16	Wheat	Peas	Wheat	Rye-grass	Mown	Oats	Beans	Wheat	Tares	Wheat	Clover	Wheat	Peas	Wheat	Rye-grass	Fed	Beans	Beans	Wheat	Fallow	1	15 0 0
25	12½	Barley	Trefoil	Wheat	Beans	Oats	Tares	Wheat	Beans	Wheat	Rye-grass	Fed	Fed	Beans	Fallow	Wheat	Clover	Wheat	Peas	Wheat	..	..	24 0 0
26	18¾	Beans	Fallow	Wheat	Clover	Wheat	Beans	Wheat	Beans	Wheat	Peas	Barley	Beans	Wheat	Beans	Wheat	Peas	Wheat	Clover	Wheat	..	..	..
27	10½	Beans	Wheat	Rye-grass	Fed	Beans	Wheat	Peas	Wheat	Beans	Wheat	Tares	Wheat	Clover	Wheat	Fallow	Wheat	Clover	Wheat	Beans	Wheat	3	30 0 0
28	14½	Barley	Rye-grass	Fed	Fed	Fed	Beans	Wheat	Beans	Wheat	Peas	Wheat	Peas	Wheat	Clover	Wheat	Fallow	Wheat	Lucerne	Lucerne	Lucerne	..	..
30	17	Wheat	Peas	Barley	Clover	Wheat	Beans	Wheat	Tares	Canary	Lucerne	Lucerne	Wheat	Fallow	Wheat	Clover	Wheat	Peas	Wheat	Beans	Wheat	3	39 0 0
31	12½	Clover	Wheat	Peas	Wheat	Tares	Wheat	Beans	Wheat	Tares	Wheat	Clover	Wheat	Fallow	Wheat	Rye-grass	Fed	Fed	Beans	Fallow	Wheat	1	13 3 15
32	11½	Barley	Clover	Wheat	Peas	Wheat	Lucerne	Lucerne	Wheat	Peas	Barley	Rye-grass	Fed	Fed	Fed	Peas	Wheat	Peas	Barley	Peas	Wheat	4	36 0 0
33	12½	Rye-grass	Fed	Beans	Fallow	Wheat	Clover	Wheat	Beans	Wheat	Tares	Oats	Beans	Wheat	Peas	Wheat	Clover	Wheat	Rye-grass	Fed	....	..	..
35	11¾	Beans	Wheat	Rye-grass	Fed	Beans	Wheat	Beans	Fallow	Wheat	Clover	Wheat	Beans	Wheat	Peas	Wheat	Peas	Wheat	Peas	Wheat	..	1	11 0 0
37	29½	Wheat	Beans	Wheat	Peas	Barley	Beans	Wheat	Peas	Wheat	Beans	Wheat	Peas	Wheat	Rye-grass	Fed	Fed	Fed	Fed	Fed	..	..	..
38	12¾	Oats	Clover	Wheat	Beans	Wheat	Peas	Wheat	Beans	Wheat	Peas	Wheat	Beans	Wheat	Beans	Wheat	Peas	Wheat	Clover	Wheat	..	1	11 0 0
39	21	Beans	Wheat	Tares	Wheat	Fallow	Wheat	Beans	Wheat	Clover	Wheat	Peas	Wheat	Beans	Barley	Peas	Wheat	Beans	Wheat	Beans and Peas	Wheat	3	60 0 0
40	3½	Lucerne	Lucerne	Wheat	Fallow	Oats	Lucerne	Lucerne	Wheat	Fallow	Oats	Clover	Wheat	Beans	Wheat	Beans	Wheat	Beans	Wheat	Beans	Wheat	3	9 0 0
42	22¾	Wheat	Peas	Wheat	Beans	Wheat	Beans	Wheat	Beans	Wheat	Peas	Wheat	Beans	Wheat	Peas	Wheat	Beans	Wheat	Clover	Wheat	..	?	..
43	3	Turnips	Wheat	Turnips	Barley	Oats	Lucerne	Lucerne	Lucerne	Lucerne	Lucerne	Lucerne	Lucerne	Wheat	Fallow	Barley	Peas	Barley	Peas	Wheat	..	1	3 0 0
44	10	Beans	Wheat	Peas	Fallow	Wheat	Clover	Wheat	Beans	Wheat	Beans	Wheat	Peas	Wheat	Beans	Wheat	Tares	Wheat	Beans	Wheat	—	?	..
45	1	Wheat	Fallow	Lucerne	Lucerne	Lucerne	Lucerne	Lucerne	Wheat	Fallow	Oats	Clover	Wheat	Peas	Wheat	Beans	Wheat	Beans	Wheat	Beans	Wheat	2	20 0 0
49	5½	Wheat	Beans	Wheat	Beans	Wheat	Beans	Barley	Beans	Wheat	Beans	Wheat	Beans	Fallow	Wheat	Clover	Wheat	Beans	Wheat	Beans	Wheat	3	15 0 0
50	2½	Clover	Wheat	Beans	Wheat	Tares	Wheat	Beans	Wheat	Beans	Wheat	Peas	Oats	Beans	Wheat	Beans	Wheat	Beans	Wheat	Beans	Wheat	3	7 0 0
51	2	Fallow	Wheat	Clover	Wheat	Beans	Wheat	Beans	Wheat	Beans	Wheat	Wheat	Beans	Wheat	Tares	Wheat	Beans	Wheat	Peas	Fallow	Wheat	1	2 0 0
53	4	Fallow	Oats	Clover	Wheat	Tares	Wheat	Beans	Wheat	Rye-grass	Wheat	Tares	Wheat	Rye-grass	Fed	Fed	Beans	Wheat	Peas	Fallow	Wheat	1	2 0 0
55	2	Fallow	Wheat	Clover	Wheat	Beans	Wheat	Beans	Wheat	Fallow	Oats	Clover	Wheat	Beans	Wheat	Beans	Wheat	Beans	Wheat	Beans	Wheat	3	3 3 0
56	1	Fallow	Fallow	Lucerne	Fallow	Oats	Lucerne	Lucerne	Wheat	Fallow	Oats	Fallow	Oats]	Lucerne	Lucerne	Wheat	Tares	Wheat	Beans	Fallow	Wheat	1	1 0 0
57	8	Beans	Wheat	Clover	Wheat	Tares	Wheat	Beans	Wheat	Beans	Wheat	Rye-grass	Fed	Fed	Mown	Beans	Wheat	Fallow	Barley	Oats	—	..	..
58	8¼	Trefoil	Wheat	Clover	Wheat	Tares	Wheat	Beans	Wheat	Tares	Wheat	Clover	Wheat	Tares	Fallow	Wheat	Rye-grass	Fed	Fed	Fed	?	..	..
																					Total ploughing since harvest		656 0 15

PASTURE LAND.

Fields. No.	No. of acres.	1843.	1844.	1845.	1846.	1847.	1848.	1849.	1850.	1851.	1852.	1853.	1854.	1855.	1856.	1857.	1858.	1859.	1860.	1861.	For 1862.	No. of Ploughings	No. of Acres Ploughed
2	9½	Fed	Mown	Fed	Mown	Fed	Fed	Mown	Fed	Fed	Fed	Fed	Fed	Fed	Fed	Fed	Fed	Fed	Mown	Fed	..	..	..
11	5¾	Fed	Mown	Fed	Fed	Fed	Fed	Mown	Fed	Mown	Fed	Fed	Mown	Fed	Fed	Mown	Fed	Fed	Mown	Fed	..	..	..
15	8¾	Mown	Fed	Fed	Mown	Fed	Fed	Fed	Fed	Mown	Fed	Mown	Mown	Fed	Fed	Fed	Fed	Fed	Fed	Fed	..	..	..
29	16	Fed	Fed	Fed	Mown	Fed	Fed	Fed	Fed	Fed	Fed	Mown	Fed	Fed	Mown	Fed	Fed	Fed	Fed	Mown	..	..	..
33	10¾	Fed	Fed	Mown	Fed	Mown	Fed	Fed	Mown	Fed	Mown	Mown	Fed	Fed	Mown	Mown	Fed	Mown	Mown	Fed	..	..	..
36	9¾	Fed	Fed	Mown	Fed	Fed	Fed	Fed	Fed	Mown	Mown	Mown	Mown	Fed	Mown	Mown	Fed	Fed	Fed	Fed	..	..	..
41	8¼	Mown	Fed	Mown	Fed	Fed	Fed	Fed	Fed	Mown	Mown	Mown	Mown	Mown	Mown	Mown	Fed	Fed	Mown	Fed	..	..	..
46	1	Mown	Fed	Mown	Fed	Mown	Mown	Fed	Fed	Fed	Fed	Fed	Mown	Fed	Mown	Mown	Mown	Fed	Mown	Fed	..	..	..
47	4	Mown	Fed	Mown	Fed	Fed	Fed	Fed	Fed	Mown	Fed	Mown	Fed	Fed	Mown	Mown	Mown	Fed	Mown	Fed	..	..	..
48	2	Mown	Fed	Mown	Mown	Fed	Fed	Fed	Fed	Mown	Fed	Mown	Mown	Fed	Mown	Mown	Mown	Fed	Mown	Fed	..	..	..
52	3	Mown	Fed	Mown	Mown	Fed	Fed	Fed	Fed	Mown	Fed	Mown	Fed	Fed	Mown	Mown	Mown	Fed	Mown	Fed	..	..	..
54	11	Fed	Fed	Fed	Fed	Fed	Mown	Fed	Fed	Fed	Fed	Fed	Fed	Fed	Fed	Fed	Mown	Mown	Mown	Fed	..	..	..

— We hope during the ensuing year to make that section of our Paper which professes to give the Calendar of Operations on a number of farms in different parts of the country more interesting and instructive than it has hitherto been; and to this end we shall preface it with a detailed account of the several farms from which we have these reports. And to-day, accordingly, our readers receive the first of these in descriptions of the College Farm, Cirencester; and of a South Hampshire Farm.

THE COST OF HORSE LABOUR.

(FROM A FARMER'S NOTE BOOK.)

THE farm in question contains about 190 acres of arable, and 73 in pasture. On an average of years 50 acres of root crops have been grown. Average number of horses kept, 6. The estimate of the cost of horse-labour is calculated on an average of 8 years. In the course of this time no fewer than 11 horses have been lost by various diseases and accidents, which will be at once admitted as an unusual number. The average price of the horses was 22*l.*, which, multiplied by 11, makes a total loss of 242*l.*; this sum again divided over 8 years makes an annual loss of about 30*l.*, or 5*l.* per horse to keep up the stock. The price of Oats has been about 25*s.* per qr. during the past 20 years. The price of hay rather under 4*l.* per ton. The spending price of Oats 20*s.* per qr. The price of hay 3*l.* per ton.

COST OF A HORSE PER YEAR.

	£	s.	d.
43 Weeks Oats at 1½ bushel a week at 20*s.* per qr.	£8	1	0
9 Ditto, Grass in July and August, at 4*s.*	1	16	0
1 Ton of Hay in Spring	3	0	0
2 Tons of Straw and Chaff	2	2	0
Harness and Shoeing	1	1	0
Loss per horse to keep up stock, interest	5	0	0
Total cost per Horse	£21	0	0

An allowance of 1 ton of hay and 2 tons of straw and chaff is equal to about 25 lbs. a day for 43 weeks. The quantity of hay has not been exceeded for half a dozen years past, but no exact weighing of either straw or chaff has taken place. A guinea a ton for straw appears to be estimating it at its full value for home consumption.

The rate of ploughing has varied according to circumstances. The first ploughing of stubble after harvest, 7 inches deep, has been at the rate of fully 3 roods a day, with 3 horses; occasionally more than an acre a day. Ordinary ploughing, 5 inches deep, has been done at the rate of 3 roods a day with 2 horses; cross and light ploughings during spring, about 1 acre a day with 2 horses. 4 horses scarify from 6 to 8 acres a day.

Presuming that a horse has cost 21*l.* a year, and works during 43 weeks, the cost of a horse for a week would be in round numbers 10*s.* a week, or 1*s.* 8*d.* per day. With ploughman's wages at 2*s.* per day, an acre of ploughing with 2 horses, when an acre a day is performed, would cost—2 horses at 1*s.* 8*d.* = 3*s.* 4*d.*, man 2*s.*: total 5*s.* 4*d.* per acre. The average rate of ploughing, however, has been about 3 roods for 2 horses, or 6*s.* 8*d.* per acre; 7 inch deep ploughing (with 3 horses and a driver for 3 roods a day), 9*s.* 10*d.* per acre; 80 days' ploughing of 6 horses has been an average of all the time required for ploughing 200 acres a year. Total cost of ploughing, 64*l.*, or about 6*s.* 6*d.* per acre for all kinds of work. About 50 acres out of 200 ploughed have been accomplished at the rate of 1 acre per day with two horses, which only leaves 150 acres for which steam could be in any way necessary. The soil is chiefly stubborn clay, or a heavy clay loam; about one-fourth a sandy loam.

The proportion of time devoted to each kind of labour throughout the year is pretty nearly as follows:—

80 days' ploughing of all kinds.
30 do. carting dung from yards to field, and re-carting a part for roots in the field.
6 days of all the horses drilling.
6 do. carting corn in harvest.
10 do. do. do. to market.
6 do. do. hay and Clover.
20 do. scarifying.
15 do. harrowing.
6 do. rolling.
6 do. carting Potatoes.
10 do. Turnips, &c.
5 days' carting coals.
10 do. hoeing corn and root crops.

210 days, chiefly occupied in the leading divisions of labour throughout the year.

In 43 weeks, of 6 days, there are 258 days, which allows 48 days for sundry carriages of straw, bushes, materials for roads, ditch banks, timber carting, lost time, &c.

Estimating the cost of 6 horses at 21*l.* each, and the manual labour at 2*s.* per day for three men, the whole cost for horse labour over 190 acres of arable land, including the pasture, without charging it, would be—

	£	s.
6 horses, at 21*l.*	£126	0
Manual labour, at 6*s.* a day for 258 days ..	77	8
	£203	8

or little over 1*l.* per acre.

In a paper of Mr. Morton's, which lately appeared in the Royal Agricultural Journal, the cost of horse labour over a large number of farms was very much above the above estimate. The chief reasons were, that a larger number of horses were kept in proportion to the acres farmed, the horses were more expensively fed, the food too over valued, and the ploughman's wages generally charged for the whole or nearly the whole year, instead of only for 43 weeks, which certainly appears to be quite enough. On arable farms the root crops should in general be finished before, or by the end of June. There are then about 2 months with only very partial work for the horses. On this farm there are generally a few weeks from Christmas to the end of February when the horses do little. The corn is sometimes reduced, and the horse men turned out to ordinary labour, such as threshing, dressing, &c. This farm being very compact, with the buildings in or nearly the centre, permits of the minimum of horse labour, and of course of manual labour, also in connection with the horses. To-day, whilst I write, 4 horses have carted out 64 loads of dung, and laid it in heaps upon the stubble for ploughing in. On many farms 14 horses instead of 4 would have been required to cart out such a number of loads. In all carting to and from the premises, the same calculation holds good, and convincingly shows the great economy of labour by having central buildings. I have seen various steam ploughs or cultivators at work, and have read with interest numerous accounts of steam cultivation. The different accounts are extremely various, running from 2*s.* up to 20*s.* per acre. Which is right? or which figures might a beginner expect to get nearest? That "one way" mode of calculation is at all events very apt to mislead. The jumbling together of ploughing and scarifying the same land two or three times over, and calculating it all as equal to ploughing at a certain price per acre, is a most obvious attempt to lead strangers on to suppose that steam cultivation is much cheaper than it is. What is the cost of scarifying in many instances by horses, when 4 horses and 1 man get over 8 acres a day? Why only about 1*s.* 1*d.* an acre; or by doubling the horses, or only getting over 4 acres a day with 4 horses, the cost would then only amount to about 2*s.* 2*d.* per acre, which is still lower than the lowest "one way"—one-sided calculation of steam grubbing.

It would be well to estimate the total cost of steam ploughing when any one thinks of adopting the system. In wet seasons steam cannot be worked to great advantage more than horses. In ordinary seasons the different kinds of horse labour fall in in proper rotation. The heavy ploughings can generally be accomplished in autumn. During frosts the horses can be at once turned to carting. Threshing is the only job for an engine during frost or wet weather. Horses may be employed in carting on good roads when the land is too wet or snowed up for the steam plough. When a steam plough is employed, which requires seven or eight people to work it, and several more people with the necessary number of horses at other work at the same time, a great many hands altogether are required for the cultivation of the land. When steam ploughing is impracticable, what becomes of the hands when no threshing is required? Are they to be turned adrift, or will it pay to put them to some odd job where the whole steam staff might, in all probability, do about as much as one regular hand at one kind of labour? If there would be any loss by the steam ploughman in wet weather, snow storms and frosts, more than there would be by regular horsemen with their horses, the loss should be charged to the steam ploughing! I presume, with fair reason, that as there must necessarily be horses kept on every farm where there is a steam plough, that the horses should also do a good deal of cultivation. The steam plough and the horses together should therefore do all the necessary ploughing on a large farm in the matter of 60 days, if the necessary horses for carriages and light acts of cultivation on an ordinary farm without a steamer can get over the ploughing in 80 days. Well, it is a large farm which produces 1200 or 1500 quarters of corn in a year. That quantity should not occupy more than 30 days threshing. The total number of days, therefore, which the engine should be at work, in both threshing and cultivating, should not exceed 90 or 100 days a year.

The cost of Fowler's plough and tackle before it could be set to work 50 miles from the makers, may be estimated at 800*l.* or 900*l.* Say the least sum, 800*l.* Well, the simple interest on this amounts to 40*l.* a year. Then, 10 per cent. at least must be charged again for tear and wear to keep up the value of the implements, or 80*l.* in addition to the 40*l.*, which is 120*l.* a year, or 24*s.* a day on a hundred days. To charge the whole of the interest on the steam-plough, when at work, the interest would be 2*l.* a day. Let, however, the 24*s.* a day stand for interest, and then add this to the average number of acres actually ploughed, and it will at once show a very different looking account from most of those which have appeared. From 3 to 4 acres have been ploughed a day on an average. The cost "one way" has ranged from 6*s.* to 15*s.* per acre. When the interest is added the cost in most instances should be doubled at once, and that without the least doubt of doing any injustice to the statement.

Every one knows that the stirring of clay soils in dry weather is an admirable thing, and that the difference of the cost between steam and horse cultivation is not so much the point as the proper working of the land. Good crops have, however, been grown by horse cultivation. The oft told tale of the feet of the horses spoiling the land stands true, no doubt, in some instances; still, horse-power may be misapplied, and there is no particular reason why three or four horses should continually go in a string and plough only three or four inches deep. Drained land suffers no injury by horses' feet if it is ploughed or cultivated at the proper time in a proper manner. The action of an implement drawn through the soil, whether by horses or steam, must be pretty similar. It is not my intention, however, to deprecate steam ploughing; only having read some accounts with considerable astonishment about the "one way" cost of cultivation, I think such accounts are apt to mislead those who have paid little attention to the subject. It would therefore be better that the whole cost should be stated as near as it is possible to ascertain it, which would give the public generally more faith in the veracity of impartial accounts.

It is tolerably clear that steam cultivation by a small power of engine, at a low first cost, would not be economical on either a small or a large farm, as the cost of working is almost equal, whether 2 or 10 acres a day might be accomplished. A large engine again, with powerful tackle, is a large first cost, which tells up very much in interest upon every acre ploughed. In exhibition trials, every one should bear in mind that a very great power is generally used, with every thing in the best possible order, with willing and interested hands to use the implements to the best possible advantage. Twenty-horse power or even more may be exerted to plough an acre an hour, but should any one expect an engine of 10 horse power to do as much he is most likely to be deceived; and should any one purchase an engine of 20 horse power complete with other matters, the whole apparatus would reach a very high figure indeed.

I am perfectly aware that a cwt. of coal as fuel for an engine applied to any moving power near the engine, is less costly and more powerful than the power of a common horse; but in steam ploughing the power is so far removed from its work that a great deal of force is lost. Here, indeed, lies the great desideratum of steam ploughing at the present time. A movable engine, on the other hand, of 4 to 8 tons weight, wastes a great part of its own power in moving itself, leaving only a portion for actual work. I should, however, be very glad to adopt steam for ploughing instead of horses, if I could see that it cost no more than horse-power when every contingency was taken into account.

Home Correspondence.

Hillside Irrigation.—My eye happened to catch Mr. Pusey's note on the "Brendon Farm" article in a recent Number, before I had read the article itself, and I turned to it with great interest, as I have been converting heath land into pasture for the last seven years, and have a good deal yet to do. Were it not for Mr. Pusey's implied testimony to the correctness of Mr. Roal's account, I should certainly have looked upon it as perfect "bosh," and wondered that you could print it. "Total expense of converting a waste mountain side into water meadow, 2*l.*"!! Of course Mr. Roal means per acre, but it seems just as credible if read as it stands. It costs me ten times as much to convert heath land on a light clay subsoil—and practical men, who have converted the same kind of land in this neighbourhood, have found the expense to be the same, whether the land is broken up by the pickaxe, which I have always used, or by the plough. Is it possible that Mr. Roal has four horses that can draw a Finlayson's harrow to the depth of from 12 to 15 inches through soil which has never before been broken! and at a cost of 1*l.* 5*s.* per acre! If so the steam-engine makers had better shut up their shops, and I should feel very much obliged to him if he will tell me where to buy such a team. Again, 60 bushels of lime cost me 10*l.* instead of 2*l.* 5*s.* Of course he burns his lime on the land. I pay for paring, burning, and breaking up from 9 to 12 inches in depth, 1*s.* 3*d.* per rod, and the men make very little if anything over 12*s.* per week after paying for their tools. After the land has been thus picked up, it requires several harrowings and ploughings to get it into order for a crop of Swedes. Mr. Roal's hill side must be first rate stuff if it will grow Turnips without the help of any artificial manure, and I see he does not charge for any. I always understood that cutting the water courses for water meadows was very expensive. Mr. Roal does it for 10*s.* per acre. I should feel very much obliged if you will state whether Mr. Roal's account is to be depended upon, or whether some great error has not been made in the statement. *Ab Initio.* [The account of Mr. Roal's farm, to which the above refers, is taken from the 6th volume of the English Agricultural Society's Journal, and the Society gave it a prize, from which we conclude that at that time it was thought trustworthy. We published it as much in illustration of what an editorial note ought to be as because of the story which it relates. The note served its purpose, for it induced "Ab Initio" to read the story, and though he confidently disbelieves it, yet he should remember that the note which sanctions it commences with the sentence, "I have known Mr. Roal's farm for many years." We suppose that the 200 acres "covered" with Heath were but sprinkled here and there—for the paring and burning is stated positively at 1*l.* The possibility of this in a rough sort of way with horse power and good weather, is certainly greater than that of working the land "12 to 15 inches deep" with Finlayson's harrow, for 1*l.* 5*s.* per acre. The too promising character of the statement will have done no harm if it should induce "Ab Initio" to give agricultural readers his experience on the same subject, which we shall be exceedingly obliged to him if he will kindly consent to do.]

The Value of 100l. Rent Charge.—If your Correspondent "X. Y. Z." will procure and examine a copy of the Act 6 & 7 Will. 4, c. 71, commonly called the

Tithe Commutation Act, he will find in clauses 37 and 57 the information he asks for respecting the method of computing the annual tithe rent charge. If however he has much of such business to do, he will find his work much simplified if he purchase (which he can do for 1s.) a copy of the tables usually published in January, showing the value for the ensuing year of any amount of tithe as fixed by the original apportionment. One of such tables is published by "Willich," another by "Pyne." I have used both and found them perfectly accurate and fully answering every useful purpose in the business. His question about a rector's rent charge on a farm of 100*l.* a year, is not, in its present form, intelligible. *Roaldus, Richmond, Yorkshire.*

Chap Money on Payment for Corn.—After the ordinary business of the Peterborough Corn Exchange Company had been despatched at their annual meeting held last Wednesday (Dec. 26) a representation was made by a deputation of farmers of the inconvenience resulting from the varying amount of sums claimed as chap money by the different purchasers of Corn, requesting the company would take steps to promote the observance of a uniform custom, whereby disputes may be prevented, and the claim of excessive sums be avoided in future. The Company declined to decide the question themselves, but after some discussion resolved to acquaint the frequenters of the Corn Exchange that the matter had been brought under the consideration of the Company, and that a paper should be submitted to the farmers, merchants, and others for their signature, stating that it was desirable a uniform rate of chap money should be acted on, and proposing that 1*s.* 6*d.* per 10 qrs. of Wheat, Barley, and Beans, and 1*s.* per 10 qrs. of Oats should be allowed as customary discount for prompt payment of Corn, excepting in such cases of sale where special conditions are agreed upon. It is expected this arrangement will be generally approved, as there were not a large number of merchants or millers who formed exceptions to the rule, by deducting more than the rates above-mentioned; and on the other hand the buyers are few who either desire to allow a less amount of chap money, or as at Norwich to abolish it altogether. As a rule Corn is paid for, if delivered, on the Saturday next after purchase. Instances were cited of 1*d.* in the pound being claimed, of 2*d.* in the pound, of 1*s.* 6*d.* per 10 qrs. of Oats, and other variations of practice. The proposed scale as recommended will be printed, and if, as it probably will be, numerously signed, the great publicity given to the question thereby will no doubt ensure its recognition as a rule of the market. *J. W., Peterborough.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

At a Special Meeting of the Council on Wednesday the 8th inst, the Earl of Powis having been requested to take the Chair, his Lordship opened the proceedings by observing that when in November last his Royal Highness the Prince Consort had presided, it was little thought by any then present that that would be his last appearance at their meetings, or that any cause more serious than temporary illness prevented the discharge of that duty which he had always performed in a manner at once dignified and affable. When his Royal Highness arrived in this country, 21 years ago, political feeling ran high, but with the greatest tact, judgment, and discretion he had been the constant guide and adviser of her Majesty, without identification with any particular party. The Society would deeply feel the loss of their President, at a time when the co-operation of kindred societies, of foreign nations, and especially of the Royal Commissioners for the International Exhibition, was urgently required, and when so much naturally hinged upon the Prince's judgment and influence. He trusted the Council would concur in the propriety of the course he had joined in adopting of summoning a Special Council at this period instead of waiting till their ordinary meeting in February, and would feel they would best express the sentiments of the Society by framing an address to her Majesty on this sad occasion.

The requisition for summoning the Special Council having been read by the Secretary, Lord Feversham proposed that an humble address be presented to her Majesty expressive of the sincere condolence of the Council. His Lordship had formed one of a deputation to His Royal Highness in the spring, when he had shown his usual diffidence in accepting the office of presiding over their meetings, and had especially solicited the aid of experienced members of the Council, in enabling him to carry out the duties which would be required of him. At a General Meeting in May he had had the honour of proposing His Royal Highness's name as their future President, and from the manner in which it had been received he felt confident that the members felt His Royal Highness would efficiently fill the chair during such a momentous year as the present. Having alluded to his virtues, his benevolence, his highly cultivated mind, his commanding intellect, and to an order of eloquence possessed by His Royal Highness which was second to none, his Lordship expressed his readiness, in common with the unanimous feeling of the country, to take part in any measure which would express their deep condolence and heartfelt sympathy.

Lord Walsingham, after expressing his cordial assent to what had been said by the noble lord, commented on the great loss which had been sustained by our Queen and nation. We could not regard our own loss as a Society as small, for though we might look forward with confident anticipation to the future, yet his Royal Highness's assistance was especially necessary in our great undertaking this year. We had seen him in that room only to make us the more sensible of our loss. If there was a moment when he could least have been spared, when the counsels of an affectionate and judicious parent were so necessary, it was now when the ripening manhood of the Prince of Wales rendered a father's advice so necessary. It was difficult to approach the subject of condolence with Her Majesty, who was now experiencing the greatest sorrow of all our lives; but he trusted that the appreciation of the universal sympathy might at no distant time tend to alleviate her grief.

An address was then prepared for transmission to Her Majesty through the Secretary of State for the Home Department.

Reviews.

Lives of the Engineers, with an Account of their Principal Works, comprising a History of Inland Communication in Britain. By Samuel Smiles. John Murray. 1861. 2 vols.

Mr. Smiles is eminently one of the working bees of the literary hive. Without creating new elements he has a happy facility in creating new and agreeable compounds, and in the several works on which his well-earned popularity depends, he has given satisfactory evidence that any fact or problem of interest which comes within his range is sure to find a suitable niche in the honeycomb of his narrative. In the volumes before us, forming part only of a comprehensive work, the author's aim has been to give an account of some of the principal men by whom the material development of England has been promoted, and in pursuance of this plan, many of the earlier pages are occupied with biographical sketches of those pioneers of improvement by whose "skill and industry large tracts of fertile land have been won from the sea, the bog, and the fen, and made available for human habitation and sustenance." A work of this kind, executed with ordinary ability and tact, is almost certain to meet with a large class of willing readers; and if the price of these superbly printed and expensively illustrated volumes had only been pitched a little lower, there are hundreds of intelligent and inquiring agriculturists who would gladly add them to their domestic libraries. As it is, we fear that the work must remain for some time to come, comparatively speaking, inaccessible to the millions who read, and a brief notice of some of its leading features will therefore be all the more acceptable.

One of the points brought out most prominently by Mr. Smiles, is the remarkable change which the last few centuries have wrought in the attitude of Great Britain, towards all the rest of the world. In the infancy of improvement all our great works were entrusted to foreign engineers and artificers, and although it is undoubtedly true that Agriculture owes very much to engineering science, it is impossible to arrive at any other conclusion, than that engineering science itself was in its early days the child and creature of our agricultural necessities. Indeed, to carry out the reflection to its natural consequences, it may be fairly argued that the mathematical nicety, so obviously necessary in the surveying, levelling, and embankment of landed property, led insensibly to those improvements in machinery and manufactures which form a distinguishing characteristic of the industrial life of the present day. From this point of view the reciprocal dependence of agriculture and commerce on each other receives a striking illustration; for much as the agricultural body has been blamed for its tardiness in accepting improvements, it will be found on inquiry, that many unsuccessful experiments have tended to justify its caution. Nor is this all: for as Mr. Smiles reminds us—

"Most of our modern branches of industry were begun by foreigners, many of whom were driven by religious persecution to seek an asylum in England. Our first cloth workers, silk weavers, and lace makers were French and Flemish refugees. The brothers Elers, Dutchmen, began the pottery manufacture; Spillman, a German, erected the first paper mill at Dartford; and Boomen, a Dutchman, brought the first coach into England. When we wanted any skilled work done, we almost invariably sent for foreigners to do it. Our first ships were built by Danes or Genoese. When the Mary Rose sank at Spithead in 1545, Venetians were hired to raise her. . . . When an engine was required to pump water from the Thames for the supply of London, Peter Morice, the Dutchman, was first employed to erect it."

In a word, the manufacturing industry of Great Britain is, comparatively speaking, of very recent introduction; and but for the aid afforded to it by those engaged in the cultivation of the soil, its development would have been far less rapid and remarkable than the event has proved. Our purpose, however, is not to exalt one branch of the community at the expense of the other, nor to defend the agricultural classes from attacks which have been sometimes wantonly made upon them, but rather to show from the lives of the engineers, as pourtrayed in the volumes before us, what very great improvements have been effected from time to time by the employment of skilled labour and well directed capital.

That the early inhabitants of Britain were familiar with the use of the spade and mattock is amply attested by the earthworks, embankments, and ditches which remain to the present day in various parts of England, and more especially the western counties. These, however, were principally intended as the bases of defensive operations, and had little to do with the arts of peace, excepting so far as they afforded indications of the permanent settlement of strong and resolute men. Indeed the Celts were, for the most part, a pastoral race, and it was reserved for the adventurous tribes of Belgium and Friesland, who early landed in great numbers along the south-eastern coasts, to clear the ground of its primitive forest, and to cultivate the rich arable lands by the seaside and along the valleys. Gradually these Teutonic colonists acquired possession of all the rich land in England, till arrested in their progress by the hills of Cumberland, of Wales, and of Cornwall; but as it was in the district of Romney Marsh that these continental immigrants first made good their footing, it was here they put forth their first great efforts at improvement. The reclamation of the tract of Romney Marsh, containing about 60,000 acres of land, lying along the south coast of Kent, is supposed by the authorities on whom Mr. Smiles relies, to be due to the Frisians, "who were familiar with embanking; their own country being in a great measure the result of laborious industry in reclaiming and preserving it from the inland as well a the outland waters. English history does not reach so far back as the period at which Romney Marsh was first reclaimed, but doubtless the work is one of great antiquity. The district is about 14 miles long and 8 broad, divided into Romney Marsh, Wallend Marsh, Denge Marsh, and Guildford Marsh. The tract is a dead uniform level, extending from Hythe, in Kent, westward to Winchelsea, in Sussex; and it is to this day held from the sea by a continuous wall or bank, on the solidity of which the preservation of the district depends, the surface of the marsh being under the level of the sea at the highest tides." On the land thus reclaimed, upwards of half a million sheep besides many cattle are now depastured every year; but so isolated is the district that the marshmen to the present day assert that the world is divided into Europe, Asia, Africa, America, and Romney Marsh; although so utterly have the character and appearance of the district been changed, that "the ancient Roman port at Lymne, past which the Limen or Rother is supposed to have originally flowed, is left high and dry more than three miles from the sea, and sheep now graze where formerly the galleys of the Romans rode." Lands won with so much difficulty have only been retained by constant and careful attention, and "the law and custom of Romney Marsh," after being applied in practice in many other districts, lies to this day "at the bottom of all legislation on the subject of embankment and drainage." As far back as the reign of Henry III., or more than six centuries ago, legal proceedings were taken against such landlords as neglected to pay their quota of the cost of keeping the banks in order, and in the time of Edward II., when the sea broke through the bank near Denge Marsh, it was attributed to the "pravity of ill-disposed men," who in the common parlance of the present day, had minded their particular gain and "scamped their work."

Strange as it may seem, the Thames, which now bears on its bosom a large proportion of the available wealth of the civilized world, is strictly speaking an artificial river almost from Richmond to the sea. The original embankment was a work of much labour and difficulty, but whether begun by the Normans or the same Belgian tribes who reclaimed Romney Marsh, it is now impossible to determine. Be this as it may the work was carried on from one generation to another, till the river was confined to its present limits, and large tracts of fertile land, in addition to the sites now occupied by Southwark and Lambeth, were reclaimed from the flowing tide. For centuries, however, repeated efforts were made by the father of English rivers to regain his lost territory, and it was only through the exertions of Acontius and Baptista Castilione, supplemented by the labours of Cornelius Vermuyden, that the breaches were effectually repaired.

But it was not only in the south eastern counties that works of reclamation were carried out according to the "law and custom of Romney Marsh," but the same spirit of enterprise extended itself to the well-known district of Sedgemoor, in Somerset. "In ancient times," says Mr. Smiles, "an Abbot of Glastonbury made a causeway across the level, which is still named after him Graylock's Fosse. But it was not until the reign of James I. that that rich tract of 13,000 acres of land, now covered with orchards and corn-fields, was reclaimed by drainage and embankment; and it was the dykes or 'rhines' cut in the moor which afterwards threw Monmouth's untrained troops into confusion during their night attack on the royal army, and in a great measure caused their discomfiture." It is to be regretted that Mr. Smiles was not enabled to add as a sequel to his narrative, that since the 5th of July, 1685, any great and perfect

system of drainage has been carried out in a district so open to improvement. Nay more; there is too much reason to apprehend that even the Act of 1861, great as are the improvements introduced by it in the law as it formerly stood, is deficient in those powers which are absolutely essential to the effectual carrying out of any comprehensive scheme of improvement.

(*To be continued.*)

Farm Memoranda.

ROYAL AGRICULTURAL COLLEGE.—The Royal Agricultural College farm, situated about 1 mile to the west of Cirencester, is bounded towards the north by the turnpike road to Stroud, which separates it from the noble park of Earl Bathurst; on the south it adjoins the well-managed farm of C. Lawrence, Esq., and in the same direction, but verging west, it forms the boundary not only of the parish but the county. The turnpike road from Cirencester to Tetbury runs through this side of the farm, which is consequently pretty well overlooked, and the low-clipped fences and flat character of the land adjoining enables the traveller to take in a considerable area. Situated on the Cotswolds, and resting principally upon the alternating marl and shale beds of the forest marble (a member of the lower oolite series), the soil varies considerably both in depth and character, according to the nature of the subsoil, and these variations are often exceedingly abrupt, so that in the same field several varieties of soil may exist.

The present occupation consists of 440 acres, of which about 40 are pasture; it is proposed to increase this after Michaelmas by about 70 acres, and as the land lies contiguous, and will add compactness to the farm, this alteration promises to be beneficial. It has always been considered by the authorities that a farm of this size affords better opportunities for study to the student than a larger tract; it being within the limits of a walk, they are enabled to keep a registry of operations and to inspect every kind of work going on, which with their other occupations would be difficult if the area were more extensive. The soil may be classified into three divisions. First, and most important as occupying more than half the area, is land of moderate depth, 6 to 8 inches, containing about 50 to 55 per cent. of clay, the remainder lime and sand; such land ploughs well with a pair of horses, but is easily affected by moisture and requires careful management in order to secure a good tilth. When kept in good heart, Wheat yielding 4 to 5 qrs. per acre can be grown every fourth year, and occasionally more frequently still. Barley, roots, and seeds, all grow well, and Vetches are also an important crop, and do remarkably well.

The remaining part of the arable land is pretty equally divided between light, thin, browy fields, where the soil is often 3 or 4 inches deep and full of stones, and a more or less tenacious marl containing 60 to 70 per cent. of clay. Such land needs to be, and has been drained. Wheat, Beans, and Mangels are crops very suitable to this land, sheep-treading, especially in the winter, being objectionable. The lighter and poorer portions of the farm are more suitable for the 5-course rotation, and occasionally the seeds are allowed to remain down for two years, but as it is generally found that the second year's growth is very poor, and wholly inadequate to the loss of more valuable produce which it displaces, the system is pretty well given up, and by consuming the roots on the land with corn, and using plenty of artificial stimulus, the condition of the soil is secured. Sainfoin grows well on all the lighter portions of the farm, and is found so valuable for live stock, especially sheep, that a small area is constantly planted. The farm is at present divided into 22 fields, varying from 7 to 45 acres, the general average being from 15 to 25 acres. Now that steam cultivation has been introduced, it is proposed to increase the size of some of the fields by removing the fences. It may be as well to state here that the steam plough has been introduced on the College farm, not because the land was considered particularly adapted for this kind of cultivation, but because it having become an established agricultural fact, the College educational system was felt to be incomplete without it, and Fowler's apparatus being considered the most perfect was purchased. The farm is occupied on a long lease under Earl Bathurst. The buildings stand in a tolerably central position, and are all included in one group, an arrangement which the undulating character and distant position of the land to the north-west hardly justifies. At the present day the advantages of one central homestead on a straggling farm, instead of two or more smaller sets of buildings, are not held to be of such importance as formerly, and no doubt different arrangements would now be made; as it is we make the best of it, and fortunately most of the land farthest from the manure heap is essentially sheep land, and can be fertilised by the fold and artificials. The buildings are roomy and generally convenient, and the stables, piggeries, and accommodation for store and breeding cattle are complete and good. The live stock consists of about 500 head of sheep, consisting of ewes and their produce, which are fatted out at 12 to 14 months, principally Cotswolds, a breed which experience has convinced us are the most suitable for the country; 10 milking cows and their produce, making about 30 head; Shorthorns, chiefly from stock bred by the late Lord Ducie and Lord Sherbourne; between 50 and 60 black Berkshire pigs; and previously to the introduction of the steam plough 11 horses, were kept, which will now be reduced to 7 or 8.

In managing the farm two objects are kept in view. The one to give the students an opportunity of seeing the practical management of land with a view to a profitable return; the other to carefully carry out on a limited area such experiments as the researches of the chemical professor indicate as important, and when such prove to be successful their adoption on a larger scale follows. As an instance we may allude to the practice of top-dressing the cereal crops, which we have not only ourselves largely adopted, but which is being carried out by our neighbours to a considerable extent. The students are made acquainted with every fact connected with these experiments, as also with the minutest details of daily practice. It is a part of their duty, according to the class they belong to, to keep either a journal of the daily work, or to note down the exact operations in the order in which they were performed, together with their cost for each crop; or lastly, to keep the actual accounts of the farm; the material for this purpose being given to them weekly; and thus they have every opportunity of acquiring actual facts connected with cost and return, and at the same time of learning a simple and yet comprehensive system of accounts. It is in this way that the farm is made useful as a part of the educational system of the Royal Agricultural College.

SOUTH HANTS FARM.—The farm to which the following report refers, contains about 100 acres of arable land, and about 25 acres of pasture.

The soil is various, consisting of clay loam and sand loam, the surface being exceedingly undulating, but for the most part of a south aspect, and excellent climate. The situation of the farm, being within an easy distance of a large town, gives it some advantages not possessed by land in the outlying districts. The soil, although not naturally of first-rate quality, has been for the most part underdrained, and thus made productive; but being very hilly it is in consequence heavy tillage, and the irregularity of the soil renders it not quite so well adapted for close cultivation and cross cropping as many farms in the district, and no fixed rotation of crops is pursued.

REPORT, FROM DEC. 14TH TO 31ST, 1861.

Horse Labour.—The employment of the horses has been various, owing to the changeable weather which has prevailed. The sowing of Wheat after the Potato crop has only been completed during the last few days, the last half of the month of November and the early part of December being continuously wet. This, together with the large acreage sown to Wheat, about 40 acres, has delayed the season beyond the usual period, and we hold it to be good practice to sow all the land intended for Wheat before Christmas if possible, and at this late period with not less than 3 bushels of seed per acre. Should however the season be delayed until January, the first opportunity is always best, although many farmers will not sow in January, preferring to sow in February or March. We have however always found that the earliest sown yields best, and the crop is freer from weeds.

At intervals fallow ploughing has been going on upon land intended for the root crops of next season, and the sooner this work is completed the better, in order that the frost and changes of the weather peculiar to this period may chasten and ameliorate the soil. Carting dung from cattle boxes, &c., to heap, in readiness for early Potatoes, has been done; also carting Couch, &c., which the scarifier brought to the surface in the autumn; this, from the circumstance of not being freed from the earth entirely, has not been burnt on the land as usual, but carted away to pasture land, and spread over the surface to be worked in during the spring with the chain harrow. By following this plan it has immensely improved the Grass land, and disposed of an otherwise troublesome commodity without further expense.

Hand Labour.—The men have been employed in the usual routine labour of the farm, such as dung filling and spreading, water furrowing, trenching in pastures, cutting hedges, banking, &c. The women have been preparing and cleaning Mangels, Turnips, &c., in readiness for cutting for the cattle and sheep; but when the weather has been open they have continued to take up with the prong the roots of Couch Grass, which may be found amongst the root crops, Clovers, &c.; and we maintain that it is the best policy to attack the Grass in this manner, as it prevents the roots spreading over the land, and eventually saves a considerable amount of horse labour at a comparatively trifling cost.

The Stock.—The Somerset horned ewes have now finished lambing, and the fall of lambs is good, perhaps never better; in this district there has been an unusual proportion of twins and very few losses. The West Country Downs have been nearly as forward as the Somerset ewes, five-sixths of our Downs having dropped their lambs by the 31st; they will now require the shepherd's constant attention, and there is probably no branch of our stock feeding which requires so much care and nicety in detail as fatting early lambs for the London market. Our mode is to feed the ewes and lambs in the open field, and although the land is somewhat dirty in unfavourable weather, yet the climate is so good and peculiar that the lambs do remarkably well without shelter. When the lambs first begin to eat, we give them a little of the finest hay we have, Dutch Clover we prefer; the root feeding consists of White Carrots, and the white hearts of the large Cow Cabbage quartered into the Gardner's cutter, and passed through twice, which gives the Carrots in small pieces like dice, and the crisp, sweet Cabbage is reduced very fine and easily taken up by the lambs when they first begin to eat, and it is of great importance that they should eat early as it relieves the ewes, particularly where they have twins; the Carrots and Cabbage, after being cut fine as described, are powdered over with cake-meal, by which means the lambs take cake before they would eat it in the ordinary way; they have, however, oil-cake cracked and passed through a riddle, to give it as small as Peas or Beans, in which state cracked Peas are mixed with it, and for lambs we prefer American cake and Grey Peas. Our Christmas beef has been sold in due season at about 13*s.* 6*d.* per score, at which price the bullocks have made a very good return for feeding, having made about 10*s.* per week increased value from the day of purchase to the time of sale, which we consider a remunerative price, according to the mode of feeding, which we will here attempt to describe. The animals we have just sold as Christmas beef were Devon steers three years old, bought in fresh condition in the last week in May, from which time until the 1st October they were put in boxes, and fed with Clover Grass cut fresh from the field daily, and 4 lbs. of oilcake per day each; from 1st October to November 7th the same quantity of cake each, with Turnip greens and Oat straw ad libitum; and from November 7th to the day of sale, December 20th, the like quantity of oilcake, 60 lbs. of Mangels and Turnips cut and mixed with the cake meal and Oat straw in the ordinary state. We have given the mode of feeding somewhat in detail in order that it may be understood that bullocks by not over feeding in an expensive manner, may be made to yield a clear profit of 3*s.* to 3*s.* 6*d.* per week, and all expenses paid and charged, including cartage of the manure returned to the land. *J. B.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending January 9, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0.6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.		°				°	°	°	°	Inches.	°	°
Wednesday ..	1	30.44	30	27	N.E.	1	7	33	28	40	28	..	37½	41
Thursday ..	2	30.45	36	35	N.E.	1	8	37	30	36	31	0.01	37½	40½
Friday ..	3	30.14	36	35	S.W.	1	8	38	34	39	33	0.03	38	40
Saturday ..	4	29.93	36	34	N.W.	1	1	42	33	44	30	0.03	38	40
Sunday ..	5	29.80	41	39	W.	2	5	42	33	51	30	..	38	40½
Monday ..	6	30.14	35	33	N.W.	2	6	47	32	48	30	0.02	39	40½
Tuesday ..	7	30.15	40	39	S.W.	2	5	40	35	50	34	0.01	39	40½
Wednesday ..	8	29.67	48	47	S.W.	2	7	48	39	54	34	0.18	39½	40½
Thursday ..	9	29.73	48	47	S.W.	3	8	52	38	54	35	0.17	40½	41

Calendar of Operations.

JANUARY.

CHESHIRE: *Jan.* 1.—Our report of the autumn refers to the finest season for field operations we can remember. After as favourable a corn harvest as could be desired, the weather continued fine for the preparation of the land for Wheat, the sowing of which was, generally, most satisfactory. During the month of October we had occasional showers which were very beneficial to the pastures and late sown Swedes, and upon the whole, there was a fine time for securing the Mangel crops, and early Swedes, without damage from frost. The early part of November was rather wet, with occasional frosty nights, by which a few patches of Mangels still remaining in the field were slightly injured, not for immediate use, but for storing, and if kept a few weeks, will, in all probability, turn black at the crown and gradually decay. Swedes on the whole have been a good healthy crop, and where sown late, have been growing up to the present time; one of the nicest crops we have seen was sown the first week in June, the bulbs are remarkably heavy and perfectly sound, and are now being stored in the finest possible condition. We have noticed some early sown crops, which probably had been rather over forced with artificial manure, that were exceedingly coarse in quality, and judging from appearances, we think will not keep through half the winter; it is one thing to grow heavy weights of Turnips, and another to grow them of fine keeping quality, so that a good supply of excellent food may be depended upon throughout a long winter, but, of course, seasons have a great deal to do with this. If, however, Turnips are sown very early, and are not of a first-rate keeping kind, and the after

management neglected, the usefulness of the crop will be much endangered. Common Turnips, some of the varieties of which are very excellent food for cattle and sheep during the months of October and November, appear to be more in favour this year, and we have seen some very heavy crops, varying from 26 to 32 tons per acre. Wheat generally is looking well, but we observe some of the early sown becoming rather too luxuriant for the time of year; a little frost which we may soon expect will however check it and prevent its becoming "winter proud;" the late Wheat crop, although good in quality, has in very few instances yielded an average quantity per acre, in consequence of being too thin in the ground. The "pleuro-pneumonia" still exists on many estates in the county, and, we believe, no effectual cure has been discovered. We are glad to observe that the Royal Agricultural Society has offered a prize for the best Essay on the "Parasites, including Entozoa, which infest cattle and sheep." This we hope will lead to the discovery of a remedy for the "Hoose" in calves, which is frequently so fatal in this county. We know of one instance where a farmer three years ago lost 17 in about a month, and this year he lost six out of 14, and on examination after death the windpipe or trachea in every case was completely filled with thread-like worms—in fact to suffocation. *W. P.*

Mid Lothian Farm: *January* 6.—The labour during the past fortnight has been entirely confined to cartage work, barn work, and the care of live stock. A very moderate frost having sealed up the earth, and made it very convenient for easily carting manure from the dung heaps to the fields, where it is placed in heaps of from 2 to 4 cwt. each, according to the quantity applied per acre. These heaps, when laid out so far as could be overtaken, were at once spread out by the women workers, and there is now about 40 acres of land ready to be ploughed for Beans and green crops to which from 14 to 20 tons of manure have been applied per acre. The frost having given way so as to enable Turnips to be pulled, those still unsecured are being taken up, topped, rooted, and carted to the homestead. The bulbs are unusually clean and of a full size, with very few rotted ones among them. Sheep on Turnips did not make much for a week, but are now fast improving. Cattle have nearly consumed all the diseased Potatoes taken out among the crop when it was raised; though there still are unfortunately a good supply remaining to be picked out of what was put aside as sound. The sale being slow with little demand for even good qualities this week, has not commenced. Another week's continuance of the slight frosts we have at present will entirely exhaust all the carting which can be judiciously prosecuted. Young Grasses look bright and promising, and even old pastures have not the browned look they often assume after frost. The young Wheats when up look well, but a goodly quantity being only sown about the middle of December will not be visible till spring. Save as to Oats and Turnips, both of which have been good, we cannot speak favourably of last year's crop, Potatoes being only one fourth sound, Wheat a moderate yield, and Barley poor, with rather empty barn yards.

Notices to Correspondents.

Fire Grate: *Exeter*. The drawing was intended to enable any maker to copy it. It is all made of thin bar iron cut into certain lengths, bent and riveted. Any blacksmith can copy the drawing.

Interpretation of Rule: *W P*. An agricultural society offers a premium for the best pair of agricultural horses, and to prevent parties gaining their prizes year after year with the same animals, introduced the following rule:—Rule 9. "Any animal having gained the first premium for stock of all ages in this society, shall thereby be disqualified for ever afterwards." A. and B. compete for premium 24, for the best pair of horses for agricultural purposes in the year 1861. In 1858 A. had the above premium awarded to him, and with one of the same pair (a gelding) he competes again in 1861, and has the same premium awarded to him. B. being placed second an objection was raised, and B. entered a protest against the award. The case was referred to the general meeting in December, when a member moved a resolution to the effect that the award be confirmed. The resolution was seconded and carried by a majority of the meeting. The question is, has it infringed Rule 9? or, is A. fairly entitled to the prize so obtained? [It appears to us that if the prize which one of A.'s pair helped to win in 1858 came under the description in Rule 9 "First premium for stock of all ages"—then its again helping to win a similar prize in 1861 should have been fatal to the award, which it appears has nevertheless been confirmed.]

Milch Cows: *Alpha*. As stated last week, Brewers' grains will not much help the butter. Get some rape cake and *boil* a cake along with some Carrots for each cow daily, and mash it all up along with some hay chaff. That will enrich the milk. The cows will not eat the cake unless it be boiled or steamed to get rid of its hot aroma. Swedes and Mangels are hardly to be eaten without spoiling the taste of the butter, though if steamed or boiled they are less likely to affect it.

Poultry.—It is very difficult to make any quotation of prices for a few weeks after Christmas. All the energies of those who send seem to have been concentrated on the supply of the metropolis for that time, and as though they had made up their minds they would "take it easy" for some time afterwards, the provisions we receive bear evident token of having been sent up in a hurry without the usual previous fattening. Christmas is a time of excitement for all parties, senders, salesmen, retailers and buyers; all suffer themselves more or less to be carried away by the stream, and none care to have much to do for a few days afterwards. We fancy, to judge from the market, the holidays have been long ones. The supply is scanty and the quality inferior. There is but little trade, and the damp, close weather is not without its influence; it necessitates an immediate sale of everything that is sent up:—

Turkeys	Each	7s.	0d.	to	12s.	0d.
Large Fowls	,,	3	6	,,	4	0
Smaller ditto	,,	2	0	,,	2	6
Chickens	,,	1	6	,,	1	9
Geese	,,	6	0	,,	6	6
Pheasants	,,	2	6	,,	3	0
Partridges	,,	1	9	,,	2	0
Hares	,,	2	3	,,	2	6
Rabbits	,,	1	3	,,	1	4
Wild ditto	,,	0	8	,,	0	9
Pigeons	,,	0	8	,,	0	9

Received with Thanks: Roaldus and Mr. Harvey on Rent charge valuation, Mr. Houldsworth on Smith's cultivator, Mr. Smith's reply to Mr. Grey, &c.—to appear next week.

Scab: *T P*. It is owing to the presence of minute insects called Acari, which burrow under the skin and produce excessive irritation, causing the animal to seek relief by rubbing against any hard object. This friction removes the wool, produces sores, and the animal loses flesh and becomes a miserable object. Powdered sulphur, 4 oz.; fish oil, 12 oz.; oil of turpentine, 2 oz.; white Hellebore, 2 drachms; to be well mixed together and rubbed into the affected parts; or mercurial ointment diluted with four times its weight of lard. *W. C. S.*

Worms in Greyhounds: *Norbiton*. Iron filings 1 drachm; ground glass 1 drachm; to be made into four pills, and one to be given daily. If not successful—oil of turpentine, 3 drachms, Castor oil, 3 drachms; to be well mixed together and given once a day for several days. *W. C. S.*

Winter and Spring Flowering Plants.

F. AND A. SMITH are now supplying fine plants at moderate prices of the following:—
*Acacias, *Azaleas, Cinerarias, *Camellias, *Chrysanthemums, Cyclamen, Cytisus, Clianthus, Carnation (Tree), *Echeveria, *Epacris, *Ericas, Eutaxias, *Gardenias, *Heterocentrum, *Kennedyas, *Leschenaultias, *Jasminum grandiflorum, *Monochætum, Pelargoniums, *Passifloras, *Primula, double and single; *Solanum, *Oranges, &c. [Those marked thus * are either in bud or fruit at the present time.]
GENERAL CATALOGUE gratis.
Dulwich, Surrey, S.

Verbena, "Sheppard's Ariosto Improved."

OSBORN AND SONS will be prepared to send out the above-named NEW VERBENA on May 1 next. It is considered by all who have seen it one of the greatest acquisitions of the season either as a pot or bedding Verbena. The colour is that of "Ariosto," a beautiful rich mulberry, but in other respects it far outvies it—the truss and pip is very much larger, and the habit robust, covering the ground well and flowering freely and continuously. It was used last summer most successfully by Mr. Sheppard, the intelligent Gardener at Woolverstone Park, the seat of John Berners, Esq., near Ipswich.

In order to make it available for bedding largely the ensuing season, Osborn & Sons have resolved to distribute it at the following low rate:—

100 Plants	£5	0	0	12 Plants	£0	18	0
50 Plants	3	0	0	A Single Plant	0	2	6

Fulham Nursery, London, S.W.—Jan. 11.

PLANTS for GAME COVERTS. — 30,000 strong well rooted Plants of PRIVET and SNOWBERRY, 3 to 4 feet high, to be sold very cheap, in large or small quantities, in consequence of the Covert in which they have been growing being converted into tillage.
For price, &c., apply to C. E. West, Newnham Paddox, Lutterworth, Leicestershire.

Planting Season.

WM. URQUHART AND SONS, Dundee, beg to announce that their PRICED LIST for this season of Forest Trees, Ornamental Trees, Shrubs, Border Flowers, Roses, Ferns, and Auriculas, may now be had on application.
Dundee.—Jan. 11.

Quick.

H. AND F. SHARPE are prepared to offer of the finest quality,
Strong 2-years' Transplanted QUICK, 3 feet high,
Strong 2-years' Seedling do., 2 feet high,
at very moderate prices, which may be had, with samples, on application.
Seed Growing Establishment, Wisbeach.

Four Millions of Transplanted Quicks.

GEORGE CHIVAS offers the above, Two Millions of which are suitable for Railways, and Two Millions varying from strong to exceeding strong—a portion having been twice Transplanted. A bale containing 100 of each, five sizes, forwarded on receipt of 15s.; orders for 10,000 delivered free at any railway station.
Also Half a Million of Transplanted SPRUCE, and one of the largest general Nursery Stocks in the North-Western counties.
Chester, Jan. 11.

500,000 QUICKS, 2 years' Seedling, 18 to 24 inches, and 24 to 30 inches, and 2 years' transplanted, 2½ to 3 feet.
GOOSEBERRIES and CURRANTS, leading kinds, 70s. to 80s. per 1000.
EVERGREEN PRIVET, from 2 to 5 feet, 20s. to 30s. per 1000.
The above are all strong and well rooted.
For prices and samples apply to J. & W. Cocks, Donington Nurseries, near Spalding.—Jan. 11.

LARCH, OAK, &c.—The Subscribers are in want of the following. None but straight, stout, well-rooted stuff need be offered.
LARCH, 2½ to 3 feet, and 3 to 4 feet } Stout, with clear good
OAK, 2½ to 3 feet, and 3 to 4 feet } leaders.
LIMES, 3 to 4 feet. Ditto, Red Twigged, 9 to 10 feet. Good plants for single specimens.
BLACKTHORN, Seedlings.
Francis & Arthur Dickson & Sons, Upton Nurseries, Chester.

A FEW respectable DISTRICT AGENTS WANTED for a MANURE which is highly recommended and sold carriage free. Liberal terms given.
Address, with occupation and references, B. C., 10, Pall Mall East, London, S.W.

POTTER'S GUANO.—Established Twenty Years.
AGENTS WANTED.
Factory: 28, Clapham Road Place, S.

THE LONDON MANURE COMPANY
(Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE of LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

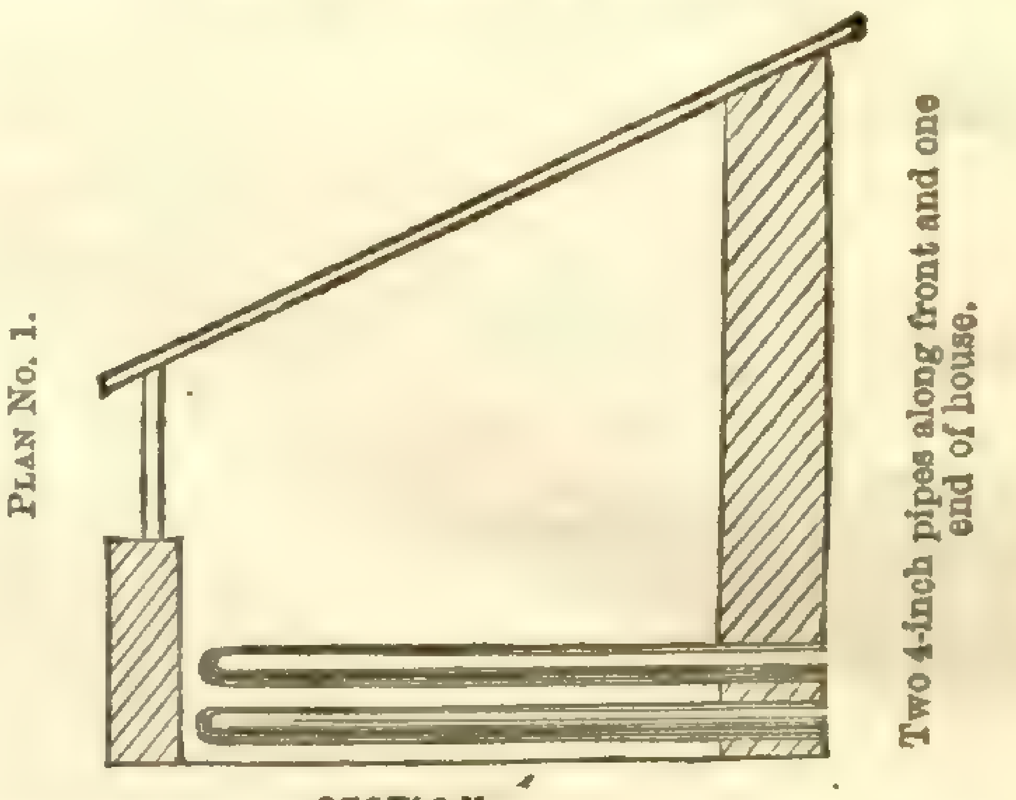
LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—

LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6	6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES ..	5	5
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8	0

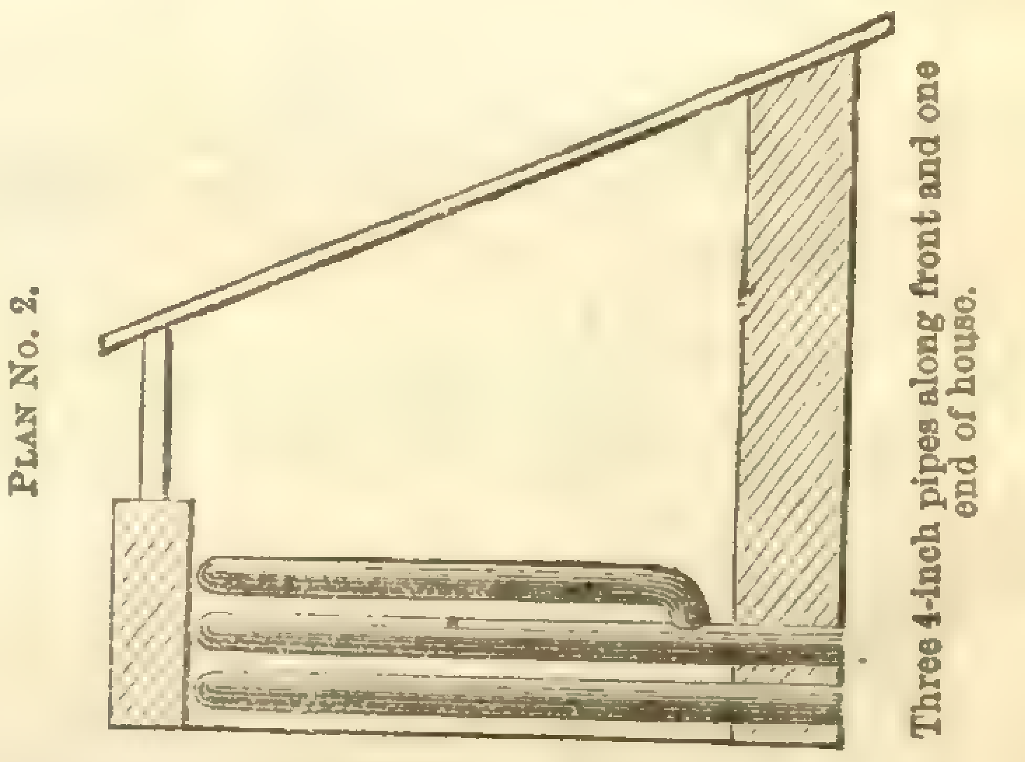
These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and Liffey Buildings, Eden Quay, Dublin.

HOT-WATER APPARATUS.

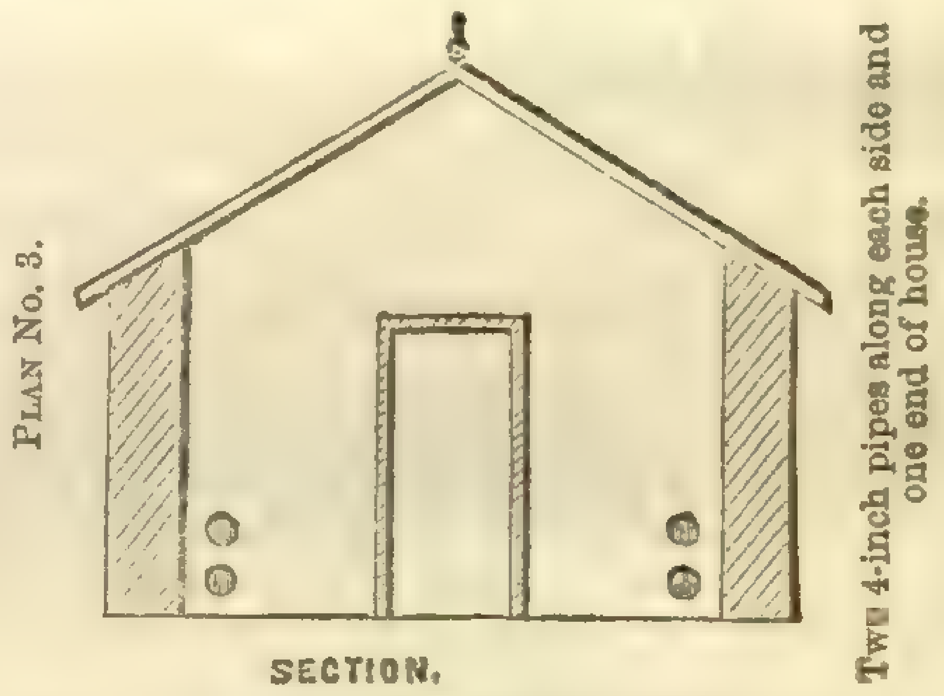
J. JONES
BEGS TO OFFER A COMPLETE
Hot-Water Apparatus for Houses
according to the following Plans, delivered Free to any Railway Station in England.



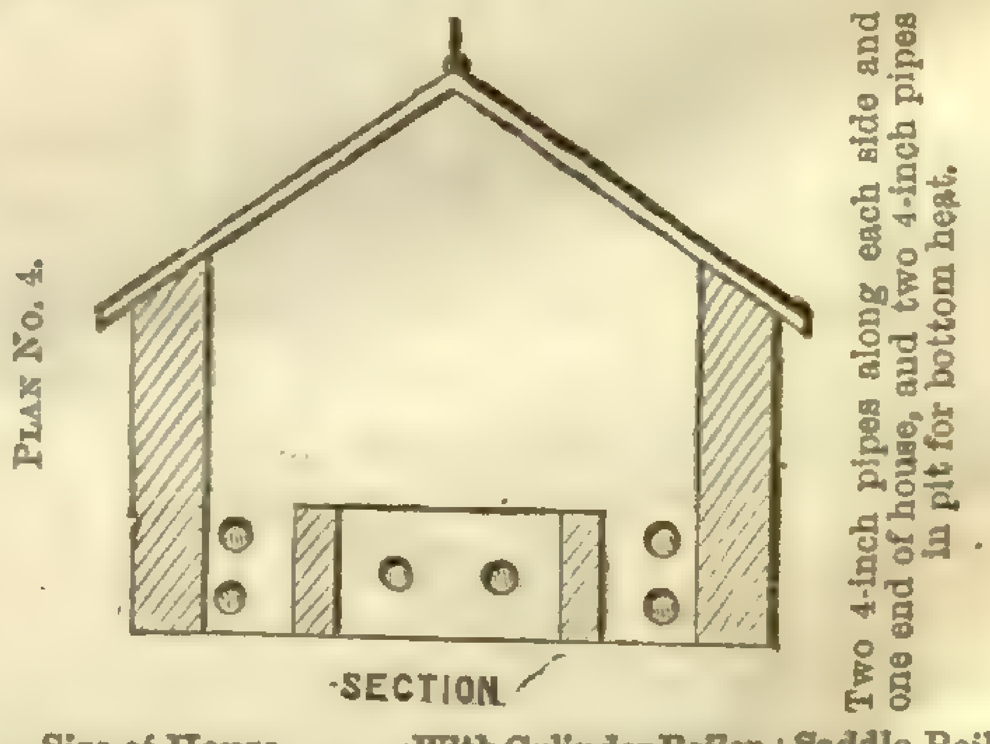
Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£8 0 0	£8 12 6
20 feet by 10 feet ..	,,	8 10 0	9 0 0
25 feet by 12 feet ..	,,	10 0 0	10 10 0
30 feet by 12 feet ..	,,	11 10 0	12 0 0
40 feet by 15 feet ..	,,	16 10 0	17 0 0
50 feet by 15 feet ..		18 10 0	20 0 0



Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£11 10 0	£12 0 0
20 feet by 10 feet ..	,,	12 10 0	13 0 0
25 feet by 12 feet ..	,,	14 10 0	15 0 0
30 feet by 12 feet ..	,,	16 10 0	17 0 0
40 feet by 15 feet ..	,,	22 0 0	23 0 0
50 feet by 15 feet ..	,,	24 10 0	26 0 0



Size of House.		With Cylinder Boiler.	Saddle Boiler
16 feet by 8 feet ..	Price	£12 10 0	£13 0 0
20 feet by 10 feet ..	,,	13 10 0	14 0 0
25 feet by 12 feet ..	,,	16 10 0	17 0 0
30 feet by 12 feet ..	,,	19 0 0	20 0 0
40 feet by 15 feet ..	,,	24 10 0	25 10 0
50 feet by 15 feet ..	,,	27 0 0	28 10 0



Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£16 0 0	£17 0 0
20 feet by 10 feet ..	,,	17 10 0	18 10 0
25 feet by 12 feet ..	,,	21 10 0	22 10 0
30 feet by 12 feet ..	,,	25 0 0	26 0 0
40 feet by 15 feet ..	,,	31 0 0	32 0 0
50 feet by 15 feet ..	,,	33 10 0	35 0 0

The above prices include Boiler, strong Furnace-doors, Bars, Plate, Soot-doors, Damper, and Supply Cistern-pipes of 4-inch diameter, Elbows, &c.; all of the best quality.
Delivered free to any Railway Station in England. Terms: Nett Cash.
Estimates will be sent for the work fixed complete, or further particulars on application to
J. Jones, Hot-Water Apparatus Manufacturer, 6, Bankside, London, S.E.

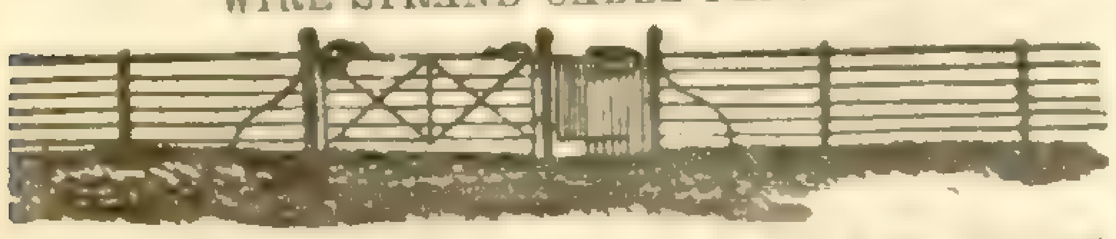
Prices Reduced.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.

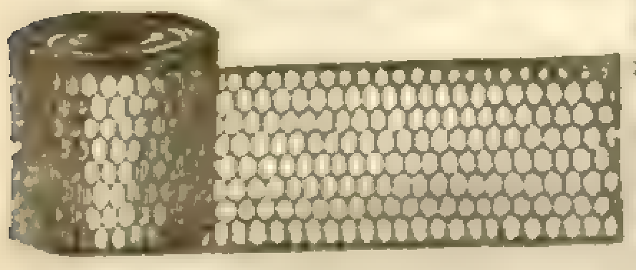
WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1s. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide 2-inch mesh, 4d., 4½d., and 6¾d. per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 2¾d., 3¼d., and 5½d. per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.

Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS

of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co., 2, Basinghall Buildings, Leeds.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, WERE AWARDED THE

SILVER MEDAL of the ROYAL AGRICULTURAL SOCIETY for their IRON HURDLES and GATES, which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use. Lists per post on application. Gates from 30s. to 500l.

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

PROFESSOR VARNELL'S ENAMELLED AND WROUGHT-IRON STABLE FITTINGS.

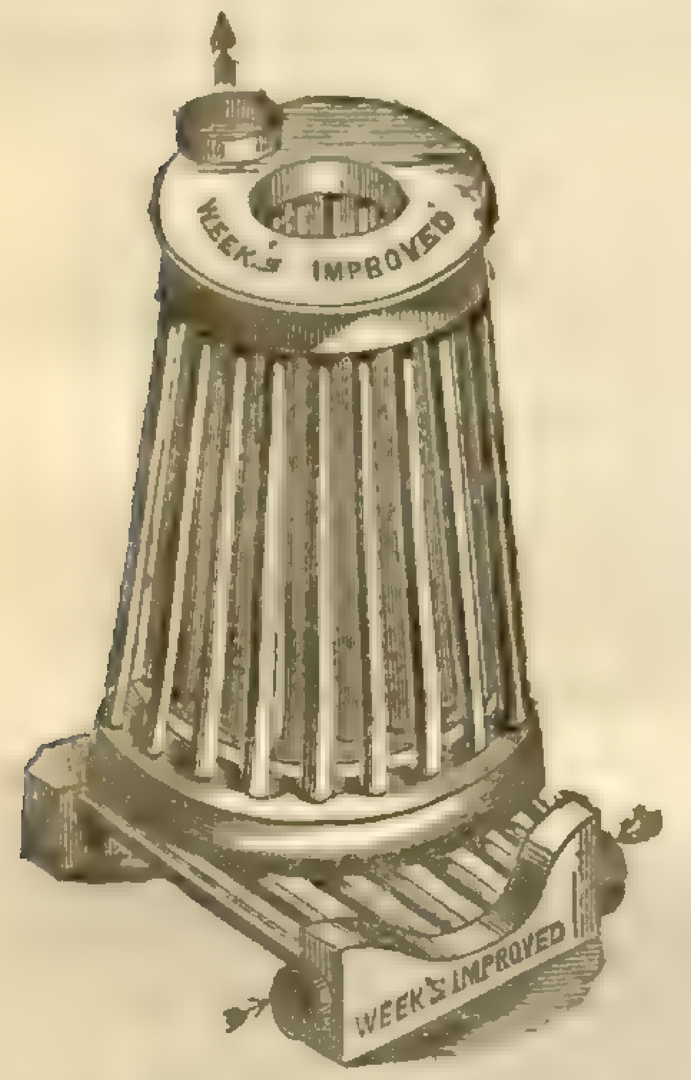
These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

OPPOSITE OLD ST. PANCRAS CHURCH.



THE LARGEST HOT-WATER APPARATUS IN EUROPE

IS ERECTED ON

WEEKS'S ONE-BOILER SYSTEM.

TOTAL LENGTH OF PIPING IN THE APPARATUS NEARLY THREE MILES.

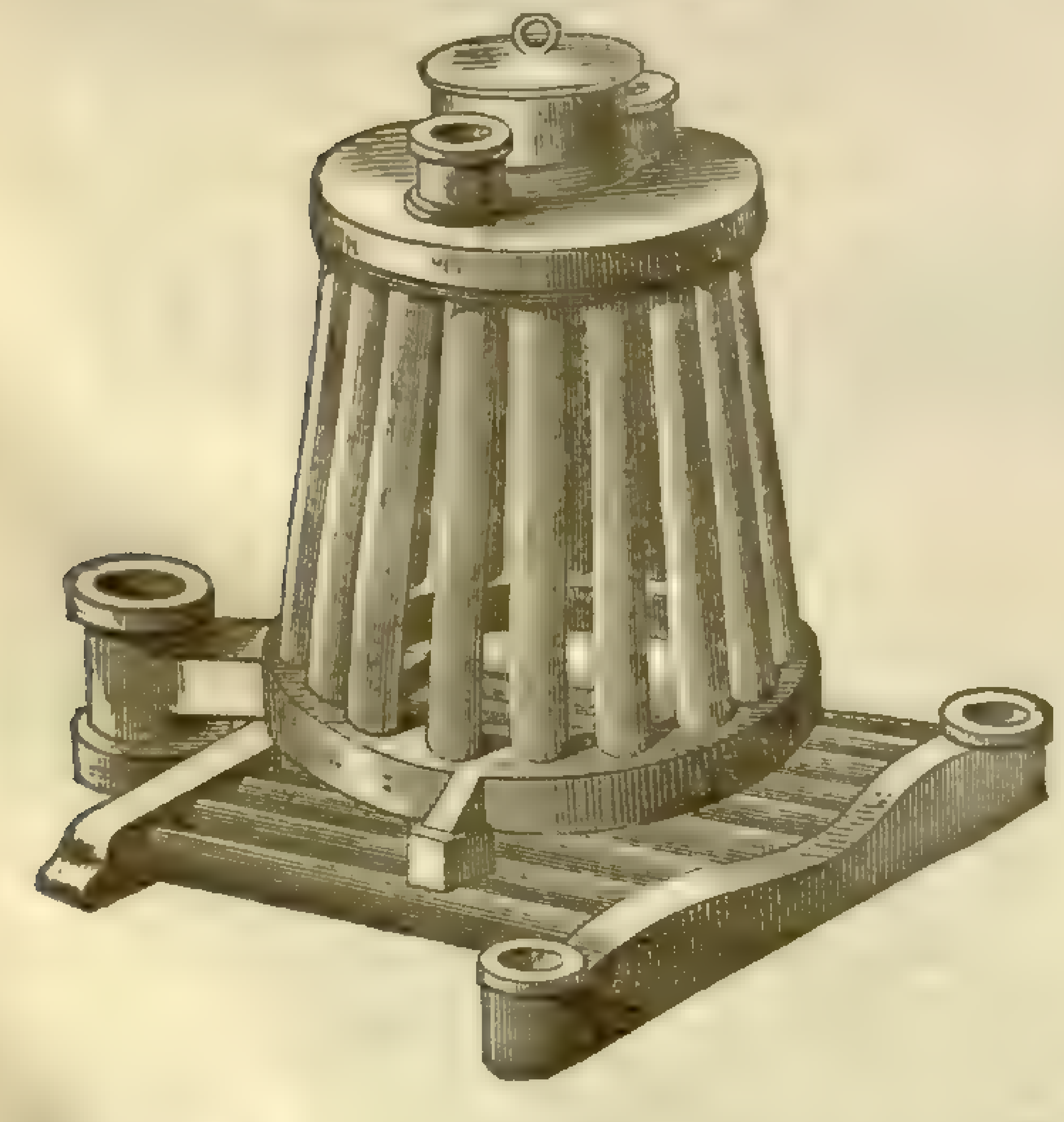
JOHN WEEKS & COMPANY,

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS MANUFACTURERS,

KING'S ROAD, CHELSEA, S.W.

PLANS AND ESTIMATES FREE ON APPLICATION.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



ORMSON'S PATENT JOINTLESS TUBULAR BOILER,

AN ORIGINAL INVENTION,

Brought out for the purpose, and is now fully acknowledged to surpass the OLD-FASHIONED JOINTED TUBULAR BOILERS, which have been made for the last 20 or 30 years by all other manufacturers. The ADVANTAGES of this PATENT will be manifest to every person's understanding from the following FACTS. For instance, one of the OLD-FASHIONED JOINTED BOILERS with 50 TUBES would have 100 JOINTS made of rope yarn and cement, exposed to the direct action of the FIRE, whereas in my PATENT there is NOT ONE JOINT so exposed. And it should be fully understood that as the OLD-FASHIONED JOINTED TUBULAR BOILER increases in SIZE, number of TUBES and JOINTS, its liability to LEAKAGE also increases, consequently

THE FOLLOWING IS THE REASON WHY

ORMSON'S ONE-BOILER SYSTEM

AND PATENT JOINTLESS TUBULAR BOILERS

have become so universally adopted on account of their superior power, great safety, and economy,

ORMSON'S No. 1 BOILERS	are heating	upwards of	250	feet of Pipe.
ORMSON'S No. 2 BOILERS	"	"	600	"
ORMSON'S No. 3 BOILERS	"	"	1300	"
ORMSON'S No. 4 BOILERS	"	"	3000	"
ORMSON'S No. 5 BOILERS	"	"	5000	"

Boilers of larger sizes if required to heat 12,000 or 15,000 feet of Pipe.

H. ORMSON having a most complete Set of Steam-power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices. IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, HORTICULTURAL BUILDER TO HER MAJESTY,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 12s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

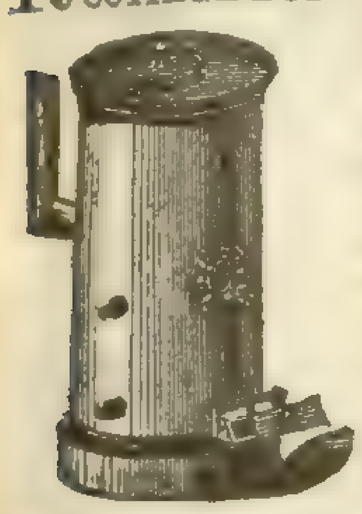
MUSGRAV SL TENETPS 'AOW COMBUSTION STOVE.—Thishcove is St tnae rest approach to Warm ing by Hot Water, and an efficient aid in Ventilation.

It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large Apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.

Particulars and prices post free on application to MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

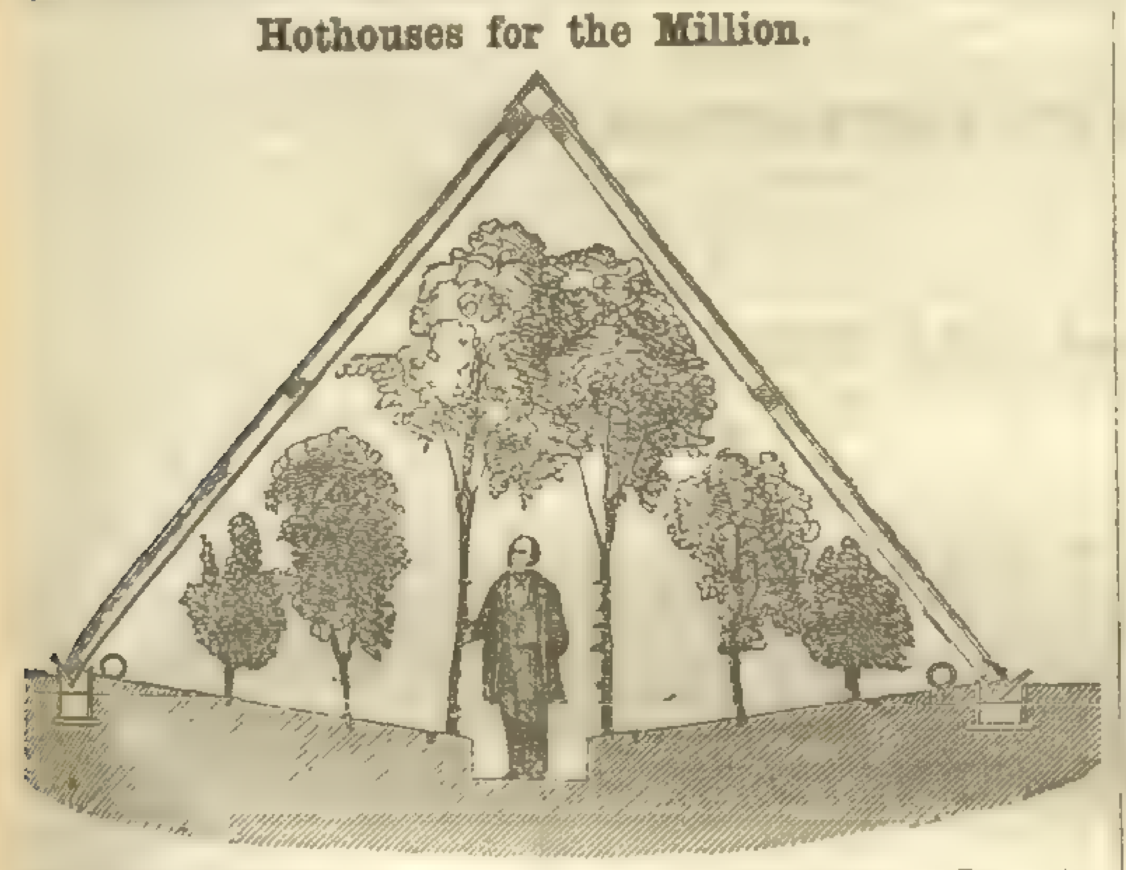


Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3l. 10s.

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

Hothouses for the Million.



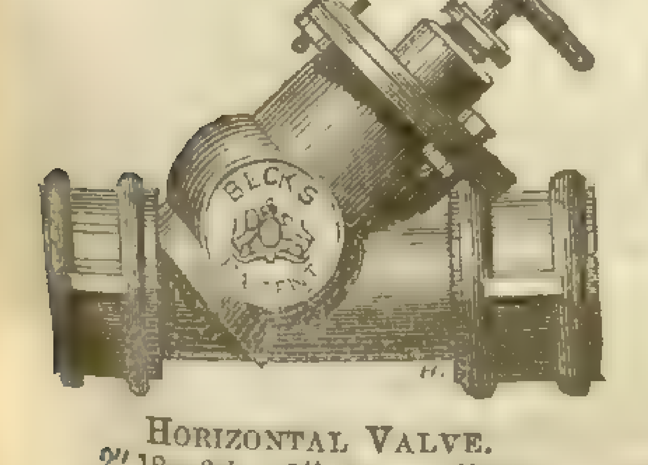
HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to any Railway Station round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to SAMUEL HEREMAN, 7, Pall Mall East, London.

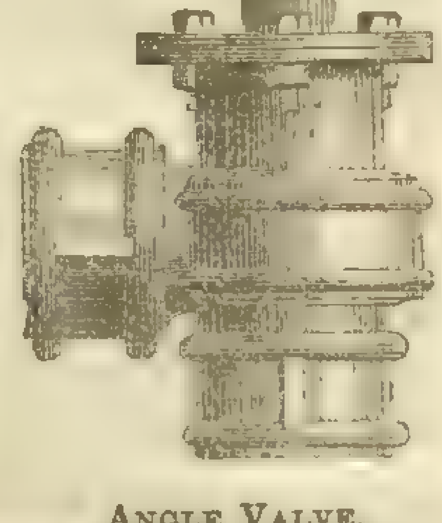
Horticultural Works, Danvers Street, Chelsea, S.W.

BECK'S PATENT

HOT WATER VALVE.



HORIZONTAL VALVE.
2" 18s. 6d.; 3" 25s.; 4" 30s.



ANGLE VALVE.
2" 17s.; 3" 23s.; 4" 28s.

JAMES GRAY, Sole Agent, begs to call attention to this most simple and perfect Valve ever invented. It is perfectly water tight, and is never liable to get out of order, or to get fixed by standing.

TO ARCHITECTS, ENGINEERS, GARDENERS, & OTHERS.—BECK'S Patent Valve has been submitted to several of the most scientific men of the day, and has invariably met with unqualified approval. A liberal Discount to the Trade.

CONSERVATORIES, GREENHOUSES, VINERIES, and every description of HOTHOUSE erected on the most improved principles, and of best materials, at the lowest possible price consistent with good workmanship.

Heating by Hot Water in all its branches. Boilers of every approved description, Tubular Saddle, Conical, &c.

JAMES GRAY, Horticultural Works, Danvers Street, Paulton's Square, King's Road, Chelsea, S.W.

HOTHOUSES TO BE LET, comprising about 200 feet in length of recently erected Buildings, heated by a Tubular Boiler and 4-inch pipes. The Proprietor, who has hitherto attended to them, cannot continue to do so, and will therefore let them by themselves, or with his extensive Gardens, or enter into any mutual arrangement by which he can be relieved from the superintendence of them. There is a stock of Pines, Vines, Peaches, &c., with a large stock of the usual plants, which may be used, &c., without any immediate outlay, according to circumstances. None but Churchmen of good character need apply.

Apply by letter to the Reverend the RECTOR, at Messrs. Sawyer, News Agents, 1, Castle Court, Birchin Lane, Cornhill, London, E.C.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.

The GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C.

PROTECTED BY THE CUTLERS COMPANY
CORPORATE
MARK.

JOSEPH HAYWOOD AND CO.,

MANUFACTURERS OF

PRUNING and BUDDING

KNIVES,

SPORTSMAN'S, and all kinds

of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

J. TYLOR AND SONS' PATENT IRON PUMP with reversible handle, for Shallow Wells, Hot-Houses, &c. Price 25s. 6d. each.

IRON YARD
and
GARDEN PUMPS
3 feet 6 inches under spout

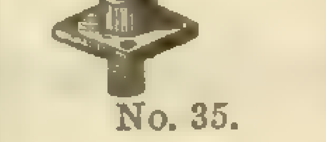
$2\frac{1}{2}$	3	$3\frac{1}{2}$ inch
43s.	53s.	60s. each.

J. TYLOR and SONS manufacture PUMPS for DEEP WELLS which do not require any fixing below the level of the ground.

PUMPS of J. TYLOR & SONS' manufacture to be obtained of Plumbers in all parts of the United Kingdom.

J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

JOHN WARNER AND SONS, BELL and BRASS FOUNDERS to HER MAJESTY, HYDRAULIC ENGINEERS, BRAZIERS, &c., 8, Crescent, Cripplegate, London, E.C.



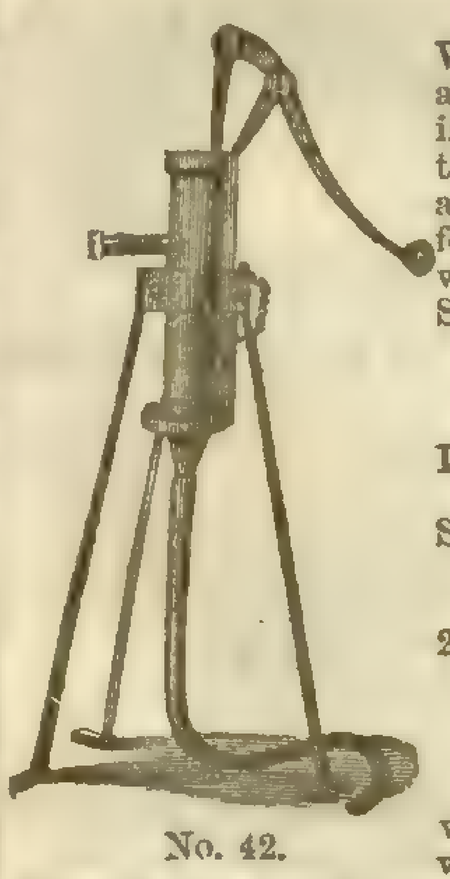
No. 35.

WARNER'S PATENT CAST-IRON PUMP, for raising Water from Wells not exceeding 25 feet in depth.

Diameter of Barrel.	Height.		£ s. d.
$2\frac{1}{4}$ in. short	1 ft. 7 in.	Fitted for lead,	1 1 0
$2\frac{1}{2}$,, long	3 ,, 3 ,,	gutta percha	1 10 0
3 ,, ditto	3 ,, 6 ,,	or cast iron	2 4 0
$3\frac{1}{2}$,, ditto	3 ,, 6 ,,	flanged pipe	2 9 0
4 ,, ditto	3 ,, 6 ,,	as required.	2 18 0
$2\frac{1}{2}$,, short, with 15 feet of Lead Pipe attached, ready for fixing			2 0 0
$2\frac{1}{2}$,, long	ditto	ditto	2 14 0

This Pump is fitted with J. W. & SONS' Patent Vibrating Standard, Improved Revolving Cap, Metal Bucket, and Brass Suction Valve. By means of the Revolving Cap the handle can be shifted to the right or left hand, or opposite the nose, as desired.

WARNER'S IMPROVED LIQUID MANURE or GENERAL PORTABLE PUMP.



No. 42.

This Pump is fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

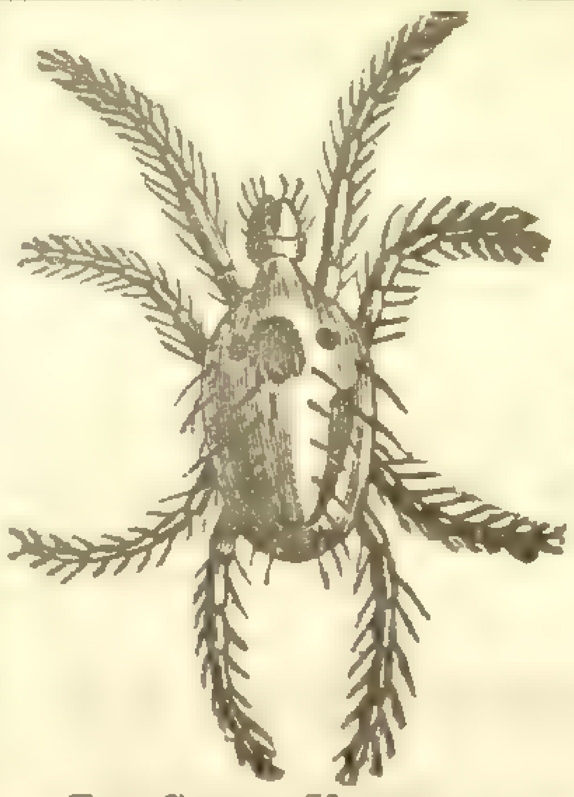
	£ s. d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2 15 0
If fitted with Barrel of Planished Copper	3 4 0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2 9 0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires, in either 10, 12, or 15 feet lengths .. per foot	0 2 5

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2l. 5s.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.

J. W. & SONS' Illustrated Catalogue forwarded post free on application.

The above may be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Cripplegate, London, E.C.



RED SPIDER MAGNIFIED.

ORCHARD HOUSE TREES and VINES.
Winter wash with
GISHURST COMPOUND,
recommended by Mr. Rivers. See "Orchard House," ninth edition; and see Mr. Pearson's recommendation in the *Journal of Horticulture*, 10th Sept., 1861.

Sold retail by Nurserymen and Seedsmen in boxes 1s., 3s., and 10s. 6d. each.

Wholesale by
PRICE'S PATENT CANDLE CO.,
Limited.

NEAL'S PATENT APHIS PASTILS.

The following is one of upwards of 70 Testimonials received by J. NEAL from gentlemen personally unknown to him.

"I beg to bear my testimony to the value of Neal's Pastils, and their efficacy in destroying, most effectually, the Green Fly without any trouble, and at a nominal expense, when compared with the us of Tobacco or even Tobacco Paper.

"JAMES SANDERS,
"Nursery Grounds, Abergavenny."

Sold by all principal Seedsmen.
Price 1s. and 2s. per packet.

Patentee:
Magnified Aphides. J. NEAL, Edward Street, Birmingham.

To Farmers and Agriculturists.

COTTON SEED CAKE.—The best and cheapest Cake for Feeding purposes, and particularly adapted for Dairymen and Cowkeepers, made from pure Egyptian Seed, which is freed from all fibre.

Apply to RALPH LEIGH CLARE, Broker, Chapel St., Liverpool.

WANTED, 3 or 4 ACRES of LAND, suitable for Market purposes (with a Cottage preferred), within 10 miles of Covent Garden Market.

Address, A. B., Mr. Hurd, Horticultural Builder, Radnor House, King's Road, Chelsea.

WANTED to RENT, by a desirable Tenant, in Gloucestershire, Wiltshire, Dorsetshire, or adjoining Counties, a Useful STOCK and CORN FARM, of 500 or 600 Acres, principally Arable. A comfortable House, conveniently situated, and Shooting indispensable.

Address Particulars to FARM, *Bath Chronicle* Office, Bath.

To Nurserymen, Gentlemen, Gardeners, and Others.

TO BE DISPOSED OF, owing to the Decease of the Proprietor, a compact and long established NURSERY and SEED BUSINESS at Middlewich, commanding an extensive trade. The Stock is young and healthy. The Nurseries extend over 15 acres, are situated in a good locality, and within two miles and a quarter from the Winsford Station on the London and North Western Railway, and near to the Trent and Mersey Canal.

For particulars apply to Mr. JOHN TAYLOR, Croxton Hall, near Middlewich, or to Mr. C. F. BARKER, Solicitor, Middlewich.

To Market Gardeners.

TO BE LET on LEASE or by the Year, 13 Acres of unexceptionable LAND, fronting a Turnpike Road, close to the Wolverton Station, and in the midst of a large and increasing population. A portion of Freehold Land abutting on the ground could be purchased for Building. This offers a remarkably advantageous opening for a Market Garden; 8 acres adjoining Let in Allotments.

Address for particulars to Rev. W. T. SANKEY, Stony Stratford.

TO BE LET, with immediate possession, a small NURSERY of about 2 Acres in a respectable and increasing neighbourhood, within a few miles of the South-east of London. There are several Houses and Pits stocked with Geraniums and Bedding Plants, &c., for which there is a great demand. The ground contains a number of fine bearing Fruit Trees, with good walls for Trained Trees, and a variety of Ornamental Plants and Shrubs. A capital situation for a jobbing trade. The rent very moderate, and the Stock to be taken by valuation in the usual way.

For further particulars apply to Mr. A CHANDLER, Horticultural Agent and Valuer, 23, Priory Road, Wandsworth Road, S.

Sales by Auction.

Valuable Consignment of Seeds from California and Oregon, just arrived.

MR. J. C. STEVENS will Sell by Auction at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY, Jan. 16, at half-past 12 o'Clock precisely, about 80 oz. of Clean SEED of Wellingtonia gigantea in first-rate condition; 15 oz. of Cupressus Lawsoniana, several lbs. of Pinus insignis, Jeffreyii, Sabiniana, Lambertiana, Fremontiana, monticolor, tuberculata; Abies Douglasi, Menziesii, Suttoniana; Sequoia sempervirens, Cupressus macrocarpa and Macnabiana, &c. Also a few CONES and dried specimens.

On view the Morning of Sale, and Catalogues had.

Important Sale of Plants.

GRAINSBY HALL, NEAR GRIMSBY, LINCOLNSHIRE.

MR. DAVID THOMPSON will SELL by AUCTION, without reserve, on the Premises of Geo. Haigh, Esq., Grainsby Hall, Lincolnshire, on THURSDAY, Jan. 16, at 11 o'Clock precisely, a Choice and Valuable Collection of STOVE and GREENHOUSE PLANTS, FERNS, BEDDING PLANTS, FRUITING and SUCCESSION PINES, &c. The above consist of choice Exhibition Plants, viz., Allamandas, Stephanotis, Hoyas, a splendid specimen of Cycas revoluta, the Sago Palm, a fine Pitcher Plant, the whole consisting of about 165 lots, well worthy the attention of Exhibitors and others. Also a good substantial Span-roofed Greenhouse, and several Pits and Frames, with Heating Apparatus, Boiler, &c.

Further particulars and Catalogues may be had on application to WM. GRAINGE, Esq., Solicitor, Grimsby; Messrs. E. P. DIXON & SONS, Nurserymen, Hull; or the Auctioneer, Mr. D. THOMPSON, Grimsby.

Grainsby is situate about two miles from Holton le-Clay, or North Thoresby Station, on the Great Northern line.

FOR LIST OF STRIKING NOVELTIES RECEIVED FROM OUR SARDINIAN CORRESPONDENT,
SEE LAST WEEK'S ADVERTISEMENT ON BACK PAGE OF *GARDENER'S CHRONICLE.*

BARR & SUGDEN, SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

NOTICE.—*In the course of three or four days we shall forward to all our Customers and Applicants, &c., a Copy of our*

SPRING SEED CATALOGUE, or GUIDE to the KITCHEN and FLOWER GARDEN for 1862,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

COLLECTIONS OF CARNATIONS, PICOTEES, AND PELARGONIUMS

Which BARR & SUGDEN have received from their SPECIAL SARDINIAN CORRESPONDENT, who has for many years devoted his attention to the improvement of these popular and splendid flowers, and has thereby gained for himself the European reputation of being one of the most distinguished and successful raisers of new varieties.

For prices see "Guide to the Flower Garden."

CARNATIONS.

A Collection contains 240 Seeds, being 20 Seeds of each variety.

No. 1. Collections containing 12 superb varieties of SELF CARNATIONS viz.,

rose	scarlet	maroon	slate	purple	yellow
carmine	bronze	white	vermilion	crimson	pink

No. 2. Collections containing 12 superb varieties of FLAKE CARNATIONS, viz.

white ground purple flake	white ground pink flake	white ground blush flake
scarlet ground maroon flake	spotted ground mulberry flake	crimson ground maroon flake
white ground rose flake	white ground scarlet flake	scarlet ground blue flake
slate ground scarlet flake	crimson ground violet flake	blush ground lilac flake

No. 3. Collections containing 12 superb varieties of BIZARRE CARNATIONS, viz.

purple and maroon bizarre	crimson and purple bizarre	purple and flesh bizarre
chamois and violet bizarre	pink and silver bizarre	flesh and maroon bizarre
scarlet rose and purple bizarre	scarlet and maroon bizarre	pink carmine and purple bizarre
carmine and slate bizarre	sienna purple and rose bizarre	red and black bizarre

No. 4. Collections containing 12 superb varieties of FANCY CARNATIONS, viz.

scarlet and slate	pink and lavender	strawberry	cerise and purple	violet and crimson	crimson mottled
flesh and purple	carmine and maroon	vermilion shaded	carmine shaded blue	carmine and slate	flesh and maroon

No. 5. Collections containing 12 superb varieties of YELLOW FLAKE CARNATIONS, viz.

nankeen ground carmine flake	orange ground vermilion flake	orange ground maroon flake
sulphur ground crimson flake	yellow ground pink flake	yellow ground rose flake
yellow ground slate flake	salmon ground scarlet flake	yellow ground scarlet flake
yellow ground orange flake	buff ground vermilion flake	yellow ground purple flake

No. 6. Collections containing 12 superb varieties of YELLOW BIZARRE and SELF CARNATIONS, viz.

yellow purple and rose bizarre	orange maroon and purple bizarre	yellow self
yellow rose and scarlet bizarre	yellow flesh and maroon bizarre	lemon self
orange scarlet and maroon bizarre	orange rose and purple bizarre	buff self
yellow carmine and lavender bizarre	yellow rose and lavender bizarre	orange self

No. 7. Collections containing 12 superb varieties of YELLOW FANCY CARNATIONS, viz.

yellow mottled carmine	salmon spotted cerise	salmon shaded purple
yellow spotted scarlet	yellow rose and slate	yellow shaded maroon
salmon shaded scarlet	orange mottled scarlet	yellow blue and pink
orange pink and lavender	yellow shaded pink	orange shaded scarlet

No. 8. Collections containing 12 fine varieties of PERPETUAL SELF CARNATIONS, viz.

cerise	pink	lilac	purple	bronze	copper
rose	maroon	crimson	scarlet	carmine	puce

No. 9. Collections containing 12 fine varieties of PERPETUAL FLAKE CARNATIONS, viz.

white ground pink flake	white ground carmine flake	rose ground lilac flake
purple ground maroon flake	pink ground lilac flake	white ground purple flake
white ground rose flake	strawberry ground maroon flake	white ground lavender flake
flame ground vermilion flake	pink ground scarlet flake	white ground scarlet flake

No. 10. Collections containing 12 fine varieties of PERPETUAL BIZARRE CARNATIONS, viz.

lilac rose and purple bizarre	crimson and lavender bizarre	crimson and slate bizarre
scarlet and yellow bizarre	rose and mulberry bizarre	pink rose and lilac bizarre
flesh and maroon bizarre	purple pink and scarlet bizarre	purple and rose bizarre
pink flesh and purple bizarre	purple white and rose bizarre	crimson and maroon bizarre

No. 11. Collections containing 12 fine varieties of PERPETUAL FANCY CARNATIONS, viz.

strawberry	pink spotted rose	rose and black
mottled crimson	carmine shaded purple	flame shaded vermilion
pink shaded lavender	fancy white	cerise and blue
mottled purple	flesh and scarlet	maroon shaded

PICOTEES.

No. 12. Collections containing 12 superb varieties of PICOTEES, viz.

white ground scarlet edge	white ground broad scarlet edge	white ground broad crimson edge
white ground purple edge	white ground broad purple edge	white ground narrow crimson edge
peach ground carmine edge	white ground fancy rose edge	white ground cupped purple edge
white ground rose edge	white ground lavender edge	

No. 13. Collections containing 12 superb varieties of YELLOW PICOTEES, viz.

yellow ground rose edge	yellow ground scarlet edge	yellow ground vermilion edge
yellow ground maroon edge	salmon ground red edge	buff ground scarlet edge
yellow ground pink edge	orange ground scarlet edge	yellow ground crimson edge
orange ground mulberry edge	yellow ground purple edge	yellow ground broad maroon edge

No. 14. Collections containing 12 fine varieties of PERPETUAL PICOTEES, viz.

white ground scarlet edge	white ground wax-like purple edge	white ground fancy scarlet edge
white ground purple edge	white ground maroon edge	white ground chocolate edge
white ground narrow pink edge	white ground pink edge	white ground rose edge
white ground broad rose edge	white ground lilac edge	white ground fancy maroon edge

PELARGONIUMS,

No. 19. Collections containing 12 splendid varieties of LARGE FLOWERED PELARGONIUMS, viz.

Etna	Turner	Empress of Russia	Stuart	Apollo	Beck.
Lord Clyde	,,	Grande-Duchesse Marie	,,	Mulberry	,,
Crown Imperial	Stuart	Marquise de Châteauneuf	,,	Beauty of Reading	Hoyle
Bird of Paradise	,,	Madame Prœschel	,,	Rosa Bonheur	,,

No. 20. Collections containing 12 splendid varieties of SPOTTED PELARGONIUMS, viz.

Bracelet	Turner	Victor Emmanuel	Miellez	Mr. Hooper	Stuart
Queen of Spots	,,	Baron Prost	Stuart	Paul Bounin	,,
Reine Hortense	Miellez	Frances Evelyn	,,	Prince Impérial	,,
Venus de Medicis	,,	Léon Pilatte	,,	Roi d'Italie	,,

No. 21. Collection containing 12 splendid varieties of FANCY PELARGONIUMS, viz.

Amy	Turner	Circle	Turner	Louise Bonnaire	Stuart
Arabella Goddard	,,	Mrs. Turner	,,	Mademoiselle Rouher	,,
Beauty	,,	Florence Stuart	Stuart	Madame Bounin	,,
Bridesmaid	,,	Julia Helen	,,	Prince of Wales	,,

DRIED SPECIMENS of NEW SEEDLING PELARGONIUMS to be seen at our Establishment.

BARR AND SUGDEN, SEED MERCHANTS AND FLORISTS, 12, KING STREET, COVENT GARDEN, W.C.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 19, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, January 11, 1862.

The Gardeners' Chronicle Newspaper.

SATURDAY, JANUARY 11, 1862.

SOUTH KENSINGTON MUSEUM.—After the 1st January, 1862, and till further notice, the South Kensington Museum will be CLOSED on WEDNESDAY evenings, and OPEN instead on SATURDAY evenings, till 10 P.M. Admission free. By Order of the
January 11. Committee of Council on Education.

GEOLOGY.—KING'S COLLEGE, London.—Professor Tennant, F.G.S., will commence a COURSE of LECTURES on GEOLOGY, on FRIDAY MORNING, January 24th, at 9 o'clock. They will be continued on each succeeding WEDNESDAY and FRIDAY at the same hour. Fee, 2*l*. 12*s*. 6*d*.
R. W. Jelf, D.D., Principal.

EVENING LECTURES on GEOLOGY, at the GOVERNMENT SCHOOL of MINES, Jermyn Street.—Mr. A. Geikie, F.R.S.E., F.G.S., will commence a COURSE of TEN LECTURES on the FIRST PRINCIPLES of GEOLOGY, on TUESDAY, January 14, at 8 o'clock; to be continued on each succeeding FRIDAY and TUESDAY evening at the same hour. Tickets for the whole Course, price 5*s*., may be had at the Museum of Practical Geology.

BELGIAN HORTICULTURAL BOARDING SCHOOL.—This School, belonging to the Belgian Government, was established 13 years ago, in M. Louis Van Houtte's Horticultural Establishment at Ghent, and Foreigners are admitted at the rate of 24*l*. a year, including Instruction, Board, and Washing. The Course begins on the 1st February. For Prospectuses application must be made at Mr. R. Silberrad's Office, 5, Harp Lane, Great Tower Street, London, E.C; for reference at Mr. Th. Cripps, Nurseryman, Tunbridge Wells; Mr. Sandy, Nurseryman, Stafford, who will be kind enough to answer on prepaid application.

Drainage Season.

MR. BAILEY DENTON undertakes the DRAINAGE of ESTATES by Commission or Contract.
52, Parliament Street, Westminster, S.W.

DRAINAGE of LANDS (by Contract or laid out and superintended at 5*s*. per acre), and the Erection of Agricultural Buildings and all other permanent improvements to Landed Estates, are undertaken by Mr. Humbert, Land Agent and Surveyor, Watford, Herts; and such works can, if desired, be entirely executed under powers conferred by special Acts of Parliament by money raised by Loan, and paid off (both principal and interest) by small annual payments, spread over a number of years, in the form of a rent charge, without immediate payment by the Landowner.

DRAINAGE OUTFALLS.—The most simple, expeditious, and inexpensive powers for obtaining the right of making Outfall Drains, Cuttings, &c., through the Lands of adjoining Proprietors, are under the WEST of ENGLAND DRAINAGE and INCLOSURE COMPANY'S ACT, and there is no necessity for separate proceedings such as Petitions, Special Act of Parliament, Commissions of Sewers, or Drainage Boards, &c.

Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements executed on Entailed, Mortgaged, or other Properties; the whole cost can be a Charge on the Lands permanently, or it might be made redeemable at any fixed time in one or more sums or by half-yearly instalments over any term of years, at the option of Proprietors.
Frederick Brodie, Secretary.
Offices—Exeter, and 30, Parliament Street, London, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To Landowners, the Clergy, Estate Agents, Surveyors, &c. in England and Wales and in Scotland.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

MINTON and CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.—Jan. 11.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the COLD WINDS & MORNING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. 1*s*. 6*d*. per yard run.
Four yards wide .. .. 3*s*. per yard.
An improved make, 3 yards wide, 2*s*. 6*d*. per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1*s*. 4*d*. per yard run.

Elisha Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

Horticultural Glass Warehouse.

THOMAS MILLINGTON, 87, BISHOPSGATE STREET WITHOUT, E.C.
LISTS FORWARDED ON APPLICATION.

Glass for Greenhouses.

JAMES PHILLIPS and CO. beg to submit their prices as follows:—

ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 280 feet, 2¼*d*. and 2½*d*. per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each, Package included.

				3rds.	4ths.
12 by 9,	13 by 9,	14 by 9,	15 by 9	14*s*. 0*d*.	12*s*. 6*d*.
12 ,, 10,	13 ,, 10,	14 ,, 10,	15 ,, 10		
13 ,, 11,	14 ,, 11,	15 ,, 11,	16 ,, 11	16*s*. 0*d*.	13*s*. 6*d*.
14 ,, 12,	15 ,, 12,	16 ,, 12,	17 ,, 12	per 100 feet.	
18 ,, 12,	19 ,, 12,	20 ,, 12,	16 ,, 13		
17 ,, 13,	18 ,, 13,	19 ,, 13,	20 ,, 13		
16 ,, 14,	17 ,, 14,	18 ,, 14,	20 ,, 14		

Various other sizes.

GLASS FOR ORCHARD HOUSES,
As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.			
20 in. by 13 in.	Common	13*s*. 6*d*. ..	£0 18*s*.
20 in. by 14 in.	Superior do.	16 0 ..	1 3
20 in. by 15 in.	English Glass	18 0 ..	1 9

The above prices include the Boxes.

SMALL SHEET SQUARES, in 100 feet Boxes.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11*s*. 6*d*.
8 ,, 6	8½ ,, 6⅜	9 ,, 7	9½ ,, 7½	
		10 ,, 8	10½ ,, 8½	12 6

Boxes 2*s*. each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.

16 oz. 4ths, 1¾*d*., 2*d*., and 2½*d*. 21 oz. 2¾*d*., 3*d*, and 3½*d*.
,, 3ds, 2*d*., 2½*d*., and 3*d*. ,, 3*d*., 3½*d*, and 4*d*.

London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

James Phillips & Co., 180, Bishopsgate Street Without, London, E.C.

Oil Paint no longer Necessary.

HILL and SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which Hill & Smith will forward on application.

Sold in casks of about 30 gallons each, at 1*s*. 6*d*. per gallon, at the Manufactory, or 1*s*. 8*d*. per gallon paid to any station in the kingdom.

Apply to Hill & Smith, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

NETTING for SHEEPFOLDS, made of Cocoa Nut Fibre. Price 4*d*. per yard. COCOA NUT CORD for THATCHING.—Wildey and Co., Manufacturer of Cocoa Nut Matting and Mats, Holland Street, Blackfriars Road, S.E.

TANNED GARDEN NETTING for preserving Seed Beds, Fruits, Strawberries, from frost, blight, birds, &c., and as a Fence for fowls, &c. 1 yard wide, 1½*d*.; 2 yards, 3*d*.; 3 yards, 4½*d*.; and 4 yards, 6*d*. per yard, in any quantity, may be had at Chas. Wright's, 376, Strand, W.C.

GREENHOUSE and FLOWER-POT STICKS VARNISHED:—1 foot, 3*d*.; 1½, 4*d*.; 2, 5*d*.; 2½, 7*d*.; 3, 10*d*.; 4, 1*s*. 6*d*. per dozen. DAHLIA STICKS VARNISHED, per dozen:—3 feet, 1*s*. 6*d*.; 4, 2*s*. 3*d*.; 5, 3*s*.; 6, 3*s*. 6*d*. An allowance to Nurserymen.

PATENT GARDEN NETTING will be found superior to every other article for the protection of Fruit Trees from frost, birds, &c.; whilst rendering this service light and air are not impeded. It is also a beautiful Shading for Hothouses, and is cheaper, being more durable than any kind of Tiffany, or other material in use. NETTINGS, No. 1, 15*s*.; No. 2, 18*s*. 9*d*.; and No. 3, 22*s*. 6*d*. per piece. Pieces, 30 yards long, 55 inches wide. GARDEN MATS, highly recommended, 50 by 70 inches, 20*d*. each.

Agents: Robt. Heinekey & Co., 20, Harp Lane, Tower Street, London, E.C.

BLOSSOM of WALL FRUIT TREES.—WORSTED NET, an approved and effectual protection, edged with cord, and loops every 18 inches, 2, 3, and 4 yards wide, 7*d*. per square yard. TANNED NETS, 6*s*. 3*d*. per 100 yards. NEW TWINE NET, 1½*d*. per yard. SHEEP NETS, FISHING NETS, &c.

R. Richardson, Net Maker, 99, Euston Road, London, N.W.

N.B.—GARDENERS' WATERPROOF CAPES, 3 feet deep, 3*s*.; lined with woollen, 5*s*. POLICE CAPES 18*s*. and 24*s*. per dozen. TARPAULINGS, 9*d*. per square yard. TRANSPARENT SHEETING, 54 inches wide, 1*s*. per yard.

Parkes' Steel Digging Forks.

BURGESS and KEY, 95, Newgate Street, E.C., London, being the Wholesale and Retail Agents for these celebrated Tools, have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN has obtained the FIRST PRIZE given by the Royal Agricultural Society at every Meeting since 1850. It is strongly recommended as the most perfect Churn now in use. Full particulars sent on application.

Agricultural Machinery.

CHAFF CUTTERS, TURNIP CUTTERS, PULPERS, MILLS, PLOUGHS, HARROWS, CARTS, &c., Delivered Carriage Free.
Burgess & Key, Manufacturers, 95, Newgate Street, London.
PRICE LISTS free per Post.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE will be sent on application to

John Fowler, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS

HAVE the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

STEAM PLOUGHING AND CULTIVATING.

HIGHLY SATISFACTORY REPORTS

HAVE BEEN RECEIVED FROM THE PURCHASERS OF

HOWARD'S NEW PATENT STEAM CULTIVATORS,

AND WILL BE SENT FREE ON APPLICATION TO

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD.

ALSO CATALOGUES WITH FULL PARTICULARS OF THEIR

CHAMPION PLOUGHS, HARROWS, HORSE RAKES, & HAYMAKERS.

The following are two of the Reports referred to:—

BERKSHIRE.
Highway Farm, Maidenhead, November 7, 1861.

Gentlemen,—In justice to you as the manufacturers of my Steam Cultivating Apparatus, and without attempting to pay you a compliment, I will endeavour to state plainly the reason why I determined on adopting steam cultivation, and why I obtained your appliances. With a view of satisfying myself, I determined upon seeing all the systems of steam cultivation, which I did, and after giving the matter mature consideration, I became a purchaser of yours, and have every reason to be satisfied. I have no hesitation in saying that the cost of yours in the first instance influenced me in some measure. I found I had a number of horses to spare, that would realize a sum approaching the cost of the apparatus, and experience convinces me I estimated correctly. Having worked it constantly through perhaps one of the most favourable autumns that it is probable I may ever experience, and performed an amount of cultivating I was scarcely justified in expecting, I am now in a position to inform you the result. I obtained your apparatus early in August, and set to work cultivating the first piece of Wheat stubble immediately it was clear of the crop. I commenced working without the assistance of any of your staff, depending upon my own experience from what I gleaned when with you, and the performances I had witnessed elsewhere. I have gone on and effectually cultivated 84 acres an average depth of 8 inches, as the first process breaking up; a portion of it has been cultivated a second time, this I call 52 acres; and 8 acres a third time, making a total of 144 acres on the Highway Farm. I have a son farming near here, on a farm called Lane Farm; I sent the apparatus there immediately I could spare it for his use, and he informs me he has cultivated 72 acres the first time, and 28 the second, making a total of 100 acres, and this without any breakages. I consider my commencement a great success. I am so satisfied now I have experienced its advantages, that I would not be without the apparatus if the cost were double the amount. I have endeavoured to ascertain the exact cost per acre and I find it to be 6*s*. 6*d*.; this includes per centage on capital, wear and tear, estimated at 25 per cent., and cost of manual labour, coal, water, and oil. On this basis, I find the daily cost of working to be as near as possible 45*s*. per day, and the average of work performed it from 7 to 8 acres. This estimate I am satisfied will cover all expenses.

Yours truly,
Messrs. J. & F. Howard, Bedford. Joseph Gillett.

CAMBRIDGESHIRE.
Camois Hall, Newmarket, November 26, 1861.

Gentlemen,—I have great pleasure in stating my experience in steam cultivating. Since I purchased a set of your Apparatus in June last, I have cultivated (instead of ploughing,) 40 acres of land once over with the 3-tined implement, and sown it with Turnips. Since harvest I have cultivated upwards of 200 acres of Wheat stubble twice over, once with the 3-tined, and once with the 5-tined implement. I have done on the average 7 acres per day, about 8 inches in depth. The land this autumn has been unusually hard, having had very little rain in this neighbourhood. I am happy to say we have not had a single breakage, although, as before stated, we have done 450 acres. I have now set it up till the spring, when I shall stir the fallows over again. I calculate I shall do 8 or 9 acres per day very easily. My engine is 10-horse power, and we consume 8 cwt. of coal and 1 quart of oil per day.

I am, Gentlemen, yours faithfully.
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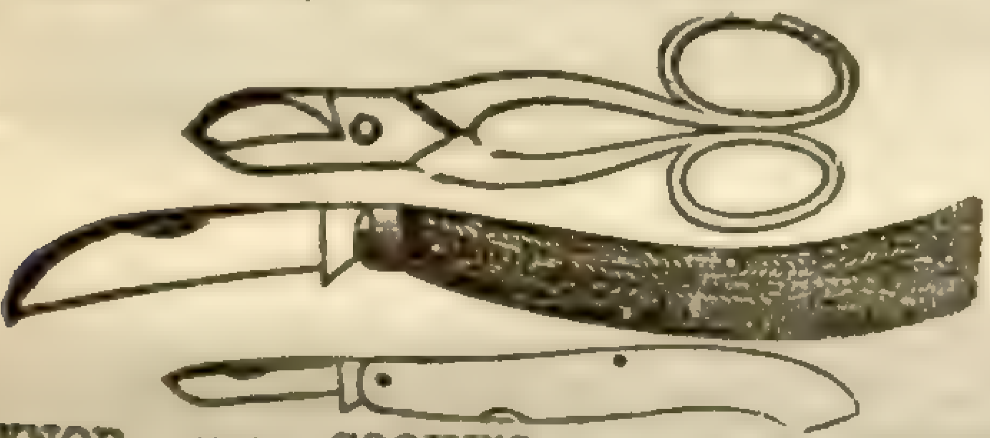

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THE QUARTERLY REVIEW, No. CCXXI., will be published NEXT WEEK.
CONTENTS:—
I. RAILWAY CONTROL.
II. THE PRINCESS CHARLOTTE.
III. POPULAR EDUCATION—THE NEW CODE.
IV. ICELAND—THE CHANGE OF FAITH.
V. THE LATE PRINCE CONSORT.
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THE EDINBURGH REVIEW, No. CCXXXIII., will be published on WEDNESDAY NEXT.
CONTENTS:—
I. LIFE AND WRITINGS OF WILLIAM PATERSON.
II. SEWELL'S ORDEAL OF FREE LABOUR.
III. MAX MÜLLER ON THE SCIENCE OF LANGUAGE.
IV. MILITARY DEFENCE OF THE COLONIES.
V. FELIX MENDELSSOHN'S LETTERS.
VI. WRECKS, LIFEBOATS, AND LIGHTHOUSES.
VII. BURTON'S CITY OF THE SAINTS.
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News of the Week.

THE SURRENDER OF MESSRS. MASON AND SLIDELL has relieved the country from the apprehension of war. A telegram, dated December 27, was received at the Foreign Office on Wednesday from Lord LYONS, announcing that the United States Government had consented to deliver to him the four prisoners seized on board the Trent, "when and where he pleased." It appears that Lord LYONS received his despatches on the night of the 18th ult. On the following day he had an interview with Mr. SEWARD, and, in accordance with his instructions, explained to him unofficially the object of his despatches, with the view of affording the Cabinet of Washington the opportunity of voluntarily making reparation, and of thereby avoiding the humiliation of doing so in compliance with a peremptory demand. Mr. SEWARD acknowledged the courtesy of this mode of procedure, but neither at this nor at two subsequent interviews would he make any further statement than that the despatch when delivered should receive the careful attention of the Government. On the 23d, therefore, Lord LYONS formally presented the official demand for the immediate surrender of the prisoners and an apology for the insult to our flag. Two days afterwards M. MERCIER, the French Minister, delivered to Mr. SEWARD the despatch addressed to him by M. THOUVENEL, in the name of the French Government; and it is understood that the Ministers of Austria and Prussia also communicated to him the despatches they had received on the subject from their respective Governments. On the 27th Mr. SEWARD informed Lord LYONS that the Federal Government had conceded the surrender of the four prisoners, and at the same time transmitted to him a long despatch from the Cabinet of Washington in reference to the rights of neutrals and belligerents. In this despatch he stated that the British Government had rightly conjectured that the act of Capt. WILKES was committed without the authority or knowledge of the Federal Government. He therefore trusted that Great Britain would see that the Federal Government had neither practised nor approved any deliberate wrong in the transaction, and he admitted that Great Britain had a right to demand the same reparation as the United States would expect from any friendly nation in a similar case. Mr. SEWARD also said he was aware that he was arguing on the British side of the case, but in doing so he was only defending American principles in the same manner as Mr. MADISON,

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when Secretary of State, had defended them in 1804 in a well-known despatch which he addressed to Mr. MONROE as Minister to England. Mr. SEWARD, in conclusion, stated that the four prisoners were at the disposal of Lord LYONS, and asked his lordship to indicate a time and place for receiving them. Lord LYONS, in his reply, said that he would forward Mr. SEWARD's communication to the British Government, and would confer with him personally in regard to the reception of the four gentlemen. The New York papers express great indignation at the surrender of the prisoners, and assert that though the American people submit to it as a necessity of their present position in relation to the South, they do so in the hope of avenging their surrender hereafter. Meanwhile a new complication has arisen on the coast of Texas, where the Federal steamer, Santiago de Cuba, has overhauled the British schooner Eugenia Smith belonging to Nassau in the Bahamas, and has taken from her two passengers, Messrs. ZACCHIRI and ROGERS, on the supposition that they were agents of the Confederate States. The schooner was allowed to pursue her voyage, but the two passengers were taken to New York, and have since been confined in Fort Lafayette.

A Cabinet Council was held on Thursday at the official residence of Lord PALMERSTON to consider Mr. SEWARD's despatch, which, as we have already stated, not only relates to the surrender of the prisoners, but discusses at great length the law of neutrals and the general question of belligerent rights. It is understood that an answer will be returned, expressing the gratification of HER MAJESTY's Government at the disavowal of the act of Capt. WILKES, accepting the satisfaction rendered, and assuming that the precedent in the case of the Trent will rule the more recent case of the seizure made by the captain of the Santiago de Cuba on board the Eugenia Smith. To Mr. SEWARD's views of the law of neutrals, the Government have determined to postpone their answer until they have submitted the despatch to the consideration of the Law Officers of the Crown.

From the seat of war in America we learn that the harbour of Charleston has been destroyed by sinking 16 whaling hulks filled with granite across the channel; and that another naval expedition was about to sail from Annapolis, with a body of 12,000 troops, with the object of cutting off the most important line of the Confederates' railway communication and dividing their forces in front of General M'CLELLAN. The latest news from New York, dated the 28th ult., states that a suspension of specie payments by the banks was considered probable.

The Confederate privateer Sumter arrived off Cadiz on Sunday with the officers and crew of three Federal merchant vessels which she had destroyed at sea, and solicited permission to enter the port. The American Consul demanded that this request should be refused; but, the Government having been consulted, the Sumter was admitted into the port without being saluted, on condition that she would place the prisoners under the protection of Spain. It is rumoured that the American Consul will leave Cadiz in consequence of this resolution.

A despatch from Bombay of the 12th Dec. says that a man has been captured at Kurrachee, when trying to get away from India in the disguise of a merchant, and has been recognised by a former servant as the NANA SAHIB. Mr. LAING has arrived in Calcutta. Lord CANNING had postponed his visit to the Godavery, and had decided on quitting India before the end of last month.

A despatch from China has been received through St. Petersburg with news from Pekin to the 13th November. The EMPEROR has returned to the capital, and has appointed Prince KUNG Regent of the Empire, and President of a new Ministry. The Supreme Council, which was hostile to Europeans, has been dissolved. SUH-SHUN, President of the Finance Department, has been publicly executed, and two other influential personages have strangled themselves by order of the Emperor.

Home News.

THE COURT.—The Queen and Royal family, with the King of the Belgians, the Princess of Hohenlohe, and Prince Louis of Hesse continue at Osborne. On Sunday morning the King of the Belgians, the Prince of Wales, the Princess Helena, Princess Louisa, Prince Arthur, and the Princess of Hohenlohe, attended Divine service at Osborne. The Rev. G. Prothero officiated. On Monday the Queen held a Privy Council at Osborne, which was attended by Earl Granville, the Duke of Newcastle, and Sir George Grey. The Council was held in her Majesty's private apartments. Earl Granville remained at Osborne on Monday night, and returned to town on Tuesday morning. On Wednesday night Count Gleichen arrived from London, and returned on Thursday afternoon.

THE PRINCE OF WALES.—The *Gazette* of Tuesday contained an Order by the Queen in Council, directing that in all the Prayers, Litanies, and Collects for the Royal Family, in the Prayer Book, the words "Albert Edward, Prince of Wales," be inserted instead of the words "Albert, Prince of Wales." A similar Order has been issued in reference to the Church of Scotland. It is announced that the Prince of Wales will remain at Osborne with the Queen until after the arrival of his brother, Prince Alfred, who is expected in England in the course of the present month. Shortly after his arrival the Prince of Wales will carry out the plan laid down for him in completion of his education by the Queen and the late Prince Consort of making a tour in the Holy Land and the other historical localities of the East. It had been intended that his Royal Highness should set out upon this expedition towards the end of last year, and, as the journeys in the East can only be performed during the cooler months of the year, the Queen has decided that the wishes and arrangements of the Prince Consort, which are considered sacred by her Majesty and the Prince of Wales, shall shortly be carried into execution. The Prince will necessarily travel in the most private manner.

THE PUBLIC MOURNING.—Notice has been issued by the Deputy Earl Marshal that it is not expected that the public should appear in mourning for the late Prince Consort after Sunday the 9th February.

THE CABINET.—A Cabinet Council was held on Thursday at the official residence of the First Lord of the Treasury in Downing Street.

PARLIAMENTARY MOVEMENTS.—At the Privy Council on Monday Parliament was ordered to be further prorogued from Tuesday, Jan. 7, to Thursday, Feb. 6; and a proclamation was issued for the meeting of Parliament on that day for the despatch of public business. It is understood that the Address in the House of Commons will be moved by Mr. Portman, member for Dorsetshire, and seconded by Mr. Western Wood, member for London. In compliance with a requisition from the Conservative party, Colonel Fane, of Wormley, has announced himself a candidate for Oxfordshire, in the Conservative interest, in opposition to Sir H. W. Dashwood. A vacancy has occurred in the representation of Grimsby by the death of the Earl of Yarborough, and the consequent accession of Lord Worsley to the peerage. A vacancy has occurred in the representation of Coleraine by the death of Dr. Boyd. Sir Hervey Bruce is a candidate for the vacant seat; and Mr. Stewart M'Naughten and Alderman Humphrey are mentioned as likely to come forward. Mr. Lawson, the Solicitor-General for Ireland, has declined to offer himself.

THE NEW GOVERNOR-GENERAL OF INDIA.—The Earl of Elgin has left Broomhall for London, where he will remain some weeks previous to his departure for India. On Thursday, the 2d inst., he was entertained at Pitfarrane by Sir P. Arthur Halket, at a farewell banquet, to which a large number of the deputy lieutenants for the county of Fife were invited. His lordship is accompanied by the Countess, by Lord Bruce, and Lady Elma Bruce.

NEW BARONETCY.—The *Globe* says it has reason to believe that it is her Majesty's intention to confer the title of baronet upon Mr. Charles Wentworth Dilke.

COURT APPOINTMENT.—The Queen has appointed Dr. William Jenner, now Physician Extraordinary to her Majesty, to be one of the Physicians in Ordinary to her Majesty.

THE ARMY.—The colonelcy of the 49th Regiment, vacant by the death of Sir Edward Bowater, has been conferred on Lieut.-General Morris; and the colonelcy of the 97th Regiment, vacated by this promotion, has been conferred on Major General Campbell.

ARRIVAL OF THE CANADIAN REINFORCEMENTS.—The Persia with the 1st battalion of the 16th Regiment, and detachments of the Hospital Corps and Commissariat Staff Corps arrived at Bic on the 27th ult. She steamed up the St. Lawrence to the very terminus of the Grand Trunk Railway, and in a few hours the troops she carried were marching into Quebec. The Australasian with the first battalion of the Rifle Brigade, a detachment of Royal Artillery, and a battery of 6 Armstrong guns, encountered a severe snow storm on the 23d and 24th, near Anticosti, and it was consequently considered prudent to put back to Halifax, where she arrived on the 26th. It was not known whether she would land her troops at Halifax or proceed again to Bic. The last portion of the Royal Artillery under orders for North America embarked at Liverpool on Saturday in the Arabia for Halifax. Two batteries of garrison artillery also embarked last week; and two other batteries of the same brigade are under orders to embark to strengthen the force in the West Indies, which has heretofore comprised but three batteries. Notwithstanding the pacific termination of the American difficulty, a number of vessels, taken up by the War Department, have yet to embark stores for British North America and the West Indies, which will now be placed in a state of complete defence.

ROYAL NAVAL RESERVE.—The returns of the Registrar General of Seamen and Shipping in connection with the enrolment of Naval Reserve volunteers, made up to 1st of January, show that the men are joining the force at the rate of 500 per month at the principal ports of the kingdom. The uniform now in course of distribution is like that worn by the officers and men of the Royal Navy, the only difference being in the ornamentation and in the buttons, which, instead of being stamped with the crown, have impressed on them the words "Royal Naval Reserve."

THE VOLUNTEER MOVEMENT.—It has been determined to have an annual match between the Volunteers of England and Scotland, the terms of which have been arranged by Lord Bury, acting for England, and by Mr. Horatio Ross, as the representatative of Scotland. The rules agreed upon between Lord Bury and Mr. Ross, who have been appointed to settle the preliminaries, are as follows:—

That an annual match be established between the Volunteers (effective, non-effective, or honorary) of England and Scotland. 2. That the competitors shall be eight in number on each side, and that the test of nationality shall be paternal descent. 3. That the first match shall take place at the meeting of the National Rifle Association at Wimbledon in 1862, and that the match shall be shot every year at the annual meeting of the National Rifle Association. 4. That as soon as possible after the annual match in each year the eight competitors on each side shall hold meetings, and each side shall choose a captain, who shall be responsible for arranging the details of the next annual match, conducting the business and correspondence connected with it, and selecting the competitors. The captain of each side so elected shall remain in office till the close of the next annual match, and shall then resign. He may, however, offer himself or re-election. The captain of each side, on his appointment, or within a week thereafter, shall nominate a substitute, who shall replace him in the case of his death or illness during his year of office. Lord Elcho having generously intimated his intention of presenting a shield, to be called "the Elcho Challenge Shield," it is agreed:— 5. That the Elcho Challenge Shield shall be the prize shot for at the international match. That each year the names of the successful side shall be engraved on it; that it shall be kept in some conspicuous place by whichever nation has the honour of holding it for the year; and that, in addition to the honour of having his name engraven on the shield, each of the successful champions shall receive some small prize, to be kept by him for ever. This prize is to be paid for by the losing side. 6. That each side shall appoint an umpire; and that the umpires shall, if they think fit, appoint a referee; and that the decision of the umpires, or of the referee, in case of a difference of opinion shall be final. 7. That the regulations for shooting shall be the same as those laid down by the National Rifle Association, at the present time, for competitors for all-comers prizes. In case of a tie, each side shall fire one round at 1000 yards until the match is decided. 8. That the ranges be 700, 800, 900, and 1000 yards. Each competitor to fire 15 shots at each of the above distances. That the targets shall be in size, number, and size of centre according to the regulations laid down in the Musketry Instructions for the army for first-class targets; but that Swiss targets of the same dimensions and appearance as a regulation set of first-class targets may be substituted for the regulation targets at the option of the authorities of the National Rifle Association. 9. That when a miss is made, either high, low, right, or left, it is to be indicated by a red flag from the marker's butt."

Foreign.

FRANCE.—The *Moniteur* of Thursday contains a decree convening the Senate and the Corps Legislatif for the 27th inst., and stating that the report on the state of the Empire will, as in 1861, be submitted to the Chambers on the day after the opening of the Session. The *Moniteur* of Tuesday contains an Imperial decree directing that the committee of the Senate appointed to draw up the Address shall in future consist of the President and two members from each bureau, instead of one member as heretofore. The *Moniteur* publishes an Imperial decree approving the regulations prepared by the Imperial Commission, of which Prince Napoleon is the president, appointed to organise the French section of the Universal Exhibition of 1862. The departure of Prince Napoleon for London is to take place in a few days. The First Chamber of the Correctional Police gave judgment on Saturday in an action brought by Prince Simon Woronzoff against M. Laurent, the responsible editor of the *Courrier du Dimanche*, for an article in that journal on the book of Prince Dolgorouki, entitled "La Vérité sur la Russie," and against Prince Dolgorouki for a letter inserted by him in the same journal. The groundwork of the suit was an anonymous note which the late Marshal Michael Woronzoff received in 1856, and in which he was advised to give to Prince Dolgorouki a sum of 200,000f. if he wished to be well spoken of in a genealogical work which the latter was publishing at that period. Before the Court, Prince Simon Woronzoff claimed from the defendants damages to be fixed by the Tribunal, and the insertion of the judgment which might be pronounced in six journals in Paris, two in London, and two in St. Petersburg. M. Mathieu pleaded the case of Prince Woronzoff, his principal argument being to show that the anonymous note above-mentioned was in the handwriting of Prince Dolgorouki himself. Prince Dolgorouki, who also

claimed damages for the imputation cast on him, was defended by M. Marie, who energetically repelled the accusation brought by the Woronzoff family against his client. M. Gustave Chaudey defended M. Laurent. The trial lasted several days, and the Court was crowded every day by all the Russian nobility now in Paris, who watched the proceedings with the greatest interest. President Benoit Champy on Saturday delivered judgment in favour of Prince Woronzoff, and rejected the application of Prince Dolgorouki, on the ground that the latter was certainly the author of the anonymous letter sent to the deceased Marshal. The Tribunal ordered the insertion of the judgment in several journals of Paris, London, and St. Petersburg, and condemned Prince Dolgorouki and Laurent jointly to the costs, but only to one-sixth for the latter. The *Constitutionnel* of Monday published the following article:—

"We wish to point out to the English public, who, we know, are friendly to the good understanding between France and England, the numerous attempts made for some time past in certain London newspapers to disturb this good understanding. Indeed, for some days past there are multiplied in the newspapers we allude to gross insults to the Emperor, to France, and the Minister who, personifying devotedness to the Imperial dynasty, is at the same time the most energetic defender of the English alliance. And what is the moment they have selected for doing so? Why, the very moment when, by its noble and energetic attitude in the Anglo-American conflict, the French Government has given to England the most striking proofs of the fidelity of its relations—the moment when among all classes of British society are exhibited the most cordial sentiments towards France and the Emperor. These insults, we know, are not of English origin. They bear, so to speak, the mark of the manufacturer. They are the work of a dynasty fallen by its own faults and before the legitimate explosion of the national wrath, and they are inserted in the London journals only as puffs, at so much a line. It is this intrigue which it is requisite to point out to the good sense of the English public."

At the annual meeting of the French Academy on Saturday M. Mignet delivered an oration on the life and works of the late Mr. Hallam, author of "The Constitutional History of England." M. Mignet quoted Mr. Hallam's words against the extension of the suffrage in 1830, and was very pathetic in his allusions to Mr. Hallam's loss of his two sons, and Tennyson's elegy upon the eldest of them.—A report has been laid before the Emperor, calling his attention to the singular prevalence of insanity among the scientific branches of the French army. The report is said to quote returns showing that one in ten of the officers of the artillery and engineers end their existence in a lunatic asylum, and ascribes the fact to the severe mathematical training they go through at the Polytechnic School before their brain has acquired its full development. A return has been published of the relative mortality in French and English hospitals, from which it appears that out of 100 patients operated on in each city, 56 died in Paris and only 30 in London. Out of 100 amputations of the thigh, 60 ended mortally in Paris, 21 in London, and 19 at Manchester. The difference is accounted for by the fact that while in the Paris wards there are as many as 80 beds, there are only 12 in the London ones. The *Moniteur* contains an Imperial decree founded on an official report from the Minister of Public Instruction, appointing some of the most eminent physicians and chemists of France, for the purpose of revising the French Pharmacopœia. The new Pharmacopœia will probably appear simultaneously with that which is about to be issued by the United Kingdom, the Royal Colleges of Physicians of London, Dublin and Edinburgh having appointed a joint committee for the purpose of combining the three existing Pharmacopœias into one, which shall be the general standard for the United Kingdom.—A large fire broke out on Monday on the floating Bagnio at Toulon, but was extinguished. All the convicts were saved, and nobody was injured. The cause of the fire is unknown.

SPAIN.—The Confederate privateer war steamer, Sumter, which has hitherto been described, it is said erroneously, with the officers and crew, 42 persons in all, or three Federal merchant vessels (the Vigilant, Ellen Dodge, and Arcade), which she had destroyed at sea, numbering in all 42 persons, arrived off Cadiz on Sunday, and solicited permission to enter the port. The American Consul demanded that this request should be refused, but, the Government having been consulted, the Sumter was admitted into the port without being saluted, on condition that she should place the prisoners under the protection of Spain. It is rumoured that the American Consul will leave in consequence of this resolution.

PORTUGAL.—It is rumoured that King Luis of Portugal has solicited the hand of the daughter of Prince Hohenzollern; and that the Portuguese Minister at Rome has been recalled, in consequence of the Pope having withheld from the young King the usual expression of condolence on the death of King Pedro and his brothers.

PRUSSIA.—According to reliable information, the reply of France to the proposals of Prussia for the conclusion of a Treaty of Commerce has arrived at Berlin. France has made counter-proposals of a conciliatory nature, which it is thought will facilitate the conclusion of a treaty. Advices from Berlin, of the 4th inst, state that the King is ill. He caught cold while out driving, and is confined to his bed. His indisposition, however, has not yet assumed a serious character. The National Verein has sent another sum of 10,000 florins to the Prussian Ministry of Marine for the Prussian fleet. The King of Denmark has prohibited the collection of subscriptions for the German fleet in the Duchies of Holstein and Lauenburg.

HOLLAND. The Ministry on Thursday tendered their resignation to the King.

HANOVER.—A treaty has been signed between the cities of Hamburg and Hanover for the construction of a bridge over the Elbe.

HESSE CASSEL.—The members of the Second Chamber, in reply to the communications of the Government, have made a declaration to the effect that they cannot relinquish the rights granted to the country by the Constitution of 1831. In consequence of this declaration a decree was read on Wednesday dissolving the Chamber.

HUNGARY.—Martial law has been proclaimed in the Comitat of Pesth for trying cases of rapine, murder, arson, and desertion. The punishment of death by hanging is decreed against any person, without distinction of rank or quality, who may be convicted of either of these offences. The Government journals state that martial law was proclaimed in the Comitat of Pesth in consequence of the increase in the crimes of robbery and murder. M. Mystrolez, the Mayor of Pesth, has been arrested and tried before a court-martial for having refused to give up the archives of the municipality to the Austrian authorities.

RUSSIA.—The *Official Gazette* of St. Petersburg on Friday published a report from the Minister of Public Instruction, sanctioned by the Emperor, and followed by an Imperial decree, stating that in consequence of the recent disturbances the University of St. Petersburg will be closed until a new set of regulations is drawn up. The decree also orders the dismissal of the professors and students. The students are permitted, however, to pursue their studies at other Universities of the Empire, and the poor students will have pecuniary assistance afforded by the Emperor to defray the expenses of their journey. The professors may, with the sanction of the authorities, be reinstated in their former posts when the new regulations are promulgated. The *Police Gazette* of St. Petersburg has an account of the public degradation in that city of M. Michael Miklailoff, who has been found guilty of propagating writings intended to excite rebellion against the supreme power, and sentenced to six years' labour in the mines. The ceremony took place on a scaffold, where a sword was formally broken over his head, and M. Miklailoff is said to have borne it with great courage. A subscription has been made among the literary people of St. Petersburg on his behalf, and the sum of 4800 crowns has been raised to enable him to ride the journey to Siberia.

POLAND.—The *Czas* of Cracow states that the Russian Government has threatened to recognise the Kingdom of Italy unless the Pope condemns the conduct of the Polish clergy. The Paris journals deny the truth of this statement. The *Journal de St. Petersburg* of Thursday announces that the Council of State for Poland will shortly be convened for an extraordinary sitting in order to settle the relations between the landlords and the peasants. The Emperor of Russia has commuted the sentence on M. Bielobrzeski to one year's imprisonment in a fortress, and has ordered due respect to be paid to the age and clerical character of the prisoner. It was announced on the 3d that Monsignor Felinscki, Catholic Archbishop of St. Petersburg, had been appointed Archbishop of Warsaw; but a subsequent despatch from Rome states that the Pope convoked a consistory on Monday and appointed a new Archbishop for Warsaw.

ITALY.—The Italian Chambers resumed their sittings on Friday. Signor Rattazzi communicated to the Chamber of Deputies a speech delivered by the King in reply to a Parliamentary deputation. In this speech the King said he was confident that the union between Crown and people would always remain firm, and that although, for reasons with which every one is acquainted, the Italian cause had not made great progress during the past year, he hoped that the new year would be more favourable. The *Monarchia Nazionale* says that on the 2d inst. at a meeting of the members who form the majority in the Chamber of Deputies, Baron Ricasoli explained the difficulties which oppose the completion of the Ministry, and said he believed that the Cabinet as at present constituted was sufficient for the exigencies of the State. A long discussion ensued, in the course of which several deputies spoke in favour of the Ministry, but no decision was come to. On Thursday last a well attended meeting of the members forming the majority in the Chamber of Deputies was held for the purpose of considering whether, after the explanation given by Baron Ricasoli at the former meeting, the Parliamentary majority should continue to support the Ministry. Signor Minghetti spoke at great length in favour of the Ministry. The meeting unanimously resolved to continue to place confidence in the Ministry. Several Deputies not belonging to the Parliamentary majority were present at the meeting, among whom were the Marquis Pepoli, General Sirtori, and others. The report that the Ministry had deliberated on the dissolution of Parliament is unfounded. Baron Ricasoli has demanded a credit of 2,000,000 lire, to purchase arms for the National Guard. Garibaldi has accepted the Presidency of the Rifle Association of Genoa, and has addressed a letter to the members of that body, in which he says, "Hasten to prepare yourselves to take up arms, for the moment approaches when you will have to give fresh proofs of your valour." A proclamation printed at Rome by order of the Bourbon committee has been published, exhorting the National Guard of the Neapolitan provinces to expel the Piedmontese, and declaring that the Neapolitans alone have the right of settling their future destinies. The proclamation is dated from Naples, and signed "The Patriotic Committee." It was despatched on Sunday to Naples. The Pope will celebrate a funeral service for the late King of Portugal on the 14th inst. The Pope has issued an apostolic letter, calling attention to his incessant efforts to re-unite the Greek and Latin Churches. With this object his Holiness has established a special permanent Congregation of Cardinals, who are to occupy themselves exclusively with the affairs of the Eastern Church. The Congregation hitherto charged with the censorship of Oriental books is suppressed.

SICILY.—A reactionary movement has taken place at Castellamare in Sicily. Troops have been despatched from Palermo to the scene of the disturbances. The population of Palermo is very excited, and has offered to co-operate with the Government in the suppression of the movement. The reactionary band of Carbone has been dispersed.

MALTA.—Commander G. B. Nicolas, of H.M.S. Trident, 3, was tried by court-martial on the 11th ult., on board her Majesty's ship Hibernia, for cruelty, in excessive punishment of two boys of the crew for breaking their leave at Gibraltar. He was found guilty, and sentenced to be dismissed the service with disgrace. The sentence of imprisonment against Captain Cavaliere Dini and Lieut. Desasco, of the Italian war steamer Monzambano, for an assault committed by them on the Editor of the *Guerriero Cattolico*, for publishing an article insulting to Italy, has been commuted by the governor of the island into three days' imprisonment, and a penalty of 10s. a day for the remaining term of their sentence, on the payment of which they were permitted to depart with their vessel.

GREECE.—Advices from Athens to the 28th ult. state that a violent shock of earthquake had occurred along the northern coast of the Peloponnesus. Athens was uninjured, but New and Old Corinth, Ægina, and Patras had been damaged. The Chambers at Athens had voted a sum of 10,000 drachmas to relieve the sufferers by this catastrophe.

TURKEY.—The Sultan, on hearing of the Prince Consort's death, sent off at once to the Queen an autograph letter of condolence, having previously telegraphed to her Majesty the expression of his deepest sympathy.

MONTENEGRO.—The Montenegrins, who had occupied Selza and Karnitza, withdrew from those places a few days since, but have now reoccupied them. The Montenegrins have violated the territory of Sosisna. 1500 Bashi-Bazouks have been despatched from Antivari to drive them back. On Monday Omar Pasha sent a new proclamation to the insurgents, promising a complete amnesty to some and clemency to the others if they spontaneously surrendered. Military operations will be suspended by the Turks until the receipt of the reply of the insurgents.

COAST OF AFRICA.—Considerable excitement prevails at Lagos, arising out of the recent cession of that place to England. The native chiefs were discontented. Serious disturbances have taken place in Quiah territory, near Sierra Leone. All the troops and native militia had gone to that place. Desperate fighting was going on. A native stockade at Madenka had been destroyed by the British. Major Hill was dangerously wounded. Captains Jones and Williams, Sergeant Evans, and 23 privates were also wounded.

INDIA.—A despatch from Bombay of Dec. 12, says that a man has been captured at Kurrachee, when trying to get away from India, and has been recognised by a former servant as the Nana Sahib. He was disguised as a merchant. The capture was preceded some days by a rumour in Kurrachee that the Nana was making his way down the valley of the Indus in the guise of a Hinglagee, purposing to make for Dwarka from either Sonmeanee or Kurrachee, and to proceed thence to Zanzibar or Muscat. Nipal Singh, a notorious rebel, who has so long eluded pursuit, has been apprehended, and will be hanged at Jounpore. Mogal Beg, one of the sons of the ex-Emperor of Delhi, who cut down Mr. Fraser, the resident, and afterwards took an active part in the massacre of the Jennings family and other Christians at Delhi, has been apprehended and identified in Upper Scinde, with his accomplice, and sent up to the Punjab authorities for trial. Salabut Khan, the murderer of Major Burton and his sons, is to be hanged at Kotah. Colonel Baird Smith had left India for England on account of ill health. Mr. Laing has arrived in Calcutta. A resolution of the Governor-General creates a Chief-Commissionership for the Central Provinces. The Governor-General has relinquished for the present his intention of visiting either the Godavery or British Burmah, and has decided on leaving for England before the close of December. Lieutenant Steward, of the 28th Regiment, was murdered on the 19th November at Nusseerabad, in his sleep, by his hammal or porter, who shot him through the head, and then terminated his own existence in the same manner. The motive for the deed was that he was about to be discharged for stealing 15 rupees from his master.

CHINA.—The Emperor has arrived at Pekin, where a *coup d'état* has taken place. The members of the Cabinet have been imprisoned, and a new Ministry has been formed under the presidency of Prince Kung, who has been appointed Regent of the Empire. The Supreme Council, the members of which were hostile to Europeans, has been dissolved. Suh-Shun, President of the Finance Department, has been publicly executed. Two other influential personages have strangled themselves by order of the Emperor.

UNITED STATES.—The City of Washington steamer arrived at Queenstown on Wednesday, and the Jura arrived at Londonderry on Thursday with news from New York to the 29th ult., announcing that the Federal Government had consented to surrender Messrs. Mason and Slidell and their Secretaries. The Europa steamer, which was expected to bring the answer of the Cabinet of Washington, had arrived at Queenstown on Monday with intelligence which did not prepare the public for news so favourable to the maintenance of peace. It appears that Lord Lyons received his instructions on the 18th ult., but did not visit Mr. Seward until the following day, in order to give him time to consider the intelligence contained in the telegrams, newspapers, and despatches of the American Legations in Europe. On the 19th Lord Lyons waited upon Mr. Seward, and stated to him that he was to be the medium of transmitting to him very important despatches, and explained unofficially their nature and import, with a view to afford the American Government the opportunity of making voluntary restitution and apology, and of avoiding the humiliation of doing so at our demand. Mr. Seward acknowledged the courtesy of this procedure, and as he appeared anxious for delay, Lord Lyons had a second, and, it is said, even a third unofficial interview with him. On the 21st Mr. Seward had expressed no opinion, and had made no other statement to Lord Lyons than that the despatch, when delivered, should receive the careful attention of the Government. On the 23d, the day the mail left Washington, Lord Lyons formally delivered the Note, officially demanding the immediate surrender of the Commissioners, and an apology for the insult to our flag. On the 25th, M. Mercier, the French Ambassador, delivered to Mr. Seward the despatch addressed to him by M. Thouvenel in the name of the French Government. On the 26th the Cabinet were still silent, and nothing was known respecting their deliberations, as they preserved strict secrecy on the question. In the afternoon of the 27th Mr. Seward informed Lord Lyons that the United States Government had consented to deliver to him the four prisoners when and where he pleased. The diplomatic correspondence was subsequently published. It commences with a despatch from Mr. Seward to Mr. Adams in London, declaring that Captain Wilkes acted without instructions, and hoping that the British Government would consider the subject in a friendly temper. Mr. Seward says also that the British Government may expect the best disposition on the part of the Federal Government. The next despatch is from Earl Russell to Lord Lyons, stating the outrage on the British flag, and hoping that the act was committed without instructions from the Federal Government, as that Government must be aware that Great Britain cannot allow such an affront to pass without reparation. Earl Russell expresses a hope that the Federal Government will offer suitable redress by giving up the four prisoners to Lord Lyons. Mr. Seward, who was furnished with a copy of Earl Russell's despatch, replied that the English Government rightly conjectured that the act was without the authority or knowledge of the Federal Government. He trusts that England will see that the Federal Government neither practised nor approved any deliberate wrong in the transaction, and declares that Great Britain has a right to demand the same reparation as the United States would expect from any friendly nation in a similar case. Mr. Seward says he is aware that he argues on the British side of the case, but in doing so he is only defending American principles. He quotes the instructions from Mr. Madison, Secretary of State in 1804, to Mr. Monroe, Minister to England, and says:—"If I decide this case in favour of my own Government I must disallow its most cherished principles, and for ever abandon its most cherished policy; but the country cannot afford such a sacrifice. The Government cannot deny the justice of England's claim." Mr. Seward, in conclusion, states that the four prisoners are at the disposal of Lord Lyons, and asks his Lordship to indicate a time and place for receiving them. Lord Lyons, in his reply, says he will forward Mr. Seward's communication to the British Government, and will confer personally with him in regard to the reception of the four gentlemen. The note from M. Thouvenel to the French Minister on the Trent affair is included in the correspondence. It was understood that Messrs. Mason and Slidell and their secretaries would be set free on the 29th, and that they would leave for England by the next mail. The popular feeling excited by the British ultimatum is hostile to England, but there is a general impression that the surrender of Messrs. Mason and Slidell will be accepted by the public as a necessity of the position in which the Federal Government was placed in regard to the rebellion. The bitter feeling against England will, however, there is no question, be much increased by their surrender, and the Trent affair will neither be forgotten nor forgiven. Many of the journals contain elaborate arguments to prove that Ireland is ripe for revolt, and that it would have been the interest of France to remain neutral, in order to avail herself of a tariff which would at once be passed in favour of the admission of French goods into the United States for the next 10 or 15 years, on such terms as to entirely exclude British manufactures from the market. The New York Associated Press publish the following telegram:—

"The surrender of Messrs. Mason and Slidell will be better accepted as a political necessity on the seaboard than in the interior and in the West. It is unquestionable that in the agricultural portion of the Union the popular sentiment at this act of the President will be profound and lasting. On the eastern rim of the Atlantic slope, his declaration that he could not have two wars at once on his hands will be accepted as the justification of his policy."

The *New York Herald* says "that the Federal Government gains no advantage in retaining Messrs. Mason and Slidell, and their surrender may take away the pretext for English and French interference. The storm may blow over, but it will leave a debt of abuse from England to be repaid hereafter by America." The *New York Times* thinks "that while England regards the rebels as belligerents and America regards them as rebels a pretext for war will eventually arise." The *New York World* is of opinion that people will submit to the surrender of Messrs. Mason and Slidell as a necessity of the present position, but with the hope of avenging their surrender hereafter. Meanwhile another affair of the same character as the Trent has occurred on the coast of Texas. Commander Ridgeley of the Federal steamer Santiago de Cuba has overhauled, on that coast, the schooner Eugenia Smith. He found nothing contraband on board her, but took from her two passengers, who from the papers found upon them were supposed to be agents of the Confederate States. These passengers, Messrs. Zacchiri and Rogers, have arrived at New York, and have been confined in Fort Lafayette. The Eugenia Smith belonged to the Bahamas and was trading under British colours between Matanzas and Havannah. The *New York Herald* thinks that the commander of the Federal steamer must have known what colours the Eugenia Smith sailed under or he would have taken her as a prize. The *New York Evening Post* says the Eugenia Smith sailed under British colours, but was believed to be an American ship, partly owned by Messrs. Zacchiri and Rogers. General Scott has arrived in New York, but the report that he brought an official offer of mediation from France is said to be unfounded. In the Senate on the 26th Mr. Hale demanded the correspondence with England on the Trent question. Mr. Sumner objected to this demand. Mr. Hale said he had heard that the Cabinet were considering the proposition to surrender Messrs. Mason and Slidell. If England had demanded their surrender the Federal Government should declare war against her. If they were surrendered, the Senate would be subject to the scorn and indignation of the country, and the Administration would be hurled from power. He believed that Napoleon would desire to wipe out the stain of Waterloo, and that thousands of Irishmen in Canada would join the Federal cause. He concluded a violent speech against England by urging war sooner than the surrender of Messrs. Mason and Slidell. Mr. Sumner urged that the consideration of the question should be delayed until it was presented in a practical form. He demanded whether there was proof of arrogant demands on the part of England, or that the Administration had not considered the question of arbitration, and stated his belief that the matter would be honourably and amicably adjusted. After several members had spoken against the surrender of the prisoners, Mr. Hale's motion was tabled for future discussion. The Senate has passed a Bill devoting 1,500,000 dols. for the construction of gunboats on the western waters. It is reported that the Government has decided to erect a naval depôt and navy yard on Lake Michigan. Both Houses of Congress have passed a Bill raising the duty on tea to 20 c., on coffee 5 c., and on sugar from 2½ c. to 8 c., according to quality; and on molasses to 8 c. per gallon. The Government has announced that these new duties came into force from the 25th of December, and apply to all goods in warehouse and to current importations. The *Journal of Commerce* says this announcement has caused a feeling of wrong and injustice among commercial classes, and trusts the Government will reconsider its action. The great question of emancipation as a military measure is discussed by the people and debated in Congress. It is believed that before Congress adjourns it will pass an Act declaring that the slaves of rebels who join the Federal side shall be free. The New York Bank statement shows a decrease of specie of two and a-half millions, and a decrease of deposits of four and a-half millions. A suspension of specie payments by the banks was considered probable on the 28th ult. Mr. Seward has written a letter excusing himself from being present at the New England anniversary dinner. In this letter Mr. Seward says that if it were an Old England dinner he would strain a point to attend in order to show to their cousins across the seas that there is no benefit that can accrue to America that will not also increase the prosperity of Great Britain, and that every disaster that befalls America is sooner or later pregnant with suffering to Great Britain. A Washington telegram says:—"Mr. Seward gave a large dinner party on the 27th, at which were present Lord Lyons and other eminent diplomatists and members of the Senate and House Committees on Federal relations. This is a significant reunion, and needs no comment." No movements of importance have taken place in the army of the Potomac, but the Congress, the Government and the people at large were getting impatient at the inaction of the army, and were urging General M'Clellan to attack the Confederates, who still occupy their strongly intrenched position and by no means shrink from the contest. It is said that the war is now costing the Federal Government a million and a half dollars a day. The harbour of Charleston has been destroyed, 16 whaling hulks filled with granite having been sunk in three parallel lines of interval distances across the channel. The flow permitted to the water will prevent the cutting of a new outlet, and the obstruction will soon accumulate a triple line of sand banks across the entrance. A large and very carefully prepared naval expedition, under General Burnside, was to sail from Annapolis in about a week. The land force will comprise 12,000 troops. Complete success is anticipated from this enterprise, and results are expected to flow from it of the greatest consequence, including the cutting off the Confederates' most important line of railroad communication and in dividing their forces in front of General M'Clellan.

CANADA.—A letter from Montreal, dated December 23, says that Canada, at the beginning of the New Year, will have fully 60,000 men in arms to resist any invasion of her soil. Of these the Active Militia, 7500 strong, is armed, uniformed, and in a respectable state of discipline, quite equal in these respects to any force the United States can bring against them, with infinitely better officers, and that confidence between officers and men which is wanting in the Federal army. A Militia general order, issued on the 20th ult., called into active service one company, 75 men, and three officers from each of the 459 battalions of Militia, by volunteers from the service men, or in the aggregate 34,425 rank and file. The volunteer corps will number fully 20,000 more, and will provide their own uniforms. The province never before was so unanimous in feeling, so perfectly united, so enthusiastic, and so determined. The city of Montreal alone has in arms fully 10,000 men, or more than one in ten of the population. New batteries have been constructed at Toronto; cannon, arms, and stores have been forwarded from Quebec to the interior magazines; extensive machine shops have been hired for rifling the heavy smooth-bored ordnance, of which there is a vast quantity in the country; the whole frontier has been visited by General Williams and the Engineer officers, and every preparation made for defence against a sudden attack. A month ago Canada was at the mercy of the enemy; she is now armed to the teeth, and capable of offering a firm defence against any force that is likely to be brought against her during the winter. The French Canadians and the Irish inhabitants are equally determined to uphold the honour of the British flag. A letter from Mr. D'Arcy M'Gee, formerly well known as one of the Irish rebels, has been published in an American journal, in which he says:—"I declare most absolutely, and it is well the assailants of Canada should know the fact in time, that the Irish inhabitants of this province will be found embattled as one man in defence of the Canadian constitution and the Imperial connection."

MEXICO.—A despatch from the Gulf confirms the news of the evacuation of Vera Cruz by the Mexican troops. On the 8th of December the Spanish forces took possession of the fortress of San Juan d'Ulloa without firing a shot. It was not thought that any further military operations would take place till the arrival of the combined forces of England and France. The English minister in October last, before knowing of the triple treaty between France, England, and Spain, concluded a direct arrangement with the Minister for Foreign Affairs, M. Zamacomma. This arrangement, which put an end to all the difficulties between England and Mexico, was approved of by President Juarez, but the Congress, to which the matter was referred, rejected it on November 5, and England was thus forcibly thrown back upon the *status quo ante*. Under these circumstances M. Zamacomma resigned, in spite of the entreaties of the President, and was replaced by M. Tejada. The English Minister thought it unnecessary to present his ultimatum after the step taken by Congress. But the French Minister, Count Dubois de Saligny, hearing of the tripartite treaty, presented his ultimatum on Dec. 19th, and President Juarez demanded a delay of eight days to reply. On the 29th the President informed the French Minister that without absolutely rejecting the French proposals, he wished them to be the subject of fresh negotiations. The French Minister replied that the time for negotiations was past, but he would consent to a further delay for a definite answer till December 2. In default of a satisfactory reply he would go to Vera Cruz on December 3 and embark for Europe.

Public Addresses.

THE RIGHT HON. EDWARD CARDWELL, M.P., at the annual dinner of the Druids' Society at Oxford on New Year's Day, spoke as follows on Public Affairs:—

"The departed year has gone down, like a winter's sun, in gloom, and with an anxious augury for the future. It has left us mourning a loss at once inscrutable and irreparable; for the nation grieves not only as a loyal people, tendering, as it must

ever tender, the homage of its sympathy to the deep affliction of a most honoured and a most loved Sovereign, but, beyond that, every household in the land, from the highest to the humblest, feels the great calamity we have sustained as a domestic and personal bereavement. Such is the tribute which English hearts have paid to the high endowments and the sterling virtues of the Prince Consort—the tribute of genuine gratitude and sincere affection. It is a sorrow too deep to be expressed in words, and it will not be effaced by time. But we bow to the hand of Him who 'rules in wisdom and in mercy the kingdoms of men.' We saw with sorrow a civil war break out between two parts of one great country—the inheritors of our blood, of our literature, and of our glory; and we should regard it as little less than a civil war among ourselves if any unhappy circumstances should arise to involve us in hostilities with the people of America. The telegram of to-day says there is hope of an amicable settlement, provided the demand of England has not been made in such a spirit and in such a temper as to render it impracticable; and I trust in due time, when all the correspondence shall be laid before the public, that they will be of opinion that those who are entrusted with the powers of State have acted in a manner worthy of them, and consentaneous with their own principles and feelings. I believe there never was a spectacle of which Englishmen might be less ashamed in the face of Europe and of the world than the demeanour which England has shown in this great trial of her fortunes. We have sustained an injury such as we could not possibly pass by if we meant to retain the name and the position which England has heretofore enjoyed among the nations of the world. The law, and, as we see, the opinion of civilised Europe, have been declared upon our side. Our contest is for freedom and for the peaceful rights of commerce. The issue, then, does not rest with us, but upon the answer we may receive. How has the English people comported itself under the circumstances? Has England shown that irritation and excitement which usually accompanies weakness; or that quietness and confidence which can spring alone from a consciousness of right and a consciousness of power? We have been determined to do right, but we have been equally determined not to suffer wrong. The Americans may find an apt description of the conduct of England, and by that I mean, not the English Government merely, but the English people at large, for there has been no party feeling in this matter; what has been done has been the act—as it always is in circumstances where the honour of England is at stake—it has been the act of a united people, speaking and acting as one man. I say the Americans may find the best description of the attitude of England at this moment in the words of her own popular poet in describing fortitude, as "Serene and earnest—and still, and calm, and self-possessed." I trust that the news of to-day may be ratified by more full intelligence, and that we may find men on the other side of the Atlantic influenced by a spirit like our own, and that these occurrences may not only pass over without leading to the great calamity of hostilities between two kindred nations, but that, by the explanations that may follow, the danger of a state of war may be so far removed and smoothed away that there may arise no other circumstance calculated to involve us in the like danger for the future. A country can afford to be peaceful in its tone, and moderate in its language, that stands in the happy position in which we now stand. Never was our army or navy in a more efficient state. We not only raise without a conscription an army and a navy sufficient for the defence of our own shores and our great colonial possessions, but we raise a militia without ballot. And in addition, there has been exhibited during the last three years a spectacle which no other nation ever exhibited before, in the magical rise of that great army of Volunteers which has earned the gratitude of their own country and commanded the admiration of every other nation. And while speaking of them and the great debt of gratitude which the country owes to them, let us not forget the Naval Volunteers, whose example at this period of doubt and anxiety has attracted to them the notice and approval of their countrymen. I speak of the Naval Volunteers with peculiar interest, for I was one of those who had the honour to advise the adoption of this special force. At the time the subject was under discussion we were told by those who professed to speak authoritatively that it would be impossible to raise a corps of Naval Volunteers, because such were the feelings of alienation between the naval service of the country and the merchant service that all efforts to raise a Naval Reserve from the merchant service must necessarily fail. But those to whom the inquiry was intrusted did not take that view. They said, if there be that feeling of alienation between the navy and the merchant service, let us inquire what is the reason, and whose fault it is? Does it not arise from the recollection of old times and ancient grievances, when you relied upon impressment for manning your navy, and when your appeals to the merchant service were made by the agency of force? We said, try the naval Englishman as you do every other Englishman in every other position of life. Don't use force, but appeal to his patriotism and generous feeling; invite him to come forward and rally round his country and see if he will not be as ready to give his service towards the protection of the country and the maintenance of its honour as they are. And what has been the result? It is not yet three years since that advice was humbly tendered to the Crown by those who conducted that inquiry, and all of you know that not only have we an efficient force, ready and zealous to come forward if our navy should require their services, but, as my noble friend the First Lord of the Admiralty told me the other day, of men who constituted the cream of the merchant service. It is an honour and an ambition to belong to the force, and so it will ever be for a body of Englishmen to come forward for the defence of the country when you speak to them as Englishmen, and appeal to their patriotism, to their generosity, and to their high-minded feeling. But that is not all. That which I regard with the greatest satisfaction in witnessing the progress of that force and their conduct is that the barrier which did exist between the Navy and the merchant service is broken down, and we now find the merchant services animated by the same spirit which pervades the rest of the community. Ancient jealousies are forgotten, and all Englishmen are ready to unite in defence of the country. I am glad to find the feeling of England is unanimous in entertaining an earnest hope that the blessings of peace will be continued. No man would deprecate more than I would any recourse to war, with all its attendant horrors and miseries; but, while I am most anxious to avoid war, I am gratified in knowing that in any event our noble and beloved Queen may confidently rely upon the patriotic and enthusiastic spirit in England and Ireland, in Scotland and our colonies—of a brave, a loyal, and a magnanimous people."

THE LORD ADVOCATE delivered an address on "A Happy New Year" on Friday evening in the Hall of the Highland and Agricultural Society of Scotland, and in the course of his remarks spoke as follows on the rights of neutrals and the affair of the Trent:—

"There has been considerable interest of late excited on the subject of belligerent and neutral rights, and men have gone back to long-forgotten books, and have raked up Grotius and Vattel, and a host of other learned names, that are now sought to study what are the rights as between two belligerent Powers, and particularly what are the rights belonging to those who are engaged on neither one side nor another—namely, what are the rights of neutrals. Now, that is a very difficult subject, and certainly I have no intention of inflicting upon you to-night a lecture on international law. I only mean to make one or two remarks on that part of the topic which may rather seem cognate to the general theme of my observations. Now, it is quite true—as was said, I think, in some of the recent discussions—that to a certain extent international law must be the conscience of the strongest. But, on the other hand, there is such a thing as a code of international law. It is a code which was, as I already hinted in the former part of my observations, originated by the Italian commercial republics of Venice, Genoa, and the other republics of that very early Christian era; and the celebrated work of the 'Consolato del Mare,' the first copy of which known to exist is somewhere about 1000, contains truly the germ of all that has ever been insisted on or written on that subject since. And it is most important that, as war cannot sometimes be avoided, there should be something settled and fixed, and firm principles on which these matters should be regulated. I am not sure—and I do not by any means like to express an opinion upon the subject—that even in this matter the principle to which I have been referring might not with great benefit be allowed more operation than it has hitherto received—I mean that the less heavily belligerent Powers deal with the colours of their adversaries, in all probability each is likely to gain in the end. And accordingly there was, as you know, some years ago, after the Russian war, a convention at Paris, by which several of the great Powers came to certain resolutions in regard to this matter, which I allude to just now because it exemplifies very strongly how shortsighted it is, with a view to the narrow range of probabilities which may be placed before a nation or an individual, to come to general conclusions. Among the things which the great Powers were agreed upon was the abolition of privateering. America declined to join with the great Powers in that convention, because she said—and she said with a great deal of force and power—"That is a very good position for you, Great Britain, who have a large fleet, and a large standing fleet, independent of your merchant navy; but for our United States, whose principle does not lead us to maintain a large standing navy, of course if we go to war with you we must trust entirely to privateering," and accordingly at that time declined to join the convention. And what has been the result? Why America was looking to the chances of a war with this country, but she has unexpectedly gone to war—the Northern against the Southern States, and the Southern States maintain no fleet, and they are obliged to have recourse to privateering; so that her refusal at that time to join in what was evidently for the general good, for the interests of humanity and civilization, has been the cause of one of the bitterest and severest results of this unhappy war between the Northern and Southern States, all of which would have been avoided if she had taken a larger view of the matter in 1856. It was debated at the Congress of Social Science of 1860 whether it would not be desirable to exempt merchant ships altogether from seizure in the event of war. Now, I heard that very learnedly discussed. I cannot say that I was convinced of the affirmative of the proposition. The difficulty is that war really knows no rule but self-defence, and that it is difficult to say that you are to allow your adversary to go on with his commerce, and cover the seas with his fleets, while at the same time he is endeavouring to do to you all the evil and all the mischief in his power. We are all waiting now in suspense. We are all looking towards the West, waiting for the tidings that are to come; and, when we look forward to the new year, much of its happiness will depend upon what that news may be. While I speak, the balance still trembles between peace or war, and no one can predict which way it may incline. Fortunately, we are prepared, with steadfast hearts, for either issue. We can honestly say we desire nothing of our neighbours'. The lust of conquest has long been dead to our councils. We can see the prosperity of others without envy, knowing it is the reflection and must be the companion of our own. In the internal regulation of the affairs of others we desire not to meddle. We are conscious of no motive, no wish, no tendency to offend. But, while we wish for nothing that is our neighbours', we mean to preserve all that is our own; and while we never were more anxious to avoid, we never were more determined or ready to repel aggression, or to maintain our honour or our rights. If war comes, it will be because, maintaining our rights and honour with temper and with dignity, we could not avoid it. Still—*absit omen*—may peace prevail; and if our Transatlantic brethren will do us justice in this matter, then, and then only, I wish them, as I wish you, a happy new year."

MR. KINGLAKE, M.P., delivered his annual address to his constituents at Bridgewater on the 30th ult., and spoke as follows on Foreign politics:—

"Before I touch upon the subject of the threatened war with America—I desire to say a few words on the state of European politics. Perhaps, after all, the most momentous events to be expected from this new American war will be those for which we may have to seek in Europe. At present all Europe tells us that we are right in this quarrel, but experience tells us also that nothing is more quickly forgotten than the mere cause of a war. If this war should break out, those nations which bear hatred against England will inquire whether or not this may be an occasion for venturing an attack upon us; or, what is very much more probable, they will inquire whether this may not be the time for attempting those territorial changes which cannot be safely attempted when England's attention is fixed upon European affairs. I will not conceal from you that, if this Transatlantic emergency had occurred two years ago, there would have been great ground for anxiety with regard to our relations in Europe. But I rejoice to be able to say that since last I addressed you in this hall a great improvement has taken place in the relations between this country and the Powers of Europe. The military powers of Central Europe were then in so distressed a state as to exercise no power at all, and the Emperor of the French was so completely the master of the situation—I mean the Emperor of the French personally, and not France—that England was placed in circumstances of embarrassment and difficulty, which I then endeavoured to describe to you. I recollect at that time showing you how perilous was the situation of England. The justice of the words I then uttered was very generally recognised in this country, and I have some reason to believe that it was also recognised in a quarter where it might have been supposed to have been unwelcome. We now find that M. Fould, the Finance Minister of France, has addressed to the French Emperor words exactly coinciding in principle with those I spoke to you. He has told the Emperor that it is impossible that he can ever have credit among the other Powers of Europe for being a peaceful potentate while he has in his hands the whole means and capabilities of France. The justice of this the French Emperor has recognised, and it is now promised that there is to be something like constitutional government in France. It is no matter to us what the government of France may be, so far as the mere personal feeling of Frenchmen is concerned; yet it is of great importance to us that there should be in France a government of such a kind that there can be no war in that country without the assent of the French people—without such an assent as would give us fair notice of what is coming. Within two months of the period when I addressed you an important declaration was made by Lord John Russell, who in quiet, temperate, but firm language, intimated to Parliament that the time had come for England to make a stand against further encroachment; and that, however friendly the Government of England might be towards the Government of France, yet, in order to maintain the tranquillity of Europe, England must no longer hold herself aloof from the other Powers. No sooner had these words been uttered than England recovered, I will not say her rank as a first-rate Power, for that had not been altogether lost, but the authority in Europe which she owes partly, indeed, to her strength, partly to her moderation, partly to the freedom from all ambition for territorial aggrandisement, and partly from the community of interests which binds her in amity with all Powers, and determines her to hold her own, but nevertheless remain free from desire to encroach upon the possessions of others. The value of that change in our policy was tested last year, when I happened to become acquainted with the fact that a scheme was in agitation for annexing the island of Sardinia to France. I did not hesitate to go down to the House of Commons and state in simple words what I happened to know. I stated no more than the bare facts. I did not say that any actual agreement for this cession had been made, but merely told the House what had chanced to come to my knowledge. The statement elicited from Lord John Russell, as I humbly hope, will have the effect of inducing France to abandon any scheme of the kind. My belief is that that scheme had been entertained without any knowledge of the full extent to which it would excite opposition on the part of England; and that the French Emperor was enabled to perceive, from what passed in the House of Commons, and from the feeling of the country generally, that this was not a measure that could be tolerated by England consistently with her determination to preserve the balance of naval power in the Mediterranean. I tell you frankly that it was on account of the good faith they have shown that I have been a supporter of her Majesty's Government. And, when I tell you that, I mean that I have not been a supporter by halves. Night and morning I have done all that I could, by the votes which a member can give, to accord my support to the government. In the spring of last year several of the Southern States of what we were accustomed to call the United States of America chose to secede from the government with which they had been connected. Her Majesty's Government soon found that these seceding States comprised a population of some 8,000,000 men; that they were as peacefully and regularly governed as any European State; that they were maintaining war against the Northern States, for the most part, it appeared, with some success; and it was quite evident, therefore, that our government had no choice but to recognise these 8,000,000 people as belligerents—that is, as men who were carrying on war, for you could no more deny that that they were carrying on war than that the sun shines at noonday. At the same time the government of this country determined to maintain a rigid neutrality. The people of the North had, perhaps, some sort of ground for supposing that the strong feeling which this country entertained on the subject of slavery might affect the course which we should take when the Southern States became separated from the North. They seemed to think that on that ground we should at once have declared for them, in order to abolish the evil which we have always denounced. We did nothing of the sort; and from what has happened, I draw a lesson in support of a principle I have always enforced—that in the policy of states a sentiment never can govern. Depend upon it that the relations between various states will always, or almost always, be governed by their great interests. Now, there is another lesson to be drawn from what has happened in America—that, where a State is subject to domestic broils, there is a strong inclination on the part of many—and this is especially the case in some States—to seek an issue out of their domestic troubles by finding a quarrel with a foreign State. And I must say that I never saw so strong an instance of this policy—if policy it can be called—as on this occasion. I own to you that it has been the custom of England during many years to be a little too negligent in the maintenance of her rights as against the United States; the feeling of every one was that we should submit to anything rather than get into a quarrel. That was a very peaceable feeling—a feeling for which I refuse to cast blame upon my country; but it was not statesmanlike, because experience tells us that by such a course we may be forced into a war which might have been avoided by a little firmness at the outset. I don't think that this would be the place for me to attempt to go into the grounds on which I say the act of Commodore Wilkes, which you all know of, was unlawful, but I tell you with confidence that it was so. If I had addressed you a fortnight ago I should have found it necessary to argue the question, but now that all Europe has pronounced the act to be unlawful, I may be content with asserting what I might have argued then. M. Thouvenel, in beautifully clear language, has told the American government that they are doing that which is indefensible. This is the more important and interesting because all who have read history know that America owes her independence to the aid she got from France, and that France and America have always been competing side by side for the rights of neutrals. For the solution of a question of this kind international law had provided a competent tribunal, and he who withdrew this matter from that tribunal was Commodore Wilkes; because if he honestly imagined that the Trent was carrying contraband of war, it was perfectly competent in him to take possession of her, and carry her into the prize courts and have her lawfully condemned. But he rejected the prize courts, and took the law into his own hands. I want to ask you who sent Commodore Wilkes to carry on war against a peaceful mail packet? I am afraid I must answer the question myself, by telling you that he was sent by a power to which we in England are almost always accustomed to bow with deference, and which we all infinitely respect. He was sent by public opinion. But then, how comes it that that power which rules us all here with moderation is in America so low, so perverse, so lawless, so mad, as to send this man on a mission which is no less destructive to his own country than offensive to ours? I am afraid that the answer is one with which all who have observed with care the United States of America have been long familiar—namely, that although good men there abound, yet, from some cause connected with their system of government, the good men are driven into the shade and the bad men are prominent. Commodore Wilkes seems to have calculated that by doing a simple lawless act of this kind he would obtain the good opinion of his fellow subjects—that is, all those of them who would come forth. As soon as the news was received in this country there was a firm determination to uphold the honour of the flag, and that that honour should be vindicated according to law. No man desired that we should pass those bounds which the law officers of the Crown might prescribe. With admirable patience the country waited until the law officers of the Crown had given their decision, and as soon as it was given there was hardly a man who ventured to question it. Upon this a despatch of a very cogent kind was addressed by her Majesty's Government to the Government of the United States, and had our Government done less they would have ceased to be a Government. I have not the slightest doubt that the despatch was couched in terms the most courteous, and that it expressed the belief of her Majesty's Government that the act of which Commodore Wilkes had been guilty was one which they would repudiate, and therefore instructions were sent to Washington to request that reparation which ought to be given. I have no doubt that a clear distinction was made between the reparation in the restoration of the two

commissioners and the reparation that due notice be given of the act of which Commodore Wilkes has been guilty. I have no doubt, with respect to the latter that our Government would be willing to negotiate with temper and moderation, but it must be understood that, with respect to the restoration of the commissioners, that was made a condition without which it would not be possible for Lord Lyons to remain at Washington."

City Intelligence.

BANK RATE OF DISCOUNT.—The Bank of England on Thursday reduced their rate of discount from 3 per cent., at which it has stood since the 7th November, to $2\frac{1}{2}$ per cent.

MONEY MARKET, FRIDAY.—BRITISH FUNDS: In consequence of the announcement of peace with the United States, the funds opened on Thursday morning at an advance of three quarters per cent. upon the improved prices attained after regular hours on the previous evening, making a total rise of $1\frac{1}{4}$ per cent. Reckoning accrued dividend, this raised Consols rather more than a half per cent. above the point at which they stood previously to the news of the Trent affair, and about 3 per cent. above the war price to which they at one time fell. The closing prices to-day were $93\frac{5}{8}$ to $\frac{3}{4}$, both for Money and the 6th February; Bank Stock, 239 to 240; Reduced and New Three per Cents., $93\frac{3}{8}$ to $\frac{1}{4}$; New Two and a Half per Cents., $77\frac{3}{8}$; Thirty Years Annuities, 1885, 15 9-16 to 9-17; India Stock, 225; Ditto Five per Cent. Stock, $106\frac{3}{8}$ to 106; Ditto for Acct., $106\frac{3}{8}$ to $\frac{1}{4}$; Ditto Bonds, 24*s.* pm.; Five per Cent. Enfaced Rupee Paper, 100 to $99\frac{5}{8}$; Ditto Five and a Half per Cent., 106; Exchequer Bills, March, 17*s.* to 19*s.* pm.; Ditto June, 20*s.* to 22*s.* pm.—FOREIGN: Brazilian Old Five per Cents., $100\frac{1}{4}$ to $\frac{1}{2}$; Italian Five per Cents., $64\frac{1}{4}$ to $63\frac{3}{4}$, ex div.; Mexican Three per Cents., $28\frac{5}{8}$; Ditto for Acct., $28\frac{5}{8}$ to $\frac{1}{4}$; Peruvian Four and a Half per Cent. Dollar Bonds, $88\frac{1}{2}$; Spanish Three per Cents., $51\frac{1}{4}$, ex div.; Turkish Six per Cents., 1858, for Acct., $72\frac{1}{4}$ to 72; Ditto 100*l.* Bonds, $74\frac{1}{2}$; Ditto Guaranteed Four per Cents., $103\frac{1}{2}$; Venezuela Three per Cents., for Acct., $23\frac{1}{4}$.

Gazette of the Week.

FRIDAY: *Jan.* 3—BANKRUPTS.—M. ALLCOCK, Hulme—CHARLES MIEVILLE BROWNE (and not CHARLES MISVILLE BROWNE, as formerly advertised), Adbolton, Nottinghamshire, Farmer—T. BLANSHARD, Manchester, Glass Dealer—J. BUCKINGHAM, Ashburton, Devonshire, Mason—T. BEDSON, Montpelier Street, Camberwell, Manufacturer of Indorsing Apparatus—B. BLAKE, Newport, Hampshire—W. BARKER, Wokingham, Berkshire, Builder—M. CROSS, Sheffield, Butcher—T. COBBOLD, Brighton, Watch and Clock Maker—J. CALDECOTT, Chester, Hatter—A. S. CROPP, Southampton, Engraver—W. CRANE, Marion Street, Hackney Road, Shoemaker—H. P. COOK, Romford, Coach Builder—G. W. COCKS, Poole, Dorsetshire, Plumber—J. COTTON, Colne, Wiltshire, Innkeeper—J. CHURCH, Harlow, Essex, Farmer—H. C. COOPER, Salisbury Street, Strand, Violinist—B. COTTON, Wapping Wall, Shadwell, Licensed Victualler—W. DIXON, Shotley Bridge, Durham, Licensed Victualler—R. DARCH—R. DAWSON, Carlisle, Innkeeper—JAMES ENOCH SADLER DAYNES, Norwich, Horsehair Manufacturer—S. H. DEAN, Lenham, Kent, Farm Labourer—J. ELL, Copenhagen Street, Islington, Baker—G. ELLIS, Staleybridge, Cheshire, Grocer—H. FELSTED, Standon, Hertfordshire—J. FAIRBROTHER, Hertford, Bargemaster—S. B. FLINT, Great Driffield, Yorkshire, General Dealer—S. FREEDMAN, Canton, Glamorganshire, Pawnbroker—A. GOLDSTANDT, Trafalgar Square, New Peckham, Commission Agent—A. E. GRITTEN, Gerrard Street, Soho, Picture Dealer—A. GORDON, Middle Scotland Yard, Civil Engineer—W. GRATTAN, Lower North Street, Chelsea, Bootmaker—H. GEORGE, Newport, Monmouthshire—W. GOODWIN, Coventry, Straw Hat Manufacturer—J. T. GRANT, Shrewton, Wiltshire, Carpenter—M. HEYMANN, Stratford, Essex, Dealer in Fancy Goods—J. HARPER, Dudley, Licensed Victualler—V. D. HUNT, Strannaer Place, Maida Vale, Dealer in Horses—J. HOLTHAM, Swansea, Builder—T. HUGGAN, Bradford, Yorkshire, Bootmaker—D. HOWARD, Battersea, Surrey, Beershop Keeper—T. JONES, Monkwell Street, City, Cap Front Manufacturer—ROBERT ROWE KNOTT, New Inn, Strand, Clerk—GEORGE KILBY, Upper Heyford, Oxfordshire, Blacksmith—E. H. KEIGHLY, Wharf Road, King's Cross, Lighterman—R. LIDDLELOW, Norwich, Carpenter—JAMES LARKMAN, Besthorpe, Norfolk, Blacksmith—J. C. LEESON, Wilmot Street, Russell Square, Working Engineer—J. M'HALE, Bacup, Lancashire—E. MANSELL and G. A. ELLIOTT, Belgrave Square, Auctioneers—W. E. MORRIS, Dudley, Worcestershire, Railway Clerk—R. MAKEY, Providence Row, Bow, Grocer—J. MOORE, Birmingham, Glass Cutter—G. T. MERCER, William Street, Hampstead Road—W. MIDDLEWOOD, Stretford, Lancashire, Builder—THOMAS TIPSON NEWBY (sued as THOMAS NEWBY), Albert Terrace, Camden Town, Commercial Traveller—G. OSBORNE, Sheffield, Boot and Shoe Maker—T. OTTEWILL, Charlotte Terrace, Islington, Photographic Apparatus Manufacturer—T. PARKER—M. PLEWS, Hampstead, Auctioneer—W. POLL, Old Catton, Norfolk, Innkeeper—L. PEACE, Portland Street, Walworth, Shoe Manufacturer—R. PARKIN, Sheffield, Herring Dealer—T. ROBERTS, Llanelly, Carmarthenshire, Ship Chandler—G. RUSSEN, Croydon, Surrey, Carrier—F. SMITH, Oxford, Carver and Gilder—ALBERT SZLUMPER, Birkenhead, Cheshire, Tailor—EDWARD SEARSON, Ripley, Derbyshire—JOSEPH SHELDON, Fawler, Oxfordshire, Superintendent of an Iron Stone Quarry—C. SILLS (sued as C. SELLS), Uxbridge, Horse Dealer—J. C. SEIPP, Lincoln Street, Mile End, Mining Agent—W. STEELE, Burslem, Staffordshire, Potters' Warehouseman—S. SKINNER, Exeter, Provision Dealer—J. SHAW, Rakeway, Staffordshire, Basket Maker—W. TURNER, Sheffield, Grocer—C. E. TOWNSHEND, Heigham, Norwich, Grocer—W. C. VYOYAN, Dorset Place, Dorset Square, Ensign—H. WILLIAMS, Salisbury, Confectioner—J. WHITTAKER, Radcliffe, Manchester, Farmer—J. WESTON, Apperley, Gloucestershire, Timber Dealer—J. WITHERS, Birmingham, Commission Agent.

SCOTCH SEQUESTRATIONS—J. ADAMS and Co., Hamilton, Lanarkshire, Millers—J. ALLAN, Glasgow, Merchant—H. ANDERSON, Paisley, Coal Merchant—JOHN DICK, Newlands, Lanarkshire, Farmer—JAMES DICK, Newlands, Lanarkshire, Farmer—J. DOCTOR, Methven, Perthshire Wood Merchant—N. GENTLE, Glasgow, Flesher—J. ORR, Auchterhead, Lanarkshire, Farmer—W. RODGER, Wishaw, Lanarkshire, Postmaster—R. YUILLE, Glasgow, Grocer.

TUESDAY: *Jan.* 7.—BANKRUPTS—G. ANDERSON, Northampton Place, Canonbury, Ship Broker—D. BOWEN, Pembroke, Lodging House Keeper—A. BANKS, Vernon Terrace, Notting Hill, Saddler—M. BRAHAM, Liverpool, Victualler—T. BRYAN, Liverpool, Hatter—W. BARLOW, Stanley Moss, Staffordshire, Poulterer—J. BLACK, Luard Street, Islington—R. T. BONEST, Bristol—C. BYE, Dullingham, Cambridgeshire, Butcher—J. S. BARRETT and F. S. BARRETT, Kingston Bagpuize, Berkshire, Surgeons—H. J. BALDWIN, Sutton Coldfield, Warwickshire, Commercial Traveller—T. CLAXTON, Huddersfield, Auctioneer—G. W. CUMMINS, Nottingham, Tripe Dresser—R. CENEY, Tipton, Staffordshire, Beer Retailer—M. CHARLTON, Seacombe, Cheshire, Licensed Victualler—W. DYMOND, Plymouth, Baker—G. DAWKINS, Broughton, Northamptonshire, Builder—G. DICKEN, Derby, Dentist—A. DOWNTON and G. SATCHWELL, New Inn Yard, Old Bailey, Provision Dealer—J. COTTON, Colne, Wiltshire Innkeeper—J. EVANS, Llanstadwell, Pembrokeshire, Licensed Victualler—C. FRENCH, Chislehurst, Kent, Butcher—J. FLUESTER, Westbourne Park Road, Paddington, Stonemason—E. FORSTER, Walthamstow, Essex, Farmer—L. FRY, Bournemouth, Huntingdonshire, Grocer—T. J. FAULKNER, Manchester, Surgeon Dentist—G. GUY, Bath, Baker—W. GREEN, Conduit Street, Paddington, Auctioneer—J. GREEN, Acomb, Northumberland, Labourer—H. GIBSON, East Dulwich, Commission Agent—H. D. GLEW (and not GLEN, as before advertised), Hill Street, Knightsbridge, Farmer—J. GREEN, Birkby, Yorkshire, Joiner—J. HALLET, Crown Street, Finsbury, Coach Painter—T. HOBSON, Waltham Abbey, Essex, Cowkeeper—J. HALL, Oxford, Carpenter—S. HORROCKS, Manchester, Licensed Victualler—W. HEWITSON, Llandudno, Carnarvonshire, Tea Merchant—E. HALL, Lincoln, Butcher—W. HIRST, Huddersfield, Dealer in Hay and Straw—W. H. HEATH, Camborne, Cornwall, Dealer in Hardware—J. HUGHES, Manchester, Fustian Manufacturer—JOHN HOUSE, Blue Anchor Road, Rotherhithe, Tanner—GEORGE INMAN, Sheffield, Labourer—M. JOWETT, Bradford, Yorkshire, Shopkeeper—D. JONES, Kenfig Hill, Glamorganshire, Draper—W. LANGMAN, Wolverhampton, Staffordshire, Furniture Dealer—W. LANE, Woolfardisworthy, Devonshire—J. F. LEAD, Wellington, Shropshire, Mercer—A. LILIE, Devonshire Street, Islington, Middlesex, Dealer in Pictures—G. LAKE, Bloomsbury Street, Bedford Square, Professor of Music—W. LAWRENCE—T. LUCAS, Worthing, Sussex, Ironmonger—W. MORGAN, Poole, Dorsetshire, Tailor—J. MILLER, Liverpool, Tea Merchant—B. MOXON, Sheffield, Publican—H. C. OXENDEN, Bart., Dover—T. PARKER, Branston, Lincolnshire, Cattle Dealer—M. PLEWS, Hampton (and not Hampstead, as before advertised), Auctioneer—F. G. PHILLIPS, Queen's Hotel, St. Martin's-le-Grand, Clerk—R. C. PARSONS, Theale, Berkshire, Cattle Dealer—J. W. PARSLEY, Albion Road, Clapham, Clerk—B. RILEY, Blackburn, Lancashire, Bobbin Maker—G. RULE, Pickard Street, City Road, Slater—RUNGHEET RAJHPOOT ROCHFORT, Gravesend—THOMAS SMITH and WILLIAM SMITH, Coventry, Ribbon Manufacturers—JOSIAH SMALLWOOD, Birmingham, Iron Square Manufacturer—E. STEVENS, Herbert Street, New North Road, Railway Clerk—R. SWEET, High Holborn, Carver—C. SMITH, Liverpool, Licensed Victualler—A. SURRIDGE, Leigh, Essex, Baker—J. VICKERS, Howden, Durham, Joiner—W. WALKER, Fuller Street, Bethnal Green Road, Silk Dealer—M. B. WELLS, Newport, Monmouthshire, Bonded Store Merchant—H. WILKINSON, Sheffield, White Metal Manufacturer—H. A. WRIGHTSON, Scarborough, Yorkshire, Painter—A. WOLSTENHOLM, Sheffield, Schoolmaster—W. H. WINTON, Walford, Herefordshire, Hay Dealer—J. WAUDE, Manchester, Mechanic—W. WELCH, Exeter, Bootmaker.

SCOTCH SEQUESTRATIONS.—J. BARDNER, Alloa, Maltster—J. BEGG, Elgin, Painter—J. CUSKER, Glasgow, Rag Merchant—A. M'CALL, Dollar Mains, Clackmannan, Farmer—R. H. MACDONALD, Glasgow, Commission Merchant—L. M'GOWN, Glasgow, Comic Vocalist—W. MENZIES, Glasgow, Wright—NOBLE, NORRIE, and COMPANY, and J. S. NORRIE, Dundee, Merchants—J. RODGER, Perth, Draper—A. THOMPSON, Lossiemouth, Elginshire, Merchant.

Bank of England.

ISSUE DEPARTMENT.

Notes issued	£29,858,915	Government Debt	£11,015,100
		Other Securities	3,634,900
		Gold Coin and Bullion ..	15,208,915
		Silver Bullion	—
	£29,858,915		£29,858,915

BANKING DEPARTMENT.

Proprietors' Capital ..	£14,553,000	Government Securities (including Dead Weight Annuity) ..	£12,768,618
Rest	3,232,385	Other Securities	18,156,887
Public Deposits (including Exchequer, Savings Banks, Commissioners of Nat. Debt, and Dividend Accts.)	4,542,974	Notes	9,505,300
Other Deposits	18,206,488	Gold and Silver Coin ..	837,102
Seven day and other bills	733,060		
	£41,267,907		£41,267,907

8th day of Jan., 1862. M. MARSHALL Chief Cashier.

Metropolis and its Vicinity.

THE LATE PRINCE CONSORT.—The Lord Mayor on Thursday issued a notice convening a public meeting in the Egyptian Hall of the Mansion House on Tuesday next, at 2 o'clock, to consider the propriety of inviting contributions for the erection of a suitable memorial of the late Prince Consort. His Lordship has also requested the attendance of many gentlemen of rank and influence to take part in the proceedings, and to aid in carrying out the proposed object.—Mr. Cole, of the South Kensington Museum, has, by permission, addressed a letter to Earl Granville, suggesting, as a memorial to the late Prince Consort, the establishment of an industrial university, to be called the "Albert University." Such an university, he says, would differ from the London University in not requiring examination for matriculation, but perhaps accepting examination conducted by other authorities. The degrees and honours would be granted for specific success in subjects technically applied. A miner from Durham or Cornwall might acquire his degree in mining only; a chemist from Manchester, Bristol, Newcastle-on-Tyne, or the Staffordshire Potteries, might take honours in chemistry only. The endowment should be partly from public subscriptions and partly from Parliamentary funds. The site of the proposed university should be at South Kensington, and the working of the institution should be analogous to that of the University of London.—A committee, consisting of Mr. Foley, R.A., Baron Marochetti, A.R.A., Professor Westmacott, Mr. J. Smirke, R.A., Mr. George Godwin, and General Grey (as a channel of communication with the Royal Family), has been appointed to confer with Mr. Durham with reference to the execution of a statue of the late Prince Consort, to be placed in the Gardens of the Horticultural Society, in accordance with her Majesty's desire. Mr. Godwin, the Honorary Secretary, in reply to the letter of the Prince of Wales, has expressed the readiness of the memorial committee to meet her Majesty's wishes, and has placed in the hands of the Prince of Wales the appropriation of Mr. Durham's statue of the Queen which is now about to be cast in bronze.

SPECIAL EVENING SERVICES AT ST. PAUL'S.—The Special Evening Services at St. Paul's Cathedral recommenced on Sunday evening, when the sermon was preached by the Bishop of London. About 3500 persons were present.

ESSAYS AND REVIEWS.—The suit instituted by the Bishop of Salisbury against Dr. Williams is still proceeding in the Arches Court. Meanwhile another suit has been instituted in that Court against the Rev. Henry Bristow Wilson, vicar of Great Staughton, in the county of Huntingdon, in the diocese of Ely, the author of the article, entitled "Séances Historiques de Géneve—The National Church." The suit is promoted by the Rev. James Fendall, rector of Harlton, in the county of Cambridge, and the diocese of Ely; and the ground of proceeding is the erroneous and heretical doctrines and opinions alleged to be contained in Mr. Wilson's Essay.

THAMES EMBANKMENT.—A Bill for the Thames embankment has been printed, and the plans and sections have been deposited with the clerk of the peace and other authorities under the standing orders. The Bill proposes that the embankment shall start from the lower side of the New Westminster Bridge, ranging with the face of the abutment of the new bridge, and continue in a curved line, following what is generally called Page's line, to the back of the first abutment of Waterloo Bridge. It then starts again from the lower side of Waterloo Bridge at the corresponding point, and proceeds in a similar curved line until it terminates abruptly against Blackfriars Bridge, $2\frac{1}{2}$ chains nearly, or about 100 feet into the river beyond the present wharfs and houses. The embankment is solid throughout, and the projection into the river, in some cases very considerable, is to be filled in by soil taken from the Thames, or otherwise obtained. The height of this new wall from Westminster Bridge to the east side of the Temple is to be $4\frac{1}{2}$ feet above Trinity high water mark. On the surface of the land thus gained there is first to be a public road 190 feet wide from Westminster Bridge to the Temple, where it is to become 70 feet wide only. In addition to this road or street, property is scheduled for four new streets—1st, an entirely new street is to be formed from the Banqueting House at Whitehall down to the river; 2d, Whitehall Place is to be continued down to the river, and form part of an entirely new street between the Strand and the river, terminating at Waterloo Bridge, just opposite the new wing of Somerset House; 3d, Norfolk Street, Surrey Street, and Arundel Street are to be made to join the river by a common communication to the new road; and lastly, a new street is to be made from Blackfriars Bridge to the Mansion House, joining New Cannon Street. The Bill constitutes a board for carrying these works into effect, consisting of the chairman and four members of the metropolitan board, and two members returned by the corporation of London, thus forming a board of seven members in all; it empowers the borrowing of one million and a half of money, and gives compulsory powers of purchase, sale, &c., in the usual way. It enables the board to deal with the Chatham and Dover Railway and Bridge, but Hungerford, Blackfriars, Westminster, and Waterloo Bridges are not to be interfered with. Houses may be built on any of the vacant lands, subject to the approbation of the Board of Works, but none are to be built in front of the Temple.—The commissioners appointed to inquire into the embankment of the south side of the river met again on Friday, the Lord Mayor presiding. Mr. Crosby said he was engaged by the Metropolitan Board of Works, and had the superintendence of a portion of the main drainage works on the south side of the river. He found that in the district of Rotherhithe and Bermondsey the houses were from time to time flooded. He also found that when trenches were dug to make sewers the water in them rose and fell with the tide. He would carry an embankment along the whole side of the river, but whether on the present line or not must depend on the convenience of trade, which must be pre-eminently considered. At Lambeth he should recommend an embankment such as Mr. Cubitt made at Pimlico—at Rotherhithe a perfect wall only. As to Fore Street, he should suggest either that much land should there be reclaimed, and the road widened, or that it should be widened by pulling down present buildings. He could conceive that puddling might improve the state of things, but he did not see how it could possibly be carried out. The main drainage will do much to improve matters, but not entirely arrest them. It will at once drain the water from the cellars. On the question of taxation, he should suggest tonnage dues on all articles coming into the port of London, thus taxing the whole country. It would not answer equally to pay the cost out of the Consolidated Fund, as by the plan he proposed the trades benefited by the embankment would pay. He did not think that the octroi system, though it succeeds well in France, would answer here. Mr. Pegg, of Bankside, who had premises abutting on the river, said that the floods caused great misery to the poor, and recommended an embankment and roadway. He was one of a commission some years ago appointed to raise Bankside. They did not raise it so much as they intended owing to the opposition of the wharfingers. The cost of construction was so great as to cause much opposition. Although not carried so high as was intended, it had done great good. After some further evidence, the inquiry was again adjourned.

THE INTERNATIONAL EXHIBITION.—The whole of the arrangements with respect to the allotment of space in the industrial department of the building have been completed, and every exhibitor has received his letter of allotment. In some of the classes the claims for space have been cut down to an enormous extent. The number of exhibitors has been reduced from 7862 to about 6000 in the industrial department. In photography there will be about 400 exhibitors, and in the fine arts classes there will be about 2000. In the class for agricultural implements the number of applications for space was 289; of these, 143 only have been accepted; while in mining and metallurgy the applicants were 400, the number accepted 380. Of the applications for space to exhibit railway plant about one-third were rejected. The class in which there was the greatest demand was that of iron and general hardware; of these about 100 were rejected, the number accepted being 469. The class of steel and cutlery produced 120 applications, and of these 102 were accepted. In glass and pottery the rejected applicants were very few, and the same remark applies to cotton, important national industries being represented in each of these classes. A very extensive traffic has, it appears, been carried on for some time past by persons who have obtained allotments of space, and who have sold them again at the most extraordinary prices. In one case which has come to the knowledge of the commissioners, an allotment was sold for 2000*l.*; in a second case the allottee has offered to sell the

whole or a portion of his block at 5*l.* per foot; and in a third, a sum of 500*l.* has been paid for about 20 square feet. These transfers of space will not be recognised, as the allotments are not transferable. Every allotment and the name of the person to whom space has been granted is registered at the office, and it will be absolutely impossible for any person to dispose of the space in the manner referred to.

UTILIZATION OF THE SEWAGE.—At the last meeting of the Metropolitan Board of Works a report from the Main Drainage Committee was brought up, stating that the committee had received and considered a proposition for dealing with the sewage of the northern area of the metropolis contained in communications from the Hon. William Napier and William Hope, Esq. The committee thought very favourably of the proposition, and recommended the Board to assent to the principle of a concession of the sewage for a term of 50 years, provided the requisite authority be granted by the Legislature, and subject to the introduction of all necessary clauses in the bill for the protection of the Board and the public interest confided to them, and for ensuring the fulfilment by the company of the obligations undertaken by them. The report was ordered to be printed for consideration at the next meeting.

SPECIAL PRAYER-MEETINGS.—On Monday morning, "in accordance with an invitation addressed to Christians throughout the world," a meeting for special prayer, on subjects having reference to peace and the general condition of mankind, took place in Freemasons' Hall. Sir Culling Eardley, Bart., presided, and having briefly explained the nature and object of the meeting, an address was delivered by the Rev. Edward Auriol, rector of St. Dunstan's-in-the-West. Short prayers were then offered up by ministers of various religious denominations. Similar meetings have been held during the week at the same place, and have been presided over by the Hon. Arthur Kinnaird, M.P., Mr. O'Malley, Q.C., Captain Maude, R.N., Lord Radstock Mr. E. Corderoy, and Mr. Finch Jones; and addresses have been delivered by the Rev. Capel Molyneux, incumbent of St. Paul's, Onslow Square; the Rev. John Graham, Minister of the Independent Chapel in Craven Street; the Rev. Clement Skrine, incumbent of Christ Church, Enfield; the Rev. Dr. Edmond, of Islington; the Rev. William Pennefather, incumbent of Christ Church, Barnet; and the Rev. Newman Hall, minister of Surrey Chapel, Blackfriars Road. The meetings will be brought to a close to-day.

THE GAS QUESTION IN THE CITY.—At a special meeting of the City Commission of Sewers on the 31st ult., the committee on General Purposes presented a report on the proposal of the Carburating Gas Company to apply their process to the public lamps throughout the city. The process consists of an apparatus, containing naphtha, complete in itself, which can be adapted to all existing gas lamps and burners, whether for public or private lighting. It tends to economy in consumption of gas, without diminishing the brilliancy of the light, and has been tried by this commission for a month in the public lighting of Moorgate Street, with satisfactory results. The General Purposes Committee, to whom the subject had been referred, now reported that the Carburating Company had proposed to carburate the gas supplied to the public lamps in the city, according to certain conditions contained in a specification, at 17*s.* 6*d.* per burner per annum, provided a contract were entered into for not less than 500 burners, or at 16*s.* per burner, if the process be applied to about 1700 of the public lamps. That being so, the committee recommended the Court to accept the proposal, and also to adopt the process for the whole of the public lamps in the district henceforward to be lighted by the City of London Gas Company, on the understanding that the Commissioners might at any time terminate the contract, if they thought fit, after 14 days' notice. It should be stated that the Court at its last meeting accepted a tender from the City Gas Company for the ensuing year to supply gas to the public lamps within a certain large district, at 3*l.* 11s. per annum, for each burner consuming 3 feet of gas in the hour. To that offer the Commissioners appended a condition that they were to be at liberty at their own cost and risk to apply the carburating process to the public lamps, if they should think it desirable, at any time during the contract. The secretary to the City Gas Company accepted the tender with that condition; but on Tuesday the chairman of the company attended the Court and disavowed so much of the arrangement as related to the carburating process, stating that they were averse to be placed under the control of another company, and to the process itself. For those reasons they were disinclined to take upon themselves the fulfilment of the contract. This announcement taking the Court by surprise, led to a long discussion, the concluding portion of which was conducted with closed doors, and eventually the report of the Committee was all but unanimously adopted.

DEATH OF THE REV. MR. HOLLOWAY.—This delinquent, who assumed the character of a clergyman of the Church of England, and who was tried and convicted at a late session of the Central Criminal Court of various robberies at railway stations, and sentenced to 18 months' imprisonment, died on the 30th ult., in the House of Correction, after an illness of four days. The surgeon of the prison, at the inquest stated that when the prisoner first came under his care, he ordered him not to be put to any hard labour, as he seemed to be a very feeble old man. He afterwards took him into the infirmary, and as he was unable to eat solid meat he ordered him arrowroot and brandy with eggs beaten up in it. He also gave him quinine. It was a case of simple exhaustion from general debility. The jury returned a verdict of Natural Death.

FATAL ACCIDENT AT ST. MARTIN'S HALL.—On Friday afternoon while several workmen were engaged on a suspending scaffolding, fixing a heavy iron ventilator in the roof of this Hall, which has just been rebuilt after having been burnt down some months since, one of the poles on which the boarding rested snapped in two and precipitated six of the workmen to the ground. The foreman caught one of the brackets surrounding the ventilator, and was able by a great effort to keep his hold for three minutes, when he was reached with a ladder and rescued. The others were frightfully injured. They were placed upon stretchers, and conveyed to King's College and Charing Cross Hospitals. Three of them, Richard Wood, a gas-fitter, Walter Sabey, and Patrick Coglan, died in the former hospital on Friday night, and the others remain in a precarious state. The inquest was concluded yesterday, when the jury returned a verdict—"That the deaths of deceased had been occasioned by a fall from a scaffold in St. Martin's Hall, by the breaking of a ledger."

FATAL FIRE.—On Monday an inquest was held on the bodies of three children who were suffocated in a fire which occurred in Fountain Court, Strand, on Friday last. The evidence clearly proved that the children set fire to the bed-clothes in their room by a lucifer match in the temporary absence of their mother, and that being frightened at what they had done, instead of trying to escape they jumped into the bed, and covered themselves with the clothes. The jury returned a verdict of "Accidental Death."

STEAM FIRE ENGINES.—The managing committee of the London Fire Brigade, seeing the success which has attended the steam fire-engine of Messrs. Shand & Mason at the various fires it has assisted in extinguishing, have determined to have three more of the same description manufactured and stationed in different parts of the metropolis.

THE LATE MURDER AT DEPTFORD.—George Inkpen a youth 20 years of age, who was sentenced to death at the November Sessions of the Central Criminal Court, for the murder of his sweetheart, with whom he had agreed to commit suicide by drowning in the Surrey Canal at Deptford, received a respite of the capital punishment shortly after his removal to Maidstone gaol. A numerously-signed memorial was subsequently presented to the Secretary of State in his behalf, coupled with a strong recommendation to mercy from the jury who tried him, and an official reply has been received to the effect that, under all the circumstances of the case, the Home Secretary has felt warranted in, advising her Majesty to commute the prisoner's sentence to 12 months' imprisonment.

THE PUBLIC HEALTH. — The Registrar-Generals' weekly return states that in the week ended Saturday, Jan. 4, the deaths registered in London were 1367. The average number in the first week of the 10 previous years (1852-61), corrected for increase of population, was 1425. The present return is therefore 58 below the average. During the week the births of 1104 boys and 1069 girls, in all 2173 children, were registered in London. In the 10 corresponding weeks of the years 1852-61 the average number was 1848.

Provincial.

BATH.—At a meeting of the county magistrates at Weston, near this city, on the 31st ult, Edward Smith, builder and contractor, William Marchant, sexton, and Henry Musty and Giles Broad, masons, were charged with stealing lead coffins from the vaults of Freshford Church. The case lasted some hours, and excited great interest. The main evidence for the prosecution was a statement previously made by Musty, one of the prisoners, to the effect that in September, 1859, he was a workman in the employ of Mr. Smith, builder, who had contracted to lower the floor of Freshford parish church. While so occupied they came to a coffin at the top of a vault which, in making the floor level, they had occasion to disturb; when Mr. Smith, assisted by witness and the other prisoners, broke open the coffin with tools, cut out the lead lining, and tore off the ornaments and handles. They then broke up the wood and put the bones of the corpse back again out of sight in the vault. Another coffin was then opened and similarly served, and the metal and contents were taken away and sold by Marchant, the sexton, who afterwards divided the money between the prisoners. A day or two subsequently, Marchant told Musty, while at work, that he was not to fasten down a particular stone over a vault, and then asked Musty to come at night and take out "the old colonel," meaning Colonel Joyce, father of the present lady of the manor. Witness declined to "have any hand" in raising any more bodies, and did not do so. Next day he saw that the stone pointed out to him had been removed in the night, and the coffin had been taken out. He assigned no reason for making this confession beyond an uneasy conscience. A brazier of Bradford-on-Avon, proved buying about this time from Marchant, the sexton, a quantity of lead, apparently coffin lead, and also a number of old coffin plates and handles for 3*l.* The plates had names on them, but were doubled up so that the names were inside. Marchant brought them twice after dark in a horse and trap, and told witness they had been thrown out with the rubbish. A brass-founder of Bradford, Mr. Milsom, deposed that he had bought brass a few months after the robbery from the last witness, and among the metal was a portion of a coffin-plate bearing the letters "Eliz," the rest being torn off. Mr. Rose, carrier, of Freshford, proved that he had twice lent Marchant a horse and trap "to take some old iron and lead to Bradford," and also proved conveying a sack, left for him by Marchant at an inn at Freshford, to a marine-store dealer in Bath named Hickey. He peeped into the sack, and saw that it contained about 50 iron handles of coffins and some bones and rags, weighing altogether perhaps a cwt. Hickey was then called, but though he admitted receiving the sack from Rose, and that it contained rags and bones, he could not, or would not, say whether there were or were not other things in the sack as well, or whether he had not received the things from Marchant, the sexton. He was, therefore, at once committed to prison for 14 days for his obstinacy, and the four prisoners were remanded for seven days, then to be remanded again until the expiration of Musty's term of imprisonment. Bail was taken for their appearance. On Friday and Saturday last searches were made, under the direction of the police, with the view of ascertaining how far the depredations had extended. On opening the vault of the family of Colonel Joyce, it was found that not only had the colonel's iron coffin disappeared, but three other coffins had been abstracted. On opening the vault of the Rev. W. Batchelor, the rev. gentleman's coffin was found laid on its side, and the lead coffin entirely gone, the stout oak case having been violently hewn open, probably with a view to finding rings or other valuables. The coffin plate, bearing date 1811, was found broken up. The coffin of Mrs. Elizabeth Batchelor was also found stripped of its furniture—thus furnishing a clue to the ownership of the portion of the plate marked "Eliz.," which had been sold at Bradford. The vault of the Barker family was found to have been stripped of a large quantity of furniture; and in the vault of the Naylor family several coffins were missing or mutilated. Among the other coffins found to have been rifled was that of the late Sir Walter James. The search is to be further prosecuted. It appears that Marchant, the sexton, has been acting under the impression that, by the new act, those vaults were for ever closed, and that the depredations would therefore never be found out. On Tuesday Hickey, the man who had been sent to prison for refusing to give evidence, was again brought before the magistrates, when he deposed that the bag brought to him contained coffin handles and plates as well as rags and bones; that he had bought them of Musty; and that he had also bought some lead from Marchant. The Rev. C. R. Rodwell, the rector of Freshford, was then examined at great length, but he denied that he had taken any steps to hush up the matter. The prisoners were then remanded for a week.

CARLISLE. — On Sunday, the 29th ult., William Charlton, the engine-driver charged with the murder of Mrs. Emmerson at the Durran Hill crossing of the Newcastle and Carlisle Railway, while in custody at the lock-up, volunteered a statement which was taken down in writing, and signed by him. The purport of the statement was, that on the night of the murder he met at a public-house a man called Robinson, his brother-in-law, who asked the prisoner to lend him his shoes. The prisoner did so, and on the following morning as he was leaving home to go to his engine he met Robinson coming out of an outhouse with the shoes, which he returned to the prisoner. When the latter lent them to Robinson they had nails in the soles, but when examined after they were returned several nails were missing. These are the shoes which the police found to correspond with the footmarks in the ground around the cottage of the murdered woman, the footmarks being remarkable for the fact that they had been made by shoes which had 54 sparables missing from two semicircles in the soles. In consequence of this statement Robinson was taken into custody, and on searching Charlton's house the missing nails were found in a hole in the wall of the outhouse referred to in the statement. The nails had marks on them as if they had been recently knocked out of shoes, the marks being bright and new. The police also found a pair of pincers and a chisel in a pantry in the house, which had marks of having been recently used, and were just such instruments as would be used to take out nails. On Saturday, a shoemaker, who made the shoes, deposed that he soled them in October last, that the nails had been knocked out since that time, and that the nails found in the outhouse were of the same sort as those in the shoes. The landlord of the publichouse where Charlton stated that he had met Robinson, stated that he had no recollection of their having been in his house on the night in question, and several witnesses deposed that on the night of the murder and for many days before Robinson had been staying at the house of his father-in-law at Ivegill, a place about nine or 10 miles from Carlisle. The magistrates, therefore, discharged Robinson from custody, and then called him as a witness for the prosecution, when he denied *in toto* the truth of Charlton's statement, so far as he was concerned. Charlton was further remanded to Monday, when the police stated

that in digging the prisoner's garden they had found two skeleten keys, one of which opened the old woman's door. After some further evidence the jury returned a verdict of "Wilful Murder" against William Charlton. The magistrates have also committed the prisoner for trial at the assizes on the capital charge.

Liverpool.—Large purchases of cotton have been made in this port during the last few weeks for the purpose of re-shipment to the United States, and the demand for steam vessels has been so great that about 800 bales were despatched in the Inman steamer City of New York on Wednesday, while on Thursday the Glasgow, belonging to the same line, followed as an extra vessel. The screw steamer John Bell, from the Clyde, has been engaged to take a cargo of about 2000 bales, and will sail in a day or two for New York. The Hope, screw steamer, a vessel of smaller tonnage, is taking in about 1000 bales, and applications have been made to the owners of other steam vessels in the port. —A telegram from Alexandria was received in this town on Monday announcing the total destruction by fire of the ship Prince of the Seas, on the 24th of October last, whilst at anchor off Melbourne. She was one of the celebrated White Star liners belonging to Messrs. Wilson and Chambers, whose sister ship Sovereign of the Seas was totally destroyed by fire a few months ago while at anchor in the same harbour.

Llanfair.—A frightful murder was committed on Monday week at a lonely village called Graigwen, about two miles from this town, and eight from Welshpool. Some men with a thrashing machine were passing along the road when they were attracted by the proceedings of a man named Ishmael Jones, who had a rope round his neck, and was trying to hang himself to the bough of a tree. They prevented his accomplishing his object, and called the attention of Mr. Thomas, surgeon of Llanfair, who just then came up on horseback, to his movements. On nearing the house Mr. Thomas found the body of a woman lying on the ground with her skull cleft in two. Jones confessed that it was his wife, and that he had cut her head open with a spade which was near, and intended to hang himself. He was speedily secured and conveyed to Montgomery Gaol. The inquest took place on Saturday, when the evidence went to show that the prisoner was jealous of his wife, and that he had admitted that he had killed his wife in order to get hanged. A surgeon deposed that he had been for some months attending the prisoner, who was always fancying that he was the victim of diseases which really did not afflict him, but he could discover no symptoms of insanity about him. The jury took an hour to consider their verdict, and eventually returned one of Manslaughter, to the surprise of the coroner, who said that the verdict was theirs, and not his. It is said that the foreman and several of the jurymen dissented from this verdict, but as there were twelve to agree to it, the verdict was recorded.

Malton.—On Saturday night, the 28th ult., Mr. John Dowson, a cattle dealer who had attended Malton Market, suddenly disappeared. His residence was at Pickering, to which he ought to have gone by train that evening. His continued absence led to a search being instituted, and bills were issued offering a reward for his discovery. It seems that a man answering the description got into the York mail at Malton, and travelled to Hutton in mistake. He wished to get back to Malton and set off on foot by the river side. On a search being made there a hat was found, and in the belief that it belonged to the missing man three days' search was made in the Derwent and the ditches on both sides, but without effect. On Saturday between 20 and 30 Volunteers, farmers, and others, friends of Mr. Dowson, arrived by the first train for the purpose of thoroughly searching the river, and about 2 in the afternoon they found the body in a creek having only two feet of water, at Cherry Islands, three miles below Malton, and about a mile below the place where the hat had been found. It is now pretty clear that deceased had entered the wrong train at Malton, and had got out at Hutton Station with the intention of walking back to Malton along the path by the river, in doing which he missed his way in the dark and walked into the water. All his money was in his pockets.

Newcastle-under-Lyme. — A man called Jonah Edwards, a man about 30 years of age, the son of a respectable farmer in this neighbourhood, was charged a few days since with stealing seven heifers, a cow, and a colt from the lands of Mr. J. B. Lowe, West Farm, in the parish of Trentham. It appeared that during the night of the 17th ult. the prisoner drove off the cattle to Crewe, and sold the cow and six heifers at the fair in that town to Mr. Camp, cattle-dealer of Hilton, for 64*l*. 10*s*. Mr. Camp, suspecting from the quality of the stock and the price asked that all was scarcely right, prevailed on the prisoner to accompany him to Hilton to spend a few days, and having had his suspicion strengthened by subsequent conversations, gave the prisoner into the custody of the police. The seventh heifer was subsequently found to have been sold at Crewe, for 6*l*. 18*s*., to Mr. Datham, of Haslingden, Cheshire. When taken into custody, 71*l*. 19*s*. 9*d*. was found in possession of the prisoner. On the following Sunday the colt was found in a field near that from which it disappeared. The entrance to the field was fastened, and prosecutor said that he examined the place several times during his search, but saw nothing of it. The prisoner made no defence, and was committed for trial at the quarter sessions.

Pickering.—One of the most remarkable runs on record occurred a few days since with Lord Middleton's hounds, the stretch being between 30 and 40 miles. The meet was at Birdsall Hall, in the East Riding. A fox was found in the Earth Slip near Land Wood, and started off to Grimston, where it crossed the Driffield Railway and ran to Langton Wold; thence to Norton, back to the Wold, to Mennythorpe, across the Scarborough Railway, and the River Derwent, into the North Riding. All the field were now at fault; but Lord Middleton, the Hon. D. Willoughby, the Hon. E. Willoughby, and a few others, rode round by a railway bridge. The hounds, after crossing the river, were taken to Hildenley, and subsequently to the Castle Howard Woods, where the fox seems to have been headed, for a turn at right angles was there made for the hills on the right, and over them into the great Vale of Pickering, and the long flat plain between the Howardian Hills and the North Riding Moors. The Thirsk Railway and the River Rye now interposed, and in consequence of the angle made at Castle Howard, the field there regained sight of the hounds. The rail and the river were crossed, and the whole lot went off in full cry for Pickering. Night now stopped the hunt, so far as the gentlemen were concerned, and the River Costa was reached in the dark. The fox and hounds, however, ran on, and neither huntsman nor any other knew more of their whereabouts. A long way above Pickering, upon the High Moors, the villagers were amazed at a fox-hunt in the dark, and how it terminated has not yet been made out. Most of the hounds have since been picked up. During this extraordinary run, three railways were crossed and three rivers swum.

Salford.—An influential meeting was held a few days since in the Town Hall for the purpose of taking into consideration the subject of erecting a suitable memorial of the late Prince Consort in Peel Park. The meeting was convened by the Mayor in compliance with a general feeling in the borough in favour of the measure. The Mayor presided. Several gentlemen addressed the meeting, and resolutions were unanimously adopted for the erection of a marble statue in the Park, and a committee was appointed to raise subscriptions for the purpose. It was understood that 25*l*. should be the maximum amount of subscription, and that the working classes should have an opportunity of giving their contributions in the form of penny subscriptions. Upwards of 500*l*. was raised in the room.

Sheffield.—At the Rotherham Court House on Monday three men, named James Watson and Isaac E. Watson, brothers, and Joseph Tomlinson, nail-makers, were brought up for final examination, charged with having committed two trade outrages at the village of Thorpe Hesley, a few miles from this town. A number of nail-makers in the employ of Mr. Favell, of Rotherham, reside in the village. Some of the men have been on strike for some time on a question of wages, and great efforts have been made to induce the remainder to join the strike, but without success. Among those who have continued to work are John Hattersley, the foreman, and Charles Butcher, both of whom occupy shops in the village, in which several other men work. Butcher occupies a house adjoining his workshop, and about 11 o'clock on Saturday night the 28th ult. was startled by a loud report. He ran out, and found his shop in ruins. The roof was entirely blown off, the gable end nearly down, and the bellows and other internal fittings in a great measure destroyed. The fragments of a can, which had contained powder, were found in the shop, and to them a string was attached, from which it is inferred that the machine had been let down the chimney. While Butcher and his neighbours were examining the ruins a second report was heard, and it was found that a similar explosion had occurred at Hattersley's shop, but attended with somewhat less damage. No personal injury was sustained, the nail-makers having left work some hours previously. A few days before, however, an attempt was made to blow one of the shops down upon the workmen by hanging a can of powder in the chimney to be exploded by the fire; but the attempt was foiled by the discovery of the can before a fire was lighted. The prisoners, who are members of the Belper Union, were committed for trial at the Assizes, the magistrates refusing to accept bail. The success of the police in this case, following so closely upon the committal of Thomson for the Sheffield trade murder, has excited a strong hope that these murderous outrages will shortly be put a stop to in this neighbourhood.

Southampton.—The Tuscarora, one of the new screw corvettes built for the Federal navy, arrived in the river on Wednesday afternoon, from New York. She left that port on the 15th ult., and had a very rough passage across the Atlantic, being obliged to put into Fayal for coals. The Tuscarora is commanded by Captain Craven, and she has a crew of 181 men. She carries nine heavy guns, two of them the famous 11-inch columbiads on pivots, six broadside guns, and a rifled Parrot gun on the forecastle. The corvette is a smart-looking vessel, of 1200 tons burden, and bark-rigged. She is just built, and only arrived at New York from Philadelphia on the 9th ult. It is understood that her mission in these waters is specially to look after the Nashville, and generally to protect the interests of Federal shipping. The Nashville was in dock when she arrived, but completely coaled and ready for sea. On Thursday night an officer and three armed men from the Tuscarora, were found in the docks, watching the Nashville. They were discovered by Mr. Hedger, the dock superintendent, close to the Nashville's bows. They had a dark lantern and combustibles for the purpose of signalling the Tuscarora, should the Nashville attempt to leave the dock. Mr. Hedger stated that the docks were private property; that they had no right there for such a purpose; and insisted upon their leaving the dock premises immediately, which they eventually did. The Nashville was getting up steam yesterday to leave the docks and to anchor near the Tuscarora. The Confederate war steamer Sumter is expected to join her at this port. She has seven guns and 140 men.

Stafford.—The execution of Brandrick for the murder of Mr. Bagott at Bilston took place on Saturday morning in front of the county gaol in the presence of 20,000 persons, who conducted themselves with great propriety and decorum. He admitted his guilt, but expressed the greatest astonishment and some irritation when told that his associates were respited.

Warwick.—On Monday the 30th ult. William Beamish, who was convicted at the recent assizes of the wilful murder of his wife at Coventry by poison; and John Thompson, who was found guilty at the same assizes of the wilful murder of Anne Walker, a woman with whom he had been living at Birmingham, suffered the extreme penalty of the law in front of the county gaol, in the presence of about 2000 persons. The circumstances of both cases are already familiar to our readers. Beamish having formed an illicit connection with a young woman in his employ, administered arsenic to his wife by mixing it with her food, the result of which was that she and one of her children died. He then put a forged letter in the pocket of her dress, stating that she had poisoned the child, and intended to commit suicide. On the morning of the execution the culprit wrote a letter to the dissenting minister who had visited him in prison, confessing that he and he alone did the deed, that he afterwards suffered such anguish that he would have given his life to have brought his wife back, and that his conscience was a "hell of itself." He had previously admitted that he wrote the letter found in his wife's pocket. Thompson also confessed his guilt, but said that he had no idea of committing murder. He attributed the position in which he was placed to the immoderate use of intoxicating liquors and to a fondness for the company of profligate women. The double execution caused a good deal of excitement in the county, and a great many persons, including women and children, came both from Birmingham and Coventry to witness it, but in spite of the crowd, the behaviour of the mob was on the whole decorous and orderly. When the drop fell, the criminals struggled violently, Thompson particularly so, and both seemed to die hard.

Windsor.—In consequence of the rumour which has been current since the death of the Prince Consort, that the sanitary state of Windsor was defective through improper sewerage, the mayor has directed the Clerk of the Local Board of Health to assure the public that there is no foundation for such a report, that there is no fever whatever in the district, and that, from the beginning of December, 1860, up to the present time, there has been but one death from that source, exclusive of that of the Prince Consort; and that, with a population of about 10,000, the deaths have not been 20 in 1000. With reference to the drainage of the district the clerk states that it was constructed under the direction of the most eminent engineer in such works, and is in a most efficient state; that the late Mr. Austin, one of the superintending inspectors of the General Board of Health, about two years since devoted two days to a minute inspection of the district, and expressed his entire satisfaction at the system of drainage, stating that with a few additional flushing tanks to some of the branch drains the works would be perfect. These flushing tanks were immediately constructed, and are now constantly used; and the main sewer is also constantly flushed by the flowing of a large body of water from a feeder from the Thames, which enters the sewer above the town, and passes through and thoroughly purges it at a considerable distance below the town. In addition to this statement the "Medical Times," in a lengthened article on the drainage of Windsor and the Castle, states that on a recent inspection by a competent member of the profession with the clerk of the works at Windsor Castle and the registrar of deaths and other officials, they came to a conclusion that "of the Castle sewerage we know no place where a more complete or more carefully-worked system of drainage is to be found, nor one which, considering the difficulties of the position, is more thoroughly successful. Gases undoubtedly do escape when the sewers are opened, but in such very small quantity as to prove both the extreme cleanliness of the sewers themselves and the absence of any ascending current of importance in them."

Worcester.—Another curious discovery in Worcester Cathedral has been made by the workmen while taking up a portion of the flooring of the sanctuary at the foot of the altar dais. The workmen had dug down two or three feet when they came upon a leaden coffin of very singular construction. The lead is thin, and appears to have been beaten on a mould until it assumed the shape of a human figure. The arms are crossed at the wrists, and the legs are extended to the full length. The figure

lay with its feet to the east. The part which covers the face looks like a leaden mask, the features—eyes, nose, and mouth being shown. The lead over the chest has sunk down, as if the pressure from above had driven it in, but the shape of the body is still preserved, even the navel being marked. The fingers on the hand also are shown. About the thighs the lead has also sunk in, but the knees, and other bony portions of the body, appear to have supported the lead over them in its original form. The figure is about 6 feet long, and the resemblance still borne by the leaden coffin to a human figure is rather startling. Last week Mr. Bloxam of Rugby, a well-known authority on ecclesiastical antiquities, made a formal examination of the coffin in the presence of the Dean of Worcester and several Roman Catholics, lay and clerical. Through an opening made between the legs the cerecloth was visible; it was very strong, and still retained a powerful aromatic odour, the body having been embalmed before it was covered with lead. Mr. Bloxam considers that it may be of the 15th, 16th, or 17th centuries. It has been suggested that the remains are those of the Duke of Hamilton, who was mortally wounded in the civil wars at the battle of Worcester, and buried in the cathedral about the spot where the body was discovered. The leaden covering was originally enclosed in an outer coffin of wood, of which, however, nothing was left but the iron handles. A small javelin head was found in or near the outer coffin, which is now in the hands of the Dean. A formal examination was also made of the stone coffin first found in the sanctuary, containing the body of a dignitary of the church, robed in canonicals, with the pastoral staff by its side, and the paten on its breast. The chalice and ring no doubt were buried with the body, but these are supposed to have been appropriated by some of the workmen, as they cannot be found. The vestments must have been exceedingly rich and costly, but are now a mass of shreds. They are of gold tissue and embroidered work, with scrolls and other accessories. Mr. Bloxam fixes the date of the burial about the middle of the 13th century, and thinks the remains are those either of William de Blois, Bishop of Worcester, who died in 1236, or more probably of Walter de Cantilupe, who died in 1266. The paten, which is of silver gilt, is in the hands of the Dean. It is very similar to one or more discovered in the graves of prelates in York Cathedral, and is pronounced by Mr. Bloxam to be clearly of the 13th century.

YORK.—The execution of James Waller, for the murder of William Smith, a gamekeeper in the employ of Mr. Timothy Horsfall, of Hawksworth Hall, near Otley, took place behind York Castle on Saturday morning in the presence of nearly 10,000 persons. On the previous day he made a full confession of his guilt to the High Sheriff. The condemned sermon was preached by the Archbishop of York, who afterwards had an interview with the condemned prisoner in his cell.

Ireland.

THE VACANT BISHOPRIC. —The Bishop of Cork Dr. Fitzgerald, has been translated to the see of Killaloe, and Archdeacon Gregg has been appointed to the Bishopric of Cork.

LEGAL APPOINTMENTS.—Mr. F. W. Brady, Q.C., son of the Lord Chancellor, has been appointed chairman of the Queen's County, in the room of Mr. West. It is reported that Mr. Moody, Q.C., is about to resign the chairmanship of the county Cork, on account of continued illness. The Attorney-General has appointed Mr. Pierce Kelly local Crown solicitor for the county and city of Waterford.

SUSPENSION OF FATHER DALY. — Dr. M'Evilly, Roman Catholic Bishop of Galway, has suspended the Rev. Peter Daly, for disobeying his commands to abstain from secular pursuits. For some months past Father Daly, who is a member of the Harbour Commission and chairman of the Town Commissioners, has been in the habit of conducting himself at the meetings of these Boards with extreme violence, using towards the other members of the Boards, and indeed on several occasions towards the Chief Secretary, Sir Robert Peel, language of the most offensive character. A few weeks ago a number of Roman Catholic gentlemen—magistrates, landowners, and merchants—who were constantly brought into collision with Mr. Daly, made a representation to their Bishop on the subject, the result of which was the injunction to abstain from all secular business. Father Daly took no notice of this order, but appeared last week at the Board as usual. On Friday, in consequence of this act of disobedience, the bishop prohibited him from performing any clerical duties. In spite of this order Father Daly celebrated mass on Saturday morning. On Sunday the chapel was crowded to excess in expectation of some announcement on the subject. At 12 o'clock the Rev. George Usher appeared in front of the altar, and read the orders received from the bishop, to the effect that the Rev. Peter Daly having celebrated mass on the previous day, after receiving the bishop's prohibitory notice, such mass was null and void, and that henceforth the Rev. Peter Daly was not empowered to celebrate mass, hear confession, or administer sacraments, or to celebrate any of the rites of the Church. As soon as this document was read Father Daly came out of the vestry, holding the letter of the bishop in his hand, informing him of his suspension, and was about to address the audience in his own defence, but Father Usher called on him to desist. The mob now became furious, and yelled and called for Father Daly to speak. After order had partially been restored, Father Daly addressed the people at great length on the cause of his suspension, which he attributed mainly to his proceedings at the harbour board. After this speech the excitement became so great that the town presented an appearance similar to that prior to an election contest, and the police were called out in force to prevent a breach of the peace. On Monday the excitement continued unabated, and an open air meeting was held to give expression to the popular feeling on the subject. At noon a sermon was preached in the parish chapel by the Bishop, who exhorted the people to mind their own business, and leave the management of ecclesiastical affairs to the Bishops of the Church. Two companies of soldiers from Athlone arrived in Galway during the day, and all the constabulary of the county were assembled in the town, in order to guard against violence on the part of the populace. The excitement has since subsided, and the town on Wednesday presented its usual tranquil appearance. Father Daly will, it is said, proceed to Rome, and appeal to the Pope on the subject.

THE QUEEN'S COLLEGES. — The Roman Catholic papers a few days since published an advertisement headed "Protest of the Roman Catholic gentry against the Queen's Colleges," professing to be "the first instalment of a list of Catholic nobility and gentry who have protested by letter in answer to Sir Robert Peel's application for aid towards the extension of the Queen's Colleges in Ireland." The list was headed by the names of four members of Parliament, Viscount Castlerosse, M.P., signed "Vice-Chamberlain of her Majesty's Household; Right Hon. R. More O'Ferrall, M.P., Right Hon. W. Monsell, M.P., and Mr. Maguire, M.P. Among the other names were those of the Right Hon. Sir Thomas Esmonde, Bart., Sir Thomas E. Blake, Bart., Sir Henry W. Barron, Bart., and 29 gentlemen who signed as D.L. or J.P. The list was followed by an appeal for names to swell its dimensions before the opening of Parliament. On the appearance of this advertisement the *Daily Express* animadverted on the unseemliness of an officer of her Majesty's household parading his official title at the head of such a document, and particularly at the time when he had been attending the funeral of the Prince Consort. In consequence of these remarks Lord Castlerosse has written letter, stating that he never signed the document at all, that he does not know by what authority his name was affixed, and that he did not even know of the existence of the document till his attention was called to the article in the *Express*. There is reason to believe that other names were attached in the same way, without the authority or knowledge of the parties, and that the "protest" has been withdrawn from public notice.

DRAINAGE OF THE SHANNON.—A deputation, consisting of the Marquis of Clanricarde, the Earl of Clancarty, Lord Castlemaine, Lord Crofton, Lord Dunkellin, M.P.; Colonel Greville, M.P.; The O'Conor Don, M.P.; Mr. O'Brien, M.P.; accompanied by Mr. James Lynam, C.E., and other gentlemen had an interview with the Lord Lieutenant on Saturday week, to lay before him a memorial to the Lords of the Treasury on the subject of the drainage of the extensive districts adjoining the Shannon, which are now annually inundated with water. The memorialists stated that these districts might be drained and reclaimed at a moderate cost, and with advantage to the navigation of the river, and they asked for his Excellency's co-operation in enabling them to obtain assistance from the Treasury to carry out their objects. Lord Carlisle, in reply, said that one of the main difficulties was to be found in reconciling the conflicting interests of navigation and drainage. The problem was, how to do what was most for the benefit of drainage, with the least injury to navigation. He assured the memorialists that their application would receive his attention, and that the Irish Government would put themselves in communication with the Treasury, with the view of seeing what practical measure could be adopted.

Railways.

ACCIDENT ON THE KEW JUNCTION.—An inquest was held on Saturday at East Acton on the body of Mr. Henry Hodson, who was killed on his own farm and in the presence of his daughter by a railway train. The deceased, who was nearly 80 years of age, was in the habit of walking from one part of his farm to another between the rails of the Kew Railway, which ran through his property, and was in the act of doing so on Thursday last when the train from Kew came up. Mr. Hodson becoming confused, stepped on to the line of the advancing train, and was literally knocked to pieces. His daughter, who had endeavoured to dissuade him from taking that route, went to the door to watch him, and had the affliction of witnessing his fate. The jury returned a verdict of Accidental Death.

COLLISION ON THE DUNGANNON AND PORTADOWN.—A fatal collision took place on Friday last on this line, in consequence of a passenger train running into a goods train that was travelling at a much slower rate of speed. The danger was discovered too late to prevent the collision, which caused very serious injury both to the carriages and to the passengers; one of whom, Mr. Sweeney of Monaghan, died at Portadown no the next morning.

Law.

CENTRAL CRIMINAL COURT.—*Child Murder.* — *Mary Anne Hamilton*, 37, was charged with the wilful murder of her infant son. The circumstances of this case were of the most painful nature. It appeared that the prisoner and her husband occupied a wretched lodging in a court in Oxford Street, and that they had two children, the deceased, who was about 11 months old, and an elder girl who was paralysed, and there was no doubt that at the time of the occurrence the family were in a most pitiable state of distress and misery. On the evening of the 15th December, the prisoner went up to a police-constable and inquired the way to the police station, deliberately saying that she wanted to give herself up for murdering her child, and that she had done it by tying a piece of braid round its neck. This was found to be true, but it was ascertained on further inquiry, that the prisoner's mind had become affected by the destitution of her family. The jury almost immediately *Acquitted* the prisoner, on the ground of insanity, and she was ordered to be detained during her Majesty's pleasure. *Burglary at Paddington.—Thomas Puzey*, 25, *George Reeves*, 26, and *Sarah Collett*, 40, were charged with a burglary in the dwelling-house of Mrs. Sarah Green, in Fulham Place, Paddington, and stealing a gold watch and other articles, and also with feloniously wounding the prosecutrix and causing her grievous bodily harm. The female prisoner had formerly been cook to the prosecutrix, and she took the opportunity, while paying a visit to the other servants, to leave the front door open in order to give the prisoners the means of robbing the house. The prosecutrix, who is an elderly lady in very infirm health, was so seriously injured that she is still unable to leave her room. The Jury returned a verdict of *Guilty*. It was then stated to the court that both of the men had been before convicted—Puzey of a burglary at Lord Foley's. Mr. Justice Willes sentenced Puzey and Reeves to penal servitude for life, and Collett for a term of four years. *Forgery.—Alexander George Gray*, 59, and *William Oliver Gray*, 26, father and son, formerly extensive merchants at Newcastle, were charged with uttering forged orders for the delivery of goods. After a very long trial the jury found the elder prisoner *Guilty*, but recommended him to mercy, and *Acquitted* the younger prisoner. Baron Martin, taking the prisoner's age and the Jury's recommendation into account, sentenced him to nine months' imprisonment and hard labour.

Obituary.

THE EARL OF YARBOROUGH died at Brighton on Tuesday evening after a long illness. Since Saturday he had been in a very precarious condition, and in consequence of his illness Lord Worsley was telegraphed for, and was with his father at his death. The Right Hon. Charles Anderson Pelham, Earl of Yarborough, Baron Yarborough of Yarborough, county of Lincoln, and Baron Worsley, of Appuldercombe, Isle of Wight, in the peerage of the United Kingdom, was the only surviving son of the first Earl, by the second daughter of the Hon. John Bridgman Simpson. He was born in 1809, and married in 1831, the Hon. Maria Adelaide Maude, second daughter of the late, and sister of the present Viscount Hawarden, by whom (who survives) he leaves issue two sons, Lord Worsley, M.P., and the Hon. Evelyn Cornwallis Pelham, and a daughter, Lady Sophia Pelham. Before the passing of the Reform Bill he represented Newtons (Hants), in 1830, and also in the following year. In 1832 he was elected for Lincolnshire, which county he uninterruptedly represented until the death of his father in 1846, when he succeeded to the Upper House. Several years back his lordship was stricken by paralysis, from which he cannot be said to have ever recovered. In 1854 he was appointed Vice-Admiral of Lincolnshire, and in 1857 was made Lord-Lieutenant of the county. His Lordship is succeeded in the family honours and estates by his son Charles (hitherto Lord Worsley, M.P.), born in 1835, and married to Lady E. Hare, daughter of the late Earl of Listowel. His Lordship has sat in the House of Commons for Great Grimsby since 1857.

THE DOWAGER COUNTESS OF MACCLESFIELD died a few days since at Eynsham Hall, in her 81st year. She was the youngest daughter of Mr. Wm. Breton Wolstenholme of Hollyhill, Sussex, and married, in 1807, the fifth and late Earl of Macclesfield, by whom she had a son, the present earl, and two daughters, the Countess Dowager of Antrim, and Lady Lavinia Agnes, married to the Hon. John Dutton.

SIR CHARLES MERRIK BURRELL, BART., M.P. for Shoreham, died at his residence, Knepp Castle, Sussex, on Saturday, the 4th inst., in his 88th year. He was born in Golden Square in 17[illegible]6 and was eldest son of Sir William Burrell, the second baronet, by the daughter and co-heir of Sir Charles Raymond, Bart., of Valentine House, Essex. He was educated at Westminster and at St. John's College, where he graduated as B.A. He succeeded his father in 1796. He served formerly in the Surrey Yeomanry, and for 11 years in the Surrey Militia during the French war. He had represented the rape of Bramber and borough of New Shoreham for nearly 56 years in the Conservative interest. He married, in 1808, the eldest of the natural daughters of the Earl of Egremont, sister of the present Lord Leconfield, and of the late General Henry Wyndham, M.P. By this marriage he had three sons and a daughter. His eldest son, Charles Wyndham, born in 1809, died in 1827. His second son, Percy, born in 1812, and educated at Westminster School, succeeds him as fourth baronet. Sir Percy married, in 1856, the eldest daughter of the late Admiral Sir George Brooke Pechell, Bart., M.P. for Brighton, and the Hon. Lady Pechell.

THE REV. SIR HUGH HENRY MOLESWORTH, BART., died suddenly on the 6th inst. at the Rectory, St. Petroe Minor, Cornwall, in his 43d year. He was the 9th baronet, having succeeded his cousin, the late Right Hon. Sir William Molesworth, in 1855. Sir Hugh, who was born in 1818, was the son of the Rev. William Molesworth, of St. Breock, son of Sir William Molesworth, of Pencarrow, who was the uncle of the late baronet. He married, in 1856, the daughter of Mr. Prideaux Brune, of Prideaux Place, Cornwall. He does not leave any male issue, and will be succeeded in the baronetcy by his brother, Paul William, who took holy orders, and at one time held the living of Tetcott, which he resigned in order to follow foreign travel and the study of art. Sir Paul Molesworth married a daughter of the old Cornish family of Gregor, of Trewarthenick, and has sons, Lewis William, born in 18[illegible], Paul Francis, born in 1855, and other children. Under the will of the late Right Hon. Sir William, the Pencarrow and Tetcott estates will remain separated from the baronetcy during the life of Lady Molesworth, his widow.

LIEUT.-GENERAL FERGUSSON, K.C., late commandant of the Royal Marines at Plymouth, died on the 26th ult. at 19, Princes Street, Hanover Square, in his 82d year. He entered the Royal Marines as second lieutenant in 1798, and was present at the capture of Rear Admiral Perrée's squadron on its way from Egypt in June, 1799; he was wrecked in the Queen Charlotte when she was burnt off Leghorn in 1800 and upwards of 700 lives were lost; he was present at the sieges of Genoa and Savona, and the destruction of Fort Spezzia. He served in Egypt under the command of Sir Ralph Abercrombie in 1801, at Maida in 1806, and subsequently at the defence of Gaeta and surrender of Tropea; and he served again in Egypt with the expedition under General Fraser in 1807. He was repeatedly engaged in severe boat actions, and against batteries, and debarked with detachments, aiding in capturing

and destroying ships and convoys on the enemy's coast. He became colonel in 1846, major-general in 1854, and lieut.-general in 1857. He had received the war medal with one clasp.

COLONEL BAIRD SMITH, a distinguished Indian officer, died on board the Candia, on the 13th ult., while on his way to England on sick leave. He was the son of Dr. Smith of Lasswade, and married the second daughter of Mr. Thomas De Quincey. Mrs. Smith has, with her two young children, been for about a year resident in this country, on account of the climate of India being unsuitable to her health. The same cause, combined with his recent labours in travelling through the famine districts of India, and preparing his elaborate report thereon for Government, have proved too severe for the strength of her husband, who has been cut off in the prime of life, and in the midst of a highly useful and successful career. Colonel Smith's services in the conduct of the engineering operations of the siege of Delhi have been dwelt on with much praise, as displaying alike high professional skill and the most complete devotion to duty. For his services he was made a C.B., and one of the aides-de-camp to the Queen.

DR. SOUTHWOOD SMITH, who died at Florence on the 10th ult., after six days' illness, from bronchitis, was born at Martock, in Somersetshire, in 1788, and was within 11 days of completing his 73d year, though from the length of time his name has been before the world he was generally thought much older. He was originally educated for a Dissenting minister, and was early known as the author of "Illustrations of the Divine Government," which passed through several editions. The duties of the pastoral office having brought him much in contact with the poor, he soon noticed how greatly physical suffering contributes to moral degradation, and he entered upon the study of medicine at Edinburgh, with a view to administer healing to the body while conveying spiritual consolation to the soul. Accordingly for some time after receiving his diploma he united the offices of pastor and physician at Yeovil. While he was engaged in this manner, the miserable condition of the dwellings of the poor became firmly associated in his mind with the undue prevalence of preventible disease, especially of fever, and he soon afterwards published "The Philosophy of Health," which reached a 10th edition. He subsequently became the chief originator of the science of preventive medicine as systematically applied in this country, and the clearness and force of his writings made him very successful in popularising the leading principles of national health. Appointed physician to the London Fever Hospital and the Eastern Dispensary in 1824, he spent several years in the wards of the one and visiting the patients of the other in their squalid abodes; at the same time embodying the results of his observations in a work described by the "Medical Chirurgical Review" as "the best work on fever that ever flowed from the pen of physician in any age or country," and which proved not only that epidemic fever is the great pauperiser of the land, but that it is preventible. Called, during a violent typhus epidemic in 1837, to the assistance of the Poor Law Commissioners, he presented two valuable reports on those causes of sickness among the poor which are capable of prevention. In 1839 he was chiefly instrumental in forming the Health of Towns Association. In 1840 he materially aided a committee of the House of Commons on the same subject, and served on the Children's Employment Commission. In 1842 he took an active part in founding the Metropolitan Association for Improving the Dwellings of the Industrious Classes. In 1844 he gave evidence before a commission for inquiring into the health of towns, and in 1847 was appointed a member of the Metropolitan Sanitary Commission. In 1848, on the passing of the "Public Health" and "Nuisances" Acts, he was appointed medical member of the General Board of Health, and for nearly 12 months his services were gratuitous. In 1850, however, he was appointed permanently to the Board, and altogether relinquished professional practice. To his labours as a member of the Board of Health, ample witness is borne by his reports on cholera, his notifications relative to that pestilence, and especially his introduction of the system of house-to-house visitation. At the same time he published two "Reports on Quarantine," which have obtained a world-wide celebrity, and in the language of Dean Peacock, "have contributed more than any other publications on this subject to dissipate the gross and mischievous delusions upon which these regulations are founded, and which are known to be so injurious to the free commercial intercourse and prosperity of nations."

BIRTHS.—On the 8th inst, at 9, Upper Grosvenor Street the Viscountess STORMONT, of a daughter—30th ult, at Godmersham Park, Kent, the Vicountess ST. VINCENT, of a son—31st ult, at Barry's British Hotel, Queen Street, Edinburgh, the Lady MARY HOPE VERE, of a daughter—31st ult, at Beechland, her father's residence, the wife of Captain the Hon. C. C. CHETWYND, of a son, stillborn—5th inst, at Cranley Rectory, Guildford, the Hon. Mrs. SAPTE, of a son—2d inst, at Dalham Hall, Suffolk, the Lady AFFLECK, of a son—31st ult, at 40, Upper Grosvenor Street, the wife of JOHN WALTER, Esq., M.P., of a daughter—3d inst, at Danby Hall, Yorkshire, the wife of SIMON SCROPE, Esq., jun., of a son—5th inst, at Trent Park, East Barnet, the wife of R. C. L. BEVAN, Esq., of a daughter.

MARRIAGES.—On the 4th inst, at St. Marylebone Church, THOMAS BINGHAM, Esq., of Beulah Hill, Upper Norwood, to ESTHER CHARLOTTE, eldest daughter of JOHN DENIS BROWNE, Esq., of Mount Browne, late M.P. for the county of Mayo, and granddaughter of the Right Hon. Denis Browne—28th ult, at St. Peter's Church, Notting Hill, C. R. LOW, Esq., to CATHERINE CHARLOTTE, daughter of Major-General J. T. BOILEAU, late of the Bengal Engineers—2d inst, at St. John's, Oxford Square, HENRY CHARLES LAWRENCE CONNOLLY, Esq., youngest son of the late General Connolly, of Southsea, to EMMA, daughter of the late W. J. FERGUSON, Esq.—31st ult, at Littleham-cum-Exmouth, the Rev. WM. ALSTON COLE, son of Wm. Cole Cole, Esq., of Exmouth, to EMILY ROSA, youngest daughter of the late Ven. Archdeacon BARNES—15th Oct., at Cape Town, Cape of Good Hope, CHARLES WARREN ADAMS, Esq., son of the late Mr. Serjeant Adams, to GEORGIANA ALETHE, youngest daughter of the Rev. HUGH POLSON—19th ult, at St. George's Church, Hanover Square, WILLIAM JOHN MURRAY, Esq., eldest son of the late George Murray, Esq., of Rose Mount, Ross-shire, to ELEANOR, eldest daughter of MEYRICK BANKES, Esq., of Winstanly Hall, Lancashire, and Lettercure, Ross-shire—2d inst, at the parish church of Broadway, Somersetshire, CHARLES TOWNSHEND, only son of JAMES GORDON MURDOCH, of White Hill, Great Berkhamstead, Herts, Esq., to SOPHIA, second daughter of WILLIAM SPEKE, of Jordans, Somersetshire, Esq.

DEATHS.—On the 1st inst., at Melton Mowbray, CAROLINE, wife of the Hon. HENRY COVENTRY, and daughter of James Dundas, Esq., of Dundas, N.B., and Lady Mary Duncan, youngest daughter of Admiral Viscount Duncan—4th inst, at 39, Ann Street, Edinburgh, MARIA HELEN, wife of the Rev. HUGH FRASER, and sister of the late Sir Duncan Campbell, of Barcaldine and Glenure, Bart., Argyleshire—2d inst, at 2, Chesham Place, LOUISA, relict of Sir THOMAS ANDREW STRANGE, First Chief Justice of Madras, and youngest daughter of the late Sir William Burroughs, Bart, of Castle Bagshaw, county Cavan, aged 73—7th inst, at 1, Durnford Street, Stone House, Devon, SOPHIE ANNE, the beloved wife of Rear-Admiral ALFRED LUCKRAFT—31st ult, at Cuddra, near St. Austell, Cornwall, Miss MARY SPRY, youngest daughter of the late Admiral SPRY, aged 60—31st ult, at Boulogne-sur-Mer, JAMES DALRYMPLE HATHORN, the infant son of Rear-Admiral Hathorn—5th inst, at St. John's Wood, HARRIET, the wife of Colonel ROBERT HUGHES, late of the 1st West India Regiment, and formerly of the 30th Regiment, in which he served at the battle of Waterloo, aged 72—31st ult, at Tonbridge Wells, Mrs. WILSON, relict of Lieut.-Colonel Wilson, aged 72—At Kilve Court, Somersetshire, Lieut.-Colonel LUTTRELL, aged 69—5th ult, at Delhi, JULIA MARIA, the wife of Lieut.-Colonel G. L. THOMSON, H.M.'s 82d Regiment, and fourth daughter of the late Thomas Hall Plumer, Esq., formerly of Canons, Middlesex, aged 31—18th Aug. at South Bersted, Colonel E. G. AUSTIN, late of the Bengal Horse Artillery, aged 48—29th Nov., at Ellichpoor, Major IVIE CAMPBELL, of the Madras Staff Corps, and Deputy Commissioner of West Berar, in the Hyderabad Assigned Districts—30th ult, ALBERT DE LAUTOUR, Esq, formerly Captain in the Rifle Brigade, youngest son of the late Joseph Andrew de Lautour, Esq., of Hexton House, Hertfordshire, aged 35—28th ult, at Biddenden, Kent, WALTER TWISDEN, the fifth son of Captain TYLDEN PATTENSON, aged one month—1st inst, after a short illness JOHN LLOYD PRICE, Esq., of Glangwilly, Carmarthenshire, a magistrate for the counties of Cardigan and Carmarthen, and a deputy-lieutenant of the latter, aged 58—6th inst, at Brunswick Square, Brighton, Col. P. W. PEDLER, J.P. for Devon and Dorset, aged 74—2d inst, at 65, Eaton Square, JAMES DEARDEN, Lord of the Manor of Rochdale, aged 62—4th inst, at 45, Portland Place, the residence of her son, MARTHA, widow of the late THOMAS HANKEY, Esq., aged 83—3d inst, at Dudley Grove House, Paddington, MATHEW COTES WYATT, aged 85—31st ult, at 4, Windsor Street, Edinburgh, Dr. FYFE, Professor of Chemistry, University, Aberdeen—24th ult, at Bonchurch, Isle of Wight, the Rev. GEORGE MAY, prebendary of Lyddington, Wilts—3d inst, at Hastings, Rev. CHAS. T. PLUMPTRE, rector of Wickhambreux, Kent, aged 62—5th inst, at the Vicarage, Holme on Spalding Moor, the Rev. BASIL WILLIAMS, B.D., late Fellow of St. John's College, Cambridge, aged 42—1st inst, at Church Oakley, Hants, the Rev. MATTHEW HARRISON, M.A., rector of the parish and rural dean—20th ult, at his residence, in Rome, the Rev. ALEXANDER GOODE, M.A., late vicar of Caverswall, Staffordshire.

Markets.

COVENT GARDEN, Jan. 11.

Owing to the unusual mildness of the weather Vegetables continue plentiful. Pears, consisting of Glou Morceau, Chaumontel, Winter Nelis, and Brown Beurré, are sufficient for the demand. Among Apples are some good examples of Ribston Pippin, Old Nonpareil, and Fearn's Pippin. Grapes and Pine Apples have not altered since our last report. Oranges of the best quality may be bought for 1s. a dozen. Potato markets remain about the same as last week. Cut flowers chiefly consist of Orchids Chinese Primulas, Camellias, Violets, Mignonette, Heaths, and Roses.

FRUIT.

Pine Apples, per lb., 4s to 6s	Oranges, per 100, 8s to 12s
Grapes, per lb., 4s to 7s	Lemons, per 100, 6s to 10s
Melons, each, 1s to 3s	Nuts, Cob, per pound., 4s to 4s 6d
Pears, per doz., 6s to 12s	Walnuts, per 100, 2s
Apples, per doz., 1s to 3s	

VEGETABLES.

Broccoli, per bundle, 1s to 1s 3d	Celery, p. bundle, 1s 6d to 2s
French Beans, per 100, 2s 6d to 3s 6d	Onions, pickling, p. ½ sieve, 4s 6d
Cabbages, do., 1s 3d to 1s 6d	Asparagus, p. bundle, 30s
Potatoes, p. ton, 60s to 75s	Seakale, per punnet, 4s
— per cwt., 4s to 8s	Shallots, per lb., 10d to 1s
Turnips, per bunch, 2d to 4d	Garlic, per lb., 6d to 8d
Carrots, do., 4d to 6d	Endive, p. score, 1s 6d
Spinach, p. sieve, 1s to 2s	Horse Radish, p. bun., 1s 6d to 4s
Cucumbers, each, 1s to 1s 9d	Mushrooms, p. pott., 2s to 3s
Artichokes, each, 6d to 8d	Parsley, p. 12 bunches, 3s to 4s
Beet, per doz., 1s 6d	Herbs, per bunch, 2d to 4d

HAY.—Per Load of 36 Trusses.

SMITHFIELD, THURSDAY, Jan. 9.

Prime Meadow Hay	80s to	90s	Clover, old	95s to	112s
Superior do.	95	100	New Clover	—	—
Inferior do.	55	70	Do. second cut	85	100
New do.	—	—	Straw	30	36
Rowen	—	—			

DAVIS & Co.

WHITECHAPEL, THURSDAY, Jan. 9.

Fine Meadow Hay	90s to	94s	Prime Clover	100s to	110s
Inferior do.	80	90	Inferior do.	90	100
Prime New Hay	—	—	Prime 2d cut	98	105
Inferior	—	—	Inferior do.	—	—
Straw	30	34	New 1st cut	—	—

POTATOES, SOUTHWARK, Monday, Jan. 6.

During the past week the arrivals coastwise have not been large, and best samples are making a little more money, but all second-rate or inferior lots are still a drag on the market. The following are this day's quotations:—Kent and Essex Regents, per ton, 120s. to 150s.; Yorkshire Flukes, 130s. to 150s.; do. Regents, — s. to — s.; Lincolnshire do., 110s. to 130s.; Dunbar do., 130s. to 140s.; Perth, Forfar, and Fife do., 90s. to 115s.; do. Rocks, 80s. to 90s.; French Whites, 80s. to 90s.

BUTTER MARKET.—Jan. 10.

Best Fresh Butter .. .. 18s. per dozen lbs.
Second do. do. .. .. 14s. „ „
Pork, 4s. 4d. to 4s. 8d. per 8 lbs.

HOPS.—BOROUGH MARKET, FRIDAY, Jan. 10.

Messrs. Pattenden & Smith report a steady demand for both new and old Hops, with colour and quality at firm rates.

COAL MARKET.—Jan. 10.

Walls End Hetton, 17s. 9d.; Walls End South Hetton, 17s. 9d.; Walls End Tees, 17s. 3d.; Walls End Heugh Hall, 16s. 6d.; Walls End Eden Main, 16s. 6d.; Walls End Trimdon Thornley, 14s. 6d.; Holywell, 16s. 3d.; Wylam, 16s. 3d.; Tanfield Moor Butes, 12s. 9d.; Bebside Hartley, 16s. 6d.; Davidson's Hartley, 16s. 6d.—Ships at market, 60.

METROPOLITAN CATTLE MARKET.

MONDAY, Jan. 6.

We have a good supply of Beasts. Trade is by no means brisk, but the favourable weather enables us to realise Thursday's quotations. There is a fair supply of Sheep, and the average quality is very good. Trade is slow, and late prices are with difficulty maintained. Good Calves are still scarce and dear. From Germany and Holland there are 580 Beasts, 1600 Sheep, and 107 Calves; from Scotland, 450 Beasts; from Ireland, 500; from Norfolk and Suffolk, 1250; and 1509 from the Northern and Midland counties.

	s d s d		s d s d
Best Scots, Herefords, &c. ..	4 10 to 5 0	Best Long-wools.	5 0 — 5 4
Best Short-horns	4 8 — 4 10	Do. Shorn	— ..
2d quality Beasts	3 10 — 4 2	Ewes & 2d quality	4 6 — 4 8
Best Downs and Half breds ..	5 4 — 5 6	Do. Shorn	to ..
Do. Shorn ..	— ..	Lambs	— ..
		Calves	4 4 — 6 0
		Pigs	4 4 — 5 4

Beasts, 4620; Sheep & Lambs, 19,640; Calves, 138; Pigs, 360.

THURSDAY, Jan. 9.

The supply of Beasts is not so large as on Thursday last There is however a very small demand, and a clearance cannot be effected, although there is a disposition to take lower prices. The number of Sheep is very small, and the average quality inferior. The amount of business transacted is very small. Calves are rather lower. Our foreign supply consists of 170 Beasts, 470 Sheep, and 80 Calves. Milch Cows, 95.

	s d s d		s d s d
Best Scots, Herefords, &c. ..	4 8 to 4 10	Best Long-wools	5 0 to 5 4
Best Short-horns	4 6 — 4 8	Do. Shorn	— —
2d quality Beasts	3 8 — 4 0	Ewes & 2d quality	4 6 — 4 8
Best Downs and Half-breds ..	5 4 to 5 6	Do. Shorn	— —
Do. Shorn ..	.. to ..	Lambs	— —
		Calves ..	4 0 — 5 8
		Pigs ..	4 4 — 5 4

Beasts, 1105; Sheep & Lambs, 2920; Calves, 122; Pigs, 130.

MARK LANE.—MONDAY, Jan. 6.

The supply of Wheat from Essex and Kent to this morning's market was small, and cleared at barely the prices of this day se'nnight. There was a moderate attendance of country buyers, but business in foreign Wheat was limited, and quite of a retail character; in some instances rather lower prices were accepted. Malting Barley is unaltered in value, grinding rather cheaper. Beans and Peas sell slowly at a trifling reduction. The Oat trade is firm, and prices are unaltered. For Flour there is but little inquiry.

PER IMPERIAL QUARTER.	s. s.		s. s.
WHEAT, Essex, Kent, & Suffolk..White	50—66	Red ..	50—62
— — fine selected runs..ditto	61—67	Red ..	54—65
— — Talavera	64—72		
— Norfolk	—	Red ..	—
— Foreign	48—76		
BARLEY, grind. & dist., 26s to 28s..Chev.	38—40	Malting .	34—36
— Foreign..grinding and distilling	26—32	Malting .	34—38
OATS, Essex and Suffolk	20—24		
— Scotch and Lincolnshire—Potato	26—28	Feed ..	20—24
— Irish ..Potato	26—28	Feed ..	20—24
— Foreign........Poland and Brew	21—24	Feed ..	20—24
RYE	36—38	Foreign .	—
RYE-MEAL, foreign	—		
BEANS, Mazagan....35s to 37s....Tick	36—39	Harrow .	36—39
— Pigeon ......38s — 42s..Winds.	—	Longpod	—
— Foreign .....Small	35—42	Egyptian	—
PEAS, white, Essex and Kent..Boilers	40—44	Suffolk .	40—46
— Maple ....48s to 45s ......Grey	39—41	Foreign .	35—42
MAIZE ......White	—	Yellow ..	—
FLOUR, best marks delivered...per sack	50—55		
— 2d do.......ditto	40—50	Country	40—50
— Foreign ....per barrel	28—36	Per sack	43—58

FRIDAY, Jan. 10.

The weather since the 3d inst has been damp and milder; since Tuesday much rain has fallen; the wind has been westerly, chiefly S.W. The Wheat trade during the above period has been exceedingly inactive, and a reduction in prices varying from 1s. to 2s. per qr. has been general throughout the kingdom. Spring Corn of all kinds, excepting perhaps fine malting Barley, has participated in the dulness, and in the majority of markets has been purchasable on slightly easier terms. Flour was neglected although offered at somewhat lower prices. Since Friday last 78 vessels have been reported off the coast. Only very little business has been done in floating cargoes; Wheat declined 1s. per qr.; Barley was rather lower. In Paris (Jan. 9), the prices of Flour continued to decline, and very little business has been done. The four marks for delivery this month are quoted equal to 50s. 3d. per 280 lbs. The arrivals of foreign Wheat and Flour this week have been large, small of Oats, and moderate of all other grain. English Wheat commanded Monday's prices, at which foreign was also generally held, but buyers were not disposed to purchase, excepting at a decline of 1s. to 2s. per qr., which was acceded to in a few instances. The value of Spring Corn is unaltered. Flour was held for Monday's quotations, but scarcely any sales were made.

ARRIVALS FROM Jan. 6 to Jan. 10.

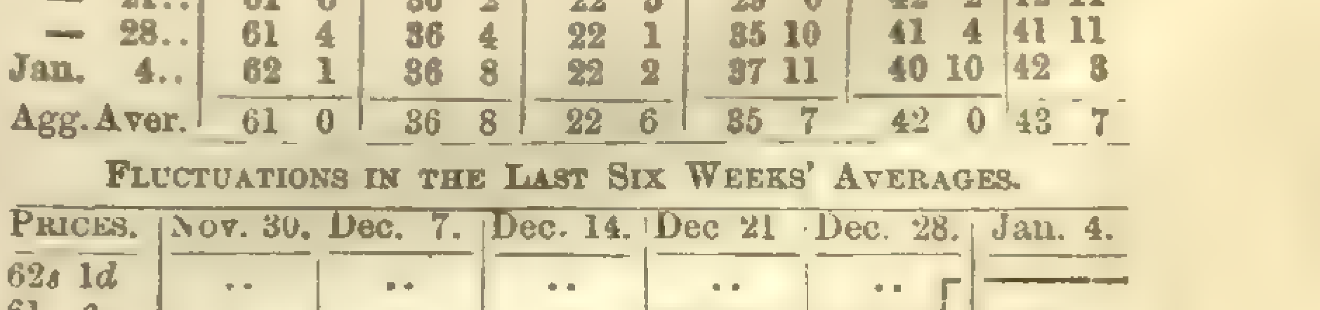
	Wheat.	Barley.	Oats.	Flour.
English ..	1370 qrs.	1480 qrs.	290 qrs.	1930 sks.
Irish	— „	—	3350	— „
Foreign ..	29210 „	3880 „	6670 „	— „ 28960 brls.

LIVERPOOL, Tuesday, Jan. 7.—Notwithstanding a large attendance of millers and dealers at this morning's market, the business passing in Wheat has only been to a moderate extent, at about the currency of Friday. Flour dull of sale, and in some instances 6d. per barrel and sack cheaper. Indian Corn attracted a more general inquiry, and there being little on offer sellers were enabled to obtain 6d. per quarter more than was practicable last market day. Oats were in fair request at previous rates, but Oatmeal was difficult to move. Beans and Peas were fully as dear. Barley unchanged. The market opened with holders asking a general advance of about 2d. per cental on Wheat, but towards the close they were glad to realise Friday's prices.

FRIDAY, Jan. 10.—There was a moderate attendance at to-day's market. Wheat 3d. to 4d. per cental, buyers holding off. Flour 1s. per barrel lower; little business. Indian Corn 1s. to 1s. 3d. per qr. decline, moderate business; mixed, 31s. to 31s. 3d. Egyptian Beans unaltered. Oats and Oatmeal slow sale.

AVERAGES	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Nov. 30..	60s 3d	37s 4d	23s 0d	36s 10d	42s 8d	45s 2d
Dec. 7..	60 4	37 0	23 8	37 10	42 7	43 8
— 14..	60 8	36 3	22 6	36 1	42 8	45 10
— 21..	61 6	36 2	22 5	29 0	42 2	42 11
— 28..	61 4	36 4	22 1	35 10	41 4	41 11
Jan. 4..	62 1	36 8	22 2	37 11	40 10	42 3
Agg. Aver.	61 0	36 8	22 8	35 7	42 0	43 7

FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.



Garden Improvements.

MR. BUSBY, F.R.H.S. (the raiser of the Golden Hamburgh Grape), late Head Gardener for 14 years at Stockwood Park, is desirous of filling up his spare time by giving advice on practical Gardening matters, which he considers his extended experience well qualifies him to undertake.

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WANTED, for two Youths about 18, two or three years' PRACTICAL INSTRUCTION in the best Systems of AGRICULTURE. A moderate premium will be given, as it is expected their services will be in some degree remunerative.—Communications, stating terms, &c., to be addressed to H. J., *Gardeners' Chronicle* Office, W.C.

TO PARENTS and GUARDIANS.—An opening now occurs near London to place a respectable YOUTH in the Forcing Department of a large Horticultural Establishment, where all the Choicest Fruits, Plants, and Flowers are extensively grown for the London Market. Board, Lodging, and Washing will be found or a salary given. A premium required. For further particulars, apply to A. B., Post Office, Barnet, N.

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GARDENER.—Age 28, unmarried; well acquainted with Vines, Peaches, Cucumbers, &c.; wishes to be engaged where two or three men are kept. He can give excellent references, even to Dr. Lindley. Wages, 60*l.* a year and lodging. He is at present in Norfolk, his native county.—Address F. P., care of Quartermaster Powley, Head Quarters, Turnham Green, W.

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Seed Trade.

SHOPMAN.—Age 27; has had 10 years' experience in all branches of the Trade. First-class reference.—C. D., 8, Warwick Street, Brighton.

To the Seed Trade.

SHOPMAN (UNDER).—Age 20; has had upwards of six years' experience in Town and Country.—ALPHA, Mr. Porter, 28, Middle Row, High Holborn, London, W.C.

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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 3.—1862.] SATURDAY, JANUARY 18. {Price Fivepence. {Stamped Edition, 6*d*.

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ROYAL HORTICULTURAL SOCIETY.—An Ordinary General Meeting for the ELECTION of FELLOWS will be held in the Council Room at the Garden, South Kensington, on MONDAY next, January 20. The Chair will be taken at 2 o'clock.
Andrew Murray, Assistant Secretary.

ROYAL HORTICULTURAL SOCIETY. ARRANGEMENTS for 1862.
March 19.—HYACINTH and CAMELLIA SHOW.
April 9.—AZALEA SHOW.
May 21.—FIRST GREAT SHOW.
*** During the Season the Inauguration of the Memorial of the Exhibition of 1851 is expected to take place.
June 11.—SECOND GREAT SHOW.
*** In May or June a Show of AMERICAN PLANTS, by Messrs. Waterer & Godfrey, of Woking.
June 26.—ROSE SHOW.
July 2.—THIRD GREAT SHOW.
Sept. 10.—AUTUMN SHOW.
October 8, 9, and 10.—GREAT INTERNATIONAL FRUIT, VEGETABLE, ROOT, CEREAL, and GOURD SHOW. The Roots, Cereals, and Gourds will remain on view until the 18th.
Schedules may be had on application to Mr. Eyles, Garden Superintendent, South Kensington, W.
Andrew Murray, Assistant Secretary.

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B. S. WILLIAMS begs to intimate that he has just received in fine condition a large importation of this beautiful plant. Price on application.
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Angræcum sesquipedale.
B. S. WILLIAMS begs to inform his friends and the public that this curious and rare Orchid is now in flower at the nursery, and he will be happy to show it to any one favouring him with a visit.
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VERY STRONG TRANSPLANTED THORNS, in large quantities. Samples with price on application to Waterer & Godfrey, Knap Hill Nursery, Woking, Surrey.

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50 FINE IRISH YEWS for SALE, 8 to 9 feet high, well formed and proportionate, of a fine dark colour, beautifully rooted, and will be sold a bargain.
Apply to J. Scott, Merriott Nurseries, Crewkerne, Somerset.
J. S.'s CONIFEROUS CATALOGUE is now ready, to be had gratis.

TO SPARE, from 5000 to 10,000 fine strong transplanted SCOTCH FIRS, standing, thin and bushy.
For price and particulars, apply to E. P. Francis, Nurseryman, Hertford.

WANTED to PURCHASE, LARCH, 3 to 4 feet.—Apply to W. Crowder, Nurseryman, Horncastle.

WANTED, LAURELS, to plant an acre of ground, from 4 to 5 feet high. State price per 100; also price per 100, 3 feet, delivered free at Potter's Bar Station, Great Northern Railway.
Address H. K., Messrs. Carter & Co., Holborn, W.C.

WANTED, 50 good strong LIME TREES, from 10 to 14 feet. Also some STANDARD PLUMS, 5 to 6 feet in stems, at per dozen.
Apply, with price, to N. Lawrence, Nurseryman, Chatteris, Cambridgeshire.

WANTED, 100 FERN-LEAVED GALE;
50 BLACK AMERICAN SPRUCE, 4 to 5 feet, bushy;
6 WILLOW-LEAVED OAK, 5, 6, or 7 feet.
Price and particulars apply to
Edward Parke Francis, Nurseryman, Hertford.

N. LAWRENCE begs to inform his friends and the public generally that his CATALOGUE of NURSERY STOCK is now ready, and will be sent gratis on application, including Seedling and Transplanted Forest Trees and Shrubs, Evergreens, Conifers, Hardy Climbers, &c.; together with a Descriptive List of Roses and Fruit Trees.
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50 in 25 ditto	ditto	..	..	1 10 0
25 in 25 ditto	ditto	..	..	0 15 0
12 in 12 ditto	ditto	..	6*s*., 9*s*., and	0 12 0

Mixed, 3*s*. 6*d*. per dozen; 25*s*. per 100.
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BARR and SUGDEN, Seed Merchants.—The above is arranged on a new principle. The cultural directions are the most copious and practical of any Trade List. All inferior varieties of VEGETABLE and FLOWER SEEDS have been rejected.
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BARR and SUGDEN, Seed Merchants.—For COLLECTIONS of VEGETABLE SEEDS enumerated, see p. 42. For PRICED LIST of the best kinds of VEGETABLE SEEDS, see last page of *Chronicle*.
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American Nursery, Bagshot, Surrey.

AZALEAS, CAMELLIAS, EPACRIS, and ERICAS.—We respectfully invite an inspection of our Stock of the above, which is large, in the finest health, and full of flower buds.
Thomas Jackson & Son, Nursery, Kingston, S.W.

Seeds, Seeds, Seeds.
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A PRICE LIST forwarded on application.
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Strong Vines from Eyes.
J. IVERY and SON beg most respectfully to inform their patrons that they have now ready for planting out, strong Plants of all the best varieties.
A PRICED LIST will be forwarded on application.
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DWARF ROSES, 60*s*. per 100.
STANDARD APPLES, 75*s*. per 100.
William Epps, Jun., Nurseryman and Seedsman, Ashford, Kent.

Fruit Trees, Dwarf-trained and Pyramid Apples, Pears, Plums, and Cherries.
JOHN CRANSTON has to offer excellent plants of the above, which cannot fail to give the greatest satisfaction. Also strong VINES in pots.
A LIST of SORTS will be sent on application.
Nurseries, King's Acre, near Hereford.

J. HOLMES WOOD, Bower Nurseries, Maidstone (adjoining the Railway Station).
All the leading varieties of AZALEAS, in 60's, at 50*s*. per 100.
Standard and Trained FRUIT TREES of every description, 30*s*. per dozen.
Every description of CONIFERS, EVERGREEN and DECIDUOUS TREES, and SHRUBS at moderate prices.

THE SUBSCRIBER is anxious to dispose of the fruit-bearing Standard and Dwarf-trained PEACH and NECTARINE TREES now growing in his Winter Garden. To those planting a Peach House this is an opportunity rarely to be met with, for some of the Trees are of large size and literally full of fruit buds, and having only been planted in the present situation two years, they will remove admirably. An inspection is invited, or for price and particulars apply to
William Bull, Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Agricultural Seeds.
GEORGE GIBBS and CO., Seedsmen, 26, Down Street, Piccadilly, London, W.

PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, and MANURE COMPANY, "Limited," Union Road, Plymouth.

New Seeds on Sale by the
PLYMOUTH SEED COMPANY, "Limited."—For prices and particulars see their GENERAL PRICE CURRENT, which is now ready.
Address Plymouth Seed Company, Plymouth.

PLYMOUTH SEED COMPANY, "Limited."—The GENERAL PRICE CURRENT is now ready, and can be had direct, or of Messrs. Simpkin & Co., 4, Stationers Court, London, E.C., for six postage stamps.
Plymouth Seed Company, Plymouth.

Agricultural and Garden Seeds.
H. and F. SHARPE, Seed Growers, Wisbeach.
PRICED LIST of SEEDS on application.

CHARLES NOBLE'S NURSERY is Ten Minutes' walk from Sunningdale Station, South-Western Railway.

J. T. WILLMER, Horticultural Agent, Auctioneer and Valuer, Springfield Nursery, Sunbury, Middlesex, S.W.

TRITOMA UVARIA. For strong plants of this splendid flower apply to James Carter & Co., 237 and 238, High Holborn, W.C.

To the Trade.
KALMIA LATIFOLIA for Potting, from 18 inches to 2 feet, and bushy, well set with Flower Buds. Samples sent if required.
Price on application to James Veitch & Son, Nursery, Exeter.

CLIANTHUS DAMPIERI. English-saved Seed.—The Trade may have price quoted per 100 or 1000 Seeds on application to Messrs. E. G. Henderson & Son.
Wellington Nursery, St. John's Wood, London, N.W.

New Fuchsias.
MESSRS. E. G. HENDERSON and SON can supply good healthy plants of F. COMET and MINNIE BANKS. A Coloured Plate of Two New Varieties, to be sent out in Spring 1862, may now be had on receipt of seven postage stamps.
Wellington Road, London, N.W.

Roses.
GEO. CLARKE can still supply STANDARD and DWARF HYBRID PERPETUALS of the leading varieties. Also fine strong DWARF TEAS and NOISETTES in pots.
PRICED CATALOGUES gratis on application.
Nursery, Streatham Place, Brixton Hill, London, S.

Seeds.
H. MEYERS and SONS having saved some superior BRUSSELS SPROUTS, offer it at 2*s*. 6*d*. per lb.
DOUBLE CURLED LEAVED PARSLEY, 1*s*. 6*d*. per quart.
Orders, with Post Office Order, addressed to Harlington, Hounslow, W., will be promptly executed.

CUTHILL'S Superior BLACK SPINE CUCUMBER.—The Trade can be supplied by the ounce, or 1*s*. per packet. HIGHLAND MARY, 1*s*. Best MELONS, 1*s*. Best MUSHROOM SPAWN. Cuthill's Five Pamphlets, free by post, 5*s*.
James Cuthill, F.R.H.S., Camberwell, London, S.

Bellamy's Early Green Marrow Peas.
CHARLES SHARPE and CO., Seed Growers, Sleaford, have the above to offer to the Trade, of first-rate quality. Price on application.

Henry's Prize Hybrid Leek.
DOWNIE, LAIRD and LAING are now sending out Seed of the above in Packets at 1*s*.
17, Frederick Street, Edinburgh; and Stanstead Park, Forest Hill, London, S.E.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
William Morton, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

Extra Large Sea Kail.
GEO. CLARKE has to offer a large quantity of very fine roots, clean and sound, 1 to 2 inches in diameter. Prices on application. The Trade also supplied.
Nursery, Streatham Place, Brixton Hill, S.

Myatt's Prolific Ash-leaf Kidney.
MR. MYATT takes this opportunity of informing his customers that he cannot take any further orders for the above POTATO.
Manor Farm, Deptford.—Jan. 18, 1862.

To the Trade.
MYATT'S PROLIFIC ASHLEAF KIDNEY POTATO.—The above excellent variety, sound and in good condition, to be had of
J. Myatt, Offenham, Evesham.—Price on application.

Seed Potatoes.
H. and F. SHARPE are now prepared to take orders at very moderate prices for all the leading sorts of POTATOES, including Myatt's Prolific ASH-LEAVED KIDNEY, the finest and most prolific in cultivation.
Prices may be had on application.
Seed Growing Establishment, Wisbeach.

60,000 Dwarf Roses in Pots on their own Roots.

WM. WOOD AND SON have much pleasure in offering selections of ROSES from their enormous stock at the following rates:

	Per doz.
Tea Scented Roses	18s.
Bourbon and Noisette do.	18
China and Climbing do. .. ..12s. to	18
Tea Scented and Bourbon Roses, established in 6-inch pots, for immediate forcing or greenhouse culture ..	30

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Standard Roses.

A LARGE IMPORTATION OF STANDARD ROSES.
WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON beg to inform the Nobility, Gentry, and Amateurs that they have imported a large quantity of STANDARD ROSES from the Continent, comprising all the best sorts. The plants are remarkably strong, and cannot fail to give the greatest satisfaction.

Standard Summer Flowering Roses .. per dozen	24s.
Standard Perpetual and Bourbon Roses "	30
Dwarf Summer Roses .. .. "	12
Dwarf Perpetual Roses .. .. "	18
New Roses of 1861 .. .. .. each 3s. 6d. to	5

Early orders are respectfully solicited.

New Rose, Beauty of Waltham.

WM. PAUL respectfully announces that he is now taking orders for this superb NEW ROSE, which received a FIRST-CLASS CERTIFICATE from the Royal Horticultural Society in June last. For description, see Rose Catalogue —Section Hybrid Perpetual: it is also figured in the "ROSE ANNUAL," just published. Plants in April, 5s. each; the usual discount to the Trade on six or more plants.

WM. PAUL, Cheshunt Nurseries, Waltham Cross, N.

Standard and Dwarf Roses.

JOHN CRANSTON has no hesitation in stating that he holds the largest stock of STANDARD ROSES in the kingdom, and plants of the finest growth possible. These he is now offering at the following prices:—

STANDARDS, finest Hybrid Perpetual and Bourbon, 30s. per dozen.

HALF-STANDARDS, do., 24s. to 30s. do.

STANDARD TEA SCENTED, the best and most hardy sorts, 36s. to 42s. do.

DWARF HYBRID PERPETUAL, strong on Manetti Stock, 15s. to 24s. do.

DWARF HYBRID PERPETUAL, own roots, 12s. to 18s. do.

DWARF TEA SCENTED, 18s. to 24s. do.

PILLAR ROSES, extra strong on Manetti Stock, 18s. to 24s. do.

NEW ROSES of 1860 and 1861, 3s. 6d. to 5s. each.

A DESCRIPTIVE LIST will be forwarded free on application.

Nurseries, King's Acre, near Hereford.

Mitchell's Unrivalled Collection of Roses.

THE LARGEST STOCK AND THE BEST PLANTS IN ENGLAND, JUSTLY PRONOUNCED BOTH BY ENGLISH AND FOREIGN GROWERS.

JAMES MITCHELL has the honour of informing his kind patrons that he has succeeded in obtaining the FIRST PRIZES at the principal Shows throughout the season, viz.:—

July 10.—The Grand National Rose Show, Royal Horticultural Society's Garden, Kensington Gore, 96 varieties, 3 trusses of each, First Prize.

September 11.—Forty-eight varieties, 3 trusses of each, First Prize.

July 3.—The Royal Botanic Society, Regent's Park, London, 50 varieties, 3 trusses of each, First Prize.

July 6.—The Great Rose Show, Crystal Palace, 96 varieties, 1 truss of each, First Prize.

June 19.—Brighton Horticultural Society, 50 varieties, 3 trusses of each, First Prize.

September 18.—Fifty varieties, 3 trusses of each, First Prize.

August 28.—Lewes Horticultural Society, 36 varieties, 3 trusses of each, First Prize.

J. M. respectfully informs the Nobility and Gentry he can supply the best perpetual BLOOMING ROSES in Standards, Half-Standards, and Dwarfs, healthy good rooted plants.

Standards, 30s. per dozen.
Half ditto, from 24s. to 30s. per dozen.
Dwarfs, from 18s., 24s., to 30s. per dozen.
New Varieties of 1861, 42s. per dozen.

Pilt Down Nurseries, Maresfield, Sussex.

N.B. These Nurseries are 2½ miles from the Uckfield Station on the London, Brighton, and South Coast Railway.

STANDARD ROSES, with straight stems and good heads, the finest varieties; 30s., 36s., and 42s. per dozen.

GRAPE VINES for PLANTING OUT.—All the leading sorts, with stout, short-jointed, well ripened canes; 3s. 6d., 5s., and 7s. 6d. each.

GRAPE VINES for FRUITING in POTS.—Extra fine, strong bearing rods.

GLADIOLUS.—Splendid hybrids of Gandavensis, 6s., 9s., 12s., and 18s. per dozen; 100 distinct varieties, 84s.; 100 newer, 126s.

NEW BEGONIAS.—Twelve of the most distinct and beautifully variegated Continental varieties, strong plants, for 18s.

CAMELLIAS with FLOWER-BUDS.—Including the best new varieties, fine plants, 30s. to 42s.; extra size, 60s. and 84s. per dozen.

DESCRIPTIVE CATALOGUES, with all particulars, forwarded on application to

JAMES DICKSON & SONS, The "Newton" Nurseries, Chester.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.

For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.

Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.

The Royal Nursery, Bagshot, Surrey.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

PINE GOLDEN PIPPIN APPLE, Dwarf Maiden and Dwarf-trained Trees.
GENERAL TODTLEBEN PEAR, Dwarf Maiden Trees.
BEURRÉ STERKSMAN PEAR, Dwarf Maiden Trees.

R. GLENDINNING has still a few Plants of the above named NEW FRUIT TREES. For their descriptions see Dr. Hogg's remarks. Price on application.

Chiswick Nursery, London, W.

NEW APPLE, "BARON WARD."—The very best late keeping variety in cultivation.

	Each—s. d.
Strong plants, two years, unpruned, suitable for pyramids or bushes	2 6
Strong plants, dwarfs	1 6

Description, &c. forwarded post free on application to R. BRADLEY & SON, Halam Nursery, near Southwell, Notts.

Magnificent Dwarf-trained Peaches, Nectarines and Pears, &c.

WM. WOOD AND SON refer with much pleasure to their extensive and well grown Stock of the above; the Trees are remarkably healthy, and are as handsome as can possibly be desired. Early orders are solicited to ensure the best trees.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Strong Grape Vines from Eyes.

R. GLENDINNING begs to offer strong GRAPE VINES from Eyes of all the leading sorts, fit for immediate planting. The Eyes were taken from Vines which bear fruit on the Premises.

PRICED LISTS on application.
Chiswick Nursery, W.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, JUN., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.

CATALOGUES on application.

Muscat Escholata Grape.

MESSRS. J. AND C. LEE have the pleasure to offer strong well ripened Canes of this

THE FINEST OF ALL MUSCAT GRAPES,

which, though little known to Grape growers in general, deserves to be extensively cultivated. It combines the desirable qualities of setting freely with a large well shouldered handsome bunch, with berries of a rich amber colour almost as large again as those of the Muscat of Alexandria, and of the most luscious Muscat flavour.

Planting Canes	15s. 0d. each
Fruiting Canes	21 0 "
Extra strong Fruiting Canes ..	31 6 "

Vineyard Nursery, Hammersmith, London, W.

Fruit Trees.

JAMES GARAWAY AND CO. call attention to their stock of the above, comprising

APRICOTS, NECTARINES, PEACHES	Standard and Dwarf-trained	APPLES, CHERRIES, PEARS, PLUMS	Dwarf-trained, Standard, and Dwarf-quarter.

All of first-rate quality and in good condition.

The STANDARD PEARS are unusually fine, and will be sold at a very low rate to purchasers of quantities.

CATALOGUES and prices free by post.

JAMES GARAWAY & CO., Durdham Down Nurseries, Bristol.

Fruit Trees.

R. GLENDINNING begs to offer the under-mentioned FRUIT TREES, which are strong, healthy, and true to name:—

Standard-trained PEACHES } in all the leading kinds with
Dwarf-trained " } well ripened wood, from walls.
Dwarf-trained APPLES, in all the leading kinds.
" PEARS " "
" PLUMS " "
Standard Mdn. " " "
Dwarf Mdn. " " "
Standard Mdn. CHERRIES " "
Dwarf Mdn. " " "
Standard APPLES " "

PYRAMIDAL PEARS on Quince and Pear Stocks in a fruiting condition.

PRICED LISTS on application.
Chiswick Nursery, London, W.

New Pear, "Matthews' Eliza."

WILLIAM BULL begs to announce that the entire stock of this excellent NEW PEAR has been placed in his hands for distribution by Mr. Matthews, and from the high character it has received from the best pomologists, W. B. has no hesitation in very strongly recommending it.

This Pear was highly commended when exhibited before the Pomological Society, and the *Florist*, in its report, thus speaks of it:—

"Mr. Matthews, of Clapham, brought a Seedling Pear, which he called 'Matthews' Eliza,' of which we are enabled, through our artist, to give a most excellent representation. This was considered to be of the race of Easter Beurré, and was raised by his father-in-law, the late Mr. Groom. The fruit, as will be seen, is very handsome, and will rank among the large Pears. In shape it has much of the appearance of White Doyenné, with the features of the Easter Beurré about the stalk end, though not towards the eye. The skin, when ripe, is of a pale citron, or straw yellow, with faintest tinge of green. The flesh has an orange-yellow tint, is quite melting, juicy, and sugary, with a fine mixture of vinous acid, which gives it a refreshing and lively piquant flavour. This was considered, and justly, a most excellent Pear. The fruit was grown on a standard."

Extract from the *National Garden Almanac* for 1858.

"It is not often that we find new fruit of such decisive merit as 'Matthews' Eliza,' raised, we learn, by the late Mr. Henry Groom, and now exclusively in the possession of his son-in-law and successor, Mr. H. Matthews, Clapham Rise, Surrey. The fruit is of large size, of the White Doyenné form; rich, buttery, melting, and aromatic, with sufficient piquancy to free it of that cloying flavour so common to over-sweet subjects. Its season seems December and January. We feel we may fairly attribute to this Pear a first-class character in every respect, convinced that it is one of the greatest acquisitions rendered to us for many years."

Price 10s. 6d. each.

Well ripened Canes of all the best VINES can be supplied.

Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Fruit Trees.

WM. PAUL (Successor to the late A. PAUL), CHESHUNT NURSERIES, Waltham Cross, London, N.

Gladioli.

WM. PAUL (Successor to the late A. PAUL), CHESHUNT NURSERIES, Waltham Cross, London, N.

Roses.

WM. PAUL (Successor to the late A. PAUL), CHESHUNT NURSERIES, Waltham Cross, London, N.

Ornamental Trees and Shrubs.

WM. PAUL (Successor to the late A. PAUL), CHESHUNT NURSERIES, Waltham Cross, London, N.

Hollyhocks.

WM. PAUL (Successor to the late A. PAUL), CHESHUNT NURSERIES, Waltham Cross, London, N.

PYRAMIDAL CHERRIES. — Well formed and handsome Pyramidal Trees of the following varieties of CHERRIES grafted on the Mahaleb Stock are now offered. They are from 4 to 5 years old, 4 to 5 feet in height, have been under summer pinching, and are full of blossom buds. They form most ornamental and useful Fruit Trees for the Garden:—

May Duke	Royal Duke
Empress Eugénie (an early sort of May Duke	Reine Hortense
Morello	Belle Magnifique
Frogmore Morello	Dauphine
Late Duke	Planchoury
Belle de Choisy	Griotte de Kleparone
	Noir de Prusse

Largest sized trees, 3s. 6d. each; second size, 2s. 6d. each; Bushes, bearing trees, 2s. each.

THOS. RIVERS, Nurseries, Sawbridgeworth.
Carriage paid to London.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England.

The Catalogue may also be had at Mr. MAY'S, 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

Can be Seen at Sunningdale Nursery, Sunningdale Station, South-Western Railway.

CHARLES NOBLE invites inspection, and would remind all interested, that his RHODODENDRONS have taken First Prizes at the opening Show of the Royal Horticultural Society, and every other show at which they have been exhibited during the last two years.

RHODODENDRONS for forcing; KALMIAS for forcing; and a magnificent stock of all the finest kinds of Rhododendrons in the world. CONIFERS and Hardy EVERGREENS by the 100 or 1000. ROSES and a General Nursery Stock well worthy the inspection of intending Planters or Nurserymen.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

OLD CHESHUNT NURSERIES, HERTS.

Gladiolus.

PAUL AND SON'S fine Collection of this superb Flower, of which the Bulbs are now ready.

Hollyhocks.

PAUL AND SON'S fine Collection of this noble Flower; fine Plants of which are now ready. Also SEED in packets of 12 fine distinct sorts at 5s. each, and mixed seed in 2s. 6d. and 1s. packets.

Roses.

PAUL AND SON'S splendid Collection of Dwarf Plants in Pots, of all the finest new kinds, with extra size plants for Forcing.

Vines.

FINE PLANTS for Fruiting in Pots or planting out.

CATALOGUES of each may be had on application by post.

1862.

NOVELTIES in VEGETABLE SEEDS. See WM. WOOD & SON'S Seed Catalogue.

NOVELTIES in FLOWER SEEDS. See WM. WOOD & SON'S Seed Catalogue.

COLLECTIONS of FLOWER SEEDS. See WM. WOOD & SON'S Seed Catalogue.

COMPLETE ASSORTMENTS of VEGETABLE SEEDS for ONE YEAR'S SUPPLY. See WM. WOOD & SON'S Seed Catalogue.

AGRICULTURAL SEEDS. See WM. WOOD & SON'S Seed Catalogue.

Prices moderate. Seeds all warranted genuine. CATALOGUES post free on application.

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

CRYPTOMERIA JAPONICA (a Bargain).—The Subscribers having a very large stock of the above, perfectly healthy and uninjured by frost, offer them on the following terms, viz.:—

	per doz.	per 100.
Stout plants, 1 foot	3s. ..	20s.
" 1½ to 2 feet	4 ..	25
" 3 to 4 feet	6 ..	40

Extra plants presented to defray cost of carriage.

Address to WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Winter and Spring Flowering Plants.

F. AND A. SMITH are now supplying fine plants at moderate prices of the following:—

*Acacias, *Azaleas, Cinerarias, *Camellias, *Chrysanthemums, Cyclamen, Cytisus, Clianthus, Carnation (Tree), *Echeveria, *Epacris, *Ericas, Eutaxias, *Gardenias, *Heterocentrum, *Kennedyas, *Leschenaultias, *Jasminum grandiflorum, *Monochætum, Pelargoniums, *Passifloras, *Primula, double and single; *Solanum, *Oranges, &c. [Those marked thus * are either in bud or fruit at the present time.]

GENERAL CATALOGUE gratis,
Dulwich, Surrey, S.

Hamilton's Market Favourite Cucumber.

SUTTON AND SONS have a limited Stock remaining of the Seed of the above Cucumber, the same as supplied by them to the Royal Horticultural Society last season, and of which the Society's Report says, "This was considered the best of the Tippel Spine Section; and it possesses the best colour, the best form, and every property of a good Cucumber. Not only was it the best in its section, but the best and handsomest in the whole collection." Price 1s. 6d. per packet.

Royal Berkshire Seed Establishment, Reading.

NEW CUCUMBERS, post free.

Per Packet—	s.	d.	Per Packet—	s.	d.
Kirklees Hall Defiance ..	1	0	Tiley's White Spine ..	2	6
Pearson's Long Gun ..	2	6	Yorkshire Hero	2	0
The Sensation	2	6	Wonderful Ridge.. ..	2	6

A single packet each of all the above six varieties for 10s.

For descriptions see WM. WOOD & SON'S CATALOGUE (free on application).

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

Pearson's Long Gun Cucumber.

HURST AND McMULLEN, 6, Leadenhall Street, London, E.C., having purchased a considerable portion of the above, beg to offer it to the Trade (see their LIST).

The raiser describes it as being most difficult to seed, from its fruiting so quickly. The gardeners in the neighbourhood where it is known consider it surpasses all others. It is the heaviest bearer in point of number ever known; fruit from 24 to 30 inches, white spines, little or no handle, skin a bright green.

The quality is also described to be far superior to all others. The texture is as fine as a Melon, and there is a total absence of all bitter flavour. The fruit is much sought after by the salesmen at Nottingham. As many as 150 per day have been supplied, and it commands half as much more as any other kind in its neighbourhood.

CUCUMBERS and MELONS.—The SENSATION CUCUMBER, a superb black spine, exhibition variety, quite as productive as any of the common Ridge varieties; its qualities are such as will be certain to render it a No. 1 with all growers. Length 24 to 28 inches, short-necked, dark green, and very regular spine; carries its bloom well to the last. Price 2s. 6d. per packet.

TILEY'S WHITE SPINE CUCUMBER.—The same character as the foregoing, with the exception of being white spine and a lighter green. Price 2s. 6d. per packet.

TILEY'S WONDERFUL RIDGE CUCUMBER.—A beautiful black spine. Average length 15 to 18 inches. As an out-door variety not to be surpassed for productiveness or quality, having always been taken when cut as one of the fine frame kinds. It grows very even from stem to point, and rarely ever seeds. Price 2s. 6d. per packet.

NEW MELON, "NONSUCH."—E. T. having purchased the entire stock of Seed of this superb New Melon, begs to offer it to the public as a great acquisition, especially to those who have not the command of a strong heat; it will grow well and ripen perfectly with merely the assistance of a cold frame. The raiser has always cultivated it on a spent dung bed with every success (on which early Potatoes had been grown); it is short-jointed, a free setter, fruit round, green flesh, thin skinned and solid, weight from 2 to 3 lbs., beautifully netted, and a splendid aromatic flavour. It is such that must be certain to give every satisfaction to all purchasers, having been grown well in pots in a cold greenhouse. Price 2s. 6d. per packet.

CUCUMBERS.—General Outram, 2s. 6d. per packet. The following sorts 1s. per packet:—Sir Colin Campbell, General Canrobert, Victory of Bath, Gordon's White Spine, Lord Kenyon's Favourite, Phenomenon, Captivation, Rifleman, Mills, Jewess, Manchester Prize, Hunter's Prolific, Incomparable, Sion House, Ipswich Standard, Ayres' Prolific, Cuthill's Island Mary, Manchester Prize, Hamilton's Black Spine Kilway's Victory, and all other varieties worthy of cultivation.

MELONS.—Garibaldi, 1s. 6d. per packet. The following, 1s. per packet:—Gen. Havelock, M'Ewen's Green and Scarlet Flesh, Monroe's Greengage, Golden Drop, Golden Perfection, Scarlet King, Incomparable, Golden Ball, Bromham Hall, Austen's Incomparable, Queen, Blackall's Green Flesh, Bowood Green Flesh, Beechwood, Windsor Prize, and all other varieties worthy of cultivation.

A packet of each of the new varieties of Cucumbers and Melons for 7s. 6d., or a packet of either of the new Cucumbers and a packet of the Melon, 4s.

The Emperor Red Celery, the best grown, 1s. per packet. The Solid White Celery, extra fine, 1s. The true old Bath Cos Lettuce, 1s. per packet. Griffin's Alma Lettuce, 1s. per packet.

The true Red Currant Rhubarb, the best grown for early forcing or preserving. This variety is red quite through, and a delicious acid. Price 1s. per root.

A remittance is expected from all unknown correspondents by Post Office Order or penny postage stamps.

EDWARD TILEY, Nurseryman, Seedsman and Florist, 14, Abbey Churchyard, Bath.

Wood's Defiance Cauliflower.

WM. WOOD AND SON have much pleasure in introducing this new and superior CAULIFLOWER to the notice of their friends and the public generally, and having tested it for several years against Walcheren and other approved varieties, they do not hesitate to pronounce it the best Cauliflower in cultivation. It is quite hardy, of dwarf habit, and produces immense large heads, which are very compact, and most deliciously flavoured.

Stock limited; price per packet, 2s. 6d.

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

*** SEED CATALOGUE post free on application.

New Vegetables—post free.

WM. WOOD AND SON beg to offer GENUINE SEEDS of the undermentioned CHOICE VEGETABLES, viz.:—

Per packet—	s.	d.	Per packet—	s.	d.
Carter's St. Osyth Beet..	1	0	Ivery's Nonsuch Celery	0	6
Nutting's Selected do. ..	0	6	Turner's Incomparable Celery	0	6
Melville's Incomparable White Broccoli ..	1	0	Cucumbers (See separate advertisement.)		
Lee's New White Sprouting Broccoli	1	0	Melville's Variegated Garnishing Kale	1	0
Snow's superb Winter White Broccoli ..	1	0	Carter's Giant White Cos Lettuce	1	0
Kemp's Incomparable Cabbage	1	0	Carter's Giant Brown Cos Lettuce	1	0
Wood's Defiance Cauliflower	2	6	Dunnett's Black-seeded Brown Cos Lettuce ..	1	0
(See separate advertisement)					
Carter's Dwarf Mammoth Cauliflower	1	0	Wheeler's Imperial Cos Lettuce	1	0
Parson's superior Cauliflower	1	0	Wheeler's Tom Thumb ditto	1	0
Cole's White Perfection Celery	2	6	The Student Parsnip ..	1	0
			Parsnip Chervil..6d. and	1	0
Hood's Imperial Dwarf Red Celery	0	6	New Feather-stem Savoy	1	0

The above are all described in WM. W. & SON'S CATALOGUE.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Complete Collections of Vegetable Seeds for Large or Small Gardens.

WM. WOOD AND SON can furnish COMPLETE COLLECTIONS of KITCHEN GARDEN SEEDS for One Year's Supply, containing only sterling varieties, as under. For particulars see their PRICED CATALOGUE.

	£	s.	d.
COLLECTION No. 1. For a Large Garden, including Wood's Defiance Cauliflower, Parsnip Chervil, and several other novelties of merit, as well as a complete assortment of the most approved older kinds	4	0	0
COLLECTION No. 2. For a Medium-sized Garden ..	2	10	0
COLLECTION No. 3. For a Small Garden	1	5	0
COLLECTION No. 4. For a Smaller Garden	0	15	0

These Collections have all been prepared in the most liberal manner, and WM. W. & SON feel assured they cannot fail to give entire satisfaction.

Early Orders are respectfully solicited.

CATALOGUES post free on application.

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

THE PLYMOUTH SEED COMPANY, "Limited," are now sending out their COLLECTIONS of SEEDS, which have hitherto given great satisfaction.

	£	s.	d.
No. 1. COMPLETE COLLECTION for a large Garden, for One Year's Supply	3	0	0
No. 2. COMPLETE COLLECTION for a moderate size Garden, for One Year's Supply	2	0	0
No. 3. COMPLETE COLLECTION for do., smaller quantities, for One Year's Supply	1	0	0
No. 4. COMPLETE COLLECTION for a Small Garden	0	15	0
No. 5. COMPLETE COLLECTION for a Small Garden	0	10	6
EXTRA LARGE COLLECTION, containing double the quantities contained in No. 1	5	0	0

Extra Collection carriage free to any Railway Station in England and Wales, and to any Steam Port in England, Wales, Scotland, and Ireland.

No. 1 carriage free to most Stations and Ports in the Kingdom.

No. 2 carriage free to Broad Gauge Stations and Steam Ports.

No. 3 carriage free to any Station between Plymouth and Paddington.

Address, Plymouth Seed Company, Plymouth.

SUTTON'S COLLECTIONS of GARDEN SEEDS.—Carriage free (with Instructions on Cultivation).

	£	s.	d.
No. 1.—A COMPLETE COLLECTION of KITCHEN GARDEN SEEDS for a Large Garden, for one whole year's supply	£3	0	0
No. 2.—A COMPLETE COLLECTION of ditto, in quantities proportionately reduced	2	0	0
No. 3.—A COMPLETE COLLECTION of ditto ditto ..	1	0	0
No. 4.—A COMPLETE COLLECTION of ditto ditto ..	0	10	6

The Sorts of Vegetable included in these Collections are those which we have proved to be the most prolific, best flavoured, and most worthy of general cultivation, and of which sorts we have, therefore, grown large crops of Seed; by this means we are enabled to furnish "A Complete Collection for One Year's Supply," of superior quality, and at much less expense than when a Gentleman or his Gardener makes his own selection. We were the first to offer this advantage to the public (nearly 20 years ago), and we continue to improve the Collections annually.

Collections of Flower Seeds to be sent Free by Post.

	£	s.	d.
The best 100 sorts of FLOWER SEEDS, hardy, half-hardy, and tender, with instructions	£1	1	0
The best 50 sorts of ditto, with instructions	0	10	6
The best 36 sorts ditto ditto	0	7	6
The best 24 sorts ditto ditto	0	5	0

Also Natural Grasses for Lawns and Meadows, Fine Mangel Wurzel, Turnip, and other Agricultural Seeds.

☞ SUTTON'S GENERAL PRICED CATALOGUE gratis and post free.

Post Office Orders payable to SUTTON & SONS, Seed Growers, Reading, Berks.

PEAT EARTH of excellent quality delivered at the Nine Elms Station, 5 tons for 55s.; at Guildford, 5 tons for 50s.; at Havant, 5 tons for 45s.

Apply to Mr. BETTS, 115, Strand, London, W.C., where a sample may be seen

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ESTABLISHED UPWARDS OF A CENTURY.

COVENT GARDEN MARKET, LONDON, W.C.

BUTLER & McCULLOCH'S

COLLECTIONS OF VEGETABLE SEEDS,

Consisting of the most approved varieties, Carriage Free.

No. 1. A Complete Collection for One Year's Supply	**£4**	**0**	**0**
No. 2. Ditto ditto smaller quantities	**2**	**0**	**0**
No. 3. Ditto ditto ditto	**1**	**0**	**0**

For full particulars, see CATALOGUE (page 91), which will be forwarded free and post paid upon application.

CARNATIONS AND PICOTEES

Saved with the greatest care from the best collections. For these, our Establishment has for years been famous, and it is with great satisfaction that we are enabled to state, that our collections of these favourite flowers are this season a great improvement even on those of former years; while our prices for the same remain equally moderate.

To cultivators in general and Amateurs in particular the following list will be found invaluable, supplying as it does the material from which the most exquisite flowers both as regards colours and properties may be raised.

Carnations.

Per Packet.—	s.	d.
A. 12 Superb varieties Self	5	0
B. 12 ditto ditto Flake	5	0
C. 12 ditto ditto Bizarre	5	0
D. 12 ditto ditto Fancy	5	0

Half packets of the above, 3s. each.

Yellow Carnations.

	s.	d.
E. 12 Superb varieties Flake	5	6
F. 12 ditto ditto Bizarre and Self	5	6
G. 12 ditto ditto Fancy	5	6

Half packets of the above, 3s. 6d. each.

	s.	d.
CARNATIONS, Choicest Mixed	2	6
PICOTEES, Choicest Mixed..	2	6

Perpetual or Tree Carnations.

Per Packet.—	s.	d.
H. 12 Superb varieties Self	5	0
I. 12 ditto ditto Flake	5	0
J. 12 ditto ditto Bizarre	5	0
K. 12 ditto ditto Fancy	5	0

Half packets of the above, 3s. each

Picotees.

	s.	d.
L. 12 Superb Varieties, White Ground	5	6
M. 12 ditto ditto Yellow Ground	5	6

Half packets of the above, 3s. each.

Perpetual or Tree Picotees.

	s.	d.
N. 12 Superb varieties	5	0

Half packets, 3s.

	s.	d.
CARNATIONS, Perpetual Mixed..	2	6
PICOTEES, Perpetual Mixed	2	6

BUTLER AND McCULLOCH, SEEDSMEN, COVENT GARDEN MARKET, W.C.

PARADISE NURSERY, HOLLOWAY, LONDON, N.

CHOICE VEGETABLE AND FLOWER SEEDS.

BENJAMIN S. WILLIAMS

BEGS to inform his Friends, Patrons, and the Public that he is now prepared to execute with NEW and GENUINE SEEDS all orders he may be favoured with.

Collections of Kitchen Garden Seeds for One Year's Supply,

Containing none but the most useful and approved sorts, proportioned to suit Gardens of various sizes, at the following prices:—1l., 2l., 3l., and 4l. each.

Any kinds not required should be named, so that they may be omitted from the Collection.

Now ready, post free on application,

A PRICED AND DESCRIPTIVE SEED CATALOGUE FOR 1862.

Containing all New Seeds of the season proved to be good, and the best of the older varieties, with useful suggestions for the guidance of Amateur Cultivators.

Also select Lists of

GLADIOLI AND OTHER BULBS FOR SPRING AND SUMMER FLOWERING.

With a few remarks on their Mode of Treatment.

PARADISE NURSERY, SEVEN SISTERS AND HORNSEY ROADS, HOLLOWAY, LONDON, N.

New Cinerarias, Gloxinias, and Pelargoniums.

F. AND A. SMITH can still supply a few sets of their New GLOXINIAS, CINERARIAS, and PELARGONIUMS.

See *Gardeners' Chronicle* of Oct. 5, 1861, and CATALOGUE, which may be had gratis.

Dulwich, Surrey, S.

DOWNIE, LAIRD, AND LAING beg to intimate that their NEW CATALOGUE of FLORIST FLOWERS, NEW FLOWER SEEDS, &c., is now ready, and may be had free on application.

17, Frederick Street, Edinburgh, and Stanstead Park, Forest Hill, London, S.E.

Russell's Pyramidal Primulas.

GEO. CLARKE has much pleasure in calling attention to the above magnificent strain, new Seed of which is now ready in packets, price 2s. 6d.

Those who are desirous of satisfying themselves of the peculiar excellence of these PRIMULAS, are invited to see them here in bloom now or any time during the winter months.

Fine young plants for spring blooming, 12s. per dozen.

Nursery, Streatham Place, Brixton Hill, near London, S.

J. SCOTT'S SEED CATALOGUE, with Descriptive and Cultural Notes, is now ready, and will be found very useful to intending purchasers. Sent gratis.

THE BEDDING PLANT CATALOGUE is being printed, and will be ready in April. Parties who wish to embellish their gardens, cheaply, should procure a copy before purchasing their plants, as the book is replete with information on the subject, and all the novelties of the season are described, and most sorts may be had at 2s. 6d. per dozen. Mr. Beaton, in the *Journal of Horticulture* says:—"It is the best Catalogue we have seen."

Merriott Nurseries, Crewkerne, Somerset.

MESSRS. E. G. HENDERSON AND SON recommend the following to be Sown as soon after Christmas as possible, to ensure their early flowering, and a continuous after season of bloom.

COBŒA SCANDENS, 6d., 1s., and 1s. 6d.
MAURANDYA, 6d., or in six colours separate, 2s. 6d.
LOPHOSPERMUM, 6d., or three varieties, 1s. 6d.
THUNBERGIA, 6d., or in six sorts, 2s. 6d.
CALAMPELIS SCABER, 6d. and 1s. each.

The above Ornamental-flowering CLIMBERS for Garden and House-decoration Blooming through the Summer.

CANNA species, 6d., or in six sorts, 2s.
PERILLA NANKINENSIS (dark leaves), 6d. and 1s.
These two for Garden Summer-decoration.
LOBELIA SPECIOSA, (true), 6d. and 1s.
PETUNIA, choice varieties, 1s.
VERBENA, „ „ 1s.
ANAGALLIS, large blue, 6d.
„ red, 6d.
DIANTHUS HEDDEWIGI, 6d., 1s.
SAPONARIA CALABRICA, 6d.
SAPONARIA CALABRICA ALBA, new pure white, 6d., 1s.
ANTIRRHINUM, choice, extra, 6d. and 1s.
ZINNIA ELEGANS, double, extra selected, 6d., 1s.
ŒNOTHERA LAMARCKIANA (new large yellow), 1s.
Shrubby habit, with flowers like Œ macrocarpa.
PANSY, extra first quality, 1s.
„ „ new blotched French varieties, 1s. 6d.

The above 12 kinds are for general Bedding, and all Ornamental effect in Pots, Vases, and House-decoration, as well as for the open Garden.

CLIANTHUS DAMPIERI, 5 English saved seeds, 2s. 6d.
CYCLAMEN PERSICUM, 1s.
CYCLAMEN ATKINSI, 1s.
LILIUM GIGANTEUM, 6d., 1s.

Wellington Road, St. John's Wood, London, N.W.

CHARLES TURNER, The Royal Nurseries, Slough, offers the following NEW SEEDS for the KITCHEN GARDEN, the FLOWER GARDEN, and the FARM.

NEW PEAS raised by Dr. MacLean.—The two varieties now offered for the first time have been the admiration of all that saw them growing, both in 1860 and 1861. See "Gardeners' Year Book," pages 84 and 86. The stock is but limited.

WONDERFUL.—A first class second early white wrinkled Pea of robust branching habit, growing only 3 feet high, and producing a mass of pods from the bottom of the haulm, each pod containing from 7 to 9 large Peas of the most delicate flavour. In half-pint packets, 1s. 6d.

LITTLE GEM.—A dwarf green wrinkled Marrow of the height of Tom Thumb, more prolific, and earlier. A great acquisition, being very early, very dwarf, with the fine flavour of our best Marrow Peas. In half-pint packets, 1s. 6d.

BROCCOLI, GEORGE'S LATE WHITE.—A great acquisition. Per packet, 2s. 6d.

See opinion of Mr. THOMAS SMITH, Gardener to the Marquis of Londonderry, who says:—"I have grown it several years, and it is the best late sort I know. Heads white, large, and fine, to the end of May."

PARSNIP CHERVIL (Chærophyllum bulbosum).—Figured in *Gardeners' Chronicle*, October 5, 1861, which see. 6d. per pkt.

CUCUMBER, WILSON'S PROLIFIC.—A first rate variety for summer or winter use. 1s. per packet.

MELON ECLIPSE.—This superior green flesh variety is a cross between Scarlet Gem and Orion, partaking of the rich flavour of the former, and the fine melting properties of the latter. It obtained a Certificate of Merit at the Botanic Society, and First Prize for green flesh at Brighton, the only two places exhibited. Highly recommended. 2s. 6d. per pkt.

BETTERIDGE'S FINE QUILLED ASTERS.—The Seed saved from this splendid collection—so successful in maintaining the leading position at the great Exhibitions—is entirely in CHARLES TURNER's hands for distribution.

12 distinct varieties (with hints for their culture) .. 3s.
Fine Mixed Seed, per packet .. .. 1s.
And all NEW ANNUALS worthy of cultivation.

TURNER'S GOLIATH SWEDE, 10d. per lb.

Mr. WILLIAM STATHAM, of South Lea Farm, Datchet, thus writes of the Goliath Purple Top Swede:—"I have 15 acres all equally good, grown without artificial manure, and with only a moderate cost of farm dung. Although my neighbours complain generally of their Swedes this year, I never grew finer, and approve very much of this sort."

TURNER'S WHITE SWEDE, 10d. per lb.
FISHER HOBBS' ORANGE GLOBE MANGEL, 8d. per lb.
ELVETHAM LONG RED MANGEL, 8d. per lb.

These are all saved from carefully selected stocks, and have been harvested in fine condition.

The GENERAL SEED CATALOGUE, containing all that is new and good in each class, as well as all the useful Culinary Roots, is just published, and will be forwarded gratis and post free to any address.

CHARLES TURNER, The Royal Nurseries, Slough.

Asparagus.

YOUELL AND CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—

ASPARAGUS, GIANT, two years .. .. 2s. 6d. per 100.
„ „ three years .. .. 3s. 6d. „

Royal Nursery, Great Yarmouth.

New Celery, "Coles' White Perfection."

WM. COLE has much pleasure in offering the above superior WHITE CELERY, feeling confident it will give equal satisfaction to those previously sent out by him. In size and quality it surpasses that of his solid red. Sealed half oz. packets free per post, 2s. 6d. Price to the Trade upon application.

Nurseries, Withington, near Manchester.

Also of the undermentioned Agents:—

Messrs. Hurst & M'Mullen, 6, Leadenhall Street, City, London, E.C.
„ J. Carter & Co., 237, 238, and 261, High Holborn, W.C.
„ Charlwood & Cummins, Tavistock Row, Covent Garden, London, W.C.
„ Lawson & Son, 27, Great George Street, Westminster, London, S.W.
„ Cooper & Bolton, 152, Fleet Street, London, E.C.
Mr. C. Turner, Royal Nursery, Slough.
Mr. J. Veitch, Royal Exotic Nursery, King's Road, Chelsea, S.W.
Messrs. A. Henderson & Co., Pine-apple Place, Edgware Road, London, W.

Florists' Flowers and Seeds.

CAREY TYSO, Wallingford, Berks, begs to offer Choice Assortments of

DOUBLE ANEMONES, 100 fine sorts, 1l. 1s. to 1l. 6s.
*RANUNCULUSES, 100 ditto, 1l. 7s. to 2l.
*RANUNCULUSES, 100 ditto mixed, 5s. to 1l.
*IMPORTED GERMAN SEEDS, Asters, Stocks, Balsams, Immortelles, Larkspurs, Wallflowers, Zinnias, &c., in named assortments, from 1s. to 5s. each.
All the popular ANNUALS,* 50 varieties, 1 packet each, 10s.; 25 ditto, 5s.
Choice RANUNCULUS, PINK, SWEET WILLIAM, and ANEMONE SEEDS,* 2s. 6d. and 5s. per packet.

The articles marked * can be sent by post.

PRICED CATALOGUE for one label for the postage.

SANSPAREIL STRAWBERRY (CULVERWELL'S) was awarded a First-class Certificate of Merit by the Fruit Committee of the Royal Horticultural Society. Dr. Hogg, the Secretary, speaks of it thus:—"A long tapering fruit with an uneven and coarse surface; the colour is of a dark blackish red, and the flesh is extraordinarily firm, solid, and red throughout, and very richly flavoured. It is a good forcer, and on account of its bearing carriage is well adapted for forcing early and for market."

Fine strong runners are now ready at 6s. per dozen; or 40s. per 100. A very liberal offer to the Trade when the order is for 100 and upwards. Price on application.

The following Nurserymen have taken in a supply:—

Messrs. J. Carter & Co., London	Messrs. Lee, J. & C., Hammersmith
„ Downie, Laird, & Laing, Edinburgh	„ Morrison Brothers, Aberdeen
„ Dickson & Co., Edinburgh	„ Nicholson, Egglescliffe, Yarm
„ Drummond & Sons, Stirling	„ Rumley & Sons, Richmond
„ Dickson & Son, F. & A., Chester	„ Robertson, Paul & Co., Glasgow
„ Fisher, Holmes, & Co., Sheffield	
„ Fraser, J. & J., Leyton, Essex	Mr. W. Barratt, Wakefield
„ Henderson & Son, E. G., London	„ J. Cattell, Westerham
„ Henderson & Co., A., London	„ Harrison, J., Darlington
„ Lucombe, Pince, & Co., Exeter	„ Jackson & Son, Kingston
„ Lawson & Sons, P., Edinburgh	„ Morse, J., Dursley
	„ Shaw, J., Manchester
	„ Tiley, Ed., Bath
	„ Turner, C., Slough
	„ Veitch, J., Jun., London

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

Quick.

H. AND F. SHARPE are prepared to offer of the finest quality,

Strong 2-years' Transplanted QUICK, 3 feet high,
Strong 2-years' Seedling do., 2 feet high,

at very moderate prices, which may be had, with samples, on application.

Seed Growing Establishment, Wisbeach.

Four Millions of Transplanted Quicks.

GEORGE CHIVAS offers the above, Two Millions of which are suitable for Railways, and Two Millions varying from strong to exceeding strong—a portion having been twice Transplanted. A bale containing 100 of each, five sizes, forwarded on receipt of 15s.; orders for 10,000 delivered free at any railway station.

Also Half a Million of Transplanted SPRUCE, and one of the largest general Nursery Stocks in the North-Western counties.

Chester, Jan. 18.

500,000 QUICKS, 2 years' Seedling, 18 to 24 inches, and 24 to 30 inches, and 2 years' transplanted, 2½ to 3 feet.

GOOSEBERRIES and CURRANTS, leading kinds, 70s. to 80s. per 1000.

EVERGREEN PRIVET, from 2 to 5 feet, 20s. to 30s. per 1000.

The above are all strong and well rooted.

For prices and samples apply to J. & W. COCKS, Donington Nurseries, near Spalding.—Jan. 18.

To the Trade.

AMERICAN WEEPING WILLOWS.—Fine trees of this hardy and beautiful Willow grafted on straight stems 7 to 8 feet high, and well adapted for planting in Cemeteries, are offered by the hundred or thousand.

Price given on application to THOMAS RIVERS, Nurseries, Sawbridgeworth.

LARGE ORNAMENTAL TREES.—As part of my Nursery Ground is required for Building purposes, to effect a clearance before I commence my new grounds, I offer for Sale the following at very low prices:—

Limes, Beech, Oak, Hornbeam, Mountain Ash, Willow, Poplar, Turkey Oak, Elm, White Thorn, Horse Chesnut, Ash, Birch, from 5 to 12 feet. Also Black American and Norway Spruce, Birch, Maple, Austrian Pine, from 3 to 5 feet; Larch, Hornbeam, Austrian Pine, from 1 to 3 feet; Seedling 2-years Spruce, Thorns, and Oak.

Many thousands of Rhubarb, Asparagus and Seakale for forcing or otherwise.

JAMES HUDDART, Nurseryman and Seedsman, Preston, Lancashire.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

To the Seed Trade.

THOMAS AYRES, SEEDSMAN and GROWER, Biggleswade, Beds., has to offer WHITE SPANISH ONION SEED, ALTRINGHAM and WHITE BELGIAN CARROT SEED; YELLOW GLOBE, ORANGE GLOBE, RED GLOBE, LONG YELLOW, LONG RED MANGEL WURZEL SEED; also several varieties of SWEDE and WHITE TURNIP SEED.

Prices forwarded on application.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our Book of FARM SEEDS sent free for 3 stamps.

J. C. WHEELER & SON, Seed Growers, Gloucestershire.

GENUINE ITALIAN RYE-GRASS, produced from the second cut of Foreign "Italian," weighing up to 21 lbs. per bushel, and "Pacey's" and "Evergreen" Perennial Rye-grass, weighing up to 28 lbs. per bushel, can be supplied direct from the Grower either now or in March (at the option of the purchaser), and samples will be forwarded free on application.

Address SIMON A. DAINTREE, Fen drayton, St. Ives, Hunts.

Sharpe's Improved Swede.

CHARLES SHARPE AND CO., SEED GROWERS, Sleaford, beg to inform their friends and the public that they have this year grown and secured in fine condition a large breadth of the above valuable variety of SWEDE, and they will now be able to execute all orders entrusted to them, which, in consequence of the scanty supply the last two seasons, they were not always in a position to do.

C. S. & Co. take the present opportunity of remarking that extended cultivation has proved decisively the superior merit of their Swede, which has in all competitions with other kinds been placed in the first rank. Price on application.

CHARLES SHARPE & CO., Seed Growers, Sleaford.

CHOICE PRIZE SWEDES (DICKSON'S Selected) at the Birmingham Show.—The SWEDE TURNIPS exhibited by the Right Honourable the Earl of Lichfield—entry 105—at the show held at Bingley Hall, Birmingham, during the first week of the present month, and which took the First Prize there (the entries at the same time, and many by eminent agriculturalists, being very numerous) were from seed which we had the honour of supplying to his Lordship. Their quality in every way, as was universally admitted, was most excellent, at once showing the great advantage of having Seed saved in a proper manner from carefully selected and transplanted bulbs.

We have again saved in the most careful manner, from picked and transplanted bulbs, a large and fine lot of Seed for the sowing season of 1862, for which we are now booking orders at 1s. per pound, for delivery in the Spring, or sooner if desired.

PRICE LISTS of SEEDS, TREES, and PLANTS on application.

JAMES DICKSON & SONS, Seed Merchants, &c. 102, Eastgate Street, and "Newton" Nurseries, Chester.

LATE DRUMHEAD or CATTLE CABBAGE SEED.—The Subscriber has now for Sale a few Tons of the Seed of his well-known Late Cabbage, of Crop 1861, carefully selected and grown by himself, and which cannot be surpassed for purity of stock, size, quality, and hardiness. The seed is a fine sample, and having been in granary since harvest, is in fine condition and ready for immediate delivery.

Orders will be executed on receipt of cash, or a satisfactory reference to respectable parties in Edinburgh or Leith; and intending purchasers who may not be acquainted with the stock can be referred for information to some of the most respectable Seedsmen in England, Scotland, and Ireland.

Present price, in quantities of not less than 4 cwt., 5l. 10s. per cwt., put free on board at Leith or Granton, or on the Rail at Edinburgh. For price of larger quantities apply to the Subscriber.

Also for Sale, a few cwt. of EARLY and LATE or LARGE YORK CABBAGE SEED, carefully selected and grown by

JOHN GIBSON, Woolmet, Dalkeith, N.B.

Choice Seeds, free by post.

NEW CABBAGE—FEARNOUGHT: A Hybrid between the Early Dwarf Cabbage and the Hearting Scotch Kale or Borecole. It forms compact and hard heads, which when cooked are tender and well flavoured; withstands frost and damp better than any other of the Brassica family, and is not subject to burst when at maturity. Last winter, when every other winter green was killed, it stood uninjured. By making two sowings it can be had fit for use from November till Spring Cabbages are ready. Awarded First-class Certificate by the Royal Horticultural Society, March 11, 1861. This valuable acquisition was raised by the successful hybridiser, Mr. Melville Dalmeny, Park Gardens, who has placed the entire Stock in our hands for distribution. 1s. per packet.

MELVILLE'S EARLY SPRING WHITE or HARDY SCOTCH BROCCOLI, strongly recommended, 1s. per packet.

AYTON CASTLE GIANT SCOTCH LEEK, 1s. per packet.

PERENNIAL SPINACH, invaluable for its hardiness, and as tender as the finest Spinach, 6d. per packet.

ANTIRRHINUM, PENTSTEMON, from an extra fine strain. See "Gossip of the Garden," November, 1861, each 1s. per packet.

PANSY, from choice named sorts, 1s. per packet.

PRIZE FRENCH MARIGOLD, from choice selected double flowers, 1s. per packet.

ASTERS: GLOBE QUILLED, BETTERIDGE'S CRYSTAL PALACE (Prize), 12 varieties, mixed, 1s. per packet.

ASTERS: BUSHBY'S NEW DWARF. Colour fine rosy pink, 6 to 7 inches in height, well adapted for a dwarf row, 1s. per packet.

FOXGLOVE, 6 beautiful varieties, separate, 1s. per collection.

MELVILLE'S CRIMSON BELTED and AURICULA-FLOWERED SWEET WILLIAMS. These are more compact in habit than the old varieties. "Richly coloured and variegated sorts, some of which were very attractive."—Opinion of Floral Committee, July 9, 1861. 1s. per packet. Price per ounce to the Trade on application.

STOCKS, GIANT AUTUMN, from prize sorts, Red and White, 6d. each per packet.

STOCKS, TRUE WHITE INTERMEDIATE (Melville), very fine, 1s. per packet.

Orders from unknown correspondents to be accompanied with Post Office Order or postage stamps.

STUART & MEIN, Seedsmen to the Union Agricultural Society, Kelso, N.B.

Wheat for Spring Sowing.

SHIRREFF'S BEARDED RED WHEAT has been found to ripen well in East Lothian when sown towards the end of March. The grain is large, bright, and clean, weighing 64 lbs. per imperial bushel, from seed sown in spring 1861, This variety is particularly recommended for spring sowing.

Samples will be forwarded on application. Price 70s. per quarter cash. Bags, 1s. 6d. each. PATRICK SHIRREFF.
Haddington—January 18, 1862.

Stirling, Scotland.

OUR CATALOGUE of SELECT VEGETABLE and FLOWER SEEDS, POTATOES, GARDEN TOOLS, &c., for 1862, is now ready, and may be had on application.

The distinctive features of this Catalogue are such as have commended themselves alike to the Gardener and Amateur. Being simple in arrangement, and sufficiently descriptive, a selection from its columns is rendered easy and satisfactory. Moreover, we still adhere to the system introduced by us several years since, of discarding, in the various sections, all comparatively inferior varieties, as well as omitting what are mere repetitions of the same sorts under different names.

*** Seeds Carriage Paid, as formerly.

W. DRUMMOND & SONS, Seed and Implement Warehouse, Stirling.

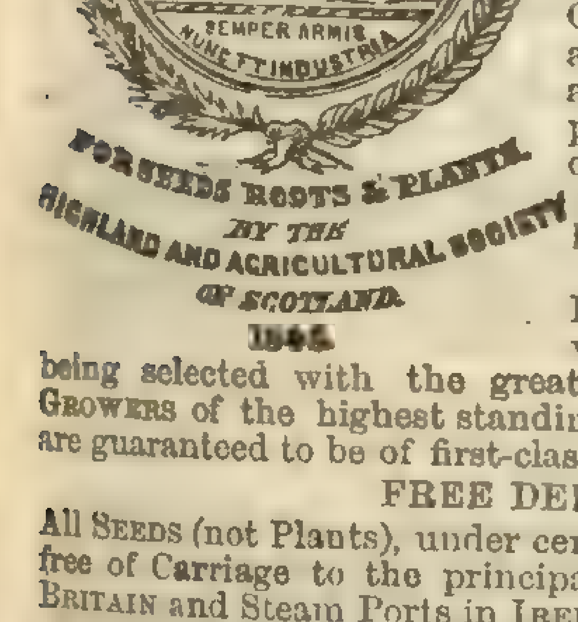
SEED ESTABLISHMENT, STIRLING.—In tendering our thanks to the many Noblemen and Gentlemen who have, for a long series of years, intrusted us with their orders for AGRICULTURAL SEEDS, we have satisfaction in stating, that to enable us to meet a large increase of business, we have greatly extended our arrangements for raising and otherwise securing more ample supplies of the leading kinds, all bearing the usual trustworthy character, thus enabling us to execute with certainty all orders, however extensive, with which we may be favoured. Our DESCRIPTIVE PRICED CATALOGUE will be ready in February, and, as heretofore, will be sent to our customers; also, post free to any address, on application.

In the meantime, we claim special attention to our ROOT SEEDS, which embrace several improved stocks of SWEDES and other TURNIPS, MANGEL WURZEL, &c.; also to remarkably fine samples of all the varieties of CLOVERS, PERENNIAL and ITALIAN RYE-GRASS, NATURAL GRASSES, &c.

The Assortments of Seeds prescribed by us for laying down land to Permanent Pasture or Meadow, are the result of a lengthened experience, which, with the fact of our annually supplying seeds for several thousand acres, warrant us in recommending them with every degree of confidence.

W. DRUMMOND & SONS, Seed and Implement Warehouses Stirling and Dublin, January 18, 1862.

*** Stirling is most favourably placed in point of Railway accommodation, there being direct and constant traffic to all the principal Stations in Scotland and England, and by Steamers (via Glasgow), almost daily to the chief Ports in Ireland, thereby ensuring a speedy delivery of Goods, all of which (with certain limitations) we forward carriage paid.



Nursery and Seed Establishment, Dumfries, N.B.
(ESTABLISHED 1787.)

THOMAS KENNEDY AND CO. beg respectfully to direct the attention of their friends and the public to their stock of NURSERY PLANTS, comprising FOREST, FRUIT and ORNAMENTAL TREES, DECIDUOUS and EVERGREEN SHRUBS, &c., adapted either for extensive planting, or for giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c.

Also to their stock of FARM and GARDEN SEEDS, which are very extensive, and being selected with the greatest possible care from SEED GROWERS of the highest standing in this and other countries, are guaranteed to be of first-class quality.

FREE DELIVERY.

All SEEDS (not Plants), under certain limitations, are delivered free of Carriage to the principal Railway Stations in GREAT BRITAIN and Steam Ports in IRELAND.

*** PRICED CATALOGUES will be sent, post free, on application.

Royal South Hants Seed Establishment

PAGE AND TOOGOOD have the honour to offer the OSBORNE MANGEL, the stock of which was presented to them by His late R. H. the Prince Consort's Steward, A. TOWARD, Esq., by whom it is considered the best variety in cultivation. In shape it is as perfect as a Globe Turnip, with a similar tap root, the foliage small and very compact, indicative of less impoverishment of the soil than can be said of most other sorts. It has carried off every prize for shape where exhibited. A great portion of the seed has been ordered by those who saw it growing, and P. & T. being anxious to get it into general cultivation, would prefer supplying it in quantities not exceeding Ten Pounds.

PAGE'S IMPERIAL ORANGE GLOBE MANGEL.—A large stock of this has been provided to meet the demand that has arisen for it. Its superior weight producing and keeping qualities are well known. The prize for the best 10 Acres has again this year been awarded to it by the Botley Farmers' Club. STEWART MACNAGHTEN, Esq., grew 61 tons 2 cwt. per acre of it by ordinary cultivation. W. DICKINSON, Esq., produced six specimens, weighing when perfectly clean, without leaves or roots, 193 lbs., the largest of which, 44 lbs. At the Vale of Avon Farmers' Club, six prizes were awarded to it for acreage.

PAGE'S IMPROVED HARDY SWEDE still maintains its superior character for general cultivation. It carried the 10 Acre Prize at Botley.

BIRMINGHAM ROOT SHOW.—The Ten Guinea Cup for the best collection, and the Five Guinea Cup for Swedes have been again brought to Hampshire—being the third time in succession the former has been awarded to Sir W. Heathcote, Bt.—This not only reflects great credit upon the management and skill of his Steward, Mr. Charles, but the County should be proud of the distinction conferred upon it, by his energy and judgment, in carrying these Prizes (that for Swedes against 26 competitors). As Hampshire Seedsmen, we have great reason to speak of his success.

Special Contracts made for the supply of all AGRICULTURAL SEEDS in large quantities.

☞ Our Goods are delivered Carriage Free
PAGE & TOOGOOD, Seed Merchants and Growers, Southampton.

Genuine Tobacco Paper for Fumigating.

H. APPLEBY (Foreman to Messrs. IVERY & SON, Nurserymen, Dorking) begs to inform his friends and the public, that he has a good supply of the above on hand. Sold in 4 lb. Packets, 1s. 3d. per pound.

Testimonials too numerous for insertion, but may be had on application.

SHEET IRON POTS for Fumigating, 3s. 6d. each.

All orders to be accompanied with a Post Office Order payable to HENRY APPLEBY, Dorking, Surrey.

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,
PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

Red Spider Magnified.

FRUIT TREES.
Winter wash with GISHURST COMPOUND.
[Copy of Letter from Mr. Rivers.]
Nurseries, Sawbridgeworth, Herts, Jan. 9, 1862.

I think you should prominently mention the great benefit Wall Trees of all kinds derive from a dressing, ¾ or 1 lb. to the gallon, of the Compound applied in January. It is so easily applied, and so very beneficial.
(Signed) THOS. RIVERS.

Sold retail by Nurserymen and Seedsmen in boxes 1s., 3s., and 10s. 6d. each.
Wholesale by PRICE'S PATENT CANDLE CO., Limited.

Magnified Aphides.

NEAL'S PATENT APHIS PASTILS.

The attempt by interested persons to injure the sale of these Pastils is best answered by the fact that Mr. Glenny and other really scientific Horticulturists use and recommend them. They are the safest and cheapest mode of Fumigation, as the large and increasing sale distinctly proves. The Pastils are better warmed before being used, as they are useless when damp.

Sold by all principal Seedsmen.
Price 1s. and 2s. per packet.

Patentee:
J. NEAL, Edward Street, Birmingham.

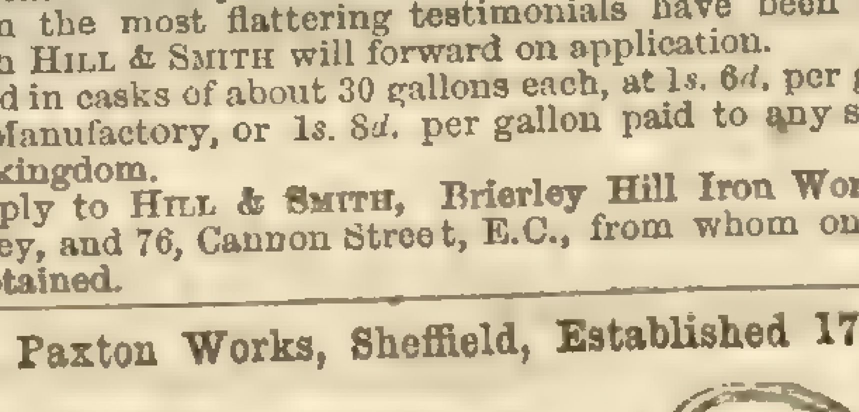
Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

Paxton Works, Sheffield, Established 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.

Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an article superior in quality to anything we have hitherto been able to offer, in PRUNING, BUDDING, and GRAFTING KNIVES, VINE and PRUNING SCISSORS, GARDEN SHEARS, &c., owing to their being tempered under an entirely new process, which renders the blade tough and not liable to break, and also gives the edge a lasting keenness which we can warrant them to retain for at least double the time they would under the old method of tempering, thus facilitating the work and saving the time usually lost by having constantly to renew the edge by sharpening, consequently making them more durable in wear and better adapted for all kinds of work, every blade being guaranteed of the same temper.

CAUTION. None are genuine except marked SAYNOR, or SAYNOR, Maker. Other marks would cause the purchaser disappointment.

Horticultural Glass Warehouse.

THOMAS MILLINGTON, 87, BISHOPSGATE STREET WITHOUT, E.C.
LISTS FORWARDED ON APPLICATION.

Glass for Greenhouses.

JAMES PHILLIPS AND CO. beg to submit their prices as follows:—

ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 280 feet, 2¼d. and 2½d. per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each, Package included.

				3rds.	4ths.
12 by 9,	13 by 9,	14 by 9,	15 by 9	14s. 0d.	12s. 6d.
12 „ 10,	13 „ 10,	14 „ 10,	15 „ 10		
13 „ 11,	14 „ 11,	15 „ 11,	16 „ 11	16s. 0d.	13s. 6d. per 100 feet.
14 „ 12,	15 „ 12,	16 „ 12,	17 „ 12		
18 „ 12,	19 „ 12,	20 „ 12,	16 „ 13		
17 „ 13,	18 „ 13,	19 „ 13,	20 „ 13		
16 „ 14,	17 „ 14,	18 „ 14,	20 „ 14		

Various other sizes.

GLASS FOR ORCHARD HOUSES,
As supplied by us to Mr. Rivers.

20 in. by 12 in.; 20 in. by 13 in.; 20 in. by 14 in.; 20 in. by 15 in.		16 oz.	21 oz.
	Common	13s. 6d.	£0 18s.
	Superior do.	16 0	1 3
	English Glass	18 0	1 9

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11s. 6d.
8 „ 6	8½ „ 6⅜	9 „ 7	9½ „ 7½	
		10 „ 8	10½ „ 8½	12 6

Boxes 2s. each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.

16 oz. 4ths, 1¾d., 2d., and 2½d. 21 oz. 2¾d., 3d, and 3¼d.
„ 3ds, 2d., 2½d., and 3d. „ 3d., 3½d, and 4d.

London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

JAMES PHILLIPS & CO., 180, Bishopsgate Street Without, London, E.C.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.—Jan. 18.

Patent Indoor Plant Cases.
SOLE MANUFACTURERS,

PICKARD AND CO., HORTICULTURAL BUILDERS, Caledonian Road, King's Cross, N.
Illustrated Priced List on application.
Description and Instructions in Miss MALING's "Flowers and Foliage," free by post for 13 stamps.

NETTING for SHEEPFOLDS, made of Cocoa Nut Fibre. Price 4d. per yard. COCOA NUT CORD for THATCHING.—WILDEY and Co., Manufacturer of Cocoa Nut Matting and Mats, Holland Street, Blackfriars Road, S.E.

TANNED GARDEN NETTING for preserving Seed Beds, Fruits, Strawberries, from frost, blight, birds, &c., and as a Fence for fowls, &c. 1 yard wide, 1½d.: 2 yards. 3d.; 3 yards, 4½d.; and 4 yards, 6d. per yard, in any quantity, may be had at CHAS. WRIGHT'S, 376, Strand, W.C.

GREENHOUSE and FLOWER-POT STICKS VARNISHED:—1 foot, 3d.; 1½, 4d.; 2, 5d.; 2½, 7d.; 3, 10d.; 4, 1s. 6d. per dozen. DAHLIA STICKS VARNISHED, per dozen:—3 feet, 1s. 6d.; 4, 2s. 3d.; 5, 3s.; 6, 3s. 6d. An allowance to Nurserymen.

PATENT GARDEN NETTING will be found superior to every other article for the protection of Fruit Trees from frost, birds, &c.; whilst rendering this service light and air are not impeded. It is also a beautiful Shading for Hothouses, and is cheaper, being more durable than any kind of Tiffany, or other material in use. NETTINGS, No. 1, 15s.; No. 2, 18s. 9d.; and No. 3, 22s. 6d. per piece, or 4d., 5d., and 6d. per square yard. Pieces, 30 yards long, 55 inches wide. GARDEN MATS, highly recommended, 59 by 70 inches, 20d. each.

Agents: ROBT. HEINEKEY & Co., 20, Harp Lane, Tower Street, London, E.C.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases and Ornamental Flower Boxes for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen-ranges, &c. Grooved Terro-metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall-Copings, Glazed Drain Pipes, &c. To be obtained of F. & G. ROSHER, at their Premises as above.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.

The GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C.

Rhododendrons for Under Cover.

JOHN WATERER has an immense quantity of the above in fine bushy plants, of sizes suitable for immediate planting into Covers.

☞ It is worthy of remark that in the most severe weather Rhododendrons are never injured by Hares or Rabbits. Samples, with prices, forwarded on application.

The American Nursery, Bagshot, Surrey.

MONRO'S RABLEY CUCUMBER, per pkt., 2s. 6d. (See fuller Advertisement in November and Dec. last.)

	Per packet—s.	d.
TELEGRAPH IMPROVED do., and other finest frame sorts	1	0
HERTFORDSHIRE dwarf hardy CAULIFLOWER (the best Cauliflower)	1	0
MELON SCARLET GEM, true	1	0
HOLLYHOCK (WM. PAUL'S Collection of 12 superb named sorts)	5	0

Every description of VEGETABLE and FLOWER SEEDS, principally grown by or under the supervision of the Subscriber.

CATALOGUE free on application.

WM. PAUL, Nurseries and Seed Warehouse, Waltham Cross, N.

Garden Seeds.

PAGE AND TOOGOOD'S SPECIAL LIST will be forwarded post free.

P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

Royal South Hants Seed Establishment, Southampton.

Notice of Removal.

THOMAS CHARMES, SEEDSMAN and FLORIST, begs to inform his Friends and the Public that he has REMOVED from 195 to 204, High Street, Exeter, where all orders with which he may be honoured will meet with prompt attention, and be gratefully acknowledged.

PRICED LISTS of SEEDS for the present season sent free on application.

Exeter—Jan. 18.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and other FLOWER SEEDS, Choice GLADIOLI, &c., is now ready, and will be forwarded post free on application.

The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices.

An inspection and comparison with prices in other Catalogue is respectfully solicited.

The following, of which descriptions will be found in Catalogues, are specially recommended:—

		Per oz., s.	d.
BEET, Compact Topped or Pine Apple Short Top ..		0	6
„ Selected Dwarf Red (Nutting's)		0	9
CAULIFLOWER, Early Dwarf Erfurt		2	0
„ New Early Mammoth or Frogmore Forcing		3	6
CELERY, Imperial Dwarf Red (Hood's)		1	0
CHÆROPHYLLUM BULBOSUM		2	0
CUCUMBER, TELEGRAPH	per packet	1	6
LETTUCE, MOOR PARK	per oz.	2	0
PEA, GENERAL WYNDHAM	per quart	1	3

Exotic Nursery, Tooting, Surrey, S.

EXCELLENCE and ECONOMY.—

Botcherby Hybrid	Kenyon
Hamilton's Market Favourite	Telegraph
Hector	William Brown

And other CUCUMBERS (true).

ORNAMENTAL GOURDS, Imported Seed.

JAMES TYNAN begs to offer Seeds of the above, at 6d. and 1s. per packet, free by post for 7 or 13 stamps.

CATALOGUES free by post on application.

Seed Warehouse, 68, Great George Street, Liverpool.

Hardy Ferns.

JAMES SMITH can supply the following for 35s. cash, or half the collection for 17s. 6d., package included. Post Office Orders payable at Matlock.

6 Asplenium Adiantum nigrum	2 Lastrea cristata
6 „ Trichomanes	2 „ uliginosa
4 „ viride	2 „ Thelypteris
6 „ Ruta muraria	6 „ dilatata
4 „ lanceolata	4 Osmunda regalis
4 Allosorus crispus	2 Polystichum angulare
2 Botrychium lunaria	2 „ lobatum
6 Blechnum boreale	2 Polypodium dryopteris
6 Ceterach officinarum	6 „ vulgare
4 Cystopteris fragilis	4 „ calcareum
6 Lastrea recurva	2 „ phegopteris
6 „ Filix mas	6 Scolopendrium vulgare
2 „ rigida	4 „ ramosum

Darley Dale Nurseries, near Matlock.

Novelties in Flower Seeds.

WM. WOOD AND SON will be happy to forward the undermentioned, post free, viz.:—

	Per packet.—s.	d.
Alyssum saxatile campactum	1	0
Anagallis grandiflora pallida	1	0
„ „ sanguinea	1	0
Campanula rotundifolia alba	1	0
Celosia aurea pyramidalis	1	0
Clarkia pulchella flore pleno	1	0
„ „ Tom Thumb	1	0
Clintonia pulchella atro-purpurea	1	0
„ „ azurea grandiflora	1	0
Cuphea Zimpani	1	0
Dianthus chinensis laciniatus atro-purpurea fl. pl.	1	0
„ „ nanus purpureus	1	0
„ imperialis compactus nigro purpureus fl. pl.	1	0
Dolichos Fernandesii	2	6
Helianthus annuus fl. pl.	2	6
Lupinus Hartwegii persicus	1	0
Nieremborgia calycina fl alba	1	0
„ „ nigricans	1	0
Nycterina selaginoides fl. alba	1	0
Nemophila atomaria oculata	1	0
„ maculata folia variegata	1	0
Pericallis Webi hybrida	1	0
Phlox Drummondii Magenta	1	0
„ „ Prince of Wales	1	0
„ „ Princess Royal	1	0
„ „ Wilhelm I.	1	0
Polygonum orientale pumilum	1	0
Saponaria calabrica alba	1	0
Senecio elegans flore pleno magenta	1	0
Statice sinuata hybrida	1	0
Tropaeolum Crystal Palace Gem	0	6

For descriptions see their CATALOGUE, copies of which may be obtained free on application.

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

For PRICED LIST of Select VEGETABLE SEEDS, See our Advertisement on Last Page of *Gardeners' Chronicle.*

For LIST of STRIKING NOVELTIES, See Advertisement of January 4.

For LIST of COLLECTIONS of CARNATIONS, PICOTEES, and PELARGONIUMS See Advertisement of January 11th.

NOTICE.—*In the press and will be forwarded immediately to our patrons and numerous applicants, our*

ILLUSTRATED SPRING SEED CATALOGUE,

OR GUIDE TO THE KITCHEN AND FLOWER GARDEN.

☞ ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

The Cultural Directions are the most ample and practical to be found in any Trade List.

BARR AND SUGDEN'S

COLLECTIONS OF VEGETABLE SEEDS FOR 1862.

THESE Assortments consist of selections from the different sections of the above Catalogue, and are suited to Gardens of various sizes; they contain the most approved Varieties, and such as are most suited to secure a succession of the best VEGETABLES from January to December.

N.B. Should any of the following Varieties not be required, increased quantities of other sorts can be sent in lieu.

THE SEEDS OF THE FOLLOWING COLLECTIONS ARE ALL NEW.

No Charge made for Packing or Package, and all Orders of 21s. sent Carriage paid.

☞ Cultural Directions are printed on each Packet of Seed.

COLLECTIONS OF SEEDS FOR ONE YEAR'S SUPPLY.

	No. 1. 10s. 6d.	No. 2. 15s. 6d.	No. 3. 21s.	No. 4. 30s.	No. 5. 42s.	No. 6. 63s.
Leguminous Plants.						
PEAS, including those best suited for succession, the most productive, and finest flavoured; such as Daniel O'Rourke, Champion of England, Champion of Scotland, Champion of Paris, &c.	4 pints	6 pints	10 pints	8 quarts	10 quarts	20 quarts
BEANS, best sorts	2 pints	3 pints	5 pints	6 pints	4 quarts	6 quarts
BEANS, French, Dwarf, and Runners	1 pint	1½ pint	2 pints	3 pints	4 pints	5 pints
Edible-Leaved and Edible-Flowered Plants.						
BORECOLE, including Cattagers' Kale, Asparagus Kale, Feathered Dwarf Kale, &c.	2 packets	2 packets	3 packets	3 packets	4 packets	5 packets
BROCCOLI, the best successional varieties, including Grainge's Autumn, Snow's Winter, Lee's White Sprouting, Adams's Early, and Mammoth Late Spring, &c.	2 packets	3 packets	3 packets	4 packets	4 packets	5 packets
BRUSSELS SPROUTS, best imported and Roseberry ..	1 packet	1 packet	1 packet	1 packet	2 packets	2 packets
CABBAGE, including Covent Garden Superfine Early Dwarf, Early Dwarf Champion, Enfield Market, &c.	2 packets	3 packets	4 packets	4 packets	5 packets	6 packets
CABBAGE, Savoy, best sorts	1 packet	1 packet	1 packet	2 packets	2 packets	3 packets
COUVE TRONCHUDA	1 packet	1 packet	1 packet	1 packet	1 packet	1 packet
CAULIFLOWER, including Mammoth, Walcheren, Covent Garden, &c.	1 packet	2 packets	2 packets	3 packets	4 packets	4 packets
SPINACH, round and prickly	2 ounces	4 ounces	6 ounces	1 quart	1½ quarts	2 quarts
Edible Rooted Plants.						
BEET, including Covent Garden, St. Osyth, and Pine Apple	1 packet	1 packet	1 packet	2 packets	2 packets	3 packets
CARROT, best for forcing and general crop	1½ ounce	2 ounces	3 ounces	4 ounces	6 ounces	10 ounces
LEEK, Musselburgh, &c.	..	1 packet	1 packet	1 packet	1 packet	2 packet
ONION, including White Spanish (Reading), Giant Madeira, White Globe, &c.	1 ounce	1½ ounces	2 ounces	3 ounces	5 ounces	8 ounces
PARSNIP, including "The Student" and Selected Hollow Crown	1 ounce	1 ounce	1½ ounce	2 ounces	3 ounces	4 ounces
RAMPION	..	..	..	1 packet	1 packet	1 packet
SALSIFY	..	..	1 packet	1 packet	1 packet	1 packet
SCORZONERA	..	..	..	..	1 packet	1 packet
TURNIP, including Jersey Navet, Snowball, &c.	1 ounce	2 ounces	3 ounces	4 ounces	6 ounces	8 ounces
Edible Fruited Plants.						
CUCUMBER, including Champion, Empress Eugenie, &c.	..	..	1 packet	1 packet	2 packets	3 packets
MELONS, including Princess Alice, which received a First-class Certificate from the Horticultural Society of Nice	..	..	1 packet	1 packet	2 packets	2 packets
TOMATO	..	..	1 packet	1 packet	2 packets	2 packets
VEGETABLE MARROW, including the New Custard, Melon Gourd, &c.	1 packet	1 packet	2 packets	2 packets	3 packets	4 packets
Salad Plants.						
CELERY, including the two Covent Garden varieties ..	1 ounce	1 ounce	2 packets	3 packets	3 packets	4 packets
CRESS, including Curled and Plain	4 ounces	4 ounces	6 ounces	10 ounces	1 quart	1½ quarts
„ Australian and American	1 ounce	2 ounces	3 ounces	4 ounces	5 ounces	6 ounces
ENDIVE, best kinds	..	1 packet	2 packets	2 packets	2 packets	2 packets
LETTUCE, including the two Covent Garden Giant, White Cos, Drumhead, &c.	2 packet	2 packets	2 packets	3 packets	4 packets	5 packets
MUSTARD	4 ounces	8 ounces	10 ounces	1 quart	1 quart	1½ quarts
RADISH, suitable sorts for succession	2 ounces	4 ounces	6 ounces	8 ounces	10 ounces	12 ounces
Pot, Sweet and Garnishing Herb Plants.						
HERBS, Pot and Sweet, including Savory, Marjoram, &c.	..	..	2 packets	3 packets	4 packets	5 packets
„ Garnishing, including Parsley, &c.	1 packet	1 packet	2 packets	3 packets	3 packets	4 packets

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A fine lot of half Specimens and Standards for Sale.

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The Gardeners' Chronicle.

SATURDAY, JANUARY 18, 1862.

MEETING FOR THE ENSUING WEEK.

MONDAY, Jan. 20 { Royal Horticultural (Ordinary General Meeting) .. .. 2 P.M.

THE SCHEDULE OF PRIZES this year offered by the Royal Horticultural Society is now before the public, and will we think show a determination on the part of the Society to use all its energies in promoting the interests of Horticulture. Above two thousand guineas are offered as prizes of various amount; and if we English gardeners do not astonish our foreign friends we shall only have ourselves to blame. The shows being at the very door of the Great International Exhibition, the eyes of the world will be upon us, and we must not leave a thing undone to prove ourselves worthy of the high rank that we have attained. There will of course be plenty of inclination to discover that we are not so great as we seem to be; and that the reports which reach foreign countries of Horticultural marvels in England are wonderfully exaggerated. We must render criticism impossible. Above all things we must demonstrate the great fact that Climate has been chained to the chariot wheels of English cultivators.

In saying this we do not so much refer to the small exhibitions in March and April, though we confidently anticipate good displays on both occasions; but to the great events in prospect in May, June, July, August, September, and October, which are so varied in the produce to be exhibited as to include everything worth including. Orchid growers will find themselves once more invited to contend for the honour of producing a single specimen to beat the field, thanks to the liberality of the Lord Bishop of WINCHESTER. Mr. DILKE's capital prizes for good taste in decoration are once more offered, and are sure to bring together plenty of competitors, among whom we shall never again see the barbarous examples of misapplied industry that created so much amusement in 1861. Other kinds of decoration, more strictly horticultural, will be represented by hanging baskets, Wardian cases, window boxes full of plants, Fern cases, groups of things for drawing-room ornament. Then we are to have Roses in every shape and form. September is to yield up her choicest autumn favourites, in the Schedule for which month we observe that Dahlias still hold a higher place than they deserve. And finally, as a wind up, there is to be in October a grand International Show of Fruit, Gourds, Roots, Vegetables, and Cereals; in the schedule of which the world will not be a little surprised to find Mushrooms, Cabbages, Peas, and Endive, very oddly enumerated as garden ROOTS!

We heartily commend this Schedule to the attentive consideration of not only the Gardeners of England but of the Continent, many of whom, we trust, will for the honour of their country take the opportunity of entering the lists in some at least of the classes for which rewards are offered. It will be a shame if Dutch, Belgians, and French allow the English to walk over the course.

THE inquiries now making among young men accustomed to country life, concerning the new colonies of Vancouver's Island and British Columbia, are so numerous that anything which throws the light of truth upon the prospects of emigrants thither is of the utmost value. Letters on the subject have already appeared in the *Times* and other newspapers; and we have now to add the following extract from a letter dated Victoria (the capital of Vancouver's Island), Nov. 12, 1861, which arrived by the last mail.

"The reports of the gold and the quantities brought down by men who four months ago left without a penny, would surpass belief (I speak within bounds), were it not for the evidence of the gold dust and nuggets, LUMPS OF TRUTH I call them, which the miners (all intending to return) bring with them. I was in the same house with one company of miners, three in number, who in one season took out (after paying all expenses) 260 ounces of gold. Neither California nor Australia at their richest ever gave such prizes. And what more strongly confirms the fact is this: those who from one cause or another, impatient working, gambling, or the like, come down with only a small quantity of gold, sing the same song, and will be off with the spring to the regions round Cariboo and the head waters of the Frazer and Thompson to try their luck again. The English papers can fairly and honestly encourage emigration hither; not of gentlemen, clerks, and office seekers, but of men determined to avoid loitering round towns, and to go straight to their work as soon as they can. Why should foreigners get all the prizes, when any man resolved to dig, however inexperienced, can make money in the mines enough to buy and stock farms and take root in the soil. It is a climate to breed men—just enough cold to brace the energies, and heat enough to render the change of summer pleasant. The test is, *English women keep their colour here*; the only place in the world except England where they do!"

It is not because of the gold diggings alone that we publish this important letter. It is by no means to advise men to go out merely to pick up gold. Our object is to show them how, by a little labour in the gold fields, they may easily acquire the means of becoming lords of the soil. Government grants of land may be bought, we believe, for something like a dollar an acre. Only think of the certainty, by a few months' rough work, of acquiring a freehold estate with money enough into the bargain to get it into working order. Swarms of people are pushing on to the Cariboo mines, and those people must be fed. They must have corn and fresh meat, and butter, and eggs, and fresh vegetables—in short, all sorts of produce horticultural and agricultural. Those who grow such produce will receive at second hand the precious metal collected in the gold fields without the labour and hardship of digging for it. Surely that is a prospect worth looking at. Intelligence and industry will thus secure their reward, without in any way interfering with the mere brute force of the ordinary navvy; and young men who in this country have no better prospect before them than hard work while young, and perhaps an old age of poverty, may all, by prudence, even without strict economy, ensure the possession of estates which only the few can hope for in any old country. Here if a gardener contrives to save a little money, he generally endeavours to secure an independence by going into trade; he becomes a little nurseryman or a fruiterer, or keeps a seed shop; and in all probability, as many unhappily know to their cost, loses all that he had built his hopes upon; or at the best but exchanges one kind of toil and servitude for another. Why should he now incur such risks, or we might rather say, risk his all upon speculations which are scarcely more certain than a throw of dice.

THE other day a Correspondent signing himself CLERICUS asked "why SALSAFY and SCORZONERA seed bought in England never grows, while that bought in Paris is always good." To this we have the following reply from *Quo*. "Much of the seed bought in England is of Parisian growth, and very much of English growth; and seed obtained in our own country has never failed to germinate, excepting in cases of a wet and cold summer and winter like that of 1860, when the seed was imperfectly ripened. Many other seeds are also similarly affected by such an untoward circumstance. I have before me records of growths of English saved seeds, that establishes the fact of its invariable vitality beyond dispute. There is no mystery in the matter, let CLERICUS obtain his seed from some house of repute, and he will not be disappointed in the result."

We hope that *Quo* is right; but at the same time we have to remark that it must only be of late years that this sort of seed can be bought alive in English shops. Had it been otherwise we would ask why, for nearly 30 years, the Horticultural Society was always obliged to procure the seed from Paris for the supply of its Fellows, who were loud in their complaints that their crops from English bought seed were invariably bad or a total failure—a complaint, by the way, entirely consistent with our own experience, and which CLERICUS shows may still be made. Our own belief has always been either that Salsafy and Scorzonera being largely grown in France, the French seedsmen always took care to provide fresh seed, while with us they were such trifling and uncommon crops that it was not worth while to be particular as to its quality; or else that the seed saved in England was insufficiently dried, put up damp, and thus destroyed.

Now that the value of these esculents, two of the very best among minor dishes, is beginning to be known, it may be expected that demand will rise, and supplies become of better quality.

—— WE have already at p. 26 of our present volume briefly alluded to the new race of GOLDEN TRICOLOR-LEAVED PELARGONIUMS, consisting of varieties of extreme beauty of foliage. The group may indeed be regarded as an acquisition of no mean order, to the class of half-hardy ornamental-foliaged plants, and as one which cannot fail to make way in public favour. Such at least was the impression made on us by the plants as we saw some of them growing last season, and as we hold to our opinion, notwithstanding that the "tricolor-zoned Geraniums" have met with some detractors.

There has been for a considerable time in cultivation a series of varieties of the white and cream-coloured Variegated Pelargoniums, in which a zone of more or less intense rose-colour has been superadded to the other markings, and in the more characteristic of these the variegation has an exceedingly pretty effect. It has happened, however, that the better varieties have partaken for the most part of the delicacy of constitution which in many, if not in all cases, is coincident with the semi-albinism of the plants, and on this account they are collectively, from their constitution, to be considered rather as choice conservatory plants than as adapted for the flower garden. Some of them, nevertheless, are suitable for the parterre when favourably treated as to soil and situation, and in these the additional roseate markings are to be regarded as so much improvement on the plainer appearance of those which are non-zonate. The coloured zone, it may be remarked, corresponds with the dark belt which is met with in the common zonate green-leaved or "horse-shoe" Pelargoniums as they are commonly called.

The golden tricolor-leaved Pelargoniums now more specially referred to, as far as we have seen, appear to have the good property of a free though not robust habit of growth, which we have mentioned many of those with albescent variegation seem to want. Hence they will be more suitable for flower garden purposes, for which indeed their charming foliage will, we imagine, render them invaluable. It would even seem, from the experience of Messrs. E. G. HENDERSON & SON, to whom the public are indebted for the best varieties, that the beauty of their foliage is better developed outdoors than in a more confined situation; and of the plants we saw at the Wellington Road Nursery, certainly both those in the open beds and those in cold airy frames were intensely coloured.

There are at the present time two varieties of this group of especial beauty, namely Mrs. Pollock and Sunset, which differ but little perhaps in merit, and not much in general character, but yet are distinct enough for purposes of cultivation on account of their dissimilarity of colour, the former having both its green and the red zone of a darker, while in the latter they are of a lighter hue, and the zone decidedly brighter. Something of the same characters of colour and marking, but less decided in tone, are to be seen in the older

varieties called Golden Cerise Unique, Golden Vase, and Golden Tom Thumb, from some of which we imagine the newer and more distinctly marked sorts have been raised. We have, moreover, seen numerous seedlings from the best sorts, showing the red-zoned marking in various degrees from the earliest stages, so that we may look forward to a permanent and well-defined group, in which, no doubt, step by step, further improvements will be effected. The condition at present reached will be seen from a register of the various "points" in Sunset, the newest and liveliest of the present varieties:—The leaves are flat, even, and rather glossy, with shallow crenately-toothed lobes; the centre is a light greyish green, breaking out irregularly towards the edge; the margin for about half an inch inwards is of a pale chrome yellow, which colour is continued to meet the green, and finally overlying these and in position corresponding with the irregular junction of the green and yellow, is a regular and continuous zone of bright rosy salmon, or salmon orange, which where overlying the yellow shows all its brilliancy of tint, but appears deeper-coloured and of a brownish red where overlying the green parts. These bright red zones, therefore, are evidently only the ordinary familiar "horse-shoe," altered like the normally green portion of the leaf to a distinct colour by some mysterious constitutional change.

Whether, therefore, for cool conservatory decoration, for vases, and for the margins of beds, we cannot but recognise in these more recent Golden Tricolor-leaved Pelargoniums materials of the highest value in an ornamental point of view. Their free-growing branching habit will keep up a constant succession of the younger and brighter coloured foliage, but it will be found that even on the older leaves the markings are so well defined as to lose but little of their effect by age; certainly not more than would ordinarily occur in the case of most other very brightly-coloured leaves.

These red-zoned Variegated Pelargoniums or Geraniums, as some people still call them, are separable, as will appear from the foregoing remarks, into two divisions,—(1), with golden, and (2) with silver variegation, for which groups it may be as well to adopt the nomenclature of the *Florist*, which calls the one *Golden tricolor-leaved*, and the other *Silver tricolor-leaved*. Of the first, we strongly recommend cultivators to obtain, if they do not already possess them, the varieties previously mentioned, namely Sunset and Mrs. Pollock; and of the second, in which there is a greater choice, the Queen's Favourite, Picturatum, and Burning Bush will be found amongst the best marked sorts.

EXTRACTS FROM MR. J. G. VEITCH'S LETTERS ON JAPAN.

(*Continued from p.* 24.)

YOKUHAMA, *September* 21, 1861.

No. XV. Since the 4th I have been stationary here, with the exception of a short excursion into the country for two or three days. My time has been principally occupied collecting plants and packing them. Seeds are only just commencing to ripen, so that there is little to be done in that way as yet.

The following sketch explains the mode of training of which I made mention in my last.

The Japanese say that their object is to combine the means of shade, a current of air for the trees, and an easy way of gathering the fruit, to obtain which they train them as they do. Their mode consists in erecting a strong trellis work (*d d*) about 7 feet high, which is spread over the piece of ground where the trees are planted. The bearing wood is tied along this trellis, and pruned, &c., as we do in Europe.

The state of affairs here at present is such that there is no possibility of my being allowed to go to Fusi Yama or anywhere beyond the treaty limits. I would ask Mr. Alcock directly if I thought there was any chance but I can assure you that no one would be allowed to go. I do not think Mr. A. himself would risk it again.

I have been trying to come to some conclusion as to the relative value of Japanese timber trees. It is however, somewhat difficult to get correct information when one does not fully understand a language. I enclose you the result of my enquiries, which I think, is tolerably correct. This list comprises all the woods in common use.* The Japanese Elm (No. 7), is a very fine tree, and the wood is beautiful. It is altogether different from our Elms, and apparently a much faster growing tree. I hope to be able to send you a large quantity of seed of one or two species.

Two other gentlemen and myself have made a trip some 16 miles into the country since I last wrote to you. We rode ponies to a village called Kanasawa, 10 miles from Yokuhama. This we made our head-quarters, and from thence proceeded in different directions to explore the country. We put up at a Japanese hotel, and lived partly after Japanese, and partly after English fashion.

There is a very fine old Buddhist Temple near the village, which though now falling into decay, bears traces of having been grand in bygone days. The chief employment of the inhabitants of Kanasawa is farming. The various kinds of Millet were mostly all harvested. Cotton and Beans were being gathered, after which comes the main crop of Rice.

There are also a great many large Salt Pans here which give employment to a number of people. They have a large shallow kind of docks into which the water from the sea can be allowed to enter whenever required. The deposit left on the beds of these docks is put over a sharp fire. Water is added and the salt is cleaned and becomes fit for sale. Large quantities are sent into the interior every day at about half a farthing a pound.

MODE OF TRAINING FRUIT TREES IN JAPAN.

The above sketch is taken from a large fruit garden at Kawasaki, near Yeddo.

EXPLANATION.—*a, a, a*, &c. Trunks of Pear trees.—*b, b, b*, &c. Supports of trellis work.—*c, c, c*, &c. Young shoots before being pruned or tied down to the trellis work.—*d, d, d*, Trellis work to which the bearing wood is tied.

Some 6 miles from Kanasawa is situated the tomb of Toritomo, at a place called Ka-ma-Kura, once the residence of the greatest Japanese rulers. Before there were emperors the great men were styled generals. Yoritomo is supposed to have been the greatest general Japan ever had. His place of residence was generally at Ka-ma-Kura. The town itself and its vicinity show signs of large sums of money having been expended. Deep cuttings through the neighbouring hills to facilitate the approach to the town, fine roads and avenues, numerous large temples, one of the largest idols in the empire, a convent and many other objects of interest, are all said to have originated in the time of Yoritomo.

The people were most civil and obliging. The priests are the only people who show any signs of dislike. Whenever they saw us entering the grounds near a temple they immediately ran and shut the doors of the different buildings.

I enjoyed the trip exceedingly. The scenery was beautiful, and, as usual, every place had a neat and happy appearance. I will describe to you what plants I saw hereafter, several of which are very interesting. I did not in this journey meet with either Sciadopitys or Thujopsis, although certainly two of the finest trees in Japan. Business and affairs generally here and Nagasaki are going on just as usual. No immediate danger is anticipated, although no one would be surprised to hear of a second assault at any moment.

The little I picked up of the Japanese language last year comes in most advantageously, and I find it much easier to get on now than on my first visit. The people are as civil as ever, delighted to see you wherever you go, and invariably supply you with tea, &c. The more I see of them the more I like them; they always appear so happy and comfortable. They have but few wants, and those few easily procured; no cares; living in a beautiful country they often appear to me to be as happy as human beings possibly can be.

They have the great superiority over the Chinese that they delight in cleanliness. They are always clean and neat themselves, and their houses and everything connected with them are invariably as well arranged as any establishment in England. The greatest difficulty I meet with is that one cannot depend on what the people tell you. Ever ready to promise but seldom performing. Enclosed herewith are two packets of seeds, collected at Tientsin in the north of China, given me by a friend. They may probably be good. I know nothing of them myself. J. G. VEITCH.

YOKUHAMA, *Sept.* 27, 1861.

No. XVI. A steamer being about to leave immediately, to try and catch the China October mail, I take advantage of it to write you a few lines. This note will probably reach you at the same time as my letter of Sept. 21. Respecting the enclosures herewith, the first is a list of bulbs which I have sent on to you by this mail. They will come as a parcel *viâ* Southampton. There is no particular remark to be made about the Lilies; 400 are probably new and the finest sent home.

The second enclosure is a branch of the large coned Pinus, of which I sent you cones last year, but could then get no specimen. I have succeeded in getting one of it now, and I trust to be able to get more seeds. It is I think the finest true Pinus in this part of Japan. The foliage is very glaucous, as you will be able to see by the enclosed foliage, and without any doubt it may be said to be perfectly hardy, as it grows near Hakodadi, as well as in this neighbourhood. I send this small piece by post, trusting it may enable you to get the species determined. J. G. VEITCH.

(N.B. This has been examined by Professor Lindley, who finds it to be the rare P. Koraensis of Zuccarini; see *Gardeners' Chronicle*, 1861, p. 1114.)

NEW GARDEN FERNS.

TRICHOMANES FIMBRIATUM, *Backh. Cat.* 1861, 12.

Caudex creeping, short. Fronds erect, *broadly ovate, or ovate-lanceolate*, 6 to 9 inches high, *bi tripinnatifid*. Ultimate divisions ovate-acuminate; when not fertile attenuated into hair-like points which form *a lax fringe nearly half an inch long.* Stipes erect, 3 to 5 inches long, very *broadly winged to the base*, and, like the rachis, clothed with velvety ferruginous hairs. Involucres sub-cylindrical, sunk at the base, spreading at the mouth, but not two-lipped; very numerous, sometimes terminating almost every segment. *Backh. MS.*

This West Indian plant is evidently allied to T. Kaulfussii. Like it the fronds have a broad wing to the rachis connecting the pinnæ and continuing down to the base of the stipes. The fronds, which are broad at the base, show a tendency to assume a triangular-ovate outline. Thus in their shorter and broader figure they differ remarkably from T. Kaulfussii, as they do also in being tripinnatifid. The pinnæ are pinnatifid more than half way to the secondary rachides, which are, like the primary ones, thus furnished with a broad wing, almost free from veins. The segments when sterile in the fertile fronds, are obscurely and somewhat sinuately toothed, and the whole of the margin is sparingly ciliated with forked hairs; when fertile the teeth are elongated and terminate in a rather large involucre. In the sterile fronds the teeth are often suddenly acuminated and then lengthened out into long, bristle-like points, which form the fringe alluded to in the specific name adopted by Mr. Backhouse, by whom the plant has been imported; but these attenuated points do not appear to be constant, and we are not sure they may not be in some way connected with abortive fructification. It is a very beautiful species, and is cultivated in the very rich collection of J. Day, Esq., of Tottenham.

TRICHOMANES SUPERBUM, *Backh. Cat.* 1861, 15.

Caudex thick, very short, creeping, chaffy. Fronds triangular-ovate, 2 to 3 feet high, and 1 to 1½ foot wide, triquadripinnatifid, dense, deep green, clothed beneath with minute translucent glandular hairs: ultimate divisions short, linear obtuse. Stipes tall, erect, rigid, *margined to the base with a very broad and rather undulated wing*, and like the rachides densely clothed with rough reddish hairs. Involucres sub-cylindrical supra-axillary, very small, the base sunk in a deflected segment: mouth not spreading nor two-lipped. *Backh. MS.*

This is a Bornean plant, and a very fine one certainly. It is of robust habit with broad triangular plane broad pinnuled fronds, having some resemblance to those of T. Prieurii, and is moreover remarkable for the very broad and well-marked wing which is continued down to the base of the stipes. This noble species was brought to England by H. Low, Esq., jun., and is in the collection of Mr. Day, as well as in that of Messrs. Backhouse.

* This list will appear hereafter.

Trichomanes setigerum, *Backh. Cat.* 1861, 14.

Fronds tufted, 9 to 15 ins. long; linear or linear-lanceolate, *pinnate*, membranaceous, smooth, curving; *pinnæ bipinnatifid*; pinnules palmate, the segments elongated and very narrow (almost capillary), the lower ones incurved (suberect). Stipes terete, slightly hairy, 2 to 6 inches long. Involucres supra-axillary, small subcylindrical, terminal on a narrow segment, in which it is half (or sometimes almost entirely) sunk, not spreading at the mouth, nor two-lipped. *Backh. MS.*

This very elegant species, a native of Borneo, is closely allied to T. longisetum and T. Pluma, differing from the first in the absence of any wing to the stipes, and from the last in having the subcapillary segments connected from the base nearly half their length, by a flat web-like membrane. The bristle-like marginal segments are recurved. The plant has been received by Messrs. Low & Co., of Clapton, and is also grown by Messrs. Backhouse & Son, of York.

Along with this T. setigerum and T. Pluma Messrs. Low & Co. have recently obtained from Borneo, through the agency of Hugh Low, Esq., Jun., a third species, which seems to be equally distinct from T. longisetum, to which they are all allied. This we propose to call T. trichophyllum. It is of tufted habit, and has linear-lanceolate quadripinnate fronds, 8 or 10 inches, perhaps more, in height, entirely cut up into long capillary segments. The parts are, however, formed on a regular pinnated plan, and are not dichotomously divided as in T. Pluma. The involucres are supra-axillary, that is they occupy the place of the first or lowest anterior segment on two or three of the pinnules nearest the rachis; they are cylindrically oblong, tapered to the base, and quite free; the mouth erect, slightly two-lipped, and the receptacle projecting at least twice the length of the cup. The stipes and rachides are quite terete, and furnished with hair-like scales.

Trichomanes saxatile, *M.*—T. rupestre, *Backh. Cat.* 1861, 14.

Fronds tufted, triangular-ovate, pinnate below; pinnæ bipinnatifid, the upper ones decurrent; pinnules ovate, with *broad short obtusely pointed segments.* Involucres cylindrical, supra-axillary, slightly 2-lipped, but not spreading at the mouth; the base sunk in a decurved segment.

A native of Borneo, where it occurs on bare wet exposed rocks. The fronds are three-times divided, densely leafy, and remarkable for the short bluntly acute segments. The margins of the pinnules are more or less decurved, giving the surface a prettily undulated character. The stipes is terete and hairy; the rachis is also hairy and very slightly margined. It is a dwarfish but very pretty species, and is apparently a free-growing plant. *M.*

FRUIT TREES OF BRAZIL.

By Dr. Heusser and G. Claraz in the *Flore des Serres*, October, 1861.)

In this country all tropical fruits succeed very well, but in general their culture is not sufficiently attended to. Among those seldom met with, are the Mammee Apple or Wild Apricot of South America (Mammea americana), the Carambola (a species of Oxalid), the fruit of which has an acid taste somewhat resembling that of an Apple, the Genipap (Genipa brasiliensis), and the Cocoa Nut. Of more frequent occurrence are the Cajá (Anacardium occidentale), the Mango* (Mangifera indica), Tamarind (Tamarindus indica), Papaw (Carica Papaya), Cambuca (Eugenia Cambuca), Pitanga (Eugenia Michelii), an acidulated fruit resembling a small Tomato; Grumixama (Eugenia Grumixama), Jambos (Eugenia jambos), Jabuticaba (Eugenia cauliflora), Avocado Pear (Persea gratissima), Ameixas da India (Mespilus japonica), Ameixas da Terra (Ximenesia americana), and the Jack (Artocarpus integrifolia); the true Bread Fruit tree (Artocarpus incisa) is more rare owing to its being difficult of propagation. Its fruit is usually cooked by roasting in the ashes. Among the fruits which are found in the greatest abundance are the varieties and subvarieties of the Citrus Aurantium; the principal are the Laranjas da terra, or Bitter Oranges; the Selatas, which are the largest; the Laranjas da China, China Oranges; and the small and large Tangerines, the dry, and the Embigudas Oranges.

Of the varieties of Citrus medica the most generally met with are the Sour Lemon, the Cidreiro or Cidra, the Zamboeiro, and the Lime. The Pine Apple is also very common; but the most abundant of all is the Banana, from the two species, Musa paradisiaca or Banana St. Thomas, and Musa sapientum or Banana da terra. There exists a vast number of varieties and subvarieties of both, differing in size, form, colour, and odour. The Banana is probably the most valuable of all plants to the inhabitants of the tropics. Its fruit, when ripe, scarcely reddens litmus paper; it is sugary, and contains a tolerable amount of starch, as may easily be seen by the use of iodine and the microscope. The Banana has the advantage of bearing throughout the year, even if the climate is not very favourable. When once planted it propagates itself for many years and requires no further care. On the contrary, it can hardly be extirpated. In confirmation of this we have heard a remarkable anecdote: A Swiss, M. Colin Schuler, bought a house at Rio Janeiro about 15 years ago, with the intention of rebuilding it. In the court-yard grew some Bananas, which were grubbed up, and the soil having been levelled rooms were built over it which had asphalte floors. Three months afterwards the asphalte began to swell up; the swelling increased every day, till at last the asphalte rent in several places, and a young and vigorous Banana made its appearance. The Banana is also cultivated by the wild tribes, who have made some of the Banana plantations found in the midst of the forests and wild places. Others have been made by the Maroons, or fugitive slaves, who lived on the borders of the forests, in order to escape the persecution of their masters. The Opossums and likewise the bats are very fond of this fruit; the former get it on the trees as they do on the Oranges. If only a few Bananas are in a room, vast numbers of bats come there in the evening. The leaves are considered very injurious to animals.

It is generally admitted that where the culture of the Vine ceases that of the Date commences. Both are found, however, at Rio de Janeiro and elsewhere throughout the province in the gardens of foreign residents. Firm thick-skinned Grapes are the sorts cultivated, as they better withstand the influence of the climate, which is apt to cause the berries to rot; their flavour however is pretty good. The Date suffers from the same cause as the Grape, the fruit often rotting on the trees before ripening. Dr. Teuscher attributes this to the dampness of the climate. The berries which rot in a bunch of Grapes are always those on which condensed moisture has lodged. If the excess of moisture is the principal obstacle to the culture of the Vine in the forest regions this drawback does not exist in the *campos* or open country, where a much dried climate prevails. With zeal and perseverance the province of Minas would certainly furnish a supply of better wines than those of Lisbon, which are generally adulterated. The general opinion that the trials of wine-making have not been successful proves nothing; for the Brazilians, accustomed to drink wines that have been doctored, and containing a large proportion of brandy, are bad judges of the quality and bouquet of a good pure wine. We have often seen them prefer a bad Portuguese wine to good Constantia, Sauterne, or Madeira.

In the meantime, till the culture of the Vine improves and extends (which may not take place during this generation, perhaps never by the present race), the manufacture of wines from other fruits is of the greatest importance. In this also the initiative has been taken by strangers, and but few Brazilians have followed their example. It was only on the appearance of the Vine disease that chemists seriously studied wine making, and the manufacture of artificial wines; the latter branch is still in its infancy. If the use of strong or heady wines is suitable to a northern constitution, it is certain that light, aromatic, or sparkling wines are salutary to the inhabitant of the tropics. The carbonic acid facilitates digestion, and the volatile oils and compound ethers act as stimulants, which explains the preference given to drinks of this description. If it is true that the skin of Quinces contains œnanthic ether, the Quince, from its growing here would afford the means of imitating in artificial wines the flavour of the natural Grape wine. We have tasted at the French Vice Consul's at Ouro-Preto, wine made from the Pine Apple, from the Jabuticaba (Eugenia cauliflora), and from the Passiflora quadrangularis, which many have taken for Spanish wines. He also made wines from the Jambos, and from the Pichiricas or Pingiricas (a black fruit of some dwarf Melastomaceous plant), Oranges, Aracas, &c. He ferments the bruised fruits with a little water, and when the brisk fermentation is over he strains the liquid through a cloth and adds 8lbs. of sugar per barrel, and a fresh fermentation commences; when this ceases he adds eight bottles of brandy or spirit per barrel; the barrel contains from 26 to 28 bottles. [According to this proportion the wine contains more than one-third part of brandy]. The liquid having settled it is strained, and when clear it is decanted and bottled. As all the fruits employed yield likewise spirit on being fermented and distilled, the corresponding spirit is preferred for each kind of wine. Coffee berries and Bananas likewise afford an excellent spirit. M. Dietrich, of Cantagallo, makes an effervescent or sparkling drink, which he flavours with different fruits, especially the Pine Apple. By fermenting Tamarinds with a portion of sugar, a good wine, rich in tannin, may be obtained. The Caja (Anacardium occidentale), owing to the quantity of tannin which it contains, likewise furnishes an excellent wine. Dr. Teuscher is trying to make a light wine similar to Sauterne. The juice of Oranges is usually 7° to 7½° Beaumé; by adding 2 ounces of sugar per bottle, we get 10° Beaumé; and by adding 4 ounces, 13°. It is well to add some powdered gall-nut. The first fermentation lasts for about 6 weeks; at the end of this time it is strained and kept in large jars for about 6 months. Fermentation having then ceased the liquor is bottled off. In this way Dr. Teuscher has obtained very satisfactory results.

* The Mango has a fruit as big as an infant's head, ovate, with a golden skin, speckled with carmine, and a Greengage flavour. It must, however, be admitted that on tasting this delicious fruit for the first time a slight turpentine flavour is experienced.

BOTANIC GARDEN, JAMAICA.

(Extracts from the Report to the Directors for 1861.)

The energies of this institution have again met the usual exigency during the past year in supplying the demand for useful plants. The ornamental, although eagerly desired, can but sparingly be supplied from the reduced limits of this garden, being reduced to three quarters of an acre under close cultivation, by causes well known and previously explained; tender plants soon perish under the drip and shade of a densely crowded collection. But I have to report that a prospect of relief is afforded for this long standing calamity by the formation of a new garden at the site of which ground operations are being vigorously carried on, preparatory to the execution of a design efficiently to meet the wants of the island practically, and to represent scientific botany according to its most approved and modern form. The re establishment of this institution has long occupied a prominent place in the minds of the public, and it is not more desirable and necessary than the altered circumstances of the country, and the advanced state of science and art demand. But as the transformation of a wilderness into a garden will necessarily be a work of time, this branch of it will have to be kept up to continue supplying the community with plants, and until those now established reproduce themselves by seeds, when they will be secured to the country, and their transfer made practical and easy.

The dissemination of plants during the bygone year numbered 1279 and 854 papers of seeds widely distributed. Among the former are 285 plants of the Nutmeg and Cinnamon. The liberal distribution of these plants of late years has rendered them so common (at least at this end of the island) that plants of them are commonly offered for sale in the streets of Kingston, which may render an extension of their cultivation at this institution unnecessary.

The Cam and Sappan dyewoods and other plants of economic merit have decided attractions for popularity, and I am glad to say that the more their intrinsic merits become known, and that plants can be obtained here, the demand increases in proportion. They possess advantages of no little importance, not likely to be overlooked by the immense saving of labour in establishing them, where soil and climate is propitious for their culture, thereby occupying large tracts of land, and rendering them of permanent and increasing value, which at present are an incumbrance to the proprietor. A slight reduction in the price of Camwood has lately taken place—the current price being 24*l.* per ton. The tree grows to the height of 50 feet and upwards, and in Bath no tree can thrive better. I have a large stock on hand of fine healthy plants of this tree for distribution. The marketable value of the Sappan wood is not so great, being from 9*l.* to 15*l.* per ton; but the plant has the advantage of robust and rapid growth, arriving at early maturity, and will accommodate itself almost to any soil or situation; arrived at maturity, it has but little albumen or sapwood to take off. The roots of this tree contain more dyeing matter than either the trunk or the branches. I have only about 50 of these plants on hand for distribution, and regret to inform you that the tree which supplied me with seeds and plants for distribution has unfortunately been cut down by an order of the directors, inadvertently given in my absence, and it may take years to recover sufficiently to meet the supply of an increasing demand.

The introduction of plants has not been so large during the past year as on former occasions, being about 30 species; but they possess an interest of no ordinary character, and are well adapted for cultivation in this island. Among them are Myroxylum peruiferum, which produces the true and well known balsam of Peru; not however found there, as the name infers, but chiefly in the Republic of Salvador; and its export from thence in 1855 is stated at 22,804 lbs., and value of 3,965*l.* 8*s.*; each tree yielding from 2 lbs. to 3 lbs. The wood has a close grain and rather darker than that of mahogany, takes a finer polish, and retains for a long time an agreeable fragrance of Coniferous plants. Nine species have been added to the collection. Among them are the Norfolk Island Pine (Araucaria excelsa), and two other noble species of the same genus; the funeral Cypress (Cupressus funebris), with other species of allied genera. This Cypress is indigenous to Chinese Tartary, where it attains a height of 60 feet and deserves special notice for its graceful, pendulous, and unsurpassed elegance of growth. The timber of this class of plants for durability is all but imperishable. The gates of Constantinople which withstood the destructive influence of time 1100 years were of Cypress.

But, desirable and useful as the introduction of these plants really is, they must give way, in point of pecuniary importance, to another class and description, now of universal repute, and absorbing the attention of every European nation having colonies in the tropics. I refer to the genus Cinchona, as affording, by several of its species, one of the best and most important of all known febrifuges and tonics—the Quinine. Soon after this time last year, I was liberally supplied with seeds of three species of this plant, viz.:—Cinchona nitida, C. micrantha, and C. succirubra, direct from Peru and Guayaquil, sent by desire, at the expense of the English Government, and recommendation of Sir W. J. Hooker, Director of the Royal Botanic Gardens at Kew, to whom this island is largely indebted for many valuable plants. These seeds were sent with a view of rearing plants, to carry out an experiment of establishing its cultivation here on a large scale, and I have now the satisfaction of stating, that I have succeeded beyond expectation in rearing the plants; and have several hundreds of them on hand in a healthy condition, many of them ready for planting out. The two first named species produce the finest grey bark of English commerce,—so named from the prevailing colour of the epidermis. The alkaloid contained is from 2 to 2·22 per cent. of the weight of the bark,—almost entirely consisting of cinchonine. The Cinchona succirubra, or Cascarilla colorada of the Spaniards, produces the red bark of commerce, and is by far the most valuable of all marketable barks; the current price being 6*s.* per pound for very ordinary quality. The alkaloid of this contains from 3 to 4 per cent of quinine, being nearly twice the quantity produced by other species; and, fortunately, the plant has also the advantage of a stronger constitution than the two former, and is found in localities of several thousand feet elevation less than them,—in moist ravines, where Palms and other plants requiring a rather high temperature are abundant. The climate where these Cinchona plants are found to arrive at greatest maturity is naturally moist, and at an elevation above the sea varying from 2000 to 6000 feet. Those producing grey bark are indigenous to the forests of Huanuco in Peru; and the red bark is found near the foot of the Chimborazo in Guayaquil, at a temperature, during the months of June, July, August, and September, of mean minimum 68½°, and mean maximum 73½°, the lowest temperature in July being 57½°, and the highest during the same month 80½°, with much moisture in the atmosphere. Nothing can more exactly correspond with the climate of our mountains and hilly lands in the interior, at similar elevations, or less, when moisture prevails,—and I have known the thermometer stand as low as 55° at an elevation of 4000 feet. It must be observed that, as moisture reduces the temperature of the earth and atmosphere, it is in a great measure equivalent to altitude, in like manner as high and dry climate is to that of moisture, and which influences the growth of plants accordingly. These Cinchona trees grow to a lofty size in their native forests, attaining a height of 50 feet, and in some instances 70 feet, and 30 inches diameter, producing 253 lbs. of dry bark; and this will give some idea of the value of an acre of land planted with these trees. When arrived at maturity, if planted at distances of 25 feet apart, an acre will contain about 70 plants, each producing 253 lbs. of bark; and this at

6s. per lb. would amount to the surprising sum of 5813l. The native forests of Cinchona are fast giving way before the axe of the barkers, and it is firmly believed by the best judges and eye witnesses that the supply of these barks will soon become too small for commercial purposes;—and the price is fast on the increase, on account of the scarcity of bark, and the general and increasing interest of the tree producing it to meet future demands. The English, Indian, and other Governments are sparing either pains nor expense to establish extensive plantations of Cinchona, wherever the plant is likely to thrive. In 1854, the Dutch Government commenced its cultivation, in Java, with half a dozen plants, which reproduced themselves, by seeds, in 1857, and, by the end of 1859, the plants numbered 100,133—some of them being over 20 feet in height. This rapid progress was certainly not made under more favorable circumstances than this island presents; and I mention it to prove how much can be done by an industrious nation, by well directed energy, to add to the wealth of a community, at a very trifling expenditure of money, labour, or time; and I have no hesitation in saying, from my knowledge of this climate, and experience with the treatment of the plants, that the Cinchona plant can be grown here to any extent, and to as great perfection as it is in Java, or elsewhere, more particularly by skilled labour, placed under proper management. And I therefore hope that the successful issue of this experiment in my hands may not be lost sight of, by either the English or this Government, but meet with approbation, and a desire to cultivate the plant here;—and this is not a question, like many others, involving a great expenditure of labour and money, but one which requiries to be assiduously conducted on practical principles, when cultivation might rapidly extend to many parts of the island, clothing the mountains to their summits, ultimately proving as remunerative as our richest vales, and thereby improving the social condition of the country.—*West India Magazine for November* 1861.

Home Correspondence.

Strawberries.—I have had a supply of plants of Marguerite and La Constante, two good foreign Strawberries, sent to me by my fragrarian friend, Mr. Gloede. He has likewise kindly furnished me with five seedling Strawberries of Mr. De Jonghe's, raised in Belgium, viz., Emma Robert Trail, Lucas, Choix d'un Connoisseur, and La Grosse Sucrée. He has also sent me Boisselot Seedling No. 1, and La Meudonnaise. He says that La Meudonnaise is a very distinct Alpine, with fruit rather larger than the others of that class, and with a very neat and peculiar foliage; that Boisselot Seedling is late, and liked for its brisk flavour; that Mr. de Jonghe says the British residents at Brussels esteem La Grosse Sucrée highly, but that he (Mr. Gloede) does not like it so well as La Constante, raised also by Mr. Jonghe, and which Mr. Rivers and myself both esteem most highly. My established Marguerites have wintered well, and I have great hopes of being able to praise their fruit and general good qualities. I have fine plants of Bonté de St. Julian and Marquise de Latour Maubourg. The latter cropped wonderfully here last season; the former I have not yet proven. Mr. Rivers has kindly given me Galande, another kind of Alpine, which, he says, is an improvement on the old Alpine, from which stubborn race it was derived. Mr Gloede, however, says, La Meudonnaise will be found superior to it. Mr. Rivers has kindly sent to me the Crimson Queen, nice plants, of which he speaks most highly, as well as of La Constante. Mr. Turner, with his usual kindness, has supplied me with the Frogmore late Pines, which, as plants, I like, Blackbird, and Rifleman, apparently a seedling from the Queen; at any rate there is a deal of Queen blood in it. Through Mr. Veitch Mr. Gloede has given me Eclipse; and Mrs. Clements, the wife of the rector of Worleggan, near Bodmin, has, as kindly, sent to me two of her seedlings, which appeared from the forced fruit to be good, and would have been better, had they travelled in a more unripe state; their names are King Arthur and Scarlet Cluster. King Arthur was sent as a forced plant with a noble crop of berries on it, and I thought it both handsome and good. It was admirably packed, and the fruit was uninjured. Of all the above Strawberries I hope in due time to be able to give a good account. I may just add, that Mrs. Clements also sent me a noble and most excellent Pear, grown at Wadebridge, Cornwall, called Beurré Clairgeau, of which Mr. Gloede speaks thus:—"I have 10 trees of it; it was raised at Nantes some years ago; in dry soil it is first rate, and the tree is a tremendous cropper." I fancied it to be nearly as good as Marie Louise, and as large and handsome as Duchesse d'Angoulême. *W. F. Radclyffe, Rector of Rushton, Blandford, Dorset.*

Rain in the Lake Districts in 1861:—

	Ins.		Ins.
January	13.5	Brought forward ..	41.2
February	9.2	July	11.5
March	11.5	August	12.0
April	0.3	September	10.0
May	2.7	October	5.0
June	4.0	November	17.0
		December	5.5
	41.2	Total	102.2

R. Aitken, Gardener to J. G. Marshall, Esq., Monk Coniston Park, Lancashire.

Muscat Hamburgh Grape.—Permit me to add a few words to what has already been said in favour of this Grape. A Vine here two years old, from the eye, showed at least two dozen bunches last season; on some of the shoots were two, some three, and even four fine shouldered bunches; of the whole I left three, which set as well as could be desired, and when ripe weighed nearly 6 lbs. Two grafts put on an old Vine in an early house in March, 1860, produced five fine bunches, which were ripe in June, 1861. My employer pronounced the flavour of the produce of both Vines to be first rate. *Charles Allen, Gardener to J. B. Glegg, Esq., Withington Hall, Cheshire.*

Heating Small Conservatories and Greenhouses.—Having repeatedly seen inquiries made in your columns as to the best method of excluding frost from these structures, I beg to record my experience in the matter. My house is exactly 12 feet square, has a back wall of brick 10 feet high, and the top sashes slope to 5½ feet in front. Excepting behind it is glazed all round, down to within 6 inches of the outer surface soil. The entrance is at the side, the door being also glazed, where a thermometer constantly hangs externally at 5 feet from the ground. When this does not descend to the freezing point, I dispense altogether with the introduction of artificial heat, but upon an indication of frost, I place a lighted Joyce's stove in the centre of the house, and keep it burning as long as that degree of cold continues. This stove has been improved by Mr. Nash, of Newgate Street, who manufactures it, and I find it to answer the purpose capitally. The temperature can be regulated as desired by means of a sliding door at the bottom, and a movable apparatus at the top to give vent. With me it is invariably kept at from 40° to 50° of Fahr., except when the sun may exert some influence, when it may rise to about 55°, but I never allow it to exceed that. With the stove is supplied a fuel purposely prepared, from which neither smoke nor dust is produced, and my plants exhibit the most perfect health. Should the heat be found too dry I place a tin vessel (also supplied with the stove if desired) filled with water, on the top, which, by slow evaporation, keeps up a nice healthy moisture, and on this account the plants need not be watered so frequently as might otherwise prove requisite. My stove is of the smallest size sold for greenhouses, and its cost is 21s.; but other sizes may be had, proportioned to the extent of the house. When properly managed it burns for 12 hours and more, without any attention after being first lit. My gardener does this when he comes to his work in the morning, and again in the evening when he leaves, carrying the stove outside to rake out the ashes, and otherwise adjust it, but the better plan would be to have two stoves, so that one may be always ready to replace the other. I use neither mats nor any other kind of covering for protection. The warmth produced from the stove is quite sufficient to prevent it from forming on the glass. I only lately obtained it, but during the severe frost we had here for more than a week in December the temperature inside of the house never was below 40°. *Old Subscriber, Whitland.*

Bougainvillæa glabra.—My experience of this, so far as it goes, leads me to believe that it may be flowered at any season, provided the wood is well ripened, and the plant sufficiently rested by gradually withholding water till it becomes quite leafless. It may then be kept in any cool dry place till started into growth, and if brought forward at intervals I have no doubt that a constant succession of bloom may be obtained. As it flowers on the young growth, and that of medium strength, it requires a little careful pruning and thinning, and when growing all strong shoots must be stopped and tied down. Our plant, so favourably noticed in your report of this place last year, was treated as has just been mentioned, and it continued growing and blooming freely till the middle of October, when it was put to rest. Before concluding, allow me to notice another plant one seldom sees, viz., Lagerstrœmia indica, which requires similar treatment to Bougainvillæa glabra, and is a fit companion for it. *J. Sheppard, Great Woolverstone Park, Ipswich.*

Neal's Pastils.—I don't think these have any effect upon greenfly, but I find them very injurious to young and tender leaves. I would not use them if I had them for nothing. The best thing I can find for killing greenfly, and the cheapest, is Tobacco paper. It is as easy to burn as the Pastils, and if good certain in its effects, and it does not hurt even the most tender foliage. *J. Cole, Keyfield Nursery, St. Albans.*——It is only an act of justice to the author of this contrivance to say that my experience of its effect is entirely opposed to that of your other correspondents. A few days ago I put three pastils in a pit 20 feet long and 8 feet wide, which was filled with Verbenas, Petunias, Heliotropes and other bedding plants. The lights were double matted to keep in the vapour. After ascertaining that the pastils were ignited the pit was shut up and left until the morning. On examination I found the pastils consumed, the plants perfectly uninjured, and the aphides (which were very numerous) quite dead. I have narrowly examined the plants again this morning, and have only found one live aphis in the place. I am not surprised that such tender foliage as that of Cucumbers should be injured by the fumes of the pastils at this sunless period of the year; nevertheless a friend of mine used them in his Cucumber house early last spring with complete success, the only plants that were at all injured being some very young Balsams which were placed close to the roof of the house. I consider it a capital invention. *E. J., Henley-on-Thames.*

Marrows and Pumpkins.—It may not be generally known that these make excellent pies at this time of year, and that during a season like the present when Apples are scarce they are very serviceable. I prefer them to Apples, for many kinds of the latter get almost tasteless by this time. The way we use them is cutting them small, say the size of Horse Beans, and putting a little allspice and shop Currants with them, and thus managed they almost equal mince pies. *J. Cole, St. Albans.*

Mushrooms.—In answer to your Correspondents "A. J., Tottenham Park, Wilts," and "A. J., Roxburghshire," who remark upon the scarcity of Mushrooms last autumn in those districts, and ask if it was general throughout the country, I beg to say that in this locality the case was quite the reverse, for I never saw them nearly so plentiful, a great many bushels having been gathered. *T. W., Eastwell Park, Ashford, Kent.*

Rainfall in 1861.

	Inches.		Inches.
January	1.26	Brought forward	.. 11.61
February	.61	August	.. .83
March	2.48	September ..	.. 1.27
April	.52	October	.. .48
May	.90	November ..	.. 4.01
June	2.22	December ..	.. .83
July	3.62		
	11.61	Total ..	.. 19.83

D., Dorwards Hall, Witham, Essex.

Notes upon Ferns.—The great national Botanic Garden at Kew keeps pace with, if it does not indeed lead the popular taste in matters horticultural. We need not be surprised therefore to find that there is a better collection of Ferns there, whether of tropical, temperate, or hardy species, than is to be found in any other garden in the world. We are indebted to this establishment for many of the most beautiful of the novelties among this family which have recently been introduced. Among these are two most interesting species, both obtained from Ceylon—the one Cyathea sinuata, the prettiest and neatest of all the tree Ferns, the other Helminthostachys dulcis, interesting as belonging to a division of the family of which we have but few representatives. Several examples of the Cyathea were sent to Kew (with the other plant above named) by Mr. Thwaites, the Director of the Botanic Garden at Peradenia, Ceylon. So far as is at present known this plant is confined to that island (though I have a specimen of the same plant said to have been gathered in Penang), and it seems to be rare even in Ceylon. It grows only in the moist and sultry gullies among the mountains, as I am informed by a friend who is living there. The stems sent are about 2 feet in height, but not thicker than a man's finger. Its fronds, instead of being bi- or tri-pinnate, are simple, strap-shaped, and dentate along the margins; with those botanists who consider difference of habit a sufficient character for the separation of genera, this would, although corresponding with Cyathea in fructification and venation, be looked upon as the type of a new genus. We thus find that Mr. Smith has described this plant under the name of Schizacæna sinuata. When first it was imported, about a twelvemonth ago, several experiments were tried before the best means of growing it could be ascertained. It was found that if exposed, even in a close and moist house, the fronds became yellow and were soon lost; it is now cultivated beneath a glass case and succeeds admirably. In the "Vegetable Kingdom" we find a triple division among the plants which we cultivate under the name of Ferns. The bulk of the species goes into the division of the true Ferns; a second group contains those which, like the Angiopteris, the Marattia, and the Danæa (which is so difficult to grow), have their spore cases combined into masses instead of being distinct; and a third division, of which the Ophioglossum is the type, has a straight instead of a gyrate vernation, which characterises the others. It is to this latter division that the Helminthostachys belongs; we might, therefore, suppose that, like our British Botrychium, it would prove to be a very difficult plant to manage, but fortunately this does not seem to be the case. I am told that in Ceylon, "It grows naturally in the Rice or Paddy-fields, and at some seasons of the year is almost an aquatic, while at others the soil in which it grows is quite dry." Under cultivation it seems to grow very freely in soil kept more than usually moist. In its own country it has a season of rest, but it will probably prove to be one of those plants which, if they are allowed to become dormant while under that kind of artificial treatment which we call cultivation, are extremely difficult to rouse up again into active life; keep them growing and all goes on well, they will even become finer than the native specimens, but allow them to dry off and all will be over with them. The success which has attended the cultivation of this plant leads us to hope that some of the very beautiful compound fronded Botrychiums of the East Indies may soon be found in our collections. A few specimens have already been imported by our leading nurserymen who devote themselves specially to Fern-growing. Can any one tell us if any of the Ferns belonging to this division (Ophioglossaceæ) have ever been raised from spores? or if young seedlings have ever been seen in a wild state? One of the best Ferns for a Wardian case which has lately been introduced is Polypodium (or perhaps more properly Phegopteris) sancta. It was sent from the West Indies to the Glasnevin Botanic Garden, and from thence to the nursery of Mr. Jackson at Kingston. It is a small growing, neat habited plant, which will be highly valued where space for plant-growing purposes is limited—and there are very few gardens where this is not the case. Why has it received its specific name? Is there any tradition connected with it? *C. W. C.*

Notices of Books.

Forest Creatures. By Charles Boner. Small 8vo. Longmans. Pp. 245, with many plates.

Under this quaint title Mr. Boner has produced a history of a few of the more noble or "knightly" objects of the sportsman's pursuit. The Wild Boar, the Roc, the Stag, the Fallow Deer, the Capercaile, the Black Cock, the Golden Eagle are treated of at length, but no others. It is necessary to point this out, or the name of the volume might lead to disappointment. It is in fact but a little bit of Natural History very well worked out. That is all. But what is done is well done.

As might be expected the anecdotes with which the volume is plentifully interspersed chiefly relate to sporting and its incidents; yet Mr. Boner by no means confines himself to such matters. On the contrary he takes every opportunity of introducing a description of the natural peculiarities of his "forest creatures," among which are some very curious particulars concerning the Roe. Besides these we have a chapter on the evidence that Homer was a sportsman; and another of 40 pages containing hints for the benefit of less experienced Nimrods than the author.

Mr. Bonar's experiences and illustrations are Continental rather than English, as indeed they must be where Wild Boars, Capercailes, and Stags are the topics; and we suspect that even the greatest of our Deerstalkers would be amazed at such battues as the following:—

"In 1537 the Archbishop Michael of Salzburg had a peasant, who took possession of a stag which he found dead in his own corn, sewed up in the animal's skin and worried to death by his hounds, he himself looking on the while. In 1562 a poacher was taken in Hesse. The Landgrave, 'in his great mercy,' remitted the sentence of death; but the man was tortured, his right eye put out, and a stag's antlers branded on his forehead. The usual punishment was the gallows. It is no wonder, therefore, that when thus protected the amount of red deer in the forests of Germany became immense; and we may form some estimate of their number when we learn that 7000 head perished of cold in a single very severe winter in Wurtemburg, and in Hesse in 1570-71, 3000 head were found frozen to death. In the summer of 1558 Landgrave Philip stalked and killed 102 good stags, one of which was a stag of 20, and another one of 18. Besides these he killed 20 more in the forest. In that year, 211 stags were delivered at the buttery of the palace at Cassel alone. In 1561 the Landgrave killed between the 1st of June and the 1st of August 81 stags, and had taken in hunting 96; besides these he still expected to shoot 40, and to hunt 60 more. Among these was a stag of 20, two were of 18, and three of 16. In this year 367 were killed, altogether; and some were stags weighing 4½ cwt., and with 3¾ inches of fat on their broad backs.

"The Margrave John George of Brandenburg, in a letter to the Landgrave of Hesse, tells him that in 1581 he had killed 677 stags, 968 hinds, and 501 wild boars. In another year Ludwig William shot, in stalking, 345 stags, and his brother 417. In the summer of 1588 the forests near Smalkalden gave, as the produce of three days' sport, 50 good stags: some of them weighed 5 cwt., and had fat five fingers broad on their backs. In another year, 1603, before the 23d of September, Landgrave Louis IV. had already killed 93 stags.

"In Bavaria, too, red deer were plentiful. In the diary kept by Duke Albert V. is carefully noted down the result of each day's sport. In one year we find 139 stags as the number he had shot 'with his own hand;' in another year 246, and so on. In 25 years he had brought down 2779 stags. And in the game book of Duke William IV. of Bavaria, 817 are marked as having been killed in 1545. And the stags of those days were unlike the degenerate race that *we* know. In 1632, in the Darmstadt territory, 472 head of deer were killed; the largest stag weighing 6 cwt., and being a stag of 24; whilst many of the others weighed no less than 5 cwt. In 1762 Maximilian von Lichtenstein shot in Saxony a stag weighing 7 cwt. 95 lbs.; and in 1723 Count Stolberg one near Agnesdorf weighing 910 lbs. And even in later times—in our own day—there were still enough to afford good sport to those who had the opportunity of enjoying it. In 1814 the present reigning Duke of Saxe-Coburg-Gotha shot 75 stags and 105 deer. The late Prince Leiningen had, as he told me, shot 700 stags in his life. He once in 14 days shot 2 of 16, 5 of 14, and 17 of 10 and 12 points each. Count Erbach had shot near 1000 in his day."

Wild Boars, and their habits, are so fully described as to make us thankful that England is rid of them, for they are among the savagest of the savage:—

"As recently as 1845, on the 7th of November, late in the evening, one of the watchers on the skirts of a wood met a boar of unusual size, and at once set his dogs upon him. But being dark he was not able to help them in their struggle, and two were killed outright, and five others mortally wounded. The boar then attacked the man, ripping up his thigh from end to end. He threw him down, and the courage of a surviving dog alone saved him from further injury. Seizing the boar by the snout, he dragged him away, and pulled him by degrees into some water close by; and though severely wounded, held him fast till aid was brought. The man's comrades soon came, and each of them was attacked in turn by the boar, which, after three hours' fight, was at last overcome."

We regret to add that the female of this creature is no better than her spouse:—

"Her bite is terrible. She tears out pieces of flesh, and tramples on her fallen adversary. She returns also to the attack, and does not wound in passing and then go on, as the male animal will do. Hence with her it is useless to step aside or get behind a tree, as you would if the boar were to rush upon you; she is not to be evaded thus. When he attacks, and there is no other help, you may fling yourself flat on the ground and you are safe; for the boar cannot wound *down*-wards, but rips *up*-wards only, as he passes and goes on. But she, were you to try such a stratagem with her, would turn it to her advantage and your sorrow; for you would never get up again whole and sound; maybe not rise at all."

Mr. Bonar claims for the Boar some good qualities; he even thinks them "highly estimable these bristly ungainly denizens of the forest," as to which we need only remark that there is no accounting for taste. At all events courtship by the beast is somewhat unrefined:—

"It is curious to see the wooing of such animal, and to observe the way in which he gives token of his love. There is little of endearment in his manner, nor does the tender passion seem to have softened his rude nature and made him gentle. Usually the lover endeavours to make himself agreeable to the object of his choice, and to ingratiate by tenderness, by a longing air, by meekness and subserviency, that says, 'I am your slave.' But with the wild boar there is none of this. He reverses the whole system of love-making as accepted both by man and brute. Instead of caresses he imparts blows; he runs at her, to whom he would make known his affection, and with his snout gives such pokes in the ribs as almost to destroy her equilibrium. He bangs her sides and gives many a dig in her flanks; a procedure, however, which does not seem much to her taste."

But we must conclude. The extracts we have given are very fair specimens of an instructive and entertaining volume.

The *Illustrated Bouquet* (E. G. Henderson & Son) has just commenced a third volume, with its thirteenth Part, containing the following subjects:—*Fuchsias Comet* and *Minnie Banks*, two very fine varieties raised by E. Banks, Esq., of Deal; the first a remarkably large broadly-expanded and very dark crimson and violet sort, said to be "the most effective of the dark Fuchsias," which it appears to be; and the second an exquisite white with rose-coloured corolla, "the most beautiful of the light-flowered section." A group of *Epacrises*, handsome sorts, but without any peculiar distinguishing features, the best being *tricolor*, *Sunset*, and *Butterfly*, all having large broad spreading limb-segments. *Sedum carneum variegatum*, a pretty and novel Japanese variegated succulent trailing herb, with linear-lanceolate glaucous leaves margined with creamy white and yellow starry flowers; it is a neat half hardy plant suitable for suspended baskets, or for greenhouse rockwork. A handsome group of six varieties of *Tree Carnations* and *Picotees*. Finally a mixed plate, containing figures of *Cassia australis var. schinifolia*, a dwarf free-flowering and manageable greenhouse species of showy character, its flowers being of a rich golden yellow and its leaves elegantly pinnated; *Bouvardia Humboldti*, a Mexican plant, Bouvardia-like in habit, but with solitary white flowers having long slender tubes of remarkable length—3 to 4 inches—and a spreading limb of four lobes, the flowers thus being not unlike those of B. longiflora with the tube exaggerated; this is described as a graceful and distinct plant, blooming in succession to the winter-flowering B. longiflora and leiantha; and lastly, *Myosotis montana*, a pretty Forget-me-Not, noticed as being probably a fine seminal form of M. alpestris, and strongly recommended for early spring forcing: "it presents an exceedingly pretty object when forced into early bloom."

—— The *Floral Magazine* for December contains representations of the following flowers:—*Gladiolus Mrs. Dombrain*, one of Standish's new varieties, with the flowers rose-coloured flaked with carmine; *Œnothera Lamarckiana*, the finest of the large Evening Primroses, resembling Œ. biennis in habit; *Triomphe d'Amiens Rose*, a new variety of which every one speaks well; and two light-edged *Picotees* called *Mrs. Hole* and *Lady Elcho*, grown by Mr. Turner.—The January Number figures: *Anigozanthus Manglesii*, introduced long since by Sir James Stirling, not "Sterling;" *Fuchsias Bianca* and *Volunteer*, some of Mr. Banks's novelties, the first an elegant white with crimson corolla, the second a red and violet sort said to be distinct, but of which the distinctness and the merits are not very evident in the picture; *Fancy Pelargoniums Undine* and *Emperor of Morocco*, two of Turner's varieties described as "great acquisitions"; and two *Chrysanthemums*, called respectively *Sparkler* and *Carissima*, good sorts grown by Mr. Salter, both of which have been already noticed in our columns.

TRADE LISTS RECEIVED.—Catalogue of Imported German Asters and Stocks, Phloxes, Double Wallflowers, and other new and rare flower seeds, together with new and carefully selected vegetable and agricultural seeds for 1862, sold by J. TYNAN, 68, Great George Street, Liverpool.——JAMES CARTER & Co.'s (of Holborn) Gardener's and Farmer's Vade-Mecum for 1862. an important list of German and other flower seeds, illustrated with woodcut representations of Double Zinnias, Double Clarkia pulchella, Œnothera Lamarckiana, and hanging Fern baskets, the whole interspersed with descriptive and cultural notes; in addition to which are ample Calendars of Garden and Farm operations. For convenience of reference all matters relating to vegetable seeds, and illustrations, are printed on different coloured paper from that of the body of this Catalogue, for which, we observe, one shilling is charged.——CUTBUSH & SON's (of Highgate Catalogue of Select Vegetable, Flower, and Farm Seeds for 1862.

Miscellaneous.

A Second Crop of Fruit in one Season.—The *Corriere Mercantile* of Genoa announces the rare occurrence that all along the coast of that province the fruit trees, having previously blossomed for the second time this year, are now laden with a second crop of fruit. As the country people, however, do not expect to see it ripen, they are now gathering it for the purpose of selling it to the confectioners for candying. Apples and Pears have attained the size of a Walnut, and Plums half or a third of their usual size. Under the mild climate of Genoa the circumstance of fruit-trees blossoming a second time is of frequent occurrence; but there are few instances on record of such second blossoms becoming fruit.

Poisoning from Diseased Grapes.—A case is reported in the "Echo Médicale Suisse," of a wet-nurse, 22 years of age, who, after partaking of some Grapes which were infected with oidium, in a few hours suffered from severe gastralgia, great difficulty of breathing, vertigo, loss of memory, and delirium. She was restored to health by the administration of opiates internally, laxative injections, and the application of laudanum poultices to the stomach. For some days, however, she remained in a very weak condition, and her infant was attacked with a very violent and obstinate diarrhœa. The Editor of the "Répertoire de Pharmacie," after narrating the above case, remarks that such Grapes have been hitherto regarded as innocuous. This is the first instance, also, as far we know, of any injurious consequences having arisen from eating Grapes infected with oidium. *Pharmaceutical Journal.*

The Coffee Bug.—Allusion has been made in a previous passage to the coccus known in Ceylon as the 'Coffee Bug' (Lecanium Coffeæ, Wlk.), which of late years has made such destructive ravages in the plantations in the Mountain Zone. The first thing that attracts attention on looking at a Coffee tree infested by it, is the number of brownish wart-like bodies that stud the young shoots and occasionally the margins on the underside of the leaves. Each of these warts or scales is a transformed female, containing a large number of eggs, which are hatched within it. When the young ones come out from their nests, they run about over the plant, like diminutive wood-lice, and at this period there is no apparent distinction between male and female. Shortly after being hatched the males seek the underside of the leaves, while the females prefer the young shoots as a place of abode. If the under surface of a leaf be examined, it will be found to be studded, particularly on its basil half, with minute yellowish-white specks of an oblong form. These are the larvæ of the males undergoing transformation into pupæ, beneath their own skins; some of these specks are always in a more advanced state than the others, the full-grown ones being whitish and scarce a line long. Some of this size are translucent, the insect having escaped; the darker ones still retain it within, of an oblong form, with the rudiment of a wing on each side attached to the lower part of the thorax and closely applied to the sides; the legs are six in number, the four hind ones being directed backwards, the anterior forwards (a peculiarity not common in other insects); the two antennæ are also inclined backwards, and from the tail protrude three short bristles, the middle one thinner and longer than the rest. When the transformation is complete, the mature insect makes its way from beneath the pellucid case, all its organs having then attained their full size: the head is sub-globular, with two rather prominent black eyes, and two antennæ, each with 11 joints, hairy throughout, and a tuft of rather longer hairs at the apices; the legs are also covered with hairs, the wings are horizontal, of an obovate oblong shape, membranous, and extending a little further than the bristles of the tail. They have only two nerves, neither of which reaches so far as the tips; one of them runs close to the costal margin, and is much thicker than the other, which branches off from its base and skirts along the inner margin; behind the wings is attached a pair of minute halteres of peculiar form. The possession of wings would appear to be the cause why the full-grown male is more rarely seen on the Coffee bushes than the female. The female, like the male, attaches herself to the surface of the plant, the place selected being usually the young shoots; but she is also to be met with on the margins of the undersides of the leaves (on the upper surface neither the male nor female ever attach themselves); but, unlike the male, which derives no nourishment from the juices of the tree (the mouth

being obsolete in the perfect state), she punctures the cuticle with a proboscis (a very short three-jointed promuscis), springing as it were from the breast, but capable of being greatly porrected, and inserted in the cuticle of the plant, and through this she abstracts her nutriment. In the early pupa state the female is easily distinguishable from the male, by being more elliptical and much more convex. As she increases in size her skin distends and she becomes smooth and dry; the rings of the body become effaced; and losing entirely the form of an insect, she presents for some time a yellowish pustular shape, but ultimately assumes a roundish conical form, of a dark brown colour. Until she has nearly reached her full size, she still possesses the power of locomotion, and her six legs are easily distinguishable in the under surface of her corpulent body; but at no period of her existence has she wings. It is about the time of her obtaining full size that impregnation takes place; after which the scale becomes somewhat more conical, assumes a darker colour, and at length is permanently fixed to the surface of the plant, by means of a cottony substance interposed between it and the vegetable cuticle to which it adheres. The scale, when full grown, exactly resembles in miniature the hat of a Cornish miner, there being a narrow rim at the base, which gives increased surface of attachment. It is about 1-8th of an inch in diameter, by about 1-12th deep, and it appears perfectly smooth to the naked eye; but it is in reality studded over with a multitude of very minute warts, giving it a dotted appearance. Except the margin, which is ciliated, it is entirely destitute of hairs. The number of eggs contained in one of the scales is enormous, amounting in a single one to 691. The eggs are of an oblong shape, of a pale flesh colour, and perfectly smooth. In some of the scales, the eggs when laid on the field of the microscope resemble those masses of life sometimes seen in decayed cheese. A few small yellowish maggots are sometimes found with them, and these are the larvæ of insects, the eggs of which have been deposited in the female while the scale was soft. They escape when mature by cutting a small round hole in the dorsum of the scale. It is not till after this pest has been on an estate for two or three years that it shows itself to an alarming extent. During the first year a few only of the ripe scales are seen scattered over the bushes, generally on the younger shoots; but that year's crop does not suffer much, and the appearance of the tree is little altered. The second year, however, brings a change for the worse; if the young shoots and the underside of the leaves be now examined, the scales will be found to have become much more numerous, and with them appear a multitude of white specks, which are the young scales in a more or less forward state. The clusters of berries now assume a black sooty look, and a great number of them fall off before coming to maturity; the general health of the tree also begins to fail, and it acquires a blighted appearance. A loss of crop is this year sustained, but to no great extent. The third year brings about a more serious change, the whole plant acquires a black hue, appearing as if soot had been thrown over it in great quantities; this is caused by the growth of a parasitic fungus over the shoots and the upper surface of the leaves, forming a fibrous coating, somewhat resembling velvet or felt. This never makes its appearance till the insect has been a considerable time on the bush, and probably owes its existence there to an unhealthy condition of the juices of the leaf, consequent on the irritation produced by the coccus, since it never visits the upper surface of the leaf until the latter has fully established itself on the lower. At this period the young shoots have an exceedingly disgusting look from the dense mass of yellow pustular bodies forming on them, the leaves get shrivelled, and the infected trees become conspicuous in the row. The black ants are assiduous in their visits to them. Two-thirds of the crop is lost, and on many trees not a single berry forms. This Lecanium, or a very closely allied species, has been observed in the Botanic Garden at Peradenia, on the Citrus acida, Psidium pomiferum, Myrtus Zeylanica, Rosa indica, Careya arborea, Vitex Negundo, and other plants. The Coffee coccus has generally been first observed in moist, hollow places sheltered from the wind; and thence it has spread itself even over the driest and most exposed parts of the island. On some estates, after attaining a maximum, it has generally declined, but has shown a liability to reappear, especially in low sheltered situations, and it is believed to prevail most extensively in wet seasons. While in its earlier stages, it is easily transmitted from one estate to another, on the clothes of human beings, and in various other ways, which will readily suggest themselves. Dr. Gardner, after a careful consideration and minute examination of estates, arrived at the conclusion that all remedies suggested up to that time had utterly failed, and that none at once cheap and effectual was likely to be discovered. He seems also to have been of opinion that the insect was not under human control; and that even if it should disappear, it would only be when it should have worn itself out, as other blights have been known to do in some mysterious way. Whether this may prove to be the case or not, is still very uncertain, but every thing observed by Dr. Gardner tends to indicate the permanency of the pest. *Sir J. E. Tennent's Natural History of Ceylon.*

Poisoning by Artificial Flowers.—The sufferer in this case, a girl of 19, was engaged in leaf-making. She was in the greatest pain until she became insensible, when death put an end to her sufferings. Mr. James Thomas Paul, surgeon, of 26, Burton Crescent, said he had attended the deceased four times within 18 months, while suffering from the same causes. He had made a *post mortem* examination, and found that the lungs gave evidence of the presence of arsenite of copper, the liver being highly impregnated, as also the mesenteric glands. The case of death was acute inflammation of the mucous membrane of the stomach, produced by the inhalation of the arsenite of copper. A sister of the deceased had died under similar circumstances. *Daily Paper.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Where Camellias, Epacrises, Heaths, and other winter blooming plants form the principal inmates of this house, 40° will be sufficiently high, and with a dry atmosphere it may safely be allowed to sink a few degrees on cold nights; but in cases where the hardier kinds of winter flowering stove plants are brought in while in bloom, 45° should be considered the proper mean night temperature. Let whatever watering may be required be done early in the day, so as to allow advantage to be taken of sunshine, whenever such may occur, to give air for the purpose of drying the foliage, &c. Many entertain an opinion that little attention is needed to properly supply plants with water at this season; and they only look over their stock at intervals of several days. We would, however, caution young gardeners against this mistake, and advise them to examine every plant at least every other day, defering the application of water until it is really required, and then giving a liberal soaking. Attend daily to the removal of dead or decaying leaves, and directly any of the flowering specimens become shabby, remove them to some out-of-the-way place, taking care that they are put in proper circumstances as to the temperature, &c., according to their wants, and supply their places with others in full beauty. Soils, crocks, and charcoal, and whatever else may be necessary for potting, should be got into readiness for use when wanted.

FORCING DEPARTMENT.

PINERY.—A night temperature of about 60° should be maintained in the fruiting pits, letting it rise to 70° or 75° by day; and, where fruit is swelling, it may be allowed to rise 10° higher with sunshine and air; aim at keeping up a steady bottom heat of about 80°, which for the present will be high enough. Maintain a moist atmosphere, and water such plants as may require it with tepid manure water, but guard against an accumulation of moisture in the heart of such plants as may be showing fruit. In the succession pit the night temperature need not exceed 55° while the present favourable weather continues, and from 60° to 65° will be sufficiently high on sunless days. See that none of the young stock suffers through dryness at the root.

VINERIES.—Wash and dress the Vines in houses about to be started; a substantial covering of dry leaves, Fern, or some such material, should however be applied before raising the inside temperature, and where it can be obtained these may be mixed with a portion of stable manure, to create a moderate fermentation and infuse a gentle warmth into the border, which will be of great service in promoting a vigorous root action. Care must be observed, however, if heat is once applied to the border, to replace the fermenting materials as they become exhausted, so as to maintain a regular temperature, and prevent the roots from sustaining any check. Commence with a night temperature of from 45° to 50°, allowing it to rise some 10° by day.

PEACHES.—Where these are being started, maintain a night temperature of about 45° or 50° according to the state of the external atmosphere, and see that their roots are properly protected; but for early forcing, it is greatly preferable to have a stock of plants in pots, which allow of keeping the roots in a favourable temperature.

STRAWBERRIES.—These may now be placed in a pit or frame where the temperature can be kept at about 45°, giving plenty of air whenever the weather will permit, and if the pots can be plunged in a gentle bottom heat, this will be advantageous in encouraging a healthy root action.

FLOWER GARDEN AND SHRUBBERIES.

During the favourable weather we are now experiencing, any out-door work in the way of alterations that require to be done may be pushed forward with vigour. Shrubberries may also be thinned, where this involves only the cutting out of overgrown plants, or lopping deciduous trees, but where evergreens generally require pruning, that is best done in March; for although, when the winter proves mild, such work may safely be performed at any time, it is never safe to depend upon this. When the hands cannot be profitably employed at out-door work, get a good stock of pegs, Dahlia stakes, tallies, brooms, and such like things prepared and stored away in an orderly manner, so as to be ready for use when wanted. Where the stock of bedding plants has to be wintered in cold pits, the present will be found a trying time for them. Cover the glass in proportion to the coldness of the night; also see that the walls are in a fit state to ward off severe frost, and embrace every possible chance of admitting fresh air, and removing decaying leaves, in order to prevent damp and mould. Too little water can hardly be given at present to plants in cold frames, and when it becomes necessary to give any, let it be done on the morning of a fine day, freely admitting air afterwards, in order to dry up all superfluous moisture before evening.

HARDY FRUIT AND KITCHEN GARDEN.

Take advantage of the present state of the weather to get manure wheeled upon the quarters for which it may be intended. Cover Celery with dry litter to protect it from frost, and Cauliflower plants under hand-lights, or in frames, should be guarded from damp by admitting air on every favourable opportunity, and a slight protection against frost will be useful, particularly where the plants may not have been properly hardened. Lettuce and Endive in cold pits will require protection from frost, and air to dispel damp whenever this can be given. Attend to keeping up a supply of Seakale, Rhubarb, and Asparagus, &c., according to the demand and convenience, by introducing quantities of the roots into heat at intervals of about a fortnight. Also see to keeping up a supply of French Beans by making frequent sowings under favourable circumstances. These are generally grown in pots placed in Vineries or plant houses, but their liability to the attacks of red spider render them dangerous inmates of such structures, and where it can possibly be done they should be planted in lines in the bed of a pit devoted to their culture.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the 6 Days ending Jan 15, 1862. as observed at the Horticultural Garden

January.	Moon's Age.	Barometer.		Temperature					Wind	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Friday 10	10	29.710	29.577	51	40	45.5	45	42½		.02
Satur. 11	11	29.577	29.275	49	30	39.5	46½	43	S.W.	.04
Sunday 12	12	29.714	29.498	49	27	38 0	45½	43	N.W.	.01
Mon. 13	13	29.692	29.596	51	35	43.0	45	43	W.	.12
Tues. 14	14	29.720	29.482	44	31	37.5	45	42½	N.E.	.03
Wed. 15	15	29.940	29.874	43	25	34.0	45	42½	N.E.	.00
Average		29.725	29.550	47.8	31.3	39.6	45.3	42.7		.21

Jan. 10—Drizzly; hazy; fine.
— 11—Boisterous with rain; clear and windy at night.
— 12—Slight haze; fine; drizzly; slight frost.
— 13—Slight frost; exceedingly fine; clear; overcast; rain.
— 14—Hazy; dark dusky haze, 10 A.M.; fine.
— 15—Foggy: hazy; fine; slight frost at night.
Mean temperature of the above period 3½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Jan. 25, 1862.

January.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 19 ..	43.0	30.3	36.7	16	0.88 in.	4	2	4	2	6	10	6	2
Mon. 20..	42.6	31.0	36.8	14	0.65	4	7	4	1	7	9	2	2
Tues. 21..	43.6	32.4	38 0	15	0.48	1	5	4	1	7	11	5	2
Wed. 22..	43.5	32 8	38.1	15	0.57	3	5	1	5	3	13	5	1
Thurs. 23..	44.4	32.7	38.5	15	0.27	2	3	2	3	6	12	4	4
Friday 24..	43.8	32.4	38.1	17	0.51	3	4	2	1	4	15	5	2
Satur. 25..	44.3	32.6	38.5	19	0 90	1	4	3	1	5	12	5	5

The highest temperature during the above period occurred on the 19th, 1828—therm. 60 deg.: and the lowest on the 19th, 1838—therm. 4½ deg. below zero.

Notices to Correspondents.

ASPARAGUS FORCING: *Amateur.* One 4-inch flow and return hotwater pipe laid under the border of your house in a hollow chamber the entire width of the bed will be found quite sufficient for either Seakale or Asparagus, provided you have already means of furnishing a little top heat; it must be borne in mind that neither of these vegetables like hard forcing, which causes them to come up spindly and weak. When the Asparagus is done with, the same bed, replenished with fresh soil, will answer for Cucumbers, French Beans, and many other useful purposes. ‡

AUSTRALIAN CULTIVATION: *D.* Probably the *last edition* of the Maison Rustique du XIXme Siècle will answer the purpose better than any other general work. It forms five volumes 8vo, but is cheap. For mere gardening take the Bon Jardinier for 1862. We are not acquainted with any school in France similar to the excellent establishment instituted at Ghent by Mr. Van Houtte.

BOOKS: *T W W.* The last edition of the work you mention was published, we believe, in 1845. With regard to Wild Duck apply to Mr. Baily, Mount Street, Grosvenor Square.‡—*J W.* Thompson's Gardener's Assistant.

DISEASED GERANIUMS: — From the condition of your plants we suspect that you have imperfectly decomposed leaf mould or other vegetable matter in your compost. Be so good as to send a line addressed Rev. M. J. B., King's Cliff, Wansford, stating the exact composition of your potting soil, and we will pay further attention to the subject. *M. J. B.*

GISHURST COMPOUND.—One of our *most experienced* Correspondents begs us to point out the great benefit wall trees *of all kinds* derive from a dressing, ¾ or 1 lb. to the gallon of the Compound applied in January; it is so easily applied, and so *very* beneficial.

GLAZING: *J S.* By all means use Hartley's rough plate to glaze your Orchid house.

HEATING: *Chelsea.* We are authorised to state that the card you have enclosed has been issued without any communication with the Royal Horticultural Society, and is wholly unauthorised. It will not admit any one to the Garden at South Kensington, nor is any "extraordinary effect" produced there by Mr. Weeks's heating apparatus, which in fact is not to this day completed.

HOLLIES: *A M S M.* The best time to cut down Hollies, with a view to their throwing out branches nearer the ground, is when the buds are first beginning to swell in the spring.

LARCHES.—Can any one who has practical acquaintance with German Larches, especially the variety called "the Saxony," oblige "C" with his opinion of their qualities, as compared with the Larches grown in this country.

MESSENGER'S GLASSHOUSES. We are in receipt of a letter from Mr. Messenger in reply to Mr. Pannall's Comments, of Nov. 20, in which he states that his patent is dated August 1, 1859.

NAMES OF PLANTS: *H G.* It is Linum (now called Reinwardtia) trigynum. L. flavum is quite different and a true Linum.—*J.* We don't know. Not in flower. Perhaps some Duvaua.

STEAM PLOUGHS: *Arator.* We cannot at all agree with you. Gardeners want something widely different. No gardener in his senses will plough his garden land.

ERRATUM: Page 22, col. *b*, for "NOT partially drying and restoring the plants" read "NOT partially drying and resting the plants."

THE LONDON MANURE COMPANY
(ESTABLISHED 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE of LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
MANUFACTURED BY
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. MACADAM, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. LAWES for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0
These Manures can be obtained of MR. LAWES, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and Liffey Buildings, Eden Quay, Dublin.

A FEW respectable DISTRICT AGENTS WANTED for a MANURE which is highly recommended and sold carriage free. Liberal terms given.
Address, with occupation and references, B. C., 10, Pall Mall East, London, S.W.

To Farmers and Agriculturists.
COTTON SEED CAKE.—The best and cheapest Cake for Feeding purposes, and particularly adapted for Dairymen and Cowkeepers, made from pure Egyptian Seed, which is freed from all fibre.
Apply to RALPH LEIGH CLANE, Broker, Chapel St., Liverpool.

CUPISS'S CONSTITUTION BALLS.—This justly celebrated Medicine, after 25 years' experience, is proved to be the best and cheapest for HORSES and NEAT CATTLE, cheaper because required to be given only once a week, preserving health, vigour, and condition. Their cost too is saved by the food turning to a better account, for it is an acknowledged fact Horses will keep up their condition better upon three feeds of Oats daily when a Ball is occasionally given, than with four feeds without the Balls. Neat Cattle will also fatten much faster with the occasional use of them, and arrive at a greater state of perfection than they can be got to without the Balls. Any one doubting this statement should try the use of them and prove for himself, for the more they are used the better they are appreciated.
The Balls will be found admirable for Coughs, Colds, Strangles, Influenza, Inflammation of the Eyes, Swelled Legs, and other diseases incident to Horses and Neat Cattle, as may be seen by the directions and Testimonials with each packet.
The Balls are prepared by FRANCIS CUPISS, Diss, Norfolk, Author of the Prize Essay on the Diseases of the Liver of the Horse. And may be had of all Patent Medicine Vendors, in Packets (6 balls each), 3*s.* 6*d.* per packet, or 7 Packets for 21*s.* with full directions.
Persons using the Balls may consult the Proprietor gratuitously by enclosing a Stamp in a prepaid letter.

Parkes' Steel Digging Forks.
BURGESS AND KEY, 95, Newgate Street, E.C., London, being the Wholesale and Retail Agents for these celebrated Tools, have always a large Stock on hand from which their Customers may select what they may require.
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CHAFF CUTTERS, TURNIP CUTTERS, PULPERS, MILLS, PLOUGHS, HARROWS, CARTS, &c., Delivered Carriage Free.
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PRICE LISTS free per Post.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.
PROTECTION from the COLD WINDS & MORNING FROST.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.
Two yards wide .. .. 1*s.* 6*d.* per yard run.
Four yards wide .. .. 3*s.* per yard.
An improved make, 3 yards wide, 2*s.* 6*d.* per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1*s.* 4*d.* per yard run.
ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

Land Drainage, Farm Buildings, and Land Improvements generally.
MR. BAILEY DENTON, AGRICULTURAL ENGINEER, maintains a large Staff for the execution of all works of Land Improvement (including Outfall and River-works) by Contract or Commission. He also reports on Improvements contemplated by Landowners, and prepares Plans and Specifications of Drainage, Farm Buildings with and without machinery, Road making, &c., for execution by Landowners themselves through their own agents.
For terms apply to Mr. BAILEY DENTON, at No. 52, Parliament Street, Westminster, S.W.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5*s.* per acre), and the Erection of Agricultural Buildings and all other permanent improvements to Landed Estates, are undertaken by MR. HUMBERT, Land Agent and Surveyor, Watford, Herts; and such works can, if desired, be entirely executed under powers conferred by special Acts of Parliament by money raised by Loan, and paid off (both principal and interest) by small annual payments, spread over a number of years in the form of a rent charge, without immediate payment by the Landowner.

DRAINAGE OUTFALLS. — The most simple, expeditious, and inexpensive powers for obtaining the right of making Outfall Drains, Cuttings, &c., through the Lands of adjoining Proprietors, are under the WEST of ENGLAND DRAINAGE and INCLOSURE COMPANY'S ACT, and there is no necessity for separate proceedings such as Petitions, Special Act of Parliament, Commissions of Sewers, or Drainage Boards, &c.
Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements executed on Entailed, Mortgaged, or other Properties; the whole cost can be a Charge on the Lands permanently, or it might be made redeemable at any fixed time in one or more sums or by half-yearly instalments over any term of years, at the option of Proprietors.
FREDERICK BRODIE, Secretary.
Offices—Exeter, and 30, Parliament Street, London, S.W.

Land Drainage.
WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.
Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.
No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.
Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.
Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.
Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
TO LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &C. IN ENGLAND AND WALES AND IN SCOTLAND.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

THE CONSERVATIVE LAND SOCIETY.
OFFICES:—33, Norfolk Street, Strand, London, W.C.
TRUSTEES:—The Viscount Ranelagh; J. C. Cobbold, Esq., M.P.
SHARE DEPARTMENT.—Interest, payable half-yearly, on Shares is 5 per cent. per annum, with power of withdrawal of subscription at 10 days' notice, and participation in any bonus declared above the ordinary interest. No partnership liability. The taking of land is quite optional. A share paid a year in advance costs 5*l.* 1*s.* 6*d.*; completed share is 51*l.* 3*s.* 6*d.*; 20 shares, 1,023*l.* 11*s.* 0*d.*, and so on in proportion, calculating 51*l.* 3*s.* 6*d.* for each share. The interest and bonus paid by the Society have ranged from 4½ to 7 per cent. The Society paid 5½ per cent. for the past year. Monthly payment on one share is 8*s.*
DEPOSIT DEPARTMENT.—Sums, large or small, may be deposited at the Offices daily. Interest allowed is now 4 per cent. per annum, payable half-yearly. Withdrawals of deposits paid every Wednesday, under 100*l.*; and upwards at fixed periods. Investors under the Deposit Department do not become members of the Society.
LAND DEPARTMENT.—Freehold plots on valuable Estates in seventeen counties are now on sale. Plan of Estates, price 6*d.* each, or 7*d.* by post.
Prospectuses will be sent free of charge to any part of the world.

YORKSHIRE AGRICULTURAL SOCIETY.
PRIZE ESSAY.
A Prize of 50*l.* is offered by H. S. THOMPSON, Esq., M.P., President of the Yorkshire Agricultural Society, in addition to a Gold Medal, value 10*l.*, given by the Society, for the best ESSAY
"On the Improvements which have taken place in Yorkshire Farming since the Formation of the Yorkshire Agricultural Society in the Year 1837."
Competing Essays must be forwarded to me on or before the 15th day of July, 1862. JOHN HANNAM, Secretary.
Kirk Deighton, Wetherby, January 18.

YORKSHIRE AGRICULTURAL SOCIETY.—The great ANNUAL SHOW of this Society will be held at York on the 6th, 7th, and 8th AUGUST next.
Prize sheets may be had free on and after February 1, on application to JOHN HANNAM,
Kirk Deighton, Wetherby, Jan. 18. Secretary.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
The following Address has been forwarded to the Right Honourable Sir George Grey, Bart., Her Majesty's Principal Secretary of State for the Home Department, to be laid before the Queen.

TO THE QUEEN'S MOST EXCELLENT MAJESTY.
MADAM,—We, your Majesty's most dutiful and loyal subjects, the Council representing the Royal Agricultural Society of England, beg leave humbly to approach your Majesty with the assurance of our loyal and devoted attachment to your Majesty's throne and person, and of our respectful sympathy with your Majesty, on the occasion of the decease of His Royal Highness the PRINCE CONSORT, our late lamented President.
While, in common with all classes of our fellow-subjects, we deplore the untimely loss of His Royal Highness, that loss is more especially felt by this Society, in the objects of which His Royal Highness had for twenty years taken the warmest interest, constantly having given to the Society his valuable aid and countenance as an Exhibitor, and repeatedly honoured its Meetings with his presence.
His thoughtful care for the labouring classes, evinced by his anxiety for their education and for the improvement of their dwellings—his intimate acquaintance with the details of agricultural machinery—his successful management of the Royal Farms, where the benefits to be derived from high cultivation and scientific knowledge are pre-eminently shown, not only to the agriculturist, but to the nation at large—all tended to inspire in the breast of every Member of this Society a feeling of attachment to His Royal Highness, springing as well from the pursuit of kindred interests, as from his courteous demeanour to all with whom he was engaged, and of deep sympathy in the irreparable bereavement sustained by your Majesty.
The Council have resolved to carry out faithfully the course approved by His Royal Highness, of inviting other Nations to compete at their Exhibition in Battersea Park; and trust they will in this manner best display their respect for the memory of their late President.
That your Majesty may long continue to reign over a devoted and happy people is the prayer of your Majesty's dutiful subjects and servants.
By Order of the Council, sealed with the seal of the Royal Agricultural Society of England, this 10th day of January, 1862, in the presence of HENRY HALL DARE, Secretary.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.
STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. HALL DARE, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, JANUARY 18, 1862.

WHEN the French naturalist, after describing the natural history of the Robin, quaintly added—"This interesting little songster is eaten with bread crumbs," he no doubt meant to convey a rebuke to his countrymen for their destruction of small birds. By Frenchmen, however, birds of all kinds are killed not for mere wantonness but to eat, and whatever the taste of those who can feast on every kind of bird, yet we are bound to conclude that there, as here, a large proportion of people are really fond of excuses for compassing their destruction. That it is so in this country seems plain from the readiness with which every tale to their discredit is believed and acted on.

Last year a neighbouring gardener had his Gooseberry trees disbudded by the bullfinches; accordingly he steeped some Wheat in a decoction of *Nux Vomica* seed (Crow Fig), and so our garden and doubtless his own became strewed with dead sparrows. This led our friend to conclude that after all it was not the bullfinches, but "they mischevious sparrers as done the mischief."

This case shows how little is generally known of the natural history of birds: for after all, though sparrows certainly will eat corn they do not destroy buds, while on the contrary bullfinches will feed on buds but not on corn. Nevertheless we would put in a word for all finches, for although this section of small birds is universally referred to as mischievous, yet we cannot but think that they are really more deserving of praise than blame. So far as our experience goes we can point to no natural means by which so many of the worst kinds of weed seeds are so effectually destroyed as by their aid.

The finches are peculiar for divesting the seeds they eat of their surrounding tegument, as one may easily see by watching the feeding process of a canary, bullfinch, or goldfinch, so that such seeds when swallowed are most perfectly digested, which is not always the case when they are swallowed whole. Birds of this class are fond of the seeds of Thistles, Sowthistles, and other pappiform plants, thousands of which a few of these birds destroy in the course of a day; and this should plead for them notwithstanding the mischief which

they do in the winter and spring when their usual food runs short. Rather let us guard our trees from the evil when they are attacked than blindly destroy friends in revenge for a slight injury.

That poisoned Wheat is prepared and sold for the purpose of destroying birds is certainly an evil. But there is a source of mischief equally injurious in the use of various mineral poisons, especially arsenic and sulphate of copper, known as "blue vitriol," as a preventive of bunt. Upon this subject the *Times* lately contained a good letter from Mr. HEWITT DAVIS, to which we referred last week.

That Mr. DAVIS is right in asserting that the separating of the light or diseased grain from the good seed is as beneficial in preventing smut as using poisons, we are fully convinced. It is the result of frequent experiments that good seed usually produces a crop free from smut, but let any one sow Wheat just as it is threshed without separating the tail, and he will have a diseased crop in proportion to the amount of diseased grain sown. That sulphate of copper and arsenic would prevent this from growing smut is quite true, but it is, in great measure, by destroying the already defective germinating power of diseased grains. It is of no use then to sow a quantity of bad seeds, for if we employ good we do not want so much of it, and need not go to the expense and trouble of killing the diseased grains, which it is necessary to do if we do not separate them.

Having repeated experiments upon the point, sowing plots side by side, we here give the results as shortly as possible:—

Plot 1. A sample of tail Wheat, not pickled.
„ 2. Ditto, pickled.
„ 3. Perfect grains of the same crop, not pickled.
„ 4. Ditto, pickled.

The results were—

Plot 1. A thick crop; but much diseased.
„ 2. A thin crop; but not diseased.
„ 3. A thick and not diseased crop.
„ 4. The same.

This seems to us conclusive upon the point. Pickling certainly keeps away smut, and so does cleaning the seed, and Mr. DAVIS's water process is perhaps as good as any where we are not sure of having good sound seed.

We hope that these remarks may tend to the putting of this matter in its true light, and if so there can be no need to sow violent poisons all over our fields, by which means we are only in danger of killing more friends than enemies. *B.*

[It must be added, however, that the difficulty of drying wetted grain by means of lime interferes so much with the operation of the drill that the "blue vitriol" process, in which the Wheat readily dries of itself, is not likely to be disturbed by the present outcry, reasonable though it be, against the use of poisons in the preparation of seed.]

—— A CORRESPONDENT of the *Economist* thus estimates the relation between our this year's demand and supplies of Wheat:—

"The average wants of the United Kingdom of Great Britain and Ireland are 25,500,000 quarters of Wheat, 22,500,000 quarters being required for food and manufacturing purposes, and 3,000,000 quarters for seed; the production in years of plenty is 20,500,000 quarters, and the importation 5,000,000 quarters. In consequence of the extraordinary late harvest of 1860 and the bad weather which followed, only three-fourths of the customary quantity of seed was committed to the ground in the autumn of that year and the spring of 1861, and it is estimated that over an eighth of that which was sown did not germinate; that about 1,000,000 quarters were 'shed' and lost in the fields by becoming over-ripe; that there has been taken for seed 750,000 quarters above the usual average, this season, in consequence of the fine autumn—all the unoccupied land of last year being now devoted to Wheat in addition to the usual rotation of crops; and that the exports to France sum up 1,000,000 quarters. Reducing this statement to a tabular form, it will be seen that there is only half a crop left for a year's consumption, or 10,250,000 quarters, making our necessities for foreign grain 15,250,000 quarters from harvest to harvest, a very small portion of which quantity has reached or is expected to arrive at our ports, and if there is not some alacrity in the corn trade, we shall soon have prices as high as they have been at any time since the beginning of this century. The small farmers are mostly out of stock, and the large agriculturists have very scanty supplies. The miserable yield of 1860 involved the producers in debt. and they, therefore, parted with the greater portion of the crop of 1861 the first four months, leaving very little in granary to send to market during the remaining eight months of the consuming year. As to the quality of the Wheat crop of 1861, it is no doubt very fine in England: it is, however, very different in Scotland and Wales, and very inferior in Ireland. On the whole, it may come up to an average per bushel in flour-making properties.

	Quarters.	Quarters.
The regular crop of Wheat in Great Britain and Ireland is		20,500,000
Short planted for last crop, one-fourth or	5,000,000	
Short yield of that sown	2,500,000	
Quantity "shed" from being over ripe	1,0 0,000	
Extra quantity taken for seed for crop of 1862	750,000	
Exported to France from Aug. to Dec. 31, 1861	1,000,000	
		10,250,000
		10,250,000
To which add the usual importation..		5,000,000
Making our requirements		15,250,000

"These figures, large as they may appear, do not include the five weeks' earlier consumption or 'run' on the crop of 1861 to patch out that of 1860, which may be computed at 2,000,000 quarters,—in other words, the remarkably early crop of 1861 has to supply a year of over 13 months; and that, with all the economy that can be practised, the importations of foreign grain into England will have to be greater than ever to carry us through until next harvest, be it ever so premature."

The wants of France and other continental countries are also stated very strongly, and it is added that Hungary is the only country that has an abundance of Wheat, but it is expensive to get it to the ports, owing to the absence of proper inland transportation facilities.

—— The Central Farmers' Club have issued the following programme of their discussions for the ensuing monthly meetings of 1862:—

February 3.—The Extent to which Artificial Manures may be profitably Employed—Proposed by Mr. CUTHBERT W. JOHNSON, Waldronhurst, Croydon.
March 3.—Steam Cultivation: its Rise and Progress—Mr. JAMES HOWARD, Bedford.
April 7.—Dairy Management—Mr. JAMES DUMBRELL, Ditchling, Sussex.
May 5.—County Expenditure and County Rates—Mr. HENRY CORBET, 39, New Bridge Street, Blackfriars.
June 2.—The Capital of British Agriculture: its Application and Remuneration—Mr. J. J. MECHI, Tiptree Hall, Kelvedon.
November 3.—The desirability of Increasing the Growth of Lustre Wool—Mr. J. ANDERTON, Cleckheaton, Leeds.
December 8.—Stock *versus* Corn—Mr. ROBERT SMITH, Emmett's Grange, South Molton.

It will be seen from the above list of subjects that in November next we are to have a discussion of the desirableness of increasing the growth of "lustre wool." Of course the desirability of that arises simply from the great demand now existing for a large class of woollen goods which have almost come into existence since the importation of alpaca wool. It is to the fleece of that important class of sheep, long known to the spectators of our annual shows as "Long-woolled—not qualified to compete as Leicesters," that we owe these "lustre wools." The Lincoln sheep especially yield it, and there can be no doubt that the cultivation of it and the other Long-wools not Leicesters has received a great impulse from the prize of superior price in the market, vastly more influential than any prizes which can be afforded by any Society. Society prizes are nevertheless of importance, and especially during the ensuing year, for they will be interpreted by our foreign visitors at Battersea as indicating the home value set upon the several breeds; and there is reason, therefore, for Mr. HUDSON's (Castle Acre) indignant letter on the subject of a recently issued prize sheet which appeared in the *Mark Lane Express* last Monday, addressed to the breeders of Cotswold, Lincolnshire, and Kent sheep. He says:—

"The *black mark* is again put upon your valuable breeds of sheep. The Council of the Royal Agricultural Society of England, in their prize sheet for 1862, have offered for—

LEICESTERS.	
Shearling ram	£20
Ram of any age	20
Pen of 5 shearling ewes	20
SOUTHDOWN.	
Shearling ram	£20
Ram of any age	20
5 shearling ewes	20
LINCOLNS.	
Shearling ram	£15
Ram of any age	15
5 shearling ewes	15
COTSWOLDS.	
Shearling ram	£15
Ram of any age	15
5 shearling ewes	15
KENTISH OR ROMNEY MARSH.	
Shearling ram	
Ram of any age	£15
5 shearling ewes	15
	15
LONG-WOOLLED. Not qualified to compete as Leicesters, Lincolns, Cotwolds, or Kentish (*mongrels*),	
Shearling ram	£20
Ram of any age	20
5 shearling ewes	20

"This, of course, is to inform the foreigners who come to the show to buy sheep, that yours are *only second class sheep*, whereas we graziers think them the most *useful* and *profitable* class of sheep in this kingdom: they are the class of sheep to make mutton for the *million*. The Downs may do very well to please the palates of the *rich*, but yours are the sheep wherewith to feed the *working people*—our *best customers*. And, again, your wool is worth 56*s*. a tod; whilst the Down is o. ly worth 38*s*. to 40*s*. a tod of 28 lbs.

"I was too unwell to attend the council meeting in the Smithfield Club Show week, when the prize sheet was made out; and I was much surprised, when I was at the Council meeting last Wednesday, to see that the Long-wools were deprived of their just amount of money prizes, and, according to the *bye laws*, it cannot be altered this year. I would have given notice of a motion for the next Monthly Council to make the classes of sheep all alike in amount, but my Lord WALSINGHAM would not allow the notice to be given.

"Now the only thing you can do is to protect yourselves. Come up to London—one or two hundred of you; go to Hanover Square on Thursday, the 22d of May; demand the house list of members of Council who go out by rotation (but *who are eligible for re-election*); mark out the names of those who have done you this piece of injustice, and insert your own names instead; then you may be reinstated as you ought to be in the prize sheet again.

"Remember 'who would be free, himself must strike the blow.'' I cannot fight the Council single-handed, and I am sorry to say I have very little support there.'

—— One word more on the Poissy Show already referred to in these columns on December 28 and January 4. Mr. BRANDRETH GIBBS writes as follows:—

"I beg to inform you that I have just received a letter from the Minister of Agriculture, Commerce, and Public Works in Paris, stating that in Classes 30, 31, 32, 33, and 34, at the Poissy show, the ages of the sheep should be under 24 months on the 1st of January, 1862; and that the restriction to one year in the prize-sheets originally issued was an error."

The original prize list for sheep included liberal prizes for pens of five fat wethers in six different classes "under one year old on January 1, 1862," viz., in the Leicesters, Longwools not Leicesters, Southdowns, other Downs, Kentish and Cross Breeds. The sheep were to be two years old in the case of Cheviots, and three years old in the case of Blackfaced or other mountain breeds. The age in all the former classes is now understood to be under 24 months on the first day of 1862.

We add that intending exhibitors should at once apply at the French Consulate, London, for detailed instructions for their guidance.

—— We are about at length to see an attempt to turn London sewage to useful account. A company has been formed for this purpose, and its plans have been so far matured as to enable an application for powers during the ensuing session of Parliament. It is proposed to apply the North London sewage to the fertilisation of a tract of land on the southern coast of Essex; and the scheme has been reported on with favour by the Committee of the Board of Works to whom the consideration of it was remitted. Certain it is, that notwithstanding certain notorious failures in the attempt to apply liquid manure with profit in ordinary farm management, the application of manure in that form *has been* successfully effected, and may again be successfully carried out. We shall next week again refer to the experience of Mr. BLACKBURN on this subject, to whose success in the practical application of liquid manure on the farm we last year called attention.

THE ROYAL FARMS.

THE SHAW AND HOME FARMS, WINDSOR.—As you walk down the "Long Drive" from the Castle you pass the grounds of Frogmore upon your left, and beyond them on the same side lies the compact homestead and residence known as the Shaw Farm. It has always been a home farm, for the supply of the Castle. The late Prince Consort became its tenant in 1849, but up till 1853 it was more directly under the management of the late General Wemyss. Since then it had been placed in the hands of the late Mr. Wilson, as steward for the Prince Consort; and his successor, Mr. Tait, the present manager, has accordingly been here but a comparatively short time. The management has altered but little since 1853, when Mr. Wilson, under the Prince's instructions, commenced the formation of the present Short-horn herd. The principal feature of the farm even still is the admirable equipment of the land with buildings—the exceedingly complete and well-arranged farmery at the Shaw, and the perfect arrangement of sheddings, houses and yards for stock nearer Frogmore, where also the Royal dairy has been erected. The herd is however growing in numbers and in merit, and though the late Prince Consort had not hitherto been an exhibitor of Short-horned breeding stock, two or three had been selected last autumn for a first illustration of his achievements as a Short-horn breeder at the Great Show of 1862.

The farms around Windsor, both these and the Norfolk and Flemish farm, and also the one at Bagshot

not being personal property, are less directly illustrative of the Prince's character than the one at Barton, already described. A rent is paid for much of these, and the position of landlord is occupied by other authorities. They, of course, on the one hand, have not been wanting in anything needed to make the farms suitable as a Royal appanage, and on the other there are marks enough of Prince Albert's wonderful power of detailed superintendence. He was here more strictly in the character of a tenant farmer employing farming capital upon another's land, and looking for his return from it in the produce of the stock and cultivation in which it was invested.

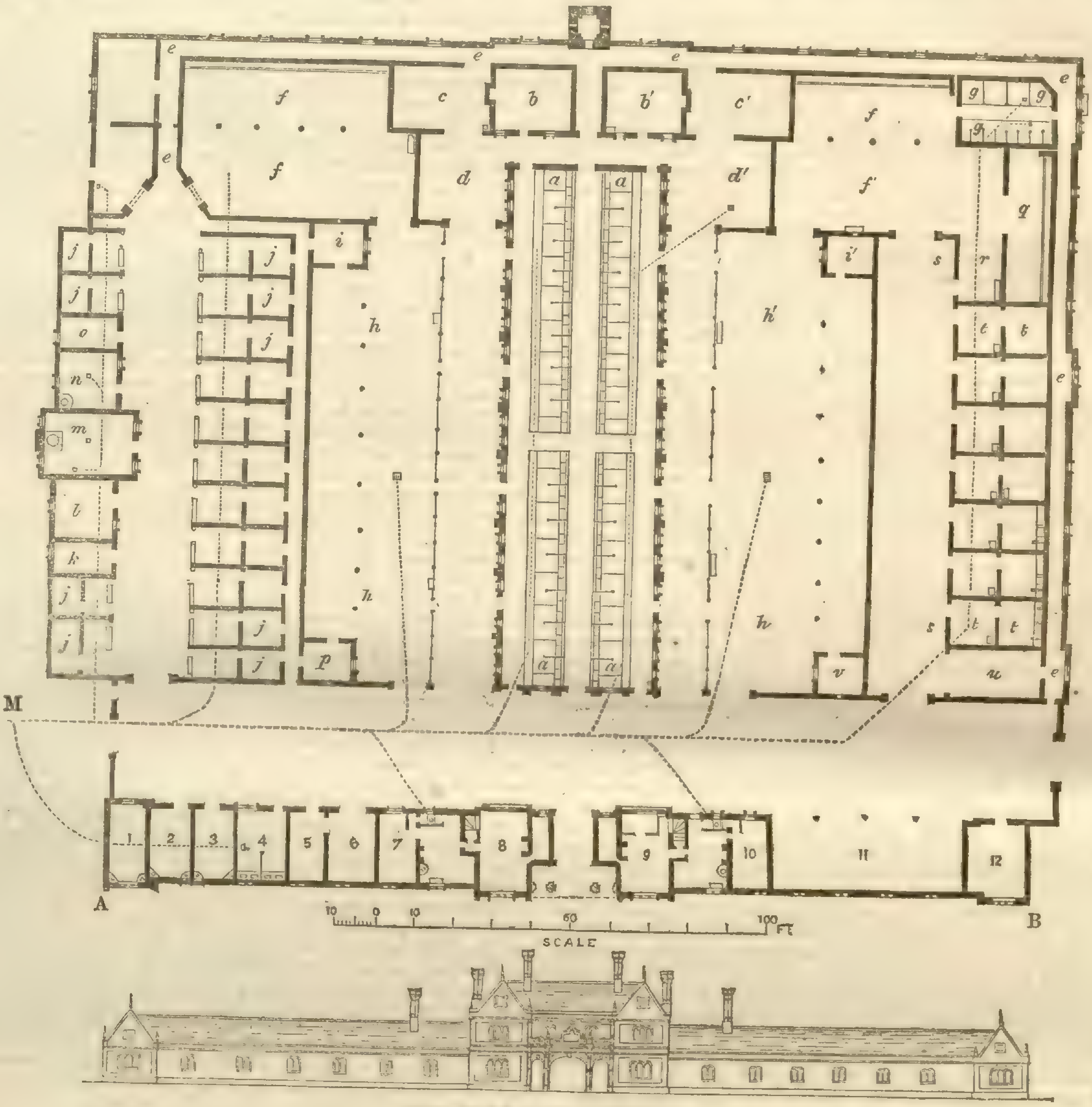
Though not landlord, as at Barton, the other relations in which he stood gave scope for the illustration of his character as an employer and a neighbour. And one of the most interesting of these illustrations was to be seen in the interest which he took in the welfare of the young men whom he employed. One part of the buildings at the Shaw Farm is an eight roomed house, where a number of them lodged—it is furnished with a room where they took their meals, and another used as a reading room and for an evening class. The attendance at this winter's evening school was registered—and "copies" and other marks of progress in education were periodically inspected by the Prince, who awarded prizes for attendance and improvement.

The Shaw Farm includes 800 acres of land in the Park and elsewhere—120 acres being arable. It is worked by 6 pairs of horses—a large number for the land, and more than would be needed were it not for the considerable extra labour connected with roads and estate management. About 30 men are employed, besides other hands at haymaking and harvest times. The farm stud is wholly Clydesdale — and the Prince had been frequently successful as an exhibitor of them at the English Agricultural Society's shows. His last act as the tenant of the Shaw Farm about three weeks before his death was to direct Mr. Tait to nail up over the stalls the premium cards which had been placed over two of his horses at Leeds; and which had lain till then in the farm house unattached. In anecdotes of this kind, in the frequent walks taken by the Queen and himself round the two farmeries, in his personal inspection of the monthly report presented through Sir C. Phipps, in the instructions given with reference to competition at the national exhibitions, and in his frequent inquiries and conversation about the evening school, the Prince chiefly showed his interest in these farms. Their daily management of course lies, as it always did, directly in the hands of Mr. Tait, Mr. Brebner, and Mr. Graham, the resident managers; but everything that is necessary for the vigorous, neat, and skilful management of the land—men, horses, implements, stock, and buildings, are provided in abundance and perfect in their kind.

The small quantity of arable land attached to the Shaw Farm is managed on the five-field system, two corn crops being taken in succession. There is no lack of manure: the Park supplies immense quantities of Fern, which is used as litter in the yards; and great store of yard dung is obtained thus and from the consumption of hay by the large dairy herd, and that of hay and roots by the young stock. The arable land is accordingly in a high state of cultivation. Forty tons of Mangel Wurzel per acre are a common crop, and as much as 60 has been obtained. Those lying in store and now in daily use are certainly a remarkably fine sample. The corn is carried home and built in round stacks in a yard near the fixed steam engine—the roots are stored close by.

The buildings are remarkably complete and well arranged. They stand upon a square of ground—the sides running North and South, East and West respectively. They consist in the first place of two rows of buildings along the two sides of this square, running North and South. The row upon the Eastern side includes cart-shed at either end, two-storied lodging-house and school in the middle, and boxes and farm-horse stables. The row on the Western side includes carpenters' yard and shed, threshing barn and granaries, steam-engine and boiler house, floor for mixing chaff with pulped roots, and piggeries around three sides of a small square, in the midst of which is the food house for their supply. Between these two North and South lines on the East and on the West sides of the square, there are three rows of buildings, &c., with roadways between them, and also between their extremities and the two lines already described.

The first row on the Northern side includes foreman's house, stable, poultry house, and blacksmiths and carpenters' shops. The second row includes a series of boxes, hamels (small yards) facing south, and double stalls, with a large root house for the supply of the whole, where Gardener's and Moody's Turnip cutter are *fixed* and worked by strap from a shaft to which motion is given by a small oscillating one-horse steam engine standing on the floor, steam being brought for it along a pipe from the threshing engine boiler house just across the road. The third row occupies nearly half the width of the square, and its whole length between the two lines of buildings at its east and west ends. It is divided midway by a wide shed in which shed-feeding of sheep on sparred floors is adopted, and on either side with sheds at their further ends are two capital yards for young stock. The sheep sheds are now full; they are said to answer well. One hundred and fifty Cheviot wethers are now fattening there. The floor is divided into pens about 9 feet square, holding about six sheep a piece; they receive cut roots and cake, and thrive fast compared with the progress made out of doors. As much as 100 cart loads of capital solid dung are taken out from beneath them towards spring. The only fault in the arrangement is the imperfect access given to the vaults where it accumulates, and from which it has to be lifted through trap doors in the floor. The place was perfectly sweet, and dry and clean. The buildings are well supplied with corn and cake crushers, millstones, chaff-cutters and Turnip-cutters, all worked by steam power. The granaries are on a third floor over the threshing barn; the corn is threshed by Messrs. Collinge and Co.'s engine, and delivered by travelling cups to the granary bins above, whence it may be sacked and delivered into carts outside by overhanging crane and pulleys from the end of the apartment.



THE HOME FARM—WINDSOR.

a a double stalled cowhouse.
b b' haystore and chaff-house, with granary for cake and meal above it.
c c' straw store.
d d' yard and roadway.
e e gangway.
f f' yards and sheds for young store.
g g calves house and pens.
h h' yards and sheds for cows, &c.
i i' calving boxes.
j j piggeries.
k store.
l meal bins.
m boiling house for pigs.
n slaughter house.
o straw store.
p calving box.
q r shed for young stock.
s roadway and working court.
t t "Hamels"—small yards and shed.
u root house.
v calving box.
1, 2, 3, 4, 5, 6, loose boxes and stables.
7, 8, 9, 10, houses for foremen.
11 cart shed.
12 loose box.

Wood's combined reaper and mowing machine and other first-class implements of cultivation, &c., are lying in the sheds. The horses by which they are worked are managed on the Scottish plan; the men working during the full summer day from 6 to 11 and then coming in, and again from 12 to 5—10 hours a day. They are worked hard and well fed, receiving two bushels of corn a week, and a daily feed of Beans in addition during seed time and severe work, and hay in effect *ad lib.* One foreman is employed over the men, through whom Mr. Tait gives his orders; himself receiving them whenever any unusual arrangement is directed through Sir C. Phipps. Mr. Tait's residence is near the buildings, and the whole is placed in the midst of the finely wooded pasture land of the Park.

A short walk takes you across this to the Home Farm and dairy beyond Frogmore. It is here that the dairy herd is chiefly kept, and that the principal piggeries, those of the white Windsor breed, are placed. The whole accommodation for live-stock here is of the most perfect kind.

The annexed figure gives its ground plan and an elevation along the line A B. The principal feature in this arrangement is the magnificent doubled-rowed cow-house, with its wide central gangway, lofty roof, and roomy arrangement generally. The arrangements for watering and for draining these and all other parts of this farmery are most perfect. Only the lines of drainage are represented on the plan; but there is an equally complete system of pipage for the supply of water to troughs on one level throughout the building. It is impossible in a short description to enumerate the many clever points of detail by which Mr. Turnbull, the Castle architect, has in these buildings of his designing, obviated a great many difficulties, with liabilities to nuisance. The whole of the soakage and drainage of the sheds and yards is conducted to a manure house situated at M on the plan, whence the liquid, collected in a tank, may be either pumped into water-carts and removed for direct application to the land, or distributed, as it more generally is, over the stall manure, which is mowed at intervals and stored for protection from the weather.

It will be seen that ready access is given to all the yards and sheds for litter, chiefly Fern-leaf mown from the Park, and stored away for its winter purposes—and that from the centres *m* and *b* and *u* where pig food,

hay, and roots are stored, easy access is given by the gangways *e e* to all the feeding houses, stables, cribs and boxes where the stock are kept. The reader will easily gather by an inspection of the plan how well and with how much economy of labour it is adapted to its purpose.*

One of the chief features in these buildings evidently is the ample accomodation for pigs—*j j* on the plan. The comparatively smaller white Windsor breed—from 10 to 20 breeding sows—are kept here. The pure Berkshire—10 to 12 sows—are kept at the other farmery. In both cases there is ample demand for the young stock for breeding purposes. Mr. Tait gives the preference to the Windsor breed, both for fecundity and for precocity. As much as 700*l.* worth of produce has been sold out of the piggeries at the Home Farm alone in a single year.

The dairy stock, for which ample accommodation is here provided, is for the most part kept on these premises. Nearly 200 head of stock are now kept—about 80 cows in general of the Short-horn breed, besides 10 or 12 Alderneys. The Short-horns of course are not yet all pure pedigree stock—the pure bred herd has been growing into existence only during the last 8 or 10 years.

But since 1855 pure Booth bulls have been used over the whole. PRINCE ALFRED (successful at the North Lincolnshire Show in 1859, and hired in succession by the late Prince, the Emperor of the French, and Lady Pigott).—FITZ CLARENCE, and now LORD HOPEWELL, have been used over both the pedigree cows and the other stock, and the whole are thus rapidly acquiring a high bred and common family character.

The pure pedigree herd are descended chiefly from the following cows:—*Alix* (1853) by EARL OF DUBLIN, bred by Sir C. Knightley, and bought at the Fawsley sale.—*Rachel* (1850) bred by the Prince Consort, by GOLDSMITH (10277), dam *Matchless*, by FITZHARDINGE (8073).—*Narcissus* (1851) bred by Mr. Trotter, of Bishop Middleham, by 3d D. OF YORK (10166), dam *Norma* by (7996).—*Coldcream* (1851), another Fawsley cow also got by EARL OF DUBLIN (10178).—*Graceful* (1852) bred by Mr. Marjoribanks, got by FACTOTUM (11455).—*Bracelet* (1856), bred by the Prince Consort, by PRINCE ALFRED, dam *Cowslip*, by BELLVILLE, &c.; and *Sally* (1853), bred by the Prince, by LORD FOPPINGTON (10437), also out of *Cowslip*. *Sally* was the 2d prize heifer at the Paris show in 1855. Besides these a few others more recently introduced and some of shorter pedigree might be included. The cows first named have all been good breeders. *Alix* and *Coldcream* have each had five calves, and *Sally* six since 1856. *Graceful* and *Rachel* have had six each, and *Narcissus* five since 1855. They are kept in fair breeding condition. Much of their milk goes to the dairy, and no roots therefore are given to them—they have hay, pasturage, and water. A ready sale at long prices is of course obtained for young bulls, and the heifers are taken into the herd and have already begun to add to its number, as by *Annette*, daughter of *Alix*; *Rosewood* and *Raby*, daughters of *Rachel*, &c.

The Prince had not been an exhibitor of Short-horn stock in this country. He was, however, a successful exhibitor at the International Show at Paris, as already named, and had proposed exhibiting at the International Show this year at Battersea, to which end PRINCE ARTHUR, a yearling bull by FITZCLARENCE (14,552) out of *Annette*, a daughter of *Alix* by PRINCE ALFRED, and two yearling heifers out of *Coldcream* and *Narcissus*, are being got ready—whether the plan will now be carried out is uncertain. The late Prince was, however, as is well known, a constant exhibitor of other stock at English shows, and a large case full of medals won by him lies on the table in the Queen's apartment at the Farm House. No fewer than 27 silver and 5 gold medals and 6 cups have thus been collected.

Near the Home Farm stands the Royal Dairy—a most beautiful sight to see. An apartment some 36 feet by 20 feet, and probably 20 feet in height—the roof supported by pillars—provides marble shelving all around it and marble tables in the midst, on which the white milk dishes stand. The floor, wall, ceiling, are all of porcelain—either Minton's tiles as on floor and roof (the latter presenting an openwork for ventilation), or white porcelain as on walls, or embossed and coloured porcelain as in cornicing and other ornamental parts. The whole is as perfect a combination of form, colour, and lustre, as was ever provided for the purpose which it serves, and which is observed in the design throughout. The utensils are of the best common kind—common barrel churn, &c.

Hard by is the aviary and Poultry house—a subdivided range of shed and wirework caged-in yards, in which the various breeds of poultry and kinds of farmyard fowl are kept.

You regain the Shaw Farm and the residence of Mr. Tait by a walk through the now deserted grounds of Frogmore House, beautiful in the magnificence of its timber trees, the smoothness of its grassy glades and slopes, and the mixture of its groves and mounds and ornamental water; interesting, too, for the mausoleum newly erected in their midst, where lies the body of H.R.H. the late Duchess of Kent; soon, however, to be more sadly interesting still for another resting place soon to be provided, where the remains of the late Prince Consort will lie in the midst of scenes of quiet beauty, and close by the scenes just visited of intelligent activity, both of which He loved so well.

* It is proper here to add a word in correction of our reference to the machinery employed on the Barton Farm (No. 1, *Agricultural Gazette*, 1862). The fixed machinery—engine and the threshing machines and other machines driven by it, were constructed or selected by Mr. Amos; but his commission did not extend, as the terms in which it was there described might lead one to expect, to the choice of field implements. That of course lay within the province of Mr. Toward, the manager of the farm and the estate.

Home Correspondence.

Smith's Steam Cultivator.—I regret that I overlooked your note of the 2d Nov., making inquiry respecting my experience of Mr. Smith's steam cultivator. I now write to say that I have not kept account of wages or fuel consumed, nor other particulars specified in your schedule. Although it is now more than two years since I received the apparatus, I have had no opportunity of employing it in the autumn owing to the wetness of both seasons and the heavy clay soil of my farm. In the two springs I have employed it with advantage, but owing to imperfections in the ground pulleys, arising partly from their construction and partly from rapid wear of the sockets, which occasioned accidents to the ropes, and latterly, as the ropes got more injured, frequent breakages, I had few days when the work was so continuous as to enable any very accurate estimate to be made of cost. I may state, however, that when the land was in a fit state for the cultivator, we have turned up 1 acre imperial per hour for some hours together, to a depth of 10 inches. The engine I at first employed was a single cylinder engine, 9 inches in diameter, and about 8-horse power, with steam at 60 lbs.; but finding it necessary for the engine-driver to assist the starting by the fly-wheel at every turn of the cultivator, and the power on the work too small for the 5-tine machine, I got a double cylinder engine of 12-horse power, cylinder 7¼ diameter, from Clayton & Shuttleworth, which gives me great command of power, but was not sufficient to draw the cultivator 6 inches deep through heavy clay in a very wet state, but quite powerful enough to break my rope on several occasions. The weight of a 12-horse engine is so great, that if I had to order another I would prefer a double cylinder of 7 inches = 10 horse power. That would be quite effective on all land up to very heavy clays in a wet state, and would not so much endanger the breaking of the rope, which is a ruinous thing, not only from the deterioration of the rope, which is an expensive article, but from the stoppage it occasions of the 10 or 11 persons attending the machines. I am now making a set of field pulleys, which I expect will much lessen the wear of the pulleys and prevent the rope from slipping off and getting damaged; and this spring I propose to start with a new rope and these pulleys, and shall keep an accurate account of the expense, as we have now sufficient experience to consider the practice as perfect as it will be on the average. With regard to the quality or value of the work done, as I am no farmer myself, I can only give you the opinion of my people. They all agree that on our heavy land it is of no use in wet weather, but when the land is in a fit state it is a most valuable apparatus for improving the soil. They never saw the soil so well worked, and one of my best tenants tells me it will change his system of summer fallow. Hitherto he has been unable to get the soil pulverised in spring so as to get a Turnip crop. Last spring he had my machine for four days in a 6-acre field, where he sowed Turnips, and had a crop which sold for 90*l.* Instead of Wheat he will now sow Oats, which pay nearly as well, as the farm is high above the sea for Wheat, and thus he will grow Turnips and Oats instead of Wheat, which he says will make a difference in favour of the new steam cultivation of 8*l.* to 10*l.* per acre on the extent of land he has hitherto had in summer fallow. I find that we employ when the machine is at work—

	£	s.	d.
2 men at engine and windlass, 2 men at shifting pulleys, and 1 man with cultivator, averaging 2*s.* 6*d.* per day	£0	12	6
1 man and horse	0	7	6
2 girls and one boy, per day	0	3	6
	£1	3	6
Our coals cost per day (15 cwt.)	0	4	6
Sundries, including mechanic's wages on the average in repairs, oil, &c., and tear and wear of engine, interest, &c., about	0	10	0
	£1	18	0

This gives from 6*s.* to 7*s.* per acre as the cost. *H. Houldsworth, Coltness, Motherwell, N. B.*

Fowler's New Windlass.—Mr. Greig's words in your paper of the 4th inst. in reference to my remarks upon Mr. Fowler's windlass ("some part of which he owns he does not clearly understand") prove that he has misread my words, for they were, "but there is one point in the report I do not clearly understand." Thus, it was the report (not the machine) that I said I did not clearly understand. Now, the reason why I did not understand it was, that its statement was opposed to facts that I had worked out. I gave those facts in support of the exception taken for the information of the public. I believe I well understand Fowler's windlass, and hope to describe it to the satisfaction of Mr. Greig, and for the information of your readers; but before doing so I must go a little into the question of this windlass supplied to me in 1855 and the windlass mode of application in general, especially as Mr. Greig alleges that I am premature in pronouncing it to be the best mode of application. Let us see what evidence there is. There stands (under my shed) my old windlass, that after patenting, constructing, and proving my implements in the spring of 1855, I travelled to Carlisle in the July following to find a manufacturer to make for me (to work them with), where I instructed and contracted with Fowler for it in good working order; and under the same shed there stands one of my substantial four-wheeled ones with which (for convenience of shifting) I now work my farm. It is in good working order, and there are now nearly 150 such windlasses in full practice. Besides this, there are the Howards, Roby for Oliver and Chandler, Hayes, Hensman, and others, all offering and supplying windlasses; yes, and we may add to this Mr. John Fowler as offering one. Their durability is proved by the "lost sheep," a second-hand one after working through three seasons going on working 133 days out of 150, doing 751 acres at a swing. Other instances of activity and durability may be brought to support this. Now let us contrast this evidence with the evidence in support of Mr. Fowler's tackle. It appeared at Chelmsford for the first time in 1856; there it was a vertical windlass. From there it went to Salisbury without proving the economical part of the question. After this the vertical drums get tossed over for a grooved drum combined with the engine for Chester, which did not last 12 months, for a "C. Hall" figure of 8 drum and a Burton arrangement of engine was the form in which it was exhibited at Warwick. From Warwick it goes to Canterbury in a somewhat varied form, but at Leeds the clip drum takes the place of the figure of 8 arrangement. This clip drum is not allowed a whole year to run clear, for the two wheeled windlass in question was brought out by Mr. Fowler in December last. Now the want of durability of the from-Chelmsford-to-Leeds machinery is too well known to require a remark from me. The summary of this evidence is that the windlass is the most generally useful and durable, and the practical farmer of England, the great jury, has given in a verdict that it is the best mode of application by adopting it by hundreds—this verdict is now supported by Mr. Fowler. Now I will explain Mr. Fowler's windlass. The two drums, by being framed on the same axis, make it in that respect a similar windlass to the one I instructed Mr. Fowler to make for me at Carlisle in 1855, the one I started with, and which, without doubt, was, with its master, the starter of efficient and economical steam cultivation; but as the drums are framed upon the same axis as the two travelling wheels, it is (except the break shaft and wheels) my own invention, and was patented by me April 22, 1855. I afterwards abandoned and gave it to the public, and it is now discarded, because I find it a bad arrangement. In the first place, the drums are grinding themselves away round their own axis, and it is very liable to be out of order. Surely I ought to be proud at seeing people appreciate my inventions. We have Mr. Fowler and Messrs. Howard offering to the public the two-wheeled windlass that stands condemned by me (its father). But let us go on; it may be seen that it is two drums framed upon the travelling axis; the driving shaft has two pinions upon it, both which are all ways in work, either backwards or forwards, in each of the two drums. At the end of the driving shaft furthest from the engine there is a cog wheel, which is always geared into another cog wheel, which is what may be termed the break wheel; this break wheel is on the end of another shaft, which may be termed the break shaft, and on this shaft there are two pinions, and they are always at work, each in one or other of the two drums. Then the only variation there is in it from the form in which I patented, is the complicated mode of breakage, to effect nothing but a waste of power, and wear and tear of itself. This Mr. Greig admits to be correct, yet with a number of words he strives but fails to place a gain to his complicate windlass break. Let him bring common sense and a little practice to bear upon the matter, and he will find out his error. He will now see that I am well up in the subject, and ever ready to give information to the public. *William Smith, Woolston, Bletchley Station.*

Tithe Rent Charge.—The questions asked by "X. Y. Z." are all easy of explanation, excepting the last, which I confess I do not understand. Without referring to Acts of Parliament or using technical language, it can be understood that supposing at the time the tithes of the parish of A. were commuted, and the sum of 100*l.* agreed to be paid to the rector in lieu of all his tithes in the parish which he formerly had in kind or compounded for, then the sum of 100*l.* would be divided into three portions, and it would be ascertained how many bushels of Wheat at 7*s.* 0¼*d.* the sum of 33*l.* 6*s.* 8*d.* would purchase:—

Barley at	3*s.* 11½*d.*
Oats at	2*s.* 9*d.*

The quantities are as under:—

Wheat nearly	95 bushels
Barley about	169½ "
Oats about	242½ "

And these quantities would be entered in the apportionment of the parish as the quantity of each kind of corn to be rendered every year to the rector, payable in money, and subject to the fluctuations in price of the

corn, the average of the preceding seven years' prices being struck early in January in every year, and ruling the rent charge for the year, which became due subsequently when the next year's averages are struck. It will therefore be seen that the quantity of corn being fixed, and the price of corn varying every year, that there is always a difference in the money value of the 100*l.*; for instance in the year next following the Act of Parliament, the prices were—Wheat, 6*s.* 8*d.*; Barley, 3*s.* 11¾*d.*; Oats, 2*s.* 9*d.*; and—

95 bushels of Wheat, at 6*s.* 8½*d.*	£31	17*s.*	3½*d.*
169¼ " Barley, at 3*s.* 11¾*d.*	33	14	5¾
242½ " Oats, at 2*s.* 9*d.*	33	6	8
So that the 100*l.* was worth only	£98	18	5¼

Being a reduction of 1*l.* 1*s.* 6¾*d.* per cent. And thus a farmer living in this parish, whose tithe rent charge in the apportionment is fixed at 20*l.*, pays for that year only 19*l.* 15*s.* 8¼*d.* The actual averages, as per Willich's Tables for the year above referred to, were 98*l.* 13*s.* 9¾*d.*; but as decimals are not used in my calculation, it is sufficiently near to show the principle of working. The rent which a farmer pays has nothing to do with his tithe rent charge, which is fixed by a valuer appointed for that purpose, who divides or technically apportions the 100*l.* in the parish of A. amongst the different farms; and, indeed, generally upon every field. Mr. Willich, the Actuary to the University Life Assurance Society, always publishes a Table every year, showing the value of all sums from 3*d.* up to 2000*l.*, and thus there is little difficulty in making out the rental for each year. The price is only 1*s.*, and as the accuracy is unquestionable, few persons make the calculations themselves. I can recommend a small book "On the Collection and Recovery of Tithe Rent Charge," by Charles James Jones, published by Rivingtons, as likely to give "X. Y. Z." all further information he may require. *R. H. Harvey, Harroldston, near Haverfordwest.*

Reviews.

Lives of the Engineers, with an Account of their Principal Works, comprising a History of Inland Communication in Britain. By Samuel Smiles. John Murray. 1861. 2 vols.

(*Concluded from* p. 32.)

We have dwelt sufficiently long on what, after all, can only be regarded as the preparatory or introductory part of Mr. Smiles's very interesting work; for it is not until we arrive at his account of the drainage of the great level of the Fens, situated at the junction of the counties of Lincoln, Huntingdon, Cambridge and Norfolk, that the authentic portion of the narrative commences. The area of this district presents almost the dimensions of a province; it contains "about 680,000 acres of the richest land in England, and is as much the product of art as the kingdom of Holland, opposite to which it lies. . . . Not many centuries ago this vast tract of about 2000 square miles of land was entirely abandoned to the waters, forming an immense estuary of the Wash, into which the rivers Witham, Welland, Glen, Nene, and Ouse discharged the rainfall of the central counties of England. It was an inland sea in winter, and a noxious swamp in summer, the waters expanding in many places into settled seas or meres, swarming with fish, and screaming with wild fowl. The more elevated parts were overgrown with tall Reeds, which appeared at a distance like fields of waving corn; and they were haunted by immense flocks of starlings, which, when disturbed, would rise in such numbers as almost to darken the air. Into this great dismal swamp the floods descending from the interior were carried, their waters mingling and widening by many devious channels before they reached the sea. They were laden with silt, which became deposited in the basin of the Fens. Thus the river beds were from time to time choked up, and the intercepted waters forced new channels through the ooze, meandering across the levels and often winding back upon themselves, until at length the surplus waters, through many openings, drained away into the Wash. Hence the numerous abandoned beds of old rivers still traceable amidst the great level of the Fens, the old Nene, the old Ouse, and the old Welland. The Ouse, which in past time flowed into the Wash at Wisbeach (or Ouse Beach) now enters at King's Lynn, near which there is another old Ouse. But the probability is that all the rivers flowed into a lake, which existed on the tract known as the Great Bedford Level, from thence finding their way, by numerous and frequently shifting channels, into the sea."

The work of reclaiming this important tract of land was first commenced by the Romans in the district lying along the shores of the Wash, now known as Marshland and South Holland. The same people also constructed several causeways across the Fens for military purposes, but it was not until the middle ages that any systematic attempt was made to occupy the Fen islands. Then the isle of Ely was adopted as the locality of a religious settlement, to which Ethelreda, afterwards known as St. Audrey, the daughter of the King of the East Angles, retired for purposes of devotion and sanctity. "Canute more than once sailed across the Fens with his ships, and the tradition survives that on one occasion, when passing from Romsey to Peterborough, the waves were so boisterous on Whittlesea Mere (now a district of fruitful corn fields, and the subject of a recent article in the English Agricultural Journal), that he ordered a channel to be cut through the body of the Fen westward of Whittlesea to Peterborough, which to this day is called by the name of the King's Delph."

It is impossible in our limited space to pursue this interesting episode in the history of reclamation and improvement, nor indeed where so much depends on the interesting and graphic character of the narrative would it be fair to do so. Suffice it to state that one of the first works attempted on a large scale with a view to the thorough drainage of the North Level was that carried out by John Morton, Bishop of Ely, in the reign of Henry VII. "He caused a 40-foot cut or canal to be dug from near Peterborough to Guyhirne, continuing it eastward, through Wisbeach, to the sea, the distance being 40 miles. Its object was to enable the overflowings of the river Nene [which has attained so much notoriety in the modern history of drainage], into which the drainage of many thousands of acres of land flowed, to be more quickly evacuated, and at the same time to enable navigation between Peterborough and the sea." This work, in which the Bishop took great interest, is known to the present day as Morton's Leam, and the public spirited prelate has the reputation of being the first to introduce into the district the practice of making straight cuts and artificial rivers, which has been extensively adopted by engineers who have succeeded him. With the dissolution of the monasteries, the drainage of the Fens, which up to that time had been principally conducted by churchmen, received a serious check; and although, in the reign of Elizabeth, a commission was appointed with the object of devising and adopting measures for the drainage of the North Level, followed some years afterwards by the passing of a General Drainage Act (43rd Elizabeth), it was not until after the accession of James I. that a series of destructive floods, which swept away many farms and villages (A.D. 1670), caused the subject to be taken up with the zeal and energy which its importance demanded. The first step was the appointment of a commission, who reported that there were not less than 307,242 acres lying outside the Fen dykes which required drainage and protection; and unless the following picture be overdrawn there was ample need for the most vigorous course of action.

"The need of skilled engineering for the rescue of the drowned lands in the Fens was at this time certainly most imminent. It would be difficult to imagine anything more dismal than the aspect which they presented. In winter, a sea without waves; in summer, a dreary mud-swamp. The atmosphere was heavy with pestilential vapours, and swarmed with insects. The meres and pools were, however, rich in fish and wild fowl The Welland was noted for stickebacks, a little fish about 2 inches long, which appeared in dense shoals near Spalding, every seventh or eighth year, and used to be sold during the season at a half-penny a bushel for field manure. Pikes were plentiful near Lincoln; hence the proverb, "Withan pike, England hath none like." Fen nightingales, or frogs, especially abounded. The birds proper were of all kinds; wild geese, herons, teals, widgeons, mallards, grebes, coots, godwits, whimbrel, knots, dottrels, yelpers, ruffs, and reeves, many of which have long since been banished from England. Mallards were so plentiful that 3000 of them, with other birds in addition, have been known to be taken at one draught. Round the borders of the fens there lived a thin and haggard population of 'Fen-slodgers,' who derived a precarious subsistence from fowling and fishing. Disease always hung over the district, ready to pounce upon the half-starved Fen men. . . . When the outfalls of the Ouse became choked up by neglect, the surrounding districts were subject to severe inundations; and after a heavy fall of rain, or after a thaw in winter, when the river swelled suddenly, the alarm spread abroad, "the bailiff of Bedford is coming!' the Ouse passing by that town. But there was even a more terrible bailiff than he of Bedford; for when a man was stricken down by the ague, it was said of him 'he is arrested by the bailiff of Marshland;' this disease extensively prevailing all over the district when the poisoned air of the marshes began to work."

That such a state of things should have seriously engaged the attention of King James is not at all to be wondered at. Accordingly we find it stated, that when informed of the calamity that had overtaken his subjects in the Fens, he made the right royal declaration that "for the honour of his kingdom he would not longer suffer these countries to be abandoned to the will of the waters, nor let them lie waste and unprofitable, and if no one else would undertake their drainage, he himself would become their undertaker." As the result of this determination various schemes were adopted; an Act of Parliament was passed for draining 6000 acres in Waldersea county, and Chief Justice Popham, as though he had been a second Fitzherbert, was sent down to the Fens to superintend one portion of the work, whilst the execution of the other part was intrusted to a company of London Adventurers on condition of their receiving two-thirds of the reclaimed lands as a recompense. These works were only partially successful; and, after the death of James I., in proportion as the outfalls of the rivers flowing through the Fen level became neglected and the old drains were suffered to be silted up, the waters were gradually regaining their old dominion. In order to arrest the evil, the Commissioners of Sewers at Huntingdon attempted to levy a drainage tax of 6*s.* per acre on all marsh and fen lands, but not a shilling of it was collected; and as matters were now approaching a climax, the Commissioners of Norfolk, at a session held at King's Lynn in 1629, determined to call to their aid Sir Cornelius Vermuyden, a Dutch engineer, who had gained a certain amount of reputation by his works at Sedgemoor, in Somerset; at Halfield Level, on the confines of Yorkshire and Lincolnshire; at Dagenham, on the Thames; and at Malvern Chase, in Worcestershire. At an interview to which he was invited, Sir Cornelius Vermuyden offered to undertake the drainage of the Level on condition of receiving a grant of 95,000 acres of the land so reclaimed; but though a contract was duly signed, it was very soon afterwards broken through, because of the popular dislike to so large a concession of land to a foreigner.

It was under these circumstances that Francis, Earl of Bedford, was induced to take the place of Vermuyden, and become chief undertaker in the great work now so well known as the Bedford Level. In this enterprise the Earl was assisted by several landowners, who contributed sums towards the work, on condition of receiving a proportionate acreage of the lands reclaimed. To the Earl of Bedford and his co-undertakers a rival scheme was presented by Westerdyke, also a Dutchman, but ultimately that of Vermuyden was adopted, and so zealously did he prosecute his work that when, owing to the failure of the Earl's resources, there was a danger of the work standing still, Vermuyden himself provided means for paying the workmen's wages, and received several thousand acres of land as a consideration for the advance. To trace the history of the various drainage works connected with the Great Level of the Fens, from the time of Vermuyden down to the year 1830, would be quite impossible in our limited space, but there are one or two facts connected with them deserving notice. Vermuyden, like many other improvers, had to encounter fierce opposition from the inhabitants of the Fen districts, and as his work was not so perfect in its kind as to ensure its triumph over the prejudices of the people, when the work was resumed under the auspices of Charles I., it was adroitly represented that the sole object of the proposal was to fill the impoverished Exchequer, and the discontent being thus fanned into a fierce flame, "Oliver Cromwell, the member for Huntingdon, until then comparatively unknown, availing himself of the opportunity which offered, of increasing the influence of the Parliamentary party in the Fen counties, immediately put himself at the head of a vigorous agitation against the further prosecution of the scheme;" he was hailed on all sides "Lord of the Fens," and the great project, even in the state it then was, fell to the ground. Thus the greater part of the Level again lay waste till the year 1649, when authority was granted to William, Earl of Bedford, and others to resume and complete the works originally undertaken by his father, and Vermuyden being again selected as engineer, after a remarkable succession of obstacles which would have disheartened a less bold and resolute man he succeeded so far with his work that in March, 1652, it was declared to be complete, and at what would now be termed an "inaugural ceremony," he was enabled to point out to the commissioners of adjudication that in the north and middle levels there were already 40,000 acres of land "sown with Cole seed, Wheat, and other winter grain, besides innumerable quantities of sheep, cattle, and other stock where never had been any before."

It is impossible after so long a lapse of time to ascertain to what combination of causes the downfall of Vermuyden was owing, but it is not without regret that we learn from Mr. Smiles's sketch, that in carrying out his great work he not only impoverished himself, but in the end the Company by whom he was engaged preferred heavy claims against him which he had no means of meeting, and in 1656 he had to appear before Parliament as a suppliant for redress, and thenceforward he entirely disappears from public sight. Since the time of Vermuyden, many engineers, including Perry, Golborne, and Kinderley, have been engaged in correcting the defects of former works, or in carrying out further improvements, but it was reserved for Mr. Rennie to evoke the enterprise of the Fen lords, and induce them to carry out the thorough drainage of the low-lying lands on sound scientific principles. Thus after centuries of persevering effort the great work has been at length accomplished, and the success which has crowned the enterprise may well be adduced as an encouragement to all future improvers, though it also teaches a lesson of caution to enthusiastic adventurers.

We have dwelt thus long on the early pages of Mr. Smiles's work because they possess peculiar interest to the agricultural reader; but in the lives of SirHugh Middleton, of John Metcalf, the blind road maker; of William Edwards, the bridge-builder; of Brindley, the canal engineer; of Smeaton, the engineer of Eddystone lighthouse; of John Rennie, the pupil of Meikle; and of Telford, the road and bridge engineer, there will be found a vast amount of interest and instruction, for which we refer the reader to the volumes themselves.

Farm Memoranda.

NORTH LINCOLNSHIRE FARM.—We have now got through the first week in January, and have hardly had as much either rain or snow as to make the ditches run freely. The weather to the close of October was unusually dry for this season, with occasional showers, hardly sufficient to make the Wheat vegetate; in consequence the early sown came up rather partially. From that time the weather has been all that could be wished, which has enabled farmers to sow a large breadth. Almost without exception the whole is looking remarkably well—the early sown not getting winter proud, the latter very vigorous. As threshing proceeds we are fully confirmed in our former opinion of the shortness of the crop of 1861. According to present appearances we have the prospect of a much larger supply of home produce for the future. I hope the time is not distant when we shall have some sort of agricultural statistics. I hold if we only had the acreage of crops grown it would be of considerable importance. The past autumn was favourable for steam cultivating; the whole of our fallow break was twice gone through (with the exception of one field we are underdraining) by the 21st of October, and now lies in that state ready to be gone over again early in the spring when sufficiently dry. Our horses are feeling the benefit of steam culture; after being reduced about one-fourth, the remainder have only the leadings of the farm to do, many of them frequently standing in the stable, and are consequently easier kept. There is no doubt now but steam culture is a success. Roots, with the exception of Mangel, are a good crop, and last out well. Sheep and cattle doing well, the former are having their Turnips all cut, with an allowance of ½ lb. of best Linseed-cake; it is not our practice to feed many cattle after Christmas, but to keep the whole of the yard beasts tolerably well, with from 2 to 4 pecks of Swede Turnips or Mangels, with about 3 lbs. of Linseed-cake, together with straw or cut hay and straw mixed, with which keep they come out full of flesh at the spring. *S.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Thursday Jan. 16, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	10	29.77	47	45	S.W.	2	2	54	46	54	42	0.06	42½	42
Saturday ..	11	29.16	49	46	S.W.	4	6	53	45	54	44	0.05	43½	42
Sunday ..	12	29.76	38	37	S.	2	4	49	36	52	34	0.03	43½	43
Monday ..	13	29.80	35	34	W.	1	8	48	31	46	28	0.07	43	43
Tuesday ..	14	29.58	37	36	N.W.	2	8	45	35	45	33	0.20	42	43
Wednesday ..	15	29.98	38	37	N.	1	5	42	37	42	36	0.03	42	43
Thursday ..	16	30.13	32	31	N.	1	3	43	30	47	28	..	42	42½

Calendar of Operations.

JANUARY.

LAMMERMUIR SHEEP FARM: *Jan.* 8—In reviewing the year which has just left us, we doubt not that stock farmers will regard it as a most favourable one, both in regard to weather and abundance of keep. It opened with a heavy storm of snow on the ground, and though during the short time it lasted the frost was most intense, yet from the thorough covering of snow the Turnip crop and hill pastures generally escaped unscathed: thus, when the sheep succeeded during the storm in getting down to the heather it was quite fresh and green. Of course a considerable quantity of hay was required to supplement their own exertions. In regard to this an error is sometimes committed of putting sheep too soon on full hay, and last season we observed even black-faced sheep lose much of their hardy independence when they found their wants so readily supplied. Some people regard a short storm not unfavourable to hill stock when they are put upon hay, thinking them the better for the change of food. The Turnip crop of 1860 was most abundant, and hill stock came in for a large share at the finish of it. Very small charges were made by low-country farmers; some were even giving them for nothing, and getting large lots of sheep down to clear their ground. The lambing season was propitious, but the crop was by no means extra in point of numbers. There being considerable deficiency from eild ewes, this probably arising from the rough wet weather of the previous autumn. Lambs thus got a capital start, and Grass became plentiful. We remarked, however, that lambs did not progress in proportion to the abundance of the Grass, having frequently seen them make more improvement when their pastures were closer shaven. Meadow hay was a large crop, but with a rather precarious hay making season the quality is perhaps not first class. Then came an early harvest with a crop bulky and well secured. October was so fine we could almost have managed a second harvest. The Turnip crops of 1861 are good, having continued to bulb till a late period. Swedes are sound and flinty. November was a boisterous month, and brought us a foretaste of winter. December, however, was fine, and at present the weather is unusually open, varied occasionally with keen frosts. Altogether 1861 has been a good hill farmer's year, and forms in some measure a set-off against the disastrous season of 1859-60. Prices of wool have been fair, and of lambs and cast ewes very high. At the present date we believe the condition of hill sheep to be considerably above an average. When our flocks were wasting under the calamitous season of 1859-60, it seemed as if they could never recover their bloom and vigour; and another such winter in their enfeebled state would have wrought dire havoc. But He who regards the wants of His creatures hath caused Grass to grow for the cattle and herb for the service of man, and the flock is not cut off from the fold. *J. S. B.*

BORDER OF THE FENS: *Jan.* 13.—The unusual mildness of the season has enabled farmers to prosecute all kinds of out door work without interruption, consequently, although the weather has been somewhat damp for such an operation, yet cleaning land with scarifier and scuffler has gone on quite satisfactorily; where Twitch abounded, men with forks have followed Bentall, and once get a fire we have found no difficulty in burning all we could cart up; on two or three successive fine days the rakes were brought out and greater progress made. There is no question about your maxim being right, "that the scarifier makes the best preparation for the plough." The scuffler we use is a triangular wooden frame in which are inserted about 12 or 14 strong tines, no two of which follow in the same track, and by unscrewing the nuts the number can be reduced if the land be so foul or wet as to block up the implement. In beginning to work foul stubbles at this time of year, the strain is sometimes too much for Bentall's broad shares, but this difficulty may be obviated by removing the shares and going over with tines only for the first time. We have begun to plough for Bean sowing, and we see everywhere the land turn up uncommonly kind and mellow. Manure carting alone proceeds slowly owing to the bad state of the roads, so that it is not advisable to do more than is necessary. During the few intervals of frost we commenced clearing the yards, but for some time since only the prepared heaps for Beans or Clover have been moved. At last it may be said that the Wheat plant is up, and everywhere looking remarkably strong; it is constantly stated that it never took so long a time to make its appearance, chiefly owing to the dryness of the soil. The temperature of November was unusually low, and nearly all the experienced hands delayed sowing until after the usual period. Here is an exception to the modern rule of putting it in as soon as possible, but the rule may be right for the next 20 years notwithstanding. Stock now require considerable attention, and all food offered to them should be palatable and nutritious. Store stock seems in demand, and makes good prices; fat stock is somewhat lower in price, possibly owing to the mildness of the weather, but we fear chiefly from a diminished consumption in the larger towns. Labourers are tolerably well employed at 12*s.* per week, indeed in some districts we hear of men being wanted, therefore as the days lengthen if Wheat should be any higher, it would not be surprising if an advance took place in wages; claying fen lands, and draining clay land seems now to engage a great number of men, and the new year finds agriculturists more enterprising than ever, anxious to make their business realise a maintenance. *J. W., Peterborough.*

BERWICKSHIRE MERSE FARM: *Jan.* 11.—The weather for a month past has been seasonably destructive, and has materially altered the prospects of the season. In early December there was a good deal of wind, and rain fell to the depth of an inch and a half. The middle of the month was unusually mild, but from the 20th the temperature fell rapidly; and until the close of the year hard frost prevailed, calm and steady, the long spikes of rime presenting the appearance of a sprinkling of snow. From New Year's Day it gradually relaxed, but it is only lately that lea-ploughing has been resumed. The frost reached a depth of 8 or 9 inches, and in sheltered places it is still noticeable. The 15 days of plough-rest were pretty well occupied in carting out dung to the heaps, and in spreading compost and waste matter. Abundant threshing too is having its effect on the markets; though with short crops, dulness cannot last very long. Red Potatoes at 4*l.* a ton are being sent off faster than consumers want them. Such small portion of Wheat as was brairded before the frost, does not seem much the worse; and, if mild weather continue, the great bulk of the crop sown a month ago promises to show above ground ere long. It is in the general root crop, however, that the effects of the late weather will be chiefly felt. There are many who in general terms assert that their Swedes are none the worse; and we believe that in some high situations, and (as might be expected) near the sea-coast, there has been a special mitigation of destroying hoar-frosts. But taking the district as a whole, we are forced to conclude that large crops are damaged so as to render doubtful the propriety of storing for any length of time; while smaller roots, grown with less stimulating manures, are comparatively sound. Under the latter class, however, the acreage is limited; for there had been a great growth since harvest; and more's the pity that one-half or perhaps two-thirds of so fine a crop should have been unsecured. Feeding cattle will feel the loss lightly, for they can get supply from the field in the meantime, and have a store more or less extensive to fall back upon. Hoggs will be the principal sufferers, for little or no provision was made for them. At present they are making White Turnips disappear "like snaw off a dyke." The Aberdeen Green-top Yellow seems to stand better than many kinds of Swede; and we have a piece of White Swedes in the comparative soundness of which we feel much confidence. *J. T.*

Notices to Correspondents.

CARRIAGE OF MILK: *The Dairy Maid.* It is common in Gloucestershire to take a large milk vessel, holding perhaps 80 or 100 gallons, carried on a pair of wheels and without springs, to the field, and milk the cows there, carrying the milk perhaps a mile to the dairy. Some such plan must be adopted by you.

GUANO: *Old Sub.* The sample, so far as it can be judged by mere inspection, is not of a good guano. There is no guano equal to "Gibb's best."

POULTRY.—There is little improvement in trade, nor is there apparently anything to cause it. We believe Chickens hatched now will pay in three or four months' time. If the supply of table poultry enters into the calculations of our readers, this is the time to prepare for the good prices of April, May, June.

RENT: *Gulielmus.* Unquestionably land is often rented for agricultural purposes, and profitably so, for more than 3*l.* per acre.

Wind Power.

J. R. PEILL, 17, New Park Street, Southwark, S.E., begs to inform intending purchasers that he has now increased facilities for Manufacturing the Patent WIND ENGINES for Pumping, Grinding, Chaffcutting, Pulping, &c.
Prospectuses and all information may be obtained by enclosing one postage stamp, and a Wind Engine in full work may be inspected on the Premises daily.

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2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern
for Cottage Houses, &c., to contain 50 gallons, 26*s.*; 80 gallons, 31*s.* each; and 140 gallons, 37*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

Galvanised Iron Pumps
for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

Galvanised Iron Swing Water Barrows
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35*s.* 0*d.* each.

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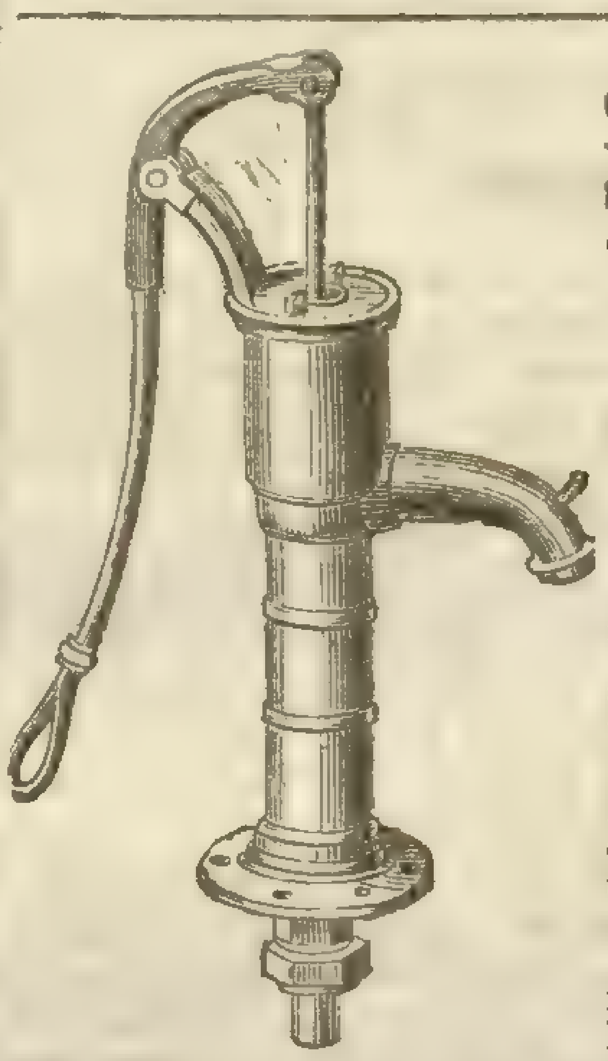

J. TYLOR AND SONS' PATENT IRON PUMP with reversible handle, for Shallow Wells, Hot-Houses, &c. Price 25*s.* 6*d.* each.

IRON YARD and GARDEN PUMPS
3 feet 6 inches under spout
2½ — 3 — 3½ inch
43*s.* — 53*s.* — 60*s.* each.

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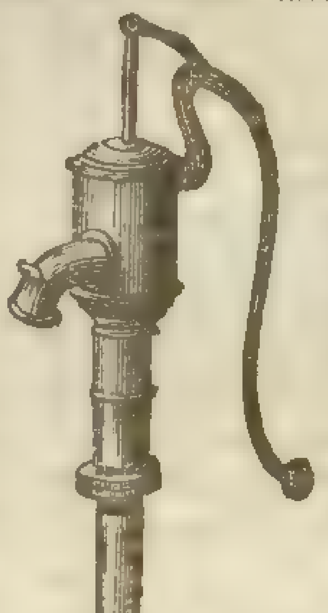


No. 35.

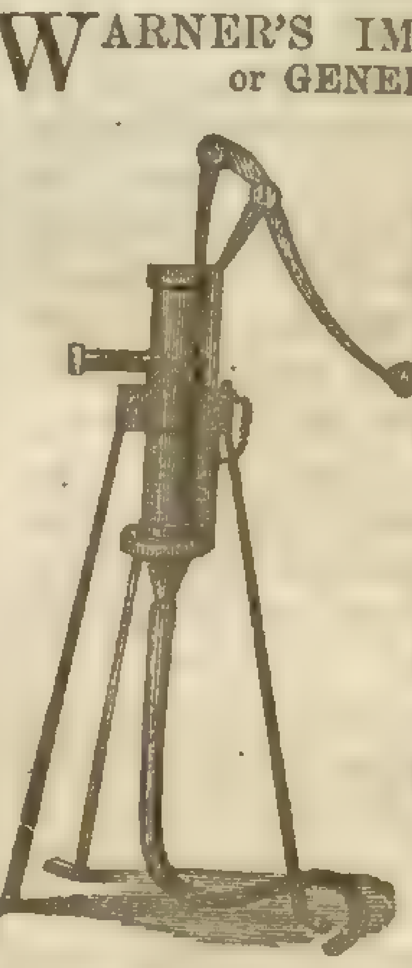
WARNER'S PATENT CAST-IRON PUMP, for raising Water from Wells not exceeding 25 feet in depth.

Diameter of Barrel.	Height.		£ s. d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1 1 0
2½ „ long	3 „ 3 „		1 10 0
3 „ ditto	3 „ 6 „		2 4 0
3½ „ ditto	3 „ 6 „		2 9 0
4 „ ditto	3 „ 6 „		2 18 0

2½ „ short, with 15 feet of Lead Pipe attached, ready for fixing 2 0 0
2½ „ long ditto ditto ditto 2 14 0

This Pump is fitted with J. W. & SONS' Patent Vibrating Standard, Improved Revolving Cap, Metal Bucket, and Brass Suction Valve. By means of the Revolving Cap the handle can be shifted to the right or left hand, or opposite the nose, as desired.

WARNER'S IMPROVED LIQUID MANURE or GENERAL PORTABLE PUMP.



No. 42.

This Pump is fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

	£ s. d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2 15 0
If fitted with Barrel of Planished Copper	3 4 0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2 9 0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires, in either 10, 12, or 15 feet lengths .. per foot	0 2 5

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2*l.* 5*s.*

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.

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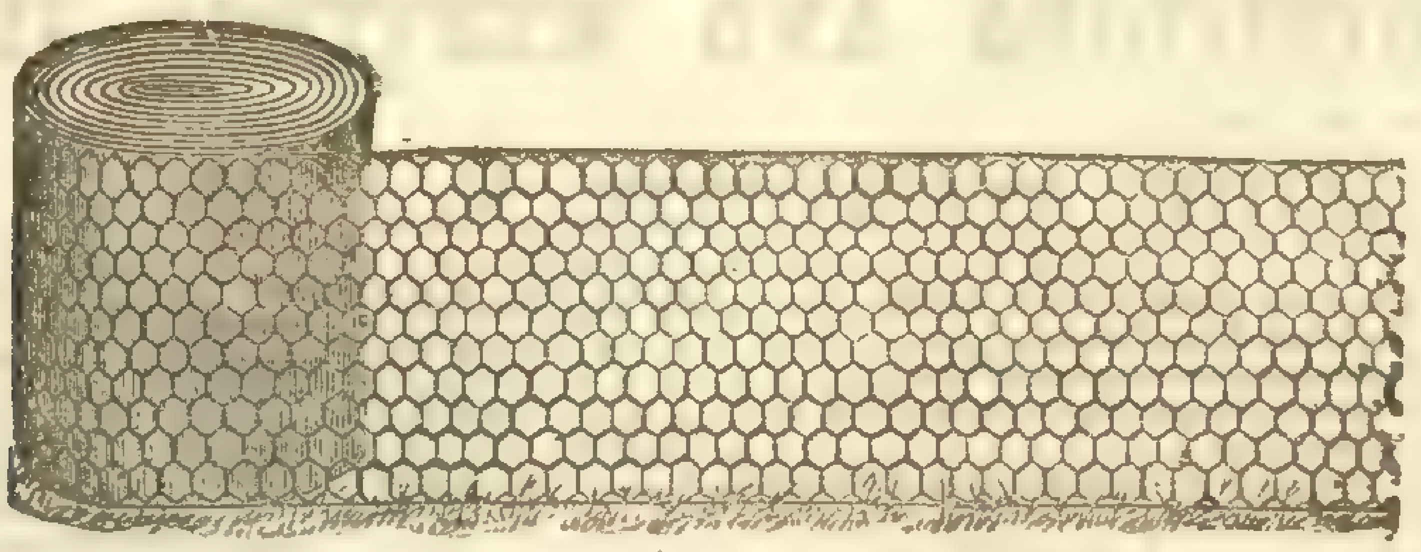


PRICES PER LINEAL YARD, 24 INCHES HIGH :—

Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra Strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
2¼ inch	Hares, Dogs, Poultry	3*d.*	4*d.*	3¾*d.*	5*d.*	4½*d.*	6*d.*	5½*d.*	7*d.*
2 inch	Game or Poultry Netting	3½*d.*	4¼*d.*	4*d.*	5*d.*	5*d.*	6½*d.*	6½*d.*	8*d.*
1⅝ inch	Small Rabbits, Hares, &c.	4*d.*	4¾*d.*	4¾*d.*	6*d.*	5½*d.*	7*d.*	7*d.*	9*d.*
1½ inch	Smallest Rabbits..................	5*d.*	6*d.*	5¾*d.*	7*d.*	7*d.*	9*d.*	9*d.*	11*d.*

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS

HAVE the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

GREEN'S PATENT LAWN MOWERS.

HER MAJESTY'S ROYAL LETTERS PATENT, DATED DECEMBER 20, 1861,

HAVE BEEN GRANTED TO THOS. GREEN FOR

IMPORTANT IMPROVEMENTS IN LAWN-MOWING MACHINES

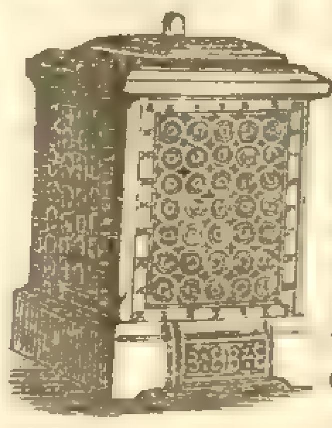
which will be ready for the ensuing season.

The Improvements are of such an important character that all users should not fail to make themselves acquainted with them.

ILLUSTRATED PRICE LISTS, with full particulars, will be ready shortly.

Address T. GREEN, SMITHFIELD IRON WORKS, LEEDS, and
2, VICTORIA STREET, HOLBORN HILL, LONDON.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

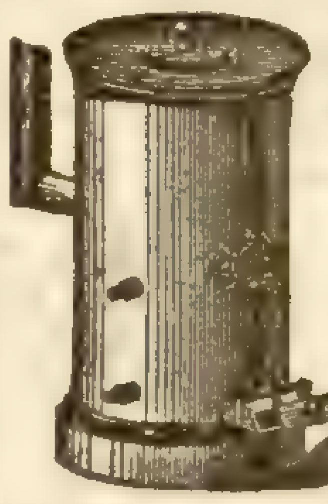


It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large Apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.

Particulars and prices post free on application to MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, and Elliptic, from 24*s.* each. Improved Boilers and Iron Stands to use without brickwork, 50*s.* each. Valves from 12*s.* 6*d.* each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. LYNCH WHITE's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

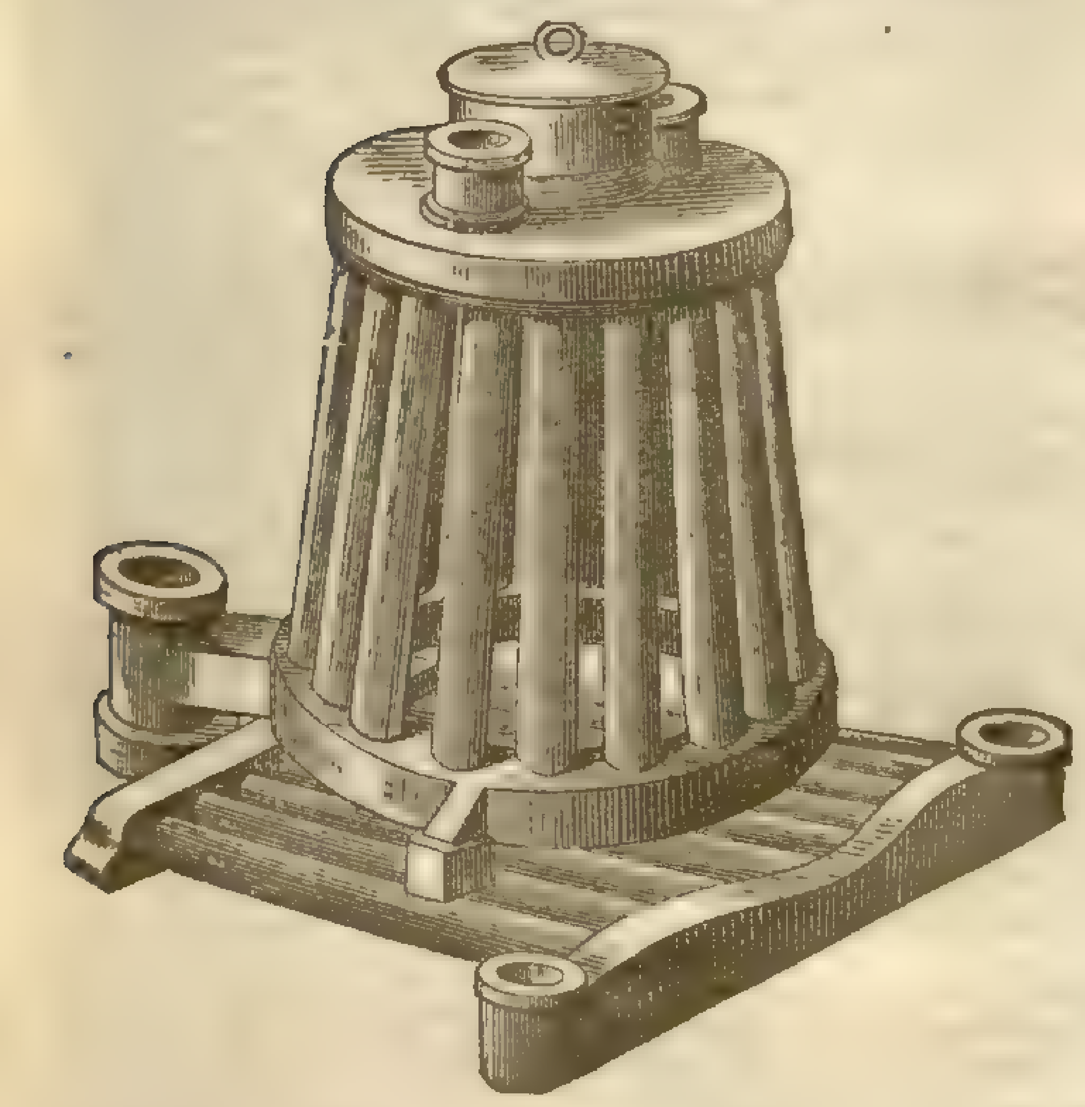
Hothouses for the Million.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17*l.* SPAN ROOFS, 30 feet in length, for 33*l.*; and all other dimensions at equally low prices. Delivered free to any Railway Station round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to SAMUEL HEREMAN, 7, Pall Mall East, London.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ORMSON'S PATENT JOINTLESS TUBULAR BOILER,
AN ORIGINAL INVENTION,



Brought out for the purpose, and is now fully acknowledged to surpass the OLD-FASHIONED JOINTED TUBULAR BOILERS, which have been made for the last 20 or 30 years by all other manufacturers. The ADVANTAGES of this PATENT will be manifest to every person's understanding from the following FACTS. For instance, one of the OLD-FASHIONED JOINTED BOILERS with 50 TUBES would have 100 JOINTS made of rope yarn and cement, exposed to the direct action of the FIRE, whereas in my PATENT there is NOT ONE JOINT so exposed. And it should be fully understood that as the OLD-FASHIONED JOINTED TUBULAR BOILER increases in SIZE, number of TUBES and JOINTS, its liability to LEAKAGE also increases, consequently

THE FOLLOWING IS THE REASON WHY

ORMSON'S ONE-BOILER SYSTEM

AND PATENT JOINTLESS TUBULAR BOILERS

have become so universally adopted on account of their superior power, great safety, and economy,

ORMSON'S No. 1 BOILERS	are heating	upwards of	250	feet of Pipe.
ORMSON'S No. 2 BOILERS	„	„	600	„
ORMSON'S No. 3 BOILERS	„		1300	„
ORMSON'S No. 4 BOILERS	„	„	3000	„
ORMSON'S No. 5 BOILERS	„	„	5000	„

Boilers of larger sizes if required to heat 12,000 or 15,000 feet of Pipe.

H. ORMSON having a most complete Set of Steam-power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, HORTICULTURAL BUILDER TO HER MAJESTY,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

ROYAL HORTICULTURAL SOCIETY.

ARRANGEMENTS FOR THE EXHIBITIONS AND MEETINGS IN 1862,

TO BE HELD

AT THE GARDEN, SOUTH KENSINGTON, W.

Jan. 20, Monday. Election of Fellows.
Feb. 11, Tuesday. Anniversary Meeting.
„ 18, Tuesday. Fruit and Floral Committee, and Ballot for Seeds.
„ 21, Friday. Meeting for Election of Fellows.
March 4, Tuesday. Fruit and Floral Committee.
„ 19, WEDNESDAY. HYACINTH and CAMELLIA SHOW, and Fruit and Floral Sub-Committee.
„ 21, Friday. Meeting for Election of Fellows.
April 1, Tuesday. Fruit and Floral Committee.
„ 4, Friday. Meeting for Election of Fellows.
„ 9, WEDNESDAY. AZALEA SHOW, and Ballot for Seeds or Plants.
„ 22, Tuesday. Fruit and Floral Committee.
„ 25, Friday. Meeting for Election of Fellows.

_ At some period during the season it is expected that the Memorial of the Exhibition of 1851 will be finished, and probably publicly uncovered.

May 2, Friday. Meeting for Election of Fellows.
„ 6, Tuesday. Fruit and Floral Committee.
„ 12, Monday. Meeting for Election of Fellows.
„ 21, WEDNESDAY. FIRST GREAT SHOW, and Fruit and Floral Sub-Committee.
„ 28, Wednesday. Election of Fellows and Ballot for Plants.
„ 30, Friday. Opening Day of American Show.

_ During June there will be a Grand Show of American Plants by Messrs. Waterer and Godfrey, of Knaphill Nursery, Woking, Surrey.

June 6, Friday. Meeting for Election of Fellows.
„ 11, WEDNESDAY. SECOND GREAT SHOW, and Fruit and Floral Sub-Committee.
„ 20, Friday. Meeting for Election of Fellows.
„ 26, THURSDAY, ROSE SHOW, and Fruit and Floral Sub-Committee.

July 2, WEDNESDAY. THIRD GREAT SHOW, and Fruit and Floral Sub-Committee.
„ 4, Friday. Meeting for Election of Fellows.
„ 22, Tuesday. Fruit and Floral Committee.
August 1, Friday. Meeting for Election of Fellows.
„ 12, Tuesday. Fruit and Floral Committee.
„ 26, Tuesday. Fruit and Floral Committee.
Sept. 5, Friday. Meeting for Election of Fellows.
„ 10, WEDNESDAY. SHOW OF AUTUMN FLOWERS, and Fruit and Floral Sub-Committee.
„ 23, Tuesday. Fruit and Floral Committee.
October 8, Wednesday. Fruit and Floral Sub-Committee.
„ 8, 9, & 10. GREAT INTERNATIONAL SHOW OF FRUIT, GOURDS, ROOTS, VEGETABLES, AND CEREALS. The Show of Gourds, Roots, and Cereals to continue until the 18th.
Nov. 7, Friday. Meeting for Election of Fellows.
„ 11, Tuesday. Fruit and Floral Committee.
Dec. 9, Tuesday. Fruit and Floral Committe.

ELECTION OF FELLOWS.

Gentlemen and Ladies wishing to become Fellows have to be proposed by some one already a Fellow, to whom they are personally known. The subscription is Two Guineas Entrance Fee, and Two Guineas or Four Guineas a year according to the privileges wished.

ADMISSION OF THE PUBLIC.

_ The Council, conceiving that it would be a convenience to a large number of persons coming to London on the occasion of the Great Exhibition, have arranged with Her Majesty's Commissioners for the issue of a Joint Card for those who, not being Fellows of the Society, may wish, during the period of the Exhibition, from the 1st of May to 18th of October, to have a personal free admission to both or either. The price fixed on is Five Guineas. The Card, which will be forfeited if transferred, will admit the one person who has signed it to the Opening Ceremony of the Great Exhibition, to visit it on every day that it is open to the public, and to be present during the same period at all the great Garden Fêtes of the Horticultural Society.

Previous to April 30, packets of 25 tickets may be bought by Fellows for 5*l.* per packet. These tickets are available for any Show during the year—admitting numbers corresponding to the prices of the day; *i.e.*, one on a 5*s.* day, 2 on a 2*s.* 6*d.* day, and 5 on a 1*s.* day.

I. HORTICULTURAL EXHIBITIONS.

March 19.	HYACINTHS and CAMELLIAS	2*s.* 6*d.*	Admission by payment at the door, or by tickets previously purchased.
April 9.	AZALEAS	2*s.* 6*d.*	
May 30.	OPENING DAY OF THE AMERICAN SHOW, contingent upon season	2*s.* 6*d.*	
June 26.	ROSE SHOW	2*s.* 6*d.*	
Sept. 10.	AUTUMN FLOWER SHOW ..	2*s.* 6*d.*	
Oct. 8	FRUIT AND VEGETABLE SHOW	2*s.* 6*d.*	
„ 9.	DITTO	1*s.* 0*d.*	
„ 10.	DITTO	1*s.* 0*d.*	
„ 11-18.	GOURDS, ROOTS, AND CEREALS	1*s.* 0*d.*	

II. GREAT MEETINGS.

May 21.	FIRST GREAT MEETING	Admission by tickets, price 5*s.* each, purchased previously to the day of the Show. If payment is made at the door, 7*s.* 6*d.* will be charged for each admission.
June 11.	SECOND DITTO	
JULY 2.	THIRD DITTO	
	UNCOVERING OF THE MEMORIAL OF 1851.	

III. ORDINARY DAYS.

From 1st January to 1st May.

Sundays	No admission by payment.
Mondays	ditto.
Tuesdays	ditto.
Wednesdays	ditto.
Thursdays	ditto.
Fridays	ditto.
Saturdays	2*s.* 6*d.*

From 1st May to 24th May. Subject to small changes as soon as the actual arrangements of the Commissioners of 1862 are known.

Sundays	No admission by payment.	*s. d.*
Mondays ..	(Band)	1 0
Tuesdays ..	(Band)	1 0
Wednesdays	(Band)	2 6
Thursdays	(Band)	1 0
Fridays ..	(Band)	1 0
Saturdays	(Bands)	5 0

From 24th May to 18th October.

Sundays		No admission by payment.	*s. d.*
Mondays .. (Band)	..	Gardens alone	1 0
Tuesdays .. (Band)		Gardens and Exhibition	1 6
Wednesdays (Band)		Gardens from Exhibition	0 6
Thursdays .. (Band)			
Fridays .. (Band)	..	.. ..	2 6
Saturdays .. (Bands)	..	.. ..	5 0

From 18th October to 31st December.

Sundays	No admission by payment.
Mondays	.. .. [illegible]
Tuesdays	No admission by payment.
Wednesdays	.. .. 2 6
Thursdays	No admission by payment.
Fridays	ditto.
Saturdays	.. .. [illegible]

The Council have the pleasure to announce that Her Majesty's Commissioners for the Exhibition of 1851 have given their consent that from the 30th of April to the 18th of October visitors may be permitted to use a temporary roadway for admission from Kensington Gore leading to the back of the Conservatory. The Council have sought this concession in order to abate the confusion which, without it, must be attendant on the number of carriages visiting the International Exhibition of 1862.

SCHEDULES OF PRIZES.

HYACINTH AND CAMELLIA SHOW, MARCH 19.

CLASS		1st	2d	3d
1. 18 Pots of Hyacinths, not less than 12 distinct kinds	.. (*Open*)	£2 0*s.*	£1 10*s.*	£1 0*s.*
2. 12 Pots of Hyacinths. Distinct kinds .. .. (Prizes offered by Mr. James Cutbush.)	(*Amateurs*)	2 2	1 1	—
3. 6 Pots of Hyacinths. Distinct kinds	(*Amateurs*)	1 0	0 15	0 10
4. 6 Pots of Hyacinths. New distinct kinds	.. (*Open*)	1 10	1 0	0 10
5. 24 Pots of Tulips, 3 bulbs in a Pot. 6 kinds	..(*Nurserymen*)	2 10	2 0	1 0
6. 18 Pots of Tulips, 3 bulbs in a Pot. 4 kinds	.. (*Amateurs*)	2 0	1 10	1 0
7. 12 Pots of Tulips, 3 bulbs in a Pot. 3 kinds	.. (*Amateurs*)	1 0	0 15	0 10
8. 6 Plants, Camellias. Distinct kinds	(*Amateurs*)	3 0	2 0	1 0

CLASS		1st	2d	3d
9. 4 Plants, Camellias. Distinct kinds	(*Amateurs*)	£2 0*s.*	£1 5*s.*	£0 15*s.*
10. Single Plant of Camellia	..(*Open*)	1 0	0 15	0 10
11. 9 Pots of Lilies of the Valley	..(*Open*)	0 15	0 10	0 5
12. 6 Pots of stove Amaryllis. Not less than 3 kinds	..(*Open*)	1 10	1 0	0 15
13. 6 Pots of any kind of Primula	..(*Open*)	0 15	0 10	0 5
14. 12 Forced Geraniums	. (*Open*)	2 0	1 10	0 15
15. 12 Pots of Spring Plants in flower, not forced, such as Epacris, Heaths, Acacias, &c.	..(*Open*)	2 0	1 10	0 15
16. 12 Plants in flower, forced		2 0	1 10	0 15

AZALEA SHOW, APRIL 9.

CLASS		1st	2d	3d
1. 2 Greenhouse Azaleas. Distinct kinds ..	(*Nurserymen*)	£2 0*s.*	£1 10*s.*	£0 15*s.*
2. 9 Greenhouse Azaleas. Distinct kinds ..	.. (*Amateurs*)	2 0	1 10	0 15
3. 6 Greenhouse Azaleas. Distinct kinds ..	.. (*Amateurs*)	1 10	1 0	0 10
4. 6 Greenhouse Azaleas. New distinct kinds	.. ..(*Open*)	1 10	1 0	0 10
5. 3 Greenhouse Azaleas. New distinct kinds	.. (*Amateurs*)	1 0	0 15	0 10
6. Single specimen of Greenhouse Azalea	..(*Open*)	1 0	0 15	0 10
NOTE.—Azaleas must be grown in Pots not exceeding 10 inches in diameter.				
7. 6 Rhododendrons in blooms. Distinct kinds ..	..(*Open*)	2 0	1 10	1 0

CLASS		1st	2d	3d
8. 3 Rhododendrons in bloom. Distinct kinds ..	..(*Open*)	£1 0*s.*	£0 15*s.*	£0 10*s.*
9. Single Specimen of Rhododendron	..(*Open*)	1 0	0 15	0
10. 9 Cinerarias. Distinct kinds	(*Nurserymen*)	2 0	10	1 0
11. 6 Cinerarias. Distinct kinds.	.. (*Amateurs*)	1 10	1 0	0 15
12. 12 Spring Flowers, forced. Distinct kinds.. ..	..(*Open*)	2 0	10	0 15
13. 12 Greenhouse Plants in flower, not forced. Distinct kinds	(*Open*)	2 0	10	0 15
14. 12 Hardy herbaceous Plants in flower	..(*Open*)	1 0	05	0 10
15. 9 Auriculas, distinct kinds	(*Nurserymen*)	1 10	1 0	0 15
16. 6 Auriculas, distinct kinds	(*Amateurs*)	1 10	1 0	0 15

FIRST GREAT EXHIBITION, WEDNESDAY, MAY 21.

CLASS		1st	2d	3rd	4th
1. 15 Stove and Greenhouse Plants	..(*Open*)	£ 0*s.*	£15 0*s.*	£10 0*s.*	£5 0*s.*
2. 12 Stove and Greenhouse Plants ..	(*Nurserymen*)	10 0	7 0	5 0	3 0
3. 9 Stove and Greenhouse Plants	.. (*Amateurs*)	9 0	7 0	5 0	3 0
4. 6 Stove and Greenhouse Plants	.. (*Amateurs*)	6 0	4 0	3 0	2 0
NOTE.—Two Plants of a Genus will be admitted in Classes 1, 2, and 3. Exhibitors can only show in one of the Classes 1, 2, 3, and 4. Orchids and Florists' Flowers are excluded.					
5. 20 Orchids, exotic species	(*Amateurs*)	20 0	15 0	10 0	5 0
6. 12 Orchids, exotic species	(*Nurserymen*)	10 0	7 0	5 0	3 0
7. 10 Orchids, exotic species	(*Amateurs*)	10 0	7 0	5 0	3 0
8. 6 Orchids, exotic species	(*Amateurs*)	6 0	4 0	3 0	—
NOTE.—Exhibitors can only compete in one of the Classes 5, 6, 7, and 8.					
9. Single specimen of any Exotic Orchid. (Prizes offered by the Lord Bishop of Winchester)		5 0	3 0	—	—
10. 9 Greenhouse Azaleas. Distinct kinds ..	(*Amateurs*)	12 0	9 0	7 0	5 0
11. 9 Greenhouse Azaleas. Distinct kinds	(*Nurserymen*)	9 0	7 0	5 0	3 0
12. 6 Greenhouse Azaleas. Distinct kinds ..	(*Amateurs*)	6 0	4 0	3 0	2 0
13. 6 Rhododendrons. Distinct kinds ..	..(*Open*)	4 0	3 0	2 0	—
14. Rhododendron. Single specimen of Sikkim or Bhotan		3 0	2 0	1 0	—
15. 6 Roses in Pots. Distinct kinds	(*Amateurs*)	6 0	5 0	4 0	3 0
16. 12 Roses in Pots. Distinct kinds ..	(*Nurserymen*)	10 0	7 0	5 0	4 0
17. 6 Cape Heaths. Distinct kinds	..(*Open*)	5 0	3 0	2 0	—
18. 9 Pelargoniums. Distinct kinds	(*Amateurs*)	8 0	6 0	4 0	2 0
19. 12 Pelargoniums. Distinct kinds ..	(*Nurserymen*)	8 0	6 0	4 0	2 0

CLASS		1st	2d	3d	4th
20. 6 Pelargoniums. Fancies. Distinct kinds	..(*Open*)	£5 0*s.*	£4 0*s.*	£3 0*s.*	—
NOTE.—Plants in Classes 17, 18, and 19, are to be grown in Pots 8 inches in diameter.					
21. 6 Cinerarias. Distinct kinds	..(*Open*)	3 0	2 0	1 0	—
22. New or rare tender Plants in flower ..	..(*Open*)	S.K.	S.B.	B.	
23. New or rare tender Plants not in flower ..	..(*Open*)	S.K.	S.B.	B.	
24. New or rare hardy Ornamental Plants ..	..(*Open*)	S.K.	S.B.	B.	
N.B.—Exhibitors may compete for all the prizes in Classes 21, 22, and 23. Plants exhibited at any Metropolitan Show in a previous season will not be eligible.					
25. Newly introduced Plants that have received special recognition from the Floral Committee during 1859, 1860, and 1861	..(*Open*)	Six Certificates in order of merit.			
26. Seedling Florists' Flowers and Garden Hybrids	(*Open*)	Certificates.			
27. Stands of 24 Tulips	..(*Open*)	2 0	1 10	1 0	—
28. Group of Plants, showing effective arrangement for decorating a small Conservatory ..	..(*Open*)	10 0	6 0	4 0	—
N.B.—A space 15 feet by 10 feet will be set apart for each Exhibitor. Valuable Plants not required. Florists and growers for market are invited to compete					
29. Miscellaneous	..(*Open*)	2 0	1 10	1 0	0 10
N.B.—Nothing can be admitted here which is provided for by any other class.					

ROYAL HORTICULTURAL SOCIETY.—*Continued.*

SECOND GREAT EXHIBITION, WEDNESDAY, JUNE 11.

CLASS	1st	2d	3d	4th
1. 15 Stove and Greenhouse Plants .. .. .. (*Open*)	£20 0*s.*	£15 0*s.*	£10 0*s.*	£5 0*s.*
2. 12 Stove and Greenhouse Plants .. (*Nurserymen*)	10 0	7 0	5 0	3 0
3. 9 Stove and Greenhouse Plants .. .. (*Amateurs*)	9 0	7 0	5 0	3 0
4. 6 Stove and Greenhouse Plants .. .. (*Amateurs*)	6 0	4 0	3 0	2 0
NOTE.—Two Plants of a genus will be admitted in Classes 1, 2, and 3. Exhibitors can only show in one of the Classes 1, 2, 3, and 4. Orchids and Florists Flowers are here excluded.				
5. 10 Fine-foliaged and Variegated Plants .. .. (*Open*)	7 0	5 0	4 0	3 0
6. 20 Orchids, exotic species .. .. .. (*Amateurs*)	20 0	15 0	10 0	5 0
7. 12 Orchids, exotic species .. .. (*Nurserymen*)	10 0	7 0	5 0	3 0
8. 10 Orchids, exotic species .. .. .. (*Amateurs*)	10 0	7 0	5 0	3 0
9. 6 Orchids, exotic species .. .. .. (*Amateurs*)	6 0	4 0	3 0	—
NOTE.—Exhibitors can only compete in one of the Classes 6, 7, 8, and 9.				
10. 9 Greenhouse Azaleas. Distinct kinds .. (*Amateurs*)	9 0	7 0	5 0	—
11. 9 Greenhouse Azaleas. Distinct kinds (*Nurserymen*)	7 0	5 0	4 0	—
12. 6 Azaleas. New kinds, sent out since 1857 .. (*Open*)	4 0	3 0	2 0	—
13. 12 Roses in Pots. Distinct kinds .. (*Nurserymen*)	10 0	7 0	5 0	—
14. 6 Roses in Pots. Distinct kinds .. .. (*Amateurs*)	6 0	5 0	3 0	—
15. 6 Dracænas and Cordylines .. .. (*Open*)	3 0	2 0	1 0	—
16. 6 Cape Heaths .. .. (*Open*)	5 0	3 0	2 0	—
17. 9 Pelargoniums. Distinct kinds .. .. (*Amateurs*)	8 0	6 0	4 0	2 0
18. 12 Pelargoniums. Distinct kinds .. (*Nurserymen*)	8 0	6 0	4 0	2 0
19. 6 Pelargoniums, Fancies. Distinct kinds .. (*Open*)	5 0	4 0	3 0	—
NOTE.—Plants in Classes 17, 18, and 19 to be grown in pots, 8 inches in diameter.				
20. 9 Pelargoniums—Spotted or French. Distinct kinds (*Open*)	4 0	3 0	2 0	—
21. 6 Calceolarias in pots not more than 11 inches in diameter .. .. (*Open*)	3 0	2 0	1 0	—
22. 12 Exotic Ferns. Distinct kinds .. .. .. (*Open*)	5 0	4 0	3 0	2 0
23. 6 Anæctochiles, or other variegated Orchids. Distinct kinds .. .. (*Open*)	3 0	2 0	1 0	—
24. 3 Tropæolums, trained on trellises. Distinct .. (*Open*)	2 0	1 10	1 0	—
25. New or rare tender Plants in flower .. .. (*Open*)	S.K.	S.B.	B.	
26. New or rare tender Plants not in flower .. .. (*Open*)	S.K.	S.B.	B.	
27. New or rare hardy Ornamental Plants .. .. (*Open*)	S K.	S.B.	B.	
NOTE.—Exhibitors in Classes 25, 26, and 27 may compete for all the prizes. Plants exhibited at any Metropolitan Show in a previous season will not be eligible				
28. Newly introduced Plants that have received special recognition from the Floral Committee during 1859, 1860, and 1861 .. .. (*Open*)	Six Certificates in order of merit.			
29. Seedling Florists' Flowers and Garden Hybrids.. ..	Certificates			
30. Wardian Case, arranged for the Drawing Room (*Open*)	4 0	3 0	2 0	—
31. Miscellaneous .. .. (*Open*)	2 0	1 10	1 0	0 10
N.B.—Nothing can be admitted here which is provided for by any other Class.				

CLASS	1st	2d	3d	4th
32. Collection of cut Rhododendrons .. .. .. (*Open*)	£2 0*s.*	£1 0*s.*	£0 10*s.*	—
SPECIAL PRIZES.				
Prizes for the best three groups of Fruits and Flowers for the decoration of the dinner table, are offered by C. WENTWORTH DILKE, Esq., V.P.R.H.S. First Prize, Gold Knightian Medal, or 10*l.*; Second Prize, Gold Banksian Medal, or 7*l.*; Third Prize, Society's Large Silver Medal, or 3*l.*	10 0	7 0	3 0	—
NOTE.—Beautiful arrangement will be the test of merit in this Exhibition; valuable flowers or fruits are therefore not demanded.—Each set must consist of three groups, and may be either one of flowers and two of fruit, or two of flowers and one of fruit, or fruit and flowers mixed in all three.—They may be shown either in epergnes, glass, or china dishes, wicker or wire work, or in any other way most to the taste of the Exhibitor. —Ladies are invited to join in the competition.—The Prizes will be awarded by a jury of ladies.—The groups will be received as late as 10 o'clock, A.M., *provided space shall have been secured for them the day before.*				
FRUIT (Open).				
NOTE.—All the Fruit exhibited at this Show must be of home growth.				
A. Pine Apple, the best Cayenne	3 0	2 0	1 0	—
B. Pine Apple, any other variety	3 0	2 0	1 0	—
C. Grapes, Black, 3 bunches	3 0	2 0	1 0	—
D. Grapes, White Muscat, 3 bunches	3 0	2 0	1 0	—
E. Grapes, White, any other class, 3 bunches	3 0	2 0	1 0	—
F. Peaches, 6 fruit	3 0	2 0	1 0	—
G. Nectarines, 6 fruit	3 0	2 0	1 0	—
H. Cherries, 50 fruit	2 0	1 0	0 10	—
I. Strawberries, single dish	1 10	1 0	0 10	—
J. Ditto three dishes	2 10	2 0	1 0	—
K. Melons, green-fleshed	1 10	1 0	—	—
L. Melons, scarlet-fleshed	1 10	1 0	—	—
NOTE.—Fruit shown in Classes K and L must be cut by the Judges.				
M. Vines in pots, 2 plants..	4 0	3 0	2 0	—
N. Miscellaneous	2 0	1 10	1 0	0 15

☞ Prizes will be given for Fruits of superior excellence, although not specified in the Schedule.

Exhibitors can only take one prize in any one class, except in Miscellaneous.

THIRD GREAT EXHIBITION, WEDNESDAY, JULY 2.

CLASS.	1st	2d	3d	4th
1. 15 Stove and Greenhouse Plants .. .. .. (*Open*)	£20 0*s.*	£15 0*s.*	£10 0*s.*	£5 0*s.*
2. 12 Stove and Greenhouse Plants .. (*Nurserymen*)	10 0	7 0	5 0	3 0
3. 9 Stove and Greenhouse Plants .. .. (*Amateurs*)	9 0	7 0	5 0	3 0
4. 6 Stove and Greenhouse Plants .. .. (*Amateurs*)	5 0	4 0	3 0	2 0
NOTE.—Two plants of a genus will be admitted in Classes 1, 2, and 3. Exhibitors can only show in one of the Classes 1, 2, 3, and 4. Orchids and Florists' Flowers are here excluded.				
5. 12 Fine Foliaged and Variegated Plants (*Nurserymen*)	7 0	5 0	3 0	2 0
6. 10 Fine Foliaged and Variegated Plants .. (*Amateurs*)	7 0	5 0	3 0	2 0
7. 12 Orchids, exotic species. Distinct kinds (*Nurserymen*)	10 0	7 0	5 0	3 0
8. 10 Orchids, exotic species. Distinct kinds (*Amateurs*)	10 0	7 0	5 0	3 0
9. 6 Orchids, exotic species. Distinct kinds (*Amateurs*)	5 0	4 0	3 0	2 0
10. 9 Greenhouse Azaleas. Distinct kinds .. .. (*Open*)	7 0	5 0	4 0	2 0
11. 9 Pelargoniums. Distinct kinds .. .. (*Amateurs*)	7 0	5 0	3 0	2 0
12. 12 Pelargoniums. Distinct kinds .. (*Nurserymen*)	7 0	5 0	3 0	2 0
13. 6 Pelargoniums. Fancies .. .. (*Open*)	4 0	3 0	2 0	—
NOTE.—Plants in Classes 11, 12, and 13 to be grown in Pots 8 inches in diameter.				
14. 6 Spotted, or French kinds of Pelargoniums .. (*Open*)	3 0	2 0	1 0	—
15. 6 Fuchsias. Distinct kinds.. .. .. .. (*Open*)	5 0	4 0	3 0	—
16. 3 Standard Fuchsias. Distinct kinds .. .. (*Open*)	3 0	2 0	1 0	—
17. 12 Variegated Begonias. Distinct kinds .. .. (*Open*)	3 0	2 0	1 0	—
18. 9 Caladiums. Distinct kinds .. .. .. (*Open*)	5 0	4 0	3 0	—
19. 6 Tree Ferns. Duplicates admitted .. .. (*Open*)	5 0	4 0	3 0	—
20. 12 Exotic Ferns. Distinct kinds .. (*Nurserymen*)	4 0	3 0	2 0	—
21. 10 Exotic Ferns. Distinct kinds .. .. (*Amateurs*)	4 0	3 0	2 0	—
22. 12 British or other hardy Ferns, rare and distinct kinds, in Pots .. .. (*Open*)	3 0	2 0	1 0	—
23. New or rare tender Plants in flower .. .. (*Open*)	S. K.	S. B.	B.	
24. New or rare tender Plants not in flower .. .. (*Open*)	S. K.	S. B.	B.	
25. New or rare hardy Ornamental Plants .. .. (*Open*)	S. K.	S. B.	B.	
N.B.—Exhibitors may compete for all the Prizes in Classes 23, 24, and 25. Plants exhibited at any Metropolitan Show in a previous season will not be eligible.				
26. Newly-introduced Plants that have received special recognition from the Floral Committee during 1859, 1860, and 1861 .. .. (*Open*)	Six Certificates in order of merit.			
27. Fern Case arranged for the Drawing-room .. (*Open*)	3 0	2 0	1 0	—
28. Fresh Water Aquaria. The most effectively arranged (*Open*)	2 0	1 0	0 10	—
29. Window-boxes filled with Plants .. .. .. (*Open*)	2 0	1 0	0 10	—
30. Seedling Florists' Flowers and Garden Hybrids.. (*Open*)	Certificates.			
31. Plants in Pots, arranged in stands for Drawing-room decoration .. .. (*open*)	3 0	2 0	1 0	0 10

CLASS.	1st	2d	3d	4th
32. Three Hanging Baskets of Pendent Plants in flower, the middle basket not to exceed 1 ft. 3 in., the other two not to exceed 9 in. each in diameter. The middle basket may contain mixed sorts, the smaller baskets one sort only	£5 0*s.*	£2 0*s.*	—	—
*** The baskets will be suspended for Exhibition with the large one in the centre. (Prizes offered by Mr. Wilson Saunders, Treasurer.)				
33. Miscellaneous .. .. (*Open*)	2 0	1 10	£1 0*s.*	£0 10*s.*
N.B. Nothing can be admitted here which is provided for by any other Class.				
FRUIT. (Open.)				
NOTE.—All the Fruit exhibited at this Show must be of home growth.				
A. Collection of Grapes	7 0	4 0	2 0	—
B. Collection of Fruit	6 0	5 0	4 0	3 0
C. Pine Apple. Queens	2 0	1 0	0 10	—
D. Pine Apple. Any other kind	2 0	1 0	0 10	—
E. Grapes. 6 bunches	3 0	2 0	1 0	—
F. Grapes, Black Hamburgh. 3 bunches	2 0	1 0	0 10	—
G. Grapes. Any other Black kind. 3 bunches	2 0	1 0	0 10	—
H Grapes, White Muscat. 3 bunches..	2 0	1 0	0 10	—
I. Grapes, Chasselas Musqué. 3 bunches. Regularity of bunch to be a test of merit	2 0	1 0	—	—
J. Grapes. Any other white kind. 3 bunches	2 0	1 0	0 10	—
K. Peaches. 3 dishes of 6 fruit each	3 0	2 0	1 0	—
L. Peaches. 6 fruit	2 0	1 0	0 10	—
M. Nectarines. 3 dishes of 6 fruit each	3 0	2 0	1 0	—
N. Nectarines. 6 fruit	2 0	1 0	0 10	—
O. Strawberries. 4 dishes, distinct kinds	1 5	1 0	0 15	0 10
P. Collection of Strawberries	4 0	3 0	2 0	—
Q. Melons. Green-fleshed	1 10	1 0	—	—
R. Melons. Scarlet-fleshed	1 10	1 0	—	—
NOTE.—Fruits shown in Classes K and L must be cut by the Judges.				
S. Vines in Pots. 4 plants	5 0	4 0	3 0	—
T. Miscellaneous. For Fruits not specially mentioned ..	2 0	1 10	1 0	0 10
ORCHARD-HOUSE FRUIT-TREES, IN POTS.				
U. 6 Peach and Nectarine	5 0	4 0	3 0	—
V. 6 Plum	4 0	3 0	2 0	—
W. 6 Cherry	4 0	3 0	2 0	—
X. 4 Apricot..	3 0	2 0	1 0	—
N.B.—The Fruit on these trees is not required to be ripe.				

ROSE SHOW, THURSDAY, JUNE 26.

CLASS.	1st	2d	3d	4th
1. 96 Kinds. 3 trusses of each .. .. (*Nurserymen*)	£7 0*s.*	£5 0*s.*	£3 0*s.*	£2 0*s.*
2. 48 Kinds. 3 trusses of each.. .. (*Nurserymen*)	4 0	3 0	2 0	1 0
3. 24 Kinds. 3 trusses of each.. .. (*Nurserymen*)	2 10	2 0	1 10	1 0
4. 24 Kinds. 1 truss of each .. .. (*Nurserymen*)	2 0	1 0	0 10	—
5. 48 Kinds. 1 truss of each .. .. .. (*Amateurs*)	6 0	4 0	3 0	2 0
6. 24 Kinds. 1 truss of each .. .. .. (*Amateurs*)	4 0	2 0	1 0	0 10
7. 18 Kinds. 1 truss of each .. .. .. (*Amateurs*)	3 0	1 10	1 0	—
8. 12 Kinds. 1 truss of each .. .. .. (*Amateurs*)	1 10	1 0	0 10	—
9. 12 Roses, 12 kinds, in Pots not exceeding 13 inches in diameter .. .. (*Open*)	6 0	4 0	3 0	—
10. 24 Roses, not less than 12 kinds, in Pots not exceeding 8 inches in diameter .. .. .. (*Open*)	6 0	4 0	3 0	—
11. 20 New Roses, not less than 10 kinds, in Pots not exceeding 8 inches in diameter .. .. (*Open*)	6 0	4 0	3 0	—
NOTE.—No variety which has been publicly sold for more than three years to be accounted new.				

CLASS.	1st £ *s.*	2d £ *s.*	3d £ *s.*	4th £ *s.*
12. New Roses of 1861 and 1862, single trusses, distinct kinds .. .. (*Open*)	2 0	1 10	1 0	0 15
13. 12 Trusses of Senator Vaisse .. .. (*Open*)	1 0	0 15	0 10	—
14. 12 Trusses of any other kind .. .. (*Open*)	1 0	0 15	0 10	—
15. 18 Tea scented Roses (single trusses) .. (*Open*)	3 0	2 0	1 0	—
16. Decorated basket or vase of Roses .. (*Open*)	3 0	2 0	1 0	—
17. 6 Bouquets of Roses. 6 distinct kinds, 5 trusses to each bouquet. each bouquet to be shown separately, in Hyacinth glasses, or somewhat similar stands	3 0	2 0	1 0	—
18. Single truss of a Hybrid Perpetual Rose, with stem and leaves, to be shown in a Hyacinth glass, or somewhat similar stand	2 0	1 0	—	—

(Prizes offered by Mr. Wilson Saunders, Treasurer.)

ROYAL HORTICULTURAL SOCIETY.—*Continued.*

SHOW OF AUTUMN FLOWERS, WEDNESDAY, SEPTEMBER 10.

Class		1st	2d	3d
1. 48 Cut Roses. 3 trusses, distinct kinds ..	..(*Nurserymen*)	£4 0s.	£3 0s.	£2 0s.
2. 24 Cut Roses. 3 trusses, distinct kinds ..	.. (*Amateurs*)	4 0	3 0	2 0
3. 24 Cut Roses. Single blooms. Distinct kinds ..	..(*Open*)	2 0	1 0	0 10
4. 6 Roses, in Pots, not more than two of one kind ..	..(*Open*)	3 0	2 0	1 0
5. 12 Hollyhocks, in spikes. Distinct kinds ..	..(*Open*)	3 0	2 0	1 0
6. 12 Hollyhocks, single flowers. Distinct kinds ..	..(*Open*)	2 0	1 0	0 15
7. 24 German Asters. "Quilled" Distinct kinds ..	..(*Open*)	2 0	1 0	0 15
8. 24 French Asters. "Tasselled." Distinct kinds	..(*Open*)	2 0	1 0	0 15
9. 24 Gladiolus, cut spikes. Distinct kinds	..(*Open*)	2 10	1 10	1 0
10. 12 Gladiolus, cut spikes. Brenchleyensis colour. Distinct kinds	..(*Open*)	2 0	1 10	1 0
11. 12 Pots of Gladiolus. Distinct kinds. Not more than 3 in each Pot	..(*Open*)	3 0	2 0	1 0
12. 24 Phloxes, single trusses. Distinct kinds	..(*Open*)	2 0	1 0	0 15

Class		1st	2d	3d
13. 12 Dwarf Phloxes. Perennial upright growing kinds, in Pots. Distinct kinds	..(*Open*)	£3 0s.	£2 0s.	£1 0s.
14. Phlox. The Dwarfest and best perennial upright growing Plant. (Prize offered by Dr. Lindley)	..(*Open*)	1 0	—	—
15. 24 Verbenas, 5 trusses of each. Distinct kinds ..	..(*Open*)	1 10	1 0	0 15
16. 48 Dahlia Blooms. Distinct kinds	..(*Nurserymen*)	5 0	4 0	3 0
17. 24 Dahlia Blooms. Distinct kinds	..(*Nurserymen*)	3 0	2 0	1 0
18. 18 Dahlia Blooms. Fancies. Distinct kinds	..(*Nurserymen*)	3 0	2 0	1 0
19. 24 Dahlia Blooms. Distinct kinds	.. (*Amateurs*)	5 0	4 0	3 0
20. 12 Dahlia Blooms. Distinct kinds	.. (*Amateurs*)	3 0	2 0	1 0
21. 12 Dahlia Blooms. Fancies. Distinct kinds	.. (*Amateurs*)	3 0	2 0	1 0
22. 12 Bouquet Dahlias, in Pots	.. ..	3 0	2 0	1 0
23. Miscellaneous. For flowers not specified	..(*Open*)	2 0	1 0	0 10

GREAT INTERNATIONAL SHOW
OF FRUIT, GOURDS, ROOTS, VEGETABLES, AND CEREALS.

OPEN TO ALL THE WORLD.

OCTOBER 8, 9, AND 10.

Gourds, Roots, and Cereals will remain on Exhibition until October 18.

NOTE.—A dish of Apples, Pears, Oranges, Lemons, and the like, 6 fruits of each; but of Plums, 9 fruits.

FRUITS.

Class.		1st	2d	3d
A. Collection of Fruits	(*Fruiterers only*)	£5 0s.	£3 0s.	£ — s.
B. Collection of Fruits Not more than 2 dishes of any one kind	(*Private growers*)	6 0	4 0	3 0
C. Pine Apple, Queens	..	2 0	1 10	1 0
D. Pine Apple. Any other kind	..	2 0	1 10	1 0
E. Grapes, White Muscat. 6 bunches	..	4 0	3 0	2 0
F. Grapes, White Muscat 3 bunches	..	2 10	2 0	1 0
G. Grapes. Any other white kind. 3 bunches	..	2 10	2 0	1 0
H. Grapes, Black Hambro' 6 bunches	..	4 0	3 0	2 0
I. Grapes, Black Hambro' 3 bunches	..	2 10	2 0	1 0
J. Grapes Any other black kind. 3 bunches	..	2 10	2 0	1 0
K. Pears, dessert, 12 dishes, distinct kinds	..	4 0	3 0	2 0
L. Pears, dessert, 6 dishes, distinct kinds	..	3 0	2 0	1 0
M. Pears, dessert, 3 dishes, ripe fruit, distinct kinds ..	..	1 10	1 0	0 10
N. Pears, dessert. Single dish, ripe fruit, any kind ..	..	1 0	0 15	0 10
O. Pears, kitchen. Single dish, any kind	..	1 0	0 15	0 10
P. Pears. Heaviest 5 fruits, dessert	..	1 0	0 15	0 10
Q. Apples, dessert, 12 dishes, distinct kinds	..	4 0	3 0	2 0
R. Apples, dessert, 6 dishes, distinct kinds	..	3 0	2 0	1 0

FRUITS—*Continued.*

Class.	1st	2d	3d
S. Apples, dessert, 3 dishes, ripe fruit, distinct kinds	£1 10s.	£1 0s.	£0 10s.
T. Apples, dessert. Single dish, ripe fruit, any kind	1 0	0 15	0 10
U. Apples, kitchen, 12 dishes, distinct kinds..	4 0	3 0	2 0
V. Apples, kitchen, 6 dishes, distinct kinds	3 0	2 0	1 0
W. Apples, kitchen, 3 dishes, distinct kinds	1 10	1 0	0 10
X. Apples, kitchen. Single dish	1 0	0 15	0 10
Y. Apples, kitchen. Heaviest 5..	1 0	0 15	0 10
Z. Oranges, Lemons, &c., collection of 1 dish of each	3 0	2 0	1 0
AA. Four Orange trees, bearing fruit. In Pots or boxes	3 0	2 0	1 0
BB. Melons. Single fruit, any kind	1 10	1 0	—
CC. Plums. Single dish, any kind	1 0	0 15	0 10
DD. Strawberries. Single dish	2 0	1 10	1 0
EE. Currants. Single dish..	0 10	—	—
FF. Raspberries. Single dish	0 15	0 10	—
NOTE.—Fruits specified in the above Classes will be excluded from GG.			
GG. Miscellaneous	2 0	1 10	1 [illegible]

GOURDS.

Class	*§ I. Gourds eatable when ripe.*	1st	2d
I. The finest collection	(*Foreign Growth*)	£3 0s.	£2 0s.
II. The finest collection	(*Home Growth*)	3 0	2 0
III. The heaviest single specimen	(*Home Growth*)	3 0	2 0
IV. The heaviest single specimen	(*Foreign Growth*)	3 0	2 0
(Prizes offered by Dr. Lindley.)			
§ II. Gourds for Ornament, or merely curious, and never eatable.			
V. The most extensive collection, without regard to cultivation	..	3 0	2 0
§ III. Mixed.			
VI. 6 Ornamental Gourds, whether eatable or not	..	3 0	2 0
(Prizes offered by Mr. Wilson Saunders.)			

GARDEN ROOTS.

	1st	2d
I. Potatoes, collection of	3 0	2 0
II. Potatoes, 6 Kinds of Kidneys, 12 tubers of each	1 0	0 15
III. Potatoes, 6 kinds, "Rounds," 12 tubers of each	1 0	0 10
IV. Potatoes, Kidneys, 12 tubers	0 15	0 10
V. Potatoes, any other kind, 12 tubers	0 15	0 10
VI. Onions, 12	0 15	0 10
VII. Carrots, 12	0 15	0 10
VIII. Parsnips, 12	0 15	0 10
IX. Globe Artichokes, 12..	0 15	0 10
X. Parsnip Chervil, 12	0 15	0 10
XI. Beet, 6 roots	0 15	0 10
XII. Turnips, 3 kinds, 6 of each..	1 0	0 10
XIII. Turnips, 6 of one kind	0 15	0 10
XIV. Salsafy, 12 roots	0 15	0 10
XV. Scorzonera, 12 roots	0 15	0 10
XVI. Peas, 1 dish	0 15	0 10
XVII. Brussels Sprouts, 3 plants	0 15	0 10
XVIII. Borecoles, 6 kinds, 2 of each	0 15	0 10
XIX. Broccoli, 6 heads	0 15	0 10
XX. Cabbage, Savoys, 6 heads	0 15	0 10
XXI. Cabbage, any other kind, 6 heads..	0 15	0 10
XXII. Yams, Chinese, 6	0 15	0 10
XXIII. Celery, red, 6 heads	0 15	0 10
XXIV. Celery, white, 6 heads	0 15	0 10
XXV. Endive, 6 heads	0 15	0 10
XXVI. Cardoons, 4 heads	0 15	0 10
XXVII. Mushrooms, dish	0 15	0 10
XXVIII. Miscellaneous	1 0	0 15

N.B Nothing can be admitted here which is provided for by any other Class.

AGRICULTURAL ROOTS.

Class	
1. Mangel Wurzel, Long Red. 3 roots	Bronze Medal.
2. Mangel Wurzel, Long Yellow. 3 roots	Ditto.
3. Mangel Wurzel, Yellow Globe. 3 roots	Ditto.
4. Mangel Wurzel, Red Globe. 3 roots	Ditto.
5. Beet, White Sugar. 3 roots	Ditto.
6. Carrots, White Belgian. 6 roots	Ditto.
7. Carrots, Altringham. 6 roots	Ditto.
8. Cabbage, Cattle. The largest head of	Ditto.
9. Turnips, Swedes. 6 roots	Ditto.
10. Turnips, Yellow. 6 roots	Ditto.
11. Turnips, White. 6 roots	Ditto.
12. Kohl Rabi. 6 roots	Ditto.

CEREALS.

In samples not less than a pint.

NOTE.—Both ear and sample are specially requested to be sent, but this is not imperative.

Class	
1. General Collection of Wheats from all quarters	Bronze Medal
2. Collection of Wheats from any one quarter	Ditto.
3. " " from the Baltic	Ditto.
4. " " from the Black Sea	Ditto.
5. " " from any part of Russia	Ditto.
6. " " grown in France	Ditto.
7. " " grown in Holland	Ditto.
8. " " grown in Belgium	Ditto.
9. " " grown in Denmark	Ditto.
10. " " grown in Sweden or Norway	Ditto.
11. " " grown in Prussia	Ditto.
12. " " grown in Austria	Ditto.
13. " " grown in Bavaria	Ditto.
14. " " grown in Wurtemberg	Ditto.
15. " " grown in North Germany	Ditto.
16. " " grown in Italy	Ditto.
17. " " grown in Spain	Ditto.
18. " " grown in Portugal	Ditto.
19. " " grown in Turkey, Egypt, or Tunis	Ditto.
20. " " grown in Algeria	Ditto.
21. " " grown in Southern Africa	Ditto.
22. " " grown in Lower Canada	Ditto.
23. " " grown in Upper Canada	Ditto.
24. " " grown in the Northern States of America ..	Ditto.
25. " " grown in the Southern States of America ..	Ditto.
26. " " grown in California	Ditto.
27. " " grown in Victoria or Vancouver's Island	Ditto.
28. " " grown in Australia	Ditto.
29. " " grown in England	Ditto.
30. " " grown in Scotland	Ditto.
31. " " grown in Ireland	Ditto.
32. " " sold in London Market	Ditto.
33. " " sold in Liverpool Market	Ditto.
34. Sample of White Wheat of any kind	Ditto.
35. Sample of Red Wheat of any kind	Ditto.
36. Collection of Barley from any one quarter	Ditto.
37. General collection of Barley from all quarters	Ditto.
38. Malting Barley	Ditto.
39. Collection of Oats from any one quarter	Ditto.
40. General collection of Oats from all quarters	Ditto.
41. Black Oats	Ditto.
42. White Oats	Ditto.
43. Rye	Ditto.
44. Rice grown in North America	Ditto.
45. Rice grown in South America	Ditto.
46. Rice grown in the East Indies	Ditto.
47. Collection of Rice from all quarters	Ditto.
48. Head of Maize, or Indian Corn, of any kind	Ditto.
49. Collection of different kinds of Maize, in heads, best in quality	Ditto.
50. Maize, most numerous in kinds	Ditto.
51. Newly introduced or rare Cereals	Ditto.
52. Cereals of any kind, not included in the above	Ditto.

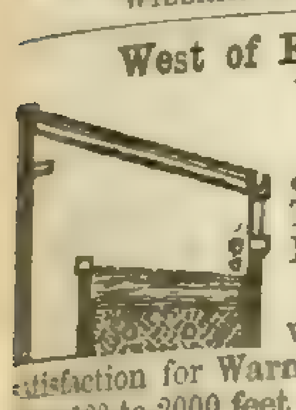
MISCELLANEOUS.

A. Collection of Fruits, modelled in Wax	Large Bronze Medal.
B. Collection of Roots, modelled in Wax	Ditto.
C. Collection of Vegetables, modelled in Wax	Ditto.
D. Collection of Ditto, in any other material	Ditto.
E. General Collection, embracing the whole or part of the subjects in the above International Show	Silver Medal.

£1000 UPON the WOOLSTON SYSTEM of STEAM CULTIVATION.—The cost of seed bed on the Woolston farm heavy land worked double depth, is ... 1d. per acre per annum on an average of six years.

WILLIAM SMITH, Woolston, Bletchley Station.

West of England, Ireland, and Wales.

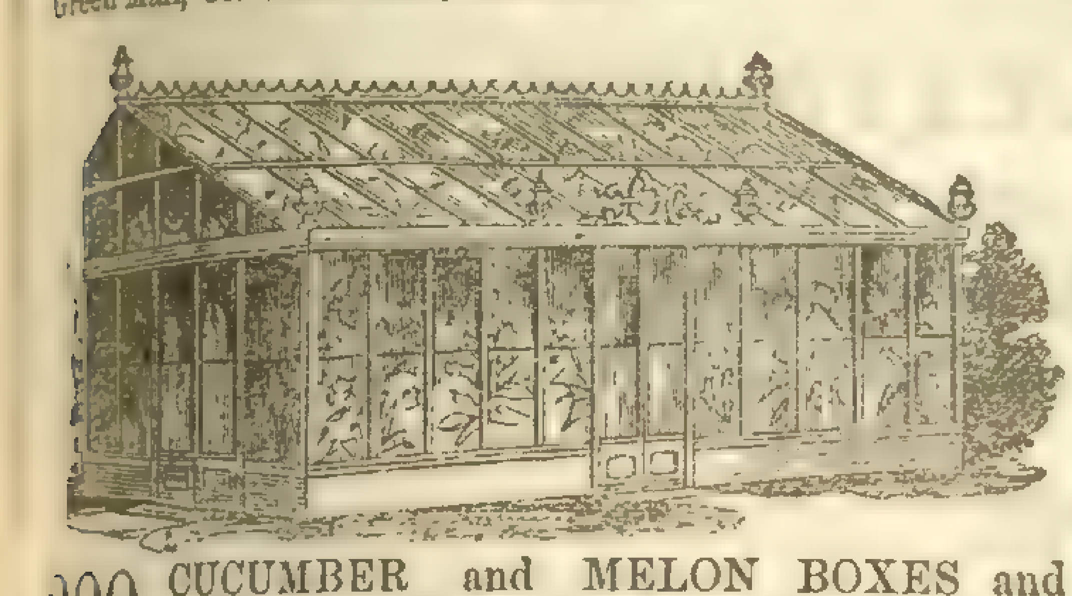


VINCENT SKINNER (*late Partner with* J. WEEKS & Co.), erects CONSERVATORIES, HOTHOUSES, and HOT-WATER APPARATUS.

His improved Pipe Boilers, which give such universal satisfaction for Warming Churches and Hothouses, will heat from 100 to 2000 feet of Pipe.

Plans and Estimates on application to V. SKINNER, Bridewell Street, Bristol.

JAMES WATTS AND CO., HOTHOUSE BUILDERS and HOTWATER APPARATUS MANUFACTURERS, near the Green Man, Old Kent Road, London, S.E.

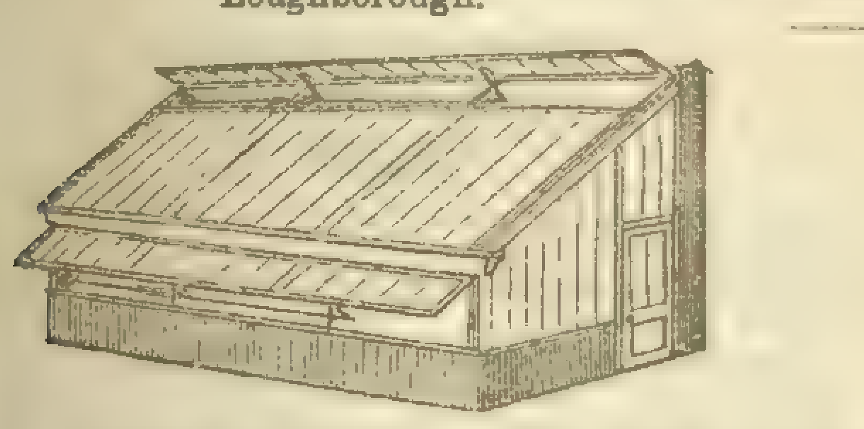


200 CUCUMBER and MELON BOXES and LIGHTS, and from 500 LIGHTS for PITS of all SIZES KEPT in STOCK.

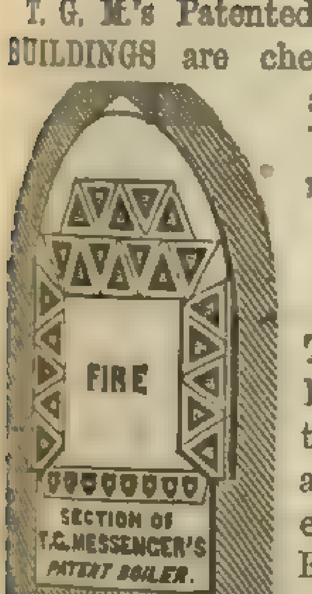
Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.

References to the Nobility, Gentry, and Trade in most of the counties in England.

T. G. MESSENGER, HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER, Loughborough.



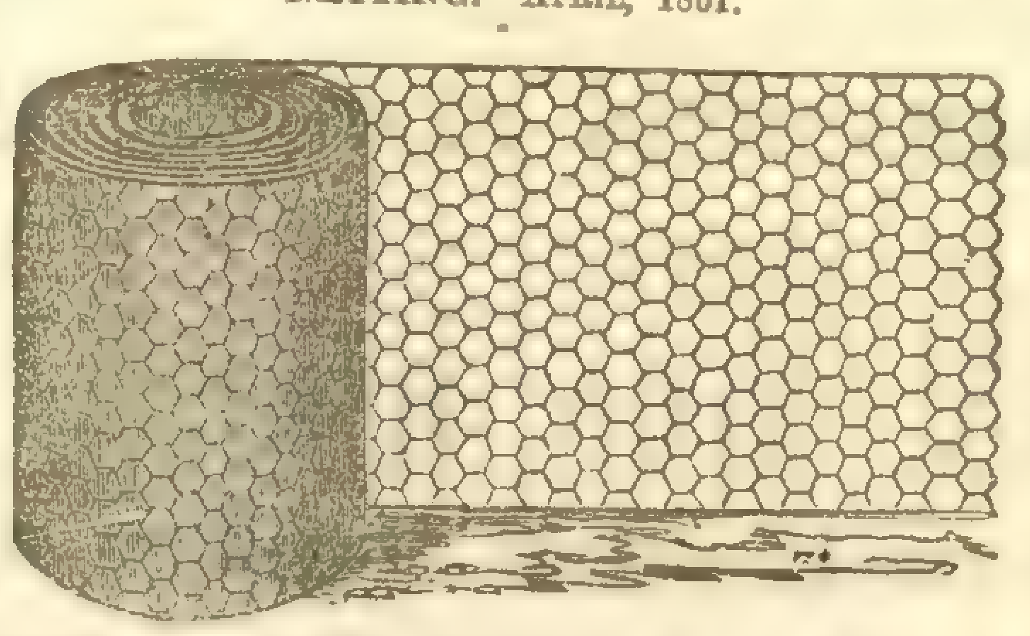
T. G. M.'s Patented DIVISIONLESS HORTICULTURAL BUILDINGS are cheaper, more durable, and lighter in appearance than any other made. The Ventilation is effected by a simple and much admired mechanical arrangement.



T. G. M.'s Patented TRIANGULAR TUBULAR BOILER for Heating Buildings with Hot Water has been extensively adopted by gentlemen who are willing to testify to its great efficiency and economy of fuel. Plans, Estimates, Testimonials, and every information sent free upon application.

BARNARD, BISHOP, AND BARNARDS, Norwich.

FURTHER REDUCTION in the PRICE of WIRE NETTING.—APRIL, 1861.

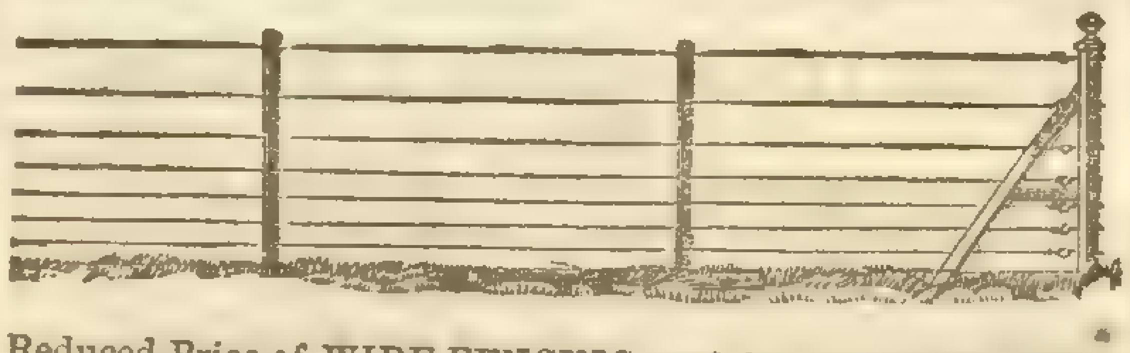


BARNARD, BISHOP, & BARNARDS beg to inform their friends and the public that they have made a further reduction in the prices of Machine made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch mesh, 24 inches wide ..	No. 19	.. $4\frac{1}{4}d.$	.. $3\frac{1}{2}d.$
2-inch „ „ „ ..	„ 18	.. 5	.. 4
2-inch „ „ „ ..	„ 17	.. $6\frac{1}{4}$	.. 5
2-inch „ „ „ ..	„ 16	.. 8	.. $6\frac{1}{2}$
$1\frac{5}{8}$-inch „ „ „ ..	„ 19	.. $4\frac{3}{4}$	.. 4
$1\frac{5}{8}$-inch „ „ „ ..	„ 18	.. 6	.. $4\frac{3}{4}$
$1\frac{5}{8}$-inch „ „ „ ..	„ 17	.. 7	.. $5\frac{1}{2}$
$1\frac{5}{8}$-inch „ „ „ ..	„ 16	.. 9	.. 7

All the above kinds can be made any width (under 6 feet), at proportionate prices.

Strong Galvanised Poultry Netting, $7\frac{1}{2}d.$ per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11*d.* per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.



Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.

Five wires, 3 feet 6 inches high, pronged Standards, 8 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10*d.* per yard.

The same with Galvanised Wire Rope, 1*s.* per yard.

Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.

⁎ Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

Prize Medal, Paris Exhibition 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose.

M., B., & Co.'s new and delicious Perfumes the Fairy Bouquet and the Oxford and Cambridge Bouquet, in bottles 2*s.*, 3*s.* 6*d.*, and 5*s.* METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box.

Sole Establishment, 130B and 131, Oxford Street, 2d and 3d doors West from Holles Street, London, W.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to

JOHN FOWLER, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

CHUBB'S PATENT SAFES, the most secure against Fire and Thieves.

CHUBB'S FIRE PROOF STRONG ROOM DOORS; CHUBB'S PATENT DETECTOR LOCKS and STREET DOOR LATCHES; CHUBB'S CASH and DEED BOXES.

Illustrated Price List gratis and post free.

CHUBB & SON, 57, St. Paul's Churchyard, London, E.C.

Le Sommier Elastique Portatif.

HEAL AND SON have patented a method of making a Spring Mattress portable. The great objection to the usual Spring Mattress is its being so heavy and cumbersome.

The SOMMIER ELASTIQUE PORTATIF is made in three separate parts, and when joined together has all the elasticity of the best Spring Mattress. As it has no stuffing of wool or horsehair, it cannot harbour moth, to which the usual Spring Mattress is very liable; the prices, also, are much below those of the best Spring Mattresses, viz.:—

3 feet wide by 6 feet 4 inches long	£2	5	0
3 feet 6 in. „ „	2	10	0
4 feet „ „	2	15	0
4 feet 6 in. „ „	3	0	0
5 feet „ „	3	5	0
5 feet 6 in. „ „	3	10	0

The SOMMIER ELASTIQUE PORTATIF therefore combines the advantages of elasticity, durability, cleanliness, portability, and cheapness.

An ILLUSTRATED CATALOGUE of Bedsteads, Bedding, and Bedroom Furniture sent free by post on application.

HEAL & SON, 196, Tottenham Court Road, W.

DISH COVERS and HOT-WATER DISHES in every material, in great variety, and of the newest and most recherché patterns, are on show at WILLIAM S. BURTON'S. Tin Dish Covers, 7*s.* 6*d.* the set of six; Block Tin, 12*s.* 3*d.* to 35*s.* 6*d.* the set of six; elegant modern patterns, 39*s.* 9*d.* to 69*s.* the set; Britannia Metal, with or without silver-plated handles, 3*l.* 11*s.* to 6*l.* 8*s.* the set of five; Electro Plated, 9*l.* to 21*l.* the set of four; Block Tin Hot-water Dishes, with wells for gravy, 12*s.* to 30*s.*; Britannia Metal, 22*s.* to 77*s.*; Electro Plated on Nickel, full size, 9*l.*

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 500 Illustrations of his illimited Stock of Sterling Silver and Electro Plate, Nickel Silver, and Britannia Metal Goods, Dish Covers, Hot Water Dishes, Stoves, Fenders, Marble Chimneypieces, Kitchen Ranges, Lamps, Gaseliers, Tea Trays, Urns, and Kettles, Clocks, Table Cutlery, Baths, Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Room and Cabinet Furniture, &c., with Lists of Prices, and Plans of the 20 large Show Rooms, at 39, Oxford Street, W.; 1, 1A, 2, 3 and 4, Newman Street; 4, 5, and 6, Perry's Place; and 1, Newman Mews.

SAUCE.—LEA AND PERRINS beg to caution the Public against Spurious Imitations of their world-renowned

WORCESTERSHIRE SAUCE.

Purchasers should

ASK FOR LEA & PERRINS' SAUCE,

Pronounced by Connoisseurs to be

"THE ONLY GOOD SAUCE."

⁎ Sold Wholesale and for Export, by the Proprietors, Worcester; Messrs. CROSSE & BLACKWELL, London, &c., &c., and by Grocers and Oilmen universally.

TO PARENTS and GUARDIANS.—Indispensable accompaniments to youth on their return to school are ROWLAND'S MACASSAR OIL, for the growth and improvement of the hair; ROWLAND'S KALYDOR, for the complexion and skin; and ROWLAND'S ODONTO, or Pearl Dentifrice, for the teeth and gums.

Sold at 20, Hatton Garden, E.C., and by all Chemists and Druggists.

DINNEFORD'S PURE FLUID MAGNESIA has been during 25 years emphatically sanctioned by the medical profession, and universally accepted by the public, as the best remedy for acidity of the stomach, heartburn, headache, gout, and indigestion, and as a mild aperient for delicate constitutions, more especially for ladies and children.—It is prepared in a state of perfect purity and uniform strength only by DINNEFORD & Co., 172, New Bond Street, London, and sold by all respectable Chemists throughout the world.

FEU FARM TO BE LET, consisting of 171 Acres of ARABLE LAND, with COTTAGE and HOMESTEAD. Rent 2*l.* per acre; tenant's taxes, 15*s.* per acre. The Farm is in excellent condition, and within a mile of a Railway Station. A Lease may be had.

For further particulars apply to Mr. J. HOPKINS, Auctioneer, St. Ives, Hunts.

To Market Gardeners.

TO BE LET on LEASE or by the Year, 13 Acres of unexceptionable LAND, fronting a Turnpike Road, close to the Wolverton Station, and in the midst of a large and increasing population. A portion of Freehold Land abutting on the ground could be purchased for Building. This offers a remarkably advantageous opening for a Market Garden; 8 acres adjoining Let in Allotments.

Address for particulars to Rev. W. T. SANKEY, Stony Stratford.

To Nurserymen, Gentlemen, Gardeners, and Others.

TO BE DISPOSED OF, owing to the Decease of the Proprietor, a compact and long established NURSERY and SEED BUSINESS at Middlewich, commanding an extensive trade. The Stock is young and healthy. The Nurseries extend over 15 acres, are situated in a good locality, and within two miles and a quarter from the Winsford Station on the London and North Western Railway, and near to the Trent and Mersey Canal.

For particulars apply to Mr. JOHN TAYLOR, Croxton Hall, near Middlewich, or to Mr. C. F. BARKER, Solicitor, Middlewich.

Standard and Dwarf-trained Fruit Trees, Ornamental Evergreens, and Deciduous Trees and Shrubs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, Jan. 25, at half-past 12 o'Clock precisely, a fine Collection of ORNAMENTAL EVERGREENS and DECIDUOUS TREES and SHRUBS, consisting of Common and Portugal Laurels, Yews, Tree Box, Rhododendrons, Azaleas, Cedars, Junipers, Roses, Lilacs, Standard Apples, Pears, Plums, Cherries, Dwarf-trained Apples, Peaches, Nectarines, Raspberry Canes, Gooseberries and Currants, &c. Also a few Gloxinias and Greenhouse Plants, &c.

On view the Morning of Sale and Catalogues had.

STEAM PLOUGHING AND CULTIVATING.

HIGHLY SATISFACTORY REPORTS

HAVE BEEN RECEIVED FROM THE PURCHASERS OF

HOWARD'S NEW PATENT STEAM CULTIVATORS,

AND WILL BE SENT FREE ON APPLICATION TO

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD.

ALSO CATALOGUES WITH FULL PARTICULARS OF THEIR

CHAMPION PLOUGHS, HARROWS, HORSE RAKES, & HAYMAKERS.

The following are two of the Reports referred to:—

BERKSHIRE.

Highway Farm, Maidenhead, November 7, 1861.

Gentlemen,—In justice to you as the manufacturers of my Steam Cultivating Apparatus, and without attempting to pay you a compliment, I will endeavour to state plainly the reason why I determined on adopting steam cultivation, and why I ... your appliances. With a view of satisfying myself, I determined upon seeing all the systems of steam cultivation. ... I did, and after giving the matter mature consideration, ... a purchaser of yours, and have every reason to be satisfied. I have no hesitation in saying that the cost of yours in the first instance influenced me in some measure. I found I had a number of horses to spare, that would realize a sum approaching the cost of the apparatus, and experience convinces ... I estimated correctly. Having worked it constantly through perhaps one of the most favourable autumns that it is probable I may ever experience, and performed an amount of cultivating I was scarcely justified in expecting, I am now in a position to inform you the result. I obtained your apparatus ... in August, and set to work cultivating the first piece of wheat stubble immediately it was clear of the crop. I commenced working without the assistance of any of your staff, depending upon my own experience from what I gleaned when ... you, and the performances I had witnessed elsewhere. I have gone on and effectually cultivated 84 acres an average depth of 8 inches, as the first process breaking up; a portion of this has been cultivated a second time, this I call 52 acres; and 8 ... a third time, making a total of 144 acres on the Highway Farm. I have a son farming near here, on a farm called Lane ... ; I sent the apparatus there immediately I could spare it ... his use, and he informs me he has cultivated 72 acres the first time, and 28 the second, making a total of 100 acres, and this without any breakages. I consider my commencement a great success. I am so satisfied now I have experienced its advantages, that I would not be without the apparatus if the cost were double the amount. I have endeavoured to ascertain the exact cost per acre and I find it to be 6*s.* 6*d.*; this includes per centage on capital, wear and tear, estimated at 25 per cent., and cost of manual labour, coal, water, and oil. On this basis, I find the daily cost of working to be as near as possible 45*s.* per day, and the average of work performed it from 7 to 8 acres. This estimate I am satisfied will cover all expenses.

Yours truly,

Messrs. J. & F. Howard, Bedford. JOSEPH GILLETT.

CAMBRIDGESHIRE.

Camois Hall, Newmarket, November 26, 1861.

Gentlemen,—I have great pleasure in stating my experience in steam cultivating. Since I purchased a set of your Apparatus in June last, I have cultivated (instead of ploughing,) 40 acres of land once over with the 3-tined implement, and sown it with Turnips. Since harvest I have cultivated upwards of 200 acres of Wheat stubble twice over, once with the 3-tined, and once with the 5-tined implement. I have done on the average 7 acres per day, about 8 inches in depth. The land this autumn has been unusually hard, having had very little rain in this neighbourhood. I am happy to say we have not had a single breakage, although, as before stated, we have done 450 acres. I have now set it up till the spring, when I shall stir the fallows over again. I calculate I shall do 8 or 9 acres per day very easily. My engine is 10-horse power, and we consume 8 cwt. of coal and 1 quart of oil per day.

I am, Gentlemen, yours faithfully.

Messrs. J. & F. Howard, Bedford. JOHN L. KING.

FOR LIST OF STRIKING NOVELTIES RECEIVED FROM OUR SARDINIAN CORRESPONDENT,

SEE ADVERTISEMENT ON BACK PAGE OF *GARDENERS' CHRONICLE*, JANUARY 4, and for

CHOICE LIST OF CARNATIONS, PICOTEES, AND PELARGONIUMS,

SEE ADVERTISEMENT ON BACK PAGE OF *GARDENERS' CHRONICLE*, JANUARY 11.

BARR & SUGDEN, SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN MARKET, W.C.

NOTICE.—*Now in the Press, and will be forwarded immediately, our*

ILLUSTRATED SPRING SEED CATALOGUE,

OR GUIDE TO THE KITCHEN AND FLOWER GARDEN FOR 1862.

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE, AND FORWARDED FREE.

The Cultural Directions are the most Copious and Practical of any Trade List.

NEW VEGETABLE SEEDS for 1862.

COLLECTIONS OF VEGETABLE SEEDS SUITABLE FOR VARIOUS SIZED GARDENS.

The following selection of VEGETABLE SEEDS has been made from our forthcoming CATALOGUE. It embraces the very best varieties in cultivation, and the most suitable for succession. *Vide* PEAS, BROCCOLI, &c.

Section I.—LEGUMINOUS PLANTS.

PEAS.

Division I.—The Earliest.

Daniel O'Rourke	per quart	1*s.*	0*d.*
Dunnett's First Early	,,	0	9
Tom Thumb	,,	1	3

Division II.—Second Early.

Auvergne	per quart	1*s.*	0*d.*
Bishop's New Long Podded	,,	1	0
Champion of Paris	,,	1	0
Dickson's Favourite	,,	1	0
Prizetaker Green Marrow	,,	1	0

Division III.—Best for Main Crop.

Flack's Victory	per quart	1*s.*	0*d.*
Victoria Marrow	,,	0	9

Division IV.—Earliest Wrinkled Marrows.

Champion of England	per quart	1*s.*	0*d.*
Hairs Dwarf Mammoth	,,	2	0
Ne plus Ultra	,,	1	6

Division V.—Best Wrinkled Marrows for Main and Late Crops.

British Queen	per quart	1*s.*	6*d.*
Champion of Scotland	,,	1	6
King of the Marrows	,,	1	6
Veitch's Perfection	,,	2	6

BROAD BEANS.

Early Long Pod	per quart	0*s.*	6*d.*
Mackie's Monarch Long Pod	,,	0	8
Nonpareil Green Long Pod	,,	0	8
Taylor's Large Windsor	,,	1	0

DWARF FRENCH KIDNEY BEANS.

Chinese Long Pod	per quart	1*s.*	6*d.*
Dun or Cream Coloured	,,	1	6
Fulmer's Early Forcing	,,	1	6
Negro Long Pod	,,	1	6
Newington Wonder	,,	1	6
Variegated Dun	,,	1	6

RUNNERS.

Eclipse or Giant White	per quart	2*s.*	6*d.*
Scarlet	,,	2	6

Section II.—EDIBLE-LEAVED and EDIBLE-FLOWERED PLANTS.

ARTICHOKE, Globe	per ounce	1*s.*	0*d.*
ASPARAGUS, Covent Garden Giant	,,	0	3
BEET, Beck's Improved Seakale Beet	per pkt.	1	0

BORECOLE OR KALE.

Asparagus Kale	per ounce	0*s.*	6*d.*
Cottager's ,,	,,	0	8
Feathered ,,	,,	0	6
Melville's Garnishing	per packet	0	6

BROCCOLI.

Division I.—For Cutting in Autumn.

Grange's White Cape	per ounce	1*s.*	6*d.*
Walcheren	,,	1	6

Division II.—For Cutting during Winter.

Snow's Winter White	per packet	1*s.*	0*d.*
Early Purple Sprouting	per ounce	1	0
Lee's Early White ditto	per packet	1	0

Division III.—For Cutting in March and April.

Adam's Early White	per ounce	1*s.*	0*d.*
Imperial Early White	,,	1	0

Division IV.—For Cutting in April and May.

Frogmore Protecting	per packet	1*s.*	0*d.*
Mammoth or Giant White	per ounce	1	0

BRUSSELS SPROUTS.

Imported	per ounce	1*s.*	0*d.*
Roseberry	,,	1	0

CARDOON.

Spanish	per ounce	1*s.*	0*d.*

CABBAGE.

Covent Garden Superfine Early Dwarf	per oz.	0*s.*	9*d.*
Champion Early Dwarf	,,	0	6
Enfield Market	,,	0	6
Kempt's Incomparable	per packet	0	6
Nonpareil Improved	per ounce	0	6
Oxheart	,,	0	6
Rosette Green Colewort	,,	0	6

CABBAGE, SAVOY.

Dwarf Green Curled	per ounce	0*s.*	6*d.*
,, Ulm	,,	0	8
Couve Tronchuda (true)	,,	1	0

CAULIFLOWER.

Covent Garden	per ounce	1*s.*	6*d.*
The Frogmore Forcing from Turner	per packet	1	0
New Erfurt Mammoth	per ounce	1	6
Stadtholder	,,	1	6
Walcheren	,,	1	6

SPINACH.

Round for Summer	per quart	1*s.*	0*d.*
Prickly for Winter	,,	1	0

Section III.—EDIBLE ROOTED PLANTS.

BEET.

Covent Garden, new	per packet	1*s.*	0*d.*
Carter's St. Osyth's, new	,,	1	0
Henderson's Pine Apple	per oz.	0	6

CARROT.

Earliest French Horn	per ounce	0*s.*	6*d.*
Covent Garden Long Surrey	,,	0	4
New Intermediate	,,	0	4

LEEK.

Musselburg, true		0*s.*	9*d.*

ONION.

White Spanish (Reading)	per ounce	0*s.*	9*d.*
White Globe	,,	0	9
Giant Madeira	,,	1	0
James' Long Keeping	,,	0	9

PARSNIP.

The Student	per packet of 1000 seeds	1*s.*	0*d.*
Hollow Crown	per ounce	0	4
RAMPION	per packet	0	6
SALSIFY	per ounce	0	6
SCORZONERA	,,	0	6

TURNIP.

White Dutch	per ounce	0*s.*	3*d.*
Snowball Ball	,,	0	3
American Red-top Stone	,,	0	3
Jersey Navet	,,	0	4
Orange Jelly	,,	0	3

Section IV.—EDIBLE-FRUITED PLANTS.

FRAME CUCUMBER.

Carter's Champion	per packet	1*s.*	0*d.*
Kirkless Hall Defiance	,,	1	0
Dr. Livingstone	,,	1	0
Hamilton's Market Favourite	,,	1	0
Phenomenon	,,	1	0
Empress Eugenie	,,	1	0

RIDGE CUCUMBER.

Henderson's A 1	per packet	1*s.*	0*d.*
Mandarin (new)	,,	1	0
Stockwood's	,,	0	4

EGG PLANT (Aubergine).

Scarlet, White, Violet and striped	each per pkt.	0	3

MELON.

Beechwood	per packet	1*s.*	0*d.*
Bromham Hall	,,	1	0
Empress Eugenie (New)	,,	2	6
Golden Perfection	,,	1	0
Prince Imperial (New)	,,	2	6
Princess Alice (New)	,,	2	6
Queen Victoria (New)	,,	2	6
Turner's Gem	,,	1	0
Carter's Excelsior	,,	1	0

TOMATO.

Long Red Italian	per packet	0*s.*	3*d.*
Early Red	,,	0	3
Tomate de Laye	,,	0	6

VEGETABLE MARROW.

New Custard	per packet	0*s.*	4*d.*
New Bush or Cluster	,,	0	4
Small White and Large Cream	,,	0	3
Ohio Squash	,,	0	6
Fancy Vegetable Marrows	,,	0	4

Section V.—SALAD PLANTS.

CELERY.

Covent Garden Dwarf White Solid	per ounce	0*s.*	9*d.*
Covent Garden Dwarf Red	,,	0	9
Goodwin's White Solid	,,	1	0
Hood's Imperial Dwarf Red	,,	1	0
Ivery's Nonsuch Pink	,,	0	6
Reid's Matchless Red	,,	0	6

CHERVIL.

Curled	per ounce	0*s.*	6*d.*

CORN SALAD.

English and Italian	per ounce	0*s.*	6*d.*

CRESS.

Australian Garden	per ounce	0*s.*	3*d.*
Extra Curled	per quart	1	6
Plain	,,	1	6
American	per ounce	0	3

ENDIVE.

Green Curled French, extra fine	per ounce	0*s.*	9*d.*
Batavian, White	,,	0	9
New Moss, Curled	,,	0	9

LETTUCE.

Covent Garden White Giant Cos	per packet	1*s.*	0*d.*
Covent Garden Brown Giant Cos	,,	1	0
Carter's Giant Cos	,,	1	0
Butler Summer Cos	,,	1	0
Dunnett's Black Seeded Cos	,,	1	0
Covent Garden Winter Cabbage	per ounce	1	6
Drumhead Summer	,,	1	6

RADISH.

Beck's Short Top	per ounce, 3*d.*	per quart	2*s.* 6*d.*
Wood's Frame	,, 3*d.*	,,	2 6
Olive Shaped	,, 3*d.*	,,	3 0
Turnip	,, 3*d.*	,,	2 6

Section VI.—POT, SWEET, and GARNISHING HERBS.

PARSLEY.

Dunnett's Garnishing	per ounce	0*s.*	6*d.*
Myatt's Extra Curled	,,	0	4

SWEET HERBS, &c.

Marjoram, Savory, Thyme, Sage, &c., per packet 4*d.*, per ounce, 1*s.*

BARR AND SUGDEN, SEED MERCHANTS AND FLORISTS, 12, KING STREET, COVENT GARDEN, W.C.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 19, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, January 18, 1862.

The Gardeners' Chronicle Newspaper.

SATURDAY, JANUARY 18, 1862.

GEOLOGY.—KING'S COLLEGE, LONDON.—Professor TENNANT, F.G.S., will commence a COURSE of LECTURES on GEOLOGY, on FRIDAY MORNING, January 24th, at 9 o'clock. They will be continued on each succeeding WEDNESDAY and FRIDAY at the same hour. Fee, 2*l.* 12*s.* 6*d.*
R. W. JELF, D.D., Principal.

JUPP AND SON, HATTERS to her Majesty, beg to announce to the nobility and gentry that they have REMOVED from 222, Regent Street, to more commodious premises, 96, New Bond Street, W.
An elegant Show Room for Ladies' Promenade and Riding Hats.

GRANGER'S PATENT COLLARS, 6*d.*, 9*d.*, and 1*s.* per dozen, post free. Everlasting Collars, (require no washing) 6*d.* each, post free. Imitation Best Lace Collars, 1*d.* and 2*d.* each.
308, High Holborn, W.C. Agents Wanted.

GLENFIELD PATENT STARCH, used in the Royal Laundry.—The ladies are respectfully informed that this Starch is exclusively used in the Royal Laundry, and Her Majesty's Laundress says, that although she has tried Wheaten, Rice, and other Powder Starches, she has found none of them equal to the Glenfield, which is the finest Starch she ever used.
WOTHERSPOON & Co., Glasgow and London.

TAYLOR BROTHERS' GENUINE MUSTARD.
Dr. Hassell, in his report on Taylor Brothers' Genuine Mustard, says, "I find this Mustard perfectly genuine, and of superior quality, possessing a delicate flavour and much pungency."
Sold by all Grocers and Oilmen, in 1 lb. and ½ lb. Tins, and Tinfoil Packets, labelled "TAYLOR BROTHERS," London.

Captain White's
CURRY or MULLIGATAWNY PASTE, Curry Powder, Curry Sauce, and Oriental Pickle, may be obtained from all Sauce Vendors, and Wholesale of
CROSSE & BLACKWELL, Purveyors to the Queen, Soho Square, London, W.C.

WHAT will THIS COST to PRINT? is a thought often occurring to literary men, public characters, and persons of benevolent intentions. An immediate answer to the inquiry may be obtained.
A SPECIMEN BOOK OF TYPES and information for Authors sent on application by
RICHARD BARRETT, 13, Mark Lane, London, E.C.

GEORGE MILLS' TREATISE on the CULTURE of the CUCUMBER, MELON, SEAKALE, and ASPARAGUS will be sent free by post on the receipt of 3*s.* 6*d.* in postage stamps. See *Gardeners' Chronicle*, Jan. 12, 1861.
GEORGE MILLS, Uxbridge Road, Ealing, Middlesex.

GEORGE MILLS' TREATISE on the CULTURE of the PINE will be sent free by post on the receipt of 2*s.* 6*d.* in postage stamps. See *Gardeners' Chronicle*, Jan. 12, 1861.
GEORGE MILLS, Uxbridge Road, Ealing, Middlesex.

Just published, price 4*s.*
THE ROSE ANNUAL for 1862.—By WILLIAM PAUL, F.R.H.S., Author of "The Rose Garden," &c., with Coloured Plate of the New Rose, "Beauty of Waltham," and three other novelties.
KENT & Co., Paternoster Row, E.C., or free by post from the Author, Waltham Cross, N.

This day is published in 12mo, price 7*s.* cloth,
THE LAND DRAINAGE ACT, 1861, with an Introduction, Practical Notes, an Appendix of Statutes relating to Drainage, and Forms. By THEODORE THRING, of the Middle Temple, Barrister-at-Law.
London: V. & R. STEVENS, SONS, & HAYNES, Law Booksellers and Publishers, 26, Bell Yard, Lincoln's Inn, W.C.

Anderson's Agricultural Chemistry.
Just published, in crown 8vo, Cloth, price 6*s.* 6*d.*,
ELEMENTS of AGRICULTURAL CHEMISTRY. By THOMAS ANDERSON, M.D., Regius Professor of Chemistry in the University of Glasgow, and Chemist to the Highland and Agricultural Society of Scotland.
"It ought to be in the hands of every student of Agriculture as a safe guide to him in his researches."—*Edin. New Philos. Journal.*
Edinburgh: ADAM & CHARLES BLACK. London: LONGMAN & Co.; and all Booksellers.

THE QUARTERLY REVIEW, No. CCXXI., is published THIS DAY.
CONTENTS:—
I. RAILWAY CONTROL.
II. THE PRINCESS CHARLOTTE.
III. POPULAR EDUCATION—THE NEW CODE.
IV. ICELAND—THE CHANGE OF FAITH.
V. THE LATE PRINCE CONSORT.
VI. SPAIN AS IT IS.
VII. LORD CASTLEREAGH.
VIII. THE AMERICAN CRISIS.
JOHN MURRAY, Albemarle Street, W.

THE EDINBURGH REVIEW, No. CCXXXIII., was published on WEDNESDAY LAST.
CONTENTS:—
I. LIFE AND WRITINGS OF WILLIAM PATERSON.
II. SEWELL'S ORDEAL OF FREE LABOUR.
III. MAX MÜLLER ON THE SCIENCE OF LANGUAGE.
IV. MILITARY DEFENCE OF THE COLONIES.
V. FELIX MENDELSSOHN'S LETTERS.
VI. WRECKS, LIFEBOATS, AND LIGHTHOUSES.
VII. BURTON'S CITY OF THE SAINTS.
VIII. MAY'S CONSTITUTIONAL HISTORY OF ENGLAND.
IX. THE LADY OF LA GARAYE.
X. BELLIGERENTS AND NEUTRALS.
London: LONGMAN & Co. Edinburgh: A. & C. BLACK.

Stag-Hunting in Somerset and Devon.
In 1 Vol., square crown 8vo, with Map, 18 Chromolithographs, and 22 Engravings on Wood, price 16*s.* cloth,
NOTES on the CHASE of the WILD RED DEER in the Counties of Devon and Somerset. With an Appendix descriptive of remarkable Runs and Incidents connected with the Chase from the year 1780 to the year 1860. By CHARLES PALK COLLYNS, of Dulverton.
London: LONGMAN, GREEN, LONGMAN, & ROBERTS.

Dr. Lindley's Theory of Horticulture.
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News of the Week.

ACCOUNTS from New York to the 4th inst. state that the excitement in regard to the Trent question has materially subsided, and that the American press has been much more moderate in its tone towards England since the settlement of the affair. Messrs. MASON and SLIDELL were given up on the 1st inst., on which day they embarked at Providence Town in HER MAJESTY'S steamship Rinaldo, for Halifax, whence they will take their passage to England in one of the Cunard steamers. The Federal government has since given orders for the release of the two American gentlemen taken from on board the English schooner Eugenia Smith, by the Federal steamer Santiago de Cuba. The United States Treasury, and the principal banks of New York, Boston, Philadelphia, and other commercial cities throughout the country have suspended specie payments. Public attention is therefore anxiously directed to the financial plans which the Government will be obliged to adopt, and the press generally urge heavy taxation as the only legitimate means of relief. It is reported that a strong effort will be made in Congress to repeal the Canadian Reciprocity Act; but it is generally considered that there will be no American interference in Mexican affairs, unless a permanent Spanish occupation should be attempted. The Confederates in Kentucky have destroyed a large portion of the railway between Louisville and Nashville; and it is rumoured that a battle has been fought in Kentucky, in which the Confederates have been victorious. Mr. STEVENS has obtained leave to introduce a bill into Congress for the abolition of the Southern ports as ports of entry. A destructive fire has taken place at Richmond, the capital of the Confederate States.

The *Moniteur* announces that France entirely concurs in the feeling of profound regret and indignation which has been aroused in England by the vindictive act of the Federal Government in destroying the port of Charleston. It is rumoured in Paris that a joint protest from England and France has been addressed to the Washington Government on the subject.

A despatch from Madrid says that the Spanish Government has given orders that the Sumter shall be watched, in order to prevent her taking arms and ammunition on board; and that the American Consul has protested against her admission into the arsenal at Cadiz to repair damages. The Spanish portion of the expedition to Mexico occupied Vera Cruz on the 17th ult. without opposition, the Mexican governor having evacuated the city and retired with his troops into the interior. The municipal authorities and the people of Vera Cruz are said to have received the Spaniards with shouts of welcome.

Accounts from Lisbon of the 7th inst. state that the Infante Dom AUGUSTO is advancing rapidly towards convalescence, and that the KING is in perfect health at his country palace of Caxias. The result of the chemical analysis of the bodies of the late KING and the Infante Dom JOAO has not yet been published, but it is understood that it has removed all suspicion that their deaths arose from other than natural causes.

The Prussian Chambers were opened on Tuesday by the KING in person. In his Speech from the Throne HIS MAJESTY deplored the loss sustained by the Royal House of England in the death of the PRINCE CONSORT, and rejoiced in the happy settlement of the Anglo-American difficulty. He stated that his personal interview with the EMPEROR OF THE FRENCH had already had the effect of placing the friendly relations between Prussia and France upon a more intimate footing; and that the negotiations for the regulation of commerce between the Zollverein and France were still in progress. HIS MAJESTY said that he still had hopes of the re-establishment of the Constitution of 1831 in Electoral Hesse, and stated that Prussia, conjointly with Austria, had entered into confidential negotiations with the Danish Government in reference to the Duchies. With

regard to domestic affairs, HIS MAJESTY said that the bills which would be laid before the Chambers would show that he remained true to his principles, and kept steadily in view the development of the Constitution; while the budget would show an increase in the public revenue, which would serve to diminish the additional credit required for military reform. He concluded by saying that the development of their institutions must be subordinate to the strength and power of the country; and that he could never permit that the progressive development of interior political life should question or endanger the rights of the Crown and the power and security of Prussia.

In the Senate of the Italian Parliament on Wednesday, Baron RICASOLI made a general statement of the policy of his Ministry. He said that at Rome not only the interests of Italians but those of humanity in general were at stake, that perhaps at that very moment their destinies were ripening, because the Roman question, being a moral question, made progress every day; and that the Government, firm in the alliance with France, would continue to follow its present policy. The Senate, after hearing this explanation, almost unanimously adopted a resolution expressing satisfaction with the declaration of the Ministry. The POPE announced to the Cardinals on Tuesday that the EMPEROR OF RUSSIA has consented to the re-establishment of a Papal Nuncio at St. Petersburg.

A telegraphic despatch from Pekin confirms the news received through St. Petersburg that a *coup d'état* had taken place in Pekin after the arrival of the EMPEROR, resulting in the overthrow of the Cabinet, and the imprisonment of the Ministers composing it. A new Regency has been established under the two Empresses. Prince KUNG has been appointed President of the new Ministry, of which KWELIANG and HWALIANG are members. The state of affairs at Pekin is encouraging. There is no news of importance from the northern ports. The rebels are in the vicinity of Shanghai, and the foreigners in that city are prepared for an attack. Japan was quiet. Mr. ALCOCK had left Yeddo to return to his post, and the Japanese Ambassador and suite were to embark for Suez in January. Advices from New Zealand announce that Sir GEORGE GREY and Mr. FOX, the Colonial Secretary, in compliance with an invitation from the native chiefs, had commenced a series of visits to the different native tribes. They had been well received, and it was thought that these visits would lead to the restoration of peace throughout the colony.

Home News.

THE COURT.—The Queen and Royal Family remain at Osborne in complete retirement. On Sunday morning Divine service was performed at Osborne before the Prince of Wales, Prince Arthur, and Princess Louisa, Princess Hohenlohe and Prince Louis of Hesse. The Rev. G. Prothero officiated. On Sunday the Duke of Nemours arrived at Osborne, and left again on Monday. On Wednesday morning the King of the Belgians left Osborne for Claremont, to visit Queen Marie Amélie, and afterwards proceeded to Buckingham Palace, where he still remains. His Majesty will return to Osborne to-morrow. The Prince of Wales and Prince Louis of Hesse accompanied the King to Portsmouth, and after his Majesty's departure for London visited Her Majesty's steam yacht Victoria and Albert and Her Majesty's sailing yacht Royal George. On Thursday the Duke of Cambridge visited the King of the Belgians at Buckingham Palace.

THE PRINCE OF WALES.—It is stated that his Royal Highness will leave England for Trieste on his way to the Levant about the 13th or 14th of next month, and that his stay in the East will extend over about four months. It was anticipated that the Prince would have taken the most prominent part in the inauguration of the Great Exhibition, but it is not probable that he will return to this country for some weeks after that event has taken place. The Admiralty yacht Osborne is expected to sail from Portsmouth to-morrow for the Mediterranean, to be at the Prince of Wales's disposal during his tour.

THE CABINET.—A Cabinet Council was summoned by Lord Palmerston for Tuesday last, but was subsequently countermanded.

THE PUBLIC MOURNING.—Notice has been issued from the Horse Guards and the Admiralty that the full mourning in the two services for the late Prince Consort will be discontinued on the 17th February, and that from that day officers are only to wear a black crape round the left arm until the 10th March, when the mourning will cease.

PARLIAMENTARY MOVEMENTS.—The report that Sir H. W. Dashwood had retired from the contest for Oxfordshire is contradicted, and a liberal subscription has been entered into for the purpose of carrying on the contest. Mr. Heneage has retired from the representation of Lincoln, and become a candidate for Grimsby, vacant by the succession of Lord Worsley to the House of Lords. Mr. J. Hinde Palmer and Mr. Bramley Moore have offered themselves to the electors of Lincoln as candidates for the vacant seat. Sir Percy Burrell is candidate for New Shoreham, and is expected to be returned without opposition. Mr. Cross has announced his intention of retiring from Preston at the close of the present Parliament.

BARONETCY.—The Queen has directed letters patent to be passed under the Great Seal, granting the dignity of a Baronet of the United Kingdom unto Charles Wentworth Dilke the younger, of Sloane Street, Esq., and the heirs male of his body lawfully begotten.

THE ARMY.—The Queen desiring to perpetuate the remembrance of the Prince Consort's connection with the Rifle Brigade as its Colonel-in-Chief, has commanded that it shall bear in future the designation of "The Prince Consort's Own Rifle Brigade."

OFFICIAL APPOINTMENT.—Mr. Alfred Denison, who was for some years private secretary to Sir William Denison, Governor-General of Australia, has been appointed Private Secretary to the Speaker, in the room of the Hon. George L. Waldegrave, resigned.

Foreign.

FRANCE.—A Cabinet Council was held on Saturday at the Tuileries, at which the Emperor and the Cabinet approved of the budget of M. Fould, the new Minister of Finance. The Emperor continues to make reductions in his various establishments. The Imperial stables at Versailles have been suppressed and a number of inspectors at the Imperial palaces have been dismissed. The building of new stables in the Isle des Cygnes for the Emperor's saddle horses has also been discontinued, and is not to be resumed until next year. The *Moniteur* publishes a decree regulating the taxation on transactions in shares, bonds of companies, and other foreign undertakings, as follows: "Those companies whose shares and bonds are negotiated in France and in other countries will be subjected to a tax upon half their capital. In the case of those companies whose bonds circulate principally in France the whole capital will be taxed." It likewise announces that the "Emperor, having taken into consideration the wish of the Masonic Order in France in maintain a central representation, has appointed Marshal Magnan as Grand Master of all the Masonic Lodges in France for three years." It also publishes a letter from M. Rouland, Minister for Public Instruction, in reply to the Bishop of Arras, who had complained of the Circular of the Minister to the Prefects in reference to religious congregations. M. Rouland criticises the assertions of the Bishop, and cites several facts which had compelled him to insist upon the execution of the laws. The *Moniteur* in its bulletin of Saturday says:—

"A feeling of profound regret and indignation has been aroused in France as well as in England by the vindictive act of destroying the port of Charleston."

It has since been currently reported that a joint protest from France and England has been addressed to the Cabinet of Washington with reference to the destruction of Charleston harbour. The report is also revived that the Government intend to take possession of the railways, paying an indemnity to the companies, with a view to carry them on on account of the state. The pacific settlement of the Trent difficulty has produced a favourable impression among men of business in France, and among the organs of the Liberal party, which agree in ascribing the prudent conduct of the Federal Government to the note of M. Thouvenel. On the other hand, the anti-English party, represented by the *Debats* and the *Opinion Nationale*, are evidently disappointed, and show great animosity to England in their comments on the question. The Papal Nuncio was expected in Paris on Tuesday evening.—On Tuesday morning M. Pierre de Rémusat, son of the ex-Minister, and member of the French Academy, left home on horseback, to ride in the Champs Elysées. The horse became restiff in the Rue Ponthieu, and fell on his rider, who was carried to the Hôpital Beaujon, where he shortly afterwards expired. M. Rémusat was but 32 years of age. He was severely wounded in the insurrection of June, 1848, defending the cause of order.—The Tribunal of Correctional Police of Valence (Drôme) tried, some days since, a young woman of 18, named Revoiron, popularly known as the "Saint of Montmirail," on a charge of deceit and swindling. Her brother's wife was also charged as an accomplice. It appears from the evidence that Marie Revoiron, after hearing mass at Montmirail in June last, fainted on leaving the church, and was carried in a state of insensibility to her brother's house close by. Soon after a rumour was set afloat that she saw visions, and had direct communication with angels; also that on her hands, feet, and side the stigmata of the Crucifixion had been imprinted by some mysterious agency. The rumour of this miracle soon spread abroad, and people came in thousands from all the country round to consult her and receive her blessing, for which money was taken. A commissary of police, however, thought it his duty to investigate the matter, and, being convinced of the deception, he arrested the young woman and her sister. Marie Revoiron then confessed to him that the wounds on her person were made by herself, but she persisted that her visions were real. After hearing all the evidence, the Tribunal condemned the pretended saint and her accomplice to a month's imprisonment each and a fine of 25f.

SPAIN.—The Spanish Government has given orders that the Sumter shall be watched, in order to prevent her taking arms and ammunition on board. The American Consul has protested against her admission into the arsenal at Cadiz to repair damages. It is said that Spain will protect the prisoners brought by the Sumter.

PORTUGAL.—The young King continues to reside at the Palace of Caxias, and is in perfect health. The Infante Dom Augusto is much better, and progessing towards convalescence. He has been removed to Lumiar for the benefit of the country air. The result of the chemical analysis of the bodies of the late King and the Infante Dom Joao has not yet been made public, but there is reason to believe that there does not exist the slightest foundation for a suspicion that the deaths arose from other than natural causes. It is said that Dom Joao, after his return from England, was indefatigable in his attention to his brother Dom Augusto, that he sometimes lay besides him and read romances to him to divert his mind, and thereby caught the typhus fever from which he was suffering. The Ministers have introduced a Bill into the Cortes empowering the two Infantas to succeed to the throne in case of failure of the male line, and appointing Dom Fernando, their father, Regent of the Kingdom in case of necessity. In answer to a question in the Chamber of Deputies the Minister of Foreign Affairs said it was true that the Archbishop of Paris had refused to allow a mass to be performed in the cathedral of Notre Dame for the repose of the soul of Dom Pedro V.

SWITZERLAND.—Both Houses of the Federal Assembly were opened on Monday at Berne. The speeches of the two Presidents chiefly related to the political situation of Switzerland. The Presidents of the Council of the States regretted the recent conflicts with France, but hoped that the rights of Switzerland would be preserved, especially in the question of the Valley of Dappes. The President of the National Council urged Switzerland to have confidence in herself.

DENMARK.—It is asserted that Prussia will break off diplomatic relations with Denmark, should the joint Council of the Empire for Denmark and Schleswig re-enter upon its functions.

SAXONY.—On Thursday afternoon, at a quarter to 4 o'clock, a violent shock of earthquake, accompanied with a rumbling noise resembling thunder, was felt in Saxon Voigtland, in the district of the Erzgebirge. The shock extended as far as Leipsic.

PRUSSIA.—The Prussian Chambers were opened on Tuesday by the King in person, who delivered a speech from the Throne, of which the following is a summary:—

"I deplore the irreparable loss which Providence has inflicted upon a great friendly State and Royal house, allied to my own by the dearest ties of relationship. The Bills which will be laid before the Chambers will show that I remain true to my principles and keep steadily in view the development of the Constitution. The Budget will show an increase in the public revenue, which will serve to diminish the additional credits required for military reform." His Majesty then dwelt on the happy issue of the Anglo-American difficulty, and continued,—"My interview with the Emperor of the French has already had the effect of placing the relations between Prussia and France upon a more intimate footing. The negotiations for the regulation of commerce between the Zollverein and France are still in progress. My Government is continually employed in preparing the way for the uniform military organisation of all the German States and in caring for the defence of the German seaboard and the development of the national fleet. Prussia will be indefatigable in endeavouring to introduce reforms into the Federal Constitution corresponding with the actual proportions of strength and the interests of the entire Fatherland." His Majesty regretted that the constitutional conflict in Electoral Hesse continued, and said that he still had hopes of the re-establishment of the Constitution of 1831. He announced that Prussia, conjointly with Austria, had entered into confidential negotiations with the Danish Government in reference to the Duchies, and said:—"In common with all other members of the German Confederation, Prussia will uphold the rights of the Confederation and the principle of international union. The development of our institutions must be subordinate to the strength and power of the country. I can never permit that the progressive development of interior political life should question or endanger the rights of the Crown and the power and security of Prussia. The political state of Europe requires harmonious co-operation between myself and my people, and I reckon with confidence upon the patriotic support of the representatives."

RUSSIA.—The Russian Government has consented to the re-establishment of a Papal Nuncio at St. Petersburg. It is reported that Monsignor Chigi, the present Nuncio at Paris, will be appointed Nuncio at St. Petersburg, and that it is the wish of the Pope that the Nuncio shall reside alternately at St. Petersburg, Warsaw and Wilna. The *Journal de St. Pétersbourg* of Saturday contains an article congratulating Mr. Seward upon the uprightness and intelligence of his policy, and demanding that the incident of the Trent may become the starting point of negotiations for the recognition by the different Powers of common principles upon the neutral flag question. This article also exhorts England to give to the world solemn guarantees for the future by signing a convention which, by insuring universal

respect for the rights of neutral Powers, would contribute to the maintenance of peace, and mark the progress of civilisation. The *Official Gazette* of Tuesday publishes an Imperial decree suppressing the department of the Council of the Empire for Polish Affairs. The decree states that this department has become superfluous by the appointment of the Polish Council of State. Another decree appoints Count Bludow to the Presidency of the Council of the Empire and of the Council of Ministers. General Mouravieff, Minister of the Crown Domains, has been relieved of his functions. The affairs of this Ministry will be provisionally administered by General Zeleny.

Poland.—Advices from Warsaw state that 11 more students have been condemned to serve as soldiers in the army in Siberia.

Austria.—Count Rechberg, who was recently summoned by telegraph to Venice, unexpectedly returned to Vienna on Tuesday, and had a conference with the Archduke Regnier, after which a Ministerial Council was held. The representatives of the Great Powers have since had conferences with the Minister of the Interior. It was reported that the Archduke Regnier had received a letter from the Emperor, in which the Ministry was requested to propose a constitution for the Venetian kingdom conformably to Art. 5 of the fundamental law of February.

Venetia.—The Emperor of Austria on the 4th inst. held a grand review at Verona, of 24 battalions of infantry, two regiments of cavalry with artillery and engineers, forming together a body of 20,000 men. His Majesty afterwards called the officers round him, and delivered a short speech, in which he expressed his satisfaction, said that serious contests awaited them, and that none could tell when they would take place, but they should all be prepared for coming events, and he relied on them. General Benedek afterwards addressed the Emperor, and assured him that the army would support with unflinching firmness—at all times and under all circumstances, without distinction of nationality, religion, or birth—one single Emperor. He could declare in the name of the army that the struggle of nationalities had not penetrated into its bosom, and that the agitation which resulted from that struggle in the different countries of the Crown had no influence on it. The army had made an oath to live for his Majesty's service, and to lay down their lives for it; to live to conquer, and if they were to die, to die an honourable death, and conquer still. This speech called forth the loudest acclamations from the officers and soldiers present. The Emperor visited Venice on the 6th, but left again on the following day for Verona.

Italy.—The Turin papers of Monday publish a speech of the Prince Royal on the occasion of the inauguration of a local society. His Royal Highness said, "Italy needs to be sure that on the day of the struggle she will find a soldier in every citizen." In the Senate on Wednesday Baron Ricasoli made a general statement of the policy of his Ministry. He said that they did not consider it would be dignified on their part to resign without a declaration of want of confidence from the House. As regards the affairs of Naples, the Government had accepted a heavy responsibility in order to hasten the accomplishment of the unification of Italy. With regard to the Roman question, he said "that at Rome not only the interests of Italians, but of humanity in general, were at stake. Perhaps at this very moment our destinies are ripening. The Government, firm in the alliance with France, will continue to follow its present policy." The Marquis de Villamarina requested Baron Ricasoli to explain the passage in his speech, "Perhaps at this very moment our destinies are ripening." Baron Ricasoli replied, "I expressed myself thus because the Roman question, being a moral question, makes progress every day." The Senate, being satisfied with the explanations of the Ministry, passed to the order of the day. In the Chamber of Deputies on Saturday Signor Crispi asked for explanations respecting the recent events at Castellamare in Sicily. Baron Ricasoli replied that the despatches received by the Government announced that almost all the chiefs of the movement had been arrested and order restored. He said also that the local authorities considered that there was no reason to apprehend a renewal of the disturbances now subdued. In the sitting of Wednesday Signor Dondes addressed another question to the Government on the subject. He censured the local authorities for not having taken regular legal proceedings against the disturbers of public order, and expressed his disapproval of persons having been shot without trial. The Minister of Justice replied that the Government had not yet received an official account of the disturbances. He said it was very difficult for the judicial authorities to obtain the evidence necessary for conviction. The Minister added that the efforts of the soldiers to repress the disorders would have been ineffectual but for a spontaneous movement on the part of the inhabitants against the robbers and assassins. Several Deputies took part in the discussion, and the Chamber decided by a vote to defer the expression of its opinion until better able to appreciate the facts contained in the Ministerial reports. On Thursday a discussion took place on the report of a Parliamentary Committee appointed to consider the petition of Signor Tofano, appealing against his removal from the magistracy by the Government, on the ground of the irrevocable nature of the office. The committee, in their report, proposed that the Chamber, not being a court of justice, should avoid treating the question involved in the petition. Signor Tofano addressed the Chamber in his own behalf in a speech which occupied nearly the whole sitting, and at its close the Chamber ordered the publication of all the documents communicated by the Government, and passed to the order of the day. — Prince Oscar of Sweden has arrived at Turin, and has been received with great distinction.—On Tuesday the Pope announced to the Cardinals that Russia had consented to the re-establishment of a Papal Nuncio at St Petersburg, and said:—"I hope that this first concession on the part of the Emperor of Russia will be the signal for others in favour of the unfortunate Polish nation." The Pope announced further, that he had requested of the Czar the liberation of the priests confined in the citadel of Warsaw, and the recall of those who had been sent to Siberia. Monsignor Chigi, the Papal Nuncio accredited to the Court of the Tuileries, left Rome on Monday morning for Paris. The amount realised by the subscriptions of Peter's pence is 3,809,747 Roman crowns, besides objects of great value. Chiavone has been deprived by the Bourbon Committee at Rome of the command of the brigands for having disobeyed instructions by shooting prisoners. Accounts from Naples state that the brigands, having been vigorously pursued and hemmed in in the Capitanata, had sought refuge in the mountains of Gargano, whence they made sallies, keeping the country in a state of alarm. The Government, however, have taken measures by which it is hoped tranquillity will soon be restored. —Signor Gavazzi has addressed a letter to a friend announcing that he is about to be prosecuted at Florence for attacking the religion of the state; the heads of his accusation being that he spoke against the immaculate conception, auricular confession, preaching the Pope to have been only Bishop of Rome in the origin, the impossibility of a free state with the canon law, &c. He says that the penalty attached to the offence is much more severe in Tuscany, where he now is, than in Piedmont, and that out of seven accusers five are foreigners, and two among them are Irishmen.

Sicily.—From the official report of the reactionary movement at Castellamare in Sicily, it appears that some rioters shouted "Down with the conscription!" and, among many other acts of atrocity, killed the Captain of the National Guard, plundered his house, and also one belonging to a merchant known to entertain Liberal opinions. The troops who were despatched to the scene of the disturbances succeeded in re-establishing order. Five persons who were found plundering were shot. The troops were well received by the population.

Syria.—Telegraphic advices from Alexandria to the 12th inst., state that the Turks at Uripomi in Syria had maltreated several of the Christian inhabitants, and that the French Consul had demanded and obtained an indemnity. The frigate Mogadore had arrived at Uripomi.

India.—Mr. Laing arrived in Calcutta on the 30th Nov. On the 5th Dec. the three representative associations of the city—the Chamber of Commerce, the Trades' Association, and the British Indian Association —presented him with a joint address, in which the natives combined with the Europeans to express their appreciation of the wise measures and concessions of the Government, and the satisfaction with which they had borne the taxes which it had been so necessary to impose. On the subject of cotton, they said that the fact was established that cotton could be produced to almost any extent in India; but it was not yet proved that Indian cotton would always find in Lancashire a profitable market. Mr. Laing in reply said it gave him great pleasure to find that the representatives of important interests applied the term of "wise measures and concessions" to the recent policy of the Government, and to the recent measures, which would render the closing career of Lord Canning memorable in the annals of Indian history. As to himself he saw the desirability of a reduction of the taxes, and would spare no efforts to accomplish the measure, consistent with financial prudence. He thought however that the first duty of a Chancellor of the Exchequer was to resist the desire to gain popularity by remitting taxes until he was assured that he had obtained a solid surplus. With regard to cotton he believed that the permanent substitution of Indian for American cotton could never be brought about until the quality of cotton in India had been improved. The only means to bring this about were improved communications for the conveyance of cotton from the interior to the seaboard, and the presence in the cotton districts of European agents to make advances. The Landholders' and Commercial Association next waited upon Mr. Laing and presented an address, dwelling chiefly upon the contract law and the Coolie emigration question, which was, it said, the cause of much anxiety, consequent on the large number of Coolies leaving the country, not only for the Mauritius and the British West India islands, but also for the French island of Bourbon. They saw with concern that an extensive cultivation of cotton in Queensland in Australia is designed, the labour for which is to be obtained from India. Mr. Laing, in reply, made a speech shadowing forth the downfall of the civilians and the inauguration of a new policy.

China.—A despatch from Pekin of Nov. 11 confirms the previous announcement that a *coup d'état* has taken place in that capital, resulting in the overthrow of the Cabinet and the imprisonment of the Ministers composing it. A new Regency has been established under the two Empresses, widows of the late Emperor—one having been his principal wife, and the other the mother of the youthful Emperor, Tsai Ch'un. Prince Kung has been appointed President of the new Ministry, of which Kweliang and Hwaliang and others of good repute, are members. The charges preferred against Su-Shun, Tsái Yuen, Prince of I, and Twan-Hwa, Prince of Ching, three leading members of the late Ministry, were tampering with the late Emperor's dying manifestoes, perverting the declarations of the successor to the throne, excessive and unreasonable assumption of power and authority, defiance of the young Emperor and the Empresses of the deceased monarch, mal-administration of affairs last year, especially in connection with foreign countries, advising the treachery practised upon the foreigners last year, which led to the sacking of the Summer Palace; withholding from the late Emperor information about the successful treaty ratified at the metropolis, and frightening him with fabulous and alarming stories. As already stated, they were found guilty and condemned to death. Su-Shun was publicly decapitated, like a common malefactor, but the two others were permitted to put an end to themselves, and were accordingly found dead in their cells. It is worthy of notice that these three Ministers were those most immediately connected with the disastrous act of treachery by which so much suffering was caused to our countrymen during the war. The state of affairs at Pekin is encouraging. There is no news of importance from the Northern ports. The rebels are in the vicinity of Shanghai. The foreigners in that city are prepared for an attack. At Hankow trade is flourishing. Ningpo is still in a state of alarm, owing to the vicinity of the rebels.

Japan.—According to the latest advices, Japan was quiet. Mr. Alcock had left Yeddo to return to his post. The Japanese Ambassadors and suite were to embark for Suez in January in H.M.S. Odin.

Australia.—Melbourne papers of November 26 report another change of ministry. The Heales government, after a struggle of twelve months, have been defeated by a majority of six on their financial statement, which proposed to reduce the duties on tea and sugar, and to levy increased customs duties and establish wharfage rates on all imported goods for the general purposes of revenue. A new cabinet has been formed from a coalition of the leaders of the opposition under Mr. O'Shanassy as chief Secretary. Parliament had adjourned to December 7, to give time to the new ministers to complete their arrangements and to proceed with their re-elections. A profound impression has been created throughout the colony by the melancholy tidings of the deaths of the explorers Burke and Wills, who left Cooper's Creek in December last to examine the interior of the country towards Carpentaria. They succeeded in setting at rest the great problem of Australian geography, but perished of starvation on their return. Melbourne has recently been brought into communication with Brisbane, the capital of Queensland, by electric telegraph. Mr. Horatio Wills, a very old settler of New South Wales, Mr. and Mrs. Baker, and their four children, and several other persons, numbering 19 in all, have been massacred by the aborigines in Queensland.

New Zealand.—Advices from Auckland announce that Sir George Grey and Mr. Fox, the Colonial Secretary, had accepted the invitation of the native chiefs to a conference. His Excellency and Mr. Fox were well received. The invitation was personally delivered by our old ally Tamati Waka Nene, who no sooner heard of Sir G. Grey's arrival than he hastened to Auckland and invited him to visit the Ngapuhi tribe, which was accordingly honoured by the first visit. Influential chiefs from other districts, including the Lower Waikato, have since waited upon his Excellency, and urgently requested him to visit them, which he has promised to do as soon as he returns from the Bay of Islands. The *New Zealander*, adverting to the probable settlement of the native question, says it is reported that it is Governor Grey's intention to offer to the natives a system of civil institutions similar to those he introduced at the Cape of Good Hope, and which led to the settlement of difficulties of far greater magnitude than any which exist in New Zealand.

United States.—Accounts from New York to the 4th inst. state that the settlement of the Trent question has been received by the people with a feeling of relief, and the tone of the American press, as a whole, is much less hostile to England since the settlement of the difficulty than it has been for many months. The uneasy feeling in the public mind, however, in regard to the relations with England still continues. The belligerent tone of the English press and the British warlike preparations have caused the impression to gain ground that England will shortly make the subject of the blockade, or the fact of vessels being sunk in the Southern harbours, a pretext for war with America. Messrs. Mason and Slidell and their Secretaries embarked on the 1st inst., at Providence Town on board Her Majesty's steamer Rinaldo, for Halifax, whence they will proceed to Europe in the next Cunard steamer. Their departure caused scarcely any excitement, and

the comments of the New York press on the subject are unimportant. The Senate has agreed to Mr. Sumner's resolution, asking the President to transmit to the Senate all the correspondence which has taken place since the Paris Congress in relation to neutral and belligerent rights upon the ocean. It is reported that a strong effort will be made to repeal the Canadian Reciprocity Act. The New York, Boston, Philadelphia, and the leading banks throughout the country have suspended specie payments. It is only some of the New York banks that continue to pay in specie. The United States' Treasury has also suspended specie payments. The interest on the Public Debt due on the 1st of January next will be paid in specie, but demand notes are no longer redeemed. The *New York Evening Post* says that the banks have resolved not to take up the third 50 millions of the Federal Loan. The *New York Journal of Commerce* considers that the suspension of specie payments is not the end of the present history, but only the beginning of another leaf, and that a resort to immediate taxation fully in proportion to the national expenses is the only method to avoid a grand collapse at the conclusion of the war. The financial plans of the Federal Government attract much attention, and the press generally urges heavy taxation as the only legitimate means of relief. Mr. Stevens has obtained leave to introduce a Bill into Congress for the abolition of the Southern ports as ports of entry. Mr. Stevens, in the speech which he made in Congress, said that the conduct of France in interfering in the Trent affair was impertinent. "France," he said, "was not invited to interfere, and when the American domestic troubles are settled, America must look into the Holy Alliance between France and England, and see how far they shall be permitted to control American affairs." The New York press is again speculating on an early advance of the Federal army. General M'Clellan's health has much improved. A Federal steamer has been despatched to the coast of Europe for the protection of American commerce. Others are expected to leave shortly. The New York Chamber of Commerce has remonstrated against the instructions of the Secretary of the Treasury regarding the immediate action of the new tariff. The New York press generally considers that there will be no American interference in Mexican affairs unless a permanent Spanish occupation should be attempted. The Confederates in Kentucky have destroyed a large portion of the railway between Louisville and Nashville. It is rumoured that a battle has been fought near Paducah, Kentucky, in which the Confederates were successful, but no details have yet come to hand. Reconnoissances from Beaufort to within 15 miles of Charleston have been made by the Federals. It was said that a large Federal force had landed on North Edisto and seized the railway station and some war vessels. It is reported at Ship Island that Fort Pickens opened fire on Pensacola on the 1st inst. The result is unknown. A destructive fire has taken place at Richmond. It is now said that the great conflagration at Charleston originated accidentally, and was not the work of an incendiary, as the Northern journals had asserted. The commission appointed to examine the Stevens floating battery had reported against it. It was stated at New York that the British steamer Gladiator, which was at Nassau, N. P., on the 16th ult., loaded with arms for the Confederates, had escaped the United States' gunboat Flambeau, which was watching her movements, and had run the blockade. A meeting of British residents was about to be held at the British Consulate in New York, in order to express condolence with her Majesty Queen Victoria on the death of his Royal Highness the Prince Consort. The Prince de Joinville, Count de Paris, and Duke de Chartres arrived in New York, Dec. 29. The diplomatic correspondence on the subject of the Trent has been published in full. It comprises the letters of Mr. Seward, Mr. Adams, Earl Russell, Lord Lyons, M. Thouvenel, and other ministers, and is of great length. The following is a summary of their contents :—

The first is a letter from Mr. Seward to Mr. Adams, the American Minister in London, dated November 30, 1861. Mr. Seward in this letter compliments Mr. Adams for speaking and acting so wisely at the Lord Mayor's dinner, and also states that he told Lord Palmerston the simple fact, when informing him that the life of the insurrection is sustained by the hopes of recognition of the Southern Confederacy by England and France, and if those hopes ceased, the insurrection would perish in 90 days. Such a recognition could never take place without producing immediate war between the United States and the recognising Powers. The British Government has been inattentive to the currents that seemed to be bringing the two countries into collision, but he infers that it is now awake to the importance of avoiding possible conflicts, and if so, the United States are disposed to meet them in the same spirit. He then refers to the act of Captain Wilkes and says—"We have not furnished you with any explanations. We adhere to that course now because we think it more prudent that the ground taken by the British Government should be first made known to us here, and that the discussion, if there must be one, shall be had here. It is proper, however, that you should know one fact in the case, without indicating that we attach importance to it namely, that Captain Wilkes having acted without any instructions from the Government, the subject is therefore free from the embarrassment which might have resulted if the act had been specially directed by us." He trusts that the British Government will consider the subject in a friendly temper, and it may expect the best disposition on the part of the Washington Cabinet. The next letter is from Earl Russell to Lord Lyons, dated Nov. 30, which details the Trent affair. He says, "It thus appears that certain individuals have been forcibly taken from a British vessel—the ship of a neutral power on a lawful and innocent voyage—an act of violence which was an affront to the British flag, and a violation of national laws. Her Majesty's Government are willing to believe the act was without authority, and resulted from misunderstanding, as the Government of the United States must be fully aware that the British Government will not allow such an affront to its national honour to pass without due reparation, and the British Government are unwilling to believe that the United States deliberately intended unnecessarily to force a discussion of so grave a question between the two governments. Her Majesty's Government trusts that the Government of the United States will, of its own accord, offer such redress as alone could satisfy them, namely, the liberation of the four prisoners and their delivery to Lord Lyons, that they may again be placed under British protection, and a suitable apology for the aggression committed. Should these terms n t be offered by Mr. Seward, you will propose them to him."—Mr. Seward replies to Lord Lyons (by whom he was furnished with a copy of Earl Russell's letter) stating that the dispatch has been submitted to the President. Mr. Seward says: "The British government rightly conjectured what it is now my duty to state, that Captain Wilkes acted upon his own suggestions of duty without any direction or instructions, or even foreknowledge of it on the part of this government. No directions had been given him, or any other naval officer, to arrest the four persons, or any of them, on the Trent, or any other British vessel, or any neutral vessel there or elsewhere." The question is, whether this proceeding was authorised by, and conducted according to the law of nations. It involves the following inquiries:—Were the persons named and their supposed despatches contraband of war? 2. Might Captain Wilkes lawfully stop and search the Trent for these contraband persons and despatches? 3. Did he exercise that right in a lawful and proper manner? 4. Having found the contraband persons on board and in presumed possession of the contraband despatches, had he a right to capture the persons? 5. Did he exercise that right of capture in the manner allowed and recognised by the law of nations? Of these questions Mr. Seward answers the first four in the affirmative; but on the fifth he admits that Captain Wilkes ought to have taken the Trent into port for condemnation, and that his release of the ship was an "oversight," of which the British Government has a right to avail itself, and which the American Government must allow After discussing the whole question at great length in all its bearings, Mr. Seward says: "I trust I have shown to the satisfaction of the British government, by a very simple and natural statement of facts and an analysis of the law applicable to them, that this government has neither meditated, nor practised, nor approved any deliberate wrong in the transaction to which they have called its attention; and, on the contrary, that what has happened has been simply an inadvertency, consisting in a departure by the naval officer—free from any wrongful motive—from a rule uncertainly established, and probably, by the several parties concerned, either imperfectly understood or entirely unknown. For this error the British government has a right to expect the same reparation that we, as an independent state, should expect from Great Britain or from any friendly nation in a similar case. I have not been unaware that in examining this question I have fallen into an argument for what seems to be the British side of it against my own country, but I am relieved from all embarrassments on that subject. I had hardly fallen into that line of argument when I discovered that I was really defending and maintaining not an exclusively British interest, but an old-honoured and cherished American cause; not upon British authorities, but upon principles that constitute a large portion of the distinctive policy by which the United States have developed the resources of a continent, and thus becoming a considerable maritime power, have won the respect and confidence of many nations. These principles were laid down for us by James Madison in 1804, when Secretary of State under Jefferson, in instructions to James Monroe, our then Minister to England." Mr. Seward says, after quoting these instructions, "If I decide this case in favour of my own government, I must disallow its most cherished principles, and reverse and for ever abandon its essential policy. The country cannot afford the sacrifice. If I maintain those principles and adhere to that policy I must surrender the case itself. It will be seen, therefore, that this government could not deny the justice of the claim presented. We are asked to do to the British nation just what we have always insisted all nations ought to do to us. In coming to my conclusion I have not forgotten that if the safety of this Union required the detention of the captured prisoners, it would be the right and duty of this government to detain them; but the effectual check and waning proportions of the existing insurrection, as well as the comparative unimportance of the captured persons themselves, when dispassionately weighed, happily forbid me from resorting to that defence; nor am I unaware that American citizens are not in any case to be unnecessarily surrendered for any purpose into the keeping of a foreign state. Only the captured persons, however, or others who are interested in them, could justly raise a question on that ground. It would tell little for our own claims to the character of a just and magnanimous people if we should so far consent to be guided by the law of retaliation as to lift up buried injuries against national consistency and national conscience. Putting behind me all suggestions of this kind, I prefer to express my satisfaction that by the adjustment of the present case upon principles confessedly American, and yet, as I trust, mutually satisfactory to both nations concerned, a question is finally and rightly settled between them which heretofore exhausted not only all forms of peaceful discussion, but also the arbitrament of war itself, for more than half a century alienated the two countries from each other, and perplexed with fears and apprehensions all other nations. The four persons in question are now held in military custody at Fort Warren, in the state of Massachusetts. They will be cheerfully liberated. Your lordship will please indicate a time and place for receiving them.—I remain, &c., W. H. SEWARD."—Lord Lyons, in reply to this letter, wrote: "I will, without any loss of time, forward to her Majesty's Government a copy of the important communication which you have made to me. I will also, without delay, do myself the honour to confer with you personally on the arrangements to be made for delivering the four gentlemen to me, in order that they may again be placed under the protection of the British flag."—The next letter is addressed to Lord Lyons by Earl Russell on the 19th Dec., describing a visit he had received from Mr. Adams, to whom he stated the substance of the two despatches he had written to Lord Lyons on the subject of the Trent. "I told him," says his lordship, "that in a private letter I had directed Lord Lyons to talk the matter over with Mr. Seward two days before reading to him the despatch. Mr. Adams asked whether the direction to Lord Lyons to leave Washington in seven days was in the despatch to be read. I said it was not, and that in case Mr. Seward should ask what would be the consequence of a refusal on his part to comply with our conditions, Lord Lyons was to decline to answer that question, in order not to have the appearance of a threat. I said that I thought the explanation that the Government had not authorised the seizure would stand in the place of an apology. But the essential condition was, that Mr. Mason and Mr. Slidell should be given up to Lord Lyons. Mr. Adams said that if the matter was stated to Mr. Seward in the manner I had explained, he hoped for an amicable termination of the difference; he thought that if the Government of the United States insisted on maintaining the act of Captain Wilkes, the United States would be abandoning their doctrine and adopting ours. Mr. Adams asked me a further question, which he said I might decline to answer; it was whether, if Lord Lyons came away, a declaration of war would be the immediate consequence. I told him nothing was decided on that point; we should wait for the reply from America, and then decide upon our course. I stated to Mr. Adams the substance of M. Thouvenel's despatch to M. Mercier as I had heard it from M. de Flahault. Mr. Adams said that the French Government had always been very consistent in their maintenance of the rights of neutrals. He added that he could not pay our Government the same compliment. I said I would dispense with compliments if this matter could be amicably arranged."—The next letter is from Lord Lyons, transmitting to Earl Russell Mr. Seward's despatch already described consenting to surrender the four prisoners.—In the next letter, dated the 27th Dec., Earl Russell states that her Majesty's Government have carefully examined how far Mr. Seward's note, and the conduct it announces, complies substantially with their demand for redress. "With regard to the first," says his lordship, "viz., the liberation of the prisoners with a view to their being again placed under British protection, I find that the note concludes by stating that the prisoners will be cheerfully liberated, and by calling upon your lordship to indicate a time and place for receiving them. No condition of any kind is coupled with the liberation of the prisoners. With regard to the suitable apology which the British Government had a right to expect, I find the Government of the United States distinctly and unequivocally declares that no directions had been given to Captain Wilkes, or to any other naval officer, to arrest the four persons named, or any of them, on the Trent or any other British vessel, or on any other neutral vessel, at the place where it occurred or elsewhere. I find, further, that the Secretary of State expressly forbears to justify the particular act of which her Majesty's Government complained. If the United States Government had alleged that although Captain Wilkes had no previous instruction for that purpose, he was right in capturing the persons of the four prisoners, and in removing them from the Trent on board his own vessel, to be afterwards carried into a port of the United States, the Government which had thus sanctioned the proceeding of Captain Wilkes would have become responsible for the original violence and insult of the act. But Mr. Seward contents himself with stating that what has happened has been simply an inadvertency, consisting in a departure by a naval officer, free from any wrongful motive, from a rule uncertainly established, and probably by the several parties concerned either imperfectly understood or entirely unknown. The Secretary of State goes on to affirm that for this error the British Government has a right to expect the same reparation which the United States, as an independent state, should expect from Great Britain, or from any other friendly nation in a similar case. Her Majesty's Government having carefully taken into their consideration the liberation of the prisoners, the delivery of them into your hands, and the explanations to which I have just referred, have arrived at the conclusion that they constitute the reparation which her Majesty and the British nation had a right to expect. It gives her Majesty's government great satisfaction to be enabled to arrive at a conclusion favourable to the maintenance of the most friendly relations between the two nations." His lordship reserves for a further communication the views of her Majesty's Government on the questions of international law on which they differ from Mr. Seward's views, and adds that in the meantime it will be desirable that the commanders of the United States cruisers should be instructed not to repeat acts for which the British Government will have to ask for redress, and which the United States Government cannot undertake to justify.—The next letter addressed by Earl Russell to Lord Lyons on the 11th inst., says:—"Your conduct in the important matter of the Trent is entirely approved by her Majesty. The discretion and good temper you have shown have contributed greatly to the success of our operations."

CANADA.—Active measures continue to be taken in Canada for the formation of effective Volunteer Corps.

MEXICO.—The Spanish expedition arrived at Vera Cruz on the 8th ult., and the Governor of that city had 24 hours to decide if he would abandon it. The Governor replied that he had instructions to abandon the city as soon as he perceived that he could not resist the force brought against it, and then, with the troops, withdrew to the interior. On the 17th the Spanish troops disembarked and hoisted the Spanish flag on the fortress of San Juan d'Ulloa and in the principal squares of Vera Cruz. 100 guns were found in San Juan d'Ulloa. The municipal authorities and the people of Vera Cruz received the Spaniards with shouts of welcome. The Governor, before evacuating the city, issued a proclamation forbidding all communications with, or supplies being given to, the Spaniards, and declaring that all Mexicans who failed to take up arms in defence of Mexico, or who remained in the Spanish army, would be treated as traitors. The Spanish Commander, Gassett, on landing, issued a stirring address to the troops, in which he said:—

"Your mission has only now commenced. It will only be finished when all Spain can say, 'These are the troops who have avenged in Mexico the insults offered to the Spanish flag, and have again won the affection of those who in other days were our brothers.'"

Commander Gassett also issued a proclamation to the inhabitants, in which he said:—

"The Spanish troops come with no mission of conquest they come solely to demand satisfaction for the non-fulfilment of treaties and for violence committed against Spaniards, and to obtain guarantees against the repetition of similar outrages. Peaceful inhabitants will receive protection, but disturbers of order will be tried by a military commission. The inhabitants should at once return to their occupations, for the greatest satisfaction to the Spanish army, after having fulfilled the mission of the Queen, will be to return to Spain with the certainty of having merited the affection of the Mexicans."

The French frigates Guerrière, Ardente, Masséna, and Astrée arrived at Havannah on the 27th ult., under the command of Admiral de la Gravière. General Prim arrived at Havannah on the 23d, and was received with intense enthusiasm. The city was illuminated, and the streets were festooned with flags.

City Intelligence.

MONEY MARKET, FRIDAY.—BRITISH FUNDS: Consols closed at 93 to $\frac{1}{8}$ for Money, and $93\frac{1}{8}$ to $\frac{1}{4}$ for the 6th Feb.; Bank Stock, 240 to 241; Three per Cents. Reduced, $93\frac{1}{8}$ to $92\frac{7}{8}$; New Three per Cents., 92 to $92\frac{7}{8}$; India Stock, 224; Ditto Five per Cent. Stock, $106\frac{1}{8}$ to $105\frac{7}{8}$; Ditto Four per Cent. Debentures, 1863, 100; Ditto 1864 or 1866, $66\frac{5}{8}$; Ditto Bonds, 24s. pm.; Five per Cent. Enfaced Rupee Paper, $99\frac{7}{8}$ to 100; Ditto Five and a Half per Cent., 106 to $105\frac{1}{2}$; Exchequer Bills, June, 21s. to 18s. pm.—FOREIGN: Brazilian Four

and a Half per Cents., 1860, 91; Chilian Four and a Half per Cents., $85\frac{1}{4}$; Equador New Consolidated, $15\frac{1}{4}$; Italian Five per Cents., $63\frac{5}{8}$ to $\frac{3}{4}$ ex div.; Mexican Three per Cents., for Acct., $28\frac{7}{8}$ to 29; New Granada Land Warrants, $2\frac{1}{2}$; Ditto Ex Overdue Coupons and Hectares, 9; Ditto Deferred ex Hectares, 5; Peruvian Uribarren Four and a Half per Cents., $94\frac{1}{4}$, ex div.; Portuguese Three per Cents., 1853, for Acct., $46\frac{3}{4}$, ex div.; Russian Three per Cents., 1859, 60 to $\frac{1}{8}$; Sardinian Five per Cents., for Acct., $77\frac{3}{4}$; Spanish Three per Cents., for Acct., $52\frac{1}{2}$, ex div.; Ditto Passive, $17\frac{3}{4}$; Committee's Certificates, 7 to $6\frac{7}{8}$; Turkish Six per Cents., 1854, for Acct., 84 to $83\frac{1}{4}$; Ditto, 1858, $74\frac{3}{4}$; Ditto for Acct., 74 to $\frac{1}{4}$; Ditto 100*l.* Bonds, 75; Venezuela Three per Cents., for Acct., $23\frac{3}{8}$ to $\frac{1}{4}$.

Bank of England.

ISSUE DEPARTMENT.

Notes issued	£30,123,420	Government Debt	£11,015,100
		Other Securities	3,634,900
		Gold Coin and Bullion ..	15,473,420
		Silver Bullion	—
	£30,123,420		£30,123,420

BANKING DEPARTMENT.

Proprietors' Capital ..	£14,553,000	Government Securities (including Dead Weight Annuity) ..	£12,268,618
Rest	3,276,760	Other Securities	17,144,246
Public Deposits (including Exchequer, Savings Banks, Commissioners of Nat. Debt, and Dividend Accts.)	4,583,353	Notes	9,425,320
Other Deposits	16,480,452	Gold and Silver Coin ..	818,206
Seven day and other bills	762,825		
	£39,656,390		£39,656,390

16th day of Jan., 1862. M. MARSHALL, Chief Cashier.

Gazette of the Week.

FRIDAY: *Jan.* 10—BANKRUPTS.—E. Alden, Norwich, Baker—D. Amis, Cleaver Street, Kennington, Commercial Traveller—H. Allen, Basinghall Chambers, Basinghall Street, General Merchant—J. Beardwell, Nayland, Suffolk, Tailor—R. Breen, Manchester, Fruit Salesman—T. Bond, Chebsey, Staffordshire, Labourer—E. W. Bowen, Liverpool, Grocer—J. Beck, Liverpool, Grocer—S. Bedford, Southampton Buildings, Holborn, Wholesale Ironmonger—J. Baker, Exeter, Leather Seller—J. O. Bebbington, Manchester, Letter-press Printer—W. Billings, Circus, Blackfriars Road, Bonnet Shape Maker—J. Bannister, Branstone Road, Staffordshire, Joiner—E. Cooke, Birmingham, Commission Agent—R. Cooper, Crescent Terrace, Millbank, Westminster, Grocer—J. A. Calow, Haymarket, Tailor—I. L. Coulton, Robert Street, Hampstead Road, Painter—J. Cox, Highbridge, Somersetshire, Builder—P. Du Day, Brighton, Upholsterer—M. Dean, Kidsgrove, Staffordshire, Grocer—M. Durlacher, Stranraer Place, Maida Vale—J. Edwards, Aberdare, Glamorganshire, Contractor—John Evens, Slough, Buckinghamshire, House Decorator—John Fowler, Cookham, Berkshire, Labourer—James Holmes Furneaux, Devonport, Commander in the Royal Navy—J. French, Brighton, Inspector of Railway Works—J. Franks, Holbeach, Lincolnshire, Coal Dealer—J. Froysell, Lyon Terrace, Maida Hill, Vice-Principal of Maida Hill College—A. Ford, Northumberland Street, Strand, Wine and Spirit Merchant—J. Gaie, Chesham, Bucks, Grocer—J. Groves, Pulverbach, Shropshire, Farmer—J. Govier, Banwell, Somersetshire, Victualler—J. Gray, jun., Bangor, Carnarvonshire, Joiner—E. Griffiths, Llanguicke, Glamorganshire, Licensed Victualler—J. Godden, Faversham, Kent, Seedsman—J. Hibbert, Manchester, Iron and Brass Work Manufacturer—J. Harbour, jun., Chard, Somersetshire, Mason—D. Harries, Llanelly, Carmarthenshire, Coal Trimmer—R. Hill, Green Street, Harrow Road, Beer Retailer—J. Hayward, Wolverhampton, Butcher—V. D. Hunt, Stranraer Place, Maida Hill, Dealer in Horses—W. Husbands, Nottingham, Lucifer Match Manufacturer—J. Holahan, Waterloo Terrace, Commercial Road East, Lead and Glass Merchant—J. Halliwell, Wigan, Lancashire, Joiner—James Harrison, Nottingham, Lace Maker—Henry Jackson, Ashton-under-Lyne, Machinist—Thomas Jarman and Lucy Martinson, High Street, Islington, Drapers—Sayers Kennington, Litchurch, Derbyshire, Tobacconist—J. Lockington, Cambridge, Licensed Victualler—D. Lewis, Merthyr Tydfil, Glamorganshire, Builder—S. Moore, West Buckland, Somersetshire, Dealer in Turf—J. Meredith, Llanwanno, Glamorganshire, Farmer—J. Marshall, Chorlton-upon-Medlock, Grocer—C. Mackay, Compton Street, Brunswick Square, Pianoforte Maker—H. Manwaring, Worcester, Tailor—W. Mead, South Ockendon, Essex, Clothier—B. V. Noppen, Nelson Square, Blackfriars Road, Hat and Cap Tip Manufacturer—G. Oakley, Orsett, Essex, Blacksmith—W. Pellatt, Maidstone, Kent, Boot and Shoemaker—G. Preedy and H. Preedy, York Place, Kingsland, Builders—R. Price, Aberdare, Glamorganshire, Contractor—G. Pim, Greenfield, Lancashire, Corn Merchant—C. J. Payne, Gresham House, Old Broad Street, General Agent—F. W. Potter, Ryder Crescent, St. John's Street Road, Watch Balance Maker—J. Pook, Roxburgh Terrace, Haverstock Hill, Lodging House Keeper—B. Reynolds, Cumberland Place, Westbourne Grove, Builder—W. Robinson, Bolton, Lancashire, Tailor—A. Scowcroft, Bolton, Lancashire, Butcher—Joseph Slater, Bolton, Lancashire, Butcher—J. Salt, Oldbury, Worcestershire, Miner—W. Stafford, Hanley, Staffordshire, Joiner—M. H. Stuchbery and C. Datus, Upper Mitcham, Schoolmistresses—A. Sadler, Liscard, Cheshire, Baker—H. Towells, Ilminster, Somersetshire, Painter—T. Thompson, Kingston-upon-Hull, Hous and Ship Smith—D. Tunstall, Birmingham—E. Unsworth, Moorfield, Lancashire—T. Welch, Datchworth, Hertfordshire, Farmer—F. C. Winter, Boston, Baker—W. Wilson, Grasmere, Westmoreland, Carpenter—T. Wilks, Birmingham—S. Westwood, Smethwick, Staffordshire, Timber Faller—L. Walker, and E. Walker, Preston, Lancashire, Innkeepers—J. Wines, Liverpool, Beerseller—J. Walker, Denton, Lancashire, Brewer—C. J. Welchman, Southam, Warwickshire, Attorney-at-Law—L. Watson, Mildmay Road, Stoke Newington, Merchant's Clerk.

SCOTCH SEQUESTRATIONS.—W. Aikman, Glasgow, Cab Proprietor—J. Macfarlane, Glasgow, Accountant—Duncan Brothers & Co., Leith, Merchants—A. Gordon, Elgin, Writer—G. Dow, Glasgow, Auctioneer.

TUESDAY: *Jan.* 14.—BANKRUPTS—W. Adamson, Leeds, Shopkeeper—E. R. Blackmore, River Terrace, King's Cross, Baker—R. Boone, Pendlebury, Lancashire, Furniture Broker—J. Burges, Weston super-Mare, Somersetshire, Painter—G. Bowden, Bristol, Beer House Keeper—E. Beazley, Bank Chambers, Lothbury, Share Broker—T. Bourne, Cardiston, Shropshire, Brick Maker—A. H. Brown, Norwich, Haberdasher—J. Bromfield, Swansea, Journeyman Brewer—J. Claypole, Great Easton, Leicestershire, Shoemaker—A. P. Childs, Cambridge Road, Hammersmith, Surgeon—J. Cowburn, Millbridge, Leeds, Joiner—R. Carson and W. Carson, Nottingham, Builders—C. Gotching, Linsdale, Buckinghamshire, Farmer—S. P. Child, Sutton, Surrey, Tea Merchant—W. Cliff, Horninglow, Burton-upon-Trent, Cooper—J. Cherry, Castle Street, Leicester Square, Licensed Victualler—H. J. Carr, Bradwell-near-the-Sea, Essex, Retired Commander in her Majesty's Fleet—H. Cook, jun., Gainsborough, Lincolnshire, Fishmonger—William Chapman, Wellingborough, Northamptonshire, Innkeeper—George Francis Cocksedge, De Beauvoir Town, Middlesex, Assistant Warehouseman—James Dalgleish, Liverpool, Ironmonger—John Dale, Penzance, Cornwall, Baker—A. Dicker, King Street, Hammersmith, Job Master—J. Evans (commonly called and known as John Prichard Evans, sued as John Prichard Evans and as J. P. Evans), Basinghall Street, Woollen Warehouseman—T. Ellis, Small Bridge, Lancashire, Joiner—F. H. Emerson, Whitehaven, Cumberland, Supervisor of Excise—L. Fischel, Langbourne Chambers, Fenchurch Street—C. Fish, Bodmin, Cornwall, Greengrocer—L. Fry, Bournemouth, Hampshire, Grocer—W. Fox, Great Yarmouth, Publican—J. W. Feakes, Lupus Street, Pimlico, Plumber—H. Frost, Union Street East, Spitalfields Market, Grocer—E. A. Garland, Portswood, Hampshire, Solicitors' Clerk—A. Green, Somers Place, Paddington, Physician—W. George, East Street, Walworth, Homœopathist—T. Gamble, Huntington, Yorkshire, Potato Dealer—J. Hulme, Stoke-upon-Trent, Labourer—William Harwood, Sheffield, Omnibus Proprietor—John Burrows Harrison, Birkenhead, Cheshire, Secretary to the Liverpool Botanic Institute—Isaac Hudson, Hartlepool, Durham, Trimmer—James Hallam, Nottingham, Beer Seller—Helena Anne Hale, Tenbury, Worcestershire, Dealer in Fancy Goods—T. W. Huntley, Reigate, General Shopkeeper—T. W. Jewell, Harwich, Surgeon—J. Kelland, Wentworth Street, Whitechapel, Saw-mill Proprietor—D. Lowe, Birmingham, Licensed Victualler—S. Lansdale, Cross Street, Blackfriars Road, Egg Merchant—J. M. Merrick, New Windsor, Berkshire, Watchmaker—J. Mason, Truro, Cornwall, Commission Agent—J. Mitchell, Bishopwearmouth, Durham, Publican—G. Peat, Nottingham, Cordwainer—A. Pankhurst, Stoke-upon Trent, Greengrocer—J. Parkhouse, Sedgley, Staffordshire, Charter Master—S. Prescott, Kirkby Cum Osgodby, Lincolnshire, Licensed Victualler—T. Preston, Sen., Stottesden, Shropshire, Farmer—W. Preston, Jun., Bedford Terrace, Church Street, Kensington—E. Perry, Llangattock Vibon Avel, Monmouthshire, Clerk—J. L. Pilbeam, Rochester, Draper—J. Roberts, Everton Park, Lancashire, Butcher—W. Roughton, Burgh-le-Marsh, Lincolnshire, Seedsman—H. S. R. St. John, Crown Hill, Norwood, Literary Author—T. Rolfe and J. Rolfe, Slough, Buckinghamshire, Hatters—T. Smart, Woodford, Essex, Market Gardener—J. Smith, Sturston, Derbyshire, Farmer—E. Symons, Walworth, Commercial Traveller—J. Sinclair, Huddersfield, Doctor of Medicine—M. Storey, Seaton, Cumberland, Innkeeper—R. Saxton, Somercotes, Derbyshire, Butcher—F. Snook, Fenny Stratford, Buckinghamshire, Carpenter—R. J. Tippin, Dove Lane, Eastcheap, Tin Plate Worker—F. Turner, Oxford, General Dealer—T. W. Tennant, Brunswick Crescent, Camberwell, Attorney's Clerk—D. Williams, Devon, Carmarthenshire, Coal Miner—G. Wharmby, Brinnington, Cheshire, Beer House Keeper—J. Woollett, Bromley, Kent, Carpenter—E. H. Wallis, Wantage, Berkshire, Innkeeper—W. Wilson, Jun., and J. Kaye, Mossley, Lancashire, Bobbin Turners—Rev. A. Watson, Harston, Cambridgeshire, Clerk in Holy Orders—W. Wilson, Hoddesdon, Hertfordshire, Harness Maker—J. Woodward, Adbaston, Staffordshire, Farmer—G. Whittaker, Ratcliffe, Lancashire, Farmer—T. Yeoman, Yately, Hampshire, Licensed Victualler.

SCOTCH SEQUESTRATIONS.—Walton, Duff, & Co., Glasgow, Saw Millers—J. Knight, Marnoch, Banffshire, Farmer—W. Taylor, Glasgow, Builder.

Metropolis and its Vicinity.

Memorial to the late Prince Consort.—On Tuesday a public meeting, convened by the Lord Mayor, was held in the Egyptian Hall of the Mansion House, "to consider the propriety of inviting contributions for the purpose of erecting a lasting memorial to his late Royal Highness the Prince Consort, and to adopt such measures for carrying out the object as may then be decided on." The meeting was numerously attended. Among those present were the Marquis of Breadalbane, the Marquis of Salisbury, the Earl of Coventry, the Bishop of London, Lord Kingsdown, Lord Stratford de Redcliffe, Lord Elcho, M.P., Mr. Walpole, M.P., Sir Hugh Cairns, M.P., Mr. Seymour Fitzgerald, M.P., Mr. Hankey, M.P., Baron Rothschild, M.P., Mr. Crawford, M.P., Mr. Tite, M.P., Hon. G. Denman, M.P., Mr. Western Wood, M.P., Mr. Gregson, M.P., Mr. Kinnaird, M.P., Mr. Hanbury, M.P., Mr. George Cubitt, M.P., Mr. H. Lewis, M.P., Mr. S. Gurney, M.P., Mr. Lyall, M.P., Mr. Somes, M.P., Mr. G. Smith, M.P., Mr. Murray, M.P., the Dean of St. Paul's, Aldermen Finnis, Musgrove, Lawrence, Rose, Gabriel, Salomons, Moon, Phillips, Hale, Mechi, Abbiss, Lawrence, and Allen, the Sheriffs of London and Middlesex, and numerous other gentlemen. The Lord Mayor took the chair, and after stating the object of the meeting, read a letter from the Secretary of the Society of Arts, stating that the Society will subscribe 1000 guineas toward the erection of a national monument the design of which may be approved by her Majesty; and intend also to aid in founding an industrial University, and in establishing travelling scholarships in honour of the Prince, both of which objects his Royal Highness their President had deeply at heart. The Bishop of London moved the first resolution, which was as follows:—

"That this meeting, deeply deploring the irreparable loss the country has sustained by the lamented death of his late Royal Highness the Prince Consort, whose powerful and well regulated mind and great abilities have for more than 20 years been unceasingly devoted to improving the condition of the humbler classes, and to the development and extension of science and art, and to the judicious education and training of the Royal family, is of opinion that a lasting memorial should be erected, commemorative of his many virtues and expressive of the gratitude of the people."

His lordship in moving the resolution said that he presumed it was intended that they should have a monument which should speak but of one thing—a monument which should speak of our deep sorrow—sorrow caused by the real worth of him whom they were lamenting. No doubt it had been customary of late to give some sort of secondary utility to the monuments which they raised; but he thought they would be wise not to do that on this occasion. It would be better, as far as his judgment went, that it should be a monument, and a monument alone. His belief was, that if they were to look to utility nothing would be found more useful than a simple monument, which should proclaim to the nation how they loved and honoured the memory of him whom they had so much cause to love and honour. Look at the monuments that were erected in this metropolis and throughout the land; he doubted whether any one of them, great as were the men whom they commemorate, would be found more really useful than that which they sought that day to inaugurate. It was not every man who was able to serve his country in the field of battle, or by achieving great victories—it was not every man who was able to take his part in the conflicts of the Senate, or win for himself a distinguished place in some of the honourable professions of the land; but every man could learn to do his duty well in the station to which God called him—to do it well especially in domestic life; for through a due discharge of domestic duties, from domestic life our political life gained its strength; and nothing else could have so well earned for him whom they that day mourned the love and veneration of Englishmen as the simple discharge of his duty in domestic life. They would point, their children would point, to that monument in time to come, and say that it told the story of a young man who came to this country from a foreign land, unknown—and Englishmen were peculiarly unwilling to learn lessons from foreigners—who soon won his way to the best affections of the country into which he came—who knowing that nothing was so dear to Englishmen as the due discharge of duty in domestic life, first won their hearts in that simple way, and then was able to go forth also into a wider sphere and perform great public duties, the advantage of which they would reap for many generations. He thought they could not overestimate the force of the lessons of which that monument would speak to the young men of that generation. They would learn from it what was the reward of those who resisted temptation under which many thousands of others had fallen—who sought quietly and modestly to dedicate all the powers that God had given them to those duties, be they great or be they humble, which God had called them to perform. Certainly they could not at that moment estimate how great was their loss, and scarcely would they estimate aright how great also had been their gain from these 20 years of faithful service. But that the gain had been great they all knew. It was something to live in an age when our nation was united by that feeling of loyal love to the Throne which bound us together as one family; and to no one more than to him whom they had lost were they indebted for that great characteristic of Englishmen, which made all the nations of the earth at this moment understand how glorious a position it was to be the Queen of this free and loyal people.—Colonel Wilson, the senior Alderman present, seconded the resolution, which was carried unanimously.—Lord Stratford de Redcliffe moved the second resolution as follows:—

"That the memorial recommended should be of a monumental and national character, and that its design and mode of execution be approved by Her Majesty the Queen."

Mr. Western Wood, M.P., seconded the resolution, which was carried unanimously. Baron Lionel de Rothschild, M.P., moved the third resolution:—

"That committees throughout the United Kingdom be formed to raise subscriptions to the proposed memorial, and that Her Majesty's subjects be invited to subscribe."

The Hon. George Denman, M.P., seconded the resolution, which was agreed to unanimously. Mr. H. Lewis, M.P., moved, and Mr. Le Neve Foster seconded the next resolution, appointing a committee of noblemen and gentlemen to carry the resolutions into effect, the Lord Mayor to be president of the committee and treasurer of the fund. On the motion of the Earl of Coventry, seconded by Mr. S. Morley, the thanks of the meeting were given to the Lord Mayor for convening and presiding over the meeting. The sum subscribed at the close of the proceedings amounted to about 4000*l.* Among the largest donors were—The Society of Arts, 1050*l.*; Messrs. Baring Brothers, Messrs Rothschild and Messrs. Coutts and Co., 210*l.* each; The Marquis of Ormonde, 105*l.*; Messrs. Gosling and Sharpe, Messrs. Smith, Payne, and Smith, Messrs. Jones Loyd and Co., Messrs. Glyn, Mills, and Co., Messrs. Overend, Gurney, and Co., the Lord Mayor, Lord J. Russell, Lord Kingsdown, the Bishop of Exeter, Mr. George Cubitt, M.P., and Mrs. Cubitt of Denbies, 100*l.* each. With reference to the recent letter of the Memorial Committee placing Mr. Durham's statue of the Queen at the disposal of the Prince of Wales, his Royal Highness has instructed General Bruce to reply as follows:—

"I have received the commands of his Royal Highness the Prince of Wales to assure you that he very highly appreciates the confidence reposed in him by the members of the Memorial Committee, when they place the statue of her Majesty the Queen, executed by Mr. Durham, at his disposal. It will be his Royal Highness's earnest desire to find a proper site, in the neighbourhood of the memorial to the Great Exhibition of 1851, for the erection of this statue. His Royal Highness, however, feels that at his age he is but little competent to decide upon a question of this character, which seems to him to be one of great importance. His Royal Highness will anxiously seek the best advice and the most valuable opinions upon the subject, and I shall then have the honour of again addressing you by his Royal Highness's direction."

Utilization of the Sewage.—At the meeting of the Metropolitan Board of Works on Friday the proposition of Messrs. Napier and Hope for a concession of the sewage of the northern area of the metropolis, the committee's report in favour of which was submitted to the board at the previous meeting, was discussed at considerable length. Mr. Wilkinson moved a resolution to the effect that the report of the committee be adopted. He was fully of opinion that out of the 38 different projects which had been submitted to that board, the one under consideration was decidedly the most practicable. He distinctly wished it to be understood that he had no favouritism in moving this resolution, and was desirous that any plan which might be submitted by a public company for the consideration of the board should meet with an impartial reception. Mr. Carpmael seconded the resolution. He considered that while every care should be taken that the public money be properly disposed of, all possible help should be given to the scheme before them. Mr. Doulton moved as an amendment that the question be deferred for one month. It was a question of great importance, and one that should be settled one way or the other; but still he strenuously objected to a course being taken which would look like favouritism. He thought, however, that the proposition before them would be the most likely one to be carried out. Alderman Lawrence seconded the amendment, believing that they would be doing wrong by precipitately agreeing to the plan now before them. Mr. Freeman supported the original motion, as the company had come before the Board with all calculations for carrying the works into effect, and for a *bonâ fide* purpose. If the question was adjourned for a month the Bill would be entirely ignored for the present Session. Mr. Nicholay believed the proposition of Mr. Doulton was a most reasonable one, to give other companies the power of sending in their plans, and he hoped the Board would not hesitate to grant the delay of one month, to enable them to send in their plans, and he should have been glad if the time had been for a longer period than a month. Mr. Robinson supported the amendment, believing that the irrigation of 20,000 acres of land with sewage could not fail to create a nuisance; and he hoped that they would confine themselves to so much of the subject as referred to the metropolis, with which alone they had to deal.—Mr. Bidgood did not see what the Board had to do with the scheme at all, for if they were to assent to it

it would at once be put prominently forward that the Metropolitan Board of Works had agreed to it, and persons might be induced to part with their money in consequence. He therefore urged the Board to be very cautious in giving their assent to any scheme, but let the whole of them go to Parliament and ask for compulsory powers on the Metropolitan Board of Works to let them have the sewage.—Mr. Peckett supported the motion.—Mr. Phillips said if the assent of the Board was obtained even then it would be required that the company should make out their case before Parliament, or they would not get their Bill.—Mr. Bennett said there was an opinion among the public that this sewage was valuable, and, if that was so, it was impossible that they could give away what was the property of the ratepayers and could be used for their advantage.—Mr. Hughes gave it as his opinion that if ever there was a scheme calculated to create a nuisance more than another, this was one, as it was proposed to spread over a sandy soil a thickness of sewage which would pollute the air with malaria, and would affect such towns as Maldon, Chelmsford, Southend, Gravesend, Dartford, and many other places until it finally reached the metropolis. Sand would not imbibe ammonia, and indeed it was intended to form a soil on the top of the sand of the sewage of the metropolis, until it should reach a depth of 10 inches, which must be most pernicious to the surrounding neighbourhood. As to the scheme he believed it was altogether impracticable; it was an interference with nature and the boundary of the coast, and, if submitted to Parliament, would be immediately rejected. After a few observations from Mr. D'Iffanger and Mr. Deputy Harrison, Mr. Wilkinson replied, and the amendment was carried by 17 to 13.

REPORTED LOSS OF THE PARANA WITH THE GUARDS.—Considerable excitement was created at Lloyd's on Thursday by paragraphs in a New York paper, and also in a Glasgow paper, stating that the steam transport Parana was reported to have been lost in the St. Lawrence. The Parana sailed in company with the Adriatic, with 1100 men, consisting mostly of a battalion of the Scots Fusilier Guards, and had orders to make for Bic. Failing to get up to that point, she was to put into St. John's, New Brunswick. The Adriatic was to go to Halifax, and the Admiralty have received advices of her arrival there. The *Globe* of last evening states that Sir Samuel Cunard has received letters, dated the 3d inst., from his son at New York, but they make no mention whatever of the Parana. The general impression is that the statement of the loss of the Parana will prove untrue; but some uneasiness is still felt on account of the severe gale that was known to be blowing on the 2d.

DIOCESE OF LONDON.—The Bishop of London has conferred the honorary prebend of "Chamberlainswood" in St. Paul's Cathedral, vacant by the death of the Rev. Thomas Henderson, on the Rev. John Edward Kempe, rector of St. James's, Piccadilly. The Rev. John G. Hale, M.A. of Oriel College, Oxford, son of the Archdeacon of London, has been presented by the Dean and Chapter of St. Paul's to the vicarage of Tottenham, vacant by the death of the Rev. W. J. Hall. The vicarage of Harrow-on-the-Hill, vacant by the death of the Rev. J. W. Cunningham, has been conferred upon the Rev. Francis Haward Joyce, M.A., tutor of Christ Church, Oxford.

THE PARAFFINE EXPLOSION AT CAMDEN TOWN.—The adjourned inquest on the boy who was killed by this accident was resumed and concluded on Monday. It will be remembered that on the evening of the 2d ult., James Wright, a carman, was pouring out a quantity of oil described as paraffine from one can to another, in a room behind the shop of Mr. Masters, oilman, in Great College Street, when an explosion took place, which fatally wounded G. F. Danser, a boy aged 11, seriously injured Wright himself, and caused a fire which destroyed the house in which the accident occurred. Wright, who is still confined to bed in the University College Hospital, was examined on Monday. He stated that deceased held the candle not nearer than four or five inches to the fluid he was pouring off, so that it must have been the vapour given off by the oil, and not the oil itself which exploded. Dr. Harley, Professor of Medical Jurisprudence at University College Hospital, in a report which he laid before the jury, stated that paraffine, properly so called, does not at ordinary temperatures give off vapour which will form an explosive mixture with atmospheric air, and that a lighted match may be applied to it without setting it on fire; its qualities in this respect being those of the ordinary animal oils used for lamps. Unfortunately, however, there are, he stated, oils imported chiefly from abroad and sold as paraffine, which have very different properties. These oils, if shaken, give off at ordinary temperatures a vapour which, if mixed with air in certain proportions, explodes on the approach of flame. The examinations of specimens of the oils sold by Messrs. Wills & Co., who were alleged to have supplied the oil in question, showed they were not explosive. The examination, on the other hand, of a substance provided by Mr. Masters as resembling that which had caused the accident, showed that it possessed the properties of the explosive and spurious oils. The system of adulteration and substitution now extensively practised among English dealers was a most dangerous one, substances being now sold habitually under the name of paraffine, which are not less dangerous from their explosive properties than gunpowder itself. The jury returned the following special verdict:—

"That the deceased died from injuries caused by the explosion of vapours thrown off from certain oil called 'paraffine oil;' that pure paraffine oil is not explosive, but that a spurious and noxious article is largely sold as such, to the extreme danger of life and property; that some Legislative measures should be adopted to protect the public safety; and the said jurors do lastly say the oil that did explode was not of the same character as that sold by Messrs. Wills & Co."

THE GARRICK CLUB.—The committee of the Garrick Club, under a resolution of a general meeting, have resolved on building a new Club House on a piece of ground on the south-west side of the new street from King Street to Long Acre. The design for the new building is by Mr. Marrable. The money for the purpose is to be raised by debentures among the members.

THE PUBLIC HEALTH.—The weekly return of the Registrar-General states that the mortality in London during the week that ended Saturday, Jan. 11, was 1561. The average number in the corresponding week of the 10 previous years, corrected for increase of population, was 1440. The present return was therefore 121 above the average. During the week the births of 918 boys and 963 girls, in all 1881 children, were registered in London. In the 10 corresponding weeks of the years 1851-60 the average number (corrected) was 1903.

Provincial.

BATH.—On Tuesday Edward Smith, builder; Wm. Marchant, sexton; Henry Mastey, and Giles Broad, labourers, who are charged with being concerned in the desecration of the dead and robbery of coffins at Freshford Church, near this city, were brought up, under remand, before the county magistrates. The court was densely thronged, and the magistrates were engaged in the investigation for upwards of seven hours. Evidence was given of the burial of several of the parties in leaden coffins, which have since disappeared. The magistrates, after a private consultation, committed the whole of the prisoners to take their trial at the next assizes; but agreed to accept substantial bail, except in the case of Marchant, for whom bail was refused.

BILSTON.—Mr. Tidd Pratt arrived in this town last week and made an official examination of the books of the Savings' Bank, preparatory to convening a meeting of the depositors, and advising them as to the best course to adopt, and also of instructing the trustees upon the course for them to pursue. At the meeting on Thursday he stated that the Rev. H. S. Fletcher, the incumbent of Bilston, who was appointed treasurer and actuary in 1848, had for several years defrauded the bank of about 1000*l*. a year. He had returned falsified accounts to the National Debt Office, his practice being in making up the Bank books, to omit about 100*l*. of the moneys received each month, and to add about 100*l*. to the amount of money paid out. The result was that, while the claims on the bank amounted to 25,242*l*. 5*s*. 2*d*., the cash and interest in the hands of the Commissioners for the Reduction of the National Debt were but 16,425*l*. 5*s*. 2*d*., showing a deficiency of 8,816*l*. 9*s*. 3*d*. The amount in the Commissioners' hands would pay a dividend of rather more than 12*s*. in the pound, and he thought the trustees and managers should make good the rest. The assets which the trustees hope to realise consist of a policy of assurance on the life of the Rev. Mr. Fletcher, for 4000*l*. Mr. Fletcher's age is about 55, and the payments are about 130*l*. a year. The living is worth about 700*l*., and if it should be sequestrated, it is expected that between 300*l*. and 400*l*. a year may be realised from it. The household furniture and the stock and implements upon the farm, are computed at 700*l*.

CLAVERING.—On Monday night a double murder was committed at Starling Green, a village on the borders of Essex and Herts. The house in which it was committed is in a very lonely place, about half-a-mile from any other habitation. It was occupied by a man named Samuel Law, a farm labourer and rat-catcher, about 27 years of age, with his wife and two children. He was a person of loose character, and had recently been undergoing a month's imprisonment in Hertford Gaol, during which period his wife, who was a sober and generally well-conducted woman, went into the Union with her children. On Friday he was discharged from prison, and on Sunday he got his wife out of the Union and took her home. On Tuesday morning the wife went to her mother's house at Langley with her eldest child, and confessed that on the previous night she had murdered her husband and youngest child while they were asleep in bed. An investigation was made, and the body of the husband was found lying on the bed quite dead with nearly 100 wounds on his head, face, neck, and arms, inflicted with a bill hook; while the child, which was still living, had been so severely injured on the head with a hammer, that after lingering in great agony throughout the day it died in the course of the evening. The woman was immediately handed over to the police, and is now in custody awaiting the result of the inquest. It appears that she and her husband frequently quarrelled during the earlier portion of their wedded life, but of late years they lived more happily together, and nothing is at present known with regard to the motive for the crime, the prisoner having allowed not a single word to escape her which would enable the motive to be ascertained.

KIRKDALE.—The execution of Patrick M'Cafferay for the murder of his two officers, Colonel Crofton and Capt. Hanham, in the barrack square at Fulwood, near Preston, took place on Saturday morning in front of Kirkdale prison, in the presence of a large number of spectators, who conducted themselves in a quiet and orderly manner. He had become very penitent since his sentence, and a day or two ago addressed two letters to his comrades, in which he confessed the enormity of his crime and admitted the justice of his sentence.

MARKET HARBOROUGH.—A fatal accident occurred on Monday, on a farm occupied by Mr. Dunmore at Stoughton Wyville, about six miles from this town, caused by the bursting of the boiler of a steam threshing machine. Mr. Butcher, the master of the engine, and 10 men were in the stackyard working the engine, which appears to have been for some time in a bad state of repair. About noon it was found that the supply pipe was leaking. To stop this leak the engine was stopped, and while some of the party were in the act of applying tow and red lead to the part, the boiler exploded, scattering destruction all around. At the time of the accident eight persons were standing near the engine, four of whom have lost their lives. One man's head was blown off and was found at a distance of 60 yards, another's legs and head were blown away to a great distance. Two others were carried over several potato camps, and were not dead when they were picked up, but expired towards evening. The other four are more or less injured, two of them seriously, but hopes are entertained of their recovery. Mr. Butcher, who was also much scalded, was conveyed to his own house at Gumley; but his injuries are not of a very serious nature. An inquest was opened on Tuesday for the purpose of identification, but was adjourned for the production of evidence of a scientific nature.

MILFORD.—It is stated that Messrs. Glass, Elliot, & Co., have sent a tender to the government offering to lay a cable from Milford Haven to Halifax, by July, 1862, for 700,000*l*., guaranteeing its efficiency for one year.

NEWCASTLE-ON-TYNE.—A boiler explosion of a very serious character took place at Crookgate, near this town, on Tuesday week. The boiler was used for colliery purposes, and had only been in use for a few months. Two men were killed by the explosion, and three others so seriously injured that one of them is not expected to recover. The force of the explosion carried the pieces of the boiler to a great distance.

PORTSMOUTH.—A large number of the old sailing men-of-war which have been lying in ordinary at the different ports were lately put up for sale by order of the Board of Admiralty. They realised nearly 18,000*l*., which is said to be about a 20th part of what they originally cost. The largest purchases were made by Messrs. Castle & Co., the well-known shipbreakers and vendors of firewood, showing that the vessels were only fit to be broken up.

SOUTHAMPTON.—The Federal sloop Tuscarora and the Confederate sloop Nashville still continue in Southampton Water. On Thursday night, the 9th inst., after the officer and three men of the Tuscarora who were found watching the Nashville had been compelled by the superintendent to leave the premises, the policeman on duty saw a man go down the jetty on the south side of the Dock, and stop under the crane. On interrogating him he said, after some hesitation, that he was watching the Nashville, and was employed by the American Consul. The policeman took him back to the gate and saw him out of the Dock. He was afterwards brought back by a messenger from the Consul's office, who said that the man was employed by the Consul to watch the ship. The policeman told him that this was contrary to his orders, and would not let him go into the Dock. About half-past 10 the two officers and three men above referred to, with the messenger and two boatmen, came into the dockyard and asked leave to embark, which was granted, and the boat was watched out of the dock and well down the river. The Nashville got up steam on Friday, apparently intending to leave the docks, but if this were her intention she did not carry it into execution. During Friday night some more watchers were found in the docks and summarily ejected from the premises. A boat's crew from the Tuscarora pulled into the outer dock at an early hour on Saturday morning, but no one landed, and the boat returned to the ship. On Saturday Captain Patey, R.N., Admiralty Superintendent at this port, paid an official visit to the Tuscarora, according to instructions from head-quarters, to inform Captain Craven that, in case the Nashville should leave the port, the Tuscarora would not be allowed to follow within 24 hours, and *vice versâ*. The Government were determined to preserve strict neutrality by enforcing this maritime international law, and had taken the necessary measures to enforce it in case an infraction should be attempted by either party. The interview between Captain Patey and Captain Craven is understood to have been of a very friendly character, and the latter officer expressed his desire and intention to do nothing contrary to British law while his vessel was in British waters. A similar intimation was given to Captain Peagrim, of the Nashville. The Dauntless frigate, 31, which is lying in Southampton Water with her steam up, is under orders to be ready for sea at a moment's notice, in case of any "difficulty" arising out of these transactions. On Sunday the Secretary of the American Legation came down from

London and went on board the Tuscarora. On Monday morning at daybreak the Tuscarora left her moorings at the mouth of the Itchen, where she had swung since her arrival, and, for some reason not disclosed, dropped down the river and took a position about a mile west of the Calshot lightship, at the entrance of the Southampton Water, returning to her former moorings at the entrance of the dock in the evening. The Nashville also got up steam during the morning, but it is understood that this was only for the purpose of giving steam to the donkey engine to try her machinery, which has been overhauled during her sojourn in dock. The vessel still remains at her berth. Her Majesty's despatch boat Argus arrived from Portsmouth during the evening and anchored off the entrance to the docks, where she still lies. A guard was sent ashore from her with orders to keep watch at the dock gates till midnight, when they were relieved by men from the Dauntless frigate. Relays were kept on duty during Tuesday at the entrance gates, and in different parts of the docks. 250 marine artillerymen were on duty at Hurst Castle, and every precaution was taken to prevent any infraction of the law by either of the belligerents. On Wednesday evening the Tuscarora again left her moorings, and steamed down the river. She anchored for the night off Lepe, just outside Calshot Castle, and at 7 o'clock on Thursday morning steamed out through the Needles. In the afternoon she returned to the river, and took up her old moorings, between 2 and 3 o'clock. The Nashville, it is rumoured, has been sold, and become the property of English owners, but the Confederate flag and the pennant are still flying from her.

Weymouth.—A few days since a well-dressed young man alighted at the railway station at Reading from the Great Western early train from this town, having a ticket from Weymouth to London. He stated that he had asked for a ticket from Weymouth to Reading, but the clerk had make a mistake by giving him one to London and charging him full fare, and he therefore wished the fare between Reading and Paddington to be returned to him. He filled up the usual form, which he duly signed, requesting that the money should be sent to him at 15, James Street, Oxford Street. He then left, but the railway authorities did not observe the direction he took. Directly after his departure from the office a telegraphic message was received, stating that a person had left Weymouth by the early train with the produce of a robbery, and giving the number of the ticket issued to him. The ticket taken from the young man was at once examined, and the numbers were found to correspond, and this furnished a conclusive proof that the late holder of it was the delinquent. He was traced to the station of the South-Eastern Railway, and the police were immediately communicated with, upon which one of the inspectors went to the station, and in a carriage of the midday train, which was within two minutes of starting, found the young man, whom he took into custody. He then gave to the inspector an antique gold watch, set with diamonds, value about 100*l.*, and a number of other articles of jewellery, which he took from his pockets, admitting that he had stolen them from Admiral Sir James Dundas of this town, in whose service he had been footman. He had with him a carpet bag, which contained a quantity of plate, of the value of about 200*l.* But for the prisoner having gone and requested the return of part of his fare he would have got clear off to London by another line of railway, and the plate would then doubtless have soon been disposed of. The prisoner, who is named Charles Edward Hart, alias Hamilton, was sent to this town by the Reading magistrates on the day after his capture, and on Monday afternoon was fully committed by the borough justices for trial at the Dorset assizes. In his possession were found 36 pawnbrokers' duplicates, and the property they referred to had been pledged at 15 different pawnbrokers, and prisoner had given as many different names.

Ireland.

The Riband Confederacy.—Dr. Dixon, Roman Catholic Primate of all Ireland, has published the following letter, condemning secret societies, and especially the Riband Confederacy. It is addressed to the Rev. Mr. Belaney, a missionary in Glasgow:—

"Armagh, Dec. 28, 1861.

"My dear Father Belaney.—I am anxious to reply without delay to your esteemed favour of the 26th inst. Nothing could give me a higher idea of the powers for evil possessed by the leaders of the wicked Riband combination than that they are able still to leave the impression on the minds of their dupes that any of the Catholic prelates or clergy of Ireland are favourable to their society, whereas we have exhausted, it may be said, all the forms of speech in condemning it. The strongest condemnation of the society ever penned proceeded from the ecclesiastical council of this province, held in Drogheda in [illegible]. This document ought to hold a very high place as the expression of the sentiments of the Catholic prelates and clergy of Ireland regarding Ribandism—more particularly as the wicked society of which we speak has hardly ever been known in Ireland under the name of Riband Society beyond the precincts of the ecclesiastical province of Ulster. If I shall be able to find the synodical address after going to Drogheda, I shall send you a copy of it, whereof you may make any use you please. With all the best wishes of this holy season, I remain, my dear Father Belaney, ever yours faithfully,

"+ Joseph Dixon."

Obituary.

Admiral the Hon. Alexander Jones died on the 8th inst. in his 84th year. He was youngest son of the fourth Viscount Ranelagh, and was born in 1778. He entered the Navy in 1790, and after serving on the Channel and Newfoundland stations, sailed on a voyage of discovery, and was wrecked among the Japan Islands in 1797. He rendered important service at the Cape of Good Hope, by communicating with Admiral Pringle's flag ship when in a state of mutiny; for which he was appointed acting Lieutenant of the Sceptre, 64, in which ship he was wrecked in Table Bay. He served in the expedition to Belleisle and Ferrol, and at the latter was mainly instrumental in saving the Tartarus, after being abandoned by her officers and crew. After witnessing the capture of the Succès and Bravoure, he was promoted to the rank of Commander in 1806. He was present at the capture of three Spanish frigates, and at the destruction of a fourth off Cape St. Mary in 1804. He commanded the Talbot from 1807 to 1811, on the north coast of Spain; and captured and destroyed several privateers. He became Rear-Admiral in 1848, Vice-Admiral in 1855, and Admiral (reserved) in 1860.

Rear-Admiral Frankland died on the 2d inst. at his residence at Florence, in his 67th year. He was second son of the late Rev. R. Frankland, of Somerset, by a sister of Admiral Lord Colville. He entered the Navy in 1807, and after serving in the Mediterranean and the Adriatic was promoted to the rank of Lieutenant in 1814. From 1816 until he became a commander in 1820 he discharged the duties of private secretary to Commodore Bowles on the South American station, and from 1830 until 1832 commanded the Dispatch, 18, on the Irish station. He became a retired Rear-Admiral in 1857.

Alderman Sir Chapman Marshall died on the 9th inst. at his residence, 17, Pembridge Crescent. He was the only son of the late Mr. Anthony Marshall, of Peterborough, and was born in 1786. In 1831, while serving the office of Sheriff of London, he received the honour of knighthood; in the following year he was elected Alderman of the Ward of Bridge Within, and served the office of Lord Mayor during the year 1839-1840.

Mr. Blamire, for some years M.P. for East Cumberland, in conjunction with the late Sir James Graham, died on Sunday at Thackwood, near Carlisle. For several years prior to the passing of the Tithe Commutation Act he represented his native county in Parliament, but relinquished his seat on being appointed head commissioner of the Tithe Commission. He continued to fill that office until the amalgamation of the commission with that of the Commons Inclosure Commission. In his official duties Mr. Blamire's diligence and business habits rendered him a conspicuous example for public men. He was a large landowner in his native county.

The Rev. Dr. Bridgman, the oldest missionary in China, died on the 2d November, at the age of 60. He left America in 1829, and landed in China in 1830, when Dr. Morrison was the only Protestant missionary in that vast empire.

BIRTHS.—On the 11th inst, at Grosvenor Street, the Countess of Courtown, of a daughter—13th inst, the Viscountess Nevill, of a son—11th inst, at 48, Rutland Gate, Viscountess Bury, of a daughter—11th inst, at 24, Princes Gate, the Hon. Lady Dalrymple Hay, of a daughter—9th inst, at Argrennan, Castle Douglas, N. B., Lady Bertha Clifton, of a son—11th inst, at Park Hill House, Clapham, the Hon. Mrs. Augustus Lane Fox, of a daughter—11th inst, at Lyme Park, Cheshire, the wife of William J. Legh, Esq., M.P., of a son—10th inst, at 17, Princes Gardens, the wife of Hugh C. E. Childers, Esq., M.P., of a son—15th inst, in Grosvenor Square, the wife of Richard Benyon, Esq., M.P., of a daughter.

MARRIAGES.—On the 9th inst, at Killinane Church, Commander George Henry Wale, R.N., son of the late General Sir Charles Wale, K.C.B, of Shelford, Cambridgeshire, to Katherine Henrietta, eldest daughter of Dudley Persse, Esq., of Roxborough, county Galway, and granddaughter of the first Viscount Guillamore—23d Oct, at St. Paul's, Auckland, Capt. T. B. Richards, 40th Regiment, eldest son of the late W. Richards, Esq., of Stapleton House, Martock, Somerset, to Ida, eldest daughter of Forster Goring, Esq., and the Hon. Mrs. Goring—7th inst, at the Church of St. Stephen-the-Martyr, Regent's Park, the Rev. Frank Owen, curate of St. Stephen's the Martyr, to Mary, third daughter of William M'Cormick, Esq., M.P., of Cambridge Terrace, Regent's Park, and Linahally, county Derry, Ireland—9th inst, at Dale Church, Captain J. E. Cornes, Royal Engineers, to Mary Frances, youngest daughter of J. P. A. Lloyd Philipps, Esq., of Dale Castle, Pembrokeshire, and of Mabws, Cardiganshire—7th inst, at St. James's Church, Exeter, John Barber, Esq., of Park Hill, Derbyshire, to Louisa, daughter of the late General Herbert, of Exeter—26th Nov., at Agra, William Dent Dent, Esq., third son of Joseph Dent, Esq., of Ribston Hall, Yorkshire, to Mary, daughter of the Major Hill.

DEATHS.—On the 10th inst, the infant son of Lord Norreys, aged 15 days—15th inst, at her house, 35, Grosvenor Place, the Hon. Elizabeth Grieve, relict of J. W. Grieve, Esq., and daughter of John, first Lord Northwick—9th Sept, 1860, supposed to be lost in the Japan Waters, in a typhoon, Philip C. M. de Vismes, midshipman of H.M.S. Camilla, fourth son of Count Henry de Vismes, of Bedford, and grandson of Admiral the Hon. Alex. Jones—9th inst, at Paris, of typhus fever, Alfred Ferdinand Constantia, son of the Baron and Baroness Constantia de Haeseler, aged 6 years and 3 months—10th inst, at his residence, Greenhill, Weymouth, Sir Edward Johnson, K.C.S., justice of the peace, and deputy-lieutenant for Dorsetshire, aged 77—10th inst, at Weston-super-Mare, Mary Spire Alleyne, eldest daughter of the late Sir John Gay Alleyne, Bart., of the Island of Barbadoes—10th inst, at Notton, Lieutenant John Awdry, 3d Regiment (Buffs), eldest son of Sir John Awdry, aged 27—8th inst, at Stoke, Chichester, Alice, daughter of Sir H. Roper, aged 2 years—13th inst, at Pentland Villa, Murrayfield, Edinburgh, Dr. Archibald William Cockburn, F.R.C.S.E., Deputy Commissioner in Lunacy for Scotland, eldest son of the late Lord Cockburn—13th Nov., at Mussoorie, East Indies, General John Hoggan, C.B., late 48th Regiment N.I., aged 72—6th inst, at Brunswick Square, Brighton, Colonel P. W. Pedler, J.P. for Devon and Dorset, aged 75—7th ult, at Sidbury, South Devon, Lieut.-Colonel John Bolton, late H.M.'s 75th Regiment, aged 65—19th ult, at Halifax, Nova Scotia, Major Falkland T. L. Paterson, H.M.'s 63d Regiment, aged 30—2d inst, Anthony Davis, Esq., of Misbourne House, Bucks, many years a magistrate of the county, and formerly of Jamaica, aged 66—8th inst, at Owlpen Park, Gloucestershire, Thomas Anthony Stoughton, Esq., aged 71—8th inst, at his residence, 4, Undercliff, Sandgate, E. P. Montagu, Esq., R.N., for many years a magistrate and deputy-lieutenant for the county of Suffolk, aged 70—12th inst, at the Grange, near Pontefract, Catherine, relict of the late William Blundell, Esq., of Crosby Hall, in the county of Lancaster, aged 75—11th inst, at his residence, Hall Road, St. John's Wood, Henry Waithman, Esq., son of the late Alderman Waithman, M.P. for the City of London, aged 61—9th inst, at 6, Duchess Street, Portland Place, Dr. Henry Davies, formerly of Savile Row, Burlington Gardens, aged 79—10th inst, the Rev. John Armstrong, M.A., rector of Dinder, and prebendary of Wells, Somerset, aged 51—6th inst, at Preston, the Rev. Robert Harris, B.D., incumbent of St. George's, Preston, aged 97, and 64th of his incumbency—6th inst, at Kingsomborne, the Rev. John William Reeves, late curate of Farley Chamberlayne, Hants, aged 45.

Markets.

COVENT GARDEN, Jan. 18.

Notwithstanding the changeable character of the weather Vegetables are still plentiful. Cornish Broccoli begins to arrive by the crateful. Pears, consisting of Glou Morceau, Chaumontel, Winter Nelis, and Brown Beurré, are sufficient for the demand. Among Apples are some good examples of Ribeton Pippin, Old Nonpareil, and Fearn's Pippin. Grapes and Pine Apples are a trifle dearer. Oranges of the best quality are still cheap. The Potato trade is heavy, except for best samples. Cut flowers chiefly consist of Orchids, Chinese Primulas, Camellias, Violets, Mignonette, Heaths, and Roses.

FRUIT.

Pine Apples, per lb., 4s to 8s	Oranges, per 100, 5s to 12s
Grapes, per lb., 4s to 8s	Lemons, per 100, 6s to 10s
Melons, each, 1s to 3s	Nuts, Cob, per pound., 4s to 4s 6d
Pears, per doz., 6s to 12s	
Apples, per doz., 1s to 3s	Walnuts, per 100, 2s

VEGETABLES.

Broccoli, per bundle, 1s to 1s 3d	Artichokes, each, 6d to 8d
	Beet, per doz., 1s 6d
French Beans, per 100, 2s 6d to 3s 6d	Celery, p. bundle, 1s 6d to 2s
	Onions, pickling, p. ½ sieve, 4s 6d
Cabbages, do., 1s 3d to 1s 6d	
Potatoes, York Regents, p. ton, 140s to 160s	Asparagus, p. bundle, 7s to 8s
	Seakale, per pun., 1s 6d to 2s 6d
,, Flukes, do., 140s to 150s	Shallots, per lb., 10d to 1s
,, Rocks, do., 90s to 100s	Garlic, per lb., 6d to 8d
,, Cups, do., 80s. to 90s	Endive, p. score, 1s 6d
Turnips, per bunch, 2d to 4d	Horse Radish, p. bun., 1s 6d to 4s
Carrots, do., 4d to 6d	Mushrooms, p. pott., 1s 6d to 1s 9d
Spinach, p. sieve, 2s to 4s 6d	Parsley, p. 12 bunches, 3s to 4s
Cucumbers, each, 1s to 1s 9d	Herbs, per bunch 2d to 4d

HAY.—Per Load of 36 Trusses.

Smithfield, Thursday, Jan. 16.

Prime Meadow Hay	80s to	90s	Clover, old	95s to	112s
Superior do.	95	100	New Clover	—	—
Inferior do.	55	70	Do. second cut	85	100
New do.	—	—	Straw	30	36
Rowen	—	—			

Davis & Co.

Whitechapel, Thursday, Jan. 16.

Fine Meadow Hay	84s to	95s	Prime Clover	100s to	112s
Inferior do.	60	80	Inferior do.	80	95
Prime New Hay	—	—	Prime 2d cut	90	100
Inferior	—	—	Inferior do.	—	—
Straw	30	34	New 1st cut	—	—

BUTTER MARKET.—Jan. 17.

Best Fresh Butter .. .. 18*s.* per dozen lbs.
Second do. do. .. .. 14*s.* ,, ,,
Pork, 4*s.* 8*d.* to 5*s.* 0*d.* per 8 lbs.

METROPOLITAN CATTLE MARKET.

Monday, Jan. 13.

The number of Beasts is smaller than on Monday last, but the trade is very heavy, and they cannot all be disposed of, even at our lower quotations. We have also a short supply of Sheep, but it exceeds the demand. Prices are lower, and a clearance cannot be effected. Good Calves are still scarce and dear. From Germany and Holland there are 297 Beasts, 1100 Sheep, and 63 Calves; from Spain, 366 Beasts; from Scotland, 450; from Ireland, 350; from Norfolk and Suffolk, 2000; and 300 from the Northern and Midland counties.

	s d	s d		s d	s d
Best Scots, Herefords, &c.	4 8 to	4 10	Best Long-wools	5 0 —	5 2
Best Short-horns	4 6 —	4 8	Do. Shorn	.. —	..
2d quality Beasts	3 8 —	4 0	Ewes & 2d quality	4 4 —	4 8
Best Downs and Half breds	5 4 —	5 6	Do. Shorn	.. to	..
Do. Shorn	.. —	..	Lambs	.. —	..
			Calves	4 0 —	5 8
			Pigs	4 4 —	5 4

Beasts, 4460; Sheep & Lambs, 17,450; Calves, 86; Pigs, 440.

Thursday, Jan. 13.

We have a short supply of Beasts, and a considerable proportion consists of those left over from Monday last. Trade is more cheerful for good qualities, and prices on the average are rather better. The number of Sheep is small, so also is the demand. There is, however, more activity in the trade. Choice Calves are rather dearer. Our foreign supply consists of 110 Beasts, 590 Sheep, and 57 Calves. Milch Cows, 90.

	s d	s d		s d	s d
Best Scots, Herefords, &c.	4 8 to	5 0	Best Long-wools	5 0 to	5 4
Best Short-horns	4 6 —	4 8	Do. Shorn	.. —	..
2d quality Beasts	3 8 —	4 2	Ewes & 2d quality	4 8 —	4 10
Best Downs and Half breds	5 4 to	5 6	Do. Shorn	.. —	..
Do. Shorn	.. to	..	Lambs	.. —	..
			Calves	4 4 —	6 0
			Pigs	4 4 —	5 4

Beasts, 1010; Sheep & Lambs, 3060; Calves, 90; Pigs, 170.

MARK LANE.—Monday, Jan. 13.

The supply of Wheat from Essex and Kent to this morning's market was small; the former remained unsold, factors being indisposed to accept lower prices; the latter was sold at a reduction of 2s. per qr. There was a numerous attendence of country buyers, who, owing to the large arrivals of Wheat, particularly American, generally deferred their purchases, and only a limited retail business was transacted at a decline of 1s. to 2s. per qr. Barley and Beans are 1s., and Peas 1s. to 2s. per qr. cheaper. The Oat trade is slow, and new corn can only be sold at a reduction of 6d. per qr. Flour is but little inquired for, and American is 6d. to 1s. per barrel lower.

Per Imperial Quarter.	s. s.		s. s.
Wheat, Essex, Kent, & Suffolk..White	50—66	Red	50—62
— — fine selected runs..ditto	60—66	Red	54—64
— — Talavera	64—72		
— Norfolk	—	Red	—
— Foreign	48—76		
Barley, grind. & dist., 26s to 28s..Chev.	36—40	Malting .	34—36
— Foreign..grinding and distilling	25—31	Malting .	32—37
Oats, Essex and Suffolk	20—24		
— Scotch and Lincolnshire—Potato	26—28	Feed ..	20—24
— Irish ....Potato	26—28	Feed ..	20—24
— Foreign........Poland and Brew	20—23	Feed ..	18—23
Rye	36—38	Foreign .	—
Rye-meal, foreign	—		
Beans, Mazagan....34s to 36s ...Tick	34—37	Harrow .	34—37
— Pigeon ......36s — 40s..Winds.	—	Longpod	—
— Foreign ....Small	42—52	Egyptian	—
Peas, white, Essex and Kent..Boilers	40—42	Suffolk .	40—44
— Maple ....41s to 44s ......Grey	35—39	Foreign .	35—42
Maize..........White	—	Yellow ..	—
Flour, best marks delivered..per sack	50—55		
— 2d do..........ditto	40—50	Country	40—50
— Foreign ....per barrel	28—35	Per sack	43—58

Friday, Jan. 17.

On Saturday there was a heavy gale of wind from the S.W., with showers; the weather continued damp, with occasionally heavy rain until the 15th, since which date it has been fine. The corn trade continues in a very dull and inactive state; the arrivals of Wheat and Flour have been considerable, principally

from America; and holders disinclined to accept the reduction required by purchasers, relying upon the short stock of English remaining in the farmers' hands, which to some extent appears to be confirmed by the returns. Wheat is generally quoted in the markets of the kingdom 2s., and in some instances 2s. to 3s. per qr. lower on the sales effected. Barley is 1s., and in some markets inferior quality 1s. to 2s.; Oats 6d.; Beans and Peas 1s. per qr., and Flour 1s. per sack and barrel lower. Since Friday last 93 vessels have been reported off the coast. The dull trade of the last two weeks has been followed by a more active business, and a good number of cargoes changed hands at a decline of 3s. per qr. on Wheat, 1s. 6d. on Maize, and 2s. to 3s. on Barley. In Paris (Jan. 16), a small business was done in Flour at a further reduction of prices. The four marks for delivery this month are quoted equal to 48s. 3d. per 280 lbs. The arrivals of English grain this week have been small, of foreign Wheat, Flour, and Barley large, of Oats moderate. Our market was better attended, and more disposition was evinced to purchase Wheat. The Essex was cleared at the reduction noted for Kent on Monday, and some large parcels of American were taken at about 1s. per qr below the nominal rates of that day. Value of other kinds is unaltered. Spring Corn is a slow sale at Monday's quotations. There is but little inquiry for Flour, and in some instances lower prices have been accepted.

ARRIVALS FROM Jan. 13 to Jan. 17.

	Wheat.	Barley.	Oats.	Flour.
English ..	540 qrs.	1120 qrs.	60 qrs.	890 sks.
Irish	— „	70	2330	— „
Foreign ..	32790 „	14580 „	19150 „	— „ 51020 brls.

LIVERPOOL, Tuesday, Jan. 14.—The attendance at our market this morning was larger than usual, but so few of the late arrivals had been sampled that the business done was inconsiderable, and at a decline of 4d. per 100 lbs. since this day week; had importers been inclined to make a greater concession the country millers would have taken to some extent. Flour, at a decline of 1s. per barrel, did not meet a ready sale. Oats and Oatmeal neglected. Barley and Beans unchanged. Indian Corn was in some speculative demand, at 1s. to 1s. 6d. under last week's prices, say 31s. to 31s. 6d for mixed, 32s. for yellow, and 31s. for white.

FRIDAY, Jan 17.—There was a good attendance at to-day's market. Wheat in active request, at an advance of 3d. per cental. Flour 6d. dearer, with a good demand. Indian Corn 31s. ex quay, 31s 6d. store; moderate business. Beans, Oats, and Oatmeal dull, prices unchanged.

AVERAGES	Wheat.	Barley.	Oats.	Rye.	Beans	Peas.
Dec. 7..	60s 4d	37s 0d	22s 8d	37s 10d	42s 7d	48s 8d
— 14..	60 6	36 3	22 6	36 1	42 8	45 10
— 21..	61 4	36 2	22 5	29 0	42 2	42 11
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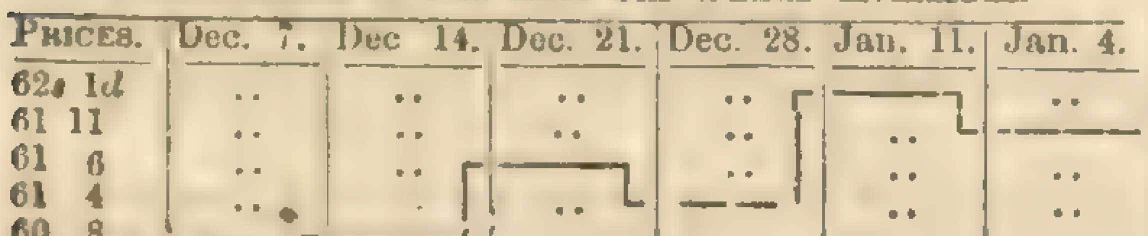
Agg. Aver.	61 4	36 6	22 8	35 5	41 9	43 0

FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.



POTATOES, SOUTHWARK, Monday, Jan. 13.

During the past week the arrivals both coastwise and by rail have been quite equal to the demand. The trade is slow for all sorts, with the exception of best samples. The following are this day's quotations:—Kent and Essex Regents, per ton, — s. to — s.; Yorkshire Flukes, 130s. to 160s.; do. Regents, 120s. to 140s.; Lincolnshire do., 110s. to 130s.; Dunbar do., 130s. to 140s.; Perth, Forfar, and Fife do., 90s. to 115s.; do. Rocks, 80s to 90s.; French Whites, 80s. to 90s.

BRITISH WOOLS.—LONDON, FRIDAY, Jan. 17.

We have a good demand for all descriptions of Wool at rather advancing prices. Blanket wool is very scarce, large quantities having been brought up for America, and prices likely to advance considerably.

	s. d.		s. d.		s. d.		s. d.
South-down Hoggets	1 4	to	1 4½	Leicest. Wethers	1 4	to	1 5
Half-bred ditto..	1 6	—	1 7	Ditto Hoggs ..	1 6	—	1 7
Down Ewes ..	1 4	—	1 4½	Combing Skins	1 0	—	1 5
Kent Fleeces ..	1 6	—	1 7	Flannel Wool ..	1 0	—	1 6
				Blanket ditto ..	0 6	—	0 11

To Noblemen and Gentlemen contemplating Remodelling their Parks and Gardens.

JOHN GRIBBINS having just completed his engagement at the Royal Horticultural Society's Gardens, South Kensington, where he has been employed for the last 18 months in carrying out Mr. Nesfield's Designs in Embroidery, &c., is desirous of treating with any one requiring thorough practical capability, having had extensive and varied practice for the last 28 years in every branch appertaining to Horticulture. His works may be seen as above, and also at the Earl of Dudley's, Whitley Court; the Earl of Craven's, Ashdown Park, Farnham Royal, Slough; at Dorking in Surrey; the Palace Gardens, Kensington; besides many other places, executed under Mr. Nesfield, the eminent Landscape Gardener, to whom he is kindly permitted to refer. J. G. having been successful in obtaining the assistance of Mr. NEWTON, Estate Improver, F.R.H.S., will be enabled to give Estimates for Alterations, &c., &c., on application to JOSEPH NEWTON, Estate Improver and Landscape Gardener, 30, Eastbourne Terrace, Hyde Park, W.

Weymouth.

R. T. HAWKINS, FLORIST, SEEDSMAN, &c., has room for a well-educated respectable YOUTH as an APPRENTICE, in or out-door. He will have every opportunity of learning the business under the special charge of a first-rate Propagator, &c. Terms may be known on application

WANTED, an industrious, sober, and intelligent Single Man, to act as WORKING FOREMAN in a General Nursery. Wages, 15s. per week.—Address, Mrs. CAMERON, Uckfield Nursery, Sussex.

WANTED, a WORKING NURSERY FOREMAN, a SCOTCHMAN, who would be willing to be generally useful. Wages, at first, 15s. per week and lodging. Also an opening for Three or Four YOUNG MEN, SCOTCH, who may wish for improvement; to such constant employment will be given. All to state age and reference.—Apply to Mr. SCOTT, Merriott, Somerset, in own handwriting.

WANTED, a GARDENER and his WIFE.—The Man must well understand his business, and be able to form a Garden, erect Orchard Houses, &c. If the Woman is a good Cook, and willing occasionally to assist in the House, it will be an advantage. A Cottage, with Fuel and Vegetables found. Young family objected to.

Address, stating ages, the number of children (if any), with the length of character and wages expected, to G. P., at Mr. Barrett's, 3, New Church Street, St. John's Wood, N.W.

WANTED, a good BUDDER and GRAFTER, a careful steady man, accustomed to general Nursery work. To be under a Foreman.—Apply to OSBORN & SONS, Fulham, London, S.W.

WANTED, a steady active MAN, who has been accustomed to Propagating and Growing Plants for Market.—Apply to R. J. PENNETT, Nurseryman, Park Lane, Tottenham, N.E.

WANTED, in a London Retail Seed Warehouse, a YOUNG MAN, who thoroughly understands the various branches of the Seed Business. He must be steady, active, and well recommended.—Address, stating wages, BARR & SUGDEN, 12, King Street, Covent Garden, London, W.C.

WANTED, in a London Nursery, a Man well acquainted with the Trade, to act as SALESMAN and prepare orders for the Packing Shed.—References and terms can be sent to X., *Gardeners' Chronicle* Office, W.C.

WANTED, for a London Seed Business, a YOUNG MAN, who has a thorough knowledge of his business, and who is active, steady, and of good address. Wages 30s. per week.—Apply by letter C. L., *Gardeners' Chronicle* Office, W.C.

WANTED, in the Seed Trade, a first-class SHOPMAN.—Applications, with references as to character, experience, and ability, to be addressed to B. C., Shopman, *Gardeners' Chronicle* Office.

WANTED, a sober active LABOURER to work in a Nursery. One who has been accustomed to assist in Painting and Glazing Hothouses, &c., and Rough Carpentry. Wages, 15s. per week.—Apply to OSBORN & SONS, Fulham Nursery, London, S.W.

WANTED, a COWMAN, who understands care of Stock, Milking, &c., to help in Garden, and make himself generally useful. Wages 15s.—Address Y. Z., Twickenham Post Office, S.W.

WANTED, a DAIRYMAID, at a gentleman's Farm, to make Cheese, look after Poultry, and take charge of the house, where two other Maids are kept. A single Woman, who can keep Accounts. Liberal wages will be given.—Apply by letter, stating age, former services and references, to J. W., at Mr Ogden's, Law Stationer, 1, Waterloo Street, Birmingham.

WANT PLACES.—Letters to be Post Paid.

GARDENER (HEAD).—Age 30, single; has a thorough practical knowledge of his profession in all its branches.—X. Y. Z., 67, George Street, Ryde, Isle of Wight.

GARDENER (HEAD).—Age 41, married; thoroughly experienced in all branches of his profession. Good reference.—B. A., Mr. Wheeler, Nurseryman, Warminster, Wilts.

GARDENER (HEAD).—Age 28, single; has had many years' practice in some of the best gardens, both in England and Scotland. References on application.—C. DIXON, The Gardens, Belton, Grantham, Lincolnshire.

GARDENER (HEAD).—Age 28, single; has a thoroughly practical knowledge of his profession in all its branches.—G. L., Post Office, Compton Sussex, Petersfield, Hants.

GARDENER (HEAD), where one or more are kept—Age 24, single; understands his profession. Can be highly recommended.—G. H., at Mr. W. Paul's, Cheshunt Nurseries, Waltham Cross, Herts.

GARDENER (HEAD).—Age 35, married, two children; thoroughly experienced in all its branches. A good character.—H. W., Mr. Preston, Nurseryman, Malvern Terrace, Richmond Road, Islington, London, N.

GARDENER (HEAD).—Age 34, a Widower, with one child; understands Vineries, Bedding-out Plants, and his profession in all its branches. A practical, hard working Man, with excellent Character and good Health.—R., Mr. Riley's, Saddler, Tadcaster.

GARDENER (HEAD).—Age 38, married; understands Orchids, Pines, Stove and Greenhouse Plants, Flower and Kitchen Gardens. No objection to a good single handed place.—C. B., Mr. Brown, News Agent, 92, Waterloo Road, S.

To Noblemen and Gentlemen.

GARDENER (HEAD).—Age 38, married; a practical Man, who thoroughly understands his business in all its branches, Forcing, Early and Late; Pruning and Laying Out Gardens. Salary not so much an object as a comfortable home. Testimonials unexceptionable.—W.H., Henley-on-Thames.

GARDENER (HEAD), to any lady or gentleman.—Age 37, married; trustworthy Working Gardener, thoroughly experienced in every branch of his profession. Character will bear the strictest investigation. No single-handed place accepted.—GARDENER, 29, New Church Street, Edgeware Road, W.

GARDENER (HEAD WORKING).—Middle-age, married, without incumbrance; thoroughly efficient in his profession. Has no objection to Land and Stock, having had several years' experience therein. Wife can Manage a small Dairy.—I. T. Y. O., at Mr. Goldstone's, 12, Carnaby Street, London, W.

GARDENER (HEAD).—Age 28, single; thoroughly understands Early and Late Forcing; also Flower and Kitchen Gardens. Has been five years in the employment of Mr. Davis, late of Oak Hill, East Barnet, the noted Grape and Pine Grower. Reference may be had from Mr. Davis.—A B. C., Mr. Cutbush, Tobacconist, Highgate, N.

GARDENER (HEAD).—Mr. GREEN can with confidence recommend his Foreman (married) to any nobleman or gentleman in want of a thorough good practical Gardener. Understands the Forcing of Fruits, Flowers, and Vegetables, and Plants in general, both for exhibition and furnishing; also the management of Kitchen and Flower Gardens. Has lived in his present situation nearly 10 years.—G. WHEELER, Sir E. Antrobus, Bart., Cheam, Surrey.

GARDENER.—A lady is anxious to obtain a situation for her Gardener; she can give him the highest recommendation, both as regards character and his qualifications as a first-rate Gardener.—A. Z., Post Office, Ashburton, South Devon.

GARDENER.—Middle age, married; the last 7 years Gardener to Abraham Darby, Esq., Stoke Court; is now disengaged, Mr. Darby having removed to another county. Is a very successful Grape, Melon, and Pine grower, and thoroughly master of his business in every department. References and character of the highest order.—CHARLES LITTLE, Regent's Place, Slough, Bucks.

GARDENER.—Age 36; sound practical knowledge of the most improved principles of modern Gardening, Forcing of Fruit, Flowers, Vegetables, &c.—C., 27, Beaufort Street, Chelsea, S.W.

GARDENER.—Middle aged, married; understands the Management of Pasture and Arable Land. Character will bear the strictest investigation.—F. F., Mr. Beck's, Upper Norwood, Surrey, S.

GARDENER (to any nobleman or gentleman).—Has had first-class experience both in England and Scotland. Good references.—A. B., Drumlanrig Castle Gardens, near Thornhill, Dumfriesshire.

GARDENER.—Age 28, unmarried; well acquainted with Vines, Peaches, Cucumbers, &c.; wishes to be engaged where two or three men are kept. He can give excellent references, even to Dr. Lindley. Wages, 60l. a year and lodging. He is at present in Norfolk, his native county.—Address F.P., care of Quartermaster Powley, Head Quarters, Turnham Green, W.

GARDENER (or UNDER).—Understands Forcing. Good reference as to steadiness.—O. Z., 28, Elim Street, Long Lane, Bermondsey, E.C.

GARDENER (UNDER).—Age 20. Good character. For further particulars apply to T. RIVERS, Esq., Nurseries, Sawbridgeworth.

GARDENER (HEAD), or GARDENER & BAILIFF.—Thoroughly understands the Cultivation of Pines, Vines, Peaches, Melons, Cucumbers, Orchids, Ferns, and Stove Plants; also the Laying-out of Pleasure Grounds. Has been accustomed to Agriculture and Management of all kinds of Soils; also the Buying and Selling of Stock for many years. Has a Son (aged 17) who thoroughly understands Plants of all classes, also the Agricultural line. Can be highly recommended from his last employer; also from three other gentlemen.—A. B., Mr. Manning, 10, Claremont Place, Hornsey Road.

GARDENER, or GARDENER and BAILIFF.—Age 40, married, no incumbrance; thoroughly practical in all branches of his profession; has been a successful Exhibitor at the Crystal Palace, Royal Botanic, and other shows; also well acquainted with the Management of Stock, Land, &c., having had full charge of the same in his former and last situation. Left in consequence of the death of his late employer, with whom he lived 10 years. Character and testimonials of the highest order.—H. J., Mr. Barnes, Camden Nursery, Camberwell, S.

GARDENER, or GARDENER and BAILIFF.—Married, one child grown up. Thoroughly conversant with the Forcing of Fruits and Vegetables, and their best modes of Cultivation. Also the Cultivation of Ferns, Orchids, Stove and Greenhouse Plants, Ornamental and Flower Gardening. Is well acquainted with the General Management of an extensive Farm, and is a good judge of Stock, and an excellent Accountant. The most satisfactory references will be given.—T. J., J. Carter and Co., 237 and 238, High Holborn.

To Noblemen and Gentlemen,

GARDENER and BAILIFF.—For many years has had the management of the Garden, Pleasure Grounds, &c.; also the management of a large Farm, Breeding, Feeding, Buying, and Selling of Stock and Farm Produce, Draining, care of Woods and Plantations, and the Superintendence of all repairs. Wife understands the Dairy and Poultry. Leaving in consequence of the death of his Employer. The most unexceptionable references can be given from last situation, and from other gentlemen of distinction.—C. M., Post Office, Claines, Worcester.

BAILIFF.—(Age 44); practical in Modern Farming, Heavy and Light Land, Steam Cultivation, Draining, Improvements, &c.; a good judge of Stock, and a good Accountant.—H. INGE, 99, Herbert Street, Hoxton, London, N.

FARM BAILIFF.—Age 30, without incumbrance; understands the management of a Tillage Farm and the Breeding and Rearing of Stock, having been five years in last situation; would make himself generally useful. Wife would not object to look after the Dairy.—J. C., *Times* Office, Driffield.

To Gentlemen, Landed Proprietors, and Others.

SOLE SUPERINTENDENT of TILERY WORKS—Married; practical. Has had great experience in all the branches connected with a Tilery, both for Building and Drainage purposes. Is a good judge of Clays at first sight as to its qualities; will prove Clay for any gentlemen on moderate terms, by their forwarding samples carriage paid. Kilns and Sheds built upon the most improved principle so as to prove effectual. Good references from the gentleman he is now leaving. A gentleman's Estate preferred.—S. B. D., Widworthy Court Tilery, near Honiton, Devonshire.

FOREMAN.—Age 22; understands Forcing and Plant growing, including Orchids and Ferns. Two years good character.—G. W., Post Office, Hoddesdon, Herts.

NURSERY FOREMAN.—A. JARRETT can have four years' excellent character from Messrs. Osborn & Sons, to whom he has given every satisfaction as Knifeman and in his general conduct.—A. JARRETT, Messrs. Osborn & Sons, Nursery, Fulham, London, S.W.

To Nurserymen.

PROPAGATOR, or PROPAGATOR and FOREMAN.—Practical experience.—C. D., *Gardeners' Chronicle* Office, W.C.

To Nurserymen.

SALESMAN (good address), or FOREMAN and PROPAGATOR.—Age 34, single; first-class references as to ability; would travel if required.—ALPHA, A. Wood & Co., Nurserymen, Worcester.

LAND STEWARDSHIP desired by a gentleman educated for and has had 15 years' practical experience in Agriculture in all its branches, including the Management and Valuation of Timber, Buildings, Draining, &c.—M. KING, Esq., 4, Dowgate Hill, Cannon Street, E C.

SHOPMAN (in the Seed Business).—Age 2[illegible]—Y., Messrs. Youell & Co., Royal Nurseries, Great Yarmouth.

To the Seed Trade.

SHOPMAN, or otherwise.—Age 21; experienced in the various Branches of the Trade. Unexceptionable references.—A. Z., Mr. Moore, Chemist, Braintree, Essex.

To the Seed Trade.

SHOPMAN.—Has had 10 years' experience in first class houses. Highest references as to character and ability.—M. C., *Gardeners' Chronicle* Office, W.C.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 4.—1862.] SATURDAY, JANUARY 25. {Price Fivepence. Stamped Edition, 6*d*.

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NOTICE TO ADVERTISERS.—*Advertisements intended for the Current Number should be sent so as to reach the Office not later than* THURSDAY *in each week.*

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.

Angræcum sesquipedale.

B. S. WILLIAMS begs to inform his friends and the public that this curious and rare Orchid is now in flower at the nursery, and he will be happy to show it to any one favouring him with a visit.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway.

Fine Stock Verbenas.

GEORGE SMITH, FLORIST, &c., Lorrimore Road, Walworth, S., has a large Stock of the above in fine health, and in very great variety, true, from 6s. per dozen.
CATALOGUES by inclosing stamp.

Double Dwarf Poppies.

HOOPER AND CO., SEEDSMEN, Covent Garden Market, London, W.C., offer Seed of their superb stock of DOUBLE DWARF FRENCH POPPIES, unrivalled for their extreme doubleness, and variety, and brilliancy of colours. Price 1s. per packet, post free. To the Trade, 5s. per ounce.

To the Trade.

KALMIA LATIFOLIA for Potting, from 18 inches to 2 feet, and bushy, well set with Flower Buds. Samples sent if required.
Price on application to JAMES VEITCH & SON, Nursery, Exeter.

DOWNIE, LAIRD, AND LAING beg to intimate that their NEW CATALOGUE of FLORIST FLOWERS, NEW FLOWER SEEDS, &c., is now ready, and may be had free on application.
17, Frederick Street, Edinburgh, and Stanstead Park, Forest Hill, London, S.E.

VERY STRONG TRANSPLANTED THORNS, in large quantities. Samples with price on application to WATERER & GODFREY, Knap Hill Nursery, Woking, Surrey.

To Spare.

FROM 5000 to 10,000 fine strong transplanted SCOTCH FIRS, 1½ to 2 feet, standing, thin and bushy. For price and particulars, apply to E. P. FRANCIS, Nurseryman, Hertford.

GOOD BOX EDGING.—1000 yards of the above for Sale.
Apply to ROBERT F. DARBY, The Nurseries, Cirencester.

Whitethorn Quick.

SAMUEL COCKING AND SON, SEEDSMEN, &c., Stotfold, near Baldock, Herts, have for Sale in any quantity, of two years growth, strong plants, of excellent quality, price moderate. Samples sent if required.

50 FINE IRISH YEWS for SALE, 8 to 9 feet high, well formed and proportionate, of a fine dark colour, beautifully rooted, and will be sold a bargain.
Apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.
J. S.'s CONIFEROUS CATALOGUE is now ready, to be had gratis.

WANTED, Extra Strong EVERGREEN PRIVETS, ASH, MANETTI and APPLE STOCKS, free from American blight.
RICHARD SMITH, Nurseryman, Worcester.

WANTED, 100 FERN-LEAVED GALE; 50 BLACK AMERICAN SPRUCE, 4 to 5 feet, bushy; 6 WILLOW-LEAVED OAK, 5, 6, or 7 feet.
For price and particulars, apply to EDWARD PARKE FRANCIS, Nurseryman, Hertford.

WANTED to PURCHASE, stout, well-grown Plants, as under—
1-year Seedling BLACK THORN
Transplanted BLACK THORN, 1½ to 2 and 2 to 3 feet
Transplanted LARCH, 2½ to 3 feet and 3 to 4 feet
These must be straight, stout plants, with good tops.
Say quantity, price, &c., to FRANCIS & ARTHUR DICKSON & SONS, Nurserymen, Chester.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.
RICHARD SMITH, Nurseryman, Worcester.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

New Garden Seeds.

JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

DOUBLE TUBEROSES, Just arrived. Price 3s. per dozen.
BUTLER & McCULLOCH, Seedsmen, Covent Garden Market, W.C.

Now Ready.

BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See long Advertisement.
Covent Garden Market, W.C.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.—

50 in 50 well selected vars.	..	..	.. £2	2 0
50 in 25 ditto ditto	..	..	.. 1	10 0
25 in 25 ditto ditto	..	..	.. 0	15 0
12 in 12 ditto ditto	.. 6s., 9s., and		0	12 0

Mixed, 3s. 6d. per dozen; 25s. per 100.
BUTLER & McCULLOCH, Seedsmen, Covent Garden Market, W.C.

Illustrated Spring Seed Catalogue sent free.

BARR AND SUGDEN, SEED MERCHANTS.—The above is arranged on a new principle. The cultural directions are the most copious and practical of any Trade List. All inferior varieties of VEGETABLE and FLOWER SEEDS have been rejected.
12, King Street, Covent Garden, W.C.

BARR AND SUGDEN, SEED MERCHANTS.—For COLLECTIONS of VEGETABLE SEEDS enumerated, see p. 63. For PRICED LIST of the best kinds of VEGETABLE SEEDS, see last page of *Chronicle*.
12, King Street, Covent Garden, W.C.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

AZALEAS, CAMELLIAS, EPACRIS, and ERICAS—We respectfully invite an inspection of our Stock of the above, which is large, in the finest health, and full of flower buds.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

Seeds, Seeds, Seeds.

WM. CUTBUSH AND SON'S CATALOGUE is now ready, post free on application.
Seed Establishment, Highgate, London, N.

PTERIS CRETICA ALBO LINEATA.—Good plants, 2s. 6d. to 7s. 6d. each, 30s. to 60s. per dozen. Trade supplied. Prices on application.
E. P. DIXON & SONS, Exotic Nursery, Sculcoates, Hull.

Strawberries for Forcing.

GEO. CLARKE has a large quantity of strong established Plants in Pots with excellent crowns; the sorts are KEEN'S SEEDLING, BRITISH QUEEN, SIR HARRY and ALICE MAUDE. Price 6s. per dozen.
Nursery, Streatham Place, Brixton Hill, S.

Fruit Trees in Pots, very fine.

PEACHES, NECTARINES, APRICOTS, APPLES, PEARS, PLUMS, CHERRIES, &c., 3s. 6d. to 7s. 6d. each.
E. P. DIXON & SONS, Exotic Nursery, Sculcoates, Hull.

FINE DWARF-TRAINED PLUMS, 30s. per dozen.
FINE DWARF ROSES, 60s. per 100.
WILLIAM EPPS, Jun., Nurseryman and Seedsman, Ashford, Kent.

To the Trade.

DWARF MAIDEN PLUMS.—The Subscribers have a fine stock to offer of the above.
Price given on application.
WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

STRONG FRUITING VINES, 7s. 6d. and 10s. 6d. LIST gratis and post free.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

Strong Vines from Eyes.

GEORGE S. DODS can supply Strong VINES of all the leading kinds for immediate Planting.
A PRICE LIST forwarded on application.
Epsom Nursery, Surrey.

Strong Vines from Eyes.

J. IVERY AND SON beg most respectfully to inform their patrons that they have now ready for planting out, strong Plants of all the best varieties.
A PRICED LIST will be forwarded on application.
Dorking Nursery.—Jan. 25.

HOLLAND AND BAYLEY can now supply from their unrivalled collection the heaviest and finest-flavoured LANCASHIRE SHOW GOOSEBERRIES, in strong 3 and 4 years old plants, at 6s. per dozen.
CATALOGUES, containing Priced Lists of Florists' Flowers, Fruits, &c., on application.
Bradshaw Gardens, Chadderton, near Manchester.

Fruit Trees, Dwarf-trained and Pyramid Apples, Pears, Plums, and Cherries.

JOHN CRANSTON has to offer excellent plants of the above, which cannot fail to give the greatest satisfaction. Also strong VINES in pots.
A LIST of SORTS will be sent on application.
Nurseries, King's Acre, near Hereford.

Good Seeds, Carriage Free.

SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds.

GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, and MANURE COMPANY, "Limited," Union Road, Plymouth.

New Seeds on Sale by the

PLYMOUTH SEED COMPANY, "Limited."—For prices and particulars see their GENERAL PRICE CURRENT, which is now ready.
Address Plymouth Seed Company, Plymouth.

PLYMOUTH SEED COMPANY, "Limited."—The GENERAL PRICE CURRENT is now ready, and can be had DIRECT, or of Messrs. SIMPKIN & Co., 4, Stationers Court, London, E.C., for six postage stamps.
Plymouth Seed Company, Plymouth.

Agricultural and Garden Seeds.

H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

CHARLES NOBLE'S NURSERY is Ten Minutes' walk from Sunningdale Station, South-Western Railway.

TRITOMA UVARIA. For strong plants of this splendid flower apply to JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

J. HOLMES WOOD, BOWER NURSERIES, Maidstone (adjoining the Railway Station).
All the leading varieties of AZALEAS, in 60's, at 50s. per 100.
Standard and Trained FRUIT TREES of every description, 30s. per dozen.
Every description of CONIFERS, EVERGREEN and DECIDUOUS TREES, and SHRUBS at moderate prices.

Seeds.

H. MEYERS AND SONS having saved some superior BRUSSELS SPROUTS, offer it at 2s. 6d. per lb. DOUBLE CURLED LEAVED PARSLEY, 1s. 6d. per quart. Orders, with Post Office Order, addressed to Harlington, Hounslow, W., will be promptly executed.

For Cucumbers,

RECOMMENDED BY THE FRUIT COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY, SEE

BARR AND SUGDEN'S Advertisements of January 4 and 11.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

CUTHILL'S Superior BLACK SPINE CUCUMBER.—The Trade can be supplied by the ounce, or 1s. per packet. HIGHLAND MARY, 1s. Best MELONS, 1s. Best MUSHROOM SPAWN. CUTHILL'S Five Pamphlets, free by post, 5s.
JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

Bellamy's Early Green Marrow Peas.

CHARLES SHARPE and CO., SEED GROWERS, Sleaford, have the above to offer to the Trade, of first-rate quality. Price on application.

Henry's Prize Hybrid Leek.

DOWNIE, LAIRD and LAING are now sending out Seed of the above in Packets at 1s.
17, Frederick Street, Edinburgh; and Stanstead Park, Forest Hill, London, S.E.

Extra Large Sea Kail.

GEO. CLARKE has to offer a large quantity of very fine roots, clean and sound, 1 to 2 inches in diameter. Prices on application. The Trade also supplied.
Nursery, Streatham Place, Brixton Hill, S.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

To the Trade.

MYATT'S PROLIFIC ASHLEAF KIDNEY POTATO.—The above excellent variety, sound and in good condition, to be had of
J. MYATT, Offenham, Evesham.—Price on application.

Seed Potatoes.

H. AND F. SHARPE are now prepared to take orders at very moderate prices for all the leading sorts of POTATOES, including MYATT'S Prolific ASH-LEAVED KIDNEY, the finest and most prolific in cultivation.
Prices may be had on application.
Seed Growing Establishment, Wisbeach.

FLUKE POTATOES, off the Lancashire Moss and Sand; EARLY PINK EYE KEMPS, very fine; TRUE ASHLEAF KIDNEY; OXHORN KIDNEY, a very prolific variety, good quality; WHITE BLOSSOM LEMON KIDNEY. Prices moderate.
HENRY BROWN, Seedsman, 4, Commutation Row, Liverpool.

SEED POTATOES.—The undersigned has an extensive Stock of all the leading kinds of the above grown, especially for Seed, which he can offer at very CHEAP rates. Prices on application.
GEORGE NEWELL, Corn, Grain, and Seed Factor, 29, Lower Bridge Street, Chester.

Seeds for the Kitchen Garden.
Seeds for the Flower Garden.
Seeds for the Farm.

JOHN CATTELL'S CATALOGUE of the above is now ready, and will be forwarded post paid on application. It contains select Lists only of all the best VEGETABLE and FLOWER SEEDS, so that the Amateur with only a small Garden cannot fail to make a proper selection.

His COLLECTIONS of KITCHEN GARDEN SEEDS, which have always given the greatest satisfaction, are sent as usual, viz. :—

	£	s.	d.
A Collection for Large Gardens, including every desirable kind of Vegetables, Salads, and Herbs	3	0	0
Ditto, ditto, for a Medium-sized Garden	2	0	0
Ditto, ditto, for a Small Garden	1	0	0
Ditto, ditto, for a Cottage Garden	0	10	6

The Carriage of all parcels of Seeds amounting to 10s. 6d. and upwards, paid to any Railway Station in England or Wales.

Nursery and Seed Establishment, Westerham, Kent.

Genuine Seeds for the Kitchen Garden, the Flower Garden, and the Farm.

For prices of the above and a Select List of all the most approved varieties both new and old, see

WM. WOOD and SON'S CATALOGUE for the present season, copies of which may be obtained free on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Vegetables—post free.

WM. WOOD and SON beg to offer GENUINE SEEDS of the undermentioned CHOICE VEGETABLES, viz. :—

Per packet—	s.	d.	Per packet—	s.	d.
Carter's St. Osyth Beet ..	1	0	Ivery's Nonsuch Celery	0	6
Nutting's Selected do. ..	0	6	Turner's Incomparable Celery	0	6
Melville's Incomparable White Broccoli ..	1	0	Cucumbers (See separate advertisement.)		
Lee's New White Sprouting Broccoli	1	0	Melville's Variegated Garnishing Kale	1	0
Snow's superb Winter White Broccoli ..	1	0	Carter's Giant White Cos Lettuce	1	0
Kemp's Incomparable Cabbage . ..	1	0	Carter's Giant Brown Cos Lettuce	1	0
Wood's Defiance Cauliflower	2	6	Dunnett's Black-seeded Brown Cos Lettuce ..	1	0
(See separate advertisement)			Wheeler's Imperial Cos Lettuce	1	0
Carter's Dwarf Mammoth Cauliflower	1	0	Wheeler's Tom Thumb ditto	1	0
Parson's superior Cauliflower	1	0	The Student Parsnip ..	1	0
Cole's White Perfection Celery	2	6	Parsnip Chervil .. 6d. and	1	0
Hood's Imperial Dwarf Red Celery	0	6	New Feather-stem Savoy	1	6

The above are all described in Wm. W. & Son's CATALOGUE.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Wood's Defiance Cauliflower.

WM. WOOD and SON have much pleasure in introducing this new and superior CAULIFLOWER to the notice of their friends and the public generally, and having tested it for several years against Walcheren and other approved varieties, they do not hesitate to pronounce it the best Cauliflower in cultivation. It is quite hardy, of dwarf habit, and produces immense large heads, which are very compact, and most deliciously flavoured.

Stock limited; price per packet, 2s. 6d.

Wm. Wood & Son, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

*** SEED CATALOGUE post free on application.

NEW CUCUMBERS, post free.

Per Packet—	s.	d.	Per Packet—	s.	d.
Kirklees Hall Defiance ..	1	0	Tiley's White Spine ..	2	6
Pearson's Long Gun ..	2	6	Yorkshire Hero	2	0
The Sensation	2	6	Wonderful Ridge	2	6

A single packet each of all the above six varieties for 10s.

For descriptions see Wm. Wood & Son's CATALOGUE (free on application).

Wm. Wood & Son, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

New Cucumber, Surrey Prolific.

F. and A. SMITH have to offer the above WHITE SPINE CUCUMBER, and strongly recommend it as one of the finest if not the best of all the forcing kinds. It is wonderfully prolific, often producing 4 or 5 at a joint, and the plants will stand for 2 or 3 years. The fruit are very straight, growing 15 to 18 inches in length. Per packet 2s. 6d.

Dulwich, Surrey, S.

Hamilton's Market Favourite Cucumber.

SUTTON and SONS have a limited Stock remaining of the Seed of the above Cucumber, the same as supplied by them to the Royal Horticultural Society last season, and of which the Society's Report says, "This was considered the best of the Tipped Spine Section; and it possesses the best colour, the best form, and every property of a good Cucumber. Not only was it the best in its section, but the best and handsomest in the whole collection." Price 1s. 6d. per packet.

Royal Berkshire Seed Establishment, Reading.

MONRO'S RABLEY CUCUMBER, per pkt., 2s. 6d. (See fuller Advertisement in November and Dec. last.)

Per packet—	s.	d.
TELEGRAPH IMPROVED do., and other finest frame sorts	1	0
HERTFORDSHIRE dwarf hardy CAULIFLOWER (the best Cauliflower)	1	0
MELON SCARLET GEM, true	1	0
HOLLYHOCK (Wm. Paul's Collection of 12 superb named sorts)	5	0

Every description of VEGETABLE and FLOWER SEEDS, principally grown by or under the supervision of the Subscriber. CATALOGUE free on application.

Wm. Paul, Nurseries and Seed Warehouse, Waltham Cross, N.

Pearson's Long Gun Cucumber.

HURST and McMULLEN, 6, Leadenhall Street, London, E.C., having purchased a considerable portion of the above, beg to offer it to the Trade (see their LIST).

The raiser describes it as being most difficult to seed, from its fruiting so quickly. The gardeners in the neighbourhood where it is known consider it surpasses all others. It is the heaviest bearer in point of number ever known; fruit from 24 to 30 inches, white spines, little or no handle, skin a bright green.

The quality is also described to be far superior to all others. The texture is as fine as a Melon, and there is a total absence of all bitter flavour. The fruit is much sought after by the salesmen at Nottingham. As many as 150 per day have been supplied, and it commands half as much more as any other kind in its neighbourhood.

ESTABLISHED UPWARDS OF A CENTURY.

COVENT GARDEN MARKET, LONDON, W.C.

BUTLER & McCULLOCH'S

COLLECTIONS OF VEGETABLE SEEDS,

CARRIAGE FREE,

Consisting of the best and most approved varieties.

				£	s.	d.
No. 1.	A Complete Collection for One Year's Supply			£4	0	0
No. 2.	Ditto	ditto	smaller quantities	2	0	0
No. 3.	Ditto	ditto	ditto	1	0	0

For full particulars, see CATALOGUE (page 91).

DESCRIPTIVE SEED CATALOGUE FOR 1862,

Containing all the new and most approved varieties of FLOWER SEEDS. To exhibitors we can strongly recommend our assortments of ASTERS, BALSAMS, STOCKS, and other CONTINENTAL SEEDS.

BUTLER and McCULLOCH, SEEDSMEN, COVENT GARDEN MARKET, W.C.

PETER LAWSON & SON,

THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

CARTER'S

COLLECTIONS of GARDEN SEEDS for 1862,

BEING COMPLETE ASSORTMENTS OF VEGETABLE SEEDS FOR ONE YEAR'S SUPPLY,

Containing only the most approved and choice sorts, in quantities to suit Large and Small Gardens.

No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
10s. 6d.	20s.	40s.	60s.	100s.

These Collections are always kept ready, and can be supplied at a moment's notice.

Just published, post free, 1s., gratis to Customers,

CARTER'S GARDENER'S AND FARMER'S VADE MECUM

(ILLUSTRATED),

Containing original and complete information for the successful management of

THE KITCHEN GARDEN	FRUIT GARDEN	FORCING HOUSE
THE FLOWER GARDEN	CONSERVATORY	STOVE
ORCHARD HOUSE	GREENHOUSE	PINERIES
VINERIES	PEACH HOUSE	PITS, FRAMES, &c.

Beside which is added,

A COMPLETE CALENDAR OF FARMING OPERATIONS

FOR EACH MONTH IN THE YEAR.

JAMES CARTER & CO., 238, HIGH HOLBORN, LONDON, W.C.

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AMATEUR'S GUIDE,

PRICE SIXPENCE, OR GRATIS TO CUSTOMERS.

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The above Work will be sent post free on receipt of Six Postage Stamps, or Gratis to Customers.

Also SUTTON'S SELECT LIST of SEEDS, gratis.

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

SEED MERCHANTS AND FLORISTS,
12, KING STREET, COVENT GARDEN, W.C.
OPPOSITE THE GARRICK CLUB.

For PRICED LIST of Select VEGETABLE SEEDS,
See our Advertisement on Last Page of *Gardeners' Chronicle*.

For LIST of STRIKING NOVELTIES,
See Advertisement of January 4.

For LIST of COLLECTIONS of CARNATIONS, PICOTEES, and PELARGONIUMS
See Advertisement of January 11th.

NOTICE.—*In the press and will be forwarded immediately to our patrons and numerous applicants, our*

ILLUSTRATED SPRING SEED CATALOGUE,

OR GUIDE TO THE KITCHEN AND FLOWER GARDEN.

☞ ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

The Cultural Directions are the most ample and practical to be found in any Trade List.

For LIST of CUCUMBERS
Recommended by the Fruit Committee of the Royal Horticultural Society, see our Advertisement of January 11.

BARR AND SUGDEN'S

COLLECTIONS OF VEGETABLE SEEDS FOR 1862.

THESE Assortments consist of selections from the different sections of the above Catalogue, and are suited to Gardens of various sizes; they contain the most approved Varieties, and such as are most suited to secure a succession of the best VEGETABLES from January to December.

N.B. Should any of the following Varieties not be required, increased quantities of other sorts can be sent in lieu.

THE SEEDS OF THE FOLLOWING COLLECTIONS ARE ALL NEW.

No Charge made for Packing or Package, and all Orders of 21s. sent Carriage paid.

☞ Cultural Directions are printed on each Packet of Seed.

COLLECTIONS OF SEEDS FOR ONE YEAR'S SUPPLY.

	No. 1. 10s. 6d.	No. 2. 15s. 6d.	No. 3. 21s.	No. 4. 30s.	No. 5. 42s.	No. 6. 63s.
Leguminous Plants.						
PEAS, including those best suited for succession, the most productive, and finest flavoured; such as Daniel O'Rourke, Champion of England, Champion of Scotland, Champion of Paris, &c.	4 pints	6 pints	10 pints	8 quarts	10 quarts	20 quarts
BEANS, best sorts	2 pints	3 pints	5 pints	6 pints	4 quarts	6 quarts
BEANS, French, Dwarf, and Runners	1 pint	1½ pint	2 pints	3 pints	4 pints	5 pints
Edible-Leaved and Edible-Flowered Plants.						
BORECOLE, including Cattagers' Kale, Asparagus Kale, Feathered Dwarf Kale, &c...	2 packets	2 packets	3 packets	3 packets	4 packets	5 packets
BROCCOLI, the best successional varieties, including Grainge's Autumn, Snow's Winter, Lee's White Sprouting, Adams's Early, and Mammoth Late Spring, &c.	2 packets	3 packets	3 packets	4 packets	4 packets	5 packets
BRUSSELS SPROUTS, best imported and Roseberry ..	1 packet	1 packet	1 packet	1 packet	2 packets	2 packets
CABBAGE, including Covent Garden Superfine Early Dwarf, Early Dwarf Champion, Enfield Market, &c.	2 packets	3 packets	4 packets	4 packets	5 packets	6 packets
CABBAGE, Savoy, best sorts	1 packet	1 packet	1 packet	2 packets	2 packets	3 packets
COUVE TRONCHUDA	1 packet	1 packet	1 packet	1 packet	1 packet	1 packet
CAULIFLOWER, including Mammoth, Walcheren, Covent Garden, &c.	1 packet	2 packets	2 packets	3 packets	4 packets	4 packets
SPINACH, round and prickly	2 ounces	4 ounces	6 ounces	1 quart	1½ quarts	2 quarts
Edible Rooted Plants.						
BEET, including Covent Garden, St. Osyth, and Pine Apple	1 packet	1 packet	1 packet	2 packets	2 packets	3 packets
CARROT, best for forcing and general crop	1½ ounce	2 ounces	3 ounces	4 ounces	6 ounces	10 ounces
LEEK, Musselburgh, &c.	..	1 packet	1 packet	1 packet	1 packet	2 packet
ONION, including White Spanish (Reading), Giant Madeira, White Globe, &c.	1 ounce	1½ ounces	2 ounces	3 ounces	5 ounces	8 ounces
PARSNIP, including "The Student" and Selected Hollow Crown	1 ounce	1 ounce	1½ ounce	2 ounces	3 ounces	4 ounces
RAMPION	..	..	..	1 packet	1 packet	1 packet
SALSAFY	..	..	1 packet	1 packet	1 packet	1 packet
SCORZONERA	..	..	..	..	1 packet	1 packet
TURNIP, including Jersey Navet, Snowball, &c.	1 ounce	2 ounces	3 ounces	4 ounces	6 ounces	8 ounces
Edible Fruited Plants.						
CUCUMBER, including Champion, Empress Eugenie, &c.	..	..	1 packet	1 packet	2 packets	3 packets
MELONS, including Princess Alice, which received a First-class Certificate from the Horticultural Society of Nice	..	..	1 packet	1 packet	2 packets	2 packets
TOMATO	..	..	1 packet	1 packet	2 packets	2 packets
VEGETABLE MARROW, including the New Custard, Melon Gourd, &c.	1 packet	1 packet	2 packets	2packets	3 packets	4 packets
Salad Plants.						
CELERY, including the two Covent Garden varieties ..	1 ounce	1 ounce	2 packets	3 packets	3 packets	4 packets
CRESS, including Curled and Plain	4 ounces	4 ounces	6 ounces	10 ounces	1 quart	1½ quarts
" Australian and American	1 ounce	2 ounces	3 ounces	4 ounces	5 ounces	6 ounces
ENDIVE, best kinds	..	1 packet	2 packets	2 packets	2 packets	2 packets
LETTUCE, including the two Covent Garden Giant, White Cos, Drumhead, &c.	2 packet	2 packets	2 packets	3 packets	4 packets	5 packets
MUSTARD	4 ounces	8 ounces	10 ounces	1 quart	1 quart	1½ quarts
RADISH, suitable sorts for succession	2 ounces	4 ounces	6 ounces	8 ounces	10 ounces	12 ounces
Pot, Sweet and Garnishing Herb Plants.						
HERBS, Pot and Sweet, including Savory, Marjoram, &c.	..	..	2 packets	3 packets	4 packets	5 packets
" Garnishing, including Parsley, &c.	1 packet	1 packet	2 packets	3 packets	3 packets	4 packets

1862.

NOVELTIES in VEGETABLE SEEDS.
See WM. WOOD & SON'S Seed Catalogue.

NOVELTIES in FLOWER SEEDS.
See WM. WOOD & SON'S Seed Catalogue.

COLLECTIONS of FLOWER SEEDS.
See WM. WOOD & SON'S Seed Catalogue.

COMPLETE ASSORTMENTS of VEGETABLE SEEDS for ONE YEAR'S SUPPLY.
See WM. WOOD & SON'S Seed Catalogue.

AGRICULTURAL SEEDS.
See WM. WOOD & SON'S Seed Catalogue.

Prices moderate. Seeds all warranted genuine. CATALOGUES post free on application.

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

Complete Collections of Vegetable Seeds for Large or Small Gardens.

WM. WOOD AND SON can furnish COMPLETE COLLECTIONS of KITCHEN GARDEN SEEDS for One Year's Supply, containing only sterling varieties, as under. For particulars see their PRICED CATALOGUE.

	£	s.	d.
COLLECTION No. 1. For a Large Garden, including Wood's Defiance Cauliflower, Parsnip Chervil, and several other novelties of merit, as well as a complete assortment of the most approved older kinds	4	0	0
COLLECTION No. 2. For a Medium-sized Garden ..	2	10	0
COLLECTION No. 3. For a Small Garden	1	5	0
COLLECTION No. 4. For a Smaller Garden	0	15	0

These Collections have all been prepared in the most liberal manner, and WM. W. & SON feel assured they cannot fail to give entire satisfaction.

Early Orders are respectfully solicited.

CATALOGUES post free on application.

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

GENUINE GARDEN SEEDS COLLECTIONS.

	£	s.	d.
No. 1 contains 20 quarts of PEAS and other Seeds in proportion for One Year's Supply	3	0	0
No. 2. Smaller quantities	2	10	0
No. 3. Do. do.	2	0	0
No. 4, Do. do.	1	1	0

Carriage free to any Railway Station in England or Scotland, or to the Steam Ports in Ireland, and the Isle of Man.

PRICED DESCRIPTIVE CATALOGUES post free on application.

A large Stock of superior SEED POTATOES.

Apply to HENRY BROWN, Seedsman, 4, Commutation Row, Liverpool.

1862.—Vegetable Seeds—First-class.

STEPHEN BROWN'S FIRST-CLASS COLLECTIONS contain a large number of new sorts, very choice They are the cheapest and best offered:—

	£	s.	d.
COLLECTION No. 1	3	0	0
" No. 2	2	0	0
" No. 3	1	0	0
" No. 4	0	12	6

SECOND CLASS COLLECTIONS of best older esteemed sorts, with less of new varieties, fine,—A., *50s.*; B., 32*s.* 6*d.*; C., 17*s.* 6*d.*; D., 10*s.* 6*d.*

The CATALOGUE is replete with interesting novelties. Copies may now be had.

Goods carriage free (20*s.* and upwards) to London and all Stations on the Eastern Counties lines, and with 40*s.* and upwards extra novelties or roots gratis.

STEPHEN BROWN, Seed Grower and Importer, Sudbury, Suffolk.

THE PLYMOUTH SEED COMPANY, "Limited," are now sending out their COLLECTIONS of SEEDS, which have hitherto given great satisfaction.

	£	s.	d.
No. 1. COMPLETE COLLECTION for a large Garden, for One Year's Supply	3	0	0
No. 2. COMPLETE COLLECTION for a moderate size Garden, for One Year's Supply	2	0	0
No. 3. COMPLETE COLLECTION for do., smaller quantities, for One Year's Supply	1	0	0
No. 4. COMPLETE COLLECTION for a Small Garden	0	15	0
No. 5. COMPLETE COLLECTION for a Small Garden	0	10	6
EXTRA LARGE COLLECTION, containing double the quantities contained in No. 1	5	0	0

Extra Collection carriage free to any Railway Station in England and Wales, and to any Steam Port in England, Wales, Scotland, and Ireland.

No. 1 carriage free to most Stations and Ports in the Kingdom.

No. 2 carriage free to Broad Gauge Stations and Steam Ports

No. 3 carriage free to any Station between Plymouth and Paddington.

Address, Plymouth Seed Company, Plymouth.

SEEDSMEN BY APPOINTMENT. Sutton and Sons

SUTTON'S COLLECTIONS of GARDEN SEEDS.—Carriage free (with Instructions on Cultivation).

	£	s.	d.
No. 1.—A COMPLETE COLLECTION of KITCHEN GARDEN SEEDS for a Large Garden, for One Whole Year's Supply	3	0	0
No. 2.—A COMPLETE COLLECTION of ditto, in quantities proportionately reduced	2	0	0
No. 3.—A COMPLETE COLLECTION of ditto ditto ..	1	0	0
No. 4.—A COMPLETE COLLECTION of ditto ditto ..	0	10	6

The Sorts of Vegetable included in these Collections are those which we have proved to be the most prolific, best flavoured, and most worthy of general cultivation, and of which sorts we have, therefore, grown large crops of Seed; by this means we are enabled to furnish "A Complete Collection for One Year's Supply," of superior quality, and at much less expense than when a Gentleman or his Gardener makes his own selection. We were the first to offer this advantage to the public (nearly 20 years ago), and we continue to improve the Collections annually.

Collections of Flower Seeds to be sent Free by Post.

	£	s.	d.
The best 100 sorts of FLOWER SEEDS, hardy, half-hardy, and tender, with instructions	1	1	0
The best 50 sorts of ditto, with instructions	0	10	6
The best 36 sorts ditto ditto	0	7	6
The best 24 sorts ditto ditto	0	5	0

Also Natural Grasses for Lawns and Meadows, Fine Mangel Wurzel, Turnip, and other Agricultural Seeds.

☞ SUTTON'S GENERAL PRICED CATALOGUE gratis and post free.

Post Office Orders payable to SUTTON & SONS, Seed Growers, Reading, Berks.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and other FLOWER SEEDS, Choice GLADIOLI, &c., is now ready, and will be forwarded post free on application.

The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices.

An inspection and comparison with prices in other Catalogues is respectfully solicited.

The following, of which descriptions will be found in Catalogue, are specially recommended :—

		s.	d.
	Per oz.,		
BEET, Compact Topped or Pine Apple Short Top ..		0	6
" Selected Dwarf Red (Nutting's)		0	9
CAULIFLOWER, Early Dwarf Erfurt		2	0
" New Early Mammoth or Frogmore Forcing		3	6
CELERY, Imperial Dwarf Red (Hood's)		1	0
CHÆROPHYLLUM BULBOSUM		2	0
CUCUMBER, TELEGRAPH	per packet	1	6
LETTUCE, MOOR PARK	per oz.	2	0
PEA, GENERAL WYNDHAM	per quart	1	3

Exotic Nursery, Tooting, Surrey, S.

CHARLES TURNER, The Royal Nurseries, Slough, offers the following NEW SEEDS for the KITCHEN GARDEN, the FLOWER GARDEN, and the FARM.

NEW PEAS raised by Dr. MacLean.—The two varieties now offered for the first time have been the admiration of all that saw them growing, both in 1860 and 1861. See "Gardeners' Year Book," pages 84 and 86. The stock is but limited.

WONDERFUL.—A first class second early white wrinkled Pea of robust branching habit, growing only 3 feet high, and producing a mass of pods from the bottom of the haulm, each pod containing from 7 to 9 large Peas of the most delicate flavour. In half-pint packets, 1s. 6d.

LITTLE GEM.—A dwarf green wrinkled Marrow of the height of Tom Thumb, more prolific, and earlier. A great acquisition, being very early, very dwarf, with the fine flavour of our best Marrow Peas. In half-pint packets, 1s. 6d.

BROCCOLI, GEORGE'S LATE WHITE.—A great acquisition. Per packet, 2s. 6d.

See opinion of Mr. Thomas Smith, Gardener to the Marquis of Londonderry, who says :—"I have grown it several years, and it is the best late sort I know. Heads white, large, and fine, to the end of May."

PARSNIP CHERVIL (Chærophyllum bulbosum).—Figured in *Gardeners' Chronicle*, October 5, 1861, which see. 6d. per pkt.

CUCUMBER, WILSON'S PROLIFIC.—A first rate variety for summer or winter use. 1s. per packet.

MELON ECLIPSE.—This superior green flesh variety is a cross between Scarlet Gem and Orion, partaking of the rich flavour of the former, and the fine melting properties of the latter. It obtained a Certificate of Merit at the Botanic Society, and First Prize for green flesh at Brighton, the only two places exhibited. Highly recommended. 2s. 6d. per pkt.

BETTERIDGE'S FINE QUILLED ASTERS.—The Seed saved from this splendid collection—so successful in maintaining the leading position at the great Exhibitions—is entirely in Charles Turner's hands for distribution.

12 distinct varieties (with hints for their culture) .. 3s.
Fine Mixed Seed, per packet .. .. 1s.
And all NEW ANNUALS worthy of cultivation.

TURNER'S GOLIATH SWEDE, 10d. per lb.

Mr. William Statham, of South Lea Farm, Datchet, thus writes of the Goliath Purple Top Swede :—"I have 15 acres all equally good, grown without artificial manure, and with only a moderate cost of farm dung. Although my neighbours complain generally of their Swedes this year, I never grew finer, and approve very much of this sort."

TURNER'S WHITE SWEDE, 10d. per lb.
FISHER HOBBS' ORANGE GLOBE MANGEL, 8d. per lb.
ELVETHAM LONG RED MANGEL, 8d. per lb.

These are all saved from carefully selected stocks, and have been harvested in fine condition.

The GENERAL SEED CATALOGUE, containing all that is new and good in each class, as well as all the useful Culinary Roots, is just published, and will be forwarded gratis and post free to any address.

Charles Turner, The Royal Nurseries, Slough.

Choice Seeds, free by post.

NEW CABBAGE—FEARNOUGHT: A Hybrid between the Early Dwarf Cabbage and the Hearting Scotch Kale or Borecole. It forms compact and hard heads, which when cooked are tender and well flavoured; withstands frost and damp better than any other of the Brassica family, and is not subject to burst when at maturity. Last winter, when every other winter green was killed, it stood uninjured. By making two sowings it can be had fit for use from November till Spring Cabbages are ready. Awarded First-class Certificate by the Royal Horticultural Society, March 11, 1861. This valuable acquisition was raised by the successful hybridiser, Mr. Melville, Dalmeny Park Gardens, who has placed the entire Stock in our hands for distribution. 1s. per packet.

MELVILLE'S EARLY SPRING WHITE or HARDY SCOTCH BROCCOLI, strongly recommended, 1s. per packet.

AYTON CASTLE GIANT SCOTCH LEEK, 1s. per packet.

PERENNIAL SPINACH, invaluable for its hardiness, and as tender as the finest Spinach, 6d. per packet.

ANTIRRHINUM and PENTSTEMON, from an extra fine strain. See "Gossip of the Garden," November, 1861, each 1s. per packet.

PANSY, from choice named sorts, 1s. per packet.

PRIZE FRENCH MARIGOLD, from choice selected double flowers, 1s. per packet.

ASTERS: GLOBE QUILLED, BETTERIDGE'S CRYSTAL PALACE (Prize), 12 varieties, mixed, 1s. per packet.

ASTERS: BUSHBY'S NEW DWARF. Colour fine rosy pink, 6 to 7 inches in height, well adapted for a dwarf row, 1s. per packet.

FOXGLOVE, 6 beautiful varieties, separate, 1s. per collection.

MELVILLE'S CRIMSON BELTED and AURICULA-FLOWERED SWEET WILLIAMS. These are more compact in habit than the old varieties. "Richly coloured and variegated sorts, some of which were very attractive."—Opinion of Floral Committee, July 9, 1861. 1s. per packet. Price per ounce to the Trade on application.

STOCKS, GIANT AUTUMN, from prize sorts, Red and White, 6d. each per packet.

STOCKS, TRUE LONDON WHITE INTERMEDIATE (Melville), very fine, 1s. per packet.

Orders from unknown correspondents to be accompanied with Post Office Order or postage stamps.

Stuart & Mein, Seedsmen to the Union Agricultural Society, Kelso, N.B.

EXCELLENCE and ECONOMY.—

Botcherby Hybrid	Kenyon
Hamilton's Market Favourite	Telegraph
Hector	William Brown

And other CUCUMBERS (true).
ORNAMENTAL GOURDS, Imported Seed.

James Tynan begs to offer Seeds of the above, at 6d. and 1s. per packet, free by post for 7 or 13 stamps.

CATALOGUES free by post on application.
Seed Warehouse, 68, Great George Street, Liverpool.

The "Student" Parsnip.

MESSRS. SUTTON and SONS have the honour of offering to the public the Stock of SEED of this delicious and finely formed Parsnip, which was ennobled from the Wild Parsnip by Professor Buckman, F.L.S., &c., of the Royal Agricultural College, Cirencester, who kindly entrusted to them the Seed, originally produced by himself, from which the present stock has been raised by Messrs. Sutton & Sons, and who having sown it in their Trial Grounds have found it to be superior to any of the other sorts sown by the side of it.

This is exclusively in their possession; and may be had in Packets of 1s. each, containing 1000 Seeds (post free), direct from Sutton & Sons, or through the undermentioned Firms who have ordered a supply. Additional names will be published in future Advertisements :—

Messrs. Hurst & M'Mullen, Leadenhall Street, London.
" Beck, Henderson, & Co., Adelphi, London.
" Noble, Cooper, & Co., Fleet Street, London.
" James Carter & Co., High Holborn, London.
" Wheeler & Son, Gloucester.
" Barr & Sugden, King Street, London, W.C.
" Butler & McCulloch, Covent Garden, London, W.C.
" Charlwood & Cummins, Tavistock Row, Covent Garden, London, W.C.
" Dicksons & Brown, Corporation Street, Manchester.
" W. Drummond & Sons, Dawson Street, Dublin.
" Dickson, Hogg, & Robertson, Dublin.
" Wood & Son, Maresfield, near Uckfield.
" Peter Lawson & Son, 27, Great George Street, Westminster, London, W.C.
" James Dickson & Son, 102, Eastgate Street, Chester.
" James Garaway & Co., Durdham Down Nursery, Bristol.
" Toole & Co., Seedsmen, Westmoreland Buildings, Dublin.
Mr. John Bell, Exchange Street, Norwich.
" Charles Turner, Royal Nursery, Slough.
" H. Brown, 4, Commutation Row, Liverpool.
" Jno. Perkins, 52, Market Square, Northampton.
" John Cattell, Westerham, Kent.
" James Veitch, Jun., King's Road, Chelsea.
" Robert Parker, Tooting, Surrey, S.
" Robert P. Ker, 4, Basnett Street, Church Street, Liverpool.
Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

Royal South Hants Seed Establishment

PAGE and TOOGOOD have the honour to offer the OSBORNE MANGEL, the stock of which was presented to them by His late R. H. the Prince Consort's Steward, A. Toward, Esq., by whom it is considered the best variety in cultivation. In shape it is as perfect as a Globe Turnip, with a similar tap root, the foliage small and very compact, indicative of less impoverishment of the soil than can be said of most other sorts. It has carried off every prize for shape where exhibited. A great portion of the seed has been ordered by those who saw it growing, and P. & T. being anxious to get it into general cultivation, would prefer supplying it in quantities not exceeding Ten Pounds.

PAGE'S IMPERIAL ORANGE GLOBE MANGEL.—A large stock of this has been provided to meet the demand that has arisen for it. Its superior weight producing and keeping qualities are well known. The prize for the best 10 Acres has again this year been awarded to it by the Botley Farmers' Club. Stewart Macnaghten, Esq., grew 61 tons 2 cwt. per acre of it by ordinary cultivation. W. Dickinson, Esq., produced six specimens, weighing when perfectly clean, without leaves or roots, 193 lbs., the largest of which, 44 lbs. At the Vale of Avon Farmers' Club, six prizes were awarded to it for acreage.

PAGE'S IMPROVED HARDY SWEDE still maintains its superior character for general cultivation. It carried the 10 Acre Prize at Botley.

BIRMINGHAM ROOT SHOW.—The Ten Guinea Cup for the best collection, and the Five Guinea Cup for Swedes have been again brought to Hampshire—being the third time in succession the former has been awarded to Sir W. Heathcote, Bt.—This not only reflects great credit upon the management and skill of his Steward, Mr. Charles, but the County should be proud of the distinction conferred upon it, by his energy and judgment, in carrying these Prizes (that for Swedes against 26 competitors). As Hampshire Seedsmen, we have great reason to speak of his success.

Special Contracts made for the supply of all AGRICULTURAL SEEDS in large quantities.

☞ Our Goods are delivered Carriage Free

Page & Toogood, Seed Merchants and Growers, Southampton.

Nursery and Seed Establishment, Dumfries, N.B.

(Established 1787.)

THOMAS KENNEDY and CO. beg respectfully to direct the attention of their friends and the public to their stock of

NURSERY PLANTS,

comprising Forest, Fruit and Ornamental Trees, Deciduous and Evergreen Shrubs, &c., adapted either for extensive planting, or for giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c.

Also to their stock of FARM and GARDEN SEEDS, which are very extensive, and being selected with the greatest possible care from Seed Growers of the highest standing in this and other countries, are guaranteed to be of first-class quality.

FREE DELIVERY.

All Seeds (not Plants), under certain limitations, are delivered free of Carriage to the principal Railway Stations in Great Britain and Steam Ports in Ireland.

. PRICED CATALOGUES will be sent, post free, on application.

SEED CORN from the CHALK.—Selected samples of all the best varieties supplied by Messrs. Raynbird, Caldecott, & Bawtree, Seed Growers and Merchants, Basingstoke, Andover; or 89, Seed Market, Mark Lane, London, E.C. Prices on application.

RAYNBIRD, CALDECOTT, and BAWTREE, Seed Merchants and Growers, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

Wheat for Spring Sowing.

SHIRREFF'S BEARDED RED WHEAT has been found to ripen well in East Lothian when sown towards the end of March. The grain is large, bright, and clean, weighing 64 lbs. per imperial bushel, from seed sown in spring 1861. This variety is particularly recommended for spring sowing.

Samples will be forwarded on application. Price 70s. per quarter cash. Bags, 1s. 6d. each. Patrick Shirreff.
Haddington—January 25.

To the Seed Trade.

THOMAS AYRES, Seedsman and Grower, Biggleswade, Beds., has to offer WHITE SPANISH ONION SEED, ALTRINGHAM and WHITE BELGIAN CARROT SEED; YELLOW GLOBE, ORANGE GLOBE, RED GLOBE, LONG YELLOW, LONG RED MANGEL WURZEL SEED; also several varieties of SWEDE and WHITE TURNIP SEED.

Prices forwarded on application.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our Book of FARM SEEDS sent free for 3 stamps.

J. C. Wheeler & Son, Seed Growers, Gloucestershire.

Sharpe's Improved Swede.

CHARLES SHARPE and CO., Seed Growers, Sleaford, beg to inform their friends and the public that they have this year grown and secured in fine condition a large breadth of the above valuable variety of SWEDE, and they will now be able to execute all orders entrusted to them, which, in consequence of the scanty supply the last two seasons, they were not always in a position to do.

C. S. & Co. take the present opportunity of remarking that extended cultivation has proved decisively the superior merit of their Swede, which has in all competitions with other kinds been placed in the first rank. Price on application.

Charles Sharpe & Co., Seed Growers, Sleaford.

Yorkshire and Lincolnshire Nursery and Seed Establishment.

PRIZE TURNIP and MANGEL SEEDS.—"Open to all." 5l. Silver Cup given by the Cottingham Horticultural Society, and won by the produce of our seed by Wm. Watson, Esq., Wood House; 5l. Silver Cup given by us and won by the produce of our seed by Mr. Stephenson, Hollym, Holderness; the second principal prize of 2l., won by the produce of our seed, by Mr. John Newton, of Cottingham, Yorkshire, and principal of the minor prizes won also by the produce of our seed. This Exhibition is one of the largest of the kind in Yorkshire.

For further particulars, enclose stamp for our SEED LIST!

Martin & Sons, Proprietors.
Hull Seed Establishment, Junction Street.
The "Park Nursery," Spring Park, Hull.
Principal Nurseries, Cottingham (A.D. 1788).

GENUINE ITALIAN RYE-GRASS, produced from the second cut of Foreign "Italian," weighing up to 21 lbs. per bushel, and "Pacey's" and "Evergreen" Perennial Rye-grass, weighing up to 28 lbs. per bushel, can be supplied direct from the Grower either now or in March (at the option of the purchaser), and samples will be forwarded free on application.

Address Simon A. Daintree, Fenddrayton, St. Ives, Hunts.

Stirling, Scotland.

OUR CATALOGUE of SELECT VEGETABLE and FLOWER SEEDS, POTATOES, GARDEN TOOLS, &c., for 1862, is now ready, and may be had on application.

The distinctive features of this Catalogue are such as have commended themselves alike to the Gardener and Amateur. Being simple in arrangement, and sufficiently descriptive, a selection from its columns is rendered easy and satisfactory. Moreover, we still adhere to the system introduced by us several years since, of discarding, in the various sections, all comparatively inferior varieties, as well as omitting what are mere repetitions of the same sorts under different names.

. Seeds Carriage Paid, as formerly.

W. Drummond & Sons, Seed and Implement Warehouse, Stirling.

SEED ESTABLISHMENT, Stirling.—In tendering our thanks to the many Noblemen and Gentlemen who have, for a long series of years, intrusted us with their orders for AGRICULTURAL SEEDS, we have satisfaction in stating, that to enable us to meet a large increase of business, we have greatly extended our arrangements for raising and otherwise securing more ample supplies of the leading kinds, all bearing the usual trustworthy character, thus enabling us to execute with certainty all orders, however extensive, with which we may be favoured. Our DESCRIPTIVE PRICED CATALOGUE will be ready in February, and, as heretofore, will be sent to our customers; also, post free to any address, on application.

In the meantime, we claim special attention to our ROOT SEEDS, which embrace several improved stocks of SWEDES and other TURNIPS, MANGEL WURZEL, &c.; also to remarkably fine samples of all the varieties of CLOVERS, PERENNIAL and ITALIAN RYE-GRASS, NATURAL GRASSES, &c.

The Assortments of Seeds prescribed by us for laying down land to Permanent Pasture or Meadow, are the result of a lengthened experience, which, with the fact of our annually supplying seeds for several thousand acres, warrant us in recommending them with every degree of confidence.

W. Drummond & Sons, Seed and Implement Warehouses, Stirling and Dublin, January 25, 1862.

. Stirling is most favourably placed in point of Railway accommodation, there being direct and constant traffic to all the principal Stations in Scotland and England, and by Steamers (via Glasgow), almost daily to the chief Ports in Ireland, thereby ensuring a speedy delivery of Goods, all of which (with certain limitations) we forward carriage paid.

Aster Seed of Superior Quality.

J. AND J. FRASER, of the Lea Bridge Road Nurseries, Leyton, N.E., beg to announce that they are now prepared to send out Collections of the finest FRENCH ASTERS.

J. & J. FRASER feel much pleasure in stating that the first Prizes for these Asters at the Royal Horticultural Society and Crystal Palace Exhibitions were awarded to flowers produced from Seed supplied by them.

A PRICED LIST will be forwarded on application.

Pride of Serinagur—Cashmere Melon.

MESSRS. J. C. WHEELER AND SONS have the pleasure to announce that this splendid [Green-fleshed MELON, growing to the weight 4 to 9 lbs., and pronounced by Dr. Lindley "*Unsurpassable*," has been placed in their hands for distribution, and packets are now ready, containing eight seeds, price 2*s*. 6*d*. each. This Melon was raised by Mr. W. P. Ayres, F.R.H.S., who having grown it for several years recommends it with the greatest confidence. For full particulars, see WHEELER'S "Little Book."

Gloucester.—Jan. 25.

VEGETABLE and FLOWER SEEDS of best quality. —Our "NEWTON HERO" CUCUMBER, 1*s*. 6*d*. per packet. "One of the best of the 118 varieties grown by the Horticultural Society, and so highly spoken of in the report, which see."

PRICED LISTS post free upon application.

JAMES DICKSON & SONS, 102, Eastgate Street, and the "Newton" Nurseries, Chester.

Agricultural Seeds.

THE SUBSCRIBER has much pleasure in offering the following SEEDS, grown and selected with the greatest care, and can be depended on:—

MANGEL WURZEL: Yellow, Orange, and Red Globe, Long Red and Yellow. SWEDE: Epps' Selected, Skirving's and Marshall's Purple-top. TURNIPS: White, Green, and Red Globe; Tankards of sorts, 5*s*. per gallon, 38*s*. per bushel. CARROTS: White Altringham, James's Keeping. Cow Cabbage, Kohl Rabi, and all kinds of Agricultural Seeds.

CATALOGUES sent on application.

W. J. EPPS, Seed Grower and Merchant, High Street, Maidstone.

First-class Seedling Fuchsias and Verbenas.

GEORGE SMITH has much pleasure in offering the following superb FUCHSIAS and VERBENAS, as varieties that will give general satisfaction to all Growers, either for Exhibition or Decorative purposes.

FUCHSIA (UNIVERSAL) G. S. considers to be the most beautiful of all Fuchsias yet offered to the public, and believes that it will be retained in choice collections for years to come; its habit is all that can be wished; its blossoms are very double, and of model form. Sepals bright crimson; corolla deep violet. Commended by the Floral Committee of the Horticultural Society, and to be figured in the "Florist." Price 10*s*. 6*d*.

DICTATOR, the largest and finest single Fuchsia ever offered; tube and sepals waxy crimson, the latter well reflexed; corolla violet purple, of remarkable size and substance, extra fine. Price 10*s*. 6*d*. each.

*** Coloured Illustrations of the two by Mr. ANDREWS in exchange for 12 Postage Stamps. In strong Plants after the 20th April.

SEEDLING VERBENAS.

These are of the finest quality, and may be relied upon to maintain the high character for which many of G. S.'s Seedlings are celebrated for size, shape, and decision of colour.

ETNA, vermilion red, of fine form, and new in colour.

FIREBALL, brilliant scarlet, of fine form, eye white, and most abundant bloomer, of splendid habit, and one of the finest of its class, for all purposes. Awarded a First-class Certificate at the Royal Botanic Gardens of London.

GARLAND, delicate blush with large and conspicuous rich pink centre, truss large and extra fine.

PALERMO, pink with bright cherry eye, fine shape and truss; fine for all purposes. Received a First-class Certificate from the Royal Botanic Gardens.

THE MOOR, the finest dark Verbena in cultivation; dark crimson, a conspicuous dark circle round the eye, extra fine.

THE WARRIOR, rosy pink, white eye, large, of fine form, and new in colour, extra.

The set of six for 25*s*., or 5*s*. per plant. After the 20th April.

A CATALOGUE is now ready. PRICED and DESCRIPTIVE LISTS of Show, Spotted, Scarlet, and Variegated Pelargoniums, Fuchsias, Verbenas, Petunias, Dahlias, Chrysanthemums, Bedding Plants, &c., in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, N.

Quick.

H. AND F. SHARPE are prepared to offer of the finest quality,

Strong 2-years' Transplanted QUICK, 3 feet high,

Strong 2-years' Seedling do., 2 feet high,

at very moderate prices, which may be had, with samples, on application.

Seed Growing Establishment, Wisbeach.

Four Millions of Transplanted Quicks.

GEORGE CHIVAS offers the above, Two Millions of which are suitable for Railways, and Two Millions varying from strong to exceeding strong—a portion having been twice Transplanted. A bale containing 100 of each, five sizes, forwarded on receipt of 15*s*.; orders for 10,000 delivered free at any railway station.

Also Half a Million of Transplanted SPRUCE, and one of the largest general Nursery Stocks in the North-Western counties.

Chester, Jan. 25

500,000 QUICKS, 2 years' Seedling, 18 to 24 inches, and 24 to 30 inches, and 2 years' transplanted, 2½ to 3 feet.

GOOSEBERRIES and CURRANTS, leading kinds, 70*s*. to 80*s*. per 1000.

EVERGREEN PRIVET, from 2 to 5 feet, 20*s*. to 30*s*. per 1000.

The above are all strong and well rooted.

For prices and samples apply to J. & W. COOKS, Donington Nurseries, near Spalding.—Jan. 25.

LARGE ORNAMENTAL TREES.—As part of my Nursery Ground is required for Building purposes, to effect a clearance before I commence my new grounds, I offer for Sale the following at very low prices:—

Limes, Beech, Oak, Hornbeam, Mountain Ash, Willow, Poplar, Turkey Oak, Elm, White Thorn, Horse Chesnut, Ash, Birch, from 5 to 12 feet. Also Black American and Norway Spruce, Birch, Maple, Austrian Pine, from 3 to 5 feet; Larch, Hornbeam, Austrian Pine, from 1 to 3 feet; Seedling 2-years Spruce, Thorns, and Oak.

Many thousands of Rhubarb, Asparagus and Seakale for forcing or otherwise.

JAMES HUDDART, Nurseryman and Seedsman, Preston, Lancashire.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Garden Seeds.

PAGE AND TOOGOOD'S SPECIAL LIST will be forwarded post free.

P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

Royal South Hants Seed Establishment, Southampton.

Novelties in Flower Seeds.

WM. WOOD AND SON will be happy to forward the undermentioned, post free, viz.:—

	Per packet.—*s*.	*d*.
Alyssum saxatile campactum	1	0
Anagallis grandiflora pallida	1	0
" " sanguinea	1	0
Campanula rotundifolia alba	1	0
Celosia aurea pyramidalis	1	0
Clarkia pulchella flore pleno	1	0
" " Tom Thumb	1	0
Clintonia pulchella atro-purpurea	1	0
" " azurea grandiflora	1	0
Cuphea Zimpani	1	0
Dianthus chinensis laciniatus atro-purpurea fl. pl.	1	0
" " nanus purpureus	1	0
" imperialis compactus nigro purpureus fl. pl.	1	0
Dolichos Fernandesii	2	6
Helianthus annuus fl. pl.	2	6
Lupinus Hartwegii persicus	1	0
Nierembergia calycina fl. alba	1	0
" " nigricans	1	0
Nycterina selaginoides fl. alba	1	0
Nemophila atomaria oculata	1	0
" maculata folia variegata	1	0
Pericallis Webi hybrida	1	0
Phlox Drummondii Magenta	1	0
" " Prince of Wales	1	0
" " Princess Royal	1	0
" " Wilhelm I.	1	0
Polygonum orientale pumilum	1	0
Saponaria calabrica alba	1	0
Senecio elegans flore pleno magenta	1	0
Statice sinuata hybrida	1	0
Tropæolum Crystal Palace Gem	0	6

For descriptions see their CATALOGUE, copies of which may be obtained free on application.

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

CRYPTOMERIA JAPONICA (a Bargain).—The Subscribers having a very large stock of the above, perfectly healthy and uninjured by frost, offer them on the following terms, viz.:—

	per doz.	per 100.
Stout plants, 1 foot	3*s*.	20*s*.
" 1½ to 2 feet	4	25
" 3 to 4 feet	6	40

Extra plants presented to defray cost of carriage.

Address to WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Hardy Ferns.

JAMES SMITH can supply the following for 35*s*. cash, or half the collection for 17*s*. 6*d*., package included. Post Office Orders payable at Matlock.

6	Asplenium Adiantum nigrum	2	Lastrea cristata
6	" Trichomanes	2	" uliginosa
4	" viride	2	" Thelypteris
6	" Ruta muraria	6	" dilatata
4	" lanceolata	4	Osmunda regalis
4	Allosorus crispus	2	Polystichum angulare
2	Botrychium lunaria	2	" lobatum
6	Blechnum boreale	2	Polypodium dryopteris
6	Ceterach officinarum	6	" vulgare
4	Cystopteris fragilis	4	" calcareum
6	Lastrea recurva	2	" phegopteris
6	" Filix mas	6	Scolopendrium vulgare
2	" rigida	4	" ramosum

Darley Dale Nurseries, near Matlock.

Notice of Removal.

THOMAS CHARMES, SEEDSMAN and FLORIST, begs to inform his Friends and the Public that he has REMOVED from 195 to 204, High Street, Exeter, where all orders with which he may be honoured will meet with prompt attention, and be gratefully acknowledged.

PRICED LISTS of SEEDS for the present season sent free on application.

Exeter—Jan. 25.

NEW SEEDLING POTATO, "DAINTREE'S EARLIEST."—This Potato raised by the "Advertiser and now for the first time offered to the public, after being thoroughly tested by competent judges, has proved itself to be a new and distinct variety, ripening ten days earlier than the "Ashleaved Kidney." It is adapted for the earliest and latest planting, is in colour beautifully white, has a very thin skin, and retains its fine cooking qualities until June. See *Gardeners' Chronicle* of May 25.

To effect, therefore, a thorough distribution, and to enable growers to test for themselves, a sample will be forwarded on receipt of an order enclosing 12 postage stamps, and the small supply for Sale this season will be delivered on the Eastern Counties' or Great Northern Railways in quantities in quantities of not more than one bushel (in the order they are booked), packed secure from frost, at 21*s*. per bushel, or 5*s*. 6*d*. per peck, on receipt of an order enclosing a post office order for the amount, payable at the Post Office, Saint Ives, Hunts, addressed to Mr. SIMON A. DAINTREE, of Fendrayton, Saint Ives, Hunts.

Royal Agricultural Society of England.

TENDERS for GREEN FODDER, HAY and STRAW.—Persons desirous of Tendering for the supply of either of the following, viz. 1st, from 10 to 20 acres of GREEN FOOD, consisting of Green Vetches, and of Green Clover or Trifolium; 2d, of HAY, 50 loads more or less of the best quality; 3d, of STRAW, from 100 to 200 loads, of 36 Trusses each, for use in the Society's Show Yard in Battersea Park, from the 21st of June to the 2nd of July, can obtain particulars, and Forms of Tender, on application to H. HALL DARE, Secretary.

12, Hanover Square, London, W.

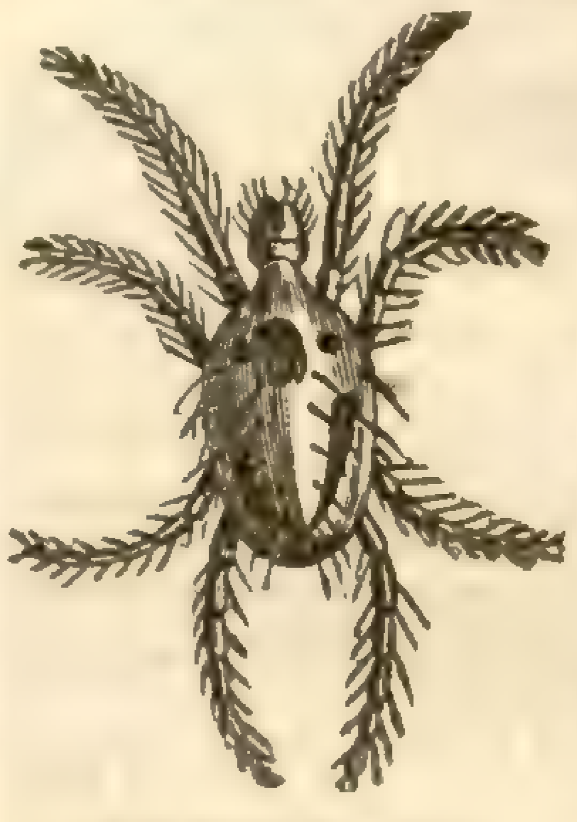
Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3*s*. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3*s*. per Gallon (or 9*d*. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.



Red Spider Magnified.

FRUIT TREES. Winter wash with GISHURST COMPOUND.

[Copy of Letter from Mr. Rivers.]

Nurseries, Sawbridgeworth, Herts, Jan. 9, 1862.

I think you should prominently mention the great benefit Wall Trees of all kinds derive from a dressing, ¾ or 1 lb. to the gallon, of the Compound applied in January. It is so easily applied and so very beneficial.

(Signed) THOS. RIVERS.

Sold retail by Nurserymen and Seedsmen in boxes 1*s*., 3*s*., and 10*s*. 6*d*. each.

Wholesale by PRICE'S PATENT CANDLE Co., Limited.

NEAL'S PATENT APHIS PASTILS.

The attempt by interested persons to injure the sale of these Pastils is best answered by the fact that Mr. Glenny and other really scientific Horticulturists use and recommend them. They are the safest and cheapest mode of Fumigation, as the large and increasing sale distinctly proves. The Pastils are better warmed before being used, as they are useless when damp.

Sold by all principal Seedsmen. Price 1*s*. and 2*s*. per packet.

Magnified Aphides.

Patentee: J. NEAL, Edward Street, Birmingham.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.

THE GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases and Ornamental Flower Boxes for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen-ranges, &c. Grooved Terrometallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall-Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1*s*. 6*d*. per gallon, at the Manufactory, or 1*s*. 8*d*. per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

New Rose, Beauty of Waltham.

WM. PAUL respectfully announces that he is now taking orders for this superb NEW ROSE, which received a FIRST-CLASS CERTIFICATE from the Royal Horticultural Society in June last. For description, see Rose Catalogue—Section Hybrid Perpetual: it is also figured in the "ROSE ANNUAL," just published. Plants in April, 5s. each; the usual discount to the Trade on six or more plants.

WM. PAUL, Cheshunt Nurseries, Waltham Cross, N.

60,000 Dwarf Roses in Pots on their own Roots.

WM. WOOD AND SON have much pleasure in offering selections of ROSES from their enormous stock at the following rates: Per doz.

Tea Scented Roses	18s.
Bourbon and Noisette do.	18
China and Climbing do. .. .. .. 12s. to	18
Tea Scented and Bourbon Roses, established in 6-inch pots, for immediate forcing or greenhouse culture ..	30

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Standard Roses.

A LARGE IMPORTATION OF STANDARD ROSES.
WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

WM. WOOD AND SON beg to inform the Nobility, Gentry, and Amateurs that they have imported a large quantity of STANDARD ROSES from the Continent, comprising all the best sorts. The plants are remarkably strong, and cannot fail to give the greatest satisfaction.

Standard Summer Flowering Roses .. per dozen	24s.
Standard Perpetual and Bourbon Roses „	30
Dwarf Summer Roses .. .. .. „	12
Dwarf Perpetual Roses .. .. .. „	18
New Roses of 1861 .. .. each 3s. 6d. to	5

Early orders are respectfully solicited.

Standard and Dwarf Roses.

JOHN CRANSTON has no hesitation in stating that he holds the largest stock of STANDARD ROSES in the kingdom, and plants of the finest growth possible. These he is now offering at the following prices:—

STANDARDS, finest Hybrid Perpetual and Bourbon, 30s. per dozen.
HALF-STANDARDS, do., 24s. to 30s. do.
STANDARD TEA SCENTED, the best and most hardy sorts, 36s. to 42s. do.
DWARF HYBRID PERPETUAL, strong on Manetti Stock, 15s. to 24s. do.
DWARF HYBRID PERPETUAL, own roots, 12s. to 18s. do.
DWARF TEA SCENTED, 18s. to 24s. do.
PILLAR ROSES, extra strong on Manetti Stock, 18s. to 24s. do.
NEW ROSES of 1860 and 1861, 3s. 6d. to 5s. each.
A DESCRIPTIVE LIST will be forwarded free on application.

Nurseries, King's Acre, near Hereford.

STANDARD ROSES, with straight stems and good heads, the finest varieties; 30s., 36s., and 42s. per dozen.
GRAPE VINES for PLANTING OUT.—All the leading sorts, with stout, short-jointed, well ripened canes; 3s. 6d., 5s., and 7s. 6d. each.
GRAPE VINES for FRUITING in POTS.—Extra fine, strong bearing rods.
GLADIOLUS.—Splendid hybrids of Gandavensis, 6s., 9s., 12s., and 18s. per dozen; 100 distinct varieties, 84s.; 100 newer, 126s.
NEW BEGONIAS.—Twelve of the most distinct and beautifully variegated Continental varieties, strong plants, for 18s.
CAMELLIAS with FLOWER-BUDS.—Including the best new varieties, fine plants, 30s. to 42s.; extra size, 60s. and 84s. per dozen.
DESCRIPTIVE CATALOGUES, with all particulars, forwarded on application to

JAMES DICKSON & SONS, The "Newton" Nurseries, Chester.

Mitchell's Unrivalled Collection of Roses.

THE LARGEST STOCK AND THE BEST PLANTS IN ENGLAND, JUSTLY PRONOUNCED BOTH BY ENGLISH AND FOREIGN GROWERS.

JAMES MITCHELL has the honour of informing his kind patrons that he has succeeded in obtaining the FIRST PRIZES at the principal Shows throughout the season, viz.:—

July 10.—The Grand National Rose Show, Royal Horticultural Society's Garden, Kensington Gore, 96 varieties, 3 trusses of each, First Prize.
September 11.—Forty-eight varieties, 3 trusses of each, First Prize.
July 3.—The Royal Botanic Society, Regent's Park, London, 50 varieties, 3 trusses of each, First Prize.
July 6.—The Great Rose Show, Crystal Palace, 96 varieties, 1 truss of each, First Prize.
June 19.—Brighton Horticultural Society, 50 varieties, 3 trusses of each, First Prize.
September 18.—Fifty varieties, 3 trusses of each, First Prize.
August 28.—Lewes Horticultural Society, 36 varieties, 3 trusses of each, First Prize

J. M. respectfully informs the Nobility and Gentry he can supply the best perpetual BLOOMING ROSES in Standards, Half-Standards, and Dwarfs, healthy good rooted plants.

Standards, 30s. per dozen.
Half ditto, from 24s. to 30s. per dozen.
Dwarfs, from 18s., 24s., to 30s. per dozen.
New Varieties of 1861, 42s. per dozen.

Pilt Down Nurseries, Maresfield, Sussex.

N.B. These Nurseries are 2¼ miles from the Uckfield Station on the London, Brighton, and South Coast Railway.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.

For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.

Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices. CATALOGUES of which will be shortly ready for distribution.

The Royal Nursery, Bagshot, Surrey.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

Magnificent Dwarf-trained Peaches, Nectarines and Pears, &c.

WM. WOOD AND SON refer with much pleasure to their extensive and well grown Stock of the above; the Trees are remarkably healthy, and are as handsome as can possibly be desired. Early orders are solicited to ensure the best trees.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

PINE GOLDEN PIPPIN APPLE, Dwarf Maiden and Dwarf-trained Trees.
GENERAL TODTLEBEN PEAR, Dwarf Maiden Trees.
BEURRÉ STERKSMAN PEAR, Dwarf Maiden Trees.

R. GLENDINNING has still a few Plants of the above named NEW FRUIT TREES. For their descriptions see Dr. Hogg's remarks. Price on application.

Chiswick Nursery, London, W.

Pine Apple Plants.

TO BE SOLD, a Bargain, 100 FRUITING and SUCCESSION, consisting of MONTSERRATS, BLACK JAMAICAS, BLACK PRINCES, and QUEENS, clean, healthy, strong, and well-rooted Plants. Can be delivered free at any one of the East Lancashire Railway Stations.

For price and other particulars, apply to HENRY WALTON, Edge End, Marsden, near Burnley.

NEW APPLE, "BARON WARD."—The very best late keeping variety in cultivation. Each—s. d.

Strong plants, two years, unpruned, suitable for pyramids or bushes	2	6
Strong plants, dwarfs	1	6

Description, &c. forwarded post free on application to R. BRADLEY & SON, Halam Nursery, near Southwell, Notts.

Muscat Escholata Grape.

MESSRS. J. AND C. LEE have the pleasure to offer strong well ripened Canes of this

THE FINEST OF ALL MUSCAT GRAPES,

which, though little known to Grape growers in general, deserves to be extensively cultivated. It combines the desirable qualities of setting freely with a large well shouldered handsome bunch, with berries of a rich amber colour almost as large again as those of the Muscat of Alexandria, and of the most luscious Muscat flavour.

Planting Canes	15s. 0d.	each
Fruiting Canes	21 0	„
Extra strong Fruiting Canes ..	31 6	„

Vineyard Nursery, Hammersmith, London, W.

Fruit Trees.

JAMES GARAWAY AND CO. call attention to their stock of the above, comprising

APRICOTS, NECTARINES, PEACHES } Standard and Dwarf-trained
APPLES, CHERRIES, PEARS, PLUMS } Dwarf-trained, Standard, and Dwarf-quarter.

All of first-rate quality and in good condition.

The STANDARD PEARS are unusually fine, and will be sold at a very low rate to purchasers of quantities.

CATALOGUES and prices free by post.

JAMES GARAWAY & CO., Durdham Down Nurseries, Bristol.

Fruit Trees.

R. GLENDINNING begs to offer the under-mentioned FRUIT TREES, which are strong, healthy, and true to name:—

Standard-trained PEACHES } in all the leading kinds with
Dwarf-trained „ } well ripened wood, from walls.
Dwarf-trained APPLES, in all the leading kinds.
„ PEARS „ „
„ PLUMS „ „
Standard Mdn. „ „ „
Dwarf Mdn. „ „ „
Standard Mdn. CHERRIES „ „
Dwarf Mdn. „ „ „
Standard APPLES „ „
PYRAMIDAL PEARS on Quince and Pear Stocks in a fruiting condition.

PRICED LISTS on application.

Chiswick Nursery, London, W.

SANSPAREIL STRAWBERRY (CULVERWELL'S) was awarded a First-class Certificate of Merit by the Fruit Committee of the Royal Horticultural Society. Dr. Hogg, the Secretary, speaks of it thus:—"A long tapering fruit with an uneven and coarse surface; the colour is of a dark blackish red, and the flesh is extraordinarily firm, solid, and red throughout, and very richly flavoured. It is a good forcer, and on account of its bearing carriage is well adapted for forcing early and for market."

Fine strong runners are now ready at 6s. per dozen; or 40s. per 100. A very liberal offer to the Trade when the order is for 100 and upwards. Price on application.

The following Nurserymen have taken in a supply:—

Messrs. J. Carter & Co., London	Messrs. Lee, J. & C., Hammersmith
„ Downie, Laird, & Laing, Edinburgh	„ Morrison Brothers, Aberdeen
„ Dickson & Co., Edinburgh	„ Nicholson, Egglescliffe, Yarm
„ Drummond & Sons, Stirling	„ Rumley & Sons, Richmond
„ Dickson & Son, F. & A., Chester	„ Robertson, Paul & Co., Glasgow
„ Fisher, Holmes, & Co., Sheffield	
„ Fraser, J. & J., Leyton, Essex	Mr. W. Barratt, Wakefield
„ Henderson & Son, E. G., London	„ J. Cattell, Westerham
„ Henderson & Co., A., London	„ Harrison, J., Darlington
„ Luombe, Pince, & Co., Exeter	„ Jackson & Son, Kingston
„ Lawson & Sons, P., Edinburgh	„ Morse, J., Dursley
	„ Shaw, J., Manchester
	„ Tiley, Ed., Bath
	„ Turner, C., Slough
	„ Veitch, J., Jun., London

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

Can be Seen at Sunningdale Nursery, Sunningdale Station, South-Western Railway.

CHARLES NOBLE invites inspection, and would remind all interested, that his RHODODENDRONS have taken First Prizes at the opening Show of the Royal Horticultural Society, and every other show at which they have been exhibited during the last two years.

RHODODENDRONS for forcing; KALMIAS for forcing; and a magnificent stock of all the finest kinds of Rhododendrons in the world. CONIFERS and Hardy EVERGREENS by the 100 or 1000. ROSES and a General Nursery Stock well worthy the inspection of intending Planters or Nurserymen.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s.; 20 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1861 and SPRING 1862, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

To the Trade.

CONTINENTAL, FLOWER, GARDEN, AND AGRICULTURAL SEEDS.

GEO. MACINTOSH, Agent for Mr. F. W. WENDEL, begs to announce that CATALOGUES of the above are now ready, and will be forwarded free on application. Early orders solicited.

All Communications to be addressed, Nursery, High Road, Hammersmith, W.

Seeds of Crop 1861.

CHARLES SHARPE AND CO., having completed the Harvesting of their Seeds, comprising Turnip, Mangel, Carrot, Peas, Beans, and all other varieties of Culinary and Agricultural Seeds, will be glad to forward post free on application their WHOLESALE PRICED CATALOGUE for the present season.

Sleaford.—January 25.

New Cinerarias, Gloxinias, and Pelargoniums.

F. AND A. SMITH can still supply a few sets of their New GLOXINIAS, CINERARIAS, and PELARGONIUMS.

See *Gardeners' Chronicle* of Oct. 5, 1861, and CATALOGUE which may be had gratis.

Dulwich, Surrey, S.

Superb Balsams.

F. AND A. SMITH are now sending out Seed of their Superior BALSAMS in collections of

9 Colours, separate	2s. 6d. each.
The same, mixed	2 0 „
Half the quantity	1 0 „

The above are in 18 distinct and bright colours, of carefully selected Seed, from the most double varieties.

Dulwich, Surrey.

New Azalea indica.

J. IVERY AND SON feel much pleasure in offering their two beautiful Seedlings, CARNATION and TRICOLOR, small plants at 10s. 6d., and larger at 21s. each.

They are fully described in our CATALOGUE, with all other Novelties of the Season, which will be forwarded post free upon application.

A fine lot of half Specimens and Standards for Sale.

Dorking Nursery.—Jan. 25.

Rhododendrons for Under Cover.

JOHN WATERER has an immense quantity of the above in fine bushy plants, of sizes suitable for immediate planting into Covers.

☞ It is worthy of remark that in the most severe weather Rhododendrons are never injured by Hares or Rabbits. Samples, with prices, forwarded on application.

The American Nursery, Bagshot, Surrey.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England.

The Catalogue may also be had at Mr. MAY'S, 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

OLD CHESHUNT NURSERIES, HERTS.

Gladiolus.

PAUL AND SON'S fine Collection of this superb Flower, of which the Bulbs are now ready.

Hollyhocks.

PAUL AND SON'S fine Collection of this noble Flower; fine Plants of which are now ready. Also SEED in packets of 12 fine distinct sorts at 5s. each, and mixed seed in 2s. 6d. and 1s. packets.

Roses.

PAUL AND SON'S splendid Collection of Dwarf Plants in Pots, of all the finest new kinds, with extra size plants for Forcing.

Vines.

FINE PLANTS for Fruiting in Pots or planting out.

CATALOGUES of each may be had on application by post.

Florists' Flowers and Seeds.

CAREY TYSO, Wallingford, Berks, begs to offer Choice Assortments of

DOUBLE ANEMONES, 100 fine sorts, 1l. 1s. to 1l. 6s.
*RANUNCULUSES, 100 ditto, 1l. 7s. to 2l.
*RANUNCULUSES, 100 ditto mixed, 5s. to 1l.
*IMPORTED GERMAN SEEDS, Asters, Stocks, Balsams, Immortelles, Larkspurs, Wallflowers, Zinnias, &c., in named assortments, from 1s. to 5s. each.
All the popular ANNUALS,* 50 varieties, 1 packet each, 10s.; 25 ditto, 5s.
Choice RANUNCULUS, PINK, SWEET WILLIAM, and ANEMONE SEEDS,* 2s. 6d. and 5s. per packet.

The articles marked * can be sent by post.

PRICED CATALOGUE for one label for the postage.

CELOSIA AUREA var. PYRAMIDALIS SANGUINEA, and a New Lemon Variety.—These are really magnificent plants, with flowers like a plume of feathers, and continue in bloom from July to December. The C. aurea here offered, G. P. believes to be an improvement upon the var. usually grown, from being more compact in its habit, and the colour a brilliant orange. Seeds of G. P.'s own saving in packets of 100 seeds, each 1s. Price to the Trade on application.

GEO. PARSONS, Nurseryman and Seedsman by Appointment to Her Majesty, 27 and 28, Western Road, Brighton; Nurseries, Montpellier Road and Hassock's Gate, Keymer.

Grape Vines from Eyes in Pots, of all the Choicest Sorts.

LUCOMBE, PINCE AND CO. respectfully invite an inspection of their fine healthy stock of extra strong VINES, consisting of all the best varieties in cultivaticn, with well ripened Canes 6 to 8 feet high, propagated from Eyes taken from their own experimental Vinery.

List of sorts and prices may be had on application to them.
Exeter Nursery, Exeter.

Strong Grape Vines from Eyes.

R. GLENDINNING begs to offer strong GRAPE VINES from Eyes of all the leading sorts, fit for immediate planting. The Eyes were taken from Vines which bear fruit on the Premises.

PRICED LISTS on application.
Chiswick Nursery, W.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, JUN., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.

CATALOGUES on application.

SUTTON'S SEED CATALOGUE for 1862 is now ready, and will be sent gratis and post free.
SUTTON & SONS, Seed Growers and Merchants, Reading.

ROYAL DUBLIN SOCIETY.
HORTICULTURAL EXHIBITION, 1862.

The Horticultural Exhibition will be OPENED on TUESDAY, June 17, and be continued on each day and evening during the week.

The Exhibition will be open to all classes of cultivators free of expense, and every facility will be given for the Sale of Plants, &c.

Exhibitors will be at liberty to remove Orchidaceous and Stove Plants between 5 and 7 o'Clock P.M. on the first day, and any other plant or specimen before 12 o'Clock on any day after Thursday, June 19.

Parties not wishing to compete are invited to send in specimens for exhibition.

Horticultural Implements will be received for exhibition but not for competition.

The Prize List, which will shortly be ready, may be had on application at the Society's House, Kildare Street.

WM. EDWARD STEELE, M.D., Assistant Secretary.
Kildare Street, Dublin.

The Gardeners' Chronicle.

SATURDAY, JANUARY 25, 1862.

A FEW years since some discussion took place in the *Gardeners' Chronicle* as to whether the DEODAR and CEDAR OF LEBANON are really distinct species, or merely remarkable varieties of one common stock. Like most questions of the kind it received no satisfactory reply, the controversy resolving itself into a mere matter of opinion not of evidence. The point may now, however, be regarded as definitively settled by a very curious and most interesting set of observations published by Dr. HOOKER in the new Number of the *Natural History Review*.*

In the autumn of 1860 Dr. HOOKER, in company with Captain WASHINGTON, R.N., Hydrographer to the Admiralty, visited Syria for the express purpose, *inter alia*, of examining the Cedar Grove on Lebanon, concerning which we had no information from men of science. The travellers arrived at Beyrout on the 25th September, and, thanks to Captain MANSELL'S arrangements, they were equipped and off on the following day, accompanied by himself, on a fortnight's journey, taking the Cedars in their way to the summit of Lebanon (whose height had never been ascertained). On the 29th they reached the Kedisha valley, and camped in the evening at its head, under the Cedars, at an elevation of 6172 feet. The party remained two nights there, and from it twice ascended the Lebanon, which gave them excellent opportunities of studying the relative position of the grove to the surrounding country, from various heights and positions on the flanks of the enclosing valley. Furthermore, two of the party, the Rev. G. WASHINGTON and Mr. HANBURY, devoted a day to counting and measuring the trees, and to making a rough ground plan of their positions. Captain MANSELL also procured a capital section of the lower limb of one of the oldest trees (which lay dead on the ground), and which proved very important, since it gave a totally different idea of the hardness of Cedar-wood from what English-grown specimens do.

The observations taken by the travellers showed the height of Lebanon itself to be about 10,200 feet, and that of the valley where the Cedars grow about 6200 feet. We quote at length Dr. HOOKER'S very important statement, which cannot be much curtailed with justice to the learned author:—

"So far as is at present generally known, the Cedars are confined on Lebanon to one spot, at the head of the Kedisha valley; they have, however, been found by EHRENBERG in valleys to the northward of this. The Kedisha valley, at 6000 feet elevation, terminates in broad, shallow, flat-floored basins, and is two to three miles across, and as much long; it is here in a straight line 15 miles from the sea, and about three or four from the summit of Lebanon, which is to the northward of it. These open basins have shelving sides, which rise 2 to 4000 feet above their bases; they exactly resemble what are called Corrys in many highland mountains; the floor of that in which the Cedars grow presents almost a dead level to the eye, crossed abruptly and transversely by a confused range of ancient moraines, which have been deposited by glaciers that, under very different conditions of climate, once filled the basin above them, and communicated with the perpetual snow with which the whole summit of Lebanon was at that time deeply covered. The moraines are perhaps 80 to 100 feet high; their boundaries are perfectly defined, and they divide the floor of the basin into an upper and lower flat area. The rills from the surrounding heights collect on the upper flat, and form one stream, which winds amongst the moraines on its way to the lower flat, whence it is precipitated into the gorge of the Kedisha. The Cedars grow on that portion of the moraine which immediately borders this stream, and nowhere else; they form one group, about 400 yards in diameter, with an outstanding tree or two, not far from the rest, and appear as a black speck in the great area of the corry and its moraines, which contain no other arboreous vegetation, nor any shrubs but a few small Berberry and Rose bushes, that form no feature in the landscape.

"The number of trees is about 400, and they are disposed in nine groups, corresponding with as many hummocks of the range of moraines; they are of various sizes, from about 18 inches to upwards of 40 feet in girth; but the most remarkable and significant fact connected with their size, and consequently with the age of the grove, is that there is no tree of less than 18 inches girth, and that we found no young trees, bushes, nor even seedlings of a second year's growth. We had no means of estimating accurately the ages of the youngest or oldest tree; nor shall we have, till the specimens of the former arrive. It may be remarked, however, that the wood of the branch of the old tree, cut at the time, is 8 inches in diameter (exclusive of bark), presents an extremely firm, compact, and close-grained texture, and has no less than 140 rings, which are so close in some parts that they cannot be counted without a lens. This specimen, further, is both harder and browner than any English-grown Cedar or native Deodar, and is as odoriferous as the latter. These, however, are the characters of an old lower branch of a very old tree, and are no guide to the general character of the wood on the Lebanon, and still less to that of English-grown specimens, which are always very inferior in colour, odour, grain, and texture. Calculating only from the rings in this branch, the youngest trees in Lebanon would average 100 years old, the oldest 2500, both estimates no doubt widely far from the mark. Calculating from trunks of English rapidly-grown specimens, their ages might be calculated as low respectively as 5 and 200 years; while from the rate of growth of the Chelsea Cedars, the youngest trees may be 22, and the oldest 6 to 800 years old.

"The positions of the oldest trees (of the 400) afforded some interesting data, relative to the ages of the different parts of the grove, and the direction in which it had lately spread. There were only 15 trees above 15 feet in girth, and these all occurred in two of the nine clumps, which two contained 180 trees. Only two others exceeded 12 feet in girth, and these were found in immediately adjoining clumps, one on one side and one on the other of the above mentioned. There were five clumps containing 156 trees, none of which was above 12 feet in girth, and these were all to the westward (or down-valley) side of the others. On this side, therefore, the latest addition to the grove has taken place."

"The nearest point to the Lebanon at which Cedars have been found, is the Bulgar-dagh chain of the Taurus in Asia Minor, and from that point forests extend eastward to Pisidia, in long. E. 32°, westward to long. E. 36°, and northward to the Anti-Taurus, in lat. 40° N.; growing at elevations of 4000 to 6400 feet above the sea. The Lebanon may be regarded as a branch of the Taurus, and is 250 miles distant from the Cedar forests upon that chain. Between individuals from the Lebanon, and the common Asia Minor form, there is said to be no appreciable difference, by those who have examined both: but there are two distinct forms or varieties in the latter country; one having shorter, more stiff and glaucous or silvery foliage than the other; this is the Silver Cedar, C. argentea, of our gardens. Northern Syria and Asia Minor form one botanical province; so that the Lebanon grove, though so widely disconnected from the Taurus forests, can be regarded in no other light than as an outlying member of the latter.

"At a distance of 1400 miles from the Cedar forests of Asia Minor, and separated by the whole breadth of the Mediterranean sea, are those of Algeria. These form the prevalent arboreous vegetation throughout the eastern province of Constantine, which borders on Tunis, and they also abound on the eastern Atlas ranges; though whether they extend to the greater Atlas and into the kingdom of Morocco is not known. They characterize the upper mountain zone (5200—7200 feet), and approach within 20 miles of the sea. The African Cedar differs from that of Lebanon in having a perfectly erect, rigid leader, and straight, stiff ends to the branches, all which, in the Lebanon plant, droop more or less. In the African the cone is generally smaller, the leaves shorter and more glaucous, and the scales and seeds triangular in form (instead of quadrangular). There are two forms of Cedar in Algeria, as in Taurus, and characterised by the same differences in each country, viz., a greener longer-leaved, and a more silvery shorter-leaved variety. Nevertheless it is generally easy to distinguish the Atlas Cedar from the Lebanon one, and in beds of young plants the differences are very marked, though it is always possible to pick out deceptive specimens.

"Proceeding eastward from the Lebanon, we come, after another 1400 miles, to the Cedar forests of Affghanistan, which extend thence continuously eastward along the Himalaya, almost to the confines of Nepal. The Cedrus Deodara is in India exclusively a western tree; it begins where the influence of the monsoons is much diminished, that is, where the climate begins to approximate to that of the Levant. It inhabits various elevations between 4000 and 12,000 feet, and in Affghanistan outnumbers all other Pines in abundance of individuals. The C. Deodara has a much more pendulous leader and ends to its branches, and longer leaves, of a more glaucous hue, than C. Libani, though not such silvery leaves as the C. Atlantica. The cones are as large as those of C. Libani, but the scales and seeds are of the same form as those of C. Atlantica, and hence markedly different from those of C. Libani."

These statements seem to show conclusively that as species the 3 Cedars cannot be distinguished, and that they must have all been derived from one common stock:—"It should be added, that there are no other distinctions whatever between them—of bark, wood, leaves, male-cones, anthers, or the structure of these—nor in their mode of germination or duration, the girth they attain, or their hardiness. Also, that all are very variable in habit; so much so, indeed, is this the case with the Deodar, which is the most distinct of all in habit, that though it was not introduced much more than 30 years ago, there are already five distinct varieties sold by nurserymen, some as stiff, others as dark coloured, and others as short-leaved as the Lebanon Cedar. Also, that though the differences in the shape of the scales and seeds of Deodara and Libani are very marked, they vary much; many forms of each overlap; and further transitions between the most dissimilar, may be established by intercalation of seeds and scales from C. Atlantica."

Further Botanical reasons are given in support of these conclusions. Nevertheless Dr. HOOKER is of opinion that they should be regarded as three well-marked forms, which are usually very distinct, but which often graduate into one another, not as colours do by blending, but as members of a family do, by the presence in each of some characters common to most of the others, and which do not interfere with, or obliterate all the individual features of their possessor. Moreover, he regards them as in so far permanently distinct plants, that though all sprang from one parent, none of them will ever assume all the characters either of that extinct parent or of the other two forms. "There will, in short, be no absolute

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reversion amongst these. Each will yield varieties after its own kind, retaining some of the characters of their progenitors, and assuming others foreign to them all; and it will depend on their relative success in the struggle for life in a wild state, and upon the wants of man in a cultivated one, which of these shall be preserved, and for how long."

We regret that want of space renders it impossible to add the very interesting remarks upon the probable cause of plants all sprung from one being now so sundered geographically that one race lives in Western Himalaya, another in Syria, and a third on the eastern range of Atlas. We are sure, however, that what has been said will lead our geological readers to consult the original paper.

THE safe return of Mr. FORTUNE from Pekin will, we are happy to say, be attended by an introduction of plants undoubtedly hardy; for in that bitterly cold city, and on the surrounding hills, nothing can survive the winter except frost-proof species. Dried specimens placed in our hands enable us to state that among them is *Quercus chinensis*, a fine evergreen Oak with leaves like those of a Sweet Chesnut; it is also used as a dye. There is also an extremely pretty two-leaved *Pinus* with small elegantly carved cones, and very slender leaves; a couple of *Biotas*, apparently distinct from the Chinese Arbor-vitæ, and at all events different from the varieties of that species now in cultivation. A very nice-looking *Vitex* like our Agnus Castus, but with handsomely cut leaves, is also in the collection. And, finally, an *Artemisia* has been brought from Tein-tsin, with stems as thick as those of a tree Rose, and used by the Chinese as a stock on which to graft Chrysanthemums; by aid of this species we understand that little standards of that fine plant are easily prepared.

The remarkable set of new plants shown last summer in the Garden of the Royal Horticultural Society by Mr. STANDISH announced that Mr. FORTUNE had then been busy in Japan. We have now before us evidence that some very striking species have been obtained in that country besides those which were then produced. There is an exceeding pretty new *evergreen Holly*, looking almost like a Tree Box, or an Evergreen Privet; a superb *Primrose* with flowers of the colour of Azalea amœna! arranged in tiers one above the other; two fine *Weigelas* new to gardens, one of which is the *W. grandiflora* of Siebold; another *Skimmia*; the scarlet *Lychnis Senno*; a *Spiræa* resembling *Ulmaria*, but with deep crimson flowers; and a beautiful *Deutzia* with double pink flowers. We also observe the *Aucuba japonica* with rich crimson berries as large as Olives; now that the male of this plant has been introduced we may hope to see the bushes already in the country, all of which are female, loaded with their glowing fruit.

As soon as we have certain information as to what of these and other varieties are safely established, we shall introduce them to our readers in full detail. All that we can do for the present is to announce their arrival.

A FEW WORDS ON GOURDS.

THE competition for premiums for varieties of Gourds offered by the Horticultural Society this autumn opens up a very interesting field of enquiry, to which little systematic attention has yet been given in this country. Whether for mere ornamental culture or for edible purposes, Cucurbits deserve some greater degree of attention than has hitherto been given to them. Although natives for the most part of the tropical regions, they have made their way very generally in North America and parts of Europe, and a word or two as to the edible portion of the family may not be out of place.

In Canada the Pumpkin is extensively grown, being always planted with Indian Corn, and cattle and swine are fed with it in the autumn. Among the old fashioned American settlers the Pumpkin is much esteemed for pies, and a kind of molasses is prepared from the fruit by long boiling. When properly made there is not a better dish eaten than a good Pumpkin pie. The English and American modes of making it are however very different, and I must decidedly give the preference to the American dish, which is something between a custard and a cheesecake in taste and appearance. An American poet, J. G. Whittier, thus celebrates Pumpkin pie, an institution of Thanksgiving Day:—

Oh! greenly and fair in the lands of the sun,
The Vines of the Gourd and the rich Melon run,
And the rock and the tree and the cottage enfold,
With broad leaves all greenness and blossoms all gold;
Like that which o'er Nineveh's prophet once grew,
While he waited to know that his warning was true,
And longed for the storm cloud, and listened in vain
For the rush of the whirlwind and red fire rain.

On the banks of the Xenil the dark Spanish maiden
Comes up with the fruit of the tangled Vine laden;
And the Creole of Cuba laughs out to behold
Through Orange trees shining the broad spheres of gold;
Yet with dearer delight from his home in the north,
On the fields of his harvest the Yankee looks forth,
Where crook-necks are coiling and yellow fruit shines,
And the sun of September melts down on his Vines.

Ah! on Thanksgiving Day, when from East and from West,
From North and from South come the pilgrim and guest,
Where the grey-haired New Englander sees round his board
The old broken links of affection restored;
When the care-wearied man seeks his mother once more,
And the worn matron smiles where the girl smiled before,
What moistened the lip and what brightens the eye?
What calls back the past, like the rich Pumpkin pie?

Oh! fruit loved of boyhood!—the old days recalling,
When wood-grapes were purpling and brown Nuts were falling!
When wild, ugly faces we carved in its skin,
Glaring out through the dark with a candle within!
When we laughed round the corn-heap, with hearts all in tune,
Our chair a broad Pumpkin—our lantern the moon,
Telling tales of the fairy who travelled like steam
In a Pumpkin-shell coach, with two rats for her team!

Then thanks for thy present!—none sweeter or better
E'er smoked from an oven, or circled a platter!
Fairer hands never wrought at a pastry more fine,
Brighter eyes never watched o'er its baking than thine!
And the pr yer, which my mouth is too full to express,
Swells my heart that thy shadow may never be less;
That the days of thy lot may be lengthened below,
And the fame of thy worth like a Pumpkin-vine grow,
And thy life be as sweet, and its last sunset sky
Golden-tinted and fair as thy own Pumpkin Pie!

Mrs. C. P. Traill, in her "Canadian Settler's Guide," furnishes the following directions for making Pumpkin pie:—

Select a good sweet Pumpkin, fully ripe. To ascertain if it be a sweet one, for there is a great difference in this respect; cut a piece of the rind and taste it, and cut several, and then you can judge which is best. The sweetest Pumpkins require less sugar and are much richer. Pare and cut the fruit into slices, removing the seeds. Cut it into small pieces and put it on the fire with about a pint of water, covering the pot close. You are not to bruise or stir it. Should the water boil away so as to endanger the Pumpkin burning to the bottom of the pot, a small quantity more of water may be added. It will take three or four hours to boil quite soft, and of a fine brownish yellow. When the Pumpkin is as soft as mashed Turnips, pass it through a hair sieve or a colander; then add new milk and two or three eggs well beaten, with grated ginger, as much sugar as will make it sweet enough to be pleasant. Pounded and sifted cinnamon is frequently used as spice, or nutmeg; but ginger and cinnamon are preferable to any other spice for Pumpkin pies. The milk must not be sufficient to thin the Pumpkin too much, for if too thin more eggs will be required to set it. It absorbs a great deal of milk and is better to stand some little time after the milk is added, before being baked. Make a nice light paste, line your dishes, and then put in your mixture. These pies are always open, not with a cover of paste over them. A very rich Pumpkin pie may be made by adding cream, lemon peel, the juice of a lemon, and more eggs.

Another way. Boil your Pumpkin as before directed, for three or four hours; bruise it fine with a pestle, such as you pound Potatoes with; mix with new milk, and two or more eggs, as you like; add a little sugar and ginger or allspice, and bake in lined tins for half an hour. Some people grate the raw Pumpkin on a coarse grater, boil it with a very little water for an hour or so, then add milk by degrees, as long as it will absorb it, keeping it simmering slowly. When well boiled and swelled let it cool; when cold sweeten and season, and bake as in the other receipt.

A finer dish than a good Pumpkin pie can hardly be eaten; and it is within the power of any poor man's family to enjoy this luxury. They have a cant term in the United States, when speaking of a person who entertains a very high opinion of himself, "He thinks he's some pumpkins." I came across the following paragraph in a recent New Brunswick paper:—"We yesterday partook of a pie made of dried Pumpkin twelve years old, and it was as palatable as if made of the growth of the present season. We are indebted to the kindness of Mrs. George R. Boyer for the materia of which the pie referred to was made; she having dried the Pumpkin twelve years since." The following is the mode of preparing dried Pumpkin:—Boil down the Pumpkin, and when soft take it out of the pot, spread it on dishes or tins, and set them in the sun or by the fire to dry. When quite dried pack in paper bags, and hang up in a dry room. This mode will enable you to make Pumpkin pies at any season when required. Steep it in milk till it swells and softens, and make your pies as usual. Some cut the Pumpkin in rings and hang it up to dry in the kitchen, but it is apt to mould and turn black. Possibly, if dried at once in the sun or in the oven, it would keep better. Even the leaves and shoots of the Pumpkin are edible, and form excellent Spinach.

Pumpkin molasses is made by boiling down a quantity of ripe Pumpkins for many hours, expressing the juice, and thus boiling it down to syrup.

Molasses is also made in America from the Water Melon. "When the weather becomes cool, in September, we haul a quantity of them to the house, split them open, with a spoon scrape out the pulp in a colander, and strain the water into vessels. We boil it in an iron vessel, then put in Apples or Peaches, like making Apple butter, and boil slowly until the fruit is well cooked, then spice to taste, and you have something that most people will prefer to Apple-butter, or any kind of preserves. Or the syrup may be boiled, without fruit, down to molasses, which will be found as fine as any sugarhouse molasses. We have made in a fall as much as 10 gallons of the Apple-butter, if I may so call it, and molasses which has kept in fine condition till May."

The Squashes (C. Melopepo) are extensively grown in America. The seeds are either set in a hollow basin, one or two in a place, or on hills; but hollows are considered preferable, as the loose soil dries too much. Squashes are of various kinds and qualities, and are boiled green like the Vegetable Marrow, or mashed like Turnips, with milk and pepper and salt. When ripe they are made into pies in the same manner as Pumpkins.

The greater number of Gourds are left to their natural growth, and have received very little careful culture either in America or France, where they are most grown.

The young fruit of many species is much used for pickling. Some are gathered in France when of the size of an egg, boiled whole in salt and water, laid upon toast and eaten as Asparagus. The Warted Gourds (C. verrucosa) are edible, and used in America as a sauce for meat. The seeds will keep for six or eight years. The plants may also be propagated by slips. The seeds of many of the Cucurbits have an economic value. The natives of India dry the seeds of Cucumis utilissimus and grind them into a meal, which is used for food. A mild oil is also expressed from them for burning in lamps; nevertheless the seeds of some are dangerous. Cucumber seed yields a bland oil, and in Western Africa some Cucurbits furnish an oil called Egusse, largely used for dietetic purposes. The seeds of the Pumpkin furnish oil by expression, and are considered in the East a cooling medicine.

What Oranges and Nuts are to us English, and Olives to the Gauls, Water-Melon seeds are to the Chinese. The scarlet and yellow Melons are in some places grown only for the seed, and are piled up by the side of the road for the use of any traveller who will scoop out the seed for the proprietor. On the rivers (says a recent traveller) I have seen whole junks laden with these seeds. In the loneliest parts you can procure them when all other food is scarce. The 300 millions of Chinese all eat them. When friends meet to drink tea or rice wine, there is always an accompaniment of Water-Melon seeds. They are piled up on every dinner table. They are eaten while travelling in the palanquins. They are picked out while discussing bargains. If a workman has a few sapecks, he does just what his child would do—buys Water-Melon seed. They are an amusement and a food—as the cigarette is to the Spaniard, and the Betel Nut to the Hindoo. *P. L. S.*

A LIST OF THE PRINCIPAL TIMBER TREES GROWING IN THE VICINITY OF KANAGAWA AND YEDDO, JAPAN.

1. *Eng-o.*—In common use for building purposes and rough work.

2. *Mo-Ku.*—Fine wood. It is heavy, hard, and has a very close grain; used for saddles and turning.

3. *Abies firma and other species of Abies.*—A. firma is the commonest of the Abies in this neighbourhood. The wood is fine but soft, in common use for building and making articles of every day requirement.

4. *Pinus parviflora.* — Very commonly used for building.

5. *Abies Tsuga.*—This is considered a very good wood by the Japanese. It has a very close grain. It is strong and much sought after for building purposes.

6. *Cryptomeria japonica.*—This is one of the commonest and most useful timber trees in Japan. It grows throughout the empire from Nagasaki to Hakodadi. The wood is of a reddish brown, light and soft. From its cheapness it is perhaps more used than any other timber.

7. *Ulmus sp.*—The Japanese Elm. There are many different kinds of this. I have specimens of several before me now, but whether they are all distinct species or only varieties it is difficult to say. This is I think the finest timber in Japan, and more useful than their Oak. It is hard, very strong, of a dark brown colour, and has a beautiful grain. It polishes well, and is very largely used for facings in houses, doors, furniture, cabinets, &c. I have seen planks 4 to 5 feet in width. If this tree can be introduced into Europe it will doubtless prove most valuable.

8. *Cephalotaxus drupacea.*— Used principally for ship-building.

9. *Quercus sp.* —A species of Oak, but not the common Oak of the country. It is first-rate timber, very hard and strong. Used where great strength is required; also for rudders of ships, sculls, &c.

10. *Quercus sp.*—A variety of the above and used for the same purposes.

11. *Retinospora pisifera.* — Common throughout Japan, but does not attain a great size as a timber tree.

Employed principally for making tubs, barrels, baths, &c.

12. *Salisburia adiantifolia.*—Trees of this attain an immense size, but the wood is apparently not much valued by the Japanese. It is of a very white colour, soft, and light. It is used for cabinets, boxes, &c. It polishes well.

13. *Ku-a.*—A coarse-grained light wood, used for ordinary purposes. It polishes.

14. *A species of Thuja or Retinospora.*—Not a very valuable wood. It is soft and light.

15. *Ku-ro-bi.*—Dark-coloured soft wood. It is a good deal used for wainscoting houses, ceilings, &c.

16. *Sing-y.*—Of little value, used for ordinary purposes.

17. *Mo-mo.*—This is a heavy strong wood, but does not attain a great size. It polishes, and is used for cabinets, boxes, &c.

18. *Pawlovnia imperialis.*—A very light wood, used for bottoms of shoes, &c.

19. *Retinospora obtusa.*—One of the most valued, useful, and generally grown timber trees in Japan. The wood is light, white and fine. Temples and chapels are generally built of this. It is much used in houses, especially for flooring. It stands well in water and under ground; also much used for ship-building.

20. *Thujopsis dolabrata.*—One of the most beautiful and graceful trees in Japan; the wood is coarse in grain and light in weight; used for building purposes.

21. *Mĕe.*—A very fine timber tree; the wood is heavy and hard. It polishes beautifully, and is on that account very much used for making the lacquer boxes, cabinets, &c., for which Japan has become celebrated.

22. *Pawlovnia sp.*—A light coarse wood, used for the same purposes as No. 18.

23. *Thuja sp.*—A light wood used for house work.

24. *Quercus sp.*—The Oak of Japan. There are many species, both evergreen and deciduous; some of the former attain a great size in this locality. The timber is splendid, I think it would prove for practical purposes equal to any Oak in the world. It is used for all purposes where heavy strong timber is required. The handles of Japanese swords are made of Oak.

25. *Unknown Genus.*—A beautiful wood, very fine grain, of a dark brown colour and medium weight. When planed it has a beautiful silky appearance. It is considered by the Japanese one of the best woods for neat or fine work, and very highly prized.

26. *Retinospora sp.*—This is said by Siebold to be the R. squarrosa, but the Japanese say it is different. The specimens I have are very near R. obtusa. It is a good wood, light, and used for building purposes.

27. *Maple.*—There are several species and varieties of Acer in Japan. The timber is similar to that of Europe, but apparently not much used by the Japanese. The trees are highly valued, being great ornaments to their parks and gardens.

28. *Pinus densiflora and Massoniana.*—The common Pines of the country. Their wood is not distinguished by separate names. These trees attain a great size; the planks are broad, of fine quality, and answer to the Deal of Europe. Resin is also obtained from both species. The Japanese value these trees highly; they are planted as avenues along the main roads, and as land marks on the highest hills. The Japanese are also very fond of dwarfing these Pines, and training them horizontally.

29. *Diospyros Kaki* (*the Persimon*).—One of the fruit trees of Japan; the fruit is about the size of a medium Plum, and of an orange colour. The wood is not extensively used, it is hard, but will not stand long exposure to the weather. It is principally used for small boxes and fine work.

30. *Ho.*—Light white wood. All the sword sheaths in Japan are made of this.

31. *Shira-lu.*—A light white wood used for building.

32. *Ya-ma-na-ra-shi.*—Used for shoes, sword handles, and such like purposes.

33. *Na-ra.*—Small boxes and fine work, not common.

34. *Kats-u-no-ki.*—Very nice light wood, used for making chopsticks, &c.

35. *Ku-rong-na-ki.*—A very scarce and expensive wood in Japan; it is almost black, very hard, and much resembles ebony. It is used for the very finest lacquer cups, &c., and polished articles.

36. *Cam-boc.*—A small tree, never attaining sufficient size to be of any use as a timber tree. It is largely used for making toothpicks. The bark has a peculiar and pleasant aromatic flavour. A small portion of the bark is allowed to remain on each toothpick. All the Japanese use them regularly after every meal. Toothpick making is quite a trade in this country.

From the opinion I have been enabled to form, many of these trees will prove highly valuable as timber trees in England, more particularly Nos. 3, 7, 19, 24, 25, and 28. No. 19 is an exceedingly useful wood, but probably the most valuable, the finest timber in this part of Japan is the Elm (No. 7). This is beyond all doubt a splendid tree, and one which should, if possible, be largely planted in England.

Yokohama, Sept. 21, 1861. J. G. VEITCH.

Window Gardening.

IN-DOOR PLANT CASES.—The interesting remarks on plant cases and their arrangement in the *Gardeners' Chronicle* for January 4, led me to try several new ways of arranging the plants, so as to avoid more and more anything like crowding, while using to the utmost the advantages given by my heated plant cases.

I find that a very charming arrangement for a 4-foot case is to have one row of plants down the centre, a Myrtle beginning the line to the arranger's left; then a White Camellia, Red Poinsettia, Dracæna terminalis, a Heath and a Gardenia, or some other stove plant or evergreen.

The Heath is of all these plants the least well placed, because it ought not by rights to have heat at the roots. A rather low and spreading Gardenia, with an evergreen creeper, or a Euphorbia jacquiniflora at the end to the right, might therefore be an improvement. In my own case however a thick mat of felt seems nearly entirely to insulate the Heath, though the surrounding plants are warm.

Along the whole side of the case next the room I have a wide band of Lycopodium denticulatum, and between it and the central row several Ferns, Davallia dissecta, D. canariensis, Adiantum formosum, Davallia dissecta and D. canariensis again, and Selaginella Lobbii. These give to the group a delightfully light appearance, and grow very well in the shade of the larger plants. On the brightest side, next to the glass, I have a row of Chinese Primroses, small Heaths, Begonias, Van Thol Tulips, Pteris tricolor, P. argyræa, and pots of green Moss to fill up any vacancies.

By this arrangement I find I can fill the case without the least look of crowd, and without hurting the plants.

The only thing that in these groups sometimes almost compels a crowd is the absence of a few distinct and well marked flowers. It is almost impossible to make up a bouquet of five or six sprays of little flowers without some one very distinct bright centre, and thus I have been compelled sometimes to crowd the plants in a case to suffocation, simply from the absence of everything distinctive, and from the plants contained, even when most beautiful, being shaded into, or blotched with mixed colours, detracting from the brilliancy of one. Thus I always find that one or two very clear and very vividly coloured flowers are more effective than many other plants.

DRACÆNA TERMINALIS.—Some amateur gardeners may like to know the surprisingly good effect produced on this plant by sponging the leaves with more than milk-warm water. I use it about 90° to 100°.

The leaves when beginning to assume a dark green and dull appearance, become under this treatment delightfully glossy, and resume within two days or so their brilliant crimson colour.

The process merely requires a small piece of soft sponge, 2 inches wide, which should be firmly passed down each leaf from the stem to the point, both on the upper and under surface.

The sponge must be well washed frequently while using it, and the plant should be replaced in a mild root heat. *E. A. M.*

Home Correspondence.

Temperature in its relation to Moisture.—In the extract in your last Saturday's impression from the report of the Botanic Garden at Jamaica, taken from the West Indian Magazine for November, the following fact is stated:—"It must be observed that as moisture reduces the temperature of the earth and atmosphere, it is in a measure equivalent to altitude." This appears to require some explanation. I am not certain whether the writer alludes to hot climates alone; for in England moisture is generally accompanied by warmth, so much so, that we often say it will be warmer if rain or snow fall; and the most humid portions of the British Isles are decidedly warmer than many of the drier, even though to the south of them. I am aware that the temperature of the soil is increased by under-draining, and that thermometers indicate a much greater degree of frost in low wet grounds than upon dry hills; but this fact does not appear exactly to answer the question whether moisture reduces the temperature of the atmosphere in England when not followed by severe frost. Even then, I believe, it was found in the year 1860, that the cold was greater in the comparatively dry counties of Essex, Cambridge, and Nottingham, than in Lancashire, Cumberland, and Westmoreland. The opinion given that excess of moisture is, to a great extent, equivalent to altitude, seems to require confirmation; the altitudes must be great. *Lowlander.*

Mushroom Houses.—I regret that an earlier moment has not offered to allow me to give attention to the wish expressed by "W. C. E." in your Paper of Jan. 4, respecting the erection of Mushroom-houses. Let me remark that the opportunity of building greenhouses, pits, and other garden structures is one coveted by most gardeners, but it is a privilege that does not fall into the hands of every man; the majority have to do the best they can with the old-fashioned places bequeathed to them by their predecessors, who often loved strength more than elegance, and whose notions of convenience by no means accord with the opinions on such matters entertained in the present day; but however rudely constructed, a just appreciation of the several claims of Pines, Vines, Peaches, &c., was allowed in the erection and appropriation of their glass structures; but not so with Mushrooms. Growing in the dark, any old shed, outhouse, or cellar, was supposed good enough, and many gardeners have had their skill taxed to the uttermost to produce Mushrooms in such places. Modern gardens have now their improved Mushroom houses, fitted with all the means and appliances suggested by more advanced skill in Mushroom growing, and greater success and less labour is the result; but Mushrooms are still grown in the dark, and it is a question whether the artificially grown Agaric ever equals in quality and flavour the wild examples pulled fresh from their native beds in the open breezy fields. Have we done right in keeping our Mushroom houses close and dark? Let us inquire a little into the nature of Agaricus campestris, and examine the circumstances which surround it in its wild state, and see if there is anything that suggests the propriety of employing dark sheds in preference to glazed structures. In the first place, in seeking for Mushrooms, we do not enter dark and humid woods. Neither would an expert Mushroom gatherer ever enter cold and gloomy valleys, where the sun never shines, but he would pursue his search in sound open healthy pastures, enriched by cattle, and capable of feeding a beast to the acre, or carrying 2 tons of hay as meadow land—land which does not grow Moss, nor yet dry up and wither the Grass in summer. And satisfied as to the localities they prefer, we next inquire concerning the time of their appearance, that we may gain a further lesson in managing the crop artificially. In our varying seasons their appearance is irregular, governed by the distribution of heat and moisture in the summer months, but they are most commonly found in the months of July, August, September, or October, when, in fact, the maximum amount of terrestrial heat is found to exist. We have thus noticed the disposition evinced by Mushrooms for rich, sound soil, and remarked their development at periods when the greatest amount of earth heat is found. We may still notice a peculiarity which has doubtless guided early growers in their choice of places for its growth—it is that it makes the greatest growth during the night, or in gloomy weather; this may be caused by the operation of the radiating heat, evolved by the attraction of the cooler air of the night or by some peculiarity in the constitution of the Mushrooms; it will be enough for us at present to have noticed that peculiarity. To imitate the circumstances which in Nature conduce to the development of Mushrooms, and to secure their application the whole year, we must have a house which will effectually temper the finer rays of sunshine in summer to its inmates, and modify the vigour of the cold of winter, or in other words we must have a house, the internal temperature of which must be under perfect command and uninfluenced by external circumstances. Let me suggest, to meet the above requirement, and to provide what "W. C. E." asks for—light and air—a house which I will endeavour to describe in a few words, reserving a more detailed account for another occasion. I would recommend your Correspondent to excavate a space for a house (span), facing east and west, 4 feet in depth, and say 30 feet by 14. Let him build a 14-inch supporting wall, which should rise 1 foot above the surface, raise a span-roof and glaze with rough plate glass, and over this, leaving a space of 4 inches between, fit a roof of wooden shutters covered with felt; the shutters to be hung on hinges so as to be lifted when it is desired to throw light on the Mushroom beds. It will be necessary to have double doors, and hollow or very thick walls at each end of the house, and dryness must be secured by thorough draining and the house heated by hot-water. One floor-bed and another raised one over it, would give great space for Mushrooms, and, in a house like this, by careful management, this pearl of the fields, as Soyer calls it, may be obtained equal to the best natural examples. *W. Ingram, Belvoir.*

Neal's Pastils.—I have used these at all times of the year for fumigating Cucumber and Melon plants. I employ them of all sizes, and I have never found them to injure a leaf of even the smallest plant. I use one pastil to a house 25 feet long by 12 feet wide. I do not consider the pastils so well made as when they were first offered to the public. The first I had were composed of what appeared to be brown paper in folds, between which was a rough dust resembling sawdust, the whole being inclosed in canvas. These gave a smoke very much like that of tobacco, and their effect on aphis, &c., was all that could be desired. In those I have had lately the brown paper has been omitted, and the whole pastil has been filled with the rough dust before described. These last gave a much blacker and denser smoke than the others, and they have not such a deadly effect on the fly. I find it much better to give a slight dose of either tobacco or pastils, and to repeat the fumigation next day, than to give such a strong application as many of my friends are in the habit of giving. *Henry Brown, Bounds Green, Colney Hatch.*

Peloria Gloxinias.—About two years ago I was very anxious to observe the germination of as many Gesneraceous plants as I could, and among those within my reach was, of course, the Gloxinia. I selected a variety called "Attraction," a plant of the normal form with drooping flowers, white with a bright rose-coloured blotch upon the lower side. This I set with its own pollen. The seed was sown and grew, but there was nothing peculiarly worth note in the germination of the seeds. The pan of seedlings was placed on one side,

and might have been thrown away, except for a prejudice of mine against destroying anything possessed of life. The following spring about eight or 10 of them were potted, merely out of curiosity, and in the autumn they flowered. I was surprised to see how true they all came to the colour of the parent; but I was still more astonished to find that nearly half of them produced the abnormal, erect, regular flowers, with five instead of four stamens, and the colour instead of being confined to a blotch on one side diffused over the whole of the throat of the flower. *C. W. C.*

Rainfall at Itchen Abbas in 1861.—

	Ins.		Ins.
January	1.11	Brought forward ..	10.43
February	2.12	July	3.72
March	3.24	August	0.95
April	0.36	September	2.90
May	1.82	October	1.37
June	1.78	November	3.75
		December	1.95
	10.43	Total	25.07

This is less than the average of the previous 11 years, by 4.55. Rain fell on 184 days, snow on 9, hail on 10. *W. W. Spicer.*

Rainfall in Cornwall in 1861.—

	Ins.		Ins.
January	1.50	Brought forward ..	21.49
February	6.30	August	1.75
March	2.96	September	3.77
April	1.15	October	3.40
May	2.0	November	6.45
June	2.85	December	3.70
July	4,73		
	21.49	Total	40.56

Henry Beddard, Gardener to J. F. Basset, Esq., Tehidy Park, Redruth, Cornwall.

Mildness of the North of Ireland.—On entering upon this place a short time ago I was particularly struck with the heat, and the uninjured appearance of the more tender trees and shrubs. Things which I had seen damaged more or less both in England and Scotland, have at this place altogether escaped the severity of last winter. Araucaria imbricata, 15 feet high, clothed with lateral branches down to the very ground, has not a browned leaf upon it; large Bays the same; smaller plants of the various Conifers have not suffered at all; Myrtles, Passifloras, Veronicas, and the old China Rose, which were elsewhere more or less injured all over—in some places killed outright—are still standing out quite green; Laurustinus, Portugal and Common Laurels have not lost a single branch, and cannot possibly have been injured in the least degree. Many other things I could bring forward as examples of plants quite lost both in England and Scotland which are now growing here as green and luxuriant as though each was no more than an ordinary winter. This season, up to the time I write (Jan. 20), has been very mild; variegated Alyssum, still out, is uninjured. In very sheltered spots both the Geranium and Calceolaria continue fresh; and Clianthus puniceus, Veronicas, Passifloras, &c., are as healthy as in the month of June. Primroses are in bloom as well as Roses against a south wall, even the old greenhouse Linum is quite at home on an exposed border. The notes of the thrush may be heard daily, but all other songsters are mute. We have not been enabled to secure ice wherewith to fill one house. *John Edlington, Crom Castle, Newtown Butler.*

French Beans at Christmas.—I was invited out to dinner a few days ago, and among the other viands which graced the hospitable board of my friend was a dish of French Beans. I expressed surprise to see them so early (for I knew that they were selling in Covent Garden at 3s. or more per 100), and I then learned that they had been preserved from the preceding year. They had merely been cut ready for cooking, mixed plentifully with salt, and put into stone jars; these were fastened down air-tight and kept in a cool place. They were of a good colour, possessed quite as much flavour as forced Beans, and could not be distinguished from freshly gathered Beans. They require soaking in water for a little while before cooking, in order that they may lose a part of the salt which they have absorbed. This plan for preserving Beans is very likely well known, but it was new to me, and may possibly be of service to some gardeners, for every practical man knows the difficulties which attend the early forcing of Beans. *C. W. C.* [This is a capital plan, but known to everybody's grandmother's grandmother.]

Nardoo: an Extraordinary Food.—I have this day received from Melbourne a few seeds of the Nardoo, which I am informed is so novel and interesting a plant, and hitherto unknown in England, that Mr. * * * has suggested my sending them to you. I refer you to the accompanying extract from a Ballarat paper sent with the seeds, one half of which I have sent to Mr. Moore, at the Glasnevin Gardens in Dublin. My brother in Melbourne writes me as follows:—"Shortly after the departure of the last mail, despatches were brought to town from the relief party sent with provisions to look for Burke's exploring party, informing us that at Cooper's Creek they had found the sole survivor of the four who had succeeded in crossing to the Gulf of Carpentaria, three of whom managed to reach the depôt at Cooper's Creek, where two of them, the first and second in command, Burke and Wills, died from starvation, King the survivor being found living with the natives, and reduced to the lowest stage of life. What adds to the melancholy story is that the party on their return from Carpentaria reached the depôt at Cooper's Creek on the very day the party long stationed there to await their return had left for Menindie. King and his companions supported themselves as long as they could upon a seed which they found the natives eating; they called it Nardoo. *John Hellicar.* [This Nardoo is the spore cases of a little plant related to Ferns, and called by Botanists *Marsilea*. It is very common in Australia, but was never before known to have any economical value. It offers no attractions to cultivators, even if it can be grown, which we doubt. As food it stands on the same level as the rhizomes of Ferns, and Typhas or the bark of trees.]

Societies.

ROYAL HORTICULTURAL.—At an ordinary General Meeting held at the Garden, South Kensington, on Monday last, Sir Wentworth Dilke, Bart., V.P. in the Chair, the following candidates were balloted for and duly elected, viz.:—

His Excellency the Italian Minister, Marquis d'Azeglio; Major M. Best; H. H. Berens, Esq.; Miss Eleanor Campbell; E. H. Cardwell, Esq.; Miss Cardwell; W. Clowes, Esq.; G. Clowes, Esq.; W. D. Davis, Esq.; H. J. Dunell, Esq.; D. D. Dymes, Esq; Mrs J. Earle; Lord Ebury; T. D. Edwardes, jun., Esq; Mrs. Fox; Mrs. Hambro; Mrs. G. Hedley; Miss L. Keily; T. Lewis, Esq; Col. A. Little; Mrs W. Moul; R. Oliverson, Esq.; C. S. Parker, Esq.; Lieut.-Gen. Sir G. W. Paty; Hon. Mrs. Stanley Penrhos; J. Perring, Esq.; Mrs. B. S. Phillips; J. Platt, Esq.; Mrs. Ramsey; R. Redgrave, R.A., Esq; Mrs. C. Reynolds; G. E. Robarts, Esq.; Mrs. Roche; Major Scott; Mrs. S. Shillingford; E. Thomas, Esq.; Hon. Mrs. Granville Harcourt Vernon; Mrs. Ward; Hon. Mrs. Westby; and J. P. Brown-Westhead, Esq., M.P.

The Chairman in a few appropriate words alluded to the highly interesting letter which the Council had received from H.R.H. the Prince of Wales relative to the Memorial of the Exhibition of 1851, and which has already appeared in our columns. It was moved by Judge Des Barres, seconded by Mr. Hesketh, and unanimously agreed to, that the letter in question should be entered on the Minutes.

BOTANICAL OF EDINBURGH: *Jan.* 9.—Prof. Balfour, V.P., in the chair. An address of condolence to the Queen on account of the death of H.R.H. the Prince Consort was adopted, and ordered to be transmitted to Sir George Grey. The following communications were read:—I. "*Description of a new species of Clerodendron, from Old Calabar, Africa.*" By Prof. Balfour. The plant was transmitted to the Edinburgh Botanic Garden some time ago by the Rev. W. C. Thomson, one of the missionaries at Old Calabar. It has flowered within the last month or six weeks, and it has a very showy appearance in the hothouse, twining along the roof to the extent of 10 or 12 feet, and giving off numerous panicles of flowers. The contrast of colour presented by its large white calyx and its crimson corolla, render it a desirable plant for cultivation. Along with the plant Mr. Thomson sent some notes and a rough pen-and-ink sketch of the flower. He also expressed an opinion that the plant was new; and if so, he wished it to be named after his late wife. The plant belongs to the natural order Verbenaceæ, and seems to be an undescribed species of Clerodendron. It has, therefore, been called Clerodendron Thomsonæ. It is a twining plant, with smooth opposite dark green leaves, having short stalks; its flowers are in axillary and terminal dichotomous cymes, with small bracts; calyx white, inflated, and five divided; corolla crimson, its tubes narrow equalling the calyx in length, its limb oblique and five lobed. The plant grows abundantly on the banks of the river at Old Calabar, above salt water range.—II. "*Notice of a Diseased Condition of Beeches at Tynninghame,* the seat of the Earl of Haddington." By Prof. Balfour. Prof. B. stated that he had received a letter from Dr. Protheroe Smith, enclosing one from the Earl of Haddington, relative to a peculiar diseased condition of Beeches at Tynninghame and Mellerstain. The letters were accompanied by specimens of a cottony matter which had appeared in large quantity on the Beech stems. Dr. Balfour had written to the Earl of Haddington on the subject, and had received the following reply:—"In regard to the specimens of the 'peculiar substance' which your letter relates to, I certainly am very desirous to know about it. I wish much to know whether it only appears upon trees already in a dying or failing state, or whether it destroys the tree upon which it appears? There can be no doubt that in every case where seen the tree dies. It is much more prevalent at Mellerstain than it is here; and very many of the Beeches there are condemned; in some cases the whole of the tree is completely covered with the substance, looking at a distance as if it were painted white; in some cases, only one side of the tree is diseased. I have been told that when it once appears in a wood it spreads rapidly, and from what I have seen at Mellerstain, I have too good reason to believe that such is the case." He had also submitted the matter for examination to Mr. W. R. M'Nab and to Mr. James Hardy, Penmanshiel. Mr. Hardy says—"The cottony substance sent is produced by Coccus Fagi—Walker; List of Homopterous insects in the British Museum, p. 1086, No. 32, with the specific character, 'yellow, elliptical, covered with white powder; length of the body, two lines.' This is the second time it has come under my notice. At first I had it from Mr. C. M'Intosh, then of Dalkeith, and gave an account of it in the second volume of the 'North British Agriculturist.' It occurs near London. Can it have been introduced from abroad with foreign Beech plants? I find the cast wrapper of a caterpillar among the cotton of the Coccus; and formerly there was one alive concealed by it: but whether it feeds on it, I cannot say, but it is not unlikely. The Coccus will be difficult to extirpate, for it is not easyto scrape the bark and apply hot water to a Beech" Mr. W. R. M'Nab remarked that Mr. M'Intosh had noticed a similar diseased condition of the Beech trees in Dalkeith Park, and had recorded the facts in the first volume of the North British Agriculturist. He seems to have considered it a Fungus. The cottony matter was at that time sent to Mr. Hardy, who ascertained that it was owing to an insect, and gave a description of it in the second volume of the same journal. Mr. M'Nab thinks the Coccus Fagi appears only on trees in an unhealthy condition, or at least in situations where they are confined in their growth by close planting. Dr. Balfour stated that the same species of Coccus had destroyed some Beech trees in the Botanic Garden, which had been planted very closely, and were hemmed in by shrubs and trees. It seems to attack healthy trees. The only remedy suggested was the application of spirit of tar or tobacco juice. Dr. Balfour remarked that the species of Coccus were often very destructive. One of them in 1842 destroyed the whole Orange trees in the Island of Fayal, one of the Azores. The usual exportation of fruit from Fayal was 12,000 chests, but in 1842 there was not one. The insect extended its devastations to St. Michael's. It was probably Coccus hesperidum. Specimens of the insect and of the cottony matter were shown.—III. "Notes in reference to the *Bursting of the Spathe of Seaforthia elegans.*" By Mr. J. Sadler and Mr. W. Bell. In this communication the authors first referred to an article which had lately appeared in the *Gardeners' Chronicle* from the pen of Dr. Seemann, describing the bursting of a spathe of Seaforthia elegans, with an audible report "almost loud enough to have proceeded from a pistol," in the Palm-house at Kew—the explosion being attributed to "a great accumulation of heat, developed by the anthers whilst inside the spathe." The authors then stated that they had had ample opportunities for observing the flowers of the Seaforthia in all their different stages of development in the Palm-house at the Edinburgh Botanic Garden, and as yet had never seen anything which gave the least indication of a sudden rupturing of the spathe. In some cases they had seen the old foot-stalk of the leaf which covered the spathe fall off two or three days before the spathe showed any signs of bursting, and when it did burst it opened gradually from the base to the apex, generally on the dorsal aspect; indeed, they had only observed a single instance where the rupture occurred on the ventral side. Again, they had seen the spathe burst two or three days before the old foot-stalk fell off, and when it fell upon the floor it generally gave a pretty sharp crack, which they thought had been probably regarded as proceeding from the bursting of the spathe, as Dr. Seeman states that the spathe in bursting "forced off the remnant of the old leaf-stalk." When the spathe bursts previous to the fall of the foot-stalk that covers it, as soon as it is removed the branches of the spadix immediately expand, and, to all appearance, it looks exactly as if the spathe, in the act of bursting, had knocked off the foot-stalk. Dr. Seemann supposes that the report was due to an accumulation of heat, produced by the anthers. This, however, the authors thought could not be the case, as a considerable time elapses between the bursting of the spathe and the opening of the flowers; this they had never observed to be less than three weeks, and generally more than a month. A tree in the Palm House at the Botanic Garden burst its spathe five weeks ago, and had not yet a single flower expanded. After the bursting of the spathe the branches of the spadix continue to increase both in length and thickness, and until they have reached their maximum development they had never seen a single flower expand. Dr. Lindley, in his "Introduction to Botany," and Dr. Balfour, in his "Class Book," both state that the greatest amount of heat during the period of flowering is when the anthers are ready to discharge their pollen, after which it gradually declines. At the time the spathe bursts the flowers are in a very imperfect state, the stamens being very immature, with no traces of pollen. The observations of the authors went to show that there was rather less heat inside the spathe before it bursts than there was in the surrounding atmosphere. They had inserted a thermometer by a narrow slit into an unburst spathe, where they allowed it to remain upwards of 20 minutes, and when taken out it stood at $57\frac{1}{2}^{\circ}$, while the surrounding atmosphere was 58°. Taking into consideration the structure of the spathe, the authors showed that it was incapable of sustaining any great amount of pressure, as it was found, when in a fresh state, to tear lengthways with as little resistance and with as little noise as a piece of soft blotting paper.—IV. "Notes regarding some *new and rare British Mosses.*" By Mr. J. Sadler.—V. "Remarks on the specimens of *Araucaria imbricata in the Botanic Garden.*" By Mr. M'Nab. The ever memorable 24th December 1860, when the thermometer

in the Botanic Garden stood at—6°, injured to a fearful extent many trees and shrubs, which had stood during the last half century unprotected and uninjured. Foremost amongst the victims was the Araucaria imbricata, first introduced into Britain in the year 1796 from Chili, where it is found growing with stems 150 feet in height. The first symptom of injury observable on the two largest plants in the Garden was the peculiar drooping of all the points, both primary and secondary, of every branch. As the spring advanced, the drooping points became brown, and were ultimately blown off. During summer all the lower branches and the points of the upper ones also became brown and dry, so much so that their removal was absolutely necessary. As the season advanced not a green portion was to be seen. After the top shoots became brown, the stems began gradually to die downwards. The finest plant was cut down exactly one year after being injured, when 2 or 3 inches only of the stem close to the surface of the ground were found to be healthy, and from which it is expected buds will push during the coming spring. The smaller sized specimens cut down last year commenced to give out buds immediately. The lower they are cut the fewer and stronger will be the shoots produced. These must be finally thinned out to single stems. It is curious to observe four plants in the Garden having their top-whorls perfectly fresh, but denuded of all the lower branches, probably arising from the depth of snow which rested on the upper whorl; while those having a terminal shoot above the upper whorl all died. The few plants saved appeared more delicate than the two noble plants which stood at each end of the long terrace lawn, and where the subsoil is deep dry sand, but both are now dead. During the last 15 years the two large plants were regularly supplied every May each with 30 barrels of water, besides a triennial renewal of the soil round the extremities of the roots, composed of very old rotted manure and loam. This may account for the very large size of the annual layers produced during the last fifteen years, compared with those sections where no extra water was given. For many years past a good deal of speculation has been going on with reference to the tiers of branches, as compared with the probable age of the trees. The cutting down of different sized trees in the garden has given us an opportunity of setting this matter, so far, at rest. The largest plant cut down was 24 feet 6 inches high, and 4 feet in circumference at the base. This plant has 30 perfect annual rings, and 20 perfect whorls of branches, proving that 18 months are necessary to complete one internode and whorl. Two others cut down, both about 16 feet in height, had 15 perfect tiers of branches, besides an unbranched terminal shoot, and 23 annual rings. Many others averaging 8 feet in height have 8 perfect whorls, with unbranched terminal shoots, and about 13 annual rings. To tell the age of a growing plant of Araucaria, count the tiers of branches and add one-half the number, making allowance for the unbranched terminal shoot, if any; this will give nearly the age of each tree. Some of the older plants, particularly those which had been confined in pots during their early growth, show a slight discrepancy in the lower whorls; in general the above test will be found very near the truth. It is not to be expected that plants ill-treated, or growing in very exposed situations, or bad undrained soil, will at all answer the above test. Araucaria and Altingia are perhaps the only plants whose external appearances indicate their exact age. Mr. M'Nab exhibited a section of the stem of the largest Araucaria.—VI. "Notice of a plant called by travellers in Canada *the Polar plant.*" By Wm. Gorrie, Esq. Mr. Gorrie called attention to the various notices of this plant in different works, and stated that he was unable to determine the correctness of the observations, or to ascertain the botanical name of the plant to which allusion was made. The following are some of the references to this plant:—1. "The Scalp-hunters." By Captain Mayne Reid, 1852, p. 206—"But we had a guide to our direction unerring as the magnetic needle. We were traversing the region of the 'Polar plant,' the planes of whose leaves at almost every step pointed out our meridian. It grew upon our track, and was crushed under the hoofs of our horses as we rode onwards." 2. "The City of the Saints." By R. F. Burton, 1861, p. 60—"Whilst in the damper ground appeared the Polar plant—that prairie compass, the plane of whose leaf ever turns towards the magnetic meridian." 3. "The Prince of Wales in Canada and the United States." By the *Times'* Special Correspondent, 1861, p. 300—"Fortunately none go to the prairie for the first time without being shown, in case of such mishaps, the groups of Compass weed which abound all over the plains, and the broad flat leaves of which point due north and south with an accuracy as unvarying as that of the magnetic needle itself." 4. "Notes by Lieutenant-Colonel W. H. Emory, made in 1846-47, with the advance guard of the 'Army of the West'" 1848, p. 11—"On the uplands the Grass is luxuriant, and occasionally is found the wild Tea (Amorpha canescens) and Pilot Weed (Silphium laciniatum). The low grounds abound in Prickly Rush, Narrow-leaved Asclepias, with flowering Indigo, Flowering Rush, Spotted Tulip, Bed Straw, Wild Bergamot, Spider Wort, pink Spider Wort, Pomme blande (Psoralea esculenta), Scarlet Malva, Pilot Weed, Hazels," &c. Again, at p. 143 of same work, Silphium laciniatum (Pilot Weed) was found on the Arkansas and its tributaries. Another Silphium, with large ovate undivided leaves, was found in Cario Creek, in lat. 32°, long 116°, Old California. In same work, Appendix No. 6, Lieutenant J. W. Albert's Notes, p. 388—"The prairie was yet what is called rolling; the flat bottoms were covered with the rosin weed or Polar plant (Silphium laciniatum), whose pinnate parted leaves have their lobes extending like fingers on each side of the midrib. It is said that the planes of the leaves of this plant are coincident with the plane of the meridian; but those I have noticed must have been influenced by some local attraction that deranged their polarity." Mr. Gorrie stated that there was no notice taken of the "Polar plant" either in Strausburg's Expedition to the Great Salt Lake, 1852, or in Fremont's 1st and 2d editions. [Dr. Asa Gray says of Silphium laciniatum that on the wide open prairies the lower leaves *are said* to present their faces uniformly north and south, whence it is called the Compass plant. *Manual*, p. 210. Chapman is silent, and so is Elliot. *Ed. G. C.*]—Professor Balfour exhibited *a photograph of a Cedar of Lebanon*, which had been presented to the Museum at the Botanic Garden by the Right Hon. R. C. Nisbet Hamilton. The following are the particulars relative to the tree:—It grew at Beil, where it was planted in 1707. It was measured on December 23, 1861—

Height	59 feet 3 inches
Girth at the root	16 „ 1 „
Do. at 4½ feet	18 „ 6 „
Spread of branches	77 „ 3 „

Prof. Balfour also stated that he had received a letter from Dr. Cleghorn, dated Cawnpore, December 2, 1861, in which he states that he had been able to convey the *Cinchona plants* safely from Kew to Madras, and that he had despatched them to the Nilgiris to be planted. Mr. Saxby sent specimens of monstrosities in leaves. In one of them the midrib was split, and a separated portion bore a small leaf-like lamina at its extremity.—T. C. Archer, Esq., sent for exhibition a New Zealander's cloak, made almost entirely of *New Zealand Flax* (Phormium tenax). In the note which accompanied it Mr. Archer said—"Robes of this kind are common amongst the natives of New Zealand. The black colour, I am told, is produced by a black ferruginous mud. The only material in the cloak not New Zealand Flax is the sheeps' wool, which is stuck on in tufts here and there."—Mr. M'Nab exhibited flower-buds of Galanthus nivalis (Snowdrop) nearly expanded.

LINNEAN, *Jan.* 16.—G. Bentham, Esq., President, in the chair. W. C. Hewitson, Esq., was elected a Fellow. N. H. Mason, Esq., was ejected by ballot in conformity with the bye-laws. The President announced that the Council had prepared an address of condolence to her Majesty on the occasion of the death of H.R.H. the Prince Consort, which address had been forwarded to Sir G. Grey for presentation. Mr. Bates exhibited specimens of some Lepidopterous insects in illustration of his paper on the Insect Fauna of the Amazon Valley, noticed in our last volume (p. 1049). The following communication was read:—"On Welwitschia mirabilis," by Dr. Hooker. This plant, of which specimens and drawings have been recently sent to England, is the very remarkable one already mentioned in our last year's volume (pp. 74, 1007), under the name of Tumboa, T. strobilifera being the name applied to it by its discoverer Welwitsch. It is a woody plant, forming a very thick corky-looking mass rising but a few inches above the earth, and producing a couple of ligulate leaves of hard leathery or almost woody texture, and of a glaucous green colour, spreading horizontally on the ground, and in age becoming split up quite to the base into narrow strips. The inflorescence consists of a peduncle about a foot high two or three times branched, bearing (according to the drawing, which was stated to represent a specimen from a plant probably a century old) numerous oblong ovate cones, the scales of which are very regularly and closely imbricated, and evenly four-ranked. These cones, which are shortly stalked, are borne two or three together from the apex of the terminal ramifications, and one or more from the lower forks of the peduncle, and they were represented to be about 2½ inches long, and about half as much in diameter. The peduncle and pedicels were stated to be of a violet-red, and the cones of a brownish red colour. As many as 15 were shown on the specimen represented in the drawing. This curious and anomalous tree! which Dr. Hooker has referred to the order Gnetaceæ, was found on sandy and rocky hills between Mossamedes and Cabo Negro. Dr. Hooker proposed that it should henceforth bear the name of Welwitschia mirabilis, in honour of the very successful and enthusiastic traveller and botanist by whom it was first made known. The name Tumbo by which it is said to be called among the negroes, is we believe a word with no precise application; like Mumbo and Jumbo, it is said to be given to various objects.

Notices of Books.

Routledge's Illustrated Natural History for January is entirely occupied by an account and excellent figures of snakes, the anecdotes and controversies about which are among the most curious in the literature of Natural History. Can snakes fascinate the beholder do they swallow their young in case of danger, and disgorge them when danger is over: are snake charmers possessed of a secret antidote to the venom of the reptiles, or are they mere jugglers; is any certain antidote to snake poison known? These and other questions are discussed at length, and will be read with interest. We can dwell on one only.

Some years ago the belief that young vipers, at the approach of danger, run down their mother's throat for shelter, was examined at length in these columns by an acute and learned naturalist, now alas no more, who maintained that the testimony in support of the belief was too unsatisfactory to justify us in accepting viper stories as true. Mr. Wood takes an opposite view. He observes, that "Were the viper the only creature of whom such an act is related, the phenomenon would be less worthy of belief; but there is hardly a poisonous snake of any country by whom the same act is not said to be performed, the narrators not being professed naturalists with a theory, but travellers, hunters, and settlers, casually noting the result of their personal experience. I cannot but think that the accumulated testimony of many trustworthy persons, acting independently of each other, accustomed to observation, and mostly unaware of the importance that would be afterwards attached to their words, is entitled to some respect, and affords legitimate grounds to the truth-seeker, not for contemptuous denial, but for further investigation.

"Several observant inhabitants of the Forest of Dean assert that both sexes assume this protective habit, the male as well as the female receiving the young into the mouth in cases of sudden danger. In those localities, the head of the viper is always chopped off as soon as the reptile is killed, and the viper-catchers say that in such cases the young vipers frequently are seen crawling out of the severed neck.

"It has been objected that the young would be consumed by the gastric juice of the parent—one of the most sensible objections that has been made. But this assertion has been invalidated by the researches of able anatomists and experimentalists, such as Mr. F. T. Buckland, &c., who have discovered, by careful dissection, two facts; the one, that the young may be concealed within the expansile body of the parent without entering the true stomach at all, the œsophagus or gullet forming a highly expansile antechamber between the throat and the actual stomach; and the other, that if they should happen to do so, the gastric juice would not hurt them. Incredible, therefore, as the possibility of such an act may seem, it can but be acknowledged that the weight of practical testimony is wholly in its favour."

It happens that this view is supported in an unexpected manner by Mr. Lubbock in the *Natural History Review*, where he has published the following letter from Mr. Philip Norman, on whose "testimony the utmost reliance may be placed."

"On the 2d of September I was out shooting with our game-keeper. In walking through a wood the keeper, who was a short distance behind me, noticed a viper on the ground. It was a little over 2 feet long, but was not accurately measured. The keeper affirms that directly the viper was disturbed he saw two young ones run into its mouth; he is convinced that he saw two, and thinks, but is not certain, that he saw three. He put his foot on it, cut its head off, and brought the body to me. We commenced skinning it by turning the skin inside out, and drawing it off from head to tail. On partially removing the skin, we could see several young ones inside, which were all moving about and seemed as lively as possible. In order to preserve them in the condition in which they then were, we drew the skin on again and tied up the orifice of the neck. On arriving at home I opened the body and found that all the young vipers, 11 in number, were dead, as I imagined from suffocation."

"Assuming," adds Mr. Lubbock, "as I feel no hesitation in doing, that Mr. Norman's statement is thoroughly correct, the only remaining question would be whether the young vipers thus found in the body of their mother were the same which the keeper saw, or supposes that he saw, running into her mouth. My friend, not being an anatomist, does not venture to state that the young were in the stomach; but he feels no doubt that this was the case; and, if they had been in the oviduct some traces of the fœtal membranes would probably have been perceived. I shall be happy to forward the specimens to any naturalist who may wish to examine them. The young ones themselves are 11 in number, between 6 and 7 inches in length, and were about to moult, a new layer of scales being fully formed under the outer skin."

It is to be hoped that Mr. Norman's specimen may be the means of finally settling this vexed question.

TRADE LISTS RECEIVED.—Messrs. SAYNOR & COOKE, of Sheffield, whose excellent cutlery is known to everybody engaged in gardening, have published an Illustrated Catalogue of their Pruning Knives. However contrary it may be to our rules we must say, in the interest of gardeners who are fleeced by cheap and bad cutlery, that we know of none equal to that of Saynor & Cooke. —Catalogue of Vegetable, Flower, Agricultural Seed and Gladioli, &c. offered by ROBERT PARKER, Exotic Nursery, Tooting, Surrey.—Select Catalogue of

Flower, Vegetable, and Agricultural Seeds, &c., offered for sale by B. S. WILLIAMS, Paradise Nursery, Holloway.—List of Choice Vegetable and Flower Seeds sold by JAS. DICKSON & SONS, 102, Eastgate Street, Chester.

Garden Memoranda.

S. RUCKER'S, ESQ., WEST HILL, WANDSWORTH.—Notwithstanding the truly winterly character of the weather which we have lately experienced a few plants are in flower here which deserve attention. In the Orchid-houses, properly so called, a splendid plant of Lælia anceps has at present 22 spikes of bloom on it, and on each spike are from three to four flowers; L. superbiens is also beautifully in blossom, as are likewise a Cattleya in the way of Wagneri; C. quadricolor, a fine species, and the singular-looking Angræcum sesquipedale; the last has 11 flowers on it. Dendrobium taurinum promises to flower again this year; it is a fine species with pure white blossoms, except the margin of the lip, which is purplish violet, and the petals, which are reddish brown, the whole producing a charming and agreeable contrast. The plant itself, which grows 4 or 5 feet in height, is one of the most stately among Orchids. The charming Calanthe vestita and Limatodes rosea have been very gay; of Odontoglossum Pescatorei three plants are just coming into flower, as are also one or two Oncidiums and Epidendrums. The aquarium even already possesses a richness and variety which is quite delightful. Immediately over the centre of the tank is a fine basketful of Dendrobium nobile. Associated with it are also numberless smaller plants of different kinds suspended from the roof, and round the margin of the water are Caladiums and other things remarkable for the beauty of their foliage, and Pitcher plants—enlivened here and there by plants in flower. At the back is a border of Lycopods containing nearly all the varieties of that interesting tribe of plants, edged in front with the bright green L. denticulatum. Ferns of different kinds have also been introduced here and there with excellent effect.

A house has, however, recently been put up exclusively for Ferns; it is upwards of 60 feet in length, and is well filled with beautiful examples of that fashionable tribe of plants. Among them are several handsome Tree Ferns, including Cyathea Cunninghami and Smithi, and many splendid bushes of the better kinds of Gleichenia. Of Hymenophyllums and Trichomanes there is also a large collection.

Of Camellias there is an excellent display; both whites and reds are flowering beautifully; among the latter Marchioness of Exeter is remarkable for its large and finely shaped flowers. On a front shelf are specimens of Orange trees in the form of standards, loaded with fruit; Skimmia japonica, one of the most hardy of evergreens, covered with round red berries; Solanum capsicastrum, also furnished with shining round orange-scarlet fruit; Epacrises in bloom, Linum flavum, and numerous bulbous plants intermixed with Primulas, all having a showy and dressy appearance. In a warm end of this house kept as a stove, the lilac-blossomed Conoclinium ianthinum will soon be effective; also Eucharis grandiflora, and various kinds of Amaryllids. The white Jasmine-flowered Rhododendron usually blooms well here, and when fully expanded it is one of the prettiest things in the whole collection. Its long tubular flowers, some dozen or more in a bunch, are extremely handsome, and the foliage being rich dark green and not too large, sets them off to great advantage. Vallota purpurea is likewise largely cultivated here for decorative purposes, and when well flowered it is very showy. The way to bloom it satisfactorily is to start it early into growth and to well ripen it in the sun in the summer time, giving it no more water than is just sufficient to keep it in health.

In the glass promenade the borders are comparatively gay with Camellias, Enkianthus, Acacias, Hyacinths, and forced plants of that description, to which must be added Lapageria rosea, which succeeds well in the agreeable greenhouse temperature of this house. It is planted in a light porous soil, to which plenty of water is given while the plant is growing; its only enemy is slugs, which eat off the young shoots close to the ground. To prevent this the stems are surrounded by narrow zinc troughs placed in the form of a square and kept constantly full of water—a barrier over which slugs find it impossible to pass.

A Peach and Nectarine house has recently been erected, in which the trees are wholly grown in pots. They are now just coming into bloom, and are very promising. Even the Stanwick Nectarine fruits well under such conditions, a small tree of it often ripening as many as 20 fruit in one season. Peaches also bear abundantly.

Out of doors a new Rosery has been formed, and several important alterations effected in the way of improving shrubbery borders; in short the whole place has so neat and trim an appearance as to be quite enjoyable even at this dull season of the year.

Miscellaneous.

Tortoise Beetles.—There is one family of insects, the members of which cannot fail to strike the traveller by their singular beauty, the Cassididæ or tortoise beetles, in which the outer shell overlaps the body, and the limbs are susceptible of being drawn entirely within it. The rim is frequently of a different tint from the centre, and one species which I have seen is quite startling from the brilliancy of its colouring, which gives it the appearance of a ruby enclosed in a frame of pearl; but this wonderful effect disappears immediately on the death of the insect. *Sir J. E. Tennent's Natural History of Ceylon.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &C. — The present changeable weather may cause extra protecting materials to be employed; therefore some should be in readiness when required. The principal work in plant houses will consist in keeping them and their inmates scrupulously clean. Fires and frequent washing of stove plants will be necessary. The conservatory and show-house should now be made as gay as possible with forced plants. Keep up a regular succession by bringing forward stock as wanted. Roses, both dwarf and standard, Honeysuckles, Scarlet Thorns, Hybrid Rhododendrons, and Azaleas, with a host of other things, will enable cultivators in addition to the usual occupants of the houses to make a good show. Hyacinths, Narcissus, Tulips, Lily of the Valley, and other plants of that class, must be duly forwarded as wanted. Hard-wooded plants will require a rather dry atmosphere in order to keep them free from mildew and damp.

FORCING DEPARTMENT.

PINERIES.—It is not by any means desirable to start more plants at this season than may be absolutely necessary, for they will produce finer fruit later than can possibly be obtained from them now; and where a separate house cannot be commanded for those which must be subjected to a higher temperature, we would advise that the plants selected for fruiting should be placed in the warmest part of the house at command, filling the rest with young stock. The former should be afforded a bottom-heat of about 85°, and the latter about 10° or 15° lower; the atmosphere should range from 68° to 75° by fire heat, allowing it to rise 5° with the assistance of sunshine, keeping the young plants near the glass, and properly supplied with water at the root. This temperature will, however, be considerably too high for young stock at this season.

VINERIES.—The early house will now require careful attention. Maintain a healthy growing atmosphere by sprinkling the floors, &c., as may be necessary, and admit fresh air whenever this can be safely done. Also attend carefully to the border, and if fermenting material is used do not allow the heat to decline, and where this is not used see that whatever covering is employed is efficient.

CHERRIES.—If early fruit is required gentle fires may now be lighted by way of preparing the trees; or a few trees in pots might be put into the Peach-house.

FIGS.—A few plants in pots might be introduced into a gentle heat in any house in which there is room.

CUCUMBERS.—These must be carefully attended to; if grown in pits the stems should not be suffered to trail over the soil; they should be trained to a moveable trellis, leaving sufficient space between it and the soil to allow the fruit to hang perpendicularly. Let the temperature, which should be moist, range between 60° and 70°. If young plants are being raised from seed, look sharply after woodlice, which are apt to eat them. Boiling water poured cautiously round the sides of the pit affords a good way of getting rid of such pests.

STRAWBERRIES.—Where ripe fruit is wanted early a portion of the most promising plants may be placed in a gentle bottom-heat; or if this cannot be commanded, a Peach-house or Vinery which has just been closed for forcing will do. They must, however, be kept close to the glass, for they require all the light that can possibly be afforded them at this season, and a free admission of air on mild days, with a low temperature until the fruit is fairly set, and if these conditions can be combined with bottom-heat, success will be more certain than under any other circumstances, and this will be more easily done in a small pit than in a house, the temperature of which must be regulated to suit other things.

FRUIT TREES IN POTS.—Where stock of these is prepared for forcing, the advantages of a deep pit with a bed of leaves will be apparent; the slight bottom heat thus afforded will be found beneficial in setting the roots in action. Cherries and Raspberries are the most impatient of heat and should be brought forward in a very low temperature, and unless they are required very early they will succeed better when started later. Peaches, &c., should be started with a top heat ranging between 40° and 60°, with a gentle syringing daily, and air according to the state of the weather. Here they may remain till they are nearly in bloom, when a drier atmosphere being necessary, they may be removed to vacant shelves or stages in any house at work where a moderate heat is kept up.

FLOWER GARDEN AND SHRUBBERIES.

Where any of the beds or borders require a dressing of fresh soil this should be provided, in order to have it in readiness to wheel on when the weather is favourable. Fresh soil, as has been formerly stated is in most cases preferable as a dressing for flower beds to manure, which is apt to cause too luxuriant a growth for a first-rate display of flowers. On soils that are naturally poor, however, and where neither fresh mould nor decayed leaves can be had, a moderate dressing of well rotted farm-yard manure will be useful, but this should be well mixed with the mould the full depth of the bed, and not carelessly turned in and left in lumps near the surface, for in that case a gross habit of growth would be promoted early in the season, and as the principal part of the roots would be near the surface in the manure, the plants would soon feel the effects of dry weather; whereas if the manure is well incorporated with the soil to the depth of about 18 inches, no ordinary amount of dry weather will injure the plants after they once get fairly established.

HARDY FRUIT AND KITCHEN GARDEN.

If any transplanting of fruit trees has yet to be done this season, it should be seen to at once; also see to getting ground intended to be planted with young trees prepared, and spare no pains or expense to have this properly done. Make sure of thorough drainage, and where the subsoil is unkind this should be removed, replacing it with some good fresh loam. Pruning and nailing should be persevered in whenever the weather is favourable. Any trees proposed to be grafted in spring may be headed down; but leave the branches sufficiently long to allow an inch or two more to be taken off at the time of grafting, when a clean cut should be made. Trench, manure and dig vacant ground if the weather permits; if frosty continue the covering of Endive and young Lettuces.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,

For the 7 Days ending Jan. 22, 1862, as observed at the Horticultural Garden

January.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind	[illegible]
Thurs. 16	○	30.038	29.970	41	20	30.5	44	43	S.E.	[illegible]
Friday 17	17	30.005	29.997	35	19	27.0	41	42	S.E.	[illegible]
Satur. 18	18	30.971	29.960	36	17	26.5	40½	41	S.E.	[illegible]
Sunday 19	19	29.900	29.766	29	24	26.5	41	40½	S.E.	[illegible]
Mon. 20	20	29.691	29.532	32	27	29.5	39	40	S.E.	[illegible]
Tues. 21	21	29.483	29.432	40	29	34.5	39	39	E.	[illegible]
Wed. 22	22	29.511	29.379	53	28	40.5	39	39	S.W.	[illegible]
Average		29.814	29.719	38.0	23.4	30.7	40.5	40.6		

Jan. 16—Clear, with slight frost; very fine; clear at night; frosty.
— 17—Frosty; uniformly overcast and cold; clear; sharp frost.
— 18—Frosty; clear; very clear and frosty at night.
— 19—Overcast; densely overcast; frosty.
— 20—Uniformly overcast; hazy; slight frost.
— 21—Slight snow shower; overcast; snowing occasionally; densely overcast; rain.
— 22—Slight rain; exceedingly fine; showery; slight frost.
Mean temperature of the week 3¾ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK

During the last 36 years, for the ensuing Week, ending Feb. 1, 1862.

January and Feb.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	[illegible]
Sunday 26 .	45.0	32.3	38.6	16	0.34 in.	1	5	3	4	2	14	[illegible]
Mon. 27..	44.2	31.0	37.6	17	0.43	2	5	4	1	4	14	[illegible]
Tues. 28..	45.1	30.4	37.7	19	0.17	2	5	4	0	1	14	[illegible]
Wed. 29..	45.2	31.2	38.2	16	0.32	5	4	0	1	2	12	[illegible]
Thurs. 30..	44.0	31.8	37.9	17	0.39	2	3	3	4	3	10	[illegible]
Friday 31..	44.0	30.0	37.0	15	0.38	5	5	1	2	9	9	[illegible]
Satur. 1..	42.9	30.5	36.7	12	0.52	5	6	1	2	3	9	[illegible]

The highest temperature during the above period occurred on the 1st, 1852—therm. 57 deg.; and the lowest on the 31st, 1857—therm. 8 deg.

Notices to Correspondents.

ADMISSION TO THE ROYAL HORTICULTURAL GARDENS: *Pater familias.* You are under some misapprehension as to the rates of admission in the approaching season. The five guinea tickets are for daily admission to the International Exhibition including the Horticultural Garden; and passing, *if desired*, through the latter, casual visitors would hardly think of buying such tickets. The prices of admission to the Horticultural Garden are advertised at p. 56 in the *Gardeners' Chronicle* for the present year. We will cause the question of children to be brought under the consideration of the Horticultural Council.

COVERT: *T C M.* Use Hypericum calycinum, Irish Ivy, Berberis aquifolium, or Common Periwinkle. You may also get up covert by sowing Whitethorn or Blackthorn, or even Acorns pretty thick. But the first are by far the best.

EMIGRATION: *S B.* We cannot undertake the duties of an emigration agent. Why don't you apply to brokers? The Somoss is now lying in the West India Docks. What hinders your writing to the Captain. Rub your eyes, and be up and doing if you think of going to a colony.

FRENCH SALAD PLANTS: *E W C.* These are Mache, Chicory, Endive, Cabbage Lettuces (not Co-), Scarole, Celery, and any tender eatable vegetables or fine herbs that may be in season. Those named are the principal. Perhaps a Cucumber may be sliced in. It is all a matter of taste, but of good taste.

GARDEN DECORATION: *X X.* In a month or so we hope to be ready, with coloured illustrations of the very best specimens of parterres, borders, and other contrivances, to show not only what good taste prescribes in these matters, but how practically to execute them.

MOSS: *Alpha.* Moss or Lichen grows on fruit trees because the soil is waterlogged and the trees stunted. Drain, Drain, Drain, and give your bushes some manure. Thermometers are made on purpose for registering ground temperatures so that the scale is above ground and the bulb at the proper distance underground. Maximum temperature is registered in shade over Grass.

NAMES OF PLANTS: *W R B.* We believe Smilax picta, a variety of S. aspera. But who can judge from a couple of leaves without even their petioles?—*George.* Cupressus funebris.—*R J W.* Rhus Typhinum we suppose. Send the leaves hereafter.—*N L.* Vaccinium Vitis Idæa.—*C L F.* The Trapa bicornis, or Water Chesnut of China. It is very near the Trapa bispinosa, or Singhara nut, on which Runjeet Sing used to levy a duty from the growers in the Lake of Cashmere. There is a South European species called Trapa natans.—*M H.* The large seed-vessel produced by a creeper from Madras belongs to Aristolochia indica, the plant which is said to be a sure antidote to the bite of poisonous snakes. You shall have some seeds back if, when the seed-vessel opens, they prove to be good.

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TO LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &c. IN ENGLAND AND WALES AND IN SCOTLAND.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

DRAINAGE OUTFALLS.—The most simple, expeditious, and inexpensive powers for obtaining the right of making Outfall Drains, Cuttings, &c., through the Lands of adjoining Proprietors, are under the WEST of ENGLAND DRAINAGE and INCLOSURE COMPANY'S ACT, and there is no necessity for separate proceedings such as Petitions, Special Act of Parliament, Commissions of Sewers, or Drainage Boards, &c.
Draining, Inclosing, Irrigating, Warping, Road Making, and all kind of Land Improvements executed on Entailed, Mortgaged, or other Properties; the whole cost can be a Charge on the Lands permanently, or it might be made redeemable at any fixed time in one or more sums or by half-yearly instalments over any term of years, at the option of Proprietors.
FREDERICK BRODIE, Secretary.
Offices—Exeter, and 30, Parliament Street, London, S.W.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5*s*. per acre), and the Erection of Agricultural Buildings and all other permanent improvements to Landed Estates, are undertaken by Mr. HUMBERT, Land Agent and Surveyor, Watford, Herts; and such works can, if desired, be entirely executed under powers conferred by special Acts of Parliament by money raised by Loan, and paid off (both principal and interest) by small annual payments, spread over a number of years in the form of a rent charge, without immediate payment by the Landowner.

YORKSHIRE AGRICULTURAL SOCIETY.
PRIZE ESSAY.
A Prize of 50*l*. is offered by H. S. THOMPSON, Esq., M.P., President of the Yorkshire Agricultural Society, in addition to a Gold Medal, value 10*l*., given by the Society, for the best ESSAY
"On the Improvements which have taken place in Yorkshire Farming since the Formation of the Yorkshire Agricultural Society in the Year 1837."
Competing Essays must be forwarded to me on or before the 15th day of July, 1862. JOHN HANNAM, Secretary.
Kirk Deighton, Wetherby, Jan. 25.

YORKSHIRE AGRICULTURAL SOCIETY.—
The great ANNUAL SHOW of this Society will be held at York on the 6th, 7th, and 8th AUGUST next.
Prize sheets may be had free on and after February 1, on application to JOHN HANNAM, Secretary.
Kirk Deighton, Wetherby, Jan. 25.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.
STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. HALL DARE, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, JANUARY 25, 1862.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	Feb. 3	London Farmers' Club .. .. 6 P.M. (Mr. Johnson on Artificial Manures)
TUESDAY,	— 4	—Wirral (Mr. Jackson on Grass Lands).
WEDNESDAY,	— 5	—Agri. Society of England .. .. Noon

THE authorities are all against the loudly vaunted excellence and merit of cattle condiments and so called concentrated cattle foods. Mr. LAWES would just as soon have a ton of good oilcake at 11*l*. or 12*l*. as a ton of THORLEY'S cattle-food costing nearly three times as much. Dr. VOELCKER has indeed pointed out in his writings that the nutritiveness of food depends upon aroma, texture, savouryness, and circumstances of which the merely chemical examination takes no account, as well as upon its richness in particular ingredients; but he has not, that we are aware, said anything to sanction the belief that science endorses the extraordinary tales which vendors of these cattle foods relate of their efficiency.

Professor ANDERSON has just published a lecture on concentrated foods, in which, by argument and analysis, he disposes of the assertion that they are either concentrated or of extraordinary merit; adding, as the conclusion at which he arrives:—

"If the manufacturers really desire to satisfy the agricultural community, the proper course would be for them to submit their foods to some farmers of experience, in whose judgment full confidence can be placed, and agree to stand or fall by the result. From this ordeal they will doubtless shrink, and as long as they do so, they must be content to bear the imputation of trading on the credulity of the farmer, and selling him an article at three times its real value.

"I have not hesitated to express thus distinctly the opinions I entertain, because this is a subject on which science can speak with no doubtful voice. It is not a question in regard to which there can be any difficulties, but is one of comparing the results of analyses with those of other and well-known foods; and before a minute examination the alleged 'discoveries' of the inventors of these substances vanish into thin air, or rather resolve themselves into the art of making the farmer pay dear for a cheap article."

Our own opinion has been often stated as distinctly and unreservedly as Dr. ANDERSON states his. Professor HOLLOWAY, or the representatives of Mr. PARR, can relate as many genuine cases of extraordinary recovery and regained health while the patient was under their particular treatment, as are reported in the lists and pamphlets of cattle food advertisers, of animals that have won prizes or fattened rapidly in consequence of these foods. There is no lesson whatever to be learned from the alf a score of extraordinary cases which any one h ay gather out of a thousand histories if he shall m himself to collect as many and to ignore the 990 which represent ordinary experience.

We have no doubt that the advertised cattle foods are made as good as they can be, or that at a certain price they may be used with profit. But that any *food* whatever can be worth 30*l*. or even 23*l*. a ton, while good oilcake can be had for 11*l*. we may safely deny. These two prices are named as those at which Mr. THORLEY and Mr. SIMPSON respectively announce their foods for sale. Competition will no doubt ultimately reduce the price to within a reasonable distance from the cost; and already prices have fallen considerably below its original amount. SIMPSON'S at 23*l*. a ton, or 7*l*. below the price of THORLEY'S, can yet bear the brunt of an enormous cost in advertising, besides the well-cared for margin for profit. Great as Mr. THORLEY'S skill and enterprise in advertising have been, they are outstripped at Birmingham. Mr. SIMPSON announces at every Railway Station, for December 1863, a Monster Cattle Show, at which a sum of 5000*l*. is to be awarded in prizes by himself, and sundry 100*l*. premiums (if they shall be forthcoming) by patrons. The prize list will include one 2000*l*. prize, and many hundred others down to 7*l*. as the lowest premium. Let us reproduce the announcement.

"The largest cattle show in the world will be SIMPSON'S Giant Cattle Show. It will probably consist of over 2000 head of cattle! all under two years old! all fed on SIMPSON'S Farinaceous Food from one week old! Anticipated average weight from 12 to 16 score per quarter! It will be a greater novelty and attract as much attention as the Great Exhibition in 1862. Total amount of prizes 5000*l*., and with patrons' prizes added! Every man who visits the Show must go to SIMPSON'S stand for a prospectus."

It is not improbable that this may be realised—but at whose cost? Does not this announcement more than anything in the whole history of the trade prove the case which Mr. LAWES and Professor ANDERSON have all along been urging on the attention of the farmer? If you wish to compete at "SIMPSON'S Giant Cattle Show," you must sign the following document—

"I agree to purchase 25 cwt. of SIMPSON'S Farinaceous Food at 25*s*. per cwt., and request you to forward me that quantity, and enter my name as a competitor for the Prize at SIMPSON'S Giant Cattle Show."

That is to say, you first pay your share of the cost at which this cattle show and its giant prize list is to be carried out.

AT the Highland Society's half yearly meeting last week the position of the Agricultural Chair in the Edinburgh University was the subject of a rather warm discussion. In the report elsewhere it will be seen that the Directors of the Society have undertaken to inquire into the subject, in order to see if some arrangement can be made between themselves and the University Commission for the suitable endowment of the Chair. The amendment which they carried differed from Sir J. S. FORBES'S motion which they refused, only by the absence of any reference to the present condition of the endowment as insufficient. That a tacit consent, however, is given to the declaration to that effect which the motion contained is proved by the adoption of any resolution whatever on the subject. To suppose indeed that any other idea can be entertained by any sensible man is absurd. In the *Museum* (a new Edinburgh Monthly Magazine) for January, 1862, the principles on which the grant in aid of the University professorships has been distributed by the Commissioners are declared to be incomprehensible.

"Take, for instance, two Chairs in the University of Edinburgh, which are certainly not without some relation to each other, those of Agriculture and Chemistry. In the latter Chair the estimated fees are 1100*l*., yet it is thought necessary to add to this magnificent income a new Parliamentary vote of 200*l*. per annum—total 1310*l*. In the Chair of Agriculture, the estimated fees amount to 100*l*. a year, the old endowment from University funds is 50*l*.—total, 150*l*.; and to this *not one penny is added by the Commissioners*. On what principle is this distinction made? If the latter chair be worth retaining at all it evidently stands more in need of endowment than any other Chair in the University. Do the Commissioners expect a man of talent or position to hold that Chair for 150*l*. per year? Surely not. Do they then wish to ruin the Chair of agriculture? If so, it would have been more honest, more creditable for them to have exercised their 'powers' and to have abolished the Chair by ordinance, instead of resorting to the expedient of starvation. Who are the guardians of Scottish Agriculture? Will not the Highland Society or their excellent Secretary

move a finger on behalf of the doomed High Priest of Ceres?"

This question has been urged with such force on the directors of the Highland Society, that the amendment by which they refuse a motion answering it directly in the affirmative, does essentially accept the responsibility which it was desired to put upon them in connection with this subject. There was a large minority (about 7 to 9) in favour of the original motion, and this division, though in favour of the Directors, will no doubt be more beneficial to the promoters of the movement than if the numbers had been reversed. Practically there was but little difference between the motion and the amendment, while so large and important a minority will enforce a *bonâ fide* action of the Directors, who, if they have the will, are well known to have the power of making a satisfactory arrangement with the University Commissioners for a joint endowment of the Agricultural Chair. This will place it under even more favourable conditions than if the Highland Society alone found the funds.

A precedent for such an arrangement is just being created in the New Sanscrit Chair at Edinburgh, which is to be endowed by a private individual giving 150*l*., provided the Commissioners give a like sum per annum, the patronage being shared by both. The mere fact, however, of giving an annual subsidy to the Chair, though good as far as it goes, is quite within the range of benefit which the Society could at this particular juncture confer upon agriculture. The agricultural education scheme of the Highland Society needs to be revised, re-organised, revivified —at present it is a complete failure. In the University there are all the elements necessary for the teaching of the sciences—chemistry, botany, natural history, natural philosophy, and agriculture. The Highland Society could take charge of the practical points, farm practice, book-keeping, surveying, &c. A Faculty of Agriculture might be arranged in the University, which should examine and give degrees or honorary distinctions in the science of agriculture; while a second (or a joint) examination by the Highland Society would certify to the practical knowledge of the candidate. This might all be carried on in *one* year's residence, provided the practical knowledge had been previously acquired; or the former examination could be passed, and the latter deferred for a year or so until the student had become properly qualified. At present very few farmers are willing to send their sons to College for two years. Much of the teaching they think useless; and the idea is that it is not worth while to send them if only to attend the agricultural and perhaps the veterinary classes.

The plan should be worked as the Society of Arts' educational scheme was at its commencement. The leading proprietors and leading farmers of the country should be convened, and the objects and advantages of the scheme should be laid before them, and they should be asked by resolutions to identify themselves with the object, and to give an expression of their opinion as to the advantages it would confer if properly carried out. If we could show the farmer that a young man possessing a certificate of qualification would be preferred, other things being equal, as a tenant by the leading proprietors, to one who had not such a certificate, we should at once confer a distinct value on the scheme, which would then be a great incentive to a higher style of agricultural education.

—— THE English Agricultural Society have issued their programme for the International Cattle Show at Battersea Park during the week beginning June 23. Prizes are offered in no fewer than 178 classes. A detailed examination of the list must be made another day. At present it must suffice to say that prizes to the amount of 270*l*. and two gold medals are offered for each of the leading breeds of cattle, and prizes to the amount of 80*l*. for six or seven subsidiary breeds. Upwards of 800*l*. are offered for horses!

The sheep list was referred to last week somewhat angrily because of the inferior position given to certain long-woolled breeds upon it; but even for the lowest on the list, no one can deny the liberality of the encouragement given to competitors. 225*l*. are offered for pigs. The prizes offered by the Highland Society are also extremely liberal, amounting in all to 755*l*. In addition to all this, gold, silver, and bronze medals are offered for foreign breeds of horses, cattle, sheep, and pigs.

From these details, and the wide-spread interest which is being taken in the meeting, we may expect that it will be a very grand display.

—— Not yet having had an opportunity of inspecting the plans, or the proposed scene of their prosecution, for the carrying out of which the London Sewage Company are about to seek Parliamentary power, we postpone for a week our account of the liquid-manure farm occupied and managed by Mr. BLACKBURN, near Stonehaven. His experience, more than any other that we know, gives reason to anticipate the success of this new plan for utilising London sewage; and they will be best considered together.

THE PROTEST AGAINST STEAM.

YOUR "Known Correspondent's" Protest against Steam" should have been followed by your leading article of the 11th inst., and then my "Contra Protest" would have been somewhat modified, though I cannot for one moment admit, even under his successful system of the old style, that it has any bearing whatever on steam cultivation, nor has his system any claim to a "protest" against steam. That your "Known Correspondent's" system of culture prior to the introduction of steam, is generally very superior to the old system, there is not a question, nor that his ability and energy are worthy the attention and example of nine tenths of his fellow agriculturists, or that, as is justly observed in your leading article, "the farm has been doing its share of the work of English soil in feeding the people;" but what would this farm do or have done, under drainage and steam, not only for the tenant, but also for the landlord and the people? The question of the advantages of horse or steam labour being the best for the community at large, resolves itself into the following queries, according to my humble opinion.

1st. Will horse or steam power produce the greatest rental on the capital invested by the land?

2d. Will horse or steam power produce the greatest profit on the capital, ability, and energy invested by the tenant?

3dly. Which of these two powers will feed the public both in bread and meat the cheapest?

4thly. Which will tend in the greatest degree to the advancement in every way of the labourer, which to me is one of the greatest considerations, for here is our blot at the present time.

1. In answering the above questions I shall take our "Known Correspondent's" model farm under the old system, for so I think I am entitled to term it, from the superior manner in which his farm has been cultivated to what such farms have generally been. Well, I know not what the rent of your "Known Correspondent's" farm would be, provided he was a tenant, but from what has been written on it I should judge 20*s*. per acre, perhaps only 15*s*.; but I will say 20*s*.; it matters not, so long as we have a fixed sum to base our calculations on. Mind I have not seen this farm, but take it to be one of the old school of wet farms. Well it is worth 20*s*. per acre, underwood, hedges, and water. Now we all know that drainage pays the landlord from 5 to 10 per cent. for his outlay, provided it be well and judiciously done.

Men of capital and intelligence, with practical knowledge, and *sans préjudice* would readily pay 5 per cent. for money invested in the removal of timber and hedges, and in forming roads for the adaptation of the land to steam, for steam cannot be adapted to the land; at least I from many years' experience would readily pay that sum. Thus the landlord under the mere outlay would have an ample return for it; besides, in most cases, these wet farms under drainage and such a removal of timber, &c., would get a large increase of rent on the original outlay. The landlord would increase his rent roll, consequently his luxuries, which to a highly civilized country is one of the greatest advantages to the working part of the community.

2. Now for the second question, and this is rather a ticklish one, because we have been some hundreds of years bringing our "Known Correspondent's" superior system to its present state, whereas steam has not yet left off its swaddling clothes, and is only on its hands and knees, with all the prejudice that millions of tenants and labourers can bring to bear against it. Here our friend your "Known Correspondent" comes in again to my assistance, for in your leading article it is said "that the ploughing is for the most part shallow, 4 or 5 inches deep." This bears me out in what I said in my Contra Protest, that it was scratched over. Now, can any intelligent person, without prejudice, contend for one moment that this is cultivating the soil in the year 1862, and is there one who will contend that a deep staple is prejudicial to a heavy yield both of straw and corn, even with a less application of manure. Now, by the 4 or 5 inch system, what does our friend do? (I speak of him as a tenant, and presume he pays 20*s*. an acre rent.) Why, in this cultivation he uses only a third of the land he rents for the purpose of producing corn and roots:—for instance, a man who only ploughs 5 inches deep pays 20*s*. for 18,150 cubic feet of earth, another who ploughs 10 inches deep has 36,300 cubic feet of soil to crop, and he who cultivates 15 inches deep, "which he ought to do to get the most for his 20*s*.," has 54,450 cubic feet of good earth, full of inorganic particles, the most difficult ingredients to put into the earth. Surely there cannot be a question as to the result of the crops, though the superficies of the area be no more; or why is there such an outcry for new soil and a deep staple? These are not the only advantages; for by deep cultivation you raise the temperature of the soil, you supply moisture to the plant during the hot season. You allow the roots to enter the earth perpendicularly and not drive them horizontally, which will enable you to take a thicker plant, though not more thickly sown, for this deep cultivation would enable you to sow earlier, consequently use less seed and give a greater tillering to the plant. Again, by steam, if the season set in wet ever so early, you could crop your land without putting a horse upon it; as I am fully convinced steam is to be made subservient to all agricultural purposes (except the market), and that eventually, at a less money cost than horse power. Again, by this deep cultivation you would not require so much manure to obtain the same crop, and by an equal quantity of manure you would grow a much heavier crop for the same rent, rates, and taxes, and less for labour proportionally for the crops grown, for we all know our labour is heavier for a light crop than for a heavy one, though we pay more money per acre for the latter.

My friend, our "Known Correspondent," will say, and I admit very justly so, with his ability and energy, that he can do all this with horse-power. Granted: for I have done it myself, and pit this system of cultivation by horse-power against steam-power, and then my friend will be beaten with his horses out of the field. Nay, here I may labour under a mistake, for such an energetic man, once convinced of the superiority of steam, would soon be the leading star of steam culture, and it is such a man we want in the field to prove the advantages of steam.

Your leading article says: "Our Correspondent 'H. L. T. L.' "declares that the statement of this cropping, &c., has nothing whatever to do with steam culture; but taken in connection with the recent reports of success in steam culture with which we had been trying to satisfy the curiosity of our readers, it seems plain, &c." Now I do hope you have succeeded not only in satisfying the curiosity of your readers but in fully convincing your intelligent and unprejudiced readers that steam must be the motive power for agricultural purposes, for every man of business, intelligence, and without prejudice, will in reading these reports bear in mind that steam power on land is not only an infant at present, but it is put into the hands of landlords' bailiffs, and tenants who are perfectly ignorant of its mechanism, of what it is capable of doing, of the resistive power it has to encounter in the soil. Regardless of all this the masters tell their bailiffs to have it put to work, accompanying that order with saying—"It is 8 or 10, or 12 or 14 horse-power, it can do anything, break up the most tenacious clay 12 or 14 inches deep with ease—so I will have it done." The "infant" is then dropped into the hands of a lower class of men with the same directions, without any instruction or watchfulness, simply because the masters and bailiffs do not like to display their own blameless ignorance in the matter. The labourer goes to work as directed, declares he will have the land up 12 inches, as master directed—so here goes—the tenacious clay is up or the tackle is broken, and in nine cases out of 10 the latter takes place, delays occur, coals are wasted, men's time is lost, and a great expense is incurred; the master scolds the bailiff, the bailiff pitches into the men, so at last it ends in all three abusing the machine and its maker, forgetting that their own ignorance has caused the loss of tackle, coals, and time. Prejudice, added to legitimate ignorance (for mechanism is new to all), does its best to make the child not only very expensive but bandy, with the hope of crippling it for life. I am quite sure our energetic friend would not, after he had adopted the steam child, put it to do what he, as a practical man, knew was utterly out of its power to do, namely, break up his strong clay in dry weather 12 or 14 inches where he knew that his 3-horse teams had never exceeded 5 inches, and in all probability not 4 inches and if he did, I have no doubt he is a lover of fair-play—so would have pitted his Suffolks against it, at the same time and same depth, with the workmanship equal. For instance, what is the resistive power of 5 inches of loose soil, what the next 4, and what the next 3 or 4—if the 5 inches would take three horses, the next 4 inches would take four horses, and the last 3 or 4 inches three or four horses. Here we have nine or 10 horses to break up 12 or 13 inches; and these could not even accomplish this in one furrow, nor could a 12-horse engine do it at one bout, but at least two bouts, if not three in some cases. Deep cultivation is where steam power so greatly has the advantage over horse power; and as for the reports in your Journal they are all unfair to steam; not that the reporters intend them to be so, but the true test of steam and horse power must be at the same depth of cultivation, and then steam will beat horse power "into fits." But every one who purchases steam power, puts it immediately to twice or three times the depth of cultivation, as they do their horses, and expect that it is to do three times the work at a less cost. Nothing can be so unfair as this. The fact is, under horse and steam deep cultivation in the first instance is an investment, but one that will amply repay itself in a short time. I have no hesitation in saying that deep cultivation by steam (for horses cannot accomplish it as a rule), will eventually yield 25

per cent. more roots, corn, and straw, as well as entirely cure the sickness of the Clover to the land, and this I think would be no small increase of profit to the tenant.

3. Now for the third question, and that is partly answered by the last lines of the second; an increased yield of 25 per cent in corn would tend to lower the price of bread—a 25 per cent. increase of roots and straw would lessen the cost of meat alone; but what would the food, now consumed by the thousands of horses that will ultimately be displaced by steam, place in the market in the articles of beef, mutton, and pork? Herein the public will be enormously benefited by deep cultivation and the food now appropriated to the horse.

The fourth and last question is somewhat answered by the third, for a reduction in the price of bread and meat would alone be a great boon to a poor man with a large family on 12*s.* per week, say 14*s.* if you please, and God knows how this sustains life in 7, 8, or 10 persons; I know not, though I have tried many a time to carve it out. Well, bread and meat would be cheapened; but that, though a great consideration, is by no means the principal in my opinion. With steam the head must be used, consequently must be better taught, and made to reflect on what the hands and the machinery under its care have to do. This will be the means of making a class of men who are now utterly void of thought, thinking men. A thinking man will not be content on 12*s.* a week, nor need he. Not only for his own interest, but for that of his master's, higher wages will be demanded, and as readily given; for the unprejudiced will soon find that a superior man will be far cheaper at 18*s.* or 20*s.* a week than the present class at 12*s.* or 14*s.*; and after all the sayings, doings, and writings about the poor labourer, there is no means of bettering his condition and improving his morals so readily as an increase of wages. This and this only will very soon make a better man in every respect.

One word on our friend and "Known Correspondent's" present superior system of cultivation (though I still hold it has no claim to a "protest against steam") and that is, that I feel assured he would add to his present profits by ploughing less frequently and more deeply, notwithstanding his land being undrained.

I would strongly advise every gentleman and farmer who intends to adopt steam, to send his bailiff or head man to the engine maker, from whom he intends to have his steam power, for 3 or 6 months, to be taught the principle on which the entire tackle is made, and the use of it; for if this plan were adopted, the failures when placed in the farmer's hands would be very few, and a great expense saved. *H. L. T. L.*

A PLAN FOR THE COLLECTION OF AGRICULTURAL STATISTICS.

Determine and arrange that each parish shall furnish an annual autumnal statement of its then agricultural position, as regards crops in the ground and prospect as regards the yield. Select one of the most intelligent and popular farmers in the parish, being at the same time one of the largest holders of land in it, as the most likely person to obtain full, accurate and reliable information on the subject sought. Let such a person be nominated and appointed by the farmers themselves in parish vestry assembled at Lady Day in each year, and let the person so nominated collect the agricultural statistics of the parish for that year and be paid by the Government. Provided with a memorandum book ruled and columned, let him at the proper season proceed to make a tour of the parish, calling on each occupier whose holding exceeds 10 acres. Let the farmers of the parish be apprised of the time when such visit is to take place by the collector himself, taking care to have a notice to that effect affixed to the church and chapel doors the Sunday previous. The time chosen for such visit should be a week before the commencement of harvest in each year.

In making a call on Farmer No. 1 (the extent of whose holding the collector already knows, having copied the acreage of each farm from the parish poor rate book into his own memorandum book), he will ascertain from the occupier—

How many acres of his farm are in Wheat.
How many acres of his farm are in Barley.
How many acres of his farm are in Oats.

With the character of the crops and the probable yield of each.

How many acres of his farm are in Turnips.
How many acres of his farm are in Maugel.
How many acres of his farm are in Potatoes.

With the character of the crops and the probable yield of each.

How many Sheep on the Farm, estimated value £—.
How many Cattle on the Farm ditto
How many Pigs on the Farm ditto
How many Horses on the Farm ditto

The extent of hay ground and of permanent pasture.

Having noted all this in the case of No. 1, he, the collector, will proceed to No. 2, and record statement No. 2, and so on over the parish. Should any occupier appear to be disinclined to afford the necessary information, the collector, having the extent of the objector's farm before him, could supply certain figures and statements under their respective heads, which would not be far from the truth.

The collector would then summarise the whole in something like the form following:—

Parish of Tawstock, Devon—Area, 6800 acres.

1862.	Acres.	Estimated yield per Acre.	Total estimated yield.
Extent in Wheat ..		Bushels	Quarters
,, Barley ..		Bushels	Quarters
,, Oats ..		Bushels	Quarters
,, Turnips ..		Tons	Tons
,, Mangel ..		Tons	Tons
,, Potatoes ..		Tons	Tons
,, Hay ..		Tons	Tons
,, Pasture ..			

Number of Sheep in the Parish, estimated value, £—.
Number of Cattle in ditto. Ditto.
Number of Pigs in ditto. Ditto.
Number of Horses in ditto. Ditto.

A person should be appointed in each county to receive these parish reports, to collate and arrange them, and prepare a digest of the whole, to be forwarded to London, to form with the other county reports a general one for the kingdom. The parish form would answer, substituting the word "county" for the word "parish."

Remarks.—The plan proposed would no doubt be attended with considerable expense, but it is the only one likely to achieve success, in the efforts to obtain correct agricultural statistics of the country. To employ the county police in the business, as was at one time proposed, would be the worst arrangement possible. These men are in bad odour with our farmers, who look upon them as drags on the industry of the country, expensive and useless; and their interference would very probably renew that hostility to the measure which formerly existed, but is now happily subsiding. The idea of employing the police in assisting to collect the agricultural statistics of this country may have originated from the circumstance of that body being employed for a similar purpose in Ireland; but the working of the system there is anything but encouraging, inasmuch as it appears by recent statements in the public papers that the Irish returns are worthless from their incorrectness in every particular. It has been said that, abandoning the assistance of the police, other persons might be employed to go round to the farmers and leave blank papers for the latter to fill up. Now there can be no doubt that in some instances the larger class of farmers, men of education, and of enlightened views would be willing to co-operate with the government in this respect, and would readily furnish the necessary information as regarded their own farms; but at the same time, it must be evident to those who are acquainted with the position, habits, and predilections of the numerous class of small farmers in England and Wales, a class numbering 96,000 men, in the occupation of 2,000,000 acres of land,—men who would rather handle any tool than a pen;—it must be evident that the attempt to obtain from each such occupier a correct statement in writing of his acreage, his root and corn crops, the number of his sheep and cattle, &c., would be a failure. But if such machinery as is now recommended be put in operation, an intelligent practical agriculturist resident in each district, and well acquainted with the routine of farm management pursued there, and having the confidence of his brother farmers large and small, would find no difficulty in obtaining every particular required. In estimating the remuneration to be given for these services, the following facts require to be considered.

In some parishes there is but one farm for every 1000 acres, in others there are 15 to 20 farms in the same area, and the rate of payment might be in the proportion of farms visited and the particulars of each recorded, according to the following scale:—

Parishes not exceeding		5	Farms	2	Guineas.
,, exceeding 5 and not exceeding		10	,,	3	,,
,, ,, 10	,,	20	,,	4	,,
,, ,, 20	,,	30	,,	5	,,
,, ,, 30	,,	40	,,	6	,,
,, ,, 40	,,	50	,,	7	,,
,, ,, 50	,,	60	,,	8	,,
,, ,, 60	,,	70	,,	9	,,
,, ,, 70	,,	80	,,	10	,,
,, ,, 80	,,	90	,,	11	,,
,, ,, 90	,,	100	,,	12	,,

By the foregoing scale, the cost of collection per farm decreases as the number of farms in a parish increases. For a parish containing five farms only, the cost per farm would be 8*s.* 5*d.*, and per parish 2 guineas. For parishes of 100 farms, the cost per farm would be 2*s.* 6*d.*, and per parish 12 guineas, and in this way the expenses of collection for the kingdom might amount in round numbers to 40,000*l.*; it is believed, however, that the country would not grudge this sum, because it would receive value for value in the first place, and secondly, the money would be distributed among the class of persons from whom the information had been obtained; and thirdly, the returns so well authenticated, would if printed and published sell well, and repay part of the cost of collection, as well as that of publishing.

LABOUR IN NORFOLK.

It is a libel on Norfolk labourers to say that, as a class, they are inferior to those of other counties—Northumberland included. The constantly employed of our men are as hard working and as skilful as can be found in any part of England. It is rarely or ever that such of them leave the country; in short, they are too much wedded to their homes, which, in some measure, may be attributed to the pressure of the present unjust laws of settlement. It is a fact worthy of notice that, although no contract exists between the employer and the employed, not even from one day to another, yet it is seldom indeed that men change masters. I have in my employ those who have been upon the farm for periods varying from ten to fifty years, in short, who have not done a day's work elsewhere from their boyhood. This is no exceptional case. I served many years' apprenticeship to all kinds of farm work, and have since had various opportunities of intercourse with your Northumberland hinds during working hours; and I unhesitatingly affirm the Norfolk men to be as good workmen, and equally as skilful.

Wages here have, I dare say for a century past, been regulated by the price of Wheat, save in the extremes of high and low prices. One-third of a coomb (*i.e.* four bushels) has been considered the value of a week's work; but it is fair to state towards the employers, at least those who are considerate, that a great deal of farm work, at all seasons, is done by the "piece," estimated in proportion to the daily wage. At present many labourers are earning at "piece-work" an average of 12*s.* weekly. It may be interesting to your agricultural readers if I state the kind of work thus let out to the men as "piece-work," with the prices paid—at the same time, be it understood, we have few or no women workers. Hoeing Turnips three times (including hand-picking by children) 8*s.* an acre, if only twice hoed 5*s.* 6*d.*—this is exclusive of scuffling; for Mangel Wurzel (which is now largely cultivated), 1*s.* an acre extra; Grass mowing (new land), from 1*s.* 6*d.* to 2*s.* 6*d.* an acre; old land, about 3*s.* Harvest work:—Mowing Wheat and tying, from 5*s.* 6*d.* to 10*s.* an acre; Oats and Barley, on the swathe, from 2*s.* to 3*s.* 6*d.*; but the harvest is almost invariably "let" to the men ordinarily employed on the farm, with, occasionally, one or two additional hands, at sums varying (according to the price of Wheat) from 5*l.* to 6*l.* each. This payment, including all the county through, would average, say, from 9*s.* to 11*s.* an acre.

In no county is the harvest more rapidly secured, the men work very hard, early and late, from 5 o'clock a.m. to sun-down, and in favourable weather are not unfrequently carting long after. The corn on the good lands is very bulky. In the autumn securing the Mangel Wurzel and the Swede Turnips is generally "piece-work," a crop of the former varying from 30 to 40 tons per acre, cost from 2*s.* to 2*s.* 6*d.* lifting and laying in rows for the carts to pass between; 1*s.* for cutting off tops, which is done by women or children; and 2*s.* to 2*s.* 6*d.* for filling per acre; hodding and banking up with earth (6 inches thick), about 3*s.* an acre. Indeed, the full expense of securing a good crop will be from 8*s.* to 10*s.* the acre. At these prices my own men made, last season, a wage averaging 2*s.* 3*d.* each per day. I should like very much to know how much Mr. Grey's men would have earned at similar work, at the same rates. For draining 4 feet deep, and filling in, from 9*d.* to 1*s.* per rod of 7 yards is given. The clay in this county is often full of flints, and frequently the bottom spits have to be broken up with a pick. The weekly earnings at this work vary from 2*s.* 3*d.* to 2*s.* 6*d.* a day. Then we have sundry other jobs done by the piece—*e. g.*, turning middins, filling do. per cubic yard, and spreading the same either by the load or the acre; chaff cutting; raising hedges and repairing them. Ploughing is also occasionally piece-work. We have not "five horses with a man and two lads;" but during full working hours in spring and summer, a man with two horses on our mixed soils can plough two acres in the day—indeed, when I was a ploughman it was our usual stint. I omitted naming that full employment is found here (especially in the winter season) for boys from 8 to 9 years old and upwards. They commence by scaring birds from the corn, by which they earn from 1*s.* 6*d.* to 2*s.* a week. At the ages of 11 or 12 they can feed beasts in the folds, the Turnips being cut by a short hook resembling a sickle, or by Gardiner's cutters. Each lad can feed from 10 to 20 beasts, his wages averaging from 2*s.* 6*d.* to 6*s.* per week; and here is a source of evil——but having, I trust, proved to Mr. Grey that Norfolk labourers can and do work, I have to ask for a little more of your valuable space, to solve the problem of the great disparity of wages in the two counties. It is neither owing to a surplus of labour with us, nor to the physical inferiority of the men;—but is there a mental equality? Although we have schools in almost every parish, and most laudable efforts are made by the parochial clergy to extend education to the children of the poor, aided, often, by landowners and farmers,—yet, owing to the long established system of low wages, the labourer's child is compelled to give up schooling when he is getting old enough to learn its lessons, that he may add his little pittance to the insufficient earnings of his parent; hence he and his schoolmates grow up in comparative ignorance, and their future lot is one of a character reflecting disgrace upon all whose mistaken policy has doomed them to ignorance, by forcing them to labour for bread when they should have been cultivating the latent powers of an immortal soul. This is the cause of their being content with their undeserved lot. We know from experience that to get all the brute labour possible out

of a man at extremely low wages, he must be kept in a low state of ignorance, for "Knowledge is power." Once enlighten the mind, and will the man be found to work from sunrise to sunset for 7s. or even 9s. a week? Will he not look about him and see what wages he can earn in other countries? Will not the cheap press inform him how dearly he may sell his labour in our colonies and elsewhere? In short he will then become what he may be scarcely called at this moment—a creature of thought and reason. I should say that not above a tenth of the middle-aged agricultural population of this county can either read or write; and, and in my humble opinion, the disparity of wages in the two counties is attributable to this educational or mental inferiority of our men in comparison with those of the North.

But there are signs of the approach of better days, and I for one shall hail their advent with pleasure; for though we shall be called on to pay a higher rate for all manual labour, yet may we not reasonably expect, from the great practical experience of our people, aided by the skill and genius of the mechanician, a further reduction in the present cost of cultivation as well as a diminution of our rates? And will there not be the satisfaction of knowing that our agricultural labourers are emancipated from ignorance, with its legion of evils, and are moving onwards with their fellowmen in the path of civilisation and virtue? *A Norfolk Tenant Farmer.* [The foregoing letter was written in 1858, and addressed to the Editor of the *Northern Daily Express* under the following circumstances. The writer, in a private letter at that period to a Northumberland agricultural friend, mentioned the then state of the Norfolk labour market, rate of wages, &c. The disparity of wages in the two counties being so great, the one averaging from 8s. to 9s. weekly, the other 16s. 6d., induced the individual to whom it was addressed to publish that fact in the above journal, in reply to which many letters appeared giving various reasons as to the cause of such disparity, one party stating there was no outlet for labour in Norfolk, whilst another declared that so great was the superiority of the Northumberland hind to the Norfolk labourer that wages were as cheap at 16s. 6d. per week for the former as 8s. would be for the latter. These assertions induced the writer to offer a few remarks relative to that invaluable class of men, the Norfolk labourers, as also to give his opinion as to the prevailing cause of the great disparity of wages then existing between the two counties. Since that short period has elapsed the ordinary agricultural Norfolk labourer is now receiving 11s. per week; team men from 1s. to 2s. extra. All piece-work has advanced in proportion. Many men in that district are now earning by the piece an average of 15s. weekly.]

Home Correspondence.

Steam Cultivation: Mr. Smith and Mr. Pike.—I have for some time refrained from saying a word about the charge "not straightforward," brought against me by Mr. Pike, feeling that I could safely leave that part of the matter to the judgment of the public, agreeable to Mr. Pike's wish; but now I think I shall not be quite just to the public if I any longer withhold the following extracts:—

1\. Stevington, near Bedford, May 16, 1859.
"GENTLEMEN,
"I have now gone over above 469 acres with my apparatus.
Messrs. J. & F. Howard. "WILLIAM PIKE."

2\. Stevington near Bedford, November 25, 1859.
"GENTLEMEN,
"I have done with my steam cultivator . . . . upwards of 1000 acres.
Messrs. J. & F. Howard. "WILLIAM PIKE."

3\. Britannia Works, Bedford, March 27, 1860.
"DEAR SIR,
"Pike put on 2000 yards of rope and upwards, and has just finished a 35 acre piece . . . without going into the field with either engine or windlass. . . . his old rope which he has added having been in work since June, 1858."
To W. Smith, Esq. "JAMES HOWARD."

4\. Stevington, near Bedford, Dec. 31, 1860.
"GENTLEMEN,
"I have now worked my apparatus for three seasons, and have done upwards of 2000 acres."
Messrs. J. and F. Howard. "WILLIAM PIKE."

5\. Stevington, Bedford, December 2, 1861.
"GENTLEMEN,
"The first steel rope I had did above 2000 acres, and I have a small portion of it at work yet.
Messrs. J. & F. Howard. "WILLIAM PIKE."

Now, perhaps Mr. Pike, with the aid of Messrs. Howard, will be good enough to explain how his first set of steel ropes managed to do above 2000 acres. Surely he must have forgot the mile of iron rope I aided in putting on his drums in his field in the presence of him and Mr. James Howard, who supplied it in June, 1858. The extract from Mr. James Howard's letter of March 27, 1860, shows that the old rope was then lashed to the first steel rope, and Mr. Pike knows that long lengths and larger pieces, 35 to 50 acres, that he advocates doing at a setting down, cannot be done with 1400 yards of rope, the length of his first steel rope, and he also knows that January, 1861, was a frosty month, and that his second set of steel ropes was had February, 1861. And now, sir, let Mr. Pike show that he has been "straightforward" in stating that his first steel rope did above 2000 acres, or perhaps the public will be inclined to think that the Messrs. Howard's reports of 1861 are not any better than a puff. *William Smith, Woolston, Bletchley Station, Jan.* 10.

Septennial Averages—Tithe Commutation.—As many of your readers may feel anxious to know the result of the Corn Averages for the seven years to Christmas, 1861, published by authority in the *London Gazette* of Friday evening, viz.:—

Wheat...	...	7s. 0¼d.	per imperial bushel
Barley...	...	4 7½	ditto
Oats ...	...	3 1	ditto

I beg to state for their information, that each 100l. of tithe rent-charge will, for the year 1862, amount to 109l. 13s. 6d., or very nearly 2½ per cent. less than last year's value. The value for the year 1855 was only 89l. 15s. 8¾d., or nearly 20 per cent. below the amount of the present year. The following statement from my "Annual Tithe Commutation Tables," will show the worth of 100l. of tithe rent-charge for each year since the passing of the Tithe Commutation Act, viz.:—

For the Year	£	s.	d.	For the Year	£	s.	d.
1837	98	13	9¾	1850	98	16	10
1838	97	7	11	1851	96	11	4¾
1839	95	7	9	1852	93	16	11¼
1840	98	15	9¼	1853	91	13	5¾
1841	102	12	5¼	1854	90	19	5
1842	105	8	2¾	1855	89	15	8¾
1843	105	12	2¼	1856	93	18	1¼
1844	104	3	5¼	1857	99	13	7¼
1845	103	17	11¼	1858	105	16	3½
1846	102	17	8¾	1859	108	19	6¼
1847	99	18	10¼	1860	110	17	8½
1848	102	1	0	1861	112	3	4¾
1849	100	3	7¾	1862	109	13	6
					26)2619	16	7¾
				General average for 26 years	£100	15	3

Charles M. Willich, Actuary University Life Assurance Society, 25, *Suffolk Street, Pall Mall East, S.W.*

Rain at Stranraer, N. B., 1861.—On looking over Morton's Almanack I find that the summer of 1861 with you has been dry, whereas with us it was extremely wet. During the first eight months of the year the depth of water which has fallen with you only amounts to 9 44 inches, while with us it was no less than 32.15 inches during the same period, showing a difference of 22.71 inches. Rain appears to have fallen with you upon 117 days of these months, and with us upon 124 days, so that your showers must have been light compared with ours. Enclosed I send you account of the depth which fell here during each month of the by-gone year, with the number of the days upon which rain fell:—

Height of Rain Gauge { Above Ground, 4 inches. Above Sea Level, 209 feet.

MONTH.	No. of Wet Days.	Inches.
January	12	3.75
February	11	3.20
March	28	5.75
April	6	1.10
May	7	1.30
June	12	2.90
July	26	6.15
August	22	7.00
September	16	5 10
October	14	3.55
November	15	5.05
December	12	3.25
Total	181	48.10

James Kennedy.

The Cost of Horse Labour (from a Farmer's Note Book).—Under the above heading a writer asks, in your impression of the 11th current, "What is the cost of scarifying in many instances by horses, when four horses and one man get over 8 acres a day?" and he immediately responds, "Why, only 1s. 1d. an acre!" Now, if he is correct in his estimate, the work of one man and four horses is worth only 8s. 8d. a day; and where labour by horses can be procured at that rate, steam ploughing will never be thought of. But though I have had a great deal to do with the hiring of horses, and still have much to do with it, the lowest price at which I can obtain the labour of a man and four horses is 22s. per day; and if the calculations of steam-grubbing are "one-sided," the calculating of horse-labour at such a low rate is no less so. *R. M., Scotland.*

Game Preserving in Inverness-shire.—We cannot take to ourselves nor give to incomers much encouragement as to future comfort and success, from the fact that a novel species of traffic has recently discovered itself in the shape of an exportation of game to the markets of Glasgow and other cities. To tenants bound down by restrictive game clauses it is small comfort to learn that the birds and beasts vigorously preserved on their land, and fed on the produce of their fields, are kept and slaughtered not simply for sport, but as an item of profitable traffic with city poulterers. In fact there is no county in Great Britain to the agricultural advancement of which greater obstruction is opposed by game preservation than Inverness-shire. This was well illustrated in the discussion at the County Farmers' Society. That discussion, started "On the improvement of pasture lands," soon passed into an exposition of the impediments thrown in its way by the operation of the game laws. One member, and he a gentleman of Saxon origin and education, and therefore likely to form an impartial opinion on a question regarding Celts, traced the depopulation of the county to the extent of 8000 between 1851 and 1861 to that operation, and all agreed that progress was much impeded. It is certain that large portions of the sheep-producing pastures have been altogether withdrawn from this their legitimate purpose, and appropriated to sterile unproductiveness of anything but red deer. It is no less certain that in the grounds still left open for sheep, the desire to obtain two rents from the same hills—one from the grouse shooter, and the other from the sheep farmer—has tramelled the latter by arbitrary rules and restrictions as to heather burning, which in many cases reduce the value of the mountain pasturage more than could be compensated for by the fluctuating rentals obtained from sportsmen—in all cases, to place the matter in the clearest light, these restrictions limit the mutton-producing powers of the district in order that its grouse-producing power may be increased. Ten sheep perhaps displaced for a covey of moorfowl. In the cultivated lands, again, lying adjacent to deer and game preserves, the most serious destruction is done to the growing crops. Tenants there tell us of nightly watches to preserve their crops, began in early summer, and continued till all is carried, and even with all this care, to use the words of a sufferer, "the produce is so harried that it is hardly worth carrying away." Even in the highly rented, and, on the whole, well cultivated straths forming the Deltas of the Ness and the Beauly, damage of no small amount to the growing corn, and particularly to the root crops, is caused by the game preserving system; and even where the damage would be patiently born, the annoyance caused by the prowling about of those vermin called gamekeepers, intent on making prizes, even of children's kittens, is not conducive to comfort and complacency. [The above report has been sent to us by a Correspondent well acquainted with the district.]

The Essex Clay Farm.—Accept my best thanks for the particulars of your "Known Correspondent's" farm. Besides that we have had this week a further protest "from a Farmer's Note Book," and we have also a short advertisement of mine showing the cost of a seed bed on an average of six years to be 9s. 4d. per acre. Then these three statements have a fair start, all off together, in the same Paper. Let us wait and look to the end of the race for the winter. I will first explain my 9s. 4d. per acre by showing the whole of the operations and cost for six years.

	£ s. d.
Roots.—One steam smashing, 7s.; one cross with horses, 2s.; one ridging with horses, 4s.; and one subsoiling with horses, 4s. Total per acre	0 17 0
Barley.—One steam smashing, 7s.; one cross cultivating with horses, 2s. Total per acre	0 9 0
Clover.—No operation.	
Wheat.—Ploughed once with three horses, per acre ..	0 12 0
Beans.—One steam smashing, 7s.; one cross cultivating with horses, 2s. Total per acre	0 9 0
Wheat.—One steam smashing, 7s.; one cross cultivating, 2s. Total per acre	0 9 0
Total cost per acre for six crops ..	£2 16 0

This gives an average of 9s. 4d. per acre per annum, and these operations have brought and will keep my heavy land as clean as a garden for ever under the same cropping. Your "Known Correspondent" between July 30 and Nov. 30, in all 122 days, less 17 Sundays gives 105 working days, appears to have ploughed 691 acres. To do this it would require the working of his 21 horses, three horses to a team (as is shown by his allowing a man to each team of three horses) [He does not always plough with three horses.] each team to do an acre a day, 99 days, thus leaving six days to harvest 352 acres of corn, to harrow, roll, and plant 200 acres of Wheat, to cart 200 loads of lime and earth, 660 loads of dung from yard and headlands, coals, lime, and furniture. This clearly shows that if he can do all this carting in six days with his 21 horses, he might sell 11 of them, and then have sufficient left to cart his harvest, &c., in a reasonable time, say within three weeks. My next point is to show that, with the 10 horses retained, an eight-horse engine, and a set of my tackle, he would be able to complete his seed beds at less cost than he has already done, testing him by my own operations and cost, and a still greater gain if I take "A Farmer's Note Book" estimate. Now we will take the 691 acres ploughed to cost at 9s. 10d. per acre ("A Farmer's Note Book" estimate) 339l. 14s. 10d. as the cost of doing it with 21 horses. Now, smash up the 166 acres of Peas and Beans stubble at 7s. per acre, and twice cross cultivated with horses at 2s. per acre each time. Total 91l. 6s. Then smash up 80 acres of Wheat stubble at 7s. per acre, cross cultivated 2s. Total 36l. This will put it in a better state than if once and part twice ploughed. And then we shall get through all the work by smashing up the 27 acres fallow land at 7s. per acre, one cross cultivating with horses 2s., and one ridging with horses 2s. 6d. Total 15l. 11s. 6d., giving a grand total of 142l. 17s. 6d. proving a clear gain of 196l. 17s. 4d. Now, as 4 horses can cross cultivate 8 acres per day, I may reduce my cross cultivating from 2s. per acre to 1s. 1d., as allowed by "A Farmer's Note Book," and thus increase my gain 15l. 10s. 9d., in all 212l. 8s. 1d. Surely this is enough to prove the superiority of steam. I have taken my friends the horse farmers' figures, and thrashed them with their own weapons. Perhaps they will want to know how I manage to do my smashing at 7s. per acre. During my now going on for the seventh year's practice, I have found that the men, coal, &c. and water, cost on an average, 5s. 2d. per acre. I usually allow 1s. 6d. per acre for wear and tear, &c. but in this case I throw in the halfpence, not that I

requires them, for if 1s. 6d. per acre of say 500 acres of ploughed land, is set apart for wear and tear, it will give a sum of 37l. 10s. per annum. It is right that I should explain why I allow him two cross cultivatings on his Pea and Bean stubbles. It is to make sure that he has got a clean seed bed; I never require but one. And the 2s. 6d. for ridging must be explained—his land being cultivated only from 4 to 5 inches deep, two horses can ridge it quite as easily as four horses can mine cultivated 10 inches deep—thus my allowance of 4s. per acre. Then if I claim all, I am the winner by a clear gain of 196l. 17s. 4d., an increased gain according to "A Farmer's Note Book" estimate of 15l. 10s. 9d., and a further gain by the saving of cross cultivating of 166 acres of Peas and Bean stubbles only once over, 16l. 12s.: a total gain of 229l. 0s. 1d., and I have set apart for your "Known Correspondent" 37l. 10s. for wear and tear, &c. Here, then, is a set of tackle provided for him the first year, and the means shown of keeping it in order; and the sale of his 11 horses with their tackle will buy him a capital engine. So much for protests against the Woolston system of steam cultivation. *William Smith, Woolston, Bletchley Station, Jan. 13.*

Societies.

HIGHLAND AND AGRICULTURAL: *Jan. 16.*—The half-yearly meeting of this Society was held to-day, the Duke of ATHOLE in the chair.

Address of Condolence to the Queen.—Mr. HALL MAXWELL read the following address, which was unanimously adopted:—

"We, your Majesty's most dutiful and loyal subjects, the President and members of the Highland and Agricultural Society of Scotland, incorporated by Royal charter, humbly desire to convey to your Majesty the expression of our deep sorrow on account of the death of His late Royal Highness the Prince Consort, and of our heartfelt and loyal sympathy with your Majesty under so irreparable a bereavement.

"While participating in the universal grief which so great a great a calamity has called forth, we are specially affected by the consideration that, in the death of His Royal Highness, we have lost an illustrious member of our body, and have been deprived of one whose great energies and abilities were unceasingly directed to the advancement of the agricultural interests of the empire.

"That it may please Divine Providence to strengthen and support your Majesty and the Royal family in your affliction is the earnest prayer of your Majesty's devoted subjects, the Presidents and members of this Society."

A vote of thanks to the retiring president, the Duke of Athole, was passed, and the Duke of Buccleuch, as senior ex-President, then took the chair. Fifty-six new members were proposed. The Duke of Argyle was elected President of the Society.

The International Show.—Sir ALEXANDER GIBSON MAITLAND read a report on this subject:—735l. is offered in money, besides 38 silver medals. The Royal Agricultural Society of England have agreed to extend to members of the Highland Society the same privileges in regard to the entry of stock as are possessed by members of their own body; and a motion has been intimated to the Council for admitting members of this Society to the yard without payment. The directors are bound to acknowledge the frank and friendly manner in which all their proposals have been met in England.

Report on the Chemical Department.—Dr. ANDERSON gave in a report of the proceedings of the Chemical Department during the last six months. He said that the result of several investigations had already been published in the Transactions, and there were at present two investigations just completed which would appear in future numbers of the Transactions—namely, an inquiry into the constitution of the straws grown in different localities; and an inquiry into the progress of the Wheat crop at different periods of its growth. Both these investigations had entailed a very great amount of work. The subject of the Potato crop had of late years attracted considerable attention, and at the last meeting of the Chemical Committee it was resolved that they should undertake a complete investigation of the Potato crop, a subject which had been very little studied. During the past six months a large amount of work had been done in the laboratory, in connection with agricultural products; and it was satisfactory to him to be able to state that there had been again a slight increase in the number of analyses made for members of the Society. The amount of work in that department which now fell into his hands greatly exceeded what fell into his hands when he first became connected with the Society.

Awards for Papers in Competition.—1. 25l. to James Sanderson, land valuer and agricultural adviser, 13, Cannon Row, Westminster, for a Report on the Agriculture of Berwickshire and Roxburghshire.

2. 10l. or Gold Medal to James M'Gillivray, V.S., Rayne, Aberdeenshire, for a Report on Joint-ill in Cattle and Sheep.

3. 10l. or Gold Medal to said James Sanderson, for a Report on laying down Grass with and without a White Crop.

4. The Medium Gold Medal to Robert Hutchison, of Carlowrie, Kirkliston, for a Report on the Effects of Frost—1860-61—on Trees and Shrubs.

5. The Medium Gold Medal to W. S. Macdonald, factor, Springkell, Ecclefechan, for a Report on Top-Dressing for Pasture.

6. The Medium Gold Medal to Christopher Young Mechie, forester, Duthil, Carrbridge, for a Report on the Cultivation of Willows.

7. The Medium Gold Medal to said James Sanderson, for a Report on Improving Hill Pastures.

The Chair of Agriculture.—Sir JOHN STUART FORBES rose to propose the following motion:—"This meeting, having observed that the Chair of Agriculture in the University of Edinburgh does not participate in the general scheme of subsidies adopted by the University Commissioners, remits to the directors to consider what steps it would be most expedient to take in order to increase the emoluments of the Chair; should the directors see fit, this meeting authorises them to communicate at once with the University Commissioners, and to urge them to join the Highland Agricultural Society in providing a suitable endowment." Since he entered the meeting there had been put into his hand a proposal that he should modify his motion, but the proposed modification implied the entire absence of any acknowledgment by the meeting of the fact that the Chair of Agriculture was inadequately provided for at present; and it was impossible for him to agree to that modification. He was quite aware that this question was one which might be called of a combustible nature, but he hoped that an explosion would be avoided on this occasion, and he would endeavour so to support the motion as to show that his sole object was to get matters placed in a more satisfactory position for the agriculturists of Scotland than he held them to be under the present ordinances of the University Commissioners. He had a strong feeling that the farmers of this country were now exceedingly anxious to improve the whole system of the education of their sons, and to enable them to take a superior position to their forefathers in the practice of their profession. He regretted that it was not possible to give them all the lights which it would be possible for them to receive, as we had not in Scotland, for want of sufficient energy, patriotism, or capital, an institution such as that at Cirencester, in England—an admirable combination of practice and science, which enabled young men to go through the whole business of their agricultural education on one spot. But in Scotland we had at least the advantage of the only Academical Chair for Agriculture at present in existence.* That Chair formed an admirable means of communicating to young men the practical theory of agriculture such as could be obtained by means of a lectureship of that kind. He regretted very much that the agriculturists of Scotland had not availed themselves of the advantages of that Chair to the extent which might be desired; but he believed that was owing to their not being sufficiently convinced of the propriety of giving to their young men a little time for entirely scientific study, independent of practical occupation. He believed that the emoluments of that important Chair did not exceed 150l., for which sum no properly qualified person could be expected to discharge its duties.

Mr. ERSKINE WEMYSS, M.P., seconded the motion.

Sir THOMAS GLADSTONE of Fasque thought that the matter should be left to the discretion of the directors, and with that view he begged to move, as an amendment, a modification in the terms of the motion, to the effect that, instead of remitting to the directors "to consider what steps it would be expedient to take to increase the emoluments of the Chair," it should be remitted "*simpliciter* to the directors to consider the subject and to take such steps as they may deem expedient"—the preamble of the motion being unaltered.

Mr. MELVIN seconded the amendment. He thought Sir John Forbes had, no doubt inadvertently, understated the matter in regard to agricultural education. He remembered when the class of Agriculture was attended by some fifty students, and he had sat on the same form with thirty farmers in the class. Certainly the farmers had shown that they appreciated the advantages of higher education.

SIR JOHN S. FORBES begged to explain that he was far from intending to put any slur on the farmers of the country with regard to their attendance on the Agricultural Chair. He was quite satisfied that their desire was to get the best education they could. It was 25 years since he attended the class of agriculture, and he had never seen any such attendance as the gentleman had spoken of.

Professor LYON PLAYFAIR said that, before the motion was put to the vote, he begged to bring one or two points before the meeting. The University Commission, which was established for the purpose of considering the condition and claims of the different Chairs in the Universities of Scotland, had published an ordinance full of great labour and merit, but in which almost the only Chair not provided for by endowment in other directions, that was neglected altogether, was the Chair of Agriculture. This must have arisen from one of two causes. Firstly, the University Commission did not think the Professorship of Agriculture was one that ought to be in the University, in which case their decision would not be sympathised in by this meeting. Agriculture was an art which was probably the most important that benefited the human race, and on its claims to have a Professorship in the University, it was not necessary for him to dwell. Or, secondly, the Commission had not paid attention to this Chair, because it considered it was one of a technical character, and which should be supported by those technical societies interested in it, as in the case of some of the Law Chairs, which several of the law societies came in to support. If that was the reason, he thought it would be becoming in the Highland Society to express their opinion that they considered the Chair of Agriculture worthy of support, and that the directors ought to go to the University Commission and co-operate with them in founding the Agricultural Chair in a proper way. The powers of the University Commission were most extensive; and they had complete power to put agricultural education on a proper basis; and in what state would this Society be as regarded their responsibilities in this matter, if they allowed the 1st January 1863 to arrive, when that Commission ceased, and when all the Chairs had been put in a proper position and that of Agriculture was neglected? He was quite willing to remit this subject, *simpliciter*, to the directors, but he thought they should give the directors such support as a meeting of this kind could give, in the expression of their opinion that this Chair should be put in a position worthy of the agriculture of the country.

* [Let us recall to the recollection of our readers the letter of Professor Skilling, of the Galway College, a week or two ago on this subject. *Ed.*]

Mr. P. MACLAGAN said every one must have been surprised when they read the ordinance of the University Commission and found the sum of 12l. 10s. set down opposite the Agricultural Chair, which was less than one-third of the lowest wages he gave to any labourer in his employment. He considered it an insult to the agriculturists of Scotland that the Chair should have been left in that position. In reference to the members attending the agricultural class, he believed there was only one attending the class in the last years of Mr. Low's incumbency. The number was far greater now. He had attended Professor Wilson's lectures, and had listened to him with great pleasure and profit; and he said that if the farmers of Scotland did not send their sons to be educated there, it was not the fault of the Professor of Agriculture. He must say he had been struck with the amount of money recommended by the Commissioners to be bestowed in the establishment of Law Chairs, some of which had been already tried, and not a single individual found to attend them. But while hundreds had been voted away for law, not a penny was voted for agriculture. While hundreds were given to teach the art of healing men nothing was given to teach the art of feeding them. He thought they ought to protest strongly against the decision of the Commissioners in this matter. It had been said that the proceedings of the University Commissioners had been as mysterious as the decisions of most Royal Commissions were. He could see no reason why they should have given so much to one faculty, and nothing to another; but the mystery that surrounded their decisions and the caprice they had manifested should not prevent this Society and the public from expressing their opinions on the subject. He hoped no gentleman would allow any personal feeling in this matter to warp his judgment. No doubt the Professor of Agriculture was a personal friend of his own, but he regarded in this question simply the interests of the Chair. Should a vacancy occur in it he did not know how they would ever get it filled if they only offered this paltry sum of 150l. He had much pleasure in supporting the motion of Sir John Stuart Forbes.

The CHAIRMAN then read the motion and amendment, and stated that, as far as he saw, the difference between them was, that in the motion the directors were fettered to a certain extent as to their action, and the Society was pledged to a certain course, whereas in the amendment it was open to the directors to take the course which they might consider best in the circumstances.

Sir JOHN S. FORBES begged to be allowed, as the mover of the motion, to say that he had no wish whatever to fetter the directors; he simply wished them to acknowledge that the present provision for the Chair of Agriculture was inadequate.

The SECRETARY again read the motion and amendment, and a show of hands was taken, the result however being apparently so nearly equal that the chairman could not decide on which side was the majority. The meeting then divided, those voting for the motion going to the right of the chair, and those voting for the amendment going to the left, when the amendment was declared to be carried by 90 to 78.

A vote of thanks to the chairman terminated the proceedings.

Reviews.

Revue Agricole de l'Angleterre. Par F. Robiou de la Trehonnais. Barthés et Lowel, Great Marlborough Street.

It is no new thing for a foreigner to draw a better picture—one which more perfectly presents the salient points of his subject—than a native of the country which he visits and describes. And M. Trehonnais, who has long been resident among us, and who knows and is known in the English agricultural world better than 99-100ths of those who more strictly belong to it—has both naturally and by long experience especial ability in the work of this kind which it is the particular office of this quarterly journal to do.

We have nowhere met with greater skill in seizing and presenting to the reader just those points on which the chief current agricultural interest hinges, and where moreover the sources and the probabilities of

agricultural progress most probably rest. In the second volume now before us we have papers on Cross-breeding—on the Forces used in Agriculture—on Lois-Weedon and Jethro Tull—on Irrigation and Liquid Manure—on Agricultural Maxima—on "Sigma" and his inventions—on High Farming—on the Influence of Climate—on the Annual Shows—on Milk and its Products.

These are only a few of the topics treated of—and each is discussed in a full and substantial essay, which states the whole case most instructively for Continental readers, and most justly to the English practice and experience which it describes. We are fortunate, as agriculturists, in having so able and so well disposed an exponent and historian for French and French-reading agriculturists.

One of the most interesting papers in the volume before us is that in which the late Prince Consort's relations to agriculture and his own proceedings as an agriculturist are described.

We heartily recommend those of our readers who are in the habit of reading French agricultural literature to add Mons. Trehonnais' annual volume to their libraries.

Foretelling Weather: Being a Description of a newly discovered Lunar Weather System. By S. M. Saxby, R.N., Principal Instructor of Naval Engineers, H.M. Steam Reserve, &c.

This pamphlet differs altogether from many previous treatises having the same object in view in the scientific education, experience, and reputation of its author. He, however, differs from men of science in general in believing that the moon *does* affect the weather.

"Hitherto the public thirst to possess a knowledge of coming weather has tempted many an impostor to vend his spurious "prognostics," the constant failures of which still further prejudice the whole question; hence the difficulty of obtaining a hearing for any suggestions founded on really honest deductions. The weight of opinions delivered by men of highest calibre in science may well have daunted the attempts and suppressed the convictions of many a casual enquirer. Perhaps I am among the first who, claiming to be allowed the weight of long experience in mathematical and physical science, has ventured to throw down the gauntlet, not, however, in a hostile spirit, but in order if possible to elicit the truth. That my supposed discoveries were received at first with coldness need not surprise; but recent occurrences, one of which will be now explained, seems to have left me once more warm and vigorous in the determined pursuit of this truth, believing, as I firmly do, that so desirable a gift to mankind as a fairly developed weather system is within our grasp."

We must leave those who are curious on the subject to read the author's speculations in the pages of his pamphlet. It must suffice to say that he believes there is a certain conjunction in the relative positions of sun, moon, and earth, which never happens without the occurrence of a marked disturbance in the atmosphere. This disturbance manifests itself especially in the equatorial regions of the earth, and travelling thence reaches our island in about 9 days from the time of their origin. The astronomical concurrences in which the power, Mr. Saxby believes in, resides occur every lunar month, and a series of predictions for the ensuing year are given, founded on the dates thus indicated.

Mr. Saxby distinguishes his theory of these atmospheric disturbances into two distinct heads:—

"The primary effects of disturbance are immediate and stationary. The secondary are progressive, and they travel to a considerable distance. The latter are known by the name of hurricanes, or Cyclones, as they are called, and they require some further illustration. The Cyclones which affect us derive their origin in the regions of about 10° to 15° north latitude, not very far eastward of the island of Trinidad; they then travel along very nearly upon some line of equal magnetic variation until they meet the continent of America with more or less proximity, and then, whether it be caused by the higher temperature of the Gulf Stream or by some peculiar magnetic or electric repulsion, their course seems to be absorbed into the line of direction of the Gulf Steam, which shunts them, as it were, across several contiguous lines of equal magnetic variation, and places them upon others in the direction of which (or very nearly) they reach the British Islands. Thus Cyclones always approach us from the southward and westward, and proceed towards the north-eastward; and this known fact affords the Board of Trade the opportunity of warning the northern ports of an approaching Cyclone, for there is another peculiarity about Cyclones which ordinary gales are free from, and it can easily be explained. If we stir water in a tumbler, it will be seen that the centre of the fluid is depressed in proportion to the velocity of the fluid, and it is just so in the case of a Cyclone. The rapid whirling motion of the air yields to the law of centrifugal force, and the air leaves the centre; consequently, within the vortex the height of the air becomes lowered, or, we may say, the weight of the air becomes lessened, so that it allows the mercury in a barometer to fall in consequence of diminished atmospheric pressure. And, further, the same law which causes a vessel in sailing through the water to push a small wave before it, causes the mass of whirling air, in its progress through the atmosphere, to push its atmospheric wave before it, which necessarily, by increasing the height of the column of air, slightly raises the mercury: this I have frequently noticed, and have called it the 'premonitory wave' of a Cyclone."

"Because they travel at the rate of about 16 to 20 miles an hour, and through a space of upwards of 4000 miles before they reach us, I have found it very accurate to allow upon an average about 9 days for the time of their passage to Great Britain.

"Having thus, as I believe, explained the heads of my Weather System, I leave with my readers a list of suspected days for their future guidance.

"List of days on which the weather may reasonably be suspected as liable to change, most probably towards high winds or lower temperature, being especially periods of primary atmospheric disturbance.

1861,	December ..	2d, 9th, 16th, 23d, 30th.
1862,	January ..	5th, 12th* or 13th, 19th or 20th, 26th.
,,	February ..	1st or 2d, 9th, 16th, 22d.
,,	March ..	1st, 8th, 15th, 21st or 22d, 28th.
,,	April ..	4th or 5th, 12th, 18th, 24th.
,,	May ..	2d, 9th, 14th or 15th, 21st or 22d, 29th.
,,	June ..	5th or 6th, 11th or 12th, 18th, 25th or 26th.

N.B.—If the day marked prove calm and still, distrust the day after, and especially the second day after.

The changes vary in intensity, but even at quiet periods they may be plainly traced in the scud flying with a velocity totally at variance with the state of the air at the earth's surface.

"Now the so frequent roughness of the weather on the "second day after" either of the above dates may possibly proceed from Cyclones of inferior importance, which then generally complete their ninth day of existence, and are consequently "due" at the British Isles. As an example, a Cyclone generated on the 26th January would be "due" in England on the 9th day after, viz., on the 4th February. And by way of explaining the nature of the list added below, I would state that I find on the 26th January, not only will the moon be in perigee at the time of her stitial colure, but it will be very near her time of new moon (30th at 3 A.M.); therefore, as three disturbing influences are nearly confluent, I specially warn against not only the 26th January to the 30th, as likely to be disturbed by primary causes, but also against the 4th February as likely to be a time of storm from secondary causes, viz., that of a Cyclone of unusual violence passing somewhere near, or perhaps over, the British Isles; and the similar reasons induce me to name the other periods undermentioned for special warning.

1861, December, 1st to 3d and 11th.
,, January, 26th to 30th.
,, February, 4th and 28th.
,, March, 1st and 28th to 30th.
,, April, 6th and 24th to 28th.
,, May, 4th and 28th to 29th.
,, June, 7th and 25th to 27th.

Farm Memoranda.

SOUTH HANTS FARM.—*Report from Jan. 1 to 14, 1862.* *Horse Labour.*—The first week in January having been remarkably fine and dry has enabled us to sow more Wheat than we had otherwise intended, and on the 2d of the month 3 acres of nursery Wheat were sown, the land being in the best possible condition. This variety of Wheat has proved for some years past very hardy and well suited for late sowing, and is also considered the finest of Red Wheats for millers' purposes; we, however, prefer Morton's Red Strawed White Wheat for the main crop and autumn sowing; it must, however, be borne in mind that ours is essentially a White Wheat climate, which together with the strength of the soil gives the grain of excellent quality both as regards colour and weight, the two great points to be attained in the growth of Wheat. The Wheat just sown was after stubble Turnips fed off with oilcake, hay, &c., and a heavy dressing of box manure applied in addition, the former crop having been White Oats, and we have found for some seasons past that Wheat if sufficiently manured succeeds well in this rotation. Carting manures in readiness for the Potatoes has been continued at intervals when the plough was impeded, otherwise ploughing has been continued, and a considerable portion of the land intended for white Oats has been ploughed in excellent condition, and will afford a stale and mellow furrow at the seed time.

Hand Labour.—The employment for men has been of somewhat the usual character peculiar to the time of year, such as hedging, banking, trenching, filling and spreading manures, &c., also forking out Couch Grass from the Clovers, &c., in which work the women have also assisted, and which work has been completed for the season; still there is work of the same kind to be done on the Wheat stubbles intended to be sown with white Oats.

The Stock.—Sheep generally have done well during the last fortnight owing to the fine mild and dry weather. Having in our last report referred more particularly to feeding our fatting lambs, we now propose to state the method of feeding and management of the ewes with lambs at side. We always divide our flock into two parts; those which drop their lambs at the earliest period are kept separate from the late part of the flock, and are fed in a different manner, and are kept in a shifting fold on Wheat stubbles where the land is intended to be sown to White Oats in the spring, the roots all being carted to the fold, and in this way the produce of 1 acre of Mangel consumed sufficiently dresses 3 acres of land for Oats. The land from which the Mangels are taken is sown with Oats without any further dressing, the land having been doubly manured for the Mangel crop. The ewes are fed in troughs with cut Mangel, cake-meal being mixed with the cut roots; the feeding takes place three times a day, with a moderate quantity, such indeed as they will eat out readily before they leave the troughs, and we reckon that the great art of successful feeding with Mangel is moderation in quantity, for we have found that when sheep get as much as they could eat of Mangel that they become unhealthy, and this is easily accounted for: the Mangel being richer and more nutritive than the Swedes, they cannot, like the Swede, be used *ad libitum* without danger to the animal. For ewes suckling their lambs we give 1 lb. of oilcake per day, a moderate quantity of good Clover hay (we prefer broad Clover for them); as the season proceeds they will get a small allowance of cracked Beans in order to finish the animals in readiness for the butcher. The second division of the flock are kept by feeding off Turnips on the land where they grow, such as stubble Turnips, &c.; they get 1 lb. of cracked cake each with good Clover hay; the lambs running in advance get an allowance of cut Carrots, in addition to the advantages of having the run over the Turnip greens. The object of feeding the backward ewes different from the early ones, is evident: the late ewes will not make mutton in the same ratio; the feeding of them for market is therefore deferred until a later period, and it often happens that a portion of the flock answer better to be sold in a comparatively lean state for stock, rather than to attempt fattening them later in the spring, at which time they do not improve in proportion to the food they consume. The dairy cows are now nearly out of profit, being forward in calf, and they are fed in sheds upon the large Drumhead Cabbage, getting about three large Cabbages three times a day, with Oat-straw in the crib always at command. We do not allow our cows to run in the pastures during the winter months, for when the Grass lands are bare fed they get nothing by going out, and are often found shivering under some hedge, where they leave all their droppings to no account; whereas, when they are kept in hovels they become what they ought to be in the winter months—manure-making machines. We allow to each animal a shed and space in front, being 12 feet by 10 feet under cover, and the like space in the open; here they are fed and remain with the manure accumulating under them until the pastures afford a bite of Grass, when they are set at liberty; the dung made in this manner is far preferable and greatly in excess of that usually made in open yards, where the animals run promiscuously and are turned out to pasture at day time. *J. B.*

* When two consecutive days are mentioned, the equinox, &c., occurs at about midnight of the first date.

Miscellaneous.

Pickling Wheat.—I have for many years endeavoured to impress upon the farmers in my neighbourhood the danger of using arsenic, or mercury, as they call it, in the preparation of seed Wheat. The death of partridges and other birds from this cause has often come under my notice; also the mischief to poultry in farmyards, and even to farmers themselves and their families; for the carelessness of many in the use of this deadly mineral is inconceivable. I have known seed corn prepared with it on barn floors, where it has sunk into the crevices, the grain being placed in sacks (for conveyance to the drill), which are often afterwards used as if nothing deleterious had been put into them, and hence much sickness may, and, no doubt, does arise. A small farmer of my acquaintance, not long ago, having doctored more corn than he required, washed the surplus and sent it, with some other Wheat, to be made into flour, but it nearly killed him and his family—to say nothing of the damage to those whose grists followed his upon the millstones. As Wheat, without some preparation, is certainly liable to smut, I shall be obliged if you will allow me to mention one which I have always found effectual—viz., soaking the seed for a few minutes in a tub of lime water, sufficiently strong to float an egg. It should be done at least 12 hours before using, so that it may become dry enough to run through the drill, and, if spread thin upon a barn floor, its power of vegetation will be unimpaired for several days. This plan is adopted by some of our best agriculturists, and has the advantage of eliciting from the seed Wheat all hariff and noxious weeds, which swim at once on the surface. *Mr. Booth, of Friskney, Lincolnshire, in Daily Paper.*

Calendar of Operations.

JANUARY.

WEST SUSSEX: *Jan.* 21.—We are now in the dull part of the season, when there is little that can be reported of farm operations. Now and then a little ploughing can be done, but on our heavy lands the weather has not been favourable for any field work for two months past, but upon light lands work is well forward, and Barley will be put in as soon as the present frost is gone. We have had very frequent white frosts, but not the rain which is said to follow three of them, and the soil below the surface is dry, and I should say comparatively warm, as we find the frost takes little effect upon it except where the wind can reach, from which we infer that the temperature of the earth is higher than usual, and we may expect that spring vegetation will be early. And as our winter food lasts well, stock are likely to be dear. Swedes and Turnips stand well, and are very sound. Mangels have kept well.

and comes in handy at times when the frost cuts us off from the Turnips. We used to fear to change sheep, especially ewes in lamb, from Turnips to Mangels, but have never found anything wrong that could be traced to this cause, and we may expect that good fresh Mangels are much better than frosty Turnips, and we consider that at any time a few of them may contribute to the health of stock, being of a more relaxing nature, and thus likely to carry off impurities. The lambing of the old ewes is now going on with varied success; among the horned breeds the luck has not been so good, but hitherto the Downs have done pretty well. During this month we expect the greater part to come in, and we consider that those that drop this month are forward enough for the market, as there is not much sale before Easter for lambs; if they are then very old the extra price is not in proportion to their size, and then they have to be provided for so much longer; and those that come later in the season get to maturity more rapidly. But as a general rule we do not get Downs too early; and the horned breeds, though they come six weeks or two months earlier, have lately been so dear that few of them find their way here, and they only do upon the best land, as they are not so easily fatted as the Downs, especially if they have to be kept far through the summer; the warm weather checks their progress. The frost for the past three days has been sharp, and to-day we have had a little snow with signs of more. Beef and mutton are plentiful in our market, and so is every kind of corn. *G. S.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, Jan. 23, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0-6	Amount of Cloud 0-10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	17	30.07	29	26	S.E.	1	6	29	26	50	25	..	40½	42
Saturday ..	18	30.13	27	22	S.E.	1	4	32	22	35	21	..	39	42
Sunday ..	19	29.96	22	18	S.E.	1	1	33	20	43	19	..	33	41
Monday ..	20	29.75	27	24	E.	1	8	31	23	42	23	..	37½	40½
Tuesday ..	21	29.56	30	28	E.	2	8	31	25	35	23	..	37	40
Wednesday .	22	29.39	41	40	S.	2	7	41	30	40	30	0.13*	37	40
Thursday ..	23	29.66	35	34	S.	2	2	49	32	56	29	..	36½	39½

* Melted Snow and Rain.

Notices to Correspondents.

Bailiff: *R.* We have no personal knowledge of the person; but if you want a common countryman, thoroughly well acquainted with the management of the dairy herd—with field work of all kinds—shepherding, barnwork, thatching, &c., we can send you one. His wages would be 18s. a week, or 16s. with a cottage and garden free.

Bones: *G L P.* We should be inclined to mix the bones with an equal quantity of wet sand, and soak the whole with about one-third their weight of sulphuric acid. This will answer very well if the sand is pure siliceous sand, but if it be calcareous it will not do. In that case you must put the bones into a vessel along with bones and acid half and half, and have an arrangement for drawing off the liquid after an hour or two, and then mix up the bones with sand in a heap under cover. Bones are phosphate of lime, superphosphate is lime united with a larger quantity of phosphoric acid by which it becomes soluble in water, and is more immediately active as a manure in the soil.

Gloucestershire Steam Plough Company, Limited: *Glo'ster.* The following are their charges for steam ploughing, the employer finding fuel and water:—For 7 inches deep in average fields of not less than 15 acres, 15s. per acre; on lighter soils of the same depth where four ploughs can be fairly kept at work, 12s. per acre; for same depth on foul land, or on extra stiff soils, where three ploughs cannot work freely to advantage, or where the fields are smaller or of awkward shapes so as to increase the labour and expense of moving and working profitably, 18s. per acre. In general the ploughs not to be expected to go into any fresh locality, or to plough on any fresh hiring for a less sum than 9*l.* For greater depths without extra difficulties—8 inches, 18s. per acre; 9 inches, 22s. per acre; 10 inches, 30s. per acre. The manager to have the discretion of increasing these charges in any cases of peculiar difficulties not contemplated in the above regulations, and also of making some reduction where the facilities are great and the quantity of land ploughed large. The manager is J. T. Harrison, Esq., Frocester Court.

Great Oilcake Case: *Hants.* We will make inquiry.

Poisoning by Yew: *S R A.* A Correspondent has lost a valuable heifer which had partaken of the leaves of two Yew trees. The idea that the berry-bearing Yew is wholesome and the other poisonous is mistaken; both Yews have the same properties.

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The following are two of the Reports referred to:—

BERKSHIRE.

Highway Farm, Maidenhead, November 7, 1861.

Gentlemen,—In justice to you as the manufacturers of my Steam Cultivating Apparatus, and without attempting to pay you a compliment, I will endeavour to state plainly the reason why I determined on adopting steam cultivation, and why I obtained your appliances. With a view of satisfying myself, I determined upon seeing all the systems of steam cultivation, which I did, and after giving the matter mature consideration, I became a purchaser of yours, and have every reason to be satisfied. I have no hesitation in saying that the cost of yours in the first instance influenced me in some measure. I found I had a number of horses to spare, that would realize a sum approaching the cost of the apparatus, and experience convinces me I estimated correctly. Having worked it constantly through perhaps one of the most favourable autumns that it is probable I may ever experience, and performed an amount of cultivating I was scarcely justified in expecting, I am now in a position to inform you the result. I obtained your apparatus early in August, and set to work cultivating the first piece of Wheat stubble immediately it was clear of the crop. I commenced working without the assistance of any of your staff, depending upon my own experience from what I gleaned when with you, and the performances I had witnessed elsewhere. I have gone on and effectually cultivated 84 acres an average depth of 8 inches, as the first process breaking up; a portion of it has been cultivated a second time, this I call 52 acres; and 8 acres a third time, making a total of 144 acres on the Highway Farm. I have a son farming near here, on a farm called Lane Farm; I sent the apparatus there immediately I could spare it for his use, and he informs me he has cultivated 72 acres the first time, and 28 the second, making a total of 100 acres, and this without any breakages. I consider my commencement a great success. I am so satisfied now I have experienced its advantages, that I would not be without the apparatus if the cost were double the amount. I have endeavoured to ascertain the exact cost per acre and I find it to be 6s. 6d.; this includes per centage on capital, wear and tear, estimated at 25 per cent., and cost of manual labour, coal, water, and oil. On this basis, I find the daily cost of working to be as near as possible 45s. per day, and the average of work performed it from 7 to 8 acres. This estimate I am satisfied will cover all expenses.

Yours truly,
Messrs. J. & F. Howard, Bedford. Joseph Gillett.

CAMBRIDGESHIRE.

Camois Hall, Newmarket, November 26, 1861.

Gentlemen,—I have great pleasure in stating my experience in steam cultivating. Since I purchased a set of your Apparatus in June last, I have cultivated (instead of ploughing,) 40 acres of land once over with the 3-tined implement, and sown it with Turnips. Since harvest I have cultivated upwards of 200 acres of Wheat stubble twice over, once with the 3-tined, and once with the 5-tined implement. I have done on the average 7 acres per day, about 8 inches in depth. The land this autumn has been unusually hard, having had very little rain in this neighbourhood. I am happy to say we have not had a single breakage, although, as before stated, we have done 450 acres. I have now set it up till the spring, when I shall stir the fallows over again. I calculate I shall do 8 or 9 acres per day very easily. My engine is 10-horse power, and we consume 8 cwt. of coal and 1 quart of oil per day.

I am, Gentlemen, yours faithfully.
Messrs. J. & F. Howard, Bedford. John L. King.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON,

were awarded the

SILVER MEDAL of the ROYAL AGRICULTURAL SOCIETY for their IRON HURDLES and GATES, which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30s. to 500*l.*

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

PROFESSOR VARNELL'S ENAMELLED AND WROUGHT-IRON STABLE FITTINGS.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

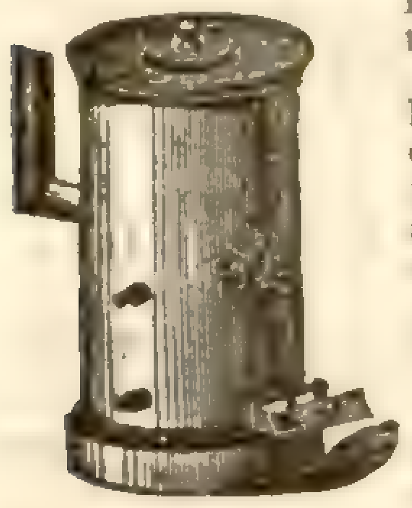
A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

Opposite Old St. Pancras Church.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



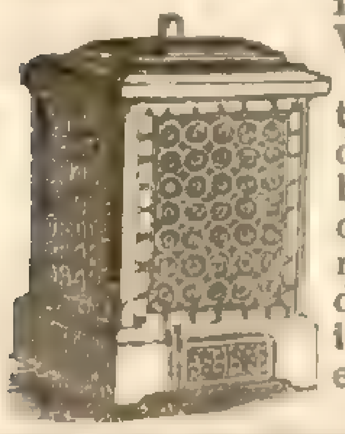
Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.



It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large Apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

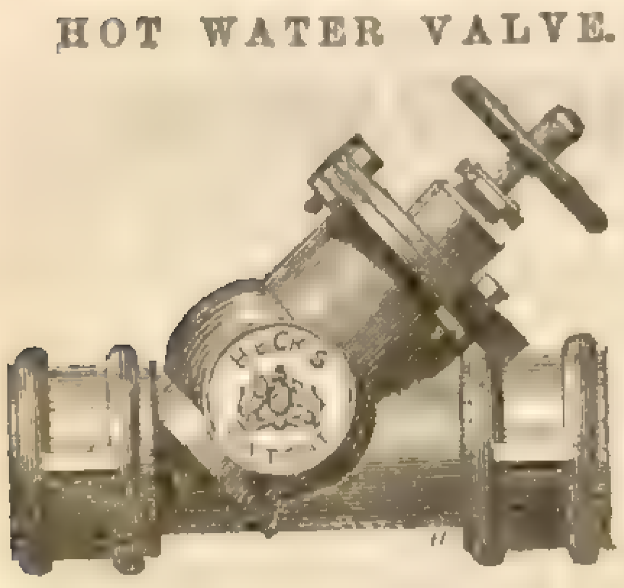
It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.

Particulars and prices post free on application to MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

Horticultural Works, Danvers Street, Chelsea, S.W.

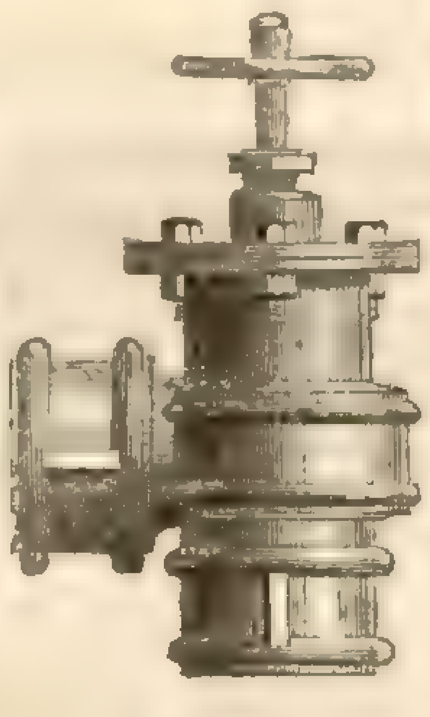
BECK'S PATENT

HOT WATER VALVE.



HORIZONTAL VALVE.

2" 18*s.* 6*d.*; 3" 25*s.*; 4" 30*s.*



ANGLE VALVE.

2" 17*s.*; 3" 23*s.*; 4" 28*s.*

JAMES GRAY, Sole Agent, begs to call attention to this most simple and perfect Valve ever invented. It is perfectly water tight, and is never liable to get out of order, or to get fixed by standing.

TO ARCHITECTS, ENGINEERS, GARDENERS, & OTHERS.—BECK'S Patent Valve has been submitted to several of the most scientific men of the day, and has invariably met with unqualified approval. A liberal Discount to the Trade.

CONSERVATORIES, GREENHOUSES, VINERIES, and every description of HOTHOUSE erected on the most improved principles, and of best materials, at the lowest possible price consistent with good workmanship.

Heating by Hot Water in all its branches. Boilers of every approved description, Tubular Saddle, Conical, &c.

JAMES GRAY, Horticultural Works, Danvers Street, Paulton's Square, King's Road, Chelsea, S.W.

Horticultural Works and Hot-Water Apparatus Manufactory,

Kensal Green, Harrow Road, London, W.

JOHN TAYLOR AND SON beg to call the attention of the nobility and gentry to the very superior manner in which they ERECT all kinds of CONSERVATORIES, VINERIES, GREENHOUSES, &c., combining every improvement with elegance of design and durability of materials and workmanship.

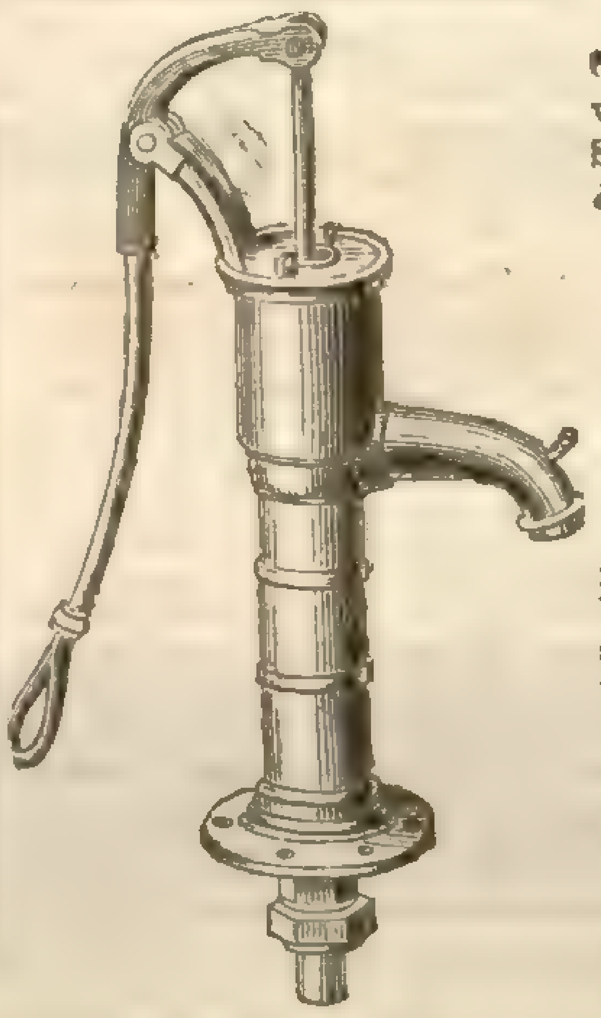
Their VENTILATING APPARATUS for the Fronts and Roofs of Houses has given the highest satisfaction. Churches, Chapels, Schools, Entrance Halls, Public Buildings, &c., heated with Hot-Water Apparatus in a most economical and efficient manner.

J. T. & SON have great pleasure in referring to numbers of the nobility and gentry by whom they are extensively engaged.

Hothouses for the Million.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17*l.* SPAN ROOFS, 30 feet in length, for 33*l.*; and all other dimensions at equally low prices. Delivered free to any Railway Station round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to SAMUEL HEREMAN, 7, Pall Mall East, London.



J. TYLOR AND SONS' PATENT IRON PUMP with reversible handle, for Shallow Wells, Hot-Houses, &c. Price 25*s.* 6*d.* each.

IRON YARD and GARDEN PUMPS

3 feet 6 inches under spout

$2\frac{1}{2}$	3	$3\frac{1}{2}$ inch
43*s.*	53*s.*	60*s.* each.

J. TYLOR and SONS manufacture PUMPS for DEEP WELLS which do not require any fixing below the level of the ground.

PUMPS of J. TYLOR & SONS' manufacture to be obtained of Plumbers in all parts of the United Kingdom.

J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

PROTECTED BY THE CUTLERS COMPANY

CORPORATE MARK.

JOSEPH HAYWOOD AND CO.,

MANUFACTURERS OF

PRUNING and BUDDING KNIVES,

SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

JOHN WARNER AND SONS, BELL and BRASS FOUNDERS to HER MAJESTY, HYDRAULIC ENGINEERS, BRAZIERS, &c., 8, Crescent, Cripplegate, London, E.C.

No. 35.

WARNER'S PATENT CAST-IRON PUMP, for raising Water from Wells not exceeding 25 feet in depth.

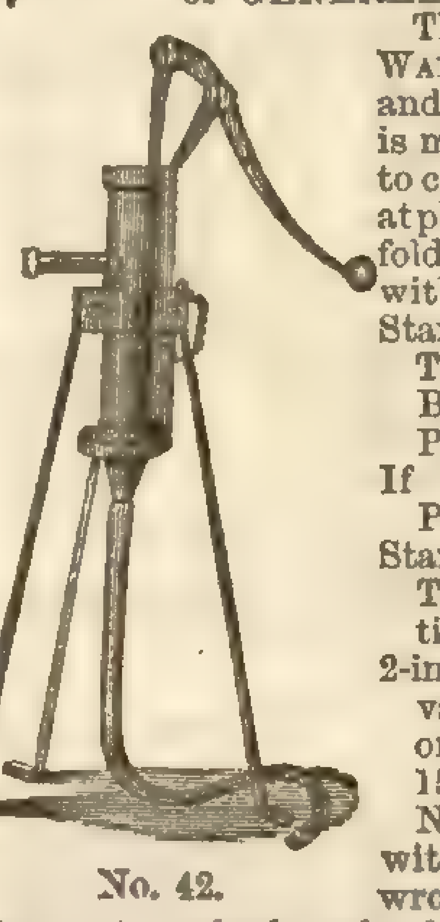
Diameter of Barrel.	Height.		£ s. d.
$2\frac{1}{2}$ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1 1 0
$2\frac{1}{2}$,, long	3 ,, 3 ,,		1 10 0
3 ,, ditto	3 ,, 6 ,,		2 4 0
$3\frac{1}{2}$,, ditto	3 ,, 6 ,,		2 9 0
4 ,, ditto	3 ,, 6 ,,		2 18 0

$2\frac{1}{2}$,, short, with 15 feet of Lead Pipe attached, ready for fixing 2 0 0

$2\frac{1}{2}$,, long ditto ditto ditto 2 14 0

This Pump is fitted with J. W. & SONS' Patent Vibrating Standard, Improved Revolving Cap, Metal Bucket, and Brass Suction Valve. By means of the Revolving Cap the handle can be shifted to the right or left hand, or opposite the nose, as desired.

WARNER'S IMPROVED LIQUID MANURE or GENERAL PORTABLE PUMP.



No. 42.

This Pump is fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

	£ s. d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2 15 0
If fitted with Barrel of Planished Copper	3 4 0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2 9 0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires, in either 10, 12, or 15 feet lengths .. per foot	0 2 5

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2*l.* 5*s.*

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.

J. W. & SONS' Illustrated Catalogue forwarded post free on application.

The above may be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Cripplegate, London, E.C.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ORMSON'S PATENT JOINTLESS TUBULAR BOILER,

AN ORIGINAL INVENTION,

Brought out for the purpose, and is now fully acknowledged to surpass the OLD-FASHIONED JOINTED TUBULAR BOILERS, which have been made for the last 20 or 30 years by all other manufacturers. The ADVANTAGES of this PATENT will be manifest to every person's understanding from the following FACTS. For instance, one of the OLD-FASHIONED JOINTED BOILERS with 50 TUBES would have 100 JOINTS made of rope yarn and cement, exposed to the direct action of the FIRE, whereas in my PATENT there is NOT ONE JOINT so exposed. And it should be fully understood that as the OLD-FASHIONED JOINTED TUBULAR BOILER increases in SIZE, number of TUBES and JOINTS, its liability to LEAKAGE also increases, consequently

THE FOLLOWING IS THE REASON WHY

ORMSON'S ONE-BOILER SYSTEM

AND PATENT JOINTLESS TUBULAR BOILERS

have become so universally adopted on account of their superior power, great safety, and economy,

ORMSON'S No. 1 BOILERS	are heating upwards of	250 feet of Pipe.
ORMSON'S No. 2 BOILERS	,, ,,	600 ,,
ORMSON'S No. 3 BOILERS	,, ,,	1300 ,,
ORMSON'S No. 4 BOILERS	,, ,,	3000 ,,
ORMSON'S No. 5 BOILERS	,, ,,	5000 ,,

Boilers of larger sizes if required to heat 12,000 or 15,000 feet of Pipe.

H. ORMSON having a most complete Set of Steam-power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices. IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, HORTICULTURAL BUILDER TO HER MAJESTY,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

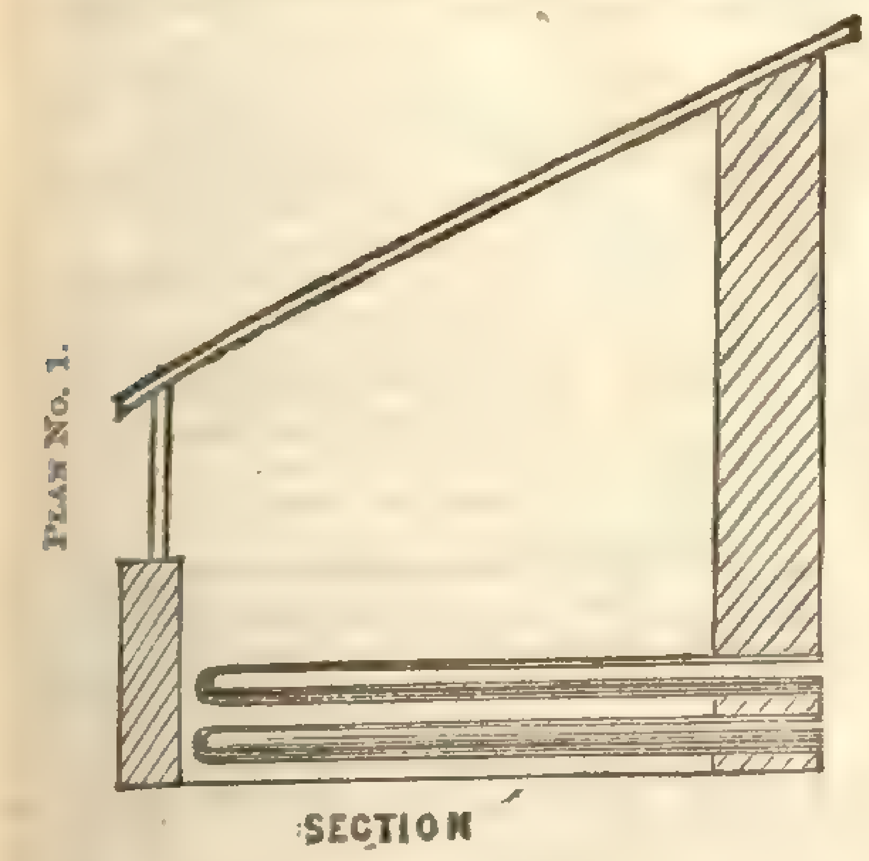
HOT-WATER APPARATUS.

J. JONES

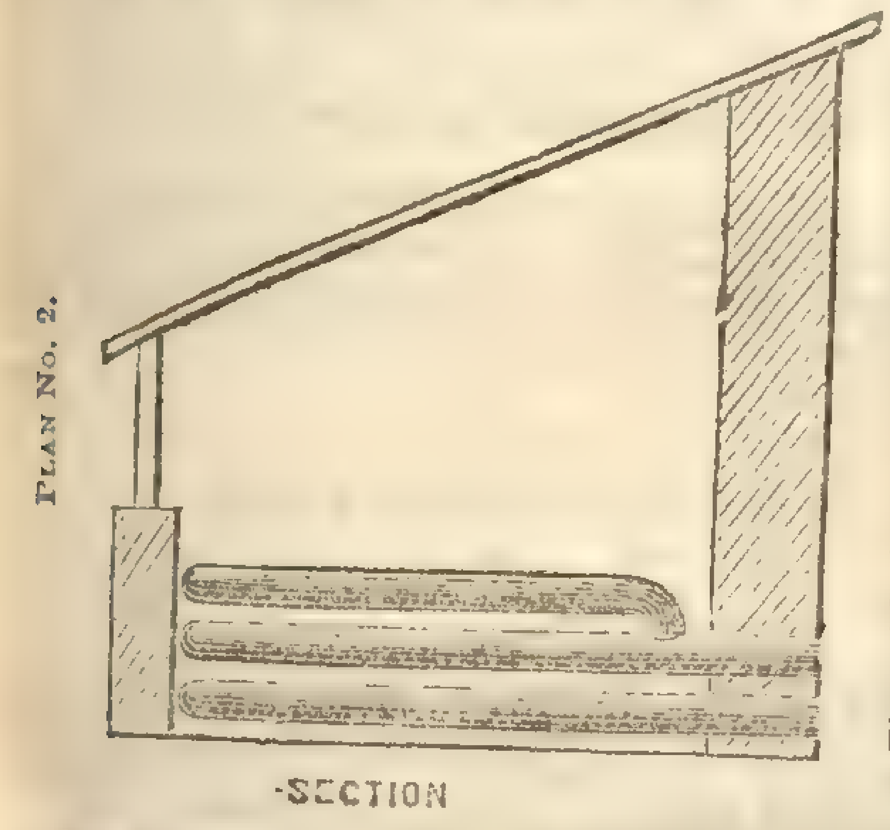
BEGS TO OFFER A COMPLETE

Hot-Water Apparatus for Houses

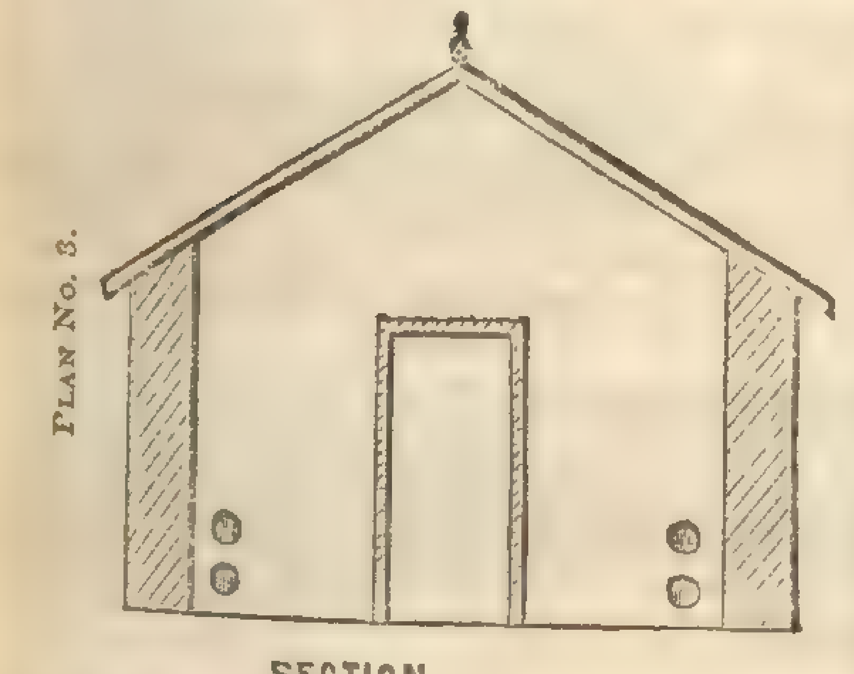
according to the following Plans, delivered Free to any Railway Station in England.



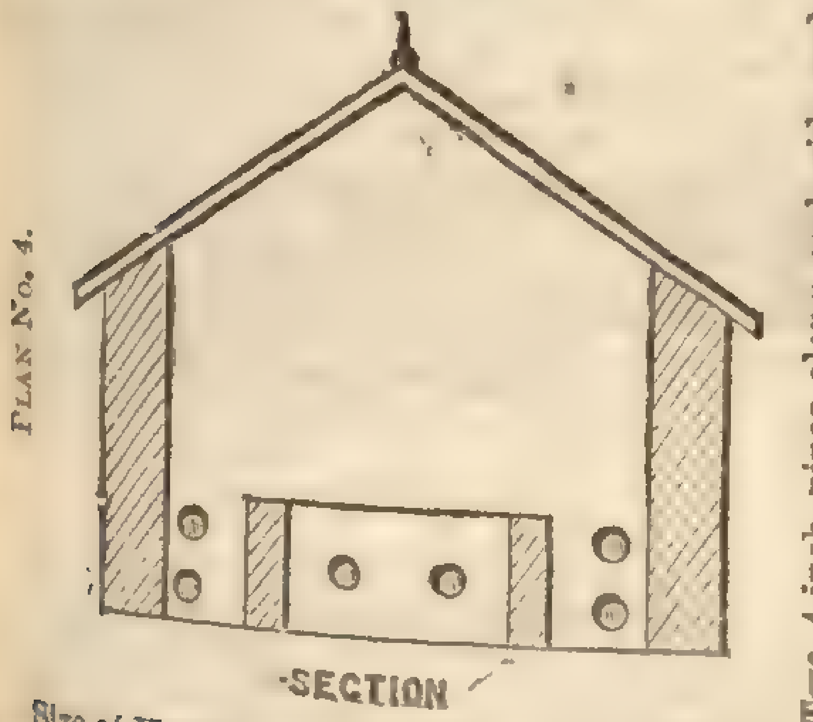
Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£8 0 0	£8 12 6
20 feet by 10 feet ..	,,	8 10 0	9 0 0
25 feet by 12 feet ..	,,	10 0 0	10 10 0
30 feet by 12 feet ..	,,	11 10 0	12 0 0
40 feet by 15 feet ..	,,	16 10 0	17 0 0
50 feet by 15 feet ..	,,	18 10 0	20 0 0



Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£11 10 0	£12 0 0
20 feet by 10 feet ..	,,	12 10 0	13 0 0
25 feet by 12 feet ..	,,	14 10 0	15 0 0
30 feet by 12 feet ..	,,	16 10 0	17 0 0
40 feet by 15 feet ..	,,	22 0 0	23 0 0
50 feet by 15 feet ..	,,	24 10 0	26 0 0



Size of House.		With Cylinder Boiler.	Saddle Boiler
16 feet by 8 feet ..	Price	£12 10 0	£13 0 0
20 feet by 10 feet ..	,,	13 10 0	14 0 0
25 feet by 12 feet ..	,,	16 10 0	17 0 0
30 feet by 12 feet ..	,,	19 0 0	20 0 0
40 feet by 15 feet ..	,,	24 10 0	25 10 0
50 feet by 15 feet ..	,,	27 0 0	28 10 0



Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£16 0 0	£17 0 0
20 feet by 10 feet ..	,,	17 10 0	18 10 0
25 feet by 12 feet ..	,,	21 10 0	22 10 0
30 feet by 12 feet ..	,,	25 0 0	26 0 0
40 feet by 15 feet ..	,,	31 0 0	32 0 0
50 feet by 15 feet ..	,,	33 10 0	35 0 0

The above prices include Boiler, strong Furnace-doors, Bars, Plate, Soot-doors, Damper, and Supply Cistern-pipes of 4-inch diameter, Elbows, &c.; all of the best quality.

Delivered free to any Railway Station in England. Terms: Nett Cash.

Estimates will be sent for the work fixed complete, or further particulars on application to

J. JONES, Hot-Water Apparatus Manufacturer, 6, Bankside, London, S.E.

Horticultural Glass Warehouse.

THOMAS MILLINGTON, 87, BISHOPSGATE STREET WITHOUT, E.C. LISTS FORWARDED ON APPLICATION.

Hartley's Patent Rough Plate Glass.

JAMES PHILLIPS AND CO., 180, Bishopsgate Street Without, E.C., beg to hand their prices of ROUGH PLATE GLASS.

PACKED IN BOXES OF 50 FEET EACH.

6 by 4 and 6½ by 4½ .. .. per Box 10s. 6d.
7 ,, 5 ,, 7½ ,, 5½ .. .. .. ,, 12 0
8 ,, 6 ,, 8½ ,, 6½ .. .. .. ,, 13 6
9 ,, 7 ,, 9½ ,, 7½ and 10 by 8 .. ,, 15 0
Subject to discount in quantity.

Extract from *Gardeners' Chronicle*, January 18, 1862.
"GLAZING: *J S.* By all means use Hartley's Rough Plate to glaze your Orchid House."

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, London, E.C.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.—Jan. 25.

Sacks. Bags. Mats.

JAMES T. ANDERSON, SACK and BAG MAKER, 34, Lime Street, Fenchurch Street, London, E.C., supplies SEED BAGS of a superior description at the lowest prices. Price List and Samples forwarded free on application.

Parkes' Steel Digging Forks.

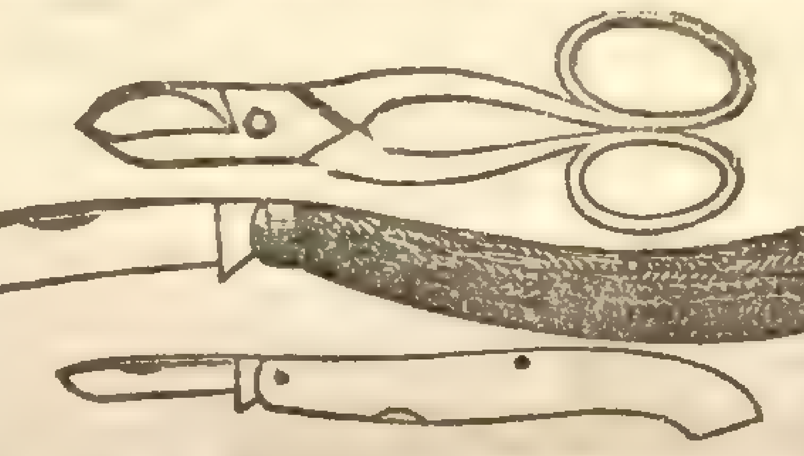
BURGESS AND KEY, 95, Newgate Street, E.C., London, being the Wholesale and Retail Agents for these celebrated Tools, have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN has obtained the FIRST PRIZE given by the Royal Agricultural Society at every Meeting since 1850. It is strongly recommended as the most perfect Churn now in use. Full particulars sent on application.

Agricultural Machinery.

CHAFF CUTTERS, TURNIP CUTTERS, PULPERS, MILLS, PLOUGHS, HARROWS, CARTS, &c., Delivered Carriage Free.
BURGESS & KEY, Manufacturers, 95, Newgate Street, London.
PRICE LISTS free per Post.

Paxton Works, Sheffield, Established 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.

Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an article superior in quality to anything we have hitherto been able to offer, in PRUNING, BUDDING, and GRAFTING KNIVES, VINE and PRUNING SCISSORS, GARDEN SHEARS, &c., owing to their being tempered under an entirely new process, which renders the blade tough and not liable to break, and also gives the edge a lasting keenness which we can warrant them to retain for at least double the time they would under the old method of tempering, thus facilitating the work and saving the time usually lost by having constantly to renew the edge by sharpening, consequently making them more durable in wear and better adapted for all kinds of work, every blade being guaranteed of the same temper.

CAUTION. None are genuine except marked SAYNOR, or SAYNOR, Maker. Other marks would cause the purchaser disappointment.

Prices Reduced.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

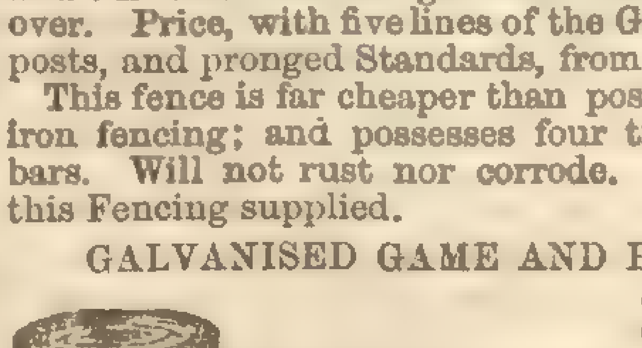
for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.

WIRE STRAND CABLE FENCING

(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1s. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide 2-inch mesh, 4d., 4½d., and 6½d. per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 2¾d., 3¾d., and 5½d. per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.

Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS

of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co., 2, Basinghall Buildings, Leeds.

Patent Indoor Plant Cases.

SOLE MANUFACTURERS,

PICKARD AND CO., HORTICULTURAL BUILDERS, Caledonian Road, King's Cross, N.

Illustrated Priced List on application.

Description and Instructions in Miss MALING'S "Flowers and Foliage," free by post for 13 stamps.

Immediate Orders will prevent Disappointment.

SIGMA'S DIBBLERS for BEANS, WHEAT, MANGELS, &c. The Drawshave Steel Hoes and the Multum in Parvo.

Engravings sent post free on application to C. POWELL Hurst Green, Sussex.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to

JOHN FOWLER, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

Wind Power.

J. R. PEILL, 17, New Park Street, Southwark, S.E., begs to inform intending purchasers that he has now increased facilities for Manufacturing the Patent WIND ENGINES for Pumping, Grinding, Chaffcutting, Pulping, &c.

Prospectuses and all information may be obtained by enclosing one postage stamp, and a Wind Engine in full work may be inspected on the Premises daily.

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200 CUCUMBER and MELON BOXES and LIGHTS, and from 400 to 500 LIGHTS for PITS of all SIZES KEPT in STOCK.

Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.

JAMES WATTS & Co., Hothouse Builders and Hot-Water Apparatus Manufacturers, near the Green Man, Old Kent Road, London, S.E.

NETTING for SHEEPFOLDS, made of Cocoa Nut Fibre. Price 4d. per yard. COCOA NUT CORD for THATCHING.—WILDEY and Co., Manufacturer of Cocoa Nut Matting and Mats, Holland Street, Blackfriars Road, S.E.

TANNED GARDEN NETTING for preserving Seed Beds, Fruits, Strawberries, from frost, blight, birds, &c., and as a Fence for fowls, &c. 1 yard wide, 1½d.; 2 yards. 3d.; 3 yards, 4½d.; and 4 yards, 6d. per yard, in any quantity, may be had at CHAS. WRIGHT'S, 376, Strand, W.C.

GREENHOUSE and FLOWER-POT STICKS VARNISHED:—1 foot, 3d.; 1½, 4d.; 2, 5d.; 2½, 7d.; 3, 10d.; 4, 1s. 6d. per dozen. DAHLIA STICKS VARNISHED, per dozen:—3 feet, 1s. 6d.; 4, 2s. 3d.; 5, 3s.; 6, 3s. 6d. An allowance to Nurserymen.

PATENT GARDEN NETTING will be found superior to every other article for the protection of Fruit Trees from frost, birds, &c.; whilst rendering this service light and air are not impeded. It is also a beautiful Shading for Hothouses, and is cheaper, being more durable than any kind of Tiffany, or other material in use. NETTINGS, No. 1, 15s.; No. 2, 18s. 9d.; and No. 3, 22s. 6d. per piece, or 4d., 5d., and 6d. per square yard. Pieces, 30 yards long, 55 inches wide. GARDEN MATS, highly recommended, 50 by 70 inches, 20d. each.

Agents: ROBT. HEINEKEY & Co., 20, Harp Lane, Tower Street, London, E.C.

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ROYAL HORTICULTURAL SOCIETY.

ARRANGEMENTS FOR THE EXHIBITIONS AND MEETINGS IN 1862,

TO BE HELD

AT THE GARDEN, SOUTH KENSINGTON, W.

Feb. 11, Tuesday. Anniversary Meeting.
" 18, Tuesday. Fruit and Floral Committee, and Ballot for Seeds.
" 21, Friday. Meeting for Election of Fellows.
March 4, Tuesday. Fruit and Floral Committee.
" 19, Wednesday. Hyacinth and Camellia Show, and Fruit and Floral Sub-Committee.
" 21, Friday. Meeting for Election of Fellows.
April 1, Tuesday. Fruit and Floral Committee.
" 4, Friday. Meeting for Election of Fellows.
" 9, Wednesday. Azalea Show, and Ballot for Seeds or Plants.
" 22, Tuesday. Fruit and Floral Committee.
" 25, Friday. Meeting for Election of Fellows.

⁎ At some period during the season it is expected that the Memorial of the Exhibition of 1851 will be finished, and probably publicly uncovered.

May 2, Friday. Meeting for Election of Fellows.
" 6, Tuesday. Fruit and Floral Committee.
" 12, Monday. Meeting for Election of Fellows.
" 21, Wednesday. First Great Show, and Fruit and Floral Sub-Committee.
" 28. Wednesday. Election of Fellows and Ballot for Plants.
" 30. Friday. Opening Day of American Show.

⁎ During June there will be a Grand Show of American Plants by Messrs. Waterer and Godfrey, of Knaphill Nursery, Woking, Surrey.

June 6. Friday. Meeting for Election of Fellows.
" 11. Wednesday. Second Great Show, and Fruit and Floral Sub-Committee.
" 20, Friday. Meeting for Election of Fellows.
" 26, Thursday, Rose Show, and Fruit and Floral Sub-Committee.

July 2, Wednesday. Third Great Show, and Fruit and Floral Sub-Committee.
" 4, Friday. Meeting for Election of Fellows.
" 22, Tuesday. Fruit and Floral Committee.
August 1, Friday. Meeting for Election of Fellows.
" 12, Tuesday. Fruit and Floral Committee.
" 26, Tuesday. Fruit and Floral Committee.
Sept. 5, Friday. Meeting for Election of Fellows.
" 10, Wednesday. Show of Autumn Flowers, and Fruit and Floral Sub-Committee.
" 23, Tuesday. Fruit and Floral Committee.
October 8, Wednesday. Fruit and Floral Sub-Committee.
" 8, 9, & 10. Great International Show of Fruit, Gourds, Roots, Vegetables, and Cereals. The Show of Gourds, Roots, and Cereals to continue until the 18th.
Nov. 7, Friday. Meeting for Election of Fellows.
" 11, Tuesday. Fruit and Floral Committee.
Dec. 9, Tuesday. Fruit and Flora Committe.

ELECTION OF FELLOWS.

Gentlemen and Ladies wishing to become Fellows have to be proposed by some one already a Fellow, to whom they are personally known. The subscription is Two Guineas Entrance Fee, and Two Guineas or Four Guineas a year according to the privileges wished.

ADMISSION OF THE PUBLIC.

⁎ The Council, conceiving that it would be a convenience to a large number of persons coming to London on the occasion of the Great Exhibition, have arranged with Her Majesty's Commissioners for the issue of a Joint Card for those who, not being Fellows of the Society, may wish, during the period of the Exhibition, from the 1st of May to 18th of October, to have a personal free admission to both or either. The price fixed on is Five Guineas. The Card, which will be forfeited if transferred. will admit the one person who has signed it to the Opening Ceremony of the Great Exhibition, to visit it on every day that it is open to the public, and to be present during the same period at all the great Garden Fêtes of the Horticultural Society.

Previous to April 30, packets of 25 tickets may be bought by Fellows for 5*l*. per packet. These tickets are available for any Show during the year—admitting numbers corresponding to the prices of the day; *i.e.*, one on a 5*s*. day, 2 on a 2*s*. 6*d*. day, and 5 on a 1*s*. day.

I. HORTICULTURAL EXHIBITIONS.

March 19.	Hyacinths and Camellias	2*s*. 6*d*.	Admission by payment at the door, or by tickets previously purchased.
April 9.	Azaleas	2*s*. 6*d*.	
May 30.	Opening Day of the American Show, contingent upon season	2*s*. 6*d*.	
June 26.	Rose Show	2*s*. 6*d*.	
Sept. 10.	Autumn Flower Show ..	2*s*. 6*d*.	
Oct. 8.	Fruit and Vegetable Show	2*s*. 6*d*.	
" 9.	Ditto	1*s*. 0*d*.	
" 10.	Ditto	1*s*. 0*d*.	
" 11-18.	Gourds, Roots, and Cereals	1*s*. 0*d*.	

II. GREAT MEETINGS.

May 21.	First Great Meeting	Admission by tickets, price 5*s*. each, purchased previously to the day of the Show. If payment is made at the door, 7*s*. 6*d*. will be charged for each admission.
June 11.	Second Ditto	
July 2.	Third Ditto	
	Uncovering of the Memorial of 1851.	

III. ORDINARY DAYS.

From 1st January to 1st May.

Sundays	No admission by payment.
Mondays	ditto.
Tuesdays	ditto.
Wednesdays	ditto.
Thursdays	ditto.
Fridays	ditto.
Saturdays	2*s*. 6*d*.

From 1st May to 24th May. Subject to small changes as soon as the actual arrangements of the Commissioners of 1862 *are known.*

			s.	*d*.
Sundays		No admission by payment.		
Mondays ..	(Band)	.. ..	1	0
Tuesdays ..	(Band)	.. ..	1	0
Wednesdays	(Band)	.. ..	2	6
Thursdays	(Band)	.. ..	1	0
Fridays ..	(Band)	.. ..	1	0
Saturdays	(Bands)	.. ..	5	0

From 24th May to 18th October.

			s. *d*.
Sundays		No admission by payment.	
Mondays ..	(Band)	Gardens alone	1 [illegible]
Tuesdays ..	(Band)	Gardens and Exhibition	1 [illegible]
Wednesdays	(Band)	Gardens from Exhibition	0 [illegible]
Thursdays ..	(Band)		
Fridays ..	(Band)	.. ..	2 6
Saturdays ..	(Bands)	.. ..	5 [illegible]

From 18th October to 31st December.

Sundays	No admission by payment.	
Mondays	.. ..	0 6
Tuesdays	No admission by payment.	
Wednesdays	.. ..	2 6
Thursdays	No admission by payment.	
Fridays	ditto.	
Saturdays	.. ..	2 6

The Council have the pleasure to announce that Her Majesty's Commissioners for the Exhibition of 1851 have given their consent that from the 30th of April to the 18th of October visitors may be permitted to use a temporary roadway for admission from Kensington Gore leading to the back of the Conservatory. The Council have sought this concession in order to abate the confusion which, without it, must be attendant on the number of carriages visiting the International Exhibition of 1862.

SCHEDULES OF PRIZES.

HYACINTH AND CAMELLIA SHOW, MARCH 19.

Class	1st	2d	3d
1. 18 Pots of Hyacinths, not less than 12 distinct kinds .. (*Open*)	£2 0*s*.	£1 10*s*.	£1 0*s*.
2. 12 Pots of Hyacinths. Distinct kinds .. .. (*Amateurs*) (Prizes offered by Mr. James Cutbush.)	2 2	1 1	—
3. 6 Pots of Hyacinths. Distinct kinds .. .. (*Amateurs*)	1 0	0 15	0 10
4. 6 Pots of Hyacinths. New distinct kinds .. .. .. (*Open*)	1 10	1 0	0 10
5. 24 Pots of Tulips, 3 bulbs in a Pot. 6 kinds ..(*Nurserymen*)	2 10	2 0	1 0
6. 18 Pots of Tulips, 3 bulbs in a Pot. 4 kinds .. (*Amateurs*)	2 0	1 10	1 0
7. 12 Pots of Tulips, 3 bulbs in a Pot. 3 kinds .. (*Amateurs*)	1 0	0 15	0 10
8. 6 Plants, Camellias. Distinct kinds .. .. (*Amateurs*)	3 0	2 0	1 0
9. 4 Plants, Camellias. Distinct kinds .. .. (*Amateurs*)	£2 0*s*.	£1 5*s*.	£0 15*s*.
10. Single Plant of Camellia .. ..(*Open*)	1 0	0 15	0 15
11. 9 Pots of Lilies of the Valley .. ..(*Open*)	0 15	0 10	0 5
12. 6 Pots of stove Amaryllis. Not less than 3 kinds ..(*Open*)	1 10	1 0	0 15
13. 6 Pots of any kind of Primula .. ..(*Open*)	0 15	0 10	0 5
14. 12 Forced Geraniums .. ..(*Open*)	2 0	1 10	0 15
15. 12 Pots of Spring Plants in flower, not forced, such as Epacris, Heaths, Acacias, &c. .. ..(*Open*)	2 0	1 10	0 15
16. 12 Plants in flower, forced	2 0	1 10	0 15

AZALEA SHOW, APRIL 9.

Class	1st	2d	3d
1. 2 Greenhouse Azaleas. Distinct kinds .. (*Nurserymen*)	£2 0*s*.	£1 10*s*.	£0 15*s*.
2. 9 Greenhouse Azaleas. Distinct kinds .. .. (*Amateurs*)	2 0	1 10	0 15
3. 6 Greenhouse Azaleas. Distinct kinds .. .. (*Amateurs*)	1 10	1 0	0 10
4. 6 Greenhouse Azaleas. New distinct kinds .. ..(*Open*)	1 10	1 0	0 10
5. 3 Greenhouse Azaleas. New distinct kinds .. (*Amateurs*)	1 0	0 15	0 10
6. Single specimen of Greenhouse Azalea .. .. ..(*Open*) Note.—Azaleas must be grown in Pots not exceeding 10 inches in diameter.	1 0	0 15	0 10
7. 6 Rhododendrons in blooms. Distinct kinds .. ..(*Open*)	2 0	1 10	1 0
8. 3 Rhododendrons in bloom. Distinct kinds .. ..(*Open*)	£1 0*s*.	£0 15*s*.	£0 10*s*.
9. Single Specimen of Rhododendron .. ..(*Open*)	1 0	0 15	0 10
10. 9 Cinerarias. Distinct kinds .. .. .. (*Nurserymen*)	2 0	1 10	1 0
11. 6 Cinerarias. Distinct kinds. .. .. (*Amateurs*)	1 10	1 0	0 15
12. 12 Spring Flowers, forced. Distinct kinds.. .. ..(*Open*)	2 0	1 10	0 15
13. 12 Greenhouse Plants in flower, not forced. Distinct kinds (*Open*)	2 0	1 10	0 15
14. 12 Hardy herbaceous Plants in flower .. .. ..(*Open*)	1 0	0 15	0 10
15. 9 Auriculas, distinct kinds .. .. .. (*Nurserymen*)	1 10	1 0	0 15
16. 6 Auriculas, distinct kinds .. .. (*Amateurs*)	1 10	1 0	0 15

FIRST GREAT EXHIBITION, WEDNESDAY, MAY 21.

Class	1st	2d	3rd	4th
1. 15 Stove and Greenhouse Plants .. .. ..(*Open*)	£20 0*s*.	£15 0*s*.	£10 0*s*.	£5 0*s*.
2. 12 Stove and Greenhouse Plants .. (*Nurserymen*)	10 0	7 0	5 0	3 0
3. 9 Stove and Greenhouse Plants .. . (*Amateurs*)	9 0	7 0	5 0	3 0
4. 6 Stove and Greenhouse Plants .. .. (*Amateurs*) Note.—Two Plants of a Genus will be admitted in Classes 1, 2, and 3. Exhibitors can only show in one of the Classes 1, 2, 3, and 4. Orchids and Florists' Flowers are excluded.	6 0	4 0	3 0	2 0
5. 20 Orchids, exotic species .. .. .. (*Amateurs*)	20 0	15 0	10 0	5 0
6. 12 Orchids, exotic species .. .. (*Nurserymen*)	10 0	7 0	5 0	3 0
7. 10 Orchids, exotic species .. .. .. (*Amateurs*)	10 0	7 0	5 0	3 0
8. 6 Orchids, exotic species .. .. .. (*Amateurs*) Note.—Exhibitors can only compete in one of the Classes 5, 6, 7, and 8.	6 0	4 0	3 0	—
9. Single specimen of any Exotic Orchid. (Prizes offered by the Lord Bishop of Winchester)	5 0	3 0	—	—
10. 9 Greenhouse Azaleas. Distinct kinds .. (*Amateurs*)	12 0	9 0	7 0	5 0
11. 9 Greenhouse Azaleas. Distinct kinds (*Nurserymen*)	9 0	7 0	5 0	3 0
12. 6 Greenhouse Azaleas. Distinct kinds .. (*Amateurs*)	6 0	4 0	3 0	2 0
13. 6 Rhododendrons. Distinct kinds .. ..(*Open*)	4 0	3 0	2 0	—
14. Rhododendron. Single specimen of Sikkim or Bhotan	3 0	2 0	1 0	—
15. 6 Roses in Pots. Distinct kinds .. .. (*Amateurs*)	6 0	5 0	4 0	3 0
16. 12 Roses in Pots. Distinct kinds .. (*Nurserymen*)	10 0	7 0	5 0	4 0
17. 6 Cape Heaths. Distinct kinds .. .. ..(*Open*)	5 0	3 0	2 0	—
18. 9 Pelargoniums. Distinct kinds .. .. (*Amateurs*)	8 0	6 0	4 0	2 0
19. 12 Pelargoniums. Distinct kinds .. (*Nurserymen*)	8 0	6 0	4 0	2 0
20. 6 Pelargoniums. Fancies. Distinct kinds ..(*Open*) Note.—Plants in Classes 17, 18, and 19, are to be grown in Pots 8 inches in diameter.	£5 0*s*.	£4 0*s*.	£3 0*s*.	—
21. 6 Cinerarias. Distinct kinds .. .. ..(*Open*)	3 0	2 0	1 0	—
22. New or rare tender Plants in flower .. ..(*Open*)	S.K.	S.B.	B.	
23. New or rare tender Plants not in flower .. ..(*Open*)	S.K.	S.B.	B.	
24. New or rare hardy Ornamental Plants .. ..(*Open*) N.B.—Exhibitors may compete for all the prizes in Classes 21, 22, and 23. Plants exhibited at any Metropolitan Show in a previous season will not be eligible.	S.K.	S.B.	B.	
25. Newly introduced Plants that have received special recognition from the Floral Committee during 1859, 1860, and 1861 .. ..(*Open*)	Six Certificates in order of merit			
26. Seedling Florists' Flowers and Garden Hybrids (*Open*)	Certificates.			—
27. Stands of 24 Tulips .. ..(*Open*)	2 0	1 10	1 0	
28. Group of Plants, showing effective arrangement for decorating a small Conservatory .. ..(*Open*) N.B.—A space 15 feet by 10 feet will be set apart for each Exhibitor. Valuable Plants not required. Florists and growers for market are invited to compete	10 0	6 0	4 0	—
29. Miscellaneous .. ..(*Open*) N.B.—Nothing can be admitted here which is provided for by any other class.	2 0	1 10	1 0	0 [illegible]

MR. NESFIELD'S COLOURED PLAN of the ROYAL HORTICULTURAL SOCIETY'S NEW GARDEN at South Kensington.—A few copies of the Number containing the above on Sale at the Office. Price 5*d.* each.

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PROCEEDINGS. — The Council of the Royal Horticultural Society having sanctioned the Sale of the Society's Monthly JOURNAL of PROCEEDINGS (hitherto printed exclusively for Fellows), Part I., Vol II. January 1862, may now be had on application at the Offices, South Kensington, W. Price 1*s.*, or by post 13*d.*

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The SOMMIER ELASTIQUE PORTATIF is made in three separate parts, and when joined together has all the elasticity of the best Spring Mattress. As it has no stuffing of wool or horsehair, it cannot harbour moth, to which the usual Spring Mattress is very liable; the prices, also, are much below those of the best Spring Mattresses, viz.:—

3 feet wide by 6 feet 4 inches long	£2	5	0
3 feet 6 in. " "	2	10	0
4 feet " "	2	15	0
4 feet 6 in. " "	3	0	0
5 feet " "	3	5	0
5 feet 6 in. " "	3	10	0

The SOMMIER ELASTIQUE PORTATIF therefore combines the advantages of elasticity, durability, cleanliness, portability, and cheapness.

An ILLUSTRATED CATALOGUE of Bedsteads, Bedding, and Bedroom Furniture sent free by post on application.
Heal & Son, 196, Tottenham Court Road, W.

DINNEFORD'S PURE FLUID MAGNESIA has been during 25 years emphatically sanctioned by the medical profession, and universally accepted by the public, as the best remedy for acidity of the stomach, heartburn, headache, gout, and indigestion, and as a mild aperient for delicate constitutions, more especially for ladies and children.—It is prepared in a state of perfect purity and uniform strength only by Dinneford & Co., 172, New Bond Street, London, and sold by all respectable Chemists throughout the world.

Coughs, Asthma, and Incipient Consumption, are effectually cured by

KEATING'S COUGH LOZENGES. — Statistics show that 50,000 persons annually fall victims to pulmonary disorders, including consumption, diseases of the chest, and the respiratory organs. Prevention is at all times better than cure; be, therefore, prepared during the wet and wintry season with a supply of KEATING'S COUGH LOZENGES, which possess the virtue of averting, as well as of curing a cough or cold; they are good alike for the young or for the aged.

Prepared and Sold in Boxes, 1*s.* 1½*d.*, and Tins, 2*s.* 9*d.*, 4*s.* 6*d.*, and 10*s.* 6*d.* each, by Thomas Keating, Chemist, &c., 79, St. Paul's Churchyard, London, E.C. Retail by all Druggists, &c.

TAYLOR BROTHERS' ICELAND MOSS COCOA is an invaluable article of diet for Invalids and persons of weak digestion.
Sold by all Grocers at 1*s.* 4*d.* per lb.

TAYLOR BROTHERS' HOMŒOPATHIC COCOA for price and quality combined stands unequalled.
Sold by all Grocers at 1*s.* 4*d.* per lb.

SAUCE.—LEA and PERRINS beg to caution the Public against Spurious Imitations of their world-renowned
WORCESTERSHIRE SAUCE.
Purchasers should
Ask for LEA & PERRINS' SAUCE,
Pronounced by Connoisseurs to be
"The only good sauce."

*** Sold Wholesale and for Export, by the Proprietors, Worcester; Messrs. Crosse & Blackwell, London, &c., &c. and by Grocers and Oilmen universally.

JUPP and SON, Hatters to her Majesty, beg to announce to the nobility and gentry that they have REMOVED from 222, Regent Street, to more commodious premises, 96, New Bond Street, W.
An elegant Show Room for Ladies' Promenade and Riding Hats.

GLENFIELD PATENT STARCH, used in the Royal Laundry.—The ladies are respectfully informed that this Starch is exclusively used in the Royal Laundry, and Her Majesty's Laundress says, that although she has tried Wheaten, Rice, and other Powder Starches, she has found none of them equal to the Glenfield, which is the finest Starch she ever used.
Wotherspoon & Co., Glasgow and London.

TO PARENTS and GUARDIANS. — Indispensable accompaniments to youth on their return to school are ROWLAND'S MACASSAR OIL, for the growth and improvement of the hair; ROWLAND'S KALYDOR, for the complexion and skin; and ROWLAND'S ODONTO, or Pearl Dentifrice, for the teeth and gums.
Sold at 20, Hatton Garden, E.C., and by all Chemists and Druggists.

METCALFE, BINGLEY, and CO.'S NEW PATTERN TOOTH BRUSHES, Penetrating Unbleached Hair Brushes, genuine Smyrna Sponges, and every description of Brush and Comb and Perfumery for the toilet. Metcalfe's celebrated Alkaline Tooth Powder, 2*s.* per box.

THE FAIRY BOUQUET.—This delicious perfume was originally discovered by one of Titania's principal attendants. It is made from wild flowers, culled by fairy hands from "the bank whereon the wild Thyme grows." The authenticity of the recipe is vouched for with the same degree of certainty as is the existence of Titania herself. It is now prepared solely by Metcalfe, Bingley, & Co., Perfumers, &c., 130 b and 131, Oxford Street, London, W.—In bottles, 2*s.*, 3*s.* 6*d.*, and 5*s.* each.

Suffolk Colt.

WANTED, a pure bred, good sized and good looking entire SUFFOLK COLT, 2 or 3 years old.
Price and pedigree and full particulars to A. H. W., 19, Somerset Place, Bath.

FEU FARM TO BE LET, consisting of 171 Acres of ARABLE LAND, with COTTAGE and HOMESTEAD. Rent 2*l.* per acre; tenant's taxes, 15*s.* per acre. The Farm is in excellent condition, and within a mile of a Railway Station. A Lease may be had.
For further particulars apply to Mr. J. Hopkins, Auctioneer, St. Ives, Hunts.

To Market Gardeners.

TO BE LET on LEASE or by the Year, 13 Acres of unexceptionable LAND, fronting a Turnpike Road, close to the Wolverton Station, and in the midst of a large and increasing population. A portion of Freehold Land abutting on the ground could be purchased for Building. This offers a remarkably advantageous opening for a Market Garden; 8 acres adjoining Let in Allotments.
Address for particulars to Rev. W. T. Sankey, Stony Stratford.

GARDENS TO BE LET, with HOTHOUSES, GREENHOUSES, FRAMES, &c., above 250 feet long by 16 feet wide, and well stocked with Pines, Vines, Peaches, and Bedding and other Plants. The Houses are heated with Hot-water and have Bottom Heat and every convenience for profitable working. The Advertiser, who is a private gentleman, cannot any longer attend to them, and will either Let them outright or arrange with a really good Gardener to share in any profits so as to induce him to manage them well. The Premises are near a Railway Station, within 80 miles of London. Some money will be required as security for the Stock now on the Premises.
Apply by letter to J. Smith, Esq., Mr. Waistell's, 40, Lime Street, London, E.C.
None but a good Churchman with good references as to character, &c., need apply.

Pont-y-Pool Park, Monmouthshire.

Important Sale of Short-horned Cattle, Flock of South-down Sheep, Valuable Horses, Farming Implements, Hay, Corn, &c.

MR. STRAFFORD begs to announce that he has received instructions from the Executors of the late Capel Hanbury Leigh, Esq., of Pont-y-pool Park, Monmouthshire, to offer for SALE by AUCTION, without reserve, on WEDNESDAY, February 19, at the Typoth Farm, the entire HERD of SHORT-HORNED CATTLE and FLOCK of SOUTH-DOWN SHEEP. The Short-horns consist of about 60 Head of Bulls, Cows, Heifers, and Steers, that are directly descended from two Cows bought at Mr. Berry's Sale, in 1835, and have since been crossed with Liberty (7141), from the Herd at Apperley Court, followed by John (4108), bred at Kirklevington, a son of the famous Duke of Northumberland (1940), and Favourite, a winner at the Royal Society's Meeting at Shrewsbury. Latterly have been used Hero of the West (8150), bred by Earl Ducie, and The Red Duke (8694), hired of Mr. Stratton, and the sire of several of his celebrated prize animals. Great attention has been paid to their milking qualities. The Sheep are bred from Ewes bought of Messrs. J. and T. Ellman, and S. Grantham, which have since been crossed by Rams had of them, and others from the Flocks of Sir R. G. Throckmorton; Messrs. Moore, of Littlecote; and Sainsbury, of Lavington. On the following day will be Sold by Mr. Partridge, of Newport, the valuable Team of Horses, Hay, Corn, and Implements, the Farms being Let.

Catalogues, with Pedigrees of the Shorthorns, and other Particulars, may be had on application to Mr. Strafford, 13, Euston Square, London, N.W.; or Mr. Partridge, Newport, Monmouthshire; and of Mr. Williams, Land Agent, at the Pont-y-pool Park Office.

FOR LIST OF STRIKING NOVELTIES RECEIVED FROM OUR SARDINIAN CORRESPONDENT,

SEE ADVERTISEMENT ON BACK PAGE OF *GARDENERS' CHRONICLE*, JANUARY 4, and for

CHOICE LIST OF CARNATIONS, PICOTEES, AND PELARGONIUMS,

SEE ADVERTISEMENT ON BACK PAGE OF *GARDENERS' CHRONICLE*, JANUARY 11.

BARR & SUGDEN, SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN MARKET, W.C.

NOTICE.—*Now in the Press, and will be forwarded immediately, our*

ILLUSTRATED SPRING SEED CATALOGUE,

OR GUIDE TO THE KITCHEN AND FLOWER GARDEN FOR 1862.

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE, AND FORWARDED FREE.

The Cultural Directions are the most Copious and Practical of any Trade List.

For LIST of CUCUMBERS

Recommended by the Fruit Committee of the Royal Horticultural Society, see our Advertisement of January 11.

NEW VEGETABLE SEEDS for 1862.

COLLECTIONS OF VEGETABLE SEEDS SUITABLE FOR VARIOUS SIZED GARDENS.

The following selection of VEGETABLE SEEDS has been made from our forthcoming CATALOGUE. It embraces the very best varieties in cultivation, and the most suitable for succession. *Vide* PEAS, BROCCOLI, &c.

Section I.—LEGUMINOUS PLANTS.

PEAS.

Division I.—The Earliest.

Daniel O'Rourke	per quart	1s. 0d.
Dunnett's First Early	„	0 9
Tom Thumb	„	1 3

Division II.—Second Early.

Auvergne	per quart	1s. 0d.
Bishop's New Long Podded ..	„	1 0
Champion of Paris	„	1 0
Dickson's Favourite	„	1 0
Prizetaker Green Marrow	„	1 0

Division III.—Best for Main Crop.

Flack's Victory	per quart	1s. 0d.
Victoria Marrow	„	0 9

Division IV.—Earliest Wrinkled Marrows.

Champion of England	per quart	1s. 0d.
Hairs Dwarf Mammoth	„	2 0
Ne plus Ultra	„	1 6

Division V.—Best Wrinkled Marrows for Main and Late Crops.

British Queen	per quart	1s. 6d.
Champion of Scotland	„	1 6
King of the Marrows	„	1 6
Veitch's Perfection	„	2 6

BROAD BEANS.

Early Long Pod	per quart	0s. 6d.
Mackie's Monarch Long Pod ..	„	0 8
Nonpareil Green Long Pod ..	„	0 8
Taylor's Large Windsor	„	1 0

DWARF FRENCH KIDNEY BEANS.

Chinese Long Pod	per quart	1s. 6d.
Dun or Cream Coloured	„	1 6
Fulmer's Early Forcing	„	1 6
Negro Long Pod	„	1 6
Newington Wonder	„	1 6
Variegated Dun	„	1 6

RUNNERS.

Eclipse or Giant White	per quart	2s. 6d.
Scarlet	„	2 6

Section II.—EDIBLE-LEAVED and EDIBLE-FLOWERED PLANTS.

ARTICHOKE, Globe	per ounce	1s. 0d.
ASPARAGUS, Covent Garden Giant	„	0 3
BEET, Beck's Improved Seakale Beet,	per pkt.	1 0

BORECOLE OR KALE.

Asparagus Kale	per ounce	0s. 6d.
Cottager's „	„	0 8
Feathered „	„	0 6
Melville's Garnishing	per packet	0 6

BROCCOLI.

Division I.—For Cutting in Autumn.

Grange's White Cape	per ounce	1s. 6d.
Walcheren	„	1 6

Division II.—For Cutting during Winter.

Snow's Winter White	per packet	1s. 0d.
Early Purple Sprouting	per ounce	1 0
Lee's Early White ditto	per packet	1 0

Division III.—For Cutting in March and April.

Adam's Early White	per ounce	1s. 0d.
Imperial Early White	„	1 0

Division IV.—For Cutting in April and May.

Frogmore Protecting	per packet	1s. 0d.
Mammoth or Giant White ..	per ounce	1 0

BRUSSELS SPROUTS.

Imported	per ounce	1s. 0d.
Roseberry	„	1 0

CARDOON.

Spanish	per ounce	1s. 0d.

CABBAGE.

Covent Garden Superfine Early Dwarf,	per oz.	0s. 9d.
Champion Early Dwarf	„	0 6
Enfield Market	„	0 6
Kempt's Incomparable	per packet	0 6
Nonpareil Improved	per ounce	0 6
Oxheart	„	0 6
Rosette Green Colewort	„	0 6

CABBAGE, SAVOY.

Dwarf Green Curled	per ounce	0s. 6d.
„ Ulm	„	0 8
Couve Tronchuda (true)	„	1 0

CAULIFLOWER.

Covent Garden	per ounce	1s. 6d.
The Frogmore Forcing from Turner,	per packet	1 0
New Erfurt Mammoth	per ounce	1 6
Stadtholder	„	1 6
Walcheren	„	1 6

SPINACH.

Round for Summer	per quart	1s. 0d.
Prickly for Winter	„	1 0

Section III.—EDIBLE ROOTED PLANTS.

BEET.

Covent Garden, new	per packet	1s. 0d.
Carter's St. Osyth's, new ..	„	1 0
Henderson's Pine Apple	per oz.	0 6

CARROT.

Earliest French Horn	per ounce	0s. 6d.
Covent Garden Long Surrey ..	„	0 4
New Intermediate	„	0 4

LEEK.

Musselburg, true		0s. 9d.

ONION.

White Spanish (Reading)	per ounce	0s. 9d.
White Globe	„	0 9
Giant Madeira	„	1 0
James' Long Keeping	„	0 9

PARSNIP.

The Student ..	per packet of 1000 seeds	1s. 0d.
Hollow Crown	per ounce	0 4
RAMPION	per packet	0 6
SALSIFY	per ounce	0 6
SCORZONERA	„	0 6

TURNIP.

White Dutch	per ounce	0s. 3d.
Snowball Ball	„	0 3
American Red-top Stone	„	0 3
Jersey Navet	„	0 4
Orange Jelly	„	0 3

Section IV.—EDIBLE-FRUITED PLANTS.

FRAME CUCUMBER.

Carter's Champion	per packet	1s. 0d.
Kirkless Hall Defiance	„	1 0
Dr. Livingstone	„	1 0
Hamilton's Market Favourite ..	„	1 0
Phenomenon	„	1 0
Empress Eugenie	„	1 0

RIDGE CUCUMBER.

Henderson's A 1	per packet	1s. 0d.
Mandarin (new)	„	1 0
Stockwood's	„	0 4

EGG PLANT (Aubergine).

Scarlet, White, Violet and striped, each	per pkt.	0 [illegible]

MELON.

Beechwood	per packet	1s. 0d.
Bromham Hall	„	1 0
Empress Eugenie (New)	„	2 6
Golden Perfection	„	1 0
Prince Imperial (New)	„	2 6
Princess Alice (New)	„	2 6
Queen Victoria (New)	„	2 6
Turner's Gem	„	1 0
Carter's Excelsior	„	1 0

TOMATO.

Long Red Italian	per packet	0s. 3d.
Early Red	„	0 [illegible]
Tomate de Laye	„	0 6

VEGETABLE MARROW.

New Custard	per packet	0s. 4d.
New Bush or Cluster	„	0 4
Small White and Large Cream ..	„	0 3
Ohio Squash	„	0 6
Fancy Vegetable Marrows	„	0 4

Section V.—SALAD PLANTS.

CELERY.

Covent Garden Dwarf White Solid ..	per ounce	0s. 9d.
Covent Garden Dwarf Red „ ..	„	0 9
Goodwin's White Solid	„	1 0
Hood's Imperial Dwarf Red	„	1 0
Ivery's Nonsuch Pink	„	0 6
Reid's Matchless Red	„	0 6

CHERVIL.

Curled	per ounce	0s. 6d.

CORN SALAD.

English and Italian	per ounce	0s. 6d.

CRESS.

Australian Garden	per ounce	0s. 3d.
Extra Curled	per quart	1 6
Plain	„	1 6
American	per ounce	0 [illegible]

ENDIVE.

Green Curled French, extra fine	per ounce	0s. 9d.
Batavian, White	„	0 9
New Moss, Curled	„	0 9

LETTUCE.

Covent Garden White Giant Cos ..	per packet	1s. 0d.
Covent Garden Brown Giant Cos	„	1 0
Carter's Giant Cos	„	1 0
Butler Summer Cos	„	1 0
Dunnett's Black Seeded Cos ..	„	1 0
Covent Garden Winter Cabbage ..	per ounce	1 [illegible]
Drumhead Summer	„	1 [illegible]

RADISH.

Beck's Short Top .. per ounce, 3d. ..	per quart	2s. 6d.
Wood's Frame .. „ 3d. ..	„	2 [illegible]
Olive Shaped .. „ 3d. ..	„	[illegible]
Turnip .. .. „ 3d. ..	„	2 [illegible]

Section VI.—POT, SWEET, and GARNISHING HERBS.

PARSLEY.

Dunnett's Garnishing	per ounce	0s. 6d.
Myatt's Extra Curled	„	0 4

SWEET HERBS, &c.

Marjoram, Savory, Thyme, Sage, &c., per packet 4d., per ounce, 1s.

BARR AND SUGDEN, SEED MERCHANTS AND FLORISTS, 12, KING STREET, COVENT GARDEN, W.C.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No. 19, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, January 25, 1862.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 5.—1862.] SATURDAY, FEBRUARY 1. { Price Fivepence. STAMPED EDITION, 6*d*.

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NOTICE TO ADVERTISERS.—*Advertisements intended for the Current Number should be sent so as to reach the Office not later than* THURSDAY *in each week.*

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.

ROYAL HORTICULTURAL SOCIETY.—An ORDINARY GENERAL MEETING for the ELECTION of FELLOWS will be held in the Council Room, at the Garden, South Kensington, W., on FRIDAY, February 7. The Chair to be taken at 2 o'Clock, P.M.
ANDREW MURRAY, Assistant Secretary.

MIDLAND and NORTHERN ROSE SHOW.—It is proposed to establish a Midland and Northern Rose Show. Rose Growers and others, who are disposed to promote the undertaking, are requested to communicate with the Rev. S. REYNOLDS HOLE, Caunton Manor, Newark.

BARR AND SUGDEN, SEED MERCHANTS.—For COLLECTIONS of VEGETABLE SEEDS, see p. 88. For PRICED LIST of the best kinds of VEGETABLE SEEDS, see last page of *Chronicle*, January 18 and 25.
12, King Street, Covent Garden, W.C.

Illustrated Spring Seed Catalogue.

BARR AND SUGDEN, SEED MERCHANTS.—The above is arranged on a new principle. The cultural directions are the most copious and practical of any Trade List. All inferior varieties of VEGETABLE and FLOWER SEEDS have been rejected. See large Advertisement.
12, King Street, Covent Garden, W.C.

Vegetable and Flower Seeds.

PAUL AND SON'S CATALOGUE of the above, including ASTERS and STOCKS, with DESCRIPTIVE LIST of the best 100 GLADIOLI, is now ready, post free.
"Old" Cheshunt Nurseries, Herts.

J. T. WILLMER, HORTICULTURAL AGENT, AUCTIONEER and VALUER, Springfield Nursery, Sunbury, Middlesex, S.W.

TRITOMA UVARIA. For strong plants of this splendid flower apply to JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

MANETTI STOCKS WANTED.—Address, giving quantity to dispose of and price, to GODWIN & PADMAN, Brookfield Nursery, Sheffield.

WANTED to PURCHASE, a fine Specimen of AZALEA GLEDSTONESII. The plant must be in a fine healthy state.
Apply to J. CHAFFIN, 5, Beaufort Place, Bath.

TRUE KENTISH COB NUTS.—Fine well-formed plants, 4*s*., 6*s*., and 9*s*. per dozen; 20*s*., 30*s*., 40*s*., and 50*s*. per 100.—EPPS' Nursery and Seed Establishment, Maidstone.

VERY STRONG TRANSPLANTED THORNS, in large quantities. Samples with price on application to WATERER & GODFREY, Knap Hill Nursery, Woking, Surrey.

To Spare,

FROM 5000 to 10,000 fine strong transplanted SCOTCH FIRS, 1½ to 2 feet, standing, thin and bushy. For price and particulars, apply to E. P. FRANCIS, Nurseryman, Hertford.

50 FINE IRISH YEWS for SALE, 8 to 9 feet high, well formed and proportionate, of a fine dark colour, beautifully rooted, and will be sold a bargain.
Apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.
J. S.'s CONIFEROUS CATALOGUE is now ready, to be had gratis.

WANTED, ENGLISH OAK, 6 feet and upwards. Also, Transplanted ELM, and Seedling and Transplanted BLACKTHORN.
State particulars to JAMES DICKSON & SONS, The "Newton" Nurseries, Chester.

DOWNIE, LAIRD, AND LAING beg to intimate that their NEW CATALOGUE of FLORIST FLOWERS, NEW FLOWER SEEDS, &c., is now ready, and may be had free on application.
17, Frederick Street, Edinburgh, and Stanstead Park, Forest Hill, London, S.E.

STANDARD SCARLET RHODODENDRONS.—Magnificent specimens, covered with blooming buds, from One to Five Guineas each, are offered by W. H. ROGERS, Red Lodge Nursery, Southampton.
A CATALOGUE of GENERAL NURSERY STOCK, extending over 60 acres, may be had on application.

Good Seeds, Carriage Free.

SUTTON AND SONS, SEED GROWERS AND MERCHANTS, Royal Berkshire Seed Establishment, Reading.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

New Garden Seeds.

JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

DOUBLE TUBEROSES, Just arrived. Price 3*s*. per dozen.
BUTLER & McCULLOCH, Seedsmen, Covent Garden Market, W.C.

Now Ready.

BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See long Advertisement.
Covent Garden Market, W.C.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.—

				£	s.	d.
50 in 50 well selected vars.				£2	2	0
50 in 25	ditto	ditto		1	10	0
25 in 25	ditto	ditto		0	15	0
12 in 12	ditto	ditto	6*s*., 9*s*., and	0	12	0

Mixed, 3*s*. 6*d*. per dozen; 25*s*. per 100.
BUTLER & McCULLOCH, Seedsmen, Covent Garden Market, W.C.

MESSRS. E. G. HENDERSON AND SON, NURSERYMEN and SEED MERCHANTS, respectfully announce their NEW SEED CATALOGUE for 1862, free on application.
Wellington Nursery, St. John's Wood, London, N.W.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

AZALEAS, CAMELLIAS, EPACRIS, and ERICAS.—We respectfully invite an inspection of our Stock of the above, which is large, in the finest health, and full of flower buds.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

Seeds, Seeds, Seeds.

WM. CUTBUSH AND SON'S CATALOGUE is now ready, post free on application.
Seed Establishment, Highgate, London, N.

Strawberries for Forcing.

GEO. CLARKE has a large quantity of strong established Plants in Pots with excellent crowns; the sorts are KEEN'S SEEDLING, BRITISH QUEEN, SIR HARRY and ALICE MAUDE. Price 6*s*. per dozen.
Nursery, Streatham Place, Brixton Hill, S.

PRIDE of SERINAGUR CASHMERE MELON.—"Your Melon is unsurpassable."—*Dr. Lindley*.
This splendid Melon, raised by Mr. W. P. Ayres, F.R.H.S., is now ready in packets, 2*s*. 6*d*. each.
See Wheeler's "Little Book."
J. C. WHEELER & SON, Gloucester.

New Hybrid Green-flesh Melon—Archer's Favourite.

T. KEMPSTER offers Seed of the above in sealed packets, at 2*s*. 6*d*. per packet. When three are ordered four will be sent. Stamps or Post-office Orders must accompany each order, payable at Lee.
See *Gardeners' Chronicle* of Dec. 14, 21, 1861.
Apply to THOMAS KEMPSTER, 14, Dacre Place, Lee, Kent, S.E.

FINE DWARF-TRAINED PLUMS, 30*s*. per dozen; FINE DWARF ROSES, 60*s*. per 100.
WILLIAM EPPS, Jun., Nurseryman and Seedsman, Ashford, Kent.

STRONG FRUITING VINES, 7*s*. 6*d*. and 10*s*. 6*d*. LIST gratis and post free.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

Vines in Pots.

H. LANE AND SON have to offer a very large stock of fine well-grown strong VINES in Pots from Eyes of all the most popular varieties, both old and new, CATALOGUES of which may be had upon application.

Strong Vines from Eyes.

J. IVERY AND SON beg most respectfully to inform their patrons that they have now ready for planting out, strong Plants of all the best varieties.
A PRICED LIST will be forwarded on application.
Dorking Nursery.—Feb. 1.

Fruit Trees—Strong Standard Apples.

J. ADAMS AND CO., Brentford, has to offer excellent Plants of the above, consisting of Willington, Blenheim, King of the Pippins, &c.; also worked English Elms, 5 to 8 feet.
Prices on application.

HOLLAND AND BAYLEY can now supply from their unrivalled collection the heaviest and finest-flavoured LANCASHIRE SHOW GOOSEBERRIES, in strong 3 and 4 years old plants, at 6*s*. per dozen.
CATALOGUES, containing Priced Lists of Florists' Flowers, Fruits, &c., on application.
Bradshaw Gardens, Chadderton, near Manchester.

Fruit Trees, Dwarf-trained and Pyramid Apples, Pears, Plums, and Cherries.

JOHN CRANSTON has to offer excellent plants of the above, which cannot fail to give the greatest satisfaction. Also strong VINES in pots.
A LIST of SORTS will be sent on application.
Nurseries, King's Acre, near Hereford.

Agricultural Seeds.

GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

Agricultural and Garden Seeds.

H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, and MANURE COMPANY, "Limited," Union Road, Plymouth.

PLYMOUTH SEED COMPANY, "Limited."—The GENERAL PRICE CURRENT is now ready, and can be had DIRECT, or of Messrs. SIMPKIN & Co., 4, Stationers' Court, London, E.C., for six postage stamps.
Plymouth Seed Company, Plymouth.

CUTHILL'S Superior BLACK SPINE CUCUMBER.—The Trade can be supplied by the ounce, or 1*s*. per packet. HIGHLAND MARY, 1*s*. Best MELONS, 1*s*. Best MUSHROOM SPAWN. CUTHILL'S Five Pamphlets, free by post, 5*s*.
JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

For Cucumbers,

RECOMMENDED BY THE FRUIT COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY, SEE

BARR AND SUGDEN'S Advertisements of January 4 and 11, and Feb. 1.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

THE ADVERTISER has 7½ QUARTERS of the True "CHAMPION of ENGLAND" PEA to DISPOSE OF (in One Lot preferred). Price 12*s*. per bushel.
RICHARD HEADLY, Stapleford, near Cambridge; or 58, Watling Street, City, E.C., where a Sample may be seen.

Bellamy's Early Green Marrow Peas.

CHARLES SHARPE and CO., SEED GROWERS, Sleaford, have the above to offer to the Trade, of first-rate quality. Price on application.

Henry's Prize Hybrid Leek.

DOWNIE, LAIRD AND LAING are now sending out Seed of the above in Packets at 1*s*.
17, Frederick Street, Edinburgh; and Stanstead Park, Forest Hill, London, S.E.

Altringham Carrot Seed.

CHARLES SHARPE AND Co., Sleaford, have the above to offer to the Trade; new Seed of their own growing. Price on application.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

NUTTING'S selected DWARF RED BEET, recommended by the Horticultural Society as best in Cultivation. The Trade supplied.
NUTTING & SONS, Seed Warehouses, 60, Barbican, London, E.C.

Extra Large Sea Kail.

GEO. CLARKE has to offer a large quantity of very fine roots, clean and sound, 1 to 2 inches in diameter. Prices on application. The Trade also supplied.
Nursery, Streatham Place, Brixton Hill, S.

Cow Grass, True Perennial.

WANTED, Half a Ton of the above, warranted True.
Letters, with price and sample, to X. X., *Gardeners' Chronicle* Office, W.C.

EARLY OXFORD POTATO, an excellent Cropper, and the best for eating all the year round. Price on application.
RICHARD SMITH, Seed Merchant, Worcester.

FORTY-FOLDS, FLUKES, ASH-LEAF, MATCHLESS, and LAPSTONE KIDNEYS, to be obtained at Messrs. JOHN & GEORGE BELL'S, Covent Garden Market, W.C.
PRICE LIST sent on application.

To the Trade.

MYATT'S PROLIFIC ASHLEAF KIDNEY POTATO.—The above excellent variety, sound and in good condition, to be had of
J. MYATT, Offenham, Evesham.—Price on application.

Seed Potatoes.

H. AND F. SHARPE are now prepared to take orders at very moderate prices for all the leading sorts of POTATOES, including MYATT'S Prolific ASH-LEAVED KIDNEY, the finest and most prolific in cultivation.
Prices may be had on application.
Seed Growing Establishment, Wisbeach.

SEED POTATOES.—The undersigned has an extensive Stock of all the leading kinds of the above grown, especially for Seed, which he can offer at [illegible] rates. Prices on application.
GEORGE NEWELL, Corn, Grain, and Seed Factor, [illegible], Lower Bridge Street, Chester.

FLUKE POTATOES, off the Lancashire [illegible] Sand; EARLY PINK EYE KEMPS, very [illegible]; TRUE ASHLEAF KIDNEY; OXHORN KIDNEY, a [illegible] prolific variety, good quality; WHITE BLOSSOM LEMON KIDNEY. Prices moderate.
A PRICED DESCRIPTIVE CATALOGUE of Garden and Flower Seeds is now ready.
HENRY BROWN, Seedsman, 4, Commutation Row, [illegible].

NEWSPAPER. ONE PENNY

New Rose, Beauty of Waltham.

WM. PAUL respectfully announces that he is now taking orders for this superb NEW ROSE, which received a First-class Certificate from the Royal Horticultural Society in June last. For description, see Rose Catalogue —Section Hybrid Perpetual: it is also figured in the "Rose Annual," just published. Plants in April, 5s. each; the usual discount to the Trade on six or more plants.

Wm. Paul, Cheshunt Nurseries, Waltham Cross, N.

Standard and Dwarf Roses.

JOHN CRANSTON has no hesitation in stating that he holds the largest stock of STANDARD ROSES in the kingdom, and plants of the finest growth possible. These he is now offering at the following prices:—

STANDARDS, finest Hybrid Perpetual and Bourbon, 30s. per dozen.

HALF-STANDARDS, do., 24s. to 30s. do.

STANDARD TEA SCENTED, the best and most hardy sorts, 36s. to 42s. do.

DWARF HYBRID PERPETUAL, strong on Manetti Stock, 15s. to 24s. do.

DWARF HYBRID PERPETUAL, own roots, 12s. to 18s. do.

DWARF TEA SCENTED, 18s. to 24s. do.

PILLAR ROSES, extra strong on Manetti Stock, 18s. to 24s. do.

NEW ROSES of 1860 and 1861, 3s. 6d. to 5s. each.

A DESCRIPTIVE LIST will be forwarded free on application.

Nurseries, King's Acre, near Hereford.

STANDARD ROSES, with straight stems and good heads, the finest varieties; 30s., 36s., and 42s. per dozen.

GRAPE VINES for PLANTING OUT.—All the leading sorts, with stout, short-jointed, well ripened canes; 3s. 6d., 5s., and 7s. 6d. each.

GRAPE VINES for FRUITING in POTS.—Extra fine, strong bearing rods.

GLADIOLUS.—Splendid hybrids of Gandavensis, 6s., 9s., 12s., and 18s. per dozen; 100 distinct varieties, 84s.; 100 newer, 126s.

NEW BEGONIAS.—Twelve of the most distinct and beautifully variegated Continental varieties, strong plants, for 18s.

CAMELLIAS with FLOWER-BUDS.—Including the best new varieties, fine plants, 30s. to 42s.; extra size, 60s. and 84s. per dozen.

DESCRIPTIVE CATALOGUES, with all particulars, forwarded on application to

James Dickson & Sons, The "Newton" Nurseries, Chester.

Mitchell's Unrivalled Collection of Roses.

The largest Stock and the best Plants in England, justly pronounced both by English and Foreign Growers.

JAMES MITCHELL has the honour of informing his kind patrons that he has succeeded in obtaining the FIRST PRIZES at the principal Shows throughout the season, viz.:—

July 10.—The Grand National Rose Show, Royal Horticultural Society's Garden, Kensington Gore, 96 varieties, 3 trusses of each, First Prize.

September 11.—Forty-eight varieties, 3 trusses of each, First Prize.

July 3.—The Royal Botanic Society, Regent's Park, London, 50 varieties, 3 trusses of each, First Prize.

July 6.—The Great Rose Show, Crystal Palace, 96 varieties, 1 truss of each, First Prize.

June 19.—Brighton Horticultural Society, 50 varieties, 3 trusses of each, First Prize.

September 18.—Fifty varieties, 3 trusses of each, First Prize.

August 28.—Lewes Horticultural Society, 36 varieties, 3 trusses of each, First Prize

J. M. respectfully informs the Nobility and Gentry he can supply the best perpetual BLOOMING ROSES in Standards, Half-Standards, and Dwarfs, healthy good rooted plants.

Standards, 30s. per dozen.
Half ditto, from 24s. to 30s. per dozen.
Dwarfs, from 18s., 24s., to 30s. per dozen.
New Varieties of 1861, 42s. per dozen.

Pilt Down Nurseries, Maresfield, Sussex.

N.B. These Nurseries are 2½ miles from the Uckfield Station on the London, Brighton, and South Coast Railway.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. John Kernan, Seedsman, 4, Great Russell Street, Covent Garden.

To the Trade.

Continental, Flower, Garden, and Agricultural Seeds.

GEO. MACINTOSH, Agent for Mr. F. W. Wendel, begs to announce that CATALOGUES of the above are now ready, and will be forwarded free on application. Early orders solicited.

All Communications to be addressed, Nursery, High Road, Hammersmith, W.

MESSRS. BROWN and CO. offer the following Selection of CHOICE PLANTS, which they will forward to any part of the kingdom:—

	s.	d.
25 AZALEAS, new hardy Belgian varieties, one of a sort, on their own roots, by name, well set for bloom, fine for beds or pot culture for forcing ..	20	0
25 AZALEAS, hardy American varieties, do. do. ..	15	0
12 Hardy RHODODENDRONS, including scarlet, white, and rose colour	12	0
Fine Hardy Scarlet RHODODENDRONS, per doz...	12	0
New Yellow RHODODENDRONS, each .. 3s. 6d. to	5	6
Hardy HEATHS, LEDUMS, and KALMIAS, per doz.	6	0
ROSES, best sorts, Standards and Half-standards, per doz.. .. .. 12s. to	15	0
CLIMBING ROSES of best sorts, rapid growers, per doz...	6	0
6 Fine Hardy MAGNOLIAS, one of a sort	10	0
Choice CONIFERÆ, cheap; PRICE LIST by Post.		
Greenhouse AZALEAS, fine varieties, per doz., 10s. to	15	0
CAMELLIAS, best double varieties, per doz. ..	28	0
Yellow PICOTEES and CARNATIONS, per doz ..	10	0

FRUIT TREES.

Fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Apples, Plums, and Pears, 2s. 6d. each, or 24s. per doz.

Dwarf Plants of all the above kinds, grown especially for pot culture in orchard houses, &c., per dozen, 18s.

Filberts, Gooseberries, Currants, and Raspberries, per doz., 3s.

Evergreen Shrubs and Ornamental Trees of all kinds cheap.

American Nurseries, near Farnham, Surrey.—Feb. 1.

PARADISE NURSERY, HOLLOWAY, LONDON, N.

CHOICE VEGETABLE AND FLOWER SEEDS.

BENJAMIN S. WILLIAMS

BEGS to inform his Friends, Patrons, and the Public that he is now prepared to execute with NEW and GENUINE SEEDS all orders he may be favoured with.

Collections of Kitchen Garden Seeds for One Year's Supply,

Containing none but the most useful and approved sorts, proportioned to suit Gardens of various sizes, at the following prices:—1*l*., 2*l*., 3*l*., and 4*l*. each.

Any kinds not required should be named, so that they may be omitted from the Collection.

Now ready, post free on application,

A PRICED AND DESCRIPTIVE SEED CATALOGUE FOR 1862,

Containing all New Seeds of the season proved to be good, and the best of the older varieties, with suggestions for the guidance of Amateur Cultivators.

Also select Lists of

GLADIOLI AND OTHER BULBS FOR SPRING AND SUMMER FLOWERING,

With a few remarks on their Mode of Treatment.

PARADISE NURSERY, SEVEN SISTERS AND HORNSEY ROADS, HOLLOWAY, LONDON, N.

HARDY JAPANESE PLANTS, NEW ROSES, &c.

JOHN STANDISH

HAS great pleasure in submitting to the consideration of his friends and the public in general the following List of NEW PLANTS, ROSES, &c., far exceeding in interest any that he has ever before had the opportunity of sending out at any one time; he would particularly direct attention to the Variegated and other JAPANESE PLANTS, which he believes will effect quite a revolution in Gardening, as their complete hardiness has in many instances been quite established. Obtained by that indefatigable and successful collector, Mr. Robert Fortune, they were sent home in such excellent condition as to excite the wonder of all who saw them at the opening fête of the Royal Horticultural Society, and were universally acknowledged to be the most remarkable collection ever imported into England.

The NEW ROSES have been exhibited in the winning stands both at the Crystal Palace and Royal Horticultural Society, and the entire stock is in the hands of J. S.

Amongst the NEW FERNS will be found many of great interest and novelty.

HARDY JAPANESE PLANTS.

THUJOPSIS DOLABRATA VARIEGATA.—It is impossible to speak in too high terms of this variegated plant. Those who know T. dolabrata can form some idea of it when J. S. states that every shoot is terminated by beautiful silvery leaves; its hardiness is established from the fact that it stood all last winter at Elvaston, when the Common Holly and Portugal Laurels were killed to the ground. Plants 63s. each in the spring.

RETINOSPORA OBTUSA.—An evergreen shrub of the Arbor-vitæ race, growing from 60 to 80 feet high, stiffer in its foliage than anything known, having the character of Cedar of Lebanon with Cypress leaves. The wood is used by the Japanese in various ways, shines beautifully without any polish when worked up. Plants now ready, 21s. each.

RETINOSPORA OBTUSA VARIEGATA.—Same species, with beautifully white variegation regularly occurring all over the plant. 31s. 6d. in April.

RETINOSPORA PISIFERA.—A very beautiful slender looking tree with sharp pinnated leaves. 21s. each.

RETINOSPORA PISIFERA AUREA.—Same species, but instead of the white variegation the terminal shoots are of a beautiful golden hue. Nothing can be more exquisite than this plant. 31s. 6d. in April.

RETINOSPORA PISIFERA VARIEGATA.—The same species with beautifully white variegated foliage. 31s. 6d. in April.

SCIADOPITYS VERTICILLATA.—This, the Umbrella Pine, as it is sometimes called, is one of the most remarkable of all the Coniferæ, described (by Siebold) as a very singular shrub or small tree, but in reality growing to the height of 100 to 150 feet, with its whorls arranged in the form of an extended parasol. As J. S. has several imported plants, the character of it can be well seen by any of his friends who may favour him with a visit. Seedling plants in the seed leaf, 42s. each; or a few imported plants, about 1 foot high, 10 guineas each.

EURYA LATIFOLIA.—A most exquisitely variegated shrub, the young shoots being of a brilliant rose colour, changing to white; when this becomes large and well established it will be one of the most beautiful plants known. 31s. 6d. each in April.

OSMANTHUS VARIEGATUS NANUS.—A dwarf Holly-like looking plant, perfectly hardy, and from the freeness of its growth likely to supersede many of the variegated species of Ilex now in our gardens. 31s. 6d. each, in April.

AUCUBA JAPONICA (true).—The shrub hitherto known under this name is merely a variegated variety of the one now introduced; it is covered with beautiful red berries about the size of the common Sorbus. 21s. each.

TAXUS FORTUNII.—An erect-growing species, somewhat similar in habit to the Irish Yew, but with very long leaves. Plants in spring. 21s. each in April.

BAMBUSA VARIEGATA.—A very beautiful dwarf growing plant, perfectly hardy. 21s. each, in April.

CAMPANUMŒA LANCEOLATA.—From N. China, probably hardy, but at any rate most useful as a greenhouse creeper. Peculiar bell-shaped flower, green and black, produced very freely all over the plant. Plants in Spring, 10s. 6d.

NEW FERNS.

LOMARIA FLUVIATILIS.—A very distinct species from New Zealand. Fronds nearly 1 foot long. 42s. each.

LOMARIA ELONGATA.—New Zealand. Pinnate leaves, 2 feet long, stouter than other Lomarias; very striking and beautiful. 42s. each.

NEW FERNS.

LOMARIA MAGELLANICA.—Perfectly hardy; stood all last winter, even in Yorkshire. 3s. 6d. to 10s. 6d. each.

CYATHEA DEALBATA.—Nice seedling plants, with fronds from 15 to 18 inches long, in 32-pots. 7s. 6d. each.

CYATHEA SMITHII.—Seedling plants. From 2 to 5 guineas.

CYATHEA CUNNINGHAMII.—A beautiful tree Fern, of not very large growth, suitable for small greenhouse. 2 to ... guineas.

LASTREA ATRATA.—North China, very hardy, dark green foliage. 10s. 6d. each.

WOODWARDIA JAPONICA.—Hardy. From Japan and North China. 21s. each.

WOODWARDIA ORIENTALE.—Hardy. From North China, one of the finest of all hardy Ferns. 21s. to 31s. 6d. each.

TODEA PELLUCIDA.—A very beautiful tree Fern. 5s. to 10 guineas each.

CAMELLIA RETICULATA FLORE PLENO.—The largest and finest of all Camellias for effect. 31s. 6d. to 3 guineas each.

NEW ROSES.

COMTE DE FALLOUX, H. P.—A most free blooming variety of the Géant race, admirably adapted for a pot Rose or for bedding, as it never at any time of the year throws up a shoot without a bloom. Colour, bright scarlet crimson. 10s. 6d. each.

REYNOLDS HOLE, H. P.—A very strong and free blooming variety, throwing its blooms up well and very erect. Colour very lively pink, increasing in brilliancy as the flower gets age. For effect in gardens unrivalled; figured in the *Florist Magazine* for November, 1861. 10s. 6d. each.

GREGOIRE BOURDILLON, H. P.—A seedling from the Géant, very vigorous habit, larger and brighter than the parent; colour scarlet crimson. 10s. 6d.

MARGUERITE APPERT, H. P.—Large blush, shading off to white, beautifully cupped shape, vigorous habit. 10s. 6d. each.

ANDRE DESPORTES, H. P.—A seedling from Lord Raglan, very vigorous in habit, large rose-coloured flower. Admirably adapted for a pillar Rose. 10s. 6d. each.

JOHN STANDISH, H. P.—Deep violet crimson, very large, perfectly imbricated, and blooming in clusters, vigorous habit, first-rate Rose. 10s. 6d. each.

Plants of Comte de Falloux now ready. Strong plants of the others will be ready the first week of May.

Besides the above J. S. can supply all the New Roses of this and last year, fine strong plants on their own roots, or grafted, from 2s. to 3s. 6d. each, or by the hundred at a considerable reduction.

VINES.

MUSCAT TROVERON.—One of the finest of all the White Grapes; as such it received a First-class Certificate at the July Show of the Royal Botanic Society. As large as a Black Hamburgh, bunches 15 to 20 inches long, with a fine ... acid and slight Frontignan flavour; one of the finest Grapes for Exhibition purposes. 10s. 6d. to 31s. 6d.

INGRAM'S HARDY PROLIFIC MUSCAT.—This Grape has fully sustained the character given to it by John Standish, ... it has obtained the 5*l*. Prize given by Mr. Saunders for the finest Seedling Grape of last year; a First-class Certificate from the Fruit Committee of the Royal Horticultural Society, and an extra Prize from the Royal Horticultural Open ... Show. 21s. to 63s. each.

In addition to the above a fine collection of all the leading kinds either as Fruiting Canes or small plants for planting out.

J. S. begs to intimate that he has a fine stock of all the leading HYBRID RHODODENDRONS, from 12*l*. to 20*l*. per hundred; a fine collection of HARDY ORNAMENTAL SHRUBS and TREES, and the finest GLADIOLI in the world. Also all the new PHLOXES of 1860 and 1861, raised by Lierval and others, from 1s. 6d. to 3s. 6d. each, and assures his friends and the public in general that everything sent out by him will be in the best possible condition, and will not fail to give satisfaction.

JOHN STANDISH, THE ROYAL NURSERY, BAGSHOT, SURREY.

PETER LAWSON & SON,

THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

GLADIOLUS, the most Choice and Rare kinds.

YOUELL & CO.

Being extensive Growers of this beautiful tribe, beg to submit the following LIST, comprising the choicest and most distinct varieties, successfully exhibited by them at the Crystal Palace last season:—

ACHILLE.—Deep red, each petal marked with a white line, 3s. 6d. each
ADONIS.—Light cherry colour, lower petals yellowish, with bright carmine spots, 9s. per dozen
AGLAE.—Salmon-coloured rose, large flower, 9s. per dozen
ARCHIMEDE.—Clear red, lower petals striped with rosy carmine, 12s. per dozen
ARISTOTE.—Flesh-coloured rose, striped with red, lower petals striped with violet and carmine, 12s. per dozen
BERENICE.—Fine rose with red stripes and purplish carmine spots, 18s. per dozen
BERTHA RABOURDIN.—Pure white, lower petals richly marked with violet carmine, 2s. 6d. each
BOWIENSIS.—Rosy carmine, with dark throat, 6s. per dozen
BRENCHLEYENSIS.—For description see as under
CALENDULACEUS.—Bright nankeen, 9s. per dozen
CALYPSO.—Striped rose, with carmine spots, 2s. 6d.
CANARY.—Clear yellow, lower petals striped with rose, 2s. each
CERES.—Pure white, spotted with violet rose, large flower, fine spike, 3s. 6d.
CHATEAUBRIAND.—Rosy cerise, on light ground, 12s. per dozen
CLEMENCE.—Pale lilac rose, shaded and spotted with deep rose, 2s. 6d. each
COMTE DE MORNY.—Cerise, large white blotches, striped with violet, 2s. 6d.
COMTESSE DE BRESSON.—Red, lower petals shaded with violet, 9s. per dozen
COURANTI FULGENS.—Vivid lustrous crimson red, of fine form, 6s. per dozen
DAPHNE.—Salmon red, striped and mottled with carmine, 12s. per dozen
DON JUAN.—Orange fiery red, lower petals yellow, 9s. per dozen
DR. ANDRY.—Very bright orange red, 9s. per dozen
DUC DE MALAKOFF.—Brilliant flamed orange red, with white blotch, 2s. 6d.
EDITH.—Large flesh-coloured rose, with dark stripes, 12s. per dozen
EGERIE.—Clear, rosy orange, striped with dark rose, 9s. per dozen
ELDORADO.—Pure yellow, lower petals striped with red, 5s. each
EMPRESS.—White, slightly tinted with carnation, mottled with carmine, 18s. per dozen
ENDYMION.—Rose, tinted with violet, 12s. per dozen
ERATO.—Bright rose, striped with dark rose, and spotted with carmine, 3s. 6d. each
EUGENIE VERDIER.—The deepest orange crimson, 2s. 6d. each
FANNY ROUGET.—Carnation rose, lower petals carmine rose, 6s. per dozen
FULGENS AUREA PICTA.—Bright orange, spotted with yellow, 9s. per dozen
GALATHÉE.—Flesh coloured, nearly white, with carmine spots, 12s. per dozen
GIL BLAS.—Carmine rose, 12s. per dozen
GOLIATH.—Very large flower, light red, striped with carmine, 12s. per dozen
HEBE.—Pale flesh, mottled with carmine, 12s. per dozen
HÉLENE.—Light lilac, spotted and striped with violet, 9s. per dozen
IMPERATRICE.—Pale carnation, mottled with carmine, 18s. per dozen
ISOLINE.—Flesh colour, spotted with violet carmine, 2s. 6d. each
JANIRE.—Clear bright orange red, 12s. per dozen
JEANNE D'ARC.—White, lined with rose, striped and spotted with violet, 18s. per dozen
JOHN BULL.—Ivory white, 18s. per dozen
LE BARIOLE.—Fine, 12s. per dozen
LE POUSSIN.—Clear red, lower petals broadly blotched with white, 5s. each
LÆLIA.—Rosy peach, spotted with lilac, 3s. 6d.
LINNÉ.—Orange cerise, with large blotches of yellowish white, 3s. 6d. each
MADAME BASSEVILLE.—Large cherry colour, spotted with purple, upon a yellowish white ground, base of the petals white, 3s. 6d. each
,, BINDER.—Pure white, striped with rosy carmine, 2s. each
,, COUDER.—Fine shaded carmine, 6s. per dozen
,, DE VATRY.—White, tinged with yellow, carmine spots, 2s. 6d. each
,, HAQUIN.—Lilac and white, 2s. 6d. each
,, HERINCQ.—White suffused with red, 9s. per dozen
,, LESEBLE.—Pure white, with large violet rose blotches, 5s. each
,, PAILLET.—Cinnamon carmine, spotted with violet blue, 12s. per dozen
MARIE.—Pure white, spotted with dark carmine, 3s. 6d. each
MARS.—Handsome rosy scarlet, 12s. per dozen
MATILDE DE LANDEVOISIN.—White striped with carmine, 2s. 6d. each
MAZEPPA.—Rich salmon, lower petals yellow, 12s. per dozen
MONS. BLOUET.—Rich rosy red, very large, 6s. per dozen
,, CORBAY.—Clear orange red spotted with violet, 9s. per dozen
,, KETELEER.—Vermilion, carmine, mottled, 18s. per dozen
,, VINCHON.—Rose, striped wtth reddish salmon, 12s. per dozen
NAPOLEON III.—Rosy scarlet, shaded with brilliant carmine 2s. each
NEMESIS.—Bright rose, striped with white, and spotted with carmine, 2s. each
NEPTUNE.—Beautiful red, with carmine spots and stripes, 18s. per dozen
NINON DE L'ENCLOS.—Flesh colour, striped with rose, 18s. per dozen
OPHIR.—Deep yellow, purple spots, 2s. 6d. each
ORACLE.—Brilliant cerise rose, 2s. each
OSIRIS.—Violet purple, spotted with pure white, 2s. each
OTHELLO.—Orange red, a very effective variety, 2s. each
PALLAS.—Bright rose striped, violet and orange carmine spots. 12s. per dozen
PEGASUS.—Carnation, mottled with purplish red, 12s. per doz.
PELLONIA.—Rose spotted and tinted with carmine, 12s. per dozen
PENELOPE.—Slightly flesh-coloured white, lower petals yellow, tinted with carmine spots, 12s. per dozen
PLINE.—Brilliant cerise, with clear white centre, 3s. 6d. each
PREMICES DE MONTROUGE.—Large glossy red, very effective, 2s. each
PRINCESSE CLOTILDE.—Flowers very large, of a delicate salmon, large blotches of violet upon a white ground, 5s. each
,, MATHILDE.—Bright rose, striped with dark rose, large spots of carmine, 2s. 6d. each
RAPHAEL.—Very bright vermilion, centre clear white, shaded with violet, 5s. each
REBECCA.—Pure white, striped with lilac, 18s. per dozen
ROBT. BLUME.—6s. per dozen
SULPHUREUS.—Pure sulphur yellow, 18s. per dozen
TRIOMPHE D'ENGHIEN.—Carmine, slightly spotted and tinted with yellow, 6s. per dozen
VELLEDA.—Bright rose, spotted with lilac, flowers very large and effective, 2s. 6d. each
VERSICOLOR.—Red, salmon stripes, 6s. per dozen
VESTA.—Pure white spotted with violet carmine, 18s. per dozen
VULCAIN.—Rich purple, flushed with scarlet, centre shaded vfolet, 2s. 6d. each

One or more roots of each kind will be supplied at the same price as quoted at per dozen.

Fine selections from the above left to Youell & Co. will be supplied as follows:—
100, in 50 extra fine kinds, £5 to £7 10s. per 100, or 9s., 12s., and 18s. per dozen.

FLOWERING SEEDLING BULBS, saved from the best flowers, 6s. per dozen, or 40s. per 100.

GLADIOLUS BRENCHLEYENSIS (True).

Youell & Co. beg to offer this season strong FLOWERING BULBS of the above magnificent GLADIOLUS, unequalled by any other for its brilliancy of colour, which is vermilion scarlet, and allowed to be the best and brightest variety known.

They have much pleasure in submitting the following report from the Editor of the *Gardeners' Chronicle*:—

"Gladiolus Brenchleyensis.—We have received from Messrs. Youell & Co., of Great Yarmouth, some specimens of this plant, the gorgeous appearance of which cannot be spoken of in terms of exaggeration. The tall robust habit and intensely bright scarlet flowers place it at the head of all the hardy flowers of the autumn."

It was also exhibited by them at the Crystal Palace Show, and was awarded an Extra Prize.

Price 30s. per 100, or 4s. per dozen. Trade price on application.

ROYAL NURSERIES, GREAT YARMOUTH, NORFOLK.

Ericas, Epacris, Azalea indica, &c.

YOUELL AND CO. beg to offer fine bushy flowering Plants of
ERICAS, fine showy kinds (in 48's) 12s. per dozen.
EPACRIS, ,, ,, ,, 12s. ,,
AZALEA INDICA, of fine kinds, in 48's, 12s. and 18s. per doz.
GREENHOUSE PLANTS in 50 fine kinds, 12s. per dozen.

Royal Nursery, Great Yarmouth.

Choice Hardy Plants.

YOUELL AND CO. beg to offer the following in strong healthy Plants:—
CARNATIONS, finest first-class varieties by name, 18s. and 24s. per dozen pairs
PICOTEES, finest first-class varieties by name, 18s. and 24s. per dozen pairs
PICOTEES, on yellow grounds, 20s. and 30s. per dozen pairs
Finest mixed Border CARNATIONS and PICOTEES, 9s. per dozen pairs
True old CLOVE CARNATIONS, 12s. per dozen pairs
Scarlet ,, ,, 18s. ,,
YOUELL'S KING OF SCARLETS, a perpetual flowering vivid scarlet Clove, highly perfumed, and fine for forcing, 18s. per dozen plants
Perpetual-flowering TREE CARNATIONS, strong, 12s. and 18s. per dozen
PINKS, finest first-class varieties by name, 6s. and 9s. per dozen pairs, or 40s. per 100 pairs.
PINKS, finest mixed for borders, 6s. per dozen pairs, or 30s. per 100 pairs
STANDARD ROSES, fine hybrid perpetuals, on straight clean stems, and fine bushy heads, 30s. per dozen
DWARF HYBRID PERPETUALS Ditto, 12s. per dozen.
PANSIES, fine first-class kinds, by name, in or from pots, 9s. per dozen
PANSIES, finest mixed for borders, 4s. per doz. or 25s. per 100
HOLLYHOCKS, fine kinds by name, 12s. per dozen
PHLOXES, the handsomest of the new varieties, 9s. per dozen
ANTIRRHINUMS ,, ,, 6s. to 9s. ,,
PENTSTEMONS ,, ,, 6s. to 9s. ,,
MIMULUS, 12 fine new continental kinds, 6s. per dozen
PYRETHRUMS, 12 fine ,, ,, 9s. ,,
DAISIES (double) 30 fine ,, ,, 4s. ,,
POLYANTHUS, fine mixed, 3s. per dozen, 20s. per 100
PRIMROSES, Double Yellow, Purple, and Lilac, 4s. per dozen
,, Double dark Maroon, 12s. per dozen
DIELYTRA SPECTABILIS, very strong, 4s. per dozen
HELLEBORUS NIGRA or CHRISTMAS ROSE, 4s. per dozen
SAPONARIA OCYMOIDES, bright pink, 4s. per dozen
PHLOX NELSONI, large white, purple eye, trailing habit, 6s. per dozen
CHEIRANTHUS ALPINUS, bright lemon, very dwarf, 6s. per dozen
BELLIS AUCUBÆFOLIA, handsome gold variegated foliage Daisy, with large scarlet flowers, 4s. per dozen
(Fine for rock work.)
CHEIRANTHUS ATRO-PURPUREA, 6s. per dozen
STATICE MARITIMA ROSEA, deep lake colour, 1 foot in height, 4s. per dozen
VIOLA ARBOREA ALBA, double white Tree Violet, very fragrant. 6s. per dozen

☞ All orders of 2l. and upwards are delivered carriage free to London, Manchester, Liverpool, Peterborough, Hull, and Newcastle, as well as to any Railway Station within 150 miles of the Nursery. Communications by Steamer and Railway, to all parts of England, Ireland, and Scotland, as well as the Continent.

Royal Nursery, Great Yarmouth, Norfolk.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

FIRST-CLASS PELARGONIUMS and CINERARIAS.

12 NEW PELARGONIUMS, Purchaser's Selection, 24s. per doz.:—Argo, Beauty of Reading, Cherub, Garibaldi, Gem of Roses, King of Spots, Mulberry, Modesty, Mrs. Benyon, Norma, Perdita, Roseum, Rosa Bonheur, Satanella, Sir H. Davy, The Lady of Quality, Thirza, Transcendent.

12 CHOICE PELARGONIUMS, Purchaser's Selection, 12s. per doz.:—Autocrat, Admirable, Annette, Agnes, Angelina, Beadsman, Bacchus, Czar, Candidate, Carlos, Douglas, Desdemona, Euphemia, Etna, Emperor, Gwendoline, Golden Hue, Hesperus, Jung Bahadoor, King of Purples, Lady Canning, Leviathan, Larkfield Rival, Lord Clyde, Monarch, Mazeppa, Magpie, Meteora, Magnet, Minnie, Mammoth, Mars, Pet of the Flock, Prince of Wales, Peacock, Richard Benyon, Rose Celestial, Symmetry, Sanspareil, Sprightliness, Spotted Gem, Sappho, The Bride, The Belle.

12 NEW CINERIAS, Purchaser's Selection, 12s. per doz.:—Adam Bede, Commander-in-Chief, Duke of Cambridge, Excelsior, Goliath, Lady Paxton (new), Mr. Marnock, Mr. Marnock (Smiths), Miss Marnock, Miss Smith, Magnet, Magenta, Magnificent, Othello, Perfecta, Queen Victoria, Refulgens, Semi Duplex, Solferino, Triumphans.

Henry May, The Hope Nurseries, near Bedale, Yorkshire.

New Seedling Fuchsias.

ROBERT REA, Nurseryman, &c., London Road, Ipswich, has much pleasure in offering his three SEEDLING FUCHSIAS, which were so universally admired by all who saw them last season. With their superior habit, large well-formed flowers, and rich colours, he feels confident they cannot fail to give satisfaction.

BLONDIN.—A fine large bold flower, of fine form and substance; tube and sepals rich crimson, the latter well reflexed; large dark violet corolla. The sepals of this flower, when flattened down, measure 4 inches across. Recommended as being one of the finest and largest Fuchsias ever offered. 10s. 6d. each.

CONQUEST.—Tube and sepals waxy scarlet vermilion, of great substance, with a finely expanded violet plum-coloured corolla; the sepals broad and gracefully reflexed. Fine branching habit, and very free bloomer. A very desirable variety. Price 7s. 6d. each.

CEDO NULLI.—R. R. recommends this Fuchsia as being the finest double Fuchsia ever offered; its fine form, rich colour, and superior habit will commend it to all lovers of Fuchsias. Tube and sepals rich brilliant crimson, the latter broad and well reflexed. Corolla fine dark violet. Extra large and very double; does not fade in the sun. A first-rate exhibition variety. Plants 10s. 6d. each.

WARRIOR will be presented to purchasers of the set, it being too much like the preceding to warrant its being sent out at the same time. Nevertheless it is a fine variety.

The set for 25s., with the usual discount to the Trade. To be sent out the first week in May.

1862.—Vegetable Seeds—First-class.

STEPHEN BROWN'S FIRST-CLASS COLLECTIONS contain a large number of new sorts, very choice They are the cheapest and best offered :—

COLLECTION No. 1	£3 0 0
„ No. 2	2 0 0
„ No. 3	1 0 0
„ No. 4	0 12 6

SECOND CLASS COLLECTIONS of best older esteemed sorts, with less of new varieties, fine,—A., 50*s.* ; B., 32*s.* 6*d.* ; C., 17*s.* 6*d.* ; D., 10*s.* 6*d.*

The CATALOGUE is replete with interesting novelties. Copies may now be had.

Goods carriage free (20*s.* and upwards) to London and all Stations on the Eastern Counties lines, and with 40*s.* and upwards extra novelties or roots gratis.

STEPHEN BROWN, Seed Grower and Importer, Sudbury, Suffolk.

THE PLYMOUTH SEED COMPANY, "Limited," are now sending out their COLLECTIONS of SEEDS, which have hitherto given great satisfaction.

	£ s. d.
No. 1. COMPLETE COLLECTION for a large Garden, for One Year's Supply	3 0 0
No. 2. COMPLETE COLLECTION for a moderate size Garden, for One Year's Supply	2 0 0
No. 3. COMPLETE COLLECTION for do., smaller quantities, for One Year's Supply	1 0 0
No. 4. COMPLETE COLLECTION for a Small Garden	0 15 0
No. 5. COMPLETE COLLECTION for a Small Garden	0 10 6
EXTRA LARGE COLLECTION, containing double the quantities contained in No. 1	5 0 0

Extra Collection carriage free to any Railway Station in England and Wales, and to any Steam Port in England, Wales, Scotland, and Ireland.

No. 1 carriage free to most Stations and Ports in the Kingdom.

No. 2 carriage free to Broad Gauge Stations and Steam Ports.

No. 3 carriage free to any Station between Plymouth and Paddington.

Address, Plymouth Seed Company, Plymouth.

Hamilton's Market Favourite Cucumber.

SUTTON AND SONS have a limited Stock remaining of the Seed of the above Cucumber, the same as supplied by them to the Royal Horticultural Society last season, and of which the Society's Report says, "*This was considered the best of the Tipped Spine Section; and it possesses the best colour, the best form, and every property of a good Cucumber. Not only was it the best in its section, but the best and handsomest in the whole collection.*" Price 1*s.* 6*d.* per packet.

Royal Berkshire Seed Establishment, Reading.

MONRO'S RABLEY CUCUMBER, per pkt., 2*s.* 6*d.* (See fuller Advertisement in November and Dec. last.)

	Per packet—*s. d.*
TELEGRAPH IMPROVED do., and other finest frame sorts	1 0
HERTFORDSHIRE dwarf hardy CAULIFLOWER (the best Cauliflower)	1 0
MELON SCARLET GEM, true	1 0
HOLLYHOCK (WM. PAUL'S Collection of 12 superb named sorts)	5 0

Every description of VEGETABLE and FLOWER SEEDS, principally grown by or under the supervision of the Subscriber.

CATALOGUE free on application.

WM. PAUL, Nurseries and Seed Warehouse, Waltham Cross, N.

Wood's Defiance Cauliflower.

WM. WOOD AND SON have much pleasure in introducing this new and superior CAULIFLOWER to the notice of their friends and the public generally, and having tested it for several years against Walcheren and other approved varieties, they do not hesitate to pronounce it the best Cauliflower in cultivation. It is quite hardy, of dwarf habit, and produces immense large heads, which are very compact, and most deliciously flavoured.

Stock limited ; price per packet, 2*s.* 6*d.*

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

*** SEED CATALOGUE post free on application.

"Yorkshire Hero" Cucumber.

EDMUND PHILIP DIXON AND SONS beg to offer Seed of the "YORKSHIRE HERO" CUCUMBER which has been proved during the past season to be the most useful and prolific Cucumber in cultivation. It is a very long White-spined variety, of a dark green colour, producing three to four fruit at a joint, and, as will be seen from the Testimonials following, possesses all the qualities the grower can possibly desire.

From MR. THOMAS GIBB, *Gardener to the Right Honourable the Earl of Yarborough.*

Long Cucumbers are generally shy bearers, but the "Yorkshire Hero" produces abundantly, besides being a Cucumber of excellent quality.

Brocklesby Park Gardens, October 21st, 1861.

From MR. GEORGE MCGILLAVRAY, *Gardener to Sir John Nelthorpe, Bart.*

The "Yorkshire Hero" Cucumber, I without hesitation say, is possessed of every qualification to be desired in a Cucumber, being a most prolific bearer, at all times showing as many as three and four fruit at a joint. It is a thick Cucumber with very short neck, and grew with us from 20 to 24 inches, and plenty of them to satisfy any one : I could not get any seed from those I saved for that purpose, they being so solid there was no room for seed.

Scawby Hall Gardens, October 24, 1861.

Price 2*s.* per packet.

London Agents for the sale of the above :—Messrs. HURST & MCMULLEN, 6, Leadenhall Street, E.C. ; Messrs. COOPER & BOLTON, 152, Fleet Street, E.C.

E. P. DIXON & SONS' DESCRIPTIVE PRICED CATALOGUE of SEEDS is now ready, and may be had on receipt of one stamp

Yorkshire Seed Establishment, 57, Queen Street, Hull.

EXCELLENCE and ECONOMY.—

Botcherby Hybrid	Kenyon
Hamilton's Market Favourite	Telegraph
Hector	William Brown

And other CUCUMBERS (true).

ORNAMENTAL GOURDS, Imported Seed.

JAMES TYNAN begs to offer Seeds of the above, at 6*d.* and 1*s.* per packet, free by post for 7 or 13 stamps.

CATALOGUES free by post on application.

Seed Warehouse, 68, Great George Street, Liverpool.

CELOSIA AUREA var. PYRAMIDALIS SANGUINEA, and a New Lemon Variety.—These are really magnificent plants, with flowers like a plume of feathers, and continue in bloom from July to December. The C. aurea here offered, G. P. believes to be an improvement upon the var. usually grown, from being more compact in its habit, and the colour a brilliant orange. Seeds of G. P.'s own saving in packets of 100 seeds, each 1*s.* Price to the Trade on application.

GEO. PARSONS, Nurseryman and Seedsman by Appointment to Her Majesty, 27 and 28, Western Road, Brighton ; Nurseries, Montpellier Road and Hassock's Gate, Keymer.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

All Orders for Vegetable Seeds amounting to 21s. sent Carriage paid.

COLLECTIONS OF VEGETABLE SEEDS FOR 1862.

THESE Assortments consist of selections from the different sections of our Catalogue, and are suited to Gardens of various sizes; they contain only the most approved Varieties, such as are most in demand in Covent Garden Market and are most suited to secure a succession of the best VEGETABLES from January to December.

No. 6 Collection contains 20 quarts of Peas and other Seeds in proportion for One Year's Supply ... £3 3.

No. 5, £2 2s. | No. 4, £1 10s. | No. 3, £1 1s. | No. 2, 15s. 6d. | No. 1, 10s. 6d.

☞ For particulars of the above Collections, see our Advertisements of January 18 and 25.

For PRICED LIST of Select VEGETABLE SEEDS,

See our Advertisement on Last Page of *Gardeners' Chronicle*, January 18 and 25.

For LIST of STRIKING NOVELTIES,

See Advertisement of January 4.

For LIST of COLLECTIONS of CARNATIONS, PICOTEES, and PELARGONIUMS,

See Advertisement of January 11th.

This week shall be forwarded to our Customers and numerous applicants our

ILLUSTRATED SPRING SEED CATALOGUE,

OR THE GUIDE TO KITCHEN AND FLOWER GARDEN.

☞ ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

The Cultural Directions are the most ample and practical to be found in any Trade List.

FRAME CUCUMBERS.

To the indefatigable exertion of Robert Hogg, Esq., LL.D., F.R.H.S., the public are indebted for the following classification and selection. Of 118 (said to be distinct) varieties, he reduced that number to 36, and of the 36 he only recommends the following 15 varieties. We quote his words :—

"The following sorts are those most worthy of cultivation ; and as they furnish every quality and requirement which are to be found in any of the other varieties, they may very safely be chosen as the kinds best fitted to form a select and distinct list."

Having a fine stock of these varieties, TRUE, we can forward them at once by post at the price quoted per packet. Prices to the Trade of those marked * forwarded on application.

I.—NON-GLAUCOUS VARIETIES.

	Per packet—*s. d.*
* CARTER'S CHAMPION.—The best of the smooth Sion House race	1 0
* CUTHILL'S HIGHLAND MARY.—A good bearer, and early	1 0
* KENYON'S IMPROVED.—The best of the white-spined Sion House race	1 0
KIRKLEES HALL DEFIANCE.—The second best of the white-spined Sion House race	1 0

II.—GLAUCOUS VARIETIES.

	Per packet—*s. d.*
* DR. LIVINGSTONE.—The best of the black-spined varieties	1 0
HENDERSON'S A 1.—The second best of the black-spined varieties	1 0
JENNING'S WORCESTER CHAMPION.—One of the best of the black-spined varieties, but for its yellow-coloured point, which places it as the third best ..	1 0
HAMILTON'S MARKET FAVOURITE.—The best and handsomest Cucumber in the whole collection, and the best of the tipped-spined varieties..	1 [illegible]
*PHENOMENON.—A very handsome Cucumber, and the second best of the tipped-spined varieties ..	1 [illegible]
*HAMILTON'S SURPRISE.—A handsome and good Cucumber, the third best of the tipped-spined vars.	1 [illegible]
*BUTLER'S EMPRESS EUGENIE.—A very handsome fruit, and the plant is an abundant bearer. The best of the white-spined sorts	1 [illegible]
DICKSON'S NEWTOWN HERO.—The second best of the white-spined sorts	1 [illegible]
*GODFREY'S WHITE SPINE.—A very handsome Cucumber of a fine dark green colour	1 [illegible]
*HIMALAYA.—A handsome white-spined variety ..	1 [illegible]
*IMPROVED MANCHESTER PRIZE.—A very excellent and generally useful sort, and one of the best of the white-spined varieties	1 [illegible]

NEW HYBRID MELONS.

BARR AND SUGDEN have just received from their SARDINIAN CORRESPONDENT the following first-class MELONS, which have been carefully tested during the last two seasons against all the known favourites of this class. B. & S. therefore feel the greatest confidence in recommending them to their numerous patrons. Sent by post, each sort 2*s.* 6*d.* per packet, or a packet each of the 4 varieties for 7*s.* 6*d.*

MELON EMPRESS EUGENIE.—"This variety is a hybrid between Veitch's Perfection (green flesh) and Turner's Scarlet Gem ; it has all the desirable characteristics of the former, having a lemon-coloured rind beautiful netted, and being rich and melting in flavour, but the flesh is of a brilliant scarlet. This received a First-class Certificate."

MELON PRINCESS ALICE.—"A most exquisite variety, of truly unique character, to be chosen out among a thousand : form nearly round, rind transparent pale buff, beautifully laced, and so thin that the colour of the flesh, a beautiful rosy pink, is seen through it. The flavour is most delicious, and the flesh is thick, melting, and somewhat resembling Turner's Scarlet Gem, but not so close in texture. It has received a First-class Certificate from the Horticultural Society of Nice, 20 other varieties being shown."

MELON PRINCE IMPERIAL.—"A magnificent scarlet-fleshed Beechwood, from which variety it could not externally be distinguished. A most remarkable Melon, sugary and melting."

MELON QUEEN VICTORIA.—"It needs no further description of this Melon than to say that in appearance and quality it is a perfect 1st-class Bromham Hall in every respect, except the colour of the flesh, which is a fine deep red, melting and delicious. It has received a First-class Certificate."

All Orders Amounting to 21s. sent Carriage Paid to any Railway Station in the Kingdom. No charge made for Package or Packing.

BARR AND SUGDEN, 12, KING STREET, COVENT GARDEN, W.C.

(OPPOSITE THE GARRICK CLUB).

ESTABLISHED UPWARDS OF A CENTURY.

COVENT GARDEN MARKET, LONDON, W.C.

BUTLER & McCULLOCH'S
COLLECTIONS OF VEGETABLE SEEDS,

CARRIAGE FREE,

Consisting of the best and most approved varieties.

No. 1.	A Complete Collection for One Year's Supply	£4 0 0
No. 2.	Ditto ditto smaller quantities	2 0 0
No. 3.	Ditto ditto ditto	1 0 0

For full particulars, see CATALOGUE (page 91).

DESCRIPTIVE SEED CATALOGUE FOR 1862,

Containing all the new and most approved varieties of FLOWER SEEDS. To exhibitors we can strongly recommend our assortments of ASTERS, BALSAMS, STOCKS, and other CONTINENTAL SEEDS.

BUTLER AND McCULLOCH, SEEDSMEN, COVENT GARDEN MARKET, W.C.

LARGE IMPORTATION OF STANDARD ROSES.

WM. WOOD & SON

Respectfully inform the Nobility, Gentry, and Amateurs that they have imported a large quantity of good, strong, and healthy

STANDARD ROSES,

Comprising the best and most popular HYBRID PERPETUAL and other kinds, from which they will be happy to make selections, as under:—

	Per dozen.—s. d.
HYBRID PERPETUALS, ÎLE DE BOURBONS, &c. ..	30 0
HALF STANDARD ditto, ditto	30 0
HYBRID BOURBONS, HYBRID CHINAS, and other summer flowering kinds	24 0
HALF STANDARD ditto ditto	24 0

DWARF ROSES.

Fine strong plants, both on own roots and worked.

HYBRID PERPETUALS, BOURBONS, TEA-SCENTED and NOISETTE.. .. .. per dozen 18s.

CHINAS, CLIMBERS, HYBRID CHINAS, and other summer kinds .. .. per dozen 12s.

TEA-SCENTED ROSES in 6-inch pots, established and fit for immediate forcing or greenhouse culture .. 30s. per dozen.

NEW ROSES.

Fine Dwarf Plants, HYBRID PERPETUAL and BOURBON varieties of 1861 .. 3s. 6d. and 5s. each.

NEW ROSES of 1862, fine strong plants, in April.

DWARF-TRAINED FRUIT TREES.

PEACHES, NECTARINES, PEARS, &c., fine healthy well furnished plants at very moderate prices.

DWARF MAIDEN PLUMS.

Strong Plants, free from blight. Price on application.

The Trade supplied. CATALOGUES *post free.*

WILLIAM WOOD & SON, NURSERYMEN and SEEDSMEN, MARESFIELD, NEAR UCKFIELD, SUSSEX.

GENUINE SEEDS DIRECT FROM THE GROWERS.

WM. WOOD & SON

BEG RESPECTFULLY TO ANNOUNCE THAT THEIR

SPRING SEED CATALOGUE

is now ready, and may be obtained free on application. It contains only the most approved varieties in each respective class, and intending purchasers will find no difficulty in making a selection therefrom.

NOVELTIES in VEGETABLES, Post Free.

	Per Packet.—s. d.
CARTER'S ST. OSYTH BEET ..	1 0
NUTTING'S SELECTED do. ..	0 6
MELVILLE'S INCOMPARABLE WHITE BROCCOLI	1 0
LEE'S NEW WHITE SPROUTING do.	1 0
SNOW'S SUPERB WHITE do. true	1 0
KEMP'S INCOMPARABLE CABBAGE	1 0
WOOD'S DEFIANCE CAULIFLOWER	2 6
CARTER'S DWARF MAMMOTH ditto	1 0
PARSON'S SUPERIOR do. ..	
PARSNIP CHERVIL ..	0 6—1 0
COLE'S PERFECTION CELERY	2 6
HOOD'S IMPERIAL RED do. ..	0 6
IVERY'S NONSUCH do.	0 6
TURNER'S INCOMPARABLE do.	0 6
KIRKLEES HALL DEFIANCE CUCUMBER	1 0
PEARSON'S LONG GUN do. ..	2 6
THE SENSATION do.	2 6
TILEY'S WHITE SPINE do. ..	2 6
YORKSHIRE HERO CUCUMBER	2 0
WONDERFUL RIDGE do. ..	2 6
MELVILLE'S VARIEGATED KALE	1 0
CARTER'S GIANT WHITE COS LETTUCE	1 0
CARTER'S GIANT BROWN do. .	1 0
DUNNETT'S BLACK SEEDED do.	1 0
WHEELER'S IMPERIAL do. ..	1 0
WHEELER'S TOM THUMB do...	1 0
THE STUDENT PARSNIP ..	1 0

For descriptions, see CATALOGUE.

COMPLETE COLLECTIONS of KITCHEN GARDEN SEEDS

FOR ONE YEAR'S SUPPLY.

No. 1. For a Large Garden	£4 0
No. 2. For a Medium-sized Garden ...	2 10
No. 3. For a Small Garden	£1 5
No. 4. For a Smaller Garden	0 15

These assortments include only the most choice sorts, and have been prepared in the most liberal manner. W. W. & SON feel assured they cannot fail to give entire satisfaction. For full particulars see CATALOGUE.

NOVELTIES in FLOWER SEEDS, Post Free.

See Advertisements in the *Gardeners' Chronicle* of January 18 and 25.

COLLECTIONS of FLOWER SEEDS, Post Free.

100 finest varieties, separate, comprising Hardy, Half Hardy, and tender ANNUALS, PERENNIALS, &c. 21s.

50 finest varieties, separate	.. ..	..	10s. 6d.
30 ditto	ditto	.. ..	7 0
20 ditto	ditto	.. ..	4 6

GERMAN FLOWER SEEDS, Post Free.

Imported in sealed packets, comprising choice assortments of ASTERS, STOCKS, LARKSPURS, BALSAMS, &c.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

SEEDS FOR THE KITCHEN GARDEN.
SEEDS FOR THE FLOWER GARDEN.
SEEDS FOR THE FARM.

JOHN CATTELL'S CATALOGUE of the above is now ready, and will be forwarded post paid on application. It contains select Lists only of all the best VEGETABLE and FLOWER SEEDS, so that the Amateur with only a small Garden cannot fail to make a proper selection.

His COLLECTIONS of KITCHEN GARDEN SEEDS, which have always given the greatest satisfaction, are sent as usual, viz.:—

	£ s. d.
A Collection for Large Gardens, including every desirable kind of Vegetables, Salads, and Herbs	3 0 0
Ditto, ditto, for a Medium-sized Garden	2 0 0
Ditto, ditto, for a Small Garden	1 0 0
Ditto, ditto, for a Cottage Garden	0 10 6

The Carriage of all parcels of Seeds amounting to 10s. 6d. and upwards, paid to any Railway Station in England or Wales.

Nursery and Seed Establishment, Westerham, Kent.

Asparagus.

YOUELL AND CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—

ASPARAGUS, GIANT, two years .. .. 2s. 6d. per 100.
" " three years .. .. 3s. 6d. "

BUCKLEY'S NEW CRIMSON RHUBARB.

Specimens have been sent to Dr. Lindley for his opinion. See the following in the *Gardeners' Chronicle* of February 26, 1859:—

"John Buckley, your specimens are very handsome, rich rose red quite through, and are evidently derived from Bucks, the true Rheum undulatum. When cooked they were remarkably free from stringiness."—2s. each; 20s. per dozen.

HAWKE'S CHAMPAGNE RHUBARB, new and fine, highly recommended, 12s. per dozen.

YOUELL'S NORFOLK HERO CUCUMBER, 1s. per packet.

LAING'S MAMMOTH RED CELERY, 1s. per packet.

Royal Nursery, Great Yarmouth.

To the Seed Trade.

FREDERICK W. WENDEL, SEED MERCHANT, Erfurt, Prussia, begs to offer the following Seeds of carefully selected Stock of good growth:—

CARROT: Altringham, Long Red; Orange Red, Belgian; Early Horn; Earliest ditto, for Forcing.

ONION: Straw Colour, true; Silver Skinned; Darkest Blood Red; Pale Red, or Flesh Colour, excellent for general crops; Pear-shaped Yellow; Sulphur Yellow; Giant Madeira.

BEET: Darkest Blood Red; James's Keeping.

TREE SEEDS: Silver Fir; Spruce ditto; Scotch ditto; Larch.

Prices, &c., for the above, to be had on application to GEO. MACINTOSH, Seedsman, &c., High Road, Hammersmith, W., London; and where also GENERAL PRICE LISTS can be obtained free and post paid.

Hanover Nursery, Peckham, S.E.

WM. IVERY begs to inform his Friends and the Public that he is now prepared to supply his NONSUCH LETTUCE, the best summer variety in cultivation. Will stand in hot weather one month longer than any other sort without running to seed, having received many testimonials of the highest character, too numerous for insertion; 1s. per packet.

Can be had of the principal Seedsmen in London. Also IVERY'S NONSUCH CELERY, 6d. and 1s. per packet.

	Per Packet—s. d.
Squibb's extra fine CAULIFLOWER	1 0
Lee's new White Sprouting BROCCOLI, own saving, from the best selected heads	1 0
Ivery's Treble Curled PARSLEY	0 6
New STUDENT PARSNIP	1 0
Splendid Pine-Apple BEET	0 6
Imported STOCKS and ASTERS, in 12 varieties	3 0
PRIMULA SINENSIS, Russell's pyramidal variety, crimson and white mixed..	2 6

Seeds of all description, selected from the best growers.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and other FLOWER SEEDS, Choice GLADIOLI, &c., is now ready, and will be forwarded post free on application.

The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices.

An inspection and comparison with prices in other Catalogues is respectfully solicited.

The following, of which descriptions will be found in Catalogue, are specially recommended:—

	Per oz., s. d.
BEET, Compact Topped or Pine Apple Short Top ..	0 6
" Selected Dwarf Red (Nutting's)	0 9
CAULIFLOWER, Early Dwarf Erfurt	2 0
" New Early Mammoth or Frogmore Forcing	3 6
CELERY, Imperial Dwarf Red (Hood's)	1 0
CHÆROPHYLLUM BULBOSUM	2 0
CUCUMBER, TELEGRAPH .. .. .. per packet	1 6
LETTUCE, MOOR PARK .. .. .. per oz.	2 0
PEA, GENERAL WYNDHAM .. .. per quart	1 3

Exotic Nursery, Tooting, Surrey, S.

SEEDS FREE BY POST.

	Per packet—s. d.
BOSTON MARROW SQUASH, from North America ..	0 6
SUMMER CROOK-NECK SQUASH, from ditto	0 6
LARGE YELLOW MAMMOTH PUMPKIN, from Paris	0 6
GREEN SPANISH do. do. do. ..	0 6
LARGE TOURS do. do. do. ..	0 6
ORNAMENTAL GOURDS, 12 varieties, per collection ..	2 0
SNAKE GOURD, light glaucous green with white longitudinal markings, giving a striking character; handsome climbing plant with snake-like fruit	1 0
SNAKE GOURD, handsome carmine fruit	0 6
SNAKE GOURD, common green	0 6

DESCRIPTIVE CATALOGUE of VEGETABLE and FLOWER SEEDS, containing all the choice novelties of the season, may be had on application.

STUART & MEIN, Seedsmen to the Union Agricultural Society, Kelso, N. B.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS.

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage-free by rail, and allow 5 per cent. discount for cash.

Our Book of FARM SEEDS sent free for 3 stamps.

J. C. WHEELER & SON, Seed Growers, Gloucestershire.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

ECONOMY IN THE GARDEN.

SUTTON'S

UNRIVALLED COLLECTIONS of GARDEN SEEDS for ONE YEAR'S SUPPLY.

(CARRIAGE FREE.)

No. 1. A Complete Collection of Kitchen Garden Seeds for One Whole Year's Supply, with Instructions on Cultivation ... £3 0 0
No. 2. A Complete Collection of Kitchen Garden Seeds, in quantities proportionately reduced 2 0 0
No. 3. A Complete Collection of Kitchen Garden Seeds ditto 1 0 0
No. 4. A Complete Collection of Kitchen Garden Seeds for a Small Garden 0 10 6

Sent Carriage Free by Rail, and 5 per cent. discount allowed for cash payment. A remittance or reference requested from unknown correspondents.

The sorts of Vegetables included in these Collections are those which have proved to be the most prolific, best flavoured, and most worthy of general cultivation, and of which sorts we have therefore grown large crops of Seed. We exclude from our Collections not only inferior old sorts, but also such new ones as we have been unable to test the merits of, and which are selling at extravagant prices. By this means, and from the great convenience experienced in supplying every purchaser with the same sorts, we are enabled to supply A COMPLETE COLLECTION for ONE YEAR'S SUPPLY at much less expense than when a Gentleman or his Gardener makes his own selection; but if the latter mode of ordering is preferred, we shall be happy to send our General Catalogue, with prices of every article separate.

QUANTITIES CONTAINED IN SUTTON'S COLLECTIONS:—

	£3 Collection	£2 Collection	£1 Collection	10s. 6d. Collection
PEAS, the best sorts as proved in Messrs. Sutton's Trial Ground, including Sutton's Early Champion, Prizetaker, Champion of England, and others	20 quarts	12 quarts	7 quarts	5 pints
BEANS, the best sorts for succession, do. ..	10 ditto	6 ditto	3 ditto	2 ditto
FRENCH BEANS, Runners and Dwarfs, do.	6 pints	4 pints	2 pints	1 ditto
BEET, Sutton's Dark Red, warranted the finest in cultivation	2 ounces	2 ounces	1 packet	1 packet
BORECOLE, or Sprouting Kale, of best sorts for succession (including Cottager's Kale	2 ditto	4 packets	4 packets	2 ditto
BRUSSELS SPROUTS, fresh imported seed	1 ounce	1 large pkt	1 packet	1 ditto
BROCCOLI, the best sorts for succession, as tested in Messrs. Sutton's Sample Ground	4 ounces	2½ ounces	5 packets	2 packets
CABBAGE, best sorts for succession throughout the year (including Sutton's Imperial)	4 ditto	3 ounces	3 large do	1 ditto
SAVOYS, fine curled	2 ditto	1 ounce	1 ditto	1 ditto
CARROT, best sorts for summer and winter use	14 ditto	7 ounces	3 ounces	1 ounce
CAULIFLOWER, true Walcheren and others	2 large pks	2 large pks	1 packet	
CELERY, Sutton's Solid White and others .	3 ditto	2 packets	2 ditto	1 packet
COUVE TRONCHUDA, a most delicious vegetable	1 packet	1 ditto	1 packet	1 packet
ENDIVE, best sorts	1½ ounce	2 ditto	1 ditto	1 ditto
CRESS, plain, curled, and New Australian	1½ pint & 2 packets	8 ounces & 2 packets	3 ounces & 1 packet	2 ounces & 1 packet
CUCUMBERS, the best sorts in cultivation (including Berkshire Champion).. ..	3 packets	3 packets	2 packets	1 ditto
LEEK, Musselburgh	1 ounce	½ ounce	1 ditto	1 ditto
LETTUCE, Sutton's Superb Cos, and others for succession	2 ounces	4 packets	3 packets	2 packets
MUSTARD .. .. —	1 quart	1 pint	4 ounces	2 ounces
MELON, choicest sorts known	4 packets	3 packets	3 packets	1 packet
ONION, true Reading and others	12 ounces	7 ounces	2 ounces	1 ounce
PARSLEY, splendid curled kinds	3 ditto	2 ditto	1 ditto	1 packet
PARSNIP, Hollow Crown, fine	6 ditto	4 ditto	2 ditto	1 ounce
RADISH, finest sorts for succession ..	1 pint and 10 ounces	14 ounces	6 ounces	3 ounces
SPINACH, summer and winter kinds ..	2 pints	1 pint	4 ditto	2 ditto
SALSAFY	1 large pkt	1 packet		
SCORZONERA	1 do do	1 ditto		
TURNIP, fine sorts for succession	16 ounces	8 ounces	3 ounces	2 ounces
VEGETABLE MARROW, new Custard and others	2 large pks	2 large pks	2 packets	1 packet
SWEET & POT HERBS, of all the useful kinds	6 packets	5 packets	4 ditto	
RAMPION	1 ditto	1 ditto	1 ditto	
TOMATO	1 ditto	1 ditto	1 ditto	
CAPSICUM	1 ditto	1 ditto		
CHILI	1 ditto			
CORN SALAD	1 ditto	1 ditto		
ORACHE, or MOUNTAIN SPINACH ..	1 ditto	1 ditto	1 ditto	

That great satisfaction has been given by these Collections in former seasons is testified by the recommendations given by our customers to their friends; as also by the numerous letters we receive, from which we present the following:—

From the Rev. M. W. Gregory, *Roade, Northampton.*

"I lose no opportunity of recommending your Seeds, which are most excellent; and I think you are doing us (the clergy especially), a great kindness in making up your garden selections."

From the Rev. W. H. Roach, *Whiteshill Parsonage, Stroud.*

"I am more than satisfied with the assortment of Seeds you made for me, and with the quantity you sent; and I consider that I have done better by leaving the choice to you than selecting for myself."

From the Rev. John Kirwan, *Withycombe Rectory Taunton.*

"I was so much pleased with the selection of Seeds sent by you, that I recommended tw[illegible] of my friends to take parcels from you."

From Chas. Lawrence, Esq., *Cirencester.*

"I never recollect having received such a numerous collection of Seeds from any house [illegible] good in quality."

From Alex. Cathcart, Esq., *Knockdolian Castle, Girvan, N.B.*

"I have had much satisfaction in recommending your Seeds to various friends, as I find they are much pleased with them; and you may depend upon my continuing to do so as long as [illegible] find the articles you send are good and reasonable in price."

From Mr. William Moore, *Gardener, the Rectory, Stoke.*

"I never had (previous to yours last year) a lot of Seeds which have all turned out [illegible] satisfactory."

From Mr. Bone, *Gardener, Huntsham Court, Tiverton.*

"I was so much pleased with your collection of Seeds last year, that I leave it to your selection again this year, both for the Kitchen and Flower Garden."

From Mr. Robertson, *Gr. to* A. Pollock, Esq., *Lochfine, N.B.*

"I must say that your Seeds have been liberal as to quantity, and excellent as to quality."

From the Rev. C. T. Farley, *Moor Hall, Stourport.*

"Your Seeds are the very best my gardener ever made use of, and gave the highest satisfaction."

From J. Lloyd, Jun., Esq., *Dinas Brecon.*

"The Garden Collection of Seeds has hitherto been most judiciously selected, and of the best description."

From the Rev. G. E. Walker, *Shareshill, Wolverhampton.*

"Mr. Walker cannot but compliment Messrs. Sutton & Sons on the quality of the Seeds sent last year, as they were by far the best he ever purchased."

If any of the above articles are not required they should be named when giving the order, and increased quantities of other sorts will be given in lieu of those omitted.

☞ *By ordering one of the above Collections once a year much trouble and expense will be saved.*

SUTTON'S COLLECTIONS OF FLOWER SEEDS (Free by Post).

Amateurs requiring showy kinds of Flower Seeds are respectfully recommended to leave the selection of sorts wholly or partly to us, and we will supply those which we know to be really worthy of cultivation. Should any sorts of Flower Seeds be already possessed they should be named, that we may omit them.

No. 1. The best 100 sorts of FLOWER SEEDS, hardy and half hardy, with instructions £1 1 0
No. 2. The best 50 sorts of FLOWER SEEDS, ditto 0 10 6
No. 3. The best 36 sorts of FLOWER SEEDS, ditto .. .. £0 7 [illegible]
No. 4. The best 24 sorts of FLOWER SEEDS, ditto .. .. 0 5 [illegible]
No. 5. The best 24 sorts of FLOWER SEEDS, all hardy .. .. 0 5 [illegible]

SEEDS FOR EXPORTATION.

SUTTON and SONS are constantly packing Farm and Garden Seeds for Australia, India, New Zealand, Africa, and other Foreign parts, and receive the most gratifying accounts of the excellent condition in which they arrive, and of the crops produced from their Seeds.

SUTTON and SONS deliver the packages free of all expense to the ship's side at London, Southampton, Bristol, and other English Ports. Prepayment is requested for all foreign orders, and a few days' notice for packing previous to the departure of a vessel.

Also NATURAL GRASSES for LAWNS and MEADOWS, fine sorts of MANGEL WURZEL, TURNIP, and other Agricultural Seeds.

All goods of the value of 20s. and upwards are delivered free to London, or to any Station of the South Western, South Eastern, Great Western (as far as Bristol, Birmingham, and Gloucester), and the Oxford, Worcester, and Wolverhampton Railways. Packages of 40s. value and upwards are delivered free not only by the above named Railways, but also to all the principal Stations of England and Wales. When goods to the value of 5l. and upwards are ordered, they will be delivered free to any of the Scotch or Irish Ports.

Remittances may be made by Cheques on Town or Country Bankers, or by Post Office Orders payable to

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

ROYAL HORTICULTURAL SOCIETY.
ARRANGEMENTS for 1862.

March 19.—HYACINTH and CAMELLIA SHOW. Admission 2s. 6d.
April 9.—AZALEA SHOW. Admission 2s. 6d.
May 21.—FIRST GREAT SHOW. Admission 5s.
*** During the Season the Inauguration of the Memorial of the Exhibition of 1851 is expected to take place.
June 11.—SECOND GREAT SHOW. Admission 5s.
*** In June a Show of AMERICAN PLANTS. Admission 2s. 6d.
June 26.—ROSE SHOW. Admission 2s. 6d.
July 2.—THIRD GREAT SHOW. Admission 5s.
Sept. 10.—AUTUMN SHOW. Admission 2s. 6d.
October 8, 9, and 10.—INTERNATIONAL FRUIT, VEGETABLE, ROOT, CEREAL, and GOURD SHOW. The Roots, Cereals, and Gourds will remain on view until the 18th. Admission on October 8, 2s. 6d.; 9th to 18th, 1s.

Packets of 25 Five Shilling Tickets, price 5l., and also Season Tickets of International Exhibition, can now be had at the Offices of the Society.

Schedules may be had on application to Mr. EYLES, Garden Superintendent, South Kensington, W.

ANDREW MURRAY, Assistant Secretary.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK, N.W.
ARRANGEMENTS for SEASON 1862.

SPRING EXHIBITIONS, open to the Fellows of the Society and their friends only:—
March 26.—CAMELLIAS and HARDY EVERGREENS, &c.
April 2.—CINERARIAS, PRIMROSES, &c. &c.
" 9.—HYACINTHS, &c.
" 16.—AZALEAS, AURICULAS, &c.
" 23.—PELARGONIUMS, FERNS, &c. &c.
" 30.—ROSES, &c.
May 7.—CALCEOLARIAS, &c.

GENERAL EXHIBITIONS of PLANTS, FLOWERS, and FRUIT, WEDNESDAYS, May 28, June 18, July 9.

AMERICAN PLANTS in June.

Musical Promenades on all the other Wednesdays in May, June, and July.

Botanical Lectures, Fridays in May, June, and July.

During the season of the International Exhibition 1862, the Fellows of the Society have the double privilege of admitting to the Gardens four persons daily, except the Wednesdays in May, June, and July, and Sundays.

Artists and Students are admitted as usual upon the recommendation of Royal Academicians, Professors, &c., as by the regulations.

J. DE CARLE SOWERBY, Secretary.

SUTTON'S SEED CATALOGUE for 1862 is now ready, and will be sent gratis and post free.
SUTTON & SONS, Seed Growers and Merchants, Reading.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 1, 1862.

MEETING FOR THE ENSUING WEEK.

FRIDAY, Feb. 7 { Royal Horticultural (Election of Fellows) at S. Kensington 2 P.M.

A VERY great and wholly unexpected event has occurred in the history of English Horticulture. The COCO-NUT PALM has flowered. At Syon, where so many fine things have been produced which no other garden has seen, where the almost uncultivable Mangosteen has ripened its fruit in perfection, this the most valuable of all the products of the vegetable world provided by an all bountiful Providence for the support of man, has expanded its flowers. Not however on that lofty Palm tree which RUMPHIUS called the ARBOR CALAPPUS sive COCCIFERA ALTISSIMA, but on a specimen of the pygmy breed from the neighbourhood of Galle, in Ceylon. The trunk of the Palm at Syon is not, we should say, above 2 feet high, and it is from among the magnificent leaves that form a bright green plume of unrivalled stateliness that the yellow blossoms have sprouted out. It must be highly gratifying to the noble Duke in whose celebrated garden this success has been achieved, to find that he alone in Europe is the possessor of so rare a specimen.

Whether the Coco-nut Palm has ever before flowered in Europe we are uncertain. We think not. LOUDON says ambiguously that in gardens the young Palms "are *seldom* allowed room enough to come into flower." Such search as we have been able to make has led us to believe that no such event has ever occurred.

We hope shortly to lay before our readers the manner in which Mr. JOHN SMITH, the Duke's skilful gardener, has managed to bring about this result in about a couple of years.

HOW MUCH SEED OUGHT I TO BUY to crop my garden is the question which amateurs are now beginning to ask, and to which it would be easy enough to give a reply were all circumstances always equal. That, however, not being so, but the very reverse, an answer to the inquiry amounts to no more than advice to buy enough of each sort so as to insure a crop; in short, to take the advice of the seedsman, who alone knows how far his seed will go. There are many reasons for this, to some of which we now advert, while we pass over others in silence.

The uncertainty in the quality of seeds may be owing in part, and in some cases (as with Onions) almost wholly, to their having been produced in a bad climate, the husks alone being formed without the presence of a living germ within. Another cause is the destruction of the vital principle in consequence of seeds having been stored before they were dried, the inevitable effect of which is the loss or fatal weakening of germinating power. In some instances an eager gardener gathers them before they are ripe, as is much the case with those flower "seeds" which are not seeds at all, but seed vessels, such as China Asters and other Composite flowers, or esculent Umbellifers like Carrots; these may be fair to the eye, although but emptiness within. And then there is the dead remainder of a seed drawer invigorated by the addition of a fresh young crop.

These causes, to say nothing of others, are more or less in continual operation, and seedsmen themselves can by no means always guard themselves against being deceived by appearances. But it is evident that unless seeds are uniformly alike in quality, there can be no certain rule by which to determine the quantity to be sown. You cannot deal with living as with dead matter. In the affairs of mankind it by no means follows that two and two practically make four; Life sets arithmetic at nought. In like manner a pound of Cabbage seed is not like a pound of shot, although the two are a good deal alike. A pound of shot will always produce the very same effect under equal circumstances. But a pound of Cabbage seed will do no such thing; not one half—not more than a quarter—may take effect, so that two pounds or even four pounds may be required to do the work of one pound.

Were it otherwise all seedsowing might be reduced to absolute rules, and tables like the following, for which we are obliged to a correspondent, would be the best advisers of gardeners.

	Contains in	Seeds			Seeds per lb.
Turnip ..	½ oz. =	7754	× 2 =	15508	× 16 = 248,128
Beet ..	½ oz. =	485	× 2 =	970	× 16 = 15,520
Cabbage ..	½ oz. =	4493	× 2 =	8986	× 16 = 143,776
Onion ..	¼ oz. =	1883	× 4 =	7532	× 16 = 120,512
Radish ..	1 oz. =	1950 (LAWSON)			× 16 = 31,200

In the same manner the quantities of seed in a lb. weight might be stated. The number of plants required to fill an acre of ground is as follows:—

At 1 inch apart	= 6,272,640
" 2 ditto	= 1,568,160
" 3 ditto	= 696,960
" 4 ditto	= 392,040
" 5 ditto	= 250,905
" 6 ditto	= 174,240

Therefore 1 lb. of Turnip seed, if every seed would grow, would be sufficient for nearly an acre and a half of land; yet seedsmen recommend 4½ lb. to be used for that space.

It may be alleged that those who sell seeds are interested in leading their customers to purchase as much as possible, and that no inference can be properly drawn from such a case as that just mentioned. Supposing it to be so, and making every degree of allowance for that feeling, it still remains evident that the quantity of seed required for a given space cannot be determined by fixed rules; but that so many adverse influences are in action as to render minute calculations worthless, and to compel submission to a large amount of waste. In the case just quoted it is assumed by the seedsman that only about two seeds in 13 will come to anything—a very large loss it must be confessed. Matters being in this state theoretical quantities can only mislead.

In order to judge what is the real germinating power of a sample of seed, it is the practice among the principal seedsmen to have "trial books," in which they record the percentage of seed that grows under the following circumstances. A hundred seeds are sown in a garden-pot filled with fine light soil; the pot is placed in a gentle hotbed, and as soon as the young plants have fully appeared they are counted. If the seed is wholly good the return is 100, if good only in part it may be any lower number—we will say 50. In that case as only half grows it will require two pounds to do the work of one. This is a very old practice and seems at first sight to be unexceptionable; nevertheless it is far from being so good as it looks. It is well known that in earth constantly damp and warm seeds having very feeble vital power will grow satisfactorily, and soon gain vigour from the surrounding atmosphere; but in cold soil they lie and perish. Now all our hardy seeds are committed to the ground at that time of year when even at midday its temperature is not above 45°, and when at night the thermometer may even fall to 32°. Under such conditions, which are wholly unlike those of the "trial" pots, the same result cannot be expected. If indeed our open gardens were like Miss MALING's plant-cases, and as carefully looked after, very weakly seeds would come up; but as the circumstances are entirely different both as to temperature and skill, that lady's success would be no evidence of what would happen in the open air.

Nevertheless we believe the trial system to be by far the best that seedsmen can employ, and if it deceives them it is because it cannot be otherwise, in the nature of things.

We all know how loud and ceaseless are the cries of gardeners as well as amateurs that the flower seeds they purchase will not grow. It never seems to occur to the complainants that they themselves are executioners and the seeds their victims. And yet we are perfectly certain, from nearly half a century's experience, that such is the case. Seeds of a plant inhabiting a dry country with little winter's cold and a genial early steady spring, are sown here, in the open border in March or April; there they lie in most uncongenial soil, exposed to wet and cold. But the force of life is strong within them, Nature will have its way, germination begins some bright sunny day, after which comes an ice cold dew at night, and the young embryo is rendered torpid. Nevertheless, weakened as it is, the succeeding day sees a renewed effort at growth—followed by renewed torpidity. The same alternation of paralysis and revival goes on for a little while, till at last the powers of nature are exhausted and the seed expires. Now, these early efforts are out of sight; no eye watches the struggle, the seeds die while buried—and the seedsman is abused. Mignonette often affords a striking example of this. Although a native of the hot sandy regions of Northern Africa, where it is a little woody bush, it nevertheless is able to ripen its seeds in our northern latitude. But when the time for sowing them arrives in spring they are cast carelessly upon the cold ground, and there they perish. Then come complaints — "Mr. FLOWERDEW," exclaims the gentle LUCY BELL, who is devoted to flowers, and has been looking forward to the delights of a charming bed of Mignonette, which will not come, "it is very tiresome indeed, that your seed never will grow, it really is quite shameful;" and then she sees in the pits a great quantity of beautiful pots of the plant, 4 or 5 inches high, standing as close as quills on a Hedgehog. "Why look there, I declare you have sold me bad old seed, and kept the good yourself!"—"Madam, I assure you that I have but one sort of seed, of which you have had a part"—"Well! it is most extraordinary." At last the gentle damsel buys as many pots as she requires, but at the same time remains perfectly convinced that she was cheated in her seed. Should this meet her eye it is to be hoped that she will be more charitable in future, and blame herself for having destroyed the lives she had thought to cherish.

Depend upon it, ladies, the blame of your ill success in getting up your seeds lies at no other door than your own. Sow them when the weather has become warm; cover them at night with a screen, or constantly with a thin coating of nice neat straw, such as the market gardeners raise their spring Radishes under, and you will incur no further disappointment. Or, if you have them, hand-glasses will do as well.

—— FOR two years past all the BELGIAN HORTICULTURAL SOCIETIES have formed a league or federation, to which the Government extends its patronage. This year the league intends to hold a GRAND INTERNATIONAL POMOLOGICAL MEETING at Namur on the 28th September, and we learn that the presence of English fruit growers on that occasion is much desired. We would suggest to those of our readers who are interested in the event to put themselves forthwith into communication with Prof. EDWARD MORREN, University, Liége.

—— IT is announced that the great spring Horticultural Exhibition of Flowers and Plants at Ghent will take place on the 2d March. On the day preceding A HUNDRED JUDGES from all the chief countries of Europe will assemble, in order to award the prizes. The next day is fixed for a grand banquet, at which the Judges, the prize men, and members of the Society will be present.

—— THE statistics of our summer Rose Shows, though they may not, on account of the unestablished condition in which the plants of some at least of the more novel kinds are, year by year, likely to be, tell the whole truth as to what are the best sorts of Roses, yet undoubtedly they go a very long way towards supplying this information—the most useful that could be furnished to those Rosarians who are not adepts in the fancy. Mr. WILLIAM PAUL, therefore, is every

year doing a real service to those who cultivate this branch of floriculture, indeed to all who are fond of Roses, in publishing through the medium of his Rose Annual,* the issue of which for 1861-2 has recently come before us, sundry and various information on matters such as that to which we have alluded, affecting the interests of Rose growers. The census of the varieties of Roses which formed the first-prize stands at the great metropolitan Rose shows of Kensington and Sydenham, as given by Mr. PAUL in his very useful brochure, shows that in point of number the Hybrid Perpetual varieties have gained a complete ascendancy over the other sections, no fewer than 131 varieties of this group being named, while the most numerous of other sections are 24 of Tea-scented and 21 of Moss, and even of these latter groups comparatively few sorts appear to have been shown more than once. Among these Tea Roses Gloire de Dijon occupies a very prominent place, having appeared in 18 stands, the highest number reached by any variety—good evidence surely both as to its quality and its hardiness.

Of the 130 or more Hybrid Perpetuals, General Jacqueminot stands highest, having been shown in 16 first-prize collections. Then follow Victor Verdier, shown in 15; Comtesse de Chabrillant, and Madame Knorr, in 13; Lord Raglan and Madame Vidot, in 11; Senateur Vaisse, Mathurin Regnier, La Ville de St. Denis, Jules Margottin, and Anna Alexieff, in 9; and La Fontaine, Louis XIV., Madame de Cambacérès, Madame Rivers, Madame Vigneron, Souvenir de Leveson Gower, and Souvenir de la Reine d'Angleterre, shown in eight collections. These may all be safely set down as well proved useful sorts of the highest quality. Virginal, Madame Boll, and Alexandrine Bachmeteff, which put in seven appearances, are also fine Roses; so are Madame Furtado, Gloire de Santenay, William Griffith, and Baronne Prevost, though they do not stand quite so high as the others in this particular enumeration; while several other very desirable varieties, some new and some old, occur amongst those which from various causes appeared still less frequently in the winning stands. Among Hybrid Bourbons, the favourite old Coupe d'Hébé still keeps a high position—one of the highest, indeed, among pot Roses; as does also Souvenir de Malmaison among the Bourbons; and Géant des Batailles among what Mr. PAUL calls Bourbon Perpetuals. It is pleasant thus to see some old friends able to hold their own, amongst the many fresh aspirants to fame and position.

Among the favourites of 1861, Mr. PAUL, who is always a safe and trustworthy guide, speaks in the highest terms of Eugenie Lebrun, a H. P., and "the finest of all the new Roses in the forcing house" at Waltham; of Catherine Guillot, a Bourbon Perpetual, 'which is perhaps, taking all things into consideration, the finest production of the year;" of Madame Furtado, another H. P., with very sweet and nicely cupped flowers, but appearing less robust than is desirable; of Modèle de Perfection, a Bourbon of which "too much can hardly be said in its praise"; of Princess Mathilde, a splendid H. P. with flowers almost scarlet and maroon, beautifully shaded, very effective; and of Marquise de Foucault, a Tea-scented, "the best that has been added to that group of late."

An Annual without pictures of some of the leading beauties of the year would not be itself at all; and so Mr. PAUL introduces to us four of the most lovely with which he has made acquaintance, the Queen of Queens among them being his own H. P. Beauty of Waltham, which was duly honoured last summer at Kensington, and is in every way a first-class Rose, being hardy, vigorous and showy, with good foliage, and still better flowers; this was raised from Jules Margottin, and it is no small recommendation that it is an English seedling adapted to our climate. Another picture shows us the Marquise de Foucault just mentioned, a delicate light Tea Rose bred from Strombio and Mrs. Bosanquet. Then comes Souvenir de Comte Cavour, a shaded crimson maroon H. P., believed to be one of the best of forthcoming French sorts. Finally we have Catherine Guillot, also noticed above, a Bourbon Perpetual raised from Louise Odier, rich rose colour, of exquisite form, and "as a pot Rose for forcing and exhibition likely to prove one of the best." These are what Mr. PAUL submits as the best and most distinct new sorts, and if we may trust the portraits he shows us, growers may have full confidence in his decision.

Of the "forthcoming brood" this Rose Annual affords us notes and memoranda of 80 novelties, almost entirely of French origin, so that there will be no lack of new Roses next summer. Whether or no they will bear out the glowing descriptions of their raisers remains to be seen. It is at least satisfactory to have them presented to us at a single view by one thoroughly conversant with the subject, in order that we may know what to be on the look out for when blooming time comes round. As there is a class provided for these in the prize schedule of the Royal Horticultural Society, we shall hope to see most of them brought together in the dozens thus invited; indeed it would be money well spent in the interests of floriculture if a prize were to tempt the largest number of them that could be brought together.

* The Rose Annual for 1861-2. By WILLIAM PAUL, F.R.H.S., Author of "The Rose Garden." London: Kent & Co.

WASTE OF GROUND NEAR RAILWAYS.

IT has been my fortune to wander about a good deal during the last few years, and one of the things which have thus been forced upon my attention is the very general waste of ground along the principal lines of railway in this country which might be turned to advantage. This is one of those things which they "manage better on the Continent." Through Prussia and Saxony, in Austria, and I think I saw also in some places in Hanover and Belgium, the banks, when the rail lays through a cutting, are generally carefully cultivated. Sometimes, even such very poor sandy soil as that between Berlin and Potsdam, the banks are planted with Apple, Pear, and other fruit trees. In other cases the banks are cut into terraces, and vegetables are grown upon them, and they often afford great advantages for this purpose. As we proceed southward we find that the Vine has replaced the Apple and Pear, and many a pretty miniature vineyard is to be seen upon the railway banks. In some parts of northern Germany and Belgium I believe I saw plantations of Currant trees in similar situations, but I cannot be quite certain on this point, for I do not find any mention of the circumstance in my diary. But in this country one seldom sees the banks turned to any profitable account, except it may be within a short distance of a gate-keeper's cottage; and yet there is a great deal of ground which might be made use of even within a few miles of the metropolis and the great manufacturing towns of the north, where fruit and vegetables are always dear, where the demand is always greater than the supply. In some places, it is true, we see the banks planted with evergreen and other ornamental plants; but too often when the banks are planted the trees and shrubs employed are not those most suitable to the situation, and not likely to thrive there. In one or two such plantations, which I have been in the habit of passing continually, there were fully as many of the trees dead as alive. Moisture-loving plants cannot be expected to succeed on a dry steep bank facing the south, where the sun must strike down hot enough to ripen the Grapes upon an espalier Vine. It cannot, of course, be denied that there are some places, as for instance where the cutting has been carried through the solid rock, where nothing can be profitably grown; but this does not negative the fact that there is a great extent of ground, not the banks of cuttings only, which is absolutely wasted. In a country so thickly peopled as our own, every square foot of soil that does not produce something is not only a national loss but a national disgrace. This land is much reduced in value, no doubt, by the difficulty of getting at it, but that might easily be overcome. In some cases, too, the strip is so narrow that it would not produce much for miles together; but in other places, from some local cause it widens out to a considerable extent, and many really valuable pieces of ground are thus unprofitably left. It may be that this land will be eventually required for some purpose connected with the line but in the meantime it might be producing Potatoes or anything else which might be deemed suitable. I know of one such piece which a railway company has given permission to a neighbouring market gardener to use, with the simple agreement that he is to give it up whenever it is required, and not to demand any compensation for the crop which may be upon the ground at the time. Of course the man does not expend much upon this plot, and yet the crops which it produces pay the rent for his other ground, several acres in extent. Fortunately I am not a shareholder upon any line, but if I did belong to that much-enduring class I should consider that anything which could legitimately raise the dividends, even to a very small extent, would be worth consideration.

It would not be advisable to have large trees growing too near the line, lest in windy weather they should be blown down across the rails and produce an accident. But when the line has been carried through an old forest this point has been lost sight of, it would seem, for I have often seen large trees which by the clearing for the formation of the line have been left exposed to the influence of the wind much more than they had been accustomed to, and are thereby rendered dangerous. The trees which are planted on vacant ground by the side of a railway should therefore be those which do not naturally attain a large size, or which might be profitably cut down while still of a moderate height. If the trees served no other purpose than that of being cut into hop-poles the ground would still produce a considerable sum.

There are also wet patches of ground along most of our lines which might be profitably employed. There are places where gravel has been dug in order to raise the line in some other part, and these places are too often left as stagnant pools until they become a perfect nuisance, producing miasma, and carrying ague and fever into the cottages of any poor people who may have the misfortune to live in their vicinity. To drain these places, if not to make them profitable, is a moral duty which the companies have in some cases fulfilled, but which every railway traveller knows is still left undone in too many cases. These places, if suitable for no other purpose, might with advantage be planted with Willows. A writer in the last Number of the Transactions of the Highland and Agricultural Society of Scotland, after enumerating the many uses to which the wood, the bark, and the young shoots of the Willow are adapted, goes on to say—"The very best kind of charcoal is made from Willows and is highly esteemed in the making of gunpowder. The bark is used for tanning several kinds of leather. So from this we may learn that the consumption of Willows, if more extensively grown, might be greater, and plantations or large beds of osiers might be very advantageously grown in almost any soil, such as banks of rivers, drained moors, &c., and annually cut would produce a sum of money that I have no doubt would largely remunerate the grower. And from land that cannot otherwise be made available for tillage, notwithstanding the vicissitudes of seasons, taking good and bad under view, the writer has experimentally ascertained that an acre of Willows or Osiers will often bring the grower a larger sum of money than an acre of Wheat; and likewise from land that would be almost useless for other kinds of crops."

It may be that the railway companies do not care to make such small profits, and think that the trouble would be greater than the profit; in that case there are plenty of private speculators who would rent it of them, if they would furnish facilities for getting at it. *C. W. C.* [How much Colsa is grown in Belgium in these waste places? We are penny foolish.]

SECOND CROPS ON FRUIT TREES.

THE circumstance of fruit trees bearing a second crop of fruit in the same year, noticed in a recent Number of your Journal as occurring near Genoa, seems to tend to the inference that with the prolongation of a summer temperature in artificial cultivation, fruit trees might continue to produce and mature successive crops of fruit. The system of management necessary to insure continued vigour in the trees would, I presume, consist in judicious pruning, with the free annual application of rich soil, or manure, which could be readily assimilated by the trees, to enable them to sustain so great a strain on their productive powers.

I had in fact an opportunity last year of witnessing what I have put hypothetically, in alluding to the Italian instance of double cropping. Mr. Speed, gardener to Sir E. Walker, of Berry Hill, near Mansfield, having sufficient unoccupied space in his extensive Pine stoves to admit of the cultivation of a certain number of pot Vines, introduced 6 Vines in 16-inch pots, the sorts selected being Muscat of Alexandria, Black Hamburgh, and Black Prince, and he was successful in obtaining the fair average crop of 6 lb. from each Vine in the month of May. Noticing the continued vigour of these Vines, and a disposition in the laterals to produce fruit, he determined on the experiment of allowing the Vines to continue in the stove, with the view of securing a second crop from them. In preparing the Muscats by pruning, he cut back the lateral and useless wood close to the stem on which the fruit was produced, leaving the green and vigorous foliage undisturbed. He then applied the stimulus of liquid manure, and the Vines enjoyed at this period a day temperature of 85°, and the lower temperature of 70° at night. These Vines broke well, and were allowed to carry six bunches each, which they perfected late in the autumn of the same year.

Mr. Speed varied his plan of pruning one of the Hamburgh Vines. He cut the ripened shoot back to two eyes, leaving, however, two healthy leaves; bleeding had here to be guarded against, the still active roots producing more sap than could be appropriated by the remaining leaves. Accordingly, until the wounds were healed, he administered water sparingly; but as soon as the buds began to swell, he fed the Vine bountifully with manure water. This Vine coloured and ripened five good bunches in the autumn.

The two remaining Vines were pruned experimentally close back to the main stem, and of course all living leaves were taken off with the shoots. These Vines bled to death. Mr. Speed was successful in meeting and in overcoming a difficulty in the management of these Vines, the particulars of which should not escape publicity. In the month of September the Vines were attacked by the dreaded Oidium. Mr. Speed, rightly reasoning that any application which would promote the vigour of the Vines would be beneficial, prepared a solution of superphosphate of lime, 1 oz. to 4 gallons of soft water, and after allowing it to stand for 12 hours, applied it to the Vines, that is by watering the roots with the mixture, and after three applications the mildew disappeared. The applications for the cure of the Vine mildew have generally been directed to the developed Fungus outwardly. It appears by this experiment that the disease may be successfully subjugated by infusing new vigour into the diseased plant. It is a fact well established that a debilitated plant is more liable to the attacks of its enemies than one in full vigour. The severance of a root, a bruised stem, or some mysterious physical influence the direct effect on vegetation of which we know little, interferes with the healthy action of a tree, and while for a moment it is debilitated its ever watchful enemies seize the moment for a successful attack. The prompt application of a stimulant to a mildewed Vine is a remedy worth knowing. The superphosphate appears

to act powerfully on the functions of the Vine, and if further experiment confirms the value of the application, Mr. Speed's fortunate experiment may be attended with valuable results. *W. Ingram, Belvoir.*

EXTRACTS FROM MR. J. G. VEITCH'S LETTERS ON JAPAN.

(Continued from p. 44.)

YOKUHAMA, *November* 5, 1861.

No. XVII. I intend to send off in a few days six glass cases of plants by a ship to proceed direct to London, taking the remainder of my collections with me to China, and ship them from thence to England. I shall also send you, by the vessel sailing from here, a plank of the beautiful Japanese Elm, which I described in my list of Japanese timber trees. You will see what a beautiful timber it is, and I am sure it will be an object of great interest.

I have to-day sent Sir Hercules Robinson, the Governor of Hong Kong, a glass case full of plants for the new Botanic Garden he is making there. He has been very kind to me, and I was really glad of the opportunity to show him that I am grateful for his attention.

The weather is becoming very winter-like. Mount Fusi Yama, Hakone and other ridges seen from here, are covered with snow. Trees and shrubs coming from high elevations will without doubt prove perfectly hardy in England. We have however no frost here as yet.

We experienced a very severe shock of an earthquake on the 20th of last month; it was much more severe than the one I wrote you about a short time ago; we all ran down stairs and out of the house, and even then the earth and house shook. Some buildings were thrown down at Yeddo, and it is said a few people lost their lives. The sensation is a very peculiar one, and anything but pleasant I can assure you; one feels the uncertainty of what will happen next, and the utter inability to do anything to help oneself.

I have not yet quite decided when I shall return to China, but I hope to be able to complete my arrangements, so as finally to leave Japan the end of this month or the beginning of December. J. G. VEITCH.

YOKUHAMA, *Oct.* 19, 1861.

No. XVIII. There is but little information to communicate to you by this mail; we go through the usual routine day after day, and see the same people. The arrival of the mail from time to time tends to arouse us somewhat, but as soon as the letters and papers have been read and discussed (the latter down to the advertisements) we again fall back into our former course.

Since my return here the friends I met last year have been very kind. Yokuhama appeared to me at first to be strangely altered; a very large European settlement and native town have taken the place of the few houses surrounded by fields and country villages of last season. One can scarcely imagine that the whole has arisen since July, 1859.

I have two Japanese servants, one a house boy, the other to collect plants and seeds. The Japanese are proud of being employed by foreigners, and as they get very good pay (for them) they generally endeavour to do their best. Unfortunately they are not in the habit of speaking the truth, and therefore little dependence can be placed on what they say. They also cheat one almost as much as Chinamen, they get a percentage on everything you buy. If your servant has a penny to spend on your account he is certain to keep a farthing for himself. However, with all their faults the Japanese are not bad people to deal with.

Ladies get very tired of the monotony of this place; there are eight here just now, the wives of merchants and missionaries. The climate is the only thing which makes it desirable; it is much more healthy than that of China. We have not commenced fires yet, but it is gradually getting cold. Mount Fusi Yama in the distance, covered with snow, is a remarkably beautiful object, particularly in an evening, with the sun setting almost immediately behind it.

My collection of plants is almost completed; my attention is now chiefly devoted to seeds; so far I have succeeded tolerably well. New species of Conifers are very scarce within the prescribed limits of the treaty with foreigners; but I have been fortunate enough to meet with two additional species of Retinospora, two or three of Pinus, and one Abies, distinct from those I obtained last year. The more I see of the Thujopsis dolabrata the handsomer it appears. I prefered it in a young state to the Sciadopitys, although as a tree the latter has the noblest aspect.

I hope to introduce some of the larger growing Bamboos of this country, such as are used for building purposes. I feel very confident that they will grow in Europe. Our summers may probably not be long or warm enough to grow them so large as in this country, but I think they will withstand our winters. Some of them are very graceful, and I feel sure would be much admired.

Political events are proceeding more favourably at the present time. Mr. Alcock is coming here to-day from Yeddo; he will make this his residence during the time that a new house is being built for him in the capital. It is however to be much feared that eventually there will be a "row." The Japanese do not or will not understand that foreign nations are equal to themselves and must be treated as such. The Minister's tasks here are not easy, and no one envies Mr. Alcock's position. We have two men of war here now, and the admiral is expected to-morrow to confer with Mr. Alcock on the best plan to adopt. J. G. VEITCH.

GARDEN CULTURE.

IT was with great regret that I was unable to comply with an invitation last year to read before this association, at Warminster, a paper on my discovery as to the application of earth for the inoffensive removal and utilization of excrementitious and other offensive substances. Of the delay of this communication, which was then disappointing to me, I am now glad. For the information and experience since gained, both on the value of sewage so saved, and on the produce obtainable even by children under high garden cultivation, enable me to bring the subject before you in more systematic connection with the society's direct object. And, in doing so, I trust some help may be given to the cause of country day-schools, at a time which must be regarded, from any point of view, as a great crisis in their history. For whatever may be the modification in store for the new Educational Code,—and some change there surely must be,—the confidence of the friends of education in the extension, if not in the stability of Government aid, has received an undoubted shock. And I, for one, feel that, in return for 800,000*l*. a year, something more should be looked for, even as a *minimum*, than the decent qualification of children of 11 years old in reading, writing, and arithmetic. If then, besides some general information on my discovery, I can show that by its aid the children, even of a day school, may raise from a few acres enough to make that school independent of public grants, and perhaps of charitable subscriptions, and may thus be beginning a course of industrial training; and if by it a new branch of industry may be opened, I think I shall help to quiet some anxious minds, and render no little service to my country. This I trust I can do. For a history and full account of my discovery, I may refer you to my pamphlet, "National Health and Wealth," second edition, published at 1*s*., by Messrs. Bradbury & Evans; and to my tract, "Manure for the Million," which may be had for 1*d*. I may add that both these works have received the hearty approval of the Editor of the *Gardeners' Chronicle and Agricultural Gazette*, and of many other intelligent and thoroughly practical men. In the first of these pamphlets it will be seen that my discovery is not merely that common earth and soils deodorize, nor is it the mere capability of soils to retain manure. But my discovery is this: that the deodorizing power of soils, and their capability for the retention of manure, are such—provided the substance to be deodorized be dealt with at once and in detail, and if the evil be not allowed to fester for months, days, or even for hours—that a very small quantity of earth is sufficient for the purpose. Further, I have discovered that, if dried by the sun or by moderate fire heat, the earth thus mixed and deodorized retains the full value of the manure. And, still further, that it can be dried and used again and again for the same purpose, increasing each time, of course, the value of the manure. Of the inoffensiveness of that which has been mixed seven times, you may judge yourselves, for I have been allowed to place some in the exhibition room. But the following facts may, to some minds, be more satisfactory. With 6 lb. weight of substance mixed five times, I planted in the summer, in the midst of growing Potatoes and Beans, 40 dozen of Broccoli and Savoys, and few, I think, can be finer than they now are. On 4 acres of land 1 cwt. of earth, mixed five times, was applied last year to one quarter of an acre of Swedes, while equal quantities of superphosphate were applied to equal portions of land over three and three quarters of an acre in the same field. The Swedes in this quarter of an acre weighed one-third more in proportion than those in the rest of the field, themselves a fair crop. But more than this, the Barley grown this year, without any additional manure, on that same quarter of an acre, stood out as far superior to the rest of the field. The bailiff reckoned it as 4 : 3 better. Lastly, by applying it to the plant as the Chinese do, and by wide and alternate cropping, I get from the greater part of my own garden three crops a year. Now I would take advantage of this discovery, and of the capability of children for garden work, for the support not only of boarding schools, but of many day schools. Mr. Baker, master of the Deaf and Dumb Asylum at Doncaster, is no mean authority on such matters. And on the subject of my three "Letters on Self-supporting Boarding Schools," he has written in substance thus:—"All Mr. Moule's statistics are correct, excepting those relating to produce, which are—even under adverse circumstances, too low. I know that the sewage of this institution of 140 persons is worth more than 100*l*. I cannot use it all. Yet from 2 acres of land I obtain a gross produce of 200*l*. My expenses are 60*l*. a year." So that he clears 70*l*. per acre per annum. Mr. Baker owns, indeed, that the offensiveness of his manure is perceived in more ways than one. And here comes in the main point of interest and value of my invention. Its adoption will entirely relieve our school premises of what is generally an intolerable nuisance; and there shall be no offensiveness in the removal of the sewage, nor in the application of it to the ground, nor in its results on the crop. If then a valuable manure can be thus inoffensively provided, with great advantage to the present condition of our school premises, let us attempt to get a proximate idea of its value. A combined education scheme for the five parishes of this borough (Dorchester) might reckon on 500 children from 2 to 14 years old. If then the sewage of 100 residents on Mr. Baker's premises may be reckoned as nearly 1*l*. a head, one-fifth of this is not too high an estimate for these 500 children, and we may safely reckon the value of the manure, if applied as I propose, at 100*l*. a year, and I feel sure that the produce raised by it from 8 acres, through such close and careful cultivation as from the labour of these children we might well command, should be equal to 1*l*. a head, or 500*l*. a year. Deduct 100*l*. for two good common gardeners, and for other expenses, and 400*l*. would, I think, cover all Government grants and all our expenses. But how cultivate 8 acres by these children? I refer, in reply, to the data in my paper on Self-supporting Boarding Schools. If one boy, under that system, can be the chief instrument in the high cultivation of 3 acres a year, working seven hours a day, then, under similar direction and supervision, and working two and a half hours a day or 15 hours a week, he may cultivate 1 acre. What then can be clearer than that the labour of 20 boys, directed by two able gardeners, shall easily cultivate to the highest pitch 8 or 10 acres? But will you get them to work? Pay them on a graduated scale; and let them, from the time they begin to work, begin also to act as pupil teachers; and allot 100*l*. for this purpose. You will find that you may thus secure the attendance and labour of a sufficient number up to 12 and 14 years of age. But how will you dispose of your produce, especially if you apply this scheme to villages? In answer to this, I must expand a hint given in my tract "Manure for the Million." We are, at present, dependent on France and other countries, and still more on adulteration, for preserves. Open a new branch of industry. An acre of Red Currants, for instance, grown as espaliers, 4 feet asunder, and well manured, shall in a year or two produce 50*l*. a year. Some of the pupils of your girls' school shall pick this produce, and, if necessary, preserve it. The space between the rows will afford room for Carrots, Turnips, or Onions, that may give you a crop worth from 10*l*. to 30*l*. Let half of your land at least, then, be devoted to these common fruits, and I feel confident that my general estimate will prove far lower than it might fairly be made. Let us apply the principle to a single school, and observe another advantage that would arise from its adoption. Let the landowner of an agricultural parish, whom the Education Grant will never reach, and whom (if I am right) it never ought to reach—let him, I say, institute such a mode of relieving himself from expense, and of increasing the benefits of education to the children of his labourers. He may, by such payment as I have mentioned, command the labour of 10 boys and girls, and 4 acres may thus be cultivated by them. Here will be a mode of keeping the boys and girls in an agricultural parish longer at school. And, since industrial training will be added to mental improvement, this continuance at school will be to such purpose that the landlord may well demand it of his tenants. My convictions on this subject have so strengthened, that could I but get the land and a little capital to start it, I would not delay a month the adoption of the plan in my own boys' school. I should like to speak one word more of this new branch of industry, or rather of this new application of children's labour. Suppose for a moment that the 10,000 schools of the country should adopt the plan, and have an average of 4 acres thus cultivated, and that 50*l*. an acre of garden produce should be raised. Two millions a year would be added to the produce of the country. But it will require the trouble and care of increased supervision? So it will. And our school committees must be much more business-like than they now are? So they must; and so I think they would be if, instead of every month having to go over a set of averages and other dry statements—the end of which may be merely that boys and girls of 11 have learnt to read, write, and cypher—we could come to some direct influence on their manners and conduct. And further I am sure that thus, and by means of the self-supporting boarding schools, a link of the strongest sympathy and affection may be formed between the classes to be educated and those who educate them. *Rev. H. Moule's Self-supporting Schools.*

In-door Gardening.

IN writing a few hints on the care of window plants, I think my best plan will be just to set down the things of which my own plants remind me, mentioning also any past experiences and any especial hints that have proved useful to me. Window gardening is indeed from first to last always one series of constant new experiments. One plant surprises us by growing so very well; another will not grow ever, and another disappoints us till we hit upon some quite unsuspected secret, and then we wonder that so small a thing could signify.

And that is a thing for window gardeners to think much of—*there is no small thing in gardening.* A little more or less water, and a little more or less air, and a little more or less light, and a little more or less

warmth, are just the very things on which depends the difference between beautiful, healthy flowers, or poor, scraggy, ill-conditioned plants.

Bulbs most likely, and Cyclamens, Camellias and Heaths, will be all the flowers we have in our windows now. In plant cases of course we can have more, and those we have last longer, but we had better first consider our open flower stands.

There are two or three dilemmas I foresee for the Hyacinth growers. Sometimes a bud which we thought was nearly out begins to turn brown and shrivelly. This is most likely caused by some change of temperature. For instance one of my glasses in the hard frost last week was put upon a chimney-piece, where I did not observe it. The consequence was that two or three buds got damaged by the heat and dryness. Besides if the bulbs are in a window, looking to the east and south, a very hard frost at night, followed by a sunny morning, is likely enough to result in some scorched and shrivelled plants, caused by sun or fire-heat touching the foliage if it has got frozen. These plants should therefore be moved at night away from the window, but never brought near the fire.

Then there are Hyacinths which will not grow up at all. I would not be in too great a hurry, because when they are just in flower they often grow very fast—and there is not any exact means then of stopping them when we wish to do so; but if it is certain that they do not grow, a thick piece of drawing paper rolled up into a cone, with a small opening left in it at the top, is a good way of making the blossom rise. Standing the plant in a plant case or putting a bell glass over it, is however a more certain and much more pleasant plan—for rolled up in paper the poor flower looks as if it were under a great extinguisher.

My own Hyacinths have always been remarkably fine, when allowed to stand for a week or so in a glass case, either cold or very slightly warmed. If grown in water they must now be kept well filled up. Last winter some of my best were half way up the bulb in water, and a spoonful of pounded charcoal was put into each glass.

Washing the leaves with a large camel's hair brush and tolerably warm water is a marvellous help to Hyacinths. If any one wishes to have these flowers in glasses, or China dishes, in which they have not grown, the roots can be most readily washed from the soil if they have grown in pots, or even in garden beds, and can be arranged with Tulips, Scillas, Crocusus, or Narcissi, in either sand or water. The only thing to be careful for is not to break any roots whatever. I always find by far the safest plan is to wash the soil away and to wash it in again if they are to be replanted.

Hearing that large trees moved safely thus, it struck me that the water-loving bulbs would surely answer also; and, in point of fact, I have moved quantities of things in this way and never known them damaged. It is necessary, however, to be very careful to see that the roots have not grown down through the pot, or got themselves mixed up with pieces of crock or charcoal. If they have, it is not safe to move them.

Then there are the Cyclamens, the loveliest of little flowers, and sometimes very sweet. These, like the Hyacinths, require a great deal of light, but in their love of coolness and delight in air they far more resemble Snowdrops. In fact they will not live or flower tolerably in too warm a place, and though they must not be dry they do not like much water. The Cyclamen persicum will be in flower for several months longer, and any one who wants three or four pretty—I may say exquisite little plants, will be very safe in obtaining some of these. It is a matter of taste, but I do not think that the variegated-leaved kinds are as pretty as the others. Variegated leaves, I think, are meant instead of—not to accompany flowers. *E. A. M.*

Home Correspondence.

Salsafy and Scorzonera.—In the *Gardeners' Chronicle* of the 4th ult. "Clericus" asks why seeds of Salsafy and Scorzonera saved in this country do not vegetate. I can only say they do, and grow as well as imported seed; for the last 30 years or longer, both Salsafy and Scorzonera have been annually saved in some parts of these nurseries, and never failed to vegetate. Inclosed I send you sample of such growth of 1861, and you will, I think, find it very good. There is a good crop, sown in the autumn of last year, from the same seed. "Clericus" must have obtained some very old seed [He obtained what his seedsman sold him. *Ed.*] as it retains its vitality for two or three years. A few years since it was not so much in demand, and I have known country seedsmen not sell perhaps above 4 oz. in the year, although doing a good business in most other seeds; and I believe at that time, and also at the present, the greater portion sold in this country is imported from the continent, the demand not having been sufficient to pay any grower to grow a quantity, otherwise it is much easier to harvest than Lettuces. *W. Heale, at Mr. John Cattell's, Westerham, Kent.*

Mammoth Gourd.—Some few years since, at the September Exhibition of the Marlborough (Wilts) Horticultural Society, a fine specimen of the true Mammoth Gourd was exhibited by Mr. Butler, the then gardener at Ramsbury Manor; it was a very different thing to what is called the Mammoth Gourd now-a-days, being somewhat the shape of a fine Beechwood Melon. If I remember rightly it weighed 2½ cwt. or 280 lbs. Could any one favour me with a few seeds of this variety? I have quite lost sight of it, and have never been able to purchase the true kind. *W. Heale, at Mr. John Cattell's, Westerham, Kent.*

Trellis-trained Fruit Trees.—In reading the system of trellis training described by Mr. Veitch as used by the Japanese, I was reminded of some experiments that I witnessed of similar plans in England, the result of which makes one wonder it has not been more generally adopted. My father, having been for many years on foreign stations, especially in the Pacific, was fond in after life of trying in his own garden many of the plans he had seen practised elsewhere. The practice of training fruit trees so as to allow the ripe fruit to hang down was particularly successful in the small way he tried it, chiefly for common things. The greatest difference I remember was in the case of Raspberries, which were trained on sticks and tied over in a very flat low kind of arch; the fruit growing underneath these arches used to be always of immense size, and especial flavour; we attributed this entirely to the mode of training, as when people got the same plants, supposing that all depended on the strain, they were always disappointed, and it seemed evidently not a question of soil or aspect, since on the upright growing canes left alternately with the others, neither crop nor quality was at all remarkable. We considered the principle to be that the fruit-bearing spurs or branches of the trees should hang down from the stems which were thus kept above them, so as to cover the ripe fruit with most luxuriant leafage. Cucumbers, Vegetable Marrows, and other common fruits were tried on the same plan, with similar success. I think this method had then been learnt on the South American coast, and perhaps at this moment it may possess some interest. *E. A. M., Jan.* 23.

Coal Tar a bad Paint for Hot-water Pipes.—I unfortunately painted hot-water pipes with mineral paint (made I believe with coal tar and turpentine); when heated they threw off a strong smell of tar, which destroyed all young foliage and killed some plants. To rectify this I gave them five coats of hot lime; this mitigates the evil for a few days. What can I now do? except undoing the pipes and burning, which at this season could not be done. If you can assist you will much oblige an *Old Reader.* [You can do nothing except burn off the coal tar.]

Fern Sports among Polystichums.—I believe it has long been the opinion of practical botanists that P. Lonchitidioides has no permanent existence, it being simply an incipient form of P. lobatum or P. aculeatum; in evidence whereof I may perhaps be excused for troubling you with a recent experience touching the point of over-exquisite classification and the illusory appearances resulting therein. While botanising on a friend's estate at Ripe in Sussex (about 7 miles from the coast), I had been gratified by observing some singularly erect specimens of P. angulare (more rigid than some states of P. aculeatum), when my attention was drawn to what certainly looked like a veritable Lonchitidioides at the bottom of a hedge-side watercourse, now nearly dry. It may have been that I was already disposed, by the varieties of Polystichum I had just seen, to expect something extraordinary (for I admit that I never believed in Lonchitidioides), or it may have been the decidedly old aspect that the plant presented, that induced me to leap down for closer inspection; but I confess my surprise and admiration were ecstatic when I saw in my actual reach—under my very eye and hand—the characteristically small unpinnuled fronds feathering from an unmistakably old crown of at least four or five years' growth. This was Lonchitidioides indeed! and I had commenced moving him from his not to be forgotten habitat when a somewhat desiccated appearance about the root fibres led me to examine the character of a few dead fragments of frondage hitherto unobserved. It was, need I say it? aculeatum, in the old dead crown of which a young individual of the same species had found a congenial nidus, so centrally positioned, however, that I scarcely felt ashamed of my hasty mistake, and removed the whole to my garden, where it grew and deceived many an old Fern grower, till time dissipated the illusion, and presented our quondam Lonchitidioides in its true colours of a two-year-old too obvious aculeatum! *Zeno, Portland Villa, Wandsworth Road, Jan.* 27.

Pumpkin Tarts.—At a time when so much is being said about Pumpkins and Pumpkin pies, I beg to record an instance that came under my notice in this neighbourhood in October, 1859. There being that year an unusual scarcity of out-door fruit, and happening with a friend to call upon a French cook, I was struck, in going into his private room, at seeing upwards of a dozen Pumpkins lying in different parts of it. I asked what he was going to do with them, when in a jocular manner he said, "I am going to make Apple tarts of them," and the following was his plan. He first cut the Pumpkins into thin strips, scraped out the pulp, took off the rind, cut in small pieces, put all into a stewpan, added water, and stewed the same until soft. He then added sufficient sugar to make it palatable, and Spice, Nutmeg, Cloves, or a little Quince, or whatever a cook might fancy in such matters. He then made them into tarts and baked them like Apples; he assured me that he had frequently sent them to table for Apple tarts, and that they never had been detected. How far they resemble the latter your readers will be the best judges. *J. Dell, Stoke Rochford.*

Rainfall, December, 1861 :—

STATIONS.	Height of Gauge. Above the Ground. Ft.	in.	Above Sea Level. Feet.	Depth of Rain. Total for the Month. Inches.	Greatest fall in 24 Hours. Depth. Inches.	Date.	Rainy Days.
Little Bridy, Dorset	0	4	348	3.07	.64	6	13
Barnstaple, Devon	0	6	31	2.21	.49	9	10
Castle House, Calne, Wilts	0	11	330	1.43	.37	6	12
Camden Town, London ..	0	4	100	1.51	.58	6	11
Finchley Road, London ..	0	4	270	1.65	....	..	..
Ditto ditto	36	4	306	1.12	....	..	..
Oundle, Northampton	20	0	124	1.18	.56	6	8
Norwich	0	0	30	1.39	....	..	..
Llanelltyd, Dolgelly	5	2	20	5.13	1.12	12	13
Derby	0	0	179	1.46	.54	7	15
Manchester	3	0	106	1.99	.70	6	14
North Shields	1	0	124	.89	.40	6	19
Dumfries	0	5	63	3.55	1.40	12	14
Nookton, Fife	0	6	80	1.60	.34	6	15
Sandwick, Orkney	2	0	78	2.68	.54	8	14

REMARKS :—

Oundle.—Weather generally dull; heavy fogs on the 5th, 26th, 27th, 28th, and 29th. Snow on the 31st.

Llanelltyd, Dolgelly.—From 18th to 31st inclusive light easterly winds and very pleasant weather.

Derby.—Average (14 years) 1.88 inch.

Manchester.—Average (47 years) 3.44 inches.

North Shields.—Frequent fogs.

Dumfries.—The first half of the month wet and stormy.

Nookton.—Of the 15 days on which rain fell, 13 (giving 1.50 in.) were from the 1st to the 16th, the rest of the month being dry and fine.

Sandwick.—The weather during the month has been remarkably fine, being mild, dry, and calm. Average (30 years) 4.37 inches.

G. J. Symons, Camden Road Villas.

Neal's Pastils.—I have sold these ever since they were first announced as a cheap and effectual means of destroying green fly, and having now been before the public so long, I am at a loss to conceive why they have been of late so much condemned. The question naturally arises—"Is there any difference in the manufacture of the article now and heretofore?" My foreman says he observed that when the pastils were first introduced they contained more solid material, rags, &c. than they do now. I have just cut some open, and I find that they are chiefly composed of a substance like sawdust. Whether or not this may alter their effect in a few cases the manufacturer probably knows best. During the last 12 months I have sold numbers of these pastils, and as yet I have only heard of one instance in which they did mischief; that was in a house where there were some strong growing Cinerarias. I am therefore disposed to think that extra care is required in smoking such things as Calceolarias, Cucumbers, &c. by keeping the pastils at a convenient distance. If Mr. Neal can produce a pastil fully equal to genuine Tobacco, at half its cost, he will confer an inestimable boon on the professional as well as the amateur gardener. That he has produced a pastil cheap and effectual for destroying green-fly without injury to the foliage of plants, if cautiously used, is a fact beyond contradiction so far as my experience and that of others in the neighbourhood proves. *R. T. H., Weybridge.* [We can insert no more letters on this subject.]

Gishurst Compound.—This is one of the most valuable compositions we possess for fruit trees, both for the destruction of mildew and insects. Upon a west wall here are some young bearing trees of the best kinds of Peaches and Nectarines, which, for the last three years have been grievously attacked with mildew, so much so that at times it quite discoloured and affected the bark of the young wood, although every care was taken to stop the attack. Various compositions were tried, and the application of sulphur in various forms was resorted to, but without any satisfactory results. After the trees had been pruned, I prepared a strong decoction of the Gishurst Compound, and washed the whole of the wood together with the wall immediately contiguous to the trees with it. I also slightly watered the ground round the stems. The result I am pleased to say was most satisfactory; no Fungi made their appearance during the season, and I have the gratification of seeing the wood at the present time perfectly healthy, and the general appearance of the trees good. The same operation was performed upon some bearing Apple trees, which have for some time been much infested with American blight; in this case, however, a portion of the soil was removed from the stems

prior to the wash being applied, in order to wash the stem quite down to the roots. The soil thus moved was well saturated with the wash, and the result was equally as striking as in the case of the Peaches and Nectarines. *J. R. T., Crowhurst Park, Sussex.*

Gourds.—In the south of Europe, the Portmanteau Gourd, so called from its trunk-like shape, is baked entire, when ripe and full grown, with the skin on, in a slow oven, much in the same way as we bake Beet for slicing in salads. When cold, it is cut into thick slices, like cake, and so sold for very small coin and eaten in the streets by children and others. The seeds of many Gourds are mixed up, inside and outside, with many cakes and sweetmeats, in the same way as our confectioners employ almonds. Gourds belonging to the Vegetable Marrow races furnish a delicious dish; gathered when quite young (a little larger than a large sausage) they are cut in two lengthwise, the outer skin being left on, and fried in a good quantity of boiling fat. Well done, well drained, and served hot, they may thus really claim to be Vegetable Marrow. *E. S. D.*

Phalænopsis Schilleriana.—I think you may like to be informed that I have now in bloom Phalænopsis Schilleriana, the first plant I believe that has flowered in England. It is quite an acquisition. It has a good branching habit, the flowers open well together; 16 are open at one time on a plant imported last June. Their size is about two-thirds of those of amabilis, and the colour beautiful rosy pink, &c. The leaves are beautifully marked, and will be 18 inches long; I say will be, because the collector told me so, and I have never been deceived by him. He also said that he had seen it with 100 flowers open on it at one time on one plant. *Robert Warner, Broomfield.*

Societies.

Entomological: *Jan. 6.*—J. W. Douglas, Esq., President, in the chair.—Notice was given of the changes in the council and officers intended to be proposed at the anniversary meeting. Mr. Smith stated that Mr. D'Urban had brought from the Cape of Good Hope a nest of a species of bee belonging to the genus Anthidium, some of the cells of which were stored with pollen and honey, but others were tenanted by Leucospis ornata, a parasitic hymenopterous insect, which had destroyed the bee grubs. He had also discovered in the hollow spines of an Acacia, the eggs, pupæ, and perfect insects of a species of Hylæus (one of the Andrænidæ, without any cocoon or other case,) the perfect insects making a hole near the tip of the spine. Mr. Smith himself had found a British species of Hylæus undergoing its transformations in the hollow of a flint, without any cell or cocoon for the pupa. Dr. Knaggs exhibited several kinds of large Psyche-cases from Australia, and Mr. Saunders several from the Cape of Good Hope. Mr. Waterhouse exhibited a new British Staphylinideous insect, Gyrophæna pulchella, Kr., from the collection of Dr. Power. Mr. Dunning exhibited a photograph of a remarkably dark variety of the common Magpie moth, observing that a piece of green glass had been placed between the moth and the object glass of the camera, in order to neutralise the yellow colour of the spots on the wings. A paper was read by Mr. Gregson on numerous varieties of well known species of moths which had been produced by feeding the caterpillars with different kinds of plants. This led to an extended discussion on the extent to which such variations might be carried, and with reference to the permanent modification of species thereby. Mr. F. Bond exhibited some slabs of compressed peat, which formed an excellent substitute for cork for the drawers of insect cabinets. Mr. Stainton read a paper containing descriptions of nine new exotic species of minute moths belonging to the genus Gracillaria, from Moreton Bay and Calcutta. Mr. MacLachlan read a paper containing descriptions of numerous new exotic (and one new British) species of Trichoptera, the exotic species being natives of China, New Zealand, and New South Wales. Mr. F. Smith read some remarks by Mr. Woodbury, in opposition to Principal Leitch's views as to the development of the queen bee being the result of increased heat communicated to the cell, and not being, as generally supposed, dependent on a particular kind of food.

Notices of Books.

Mr. Murray has commenced the issue of a *Dictionary of the Bible* by Dr. Wm. Smith, whose dictionaries of Greek and Roman antiquities are in such universal esteem. The present work is to comprise Antiquities, Biography, Geography, and Natural History by various writers. The undertaking is to be completed in 10 monthly parts, of which two are before us. They are beautifully printed in double columns, and profusely illustrated with wood engravings. The learned Editor announces that the volumes, when complete, are to form a dictionary *of the Bible* not of *Theology*, points of controversial Divinity being excluded. The article, Bible, occupies about 11 columns, and is from the hand of the Rev. E. H. Plumptree, the Professor of Pastoral Theology in King's College, London.

Mr. W. Paul's *Rose Annual* for 1861-62 keeps up its character as a useful record of the year's events as affecting Rose culture, and a trustworthy guide as to information concerning novelties, which features are invaluable to less experienced cultivators. Indeed, from Mr. Paul's position as one of the most extensive and successful of Rose growers, the learned in these matters can hardly fail to glean some useful information from the pages of this annual brochure, to some of the contents of which allusion is made in another column. We are glad to see that a cheaper edition of the Rose Garden by the same author is preparing for publication.

——The following works have accumulated upon our table. *Prodromus Floræ Hispanicæ.* By Willkomm & Lange, Vol. 1, part 1. A work on Spanish plants, both wild and commonly cultivated. This part consists of 192 closely printed pages, large 8vo, of technical Latin. It begins with Ferns, and extends past Orchids as far as Melanths. The work is well done, and no book was more wanted. We regard it as of even political interest, for it is surely one of the proofs of the regeneration of the grand and rich country whose vegetation it describes.——*Coffee Planting in Ceylon.* By Aliquis. A Poem. 8vo. Taylor & Francis. We shall report on this hereafter.——*In Hyperici genus ejusque species Animadversiones.* By Professor Treviranus. A 4to pamphlet.——*British Poisonous Plants.* By Sowerby & Johnson. 8vo., with 36 good coloured Plates. Second Edition.——*Dictionnaire de Botanique Pratique.* By Dr. Hoefer. Pp. 726. This is a duodecimo volume closely printed in small type in double columns. It gives an account of all the more important groups, genera and species of plants in alphabetical order in the form of a Dictionary. No plates accompany it.——*Flora Indiæ Batavæ.* Parts 1 and 2, containing the Prodromus of the Flora of Sumatra by Miquel. Two parts, containing 3 plates. The general observations in Dutch, the technical matter in Latin. It commences with a classified Catalogue of the plants of Sumatra, and concludes with definitions of the new species and genera.——*De la Production naturelle et artificielle du Liége dans le Chêne-Liége.* By Casimir De Candolle. 4to. The third generation of De Candolles here enters the botanical field with a dissertation upon the manner in which Cork is formed in the Cork tree. All that we need say for the present is that it is worthy of the great name borne by the author.——*Weddell's Chloris Andina,* Parts 15 and 16. These complete the second volume of this singularly beautiful work.——Under the title of *Selecta Fungorum Carpologia*, the brothers Tulasne have published a very complete account of the singular genus Erysiphe, whose ravages under one form or another are the pests of cultivators. It forms a volume of 242 pages in large 4to, magnificently printed and illustrated with five superb plates, one of which is dedicated to the Peach mildew, Erysiphe pannosa. We trust to our learned correspondent "M. J. B." for a detailed account of this noble volume.——*The Historical Finger-post*, by Edwd. Shelton (Lockwood & Co.), is a small 8vo, containing definitions of "terms, phrases, epithets, cognomens, allusions, &c.," in connection with universal literature. Although of very slight texture, it will doubtless be acceptable to those who have no access to more important works.

Garden Memoranda.

Mr. B. S. Williams, Paradise Nursery, Seven Sisters Road, Holloway.—A visit to this thriving establishment, even at the present time, is not without interest; for although there is little in bloom, yet the fine collections of Ferns, Orchids, and plants remarkable for the beauty of their foliage are well worth inspection.

Among Ferns is Cibotium princeps, a new kind in the way of Schiedei; but a stronger grower and handsomer; Gymnogramma Wetenhalliana, also an elegant dwarf tasselled new Fern of good habit. The fronds of the latter are about a foot in length, branched, and finely crested, arching outwards and covered with a sulphury white powder. Of Gleichenia dichotoma there is a fine specimen, and associated with it is Marattia elegans, a more compact plant than Angiopteris evecta, and therefore better suited for such as have only a limited amount of house room. Of Hemidictyum marginatum and Hymenodium crinitum, two distinct-looking kinds with undivided leaves, we noticed several nice plants, especially of the last, of which Mr. Williams has a good stock. In Gleichenias, which are everybody's favourites, the collection is exceedingly rich; one of the prettiest of them is semivestita, a graceful slender growing kind, occupying an intermediate place between dicarpa and Speluncæ. G. rupestris is also a handsome drooping species, whose general aspect is very different from that of other Gleichenias. Of the various kinds of variegated Ferns, as well as of all the leading sorts of other varieties at present in cultivation, there is likewise a fine stock.

Of Orchids there is an excellent collection of well grown plants, more especially of Vandas, Cattleyas, Dendrobiums, and Aerides, with which and others two large span-roofed houses are crammed full. Among plants in flower are Dendrobium heterocarpum, a sweet-scented Primrose coloured kind with a yellow and brown stained lip; the beautiful Limatodes rosea, of which there are several plants all differing from one another in shade of colour, is just going out of bloom, as is also the orange eyed variety of Calanthe vestita, which together with the red eyed sort, has been for some time past very gay. The Fernando Po Ansellia africana, is in full blossom, as are also Dendrobium nobile, the true Vanda insignis, various Cypripediums, Cœlogyne cristata, Zygopetalum Mackaii and Phalænopsis amabilis. Of the last we noticed a fine stock of young plants, and also of the new P. Schilleriana, alluded to in another page.

Among Angræcums, eburneum and its green variety and sesquipedale are in bloom; the last—a singular looking species—has long tailed ivory white flowers, of which three were open, and owing to their large size they made a good display.

Of Anæctochiles and other variegated Orchids, Mr. Williams has an extensive assortment. Among newer kinds are Bulleni, a fine species, attaining a height of from 6 to 9 inches, with leaves from 2 to 2½ inches in length, ground colour bronzy green, marked through the entire length with three broad distinct coppery red, stripes varying at times to golden; Nevilleana, a lovely species, with leaves marked with orange blotches on a dark velvety ground. In some of the specimens the markings are of a beautiful white, in the way of Sonerila margaritacea. Ruckerii, leaves broadly ovate, ground colour bronzy green, with six rows of distinct spots running the entire length of the leaves. Of other sorts there are also many beautiful plants, in the propagation and growth of which Mr. Williams is very successful.

In a span-roofed stove are some good specimens of Pitcher plants, consisting of Nepenthes Rafflesiana, lanata, lævis, distillatoria, and others; and associated with them are beautiful examples of Cyanophyllum magnificum, Croton angustifolium and variegatum, Theophrasta imperialis (a stately plant), the singular Alocasia metallica, and Sphærostema marmorata; the last evidently likes a considerable amount of shade and moisture, as plants grown rapidly under such circumstances have their markings on the leaves much more white and conspicuous than in specimens in drier and more exposed situations. When well managed, and the white blotches on the foliage well brought out, this Sphærostema is very handsome.

A span-roofed house, 50 feet long and 23 feet wide, has recently been put up exclusively for Ferns and other handsome leaved plants, which, being all wonderfully large and fine specimens, form a compact group running the whole length of the house, and being set on the floor on gravel, with merely a brick edging round them, they have a much prettier effect than when elevated on stages. Of the latter there is only one placed immediately inside the house next the glass for the accommodation of small plants. Among the large specimens are variegated Aloe-leaved Yuccas, Cycas revoluta, Dion edule, Tree Ferns of great size and beauty, Dracæna indivisa, and Draco, the last with a stem nearly 10 feet high and 18 inches round; Gleichenias of different sorts—immense bushes, and other plants of that description, forming a little dense forest of rich and well varied vegetation, such as is rarely met with under glass in comparatively small establishments. Among plants on the shelves are Statice profusa, a free blooming kind; Gardenia citriodora, a sweet-scented winter blooming plant; Ardisia crenulata, loaded with fruit; Privet leaved Jasmine, some seedling Dipladenias, and other plants.

In a small lean-to house is a fine stage full of Amaryllids, of which Mr. Williams last season showed some well-bloomed collections, and in a corresponding house elsewhere are choice Araucarias, Thujas, and Yuccas.

Greenhouses of different kinds are filled with Azaleas, and hard-wooded New Holland plants, intermixed here and there with Primulas and Early Tulips. Among other things in these houses we noticed some standard Heliotropes with straight, woody stems, 3 feet in height, and fine bushy heads, which when in flower have a handsome appearance.

The frontage of this nursery has recently been altered and greatly improved in appearance, as has also indeed the whole place, which in summer is kept gay with Alpine and herbaceous plants; there is likewise a good collection of Conifers and of hardy evergreen and other shrubs.

Miscellaneous.

Aristolochia indica an Antidote to Snake's Venom.—"According to your request I have the pleasure of inclosing a statement of one out of at least 20 cases of snake-bites, in which the exhibition of the Aristolochia indica was attended with complete success, on patients who were brought to my house on a litter, in a perfect state of coma from the bites of venomous snakes. The Aristolochia indica is noticed by medical writers as a powerful stimulant, much extolled as a remedy for snake-bites, in support of which I need only refer you to my detailed statement, as also to the circumstances under which the plant was transferred to my garden at Allahabad. The gentleman from whom I received it (Mr. Breton, Deputy Collector of Customs) gave me the following account of it. A cobra, to the great alarm of his servants, had taken up its abode in a mound of earth, formed by white ants, in the vicinity of his house. A party of snake-catchers having one day made their appearance in the village, Mr. Breton was afforded the opportunity of getting rid of the reptile by having it dug out of its lodgment. After having reached a considerable depth, the man at work used his finger for the purpose of ascertaining the direction of the hole. This seemed to have been its

termination, or nearly so, as the snake caught hold of his finger. His companion immediately ran off to the bank of a stream near at hand, and brought back some leaves, which, having bruised with a stone, he administered to his friend's relief. Mr. Breton requested the man to take him to the plant, which he forthwith removed to his own garden. The snake-catcher informed me the plant was a specific, and that they usually carried the dried root about with them in case of need. Mr. Breton, having been subsequently appointed to Allahabad, brought the plant away, and was successful in the treatment of numerous cases. On being removed to a distant station, he transferred the plant to me. The plant is a creeper, and sheds its leaves at that season when snakes, for the most part, are lying inert in their holes. I should have mentioned that the cobra above referred to was killed in the hole. There are several species of Aristolochia, all of them I believe stimulant; but the indica is that which I refer to, it is intensely bitter and strongly aromatic. In one bad case which came under my treatment, in which large doses had been exhibited, I gave an additional leaf to the patient to take home, but to be used only in case of relapse. Her husband informed me that, although quite recovered, she took the extra dose at 1 o'clock in the morning, and became so giddy that in attempting to move she reeled about like a drunken creature. A young Hindoo woman was brought to my door in a 'charpoy,' or litter, in a state so apparently lifeless from a snake-bite, that I had no hesitation in refusing to prescribe. An officer, who was on a visit at my house at the time, considered the woman beyond the power of human relief, and advised me to send her away, as my failure would bring discredit on a remedy which was attracting public notice. In this instance the patient was as cold as marble; there was no pulsation; countenance death-like. The woman's husband manifested great distress at my refusal, at the same time urging that as the remedy had been prepared, I might, at any rate, give his wife the chance of recovery. I explained to him my motives, and my firm belief that his wife was dead long before he had reached my door. However, rather than add to his distress by persisting in my refusal, I forced her jaws open, and poured down her throat three medium-sized leaves of the Aristolochia indica, reduced to a pulp, with 10 black Peppercorns, diluted with a graduated ounce of water. The remedy having flowed into her stomach, I directed her body to be raised and supported in a sitting posture, and with some anxiety, though without the slightest prospect of success. I attentively watched her features, and in the course of eight or 10 minutes I observed a slight pulsation on her under lip. I instantly directed her husband, with the aid of my own servants, to drag her about for the purpose, if possible, of increasing the circulation. Supported by two men, holding her up by the waist and arms, she was moved about, her feet helplessly dragging after her. After a lapse of a few minutes, I perceived an attempt on the part of the patient to use her feet. I accordingly directed them to raise her body sufficiently high to admit of the soles of her feet being placed on a level with the ground. In a few minutes she gave a deep inspiration, accompanied with a kind of shriek, manifesting the return of consciousness. This was followed by an exclamation, 'A fire is consuming my vitals!' At this time her chest and arms were deadly cold. I immediately gave her the pulp of one leaf in an ounce of water, which greatly alleviated the burning sensation in the stomach. She was then enabled to explain the position of the wound on her instep, which had the appearance of a small speck of ink, surrounded by a light-coloured circle. I had the part well rubbed with the Aristolochia, after which she was able to walk without assistance. I kept her walking up and down for at least a couple of hours. Having expressed herself entirely recovered, I allowed her to depart. She called on the following morning to show herself. The snake unfortunately escaped, but the woman described it as a 'kala samp,' which is the term ordinarily used for the kobra kapelle. I have written the above entirely from memory, the case having occurred eight or nine years ago. A middle-aged woman was brought to my door in the early part of the rainy season, who had been bitten by a snake at daybreak, while stooping down for the purpose of sweeping the floor. She called out to the people of the house that a rat had bitten her, and nothing more was thought of it, as her attention was directed to her infant, who became fractious for the breast. She accordingly went to bed to give the child sustenance, and not long afterwards complained of giddiness. It was suggested to her that a snake might have bitten her, but she referred to a hole in the mud-wall from which the rat must have darted out. Nothing further transpired until the household were alarmed on finding her in a state of insensibility, foaming at the mouth, and the infant at her breast. They were then convinced that a snake must have done the mischief, and immediately carried her off to the charmer! After detaining the woman for a full hour, the fellow coolly told her friends to take her off to the Commissioner, who would prescribe for her. The poor woman had been dead for some time before the incantations were finished. On arriving at my house, I found the deceased in a state of incipient decomposition, and, having heard the statement of her friends, directed them to take the body away for the performance of funeral rites, and to lose no time in bringing her infant, who was said to be suffering from the effects of the poison. The poor thing reached my house in a state of insensibility, though not dead. Its head was hanging on its shoulder, and when raised beyond the perpendicular would fall on the opposite shoulder. The body was not cold, and that was the only indication that death had not supervened. I selected one of the smallest of the leaves of the Aristolochia, and pounded one-third of it, and with a small table-spoonful of water, poured the solution into the stomach. After the lapse of four or five minutes the child heaved a deep sigh, opened its eyes wildly, gave a loud scream, and afterwards became quite composed. The child was brought to me next morning quite well." *Routledge's Illustrated Natural History.*

The Stick-insect.—The Phasmidæ or spectres, another class of Orthoptera, present as close a resemblance to small branches or leafless twigs as their congeners do to green leaves. The wing-covers, where they exist, instead of being expanded, are applied so closely to the body as to detract nothing from its rounded form, and hence the name which they have acquired of 'walking-sticks.' Like the Phyllium, the Phasma lives exclusively on vegetables, and some attain the length of several inches. *Sir J. E. Tennent's Natural History of Ceylon.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—If not already done prune and train climbers in this and other houses. Passion flowers, Bignonias, and similar plants which make long annual shoots, should only have their branches thinned and slightly shortened, but others, as Combretums, for instance, may be spurred in. Kennedyas will soon be showing bloom, and what training they require should be done at once, but the pruning of these should not take place till after they have done flowering. Where Orange trees are grown to decorate the flower garden in summer care should be taken to prevent their pushing, and this more especially if the trees are in a dark-roofed house. Where such happens the young leaves have always a thin flabby appearance, and soon turn brown after the plants have been set out of doors, whereas if growth is prevented till the trees are in the open air the foliage will bear any amount of sunshine. Amaryllises that are beginning to push should be taken into the stove or some house in which there is a warm growing temperature. They should be placed near the light and watered; but not too liberally at first. The best time to pot them if they merely require shifting into larger pots, is when in a state of vigorous growth; but if it is necessary to change the soil altogether, it should be done upon the first signs of vegetation. Autumn sown annuals may now require repotting; keep them near the glass, and avoid watering over the leaves for fear of damp.

FORCING DEPARTMENT.

Pineries.—In the case of swelling fruit see that an amount of atmospheric moisture is secured proportionate to the heat employed, for Pines are by no means benefited by a warm parched state of the atmosphere; see that none of the stock is allowed to suffer for want of water at the root. For succession plants a temperature of from 50° to 55° by means of fire-heat will be sufficiently high, but it should not be allowed to fall below 50°.

Vineries.—In early houses maintain a healthy growing atmosphere by sprinkling the floors, &c., as may be necessary, and admit fresh air whenever this can be safely done. Do not allow the heat in the outside border to decline, and where fermenting material is not used see that the covering employed is efficient.

Peach House.—Maintain a steady night temperature where trees are started; take every favourable opportunity of admitting fresh air, and where the external atmosphere can be made to pass over the heating apparatus, which it should do so as to get warm before coming in contact with the plants, a gentle circulation should be constantly kept up. Avoid the admission of currents of cold air, however, which would be most injurious to the trees.

Fig-house.—If a house is wholly devoted to this fruit, the trees might now be set in motion and brought forward gently to succeed those in pots in the early Peach house or Vinery. A temperature of 45° will be high enough to begin with.

Cucumbers.—Still maintain the temperature previously advised, and give air every day when the weather permits. Stop and train the plants as they progress, and do not allow the leaves to crowd one another, otherwise they will soon get yellow; water occasionally with liquid manure; this should be done when the soil is dry.

Strawberries.—These will require air daily when the weather is at all favourable to prevent drawing; when early started ones show the truss of flower they should be removed to the Vineries and Peach-houses.

Kidney Beans.—Where a constant succession is required it is best to sow about every third week, as bearing plants will not yield a profitable return for a longer time than that at this season of the year. The pots may stand in any out of the way corner of the forcing house till the plants come up, when they should be immediately removed to a lighter situation.

FLOWER GARDEN AND SHRUBBERIES.

See to having plenty of soil prepared for striking cuttings in, and have draining materials for pots prepared and sorted out in sizes. As there will be comparatively little to do at present, any spare time will be well spent in going over the stock of plants in pits for next season's use, removing every decaying leaf, and where the surface soil has got green, removing this and top dressing with sandy loam. There is nothing so unfavourable to these plants at this season as damp, therefore take every favourable opportunity of admitting fresh air.

HARDY FRUIT AND KITCHEN GARDEN.

Where orchard trees are infested with insects, as soon as time can be spared for the purpose, the bark should be well scraped with a blunt tool to remove as many of the larvæ as possible, after which the parts should receive a coat of the following composition; viz., hot lime and soot in equal quantities mixed with water from the cow-house until it attains the consistency of thick paint. This composition should be well rubbed into the crevices of the bark in order to make sure of its reaching every hiding place of the enemy; and if a little cow manure was worked up in the composition, it would be useful in causing it to adhere better. It is a tedious task to properly cover large old trees with this, but its effect in clearing them of insects will repay the trouble, and an occasional coat to young trees will be useful in keeping them clean. Gishurst Compound (see p. 49) is also recommended for the same purpose. Look over fruit and other stores frequently in order to see that all is safe and sound.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the 7 Days ending Jan. 29, 1862, as observed at the Horticultural Garden.

January.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind	Rain
Thurs. 23	☾	29.629	29.337	50	38	44.0	39	39	S.	[illegible]
Friday 24	24	29.486	29.411	56	40	48.0	41	39	S.W.	[illegible]
Satur. 25	25	29.985	29.564	48	19	33.5	43	40	S.W.	[illegible]
Sunday 26	26	30.192	30.173	53	36	44.5	42	40	N.W.	[illegible]
Mon. 27	27	30.185	30.027	49	31	40.0	41	40½	S.	[illegible]
Tues. 28	28	29.805	29.733	53	40	46.5	41	40	S.	[illegible]
Wed. 29	29	29.766	29.628	54	45	49.5	42½	41	S.W.	[illegible]
Average		29.864	29.696	51.8	35.5	43.7	41.3	39.9		[illegible]

Jan. 23—Fine; cloudy; rain at night.
— 24—Fine, light clouds; fine; boisterous.
— 25—Rain; clear at night; sharp frost.
— 26—Frosty; clear and fine; overcast at night.
— 27—Fine throughout; clear at night.
— 28—Densely overcast; rain; fine.
— 29—Rain; cloudy and mild; drizzly.

Mean temperature of the week 5½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Feb. 8, 1862.

February.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 2	43.2	30.3	36.7	12	0.75 in.	3	6	5	3	2	8	[illegible]	[illegible]
Mon. 3	43.9	30.6	37.3	16	0.42	4	4	4	3	2	14	[illegible]	[illegible]
Tues. 4	44.4	32.7	38.5	17	0.31	3	4	4	1	7	11	[illegible]	[illegible]
Wed. 5	45.4	33.4	39.4	17	0.39	2	3	2	2	3	14	[illegible]	[illegible]
Thurs. 6	46.1	32.6	39.3	19	0.25	2	3	4	3	4	8	[illegible]	[illegible]
Friday 7	46.7	33.2	40.0	19	0.29	2	2	4	—	5	13	[illegible]	[illegible]
Satur. 8	45.7	33.3	39.5	20	0.67	1	3	4	2	5	14	[illegible]	[illegible]

The highest temperature during the above period occurred on the 3d, 1850—therm. 57 deg.; and the lowest on the 8th, 1847—therm. 5 deg.

Notices to Correspondents.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive after the Morning Post of Wednesday. Those received later will receive attention the week after.

Books: *Inquirer.* We recommend you to study the last edition of Rivers on Orchard Houses. There and in the occasional notices of the *Gardeners' Chronicle* you will find all that can be usefully said on the subject.—*H H.* Lindley's Vegetable Kingdom, or his School Botany.

Moule's Method of Disinfecting: *Daventry.* We have tried the method, and it answers so perfectly that no one could tell that an old offensive cesspool was in course of being emptied.

Names of Fruits: *Northwick.* Not known, a very sweet mealy Apple, not in cultivation near London.‖

New Holland Seeds: *Villa Albert.* We have a good packet for you; but how are they to be sent? You do not say. By all means send us scraps.

Pomological Meeting: *E M.* The papers to which you refer have not arrived. Address all such, post paid, to the Office of this paper, 41, Wellington Street, Strand, London.

Propagating Pit: *Q H. F.* Use small cinders for "rubble." Keep your pipes as low as you can; place the rubble over and between them. Place 6 inches of fine cinder siftings upon the rubble, or charcoal fragments if you have them, and in these plunge your pots. We should not use mould at all except in the pots themselves.

Vancouver Emigration.—So many inquiries are addressed to us on this subject that we are glad to have the opportunity of making public the following memoranda from a resident in the colony now in this country:—"Market gardening pays very well in Vancouver Island. Soil good and market excellent. Land near the town dear, as high as 50*l.* or 60*l.* per acre; two miles from the same 10*l.* to 15*l.* At the latter it is readily rented at from 1*l.* to 3*l.* per acre. Climate far better than that of England. Passage money, second class, 35*l.* Two ships laid on at this moment. Passage from four to six months. Overland—cost about the same—time six or seven weeks. Living much the same as in England. House rent dear, wood cheap, and houses easily constructed, without any knowledge of tools beyond the saw, chisel, &c. Agricultural land easily bought a little distance off, at 4*s.* 2*d.* per acre, payable thus—Within two years from possession, 1*s.* per acre; three years do., 1*s.* per acre, and balance of 2*s.* 2*d.* per acre within four years. Wages about these (June last)—Farm labourers 30*l.* per annum and rations, &c.; day do., 6*s.* 3*d.* to 10*s.* 5*d.* per day; gardeners, 1*l.* 0*s.* 10*d.* to 1*l.* 3*s.* per day, and no rations; domestic female servants, 75*l.* to 100*l.* per annum; mechanics, 18*s.* 9*d.* to 1*l.* 0*s.* 10*d.* per day and no rations. Any man of ordinary mechanical ability could build a house with two rooms and a double chimney for about 25*l.* to 30*l.* Pair of oxen for breaking up new soil and plough, 1*l.* 13*s.* 4*d.* per day, and they will do perhaps half an acre. I shall be very happy to answer any further or more definite questions."

Misc.: *H E.* Apply to Mr. Smith, Royal Botanic Garden, Kew.

Royal South Hants Seed Establishment

PAGE AND TOOGOOD have the honour to offer the OSBORNE MANGEL, the stock of which was presented to them by His late R. H. the Prince Consort's Steward, A. Toward, Esq., by whom it is considered the best variety in cultivation. In shape it is as perfect as a Globe Turnip, with a similar tap root, the foliage small and very compact, indicative of less impoverishment of the soil than can be said of most other sorts. It has carried off every prize for shape where exhibited. A great portion of the seed has been ordered by those who saw it growing, and P. & T. being anxious to get it into general cultivation, would prefer supplying it in quantities not exceeding Ten Pounds.

PAGE'S IMPERIAL ORANGE GLOBE MANGEL.—A large stock of this has been provided to meet the demand that has arisen for it. Its superior weight producing and keeping qualities are well known. The prize for the best 10 Acres has again this year been awarded to it by the Botley Farmers' Club. Stewart Macnaghten, Esq., grew 61 tons 2 cwt. per acre of it by ordinary cultivation. W. Dickinson, Esq., produced six specimens, weighing when perfectly clean, without leaves or roots, 193 lbs., the largest of which, 44 lbs. At the Vale of Avon Farmers' Club, six prizes were awarded to it for acreage.

PAGE'S IMPROVED HARDY SWEDE still maintains its superior character for general cultivation. It carried the 10 Acre Prize at Botley.

BIRMINGHAM ROOT SHOW.—The Ten Guinea Cup for the best collection, and the Five Guinea Cup for Swedes have been again brought to Hampshire—being the third time in succession the former has been awarded to Sir W. Heathcote, Bt.—This not only reflects great credit upon the management and skill of his Steward, Mr. Charles, but the County should be proud of the distinction conferred upon it, by his energy and judgment, in carrying these Prizes (that for Swedes against 26 competitors). As Hampshire Seedsmen, we have great reason to speak of his success.

Special Contracts made for the supply of all AGRICULTURAL SEEDS in large quantities.

☞ Our Goods are delivered Carriage Free

Page & Toogood, Seed Merchants and Growers, Southampton.

Agricultural Seeds.

THE SUBSCRIBER has much pleasure in offering the following SEEDS, grown and selected with the greatest care, and can be depended on:—

MANGEL WURZEL: Yellow, Orange, and Red Globe, Long Red and Yellow, 6*d.* per lb., 45*s.* per cwt. SWEDE: Epps' Selected, Skirving's and Marshall's Purple-top. TURNIPS: White, Green, and Red Globe; Tankards of sorts, 5*s.* per gallon, 38*s.* per bushel. CARROTS: White Altringham, James's Keeping. Cow Cabbage, Kohl Rabi, and all kinds of Agricultural Seeds.

CATALOGUES sent on application.

W. J. Epps, Seed Grower and Merchant, High St., Maidstone.

Nursery and Seed Establishment, Dumfries, N.B.
(Established 1787.)

THOMAS KENNEDY AND CO. beg respectfully to direct the attention of their friends and the public to their stock of

NURSERY PLANTS,

comprising Forest, Fruit and Ornamental Trees, Deciduous and Evergreen Shrubs, &c., adapted either for extensive planting, or for giving immediate effect in the formation and improving of Ornamental Parks, Pleasure Grounds, &c.

Also to their stock of

FARM and GARDEN SEEDS,

which are very extensive, and being selected with the greatest possible care from Seed Growers of the highest standing in this and other countries, are guaranteed to be of first-class quality.

FREE DELIVERY.

All Seeds (not Plants), under certain limitations, are delivered free of Carriage to the principal Railway Stations in Great Britain and Steam Ports in Ireland.

⁂ PRICED CATALOGUES will be sent, post free, on application.

RICHARD SMITH'S
LIST OF ALL THE BEST
VEGETABLE AND FLOWER SEEDS,

Combines simplicity of arrangement, with prices, descriptions of size, height, colour, time of sowing, soil, duration, hardiness, &c., with useful hints on rearing and general management.

COLLECTIONS of SEEDS, of the Choicest Sorts, for One Year's Supply of a large Garden, consisting of 10 quarts of Peas and all other Vegetables in proportion				£2 2 0
6 quarts Peas	ditto	ditto	ditto	1 5 0
5 pints ditto	ditto	ditto	ditto	0 12 6

Retail Seed Orders of 21*s.* and upwards free to any Railway Station.

ROSES.

STANDARD HYBRID PERPETUAL and other FINEST kinds				30*s.* per Dozen.
HALF-STANDARDS	ditto	ditto	ditto	24*s.* to 30*s.* „
DWARFS ditto	ditto	ditto	ditto	12*s.* to 24*s.* „
NEW ROSES of 1861				2*s.* 6*d.* to 5*s.* each

FRUIT TREES.

Thirty-five Acres of these; consisting of PEACHES, NECTARINES, APRICOTS, PEARS, PLUMS, CHERRIES, and APPLES, in Trained and Pyramidal Trees, Standards, Half-Standards, Bushes, Dwarfs, or Potted Trees for Orchard House culture.

EVERGREENS. | FLOWERING SHRUBS. | CONIFERS.

With all other Nursery and Seed Stock of the finest description and at Cheapest Prices—Lists of which may be had on application to

RICHARD SMITH, NURSERYMAN AND SEED MERCHANT, WORCESTER.

PERMANENT GRASS SEEDS
FOR ALL SOILS.

SUTTON & SONS,
SEED GROWERS, READING, BERKS,

Have a most extensive and complete stock of all the best kinds of GRASS SEEDS for PERMANENT PASTURE, which they are now sending out daily to all parts of the Kingdom, mixed expressly to suit the soil for which they are intended and the purposes for which the Pasture is required.

It is believed that Messrs. Sutton's Stock of GRASS SEEDS is the largest in the country, and certainly the quality cannot be surpassed. The sorts can be supplied separate or mixed to suit the soil, or the Light Large Seeds may be had in one mixture, and the Clovers and other Small Heavy Seeds in another; 2 bushels of the former and 12 lbs. of the latter per acre are supplied.

No. 1. MIXTURES for PERMANENT MEADOW and PASTURE, adapted to suit the soil	26*s.* to 32*s.* per acre
No. 2. MIXTURES for PERMANENT FIELD LAWNS, PARKS, and CEMETERIES	16*s.* per bushel
No. 3. MIXTURES for IRRIGATION or CATCH MEADOWS	25*s.* per acre
No. 4. MIXTURES for RECLAIMED, MARSH, or HEATH LAND	18*s.* to 20*s.* per acre
No. 5. MIXTURES for LOOSE BLOWING SANDS, HEAVY CLAYS, CHALKY SOILS, and SHARP GRAVEL	
No. 6. MIXTURES of FINEST SHORT GRASSES for GARDEN LAWN	1*s.* per lb., or 18*s.* per bushel
No. 7. RENOVATING MIXTURE of CLOVERS and FINE GRASSES for OLD PARKS and MEADOWS, 9*d.* per lb., or, by the cwt., 80*s.*	

N.B.—Messrs. Sutton *furnish complete instructions for sowing and management with the Seed.*

OTHER AGRICULTURAL SEEDS,
ALL WARRANTED NEW AND UNADULTERATED.

CLOVERS. English Red; White or Dutch; Trefoil; Alsike Hybrid; Cow Grass (true kind)

RYE-GRASS. Sutton's Improved Italian; Dickenson's do. do.; Fine Imported Italian; Common; Pacey's Perennial

MANGEL WURZEL. Long Red; Elvetham do.; Orange or Yellow Globe; Red Globe; Long Yellow

SWEDES. Sutton's Champion; Ashcroft.—Skirving's; Hardy Purple; Marshall's Purple-top; Improved White

CARROTS. White Belgian; Yellow Belgian; Large Altringham; James' Intermediate; Long Orange

SUNDRIES. Holcus saccharatus; Lucerne; Drumhead Cabbage; Large Cattle Parsnip; Kohl Rabi, of sorts

Goods delivered Carriage Free. Priced Lists Post Free. Cash or reference requested with first orders.

Five per Cent. allowed for Payment on receipt of Goods.

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

RAYNBIRD, CALDECOTT, AND BAWTREE, Seed Merchants and Growers, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

To the Seed Trade.

THOMAS AYRES, Seedsman and Grower, Biggleswade, Beds., has to offer WHITE SPANISH ONION SEED, ALTRINGHAM and WHITE BELGIAN CARROT SEED; YELLOW GLOBE, ORANGE GLOBE, RED GLOBE, LONG YELLOW, LONG RED MANGEL WURZEL SEED; also several varieties of SWEDE and WHITE TURNIP SEED.

Prices forwarded on application.

GENUINE ITALIAN RYE-GRASS, produced from the second cut of Foreign "Italian," weighing up to 21 lbs. per bushel, and "Pacey's" and "Evergreen" Perennial Rye-grass, weighing up to 28 lbs. per bushel, can be supplied direct from the Grower either now or in March (at the option of the purchaser), and samples will be forwarded free on application.

Address Simon A. Daintree, Fendrayton, St. Ives, Hunts.

CHOICE PRIZE SWEDES (Dickson's Selected) at the Birmingham Show.—The SWEDE TURNIPS exhibited by the Right Honourable the Earl of Lichfield—entry 105—at the show held at Bingley Hall, Birmingham, during the first week of the present month, and which took the First Prize there (the entries at the same time, and many by eminent agriculturalists, being very numerous) were from seed which we had the honour of supplying to his Lordship. Their quality in every way, as was universally admitted, was most excellent, at once showing the great advantage of having Seed saved in a proper manner from carefully selected and transplanted bulbs.

We have again saved in the most careful manner, from picked and transplanted bulbs, a large and fine lot of Seed for the sowing season of 1862, for which we are now booking orders at 1*s.* per pound, for delivery in the Spring, or sooner if desired.

PRICE LISTS of SEEDS, TREES, and PLANTS on application.

James Dickson & Sons, Seed Merchants, &c. 102, Eastgate Street, and "Newton" Nurseries, Chester, and 23, Market Place, Manchester.

Stirling, Scotland.

OUR CATALOGUE of SELECT VEGETABLE and FLOWER SEEDS, POTATOES, GARDEN TOOLS, &c., for 1862, is now ready, and may be had on application.

The distinctive features of this Catalogue are such as have commended themselves alike to the Gardener and Amateur. Being simple in arrangement, and sufficiently descriptive, a selection from its columns is rendered easy and satisfactory. Moreover, we still adhere to the system introduced by us several years since, of discarding, in the various sections, all comparatively inferior varieties, as well as omitting what are mere repetitions of the same sorts under different names.

⁂ Seeds Carriage Paid, as formerly.

W. Drummond & Sons, Seed and Implement Warehouse, Stirling.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.
Last day of Entry for Implements, March 31.
Last day of Entry for Stock, May 1.

STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. Hall Dare, Secretary.
12, Hanover Square, London, W.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.

STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. Hall Dare, Secretary,
12, Hanover Square, London, W.

The Agricultural Gazette.
SATURDAY, FEBRUARY 1, 1862.

MEETINGS FOR THE FOLLOWING WEEK.

Monday,	Feb. 3	London Farmers' Club (Mr. Johnson on Artificial Manures)	6 P.M.
Tuesday,	— 4	Wirral (Mr. Jackson on Grass Lands).	
Wednesday,	— 5	Agri. Society of England	Noon

In the discussion which has been going on for some weeks past at the Institution of Civil Engineers on Mr. Bailey Denton's paper, considerable difference of opinion has been expressed as to the effect of the underdrainage now extending throughout the country on the perennial springs which maintain the rivers.

Mr. Denton has advanced the opinion, as the result of his experiments and observations on the various soils and strata of the country, that where, from the configuration of surface or the inclination of depending strata, valleys or flat districts of "free" subsoil are kept in a state of saturation through the summer months—not by rain falling directly on their surface simply, but by water pressing down from superior elevations through the soil in addition to the immediate rainfall—the result of underdraining such lands is to rescue from evaporation during the ordinary time of drought a very large increase of water in favour of the river supply. He illustrates his views by reference to the valleys of the Test, the Itchin, the Avon, on the south, the numerous valleys of the Silurian formation in Wales, those of the red sandstone of the west, and those of the limestone districts in

the north of England, as well as the wide alluvial marshes which border most of our larger rivers, all of which soils are composed of drifted and peaty matter, which presents a constantly saturated surface to the action of the atmosphere. His opinion is disputed by Mr. Hawksley, Mr. Bidder, and others.

All engineers, however, agree with Mr. Denton that during the winter and spring, when the ordinary clay-land drains are discharging the rain they absorb on the surface, and when evaporation and vegetation are comparatively dormant, the water of underdrainage running down from the higher lands must overload the rivers, and will soon necessitate a reform of our arterial channels and outfalls.

In his reply at the Institution on Tuesday last Mr. Denton read extracts from a long and very interesting letter from Lord Palmerston, going fully into the subject under discussion, and giving the result of his Lordship's experience of the drainage of the Test valley at Broadlands, in support of the opinion that the effect of under-draining such valleys as the Test must be to increase the river's supply. Lord Palmerston speaks of the improvement in the atmosphere as "most striking and satisfactory," and as being entirely owing to the drainage executed on the Broadlands estate and lands adjoining.

This valuable letter, remarkable because it was written with instant despatch in the midst of momentous matters of national importance, is to be published in the Journal of the Royal Agricultural Society, and we shall then see the grounds upon which our gifted Premier could descend from the high region of war and politics to cope with engineers within the precincts of their own Institution upon a subject peculiarly their own.

It is an exceedingly difficult thing to get rid of town sewage—and it is an exceedingly desirable thing to obtain the use of town sewage.

The former of these propositions is proved by actions at law for damages on account of the nuisance which on dismissal it inflicts.

In the old cesspool days the nuisance either was not felt *except* by fevers and epidemics regarded as directly "the Act of God"—or it was dealt with in detail; and each household having its own nuisance once a year was content periodically to bear that of a neighbour also. But now towns are drained. An immense store of water is brought into each, and this washes out the town as it makes it exits and carries all the filth into one channel or on one spot. Those who once had pleasant trout streams rippling by their grounds now live on the banks of a common sewer. The thing is intolerable; and at Birmingham and at Croydon and elsewhere, actions for damages have been laid against the town or the promoters of its cleanliness and health; and heavy damages have been thus obtained.

The second of the propositions in our first sentence is also true. Town sewage is useful as well as mischievous. There is proof also of this. At Watford, at Mansfield, and at Edinburgh it is turned to use. And the use there made of it is the only method which we have for disinfecting it and making it harmless as well as beneficial.

The soil is the true disinfector.

The distiller sends his vapour over an enormous surface of cold metal—through a system of tubes in contact with whose inner surface every portion of it comes and is condensed—and so its waste is hindered.

The chemical manufacturer sends his vapours through a chimney filled with damp coke; and here again we have a great surface spread out for acting on the evaporated liquid and hindering its escape.

But in neither of these cases is there anything like such an enormous extent of surface within a given bulk, as there is within the cultivated soil, whose attractive powers are exercised upon the gaseous substances, the escape of which we would prevent. Bring all this fermenting filth in contact with the soil, and the loss of those products of decomposition which make it a nuisance is effectually prevented. Not only is the loss of all these products prevented, but they are turned to use; the soil is enriched and plants convert them into food.

But both our propositions being true—what a singular thing it is that they should co-exist! The difficulty is either that convenient land is not always to be had near towns on which to use this sewage—or that public opinion, doubtful of the disinfecting powers of soil, will not permit its use in this way near the town—or that the machinery employed has been so expensive as to spoil the thing so far as profit goes.

Add to this that the attempts hitherto, as at Birmingham, Aldershot, Cheltenham, &c., have been directed rather to the extraction of a solid manure from the liquid sewage than to the use of the sewage itself as a self-carried fertiliser. And these attempts have been failures, and have created nuisances, and thus the public feeling is impatient; and when any *use* is proposed, as for instance of the London sewage, the cry is—"Away with it to the German Ocean; we will no longer have it stinking in our nostrils and poisoning our houses while agriculturists and capitalists are making up their minds what is to be done with it." And this was the feeling which dictated the conclusions which the Metropolitan Board of Works are striving to attain. London sewage is to be delivered into the Thames some miles down, in the hope that it will obediently follow its instructions and be off to the German Ocean. It seems plain, however, that it will not be so obedient, but that unless disinfected in the first place it will poison the upper reaches of the river as of old, and be carried to and fro by the tide under the noses of the Londoners almost as mischievously as ever. The only remedy is to do what a recently projected Company is seeking power to do—take it 40 miles down the river, and upon some 10 or 12 square miles of sea-side alluvium and sand, which there want embankment from high tides only, spread the whole abroad and convert it into Italian Rye-grass — into milk — into handsome dividends! All this we have no doubt will be done—unless the Board of Works should foolishly endorse the captious opposition with which some of its members seem about to meet the proposals which have been made; and driving the promoters of this scheme from the field, leave themselves saddled helplessly with what will prove a costly nuisance both to themselves and to their clients within "the bills of mortality."

—— We hope that hundreds of agriculturists have read, and will read, the advertisement which appeared at pp. 57 and 58 of the different shows to be held during 1862 under the Royal Horticultural Society, and especially of the Great International Show (on October 8, 9, and 10) of Fruit, Gourds, Roots, Vegetables, and Cereals, open to all the world. There is, we fear, reason to believe that the stands of some of our leading seedsmen at the Great Exhibition, restricted to the smallest possible dimensions, will be deficient in such complete and extensive illustrations of our various agricultural plants as were given for instance by Messrs. Lawson at the Great Exhibition of 1851. And there is thus the more reason why an opportunity of the kind now offered by the Horticultural Society should be eagerly taken for a display of our garden and agricultural roots and cereal grains. Medals are offered for collections of Potatoes, Mangel Wurzel, Carrots, Turnips, and Kohl Rabi, and for collections of Wheats and other grains from all quarters and from any one quarter within the United Kingdom, as well as from any of a long list of ports, markets, coasts, and countries.

It is to be hoped, in the interests of English agriculture, that the invitation to foreign agriculturists may be accepted, and that we may thus have an opportunity of studying the productions of other soils and other climates. It is we think, however, still more to be hoped, in the interests of British agriculture, that our own plants and all their varieties shall be fully displayed to the cultivators both of our own and of foreign soils. Local societies and their office-bearers should take up the subject and see that every locality is fairly represented at the forthcoming show. At some local shows before the month of October roots are collected for exhibition, and the Secretaries ought in such cases to take care that the best are saved for exhibition at Kensington. Specimens which have achieved success even at the village competitions of cottagers and allotment holders might thus usefully reappear at the metropolitan show. Seedsmen will, we hope, urge their leading customers to lend a hand on so interesting an occasion. And it is especially to be desired that such samples of our different varieties of Wheat and other grain may be forthcoming as will *completely* illustrate the produce of our corn fields. It appears that both ear and sample are requested to be sent; "but this is not imperative." A sample of not less than a pint of the grain is all that is *required*. The proper illustration of a variety of Wheat is given by a sheaf in addition to a sample. A handful of the corn in the straw would, however, suffice, and this with a pint of the grain, together with the name and a description of those particulars of its character which cannot be learned by mere inspection — such as its hardiness, earliness of ripening, general productiveness, and fitness to particular soils or climate, ought to be sent. It is a pity that this is not specified as necessary in the Society's programme. We earnestly hope that pains will be taken to obtain good specimens of the numberless varieties of grain and roots we grow, and to classify and exhibit them truthfully and instructively.

We shall again before harvest time take means to remind our agricultural readers of what is certainly their interest, and may really be called their duty —when the nature of the opportunity and the wide spread influence which it must exert are considered.

—— The offer by the Royal Agricultural Society of England of lower premiums at the forthcoming great meeting at Battersea, in the classes of Long-woolled sheep "not Leicesters," than are offered for Southdowns on the one hand, and Leicesters on the other, continues to create a good deal of angry feeling. Mr. Hudson, of Castleacre, first called attention to the subject, and since then in the localities more especially interested meetings have been called to consider the subject. At Northleach last Wednesday, a meeting of Cotteswold flock-masters resolved to memorialise the Council, with a view to induce them to reconsider their decision. The thing would be of comparatively little importance, were it not that this year our prize lists will be scanned by foreign eyes, who will read in it the judgment formed by practical men of the relative importance of the breeds there named. The Leicester and the Southdown have hitherto possessed that predominant value which the old prize lists showed to be placed upon them. Latterly, however, the value of the Lincoln and the Cotteswold fleece has risen so much, and the character of the latter for crossing other breeds, as for instance the Cheviot, has also risen so much, that both Lincoln and Cotteswold have a right to stand as first-class breeds, and the offer of a second rate premium list thus becomes a slur which is properly resented. It is to be hoped that the memorial to be presented next Wednesday may result in the removal of this slur.

The Règistrar General declares that the only proper disinfectant is the soil, through which—and the plants and animals which would thus be fed, town sewage instead of breeding fevers by fermenting in our midst might not only be made harmless but "by cleanly manipulation" be converted into milk. The Court of Chancery grants injunctions which serve to drive in the same direction as that which is the tendency of the published bills of mortality. At Birmingham, at Aldershot, and we believe at Leicester, the attempt to collect the solid part of the waste of towns, washed out of them by the water which is now brought into them, is condemned as a nuisance in courts of law. At Croydon the attempt to send it simply to waste has been met by an injunction owing to the nuisance thus created.*

On the other hand, we have the undoubted fact that the soil is capable of disinfecting the filthy water and of putting it to use. Apply it to the land, and you will thus not only render it harmless, but you will convert it into food. This is what has been done on many liquid-manured farms at both ends of the Island, and it is what is now proposed to be done with London sewage. One check which the scheme has hitherto received, has been the misfortune which in many cases attended it on individual farms. Canning Park, near Ayr—Myre-mill, in the same county—both of them noted "liquid manure" farms, are now cultivated, we believe, on the ordinary system; and elsewhere the practice has not been successful, owing either to the costly manner in which it has been carried out, or the mis-adventure of its promoters in other matters in which they have been engaged. An impression has thus arisen that whatever the theoretical superiority of the liquid manure system, it has not practically proved capable of profitable and successful prosecution.

There are, however, instances which disprove this impression, and ought to be kept in remembrance when considering the possibility and the desirableness of turning such an enormous store of fertilising matter to use as is contained in the London sewage. Among them is Mr. Ralston's farm of Lagg by Ayr, where tank water is sent through

* See Report—Bidder *v.* Clerk to the Local Board of Health Croydon —*Times*, Jan 15.

pipes on to fields below and spread over Italian Rye-grass, of which heavy crops are cut and carried up to the homestead above. Mr. Blackburn's farm near Stonehaven has been also a notable instance of even greater success. We understand that an account of this gentleman's experience in the engineering department of this subject is to appear in the forthcoming Journal of the English Agricultural Society, when it will be seen at how little cost per acre all the advantages of the liquid manuring of the farm may be carried out.

The farm, chiefly clay, and only about 130 acres in extent, was taken some years ago, in order that recent experience in liquid methods of applying manure might be tried; and it was abandoned whenever (owing to the loss of water supply) that method of management has been impossible. By engine, pumps, and pipes, as well as by ordinary water meadow, the manure made by a very large herd of dairy cows was spread, along with many thousand gallons annually of the ammoniacal liquor of gas works, over from five to nine acres of Italian Rye-grass near the farmery, and the result was an enormous increase in the quantity of food yielded per acre. From five and six cuttings of Italian Rye-grass were obtained annually. From 8 to 12 feet in *length* of the grass was thus cut during the season. A good crop would keep an ox or cow for a week on every 144 square yards of surface. An acre would thus keep 33 head of cattle for a week. Five acres would keep that number for five weeks; at the end of which time another cutting would be ready. And thus a small extent, liberally treated with manure, would enable the maintenance of a larger number of cattle during the summer months, or would enable the completion of the fatting process over a large winter's herd; which must often be disposed of, whether fit or not, when the winter's store of food is exhausted. In answer to questions put by Mr. Chadwick, Mr. Blackburn states his experience of the system thus—

"My predecessor kept 10 oxen and 6 cows on 21 acres of Grass, and the aftermath of 17 acres, the first crop of which was taken for hay. On the irrigated Grass land, consisting of 3½ acres of Italian Rye-grass, and 8 acres of water meadow newly brought in—and not very good at that time—there were kept 20 cows, four feeding cattle, and a bull; there was provided the partial keep of 5 cart-horses, and the total keep of 1 pony, and the Grass which 8 calves required. This same land had 2½ qrs. of Oats per acre the year I took the farm. My experience, however, enables me to state that the result I have obtained is not a maximum result, even in our cold climate, where it may be estimated that we have two months less of growing weather than in the south of England.

"Undoubtedly the system will tend to the high cultivation of small areas of land. Some of my neighbouring farmers used to condole with me, that I had not some 300 acres, to which my reply was, that I should have done better if I had half the quantity, or 60 acres instead of 120, and had I been rid of the hard clay land."

The advantage will however as we believe be even greater on large arable farms than on small ones, a comparatively small addition to the capital otherwise required in the former case conferring the immense advantage of being able to keep over difficult periods of the year, the large herd which may on such farms be kept during winter.

The details of expenditure as well as the history of returns on Mr. Blackburn's farm are given in a paper read last year before the Council of the Royal Agricultural Society of England. The completer account under these heads which is given in the forthcoming Journal will we cannot doubt result in many attempts on the large farms of the country to adopt the plans he recommends. In the meantime especial interest attaches to the subject just now owing to the forthcoming attempt described elsewhere to utilize London sewage on the seaside flats along the south-eastern coast of Essex, the success of which hinges on just the same principles as those which Mr. Blackburn has trusted and proved trustworthy on his small farm near Stonehaven.

THE FROCESTER COURT FARM,

Stonehouse, Gloucestershire.

This is one of the finest dairy farms in the country. Of extent and soil and pasturage equal to any that we know, and better equipped with buildings and with residence. It is part of the Woodchester estate, till lately the property of the Earls of Ducie. The old Court House, a resting place of Queen Elizabeth on one of her many tours,* is a very fine specimen of the country mansion of the period. The barn, dating from the days of monkish agriculture many centuries ago, is probably unique for its structure and dimensions—200 feet long by 30 feet wide—on walls 14 feet high, and a roof whose ridge is 35 feet high, supported on principals every 12 or 14 feet, which are said to be of Spanish Chesnut,* the lower 4 or 5 feet of each being built into the wall, there strengthened by a buttress, and the upper part fitting by the natural bend of the timber to the slope of the roof. In this barn is stored a great part of the hay and other produce of the farm. Here also stands the threshing machine worked by a turbine, which when the full flow of water is put on it may be five-horse power.

The figures below are a section of this barn and an elevation of the wood-work of roof—the latter being rather a projection of the roof upon a vertical longitudinal plane.

Mr. Harrison, the present tenant of the farm, has till lately been employed actively in the duties of his profession as civil engineer; and his experience and tastes in this direction have since proved of agricultural benefit both to himself and no doubt to others also, through his management of the Steam Plough Company, of which he is the active director.

The farm lies on the lias and marlstone of the lower oolite, at the foot and on the side of the Cotteswold range. There is much very heavy clay land, a great deal of good loam, a great deal of first-class pasture land, and some comparatively poor hill-side Grass. It has all been drained where necessary at depths of 3 feet and more, and at intervals varying according to the necessity of the case.

Of the 480 acres of which the farm consists, 130 acres are arable. The land is cultivated on an alternate system of cropping, one-half being Wheat and the remainder roots, Clover, roots, and Beans or Potatoes—the "root" crop being Turnips and Mangel Wurzel.

Of the Pasture land 110 to 120 acres are mown each year, and about 15 acres of Clover are also mown twice. Some of the land is so stiff that Mr. Harrison valued the steam ploughing it received at 30*s.* an acre—some of it is easy two-horse work. The horse-labour of the farm would be easily accomplished by seven horses, but that several mares are kept and foals bred from them. The other stock includes about 80 dairy cows, 30 calves being reared annually, and 30 yearlings and two-year olds being thus included in the herd. A flock of 150 to 200 Southdown ewes is also kept—70 or 80 lambs being fattened and the remainder either fattened or brought into the flock after a first fleece is taken from them. Some five or six sows are kept, 60 bacon hogs were fattened, and 20 pigs sold as store last year.

The principal feature in the management of the farm is the dairy. This includes now a herd of 82 cows, which if all be well will come to the pail during the ensuing spring — 9 being due in January, 20 in February, 13 in March, 30 in April, 9 in May, and 1 in June. Nowhere is there a more exact account kept of dairy proceedings and dairy produce. The following are some of the figures to which this record leads, beginning with 1855. In 1857 the centrifugal drying machine was applied to the separation of the whey from the curd. It was worked by a small turbine. Mr. Harrison then milked 55 cows; the quantity of milk made into cheese was 31,728 gallons, or 577 gallons per cow, besides the milk expended in weaning 43 calves:—

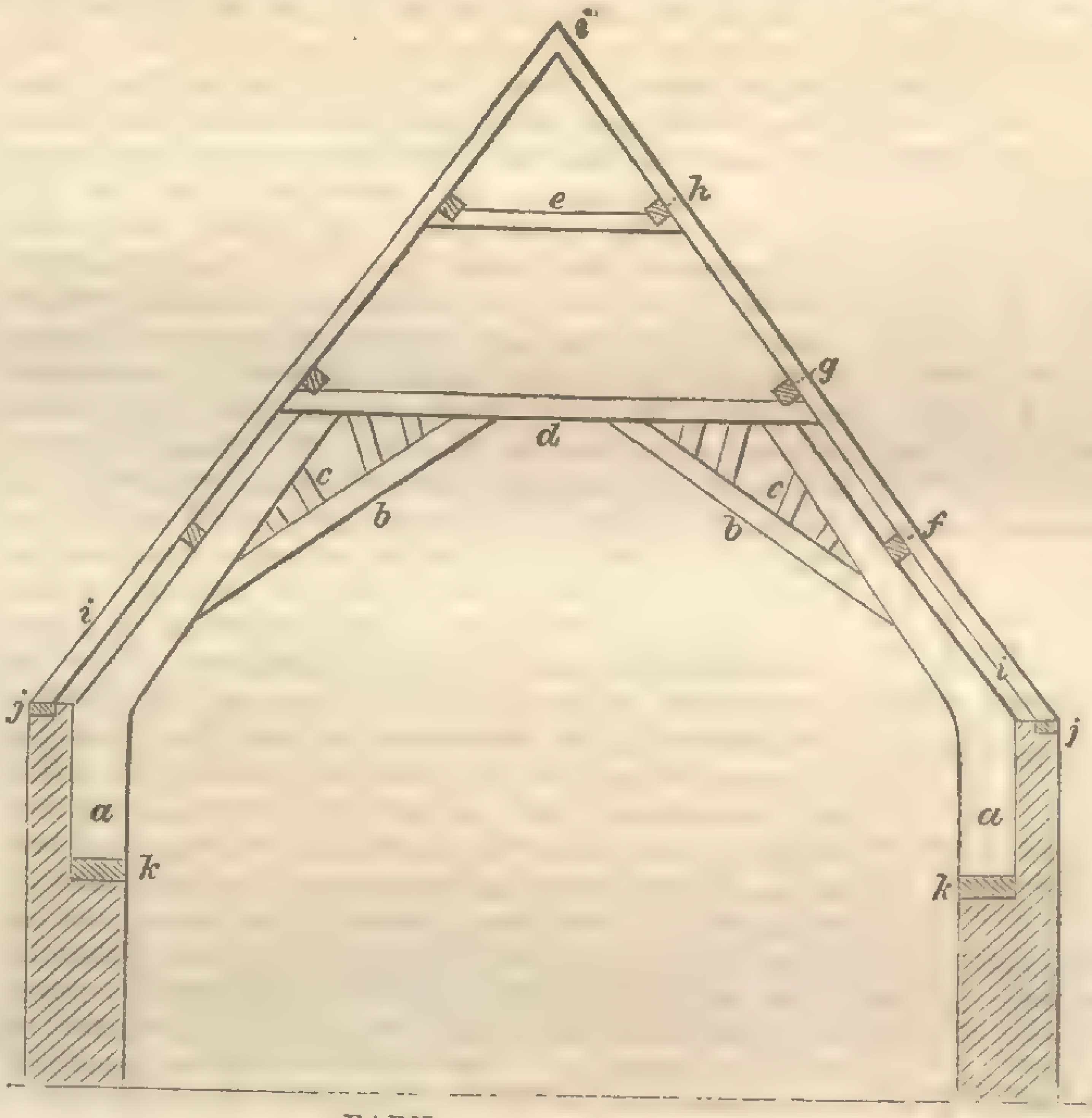
		£	s.	d.
The actual return for cheese was	.. .. ..	615	0	0
" " butter was	.. ..	182	6	10
" " milk sold and used was	.. ..	6	0	0
" " whey: 220 hogsheads at, say 6s.		66	0	0
" " rearing 43 calves was	.. ..	43	0	0
		£912	6	10

or about 16*l.* 10*s.* per cow.

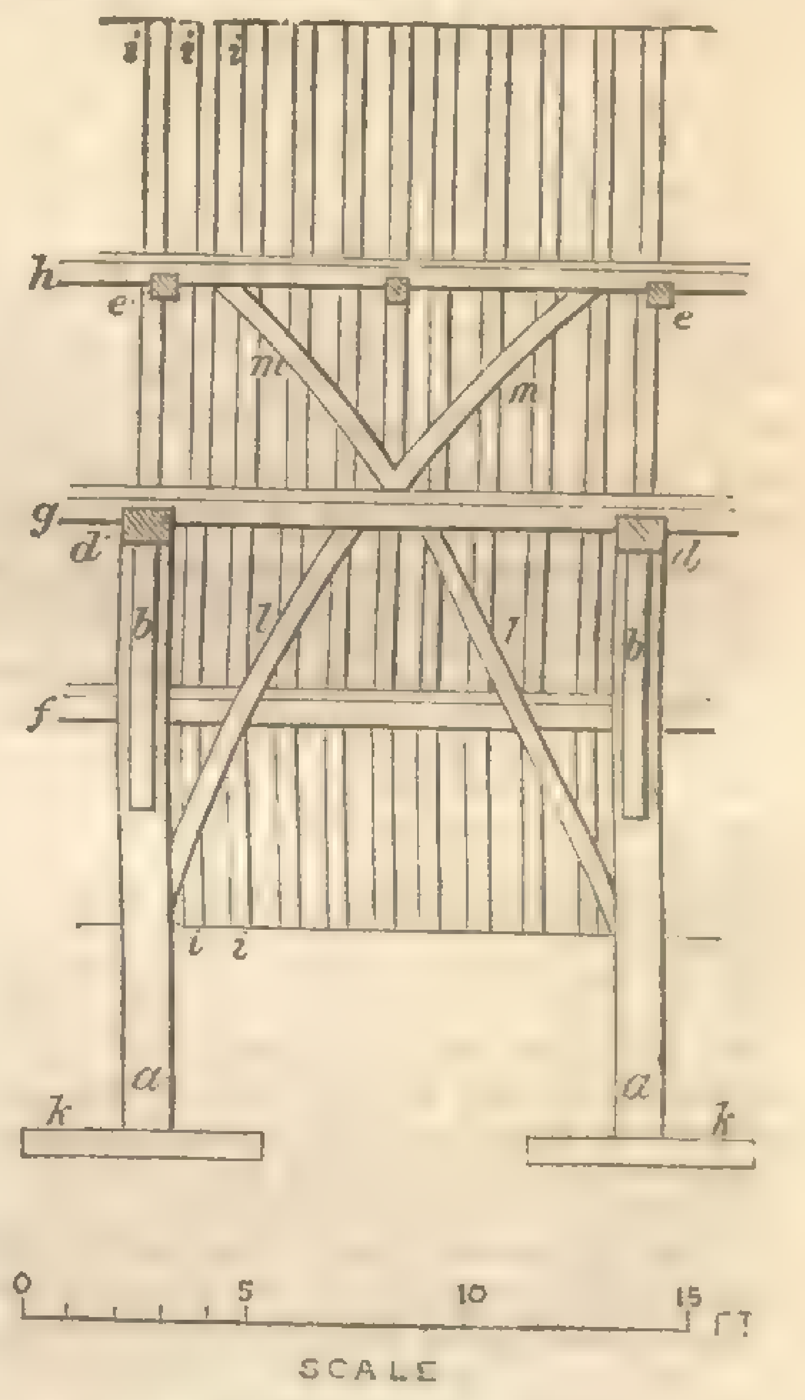
The following are the returns of other years, including the same particulars:—

	Dairy cows.	Per cow.	Cheese per cow.	Butter per cow.
For		£ s.	cwt.	lbs.
1855	30	15 0	3.23	62
1856	45	16 0	3.78	64
1857	55	16 10	4.1	62
1858	52	12 5	3.46	38
1859	60	13 5	3.27	39
1860	66	16 4	3.97	37
1861	71	15 0	4.06	34

It is proper to remark that the management of the farm has been in a transition state of late, from grazing to dairying, and that the increased produce per cow of late years is no doubt partly owing to the best pastures and the best winter food, formerly kept for grazing, being now available for the dairy herd.



BARN.
The following are references to the index letters:—
a a principals of the roof; section, 16 in. × 10 in.
b b main struts; section, 8½ in. × 6 in.
c c struts; *d d* beam, 14 in. × 12 in.



ROOF.
e e upper beams; *f f* purlines, 9 in. × 12 in.
g g purlines, 12 in. × 10 in.; *h h* purlines, 8 in. × 6 in.
i i rafters, 6½ in. × 5½ in.; *j k* wall plates.
l l, *m m* supports for rafters.

In 1858 and 1859 they could use the machine only about two months for want of water. The diminished yield in these two years is attributed in a great measure to the excessive dryness of the seasons; other circumstances affecting the cows likewise contributed to the result. In 1858 the price of cheese was not so good and the quality was inferior, especially that made during the autumn. Again, as to the last two years during which the drying machine has been abandoned, and the usual method adopted, there was 10*s.* per cwt. difference in the value of cheese in 1860 and 1861—the latter the lower. A correct account was kept these two years of the quantity of milk consumed by the calves, and charging the new milk at 6*d.*, and the skim at 4*d.* per gallon:—

30 calves in 1860 drank 72*l.* worth,
33 " 1861 " 76*l.* "

When the value of the calf when dropped, and whey, hay, oilcake, and Beans are added, it shows calf rearing to be very expensive, and only to be adopted with the view of improving the stock, at least on rich dairy farms.

The quantity of milk per cow was in 1860, 522 gallons; 1861, 550 gallons.

It will be seen from the Table that the dairy herd is gradually increasing. Just now there are a capital lot of 28 heifers—calves of 1860, which will come to the pail in the spring of 1863, and a lot of 30 calves feeding in a shed, which will be brought into the herd in the following year. A well selected small herd of ordinary Short-horn cows has been for several years served by pedigree bulls of Colonel Kingscote's breeding, viz., Harold (1853), Lionel (1856), Royalist (1857), Royal Duke (1859), and Honeycomb (1861)—two of them descended from *Honeysuckle* by Premier 7344, a capital dairy cow of pure Short-horn blood. In a few years the herd, originally Short-horned, will have so many crosses of pedigree blood as to be itself eligible for record in the Herd Book.

Much less than the usual extent of pasture land is annually mown on this farm. The great want of dairy farms—straw for litter and for fodder—although felt here, is not so much felt as on the generality of

* Extract from the Parish Register of Frocester:—"Hoc Anno 1574, die festo Laurentii Martyris, Serenissima Regina n'ra Elizabetha hoc n'rum oppidatum accessit et invisit, in coq. in ædibus Georgii Huntlei, armigeri, comiter benigneque, et sum'â cum humanitate tractantis, p'noctavit, indeq. Barkleyeum Castellum concessit."

* In illustration of the date and quantity of Chesnut timber in the county, it may be mentioned that within existing recollection a "grove" of such timber, about 2½ acres, was sold at North Nibley, the root cuts of which made scantlings of about 18 inches square, and that at Tortworth in the same county the old Chesnut still stands, now about 45 feet in circumference, which is mentioned by Sir R. Atkyns in his History of Gloucestershire, as a famous tree in King John's time, and by Mr. Evelyn in his Sylva, Book 3, Chap. 7, Page 282, 4th Edition, to have been so remarkable for its magnitude in the reign of King Stephen, as then to be called the Great Chesnut of Tortworth, from which it may reasonably be supposed to have been standing before the Conquest.

vale farms, owing to the considerable proportion of arable land. The straw—Bean and Oat and Wheat straw—is cut up into chaff along with a proportion of hay and mixed with pulped roots into a mess which is readily eaten by the calves and young stock. The dry cows receive straw and pulp alone, the cows in milk receive hay and pulp; but the consumption of roots and straw in this way diminishes the need of hay. The use of the mowing machine (Wood's) and hay-tedder has economised and facilitated haymaking. Take two or three years of ordinary hand-mowing as an illustration of this in the first place.

In 1851 the whole cost in manual labour, *i.e.*, mowing, making, carrying, ricking, thatching, over 123 acres, was 7*s.* 6*d.* per acre. In 1852 the cost over exactly the same extent was 8*s.* 8*d.* per acre.

In 1856 the whole cost of mowing and making (including some acres of Clover), "thatching and all," was 8*s.* an acre over 145 acres. In 1857 the whole cost over 154 acres was 61*l.*, or about 8*s.* an acre.

In 1859 the mowing machine was used in addition to the hay-tedders and horse-rake, and the whole cost of manual labour in mowing, making, carrying, ricking, and thatching 170 acres, was only 6*s.* an acre. The quantity of beer and cider consumed is about 2 gallons per acre during the whole process—but of course it and every other item of the cost varies immensely with the weather. When that is difficult the process is correspondingly tedious and expensive. But the figures given state accurately the whole cost incurred in the years which have been named. The following particulars of crops and labour may be added. The weight of hay per acre on this farm is put at from 20 to 30 cwt. per acre. The same men all the year round are employed, and extra hands (excepting a few women) are rarely engaged at hay making time. The men have the same wages as at other periods of the year, viz., from 11*s.* to 12*s.* a week. Cider is given to them in addition during the harvest work.

Let us add that in the case of two of the above seasons the labour of making 145 and 154 acres lasted between mowing and thatching from June 14 till August 1, and from June 5 till August 7, respectively. The cost of mowing by hand has been generally 2*s.* 6*d.* per acre, with 9*d.* extra for beer and cider. It is proper to add that the cost of thatching is a minimum at Frocester, which is provided with enormous barn room, so that comparatively few ricks are made.

At present there are upwards of 3 tons of Mangels daily pulped and given to 81 cows and heifers, besides a lot of calves. This is done by water power. The following statement relating to a period some time past represents very nearly the performance now of the small turbine by which the work is done—

"At the present time we are cutting 18 cwts. of chaff and pulping 3 tons 8 cwts. of roots daily, and occasionally bruising Oats and grinding corn by water power.

"To accomplish this work we are obliged to be careful and not waste any water. The quantity of water flowing into the reservoir per diem is about 500 cubic feet per hour, or at the rate of 84,000 cubic feet per week. From the level of the water in the reservoir to that of our turbine there is a fall of about 22 feet.

"The quantity of water driving the water-wheel, whilst we are

Chaff-cutting	92	cubic feet per minute.
Pulping roots	103	" "
Chaff-cutting and pulping together	114	" "

We can cut ½ cwt. of chaff per minute, and pulp 30 cwt. of Swedes in 27 minutes, or 30 cwt. of Mangels in 20 minutes.

Thus we find it takes to cut 18 cwt. of chaff, say .. 1¼ hours.
And to pulp 3 tons 8 cwt. of roots 1
Total, 2¼ hours' work for the food daily consumed.

"And in doing this it will be found on calculation that we use about 86,000 cubic feet of water per week, with the 22 feet fall, which is, I believe, not far from the average truth; though probably at the beginning of the week less water is used to do the work, as it then stands somewhat higher in the reservoir."*

Besides the magnificent barn and the permanent and substantial yards and sheds erected near it, covered stalls for 28 calves have been lately erected by Mr. Harrison which as tenant's work deserves description. A trough about 2 feet wide is laid 1 foot from the ground 42 feet long, and 14 calves on either side of it are tied to it at 3 feet intervals by neck strap, chain and ring. The boarded walls on either side are nearly close to them so that they come against them when backing out the full length of their chain—and the whole is roofed over in a very light manner with galvanised iron. There is an upper ridge line, and the side "walls" are not close up to the eaves, so that there is ample ventilation.

The herdsman opens the door at one end of the trough, walks along it to the other end, and sweeps it out. The width 3 feet between the uprights, leaving a convenient gangway. He then takes in successive baskets full of food—pulped Mangels, cut straw and hay and 1 lb. of crushed oilcake daily, and backs out distributing the contents as he goes. Lack of straw as litter is the only difficulty in the way of the entire success of this simple and economical arrangement, under which nevertheless the calves seemed to be doing very well.

Richmond & Chandler's chaffcutter, Bentall's pulper and cake breaker, Wood's mowing machine, and Barrett and Exall's and Ferrabee's hay tedders, Wood's combined reaper and mower are used on the farm; Hanson's Potato digger is also used, a capital tool where horse cultivation of the Potato in long straight drills is followed. An hour's work in the morning gives ample employment for 12 or 14 pickers during the day. The Uley cultivator, and Bentall's broadshare are also employed as tillage implements. The steam plough has been at work on Frocester Farm during the past two years. Mr. Harrison is the manager of the Gloucestershire Steam Plough Company. They now have five sets of apparatus at work, and are gradually getting into employment. The prices which they charge were given in our Answers to Correspondents in reply to an enquiry last week. As an illustration of the quality of the work that has been performed by them, it may be mentioned that Mr. Harrison has before now charged against himself for work done on this farm no less than 30*s.* an acre, besides fuel and water, for extremely heavy and deep work on stiff clay land. The experiment of a steam plough company is, in the vale of Gloucester, being tried under the unfavourable condition of small fields, and the majority of them pasture. There is thus much travelling of long distances from farm to farm, and the fields on each are not generally favourable to the work. Add to this the circumstance that a company's staff must be kept at a constant expense, notwithstanding only occasional employment, and this is enough to account for its not having yet realised a commercial success. When the arrangements are completed by which the work will be done with engines available for threshing as well as tillage, and when it shall have achieved more general popularity so as to command constant employment, it will doubtless present a more satisfactory report to its shareholders.

* Mr. Harrison's statement in "Morton's Handbook of Farm Labour." (Longmans).

Home Correspondence.

Tithe Rent Charge.—The average prices of grain for the seven years preceding Christmas last having been declared, a more complete reply can now be given to the inquiry of "X. Y. Z." in the *Agricultural Gazette* of the 30th ult. The Tithe Commutation process is as follows:—When either by voluntary agreement or Commissioner's award the annual sum to be taken as the worth of the tithe is determined, that sum is divided into three equal parts; one such part to be reckoned in bushels of Wheat, one in Barley, and one in Oats, at the average prices of these three species of grain for the seven years preceding Christmas 1836; that is to say, Wheat, 7*s.* 0½*d.*; Barley, 3*s.* 11½*d.*; Oats, 2*s.* 9*d.* per bushel. The number of bushels so determined is fixed for ever, but the worth of them varies according to the average taken at the end of every year of the prices of grain for the seven past years. Accordingly in the *London Gazette* of the 10th instant the corn averages for seven years to Christmas 1861 were published as follows: Wheat 7*s.* 0⅝*d.*, Barley 4*s.* 7¼*d*, Oats 3*s.* 1*d.* per bushel. Let then "X. Y. Z." bear in mind that the pounds, shillings, and pence of his tithe rent charge as apportioned, is only another name for a certain number of bushels of Wheat, Barley, and Oats, which number he may easily ascertain by dividing the sum apportioned on his land into three equal parts, and calculating how many bushels of Wheat at 7*s.* 0½*d*, Barley at 3*s.* 11½*d.*, Oats at 2*s.* 9*d.* each part would purchase. These are the numbers of bushels of the three several kinds of grain he always has to account for, and if he takes the prices as declared in the *London Gazette* of the 10th, which are quoted above, he may readily calculate for himself what his tithe payments will be for the present year 1862. It may be useful here to say that it is a mistake to suppose that the dross and inferior qualities of corn not being taken to market, and therefore not being included in the averages, inflicts an injustice on the tithe payer. It is quite true if the rubbish were sold the corn averages would be lower, but then it must be remembered that if the averages had been lower the fixed number of bushels would have been greater in exactly the same proportion, which would have brought it to precisely the same thing. If by some other mode of taking averages the results had been only half what they are, there would have been twice as many bushels to pay upon, and thus it would make no difference in the sum total to be paid. So long as the mode of averaging is the same no injustice is committed; but it would be manifestly unfair to fix the number of bushels by a high method of taking averages, and afterwards calculate the payments per bushel by a lower method. *A. B. C., Jan.* 20.

Smith's Steam Grubber.—In Mr. Houldsworth's letter I observe that, owing to imperfections in the ground pulleys, rapid wear of the sockets and breakage have been the result. This I very much regret; but in justice to myself, permit me to state, that as a farmer only I am obliged to get my machinery made by manufacturers as I best can. It was they who supplied Mr. Houldsworth's tackle, and it is they alone who are responsible for the imperfection in pulleys, for the necessity of steel bushing them had been pointed out before the set of tackle in question was supplied. All pulleys now sent out under my directions are steel bushed, and have been since I withdrew from the Howards. The following extract from Mr. Houldsworth's letter deserves the greatest attention:—"The weight of a 12-horse engine is so great, that if I had to order another I would prefer a double cylinder of 7 inches = 10 horse power. That would be quite effective on all land up to the very heaviest clays in a wet state, and would not so much endanger the breakage of the rope." Depend upon it a heavy engine will ever be found a lumbering thing in a ploughed field, especially in wet weather, and a too powerful engine will be destructive to any ropes that can be made. *William Smith, Woolston, near Bletchley Station, Bucks, Jan.* 21.

Societies.

Wirral Agricultural Improvement.—At the late meeting of this Society Mr. W. B. Burnham, the Honorary Secretary, read the report for the past year.

During the past year the subjects considered have been as follows:—"The Agriculture of Lincolnshire," by Mr. Lockhart; "The Spring Work of the Farm," Mr. R. Jackson; "Implements suited for the District," by Mr. Russell; "Application of the Manure of the Farm," by Mr. Burnham; "Manuring of Grass Land," by Mr. Simpson; and "Influence of Prices on Farm Management," by Mr. Turner.

In addition to these subjects, the Society has this year quite stepped out of its beaten track, by its members each reporting the leading agricultural features of the township in which he resides, and of its immediate neighbourhood. This information has been arranged and enlarged upon by one of our leading members, and will, when a few additional particulars have been sent in, form a complete history of the agriculture of Wirral at the present time. This document the committee have great confidence and some pride in feeling they can recommend as a record well worth placing in the hands of the printer, for private or even public circulation; for it will give a true picture of the present condition of the locality—valuable for comparison with past histories of the kind—showing the progress already made, and its beneficial results to all concerned in those improvements, and also showing where and how much still requires doing; and in future times, it will stand as a most valuable chronicle of the agriculture of the hundred in 1861.

For the session of 1862—A sub-committee was appointed to select profitable subjects of discussion for the monthly meetings, and the names of members to introduce them. The list it is hoped will prove sufficiently attractive to draw together a numerous audience. The following is the programme:—

"February.—'Best means of improving poor meadows.'—*R. Jackson.*

"March.—'The breeding and rearing of farm stock.'—*Burnham.*

"April.—'The cheapest mode of obtaining portable manure'—*Wm. Turner.*

"May.—The amount of cottage accommodation required on an arable farm'—*Russell.*

"June.—'The relations between the employer and the employed in agriculture'—*Hope Jones.*

"August.—'To what extent can we profitably use steam power on the farm?'—*James Lockhart.*

"October.—'Are restrictions in the ploughing of Grass fields profitable to landlord, tenant, or the public?'—*Russell.*

"November—'The winter feeding of stock'—*Mr. Richard Barton.*

"December.—A silver cup or medal will this day be awarded to the member who produces the best essay on and review of the subjects just named, and the discussions thereon, during the session."

The committee earnestly recommend members to make arrangements for attending on the appointed day, for discussion, as, although it must be admitted that the member introducing a subject will, himself, be much benefited by the examination and thought requisite for the production of the paper he reads, it would, were he sure of a good attendance of practical men, stimulate and encourage him to sift and master the subject still better, for his own benefit, and that of his audience. The last mentioned subject on the list, viz., "the review of the year's discussions," is a novelty, which it is fairly anticipated will effect some good, and also create an interest in your proceedings. It is hoped there will be a strong competition, and that the essays or reviews may so epitomise the work of the session that the Society may be enabled (if thought advisable) to publish one or more of them, with little additional labour, and so give the benefit of your opinions and practices to the public. The Society is based upon broad grounds of general usefulness to the district. It will persevere in its labours, fully convinced that if agriculture is to keep pace with the general progress, and take the rank it ought socially to hold, no fears should attend the pushing on of well-considered improvements.

Reviews.

Metropolitan Board of Works. Proposition from the Hon. W. Napier and W. Hope, Esq., V.C., for a Concession of the Sewage of the Northern Area of the Metropolis. Ordered by the Main Drainage Committee to be printed.

A Letter to John Thwaites, Esq., Chairman of the Metropolitan Board of Works, from the Hon. W. Napier and W. Hope, Esq., V.C. E. Stanford, 6, Charing Cross.

In these two pamphlets we have first an explicit account of the use proposed to be made of the North London "dry weather" sewage, and of the conditions under which it is desired to obtain a concession of the sewage for this purpose. And secondly, we have a remonstrance addressed to the Chairman of the Board of Works against a postponement of the scheme, which threatens to be fatal to it, if not finally, at least for a year to come.

The plan, shortly described, proposes to take the sewage from the main drain near Barking along a culvert 10 feet in diameter and 37 miles long, branching then towards Dengie Flats and Foulness Sands respec-

tively, where some 20,000 acres, now for the most part covered at high water, lie ready for embankment and reclamation.

"There will be but one lift on the line of culvert, at about the ninth mile from Abbey Mill, and in a deep cutting. The force required will be about 40-horse power per foot, or 1200-horse power for the lift of under 30 feet.

"As during the earlier period of the reclamation, a part of the sewage may be disposable, it is proposed to arrange for its distribution to farms on the line of the Culvert, at such places and distances from London, and from populous districts, as will preclude all possibility of nuisance.

"The gross amount of the estimates for the Culverts, sea walls, irrigation, and pumping, is 2,000,000*l.* sterling.

"It is proposed to incorporate a company, under the provisions of a Bill now to be deposited, for the subscription of the capital and the working of the scheme, should the necessary grants be obtained from the Metropolitan Board and the Crown."

The conditions under which the company is to be formed include—

"The right of the company to the sewage absolute and exclusive, for a period of 50 years.

"All net profits realised by the company in excess of 10 per cent. on their total outlay, to be equally divided between the company and the Board of Works.

"On giving seven years' notice, the Board to have the right to take over, at the expiration of the grant of 50 years, the whole of the company's works and land at a valuation, such valuation in no case to be below the total original cost.

"In the event of the Board not wishing to exercise this right, a new concession of the sewage to be granted to the company for 50 years on the same terms."

These conditions were allowed by the Drainage Committee to whom the subject was remitted, and sanctioned by their engineer, Mr. Bazalgette; and the promoters of the scheme were about to deposit, in accordance with the standing orders of the House of Commons, plans and estimates at a cost already incurred of several thousand pounds, in order to the obtaining of a Bill during the coming session, when they are met by an abrupt and entirely uncalled-for opposition at a general meeting of the Board, by which the consideration of their proposal is postponed until a period which throws the whole affair back for a year.

In the second pamphlet named above an exceedingly good-tempered, straightforward, and well-written remonstrance is addressed to the Board of Works on this subject. Alluding to the discussion which resulted in this untoward way, the writers say :—

"Seeing how it was likely to end, we took occasion to announce to the Board, and we now repeat the statement, that we were prepared to deposit, by the 15th, in accordance with the standing orders of Parliament, a sum of money amounting to 4 per cent. upon our estimates, or 70,000*l.*; but adding, however, that if the provisional concession were not granted, and the discussion were postponed until after that date, we should certainly not incur this additional risk and expense, but should rather allow the matter to stand over, if necessary, until next Session. We have determined to adhere to that decision.

"The Board were clearly informed that to postpone the discussion for a month was, in reality, to postpone the question for a year, therefore we are not open to complaint on their part in respect of this delay, and we feel sure that the public will support us in our decision, for although they will doubtless regret the loss of another year, which will be more or less mischievous, they would certainly not expect that private individuals, who have already put themselves to great trouble and serious expense in the prosecution of a truly national object, should incur this great additional and wholly unnecessary risk."

There is still however a hope expressed that "if at the adjourned meeting of the Board the concession is granted, it may be possible to obtain a dispensation with this particular order, and an enlargement of the time for making the deposit, so as to carry the measure in the ensuing session."

It certainly is very desirable that the project, or some such scheme for utilising so large a supply of manure, should not be delayed.

Mr. Dean, well-known as an architect and land-agent, and also as an author on this subject, sends the history of this injurious opposition to the *Economist.* He says :—"Notwithstanding the favourable opinion of the Engineer to the Board as set forth in his report, and utterly regardless of the time Messrs. Napier & Hope have devoted and the large sums of money they have expended in perfecting their scheme, and in compliance with the standing orders of Parliament, I now learn, from a printed letter addressed to the Chairman of the Metropolitan Board of Works by Messrs. Napier & Hope, that this Board have postponed the discussion of the scheme to a time too late to proceed with the Bill during the ensuing session of Parliament.

"As one of the public and as a ratepayer, I protest against this negligence of a subject of national importance, and one in which ratepayers have a pecuniary interest."

On which the *Economist* remarks as follows :—

"There seems to be every reason why such a scheme, involving as it necessarily does a large subscribed capital, should not be needlessly postponed. The present time is favourable for its organisation from the existing abundance of money, and in large operations of this sort requiring the combination of many capitalists, no opportunity of commencing when circumstances are promising and the money market is 'easy' ought to be neglected. In such improvements, postponement is not seldom equivalent to abandonment. We believe, however, that this will not occur in the present case, for the advantages of some plan for turning the drainage of London to account are too obvious to be long overlooked."

The Fourth Agricultural Tour in England and in Scotland, made in 1859 *by* Le Comte De Gourcy, Paris 1861.

This book, just published, is full of well written and very clearly described details of the author's observations on many of the most perfectly managed farms in our country, and also in France. We take at hazard two or three examples of his accuracy of observation, and evident capability of promoting, by his illustrations and remarks, the extension of agricultural knowledge and improved practice not only in his own country, but in ours. Every page is a useful report. We shall select from them at least specimens of what they are worth, translating after a free and easy style as we proceed.

Early in September (writes the author) I started for Rothamsted, near St. Alban's, for the purpose of visiting Mr. Lawes, that distinguished experimentalist in agricultural chemistry and scientific husbandry. In carrying out his investigations this gentleman has expended very large sums of money annually, since he commenced his comparative experiences in agricultural science more than 20 years ago.

Mr. Lawes and his manager being absent, Doctor Gilbert, who has assisted Mr. L. during 16 years in his researches, had the kindness to show me the large and handsome laboratory, which is in a suitable building, in which a dozen persons are employed in preparing, making, and registering analyses. The building has been erected by means of a subscription of 4000*l.* from agriculturists of the surrounding counties desirous of paying this tribute of respectful acknowledgment to Mr. Lawes for his untiring perseverance in promoting the interests of agriculture. Reports of analyses fill an immense number of registers.

Not far from this is a large barrack or combination of dwelling-rooms for the workpeople, each lodging house having a ground and upper floor with its own separate staircase.

There is also a building with ground-floor only, divided into several rooms, of which one is devoted to lectures and addresses, which are delivered there weekly in the evening, and the other rooms serve for the accommodation of members of the workmen's club, where they can have refreshment at a moderate charge, which prevents them from going to beer-houses. This club-house is surrounded by small field allotments, which Mr. Lawes lets to them for garden husbandry.

On the farm, the stubbles in drill were very thick and clean, showing that they had been carefully horse-hoed—the green crops very fine and well hoed. Mr. Gilbert pointed out the results of 16 years' culture of allotments of argillaceous but stony land, growing Wheat during all that time. No. 1 without manure, the others manured (with different manures). The same treatment was applied to other lots for Barley, Oats, Beans, Vetches, Clover, Mangels, Turnips, &c. The Wheat ground at last became so foul, especially with the wild Oat, that the Wheat was subsequently sown in high ridges a foot wide, leaving the intervals for fallowing and cleaning.

The Beans having ceased to produce at the end of 10 years, other crops were substituted there during 4 years, and afterwards the re-culture of Beans commenced on the same lot. Mangels and Turnips which had not been manured, at length died off in the same way. Successive cropping with Clover had a similar result (though supplied with plenty of various manures), excepting a few of the first year's. The Clover came up well, but died off in winter.

On the meadows various fertilisers were employed; From parts which received ammoniacal manures during many successive years, all the leguminous plants disappeared, while other allotments which were top dressed with mineral manures were covered with them. However the close Grasses, though of middling quality, of the former divisions of the meadow land, are more productive than the portions which are covered with leguminous herbage.

The successive culture of Wheat at Lois-Weedon by the Rev. Mr. Smith, during 13 years, which M. De Gourcy inspected with great admiration, is conducted on a very different principle from that pursued in the foregoing experiment of Mr. Lawes, fresh aliment being annually supplied in the former case by the deep digging and bringing up of mineral substances; besides, there is in fact a bare fallowing every alternate year of the whole field. M. De Gourcy has explained the well knowndetails very clearly.

Let us run to Cambridgeshire with our traveller and read what he says of a farm in that country. He visited Mr. Jonas Webb at Babraham, near the Shelford Station, to examine this gentleman's celebrated stock of Shorthorns and Southdowns. There M. de Gourcy saw a great number of the 160 Durhams, which were collected for the purpose under cover, afterwards some young stock were viewed in the byres, &c. He tells us that Mr. Webb commenced his stock breeding 25 years ago, and has unsparingly purchased the most perfect specimens; here, however, he is mistaken, for Mr. Webb has not purchased but bred the improvers of his flock. With respect to sheep management, we are informed his system has been to select from his large number of rams those of the highest quality, and to form several separate lots of ewes, each with the nearest possible similarity in shape and good qualities, as also in their defects, and then to introduce to each lot rams possessing the qualities wanting in the ewes of that lot, and which fail in those particular qualities in which the rams have especial merit. Thus do the celebrated breeders improve their breeds. To do this a large stock is necessary at starting, and the best rams must be supplied at any cost. So also does Mr. Webb act with regard to the Durhams. He has such a large supply of bulls that in one year he has sold 35. He has three farms, and collects in each the cows which are most nearly alike, and has select bulls for them according to the system explained. Mr. Webb had at that time sold a young bull, price 150 guineas, and 4 in calf, price 408 guineas, for the New Zealand market. One of these pure Durhams, aged 15 years, had produced 13 calves which were successful. Another cow, 11 years old, had produced 11 calves, a 7-year-old, 7 calves, and a 6-year (at 4 calvings) had brought forth 8 calves. The cows will of course sometimes miscarry. When this happens the cow is separated from the others lest they should be led to do the same. The bull is not introduced to the unsuccessful cow until 10 months have lapsed from the day of her mishap. These details convinced M. de Gourcy that with judicious care the Durhams are as prolific as any other breed whatever. He saw seven or eight out of 13 lots of sheep—each like to like. Mr. Webb had 700 breeding ewes and 400 rams, including the male lambs reserved for breed. He has sometimes 150, but more frequently 130 lambs reared from 100 ewes. He has let rams for the season so high as 250, but the average is between 20 and 25 guineas—and Mr. Webb sells for exportation to foreign countries good rams from 15 to 18 months old at the following prices—10, 15, and 20 guineas, and older rams from 5 to 10 guineas.

The writer also notices the fine stock of Suffolk horses and swine. He expresses surprise and admiration at witnessing in one place such pre-eminent skill as the breeder of the most improved stocks of cattle, horses, sheep, and swine, and such complete and extensive culture. The book is full of such reports as these.

Farm Memoranda.

NORTHUMBERLAND FARM.—The farm to which the following remarks apply, and a report of which will in future from time to time appear in this Paper, is situated in the eastern part of the Northern division of this county—on the east of the line of the North Eastern Railway, and on the very verge of the coal field. Its aspect is south and east, and its general appearance flat, though with a gentle inclination towards the sea, from which it is distant one mile. The soil varies in character from the "clayey" to the lighter description of loam, of considerable depth, with an honest and sound clay for a subsoil, and incumbent on the new red sandstone. The farm at present consists of about 600 acres, of which 360 are arable, and the rest in permanent pasture, and mostly of a very superior quality, 200 acres of it being able to fatten a bullock per acre.

Though 9-tenths of it has been drained and deeply cultivated, yet it is still of too tenacious a quality to allow of eating the roots on by sheep. The fields vary extremely in size, but average from 15 to 20 acres each, and are divided by neatly switched Thorn fences, except in the Grass fields, where the old-fashioned mounds with a Thorn on the top appear, and which are best known in the hunting field by the term "on-and-off fences."

It is cultivated on a four-course rotation, viz., (1) Turnips; (2) Wheat and a small portion of Barley; (3) Clover; (4) Oats; sometimes on the lighter soils a five-course is substituted by allowing the artificial Grasses to remain a year longer. A certain breadth of the Clover quarter is generally taken for Beans, which is considered an excellent preparation for Clover, so that by alternating a portion of the Clover break with Beans, the former only occurs once in 8 years, and thus ensures a more certain crop. When in good heart, 4 to 6 qrs. of Wheat, 5 to 7 qrs. of Oats, 6 qrs. of Barley (not essentially a Barley soil, the quality is coarse), $4\frac{1}{2}$ to $5\frac{1}{2}$ qrs. of Beans, 20 to 30 tons of Turnips can be grown per acre. The Turnip crop this year far exceeds the average in bulk and weight. The farm buildings are modern and commodious, the arrangement for the cattle being on the open yard and box system; an increased number of boxes are about to be added as a means of economising food and litter, and improving the manure. A fixed steam-engine, 6-horse power, drives the threshing-machine, chaff-cutter, corn-crusher, and other machinery, and the manual labour in the barn is chiefly performed by women. Three good public roads run through the farm, which

thus considerably facilitate the transport of manure, grain, &c. As the roots are almost entirely drawn from the land, a considerable quantity of fat and store cattle are kept; of the former there are 50 during the present winter, consuming Swedes, Bean-meal (with and without cake), Oat-straw and a little hay, producing simultaneously with beef a superior quality of manure. Within the last few years improved machinery for the cultivation and harvesting of the various crops has been introduced with great pecuniary advantage, not the least important of which may be mentioned Bentall's broadshare, Garrett's drill and horse-hoe, Burgess & Key's reaping machine, &c. The broadshare is here used not only in the autumn for the shallow paring of stubbles, but also, and most effectually, in the cultivation of the spring fallows at a greater depth; the cereal crops are all drilled with Garrett's drill and hoed by the horse hoe, which also serves as a means of covering the Grass seeds; the reaping machine at present in use has cut upwards of 1000 acres of corn. Swing ploughs drawn by two horses abreast are universally used.

The sheep stock consists of about 250 head of Leicester and half-bred ewes, and their produce, which are sold off as fat at about 15 months old, with the exception of about 40, which go off early as fat lambs. About two score of high-bred Leicester ewes are kept for breeding rams; the rest are sold off in the autumn of each year to the butcher, and fresh ones purchased. A Short-horn breeding herd was formerly kept in conjunction with a feeding stock; the former has now been abandoned in favour of an entire system of feeding. In summer from 70 to 80 head of 3-year old pure Short-horn bullocks and heifers are fed off on Grass; the remainder of the pasture land being grazed by sheep, and store cattle intended to come into the boxes in the autumn. Every autumn of course a number of stores are purchased to winter in the straw-yards, and be fed off during the following summer. The pigs are of the "Improved Yorkshire and Cumberland" breed, and have attained considerable celebrity, inasmuch as they are now sold to all parts of the kingdom; only about four breeding sows can be kept, as pig accommodation is extremely limited. The horse power amounts to 15; perhaps a somewhat large force in proportion to the land in cultivation, but owing to the difficulty and danger of working strong land in a wet season, an extra number must be kept to keep the work forward; besides this, the cartage of sea-weed and fish refuse is important and considerable.

The staff of labourers consists of a foreman, a shepherd, a cattle-man, 7 ploughmen, and 2 hedgers; besides these there are 2 boys and from 8 to 10 women, who hoe and pull all the Turnips and work in the barn, &c. The average wage of the men is 15*s.* per week, with a house found on the farm rent free, coals carted, a certain quantity of Potatoes, and a house and litter for a pig. In some cases the men are paid by a corn wage, and food found for a cow (in lieu of a cow 5*s.* per week), which is a great boon to a man with a large family. The boys and women receive 10*d.* and 1*s.* per day for ordinary work, and in harvest from 1*s.* 6*d.* to 3*s.*

About 20 miles distant is the town of Newcastle, possessing two of the finest markets for fat stock and corn in the kingdom; at present the average weekly supply of cattle in the fat market is 1000 head, with sheep and swine in proportion. These are bought principally for shipping purposes on the Tyne, the colliery districts in the neighbourhood, and the manufacturing parts of Yorkshire and Lancashire.

College Farm, Cirencester.—In commencing our report of the operations on this farm, of which we gave an introductory sketch a short time since, we have to notice the favourable character of the weather, particularly during the early part of the month; and whilst field operations have been less obstructed than usual, we have still had those rapid changes of temperature, and an amount of rainfall sufficient to pulverize and sweeten our stiffest soils; so that should the next month be dry and healthy, spring sowing will be very successful. The dry weather which characterized the latter half of December continued sufficiently long into the new year to allow of our drilling Nursery Wheat after roots fed off. The policy of planting so late is very questionable as a general rule, and frequently a better crop would result from February sowing, but the ground was healthy, operations slack, and it was getting on with the work. The usual work of this season has been in progress whenever weather permitted. One large field of stubble (28 acres, newly occupied), has been partly ploughed about 5 inches for Vetches, and partly pared with Wooff's parer at a depth of 1½ inches, with a view to burn the surface, which is weedy, and then lightly ploughed for early Turnips. This soil is shallow and light, and either very early or deep ploughing would be injurious. We are ploughing 16 acres for Spring Wheat after roots fed off. This is being done with horses, as the land is light and we have not enough work open to make it worth while to take out the steam plough, which has been laid up during the whole of the month.

Manure has been carted out on the seeds at the rate of 8 tons per acre, and a heavy dressing of compost (soil, vegetable matter, and manure) has been applied to Grass land. We have altered our system with regard to the application of manure, being convinced that on the light land especially it can be more economically applied to the seeds in winter than for root crops in the spring. The advantages are economy of labour at an important period, increased crop of Clover, and better preparation for the Wheat, whilst a better quality and equal quantity of Barley will follow the roots grown with artificial manure only. Cleaning out dikes and repairing gates and fences completes the field operations.

Preparing corn for market and food for the stock has occupied a considerable part of the month. The crops yield quite as well as we anticipate, both Wheat and Barley producing an average of nearly 40 bushels per acre. The quality of the Wheat is superior, and though the varieties grown, Browick, Viper's Wonder, &c., are coarse Wheats of the Spalding class, the weight per bushel has in several instances reached 64¼ lbs.; and weighed up 62lbs. (a system which is rapidly extending in our market) has made up to 60*s.* per qr.

We proceed to notice the live stock on the farm, commencing with the *Horses*, at present 10 in number. These are generally worked in pairs, kept in all the year round; each animal has a loose box, and is fed from a gangway by a feeder, who also attends to the pig stock. The food consists of bruised Oats, cracked Beans, and straw chaff, with a handful of brewer's grains in each feed, about 1½ bushel per week, to each horse; 2 bushels of Oats and 1 peck of Beans is the average winter feed. They have as much Barley or Pea cavings, to rack up with, as they will eat clean. No hay is allowed, and yet the horses are in fine sleek condition, and able to do a good day's work. At this time of the year the hours are from 7 to 12, and from 1 to 5. As Spring comes on a few Mangels, pulped or finely sliced, are substituted for grains, to moisten the chaff, and this goes on until Clover can be mown for them. It may be thought that the allowance of corn is high, but one great object is to save hay, which is always a scarce article on the farm, and to have the horses in good condition against the heavy work in Spring. Each carter has to farm his stables, water and dress his team, for which purpose he comes at 6.30 A.M., and remains till 5.30 P.M. All the feeding is done by the horse feeder, who has his feeding house adjoining the stable.

Sheep.—The fatting and stock tegs, together with a few barren ewes, in all about 270, are consuming Swedes, which have been stored with the tops and roots on in hills. The weather has been on the whole favourable, and we never had our sheep forwarder in condition, which is fortunate, as our keep will not be at all too abundant. Up to a recent period they received ¼ lb. of Nut meal (the produce of the Palm-oil manufactory), with hay and straw chaff (equal parts) daily, and with a liberal supply of cut Swedes were doing extremely well. Being unable at the time to obtain a fresh supply, we were obliged to substitute half a pint of Oats and a little Bran, which, however, did not do the sheep nearly so well, proving the high feeding value of this comparatively new food. We hope that when the fresh supply arrives which we are promised, the change will be very marked.

The ewes and theaves, 200 in number, were on yellow Aberdeen Turnips until lately, with Barley chaff and Bean straw. They are now eating Swedes, still having Bean straw, of which they are very fond, and will eat up a very large proportion. Every night they are driven into a straw yard made in a corner of a field, and well littered every day with Barley straw; of this they pick a little, and at any rate enjoy a dry sheltered lair, which we think very important at this season, especially with theaves. A large quantity of manure can thus be made just in the spot where it will be wanted a year hence for putting in the young seeds. The advantages of this system would be especially felt in a wet or very severe season. With the exception of the theaves, which have had a mixture of Barley and hay-chaff, our ewes are ignorant of the flavour of the hay this season, nor will they have any until brought to the ewe pen about 10 days before lambing commences, and then some excellent green-cut Pea-straw will be supplied with the hay. We are anxious to substitute well made straw for hay as far as we can with a due regard to the health of our stock, in order that the mowing of our seeds may be avoided as far as possible. So far the flock has been particularly healthy, and we have not had one death since the ram was put out. After the ewes have lambed they will require to be well fed.

The horned stock on this farm are not so important as the flock. The soil is not adapted for pasture, and summer keep is often very short, and therefore if our only object was profit we should do wisely to give up breeding cattle altogether, and only purchase such stock at the fall as were required to consume our straw and make manure. As it is, however, necessary to represent this branch of farm management, we keep a limited number of cows, about 9 or 10, and by using good blood endeavour to breed up such stock as can be sold at remunerating prices. Anything like high breeding would under the circumstances be out of the question, nor do we think that it would be desirable even if practicable. We commence breeding at three years. The cows mostly calve during winter and early spring, and so soon as they are dried off are placed in a sheltered yard with a warm shed attached, and have roots and straw chaff, with long straw in cribs *ad libitum*; this food is continued until about two weeks from calving, when the animal is separated and placed in a roomy calving house, and supplied with some hay in addition. The young stock calves of last spring are run in yards and get plenty of nourishing food. It is difficult to do them too well, and a little extra outlay in cake or other artificial food at this age is amply repaid by their thriving condition at a later period. We do very little with fatting beasts; when there is no pasture on which to freshen them up it seldom pays to feed; any draft or cull animals are made out in this way, and occasionally we purchase if an eligible opportunity occurs; but as a rule, if extra horned stock is required, we prefer to buy in calf heifers.

The Pigs are all of the medium size black Berkshire breed. A good deal of attention has been paid to this stock, the choice of breed is the result of careful trials with the Yorkshire and Improved Essex. The large quantity of wash from the College enables us to keep a large stock of breeding pigs. The best of the produce, male and female, are reared for breeding purposes and disposed of either when weaned or at from four to six months old. The remainder are either pork'd or made into bacon, at from 10 to 12 months old, when with good keeping they average 11 to 12 score a pig; weights that are always selling. We prefer the black Berkshire to most other breeds on account of their hardy character. *John Coleman, Royal Agricultural College, Jan.* 28.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, Jan. 30, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Barometer corrected to Freezing Point at Mean Sea Level.	Reading of Dry Bulb Thermometer.	Reading of Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday	24	29.43	46	44	S.W.	4	2	49	35	47	23	0.27	36½	39
Saturday	25	29.66	43	43	S.W.	1	8	52	41	56	38	0.02	38	39
Sunday	26	30.27	35	33	S.W.	1	1	45	30	47	26	0.29	38½	39½
Monday	27	30.22	40	28	S.	1	5	46	34	55	31	...	38	40
Tuesday	28	29.83	40	39		3	8	48	35	53	32	0.11	33	40
Wednesday	29	29.77	47	46	S.W.		8	52	40	53	30	0.28	39	40
Thursday	30	29.77	49	47	S.W.	2	5	54	47	54	44	0.11	41	40

Calendar of Operations.

JANUARY.

Mid-lothian Farm, *Jan. 27th.*—The frost, which came on so seasonably at the close of the year for carting purposes, went off equally so; and the manure led out and laid on the land has been all spread and ploughed in with a furrow across the line of ridges, which it is generally advisable to do when it can be attained. The soil wrought well, being quite dry enough. Ploughing of Hay stubble, and two or three years old pasture for Oats now proceeds. It is generally advisable to allow the ploughman to have the feather of the sock or share slightly raised at about 4 inches behind the point. The coulter also may be somewhat bent to give what is called *set*, by which means the furrows can be more closely impacted together, and the Grasses more effectively buried. When this alteration of the irons, i.e. the share and coulter are called, is carried too far, however, false ploughing is the result, a description of work neither advantageous nor desirable. The other farm work has consisted in threshing, carting grain to market, that is Barley and Oats. Threshing is done entirely with the women workers, save the engineman and feeder. Potatoes also are being disposed of at 5*l.* 5*s.* per ton; the labour which the putting these up into bags entails is considerable, 7 cwt. per day each person being the full amount of sound Potatoes, and this is from the stores which had been all separated at lifting time; 1¼ ton per acre is the full average of saleable Potatoes now remaining. The worst diseased ones are unfit for food, but many of those only partly affected are greedily eaten by cattle. Indeed the calls upon the Turnip crop have been greatly less from the large supply of this root. Sheep have done very well when feeding on the Turnip break. Sickness, however, has cut off several after they began so rapidly to mend. A good safe sheep bath free from mineral poisons is still a desideratum. Turnips promise to be plentiful should no intense frost destroy them yet remaining in the fields. With mutton at 8*d.* per lb.

beef at not much less, notwithstanding the high price of lean stock and Linseed cake, the returns for keep are fair. Guano is now arriving and the labourers have been busy preparing the mixture for surface dressing the Oats and Barley land; the proportions used are two of Peruvian, one of Bolivian, one of superphosphate, riddled, beat fine and damped.

SOUTH NORTHAMPTONSHIRE, *Jan.* 29.—The present month has been unusually mild. Winter ploughing is generally in a forward state; we finished breaking up our fallows by the middle of this month; the work was done by horses to the depth of 10 inches. The whole of the fallow break having been autumn cultivated, it now lies in a favourable state for the rest of the spring frost. The open weather, with plenty of moisture, has been favourable for the growth of the autumn-sown Wheats, which everywhere look healthy and in a forward state; in some cases fears are entertained that they are even too much so for the season of the year. There will again be a considerable quantity of Spring Wheat sown in this neighbourhood. Sheep on Turnips are doing well; the fattening tegs receive an allowance of ½ lb. of Linseed cake each per diem; and the more forward shearlings the same quantity of cake and ½ lb. of old Beans; each lot has plenty of cut chaff, ¾ lb. of Barley straw, ¼ lb. of hay, and as many cut Swedes as they can consume. The breeding ewes we do not fold on the Turnips, but throw them some Swedes or Mangels on the Grass; lambs with ½ a pint each per day of black Oats and plenty of cut chaff. We have lost a less number of sheep than usual this season; from the 1st of November till the present date from a flock of 750 fatting sheep and tegs and 300 breeding ewes we have only had to register eight deaths. The young stock in the yards are doing well; their bill of fare is 2 lbs. each per day of Linseed cake, with as many pulped roots and cut chaff as they can eat. Our greatest difficulty has been to find a sufficient quantity of litter to keep them clean, as we cut most of our straw into chaff and so mix with pulped roots. *G. M.*

Notices to Correspondents.

ANALYSES: *J. B.* Unless you are a member of either of the National Agricultural Societies, whose chemists will there give you the information you seek on the less costly published charges, the expense of a complete analysis of a manure or soil may be from 2 or 3 guineas up to 10*l.* 10*s.* We see Dr. Voelcker charges 7*s.* 6*d.* for an opinion of the genuineness of a guano or bone dust; 2*l.* 2*s.* for the complete analysis of guano, nitrates, or bone ash; 2*l.* 2*s.* to 5*l.* 5*s.* for that of an artificial manure; 5*l.* 5*s.* to 10*l.* 10*s.* for that of a soil.

BAILIFF: *Wembly.* The man to whom we referred is probably not able for the position you offer. We will write by post. He is better adapted for a place on a very small home farm, where he would himself do a great deal of the work. He is thoroughly trustworthy, and himself knows all kinds of field and barn work—cattle, sheep, and pigs.

CORN AVERAGES; *Tithe Owner.* The injustice is that the rent charge is calculated on the corndealer's returns, not on those of the farmer. The same corn may be sold several times, but it is only its first and cheapest sale, that on which the subsequent sales give a profit to the dealer, that the tithe ought to be calculated on. It is the price to the grower on which his ability to pay tithe depends; and it is the grower's return of corn sold that alone therefore ought to influence the corn averages.

GRASSES: *Surrey.* The months of April, August, and September, are the best for sowing permanent Grass seeds. A wet autumn, if you can get it, is probably the best time; but if your land is ready in April you had better use it. The sorts which should be sown per acre, vary with the quality of the soil. The following is a good mixture, per acre, for ordinary loam:—

	lbs.
Alopecurus pratensis	2
Dactylis glomerata	4
Festuca duriuscula	2
„ elatior	2
„ heterophylla	2
„ pratensis	2
Lolium italicum	6
„ perenne	8
Phleum pratense	2
Poa nemoralis sempervirens ..	2
„ trivialis	2
Trisetum flavescens	1
Lotus corniculatus	½
„ major	½
Medicago lupulina	1
Trifolium hybridum	2
„ pratense	1
„ pratense perenne	3
„ repens	4

Add 1 or 2 lbs. each of Festuca rubra and Poa pratensis on dry sandy soils. If a crop of hay is to be taken in the first year, both the Rye-grasses (Lolium) may be increased by a third, and 2 lbs. of Trifolium pratense added.

POULTRY. We suppose that poultry ranks with delicacies, and that such are influenced by the Court mourning. The consumption of them depends much on gaieties and feasting. There has been little of such of late, and for that cause, although there has been but a poor supply, we have no great rise to note in the prices. We are anxious to see the result of the meeting of Parliament, and the cessation of mourning. The scanty supply we had to note during the year 1861 continues. We repeat that which we have said of late—those who wish to benefit by the good prices that must come in April, May, and June should prepare now. The prizes in the poultry lottery are not dependent on chance, but they are the reward of pains taking and providing beforehand. The real profit of poultry will never depend on the sale of a few pens at exhibition prices, but on the supply of the market. Where one pen is sold for 25*l.*, hundreds of dozens make 3*l.* per dozen. There is one buyer sometimes for the prize pen, but the dozens are a necessity; and if they do not come in sufficient numbers, an increase even in the price we have named is the consequence.

Large Fowls	Each	3*s.* 6*d.*	to	4*s.* 0*d.*
Smaller ditto	„	3 0	„	0 0
Chickens	„	2 6	„	0 0
Geese	„	6 0	„	6 6
Pheasants	„	3 6	„	4 0
Partridges	„	1 4	„	2 0
Hares	„	3 0	„	3 6
Rabbits	„	1 3	„	1 4
Wild ditto	„	0 8	„	0 9
Pigeons	„	0 9	„	0 10

SAVINGS' BANKS: *Sub.* By all means use the Post-office Savings Bank. Take and give the advice that *Punch* has published—

"The Savings Bank, the Savings Bank,
Bland Gladstone's best and latest boon,
Come, use it, folks of every rank,
You cannot get your Books too soon.
Display the common sense you boast,
And take your money to the Post."

THE GREAT OILCAKE CASE: *Hants.* The case Jackson *v.* Harrison was made a remanet, and will probably be tried in February in the Exchequer Court.

Seeds of Crop 1861.

CHARLES SHARPE AND CO., having completed the Harvesting of their Seeds, comprising Turnip, Mangel, Carrot, Peas, Beans, and all other varieties of Culinary and Agricultural Seeds, will be glad to forward post free on application their WHOLESALE PRICED CATALOGUE for the present season.

Sleaford.—February 1.

Choice Seeds, free by post.

NEW CABBAGE—FEARNOUGHT: A Hybrid between the Early Dwarf Cabbage and the Hearting Scotch Kale or Borecole. Forms compact and hard heads, when cooked tender and well flavoured; withstands frost and damp better than others of the Brassica family, and is not subject to burst. Last winter, when every other winter green was killed, it stood uninjured. By making two sowings it is fit for use from November till Spring Cabbages are ready. Awarded First-class Certificate by the Royal Horticultural Society, March 11, 1861. This valuable acquisition was raised by the successful hybridiser, Mr. Melville, Dalmeny Park Gardens, who has placed the Stock in our hands for distribution. 1*s.* per packet.

MELVILLE'S EARLY SPRING WHITE or HARDY SCOTCH BROCCOLI, strongly recommended, 1*s.* per packet.

AYTON CASTLE GIANT SCOTCH LEEK, 1*s.* per packet.

PERENNIAL SPINACH, invaluable for its hardiness, and as tender as the finest Spinach, 6*d.* per packet.

ANTIRRHINUM and PENTSTEMON, from extra fine strain. See "Gossip of the Garden," Nov., 1861, each 1*s.* per packet.

PANSY, from choice named sorts, 1*s.* per packet.

PRIZE FRENCH MARIGOLD, from choice selected double flowers, 1*s.* per packet.

ASTERS: GLOBE QUILLED. BETTERIDGE'S CRYSTAL PALACE (Prize), 12 varieties, mixed, 1*s.* per packet.

ASTERS: BUSHBY'S NEW DWARF. Fine rosy pink, 6 to 7 in. in height, adapted for a dwarf row, 1*s.* per packet.

TRUFFAUT'S PÆONY FLOWERING ASTERS, saved by M. Truffaut from his celebrated collection. 12 varieties. Per 100 seeds 1*s.* 4*d.*

FOXGLOVE, 6 beautiful varieties, separate, 1*s.* per collection.

MELVILLE'S CRIMSON BELTED and AURICULA-FLOWERED SWEET WILLIAMS. These are more compact in habit than the old varieties. "Richly coloured and variegated sorts, some of which were very attractive."—Opinion of Floral Committee, July 9, 1861. 1*s.* per packet. Price per ounce to the Trade on application.

STOCKS, GIANT AUTUMN, from prize sorts, Red and White, 6*d.* each per packet.

STOCKS, TRUE LONDON WHITE INTERMEDIATE (Melville), very fine, 1*s.* per packet.

Orders from unknown correspondents to be accompanied with Post Office Order or postage stamps.

STUART & MEIN, Seedsmen to the Union Agricultural Society, Kelso, N.B.

JOHN CATTELL having proved for several years the articles named below, recommends them with confidence as deserving of cultivation in every garden.

Per packet—free by post—	s.	d.
CATTELL'S DWARF PURPLE-TOP BEET, the best kind in cultivation	0	6
KALE, Buda or Asparagus (true)	0	6
„ Jerusalem, old kind	0	6
„ „ curled	0	6
„ Scotch dwarf curled	0	6
„ Variegated garnishing, as exhibited by him at the Royal Horticultural Gardens at Kensington and the Crystal Palace	0	6
BROCCOLI, Conning's Reliance, withstood the severe winter of 1860 and 1861, when every other kind was destroyed, a late white, close heading variety	1	0
„ Walcheren, a splendid stock, very fine and true	1	0
CABBAGE, Cattell's Early Reliance, undoubtedly the best Cabbage in cultivation	0	6
„ Little Pixie, a fine summer Cabbage, similar to Dwarf York, but much superior	0	6
„ Cattell's Green Colewort	0	6
„ Couve Tronchuda or Portugal Cabbage, a delicious vegetable	0	6
CUCUMBER, Holmesdale Frame, a very handsome and prolific White Spine	1	0
„ General Wolfe, equally adapted for ridge or frame, for general use, will be a great favourite	1	0
LETTUCE, London White Cos (true)	0	6
SAVOY, Cattell's Dwarf Green Curled	0	6
„ „ „ „ Drumhead	0	6
TOMATO De Laye, a very fine variety	0	6

For other first-class Vegetables, see CATALOGUE.

FLOWER SEEDS.

Per Packet, free by Post.		s.	d.
Imported GERMAN ASTER	1*s.* to	3	6
„ „ STOCK	1*s.* to	4	0
„ „ WALLFLOWER	1*s.* to	3	6

From the same growers as usual, and which have always been highly commended by all purchasers.

BALSAM, finest double, 9 varieties, in sealed packets, saved by Messrs. F. & A. Smith	2	6
PRIMULA SINENSIS, finest fringed, saved by Messrs. F. & A. Smith	1	0
CALCEOLARIA, from very splendid spotted kinds, 1*s.* and	2	6
CINERARIA, from choicest named flowers .. 1*s.* and	2	6
DIANTHUS HEDDEWIGII	0	6
„ „ atropurpureus fl. pl.	1	0
„ IMPERIALIS HYBRIDUS, very beautiful ..	0	6
„ „ „ flore nigro purpureo	1	0
„ CHINENSIS NANUS, atrosanguinea flore pleno	0	6
LOBELIA ERINUS SPECIOSA (true), saved from the Crystal Palace variety, and will come true from seed; cannot be too highly recommended for its intense blue colour and dwarf habit. All visitors to the Crystal Palace must have admired the immense lengths of edging of this kind, so artistically planted by Mr. Gordon .. .. 6*d.* and	1	0
TROPÆOLUM, Crystal Palace Scarlet, saved from the true variety; this is a well known bedding plant, extensively used at the Crystal Palace	1	0
„ Crystal Palace Gem	0	6
„ Cattell's Dwarf Scarlet	0	6
„ „ „ Crimson	0	6
„ Yellow Tom Thumb	0	6

(The last four are very dwarf free blooming kinds and make beautiful beds in poor soil; if sown in rich soil they grow too freely, and do not show their true character.)

ATRIPLEX HORTENSIS RUBRA (Orache), highly recommended by many horticultural writers in preference to Perilla Nankinensis; as a decorative plant it is highly ornamental	0	3

For other choice and select Annuals, Ornamental Grasses, &c., see CATALOGUE, pages 20 to 32.

Nursery and Seed Establishment, Westerham, Kent.

J. SCOTT'S SEED CATALOGUE, with Descriptive and Cultural Notes, is now ready, and will be found very useful to intending purchasers. Sent gratis.

THE BEDDING PLANT CATALOGUE is being printed, and will be ready in April. Parties who wish to embellish their gardens, cheaply, should procure a copy before purchasing their plants, as the book is replete with information on the subject, and all the novelties of the season are described, and most sorts may be had at 2*s.* 6*d.* per dozen. Mr. Beaton, in the *Journal of Horticulture* says:—"It is the best Catalogue we have seen."

Merriott Nurseries, Crewkerne, Somerset.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England.

The Catalogue may also be had at Mr. MAY'S, 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

Rhododendrons for Under Cover.

JOHN WATERER has an immense quantity of the above in fine bushy plants, of sizes suitable for immediate planting into Covers.

☞ It is worthy of remark that in the most severe weather Rhododendrons are never injured by Hares or Rabbits. Samples, with prices, forwarded on application.

The American Nursery, Bagshot, Surrey.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1861 and SPRING 1862, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

SEED ESTABLISHMENT, STIRLING.—In tendering our thanks to the many Noblemen and Gentlemen who have, for a long series of years, intrusted us with their orders for AGRICULTURAL SEEDS, we have satisfaction in stating, that to enable us to meet a large increase of business, we have greatly extended our arrangements for raising and otherwise securing more ample supplies of the leading kinds, all bearing the usual trustworthy character, thus enabling us to execute with certainty all orders, however extensive, with which we may be favoured. Our DESCRIPTIVE PRICED CATALOGUE will be ready in February, and, as heretofore, will be sent to our customers; also, post free to any address, on application.

In the meantime, we claim special attention to our ROOT SEEDS, which embrace several improved stocks of SWEDES and other TURNIPS, MANGEL WURZEL, &c.; also to remarkably fine samples of all the varieties of CLOVERS, PERENNIAL and ITALIAN RYE-GRASS, NATURAL GRASSES, &c.

The Assortments of Seeds prescribed by us for laying down land to Permanent Pasture or Meadow, are the result of a lengthened experience, which, with the fact of our annually supplying seeds for several thousand acres, warrant us in recommending them with every degree of confidence.

W. DRUMMOND & SONS, Seed and Implement Warehouses, Stirling and Dublin, Feb. 1, 1862.

*** Stirling is most favourably placed in point of Railway accommodation, there being direct and constant traffic to all the principal Stations in Scotland and England, and by Steamers (via Glasgow), almost daily to the chief Ports in Ireland, thereby ensuring a speedy delivery of Goods, all of which (with certain limitations) we forward carriage paid.

CHARLES TURNER, The Royal Nurseries, Slough, offers the following NEW SEEDS for the KITCHEN GARDEN, the FLOWER GARDEN, and the FARM.

NEW PEAS raised by Dr. MacLean.—The two varieties now offered for the first time have been the admiration of all that saw them growing, both in 1860 and 1861. See "Gardeners' Year Book," pages 84 and 86. The stock is but limited.

WONDERFUL.—A first class second early white wrinkled Pea of robust branching habit, growing only 3 feet high, and producing a mass of pods from the bottom of the haulm, each pod containing from 7 to 9 large Peas of the most delicate flavour. In half-pint packets, 1*s.* 6*d.*

LITTLE GEM.—A dwarf green wrinkled Marrow of the height of Tom Thumb, more prolific, and earlier. A great acquisition, being very early, very dwarf, with the fine flavour of our best Marrow Peas. In half-pint packets, 1*s.* 6*d.*

BROCCOLI, GEORGE'S LATE WHITE.—A great acquisition. Per packet, 2*s.* 6*d.*

See opinion of Mr. THOMAS SMITH, Gardener to the Marquis of Londonderry, who says:—"I have grown it several years, and it is the best late sort I know. Heads white, large, and fine, to the end of May."

PARSNIP CHERVIL (Chærophyllum bulbosum).—Figured in *Gardeners' Chronicle*, October 5, 1861, which see. 6*d.* per pkt.

CUCUMBER, WILSON'S PROLIFIC.—A first rate variety for summer or winter use. 1*s.* per packet.

MELON ECLIPSE.—This superior green flesh variety is a cross between Scarlet Gem and Orion, partaking of the rich flavour of the former, and the fine melting properties of the latter. It obtained a Certificate of Merit at the Botanic Society, and First Prize for green flesh at Brighton, the only two places exhibited. Highly recommended. 2*s.* 6*d.* per pkt.

BETTERIDGE'S FINE QUILLED ASTERS.—The Seed saved from this splendid collection—so successful in maintaining the leading position at the great Exhibitions—is entirely in CHARLES TURNER'S hands for distribution.

12 distinct varieties (with hints for their culture) .. 3*s.*
Fine Mixed Seed, per packet .. .. 1*s.*

And all NEW ANNUALS worthy of cultivation.

TURNER'S GOLIATH SWEDE, 10*d.* per lb.

Mr. WILLIAM STATHAM, of South Lea Farm, Datchet, thus writes of the Goliath Purple Top Swede:—"I have 15 acres all equally good, grown without artificial manure, and with only a moderate cost of farm dung. Although my neighbours complain generally of their Swedes this year, I never grew finer, and approve very much of this sort."

TURNER'S WHITE SWEDE, 10*d.* per lb.
FISHER HOBBS' ORANGE GLOBE MANGEL, 8*d.* per lb.
ELVETHAM LONG RED MANGEL, 8*d.* per lb.

These are all saved from carefully selected stocks, and have been harvested in fine condition.

The GENERAL SEED CATALOGUE, containing all that is new and good in each class, as well as all the useful Culinary Roots, is just published, and will be forwarded gratis and post free to any address.

CHARLES TURNER, The Royal Nurseries, Slough.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., Nurseryman, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s. ; 20 pairs of best large varieties, cuttings, 5s. ; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

Florists' Flowers and Seeds.

CAREY TYSO, Wallingford, Berks, begs to offer Choice Assortments of

DOUBLE ANEMONES, 100 fine sorts, 1l. 1s. to 1l. 6s.
*RANUNCULUSES, 100 ditto, 1l. 7s. to 2l.
*RANUNCULUSES, 100 ditto mixed, 5s. to 1l.
*IMPORTED GERMAN SEEDS, Asters, Stocks, Balsams, Immortelles, Larkspurs, Wallflowers, Zinnias, &c., in named assortments, from 1s. to 5s. each.
All the popular ANNUALS,* 50 varieties, 1 packet each, 10s. ; 25 ditto, 5s.
Choice RANUNCULUS, PINK, SWEET WILLIAM, and ANEMONE SEEDS,* 2s. 6d. and 5s. per packet.

The articles marked * can be sent by post.

PRICED CATALOGUE for one label for the postage.

Old Cheshunt Nurseries, Herts.

Gladiolus.

PAUL and SON'S fine Collection of this superb Flower, of which the Bulbs are now ready.

Hollyhocks.

PAUL and SON'S fine Collection of this noble Flower ; fine Plants of which are now ready. Also SEED in packets of 12 fine distinct sorts at 5s. each, and mixed seed in 2s. 6d. and 1s. packets.

Roses.

PAUL and SON'S splendid Collection of Dwarf Plants in Pots, of all the finest new kinds, with extra size plants for Forcing.

Vines.

FINE PLANTS for Fruiting in Pots or planting out.

CATALOGUES of each may be had on application by post.

New Azalea indica.

J. IVERY and SON feel much pleasure in offering their two beautiful Seedlings, CARNATION and TRICOLOR, small plants at 10s. 6d., and larger at 21s. each.

They are fully described in our CATALOGUE, with all other Novelties of the Season, which will be forwarded post free upon application.

A fine lot of half Specimens and Standards for Sale.

Dorking Nursery.—Feb. 1.

Garden Seeds.

PAGE and TOOGOOD'S SPECIAL LIST will be forwarded post free.

P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

Royal South Hants Seed Establishment, Southampton.

Verbena, "Sheppard's Ariosto Improved."

OSBORN and SONS will be prepared to send out the above-named NEW VERBENA on May 1 next. It is considered by all who have seen it one of the greatest acquisitions of the season either as a pot or bedding Verbena. The colour is that of "Ariosto," a beautiful rich mulberry, but in other respects it far outvies it—the truss and pip is very much larger, and the habit robust, covering the ground well and flowering freely and continuously. It was used last summer most successfully by Mr. Sheppard, the intelligent Gardener at Woolverstone Park, the seat of John Berners, Esq., near Ipswich.

In order to make it available for bedding largely the ensuing season, Osborn & Sons have resolved to distribute it at the following low rate:—

100 Plants	£5 0 0	12 Plants	£0 18 0
50 Plants	3 0 0	A Single Plant	0 2 6

Fulham Nursery, London, S.W.—Feb. 1.

First-class Seedling Fuchsias and Verbenas.

GEORGE SMITH has much pleasure in offering the following superb FUCHSIAS and VERBENAS, as varieties that will give general satisfaction to all Growers, either for Exhibition or Decorative purposes.

FUCHSIA (UNIVERSAL G. S. considers to be the most beautiful of all Fuchsias yet offered to the public, and believes that it will be retained in choice collections for years to come ; its habit is all that can be wished ; its blossoms are very double, and of model form. Sepals bright crimson ; corolla deep violet. Commended by the Floral Committee of the Horticultural Society, and to be figured in the "Florist." Price 10s. 6d.

DICTATOR, the largest and finest single Fuchsia ever offered ; tube and sepals waxy crimson, the latter well reflexed ; corolla violet purple, of remarkable size and substance, extra fine. Price 10s. 6d. each.

, Coloured Illustrations of the two by Mr. Andrews in exchange for 12 Postage Stamps. In strong Plants after the 20th April.

SEEDLING VERBENAS.

These are of the finest quality, and may be relied upon to maintain the high character for which many of G. S.'s Seedlings are celebrated for size, shape, and decision of colour.

ETNA, vermilion red, of fine form, and new in colour.
FIREBALL, brilliant scarlet, of fine form, eye white, and most abundant bloomer, of splendid habit, and one of the finest of its class, for all purposes. Awarded a First-class Certificate at the Royal Botanic Gardens of London.
GARLAND, delicate blush with large and conspicuous rich pink centre, truss large and extra fine.
PALERMO, pink with bright cherry eye, fine shape and truss ; fine for all purposes. Received a First-class Certificate from the Royal Botanic Gardens.
THE MOOR, the finest dark Verbena in cultivation ; dark crimson, a conspicuous dark circle round the eye, extra fine.
THE WARRIOR, rosy pink, white eye, large, of fine form, and new in colour, extra.

The set of six for 25s., or 5s. per plant. After the 20th April.

A CATALOGUE is now ready. PRICED and DESCRIPTIVE LISTS of Show, Spotted, Scarlet, and Variegated Pelargoniums, Fuchsias, Verbenas, Petunias, Dahlias, Chrysanthemums, Bedding Plants, &c., in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, N.

New Cinerarias, Gloxinias, and Pelargoniums.

F. and A. SMITH can still supply a few sets of their New GLOXINIAS, CINERARIAS, and PELARGONIUMS.

See *Gardeners' Chronicle* of Oct. 5, 1861, and CATALOGUE, which may be had gratis.

Dulwich, Surrey, S.

Superb Balsams.

F. and A. SMITH are now sending out Seed of their Superior BALSAMS in collections of

9 Colours, separate	2s. 6d. each.
The same, mixed	2 0 ,,
Half the quantity	1 0 ,,

The above are in 18 distinct and bright colours, of carefully selected Seed, from the most double varieties.

Dulwich, Surrey.

Aster Seed of Superior Quality.

J. and J. FRASER, of the Lea Bridge Road Nurseries, Leyton, N.E., beg to announce that they are now prepared to send out Collections of the finest FRENCH ASTERS.

J. & J. Fraser feel much pleasure in stating that the first Prizes for these Asters at the Royal Horticultural Society and Crystal Palace Exhibitions were awarded to flowers produced from Seed supplied by them.

A PRICED LIST will be forwarded on application.

Phalænopsis Schilleriana.

B. S. WILLIAMS has much pleasure, in informing his friends and the public that this new and beautiful VARIEGATED ORCHID is now in flower at the Nursery, and he will be happy to show it to any one favouring him with a visit.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

, The "Favourite" Omnibuses, from the London Bridge Railway Stations, by the Bank and Post Office; and from Charing Cross, through the Strand and Holborn, pass the Nursery every 10 minutes.

New Celery, "Coles' White Perfection,"

WM. COLE has much pleasure in offering the above superior WHITE CELERY, feeling confident it will give equal satisfaction to those previously sent out by him. In size and quality it surpasses that of his solid red. Sealed half oz. packets free per post, 2s. 6d. Price to the Trade upon application.

Nurseries, Withington, near Manchester.

Also of the undermentioned Agents:—

Messrs. Hurst & M'Mullen, 6, Leadenhall Street, City, London, E.C.
,, J. Carter & Co., 237, 238, and 261, High Holborn, W.C.
,, Charlwood & Cummins, Tavistock Row, Covent Garden, London, W.C.
,, Lawson & Son, 27, Great George Street, Westminster, London, S.W.
,, Cooper & Bolton, 152, Fleet Street, London, E.C.
,, A. Henderson & Co., Pine-apple Place, Edgware Road, London, W.
Mr. C. Turner, Royal Nursery, Slough.
Mr. J. Veitch, Royal Exotic Nursery, King's Road, Chelsea, S.W.

Hardy Ferns.

JAMES SMITH can supply the following for 35s. cash, or half the collection for 17s. 6d., package included. Post Office Orders payable at Matlock.

6 Asplenium Adiantum nigrum	2 Lastrea cristata
6 ,, Trichomanes	2 ,, uliginosa
4 ,, viride	2 ,, Thelypteris
6 ,, Ruta muraria	6 ,, dilatata
4 ,, lanceolata	4 Osmunda regalis
4 Allosorus crispus	2 Polystichum angulare
2 Botrychium lunaria	2 ,, lobatum
6 Blechnum boreale	2 Polypodium dryopteris
6 Ceterach officinarum	6 ,, vulgare
4 Cystopteris fragilis	4 ,, calcareum
6 Lastrea recurva	2 ,, phegopteris
6 ,, Filix mas	6 Scolopendrium vulgare
2 ,, rigida	4 ,, ramosum

Darley Dale Nurseries, near Matlock.

Fruit Trees.

JAMES GARAWAY and CO. call attention to their stock of the above, comprising

APRICOTS NECTARINES PEACHES	Standard and Dwarf-trained	APPLES CHERRIES PEARS PLUMS	Dwarf-trained, Standard, and Dwarf-quarter.

All of first-rate quality and in good condition.

The STANDARD PEARS are unusually fine, and will be sold at a very low rate to purchasers of quantities.

CATALOGUES and prices free by post.

James Garaway & Co., Durdham Down Nurseries, Bristol.

Fruit Trees.

R. GLENDINNING begs to offer the undermentioned FRUIT TREES, which are strong, healthy, and true to name:—

Standard-trained PEACHES } in all the leading kinds with
Dwarf-trained ,, } well ripened wood, from walls.
Dwarf-trained APPLES, in all the leading kinds.
,, PEARS ,, ,,
,, PLUMS ,, ,,
Standard Mdn. ,, ,, ,,
Dwarf Mdn ,, ,, ,,
Standard Mdn. CHERRIES ,, ,,
Dwarf Mdn. ,, ,,
Standard APPLES ,, ,,
PYRAMIDAL PEARS on Quince and Pear Stocks in a fruiting condition

PRICED LISTS on application.

Chiswick Nursery, London, W.

Ornamental Trees and Shrubs.

H. LANE and SON have great pleasure in informing Planters of this most beautiful variety of Trees that they possess one of the finest lots of Araucarias ever seen in a Nursery, from 1 ft. to 10 ft. ; they are strong and well furnished. Also a large quantity of fine specimens of Cedrus Deodara, from 5 ft. to 12 ft. ; Cedar of Lebanon, 6 ft. to 12 ft. ; Abies Douglasii, 5 ft. to 14 ft. ; Picea nobilis, 1 ft. to 4 ft. ; Picea Nordmanniana, 1 ft. to 3 ft. ; Irish Yew, 3 ft. to 8 ft. beautiful specimens ; Thuja gigantea, 1 ft. to 3 ft. ; Wellingtonia gigantea, 1 ft. to 4 ft. A very large quantity of Retinospora ericoides, Thujopsis borealis, Thuja aurea, Taxus japonica, Swedish and Irish Junipers, Juniperus canadensis, Rhododendrons of the common varieties, Standards and Dwarfs ; also a selection of the best named sorts, Standards and Dwarfs, Standard Portugal Laurels, one of the finest lots in the Trade, and a general Nursery stock. All the Evergreens move with good balls of earth, and the Deciduous Trees are well rooted. Orders despatched with speed and care.

CATALOGUES may be had upon application to H. Lane & Son, The Nurseries, Great Berkhampstead, Herts.

Choice Vines in Pots.

MUSCAT ESCHOLATA and BUCKLAND SWEET WATER.

LUCOMBE, PINCE and CO. have fine, strong, healthy, well-ripened Canes of the above very choice Vines, together with all the leading kinds in cultivation. Prices may be had on application to them.

Exeter Nursery, Exeter.

Grape Vines from Eyes in Pots, of all the Choicest Sorts.

LUCOMBE, PINCE and CO. respectfully invite an inspection of their fine healthy stock of extra strong VINES, consisting of all the best varieties in cultivation, with well ripened Canes 6 to 8 feet high, propagated from Eyes taken from their own experimental Vinery.

List of sorts and prices may be had on application to them.

Exeter Nursery, Exeter.

Strong Grape Vines from Eyes.

R. GLENDINNING begs to offer strong GRAPE VINES from Eyes of all the leading sorts, fit for immediate planting. The Eyes were taken from Vines which bear fruit on the Premises.

PRICED LISTS on application.

Chiswick Nursery, W.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, Jun., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.

CATALOGUES on application.

Muscat Escholata Grape.

MESSRS. J. and C. LEE have the pleasure to offer strong well ripened Canes of this

THE FINEST OF ALL MUSCAT GRAPES,

which, though little known to Grape growers in general, deserves to be extensively cultivated. It combines the desirable qualities of setting freely with a large well shouldered handsome bunch, with berries of a rich amber colour almost as large again as those of the Muscat of Alexandria, and of the most luscious Muscat flavour.

Planting Canes	15s. 0d. each
Fruiting Canes	21 0 ,,
Extra strong Fruiting Canes ..	31 6 ,,

Vineyard Nursery, Hammersmith, London, W.

Pine Apple Plants.

TO BE SOLD, a Bargain, 100 FRUITING and SUCCESSION, consisting of MONTSERRATS, BLACK JAMAICAS, BLACK PRINCES, and QUEENS, clean, healthy, strong, and well-rooted Plants. Can be delivered free at one of the East Lancashire Railway Stations.

For price and other particulars, apply to Henry Walton, Edge End, Marsden, near Burnley.

PINE GOLDEN PIPPIN APPLE, Dwarf Maiden and Dwarf-trained Trees.
GENERAL TODTLEBEN PEAR, Dwarf Maiden Trees.
BEURRÉ STERKSMAN PEAR, Dwarf Maiden Trees.

R. GLENDINNING has still a few Plants of the above named NEW FRUIT TREES. For their descriptions see Dr. Hogg's remarks. Price on application.

Chiswick Nursery, London, W.

NEW APPLE, "BARON WARD."—The very best late keeping variety in cultivation. Each—s. d.

Strong plants, two years, unpruned, suitable for pyramids or bushes	2 6
Strong plants, dwarfs	1 6

Description, &c. forwarded post free on application to R. Bradley & Son, Halam Nursery, near Southwell, Notts.

PEACHES and NECTARINES, in pots, fine.
E. P. Dixon & Sons, Exotic Nursery, Hull.

PYRAMIDAL PEARS in pots, fine fruiting.
E. P. Dixon & Sons, Exotic Nursery, Hull.

STANDARD ROSES, good heads, 30s. per dozen.
E. P. Dixon & Sons, Exotic Nursery, Hull.

CHOICE CONIFERÆ, all sizes.
E. P. Dixon & Sons, Exotic Nursery, Hull.

STOVE and GREENHOUSE PLANTS, CHOICE FERNS, &c.
E. P. Dixon & Sons, Exotic Nursery, Hull.

STRONG MUSCAT and GOLDEN HAMBURGH VINES.
E. P. Dixon & Sons, Exotic Nursery, Hull.

CATALOGUES on application.
Seed Establishment, 57, Queen Street, Hull.

PYRAMIDAL CHERRIES. — Well formed and handsome Pyramidal Trees of the following varieties of CHERRIES grafted on the Mahaleb Stock are now offered. They are from 4 to 5 years old, 4 to 5 feet in height, have been under summer pinching, and are full of blossom buds. They form most ornamental and useful Fruit Trees for the Garden:—

May Duke	Royal Duke
Empress Eugénie (an early sort of May Duke)	Reine Hortense
	Belle Magnifique
Morello	Dauphine
Frogmore Morello	Planchoury
Late Duke	Griotte de Kleparone
Belle de Choisy	Noir de Prusse

Largest sized trees, 3s. 6d. each ; second size, 2s. 6d. each ; Bushes, bearing trees, 2s. each. Carriage paid to London.

Thos. Rivers, Nurseries, Sawbridgeworth.

Melons.

MESSRS. JOHN and CHARLES LEE have seeds to offer of the undermentioned superb MELONS:—

BAILEY'S ECLIPSE.—Pale green flesh, melting to the rind, of exquisite flavour ; weight 3 to 4 lbs. ; handsome, very prolific, and has gained many prizes. Price 2s. 6d. per packet.

AMERICAN RIDGE.—Scarlet flesh, melting, and highly flavoured. Ripens in a cold frame ; very prolific. Price 1s. 6d. per packet.

Nursery and Seed Establishment, Hammersmith, London, W.

THE SUBSCRIBER is anxious to dispose of 10 fruit-bearing Standard-trained PEACH and NECTARINE trees now growing in his Winter Garden. To those planting a Peach House this is an opportunity rarely to be met with, for some of the Trees are of large size and literally full of fruit buds, and having only been planted in the present situation two years, they will remove admirably. An inspection is invited, or for price and particulars apply as below.

Well ripened Canes of all the best VINES can be supplied.

PINE APPLE PLANTS.—The best, largest, cleanest, and most healthy stock in this country.

William Bull, Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Fruit Trees.

H. LANE AND SON, The Nurseries, Great Berkhampstead, Herts, have a large stock of PYRAMIDAL APPLES, which are well set with bloom buds, also PYRAMIDAL PEARS, PLUMS, &c. They are still able to supply dwarf-trained Apples, Apricots, Pears, Plums, &c., in any quantity. They are very clean, well grown, and beautifully rooted. Orders will receive prompt attention.

Hanover Nursery, Peckham, S.E.

WM. IVERY has a splendid stock of large EVERGREEN OAKS, 4 to 7 feet; will remove well, with large balls of earth. Price on application.
Also DECIDUOUS and EVERGREEN SHRUBS, FRUIT TREES, &c., of the best description. The Trade supplied with MUSHROOM SPAWN of the very best quality.

To the Trade.

AMERICAN WEEPING WILLOWS.—Fine trees of this hardy and beautiful Willow grafted on straight stems 7 to 8 feet high, and well adapted for planting in Cemeteries, are offered by the hundred or thousand.
Price given on application to THOMAS RIVERS, Nurseries, Sawbridgeworth.

Quick.

H. AND F. SHARPE are prepared to offer of the finest quality,
Strong 2-years' Transplanted QUICK, 3 feet high,
Strong 2-years' Seedling do., 2 feet high,
at very moderate prices, which may be had, with samples, on application.
Seed Growing Establishment, Wisbeach.

Four Millions of Transplanted Quicks.

GEORGE CHIVAS offers the above, Two Millions of which are suitable for Railways, and Two Millions varying from strong to exceeding strong—a portion having been twice Transplanted. A bale containing 100 of each, five sizes, forwarded on receipt of 15s.; orders for 10,000 delivered free at any railway station.
Also Half a Million of Transplanted SPRUCE, and one of the largest general Nursery Stocks in the North-Western counties.
Chester, Feb. 1.

500,000 QUICKS, 2 years' Seedling, 18 to 24 inches, and 24 to 30 inches, and 2 years' transplanted, 2½ to 3 feet.
GOOSEBERRIES and CURRANTS, leading kinds, 70s. to 80s. per 1000.
EVERGREEN PRIVET, from 2 to 5 feet, 20s. to 30s. per 1000.
The above are all strong and well rooted.
For prices and samples apply to J. & W. COOKS, Donington Nurseries, near Spalding.—Feb. 1.

To Planters.

300,000 Transplanted LARCH, consisting of the following sizes:—1 to 1½ foot, 1½ to 2 feet, 2 to 2½ feet, 2½ to 3 feet; 100,000 MOUNTAIN ASH, 2 to 3 feet, and 3 to 5 feet; SPRUCE and SCOTCH, 1 to 3 feet; QUICKS, strong, 2, 3, and 4 years; Transplanted GREEN HOLLY, 1 to 6 feet; ENGLISH YEWS, 1 to 4 feet; RHODODENDRONS, TREE BOX, MAHONIA AQUAFOLIA, &c. EVERGREEN BARBERRY, strong: this plant is very suitable for game preserves, it produces berries which the pheasants feed upon.
For Prices or Samples, apply to WILLIAM GROSVENOR, Prospect and Heath House Nurseries, Cheddleton, near Leek.

500,000 Seedling Larch Fir.

THE SUBSCRIBERS have a very fine Stock of the above and other Seedlings to dispose of, viz.:—
1 and 2 Years' Seedling LARCH FIR.
2 Years' Seedling SCOTCH FIR.
2 Years' Seedling ASH.
1 Year's Seedling ELMS.
1 Year's Seedling APPLES.
2 Years' Seedling THORNS.
Prices furnished on application.
Address to WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

W. VIRGO AND SON have a large Stock of the following to offer at very low prices:—
BERBERIS AQUIFOLIA, 12 to 15 inches, 2 years transplanted
" DULCIS, 2 feet
EVERGREEN PRIVET, of various sizes
PORTUGAL LAUREL, 12 to 18 inches
SIBERIAN ARBOR-VITÆ, 2 to 2½ feet
SPRUCE FIR, 2 to 5 feet
WEYMOUTH PINE, fine and bushy, 2 to 5 feet
They also beg to offer extra strong 2-years transplanted THORNS, in very large quantities.
Samples and prices to be had on application at the Nursery, Wonersh, near Guildford, Surrey.

LARGE ORNAMENTAL TREES.—As part of my Nursery Ground is required for Building purposes, to effect a clearance before I commence my new grounds, I offer for Sale the following at very low prices:—
Limes, Beech, Oak, Hornbeam, Mountain Ash, Willow, Poplar, Turkey Oak, Elm, White Thorn, Horse Chesnut, Ash, Birch, from 5 to 12 feet. Also Black American and Norway Spruce, Birch, Maple, Austrian Pine, from 3 to 5 feet; Larch, Hornbeam, Austrian Pine, from 1 to 3 feet; Seedling 2-years Spruce, Thorns, and Oak.
Many thousands of Rhubarb, Asparagus and Seakale for forcing or otherwise.
JAMES HUDDART, Nurseryman and Seedsman, Preston, Lancashire.

Forest Trees, Ornamental and Hedge Plants, Fruit Trees, &c.

THE SUBSCRIBERS call the attention of intending Planters to the undernoted Stock at their Nursery, Longniddry Station. The plants are fine; and as the grounds are to be cleared, they offer them at the following low prices. Terms cash, or three months' acceptance:—
TRANSPLANTED, the 1000.—Norway Spruce, 6 inches, 5s.; 6 to 9 inches, 6s.; 9 to 15 inches, 7s. 6d.; English Oak, 15 to 18 inches, 10s.; Laburnum, 10s.; Service, 8s.; Thorn Quick, 12 to 18 inches, 7s. 6d.
TRANSPLANTED, the 100.—Irish Yews, 4 to 5 feet, 60s.; Cedrus Deodara, 24 to 30 inches, 200s.; Red Cedars, 9 to 24 inches, 5s.; Aucuba japonica, 6s. to 20s.; Pinus Cembra, 3 to 4 inches, 3s.; Pinus Cephalonica, 10s.; American Arborvitæ, 15 to 24 inches, 10s.; Spurge Laurel, 2 feet, 8s.; Common Laurel, 3s. to 6s.; China and Climbing Roses, 10s.; Weigelia rosea, 15s.; Savin tree, 12s. 6d.
SEEDLINGS, two years old, per 1000.—Scots Fir, native, 1s.; Norway Spruce, 1s.; Pinus maritima, 2s.; Balm of Gilead, 2s.; Chinese Arborvitæ, 10s.; Pears, 5s.
TRANSPLANTED FRUIT TREES, &c.—Pear Stocks, 15s. per 1000; Apple Stocks, 12s. 6d. per 1000; Gooseberries and Currants, of sorts, 60s. per 1000; Dwarf Apples, of sorts, 25s. per 100; Dwarf Pears, of sorts, 40s. per 100; Trained Pears, of sorts, 100s. per 100.
DAVID REID & SON, Nurserymen and Seedsmen, Edinburgh.

To Planters of Conifers.

YOUELL AND CO. can supply 50 species of RARE and HARDY CONIFERS in good plants for 5l., package included, and carriage paid to Liverpool, Manchester, Newcastle-on-Tyne, Hull, London, Peterborough, or to any Railway Station within 150 miles of the Nursery.
A LIST of the above can be had on application.
Royal Nursery, Great Yarmouth.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.
RICHARD SMITH, Nurseryman, Worcester.

J. HOLMES WOOD, BOWER NURSERIES, Maidstone (adjoining the Railway Station).
All the leading varieties of AZALEAS, in 60's, at 50s. per 100.
Standard and Trained FRUIT TREES of every description, 30s. per dozen.
Every description of CONIFERS, EVERGREEN and DECIDUOUS TREES, and SHRUBS at moderate prices.

PEAT EARTH of excellent quality delivered at the Nine Elms Station, 5 tons for 55s.; at Guildford, 5 tons for 50s.; at Havant, 5 tons for 45s.—Apply to Mr. BETTS, 115, Strand, London, W.C., where a sample may be seen.

THE LONDON MANURE COMPANY
(ESTABLISHED 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE of LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

Tenant Farmers' Manure Company.

ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
MANUFACTURED BY
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. MACADAM, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. LAWES for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—

LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES ..	5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8 0

These Manures can be obtained of MR. LAWES, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and Liffey Buildings, Eden Quay, Dublin.

New Source of Ammonia.

TO MANURE MANUFACTURERS AND DEALERS.

ULMATE OF AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that Wool contains more Nitrogen (yielding Ammonia) than any other kind of animal matter proves the Ulmate of Ammonia to be a highly valuable manure the Analyses by Professor Voelcker, the Chemist of the Royal Agricultural Society, and other high authorities,, showing a per centage of Ammonia exceeding 14 per cent., or equal to an average sample of Peruvian Guano, while, from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of ammonia. Being a fine dry powder, it is peculiarly suitable for use in the manufacture of manures, and preferable to the ordinary salts in use, sulphate of ammonia, nitrate of soda, &c.
Samples, prices, and all information will be forwarded on application to FREDERIC J. CORNWELL, Broker, 7, Great St. Helens, E.C.
LINSEED CAKES, RAPE CAKES, COTTON CAKES, also all Materials used in the Manufacture of Manures, at the lowest market prices.

A FEW respectable DISTRICT AGENTS WANTED for a MANURE which is highly recommended and sold carriage free. Liberal terms given.
Address, with occupation and references, B. C., 10, Pall Mall East, London, S.W.

To Farmers and Agriculturists.

COTTON SEED CAKE.—The best and cheapest Cake for Feeding purposes, and particularly adapted for Dairymen and Cowkeepers, made from pure Egyptian Seed, which is freed from all fibre.
Apply to RALPH LEIGH CLANE, Broker, Chapel St., Liverpool.

Wind Power.

J. R. PEILL, 17, New Park Street, Southwark, S.E., begs to inform intending purchasers that he has now increased facilities for Manufacturing the Patent WIND ENGINES for Pumping, Grinding, Chaffcutting, Pulping, &c.
Prospectuses and all information may be obtained by enclosing one postage stamp, and a Wind Engine in full work may be inspected on the Premises daily.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.
This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.
May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,
PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

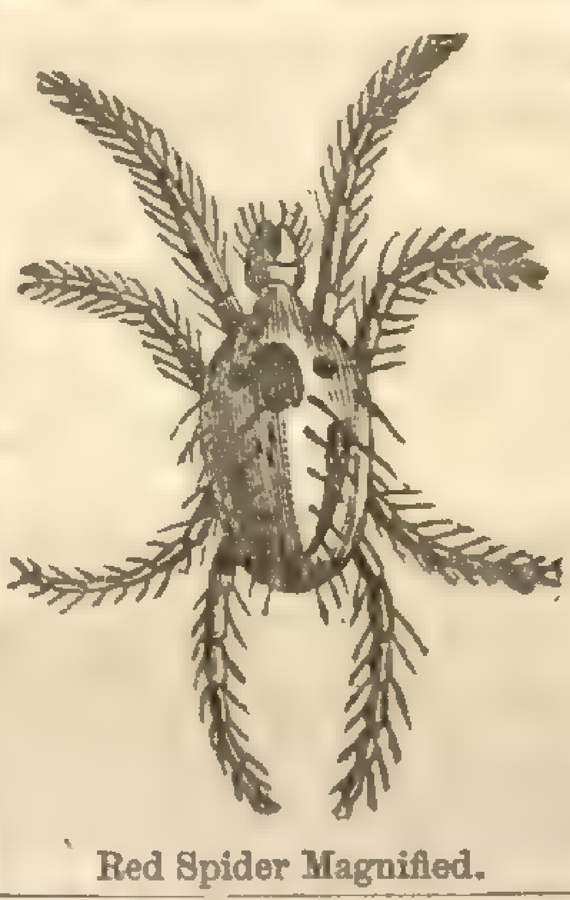
NEAL'S PATENT APHIS PASTILS.

The attempt by interested persons to injure the sale of these Pastils is best answered by the fact that Mr. Glenny and other really scientific Horticulturists use and recommend them. They are the safest and cheapest mode of Fumigation, as the large and increasing sale distinctly proves. The Pastils are better warmed before being used, as they are useless when damp.

Sold by all principal Seedsmen.
Price 1s. and 2s. per packet.

Patentee:
Magnified Aphides. J. NEAL, Edward Street, Birmingham.

FRUIT TREES.
Winter wash with GISHURST COMPOUND.



[Copy of Letter from Mr. Rivers.]
Nurseries, Sawbridgeworth, Herts, Jan. 9, 1862.
I think you should prominently mention the great benefit Wall Trees of all kinds derive from a dressing, ½ or 1 lb. to the gallon, of the Compound applied in January. It is so easily applied, and so very beneficial.
(Signed) THOS. RIVERS.

Sold retail by Nurserymen and Seedsmen in boxes 1s., 3s., and 10s. 6d. each.
Wholesale by
PRICE'S PATENT CANDLE CO., Limited.

Red Spider Magnified.

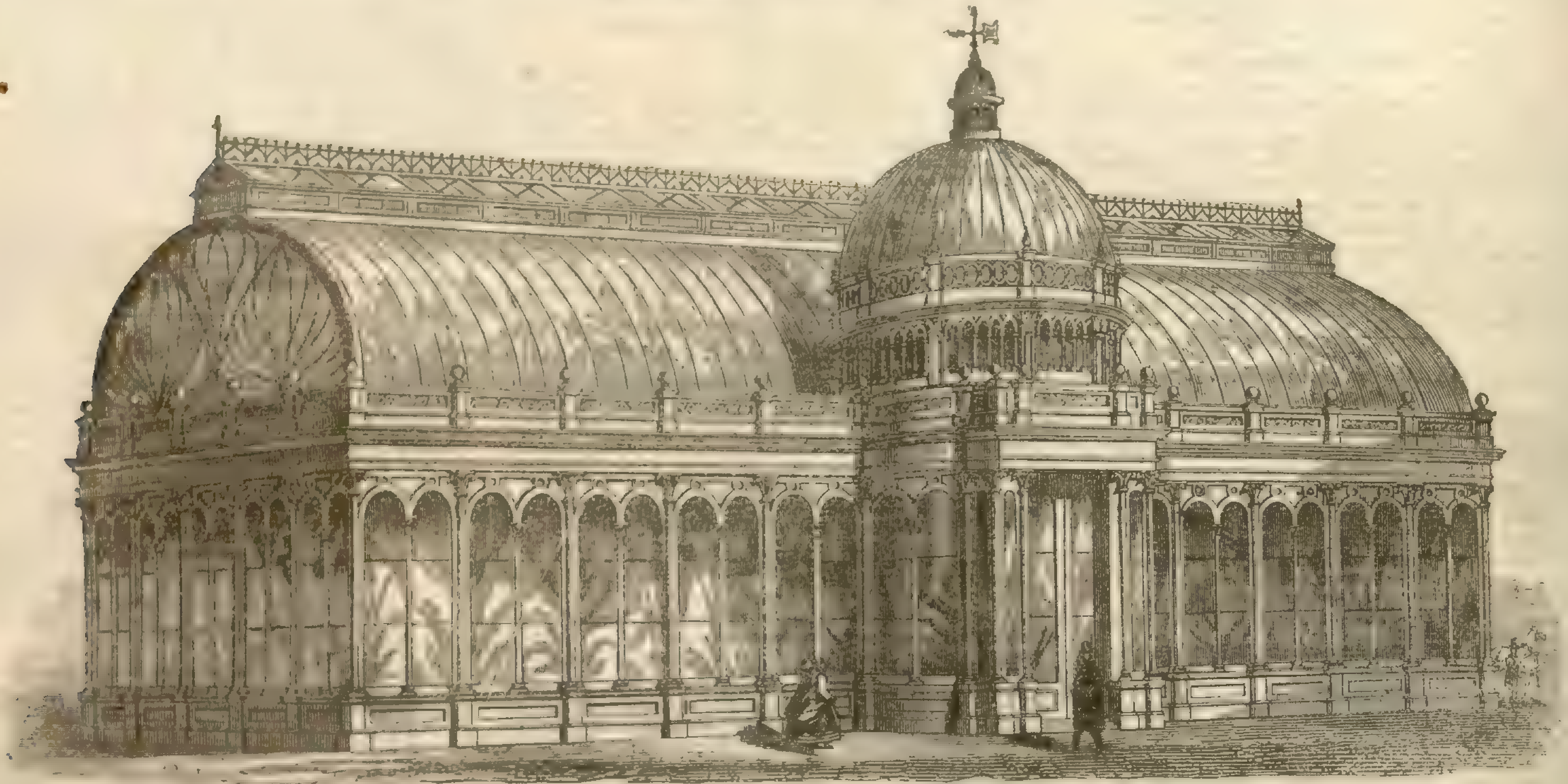
GISHURST COMPOUND.—"January, 1862.
"The mode of using Gishurst which I have found most advantageous with my own trees, is to take say 3 lb.; throw this into an earthenware pan or large pail containing about six gallons of nearly boiling water. Stir up and let this remain for 48 hours, by which time the strength of the smell will have passed off; then apply, by means of a full sized painter's brush, over buds, shoots, branches, and stem, giving especial care at the forks, till the whole tree is in a white lather.
"This winter dressing may be applied from the time trees go to rest in Autumn till the time the buds begin to open in Spring; after that time the above strength of solution would be too great, as injury would be done to the blossoms. From one to two ounces to the gallon is then found the best strength.
"(Signed) THE INVENTOR OF GISHURST."

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—
"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."
Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.
The GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.
PROTECTION from the COLD WINDS & MORNING FROST.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.
Two yards wide .. .. 1s. 6d. per yard run.
Four yards wide .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.
ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

PATRONISED BY THE QUEEN.



WEEKS'S CONSERVATORIES are peculiarly chaste in design. A choice variety now in preparation at their Steam-Power Works.

WEEKS'S NEWLY-INVENTED PEACH HOUSES give the utmost satisfaction. They require *no Brick foundation,* and are specially suited for covering Trees of long standing.

WEEKS'S FORCING HOUSES and **VINERIES** combine some valuable improvements.

WEEKS'S IMPROVED VENTILATING APPARATUS gives universal satisfaction.

WEEKS'S HOT-WATER APPARATUS continues to eclipse all spurious imitations of their renowned "ONE-BOILER SYSTEM." It exposes four times the quantity of heating surface to the action of the fire, consequently must be four-fold as powerful, and economical in the same ratio. It is described by the highest authority as the very best extant for both large and small works, which the following references will serve to corroborate. It has been adopted by

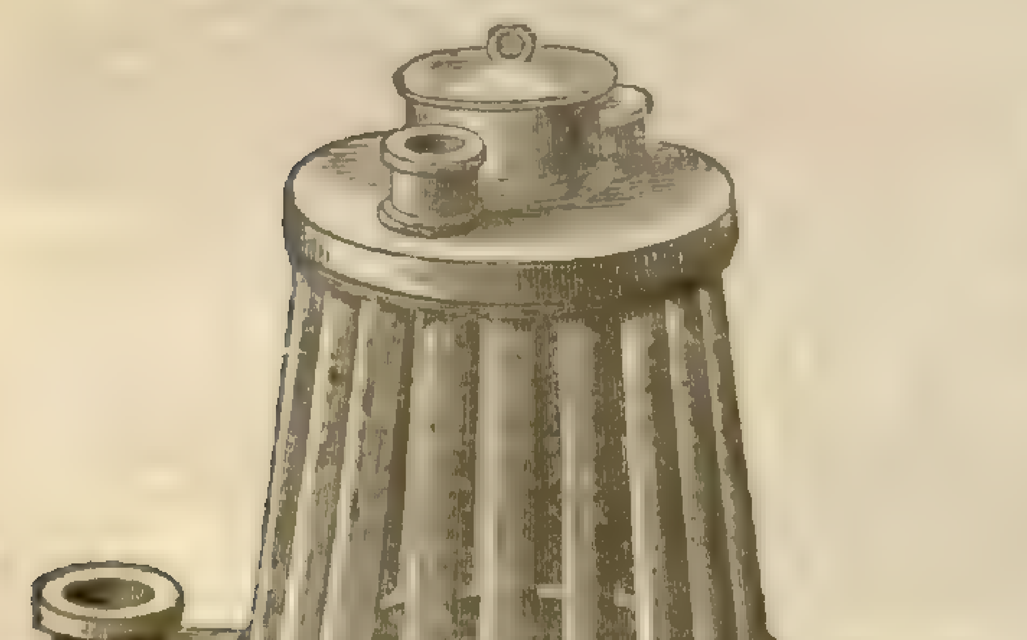
HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN
THE TOWER OF LONDON
THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN
THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM, AND NUMEROUS PUBLIC COMPANIES.

Catalogues free on application.

JOHN WEEKS & COMPANY, Horticultural Builders and Hot-Water Apparatus Engineers,

KING'S ROAD, CHELSEA, LONDON, S.W.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



ORMSON'S PATENT JOINTLESS TUBULAR BOILER,

AN ORIGINAL INVENTION,

Brought out for the purpose, and is now fully acknowledged to surpass the OLD-FASHIONED JOINTED TUBULAR BOILERS, which have been made for the last 20 or 30 years by all other manufacturers. The ADVANTAGES of this PATENT will be manifest to every person's understanding from the following FACTS. For instance, one of the OLD-FASHIONED JOINTED BOILERS with 50 TUBES would have 100 JOINTS made of rope yarn and cement, exposed to the direct action of the FIRE, whereas in my PATENT there is NOT ONE JOINT so exposed. And it should be fully understood that as the OLD-FASHIONED JOINTED TUBULAR BOILER increases in SIZE, number of TUBES and JOINTS, its liability to LEAKAGE also increases, consequently

THE FOLLOWING IS THE REASON WHY

ORMSON'S ONE-BOILER SYSTEM

AND PATENT JOINTLESS TUBULAR BOILERS

have become so universally adopted on account of their superior power, great safety, and economy,

ORMSON'S No. 1 BOILERS	are heating upwards of	250	feet of Pipe.
ORMSON'S No. 2 BOILERS	" "	600	"
ORMSON'S No. 3 BOILERS	" "	1800	"
ORMSON'S No. 4 BOILERS	" "	3000	"
ORMSON'S No. 5 BOILERS	" "	5000	"

Boilers of larger sizes if required to heat 12,000 or 15,000 feet of Pipe.

H. Ormson having a most complete Set of Steam-power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, Horticultural Builder to Her Majesty,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

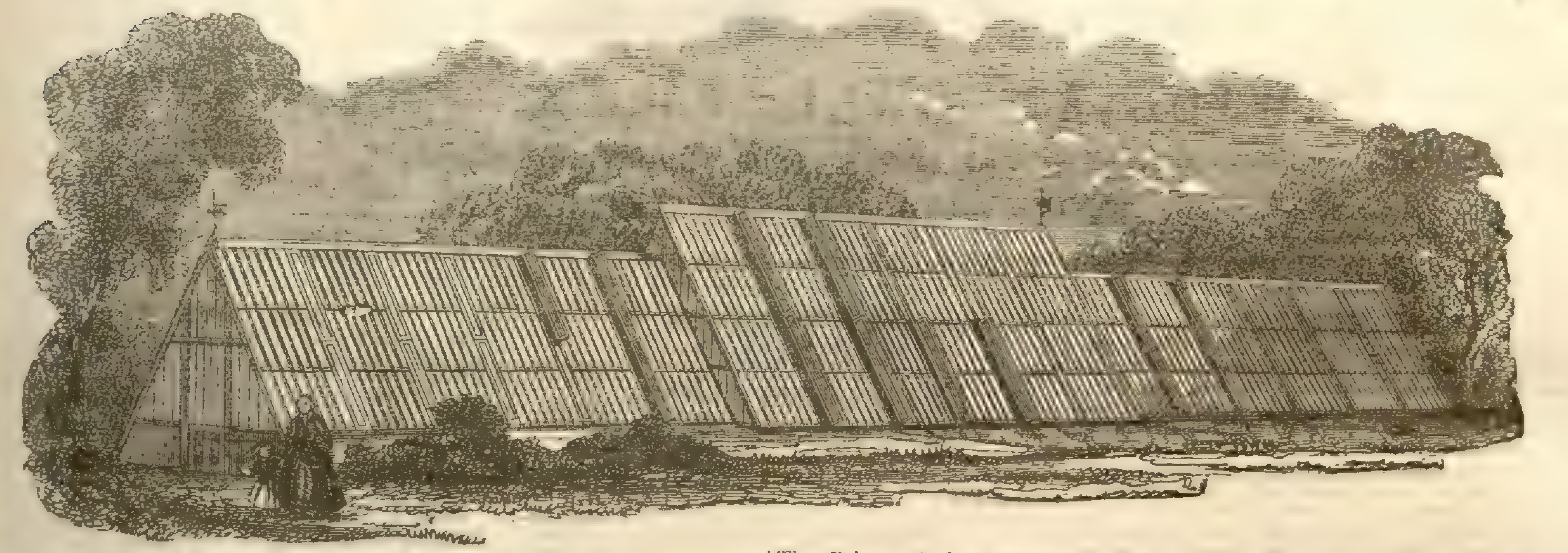
HOTHOUSES FOR THE MILLION,

ON THE PRINCIPLE INVENTED AND PATENTED BY

SIR JOSEPH PAXTON, M.P.

COMBINING SIMPLICITY, CHEAPNESS, EXCELLENCE, AND DURABILITY,

BEING CAPABLE OF FULFILLING IN THE MOST PERFECT MANNER ALL THE REQUIREMENTS OF HORTICULTURE.



The Prices of Lean-to Houses complete are as follows:—

Ft. In.	8 ft. Lights			10ft. Lights			12ft. Lights			14ft. Lights			16ft. Lights		
20 7 in length	£12	0	0	£16	0	0	£21	0	0	£28	10	0	£34	5	0
31 3 in length	16	10	0	21	2	6	26	10	0	37	12	0	45	16	0
41 11 in length	20	18	0	26	18	6	33	7	6	46	14	0	57	7	0
52 7 in length	25	12	6	32	15	0	40	5	0	55	16	0	68	18	0
63 3 in length	30	6	0	38	10	0	47	2	6	64	18	0	80	10	0
73 11 in length	34	12	6	43	15	0	53	7	6	74	0	0	92	0	0
84 7 in length	39	6	0	49	11	6	60	5	0	83	2	0	103	11	0
95 3 in length	43	19	0	55	10	0	67	2	6	92	5	0	115	2	0
105 11 in length	48	17	6	60	12	6	73	10	0	101	10	0	126	13	0

The Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are as follows:—

Ft. In.	8 ft. Lights			10ft. Lights			12ft. Lights			14ft. Lights			16ft. Lights		
20 7 in length	£24	0	0	£32	0	0	£42	0	0	£57	0	0	£68	10	0
31 3 in length	33	0	0	42	5	0	53	0	0	75	4	0	91	12	0
41 11 in length	41	16	0	53	17	0	66	15	0	93	8	0	114	14	0
52 7 in length	51	5	0	65	10	0	80	10	0	111	12	0	137	16	0
63 3 in length	60	12	0	77	0	0	94	5	0	129	16	0	161	0	0
73 11 in length	69	5	0	87	10	0	106	15	0	148	0	0	184	0	0
84 7 in length	78	12	0	99	3	0	120	10	0	166	4	0	207	2	0
95 3 in length	87	18	0	111	0	0	134	5	0	184	10	0	230	4	0
105 11 in length	97	15	0	121	5	0	147	0	0	203	0	0	253	6	0

If only one end is required a corresponding deduction will be made. **The 14 and 16 feet lights are made stronger than those of less dimensions.**

The above prices do not include package, railway freight, heating apparatus, or erection, but we have made arrangements with Mr. Jones, of 6, Bankside, Southwark, London, to heat our houses on economical principles under our direction.

Illustrated Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

SAMUEL HEREMAN, 7, PALL MALL EAST, LONDON, S.W

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

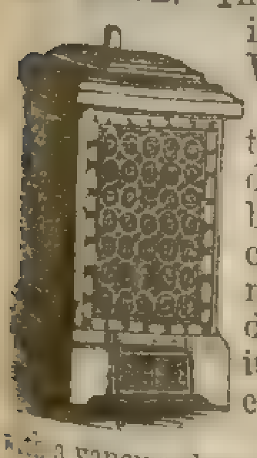
Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.



It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large Apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 48 hours with once filling.

Particulars and prices post free on application to MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

JAMES WATTS AND CO., HOTHOUSE BUILDERS and HOTWATER APPARATUS MANUFACTURERS, near the Green Man, Old Kent Road, London, S.E.

200 CUCUMBER and MELON BOXES and LIGHTS, and from 400 to 500 LIGHTS for PITS of all SIZES KEPT in STOCK.

Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.

References to the Nobility, Gentry, and Trade in most of the Counties in England.

West of England, Ireland, and Wales.

VINCENT SKINNER (*late Partner with* J. WEEKS & Co.), erects CONSERVATORIES, HOTHOUSES, and HOT-WATER APPARATUS.

His improved Pipe Boilers, which give such universal satisfaction for Warming Churches and Hothouses, will heat from 100 to 2000 feet of Pipe.

Plans and Estimates on application to V. SKINNER, Bridewell Street, Bristol.

Horticultural Works and Hot-Water Apparatus Manufactory,

Kensal Green, Harrow Road, London, W.

JOHN TAYLOR AND SON beg to call the attention of the nobility and gentry to the very superior manner in which they ERECT all kinds of CONSERVATORIES, VINERIES, GREENHOUSES, &c., combining every improvement with elegance of design and durability of materials and workmanship.

Their VENTILATING APPARATUS for the Fronts and Roofs of Houses has given the highest satisfaction. Churches, Chapels, Schools, Entrance Halls, Public Buildings, &c., heated with Hot-Water Apparatus in a most economical and efficient manner.

J. T. & SON have great pleasure in referring to numbers of the nobility and gentry by whom they are extensively engaged.

To Market Gardeners and Others.

WANTED to RENT, about 2 Acres of MARKET GARDEN, with Dwelling House attached, or near to it, within six miles of London. The crops, &c., on the ground taken at a valuation if required.

Parties are requested to apply, stating capital required, with other particulars, to A. B., Post Office, St. John's Hill, Sevenoaks, Kent.

FARM to be LET by TENDER.—MELLS DOWN FARM, in the parish of Mells, near Frome, Somerset, consisting of a good House and 300 Acres of Land. May be entered upon at Lady Day next.

For particulars apply to Mr. RAYNES, Mells.

To Gentlemen's Gardeners and Others.

A GARDENER and FLORIST retiring from Business will Dispose of it for a small Premium. The profits amount to 200*l.* per annum, and may be much increased. Any person with a small capital would find this a most advantageous opportunity.

Address G. H., Post Office, Camberwell Green, Surrey, S.

To Gardeners and Florists.

TO BE DISPOSED OF, a Bargain if taken immediately, 10 Years ESTABLISHED BUSINESS, with Six Roomed Double-fronted House, Ground in front, Span-roof Greenhouse, 40 feet by 12 feet; 12-light Pit, Shed, stock of Plants, Tools, and Utensils. Well situated, being in the immediate vicinity of five new Parks; Rent low, and half let off. The only reason for parting with this well paying Business, is the proprietor is in treaty for another line of Trade.

Apply to Mr. ALLEN, Auctioneer and Valuer, 7, St. James's Terrace, Southgate Road, Islington, N.

Crown Lands, Delamere, Cheshire.

TO BE LET by TENDER for a term of 21 years, from April 5, 1862, with immediate possession, by direction of the Honourable James Howard, the Commissioner in charge of Her Majesty's Woods and Royal Forests, a portion of the late Forest of Delamere called LONGRIDGE and PLOVER'S MOSS. Allotments (formerly Woodland) recently cleared, and now being marled for cultivation, containing about 893 statute Acres, in the parish of Delamere, to be divided into convenient farms.

The land is Tithe Free, and is situate about 10 miles from Chester, and 4 miles from Hartford Station, on the London and North Western Railway. There is also to be a station at Delamere on the proposed West Cheshire line of railway through the Forest.

Particulars, with Forms of Tender, may be had on application to the Honourable JAMES HOWARD, Office of Woods, &c., London; to Mr. JOHN CLUTTON, 9, Whitehall Place, London; or to Mr. GEORGE MOODIE HARWOOD, Kelsall, Chester, who will afford every facility for viewing the land.

Tenders must be delivered not later than Saturday, March 8, 1862.

Sales by Auction.

Consignment of Plants from Ghent.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY, Feb. 6, at half-past 12 o'Clock precisely, 300 fine CAMELLIAS with flower buds, from 1 to 2 feet high; 100 strong bulbs of LILIUM LANCIFOLIUM RUBRUM, the dark spotted variety, formerly the property of an amateur, who has grown this sort for 20 years without disposing of any of them; 300 fine INDIAN AZALEAS, well set with flower buds; 300 hardy RHODODENDRONS, choice varieties, many with flower buds; 200 ASCLEPIAS TUBEROSA; 200 DELPHINIUM FORMOSUM.

On view the Morning of Sale and Catalogues had.

Owston, in the County of Leicester,

NEAR TO OAKHAM, IN THE COUNTY OF RUTLAND.

MESSRS. WOOD will SELL by AUCTION, by order of the Assignees, under the bankruptcy of Mr. F. Ormond, on WEDNESDAY, THURSDAY, and FRIDAY, the 12th, 13th, and 14th February, 1862, the whole of the very valuable DINING, DRAWING, BED-ROOM, and other FURNITURE and EFFECTS, upon the premises, at Owston aforesaid, commencing each morning at 11 o'Clock; the recently erected Greenhouse (about 11 by 5 yards) and Melon House, heated upon the modern and highly approved hot-water principle, with Stands and Plants, Ornamental Wire-work, Stone Pedestals with Vases, Sun-dial, &c., Circular Summer-house of iron work, with revolving Centre Table, Tree-trainers, Garden Chair, Lawn Mowing Machine, Iron Garden Roll, and other customary garden essentials. Also a Harness Horse, Do. Mare and Pony, Dog Cart, Gig and Harness, Dairy Cow, Calf, Pig, Fancy and other Pigeons, with Poultry, will be sold on the last day.

Catalogues to be had of the AUCTIONEERS, Grantham, and place of Sale.

NEW AND BEAUTIFUL PLANTS FOR 1862.

WILLIAM BULL, F.R.H.S., F.R.B.S.,

NURSERYMAN AND NEW PLANT MERCHANT,

KING'S ROAD, CHELSEA, LONDON, S.W.,

Will send out the following NOVELTIES for the first time on and after the 21st of April next:—

NEW FUCHSIAS.

Unquestionably the best and most distinct collection ever offered at any one time, each possessing sterling merit, good habit, and a free blooming character.

BRAVO.—The corolla of this flower is so complex, full, and double, as to appear like a plum-coloured ball set beneath short crimson sepals; peculiarly novel.

BRIGHTNESS.—A massive and noble flower, sepals unusually long, moderately reflexed, of the richest crimson; large and rich purple double corolla, an attractive kind.

GEM OF THE SEASON.—Deep crimson sepals, elegantly reflexed, very short, showing the corolla to great advantage; double, bright purple corolla; an immensely free bloomer, so much so as to make the plant one mass of flower; very short jointed, and compact in growth.

HER MAJESTY.—This, the Queen of white-sepal'd Fuchsias, in style is somewhat after the well-known Duchess of Lancaster, but totally eclipses that variety, its ponderous flowers being individually twice the size and substance of that favourite kind.

INTERNATIONAL.—Light red tube and sepals; extraordinary large, double, peculiar barrel shaped corolla of the most beautiful purple colour, striped and blotched with red at the base.

SENSATION.—A complete novelty and new shape, inasmuch as the corolla expands almost horizontally, of a rich purple colour; sepals bright crimson and beautifully reflexed; a peculiarly attractive variety.

THE BEST.—Good, stiff, large and shapely white corolla, much the finest of this class ever offered; sepals very bright scarlet, broad and elegantly reflexed.

TURBAN.—Very broad bright crimson sepals, elegantly reflexed; an immensely large, beautifully formed, smooth, rich purple corolla.

Price of the above NEW FUCHSIAS, 10*s.* 6*d.* each; or the collection of eight for 63*s.*

NEW ANTIRRHINUMS.

The annexed have been selected from several thousand Seedlings; they are all distinct and good, and such as will give satisfaction.

ALBION.—Purple tube, mouth and lower lips cream colour, upper lips rosy purple.

ATTRACTION.—White tube, purple crimson with bright yellow mouth.

CANARY.—Clear yellow, orange mouth.

CHERUB.—Bright pink, lemon mouth.

DECLARATION.—Beautiful bright amaranth, yellow mouth and white tube.

FAIRY.—Deep rose with light mouth and orange centre, blush centre to lower lip.

GLOWWORM.—Vivid crimson, bright orange mouth.

HEBE.—Yellow, freckled and striped with crimson, bright yellow mouth.

HEROINE.—Very bright rose with orange mouth, white tube.

LIVELINESS.—Rich velvet crimson, white tube and mouth.

METEOR.—Fiery crimson, very attractive and fine.

NEMESIS.—White tube, bright red with light mouth.

Price of the above NEW ANTIRRHINUMS, 3*s.* 6*d.* each, or 31*s.* 6*d.* the collection of 12.

NEW VERBENAS.

In announcing which, William Bull has the pleasure to say that they are all the seedling productions of C. J. Perry, Esq. The following prizes have been awarded to Mr. Perry during the past season, and the seedling varieties here offered formed the chief feature in every collection.

Royal Botanic Society, June 12.
Collection of 24 .. .. Certificate of Merit.

Leamington Horticultural Society, June 18.
Collection of 18 .. .. 1st Prize.

Handsworth Horticultural Society, June 25.
Collection of 24 .. .. 1st Prize.
Collection of 12 .. .. 1st Prize.
Collection of 12 .. .. Extra Prize.
Collection of 12 Seedlings .. .. Certificate of Merit.

Royal Botanic Society, July 3.
Collection of 36 .. .. Bronze Medal.

Birmingham Botanic Society, July 4.
Collection of 24 .. .. 1st Prize.

Handsworth Horticultural Society, "Open to all England," July 23.
Collection of 24 1st Prize (a Silver Cup, value 7 guineas).
Collection of 12 .. .. 1st Prize.
Collection of 6 in pots .. .. 1st Prize.
Collection of 6 in pots .. .. Extra Prize.

Reading Horticultural Society, August 28.
Collection of 18 .. .. 1st Prize.

Rugby Horticultural Society, August 30.
Collection of 24 .. .. 1st Prize.

NEW VERBENAS.

Crystal Palace, September 4.
Collection of 24 .. .. 1st Prize.

Royal Horticultural, September 11.
Collection of 24 .. .. 1st Prize.

Brackley Horticultural Society, September 17.
Collection of 12 .. .. 1st Prize.

Hagley Horticultural Society, August 7.
Collection of 18 .. .. 1st Prize.
Collection of 12 .. .. 1st Prize.
Collection of 12 in pots .. .. 1st Prize.
Collection of 6 in pots .. .. 1st Prize.
Collection of 6 new in pots .. .. .. 1st Prize.

Birmingham Botanic Society, August 15.
Collection of 24 .. .. 1st Prize.

Handsworth Horticultural Society, August 20.
Collection of 18 .. .. 1st Prize.
Collection of 12 .. .. 1st Prize.
Collection of 6 in pots .. .. 1st Prize.

Banbury Horticultural Society, August 27.
Collection of 12 .. .. 1st Prize.

Opinions of the Press.

The *Gardeners' Chronicle*, June 15, 1861.
Report of the Royal Botanic Show, June 12.

"Verbenas were sent by several growers, the best being from Mr. Perry."

The *Gardeners' Chronicle*, Sept. 14, 1861.
Report of the Royal Horticultural Society's Show, Sept. 11.

"Of Verbenas, the best stand was contributed by Mr. Perry, of Castle Bromwich, near Birmingham. The sorts were chiefly seedlings, all large and handsome."

The *Florist and Fruitist*, Oct., 1861.
Report of the Crystal Palace Show, Sept. 4.

"Mr. Perry's Verbenas were superb, and fully maintained his position as a grower and raiser of these 'everybody's flowers,' as we heard them called."

Gossip of the Garden, Oct., 1861.
Report of the Crystal Palace Show, Sept. 4.

"Verbenas in bunches of five trusses were well shown. The best collection, consisting for the most part of seedlings, was contributed by Mr. C. J. Perry."

Report of Royal Horticultural Society's Show, Sept. 11.

"Among Verbenas, Mr. Perry's Seedlings were conspicuous. Of these fine sorts we hope to give detailed descriptions in a future number."

ANNIHILATOR.—An extra fine variety, colour brilliant shaded crimson, the pips closely set, very fine truss, pips circular with large pure white eye; the best shaped Verbena ever raised.

BLUE BEAUTY.—Deep blue with large pure white eye; very beautiful, quite a gem.

CHEERFUL.—Pink with crimson centre, fine in form and large truss; an excellent variety for all purposes.

COUNTESS OF AYLESFORD.—Deep rose with darker centre and large white eye; an abundant bloomer and very fine.

COUNTESS OF BRADFORD.—Mauve or pale lavender, of large size and perfect shape, both in pips and truss; an extra fine variety.

DECORATOR.—Brilliant crimson with white eye; a free bloomer, and fine in every way.

LIVELINESS.—Bright crimson, of a peculiar and pleasing shade, fine form, large white eye; very attractive.

QUEEN OF PRUSSIA.—Shaded purple, with large white eye and dark ring round the eye; a fine variety.

RAPHAEL.—Deep plum colour with large white eye; attractive and novel.

SPARK.—Fiery scarlet with yellow eye; the plant is a dwarf shrubby grower, and is the last scarlet bedder ever sent out.

THACKERAY.—Shaded rosy purple, with large white eye and conspicuous purple ring round the eye; pips of fine form and large; very distinct.

THE PALACE.—Flesh colour with crimson centre and white eye; a distinct and singular variety, quite a new style.

UNIQUE.—Puce with maroon centre and white eye; very distinct and striking.

Price of the above VERBENAS 5*s.* each, or the collection of 13 for 60*s.*

As a further proof of the excellence of C. J. Perry's Verbenas, he offers the following Challenge, Open to all England, to Exhibit in June, July, or August, 24 bunches of Verbenas, all the sorts raised by himself, five trusses of each sort in a bunch, in London or within 100 miles of Birmingham, for 10*l.* or 20*l.*, against all the other sorts in cultivation, both new and old, English and French, and including all the new kinds to be sent out this spring.

Any person accepting this Challenge must communicate with J. C. Perry, care of William Bull, to fix date and make arrangements before the 1st May.

NEW PETUNIAS.

The following are confidently offered as superior to any previously in cultivation: they have been raised at my establishment by the most careful hybridisation, and are a small selection made from many thousand seedlings.

ACME.—White, striped and veined with bright blue, stiff shell-like flower of good form.

DAZZLE.—Beautiful rich crimson with intensely black centre, excellent form and of good substance.

EXCELLENT.—Deep pink shaded with violet, and very much veined with crimson over the entire surface of the flower.

GUIDO.—Broadly margined with French white, striped with red and dark crimson centre.

MONARCH.—An extremely large and full, fine double flower, rich crimson, free flowerer.

NONESUCH.—Bright rose mottled with white, pure white throat.

PALATIAL.—French white, each petal strikingly rayed with bright violet crimson.

REVIEW.—Bright crimson, broadly margined with rose, violet throat.

RUBY.—Crimson, intensely veined and striped with black, dark violet throat, stiff flower and excellent form.

SPECIAL.—Fine bold flower of excellent form, margined with rose and beautifully marbled, also striped and veined with violet crimson.

SUFFUSION.—Double, delicate pink, veined with purplish red.

SULTANA.—Blush, striped with purple, good form, novel and distinct.

Price of the above NEW PETUNIAS, 3*s.* 6*d.* each.

TROPÆOLUM BOUQUET.

A gem for bedding purposes, compact habit, height about 6 inches, flowering so profusely as to be literally one mass of blossom; colour chrome yellow, the three under petals clearly and distinctly spotted with bright red; calyx and proboscis or tube also bright red, a very showy and attractive variety, 3*s.* 6*d.* each.

The entire stock has been purchased from Mr. Barker, of Godalming, the raiser of so many good Tropæolums.

GESNERA REFULGENS.

In this magnificent hybrid are combined some of the best qualities which a plant can possess, for it is not only of good habit, and free-flowering, but extremely showy, and also one of the most beautiful foliaged plants extant; the leaves are broadly cordate, 6 to 9 inches in diameter, and covered with innumerable crimson hairs, which give the foliage the appearance of rich crimson velvet; the flowers are produced in fine pyramids throughout the winter; tube and lobes rich orange scarlet with yellow throat. When exhibited before the Floral Committee of the Royal Horticultural Society, it was awarded a label of commendation for its ornamental character. Price 15*s.* each.

GESNERA VELUTINA.

This hybrid, although distinct from the preceding, embraces its main characteristics, the foliage very ornamental and similar in size, with a mottled green and brown surface, velvety with purplish-red hairs, the flowers of a scarlet vermilion colour. Price 10*s.* 6*d.* each.

NEW TYDÆAS.

PUMILA | PYGMÆA | TENELLA.

The above are offered as being pretty, little, neat, dwarf growing varieties, and hence much superior to many others of this family; their blossoms are tubular funnel-shaped, as in other kinds, the colours of each sort are varied, and embrace rose, rosy-lake, rich carmine rose, and all more or less spotted with rich crimson. Price 5*s.* each.

CHRYSANTHEMUM FIMBRIATUM.

An interesting and pretty novelty, all the petals beautifully fringed; flower medium size and very double, primrose colour. The entire stock has been purchased from Messrs. Spary and Campbell, of Brighton. Price 7*s.* 6*d.* each.

PHLOX ADMIRATION.

The entire stock of this exquisite variety has been purchased from that eminent Phlox cultivator M. Lierval, of Paris. It only grows about a foot high, and has immense Hydrangea-like heads of blossom, the flowers individually are large, and of the most perfect form, colour bright red or carmine, with glowing crimson centre. The best Phlox ever offered. Price 7*s.* 6*d.* each.

GERANIUM SPARKLER.

A vivid scarlet, zonale variety, of excellent compact habit; flowers of good substance and form. Price 5*s.* each.

BEGONIA DÆDALEA. | BEGONIA LONGIPILA.
" IMPERIALIS | " SMARAGDINA.

These fine new species, collected by M. Ghiesbreght in South America, with some new Caladiums, and several other New Plants, introduced by M. Ambroise Verschaffelt, will be hereafter announced.

ESTABLISHMENT FOR NEW AND RARE PLANTS, KING'S ROAD, CHELSEA, LONDON, S.W.

Printed by William Bradbury, of 13, Upper Woburn Place, and Frederick Mullett Evans, of No 19, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, February 1, 1862.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 6.—1862.] SATURDAY, FEBRUARY 8. {Price Fivepence. STAMPED EDITION, 6*d*.

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☞ NOTICE TO ADVERTISERS.—*Advertisements intended for the Current Number should be sent so as to reach the Office not later than* THURSDAY *in each week.*

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.

ROYAL HORTICULTURAL SOCIETY.—NOTICE.—The ANNIVERSARY MEETING of the Society for the ELECTION of COUNCIL, OFFICERS, and AUDITORS for the ensuing year, will be held in the Council Room, at the Garden, South Kensington, W., on TUESDAY, February 11. The Chair will be taken at 1 o'Clock P.M. precisely.
Feb. 8. ANDREW MURRAY, Assistant Secretary.

MIDLAND and NORTHERN ROSE SHOW.—It is proposed to establish a Midland and Northern Rose Show. Rose Growers and others, who are disposed to promote the undertaking, are requested to communicate with the Rev. S. REYNOLDS HOLE, Caunton Manor, Newark.

BRISTOL and CLIFTON HORTICULTURAL FETES.—SEASON 1862.
The Two MEETINGS for this year will be held at the Zoological Gardens, Clifton, on THURSDAY, May 22, and THURSDAY, [illegible] Schedule of Prizes may be obtained on personal application to the Gatekeeper, at the Gardens; or by letter addressed to the Honorary Secretary.
ROBERT COLES,
February 8, 1862. 2, Lower Harley Place, Clifton.

BARR AND SUGDEN, SEED MERCHANTS.—For COLLECTIONS of VEGETABLE SEEDS, see p. 111. For PRICED LIST of the best kinds of VEGETABLE SEEDS, see last page of *Chronicle*, January 18 and 25.
12, King Street, Covent Garden, W.C.

Illustrated Spring Seed Catalogue.
BARR AND SUGDEN, SEED MERCHANTS.—The above is arranged on a new principle. The cultural directions are the most copious and practical of any Trade List. All inferior varieties of VEGETABLE and FLOWER SEEDS have been rejected. See large Advertisement.
12, King Street, Covent Garden, W.C.

MESSRS. E. G. HENDERSON AND SON, NURSERYMEN and SEED MERCHANTS, respectfully announce their NEW SEED CATALOGUE for 1862, free on application.
Wellington Nursery, St. John's Wood, London, N.W.

TRITOMA UVARIA.
For strong plants of this splendid flower apply to JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

WANTED to PURCHASE, a fine Specimen of AZALEA GLEDSTONESII. The plant must be in a fine healthy state.
Apply to J. CHAFFIN, 5, Beaufort Place, Bath.

To the Trade.
TWO-YEARS' SEEDLING NORWAY SPRUCE, extra fine well rooted plants, grown in loam. Price 2*s*. per 1000; 4*l*. 10*s*. per 50,000; 8*l*. 10*s*. per 100,000.
JOHN CRANSTON, King's Acre Nurseries, near Hereford.

WANTED, ASH 4 to 5 feet, stout and well grown; also BLACK ITALIAN POPLARS, 3 to 4 feet.
J. C. WHEELER & SON, Nurserymen, Gloucester.

WANTED, 20,000 NORWAY SPRUCE FIR, 2½ to 3 feet.
JOHN PERKINS, Nurseryman, 52, Market Place, Northampton.

PEAT EARTH of excellent quality delivered at the Nine Elms Station, 5 tons for 55*s*.; at Guildford, 5 tons for 51*s*.; at Havant, 5 tons for 45*s*.—Apply to MR. BETTS, 115, Strand, London, W.C., where a sample may be seen.

DOWNIE, LAIRD, AND LAING beg to intimate that their NEW CATALOGUE of FLORIST FLOWERS, NEW FLOWER SEEDS, &c., is now ready, and may be had free on application.
17, Frederick Street, Edinburgh, and Stanstead Park, Forest Hill, London, S.E.

STEPHEN SMITH, NURSERYMAN, Macclesfield, Cheshire, offers at very cheap rates, as the Ground on which they stand is wanted, Transplanted SPRUCE FIR, 1 to 2 feet; SCOTCH FIRS, PRIVETS, COTONEASTER, LAURELS, AMERICAN PLANTS in variety, &c. &c. LISTS, with prices, free on application.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

New Garden Seeds.
JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

To the Trade.
TOMATO DE LAYE (scarce).—Price per ounce on application.
JAMES CARTER & CO., 237 and 238, High Holborn, W.C.

For Cucumbers,
RECOMMENDED BY THE FRUIT COMMITTEE OF THE ROYAL HORTICULTURAL SOCIETY, SEE
BARR AND SUGDEN'S Advertisements of January 4 and 11, and Feb. 1.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

Now Ready.
BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See large Advertisement.
Covent Garden Market, W.C.

Seeds.
WM. PAUL'S CATALOGUE of SELECT VEGETABLE and FLOWER SEEDS is now ready. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Double Dwarf Poppies.
HOOPER AND CO., SEEDSMEN, Covent Garden Market, London, W.C., offer Seed of their superb stock of DOUBLE DWARF FRENCH POPPIES, unrivalled for their extreme doubleness, and variety, and brilliancy of colours. Price 1*s*. per packet, post free. To the Trade, 5*s*. per ounce.

Lilium Colchicum (Loddigesianum).
A. VAN GEERT, NURSERYMAN, Ghent, begs to offer STRONG FLOWERING BULBS of this splendid and rare species at 21*s*. each.

TRUE KENTISH COB NUTS.—Fine well-formed plants, 4*s*., 6*s*., and 9*s* per dozen; 20*s*., 30*s*., 40*s*., and 50*s*. per 100.—EPPS' Nursery and Seed Establishment, Maidstone.

SUPERB HOLLYHOCKS.—
12 Superior Show Flowers .. .. 18*s*. 0*d*.
12 Good ditto 9 0
The Trade supplied.
For CATALOGUES, address R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk.

FINE DWARF-TRAINED PLUMS, 30*s*. per dozen; FINE DWARF ROSES, 60*s*. per 100.
WILLIAM EPPS, Jun., Nurseryman and Seedsman, Ashford, Kent.

STRONG FRUITING VINES, 7*s*. 6*d*. and 10*s*. 6*d*. LIST gratis and post free.
JAMES CARTER & CO., 237 and 238, High Holborn, W.C.

FRUITING STRONG VINES, 7*s*. 6*d*. and 10*s*. 6*d* each.
Extra extra strong, 15*s*. each.
Strong Canes for planting, 3*s*. 6*d*. and 5*s*. each.
E. G. HENDERSON & SON, Wellington Road, St John's Wood, N.E.

Strong Vines from Eyes.
J. IVERY AND SON beg most respectfully to inform their patrons that they have now ready for planting out, strong Plants of all the best varieties.
A PRICED LIST will be forwarded on application.
Dorking Nursery.—Feb. 8.

High Beech, Essex.
JAMES CRAWFORD begs to offer a large Stock of strong GRAPE VINES from Eyes, now fit for fruiting, in No. 8 pots. Also good Plants of all the best sorts for planting out.

New Hybrid Green-flesh Melon—Archer's Favourite.
T. KEMPSTER offers Seed of the above in sealed packets, at 2*s*. 6*d*. per packet. When three are ordered four will be sent. Stamps or Post-office Orders must accompany each order, payable at Lee.
See *Gardeners' Chronicle* of Dec. 14 and 21, 1861.
Apply to THOMAS KEMPSTER, 14, Dacre Place, Lee, Kent, S.E.

Fruit Trees, Dwarf-Trained—Apples, Pears, and Plums.
JOHN ADAMS AND CO., Brentford, beg to offer good plants of the above at exceedingly low prices.

Fruit Trees—Strong Standard Apples.
J. ADAMS AND CO., Brentford, has to offer excellent Plants of the above, consisting of Willington, Blenheim, King of the Pippins, &c.; also worked English Elms, 5 to 8 feet.
Prices on application.

Fruit Trees, Dwarf-trained and Pyramid Apples, Pears, Plums, and Cherries.
JOHN CRANSTON has to offer excellent plants of the above, which cannot fail to give the greatest satisfaction. Also strong VINES in pots.
A LIST of SORTS will be sent on application.
Nurseries, King's Acre, near Hereford.

Strawberries for Forcing.
GEO. CLARKE has a large quantity of strong established Plants in Pots with excellent crowns; the sorts are KEEN'S SEEDLING, BRITISH QUEEN, SIR HARRY and ALICE MAUDE. Price 6*s*. per dozen.
Nursery, Streatham Place, Brixton Hill, S.

Good Seeds, Carriage Free.
SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds.
GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

Agricultural and Garden Seeds.
H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, and MANURE COMPANY, "Limited," Union Road, Plymouth.

New Seeds on Sale by the
PLYMOUTH SEED COMPANY, "Limited."—For prices and particulars see their GENERAL PRICE CURRENT, which is now ready.
Address Plymouth Seed Company, Plymouth.

PLYMOUTH SEED COMPANY, "Limited."—The GENERAL PRICE CURRENT is now ready, and can be had DIRECT, or of Messrs. SIMPKIN & Co., 4, Stationers' Court, London, E.C., for six postage stamps.
Plymouth Seed Company, Plymouth.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

AZALEAS, CAMELLIAS, EPACRIS, and ERICAS.—We respectfully invite an inspection of our Stock of the above, which is large, in the finest health, and full of flower buds.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

Seeds, Seeds, Seeds.
WM. CUTBUSH AND SON'S CATALOGUE is now ready, post free on application.
Seed Establishment, Highgate, London, N.

Bellamy's Early Green Marrow Peas.
CHARLES SHARPE and CO., SEED GROWERS, Sleaford, have the above to offer to the Trade, of first-rate quality. Price on application.

Henry's Prize Hybrid Leek.
DOWNIE, LAIRD AND LAING are now sending out Seed of the above in Packets at 1*s*.
17, Frederick Street, Edinburgh; and Stanstead Park, Forest Hill, London, S.E.

Extra Large Sea Kail.
GEO. CLARKE has to offer a large quantity of very fine roots, clean and sound, 1 to 2 inches in diameter. Prices on application. The Trade also supplied.
Nursery, Streatham Place, Brixton Hill, S.

Altringham Carrot Seed.
CHARLES SHARPE AND Co., Sleaford, have the above to offer to the Trade; new Seed of their own growing. Price on application.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

NUTTING'S selected DWARF RED BEET, recommended by the Horticultural Society as best in Cultivation. The Trade supplied.
NUTTING & SONS, Seed Warehouses, 60, Barbican, London, E.C.

FORTY-FOLDS, FLUKES, ASH-LEAF, MATCHLESS, and LAPSTONE KIDNEYS, to be obtained at Messrs. JOHN & GEORGE BELL'S, Covent Garden Market, W.C.
PRICE LIST sent on application.

SEED POTATOES from the Growers.—Early Shaws, Manly's and Regents may be had on application of H. CHEVERST, Salesman, Borough Market, S.E.

LEMON KIDNEY POTATOES.—Earliest and best variety. See Article in Royal Agricultural Journal. Supplied by Author's Bailiff, JOHN HELM, Poulton Hall, Morecambe. Price 3*s*. 6*d* per stone. Copy of Article, 3*d* edition, 1*s*. on receipt of Post Office Order.

SEED POTATOES. — The undersigned has an extensive Stock of all the leading kinds of the above grown, especially for Seed, which he can offer at very CHEAP rates. Prices on application.
GEORGE NEWELL, Corn, Grain, and Seed Factor, 19, Lower Bridge Street, Chester.

Seed Potatoes.
H. AND F. SHARPE are now prepared to take orders at very moderate prices for all the leading sorts of POTATOES, including MYATT'S Prolific ASH-LEAVED KIDNEY, the finest and most prolific in cultivation.
Prices may be had on application.
Seed Growing Establishment, Wisbeach.

FLUKE POTATOES, off the Lancashire Moss and Sand; EARLY PINK EYE KEMPS, very fine TRUE ASHLEAF KIDNEY; OXHORN KIDNEY, a very prolific variety, good quality; WHITE BLOSSOM LEMON KIDNEY. Prices moderate.
A PRICED DESCRIPTIVE CATALOGUE of Garden and Flower Seeds is now ready.
HENRY BROWN, Seedsman, 4, Commutation Row, Liverpool.

New Roses for 1862.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

WILLIAM WOOD and SON have much pleasure in announcing the NEW ROSES for 1862, strong plants of which will shortly be ready, at 5s. per plant.

HYBRID PERPETUAL ROSES.

Adolphe Noblet	Madame Julie Daran
Alexandre Dumas	Maréchal Vaillant
Alphonse Damaisin	Monte Christo
Archevêque de Paris	Monsieur Ernest Driol
Charles Lefebre	Notre Dame de Fourvières
Comtesse Séguier	Olivier Delhomme
Emile Dulac	Paul Féval
Eugène Bourcier	Prince Camille de Rohan
François Lacharme	Professor Koch
Henriette Dubus	Robert Fortune
James Dickson	Simon St. Jean
Jean Baptiste Guillot	Souvenir de Lady Cardley
La Brillante	Souvenir de Monsieur Rousseau
Louise Darzans	Turenne
Madame Boutin	Vicomte Vigier
Madame Cuillot	Vicomtesse de Montesquieu
Madame Charles Wood	Wilhelm Pfitzer.

TEA SCENTED ROSES.

Belle Chartreusaise	Gloire de Bordeaux
Comtesse Ouwaroff	Triomphe de Guillot fils

Also several other new varieties of merit, a DESCRIPTIVE CATALOGUE of which is in the press and will shortly be issued.

N.B. A liberal discount allowed to the Trade.

New Rose, Beauty of Waltham.

WM. PAUL respectfully announces that he is now taking orders for this superb NEW ROSE, which received a First-class Certificate from the Royal Horticultural Society in June last. For description, see Rose Catalogue—Section Hybrid Perpetual: it is also figured in the "Rose Annual," just published. Plants in April, 5s. each; the usual discount to the Trade on six or more plants.

Wm. Paul, Cheshunt Nurseries, Waltham Cross, N.

Standard and Dwarf Roses.

JOHN CRANSTON has no hesitation in stating that he holds the largest stock of STANDARD ROSES in the kingdom, and plants of the finest growth possible. These he is now offering at the following prices:—

STANDARDS, finest Hybrid Perpetual and Bourbon, 30s. per dozen.

HALF-STANDARDS, do., 24s. to 30s. do.

STANDARD TEA SCENTED, the best and most hardy sorts, 36s. to 42s. do.

DWARF HYBRID PERPETUAL, strong on Manetti Stock, 15s. to 24s. do.

DWARF HYBRID PERPETUAL, own roots, 12s. to 18s. do.

DWARF TEA SCENTED, 18s. to 24s. do.

PILLAR ROSES, extra strong on Manetti Stock, 18s. to 24s. do.

NEW ROSES of 1860 and 1861, 3s. 6d. to 5s. each.

A DESCRIPTIVE LIST will be forwarded free on application.

Nurseries, King's Acre, near Hereford.

STANDARD ROSES, with straight stems and good heads, the finest varieties; 30s., 36s., and 42s. per dozen.

GRAPE VINES for PLANTING OUT.—All the leading sorts, with stout, short-jointed, well ripened canes; 3s. 6d., 5s., and 7s. 6d. each.

GRAPE VINES for FRUITING in POTS.—Extra fine, strong bearing rods.

GLADIOLUS.—Splendid hybrids of Gandavensis, 6s., 9s., 12s., and 18s. per dozen; 100 distinct varieties, 84s.; 100 newer, 126s.

NEW BEGONIAS.—Twelve of the most distinct and beautifully variegated Continental varieties, strong plants, for 18s.

CAMELLIAS with FLOWER-BUDS.—Including the best new varieties, fine plants, 30s. to 42s.; extra size, 60s. and 84s. per dozen.

DESCRIPTIVE CATALOGUES, with all particulars, forwarded on application to

James Dickson & Sons, The "Newton" Nurseries, Chester.

Mitchell's Unrivalled Collection of Roses.

The largest Stock and the best Plants in England, justly pronounced both by English and Foreign Growers.

JAMES MITCHELL has the honour of informing his kind patrons that he has succeeded in obtaining the FIRST PRIZES at the principal Shows throughout the season, viz.:—

July 10.—The Grand National Rose Show, Royal Horticultural Society's Garden, Kensington Gore, 96 varieties, 3 trusses of each, First Prize.

September 11.—Forty-eight varieties, 3 trusses of each, First Prize.

July 3.—The Royal Botanic Society, Regent's Park, London, 50 varieties, 3 trusses of each, First Prize.

July 6.—The Great Rose Show, Crystal Palace, 96 varieties, 1 truss of each, First Prize.

June 19.—Brighton Horticultural Society, 50 varieties, 3 trusses of each, First Prize.

September 18.—Fifty varieties, 3 trusses of each, First Prize.

August 28.—Lewes Horticultural Society, 36 varieties, 3 trusses of each, First Prize.

J. M. respectfully informs the Nobility and Gentry he can supply the best perpetual BLOOMING ROSES in Standards, Half-Standards, and Dwarfs, healthy good rooted plants.

Standards, 30s. per dozen.
Half ditto, from 24s. to 30s. per dozen.
Dwarfs, from 18s., 24s., to 30s. per dozen.
New Varieties of 1861, 42s. per dozen.

Pilt Down Nurseries, Maresfield, Sussex.

N.B. These Nurseries are 2½ miles from the Uckfield Station on the London, Brighton, and South Coast Railway.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.

For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.

Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.

The Royal Nursery, Bagshot, Surrey.

CELOSIA AUREA var. PYRAMIDALIS SANGUINEA, and a New Lemon Variety.—These are really magnificent plants, with flowers like a plume of feathers, and continue in bloom from July to December. The C. aurea here offered, G. P. believes to be an improvement upon the var. usually grown, from being more compact in its habit, and the colour a brilliant orange. Seeds of G. P.'s own saving in packets of 100 seeds, each 1s. Price to the Trade on application.

Geo. Parsons, Nurseryman and Seedsman by Appointment to Her Majesty, 27 and 28, Western Road, Brighton; Nurseries, Montpellier Road and Hassock's Gate, Keymer.

ESTABLISHED UPWARDS OF A CENTURY.

COVENT GARDEN MARKET, LONDON, W.C.

BUTLER & McCULLOCH'S
COLLECTIONS OF VEGETABLE SEEDS,

CARRIAGE FREE,

Consisting of the best and most approved varieties.

No. 1.	A Complete Collection for One Year's Supply	£4	0	0
No. 2.	Ditto ditto smaller quantities	2	0	0
No. 3.	Ditto ditto ditto	1	0	0

For full particulars, see CATALOGUE (page 91).

DESCRIPTIVE SEED CATALOGUE FOR 1862,

Containing all the new and most approved varieties of FLOWER SEEDS. To exhibitors we can strongly recommend our assortments of ASTERS, BALSAMS, STOCKS, and other CONTINENTAL SEEDS.

BUTLER and McCULLOCH, SEEDSMEN, COVENT GARDEN MARKET, W.C.

PARADISE NURSERY, HOLLOWAY, LONDON, N.

CHOICE VEGETABLE AND FLOWER SEEDS.

BENJAMIN S. WILLIAMS

Begs to intimate that he will be happy to forward Post Free to all applicants his

NEW PRICED AND DESCRIPTIVE SEED CATALOGUE FOR 1862,

Containing Select Lists of all the best Vegetable and Flower Seeds, with useful suggestions for the guidance of Amateur Cultivators.

The following are specially recommended as good and useful varieties. Descriptions, &c., will be found in Catalogue.

KITCHEN GARDEN SEEDS.

Per quart.—		s.	d.
PEAS, Early Prolific (Dillestone's)		1	3
Sangster's No. 1 (Daniel O'Rourke)		0	10
Auvergne, very prolific		0	9
Champion of England		0	10
Perfection (Veitch's)		2	6
British Queen		1	3
Mammoth Dwarf Green Marrow (Hair's)		2	0
BEET, Dwarf Blood Red (Cattell's)	per oz.	0	3
Compact Topped or Pine Apple	,,	0	6
BORECOLE, Curled Variegated (Melville's)	,,	0	6
Cottager's Kale	,,	0	6
BROCCOLI, White Cape (Grange's)	,,	1	3
Walcheren	,,	1	6
New White Sprouting (Lee's), 1s. per packet, or	,,	4	0
Purple Sprouting	,,	0	6

Per oz.—		s.	d.
BRUSSELS SPROUTS, finest imported		[illegible]	[illegible]
CAULIFLOWER, Early Dwarf Erfurt		[illegible]	[illegible]
Early London		1	3
New Early Mammoth or Frogmore Forcing, 1s. p. pkt.		3	[illegible]
CELERY, Crystal White		0	4
Imperial Dwarf Red (Hood's)		1	[illegible]
Nonsuch (Ivery's)		0	4
CUCUMBER, Kirklees Hall	per packet	1	[illegible]
Telegraph	,,	1	0
The Queen	,,	1	0
LEEK, Ayton Castle (Giant)	,,	1	0
Hybrid Prize (Henry's)	,,	1	0
LETTUCE, Malta or Drumhead	per oz.	0	[illegible]
Moor Park, the best variety in cultivation	,,	1	5
Paris Green or Brighton	,,	0	[illegible]

FLOWER SEEDS in COLLECTIONS, Sealed Packets as imported.

	s.	d.
ASTERS, Chrysanthemum-flowered, an assortment of 12 varieties	3	0
Cocardeau or Crown, an assortment of 4 varieties	1	0
French, Truffaut's Pæony-flowered, an assortment of 12 varieties	2	6
German, an assortment of 12 quilled varieties	2	0
German, an assortment of 12 tall pyramidal varieties	2	0
German, an assortment of 12 Globe flowered varieties	2	0
Giant Emperor, an assortment of 10 varieties	5	0
BALSAMS, Camellia-flowered from Messrs. Smith's collection of 9 varieties	2	6
Rose-flowered, an assortment of 12 varieties	3	0
CARNATIONS, an assortment of 12 splendid varieties, 20 seeds of each	5	0
An assortment of 12 splendid varieties, 10 seeds of each	3	0
CONVOLVULUS MAJOR, assortment of 9 varieties	1	6
DIANTHUS CHINENSIS, an assortment of 12 var. including Heddewigii, Imperial Double, and laciniatus	3	0
HOLLYHOCKS, an assortment of 12 splendid and distinct varieties	6	0
LARKSPURS, an assortment of 8 Rocket flowered vars.	1	6
An assortment of 8 Hyacinth-flowered varieties	1	6

	s.	d.
PHLOX DRUMMONDI, an assortment of 8 splendid varieties	3	0
PICOTEES, an assortment of 12 splendid varieties, 20 seeds of each	5	0
An assortment of 12 splendid varieties, 10 seeds of each	3	[illegible]
PORTULACCAS, an assortment of 7 finest varieties	1	[illegible]
SCABIOUS, Sweet, an assortment of 6 fine new dwarf var.	1	[illegible]
STOCKS, Autumnal flowering, an assortment of 12 splendid varieties	3	0
Brompton or Biennial, an assortment of 12 splendid var.	2	6
Dwarf German 10 Week, an assortment of 12 splendid var.	2	6
Dwarf German, new large flowering, an assortment of 8 splendid varieties	1	6
Emperor or Perpetual, an assortment of 8 splendid var.	2	0
Hybrid Giant, or Cocardeau Biennial, an assortment of 4 splendid varieties	1	6
New Pyramidal 10 Week, an assortment of 8 splendid varieties	1	6
SWEET PEAS, an assortment of 7 finest varieties	1	[illegible]
ZINNIA ELEGANS, an assortment of 6 splendid varieties	1	6
ZINNIA ELEGANS FLORE PLENO, an assortment of 12 splendid varieties	5	0

CHOICE FLOWER SEEDS, in Small Packets.

Per packet.—		s.	d.
Alyssum saxatile compactum		1	6
Amaranthus tricolor splendidissimus		0	6
Aquilegia vulgaris caryophylloides		0	6
Aster, Giant Emperor		0	6
Atriplex hortense purpurea		0	3
Balsamina hortensis camelliæflora, finest mixed		0	6
Bidens atrosanguinea (Ortgies)			
Calceolaria, herbaceous, finest mixed	1s. 6d. to	2	6
Calliopsis cardaminefolia hybrida atrosanguinea		0	6
Celosia aurea		1	6
cristata (coccinea)		1	0
(Dwarf Cockscomb)		1	0
spicata rosea		1	0
Cineraria cruenta, mixed seed, from named flowers,	1s. 6d. to	2	6
maritima		0	4
Clarkia pulchella flore pleno	1s. to	2	6
Clianthus Dampieri		2	6
Dianthus chinensis Heddewigi		0	4
chinensis flore pleno		1	0
hybridus flore pleno atropurpurea		0	6
imperialis hybridus		0	6
laciniatus		0	4

Per packet.—		s.	d.
Dianthus nanus atrosanguineus		0	[illegible]
Gazania splendens		0	[illegible]
Gladiolus Gandavensis (hybrids)	1s. to	[illegible]	[illegible]
Linum grandiflorum		0	[illegible]
Lobelia erinus speciosa		0	[illegible]
trigonicaulis		0	[illegible]
Lychnis Haageana		0	[illegible]
Mathiola intermedia coccinea		1	[illegible]
Œnothera Lamarckiana		0	[illegible]
Perilla nankinensis		1	[illegible]
Phlox Drummondii Radowitzi Kermesina striata		0	[illegible]
Plantago purpurea		0	[illegible]
Saponaria multiflora (calabrica) alba		1	[illegible]
Senecio elegans flore pleno (Magenta)		0	[illegible]
Solanum capsicastrum		0	[illegible]
pseudo-capsicum		0	[illegible]
species		1	[illegible]
Tropæolum Crystal Palace Gem		0	[illegible]
Verbena venosa		0	[illegible]
finest mixed		0	[illegible]
Viola tricolor hybrida		0	[illegible]
Zinnia elegans		0	[illegible]
flore pleno		[illegible]	[illegible]

PRIMULA, Red and White Fringed, mixed or separate, per packet, 2s., 3s. 6d., superior quality.

See Testimonials in Catalogue.

. *Seeds presented to compensate for Carriage or Postage.*

PARADISE NURSERY, SEVEN SISTERS AND HORNSEY ROADS, HOLLOWAY, LONDON, N.

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OPPOSITE THE GARRICK CLUB.

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Contains choice Collections of the following, with important Notes, &c.

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All Orders for Vegetable Seeds amounting to 21s. sent Carriage paid.

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	£	s.	d.
No. 6 Collection contains 20 quarts of Peas and other Seeds in proportion for One Year's Supply ...	£3	3	0
No. 5 Collection contains a proportionate quantity of Seed ditto ...	2	2	0
No. 4 ditto ditto ditto ditto ...	1	10	0
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☞ For particulars of the above Collections, see our Advertisements of January 18 and 25.

For PRICED LIST of Select VEGETABLE SEEDS,
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For LIST of STRIKING NOVELTIES,
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For LIST of COLLECTIONS of CARNATIONS, PICOTEES, and PELARGONIUMS,
See Advertisement of January 11th.

For LIST of CUCUMBERS
Recommended by the Fruit Committee of the Royal Horticultural Society, see our Advertisement of February 1.

BARR AND SUGDEN, SEED MERCHANTS, 12, KING STREET, COVENT GARDEN, LONDON, W.C.

1862.—Vegetable Seeds—First-class.

STEPHEN BROWN'S FIRST-CLASS COLLECTIONS contain a large number of new sorts, very choice. They are the cheapest and best offered :—

	£	s.	d.
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SECOND CLASS COLLECTIONS of best older esteemed sorts, with less of new varieties, fine,—A., 50*s.*; B., 32*s.* 6*d.*; C., 17*s.* 6*d.*; D., 10*s.* 6*d.*

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It contains select Lists only of all the best VEGETABLE and FLOWER SEEDS, so that the Amateur with only a small Garden cannot fail to make a proper selection.

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A Collection for Large Gardens, including every desirable kind of Vegetables, Salads, and Herbs ..	3	0	0
Ditto, ditto, for a Medium-sized Garden ..	2	0	0
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BOSTON MARROW SQUASH, from North America ..	0	6
SUMMER CROOK-NECK SQUASH, from ditto ..	0	6
LARGE YELLOW MAMMOTH PUMPKIN, from Paris	0	6
GREEN SPANISH do. do. do. ..	0	6
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ORNAMENTAL GOURDS, 12 varieties, per collection ..	2	0
SNAKE GOURD, light glaucous green with white longitudinal markings, giving a striking character; handsome climbing plant with snake-like fruit ..	1	0
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Per packet—free by post—	s.	d.
CATTELL'S DWARF PURPLE-TOP BEET, the best kind in cultivation ..	0	6
KALE, Budà or Asparagus (true) ..	0	6
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,, ,, curled ..	0	6
,, Scotch dwarf curled ..	0	6
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BROCCOLI, Conning's Reliance, withstood the severe winter of 1860 and 1861, when every other kind was destroyed, a late white, close heading variety ..	1	0
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,, General Wolfe, equally adapted for ridge or frame, for general use, will be a great favourite ..	1	0
LETTUCE, London White Cos (true) ..	0	6
SAVOY, Cattell's Dwarf Green Curled ..	0	6
,, ,, ,, ,, Drumhead ..	0	6
TOMATO De Laye, a very fine variety ..	0	6

For other first-class Vegetables, see CATALOGUE.

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Imported GERMAN ASTER ..	1*s.* to	3	6
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From the same growers as usual, and which have always been highly commended by all purchasers.

		s.	d.
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PRIMULA SINENSIS, finest fringed, saved by Messrs. F. & A. Smith ..		1	0
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CINERARIA, from choicest named flowers ..	1*s.* and	2	6
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(The last four are very dwarf free blooming kinds and make beautiful beds in poor soil; if sown in rich soil they grow too freely, and do not show their true character.)

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Every description of VEGETABLE and FLOWER SEEDS, principally grown by or under the supervision of the Subscriber.

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Lee's new White Sprouting BROCCOLI, own saving, from the best selected heads	1	0
Ivery's Treble Curled PARSLEY	0	6
New STUDENT PARSNIP	1	0
Splendid Pine Apple BEET	0	6
Imported STOCKS and ASTERS, in 12 varieties ..	3	0
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Seeds of all description, selected from the best growers.

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The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices

An inspection and comparison with prices in other Catalogues is respectfully solicited.

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	Per oz., s.	d.
BEET, Compact Topped or Pine Apple Short Top ..	0	6
" Selected Dwarf Red (Nutting's)	0	9
CAULIFLOWER, Early Dwarf Erfurt	2	0
" New Early Mammoth or Frogmore Forcing	3	6
CELERY, Imperial Dwarf Red (Hood's)	1	0
CHÆROPHYLLUM BULBOSUM	2	0
CUCUMBER, TELEGRAPH .. .. .. per packet	1	6
LETTUCE, MOOR PARK .. .. .. per oz.	2	0
PEA, GENERAL WYNDHAM .. .. per quart	1	3

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COLLECTION No. 1. £5 0 0 | COLLECTION No. 3. £1 0 0
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Carriage Free to any Railway Station in the Kingdom.

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PEAS, the early and later kinds ..	20 qts.	10 qts.	6 qts.	4 pts.
BEANS, the best & most useful sorts	6 "	5 "	4 pts.	2 "
FRENCH BEANS, dwarfs & runners	5 pts.	2 pts.	2 "	1 "
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BEET, Silver or Seakale	1 pa.	1 pa.	—	—
KALES, of sorts, including Cottager's Kale and Couve Tronchuda ..	5 "	4 "	3 "	2 "
BROCCOLI, hardiest and best kinds	6 "	6 "	4 "	2 "
BRUSSELS SPROUTS, imported ..	1 "	1 "	1 "	1 "
CAULIFLOWER, early and late ..	2 "	2 "	1 "	1 "
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CAPSICUM	1 "	1 "	—	—
CARROT, early Horn and other best kinds	10 oz.	5 oz.	2 oz.	2 pa.
CELERY, including Cattell's tall white Solid	3 pa.	2 pa.	2 pa.	2 "
CRESS, finest curled	2 pts.	1 pt.	½ pt.	2 oz.
American and Normandy ..	2 pa.	2 pa.	1 pa.	—
CUCUMBER, the best forcing and ridge kinds	2 "	2 "	1 "	1 "
ENDIVE, moss curled and others ..	2 "	2 "	2 "	—
ICE PLANT	1 "	—	—	—
LEEK, Musselburg, and large flag	2 "	1 "	1 "	1 "
LETTUCE, the best kinds for Summer and Winter use ..	6 "	5 "	3 "	2 "
MELON, approved varieties ..	2 "	2 "	1 "	—
MUSTARD, white	1 qt.	1 pt.	½ pt.	2 oz.
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PARSLEY, Cattell's Exquisite and other kinds	2 pa.	2 pa.	2 pa.	1 pa.
PARSNIP, Improved Guernsey and Hollow Crown	4 oz.	2 oz.	2 "	1 "
RADISH, early frame	½ pt.	½ pt.	2 oz.	1 oz.
Turnip, and other useful kinds	10 oz.	8 oz.	4 "	2 "
RAMPION	1 pa.	—	—	—
SAVOY, Cattell's Dwarf Green Curled and other useful sorts	3 "	2 "	2 pa.	1 pa.
SALSAFY	1 oz.	1 "	—	—
SCORZONERA	1 "	1 "	—	—
SPINACH, Round and Winter ..	2 pts.	1 pt.	½ pt.	2 oz.
TURNIP, Early Dutch, and best sorts for succession	8 oz.	6 oz.	3 oz.	2 pa.
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VEGETABLE MARROW	2 "	2 "	1 "	1 "
HERBS, useful sorts	5 "	4 "	4 "	3 "

N.B. Collection No. 1 contains Seeds sufficient to Stock about Half an Acre of Kitchen Garden. For more extensive Gardens, requiring larger quantities:—Extra large Collections are supplied from 4l. to 10l. containing proportionate quantities of the kinds enumerated above.

COLLECTIONS OF FLOWER SEEDS.

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100	Packets of the best and most showy, hardy and half-hardy Varieties	£1	0	0
50	ditto ditto ditto	0	10	0
25	ditto ditto ditto	0	6	0
50	ditto of hardy annuals	0	7	0
25	ditto ditto	0	4	0

Any kinds not required should be named in the order, that they may be omitted from the Collection.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
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VEGETABLE and FLOWER SEEDS of best quality.—Our "NEWTON HERO" CUCUMBER, 1s. 6d. per packet. "One of the best of the 118 varieties grown by the Horticultural Society, and so highly spoken of in the report, which see."

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SUTTON'S LIST of SEED POTATOES.—Prices per Bushel, Sack, Ton, or Cwt., may be had on application. We have other sorts, but these are most worthy of recommendation:—

Handsworth Early	Early Lemon Kidney
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Sutton's Early Racehorse	Dawe's Matchless
Dalmahoy	York Regent
Webb's Imperial	Glory of England
Wellington	Forty-fold
Soden's Early Oxford	Early Shaw
Hudson's Early May	Prince of Wales
Fluke Kidney	Arrowsmith Seedling
Early Frame	Goldfinder
Early Ashleaf Kidney	British Queen

PRICED DESCRIPTIVE LISTS of POTATOES and SEEDS post free on application addressed

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Wood's Defiance Cauliflower.

WM. WOOD AND SON have much pleasure in introducing this new and superior CAULIFLOWER to the notice of their friends and the public generally, and having tested it for several years against Walcheren and other approved varieties, they do not hesitate to pronounce it the best Cauliflower in cultivation. It is quite hardy, of dwarf habit, and produces immense large heads, which are very compact, and most deliciously flavoured.

Stock limited; price per packet, 2s. 6d.

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

*** SEED CATALOGUE post free on application.

RICHARD SMITH'S
LIST OF ALL THE BEST
VEGETABLE AND FLOWER SEEDS,

Combines simplicity of arrangement, with prices, descriptions of size, height, colour, time of sowing, soil, duration, hardiness, &c., with useful hints on rearing and general management.

				£	s.	d.
COLLECTIONS of SEEDS, of the Choicest Sorts, for One Year's Supply of a large Garden, consisting of 10 quarts of Peas and all other Vegetables in proportion				£2	2	[illegible]
6 quarts Peas	ditto	ditto	ditto	1	5	[illegible]
5 pints ditto	ditto	ditto	ditto	0	12	6

Retail Seed Orders of 21s. and upwards free to any Railway Station.

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STANDARD HYBRID PERPETUAL and other FINEST kinds	30s. per Dozen.
HALF-STANDARDS ditto ditto ditto	24s. to 30s. "
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Thirty-five Acres of these; consisting of PEACHES, NECTARINES, APRICOTS, PEARS, PLUMS, CHERRIES, and APPLES, in Trained and Pyramidal Trees, Standards, Half-Standards, Bushes, Dwarfs, or Potted Trees for Orchard House culture.

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SUTTON & SONS,
SEED GROWERS, READING, BERKS,

Have a most extensive and complete stock of all the best kinds of GRASS SEEDS for PERMANENT PASTURE, which they are now sending out daily to all parts of the Kingdom, mixed expressly to suit the soil for which they are intended and the purposes for which the Pasture is required.

It is believed that Messrs. SUTTON'S Stock of GRASS SEEDS is the largest in the country, and certainly the quality cannot be surpassed. The sorts can be supplied separate or mixed to suit the soil, or the Light Large Seeds may be had in one mixture, and the Clovers and other Small Heavy Seeds in another; 2 bushels of the former and 12 lbs. of the latter per acre are supplied.

No. 1. MIXTURES for PERMANENT MEADOW and PASTURE, adapted to suit the soil .. .. 26s. to 32s. per acre
No. 2. MIXTURES for PERMANENT FIELD LAWNS, PARKS, and CEMETERIES .. .. .. 16s. per bushel
No. 3. MIXTURES for IRRIGATION or CATCH MEADOWS .. .. 25s. per acre
No. 4. MIXTURES for RECLAIMED, MARSH, or HEATH LAND .. .. 18s. to 20s. per acre
No. 5. MIXTURES for LOOSE BLOWING SANDS, HEAVY CLAYS, CHALKY SOILS, and SHARP GRAVEL
No. 6. MIXTURES of FINEST SHORT GRASSES for GARDEN LAWN .. .. .. 1s. per lb., or 18s. per bushel
No. 7. RENOVATING MIXTURE of CLOVERS and FINE GRASSES for OLD PARKS and MEADOWS, 9d. per lb., or, by the cwt., 80s.

N.B.—Messrs. SUTTON *furnish complete instructions for sowing and management with the Seed.*

OTHER AGRICULTURAL SEEDS,
ALL NEW AND UNADULTERATED.

CLOVERS.
English Red
White or Dutch
Trefoil
Alsike Hybrid
Cow Grass (true kind)

RYE-GRASS.
Sutton's Improved Italian
Dickenson's do. do.
Fine Imported Italian
Common
Pacey's Perennial

MANGEL WURZEL.
Long Red
Elvetham do.
Orange or Yellow Globe
Red Globe
Long Yellow

SWEDES.
Sutton's Champion
Ashcroft.—Skirving's
Hardy Purple
Marshall's Purple-top
Improved White

CARROTS.
White Belgian
Yellow Belgian
Large Altringham
James' Intermediate
Long Orange

SUNDRIES.
Holcus saccharatus
Lucerne
Drumhead Cabbage
Large Cattle Parsnip
Kohl Rabi, of sorts

Goods delivered Carriage Free. Priced Lists Post Free. Cash or reference requested with first orders.

Five per Cent. allowed for Payment on receipt of Goods.

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

PETER LAWSON & SON,

THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

LARGE IMPORTATION OF STANDARD ROSES.

WM. WOOD & SON

Respectfully inform the Nobility, Gentry, and Amateurs that they have imported a large quantity of good, strong, and healthy

STANDARD ROSES,

Comprising the best and most popular HYBRID PERPETUAL and other kinds, from which they will be happy to make selections, as under:—

	Per dozen.—s. d.		Per dozen.—s. d.
HYBRID PERPETUALS, ÎLE DE BOURBONS, &c.	30 0	HYBRID BOURBONS, HYBRID CHINAS, and other summer flowering kinds	24 0
HALF STANDARD ditto, ditto	30 0	HALF STANDARD ditto ditto	24 0

DWARF ROSES.

Fine strong plants, both on own roots and worked.

HYBRID PERPETUALS, BOURBONS, TEA-SCENTED and NOISETTE.. .. .. per dozen 18s.	CHINAS, CLIMBERS, HYBRID CHINAS, and other summer kinds .. .. per dozen 12s.

TEA-SCENTED ROSES in 6-inch pots, established and fit for immediate forcing or greenhouse culture .. 30s. per dozen.

NEW ROSES.

Fine Dwarf Plants, HYBRID PERPETUAL and BOURBON varieties of 1861 .. 3s. 6d. and 5s. each.

NEW ROSES of 1862, fine strong plants, in April.

DWARF-TRAINED FRUIT TREES.

PEACHES, NECTARINES, PEARS, &c., fine healthy well furnished plants at very moderate prices.

DWARF MAIDEN PLUMS.

Strong Plants, free from blight. Price on application.

CATALOGUES *post free.*

WILLIAM WOOD & SON, NURSERYMEN and SEEDSMEN,

MARESFIELD, NEAR UCKFIELD, SUSSEX.

GENUINE SEEDS DIRECT FROM THE GROWERS.

WM. WOOD & SON

BEG RESPECTFULLY TO ANNOUNCE THAT THEIR

SPRING SEED CATALOGUE

is now ready, and may be obtained free on application. It contains only the most approved varieties in each respective class, and intending purchasers will find no difficulty in making a selection therefrom.

NOVELTIES in VEGETABLES, Post Free.

Per Packet.	s. d.	Per Packet.	s. d.	Per Packet.	s. d.
CARTER'S ST. OSYTH BEET ..	1 0	CARTER'S DWARF MAMMOTH ditto	1 0	TILEY'S WHITE SPINE do. ..	2 6
NUTTING'S SELECTED do. ..	0 6	PARSON'S SUPERIOR do. ..		YORKSHIRE HERO CUCUMBER	2 0
MELVILLE'S INCOMPARABLE WHITE BROCCOLI	1 0	PARSNIP CHERVIL ..	0 6—1 0	WONDERFUL RIDGE do. ..	2 6
LEE'S NEW WHITE SPROUTING do.	1 0	COLE'S PERFECTION CELERY	2 6	MELVILLE'S VARIEGATED KALE	1 0
SNOW'S SUPERB WHITE do. true	1 0	HOOD'S IMPERIAL RED do. ..	0 6	CARTER'S GIANT WHITE LETTUCE	1 0
KEMP'S INCOMPARABLE CABBAGE	1 0	IVERY'S NONSUCH do.	0 6	CARTER'S GIANT BROWN do. .	1 0
WOOD'S DEFIANCE CAULIFLOWER	2 6	TURNER'S INCOMPARABLE do.	0 6	DUNNETT'S BLACK SEEDED do.	1 0
		KIRKLEES HALL DEFIANCE CUCUMBER	1 0	WHEELER'S IMPERIAL do. ..	1 0
		PEARSON'S LONG GUN do. ..	2 6	WHEELER'S TOM THUMB do...	1 0
		THE SENSATION do.	2 6	THE STUDENT PARSNIP ..	1 0

For descriptions, see CATALOGUE.

COMPLETE COLLECTIONS of KITCHEN GARDEN SEEDS
FOR ONE YEAR'S SUPPLY.

No. 1. For a Large Garden	£4 0	No. 3. For a Small Garden	£1 5
No. 2. For a Medium-sized Garden ...	2 10	No. 4. For a Smaller Garden	0 15

These assortments include only the most choice sorts, and have been prepared in the most liberal manner. W. W. & SON feel assured they cannot fail to give entire satisfaction. For full particulars see CATALOGUE.

NOVELTIES in FLOWER SEEDS, Post Free.

See Advertisements in the *Gardeners' Chronicle* of January 18 and 25.

COLLECTIONS of FLOWER SEEDS, Post Free.

[illegible] finest varieties, separate, comprising Hardy, Half Hardy, and tender ANNUALS, PERENNIALS, &c. 21s	50 finest varieties, separate .. .. 10s. 6d.
	30 ditto ditto 7 0
	20 ditto ditto 4 6

GERMAN FLOWER SEEDS, Post Free.

Imported in sealed packets, comprising choice assortments of ASTERS, STOCKS, LARKSPURS, BALSAMS, &c.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.—

50 in 50 well selected vars.	£2 2 0
50 in 25 ditto ditto	1 10 0
25 in 25 ditto ditto	0 15 0
12 in 12 ditto ditto .. 6s., 9s., and	0 12 0

Mixed, 3s. 6d. per dozen; 25s. per 100.

BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

EXCELLENCE and ECONOMY.—

Botcherby Hybrid	Kenyon
Hamilton's Market Favourite	Telegraph
Hector	William Brown

And other CUCUMBERS (true).

ORNAMENTAL GOURDS, Imported Seed.

JAMES TYNAN begs to offer Seeds of the above, at 6d. and 1s. per packet, free by post for 7 or 13 stamps.

CATALOGUES free by post on application.

Seed Warehouse, 68, Great George Street, Liverpool.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England.

The Catalogue may also be had at Mr. MAY's, 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

Rhododendrons for Under Cover.

JOHN WATERER has an immense quantity of the above in fine bushy plants, of sizes suitable for immediate planting into Covers.

☞ It is worthy of remark that in the most severe weather Rhododendrons are never injured by Hares or Rabbits. Samples, with prices, forwarded on application.

The American Nursery, Bagshot, Surrey.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

Florists' Flowers and Seeds.

CAREY TYSO, Wallingford, Berks, begs to offer Choice Assortments of

DOUBLE ANEMONES, 100 fine sorts, 1l. 1s. to 1l. 6s.
*RANUNCULUSES, 100 ditto, 1l. 7s. to 2l.
*RANUNCULUSES, 100 ditto mixed, 5s. to 1l.
*IMPORTED GERMAN SEEDS, Asters, Stocks, Balsams, Immortelles, Larkspurs, Wallflowers, Zinnias, &c., in named assortments, from 1s. to 5s. each.
All the popular ANNUALS,* 50 varieties, 1 packet each, 10s.; 25 ditto, 5s.
Choice RANUNCULUS, PINK, SWEET WILLIAM, and ANEMONE SEEDS,* 2s. 6d. and 5s. per packet.

The articles marked * can be sent by post.

PRICED CATALOGUE for one label for the postage.

New Cinerarias, Gloxinias, and Pelargoniums.

F. AND A. SMITH can still supply a few sets of their New GLOXINIAS, CINERARIAS, and PELARGONIUMS.

See *Gardeners' Chronicle* of Oct. 5, 1861, and CATALOGUE, which may be had gratis.

Dulwich, Surrey, S.

Superb Balsams.

F. AND A. SMITH are now sending out Seed of their Superior BALSAMS in collections of

9 Colours, separate	2s. 6d. each.
The same, mixed	2 0 ,,
Half the quantity	1 0 ,,

The above are in 18 distinct and bright colours, of carefully selected Seed, from the most double varieties.

Dulwich, Surrey.

Aster Seed of Superior Quality.

J. AND J. FRASER, of the Lea Bridge Road Nurseries, Leyton, N.E., beg to announce that they are now prepared to send out Collections of the finest FRENCH ASTERS.

J. & J. FRASER feel much pleasure in stating that the first Prizes for these Asters at the Royal Horticultural Society and Crystal Palace Exhibitions were awarded to flowers produced from Seed supplied by them.

A PRICED LIST will be forwarded on application.

Phalænopsis Schilleriana.

B. S. WILLIAMS has much pleasure in informing his friends and the public that this new and beautiful VARIEGATED ORCHID is now in flower at the Nursery, and he will be happy to show it to any one favouring him with a visit.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

*** The "Favourite" Omnibuses, from the London Bridge Railway Stations, by the Bank and Post Office; and from Charing Cross, through the Strand and Holborn, pass the Nursery every 10 minutes.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New Azalea indica.

J. IVERY AND SON feel much pleasure in offering their two beautiful Seedlings, CARNATION and TRICOLOR, small plants at 10s. 6d., and larger at 21s. each.

They are fully described in our CATALOGUE, with all other Novelties of the Season, which will be forwarded post free upon application.

A fine lot of half Specimens and Standards for Sale.

Dorking Nursery.—Feb. 8.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

ECONOMY IN THE GARDEN.

SUTTON'S

UNRIVALLED COLLECTIONS of GARDEN SEEDS for ONE YEAR'S SUPPLY.

(CARRIAGE FREE.)

No. 1. A Complete Collection of Kitchen Garden Seeds for One Whole Year's Supply, with Instructions on Cultivation ...	£3 0 0
No. 2. A Complete Collection of Kitchen Garden Seeds, in quantities proportionately reduced	2 0 0
No. 3. A Complete Collection of Kitchen Garden Seeds ditto	1 0 0
No. 4. A Complete Collection of Kitchen Garden Seeds for a Small Garden	0 10 6

Sent Carriage Free by Rail, and 5 per cent. discount allowed for cash payment. A remittance or reference requested from unknown correspondents.

The sorts of Vegetables included in these Collections are those which have proved to be the most prolific, best flavoured, and most worthy of general cultivation, and of which sorts we have therefore grown large crops of Seed. We exclude from our Collections not only inferior old sorts, but also such new ones as we have been unable to test the merits of, and which are selling at extravagant prices. By this means, and from the great convenience experienced in supplying every purchaser with the same sorts, we are enabled to supply A COMPLETE COLLECTION for ONE YEAR'S SUPPLY at much less expense than when a Gentleman or his Gardener makes his own selection; but if the latter mode of ordering is preferred, we shall be happy to send our General Catalogue, with prices of every article separate.

QUANTITIES CONTAINED IN SUTTON'S COLLECTIONS:—

	£3 Collection	£2 Collection	£1 Collection	10s. 6d. Collection
PEAS, the best sorts as proved in Messrs. SUTTON'S Trial Ground, including SUTTON'S Early Champion, Veitch's Perfection, Prizetaker, Champion of England, and others..	20 quarts	12 quarts	7 quarts	5 pints
BEANS, the best sorts for succession, do. ..	10 ditto	6 ditto	3 ditto	2 ditto
FRENCH BEANS, Runners and Dwarfs, do.	6 pints	4 pints	2 pints	1 ditto
BEET, SUTTON'S Dark Red, warranted the finest in cultivation	2 ounces	2 ounces	1 packet	1 packet
BORECOLE, or Sprouting Kale, of best sorts for succession (including Cottager's Kale	2 ditto	4 packets	4 packets	2 ditto
BRUSSELS SPROUTS, fresh imported seed	1 ounce	1 large pkt	1 packet	1 ditto
BROCCOLI, the best sorts for succession, as tested in Messrs. SUTTON'S Sample Ground	4 ounces	2½ ounces	5 packets	2 packets
CABBAGE best sorts for succession throughout the year (including SUTTON'S Imperial)	4 ditto	8 ounces	8 large do	1 ditto
SAVOYS, fine curled	2 ditto	1 ounce	1 ditto	1 ditto
CARROT, best sorts for summer and winter use	14 ditto	7 ounces	3 ounces	1 ounce
CAULIFLOWER, true Walcheren and others	2 large pks	2 large pks	1 packet	
CELERY, SUTTON'S Solid White and others .	3 ditto	2 packets	2 ditto	1 packet
COUVE TRONCHUDA, a most delicious vegetable	1 packet	1 ditto	1 packet	1 packet
ENDIVE, best sorts	1½ ounce	2 ditto	1 ditto	1 ditto
CRESS, plain, curled, and New Australian	1½ pint & 2 packets	8 ounces & 2 packets	3 ounces & 1 packet	2 ounces & 1 packet
CUCUMBERS, the best sorts in cultivation (including Berkshire Champion).. ..	3 packets	3 packets	2 packets	1 ditto
LEEK, Musselburgh	1 ounce	½ ounce	1 ditto	1 ditto
LETTUCE, SUTTON'S Superb Cos, and others for succession	2 ounces	4 packets	3 packets	2 packets
MUSTARD .. .. —	1 quart	1 pint	4 ounces	2 ounces
MELON, choicest sorts known	4 packets	3 packets	3 packets	1 packet
ONION, true Reading and others	12 ounces	7 ounces	2 ounces	1 ounce
PARSLEY, splendid curled kinds	3 ditto	2 ditto	1 ditto	1 packet
PARSNIP, Hollow Crown, fine	6 ditto	4 ditto	2 ditto	1 ounce
RADISH, finest sorts for succession ..	1 pint and 10 ounces	14 ounces	6 ounces	3 ounces
SPINACH, summer and winter kinds ..	2 pints	1 pint	4 ditto	2 ditto
SALSAFY	1 large pkt	1 packet		
SCORZONERA	1 do do	1 ditto		
TURNIP, fine sorts for succession	16 ounces	8 ounces	3 ounces	2 ounces
VEGETABLE MARROW, new Custard and others	2 large pks	2 large pks	2 packets	1 packet
SWEET & POT HERBS, of all the useful kinds	6 packets	5 packets	4 ditto	
RAMPION	1 ditto	1 ditto	1 ditto	
TOMATO	1 ditto	1 ditto	1 ditto	
CAPSICUM	1 ditto	1 ditto		
CHILI	1 ditto			
CORN SALAD	1 ditto	1 ditto		
ORACHE, or MOUNTAIN SPINACH ..	1 ditto	1 ditto	1 ditto	

That great satisfaction has been given by these Collections in former seasons is testified by the recommendations given by our customers to their friends; as also by the numerous letters we receive, from which we present the following:—

From the Rev. M. W. GREGORY, *Roade, Northampton.*

"I lose no opportunity of recommending your Seeds, which are most excellent; and I think you are doing us (the clergy especially), a great kindness in making up your garden selections."

From the Rev. W. H. ROACH, *Whiteshill Parsonage, Stroud.*

"I am more than satisfied with the assortment of Seeds you made for me, and with the quantity you sent; and I consider that I have done better by leaving the choice to you than selecting for myself."

From the Rev. JOHN KIRWAN, *Withycombe Rectory Taunton.*

"I was so much pleased with the selection of Seeds sent by you, that I recommended two of my friends to take parcels from you."

From CHAS. LAWRENCE, Esq., *Cirencester.*

"I never recollect having received such a numerous collection of Seeds from any house so good in quality."

From ALEX. CATHCART, Esq., *Knockdolian Castle, Girvan, N.B.*

"I have had much satisfaction in recommending your Seeds to various friends, as I find they are much pleased with them; and you may depend upon my continuing to do so as long as I find the articles you send are good and reasonable in price."

From Mr. WILLIAM MOORE, *Gardener, the Rectory, Stoke.*

"I never had (previous to yours last year) a lot of Seeds which have all turned out so satisfactory."

From Mr. BONE, *Gardener, Huntsham Court, Tiverton.*

"I was so much pleased with your collection of Seeds last year, that I leave it to your selection again this year, both for the Kitchen and Flower Garden."

From Mr. ROBERTSON, *Gr. to* A. POLLOCK, Esq., *Lochfine, N.B.*

"I must say that your Seeds have been liberal as to quantity, and excellent as to quality."

From the Rev. C. T. FARLEY, *Moor Hall, Stourport.*

"Your Seeds are the very best my gardener ever made use of, and gave the highest satisfaction."

From J. LLOYD, Jun., Esq., *Dinas Brecon.*

"The Garden Collection of Seeds has hitherto been most judiciously selected, and of the best description."

From the Rev. G. E. WALKER, *Shareshill, Wolverhampton.*

"Mr. Walker cannot but compliment Messrs. SUTTON & SONS on the quality of the Seeds sent last year, as they were by far the best he ever purchased."

If any of the above articles are not required they should be named when giving the order, and increased quantities of other sorts will be given in lieu of those omitted.

By ordering one of the above Collections once a year much trouble and expense will be saved.

SUTTON'S COLLECTIONS OF FLOWER SEEDS (Free by Post).

Amateurs requiring showy kinds of Flower Seeds are respectfully recommended to leave the selection of sorts wholly or partly to us, and we will supply those which we know to be really worthy of cultivation. Should any sorts of Flower Seeds be already possessed they should be named, that we may omit them.

No. 1. The best 100 sorts of FLOWER SEEDS, hardy and half hardy, with instructions	£1 1 0
No. 2. The best 50 sorts of FLOWER SEEDS, ditto	0 10 6
No. 3. The best 36 sorts of FLOWER SEEDS, ditto	£0 7 6
No. 4. The best 24 sorts of FLOWER SEEDS, ditto	[illegible]
No. 5. The best 24 sorts of FLOWER SEEDS, all hardy	[illegible]

SEEDS FOR EXPORTATION.

SUTTON AND SONS are constantly packing Farm and Garden Seeds for Australia, India, New Zealand, Africa, and other Foreign parts, and receive the most gratifying accounts of the excellent condition in which they arrive, and of the crops produced from their Seeds.

SUTTON AND SONS deliver the packages free of all expense to the ship's side at London, Southampton, Bristol, and other English Ports. Prepayment is requested for all foreign orders, and a few days' notice for packing previous to the departure of a vessel.

Also NATURAL GRASSES for LAWNS and MEADOWS, fine sorts of MANGEL WURZEL, TURNIP, and other Agricultural Seeds

All goods of the value of 20*s.* and upwards are delivered free to London, or to any Station of the South Western, South Eastern, Great Western (as far as Bristol, Birmingham, and Gloucester), and the Oxford, Worcester, and Wolverhampton Railways. Packages of 40*s.* value and upwards are delivered free not only by the above named Railways, but also to all the principal Stations of England and Wales. When goods to the value of 5*l.* and upwards are ordered, they will be delivered free to any of the Scotch or Irish Ports.

Remittances may be made by Cheques on Town or Country Bankers, or by Post Office Orders payable to

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

Strong Grape Vines from Eyes.

R. GLENDINNING begs to offer strong GRAPE VINES from Eyes of all the leading sorts, fit for immediate planting. The Eyes were taken from Vines which bear fruit on the Premises. PRICED LISTS on application.
Chiswick Nursery, W.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, Jun., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.
CATALOGUES on application.

Muscat Escholata Grape.

MESSRS. J. and C. LEE have the pleasure to offer strong well ripened Canes of this
THE FINEST OF ALL MUSCAT GRAPES,
which, though little known to Grape growers in general, deserves to be extensively cultivated. It combines the desirable qualities of setting freely with a large well shouldered handsome bunch, with berries of a rich amber colour almost as large again as those of the Muscat of Alexandria, and of the most luscious Muscat flavour.

Planting Canes	15s. 0d. each
Fruiting Canes	21 0 „
Extra strong Fruiting Canes ..	31 6 „

Vineyard Nursery, Hammersmith, London, W.

Melons.

MESSRS. JOHN and CHARLES LEE have seeds to offer of the undermentioned superb MELONS :—
BAILEY'S ECLIPSE.—Pale green flesh, melting to the rind, of exquisite flavour; weight 3 to 4 lbs.; handsome, very prolific, and has gained many prizes. Price 2s. 6d. per packet.
AMERICAN RIDGE.—Scarlet flesh, melting, and highly flavoured. Ripens in a COLD FRAME; very prolific. Price 1s. 6d. per packet.
Nursery and Seed Establishment, Hammersmith, London, W.

PRIDE of SERINAGUR CASHMERE MELON.—
"Your Melon is unsurpassable."—*Dr. Lindley.*
This splendid Melon, raised by Mr. W. P. Ayres, F.R.H.S., is now ready in packets, 2s. 6d. each.
See Wheeler's "Little Book."
J. C. Wheeler & Son, Gloucester.

J. HOLMES WOOD, Bower Nurseries, Maidstone (adjoining the Railway Station).
All the leading varieties of AZALEAS, in 60's, at 50s. per 100.
Standard and Trained FRUIT TREES of every description, 30s. per dozen.
Every description of CONIFERS, EVERGREEN and DECIDUOUS TREES, and SHRUBS at moderate prices.

HOLLAND and BAYLEY can now supply from their unrivalled collection the heaviest and finest-flavoured LANCASHIRE SHOW GOOSEBERRIES, in strong 3 and 4 years old plants, at 6s. per dozen.
CATALOGUES, containing Priced Lists of Florists' Flowers, Fruits, &c., on application.
Bradshaw Gardens, Chadderton, near Manchester.

PROLIFIC RASPBERRY CANES, 3s. & 4s. per 100.
True GRAPE CURRANT TREES, 12s. and 16s. per 100.
MORELLO CHERRY, strong, 1s. each.
PRINCE ARTHUR and other STRAWBERRY Plants.
LAURELS, ARBOR-VITÆ, &c.
Henry Warner, Jun., Cranford, near Hounslow, W.

RASPBERRIES, strong Canes. Red and White GOOSEBERRIES: Crown Bob, Warrington, and Whitesmith, bearing plants. STRAWBERRIES: Admiral Dundas, British Queen, Black Prince, Eleanor, Prince of Wales, Sir C. Napier, Wizard of the North, 2s.; Alice Maude, Elton Pine Eliza, Keens' Seedling, 1s. 6d.; and Oscar, 3s. per 100.
Handsworth and other POTATOES, true.
Geo. Cornwell, Seedsman, &c., Barnet. Herts, N.

Strawberry Plants.

WM. JAMES NICHOLSON again offers strong laid plants of his GRAND COLLECTION of more than 200 varieties of English, French, Belgian, American, and other STRAWBERRIES, including all the new and fine sorts. A Catalogue sent on application. A new enlarged and improved Catalogue will be published in Autumn, when many new sorts well tested will be offered with confidence.
William James Nicholson, Egglescliffe, Yarm, Yorkshire.

EXTRA strong PEACH TREES in pots, well set with fruit buds, grown under glass the last two years, well established in No 8. pots.
Good strong CUCUMBER PLANTS for present planting; and true early CAULIFLOWER PLANTS.
Apply to John Bailey, Hope Nursery, George St., Deptford.

New Plants for 1862.—See

WILLIAM BULL'S advertisement in last week's *Gardeners' Chronicle* (last page).
PINE APPLE PLANTS.
The best, largest, cleanest, and most healthy stock in this country. An inspection is invited.
Well ripened CANES of all the best VINES can be supplied.
Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

PINE GOLDEN PIPPIN APPLE, Dwarf Maiden and Dwarf-trained Trees.
GENERAL TODTLEBEN PEAR, Dwarf Maiden Trees.
BEURRÉ STERKSMAN PEAR, Dwarf Maiden Trees.
R. GLENDINNING has still a few Plants of the above named NEW FRUIT TREES. For their descriptions see Dr. Hogg's remarks. Price on application.
Chiswick Nursery, London, W.

NEW APPLE, "BARON WARD."—The very best late keeping variety in cultivation.

	Each—s. d.
Strong plants, two years, unpruned, suitable for pyramids or bushes	2 6
Strong plants, dwarfs	1 6

Description, &c. forwarded post free on application to R. Bradley & Son, Halam Nursery, near Southwell, Notts.

PYRAMIDAL CHERRIES. — Well formed and handsome Pyramidal Trees of the following varieties of CHERRIES grafted on the Mahaleb Stock are now offered: They are from 4 to 5 years old, 4 to 5 feet in height, have been under summer pinching, and are full of blossom buds. They form most ornamental and useful Fruit Trees for the Garden :—

May Duke	Royal Duke
Empress Eugénie (an early sort of May Duke)	Reine Hortense
Morello	Belle Magnifique
Frogmore Morello	Dauphine
Late Duke	Planchoury
Belle de Choisy	Griotte de Kleparone
	Noir de Prusse

Largest sized trees, 3s. 6d. each; second size, 2s. 6d. each; Bushes, bearing trees, 2s. each. Carriage paid to London.
Thos. Rivers, Nurseries, Sawbridgeworth.

ROYAL HORTICULTURAL SOCIETY.
ARRANGEMENTS for 1862.
March 19.—HYACINTH and CAMELLIA SHOW. Admission 2s. 6d.
April 9.—AZALEA SHOW. Admission 2s. 6d.
May 21.—FIRST GREAT SHOW. Admission 5s.*
*** During the Season the Inauguration of the Memorial of the Exhibition of 1851 is expected to take place.
June 11.—SECOND GREAT SHOW. Admission 5s.
*** In May or June, AMERICAN PLANTS. Admission 2s. 6d.
June 26.—ROSE SHOW. Admission 2s. 6d.
July 2.—THIRD GREAT SHOW. Admission 5s.
Sept. 10.—AUTUMN SHOW. Admission 2s. 6d.
October 8, 9, and 10.—INTERNATIONAL FRUIT, VEGETABLE, ROOT, CEREAL, and GOURD SHOW. The Roots, Cereals, and Gourds will remain on view until the 18th. Admission on October 8, 2s. 6d.; 9th to 18th, 1s.
* On the days of the Great Shows the charges will be 7s. 6d.
Packets of 25 Five Shilling Tickets, price 5l., available according to the daily charges, on any day on which money is taken.
Season Tickets of International Exhibition, price 3l. 3s., and Joint Season Tickets freeing also to the Horticultural Gardens, price 5l. 5s., can be had at the Offices.
Bands will play every week day from May 1 to October 18.
The next ballot for Fellows is on the 21st of February.
Schedules of Prizes may be had on application to Mr. Eyles, South Kensington, W.
Andrew Murray, Assistant Secretary.

ROYAL HORTICULTURAL SOCIETY.
South Kensington, W.
A BALLOT for the undermentioned Seeds will take place in the Council-Room on TUESDAY, the 18th inst., at 2 o'clock p.m., after the meetings of the Floral and Fruit Committees.
Class I. Seeds collected near Belem, Rio Janeiro, by the Society's Collector, Mr. Weir; and sent home in Nov., 1861 :—
1. No. 1. Coffea sp. A small neat growing shrub from the Tejuca hills, bearing a large number of berries of a bright indigo blue colour. Found growing in a brown stiff loamy soil (very ornamental).
2. No. 2. Pleroma semidecandrum. Shrub 5 to 6 feet high, with large purple flowers—from the Tejuca hills.
3. No. 25. Clematis Brasiliensis.
4. No. 27. Rhexia species.
5. No. 28. Jussiœa anastomozans.
6. No. 32. Stiftia chrysantha.
7. No. 36. Tetrapterys Guilleminiana.
Class II. Garden Seeds for Ballot :—
8. Dwarf German Ten-week Stock (in 24 varieties of 100 Seeds each).
9. Miniature Dwarf Ten-week Stock (in 6 varieties of 100 seeds each).
10. Large flowering Dwarf Ten-week Stock (in 16 varieties of 100 seeds each).
11. Dwarf German Ten-week Stock (Wallflower-leaved, in 16 varieties of 100 seeds each).
12. Double quilled Asters (in 24 varieties of 100 seeds each.
13. Dwarf bouquet-flowered Asters (in 12 varieties of 100 seeds each).
14. Truffaut's double French Pæony-flowered Asters (in 12 varieties of 100 seeds each.)
15. New Chrysanthemum-flowered Asters (in 10 varieties of 100 seeds each).
16. New double-crown two-coloured Asters (in 4 varieties of 100 seeds each).
17. Asters grown at Chiswick last year (in 12 varieties).
18. Balsams, Camellia-flowered (in 12 varieties of 50 seeds each).
19. Double Zinnias (in 12 varieties of 10 seeds each).
20. Dianthus chinensis (in 12 varieties).

Fellows of the Society desirous of obtaining any of these seeds, if Life Members of 40 guineas, or Annual Subscribers of 4 guineas, are requested to name *two* sorts of Class I., and *four* sorts of Class II. Members of 20 guineas, or Annual Subscribers of 2 guineas, to name *one* sort of Class I. and *two* of Class II.
The arrangements for conducting the Ballot, render it necessary that the number prefixed to the plants in the above list, should be sent to the Offices of the Society, South Kensington, W., on or before Thursday, February 13th, *after which date no applications can be attended to.*
In addition to this Ballot, the Annual Distribution of Seeds to Fellows can be obtained by application at the Offices on and after the 15th February.
Andrew Murray, Assistant Secretary.

ROYAL BOTANIC SOCIETY,
Regent's Park, N.W.
ARRANGEMENTS for SEASON 1862.
SPRING EXHIBITIONS, open to the Fellows of the Society and their friends only :—
March 26.—CAMELLIAS and HARDY EVERGREENS, &c.
April 2.—CINERARIAS, PRIMROSES, &c. &c.
„ 9.—HYACINTHS, &c.
„ 16.—AZALEAS, AURICULAS, &c.
„ 23.—PELARGONIUMS, FERNS, &c. &c.
„ 30.—ROSES, &c.
May 7.—CALCEOLARIAS, &c.
GENERAL EXHIBITIONS of PLANTS, FLOWERS, and FRUIT, WEDNESDAYS, May 28, June 18, July 9.
AMERICAN PLANTS in June.
Musical Promenades on all the other Wednesdays in May, June, and July.
Botanical Lectures, Fridays in May, June, and July.
During the season of the International Exhibition 1862, the Fellows of the Society have the double privilege of admitting to the Gardens four persons daily, except the Wednesdays in May, June, and July, and Sundays.
Artists and Students are admitted as usual upon the recommendation of Royal Academicians, Professors, &c., as by the regulations.
J. De Carle Sowerby, Secretary.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 8, 1862.

MEETINGS FOR THE ENSUING WEEK.

Tuesday, Feb. 11 { Royal Horticultural (Anniversary) at S. Kensington.. .. .. 1 p.m.

In a recent number of the *Times* our great contemporary has taken up the question of Tree management, in a leading article which by this time has been read in every country house in the kingdom. Its object is to point out the advantage of a scientific knowledge of the nature of trees, and the peculiar merits of M. Robert, a well known French experimenter on them. The following extracts will bring the question distinctly before the reader. The italics are our own.

"Our neighbours, the French," the *Times* observes, "though they may be less alive to the "beauties of scenery than ourselves, have always "shown much skill in economising the bounty of "nature. Roadside avenues are commoner in "France than in England, and the utility of "trees is thoroughly appreciated by the peasantry. We are not surprised, therefore, that "the first step in the medical, or rather "the surgical treatment of trees, should "be taken by a Frenchman. M. Robert, "the gentleman to whom we refer, began his "labours some 20 years ago, and since that time "has *undertaken* the cure of *vast numbers of trees*, "especially Elms, in many parts of France and "Belgium. He has taken out a patent for his "system, and, if we may judge by the testimonials "and honours which he has received from scientific "societies and public bodies, his success must have "been remarkable. His theory is, that the most "inveterate enemies of trees, and especially young "trees, are not excessive moisture or unfavourable peculiarities of ground affecting their roots, "but certain tribes of xylophagous insects. Of "these the chief and most truculent are the "scolytes and the cossus, and the art of curing "the ligneous consumption, which has hitherto "been considered mortal, consists, according "to him, in destroying these insatiable parasites, "and fortifying the trunk against their future "ravages. His first experiments were made on "the large trees bordering the public walks of "Paris, and with these he proceeded cautiously and "gradually. He scored them in longitudinal sections, hoping in this way to quicken the circulation of sap in the bark between the incisions "at the same time that he laid bare and extirpated "the tunnel-shaped nests of numberless tree-consuming insects. *Encouraged by the results of "this attempt*, he ventured to try the effect of "stripping trees thus affected *of their whole bark* "—an operation not much less bold in its own "way than that of flaying a human being. However, *we are told that it succeeded to admiration*, "that 'the scolytes and the cossuses found themselves instantaneously annihilated,' and the "grubs, still in a state of unconsciousness, were "buried alive in the process of cicatrization. The "trees threw out new layers of 'liber,' or inner "bark, and even increased in bulk, as we learn "from another source, more rapidly than their "unmutilated contemporaries. Ever since this "discovery was made the more slashing practice "has been universally adopted, and *we are told "that thousands of Elms, already with one foot "in the grave*, are now convalescent patients or "restored to perfect health by the benevolent "exertions of M. Robert."

This is a very strong statement; so strong, indeed, that the *Times* itself would be "the last to recommend a hasty application of so trenchant a system;" and we certainly do not mean to advocate it. The fact is, that the account of M. Robert and his doings, taken, doubtless, from some publication of his own, contains as many mistakes of one kind or another as could well be crowded into such a space. The "step," such as it is, was not first taken by this gentleman; for it was proposed many years ago by the late Mr. Wm. Spence, the eminent coadjutor of Kirby in his Introduction to Entomology; and it was attended by no success. As to the "vast numbers of trees," "the thousands of Elms," which with one foot in the grave have been restored to perfect health, we should be very glad to know where they can be inspected. Is it on the road to Vincennes, where so many old Elms may be seen with great spreading branches at the bottom and poor diminutive heads at the top? or may it be in the Avenue de Marigny, where Elms are in a state of greater misery than we have seen them elsewhere. Signs of work on M. Robert's "system" may be discovered there in perfection; and as this gentleman is said to have been employed by the French Government, we may be permitted to infer that they are really his own handy work. Alas, poor trees! Their bark looks like the legs of a horse that has been fired; but they are dying notwithstanding.

What this new system is has been stated by M. Dubreuil, a very eminent arboriculturist, who well knows its nature and what it is worth. We shall not trouble our readers with it. After describing the grooving and scoring, and plastering employed by M. Robert he concludes by remarking that "the most certain (*efficace*) way

to diminish the mischief produced by wood-boring insects is to keep the trees in good health."

To be sure! Trees in health are not attacked by insects to any dangerous extent. Maintain them in vigorous growth and the fiercest "xylophagers" are kept at bay. Let them become diseased, and all the plant-doctors in the world would fail in keeping off their enemies. In places unsuited to the growth of the Elm, the tree which has received the greatest share of M. Robert's attentions, it soon becomes unhealthy. To this tree a deep damp soil is an indispensible necessity; dry the soil by whatever means, and it will die. Not when young perhaps, because at that time the demand made by Elms on the soil is easily supplied; but as they grow old they require an amount of water greater and greater every year to replace what they lose by evaporation; how much that is we leave those to calculate, who have a mind to it, proceeding upon the datum that surface for surface plants, one with another, perspire 17 times as much as a man, and that an Elm is one that perspires the most. The great and ancient Elm that was blown down a few weeks ago at S. Elmham would have defied an army of Scolytes, for its roots were anchored fast in never drying clay. The Elms in Hyde Park are in thin soil, on gravel, drained by the vale of Brompton; in the Champs Elysées and St. James's Park they are in soil as hard and dry as a paving stone. In both these places the Scolytes hold high festival; and no one can prevent them. If it is desired to infuse the vigour of youth into those decrepid remains of the 17th century, it must be done by subterranean irrigation and a company of firemen with their watering engines, and not by M. Robert and his Parisian "scalpel."

When M. Robert submits his experiments to a Committee of the French Institute, and obtains its endorsement to his statements, we shall be prepared to give them further consideration; but certainly not till then.

—— The great show of Gourds projected to take place next autumn in the gardens of the Royal Horticultural Society, will be held in the very face of thousands upon thousands of visitors from the countries of Continental Europe, where, as we all know, they "manage these things better" than we. The foreign cultivators too are invited to enter the lists against us. It concerns, therefore, the honour of England, and of British cultivators that every effort should be made to secure for our own growers every laurel wreath that can be won. What, then, is to be done?

Of course all who take interest in the Gourd struggle will cultivate Gourds if they can possibly do so, some going in for the monsters, some for the collections, and so on. But to grow them, and to grow them well too, will not be enough. They must be fairly pitted at Kensington against their foreign rivals, if we are not to come off second-best in the friendly conflict. Many competitors we have no doubt will enter the lists independently; but as there is something of a national character in the whole affair, closely connected as it is with the Great International Exhibition, cannot something of a national spirit also be thrown into the competition? Why, for example, should not provincial horticultural societies throughout the country take the matter in hand, and by first bringing together all the available materials in their respective localities, and then sending on to London the first-class productions, contribute to a national victory. In this friendly passage of arms we Britons must not be beaten.

The Gourds are capital subjects to deal with after this manner, for they will bear without injury the necessary removals from place to place. We strongly recommend, therefore, that our local horticultural associations should take the matter in hand; and as a means towards securing something like uniformity of action, we make one or two further suggestions.

First, then, the local invitations to competition should all correspond with the classes in which the subjects must appear at the great show in London, so that when sent up the latter may find a fitting place. These classes are in brief:—

(a). The finest collection of edible Gourds.
(b). The most extensive collection, edible or not.
(c). The best half dozen ornamental Gourds.
(d). The heaviest single edible Gourd.

The invitation in the first of these classes has in view the best edible kinds in the highest state of cultivation; that in the second recognises mere numbers (of sorts) without regard to cultivation; in the third a small limited number of the best looking sorts is intended; while the fourth class is meant for examples of the highest possible cultivation as applied to certain kinds known to acquire a monstrous size. It is in reference to the last of these classes probably that provincial societies would find the most ready response, and this class at least is as fully open to the humblest cultivator as to the most wealthy.

Next, to avoid misunderstanding, the several exhibitions should be invited with the express and definite condition that those which gained the highest prizes should be sent to Kensington to the "national" show, there to compete with similar samples from other societies or from independent exhibitors. Each exhibition should bear the name of the grower, and of the local society through which it had been sent.

No doubt the authorities of the Royal Horticultural Society would make arrangements to receive and display in competition for the prizes it offers on this occasion (as advertised in our columns) any contributions of the kind here indicated, of which timely notice had been given. Something more than the usual five days' notice given by individual exhibitors would be desirable, in order that the particulars in each case might be printed to accompany the specimens. It would even be desirable that the specimens themselves should be sent some days before the opening of the show (Oct. 8), say by the 1st of October, to give time for their due arrangement. Nothing could be more easily packed and forwarded, and the cost, to be defrayed of course by the senders, would be trifling.

As the exhibition on the occasion we refer to is to be a general display of horticultural produce, it would offer a good opportunity of showing to foreigners something more of British horticulture than the production of great Gourds, however interesting as one item of display these may be. For instance a few other prominent selected subjects, such as Cabbages, Celery, Carrots, Parsnips, &c., might without difficulty be similarly dealt with. As, however, all samples produced in competition at Kensington must have been grown by the exhibitors, it would be necessary that they should severally be sent up and shown in the name of the grower, to which that of the Society before which the object was presented might be affixed.

We should be glad to hear what the secretaries and supporters of country Societies have to say to these suggestions. There is yet abundant time for all the arrangements to be made. —— *

—— Intelligence has been just received of the death of Professor de Vriese, of Leyden, a botanist of eminence and a most estimable man; from whom various interesting communications, relating especially to the vegetation and products of the Dutch East Indian possessions, have appeared in this Paper. Dr. de Vriese was not only one of the most distinguished men of science in Holland, but had, more than any other, devoted himself to the pharmaceutical and industrial plants of the Malay Islands and Dutch Guiana, upon which he had written several learned and valuable papers; whilst as a purely scientific botanist, his monograph of the genus Marattia will ever remain a monument of patient research and laborious study. As an instance of scientific ardour and earnest desire to benefit his country and race, Dr. de Vriese's voyage to Java is a memorable one in the history of botany. In the year 1856 a really accomplished and experienced scientific man was wanted by the Government to report on the vegetable resources of Java, and the methods there employed to increase their productiveness. Dr. de Vriese appearing to be the best qualified man for this task, he did not hesitate to undertake the duty. Relinquishing for the time a comfortable professorship, and parting with a young family to whom he was fondly attached, at an age long past the prime of life, he braved the discomforts of a long sea voyage and the dangers of an equatorial climate. He returned but a few months ago, having accomplished all he had to do, and with vast stores of valuable observations on the spices, drugs, gums, cereals and textiles of Java and Borneo, besides extensive botanical collections, upon which he was busily engaged till within a very few weeks of his decease.

The following obituary notice, prepared for the Dutch papers by a friend, has been translated by one of his family and thoughtfully forwarded to us by a near relative. Died, on the 23d inst., at Leyden, aged 55, Professor Willem Henderik de Vriese, Doctor of Medicine and Professor of Mathematics and Physical Science in the university of that city. He had held this office for 16 years, and was also a Knight of the Order of the Lion of the Netherlands. Though Dr. de Vriese commenced his career as a physician at Rotterdam, he always addicted himself partially, and latterly wholly to botany, being first a reader on this subject in the clinical school at Rotterdam, and afterwards a professor of the science, first at Amsterdam and latterly Leyden. His numerous publications made him known to the botanists of Europe, many of whom were his personal friends. His dissertations chiefly appeared in the Journal of Natural History and Physiology, which he published (in 1834-1845) in conjunction with Professor Van der Hoeven, and afterwards in the Dutch Botanical Archives, also published by him, assisted by other botanists. Dr. de Vriese devoted his special attention to the vegetation of our own possessions in the tropics, and he assisted in making known the collections of Junghuhn, Reinwardt, and others, working much at them himself. Several treatises on special genera and groups of plants are due to his pen, especially his Monograph of the wonderful species of Rafflesia and of the Marattiaceæ, the latter in connection with Dr. Hartung. His favourite study, however, was that of such plants as are useful in medicine, trade, and manufactures. He wrote upon Vanilla, Cinchona, the Camphor-tree of Sumatra, and many others; and was eminently qualified to undertake the mission to which he was appointed by our Government upwards of four years ago, and to investigate the special cultures which are pursued in our East Indian colonial possessions. Dr. de Vriese quitted Europe on this errand in October, 1856, and returned in March, 1861, to his native land, after a most zealous and satisfactory performance of the duties with which he was charged. Sorrowful events were in store for him. Two months after his return his wife died, and she was quickly followed by their only son. The climate of Java had undermined Dr. de Vriese's own health, and in 10 months after he came home he expired, having perseveringly pursued his botanical studies to the last, and even commenced his lectures in the end of November.

—— By the same post that brought the melancholy intelligence of the death of Dr. de Vriese, we have been apprised of that of his fellow countryman, Dr. R. B. Van der Bosch, of Wilk Goes in Holland; the author of several monographs on Cryptogamic botany, and especially on Ferns, including an elaborate and beautifully illustrated work on the Hymenophyllaceæ.

—— We have also to record the decease of Prof. Blume, the eminent investigator of the Vegetation of the Dutch East Indian Islands, who died a few days since at Leyden.—This news has reached us at the moment of going to press.

PHALÆNOPSIS SCHILLERIANA.

I have this fine new Orchid now in bloom, and, having received many inquiries respecting it, I have sent you by way of reply to them, a description of the plant, together with the kind of cultivation which seems best suited for its growth.

I had my plant from Manilla in May last, along with P. rosea, P. amabilis, and another, which I expect to be new. P. Schilleriana has beautifully variegated foliage and is quite distinct from any other kind in cultivation. The leaves are similar in form and equal in size to those of P. grandiflora; their ground colour is dark green interspersed with irregular bands of white; the flower spikes are produced from the axles of the leaves. In their native country they are more than 3 feet long, and more branched than those of other kinds. I have a dried spike on which has been more than 100 blossoms. On the one I have in bloom each flower measures more than 2½ inches across, and the blossoms are arranged in two rows down the spike; the sepals and petals are of a beautiful light mauve colour edged with white the lip is of the same colour with darker spots, except the upper part, which is yellow spotted with reddish brown; the inside of the flower is very handsome, and indeed the whole aspect of the plant is very attractive.

There are now five sorts of Phalænopsis in cultivation in this country, and all are well worth growing; they have all beautiful flowers and handsome evergreen foliage; they are compact in their habits of growth, free flowering, and continue a long time in perfection—all qualities proclaiming them to be plants of more than ordinary value. They all require the same kind of treatment, and an East Indian heat, together with a good supply of moisture during their growing season. Plants of this genus are found in Java, Manilla, and Borneo, where the heat is high, and of course ought to be imitated under artificial circumstances as near as possible; they are found growing on the branches of trees in damp, moist places.

Nevertheless, they are of easy culture, and if properly attended to are seldom out of order; unlike many other Orchids they have no thick fleshy bulbs to support them, and of course to have them in perfection they require more nourishment. This is done by giving them more moisture at their roots during the growing season, in fact they should never be allowed to get dry; if so they are apt to shrivel and often lose their bottom leaves, which spoils their appearance, for the beauty of the plants consists in their having good foliage as well as good flowers. The growing season is from March to the end of October, during which time the temperature by day should range from 70° to 75°, allowing it to rise to 80° or more by sun heat provided the house be shaded. The night temperature should range from 65° to 70° in March and April. Afterwards it may be allowed to rise a few degrees higher. During their resting season, from the end of October to February, the temperature should range from 60° to 65° by night and 65° by day, or even a little more will not do any harm with sun heat. In giving air a little should be admitted close to the hot-water pipes, so that it may be warmed on entering the house; a little moisture should be sprinkled about on fine days, but let it be in the morning so that the house may be dry by night.

Phalænopsids are grown in different ways; some are placed on blocks, some in pots, and others in baskets. I have found them to succeed well under all three modes of treatment, but they require more moisture at the roots if grown on blocks; if in pots give more drainage than in baskets. The best way is to place an empty pot upside down in the bottom of the one you intend for the plant, and then fill in with potsherds broken into pieces about 2 inches square to within 2 inches of the rim; then fill up with Sphagnum, having a few small potsherds mixed with it, and elevate the plant 3 inches above the rim, taking care to keep it well above the Moss. The successful culture of these plants as well as of all others depends upon efficient drainage. If grown on blocks they should be placed on a good sized one, so that there is room for the roots

to cling to it. In fastening the plant on, first place a little live Sphagnum on the block, and afterwards fix the plant on with copper wire and hang it up to the roof, but not too near the glass or your plants may get injured by cold, which should be guarded against during winter. Many Orchids are injured in that way. If they should get into an unhealthy condition the best plan is to turn them out of their pots or baskets, and shake all material off their roots, wash them with clean water, cut off all the decayed parts and replace them on blocks with a little Sphagnum, giving them a good supply of moisture; place them at the warmest end of the house with not too much light; under this treatment they will soon begin to root and improve in appearance. I need hardly add that they should be kept clear of insects, especially thrips, which soon disfigure the foliage; it is best kept under by constantly washing the leaves with a sponge and clean water, or fumigating the house with tobacco smoke, an operation which should be conducted with great care.

Phalænopsids are difficult to propagate; sometimes they will produce young plants on the old flower stems, which should be left on till well rooted; then place them on small blocks. *B. S. Williams, Paradise Nursery, Holloway.*

NOTES ON THE CULTIVATION OF JAPAN, &c.

AS NOTICED IN THE VICINITY OF YOKUHAMA AND KANAGAWA.—By J. G. Veitch.

Agriculture forms the chief occupation of the lower classes in Japan. Land is brought to a very high state of cultivation, which may be accounted for in two ways, viz., that the country has to provide for an annually increasing population, and that all rents are paid in produce.

The revenue of the Princes and other proprietors is derived almost solely from the landed estates. The greatest landowners are the Crown and the Princes. Some of the latter are possessed of immense estates, their annual incomes being sufficiently large to give them great power in the country, and often to menace the Sovereign. It is difficult to arrive at the relative positions of landlord and tenant. It is however known, that all payments are made in Rice. The Japanese measurement is termed Ko-Ku, corresponding to about 100 English lbs. A landed proprietor calculates his income by 10,000 Ko-Kus, his retainers and attendants are again paid in Rice, so that little or no money changes hands.

Each estate is surveyed once or twice a year, when an approximate value is placed on the crop, and each tenant pays at the harvest as a rent, 6 parts in 10, as nearly as can be ascertained, of whatever the valuation may have been. The Crown tenants are however somewhat favoured, not paying so much as those of Princes or other proprietors.

The land in this neighbourhood is exceedingly fertile. The soil is a light friable loam, extending to a very considerable depth, and worked without difficulty. There is a great amount of waste land which might be cleared at a very slight expense and cultivated if necessary, but on the other hand there is not a spot of ground which having been once under cultivation is not made the best of.

Cropping and the rotation of crops are thoroughly understood by the Japanese.

Rice forms their chief food, the great numbers of rivulets and streams of water which are found alike in all parts rendering its growth everywhere practicable. There are several varieties; some adapted for growing on irrigated lands, others on higher and drier situations. A valley of Rice of 100 acres is a fine sight during the summer months. The beautiful green colour and the exact evenness of this crop makes it different from any other.

No fences or hedges of any kind are necessary in Japan. No animals are ever put out to graze, and there being very few wild animals to overrun the country there is no necessity for the means of protection which are so common in Europe.

There is one particularly striking feature in every Japanese farm, and that is the cleanliness and order everywhere prevalent. Every man appears to take a pride in keeping his land in perfect order, and clear of everything in the shape of weeds, &c.

The use of manures is well understood. Human excrement is the commonest, and that most generally employed. It is used in a liquid state during the young stages of the growing crops. Horse manure and sea-weed are also used, but the latter only suits certain crops.

The Chief Agricultural Crops of the District are—

Rice.—It is grown as in China. The fields are ploughed or worked by hand, generally the latter, and irrigated. The seed is first sown in small nurseries, and transplanted in April in small tubs of 8 to 10 plants, in rows about 8 inches apart, the plants at this time being about 6 inches high. The harvest commences in October.

Wheat.—This is extensively grown in some parts. It is sown in November and December, and harvested in May and June. Generally sown in drills.

Barley.—Grown in the same way as Wheat; it is principally used for feeding cattle.

Millet.—There are five kinds grown in this district. It is sown in drills in March or April and harvested in September or October. Millet forms a common article of food. It is generally made into cakes.

Cotton.—This is a crop of some importance. It is sown in March or April, attains a height of 12 to 18 inches, and is harvested in September and October.

Beans.—There are numerous varieties, some in the way of the English field Bean, and others similar to French Beans. They are largely grown for several purposes. As food they are eaten in a green state and also dried and ground into powder for cakes. Cattle are fed on some kinds, and from others, soy and other things are made.

Rape.—Grown for its seed, from which large quantities of oil are made.

Peas.—Several kinds grown for food, and eaten both in a green and dry state. *Buckwheat, Hemp, Indian Corn,* and *Tobacco* are also cultivated in Japan.

The Labour of the District is almost entirely manual. A plough is certainly sometimes met with, but generally the land is prepared with hand implements. Women and children take an active part in the labours of the field, and at harvest time every one does his or her share of the work.

The Agricultural Implements in Japan are very few. A plough drawn by bullocks or horses is sometimes used for preparing the rice fields, but is not general. Mattocks and hoes are the common implements with which almost all field work is done.

Flails similar to those in England, and used in the same manner, are employed for threshing. Winnowing machines upon the same principle as those in England are in common use.

A smaller article is also used for cleaning grain. It resembles two fans joined by a piece of Bamboo at the handles. The grain is allowed to fall from a height, during which the dust is blown away by the fans, which are worked by hand.

To separate the Rice from the husk the Japanese use a large wooden mortar. They pound the grain also by hand. They have also a machine upon the same principle, worked by water or by a man's foot. It consists of a number of pestles, which rise and fall into mortars containing the grain.

The Domestic Animals of Japan are very few. The Japanese do not pay much attention to the breeding and rearing of animals, as they do not eat animal food.

Horses of a small breed are plentiful. They are used exclusively (with the exception of riding horses for the high officers of the land) for labour purposes. There are no carts in this district. Everything is transported from and into the interior on horses and bullocks.

Oxen and *Cows* are also kept solely for labour, as they are never killed by the Japanese, nor do they make any use of milk. On first settling here foreigners had great difficulty in overcoming the prejudices of the natives, but now bullocks are regularly brought to the market for sale.

Sheep and *Pigs* have both been introduced by foreign nations at various times, but have never become distributed throughout the country. Neither of these are known by the Japanese living some little distance from this port.

The Wild Animals of Japan are very few. Deer, Hares, Foxes, and Wild Dogs, are the only ones found in this district.

Deer are hunted by the natives for the sake of their horns, from which they make various kinds of ornaments.

The Fox is superstitiously supposed by some to be the abode of wicked spirits. It is hunted for the sake of its skin, from the hair of which the Japanese make their pens and pencils.

Wild Dogs (which very much resemble wolves) are very common. They infest hills in the vicinity of large towns, descending at night to procure their food.

The Vegetables of the District of Yokuhama.—The collection of vegetables is large, great attention being paid to their growth in consequence of their forming so large a portion of the daily food. Vegetables are generally grown in small plots of land about the farm, and particularly near the farm houses. Liquid manure is very largely used to bring vegetables to a great size; I attribute their universal want of flavour to this cause.

The principal vegetables grown in this district are—

Beans	Arums, several species, the roots of which are eaten. The commonest is A. esculentum
Peas	The Egg Plant
Potatoes	Gourds
Yams	Cucumbers
Turnips	Mushrooms
Carrots	Horse Radish
Onions	Lilies. The roots of several species are eaten
Leeks	Spinach
Lettuce	Bamboo. The young shoots are cut just before they appear above the ground. They are boiled before being eaten
Beet	
Radishes	
Tomatoes	
Endive	
Garlic	
Capsicum	
Fennel	

Fruit Trees.—The fruits of Japan very much want flavour. No attention is paid to the improvement of the various kinds. It would appear as if the same varieties had continued without change for many generations. Both the climate and soil are very favourable to their growth, and with proper attention to the subject the fruit of Japan ought to equal that of any part of the world.

The principal fruits of this district are

Apples	Pomegranates
Pears	Figs
Plums	Oranges
Peaches	Lemons
Grapes	Citrons
Chestnuts	Strawberries (very insipid)
Persimons	Melons (several kinds)

Indoor Gardening.

Heaths and Camellias.—All window gardeners are ambitious of "growing white Camellias." I do not think I ever heard of a flower-stand started, at least at this time of year, without a little hint at this especial longing, or without a sigh at the failure of some previous attempt.

In proportion to our admiration of any special plant we generally will make much of it; and warm sunny corners in a sitting-room, and continual anxious waterings, are not attentions under common circumstances acceptable to these plants. People are misled by forgetting to consider that a forced plant is not in the same state as one that flowers naturally; and thus they often adopt the instructions given for the much forced plants for those which they, themselves, have slowly coming on, which merely require a cool and airy place, and to be preserved from getting really dry at any time.

Camellias are in some ways the very pleasantest and in others the most tiresome of all plants to grow. It is so mortifying to see the buds drop off. This is a thing however which has not the least right to happen, and it would not do so more frequently with Camellias than with other plants, if we only recollected as I say, that the coolest, not the warmest room, is the safest for them; that draughts and sudden changes of temperature are the worst things for them, and that the most frequent cause of the falling buds is want of equilibrium between the soil and air, the soil saturated, and the air dry—all perhaps hot and parched on a frosty day, or the air and foliage carefully made damp, while the soil at the roots is dried into a cake. When quite unforced the safest and easiest way to have the Camellias is then, I think, to place the pots in a box, or in second and larger pots, filling the space between with sand or moss, constantly kept quite moist, the room being either without a fire, or the stand on which the plants are being damped. Most likely, with this treatment, they will blossom beautifully, perhaps even better than in a regular conservatory. These plants, however, when forced, certainly like some warmth as well as a moister atmosphere. No plants do better in plant cases, where I have known their flowers last more than three weeks unfaded. But then there was the advantage of constantly moist sand for the pot to rest on, and just such a degree of moistness also in the air as without being wet to keep the leaves all fresh.

It must be remembered, indeed, in attempting window gardening, that dry air absorbs the juices out of every scrap of stem, and flower, and leaf, and that we must prevent the call, or supply wherewithal to meet it; and that sun or wind beating upon a porous flower-pot, not only cools the soil, precisely as we cool water in porous bottles for summer use, but draws out and sucks up also, every drop of moisture, leaving the roots half baked. Camellias are useful flowers in teaching us this lesson very unmistakably! and I hope I have succeeded in making my meaning clear—that though forced Camellias, such as are now in flower, require warmth and slight continual moisture, the plants we have in windows preparing slowly to blossom about Easter must be merely prevented drying, preserved from soakings of water, and kept in a cool place, if possible in a room where there is no fire.

The old Double White is still one of the best plants to grow—and the exquisitely beautiful Fimbriata alba is also tolerably freely flowering, and is always lovely with its delicate notched petals.

If the leaves need sponging it must be done with warm water, and every drop of water given to the roots must be also warmed. I have never known any thing make so great a difference to the health of plants, and when this is attended to, green flies—those torments of some gardeners—seem to become unknown.

Heaths may be treated very much like Camellias at the present season, standing always in a double pot, and kept in the very lightest place that can be provided for them. If they should stand out on a plant stand a light net should be thrown over them while the room is dusted, as with their tiny foliage it is difficult to dislodge dust.

On a very dry frosty day it is often well to sprinkle the plants a little, if not actually in blossom; and here I beg to mention a regular window-garden contrivance:—as the very best thing for this is a goose's wing, like the housemaids use, which can be dipped (just the tips of the feathers) in water, and then fanned a little, so as to sprinkle the plants.

Heaths require generally a little water daily, but none should ever stand for a moment in the saucer. Faded flowers should be cut off with sharp pointed scissors. Erica hiemalis and Epacris impressa are two pretty kinds, and both are now in flower. *E. A. M.*

Home Correspondence.

The Coco-nut Palm at Syon.—The following is the kind of treatment to which this has been subjected in

the tropical house here. In May 1860, when I first paid particular attention to it, I found that the plant had been, and then was, in an unhealthy state. The soil in which it grew I considered entirely unsuitable for it; I therefore disrooted it, removing as much of the old soil as was consistent with safety, replacing it with a compost consisting of three-fourths old turfy loam from a pasture, and one-fourth rotted cow dung and leaf mould, with just sufficient river sand to keep the whole in an open condition. After this was done I gave the whole a good soaking with water to which a little common salt was added, and in two months I had the satisfaction of seeing a much finer young leaf than had ever before been on the plant. I continued to give copious waterings weekly as follows, viz., two weeks pure rain water, the next liquid manure from a cow-house tank, in the proportion of 1 gallon to 4 gallons of rain water, the following week a weak application of common salt and water, and so on successively. In the mean time the plant began to improve in health and to grow fast. From January 1861 I withheld water to a great extent till the latter end of February, when I again gave a fresh top-dressing of compost like that above described, and watered as before. The plant continued to grow most luxuriantly, and on the 26th October last the flower spathe appeared in sight, and opened on the 23d ult. As regards size I may add that the circumference of the stem at the ground is 2 feet; from the ground to the base of the leaves the height is 2½ feet; the leaves are 12½ feet long and 5 feet in width. The temperature at which the house was kept in summer was as follows, viz., morning, 70°, with a range of from 25° to 30° higher at noon; in winter, morning, 70° with a range of 10° higher at mid-day; the bottom heat in summer was from 85° to 95°, and in winter from 95° to 105°. I may mention that in sunny weather the plant was always very closely shaded, and that the atmosphere of the house was constantly kept very moist. *John Smith, The Gardens, Syon, Brentford.*

Produce of Fruit on an Acre.—Can any of your readers point out how I may obtain some information respecting the average produce per acre or otherwise of common fruits grown out of doors in England, such as Apples, Pears, Plums, &c., together with the smaller fruits, consisting of Gooseberries, Strawberries, Currants, &c. I do not of course refer to what is possible to be done, but what is the quantity that may fairly be expected from an acre under the usual mode of culture of any particular fruit grown for market, in full bearing, and in an average season. The value is another affair: I now refer only to quantity. *D., Gravesend.*

Unusual Form of the Scotch Fir.—The Scotch Fir of which some bits of a cone and also a photograph accompany this memorandum, grows on loam with chalk a few feet below the surface in the grounds of Woodstock House, near Sittingbourne, Kent. There does not appear to be anything the matter with the leader or main stem to account for its peculiar growth. Within the last 60 years it was surrounded by other trees, so that it would seem natural it should have been drawn up rather than spread as it has, so as in any point of view to be about twice as broad as it is high. It is probably 80 or 90 years old; and on comparison of the leaves and cones with those of common large Scotch Firs growing near of about the same age they are in every respect larger and stronger. Indeed the cones of the common Scotch Fir of this year are hardly yet formed. The sap too is more abundant and appears to have more turpentine in it. The tree increases in size rapidly. The circumference of the fence round the branches is 80 yards, 2 feet, 7 inches. The whole tree has so singular an appearance that the subjoined representation of it cannot fail to be interesting. *E. T.*

Propagation of the Bread Fruit Tree.—Among the many examples of tropical vegetation cultivated in our hot-houses the Bread-fruit tree is, perhaps, the most difficult to propagate from cuttings. I should, however, have thought that nearly all the difficulty would have disappeared in countries where it can grow under more natural circumstances; that this is not the case we learn from the article upon the fruit trees of Brazil, by Dr. Heusser and G. Claraz, at page 45 of the present volume. The authors say:—"The true Bread-fruit tree (Artocarpus incisa) is more rare than the Jack (A. integrifolia) owing to its being difficult of propagation." I should have expected that in a hot, moist climate large branches might have been taken off and struck almost as easily as those of a Fig; but most likely this plan has been tried and failed. I have tried to strike it by terminal and side shoots, but these are too stout and the wood pithy. I have also tried it by leaves, by single eyes, and by the weak shoots which an old stem will sometimes push out; the former methods failed, the latter would sometimes succeed, but then the shoots of that description are only rarely produced. A fortunate accident a few years ago, however, taught me a method by which this tree might be quickly propagated to any extent. A piece of root, several feet in length and about an inch in diameter, fell into my hands; it was at once buried in the coal-ashes, or rather the dust sifted out of coke, used as a plunging material in the propagating house. The brisk bottom-heat soon induced it to throw out a few shoots, these were taken

off when about 2 inches in length, potted singly in sand, and plunged beneath a bell-glass. They struck as easily as Dahlia cuttings, which they nearly resembled in the softness of their wood. The root produced at least a couple of dozen of these little shoots before it was exhausted, most of which struck within a fortnight or three weeks after being taken off. There was a little difficulty about keeping them after they were struck, but most of them succeeded. It may be observed, with some truth, that in England it would be more difficult to obtain such a root than cuttings, but the same cannot be said of many foreign countries, where the *Gardeners' Chronicle* is as much read as at home, and where it might be very advantageous to increase the number of Bread Fruit trees. If persons so situated would take a few good roots off an old tree, cut them in lengths of about 18 inches, and plant them in some sheltered nook, I think they would find no difficulty in soon obtaining a stock of it. At any rate the experiment is worth trying by any of our countrymen who may be living within the tropics. *C. W. C.*

How to get Coal Tar off Hot-water Pipes.—If an "Old Reader" (see p. 94) cannot at this season unfix his hot-water pipes for the purpose of burning off the coal tar with which he has unfortunately painted them, he can remove it by the application of Linseed or train oil and a hard scrubbing brush, after having broken the crust a little by scraping the surface with an old knife or the blade of an old scythe broken into suitable lengths. I have known this plan to be effectual under similar circumstances to those in which your Correspondent is placed. Oil will also readily remove coal tar from the hands or faces of those engaged in painting fences, &c., with this somewhat disagreeable article to handle. *A. D.*

Opening of a Palm-spathe with an audible report.—In a paper read before the Botanical Society of Edinburgh, on the 9th of January, and reported in the *Gardeners' Chronicle* of the 25th of the same month, the correctness of an observation I published on the 20th of July, 1861, in this Journal, has been called into question by Messrs. Sadler and Bell. The authors endeavour to prove that the two young men who heard the report made by the Seaforthia elegans in the Great Palm House at Kew were so far mistaken that it was not caused by the bursting of the spathe, but by a pretty sharp crack which the foot-stalk of the old leaf is said to give when dropping on the floor. Casual visitors of the Great Palm House might be startled by the remnant of a huge leaf suddenly falling on the floor, but this could not possibly deceive men like Messrs. Gale and Hilary, daily employed amongst Palms, and consequently perfectly familiar with such an occurrence. The fact that no audible report was heard in Edinburgh does not in my opinion invalidate the evidence I collected at Kew. I never maintained that all spathes do open with an audible report, but I am convinced that the one at Kew did so. The slightest slit in the spathe would probably be quite sufficient to prevent its opening with any report. Of course this must be a matter of mere conjecture until we shall know more about the subject, and Messrs. Sadler and Bell will have rendered good service if their objections, whether well founded or not, induce those who can bring positive facts to bear upon the question to communicate them. Dr. George Bennett, at Sydney, author of the "Wanderings and Gatherings of a Naturalist," wrote to me only by last mail that he had read my communication relating to the bursting of the Palm spathe with great interest, because during his stay in Ceylon he had *often observed* this curious phenomenon. I trust that when my friend reads this note he will hasten to communicate all he knows on the subject, and on what Cingalese Palms he noticed the bursting. With regard to the cause of the report I left it quite an open question, and merely threw out a suggestion that it might be owing to heat generated by the anthers. Messrs. Sadler and Bell inserted a thermometer by a narrow slit into an unburst spathe, and when taken out after a lapse of 20 minutes, it was found to be a half a degree less (57½°) that the surrounding atmosphere. To my mind the observation as given does not prove anything at all. In order to have any value we ought to know the range of the thermometer in the house during at least 12 hours previously, and the time of day when the observation was taken. If the atmosphere surrounding the plant had not fluctuated during the last 24 hours, the observation would tend to prove that there was no heat developed inside the spathe, but if the range of the thermometer had been considerably lower a few hours, or perhaps even a still shorter time before, it would go some way to prove that a certain degree of heat was thrown off by the flowers. We have as yet very few exact observations on the development of heat in flowers, Caspary's on Victoria regia are perhaps the most minute ever made known, and that able botanist confirms the fact that not only is the greatest amount of heat generated when the anthers are ready to discharge their pollen, but that there is at different times of the day a maximum and a minimum independent of the surrounding temperature. *Berthold Seemann.*

Mildness of the North of Ireland (see p. 70).—I am surprised to learn that there has been no frost at Crom Castle up to the 20th January; while here, 14 miles south of it, we have had sharp frost during the first week of this month, producing ice 1½ inch thick, with which we filled an ice-house holding from 120 to 140 large cart-loads, and we could have filled another if we had had one. Fortunately the frost just alluded to did no injury to shrub or plant of any kind, a circumstance, I should think, chiefly owing to the very dry weather we previously had, as no rain fell here during the month of December, which is the longest drought we have had for a long time on this side of the

Channel. Is it any wonder, therefore, that in a favoured spot like Crom, in the absence of frost no trees or shrubs should be damaged. But Crom is not a fair example as to the mildness of the north; for it possesses many advantages over the majority of places; the pleasure ground for instance, where the most tender plants grow, is high and dry, and beautifully sheltered at every point with woods and large timber trees; the splendid Lake Erne, too, winding as it does around the grounds, and shut out by plantations, may, in some measure, add to the freshness and healthful appearance that are so seldom met with in more exposed situations in the north. I can bear testimony to the vigour of the beautiful Araucaria, 15 feet high, alluded to by your correspondent when there last summer. Mr. Dowling (the then gardener) directed my attention to it, and said, "It's just 19 years—I speak from memory—since I planted that tree in this little nook." *Wm. Kearns, Gardener to Wm. Humphrys, Esq., Ballyhaise, Cavan.*

Broad Beans.—Can you give a friend of mine at Kurrachee any hope of success in growing this vegetable in Sindh? She has no expectation of its succeeding at Kurrachee, but thinks that she may be more fortunate at Kotree. Now I find that there are four places of that name in different latitudes between 24° N. and 28½° N. But probably elevation would affect the question of suitability of climate rather than latitude. If there be a chance of success in that region, you would much oblige me by giving me some general idea of the nature of soil and locality best suited to their growth, and by naming any variety that you consider more likeiy than another to succeed. The best chance I suppose would be not to send out at present the seeds that were gathered last autumn, but next autumn to send out as early as possible the then lately ripened seed in their pods. *Diss.* [Broad Beans are called bakla in the North of India, where they form one of the cold weather crops. The natives have no doubt hit upon the soil and situation best suited to them. As Beans keep very well, if dry, you might send them out now, so as to be ready by the next cold season. We should provide Mazagans and Long Pods.]

Mushrooms.—I am much pleased with Mr. Ingram's remarks on Mushroom houses, and I fully concur in all he has said on the subject; as regards open sheds and places of that sort, no gardener should be expected to keep up a supply under such inauspicious circumstances. To have to contend with such places in the present age of improvement is not very encouraging to gardeners. What we have here is rather better than an open shed; in this place a bed was made or rather spawned on the 24th of September last; on the 30th of October Mushrooms made their appearance. The bed is 16 feet long and 4 feet wide; I find from our vegetable book, that from November 1st to the second week in January, 4½ pecks have been gathered. This was the second bed made since the middle of February, 1861. In the last bed Mr. Duncan (the gardener) tried Milltrack spawn, the produce of which surpassed that of the former bed. Our cook considered them superior to any he had seen since he left France—are French Mushrooms, therefore, better than those grown in England? [No.] *W. P. R., Wortley Hall, Sheffield.*

Waterproofing Tiffany.—Is there any receipt for waterproofing tiffany, and making it more durable for tiffany houses? If there is I should like to be made acquainted with it. *J. H.*

Indoor Gardening.—As this is at present so much patronised, and as the taste for having our rooms ornamented with plants is so much extended of late, I must say a word or two on the plan I adopt, and which affords me the gratification of having a constant supply of flowers from December until the genial spring ushers in the many welcome plants and shrubs which furnish our vases with cut flowers. At this moment I have my rooms decorated with some very fine specimens of Hyacinths, Tulips, and Lily of the Valley, which at this dull season are much admired by all who see them. I have a very small greenhouse heated by a stove, and into this I bring the pots containing the bulbs or other plants in succession; the rear of my house is in a northern aspect, so that in winter we seldom have the benefit of the rays of the sun. In October I obtained the bulbs, &c., and had them potted in compost and then plunged into a bed and covered with coal ashes and cinders. I let them remain under earth for about five weeks and then placed them in a cool frame, and after a short time I took them into the greenhouse, where they very soon began to show signs of bloom. On the 22d of last month I had a very fine box of Lily of the Valley in full blossom in the drawing room. I quite agree with my namesake "E. A. M." "that a little more or less water, air, and light are just the very things upon which depend the difference between beautiful healthy flowers or poor, scraggy, ill-conditioned plants;" but I don't think that any amount of care will afford the same style of plants or flowers grown in a room as you have if you possess the advantage of plenty of light, air, and a nice growing atmosphere. Every one cannot indulge in a miniature stove, but to those really caring to have a supply of flowers for their rooms early in the season the advantage of a greenhouse heated by a stove is decidedly far better than any amount of care one can bestow in a sitting room. The great desideratum is to preserve the air cells or lungs of the plants free from dust or smoke, &c., and in a greenhouse you can give them a shower-bath with a syringe every morning, which effects this object. In a sitting room this would not be possible, nor could we often afford sufficient space for a plant-case. Certainly there are many persons who could not devote sufficient time or means to the care or erection of a greenhouse, and in this instance the plant-case must be useful; but I should say that one which would contain as many plants as are described by "E. A. M." would be nearly as large as a greenhouse of a moderate size. *E. A. M., Dublin.*

What Quantities of Seed are sufficient for my Garden.—Many who have gardens of considerable extent under their charge, are complaining, and I think with sufficient reason, that the system adopted during the last few years by seedsmen of advertising collections of garden seeds, is liable to mislead employers through being vaguely worded. Most of the advertisements run thus:—"A complete Collection for a large Garden;" or, "a complete Collection for one whole year's supply, 3*l.*;" without stating what extent of garden this will stock. Some employers who know very little about these matters may have 2 or 3 acres of kitchen garden, and a large household to provide for, and they think that a collection costing 3*l.* ought to suffice. They say Mr. So-and-so advertises such a collection for a large garden, and surely he must know. To prevent any misunderstanding between gardeners and their employers, I may state that a 3*l.* collection of seeds is sufficient for a garden of about ½ an acre, allowing a margin for accidents that will sometimes arise from various causes, such as birds, insects, &c. In Hogg's "Gardener's Year Book" for 1862, amongst other matters is a table of seeds required to stock 1 acre of kitchen garden, and as it may be useful I have copied it, viz.:—

Peas, 36 qts.	Beet, Silver, 2 oz.
Beans, 10 qts.	Leek, 4 oz,
Kidney Beans, 4 qts.	Parsnep, 4 oz.
Scarlet Runners, 2 qts.	Salsafy, 2 oz.
Cabbage, early, 8 oz.	Skirret, 2 oz.
Savoy, 4 oz.	Scorzonera, 2 oz.
Brussels Sprouts, 3 oz.	Endive, 4 oz.
Cauliflower, 4 oz.	Lettuce, 4 oz.
Broccoli, 8 oz.	Radish, 3 pts.
Borecole and Kales, 4 oz.	Mustard, 1½ qt.
Cabbage, Red, 2 oz.	Cress, 1½ qt.
Do. late, or Drumhead, 2 oz.	Parsley, plain, 2 oz.
Kohl Rabi, 2 oz.	Parsley, curled, 2 oz.
Onions, 12 oz.	Potatoes, early 1½ bushel
Carrots, 8 oz.	Potatoes, late, 3 do.
Turnip, white, 16 oz.	Jerusalem Artichokes, 1 peck
Turnip, yellow, 6 oz.	Garlic, ½ lb.
Celery, 2 oz.	Shallots, 2 lbs.
Spinach, 8 qts,	Sweet and Pot Herbs, 6 oz.
Beet, Red, 4 oz.	

* * *

Fumigation.—Can any of your Correspondents recommend a mode of fumigation which will not fill a dwelling-house with the nuisance of burning shag. I have a conservatory adjoining a library, and whenever the aphides appear there my gardener smokes them to death; and so penetrating is the smoke, that not only the next room, but all the sitting-rooms are filled with the coarse, nauseous scent of the tobacco. *R. I. M.*

Mushrooms.—I gathered a bunch of Mushrooms last week weighing 2 lbs. 12 oz., and when divided there were 35 fully developed Mushrooms. The bed on which these grew was spawned with natural spawn, generated in a heap of turf and manure. I have forwarded another bunch from the same bed for your inspection. *R. W. C.* [Nothing could be finer at this season.]

The Dwarf Coco-nut.—Having seen in your valuable Paper of the 1st inst. the interesting account of the flowering of a Coco Palm at Syon (I presume in the Garden of his Grace the Duke of Northumberland), I thought that the following information might not be unacceptable. From the description I should suppose it to be of the variety called in South India "the Nicobar Coco-nut." This is peculiar in bearing fruit in the third year, while the common Coco Palm does not usually until the seventh year. *E. Johnson, A.M., Curate of Shirenewton, late Missionary of the Church in Travancore.*

Foreign Correspondence.

We have been favoured with a copy of the following most interesting letter from the Future Cotton Country in Africa to a gentleman in one of our public offices. In the present uncertainty about the places whence supplies of cotton can be drawn to feed our manufacturing demand, the statements in this communication deserve the most serious attention. It has been known for some time that the climate and soil of W. Africa are perfectly adapted to the Cotton plant, and that the only obstacle to its cultivation is the absence of sufficient European force to put down the petty wars of extermination carried on between the barbarous negro chiefs.

"Brass River, *Dec.* 1, 1861.

"Since writing to you, I visited Abeokuta in company with * * *, and the following letter is the result. American colonisation has been projected, Messrs. Campbell and Delany (coloured men) have been sent out, and the report has been started that land is in common. Mr. Campbell has had a kind of book written for him. I observe, too, that Sir C. Eardly has been informed that land is in common. Nothing can be further from the truth. The most powerful chief cannot alienate land in perpetuity; even building ground is only granted on the implied, if not expressed condition, that when vacated it reverts to the original owners. Sir C. Eardly does not, I presume, wish to give rise in W. Africa to the agrarian quarrels of New Zealand; but his ideas, if carried out, certainly will. The chief of Abeokuta has denied his treaty with Messrs. Campbell & Delany, declares that he will receive writing subject to English law, but that he will have nothing to do with men who come to his country independent of all contract. This is surely reasonable.

"Don't believe the fine reports about Abeokuta. It is a filthy hole. The Alatu, who calls himself king, receives you in a shed well plastered with horse-dung and Indigo leaves; he has not the state of a Hindoo Banyan. The converts are about 800 in number, and the people generally are most pragmatical Pagans. There is no humbug, however, about Cotton growing. The whole of Zumbu, which in its extensive sense means the land bounded N. and E. by the Niger, S. by the sea, and W. by the Volta, would be one vast Cotton field. But to put down petty wars and other troubles we must maintain a force at Lagos sufficient to make us respected if not feared. Do not doubt its paying. After leaving Lagos I got the loan of the Bloodhound and proceeded to the Nun. After seeing old Mr. Crowther and the batch of missionaries temporarily fixed at the mouth, we steamed up the Akasse creek, which saw for the first time a ship of war. The news has spread far and wide. Arrived at Brass River I went up to Brass Town, some 30 miles northwards, and took a plan and sketch of the place. It has three tolerable stockades, and can mount 50 guns, but they are all placed upon the ground, and a few rockets would clear the kitchen. All, however, is peaceful. After that we went to Fish Town and surveyed the creek, which will *not* admit a steamer; to-morrow we shall try and round the bar of the St. Nicholas River and then steam slowly down the coast, visiting all the oil rivers and doing what I can for trade and geography. Up the Old Calabar I hear of valuable lead mines (fine specimens of galena have been shown to me) now abandoned by the natives, who ignore the simple act of "shoreing up" before they come to the richest deposits. These I intend to purchase as the dry season is coming on. We are now in the last and fiercest burst of the rainy. I shall ascend, D. V., Fernando Po Peak and the Camaroons mountain. The latter, if the harbour be only tolerable, will supply a great want—a sanitarium. It is the only healthy spot between Teneriffe and Ascension, and if we have a civil establishment at Lagos something of the kind will be required."

Garden Memoranda.

Mr. Bunney's Nursery, Stratford.—This is one of those establishments, of which there are several in the neighbourhood of London, where certain kinds of plants are grown by thousands for the supply of Covent Garden and other metropolitan markets. Large houses are full of Pelargoniums, long ranges of pits are occupied with Cinerarias, China Roses, Acacia armata, Cape Heaths, Epacrises, Cytisus racemosus, Cacti, Ledums, Rhododendrons, Magnolia fuscata, and plants of that description; and stages of larger houses contain multitudes of Chinese Azaleas, New Holland and other greenhouse shrubs. But the glass houses in this nursery are not wholly devoted to the production of such plants as have just been named; on the contrary, one large house is filled with Camellias, great trees loaded with flower buds, which, when open, must make a fine display, and various stoves contain Orchids, Ferns, and other plants remarkable for the beauty of their foliage. Among the last are variegated-leaved Begonias, Marantas, fine plants of Cyanophyllum magnificum, Phyllagathis rotundifolia, a handsome-leaved Melastomad, Theophrasta imperialis, Dracænas of different kinds, Cycas, and a few Palms. Among Orchids, of which there is a considerable collection, few are at present in flower; but several exhibit signs of good growth. Of Anæctochilus there is a nice caseful, in which are most of the leading kinds. One pit is set apart entirely for the growth of Cape Jasmine and other Gardenias. It is heated with hot-water pipes, and contains beds filled with tan, in which the plants are plunged; thus circumstanced they soon make fine plants, and bloom beautifully. Cinerarias are also coming nicely into flower, as are likewise Erica hiemalis and the spring-flowering variety of E. gracilis, two extremely useful Heaths for purposes of early decoration. Azaleas are in blossom in the Orchid and other warm houses in which they receive a gentle amount of forcing, and quantities of Acacia armata, which are loaded with flower buds, now receive a little warmth to bring them into beauty; in point of real usefulness this is one of the best of all the Acacias.

Out of doors among hardy shrubs, of which there is a good collection, we noticed some fine bushes of Andromeda floribunda and of young Aucubas, a plant which is stated to have been greatly injured here during the severe winter of 1860.

Miscellaneous.

British Columbia and Vancouver.—The recent partial interruption in the regular steam communication between San Francisco, California, and Victoria, Vancouver, being calculated to deter many intending

emigrants from proceeding to that colony, we shall feel much obliged if you will grant us space in your columns to inform all persons interested that by a late arrangement of the North Pacific Steamship Company their boats now leave San Francisco for Victoria and intermediate ports on the 7th, 17th, and 27th of every month. Passengers by the steamers of the Royal Mail (West India) Company leaving Southampton on the 2d and 17th of the month may now reach the colony in about 40 days. *Wheatley, Starr, & Co., Cheapside.*

Fish Culture.—An establishment, in the nature of a piscicultural laboratory, was erected some years ago, on a large scale, at Huningue, near Bâle, on the Rhine. From this establishment millions of the eggs of all the species of fish usually cultivated in the country, particularly those having large eggs, as the Danube salmon, Ombre chevalier, &c., have been distributed to the chief rivers of France. Canals, ponds, and marshes have likewise been stocked, and new places have been constructed to grow eels and other appropriate fish. Few of the eggs are brought to maturity in Huningue; it suits better to send them away when nearly hatched. Packed among wet moss, enclosed in wooden boxes, they can be sent to great distances: some have gone quite safely that required to be on their journey as long as ten days. Although not more than two miles distant from Bâle, and with grounds nicely laid out, there is a certain want of interest about the establishment at Huningue, inasmuch as they do not, as a rule, hatch the eggs in large quantities. Although there are always a few thousand fish in the place, it is a rule only to supply eggs. People are paid to collect these from the rivers and lakes of Switzerland, and also to procure them from the Rhine and the Danube. The trade thus created affords employment to a great number of industrious people, who are paid at the rate of 1*s*. 8*d*. per thousand. The spawn of a fish weighing 20 lbs. would yield to the pisciculturist a sum of 1*l*. 13*s*. 4*d*. The eggs of some of the fresh-water fish are too minute to be operated upon pisciculturally—these must just be left to chance. Pike, tench, carp, &c., allow a vast per-centage of their eggs to be lost; indeed they are nearly all lost, except such as are caught on those leaves and weeds which overhang the river. The eggs of such fish may be numbered by millions; but, from their being exposed to all kinds of accidents, and from their being devoured in wholesale quantities, only a small per-centage ever comes to life: it is not an exaggeration to say that of some species perhaps not one egg in each hundred ever becomes a marketable fish. In addition to serving as a commercial depôt, the naturalist has rare facilities at Huningue to study the development of the fish, as the hatching-boxes are all under cover, and therefore easy to observe. Indeed, the progress of the egg (and these are there in all stages of progress), can be noted from day to day, and its various changes observed. These are so gradual that it requires a keen observer to hit upon the points. It is not, for instance, till about the 10th day, according to Agassiz, that the form of the embryo can be distinguished, and about the 30th day signs of the circulation of the blood are observable; and, under favourable circumstances, the fish escapes from its egg about the 60th day. Of course, much depends upon the temperature of the water—indeed, the heat of the water is a grand question in all matters relating to fish life. The salmon eggs in the breeding boxes at Stormontfield do not hatch so quickly as those described by Agassiz—they require fully 100 days, and sometimes take four months. Of course they are exposed to the open air; in a warmer atmosphere they would be hatched in half the time. We know of eggs that were hatched in 50 days, but the fish did not live. *Cornhill Magazine.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Forcing pits will now have to be kept in full activity to supply the various calls for plants in bloom, which during the spring months are more or less in demand in most establishments. Care should be taken before plants are moved to sitting rooms to gradually harden them for a day or two, either by placing them in the conservatory or an intermediate house. In addition to keeping the conservatory gay with blooming plants, let the arrangement of the interior be occasionally changed by grouping the plants somewhat differently and adding a few striking ones, as some of the hardiest Palms, &c., for effect. Pay attention to the plants intended for successive blooming. Insects should be kept down and every means enforced to keep the foliage clean and healthy. The number of plants brought forward will depend on the demand and must be regulated accordingly. Narcissi, Hyacinths, &c., should be carefully attended to as they now begin to show flower; as regards those in a less forward state remove the plunging material down to the surface of the pots to prevent them rooting upwards. Mignonette and Neapolitan Violets will require abundance of light and air to keep them from damping.

FORCING DEPARTMENT.

Pinery.—Pines at this season are often deficient in flavour, which is improved by exposing the ripening fruit to all the light you can command, and giving but little water. A good supply of air is likewise essential at all times for high-flavoured fruit, and more than ever necessary at this time. Continue an increase of heat to Pines now wanted to start, employing it principally by day. Attend to linings for dung pits and keep the atmosphere dry.

Early Vinery.—Remove all extra buds except such as may be required for producing bearing wood. In leaving these latter select such as are formed nearest the main stem to avoid the awkward appearance of long spurs at a stage further in their growth. Such shoots as have more than one bunch should have them reduced to that number, selecting the one likeliest to form the handsomest cluster. Tying in the young wood should be managed carefully, bringing the shoots to their proper position by degrees, to avoid the danger of their breaking. Regulate the admission of air so as to have a gentle current at all times through the house, increased, of course, by day agreeably with the state of the weather. Gradually advance the night temperature to 60° and then to 65° by the time the flowers are ready to open, keeping the thermometer from 10° to 15° higher by day according to the amount of light you can command. Keep up the heat in the outside border by additions when necessary, bearing in mind the injurious effects any sudden check to the roots now in action will produce on the coming crop. Bring succession Vineries into work as wanted.

Fig House.—Damp the trees over frequently, and if wanted early increase the heat a degree or two weekly.

Melons and Cucumbers.—To those who have not the advantage of a pit for growing Melons and Cucumbers, the following way of forming a bed will be found better than making it wholly of dung, as it will not sink so much, nor take so strong a lining to keep up the heat. Mark off the size of the bed on the ground 1 foot longer and wider than the frame; then build up to this size, with faggots of stout brushwood, to the height of 2 feet; then lay a row of faggots, 18 inches in diameter, along the back, front, and ends, for the frame to rest upon, placing them close and firm, leaving the interior space to be filled up with fermented dung and leaves as a foundation for the soil. The latter should be 2 feet in depth at least.

FLOWER GARDEN AND SHRUBBERIES.

Except in particular cases little more can be done in this department at present than paying attention to order and neatness. Bedding plants, however, must have attention, for in all likelihood many things are suffering, and such plants as appear to be injured must should be removed to other quarters where a more favourable temperature is kept. Keep stock in pits and frames well ventilated, whenever the weather will permit, and the surface soil of the pots frequently stirred. Dust with sulphur Verbenas and similar plants attacked with mildew. Be particular in keeping the interior of pits containing plants of the description just mentioned as dry as possible.

HARDY FRUIT AND KITCHEN GARDEN.

Trees attacked by scale should now be well washed with a mixture of soft soap, tobacco water, and lime; a half pint of spirits of turpentine may be added to each 4 gallons of the mixture when the trees are much infested. The lime is added to give body to the mixture, and to show that no parts of the trees are missed in dressing. Let this be applied during dry weather, if possible, that it may remain on for some time and before the trees are nailed; washing the infected parts with water of the temperature of 160° is also a good remedy. Gishurst Compound as mentioned last week has likewise been proved to be a cure for scale on fruit trees. It is now necessary to determine what the different quarters of the garden shall be filled with during the season. Though one vegetable may be grown on the same ground for years, yet such a method induces a greater expense for manure and labour than when a regular system of rotation is adopted, as the culture of one vegetable often prepares the soil for the growth of another. The chief rule to be observed with all annual vegetables, is never to have two crops of the same class directly following each other. Though excellent plans of rotation may be laid down, yet the period that will elapse before the ground is again occupied by a similar crop will depend upon the wants of the establishment and the quantity of ground at the disposal of the gardener. Those who require to have several crops on the ground at the same time will find that Celery gives a good preparation for Carrots, Turnips, Parsnips, Onions, and early Cauliflowers, or for Peas, with Potatoes and Winter Greens, or Broccoli between the rows. Autumn-sown Onions may be succeeded by Spinach, Lettuce, &c., and early Cauliflower by autumn Onions. Spring-sown Onions will be advantageously succeeded by Cabbages in beds, with Scarlet Runners between; and if the Cabbages stand all summer and next winter, the ground will come in, in the spring, along with Broccoli-ground, for Celery, Potatoes, and Peas, the early Potatoes being planted in the trenches, and the Peas sown on the ridges. If not already done, a sowing of Radishes may be made on a warm border if the weather is favourable; but the beds must be carefully covered in severe weather. Vacant ground, if any, may be dug, and everything that will forward the spring work should now be done before that busy time arrives.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the 7 Days ending Feb. 5, 1862, as observed at the Horticultural Garden.

January and February	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind	Rain.
Thurs. 30	●	29.650	29.595	54	44	49.0	46	42½	S.W.	.32
Friday 31	1	29.748	29.683	55	48	51.5	47	43	S.W.	.02
Satur. 1	2	29.962	29.809	54	44	49.0	47	43½	W.	.09
Sunday 2	3	30.076	30.008	53	44	48.5	47	44	S.W.	.06
Mon. 3	4	30.120	30.105	55	41	48.0	47½	44½	S.W.	.00
Tues. 4	5	30.183	30.096	55	42	48.5	48	45	S.W.	.00
Wed. 5	6	30.010	29.945	56	39	47.5	48	45	S.W.	.00
Average		29.964	29.891	54.5	43.1	48.8	45.7	43.9		.34

Jan. 30—Partially overcast; boisterous, with rain at night.
— 31—Overcast and boisterous; densely clouded; boisterous.
Feb. 1—Densely clouded; overcast.
— 2—Cloudy; fine; warm for the season; mild and fine at night.
— 3—Cloudy and fine; densely clouded; very fine.
— 4—Overcast; warm and fine throughout.
— 5—Overcast; fine; very fine; overcast.

Mean temperature of the week 11 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Feb. 15, 1862.

February.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 9	45.3	31.8	38.5	15	40 in.	1	5	4	2	2	14	5	3
Mon. 10	44.5	29.7	37.1	14	52	6	7	3	2	5	9	3	1
Tues. 11	45.6	29.7	37.6	15	34	8	6	2	—	5	9	2	4
Wed. 12	45.5	29.7	37.6	15	26	3	7	1	—	4	11	8	2
Thurs. 13	44.0	29.9	36.9	14	37	3	4	5	1	5	10	6	2
Friday 14	45.2	29.5	37.3	14	50	1	4	3	3	3	12	8	2
Satur. 15	46.6	31.2	38.9	13	37	4	4	3	—	5	10	7	3

The highest temperature during the above period occurred on the 10th, 1831—therm. 65 deg.; and the lowest on the 13th, 1855—therm. 0 deg.

Notices to Correspondents.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

Celery: *Felix Laxton*. The best answer we can give your enquiry is contained in the following translation of Messrs. Vilmorin's report on the Celeries they tried last season. Green Solid, and Incomparable Dwarf White, proved the same as the White Solid, excepting that in the former many of the plants were hollow-stalked. Turner's Incomparable White, appeared to be identical with the Early Dwarf White Solid (Celeri blanc court hâtif) with the exception of a few degenerated. Cole's Red Solid, Nutt's Fine, Dickson's Manchester Champion Red Solid, Lindley's (!) New Red, Laing's Mammoth Red, all proved to be the same as the Celeri Plein Violet; as did likewise the Imperial Violet and Lane's Matchless, excepting that in the former one-fourth, and in the latter the greater part of the plants were hollow-stalked The Double-pointed Solid White is the same as the Celeri à Couper, the sort which the French use for cutting into salads.

Diseased Leaves: *F W D.* You have to thank the varnish for the destruction of the leaves. What could have led you to treat your hot-water pipes to such a dose of poison? The rain water and soot in your tank *can* do no harm, and *must* do some good. We know of no remedy except removing the varnish from the pipes, or heating them till the poisonous volatile matter with which they are smeared is driven off. It is a very bad job.

Diseased Vines: *Vitis*. Your shoots appear to be poisoned, but whether by bad air or bad earth, or by what, can only be ascertained on the spot. They will doubtless get worse.

Gutta Percha. *R Denbigh.* This substance becomes as hard as bone when submitted to a temperature of about 330°, and in that state forms the most valuable of all materials for artificial teeth. The great artist in that line is Mr. Ballard, 25, Hinde Street, Manchester Square, London.

Heating: *J C.* Be advised. There is nothing like hot-water where it can be used.—*Skŏlastikos*. The boilers and heating apparatus at the Royal Horticultural Society's Gardens at South Kensington were put up by Mr. Weeks, and work satisfactorily.

Hexagon Garden Netting. Samples of this have been submitted to us by Mr. Haythorn of Nottingham. We have only to say now that it continues to be well manufactured, and to repeat that it is one of the most useful materials that gardeners can employ for protecting purposes.

Messenger's Glass-houses: Mr. M. complains that we do not insert a long letter he has sent us. If he will send us an answer—that is to say *a real answer* to Mr. Pannell—we will print it if short; but he must excuse us for saying that what he has favoured us with is merely a cloud of words conveying anything rather than an *answer*.

Names of Plants: *R J.* Your great Snowdrop is the Galanthus plicatus of the Crimea—*C A B.* We can scarcely doubt its being Juniperus virginiana. If the berries are always like that on your specimen there is no question about it. The greater part of the species of Juniper bear leaves of two kinds; but not all of them—*Old Subscriber*. The plant which was used extensively in the bedding-out plants of the Tuileries Gardens this last year, something like a Daisy in shape and found in almost all the white borders and beds in the gardens about Paris, is, we believe, Chrysanthemum grandiflorum, a variety of C. frutescens.

North Wall: *W C.* Morello Cherries and Red Currants succeed perfectly on a north aspect, and so do some kinds of Plums, provided you can give their blossoms a little protection from north east winds. As you prefer Plums you might try the following: viz., Wine Sour, Blue Gage, and Ickworth Imperatrice.‡

Plans of Gardens: *S C.* It is impracticable to go into details in a newspaper. It would require a whole column to give you an answer of any value. We may however hint that the principle on which the plan is made is wrong; and that if executed it would greatly disappoint you.

Sapucajas: *G.* The seed vessels are not on sale that we know of. Probably they may be seen at Fortnum and Mason's. When they come over it is as presents.

Seeds: *W E.* They all require a greenhouse, hereabouts, Acacia dealbata will however live and blossom out of doors in Devonshire. Ceanothus africanus is worthless. The Hardenbergias are handsome climbers. Salsola and Atriplex are weeds. The others are small bushes.

Smith's Dictionary of the Bible: *A Correspondent* reminds us that the edition now issued is merely a reissue of Vol. 1, a circumstance to which there is no allusion on the wrapper. —*Westminster*. We cannot endorse the Botanical articles in this work. They rest on the responsibility of their authors. The article Cedar is evidently not from the hand of any one acquainted with trees. It may be learned, but is unsatisfactory; as the remarks on Natural History by learned commentators usually are.

Vancouver: *Under Gardener*. There is no Government-assisted emigration to Vancouver; if you make up your mind to go there, you must do so at your own expense.—*A B.* You will find the information you ask for at p. 96 of our last week's number.‡—*J F J.* Consult shipping advertisements. We cannot undertake the duty of emigration agents. The Commissioner you speak of is no Commissioner at all if he cannot give you information.

SUTTON'S COLLECTION of GOURDS and PUMPKINS, highly ornamental and useful.

	(Post free)—s.	d.		(Post free).—s.	d.
50 choice sorts	12	6	12 choice sorts	3	0
36 ditto	9	0	Serpent Gourd, very handsome	0	6
24 ditto	6	0			

SUTTON & SONS having imported Seeds of all the most ornamental and useful GOURDS, can supply a collection which they consider unrivalled, and at very low charges (as see above).

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Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

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THOMAS AYRES, SEEDSMAN and GROWER, Biggleswade, Beds., has to offer WHITE SPANISH ONION SEED, ALTRINGHAM and WHITE BELGIAN CARROT SEED; YELLOW GLOBE, ORANGE GLOBE, RED GLOBE, LONG YELLOW, LONG RED MANGEL WURZEL SEED; also several varieties of SWEDE and WHITE TURNIP SEED.

Prices forwarded on application.

GENUINE ITALIAN RYE-GRASS, produced from the second cut of Foreign "Italian," weighing up to 21 lbs. per bushel, and "Pacey's" and "Evergreen" Perennial Rye-grass, weighing up to 28 lbs. per bushel, can be supplied direct from the Grower either now or in March (at the option of the purchaser), and samples will be forwarded free on application.

Address SIMON A. DAINTREE, Fendrayton, St. Ives, Hunts.

Seeds of Crop 1861.

CHARLES SHARPE AND CO., having completed the Harvesting of their Seeds, comprising Turnip, Mangel, Carrot, Peas, Beans, and all other varieties of Culinary and Agricultural Seeds, will be glad to forward post free on application their WHOLESALE PRICED CATALOGUE for the present season.

Sleaford.—February 8.

WHEELER'S TOM THUMB LETTUCE "IMPERIAL COS."—The demand for the above has been so great that we are now nearly sold out. We can spare a few more packets at 1s. each (free by post).

We have supplied the following leading firms, who can sell packets at the same price:—

Messrs. Jacob Wrench & Sons, London.
" Peter Lawson & Son, Edinburgh.
" Hurst & McMullen, London.
" Noble, Cooper, & Co., London.
Mr. J. G. Waite, London.
Messrs. Fraser, Richardson, & Goad, London.
" Nutting & Sons, London.
" Sutton & Sons, Reading.
" James Carter & Co., London.
" James Dickson & Son, Chester.
Mr. John Bell, Norwich.
Messrs. Wm. Wood & Son, Maresfield.
" Hugh Low & Co., Clapton.
" Fisher, Holmes, & Co., Sheffield.
" A. Henderson & Co., Pine Apple Place.
Mr. Cooling, Derby.
Messrs. Maule & Sons, Bristol.

To secure a supply it will be necessary to send orders immediately.

Postage stamps taken in payment for small amounts.

J. C. WHEELER & SON, Seed Merchants, Gloucester.

To the Nobility, Gentry, Agriculturists, and the Public generally.

ALEX. PONTEY, of the Original Plymouth Nursery and Seed Establishment, established upwards of 60 years, supplies every requisite for the Farm, the Forest, the Vegetable Garden, the Flower Garden, the Fruit Garden, and the Conservatory. All Seeds proved before they are sent out. His celebrated GERMAN STOCKS and PÆONY FLOWERED ASTERS, which have given such satisfaction throughout the West of England, are now ready, and will be sent (post free) in packets of 12 splendid colours, separate, for 3s.; or same varieties mixed in 6d. or 1s. packets; and 1000 other varieties of Flower Seeds, in packets, from 2d. upwards.

Complete CATALOGUES are now ready, and will be forwarded free on application.

N.B.—Thirty four distinct varieties of TURNIPS, grown in the Trial Grounds last year, may be seen at the Seed Shop, 21, Cornwall Street.—Plymouth, Feb. 8th, 1862.

WILLIAM BARRON, Elvaston Castle, Derby, can supply strong and remarkably well-rooted plants as under:—

	Per 100—s.	d.
ABIES DOUGLASII, 3 years once transplanted .. .. This tree attains a height of more than 200 feet, highly ornamental, the same as the tall flagpole at Kew.	25	0
PINUS LARICIO, 18 ins. to 2 feet .. .. per 1000. This produces timber for railway sleepers sooner than the Larch, and is used as spars and masts in the French navy.	70	0
BERBERIS DARWINI, the most beautiful of the tribe, fit either for the flower garden or game cover, with rich orange-coloured flowers; Pheasants are very fond of the berries, which are produced in profusion. Strong plants, 3 years old	20	0
Ditto ditto, 2 years old	15	0
Ditto ditto, 1 year old	12	6
PICEA NOBILIS, 3 to 4 years old, plants from seed, each, 10s. to	15	0

This is the most lovely of all Firs.

WELLINGTONIAS from 2 to 9 feet. Also specimens of the rarest Conifers.

Remittances to accompany orders from unknown correspondents. Post-office Orders payable at Derby.

NEW SEEDLING POTATO, "DAINTREE'S EARLIEST."—This Potato raised by the "Advertiser and now for the first time offered to the public, after being thoroughly tested by competent judges, has proved itself to be a new and distinct variety, ripening ten days earlier than the "Ashleaved Kidney." It is adapted for the earliest and latest planting, is in colour beautifully white, has a very thin skin, and retains its fine cooking qualities until June. See *Gardeners' Chronicle* of May 25.

To effect, therefore, a thorough distribution, and to enable growers to test for themselves, a sample will be forwarded on receipt of an order enclosing 12 postage stamps, and the small supply for Sale this season will be delivered on the Eastern Counties' or Great Northern Railways in quantities in quantities of not more than one bushel (in the order they are booked), packed secure from frost, at 21s. per bushel, or 5s. 6d. per peck, on receipt of an order enclosing a post office order for the amount, payable at the Post Office, Saint Ives, Hunts, addressed to MR. SIMON A. DAINTREE, of Fendrayton, Saint Ives, Hunts.

Royal South Hants Seed Establishment

PAGE AND TOOGOOD have the honour to offer the OSBORNE MANGEL, the stock of which was presented to them by His late R. H. the Prince Consort's Steward, A. TOWARD, Esq., by whom it is considered the best variety in cultivation. In shape it is as perfect as a Globe Turnip, with a similar tap root, the foliage small and very compact, indicative of less impoverishment of the soil than can be said of most other sorts. It has carried off every prize for shape where exhibited. A great portion of the seed has been ordered by those who saw it growing, and P. & T. being anxious to get it into general cultivation, would prefer supplying it in quantities not exceeding Ten Pounds.

PAGE'S IMPERIAL ORANGE GLOBE MANGEL.—A large stock of this has been provided to meet the demand that has arisen for it. Its superior weight producing and keeping qualities are well known. The prize for the best 10 Acres has again this year been awarded to it by the Botley Farmers' Club. STEWART MACNAGHTEN, Esq., grew 61 tons 2 cwt. per acre of it by ordinary cultivation. W. DICKINSON, Esq., produced six specimens, weighing when perfectly clean, without leaves or roots, 193 lbs., the largest of which, 41 lbs. At the Vale of Avon Farmers' Club, six prizes were awarded to it for acreage.

PAGE'S IMPROVED HARDY SWEDE still maintains its superior character for general cultivation. It carried the 10 Acre Prize at Botley.

BIRMINGHAM ROOT SHOW.—The Ten Guinea Cup for the best collection, and the Five Guinea Cup for Swedes have been again brought to Hampshire—being the third time in succession the former has been awarded to Sir W. Heathcote, Bt.—This not only reflects great credit upon the management and skill of his Steward, Mr. Charles, but the County should be proud of the distinction conferred upon it, by his energy and judgment, in carrying these Prizes (that for Swedes against 26 competitors). As Hampshire Seedsmen, we have great reason to speak of his success.

Special Contracts made for the supply of all AGRICULTURAL SEEDS in large quantities.

☞ Our Goods are delivered Carriage Free

PAGE & TOOGOOD, Seed Merchants and Growers, Southampton.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.

METROPOLITAN SHOW, 1862.
Last day of Entry for Implements, March 31.
Last day of Entry for Stock, May 1.

STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. HALL DARE, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, FEBRUARY 8, 1862.

MEETING FOR THE WEEK.

WEDNESDAY, Feb. 12—Agri. Society of England .. .. Noon

EVERY educated man knows astrology to be utter folly, and the jargon of so-called ASTRO-METEOROLOGY to be utter nonsense. The days when the almanac was consulted for the weather are past, or if anywhere they still exist it is only where little more than the bare ability to read has been achieved, and where accordingly the profoundest ignorance prevails.

It is a lamentable illustration of the judgment either of its readers or of its conductors that any publication should still periodically profess to teach the influence of the planets on our rainfall, winds, or temperature. Primrose Hill exerts greater attractive power on the immediate atmosphere of London than the planet Saturn does at present, or than the planet Saturn would when at the utmost of its orbit from us were it 10 times the mass that it possesses. And were Primrose Hill carried bodily away and used to fill up the Serpentine, that would be a greater, more influential, displacement of attracting matter so far as North London atmosphere is concerned than any of those changes from day to day which take place in the relative positions of Earth and Saturn, on which, among other planetary displacements, weather prophets of a certain class profess to build. Would any one expect a frost, a flood, or storm of wind if an army of "navvies" and contractors were to level Primrose Hill? The thing is absurd, and yet not so absurd as the expectations or predictions of the astro-meteorologist. It is very possible that the removal of Primrose Hill might affect the climate of the Regent's Park. It may be a shelter against the north wind, of some service to the tropical animals of the Zoological Gardens there. But that is a different thing altogether. Excepting, of course, the sun, none of the heavenly bodies affect our temperature in an appreciable degree. It is possible, indeed, that the moon's direct influence on the temperature of the earth may be felt in the heights of our atmosphere; but the most sensitive contrivances fail down here to detect the slightest warmth in moonlight. And, in fact, the clearance of the clouds upon a moonlight night no more adds to the warmth of the air than that of a whole parish would be affected by the lighting of a solitary Couch fire in one of its fields. It is not the warmth, due to shelter or any other cause, given out by Primrose Hill, but the attracting influence of its mass, in which *alone* it can be compared with the masses at astronomical distances to which astro-meteorologists refer.

There are, however, many other ways in which it must almost at once appear to every one that the changes in the position, and therefore in the attractive power of astronomical bodies relatively to our earth, cannot be held to influence our atmosphere. There is (1) first no doubt their immense distance, which, as we have said, renders their attractive influence at best so small; but (2) there is also the fact that all such changes of position are gradual, constant, and either uniform, or possessing such a varying rate of progress as is itself subject to the simplest rule—whereas the changes which they are said to produce are often startling and abrupt. On the first day of this year the thermometer was low, and hardly rose above the freezing point; the air was dry; what wind there was came from the N.E., but it was nearly calm. On the seventh day afterwards the thermometer stood at 52°, the day was wet, the wind was from the S.W., and it was half a gale. During that interval, as at all times, astronomical changes and displacements relatively to the earth went on with perfect uniformity. Can you hold these abrupt changes and this undeviating regularity, to stand to weather as effect and cause? Can you put that and that *together?* Will those two horses run in one curricle!

But (3) not only is this influence (so small at best) uniform or nearly so within the periods of our greatest meteorological changes, but that influence, such as it is, must affect the whole shell of air *alike* in which the earth is wrapped: whereas we know that the greatest meteorological contrasts occur close together upon the surface of the earth. Why was it that England had such a splendid harvest time and autumn, and Scotland such deplorable weather at the very same time last year? Was it because "Mars had become antagonistic to Saturn," or because "that refrigerating planet had come into close companionship with Jupiter?" How was it that under these circumstances north latitude 51°—2° in west longitude 3° experienced such different weather from latitude 56° on the same meridian? Everybody knows that the weather not only changes rapidly, or is steady for long periods of time, while astronomical changes proceed sublimely constant to the simple law which they obey; but during the gradual process of such astronomical movements as astro-meteorologists profess to study, the changes of the weather may be one way here and the other way five counties off. There is no connection at all between the two things which are declared to stand to one another as cause and effect. "February will probably during the first week find amusement for skaters"—that was the latest astro-meteorological prediction we have read, and it is a sufficient illustration of the unutterable folly of the whole affair.

The moon is believed with greater reason than any of the planets to affect the weather—but the best authorities do not believe even that. Or if the influence be real, it is either so small, or itself so influenced and disguised by other causes, that no law to justify the belief can be read in meteorological records. There are indeed changes on the earth itself in some localities, vastly greater and more rapid than any which even the moon *directly* can produce, which happen without effect on weather. Some of our readers may have heard the distich on the banks of the Mersey or the Severn:

Rain, flow—go to plough.
Rain, ebb—go to bed.

It is an old doggerel whose imperfect jingle is probably the only cause of its maintenance, for there is no evidence that rain beginning at the flow of tide is less likely to last than rain during ebb. But there is much more reason why we should expect some truth here, than in any of the speculations of astro-meteorology. A flow of tide into an estuary of some 60 square miles is an immense and sudden increase to the mass below the air of such a locality. If the tide flow 6 or 7 yards deep, such a mass of water will weigh at least a thousand millions of tons. What is the attracting power of such a mass brought within three or four hours to bear upon the air above it, and at an average distance of say one mile from it? It would need a mass 10,000 millions of millions times as great at the distance of our sun to exert so great a power—a cubic mass considerably more than 100,000 miles in the side, of such stuff as the moon is made of! Is there any change in our astronomical relations at

all equal in its influence on the atmosphere of a locality to that which would be produced by the appearance and disappearance at that distance twice in the 24 hours of such a mass as that would be? And yet the doggerel rhyme which attributes meteorological influence even to such a cause as this, cannot be shown to have any ground of fact to rest upon.

Let us hope that ere long Zadkiel and all his colleagues, whether patronised by City magistrates or not, may soon be "put down" by the prevalence of common sense; and that before French and Dutch and German farmers flock in to see our cattle show and exhibition, agricultural periodicals may cease to cast the slur on British agriculturists which certainly is thrown by any pretence that they believe in the fooleries of astro-meteorology.

The subject of Artificial Manures, on which a paper was last Monday read before the Central Farmers' Club by Mr. Cuthbert Johnson, was well chosen for the season of the year. We shall all soon be purchasing artificial manures for spring top-dressings of Corn and pasturage, and for use on the fields for Mangels and for Turnips. The paper, reported elsewhere, will not materially guide us, either in the choice of a fertiliser or in the quantity of it that should be applied to particular crops under particular circumstances. It does, however, show the extent to which the best farmers at both ends of the island use these auxiliaries; and it illustrates, by the increase of late years in their manufacture and their importation, both how general the use of them has become and the room there is for a still more extended application than has yet obtained. Perhaps Mr. Johnson erred when estimating this latter point in assuming that the lands on which these fertilisers are not now used are as suitable for them and as likely to pay for them as those over which they have been already found so profitable. He did not appear to consider that there is an immense extent of clay lands where guano or at least where bones and superphosphate are not so generally employed, whose fertility is to be increased rather by improved tillage than by increased manuring. Even omitting tillage, however, there is hardly any other agricultural topic which might not have been brought in to illustrate "the extent to which artificial manures may yet be profitably used"—for that depends on the uses already made of our natural resources as much as anything—and steam cultivation, stock farming, rotation of crops, fallows, drainage, irrigation, would all need to be named in a full discussion of it.

The Chairman, Mr. Charles Howard, impressed upon the meeting the importance for the utility of the discussion that it should be confined strictly to the subject as announced upon the card, viz., "The extent to which artificial manure may be profitably employed." Nevertheless we heard in the course of the evening an address perfectly in order on the importance of "spouting" at the eaves of all farm buildings!

Wide, however, as was the ground over which the discussion ran, a great deal of most useful information was forthcoming of the kind needed to give a practical tone to the somewhat general review taken in the opening essay.

Mr. Thomas, lately of Lidlington, Bedfordshire, spoke of lime and urged its use on all virgin soils as possessing a wonderfully fertilising influence—and as giving a value and effectiveness to other fertilisers in the land which they would not otherwise possess. He urged upon the meeting the need of increasing the manufacture of meat upon the land, not only as being itself a profitable thing, but as adding to the fertilising resources of the farm. He spoke of Lentils, now sold at 32*s.* a quarter, as being worth as much per lb. in the process of meat making, as oilcake, though now worth 11*l.* or 12*l.* per ton, costing therefore at least one-half more. He referred to the need of an altered rotation of crops — taking another grain crop between Turnips and Barley in the four-field course—to enable the growth of good samples of Barley; and he urged the possibility of this now that artificial fertilisers could be easily and cheaply applied.

Mr. Coussmaker doubted the policy of using artificial manures. He considered that like lime they stimulated the soil, did not themselves completely feed the plant and so robbed the land. And not only did the land suffer but the crop was inferior in quality, corn was more liable to blight, and Turnips more liable to rot.

Mr. Trethewy of Silsoe entirely differed from Mr. Coussmaker. So far from lime injuring the land when properly used, he knew of an immense extent of land where the owner is draining for his tenant, charging 5 per cent. interest, and afterwards applying lime at his own cost, charging 6 per cent. for that. Land not worth 5*s.* an acre in its natural state has been drained and limed, and in 3 years has let for 2*l.* an acre. He did not believe moreover that artificial manures injured the quality of the Turnip crop.

Mr. Bradshaw illustrated the variety of English practice and experience by contrasting Cheshire and Sussex. In the latter county bones are of no service to pastures. He used 3 cwt. of superphosphate per acre to Turnips with advantage.

Mr. Burnett explained Scottish practice with reference to lime. It was the custom to apply very large doses at once to the land only on the first time of its enclosure or breaking out of the natural Grass or moor. Afterwards at intervals of 20 or 30 years a smaller dose, equal to 60 or 70 bushels per acre, was applied with good effect.

Mr. Copley spoke of the experience of Irish farmers with regard to lime. Its repeated use did not exhaust, it *maintained* the fertility of the soil; and when an Irish farmer wished to run out a farm towards the end of a lease, he *ceased* to lime, thus taking the last inferior crops at smaller expense to himself.

Mr. Purser brought back the attention of the meeting to what was more generally understood by the announcement of the subject on the card, by reference to nitrogenous manures as the only stimulating and exhausting fertilisers, inducing the more rapid extraction of the natural mineral stores within the soil; and to superphosphate as a true feeding manure, supplying material needed by the Turnip crop, and not sufficiently supplied to it in the land.

Mr. Brown, of Swindon, spoke of the practice of stifle burning as a fertilising practice of great importance on the calcareous soils of Gloucestershire and Wiltshire.

Dr. Ellis, of Richmond, gave an exceedingly interesting address on the serviceableness of such discussions, quoting in reference to the subject of the evening, the maxim — "He that soweth sparingly shall reap also sparingly;" but asking for information on the ground that it is possible to sow liberally but yet mistakenly. He asked especially for information on the value of soot.

Mr. Reynolds informed him that soot was extensively used in his neighbourhood. Gardeners used it for seed crops, for Onions, and for many other crops in large quantities; 100 bushels per acre being a common application. It was also used at the rate of 60 or 70 bushels per acre for Wheat and Grass.

Mr. Williams, of Baydon, urged that the recommendation of Mr. Johnson to increase so largely the use of artificial manures, based on the practice of such a man as Mr. Hudson, of Castleacre, was not adapted to men of ordinary means; and he repeated Mr. Coussmaker's assertion, that the crops grown by the use of them were not of such good quality as those grown under more ordinary circumstances.

Mr. Dumbrell spoke of stopping the waste of natural manure as being of at least as much importance as the purchase of auxiliaries. The addition of spouting to the eaves of farm buildings was a topic quite within the range of the subject on the card.

Mr. Frere pronounced an eloquent eulogium on the energy, intelligence, and sterling worth of the late Professor Henslow, to whose discovery of the value of coprolites for the manufacture of superphosphate we owe it that bone-dust and all the artificial manures into whose composition it enters are as cheap as we now have them.

A most interesting and useful discussion terminated by an able summary of the whole from the Chairman, Mr. Howard; and by a reply from Mr. Cuthbert Johnson.

THE ROYAL FARMS.

The Shaw Farm.—In our Journal of the 18th inst. we published a plan of the Home Farm buildings, and alluded in general terms to the Shaw Farm, and to its exceedingly complete and well arranged homesteads.

We now publish a plan and view of this homestead, which was designed by and erected under the personal superintendence of Mr. G. A. Dean, the well known agricultural architect and land agent.

Before describing these buildings let us state the reasons which induced the late Prince Consort to erect them when his Royal Highness in 1849 became tenant of the Shaw Farm. The buildings then upon the farm were of a very inferior character, and in a dilapidated state of repair, as were also most of the buildings upon the other Royal farms.

The late General Wemyss, who then had the entire charge of these farms, frequently consulted Mr. Dean respecting their cultivation and management, and as frequently complained of the unsuitableness of the buildings generally for rearing and fattening choice stock, especially those intended for exhibition at cattle shows where his Royal Highness was desirous of success as an exhibitor.

The General called the attention of his Royal Highness to the state of the buildings, and the result was that Mr. Dean received the commands of his Royal Highness to prepare designs for an entirely new set of farm offices to be erected at the Shaw Farm, together with a house for the steward and rooms for the exclusive use of the Queen and Prince when visiting the steading and inspecting the stock.

Mr. Dean informs us that when the Prince gave his commands he said, "I have not seen a perfect set of farm offices anywhere;" and added, "I requir[illegible] substantial buildings, so arranged that each des[illegible] of animals may be kept distinct from and tended without disturbance to other animals—that suitable aspects be given to the various buildings, and [illegible]pera-tions economically performed."

Here we see his Royal Highness not only as a tenant farmer but a practical one, and as desirous of having model farm buildings erected on this farm for the guide and benefit of the agricultural community, as he was in having model cottages erected in Hyde Park and elsewhere, with the view of administering to the comforts of the poor cottagers. The latter were built [illegible] at the cost of his Royal Highness, and he c[illegible]d about three-fourths of the cost of the former, besides paying rent for the farm as would any other tenant.

Her Majesty as well as the Prince Consort took great interest in these buildings, and frequently visited them while in course of erection. Soon after completion Mr. Dean received through Sir C. B. Phipps a letter requesting the acceptance of a valuable gold watch in token of his Royal Highness's approval of the plan and arrangement of the buildings.*

As regards the buildings under consideration, on referring to the annexed plan it will be seen that they are explained in detail by the references thereto; we therefore propose to describe them here generally, and then state our opinion of them as buildings erected with the view of benefiting the agricultural community.

The rooms erected for the use of the Queen and Prince Consort are shown on the plan by the letter N in the steward's house, the road to which passes the entrance to the steading. The foreman's cottage, steward's stable, gig house, and spare boxes for horses or other sick stock, are placed at *i* to *j*. At *k* is shown the poultry department; at *l*, *n*, blacksmith and carpenter's shops, sawpit, &c., which completes the north range.

At A to J in the west range is the threshing, grinding, and manufacturing departments, and at K, M, in the same range, the piggery department.

The three central ranges are shown at *v*, *y*, *v*; the two outer being open stock sheds and yards with small lean-to sheds for rack feeding.

At *a* to *h* is the east range, in which are the cart and waggon sheds, cart horse stables, the house for labourers, and school room (already alluded to in a former Number of our Journal), clock tower, implement sheds, &c.

In the range from *p* to *u* are the bullock boxes with and without hamels or yards, provision shed, cow house, stallion and bull boxes, &c.

The rooms for her Majesty are placed at the end of a fine avenue, and, together with the steward's house, form a very pleasing and picturesque object. They are of an ornamental character and considerable architectural pretensions. From these rooms her Majesty is enabled to walk in comparative privacy to the poultry department by the passage shown by *m*, and thence by means of the various passages through the whole range of buildings.

The steward's house and offices are commodious and well arranged, and sufficiently near to without being attached to the steading.

The poultry department is managed without interference with the farm operations, as is also the blacksmith's and carpenter's departments.

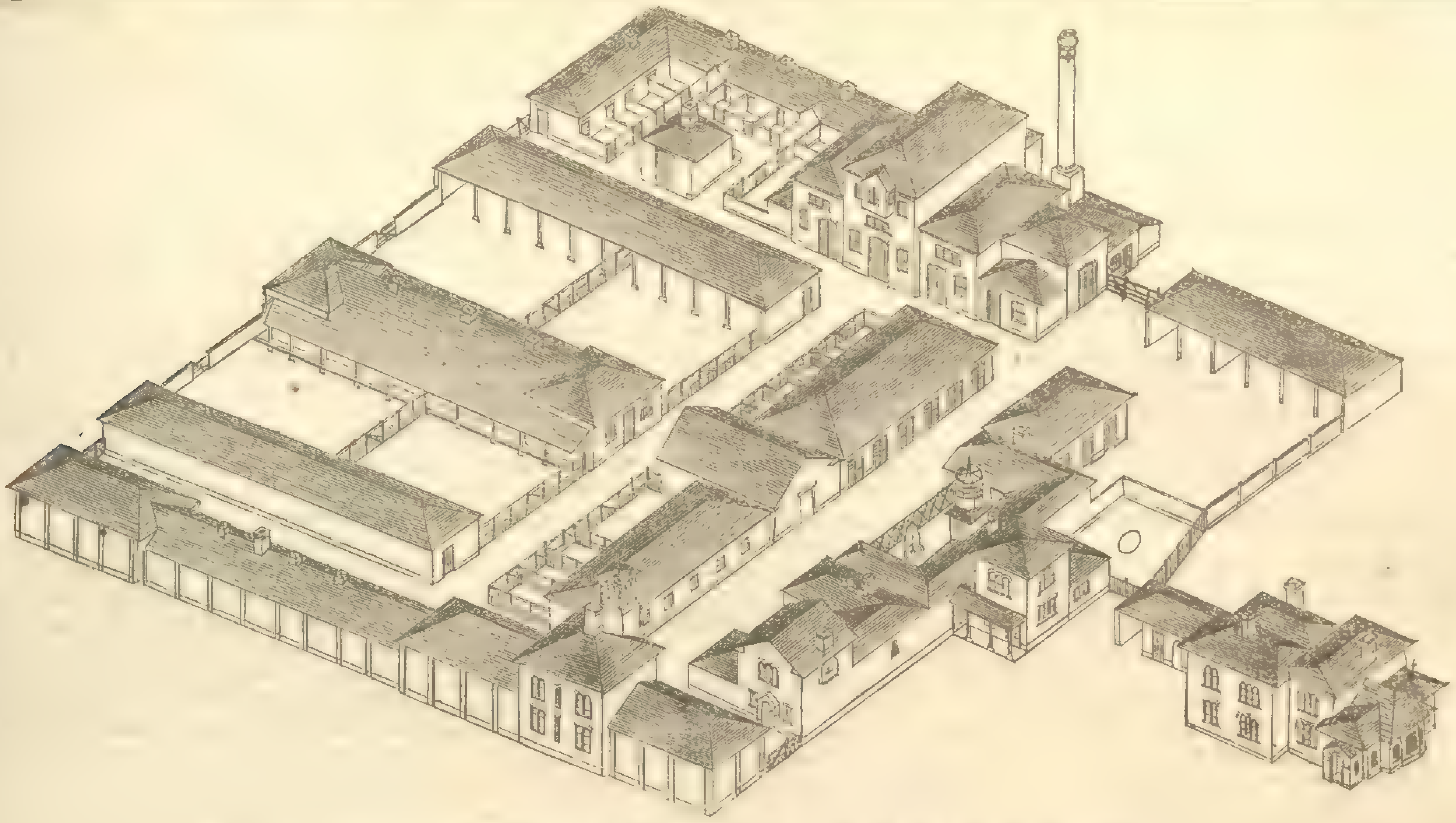
We noticed the barn steam engine and machinery in our former Number, and have but to add that the engine, which was designed by Mr. Dean, and constructed by Messrs. Collinge & Co., works the saws, &c., in the carpenter's department as well as the machinery of the steading. Mr. Dean also arranged the extensive machinery in use, and which was supplied from Messrs. Garrett & Son's establishment.

The barn machinery comprises besides the threshing machine, Oat, Bean, and Cake-crushing mills, a flour mill, straw and chaff-cutters, hoisting machinery, &c., in short the barn is made a complete manufactory for the conversion into food for man and beast of the produce grown upon the farm.

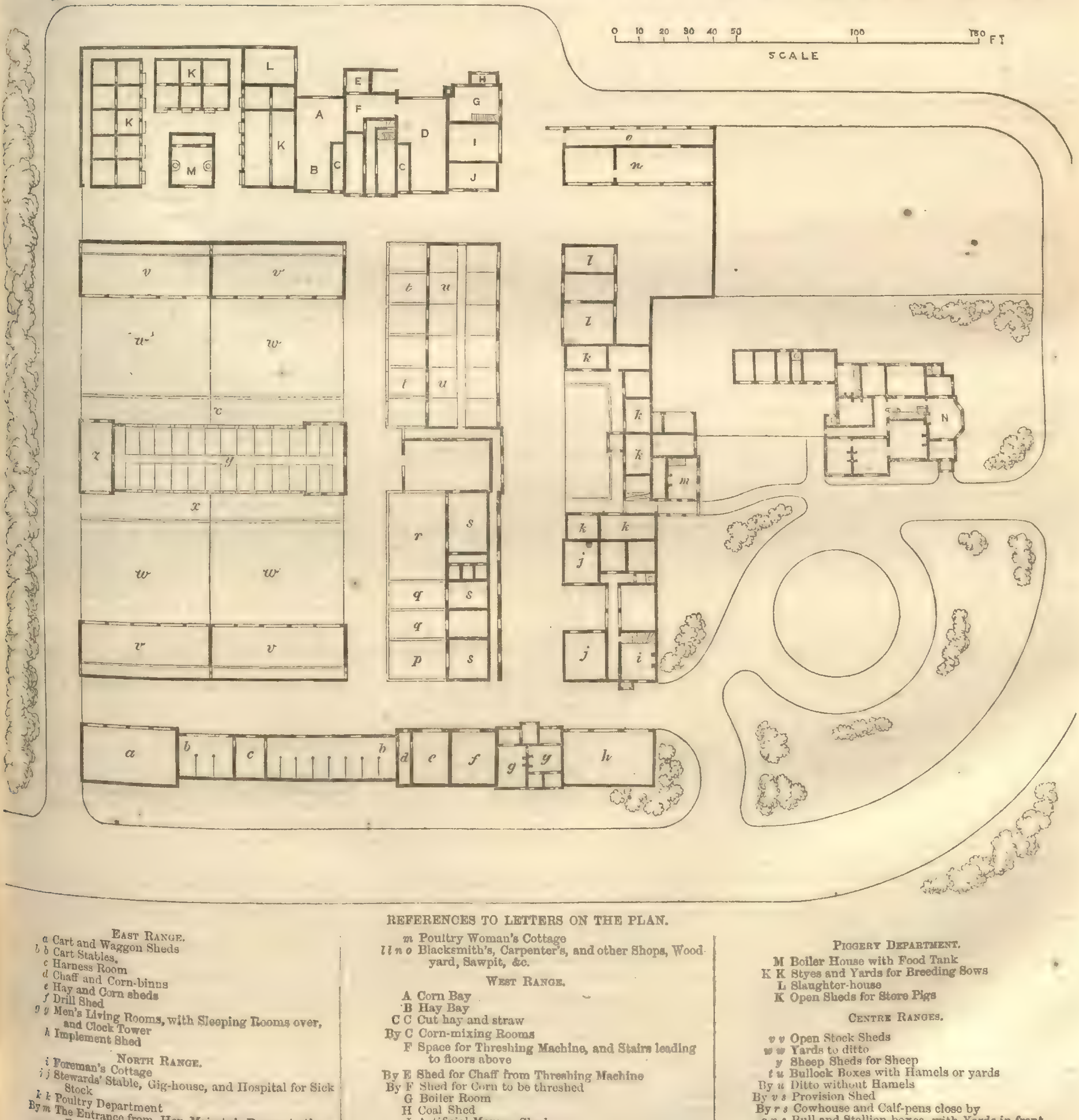
In the piggery department, shown at K, the styes surround the boiling house, at the back of which is a large tank in which the food is fermented. The central position of this building ensures economy in feeding the animals.

The stock yards shown at *w* are divided into four for keeping separate distinct breeds of stock and those

* In 1849, we reviewed a work published by Mr. Dean, on Farm Buildings and Labourers' Cottages, which was dedicated by permission to His Royal Highness.



ISOMETRICAL PERSPECTIVE, AND GROUND PLAN OF THE SHAW FARMSTEAD.



REFERENCES TO LETTERS ON THE PLAN.

East Range.

- *a* Cart and Waggon Sheds
- *b b* Cart Stables.
- *c* Harness Room
- *d* Chaff and Corn-binns
- *e* Hay and Corn sheds
- *f* Drill Shed
- *g g* Men's Living Rooms, with Sleeping Rooms over, and Clock Tower
- *h* Implement Shed

North Range.

- *i* Foreman's Cottage
- *j j* Stewards' Stable, Gig-house, and Hospital for Sick Stock
- *k k* Poultry Department
- By *m* The Entrance from Her Majesty's Rooms to the Farm Offices
- *m* Poultry Woman's Cottage
- *l l n o* Blacksmith's, Carpenter's, and other Shops, Wood-yard, Sawpit, &c.

West Range.

- A Corn Bay
- B Hay Bay
- C C Cut hay and straw
- By C Corn-mixing Rooms
- F Space for Threshing Machine, and Stairs leading to floors above
- By E Shed for Chaff from Threshing Machine
- By F Shed for Corn to be threshed
- G Boiler Room
- H Coal Shed
- I Artificial Manure Shed
- J Boiling House

Piggery Department.

- M Boiler House with Food Tank
- K K Styes and Yards for Breeding Sows
- L Slaughter-house
- K Open Sheds for Store Pigs

Centre Ranges.

- *v v* Open Stock Sheds
- *w w* Yards to ditto
- *y* Sheep Sheds for Sheep
- *t u* Bullock Boxes with Hamels or yards
- By *u* Ditto without Hamels
- By *v s* Provision Shed
- By *r s* Cowhouse and Calf-pens close by
- *q p s* Bull and Stallion-boxes, with Yards in front

Feeding and Inspection Passages throughout

of different ages. The centre range comprises the sheep shed already alluded to as including arrangements for feeding on an open floor over a tank for the collection of their manure.

The bullock boxes in the range shown at letters *p u* are without hamels on the north side, while those on the south possess them. This arrangement was carried out by command, as his Royal Highness wished to ascertain which of the two plans was the best for fattening bullocks of various breeds.

The provision shed in this range is also well placed for supplying food to animals in the various ranges of buildings.

The accommodation for cows is small in consequence of the dairy being at Frogmore. It was therefore intended to keep but a few in this steading, and these for breeding animals intended for exhibition. The bull and stallion boxes adjoining are very commodious and well fitted up.

The whole of the buildings are well drained and well supplied with water.

There are various manure tanks having holes with plugs in the topstones, so that on taking out the plugs, portable pumps may be employed for pumping the liquid either into carts or on the manure in the stock yards as may be desirable.

A reference to the distinctive merits of these buildings will be made when we come to compare them and the other Royal farmeries after the completion of our series. The whole are a capital illustration of all the various styles of farm architecture. At the Norfolk Farm we have the old-fashioned wooden sheds and barns, comfortable for stock, none more so, but incurring by wide and scattered arrangement extra labour in attendance on them, and extra risk of fire by the material, wood and thatch, of which they are made. At the Flemish Farm we have the latest improvements—covered yards, well packed and compendious. At the Shaw Farm we have the buildings just described, open yards and sheds, boxes, stalls, and hamels, accommodation for stock of all kinds on almost every plan, good machinery, and good arrangement. At the Home Farm and dairy we have the very highest style of workmanship, and a plan including magnificent architectural features, adapted for the eye of Royal visitors, though no less adapted for the live-stock for which exclusively it was intended.

Home Correspondence.

The Norfolk Labourer: The Gang System.—In a late Number of your journal "A Norfolk Tenant Farmer" says, "It is a libel on Norfolk labourers to say that as a class they are inferior to those of other counties, Northumberland included;" and adds, towards the conclusion of his letter, "not one-tenth of the middle-aged agricultural population of this county can either read or write, and in my humble opinion the disparity of wages in the two counties is attributable to this educational or mental inferiority of our men in comparison with those of the North." The line of defence adopted by your correspondent suggests matter for serious reflection, not so much as to whether the men constantly employed are as hard-working or skilful as can be found in any part of England, but rather whether the Norfolk tenant farmers do their duty towards their labourers, who are represented to serve them well and for moderate wages, so long as they expose their children of both sexes to the manifold evils of the so-called "gang system," not very long since described in your columns. In an article on the agricultural labourer of Cambridgeshire in your journal, Jan. 18, 1861, p. 55, Mr. Ruston, of Chatteris, under the head "Employment of Children," says, "A system has grown up amongst us during the last 10 years in connection with the employment of children and young people which is most pernicious in its tendency, and is fraught with moral evils of no trifling character—a system which cannot be too severely reprobated, and which, if unchecked, must ultimately result in the most disastrous consequences. A man who is designated a ganger collects together a number of children and young people of both sexes, sometimes upwards of 100; these he puts in gangs of 15, 20, or even more, putting over each gang a man or woman, who takes the superintendence of it during the hours of work. The great evil of the system morally is this. The children and young people of both sexes constituting these gangs are indiscriminately mixed, without any strict or sufficient oversight. The result is appalling, and we tremble to think what must be the consequence if this system is perpetuated. Girls lose modesty, the familiarity growing up between the sexes through this system is leading and preparing the way for the grossest acts of immorality." I have quoted this passage at length, because I am a witness no less to its general accuracy, than to its being no less applicable to parts of Norfolk than to Cambridgeshire. The tenant farmers of the eastern counties are held up, and deservedly so, as models for light land cultivation, but does in this particular case the end justify the means? So long as this social plague spot is permitted more or less to exist, there can be no hope for real substantial improvement in either the moral or physical condition of the rising generation. The evils of this miserable gang system made a deep impression upon me some years since when I was in Norfolk. I felt regret at the time that the report of Mr. Ruston which I have just quoted did not excite the attention of your readers. I have expected that in the lengthy, but somewhat discursive discussion on the condition of the agricultural labourer held last year at the London Farmers' Club the evil tendency of the "gang system" would have attracted notice. If I recollect right no allusion was made to it. But few days have elapsed since Mr. Roebuck laid bare with a master's hand the inherent evil in the habits, bearing, and welfare of our English labourers as caused by the want of early education. Some may consider that description as somewhat exaggerated. I doubt however whether any of the evil influences so forcibly depicted by Mr. Roebuck are more likely to retard the future progress, or prejudice the dearest interests of the rising generation amongst the labouring class, more than those inseparable from this "gang system," as drawn from the life by Mr. Ruston and coloured on the spot. *A Subscriber and Member of the Royal Agricultural Society.*—When your correspondent states that "a man with two horses on our mixed soils can plough 2 acres a day," are we to understand that the depth is to be fair, and the day's work not exceptional?

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Monthly Council: *Wednesday, Feb.* 5.—Present, the Earl of Powis, Trustee, in the Chair; the Duke of Marlborough, Viscount Hill, Lord Feversham, Lord Portman, Lord Tredegar, Lord Walsingham, the Speaker, the Hon. W. G. Cavendish, M.P.; the Hon. Colonel Cotton, Sir J. V. Shelley, Bart., M.P.; Sir Watkin W. Wynn, Bart., M.P.; Mr. Raymond Barker, Mr. Barnett, Mr. Barthropp, Mr. Bosanquet, Mr. Bramston, M.P.; Colonel Challoner, Mr. Dent, M.P.; Mr. Exall, Mr. Frere, Mr. Brandreth Gibbs, Mr. Hamond, Mr. Fisher Hobbs, Mr. Wren Hoskyns, Mr. Holland, M.P.; Mr. Hudson, Mr. Humberston, M.P.; Mr. Hutton, Mr. Jonas, Mr. Lawes, Mr. Lawrence, Mr. Milward, Mr. Pain, Mr. Rigden, Mr. Sanday, Mr. Shuttleworth, Mr. Torr, Dr. Voelcker, Mr. Webb, Mr. Wells, Mr. Burch Western.

The Duke of Bedford, of Woburn Abbey, and Lord Bateman of Shobden Court, Leominster, were elected Governors of the Society.

The following New Members were elected:—

Buckley, James, Pennyfai House, Llanelly, Caermarthenshire
Findlay, J. Dunlope, Easter Hill, Glasgow
Milbank, Sussex, Barningham Park, Yorkshire
Hodgkinson, Grosvenor, M.P., Winthorpe Hall, Newark, Notts
Tibbits, Captain J. Borlade, Barton Seagrave Hall, Kettering
Newton, John, Grove Lodge, York
McGregor, Duncan, Eccleston, Chester
Joyce, Thomas, Vale Farm, Sudbury, Harrow
Tinder, Thomas, Sandlin, Leigh, Worcester
Barker, Walter R. H., Wantage
Welby-Gregory, Sir Glynne Earle, Bart., Denton Hall, Grantham
Welby, W. Earle, M.P., Denton Hall, Grantham
Banwell, Wm., Little Marlow, Bucks
Farrell, Edward, Tan-y-Lan, Holywell
Trumper, Joseph, Lake End, Burnham, Bucks
Roberts, Wm. Harvey, Trewhiddle, St. Austell, Cornwall
Pilbeam, Thomas, Henham, Wangford
Arnould, Alfred Henry, White Cross, Wallingford
Welby, Rev. George Earle, Barrowby Rectory, Grantham
Jones, R. Hesketh, Chilton Farm, Dover
Livesey, Rev. Thomas, Stourton Hall, Horncastle
Robarts, A. J., Lillingstone Dayrell, Buckingham
Pulteney, J. Granville Beaumont, Portslade House, Shoreham, Sussex
Biddell, Hermann, Playford, Ipswich
Upfill, Thomas S., The Wells, Bromyard
Taylor, Charles, The Green, Bromyard
Draper, Joseph Skidmore, Thingehill, Hereford
Dumas, Francis Kuper, 12, Little Tower Street, City, E.C.
Norrington, Charles, Catte-down, Plymouth
Bancroft, William, Clifton Campville, Tamworth
Platt, Henry, Oldham, Werneth Park, Lancashire
Luff, John Wm., Canford, Wimborne
Lane, John, Wenlock Brewery, City Road, E.C.
Arnott, James, Woodcot, Carshalton
Cressingham, Jonah, Carshalton
Hall, Charles, Ewell
Trotter, Theodore, Greetwell House, Lincoln
Prout, John, Blounts and Sweet Dews Farm, Sawbridgeworth, Herts
Dufty, Thomas, Knapthorpe, Newark
Sewell, Daniel, Beaumont Hall, Colchester
Atherton, Thomas, Chapel House, Speke, Liverpool
Constable, Sir Clifford, Bart., Burton, Constable, Hull
Wise, Robert, Auburn Hill, Malton
Sharp, William, Shottesbrook, Maidenhead
Lee, Captain John, Woolley Firs, Maidenhead
Cocksedge, James, Stowmarket
Beaven, Charles, Clyffe Pypard, Wootton Bassett
Harvey, Richard Hart, Harroldston, Haverfordwest
Hole, Henry E., Merton, Thetford
Welsh, Fitzwilliam, Trough House, co. Limerick
Leigh, Francis A., Rosegarland, Foulksmill, co. Wexford, Ireland

On the motion of His Grace the Duke of Marlborough, seconded by Sir J. V. Shelley, Bart., Lord Portman was unanimously elected President in the room of His Royal Highness the late Prince Consort; the Chair was then vacated by the Earl of Powis, and taken by Lord Portman.

On the motion of Mr. Fisher Hobbs, seconded by Mr. Burch Western, the Earl of Stradbroke, of Henham Park, Wangford, was unanimously elected a Member of Council, in the room of the Earl of Powis, elected a Trustee.

Finances.—Mr. Barnett presented the report of the Committee, from which it appeared that the Secretary's receipts during the past two months had been examined by the Committee, and by Messrs. Quilter, Ball, and Co., the Society's accountants, and were found correct. The balance in hands of the bankers on January 31 was 2721*l.* 7*s.* 7*d.* The quarterly statements to Dec. 31 were laid on the table.

Chemical.—Mr. Wren Hoskyns, Chairman, made the following report:—Professor Voelcker exhibited to the Committee specimens of the Palm-cake referred to in the last report, and of the nut in its original state. He also showed a sample of Locust meal which had been sent to him for analysis; he stated that the Locust or Carob Beans are usually given to the cattle whole or coarsely broken and mixed with chaff and roots or other feed. The hard stones of the Bean amounting to about 12 per cent. render this system objectionable; when these are got rid of by bruising and sifting a meal is obtained which is extremely sweet and well adapted for using with other less palatable food. This meal is now prepared at Bristol, and sold at 7*l.* 10*s.* per ton, which the Professor considers a reasonable price.

The analysis shows it to contain nearly half its weight of sugar, and that it possesses high fattening properties. There is no doubt that it enters largely but anonymously into the composition of most of the advocated cattle-feeds.

The Professor also exhibited a sample of Palm-nut kernel cake, of which he presented the analysis to the Committee. Though less valuable than a nut-meal in which 25 per cent. of oil was found, he considered it a useful feed.

An interesting communication on the use of Carbolic Acid has been received by Professor Voelcker from Dr. G. Calvert, of Manchester. Dr. Calvert's paper relates instances of the remarkable power of this substance in arresting decay. It has been tried in the neighbourhood of the Royal Agricultural College as an application for foot-rot with success.

The last published Number of the Journal contains two papers by Dr. Voelcker—one on Cheese Making, and one on Turnip Experiments. The forthcoming Number will contain the results of a laborious investigation on the Feeding Qualities of Straw, and a paper on Field Experiments on Top Dressing for Wheat. The grant of 200*l.* for 1862 was awarded by the Committee to the Professor for these Papers.

The Professor will deliver his Lecture on Milk on Wednesday, the 12th March, at half-past 12.

London Show.—Lord Walsingham, Chairman of this Committee, presented the report, recommending that advertisements be inserted asking for tenders for the supply of from 10 acres of Green Vetches, Green Clover, or Trifolium to be delivered at the Show Yard in Battersea Park in good and proper condition, at such times and in such quantities as the Society may require between the 22d June and the 2d of July next; also for the supply of from 100 to 200 loads of straw, and of 50 loads of hay of the best quality. A considerable number of horse boxes of a superior description would be required for the protection of the valuable horses which it is expected will be sent for exhibition, and great care will be devoted in the construction of these boxes, regard being paid to the due admission of light and air, combined with the efficient protection of the animals. Plans and estimates for the bridges required for communication between various parts of the show-yard had been examined by the Committee. They recommended that the Society's seal be affixed to the lease of Battersea Park granted by Her Majesty's Commissioners of Works. This report was adopted and the seal affixed.

On the motion of Mr. Torr, seconded by Mr. Milward, it was unanimously agreed that the members of the Highland and Agricultural Society of Scotland be admitted into the show-yard on the same terms as members of this Society.

Mr. Brandreth Gibbs, having moved that there be a public working of Steam Cultivators, under the direction of the Stewards, it was resolved that the London Show Committee be requested to ascertain whether suitable arrangements can be made for the purpose.

Mr. Milward having moved the reconsideration of the question of preliminary Veterinary Surgeons' examination, it was resolved that under the Bye-laws, the Prize Sheet which had been settled in December could not be altered.

Mr. Milward's motion that the names and pedigrees of entire horses shall be inserted in the books given to judges, was negatived on a division by 14 noes to 7 ayes.

It was resolved that the London Show Committee be requested to examine and consider the demands for space sent in by exhibitors of implements in the Show-yard in Battersea Park.

M. de la Tréhonnais presented the third Volume of his work "Revue Agricole de l'Angleterre," for which the thanks of the Council were ordered.

A set of the Society's Journals were granted to the Board of Agriculture, Melbourne.

The Council then adjourned to Wednesday, the 12th inst.

Farmers' Clubs.

Central: *Feb.* 3.—*The Extent to which Artificial Manures can be profitably employed.*—At the monthly meeting of the Central Farmers' Club last Monday, Mr. Cuthbert Johnson read a paper on this subject. A very large attendance of members was present, under the presidency of Mr. Charles Howard, of Biddenham, Bedford. Mr. Johnson said:—I propose to limit my inquiries to the profitable use of one or two of those fertilisers which owe their value to the amount of nitrogen and phosphate of lime which they contain.

1. *History.*—Now it will be both interesting and instructive if we first very briefly inquire how long these dressings have been used in our country, what progress they have already made, and what is the rate, if any, of that steady increase.

The earliest of them employed in England—crushed bones—were first applied, in Cheshire, for pastures, at the rate of from 35 cwt. to 2 tons per acre, about the early part of this century; and this amount of bones will suffice for Grass lands that are annually mown for eight or nine years. Now here we have an outlay, if we reckon the crushed bones at 6*l.* 10*s.* per ton, of say 11*l.* to 13*l.* per acre. And, if we add the interest upon the original outlay during eight or nine years, say at 10*s.* per annum, we see that the annual cost of this bone-dressing to the Cheshire farmers cannot be less than 2*l.*; and yet we have the evidence of many of those great stock-owners to the effect that "bones are the cheapest of all manures for mowing grounds," especially upon well drained soils with a clay subsoil. Then came the time when crushed bones began to be used, towards the end of the last century, in Nottinghamshire, for Turnips, at the rate of 50 bushels, or at a cost of say 5*l.* per acre. Then amongst the phosphatic and nitrogenous manures used by the agriculturist of the last generation, we must include refuse fish, and sprats (which it is now contended are the young fry of the herring). These sprats were and are still used at the rate of 50 or 60 bushels per acre, and produced excellent effects upon the light soils of the east of England for the first year, and did not entirely lose their fertilizing effect for the second season. As these cost about 8*d.* per bushel, here was an outlay of about 2*l.* per acre; and yet these sprats, which are still largely employed as manure by our eastern farmers, are by no means a very concentrated substance, since they contain, according to the analysis of Professor Way, 64 per cent. of water, 19.50 of oil, and 15.90 of dry nitrogenous matter. It is only about 20 years since the great employment of our chief modern artificials commenced. Liebig first suggested in 1839 the use of superphosphate of lime from bones. The late Professor Henslow, in a succeeding year, proposed the use of the mineral phosphates, such as those abounding in the coprolites of Cambridgeshire and Suffolk. It was not until the year 1841 that cargoes of Peruvian guano began to arrive in England. It was two or three years only previous to this time that nitrate of soda was beginning to be used, and not till some time after this that any considerable trials with sulphate of ammonia were instituted.

It is instructive to trace the rapid rate at which these artificial dressings have been employed by the agriculturists of our island.

The members of the Lockerbie or Vale of Annan Scotch Club, reported in the year 1851, that "the farmers of their district are so convinced of the advantages of using extra manures, that it is now rare to find any Turnips where at least 2 cwt. of Peruvian guano per Scotch acre are not added to the dung. And they added the very important conclusion, "The Club are of opinion that 32*s.* per imperial acre may be profitably expended on extra manure when 15 yards of dung only can be applied. Five years after this we find, in 1855, the same club reporting, "The quantity of extra manures used is on the increase, and confirms the practice which is becoming every year more general, of applying bones, either raw or dissolved, along with guano and the farmyard dung." And again, the next year (1856), the same club remarks in their report, "It seems beyond all doubt that the additional expense of 25*s* per imperial acre for raw bones, or 15*s.* for dissolved bones, will produce an additional quantity of Turnips at a very low rate per ton, besides adding much to the permanent condition of the land."

Lastly, let us inquire what is the present opinion of the great Scotch agriculturists on these fertilisers.

Mr. Alexander Simpson, of Teawig, writing on combining high farming with profit, an essay for which the Highland Society of Scotland have recently awarded its author their Gold Medal tells us, "Take the case of a farm of 300 acres on the four-shift system; say 75 acres of Grass cut for hay, 75 Oats, 38 Potatoes, 37 Turnips, Mangels, Cabbage, and Carrots, 75 Wheat; I would apply to the Grass in March 2 cwt. of Peruvian guano per acre, and in April, or early in May, when showers are falling, 1 cwt. nitrate of soda; I would give (adds Mr. Simpson) the Potatoes at planting 2 cwt. superphosphate and 1 cwt. of Peruvian guano per acre, and top-dress them with 2 cwt. of Peruvian guano at the first hoeing. To the Turnip, &c., I would give 2 cwt. of superphosphate and 3 cwt. of Peruvian guano per acre at sowing, adding to the Mangels 3 cwt. of common salt. We should, adopting the practice thus suggested, have a total use of purchased manure to the extent of—

375 cwt. of Peruvian guano at 12*s.*	£225 0 0
75 ,, nitrate of soda ,, 18*s.*	67 10 0
150 ,, superphosphate ,, 7*s.*	52 10 0
30 ,, salt ,, 1*s.*	1 10 0
	£346 10 0

or little more than 23*s.* per acre. "This," concludes Mr. Simpson, "though it may appear a high, would under the circumstances suggested be, I believe, a wise, a safe, and a profitable rate of expenditure."

And now, having drawn your attention to the testimony of many excellent Scotch farmers, I must ask you to accompany me on to the Turnip soils of Norfolk, and to hear the practical and valuable evidence of one of the best of the very many scientific agriculturists of that fine county.

I hold in my hand a report with which I was last week favoured from Mr. John Hudson, dated from Castleacre on the 23d of last month, in which he tells me, "My practice is to apply per acre upon this farm of 800 acres of arable land, and 200 acres of pasture and meadow, fertilising substances as follows:—

For Wurzel.

	£ s. d.
10 three-horse cartloads of farm-yard manure	
3 cwt. of Peruvian guano, at 13*s.*	1 19 0
3 ,, common salt at 1*s.*	0 3 0
2½ ,, superphosphate of lime, at 6*s.* 8*d.* ..	0 16 8
	£2 18 8

For White Turnips.

10 three-horse cartloads of farm-yard manure	
3 cwt. of superphosphate of lime	1 0 0

For Swedes.

10 three-horse cart-loads of farm-yard manure	
3 cwt. of superphosphate of lime..	1 0 0

For Wheat.

6 loads of farm-yard manure as soon as the hay is off, and in February or March a top-dressing of	
1½ cwt. of Peruvian guano	1 0 0
½ ,, nitrate of soda	0 7 6
2 ,, common salt (put on with Chambers' manure distributor)	0 2 0
	£1 9 6

For Barley after Wheat.

2½ cwt. of Peruvian guano..	1 12 6
2 ,, common salt	0 2 0
	£1 14 6

"Besides which," adds Mr. Hudson, "I consumed during the last 12 months in sheep and cattle feeding, upwards of 3000*l.* worth of linseed cake." Now, sir, what do these artificial dressings cost this great and accomplished agriculturist? Why, taking the Peruvian guano at 13*s.* per cwt. the superphosphate at 6*s.* 8*d.*, the nitrate of soda at 14*s.* 6*d.*, and the common salt at 1*s.*, the cost of these per acre was for

The Wurzel	£2 18 8
The White Turnips	1 0 0
The Swedes	1 0 0
The Wheat	1 9 6
The Barley after Wheat	1 14 6
	£8 2 8
Or an average outlay per acre for these five crops in strictly artificial dressings of	1 12 0
If we add to this the 3*l.* per acre expended on the farm in oil-cake, and allow, with the Tamworth Farmers' Club, one-third of its value to the manure, we have here again in manure, per acre	1 0 0
Making a total expenditure on Mr. Hudson's farm for purchased manure in one year per acre	£2 12 8

I will now refer to the use of these dressings for a hitherto much too commonly neglected portion of the farm—that of the Grass land.

I am ready to admit that there has recently been more care bestowed on top dressing permanent Grass lands than was till lately the case, We have unanswerable evidence that such artificial dressings are very remunerative. We have already seen to what an extent the Cheshire farmers dress their fine pastures with bones; and if we inquire in still more northerly portions of our island, the evidence of the best farmers all tend to a similar conclusion. This was during the past year very briefly shown by a practical farmer, Mr. James Porter, of Monymusk, in Aberdeenshire, in a report "On Top-dressing Pasture," for which the Highland Society awarded him their gold medal. "After varied and numerous trials for many years of a great variety of artificial manures, I have," he says, "come to the conclusion that guano, sulphate of ammonia, nitrate of soda, and soot are the best light dressings for new Grass; and in regard to quantity, I have found about the value of 30*s.* of any of these to be a fair dressing for an acre of land." He gives the result of one trial with several of these, in which he applied each manure at the rate of 40*s.* an acre. He found the value of the hay per acre produced to be at 3*s.* per cwt., as follows;

1. The hay from the soil unmanured was worth per acre..	£2 17 0
2. From farmyard dung (12 yards at 3*s.* 6*d*)	3 15 0
3. Peruvian guano	5 2 0
4. Nitrate of soda	4 16 9
5. Sulphate of ammonia	5 4 3
6. Superphosphate of lime..	4 3 3

The amount of extra dressings employed at Castleacre for the Grasses are thus described in a recent letter to me by Mr. Hudson: "For Clover, Trefoil, and Suckling, I consider the best dressing is about 10 loads of good rich farm-yard manure, *soon* after the Corn crop is off, say in September, and if that is not to be had, a dressing with Chambers's manure distributor of

1 cwt. of guano	£0 13 0
1 cwt of nitrate of soda	0 14 6
2 cwt. common salt	0 2 0
Now, this is an outlay for the Grasses of about per acre for artificial manures.	£1 9 6

2. *Present Use of Artificial Manures.*—It must be evident to every one that the steady increase in the use of artificial manures during the last quarter of a century proves very clearly this important fact, that the agriculturists of our islands are generally convinced that the outlay for the purchase of these fertilisers is money well bestowed.

Let us examine a little into the probable extent to which the dressings are now used. Such an inquiry has been recently made by Professor Anderson, who has given an approximate estimate of the money-value of the ordinary manures annually used in this country. He estimates the land under tillage in our islands to be about 24,000,000 acres. Then if we allow one-fourth of this extent of land to be annually manured with 10 tons of dung per acre, then the annual consumption must be about 60,000,000 tons of farm-yard manure, worth, at say 6*s.* 8*d.* per ton, 20,000,000*l.* Now, let us compare this enormous amount of manure with that of the artificial fertilisers, now also used; and, in making this comparison, we must not forget one very material fact, that in the 60,000,000 tons of dung I have estimated to be annually used, we spread 45,000,000 tons of water In this respect farm-yard manure suffers by being compared with the chief of our artificial manures. Thus, the average amount of water in 32 specimens of guano, examined by Professor Way, was only 13.09 per cent.; in the best superphosphate of lime of commerce, there is commonly rather more than the same average amount of water; in sulphate of ammonia about 31 per cent.; in cubic petre, or nitrate of soda, about 22 or 23 per cent. The average amount of guano imported into this country we may fairly estimate at 250,000 tons, equal in value to 300,000*l.*, say at 12*l.* Then of bones about 84,000 tons are annually imported: to these must be added the bones collected. Probably 50,000 tons of bones, which, added to the 84,000 tons imported, gives us 134,000 tons of bones altogether collected. If we subtract 20,000 tons of these bones for the use of the bone-turner and other purposes, we have 114,000 tons to be employed in agriculture—of this the Professor thinks about 40,000 tons are used as bone dust, at a cost to the farmer of 6*l.* per ton (equal to 240,000*l.*), and 74,000 tons are converted by the action of sulphuric acid into 110,000 tons of superphosphate. which, at 6*l.* 10*s.* per ton, is worth 715,000*l.* The annual consumption of the mineral phosphates Dr. Anderson estimates to be—

Cambridge coprolites	40,000 tons.
Suffolk ditto	3,000
Apatite and other mineral phosphates ..	5,000
Total	48,000

which, when converted into the superphosphate of lime of commerce, will yield 72,000 tons, at 5*l.* or equal to 360,000*l.* If we add to these about 13,000 tons of nitrate of soda, at 15*l.* (equal to 195,000*l*), and say 6000 tons of sulphate of ammonia, at 15*l.* (equal to 90,000*l.*), and other minor artificial dressings, such as soot, offal, &c. (equal to 50,000*l.*), then we have the following curious proximate result of the weight and money value of the artificial manures now yearly employed by the farmers of our country:—

	Tons.	£
Guano	250,000 ..	3,000,000
Bone-dust..	40,000 ..	240,000
Superphosphate made from bones and bone-ash	110,000 ..	715,000
Superphosphates made from coprolites	72,000 ..	360,000
Nitrate of soda	13,000 ..	195,000
Sulphate of ammonia	6,000 ..	90,000
Other substances	— ..	50,000
Total	491,000 ..	4,650,000

Now, if we compare the weight of these artificial dressings with that of the 60,000,000 tons of farmyard-manure I have taken in my estimate, we see that in weight the artificials employed are only about three-quarters per cent. of that of the farmyard dung; but if we contrast their gross value, then we find that the value of the special manures amounts to 20 per cent., or 1-5th of that of all the farmyard-manure of our islands.

In examining the advantage of using artificial dressings, we must regard the question in some degree from the same point of view that the farmer considers the use of oilcake.

The use of this kind of food we are all aware has long since ceased to be remunerative in the mere return of meat. The modern farmer uses cake not for its fattening qualities alone, but for the largely increased value it imparts to the dung of his stock. Oilcake, in fact, may be fairly enough classed with the modern artificial manures; and of these cakes, let us not forget, 108,126 tons were imported in 1860, and, according to the information I have had from Messrs. Whealler & Sons (who are very eminent cake merchants), about 120,000 tons were imported in 1861. Add to this the 1,330,623 quarters of Linseed, and 269,403 quarters of Rapeseed imported in 1860, and note what a large amount of manure is thus annually added to our soils. If we reckon the 120,000 tons of Oilcake to be worth 10*l.* per ton, we have here another 1,200,000*l.* worth of enriching matter added to our soils in 1860, saying nothing of the Oilcake produced from the 1,600,000 quarters of Linseed and Rapeseed then imported. Again, I find from the report of Messrs. Whealler & Sons, that in 1861 there were imported into this country 1,277,000 quarters of Linseed, viz.:—

510,000 qrs. from the East Indies.
491,000 qrs. from the Black Sea.
196,000 qrs. from Russia.
80,000 qrs. from sundry places.

1,277,000 qrs.

Of these 1,277,000 qrs. there were re-exported about 100,000 qrs., leaving 1,177,000 qrs. to be converted into cake. This, as a proximate estimate, would produce of Linseed cake about 180,000 tons; add to this the cake imported in 1861, 120,000, tons; and it leaves a total of 300,000 tons; and we have the large amount of 300,000 tons of cake employed in stock feeding in 1861, which, at 10*l.* per ton, is equal in value to 3,000,000*l.* If, however, the evidence of some of the best agriculturists of our island is to be acted upon—if it is essential to the most profitable farming, that from 20*s.* to 23*s.* per acre should be yearly invested in artificial manures, then how far short are we of applying the full extent of these dressings to our lands? The 4,705,000*l.*, which we have just seen is about the value of our chief artificial dressings at present used in our islands, is only (supposing 24,000,000 acres to be the extent of our arable soils) about 4*s.* per acre, or less than one-sixth or one-eighth of what is deemed the most advantageous amount to be expended; and if we add to this the 3,000,000*l.* worth of English and foreign oilcake, this adds only about 2*s.* 6*d.* per acre to our outlay for the artificial additions to our soil; and in this estimate I am including the entire value of the oilcake, whereas it would be much nearer the truth if, adopting the estimate of the Tamworth Agricultural Association, I carried only one-third of its value to the manure, and the remaining two-thirds to its value as food of stock; and if that is the correct way of putting it, then we have an average value of fertilizing matters added to the soils of our island per acre in artificial manures 4*s.*, in oilcake 10*d.*—altogether 4*s.* 10*d.*, or only about one-fifth of the value of the artificial dressings which are, by the best practical authorities, deemed to be productive of the most profitable results.

We sometimes, I fear, rather confuse the inquiry by separating too closely the different kinds of artificial manures into two classes, viz., those which extend their influence to several crops, and those which are beneficial only to the first.

We class, I think, too many with these last kind of fertilisers, forgetting that, if we can, by an application, add materially to the growth of our root crops, for instance, that that additional quantity of Turnips or Mangels, when fed off, adds also as materially additional ordinary manure to the land. Let me give an instance, to explain this more clearly. Professor Anderson has given the result of a series of trials on Turnips, with a view to determine the economical value of different manures, and for this purpose each manure was used to the extent of 2*l.* 8*s.* 6*d.* per acre. Now, it was found that the soil simple produced 16 tons 17 cwt. of bulbs per acre—the use of

	Tons.	cwt.
Guano increased this weight of Turnips per acre, by	8	1
Superphosphate of lime	5	6

Now, here we have an average increased produce per acre, by the use of 48*s.* 6*d.* worth of the two manures, of 6 tons 13 cwt. of Turnips, which, if we reckon them at a feeding value of 7*s.* per ton, gives us an increased return of about 45*s.* 6*d.* from our first crop, leaving the soil with all the additional manure produced by the feeding off of these 6½ tons of roots—or to put it another way, if by feeding off the Turnips grown on the soil simple, a given amount of manure was deposited by the sheep, then from the larger weight of Turnips on the manured land, the amount of manure dropped on the land by the sheep would, in the experiments I have given, be 50 per cent. greater in amount. If, then, the facts I have brought before this Club are based on truth, we can, I think, hardly arrive at any other conclusion than that the best artificial manures are not yet nearly generally employed to the extent to which they are capable. The steady onward still advancing use of these dressings during the present quarter of a century well supports this conclusion. We have seen that about 4,000,000*l.* worth of these are now annually applied, not a tithe of which was used in 1840; and if so, we have had an increase in the value of these artificials employed during the last 20 years, at the rate of about 200,000*l.* a year; and hence we may, I am inclined to believe, safely arrive at the conclusion that taking into consideration the rapid enlargement of our population, the consequent increasing value of the food of our live stock, and the rapidity with which our crops are now taken, that the great majority of the broad acres of our land would be grateful for a much larger application of artificial dressings than they have hitherto had bestowed upon them.

Calendar of Operations.

North Lincolnshire: *Feb.* 4.—January has been a mild month, with the exception of sharp frost from the 17th to the

21st inclusive, and now and then a frosty day. Those frosts have enabled us to get some of our yards cleared out of manure, a job which we wish to get done this month—the manure taken as near the field for roots as possible, so as the work may be facilitated as much as possible at the time of sowing. Our plan for the last 30 years and upwards has been to put the manure in the ridges at the time of sowing—a practice which has answered very well. The last few days have been quite mild spring weather. Horses are engaged ploughing Turnip land for Oats and Barley, which works remarkably well in consequence of not being so much poached with sheep during the process of eating off. There is every prospect of a fine seed bed. The fine weather is a great inducement to sow Wheat, it is still going on in many places. We have finished, as we do not consider it well to go much beyond our usual quantity, say about three-fifths of the corn grown. We have six men underdraining, putting in pipe tiles, 3 feet 7 or 8 inches deep, 25 feet apart, at an expense for the whole of 1s. 6d. per chain of 22 yards—soil a loam with a good clay subsoil. Other hands are employed attending to the sheep upon the Turnips, the cattle in the yards, threshing corn, &c.; the corn is threshed by a portable 8-horse steam-engine with fixed barn works. The same engine used for cultivating this applies to the farm the writer resides upon just off the Lincolnshire Wolds, extent 900 acres, 600 in tillage, 300 in Grass (in round numbers). Another farm on the Wolds of 460 acres, 400 tillage, remainder Grass, under the same occupation, is managed the same way, except steam cultivation. A flock of sheep is kept on both farms of the Improved Lincoln, consisting of 600 breeding ewes, and the produce from them—and 340 fat, altogether 1750; the fat sheep and hogs are divided into lots of about 300 each, and get cut Swedes with one-fourth of oilcake each, employing four men and six boys. The he hogs are sold off in April, the shes kept for breeding; the fat sheep likewise go off in April and May after being shorn. Sheep and Wheat are the Lincolnshire man's best paying articles. Corn markets are dull—Red Wheat, 60s.; White Wheat, 64s.; Barley, 34s.; Oats from 11d. to 12½d. per stone. Wages: men, 18s. 6d. per week; women, 1s. per day. *S.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, Feb. 6, 1862.

Day of Week.	Day of Month.	Barometer corrected to Freezing Point at Mean Sea Level. (At 9 A.M., Railway Time)	Reading of Dry Bulb Thermometer. (At 9 A.M.)	Reading of Wet Bulb Thermometer. (At 9 A.M.)	Wind. Direction. (At 9 A.M.)	Wind. Force. 0–6. (At 9 A.M.)	Amount of Cloud 0–10. (At 9 A.M.)	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	31	29.76	52	49	W.	5	3	53	45	63	45	0.30	43	41
Saturday ..	1	29.88	51	49	W.	5	4	55	50	58	49	0.06	44½	42
Sunday ..	2	30.15	48	46	S.W.	2	5	53	47	64	45	..	45	43
Monday ..	3	30.17	50	48	S.W.	2	5	52	47	53	43	..	45½	43½
Tuesday ..	4	30.25	52	50	W.	2	7	54	45	55	45	..	46	44
Wednesday ..	5	30.09	50	48	S.W.	3	6	54	[illegible]	57	43	..	46½	44½
Thursday ..	6	30.01	47	46	W.	2	2	54	41	68	39	..	46	45

Notices to Correspondents.

Frocester Court: *Want*. The 912*l*. is the whole produce for the year from 55 cows, and a very good one too. To get the profit you must deduct labour, rent, and average loss and interest.

Manures, Linseed Cake, &c.—Since our last report there has been great fluctuation in the Cake market. After reaching exceedingly high rates a reaction has taken place, and Cakes are more moderate. Guano is in very great demand. The same applies to Nitrate of Soda and Sulphate of Ammonia, the latter fetching a considerably higher price. Bones, Bone-ash, and their preparations are in full demand for Spring use.

		£ s. d.		£ s. d.
Peruvian Guano, direct from Importers' Stores	per ton.	12 10 0		
Bones	,,	6 0 0	to	6 5 0
Ditto, crushed	,,	6 5 0	to	6 10 0
Nitrate of Soda	,,	14 10 0		
Sulphate of Ammonia ..	,,	15 10 0		
Gypsum	,,	1 10 0		
Salt (in London)	,,	1 8 0		
Sulphuric acid, concentrated 1.845	per lb.	0 0 1		
Ditto, brown, 1.712	,,	0 0 ¾		
Superphosphate of Lime ..	per ton.	6 5 0		
Blood Manures	,,	6 5 0	to	7 10 0
Dissolved Bones	,,	6 10 0		
Dissolved Coprolites	,,	5 0 0		
Linseed Cakes, best American (barrel)	,,	11 12 6	to	11 15 0
Ditto ditto (bag)	,,	10 17 6	to	11 0 0
Ditto ditto Marseilles ..	,,	9 12 6	to	9 15 0
Rape Cake	,,	6 15 0	to	7 0 0
Cotton-seed Cake	,,	6 10 0		

Fruit Trees.

JAMES GARAWAY and CO. call attention to their stock of the above, comprising

APRICOTS NECTARINES PEACHES	Standard and Dwarf-trained	APPLES CHERRIES PEARS PLUMS	Dwarf-trained, Standard, and Dwarf-quarter.

All of first-rate quality and in good condition.

The STANDARD PEARS are unusually fine, and will be sold at a very low rate to purchasers of quantities.

CATALOGUES and prices free by post.

James Garaway & Co., Durdham Down Nurseries, Bristol.

Fruit Trees.

R. GLENDINNING begs to offer the under-mentioned FRUIT TREES, which are strong, healthy, and true to name:—

Standard-trained PEACHES } in all the leading kinds with
Dwarf-trained ,, } well ripened wood, from walls.
Dwarf-trained APPLES, in all the leading kinds.
,, PEARS ,, ,,
,, PLUMS ,, ,,
Standard Mdn. ,, ,, ,,
Dwarf Mdn. ,, ,, ,,
Standard Mdn. CHERRIES ,, ,,
Dwarf Mdn. ,, ,, ,,
Standard APPLES ,, ,,
PYRAMIDAL PEARS on Quince and Pear Stocks in a fruiting condition

PRICED LISTS on application.

Chiswick Nursery, London, W.

Fruit Trees.

H. LANE and SON, The Nurseries, Great Berkhampstead, Herts, have a large stock of PYRAMIDAL APPLES, which are well set with bloom buds, also PYRAMIDAL PEARS, PLUMS, &c. They are still able to supply dwarf-trained Apples, Apricots, Pears, Plums, &c., in any quantity. They are very clean, well grown, and beautifully rooted. Orders will receive prompt attention.

Vines in Pots.

H. LANE and SON have to offer a very large stock of fine well-grown strong VINES in Pots from Eyes of all the most popular varieties, both old and new, CATALOGUES of which may be had upon application.

Ornamental Trees and Shrubs.

H. LANE and SON have great pleasure in informing Planters of this most beautiful variety of Trees that they possess one of the finest lots of Araucarias ever seen in a Nursery, from 1 ft. to 10 ft.; they are strong and well furnished. Also a large quantity of fine specimens of Cedrus Deodara, from 5 ft. to 12 ft.; Cedar of Lebanon, 6 ft. to 12 ft.; Abies Douglasii, 5 ft. to 14 ft.; Picea nobilis, 1 ft. to 4 ft.; Picea Nordmanniana, 1 ft. to 3 ft.; Irish Yew, 3 ft. to 8 ft. beautiful specimens; Thuja gigantea, 1 ft. to 3 ft.; Wellingtonia gigantea, 1 ft. to 4 ft. A very large quantity of Retinospora ericoides, Thujopsis borealis, Thuja aurea, Taxus japonica, Swedish and Irish Junipers, Juniperus canadensis, Rhododendrons of the common varieties, Standards and Dwarfs; also a selection of the best named sorts, Standards and Dwarfs, Standard Portugal Laurels, one of the finest lots in the Trade, and a general Nursery stock. All the Evergreens move with good balls of earth, and the Deciduous Trees are well rooted. Orders despatched with speed and care.

CATALOGUES may be had upon application to H. Lane & Son, The Nurseries, Great Berkhampstead, Herts.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.

Richard Smith, Nurseryman, Worcester.

To the Trade.

AMERICAN WEEPING WILLOWS.—Fine trees of this hardy and beautiful Willow grafted on straight stems 7 to 8 feet high, and well adapted for planting in Cemeteries, are offered by the hundred or thousand.

Price given on application to Thomas Rivers, Nurseries, Sawbridgeworth.

TO THE TRADE.—Extra Stock, fine quality.—Transplanted Native SCOTCH FIR, 1½ to 2, and 2 to 3 feet; BEECH, 2 to 3, and 3 to 4 feet; PEAR STOCKS, 2 to 3, and 3 to 4 feet; LAUREL, 2 to 3 feet; BERBERIS, Common and aquifolia, 2 to 3 feet; MOUNTAIN ASH, 6 to 7, and 8 to 9 feet; CHESNUTS, 7 to 8, and 8 to 10 feet; PINUS AUSTRIACA 2 to 3, and 3 to 4 feet; GREEN HOLLIES, 1½ to 2, and 2 to 3 feet; 2 year Seedling GREEN HOLLIES; 1 year APPLE STOCKS. Prices on application to

James Dickson & Sons, "Newton" Nurseries, Chester.

500,000 Seedling Larch Fir.

THE SUBSCRIBERS have a very fine Stock of the above and other Seedlings to dispose of, viz.:—
1 and 2 Years' Seedling LARCH FIR.
2 Years' Seedling SCOTCH FIR.
2 Years' Seedling ASH.
1 Year's Seedling ELMS.
1 Year's Seedling APPLES.
2 Years' Seedling THORNS.

Prices furnished on application.

Address to Wm. Wood & Son, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

W. VIRGO and SON have a large Stock of the following to offer at very low prices:—
BERBERIS AQUIFOLIA, 12 to 15 inches, 2 years transplanted
,, DULCIS, 2 feet
EVERGREEN PRIVET, of various sizes
PORTUGAL LAUREL, 12 to 18 inches
SIBERIAN ARBOR-VITÆ, 2 to 2½ feet
SPRUCE FIR, 2 to 5 feet
WEYMOUTH PINE, fine and bushy, 2 to 5 feet

They also beg to offer extra strong 2-years transplanted THORNS, in very large quantities.

Samples and prices to be had on application at the Nursery, Wonersh, near Guildford, Surrey.

To Planters.

300,000 Transplanted LARCH, consisting of the following sizes:—1 to 1½ foot, 1½ to 2 feet, 2 to 2½ feet, 2½ to 3 feet; 100,000 MOUNTAIN ASH, 2 to 3 feet, and 3 to 5 feet; SPRUCE and SCOTCH, 1 to 3 feet; QUICKS, strong, 2, 3, and 4 years; Transplanted GREEN HOLLY, 1 to 6 feet; ENGLISH YEWS, 1 to 4 feet; RHODODENDRONS, TREE BOX, MAHONIA AQUAFOLIA, &c. EVERGREEN BARBERRY, strong; this plant is very suitable for game preserves, it produces berries which the pheasants feed upon.

For Prices or Samples, apply to William Grosvenor, Prospect and Heath House Nurseries, Cheddleton, near Leek.

Quick.

H. and F. SHARPE are prepared to offer of the finest quality,
Strong 2-years' Transplanted QUICK, 3 feet high,
Strong 2-years' Seedling do., 2 feet high,
at very moderate prices, which may be had, with samples, on application.

Seed Growing Establishment, Wisbeach

Four Millions of Transplanted Quicks.

GEORGE CHIVAS offers the above, Two Millions of which are suitable for Railways, and Two Millions varying from strong to exceeding strong—a portion having been twice Transplanted. A bale containing 100 of each, five sizes, forwarded on receipt of 15s.; orders for 10,000 delivered free at any railway station.

Also Half a Million of Transplanted SPRUCE, and one of the largest general Nursery Stocks in the North-Western counties.

Chester, Feb. 8.

Hanover Nursery, Peckham, S.E.

WM. IVERY has a splendid stock of large EVERGREEN OAKS, 4 to 7 feet; will remove well, with large balls of earth. Price on application.

Also DECIDUOUS and EVERGREEN SHRUBS, FRUIT TREES, &c., of the best description. The Trade supplied with MUSHROOM SPAWN of the very best quality.

ARBUTUS, 2 to 2½ feet, well rooted and good tops, twice transplanted. SWEET BAYS, 1 to 1½, and 1½ to 2 feet; twice transplanted. GREEN HOLLIES, 6 to 9, 9 to 12, and 12 to 15 inches, well rooted, healthy and clean grown; the two latter sizes very suitable for Grafting or Budding on. EVERGREEN OAKS, in pots, 2 feet; repotted last spring.

Prices forwarded on application.

Dicksons & Co., Waterloo Place, Edinburgh.

To Nurserymen, Noblemen, Gentlemen, and Railway Contractors, Planters, &c.

FOR SALE, 100,000 first-rate QUICKWOOD; 2 to 2½ feet high and well furnished and fit for forming first-rate Hedgerows, per 1000, 12s.; 15,000 to 20,000 SPRUCE FIRS, 10 to 15 inches high, green and well furnished, 10s. per 1000; about 1,000,000 of good OAKS, 1½ to 2 feet, 11s. per 1000; 5000 CHESNUTS (HORSE), 1 to 1½ feet, 10s. per 1000; about 10,000 good OAKS, 3 feet full, 17s. per 1000; about 10,000 ASH, 5 to 6 feet, clean and straight, 11s. per 1000. The above prices are for Cash on receipt of the goods, the Land being wanted for other purposes.

Address, in first instance, W. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W. C.

Excellence and Economy.

To Purchasers of Vegetable and Flower Seeds.—Send for JAMES TYNAN'S CATALOGUE, select your own Seeds, and save one-half the cost. No other house supplies Seeds of equal quality on the same terms. Importer of German and other Seeds.

Seed Warehouse, 68, Great George Street, Liverpool.

Cheap Plants.

WM. DILLISTONE can still supply strong Plants of the following:—

Per dozen.—	s. d.	Per dozen.—	s. d.
Hepaticas of sorts ..	3 0	Tritoma Uvaria	3 6
Auriculas	2 6	Verbenas, strong stock plants	3 6
Œnothera Missouriensis	3 0	Gazania splendens ..	3 6
Pinks (sorts)	3 0	Fuchsias	5 0
Cloves (sorts)	2 6	Petunias	4 0
Hollyhocks	3 0	Dahlias (Old Roots) ..	6 6
Pansies (fine mixed sorts)	2 0	Festuca glauca	3 6
Pampas Grass, 1*l*. per 100;	3 0		

Herbaceous Plants, 50 plants in 25 varieties for 10s.

Lobelia speciosa, "true," 1s. per packet.

The above all carefully named and packed upon receipt of Post Office Order payable at Castle Hedingham, to William Dillistone, Munro Nursery, Sible Hedingham, Halstead, Essex.

The Royal Nurseries, Slough.

SEEDS for the FLOWER GARDEN.—BETTERIDGE'S FINE QUILLED ASTERS. The Seed saved from this splendid Collection—so successful in maintaining the leading position at the great exhibitions—is entirely in Charles Turner's hands for distribution:—

18 Distinct Varieties (with Hints for their Culture)	4s. 6d.		
12 Ditto Ditto Ditto	3 0		
Fine Mixed Seed, per packet	1 0		

NEW DOUBLE FRENCH, or TRUFFAUT'S PÆONY-FLOWERED ASTERS, imported direct from that eminent cultivator, may be had in collections of—

22 Varieties	7s. 6d.	10 Varieties	3s. 6d.
16 ,, ...	5 6	8 ,, ...	2 6
12 ,, ...	4 6		

Charles Turner congratulates himself on being able to supply his Patrons with this favourite flower direct from the two first growers in Europe.

DOUBLE DWARF BALSAMS, CAMELLIA FLOWERED BALSAMS, DWARF GERMAN TEN WEEK STOCKS, CRIMSON DWARF BOUQUET STOCKS, and all the NEW ANNUALS worthy of cultivation.

Charles Turner, The Royal Nurseries, Slough.

His CATALOGUE of SEEDS for the FARM is in the press and a copy thereof will be forwarded Gratis and Post Free to any address.

New Seedling Fuchsias.

ROBERT REA, Nurseryman, &c., London Road, Ipswich, has much pleasure in offering his three SEEDLING FUCHSIAS, which were so universally admired by all who saw them last season. With their superior habit, large well-formed flowers, and rich colours, he feels confident they cannot fail to give satisfaction.

BLONDIN.—A fine large bold flower, of fine form and substance; tube and sepals rich crimson, the latter well reflexed; large dark violet corolla. The sepals of this flower, when flattened down, measure 4 inches across. Recommended as being one of the finest and largest Fuchsias ever offered. 10s. 6d. each.

CONQUEST.—Tube and sepals waxy scarlet vermilion of great substance, with a finely expanded violet plum-coloured corolla; the sepals broad and gracefully reflexed. Fine branching habit, and very free bloomer. A very desirable variety. Price 7s. 6d. each.

CEDO NULLI.—R. R. recommends this Fuchsia as being the finest double Fuchsia ever offered; its fine form, rich colour and superior habit will commend it to all lovers of Fuchsias. Tube and sepals rich brilliant crimson, the latter broad and well reflexed. Corolla fine dark violet. Extra large and very double; does not fade in the sun. A first-rate exhibition variety. Plants 10s. 6d. each.

WARRIOR will be presented to purchasers of the set, it being too much like the preceding to warrant its being sent out at the same time. Nevertheless it is a fine variety.

The set for 25s., with the usual discount to the Trade. To be sent out the first week in May.

Old Cheshunt Nurseries, Herts.

Gladiolus.

PAUL AND SON'S fine Collection of this superb Flower, of which the Bulbs are now ready.

Hollyhocks.

PAUL AND SON'S fine Collection of this noble Flower; fine Plants of which are now ready. Also SEED in packets of 12 fine distinct sorts at 5s. each, and mixed seed in 2s. 6d. and 1s. packets.

Roses.

PAUL AND SON'S splendid Collection of Dwarf Plants in Pots, of all the finest new kinds, with extra size plants for Forcing.

Vines.

FINE PLANTS for Fruiting in Pots or planting out.

CATALOGUES of each may be had on application by post.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., Nurseryman, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s.; 20 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

Major's Half-shrubby Calceolaria Seed for 1862.

H. MAJOR is prepared to supply the above, in packets at 2s. 6d. each, or three for 5s, post free. The Seed is unusually select, having been saved from varieties surpassing all his previous productions.

Postage stamps are respectfully requested in payment.

Knostborpe, near Leeds, Yorkshire.

To the Trade—Cheap.

GLADIOLUS FLORIBUNDA,
GLADIOLUS RAMOSA,
TIGRIDIA PAVONIA.

Price upon application to Thos. Sherman, Seedsman, &c., Newington Butts, S.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1861 and SPRING 1862, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

Garden Seeds.

PAGE AND TOOGOOD'S SPECIAL LIST will be forwarded post free.

P & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

Royal South Hants Seed Establishment, Southampton.

Large Tartarian Arborvitæs.

FOR SALE, 800 of the above, all strong healthy well-formed Plants, from 5 to 6 feet high, and in excellent condition for Transplanting. Price moderate.

Apply to H. & F. Sharpe, Seed Growing Establishment, Wisbeach.

To the Seed Trade.

H. AND F. SHARPE have for Sale at very moderate prices the undermentioned sorts of SEEDS, &c., raised from the finest selected stocks, and of 1861 growth.

Large York Cabbage	Bellamy's Green Marrow Peas
Long Red Surrey Carrot	Woodford's Green do. do.
James' Intermediate do.	Sangster's No. 1, do.
Fine Red Pickling Cabbage	British Queen do.
Green Kohl Rabi	Early Long Pod Beans
Turnip seed in variety	Mackie's Monarch do.
	Mangel Wurzel Seed, 4 sorts

Seed Growing Establishment, Wisbeach.

New Celery, "Coles' White Perfection."

WM. COLE has much pleasure in offering the above superior WHITE CELERY, feeling confident it will give equal satisfaction to those previously sent out by him. In size and quality it surpasses that of his solid red. Sealed half oz. packets free per post, 2s. 6d. Price to the Trade upon application.

Nurseries, Withington, near Manchester.

Also of the undermentioned Agents:—

Messrs. Hurst & M'Mullen, 6, Leadenhall Street, City, London, E.C.
" J. Carter & Co., 237, 238, and 261, High Holborn, W.C.
" Charlwood & Cummins, Tavistock Row, Covent Garden, London, W.C.
" Lawson & Son, 27, Great George Street, Westminster, London, S.W.
" Cooper & Bolton, 152, Fleet Street, London, E.C.
" A. Henderson & Co., Pine-apple Place, Edgware Road. London, W.
Mr. C. Turner, Royal Nursery, Slough.
Mr. J. Veitch, Royal Exotic Nursery, King's Road, Chelsea, S.W.

FIRST-CLASS PELARGONIUMS and CINERARIAS.

12 NEW PELARGONIUMS, Purchaser's Selection, 24s. per doz.:—Argo, Beauty of Reading, Cherub, Garibaldi, Gem of Roses, King of Spots, Mulberry, Modesty, Mrs. Benyon, Norma, Perdita, Roseum, Rosa Bonheur, Satanella, Sir H. Davy, The Lady of Quality, Thirza, Transcendent.

12 CHOICE PELARGONIUMS, Purchaser's Selection, 12s. per doz.:—Autocrat, Admirable, Annette, Agnes, Angelina, Beadsman, Bacchus, Czar, Candidate, Carlos, Douglas, Desdemona, Euphemia, Etna, Emperor, Gwendoline, Golden Rule, Hesperus, Jung Bahadoor, King of Purples, Lady Canning, Leviathan, Larkfield Rival, Lord Clyde, Monarch, Mazeppa, Magpie, Meteora, Magnet, Minnie, Mammoth, Mars, Pet of the Flock, Prince of Wales, Peacock, Richard Benyon, Rose Celestial, Symmetry, Sanspareil, Sprightliness, Spotted Gem, Sappho, The Bride, The Belle.

12 NEW CINERARIAS, Purchaser's Selection, 12s per doz.:—Adam Bede, Commander-in-Chief, Duke of Cambridge, Excelsior, Goliath, Lady Paxton (new), Mr. Marnock, Mr. Marnock (Smiths), Miss Marnock, Miss Smith, Magnet, Magenta, Magnificent, Othello, Perfecta, Queen Victoria, Refulgens, Semi Duplex, Solferino, Triumphans.

Henry May, The Hope Nurseries, near Bedale, Yorkshire.

THE LONDON MANURE COMPANY (Established 1840,)

Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.

116, Fenchurch Street, E.C. Edw. Purser, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE of LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

Tenant Farmers' Manure Company.

ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.

Manufactured by

THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.

Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.

Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.

C. T. Macadam, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.

The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—

LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6	6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES ..	5	5
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8	0

These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

American and other Cakes at market prices.

Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and Liffey Buildings, Eden Quay, Dublin.

New Source of Ammonia.

To Manure Manufacturers and Dealers.

ULMATE of AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that Wool contains more Nitrogen (yielding Ammonia) than any other kind of animal matter proves the Ulmate of Ammonia to be a highly valuable manure, the Analyses by Professor Voelcker, the Chemist of the Royal Agricultural Society, and other high authorities, showing a per centage of Ammonia exceeding 14 per cent., or equal to an average sample of Peruvian Guano, while, from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of ammonia. Being a fine dry powder, it is peculiarly suitable for use in the manufacture of manures, and preferable to the ordinary salts in use, sulphate of ammonia, nitrate of soda, &c.

Samples, prices, and all information will be forwarded on application to Frederic J. Cornwell, Broker, 7, Great St. Helens, E.C.

LINSEED CAKES, RAPE CAKES, COTTON CAKES, also all Materials used in the Manufacture of Manures, at the lowest market prices.

CATTLE and SHEEP BREEDERS may frequently save themselves 100 per cent. by an outlay of 20s. for the following celebrated CHEMICAL COMPOUNDS, which are now patronised by 70,000 Stock Breeders.

Day, Son & Hewitt's UNIVERSAL CHEMICAL EXTRACT, unmatched in Europe for curing paining and inflammation in Ewes after bad Lambing, swollen udders in Cows, and all kicks, cuts, wounds, and old strains in Horses and Cattle. 2s. 6d. and 7s. per bottle, 30s. per doz. in wooden boxes.

Day, Son & Hewitt's GASEOUS FLUID or BLACK MIXTURE for diarrhœa or scour in Calves, Sheep, and Lambs; and for Horses, Cattle and Sheep in chills and low condition or much exhausted. Cures the fret, colic or gripes in 15 minutes, and for blown Cattle and Sheep an excellent remedy. 1s. 9d. bottle, 20s. dozen in wooden boxes, 1½d. per dose for Lambs.

Day, Son & Hewitt's RED DRENCH or INFLAMMATION POWDER for cleansing after Calving or Lambing; for feverish and inflammatory symptoms in Horses, Cattle, and Sheep. 13s. per dozen in wooden boxes, 2d. per dose for Ewes.

Manufactured solely by Day, Son & Hewitt, 12, Sheldon Street, Paddington, London, W., to whom all orders by post should be addressed. The above name and address must be on all bottles and packages, or the articles cannot be genuine.

KEY to FARRIERY (2d Edition), by Post for 13 Stamps.

Carriage of goods paid to the nearest Town or Railway Station. Sample assortments securely packed.

CUPISS'S CONSTITUTION BALLS.—This justly celebrated Medicine, after 25 years' experience, is proved to be the best and cheapest for HORSES and NEAT CATTLE, cheaper because required to be given only once a week, preserving health, vigour, and condition. Their cost too is saved by the food turning to a better account, for it is an acknowledged fact Horses will keep up their condition better upon three feeds of Oats daily when a Ball is occasionally given, than with four feeds without the Balls. Neat Cattle will also fatten much faster with the occasional use of them, and arrive at a greater state of perfection than they can be got to without the Balls. Any one doubting this statement should try the use of them and prove for himself, for the more they are used the better they are appreciated.

The Balls will be found admirable for Coughs, Colds, Strangles, Influenza, Inflammation of the Eyes, Swelled Legs, and other diseases incident to Horses and Neat Cattle, as may be seen by the directions and Testimonials with each packet.

The Balls are prepared by Francis Cupiss, Diss, Norfolk, Author of the Prize Essay on the Diseases of the Liver of the Horse. And may be had of all Patent Medicine Vendors, in Packets (6 balls each), 3s. 6d. per packet, or 7 Packets for 21s. with full directions.

Persons using the Balls may consult the Proprietor gratuitously by enclosing a Stamp in a prepaid letter.

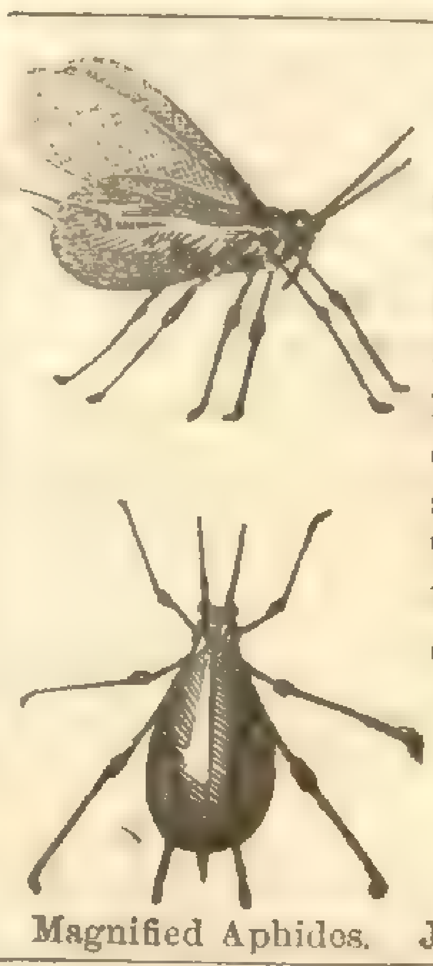
Genuine Roll Tobacco Cloth.

Warranted equal in Strength to Tobacco.

JOSEPH BAKER, 10, Gough Square, Fleet Street, E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1s. 4d. per lb.; over 10 lbs., 1s. Post-office Orders payable Fleet Street.

NEAL'S PATENT APHIS PASTILS.—These PASTILS are precisely the same strength always unless injured by damp—to avoid which they should be kept in a dry place. The smoke is thrown off much more rapidly than it used to be, and they cannot now blaze if too warm. These improvements were made at the suggestion of some of the most eminent gardeners of the day.

J. Neal, Patentee.



Magnified Aphides.

NEAL'S PATENT APHIS PASTILS.

The attempt by interested persons to injure the sale of these Pastils is best answered by the fact that Mr. Glenny and other really scientific Horticulturists use and recommend them. They are the safest and cheapest mode of Fumigation, as the large and increasing sale distinctly proves. The Pastils are better warmed before being used, as they are useless when damp.

Sold by all principal Seedsmen.
Price 1s. and 2s. per packet.

Patentee:
J. Neal, Edward Street, Birmingham.

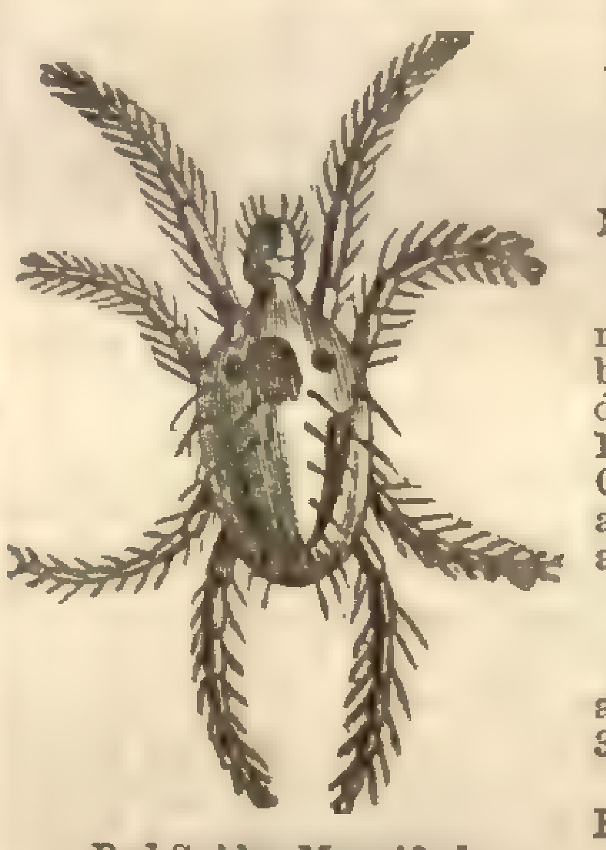
Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

Page & Toogood, Royal South Hants Seed Establishment, Southampton.



Red Spider Magnified.

FRUIT TREES.
Winter wash with
GISHURST COMPOUND.

[Copy of Letter from Mr. Rivers.]

Nurseries, Sawbridgeworth, Herts, Jan. 9, 1862.

I think you should prominently mention the great benefit Wall Trees of all kinds derive from a dressing, ½ or 1 lb. to the gallon, of the Compound applied in January. It is so easily applied, and so very beneficial.

(Signed) Thos. Rivers.

Sold retail by Nurserymen and Seedsmen in boxes 1s., 3s., and 10s. 6d. each.

Wholesale by Price's Patent Candle Co., Limited.

GISHURST COMPOUND.—"January, 1862.

"The mode of using Gishurst which I have found most advantageous with my own trees, is to take say 3 lb.; throw this into an earthenware pan or large pail containing about six gallons of nearly boiling water. Stir up and let this remain for 48 hours, by which time the strength of the smell will have passed off; then apply, by means of a full sized painter's brush, over buds, shoots, branches, and stem, giving especial care at the forks, till the whole tree is in a white lather.

"This winter dressing may be applied from the time trees go to rest in Autumn till the time the buds begin to open in Spring; after that time the above strength of solution would be too great, as injury would be done to the blossoms. From one to two ounces to the gallon is then found the best strength.

"(Signed) The Inventor of Gishurst."

Parkes' Steel Digging Forks.

BURGESS AND KEY, 95, Newgate Street, E.C., London, being the Wholesale and Retail Agents for these celebrated Tools, have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN has obtained the FIRST PRIZE given by the Royal Agricultural Society at every Meeting since 1859. It is strongly recommended as the most perfect Churn now in use. Full particulars sent on application.

Agricultural Machinery.

CHAFF CUTTERS, TURNIP CUTTERS, PULPERS, MILLS, PLOUGHS, HARROWS, CARTS, &c., Delivered Carriage Free.

Burgess & Key, Manufacturers, 95, Newgate Street, London.

PRICE LISTS free per Post.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which Hill & Smith will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.

Apply to Hill & Smith, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

LONDON, 1862.

METROPOLITAN SHOW, TO BE HELD IN BATTERSEA PARK,

COMMENCING MONDAY, JUNE 23, 1862.

Members of the Royal Agricultural Society of England, and of the Highland and Agricultural Society of Scotland, have the privilege of making Entries on the payment of 5s. on each Certificate of Cattle, Horses, Sheep, and Pigs; but Non-Members will be allowed to compete on the payment of 15s. on each Certificate.

Forms of Certificate may be had on application to the Secretary, at the Office of the Society, 12, Hanover Square, London, W. All Certificates for the Entry of Live Stock must be returned, filled up, to the Secretary on or before May 1.

Special Clause.—The Council have ordered that all Certificates for Live Stock received after May 1 shall not be accepted, but returned to the persons sending them.

All Prizes of the Royal Agricultural Society of England, and all the Prizes offered by the Highland and Agricultural Society of Scotland are Open to General Competition.

Caution.—LAST DAY OF ENTRY, MAY 1.

All Ages calculated to July 1, 1862.] **PRIZES to the Owners of the following:—** [All Ages calculated to July 1, 1862.

CATTLE.

Class	First Prize.	Second Prize.	Third Prize.
	£	£	£
SHORT-HORNED.			
1. Bull, calved on or before July 1, 1859, above 3 and under 6 years old	30	15	5
2. Bull, calved since July 1, 1859, above 2 and under 3 years old	30	15	5
3. Bull, calved since July 1, 1860, above 1 and under 2 years old	25	15	5
4. Bull-Calf, above six and under 12 months old	15	10	5
5. Cow, above 3 years old	20	10	5
6. Heifer, in-milk or in-calf, under 3 years old	15	10	5
7. Yearling Heifer	15	10	5
8. Heifer Calf, above 6 and under 12 months old	15	10	5
To the Owner of the best Male Animal in the Shorthorn Classes	Gold Medal		
To the Owner of the best Female Animal in the Shorthorn Classes	Gold Medal		
HEREFORD.			
1. Bull, calved on or before July 1, 1859, above 3 and under 6 years old	30	15	5
2. Bull, calved since July 1, 1859, above 2 and under 3 years old	30	15	5
3. Bull, calved since July 1, 1860, above 1 and under 2 years old	25	15	5
4. Bull Calf, above 6 and under 12 months old	15	10	5
5. Cow, above 3 years old	20	10	5
6. Heifer, in milk or in-calf, under 3 years old	15	10	5
7. Yearling Heifer	15	10	5
8. Heifer-Calf, above 6 and under 12 months old	15	10	5
To the Owner of the best Male Animal in the Hereford Classes	Gold Medal		
To the Owner of the best Female Animal in the Hereford Classes	Gold Medal		
DEVON.			
1. Bull, calved on or before July 1, 1859, above 3 and under 6 years old	30	15	5
2. Bull, calved since July 1, 1859, above 2 and under 3 years old	30	15	5
3. Bull, calved since July 1, 1860, above 1 and under 2 years old	25	15	5
4. Bull-Calf, above 6 and under 12 months old	15	10	5
5. Cow, above 3 years old	20	10	5
6. Heifer, in-milk or in-calf, under 3 years old	15	10	5
7. Yearling Heifer	15	10	5
8. Heifer-Calf, above 6 and under 12 months old	15	10	5
To the Owner of the best Male Animal in the Devon Classes	Gold Medal		
To the Owner of the best Female Animal in the Devon Classes	Gold Medal		
SUSSEX.			
1. Bull, calved on or before July 1, 1859, and under 6 years old	15	5	—
2. Bull, calved since July 1, 1859, and more than 1 year old	10	5	—
3. Cow, above 3 years old	10	5	—
4. Heifer, in-milk or in-calf, under three years old	10	5	—
5. Yearling Heifer	10	5	—
LONG-HORNED.			
1. Bull, calved on or before July 1, 1859, under 6 years old	15	5	—
2. Bull, calved since July 1, 1859, and more than 1 year old	10	5	—
3. Cow, above 3 years old	10	5	—
4. Heifer, in-milk or in-calf, under 3 years old	10	5	—
5. Yearling Heifer	10	5	—
NORFOLK AND SUFFOLK POLLED.			
1. Bull, calved on or before July 1, 1859, under 6 years old	15	5	—
2. Bull, calved since July 1, 1859, and more than 1 year old	10	5	—
3. Cow, above 3 years old	10	5	—
4. Heifer, in-milk or in-calf, under 3 years old	10	5	—
5. Yearling Heifer	10	5	—
NORTH WALES.			
1. Bull, calved on or before July 1, 1859, under 6 years old	15	5	—
2. Bull, calved since July 1, 1859, and more than 1 year old	10	5	—
3. Cow, above 3 years old	10	5	—
4. Heifer, in-milk or in-calf, under 3 years old	10	5	—
5. Yearling Heifer	10	5	—
SOUTH WALES.			
1. Bull, calved on or before July 1, 1859, under 6 years old	15	5	—
2. Bull, calved since July 1, 1859, and more than 1 year old	10	5	—
3. Cow, above 3 years old	10	5	—
4. Heifer, in-milk or in-calf, under 3 years old	10	5	—
5. Yearling Heifer	10	5	—

CATTLE—(Continued).

Class	First Prize.	Second Prize.	Third Prize.
	£	£	£
IRISH—KERRY.			
1. Bull, calved on or before July 1, 1859, under 6 years old	15	5	—
2. Bull, calved since July 1, 1859, and more than 1 year old	10	5	—
3. Cow, above 3 years old	10	5	—
4. Heifer, in-milk or in-calf, under 3 years old	10	5	—
5. Yearling Heifer	10	5	—

CHANNEL ISLANDS.

Class	First Prize.	Second Prize.	Third Prize.
JERSEY, commonly called ALDERNEY.			
1. Bull, calved on or before July 1, 1859, under 4 years old	10	—	—
2. Bull, calved since July 1, 1859, and more than 1 year old	5	—	—
3. Cow, above 3 years old	10	6	4
4. Heifer, in-milk or in-calf, under 3 years old	10	5	—
GUERNSEY.			
1. Bull, calved on or before July 1, 1859, under 4 years old	10	—	—
2. Bull, calved since July 1, 1859, and more than 1 year old	5	—	—
3. Cow, above 3 years old	10	6	4
4. Heifer, in-milk or in-calf, under 3 years old	10	5	—

HORSES.

Class	First Prize.	Second Prize.	Third Prize.
For the Thorough-bred Stud Horse, having served Mares during the season 1862, which, in the opinion of the Judges, is best calculated to improve and perpetuate the breed of the sound and stout Thorough-bred Horse for General Stud Purposes	100	25	—
HUNTER.			
1. Stallion, thorough or half-bred	30	15	—
2. Brood Mare, with foal at foot, or in foal	20	10	—
3. Gelding, four or five years old	20	10	—
4. Mare, four or five years old	20	10	—
CARRIAGE.			
1. Stallion	20	10	—
2. Brood Mare, with foal at foot, or in-foal	20	10	—
ROADSTER.			
1. Stallion	20	10	—
2. Brood Mare, with foal at foot, or in foal	20	10	—

AGRICULTURAL HORSES.

Class	First Prize.	Second Prize.	Third Prize.
SUFFOLK.			
1. Stallion, foaled on or before the 1st of Jan. 1860	30	15	—
2. Stallion, foaled in the year 1860	20	10	—
3. Mare and Foal	20	10	—
4. Two years old Filly	15	10	—
AGRICULTURAL. Not qualified to compete as Suffolk			
1. Stallion, foaled on or before the 1st of Jan. 1860	30	15	—
2. Stallion, foaled in the year 1860	20	10	—
3. Mare and Foal	20	10	—
4. Two years old Filly	15	10	—
DRAY.			
1. Stallion, foaled on or before the first of Jan. 1860	30	15	—
2. Stallion, foaled in the year 1860	20	10	—
3. Mare and Foal	20	10	—
4. Filly, foaled in the year 1860	15	10	—
PONIES. Above 12½ and under 14 hands.			
1. Stallion	15	5	—
2. Mare	10	5	—
3. Gelding, 4 or 5 years old	10	—	—
Not exceeding 12½ hands.			
1. Stallion	15	5	—
2. Mare	10	5	—
3. Gelding, 4 or 5 years old	10	—	—

SHEEP.

Class	First Prize.	Second Prize.	Third Prize.
LEICESTER.			
1. Shearling Ram	20	10	5
2. Ram of any other age	20	10	5
3. Pen of Five Shearling Ewes, of the same flock	20	10	5
To the owner of the best Ram in the Leicester Classes	Gold Medal		

SHEEP—(Continued).

Class	First Prize.	Second Prize.	Third Prize.
	£	£	£
LINCOLN.			
1. Shearling Ram	15	10	5
2. Ram of any other age	15	10	5
3. Pen of Five Shearling Ewes, of the same flock	15	10	5
COTSWOLD.			
1. Shearling Ram	15	10	5
2. Ram of any other age	15	10	5
3. Pen of Five Shearling Ewes, of the same flock	15	10	5
KENTISH OR ROMNEY MARSH.			
1. Shearling Ram	15	10	5
2. Ram of any other age	15	10	5
3. Pen of Five Shearling Ewes, of the same flock	15	10	5
LONG-WOOLLED. Not qualified so compete as Leicesters, Lincolns, Cotswolds, or Kentish.			
1. Shearling Ram	15	10	5
2. Ram of any other age	15	10	5
3. Pen of Five Shearling Ewes, of the same flock	15	10	5
IRISH—PURE NATIVE LONG-WOOLLED BREEDS.			
1. Shearling Ram	15	10	5
2. Ram of any other age	15	10	5
3. Pen of Five Shearling Ewes, of the same flock	15	10	5
SOUTHDOWN.			
1. Shearling Ram	20	10	5
2. Ram of any other age	20	10	5
3. Pen of Five Shearling Ewes, of the same flock	20	10	5
To the owner of the best Ram in the Southdown Classes	Gold Medal		
SHROPSHIRE.			
1. Shearling Ram	15	10	5
2. Ram of any other age	15	10	5
3. Pen of Five Shearling Ewes, of the same flock	15	10	5
HAMPSHIRE AND WEST COUNTRY DOWN.			
1. Shearling Ram	15	10	5
2. Ram of any other age	15	10	[illegible]
3. Pen of Five Shearling Ewes, of the same flock	15	10	5
OXFORDSHIRE DOWN.			
1. Shearling Ram	15	10	5
2. Ram of any other age	15	10	5
3. Pen of Five Shearling Ewes, of the same flock	15	10	5
DORSET.			
1. Shearling Ram	15	10	[illegible]
2. Ram of any other age	15	10	[illegible]
3. Pen of Five Shearling Ewes, of the same flock	15	10	[illegible]
MOUNTAIN.			
1. Shearling Ram	15	10	5
2. Ram of any other age	15	10	5
3. Pen of Five Shearling Ewes, of same flock	15	10	5

PIGS.

Class	First Prize.	Second Prize.	Third Prize.
1. Boar of a large breed, of any colour	10	5	—
2. Boar of a small white breed	10	5	—
3. Boar of a small black breed	10	5	—
4. Boar of the Berkshire breed	10		
5. Boar of a breed not eligible for the preceding classes	10	5	—
6. Breeding Sow of a large breed, of any colour	10	5	—
7. Breeding Sow of a small white breed	10	5	—
8. Breeding Sow of a small black breed	10	5	—
9. Breeding Sow of the Berkshire breed	10		
10. Breeding Sow of a breed not eligible for the preceding classes	10	5	—
11. Pen of Three Breeding Sow Pigs of a large breed, of any colour, of the same litter, above 4 and under 8 months old	10	5	—
12. Pen of Three Breeding Sow Pigs of a small white breed, of the same litter, above 4 and under 8 months old	10	5	—
13. Pen of Three Breeding Sow Pigs of a small black breed, of the same litter, above 4 and under 8 months old	10	5	—
14. Pen of Three Breeding Sow Pigs of the Berkshire breed, of the same litter, above 4 and under 8 months old	10	5	—
15. Pen of Three Breeding Sow Pigs of a breed not eligible for the preceding classes, of the same litter, above 4 and under 8 months old	10	5	—

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.—(*Continued*).

PRIZES OFFERED BY THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

CATTLE.

POLLED (ABERDEEN AND ANGUS). Class	First Prize. £	Second Prize. £	Third Prize. £
1. Bull, calved before the 1st of January, 1860	20	10	Silver Medl.
2. Bull, calved after the 1st of January, 1860	20	10	
3. Bull, calved after the 1st of January, 1861	10	5	
4. Cow, of any age	10	5	
5. Heifer, calved after the 1st of January, 1860	10	5	
6. Heifer, calved after the 1st of January, 1861	8	4	
POLLED (GALLOWAY).			
1. Bull, calved before the 1st of January, 1860	20	10	Do.
2. Bull, calved after the 1st of January, 1860	20	10	Do.
3. Bull, calved after the 1st of January, 1861	10	5	Do.
4. Cow, of any age	10	5	Do.
5. Heifer, calved after the 1st of January, 1860	10	5	Do.
6. Heifer, calved after the 1st of January, 1861	8	4	Do.
HIGHLAND.			
1. Bull, calved before the 1st of January, 1859	20	10	Do.
2. Bull, calved after the 1st of January, 1859	20	10	Do.

CATTLE.

HIGHLAND. (*Continued.*) Class	First Prize. £	Second Prize. £	Third Prize.
3. Bull, calved after the 1st of January, 1860	10	5	Silver Medal.
4. Cow, of any age	10	5	
5. Heifer, calved after the 1st of January, 1859	10	5	
6. Heifer, calved after the 1st of January, 1860	8	4	
AYRSHIRE.			
1. Bull, calved before the 1st of January, 1860	20	10	Do.
2. Bull, calved after the 1st of January,1 860	20	10	Do.
3. Bull, calved after the 1st of January, 1861	10	5	Do.
4. Cow, in-milk, of any age	10	5	Do.
5. Cow, in-calf, of any age	10	5	Do.
6, Heifer, calved after the 1st of January, 1860	10	5	Do.
7. Heifer, calved after the 1st of January, 1861	8	4	Do.

HORSES.

CLYDESDALE.	First Prize.	Second Prize.	Third Prize.
1. Stallion, foaled before the 1st of January, 1859	30	15	Do.

HORSES.

CLYDESDALE. (*Continued.*) Class	First Prize. £	Second Prize. £	Third Prize.
2. Entire Colt, foaled after the 1st of January, 1859	20	10	Silver Medal.
3. Mare (with foal at foot), foaled before the 1st of January, 1859	20	10	
4. Mare (in-foal), foaled before the 1st of January, 1859..	10	8	
5. Filly, foaled after the 1st of January, 1859	10	5	

SHEEP.

BLACKFACED.	First Prize.	Second Prize.	Third Prize.
1. Tup, not more than 4 shear	10	5	Do.
2. Shearling Tup	10	5	Do.
3. Five Ewes, not more than 4 shear	8	4	Do.
4. Five Shearling Ewes	8	4	Do.
CHEVIOT.			
1. Tup, not more than 4 shear	10	5	Do.
2. Shearling Tup	10	5	Do.
3. Five Ewes, not more than 4 shear	8	4	Do.
4. Five Shearling Ewes	8	4	Do.

THE FOLLOWING CLASSES ARE APPLICABLE TO FOREIGN COUNTRIES:—

CATTLE.

CHAROLAISE.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

GARONNAISE.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

NORMAN.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

DE SALERS.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

PYRENEAN.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

BRETON.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

OTHER FRENCH BREEDS.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

FLEMISH.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

DUTCH.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

SWISS.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

SPANISH.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

OTHER FOREIGN BREEDS.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

INDIAN OR OTHER NATIVE COLONIAL BREEDS.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

In addition to the above Prizes, SIX GRAND GOLD MEDALS OF HONOUR WILL be distributed among the above Classes, at the discretion of the Stewards and Judges.

HORSES.

HORSES FOR HEAVY DRAUGHT, OF ANY PURE FOREIGN BREED.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

AGRICULTURAL HORSES, USED FOR AGRICULTURAL PURPOSES GENERALLY.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

In addition to the above Prizes, TWO GRAND GOLD MEDALS OF HONOUR will be distributed among the above Classes, at the discretion of the Stewards and Judges.

SHEEP.

FRENCH MERINO.

Class I. Ram of any age:	Class II. Pen of 3 Females:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

SPANISH MERINO.

Class I. Ram of any age:	Class II. Pen of 3 Females:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

SAXON MERINO.

Class I. Ram of any age:	Class II. Pen of 3 Females:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

OTHER PURE MERINO.

Class I. Ram of any age:	Class II. Pen of 3 Females:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

LONG-WOOLLED FOREIGN BREEDS.

Class I. Ram of any age:	Class II. Pen of 3 Females:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

SHORT-WOOLLED FOREIGN BREEDS.
(Not qualified for the above Classes.)

Class I. Ram of any age:	Class II. Pen of 3 Females:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

CROSS-BRED MERINO.

Class I. Ram of any age:	Class II. Pen of 3 Females:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

OTHER MIXED BREEDS.

Class I. Ram of any age:	Class II. Pen of 3 Females:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

In addition to the above Prizes, TWO GRAND GOLD MEDALS OF HONOUR will be distributed among the above Classes, at the discretion of the Stewards and Judges.

PIGS.

PURE FOREIGN BREEDS.

Class I. Male:	Class II. Female:
1st Prize: a Gold Medal	1st Prize: a Gold Medal
2d ,, a Silver Medal	2d ,, a Silver Medal
3d ,, a Bronze Medal	3d ,, a Bronze Medal

Prices Reduced.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

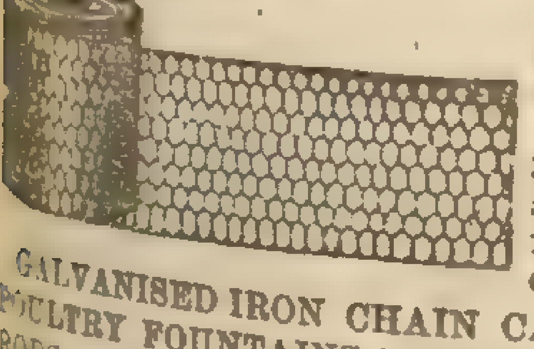
GALVANISED IRON ROOFING for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING

(Formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1*s.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide 2-inch mesh, 4*d.*, 4½*d.*, and 6¾*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 2¾*d.*, 3¾*d.*, and 5½*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

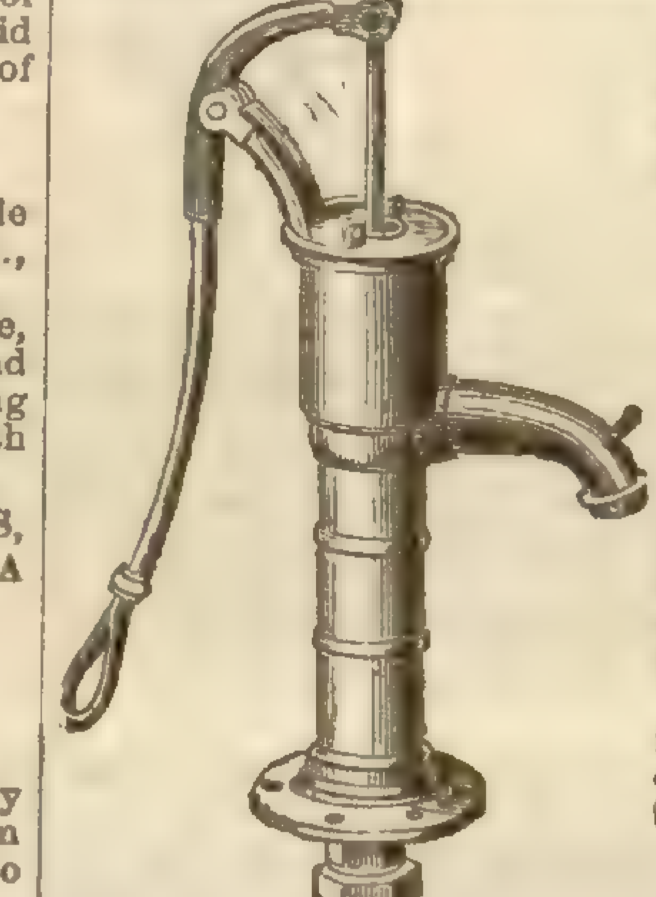
PATENT IMPROVED GAS WORKS of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to HENRY J. MORTON & Co., 2, Basinghall Buildings, Leeds.

JOSEPH HAYWOOD AND CO., MANUFACTURERS OF PRUNING and BUDDING KNIVES, SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

J. TYLOR AND SONS' PATENT IRON PUMP with reversible handle, for Shallow Wells, Hot-Houses, &c. Price 25*s.* 6*d.* each.



IRON YARD and GARDEN PUMPS
3 feet 6 inches under spout
2¼ 3 3½ inch
43*s.* 53*s.* 60*s.* each.

J. TYLOR and SONS manufacture PUMPS for DEEP WELLS which do not require any fixing below the level of the ground.

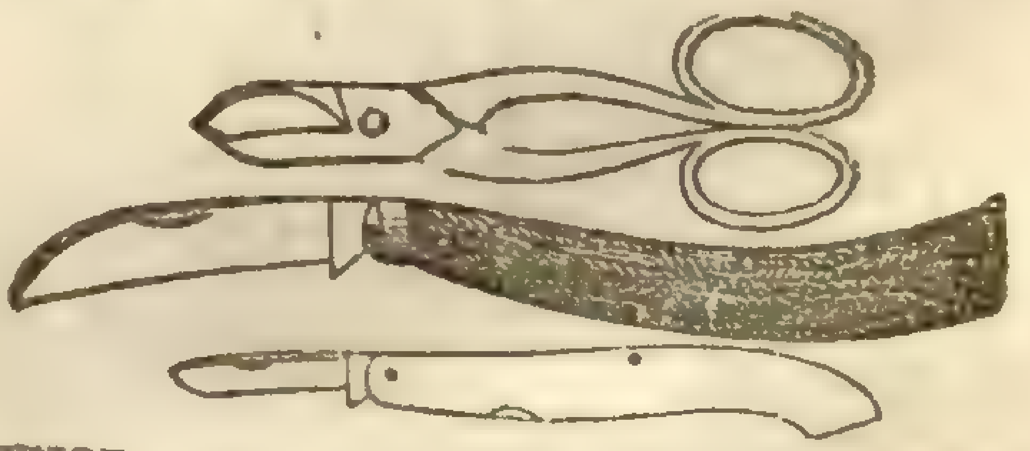
PUMPS of J. TYLOR & SONS' manufacture to be obtained of Plumbers in all parts of the United Kingdom.

J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to

JOHN FOWLER, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

Paxton Works, Sheffield, Established 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.

Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

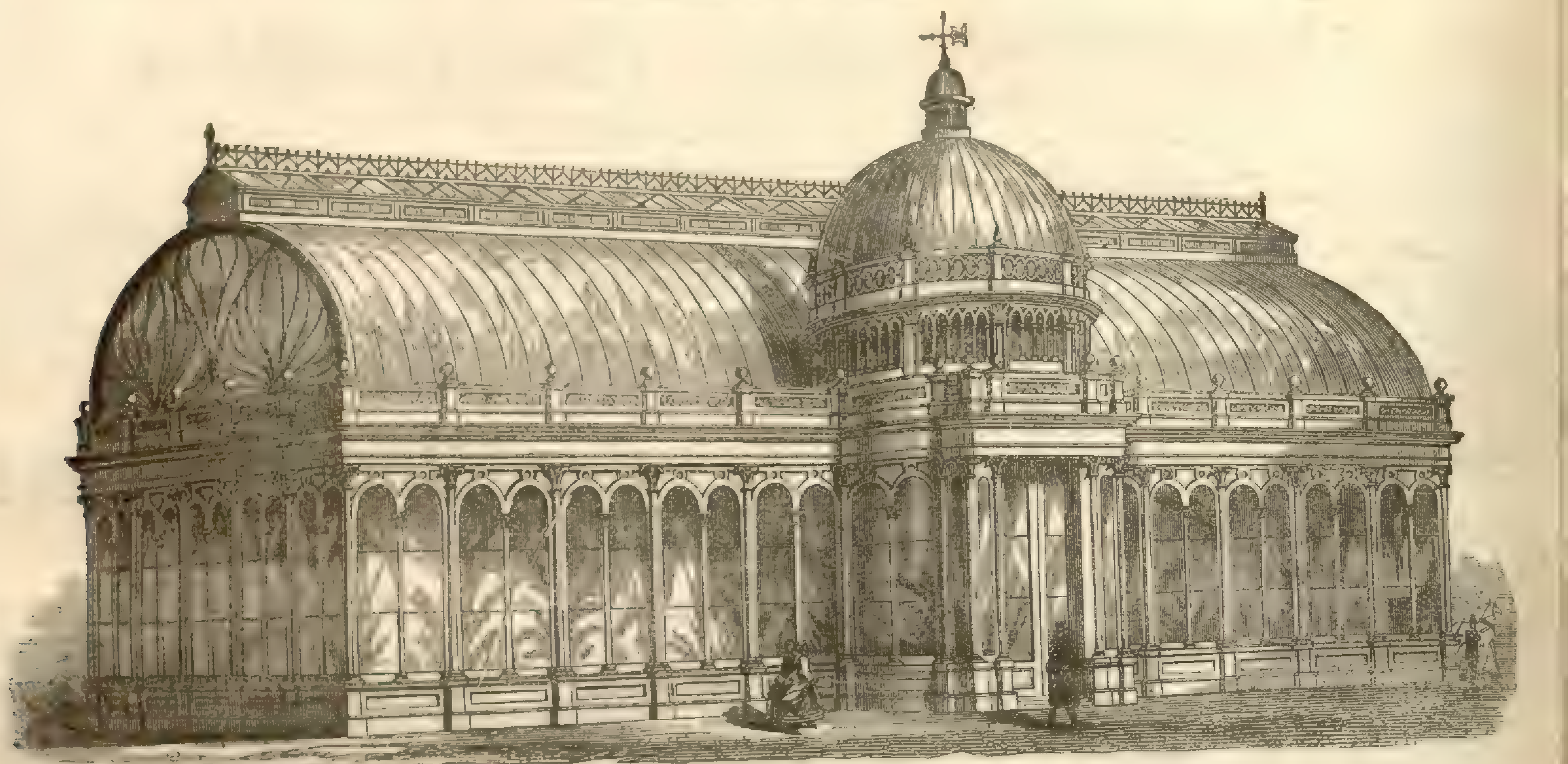
Important to Gardeners.

WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an article superior in quality to anything we have hitherto been able to offer, in PRUNING, BUDDING, and GRAFTING KNIVES, VINE and PRUNING SCISSORS, GARDEN SHEARS, &c., owing to their being tempered under an entirely new process, which renders the blade tough and not liable to break, and also gives the edge a lasting keenness which we can warrant them to retain for at least double the time they would under the old method of tempering, thus facilitating the work and saving the time usually lost by having constantly to renew the edge by sharpening, consequently making them more durable in wear and better adapted for all kinds of work, every blade being guaranteed of the same temper.

CAUTION. None are genuine except marked SAYNOR, or SAYNOR, Maker. Other marks would cause the purchase disappointment.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

PATRONISED BY THE QUEEN.



WEEKS'S CONSERVATORIES are peculiarly chaste in design. A choice variety now in preparation at their Steam-Power Works.

WEEKS'S NEWLY-INVENTED PEACH HOUSES give the utmost satisfaction. They require *no Brick foundation*, and are specially suited for covering Trees of long standing.

WEEKS'S FORCING HOUSES and **VINERIES** combine some valuable improvements.

WEEKS'S IMPROVED VENTILATING APPARATUS gives universal satisfaction.

WEEKS'S HOT-WATER APPARATUS continues to eclipse all spurious imitations of their renowned "ONE-BOILER SYSTEM." It exposes four times the quantity of heating surface to the action of the fire, consequently must be four-fold as powerful, and economical in the same ratio. It is described by the highest authority as the very best extant for both large and small works, which the following references will serve to corroborate. It has been adopted by

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN

THE TOWER OF LONDON
THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN

THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM, AND NUMEROUS PUBLIC COMPANIES.

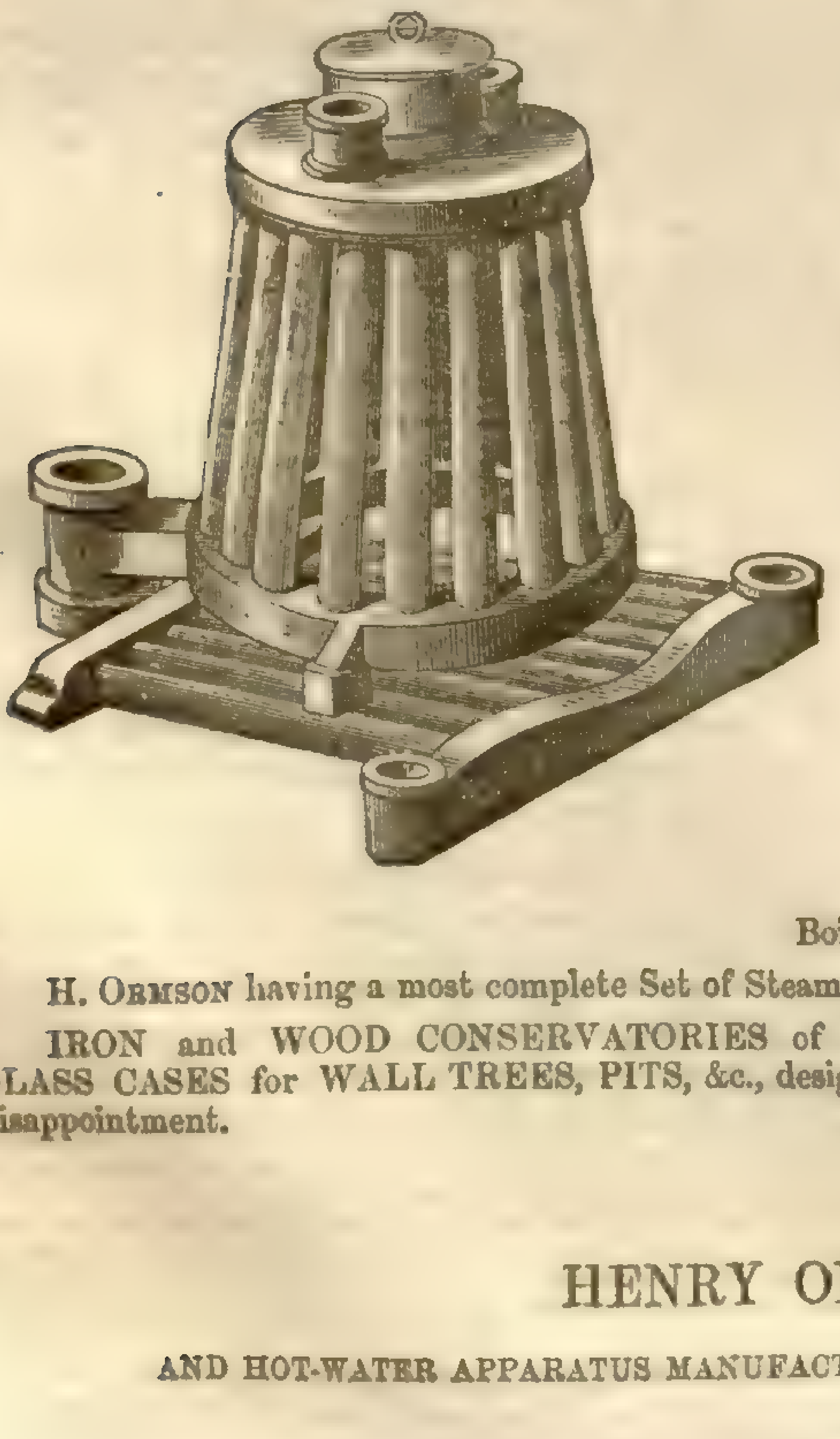
Catalogues free on application.

JOHN WEEKS & COMPANY, HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS ENGINEERS,
KING'S ROAD, CHELSEA, LONDON, S.W.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ORMSON'S PATENT JOINTLESS TUBULAR BOILER,

AN ORIGINAL INVENTION,



Brought out for the purpose, and is now fully acknowledged to surpass the OLD-FASHIONED JOINTED TUBULAR BOILERS, which have been made for the last 20 or 30 years by all other manufacturers. The ADVANTAGES of this PATENT will be manifest to every person's understanding from the following FACTS. For instance, one of the OLD-FASHIONED JOINTED BOILERS with 50 TUBES would have 100 JOINTS made of rope yarn and cement, exposed to the direct action of the FIRE, whereas in my PATENT there is NOT ONE JOINT so exposed. And it should be fully understood that as the OLD-FASHIONED JOINTED TUBULAR BOILER increases in SIZE, number of TUBES and JOINTS, its liability to LEAKAGE also increases, consequently

THE FOLLOWING IS THE REASON WHY

ORMSON'S ONE-BOILER SYSTEM

AND PATENT JOINTLESS TUBULAR BOILERS

have become so universally adopted on account of their superior power, great safety, and economy,

ORMSON'S No. 1 BOILERS	are heating upwards of	250	feet of Pipe.
ORMSON'S No. 2 BOILERS	" "	600	"
ORMSON'S No. 3 BOILERS	"	1300	"
ORMSON'S No. 4 BOILERS	" "	3000	"
ORMSON'S No. 5 BOILERS	" "	5000	"

Boilers of larger sizes if required to heat 12,000 or 15,000 feet of Pipe.

H. ORMSON having a most complete Set of Steam-power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, HORTICULTURAL BUILDER TO HER MAJESTY,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

HOT-WATER APPARATUS.

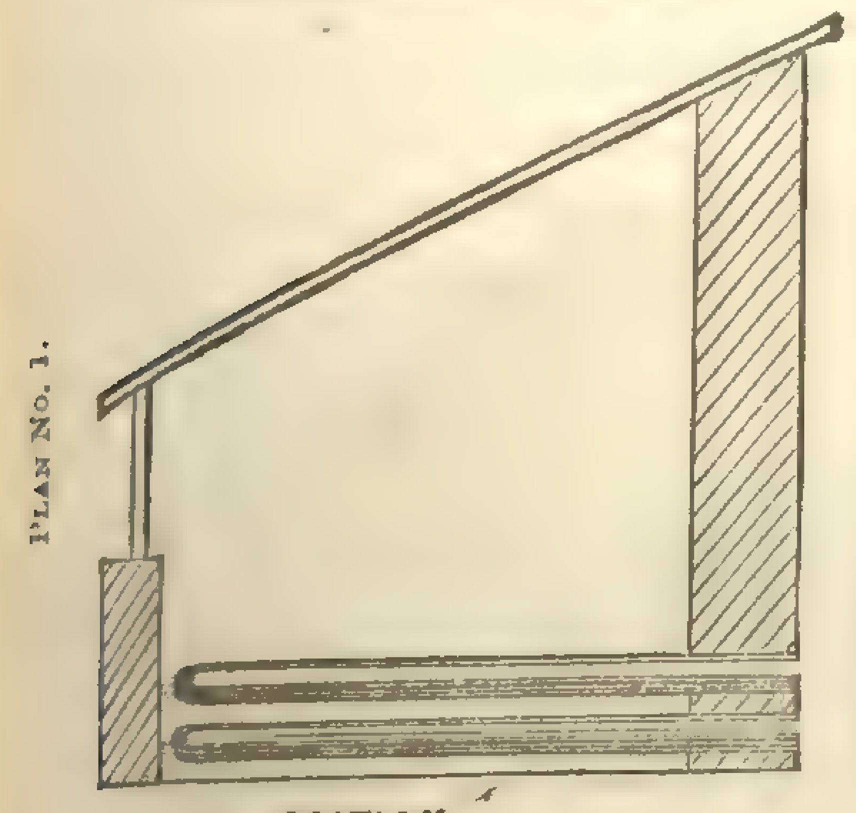
J. JONES

BEGS TO OFFER A COMPLETE

Hot-Water Apparatus for Houses

according to the following Plans, delivered Free to any Railway Station in England.

Plan No. 1.

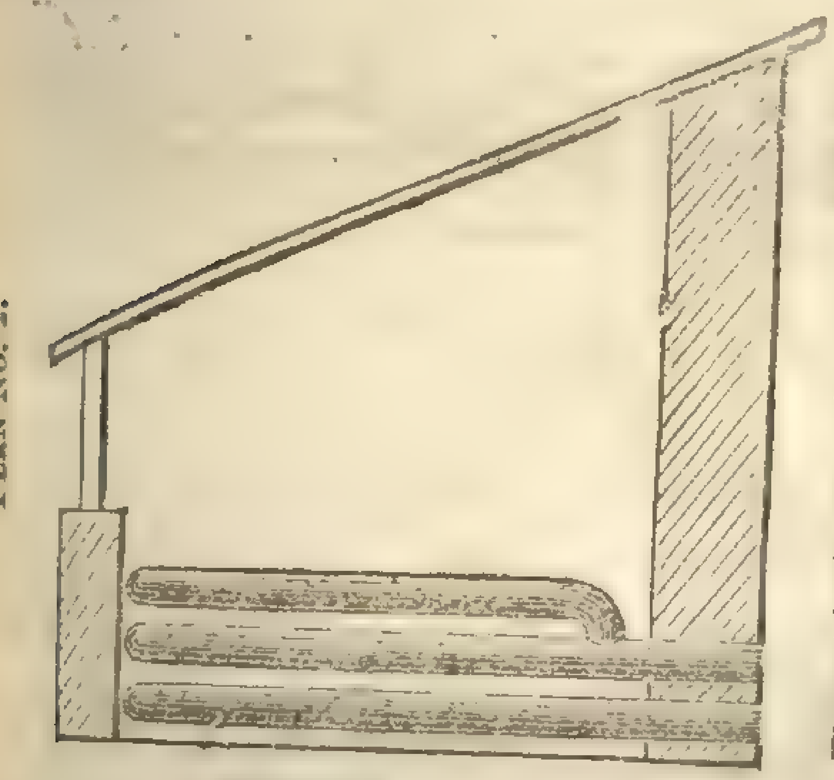


Two 4-inch pipes along front and one end of house.

SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
[illegible] feet by 8 feet ..	Price	£8 0 0	£8 12 6
[illegible] feet by 10 feet ..	,,	8 10 0	9 0 0
[illegible] feet by 12 feet ..	,,	10 0 0	10 10 0
[illegible] feet by 12 feet ..	,,	11 10 0	12 0 0
[illegible] feet by 15 feet ..	,,	16 10 0	17 0 0
[illegible] feet by 15 feet ..	,,	18 10 0	20 0 0

Plan No. 2.

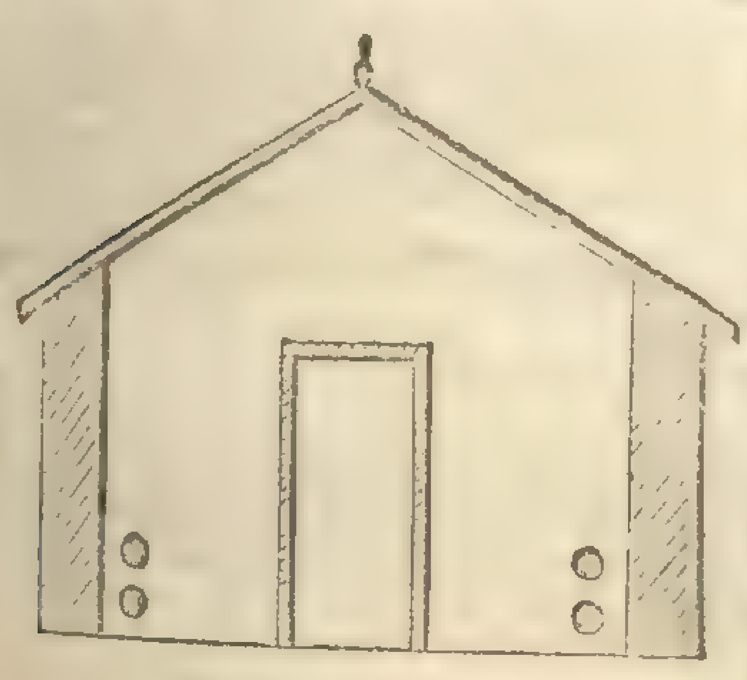


Three 4-inch pipes along front and one end of house.

SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
15 feet by 8 feet ..	Price	£11 10 0	£12 0 0
[illegible] feet by 10 feet ..	,,	12 10 0	13 0 0
[illegible] feet by 12 feet ..	,,	14 10 0	15 0 0
[illegible] feet by 12 feet ..	,,	16 10 0	17 0 0
[illegible] feet by 15 feet ..	,,	22 0 0	23 0 0
[illegible] feet by 15 feet ..	,,	24 10 0	26 0 0

Plan No. 3.

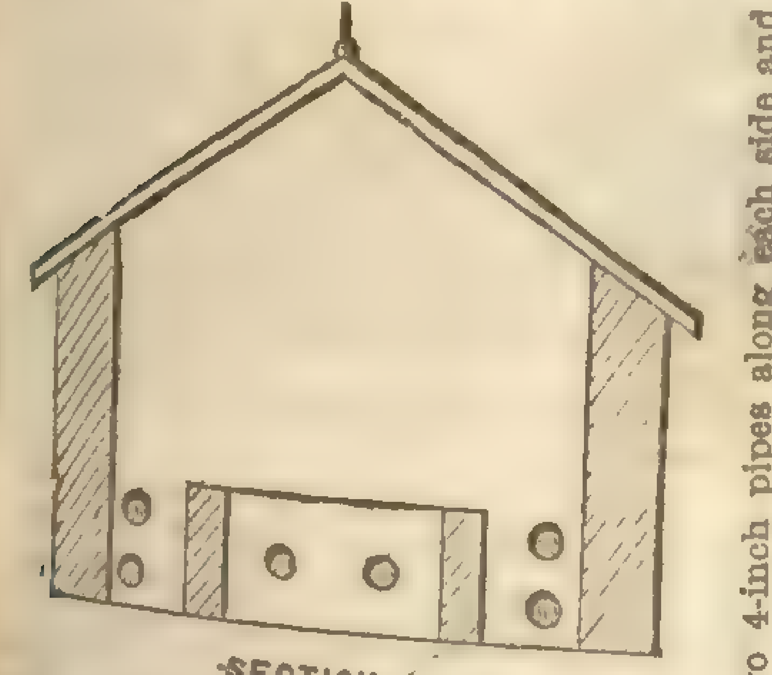


Two 4-inch pipes along each side and one end of house.

SECTION.

Size of House.		With Cylinder Boiler.	Saddle Boiler.
[illegible] feet by 8 feet ..	Price	£12 10 0	£13 0 0
[illegible] feet by 10 feet ..	,,	13 10 0	14 0 0
[illegible] feet by 12 feet ..	,,	16 10 0	17 0 0
[illegible] feet by 12 feet ..	,,	19 0 0	20 0 0
[illegible] feet by 15 feet ..	,,	24 10 0	25 10 0
[illegible] feet by 15 feet ..	,,	27 0 0	28 10 0

Plan No. 4.



Two 4-inch pipes along each side and one end of house, and two 4-inch pipes in pit for bottom heat.

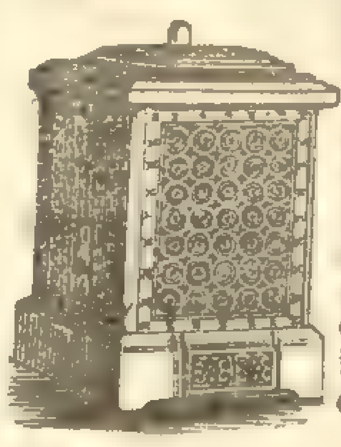
SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
[illegible] feet by 8 feet ..	Price	£16 0 0	£17 0 0
[illegible] feet by 10 feet ..	,,	17 10 0	18 10 0
[illegible] feet by 12 feet ..	,,	21 10 0	22 10 0
[illegible] feet by 12 feet ..	,,	25 0 0	26 0 0
[illegible] feet by 15 feet ..	,,	31 0 0	32 0 0
[illegible] feet by 15 feet ..	,,	33 10 0	35 0 0

The above prices include Boiler, strong Furnace-doors, Bars, Plate, Soot-doors, Damper, and Supply Cistern-pipes of 4-inch diameter, Elbows, &c.; all of the best quality. Delivered free to any Railway Station in England. Terms: Net Cash.

Estimates will be sent for the work fixed complete, or further particulars on application to

J. Jones, Hot-Water Apparatus Manufacturer, 6, Bankside, London, S.E.



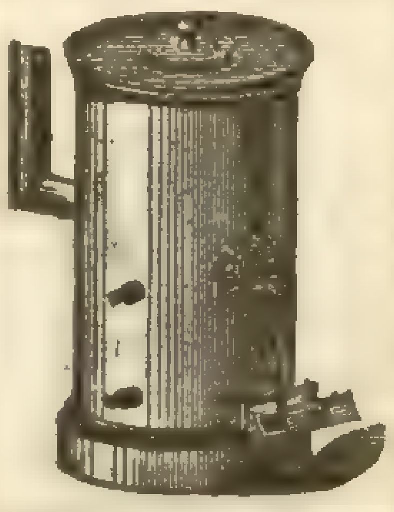
MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large Apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.

Particulars and prices post free on application to Musgrave Brothers, Ann Street Iron Works, Belfast.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



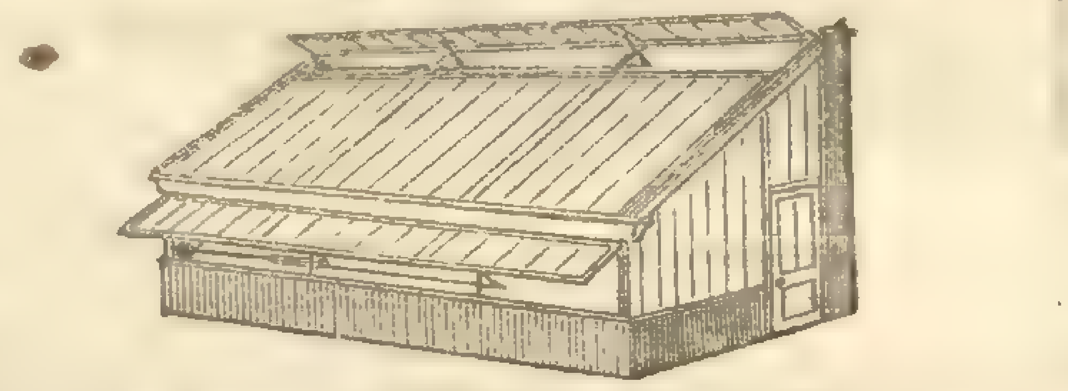
Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

T. G. MESSENGER, Horticultural Builder and Hot-Water Apparatus Manufacturer, Loughborough.



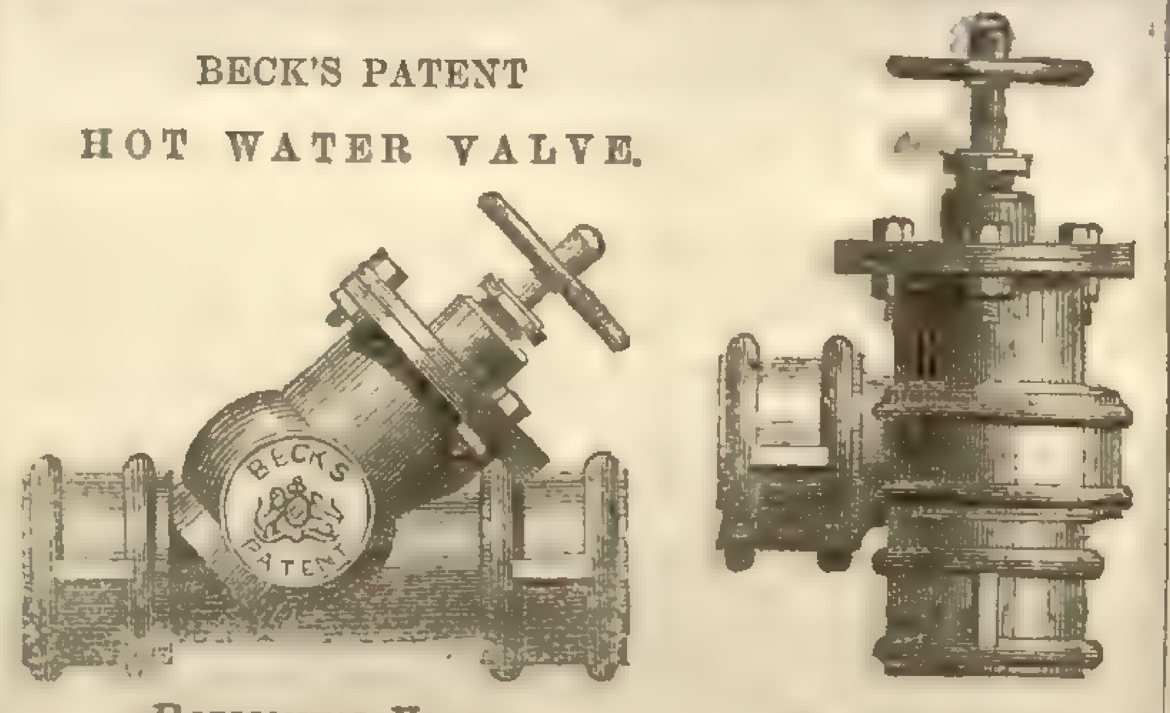
T. G. M.'s Patented DIVISIONLESS HORTICULTURAL BUILDINGS are cheaper, more durable, and lighter in appearance than any other made. The Ventilation is effected by a simple and much admired mechanical arrangement.

T. G. M.'s Patented TRIANGULAR TUBULAR BOILER for Heating Buildings with Hot Water has been extensively adopted by gentlemen who are willing to testify to its great efficiency and economy of fuel. Plans, Estimates, Testimonials, and every information sent free upon application.

Horticultural Works, Danvers Street, Chelsea, S.W.

BECK'S PATENT

HOT WATER VALVE.



Horizontal Valve. 2" 18*s.* 6*d.*; 3" 25*s.*; 4" 30*s.*

Angle Valve. 2" 17*s.*; 3" 23*s.*; 4" 28*s.*

JAMES GRAY, Sole Agent, begs to call attention to this most simple and perfect Valve ever invented. It is perfectly water tight, and is never liable to get out of order, or to get fixed by standing.

To Architects. Engineers, Gardeners, & Others.—Beck's Patent Valve has been submitted to several of the most scientific men of the day, and has invariably met with unqualified approval. A liberal Discount to the Trade.

Conservatories, Greenhouses, Vineries, and every description of Hothouse erected on the most improved principles, and of best materials, at the lowest possible price consistent with good workmanship.

Heating by Hot Water in all its branches. Boilers of every approved description, Tubular Saddle, Conical, &c.

James Gray, Horticultural Works, Danvers Street, Paulton's Square, King's Road, Chelsea, S.W.

FOR SALE.—2 Well-built GREENHOUSES, one 21 ft. by 11 ft., the other 15 ft. by 9 ft., both Lean-to. Can be seen erected on the premises. A quantity of 1 and 2 Light GARDEN FRAMES, very cheap. Also a lot of LIGHTS, 6 ft. by 4 feet, and 5 ft. by 3 ft. 2 in.

J. Smith, King Street, Hammersmith, W.

FOR SALE, a double VINERY, 37 feet long by 14 feet wide, with large Sheet Glass and Hot-water Apparatus complete; has been erected about 18 months. Also 27 choice Fruiting Vines and Brass Syringe. The present owner of the property does not require such a building.

Apply to Mr. Samuel H. J. Ashford, Send Tannery, near Ripley, Surrey.

Horticultural Works and Hot-Water Apparatus Manufactory,

Kensal Green, Harrow Road, London, W.

JOHN TAYLOR and SON beg to call the attention of the nobility and gentry to the very superior manner in which they ERECT all kinds of CONSERVATORIES, VINERIES, GREENHOUSES, &c., combining every improvement with elegance of design and durability of materials and workmanship.

Their VENTILATING APPARATUS for the Fronts and Roofs of Houses has given the highest satisfaction. Churches, Chapels, Schools, Entrance Halls, Public Buildings, &c., heated with Hot-Water Apparatus in a most economical and efficient manner.

J. T. & Son have great pleasure in referring to numbers of the nobility and gentry by whom they are extensively engaged.

WILLIAM HURD, Horticultural Builder and Hot-water Apparatus Manufacturer, Radnor House, Radnor Street, King's Road, Chelsea, S.W. TUBULAR BOILERS, from 3 guineas.

200 CUCUMBER and MELON BOXES and LIGHTS, and from 400 to 500 LIGHTS for PITS of all SIZES kept in STOCK.

Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.

James Watts & Co., Hothouse Builders and Hot-Water Apparatus Manufacturers, near the Green Man, Old Kent Road, London, S.E.

Patent Indoor Plant Cases.

Sole Manufacturers,

PICKARD and CO., Horticultural Builders, Caledonian Road, King's Cross, N.

Illustrated Priced List on application.

Description and Instructions in Miss Maling's "Flowers and Foliage," free by post for 13 stamps.

Wind Power.

J. R. PEILL, 17, New Park Street, Southwark, S.E., begs to inform intending purchasers that he has now increased facilities for Manufacturing the Patent WIND ENGINES for Pumping, Grinding, Chaffcutting, Pulping, &c.

Prospectuses and all information may be obtained by enclosing one postage stamp, and a Wind Engine in full work may be inspected on the Premises daily.

FOR SALE, a FIRST-CLASS CART STALLION and FILLY.—The Stallion is 4 years old, nearly 17 hands high, grey roan, very powerful, a good worker, good temper; and almost sure foal getter. The Filly is 3 years old, own sister of the horse; and is a first-class animal in the hands of the Breeder.

E. Brooks, Lisleworth Farm, Esher, Surrey.

WANTED TO PURCHASE, or upon a long LEASE, from 2 to 4 ACRES of LAND, within 10 miles of Covent Garden. If a Cottage upon it preferred.

Address W. S., Mr. Edmonds, 100, High Street, Clapham, Surrey, S.

South Hants—Farm to Let.

TO LET, with immediate entry, a very desirable CORN and STOCK FARM in South Hants, containing 498 Acres of Arable, Pasture, and Meadow Land. The Farm has been in the occupation of the Proprietor for several years, and will be found in excellent condition. The Stock, &c., to be taken to at a valuation.

Apply to Mr. H. L. Footner, Solicitor, Stockbridge, Hants.

Crown Lands, Delamere, Cheshire.

TO BE LET by TENDER for a term of 21 years, from April 5, 1862, with immediate possession, by direction of the Honourable James Howard, the Commissioner in charge of Her Majesty's Woods and Royal Forests, a portion of the late Forest of Delamere called LONGRIDGE and PLOVER'S MOSS. Allotments (formerly Woodland) recently cleared, and now being marled for cultivation, containing about 893 statute Acres, in the parish of Delamere, to be divided into convenient farms.

The land is Tithe Free, and is situate about 10 miles from Chester, and 4 miles from Hartford Station, on the London and North Western Railway. There is also to be a station at Delamere on the proposed West Cheshire line of railway through the Forest.

Particulars, with Forms of Tender, may be had on application to the Honourable James Howard, Office of Woods, &c., London; to Mr. John Clutton, 9, Whitehall Place, London; or to Mr. George Moodie Harwood, Kelsall, Chester, who will afford every facility for viewing the land.

Tenders must be delivered not later than Saturday, March 8, 1862.

Sales by Auction.

Extra Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, February 11, at 12 o'Clock precisely, upwards of 250 PENS of CHOICE POULTRY and PIGEONS, from the yards and lofts of Messrs. Stainton, Archer, Fulton, Jones, Leno, Plumbley, Everett, Heath, and other well-known fanciers.

On view the Morning of Sale, and Catalogues had.

To Noblemen, Gentlemen, Nurserymen, and Seedsmen.

Valuable Consignment of upwards of 400 ounces of Coniferous Seeds from California, Oregon, and British Columbia, just arrived in First rate Condition.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY, February 13, at half-past 12 o'Clock precisely, a valuable Consignment of SEEDS, comprising—

Wellingtonia gigantea,	75 oz.	Cupressus Lawsoniana	11 oz.
Pinus Jeffreyii ..	.. 36 ,,	,, MacNabiana ..	6 ,,
,, Douglasii	.. 4 ,,	,, macrocarpa ..	73 ,,
,, insignis ..	.. 19 ,,	Sequoia sempervirens .	12 ,,
,, Sabiniana	.. 98 ,,	Abies Menziesii ..	6 ,,
,, monticola	.. 3 ,,	Thuja gigantea ..	6 ,,

May be viewed on the Morning of Sale, and Catalogues had.

Standard, Half-Standard, and Climbing Roses, 1200 Bulbs of Gladiolus Brenchleyensis and Gandavensis, Trained and Standard Fruit Trees, Ornamental Evergreens, and Deciduous Trees and Shrubs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, February 15, at half-past 12 o'Clock precisely, 1200 Gladiolus Brenchleyensis and Gandavensis; 100 Carnations; Standard, Half-standard, and Climbing Roses; Apple, Plum, Peach, Cherry, and Currant Trees; Common Laurels, Red Cedars, Cedrus Deodara, Araucarias, Wellingtonia gigantea, Yews, Vines, and three bushels of English Acorns in good condition for planting, &c.

On view the Morning of Sale, and Catalogues had.

Annual Sale of English Grown Camellias, &c.

To Gentlemen, Nurserymen, Florists, and Others.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION at the Mart, Bartholomew Lane, City, E.C., on WEDNESDAY, Feb. 19, 1862, at 12 o'Clock, about 200 Choice Double Camellias, beautiful Plants, from 1 to 6 feet, including the most approved kinds, abundantly furnished with bloom buds, and a fine Azalea indica in flower; a superb assortment of about 300 very handsome Standard, Half Standard, Dwarf and Climbing Roses, a fine Collection of American Plants, Lilium lancifolium rubrum, Ericas, Epacris, Fuchsias, Verbenas, Pæonias, Dahlias in dry roots, &c.

May be viewed the Morning of Sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex, N. E.

HOTHOUSES FOR THE MILLION.

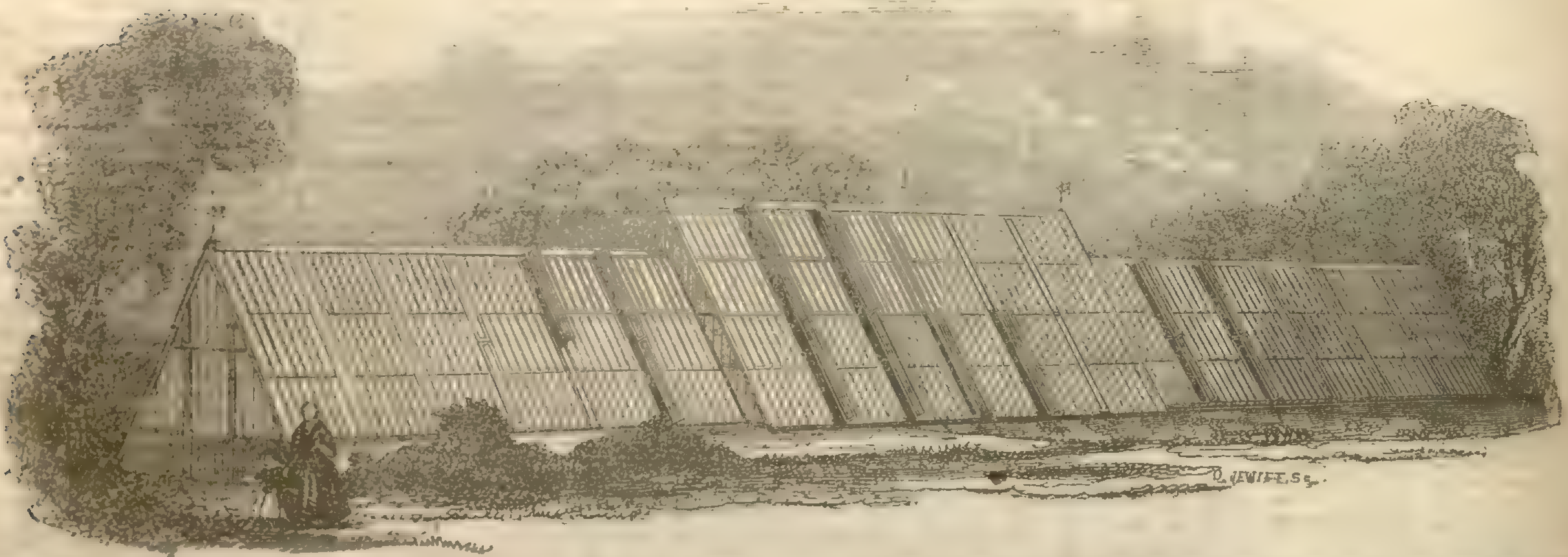
SAMUEL HEREMAN

BEGS TO EXPRESS HIS BEST THANKS FOR THE LIBERAL SUPPORT HE HAS RECEIVED IN THE MANUFACTURE AND SALE OF

THE PORTABLE AND ECONOMICAL HOTHOUSES,

INVENTED AND PATENTED BY

SIR JOSEPH PAXTON, M.P.



These Buildings are of unparalleled cheapness, and being composed of simple parts can be enlarged, removed, or adapted to any Horticultural purpose by ordinary labourers.

They are calculated for Gardens of the highest order, or Gentlemen's Gardens generally, for Market Gardens where they may be made to cover any extent of surface, and also for Suburban, Villa, and Cottage Gardens.

The Cash Prices of Lean-to Houses complete are as follows:—

Ft.	In.		8 ft. Lights			10ft. Lights			12ft. Lights			14ft. Lights			16ft. Lights		
20	7	in length	£12	0	0	£16	0	0	£21	0	0	£28	10	0	£34	5	0
31	3	in length	16	10	0	21	2	6	26	10	0	37	12	0	45	16	0
41	11	in length	20	18	0	26	18	6	33	7	6	46	14	0	57	7	0
52	7	in length	25	12	6	32	15	0	40	5	0	55	16	0	68	18	0
63	3	in length	30	6	0	38	10	0	47	2	6	64	18	0	80	10	0
73	11	in length	34	12	6	43	15	0	53	7	6	74	0	0	92	0	0
84	7	in length	39	6	0	49	11	6	60	5	0	83	2	0	103	11	0
95	3	in length	43	19	0	55	10	0	67	2	6	92	5	0	115	2	0
105	11	in length	48	17	6	60	12	6	73	10	0	101	10	0	126	13	0

The Cash Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are as follows:—

Ft.	In.		8 ft. Lights			10ft. Lights			12ft. Lights			14ft. Lights			16ft. Lights		
20	7	in length	£24	0	0	£32	0	0	£42	0	0	£57	0	0	£68	12	[illegible]
31	3	in length	33	0	0	42	5	0	53	0	0	75	4	0	91	10	[illegible]
41	11	in length	41	16	0	53	17	0	66	15	0	93	8	0	114	14	[illegible]
52	7	in length	51	5	0	65	10	0	80	10	0	111	12	0	137	10	[illegible]
63	3	in length	60	12	0	77	0	0	94	5	0	129	16	0	161	0	[illegible]
73	11	in length	69	5	0	87	10	0	106	15	0	148	0	0	184	0	[illegible]
84	7	in length	78	12	0	99	3	0	120	10	0	166	4	0	207	2	[illegible]
95	3	in length	87	18	0	111	0	0	134	5	0	184	10	0	230	4	[illegible]
105	11	in length	97	15	0	121	5	0	147	0	0	203	0	0	253	6	[illegible]

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

The above prices do not include package, railway freight, heating apparatus, or erection, but we have made arrangements with Mr. Jones, of 6, Bankside, Southwark, London, to heat these houses on economical principles under our direction.

Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

SAMUEL HEREMAN, 7, PALL MALL EAST, LONDON, S.W

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No 19, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, February 8, 1862.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 7.—1862.] SATURDAY, FEBRUARY 15. { Price Fivepence. STAMPED EDITION, 6*d*.

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NOTICE TO ADVERTISERS.—*Advertisements intended for the Current Number should be sent so as to reach the Office not later than* THURSDAY *in each week.*

ROYAL HORTICULTURAL SOCIETY.—FLORAL COMMITTEE.
The next ORDINARY MEETING will take place on TUESDAY, February 18. Subjects for the examination of the Committee must be at the Garden, for entry, by 11 A.M.
Any person may exhibit.
THOMAS MOORE, Secretary to the Committee.

ROYAL HORTICULTURAL SOCIETY.—FRUIT COMMITTEE.
A MEETING of the FRUIT COMMITTEE will be held on TUESDAY, Feb. 18, at the Rooms, South Kensington.
Fruit or Vegetables for exhibition must be at the rooms by 11 o'clock on the day of meeting. Chair to be taken at 12 [illegible].
All Communications and Packages to be addressed to
ROBERT HOGG, Secretary to the Committee.

FOURTH YEAR of the GRAND FLORAL FETE at York, JUNE, 18 and 19, 1862.
PRIZES THREE HUNDRED and FIFTY POUNDS.
Schedules and Forms of Entry are now ready, and may be had on application to JOHN WILSON,
Committee Room, 13, New Street, York. Secretary.

New Roses for 1862.
J. AND J. FRASER, of the Lea Bridge Road Nurseries, N.E., beg to offer good Plants of the NEW ROSES of 1862.
A DESCRIPTIVE LIST will be forwarded on application.

NEW ROSES for 1862.—36 varieties (the pick of the year) offered in fine strong plants, a DESCRIPTIVE LIST of which may be had on application to
BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

TRITOMA UVARIA.
For strong plants of this splendid flower apply to
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

AZALEAS, CAMELLIAS, EPACRIS, and ERICAS.—We respectfully invite an inspection of our Stock of the above, which is large, in the finest health, and full of flower buds.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

PANSY.—The best and hardiest Bedding Pansy, the freest and boldest flowerer yet offered. Price 5*s*. per score, or 1*l*. 1*s*. per 100.
G. KNIGHTS, Whitton, Ipswich.

PANSIES.—The best Show Flowers, and all the newest varieties, at very low prices by the dozen, hundred or thousand. Strong plants guaranteed. Seed, 9*d*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
G. KNIGHTS, Whitton, Ipswich.

Gladiolus Brenchleyensis.
YOUELL AND CO. continue to supply the above in Flowering Bulbs at 4*s*. per doz.; 30*s*. per 100. Trade price on application.
For a LIST of their general collection, see *Gardeners' Chronicle* of Feb. 1.
Royal Nursery, Great Yarmouth.

ORANGE TREES in New Tubs.—From 6 to 10 very handsome ORANGE TREES, about 10 feet high and 6 feet through, to be sold at moderate cost, having grown too large for the Orangery.
Address CXX., Post Office, Kingston-on-Thames.

WANTED, 24 FRUITING FIGS, well established in Pots.
Apply, stating price, to WILLIAM HOLMES, Frampton Park Nursery, Hackney, N.E.

WANTED, STRONG LARCH, about 3 feet.
Address, RICHARD SMITH, Nurseryman, Worcester.

COMMON LAURELS (Bushy).
4 to 5 feet, 20*s*. per 100; 170*s*. per 1000.
3 to 4 feet, 15*s*. per 100; 130*s*. per 1000.
R. HAYNES, Henwick Nursery, Worcester.

To the Trade.
TWO-YEARS' SEEDLING NORWAY SPRUCE, extra fine well rooted plants, grown in loam. Price 2*s*. per 1000; 4*l*. 10*s*. per 50,000; 8*l*. 10*s*. per 100,000.
JOHN CRANSTON, King's Acre Nurseries, near Hereford.

STEPHEN SMITH, NURSERYMAN, Macclesfield, Cheshire, offers at very cheap rates, as the Ground on which they stand is wanted, Transplanted SPRUCE FIR, 1 to 2 feet; SCOTCH FIRS, PRIVETS, COTONEASTER, LAURELS, AMERICAN PLANTS in variety, &c. &c.
LISTS, with prices, free on application.

Good Seeds, Carriage Free.
SUTTON AND SONS,
SEED GROWERS and MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

JAMES CARTER AND CO.,
SEED MERCHANTS and NURSERYMEN,
237 and 238, High Holborn, London, W.C.

New Garden Seeds.
JAMES CARTER AND CO.,
237 and 238, High Holborn, London, W.C.

Now Ready.
BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See large Advertisement.
Covent Garden Market, W.C.

Seeds.
WM. PAUL'S CATALOGUE of SELECT VEGETABLE and FLOWER SEEDS is now ready. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Seeds, Seeds, Seeds.
WM. CUTBUSH AND SON'S CATALOGUE is now ready, post free on application.
Seed Establishment, Highgate, London, N.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

New Seeds of the best quality.
J. ROBERTS AND SON'S CATALOGUE is now ready. Post free on application.
Seed Warehouse, Vale Street, Denbigh, N.W.

R. M. STARK begs to intimate that his CATALOGUE of FLORISTS' FLOWERS, BEDDING and HERBACEOUS PLANTS, SEEDS, &c., is now ready, and may be had on application.
Edgehill Nursery, Edinburgh.—Feb. 15.

Vegetable and Flower Seeds.
PAUL AND SON'S CATALOGUE of the above, including ASTERS and STOCKS, with DESCRIPTIVE LIST of the best 100 GLADIOLI, is now ready, post free.
"Old" Cheshunt Nurseries, Herts.

DOWNIE, LAIRD, AND LAING beg to intimate that their NEW CATALOGUE of FLORIST FLOWERS, NEW FLOWER SEEDS, &c., is now ready, and may be had free on application.
17, Frederick Street, Edinburgh, and Stanstead Park, Forest Hill, London, S.E.

Fresh Imported German Flower Seeds (post free).
SUTTON AND SONS, Reading, Berks, have just received a choice importation of GERMAN FLOWER SEEDS, a List of which will be sent gratis and post free on application.

LILIUM LANCIFOLIUM.—A quantity of large FLOWERING BULBS of the above Lily, in three or four varieties, to be sold cheap.
Apply to A. B., Mr. Richards, 75, South Street, Exeter.

Lilium Colchicum (Loddigesianum).
A. VAN GEERT, NURSERYMAN, Ghent, begs to offer STRONG FLOWERING BULBS of this splendid and rare species at 21*s*. each.

Phalænopsis amabilis.
R. WARNER, Broomfield, Essex, has several fine Plants to dispose of; all healthy and good varieties. Prices on application.
When three or more are taken by Nurserymen an allowance will be made.

SUPERB HOLLYHOCKS.—
12 Superior Show Flowers .. .. 18*s*. 0*d*.
12 Good ditto 9 0
The Trade supplied.
For CATALOGUES, address R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk.

TRUE KENTISH COB NUTS.—Fine well-formed plants, 4*s*., 6*s*., and 9*s*. per dozen; 20*s*., 30*s*., 40*s*., and 50*s*. per 100.—EPPS' Nursery and Seed Establishment, Maidstone.

FINE DWARF-TRAINED PLUMS, 30*s*. per dozen; Fine DWARF ROSES, 60*s*. per 100.
WILLIAM EPPS, Jun., Nurseryman and Seedsman, Ashford, Kent.

STRONG FRUITING VINES, 7*s*. 6*d*. and 10*s*. 6*d*.
LIST gratis and post free.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

Strong Vines from Eyes.
J. IVERY AND SON beg most respectfully to inform their patrons that they have now ready for planting out, strong Plants of all the best varieties.
A PRICED LIST will be forwarded on application.
Dorking Nursery.—Feb. 15.

Fruit Trees, Dwarf-Trained—Apples, Pears, and Plums.
JOHN ADAMS AND CO., Brentford, beg to offer good plants of the above at exceedingly low prices.

Fruit Trees, Dwarf-trained and Pyramid Apples, Pears, Plums, and Cherries.
JOHN CRANSTON has to offer excellent plants of the above, which cannot fail to give the greatest satisfaction. Also strong VINES in pots.
A LIST of SORTS will be sent on application.
Nurseries, King's Acre, near Hereford.

Agricultural Seeds.
GEORGE GIBBS AND CO.,
SEEDSMEN,
26, Down Street, Piccadilly, London, W.

MESSRS. E. G. HENDERSON AND SON, NURSERYMEN and SEED MERCHANTS, respectfully announce their NEW SEED CATALOGUE for 1862, free on application.
Wellington Nursery, St. John's Wood, London, N.W.

Agricultural and Garden Seeds.
H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, and MANURE COMPANY, "Limited,"
Union Road, Plymouth.

PLYMOUTH SEED COMPANY, "Limited."—The GENERAL PRICE CURRENT is now ready, and can be had DIRECT, or of Messrs. SIMPKIN & Co., 4, Stationers' Court, London, E.C., for six postage stamps.
Plymouth Seed Company, Plymouth.

PEAT EARTH of excellent quality delivered at the Nine Elms Station, 5 tons for 55*s*.; at Guildford, 5 tons for 50*s*.; at Havant, 5 tons for 45*s*.—Apply to Mr. BETTS, 115, Strand, London, W.C., where a sample may be seen.

Broccoli All the Year Round.—See
SUTTON'S SEED LIST, which will be sent post free on application.
SUTTON & SONS, Seed Growers, Reading.

CUCUMBER PLANTS, CUCUMBER PLANTS.—Plants fit to put out, all the best in cultivation, including Cuthill's Black Spine, Highland Mary, Ayres' Black Spine, Telegraph, &c.
LIST on application. Terms cash.
HENRY BROWN, Bounds Green, Colney Hatch, N.

PINE PLANTS, RHUBARB and ASPARAGUS.—A quantity of very healthy clean succession Pine Plants, principally Queens; also very strong one and two years old Rhubarb and Asparagus to be sold.
M. ROCHFORD, Market Gardener, Page Green, Tottenham, N.

Bellamy's Early Green Marrow Peas.
CHARLES SHARPE AND CO., SEED GROWERS, Sleaford, have the above to offer to the Trade, of first-rate quality. Price on application.

Henry's Prize Hybrid Leek.
DOWNIE, LAIRD AND LAING are now sending out Seed of the above in Packets at 1*s*.
17, Frederick Street, Edinburgh; and Stanstead Park, Forest Hill, London, S.E.

Altringham Carrot Seed.
CHARLES SHARPE AND Co., Sleaford, have the above to offer to the Trade; new Seed of their own growing. Price on application.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

DRUMHEADS (extra fine), at 3*s*. 3*d*. per 1000; GARDEN PLANTS, 3*s*. 6*d*. ditto; fine PICKLE PLANTS, 5*s*. per 1000, Crates included.
THOMAS WELLANDS, Surrey Gardens, Godalming, Surrey.

NUTTING'S selected DWARF RED BEET, recommended by the Horticultural Society as the best in [illegible]. The Trade supplied.
NUTTING & SONS, Seed Warehouses, 60, Barbican, London, E.C.

Gynerium argenteum, or Pampas Grass.—See
SUTTON'S AMATEUR'S GUIDE (Illustrated) which will be sent post free on receipt of 6 postage stamps, or free to purchasers of Seeds.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Good Clover Seed.
GENUINE NEW CLOVER SEED may be obtained of the undersigned. Prices (according to market and quantity required) will be forwarded on application.
SUTTON & SONS, Seed Growers, Reading, Berks.

EARLY OXFORD POTATO, an excellent Cropper, and the best for eating all the year round, 6*s*. per bushel.
A reduction made if 1 Ton or more be taken.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

SEED POTATOES from the GROWERS.—Early Shaws, Manly's and Regents may be had on application of
H. CHEVERST, Salesman, Borough Market, S.E.

SEED POTATOES.—Off sandy land from the Southport district. FLUKES, 5*s*. 6*d*.; EARLY PINK EYES and WHITE KEMPS, 5*s*. 6*d*.; SEEDLINGS, 4*s*. 6*d*. per bushel; other sorts in proportion. Large buyers treated most liberally.
ROBERT STEPHENSON, Agent, Pheasant Yard, Queen's Square Liverpool.

FORTY-FOLDS, FLUKES, ASH-LEAF, MATCHLESS, and LAPSTONE KIDNEYS, to be obtained at Messrs. JOHN & GEORGE BELL'S, Covent Garden Market, W.C.
PRICE LIST sent on application.

Seed Potatoes.
H. AND F. SHARPE are now prepared to take orders at very moderate prices for all the leading sorts of POTATOES, including MYATT'S Prolific ASH-LEAVED KIDNEY, the finest and most prolific in cultivation.
Prices may be had on application.
Seed Growing Establishment, Wisbeach.

New Rose, Beauty of Waltham.

WM. PAUL respectfully announces that he is now taking orders for this superb NEW ROSE, which received a FIRST-CLASS CERTIFICATE from the Royal Horticultural Society in June last. For description, see Rose Catalogue —Section Hybrid Perpetual: it is also figured in the "ROSE ANNUAL," just published. Plants in April, 5s. each; the usual discount to the Trade on six or more plants.

WM. PAUL, Cheshunt Nurseries, Waltham Cross, N.

Standard and Dwarf Roses.

JOHN CRANSTON has no hesitation in stating that he holds the largest stock of STANDARD ROSES in the kingdom, and plants of the finest growth possible. These he is now offering at the following prices:—

STANDARDS, finest Hybrid Perpetual and Bourbon, 30s. per dozen.

HALF-STANDARDS, do., 24s. to 30s. do.

STANDARD TEA SCENTED, the best and most hardy sorts, 36s. to 42s. do.

DWARF HYBRID PERPETUAL, strong on Manetti Stock, 15s. to 24s. do.

DWARF HYBRID PERPETUAL, own roots, 12s. to 18s. do.

DWARF TEA SCENTED, 18s. to 24s. do.

PILLAR ROSES, extra strong on Manetti Stock, 18s. to 24s. do.

NEW ROSES of 1860 and 1861, 3s 6d. to 5s. each.

A DESCRIPTIVE LIST will be forwarded free on application.

Nurseries, King's Acre, near Hereford.

STANDARD ROSES, with straight stems and good heads, the finest varieties; 30s., 36s., and 42s. per dozen.

GRAPE VINES for PLANTING OUT.—All the leading sorts, with stout, short-jointed, well ripened canes; 3s. 6d., 5s., and 7s. 6d. each.

GRAPE VINES for FRUITING in POTS.—Extra fine, strong bearing rods.

GLADIOLUS.—Splendid hybrids of Gandavensis, 6s., 9s., 12s., and 18s. per dozen; 100 distinct varieties, 84s.; 100 newer, 126s.

NEW BEGONIAS.—Twelve of the most distinct and beautifully variegated Continental varieties, strong plants, for 18s.

CAMELLIAS with FLOWER-BUDS.—Including the best new varieties, fine plants, 30s. to 42s.; extra size, 60s. and 84s. per dozen.

DESCRIPTIVE CATALOGUES, with all particulars, forwarded on application to

JAMES DICKSON & SONS, The "Newton" Nurseries, Chester.

Mitchell's Unrivalled Collection of Roses.

THE LARGEST STOCK AND THE BEST PLANTS IN ENGLAND, JUSTLY PRONOUNCED BOTH BY ENGLISH AND FOREIGN GROWERS.

JAMES MITCHELL has the honour of informing his kind patrons that he has succeeded in obtaining the FIRST PRIZES at the principal Shows throughout the season, viz.:—

July 10.—The Grand National Rose Show, Royal Horticultural Society's Garden, Kensington Gore, 96 varieties, 3 trusses of each, First Prize.

September 11.—Forty eight varieties, 3 trusses of each, First Prize.

July 3.—The Royal Botanic Society, Regent's Park, London, 50 varieties, 3 trusses of each, First Prize.

July 6.—The Great Rose Show, Crystal Palace, 96 varieties, 1 truss of each, First Prize.

June 19.—Brighton Horticultural Society, 50 varieties, 3 trusses of each, First Prize.

September 18.—Fifty varieties, 3 trusses of each, First Prize.

August 28.—Lewes Horticultural Society, 36 varieties, 3 trusses of each, First Prize.

J. M. respectfully informs the Nobility and Gentry he can supply the best perpetual BLOOMING ROSES in Standards, Half-Standards, and Dwarfs, healthy good rooted plants.

Standards, 30s. per dozen.
Half ditto, from 24s. to 30s. per dozen.
Dwarfs, from 18s., 24s., to 30s. per dozen.
New Varieties of 1861, 42s. per dozen.

Pilt Down Nurseries, Maresfield, Sussex.

N.B. These Nurseries are 2½ miles from the Uckfield Station on the London, Brighton, and South Coast Railway.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.

For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.

Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.

The Royal Nursery, Bagshot, Surrey.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

Phalænopsis Schilleriana.

B. S. WILLIAMS has much pleasure in informing his friends and the public that this new and beautiful VARIEGATED ORCHID is now in flower at the Nursery, and he will be happy to show it to any one favouring him with a visit.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

*** The "Favourite" Omnibuses, from the London Bridge Railway Stations, by the Bank and Post Office; and from Charing Cross, through the Strand and Holborn, pass the Nursery every 10 minutes.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

PETER LAWSON & SON,

THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

LARGE IMPORTATION OF STANDARD ROSES.

WM. WOOD & SON

Respectfully inform the Nobility, Gentry, and Amateurs that they have imported a large quantity of good strong, and healthy

STANDARD ROSES,

Comprising the best and most popular HYBRID PERPETUAL and other kinds, from which they will be happy to make selections, as under:—

	Per dozen.—s. d.		Per dozen.—s. d.
HYBRID PERPETUALS, ILE DE BOURBONS, &c.	30 0	HYBRID BOURBONS, HYBRID CHINAS, and other summer flowering kinds	24 [illegible]
HALF STANDARD ditto, ditto	30 0	HALF STANDARD ditto ditto	24 [illegible]

DWARF ROSES.

Fine strong plants, both on own roots and worked.

HYBRID PERPETUALS, BOURBONS, TEA-SCENTED and NOISETTE.. .. .. per dozen	18s.	CHINAS, CLIMBERS, HYBRID CHINAS, and other summer kinds .. .. per dozen	12[illegible]

TEA-SCENTED ROSES in 6-inch pots, established and fit for immediate forcing or greenhouse culture .. 30s. per dozen.

NEW ROSES.

Fine Dwarf Plants, HYBRID PERPETUAL and BOURBON varieties of 1861 .. 3s. 6d. and 5s. each.

NEW ROSES of 1862, fine strong plants, in April.

DWARF-TRAINED FRUIT TREES.

PEACHES, NECTARINES, PEARS, &c., fine healthy well furnished plants at very moderate prices.

DWARF MAIDEN PLUMS.

Strong Plants, free from blight. Price on application.

CATALOGUES *post free.*

WILLIAM WOOD & SON, NURSERYMEN and SEEDSMEN,

MARESFIELD, NEAR UCKFIELD, SUSSEX.

GENUINE SEEDS DIRECT FROM THE GROWERS.

WM. WOOD & SON

BEG RESPECTFULLY TO ANNOUNCE THAT THEIR

SPRING SEED CATALOGUE

is now ready, and may be obtained free on application. It contains only the most approved varieties in each respective class, and intending purchasers will find no difficulty in making a selection therefrom.

NOVELTIES in VEGETABLES, Post Free.

	Per Packet.—s. d.
CARTER'S ST. OSYTH BEET ..	1 0
NUTTING'S SELECTED do. ..	0 6
MELVILLE'S INCOMPARABLE WHITE BROCCOLI	1 0
LEE'S NEW WHITE SPROUTING do.	1 0
SNOW'S SUPERB WHITE do. true	1 0
KEMP'S INCOMPARABLE CABBAGE	1 0
WOOD'S DEFIANCE CAULIFLOWER	2 6

	Per Packet.—s. d.
CARTER'S DWARF MAMMOTH ditto	1 0
PARSON'S SUPERIOR do. ..	
PARSNIP CHERVIL ..	0 6—1 0
COLE'S PERFECTION CELERY	2 6
HOOD'S IMPERIAL RED do. ..	0 6
IVERY'S NONSUCH do.	0 6
TURNER'S INCOMPARABLE do.	0 6
KIRKLEES HALL DEFIANCE CUCUMBER	1 0
PEARSON'S LONG GUN do. ..	2 6
THE SENSATION do.	2 6

	Per Packet.—s. d.
TILEY'S WHITE SPINE do. ..	2 [illegible]
YORKSHIRE HERO CUCUMBER	2 [illegible]
WONDERFUL RIDGE do. ..	[illegible]
MELVILLE'S VARIEGATED KALE	1 [illegible]
CARTER'S GIANT WHITE LETTUCE	1 [illegible]
CARTER'S GIANT BROWN do. ..	1 [illegible]
DUNNETT'S BLACK SEEDED do.	1 [illegible]
WHEELER'S IMPERIAL do. ..	1 [illegible]
WHEELER'S TOM THUMB do...	1 [illegible]
THE STUDENT PARSNIP ..	[illegible]

For descriptions, see CATALOGUE.

COMPLETE COLLECTIONS of KITCHEN GARDEN SEEDS
FOR ONE YEAR'S SUPPLY.

No. 1. For a Large Garden	£4 0	No. 3. For a Small Garden	£1 5
No. 2. For a Medium-sized Garden ...	2 10	No. 4. For a Smaller Garden	0 15

These assortments include only the most choice sorts, and have been prepared in the most liberal manner. W. W. & SON feel assured they cannot fail to give entire satisfaction. For full particulars see CATALOGUE.

NOVELTIES in FLOWER SEEDS, Post Free.

See Advertisements in the *Gardeners' Chronicle* of January 18 and 25.

COLLECTIONS of FLOWER SEEDS, Post Free.

100 finest varieties, separate, comprising Hardy, Half Hardy, and tender ANNUALS, PERENNIALS, &c.	21s.	50 finest varieties, separate	10s. 6d.
		30 ditto ditto	7 6
		20 ditto ditto	4 6

GERMAN FLOWER SEEDS, Post Free.

Imported in sealed packets, comprising choice assortments of ASTERS, STOCKS, LARKSPURS, BALSAMS, &c.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

ESTABLISHED UPWARDS OF A CENTURY.

COVENT GARDEN MARKET, LONDON, W.C.

BUTLER & McCULLOCH'S
COLLECTIONS OF VEGETABLE SEEDS,

CARRIAGE FREE,

Consisting of the best and most approved varieties.

		£	s.	d.
No. 1.	A Complete Collection for One Year's Supply	£4	0	0
No. 2.	Ditto ditto smaller quantities	2	0	0
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For full particulars, see CATALOGUE (page 91).

DESCRIPTIVE SEED CATALOGUE FOR 1862,

Containing all the new and most approved varieties of FLOWER SEEDS. To exhibitors we can strongly recommend our assortments of ASTERS, BALSAMS, STOCKS, and other CONTINENTAL SEEDS.

BUTLER AND McCULLOCH, SEEDSMEN, COVENT GARDEN MARKET, W.C.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

The above Work contains SIX PLATES, viz. :—

I.—CELOSIA PYRAMIDALIS COCCINEA AURANTIACA.
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All Orders for Vegetable Seeds amounting to 21s. sent Carriage paid.

All Packets of Flower Seeds sent Post Paid.

COLLECTIONS OF VEGETABLE SEEDS FOR 1862.

These Assortments consist of selections from the different sections of our Catalogue, and are suited to Gardens of various sizes; they contain only the most approved Varieties, such as are in demand in Covent Garden Market, and those most suited to secure a succession of the best VEGETABLES from January to December.

		£	s.	d.
No. 6	Collection contains 20 quarts of Peas and other Seeds in proportion for One Year's Supply	£3	3	0
No. 5	Collection contains a proportionate quantity of Seed ditto	2	2	0
No. 4	ditto ditto ditto ditto	1	10	0
No. 3	ditto ditto ditto ditto	1	1	0
No. 2	ditto ditto ditto ditto	0	15	6
No. 1	ditto ditto ditto ditto	0	10	6

☞ For particulars of the above Collections, see our Advertisements of January 18 and 25.

For PRICED LIST of Select VEGETABLE SEEDS,
See our Advertisement on Last Page of *Gardeners' Chronicle*, January 18 and 25.

For LIST of STRIKING NOVELTIES,
See Advertisement of January 4.

For LIST of COLLECTIONS of CARNATIONS, PICOTEES, and PELARGONIUMS,
See Advertisement of January 11th.

For LIST of CUCUMBERS
Recommended by the Fruit Committee of the Royal Horticultural Society, see our Advertisement of February 1.

BARR AND SUGDEN, SEED MERCHANTS, 12, KING STREET,
COVENT GARDEN, LONDON, W.C.

Excellence and Economy Combined.

SUTTON'S COLLECTION of GARDEN SEEDS.

THE BEST YET OFFERED.

KITCHEN GARDEN SEEDS.

		£	s.	d.
No. 1.	A COMPLETE COLLECTION for One Year's Supply of a Large Garden	3	0	0
No. 2.	A COMPLETE COLLCTION, in smaller quantities	2	0	0
No. 3.	Ditto ditto ditto ..	1	0	0
No. 4.	Ditto ditto ditto ..	0	10	6

If some of the sorts are already possessed, increased quantities of others will be given in lieu of those to be omitted.

HARDY AND SHOWY FLOWER SEEDS (POST FREE),
Which may be sown where they are intended to bloom.

	£	s.	d.
A Collection of the best 100 sorts known	£1	1	0
A Collection of the best 50 sorts known	0	10	6
A Collection of the best 36 sorts known	0	7	6
A Collection of the best 24 sorts known	0	5	0

BOKHARA CLOVER, BORAGE, and other Seeds for Bees.

Carriage Free by Rail to all parts of the Kingdom.

Address SUTTON & SONS, Seed Growers, Reading, Berks.

THE PLYMOUTH SEED COMPANY, "Limited," are now sending out their COLLECTIONS of SEEDS, which have hitherto given great satisfaction.

		£	s.	d.
No. 1.	COMPLETE COLLECTION for a large Garden, for One Year's Supply	3	0	0
No. 2.	COMPLETE COLLECTION for a moderate size Garden, for One Year's Supply	2	0	0
No. 3.	COMPLETE COLLECTION for do., smaller quantities, for One Year's Supply	1	0	0
No. 4.	COMPLETE COLLECTION for a Small Garden	0	15	0
No. 5.	COMPLETE COLLECTION for a Small Garden	0	10	6
	EXTRA LARGE COLLECTION, containing double the quantities contained in No. 1	5	0	0

Extra Collection carriage free to any Railway Station in England and Wales, and to any Steam Port in England, Wales, Scotland, and Ireland.

No. 1 carriage free to most Stations and Ports in the Kingdom.

No. 2 carriage free to Broad Gauge Stations and Steam Ports.

No. 3 carriage free to any Station between Plymouth and Paddington.

Address, Plymouth Seed Company, Plymouth.

SEEDS FREE BY POST.

Per packet—	s.	d.
BOSTON MARROW SQUASH, from North America ..	0	6
SUMMER CROOK-NECK SQUASH, from ditto	0	6
LARGE YELLOW MAMMOTH PUMPKIN, from Paris	0	6
GREEN SPANISH do. do. do. ..	0	6
LARGE TOURS do. do. do. ..	0	6
ORNAMENTAL GOURDS, 12 varieties, per collection ..	2	6
SNAKE GOURD, light glaucous green with white longitudinal markings, giving a striking character; handsome climbing plant with snake-like fruit	1	0
SNAKE GOURD, handsome carmine fruit	0	6
SNAKE GOURD, common green	0	6

DESCRIPTIVE CATALOGUE of VEGETABLE and FLOWER SEEDS, containing all the choice novelties of the season, may be had on application.

STUART & MEIN, Seedsmen to the Union Agricultural Society, Kelso, N. B.

JOHN CATTELL'S COLLECTIONS of SELECTED KITCHEN GARDEN SEEDS for 1862.

COMPLETE COLLECTIONS for LARGE and SMALL GARDENS.

COLLECTION No. 1. £3 0 0 | COLLECTION No. 3. £1 0 0
ditto No. 2. 2 0 0 | ditto No. 4. .. 0 10 6

Carriage Free to any Railway Station in the Kingdom.

	Coll. No. 1.	Coll. No. 2.	Coll. No. 3.	Coll. No. 4.
PEAS, the early and later kinds ..	20 qts.	10 qts.	6 qts.	4 pts.
BEANS, the best & most useful sorts	6 ,,	5 ,,	4 pts.	2 ,,
FRENCH BEANS, dwarfs & runners	5 pts.	2 pts.	2 ,,	1 ,,
BEET, Cattell's Dwarf Purple-top, the best dark Beet in cultivation	2 oz.	1 oz.	1 pa.	1 pa.
BEET, Silver or Seakale	1 pa.	1 pa.	—	—
KALES, of sorts, including Cottager's Kale and Couve Tronchuda ..	5 ,,	4 ,,	3 ,,	2 ,,
BROCCOLI, hardiest and best kinds	6 ,,	6 ,,	4 ,,	2 ,,
BRUSSELS SPROUTS, imported ..	1 ,,	1 ,,	1 ,,	1 ,,
CAULIFLOWER, early and late ..	2 ,,	2 ,,	1 ,,	1 ,,
CABBAGE, including Cattell's Reliance, acknowledged to be the best kind yet known ..	6 ,,	4 ,,	3 ,,	2 ,,
CAPSICUM	1 ,,	1 ,,	—	—
CARROT, early Horn and other best kinds	10 oz.	5 oz.	2 oz.	2 pa.
CELERY, including Cattell's tall white Solid	3 pa.	2 pa.	2 pa.	2 ,,
CRESS, finest curled	2 pts.	1 pt.	½ pt.	2 oz.
American and Normandy ..	2 pa.	2 pa.	1 pa.	—
CUCUMBER, the best forcing and ridge kinds	2 ,,	2 ,,	1 ,,	1 ,,
ENDIVE, moss curled and others ..	2 ,,	2 ,,	2 ,,	—
ICE PLANT	1 ,,	—	—	—
LEEK, Musselburg, and large flag	2 ,,	1 ,,	1 ,,	1 ,,
LETTUCE, the best kinds for Summer and Winter use ..	6 ,,	5 ,,	3 ,,	2 ,,
MELON, approved varieties ..	2 ,,	2 ,,	1 ,,	—
MUSTARD, white	1 qt.	1 pt.	½ pt.	2 oz.
ONION, good kinds	8 oz.	5 oz.	3 oz.	2 ,,
PARSLEY, Cattell's Exquisite and other kinds	2 pa.	2 pa.	2 pa.	1 pa.
PARSNIP, Improved Guernsey and Hollow Crown	4 oz.	2 oz.	2 ,,	1 ,,
RADISH, early frame	½ pt.	½ pt.	2 oz.	1 oz.
Turnip, and other useful kinds	10 oz.	8 oz.	4 ,,	2 ,,
RAMPION	1 pa.	—	—	—
SAVOY, Cattell's Dwarf Green Curled and other useful sorts	3 ,,	2 ,,	2 pa.	1 pa.
SALSAFY	1 oz.	1 ,,	—	—
SCORZONERA	1 ,,	1 ,,	—	—
SPINACH, Round and Winter ..	2 pts.	1 pt.	½ pt.	2 oz.
TURNIP, Early Dutch, and best sorts for succession	8 oz.	6 oz.	3 oz.	2 pa.
TOMATO	1 pa.	1 pa.	1 pa.	—
VEGETABLE MARROW	2 ,,	2 ,,	1 ,,	1 ,,
HERBS, useful sorts	5 ,,	4 ,,	4 ,,	3 ,,

N.B. Collection No. 1 contains Seeds sufficient to Stock about Half an Acre of Kitchen Garden. For more extensive Gardens, requiring larger quantities :—Extra large Collections are supplied from 4*l.* to 10*l.* containing proportionate quantities of the kinds enumerated above.

COLLECTIONS OF FLOWER SEEDS.

	£	s.	d.
100 Packets of the best and most showy, hardy and half-hardy Varieties	£1	0	0
50 ditto ditto ditto	0	10	0
25 ditto ditto ditto	0	6	0
50 ditto of hardy annuals	0	7	0
25 ditto ditto	0	4	0

Any kinds not required should be named in the order, that they may be omitted from the Collection.

MONRO'S RABLEY CUCUMBER, per pkt., 2*s.* 6*d.*
(See fuller Advertisement in November and Dec. last.)

	Per packet—*s.*	*d.*
TELEGRAPH IMPROVED do., and other finest frame sorts	1	0
HERTFORDSHIRE dwarf hardy CAULIFLOWER (the best Cauliflower)	1	0
MELON SCARLET GEM, true	1	0
HOLLYHOCK (Wm. Paul's Collection of 12 superb named sorts)	5	0

Every description of VEGETABLE and FLOWER SEEDS, principally grown by or under the supervision of the Subscriber.
CATALOGUE free on application.
Wm. Paul, Nurseries and Seed Warehouse, Waltham Cross, N.

"Yorkshire Hero" Cucumber.

EDMUND PHILIP DIXON and SONS beg to offer Seed of the "YORKSHIRE HERO" CUCUMBER, which has been proved during the past season to be the most useful and prolific Cucumber in cultivation. It is a very long White-spined variety, of a dark green colour, producing three to four fruit at a joint, and, as will be seen from the Testimonials following, possesses all the qualities the grower can possibly desire.

From Mr. Thomas Gibb, *Gardener to the Right Honourable the Earl of Yarborough.*

Long Cucumbers are generally shy bearers, but the "Yorkshire Hero" produces abundantly, besides being a Cucumber of excellent quality.
Brocklesby Park Gardens, October 21st, 1861.

From Mr. George McGillavray, *Gardener to Sir John Nelthorpe, Bart.*

The "Yorkshire Hero" Cucumber, I without hesitation say, is possessed of every qualification to be desired in a Cucumber, being a most prolific bearer, at all times showing as many as three and four fruit at a joint. It is a thick Cucumber with very short neck, and grew with us from 20 to 24 inches, and plenty of them to satisfy any one: I could not get any seed from those I saved for that purpose, they being so solid there was no room for seed.
Scawby Hall Gardens, October 24, 1861.
Price 2*s.* per packet.

London Agents for the sale of the above:—Messrs. Hurst & McMullen, 6, Leadenhall Street, E.C.; Messrs. Cooper & Bolton, 152, Fleet Street, E.C.

E. P. Dixon & Sons' DESCRIPTIVE PRICED CATALOGUE of SEEDS is now ready, and may be had on receipt of one stamp
Yorkshire Seed Establishment, 57, Queen Street, Hull.

SUTTON'S COLLECTION of GOURDS and PUMPKINS, highly ornamental and useful.

(Post free)—	*s.*	*d.*	(Post free).—	*s.*	*d.*
50 choice sorts	12	6	12 choice sorts	3	0
36 ditto	9	0	Serpent Gourd, very handsome	0	6
24 ditto	6	0			

Sutton & Sons having imported Seeds of all the most ornamental and useful GOURDS, can supply a collection which they consider unrivalled, and at very low charges (as see above).
Royal Berkshire Seed Establishment, Reading.

JOHN CATTELL having proved for several years the articles named below, recommends them with confidence as deserving of cultivation in every garden.

	Per packet—free by post—*s.*	*d.*
CATTELL'S DWARF PURPLE-TOP BEET, the best kind in cultivation	0	6
KALE, Buda or Asparagus (true)	0	6
„ Jerusalem, old kind	0	6
„ „ curled	0	6
„ Scotch dwarf curled	0	6
„ Variegated garnishing, as exhibited by him at the Royal Horticultural Gardens at Kensington and the Crystal Palace	0	6
BROCCOLI, Conning's Reliance, withstood the severe winter of 1860 and 1861, when every other kind was destroyed, a late white, close heading variety	1	0
„ Walcheren, a splendid stock, very fine and true	1	0
CABBAGE, Cattell's Early Reliance, undoubtedly the best Cabbage in cultivation	0	6
„ Little Pixie, a fine summer Cabbage, similar to Dwarf York, but much superior	0	6
„ Cattell's Green Colewort	0	6
„ Couve Tronchuda or Portugal Cabbage, a delicious vegetable	0	6
CUCUMBER, Holmesdale Frame, a very handsome and prolific White Spine	1	0
„ General Wolfe, equally adapted for ridge or frame, for general use, will be a great favourite	1	0
LETTUCE, London White Cos (true)	0	6
SAVOY, Cattell's Dwarf Green Curled	0	6
„ „ „ „ Drumhead	0	6
TOMATO De Laye, a very fine variety	0	6

For other first-class Vegetables, see CATALOGUE.

FLOWER SEEDS.

	Per Packet, free by Post.	
Imported GERMAN ASTER .. .. 1*s.* to	3	6
„ „ STOCK .. .. 1*s.* to	4	0
„ „ WALLFLOWER .. .. .. 1*s.* to	3	6

From the same growers as usual, and which have always been highly commended by all purchasers.

BALSAM, finest double, 9 varieties, in sealed packets, saved by Messrs. F. & A. Smith	2	6
PRIMULA SINENSIS, finest fringed, saved by Messrs. F. & A. Smith	1	0
CALCEOLARIA, from very splendid spotted kinds, 1*s.* and	2	6
CINERARIA, from choicest named flowers .. 1*s.* and	2	6
DIANTHUS HEDDEWIGII	0	6
„ „ atropurpureus fl. pl.	1	0
„ IMPERIALIS HYBRIDUS, very beautiful ..	0	6
„ „ flore nigro purpureo	1	0
„ CHINENSIS NANUS, atrosanguinea flore pleno	0	6
LOBELIA ERINUS SPECIOSA (true), saved from the Crystal Palace variety, and will come true from seed; cannot be too highly recommended for its intense blue colour and dwarf habit. All visitors to the Crystal Palace must have admired the immense lengths of edging of this kind, so artistically planted by Mr. Gordon .. .. 6*d.* and	1	0
TROPÆOLUM, Crystal Palace Scarlet, saved from the true variety; this is a well known bedding plant, extensively used at the Crystal Palace	1	0
„ Crystal Palace Gem	0	6
„ Cattell's Dwarf Scarlet	0	6
„ „ „ Crimson	0	6
„ Yellow Tom Thumb	0	6

(The last four are very dwarf free blooming kinds and make beautiful beds in poor soil; if sown in rich soil they grow too freely, and do not show their true character.)

ATRIPLEX HORTENSIS RUBRA (Orache), highly recommended by many horticultural writers in preference to Perilla Nankinensis; as a decorative plant it is highly ornamental	0	3

For other choice and select Annuals, Ornamental Grasses, &c., see CATALOGUE, pages 20 to 32.
Nursery and Seed Establishment, Westerham, Kent.

Seeds for the Kitchen Garden.
Seeds for the Flower Garden.
Seeds for the Farm.

JOHN CATTELL'S CATALOGUE of the above is now ready, and will be forwarded post paid on application.

It contains select Lists only of all the best VEGETABLE and FLOWER SEEDS, so that the Amateur with only a small Garden cannot fail to make a proper selection.

His COLLECTIONS of KITCHEN GARDEN SEEDS, which have always given the greatest satisfaction, are sent as usual, viz.:—

	£	*s.*	*d.*
A Collection for Large Gardens, including every desirable kind of Vegetables, Salads, and Herbs	3	0	0
Ditto, ditto, for a Medium-sized Garden	2	0	0
Ditto, ditto, for a Small Garden	1	0	0
Ditto, ditto, for a Cottage Garden	0	10	6

The Carriage of all parcels of Seeds amounting to 10*s.* 6*d.* and upwards, paid to any Railway Station in England or Wales.
Nursery and Seed Establishment, Westerham, Kent.

B. S. WILLIAMS'S LIST of Choice VEGETABLE and FLOWER SEEDS—See Advertisement in *Gardeners' Chronicle*, Feb. 8. Descriptions and further particulars will be found in his PRICED CATALOGUE, forwarded post free on application.

COLLECTIONS of KITCHEN GARDEN SEEDS, containing none but the most useful and approved sorts, 15*s.*, 20*s.*, 40*s.*, and 60*s.*, particulars of which if required will be forwarded.

Hardy Annuals, 12 varieties, 1*s.* 6*d.*; 25 varieties, 3*s.*
Biennials and Perennials, 12 varieties, 2*s.*; 25 varieties, 4*s.*
Half Hardy Annuals, 12 varieties, 2*s.* 6*d.*; 25 varieties, 5*s.*
Ornamental Grasses, 12 varieties, 2*s.*; 25 varieties, 4*s.*

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Notice.

PURCHASERS of LARGE QUANTITIES of FARM or GARDEN SEEDS will be supplied liberally by Sutton & Sons.

For prices apply (*stating quantity required*) to
Sutton & Sons,
Royal Berkshire Seed Establishment, Reading.

VEGETABLE and FLOWER SEEDS of best quality.

Our "NEWTON HERO" CUCUMBER, 1*s.* 6*d.* per pckt. "One of the best of the 118 varieties grown by the Horticultural Society, and so highly spoken of in the report, which see."

PRICED LISTS post free upon application.

James Dickson & Sons, 102, Eastgate Street, and the "Newton" Nurseries, Chester.

VEGETABLE SEEDS for ONE ACRE. — The COMPLETE COLLECTION, recommended in Hogg's 'Gardener's Year Book," and mentioned at p. 119 of *Gardeners' Chronicle*, February 8, can be supplied for 8*l.*, Half and Quarter Collection same rate. Carriage and package free. All the articles of guaranteed quality and sorts of acknowledged merit.
B. J. Edwards, Seedsman, 222, Strand, London, W.C.

Excellence and Economy.

To Purchasers of Vegetable and Flower Seeds.—Send for JAMES TYNAN'S CATALOGUE, select your own Seeds, and save one-half the cost. No other house supplies Seeds of equal quality on the same terms. Importer of German nd other Seeds.
Seed Warehouse, 68, Great George Street, Liverpool.

Wood's Defiance Cauliflower.

WM. WOOD and SON have much pleasure in introducing this new and superior CAULIFLOWER to the notice of their friends and the public generally, and having tested it for several years against Walcheren and other approved varieties, they do not hesitate to pronounce it the best Cauliflower in cultivation. It is quite hardy, of dwarf habit, and produces immense large heads, which are very compact, and most deliciously flavoured.

Stock limited; price per packet, 2*s.* 6*d.*

Wm. Wood & Son, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

*** SEED CATALOGUE post free on application.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and other FLOWER SEEDS, Choice GLADIOLI, &c., is now ready, and will be forwarded post free on application.

The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices.

An inspection and comparison with prices in other Catalogues is respectfully solicited.

The following, of which descriptions will be found in Catalogue, are specially recommended:—

		s.	*d.*
BEAN, Haricot Flagolet Jaune, six days earlier than any variety in cultivation	per quart	2	[illegible]
BEET, Compact Topped or Pine Apple Short Top,	per oz.	0	[illegible]
„ Selected Dwarf Red (Nutting's)	„	0	[illegible]
CAULIFLOWER, Early Dwarf Erfurt	„	2	[illegible]
„ New Early Mammoth or Frogmore forcing ..	„	3	[illegible]
CELERY, Imperial Dwarf Red (Hood's)	„	1	[illegible]
CHÆROPHYLLUM BULBOSUM	„	2	[illegible]
CUCUMBER, TELEGRAPH	per packet	1	[illegible]
LETTUCE, MOOR PARK	per oz.	2	[illegible]
PEA, GENERAL WYNDHAM	per quart	1	[illegible]

Exotic Nursery, Tooting, Surrey, S.

Asparagus.

YOUELL and CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—

ASPARAGUS, GIANT, two years .. .. 2*s.* 6*d.* per 100.
„ „ three years .. .. 3*s.* 6*d.* „

BUCKLEY'S NEW CRIMSON RHUBARB.

Specimens have been sent to Dr. Lindley for his opinion. See the following in the *Gardeners' Chronicle* of February 26, 1859:—

"John Buckley, your specimens are very handsome, rich rose red quite through, and are evidently derived from Bucks, the true Rheum undulatum. When cooked they were remarkably free from stringiness."—2*s.* each; 20*s.* per dozen.

HAWKE'S CHAMPAGNE RHUBARB, new and fine, highly recommended, 12*s.* per dozen.

YOUELL'S NORFOLK HERO CUCUMBER, 1*s.* per packet.

LAING'S MAMMOTH RED CELERY, 1*s.* per packet.

Royal Nursery, Great Yarmouth.

KITCHEN GARDEN SEEDS,
FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

Thos. Gibbs & Co., Corner of HALF-MOON St., PICCADILLY, London. Royal Agricultural Society of England. Appointed Ap. 3, 1844. The Seedsmen.

AGRICULTURAL SEEDS,
GRASS SEEDS,
FARM SEEDS,
of all descriptions.

Thomas Gibbs & Co
CORNER OF
HALF-MOON St.
Piccadilly, London, W.

RICHARD SMITH'S

LIST OF ALL THE BEST

VEGETABLE AND FLOWER SEEDS,

Combines simplicity of arrangement, with prices, descriptions of size, height, colour, time of sowing, soil, duration, hardiness, &c., with useful hints on rearing and general management.

COLLECTIONS of SEEDS, of the Choicest Sorts, for One Year's Supply

				£	*s.*	*d.*
of a large Garden, consisting of 10 quarts of Peas and all other Vegetables in proportion				2	2	[illegible]
6 quarts Peas	ditto	ditto	ditto	1	5	[illegible]
5 pints ditto	ditto	ditto	ditto	0	12	[illegible]

Retail Seed Orders of 21*s.* and upwards free to any Railway Station.

ROSES.

STANDARD HYBRID PERPETUAL and other FINEST kinds			..	30*s.* per Dozen
HALF-STANDARDS	ditto	ditto	ditto ..	24*s.* to 30*s.* „
DWARFS ditto	ditto	ditto	ditto ..	12*s.* to 24*s.* „
NEW ROSES of 1861 ..			..	2*s.* 6*d.* to 5*s.* each

FRUIT TREES.

Thirty-five Acres of these; consisting of PEACHES, NECTARINES, APRICOTS, PEARS, PLUMS, CHERRIES, and APPLES, in Trained and Pyramidal Trees, Standards, Half-Standards, Bushes, Dwarfs, or Potted Trees for Orchard House culture.

EVERGREENS. | FLOWERING SHRUBS. | CONIFERS.

With all other Nursery and Seed Stock of the finest description and at Cheapest Prices—Lists of which may be had on application to

RICHARD SMITH, NURSERYMAN AND SEED MERCHANT, WORCESTER.

OLD CHESHUNT NURSERIES, HERTS.

Gladiolus.

PAUL AND SON'S fine Collection of this superb Flower, of which the Bulbs are now ready.

Hollyhocks.

PAUL AND SON'S fine Collection of this noble Flower; fine Plants of which are now ready. Also SEED in packets of 12 fine distinct sorts at 5s. each, and mixed seed in 2s. 6d. and 1s. packets.

Roses.

PAUL AND SON'S splendid Collection of Dwarf Plants in Pots, of all the finest new kinds, with extra size plants for Forcing.

Vines.

FINE PLANTS for Fruiting in Pots or planting out.

CATALOGUES of each may be had on application by post.

Gladioli and other Choice Bulbs for Spring and Summer Flowering.

B. S. WILLIAMS will be happy to forward, post free, to all applicants, his DESCRIPTIVE and PRICED CATALOGUE of the above, containing select lists of all the best varieties.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.—

50 in 50 well selected vars.	..	..	£2 2 0
50 in 25 ditto ditto	..	..	1 10 0
25 in 25 ditto ditto	..	..	0 15 0
12 in 12 ditto ditto	..	6s., 9s., and	0 12 0

Mixed, 3s. 6d. per dozen; 25s. per 100.

BUTLER & McCULLOCH, Seedsmen, Covent Garden Market, W.C.

New Cinerarias, Gloxinias, and Pelargoniums.

F. AND A. SMITH can still supply a few sets of their New GLOXINIAS, CINERARIAS, and PELARGONIUMS.

See *Gardeners' Chronicle* of Oct. 5, 1861, and CATALOGUE, which may be had gratis.

Dulwich, Surrey, S.

Superb Balsams.

F. AND A. SMITH are now sending out Seed of their Superior BALSAMS in collections of

9 Colours, separate	.. .. ..	2s. 6d. each.
The same, mixed	.. .. ..	2 0 „
Half the quantity	.. .. ..	1 0 „

The above are in 18 distinct and bright colours, of carefully selected Seed, from the most double varieties.

Dulwich, Surrey.

Aster Seed of Superior Quality.

J. AND J. FRASER, of the Lea Bridge Road Nurseries, Leyton, N.E., beg to announce that they are now prepared to send out Collections of the finest FRENCH ASTERS.

J. & J. FRASER feel much pleasure in stating that the first Prizes for these Asters at the Royal Horticultural Society and Crystal Palace Exhibitions were awarded to flowers produced from Seed supplied by them.

A PRICED LIST will be forwarded on application.

J. SCOTT'S SEED CATALOGUE, with Descriptive and Cultural Notes, is now ready, and will be found very useful to intending purchasers. Sent gratis.

THE BEDDING PLANT CATALOGUE is being printed, and will be ready in April. Parties who wish to embellish their gardens, cheaply, should procure a copy before purchasing their plants, as the book is replete with information on the subject, and all the novelties of the season are described, and most sorts may be had at 2s. 6d. per dozen. Mr. Beaton, in the *Journal of Horticulture*, says:—"It is the best Catalogue we have seen."

Merriott Nurseries, Crewkerne, Somerset.

Major's Half-shrubby Calceolaria Seed for 1862.

H. MAJOR is prepared to supply the above, in packets at 2s. 6d. each, or three for 5s, post free. The Seed is unusually select, having been saved from varieties surpassing all his previous productions.

Postage stamps are respectfully requested in payment.

Knosthorpe, near Leeds, Yorkshire.

The Royal Nurseries, Slough.

SEEDS for the FLOWER GARDEN.—BETTERIDGE'S FINE QUILLED ASTERS. The Seed saved from this splendid Collection—so successful in maintaining the leading position at the great exhibitions—is entirely in CHARLES TURNER'S hands for distribution:—

18 Distinct Varieties (with Hints for their Culture)		4s. 6d.
12 Ditto	Ditto Ditto	3 0
Fine Mixed Seed, per packet	.. ..	1 0

NEW DOUBLE FRENCH, or TRUFFAUT'S PÆONY-FLOWERED ASTERS, imported direct from that eminent cultivator, may be had in collections of—

22 Varieties.. ..	7s. 6d.	10 Varieties	3s. 6d.
16 „	5 6	8 „	2 6
12 „	4 6		

CHARLES TURNER congratulates himself on being able to supply his Patrons with this favourite flower direct from the two first growers in Europe.

DOUBLE DWARF BALSAMS, CAMELLIA FLOWERED BALSAMS, DWARF GERMAN TEN WEEK STOCKS, CRIMSON DWARF BOUQUET STOCKS, and all the NEW ANNUALS worthy of cultivation.

CHARLES TURNER, The Royal Nurseries, Slough.

His CATALOGUE of SEEDS for the FARM is in the press, and a copy thereof will be forwarded Gratis and Post Free to any address.

WILLIAM BARRON, Elvaston Castle, Derby, can supply strong and remarkably well-rooted plants as under:—

Per 100—s. d.

ABIES DOUGLASII, 3 years once transplanted.. .. 25 0
This tree attains a height of more than 200 feet, highly ornamental, the same as the tall flagpole at Kew.

PINUS LARICIO, 18 ins. to 2 feet .. . per 1000 70 0
This produces timber for railway sleepers sooner than the Larch, and is used as spars and masts in the French navy.

BERBERIS DARWINI, the most beautiful of the tribe, fit either for the flower garden or game cover, with rich orange-coloured flowers; Pheasants are very fond of the berries, which are produced in profusion. Strong plants, 3 years old 20 0
Ditto ditto, 2 years old 15 0
Ditto ditto, 1 year old 12 6

PICEA NOBILIS, 3 to 4 years old, plants from seed, each, 10s. to 15 0
This is the most lovely of all Firs.

WELLINGTONIAS from 2 to 9 feet. Also specimens of the rarest Conifers.

Remittances to accompany orders from unknown correspondents. Post-office Orders payable at Derby.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s.; 20 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England.

The Catalogue may also be had at Mr. MAY'S, 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

Rhododendrons for Under Cover.

JOHN WATERER has an immense quantity of the above in fine bushy plants, of sizes suitable for immediate planting into Covers.

☞ It is worthy of remark that in the most severe weather Rhododendrons are never injured by Hares or Rabbits. Samples, with prices, forwarded on application.

The American Nursery, Bagshot, Surrey.

EXCELLENCE and ECONOMY.—

Botcherby Hybrid	Kenyon
Hamilton's Market Favourite	Telegraph
Hector	William Brown

And other CUCUMBERS (true).

ORNAMENTAL GOURDS, Imported Seed.

JAMES TYNAN begs to offer Seeds of the above, at 6d. and 1s. per packet, free by post for 7 or 13 stamps.

CATALOGUES free by post on application.

Seed Warehouse, 68, Great George Street, Liverpool.

1861-62.

THE NEW TRADE LIST of my well-known FLOWER SEEDS, including all the latest Novelties, may be had of my Agent, M. EMIL LEIBIUS, 132, Upper Thames Street, London, E.C.

Also to be had, Prices of AGRICULTURAL SEEDS, viz., Mangel Wurzel, Carrots, Radishes, Sugar Beets, Clover, etc.

CHARLES APPELIUS, in Erfurt (Prussia), Inspector of the Royal Gardens, Nursery and Seed Establishment.

New Azalea indica.

J. IVERY AND SON feel much pleasure in offering their two beautiful Seedlings, CARNATION and TRICOLOR, small plants at 10s. 6d., and larger at 21s. each.

They are fully described in our CATALOGUE, with all other Novelties of the Season, which will be forwarded post free upon application.

A fine lot of half Specimens and Standards for Sale.

Dorking Nursery.—Feb. 15.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1861 and SPRING 1862, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

Florists' Flowers and Seeds.

CAREY TYSO, Wallingford, Berks, begs to offer Choice Assortments of

DOUBLE ANEMONES, 100 fine sorts, 1l. 1s. to 1l. 6s.
*RANUNCULUSES, 100 ditto, 1l. 7s. to 2l.
*RANUNCULUSES, 100 ditto mixed, 5s. to 1l.
*IMPORTED GERMAN SEEDS, Asters, Stocks, Balsams, Immortelles, Larkspurs, Wallflowers, Zinnias, &c., in named assortments, from 1s. to 5s, each.
All the popular ANNUALS,* 50 varieties, 1 packet each, 10s.; 25 ditto, 5s.
Choice RANUNCULUS, PINK, SWEET WILLIAM, and ANEMONE SEEDS,* 2s. 6d. and 5s. per packet.

The articles marked * can be sent by post.

PRICED CATALOGUE for one label for the postage.

Cheap Plants.

WM. DILLISTONE can still supply strong Plants of the following:—

Per dozen.—	s.	d.	Per dozen.—	s.	d.
Hepaticas of sorts ..	3	0	Tritoma Uvaria	3	0
Auriculas	2	6	Verbenas, strong stock plants	3	6
Œnothera Missouriensis	3	0	Gazania splendens ..	3	6
Pinks (sorts)	3	0	Fuchsias	5	0
Cloves (sorts)	2	6	Petunias	4	0
Hollyhocks	8	0	Dahlias (Old Roots) ..	6	0
Pansies (fine mixed sorts)	2	0	Festuca glauca	3	6
Pampas Grass, 1l. per 100;	3	0			

Herbaceous Plants, 50 plants in 25 varieties for 10s.

Lobelia speciosa, "true," 1s. per packet.

The above all carefully named and packed upon receipt of Post Office Order payable at Castle Hedingham, to WILLIAM DILLISTONE, Munro Nursery, Siblé Hedingham, Halstead, Essex.

New Seedling Fuchsias.

ROBERT REA, NURSERYMAN, &c., London Road, Ipswich, has much pleasure in offering his three SEEDLING FUCHSIAS, which were so universally admired by all who saw them last season. With their superior habit, large well-formed flowers, and rich colours, he feels confident they cannot fail to give satisfaction.

BLONDIN.—A fine large bold flower, of fine form and substance; tube and sepals rich crimson, the latter well reflexed; large dark violet corolla. The sepals of this flower, when flattened down, measure 4 inches across. Recommended as being one of the finest and largest Fuchsias ever offered. 10s. 6d. each.

CONQUEST.—Tube and sepals waxy scarlet vermilion, of great substance, with a finely expanded violet plum-coloured corolla; the sepals broad and gracefully reflexed. Fine branching habit, and very free bloomer. A very desirable variety. Price 7s. 6d. each.

CEDO NULLI.—R. R. recommends this Fuchsia as being the finest double Fuchsia ever offered; its fine form, rich colour, and superior habit will commend it to all lovers of Fuchsias. Tube and sepals rich brilliant crimson, the latter broad and well reflexed. Corolla fine dark violet. Extra large and very double; does not fade in the sun. A first-rate exhibition variety. Plants 10s. 6d. each.

WARRIOR will be presented to purchasers of the set, it being too much like the preceding to warrant its being sent out at the same time. Nevertheless it is a fine variety.

The set for 25s., with the usual discount to the Trade. To be sent out the first week in May.

Strong Grape Vines from Eyes.

R. GLENDINNING begs to offer strong GRAPE VINES from Eyes of all the leading sorts, fit for immediate planting. The Eyes were taken from Vines which bear fruit on the Premises. PRICED LISTS on application.

Chiswick Nursery, W.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, JUN., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.

CATALOGUES on application.

Muscat Escholata Grape.

MESSRS. J. AND C. LEE have the pleasure to offer strong well ripened Canes of this

THE FINEST OF ALL MUSCAT GRAPES,

which, though little known to Grape growers in general, deserves to be extensively cultivated. It combines the desirable qualities of setting freely with a large well shouldered handsome bunch, with berries of a rich amber colour almost as large again as those of the Muscat of Alexandria, and of the most luscious Muscat flavour.

Planting Canes	.. .. ..	15s. 0d. each
Fruiting Canes	.. .. ..	21 0 „
Extra strong Fruiting Canes	..	31 6 „

Vineyard Nursery, Hammersmith, London, W.

Melons.

MESSRS. JOHN AND CHARLES LEE have seeds to offer of the undermentioned superb MELONS:—

BAILEY'S ECLIPSE.—Pale green flesh, melting to the rind, of exquisite flavour; weight 3 to 4 lbs.; handsome, very prolific, and has gained many prizes. Price 2s. 6d. per packet.

AMERICAN RIDGE.—Scarlet flesh, melting, and highly flavoured. Ripens in a COLD FRAME; very prolific. Price 1s. 6d. per packet.

Nursery and Seed Establishment, Hammersmith, London, W.

New Hybrid Green-flesh Melon—Archer's Favourite.

T. KEMPSTER offers Seed of the above in sealed packets, at 2s. 6d. per packet. When three are ordered four will be sent. Stamps or Post-office Orders must accompany each order, payable at Lee.

See *Gardeners' Chronicle* of Dec. 14 and 21, 1861.

Apply to THOMAS KEMPSTER, 14, Dace Place, Lee, Kent, S.E.

PRIDE OF SERINAGUR CASHMERE MELON.—"Your Melon is unsurpassable."—*Dr. Lindley.*

This splendid Melon, raised by Mr. W. P. AYRES, F.R.H.S., is now ready in packets, 2s. 6d. each.

See Wheeler's "Little Book."

J. C. WHEELER & SON, Gloucester.

J. HOLMES WOOD, Bower Nurseries, Maidstone (adjoining the Railway Station).

All the leading varieties of AZALEAS, in 60's, at 50s. per 100.

Standard and Trained FRUIT TREES of every description, 30s. per dozen.

Every description of CONIFERS, EVERGREEN and DECIDUOUS TREES, and SHRUBS at moderate prices.

Strawberry Plants.

WM. JAMES NICHOLSON again offers strong laid plants of his GRAND COLLECTION of more than 200 varieties of English, French, Belgian, American, and other STRAWBERRIES, including all the new and fine sorts. A Catalogue sent on application. A new enlarged and improved Catalogue will be published in Autumn, when many new sorts well tested will be offered with confidence.

WILLIAM JAMES NICHOLSON, Egglescliffe, Yarm, Yorkshire.

PINE GOLDEN PIPPIN APPLE, Dwarf Maiden and Dwarf-trained Trees.

GENERAL TODTLEBEN PEAR, Dwarf Maiden Trees.

BEURRÉ STERKSMAN PEAR, Dwarf Maiden Trees.

R. GLENDINNING has still a few Plants of the above named NEW FRUIT TREES. For their descriptions see Dr. Hogg's remarks. Price on application.

Chiswick Nursery, London, W.

NEW APPLE, "BARON WARD."—The very best late keeping variety in cultivation. Each—s. d.

Strong plants, two years, unpruned, suitable for pyramids or bushes	.. ..	2 6
Strong plants, dwarfs	.. ..	1 6

Description, &c. forwarded post free on application to R. BRADLEY & SON, Halam Nursery, near Southwell, Notts.

PYRAMIDAL CHERRIES. — Well formed and handsome Pyramidal Trees of the following varieties of CHERRIES grafted on the Mahaleb Stock are now offered. They are from 4 to 5 years old, 4 to 5 feet in height, have been under summer pinching, and are full of blossom buds. They form most ornamental and useful Fruit Trees for the Garden:—

May Duke	Royal Duke
Empress Eugénie (an early sort of May Duke)	Reine Hortense
	Belle Magnifique
Morello	Dauphine
Frogmore Morello	Planchoury
Late Duke	Griotte de Kleparone
Belle de Choisy	Noir de Prusse

Largest sized trees, 3s. 6d. each; second size, 2s. 6d. each; Bushes, bearing trees, 2s. each. Carriage paid to London.

THOS. RIVERS, Nurseries, Sawbridgeworth.

Fruit Trees.

JAMES GARAWAY AND CO. call attention to their stock of the above, comprising

APRICOTS	Standard and Dwarf-trained	APPLES	Dwarf-trained, Standard, and Dwarf-quarter.
NECTARINES		CHERRIES	
PEACHES		PEARS	
		PLUMS	

All of first-rate quality and in good condition.

The STANDARD PEARS are unusually fine, and will be sold at a very low rate to purchasers of quantities.

CATALOGUES and prices free by post.

JAMES GARAWAY & Co., Durdham Down Nurseries, Bristol.

Fruit Trees.

R. GLENDINNING begs to offer the undermentioned FRUIT TREES, which are strong, healthy, and true to name:—

Standard-trained PEACHES } in all the leading kinds with
Dwarf-trained „ } well ripened wood, from walls.
Dwarf-trained APPLES, in all the leading kinds.
„ PEARS „ „
„ PLUMS „ „
Standard Mdn. „ „ „
Dwarf Mdn. „ „ „
Standard Mdn. CHERRIES „ „
Dwarf Mdn. „ „ „
Standard APPLES „ „
PYRAMIDAL PEARS on Quince and Pear Stocks in a fruiting condition.

PRICED LISTS on application.

Chiswick Nursery, London, W.

4, Great Russell Street, Covent Garden, 1862.

JOHN KERNAN,

IMPORTER AND EXPORTER OF AGRICULTURAL AND GARDEN PRODUCE,

HAS MUCH PLEASURE IN SUBMITTING A CONDENSED

LIST OF VEGETABLE SEEDS FOR PRESENT SOWING,

Which includes every Novelty up to the present Season, and respectfully assures his Customers that no pains have been spared in securing Articles of the best description, from the most celebrated Growers, both at home and abroad, avoiding all Seeds which, however extensively puffed, have no character and deserve none.

The Trade supplied on liberal terms.

PEAS.

Per Quart—s. d.

Prince Albert 1 0
Sangster's No. 1 .. .. 1 0
Early Emperor 0 9
Bishop's New Long Pods 1 0
Daniel O'Rourke 1 0
Climax 1 0
Fairbeard's Champion of England 1 0
Knight's Dwarf Green Marrow 1 0
,, Ne Plus Ultra .. 1 0
,, Tall Green Mammoth 1 0
,, Dwarf ditto 1 0
,, British Queen .. 1 0
Blue Scimitar 0 9
Victoria Marrow .. . 1 0
Woodford or Nonsuch .. 1 0
King of Marrows 1 0
Split, Yellow or Green .. 0 6

With all other varieties worth cultivating.

BEANS.

Early Mazagan 0 6
Sword Longpod 0 8
Hangdown 0 8
Taylor's Broad Windsor .. 0 9
Johnson's Wonderful .. 0 9
Green Genoa 0 9
Dwarf French, of sorts .. 1 6
French Haricot 0 6
Scarlet Runners 1 6
Painted Lady 1 6
Kernan's Hybrid Sicilian (surpassing all others in abundance of crop and earliness) .. 0 9

ARTICHOKE—Green per oz. 0 3
,, Globe 0 6
,, Cardoon 0 3
,, Jerusalem, per peck 3 0

ASPARAGUS—Seed, per oz. 0 3
,, Plants, per 100 .. 5 0

SEA-KALE—Seed per oz. 0 6
,, Plants, according to age per 100 5 0
,, ,, for forcing ..10 0

BEET—fine London Red per oz. 0 6
,, Silver .. . 0 6
,, Whyte's Black .. 0 6
,, Castelnaudry, blood coloured 0 6
,, Green 0 6

BORECOLE—new heading, per oz. .. 0 6
red and white variegated, for garnishing, per packet .. 0 6
,, dwarf or tall curled, per oz. 0 6

BRUSSELS SPROUTS—(foreign seed, fine) per oz. 0 9
,, English ditto .. 0 6

KOHL RABI, per oz. .. 0 6

BROCCOLI. Per oz.—s. d.

Myatt's Early Purple Cape 1 6
Miller's Dwarf 1 0
Chappell's Cream . .. 1 0
Dancer's Early White .. 1 0
Sommer's Late White .. 1 0
Wilcove White, late .. 1 0
Grange's Early White—from the original raiser 1 0
Invisible White 1 0
Purple Sprouting 1 0
Walcheren 1 6
Imperial Winter 1 0
Dwarf Siberian 1 0
Purple Syrian 1 0
Brimstone 1 0
Snow's Early White .. 1 6

CABBAGE.

Nonpareil 0 6
Shilling's Queen 0 6
Atkin's Matchless.. .. 0 6
Enfield Market 0 6
Knight's Early Dwarf .. 0 6
Early York 0 6
Late York 0 6
Early Man 0 6
Early Hope 0 6
Early Battersea 0 6
Chou Tronchuda, or Portugal Cabbage 0 6
Red Dutch 0 6
Savoy—Green Curled .. 0 6
,, Drumhead 0 6
,, Yellow 0 6

And all other kinds in cultivation.

CARROT.

Early French Horn .. 0 6
Early Scarlet Horn .. 0 4
Long Orange 0 4
Fine Surrey 0 4
Altringham, per lb. .. 1 6
White, for Agriculture, p. lb. 1 0
Parsnip, Hollow-crown ,, 1 6

CAULIFLOWER. Per oz.

Mercer's fine Pearly .. 1 6
London Particular .. 1 6
Large Asiatic 1 0
Walcheren 1 0

CELERY.

Coles's Superb Red or White 0 6
Seymour's Superb White 0 6
,, Superb Red .. 0 6
New rose, solid 0 6
New Giant 0 6
Ivery's Ne plus ultra, p. pkt. 0 6

CHERVIL.

Turnip Root, fine substitute for Potatoes, p. pkt. 0 6
Curled, per oz. 0 6

Chicory 0 3
Corn Salad 0 3

CRESS. Per oz.—s. d.

Australian 0 4
Plain .. per pint 0 6
Curled .. .. ,, 1 0
American 0 3
Water 0 6
Cress and Mustard, p. pint 0 6

CUCUMBER.

Per paper.

Crawshay's Ne Plus Ultra 1 0
Victory of Bath 0 6
Acme of Perfection .. 0 6
Syon House 0 6
Weedon's Free Bearer .. 0 6
Early Frame 0 3
Kerrison's 0 6
Walker's Rambler.. .. 0 6
Windsor Prize 0 3
Early Handglass 0 3
Early Ridge 0 3
Kernan's Gardener's Friend 1 0
Kenyon's Free Bearer .. 0 6

ENDIVE.

New Imperial, per packet 0 6
Batavian, .. per oz. 0 6
Green Curled 0 6
White Curled 0 6
New Moss Curled 0 6

LEEK. Per oz.

London Flag 0 6
Musselburgh Broad .. 0 6
Common 0 6

LETTUCE.

Acme of Perfection .. 1 0
Bath Cos, black seeded .. 1 0
Brighton Cos 1 0
Imperial Cos 1 0
Victoria Cabbage 1 0
Green Paris Cos 1 0
White Summer Cabbage.. 1 0
Fine London White Cos .. 1 0
Paris Cos 1 0
Drumhead 1 0
Bath Cos 1 0
Snow Compact White Cos 1 0
Hampshire Brown Cos .. 1 0
Large Cyrius or Mogul .. 1 0
Swede Head 1 0
Milan Emperor 1 0
Perpignan 1 0
Large Spotted 1 0
Large Asiatic 1 0
Glory of Switzerland .. 1 0
Stone Head 1 0
Ne Plus Ultra 1 6

MELONS.

Seymour's Golden Perfection 0 6
True Syon House 0 6
Snow's Hybrid Green-flesh 0 6
Beechwood 0 6
Caubul 0 6
Spanish Water Melon .. 0 3

And all the better sorts grown for this market.

MUSTARD.

Per pint.—s. d.

White, ... 0 6
Brown 0 6

ONION. Per oz.

James's Long Keeping .. 1 0
Fine White Spanish .. 0 9
Globe 1 0
Strasburg 0 9
Deptford 0 9
Silver-skin 1 0
Tripoli 1 0
Blood Red 0 6
Two-bladed, for pickling 0 9
Potatoes or Underground Onions .. per lb. 0 6
Very mild, propagated like Potatoes—keep well.

PARSLEY.

Plain, for Sheep-walk and Early Lambs per bush. 21 0
Curled .. per oz. 0 3
Myatt's Extra Curled ,, 0 3
Hambro or Long Rooted ,, 0 3
Giant .. .. ,, 0 3

PARSNIP.

Per oz.—s. d.

Jersey Hollow Crown .. 0 3

RADISH.

Per oz.—s. d.

New Scarlet Olive-shaped, a delicious new variety 0 3
New Rose 0 3
Early frame .. per pint 1 6
Long scarlet 1 6
Red and White Turnip .. 1 6
Black Spanish per oz. 0 3

RHUBARB.

Myatt's Victoria per pkt. 0 3
,, Goliah ,, 0 3
Dudley's Early Scarlet .. 0 3
Ditto .. per root 1 0

SPINACH.

New Flanders per pint 0 6
Round or Summer .. 0 6
Lettuce-leaved (new) .. 0 6
New Zealand per oz. .. 0 3
Sorel-leaved 0 3

SWEET HERBS.

Per oz.—s. d.		Per oz.—s. d.	
Basil Bush	0 6	Rosemary	0 6
,, Sweet	0 6	Rampion	0 6
Burnet	0 6	Scorzonera	0 6
Cummin	0 3	Salsify ..	0 6
Capsicum	0 6	Savory Winter	0 6
Chili ..	0 6	,, Summer	0 6
Dill ..	0 3	Sage ..	0 6
Fennel	0 6	Sorrel ..	0 6
Hyssop	0 6	Tomata	0 6
Marjoram, Knotted	0 6	Taragon Roots, ea.	0 6
Mint, per doz. roots	0 6	Thyme	0 6

TURNIPS. per oz.—s. d.

Early Snowball .. 0 3
Red American Stone .. 0 3
Tetlow, for stewing .. 0 3
Early Dutch 0 3
Yellow Malteso 0 3
,, Stone 0 3
Early Snowball, per lb. .. 2 0
Early Dutch (earliest), true imported 2 0
Orange jelly 2 0
Early Strapleaf 2 0

AGRICULTURAL TURNIPS, MANGEL WURZEL, CABBAGE, &c. per lb.

Turnip—Yellow Bullock, 1 0
,, Skirving's Swede 1 0
,, Laing's ditto 1 0
,, Ashcroft ditto 1 0
,, Dale's Hybrid 1 0
,, Red Round 1 0
,, White Round .. 1 0
,, White Globe .. 1 0
,, Oxheart .. 1 0
,, Eclipse .. 1 0
Mangel Wurzel—Long Red 1 0
,, ,, Red Globe .. 1 0
,, ,, Yellow Globe 1 0
,, ,, Long Yellow 1 0
Kohl Rabi 4 0
Drumhead Cabbage .. 2 0
Thousand-headed 1 6
Sugar Beet 1 0

VEGETABLE MARROWS, GOURDS, &c. P. packet

Double jointed 0 3
Melon Marrow 0 6
Custard Marrow 0 6
Vegetable Marrow .. 0 3
Ohio Butter Squash, averaging in growth 1 cwt. . 0 3
Hundredweight Gourd .. 0 3
Ornamental ,, .. 0 3
Calibash ,, .. 0 3
Bottle ,, .. 0 3
Warted ,, .. 0 3

GRASSES.

Italian Rye-Grass (genuine, imported from Leghorn) p. bush. 6 0
Pacy's Perennial .. ,, 6 0
Sweet Vernal, for fattening early lambs, per lb. 2 0
Sheep's Fescue p. bush. 8 0
Meadow Fescue.. ,, 10 0
Hard Fescue .. ,, 8 0
Smooth Stalked Meadow per cwt. 84 0
Rough Stalked ditto ,, 84 0
Cocksfoot .. per bus. 6 0
Timothy .. per lb. 0 6
Meadow Foxtail per bus. 6 0
Fine mixed Meadow Grass, for renewing Pastures per bus. 8 0

GRASSES.

Crested Dogstail, for Lawns .. per bus. s. d. 20 0
Fine Lawn Grass per lb. 1 0

J. K. never advises a mixture for Lawns as one distinct Grass is far better and more uniformly green.

Coarse, for Game Cover per bus. 8 0
Poa pratensis per cwt. 84 0
Poa trivialis .. ,, 74 0
Holcus saccharatus or Sugar Grass, for fattening Cattle .. per lb. 1 0
Treatise on cultivating ditto, 1s.

Clover—White, 1s.; and Red, 9d. per lb.
Lucerne .. per lb. 0 9
Trefoil, including Trifolium incarnatum and other useful varieties..
Saintfoin .. .. ..
Tares—Spring and Winter
Furze .. .. ..
Broom .. per lb. 0 6
Rape .. .. per bus. 12 0
Hemp .. .. ,, 8 0

POTATOES.

Per bushel s. d.

Early Frame 10 0
Early Oxford 10 0
Early Cockney 10 0
Early Prolific 10 0
Kirke's True Ash-leaved Kidney.. .. .. 10 0
Walnut-leaved Kidney.. 10 0
Ash-leaved Kidney .. 10 0
Fluke Kidney 8 0
Lapstone Kidney .. 8 0
Early Hen's Nest .. 8 0
Early Shaw 6 0
Regent 6 0
Forty-fold 6 0
Everlasting .. per lb. 0 6

And many other most productive kinds.

Also seeds saved from the best varieties, per pkt. 0 6

Garlick, per lb. 0 6
Shallots 0 6
Chesnuts, Sweet, per bushel .. from 8s. to 10 0
Mushroom Spawn, per bushel 5 0
Budding and Pruning Knives
Russia Mats, each .. 1 6
Cuba Bass, per lb. .. 2 6
Guano, in large or small quantities

Seeds of all best varieties of CURRANTS, GOOSEBERRIES, RASPBERRIES and STRAWBERRIES, per packet, 6d. Plants of ditto on most reasonable terms.

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30 fine Showy HARDY ANNUALS, 5s.

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RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 13 postage stamps.
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To the Trade.
AMERICAN WEEPING WILLOWS.—Fine trees of this hardy and beautiful Willow grafted on straight stems 7 to 8 feet high, and well adapted for planting in Cemeteries, are offered by the hundred or thousand.
Price given on application to THOMAS RIVERS, Nurseries, Sawbridgeworth.

Quick.
H. AND F. SHARPE are prepared to offer of the finest quality,
Strong 2-years' Transplanted QUICK, 3 feet high,
Strong 2-years' Seedling do., 2 feet high,
at very moderate prices, which may be had, with samples, on application.
Seed Growing Establishment, Wisbeach.

Four Millions of Transplanted Quicks.
GEORGE CHIVAS offers the above, Two Millions of which are suitable for Railways, and Two Millions varying from strong to exceeding strong—a portion having been twice Transplanted. A bale containing 100 of each, five sizes, forwarded on receipt of 15s.; orders for 10,000 delivered free at any railway station.
Also Half a Million of Transplanted SPRUCE, and one of the largest general Nursery Stocks in the North-Western counties.
Chester, Feb. 15.

ARBUTUS, 2 to 2½ feet, well rooted and good tops, twice transplanted. SWEET BAYS, 1 to 1½, and 1½ to 2 feet; twice transplanted. GREEN HOLLIES, 6 to 9, 9 to 12, and 12 to 15 inches, well rooted, healthy and clean grown; the two latter sizes very suitable for Grafting or Budding on. EVERGREEN OAKS, in pots, 2 feet; repotted last spring.
Prices forwarded on application.
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JOSEPH FRYER, Clarendon Nurseries, Camberwell, S., has to offer a large stock of fine straight Limes of various sizes, Lombardy Poplars, Scarlet Thorns, Lilacs (7 varieties, all sizes), Guelder Rose, Althæa frutex (10 varieties), Pyrus japonica (red and white), Euonymus japonica, Yellow Brooms in pots, Irish Ivies, Sweet Clematis, Passion-flower, Menispermum, Periploca, Virginian Creeper, Glycine sinensis, &c.; also Mulberries, Dwarf and Standard trained Plums, Dwarf trained Peaches, Apricots, Apples, Pears, Plums, and Cherries, good Mushroom Spawn, &c.

W. VIRGO AND SON have a large Stock of the following to offer at very low prices:—
BERBERIS AQUIFOLIA, 12 to 15 inches, 2 years transplanted
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EVERGREEN PRIVET, of various sizes
PORTUGAL LAUREL, 12 to 18 inches
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They also beg to offer extra strong 2-years transplanted THORNS, in very large quantities.
Samples and prices to be had on application at the Nursery, Wonersh, near Guildford, Surrey.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.
EXHIBITIONS of PLANTS, FLOWERS, and FRUIT, WEDNESDAYS, May 28, June 18, and July 9.
AMERICAN PLANTS, MONDAY, June 9.
Tickets are now being issued, and can be obtained at the Gardens only by Vouchers from Fellows or Members of the Society. Price on or before SATURDAY, May 17, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.
SPRING EXHIBITIONS open to the Fellows of the Society and their friends only,
WEDNESDAYS, March 26, April 2, 9, 16, 23, 30, and May 7.
J. DE C. SOWERBY, Secretary.

ROYAL HORTICULTURAL SOCIETY.
ARRANGEMENTS for 1862.
March 19.—HYACINTH and CAMELLIA SHOW. Admission 2s. 6d.
April 9.—AZALEA SHOW. Admission 2s. 6d.
May 21.—FIRST GREAT SHOW. Admission 5s.*
** During the Season the Inauguration of the Memorial of the Exhibition of 1851 is expected to take place.
June 11.—SECOND GREAT SHOW. Admission 5s.
** In May or June, AMERICAN PLANTS. Admission 2s. 6d.
June 26.—ROSE SHOW. Admission 2s. 6d.
July 2.—THIRD GREAT SHOW. Admission 5s.
Sept. 10.—AUTUMN SHOW. Admission 2s. 6d.
October 8, 9, and 10.—INTERNATIONAL FRUIT, VEGETABLE, ROOT, CEREAL, and GOURD SHOW. The Roots, Cereals, and Gourds will remain on view until the 18th. Admission on October 8, 2s. 6d.; 9th to 18th, 1s.
* On the days of the Great Shows the charges will be 7s. 6d.
Packets of 25 Five Shilling Tickets, price 5l., available according to the daily charges, on any day on which money is taken.
Season Tickets of INTERNATIONAL EXHIBITION, price 3l. 3s., and Joint Season Tickets freeing also to the Horticultural Gardens, price 5l. 5s., can be had at the Offices.
Bands will play every week day from May 1 to October 18.
The next Ballot for Fellows is on the 21st of February.
Schedules of Prizes may be had on application to Mr. EYLES, South Kensington, W.
ANDREW MURRAY, Assistant Secretary.

The Gardeners' Chronicle.
SATURDAY, FEBRUARY 15, 1862.

MEETING FOR THE ENSUING WEEK.

TUESDAY, Feb. 18 { Royal Horticultural (Fruit and Floral Committees) at S. Kensington .. Noon

IT is evident that the ROYAL HORTICULTURAL SOCIETY has entered upon a career of great prosperity. Long may be it pursued! The proceedings at the Anniversary meeting on Tuesday last exceed in importance any of which we have a recollection. Even the deplorable loss sustained by the Decease of the late Royal President, PRINCE ALBERT the Good, has been repaired by a very touching circumstance, which the most sanguine could not have anticipated. The Council stated in their "Report," that in consequence of that most lamentable event it became their duty "to "consider whom they should recommend to the "Society for election in his place, and they "deemed it becoming to endeavour to ascertain "HER MAJESTY's wishes on the subject. With "feelings of the deepest gratitude the Council "learned that *had it been compatible with Her* "*high position*, HER MAJESTY *would Herself have* "*condescended to fill the office.*" This being impossible, for reasons of State that will be easily understood, the QUEEN was graciously pleased "to recommend the Duke of BUCCLEUCH to the "Council, as the person whom, under present cir-"cumstances, it would be most agreeable to HER "MAJESTY's feelings to see holding that situation. "*The* QUEEN *has also expressed Her desire that* "*though unable Herself to hold the office of Pre-*"*sident, She may be kept as fully acquainted with* "*the proceedings of the Society as has hitherto been* "*the case.*" It is scarcely necessary to say that his Grace was unanimously elected; and we may be permitted to add that a nobleman more entirely acceptable to the whole body of the Society could not have been chosen.

There is every reason to believe that the Duke of BUCCLEUCH has been called upon to preside over an institution with not only the desire, but ample power to maintain our English Horticulture on the proud eminence it has won. The old Horticultural Society, as we may call it before the acquisition of a fresh charter of incorporation, reared up a noble edifice. By its plant collectors in foreign countries and its foreign correspondence it enriched the kingdom with new plants of use or beauty, of which few are conscious of the multitude, and to which there is no parallel; by its Home and European agencies it formed a prodigious collection of fruits, which has resulted in the whole Pomological nomenclature being reduced to order; by its medals it elicited and by its Transactions it diffused through the country information upon the most important points in the theory and practice of gardening; and finally and above all by its magnificent Exhibitions at Chiswick it gave a stimulus to cultivators the effects of which will be, we trust, for ever felt. Nevertheless it perished. It was killed by a chronic malady that attended the acquisition of its first garden. By some strange oversight, the more strange because it was committed by the "practical men" to whose judgment the selection of a site was confided, this garden was formed out of old exhausted Market Garden ground on the banks of the Thames, where the first frosts of autumn and the last frosts of spring are always felt, and on so dead a level that nothing could be seen from within beyond dingy houses, the Duke of DEVONSHIRE's plantations, and its own fence. Had it been placed on the Acton Hills it would have enjoyed from the first an admirable position, overlooking the surrounding country, and a fertile unexhausted soil, at an annual cost not one fourth of that incurred at Chiswick. As the event proved it would also have been on the border of one of the greatest of our Railways.

For many years the public disregarded the position of the Chiswick Garden, and eagerly flocked to its fêtes, as they were called, the revenue derived from which furnished an ample income. But by degrees other places of a similar kind were formed. First came the Botanic Garden in the Regent's Park, and this was succeeded by Sydenham, both of easy access; the first because it stood on the edge of London, the other because of Railways. And then began the decline of the Horticultural Society; its income was mainly dependent on its Exhibitions, which the public neglected for its newborn rivals; and at last its position as a Society was found untenable.

Then it was that PRINCE ALBERT came to the rescue. The Royal Commissioners for managing the funds resulting from the last International Exhibition, had purchased certain lands at Kensington Gore, the use of which for an Exhibition had, in the year 1855, been granted to the Horticultural Society. The Exhibition was successful. Her Majesty the QUEEN and Her Royal Consort honoured the Society by their august presence; and then it may be conceived that the PRINCE perceived how well the site was adapted to a new Horticultural Garden. Eventually, as all now know, it was leased to the Society for the purpose by the Royal Commissioners. The PRINCE assumed the command; consulted those whom he found most capable of giving sound advice; criticized their proposals with a degree of acuteness which can only be understood by those who were present at the many discussions held at South Kensington, Buckingham Palace, Windsor, and even Osborne; and ultimately, aided by his own refined taste, produced that beautiful specimen of a Geometrical Garden which the Society possesses at South Kensington. And what is the result? The Report of the Council informs us that the number of Fellows had risen on Jan. 1 of the present year to 2774, in addition to which 147 more have been added since, and so many proposals for admission are coming daily into the Secretary's office that the whole number is now beyond three thousand. In the last eight months the income derived from Fellows alone has amounted to 8767*l*.

We print elsewhere the Report itself upon which these observations rest; omitting the columns of figures explanatory of the financial operations of the year, which will shortly be in the hands of every Fellow. We may, however, add, what is not separately mentioned in the Report itself, that for the formation of the new Garden a sum of 70,855*l*. 2*s*. 2*d*. had been received up to Feb. 1, including 50,000*l*. of debentures, the issue of which has finally ceased; and that on the other hand 71,303*l*. 15*s*. 4*d*. had been expended or contracted for, leaving only 448*l*. 13*s*. 2*d*. to be paid out of the ordinary income.

As to the changes in the Council Lord SOMERS replaces HENRY THOMAS HOPE, Esq.; Mr. EDMONDS, Gardener to the Dowager Countess GRANVILLE, is succeeded by Mr. JOHN FLEMING, Gardener to the Dowager Duchess of SUTHERLAND, and Mr. ROBERT WRENCH, the eminent seedsman of London Bridge, is replaced by Mr. ROBERT COOPER, of Fleet Street. And thus all classes, noblemen, gentlemen, gardeners and seedsmen, have their representatives in the management of the Society.

—— Exhibitors may be reminded that the period of their struggles, as well as of their victories or defeats, is drawing rapidly on. They will do well, therefore, to be on the alert, and to forecast the times and the seasons. The Royal Horticultural Society opens the campaign for them on the 19th of the ensuing month, when forced Hyacinths, Tulips, Amaryllises, Pelargoniums, and Lilies of the Valley, as well as Primulas, Camellias, and other spring flowers, will find a battle-field at South Kensington. A week later, Camellias, Primulas, and Conifers may contend for victory in the Regent's Park Gardens of the Royal Botanic Society, and at the same place on the 2d of April, Cinerarias have an opportunity of entering the lists, supported by Cyclamens, Amaryllises, and Double Alpine Primroses. On the 9th of April, South Kensington provides an arena for Azaleas, Rhododendrons, Cinerarias, and Auriculas; and on the same day the Regent's Park receives Hyacinths, Begonias, and Epacrises. Further, the Royal Botanic Society invites Azaleas, Auriculas, and variegated plants on the 16th of April; Pelargoniums, pot annuals, Pansies, and British Ferns on the 23d; Roses, Exotic Ferns, and Lycopods on the 30th; and finally Calceolarias, Caladiums, and Hyacinths on the 7th of May. All this work too, independent of the great exhibitions of May, June, and July. Truly here is no trifling task marked out for those who are to be the producers of the materials for these early floral displays. They will have to make many nice calculations as to the progress of their protégés, and to undergo many anxious hours, of which the admiring lookers-on at the results will have little consciousness.

—— We have recently alluded to the great improvements, in an ornamental point of view, which have been effected amongst Variegated Pelargoniums—improvements not merely consisting in the perfecting as it were of those types of form and marking which have long been familiar to us, but in stamping upon the plants new features which are not less beautiful than novel. The golden tricolor-leaved varieties which were mentioned on the occasion referred to, sufficiently bear out this statement.

But the races of varieties familiarly known to us as SCARLET PELARGONIUMS, which have sprung mainly from two Cape species called respectively *P. inquinans* and *P. zonale*, and of which the forms belonging to the variegated series are mere sports or freaks of development of mysterious origin, have shared in an equal degree with the variegated class itself in the improvements which have been worked out; and this not merely in regard to the perfecting of the older types, but also in the originating of new ones, as seen for example in the beautiful varieties till quite recently unknown to us, in the flowers of which salmon colour and white are so exquisitely blended. Amongst those to which we now refer, and which are grown chiefly

for their flowers, the improvements to which we think it most useful to advert have been made in respect to the flowers themselves, though even here the blending of beauties of flower and leaf in one plant are by no means uncommon. We propose to take a rapid glance over the ground which has been gained in this field of enterprise.

The scarlet-flowered set is the most familiar and the most numerous in varieties. It naturally divides into two groups representing the two species already mentioned, the one group having the leaves of a plain and uniform green colour, and the other having them marked by the dark-coloured zone which has gained for them the familiar title of "horse-shoe" varieties. There are highly meritorious sorts belonging to each group, and our object is to record the names of those which in our opinion occupy the highest positions. Commencing then with the green or plain-leaved, there are none which surpass Punch and Trentham Scarlet, the first a more vigorous, the second a dwarfer habited sort, both free and continuous bloomers, and both having bright-coloured flowers. They are good planted out in masses in the parterre, good in pots for summer decoration in conservatories, good in vases for ornamenting architectural gardens, good in fact any way; and for mere masses of scarlet flowers unsurpassed. Still dwarfer and not so commendable in point of display is little Stella, which deserves a good word, nevertheless, on account of its colour, which is a deep crimson scarlet, many degrees darker than any other variety we know, and in certain lights very telling. Of this group too a very distinct and a capital robust plant for conservatories is Wellington Hero, a light scarlet, with a distinct white centre to the flowers. In the zoned group the selection is more difficult, and may be made on various grounds. Thus there are some in which the zone is very faint, and among these, Scarlet Perfection (or Attraction as it is also called) which for its fine form and colour, and its large compact masses of flowers thrown out on long stalks clear of the leaves, is inferior to none, especially for specimens, and as a late pot plant; while another is the well known Emperor, which rejoices in several aliases, and is an established favourite for conservatory pillars and such like places. Of the more decidedly marked horse-shoe Scarlets, our own preference lies with Queen of England otherwise Excellence, Emperor of the French, Martin Gireau, and Globe Compactum. The first is in the way of Village Maid, with a dark well-defined zone and bold compact trusses of large well formed dark scarlet flowers. The second has a narrowish but dark and very effective zone, and great heads of large orange-scarlet flowers. In the third, which has a lighter zone, the flowers are of excellent form, full size, light scarlet with white centre. The fourth is well known as having a narrow dark zone and compact trusses of small flowers which have a pinkish tinge, so as to become light rosy scarlet. All these are good both indoors and out, in the borders and in pots. The best formed flowers we have seen, and these too among the largest, are those of Scarlet Globe, a name which seems to have been given in reference to the circular outline of the flower rather than to the form of the flower-truss. The great improvement which is apparent in these and others has taken place in the form and size of the individual flowers, and in the combination of such qualities with a desirable free blooming habit, bold trusses, and well-marked foliage.

The other groups are less familiar. There is prominent amongst them the cerise or rosy-red flowered series, in which, of the plain-leaved sorts, notwithstanding the somewhat improved blossoms of Le Titien and Beauté de Meldoise, we must fall back on Lady Middleton as the most effective decorative variety. Lord John Russell is another good and distinct sort, deeper in colour, and every way a telling plant. Both are good as pot plants and both are early bloomers indoors, under pot culture. It is probably among the zonate forms of this colour that we shall find the most advanced sorts in regard to merit which have as yet been obtained: for example, in such as Mons. Martin, Paul Labbé, Comte de Morny, and Leonie. Their tints are various, and not very readily described with exactness, the general colour being however a clear rosy red, here somewhat redder, there more rosy or pinky, in one lighter and in another deeper in hue. The individual flowers in all these are large and quite circular, and they grow in large heads. Paul Labbé and Comte de Morny have a strong tendency to bear proliferous trusses. Leonie and Mons. Martin are remarkably fine in every way, the former being of a more decidedly pinkish rose colour than the rest. They are all beautiful pot plants.

Another well-marked set has the flowers rose pink. Here Christina and Rose Queen carry off the palm among plain leaved sorts, for the flower garden; whilst as pot plants they flower early, and do not last out so well as some. Amy and Minnie, on the other hand, zoned-leaved varieties, and very passable, but not equal to the former out-of-doors, are remarkable as pot plants for blooming early and enduring throughout the season. Amy is particularly meritorious in this point of view.

Here the plain-leaved varieties end. The other colours afforded us only by the "horse-shoe" breed consist of salmons, salmon-eyed, and whites. Of the salmons there are two beautiful dwarf compact sorts, Beauty of Blackheath, paler, and Aurora, deeper coloured, both excellent pot plants, with small neat dark-zoned leaves. A third good sort, Madame Chardine, is larger. The salmon-eyed group, which gives us the greatest novelty of character, affords some capital sorts for pot-culture; they are probably best bloomed in the shade, though in fine seasons they are very pretty in the open beds. Here we find Anthony Lamotte, a blush white with salmon centre; Henri de Beaudot, salmon pink, deeper in the centre; and Prince of Hesse, a Frogmore seedling, bright salmon with deeper eye. They all share in the modern improvements of form and texture, and are of good habit, with well marked leaves. Of the white "scarlets," as they are sometimes facetiously called, the best by far which has come under our notice is Madame Vaucher, a pure white, with abundant large well-formed flowers in compact trusses, these being well set off by the dark-zoned leaves.

We have thus far left out of view a group in which the leaves are not only zonate, but marbled with a lighter green about the centre. This group is worth growing, both in the house and garden, for its leaves alone, but its flowers are also effective. To this set belong Cerise Unique, Sheen Rival, Empress of the French, and British Flag. The first yields abundant rosy scarlet flowers of good form in trusses which are often proliferous, and is an excellent bedding plant. The second has large heads of bright light scarlet flowers, and is very fine as a pot plant; it is, we think, the best of the group. The third is dwarf with light scarlet flowers, better in quality than those of British Flag, which it resembles in foliage; this last has the foliage particularly well marked, and is besides a very free-blooming and highly decorative plant indoors early in the season, the others we have named being later bloomers.

That we have by no means exhausted the list of desirable varieties, those who had the opportunity of seeing the very large collection grown last summer at Chiswick will be quite aware. What degree of merit attaches to each, we shall doubtless soon learn from the Floral Committee, whose report will embody the decisions of a skilled jury. In the mean time we have thought it useful to point out the choicer varieties which have come under our own observation, and to indicate briefly their peculiarities.

We may certainly venture to say, that the addition of those we have named to any collection in which they did not exist would impart to it not only variety but quality and brilliance.

GARDEN TRACERY.

Now that Geometrical Gardens are come into vogue, and that scrolls, circles, ovals, oblongs, ribbons have to be traced on ground by everybody, we doubt not that the practical instructions given on the subject 150 years ago will be useful to all who have had no experience in such work. In a book translated from the French by John James of Greenwich we find a set of plain directions, which we reproduce in the very words of the original. They were addressed by a Gardener to his brother Gardeners, and seem to us more likely to be really useful than if served up in the finery of modern language or the learning of a geometrician.

James's first observation is the key to all that he has done.

"The method of tracing things out upon the ground, consists in a great deal of practice, rather than in any depth of science: there needs no more than to know some few rules of practical geometry, to capacitate a man for this work in little time. Experience, tryal upon the ground, and a certain rote, are more necessary to this end, than long reflection and contemplation in the closet; nevertheless, if a man neglect to inform himself of these rules, and apply himself straitway to work upon the ground, before he has designed upon paper, or, at least, before he knows the relation the paper has to the ground, he certainly runs the hazard of being oftentimes mistaken. I am not saying that a man must needs be an excellent geometrician, to be capable of tracing out designs upon the ground; this is above the reach of a gardener; and, if it were necessary, a garden would lie a long time uncultivated, were it to wait its master's rendering himself accomplished in a science, for which the whole life of man is scarcely sufficient.

"Nor would I impose upon a gardener the necessity of reading any treatise of practical geometry, though there be those that are very good, and very short. I would spare him that trouble: for which reason I have carefully collected, from practical geometry, all that can any ways relate to designs of gardening, and from thence have composed these preliminaries, or elements of the method of tracing, which I have reduced to the 20 following exercises."

There are several instruments made use of for tracing upon the ground; but the square and semicircle are the most useful. The former is frequently required for setting off lines at right angles; and the semicircle divided into degrees is useful for laying down lines according to any given angle. This of course is best done by a theodolite, but this instrument is too expensive for ordinary use in garden operations, and therefore a simpler contrivance is to be preferred. Folding rules are now made having a graduated quadrant or semicircle, so that they can be opened to any angle. These may be called *Protracting Rules.* For short distances they can be applied to two straight edges, so that the latter can at once be placed at the required angle of divergence. Furnished with sights, the lines including the given angle can be extended on the ground as far as may be desirable. By directing the sights on one of the legs of the rule to a stake, or to two stakes in the line of a walk; then, whilst that leg remains fixed, let the other be opened to 90°, as shown by the graduated semicircle, and the two legs will be at right angles to each other, and so will lines be that are traced in the direction of the sights of the respective legs. In the same way any angle may be readily set off.

"Upon the ground we make use likewise of the fathom, the line, or small cord, and of ranging-sticks and stakes, all which are things so requisite in gardening, that one may say they are of daily use, there being scarce a day in a year that a gardener has not occasion for one or other of them."

"Ranging sticks and stakes are plain sticks, which should always be chosen as strait as possible, to facilitate the work. They are made sharp at one end for driving them into the earth, and the upper end is cut very smooth and eaven, which we call the head of the ranging-stick.

"The ranging-sticks, or perches, differ from the stakes, or spikes, in nothing but that they are bigger, and should be 5 or 6 foot long, whereas 2 or 3 foot length is enough for the stakes.

"The terms of staking out, alining, ranging, and bourning, all signify the same thing; and are, when he that performs the work, shutting one eye, and opening the other, applies it to the head of the ranging-stick, to direct all the others in the same line, which we call the line of aim, or visual ray.

"It happens, that if the eye be applied too near the stick, a defect in the standing of the others can't be so well perceived, because the visual ray is always apt to deviate; 'tis better, therefore, to place yourself 3 or 4 foot beyond the ranging-stick; and stooping to its height, with one eye shut, aim with that which is open, and direct all the other stakes according to the range of the first with that in the middle and at the other end, so that they be all covered, and appear as one only, were there 30 of them standing in the same line.

"'Tis no way necessary, that the ranging-sticks should stand of equal height in this case; that is required only in leveling; for if one stick stand half a foot higher than another in this work, it matters not, so they range directly, and cover one another as they ought.

"In drawing upon the ground, there is likewise need of an instrument, called a tracing-staff, which is a long strait stick tipt with iron at the lower end, having the point triangular, or flatted like a cat's tongue; with this tracing-staff you strike out and design all the figures of a garden; in a word, 'tis the very pencil-case of him that traces things upon the ground.

"In tracing, you must strain the line from stake to stake, and follow it with the tracing-staff, so as not to force it one way or other; in great lengths, it would be well to drive small spikes in the track, at proper distances, both for fear it should be defaced, and also that it may be the better distinguished at a distance.

"When you trace the earth should be broke up a little before the tracing-staff, to make the track show larger and deeper: you pass the tracing-point several times through the same track, and sometimes your hand sideways, to mark it the more distinctly, lest the wind and the rain should deface it.

"You ought never to take up the stakes till the track be scored out very plain upon the ground, and two, at least, should be constantly left in each line, as well to be of use in planting the trees, as for recovering new measures, should it be afterwards necessary.

"What we call raising a square (which is a term used in this work) is, when, upon a strait line drawn with the instrument, or with the cord, you cause another line to fall directly perpendicular, which makes a right angle, or square; and is what the French workmen call *Le Trait quarré.*

"You must take the precaution in working to have near you a small line of 3 or 4 fathom long, to take the lesser measures, and perform the smaller operations; as also, to have a large wooden square [the same that all workmen make use of] to make the short returns you meet with in your designs, where 'tis needless to make use of the semi-circle or cord to raise the square.

"When, in the following exercises, you read, trace out this line by the third, by the fifth practice, &c., it signifies, that 'tis the same operation that was done before in the third or fifth practice, to which you are referred, to avoid repetitions; and the practices are numbered exactly for this very purpose.

"'Tis convenient to say one thing here, before I enter upon the following exercises; that a gardener who is desirous to learn, be not startled at the difficulties he may conceive, either in the business of design, which he may think indispensably necessary for him to know how to perform, or at the great pains he may suppose 'twill cost him, to apprehend, and put in practice, all the following figures.

"As to the first difficulty, I shall say, for all gardeners and countrymen in general, that 'tis not neces-

sary they should know how to design, but only that they should understand a plan, so as that when a design is given them, they may be able to strike it out to a truth upon the ground; which is done by means of a small double line divided by the fathom, which is called the scale of the plan, and is always at the bottom of the paper. As all the parts of a design are made upon this scale, and that it is an infallible rule for describing them truly upon the ground, to follow it exactly, the gardener has no more to do than to examine the scale, and consider into how many fathom its divided. For this purpose, he must have a pair of compasses wherewith to measure all the parts of the plan, a ruler to prolong the lines and centres, which must be found upon the paper; and measuring these by the division of his scale, he will know how many fathom they have in length and breadth. He will have need likewise of a small instrument, called a protractor, which is to take the openings of angles. The protractor is applied to one of the sides of the angle, and reckoning from its centre, the number of degrees from the base to the place where the other side of the angle comes to cut the circumference, you mark it down upon the paper, and describe it truly upon the ground in like proportion, by opening the semicircle, and setting the alhidade or movable index on the same number of degrees; because the protractor is divided into as many degrees, as the great semicircle made use of for drawing upon the ground.

"As for the second difficulty, which is the great pains a gardener may prepossess himself he must be at, to apprehend the following exercises, I shall answer, that if he will but read them over without prejudice, and bestow a little application on them, let his understanding be never so mean, he will find nothing difficult, and out of the reach of an ordinary capacity; having endeavoured to reduce them all to as small a number as possible, and to range them in an easy and natural order; besides which, I have avoided a tedious compass of words and terms affected in geometry, which possibly might seem barbarous to him. In a word, it has been my whole application to render myself intelligible to gardeners, and to make that easy and plain to them, which in itself might possibly appear difficult. I write not then for geometricians, nor for persons knowing in this matter, to whom the most difficult terms and things are become familiar by study; but only for countrymen, and some that are curious in gardening. And this I mention, that it may not be charged upon me hereafter, that I have declined to speak like a tradesman.

"After this short advertisement, we may proceed to the following exercises, which are supposed to be designed upon rolls of paper, called plans, and the space upon the side is the ground, upon which they are conceived to be laid down in a true and just proportion; that is to say, converted from little to great. All these exercises are contained in the four plates.

"By this comparison of the paper with the ground, you will judge of the relation they have one to another; and I may truly affirm, that these practices contain all that a gardener needs to know in geometry, for enabling him to trace out all sorts of figures upon the ground."

A measuring chain, measuring tape, and rods, some of which should be divided into inches as well as feet, are also necessary.

"THE FIRST PRACTICE.

"*To draw a Right or strait Line upon the Ground, with the Cord.*

"Let the strait line be *a b*, which is here supposed to be 12 fathom; measure exactly this length upon the ground from A to B, and fix two stakes there; then straining the cord from one to the other, mark the line out upon the ground with the tracing-staff, following the cord, so as not to force it one way or other.

"OBSERVATION.

This practice is proper only for a distance of about 10 or 15 fathom, by reason of the difficulty you will have to trace a longer line, by the side of the cord, without making it swerve.

"THE SECOND PRACTICE.

"*To draw a Right Line upon the Ground, by the help of Stakes.*

"Suppose the line to be drawn be found upon the plan to be 100 fathom long, as the line *c d*, drive a stake into the ground upon one of the extremities of this line, as at A, and another at the extremity B, distant 100 fathom one from another; and, in a line with these two, set another about the middle, as at C; thus divide the whole length A B, into so many parts, that none may exceed 12 or 15 fathom; and straining a cord from stake to stake, trace the line at several times, according to the foregoing practice. You may afterwards take away the longer stakes or perches that served for ranging, and fix short stakes or spikes, pretty near one another, for finding the track again more easily, if it should be defaced.

"THE THIRD PRACTICE.

"*To prolong a Right Line upon the Ground.*

"In this practice, the line to be prolonged is supposed to be the range of a wall, or of a building, as *a b*. Place yourself at the extremity, opposite to that which should be prolonged, as at A, and cause a stake to be placed beyond the corner B, as at C, in such manner that this stake swerve not from the direct line A B, towards D, or towards E, and then trace out the line B C, by one of the preceding practices, according to the length of it.

"THE FOURTH PRACTICE.

"*To describe, with the Cord, a Right Line, which shall be square or perpendicular to another Right Line already traced.*

"Let the right line traced upon the ground be C D, and the stake E planted at the point, from whence the perpendicular should be raised: carry on each side the point E, about 6 or 8 fathom, and set two stakes there, as F and G, then fixing the loops at the ends of the cord upon the two stakes F and G, draw the loop in the middle of it towards H, so that the two sides of the cord F H, and G H, may be strained alike. Drive a stake at H, just before the loop, that is to say, in the angle made by these two lines, and straining another cord from E to H, trace out the line H E, which shall be perpendicular to the line C D, and like to that of the plan *a b*.

"THE FIRST OBSERVATION.

"For performing this and the following practices, you may take a cord of 15 or 20 fathom long, and make a loop at each end of it; then double it, and straining it equally from the two ends, make a third loop in the middle.

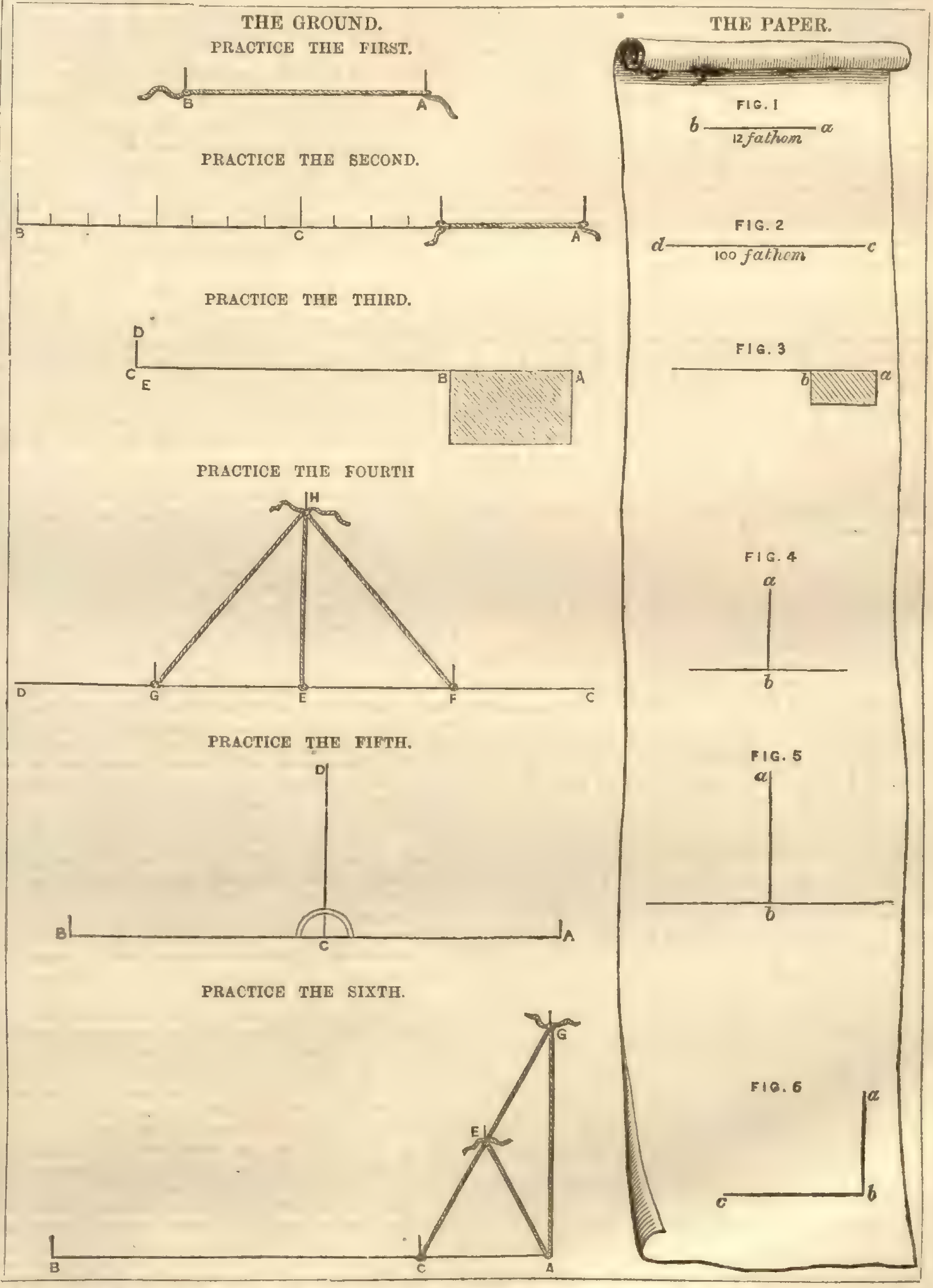
"THE SECOND OBSERVATION.

"This practice may be performed likewise, by tracing two portions of a circle from the stakes F and G, which are equally distant from the point E, by means of a small tracing-pin fixed at the end of the cord, which will form two sections in H; and in the place where they cut one another, called the point of intersection, plant the stake H, from whence, to that of E, draw the perpendicular line H E. This practice may also serve for all that follow.

"THE FIFTH PRACTICE.

"*To describe with the Instrument, a Line perpendicular to a Right Line given.*

"Let the given line traced out upon the ground be



A B, and let the stake C be planted at the point from whence the perpendicular is to be raised, as is marked in the plan by *a b*; fix the semicircle upon its foot plum over the stake C, and direct its base towards the stake A, or towards B, by means of the sights that are upon the base; and turning yourself square, set the moveable index to 90 degrees, and, by the sights upon the index direct a stake to be drove towards D, at a distance proportionable to the length the perpendicular ought to have. You then trace this line from the stake D to C, by the first or second practice, which line shall be perpendicular or square to the given line A B.

"THE SIXTH PRACTICE.

"*To describe, with the Cord, a Perpendicular Line at the End of a Right Line given, already traced.*

"Having upon the paper the line *a b*, perpendicular to the line *b c*, which must be described upon the ground: To do this, from the extremity A of the traced line A B, measure (suppose) 10 fathom, and drive a stake, as at C; then take a double line of 10 or 12 fathom, and fixing the two end loops upon the stakes A and C, draw the middle loop towards E, and plant a stake there; and taking the loop off from the stake A, put another stake through it; and straining the end of the cord, so that it range in a line with the stakes E and C, as at the point G, fix this stake there, and strain another line from the stake A to the stake G; the line G A shall be perpendicular to the line A B.

"OBSERVATION.

"You may raise this perpendicular at the end of a line, by the help of the semi-circle [or protracting rules], setting it plum over the stake at one of the extremities, and directing the base towards the other extremity, you then place the index over 90 degrees, [or open the rules] and work as in the fifth practice."

(To be continued.)

Indoor Gardening.

FEW people I think are proof against the delight in spring of having Lilies of the Valley, with all their fragrant scent and their delightful freshness, growing up in clusters in their drawing-room gardens! At the moment I write (in the first week of February), there is just such a cluster delighting me by its promise whenever I turn my eyes to that corner of my plant case. No less than 14 blossoms does that one flower pot promise; and then, besides, there are the lovely leaves, which rival the flowers in beauty.

These Lilies were taken up last autumn in one good lump, in the nursery whence they came, put into the flower pot, and allowed to stand first out of doors and dry, and then in-doors just to be safe from frost, while water was given them by very slow degrees. Barely a month ago I placed them in my plant case, at the warmest corner (inuring them to it, however, by a day or two spent previously at the cooler end), and there they almost at once began to shoot up strongly, till as soon as I found them sufficiently advanced to show the little buds by the side of the folded leaf, I removed them thence into a lighter window, and placed them there in a cooler spot, giving them no longer any heat to the roots. Standing in a box of Cocoa fibre or sand, they do not need often watering, but occasional washing with a paint brush and fresh warm water is a great advantage, in both securing a fresh and healthy growth and preserving them utterly from the ravages of green-fly. As soon as the blossoms are fairly open, the pot may be taken to a sitting room table, only, if we are anxious to preserve the delightful flowers, we shall be very careful to cover them with a shade when the room is hot and dry, or when lamps and gas are burning.

When the flowers fade, they may be cut off at once, but the leaves should be carefully preserved uninjured till they die off naturally. The pots then may be laid on one side in some out of the way corner till about November when it becomes time to take them in, and to water them. It is quite a mistake to suppose that they will not flower well a second year. I have had them do so at least three years together, and judging by the aversion the plants have to be moved, I should say with confidence that the longer they last, the better they will bloom. A little soil should always however be scraped off each year before we begin to water them for spring growth—and some nice leafmould, or Cocoa-nut fibre, should then be put on.

By using plants in pots one holds the time of growth so much in one's own hand that I have had these Lilies blossoming as early as February, and as late as September, without any help beyond a plant case, and a window-sill.

Even without the former, one is not much worse off, a kitchen chimney-piece for the first three weeks' growth, "while the buds are swelling," and then a window-sill, will give us not very much later, and not at all less healthy flowers.

Window gardeners now should bear in mind their Balsams and their Lobelias to be raised from seed. An old Lobelia plant also, cut down to about 3 inches from the ground, keeps putting out little shoots which root very easily put into sand and water. The sand should be in a saucer, just enough water to wet it well and cover it—and the little cuttings dotted in all over. This may be placed also on a chimney-piece, though the best thing for it is certainly a warm plant case. These cases, to which, from my continual use of them, I am obliged to allude so often, are frames of glass set on a wooden, zinc-lined box, which is fitted with a case for containing hot water. The water being renewed each morning before it cools, communicates so much warmth to the sand or fibre, that it retains some heat for very many hours.

These cases are certainly very pleasant adjuncts to a window garden, yet it is really wonderful how much may be done without any means at all—but with an inventive genius. Basins even, filled now and then with hot water, hot sand—even little lamps for very special plants—what a world of pleasure there is in all our own contrivances.

A row of little bottles containing each a cutting often is a means of striking delightful plants. The difficulty however is how to accustom plants thus grown to a more solid food when the time comes to plant them; of this however we must speak another day.

At the present moment I want only to give one hint —people are apt to think plants must be wrapt up so very warm at night just like so many chickens. The real truth is that the heat in which they stand should be always in exact proportion to the amount of light—light days warmer, and dark nights cooler—keeping clear of just the *lowest* degree allowed for the kind of plant, in its particular state—the sunny days or the sunny aspects bringing with them their due degree of extra warmth from sun heat—the duller days and the more northern aspects having a lower heat.

Plants *lengthen* in heat, but they only *increase* in light, and window gardeners all may well lay that hint, long laid down, to heart. *E. A. M.*

Home Correspondence.

Gishurst Compound.—I was led to believe by a well known authority, that this, used at the rate of 8 oz. to the gallon of water, would destroy the vitality of the eggs of the Red Spider; and I accordingly made use of it for that purpose in January 1861, but without the slightest apparent effect, as every egg produced a lively specimen of that tree-and-temper-destroying pest. A month ago I repeated the application, using one pound to the gallon as is now recommended, but alas! my hopes of conquering the foe by means of Gishurst have vanished, as the eggs now show unmistakeable symptoms of ere long producing a lively family. If any of your correspondents would furnish the egg-destroying application wanted, great would be the relief to multitudes besides myself. *Microscope.*

Figs.—I have a large Fig tree on a south wall, which formerly used to bear profusely — latterly, however, it has produced but little. I am therefore inclined to attribute this to bad pruning—it having been treated like any other fruit tree. Several persons have assured me that a Fig tree should never be touched by the knife, but be allowed to grow quite wild—though how that can be managed I do not well see. I should be much obliged by the advice of yourself or some experienced person on the subject. *S. Y. C.* [Don't prune the tree, but pinch off the end of every young shoot as soon as it has formed 5 or 6 leaves. Then look to the roots, cut them in, and fill the hole with plenty of broken bricks and plasterers' rubbish mixed with the soil.]

Jasminum nudiflorum.—This pretty shrub has been in full bloom for the last three or four weeks on many of the house walls in the western suburbs of London. Should it be unknown to any of your readers who would like to have a wall covered during the winter and spring months with primrose-coloured flowers, I advise them by all means to procure it. It was introduced from China some 16 or 17 years ago, and I fancy may be had in any nursery for a trifle. During my late travels in Northern China I found it in the gardens about Peking, and it appears to be indigenous to this part of China, a fact which fully accounts for its hardiness in our climate. Any thing that will survive the frosts of a Peking winter need not fear an English one. I therefore recommend this pretty Jasmine to all lovers of winter or spring flowers, and particularly to cottagers and others who have not the luxury of a greenhouse. *R. Fortune.*

Room Plants.—The letter of the lady who writes last week from Dublin, recommending small stoves and greenhouses to all who really care for having good flowers in rooms, reminds me a little of the French princess who recommended cake, if bread were unattainable. We are indeed, in two points at issue. I should be very sorry to do away with room plants, if I had twenty greenhouses; and I can never allow but that with twenty greenhouses the room plants might hold their own. It seems to me that the object of all good indoor-gardening is to make up to plants for advantages that they might elsewhere naturally enjoy; and while I do not pretend that all plants will thrive in rooms, or that any will do so without especial care, I do maintain that with care many will thrive there beautifully. On no less authority than that of Dr. Lindley I have heard of a window garden whose beauty attracted even his attention, in passing it by abroad—the Begonias and Campanulas, Fuchsias and Geraniums which filled that window must thus have been very striking. My friendly antagonist, indeed, is fortunate in having a little greenhouse, and in being able to provide it with all due attention on a winter's night; but the essence of indoor-gardening is, I think, to have equal flowers in the absence of all such help, making up, in fact, by care and ingenuity for advantages denied by want of space or money. For my own part, since the first week in December I have had a constant succession of Narcissi, Tulips, Scillas, and for the last month of Hyacinths and Snowdrops, without any heat beyond what a cool window gives them, when promoted from cellar floors. My Lilies of the Valley have also grown as fast as possible in a heated plant case, and now are very beautiful. As far, therefore, as our lists run together, I am well contented with my own room plants. My Orchids, too, some beautiful Calanthes that Messrs. Low, of Clapton, were kind enough to send me, with one of the pink Limatodes rosea, have been very lovely for a great many weeks; Narcisse, a Tea Rose, had a beautiful blossom open on Christmas Day. Ferns and Camellias have been very flourishing, while Cyclamens and Chinese Primroses have been in constant blossom since the first week of November. And as all these things are kept in a London sitting-room, I think they ought to prove that room-plants may not be so very despicable. I do not think much myself of the extra trouble required. With me it is now compulsory to have only room plants; but long ago, when I was able to take care of a greenhouse, I found it quite as difficult to grow plants well in it. In fact, a fine range of stoves and Orchid houses, conservatories, and hot houses, would be the proper thing; but for those who have them not, I have no hesitation in saying that room plants can be grown with more hope of triumphant success than such plants can be in a mixed greenhouse, and one of a small size. The alternations of heat and cold, the occasional necessity of high night temperature, causing weakly shoots; the dreadful condensation of moisture on the glass, drying the air so much, and the danger even of syringing on a sunny day—all these things are difficulties that are indeed alarming. *E. A. M.*

French Tree Management.—As I see that you have sufficiently condemned the cruel plan of our Gallic neighbour in depriving Elm trees of their breeches, coats, and waistcoats in these boreal climates (ay, even in the tropics), I refrain from sending to you a few notes which I had prepared on the subject. In days gone by, we find old Dame Nature a practical anti-Robertist; for, she clothed with wholesome bark the unfortunate sisters of Phaeton:—"Dumque ea mirantur, complectitur inguine cortex. Perque gradus uterum, pectusque, humerosque manusque ambit." And again—"Cortex in verba novissima venit." I had rather trust to the anodyne of ancient poets, than to the nostrums of modern scarificators. Should any of your friends express a wish to inspect Elm trees, I can offer them a most ample field. I have Elms here, from 15 feet in circumference to half an inch; Elms growing on high land and on low land, on rich lands and on poor lands; Elms exposed to all the four winds of Heaven, amid rocks and in Turnip soil; Elms grafted, and Elms natural. Perhaps, I do not err when I say that I can boast a display of Elm trees not to be surpassed in all England. The Scolytus is my friend and forester. So soon as he makes his appearance I thank him kindly for the visit; and I lose no time in sending the felling axe to the grindstone. Anybody may have free access to examine these Elms. *Charles Waterton, Walton Hall, near Wakefield.*

Early Grapes.—Along with this I have sent you a bunch of Black Hamburgh Grapes which were ripe the first week in January. In the *Florist* for February I read an article from Mr. Thomson respecting Grapes ripening in the early part of the year; and, though some objections have been raised against such a system of culture, as far as my experience goes I fully indorse all Mr. T. has written. The Vines from which this bunch was cut were started on the 10th of August, 1861. The sashes were off until that time in order to have them painted; but the Vines showed signs of pushing, so I started them at once, and they grew away as well as if it were spring, until November; then we had very dark weather; but in December some of the fruit began to colour, and, what is most remarkable, got ripe at once. Some of the bunches were fit for cutting by Christmas Day, others are only just ripe now, and some are shrivelling. I may add that I cut 15 lbs. last week for my employer's table of the best and largest bunches; also some bunches of Barbarossa, in a fine plump condition. The latter is not properly appreciated as a late Grape, for I believe that it would hang well until March in a house by itself, while our West's St. Peter's have been done since the first week in January; they were quite shrivelled, and dropped off the bunch at that time. I should state that the Barbarossa grew in a house with Hamburghs and Muscats; the former were ripe, and were exhibited the first week in September. *J. E. F., Feb.* 10. [The Grapes were as black as ebony, and their stalks as green as grass. They could not be more.]

Coal Tar and Hotwater Pipes.—If your Correspondent who complains of the unpleasant and deleterious smell arising from his pipes, which he had covered with coal tar, had taken the precaution in the first instance to heat the pipes to a dull red heat, and had then plunged them into a bath of coal tar, a fine varnish would thus have been burnt into the pipes both inside and out. No smell whatever would subsequently have arisen from them, They would have received in this manner cheaply and instantaneously a coating better than paint. The inside of the pipes would have been protected from the action of the water, and the outside from the action of the atmosphere. I speak from experience. *Robt. Sutcliffe Idle, near Leeds.*

Seedling Nepenthes.—I do not know a more interesting sight than a pan full of young seedling Pitcher Plants. It was my good fortune about a year and a half ago to raise a good stock of Nepenthes distillatoria from seed sent from Ceylon. The seeds are very minute, but tapering out at each end into a thread-like appendage; Dr. Lindley says in the "Vegetable Kingdom," that "It may be concluded that the long loose tunic of the seed is intended to act at first as a buoy, to float the seed upon the surface of the water, and afterwards as an anchor, to keep it fast upon the mud until it can have struck root." Keeping in mind that the Pitcher Plants are natives of the East Indian swamps, I filled a flat pan with loose peaty soil and gave it a good soaking of water; the seeds were then sown upon the surface, and the pan was covered with a bell-glass and plunged in a frame in the hottest division of the propagating house, where it would receive a brisk bottom heat. In the course of about three weeks I had the satisfaction of seeing that the seeds were beginning to germinate, and, as the Conferva was commencing to spread over the surface of the soil, the bell-glass was raised so as to allow of a little circulation of air. The very first leaves made after the expansion of the cotyledons were possessed of pitchers, but not as in the adult state hanging from the point of the leaf. In these earliest leaves the pitcher was, as it were, imbedded in the substance of the leaf, as though the midrib were hollowed out. They were in fact somewhat like the miniature leaves of a Sarracenia, but with a wing along each side instead of one along the upper surface; the lid of the pitcher, too, was shaped more like that of a Sarracenia than a Nepenthes

As the plants progressed, the leaves gradually and by slow degrees assumed the normal form; but as many as eight or ten leaves were formed, clustering like a rosette upon the soil, before the stem showed any disposition to ascend. There was another point worthy of note about these seedlings; there were, even in that young state, great differences in the colour of the pitchers and in the habit of the plants. It will be interesting to see if they preserve these peculiarities as they grow up, for in that case they would be almost as distinct as some of the so-called species. There is one fact which I learned from these seedlings which it would be well to keep in mind. The seed must be sown as soon as possible after it is ripe, it positively will not keep even for a month or two. The seed which was ripened at the same time as that which produced the plants above mentioned, but which was not sent to England until a month afterwards, although treated in exactly the same way, entirely refused to germinate. This may, perhaps, account for the difficulties which others have sometimes experienced in raising plants from imported seed. Those who have correspondents in the East should firmly impress this fact upon them—that it is quite useless to send the seed of Pitcher plants unless it is forwarded the very first mail after it is ripe. There are yet many other species of Nepenthes in Borneo and some of the other East Indian islands, which have not been introduced, and yet which surpass in size and beauty those we now cultivate. While speaking of Pitcher-plants, allow me to ask a question. There are several species which when in strong health grow very rapidly, making long shoots, the leaves of which terminate in tendrils instead of pitchers; is it possible to cause these to produce pitchers? In one of the best private gardens in England, I was once shown some Pitcher-plants which had grown in this way, and yet were furnished with pitchers along the greater part of the long shoots. I inquired how this result was brought about, and was told that if the extremity of these tendrils were uninjured they would produce pitchers, although the leaf had been made a twelvemonth, if the top of the shoot were cut off. One thing is certain, that those plants were better furnished with pitchers than any other plants I ever saw, and if this can be insured it must be looked upon as a fact worth knowing. But at the same time I must say that my own experience leads me to look upon it with a good deal of doubt and suspicion; but others, who have seen more of the practical cultivation of these plants, may perhaps be able to throw a little light upon it. *C. W. C.*

Coleus Verschaffelti.—That this is a first-rate plant of its kind I think all will admit who have seen it grown; and that it will prove an effective exhibition plant during the coming season I am sure; yet some exhibitors hesitate about growing it, because they say that "it will not tell; that it is a plant as easily propagated as a Verbena, and as easily grown as a Cabbage." Now, I think this is to be regretted, inasmuch as it is a fine-looking dark-leaved plant. The groups one sees exhibited have too many green things among them; beautiful and decorative as they are, still there is a deadness and want of brilliancy about them. At our shows here in Manchester the most beautiful leaved plant in cultivation is seldom exhibited on account of its being common. I allude to Cissus discolor; a good plant of this and the above would I am sure vastly improve collections of fine-foliaged plants. One purpose flower-shows serve is to please those who frequent them; and I venture to say that eight out of 10 persons who visit exhibitions would prefer seeing a good plant of Cissus discolor or Coleus Verschaffelti, though not worth 1*l*., to even the stately Theophrasta imperialis, although the latter might be worth 20*l*. I am not complaining of exhibitors not growing these things; the remedy lies in another direction, and I think it possible that these deservedly popular collections may be much improved by the introduction of a few showy plants such as those just named. *A., Manchester.*

Societies.

ROYAL HORTICULTURAL: *Feb.* 11 (*Anniversary*).—This meeting, for the election of Council and officers for the ensuing year, and receiving the Report of the Council, was held at the Society's Garden, South Kensington, on Tuesday last. Sir Wentworth Dilke, Bart., V.P., occupied the chair. Mr. Thomas Moore and Mr. Booth having been appointed Scrutineers of the approaching Ballot, the Secretary read the following Annual Report from the Council to the Fellows.

A few short weeks ago the Council had looked forward to this Meeting as an opportunity for congratulating the Society upon the prosperous state of its affairs. Now, through the lamented death of H.R.H. the President, their satisfaction has given place to sadness and gloom.

The Fellows are already aware of the promptitude with which her Majesty, with characteristic disregard of Her own feelings, at a time when She was overwhelmed with grief, deigned to think of the Society, which had been so specially the object of Her Royal Consort's care. The spontaneous promise of support which the Queen has so graciously extended to it calls for its most grateful acknowledgments.

The Fellows have already been informed that, without loss of time, an address of condolence was forwarded by the Council to her Majesty.

A further most gratifying demonstration of the Queen's purpose, to do everything in Her power to support the Society, and carry out the intentions of Her lamented husband, has since occurred. Fellows are aware that at the present Meeting it falls upon them to elect their President and office-bearers. Had Providence not removed their late President, it would have been the privilege of this Meeting again to elect him. In consequence of his decease, however, it became the duty of the Council to consider whom they should recommend to the Society for election in his place; and they deemed it becoming to endeavour to ascertain Her Majesty's wishes on the subject. With feelings of the deepest gratitude the Council learned that had it been compatible with Her high position, Her Majesty would Herself have condescended to fill the office.

In proceeding, therefore, to the Election of a President, as required by the Charter, it will doubtless be the anxious desire of the Fellows to meet the wishes of her Majesty, who has been pleased to recommend the Duke of Buccleuch to the Council, as the person whom, under present circumstances, it would be most agreeable to Her Majesty's feelings to see holding that situation. The Queen has also expressed Her desire that though unable Herself to hold the office of President, She may be kept as fully acquainted with the proceedings of the Society as has hitherto been the case.

Such encouragement and support, hallowed by the motives which have actuated Her Majesty, must strike a responsive note in every heart. The Council feel sure that the Fellows of the Society will with one accord participate in their desire to join with their widowed Queen in carrying out Her lamented husband's plans, and so completing the noblest monument which the Society can offer to the illustrious Prince who did so much for it, and who had its welfare so thoroughly at heart.

A statement of what has been done since the last Anniversary and of what remains to be done, will best show the Fellows how such intentions can be turned to practical account.

The number of Fellows of the Society at the last Anniversary (1st May, 1861) was 1752. Under the new Charter the date of the Anniversary has been anticipated, in consequence of which only eight months are now to be reported on. During that period 1005 Fellows have joined, of whom 365 pay 2 guineas annually, 544 pay 4 guineas, 81 have compounded by the payment of 20 guineas, and 75 by that of 40 guineas. The total number of Fellows on 1st Jan. 1862, had reached 2774, composed as follows, viz.:—

10	Fellows paying retrospectively	1 guinea.
23	" " " "	3 "
6	" " " "	2 "
716	" " in advance	2 "
215	" " retrospectively	4 "
915	" " in advance	4 "
334	" who have compounded by paying	20 "
555	" " " "	40 "

At the General Meeting held on the 7th inst. 157 more Fellows were elected.

The resignations and deaths during the past season have been only 43.

It will thus be seen that whether the number of Fellows be looked at as a whole, or a merely comparative view be taken of the increase since the 1st of May last, there is equal ground for satisfaction. The List of Fellows also shows that, irrespective of rank or title, the Society has the honour to reckon among its members a large proportion of the most distinguished men of the day.

Whilst the adhesion of so many persons of eminence has been highly gratifying, the Council have never forgotten that the real and proper scope of the Society is the advancement of Horticultural knowledge. In all their proceedings they have kept this steadily in view, and they trust that they may refer to the work done by the Fruit and Floral Committees; to the information contained in their published "Proceedings;" to the many interesting and novel subjects exhibited at their Flower shows, as well to the extent and beauty of these shows themselves; to the mission of their Collector to South Brazil, the returns from whom are already beginning to arrive; and to their ballots for seeds and plants, as proof of their efforts to sustain the high reputation of the Society in this respect. Further improvements have occurred to the Council, which, as opportunities offer and means arise, it is their intention to carry into effect.

The statements of accounts appended to this Report being, in consequence of the alterations caused by the New Charter, only for a fractional part of the year, viz., from May 1 to December 31, they cannot be looked at as a representation of the results of the year; nor can their elements be dissected and brought forward as in past years, in contrast and comparison with previous years. It is the partial commencement of a new epoch, and must stand by itself as an imperfect record. From the same cause the accounts on the present occasion had to be prepared in a somewhat different form from that which has been previously employed. The Council has hitherto merely had to show the Society how its own individual account stood. It now has to produce a double set of accounts: one embracing the whole of its affairs, including those of Chiswick as well as South Kensington; the other confined to South Kensington. A separate account of the latter has to be kept for the Commissioners of 1851, as their rent depends upon the success of the Society. In the Appendix the accounts will be found stated in this double form. The first three accounts—called the Private Account, the Capital Account, and the statement of Assets and Liabilities—represent the affairs of the Society in its individual capacity. The fourth account, entitled the Revenue Account, has reference to the lease with the Commissioners alone. The accounts which will more directly interest the Fellows are those of Capital and Revenue, the Capital Account as showing the amount of money which has been expended on the works in the Garden, and the Revenue Account as explaining the ordinary working of the Society.

On referring to the Revenue Account it will be seen that the chief source of income is derived from the subscriptions of Fellows. The Council feel that this is the mainstay of the Society, and that its prosperity must depend upon its possessing a sufficient number of regular subscribers to render it independent of accidents or occasional reverses. The account in this respect, although it does not yet realize all they expect, gives very satisfactory promise of its soon reaching such a point as will put them at ease regarding it. The total sum derived from the Fellows in all ways since the 1st May, 1861, has been 8767*l*., but this includes 2373*l*. paid for life compositions, which are capitalized or placed in a separate account, for the purpose of yielding a yearly fifteenth to revenue. What had been paid prior to the commencement of the lease was carried to the general funds of the Society. The above receipts also include the whole year's subscription up to the 1st May, 1862, the subscriptions having hitherto been payable at that date, and thus one year's subscription applies to expenses in two years' accounts. This undesirable complication is the consequence of the change in the period of striking the yearly balance, rendered necessary by the New Charter, which requires the accounts now to be balanced each year on the 31st of December. The Council, in order to remove this inconvenience, have requested Fellows, in paying their next subscription, to pay only up to the 1st January, 1863, so that at that date the accounts may start fair, the year's subscriptions and the year's expenses both running for the same period.

There is another complication which the Council are most anxious, if possible, to remove. It will be seen in the statement as to the number of Fellows, and their different payments, that there is a certain number who pay retrospectively. These are Fellows who were elected at that period in the Society's history when the subscriptions, instead of being paid in advance, were not called for until after the Fellow had enjoyed a year's privileges. It is long since this system was abolished, but 254 Fellows of the period remain. It would obviously be a considerable convenience in the working of the accounts if some arrangement could be effected with this exceptional class of Fellows, by the individuals composing it voluntarily agreeing to be placed in the same position as others. It would make no difference in the amount to be ultimately paid by these gentlemen, because on death or resignation their past year's subscription would have to be paid, which is not the case with those who pay in advance.

The next source of income is that derived from the public by means of exhibitions and promenades, &c. The table, No. 5 of the Appendix, shows the amount obtained from this source during the past season, as well as the profit or loss resulting from each occasion. No account is there taken of the expenses of the staff, the rent of the place of exhibition, or other items which in a strict debtor and creditor account would require to be charged. But even after making allowance for this the result is satisfactory; with the establishment which the Society possesses, (and must keep at any rate), these attractive entertainments have been provided for the Fellows not only without putting them to any extra expense, but actually at a profit of 1347*l*. 17*s*. 8*d*.

The Council would wish, where practicable, to make every separate department of expense in like manner contribute to its own support. That part of the Chiswick expenses which is occasioned by the operations of the Fruit Committee, they endeavour to diminish by the sale of the fruit and vegetables reared for trial purposes; and it will be seen that 195*l*. 1*s*. 2*d*. has been received during the last 8 months from this source. In the same way they would wish to make their publications contribute to the cost of producing them; and they intend that, like those of other eminent Societies, their "Proceedings," &c., be sold to the public. With the view of rendering them more attractive, it is proposed that illustrative plates be occasionally given.

Of the items of expenditure, the only one which occurs to the Council as calling for comment is the interest on the debentures. This was originally 5 per cent. Since the original bargain was made, however, the Society has expended from the funds drawn from its Fellows, a sum of nearly 20,000*l*. beyond what has been borrowed, on permanent improvements to the Garden. In July, 1859, when the loan was brought out, the number of Fellows was only 989; now it is 2774. It therefore appeared to the Council that the time was come at which they might propose to the debenture holders either to pay them off, or to reduce the rate of interest to 4 per cent. Four-fifths have consented to the reduction, many of them handsomely signifying their approval of the step. The remaining fifth has been paid off, by transferring the bonds to fresh applicants.

The Capital Account shows the sums that have been actually paid for the works in the Garden; and in the Account of Assets and Liabilities will be found the additional sums incurred or expected to be due. A portion of the expense of the works is not payable until 12 months after their execution.

That part of the Garden works the execution of which falls upon the Society is nearly completed. The conservatory, the council-room, the terraces, the various terrace-steps and terrace-walls, the band-houses, the basins and canals, the Artesian well and water-works, the laying out of the garden, are all finished or far advanced. The portico leading from the council-room into the Garden, and the space adjoining it, has still to be plastered and finished. The walks are not so finely gravelled as is intended. Some minor works originally contemplated are still kept in view, and probably some addition may be made to the water-works. But of the actual works contemplated with the present means of the Society, the whole may be said to be very nearly completed. Those undertaken by the Commissioners of 1851 are not in so advanced a state. The decorations, both external and internal, of the Arcades are in a different position from others, and will probably be the work of years. The decorations of the Garden are in the same category, with this advantage, that in their case independent loans and gifts can be received, while any gift that can be made to the embellishment of the Arcades must be specially adapted to those buildings, and must take the shape of a work to be executed upon them or fitted into them. The Society has already felt the benefit of these two sources of embellishment. Various works of art lent to the Society will be found decorating the Garden, and some of the objects intended for the International Exhibition will find their way into its precincts. Others of a higher class have been presented to the Society, among which special notice should be taken of the noble works of art presented by Her Majesty, now placed in the Conservatory.

The Fellows themselves have done more to furnish the Conservatory with plants by their gifts than the Council by purchases. Many of these are of great value and beauty.

The New Charter has rendered necessary a new body of Bye-laws, which will be brought forward for adoption at an early opportunity.

The arrangements for the year 1862 have been already circulated among the Fellows, and need not here be repeated. The most important points regarding them are perhaps—1. The arrangements with the Commissioners of 1862 for the issue of joint tickets, admitting the owners both to the International Exhibition and the Society's Garden. The price of these has been fixed at five guineas. Fellows of the Society will, however, only require from the Exhibition Commissioners their ordinary three-guinea Season tickets; and—2. The arrangement with the Commissioners of 1851 for an entrance to the Garden during the Exhibition season from Kensington Gore, through the Commissioners' ground behind the Conservatory.

This Report having been read and adopted, upon the motion of the Vice-President it was resolved unanimously that His Serene Highness the Duke of Saxe Coburg-Gotha, brother of H.R.H. the late Prince Consort, should be elected an honorary member. The ballot having been taken the Chairman announced that His Grace the Duke of Buccleuch had been elected President, that Prof. Lindley had been re-elected Secretary, and Wilson Saunders, Esq., Treasurer; that Mr. Jonathan Clarke, Mr. Edmonds, and Mr. James Nicholson had been elected Auditors, and that Earl Somers, Mr. John Fleming, of Cleveden, and Mr. Robert Cooper, of 152, Fleet Street, had been elected new Members of Council for the ensuing year.

Notices of Books.

TRADE LISTS RECEIVED.—VILMORIN & CO., Quai de la Mégisserie, Paris. Catalogue of Tree Seeds. Also, List of Californian Tree Seeds, containing all the more important species.——PETER LAWSON & CO., No. 2 Catalogue, Garden Seeds, Jan. 1862; the same firm, The Gardeners' Kalendar for 1862, a broadside. The view for the present year is one of the International Exhibition building as it will appear when

finished. Surely it would be a *very* great improvement if, in the Almanac part, days for sowing, cropping, &c., were named instead of Saints' days, Birth days, Death days, and so on, which may be found in any penny Almanac.——BARR & SUGDEN'S Spring Seed Catalogue and Guide to the Flower and Kitchen Garden; 116 pages large 8vo, closely printed. No one expects scientific knowledge or literary merit in a Seed Catalogue, and we should not have looked for either in that before us, had not Chancery proceedings been threatened against all who venture to reprint it, a course which we think none would find worth their while. It is evident that a good deal of pains has been taken to give it an air of science; but we must add that the compiler was very ill-qualified for his task. Take, for instance p. 30. Convolvulus oleifolius which comes from Cape Maleca, in Candia, is said to be a native of the Cape of Good Hope! Coulteria, all the species of which are exclusively South American, is announced to have furnished a species from China! Does the writer think that Chili and China are the same country. Then we have Cosmos atropurpurea and bipinnata, the author not knowing that Cosmos is masculine. It is a pity that the Catalogue should be thus absurdly blemished, for it is no doubt as good as any other for practical purposes, notwithstanding the extravagant exaggeration of the figure of a double Zinnia elegans. ——JOHN CATTELL'S (of Westerham, Kent) Catalogue of Vegetable, Flower, and Agricultural Seeds for 1862. ——A Selected List of Seeds, &c., for the Kitchen, Flower Garden, and Farm, offered for sale by PAUL & SON, the "Old" Nurseries, Cheshunt, Herts.—— TOOLE & Co.'s (of 1 and 2, College Street, Dublin) Spring Catalogue and Amateur's Guide for 1862.

Garden Memoranda.

WEST HILL HOUSE, HIGHGATE, THE RESIDENCE OF R. BARCLAY, ESQ.—On the lawn here are some fine specimens of Coniferæ, among the most conspicuous of which are Pinus nigricans, P. insignis, P. excelsa, and P. cephalonica, Araucaria imbricata, and various fine Deodars and Cedars of Lebanon. A Rose border, which in summer forms a prominent feature in front of a low terrace wall, has been replenished with some of the best kinds of Roses, but previous to planting a liberal dressing of well rotted manure was given, and the border was trenched 3 spits deep. Beds on Grass are all filled with spring-flowering plants, such as Tulips, Hyacinths, Wallflowers, Sweet Williams, Anemones, &c.; and every bed is edged with different sorts of Crocuses, which bloom earliest, and being planted 2 inches from the edge their foliage afterwards forms a good edging to the plants which occupy the centre. When the bulbs have done flowering, ordinary bedding plants take their place.

In greenhouses near the dwelling-house are Camellias, Hyacinths, Primulas, Epacrises, Azaleas, Cyclamens, and Acacias in bloom, whilst in other houses are Ferns, a large collection of Begonias and other fine foliaged plants. One house is entirely filled with large specimen Cacti; another with Verbenas, Geraniums, and other plants used for the decoration of the pleasure ground; a third is employed as a forcing house, in which amongst other things, such as Rhododendrons, Roses, Lilacs, Hydrangeas, Azaleas, &c., is a quantity of large Fuchsias, cut close in; from the roots of the latter all soil had been shaken, and after pruning they had been repotted in as small pots as possible. In several houses Strawberries occupy shelves near the glass; the earliest are just showing bloom; when they have borne their crop they are planted out in the kitchen garden on ground well manured and trenched, where they remain three seasons without digging or other disturbance between the rows, which are 2 feet 6 inches apart, and the plants are proportionately wide asunder in the rows; rotten dung in the shape of a mulching is applied 2 inches thick, directly they have borne their crop each season; all runners are constantly cleared, but no leaves are allowed to be injured, and thus treated they bear wonderful crops of fine fruit, berries of Admiral Dundas on several occasions measuring as much as 6¼ inches in circumference.

Mushrooms, in the growth of which Mr. Young, the gardener here, is famous, are as usual abundant in cellars underneath the dwelling-house, the beds being literally covered with them. Milltrack spawn is that which is employed; the beds are made 16 inches deep, of any kind of short dung that may happen to be at hand, and which had been previously thrown together to heat and throw off its superfluous moisture. After being firmly beaten down the spawn is broken into pieces about the size of small Apples and inserted all over the bed, 9 inches or a foot apart, just covering it with the dung. This is done when the heat in the bed has fallen to 75°; and at no time is the bed ever spawned above that temperature. It is then covered immediately with 2 inches in depth of any good garden soil, and all is beaten firm and smooth; then in a temperature of from 48° to 55° Mushrooms appear in about six weeks, coming up close together in clusters often weighing 3 lbs. each, and many Mushrooms weigh individually from 4 to 5 ounces. 169 lbs. were gathered last season from one bed 12 feet long and 7 feet wide, and some beds have produced even more than that. The old beds, of which some account will be found in our last year's volume, p. 460, have all been wheeled out to the fruit garden, and used as a mulching to pyramidal Pear and Apple trees which have been taken up and root pruned. Last season excellent crops were obtained from these trees, and they promise equally well this year, as do also Wall trees.

Cold pits and frames are filled with Potatoes, Radishes, Carrots, Cauliflowers, &c. Cucumbers occupy a small house efficiently warmed by hot water from a No. 2 Ormson boiler, which heats about 730 feet of 4-inch pipe, and a No. 1 boiler from the same maker heats 350 feet satisfactorily.

Sparrows are found to be already attacking the buds of fruit trees; to prevent their depredations the trees have been whitewashed with quick lime, applied with a painter's brush. This has also the effect of keeping insects in check, and in some measure preventing the growth of Moss. For the latter however thorough drainage is the only effectual remedy.

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Let every attention be paid to providing a succession of bloom with which to keep this house gay, and avoid as far as possible the expense of much firing, which is moreover very injurious to most plants. Be careful not to let things in bloom suffer for the want of water, giving weak clear manure water to Salvias, Camellias, &c., and use every means to preserve the beauty of specimens in bloom as long as possible. In greenhouses damp and mildew are the great enemies to be guarded against, and these must be sharply looked after, especially in the case of plants in a rather soft state. If the former is troublesome it must be got rid of by means of free ventilation on mild days, using a little fire-heat at the same time, and for the latter a dry airy atmosphere is the best preventive, but the plants should be frequently examined, applying sulphur on the first appearance of the enemy. Very little water will be required at present, but the plants should be carefully looked over about twice a week, so as to make sure that nothing is allowed to feel the want of it. If not already done, get all plants tied with the least possible delay, for it is difficult to tie a plant so that it will not look somewhat stiff and unnatural, and the sooner all this description of work is done the better specimens will look when in bloom later in the season.

FORCING DEPARTMENT.

PINERIES.—Plants in bloom will require very careful management to prevent their being injured by damp, and the atmosphere must be kept dry, with a rather brisk temperature, admitting a little fresh air on every favourable opportunity; and if there are means of admitting air over hotwater pipes, which there should be, so that it may get warmed before coming in contact with the plants, a little should be admitted constantly when the weather is not frosty. Plants in bloom should also be near the glass, and where they will catch every ray of sunshine. It is nearly impossible to get fruit to swell anything like properly at this season; therefore unless a succession of ripe fruit is indispensable, and cannot be secured except by driving plants that bloomed late in autumn, these had better be kept rather quiet until the sun gains a little more power. Where an attempt must be made at present to get fruit to swell, a moist warm temperature of about 70° at night and 75° by day must be maintained, allowing it to rise to 80° with the assistance of sunshine, and the bottom-heat must be kept regular at about 85°, taking care to keep the soil in a healthy state as to moisture. But it is difficult to get the fruit to make much progress at this season, and a little time lost now will be easily overtaken next month, when the plants will enjoy a moist temperature, and the fruit will increase more in weight in one month than in two at present.

VINERIES.—As soon as succession houses are closed for forcing be careful to secure a thoroughly moist state of the atmosphere by frequently sprinkling the floors and every available surface, but as observed previously, a regular moist state of the atmosphere is most effectually secured by means of a slight bed of fermenting materials in the house, which will also afford a little warmth, and the moisture from this is much more congenial to vegetation than anything that can be effected by the most careful use of either syringe or evaporating pans.

STRAWBERRIES.—Early kinds should be placed in forcing houses, where a moderate heat is maintained. Water, however, sparingly until we have more sunlight than we have at present.

FLOWER GARDEN AND SHRUBBERIES.

The weather is comparatively favourable for executing alterations; and where these are in hand they should be prosecuted with the greatest possible despatch, taking advantage of frosty mornings like the present for wheeling. See to even small plants being secured against wind, for these are often greatly injured by being blown about, especially if recently transplanted, and a small stake and a few minutes' work would prevent the mischief.

HARDY FRUIT AND KITCHEN GARDEN.

If any pruning has yet to be done let this be attended to without further loss of time, and see that trees exposed to wind are securely staked. Whenever the weather is favourable give air freely to Lettuce and Cauliflower plants under glass; indeed, the sashes should merely be used to exclude frost and throw off rains, for the plants will do all the better in spring for being kept hard over winter. A sowing of Peas and Beans on well-sheltered dry ground must soon be made, and do not spare the seed of the former, for it will be sure to be exposed to the depredations of mice. Attend to keeping up a regular succession of Seakale, Asparagus, and Rhubarb, by introducing moderate quantities at short intervals into heat.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the Week ending Feb. 19, 1862, as observed at the Horticultural Garden.

February	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind	Rain.
Thurs. 6	7	29.941	29.921	50	29	39.5	47½	45	N.W.	.06
Friday 7	8	30.294	30.061	39	20	29.5	46½	45	N.E.	.00
Satur. 8	9	30.548	30.516	35	18	26.5	45	44	N.E.	.00
Sunday 9	10	30.527	30.515	40	30	35.0	43	43	N.E.	.00
Mon. 10	11	30.479	30.308	45	18	31.0	42½	43	N.	.00
Tues. 11	12	30.235	30.079	44	30	37.0	42	42½	N.	.00
Wed. 12	13	30.018	29.973	48	31	39.5	42	42	N.	.01
Average		30.293	30.196	43.0	25.0	34.0	44.1	43.5		.01

Feb. 6—Fine, with clouds; overcast; fine at night.
— 7—Fine but cold; clear; some snow-flakes; frosty.
— 8—Clear, with sharp frost; low dusky-white clouds; frosty.
— 9—Sharp frost; fine but cold; overcast at night.
— 10—Cloudy; clear; very clear and frosty at night.
— 11—Frosty; uniformly overcast; cloudy.
— 12—Hazy; overcast; fine at night.
Mean temperature of the week 3¾ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Feb. 22, 1862.

February.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 16	46.5	30.9	38.7	7	.23 in.	6	6	2	3	1	9	6	3
Mon. 17	46.5	31.3	38.9	13	.32	3	5	3	3	4	7	9	2
Tues. 18	44.7	30.8	37.8	14	.30	5	3	4	1	5	8	6	4
Wed. 19	44.8	30.8	37.8	12	.50	6	2	5	4	1	10	4	4
Thurs. 20	45.2	30.8	38.0	19	.51	2	4	3	5	2	9	7	4
Friday 21	46.3	32.1	39.2	17	.20	3	7	4	5	0	10	6	1
Satur. 22	46.1	32.2	39.1	16	.29	4	3	6	2	1	11	6	2

The highest temperature during the above period occurred on the 16th and 21st, 1859, and 21st, 1846—therm. 58 deg.; and the lowest on the 17th, 1855—therm. 2 deg.

Notices to Correspondents.

⁂ In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

AMSINCKIA SPECTABILIS: *C D.* This is a native of New California. We should raise it in heat and turn it out in the summer. If handsome pray let us see it.

ANNUALS: *T S P.* Next week.

BOOKS: *A Young Gardener* should procure Kemp's "How to Lay Out a Garden." We have *promised* nothing.

CUCUMBERS: *W F M.* You must cover your tank more securely than with Railway sleepers; the steam passing up between the latter into the soil, and keeping it in a continually unhealthy state, is the reason why your plants never root beyond a few inches into the mould without rotting. In winter especially the tank should be closely covered, and for that purpose slates are as good as any material you could employ.‡

EXOTIC TREES: *H C.* We fear that Chamæcyparis thurifera is too tender to acquire much size in this country. The others are large trees, perfectly hardy, and as they make valuable timber in their own countries we see no reason to doubt their doing so here. You are however aware that they have been introduced for only a few years, and therefore we can have no home evidence upon the last point.

GLASS: *G H P.* We should certainly use Hartley's rough plate for the roof. Good sheet is best for the sides. All the *chief* glass dealers keep an equally good article.

ICE HOUSES.—We advise *the Colonel* to "continue the old plan."

INSECTS: *Horace.* The leaf of Cænopteris flexuosa is infested with the females of a scale insect (Coccus sp.) of the ordinary form. Are any other groups of plants in your house infested with the same insect? Is it confined to the Ferns? or has it travelled to them from other plants previously in your possession? Fumigation, at the period when the young are hatched, will be effectual. *W.*

MEALY BUG: *Warley.* Frequent washing with soap, warm water, and a sponge, is a safe and, if carefully done, effectual remedy. Gishurst Compound, at the strength of ½ lb. to a gallon of water, is also reported to kill mealy bug. Immersing the plants for a second or two in the solution is said to be the best way of applying it. To test its strength and effect, however, you should first try it experimentally upon some plant which you care but little about, and if that is uninjured you may then cautiously proceed with the rest. Doubtless more than one dressing will be required to banish this pest from your stove.‡

MESSENGER'S GLASS HOUSES.—We have received from Mr. Messenger the following note:—"Rather than allow so cursory a notice of my answer to Mr. J. Pannall, of Leeds, as the one that appeared in the *Gardeners' Chronicle* of Jan. 18, I will gladly shorten it to the greatest brevity as a means of having it brought before the public, inviting at the same time any gentleman to correspond with me on the subject, when a more explicit and substantial reply shall be given. 1st. All I say of my buildings is true—*intrinsically true*—and I challenge any one to contradict one point. 2d. My patent was finally sealed Aug. 1, 1859. 3d. I alone am the inventor of my patents, and will contest their originality. 4th. I deny that any one else has ever (unless surreptitiously) built upon my principles." This is really an advertisement not an answer.

NAMES OF PLANTS: *W C.* The name Sea Juniper is unknown to fame. Very likely it is the common Tamarix germanica, or possibly T. gallica, which is by far the handsomer of the two.—*M M.* Lichen pyxidatus.—*Faber marinus.* Acacia myrtifolia.—*W P R.* The well-known Acacia Riceana.

OLD MEDLARS: *X K.* If in health we should root prune them.

PARIS FRUITS: *Japhet.* Fresh Grapes were selling in Paris in the middle of January at from 1¾ to 4 francs the kilo. By the beginning of February the supply was exhausted.

VINES: *Wainfleet.* If you mean to force your Vines you should protect not only their stems but the border in which they grow, with haybands for the first and long litter for the second. If you don't force them, then such protection is needless.

WIREWORMS: *An Amateur.* You are surely mistaken in supposing that these infest your pots. If they do, shake the earth off the roots and repot, having first plunged the "wire worms" into boiling water. Neither soot nor lime will do harm—but the other substance is unsuitable.

MISC: Full price will be given for copies of June 8, 1861.

Seeds of Crop 1861.

CHARLES SHARPE AND CO., having completed the Harvesting of their Seeds, comprising Turnip, Mangel, Carrot, Peas, Beans, and all other varieties of Culinary and Agricultural Seeds, will be glad to forward post free on application their WHOLESALE PRICED CATALOGUE for the present season.

Sleaford.—February 15.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

To the Seed Trade.

THOMAS AYRES, SEEDSMAN and GROWER, Biggleswade, Beds., has to offer WHITE SPANISH ONION SEED, ALTRINGHAM and WHITE BELGIAN CARROT SEED; YELLOW GLOBE, ORANGE GLOBE, RED GLOBE, LONG YELLOW, LONG RED MANGEL WURZEL SEED; also several varieties of SWEDE and WHITE TURNIP SEED.

Prices forwarded on application.

GENUINE ITALIAN RYE-GRASS, produced from the second cut of Foreign "Italian," weighing up to 21 lbs. per bushel, and "Pacey's" and "Evergreen" Perennial Rye-grass, weighing up to 28 lbs. per bushel, can be supplied direct from the Grower either now or in March (at the option of the purchaser), and samples will be forwarded free on application.

Address SIMON A. DAINTREE, Fendrayton, St. Ives, Hunts.

To the Seed Trade.

FREDERICK W. WENDEL, SEED MERCHANT, Erfurt, Prussia, begs to offer the following Seeds of carefully selected Stock of good growth:—

CARROT: Altringham, Long Red; Orange Red, Belgian; Early Horn; Earliest ditto, for Forcing.

ONION: Straw Colour, true; Silver Skinned; Darkest Blood Red; Pale Red, or Flesh Colour, excellent for general crops; Pear-shaped Yellow; Yellow; Giant Madeira; James's Keeping

BEET: Darkest Blood Red.

TREE SEEDS: Silver Fir; Spruce ditto; Scotch ditto; Larch.

Prices, &c., for the above, to be had on application to GEO. MACINTOSH, Seedsman, &c., High Road, Hammersmith, W., London; and where also GENERAL PRICE LISTS can be obtained free and post paid.

THE ENGLEFIELD YELLOW GLOBE MANGEL WURZEL, warranted to grow more weight per acre than any other variety of Globe Mangel. The Raiser and Advertiser, Mr. ANDREW HORSBURGH (Steward to R. Benyon, Esq.) Chalk Pit Farm, Englefield, Reading, Berks, has 15 sacks of hand picked seed for sale either in bulk or in bags of not less than 14 lbs., at 1s. 6d. per lb. Roots of this superior variety frequently weigh from 30 to 40 pounds each. Mr. HORSBURGH has taken upwards of 100 Prizes in Cups and Specie for Mangel Wurzel at Birmingham, Crystal Palace, Reading, Abingdon, &c. The above is not grown from seedling roots, but from large selected bulbs, which materially affects the weight per acre of a general crop.

Orders received by Mr. HORSBURGH, or by Mr. G. KNIGHTS, Whitton, Ipswich.

N.B.—The only reliable source to obtain the stock in its purity. All orders from persons unknown must be accompanied by a Post Office Order, or no notice will be taken of them.

To the Nobility, Gentry, Agriculturists, and the Public generally.

ALEX. PONTEY, of the Original Plymouth Nursery and Seed Establishment, established upwards of 60 years, supplies every requisite for the Farm, the Forest, the Vegetable Garden, the Flower Garden, the Fruit Garden, and the Conservatory. All Seeds proved before they are sent out. His celebrated GERMAN STOCKS and PÆONY FLOWERED ASTERS, which have given such satisfaction throughout the West of England, are now ready, and will be sent (post free) in packets of 12 splendid colours, separate, for 3s.; or same varieties mixed in 6d. or 1s. packets; and 1000 other varieties of Flower Seeds, in packets, from 2d. upwards.

Complete CATALOGUES are now ready, and will be forwarded free on application.

N.B.—Thirty four distinct varieties of TURNIPS, grown in the Trial Grounds last year, may be seen at the Seed Shop, 21, Cornwall Street.—Plymouth, Feb. 15.

Royal South Hants Seed Establishment

PAGE AND TOOGOOD have the honour to offer the OSBORNE MANGEL, the stock of which was presented to them by His late R. H. the Prince Consort's Steward, A. TOWARD, Esq., by whom it is considered the best variety in cultivation. In shape it is as perfect as a Globe Turnip, with a similar tap root, the foliage small and very compact, indicative of less impoverishment of the soil than can be said of most other sorts. It has carried off every prize for shape where exhibited. A great portion of the seed has been ordered by those who saw it growing, and P. & T. being anxious to get it into general cultivation, would prefer supplying it in quantities not exceeding Ten Pounds.

PAGE'S IMPERIAL ORANGE GLOBE MANGEL.—A large stock of this has been provided to meet the demand that has arisen for it. Its superior weight producing and keeping qualities are well known. The prize for the best 10 Acres has this year been awarded to it by the Botley Farmers' Club. STEWART MACNAGHTEN, Esq., grew 61 tons 2 cwt. per acre of it by ordinary cultivation. W. DICKINSON, Esq., produced six specimens, weighing when perfectly clean, without leaves or roots, 193 lbs., the largest of which, 44 lbs. At the Vale of Avon Farmers' Club, six prizes were awarded to it for acreage.

PAGE'S IMPROVED HARDY SWEDE still maintains its superior character for general cultivation. It carried the 10 Acre Prize at Botley.

BIRMINGHAM ROOT SHOW.—The Ten Guinea Cup for the best collection, and the Five Guinea Cup for Swedes have been again brought to Hampshire—being the third time in succession the former has been awarded to Sir W. Heathcote, Bt.—This not only reflects great credit upon the management and skill of his Steward, Mr. Charles, but the County should be proud of the distinction conferred upon it, by his energy and judgment, in carrying these Prizes (that for Swedes against 45 competitors). As Hampshire Seedsmen, we have great reason to speak of his success.

Special Contracts made for the supply of all AGRICULTURAL SEEDS in large quantities.

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Permanent Grass Seeds for all Soils.

SUTTON AND SONS have one of the largest and most complete Stocks of NATURAL GRASSES and CLOVERS in Europe, from which they prepare Mixtures expressly to suit the Soils for which they are required.

Seeds sent Carriage Free to all parts of the Kingdom. Export orders delivered free to the Ship's side in any English Port.

PRICED LIST gratis and Post Free on application addressed to

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Improvement of Grass Lands

BY SOWING GOOD SEEDS OF THE MOST SUITABLE KINDS.

SUTTON'S RENOVATING GRASS SEEDS SHOULD NOW BE SOWN.

These Seeds consist of PERENNIAL CLOVERS and FINE GRASSES for improving the bottom.

Price 9d. per lb., or 80s. per cwt. Eight or 12 lbs. per acre will be sufficient, and will produce a great increase in the produce.

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WHEELER'S ORANGE GLOBE MANGEL, WHEELER'S IMPERIAL SWEDE, GRASS SEEDS for PERMANENT PASTURE, GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

WHEELER'S TOM THUMB LETTUCE "IMPERIAL COS."—The demand for the above has been so great that we are now nearly sold out. We can spare a few more packets at 1s. each (free by post).

We have supplied the following leading firms, who can sell packets at the same price:—

Messrs. Jacob Wrench & Sons, London.
„ Peter Lawson & Son, Edinburgh.
„ Hurst & McMullen, London.
„ Noble, Cooper, & Co., London.
Mr. J. G. Waite, London.
Messrs. Fraser, Richardson, & Goad, London.
„ Nutting & Sons, London.
„ Sutton & Sons, Reading.
„ James Carter & Co., London.
„ James Dickson & Son, Chester.
Mr. John Bell, Norwich.
Messrs. Wm. Wood & Son, Maresfield.
„ Hugh Low & Co., Clapton.
„ Fisher, Holmes, & Co., Sheffield.
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Mr. Cooling, Derby.
Messrs. Maule & Sons, Bristol.

To secure a supply it will be necessary to send orders immediately.

Postage stamps taken in payment for small amounts.

J. C. WHEELER & SON, Seed Merchants, Gloucester.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.

METROPOLITAN SHOW, 1862.

Last day of Entry for Implements, March 31.

Last day of Entry for Stock, May 1.

STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. HALL DARE, Secretary.

12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, FEBRUARY 15, 1862.

MEETING FOR THE ENSUING WEEK.

WEDNESDAY, Feb. 19—Agri. Society of England.. .. Noon

THE owners of the clay lands of this country are to be congratulated. Their turn has come at length; and whereas the lighter soils by marling, sheepfeeding, and artificial manuring have hitherto been foremost in the march of agricultural improvement — thus contributing more than any other to that increased produce of food which English fields have of late years provided—we may now expect by drainage and effective tillage that the stiffer lands will take their turn in front —making the most rapid progress, yielding larger produce, more profit, and more rent.

A light soil is a machine—and as you must provide the rags before you get the paper, or you must feed in the wool before you get the cloth, so here you must supply the food for plants before you can expect a crop. All soils vary in their quality according to the economy with which the raw material thus fed in is dealt with in the land, and also according to the quantity of supplementary material needed in the manufacture, of which the soil naturally contains a store. Still it is the ability of the lighter soils as a machine rather than as a storehouse which is the main feature of their character, and so while by claying and sheep treading you are able to improve it even as a machine, yet it is by the cake and bones and dung which you supply that you provide the raw material of the produce you expect. Look at the wonderful report of Mr. Hudson, of Castle Acre, to Mr. JOHNSON last week at the London Farmers' Club. He applies at least 10 tons of dung and 8½ cwt. of guano, superphosphate, and common salt per acre to all his Mangels; 10 tons of dung and 3 cwt. of superphosphate to all his Turnips and Swedes; 8 tons of dung, 4⅔ cwt. of guano and nitrate of soda and common salt to all his Wheat; 4½ cwt. of guano and common salt to all his Barley; 10 tons of dung and 4 cwt. of guano, nitrate of soda, and salt to all his Clover; besides 3000*l.* worth per annum of oilcake, &c., consumed on the farm generally. "It is the custom on this farm to manure for every crop." Is not this a feeding in of rags at one end for the sake of the paper that comes out from the other! It is a true manufacture, and the soil is a true machine, depending for its productiveness on the quantity of raw material that can be passed through it in a given time.

Such is the character more or less of all our light soils. They are fertile or infertile, according to the capital of the farmer and his expenditure on food for sheep and cattle, and on artificial manure.

The clay lands of the country, on the other hand, are a strong box already full of treasure. What the owner of this box or the tenant who hires the use of it from year to year requires, is not so much a quantity of raw material to be converted by its means, as a machine would, into material of greater value and utility—but a clever picklock, and skill to use it well, by which to get at stores already there.

Such a picklock now exists—has, indeed, existed always; but it is now applied with unusual energy and skill. It is the clay farm that henceforth will be in greatest demand. In hiring it you take not only the groundwork of a manufactory, as it were, but you have access to a mine. You take not only a given surface whose natural fertility is indicated by the Sedge and Rush and Grass of untouched meadow land, and from which by dint of air and frost and sunshine you mow or reap a certain annual crop—but you have a depth of soil beneath that surface which the chemist tells you is full of valuable matter—much fuller than the sand soil is—which only needs skill for its extraction and utilization. The picklock to this treasure house is land drainage. Once give rain free passage through this soil, and let it take air through and through it in its train, and an immense quantity of the raw material will be at once provided from the natural supplies. No guano, petre, or ammonia, at 13*l.* to 16*l.* a ton, is needed. The material which for light land you must bring from the ends of the earth, is already here beneath the surface; and it only needs for the attainment of fertility that air and rain and light be brought to bear upon it, and free passage of soil-water be provided as a vehicle of it all to the roots of plants. They will then prove by rapid growth and fruitfulness how rich the clay land treasure-house naturally is in all that a light soil farm like Castle Acre must artificially receive in order to the maintenance of its fertility.

But the drainage of clay soils has rarely hitherto been thoroughly effected. You dig trenches at 7 or 8 yards intervals some 3 or 4 feet deep, and through pipes placed there you expect that all the rain which falls upon the field will escape, after gradual penetration of the whole, and filtration by every particle of all this 3 or 4 feet mass of earth. But after this you cultivate the upper layer of this mass in a manner which interposes between it and the lower layers an impervious floor. Three or four ploughings of grain stubbles before the succeeding Peas and Beans—the passage of long teams of cattle on the floor over which the soil, and under which the subsoil lies—is an effectual induration, which spoils your attempts at drainage.

This floor is fatal to land drainage, and therefore to fertility. It must be broken up, and this can be only done effectually by steam-power.

Within the last few days we have walked over several hundreds of acres of stiff clay land—land needing four horses to the plough—drained and smashed up before winter—between whose surface and the drains no such floor exists. It treads dry, and lies in as wholesome a condition as it is possible for land to exhibit at this season. The only

tillage which it has had has been a one-way cultivation or grubbing by steam-power to a depth of 8 or 9 inches, and a subsequent cross-grubbing, in some cases by steam-power, in others by the horse-drawn cultivator. This was done during the dry weather of October last; and the land is now a treasure-box whose lock is effectually picked; of whose stores made thus accessible it only needs that use be made by planting well-selected living seed in order that the utmost fertility may at harvest time be exhibited.

Steam ploughing or steam cultivation, after drains have been dug and placed, is the way to ensure good drainage. Tillage by steam power under such circumstances is the true picklock, by which the exhaustless stores of food for plants in all clay soils—lying now inaccessible as in a strong box—may be laid open to the roots of plants. The breaking up of the floor which horse cultivation hitherto has laid immediately below the surface—and the breaking up of soil and subsoil, and exposure of the whole to air and rain on its way downwards to the drains, will yet exert a marvellous influence on fertility.

THE experiment in Pig Feeding described in another column deserves the attention of those of our readers whose judgment is likely to be overborne by the perpetual advertisements of the enterprising manufacturers of cattle food. Since Mr. LAWES announced the result of his experiment he has issued so clear a statement of the circumstances under which alone a manufactured cattle food can be profitable, that we reproduce it here:—

"The possibility of manufacturing 'a Cattle Food,' the selling price of which should be sufficiently low to make it a cheaper food than oil-cake, or our common unmanufactured foods, is worth a little consideration. As every process of manufacture must necessarily add to the cost of the raw material, it is evident that it must be far cheaper to use the raw material as food, without putting it through any process of manufacture, unless this process gives rise to certain things which may be included under one of the two following heads:—

"1st. That a certain portion of the ingredients contained in the food possess a value for commercial purposes beyond that which they are worth merely as food; and consequently enable the manufacturer to sell the residue at a lower price as cattle food.

"2. That by a certain process of manufacture the elements of food can be arranged, so as to produce a feeding value more than equivalent to the cost of manufacture.

"In the manufacture of oilcakes, we have examples of the cost of manufacture being recovered in the high commercial value of certain ingredients contained in the food. The seed crusher produces oil for commercial purposes. The residue, under the general term "cake," is in much demand amongst agriculturists, either for cattle food, or as manure. If, however, this residue was of no value, oil would still be produced. The seed crusher, it is true, is enabled to sell his oil at a lower price, on account of the price which the farmer is willing to give for the cake; but it is the commercial demand for oil, and not the agricultural demand for cake, which gives rise to this branch of trade. Linseed oil is generally worth two or three times as much as the seed containing it, while the cake is, weight for weight, cheaper than the seed; the cost of manufacture is therefore recovered in the price for which the oil will sell as an article of commerce, and hence the manufactured cake is a cheaper food than the seed in its natural state.

"If our common feeding substances, such as Beans, Lentils, Barley, Locust Beans, &c., contained some ingredient of high commercial value similar to oil, we should undoubtedly have a fair basis for the manufacture of a food for cattle; in the absence of this, the manufacture of these or similar substances into 'a Cattle Food,' must depend for its success upon the combination of the elements of the foods into more nutritious compounds. The manufacturer while admitting, as he would be compelled to do, that the several ingredients contained in his food, such as starch, sugar, oil, &c., could be purchased by the farmer at a much lower price in the ordinary foods, must show, that it would be worth while for farmers to give a higher price for these substances, as they were combined in much better proportion, and possessed a greater nutritive effect in the artificial than in the natural food. The experiments on the feeding of various animals, which have been conducted for so many years at Rothamsted, do not hold out much hope of success in this direction. They show that the relation between the various elements of food as they exist in the ordinary grains, are perfectly suitable for the requirements of the fattening animals—that the elements which form fat and flesh, as they exist in Barley-meal, are perfectly suitable for the production of pork; and that a food to be successfully substituted for Barley-meal, should supply the same elements in a cheaper form.

"From the above remarks it will be seen that the manufacture of 'Cattle Foods,' as a distinct branch of trade, is not likely to prove of any service to agriculture. The production of meat at a low cost will depend upon the liberal supply of imported feeding substances, to be used in the unmanufactured state, and not upon the preparation of them by any peculiar process of manufacture."

THE fine weather in the beginning of the month was largely used in all our clay land districts for getting in the Bean crop. Peas too, for the early crop of Green Peas, on lighter lands near London were largely sown.

ARTHUR YOUNG says: "The farmer ought to sow his Beans the first month that his land is dry." The land has been and is unusually dry for the time of year, and when drained clay land was manured and tilled in autumn it has been of late in first rate order for Bean sowing. The land (1) harrowed down may be drilled with the common Suffolk drill in rows 18 inches to 2 feet apart, with seed varying from 10 to 14 or even 16 pecks per acre, according to the size of grain; or (2) it may be hand dibbled without any disturbance of the land, and this is commonest on stiff clay soils in England; or (3) on lighter soils the land may be bouted up in ridgelets 30 inches wide, manured in those drills either with dung or guano, and sown with a Bean barrow on the top of the manure which is afterwards covered over by splitting the intervening ridgelets, thus forming new ones, to be partly harrowed down before the plant comes through; or (4) the seed may be sown with a Bean barrow following every second plough, and thus ploughed in, this also being a practice adapted to light soils; and lastly (5), we may name the machine just patented by Mr. SMITH, of Woolston, referred to in another column, by which steam power is for the first time applied to a seed operation. The land is then at once tilled and sown in rows and covered in, and the work is done at the rate of an acre per hour.

Of the sorts of seed, we may name the Horse, the Tick, the Heligoland, the Long-pod, and the Mazagan. The Horse Bean, larger than the Tick, and needing more bushels to be sown per acre. The Heligoland, a round plump seed, sometimes exceedingly prolific; we once reaped 7½ quarters per acre of a first-rate sample. The Long-pod and the Mazagan, a large Bean, adapted for the garden rather than for the ordinary field culture.

Of Peas we take the following account from the lately-published edition of ARTHUR YOUNG'S "Farmer's Calendar."* "In the neighbourhood of London it is common to sow Peas so early as this on light dry soils which have been ploughed out of some corn stubble, cleaned and manured in autumn. The land is ribbed at intervals of 15 to 18 inches with a small one-horse plough. The seed, 2 to 2½ bushels per acre, is sown in these rows by hand and covered in by a broad hand-hoe, which pulls down enough of the edge of each ridgelet to cover the seed, leaving enough to be a protection from frosty winds to the young plant on first coming through, or enough to furnish a second covering with earth if the weather become excessively severe. The Early Charlton is a good sort for this culture.

The more ordinary culture of the Pea is done rather later in the season. The soils adapted for this crop are of the lighter class. The preceding crop may have been a grain crop, as Wheat after Clover. And if the stubble was cleaned, manured and tilled in autumn, all that is needed now is a harrowing and drilling with the Suffolk drill in rows 18 to 24 inches apart. The common grey or the grey Maple Pea may be chosen, and 10 to 12 pecks per acre may be sown.

STEAM CULTIVATION.

A DAY NEAR LITTLE WOOLSTON.

No one traversing the interval between Bletchley Station and the farm of Mr. Smith would suppose himself to be in the midst of some of the most striking features of English agriculture. Not to speak of that particular style of steam cultivation which has originated here, we have in its immediate neighbourhood—Woburn and the splendid cultivation of the Bedford estates—Creslow and some of the most remarkable illustrations of the successful practice and experience of English graziers—the vale of Aylesbury and the best extensive instance of butter dairying in the country—Northamptonshire and its grazing, its arable culture, its Lois Weedon tillage. And besides all this there are first-class herds of cattle and flocks of sheep not far off.—Shorthorns, Alderneys, Leicesters, &c. Between Bletchley and Woolston it is a country of small fields, pasture farming, crooked lanes, and hedgerow timber, anything but suggestive of the agricultural energy and intelligence which exists all round, and nowhere more than on the small estate of Little Woolston itself where Mr. Smith resides—where many years ago he realised the faults of the plough as an implement of tillage on all clay soils—where, accordingly, he invented and applied his grubbers for smashing up his land, working them with great teams of 8 and 1[illegible] horses—and where, driven by the awkwardness and inefficiency of a power so cumbrous as this, he finally yoked on the steam engine by a stationary windlass and wire rope.

It is to instances all round Woolston of the success which has attended copyists of his example that we had our attention the other day directed, and to which accordingly we now direct the attention of our readers.

* By J. C. Morton. Routledge & Co.

THE LITTLE WOOLSTON FARM.

This farm has been already more than once described in these columns. It is a small estate—one large field of 40 acres, in Beans, Wheat, Oats or Barley, and Swedes, of what is naturally a tract of poor hilly clay—and several large fields of fine rich clayey loam more nearly on the level. Of the former—one quarter now in Wheat sown broadcast on a smashed up Bean stubble looks as well as any one could wish Wheat now to look, of a first-rate colour, not too thick, but the plants individually strong and vigorous. The quarter for Beans was a Barley stubble manured and then smashed up one way with the cultivator. We saw it at work last autumn, and it was then tumbling the soil about in great masses, and leaving it in the roughest possible condition. This had been crossed by a horse-drawn grubber, and lay last week dry and thoroughly disintegrated, little heaps of yellow mouldered clay here and there over the surface, showing that the subsoil had been lifted and to some extent mixed with the upper layer. On Monday next it will be planted with Beans. An implement recently invented and patented by Mr. Smith, which stirs the ground and deposits the seed and covers it as it passes over the ground, is drawn to and fro by the steam engine and wire rope gear. And the report we have received, founded on the experience of the last few days, is to the effect that 10 to 12 acres a day can thus be accomplished in the best possible style.

The third quarter lies now ready for Swedes. It was a Wheat stubble cultivated one way by steam power, cross cultivated by horse power—left for weeds to die—then ridged up in 3 feet "bouts" by a double mould board plough drawn by horses, and subsequently subsoil ploughed in the furrows. A dressing of rags and of guano was scattered over the stubble before the steam cultivation, and the surface will be hand-hoed where necessary for the destruction of weeds before the seed is sown in May.

The fourth quarter was Swedes. They have been consumed upon the land by sheep and cattle, allowed access to one quarter of the field at a time during the day and folded elsewhere at night. The tops and roots were eaten down in the first place, and the tap root and shells have since been hoed out and are now being eaten. This will by and by be steam-cultivated for Barley or Oats. The whole of this tract of 40 acres now thrown together lay once in several separate pieces, and was cultivated at great expense and most laboriously with horses. It is now a specimen of remarkably cheap and efficient cultivation by steam power.

STOKE GOLDINGTON.

Mr. Smith, of Woolston, is not a prophet disregarded in his own county. His neighbours are his disciples. On the clay lands all round him the Woolston cultivator is at work, and hard-working farmers declare they would rather give up their occupation altogether than return to the former management of it. Mr. Whiting, of Stoke Goldington, near Newport Pagnell, is one of Mr. Smith's allies in this way. Besides being largely engaged as the owner of steam-threshing machines, he has taken two farms, and in April 1857 became the purchaser of Mr. Smith's steam tackle and cultivating apparatus, which he works with one or other of his steam-engines, and does a good deal of work with it on his own land, and still more for hire.

Take, for instance, his experience during 1861. He has with this one apparatus one-way cultivated upwards of 700 acres, of which 242 were on his own land, and the rest for hire. The value of the work thus accomplished is proved by the long prices which are willingly given per acre for only one-way work. It is also proved by the promise of the crops upon the ground, and the proved fertility of the land. The farm near Newport Pagnell is a small holding of good adhesive loam, about 80 acres in extent, and had only recently been taken at the high rent which accommodation land commands.

The Wheat after Beans smashed up by steam looked perfect—Clover after Wheat preceded by Beans also promised well—Clover after Barley not so good—Wheat after roots and after Clover not so good as after Beans. About 112 acres of steam grubbing, most of it on 56 acres of land, including therefore the double operation, had been accomplished.

On the Stoke farm—about 160 acres—110 or there-

abouts are arable, chiefly on stiff clay, and often very steep and hilly land. It has been drained, and most of the land has been steam ploughed for several years. On the heavy soils a six-year course is adopted, viz., Turnips, Barley, Clover, Wheat, Beans, Wheat. The extent to which steam tillage enters into the cultivation of the different crops depends upon the employment for hire of the horses and steam engine which Mr. Whiting lets out. If there be horses at home, otherwise idle in the stable, it is not thought necessary to light the fire in the engine.

The following cultivation and cropping of one of its fields may be taken as a sample of treatment which the land receives. Mr. Whiting had commenced work with the steam cultivator in the autumn of 1857. It was not however until the spring of 1858 that he began on the farm. The field in question had been Wheat in 1857—the stubble was not broken up till April 1858. It was then cross cultivated by steam-power, harrowed and cleaned as well as possible—manured and ploughed, and sown, part with Mangels, part with Tares, of which there was a good crop. The Tares were eaten off, the Mangels removed. The land was steam-cultivated once in autumn, and horse-cultivated in spring, and sown with Barley in 1859. The Barley stubble was horse-ploughed and cleaned, and sown with Beans in the spring of 1860. The Peas stubble was cultivated by steam-power once in autumn, and again in spring, and sown with Oats for 1861, of which there had been a heavy crop. Clover seeds, sown along with the Oats, had come well, and promise strongly and well for a good crop in 1862. The land generally is clean, and being in the hands of a man who is otherwise taken up with business engagements its condition speaks well for the cultivation adopted.

A good deal has been done upon the land in the way of removing old crooked fences and the planting of new ones, and the condition of these is capital. Two parallel rows of Thorns about one foot apart, and 8 or 10 inches from plant to plant, are allowed to grow 3 or 4 years upon the ditch side of the bank formed in the usual way. The upper row is then cut off except here and there an upright, and the lower row half cut through are bent up the bank over the levelled row, being kept down by a "heathering" above them of twisted Briar stems fastened about a foot from the ground from one to another of the uprights left, which are then cut off, immediately above the line thus made. The shoots from the plants cut down, and from the branches laid over, must produce a thick and efficient fence. The whole was kept well cleaned, and protected on either side by a dead wood fence.

Mr. Whiting's activity and energy are shown in various ways besides his multifarious work for hire and the steam tillage of his own lands. We saw a lot of bacon hogs which had made rapid progress on pulped Turnips and Barley-meal. A young Shorthorn bull, too, from Clifton Pastures, of pure pedigree blood, was on hire, and in demand for the neighbouring dairy herds. Altogether the impression given was one of great energy and practical good sense on the part of the tenant of Stoke Goldington.

PARK FARM, HANSLOPE, STONY STRATFORD.

This, as much as any farm we ever saw, is an example of steam cultivation for the instruction of any one still in doubt of the policy of steam tillage. It is some 490 acres in extent, 275 of which are arable—a stiff clay soil—hitherto worked by 13 horses in three or four teams, according to the character of the work. It is no show farm, and its tenant, Mr. Thomason, an energetic, practical, and laborious man, is no show farmer. He nevertheless kindly permitted us to walk over his land, and through his capital, well arranged, and recently erected farmery, and gave us a great deal of most useful and instructive information. The land has been drained, and is being drained, for the most part at the tenant's expense—the trustees for the owner, who is a minor, being shy of any expenditure whatever. The season of 1860 was a most difficult one for such land. The steam cultivator was obtained in the autumn of that year, but did little owing to the wetness of the weather. A Clover lea 22 acres was cultivated twice for Wheat. A Bean stubble 16 acres was also cultivated twice for Wheat, and one cultivation more given to fallow—all for Wheat.

In 1861, 324 acres were cultivated once, or rather 171 acres were cultivated, most of it twice, so as to give that number of acres worked in all. It was chiefly employed in helping forward the fallows. The work was accomplished by an 8-horse engine, burning 8 to 10 cwt. of coal a day, and requiring engineer, windlass man, ploughman, 2 anchor men, 1 rope-porter lad, and 1 boy and horse, at a wage of 13*s.* a day, besides perhaps 2*s.* 6*d.* a day for a horse and water cart. The work accomplished varies from 4 or 5 to 7 or 8 acres a day, according to the tool employed. In the first operation on the stubble, the cost of wage and fuel thus amounts to about 4*s.* 6*d.* to 5*s.* an acre; while in the second operation, crossing the first, the same daily cost, divided over one half more acres, comes to about 3*s.* 6*d.* to 4*s.* an acre. The repairs have been hardly any; the rope, since the autumn of 1860, has broken once or twice, but barring these accidents it has suffered little wear, and may be expected to last another two years.

Mr. Thomason is about to sell 4 horses—he is forward with his work, and it is more efficient than horse tillage—his Wheat looks uncommonly promising, and the general aspect of his farm is satisfactory. The best testimony to the value of the steam cultivator is, however, given by the emphatic way in which he declares that he would rather give up his occupation altogether than return to his former horse tillage of it; for "Mr. Smith's 8-horse power engine and steam tackle are worth any 12 horses you could find in place of them."

RECTORY FARM, LOUGHTON.

Here is another example of a farm mostly of stiff clay, needing four-horse teams for its cultivation, which has derived great benefit from Mr. Smith's steam cultivator. Of 220 acres arable besides 80 acres pasture, of which the farm consists, at least 140 acres are stiff clay, cultivated on the plan of the district in Wheat, Beans, Wheat, fallow in succession. Ten horses have been needed for its cultivation, and the labour and place together have been unusually fatal to horse flesh.

Mr. Bignell began steam cultivation in 1858. He did last year upon his own farm only 164 acres of work on about 102 acres of land, and by contract about 100 acres more, employing his own tackle and hiring the necessary steam-power. Nothing more clearly proves the laboriousness and inefficiency of horse cultivation of clays than the number of horses which you displace by a comparatively small extent of cultivation done by steam power. The splendid condition in which a winter's weather upon steam cultivation has left the fields over which we walked is a first-rate illustration of the superiority of a mere stirring and subsequent exposure to the natural tilling agencies over repeated horse ploughings. "I had once to attack one of my fallow fields," said Mr. Bignell, "in a dry summer. By immense force and tear and wear of horse flesh, implements, and harness, I got it broken up in lumps as big as horses heads. These a cross ploughing reduced one-half; another ploughing got them down to cricket balls; Crosskill's clodcrusher brought them down to the size of Walnuts; and then to sugar knobs, to Beans, to Peas; but they were hard fragments still, as unlike tilth as possible." Contrast this with the agency of steam and frost.

"A single smashing up, and perhaps a crossing before winter, will kill the weeds in a dry autumn, and so place the land under the influence of the winter's frost that the soil in spring shall be as light and loose as the freest loam in the country." We walked across such fields before taking the morning train back to town, and enjoyed, as we crossed the fallows, kicking the masses which still retained the form of the clods they once had been, and making them fly into the loosest powder over the land. The stiff adhesive clays trod dry, and barely soiled the boots which would in other circumstances soon have gathered 10 to 20 lbs. of earth apiece.

The following is Mr. Bignell's usual cultivation:—Wheat after Clover is generally put in after a horse-ploughing; Beans, too, after Wheat, are put in after the old-fashioned plan. Wheat after Beans is cultivated one way by steam, cross cultivated by horses, drilled and harrowed. Fallow after Wheat is cross cultivated by steam-power once in autumn, once in spring, and afterwards cross-scarified by horse-power.

The root crop, which on the lighter soils is taken in place of fallow, is cross cultivated by steam-power and then ridged up by horses, perhaps subsoil ploughed in the furrows as at Woolston. Root weeds are forked out in spring, dung is led on and covered by the ridges being split. Sheep are folded on them in early winter—not in spring, or the land would never be brought to tilth for Barley. The earlier fed off are ploughed, the rest scarified.

The Rectory Farm lies in large fields with good fall for drainage, and a good aspect. Mr. Bignell after several years as unkindly for the management of a stiff clay farm as could be, at length has got it well in hand. The Wheats promise admirably, and the land is in first-rate order for all other crops. He joins most cordially in the confidence with which steam cultivation is regarded by his neighbours. And the experience of all those to whom we have thus referred is a sufficient burlesque of the opinion we have since seen given by a man who has not personally tested the affair, that the true way to ruin a farmer would be to *give* him one of these machines on the condition that he should use it.

EXPERIMENTS MADE AT ROTHAMSTED

WITH THORLEY'S CONDIMENTAL FOOD.

Sixteen pigs were carefully selected from a number bought in for the purpose, and divided as equally as possible into four lots. One lot was supplied with good fattening food; the second with the same food and Thorley's condimental food in addition; the third with food of a lower quality; and the fourth with food of the same description with Thorley's food in addition.

It is with the second lot receiving the good fattening food, the one without and the other with Thorley's condimental food, that I propose to deal on the present occasion; reserving the results with the inferior food for a future opportunity.

Barley meal was the food selected. The four pigs of Lot 1 were allowed to eat as much of this as they chose, the quantity being accurately weighed. Lot 2 had also as much as they chose of the same Barley-meal, with a daily allowance of Thorley's condimental food mixed with it. In fixing upon the quantity to be given the following statement prominently set forth in Mr. Thorley's advertisements, was taken as the basis:—"A pig fattened in half the usual time, and the bacon upwards of 2*d.* per pound superior in quality, through the daily use of two pennyworth of Thorley's food for cattle." And as the pigs were not large ones, so much was given as to average about 1½*d.* a day each.

Table I. gives the weights of the pigs at the commencement and at the conclusion of the experiment; their increase in weight, and the per cent. of carcass (weighed cold) in the fasted live weight.

TABLE I.

Pigs.	Weights. At commencement, Nov. 1, 1861.	Weights. At conclusion, Jan. 10, 1862.	Increase in 10 weeks.	Per cent. carcass in fasted weight.
Lot. 1. Barley-meal alone.				
	lbs.	lbs.	lbs.	
1	115	283	168	84
2	108	234	126	83
3	106	238	132	84¼
4	98	238	140	82½
Total	427	993	566	
Average ..	106¾	248¼	141½	83½
Lot 2. Barley Meal and Thorley's Food.				
1	123	250	127	82
2	105	262	157	83¼
3	103	220	117	81¾
4	95	217	122	81½
Total	426	949	523	
Average ..	106½	237¼	130¾	82⅛

Table II. shows the total quantity of food consumed by each of the two lots in 10 weeks; the average amount consumed per head per week; the average amount consumed per 100 lbs. live-weight per week; and the average amount required to produce 100 lbs. increase in live-weight.

TABLE II.

	Food Consumed. Total: by 4 Pigs in 10 weeks.	Food Consumed. Per head per week.	Food Consumed. Per 100 lbs. live-weight per week.	Food Consumed. To produce 100 lbs. increase.
Lot 1. Barley-meal alone.				
	lbs.	lbs. oz.	lbs. oz.	lbs. oz.
Barley meal .	2650	66 4	37 5	468 3
Lot 2. Barley-meal and Thorley's food.				
Barley meal .	2575	64 6	37 7	492 6
Thorley's food	87½	2 3	1 4	16 12
Total ..	2662½	66 9	38 11	509 2

Table I. shows that the two lots of 4 pigs each differed in total weight by only 1 lb. at the commencement of the experiment. At the end of 10 weeks the lot fed on Barley-meal alone had gained 43 lbs. more than those having Barley-meal and Thorley's condimental food in addition. But a knowledge of the amount of increase in live-weight is not of itself sufficient to enable us to judge of the comparative feeding value of different foods. It is also necessary to consider the quantity of food required to produce a given amount of increase, the cost of the food, and the qualities of the increase obtained.

The results given in Table II. show that although the total amount of food consumed by each of the two lots was nearly the same, yet the amount of food consumed by an equal weight of the animal within a given time, was considerably more where the pigs had Thorley's food than where they had Barley-meal alone. Thus, where the Barley-meal was given alone, the average amount consumed per 100 lb. live-weight per week, was 37 lb. 5 oz.; and where it was given with Thorley's food, 37 lb. 7 oz. Barley-meal, and 1 lb. 4 oz. Thorley's food in addition.

Again, where the Barley-meal was given alone, 468¼ lbs. of it yielded 100 lbs. increase in live weight; but where it was given with Thorley's food it required 492½ lbs. of Barley-meal, and 16¾ lbs. of Thorley's food in addition, to produce 100 lbs. increase in live weight. That is to say, to produce 100 lbs. increase it required, with Thorley's food, 24 lbs. Barley-meal and 16¾ lbs. of the condimental food more than when the Barley-meal was given alone.

But not only was there more food required to produce a given amount of gross increase, but Table II. further shows that there was a less proportion of saleable carcass in a given live-weight where Thorley's food was used than where Barley-meal was used alone. It should also be remarked that the appearance of the carcasses was very different in the two cases. The fat of those fed on Barley-meal alone was much the whiter; that of the pigs fed with Thorley's food being yellowish; and the former were pronounced to be preferable to the latter.

It appears, therefore, that the addition of Thorley's condimental food to good fattening food increases the appetite of the pigs, and consequently the amount of food they consumed. It at the same time rather lessened their capability of converting their food into meat.

It remains to consider the debtor and creditor

account of the two experiments, which stands as follows:—

LOT 1. WITH BARLEY-MEAL ALONE.

	£	s.	d.
4 pigs bought in at 41s. 6d. each	£8	6	0
2650 lbs. Barley, at 37s. 6d. per quarter of 416 lbs., including grinding..	11	18	10½
	20	4	10½
99 stone 3 lbs. pork sold at 4s. 4d. per stone, sinking the offal	21	10	7½
	£1	5	9

LOT 2. WITH BARLEY MEAL AND THORLEY'S FOOD.

	£	s.	d.
4 pigs bought in at 41s. 6d. each	£8	6	0
2575 lbs. Barley, at 37s. 6d. per quarter of 416 lbs., including grinding	11	12	1½
87½ lbs. Thorley's food, at 49s. per cwt. ..	1	11	3
	21	9	4½
93 stone 6 lbs. pork, sold at 4s. 4d. per stone, sinking the offal	20	6	3
	£1	3	1½

Thus, the pigs fed upon Barley-meal alone sold for 1*l.* 5*s.* 9*d.* more, and those fed upon Barley-meal and Thorley's food 1*l.* 3*s.* 1½*d.* less, than the cost of the store animals and the food they consumed.

The results of the experiments may be briefly summed up as follows:—

1. The addition of Thorley's condimental food to good fattening food increased the amount of food consumed by a given weight of animal within a given time.

2. The pigs receiving Thorley's food required rather more Barley-meal than those fed on Barley-meal alone, and the condimental food in addition, to produce the same amount of increase in live weight.

3. The pigs receiving Thorley's food gave a less proportion of saleable carcass for a given live-weight, and of slightly inferior quality, than those having Barley-meal alone.

4. In fattening for 10 weeks there was a difference of 2*l.* 8*s.* 10½*d.* on the lot of four pigs in favour of Barley-meal alone over Barley-meal with Thorley's food in addition. *J. B. Lawes, Rothamsted, Jan.* 28.

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

THE first of the quasi-public meetings of the Society, open to members and the representatives of the press, was held on Wednesday last, under the presidency of Sir E. Kerrison, Bart. There were also present Lord Walsingham, Hon. Colonel Hood, Hon. A. Vernon, Mr. Alcock, M.P.; Mr. Barrow, M.P.; Mr. Caird, M.P.; Mr. Cantrell, Mr. H. Corbet, Mr. F. Hobbs, Mr. B. T. Gibbs, Mr. Gillett, Mr. Goodwin, Mr. Jordan, Mr. Knowles, &c.

After some formal business, seven new members were elected.

Specimens of the Clover Linten (*Melilotus leucantha major*) were contributed by Mr. Prior, of Halifax, Nova Scotia, accompanied by a paper describing it as not only an ornamental shrub, but capable of being utilised in the manufacture of paper and certain textile fabrics. It was stated that a patent is about to be applied for to secure the benefits of the discovery. Thanks were ordered for the communication.

A collection of seeds of Chinese vegetables was presented by Captain Archer, in the hope that some of them might be found suitable for cultivation in England, and on the suggestion of Mr. Caird, M.P., it was determined that a portion of them should be sent to the Horticultural Society, unless already supplied, and that the residue should be tried by Lord Walsingham, Sir E. Kerrison, Mr. Caird, and others.

A communication respecting the gold-fields on the Tangier river was also read.

Mr. C. Barnett, of Stratton Park, Biggleswade, Bedfordshire, reported the results of his experiments in the growth of a specimen of Burmese Wheat. On the 7th of December, 1859, he dibbled 38 poles of gravel land, after Tares sown and late Turnips fed off. The quantity sown was three-quarters of a peck; it was in full bloom on July 15, reaped August 27, and the produce was 12 bushels, weighing 61 lbs. per bushel, a result which called forth several expressions of surprise, more especially as the sample of Wheat exhibited was characterised by the chairman as very nice indeed.

A communication on "chromatic tetanus in horses," by Mr. Osborn, of Dalkeith, was received with the proposition of a vote of thanks.

Letters from Mr. Lees and from Mr. B. Sanderson, of Woodford, Essex, on the cultivation of the Potato, were also read. In the former a demand of 10*s.* per acre was made from all persons who adopted his plan; but in the opinion of Mr. Caird, Mr. Hobbs, and other members, there was nothing new or valuable in his suggestions, and a resolution was passed with the view of protecting the Society from the imputation of in any way sanctioning the recommendations contained in the paper.

As this was the whole of the "business" before the meeting, Mr. Hobbs took the opportunity of remarking that he had understood that the papers read to the members were in the first place to be examined and selected by the Journal Committee, in the hope that practical and trustworthy information might be conveyed to the agricultural world. Such, he regretted to say, had not been the case in the present instance, and he thought it highly important that it should be understood that the Society was not in any way responsible for the views set forth by their correspondent on the cultivation of the Potato. In this view Mr. Caird fully agreed, considering that several of the communications read were little better than "puffing advertisements," and after a discussion in which Lord Walsingham, Mr. Caird, Mr. T. B. Gibbs, Mr. Corbet, and others took part, it was resolved that the Journal Committee should be requested henceforth not only to select and determine the papers suitable to be read, but should cause an anticipatory announcement to be made to the members of the subjects likely to engage their attention at the weekly meetings.

Farmers' Clubs.

HEXHAM: *Bean and Pea Culture.*—At the last monthly meeting of the Hexham Farmers' Club, Mr. WM. C. THOMSON, of Dilston, read a paper "On the Cultivation of Beans and Peas":—

The great difficulty experienced in modern agriculture is, how judiciously to vary the crops cultivated, so that the same, or allied species shall follow with the widest possible intervals. On all our tillage land we find that those crops which have been frequently repeated, though perhaps best suited to the nature of the soil, and of the greatest immediate money value, have yet, in spite of improved methods of cultivation, and all the artificial aids to our greatly enlarged manure heaps, become more difficult to grow to perfection in each succeeding rotation. To mitigate these evils we shall do well to direct our attention to the cultivation of that class of plants which has been selected as the subject of this day's discussion, namely, Beans, Peas, and Tares.

As the crops can in no sense be looked upon as cleaning or fallow crops, their successful cultivation must depend on the previous good condition and freedom from root weeds of the soil upon which they are sown: and when land is either foul or poor, some other crops should be substituted. When we consider how early Beans and Peas must be sown, before the proper season has arrived in moist situations for working the land to any purpose, and the early period at which horse and hand-hoeing must be discontinued, it will be evident that to leave the land in a satisfactory state at the removal of the crop, we should have a clean stubble to start with or make it so by scarifying and gathering of the weeds in autumn, previous to the winter ploughing. Of all manures or stimulants lime is most congenial to the growth of these plants; and where this is awanting in the soil, a dressing should, if possible, be applied, and thoroughly intermixed with the soil by means of the grubber and harrows, good opportunity for doing which is afforded after the conclusion of the autumn cultivation and before the winter furrow is given. The cultivation of Beans has long been practised in regular rotation in those districts where the soil is deep and strong-bodied, though in late years the breadth under the crop has decreased, owing to the substitution of Potatoes, or the drier and more conveniently situated Bean soils. The ordinary four or five-course has in this case been lengthened by taking Beans after the corn crop following seeds, then Wheat, followed by Turnips or fallow, and thus the Clover and Turnip crops come round in six or seven, instead of four or five years; but where there is comparatively little danger of Finger and Toe in the Turnip crop from repeating it (varied by Swedes, Mangel, or Potatoes) every fourth or fifth year, the more profitable course will be to take Beans in place of seeds, then a white crop, and fallow again, thus lengthening the interval between the Clover crops to eight or nine years. Though the acreage under Grass is diminished by this course, it may be safely maintained that during the currency of a lease, at least an equal weight of Grass may be produced on the farm, from the comparative certainty of the Clover crop holding its ground on those fields treated in the way I have mentioned.

It is unnecessary to enumerate the varieties of Beans, and I shall consider them as spring and winter sown. The land intended for spring Beans should, if quite clean, be ploughed as early in autumn as possible, with a deep furrow, and on damp soils too much attention cannot be paid to having the open furrows in the best form for keeping the ridges dry, adding cross surface cuts where necessary, in order to secure an early seed time. If convenient, from 12 to 15 loads of manure per acre should be spread on the surface and ploughed in with the autumn furrow, as the labour of carting it on the land is then much easier than in spring; and, if so, as early in February as possible the land may be prepared for drilling by simply harrowing down the ridges. Should spring manuring be preferred, the mode of doing so must be determined by the way in which the Beans are to be sown; if drilled on the flat, manure must after a harrowing be spread on the surface and ploughed in with a moderate furrow, followed by sufficient harrowing, in order that the drill machine may be able to deposit the seed at a sufficient depth; or the land may be ribbed 14 or 15 inches wide, the seed sown broadcast, and covered by a double stroke of the harrows in the direction of the ribs. These methods of sowing, however, are better adapted to autumn manured land, from the risk of the drill coulters, or ribbing ploughs, dragging up the fresh manure; and the method of raising drills about 28 inches wide, and spreading the manure as if for Turnips, is to be preferred in spring; the seed is either then sown broadcast, or by means of a "bean-harrow," over the manure, and the drills split, covering manure and seed. As soon as the land is sufficiently dried on the surface, the drills should be gone over with the drill-harrow or chain-harrow, to assist the Bean plants in reaching the surface. By this plan it will be found that the interval between the rows is quite sufficient to admit of horse-hoeing, and the plants are less crowded together than when sown in narrow lines. After the Beans are up, no time should be lost in setting the horse-hoe to work between the rows, and they must also be hand-hoed twice if necessary, bearing in mind that every week's delay makes this operation more difficult and expensive.

The culture of winter Beans is similar to that I have detailed: they should be sown in October if possible, but not later than the middle of November in most seasons, as it is important that they should have a fair start before the occurrence of severe frosts. On dry warm soils, of moderate depth, though not what are strictly termed Bean soils, the cultivation of this variety might be extended with advantage, in preference to spring Beans; the risk of harvesting is diminished, as they ripen from a month to six weeks earlier; the straw is thus more valuable as fodder, and the produce of grain will generally be much greater, while the land is earlier cleared, and can, if necessary, be scarified and cleaned in good time for the Wheat crop, which is generally an abundant one after a well-managed Bean crop. When drilled in the flat, or sown in ribs harrowed down, the reaping machine will be found the most economical harvesting implement, but when grown on raised drills the sickle must be employed to cut the crop; and to secure good fodder without any loss of grain, this should be done as soon as the leaf begins to fall, and the eye of the Bean turns black and easily detached from the seed vessel; for, if allowed to stand much longer, the stalks become a mass of hard, woody fibre, and there is so much greater risk of the seed shedding out during the process of harvesting. If the cutting is performed by the reaper, the swathe or sheaves may lie a few days before being bound up; if the sickle is used during damp weather, the handfuls may be allowed to lie until thoroughly dry; but the safest course, when the stems are cut dry, is to bind them up in small sheaves at once, setting four or six to a stook. The quantity of seed required per acre varies from 2½ to 3 bushels of the small kinds, and winter Beans drilled, to 5 bushels of the larger varieties, sown broadcast over wide drills; and, though many eminent farmers practise the sowing at narrow intervals, believing that thereby the crop sooner covers the ground and keeps down weeds, I am persuaded that the free use of the horse-hoe between the wider intervals more than counterbalances those supposed advantages.

The greater proportion of the soil of this district, however, is more suited to the cultivation of Peas, and though, unfortunately, this has acquired the character of a "dirty" crop, there seems no reason why this should be the case. Peas may profitably occupy the same place in a rotation as I have mentioned in speaking of Beans, and for the same reasons. Following the corn crop after Turnips, the land should generally be in a tolerably clean state, or, if not, should be made so in autumn; if this cannot be managed, a good deal may be done on dry light soils in a favourable spring before the time arrives for sowing. The land should then be ribbed about 12 inches wide, and the seed, at the rate of 3 to 3½ bushels per acre, sown broadcast, or, if preferred, it may be drilled on the flat at a similar width. As farm-yard manure is seldom applied directly for this crop, a dressing of artificial manure may be given, either harrowed in with the seed, or if a heavy dressing is to be given, half at seed time, and the remainder after the young plants have appeared. Where the soil is deficient in lime, and this cannot be conveniently applied, from 3 to 5 cwt. of gypsum, mixed with 2 cwt. of salt for each acre, invariably produces a good result. However clean the soil may appear at seed-time, it will be found requisite to hand-hoe the intervals between the rows twice, or at least once, as early in the season as possible; and this will be found a good opportunity for applying a top-dressing, which, in process of hoeing, will be intermixed with the soil. Though the preceding method of cultivating Peas may be held the more perfect method, good results are frequently obtained after a rich and clean stubble, by sowing the Peas in every second furrow, the seed box being attached to the stilts of one of two ploughs following one another; by this method a full allowance of seed should be given.

Tares are one of the most valuable green crops, and where the soiling of farm horses, milk cows, and other cattle, is pursued throughout the season, almost indispensable for filling up the interval between the cuttings of Clover. When sown for this purpose, a liberal allowance of seed should be sown, from 2½ to 3 bushels of clean Tares, mixed with half a bushel of some mixed variety of late Oats per acre, the land ribbed as narrow as possible, or drilled at 8 or 10 inches. When intended for seed, a lighter seeding will be necessary, and a mixture of Beans should be added in place of Oats, the better to support the trailing stems, and allow the flowers and seed vessels to enjoy the advantages of sun and air, and the following season the Beans can readily be separated should the Tares be required pure. The quantity of land under Tares is usually

so small that it is commonly selected more with a view to convenience than anything else, but as when sown upon lea they take the place of the Oat crop, they may more profitably occupy the same place in the rotation as Beans or Peas, and a corner of a field under either of these crops may be found convenient. In favoured situations, where the young plants can be protected throughout the winter from game and wood-pigeons, a small extent of the winter variety may be sown in October for very early cutting, but unless the soil is in high condition, and the season prove favourable, in our climate a cutting may be got as early from a sowing in the beginning of March. The hay made from Tares is relished by all kinds of stock, and sheep prefer it to the best meadow hay, and when the second cutting of Clover proves abundant, and the Tares cannot be consumed in time, it would be more profitable to cut it for winter use than to allow it to lie rotting on the ground till the end of the season, as we too often see it.

The Chairman, Mr. Gray, of Dilston, said it was perfectly correct what Mr. Thomson said with regard to making more about the repetition of Clover, and that they would get quite as much Grass in the one way as the other. There was nothing that would yield a larger quantity of manure, and better in quality, than Beans and Peas. They knew how horses throve on Bean straw if well secured, and the weight of corn from a good crop of Beans was very great. With regard to making hay from Tares, that also was a thing very well worth their consideration. When he had seen that attempted, people had not cut them soon enough. They ought to be cut when full of sap and succulent, which was when they had begun to pod. When well got, they not only produced a great quantity, but they were a nutritious food, and what all stock were very fond of. Sheep upon Turnips with that kind of food in racks did very well indeed. They preferred it to Clover or any other kind of hay.

Mr Dod quite agreed with all that Mr. Thomson had said with regard to the desirableness of having either Peas, Beans, or Tares brought more regularly into their course of cropping than they had been in the habit of doing. He referred to a field at Anick Bank Foot, which, four years ago, was sown—the west side with Peas, and the east side with Clover. This year the whole had been put under Clover, and whereas the west side produced the best crop of Clover he had seen this year, on the east side there was not a head of Clover to be seen—the good Clover was on the land where the Peas were four years ago. The course he himself was now adopting was to have Turnips and Barley, or seeds followed by Oats, Beans, Peas, Tares, or Rape, according to the kind of land, followed by Wheat, and coming in again for Turnips. He was quite sure by doing so, and taking care to keep the land clean, he would have better seeds and more Turnips than if they were following each other every four years.

Reviews.

Coates's Herd Book, containing the Pedigrees of Improved Short-horned Cattle. Vol. XIV. By H. Strafford. (13, Euston Square.)

This, the latest volume of this valuable series: issued towards the end of 1861, contains the Bulls, Nos. 17269—19176 between Aaron, the property of Mr. Fawkes, and Zero, bred by Lord Braybrooke. There are also the pedigrees, the produce, and the names of upwards of 5000 cows and heifers. We have returns from upwards of 800 herds recorded in this volume, so great is the extent to which pure bred stock is now cultivated—and from some of these herds the numerous returns indicate how large a stock is kept. Thus taking only a few of the most numerous in alphabetical order, Mr. Ambler, of Watkinson Hall, contributes names on 33 pages of the volume, Mr. Barnes of Westland on 34, Mr. Bowley, of Siddington, on 34, Mr. Bruere of Braithwaite on 33; Mr. Carr of Stackhouse on 32; Mr. Cruickshank of Sittington on no less than 85, Mr. Dudding of Panton on 39, Lord Feversham on 32, Mr. Hewer of Sevenhampton on 32, Mr. Jefferson of Preston Hows on 36, Col. Kingscote of Kingscote on 46, Mr. Langston, M.P., on 41, Mr. Marjoribanks of Bushy Grove on 43, Mr. Maynard of Marston-le-Moor on 32, the Hon. Col. Pennant on 57, Messrs. Rich of Didmarton on 47, Mr. Robinson of Clifton Pastures on 33, Mr. Stratton of Broad Hinton on 91, Col. Towneley on 32, Mr. Torr of Aylesby Manor on 49, Mr. Jonas Webb on 69, Mr. Woodward of Northway House, Tewkesbury, on 30. But this does not fully represent the contributions from particular herds, for where breeders have adopted a family designation, as, for instance, in the case of the "Royal Butterfly" of Colonel Towneley, several of the pages include a number of animals from the same herd.

No wonder that of our largest herds there are now supplementary catalogues issued — subsidiary herd books in fact—by which each in its several families and individuals has its relationships and pedigrees laid open to view. The large volume connecting all these herds is thus limited to its proper use as a book of reference for the purpose of verifying alleged descent and pedigree if that should be disputed. Its worth for such a purpose is immense, not merely to the owners of pure bred stock, whose market value depends on the blood relationship thus recorded, but to the owners of live stock generally, for the intrinsic worth as well as market value of animals for use or sale hinges on their pedigree and therefore on the accuracy with which it is recorded.

The volume is illustrated with lithographs of 13 cows and bulls, the majority of them descended more or less directly from the Kirkleavington herd, and some of them having histories attached to them giving marvellous illustration of the market value of certain strains in the Short-horn breed. Take for example the case of the 2d Duke of Thorndale, a rich roan bull now close upon 4 years old, bred by Mr. Thorne, of Duchess Co., New York. For his sire Mr. Thorne paid 1000 guineas. He is from an own sister to the dam of the celebrated prize cow *Duchess* 77, both being the produce of Duchess 66, sold at Tortworth for 700 guineas. The sire and grandsire of these cows were purchased at the same sale for 650 and 500 guineas each. This bull was recently imported from America along with 5 other animals, which were sold at an average of 300 guineas each.

Farm Memoranda.

Nottinghamshire Farm.—The following is a short report from a light land farm in this county, of which occasional reports will be given in the *Agricultural Gazette* during the ensuing year.

Jan. 31, 1862. *Horse Labour.*—During the past month we have had only four or five days of frost to interfere with ploughing. In the early part of the month the land intended for roots was finished ploughing, and since then the Clover-lea not considered good enough for Wheat has been ploughed and pressed for Oats. As the sheep clear the Turnip fields, the ploughs and presser follow on the poorest land, and prepare for Wheat, which will be sown in good time this month (February); on the better land the cultivator is kept close up to the sheep, slightly disturbing the surface so as to prevent heavy rain from washing the manure from the smooth-trodden surface. We happen this year to have a good deal of road making to do, which keeps the horses unusually occupied, and has caused delay in emptying the yards and boxes of an unusual accumulation of manure. At this time of the year the horses work from 7 till 3, and are consuming 6 pecks of Oats weekly.

Hand Labour.—Besides the men and boys in attendance on the cattle and sheep, the roads above mentioned have absorbed all that could be spared, with the exception of a little hedging, barn-work, and occasional jobs.

Live Stock.—Feeding heifers in stalls and boxes are receiving 2 bushels (90 lbs.) of cut Swedes, 1 bushel of chopped straw and pulped Mangel, and 8 lbs. of Linseed-cake and corn daily. In the yards a lot of in-calf heifers are doing well on 1 bushel of Swedes, and 4 lbs. Rape-cake, with good straw *ad lib.* Some store bullocks receive the same allowance, but having manifested decided repugnance to Rape-cake, we have substituted an equal weight of Linseed. Owing to some unexplained cause sheep have suffered severely from lameness, which does not perceptibly yield to the ordinary treatment. In-lamb ewes have as yet been tolerably free from this complaint, which has chiefly affected a lot of Lincolnshire ewes purchased for fattening. The hogs are allowed ½ lb. of mixed Linseed-cake and corn daily. Fatting ewes and wethers have ½ lb. of cake and corn. The Turnips are given three times a day, and the cake before the evening meal of Turnips.

In this neighbourhood, owing to a pretty good crop and the mildness of the winter, Turnips are abundant, and the supply somewhat in excess of the demand, which is quite an exception to the rule of the last three or four years, sellers having frequently realised very high prices. *H. J. W.*

South Hants Farm: *Report to the end of January.* —*Horse Labour.* — The weather having been very changeable and for the most part wet, but little ploughing has been done, and the work has been chiefly carting manures to heap for the earliest root crops, which would be without any advantage, except that in distant fields it accelerates the work of laying out, when the heap is ready made in the field where it is required for use, and saves labour at a more important period; otherwise we prefer to allow the dung to remain and accumulate in the boxes and pens, and lay it out fresh, rather than draw it to heap, where fermentation and consequent loss of ammonia is always going on more or less. However, when the carts are allowed to pass over the heap as the loads are added, the compression caused thereby prevents any serious loss, when the dung is required for use within a month or six weeks. The horses have been engaged drawing out corn during 8 or 9 days, the corn consisting of White Wheat and White Oats. The Morton's White Wheat yielding about 38 bushels per acre, weighing from 62½ to 64 lbs. per bushel. The condition and consequently the weight has however been reduced by the late close and damp weather; the White Oats yielding 68 bushels per acre of good quality. This corn has been all threshed by steam-power in the open air; we are obliged, however, to choose the weather, consequently some days are lost to the parties who let the machines out on hire. We have threshed all our corn by steam power for the last six years, and for many agricultural purposes the battle between horse-power and steam is no longer doubtful, and must be taken as decided in favour of the latter, whether for cultivation under ordinary circumstances, or for threshing and various operations formerly effected by horses only. The importance of steam threshing is not so much derived from any reduction in cost of threshing per quarter of corn, there being but a slight difference in the cost of either process by horse or steam power. The advantages, however, of steam, as compared with the flail are very great and effective, although we still see the flail used in some parts of the county, more particularly for threshing Barley intended for malting; but it is a fact that in some parishes, in well farmed districts, the whole of the manual labour available in the parish would be barely sufficient to thresh by flail the whole growth of corn if continued during the 11 months between harvest and harvest, supposing that the men performed no other work, such has been the increased acreage and quantity of corn produced under high farming, and the necessity or policy of cutting and securing the whole of the straw.

Many threshing machines have lately attempted to turn off the corn dressed sufficiently for sale without winnowing, and for three years in succession we adopted this plan; but in some years, when the weeds happen to predominate in the corn, it is quite useless to attempt to clean the corn without winnowing, and we have found also when the grain has been rendered clear of weeds, chaff, and everything objectionable, yet when the corn is sacked and weighed off the machine, that in many cases the quality of the grain will differ. In some sacks the weight and condition may be good, others inferior. For in markets where selling by sample prevails it is very difficult to exhibit a sample which shall fairly represent the bulk, because when one sack of corn is measured and weighed, the remainder being weighed off at a certain weight per sack, some sacks will measure more, some less than 4 bushels, according to the condition and quality of the corn, which often varies much in the same stack; these circumstances having caused so much dissatisfaction to the purchasers, we now winnow and mix all our corn after it comes from the thresher, and we are inclined to think that the machine lately manufactured for the purpose of threshing and dressing the corn fit for market will eventually go out of use, because it involves a more costly and complicated arrangement. I must not allow this opportunity to pass without alluding to the great advantage of the straw carrier, which supersedes the heaviest manual labour in connection with steam threshing, and it is important, too, that the straw being largely required for feeding purposes should be properly stacked, and this matter is greatly facilitated by the elevation of the straw carrier.

Manual Labour.—This for the past fortnight has consisted for the most part of attending the threshing machine and winnowing the grain for market, in which workwomen as well as men have assisted; other work has consisted of cleaning roots for the stock in readiness for the cutters, pulpers, &c.

The Stock.—The sheep have fared badly; the land being constantly saturated with water, has made it very dirty, and many of the ewes as well as lambs have much mud attached to their wool, and the only redeeming point in feeding sheep in our case upon such cold land, is that the land is hilly and sheds the water, and that the animals are fed in troughs only, so that they have plenty of clean well prepared food.

Our fatting pigs are fed according to our usual plan; they get Mangels pulped with Bentall's machine (which we consider the best in use), and mixed with Barley-meal, in the proportion of two-thirds of Mangel pulp and one-third meal, with a few Grey Peas given once a day, between the times of feeding with meal. As the pigs advance in fatness, the proportion of meal is increased, and during the fortnight previous to their disposal the Mangel is dispensed with entirely, and the Peas likewise, and in this method of feeding we can make pork cheaper by one-third of the cost than by feeding with meal only; it will, however, take more time to fatten the animals; but when it is considered as a manure question, the extra time is an advantage rather than otherwise. *J. B.*

Miscellaneous.

An Interesting Experiment.—Two hundred pounds of earth were dried in an oven and afterwards put into a large earthenware vessel; the earth was then moistened with rain-water, and a Willow tree, weighing 5 lbs., was placed therein. During the space of five years, the earth was carefully watered with rain-water, or pure water; the Willow grew and flourished; and to prevent the earth being mixed with fresh earth, or dust blown into it by the wind, it was covered with a metal plate, perforated with a great number of small holes, suitable for the free admission of air only. After growing in the earth for five years, the Willow tree was removed and found to weigh 109 pounds and about 3 ounces: the leaves which fell from the tree every autumn were not included in this weight. The earth was then removed from the vessel, again dried in the oven, and afterwards weighed: it was discovered to have lost only about 2 ounces of its original weight; thus, 164 pounds of lignum or woody fibre, bark, roots, &c., were certainly produced, but from what source? *Griffith's Chemistry of the Seasons.*

Calendar of Operations.

FEBRUARY.

Wester Ross: *Feb.* 8.—Upon the whole, a winter so mild and pleasant we have not had for many years, and consequently out-door labour is greatly more than usually advanced. A large breadth of Wheat has been sown, and latterly in excellent condition, and should the fine weather we have had continue throughout this month, additional sowings will yet be made, so that a breadth will be laid down considerably beyond an

average. The earlier sowings are now well advanced, whilst the later sowings are rapidly and promisingly appearing above ground. Our leas are nearly all seed furrowed for Oats, and as the Turnips are cleared off the ground is turned over for Wheat or Barley. For a few days we have had a keen frost, with a sprinkling of snow; but previously vegetation was so advanced that the country had quite a spring-like appearance. Grass had made such progress that sheep could have lived comfortably upon it; Turnips still a-field were running rapidly to seed The present frost was greatly needed to enable us to cart our manure to its place in the field. The winter has been peculiarly favourable for stock of all kinds. Sheep folded in the fields have been eating their Turnips with the greatest comfort, and have thriven amazingly; and cattle, whether housed or in open courts, are fast preparing for the butcher's knife. Sheep farmers expect to sell a heavy fleece of wool at a good price, although from the unemployed condition of so many of our cotton spinners, we fear that the demand for butcher meat may be sensibly affected. When growing Barley appeared an average crop, and we would have readily estimated it at from 8 to 12 bushels an acre more than it yields. The steam plough is scarcely known in the north. In Easter Ross, the only part of our county well suited for such an implement, one belonging to the Duke of Sutherland has been at work. In Wester Ross, and throughout the country generally, the fields are so steep and hilly that we much fear that we will have to abide by our old friend, drawn in the old way, and as we have no immediate prospect of being able to dispense with the common plough, we have serious objections to its being unfairly and injuriously traduced. We hear it asserted by the advocates of steam that, by the old method, the subsoil becomes crusted by the horses' tread, and the plough's sole. True, this must be the result when under unskilful direction, but it is an impossibility if ploughed thus: first ploughing for green crops from 10 to 12 inches deep; for Barley after Turnips from 5 to 6 inches; for Wheat or Oats after lea, 7 inches; for a second white crop, if need be, 8 inches; and then we have the deep furrow again. If our father's implement is to go to the wall, to which we have no objection, let its epitaph be fairly and truthfully written.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Thursday, Feb. 13, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0-6	Amount of Cloud 0-10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.										Inches.		
Friday ..	7	30.17	34°	32°	N.E.	3	3	52°	33°	63°	32°	..	45½°	45°
Saturday ..	8	30.64	28	24	N.E.	2	1	37	25	48	22	..	43	44½
Sunday ..	9	30.67	26	22	N.W.	2	1	34	18	49	17	..	41	43½
Monday ..	10	30.58	32	27	N.	1	5	37	27	38	25	..	39	42½
Tuesday ..	11	30.31	34	32	N.	1	7	43	25	55	22	..	39½	42½
Wednesday ..	12	30.11	39	33	W.	1	8	41	24	42	35	0.01	39½	42
Thursday ..	13	30.12	37	35	N.E.	1	5	47	35	53	32	0.01	40	42

Notices to Correspondents.

LEATHER: *Poverty*. We can find no information on the composition of leather clippings. But it is doubtless rich in nitrogenous matter. In the conversion of skin into leather there is however such an insolubility and fixity of character conferred upon it that it is rendered useless as manure, except after such a tedious process of rotting and disintegration as will practically render it valueless.

POULTRY: This week tells of the end of the game season of 1861. It has been of an ordinary character, calling for no particular remark. Partridges were not so plentiful as they were expected to be. There has been throughout a good supply of pheasants. Hares rather deficient in numbers than otherwise. We have not to do with it in a sporting sense, our business is only as it affects poultry. Now there is no game, and that the assembling of Parliament has brought people to town, we may look for a slight increase and a continuous demand for poultry. Those, however, who would take advantage of it, must be careful to send the proper quality. Even in times of the greatest scarcity, there is always unsaleable poultry lying about the market, lacking youth. To command a sale poultry must be positively not comparatively young.

TAKING A FARM: *A Would-be Farmer*. It is usual to estimate farm capital at 10*l*. per acre. But 100 acres of good land cannot be stocked and managed for 1000*l*. You had better advertise in the county paper of the neighbourhood where you wish to live. A grazing or dairy farmer is liable to risks of a different kind, but often quite as serious as those of arable culture. Pleuro-pneumonia may destroy your profits for several years at a single blow.

The Alsike Hybrid Clover.
Perennial Red Clover.
True Perennial White Clover.

SEEDSMEN BY APPOINTMENT Sutton and Sons

THE above kinds of CLOVERS will take well on land which has proved Clover-sick when sown with the common kinds of Clover.

They are all included in Messrs. SUTTON'S MIXTURE of GRASS SEEDS for PERMANENT PASTURE, and they may be purchased separately.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Garden Seeds.

ROYAL SOUTH HANTS SEED ESTABLISHMENT

PAGE AND TOOGOOD'S SPECIAL LIST will be forwarded post free.

P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

From Mr. R. McDONALD, *Gardener to the* Rt. Hon. LORD WILLOUGHBY D'ERESBY, *Drummond Castle, Scotland, Jan. 4th*, 1861.

"The seeds sent here by you for the last 23 years have given the greatest satisfaction, and considering the large supply required, it is of the greatest importance to have them of such first-rate quality and so true to name. The collections for cottagers have been very useful and have been the means of inducing many of them to grow a greater variety of vegetables than they have hitherto done."

From MR. DOWLING, *Gardener to* LORD HENRY CHOLMONDLEY, *Holly Hill, Jan. 1st*, 1861.

"Nothing gives me so much pleasure as to speak of the excellent quality and trueness of the seeds you sent me for 1860. It is impossible to single out anything in particular, as all succeeded so well, and although a difficult season, I have never served a family better, which I attribute to the good quality of the seeds, and having been supplied by you for 30 years with the greatest satisfaction, my opinion is expressed with some confidence, and I also know your extreme desire at all times to meet the wishes of your customers."

From Mr. WHALE, *Gardener to the* Rt. Hon. LORD RIVERS, *Rushmore, Dorset, December 30th*, 1860.

"In enclosing you my 20th annual order, I am happy to say that I have always found your articles to be of the best quality, and they have always given me great satisfaction."

Royal South Hants Seed Establishment, Southampton.

SUTTON'S LIST of SEED POTATOES.—Prices per Bushel, Sack, Ton, or Cwt., may be had on application. We have other sorts, but these are most worthy of recommendation:—

Handsworth Early	Early Lemon Kidney
Hudson's Nonsuch	Flour Ball
Sutton's Early Racehorse	Dawe's Matchless
Dalmahoy	York Regent
Webb's Imperial	Glory of England
Wellington	Forty-fold
Soden's Early Oxford	Early Shaw
Hudson's Early May	Prince of Wales
Fluke Kidney	Arrowsmith Seedling
Early Frame	Goldfinder
Early Ashleaf Kidney	British Queen

PRICED DESCRIPTIVE LISTS of POTATOES and SEEDS, post free on application addressed

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

FLUKE POTATOES, off the Lancashire Moss and Sand; EARLY PINK EYE KEMPS, very fine; TRUE ASHLEAF KIDNEY; OXHORN KIDNEY, a very prolific variety, good quality; WHITE BLOSSOM LEMON KIDNEY. Prices moderate.

A PRICED DESCRIPTIVE CATALOGUE of Garden and Flower Seeds is now ready.

HENRY BROWN, Seedsman, 4, Commutation Row, Liverpool.

POTATOES: Handsworth, Fortyfold, Dalmahoy, Shaw, Regent, White Farmer, Blues and Ash-leaf Kidney, true.

RASPBERRIES, Strong Canes.

Red and White GOOSEBERRIES: Crown Bob, Warrington, and Whitesmith, bearing plants.

STRAWBERRIES: Admiral Dundas, British Queen, Black Prince, Eleanor, Prince of Wales, Sir C. Napier, Wizard of the North, 2*s*.; Alice Maude, Elton Pine, Eliza, Keens' Seedling, 1*s*. 6*d*.; and Oscar, 3*s*. per 100.

GEO. CORNWELL, Barnet, Herts, N.

NEW, CHOICE, and GENUINE FLOWER SEEDS, free by Post:—

	s.	d.
100 Packets, choice sorts, including all the best Hardy, Half-hardy, and Greenhouse Annuals, left to D. B.'s selection	20	0
50 Packets ditto ditto	10	6
25 Packets ditto ditto	5	6
100 Packets very choice and showy Hardy Annuals ..	13	0
50 Packets ditto ditto	7	0
25 Packets ditto ditto	4	0
12 Packets ditto ditto	2	6
50 Packets Half-hardy Annuals	8	0
25 Packets ditto ditto	5	0
12 Packets ditto ditto	2	6

Smaller packets of above at half the prices quoted.

DAVID BROWNE, Seed Grower and Importer, 41, London Street, Norwich.

Hanover Nursery, Peckham, S.E.

AZALEA INDICA.

WM. IVERY begs to offer fine Plants of all sizes, full of bloom buds. The Trade supplied by the dozen or hundred. Price on application. Also a quantity of Half Specimens of all the best leading varieties. A fine Stock of large CAMELLIAS, to be sold a bargain. Evergreen OAKS, 5 to 7 feet.

IVERY'S NONSUCH LETTUCE, the best summer variety in cultivation, 1*s*. per packet, post free; and to be had of all the principal Seedsmen in London.

500,000 Seedling Larch Fir.

THE SUBSCRIBERS have a very fine Stock of the above and other Seedlings to dispose of, viz.:—

1 and 2 Years' Seedling LARCH FIR.
2 Years' Seedling SCOTCH FIR.
2 Years' Seedling ASH.
1 Year's Seedling ELMS.
1 Year's Seedling APPLES.
2 Years' Seedling THORNS.

Prices furnished on application.

Address to WM. WOOD & SON, Woodlands Nursery, Maresfield, near Uckfield, Sussex.

THE SUBSCRIBERS have on SALE a large quantity of 2-year Seedling THORNS, 2-year Seedling SCOTCH FIRS (Native), 3 and 4-year Seedling NORWAY SPRUCE, 1-year Seedling PEAR STOCKS, and 1-year Seedling APPLE STOCKS, 2-year Transplanted SCOTCH FIRS, 9 to 15 inches (Native); Transplanted NORWAY SPRUCE, 6, 9, 12, and 18 inches.

All at very moderate prices, to be had on application.

FOWLER & SON, Glasgow.

To Nurserymen, Noblemen, Gentlemen, and Railway Contractors, Planters, &c.

FOR SALE, 100,000 first-rate QUICKWOOD, 2 to 2½ feet high and well furnished and fit for forming first-rate Hedgerows, per 1000, 12*s*.; 15,000 to 20,000 SPRUCE FIRS, 10 to 15 inches high, green and well furnished, 10*s*. per 1000; about 1,000,000 of good OAKS, 1½ to 2 feet, 11*s*. per 1000; 5000 CHESNUTS (HORSE), 1 to 1½ feet, 10*s*. per 1000; about 10,000 good OAKS, 3 feet full, 17*s*. per 1000; about 10,000 ASH, 5 to 6 feet, clean and straight, 11*s*. per 1000. The above prices are for Cash on receipt of the goods, the Land being wanted for other purposes.

Address, in first instance, W. M., *Gardeners' Chronicle* Office, 41, Wellington Street, Strand, London, W. C.

MESSRS. BROWN AND CO. offer the following Selection of CHOICE PLANTS, which they will forward to any part of the kingdom:—

	s.	d.
25 AZALEAS, new hardy Belgian varieties, one of a sort, on their own roots, by name, well set for bloom, fine for beds or pot culture for forcing ..	20	0
25 AZALEAS, hardy American varieties, do. do. ..	15	0
12 Hardy RHODODENDRONS, including scarlet, white, and rose colour	12	0
Fine Hardy Scarlet RHODODENDRONS, per doz ..	12	0
New Yellow RHODODENDRONS, each .. 3*s*. 6*d*. to	5	0
Hardy HEATHS, LEDUMS, and KALMIAS, per doz.	6	0
ROSES, best sorts, Standards and Half-standards per doz. .. .. 12*s*. to	15	0
CLIMBING ROSES of best sorts, rapid growers, per doz.	6	0
6 Fine Hardy MAGNOLIAS, one of a sort	10	0
Choice CONIFERÆ, cheap; PRICE LIST by Post.		
Greenhouse AZALEAS, fine varieties, per doz., 10*s*. to	15	0
CAMELLIAS, best double varieties, per doz. ..	25	0
Yellow PICOTEES and CARNATIONS, per doz. ..	10	0

FRUIT TREES.

Fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Apples, Plums, and Pears, 2*s*. 6*d*. each, or 24*s*. per doz.

Dwarf Plants of all the above kinds, grown especially for pot culture in orchard houses, &c., per dozen, 18*s*.

Filberts, Gooseberries, Currants, and Raspberries, per doz., &c. Evergreen Shrubs and Ornamental Trees of all kinds cheap. American Nurseries, near Farnham, Surrey.—Feb. 15.

THE LONDON MANURE COMPANY (ESTABLISHED 1840,)

Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE of LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK & Co., Sutton Road, Plymouth.

Tenant Farmers' Manure Company.

ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.

MANUFACTURED BY

THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.

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Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.

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Offices: 109, Fenchurch Street, London, E.C.
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LAWES'S MANURES.

The Manures manufactured by J. B. LAWES for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—

LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME .. .. 6*l*.
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5*l*.
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8*l*.

These Manures can be obtained of MR. LAWES, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

American and other Cakes at market prices.

Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and Liffey Buildings, Eden Quay, Dublin.

New Source of Ammonia.

TO MANURE MANUFACTURERS AND DEALERS.

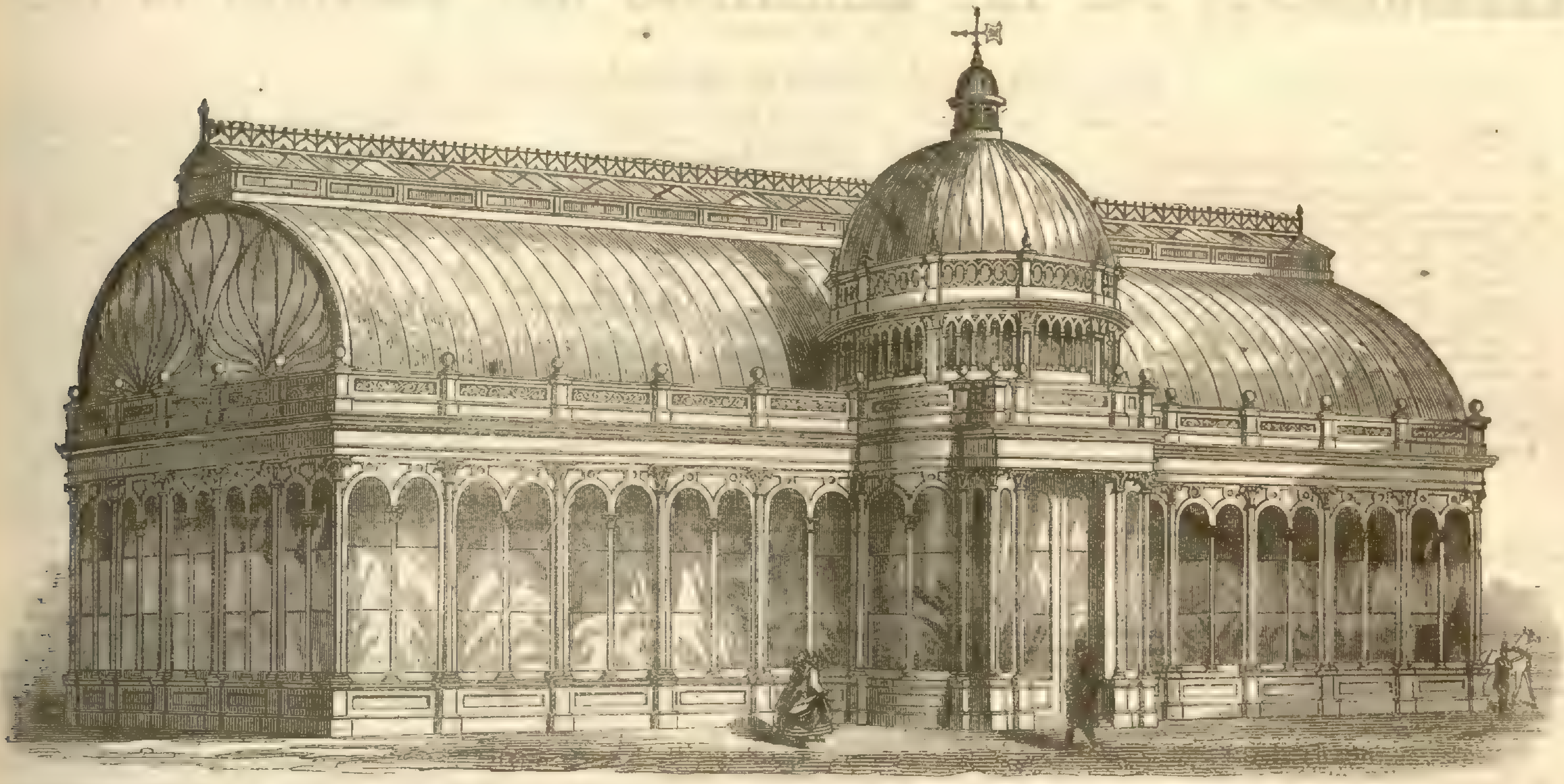
ULMATE of AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Manure Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that it contains more Nitrogen (yielding Ammonia) than any other kind of animal matter proves the Ulmate of Ammonia to be a highly valuable manure, the Analyses by Professor Voelcker, the Chemist of the Royal Agricultural Society, and other high authorities, showing a per centage of Ammonia exceeding ... per cent., or equal to an average sample of Peruvian Guano, while, from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of ammonia. Being a fine dry powder, it is peculiarly suitable for use in the manufacture of manures, and preferable to the ordinary salts in use, sulphate of ammonia, nitrate of soda, &c.

Samples, prices, and all information will be forwarded on application to FREDERIC J. CORNWELL, Broker, 7, Great St. Helens, E.C.

LINSEED CAKES, RAPE CAKES, COTTON CAKES, and all Materials used in the Manufacture of Manures, at the lowest market prices.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

PATRONISED BY THE QUEEN.



WEEKS'S CONSERVATORIES are peculiarly chaste in design. A choice variety now in preparation at their Steam-Power Works.

WEEKS'S NEWLY-INVENTED PEACH HOUSES give the utmost satisfaction. They require *no Brick foundation*, and are specially suited for covering Trees of long standing.

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WEEKS'S IMPROVED VENTILATING APPARATUS gives universal satisfaction.

WEEKS'S HOT-WATER APPARATUS continues to eclipse all spurious imitations of their renowned "ONE-BOILER SYSTEM." It exposes four times the quantity of heating surface to the action of the fire, consequently must be four-fold as powerful, and economical in the same ratio. It is described by the highest authority as the very best extant for both large and small works, which the following references will serve to corroborate. It has been adopted by

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN
THE TOWER OF LONDON
THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN
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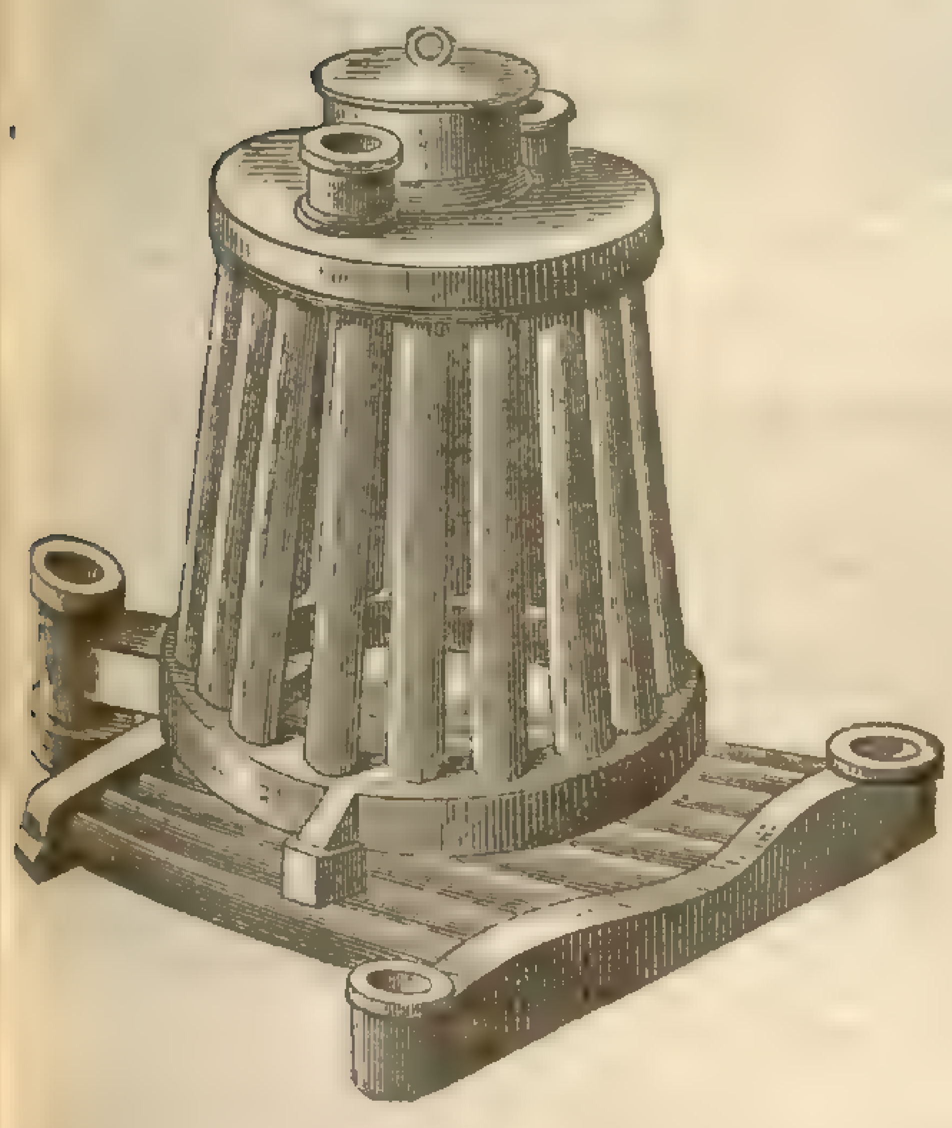
THE CRYSTAL PALACE, SYDENHAM, AND NUMEROUS PUBLIC COMPANIES.

Catalogues free on application.

JOHN WEEKS & COMPANY, HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS ENGINEERS,
KING'S ROAD, CHELSEA, LONDON, S.W.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



ORMSON'S PATENT JOINTLESS TUBULAR BOILER,

AN ORIGINAL INVENTION,

Brought out for the purpose, and is now fully acknowledged to surpass the OLD-FASHIONED JOINTED TUBULAR BOILERS, which have been made for the last 20 or 30 years by all other manufacturers. The ADVANTAGES of this PATENT will be manifest to every person's understanding from the following FACTS. For instance, one of the OLD-FASHIONED JOINTED BOILERS with 50 TUBES would have 100 JOINTS made of rope yarn and cement, exposed to the direct action of the FIRE, whereas in my PATENT there is NOT ONE JOINT so exposed. And it should be fully understood that as the OLD-FASHIONED JOINTED TUBULAR BOILER increases in SIZE, number of TUBES and JOINTS, its liability to LEAKAGE also increases, consequently

THE FOLLOWING IS THE REASON WHY

ORMSON'S ONE-BOILER SYSTEM

AND PATENT JOINTLESS TUBULAR BOILERS

have become so universally adopted on account of their superior power, great safety, and economy,

ORMSON'S No. 1 BOILERS	are heating upwards of		250	feet of Pipe.
ORMSON'S No. 2 BOILERS	„	„	600	„
ORMSON'S No. 3 BOILERS	„		1300	„
ORMSON'S No. 4 BOILERS	„	„	3000	„
ORMSON'S No. 5 BOILERS	„	„	5000	„

Boilers of larger sizes if required to heat 12,000 or 15,000 feet of Pipe.

H. ORMSON having a most complete Set of Steam-power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, HORTICULTURAL BUILDER TO HER MAJESTY,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

ROYAL HORTICULTURAL SOCIETY.

ARRANGEMENTS FOR THE EXHIBITIONS AND MEETINGS IN 1862,

TO BE HELD AT

THE GARDEN, SOUTH KENSINGTON, W.

Feb. 18, Tuesday. Fruit and Floral Committee, and Ballot for Seeds.
,, 21, Friday. Meeting for Election of Fellows.
March 4, Tuesday. Fruit and Floral Committee.
,, 19, WEDNESDAY. HYACINTH and CAMELLIA SHOW, and Fruit and Floral Sub-Committee.
,, 21, Friday. Meeting for Election of Fellows.
April 1, Tuesday. Fruit and Floral Committee.
,, 4, Friday. Meeting for Election of Fellows.
,, 9, WEDNESDAY. AZALEA SHOW, and Ballot for Seeds or Plants.
,, 22, Tuesday. Fruit and Floral Committee.
,, 25, Friday. Meeting for Election of Fellows.

*** At some period during the season it is expected that the Memorial of the Exhibition of 1851 will be finished, and probably publicly uncovered.

May 2, Friday. Meeting for Election of Fellows.
,, 6, Tuesday. Fruit and Floral Committee.
,, 12, Monday. Meeting for Election of Fellows.
,, 21, WEDNESDAY. FIRST GREAT SHOW, and Fruit and Floral Sub-Committee.
,, 28. Wednesday. Election of Fellows and Ballot for Plants.
,, 30. Friday. Opening Day of American Show.

*** During June there will be a Grand Show of American Plants by Messrs. Waterer and Godfrey, of Knaphill Nursery, Woking, Surrey.

June 6. Friday. Meeting for Election of Fellows.
,, 11. WEDNESDAY. SECOND GREAT SHOW, and Fruit and Floral Sub-Committee.
,, 20, Friday. Meeting for Election of Fellows.
,, 26, THURSDAY, ROSE SHOW, and Fruit and Floral Sub-Committee.
July 2, WEDNESDAY. THIRD GREAT SHOW, and Fruit and Floral Sub-Committee.
,, 4, Friday. Meeting for Election of Fellows.
,, 22, Tuesday. Fruit and Floral Committee.
August 1, Friday. Meeting for Election of Fellows.
,, 12, Tuesday. Fruit and Floral Committee.
,, 26, Tuesday. Fruit and Floral Committee.
Sept. 5, Friday. Meeting for Election of Fellows.
,, 10, WEDNESDAY. SHOW OF AUTUMN FLOWERS, and Fruit and Floral Sub-Committee.
,, 23, Tuesday. Fruit and Floral Committee.
October 8, Wednesday. Fruit and Floral Sub-Committee.
,, 8, 9, & 10. GREAT INTERNATIONAL SHOW OF FRUIT, GOURDS, ROOTS, VEGETABLES, AND CEREALS. The Show of Gourds, Roots, and Cereals to continue until the 18th.
Nov. 7, Friday. Meeting for Election of Fellows.
,, 11, Tuesday. Fruit and Floral Committee.
Dec. 9, Tuesday. Fruit and Floral Committe.

ELECTION OF FELLOWS.

Gentlemen and Ladies wishing to become Fellows have to be proposed by some one already a Fellow, to whom they are personally known. The subscription is Two Guineas Entrance Fee, and Two Guineas or Four Guineas a year according to the privileges wished.

ADMISSION OF THE PUBLIC.

*** The Council, conceiving that it would be a convenience to a large number of persons coming to London on the occasion of the Great Exhibition, have arranged with Her Majesty's Commissioners for the issue of a Joint Card for those who, not being Fellows of the Society, may wish, during the period of the Exhibition, from the 1st of May to 18th of October, to have a personal free admission to both or either. The price fixed on is Five Guineas. The Card, which will be forfeited if transferred. will admit the one person who has signed it to the Opening Ceremony of the Great Exhibition, to visit it on every day that it is open to the public, and to be present during the same period at all the great Garden Fêtes of the Horticultural Society.

Previous to April 30, packets of 25 tickets may be bought by Fellows for 5*l.* per packet. These tickets are available for any Show during the year—admitting numbers corresponding to the prices of the day; *i.e.*, one on a 5*s.* day, 2 on a 2*s.* 6*d.* day, and 5 on a 1*s.* day.

I. HORTICULTURAL EXHIBITIONS.

March 19.	HYACINTHS and CAMELLIAS	2*s.* 6*d.*	Admission by payment at the door, or by tickets previously purchased.
April 9.	AZALEAS	2*s.* 6*d.*	
May 30.	OPENING DAY OF THE AMERICAN SHOW, contingent upon season	2*s.* 6*d.*	
June 26.	ROSE SHOW	2*s.* 6*d.*	
Sept. 10.	AUTUMN FLOWER SHOW ..	2*s.* 6*d.*	
Oct. 8.	FRUIT AND VEGETABLE SHOW	2*s.* 6*d.*	
,, 9.	DITTO	1*s.* 0*d.*	
,, 10.	DITTO	1*s.* 0*d.*	
,, 11-18.	GOURDS, ROOTS, AND CEREALS	1*s.* 0*d.*	

II. GREAT MEETINGS.

May 21.	FIRST GREAT MEETING	Admission by tickets, price 5*s.* each, purchased previously to the day of the Show. If payment is made at the door, 7*s.* 6*d.* will be charged for each admission.
June 11.	SECOND DITTO	
July 2.	THIRD DITTO	
	UNCOVERING OF THE MEMORIAL OF 1851.	

III. ORDINARY DAYS.

From 1st January to 1st May.

Sundays	No admission by payment.
Mondays	ditto.
Tuesdays	ditto.
Wednesdays	ditto.
Thursdays	ditto.
Fridays	ditto.
Saturdays	2*s.* 6*d.*

From 1st May to 31st May. Subject to small changes as soon as the actual arrangements of the Commissioners of 1862 are known.

			s.	d.
Sundays		No admission by payment.		
Mondays ..	(Band)	.. ..	1	0
Tuesdays ..	(Band)	.. ..	1	0
Wednesdays	(Band)	.. ..	2	6
Thursdays	(Band)	.. ..	1	0
Fridays ..	(Band)	.. ..	1	0
Saturdays	(Bands)	.. ..	5	0

From 31st May to 18th October.

Sundays		No admission by payment.	
Mondays ..	(Band)	Gardens alone	1 [illegible]
Tuesdays ..	(Band)	Gardens and Exhibition	1 [illegible]
Wednesdays	(Band)	Gardens from Exhibition	0 [illegible]
Thursdays ..	(Band)		
Fridays ..	(Band)	.. ..	2 6
Saturdays ..	(Bands)	.. ..	5 [illegible]

From 18th October to 31st December.

Sundays	No admission by payment.	
Mondays	.. ..	0 [illegible]
Tuesdays	No admission by payment.	
Wednesdays	.. ..	2 6
Thursdays	No admission by payment.	
Fridays	ditto.	
Saturdays	.. ..	2 6

The Council have the pleasure to announce that Her Majesty's Commissioners for the Exhibition of 1851 have given their consent that from the 30th of April to the 18th of October visitors may be permitted to use a temporary roadway for admission from Kensington Gore leading to the back of the Conservatory. The Council have sought this concession in order to abate the confusion which, without it, must be attendant on the number of carriages visiting the International Exhibition of 1862.

SCHEDULES OF PRIZES.

HYACINTH AND CAMELLIA SHOW, MARCH 19.

CLASS	1st	2d	3d
1. 18 Pots of Hyacinths, not less than 12 distinct kinds .. (*Open*)	£2 0*s.*	£1 10*s.*	£1 0*s.*
2. 12 Pots of Hyacinths. Distinct kinds .. .. (*Amateurs*) (Prizes offered by Mr. James Cutbush.)	2 2	1 1	—
3. 6 Pots of Hyacinths. Distinct kinds .. .. (*Amateurs*)	1 0	0 15	0 10
4. 6 Pots of Hyacinths. New distinct kinds .. .. .. (*Open*)	1 10	1 0	0 10
5. 24 Pots of Tulips, 3 bulbs in a Pot. 6 kinds ..(*Nurserymen*)	2 10	2 0	1 0
6. 18 Pots of Tulips, 3 bulbs in a Pot. 4 kinds .. (*Amateurs*)	2 0	1 10	1 0
7. 12 Pots of Tulips, 3 bulbs in a Pot. 3 kinds .. (*Amateurs*)	1 0	0 15	0 10
8. 6 Plants, Camellias. Distinct kinds .. .. (*Amateurs*)	3 0	2 0	1 0

CLASS	1st	2d	3d
9. 4 Plants, Camellias. Distinct kinds .. .. (*Amateurs*)	£2 0*s.*	£1 5*s.*	£0 15*s.*
10. Single Plant of Camellia .. ..(*Open*)	1 0	0 15	0 10
11. 9 Pots of Lilies of the Valley .. ..(*Open*)	0 15	0 10	0 5
12. 6 Pots of stove Amaryllis. Not less than 3 kinds ..(*Open*)	1 10	1 0	0 15
13. 6 Pots of any kind of Primula .. ..(*Open*)	0 15	0 10	0 5
14. 12 Forced Geraniums .. .. (*Open*)	2 0	1 10	0 15
15. 12 Pots of Spring Plants in flower, not forced, such as Epacris, Heaths, Acacias, &c. .. ..(*Open*)	2 0	1 10	0 15
16. 12 Plants in flower, forced	2 0	1 10	0 15

AZALEA SHOW, APRIL 9.

CLASS	1st	2d	3d
1. 12 Greenhouse Azaleas. Distinct kinds .. (*Nurserymen*)	£2 0*s.*	£1 10*s.*	£0 15*s.*
2. 9 Greenhouse Azaleas. Distinct kinds .. .. (*Amateurs*)	2 0	1 10	0 15
3. 6 Greenhouse Azaleas. Distinct kinds .. .. (*Amateurs*)	1 10	1 0	0 10
4. 6 Greenhouse Azaleas. New distinct kinds .. ..(*Open*)	1 10	1 0	0 10
5. 3 Greenhouse Azaleas. New distinct kinds .. (*Amateurs*)	1 0	0 15	0 10
6. Single specimen of Greenhouse Azalea .. .. ..(*Open*) NOTE.—Azaleas must be grown in Pots not exceeding 10 inches in diameter.	1 0	0 15	0 10
7. 6 Rhododendrons in blooms. Distinct kinds .. ..(*Open*)	2 0	1 10	1 0

CLASS	1st	2d	3d
8. 3 Rhododendrons in bloom. Distinct kinds .. ..(*Open*)	£1 0*s.*	£0 15*s.*	£0 10*s.*
9. Single Specimen of Rhododendron .. ..(*Open*)	1 0	0 15	0 10
10. 9 Cinerarias. Distinct kinds .. .. .. (*Nurserymen*)	2 0	1 10	1 0
11. 6 Cinerarias. Distinct kinds.. .. .. .. (*Amateurs*)	1 10	1 0	0 15
12. 12 Spring Flowers, forced. Distinct kinds.. .. ..(*Open*)	2 0	1 10	0 15
13. 12 Greenhouse Plants in flower, not forced. Distinct kinds (*Open*)	2 0	1 10	0 15
14. 12 Hardy herbaceous Plants in flower .. .. ..(*Open*)	1 0	0 15	0 15
15. 9 Auriculas, distinct kinds .. .. .. (*Nurserymen*)	1 10	1 0	0 15
16. 6 Auriculas, distinct kinds .. .. (*Amateurs*)	1 10	1 0	[illegible]

FIRST GREAT EXHIBITION, WEDNESDAY, MAY 21.

CLASS	1st	2d	3rd	4th
1. 15 Stove and Greenhouse Plants .. .. ..(*Open*)	£20 0*s.*	£15 0*s.*	£10 0*s.*	£5 0*s.*
2. 12 Stove and Greenhouse Plants .. (*Nurserymen*)	10 0	7 0	5 0	3 0
3. 9 Stove and Greenhouse Plants .. . (*Amateurs*)	9 0	7 0	5 0	3 0
4. 6 Stove and Greenhouse Plants .. .. (*Amateurs*)	6 0	4 0	3 0	2 0
NOTE.—Two Plants of a Genus will be admitted in Classes 1, 2, and 3. Exhibitors can only show in one of the Classes 1, 2, 3, and 4. Orchids and Florists' Flowers are excluded.				
5. 20 Orchids, exotic species .. .. .. (*Amateurs*)	20 0	15 0	10 0	5 0
6. 12 Orchids, exotic species .. .. (*Nurserymen*)	10 0	7 0	5 0	3 0
7. 10 Orchids, exotic species .. .. .. (*Amateurs*)	10 0	7 0	5 0	3 0
8. 6 Orchids, exotic species .. .. .. (*Amateurs*)	6 0	4 0	3 0	—
NOTE.—Exhibitors can only compete in one of the Classes 5, 6, 7, and 8.				
9. Single specimen of any Exotic Orchid. (Prizes offered by the Lord Bishop of Winchester)	5 0	3 0	—	—
10. 9 Greenhouse Azaleas. Distinct kinds .. (*Amateurs*)	12 0	9 0	7 0	5 0
11. 9 Greenhouse Azaleas. Distinct kinds (*Nurserymen*)	9 0	7 0	5 0	3 0
12. 6 Greenhouse Azaleas. Distinct kinds .. (*Amateurs*)	6 0	4 0	3 0	2 0
13. 6 Rhododendrons. Distinct kinds .. ..(*Open*)	4 0	3 0	2 0	—
14. Rhododendron. Single specimen of Sikkim or Bhotan	3 0	2 0	1 0	—
15. 6 Roses in Pots. Distinct kinds .. .. (*Amateurs*)	6 0	5 0	4 0	3 0
16. 12 Roses in Pots. Distinct kinds .. (*Nurserymen*)	10 0	7 0	5 0	4 0
17. 6 Cape Heaths. Distinct kinds .. .. ..(*Open*)	5 0	3 0	2 0	—
18. 9 Pelargoniums. Distinct kinds .. .. (*Amateurs*)	8 0	6 0	4 0	2 0
19. 12 Pelargoniums. Distinct kinds .. (*Nurserymen*)	8 0	6 0	4 0	2 0

CLASS	1st	2d	3d
20. 6 Pelargoniums. Fancies. Distinct kinds ..(*Open*) NOTE.—Plants in Classes 17, 18, and 19, are to be grown in Pots 8 inches in diameter.	£5 0*s.*	£4 0*s.*	£3 0*s.*
21. 6 Cinerarias. Distinct kinds .. .. ..(*Open*)	3 0	2 0	1 0
22. New or rare tender Plants in flower .. ..(*Open*)	S.K.	S.B.	B.
23. New or rare tender Plants not in flower .. ..(*Open*)	S.K.	S.B.	B.
24. New or rare hardy Ornamental Plants .. ..(*Open*)	S.K.	S.B.	B.
N.B.—Exhibitors may compete for all the prizes in Classes 22, 23, and 24. Plants exhibited at any Metropolitan Show in a previous season will not be eligible.			
25. Newly introduced Plants that have received special recognition from the Floral Committee during 1859, 1860, and 1861 .. ..(*Open*)	Six Certificates in order of merit.		
26. Seedling Florists' Flowers and Garden Hybrids (*Open*)	Certificates.		
27. Stands of 24 Tulips .. ..(*Open*)	2 0	1 10	1 0
28. Group of Plants, showing effective arrangement for decorating a small Conservatory .. ..(*Open*) N.B.—A space 15 feet by 10 feet will be set apart for each Exhibitor. Valuable Plants not required. Florists and growers for market are invited to compete	10 0	6 0	4 0
29. Miscellaneous .. ..(*Open*) N.B.—Nothing can be admitted here which is provided for by any other class.	2 0	1 10	1 0

ROYAL HORTICULTURAL SOCIETY.—*Continued.*

SECOND GREAT EXHIBITION, WEDNESDAY, JUNE 11.

Class		1st	2d	3d	4th
15 Stove and Greenhouse Plants	(Open)	£20 0s.	£15 0s.	£10 0s.	£5 0s.
12 Stove and Greenhouse Plants ..	(Nurserymen)	10 0	7 0	5 0	3 0
9 Stove and Greenhouse Plants	(Amateurs)	9 0	7 0	5 0	3 0
6 Stove and Greenhouse Plants	(Amateurs)	6 0	4 0	3 0	2 0
NOTE.—Two Plants of a genus will be admitted in Classes 1, 2, and 3. Exhibitors can only show in one of the Classes 1, 2, 3, and 4. Orchids and Florists Flowers are here excluded.					
10 Fine-foliaged and Variegated Plants	(Open)	7 0	5 0	4 0	3 0
20 Orchids, exotic species	(Amateurs)	20 0	15 0	10 0	5 0
12 Orchids, exotic species	(Nurserymen)	10 0	7 0	5 0	3 0
10 Orchids, exotic species	(Amateurs)	10 0	7 0	5 0	3 0
6 Orchids, exotic species	(Amateurs)	6 0	4 0	3 0	—
NOTE.—Exhibitors can only compete in one of the Classes 6, 7, 8, and 9.					
9 Greenhouse Azaleas. Distinct kinds ..	(Amateurs)	9 0	7 0	5 0	—
9 Greenhouse Azaleas. Distinct kinds	(Nurserymen)	7 0	5 0	4 0	—
6 Azaleas. New kinds, sent out since 1857 ..	(Open)	4 0	3 0	2 0	—
12 Roses in Pots. Distinct kinds ..	(Nurserymen)	10 0	7 0	5 0	—
6 Roses in Pots. Distinct kinds	(Amateurs)	6 0	5 0	3 0	—
6 Dracænas and Cordylines	(Open)	3 0	2 0	1 0	—
6 Cape Heaths	(Open)	5 0	3 0	2 0	—
9 Pelargoniums. Distinct kinds	(Amateurs)	8 0	6 0	4 0	2 0
12 Pelargoniums. Distinct kinds ..	(Nurserymen)	8 0	6 0	4 0	2 0
6 Pelargoniums, Fancies. Distinct kinds ..	(Open)	5 0	4 0	3 0	—
NOTE.—Plants in Classes 17, 18, and 19 to be grown in pots, 8 inches in diameter.					
9 Pelargoniums—Spotted or French. Distinct kinds	(Open)	4 0	3 0	2 0	—
6 Calceolarias in pots not more than 11 inches in diameter	(Open)	3 0	2 0	1 0	—
12 Exotic Ferns. Distinct kinds	(Open)	5 0	4 0	3 0	2 0
6 Anæctochiles, or other variegated Orchids. Distinct kinds..	(Open)	3 0	2 0	1 0	—
3 Tropæolums, trained on trellises. Distinct ..	(Open)	2 0	1 10	1 0	—
New or rare tender Plants in flower	(Open)	S.K.	S.B.	B.	
New or rare tender Plants not in flower	(Open)	S.K.	S.B.	B.	
New or rare hardy Ornamental Plants	(Open)	S K.	S.B.	B.	
NOTE.—Exhibitors in Classes 25, 26, and 27 may compete for all the prizes. Plants exhibited at any Metropolitan Show in a previous season will not be eligible					
Newly introduced Plants that have received special recognition from the Floral Committee during 1859, 1860, and 1861	(Open)	Six Certificates in order of merit.			
Seedling Florists' Flowers and Garden Hybrids.. ..		Certificates			
Wardian Case, arranged for the Drawing Room	(Open)	4 0	3 0	2 0	—
Miscellaneous	(Open)	2 0	1 10	1 0	0 10
N.B.—Nothing can be admitted here which is provided for by any other Class.					

Class		1st	2d	3d	4th
32. Collection of cut Rhododendrons	(Open)	£2 0s.	£1 0s.	£0 10s.	—

SPECIAL PRIZES.

	1st	2d	3d	4th
Prizes for the best three groups of Fruits and Flowers for the decoration of the dinner table, are offered by C. WENTWORTH DILKE, Esq., V.P.R.H.S. First Prize, Gold Knightian Medal, or 10*l.*; Second Prize, Gold Banksian Medal, or 7*l.*; Third Prize, Society's Large Silver Medal, or 3*l.*	10 0	7 0	3 0	—

NOTE.—Beautiful arrangement will be the test of merit in this Exhibition; valuable flowers or fruits are therefore not demanded.—Each set must consist of three groups, and may be either one of flowers and two of fruit, or two of flowers and one of fruit, or fruit and flowers mixed in all three.—They may be shown either in epergnes, glass, or china dishes, wicker or wire work, or in any other way most to the taste of the Exhibitor. —Ladies are invited to join in the competition.—The Prizes will be awarded by a jury of ladies.—The groups will be received as late as 10 o'clock, A.M., *provided space shall have been secured for them the day before.*

FRUIT (Open).

NOTE.—All the Fruit exhibited at this Show must be of home growth.

	1st	2d	3d	4th
A. Pine Apple, the best Cayenne	3 0	2 0	1 0	—
B. Pine Apple, any other variety	3 0	2 0	1 0	—
C. Grapes, Black, 3 bunches	3 0	2 0	1 0	—
D. Grapes, White Muscat, 3 bunches	3 0	2 0	1 0	—
E. Grapes, White, any other class, 3 bunches	3 0	2 0	1 0	—
F. Peaches, 6 fruit	3 0	2 0	1 0	—
G. Nectarines, 6 fruit	3 0	2 0	1 0	—
H. Cherries, 50 fruit	2 0	1 0	0 10	—
I. Strawberries, single dish	1 10	1 0	0 10	—
J. Ditto three dishes	2 10	2 0	1 0	—
K. Melons, green-fleshed	1 10	1 0	—	—
L. Melons, scarlet-fleshed	1 10	1 0	—	—
NOTE.—Fruit shown in Classes K and L. must be cut by the Judges.				
M. Vines in pots, 2 plants..	4 0	3 0	2 0	—
N. Miscellaneous	2 0	1 10	1 0	0 15

☞ Prizes will be given for Fruits of superior excellence, although not specified in the Schedule.

Exhibitors can only take one prize in any one class, except in Miscellaneous.

THIRD GREAT EXHIBITION, WEDNESDAY, JULY 2.

Class		1st	2d	3d	4th
1. 15 Stove and Greenhouse Plants	(Open)	£20 0s.	£15 0s.	£10 0s.	£5 0s.
2. 12 Stove and Greenhouse Plants ..	(Nurserymen)	10 0	7 0	5 0	3 0
3. 9 Stove and Greenhouse Plants	(Amateurs)	9 0	7 0	5 0	3 0
4. 6 Stove and Greenhouse Plants	(Amateurs)	5 0	4 0	3 0	2 0
NOTE.—Two plants of a genus will be admitted in Classes 1, 2, and 3. Exhibitors can only show in one of the Classes 1, 2, 3, and 4. Orchids and Florists' Flowers are here excluded.					
12 Fine Foliaged and Variegated Plants	(Nurserymen)	7 0	5 0	3 0	2 0
10 Fine Foliaged and Variegated Plants ..	(Amateurs)	7 0	5 0	3 0	2 0
12 Orchids, exotic species. Distinct kinds	(Nurserymen)	10 0	7 0	5 0	3 0
10 Orchids, exotic species. Distinct kinds	(Amateurs)	10 0	7 0	5 0	3 0
6 Orchids, exotic species. Distinct kinds	(Amateurs)	5 0	4 0	3 0	2 0
9 Greenhouse Azaleas. Distinct kinds	(Open)	7 0	5 0	4 0	2 0
9 Pelargoniums. Distinct kinds	(Amateurs)	7 0	5 0	3 0	2 0
12 Pelargoniums. Distinct kinds ..	(Nurserymen)	7 0	5 0	3 0	2 0
6 Pelargoniums. Fancies	(Open)	4 0	3 0	2 0	—
NOTE.—Plants in Classes 11, 12, and 13 to be grown in Pots 8 inches in diameter.					
6 Spotted, or French kinds of Pelargoniums ..	(Open)	3 0	2 0	1 0	—
6 Fuchsias. Distinct kinds..	(Open)	5 0	4 0	3 0	—
3 Standard Fuchsias. Distinct kinds	(Open)	3 0	2 0	1 0	—
12 Variegated Begonias. Distinct kinds	(Open)	3 0	2 0	1 0	—
9 Caladiums. Distinct kinds	(Open)	5 0	4 0	3 0	—
6 Tree Ferns. Duplicates admitted	(Open)	5 0	4 0	3 0	—
12 Exotic Ferns. Distinct kinds ..	(Nurserymen)	4 0	3 0	2 0	—
10 Exotic Ferns. Distinct kinds	(Amateurs)	4 0	3 0	2 0	—
12 British or other hardy Ferns, rare and distinct kinds, in Pots	(Open)	3 0	2 0	1 0	—
New or rare tender Plants in flower	(Open)	S. K.	S. B.	B.	
New or rare tender Plants not in flower	(Open)	S. K.	S. B.	B.	
New or rare hardy Ornamental Plants	(Open)	S. K.	S. B.	B.	
N.B.—Exhibitors may compete for all the Prizes in Classes 23, 24, and 25. Plants exhibited at any Metropolitan Show in a previous season will not be eligible.					
Newly-introduced Plants that have received special recognition from the Floral Committee during 1859, 1860, and 1861	(Open)	Six Certificates in order of merit.			
Fern Case arranged for the Drawing-room ..	(Open)	3 0	2 0	1 0	—
Fresh Water Aquaria. The most effectively arranged	(Open)	2 0	1 0	0 10	—
Window-boxes filled with Plants	(Open)	2 0	1 0	0 10	—
Seedling Florists' Flowers and Garden Hybrids..	(Open)	Certificates.			
Plants in Pots, arranged in stands for Drawing-room decoration	(Open)	3 0	2 0	1 0	0 10

Class	1st	2d	3d	4th
32. Three Hanging Baskets of Pendent Plants in flower, the middle basket not to exceed 1 ft. 3 in., the other two not to exceed 9 in. each in diameter. The middle basket may contain mixed sorts, the smaller baskets one sort only	£5 0s.	£2 0s.	—	—
*** The baskets will be suspended for Exhibition with the large one in the centre. (Prizes offered by Mr. Wilson Saunders, Treasurer.)				
33. Miscellaneous .. .. (Open)	2 0	1 10	£1 0s.	£0 10s.
N.B. Nothing can be admitted here which is provided for by any other Class.				

FRUIT. (Open.)

NOTE.—All the Fruit exhibited at this Show must be of home growth.

	1st	2d	3d	4th
A. Collection of Grapes	7 0	4 0	2 0	—
B. Collection of Fruit	6 0	5 0	4 0	3 0
C. Pine Apple. Queens	2 0	1 0	0 10	—
D. Pine Apple. Any other kind	2 0	1 0	0 10	—
E. Grapes. 6 bunches	3 0	2 0	1 0	—
F. Grapes, Black Hamburgh. 3 bunches	2 0	1 0	0 10	—
G. Grapes. Any other Black kind. 3 bunches	2 0	1 0	0 10	—
H Grapes, White Muscat. 3 bunches..	2 0	1 0	0 10	—
I. Grapes, Chasselas Musqué. 3 bunches. Regularity of bunch to be a test of merit	2 0	1 0	—	—
J. Grapes. Any other white kind. 3 bunches	2 0	1 0	0 10	—
K. Peaches. 3 dishes of 6 fruit each	3 0	2 0	1 0	—
L. Peaches. 6 fruit	2 0	1 0	0 10	—
M. Nectarines. 3 dishes of 6 fruit each	3 0	2 0	1 0	—
N. Nectarines. 6 fruit	2 0	1 0	0 10	—
O. Strawberries. 4 dishes, distinct kinds	1 5	1 0	0 15	0 10
P. Collection of Strawberries	4 0	3 0	2 0	—
Q. Melons. Green-fleshed	1 10	1 0	—	—
R. Melons. Scarlet-fleshed	1 10	1 0	—	—
NOTE.—Fruits shown in Classes Q and R must be cut by the Judges.				
S. Vines in Pots. 4 plants	5 0	4 0	3 0	—
T. Miscellaneous. For Fruits not specially mentioned ..	2 0	1 10	1 0	0 10
ORCHARD-HOUSE FRUIT-TREES, IN POTS.				
U. 6 Peach and Nectarine	5 0	4 0	3 0	—
V. 6 Plum	4 0	3 0	2 0	—
W. 6 Cherry	4 0	3 0	2 0	—
X. 4 Apricot..	3 0	2 0	1 0	—
N.B.—The Fruit on these trees is not required to be ripe.				

ROSE SHOW, THURSDAY, JUNE 26.

Class		1st	2d	3d	4th
96 Kinds. 3 trusses of each	(Nurserymen)	£7 0s.	£5 0s.	£3 0s.	£2 0s.
48 Kinds. 3 trusses of each.. ..	(Nurserymen)	4 0	3 0	2 0	1 0
24 Kinds. 3 trusses of each.. ..	(Nurserymen)	2 10	2 0	1 10	1 0
24 Kinds. 1 truss of each	(Nurserymen)	2 0	1 0	0 10	—
48 Kinds. 1 truss of each	(Amateurs)	6 0	4 0	3 0	2 0
24 Kinds. 1 truss of each	(Amateurs)	4 0	2 0	1 0	0 10
18 Kinds. 1 truss of each	(Amateurs)	3 0	1 10	1 0	—
12 Kinds. 1 truss of each	(Amateurs)	1 10	1 0	0 10	—
12 Roses, 12 kinds, in Pots not exceeding 13 inches in diameter	(Open)	6 0	4 0	3 0	—
24 Roses, not less than 12 kinds, in Pots not exceeding 8 inches in diameter	(Open)	6 0	4 0	3 0	—
20 New Roses, not less than 10 kinds, in Pots not exceeding 8 inches in diameter	(Open)	6 0	4 0	3 0	—
NOTE.—No variety which has been publicly sold for more than three years to be accounted new.					

Class	1st £ s.	2d £ s.	3d £ s.	4th £ s.
12. New Roses of 1861 and 1862, single trusses, distinct kinds .. .. (Open)	2 0	1 10	1 0	0 15
13. 12 Trusses of Senator Vaisse .. .. (Open)	1 0	0 15	0 10	—
14. 12 Trusses of any other kind .. .. (Open)	1 0	0 15	0 10	—
15. 18 Tea scented Roses (single trusses) .. (Open)	3 0	2 0	1 0	—
16. Decorated basket or vase of Roses .. (Open)	3 0	2 0	1 0	—
17. 6 Bouquets of Roses. 6 distinct kinds, 5 trusses to each bouquet. each bouquet to be shown separately, in Hyacinth glasses, or somewhat similar stands	3 0	2 0	1 0	—
18. Single truss of a Hybrid Perpetual Rose, with stem and leaves, to be shown in a Hyacinth glass, or somewhat similar stand	2 0	1 0	—	—

(Prizes offered by Mr. Wilson Saunders, Treasurer.)

ROYAL HORTICULTURAL SOCIETY.—*Continued.*

SHOW OF AUTUMN FLOWERS, WEDNESDAY, SEPTEMBER 10.

Class		1st	2d	3d
1. 48 Cut Roses. 3 trusses, distinct kinds	(*Nurserymen*)	£4 0s.	£3 0s.	£2 0s.
2. 24 Cut Roses. 3 trusses, distinct kinds	(*Amateurs*)	4 0	3 0	2 0
3. 24 Cut Roses. Single blooms. Distinct kinds	(*Open*)	2 0	1 0	0 10
4. 6 Roses, in Pots, not more than two of one kind	(*Open*)	3 0	2 0	1 0
5. 12 Hollyhocks, in spikes. Distinct kinds	(*Open*)	3 0	2 0	1 0
6. 12 Hollyhocks, single flowers. Distinct kinds	(*Open*)	2 0	1 0	0 15
7. 24 German Asters. "Quilled." Distinct kinds	(*Open*)	2 0	1 0	0 15
8. 24 French Asters. "Tasselled." Distinct kinds	(*Open*)	2 0	1 0	0 15
9. 24 Gladiolus, cut spikes. Distinct kinds	(*Open*)	2 10	1 10	1 0
10. 12 Gladiolus, cut spikes. Brenchleyensis colour. Distinct kinds	(*Open*)	2 0	1 10	1 0
11. 12 Pots of Gladiolus. Distinct kinds. Not more than 3 in each Pot	(*Open*)	3 0	2 0	1 0
12. 24 Phloxes, single trusses. Distinct kinds	(*Open*)	2 0	1 0	0 15
13. 12 Dwarf Phloxes. Perennial upright growing kinds, in Pots. Distinct kinds	(*Open*)	£3 0s.	£2 0s.	£1 0s.
14. Phlox. The Dwarfest and best perennial upright growing Plant. (Prize offered by Dr. Lindley)	(*Open*)	1 0	—	—
15. 24 Verbenas, 5 trusses of each. Distinct kinds	(*Open*)	1 10	1 0	0 15
16. 48 Dahlia Blooms. Distinct kinds	(*Nurserymen*)	5 0	4 0	3 0
17. 24 Dahlia Blooms. Distinct kinds	(*Nurserymen*)	3 0	2 0	1 0
18. 18 Dahlia Blooms. Fancies. Distinct kinds	(*Nurserymen*)	3 0	2 0	1 0
19. 24 Dahlia Blooms. Distinct kinds	(*Amateurs*)	5 0	4 0	3 0
20. 12 Dahlia Blooms. Distinct kinds	(*Amateurs*)	3 0	2 0	1 0
21. 12 Dahlia Blooms. Fancies. Distinct kinds	(*Amateurs*)	3 0	2 0	1 0
22. 12 Bouquet Dahlias, in Pots		3 0	2 0	1 0
23. Miscellaneous. For flowers not specified	(*Open*)	2 0	1 0	0 15

GREAT INTERNATIONAL SHOW OF FRUIT, GOURDS, ROOTS, VEGETABLES, AND CEREALS.

OPEN TO ALL THE WORLD.

OCTOBER 8, 9, AND 10.

Gourds, Roots, and Cereals will remain on Exhibition until October 18.

NOTE.—A dish of Apples, Pears, Oranges, Lemons, and the like, 6 fruits of each; but of Plums, 9 fruits.

FRUITS.

Class		1st	2d	3d
A. Collection of Fruits	(*Fruiterers only*)	£5 0s.	£3 0s.	£ — s.
B. Collection of Fruits. Not more than 2 dishes of any one kind	(*Private growers*)	6 0	4 0	3 0
C. Pine Apple, Queens		2 0	1 10	1 0
D. Pine Apple. Any other kind		2 0	1 10	1 0
E. Grapes, White Muscat. 6 bunches		4 0	3 0	2 0
F. Grapes, White Muscat. 3 bunches		2 10	2 0	1 0
G. Grapes. Any other white kind. 3 bunches		2 10	2 0	1 0
H. Grapes, Black Hambro' 6 bunches		4 0	3 0	2 0
I. Grapes, Black Hambro' 3 bunches		2 10	2 0	1 0
J. Grapes. Any other black kind. 3 bunches		2 10	2 0	1 0
K. Pears, dessert, 12 dishes, distinct kinds		4 0	3 0	2 0
L. Pears, dessert, 6 dishes, distinct kinds		3 0	2 0	1 0
M. Pears, dessert, 3 dishes, ripe fruit, distinct kinds		1 10	1 0	0 10
N. Pears, dessert. Single dish, ripe fruit, any kind		1 0	0 15	0 10
O. Pears, kitchen. Single dish, any kind		1 0	0 15	0 10
P. Pears. Heaviest 5 fruits, dessert		1 0	0 15	0 10
Q. Apples, dessert, 12 dishes, distinct kinds		4 0	3 0	2 0
R. Apples, dessert, 6 dishes, distinct kinds		3 0	2 0	1 0

FRUITS—*Continued.*

Class.	1st	2d	3d
S. Apples, dessert, 3 dishes, ripe fruit, distinct kinds	£1 10s.	£1 0s.	£0 10
T. Apples, dessert. Single dish, ripe fruit, any kind	1 0	0 15	0 15
U. Apples, kitchen, 12 dishes, distinct kinds	4 0	3 0	2 0
V. Apples, kitchen, 6 dishes, distinct kinds	3 0	2 0	1 0
W. Apples, kitchen, 3 dishes, distinct kinds	1 10	1 0	0 10
X. Apples, kitchen. Single dish	1 0	0 15	0 10
Y. Apples, kitchen. Heaviest 5	1 0	0 15	0 10
Z. Oranges, Lemons, &c., collection of 1 dish of each	3 0	2 0	1 0
AA. Four Orange-trees, bearing fruit. In Pots or boxes	3 0	2 0	1 0
BB. Melons. Single fruit, any kind	1 10	1 0	—
CC. Plums. Single dish, any kind	1 0	0 15	0 10
DD. Strawberries. Single dish	2 0	1 10	1 0
EE. Currants. Single dish	0 10	—	—
FF. Raspberries. Single dish	0 15	0 10	—
NOTE.—Fruits specified in the above Classes will be excluded from GG.			
GG. Miscellaneous	2 0	1 10	1 0

GOURDS.

Class		1st	2d
§ I. *Gourds eatable when ripe.*			
I. The finest collection	(*Foreign Growth*)	£3 0s.	£2 0s.
II. The finest collection	(*Home Growth*)	3 0	2 0
III. The heaviest single specimen	(*Home Growth*)	3 0	2 0
IV. The heaviest single specimen	(*Foreign Growth*)	3 0	2 0
(Prizes offered by Dr. Lindley.)			
§ II. *Gourds for Ornament, or merely curious, and never eatable.*			
V. The most extensive collection, without regard to cultivation		3 0	2 0
§ III. *Mixed.*			
VI. 6 Ornamental Gourds, whether eatable or not		3 0	2 0
(Prizes offered by Mr. Wilson Saunders.)			

VEGETABLES, GARDEN ROOTS, &c.

	1st	2d
I. Potatoes, collection of	3 0	2 0
II. Potatoes, 6 Kinds of Kidneys, 12 tubers of each	1 0	0 15
III. Potatoes, 6 kinds, "Rounds," 12 tubers of each	1 0	0 10
IV. Potatoes, Kidneys, 12 tubers	0 15	0 10
V. Potatoes, any other kind, 12 tubers	0 15	0 10
VI. Onions, 12	0 15	0 10
VII. Carrots, 12	0 15	0 10
VIII. Parsnips, 12	0 15	0 10
IX. Globe Artichokes, 12	0 15	0 10
X. Parsnip Chervil, 12	0 15	0 10
XI. Beet, 6 roots	0 15	0 10
XII. Turnips, 3 kinds, 6 of each	1 0	0 10
XIII. Turnips, 6 of one kind	0 15	0 10
XIV. Salsafy, 12 roots	0 15	0 10
XV. Scorzonera, 12 roots	0 15	0 10
XVI. Peas, 1 dish	0 15	0 10
XVII. Brussels Sprouts, 3 plants	0 15	0 10
XVIII. Borecoles, 6 kinds, 2 of each	0 15	0 10
XIX. Broccoli, 6 heads	0 15	0 10
XX. Cabbage, Savoys, 6 heads	0 15	0 10
XXI. Cabbage, any other kind, 6 heads	0 15	0 10
XXII. Yams, Chinese, 6	0 15	0 10
XXIII. Celery, red, 6 heads	0 15	0 10
XXIV. Celery, white, 6 heads	0 15	0 10
XXV. Endive, 6 heads	0 15	0 10
XXVI. Cardoons, 4 heads	0 15	0 10
XXVII. Mushrooms, dish	0 15	0 10
XXVIII. Miscellaneous	1 0	0 15

N.B. Nothing can be admitted here which is provided for by any other Class.

AGRICULTURAL ROOTS.

Class	
1. Mangel Wurzel, Long Red. 3 roots	Bronze Medal.
2. Mangel Wurzel, Long Yellow. 3 roots	Ditto.
3. Mangel Wurzel, Yellow Globe. 3 roots	Ditto.
4. Mangel Wurzel, Red Globe. 3 roots	Ditto.
5. Beet, White Sugar. 3 roots	Ditto.
6. Carrots, White Belgian. 6 roots	Ditto.
7. Carrots, Altringham. 6 roots	Ditto.
8. Cabbage, Cattle. The largest head of	Ditto.
9. Turnips, Swedes. 6 roots	Ditto.
10. Turnips, Yellow. 6 roots	Ditto.
11. Turnips, White. 6 roots	Ditto.
12. Kohl Rabi. 6 roots	Ditto.

CEREALS.

In samples not less than a pint.

NOTE.—Both ear and sample are specially requested to be sent, but this is not imperative.

Class	
1. General Collection of Wheats from all quarters	Bronze Medal
2. Collection of Wheats from any one quarter	Ditto.
3. " " from the Baltic	Ditto.
4. " " from the Black Sea	Ditto.
5. " " from any part of Russia	Ditto.
6. " " grown in France	Ditto.
7. " " grown in Holland	Ditto.
8. " " grown in Belgium	Ditto.
9. " " grown in Denmark	Ditto.
10. " " grown in Sweden or Norway	Ditto.
11. " " grown in Prussia	Ditto.
12. " " grown in Austria	Ditto.
13. " " grown in Bavaria	Ditto.
14. " " grown in Wurtemberg	Ditto.
15. " " grown in North Germany	Ditto.
16. " " grown in Italy	Ditto.
17. " " grown in Spain	Ditto.
18. " " grown in Portugal	Ditto.
19. " " grown in Turkey, Egypt, or Tunis	Ditto.
20. " " grown in Algeria	Ditto.
21. " " grown in Southern Africa	Ditto.
22. " " grown in Lower Canada	Ditto.
23. " " grown in Upper Canada	Ditto.
24. " " grown in the Northern States of America	Ditto.
25. " " grown in the Southern States of America	Ditto.
26. " " grown in California	Ditto.
27. " " grown in Victoria or Vancouver's Island	Ditto.
28. " " grown in Australia	Ditto.
29. " " grown in England	Ditto.
30. " " grown in Scotland	Ditto.
31. " " grown in Ireland	Ditto.
32. " " sold in London Market	Ditto.
33. " " sold in Liverpool Market	Ditto.
34. Sample of White Wheat of any kind	Ditto.
35. Sample of Red Wheat of any kind	Ditto.
36. Collection of Barley from any one quarter	Ditto.
37. General collection of Barley from all quarters	Ditto.
38. Malting Barley	Ditto.
39. Collection of Oats from any one quarter	Ditto.
40. General collection of Oats from all quarters	Ditto.
41. Black Oats	Ditto.
42. White Oats	Ditto.
43. Rye	Ditto.
44. Rice grown in North America	Ditto.
45. Rice grown in South America	Ditto.
46. Rice grown in the East Indies	Ditto.
47. Collection of Rice from all quarters	Ditto.
48. Head of Maize, or Indian Corn, of any kind	Ditto.
49. Collection of different kinds of Maize, in heads, best in quality	Ditto.
50. Maize, most numerous in kinds	Ditto.
51. Newly introduced or rare Cereals	Ditto.
52. Cereals of any kind, not included in the above	Ditto.

MISCELLANEOUS.

A. Collection of Fruits, modelled in Wax	Large Bronze Medal.
B. Collection of Roots, modelled in Wax	Ditto.
C. Collection of Vegetables, modelled in Wax	Ditto.
D. Collection of Ditto, in any other material	Ditto.
E. General Collection, embracing the whole or part of the subjects in the above International Show	Silver Medal.

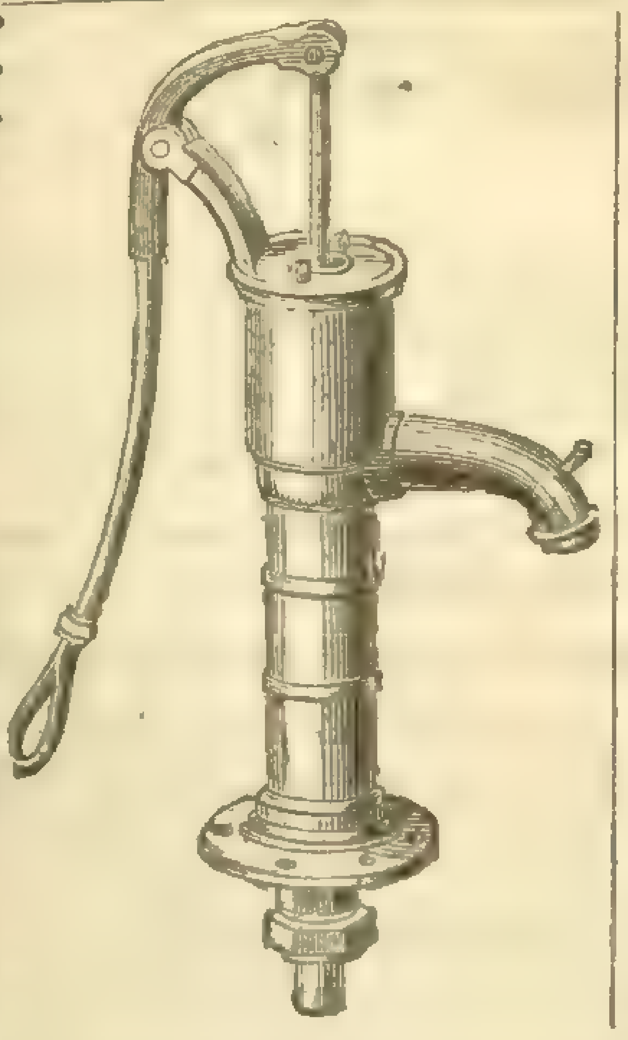
J. TYLOR AND SONS' PATENT IRON PUMP ... reversible handle, for ... Wells, Hot-Houses, ... Price 25s. 6d. each.

IRON YARD
and
GARDEN PUMPS
... feet 6 inches under spout
... 3 3½ inch
... 53s. 60s. each.

J. Tylor and Sons manufacture PUMPS for DEEP WELLS which do not require ... fixing below the level of the ground.

PUMPS of J. Tylor & Sons' manufacture to be obtained of Plumbers in all parts of the United Kingdom.

J. Tylor & Sons, Manufacturers, Warwick Lane, Newgate Street, London, E.C.



Notice.

THE INVENTOR of "SIGMA'S DIBBLERS," &c., is in no way connected with, or interested in their manufacture or sale.

Immediate Orders will prevent Disappointment.

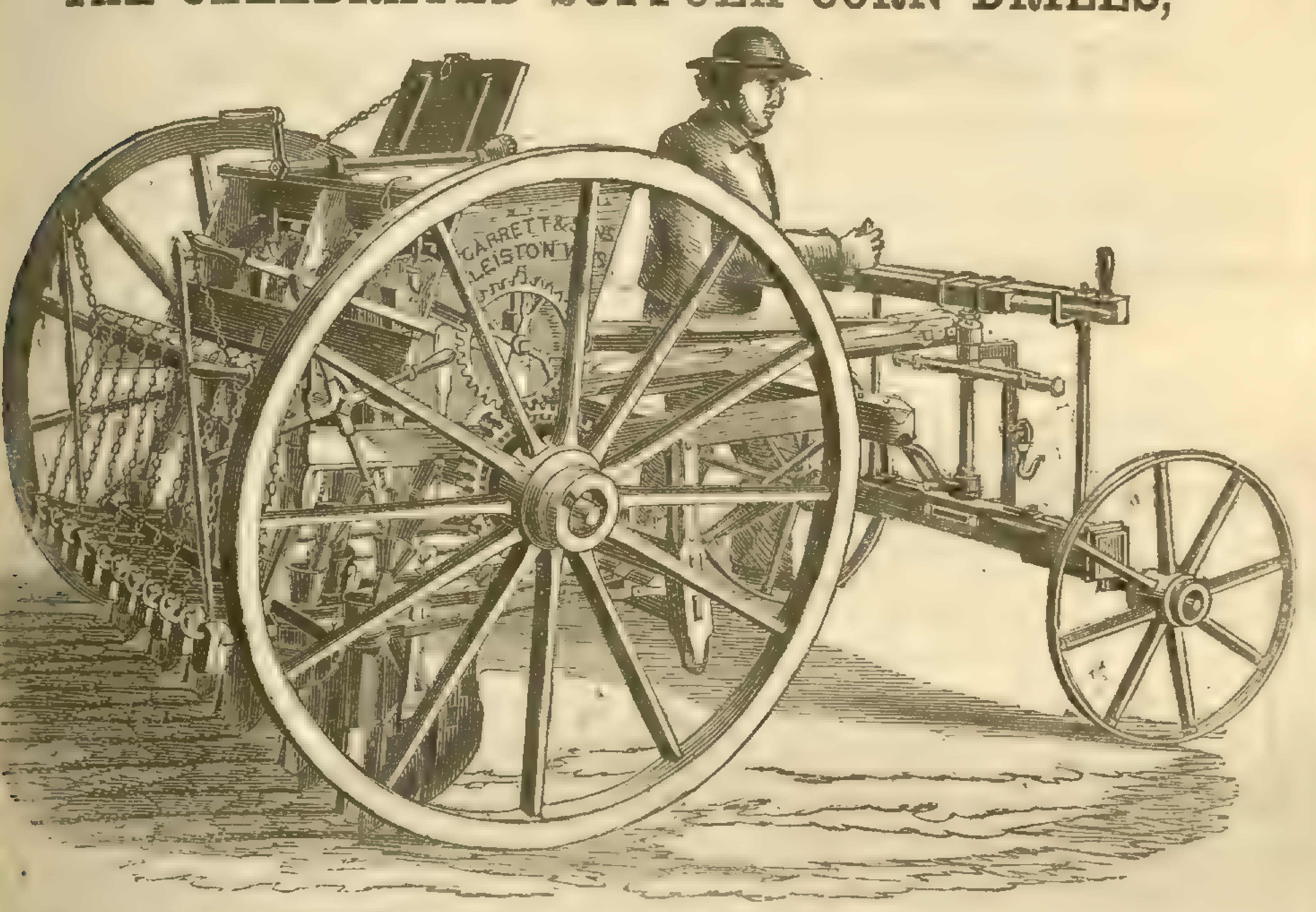
SIGMA'S DIBBLERS for BEANS, WHEAT, MANGELS, &c. The Drawshave Steel Hoes and the Multum in Parvo. Engravings sent post free on application to C. Powell, Hurst Green, Sussex.

MUSGRAVE'S PATENT STABLE FITTINGS and HARMLESS LOOSE BOXES, PATENT IRON COW HOUSE FITTINGS, and IRON PIGGERIES.

These inventions are recommended as possessing numerous advantages not to be found in anything hitherto made. At the late Meeting of the Royal Agricultural Society at Leeds, Musgrave Brothers received a Silver Medal, and two Awards of "Highly Commended," being the only Prizes conferred on any competitor in this class.

Particulars sent on application to the Inventors and Makers, Musgrave Brothers, Ann Street Iron Works, Belfast.

THE CELEBRATED SUFFOLK CORN DRILLS,



MANUFACTURED WITH ALL THE LATEST IMPROVEMENTS BY

RICHARD GARRETT & SON,

LEISTON WORKS, SUFFOLK.

Any size Drill will be supplied in one week from receipt of order. Every operation for which a Drill can be employed is performed in the most efficient and economical manner by the Drills of R. Garrett & Son's Manufacture.

THE WELL-KNOWN GARRETT'S PATENT HORSE HOE

(Sole Manufacturers and Inventors, RICHARD GARRETT & SON),

Will Hoe any kind of Drilled Root or Grain Crop at the rate of 10 to 12 acres per day, and at a cost not exceeding 6d. per acre. The mode of steering and regulating the position of the Hoe Blades will be found ... effectual.

CATALOGUES containing full description, with prices, sent postage free to any address on application to R. Garrett & Son, Leiston Works, Suffolk.

N.B.—Early orders are respectfully solicited for the ensuing season's use, and the delivery of ... Drill or Hoe may be depended on in six clear days from receipt of order.

Coloured Dorkings.

MISS WARNER has now to DISPOSE OF, at 12s. per dozen, EGGS from PRIZE BIRDS of the last Crystal Palace Poultry Show. Boxes 1s. each.
Broomfield, near Chelmsford, Essex.

Crown Lands, Delamere, Cheshire.

TO BE LET by TENDER for a term of 21 years, from April 5, 1862, with immediate possession, by direction of the Honourable James Howard, the Commissioner in charge of Her Majesty's Woods and Royal Forests, a portion of the late Forest of Delamere called LONGRIDGE and PLOVER'S MOSS. Allotments (formerly Woodland) recently cleared, and now being marled for cultivation, containing about 893 statute Acres, in the parish of Delamere, to be divided into convenient farms.

The land is Tithe Free, and is situate about 10 miles from Chester, and 4 miles from Hartford Station, on the London and North Western Railway. There is also to be a station at Delamere on the proposed West Cheshire line of railway through the Forest.

Particulars, with Forms of Tender, may be had on application to the Honourable James Howard, Office of Woods, &c., London; to Mr. John Clutton, 9, Whitehall Place, London; or to Mr. George Moodie Harwood, Kelsall, Chester, who will afford every facility for viewing the land.

Tenders must be delivered not later than Saturday, March 8, 1862.

Sales by Auction.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, February 18, at 12 o'Clock precisely, a choice Collection of Cochins, Dorkings, Polands, Spanish, Game, Bantams, Hamburghs, Ducks, Pigeons, &c., from well-known breeders and exhibitors.
On view the Morning of Sale, and Catalogues had.

Sale this Day at Half-past 12 o'Clock precisely.

Standard, Half-Standard and Climbing Roses, 1200 Bulbs of Gladiolus Brenchleyensis and Gandavensis, Trained and Standard Fruit Trees, Ornamental Evergreens and Deciduous Trees and Shrubs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., this day, SATURDAY, February 15, at Half-past 12 o'Clock precisely, 1200 Gladiolus Brenchleyensis and Gandavensis, 100 Carnations; Standard, Half-Standard and Climbing Roses; Apple, Plum, Cherry, Peach, and Currant Trees; Common Laurels, Red Cedars, Cedrus Deodara, Araucarias, Wellingtonia gigantea, Yews, Vines, and 3 bushels of English Acorns in good condition for planting, &c.
On view the Morning of Sale, and Catalogues had.

Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY, February 20, at half-past 12 o'Clock precisely, a valuable importation of ORCHIDS from India, consisting of—

Aerides crispum	Aerides Brookii
„ Lindleyana	„ maculosum
„ Fieldingii	Saccolabium Reedii, &c.

May be viewed the Morning of Sale, and Catalogues had.

Standard Roses, Trained and Standard Fruit Trees, Evergreens, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, February 22, at half-past 12 o'Clock precisely, a quantity of splendid Dwarf-trained Apricot, Plum, Peach, and Nectarine trees, Standard Fruit Trees, Roses, Pinks, Laurustinus, Cypress, Arbor-vitæ, Laurels, Raspberry Canes Rhubarb, 1200 Strawberry plants, Currants, &c.
On view the Morning of Sale, and Catalogues had.

Consignment of Plants from Ghent.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, February 26, at half-past 12 o'Clock precisely, a CONSIGNMENT of PLANTS from Ghent, consisting of 300 Rhododendrons, choice hardy varieties; 300 Indian Azaleas, with flower-buds; 200 Lilium lancifolium rubrum; 200 Lilium venustum, 1000 fine double Italian Tuberosa, 300 Delphinium formosum, 200 Rosa Caroliniana, 100 mixed Chinese herbaceous Pæonias, and 300 roots of fine mixed German Iris.
On view the Morning of Sale, and Catalogues had.

Annual Sale of English-grown Camellias, &c.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION at the Mart, Bartholomew Lane, City, E.C., on WEDNESDAY, Feb. 19, 1862, at 12 o'Clock, about 200 Choice Double Camellias, beautiful Plants, from 1 to 6 feet, including the most approved kinds, abundantly furnished with bloom buds; fine Azalea indica; a superb assortment of about 300 very handsome Standard, Half Standard, Dwarf and Climbing Roses; a fine Collection of American Plants, Lilium lancifolium rubrum, Ericas, Epacris, Fuchsias, Verbenas, Pæonias, Dahlias in dry roots, &c.

May be viewed the Morning of Sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex, N. E.

Pont-y-Pool Park, Monmouthshire.

Important Sale of Short-horned Cattle, Flock of South-down Sheep, Valuable Horses, Farming Implements, Hay, Corn, &c.

MR. STRAFFORD begs to announce that he has received instructions from the Executors of the late Capel Hanbury Leigh, Esq., of Pont-y-pool Park, Monmouthshire, to offer for SALE by AUCTION, without reserve, on WEDNESDAY, February 19, at the Typoth Farm, the entire HERD of SHORT-HORNED CATTLE and FLOCK of SOUTH-DOWN SHEEP. The Short-horns consist of about 60 Head of Bulls, Cows, Heifers, and Steers, that are directly descended from two Cows bought at Mr. Berry's Sale, in 1835, and have since been crossed with Liberty (7141), from the Herd at Apperley Court, followed by John (4108), bred at Kirklevington, a son of the famous Duke of Northumberland (1940), and Favourite, a winner at the Royal Society's Meeting at Shrewsbury. Latterly have been used Hero of the West (8150), bred by Earl Ducie, and The Red Duke (8694), hired of Mr. Stratton, and the sire of several of his celebrated prize animals. Great attention has been paid to their milking qualities. The Sheep are bred from Ewes bought of Messrs. J. and T. Ellman, and S. Grantham, which have since been crossed by Rams had of them, and others from the Flocks of Sir R. G. Throckmorton; Messrs. Moore, of Littlecote; and Sainsbury, of Lavington. On the following day will be Sold by Mr. Partridge, of Newport, the valuable Team of Horses, Hay, Corn, and Implements, the Farms being Let.

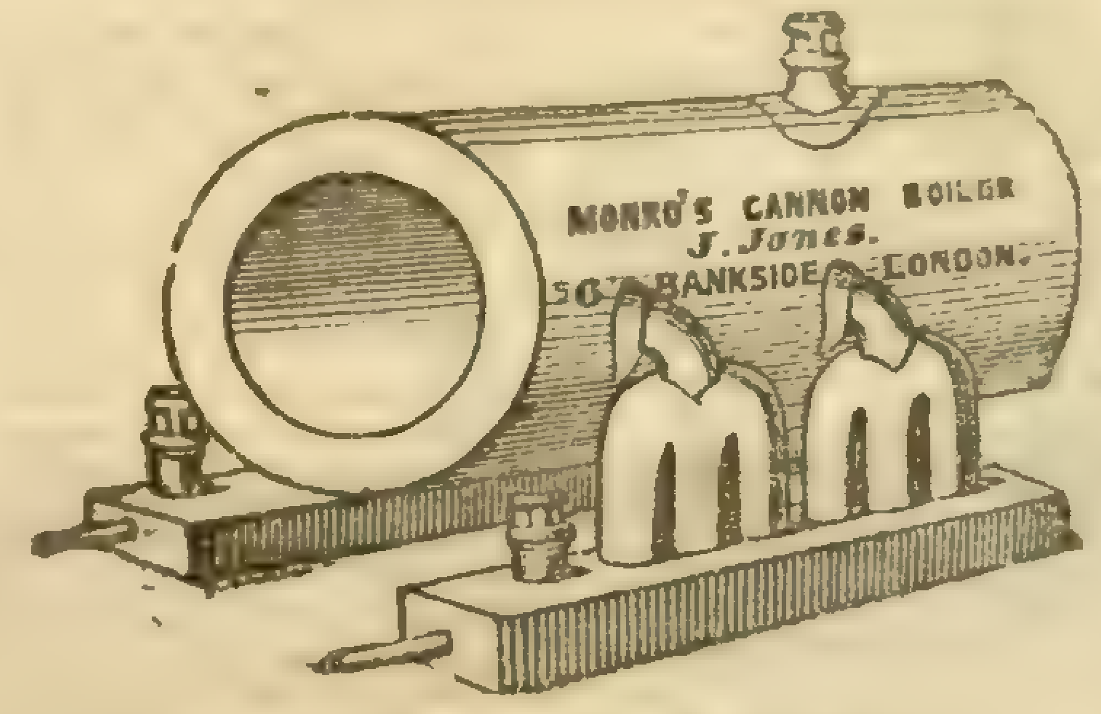
Catalogues, with Pedigrees of the Shorthorns, and other Particulars, may be had on application to Mr. Strafford, 13, Euston Square, London, N.W.; or Mr. Partridge, Newport, Monmouthshire; and of Mr. Williams, Land Agent, at the Pont-y-pool Park Office.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

24-inch Wrought Iron	£6 10 0
36-inch Wrought Iron	8 10 0
48-inch Wrought Iron	12 0 0

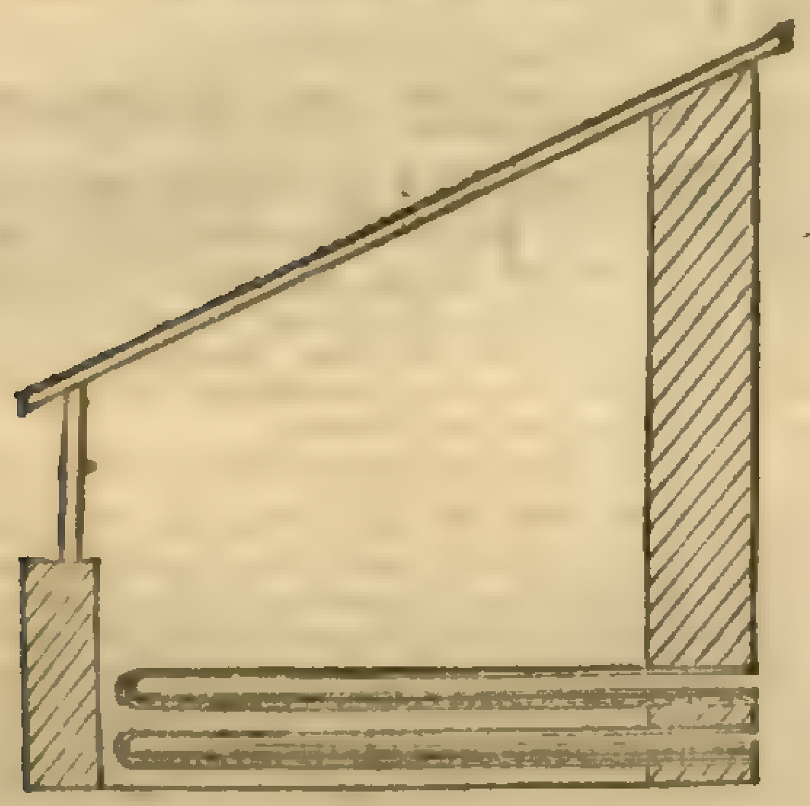
Larger sizes if required.



MONRO'S CANNON BOILER.

These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by

PLAN No. 1.

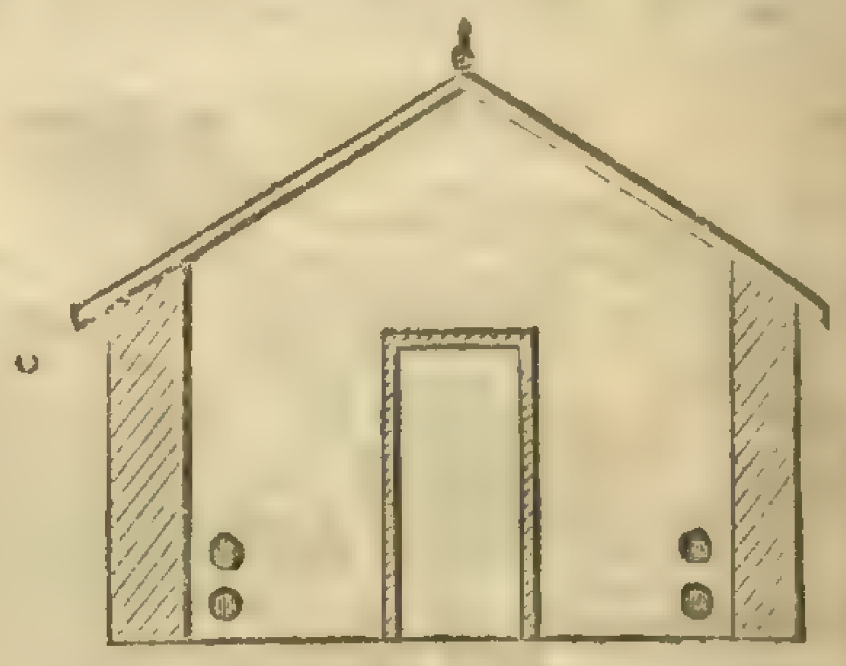


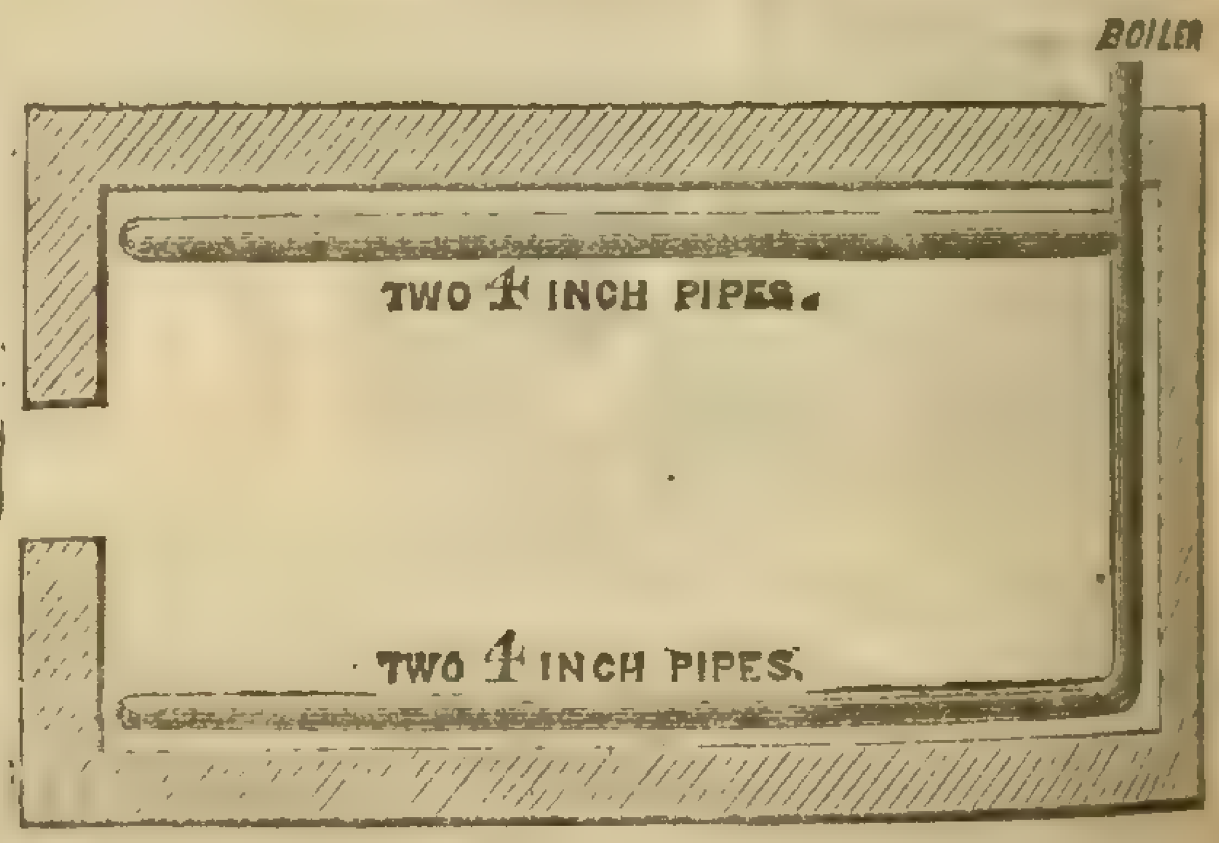
J. JONES,

6, BANKSIDE, SOUTHWARK,

LONDON, S.E.

PLAN No. 3.





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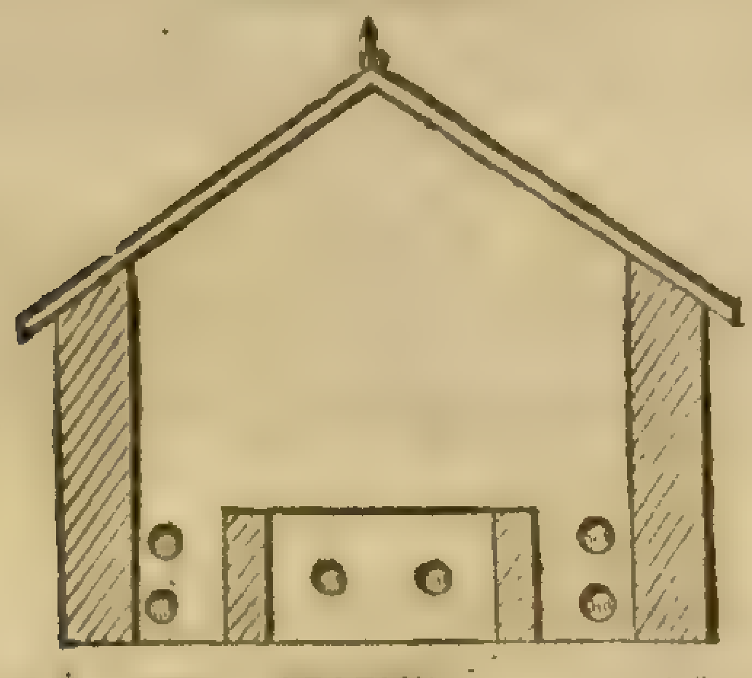
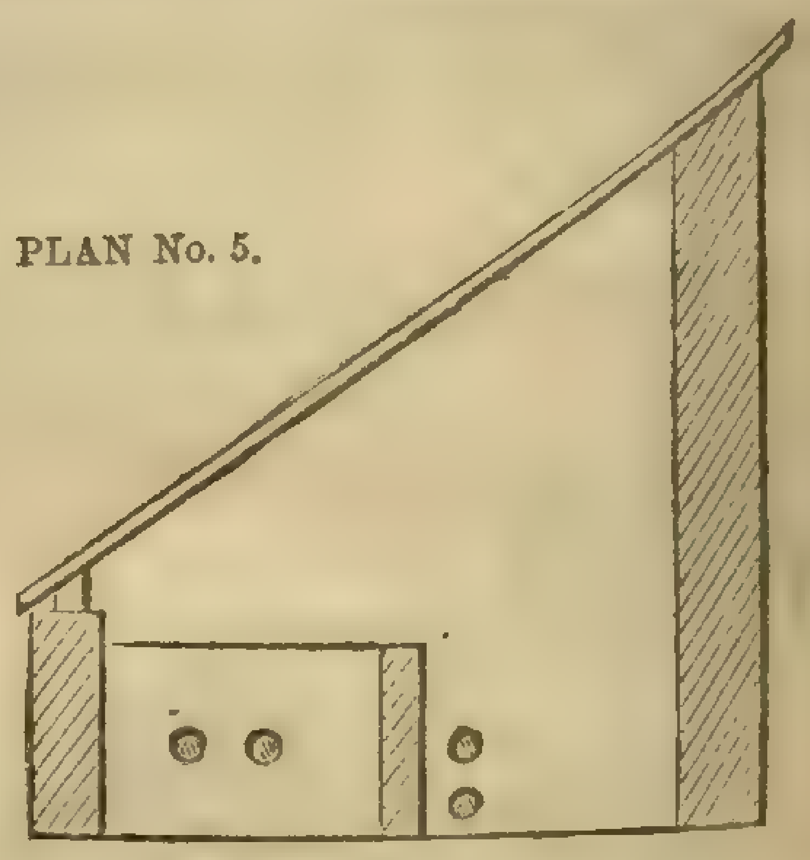


ESTIMATES

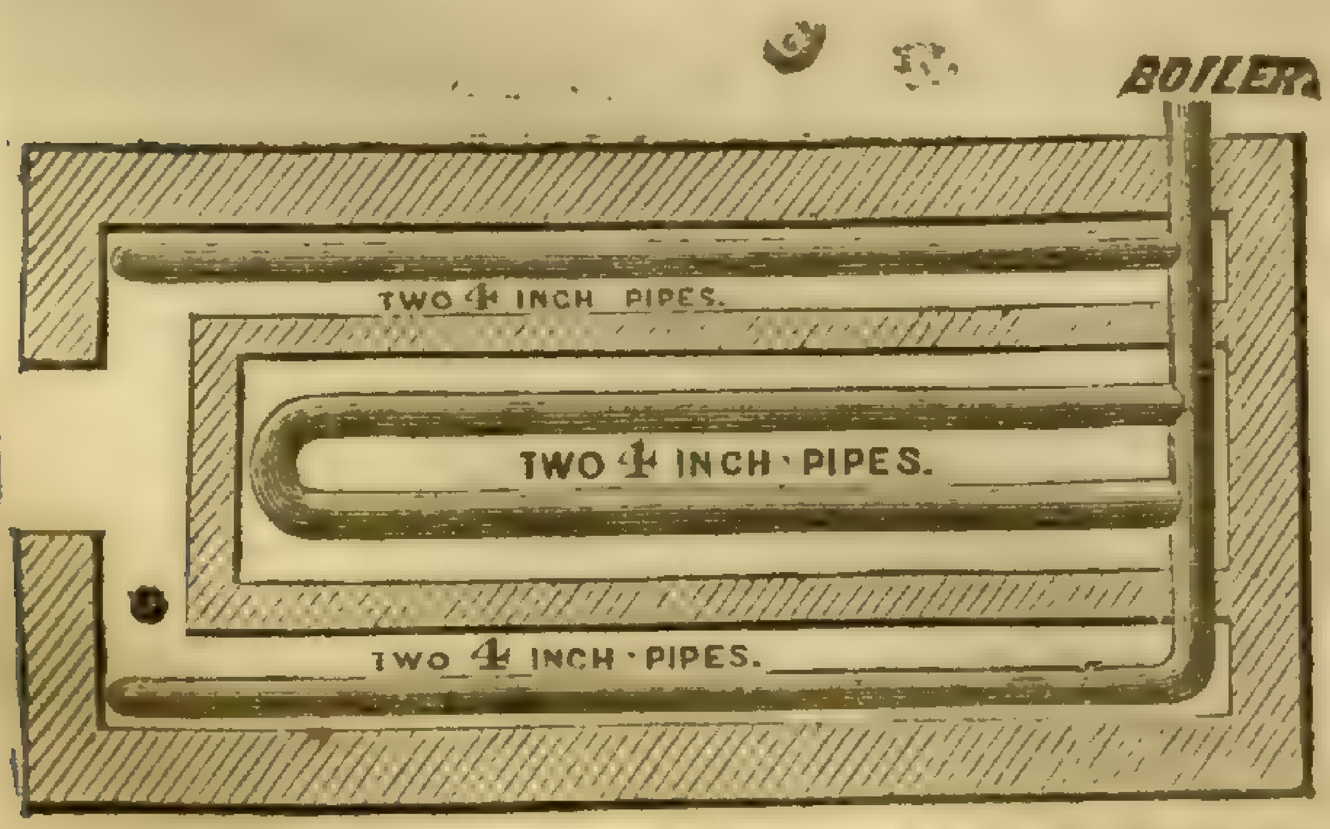
FOR

HOT-WATER APPARATUS,

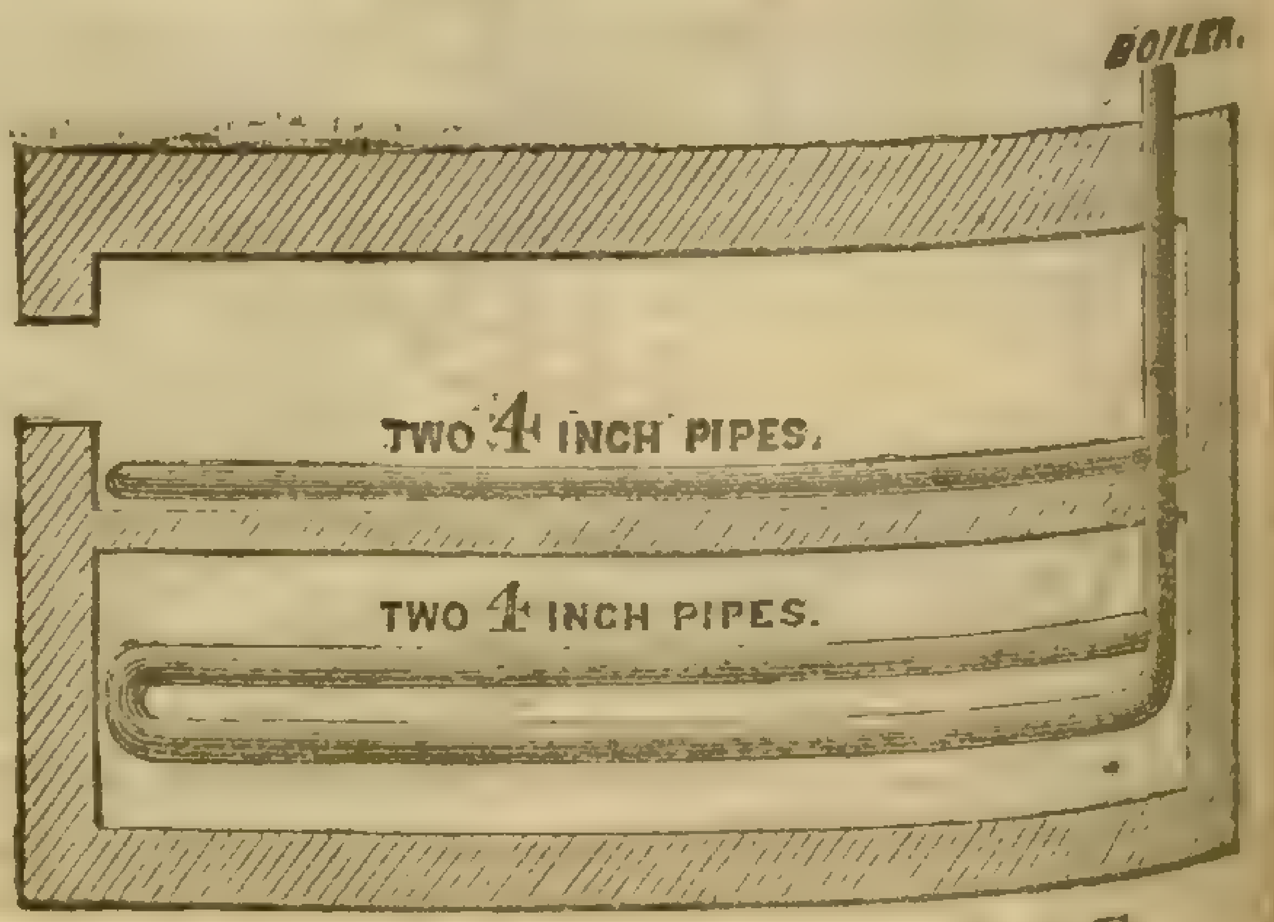
PLAN No. 5.



as shown in any of the annexed plans, and with Pipes of any size as required, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON, SADDLE, or CYLINDER BOILERS, will be sent, with an ILLUSTRATED CATALOGUE, free on application to



J. JONES,



HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, SOUTHWARK, LONDON, S.E.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 8.—1862.] SATURDAY, FEBRUARY 22. Price Fivepence. STAMPED EDITION, 6*d*.

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NOTICE TO ADVERTISERS.—*Advertisements intended for the Current Number should be sent so as to reach the Office not later than* THURSDAY *in each week.*

BARR AND SUGDEN, SEED MERCHANTS. Price 2*s*. 6*d*., sent post paid, THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN.
BARR & SUGDEN, 12, King Street, Covent Garden, W.C.

BARR & SUGDEN, SEED MERCHANTS. See large Advertisement of ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN.
BARR & SUGDEN, 12, King Street, Covent Garden, W.C.

BARR AND SUGDEN, SEED MERCHANTS. EXHIBITION ORNAMENTAL GOURDS. See large Advertisement.
BARR & SUGDEN, 12, King Street, Covent Garden, W.C.

BARR AND SUGDEN, SEED MERCHANTS. CUCUMBERS recommended by the Fruit Committee of the Royal Horticultural Society. See our January Advertisements.
BARR & SUGDEN, 12, King Street, Covent Garden, W.C.

Broccoli All the Year Round.—See SUTTON'S SEED LIST, which will be sent post free on application.
SUTTON & SONS, Seed Growers, Reading.

PLYMOUTH SEED, AGRICULTURAL IMPLEMENT, and MANURE COMPANY, "Limited," Union Road, Plymouth.

New Seeds on Sale by the
PLYMOUTH SEED COMPANY, "Limited." — For prices and particulars see their GENERAL PRICE CURRENT, which is now ready.
Address Plymouth Seed Company, Plymouth.

New Roses for 1862.
J. AND J. FRASER, of the Lea Bridge Road Nurseries, N.E., beg to offer good Plants of the NEW ROSES of 1862.
A DESCRIPTIVE LIST will be forwarded on application.

NEW ROSES for 1862.—36 varieties (the pick of the year) offered in fine strong plants, a DESCRIPTIVE LIST of which may be had on application to
BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

TRITOMA UVARIA. For strong plants of this splendid flower apply to
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

PANSY.—The best and hardiest Bedding Pansy. the freest and boldest flowerer yet offered. Price 5*s*. per [illegible], or 1*l*. 1*s*. per 100.
G. KNIGHTS, Whitton, Ipswich.

PANSIES.—The best Show Flowers, and all the newest varieties, at very low prices by the dozen, hundred or thousand. Strong plants guaranteed. Seed, 9*d*., [illegible], and 2*s*. 6*d*. per packet.
G. KNIGHTS, Whitton, Ipswich.

COMMON LAURELS (Bushy).
4 to 5 feet, 20*s*. per 100; 170*s*. per 1000.
3 to 4 feet, 15*s*. per 100; 130*s*. per 1000.
R. HAYNES, Henwick Nursery, Worcester.

To the Trade.
TWO-YEARS' SEEDLING NORWAY SPRUCE, extra fine well rooted plants, grown in loam. Price 2*s*. [illegible]; 4*l*. 10*s*. per 50,000; 8*l*. 10*s*. per 100,000.
JOHN CRANSTON, King's Acre Nurseries, near Hereford.

LAURELS.—Good healthy transplanted, 2 to 3 feet, by the 100 or 1000. Samples of 100 will be forwarded to unknown correspondents on receipt of 10*s*. post office order or postage stamps.
GODWIN & SON, Collycroft Nursery, Ashbourne, Derbyshire.

Large Tartarian Arborvitæs.
FOR SALE, 600 of the above, all strong, healthy and well-formed, from 5 to 6 feet high, and in excellent condition for transplanting. Price moderate.
Apply to H. and F. SHARPE, Wisbech.

WANTED, LARCHES, 1½ to 2 ft. and 2 to 3 ft. Address, with Price, to JOHN CARTER, Nurseryman, [illegible], Yorkshire.

WANTED to PURCHASE, good strong Roots of GINGER, to plant a new bed. Say price per dozen.
FRANCIS and ARTHUR DICKSON & SONS, "Upton" Nurseries, Chester.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

New Garden Seeds.
JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

Now Ready.
BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See large Advertisement.
Covent Garden Market, W.C.

Seeds.
WM. PAUL'S CATALOGUE of SELECT VEGETABLE and FLOWER SEEDS is now ready. Free by post on application.
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E. G. HENDERSON AND SON, NURSERYMEN AND SEED MERCHANTS, Respectfully announce their NEW SEED CATALOGUE and GUIDE for 1862, free on application.
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Seeds, Seeds, Seeds.
WM. CUTBUSH AND SON'S CATALOGUE is now ready, post free on application.
Seed Establishment, Highgate, London, N.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

New Seeds of the best quality.
J. ROBERTS AND SON'S CATALOGUE is now ready. Post free on application.
Seed Warehouse, Vale Street, Denbigh, N.W.

Vegetable and Flower Seeds.
PAUL AND SON'S CATALOGUE of the above, including ASTERS and STOCKS, with DESCRIPTIVE LIST of the best 100 GLADIOLI, is now ready, post free.
"Old" Cheshunt Nurseries, Herts.

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CARSTAIRS AND SON'S DESCRIPTIVE CATALOGUE of the above is now ready, and may be had free on application. Prices will be found extremely moderate.
Warriston Nursery, Edinburgh.

AZALEAS, CAMELLIAS, EPACRIS, and ERICAS. —We respectfully invite an inspection of our Stock of the above, which is large, in the finest health, and full of flower buds.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

TRUE KENTISH COB NUTS.—Fine well-formed plants, 4*s*., 6*s*., and 9*s*. per dozen; 20*s*., 30*s*., 40*s*., and 50*s*. per 100.—EPPS' Nursery and Seed Establishment, Maidstone.

To the Trade.
WILLIAM EPPS, Jun., begs to offer FINE DWARF-TRAINED PLUMS, 24*s*. per dozen.
The Nurseries, Ashford, Kent.

STRONG FRUITING VINES, 7*s*. 6*d*. and 10*s*. 6*d*. LIST gratis and post free.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

Pine Plants for Sale.
50 SUCCESSION and FRUITING PINES.— Strong healthy Plants, free from scale. 2*s*., 3*s*., and 4*s*. each.
Apply to S. ROSLING, Hemel Hempstead.

ORANGE TREES in New Tubs.—From 6 to 10 very handsome ORANGE TREES, about 10 feet high and 6 feet through, to be sold at moderate cost, having grown too large for the Orangery.
Address CXX., Post Office, Kingston-on-Thames.

WANTED TO PURCHASE, Four ORANGE TREES, from 4 to 6 feet high, including the pot or tub. Address, stating price and full particulars, to S. H., care of Mr. Anderson, 2, Easy Row, Birmingham

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GEO. CLARKE has a large quantity of strong established Plants in Pots with excellent crowns; the sorts are KEEN'S SEEDLING, BRITISH QUEEN, SIR HARRY and ALICE MAUDE. Price 6*s*. per dozen.
Nursery, Streatham Place, Brixton Hill, S.

Strong Vines from Eyes.
J. IVERY AND SON beg most respectfully to inform their patrons that they have now ready for planting out, strong Plants of all the best varieties.
A PRICED LIST will be forwarded on application.
Dorking Nursery.—Feb. 22.

NEW MELONS, NEW CUCUMBERS, NEW and CHOICE SEEDS of all the finest varieties for the FARM, the KITCHEN GARDEN, and the FLOWER GARDEN.
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GENUINE NEW CLOVER SEED may be obtained of the undersigned. Prices (according to market and quantity required) will be forwarded on application.
SUTTON & SONS, Seed Growers, Reading, Berks.

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SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Good Seeds, Carriage Free.
SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

Present low Prices of Farm Seeds—See
SUTTON'S PRICED LIST, which will be sent free to any address.
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Agricultural and Garden Seeds.
H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

TO BE SOLD, Half an Acre of 3 year old VICTORIA RHUBARB, in Lots to suit purchasers.
For further particulars apply to Mr. CHARLES BROOKS, Whitmoreans, near Wolverhampton.

Bellamy's Early Green Marrow Peas.
CHARLES SHARPE AND CO., SEED GROWERS, Sleaford, have the above to offer to the Trade, of first-rate quality. Price on application.

Henry's Prize Hybrid Leek.
DOWNIE, LAIRD AND LAING are now sending out Seed of the above in Packets at 1*s*.
17, Frederick Street, Edinburgh; and Stanstead Park, Forest Hill, London, S.E.

Altringham Carrot Seed.
CHARLES SHARPE AND Co., Sleaford, have the above to offer to the Trade; new Seed of their own growing. Price on application.

Extra Large Sea Kail.
GEO. CLARKE has to offer a large quantity of very fine roots, clean and sound, 1 to 2 inches in diameter. Prices on application. The Trade also supplied.
Nursery, Streatham Place, Brixton Hill, S.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

NUTTING'S selected DWARF RED BEET, recommended by the Horticultural Society as the best in Cultivation. The Trade supplied.
NUTTING & SONS, Seed Warehouses, 60, Barbican, London, E.C.

Dalmahoy Early Potatoes from Scotland.
PETER LAWSON AND SON can supply the above, and other varieties of SEED POTATOES.
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SEED POTATOES from the GROWERS.—Early Shaws, Manly's and Regents may be had on application of H. CHEVERST, Salesman, Borough Market, S.E.

SEED POTATOES.—EARLY DULWICH: a very early prolific round Potato of fine quality, 10*s*. per bushel. Also, a fine Stock of SEED REGENTS, quite free from disease, grown on poor soil, 4*s*. per bushel, bag included.
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CHRISTMAS QUINCEY, Peterborough.

FORTY-FOLDS, FLUKES, ASH-LEAF, MATCHLESS, and LAPSTONE KIDNEYS, to be obtained at Messrs. JOHN & GEORGE BELL'S, Covent Garden Market, W.C.
PRICE LIST sent on application.

EARLY OXFORD POTATO, an excellent Cropper, and the best for eating all the year round, 6*s*. per bushel. A reduction made if 1 Ton or more be taken.
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Seed Potatoes.
H. AND F. SHARPE are now prepared to take orders at very moderate prices for all the leading sorts of POTATOES, including MYATT'S Prolific ASH-LEAVED KIDNEY, the finest and most prolific in cultivation.
Prices may be had on application.
Seed Growing Establishment, Wisbeach.

NEW SEEDLING POTATO, "DAINTREE'S EARLIEST."—The stock of this Potato being so nearly exhausted, after the 1st of March samples ONLY can be forwarded, orders for which (enclosing 12 postage stamps) addressed to Mr. SIMON A. DAINTREE, of Fendrayton, Saint Ives, Hunts, will have immediate attention.

WEBB'S IMPERIAL KIDNEY POTATOES for quantity, quality, beauty, and size, can hardly be equalled, and not surpassed by any other Potato. Price 12*s*. per bushel.
Apply GEORGE MACE, Calcot Gardens, near Reading.

PEAT EARTH of excellent quality delivered at the Nine Elms Station, 5 tons for 55*s*.; at Guildford, 5 tons for 50*s*.; at Havant, 5 tons for 45*s*.
Apply to Mr. BETTS, 115, Strand, London, W.C., where a sample may be seen.

BARR & SUGDEN, SEED MERCHANTS,

12, KING STREET, COVENT GARDEN, W.C. (OPPOSITE THE GARRICK CLUB).

For those who are interested in the Culture of Gourds, or who may contemplate entering the List of Competitors for the £30 offered by the Royal Horticultural Society, we quote from our "Guide to the Flower and Kitchen Garden" one of the finest Collections of ORNAMENTAL GOURDS ever offered to the British Public.

"Oh! greenly and fair in the lands of the sun,
The Vines of the Gourd and the rich Melon run,

"And the rock and the tree and the cottage enfold,
With broad leaves all greenness and blossoms all gold."

The GREAT EXHIBITION of GOURDS, 8th, 9th, 10th, to the 18th October.

The ROYAL HORTICULTURAL SOCIETY offers PRIZES to the amount of £30 for ORNAMENTAL and EDIBLE GOURDS and MARROWS.

CUCUMIS and CUCURBITA, Nat. Ord. *Cucurbitaceæ.*

The most Picturesque, Curious, Interesting, Beautiful, and Varied Collection of Ornamental Cucumbers and Gourds ever offered to the British Public.

ARRANGED AND CLASSIFIED BY OUR "SARDINIAN CORRESPONDENT."

"The species and varieties in this collection have been selected either for the highly ornamental character of their foliage, the singularity or exquisite symmetry of their fruit, or for the richness, variety, and peculiarity of their colouring; some are perfect monsters in size and oddity of shape, while others are miniatures of most elegant formation. The colours range from white to crimson, orange and scarlet, blending and harmonising with olive-green, bronze and the most beautiful bright polished glossy green; these again are striped, spotted, dappled, or variegated in the most extraordinary manner, others being self-coloured, are distinct and beautiful. The style of growth is as diversified as the size of the fruit; some are of the most gigantic structure, others are slender and delicate, and these are invaluable for covering verandahs, trellis-work, or fronts of villas and cottages; where trained round the windows they are exceedingly ornamental, while in autumn their rich and parti-coloured fruit is exceedingly picturesque. The strong growers are invaluable for training to trees, over summer retreats and arbours, or trailing on rockeries and rooteries, sloping banks, by the margins of woodland walks, amidst ruins, &c. The fruit when dried make splendid hall and drawing-room ornaments. To have them in the highest perfection, sow in heat in March or April, so as to have good strong plants to put out the end of May. For culture, see article on Tomato, Ridge, Cucumber, or Gourd, in our "Guide to the Kitchen Garden."

Since writing the article on Gourds, we observe from the *Gardeners' Chronicle* of January 4th and 11th instant, that the Royal Horticultural Society offers 30*l.* to be expended in prizes for the fruit of this class of highly ornamental, curious, and useful plants.

The following collection is, we believe, the largest in Europe, and yet does not nearly embrace all the varieties at our command; we therefore trust it may be of some service to intending Exhibitors, for whose convenience we have divided the collection into five classes, and have indicated with an * such sorts as are EDIBLE, and the points of whose shoots form an excellent substitute for Asparagus."

Copy from a Photograph in our possession of a group of Gourds, as exhibited by our Sardinian Correspondent.

MINIATURE GOURDS.

This section comprises the small growing varieties, averaging in length from 2 to 6 inches, amongst which there is every variety of shape and colour, some beautifully striped, spotted, and variegated in the most fanciful manner; all are extremely elegant, and when dried very ornamental.

OUR SELECTION, in Sealed Packets.

	s.	d.
30 Packets beautiful varieties	7s.	6d.
20 ,, ,, ,,	5	6
15 ,, ,, ,,	3	6
10 ,, ,, ,,	2	6

No.	Per packet—	s.	d.
2013	AURANTIACA VIRIDIS, dark green striped	0	6
2014	BEAUTY, cream warted	0	6
2015	BERGAMOT TRICOLOR, yellow, green, and orange	0	3
2016	BIGARADIA, pale sulphur, beautiful	0	4
2017	BIJOU, cream warted, pretty	0	6
2018	BOULE D'OR, golden ball	0	3
2019	CIALDINI, dark green rays	0	6
2020	DEWDROP, cream warted, exquisite	0	6
2021	DIAMOND, beautiful	0	6
2022	EAR-RING, pretty, sulphur and green	0	6
2023	ELEGANTISSIMA, exquisite, cream cólour	0	6
2024	FIG, green, striped with yellow	0	4
2025	FLORENCE, yellow and orange striped, very beautiful	0	6
2026	FRENCH CAP, exceedingly curious	0	4
2027	GOLDEN PIPPIN, rich orange yellow	0	4
2028	GOOSEBERRY, bright green	0	3
2029	GRANDE DUCHESSE HÉLÉNE, bright yellow	0	6
2030	JULIA HELEN, prettily striped	0	6
2031	KING of ITALY, cream and orange striped, beautiful	0	6
2032	MR. MALARD, orange, pretty	0	6
2033	MAUD LILIPUTIAN, lemon	0	6
2034	MELOPEPO AURANTIFORMIS, green and yellow	0	6
2035	,, VIRIDIS VARIEGATA, green and yellow, variegated	0	6
2036	ŒUF D'OR, golden, beautiful	0	6
2037	PUCK, striped, orange and yellow	0	6
2038	PEAR, MARIE LOUISE, green striped, yellow and orange	0	6
2039	,, CHAUMONTEL, orange and yellow	0	6
2040	,, EUGENIE, primrose, exquisitely beautiful	0	6
2041	,, JARGONELLE, bright yellow	0	6
2042	PENDANT D'OREILLE, pretty	0	6
2043	PIPPIN, handsome	0	4
2044	PETITE PELERINE DE CHINE, very beautiful	1	0
2045	PRINCESS ALICE, green and orange	0	6

MINIATURE GOURDS.

No.	Per Packet—	s.	d.
2046	PURITAN'S DAUGHTER, lemon coloured	0	6
2047	PYRUS MACULATUS, fine pear shaped, spotted	0	6
2048	PYRUS STRIATUS, fine striped	0	6
2049	QUEEN MAB, orange warted, extremely beautiful	0	6
2050	SIPHON	0	3
2051	SONNETTE, prettily variegated	0	6
2052	STRIATUM AURANTIACUM, beautifully striped	0	6
2053	STRIPED GEM, rich golden	0	6
2054	,, APPLE	0	4
2055	,, HALF-MOON	0	3
2056	,, SUGAR BASIN, clear yellow	0	4
2057	,, SUNBEAM, yellow	0	6
2058	TOM THUMB, orange striped yellow, pretty	0	6
2059	VICTORIA, with beautiful map-like markings	1	0

MEDIUM SIZED GOURDS.

Amongst these are many novel and very beautiful varieties, which we can highly recommend; some are variegated, &c.

OUR OWN SELECTION, in Sealed Packets.

	s.	d.
12 Packets beautiful varieties	3s.	0d.
6 Packets beautiful varieties	1	6

No.		s.	d.
2060	AGATE, beautifully variegated	0	6
2061	BENINCASA CERIFERA, waxy yellow, beautiful	0	3
2062	,, SINENSIS, beautiful pale green	0	3
2063	BISHOP'S HAT, red orange, very fine	0	3
2064	GOBLET, bright yellow	0	4
2065	HEBE'S CUP, yellow, spotted white	0	6
2066	L'ŒUF BICOLOR, one half cream, the other half pale green	0	6
2067	LUFFA ACUTANGULAR, new, very fine	0	4
2068	LADY EMILY STANLEY, clear sulphur, pretty	0	6
2069	MELOPEPO VIRIDIS MAXIMO, green and yellow	0	4
2070	MILKY WAY, starry speckled, orange tipped, pretty	0	6
2071	OSTRICH EGG, pale cream, very beautiful	0	3
2072	SWAN'S EGG, cream, transparent	0	6

WARTED GOURDS.

This section embraces the rustic and grotesque-looking varieties, all of which are very interesting, beautiful in form, vivid in colour, and most ornamental in appearance.

OUR OWN SELECTION, in Sealed Packets.

20 Packets beautiful varieties	5s. 6d.
10 Packets beautiful varieties	2s. 6d.

No.	Per packet—	s.	d.
2073	CARAFFE d'OR, bright yellow, very handsome	0	6
2074	,, ,, bright yellow, striped brown	0	6

WARTED GOURDS.

No.	Per packet—	s. d.
2075	CARBUNCLE, sulphur, curious	[illegible]
2076	FAIRY QUEEN, cream colour	[illegible]
2077	FLACON d'OR, orange	[illegible]
2078	GOLDEN DROP, orange	[illegible]
2079	GORILLA, black, very curiously marked and shaded	[illegible]
2080	GREAT EXPECTATIONS, green and gold	[illegible]
2081	MADLLE. PATTI, half-moon-shaped, very handsome	[illegible]
2082	MADAME MARIO, orange	[illegible]
2083	MONSIEUR FOULD, cream-coloured and egg-shaped, very transparent	[illegible]
2084	NAPOLEON III., orange, tipped and radiated green, magnificent	[illegible]
2085	NUGGET, golden yellow	[illegible]
2086	PRINCE IMPERIAL, pale sulphur	[illegible]
2087	,, WILLIAM, yellow and green, beautiful	[illegible]
2088	PRINCESS CLOTHILDE, yellow and orange, of a rocky appearance	[illegible]
2089	PRINCESS HELENA, sulphur	[illegible]
2090	SWAN'S EGG, cream coloured, transparent	[illegible]
2091	TOPAZ, golden yellow	[illegible]

ORNAMENTAL CUCUMBERS.

Varying in length from 2 inches to 3 feet; singularly curious and highly ornamental.

A COLLECTION containing 1 Packet each of the following, 2s. 6d.

No.	Per Packet—	s. d.
2128	CUCUMIS ACUTANGULAR (angular) curious	[illegible]
2129	,, ARADAC, yellow, fruit small, growing in pairs	[illegible]
2130	,, DIPSACEUS, sulphur-yellow, Teasel-like, elegant	[illegible]
2131	,, FLEXUOSUS, snake Cucumber, 3 feet long	[illegible]
2132	,, MEDULLIFERUS, scarlet, thorny	[illegible]
2133	CUCUMIS MELOCHITO, variegated, brown and yellow, small oval fruit, very pretty	[illegible]
2134	,, ODORATISSIMUS, yellow, mottled, fragrant, pretty	[illegible]
2135	,, PERENNIS, foliage highly ornamental	[illegible]
2136	CUCURBITA LEUCANTHA DEPRESSA	[illegible]
2137	,, LONGISSIMA, 6 feet long	[illegible]
2138	,, MASSUE, curious	[illegible]

AN ASSORTMENT OF THE ABOVE SPLENDID COLLECTION,

	£ s. d.
120 varieties	£2 [illegible]
100 ,,	1 1[illegible]
50 ,,	0 15 [illegible]
25 ,,	0 7 [illegible]

FOR ANSWER TO "CRITIC" ON OUR FLORAL GUIDE, SEE OUR ADVERTISEMENT, p. 159

For LIST *of* GIANT GOURDS *see our "Guide to the Flower and Kitchen Garden;" also next week's Advertisement.*

BARR AND SUGDEN, SEED MERCHANTS, 12, KING STREET, COVENT GARDEN, W.C.

BARR & SUGDEN
12 KING ST. COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

THE CRITIC CRITICISED.

For Editorial Critic on the above Work see page 144 of last week's *Gardeners' Chronicle. We claim for the book scientific as well as literary accuracy.* The following notes on the Critic and his criticisms, will enable the readers of the *Gardeners' Chronicle* to form an unbiased opinion.

COULTERIA SPECIES NOVA (578 of our Catalogue).

This is a new plant raised from seed received from China (not Chili); a dried specimen was submitted to the Editor of the *Gardeners' Chronicle*, which he at first named "Cassia;" a few days afterwards he declared it to be a species of Coulteria, but desired to know where it came from. Those interested in the question may see the same specimen at our Establishment.

COSMOS ATROPURPUREA and C. BIPINNATA

According to G. W. JOHNSTONE, Esq., "Cottage Gardener's Dictionary," Cosmos is feminine.
When learned Doctors and Schoolmasters disagree, to whom shall we appeal?

ZINNIA ELEGANS FLORE PLENO,

Figured in our Catalogue, is said to be *"an extravagant exaggeration."* The learned Critic's knowledge and experience have doubtless been limited to a few inferior specimens shown to the Floral Committee of the Royal Horticultural Society. Mr. Banks of Sholden, at the Deal Flower Show, exhibited a stand of cut blooms of Zinnia elegans flore pleno quite equal to our illustration, and we may further add, those who have seen specimens of this magnificent flower as grown by our "Sardinian Correspondent" in the sunny South, would say we had *under* instead of *over*-rated the flower in our representation. The plants in bloom elicited the enthusiastic admiration of most distinguished florists in Europe; cut blooms are thus spoken of by the Horticultural contributor to the "Messager des Alpes Maritimes," Dr. Ferdinand Giraud, of the 13th October, 1861:—

"1. Une corbeille artistement montée de fleurs de Zinnia elegans flore pleno. Il y avait 24 varietés de cette espèce remarquable, à peine introduite des Indes Orientales. Le mot indique assez l'amélioration qui a été obtenue. Au lieu de fleurs simples on est étonné d'avoir sous les yeux des milliers de fleurs à couleurs riches, diverses, et pouvant rivaliser avec les plus beaux Dahlias. Aussi le Jury a-t-il accordé un Certificat d'honneur, de 1re classe hors ligne." This basket of cut flowers of Zinnia was sent express to Paris by His Excellency, M. Rouher, Minister of Agriculture.

THE GUIDE TO THE FLOWER GARDEN

was Edited by the Rev. H. H. DOMBRAIN, A.B., Member of the Floral Committee of the Royal Horticultural Society, Editor of the "Floral Magazine," and of the Floral department of the "Journal of Horticulture." Still further to secure literary accuracy, combined with practical usefulness, the work was carefully examined by an eminent Botanist and Latin scholar, and also by a Horticulturist well known to the reading portion of the Gardening community.

THE GUIDE TO THE KITCHEN GARDEN

was Edited by a literary gentleman of high repute. The cultural articles were written by "Alpha," whose name for many years was as "Household Words" to the readers of the *Gardeners' Chronicle*; the same gentleman for several years was the writer of the weekly Calendar of the *Gardeners' Chronicle*.

FOR EXHIBITION GOURDS, see our other Advertisement.

BARR AND SUGDEN, SEED MERCHANTS, 12, KING STREET, COVENT GARDEN, LONDON, W.C.

New Rose, Beauty of Waltham.

WM. PAUL respectfully announces that he is now taking orders for this superb NEW ROSE, which received a FIRST-CLASS CERTIFICATE from the Royal Horticultural Society in June last. For description, see Rose Catalogue —Section Hybrid Perpetual: it is also figured in the "ROSE ANNUAL," just published. Plants in April, 5s. each; the usual discount to the Trade on six or more plants.

WM. PAUL, Cheshunt Nurseries, Waltham Cross, N.

New Roses for 1862.

4000 STRONG PLANTS IN 51 NEW KINDS.

WM. WOOD AND SON can supply really strong, robust, and healthy plants of all the NEW ROSES of 1862, worth growing, at 5s. each.

A liberal Discount allowed to the Trade.
DESCRIPTIVE CATALOGUES on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Standard and Dwarf Roses.

JOHN CRANSTON has no hesitation in stating that he holds the largest stock of STANDARD ROSES in the kingdom, and plants of the finest growth possible. These he is now offering at the following prices:—

STANDARDS, finest Hybrid Perpetual and Bourbon, 30s. per dozen.
HALF-STANDARDS, do., 24s. to 30s. do.
STANDARD TEA SCENTED, the best and most hardy sorts, 36s. to 42s. do.
DWARF HYBRID PERPETUAL, strong on Manetti Stock, 15s. to 24s. do.
DWARF HYBRID PERPETUAL, own roots, 12s. to 18s. do.
DWARF TEA SCENTED, 18s. to 24s. do.
PILLAR ROSES, extra strong on Manetti Stock, 18s. to 24s. do.
NEW ROSES of 1860 and 1861, 3s. 6d. to 5s. each.
A DESCRIPTIVE LIST will be forwarded free on application.

Nurseries, King's Acre, near Hereford.

STANDARD ROSES, with straight stems and good heads, the finest varieties; 30s., 36s., and 42s. per dozen.

GRAPE VINES for PLANTING OUT.—All the leading sorts, with stout, short-jointed, well ripened canes; 3s. 6d., 5s., and 7s. 6d. each.

GRAPE VINES for FRUITING in POTS.—Extra fine, strong bearing rods.

GLADIOLUS.—Splendid hybrids of Gandavensis, 6s., 9s., 12s., and 18s. per dozen; 100 distinct varieties, 84s.; 100 newer, 126s.

NEW BEGONIAS.—Twelve of the most distinct and beautifully variegated Continental varieties, strong plants, for 18s.

CAMELLIAS with FLOWER-BUDS.—Including the best new varieties, fine plants, 30s. to 42s.; extra size, 60s. and 84s. per dozen.

DESCRIPTIVE CATALOGUES, with all particulars, forwarded on application to

JAMES DICKSON & SONS, The "Newton" Nurseries, Chester.

Mitchell's Unrivalled Collection of Roses.

THE LARGEST STOCK AND THE BEST PLANTS IN ENGLAND, JUSTLY PRONOUNCED BOTH BY ENGLISH AND FOREIGN GROWERS,

JAMES MITCHELL has the honour of informing h kind patrons that he has succeeded in obtaining the FIRST PRIZES at the principal Shows throughout the season, viz.:—

July 10.—The Grand National Rose Show, Royal Horticultural Society's Garden, Kensington Gore, 96 varieties, 3 trusses of each, First Prize.

September 11.—Forty-eight varieties, 3 trusses of each, First Prize.

July 3.—The Royal Botanic Society, Regent's Park, London, 50 varieties, 3 trusses of each, First Prize.

July 6.—The Great Rose Show, Crystal Palace, 96 varieties, 1 truss of each, First Prize.

June 19.—Brighton Horticultural Society, 50 varieties, 3 trusses of each, First Prize.

September 18.—Fifty varieties, 3 trusses of each, First Prize.

August 28.—Lewes Horticultural Society, 36 varieties, 3 trusses of each, First Prize.

J. M. respectfully informs the Nobility and Gentry he can supply the best perpetual BLOOMING ROSES in Standards, Half-Standards, and Dwarfs, healthy good rooted plants.

Standards, 30s. per dozen.
Half ditto, from 24s. to 30s. per dozen.
Dwarfs, from 18s., 24s., to 30s. per dozen.
New Varieties of 1861, 42s. per dozen.

Pilt Down Nurseries, Maresfield, Sussex.

N.B. These Nurseries are 2½ miles from the Uckfield Station on the London, Brighton, and South Coast Railway.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.

For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.

Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.

The Royal Nursery, Bagshot, Surrey.

Florists' Flowers and Seeds.

CAREY TYSO, Wallingford, Berks, begs to offer Choice Assortments of

DOUBLE ANEMONES, 100 fine sorts, 1l. 1s. to 1l. 6s.
*RANUNCULUSES, 100 ditto, 1l. 7s. to 2l.
*RANUNCULUSES, 100 ditto mixed, 5s. to 1l.
*IMPORTED GERMAN SEEDS, Asters, Stocks, Balsams, Immortelles, Larkspurs, Wallflowers, Zinnias, &c., in named assortments, from 1s. to 5s. each.
All the popular ANNUALS,* 50 varieties, 1 packet each, 10s.; 25 ditto, 5s
Choice RANUNCULUS, PINK, SWEET WILLIAM, and ANEMONE SEEDS,* 2s. 6d. and 5s. per packet.

The articles marked * can be sent by post.
PRICED CATALOGUE for one label for the postage.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

B. S. WILLIAMS'S LIST of CHOICE VEGETABLE and FLOWER SEEDS—See Advertisement in *Gardeners' Chronicle*, Feb. 8. Descriptions and further particulars will be found in his PRICED CATALOGUE, forwarded post free on application.

COLLECTIONS of KITCHEN GARDEN SEEDS, containing none but the most useful and approved sorts, 15*s.*, 20*s.*, 40*s.*, and 60*s.*, particulars of which if required will be forwarded.

Hardy Annuals, 12 varieties, 1*s.* 6*d.*; 25 varieties, 3*s.*
Biennials and Perennials, 12 varieties, 2*s.*; 25 varieties, 4*s.*
Half Hardy Annuals, 12 varieties, 2*s.* 6*d.*; 25 varieties, 5*s.*
Ornamental Grasses, 12 varieties, 2*s.*; 25 varieties, 4*s.*

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

SEEDS FOR THE KITCHEN GARDEN.
SEEDS FOR THE FLOWER GARDEN.
SEEDS FOR THE FARM.

JOHN CATTELL'S CATALOGUE of the above is now ready, and will be forwarded post paid on application. It contains select Lists only of all the best VEGETABLE and FLOWER SEEDS, so that the Amateur with only a small Garden cannot fail to make a proper selection.

His COLLECTIONS of KITCHEN GARDEN SEEDS, which have always given the greatest satisfaction, are sent as usual, viz.:

	£	s.	d.
A Collection for Large Gardens, including every desirable kind of Vegetables, Salads, and Herbs	3	0	0
Ditto, ditto, for a Medium-sized Garden	2	0	0
Ditto, ditto, for a Small Garden	1	0	0
Ditto, ditto, for a Cottage Garden	0	10	6

The Carriage of all parcels of Seeds amounting to 10*s.* 6*d.* and upwards, paid to any Railway Station in England or Wales.

Nursery and Seed Establishment, Westerham, Kent.

VEGETABLE SEEDS for ONE ACRE. — The COMPLETE COLLECTION recommended in Hogg's 'Gardener's Year Book," and mentioned at p. 119 of *Gardeners' Chronicle*, February 8, can be supplied for 8*l.*, Half and Quarter Collection same rate. Carriage and package free. All the articles of guaranteed quality and sorts of acknowledged merit.

B. J. EDWARDS, Seedsman, 222, Strand, London, W.C.

Excellence and Economy Combined.

SUTTON'S COLLECTION of GARDEN SEEDS.

THE BEST YET OFFERED.

KITCHEN GARDEN SEEDS.

		£	s.	d.
No. 1.	A COMPLETE COLLECTION for One Year's Supply of a Large Garden	3	0	0
No. 2.	A COMPLETE COLLECTION, in smaller quantities	2	0	0
No. 3.	Ditto ditto ditto ..	1	0	0
No. 4.	Ditto ditto ditto ..	0	10	6

If some of the sorts are already possessed, increased quantities of others will be given in lieu of those to be omitted.

HARDY AND SHOWY FLOWER SEEDS (POST FREE),
Which may be sown where they are intended to bloom.

A Collection of the best 100 sorts known	£1	1	0
A Collection of the best 50 sorts known	0	10	6
A Collection of the best 36 sorts known	0	7	6
A Collection of the best 24 sorts known	0	5	0

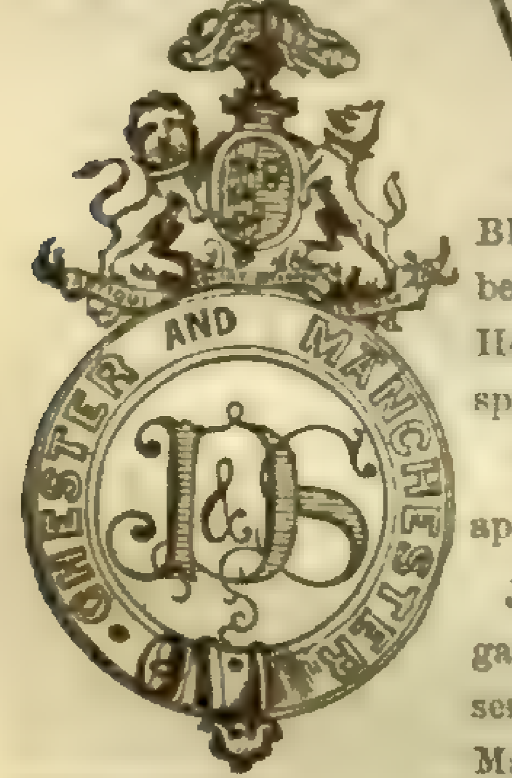
BOKHARA CLOVER, BORAGE, and other Seeds for Bees.
Carriage Free by Rail to all parts of the Kingdom.
Address SUTTON & SONS, Seed Growers, Reading, Berks.

New Vegetables—Post free.

WM. WOOD AND SON beg to offer GENUINE SEEDS of the undermentioned CHOICE VEGETABLES, viz.:—

Per packet—	s.	d.
Carter's St. Osyth Beet	1	0
Nutting's selected ditto	0	6
Melville's Incomparable White Broccoli	1	0
Lee's New White Sprouting Broccoli	1	0
Snow's superb Winter White Broccoli	1	0
Kemp's Incomparable Cabbage	1	0
Wood's Defiance Cauliflower. (See separate advertisement)	2	6
Carter's Dwarf Mammoth Cauliflower	1	0
Cole's White Perfection Celery	2	6
Hood's Imperial Dwarf Red Celery	0	6
Ivery's Nonsuch Celery	0	6
Turner's Incomparable Celery	0	6
Melville's Variegated Garnishing Kale	1	0
Carter's Giant White Cos Lettuce	1	0
Carter's Giant Brown Cos Lettuce	1	0
Dunnett's Black-seeded Brown Cos Lettuce ..	1	0
Wheeler's Imperial Cos Lettuce	1	0
Wheeler's Tom Thumb Lettuce	1	0
The Student Parsnip	1	0
Parsnip Chervil .. .. 6*d.* and	1	0
Tomato de Laye	0	6

e above are all described in WM. W. & SON'S CATALOGUE.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.



VEGETABLE and FLOWER SEEDS of best quality.

Our "NEWTON HERO" CUCUMBER, 1*s.* 6*d.* per pckt. "One of the best of the 118 varieties grown by the Horticultural Society, and so highly spoken of in the report, which see."

PRICED LISTS post free upon application.

JAMES DICKSON & SONS, 102, Eastgate Street; the "Newton" Nurseries, Chester; and 23, Market Place, Manchester.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and other FLOWER SEEDS, Choice GLADIOLI, &c., is now ready, and will be forwarded post free on application.

The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices.

An inspection and comparison with prices in other Catalogues is respectfully solicited.

The following, of which descriptions will be found in Catalogue, are specially recommended:—

		s.	d.
BEAN, Haricot Flagolet Jaune, six days earlier than any variety in cultivation	per quart	2	6
BEET, Compact Topped or Pine Apple Short Top,	per oz.	0	6
,, Selected Dwarf Red (Nutting's)	,,	0	9
CAULIFLOWER, Early Dwarf Erfurt	,,	2	0
,, New Early Mammoth or Frogmore forcing ..	,,	3	6
CELERY, Imperial Dwarf Red (Hood's)	,,	1	0
CHÆROPHYLLUM BULBOSUM	,,	2	0
CUCUMBER, TELEGRAPH	per packet	1	6
LETTUCE, MOOR PARK	per oz.	2	0
PEA, GENERAL WYNDHAM	per quart	1	3

Exotic Nursery, Tooting, Surrey, S.

ESTABLISHED UPWARDS OF A CENTURY.

COVENT GARDEN MARKET, LONDON, W.C.

BUTLER & McCULLOCH'S

COLLECTIONS OF VEGETABLE SEEDS,

CARRIAGE FREE,

Consisting of the best and most approved varieties.

No. 1. A Complete Collection for One Year's Supply	£4	0	0
No. 2. Ditto ditto smaller quantities	2	0	0
No. 3. Ditto ditto ditto	1	0	0

For full particulars, see CATALOGUE (page 91).

DESCRIPTIVE SEED CATALOGUE FOR 1862,

Containing all the new and most approved varieties of FLOWER SEEDS. To exhibitors we can strongly recommend our assortments of ASTERS, BALSAMS, STOCKS, and other CONTINENTAL SEEDS.

BUTLER AND McCULLOCH, SEEDSMEN, COVENT GARDEN MARKET, W.C.

SEEDS FOR THE KITCHEN GARDEN.

WILLIAM WOOD & SON'S

COLLECTIONS OF VEGETABLE SEEDS

FOR ONE YEAR'S SUPPLY.

Containing only the most choice and approved kinds for giving a succession of Crops throughout the year.

Any varieties not required should be mentioned, when an equivalent in others which may be preferred will be substituted.

No. 1. For a Large Garden (about three-quarters of an acre)	£4	0	0
No. 2. For a Medium-sized Garden (about half an acre)	2	10	0
No. 3. For a Small Garden (about a quarter of an acre)	1	5	0
No. 4. For a Smaller Garden	0	15	0

The Collection of Seeds for One Acre, enumerated in Dr. Hogg's "Year Book for 1862" (omitting Potatoes) will be supplied for 5*l.* 10*s.*

SEEDS for the FLOWER GARDEN.

FREE BY POST, EXCEPT SWEET PEAS AND LUPINS.

100 finest selected varieties, (post free) consisting of Hardy, Half Hardy, and tender ANNUALS, PERENNIALS, &c. .. .. 21*s.*

50 finest varieties (post free)	10*s.* 6*d.*
30 ditto ditto	7 0
20 ditto ditto	4 6

☞ PRICED CATALOGUES *post free on application.*

WILLIAM WOOD & SON, NURSERYMEN AND SEEDSMEN, MARESFIELD, NEAR UCKFIELD, SUSSEX.

PETER LAWSON & SON,

THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

RICHARD SMITH'S

LIST OF ALL THE BEST

VEGETABLE AND FLOWER SEEDS,

Combines simplicity of arrangement, with prices, descriptions of size, height, colour, time of sowing, soil, duration, hardiness, &c., with useful hints on rearing and general management.

COLLECTIONS of SEEDS, of the Choicest Sorts, for One Year's Supply of a large Garden, consisting of 10 quarts of Peas and all other Vegetables in proportion .. .. £2 [illegible]

6 quarts Peas	ditto	ditto	ditto	1 [illegible]
5 pints ditto	ditto	ditto	ditto	0 12 6

Retail Seed Orders of 21*s.* and upwards free to any Railway Station.

ROSES.

STANDARD HYBRID PERPETUAL and other FINEST kinds	30*s.* per Dozen.
HALF-STANDARDS ditto ditto ditto	24*s.* to 30*s.* ,,
DWARFS ditto ditto ditto ditto	12*s.* to 24*s.* ,,
NEW ROSES of 1861	2*s.* 6*d.* to 5*s.* each

FRUIT TREES.

Thirty-five Acres of these; consisting of PEACHES, NECTARINES, APRICOTS, PEARS, PLUMS, CHERRIES, and APPLES, in Trained and Pyramidal Trees, Standards, Half-Standards, Bushes, Dwarfs, or Potted Trees for Orchard House culture.

EVERGREENS. | FLOWERING SHRUBS. | CONIFERS.

With all other Nursery and Seed Stock of the finest description and at Cheapest Prices—Lists of which may be had on application to

RICHARD SMITH, NURSERYMAN AND SEED MERCHANT, WORCESTER.

CUTHILL'S STRAWBERRY PLANTS. For fruiting this year. Highland Mary, 10s. per 100; Richard II., 10s.; Newton Seedling, 10s.; Princess Royal, 7s. 6d.; Prince of Wales, 7s. 6d.; Black Prince, 5s. Best CUCUMBER and MELON SEED, 1s. per packet. MUSHROOM SPAWN, 5s. per bushel. If Cuthill's five Pamphlets are taken, 5s.

JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

Strawberry Plants.

WM. JAMES NICHOLSON again offers strong laid plants of his GRAND COLLECTION of more than 300 varieties of English, French, Belgian, American, and other STRAWBERRIES, including all the new and fine sorts. A Catalogue sent on application. A new enlarged and improved Catalogue will be published in Autumn, when many new sorts well tested will be offered with confidence.

WILLIAM JAMES NICHOLSON, Egglescliffe, Yarm, Yorkshire.

NEW APPLE, "BARON WARD."—The very best late keeping variety in cultivation. Each—s. d.

Strong plants, two years, unpruned, suitable for pyramids or bushes	2 6
Strong plants, dwarfs	1 6

Description, &c. forwarded post free on application to R. BRADLEY & SON, Halam Nursery, near Southwell, Notts.

GRAPE VINES.—Well-ripened Canes of all the best sorts can be supplied.

PINE APPLE PLANTS.—The best, largest, cleanest, and most healthy stock in this country. An inspection is invited at

WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, JUN., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.

CATALOGUES on application.

Muscat Escholata Grape.

MESSRS. J. AND C. LEE have the pleasure to offer strong well ripened Canes of this

THE FINEST OF ALL MUSCAT GRAPES,

which, though little known to Grape growers in general, deserves to be extensively cultivated. It combines the desirable qualities of setting freely with a large well shouldered handsome bunch, with berries of a rich amber colour almost as large again as those of the Muscat of Alexandria, and of the most luscious Muscat flavour.

Planting Canes	15s. 0d.	each
Fruiting Canes	21 0	"
Extra strong Fruiting Canes ..	31 6	"

Vineyard Nursery, Hammersmith, London, W.

The best Melon in Cultivation.

WILD'S ORION, unrivalled for beauty, weight, and flavour, genuine old Seed FREE to all customers on receipt of stamped envelope, 6d. to unknown correspondents.

WILD'S PRIMULAS.—No more Wholesale orders can be executed till June. Retail, 2s. 6d. per packet as usual.

THOS. WILD, the Primulary, Ipswich.

Melons.

MESSRS. JOHN AND CHARLES LEE have seeds to offer of the undermentioned superb MELONS:—

BAILEY'S ECLIPSE.—Pale green flesh, melting to the rind, of exquisite flavour; weight 3 to 4 lbs.; handsome, very prolific, and has gained many prizes. Price 2s. 6d. per packet.

AMERICAN RIDGE.—Scarlet flesh, melting, and highly flavoured. Ripens in a COLD FRAME; very prolific. Price 1s. 6d. per packet.

Nursery and Seed Establishment, Hammersmith, London, W.

New Hybrid Green-flesh Melon—Archer's Favourite.

T. KEMPSTER offers Seed of the above in sealed packets, at 2s. 6d. per packet. When three are ordered four will be sent. Stamps or Post-office Orders must accompany each order, payable at Lee.

See *Gardeners' Chronicle* of Dec. 14 and 21, 1861.

Apply to THOMAS KEMPSTER, 14, Dacre Place, Lee, Kent, S.E.

Fruit Trees.

JAMES GARAWAY AND CO. call attention to their stock of the above, comprising

APRICOTS, NECTARINES, PEACHES	Standard and Dwarf-trained	APPLES, CHERRIES, PEARS, PLUMS	Dwarf-trained, Standard, and Dwarf-quarter.

All of first-rate quality and in good condition.

The STANDARD PEARS are unusually fine, and will be sold at a very low rate to purchasers of quantities.

CATALOGUES and prices free by post.

JAMES GARAWAY & CO., Durdham Down Nurseries, Bristol.

J. HOLMES WOOD, Bower Nurseries, Maidstone (adjoining the Railway Station).

All the leading varieties of AZALEAS, in 60's, at 50s. per 100. Standard and Trained FRUIT TREES of every description, 30s. per dozen.

Every description of CONIFERS, EVERGREEN and DECIDUOUS TREES and SHRUBS at moderate prices.

COB FILBERTS.—What yield most Sovereigns per acre?—COB FILBERTS, now selling on the market 10d. per lb. and upwards. For Trees apply to GEORGE MACE, Calcot Gardens, near Reading.

Also may be had RED SKIN and WHITE SKIN FILBERTS, with other varieties of Cob Nuts.

SUTTON'S SEED CATALOGUE for 1862 is now ready, and will be sent gratis and post free.

SUTTON & SONS, Seed Growers and Merchants, Reading.

Fine Conifers.

JAMES VEITCH, JUN., begs to intimate that he has a large and healthy stock of the following CONIFERS, which not being injured by the severe frost of the winter of 1860-61 are fine and good.

ABIES DOUGLASI TAXIFOLIA, fine formed plants, 2 to 3 ft.
" " " stronger plants, 3 to 4 feet.
This is the best coloured and quickest growing variety.
CEDRUS DEODARA, handsome plants, 4 to 5 feet.
" " extra do, 5 to 6 feet.
" " fine pyramidal-shaped plants, 6 to 7 ft.
PINUS BENTHAMIANA, very strong, 12 to 15 inches.
" " extra fine, 2 to 3 feet.
" EDGARIANA, 1½ to 2 feet.
" " fine, 1½ to 2½ feet.
" EXCELSA, 1 to 1½ feet.
" " fine, 1½ to 2½ feet.
" INSIGNIS, 2 to 3 feet.
" " extra fine, 3 to 4 feet.
Also a few larger and very handsome specimens.
" PYRENAICA, 2½ to 3 feet.
" " fine, 3 to 4 feet.

With a large Stock of WELLINGTONIA GIGANTEA, and ARAUCARIA IMBRICATA, of all sizes, and some remarkably handsome Specimen Plants of both.

The above are growing, and can be seen at Mr. J. VEITCH'S, Jun., New Nursery, at Coombe Wood, Kingston Hill, S.W., on a high exposed situation.

Retail prices, with a considerable reduction when taken by the *dozen or hundred*, given on application.

Special quotations to the Trade.

Royal Exotic Nursery, Chelsea, S.W.—Feb. 22.

Fruit Trees, Dwarf-trained and Pyramid Apples, Pears, Plums, and Cherries.

JOHN CRANSTON has to offer excellent plants of the above, which cannot fail to give the greatest satisfaction. Also strong VINES in pots.

A LIST OF SORTS will be sent on application.

Nurseries, King's Acre, near Hereford.

SUPERB HOLLYHOCKS.—

12 Superior Show Flowers	18s. 0d.
12 Good ditto	9 0

The Trade supplied.

For CATALOGUES, address R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very large, and in all varieties of colour, in Seed or Roots; also FLORIST FLOWERS, POLYANTHUS in roots, and DOUBLE WHITE PRIMROSE.

Apply GEORGE MACE, Calcot Gardens, near Reading.

DOWNIE, LAIRD, AND LAING beg to intimate that their NEW CATALOGUE of FLORIST FLOWERS, NEW FLOWER SEEDS, &c., is now ready, and may be had free on application.

17, Frederick Street, Edinburgh, and Stanstead Park, Forest Hill, London, S.E.

Excellence and Economy.

TO PURCHASERS OF VEGETABLE AND FLOWER SEEDS.—SEND FOR JAMES TYNAN'S CATALOGUE, select your own Seeds, and save one-half the cost. No other house supplies Seeds of equal quality on the same terms. Importer of German and other Seeds.

Seed Warehouse, 68, Great George Street, Liverpool.

EXCELLENCE and ECONOMY.—

Botcherby Hybrid	Kenyon
Hamilton's Market Favourite	Telegraph
Hector	William Brown

And other CUCUMBERS (true).

ORNAMENTAL GOURDS, Imported Seed.

JAMES TYNAN begs to offer Seeds of the above, at 6d. and 1s. per packet, free by post for 7 or 13 stamps.

CATALOGUES free by post on application.

Seed Warehouse, 68, Great George Street, Liverpool.

Polyanthus Seed.

JAMES WOODS is now sending out his POLYANTHUS SEED, as in former years, saved from a forty years' selection of Plants, of fine laced flowers, not to be equalled in the kingdom. Price 1s. per packet, or sent free on receipt of thirteen postage stamps. Trade price on application.

JAMES WOODS, Florist, Harwich, Essex.

Superb Balsams.

F. AND A. SMITH are now sending out Seed of their Superior BALSAMS in collections of

9 Colours, separate	2s. 6d. each.
The same, mixed	2 0 "
Half the quantity	1 0 "

The above are in 18 distinct and bright colours, of carefully selected Seed, from the most double varieties.

Dulwich, Surrey.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that his DESCRIPTIVE CATALOGUE for 1862, of NEW CHRYSANTHEMUMS and other PLANTS is now ready, and will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s.; 20 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

Rhododendrons for Under Cover.

JOHN WATERER has an immense quantity of the above in fine bushy plants, of sizes suitable for immediate planting into Covers.

☞ It is worthy of remark that in the most severe weather Rhododendrons are never injured by Hares or Rabbits. Samples, with prices, forwarded on application.

The American Nursery, Bagshot, Surrey.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.—

50 in 50 well selected vars.	£2 2 0
50 in 25 ditto ditto	1 10 0
25 in 25 ditto ditto	0 15 0
12 in 12 ditto ditto .. 6s., 9s., and	0 12 0

Mixed, 3s. 6d. per dozen; 25s. per 100.

BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

Gladioli and other Choice Bulbs for Spring and Summer Flowering.

B. S. WILLIAMS will be happy to forward, post free, to all applicants, his DESCRIPTIVE and PRICED CATALOGUE of the above, containing select lists of all the best varieties.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Phalænopsis amabilis and rosea.

R. WARNER, Broomfield, Essex, has several fine Plants to dispose of; all healthy and good varieties. Prices on application.

When three or more are taken by Nurserymen an allowance will be made.

Aster Seed of Superior Quality.

J. AND J. FRASER, of the Lea Bridge Road Nurseries, Leyton, N.E., beg to announce that they are now prepared to send out Collections of the finest FRENCH ASTERS.

J. & J. FRASER feel much pleasure in stating that the first Prizes for these Asters at the Royal Horticultural Society and Crystal Palace Exhibitions were awarded to flowers produced from Seed supplied by them.

A PRICED LIST will be forwarded on application.

Major's Half-shrubby Calceolaria Seed for 1862.

H. MAJOR is prepared to supply the above, in packets at 2s. 6d. each, or three for 5s., post free. The Seed is unusually select, having been saved from varieties surpassing all his previous productions.

Postage stamps are respectfully requested in payment.

Knosthorpe, near Leeds, Yorkshire.

New Azalea indica.

J. IVERY AND SON feel much pleasure in offering their two beautiful Seedlings, CARNATION and TRICOLOR, small plants at 10s. 6d., and larger at 21s. each.

They are fully described in our CATALOGUE, with all other Novelties of the Season, which will be forwarded post free upon application.

A fine lot of half Specimens and Standards for Sale.

Dorking Nursery.—Feb. 22.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1861 and SPRING 1862, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

OLD CHESHUNT NURSERIES, HERTS.

Gladiolus.

PAUL AND SON'S fine Collection of this superb Flower, of which the Bulbs are now ready.

Hollyhocks.

PAUL AND SON'S fine Collection of this noble Flower; fine Plants of which are now ready. Also SEED in packets of 12 fine distinct sorts at 5s. each, and mixed seed in 2s. 6d. and 1s. packets.

Roses.

PAUL AND SON'S splendid Collection of Dwarf Plants in Pots, of all the finest new kinds, with extra size plants for Forcing.

Vines.

FINE PLANTS for Fruiting in Pots or planting out.

CATALOGUES of each may be had on application by post.

Hanover Nursery, Peckham, S.E.

AZALEA INDICA.

WM. IVERY begs to offer fine Plants of all sizes, full of bloom buds. The Trade supplied by the dozen or hundred. Price on application. Also a quantity of Half Specimens of all the best leading varieties. A fine Stock of large CAMELLIAS, to be sold a bargain. Evergreen OAKS, 5 to 7 feet.

IVERY'S NONSUCH LETTUCE, the best summer variety in cultivation, 1s. per packet, post free; and to be had of all the principal Seedsmen in London.

Saffron Walden Nursery.

SUPERB DOUBLE HOLLYHOCKS.

NOW IS THE TIME FOR PLANTING!

WILLIAM CHATER has ready some thousands of SEEDLINGS suitable for planting in Borders, Shrubberies, or other ornamental grounds.

W. C. has also an immense Stock of fine healthy young Plants, named sorts, and invites attention to his newly classified list for full information respecting prices, colours, and description.

N.B. The Trade liberally dealt with, and special prices on application for quantities.

WILLIAM CHATER, Saffron Walden, Essex.

KITCHEN GARDEN SEEDS,

FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND — THOS. GIBBS & CO. Corner of HALF-MOON St. PICCADILLY, London. — APPOINTED AP: 3. 1844 — THE SEEDSMEN

AGRICULTURAL SEEDS,

GRASS SEEDS,

FARM SEEDS,

of all descriptions.

Thomas Gibbs & Co.

CORNER OF HALF-MOON St.

PICCADILLY, LONDON, W.

SUTTON'S

CHOICE FLOWER SEEDS, Free by Post and Rail.

COLLECTIONS FREE BY POST (THE SELECTION BEING LEFT TO MESSRS. SUTTON).

Ladies and gentlemen requiring Showy kinds of FLOWER SEEDS, and who are not well acquainted with the sorts, are respectfully recommended to leave the selection to us, and we will supply those which we know to be really worthy of cultivation.

ANNUALS.

1. The best 100 sorts (hardy, half-hardy, and tender), with instructions		£1 1 0
2. The best 50 sorts	ditto ditto ditto	0 10 6
3. The best 36 sorts	ditto ditto ditto	0 7 6
4. The best 24 sorts	ditto ditto ditto	0 5 0
5. The best 24 sorts (hardy sorts only)	ditto	0 5 0

PERENNIALS.

6. The best 50 sorts (hardy, half-hardy, and tender)		0 10 6
7. The best 36 sorts	ditto ditto	0 7 6
8. The best 24 sorts	ditto ditto	0 5 0
9. The best 12 sorts	ditto ditto	0 3 0

CLIMBERS.

10. The best 12 sorts (hardy, half-hardy, and tender)	0 3 6
11. The best 6 sorts (hardy sorts only)	0 2 0

SUITABLE FOR ROCK WORK.

12. The best 12 sorts	0 3 6
13. The best 6 sorts	0 2 0

ORNAMENTAL GRASSES.

14. Twenty-four fine selected sorts	£0 6 0
15. Twelve fine selected sorts	0 3 6
16. Six ditto	0 2 0

HARDY, WITH ORNAMENTAL FOLIAGE.

17. Twelve fine varieties	0 5 0
18. Six fine varieties	0 2 6

EVERLASTING FLOWERS.

19. The best 12 sorts	0 3 6
20. The best 6 sorts	0 2 0

ANNUALS FOR FORMING LARGE BEDS.

21. Twelve large packets	0 9 0
22. Six large packets	0 5 0

GREENHOUSE SEEDS.

23. The best 12 sorts	0 6 0
24. The best 6 sorts	0 3 6

SWEET SCENTED FLOWERS.

25. The best 12 sorts	£0 3 6
26. The best 6 sorts	0 2 6

DWARF FLOWERS SUITABLE FOR EDGINGS.

27. The best 12 sorts	0 3 6
28. The best 6 sorts	0 2 0

TREE AND SHRUB SEEDS.

Fifty Hardy Sorts	1 5 0
Twenty-five ditto	0 12 6
Twelve ditto	0 6 0

NATURAL GRASSES.

Twenty-five Hardy Sorts	0 12 6
Twelve ditto	0 6 0

GOURDS—HIGHLY ORNAMENTAL AND USEFUL.

Fifty Choice Sorts	0 12 6
Thirty-six ditto	[illegible]
Twenty-four ditto	0 6 0
Twelve ditto	0 3 0
Serpent Gourd, very handsome	0 0 6

A few NEW and very CHOICE FLOWER SEEDS for the Coming Season.

ALYSSUM SAXATILE COMPACTUM.—A bright golden Alyssum, of the habit of Saponaria calabrica, admirably adapted for rock-work. Price per packet, 1*s*.

AQUILEGIA CARYOPHYLLOIDES.—A splendid striped variety, very double, and of great beauty. Price per packet, 6*d*.

CLARKIA PULCHELLA, NEW DOUBLE.—This is described in the *Gardeners' Chronicle* as "a new and desirable plant for ornamental purposes of all kinds, being very double, and the colour a rich magenta." Price per packet, 1*s*.

CLARKIA PULCHELLA, TOM THUMB.—A dwarf showy variety, of compact growth and a most profuse bloomer. Price per packet, 6*d*.

CLINTONIA PULCHELLA ATROCINERIA.—A beautiful variety of Clintonia, with bright purple and yellow blossoms. Price per packet, 1*s*.

CONVOLVULUS TRICOLOR MONSTROSUS.—Very large rich purple blossoms. Price per packet, 6*d*.

GILIA ACHILLEÆFOLIA ALBA.—A beautiful pure white variety of Gillia, very useful for beds. Price per packet, 6*d*.

GRAMMANTHES GENTIANOIDES CINNABARINA. — A handsome variety of Grammanthes with flowers of a crimson scarlet colour. Price per packet, 1*s*.

HUNNEMANNIA FUMARIÆFOLIA. — A fine hardy perennial, producing a profusion of yellow Tulip-shaped blossoms. Price per packet, 6*d*.

IPOMŒA LEARI.—A magnificent Ipomœa, with blossoms of a rich mazarine blue. Price per packet, 1*s*.

JACOBÆA, NEW DOUBLE MAGENTA.—A beautiful variety of double Jacobæa, with flowers of a bright rich magenta colour, contrasting admirably with the foliage, and well adapted for bedding purposes. Price per packet, 6*d*.

NEMESIA COMPACTA INSIGNIS.—A bright blue variety of Nemesia elegans, with a graceful and compact habit. Price per packet, 1*s*.

NEMESIA COMPACTA, LA SUPERBE. — A delicate rose-coloured variety, of similar habit to the above. Price per packet, 1*s*.

NEMOPHILA ATOMARIA OCULATA.—A pale blue variety, with a conspicuous blackish purple eye. Price per packet, 6*d*.

NEMOPHILA MACULATA VARIEGATA.—This differs from the well-known Nemophila maculata only in having its leaves variegated before the plant comes into bloom. Price per packet, 6*d*.

ŒNOTHERA LAMARCKIANA.—This is a hardy perennial, flowering the first year; its blossoms are more than 3 inches in diameter, and of a bright golden yellow. Price per packet, 1s.

ŒNOTHERA CAMPYLOCARPA GRANDIFLORA. — This is a large flowering variety, and the colour, which is crimson orange, is a striking novelty among Œnotheras. Price per packet, 6*d*.

PHLOX DRUMMONDII MAGENTA.—A handsome variety of bright magenta colour. Price per packet, 6*d*.

PHLOX DRUMMONDII RADOWITZI. — This has rose-coloured flowers striped with white, forming a very striking and effective object for pot culture. Price per packet, 6*d*.

SAPONARIA CALABRICA ALBA.—This is a pure white variety of the much-admired Saponaria calabrica. Price per packet, 1s.

TROPÆOLUM, CRYSTAL PALACE GEM.—A very pretty and effective bedding plant, of dwarf habit, with large sulphur-coloured flowers blotched with maroon. Price per packet, 1*s*.

TROPÆOLUM BRILLIANT.—A very bright-flowered variety, of climbing habit, with blossoms of a rich orange scarlet. Price per packet, 1*s*.

TRIFOLIUM ARVENSE.—This is an elegant ornamental Grass, of dwarf habit, and with silvery foliage. Price per packet, 6*d*.

ZINNIA ELEGANS, NEW DOUBLE.—This is one of the most valuable additions that have been made of late years to our flower garden. It differs from the old variety of Zinnia with single blossoms by having the yellow centre or disc transformed into petals, so as to form perfect rosettes, as seen in a fine double French Marigold. It has received a first-class certificate from the Royal Horticultural Society of London. Our Seed is of the finest possible quality, having been saved from double flowers only. Price per packet, 1*s*.

The above 24 sorts of NEW FLOWER SEEDS post free for 15*s*.

ASSORTMENTS of GERMAN FLOWER SEEDS,

which can be Warranted Genuine, having been just imported direct from the Growers.

		s. d.
1. Twenty varieties of fine quilled GERMAN ASTER	separate	4 0
2. Twelve ditto ditto	ditto	2 6
3. Six ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
4. Twelve varieties of NEW PYRAMIDAL GERMAN ASTER	separate	2 6
5. Six ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
6. Twelve varieties NEW GLOBE GERMAN ASTER	separate	2 6
7. Six ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
8. Twelve varieties NEW DWARF ASTER	separate	2 6
9. Six ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
10. Twelve varieties TRUFFAUT'S FRENCH PÆONY-FLOWERED ASTER	separate	2 6
11. Six ditto ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
12. Eight splendid varieties DWARF CHRYSANTHEMUM-FLOWERED ASTER	separate	2 0
The above choice sorts in mixture	per packet	1 0
13. Four showy varieties NEW COCKADE or CROWN-FLOWERED ASTER	separate	2 0
The above sorts in mixture	per packet	1 0
14. Six splendid varieties HELICHRYSUM	separate	2 0
The above choice sorts in mixture	per packet	1 0
15. Ten different vars. PAPAVER PÆONY-FLOWERED DOUBLE POPPY	separate	2 6
16. Six ditto ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
17. Twelve finest colours SALPIGLOSSIS VARIABILIS	separate	2 6
18. Six ditto ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
19. Ten different vars. SCABIOSA MAJOR	separate	2 6
The above choice sorts in mixture	per packet	1 0
20. Twenty-four varieties fine dwarf GERMAN TEN-WEEK STOCK	separate	4 0
21. Twelve ditto ditto ditto	ditto	2 6
22. Six ditto ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
23. Twelve varieties WALLFLOWER-LEAVED GERMAN TEN-WEEK STOCK	separate	3 0
24. Six ditto ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
25. Twelve varieties new large flowered GERMAN TEN-WEEK STOCK	separate	3 0
26. Six ditto ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
27. Six varieties MINIATURE GERMAN TEN-WEEK STOCK	separate	2 0
The above choice sorts in mixture	per packet	1 0
28. Twelve varieties AUTUMNAL FLOWERING TEN-WEEK STOCK	separate	3 0
29. Six ditto ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
30. Twelve varieties BROMPTON (BIENNIAL) STOCK	separate	3 6
31. Six ditto ditto ditto	ditto	2 0
The above choice sorts in mixture	per packet	1 0
32. Six varieties new CAPE or GIANT STOCK	separate	2 0
The above choice sorts in mixture	per packet	1 0
33. New SULPHUR PALE YELLOW STOCK	ditto	1 6
34. New SCARLET BOUQUET STOCK	ditto	1 0
35. Twelve varieties extra fine double HOLLYHOCK, from named sorts	separate	3 6
36. Six ditto ditto ditto	ditto	2 0
The above choice sorts in mixture	per packet	1 0
37. Twelve varieties double dwarf ROCKET LARKSPUR	separate	2 6
38. Six ditto ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
39. Ten varieties dwarf double HYACINTH-FLOWERED LARKSPUR	separate	2 6
40. Six ditto ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
41. Twelve vars. ROSE-FLOWERED BALSAM	separate	3 0
42. Six ditto ditto ditto	ditto	1 6
The same varieties in mixture	per packet	1 0
43. Twelve varieties fine new CAMELLIA-FLOWERED BALSAM	separate	2 6
44. Six ditto ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
45. Twelve vars. new MINIATURE BALSAM	separate	3 0
46. Six ditto ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
47. Twelve extra fine varieties GERMAN ZINNIA	separate	2 6
48. Six ditto ditto	ditto	1 6
The above choice sorts in mixture	per packet	1 0
49. Ten splendid varieties double WALLFLOWER from Erfurt	separate	3 6
50. Six ditto ditto	ditto	2 0
The above choice sorts in mixture	per packet	1 0

Fresh imported German Seeds produce finer Blooms, and more Double, than any English Seed, however carefully selected; and the Assortments named in the foregoing List are genuine German Seeds just imported. WE WOULD ESPECIALLY RECOMMEND THE ASSORTMENTS Nos. 1, 6, 10, 12, 13, 15, 20, 27, 35, 37, 39, 43, 47, 49, which we would supply post free for 1*l*. 10*s*.

*** One of the above Collections of Choice Flower Seeds will prove an acceptable Present to a friend, and may be conveniently transmitted by post.

ASSORTMENTS of ENGLISH FLOWER SEEDS.

ANTIRRHINUM, in 12 varieties	4*s*. 0*d*.
„ in 6 varieties	2 6
AQUILEGIA, in 4 choice varieties	1 6
BALSAM (Webb's) in 10 colours	3 6
„ (Ward's) in 7 colours	3 6
„ (Smith's) in 9 colours	2 6
CANDYTUFT, 6 varieties, separate	1 6
CHRYSANTHEMUM, in 6 varieties	1 6
CLARKIA, in 10 distinct varieties	3 0
„ in 6 distinct varieties	2 0
COLLINSIA, in 8 sorts	2 0
CONVOLVULUS MINOR, in 6 colours	1 6
COREOPSIS, in 10 choice varieties	2 6
„ in 6 choice varieties	1 6
DELPHINIUM, in 5 sorts	1*s*. 0*d*.
DIANTHUS, in 10 choice varieties	3 6
„ in 6 choice varieties	2 0
ESCHSCHOLTZIA, in 5 sorts	1 0
GILIA, in 4 sorts	1 0
GLOBE AMARANTHUS, in 4 colours	1 0
GODETIA, in 5 sorts	1 0
IPOMŒA, (Climbers) in 6 varieties	2 0
JACOBÆA, double, 9 colours	2 0
„ „ in 6 colours	1 6
LARKSPUR, stock flowering, in 10 varieties	2 6
„ double branching, in 6 varieties	1 6
„ Tall Rocket, in 12 vars.	2 6
LEPTOSIPHON, in 6 choice varieties	1*s*. 0*d*.
LINARIA, in 8 sorts	1 6
LOBELIA (dwarf), in 12 varieties	3 6
„ „ in 6 varieties	2 0
LUPINUS, in 12 distinct varieties	3 6
„ in 6 distinct varieties	2 0
MARIGOLD, double, in 6 sorts	1 6
MARVEL OF PERU, in 8 colours	2 0
NASTURTIUM, dwarf, in 6 varieties	2 0
„ tall, in 4 sorts	1 0
NEMOPHILA, in 12 varieties	2 6
„ in 6 varieties	1 6
ŒNOTHERA, in 12 distinct varieties	3 6
„ in 6 distinct varieties	2 0
PETUNIA, in 8 choice varieties	2*s*. 6*d*.
PHLOX DRUMMONDII, in 12 sorts	3 6
„ „ in 6 sorts	2 0
PORTULACCA, in 10 varieties	3 0
„ in 6 varieties	2 0
SALPIGLOSSIS, in 6 sorts	1 6
SCHIZANTHUS, in 6 sorts	1 6
SILENE, in 10 varieties	2 0
„ in 6 varieties	1 6
SWEET PEAS, in 6 colours	1 6
THUNBERGIA, in 4 distinct sorts	1 6
TROPÆOLUM, in 10 choice varieties	2 6
„ in 6 choice varieties	1 6
VISCARIA, in 8 sorts	2 0

The Seeds are all of last Summer's growth, and many of them are quite NEW SORTS.

N.B. *Any of the above named Seeds will be sent Free by Post or Rail.*

SUTTON'S CATALOGUE of KITCHEN, GARDEN, FARM, and FLOWER SEEDS

May be had gratis and post free on application, addressed

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

ROYAL HORTICULTURAL SOCIETY.
ARRANGEMENTS for 1862.
March 19.—HYACINTH and CAMELLIA SHOW. Admission 2s. 6d.
April 9.—AZALEA SHOW. Admission 2s. 6d.
May 21.—FIRST GREAT SHOW. Admission 5s.*
During the Season the Inauguration of the Memorial of the Exhibition of 1851 is expected to take place.
June 11.—SECOND GREAT SHOW. Admission 5s.
In May or June, AMERICAN PLANTS. Admission 2s. 6d.
June 26.—ROSE SHOW. Admission 2s. 6d.
July 2.—THIRD GREAT SHOW. Admission 5s.
Sept. 10.—AUTUMN SHOW. Admission 2s. 6d.
October 8, 9, and 10.—INTERNATIONAL FRUIT, VEGETABLE, ROOT, CEREAL, and GOURD SHOW. The Roots, Cereals, and Gourds will remain on view until the 18th. Admission on October 8, 2s. 6d.; 9th to 18th, 1s.
* On the days of the Great Shows the charges will be 7s. 6d.
Packets of 25 Five Shilling Tickets, price 5l., available according to the daily charges, on any day on which money is taken.
Season Tickets of INTERNATIONAL EXHIBITION, price 3l. 3s., or Joint Season Tickets freeing also to the Horticultural Gardens, price 5l. 5s., can be had at the Offices.
Bands will play every week day from May 1 to October 18.
The next Ballot for Fellows is on the 21st of March.
Schedules of Prizes may be had on application to Mr. EYLES, South Kensington, W.
ANDREW MURRAY, Assistant Secretary.

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.
LIST OF AWARDS, FEBRUARY 18, 1862.
FIRST-CLASS CERTIFICATE.
Phalaenopsis Schilleriana, from R. Warner, Esq., Chelmsford; R. McMorland, Esq., Haverstock Hill; and Mr. W. Bull, Chelsea.
Cibotium princeps, from Mr. W. Bull.
COMMENDATION.
Oreopanax dactylifolium, from Mr. W. Bull.
SPECIAL CERTIFICATE.
To Messrs. Veitch & Son, Chelsea, for a collection of 12 distinct varieties of Lycaste Skinneri.
The next MEETING of the Committee will take place on March 4.
THOMAS MOORE, Secretary to the Committee.

BURTON-UPON-TRENT FLORAL and HORTICULTURAL SOCIETY.—The FIRST EXHIBITION this year will be held on JUNE 18.
First Class open to all England.
Schedules with prizes affixed to be obtained on application to the Secretary, Mr. ATTERBURY, 81, High Street, Burton-on-Trent.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK.
EXHIBITIONS of PLANTS, FLOWERS, and FRUIT, WEDNESDAYS, May 28, June 18, and July 9.
AMERICAN PLANTS, MONDAY, June 9.
Tickets are now being issued, and can be obtained at the Gardens only by Vouchers from Fellows or Members of the Society. Price on or before SATURDAY, May 17, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.
SPRING EXHIBITIONS open to the Fellows of the Society and their friends only,
WEDNESDAYS, March 26, April 2, 9, 16, 23, 30, and May 7.
J. DE C. SOWERBY, Secretary.

The Gardeners' Chronicle.

SATURDAY, FEBRUARY 22, 1862.

WE are sometimes reproached for not admiring the DAHLIA, the pride of cottage critics and rustic shows; a charge to which we must in truth plead guilty. Not that we undervalue it in its proper place, or that we disregard the unsurpassable skill by which it has been transformed from the single-flowered weedy gawky herb that we well remember at "LEE and KENNEDY'S" in 1818 into a dwarf bush with flowers of remarkable symmetry. Quite the contrary. What we complain of is that notwithstanding its lumpish inelegant form which no art can cure, it has been absurdly exalted to the throne of the autumn. Dahlias are very good things in their way, but to place them in the same rank as Roses, Camellias, China Asters, or even Carnations and Picotees is, we must think, very extraordinary bad taste. They must surely be only regarded as ugly unsavoury bushes with gaudy flower heads.

Whatever may be said in favour of the plant on the score of brilliant colouring and symmetry of form, and however beautiful as autumnal garden ornaments a few of the better-habited and brighter-coloured large-flowered show varieties may be—and their flower heads are very much more beautiful in the garden on the plant than as dotted in interminable lines along the tables of what are called "Dahlia shows," yet as a cut flower for indoor decorative uses, it is from its size entirely unfitted, except the decorations are on an unusual scale; indeed, its unfitness for such an use is almost as self-evident as in the case referred to in one of our popular lyrics, in which the tresses of the heroine are said to be "braided up with Dahlias and Hollyhocks so sweet."

Thus much of objection to these "grand autumnal flowers." We turn now to introduce and recommend a new race of them, the Pompon or miniature-flowered varieties, to which some at least of the foregoing objections do not apply. They are sometimes known as Lilliputian or Bouquet Dahlias—the former name objectionable because the plants are as yet not sufficiently dwarfed to make it applicable, and the latter indicating one of the uses to which the "blooms" may be very properly and conveniently applied.

The POMPON DAHLIAS are, in fact, a new race of the well-known florists' Dahlia cultivated in this country for so many years with so much zest, to which, as for many other novel races of popular flowers, we are indebted to continental growers. At the present time the chief differences consist in the somewhat more slender character of the plants, and in the smaller size of the "flowers" or flower-heads, which latter may be taken as about half that of the varieties usually grown for show purposes, the average diameter of the flower-heads being a couple of inches, very few only reaching to 2½ inches. With this small size is combined all the symmetry of form which is so much prized in the large-flowered varieties. They are many of them free-flowering plants, so that branches of moderate size bearing two or three flowers, and of dimensions quite suitable for table bouquets, may be cut from them, and the moderate size of the individual blooms renders these materials well fitted for arrangement in tasteful groups, either alone or intermixed with other flowers. Their odour rather than their size excludes them from hand bouquets, and from being used in situations where the objectionable smell would be detected. Some of the varieties, of which a considerable number has been raised, grow to the height of 4 feet, while others reach 5 or even 6 feet; some form a fine spreading head of long-stalked blooms, while others are stiffer habited with the blooms closer to the foliage and altogether less graceful; some have the florets symmetrically ranged in concentric circles, while others have the regular cupped or shell-like florets of the best show flowers: in short, there are repeated among them all the leading peculiarities which run through the larger race.

When these Pompon Dahlias shall have been thoroughly dwarfed (as, who can doubt, they will be?) and we have plants of 2 or 3 feet high only, with the little balls of florets thrown out well above the foliage in gracefully spreading heads, we shall have one of the prettiest plants that can be desired for the garden in the late summer and autumnal months. Then, too, we may hope for Dahlia shows to be something more than dabs of varied colour ranged in long lines on flat tables, for we should have among the Dahlias themselves thoroughly manageable pot specimens to relieve the monotony. There is such a thing as fitness and proportion of parts, and there can be no doubt that plants such as those we have ventured to imagine will be very much more pleasing and appropriate in respect to their decorative effect than others with larger and more massive flowers, even though the latter were equally dwarf. At the present moment 4-feet plants are, as a rule, the dwarfest of these Pompones which are available for the parterre, but these will be found to be very pretty objects in situations to which this stature is not inappropriate. Even some of the very tallest of them—the Brobdignagians, with their spreading heads of brilliant colours, would be effective enough at the back of a wide border of flowers or of shrubs; and we have no doubt a few examples of well selected habit and colour would be telling objects, if judiciously disposed in the form of single plants in the centre of moderate-sized beds filled out with other dwarfer flowers.

Some of the more desirable of the dwarfer growing varieties we have met with are—Little Helen, Annie, and Tom-tit, white or blush tipped; Star and Goldfinch, yellow tipped; Little Dorrit, purple rose; Little Darling, bright rose crimson; Crimson Beauty, rich maroon crimson; Fairy Nymph, rosy lilac; Canary Bird, sulphur; and Child of Faith, white. These grow from 3 to 4 feet high. The smallest of them is Annie, in which the flower-heads are under 2 inches in diameter. Little Mary and Bijou, maroon crimson; Little Darling, bright rosy crimson; Little Jewess, bright pinkish rose; and Hebe, rosy purple, are some of the more showy and effective of the taller sorts growing 5 or 6 feet high; available for the "single plants" indicated above.

WHICH are best on the 1st of January—Grapes newly ripened, or Grapes kept over from the autumn-ripened crops? Mr. THOMSON, of Dalkeith, and others think the former are the better of the two, and in a recent paper published in the *Florist*, to which a correspondent alludes last week, he gives some reasons which we transfer to our columns.

It had been objected (1) that new Grapes in January were unnecessary because old ones could easily be had; and (2) that such early forcing weakened the Vines by depriving them of their winter's rest. The answers were—(1) that where there are Vineries enough it is desirable to force one so as not only to secure ripe Grapes on New Year's Day, but to be able to garnish both old and new Grapes with fresh Vine leaves, which give to the old ones if well kept all the appearance of new ones, and set off a dessert table as nothing else can; and (2) that to have ripe Grapes in January does not exhaust the Vines more than to have them in March, if indeed so much, for Vines cannot be rested in August and September so well as in June and July, while to have the fruit ripe in March the resting must take place in the former months, as forcing must commence by the first of October.

What Mr. THOMSON has learned by experience in reference to this question, he explains thus:—"In the year 1855 I cleared out and replanted all the Vineries here, except one that I thought would give some fruit till the young Vines came into bearing. Of this one, I raised the roots and laid them in new soil, and they bore fair crops of Grapes which ripened in April and May. I determined to get rid of the Vines in 1860, on account of their being unsightly, and pruned on the old long-spur system. This being my intention I filled the house in August with a lining of leaves and dung so as to throw heat into the outside border, where their roots were then exclusively. They broke freely in September, and we cut the first dish off them on January 1, 1860. As it was still my intention to do away with them as soon as their crop was cut, I made free with their leaves for garnishing the dessert. In the meantime my employers and others at their table thought the flavour of the Grapes so much superior to Lady Downes' and West's St. Peter's, and admired them so much, that I resolved to have another year's crop out of them. I pruned them early in July; they broke naturally on the 15th of August, and we cut again on the first day of this year: the crop being, however, double what it was in 1861, the wood stronger, and by the middle of January thoroughly hard and ripe.

It is quite evident, as Mr. THOMSON points out, that the natural climatal advantages are all on the side of the earlier forced Vines. When started in August they have before them three months of comparatively fine weather, which is of immense importance to them, and suffices for all the more critical periods of their development. When started in October, to be ripe in March, the entire period of growth belongs to the most dreary and unpropitious part of the whole year, so that it would seem, resting the Vines in the hot dry months of summer—dryness being at that period the maturing agent, and renewing the growth in August so as to snatch as much as possible of the fine weather of autumn for all the earlier stages of growth, turns out in practice, as it does in theory, to be the proper course for producing new ripe Grapes by New Year's day; and this with better results than would be obtained a couple of months later.

There is something, continues Mr. THOMSON, that appears to me very remarkable about the Grapes we have ripened here in January. They colour, he says, as black as sloes; their skins are thinner than the same sort of Grape (Black Hamburgh) ripened in August; and the berries which are green one day are black three days afterwards without trace of acid, but perfectly sweet and well flavoured, while in summer a Grape has to hang a fortnight after it is black before its acid is got rid of and its flavour developed. This is puzzling. The influence of the sun has generally been thought essential to produce flavour in fruits, and yet after the period when these Dalkeith Grapes received the customary thinning, we are told they had not 50 hours' sun were it all put together, so dark and foggy had the weather been. A current of air previously warmed had indeed been allowed to pass into the house night and day from the time forcing commenced; and one would at first be inclined to attribute to this the perfect colouring and flavouring of the berries; but then as Mr. THOMSON properly states, the same thing "takes place in the case of Grapes ripened in August," though the air does not then require to be artificially warmed. What then did impart the colour and flavour so perfectly? That we cannot answer. But there can be no doubt that such cases as this and the one alluded to last week are masterly examples of Grape growing.

—— M. G. B. WOLLASTON in the *Phytologist* proposes or rather suggests a new solution of the IRISH SHAMROCK problem. He thinks it possible that the

true Shamrock may be the *Oxalis corniculata*, plucked by St. PATRICK from the gardens of the monastery or elsewhere, to illustrate the doctrine of the Three in One. "I have two reasons" he remarks, "for suggesting this:—1st, that most Irishmen on St. Patrick's Day wear a piece of gold leaf mingled with the Trefoil, which may represent the golden flower of O. corniculata; and secondly, that it is hardly likely that Trifolium repens, Dutch Clover, was introduced into Ireland so early as St. Patrick's time"—this Trefoil being one of the two plants generally supposed to have been the Shamrock, the other being Oxalis Acetosella.

GARDEN TRACERY.

(*Continued from* p. 141.)

"THE SEVENTH PRACTICE.

"*To draw, with the Cord, a Line parallel to a Right Line traced out.*

"LET the two parallel lines upon the plan be *a b* and *c d*, distant from one another 12 fathom, and let the right line C D be traced upon the ground. At each of its extremities C and D, raise a perpendicular, according to the foregoing practice; set upon each of them the length of 12 fathom, as here, from C to E, and from D to F, and then draw, from the point E to F, the line E F, which shall be parallel to the line C D.

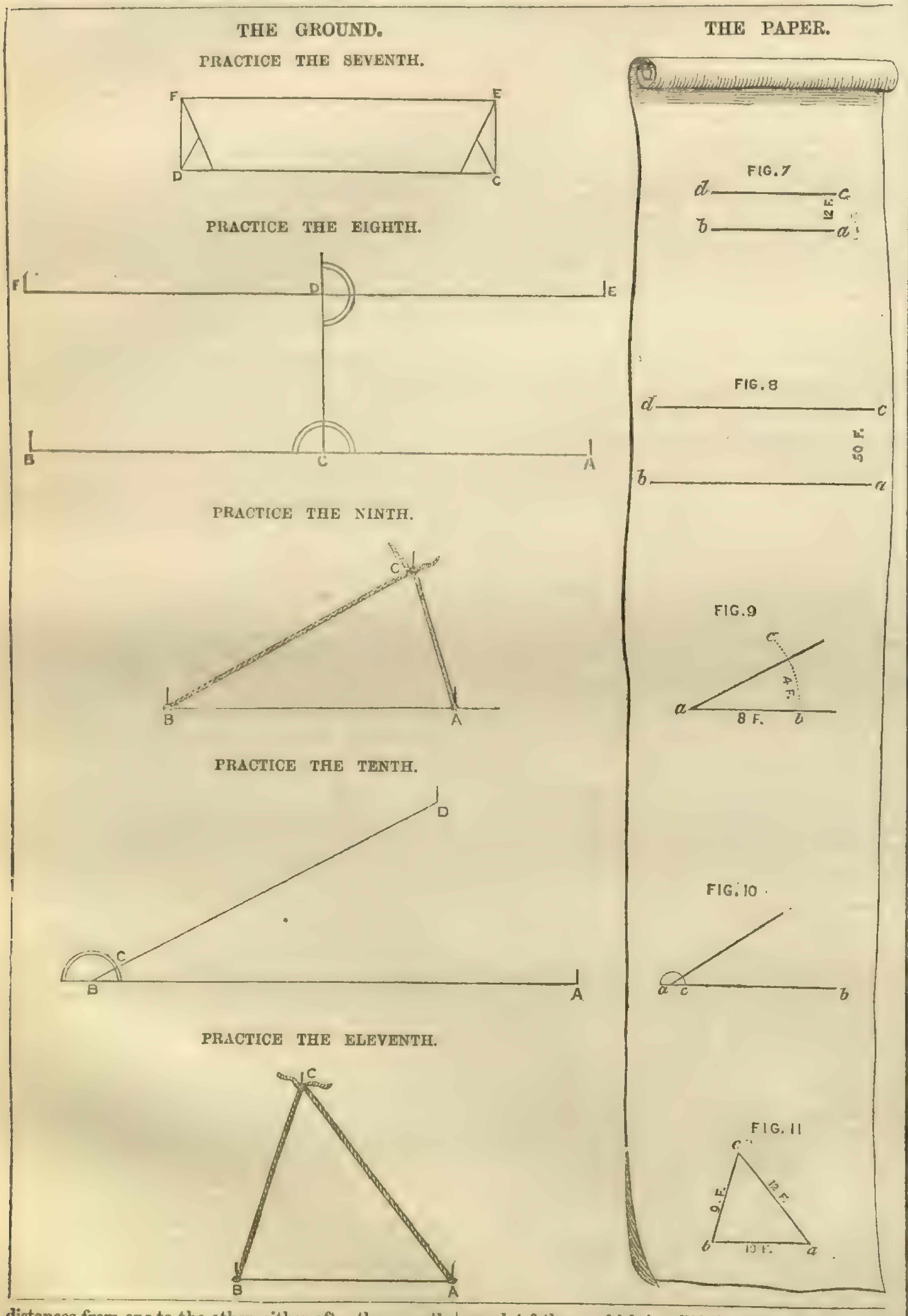
"THE EIGHTH PRACTICE.

"*To draw, with the Semi-circle, a Line parallel to a Right Line traced out.*

"Let the two parallel lines upon the plan (as in the foregoing practice) be *a b*, and *c d*, which suppose distant from one another 50 fathom, and that the line A B were traced upon the ground, to which a parallel should be drawn at the like distance. From the point C, taken at pleasure upon the line A B, raise with the instrument a large perpendicular, by the fifth practice; then moving the instrument to the point D, 50 fathom distant from the point C, direct the base towards the stake C, and the moveable index being upon 90 degrees, direct, by the sights, a stake towards E, and another towards F, and trace the line E F by the first or second practice, according to the length it contains upon the plan.

"OBSERVATION.

"When there are several lines to be drawn parallel to one given, there needs no more than to set off the distances from one to the other, either after the seventh practice, by raising perpendiculars at the ends, or according to this last, by returning the square with the semi-circle, at each of the points measur'd off upon the great perpendicular in the middle.



"THE NINTH PRACTICE.

"*To describe with the Line, an Angle equal to an Angle given upon the Paper.*

"Take upon the plan, a length at pleasure, as here, of 8 fathom. With this interval, upon the point of the angle *a*, describe with the compasses an arch, as *b c*, which joins the two sides of this angle, and measure the distance of the two points *b* and *c*, supposed 4 fathom, which is call'd the cord of the arch *b c*. Then measure upon the line traced upon the ground, 8 fathom, as from A to B, and taking a line of 4 fathom, the loop of which is fixed to the stake A, and another of 8 fathom fix'd in like manner to the stake B, join them together at the point C, where drive a stake; after which you draw the lines C B and C A, which, with the traced line A B, make the angle B A C equal to the angle of the plan.

"THE TENTH PRACTICE.

To draw, with the Instrument, an Angle equal to an Angle given upon the Plan.

"Measure the angle marked upon the plan with the protractor, by placing its corner upon the point *a*, and its base along the line *a b*, count how many degrees there are from *c* to *d*; as suppose 30, keep this number carefully in mind, that it be set off exactly upon the ground, in supposing A B the traced line, and the point B that from which is to be drawn an angle equal to that of the plan. Set the center of the semi-circle as perpendicularly as possible over the point B, and directing the base to the stake A, place the index at the point C, upon the same degree that you found upon your paper with the protractor, and by the sights of the index cause a stake to be planted towards D, and draw the line B D, by either of the two first practices, as best suits with the distance contained between B and D.

"THE ELEVENTH PRACTICE.

"*To draw, with the Line, a Triangle equal to a Triangle given upon the Plan.*

"Let the supposed triangle be *a b c*; measure each of its sides, found, for instance, to be respectively 10, 9, and 12 fathoms, and note them upon the plan; then drawing the base A B, take a line of 12 fathom long, and fix it by a loop to the stake A; and one of 9 fathom, which fix in like manner to the stake B, and joining their extremities, as in C, drive a stake there; then draw the two lines A C and B C, and the triangle A C B shall be like that of the plan.

"THE FIRST OBSERVATION.

"If the triangle had the three sides equal, which we call equilateral, you need only take two lines of equal length with the base, at the extremities of which, having two stakes run through the loops, and joining the ends of these lines together above, you plant a stake, where they intersect, and trace the two lines, as before.

"THE SECOND OBSERVATION.

"If the triangle should be so large that it could not be conveniently drawn with the line, you must then measure one of its angles, as that of *a*, with the protractor, which suppose 50 degrees, and the side *a b* 100 fathom, and *a c* 120 fathom. After having drawn upon the ground the line A B 100 fathom, by the second practice, place the semi-circle on the point A, directing its base to the point B, and setting the index to 50 degrees, you direct the stake C to 120 fathom distant from the stake A; after which, from the stake C to that of B, you draw the line C B, which, with the lines B C and A B, form the triangle demanded.

(To be Continued.)

Indoor Gardening.

I DO not know if all indoor gardeners are apt or not to find themselves now and then in the predicament in which I was once, that of having been so busy taking care of the spring flowers in blossom as to have quite forgotten to provide for summer and autumn gaiety.

There are several things which we ought to be doing now, and amongst the most essential, I think, is the potting the summer bulbs.

Liliums, for example, longifolium and longiflorum, ought now to be procured. Gladioli again make splendid masses of colour when grown in large groups in pots, and Calla ethiopica and Vallota purpurea ought also to be obtained. Begonia Evansiana, again, should be started now, and Achimenes and Gloxinias should be placed in a warm plant case, or in some kind of heat-providing substitute; while the climbing Tropæolums for window baskets want much of the same treatment. As to the Japan Lilies particularly I do most strongly advise all whom it may concern no longer to delay getting in these plants. My favourite mode is to have about five roots in one large pot, giving thorough drainage; first an oyster shell, or better, a zinc cap (to exclude worms), then a layer 2 inches deep of pounded charcoal, a handful of Moss, the pot filled up with good soil—leaf-mould and sand—the bulbs planted almost on the top, and a good thick layer of Coco-nut refuse covering them well over and packed in amongst them. The little surface roots perfectly fill the fibry stuff which covers up the bulbs; and my plants thus treated have been very beautiful. They may stand anywhere clear of frost till they begin to come up, then a window is suitable till the end of May, keeping them nice and moist, and after the flower-stems rise a pan of water to stand in or a box of damp sand is the proper treatment.

Vallota purpurea I have not yet myself grown in a window. It requires, however, treatment very similar to that of the Arum Lilies, whose great points are perfect rest, *i. e.* keeping dry for some time after blossoming; unbroken leaves when they begin to grow, and a constant supply of water not only given but suffered to remain standing in the saucer.

The prettiest Arums that I ever saw were standing immersed in a small tank of water; and window gardeners, I think, might adopt this practice for their aquaria, only taking care to cover the soil in the pot either with sand or pebbles. The plant should not be in very deep water, as the flower-stalk and the leaves should rise above the surface.

The Begonias and the Achimenes require heat to start them. The difficulty for these with window gardeners who have not means at command for giving proper heat, is generally I think in obtaining moisture. A box of damp sand with pots sunk in it, and bell-glasses placed over them, answers, however.

well if placed upon a chimney-piece, or over some hot bar or water-pipe. There are plenty of such contrivances for any one who will think of them; indeed I once heard of some arrangement for forcing bulbs and seeds over a baker's oven, and when I hear of very beautiful hothouse plants appearing in cottage windows, I always guess that some such clever plan is at work inside.

The Gladioli, however, like the lovely Lilies, require no heat at all, and they are so gay with their great spikes of blossom, that any one with their aid may have a bright window-garden. These are also first-rate flowers for towns.

The new varieties of the last two years in a list I have just seen, published by Messrs. Hooper, include a great number of beautiful and delicate shades of rose and white, and of white and purple—Empress, Calathée, Vesta, and Madame de Vatry are very pretty. Bertha Rabourdin is a well-known flower, with a crimson blotch on its clean white petals, and there is a new one called Marie, which is said in the aforesaid list to excel the last-named in beauty, but this I have not seen. Window gardeners ought, however, to be very careful in ordering these flowers to avoid having four or five "very distinct varieties," very much alike! The multiplication of names is endless, and it has before now happened to me to have new flowers sent in, of a type so much resembling many I possessed as to be quite vexatious. The best way is in such things to put down always the names of the plants one has, and to request the seedsman to avoid immediate repetitions. Many, besides, of the best nurserymen abstain very carefully from filling up page after page with things too much alike, and the colours are given with so much exactness that even those who have never seen the flowers at all cannot go very wrong in making their own selection from the colours described. One caution I must give, however, it took me so long to learn it—in ordering plants it is very dangerous to think that in all cases "white tinged or blotched with rose, and rose streaked or blotched with white," will produce a brilliant variety. The rose in one may be brighter, or the white in another rosier, and thus we may find that our variations require to be looked at closely; as seen even across a room they produce a general rose effect! Purple and white, I think, are always very beautiful; these contrast well with the white and rose. The pale straw colour, too, is pretty and peculiar, and the brilliant scarlet most useful for lighting up. Gandavensis, scarlet and yellow; floribundus, white and pink or purple; and ramosus, rose colour, are very cheap, showy, and distinctive kinds, even for cottage windows.

When the Gladioli are chosen, they may be potted much in the same way as the Japan Lilies—three to five in a 5 or 6-inch pot. I am always inclined to small pots myself, knowing their great convenience where small spaces must be filled up brilliantly, and after all, the bulb roots generally go downwards; thus we can often give a little help in need, by allowing the pots to stand upon a bed of cocoa-nut stuff or soil.

After potting, the plants should be placed in a cold frame or room—covered in the former case with something like coal ashes, about 4 inches deep. They require at first scarcely any water, but after a time, as the leaves come up, more may be desirable. It is quite essential not to let the pots dry later in the season, but it is now so easy to have either balconies or windows fitted with tile boxes, that this very simple precaution ought always to be taken. The range of materials is at least wide enough, and even where expense is no small consideration, the saving of plants effected by this means renders it most advisable.

All bulbs feel extremely any dryness after their growth has once set in in earnest. Even now, perhaps, some people may be distressed at Tulips and Crocuses going out of bloom too fast. If they examine the soil it is not unlikely that they may find it dry, for the quantity of water absorbed and transpired by bulbs is something quite astonishing, and then a good watering will often give the flowers as it were a new lease of life.

I cannot help here remarking one curious instance of the rapid transpiration mentioned—Arums in summer having constantly a drop of clear water at the point of every leaf. These observations are not merely interesting to window gardeners, but also of much importance, for it is by such things, as for instance by the dew left on glass by leaves, that we learn to guard against what may be injurious, and still more to trust to the natural provision made for balancing what we might deem excess, while it is in fact useful to the plant. Thus, when we fear for Arums the too much water given, forgetting their natural alternations between dry ground and swamp, we may be reassured by seeing this provision. *E. A. M.*

Home Correspondence.

Propagation of the Breadfruit Tree.—A method, or rather the only method by which this tree may be easily propagated to any extent, and which a fortunate accident revealed to the observant eye of "C. W. C., (see p. 118) is well known to those nations to whom the Breadfruit is the staff of life. They have been acquainted with it doubtless from time immemorial, and communicating it to them would simply be carrying coals to Newcastle, or owls to Athens. We know very little of the endless number of varieties of this tree—there are no less than 50 in the Society Islands alone—but this we do know, that by far the greater number do not develope seeds, and hence cannot be propagated by means of them. The method adopted in the tropics is therefore exactly that accidentally discovered by your correspondent, and I have often seen the South Sea Islanders chopping up a root and setting the different pieces in order that young trees might grow from them. If suckers could be obtained they were of course preferred, and would have he start of them by a few weeks. Tropical gardeners are not always that thick-headed race they are generally supposed to be. In the Fijis I heard once an animated discussion on the best method of growing Yams, which gave me rather a high idea of the reasons regulating the field work of a people who produce Yams, a single root of which is often 10 feet long. Nor are these people wanting in taste. Phyllomania, as I call the fashion for leaf plants—had taken possession of the mind of the Polynesians, as well as that of the Chinese and Japanese, ages previously to its infesting the continent of Europe or the British Islands; and many other facts might be mentioned, to prove that tropical gardeners could rather give than receive much instruction. *Berthold Seemann.*

Indoor Gardening.—I think "my friendly antagonist" misconstrues my remark in your paper of the 8th inst. respecting the advantage of a small greenhouse in a city, in order to afford a supply of plants wherewith to decorate our rooms. I do not wish it to be understood that I want to do away with room plants, but I contend that a greenhouse has many advantages over a plant case. When one cannot have either, then window gardening is a great pleasure to many admirers of flowers, and "E. A. M.'s" remarks on the subject are much to be commended as containing many useful hints. Dr. Lindley's observation of window plants which he saw abroad no doubt gives a prestige to the subject; but still, alas for the London and Dublin experimentalists, even Dr. Lindley must admit how very different the atmosphere is on the Continent from that in any of our towns or cities. I should be sorry to throw a "damper" upon the efforts of any lover of the science, being myself an ardent admirer of horticulture; and therefore I trust I may not be considered uncourteous if I again differ from my friend in my experience, having also enjoyed the privilege "long ago" of cultivating my taste, when (I can't but say) I did not find it by any means so difficult to grow plants in our conservatories as I do at present. *E. A. M., Dublin.*

Figs.—If your correspondent "S. Y. C." attends to your suggestion and pinches the shoots of his Fig tree instead of close pruning, then he will have abundance of fruit; there is no tree with which I am acquainted that dislikes close pruning so much as the Fig. I have some large trees here literally covered with fruit, some thousands appearing on each tree. They are planted close to and trained up a stable wall, with a south-east aspect. They are pruned just as you recommend, *i. e.* the ends of the shoots are pinched off when about 6 inches in length. The trees are covered with well-ripened spurs from top to bottom, and the fruit even thus early appears to be swelling fast. *G. A., Finedon Hall, Northamptonshire.*

Gishurst Compound.—Your Correspondent "Microscope" has found that this does not destroy the vitality of red spider's eggs. With other experienced authorities, washed trees have contrasted so favourably with those left unwashed as to convince them that the pest was checked. I believe the action of Gishurst to be threefold; its composition gives it the detergent property of soap, and at the same time it administers sulphur in its most active form, and if applied with a painter's brush it acts besides mechanically by dislodging the clusters of eggs from the forks and rugged parts of the bark where they have been deposited. Two years ago I had an American Apple-tree in an orchard house (a Northern Spy); on looking it over in winter, at every fork there was the suspicious red appearance a magnifying glass showed the enemy in great force. In this case I used a much stronger application of Gishurst than the strongest tried by "Microscope," making a strong lather by means of a wetted painter's brush on the surface of the Gishurst cake. This I scrubbed into the recesses of the bark, and did check the red spider. The tree last year was perfectly healthy; one of its beautiful fruit was figured in the *Florist and Pomologist* for last January. If "Microscope" be led by the above to make a third trial, may I caution him that i is only when the buds are quite at rest that they can be exposed to so very strong an application with impunity. *G. W.*

Tortoise.—I bought of a sailor's wife in the city last summer a small tortoise. On bringing it to the north I placed it in a greenhouse; but it soon found its way to a small pool of water at the end of the garden, where it swam about with gold fish, eating no vegetables, but pieces of raw meat. In autumn it buried itself in the mud, and was only seen 10 days ago crawling up a piece of stone—but it eats nothing! Can you say what food should be given to it now? From what part of the world it comes? and if unusual to live over our winters? There is also in the same pool of water a Lily making for flower, which has stood the winter; it is named "Aponogeton distachyon," from the Cape; it appears to be more hardy than is commonly imagined. I may also add that Thujopsis dolabrata (not the variegated variety), has stood the winter well here, in the county of Durham. *Norton, Stockton-on-Tees.* [What species of Tortoise was it? Aponogeton is notoriously hardy.]

Bougainvillæa spectabilis.—I herewith send you a spike of blossoms of this Bougainvillæa, whose flowering will doubtless soon become as much a matter of certainty as that of any other stove or greenhouse plant. Our plant here is about two years old, and is blooming most profusely, in an 8-inch pot standing on bricks over the hot-water pipes that heat the house; it is trained within 8 inches of the glass of the roof of a lean-to stove. I am of opinion that the plant trained as the one here is will do well in a greenhouse temperature, but the young shoots must be thoroughly ripened before dull winter weather sets in. It is indeed a beautiful object when in full bloom, and is well deserving of extensive cultivation. *John Smith, Syon Gardens, Brentford.*

Double Zinnias.—Your critic (see p. 144) is wrong in calling the illustration of Double Zinnia in Barr & Sugden's Catalogue an exaggeration. I saw exhibited at a flower show last August 12 blooms, each of which was 3 inches in depth, and fully as double and regular as the engraving. There is an inferior kind which perhaps he alone saw. *C.*

Fat Catalogues.—Your remarks were much needed. A friend suggests for a new kind of Celery with a scarlet blotch on its stalk, looking as if the cook's finger had been cut, the following name—"Apium graveolens cruentus digitus splendidum giganteus nova." Surely Diabolus the Perverter must have edited those atrocities. ***

Sowle Bread.—Some weeks since inquiry was made concerning this substance. As no satisfactory answer has been given allow me to send you some extracts from Halliwell's Dictionary of Archaic and Provincial Words, &c., from the 14th century, a work printed for private circulation only:—'SOOL.' Anything eaten with bread (North). Anything used to flavour bread, such as butter, cheese, &c., is called "Sowl" in Pembrokeshire. "Tytter* (sooner) want ye sowlle then sorrow" (Towneley, Myst. p. 87). Hence comes 'soul,' q. v. "Edulium, Anglicè sowylle," nominale, MS. XV. cent.

> Kam he nevere hom hand bare
> That he ne broucte bred and sowel.—Havelock, 767.

——'SOUL.' (1) To satisfy with food, no doubt derived from sowel or sool, q. v. (2) The black spongy part adhering to the back of a fowl. "Soule of a capon or gose, ame." Palsgrave, Subst. f. 65. (3) To soil or dirty; to stain.——'SOWEL.' Same as sool, q. v.——'SOULING.' To go a-souling is to go about, as boys do, repeating certain rigmarole verses, and begging cakes, or money in commutation for them, on the eve of All Soul's Day. These cakes are called Soul-cakes (Wilbraham). When the cakes were given, the person who received them said to the benefactor,

> "God have your saul,
> Bones and all."
> Blount's Glossographia, ed. 1681, p. 602.

——'SOLMAS LOAF.' Bread given away to the poor on All Soul's Day (North). Mr. Hunter has "somas cake," a sweet cake made on the 2d of November, and always in a triangular form.——'SOULMAS DAY.' All Soul's Day. "Le jour des mors" (Palsgrave, 1530).——'SOULDIE.' Pay, or wages (A. N.), "Solde," French. ——'SOUL SILVER.' The whole or a part of the wages of a retainer or servant, originally paid in food, but afterwards commuted into a money payment. *F.*

Serpentine Incubation. "Nova delectant."—The gorilla farce being ended, we are now treated to a novel interlude of a serpent hatching its own eggs. An impossible process! Dame Nature cannot sanction it. There is nothing in the composition of a snake that can produce it. The body of a snake is hard and cold and scaly; qualities quite useless in hatching eggs, which require warmth and softness and pliability when birds sit on them; and heat of the sun and dryness, when the atmosphere acts the part of a parent. Depend upon it, the eggs of the Pythoness were hatched by the warmth of the artificial atmosphere, quite necessary for her own existence in these cold and dreary regions. Likely enough too, the coils of the snake might have added a trifle by condensing the surrounding heat of the den. But even this is dubious. The Pythoness herself would comprehend nothing of what was going on at the time. Nature has ordered all snakes to deposit their eggs where those eggs can be assisted in their process of vivification by the rays of the sun, in the warm countries; and by the dung-hill, or by a heated atmosphere, or even by the warmth from our own bodies in these unpropitious climates. When I was a lad at school in the year 1792, I was near hatching the egg of a barn-door fowl, having secured it in the hollow of my arm-pit. But, a rascal of a boy maliciously pushed me down, and the egg was broken in the fall. *Charles Waterton, Walton Hall, near Wakefield.*

* Halliwell gives the following meanings of the word Titter:—(1) SOONER, earlier (North). "TITTER up kâ," *i. e.*, the earliest riser call the rest. This example is taken from Urry's MS. Additions to Ray.

> Ah! fadir, he said, takes to none ill,
> For with the geaunt fighte I wille,
> To luke if I dare byde;
> And bot I *titter* armede be,
> I salle noghte lett, so mote I the,
> That I ne salle to hyme ryde.
> MS. Lincoln, A. I. 17. f. 103.

(2) To tremble (Suffolk). (3) To seesaw (East).

Societies.

ROYAL HORTICULTURAL: *Feb.* 18: (*Floral Committee*).—This meeting and that of the Fruit Committee reported below took place in the Society's new Conservatory. Among subjects produced were flowering specimens of the beautiful Phalænopsis Schilleriana, of which a full account has been given by Mr. Williams at p. 116. These came from Mr. Robert Warner and Mr. McMorland; Mr. Bull also exhibited a small plant of this fine new Orchid, but not in flower. From the last named exhibitor also came some seedling plants of a pretty semi-double fringed white Chinese Primula, Cibotium princeps, Oreopanax dactylifolium, with deeply cut palmate leaves; Rhopala crenata and one or two other plants remarkable for the beauty of their foliage. From Messrs. Veitch came a dozen beautiful varieties of Lycaste Skinneri, all differing from one another, both in size and colour. Of Cattleya Warczewiczii various varieties were shown by Messrs. Warner and McMorland. These differed in intensity of colouring, especially of the lip, which in some was tipped with rich crimson, the sepals and petals being almost white. Mr. Standish showed a small specimen of a Japanese Lily, pale yellow, richly spotted with dark brown. The stem, which was furnished with long narrow leaves, stood about 1½ foot in height, and the petals of the flower reflexed like those of Lilium canadense. When well-grown and flowered it will doubtless prove very ornamental. For awards made on this occasion see an advertisement in another column.

Feb. 18 (*Fruit Committee*).—Mr. Newton, Enfield Chase, showed a small collection of Apples in a state of good preservation. From Mr. Butcher came a promising seedling Grape, a cross between Champion Hamburgh and Barbarossa. New Black Hamburgh Grapes, rather unripe, but well grown, came from Mr. Richards, Garnston Park, Tadcaster; and fruit of Passiflora edulis from Mr. Lamb, gardener, Osmaston Manor, near Derby. The latter were stated to have been grown in a cool conservatory.

Reviews.

Selecta Fungorum Carpologia junctis studiis ediderunt — L. V. Tulasne et C. Tulasne. Paris, 1861. Fol. pp. xxviii. et 242, tab. æn. 5.

If beauty of paper and type, correctness of drawing, and superior engraving, together with that taste in arrangement which contributes so much to the general effect of a volume, would alone constitute a creditable work, we have all combined in the treatise before us in a degree which has seldom been equalled. Happily however these are not its only, nor its highest merits. The learning, accurate observation, acute criticism, and unwearied industry, which have been brought to bear on the subject in hand, fully maintain the well-deserved reputation of its excellent authors, and render it on the whole one of the most remarkable works which have ever issued from the press. The reproach which is so often brought against continental writers, that their literature is confined within a very narrow circle, does not apply here. Trojan and Tyrian have been equally called in as helpers, and it would be difficult to point out any good source of information, whatever the views or country of the author may be, which has not been carefully and conscientiously examined, and more especially those of our own countrymen have met with a candour and freedom from prejudice which can scarcely be too highly praised.

It is well known to most of our readers that the study of Fungi has during the last 20 years made the most surprising progress. Not only has the real structure of the higher Fungi been ascertained beyond doubt, but proof has been brought forward, which it is scarcely possible to resist, that multitudes of the lower Fungi which have been referred to distinct genera are merely peculiar conditions of other Fungi, at first sight altogether different in structure. Meanwhile, numbers of anomalous productions, as Ergot, and the various Sclerotia, have been traced to their true origin, information has been accumulated tending to show that sexual differences exist amongst Fungi; light has been thrown on the phases of their propagation; their influence in producing disease amongst plants or animals has been more clearly demonstrated, and their mutual relations established on a more sure and permanent foundation. Facts moreover have within a few months been elicited, opening an entirely new field for research, which show that amongst Fungi no less than amongst Algæ, reproductive bodies are produced which exhibit phenomena similar to those which occur amongst the Infusorial animalcules, and which when thoroughly investigated will probably have great importance both in a practical and theoretical point of view. These more recent discoveries indeed were made since the projection of the present work, but before its publication some of them had been tested and appear now as established truths.

The subject then of Mycology offers so many subjects for investigation, and is of such high importance, not merely to the systematist, but to the Gardener, Farmer, and Physician, the Brothers of Tours, as they term themselves, have determined to bring out from time to time dissertations on especial points of interest, tending to a more complete and perfect knowledge of the subject. For the present number the genus *Erysiphe*, taken in its widest point of view, has been chosen, partly on account of the various modes of fructification which it exhibits, and partly from its immense importance as producing fatal diseases in Hops, Vines, Peaches, and other valued objects of culture.

Before, however, they proceed to the consideration of this particular group, a large part of the volume is devoted to the discussion of various questions in the history of Fungi relative to their true nature, their propagation, and mode of growth. First, the origin and nature of Fungi is considered; secondly their abundance, and purpose in the economy of nature; thirdly, their multifarious mode of propagation whether by gems or seeds; fourthly, the seeds themselves; fifthly, their germination and mode of dissemination; sixthly, the various nature of the seeds in the same fungus; seventhly, the structure of the seed; eighthly, the evolution on the germinating spore, and the various nature of the spawn or mycelium; ninthly, the controversies respecting sexuality in Fungi; and lastly, the present condition of the science of Mycology and what ought to be the aim of the Mycologist. These dissertations extend through 182 pages, and are couched in good classical Latin. Scarcely a sentence in them is without interest, but we fear that they will not prove very easy of comprehension to the ordinary reader, as the views of the authors, which are sometimes essentially metaphysical, cannot be grasped perfectly without very attentive study. As a store-house of facts, however, and indications of the quarter from whence information is to be derived, they are easily available to all.

One of the first to point out the identity of many different types of Fungi, was the learned mycologist Fries. This he did rather by tact than minute observation, and his predictions have in very many instances been verified. He regarded the naked spores and asci which occur in different types as mere modifications of one another, the spores being in fact reduced or degenerated asci. There are indeed some facts which tend to prove this, but our authors have taken a more metaphysical point of view, and regard the different forms of fruit which occur in different individuals of the same species, whether two or more, as distinct organisms, constituting together a whole, and by no means as degenerations of one original type. The question does not appear to us of much importance, but whether the Friesian notions of degeneration, or the Tulasnes' notions of a unity composed of two or more types be true, it still remains certain that to Fries belongs the honour of anticipating more modern views, while to the Tulasnes more especially, though there are other labourers in the same field, must be ascribed the merit of working out the problem announced by Fries, and extending its limits far beyond the original conception.

We have already borne testimony to the general correctness of our authors' conclusions. They are wrong, however, in supposing Fries to indicate the probability of there being 40,000 species of Agaric in the world. Fries does not say Agarici, but Agaricini; and even taking the whole group, the estimate is undoubtedly irrational. This however is but a trivial oversight, and it would be strange indeed if the finger of criticism could not point to one or two doubtful matters.

It remains to notice briefly the peculiar treatise to which the long and important dissertation to which we have been adverting serves only as a preface.

Though the peculiar group of Fungi on which it treats has before had the advantage of our authors' investigations, there was still some comparatively new matter left behind. One of the most interesting points is the illustration of the globule which crowns the cysts in the white mildew *Erysiphe guttata*, which is so common on the leaves of Ash, Beech, Hazle, and other trees and shrubs. These globules consist of a delicate sac composed of cells, at the base of which are seated parallel to each other a pile of short cylindrical bodies, divided above like little cuttle fish into a number of arms, each tipped with a little swelling. They have been observed by very few mycologists, and have been supposed to be parasitical, but the more probable opinion is that these are an indication of a new form of fruit, though five several forms have already been recorded in the genus.* Our authors have shown the Peach Mildew to be identical with that of the Rose, while that of the Hop is supposed not to be different from that of the Teazle. They are moreover of opinion that the fatal Vine mildew is merely a peculiar condition of *Erysiphe communis*, but if so it is strange that it should not have attacked the Vine before. The true fruit indeed of the Vine mildew has not yet been discovered, and till that rewards the researches of some observer, it is impossible to settle the question.

We conclude with recommending the volume to all lovers of Botany who have not forgotten their Latin. Our space precludes especial extracts, but some of the more interesting points may afford matter for future consideration. The drawing of the several objects is quite a study for all designers of microscopic objects, the light and shade and foreshortening being exquisite. We cannot leave the work moreover without noticing the high tone of religious feeling which pervades it, a tone which is too frequently wanting amongst Continental Naturalists.

* One of these, which consists in the germination of the contents of the terminal cells of the threads of the plant when in the Oidioid state, is probably dependent on the conversion of the included mass into zoospores. The late Dr. Plomley is, we believe, the only person who has witnessed this mode of fructification, which is well worthy of further investigation.

Garden Memoranda.

HECKFIELD PLACE, HANTS, THE SEAT OF THE RIGHT HON. VISCOUNT EVERSLEY.—Of this delightful country seat some account was given in our Volume for 1856; since then, however, many important alterations have been effected. On two sides of the house is a raised terrace garden, which in summer is a blaze of floral beauty, and in winter is rendered interesting by means of different kinds of evergreens, with which the beds are at present skilfully furnished. Beyond is a beautifully undulated park and pleasure ground, containing a piece of ornamental water, with islands planted with Rhododendrons and other American plants, which serve to beautify and vary the foreground, and which when viewed from the terrace and windows of the mansion have a striking and excellent effect. In the Park, which is nearly 400 acres in extent, are some fine Oaks, Elms, Beech, and other timber trees. Larch, too, seems to succeed admirably, fine specimens of it being scattered about everywhere throughout the pleasure grounds. A Deodar 54 feet in height is beautifully feathered with branches to the ground, and is altogether one of the most unique examples of that tree we have seen; Abies Webbiana succeeds well on a northern aspect. Of Wellingtonia we observed some thriving young trees, and of other rare Conifers there is also many handsome single specimens. Two fine trees of Pinus insignis, one about 54 feet in height, were killed by the severe frost in the winter of 1860. It is, however, to the kitchen garden and forcing grounds that we wish more especially now to direct attention. The Strawberries and other fruit exhibited at Reading and other places last year from Heckfield astonished everybody. Some account, therefore, of the way by which such results are obtained may not be without interest.

Pine Apples and Grapes are fit for table here nearly all the year round; but this season late Grapes, owing to the border having been renewed last year, have not lasted so long as usual, and early ones will not be in till April. The Vines expected to furnish the latter are planted out in a pit heated inside by hot water, and outside by dung-linings. They promise to yield a good crop. These are succeeded by an early Vinery in which the fruit will be ripe in May. In the latter the operation of summer pruning is conducted on a plan somewhat different from that usually adopted. Instead of having only one young shoot from each spur, three or four are left, with the view of having sufficient leaves to give extra strength to the wood. Vines treated thus are found to produce excellent crops of well coloured Grapes. Other Vineries to succeed these are being started, with the exception of the latest house, which is kept back as long as possible, and when the Vines in it do push they are grown on slowly. After the fruit is ripe this house is kept as dry inside as possible, and in order that the outside border may not get wet it is covered with Croggon's asphalte fastened on shutters each 2½ feet wide, and of a length corresponding with that of the border. Under these the surface soil gets as dry as dust, and Mr. Dwerrihouse, who is gardener to Lord Eversley, is of opinion that for purposes of this kind nothing could answer better. From this house some fine bunches have been cut. The sorts are Common and Mill Hill Black Hamburghs, the former of which have been found to keep sound longer than the latter. The border of the house in which these Vines are, although intended for the production of late fruit, is heated by means of hot air led from a Pine stove as follows:—the stove runs parallel with the border and is close to it, but still sufficiently below its level to allow the air of its atmosphere to be conducted in 6-inch drain pipes through the border to the front of the Vinery, where it descends into a hollow chamber below the border, and passes back again to the stove. It will thus be seen that a constant circulation of warm air is kept up at little or no additional expense, and in this way the soil in which the Vines grow, even during winter when snow is on the ground, can be kept at a temperature 20° higher than that of other borders similarly circumstanced, but not heated. For an early house, therefore, an arrangement of this kind would be invaluable.

The most forward Peach house has its fruit just set; the second is coming into bloom: standard trees for the upper portion of the roof are planted inside the house; but the roots of those for the lower part are in a border outside, over which there is a gravel walk. Notwithstanding this, however, the trees produce excellent crops, from 60 to 80 dozen of fine fruit being gathered from them every year. Strawberries occupy a shelf at top.

Against one of the garden walls is a kind of orchard house, which is, however, warmed by hotwater pipes. On the back wall of this house are Apricots, and in front Peaches, while in the centre are wintered scarlet Geraniums for vases. From this house, which is 70 feet long, an amazing quantity of fruit is annually gathered. Heat sufficient to bring it in a little before

that on the open wall is given, and no more; and owing to the house being thoroughly ventilated it is excellent in flavour, and hangs long on the trees.

Strawberries are being forced gently in a pit in bottom heat, furnished chiefly by leaves. The sorts are Keen's Seedling, Oscar, Alice Maud, Bicton Pine, Sir Chas. Napier, British Queen, Crimson Queen, Carolina Superb, and Hautbois. Out of doors Strawberries succeed admirably; the ground is very deeply trenched; the rows are nearly 3 feet apart, and the plants stand proportionately wide asunder in the row; there is thus plenty of room for liberal culture, and the plants produce large crops of fine fruit.

Potatoes are stored here in a pit under an arched brick roof, and shelves put up in the same place afford accommodation for other roots, which are wintered in dry sand.

Early Potatoes and Asparagus are forced in brick pits on beds of 2 feet deep of leaves put in dry; for surface heat 2-inch pipes are employed. Although no dung is mixed with the leaves they soon generate sufficient warmth. French Beans and other early crops of that description are also grown in the same way and in Vineries and all other houses where there is enough of heat.

In a ridge and furrow-roofed conservatory attached to the mansion is a collection of large Orange trees, most of which though very old have recently been retubbed. In summer they are set out along the terrace garden, where they produce a striking effect. In winter their place out of doors is in some measure occupied by Standard Portugal Laurels.

The fruit room still contains some fine specimens of Pears, especially of Beurré Rance, which are large and good from a wall. Among other sorts are Winter Nelis, Knight's Monarch, Easter Beurré, Beurré Diel, Ne plus Meuris, Prince Albert, Josephine de Malines, and even Passe Colmar. Apples also keep well in this house, whose walls are built hollow, and it also has a double roof. In winter the walls are covered with straw hurdles to keep out frost. In spring the latter make good protections for bedding plants.

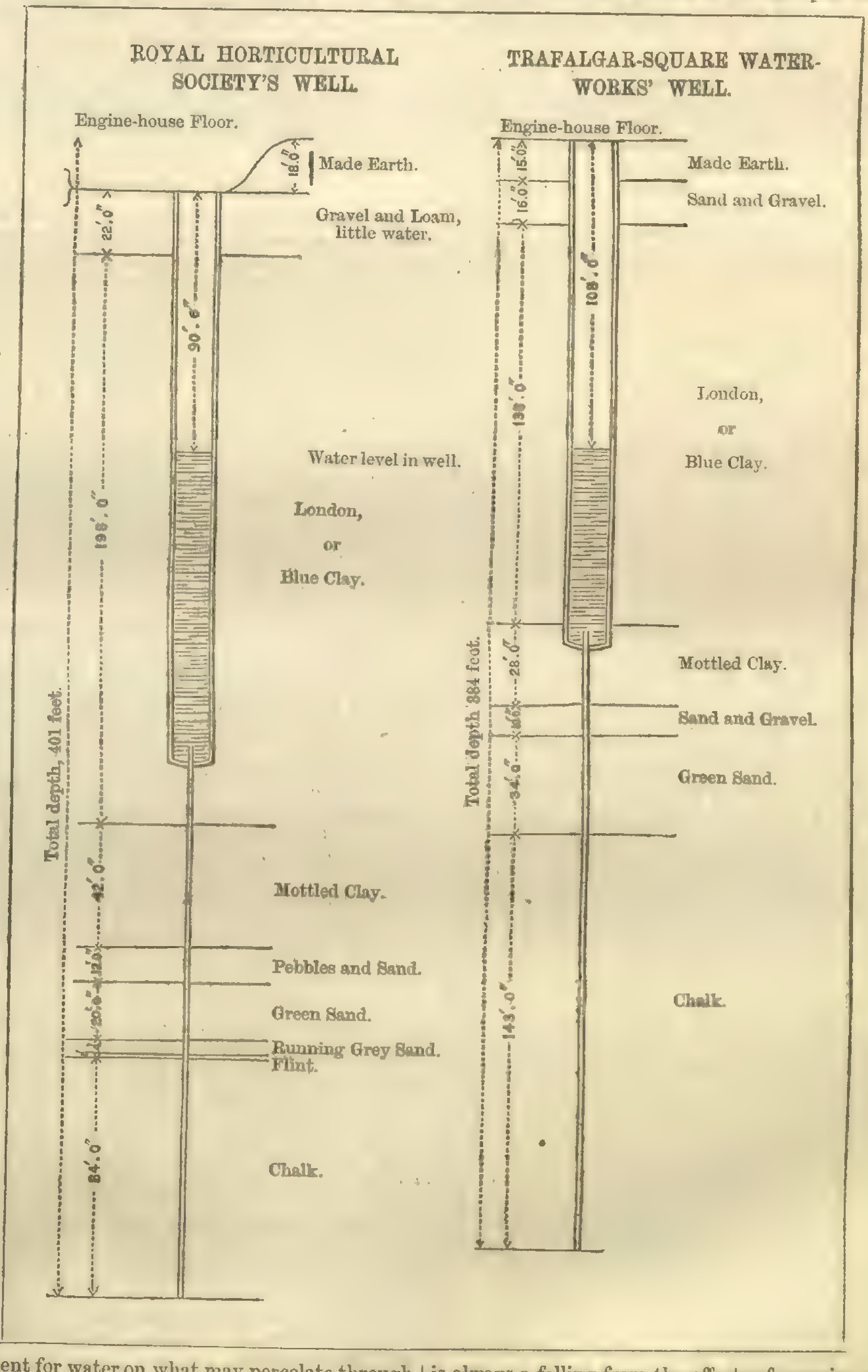
The borders and walls of the kitchen garden are well stocked with healthy trees. The Peaches especially are in excellent condition, and promise to produce abundant crops. Their blossoms are protected by means of a thin unbleached Hemp covering manufactured at Knutsford in Cheshire, at about 5½*d.* a yard; it is attached to rollers, as at Frogmore, and, being in 4-feet lengths when let down, it forms a close and efficient covering, and one which is very durable. The trees are dressed yearly with the usual mixture of soot, soft soap, Tobacco water and lime; but instead of applying it by means of a painter's brush it is put on with the garden engine, which does the work sufficiently well and much quicker than it could be done by hand. It can be made of a lighter or darker tint by adding a little more or less soot.

The different approaches to the house have been much improved, both as regards convenience and appearance; openings have been made here and there so as to bring into view distant objects of a conspicuous character. Shrubberies along the sides of walks have in some places been set back and faced with the finer kinds of Rhododendrons. The lawns, which are extensive, exhibit the best of keeping, and even at this comparatively dull season the general aspect of the whole place is extremely beautiful.

Miscellaneous.

New Artesian Well in the Garden at S. Kensington.—When the plan of the Garden was first settled, and ponds, basins, canals, cascade, and fountains resolved upon, the question still remained, how the vast amount of water required for these purposes was to be supplied. It was a matter which had been purposely left open. It was known that, at the worst, it could be had for a certain price from a Water Company; and, relying on this, the works were commenced. When these became so far advanced that it was necessary to determine the plan which should be adopted,—whether a large yearly rent should be paid permanently for water, or whether it would not be more economical to expend a larger sum at first in sinking an Artesian well, which would ever after give the necessary supply at a comparatively trifling yearly expenditure,—it was found that there could be no question as to which was the most expedient course, if it were certain that the Artesian well could be sunk for the sum at which it was estimated, that after it was finished it would produce the requisite quantity of water, and that the water so obtained would be suitable for the purposes of the garden (for is not the water from every Artesian well that is so). The estimated payment to the Water Company, with all economy in the use of the water, would three times exceed the most liberal use of the water gained from the Artesian well. But the sinking of Artesian wells is proverbially a lottery—some unexpected impediment may double or quadruple the estimated expense; or, after boring until the funds have been exhausted, the attempt has to be given up in despair; or, supposing the attempt to be successful, the supply of water may be insufficient, or, under the constant demand, may eventually become so; or, yet again, supposing the water to be obtained and to be sufficient in quantity, its quality may be unsuited for the purposes for which it is wanted, from its containing saline or mineral ingredients. These risks seemed so formidable, that the Council might perhaps have declined encountering them, had not Messrs. Easton, Amos, and Sons, the hydraulic engineers, relieved them from their embarrassment by undertaking to sink the well on the principle of "no cure no pay." These gentlemen were so confident of success, that they not only undertook to sink the well to the required depth (400 feet) for the estimated price, but also guaranteed a supply of 75 gallons of water per minute. This determined the Council to undertake the work. Supposing it successful, the great volume of water which they required for their cascade, basins and fountains, and which formed by much the greatest part of what they would have had to pay the Water Company for, would be supplied, and even although this water should turn out to be unfitted for gardening purposes, and it should be found necessary to procure what was required for them from a Water Company, a large saving would still be effected by getting the main supply from the Artesian well. The work has now been completed, the well bored, and the decision of the Council, as well as the confidence of the engineers, has been justified by the result. Not only has the well been sunk at the estimated cost, and water been found at the expected depth, but it has been found of the purest and softest quality, and in such abundance, that, instead of supplying merely from 100,000 to 110,000 gallons in the 24 hours (the quantity stipulated for), it can readily supply a million gallons in that time, if larger pumps and more powerful engines were employed. The total depth sunk and bored is 401 feet—a well having been sunk to the depth of 226 feet, and a bore thereafter carried down 175 feet farther.

The accompanying woodcut shows the nature and depth of the geological formations through which the well passed. For the sake of contrast, a similar cut of the Artesian well which supplies the Trafalgar Square fountains, the Palaces and Public Offices, is placed alongside of it. The latter sketch, so far as the strata and their depths are concerned, very well represents the usual relations of these as found in numerous other Artesian wells which have been sunk in the London basin. It will be seen that the strata at the spot bored by the Society differ somewhat from the others—the London clay, especially, being found of much greater depth than is usually the case. It would appear as if, in ancient days, the spot where Kensington Gore now stands, had been one of the deep parts of the basin in which the London clay was being deposited. The two wells, however (that of Trafalgar Square and that of the Society), correspond in one point which is of excessively rare occurrence, wholly beyond provision, and a pure matter of chance: out of numerous wells bored by Messrs. Easton, Amos & Sons, for instance, these two are the only instances in which it has occurred. Whilst boring through the chalk, in both cases, the instrument came upon a fissure and dropped down a space of several feet. To understand the significance of this, it is necessary to remember that the way in which the water in the chalk finds its way to the surface, or into the sea, is through such fissures. An example of its finding its way to the surface from them may be seen in the river Wandle, which takes its rise at Carshalton, near Croydon, pouring out of its source through such fissures a river ready made. An instance of its falling into the sea out of such fissures may be seen at low water near Brighton, where a succession of vertical fissures from the narrowest chink to 6 inches wide, occurring at varying distances from each other, pours out an immense quantity of fresh water. Such fissures act as the main channels by which the water in the chalk finds its way to the sea. When a well sunk into the chalk does not fall upon one of these,



it is dependent for water on what may percolate through the surrounding chalk into the well; but if it hits upon a fissure, it draws its supply from a stream itself, and it will, of course, depend upon its size how far it may be exhaustible. The quantity of water percolating through the chalk, however, is so great, that for all ordinary purposes, any well sunk for some depth in it is sufficient. If a very large supply is not wanted, the only drawback on such a well is that it may be lowered by unusual or continuous pumping, so as to require some time to be given to allow it to refill; and that in course of time the standing point of the water gradually sinks. A well which has dropped upon a fissure, on the other hand, may apparently be pumped for ever without lowering its standing point. It draws its supplies from a running stream, as it were, and as fast as it is pumped out it flows in. This remark, however, only applies to the standing point when it has once been found; for after the well is opened and first tried, there is always a falling from the effects of pumping until the proper level is reached. In the Trafalgar Square well, which was sunk in 1844, the pumping of 100 gallons a minute for 48 hours lowered its surface 4 feet, and it has ever since maintained the same standing-level, varying only with the season. The Society's well has only been lowered 16 inches by the same amount of pumping. The supply of the Society's well may, therefore, be fairly reckoned to be many times larger than that from the Trafalgar Square well, which previously was the largest in London. It will also be observed that the standing level of the Society's well is in point of fact actually considerably higher than that of the Trafalgar Square. This may perhaps be accounted for by the greater number of other Artesian wells sunk to the eastward of the latter, and possibly also by its being nearer to the outlet of the water. The Fellows may, therefore, congratulate themselves on possessing the finest well in the Metropolis. To form

some idea of what such a phrase really implies, and of the importance of their possession, we must calculate what the supply which could be furnished would bring if it could be sold at the price charged by the Water Companies, viz. 6*d*. per thousand gallons.

Assuming that the well at Kensington can furnish 1,000,000 gallons per day, and that it could be utilised, it would, on the same rates, and allowing for larger engines to work it, yield a yearly return of 7500*l*. in the gross to the Society, or above 5500*l*. net profit. Such speculations are not unreasonable, neither are they out of place. The Royal Horticultural Society may not choose to add to its other duties and names, that of "Water Company (Limited)"; but it is an important thing for the Fellows to know that they do possess a very valuable property, which might be turned to good practical commercial account, should occasion ever demand it.

Proceedings of the Royal Horticultural Society.

Cement for Rooms.—A recent invention by M. Sorel is described to us. He states that the invention consists in the discovery of a property possessed by oxychloride of zinc, which renders it superior to the plaster of Paris for coating the walls of rooms. It is applied in the following manner:—"A coat of oxide of zinc mixed with size, made up like a wash, is first laid on the wall, ceiling, or wainscot, and over that a coat of chloride of zinc applied, being prepared in the same way as the first wash. The oxide and chloride effect an immediate combination, and form a kind of cement, smooth and polished as glass, and possessing the advantages of oil paint, without its disadvantages of smell," &c. *Builder.*

Mexican Plants. — Proceeding towards Tejulpico, where the civil war raged in all its fury, M. Rœzl made an important discovery, upon which he congratulates himself in these words:—On this dangerous route I was fortunate enough to meet with a new Melastomad having very large red flowers and brilliant leaves, which I named Centradenia grandiflora (an untenable name, which has long since been otherwise applied). It lives in the cold region, and the ground where I found it was entirely covered with hard frost. Avoiding Tejulpico under the direction of a safe guide, we continued our route in silence, having neither time nor inclination to examine plants until beyond the reach of the hordes (of ruffians who infest the country). The road was full of interest; I saw a new species of Galphimia which unfortunately had no ripe seed upon it; also a plant near Franciscea, which was entirely covered with white flowers like snow, of which I was able to collect some seeds. A Stannia Mexicana was entirely covered with ripe fruit; I also gathered fruit from several climbing Asclepiads, and from a magnificent Combretum, which had completely covered the tree that supported it with a mantle of scarlet flowers. In the neighbourhood of Huetamo, a town situated in a valley, grew most luxuriantly a yellow-flowered Stigmaphyllum, also a magnificent leaved Cassia grandis; this plant grows three feet high, with leaves as long as the whole plant. In this locality M. Rœzl saw for the first time a wild Pilocereus chrysomallus from 6 to 8 yards high. Its columns, covered with black or yellow wigs, formed a singular contrast with other species of Cereus rivalling it in size. The next day M. Rœzl gathered seeds of Echites melaleuca, from a specimen growing on the banks of a river, and displaying its beautiful pointed leaves. After having travelled for six days, our traveller reached Spirito-Santo, where he made a fresh halt. This hamlet consists of 150 miserable huts, inhabited by miners who work the rich veins that have been discovered in the neighbourhood. Pilocereus chrysomallus or militaris appears to have established itself there, for it is very common, as well as a species of Thrinax, a Palm 60 feet high. Close by rises a tolerably high mountain known by the name of Sierra de Spirito Santo, towards which my fancy took me, although the people of the country maintained that nothing could grow there. In this place the sky is always clear, the heat intense, so that the ascent is no little matter. However, nothing daunted, I started at an early hour in the morning, and reached the top by 11 A.M. I was repaid for my exertion by finding a capital plant. The king of all the Agaves, and all the Littæas, was enthroned in this solitude. At first I thought I saw an Agave before me, for its appearance was altogether like that of Agave filifera; its leaves grew cross ways, covered with white threads, producing a fine effect where from age they had turned red. Two specimens were in full flower, from a third I was able to gather seeds. However I convinced myself it was a Littæa, to which I gave the name of Littæa Rœzlii, in honour of my aged father. The genera Agave and Littæa are easily distinguishable by their inflorescence. The Agaves have the flowering stem branched like a kind of lustre, the Littæas on the contrary have the stem straight without any kind of branching. In Europe mistakes are often made with respect to the nomenclature of these plants, to which wrong names are generally assigned. Thus they say Bonapartea juncea instead of Littæa juncea. The Bonapartea gracilis of gardens does not even belong to the genus, but to that of Dasylirium, as does Pincenectitia. Agave filifera on the contrary is a true Agave. I collected with all possible care the seeds of this precious plant. I also found plants 6 feet high covered with seeds, which I took for a new species of Zinnia, and a very beautiful Inga, with very large heads of bright scarlet flowers. *Revue Horticole, Jan.* 16.

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Young Allamandas, Clerodendrons, Torenias, and other plants of that description, if encouraged with a little bottom heat and other favourable circumstances, will form nice-sized specimens in a few months, and large masses of Statices, than which few plants are more useful, will, under skilful treatment, be obtained in a short time. The showy Impatiens Jerdoniæ should also be encouraged by every possible means to make wood, and let it be propagated as quickly and freely as possible, for it is just the plant that is wanted for autumn decoration. The pretty dwarf Heliotropium Voltaireanum will likewise be found useful for blooming under glass where sweet-scented flowers are in request. In fact, where the stock in hand is deficient not a day should now be lost in making every possible effort to provide considerably more than is likely to be wanted, so as to be prepared against any accident or extra demand, should such occur. Push on Camellias with gentle warmth and weak manure water. Also get a portion of Epacrises into gentle heat. By getting them to flower early, starting them into growth in good time, and getting their wood well ripened, they may be had in full blossom in November, at which season their flowers retain their beauty much longer than after the sun becomes powerful in spring. Proceed as diligently as possible with the repotting of such of the hard-wooded greenhouse plants as require it, so as to afford them every chance to make a vigorous start. Be careful, however, before potting, to have the ball in a nice moist state, and avoid giving large shifts to weakly growers.

FORCING DEPARTMENT.

Pineries.—Attend carefully to the bottom heat; where tan is used, see that the temperature is not allowed to rise too high, which it is exceedingly apt to do after fresh materials have been added, either during bright weather, or where there are pipes under the bed. Where much fire-heat is used it requires some practice and attention to be able to keep the soil in a proper state as regards moisture, but this must be effected at any expense of attention if success is to be insured. Maintain a thoroughly moist atmosphere, but do not push young stock too fast until we have more sunshine, when if all is right at the roots there will be no danger of drawing the plants. Avoid allowing water to lodge in the hearts of plants showing fruit, and do not wet the flowers of those in bloom with the syringe. Pot off or plant out suckers as they can be obtained sufficiently strong, and attend to keeping up a regular succession, which is the surest way of providing the necessary amount of fruit.

Vineries.—See that the houses in which the Vines have not yet started are properly cleaned, the Vines painted with the usual composition of soft soap, sulphur, &c., and everything put into proper working order; also get the rods bent in time to induce the buds to push regularly. Attend to disbudding and stopping, &c., as may be necessary in the succession houses, and see that the inside borders are kept properly moist, giving tepid manure-water as may be necessary to effect this, and do not be afraid of giving too much of this to Vines in pots, except such as already have ripe fruit on them.

Peaches and Nectarines.—Let it be remembered that these will not admit of rapid forcing, especially in the early stages of the process; therefore fire-heat should be applied with caution; let not the night temperature exceed 50°, otherwise the blossoms will be weak and liable to drop; during the day the temperature may rise to 60°, admitting plenty of air on every favourable opportunity. Syringe the trees and close the house early after a bright day; continue this until the blossoms begin to expand.

Cherries.—If not already done, place trees in pots in the early house. Top dress with fresh loam and dung, and keep up a moist atmosphere with a night temperature of 45°. Admit air freely during the daytime.

Cucumbers.—Stop and train the plants as they progress, and do not allow the leaves to crowd one another; water occasionally with weak clear liquid manure.

Mushroom House.—Collect fresh droppings and put them together in a dry place to heat, preparatory to their being wanted.

FLOWER GARDEN AND SHRUBBERIES.

Attend carefully to the stock of bedding plants, and get rooted cuttings potted off as soon as they are in a fit state for that purpose, and encourage them with a gentle bottom-heat and careful management to make quick growth, for after this season there is no time to be lost with young stock. Calceolarias, if well established, may be planted out next month, should the weather be favourable, in a turf pit on poor sandy soil where they can be protected from cold winds, but they must be prepared for this by previously inuring them to full exposure to sun and air whenever the weather will permit. Their place under glass can be profitably occupied with recently potted-off stuff, and with ordinary care they will do better planted out than stunted in small pots. Tender annuals must now receive attention. Heat is indispensable to the raising of these, though not necessary to flowering them; indeed, most of them would bloom more beautifully if planted out in June in a warm sheltered part of the garden, than if treated as greenhouse plants. Commence sowing this month, and continue till the end of April, in pans, placed close to the glass, in a temperature of from 60° to 65°, keeping the soil moist, and shading from bright sunshine. Great care must be exercised to prevent the plants from damping-off or getting "drawn" from want of air. As soon as they can be handled, prick off singly into small pots, or place three round the edge of a 4-inch pot, plunging them in a gentle heat till they can be safely trusted in the open borders, or they may be pricked out in rows in a spent hot-bed, shading carefully, and giving plenty of air when the weather will permit. To secure fine plants and a profusion of bloom it is of the greatest importance to sow early.

HARDY FRUIT AND KITCHEN GARDEN.

Orchard houses and glass cases should have air daily during sunshine, but close early if there is any appearance of frost. Finish pruning and nailing as soon as possible. Prepare stations for Cauliflowers and Lettuces that have been wintered under glass, selecting a sheltered deep rich piece of ground. It is a very good practice in planting out things that are at all tender at an uncertain season to throw up the ground in good strong ridges running east and west, planting on the south side of the ridge. The plants are thus sheltered from the north winds, and fully exposed to the sun. Take advantage of dry days to stir the surface of the ground among growing crops, and to prevent weeds from making their appearance.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the Week ending Feb. 19, 1862, as observed at the Horticultural Garden

February	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Thurs. 13	14	30.044	30.001	39	33	36.0	43	42	N.E.	[illegible]
Friday 14	○	30.052	30.033	44	34	39.0	43	42	N.E.	[illegible]
Satur. 15	16	30.101	30.032	45	30	37.5	43	42	E.	[illegible]
Sunday 16	17	29.956	29.676	45	33	39.0	43	42	E.	[illegible]
Mon. 17	18	29.475	29.370	48	38	43.0	43	42	E.	.14
Tues. 18	19	29.364	29.270	53	39	46.0	43½	42	S.W.	[illegible]
Wed. 19	20	29.543	29.419	55	44	49.5	45	42	S.E.	[illegible]
Average		29.933	29.686	47.0	35.8	41.4	43.3	42.0		[illegible]

Feb. 13—Overcast and cold throughout.
— 14—Hazy; overcast; cloudy; overcast at night.
— 15—Foggy; hazy; overcast; very slight frost.
— 16—Fine throughout the day; hazy, rain at night.
— 17—Rain, with fog; dark and foggy at night.
— 18—Hazy; rain; drizzly; overcast at night.
— 19—Fine; overcast; rain at night
Mean temperature of the week 3 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending March 1, 1862.

February.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 23	47.0	39.2	32.9	13	.44 in.	4	4	6	2	1	10	6	[illegible]
Mon. 24	45.2	32.8	39.0	17	.60	—	3	6	3	7	6	4	[illegible]
Tues. 25	47.6	32.5	40.0	19	.92	2	5	6	—	6	9	5	3
Wed. 26	47.5	33.1	40.3	20	.48	4	5	5	1	4	6	8	3
Thurs. 27	48.2	33.8	41.0	18	.40	3	5	4	2	6	8	5	3
Friday 28	49.0	33.8	41.4	14	.84	1	7	5	—	2	8	5	5
Satur. 29	47.6	34.1	40.9	14	.62	—	7	2	1	5	10	7	4

The highest temperature during the above period occurred on the 27th, 1846—therm. 62 deg.; and the lowest on the 24th, 1860—therm. 18 deg.

Notices to Correspondents.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

Artocarpus incisa. *Ignoramus* has adopted an appropriate name. The experiments mentioned by C. W. C. were made in the Royal Botanic Garden, Kew.

Bees: *J T.* We have never been able to derive any practical advantage from Books. "Milton's Practical Bee-Keeper" is as good as any.

Books: *M R.* Paxton's Botanical Dictionary is the most recent. There is no likelihood of anything better being published. So far as names go, you had better consult in addition the supplements to Loudon's Hortus Britannicus.

Conifers: *L C M.* If you can manage it plant them out in August or September when the earth is warm, previously giving the hole a soaking with water. Plant Rhododendrons when coming into flower.

Dwarf Annuals: *T S P.* The following may possibly answer your purpose, viz., Calandrinia umbellata, Cenia turbinata and its yellow variety, Clintonia pulchella, Gilia tricolor, Leptosiphon luteum, Nolana grandiflora, Limnanthes alba, Phlox Drummondi, Clarkia pulchella nana, Nemophila insignis, and, though not perhaps strictly an annual, Saponaria calabrica.‡

Fruit Room: *A Constant Reader.* The window should face the North.

Glazing: *H W.* The pitch of the roof should not be less than 45°.

Gooseberry Bushes: *J C.* They are smothered by Orthotrichum Moss and sundry yellow and grey Lichens. Scrape these off, and drain the ground 3 feet deep. Young bushes will be attacked in the same way if the land remains in the same state.

Lectures: *F R H S.* We are quite unable to give you any advice.

Names of Plants: *O O.* Cyclamen Coum.—*J C.* Fuchsia arborescens.—*E B C.* The Cactus cultivated in Sicily as food for cattle is C. Opuntia.—*Alpha.* 1. Lastrea patens; 2 Grammitis rupestris.

Orchid Growing: *G H P.* You shall have a *full* answer next week. A curt one will avail you nothing.

The Gladiolus Corm: *J Churchfield.* The old corm you sent us some time ago was breaking up into a multitude of little ones, each of which in skilful hands would have grown. We regret, however, to say that the gardener to whom it was entrusted was not up to his work and let it and all its brood perish. If you meet with another such case we will take it in hand ourselves.

Vancouver: *An Inquirer.* We really cannot undertake to answer inquiries. The road being pointed out, emigrants must address themselves to shipping agents. You may proceed by New York, or Panama, or Cape Horn, just as you please. The last is cheapest. You should consult a map.

Seeds of Crop 1861.

CHARLES SHARPE AND CO., having completed the Harvesting of their Seeds, comprising Turnip, Mangel, Carrot, Peas, Beans, and all other varieties of Culinary and Agricultural Seeds, will be glad to forward post free on application their WHOLESALE PRICED CATALOGUE for the present season.

Sleaford.—February 22.

GENUINE ITALIAN RYE-GRASS, produced from the second cut of Foreign "Italian," weighing up to 21 lbs. per bushel, and "Pacey's" and "Evergreen" Perennial Rye-grass, weighing up to 28 lbs. per bushel, can be supplied direct from the Grower either now or in March (at the option of the purchaser), and samples will be forwarded free on application.
Address SIMON A. DAINTREE, Fendrayton, St. Ives, Hunts.

To the Seed Trade.

FREDERICK W. WENDEL, SEED MERCHANT, Erfurt, Prussia, begs to offer the following Seeds of carefully selected Stock of good growth :—
CARROT: Altringham, Long Red; Orange Red, Belgian; Early Horn; Earliest ditto, for Forcing.
ONION: Straw Colour, true; Silver Skinned; Darkest Blood Red; Pale Red, or Flesh Colour, excellent for general crops; Pear-shaped Yellow; Yellow; Giant Madeira; James'sKeeping
BEET: Darkest Blood Red.
TREE SEEDS: Silver Fir; Spruce ditto; Scotch ditto; Larch.
Prices, &c., for the above, to be had on application to GEO. MACINTOSH, Seedsman, &c., High Road, Hammersmith, W., London; and where also GENERAL PRICE LISTS can be obtained free and post paid.

THE ENGLEFIELD YELLOW GLOBE MANGEL WURZEL, warranted to grow more weight per acre than any other variety of Globe Mangel. The Raiser and Advertiser, Mr. ANDREW HORSBURGH (Steward to R. Benyon, Esq.) Chalk Pit Farm, Englefield, Reading, Berks, has 15 sacks of hand picked seed for sale either in bulk or in bags of not less than ..., at 1s. 6d. per lb. Roots of this superior variety frequently weigh from 30 to 40 pounds each. Mr. HORSBURGH has taken upwards of 100 Prizes in Cups and Specie for Mangel Wurzel at Birmingham, Crystal Palace, Reading, Abingdon, &c. The above is not grown from seedling roots, but from large selected bulbs, which materially affects the weight per acre of a general crop.
Orders received by Mr. HORSBURGH, or by Mr. G. KNIGHTS, Whitton, Ipswich.
N.B.—The only reliable source to obtain the stock in its purity. All orders from persons unknown must be accompanied by a Post Office Order, or no notice will be taken of them.

MANGEL WURZEL
AND
TURNIP SEEDS
from Large Roots at low prices.

SUTTON'S PRICED LIST
will be sent gratis and post free.

Royal Berkshire Seed Establishment, Reading.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,
And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

Royal South Hants Seed Establishment

PAGE AND TOOGOOD have the honour to offer the OSBORNE MANGEL, the stock of which was presented to them by His late R. H. the Prince Consort's Steward, A. TOWARD, Esq., by whom it is considered the best variety in cultivation. In shape it is as perfect as a Globe Turnip, with a similar tap root, the foliage small and very compact, indicative of less impoverishment of the soil than can be said of most other sorts. It has carried off every prize for shape where exhibited. A great portion of the seed has been ordered by those who saw it growing, and P. & T. being anxious to get it into general cultivation, would prefer supplying it in quantities not exceeding Ten Pounds.

PAGE'S IMPERIAL ORANGE GLOBE MANGEL.—A large stock of this has been provided to meet the demand that has arisen for it. Its superior weight producing and keeping qualities are well known. The prize for the best 10 Acres has this year been awarded to it by the Botley Farmers' Club. STEWART MACNAGHTEN, Esq., grew 61 tons 2 cwt. per acre of it by ordinary cultivation. W. DICKINSON, Esq., produced six specimens, weighing when perfectly clean, without leaves or roots, 193 lbs., the largest of which, 44 lbs. At the Vale of Avon Farmers' Club, six prizes were awarded to ... acreage.

PAGE'S IMPROVED HARDY SWEDE still maintains its superior character for general cultivation. It carried the 10 Acre Prize at Botley.

BIRMINGHAM ROOT SHOW.—The Ten Guinea Cup for the best collection, and the Five Guinea Cup for Swedes have been again brought to Hampshire—being the third time in succession the former has been awarded to Sir W. Heathcote, Bart.—This not only reflects great credit upon the management and skill of his Steward, Mr. Charles, but the County should be proud of the distinction conferred upon it, by his energy and judgment, in carrying these Prizes (that for Swedes against ... competitors). As Hampshire Seedsmen, we have great pleasure to speak of his success.

Special Contracts made for the supply of all AGRICULTURAL SEEDS in large quantities.

☞ Our Goods are delivered Carriage Free.

PAGE & TOOGOOD, Seed Merchants and Growers, Southampton.

ROYAL AGRICULTURAL SOCIETY of ENGLAND, London, 1862.

TENDERS for GREEN FODDER, HAY, and STRAW.
Persons desirous of Tendering for the Supply of either of the following, viz.:—1st, from 10 to 20 Acres of GREEN FOOD, consisting of Green Vetches, and of Green Clover or Trifolium; 2d, of HAY, 50 Loads more or less of the best quality; 3d, of STRAW, from 100 to 200 Loads, of 36 Trusses each, for use in the Society's Show Yard in Battersea Park, from the 21st JUNE to the 2d of JULY, can obtain particulars, and Forms of Tender, on application to H. HALL DARE, Secretary.
Last day for receiving Tenders, 3d March.
12, Hanover Square, London, W.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.

METROPOLITAN SHOW, 1862.
Last day of Entry for Implements, March 31.
Last day of Entry for Stock, May 1.
STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. HALL DARE, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, FEBRUARY 22, 1862.

MEETING FOR THE ENSUING WEEK.

WEDNESDAY, Feb. 26—Agri. Society of England.. .. Noon

—— THE weekly meetings of the English Agricultural Society have not hitherto been of much utility. At the first of the series this session very little serviceable information was forthcoming. At the second (last Wednesday) none at all.

In its absence there arose a discussion (1) on the unfitness of the day and hour, more particularly with reference to members of Parliament, for whom Wednesday is inconvenient; and (2) on the method by which these weekly meetings are to be utilised.

On the former point it soon appeared that Wednesday had been adopted after so long an experience of its superiority, and so fair a trial of other days, that the existing arrangement could not easily now be set aside.

On the latter point a prolonged conversation, to which Mr. FISHER HOBBS, Mr. FRERE, and others contributed, resulted in the announcement by Sir C. KERRISON that he would, at the next monthly meeting of the Council, move the appointment of a Committee to confer with the Journal Committee in order that means might be devised for ensuring every Wednesday the reading of one or more papers of agricultural interest. It appears that hitherto no effort has been made for obtaining such papers, or for rendering these meetings useful. If any letters of agricultural interest *happen* during the week to have been addressed to the Society they are read on Wednesday; if none have arrived, as was the case last week, then there is nothing to be done! It is plain that on this plan the meetings themselves will remain, as hitherto, utterly useless. That they may be made an engine of great agricultural utility is, on the other hand, equally manifest; and the way to do it was by one of the speakers clearly enough announced. The provision of the agricultural information and the literary ability, both of which to some extent are needed for the purpose, must be made a simple matter of business. The labour which it is proposed to put on qualified men must be *purchased*. It may indeed be urged that sufficient sums are already disbursed by the Journal Committee—but if these sums have not been sufficient to produce what the members need, more power still must be given them. We venture to say that there is not one of those editors of weekly agricultural papers whose experience and previous services to agriculture were a disadvantage to them in the judgment of the Journal Committee, when a Journal Editor was wanted, who will not at once, and as a thing for which all the habits of ordinary employment fit him, readily undertake the weekly provision of papers from practical men on topics of current agricultural interest. There are but a dozen or thereabouts of these weekly meetings available for this purpose in the course of the year—and it is a remarkable thing that Mr. FRERE should desire to shorten their number by postponing them for the most part, as he proposed last Wednesday, till after Easter.

—— THE Kelso Association for analysing and testing manures presents an example worth copying. They have recently undertaken the task of testing seeds and foods as well as fertilisers. Hitherto the operations of the Association have been confined to the analysing and testing of manures and feeding stuffs; but at the last meeting the Secretaries were directed to communicate with Professor BALFOUR, of Edinburgh, to ascertain if he could undertake the duty of testing any seeds which might be sent to him; and it was remitted to the Ordinary Committee to make the necessary arrangements for getting the seeds which will be used by the farmers during the current year tested by him or some other competent person. The plan of regulating the subscriptions for members is also one worth noting. The subscriptions payable by the members for the current year are to be at the same rate as last year, viz., 3s. per 100 acres of arable land occupied by each.

—— AN elaborate series of reports of the harvest of 1861, such as we gave in our columns last August, appeared last Monday in the *Mark Lane Express*.

Of the returns of the Wheat crop, 75 per cent. were "under average," about 20 per cent. were "average," and 5 per cent. were "over average." In our own returns last Autumn, 57 per cent. were under average, 37 per cent. were average, and 6 per cent. were over average. The result of the harvest after threshing has proved worse than had been anticipated.

Of the Barley crop, according to our contemporary, 32 per cent. was "under average," 52 per cent. was "average," 16 per cent. was "over average." In the estimate of our own correspondents at harvest time these figures were 15, 47, and 38 respectively. Here too, therefore, if the former figures are to be taken as describing actual experience, the estimates were too favourable.

Of Oats the *Mark Lane Express* declares 12 per cent. to have been under average, 46 per cent. to have been average, and 42 per cent. to have been over average. Our own figures were 13, 37, 50 respectively, which very nearly correspond with those of our contemporary.

Of the Bean crop 39 per cent. of the returns to the *Mark Lane Express* were under average, 39 per cent. were average, and 22 per cent. were over average. Our own returns in August were 50, 39, and 20 respectively, which are not materially different, though somewhat less favourable. The Pea crop is now quoted—20 under average, 54 average, and 26 over average. In autumn the returns were 12, 33, and 55 respectively, which again was a rather more favourable account of the crop.

A comparison of the two sets of figures leads to the conclusion that a very fair estimate can be formed of the yield at harvest-time, provided a sufficient number of trustworthy men be consulted. The conclusion at which our contemporary arrives, is that 10½ millions of quarters of Wheat must be imported to meet the deficiency of last harvest. This is arrived at thus:—4,000,000 quarters are needed to meet the deficiency of extent sown; 3,000,000 to meet the deficient crop; add 5,000,000 the *average* import, and deduct 1½ million for excess of weight and quality of grain.

—— In the House of Commons on Tuesday last a committee was granted on the motion of Mr. BRADY to inquire into the best means of utilising the sewage of cities and towns in England. The matter, according to Mr. BRADY, is worthy of consideration both on social and sanitary grounds. He did not introduce the subject with the view of promoting the interests of individuals in this metropolis, but for the general interests of the nation; for, if the metropolis once adopted the system of utilising the sewage, the other towns of the kingdom would follow. About the fertilising qualities of sewage there is no doubt.

Professor LIEBIG had alleged that, if England intended to continue a great agricultural country, she should apply herself to the problem of utilising the night soil of her large towns; and Lord PALMERSTON at the Lewes meeting of the Royal Agricultural Society of England had expressed the opinion that the progress in chemical science, and the application of that science to practical agriculture, would lead to something which will render us less anxious and solicitous about land; so that, instead of sending to the other end of the world for manure, we shall find something nearer home for the purpose. "The dirt of our towns ought to be on our fields, and we ought not to allow decomposed substances in our towns to pollute the atmosphere, corrupt health, promote disease and pestilence, and destroy life. If a system could be devised whereby substances which are noxious could be utilised, not only the health of the towns' population would be greatly improved, but the agricultural interest would derive great pecuniary advantages from the change."

Let us hope that the information to be elicited

by this committee will tend, by the information and correction of public opinion, to facilitate the attainment of the object so well described by Lord Palmerston and so long desired by both agriculturists and citizens.

—— Mr. Jackson, a farmer at Garton-on-the-Wolds, near Driffield, purchased three tons of cake from manufacturers of Linseed cake at Driffield, and fed some sheep and cattle with it. He was dissatisfied with the progress his stock was making, and thinking that perhaps the neglect of his servants to feed them might have something to do with it, resolved upon feeding them himself. Things got from bad to worse, and seven of the cattle died, besides seven ewes and 20 lambs; his steers became of less value, and the cows fell off in the yield of milk.

Accordingly an action was brought against the defendants for warranting that certain oilcake was reasonably fit to be used for feeding certain sheep and cattle; yet it was not so, whereby the cake became of no value to the plaintiff, and divers cattle and sheep to which the plaintiff had given it, became sick, diminished in value and died.

Dr. Letheby said that 10 samples of Linseed cakes had been forwarded to him for examination. He discovered no trace of mineral poison in them. He found that the great bulk of them was Linseed, but they also contained Rape and Mustard seeds, Charlock or Wild Mustard, and some black seed, the nature of which he could not determine; it was extremely hard, and the millcrushers complained that the seeds cut their millstones to pieces. He attributed the inflammation discovered in the stomachs and intestines to some mechanical irritant. It might have been produced by the hard seeds, which were perfectly insoluble and indestructible.

At the close of the plaintiff's case, the Lord Chief Baron was of opinion that there was no evidence of the warranty declared upon, and accordingly the jury intimated that in their opinion the plaintiff was not entitled to recover.

The case is named here in illustration of the importance of obtaining in all cases a warranty of the quality of the article purchased, whether it be manure or cattle food.

THE ROYAL FARMS.

THE NORFOLK AND FLEMISH FARMS, AND WINDSOR PARK.

These, which as much as any of the series are characteristic specimens of English agriculture, lie at the farther end of Windsor Park, three or four miles from the Castle, on either side of the Long Walk, or rather at either side and beyond it. For the lover of fine timber the drive to these more distant farms is a very great enjoyment. Nowhere are there older and finer plantations or more glorious individual trees than Windsor Park contains. Thanks to recent researches, and very much to those of Mr. Menzies, the present Deputy Surveyor, a definite history attaches now to almost every portion of the whole. Records dating even from Henry the Eighth's time—from Elizabeth's time—from that of James (the first Scottish arboriculturist who interfered in the management of the timber here)—from that of the Commonwealth, from Charles the Second's reign, and those of William and of Anne, can now be quoted in relation to one or other of all the plantations in the Park and Forest. And besides the love of accurate history which along with that of the picturesque is now so pleasurably gratified, the visitor to the Royal Farms, supposed of course to be more specially agricultural in his tastes, has these also gratified as he drives along. He learns that, thanks to measures devised and carried out by the late Prince Consort, the Park now for the most part so perfectly grazed was but lately the poorest of Rushy bottoms, or, in drier places, Ferny covers.

Step by step the greater portion has at length been drained. And the process of improvement is being still continued at the rate of 80 to 100 acres annually. Drains 4 feet deep, at 8 to 10 yards intervals, are dug, care being latterly taken where near trees rather to let them point at the plantation than take them by it, and thus the risk of stoppage by tree roots is reduced to a minimum. The Rushes are mown repeatedly every year. They soon disappear under this treatment; and from a full head of shoots to every tussock, gradually dwindle until one or two shoots only from the outside of every plant make their appearance; these last are spudded out by hand, and so that mischief also disappears. The Grass after drainage, and the spreading of much of the earth from the drains, became full of Thistles. These, however, were destroyed by diligent mowings and spuddings. And in addition to these means levelled at the destruction of weeds, the growth of the true Grasses was encouraged by manuring and other vigorous treatment. As each plot is drained, it receives a liberal dressing of farm-yard dung and bonedust, and is fenced about with high deer-hurdles, and for a couple of summers a treatment is followed consisting of mowing the Grass one year, and in the second a herd of Scotch cattle is fed closely over the ground, receiving 4 lbs. of oil-cake daily each during the time.

It has resulted as the upshot of all these measures, which we hope hereafter to describe more fully in detail, that the greater part of Windsor Park, which only lately was an undrained, swampy or Rushy pasture, is now as well grazed as any land in the country; and the change is a striking illustration of those means of *cultivation* adapted to the Grasses to which the generally poor condition of our pastures is now directing so much of our attention.

Let us, however, ere we reach the Flemish Farm, take down some of the many interesting particulars which Mr. Menzies is kindly telling us with regard to the timber in the Park. Our drive takes us in the first place down the Long Walk from the Castle.

This imposing avenue of Elm trees was planted about the year 1680—*i.e.*, in the reign of Charles II.—to whose officers and their immediate successors much of the present beauty of the Park is due. It extends in double rows on either side of the drive, 30 feet from tree to tree, with an interval of about 100 feet between the two double rows. It extends from the Castle gates more than 2¼ miles in length towards Snow Hill, on a point of which in the line of the avenue stands the equestrian monument of George III. The avenue originally contained about 1652 trees. Some years ago the late Prince Consort, who was the Ranger of the Park, called the attention of the office of the Woods and Forests to the decaying state of many of the Elms, and a detailed examination by Mr. Menzies in 1858, showed that of 1652 trees, the original number, only 712 are now absolutely sound, while as many as 105 are "seriously" decayed and injured. In a recently published correspondence* the plans are described by which it is proposed gradually to renovate and so preserve this magnificent plantation.

In the portion next the Castle, individual trees, in accordance with these plans, have been here and there cut down—the old roots entirely removed—large holes dug and filled with fresh loam, drainage being provided, and in these spots very fine young Elms already carefully trained, and more than once transplanted so as to fit them for at once taking to their new position, have been placed. Beyond the double gates, where the soil is more clayey and less congenial to the Elm, the removal of trees of stunted growth, or of Chesnut and other trees planted where the Elm had altogether failed, is to be carried out upon a larger scale. One plantation, including a double row, 23 such trees (*i.e.*, 230 yards in length), has been already formed. The original stunted growth has been removed, the whole has been deeply trenched over, according to the plan recommended in the report to H.R.H. the late Prince Consort by the late Duke of Bedford, Mr. Sneyd, Mr. Gore, and Mr. Clutton. This includes "a gradual system of replanting in masses" in this part of the avenue, leaving undisturbed for the present all Elm trees which are in health or have any ornamental character, but removing all such of older date as are dead, dying, or unsightly, and without exception all those younger plants with which vacancies have from time to time been supplied; since it is plain that they have not thriven, and they give no promise of ever making good trees."

In these plantations accordingly, only one of which has yet been finished, the trees are removed, the land trenched up, as Mr. Menzies recommended, 3 feet deep, and left, after drainage, for some time to mellow. Immense quantities of loam from Snow Hill are brought on to the land, and the whole is in admirable condition for ensuring healthy growth when planted. Larch and Scotch Fir have been planted in lines 4 feet from tree to tree over all this space, Oaks, carefully trained by previous transplanting and otherwise, being placed in the midst in the line of the former avenue, and at the old intervals (10 yards) from tree to tree—the actual position of each being however in the space between those occupied by the former trees. The Larch will act as "nurses" to the young Oaks, and the whole are thus placed under the most favourable circumstances for healthy and vigorous growth.

As a protection from the deer and hares a careful fencing was required; and one which with occasional painting should last for 30 or 40 years, until indeed the trees are out of danger, has been devised and erected by Mr. Menzies. It is a 6-foot iron fence, 7 barred; the separate bars being received in tubular sockets in the uprights, thus enabling contraction or expansion (without warping) by heat; and up to 30 inches from the ground a wire netting is placed. If fastened to the lower bars of this fence, it would soon have been destroyed by the deer and cattle by their trick of inserting their horns and scratching them against anything of the kind. Accordingly every upright at about 30 inches from the ground is furnished with an arm projecting horizontally about a foot or 18 inches inwards towards the plantation, and it is at the end of these arms, protected therefore by the lower bars of the fence, that the wire netting against the bars is fixed. The whole is a very complete specimen of good and careful management.

Fine, however, as is much of the avenue, and interesting as are the plans in progress for its preservation and renewal, it is not until you escape from it altogether, and reach the further end of the Park, that you are in the midst of the finest trees of which Windsor boasts. The history of many of the plantations here situated is particularly interesting.

Mr. Menzies has done a great deal towards clearing up this history, and his researches amidst parliamentary records and elsewhere with this object in view have been singularly successful. Among other points thus determined we learn that all the pollarded Oaks date previously to James's time. The old law in Henry VIII.'s reign provided that shrouding and pollarding was to be done not oftener than once in 7 years, and then nothing was to be lopped or cut larger than a deer could turn over with its horns. James, "the first Scottish arboriculturist," put a stop to this pollarding altogether, and thus we have one great and easily recognisable date affecting the age of much of the timber, clearly marked out. Among the oldest plantations to which another distinct date attaches is a 13 acre group in the midst of the Park—probably the oldest and finest artificial plantation of Oaks in the kingdom (now numbering 30 trees per acre), concerning which there is a record dating from Elizabeth's reign.

Another date of interest as affecting the Park more generally is that of much of the timber standing frequently in rows, though in the midst of the Park at its farther end. The land hereabout lies in ridge and furrow, and the date of the trees and of the ridges is the same, being that of certain old leases in the time of the Commonwealth, by which the land was let for arable culture and a rent secured for public purposes. Immediately on the Restoration, under the guidance of a less utilitarian spirit, the hedges were removed, though hedgerow-planted trees were left, and the land was relaid in Grass, though the ridged form of surface remained.

It was at this period that the Long Walk was planted. James the 2d has left no mark upon the Park, but his successor William, and again Queen Anne—especially the latter—did a great deal of planting, and one of the most distinguished of the long list of Rangers was Sarah Duchess of Marlborough, who held the office 40 years—a period when much planting was accomplished.

In the present century, especially since 1810, when the importance of Oak for naval purposes and the scarcity of it were beginning to claim attention, a large extent of planting has been done. Some of the finest young plantations, averaging now about 40 years of age, lie beyond the Park. Any one desirous of seeing how Nature, merely watched or on rare occasions helped, carries on the pruning of her timber trees, can study it advantageously here, as the office of the forester is confined (as he sees the necessity of thinning to be *naturally* asserting itself) to the selection of the trees which shall be removed and of those which shall remain.

In and around the Forest, too, as well as here and there within the Park, are some magnificent remnants of olden time, individual trees carrying back the eye and mind to periods probably before the date of the Conquest, and previous therefore to the erection of any part of the Castle. One magnificent Oak, about 30 feet in circumference, stands by the so-called Forest Gate, which, calculating at the rate of 12 to 14 annual rings per inch, must be more than 800 years old. Of this, and several other of the most noteworthy trees in the Forest, connected with each of which there is some special history, photographs have been taken by the Earl of Caithness, and these will probably soon be published in a work on the history of the Forest under its successive Rangers, by Mr. Menzies. Materials for this work have been sedulously gathered by Mr. Menzies during the past 12 years in which he has held the office of Deputy Surveyor of the Crown estates here. Among the latest matters which he was preparing to submit to H.R.H. the late Prince Consort, were proposals to place iron pillars by each of the groups, plantations, and principal solitary trees, intimating the date and history of each which had been thus determined. On the Tuesday of the week previous to the death of the Prince, Mr. Menzies waited by command at the Castle to lay before his Royal Highness the materials thus collected for a description and historical account of the Forest—but the message was that owing to illness the examination must be postponed. The first iron pillar has since then been set up near the Royal Chapel.

—— Beyond Snow Hill, at the further end of Windsor Park, stand the buildings for the performance of the work which falls within the office of the Ranger and the Commissioners of Woods and Forests to direct—and that of the Surveyor and Deputy Surveyor to carry out. There is here a complete arrangement of buildings for all manner of carpenter's and other work connected with the estate. How large a business is here carried on may be gathered from the fact that upwards of 14,000 acres of land, and 40 miles of road are thus included.

There is a turbine driven by pond water from a high level, and a 14-horse-power engine, originally moveable, of Clayton & Shuttleworth's, for driving sawmills, boring, morticing, and other machines. There is also stabling for a considerable number of horses employed by the Surveyor. A large staff of carpenters and other mechanics is here engaged. A great deal of

* 10th Report of the Commissioners of H.M. Woods and Forests—1st July, 1861.

work connected with the conversion of timber, erection of cottages, &c., is done here.

It was the late Prince Consort's wish that every labouring man should be comfortably housed within a mile of his work.

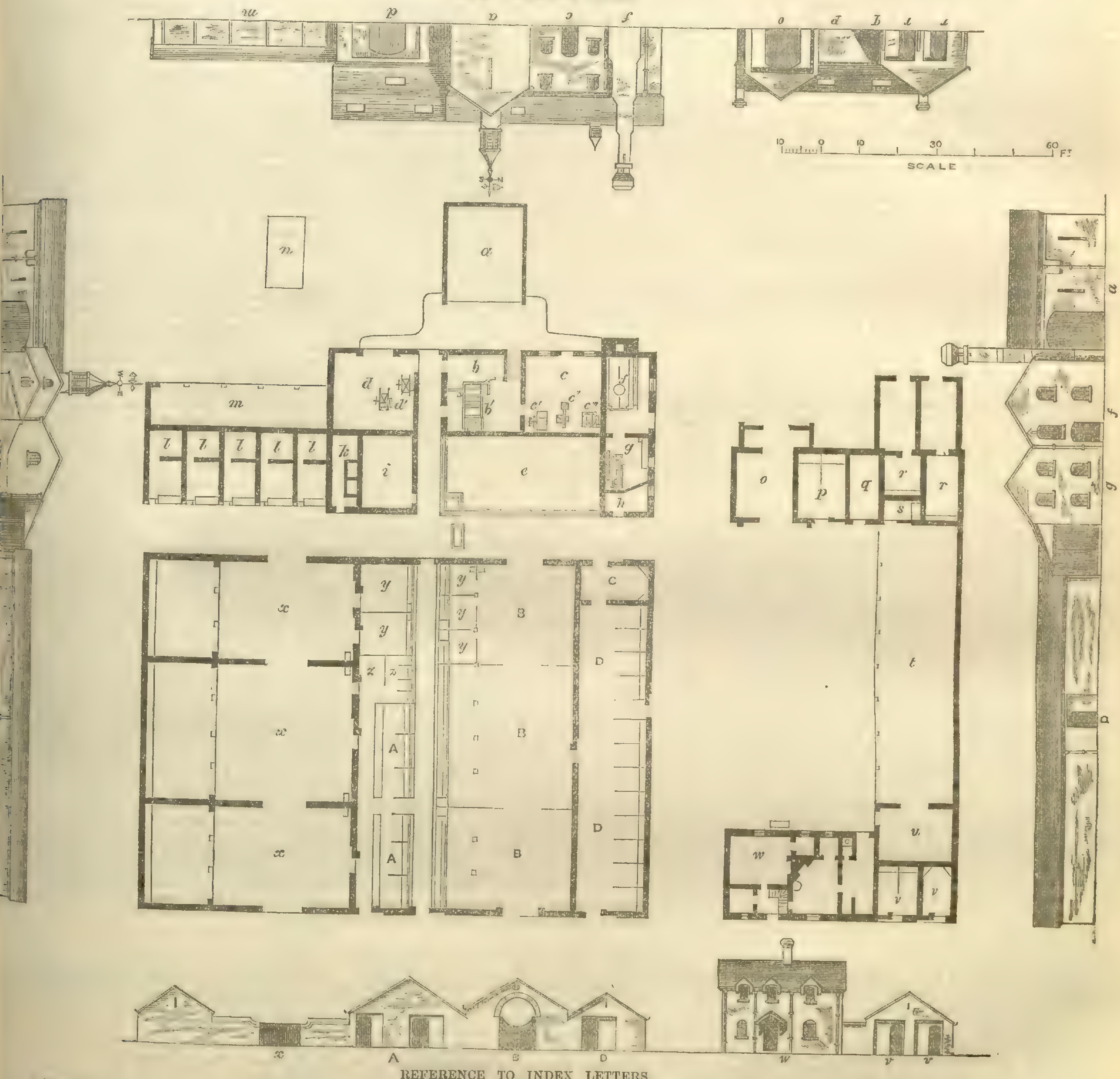
How different this spirit from that which had actuated previous exclusiveness may be gathered from a remark made during one of the last interviews at which the Deputy Surveyor received the instructions of his Royal master.—"You may depend upon any suggestion of that kind having my best support when it comes officially before me."

Accordingly groups of cottages have been erected on the outskirts of the Park, where provision for comfort by good sized living rooms with an adequate number of bedrooms has been united with extremely picturesque elevations and exteriors under the designs of Mr. Teulon the architect. All this expenditure and all arrangements with the Treasury have come under the control of Mr. Gore, who has given the greatest amount of personal interest to all these matters.

THE FLEMISH FARM.

The plan and elevation on this page represent the very complete, compact and well-arranged farmery at the Flemish Farm. It was designed and erected by Mr. Turnbull, the Castle architect, and is a capital specimen of the style of farmery, including covered yards with stable on one side and open yard on the other, of which many examples have also been erected in different parts of the country by Mr. Wilkinson, architect of Oxford. The connection of the various parts is most natural and obvious. The horses come out of the stable, and are at once close by the cart and implement shed. They are yoked in carts, and carry the corn from the stack through the gangway between *a* and *b*, where the sheaves are unloaded and threshed at *b*, the straw falls away into the straw barn at *e*, and the grain goes upwards to the granary. From *e* the straw

THE FLEMISH FARM.



REFERENCE TO INDEX LETTERS.

a Sheaf Barn
b Threshing Barn
c Mills; *c'* Cake; *c''* Oats and Beans; *c'''* Meal Mill
d d' Turnip Cutters
e Straw Barn
f Boiler House
g Engine
h Saddlery
i Cut Chaff.
k Pig Food and Cisterns
l Piggeries
m Shed
n Liquid Manure Tank
o Portable Engine
p Stable
q Fowls
r r Bulls' Houses
s Forge
t Cart Shed
u Implements
v Stable
w Loose Box
w Cottage
x x x Cow-yards open
y y Feeding Boxes
z z Calves' Pens
A Cow Stalls
B Covered Yards for young Stock
C Loose Box
D Stable

A B D are under one roof, as shown in elevation at foot of Plan

The Passage between Barns and Covered Yards is also under a Roof as shown in elevation at either side of the Plan

carried the shortest possible distance to D B Y and and *l*. If the carriage of the litter should rule the position of the several feeding places, then farmeries on this principle have been erected here and in hundreds of other places for many a long year. The soiled litter from D is thrust into the yard at B, and that from A into the yard at *x*. It thus gets trodden down into a solid material which suffers no waste on its road to the field once more.

The machinery in barns, &c., is well arranged and well selected. Clayton and Shuttleworth's engine and threshing machine, Turner's corn crushers, Garrett's cake mill, Smith's of Stamford and Cornes' of Nantwich chaff cutters for litter and for fodder. The work of threshing was going on when we were at the farmery—three men removed and built the straw, two men and two boys were unloading the carts as they arrived, and feeding the mill.

By the corn stack stood a big tripod used when building the rick for suspending the cradle taken from the cart wheels which constitutes the harvest cart. Pulleys are brought into use by which the inner cart frame on which the load is brought in from the fields is pulled by the horse up to a level with the rick and left there, while the one just unloaded is placed upon the empty wheels and taken back to the field for its load.

In the shed outside are Fowler's steam plough, Bentall's broad-share, Hancock's pulverizer plough, which met with more than its match on the stiff clay soil of the Flemish Farm; Phillips & Gardner's Turnip-cutter, Wood's mowing-machine, &c. A cottage containing several bed-rooms, a kitchen and a sitting-room for the unmarried ploughmen is part of the farmery. Very comfortable accommodation is thus provided, and the establishment is in fact a model "bothy."

The Flemish Farm is especially interesting for its herd of Hereford cattle. Mr. Brebner, who has been for many years the manager of the Flemish and the Norfolk farms, was a purchaser of cows for the late Prince Consort at Lord Hereford's sale and from them and other purchases (as at Lord Radnor's sales, and last year at the late Lord Berwick's sale, where GARIBALDI was purchased, a yearling bull of great promise, one of the highest priced animals there sold) a large herd has now descended. 82 head of stock, pure bred Herefords, including 35 cows in calf and in milk, and a large number of all ages, calves, yearlings, and two and three years old heifers were turned out for our inspection, a most beautiful sight on that sunny day in the paddocks around the buildings.

Among the cows was the 1st prize yearling heifer at Salisbury, now a thick well-made animal. Among the bulls MAXIMUS, who took the 1st prize in his class at the Warwick show of the Royal Agricultural Society of England, and AJAX, out of *Zoë* by MAXIMUS, calved August 16th, 1860.

The Prince Consort had for many years been a successful exhibitor both of breeding and of fat stock of Herefords, and latterly his herd has been maintained chiefly from its own members, and will compare with any Hereford herd in the country for purity of descent and the quality and uniformity of its character.

The Flemish Farm includes 400 acres of land, of which about 200 are arable—12 or 13 horses have hitherto been employed upon it, undertaking of course a good deal more than merely the farm work. Since, however, the employment of Fowler's 12-horse power plough, the number required has been much less, and the work can easily be done by 8. The land is an extremely stiff clay and was lying in perfectly dry and well tilled condition—turned over by the steam plough in the autumn. It is arranged in large open fields, to which there is ready access by good roads.

Mr. Brebner's account, kindly sent to us in November last, showed that during last autumn 158 acres had been ploughed from 8 to 10 inches deep in 39½ days, including removals. The wages paid during this time had been 25*l*. 13*s*. 6*d*., and the coals and oil consumed had cost 20*l*. 7*s*. 6*d*., and the repairs incurred amounted to 4*l*. 10*s*. The cost of ploughing, not including the tear and wear of rope or the interest of capital or the maintenance of value, was 6*s*. 1*d*. for acre for the work accomplished. The liquid manure from the stables and cow-stalls in the farmery are at these buildings collected in a tank and used by hose and jet to irrigate Grass land upon a lower level, on which it produces satisfactory results.

THE NORFOLK FARM.

The Norfolk farm, lying two or three miles off, and for the most part beyond the limits of the Park, is a tract of about 700 acres, 200 of which are arable. It is generally a lighter soil than that of the Flemish Farm, cultivated however like it for the most part on the 4-course rotation of cropping with occasional "stolen" crops, as of Trifolium, Vetches, Rape, &c. Probably one-fifth of the land at each farm may be in Clover. Mangels and Swedes form one of the regular "breaks" in the rotation; one-half in general are carried off the land and the remainder fed on it with sheep wherever the land will admit of it. Chandler's liquid manure drill is used in putting in both Swedes and Mangels on the lighter soils of this farm with good effect. A considerable quantity of artificial manure, guano, and superphosphate, is thus applied; from 300*l*. to 400*l*. worth in all per annum is used on corn and green crops. The cultivation has hitherto been done with 12 or 13 horses; but, like the Flemish Farm, it can be cultivated with about eight now that a share is received in the work of the steam plough.

The buildings at the Norfolk Farm are of the old fashioned kind, wooden and thatched; barns, stables, sheds, and other houses arranged around a large quadrangle, of which Mr. Brebner's comfortable residence and its offices occupy one side.

A large herd of the pure bred Devon breed is a principal feature of the farm. It now numbers from 90 to 100, the last monthly list including 4 bulls, 16 cows in milk, 12 cows in calf, 13 calves, 23 young stores, and 30 fatting beasts. These, with about 200 sheep and 60 Berkshire pigs, a very well bred lot, are the stock of the farm. Among the cows was *Fancy*, bought of Mr. W. Farthing—the "mother" of the herd. Her first calf, after taking a first prize as a cow at one of the Royal Agricultural Shows, was fattened and received the first prize in the fat cow class at Birmingham. She was also shown and highly commended at Baker Street. The herd has grown out of materials collected by Mr. Brebner during several years from the herds of Quartley, Farthing, Turner, and is now of considerable standing and of established reputation.

Mr. Brebner has both of these farms under his management, and this includes the superintendence of labour to the extent of from 1400*l*. to 1800*l*. a year, the use of a very large farm capital and the direction of two first-class herds. He adds to all this nevertheless the guidance and superintendence of several agricultural pupils—and gentlemen from Canada, Germany, and France are with him now, making use of the unusual opportunities for acquiring agricultural experience, which so many varied circumstances under one vigorous management afford.

Home Correspondence.

Morton's Edition of Arthur Young's Farmer's Calendar.—Many old farmers will recall the usefulness of Arthur Young's Calendar to them in teaching them what to be doing, when farming 30 or 40 years ago. It was not only a monthly remembrancer for farmers of the work of each month, but it likewise gave them general directions of how it was to be done, leading them to reflect in season on the occupation immediately before them, and the best way of doing it. Its usefulness may be judged of by the high appreciation that was set upon it. No work on agriculture has had so large a circulation, it ran through 20 editions in little more than 30 years, but the time came when its practice became obsolete from the numerous improvements in agriculture of the last 20 years, and farmers dared no longer to trust to its directions, and they have been long left without any such guidance as it afforded. This was much to be regretted. Whilst the oldest gardeners have felt the necessity of being continually reminded of the work of the season, and have had their calendars to assist them, farmers have been trusting to their recollection, and, as always happens in so doing, have often been behind in their preparations from the want of thinking in time of the work before them. But this may be so no longer, for Arthur Young's Calendar, describing the business necessary to be performed in various kinds of farms during every month in the year, has just been rewritten and extended by Mr. John Chalmers Morton. The 21st edition is now published, with numerous illustrations and most useful tables and statistics, giving the improved practice of the present day, and information of the latest improvements, upon the adopting of which the profit of farming so much depends. *Hewitt Davies, Feb.* 14.

Agricultural Seeds from China.—I read in No. 7 of the *Agricultural Gazette* an account of the distributing of agricultural seeds from the north of China to the members of the Council of the Royal Agricultural Society. Perhaps it may be interesting to your readers to learn that I had from the Museum of the India Company, in the early spring of 1860, a quart of each of the following seeds, with the memorandum: to plant in the beginning of April in moderately rich soils, and if successful and partially acclimatised the seeds would succeed better the following year. The seeds were planted in a rich sandy soil, a quarter of an acre; they grew sparingly, but the season being so very unsuitable I found the young plants did not succeed. Accordingly I transplanted a few into pots and removed them to the conservatory; they then grew well, but did not show for bloom. In the following year, 1861, I planted a bed with seed under a south wall in the garden; there they succeeded well, and produced interesting shrubs, similar to Gooseberry bushes, and in the autumn showed for bloom. But again disappointment: the buds did not open, their season was gone. I purpose again this season to try, with some protection at night. The difficulty is want of warmth after sunset. The sorts were "Soy Bean" (Soja hispida); Green "Soy Bean," called also "Japan Pea," and a fodder "Gram," excellent for animals, also compressed for its oil; the cake can then be used for food for man and animals. The quantity of "Gram" required in India from 7 lbs. to 10 lbs. avoirdupois, with 14 lbs. to 20 lbs. of hay, is found sufficient for an Arab. Sheep in India receive 1 lb. to 1½ lb. daily. Gram fed mutton is unequalled in flavour. Soja hispida, "Soy Bean" in nutritive power in India stands unrivalled, containing 40 to 46 per cent. of nitrogenous or "muscle forming" substance, and from 14 to 17 per cent. of oil with proportionately large quantities of phosphorus, sulphur, potash, &c. *Amicus, Oak House, Snelsmore, Newbury, Berks.*

Societies.

AGRICULTURAL SOCIETY OF ENGLAND: *Feb.* 19.—Colonel Challoner in the chair. A very scanty attendance. Five new members elected. No other business.

Reviews.

Edinburgh Veterinary Review. Jan. 1862. T. C. Jack, 92, Princes Street.

The current number begins a series of articles on Horse Warrantry, which promise to be useful. It publishes Dr. Anderson's lecture on the use of accessory feeding substances (condiments). And among other things it reports a number of actions at law, chiefly horse cases. It is a good number of the Journal, possessing as much general and agricultural as strictly professional or technical interest. We quote a passage on Horse Copers and the Heart Disease:—

"If one of the busy fraternity who delight in a deal on a dark Wednesday night in the Grassmarket were asked what sort of horse he would wish to procure as a safe investment for his ill-gotten coin, he would certainly prefer a good-looking Clydesdale, sound in limb, not a roarer, but with a mysterious screw loose, which few, including the horse-coper himself, can discover.

"Such an animal has been turned over many and many a time within the last three weeks in or near Edinburgh. Our readers will remember a recent article on heart-disease in which three cases were specially mentioned, and one amongst them 'under observation.' A full-sized, active looking, grey mare, apparently fit for a goods van, having been treated for a cold by a blacksmith, proved to be suffering from dilatation of the right side of the heart. She was looked upon with interest by a strong muster of students, who hoped to see further into matters, and proposed to buy the mare to be destroyed, as the only humane method of treating her. But, as we are informed, a friend, seeing the animal with swelled legs only, thought he could cure the case, and urged that she should be sent to his farm, where he would put her to the plough. In opposition to professional advice, this was agreed upon, and the students disappointed of their legitimate prize. Not many days elapsed before the farmer found that he had undertaken a hard task in attempting to cure the swelled legs. Thirty shillings were realised for this likely looking animal, and we believe a smith near Edinburgh was the lucky purchaser. Here the trickery commenced, and a simple countryman greedily closed a bargain, which enriched the smith by 8*l*. 10*s*. sterling. The animal's wind was, however, wrong, and cart work would not suit her, so that, in despair, an exchange was effected with some of the ingenious dealers of horse flesh in this town. Exchange followed exchange, and it proved very troublesome to trace the animal, when at last, in broad day-light, she falls by the auctioneer's hammer to the lot of a man from Glasgow-side. Many a ten-pound note can be made out of a poor animal thus knocked from hand to hand, until, in the course of nature, it drops dead in harness. The history of the case is as interesting as would have been the *post mortem* to the students; and it will be found that one of the most remarkable features in such cases is the length of time that animals retain a selling appearance, though absolutely unfit for any exertion."

Farm Memoranda.

ISLE OF ELY.—Like most other Fen farmers our occupation of 1100 acres is made up of some half dozen different holdings, lying detached, and comprising several varieties of soil and requiring as many different modes of cultivation. This is one of the evils of Fen farming. It is difficult to get a large occupation, all lying together, where supervision can be efficient, and where labour can be economised. This renders Fen farming, to a great extent, undesirable. For he must be a mere tyro, or a very unobservant man indeed, who has not discovered that where the master's eye can command, and the master's presence regulate the operations upon the farm, work is both better and more cheaply done. We sustain a heavy annual loss in consequence of our inability, from these local peculiarities, to afford the superintendence required. We are compelled, *nolens volens*, to entrust much of this to other hands, and worst of all to other heads. For we find it far easier to get a foreman who can use his hands than one who can or will use his head. It is difficult to estimate with accuracy the difference in the cost of cultivation under these different circumstances, but we should conceive that a compact well arranged farm would cost less by 5*s*. per acre for labour, than the same number of acres lying, like our Fen lands, in small detached farms would cost. There must of necessity, under the very best management, be a great increase of labour, and when you add to this the unnecessary additional labour arising from defective supervision, we believe it will be found that the sum we have named is not at all excessive, but is rather under than over the mark. We will not pursue these remarks further, although we conceive a description of fen farming would be imperfect without them.

As we have intimated, our own occupation consists of a great variety of soil, and consequently of cultivation. We have some strong tenacious clays, some more open soiled border lands, and some hot burning gravels. These we technically call "high lands." We have besides these gravelly lands with a light dusty soil; also lands with hard black "clunch" as a subsoil, and others with a peaty subsoil, but below these clay, blue and "buttery." These are our fen lands. The cultivation is necessarily as varied as the soil. The high lands require to be trod and consolidated as little as possible, whereas the fen lands require all the rolling and consolidation that can be obtained. Fen lands are more fickle, and suffer from a greater variety of evils than the high lands. Wireworm, fly, wind, frost, blight, mildew, all injure crops on fen soils far more seriously than they do those upon stronger lands.

We strive to manage both high and fen lands upon a five-course system, viz., fallow, Oats, Wheat, seeds, Beans or Peas, &c., and Wheat. On most of our farms, indeed upon all those where Mangels can be successfully cultivated, we set apart three small fields near the homestead, where we grow Mangels, Oats, and Wheat in succession. The remainder of the farm is worked upon the five-course system, as just intimated. On the fen lands we sow our fallows with Coleseed, which we eat off with sheep during the winter months. We also cultivate these fallows deeply. Where the subsoil is gravelly we plough about 12 inches deep, and where it is clunch or peat we plough about 18 ins. deep, bringing the bottom to the top, completely inverting it. These latter lands we usually clay for Oats, *i. e.* dig clay in trenches about 2½ feet wide and 11 yards apart, and take out two draws of the clay and spread it upon the intervening ground. This clay gives solidity, and also contains lime and other manurial elements which tend to enrich the soil. We have ploughs specially made for this deep work by Messrs. Howard of Bedford, and they are invaluable implements. We always sow our Coleseeds and Oats on the fen lands with superphosphate of lime and the water-drill, reserving the yard manure for Wheat lands. On the high lands we don't usually sow any green crop upon the fallows, as the land is injured by treading and grows more corn after a naked than a green fallow.

Our operations just now are not particularly interesting, but are more of a routine character.

Horses.—Our horses are principally engaged in preparing the land for spring crops, in deep ploughing, and in delivering corn, whilst in the frost they were moving manure from the yards. Our land for Beans (about 27 acres) is all ploughed, except a few acres we manured last week. We have also ploughed about 38 acres out of 58 for Peas. Besides these we have ploughed 14 acres for Barley, and about 100 for Oats. We have ploughed 40 acres of fallow land from 16 to 18 inches deep, with 8 horses, doing 1 acre per day; also 74 acres

about 12 inches deep, with 5 horses, doing the same quantity per day. This open weather enables us to make good progress with this deep work, and we hope in another week to have finished for the season.

Men.—Our labourers are principally engaged in attending to stock, threshing, claying, and cutting hedges, *i. e.*, those who are not engaged with horses.

Manure.—We are again employing sheep to a large extent in manufacturing our manure. Losses amongst bullocks, and the better profits from sheep, led us to the adoption of this system; and we certainly see no reason at present for abandoning it. We were successful in buying 400 lambs in North Lincolnshire, early, and there is the prospect of a good profit upon them for wintering. We have about our average losses from different diseases, &c. We believe we have lost or had to kill 10 or 11 out of the 400 since they came into the yards early in November. Besides these we have over 40 lambs we bred, and 66 shearling wethers we bought in the autumn in yards. And it is a singular fact that during the whole time these 500 sheep have been in yards (11 weeks), we have not had a lame one—not a single case of foot disease. They came in sound, and they remain to this day sound. To the lambs we give a measure of Peas and Beans to the value of 3*d.* per head per week, and to the older sheep to the value of 6*d.*, as we design to take the wool from these, and let them go from the yards to market. Our greatest difficulty with the lambs is to keep them from scouring. Being able to grow no other roots than Mangel, and these of an inferior quality, we are compelled to use very large quantities of dry food. In this respect we find the older sheep are preferable, as they can bear quite double the quantity of Mangels without scouring that the lambs can; but when the warmer days come the lambs will bear more, and consequently thrive much faster. It is very doubtful which will afford the more profit for wintering in yards on Mangels, lambs or older sheep. We forbear at present to express an opinion, although we are inclining to the older sheep. By the middle of April, when we get in a valuer to place a price upon all, we shall be able to express our views with greater confidence.

Growing Wheats.—Our growing Wheats look all that could be desired. The late sown are up, and present a healthy and vigorous appearance. The last year's crop was anything but satisfactory. The quality is good, but the yield very deficient—from 1 to 1½ qr. per acre. We continue to thresh something every week, as we are quite overrun with vermin. Last week we threshed 9 qrs. of Wheat, and killed 50 rats in the stack, although we pay a professed rat-catcher by the quarter for killing them. The mice too are very numerous and destructive, especially in the Oat stacks. *A. S. R.*

Northumberland Farm.—*Horse Labour.*—The horses have been mainly employed in ploughing clover-lea for Oats, ploughing and subsoiling Oat and Wheat stubbles for Turnips and Beans, carting manure and seaweed to the various fields intended for roots, carting draining tiles, Turnips from the field to the steading, and coals to the house, engine, and hinds' cottages. In carting manure at this season of the year the dung carts are usually driven on to the heap in the form of a bridge, with a view to consolidate it and prevent that rapid decomposition which would ensue if it were simply thrown up in a light state. This, of course, will in due time be well soaked with liquid manure carted from the tank and afterwards turned and thoroughly mixed; the soil which invariably forms the foundation of the heap will then be spread on the top. As the season advances, other manure will be carted out, after having also received a thorough soaking with liquid, and thrown up at once, a quantity of soil or ashes being spread over the top, and we shall thus save the process of turning. The subsoiling is effected by fixing a heel and shoe similar to the Tweeddale subsoiler, to the centre tine of a strong Bentall's broadshare, which does its work admirably. No Wheat has been sown during this month, owing to an unusually large breadth having been sown in the autumn; the last, after Turnips, was drilled at the rate of 1½ bushel per acre about the middle of December. A larger breadth of Wheat has been sown during the past three months in this neighbourhood than for many years, and is all looking most luxuriant, though in many cases much too forward on the ground: spring work will consequently be considerably forwarded, and as a rule field operations have seldom been in a more advanced state. Next month will be important in opening the spring seed time by the drilling of spring Wheat and Beans. The horses are receiving 2 bushels of crushed Oats and 1 bushel of Beans per week, and Bean-straw *ad libitum.*

Manual Labour.—Ploughing, dung and Turnip carting, hedging, ditching, draining, repairing roads and such like, have chiefly supplied work for the men; and the women have been variously occupied in barn work, pulling Turnips, &c.

Cattle.—Early in the month, 12 bullocks and 4 heifers were sold to the butcher; the former would average about 64 stone (14 lbs.) each, and would bring [illegible] per stone, whilst the latter were sold at 8*s.* 3*d.* per stone. Since that time other 4 heifers have been disposed of, a lower price per stone having to be submitted to. The boxes and stalls recently occupied by the stock that has been sold, have been re-filled with the most forward in condition of both sexes, from the yards and hamels, which are intended to go off fat during March and April. The fat stock are daily receiving about 8 stone of cut Swedes, 4 lbs. Bean meal, some of them a little hay, and straw *ad libitum.* The store cattle receive twice a day a few yellow or hybrid Turnips (Border Imperial) and straw, and are also allowed an "out-rake" for a couple of hours when fine, in a Grass field.

Sheep.—The sheep stock generally—both ewes and hoggets—are thinly distributed over the whole Grass land; the former receiving only hay-chaff, whilst the latter have in addition half pint of Oats per day, and occasionally a load of Turnip-tops or small Turnips, as the process of Turnip-pulling proceeds. Previous to lambing of course the ewes will be put on to better food, and in addition to hay-chaff will receive a few cut yellow Turnips, which are superior to Swedes for their milk-producing qualities.

Pigs.—As they became fit for the butcher, small porkers and bacon pigs are sold or killed for home consumption; the former have been sold at 8*s.* per stone (14 lbs.), when about 4 stone weight; the latter of the Cumberland herd—14 months old—have varied in weight from 18 to 26½ stone. Two fat sows have been disposed of, the one (after a single litter of pigs) at 5*s.* 6*d.* per stone; and the other, an improved Yorkshire of the small breed and a famous prize taker, three years old, weighing 32½ stone, at 5*s.* per stone. The pigs are fed on boiled Turnips mixed with light Bean, Barley and Wheat-meal and bran.

Corn.—The threshing and simultaneous selling of Wheat has continued throughout the month, and though the temporary settlement of the American difficulty slightly checked the demands of speculators, the price still continues good; the average price from this farm being 62*s.* per quarter of 63 and 64 lbs. per bushel; the yield is satisfactory, though the spring Wheat is scarcely up to the mark in quality and weight. The Oats are chiefly consumed on the farm, with the exception of a fine sample of Potato Oats, which are usually sold for seed. Beans are of a very superior quality and an enormous yield; they are of the Heligoland kind, and are being reserved for the good prices usually given for seed Beans during the ensuing month. On the 17th inst. an important agricultural meeting took place, in the Northumberland Ploughing Match which is open to the United Kingdom, and on this occasion mustered in strong force. The entries for swing ploughs exceeded 60 in number, exclusive of boys under 18 years of age, and the palm was carried off by a Scotchman; a meagre entry characterised the wheel plough class, which is not appreciated by farmers north of the Tyne. A district ploughing match has also been originated at Morpeth, to be confined within a radius of 10 miles round that town; and it is contemplated that this will have a more beneficial effect on the ploughmen of the neighbourhood than the large open competitions; the first meeting takes place at Netherton on Feb. 11. Turnips are keeping well in this neighbourhood, but we hear of complaints from the late frost on the banks of the Tweed; and owing to the unusually large crops, a considerable quantity of fat cattle are being kept back to consume them, which may however be expected to come out in prime condition during April and the beginning of May. *J. W.*

South Hants Farm: *Report to the 15th February.*—*Horse Labour.*—The weather having been favourable during the past fortnight, the horse-labour of the farm has proceeded without any delay, carting manure has been continued, some extent of land has been ploughed intended for the Oat crop. The work of the farm may be considered in a more forward state than usual at this period. We have, too, availed ourselves of the opportunity afforded by the late frosts, to draw chalk on to the young Wheats, and other parts of the farm which most required it. The application of chalk to the soils of our district is attended with heavy labour and considerable expense. Chalk costs from 3*s.* 6*d.* to 4*s.* per ton delivered on the farm, after which, there is the laying out and spreading, breaking, &c.; the quantity we usually apply per acre is from 18 to 20 tons per acre, and this is a greatly reduced quantity compared with that which was formerly considered necessary; the total expenses per acre will therefore reach and often exceed 5*l.* per acre. This is too heavy an outlay for tenants to incur, unless at the outset of a 21 years' lease, and in that case it is a matter in which the proprietor ought certainly to assist, by bearing a portion of the expense. We have often noticed that large doses of chalk, say 35 and 40 tons per acre, which used to be applied, have not been attended with so good results at first as smaller quantities; but the economy has been chiefly produced by the excessive cost of the operation, and we have found too that an application of 18 tons per acre will benefit the land for at least 25 years, under a system of close and severe cropping, but when the rotation of crops are longer, such as two years in Grass, &c., the advantages of chalk will extend to upwards of 30 years; the great benefit derived from chalking is seen in various ways: first of all, it is next to impossible to keep the soils of this district clean and free from weeds where deficient of chalk; again, Turnips cannot be grown repeatedly without being subject to club root, and although Mangel and Carrots have been substituted for Turnips on land out of chalk, yet we hold to the opinion, that neither roots produced under these circumstances are so nutritious and likely to preserve sound, nor would the corn crops produce the same yield of grain, even under the highest farming, as when chalk is present in the land in sufficient quantities.

The odd horse of the farm is as important as any horse employed, and there should always be one or more of these according to the size of the occupation, for we hold it to be bad policy that the teams or pairs of horses should be broken, or separated for the purpose of doing work, which at the busy periods is best done by power set apart to meet every contingency, and it often happens that much is neglected, particularly that which contributes to the ordinary decency and appearance, as well as profitable work of the farm, rather than break the pairs of horses. The odd horse has been constantly employed carting Couch Grass on to pasture land, carting hay and roots to sheep in the field, carting straw and roots to cattle in the boxes and yards, and also various jobs on the farm requisite to keep up a cleanly and decent state of the homestead.

Manual Labour.—The labourers have been filling and spreading chalk, the women assisting in breaking after laying out, filling manure, hedging, banking, &c. Shaping of farm roads has been going on; the last named work is found to be very important, for in cases where roads are private and for the use of the farm only, the expense of gravelling to a great extent may be saved by a proper application of manual labour, taking care, once at least in the year, to have the cart wheel tracks filled in, and the outer parts of the road cast into the middle, in order that water may pass off quickly, and in this way the outlay of 1*s.* in manual labour will often save 10*s.* expenditure of horse labour in the carting of gravel, &c.

The Stock.—The sheep have been doing remarkably well, as the weather has proved dry; some of our earliest lambs have been sent to the London market during the past fortnight, but the weather being cold, they have not realised more than 6*s.* 6*d.* per stone, which is certainly not enough for a well fed forward lamb, for not only is the food they consume costly, but the ewes were last autumn expensive to purchase. The breeding sows and store pigs have also constant attention paid them, both in feeding as well as accommodation. The breeding sows are kept in yards of small extent, with a shed attached, and fed with wash, &c., receiving also Mangel cast into the yard, which yard is fenced round with iron cattle hurdles, the long horse dung being spread over the surface as fast as it comes from stables, and allowed to accumulate; this is found to make excellent and roomy accommodation for the pigs, which are constantly treading down the dung, and adding to its value by their own droppings, and consolidating the mass, which would deteriorate greatly by overheating under ordinary circumstances. When the sows are about to farrow they are removed to a comfortable pen, consisting of about 10 feet by 10 feet under cover, and the like space in the open, fenced by iron work, the manure being allowed to accumulate in the outside space; here they remain until the young pigs are weaned, when they return again to the yard, and this seems to be especially desirable, as they are found not to breed well, and bring but few pigs, when kept in close pens without exercise, a certain amount of which appears to be essential to the well-doing of all breeding animals. *J. B.*

Miscellaneous.

The Clergyman and the Agricultural Society.—The following remarks were made by the Rev. J. C. Clutterbuck at the last meeting of the Abingdon Agricultural Society:—He cordially approved of Societies like the present, and considered that the clergy were not out of their place at such meetings, when they looked upon their moral or social aspect. He thought there was a great moral benefit arising from them, because those who employed and had labourers under their direction would always find that the better they cultivated their farms the more informed and the more intelligent their labourers became, and their moral character became better. It was impossible for breeders to bring their animals to the perfection which they had witnessed that day unless they were placed under very careful men; it was unnecessary for him to speak of the value of careful labourers, and of men of good moral character, for unless they were so they ought not to be trusted with animals of great value and requiring great attention. There was not a single prize gained by animals at this show which could not, to a great extent, be traced to the moral, and, to a certain extent, to the intellectual capabilities of those who had attended to them. Although the labourer was not a learned man, it was essential that he should possess a certain amount of intelligence when it devolved upon him to take the entire charge of animals requiring so much care and attention. They had the social aspect exhibited in this very gathering; the social aspect also had regard especially to the supply of animal food, and consequently to the breed of animals, and if this country had remained in the condition in which it was some 30 years ago, they would not have had food to eat. If he wanted to point to one single instance further of what good these Agricultural Societies did, he would point to the case of Mr. Wm. Humphrey, of Oak Ash, in this

ounty; that gentlemen had stated that, in consequence of what he saw at the first exhibition of the Royal Agricultural Society, held at Oxford, he was led to ponder over how he could best improve his sheep stock; he was struck by what he saw there, the perfection to which sheep were brought, and he resolved to profit by it and to endeavour to reach the same point. He (Mr. C.) thought that every young farmer should go to every good cattle show, if he desired to make himself acquainted with the best points of the best animals, for if they trusted only to what they saw in their neighbour's or their own fields, they would never know what was a good animal.

The Worcestershire Magistrates' Memorial—which states that there are 815 men, besides women, in that county who live by poaching, fowl-stealing, and general plunder—has created some attention. The memorialists also state that "it is a common and frequent practice with the class of persons referred to openly to exhibit large quantities of game, with the instruments used for its destruction, on the common turnpike roads, highways, and in the markets, yet no remedy exists by law by which such game or instruments may be seized, or the parties in possession of them compelled to account for their possession." They therefore asked that the police may be armed with additional powers in such cases, and they suggested that the police should be empowered to take into custody persons found in possession of game, or traps or engines for the destruction of it, which they cannot satisfactorily account for. On this latter point some statutory enactment is sadly needed, as we have lately had the strange anomaly of a Chief Justice of the Queen's Bench ruling that poachers had no ground of action against the police for seizing their nets, &c., on their return home; and a county court judge ruling in direct opposition to his lordship. There is, however, not much sympathy with the landlords' appeal to the Legislature for a fuller recognition of their property in game, as it is felt that if such an inordinate amount of it were not reared (in a very great measure at the expense of the tenants) to furnish a few days of battue slaughter, the inducement to adopt poaching as a profession would be gone. Although Sir John Pakington has kindly intimated that all such ideas are "jargon," the public will still continue to think that the owners of "aristocratic game preserves" are the real cause of the "demoralisation" which they profess to deplore and require the Legislature to cure. In proportion as game-preservers glory in killing their thousand head per day the organisation of the poachers increases. They have, in fact, become so daring and reckless that it has transpired that, after a recent bloody affray in which a gamekeeper was killed, the gang in their retreat actually stopped and held a consultation whether or not they should shoot and bury one of their wounded companions whose weakness from loss of blood impeded their flight. It is thought by the police that he died a few days afterwards, and that he was carried out by two of the gang in a dogcart at night, and secretly buried. Landlords have the remedy in a great measure in their own hands by reducing their game within reasonable limits, and they are not likely to get any other advice when they "put themselves on the country." Seeing that their tenants do not sympathise with them, but on the contrary, groan most bitterly at the way in which they are eaten up, and too often frowned at if they ask for compensation, the landlords cannot look to the public for sympathy in this "fur and feather" question. Still, what "sets" them most, and prevents any permanent change for the better, are the vulgar, sneering nicknames which the anti-game advocates and pseudo "farmers' friends" attempt to fasten on them in their writings and speeches. Englishmen may be led on this and other points, but they will not submit to be driven or bullied into anything. *Illustrated News.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, Feb. 20, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Barometer corrected to Freezing Point at Mean Sea Level.	Reading of Dry Bulb Thermometer.	Reading of Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	14	30.13	37	36	N.E.	1	7	46	35	46	35	..	40½	42
Saturday ..	15	30.18	38	37	E.	1	5	40	36	43	35	..	40½	42
Sunday ..	16	29.97	35	34	S.E.	2	8	42	33	54	31	..	41	42
Monday ..	17	29.50	39	38	E.	1	7	45	24	55	32	0.02	41	42
Tuesday ..	18	29.32	46	45	S.	2	7	46	38	48	38	0.13	41	42
Wednesday.	19	29.56	49	47	S.	1	4	55	44	60	39	0.04	42½	42
Thursday ..	20	29.54	51	49	S.	3	2	55	43	64	39	0.14	44	43

Calendar of Operations.

FEBRUARY.

Berwickshire Merse Farm: *Feb.* 1, 1862.—January has been moist and remarkably mild, with the exception of a sudden frost on the 18th that laid the ploughs for a week. The 24th was very windy; and on that day, as well as on the 11th, the barometer fell very low. Rain fell on 21 days, but the depth was under two inches. Owing to soft weather, lea-ploughing is well forward. Turnip-land was seldom in better order, yet at favourable intervals some progress has been made in Wheat sowing. The principal part of it was sown at an unusual season, and is just beginning to point through; but, with what is designed for this month, the entire breadth will be pretty extensive. As we anticipated, the Root crop is found to have suffered severely from the Christmas frost. We have a portion of a heavy crop in which there is not a sound Swede; but, as a contrast, in a field of smaller bulbs there is no damage but from vermin. Turnips are still cheap, and even spoilt ones will have the effect of keeping live stock out of market, as would seem to be the case from the recent rise of ½d. per lb. Ewes, of course, get a full share of what is going in the meantime. Stock in general is thriving. Stackyards look small at the time of year, and a deficiency of straw (not to mention corn) may be felt ere the month of May. Barley is still quite a drug, but some demand has arisen for seed Oats. The weather is unsuitable for threshing Wheat, but in that case delay may cause no loss; though, out of a small crop, rats and mice must have their living. Potatoes are difficult to sell just now; nor is the price likely to mend during sith open weather. *J. T.*

Mid Lothian Farm: *Feb.* 17.—Field labour is now well advanced, the past fortnight has been employed in ploughing up land cleared of Turnip for Barley, on part of which sheep have been consuming the Turnip. Where hoggs or 11 months old sheep are being fed, the Turnips are cut with Gardner's cutter and put into troughs about 1 foot deep and 14 inches broad at top, lessening downwards, with a bar along the top to prevent the animals getting into the trough or interfering with one another across it. Many of them have been lame, indeed this past season their feet have been troublesome to maintain in a healthy state—the horn not retaining its usual firm rigid texture, but being soft and spongy and requiring the weekly use of the paring-knife. Notwithstanding there has been a fair advance in wool and mutton. Turnips are very plentiful, none having been destroyed by frost. Cattle are consuming at present a large allowance of yellows. An affection of the bronchial passages has prevailed this season, accompanied with derangement of the stomach and bowels; a hard harsh cough, sore throat, quickened breathing, want of appetite and costiveness are the symptoms. It does not prove fatal, but is tedious and troublesome. Pleura does not exist. Carting out of manure to the heaps in the fields for Potatoes and Turnips has been followed as the requirements of the cattle necessitated it, while the usual proportion of corn has been threshed for fodder and Beans preparatory to the need of seed. The land is now sufficiently dry for spring Wheat, and the most of it has been sown on lands suitable for it, but not on this farm Bean drilling with a few more fine days will be begun. This is the only crop which can safely be sown so early in the season, as the crop of Barley has often as well as Oats been injured where put into the soil before the soil became sufficiently warm, and Potatoes have often been lost from too early planting. Every locality has a season for sowing, which when hit upon correctly proves the most satisfactory; and although in an early fine climate with dry soil, that season is of longer duration, it is only in such situations it is safe to begin very early or continue very late. Preparations are now making for lambing ewes by erecting shelters for them of hurdles lined with straw, and separate divisions for the recently lambed ones until they are fit to trust in the open field; more lives being saved by this means than when they are exposed to the rigours of snowy frosty nights or cold windy rain.

Notices to Correspondents.

Manures, Linseed Cake, &c.—Since our last report the Cake trade has sustained some extraordinary changes. The prices have ranged as high as almost to stop the demand; but since the pacific solution of the American difficulty prices have declined, and a large and brisk trade is being done at subjoined rates. Guano, Nitrate of Soda, and Sulphate of Ammonia, are all selling very freely; the two latter at an advance, which will, doubtless, be maintained. The price of Bones and Bone-ash is still unusually high.

		£ s. d.		£ s. d.
Peruvian Guano, direct from Importers' Stores	per ton.	12 10 0		
Bones	,,	6 5 0		
Ditto, crushed	,,	6 5 0		
Animal Charcoal (70 per cent. Phosphate)	,,	5 0 0	to	5 5 0
Coprolite, Cambridge (in London) whole	,,	2 5 0		
Ditto ditto ground ..	,,	3 5 0		
Ditto, Suffolk, whole	,,	1 15 0		
Ditto ditto, ground ..	,,	2 13 0		
Nitrate of Soda	,,	14 0 0	to	14 10 0
Sulphate of Ammonia ..	,,	16 0 0	to	16 10 0
Sulphuric acid, concentrated 1.845	per lb.	0 0 1		
Ditto, brown, 1.712	,,	0 0 ¾		
Superphosphate of Lime ..	per ton.	6 5 0		
Blood Manures	,,	6 5 0	to	7 10 0
Dissolved Bones	,,	6 10 0		
Dissolved Coprolites	,,	5 0 0		
Linseed Cakes, best American (barrel)	,,	11 0 0	to	11 10 0
Ditto ditto (bag)	,,	10 0 0	to	10 10 0
Ditto English	,,	10 0 0	to	10 10 0
Ditto Marseilles	,,	9 0 0	to	9 10 0
Rape Cake	,,	6 5 0		
Ditto German Green ..	,,	7 0 0		
Cotton-seed Cake	,,	6 0 0	to	6 10 0

To the Seed Trade.

THOMAS AYRES, Seedsman and Grower, Biggleswade, Beds., has to offer WHITE SPANISH ONION SEED, ALTRINGHAM and WHITE BELGIAN CARROT SEED; YELLOW GLOBE, ORANGE GLOBE, RED GLOBE, LONG YELLOW, LONG RED MANGEL WURZEL SEED; also several varieties of SWEDE and WHITE TURNIP SEED.

Also about 60 bushels of English SCARLET RUNNER BEANS, all the growth of 1861.

Prices forwarded on application.

Improvement of Grass Lands

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SUTTON'S RENOVATING GRASS SEEDS SHOULD NOW BE SOWN.

These Seeds consist of PERENNIAL CLOVERS and Fine GRASSES for improving the bottom.

Price 9*d*. per lb., or 80*s*. per cwt. Eight or 12 lbs. per acre will be sufficient, and will produce a great increase in the produce.

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Permanent Grass Seeds for all Soils.

SUTTON and SONS have one of the largest and most complete Stocks of NATURAL GRASSES and CLOVERS in Europe, from which they prepare Mixtures expressly to suit the Soils for which they are required.

Seeds sent Carriage Free to all parts of the Kingdom. Export orders delivered free to the Ship's side in any English Port.

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The "Student" Parsnip.

MESSRS. SUTTON and SONS have the honour of offering to the public the Stock of SEED of this delicious and finely formed Parsnip, which was ennobled from the Wild Parsnip by Professor Buckman, F.L.S., &c., of the Royal Agricultural College, Cirencester, who kindly entrusted to them the Seed, originally produced by himself, from which the present stock has been raised by Messrs. Sutton & Sons, and who having sown it in their Trial Grounds have found it to be superior to any of the other sorts sown by the side of it.

This is exclusively in their possession; and may be had in Packets of 1*s*. each, containing 1000 Seeds (post free), direct from Sutton & Sons, or through the undermentioned Firms who have ordered a supply. Additional names will be published in future Advertisements:—

Messrs. Wrench & Sons, London Bridge, E.C.
,, Hurst & M'Mullen, Leadenhall Street, London.
,, Beck, Henderson, & Co., Adelphi, London.
,, Noble, Cooper, & Co., Fleet Street, London.
,, James Carter & Co., High Holborn, London.
,, Wheeler & Son, Gloucester.
,, Barr & Sugden, King Street, London, W.C.
,, Butler & McCulloch, Covent Garden, London, W.C.
,, Charlwood & Cummins, Tavistock Row, Covent Garden, London, W.C.
,, Dicksons & Brown, Corporation Street, Manchester.
,, W. Drummond & Sons, Dawson Street, Dublin.
,, Dickson, Hogg, & Robertson, Dublin.
,, Wood & Son, Maresfield, near Uckfield.
,, Peter Lawson & Son, 27, Great George Street, Westminster, London, W.C.
,, James Dickson & Son, 102, Eastgate Street, Chester.
,, James Garaway & Co., Durdham Down Nursery, Bristol.
,, Toole & Co., Seedsmen, Westmoreland Buildings, Dublin.
Mr. John Bell, Exchange Street, Norwich.
,, Charles Turner, Royal Nursery, Slough.
,, H. Brown, 4, Commutation Row, Liverpool.
,, Jno. Perkins, 52, Market Square, Northampton.
,, John Cattell, Westerham, Kent.
,, James Veitch, Jun., King's Road, Chelsea.
,, Robert Parker, Tooting, Surrey, S.
,, Robert P. Ker, 4, Basnett Street, Church Street, Liverpool.
Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

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PAGE and TOOGOOD'S SPECIAL LIST will be forwarded post free. P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

From Mr. R. McDonald, *Gardener to the* Rt. Hon. Lord Willoughby D'Eresby, *Drummond Castle, Scotland, Jan. 4th, 1861.*

"The seeds sent here by you for the last 23 years have given the greatest satisfaction, and considering the large supply required, it is of the greatest importance to have them of such first-rate quality and so true to name. The collections for cottagers have been very useful, and have been the means of inducing many of them to grow a greater variety of vegetables than they have hitherto done."

From Mr. Dowling, *Gardener to* Lord Henry Cholmondeley, *Holly Hill, Jan. 1st,* 1861.

"Nothing gives me so much pleasure as to speak of the excellent quality and trueness of the seeds you sent me for 1860. It is impossible to single out anything in particular, they all succeeded so well, and although a difficult season, I have never served a family better, which I attribute to the great quality of the seeds, and having been supplied by you for years with the greatest satisfaction, my opinion is expressed with some confidence, and I also know your extreme desire at all times to meet the wishes of your customers."

From Mr. Whale, *Gardener to the* Rt. Hon. Lord Rivers, *Rushmore, Dorset, December 30th,* 1860.

"In enclosing you my 20th annual order, I am happy to say that I have always found your articles to be of the best quality, and they have always given me great satisfaction."

Royal South Hants Seed Establishment, Southampton.

RAYNBIRD, CALDECOTT, AND BAWTREE, Seed Merchants and Growers, Basingstoke, Andover; Seed Market, Mark Lane, London, E.C.
Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.
Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Seed Cakes, &c., of best quality at Market Prices.

TURNIP, MANGEL, and AGRICULTURAL SEEDS of best Selected Stocks.—First class sample crop, at growers' prices.
James Fairhead & Son, Seed Growers and Merchants, Borough Market, London, S.E.

To the Seed Trade.

H. and F. SHARPE can offer on very advantageous terms the under-mentioned sorts of SEEDS of 1861 growth and raised from selected stocks:—

Large York Cabbage	Bellamy's Green Marrow Peas
Red Surrey Carrot	Early Long-pod Beans
James's new Intermediate do.	Mackie's Monarch do
Red Pickling Cabbage	Mangel Wurzel in sorts
Kohl Rabi	Turnip in sorts

Seed Growing Establishment, Wisbech.

WHEELER'S TOM THUMB LETTUCE "IMPERIAL COS."—The demand for the above has been so great that we are now nearly sold out. We can spare a few more packets at 1s. each (free by post).
We have supplied the following leading firms, who can sell packets at the same price:—
Messrs. Jacob Wrench & Sons, London.
" Peter Lawson & Son, Edinburgh.
" Hurst & McMullen, London.
" Noble, Cooper, & Co., London.
Mr. J. G. Waite, London.
Messrs. Fraser, Richardson, & Goad, London.
" Nutting & Sons, London.
" Sutton & Sons, Reading.
" James Carter & Co., London.
" James Dickson & Son, Chester.
Mr. John Bell, Norwich.
Messrs. Wm. Wood & Son, Maresfield.
" Hugh Low & Co., Clapton.
" Fisher, Holmes, & Co., Sheffield.
" A. Henderson & Co., Pine Apple Place.
Mr. Cooling, Derby.
Messrs. Maule & Sons, Bristol.
To ensure a supply it will be necessary to send orders immediately.
Postage stamps taken in payment for small amounts.
J. C. Wheeler & Son, Seed Merchants, Gloucester.

BUSH VEGETABLE MARROW.—This valuable variety differs from the ordinary varieties of Vegetable Marrow in being but a sub-climber, and from its short-jointed character and abundant bearing its produce may be compared to a nest of fruits overlaying each other. The Custard Marrow is much inferior to the present one in habit of growth, prolific bearing, and rich flavour. Its fruit is of the same oblong form as the old Vegetable Marrow. Seed, 1s.
CITRON WATER MELON for Preserves (see Catalogue, p. 11). 1s.
HUBBARD and POLK SQUASH.—Two of the finest and largest grown, and estimated in America. 1s.
HENDERSON'S A 1 HOUSE CUCUMBER—Pronounced as the second best Black Spine out of 118 trials by the Royal Horticultural Society. 1s. and 2s. 6d.
HENDERSON'S A 1 RIDGE.—The best Ridge Cucumber grown. 1s. and 2s. 6d.
ICE CREAM and APPLE-PIE MELON GOURDS. 1s. each.
E. G. Henderson & Son, Wellington Nursery, St. John's Wood, London, N.W.

E. G. HENDERSON AND SON respectfully offer
STUARTIA PENTAGYNIA.—A very handsome deciduous autumn-flowering hardy shrub, of Magnolia like habit, with large, ovally oblong leaves, and numerous large, conspicuous, well expanded, white saucer-shaped flowers, from 2 to 3 inches in width, with crimped edges. Its neat, bushy habit of growth, which only requires good ordinary soils, and profusion of showy blossoms during the late autumn months, merits a place in every good collection of shrubs, being well adapted for a prominent position upon the approach or front lawn of a flower garden. Strong bushy Plants, 3 feet high. 7s. 6d.
EXTRA TALL ROSES.—Standard, 5 and 6 feet stems, including the head, 6 and 7 feet. 3s. 6d. each.
FRUITING VINES.—Extra strong BLACK, GOLDEN, and MUSCAT HAMBURGHS; also BIDWELL SEEDLING, a late hanging Grape, and others.
Wellington Nursery, St. John's Wood, London, N.

E. G. HENDERSON AND SON respectfully offer SEEDS of
CLIANTHUS DAMPIERI.—The most gorgeous plant in cultivation. Five seeds, 2s. 6d.
CALENDULA OFFICINALIS SUPERBA.—This beautiful plant, for which a premium was awarded by the Floral Committee of the Royal Horticultural Society, is now respectfully offered by Messrs. E. G. Henderson & Son, who hold the entire stock. The colours vary from a clear bright lemon-yellow, with orange centre, to the richest golden and bronze-yellow ground colour, richly tipped and shaded with dark maroon. Its long continued bloom, from June until November, renders it invaluable where late summer flowers are required, or where gay colours are sought for picturesque effect in flower borders. Seed packets, 6d. and 1s.
CELOSIA PYRAMIDALIS AUREA, 1s. 6d.; RUBRA, 1s.—Beautiful annuals for pot culture, warm greenhouse, conservatory, or stove, producing numerous clusters of light yellow and rich Magenta shaded crimson blossoms from November to February.
COSMOS DIVERSIFOLIUS ATROSANGUINEUS.—A very pretty perennial plant, with dwarf bushy growth, neat foliage, producing innumerable flowers throughout the season; of a rich dark crimson. A miniature Dahlia-like flower, its Dahlia-like tuberous roots require a similar care and treatment to that tribe. Seed, 1s.
ALYSSUM PERENNE CANDIDISSIMA.—A fine pure white annual bedding plant. 1s.
HENDERSON'S PERFECTION SWEET WILLIAM.—The finest strain of Hunt's improved Auricula-eyed section. 6d
ŒNOTHERA LAMARCKIANA.—The largest flowered Œnothera. 6d. and 1s.
SAPONARIA CALABRICA ALBA. — Beautiful bedding plant. 6d. and 1s.
NEMOPHILA ATOMARIA OCULATA. — The most distinct among novelties in this beautiful tribe. 6d. and 1s.
ZINNIA ELEGANS FLORE PLENO. 6d. and 1s.
GIANT EMPEROR ASTERS in 20 colours.
DWARF CHRYSANTHEMUM-FLOWERED ASTERS. — Very beautiful for bedding and margins.
CENTAUREA ARGENTEA, FERULA GLAUCA, DIPSACUS FULLONI.—Ornamental garden plants. 6d. and 1s. See descriptions in Seed Catalogue.
E. G. Henderson & Son, Wellington Nursery, St. John's Wood, London, N. W.

MONRO'S RABLEY CUCUMBER, per pkt., 2s. 6d. (See fuller Advertisement in November and Dec. last.)

	s.	d.
	Per packet—s.	d.
TELEGRAPH IMPROVED do., and other finest frame sorts	1	0
HERTFORDSHIRE dwarf hardy CAULIFLOWER (the best Cauliflower)	1	0
MELON SCARLET GEM, true	1	0
HOLLYHOCK (Wm. Paul's Collection of 12 superb named sorts)	5	0

Every description of VEGETABLE and FLOWER SEEDS, principally grown by or under the supervision of the Subscriber. CATALOGUE free on application.
Wm. Paul, Nurseries and Seed Warehouse, Waltham Cross, N.

Wood's Defiance Cauliflower.

WM. WOOD AND SON have much pleasure in introducing this new and superior CAULIFLOWER to the notice of their friends and the public generally, and having tested it for several years against Walcheren and other approved varieties, they do not hesitate to pronounce it the best Cauliflower in cultivation. It is quite hardy, of dwarf habit, and produces immense large heads, which are very compact, and most deliciously flavoured.
Stock limited; price per packet, 2s. 6d.
Wm. Wood & Son, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.
*** SEED CATALOGUE post free on application.

FLUKE POTATOES, off the Lancashire Moss and Sand; EARLY PINK EYE KEMPS, very fine; TRUE ASHLEAF KIDNEY; OXHORN KIDNEY, a very prolific variety, good quality; WHITE BLOSSOM LEMON KIDNEY. Prices moderate.
A PRICED DESCRIPTIVE CATALOGUE of Garden and Flower Seeds is now ready.
Henry Brown, Seedsman, 4, Commutation Row, Liverpool.

POTATOES: Handsworth, Fortyfold, Dalmahoy, Shaw, Regent, White Farmer, Blues and Ash-leaf Kidney, true.
RASPBERRIES, Strong Canes.
Red and White GOOSEBERRIES: Crown Bob, Warrington, and Whitesmith, bearing plants.
STRAWBERRIES: Admiral Dundas, British Queen, Black Prince, Eleanor, Prince of Wales, Sir C. Napier, Wizard of the North, 2s.; Alice Maude, Elton Pine, Eliza, Keens' Seedling, 1s. 6d.; and Oscar, 3s. per 100.
Geo. Cornwell, Barnet. Herts, N.

To Bean Growers.

RIVERS' IMPROVED PROLIFIC TICK BEAN. The parent of this Bean was brought to me by a labourer in 1855 employed in cutting a field of the common Tick Bean, being of a singular height (upwards of 7 feet), and having 125 pods, being branched like a herb. It was saved, and has been carefully selected since, and proved a distinct kind, bearing 5 or 6 bushels per acre more than any other sort.
It was shown at the late Baker Street Exhibition, and excited much attention, many of the single stems having from 50 to 70 stems, the branching stems upwards of 100 pods upon them, and from 4 to 5 Beans in each pod.
It may be had of Messrs. Lawson & Son, at 27, Great George Street, Westminster, S.W.; or of the Grower, John Rivers, Sawbridgeworth, in quantities of not less than 4 bushels. For cash only, price 10s. per bushel.

JOHN CATTELL'S COLLECTIONS of SELECTED KITCHEN GARDEN SEEDS for 1862.
COMPLETE COLLECTIONS for LARGE and SMALL GARDENS.

COLLECTION No. 1.	£3 0 0	COLLECTION No. 3.	£1 0 0
ditto No. 2.	2 0 0	ditto No. 4. ..	0 10 6

Carriage Free to any Railway Station in the Kingdom.

	Coll. No. 1.	Coll. No. 2.	Coll. No. 3.	Coll. No. 4.
PEAS, the early and later kinds ..	20 qts.	10 qts.	6 qts.	4 pts.
BEANS, the best & most useful sorts	6 "	5 "	4 pts.	2 "
FRENCH BEANS, dwarfs & runners	5 pts.	2 pts.	2 "	1 "
BEET, Cattell's Dwarf Purple-top, the best dark Beet in cultivation	2 oz.	1 oz.	1 pa.	1 pa.
BEET, Silver or Seakale	1 pa.	1 pa.	—	—
KALES, of sorts, including Cottager's Kale and Couve Tronchuda ..	5 "	4 "	3 "	2 "
BROCCOLI, hardiest and best kinds	6 "	6 "	4 "	2 "
BRUSSELS SPROUTS, imported ..	1 "	1 "	1 "	1 "
CAULIFLOWER, early and late ..	2 "	2 "	1 "	1 "
CABBAGE, including Cattell's Reliance, acknowledged to be the best kind yet known ..	6 "	4 "	3 "	2 "
CAPSICUM	1 "	1 "	—	—
CARROT, early Horn and other best kinds	10 oz.	5 oz.	2 oz.	2 pa.
CELERY, including Cattell's tall white Solid	3 pa.	2 pa.	2 pa.	2 "
CRESS, finest curled	2 pts.	1 pt.	½ pt.	2 oz.
American and Normandy ..	2 pa.	2 pa.	1 pa.	—
CUCUMBER, the best forcing and ridge kinds	2 "	2 "	1 "	1 "
ENDIVE, moss curled and others ..	2 "	2 "	2 "	—
ICE PLANT	1 "	—	—	—
LEEK, Musselburg, and large flag	2 "	1 "	1 "	1 "
LETTUCE, the best kinds for Summer and Winter use ..	6 "	5 "	3 "	2 "
MELON, approved varieties ..	2 "	2 "	1 "	—
MUSTARD, white	1 qt.	1 pt.	½ pt.	2 oz.
ONION, good kinds	8 oz.	5 oz.	3 oz.	2 "
PARSLEY, Cattell's Exquisite and other kinds	2 pa.	2 pa.	2 pa.	1 pa.
PARSNIP, Improved Guernsey and Hollow Crown	4 oz.	2 oz.	2 "	1 "
RADISH, early frame	½ pt.	½ pt.	2 oz.	1 oz.
Turnip, and other useful kinds	10 oz.	8 oz.	4 "	2 "
RAMPION	1 pa.	—	—	—
SAVOY, Cattell's Dwarf Green Curled and other useful sorts	3 "	2 "	2 pa.	1 pa
SALSAFY	1 oz.	1 "	—	—
SCORZONERA	1 "	1 "	—	—
SPINACH, Round and Winter ..	2 pts.	1 pt.	½ pt.	2 oz.
TURNIP, Early Dutch, and best sorts for succession	8 oz.	6 oz.	3 oz.	2 pa.
TOMATO	1 pa.	1 pa.	1 pa.	—
VEGETABLE MARROW	2 "	2 "	1 "	1 "
HERBS, useful sorts	5 "	4 "	4 "	3 "

N.B. Collection No. 1 contains Seeds sufficient to Stock about Half an Acre of Kitchen Garden. For more extensive Gardens, requiring larger quantities, Extra large Collections are supplied from 4l. to 10l. containing proportionate quantities of the kinds enumerated above.

COLLECTIONS OF FLOWER SEEDS.

			£	s.	d.
100 Packets of the best and most showy, hardy and half-hardy Varieties			£1	0	0
50 ditto	ditto	ditto	0	10	0
25 ditto	ditto	ditto	0	6	0
50 ditto of hardy annuals			0	7	0
25 ditto	ditto		0	4	0

Any kinds not required should be named in the order, that they may be omitted from the Collection.

Phalænopsis Schilleriana.

B. S. WILLIAMS has much pleasure in informing his friends and the public that this new and beautiful VARIEGATED ORCHID is now in flower at the Nursery, and he will be happy to show it to any one favouring him with a visit.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.
*** The "Favourite" Omnibuses, from the London Bridge Railway Stations, by the Bank and Post Office; and from Charing Cross, through the Strand and Holborn, pass the Nursery every 10 minutes.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

NEW, CHOICE, and GENUINE FLOWER SEEDS, free by Post:—

	s.	d.
100 Packets, choice sorts, including all the best Hardy, Half-hardy, and Greenhouse Annuals, left to D. B.'s selection	20	0
50 Packets ditto ditto	10	6
25 Packets ditto ditto	5	6
100 Packets very choice and showy Hardy Annuals ..	13	0
50 Packets ditto ditto	7	0
25 Packets ditto ditto	4	0
12 Packets ditto ditto	2	6
50 Packets Half-hardy Annuals	8	0
25 Packets ditto ditto	5	0
12 Packets ditto ditto	2	6

Smaller packets of above at half the prices quoted.
David Browne, Seed Grower and Importer, 41, London Street, Norwich.

The Royal Nurseries, Slough.

SEEDS for the FLOWER GARDEN.—BETTERIDGE'S FINE QUILLED ASTERS. The Seed saved from this splendid Collection—so successful in maintaining the leading position at the great exhibitions—is entirely in Charles Turner's hands for distribution:—

		s.	d.
18 Distinct Varieties (with Hints for their Culture)		4	6
12 Ditto	Ditto	3	0
Fine Mixed Seed, per packet		1	0

NEW DOUBLE FRENCH, or TRUFFAUT'S PÆONY-FLOWERED ASTERS, imported direct from that eminent cultivator, may be had in collections of—

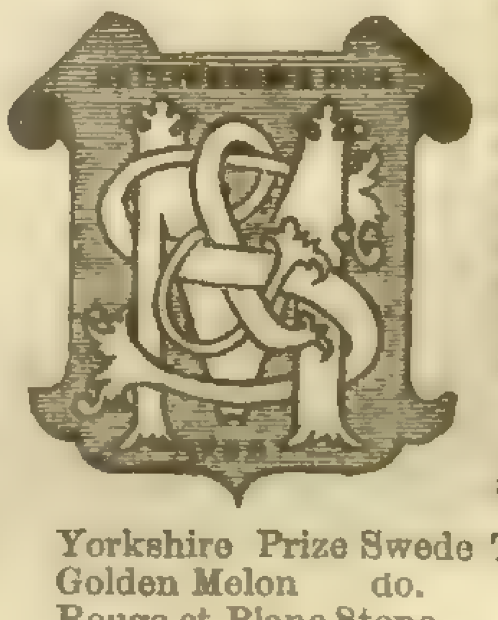
	s.	d.		s.	d.
22 Varieties	7	6	10 Varieties	3	6
16 "	5	6	8 "	2	6
12 "	4	6			

Charles Turner congratulates himself on being able to supply his Patrons with this favourite flower direct from the two first growers in Europe.
DOUBLE DWARF BALSAMS, CAMELLIA-FLOWERED BALSAMS, DWARF GERMAN TEN WEEK STOCKS, CRIMSON DWARF BOUQUET STOCKS, and all the NEW ANNUALS worthy of cultivation.
Charles Turner, The Royal Nurseries, Slough.
His CATALOGUE OF SEEDS for the FARM is in the press, and a copy thereof will be forwarded Gratis and Post Free to any address.

Asparagus.

YOUELL AND CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—
ASPARAGUS, GIANT, two years .. .. 2s. 6d. per 100.
" " three years .. .. 3s. 6d. "
BUCKLEY'S NEW CRIMSON RHUBARB.
Specimens have been sent to Dr. Lindley for his opinion. See the following in the *Gardeners' Chronicle* of February 26, 1859:—
"John Buckley, your specimens are very handsome, rich rose red quite through, and are evidently derived from Bucks, the true Rheum undulatum. When cooked they were remarkably free from stringiness."—2s. each; 20s. per dozen.
HAWKE'S CHAMPAGNE RHUBARB, new and fine, highly recommended, 12s. per dozen.
YOUELL'S NORFOLK HERO CUCUMBER, 1s. per packet.
LAING'S MAMMOTH RED CELERY, 1s. per packet.
Royal Nursery, Great Yarmouth.

Yorkshire and Lincolnshire Nursery and Seed Establishment.



MARTIN AND SONS respectfully offer a very superior Stock of TURNIP SEED, as under, the produce of their Seed beating all others at one of the principal Shows in Yorkshire, winning the "two Five Pound Silver Cups," the "Second principal Prize," and several of the minor prizes.
Catalogues with particulars on application.

Yorkshire Prize Swede Turnip		1s. per lb.
Golden Melon do.	do.	
Rouge et Blanc Stone	do.	
Improved White Globe	do.	
Russian Green-top White	do.	

Skirving's Green-top, Marshall's Purple-top, and all the principal kinds of Swede and White Turnips, at 9d. per lb.; by the bushel or cwt, cheaper.

KITCHEN GARDEN SEEDS.
Martin & Sons' No. 1 Collection contains 20 quarts Peas and other sorts in proportion, for 3l.; No. 2 Collection, 2l.; No. 3, 1l. 10s.; No. 4, 21s.; No. 5, 15s.

FLOWER SEEDS.
The 30 varieties which caused so great attraction and were admired by the hundreds of persons passing the Park Nursery, Hull, for 5s., free by post.

GLADIOLUS.
40 choice varieties for 1l. 5s., carriage paid.

NURSERY STOCK.
Our GENERAL NURSERY CATALOGUE may be had on application. We abound in Laurels, Yews, Arbor-vitæ, Thujopsis, Wellingtonias, Cedars, Juniper, Chestnuts, Limes, Maples, Mountain Ash, Weeping Ash, Weeping Elm, Privet, &c.
Nursery and Seed Establishment, Cottingham (A.D. 1788). Hull Nursery, Spring Bank; Hull Seed Establishment, Junction Street.

To Planters of Conifers.

YOUELL AND CO. can supply 50 species of RARE and HARDY CONIFERS in good plants for 5*l*., package included, and carriage paid to Liverpool, Manchester, Newcastle-on-Tyne, Hull, London, Peterborough, or to any Railway Station within 150 miles of the Nursery.

A LIST of the above can be had on application.

Royal Nursery, Great Yarmouth.

Gladiolus Brenchleyensis.

YOUELL AND CO. continue to supply the above in Flowering Bulbs at 4*s*. per doz.; 30*s*. per 100. Trade price on application.

For a LIST of their general collection, see *Gardeners' Chronicle* of Feb. 1.

Royal Nursery, Great Yarmouth.

Quick.

H. AND F. SHARPE are prepared to offer of the finest quality,

Strong 2-years' Transplanted QUICK, 3 feet high,

Strong 2-years' Seedling do., 2 feet high,

at very moderate prices, which may be had, with samples, on application.

Seed Growing Establishment, Wisbeach.

Four Millions of Transplanted Quicks.

GEORGE CHIVAS offers the above, Two Millions of which are suitable for Railways, and Two Millions varying from strong to exceeding strong—a portion having been twice Transplanted. A bale containing 100 of each, five sizes, forwarded on receipt of 15*s*.; orders for 10,000 delivered free at any railway station.

Also Half a Million of Transplanted SPRUCE, and one of the largest general Nursery Stocks in the North-Western counties.

Chester, Feb. 22.

STEPHEN SMITH, NURSERYMAN, Macclesfield, Cheshire, offers at very cheap rates, as the Ground on which they stand is wanted, Transplanted SPRUCE FIR, 1½ to 2 feet; SCOTCH FIRS, PRIVETS, COTONEASTER, LAURELS, AMERICAN PLANTS in variety, &c. &c.

LISTS, with prices, free on application.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.

RICHARD SMITH, Nurseryman, Worcester.

W. VIRGO AND SON have a large Stock of the following to offer at very low prices:—

BERBERIS AQUIFOLIA, 12 to 15 inches, 2 years transplanted

„ DULCIS, 2 feet

EVERGREEN PRIVET, of various sizes

PORTUGAL LAUREL, 12 to 18 inches

SIBERIAN ARBOR-VITÆ, 2 to 2½ feet

SPRUCE FIR, 2 to 5 feet

WEYMOUTH PINE, fine and bushy, 2 to 5 feet

They also beg to offer extra strong 2-years transplanted THORNS, in very large quantities.

Samples and prices to be had on application at the Nursery, Wonersh, near Guildford, Surrey.

THE SUBSCRIBERS have on SALE a large quantity of 2-year Seedling THORNS, 2-year Seedling SCOTCH FIRS (Native), 3 and 4-year Seedling NORWAY SPRUCE, 1-year Seedling PEAR STOCKS, and 1-year Seedling APPLE STOCKS, 2-year Transplanted SCOTCH FIRS, 9 to 15 inches (Native); Transplanted NORWAY SPRUCE, 6, 9, 12, and 18 inches.

All at very moderate prices, to be had on application.

FOWLER & SON, Glasgow.

ARBUTUS, 2 to 2½ feet, well rooted and good tops, twice transplanted. SWEET BAYS, 1 to 1½, and 1½ to 2 feet; twice transplanted. GREEN HOLLIES, 6 to 9, 9 to 12, and 12 to 15 inches, well rooted, healthy and clean grown; the two latter sizes very suitable for Grafting or Budding on. EVERGREEN OAKS, in pots, 2 feet; repotted last spring.

Prices forwarded on application.

DICKSONS & Co., Waterloo Place, Edinburgh.

WANTED to PURCHASE, 100 ENGLISH YEWS, young growing Plants, 6 or 7 feet high above ground and well branched. The advertiser will not object to have them got up by his own men if the quantity is not under 20, and to be sold from a private garden. Price must be moderate.

Address, F. G., *Gardeners' Chronicle* Office, London, W.C.

Forest Trees, Ornamental and Fruit Trees, &c.

THE SUBSCRIBERS call the attention of intending Planters to the undernoted Stock at their Nursery, Longniddry Station. The plants are fine; and as the grounds have to be cleared, they offer them at the following low prices. Terms cash, or three months' acceptance:—

TRANSPLANTED, the 1000.—Norway Spruce, 6 to 9 inches, 6*s*.; English Oak, 18 inches, 10*s*.; Laburnum, 10*s*.; Service, 8*s*.

TRANSPLANTED, the 100.—Irish Yews, 4 to 5 feet, 60*s*.; Red Cedars, 9 to 15 inches, 3*s*.; 9 to 24 inches, 5*s*.; Aucuba japonica, 6*s*.; Pinus Cephalonica, 10*s*.; Chinese Arborvitæ, 18 to 24 inches, 12*s*.; Spurge Laurel, 2 feet, 8*s*.; Common Laurel, 3*s*. to 6*s*.; China and Climbing Roses, 10*s*.; Weigela rosea, 10*s*.; Savin tree, 7*s*. 6*d*.; Laurustinus, 12 to 18 inches, 2*s*.

SEEDLINGS, two years old, per 1000.—Norway Spruce, 1*s*.; Pinus maritima, 2*s*.; Balm of Gilead, 5*s*.; Chinese Arborvitæ, 10*s*.; Pears, 5*s*.

TRANSPLANTED FRUIT TREES, &c.—Pear Stocks, 15*s*. per 1000; Gooseberries and Currants, of sorts, 60*s*. per 1000; Dwarf Apples, of sorts, 25*s*. per 100; Dwarf Pears, of sorts, 40*s*. per 100; Trained Pears, of sorts, 100*s*. per 100; Raspberries, of sorts, 8*s*. per 100; Quince Stocks, 2*s*. 6*d*. per 100.

DAVID REID & SON, Nurserymen and Seedsmen, Edinburgh.

To the Nobility, Gentry, Agriculturists, and the Public generally.

ALEX. PONTEY, of the Original Plymouth Nursery and Seed Establishment, established upwards of 60 years, supplies every requisite for the Farm, the Forest, the Vegetable Garden, the Flower Garden, the Fruit Garden, and the Conservatory. All Seeds proved before they are sent out. His celebrated GERMAN STOCKS and PÆONY FLOWERED ASTERS, which have given such satisfaction throughout the West of England, are now ready, and will be sent (post free) in packets of 12 splendid colours, separate, for 3*s*.; or same varieties mixed in 6*d* or 1*s*. packets; and 1000 other varieties of Flower Seeds, in packets, from 2*d*. upwards.

Complete CATALOGUES are now ready, and will be forwarded free on application.

N.B.—Thirty four distinct varieties of TURNIPS, grown in the Trial Grounds last year, may be seen at the Seed Shop, 21, Cornwall Street.—Plymouth, Feb. 22.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England.

The Catalogue may also be had at Mr. MAY'S, 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

JUST ARRIVED from Belgium, a large quantity of CAMELLIAS and AZALEAS; handsome plants, best sorts, full of Flower Buds, 12*s*. to 30*s*. per dozen. British and Foreign FERNS; an immense variety, 3*s*. to 12*s*. per dozen.

R. GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church, N.E.

New Cinerarias, Gloxinias, and Pelargoniums.

F. AND A. SMITH can still supply a few sets of their New GLOXINIAS, CINERARIAS, and PELARGONIUMS.

See *Gardeners' Chronicle* of Oct. 5, 1861, and CATALOGUE, which may be had gratis.

Dulwich, Surrey, S.

FINE SPECIMEN PLANTS.

1 Gardenia radicans	1 Pimelia spectabilis
1 Stephanotis floribunda, 5 feet by 7	1 Allamanda cathartica
	1 Allamanda Schottii

The above to be sold a bargain, and would make grand Plants for Exhibition. For price apply to H. BROWN, Seedsman, Liverpool.

A Priced Descriptive SEED CATALOGUE on application.

Cheap Plants.

WM. DILLISTONE can still supply strong Plants of the following:—

Per dozen.—	s.	d.	Per dozen.—	s.	d.
Hepaticas of sorts ..	3	0	Tritoma Uvaria	3	0
Auriculas	2	6	Verbenas, strong stock plants	3	6
Œnothera Missouriensis	3	0	Gazania splendens ..	3	6
Pinks (sorts)	3	0	Fuchsias	5	0
Cloves (sorts)	2	6	Petunias	4	0
Hollyhocks	3	0	Dahlias (Old Roots) ..	6	0
Pansies (fine mixed sorts)	2	0	Festuca glauca	3	6
Pampas Grass, 1*l*. per 100;	3	0			

Herbaceous Plants, 50 plants in 25 varieties for 10*s*.

Lobelia speciosa, "true," 1*s*. per packet.

The above all carefully named and packed upon receipt of Post Office Order payable at Castle Hedingham, to WILLIAM DILLISTONE, Munro Nursery, Sible Hedingham, Halstead, Essex.

JOHN CATTELL having proved for several years the articles named below, recommends them with confidence as deserving of cultivation in every garden.

Per packet—free by post—	s.	d.
CATTELL'S DWARF PURPLE-TOP BEET, the best kind in cultivation	0	6
KALE, Buda or Asparagus (true)	0	6
„ Jerusalem, old kind	0	6
„ „ curled	0	6
„ Scotch dwarf curled	0	6
„ Variegated garnishing, as exhibited by him at the Royal Horticultural Gardens at Kensington and the Crystal Palace	0	6
BROCCOLI, Conning's Reliance, withstood the severe winter of 1860 and 1861, when every other kind was destroyed, a late white, close heading variety	1	0
„ Walcheren, a splendid stock, very fine and true	1	0
CABBAGE, Cattell's Early Reliance, undoubtedly the best Cabbage in cultivation	0	6
„ Little Pixie, a fine summer Cabbage, similar to Dwarf York, but much superior	0	6
„ Cattell's Green Colewort	0	6
„ Couve Tronchuda or Portugal Cabbage, a delicious vegetable	0	6
CUCUMBER, Holmesdale Frame, a very handsome and prolific White Spine	1	0
„ General Wolfe, equally adapted for ridge or frame, for general use, will be a great favourite	1	0
LETTUCE, London White Cos (true)	0	6
SAVOY, Cattell's Dwarf Green Curled	0	6
„ „ „ „ Drumhead	0	6
TOMATO De Laye, a very fine variety	0	6

For other first-class Vegetables, see CATALOGUE.

FLOWER SEEDS.

Per Packet, free by Post.	s.	d.
Imported GERMAN ASTER .. .. 1*s*. to	3	6
„ „ STOCK .. .. 1*s*. to	4	0
„ „ WALLFLOWER .. .. .. 1*s*. to	3	6

From the same growers as usual, and which have always been highly commended by all purchasers.

	s.	d.
BALSAM, finest double, 9 varieties, in sealed packets, saved by Messrs. F. & A. Smith	2	6
PRIMULA SINENSIS, finest fringed, saved by Messrs. F. & A. Smith	1	0
CALCEOLARIA, from very splendid spotted kinds, 1*s*. and	2	6
CINERARIA, from choicest named flowers .. 1*s*. and	2	6
DIANTHUS HEDDEWIGII	0	6
„ „ atropurpureus fl. pl.	1	0
„ IMPERIALIS HYBRIDUS, very beautiful ..	0	6
„ „ flore nigro purpureo	1	0
„ CHINENSIS NANUS, atrosanguinea flore pleno	0	6
LOBELIA ERINUS SPECIOSA (true), saved from the Crystal Palace variety, and will come true from seed; cannot be too highly recommended for its intense blue colour and dwarf habit. All visitors to the Crystal Palace must have admired the immense lengths of edging of this kind, so artistically planted by Mr. Gordon .. .. 6*d*. and	1	0
TROPÆOLUM, Crystal Palace Scarlet, saved from the true variety; this is a well known bedding plant, extensively used at the Crystal Palace	1	0
„ Crystal Palace Gem	0	6
„ Cattell's Dwarf Scarlet	0	6
„ „ „ Crimson	0	6
„ Yellow Tom Thumb	0	6

(The last four are very dwarf free blooming kinds and make beautiful beds in poor soil; if sown in rich soil they grow too freely, and do not show their true character.)

	s.	d.
ATRIPLEX HORTENSIS RUBRA (Orache), highly recommended by many horticultural writers in preference to Perilla Nankinensis; as a decorative plant it is highly ornamental	0	3

For other choice and select Annuals, Ornamental Grasses, &c., see CATALOGUE, pages 20 to 32.

Nursery and Seed Establishment, Westerham, Kent.

CHARLES NOBLE would remind all those interested that his Selection of RHODODENDRONS is unrivalled; that his Selection of CONIFERS is worthy of notice, and his Selection of HARDY EVERGREENS worth an inspection. The following handsome well-grown specimens can be obtained on very advantageous terms, and purchasers will consult their interests by visiting the Sunningdale Nursery, Sunningdale Station, South Western Railway.

Wellingtonia gigantea, 1 to 6 ft.	Juniperus Virginiana, 1 to 10 ft.
Thujopsis borealis, 1 to 4 feet	„ argentea, 1 to 4 feet
Thuja Warriana, 4 to 5 feet	„ chinensis, 5 to 7 feet
„ Lobbii, 1 to 4 feet	„ sphærica, 2 to 4 feet
„ gigantea, 1 to 4 feet	Cupressus Lawsonii, 1 to 4 feet
„ americana, 6 to 10 feet	„ Thyoides, 1 to 4 feet
Taxus fastigiata, 3 to 7 feet	Cephalotaxus Fortuni, 2 to 4 ft.
„ baccata, 3 to 5 feet	Cedrus Deodara, 1 foot to 8 feet
Taxodium distichum, 4 to 6 ft.	„ atlantica, 8 to 10 feet
Spiræa Nobleana, 3 to 5 feet	Berberis japonica, 1 to 4 feet
„ callosa, 3 to 5 feet	„ Beallii, 1 to 4 feet
Skimmia japonica, fine blooming plants	„ Darwinii, 1 to 4 feet
	Abies spec. Vancouver's Island
Retinospora ericoides, 1 to 3 ft.	„ lasiocarpa
Pinus austriaca, 1 to 5 feet	„ Pinsapo, 1 to 3 feet
„ Laricio, 3 to 5 feet	„ orientalis, 1 to 6 feet
„ insignis, 2 to 5 feet	„ Douglasi, 2 to 3 feet
„ excelsa, 1 to 3 feet	„ Nordmanniana, 2 to 5 ft.
„ Cembra, 1 to 3 feet	„ Menziesii, 3 to 10 feet
„ Benthamiana, 2 to 6 feet	Araucaria imbricata, 1 to 5 ft.

Ten Minutes' walk from the Station.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the most effective and useful bedding variety known. During the past season upwards of 5000 plants were grown in the gardens of Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.

The following Testimonials are selected from a large number received by Mr. Thomson from visitors to Dalkeith in the past season:—

"I have much pleasure in saying that I have seen no scarlet bedding Verbena that can approach your 'Lady Victoria,' as I saw it at Dalkeith, on August 21st, and it was well tested, being extensively grown alongside of Verbena 'Miss Trotter,' which it resembles, but far surpasses in general effect.

"October 4, 1861. ANDREW TURNBULL, Bothwell Castle."

"Your bright crimson Verbena, 'Lady Victoria Scott,' which I saw at Dalkeith, is decidedly superior to any other variety which I have ever seen for bedding purposes; its compact, vigorous, and free blooming habit makes it quite a novelty for the flower garden. ANDREW HOWDEN,

"October 5, 1861. Coltness, Wishaw, Glasgow."

"'Lady Victoria Scott,' as I saw it towards the end of the season, was unquestionably superior in every respect to 'Miss Trotter,' growing side by side, having a more robust habit, denser heads of bloom, and flowers of a more glaring crimson scarlet hue. For bedding purposes, I believe it to be a variety of premier excellence. J. ANDERSON, Meadow Bank,

"October 6th, 1861. Uddingstone."

"Your seedling Verbena, 'Lady Victoria Scott,' stands pre-eminent for its unexampled effect in the parterre. It possesses every desirable quality the fancy can conceive; as seen by me at Dalkeith this season, the display it made was rich beyond conception. JOHN REID, Orton Hall, Peterborough."

"October 7th, 1861.

"I was much pleased with the Verbena 'Lady Victoria Scott,' which I saw at Dalkeith Palace in the month of July last. It is a seedling from 'Miss Trotter' Verbena, on which it is a decided improvement. It has a compact habit of growth, and is a free bloomer. A desirable variety which cannot fail to give satisfaction. GEO. WESTLAND, Kingston Hall."

"October 8th, 1861.

"I had many opportunities of seeing the 'Lady Victoria Scott' Verbena, in all stages of growth, from the middle of June to the end of September. I consider it the most effective bedding Verbena of the day. It was extensively used at Dalkeith this season, and planted side by side with 'Miss Trotter,' offering a fair and impartial chance of comparison. The most ordinary observer could see at a glance that 'Miss Trotter' is to be no longer inquired after, it is so distinctly surpassed in robustness of habit, earliness and profusion of bloom, and brilliancy of colour; for the three latter properties it cannot be approached by any existing Verbena.

"October 8th, 1861. A. McLEOD, Newbattle Abbey, Dalkeith."

"I have great pleasure in bearing the highest testimony to your valuable Verbena, 'Lady Victoria Scott' (colour bright crimson, an exceeding free bloomer, very compact and vigorous habit), which I saw growing at Dalkeith Palace Gardens, in August last, never having seen any Verbena so effective), completely dazzling at a distance of 100 yards, and having putting in the shade every other Verbena near it, and having the good qualities of being able to resist any amount of rain.

"October 12th, 1861. W. CUTBUSH, Barnet, Herts."

"In reply to the inquiry as to my opinion of Verbena 'Lady Victoria Scott,' let me say, that in common with all who saw it bedded by the thousand at Dalkeith this season, I thought it the most effective bedding plant I ever saw. Its dwarf compact habit and dense mass of brilliant scarlet bloom leaves nothing to be desired either for beds or riband borders.

"October 16th, 1861. H. ROSE, Fleurs Castle, Kelso."

"I have no hesitation in giving you my opinion about your Verbena, 'Lady Victoria Scott;' when I saw it at Dalkeith last August, it was the finest Verbena I have seen.

A. WILLIAMSON, Royal Gardens, Kew."

"November 4th, 1861.

Plants in April, 1*s*. 6*d*. each. 12*s*. per dozen. 50*s*. per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in riband-borders and vases, this variety is one of the most useful and effective yet offered for sale.

Plants in April, 1*s*. 6*d*. each. 12*s*. per dozen. 75*s*. per 100.

CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

Per packet—	s.	d.	Per packet—
Calceolaria, herbaceous..	2	6	Primula sinensis dentiflora .. ..
Cineraria cruenta ..	2	6	Primula sinensis albiflora dentiflora
„ maritima	0	6	„ „ kermesina splendens
Erianthus Ravennæ ..	1	0	Verbena venosa ..
Lobelia erinus speciosa	1	0	
„ „ major ..	1	6	

A PRICED and DESCRIPTIVE CATALOGUE of Vegetable, Agricultural, and Flower Seeds, forwarded post free to all applicants.

Exotic Nursery, Tooting, Surrey, S.

Superb Hollyhocks.

WILLIAM PERRY has published a CATALOGUE of HOLLYHOCKS for the Spring of 1862, containing all the most popular kinds.
Also strong SEEDLINGS from best varieties, mixed, 4s. per doz., or 25s. per hundred.
Sawbridgeworth, Herts.

Double Dwarf Poppies.

HOOPER AND CO., SEEDSMEN, Covent Garden Market, London, W.C., offer Seed of their superb stock of DOUBLE DWARF FRENCH POPPIES, unrivalled for their extreme doubleness, and variety, and brilliancy of colours. Price 1s. per packet, post free. To the Trade, 5s. per ounce.

Bower Nurseries, Maidstone.

THE WHOLE of the OUTDOOR STOCK is on SALE at reduced prices in order to effect a clearance, the land being required for other purposes.
J. H. WOOD, Proprietor.

THE LONDON MANURE COMPANY
(ESTABLISHED 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

BURNARD, LACK, AND CO.'S CONCENTRATED SUPERPHOSPHATE of LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to BURNARD, LACK, & Co., Sutton Road, Plymouth.

Tenant Farmers' Manure Company.

ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
MANUFACTURED BY
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. MACADAM, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. LAWES for the present season of 1862 are now ready for delivery at his factories, at the following prices:—

	£	s.
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6	6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES ..	5	5
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8	0

These Manures can be obtained of MR. LAWES, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

New Source of Ammonia.

TO MANURE MANUFACTURERS AND DEALERS.
ULMATE of AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that Wool contains more Nitrogen (yielding Ammonia) than any other kind of animal matter proves the Ulmate of Ammonia to be a very valuable manure, the Analyses by Professor Voelcker, the Chemist of the Royal Agricultural Society, and other high authorities, showing a per centage of Ammonia exceeding 14 per cent., or equal to an average sample of Peruvian Guano, while, from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of Ammonia. Being a fine dry powder, it is peculiarly suitable for use in the manufacture of manures, and preferable to the ordinary salts in use, sulphate of ammonia, nitrate of soda, &c. Samples, prices, and all information will be forwarded on application to FREDERIC J. CORNWELL, Broker, 7, Great St. Helens, E.C.
LINSEED CAKES, RAPE CAKES, COTTON CAKES, also the Materials used in the Manufacture of Manures, at the lowest market prices.

BROWN'S FLORAL SHADING.
Sold by all Nurserymen and Seedsmen, in pieces.

	s.	d.
No. 1, 20 yards long, 38 inches wide	4s.	6d.
No. 2, ditto ditto	4	9
No. 3, extra stout, 18 yards long, 39 inches wide	7	6

Owing to the scarcity and high price of Cotton, an advance of [illegible] per piece in this material has been made.
C. B. wishes to state that all his Shading is stamped thus:—Brown's Floral Shading, No. 1, 2, or 3, it having come to his knowledge that there is an unstamped article being sold as his manufacture.
CHARLES BROWN, Greenheys, Manchester.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.
PROTECTION from the COLD WINDS & MORNING FROST. "FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for horticultural and floricultural purposes, for preserving Fruit and Flowers from the scorching rays of the sun, from from attacks of insects, and from morning frosts. To be had in any required lengths.
Two yards wide .. .. 1s. 6d. per yard run.
Four yards wide .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.
The "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.
ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON,
WERE AWARDED THE
SILVER MEDAL of the ROYAL AGRICULTURAL SOCIETY for their IRON HURDLES and GATES,
which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.
Lists per post on application. Gates from 30s. to 500l.

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

PROFESSOR VARNELL'S ENAMELLED AND WROUGHT-IRON STABLE FITTINGS.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their horses. They can be had plain, galvanised, or enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS,
ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,
OPPOSITE OLD ST. PANCRAS CHURCH.

GREEN'S PATENT LAWN MOWERS.

HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN GRANTED TO THOS. GREEN FOR
IMPORTANT IMPROVEMENTS IN LAWN-MOWING MACHINES
which will be ready for the ensuing season.

The Improvements are of such an important character that all users should not fail to make themselves acquainted with them.

ILLUSTRATED PRICE LISTS, with full particulars, will be ready shortly.

Address T. GREEN, SMITHFIELD IRON WORKS, LEEDS, and
2, VICTORIA STREET, HOLBORN HILL, LONDON, E.C.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

STEAM PLOUGHING AND CULTIVATING.

HIGHLY SATISFACTORY REPORTS
HAVE BEEN RECEIVED FROM THE PURCHASERS OF

HOWARD'S NEW PATENT STEAM CULTIVATORS,

AND WILL BE SENT FREE ON APPLICATION TO

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD.

ALSO CATALOGUES WITH FULL PARTICULARS OF THEIR

CHAMPION PLOUGHS, HARROWS, HORSE RAKES, & HAYMAKERS.

The following are two of the Reports referred to:—

BERKSHIRE.
Highway Farm, Maidenhead, November 7, 1861.

Gentlemen,—In justice to you as the manufacturers of my Steam Cultivating Apparatus, and without attempting to pay you a compliment, I will endeavour to state plainly the reason why I determined on adopting steam cultivation, and why I obtained your appliances. With a view of satisfying myself, I determined upon seeing all the systems of steam cultivation, which I did, and after giving the matter mature consideration, I became a purchaser of yours, and have every reason to be satisfied. I have no hesitation in saying that the cost of yours in the first instance influenced me in some measure. I found I had a number of horses to spare, that would realize a sum approaching the cost of the apparatus, and experience convinces me I estimated correctly. Having worked it constantly through perhaps one of the most favourable autumns that it is probable I may ever experience, and performed an amount of cultivating I was scarcely justified in expecting, I am now in a position to inform you the result. I obtained your apparatus early in August, and set to work cultivating the first piece of Wheat stubble immediately it was clear of the crop. I commenced working without the assistance of any of your staff, depending upon my own experience from what I gleaned when with you, and the performances I had witnessed elsewhere. I have gone on and effectually cultivated 84 acres an average depth of 8 inches, as the first process breaking up; a portion of it has been cultivated a second time, this I call 52 acres; and 8 acres a third time, making a total of 144 acres on the Highway Farm. I have a son farming near here, on a farm called Lane Farm; I sent the apparatus there immediately I could spare it for his use, and he informs me he has cultivated 72 acres the first time, and 28 the second, making a total of 100 acres and this without any breakages. I consider my commencement a great success. I am so satisfied now I have experienced its advantages, that I would not be without the apparatus if the cost were double the amount. I have endeavoured to ascertain the exact cost per acre and I find it to be 6s. 6d.; this includes per centage on capital, wear and tear, estimated at 25 per cent., and cost of manual labour, coal, water, and oil. On this basis, I find the daily cost of working to be as near as possible 45s. per day, and the average of work performed it from 7 to 8 acres. This estimate I am satisfied will cover all expenses.

Yours truly,
Messrs. J. & F. Howard, Bedford. JOSEPH GILLETT.

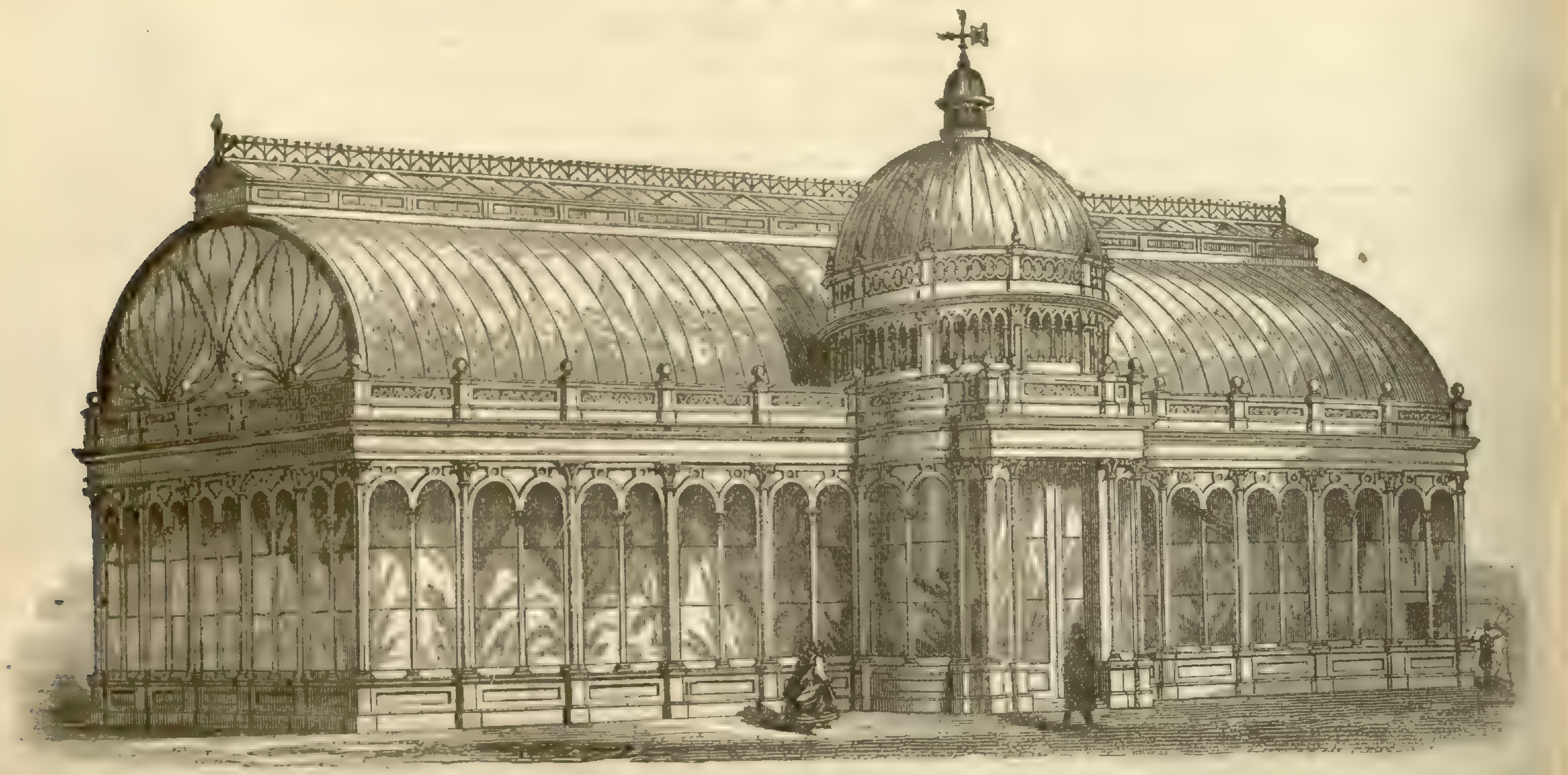
CAMBRIDGESHIRE.
Camois Hall, Newmarket, November 26, 1861.

Gentlemen,—I have great pleasure in stating my experience in steam cultivating. Since I purchased a set of your Apparatus in June last, I have cultivated (instead of ploughing,) 40 acres of land once over with the 3-tined implement, and sown it with Turnips. Since harvest I have cultivated upwards of 200 acres of Wheat stubble twice over, once with the 3-tined, and once with the 5-tined implement. I have done on the average 7 acres per day, about 8 inches in depth. The land this autumn has been unusually hard, having had very little rain in this neighbourhood. I am happy to say we have not had a single breakage, although, as before stated, we have done 450 acres. I have now set it up till the spring, when I shall stir the fallows over again. I calculate I shall do 8 or 9 acres per day very easily. My engine is 10-horse power, and we consume 8 cwt. of coal and 1 quart of oil per day.

I am, Gentlemen, yours faithfully.
Messrs. J. & F. Howard, Bedford. JOHN L. KING.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

PATRONISED BY THE QUEEN.



WEEKS'S CONSERVATORIES are peculiarly chaste in design. A choice variety now in preparation at their Steam-Power Works.

WEEKS'S NEWLY-INVENTED PEACH HOUSES give the utmost satisfaction. They require *no Brick foundation*, and are specially suited for covering Trees of long standing.

WEEKS'S FORCING HOUSES and **VINERIES** combine some valuable improvements.

WEEKS'S IMPROVED VENTILATING APPARATUS gives universal satisfaction.

WEEKS'S HOT-WATER APPARATUS continues to eclipse all spurious imitations of their renowned "ONE-BOILER SYSTEM." It exposes four times the quantity of heating surface to the action of the fire, consequently must be four-fold as powerful, and economical in the same ratio. It is described by the highest authority as the very best extant for both large and small works, which the following references will serve to corroborate. It has been adopted by

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN

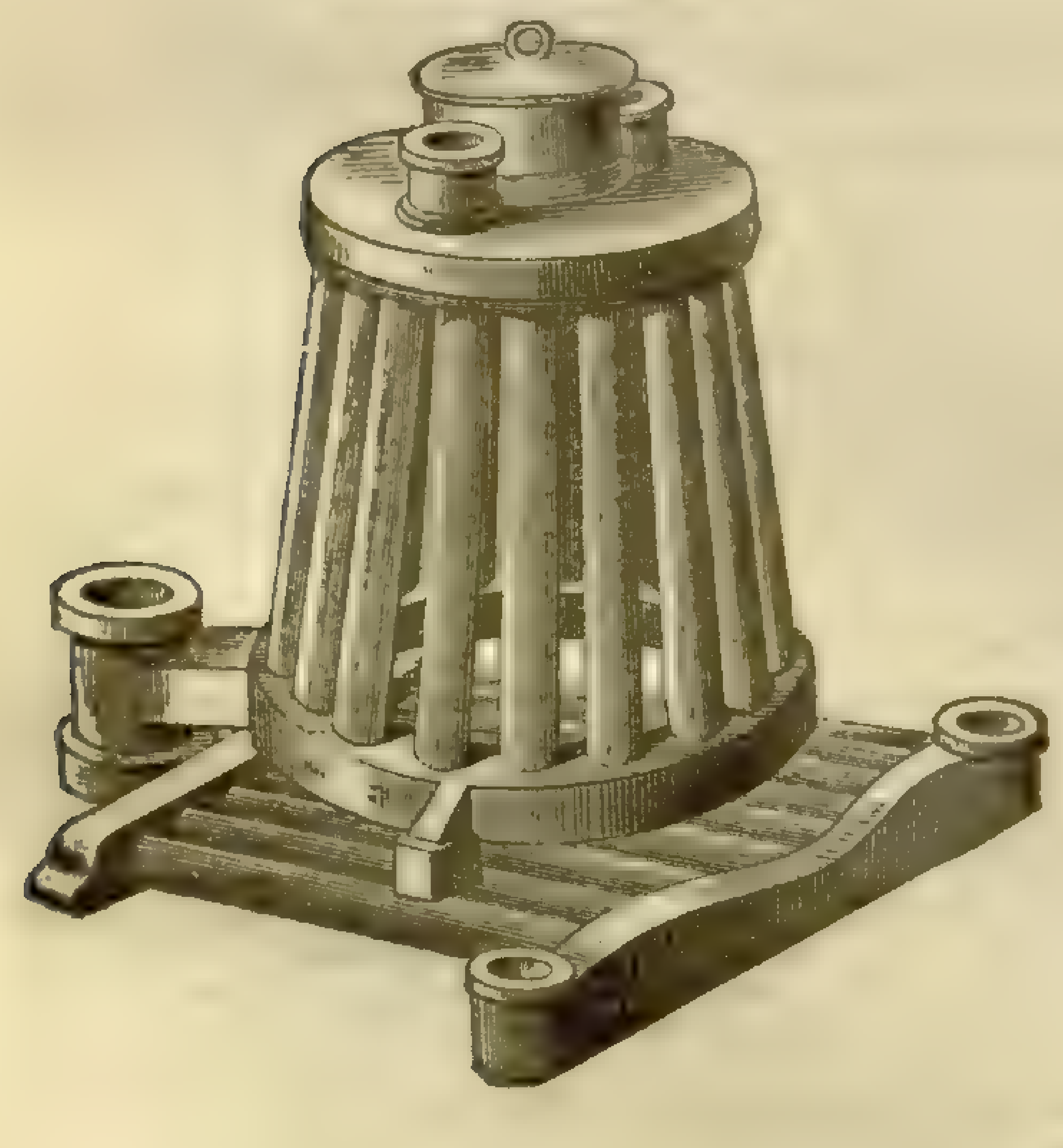
THE TOWER OF LONDON
THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN

THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM, AND NUMEROUS PUBLIC COMPANIES.

Catalogues free on application.

JOHN WEEKS & COMPANY, HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS ENGINEERS,
KING'S ROAD, CHELSEA, LONDON, S.W.

BY HER MAJESTY'S ROYAL LETTERS PATENT.



ORMSON'S PATENT JOINTLESS TUBULAR BOILER,

AN ORIGINAL INVENTION,

Brought out for the purpose, and is now fully acknowledged to surpass the OLD-FASHIONED JOINTED TUBULAR BOILERS, which have been made for the last 20 or 30 years by all other manufacturers. The ADVANTAGES of this PATENT will be manifest to every person's understanding from the following FACTS: For instance, one of the OLD-FASHIONED JOINTED BOILERS with 50 TUBES would have 100 JOINTS made of rope yarn and cement, exposed to the direct action of the FIRE, whereas in my PATENT there is NOT ONE JOINT so exposed. And it should be fully understood that as the OLD-FASHIONED JOINTED TUBULAR BOILER increases in SIZE, number of TUBES and JOINTS, its liability to LEAKAGE also increases, consequently

THE FOLLOWING IS THE REASON WHY

ORMSON'S ONE-BOILER SYSTEM

AND PATENT JOINTLESS TUBULAR BOILERS

have become so universally adopted on account of their superior power, great safety, and economy,

ORMSON'S No. 1 BOILERS	are heating upwards of		250	feet of Pipe.
ORMSON'S No. 2 BOILERS	,,	,,	600	,,
ORMSON'S No. 3 BOILERS	,,		1800	,,
ORMSON'S No. 4 BOILERS	,,	,,	3000	,,
ORMSON'S No. 5 BOILERS	,,	,,	5000	,,

Boilers of larger sizes if required to heat 12,000 or 15,000 feet of Pipe.

H. ORMSON having a most complete Set of Steam-power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, HORTICULTURAL BUILDER TO HER MAJESTY,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

WILLIAM HURD, HORTICULTURAL BUILDER and HOT-WATER APPARATUS MANUFACTURER, Radnor House, Radnor Street, King's Road, Chelsea, S.W. TUBULAR BOILERS, from 3 guineas.

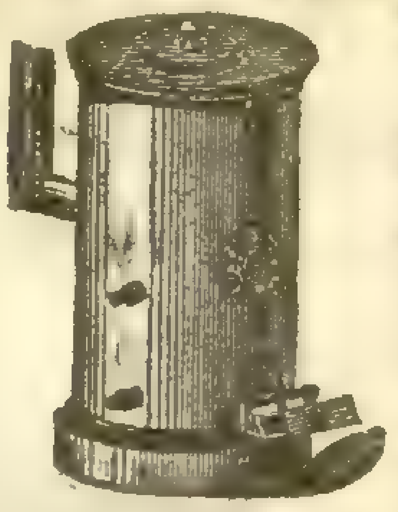
MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large Apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.

Particulars and prices post free on application to MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



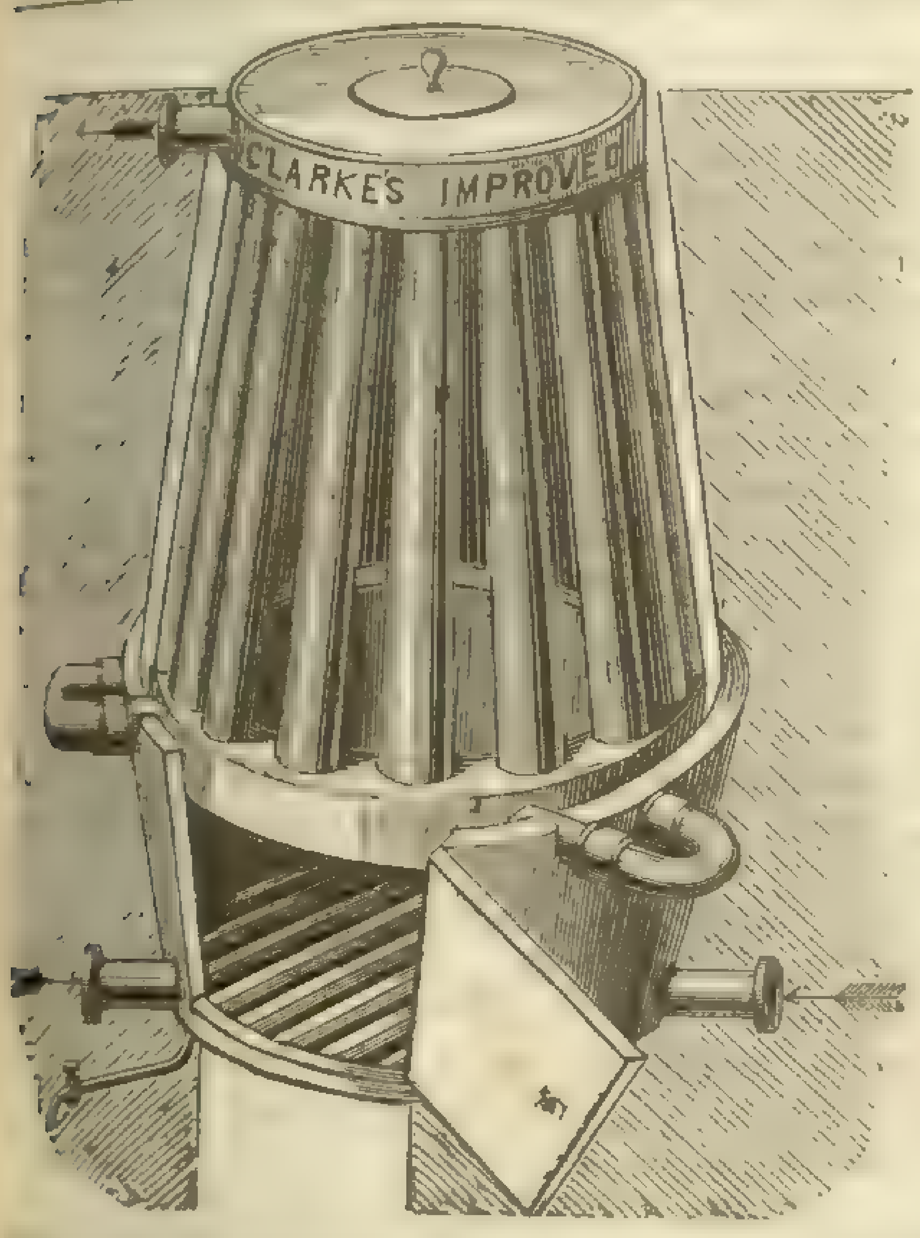
Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

WARRANTED GARDEN TOOLS. — GARDEN ENGINES, GARDEN ROLLERS, Pruning Knives, Flower Scissors, Shears, WIRE NETTING, Syringes, Hoes, Rakes, Spades, Forks, MOWING MACHINES, and every Implement for Horticultural use at

DEANE'S (Opening to the Monument), London Bridge, E.C. Illustrated Price Lists free on application.



CLARKE'S

NEW PATENT

CYLINDRICAL BOILER

Is now announced to be the most economical and efficient HEATING APPARATUS invented; and the Draught principle and Cylindrical Furnace surpasses everything brought before the Public. These Boilers are also very durable, the metal being half-inch thick and no joints exposed to the direct action of the fire; and although they possess such great power, the Heat can be regulated to the greatest nicety.

Estimates and Prices for all kinds of Heating, with first-class references, sent Post Free, by applying to the EAGLE IRON FOUNDRY, 25, Seel Street, Liverpool.

T. C. CLARKE,

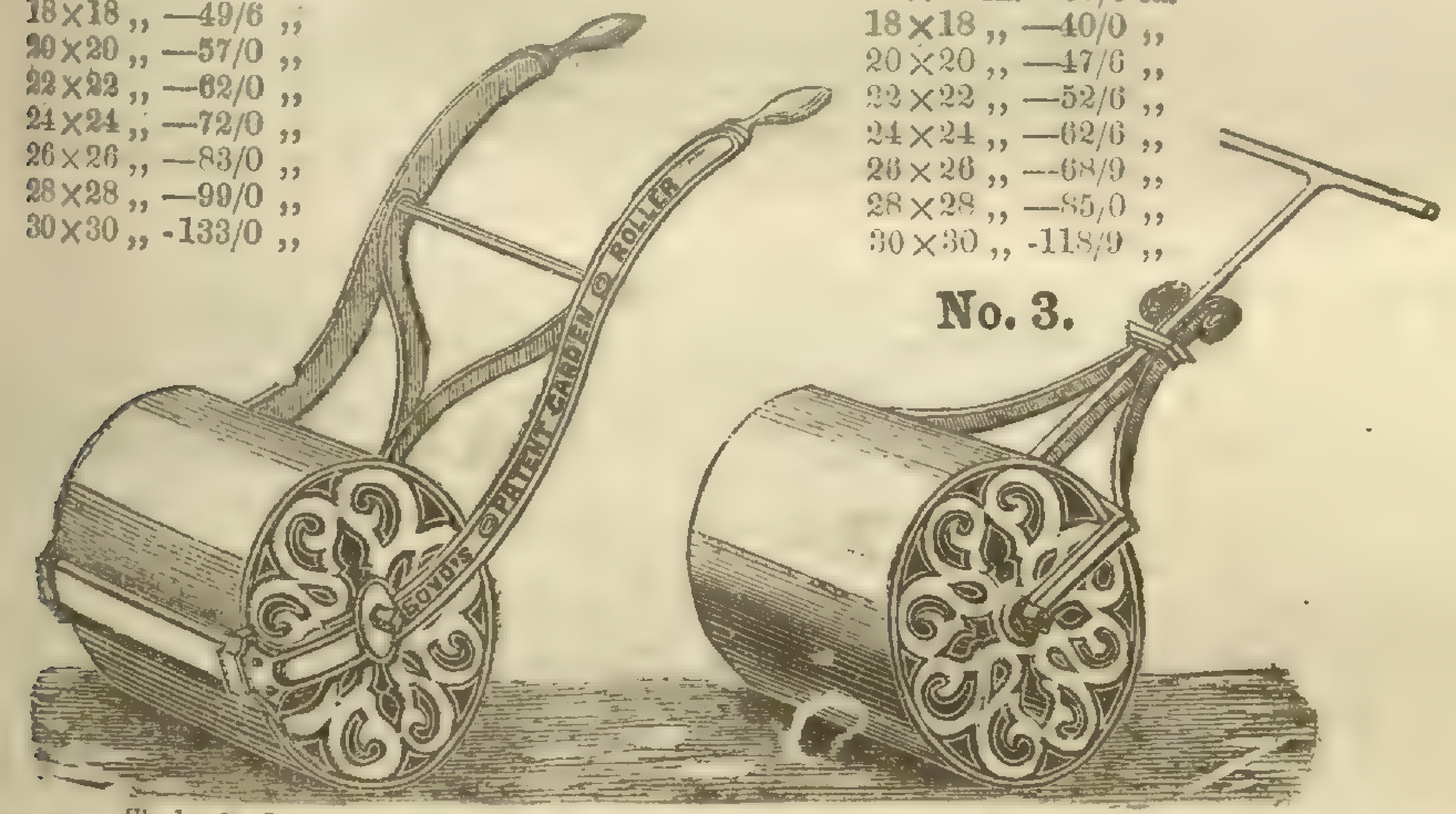
CIVIL AND HYDRAULIC ENGINEER, PROPRIETOR.

GARDEN ROLLERS.

16×16 in.—42/6 ea.
18×18 ,, —49/6 ,,
20×20 ,, —57/0 ,,
22×22 ,, —62/0 ,,
24×24 ,, —72/0 ,,
26×26 ,, —83/0 ,,
28×28 ,, —99/0 ,,
30×30 ,, -133/0 ,,

16×16 in.—37/6 ea.
18×18 ,, —40/0 ,,
20×20 ,, —47/6 ,,
22×22 ,, —52/6 ,,
24×24 ,, —62/6 ,,
26×26 ,, —68/9 ,,
28×28 ,, —85/0 ,,
30×30 ,, -118/9 ,,

No. 3.

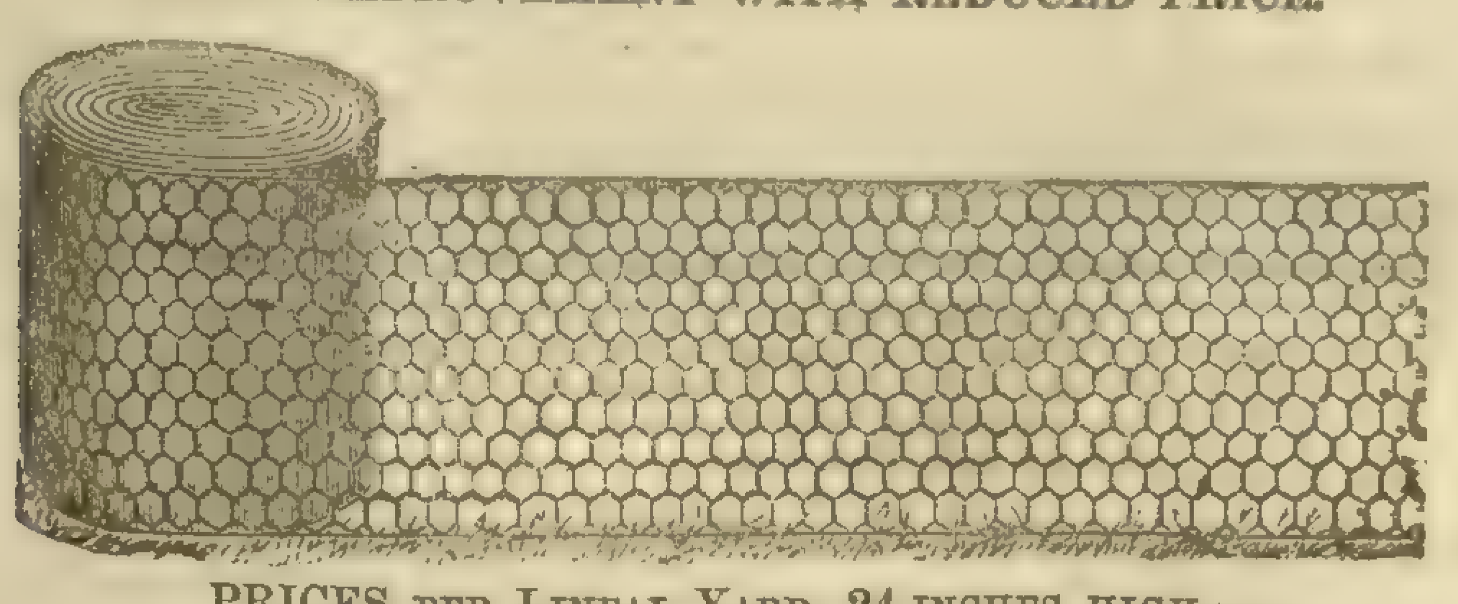


To be had of every Ironmonger in the Kingdom; also of the Manufacturers,

NEWTON, CHAMBERS, & CO., THORNCLIFFE IRON WORKS, NEAR SHEFFIELD.

NEW IMPROVED PREMIUM WIRE NETTING.

GREAT IMPROVEMENT WITH REDUCED PRICE.



PRICES PER LINEAL YARD, 24 INCHES HIGH:—

Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra Strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
[illegible] inch	Hares, Dogs, Poultry	3*d.*	4*d.*	3¾*d.*	5*d.*	4½*d.*	6*d.*	5½*d.*	7*d.*
[illegible] inch	Game or Poultry Netting	3½*d.*	4¼*d.*	4*d.*	5*d.*	5*d.*	6½*d.*	6½*d.*	8*d.*
[illegible] inch	Small Rabbits, Hares, &c.	4*d.*	4¾*d.*	4¾*d.*	6*d.*	5½*d.*	7*d.*	7*d.*	9*d.*
[illegible] inch	Smallest Rabbits..................	5*d.*	6*d.*	5¾*d.*	7*d.*	7*d.*	9*d.*	9*d.*	11*d.*

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

WANTED to RENT, a Small NURSERY BUSINESS, near London preferred.—Address, with particulars, to G. H., Post Office, St. John's Hill, Sevenoaks, Kent.

WANTED, a good FARM of not less than 400 acres in extent, conveniently and healthily situated in the West or South of England, near a Railway—must be suitable for Sheep, have some Grass Land, be in fair order, and the Shooting must go with the Farm. Would suit executors, or any gentleman giving up a Farm, or having one to let unexpectedly.

Address, The Author of "Farm Life," care of Messrs. Saunders & Otley, 66, Brook Street, Hanover Square, London, W.

Whitehill Farm, Frimley, Surrey.

TO BE LET by TENDER for 15 Years, from the 5th of January, 1862, by order of the Hon. Charles Gore, the Commissioner in charge of Her Majesty's Land Revenue in England, a convenient FARM HOUSE and about 19 Acres of Land (Land Tax redeemed), in the hamlet of Frimley, in the county of Surrey.

Particulars and Forms of Tender may be had on application to the Hon. CHARLES GORE, 1, Whitehall Place; to Mr. MENZIES, Parkside, Englefield Green, Staines; and at Whitehill Farm.

Crown Lands, Delamere, Cheshire.

TO BE LET by TENDER for a term of 21 years, from April 5, 1862, with immediate possession, by direction of the Honourable James Howard, the Commissioner in charge of Her Majesty's Woods and Royal Forests, a portion of the late Forest of Delamere called LONGRIDGE and PLOVER'S MOSS. Allotments (formerly Woodland) recently cleared, and now being marled for cultivation, containing about 893 statute Acres, in the parish of Delamere, to be divided into convenient farms.

The land is Tithe Free, and is situate about 10 miles from Chester, and 4 miles from Hartford Station, on the London and North Western Railway. There is also to be a station at Delamere on the proposed West Cheshire line of railway through the Forest.

Particulars, with Forms of Tender, may be had on application to the Honourable JAMES HOWARD, Office of Woods, &c., London; to Mr. JOHN CLUTTON, 9, Whitehall Place, London; or to Mr. GEORGE MOODIE HARWOOD, Kelsall, Chester, who will afford every facility for viewing the land.

Tenders must be delivered not later than Saturday, March 8, 1862.

Sales by Auction.

Standard Roses, Trained and Standard Fruit Trees, Evergreens, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, February 22, at half-past 12 o'Clock precisely, a quantity of splendid Dwarf-trained Apricot, Plum, Peach, and Nectarine trees, Standard Fruit Trees, Roses, Pinks, Laurustinus, Cypress, Arbor-vitæ, Laurels, Raspberry Canes Rhubarb, 1200 Strawberry plants, Currants, &c.

On view the Morning of Sale, and Catalogues had.

Consignment of Plants from Ghent.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, February 26, at half-past 12 o'Clock precisely, a CONSIGNMENT of PLANTS from Ghent, consisting of 300 Rhododendrons, choice hardy varieties; 300 Indian Azaleas, with flower-buds; 200 Lilium lancifolium rubrum; 200 Lilium venustum, 1000 fine double Italian Tuberosa, 300 Delphinium formosum, 200 Rosa Caroliniana, 100 mixed Chinese herbaceous Pæonias, and 300 roots of fine mixed German Iris.

On view the Morning of Sale, and Catalogues had.

Important Sale of Seeds from United States, Canada, California, Caucasus, Greece, and Mexico.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 5, at half-past 12 o'Clock precisely, a large quantity of CONIFEROUS SEEDS, comprising Cupressus funebris, C. Uhdeana, Lawsoniana; Juniperus excelsa; Pinus Coulteri, P. muricata; Abies Pinsapo, Fraseri, Nordmanniana, grandis, Cephalonica, Reginæ, Amaliæ; Wellingtonia gigantea; Virgilia lutea, alba, Apollinis, Ceanothus thyrsiflorus, &c.

On view the Morning of Sale, and Catalogues had.

Annual Sale of Handsome English-grown Camellias, &c.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at the Mart, on FRIDAY, February 28, at 12 o'Clock, about 200 choice DOUBLE CAMELLIAS, beautiful plants, from 1 to 6 feet, including the most approved kinds, abundantly furnished with bloom buds; fine AZALEA INDICA in flower; a superb assortment of about 300 very fine STANDARD, HALF-STANDARD, DWARF and CLIMBING ROSES; a fine collection of AMERICAN PLANTS; Lilium lancifolium rubrum, Ericas, Epacris, Fuchsias, Verbenas, Pæonias; Dahlias in dry roots, &c.

May be viewed the Morning of Sale; Catalogues had at the Mart; and of the AUCTIONEERS, American Nursery, Leytonstone, Essex, N.E.

Clearance Sale for the British Land Company Limited.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION, on the Premises, Tilney Hall, George Lane, Wanstead, Essex, N.E., on WEDNESDAY, March 5, at 11 o'Clock, the whole of the valuable EVERGREENS, DECIDUOUS SHRUBS, and ORNAMENTAL TREES; some very handsome Dwarf Trained Peaches, Nectarines, Apricots, and other Fruit Trees, Box Edging, several hundred feet of capital Turf, Walnut, Lime, and other Timber Trees; Lean-to Greenhouse, 40 feet by 17 feet; quantity of Rhubarb, Herbaceous Plants, and other effects.

May be viewed 2 days prior to the Sale. Catalogues may be had on the Premises, the George Inn, Wanstead, N.E.; the Eagle, Snaresbrook, N.E.; at the Offices of the British Land Company Limited, 14, Moorgate Street, E.C.; of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

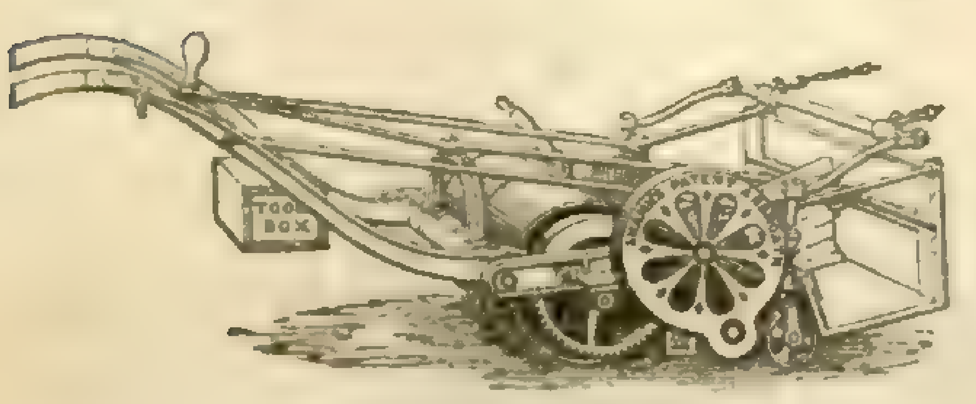
TO BE SOLD by AUCTION at Liverpool, on WEDNESDAY, the 26th inst., at 1 o'clock, at the Broker's Office, per "H. B. Emery," Perkins, from Buenos Ayres, now on her voyage to Cork or Falmouth for orders, her cargo deliverable at the buyer's option at any safe port in the United Kingdom, 265 Tons ½-inch GROUND BONES, 51 Tons BONE DUST, in Bags, in One Lot.

Apply to Messrs. JAS. HOSACK & Co., Merchants; or to JAMES GORDON & Co., Brokers, 11, Orange Court, Castle Street, Liverpool.

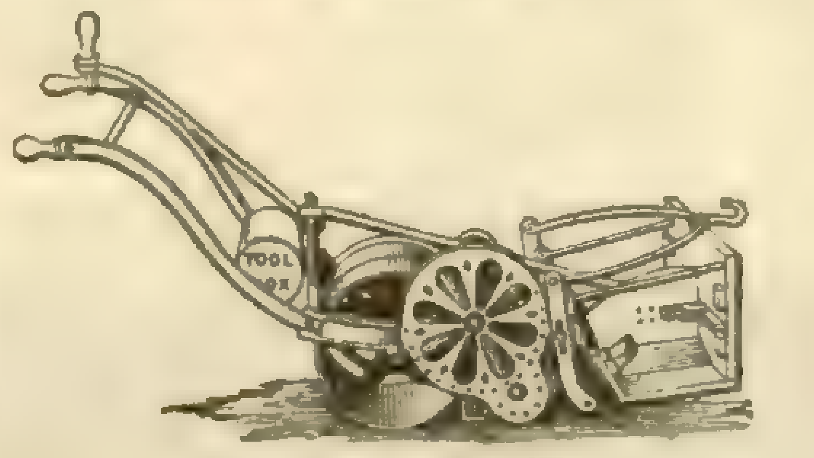
SHANKS' NEW PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

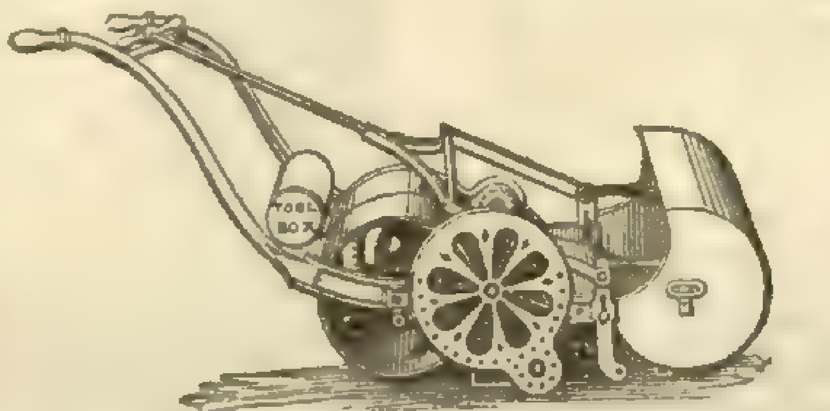
WITH SILENT MOTION IF SPECIALLY DESIRED.



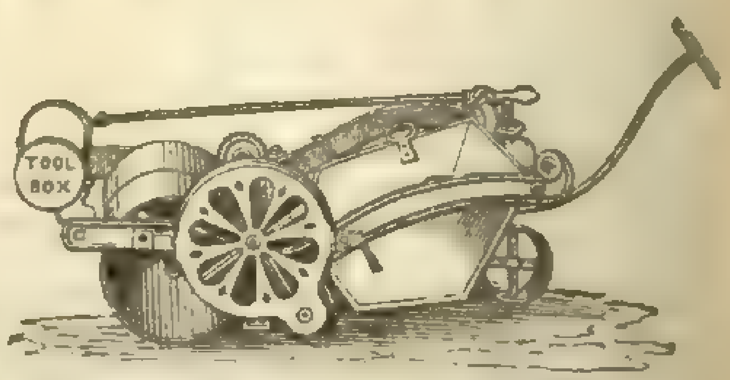
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

J. B. BROWN AND CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effect of the improvements of previous years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season.

The improvement whereby the noise occasioned by the working of the Wheels is entirely obviated, is this season made still more efficient. There is no method of imparting Motion to the working parts of almost any kind of Machinery at all to be compared to the Motion derived from Wheels; and the Patentees are gratified to state that they have not found it necessary to provide a substitute for this perfect method of imparting motion in introducing the silent movement into their Machine. The Cogs of the Wheels are made in the ordinary way, with ample bearing on each other, but so constructed and composed of Patent Material, as to be quite silent in working.

One of the most important considerations in making a Machine fit to be put into the hand of a labourer, to work without any difficulty, is simplicity of construction and arrangement, combined with strength and durability of the whole working parts, and J. B. BROWN & Co. have much pleasure in intimating that the efforts of the Patentees to attain this end have been completely successful. The Improved Machines for Horse and Pony Power, combining with these advantages the additional one of Delivering the Grass without stopping the Machine, make it peculiarly fit for all the purposes of Mowing, whether for Grass Walks, the Flower Garden, or the open Lawn. The style in which the work is executed cannot be surpassed—being very much neater than the Scythe, while at half the expense—*and it is quite immaterial whether the Lawn be level or otherwise, or whether the Grass be wet or dry.*

The peculiar advantages of Shanks' celebrated HORSE MACHINE may be thus described:—

1. The Cutter is so constructed that in Mowing the closest and finest Turf there is not the smallest appearance of ribbing.

2. The Drums are loose on the Shaft, and are made SELF-ACTING, so that in turning the Machine will Mow as well as when going in a straight line.

3. From the position of the Front Pulleys or Rollers the Machine will Mow on the most uneven Lawn, and the Plate at the same time is PREVENTED FROM INJURING THE TURF.

4. No Machine can turn quicker or more easily than this Machine. The two Front Pulleys swivel, and the Drums on the Shaft are loose, and yet kept in gear by Patent Spiral Springs, so that the Machine will turn into the most intricate windings of the Flower Garden, amongst Trees or Flower Beds, with perfect ease, and WITHOUT THE SMALLEST CHANCE OF INJURING THE SHRUBS OR FLOWERS.

5. The Wheels are all protected by Guards, which entirely prevent any particles of Cut Grass, Shrubs, or Flo wers from getting into contact with the teeth. A Scraper is introduced to keep the Rollers clear of small stones or rubbish in crossing Gravel Walks, &c. The whole Machine is nicely balanced as regards equality of weight in front and back, and consequently is exceedingly STEADY IN WORKING. The Cutter works in Brass Bearings, and is now made so very strong that breakage is rarely heard of. Malleable Iron is always used for the Handles or Shafts, which are necessarily neater and much more durable than the usual Cast-iron ones.

6. One of the most valuable of the Patent Improvements the Patentees have effected in their Machine is in the method of emptying the Grass Box. The want of a speedy and efficient method for this purpose has been much felt for many years past. In the Spring more especially, when the Grass springs up rapidly, nothing is more annoying in working a Mowing Machine than the stopping and almost constant travel from the handles to the box, and *vice versa*, for the purpose of emptying the Grass. A great deal of time is thus lost, independent of the hard work to the man, not only in walking some hundreds of times the length of the Machine in a day, but more especially in the stooping posture which he has so often to endure. This great want in all Mowing Machines, whether past or present, is completely obviated in Shanks' Patent Mowing, Rolling, Collecting, and Delivering Machine. The improvement consists in the introduction of a simple and efficient Apparatus for emptying the Box without the man being under the necessity of either leaving the handles or stopping the Machine. The immense advantages of this invention must be at once apparent to the practical Gardener. It will enable the Machine to do at least a third more work, while the labour and annoyance in working it, as compared with ordinary Machines, is three-fourths lessened. If a Lawn, which formerly took a Machine nine hours to Mow, can now be done in six hours, with three-fourths less labour to the man who works the Machine, nothing further is necessary to establish the utility and worth of the invention. The Grass is deposited on the Lawn in heaps ready for removal.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Price		Width of Cutter.	Price	
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0	*Drawn by a Horse.*	No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony.*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Width of Cutter.	Width of Cutter.
No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.*	No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.*	No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey.*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

SHANKS' NEW PATENT HAND MACHINE for 1862, for Pushing or Drawing separately or together.

Messrs. SHANKS have this year further improved their Hand Machine by the introduction of stiffer Malleable Iron Shafts or Handles, also by strengthening the Cutter, and by constructing the Axles so as to reduce the friction, and thus lessen the draught to the smallest possible amount, the effect of which improvements will unquestionably be to confirm the high character the Machine has gained in previous years, as *the most complete, the cheapest, and most durable Lawn Mowing Machine extant.* The Machines are fitted with the same care and precision as the Horse and Pony sizes, and like them possess the same advantages of ability to Mow on uneven Lawns without injuring the Turf, also of having loose Rollers for ease in turning, of having Wheels properly guarded, and so placed as to give an equal balance to either side of the Machine. A Scraper is introduced to keep the Rollers clear of small stones and rubbish in crossing Gravel Walks, &c.

PRICES.

SHANKS' NEW PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Price		Width of Cutter.	Price	
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man.*
No. 9.—22-inch Machine	8 7 6	*Easily Worked by Two Men.*	No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*	No. 16.—12-inch Machine	5 0 0	*Ditto by a Lady.*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

*** *The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

SOLE AGENTS FOR LONDON:

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No 19, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, February 22, 1862.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 9.—1862.] SATURDAY, MARCH 1. {Price Fivepence. STAMPED EDITION, 6*d*.

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NOTICE TO ADVERTISERS.—*Advertisements should be sent so as to reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

New Roses of 1862.

PAUL AND SON have now ready their usual fine Plants of the finest novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

New Roses, &c.

WM. PAUL'S CATALOGUE of NEW ROSES and SPRING PLANTS generally is now ready. Free by post on application to
WM. PAUL, Nurseries and Seed Warehouse, Waltham Cross, N.

New Roses for 1862.

J. AND J. FRASER, of the Lea Bridge Road Nurseries, N.E., beg to offer good Plants of the NEW ROSES of 1862.
A DESCRIPTIVE LIST will be forwarded on application.

NEW ROSES for 1862.—36 varieties (the pick of the year) offered in fine strong plants, a DESCRIPTIVE LIST of which may be had on application to
BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

Manetti Stocks.

WANTED, 200 or 300 STOCKS. Good price offered.
R. WHITTLE, Bitton, Teignmouth, Devon.

E. G. HENDERSON AND SON, NURSERYMEN AND SEED MERCHANTS, Respectfully announce their NEW SEED CATALOGUE and GUIDE for 1862, free on application.
Wellington Nursery, St. John's Wood, London, N.W.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very large, and in all varieties of colour, in Seed or Roots; also FLORIST FLOWERS, POLYANTHUS in roots, and DOUBLE WHITE PRIMROSE.
Apply GEORGE MACE, Calcot Gardens, near Reading.

COMMON LAURELS (Bushy).
4 to 5 feet, 20*s*. per 100; 170*s*. per 1000.
3 to 4 feet, 15*s*. per 100; 130*s*. per 1000.
R. HAYNES, Henwick Nursery, Worcester.

LAURELS.—Good healthy transplanted, 2 to 3 feet, by the 100 or 1000. Samples of 100 will be forwarded to unknown correspondents on receipt of 10*s*. post office order or postage stamps.
A. GODWIN & SON, Collycroft Nursery, Ashbourne, Derbyshire.

Large Tartarian Arborvitæs.

FOR SALE, 600 of the above, all strong, healthy and well-formed, from 5 to 6 feet high, and in excellent condition for transplanting. Price moderate.
Apply to H. and F. SHARPE, Wisbech.

To the Trade.

TWO-YEARS' SEEDLING NORWAY SPRUCE, extra fine well rooted plants, grown in loam. Price 2*s*. per 1000; 4*l*. 10*s*. per 50,000; 8*l*. 10*s*. per 100,000.
JOHN CRANSTON, King's Acre Nurseries, near Hereford.

To the Trade.

WILLIAM WOOD AND SON beg to offer fine healthy 1 year Seedlings of UPRIGHT CYPRESS and CHINESE ARBOR VITÆ at 20*s* per 1000, or cheaper to purchasers of large quantities.
Maresfield, near Uckfield, Sussex.

WANTED IMMEDIATELY, 60,000 transplanted SCOTCH FIR, 6 to 9 inches; stout stuff. Address, stating price to G. FROST, The Nurseries, Brushford, Tiverton.

WANTED, Large EVERGREEN TREES and SHRUBS, in good condition for transplanting; HOLLIES, SPRUCE FIRS, YEWS, PORTUGAL LAURELS, ABIES CANADENSIS, &c., about 10 feet high.
Address, with price and description of Plants, to THOS. BURNETT, Roehampton, London, S.W.

Peat! Peat!!

WANTED, about 16 yards good BLACK PEAT delivered at Sunnyside, Upper Avenue Road, immediately. State lowest terms. Also for WHITE SAND.

PEAT EARTH of excellent quality delivered at the Nine Elms Station, 5 tons for 55*s*.; at Guildford, 5 tons for 50*s*.; at Havant, 5 tons for 45*s*.
Apply to Mr. BETTS, 115, Strand, London, W.C., where a sample may be seen.

Good Seeds, Carriage Free.

SUTTON AND SONS, SEED GROWERS AND MERCHANTS, Royal Berkshire Seed Establishment, Reading.

JAMES CARTER AND CO., SEED MERCHANTS AND NURSERYMEN, 237 and 238, High Holborn, London, W.C.

New Garden Seeds.

JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

Choice New Flower Seeds, post free, See

SUTTON'S ADVERTISEMENT at page 162 of the *Gardeners' Chronicle* of Feb. 22.

Now Ready.

BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See large Advertisement.
Covent Garden Market, W.C.

Vegetable and Flower Seeds.

PAUL AND SON'S CATALOGUE of the above, including ASTERS and STOCKS, with DESCRIPTIVE LIST of the best 100 GLADIOLI, is now ready, post free.
"Old" Cheshunt Nurseries, Herts.

Seeds, Seeds, Seeds.

WM. CUTBUSH AND SON'S CATALOGUE is now ready, post free on application.
Seed Establishment, Highgate, London, N.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

New Seeds of the best quality.

J. ROBERTS AND SON'S CATALOGUE is now ready. Post free on application.
Seed Warehouse, Vale Street, Denbigh, N.W.

DOWNIE, LAIRD, AND LAING beg to intimate that their NEW CATALOGUE of FLORIST FLOWERS, NEW FLOWER SEEDS, &c., is now ready, and may be had free on application.
17, Frederick Street, Edinburgh, and Stanstead Park, Forest Hill, London, S.E.

Superb Hollyhocks.

WILLIAM PERRY has published a CATALOGUE of HOLLYHOCKS for the Spring of 1862, containing all the most popular kinds.
Also strong SEEDLINGS from best varieties, mixed, 4*s*. per doz., or 25*s*. per hundred.
Sawbridgeworth, Herts.

Florist Flowers.

CARSTAIRS AND SON'S DESCRIPTIVE CATALOGUE of the above is now ready, and may be had free on application. Prices will be found extremely moderate.
Warriston Nursery, Edinburgh.

PANSY.—The best and hardiest Bedding Pansy, the freest and boldest flowerer yet offered. Price 5*s*. per score, or 1*l*. 1*s*. per 100.
G. KNIGHTS, Whitton, Ipswich.

PANSIES.—The best Show Flowers, and all the newest varieties, at very low prices by the dozen, hundred or thousand. Strong plants guaranteed. Seed, 9*d*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
G. KNIGHTS, Whitton, Ipswich.

SEEDLING HOLLYHOCKS, saved from the finest named varieties in cultivation. Will bloom early this year. 10*s*. per 100. Trade price on application.
ROBERT WARD, The Rosery, Ipswich.

TRITOMA UVARIA.
For strong plants of this splendid flower apply to
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

To the Trade.

WILLIAM EPPS, Jun., begs to offer FINE DWARF-TRAINED PLUMS, 24*s*. per dozen.
The Nurseries, Ashford, Kent.

STRONG FRUITING VINES, 7*s*. 6*d*. and 10*s*. 6*d*. LIST gratis and post free.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

Lady Downe's Vines.

JAMES BACKHOUSE AND SON can offer fine healthy young plants.
York Nurseries.—March 1.

Strong Vines from Eyes.

J. IVERY AND SON beg most respectfully to inform their patrons that they have now ready for planting out, strong Plants of all the best varieties.
A PRICED LIST will be forwarded on application.
Dorking Nursery.—March 1.

GRAPE VINES.—Well-ripened Canes of all the best sorts can be supplied.
PINE APPLE PLANTS.—The best, largest, cleanest, and most healthy stock in this country. An inspection is invited at
WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

ESPALIER APPLES, about 60 or 70 of the best varieties; excellent plants, 24*s*. to 30*s*. per dozen.
A LIST of SORTS sent on application.
Also extra fine Dwarf-trained MORELLO and other CHERRIES, PEARS, PLUMS, &c.
JOHN CRANSTON, Nurseries, King's Acre, Hereford.

Phalænopsis amabilis and rosea.

R. WARNER, Broomfield, Essex, has several fine Plants to dispose of; all healthy and good varieties. Prices on application.
When three or more are taken by Nurserymen an allowance will be made.

Agricultural Seeds.

GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

Agricultural and Garden Seeds.

H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

Present low Prices of Farm Seeds—See

SUTTON'S PRICED LIST, which will be sent free to any address.
SUTTON & SONS, Seed Growers, Reading.

Good Clover Seed.

GENUINE NEW CLOVER SEED may be obtained of the undersigned. Prices (according to market and quantity required) will be forwarded on application.
SUTTON & SONS, Seed Growers, Reading, Berks.

AZALEAS, CAMELLIAS, EPACRIS, and ERICAS.—We respectfully invite an inspection of our Stock of the above, which is large, in the finest health, and full of flower buds.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

Specimen Cacti to be disposed of.

W. YOUNG having too large a Stock of the above, is willing to treat on liberal terms with any one wishing to possess really fine specimens of first-class show varieties.
The Gardens, West Hill House, Highgate, N.

Henry's Prize Hybrid Leek.

DOWNIE, LAIRD AND LAING are now sending out Seed of the above in Packets at 1*s*.
17, Frederick Street, Edinburgh; and Stanstead Park, Forest Hill, London, S.E.

Altringham Carrot Seed.

CHARLES SHARPE AND Co., Sleaford, have the above to offer to the Trade; new Seed of their own growing. Price on application.

Extra Large Sea Kail.

GEO. CLARKE has to offer a large quantity of very fine roots, clean and sound, 1 to 2 inches in diameter. Prices on application. The Trade also supplied.
Nursery, Streatham Place, Brixton Hill, S.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

NUTTING'S selected DWARF RED BEET, recommended by the Horticultural Society as the best in Cultivation. The Trade supplied.
NUTTING & SONS, Seed Warehouses, 60, Barbican, London, E.C.

Dalmahoy Early Potatoes from Scotland.

PETER LAWSON AND SON can supply the above, and other varieties of SEED POTATOES.
27, Great George Street, Westminster, London, S.W.

SEED POTATOES—FORTY-FOLD.—The undersigned has a few Tons of the above at low rates. Prices on application.
CHRISTMAS QUINCEY, Seedsman, Peterborough.

EARLY OXFORD POTATO, an excellent Cropper, and the best for eating all the year round, 6*s*. per bushel.
A reduction made if 1 Ton or more be taken.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

SEED POTATOES.—EARLY DULWICH: a very early prolific round Potato of fine quality, 10*s*. per bushel. Also, a fine Stock of SEED REGENTS, quite free from disease, grown on poor soil, 4*s*. per bushel, bag included.
D. NICKLIN, 130, High Street, Guildford.

SEED POTATOES for SALE, at 6*s*. per Bushel.—"MURTON'S SEEDLINGS" obtained Prizes at the Crystal Palace Agricultural Root Shows, Christmas 1860 and 1861, as New Seedling Potatoes suited for Field culture.
Apply at Evegate Farm, Smeeth, Ashford, Kent.

Seed Potatoes.

H. AND F. SHARPE are now prepared to take orders at very moderate prices for all the leading sorts of POTATOES, including MYATT'S Prolific ASH-LEAVED KIDNEY, the finest and most prolific in cultivation.
Prices may be had on application.
Seed Growing Establishment, Wisbeach.

Ashleaf Kidney Potatoes.

JAMES BACKHOUSE AND SON can supply the above, true, and of very fine quality. Also SODEN'S EARLY OXFORD, LAPSTONE KIDNEY and DALMAHOY. Prices on application.
York Nurseries.—March 1.

Restoration of the Old Irish Red Potatoes.

MR. THOMAS LEY, of Bideford, Devon, has on SALE a few Bags of the old sort of IRISH RED ROUGH POTATOES, which by patience and perseverance he has restored after 12 years succession planting. Price 5*s*. per Peck.

WEBB'S IMPERIAL KIDNEY POTATOES for quantity, quality, beauty, and size, can hardly be equalled, and not surpassed by any other Potato. Price 12*s*. per bushel.
Apply GEORGE MACE, Calcot Gardens, near Reading.

New Roses for 1862.

4000 Strong Plants in 51 New kinds.

WM. WOOD AND SON can supply really strong, robust, and healthy plants of all the NEW ROSES of 1862, worth growing, at 5s. each.

A liberal Discount allowed to the Trade.

DESCRIPTIVE CATALOGUES on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses.

JOHN CRANSTON has to offer a very large stock of all the NEW ROSES for 1862, numbering upwards of 60 varieties. The plants are grafted on the Manetti Stock, and will be fit to plant out in April.

A LIST of SORTS, with the raiser's descriptions, sent on application.

Nurseries, King's Acre, near Hereford.

STANDARD ROSES, with straight stems and good heads, the finest varieties; 30s., 36s., and 42s. per dozen.

GRAPE VINES for PLANTING OUT.—All the leading sorts, with stout, short-jointed, well ripened canes; 3s. 6d., 5s., and 7s. 6d. each.

GRAPE VINES for FRUITING in POTS.—Extra fine, strong bearing rods.

GLADIOLUS.—Splendid hybrids of Gandavensis, 6s., 9s., 12s., and 18s. per dozen; 100 distinct varieties, 84s.; 100 newer, 126s.

NEW BEGONIAS.—Twelve of the most distinct and beautifully variegated Continental varieties, strong plants, for 18s.

CAMELLIAS with FLOWER-BUDS.—Including the best new varieties, fine plants, 30s. to 42s.; extra size, 60s. and 84s. per dozen.

DESCRIPTIVE CATALOGUES, with all particulars, forwarded on application to

JAMES DICKSON & SONS, The "Newton" Nurseries, Chester.

Mitchell's Unrivalled Collection of Roses.

THE LARGEST STOCK AND THE BEST PLANTS IN ENGLAND, JUSTLY PRONOUNCED BOTH BY ENGLISH AND FOREIGN GROWERS.

JAMES MITCHELL has the honour of informing his kind patrons that he has succeeded in obtaining the FIRST PRIZES at the principal Shows throughout the season, viz.:—

July 10.—The Grand National Rose Show, Royal Horticultural Society's Garden, Kensington Gore, 96 varieties, 3 trusses of each, First Prize.

September 11.—Forty-eight varieties, 3 trusses of each, First Prize.

July 3.—The Royal Botanic Society, Regent's Park, London, 50 varieties, 3 trusses of each, First Prize.

July 6.—The Great Rose Show, Crystal Palace, 96 varieties, 1 truss of each, First Prize.

June 19.—Brighton Horticultural Society, 50 varieties, 3 trusses of each, First Prize.

September 18.—Fifty varieties, 3 trusses of each, First Prize.

August 28.—Lewes Horticultural Society, 36 varieties, 3 trusses of each, First Prize.

J. M. respectfully informs the Nobility and Gentry he can supply the best perpetual BLOOMING ROSES in Standards, Half-Standards, and Dwarfs, healthy good rooted plants.

Standards, 30s. per dozen.
Half ditto, from 24s. to 30s. per dozen.
Dwarfs, from 18s., 24s., to 30s. per dozen.
New Varieties of 1861, 42s. per dozen.

Pilt Down Nurseries, Maresfield, Sussex.

N.B. These Nurseries are 2½ miles from the Uckfield Station on the London, Brighton, and South Coast Railway.

Gladioli and other Choice Bulbs for Spring and Summer Flowering.

B. S. WILLIAMS will be happy to forward, post free, to all applicants, his DESCRIPTIVE and PRICED CATALOGUE of the above, containing select lists of all the best varieties.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Phalænopsis Schilleriana.

B. S. WILLIAMS has much pleasure in informing his friends and the public that this new and beautiful VARIEGATED ORCHID is now in flower at the Nursery, and he will be happy to show it to any one favouring him with a visit.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

*** The "Favourite" Omnibuses, from the London Bridge Railway Stations, by the Bank and Post Office; and from Charing Cross, through the Strand and Holborn, pass the Nursery every 10 minutes.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway: also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

Verbena, "Sheppard's Ariosto Improved."

OSBORN AND SONS will be prepared to send out the above-named NEW VERBENA on May 1 next. It is considered by all who have seen it one of the greatest acquisitions of the season either as a pot or bedding Verbena. The colour is that of "Ariosto," a beautiful rich mulberry, but in other respects it far outvies it—the truss and pip is very much larger, and the habit robust, covering the ground well and flowering freely and continuously. It was used last summer most successfully by Mr. Sheppard, the intelligent Gardener at Woolverstone Park, the seat of John Berners, Esq., near Ipswich.

In order to make it available for bedding largely the ensuing season, OSBORN & SONS have resolved to distribute it at the following low rate:—

100 Plants	£5 0 0	12 Plants	£0 18 0
50 Plants	3 0 0	A Single Plant	0 2 6

Fulham Nursery, London, S.W.—March 1.

KITCHEN GARDEN SEEDS,

FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND. THOS. GIBBS & CO. Corner of HALF-MOON St. PICCADILLY, London. APPOINTED AP. 3 1844. THE SEEDSMEN

AGRICULTURAL SEEDS,

GRASS SEEDS,

FARM SEEDS,

of all descriptions.

Thomas Gibbs

CORNER OF

HALF-MOON St.

PICCADILLY, LONDON, W.

EXHIBITION of NEW ROSES, HYACINTHS, &c.

THE COLLECTION OF HYACINTHS, NEW ROSES, &c.,

AT THE

WALTHAM CROSS NURSERIES,

Will this year be at its best the last 14 days of March. Every new variety of merit has been added, and the Show is expected to surpass that of last year.

Entrances: Platform, Waltham Station, E.C. Railway (half an hour's ride from London); and Turnpike Road, Waltham Cross, N. Admittance free.

Waltham Cross, N., March 1. WILLIAM PAUL.

N.B.—Strong Plants of all the NEW ROSES ready in April.

HARDY JAPANESE PLANTS, NEW ROSES, &c.

JOHN STANDISH

HAS great pleasure in submitting to the consideration of his friends and the public in general the following List of NEW PLANTS, ROSES, &c., far exceeding in interest any that he has ever before had the opportunity of sending out at any one time; he would particularly direct attention to the Variegated and other JAPANESE PLANTS, which he believes will effect quite a revolution in Gardening, as their complete hardiness has in many instances been quite established. Obtained by that indefatigable and successful collector, Mr. Robert Fortune, they were sent home in such excellent condition as to excite the wonder of all who saw them at the opening fête of the Royal Horticultural Society, and were universally acknowledged to be the most remarkable collection ever imported into England.

The NEW ROSES have been exhibited in the winning stands both at the Crystal Palace and Royal Horticultural Society, and the entire stock is in the hands of J. S.

Amongst the NEW FERNS will be found many of great interest and novelty.

HARDY JAPANESE PLANTS.

THUJOPSIS DOLABRATA VARIEGATA.—It is impossible to speak in too high terms of this variegated plant. Those who know T. dolabrata can form some idea of it when J. S. states that every shoot is terminated by beautiful silvery leaves; its hardiness is established from the fact that it stood all last winter at Elvaston, when the Common Holly and Portugal Laurels were killed to the ground. Plants 63s. each in the spring.

RETINOSPORA OBTUSA.—An evergreen shrub of the Arbor-vitæ race, growing from 60 to 80 feet high, stiffer in its foliage than anything known, having the character of Cedar of Lebanon with Cypress leaves. The wood is used by the Japanese in various ways, shines beautifully without any polish when worked up. Plants now ready, 21s. each.

RETINOSPORA OBTUSA VARIEGATA.—Same species, with beautifully white variegation regularly occurring all over the plant. 31s. 6d. in April.

RETINOSPORA PISIFERA.—A very beautiful slender looking tree with sharp pinnated leaves. 21s. each.

RETINOSPORA PISIFERA AUREA.—Same species, but instead of the white variegation the terminal shoots are of a beautiful golden hue. Nothing can be more exquisite than this plant. 31s. 6d. in April.

RETINOSPORA PISIFERA VARIEGATA.—The same species with beautifully white variegated foliage. 31s. 6d. in April.

SCIADOPITYS VERTICILLATA.—This, the Umbrella Pine, as it is sometimes called, is one of the most remarkable of all the Coniferæ, described (by Siebold) as a very singular shrub or small tree, but in reality growing to the height of 100 to 150 feet, with its whorls arranged in the form of an extended parasol. As J. S. has several imported plants, the character of it can be well seen by any of his friends who may favour him with a visit. Seedling plants in the seed leaf, 42s. each; or a few imported plants, about 1 foot high, 10 guineas each.

EURYA LATIFOLIA.—A most exquisitely variegated shrub, the young shoots being of a brilliant rose colour, changing to white; when this becomes large and well established it will be one of the most beautiful plants known. 31s. 6d. each in April.

OSMANTHUS VARIEGATUS NANUS.—A dwarf Holly-like looking plant, perfectly hardy, and from the freeness of its growth likely to supersede many of the variegated species of Ilex now in our gardens. 31s. 6d. each, in April.

AUCUBA JAPONICA (true).—The shrub hitherto known under this name is merely a variegated variety of the one now introduced; it is covered with beautiful red berries about the size of the common Sorbus. 21s. each.

TAXUS FORTUNII.—An erect-growing species, somewhat similar in habit to the Irish Yew, but with very long leaves. Plants in spring. 21s. each in April.

BAMBUSA VARIEGATA.—A very beautiful dwarf growing plant, perfectly hardy. 21s. each, in April.

CAMPANUMŒA LANCEOLATA.—From N. China, probably hardy, but at any rate most useful as a greenhouse creeper. Peculiar bell-shaped flower, green and black, produced very freely all over the plant. Plants in Spring, 10s. 6d.

NEW FERNS.

LOMARIA FLUVIATILIS.—A very distinct species from New Zealand. Fronds nearly 1 foot long. 42s. each.

LOMARIA ELONGATA.—New Zealand. Pinnate leaves, 2 feet long, stouter than other Lomarias; very striking and beautiful. 42s. each.

NEW FERNS.

LOMARIA MAGELLANICA.—Perfectly hardy; stood all last winter, even in Yorkshire. 3s. 6d. to 10s. 6d. each.

CYATHEA DEALBATA.—Nice seedling plants, with fronds from 15 to 18 inches long, in 32-pots. 7s. 6d. each.

CYATHEA SMITHII.—Seedling plants. From 2 to 5 guineas.

CYATHEA CUNNINGHAMII.—A beautiful tree Fern, of not very large growth, suitable for small greenhouse. 2 to 5 guineas.

LASTREA ATRATA.—North China, very hardy, dark green foliage. 10s. 6d. each.

WOODWARDIA JAPONICA.—Hardy. From Japan and North China. 21s. each.

WOODWARDIA ORIENTALE.—Hardy. From North China, one of the finest of all hardy Ferns. 21s. to 31s. 6d. each.

TODEA PELLUCIDA.—A very beautiful tree Fern. 5s. to 10 guineas each.

CAMELLIA RETICULATA FLORE PLENO.—The largest and finest of all Camellias for effect. 31s. 6d. to 3 guineas each.

NEW ROSES.

COMTE DE FALLOUX, H. P.—A most free blooming variety of the Géant race, admirably adapted for a pot Rose or for bedding, as it never at any time of the year throws up a shoot without a bloom. Colour, bright scarlet crimson. 10s. 6d. each.

REYNOLDS HOLE, H. P.—A very strong and free blooming variety, throwing its blooms up well and very erect. Colour very lively pink, increasing in brilliancy as the flower gets age. For effect in gardens unrivalled; figured in the *Florist Magazine* for November, 1861. 10s. 6d. each.

GREGOIRE BOURDILLON, H. P.—A seedling from the Géant, very vigorous habit, larger and brighter than its parent; colour scarlet crimson. 10s. 6d.

MARGUERITE APPERT, H. P.—Large blush, shading off to white, beautifully cupped shape, vigorous habit. 10s. 6d. each.

ANDRE DESPORTES, H. P.—A seedling from Lord Raglan. Very vigorous in habit, large rose-coloured flower. Admirably adapted for a pillar Rose. 10s. 6d. each.

JOHN STANDISH. H. P.—Deep violet crimson, very dark, perfectly imbricated, and blooming in clusters, vigorous habit, first-rate Rose. 10s. 6d. each.

Plants of Comte de Falloux now ready. Strong plants of the others will be ready the first week of May.

Besides the above J. S. can supply all the New Roses of this and last year, fine strong plants on their own roots, or grafted, from 2s. to 3s. 6d. each, or by the hundred at a considerable reduction.

VINES.

MUSCAT TROVERON.—One of the finest of all the White Grapes; as such it received a First-class Certificate at the July Show of the Royal Botanic Society. As large as a Black Hamburgh, bunches 15 to 20 inches long, with a fine rich acid and slight Frontignan flavour; one of the finest Grapes for Exhibition purposes. 10s. 6d. to 31s. 6d.

INGRAM'S HARDY PROLIFIC MUSCAT.—This Grape has fully sustained the character given to it by John Standish, as it has obtained the 5l. Prize given by Mr. Saunders for the finest Seedling Grape of last year; a First-class Certificate from the Fruit Committee of the Royal Horticultural Society, and an extra Prize from the Royal Horticultural Opening Show. 21s. to 63s. each.

In addition to the above a fine collection of all the leading kinds either as Fruiting Canes or small plants for planting out.

J. S. begs to intimate that he has a fine stock of all the leading HYBRID RHODODENDRONS, from 12l. to 20l. per hundred; a fine collection of HARDY ORNAMENTAL SHRUBS and TREES, and the finest GLADIOLI in the world. Also all the NEW PHLOXES of 1860 and 1861, raised by Lierval and others, from 1s. 6d. to 3s. 6d. each, and assures his friends and the public in general that everything sent out by him will be in the best possible condition, and will not fail to give satisfaction.

JOHN STANDISH, THE ROYAL NURSERY, BAGSHOT, SURREY.

BARR & SUGDEN 12 KING ST COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

For Editorial Critic on the above Work see *Gardeners' Chronicle* of February 15, page 144; see also our reply in last week's Advertisement.

The following article was forwarded for insertion in last week's issue of the *Gardeners' Chronicle*; but not having appeared in its columns, and being placed at our disposal, we give it space in our Advertisement:—

BOTANICAL LATIN.

I have been not a little amused at the dogmatic style of criticism exhibited by your Reviewer in last week's *Gardeners' Chronicle* (see page 144). Into either the abstract question of whether scientific accuracy is to be expected in a Seed Catalogue (why not?) or whether it has been attained or not in the one he reviews, I have no desire to enter; but the example that he has given shows how very little he really knows on the subject he speaks of in such an ex cathedrâ style.

Cosmos, as is the case with all nouns ending in *os*, is of Greek origin, and I used to learn that nouns of the second declension ending in *os* were either masculine, feminine, or common. It may be altered now, particularly in the University in which your Reviewer has studied; unless it is, I see no reason why Cosmos should be masculine. The Botanical Editor of the "Cottage Gardeners' Dictionary" has so thought also, for he makes it *feminine*.

I know it is very hard to restrict Botanical Latin to rules, where we find words compounded of one Greek and one Latin word, and all queer sorts of native names Latinised, and such like vagaries; but still when a *learned* Critic talks about rules it may be well to let him see that, to use his own words, *he is ill adapted for the task he has undertaken.*

SENATOR.

To be continued if necessary.

For those who are interested in the Culture of Gourds, or who may contemplate entering the List of Competitors for the £30 offered by the Royal Horticultural Society, we quote from our "Guide to the Flower and Kitchen Garden" one of the finest Collections of ORNAMENTAL GOURDS ever offered to the British Public.

The GREAT EXHIBITION of GOURDS, 8th, 9th, 10th, to the 18th October.

The ROYAL HORTICULTURAL SOCIETY offers PRIZES to the amount of £30 for ORNAMENTAL and EDIBLE GOURDS and MARROWS.

Continued from last week's Advertisement of ORNAMENTAL GOURDS, which see:—

GIANT GOURDS.

*Those marked with an * are edible.*

These, from their varied gorgeous colouring and picturesque markings, are strikingly effective objects: they are extremely rapid in growth, and the fruit frequently attains to a great size.

OUR OWN SELECTION, in Sealed Packets.

	s. d.
30 Packets beautiful varieties	7s. 6d.
20 " "	5 0
15 " "	3 6
10 " "	2 6

	Per packet—s. d.
2092*BIG BEN of WESTMINSTER, green, spotted white	0 6
2093 CLOCHE de MONBORON (large), green	0 6
2094*CORPORAL of the ZOUAVES, yellow, very handsome	0 3
2095 CUCUMBER-SHAPED, long	0 3
2096*EXHIBITION 1862, splendid carmine flesh, eatable	0 6
2097 FIRE BALL, red, very handsome	0 3
2098 GARIBALDI, green and orange, splendid	1 0
2099*GENERAL TURR, yellow, striped orange, and tipped with green	0 3
2100*GIANT'S PUNCH BOWL, bronze, spotted with brilliant red	0 3
2101 GROSSE PELERINE (bell-shaped), light and dark green	0 3
2102 HERCULES CLUB, grows 6 feet long	0 3
2103 LE GRAND MONARQUE, cream colour	0 6
2104 LEOPARD, green, spotted scarlet	0 3
2105*LURLINE GLACE MELON, ruby, remarkably beautiful	0 3
2106 MARMORATA SUPERBA, beautiful green and yellow	0 6
2107 MRS. COVENTRY, amber, large transparent	0 6
2108 MISS MALING, yellow and green striped, and tipped green	0 6
2109*PANTHER, dappled, very curious	0 3
2110 PLATE DE CORSE, bell-shaped	0 6
2111 POPPIA FABIANA, beautiful Vine-leaved	0 6
2112*PORTMANTEAU de NAPLES, eatable Marrow, for soups in winter, keeps six months	0 4
2113*PORTMANTEAU de ROI	0 6
2114*PRINCE IMPERIAL, orange, striped white, beautiful	1 0
2115 QUEEN of NAPLES, sulphur, fine	0 6
2116 RADIATUM, yellow, striped orange and green	0 6
2117 RUBY and TOPAZ, golden yellow and red	0 6
2118 SIPHON, flat base, 8 inches round; neck 3 feet in length, and 1 inch in diameter	0 3
2119*SUGAR LOAF, clear bright yellow	0 6
2120 TRICHOSANTHES ARABICA (new), distinguished novelty; a handsome climbing plant, with snake-like fruit of white glaucous green, with white longitudinal markings of a very striking character	0 6
2121 TRICHOSANTHES COLUBRINA, true serpent Gourd, striped and streaked like a serpent, changing to brilliant carmine, an elegant climber	0 4
2122 TRICHOSANTHES ANGUINA, slender, green and silver, 2 feet long, very handsome	0 4
2123 TURK'S CAP, carmine and bronze, striped with white and green, very splendid	1 0
2124 TURK'S CAP, splendid, vivid scarlet, with mottled flesh, extremely beautiful	1 0
2125 TURK'S CAP, black and white	1 0
2126 " " new carmine, superb variety	1 0
2127 ZEBRINA SUPERBA, splendid green and gold striped	1 0

BARR AND SUGDEN, SEED MERCHANTS, 12, KING STREET, COVENT GARDEN, LONDON, W.C.

CUTHILL'S STRAWBERRY PLANTS For fruiting this year. Highland Mary, 10s. per 100; Richard II., 10s.; Newton Seedling, 10s.; Princess Royal, 7s. 6d.; Prince of Wales, 7s. 6d.; Black Prince, 5s. Best CUCUMBER and MELON SEED, 1s. per packet. MUSHROOM SPAWN, 5s. per bushel. If Cuthill's five Pamphlets are taken, 5s.
JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

Strawberries for Forcing.

GEO. CLARKE has a large quantity of strong established Plants in Pots with excellent crowns; the sorts are KEEN'S SEEDLING, BRITISH QUEEN, SIR HARRY and ALICE MAUDE. Price 6s. per dozen.
Nursery, Streatham Place, Brixton Hill, S.

Strawberry Plants.

WM. JAMES NICHOLSON again offers strong laid plants of his GRAND COLLECTION of more than 200 varieties of English, French, Belgian, American, and other STRAWBERRIES, including all the new and fine sorts. A Catalogue sent on application. A new enlarged and improved Catalogue will be published in Autumn, when many new sorts well tested will be offered with confidence.
WILLIAM JAMES NICHOLSON, Egglescliffe, Yarm, Yorkshire.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, JUN., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.
CATALOGUES on application.

VINES.—The following varieties are offered at 5s. each, good Plants with well ripened canes.

Chasselas Musqué	Muscat of Alexandria
Grisly Frontignan	Tokay
Black St. Peter's	Muscat Hambro'
Canon Hall Muscat	Barbarossa
White Frontignan	Esperon
White Sweet Water	Royal Muscadine

JOHN CRANSTON, Nurseries, King's Acre, Hereford.

NEW MELONS, NEW CUCUMBERS, NEW and CHOICE SEEDS of all the finest varieties for the FARM, the KITCHEN GARDEN, and the FLOWER GARDEN.
See our "Little Book", for 1862 (illustrated) which will be sent free on receipt of four stamps.
J. C. WHEELER & SON, Seed Growers, Gloucester.

The best Melon in Cultivation.

WILD'S ORION, unrivalled for beauty, weight, and flavour, genuine old Seed FREE to all customers on receipt of stamped envelope, 6d. to unknown correspondents.
WILD'S PRIMULAS.—No more Wholesale orders can be executed till June. Retail, 2s. 6d. per packet as usual.
THOS. WILD, the Primulary, Ipswich.

Melons.

MESSRS. JOHN AND CHARLES LEE have seeds to offer of the undermentioned superb MELONS:—
BAILEY'S ECLIPSE.—Pale green flesh, melting to the rind, of exquisite flavour; weight 3 to 4 lbs.; handsome, very prolific, and has gained many prizes. Price 2s. 6d. per packet.
AMERICAN RIDGE.—Scarlet flesh, melting, and highly flavoured. Ripens in a COLD FRAME; very prolific. Price 1s. 6d. per packet.
Nursery and Seed Establishment, Hammersmith, London, W.

Muscat Escholata Grape.

MESSRS. J. AND C. LEE have the pleasure to offer strong well ripened Canes of this
THE FINEST OF ALL MUSCAT GRAPES,
which, though little known to Grape growers in general, deserves to be extensively cultivated. It combines the desirable qualities of setting freely with a large well shouldered handsome bunch, with berries of a rich amber colour almost as large again as those of the Muscat of Alexandria, and of the most luscious Muscat flavour.

Planting Canes	15s. 0d. each
Fruiting Canes	21 0 "
Extra strong Fruiting Canes	31 6 "

Vineyard Nursery, Hammersmith, London, W.

Splendid Grape Vines.

WILLIAM BARNES has still to offer the following varieties of VINES from Eyes; the wood well ripened, length averaging from 5 to 9 feet; many of them fruit-bearing.

Royal Muscadine	Golden Hamburgh
White Dutch Sweetwater	Muscat do.
Muscat of Alexandria	Black do.
Cannon Hall Muscat	Bowood Muscat
West's St. Peter's	Muscat Muscadine
Black Frontignan	Lady Downe's Seedling
White do.	Barbarossa
Grizzly do.	Purple Constantino
Mill Hill Hamburgh	White Tokay

Prices will be forwarded on application.
Camden Nursery, Camberwell, S.

FRUIT TREES in POTS.—Those who require Fruit this summer from Trees in Pots are invited to inspect the stock of W. BARNES, whose trees have been established for two and three years; wood well matured and covered with bloom buds.

APRICOTS	CHERRIES	PEARS
APPLES	NECTARINES	PLUMS
	PEACHES.	

Prices on application to WM. BARNES, Camden Nursery Camberwell, S.

J. HOLMES WOOD, Bower Nurseries, Maidstone (adjoining the Railway Station).
All the leading varieties of AZALEAS, in 60's, at 50s. per 100.
Standard and Trained FRUIT TREES of every description, 30s. per dozen.
Every description of CONIFERS, EVERGREEN and DECIDUOUS TREES and SHRUBS at moderate prices.

COB FILBERTS.—What yield most Sovereigns per acre?—COB FILBERTS, now selling on the market at 3s. per lb. and upwards. For Trees apply to GEORGE MACK, Calcot Gardens, near Reading.
Also may be had RED SKIN and WHITE SKIN FILBERTS, with other varieties of Cob Nuts.

SPLENDID NEW FUCHSIAS, DICTATOR and UNIVERSAL. Coloured Illustrations by Mr. ANDREWS of the two, in exchange for 12 postage stamps.
G. S. assures Fuchsia Growers that Universal is the finest Fuchsia ever offered. For description see CATALOGUE.
GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington, London, N.

B. S. WILLIAMS'S LIST of Choice VEGETABLE and FLOWER SEEDS—See Advertisement in *Gardeners' Chronicle*, Feb. 8. Descriptions and further particulars will be found in his PRICED CATALOGUE, forwarded post free on application.

COLLECTIONS of KITCHEN GARDEN SEEDS, containing none but the most useful and approved sorts, 15*s.*, 20*s.*, 40*s.*, and 60*s.*, particulars of which if required will be forwarded.

Hardy Annuals, 12 varieties, 1*s.* 6*d.*; 25 varieties, 3*s.*
Biennials and Perennials, 12 varieties, 2*s.*; 25 varieties, 4*s.*
Half Hardy Annuals, 12 varieties, 2*s.* 6*d.*; 25 varieties, 5*s.*
Ornamental Grasses, 12 varieties, 2*s.*; 25 varieties, 4*s.*

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Excellence and Economy Combined.

SUTTON'S COLLECTION of GARDEN SEEDS.

THE BEST YET OFFERED.

KITCHEN GARDEN SEEDS.

		£	s.	d.
No. 1.	A COMPLETE COLLECTION for One Year's Supply of a Large Garden	3	0	0
No. 2.	A COMPLETE COLLECTION, in smaller quantities	2	0	0
No. 3.	Ditto ditto ditto ..	1	0	0
No. 4.	Ditto ditto ditto ..	0	10	6

If some of the sorts are already possessed, increased quantities of others will be given in lieu of those to be omitted.

HARDY AND SHOWY FLOWER SEEDS (Post Free),
Which may be sown where they are intended to bloom.

A Collection of the best 100 sorts known	£1	1	0
A Collection of the best 50 sorts known	0	10	6
A Collection of the best 36 sorts known	0	7	6
A Collection of the best 24 sorts known	0	5	0

BOKHARA CLOVER, BORAGE, and other Seeds for Bees.
Carriage Free by Rail to all parts of the Kingdom.
Address Sutton & Sons, Seed Growers, Reading, Berks.

VEGETABLE and FLOWER SEEDS of best quality.

Our "NEWTON HERO" CUCUMBER, 1*s.* 6*d.* per pckt. "One of the best of the 118 varieties grown by the Horticultural Society, and so highly spoken of in the report, which see."

PRICED LISTS post free upon application.

James Dickson & Sons, 102, Eastgate Street; the "Newton" Nurseries, Chester; and 23, Market Place, Manchester.

CABBAGE SEEDS, PLANTS, and SCOTCH SEED TARES.

Fine new EARLY YORK CABBAGE and CAPE SAVOY Seed, well saved, and true to their sorts; also CABBAGE PLANTS of several kinds, and fine sound Spring SCOTCH SEED TARES, 65½ lbs. per bushel, for sale, at moderate prices, by the Grower,

Mr. J. B. Taylor, Seton Mains, Prestonpans, N.B.

Seeds for the Kitchen Garden.
Seeds for the Flower Garden.
Seeds for the Farm.

JOHN CATTELL'S CATALOGUE of the above is now ready, and will be forwarded post paid on application.

It contains select Lists only of all the best VEGETABLE and FLOWER SEEDS, so that the Amateur with only a small Garden cannot fail to make a proper selection.

His COLLECTIONS of KITCHEN GARDEN SEEDS, which have always given the greatest satisfaction, are sent as usual, viz.:

	£	s.	d.
A Collection for Large Gardens, including every desirable kind of Vegetables, Salads, and Herbs	3	0	0
Ditto, ditto, for a Medium-sized Garden	2	0	0
Ditto, ditto, for a Small Garden	1	0	0
Ditto, ditto, for a Cottage Garden	0	10	6

The Carriage of all parcels of Seeds amounting to 10*s.* 6*d.* and upwards, paid to any Railway Station in England or Wales.

Nursery and Seed Establishment, Westerham, Kent.

New Vegetables—Post free.

WM. WOOD AND SON beg to offer GENUINE SEEDS of the undermentioned CHOICE VEGETABLES, viz.:—

Per packet—	s.	d.
Carter's St. Osyth Beet	1	0
Nutting's selected ditto	0	6
Melville's Incomparable White Broccoli	1	0
Lee's New White Sprouting Broccoli	1	0
Snow's superb Winter White Broccoli	1	0
Kemp's Incomparable Cabbage	1	0
Wood's Defiance Cauliflower. (See separate advertisement)	2	6
Carter's Dwarf Mammoth Cauliflower	1	0
Cole's White Perfection Celery	2	6
Hood's Imperial Dwarf Red Celery	0	6
Ivery's Nonsuch Celery	0	6
Turner's Incomparable Celery	0	6
Melville's Variegated Garnishing Kale	1	0
Carter's Giant White Cos Lettuce	1	0
Carter's Giant Brown Cos Lettuce	1	0
Dunnett's Black-seeded Brown Cos Lettuce ..	1	0
Wheeler's Imperial Cos Lettuce	1	0
Wheeler's Tom Thumb Lettuce	1	0
The Student Parsnip	1	0
Parsnip Chervil .. .. 6*d.* and	1	0
Tomato de Laye	0	6

The above are all described in Wm. W. & Son's CATALOGUE.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and other FLOWER SEEDS, Choice GLADIOLI, &c., is now ready, and will be forwarded post free on application.

The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices.

An inspection and comparison with prices in other Catalogues is respectfully solicited.

The following, of which descriptions will be found in Catalogue, are specially recommended:—

	s.	d.
BEAN, Haricot Flagolet Jaune, six days earlier than any variety in cultivation .. .. .. per quart	2	6
BEET, Compact Topped or Pine Apple Short Top, per oz.	0	6
„ Selected Dwarf Red (Nutting's) .. .. „	0	9
CAULIFLOWER, Early Dwarf Erfurt .. .. „	2	0
„ New Early Mammoth or Frogmore forcing .. „	3	6
CELERY, Imperial Dwarf Red (Hood's) .. .. „	1	0
CHÆROPHYLLUM BULBOSUM .. .. .. „	2	0
CUCUMBER, TELEGRAPH .. .. .. per packet	1	6
LETTUCE, MOOR PARK .. .. .. per oz.	2	0
PEA, GENERAL WYNDHAM .. .. per quart	1	3

Exotic Nursery, Tooting, Surrey S.

ESTABLISHED UPWARDS OF A CENTURY.

COVENT GARDEN MARKET, LONDON, W.C.

BUTLER & McCULLOCH'S
COLLECTIONS OF VEGETABLE SEEDS,

CARRIAGE FREE,
Consisting of the best and most approved varieties.

No. 1. A Complete Collection for One Year's Supply	£4	0	0
No. 2. Ditto ditto smaller quantities	2	0	0
No. 3. Ditto ditto ditto	1	0	0

For full particulars, see CATALOGUE (page 91).

DESCRIPTIVE SEED CATALOGUE FOR 1862,

Containing all the new and most approved varieties of FLOWER SEEDS. To exhibitors we can strongly recommend our assortments of ASTERS, BALSAMS, STOCKS, and other CONTINENTAL SEEDS.

BUTLER and McCULLOCH, SEEDSMEN, COVENT GARDEN MARKET, W.C.

SEEDS FOR THE KITCHEN GARDEN.

WILLIAM WOOD & SON'S
COLLECTIONS OF VEGETABLE SEEDS

FOR ONE YEAR'S SUPPLY.

Containing only the most choice and approved kinds for giving a succession of Crops throughout the year.

Any varieties not required should be mentioned, when an equivalent in others which may be preferred will be substituted.

No. 1. For a Large Garden (about three-quarters of an acre)	£4	0	0
No. 2. For a Medium-sized Garden (about half an acre)	2	10	0
No. 3. For a Small Garden (about a quarter of an acre)	1	5	0
No. 4. For a Smaller Garden	0	15	0

The Collection of Seeds for One Acre, enumerated in Dr. Hogg's "Year Book for 1862" (omitting Potatoes) will be supplied for 5*l.* 10*s.*

SEEDS for the FLOWER GARDEN.

FREE BY POST, EXCEPT SWEET PEAS AND LUPINS.

100 finest selected varieties, (post free) consisting of Hardy, Half Hardy, and tender ANNUALS, PERENNIALS, &c. .. .. 21*s.*

50 finest varieties (post free)	10*s.* 6*d.*
30 ditto ditto	7 0
20 ditto ditto	4 6

☞ PRICED CATALOGUES *post free on application.*

All Orders amounting to 10*s.* and upwards Free to London; and Extra Seeds presented for distant carriage.

WILLIAM WOOD & SON, NURSERYMEN AND SEEDSMEN, MARESFIELD, NEAR UCKFIELD, SUSSEX.

PETER LAWSON & SON,

THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

RICHARD SMITH'S

LIST OF ALL THE BEST

VEGETABLE AND FLOWER SEEDS

Combines simplicity of arrangement, with prices, descriptions of size, height, colour, time of sowing, soil, duration, hardiness, &c., with useful hints on rearing and general management.

COLLECTIONS of SEEDS, of the Choicest Sorts, for One Year's Supply of a large Garden, consisting of 10 quarts of Peas and all other Vegetables in proportion .. .. £2 [illegible]
6 quarts Peas ditto ditto ditto .. .. 1 5 [illegible]
5 pints ditto ditto ditto ditto .. .. 0 15 [illegible]

Retail Seed Orders of 21*s.* and upwards free to any Railway Station.

ROSES.

STANDARD HYBRID PERPETUAL and other FINEST kinds	30*s.* per Dozen
HALF-STANDARDS ditto ditto ditto	24*s.* to 30*s.* „
DWARFS ditto ditto ditto ditto	12*s.* to 24*s.* „
NEW ROSES of 1861	2*s.* 6*d.* to 5*s.* each

FRUIT TREES.

Thirty-five Acres of these; consisting of PEACHES, NECTARINES, APRICOTS, PEARS, PLUMS, CHERRIES, and APPLES, in Trained and Pyramidal Trees, Standards, Half-Standards, Bushes, Dwarfs, or Potted Trees for Orchard House culture.

EVERGREENS. | FLOWERING SHRUBS. | CONIFERS.

With all other Nursery and Seed Stock of the finest description and at Cheapest Prices—Lists of which may be had on application to

RICHARD SMITH, NURSERYMAN AND SEED MERCHANT, WORCESTER.

Snow's Winter White Broccoli.

JAMES BACKHOUSE AND SON can supply the above named excellent variety, which formed fine heads in their Nurseries early in the winter of 1860. Also DALMENY PARK BROCCOLI; this variety suffered less than any other in their cultivation during the intense frost of 1860.

York Nurseries.—March 1.

YOUELL'S NORFOLK HERO CUCUMBER. Without exception the best Ridge Cucumber known. 6 Seeds 1s., 18 Seeds 2s.

LAING'S MAMMOTH CELERY.—The very best, hardiest, and finest flavoured Red Celery in cultivation, 1s. and 2s. per packet on receipt of postage stamps.

See former advertisement.

YOUELL'S Royal Nurseries, Great Yarmouth.

CUCUMBER PLANTS, CUCUMBER PLANTS.—Cuthill's Black Spine, Ayres' Black Spine, General Outram, Rideman, Manchester Prize, Kenyon's Favourite, Sutton's Champion, Lynch's Star of the West, Essex Hero, Highland Mary, Telegraph, &c.

HENRY BROWN begs to offer the above select varieties (true) at 1s. 9d. per pot, or 18s. per dozen. The plants are healthy and well rooted, 6 to 8 inches high; two in a large 60-pot. Package for 1 dozen or under, 2s. Delivered free to all the London Terminuses. Terms, Cash.

Bounds Green, Colney Hatch, N.

MONRO'S RABLEY CUCUMBER, per pkt., 2s. 6d. (See fuller Advertisement in November and Dec. last.)

Per packet—s. d.
TELEGRAPH IMPROVED do., and other finest frame sorts 1 0
HERTFORDSHIRE dwarf hardy CAULIFLOWER (the best Cauliflower) 1 0
MELON SCARLET GEM, true 1 0
HOLLYHOCK (WM. PAUL'S Collection of 12 superb named sorts) 5 0

Every description of VEGETABLE and FLOWER SEEDS, principally grown by or under the supervision of the Subscriber.

CATALOGUE free on application.

WM. PAUL, Nurseries and Seed Warehouse, Waltham Cross, N.

"Yorkshire Hero" Cucumber.

EDMUND PHILIP DIXON AND SONS beg to offer Seed of the "YORKSHIRE HERO" CUCUMBER, which has been proved during the past season to be the most useful and prolific Cucumber in cultivation. It is a very long White-spined variety, of a dark green colour, producing three to four fruit at a joint, and, as will be seen from the Testimonials following, possesses all the qualities the grower can possibly desire.

From Mr. THOMAS GIBB, *Gardener to the Right Honourable the Earl of Yarborough.*

Long Cucumbers are generally shy bearers, but the "Yorkshire Hero" produces abundantly, besides being a Cucumber of excellent quality.

Brocklesby Park Gardens, October 21st, 1861.

From Mr. GEORGE MCGILLAVRAY, *Gardener to Sir John Nelthorpe, Bart.*

The "Yorkshire Hero" Cucumber, I without hesitation say, is possessed of every qualification to be desired in a Cucumber, being a most prolific bearer, at all times showing as many as three and four fruit at a joint. It is a thick Cucumber with very short neck, and grew with us from 20 to 24 inches, and plenty of them to satisfy any one: I could not get any seed from those I saved for that purpose, they being so solid there was no room for seed.

Scawby Hall Gardens, October 24, 1861.

Price 2s. per packet.

London Agents for the sale of the above:—Messrs. HURST & MCMULLEN, 6, Leadenhall Street, E.C.; Messrs. COOPER & BOLTON, 152, Fleet Street, E.C.

E. P. DIXON & SONS' DESCRIPTIVE PRICED CATALOGUE of SEEDS is now ready, and may be had on receipt of one stamp

Yorkshire Seed Establishment, 57, Queen Street, Hull.

Asparagus.

YOUELL AND CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—

ASPARAGUS, GIANT, two years .. .. 2s. 6d. per 100.
" " three years .. .. 3s. 6d. "

BUCKLEY'S NEW CRIMSON RHUBARB.

Specimens have been sent to Dr. Lindley for his opinion. See the following in the *Gardeners' Chronicle* of February 26, 1859:—

"John Buckley, your specimens are very handsome, rich rose red quite through, and are evidently derived from Bucks, the true Rheum undulatum. When cooked they were remarkably free from stringiness."—2s. each; 20s. per dozen.

HAWKE'S CHAMPAGNE RHUBARB, new and fine, highly recommended, 12s. per dozen.

YOUELL'S NORFOLK HERO CUCUMBER, 1s. per packet.

LAING'S MAMMOTH RED CELERY, 1s. per packet.

Royal Nursery, Great Yarmouth.

Garden Seeds.

PAGE AND TOOGOOD'S SPECIAL LIST will be forwarded post free.

P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

From Mr. R. MCDONALD, *Gardener to the* Rt. Hon. LORD WILLOUGHBY D'ERESBY, *Drummond Castle, Scotland, Jan. 4th*, 1861.

"The seeds sent here by you for the last 23 years here given the greatest satisfaction, and considering the large supply required, it is of the greatest importance to have them of such first-rate quality and so true to name. The collections for cottagers have been very useful and have been the means of inducing many of them to grow a greater variety of vegetables than they have hitherto done."

From MR. DOWLING, *Gardener to* LORD HENRY CHOLMONDLEY, *Holly Hill, Jan. 1st*, 1861.

"Nothing gives me so much pleasure as to speak of the excellent quality and trueness of the seeds you sent me for 1860. It is impossible to single out anything in particular, as all succeeded so well, and although a difficult season, I have never served a family better, which I attribute to the good quality of the seeds, and having been supplied by you for 30 years with the greatest satisfaction, my opinion is expressed with some confidence, and I also know your extreme desire at all times to meet the wishes of your customers."

From Mr. WHALE, *Gardener to the* Rt. Hon. LORD RIVERS, *Rushmore, Dorset, December 30th*, 1860.

"In enclosing you my 20th annual order, I am happy to say that I have always found your articles to be of the best quality, and they have always given me great satisfaction."

Royal South Hants Seed Establishment, Southampton.

Wood's Defiance Cauliflower.

WM. WOOD AND SON have much pleasure in introducing this new and superior CAULIFLOWER to the notice of their friends and the public generally, and having tested it for several years against Walcheren and other approved varieties, they do not hesitate to pronounce it the best Cauliflower in cultivation. It is quite hardy, of dwarf habit, and produces immense large heads, which are very compact, and most deliciously flavoured.

Stock limited; price per packet, 2s. 6d.

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

⁎ SEED CATALOGUE post free on application.

TURNIP, MANGEL, and AGRICULTURAL SEEDS of best Selected Stocks.—First class sample crop, 1861, at growers' prices.

JAMES FAIRHEAD & SON, Seed Growers and Merchants, 7, Borough Market, London, S.E.

SEED POTATOES per Bushel of 4 stone.—Fine Ashleaf Kidney, 10s.; Fluke Kidney, 6s.; Early American, 6s.; Early Malta, 6s.; Prolific Kidney, 8s.

CABBAGE PLANTS per 1000:—Imperial Fine, 6s.; Savoys, select, 6s.; Dwarf Scotch, fine, 6s.; Large Scotch, 5s.

CAULIFLOWERS, 25s.

At JOSEPH COBB'S Seed Establishment, 150, High Street, Sunderland.

J. C.'s FARM and GARDEN SEED LIST is now ready, and sent Post free on application.

FLUKE POTATOES, off the Lancashire Moss and Sand; EARLY PINK EYE KEMPS, very fine; TRUE ASHLEAF KIDNEY; OXHORN KIDNEY, a very prolific variety, good quality; WHITE BLOSSOM LEMON KIDNEY. Prices moderate.

A PRICED DESCRIPTIVE CATALOGUE of Garden and Flower Seeds is now ready.

HENRY BROWN, Seedsman, 4, Commutation Row, Liverpool.

POTATOES: Handsworth, Fortyfold, Dalmahoy, Shaw, Regent, White Farmer, Blues and Ash-leaf Kidney, true.

RASPBERRIES, Strong Canes.

Red and White GOOSEBERRIES: Crown Bob, Warrington, and Whitesmith, bearing plants.

STRAWBERRIES: Admiral Dundas, British Queen, Black Prince, Eleanor, Prince of Wales, Sir C. Napier, Wizard of the North, 2s.; Alice Maude, Elton Pine, Eliza, Keens' Seedling, 1s. 6d.; and Oscar, 3s. per 100.

GEO. CORNWELL, Barnet, Herts, N.

SUTTON'S LIST of SEED POTATOES.—Prices per Bushel, Sack, Ton, or Cwt., may be had on application. We have other sorts, but these are most worthy of recommendation:—

Handsworth Early	Early Lemon Kidney
Hudson's Nonsuch	Flour Ball
Sutton's Early Racehorse	Dawe's Matchless
Dalmahoy	York Regent
Webb's Imperial	Glory of England
Wellington	Forty-fold
Soden's Early Oxford	Early Shaw
Hudson's Early May	Prince of Wales
Fluke Kidney	Arrowsmith Seedling
Early Frame	Goldfinder
Early Ashleaf Kidney	British Queen

PRICED DESCRIPTIVE LISTS of POTATOES and SEEDS, post free on application addressed

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

THE CHINESE POTATO, or YAM (Dioscorea Batatas, or Dioscorea japonica).—This delicious Vegetable becomes increasingly popular. We can now offer fine Roots, 2s. 6d. per doz, or 15s. per 100. A few extra large Specimens, 5s. per dozen. Each root will cut into several sets of 2 inches each.

Dioscoreas should be cooked as Potatoes, either boiled or roasted; the only point of importance is, that they should not be boiled more or less than 10 minutes.

Instruction for cultivation, which is very simple, will be supplied gratis.

SUTTON & SONS, Seed Growers, Reading.

Yorkshire and Lincolnshire Nursery and Seed Establishment.

MARTIN AND SONS respectfully offer a very superior Stock of TURNIP SEED, as under, the produce of their Seed beating all others at one of the principal Shows in Yorkshire, winning the "two Five Pound Silver Cups," the "Second principal Prize," and several of the minor prizes.

Catalogues with particulars on application.

Yorkshire Prize Swede Turnip .. }
Golden Melon do. do. .. }
Rouge et Blanc Stone do. .. } 1s. per lb.
Improved White Globe do. .. }
Russian Green-top White do. .. }

Skirving's Green-top, Marshall's Purple-top, and all the principal kinds of Swede and White Turnips, at 9d. per lb.; by the bushel or cwt, cheaper.

KITCHEN GARDEN SEEDS.

MARTIN & SONS' No. 1 Collection contains 20 quarts Peas and other sorts in proportion, for 3l.; No. 2 Collection, 2l.; No. 3, 1l. 10s.; No. 4, 21s.; No. 5, 15s.

FLOWER SEEDS.

The 30 varieties which caused so great attraction and were admired by the hundreds of persons passing the Park Nursery, Hull, for 5s., free by post.

GLADIOLUS.

40 choice varieties for 1l. 5s., carriage paid.

NURSERY STOCK.

Our GENERAL NURSERY CATALOGUE may be had on application. We abound in Laurels, Yews, Arbor-vitæ, Thujopsis, Wellingtonias, Cedars, Juniper, Chestnuts, Limes, Maples, Mountain Ash, Weeping Ash, Weeping Elm, Privet, &c.

Nursery and Seed Establishment, Cottingham (A.D. 1788). Hull Nursery, Spring Bank; Hull Seed Establishment, Junction Street.

Saffron Walden Nursery.

SUPERB DOUBLE HOLLYHOCKS.

NOW IS THE TIME FOR PLANTING!

WILLIAM CHATER has ready some thousands of SEEDLINGS suitable for planting in Borders, Shrubberies, or other ornamental grounds.

W. C. has also an immense Stock of fine healthy young Plants, named sorts, and invites attention to his newly classified list for full information respecting prices, colours, and description.

N.B. The Trade liberally dealt with, and special prices on application for quantities.

WILLIAM CHATER, Saffron Walden, Essex.

GENUINE ITALIAN RYE-GRASS, produced from the second cut of Foreign "Italian," weighing up to 21 lbs. per bushel, and "Pacey's" and "Evergreen" Perennial Rye-grass, weighing up to 28 lbs. per bushel, can be supplied direct from the Grower either now or in March (at the option of the purchaser), and samples will be forwarded free on application.

Address SIMON A. DAINTREE, Fendrayton, St. Ives, Hunts.

Seeds.

THE SUDBURY COLLECTIONS ARE OF THE FINEST QUALITY AND THE CHEAPEST OFFERED.

STEPHEN BROWN, SEED GROWER and IMPORTER, offers the following.

VEGETABLE SEEDS:—

FIRST CLASS COLLECTIONS (the List of the Collection given in the Catalogue). 60s., 40s., 20s., and 12s. 6d.

SECOND CLASS COLLECTIONS of best older esteemed sorts, with less of those of new introduction. 50s., 32s. 6d., 17s. 6d., and 10s. 6d.

FLOWER SEEDS.—Post free.

FIRST CLASS COLLECTIONS, including novelties of 1861 and 1862. (The Collections are given in the Catalogue.)

HARDY ANNUALS.—100 vars., 15s.; 50 vars., 8s. 6d.; 30 vars., 5s. 6d.; 20 vars., 4s.

HALF HARDY ANNUALS.—100 vars., 20s.; 50 vars., 12s. 6d. 30 vars., 8s.; 20 vars., 6s.

GREENHOUSE ANNUALS.—20 vars., 7s. 6d.; 50 vars., 5s.

HARDY PERENNIALS.—100 vars., 20s.; 50 vars., 12s. 6d.; 25 vars., 7s. 6d.

GREENHOUSE PERENNIALS.—50 vars., 18s.; 25 vars., 10s.; 12 vars., 7s. 6d.

SECOND CLASS COLLECTIONS from the best popular older varieties. For prices see Catalogue.

GLADIOLUS and ROOTS for SPRING PLANTING.—An extensive Collection. See Catalogue.

Goods Carriage Free, to the amount of 20s. and upwards, to London and all Stations on the two London and Norwich lines.

The SEED CATALOGUE supplied on application.

Seed Establishment, Sudbury, Suffolk.

JOHN CATTELL having proved for several years the articles named below, recommends them with confidence as deserving of cultivation in every garden.

Per packet—free by post—s. d.
CATTELL'S DWARF PURPLE-TOP BEET, the best kind in cultivation 0 6
KALE, Buda or Asparagus (true) 0 6
" Jerusalem, old kind 0 6
" " curled 0 6
" Scotch dwarf curled 0 6
" Variegated garnishing, as exhibited by him at the Royal Horticultural Gardens at Kensington and the Crystal Palace 0 6
BROCCOLI, Conning's Reliance, withstood the severe winter of 1860 and 1861, when every other kind was destroyed, a late white, close heading variety 1 0
" Walcheren, a splendid stock, very fine and true 1 0
CABBAGE, Cattell's Early Reliance, undoubtedly the best Cabbage in cultivation 0 6
" Little Pixie, a fine summer Cabbage, similar to Dwarf York, but much superior 0 6
" Cattell's Green Colewort 0 6
" Couve Tronchuda or Portugal Cabbage, a delicious vegetable 0 6
CUCUMBER, Holmesdale Frame, a very handsome and prolific White Spine 1 0
" General Wolfe, equally adapted for ridge or frame, for general use, will be a great favourite 1 0
LETTUCE, London White Cos (true) 0 6
SAVOY, Cattell's Dwarf Green Curled 0 6
" " " " Drumhead.. .. .. 0 6
TOMATO De Laye, a very fine variety 0 6

For other first-class Vegetables, see CATALOGUE.

FLOWER SEEDS.

Per Packet, free by Post.
Imported GERMAN ASTER .. .. 1s. to 3 6
" " STOCK .. .. 1s. to 4 0
" " WALLFLOWER .. .. .. 1s. to 3 6

From the same growers as usual, and which have always been highly commended by all purchasers.

BALSAM, finest double, 9 varieties, in sealed packets, saved by Messrs. F. & A. Smith.. .. .. .. 2 6
PRIMULA SINENSIS, finest fringed, saved by Messrs. F. & A. Smith 1 0
CALCEOLARIA, from very splendid spotted kinds, 1s. and 2 6
CINERARIA, from choicest named flowers .. 1s. and 2 6
DIANTHUS HEDDEWIGII 0 6
" " atropurpureus fl. pl. 1 0
" IMPERIALIS HYBRIDUS, very beautiful .. 0 6
" " flore nigro purpureo 1 0
" CHINENSIS NANUS, atrosanguinea flore pleno 0 6
LOBELIA ERINUS SPECIOSA (true), saved from the Crystal Palace variety, and will come true from seed; cannot be too highly recommended for its intense blue colour and dwarf habit. All visitors to the Crystal Palace must have admired the immense lengths of edging of this kind, so artistically planted by Mr. Gordon .. .. 6d. and 1 0
TROPÆOLUM, Crystal Palace Scarlet, saved from the true variety; this is a well known bedding plant, extensively used at the Crystal Palace 1 0
" Crystal Palace Gem 0 6
" Cattell's Dwarf Scarlet 0 6
" " " Crimson 0 6
" Yellow Tom Thumb 0 6

(The last four are very dwarf free blooming kinds and make beautiful beds in poor soil; if sown in rich soil they grow too freely, and do not show their true character.)

ATRIPLEX HORTENSIS RUBRA (Orache), highly recommended by many horticultural writers in preference to Perilla Nankinensis; as a decorative plant it is highly ornamental 0 3

For other choice and select Annuals, Ornamental Grasses, &c., see CATALOGUE, pages 20 to 32.

Nursery and Seed Establishment, Westerham, Kent.

New Azalea indica.

J. IVERY AND SON feel much pleasure in offering their two beautiful Seedlings, CARNATION and TRICOLOR, small plants at 10s. 6d., and larger at 21s. each. They are fully described in our CATALOGUE, with all other Novelties of the Season, which will be forwarded post free upon application.

A fine lot of half Specimens and Standards for Sale.

Dorking Nursery.—March 1.

Hanover Nursery, Peckham, S.E.

AZALEA INDICA.

WM. IVERY begs to offer fine Plants of all sizes, full of bloom buds. The Trade supplied by the dozen or hundred. Price on application. Also a quantity of Half Specimens of all the best leading varieties. A fine Stock of large CAMELLIAS, to be sold a bargain. Evergreen OAKS, 5 to 7 feet.

IVERY'S NONSUCH LETTUCE, the best summer variety in cultivation, 1s. per packet, post free; and to be had of all the principal Seedsmen in London.

Excellence and Economy.

TO PURCHASERS OF VEGETABLE AND FLOWER SEEDS.—SEND FOR JAMES TYNAN'S CATALOGUE, select your own Seeds, and save one-half the cost. No other house supplies Seeds of equal quality on the same terms. Importer of German and other Seeds.

Seed Warehouse, 68, Great George Street, Liverpool.

J. SCOTT'S SEED CATALOGUE, with Descriptive and Cultural Notes, is now ready, and will be found very useful to intending purchasers. Sent gratis.

THE BEDDING PLANT CATALOGUE is being printed, and will be ready in April. Parties who wish to embellish their gardens, cheaply, should procure a copy before purchasing their plants, as the book is replete with information on the subject, and all the novelties of the season are described, and most sorts may be had at 2s. 6d. per dozen. Mr. Beaton, in the *Journal of Horticulture*, says:—"It is the best Catalogue we have seen."

Merriott Nurseries, Crewkerne, Somerset.

MESSRS. KOLLER AND CO., 27, Leadenhall Street, E.C., beg to inform their customers that their select FLOWER and GARDEN SEEDS have just arrived from Hamburg. Prospectuses are to be had on application. Their splendid publications about the art of Landscape Gardening always in stock.

Pelargoniums.

GEORGE SMITH begs to offer from a splendid Stock of Choice and well grown Plants the following, viz.:—

	per dozen
SHOW GERANIUMS from	9s. to 30s.
French and English Spotted	9s. to 30s.
Fancy	9s. to 30s.
Pink, Scarlet and White, Zonale	9s. to 12s.
Variegated Leaved	9s. to 20s.

A DESCRIPTIVE CATALOGUE of the above, together with Fuchsias, Verbenas, Dahlias, Petunias, Chrysanthemums, Bedding Plants, &c., in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London, N.

Calceolaria Canariensis.

G. SMITH has great pleasure in recommending this unsurpassed and beautiful variety; it has been shown in the past season at all the leading exhibitions round London, and has established itself as the best for all purposes, as it gives two-thirds more bloom in a pot and one-third more in beds than any other Calceolaria in cultivation; colour bright Canary Yellow, the mouth closed, so as to resist the wet; the habit is all that could be wished. Has taken a First-class Certificate at the Royal Botanic Gardens, Regent's Park; also a First-class Certificate from the Floral Committee of the Horticultural Society, for its fine qualities. Now ready, in strong plants, at 1s. 6d. each, or 12s. per dozen. A remittance must accompany the order of unknown correspondents.

Tollington Nursery, Hornsey Road, Islington, London, N.

WILLIAM BARRON, Elvaston Castle, Derby, can supply strong and remarkably well-rooted plants as under:— Per 100—s. d.

ABIES DOUGLASII, 3 years once transplanted.. .. 25 0
This tree attains a height of more than 200 feet, highly ornamental, the same as the tall flagpole at Kew.

PINUS LARICIO, 18 ins. to 2 feet .. .. per 1000 70 0
This produces timber for railway sleepers sooner than the Larch, and is used as spars and masts in the French navy.

BERBERIS DARWINI, the most beautiful of the tribe, fit either for the flower garden or game cover, with rich orange-coloured flowers; Pheasants are very fond of the berries, which are produced in profusion. Strong plants, 3 years old 20 0
Ditto ditto, 2 years old 15 0
Ditto ditto, 1 year old 12 6

PICEA NOBILIS, 3 to 4 years old, plants from seed, each, 10s. to 15 0
This is the most lovely of all Firs.

WELLINGTONIAS from 2 to 9 feet. Also specimens of the rarest Conifers.

Remittances to accompany orders from unknown correspondents. Post-office Orders payable at Derby.

SELECT PRICED LISTS post free on application.

MESSRS. BROWN AND CO. offer the following Selection of CHOICE PLANTS, which they will forward to any part of the kingdom:— s. d.

25 AZALEAS, new hardy Belgian varieties, one of a sort, on their own roots, by name, well set for bloom, fine for beds or pot culture for forcing .. 20 0
25 AZALEAS, hardy American varieties, do. do. .. 15 0
12 Hardy RHODODENDRONS, including scarlet, white, and rose colour 12 0
Fine Hardy Scarlet RHODODENDRONS, per doz. .. 12 0
New Yellow RHODODENDRONS, each .. 3s. 6d. to 5 6
Hardy HEATHS, LEDUMS, and KALMIAS, per doz. 6 0
ROSES, best sorts, Standards and Half-standards per doz. .. .. 12s. to 15 0
CLIMBING ROSES of best sorts, rapid growers, per doz. 6 0
6 Fine Hardy MAGNOLIAS, one of a sort 10 0
Choice CONIFERÆ, cheap; PRICE LIST by Post.
Greenhouse AZALEAS, fine varieties, per doz., 10s. to 15 0
CAMELLIAS, best double varieties, per doz. .. 28 0
Yellow PICOTEES and CARNATIONS, per doz .. 10 0

FRUIT TREES.

Fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Apples, Plums, and Pears, 2s. 6d. each, or 24s. per doz.

Dwarf Plants of all the above kinds, grown especially for pot culture in orchard houses, &c., per dozen, 18s.

Filberts, Gooseberries, Currants, and Raspberries, per doz., 3s. Evergreen Shrubs and Ornamental Trees of all kinds cheap.

American Nurseries, near Farnham, Surrey.—March 1.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.—

50 in 50 well selected vars.	.. ..	..	£2 2 0
50 in 25 ditto ditto	.. ..	..	1 10 0
25 in 25 ditto ditto	.. ..	..	0 15 0
12 in 12 ditto ditto	.. 6s., 9s., and		0 12 0

Mixed, 3s. 6d. per dozen; 25s. per 100.

BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1861 and SPRING 1862, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

SEED ESTABLISHMENT, THE WASH, HERTFORD.

ALFRED E. McMULLEN'S CATALOGUE of VEGETABLE and FLOWER SEEDS for 1862, containing Prices and Description of all Seeds, and Practical Hints on the cultivation of every class, together with a Calendar of Operations for every month in the year, is now ready, and may be had post free on application.

Special columns are appropriated to treatises on the cultivation of Hardy, Half-hardy, and Tender Annuals; also the Chinese Yam or Potato; Mushrooms, Cucumbers, Celery, and other choice Vegetables.

N.B. Flower Seeds free per post.—March 1.

NEW, CHOICE, and GENUINE FLOWER SEEDS, free by Post:—

	s.	d.
100 Packets, choice sorts, including all the best Hardy, Half-hardy, and Greenhouse Annuals, left to D. B.'s selection	20	0
50 Packets ditto ditto	10	6
25 Packets ditto ditto	5	6
100 Packets very choice and showy Hardy Annuals ..	13	0
50 Packets ditto ditto	7	0
25 Packets ditto ditto	4	0
12 Packets ditto ditto	2	6
50 Packets Half-hardy Annuals	8	0
25 Packets ditto ditto	5	0
12 Packets ditto ditto	2	6

Smaller packets of above at half the prices quoted.

DAVID BROWNE, Seed Grower and Importer, 41, London Street, Norwich.

Hardy Ferns.

JAMES SMITH can supply the following for 35s. cash, or half the collection for 17s. 6d., package included. Post Office Orders payable at Matlock.

6 Asplenium Adiantum nigrum	2 Lastrea cristata
6 „ Trichomanes	2 „ uliginosa
4 „ viride	2 „ Thelypteris
6 „ Ruta muraria	6 „ dilatata
4 „ lanceolata	4 Osmunda regalis
4 Allosorus crispus	2 Polystichum angulare
2 Botrychium lunaria	2 „ lobatum
6 Blechnum boreale	2 Polypodium dryopteris
6 Ceterach officinarum	6 „ vulgare
4 Cystopteris fragilis	4 „ calcareum
6 Lastrea recurva	2 „ phegopteris
6 „ Filix mas	6 Scolopendrium vulgare
2 „ rigida	4 „ ramosum

Darley Dale Nurseries, near Matlock.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the most effective and useful bedding variety known. During the past season upwards of 5000 plants were grown in the gardens at Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.

*** For Testimonials and further particulars see *Gardeners' Chronicle* of February 22.

Plants in April, 1s. 6d. each. 12s. per dozen. 50s. per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in riband-borders, and vases, this variety is one of the most useful and effective yet offered for sale.

Plants in April, 1s. 6d. each. 12s. per dozen. 75s. per 100.

CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

Per packet—s. d.		Per packet—s. d.	
Calceolaria, herbaceous ..	2 6	Primula sinensis denti-flora	2 0
Cineraria cruenta ..	2 6	Primula sinensis albiflora	2 0
„ maritima	0 6	„ „ dentiflora kermesina splendens ..	2 6
Erianthus Ravennæ ..	1 0	Verbena venosa	0 6
Lobelia erinus speciosa	1 0		
„ „ major ..	1 6		

A PRICED and DESCRIPTIVE CATALOGUE of Vegetable, Agricultural, and Flower Seeds, forwarded post free to all applicants.

Exotic Nursery, Tooting, Surrey, S.

CHARLES NOBLE would remind all those interested that his Selection of RHODODENDRONS is unrivalled; that his Selection of CONIFERS is worthy of notice, and his Selection of HARDY EVERGREENS worth an inspection. The following handsome well-grown specimens can be obtained on very advantageous terms, and purchasers will consult their interests by visiting the Sunningdale Nursery, Sunningdale Station, South Western Railway.

Wellingtonia gigantea, 1 to 6 ft.	Juniperus Virginiana, 1 to 10 ft
Thujopsis borealis, 1 to 4 feet	„ argentea, 1 to 4 feet
Thuja Warriana, 4 to 5 feet	„ chinensis, 5 to 7 feet
„ Lobbii, 1 to 4 feet	„ sphærica, 2 to 4 feet
„ gigantea, 1 to 4 feet	Cupressus Lawsonii, 1 to 4 feet
„ americana, 6 to 10 feet	„ Thyoides, 1 to 4 feet
Taxus fastigiata, 3 to 7 feet	Cephalotaxus Fortunii, 2 to 4 ft.
„ baccata, 3 to 5 feet	Cedrus Deodara, 1 foot to 8 feet
Taxodium distichum, 4 to 6 ft.	„ atlantica, 8 to 10 feet
Spiræa Nobleana, 3 to 5 feet	Berberis japonica, 1 to 4 feet
„ callosa, 3 to 5 feet	„ Beallii, 1 to 4 feet
Skimmia japonica, fine blooming plants	„ Darwinii, 1 to 4 feet
Retinospora ericoides, 1 to 3 ft.	Abies spec. Vancouver's Island
Pinus austriaca, 1 to 5 feet	„ lasiocarpa
„ Laricio, 3 to 5 feet	„ Pinsapo, 1 to 3 feet
„ insignis, 2 to 5 feet	„ orientalis, 1 to 6 feet
„ excelsa, 1 to 3 feet	„ Douglasi, 2 to 3 feet
„ Cembra, 1 to 3 feet	„ Nordmanniana, 2 to 5 ft.
„ Benthamiana, 2 to 6 feet	„ Menziesii, 3 to 10 feet
	Araucaria imbricata, 1 to 8 ft.

Ten Minutes' walk from the Station.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s.; 20 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that his DESCRIPTIVE CATALOGUE for 1862, of NEW CHRYSANTHEMUMS and other PLANTS is now ready, and will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Chrysanthemums.

W. HOLMES, F.R.H.S., has a fine stock of the above, including Little Harry, Lady Hardinge, Leda, Linda, Rifleman, Florence, &c., &c., all at 5s. per dozen.

DESCRIPTIVE CATALOGUES of the above, also Dahlias, Fuchsias, Verbenas, Geraniums, Antirrhinums, Petunias, &c., free for one stamp.

Frampton Park Nursery, Hackney, N.E.

RHODODENDRON NOBLEANUM WANTED.—Any person having good bushy plants of the above, from 12 to 18 inches high, to dispose of, may hear of a purchaser by sending full particulars respecting size, prices, &c., to Mr. J. VEITCH, Junr., Royal Exotic Nursery, Chelsea, S.W.

AN AVENUE of PINUS BENTHAMIANA.—Should any gentleman feel desirous of planting as above this hardiest of all hardy long-leaved Pines, fine specimens can be supplied by CHARLES NOBLE, Sunningdale Nursery.

Several hundred to select from, and warranted to move safely.

Quick.

H. AND F. SHARPE are prepared to offer of the finest quality,

Strong 2-years' Transplanted QUICK, 3 feet high,
Strong 2-years' Seedling do., 2 feet high,

at very moderate prices, which may be had, with samples, on application.

Seed Growing Establishment, Wisbeach.

Four Millions of Transplanted Quicks.

GEORGE CHIVAS offers the above, Two Millions of which are suitable for Railways, and Two Millions varying from strong to exceeding strong—a portion having been twice Transplanted. A bale containing 100 of each, five sizes, forwarded on receipt of 15s.; orders for 10,000 delivered free at any railway station.

Also Half a Million of Transplanted SPRUCE, and one of the largest general Nursery Stocks in the North-Western counties.

Chester, March 1.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.

RICHARD SMITH, Nurseryman, Worcester.

THE SUBSCRIBERS have on SALE a large quantity of 2-year Seedling THORNS, 2-year Seedling SCOTCH FIRS (Native), 3 and 4-year Seedling NORWAY SPRUCE, 1-year Seedling PEAR STOCKS, and 1-year Seedling APPLE STOCKS, 2-year Transplanted SCOTCH FIRS, 9 to 15 inches (Native); Transplanted NORWAY SPRUCE, 6, 9, 12, and 18 inches.

All at very moderate prices, to be had on application.

FOWLER & SON, Glasgow.

WANTED to PURCHASE, 100 ENGLISH YEWS, young growing Plants, 6 or 7 feet high above ground and well branched. The Advertiser will not object to have them got up by his own men if the quantity is not under 20, and to be sold from a private garden. Price must be moderate.

Address, F. G., *Gardeners' Chronicle* Office, London, W.C.

TREE PLANTS for SALE.—A large quantity of native SCOTCH FIR, twice transplanted, and grown from Seed from Braemar Forest, 1 to 1½ feet, 2 feet and upwards.

Transplanted EVERGREEN PRIVETS		..	2 to 2½ feet.
Do.	do.	do. ..	3 to 4 „
Do.	ASH ..	.. ..	3 to 4 „
Do.	SYCAMORE	.. ..	3 to 4 „
Do.	APPLE STOCKS ..	..	2½ to 3 „

Will be sold cheap and delivered on the Rails, Cornhill Station, N.E. Railway Prices on application to

HOGG & WOOD, Coldstream, N.B.

TO THE TRADE.—

1 year Seedling HOLLIES, 3s. per 1000
1 year Seedling BERBERIS AQUIFOLIA, 4s. per 1000
2 year Seedling SPRUCE FIR, 1s. 6d. per 1000
3 year Seedling do fine, 2s. per 1000

Prices of the following on application:—

Araucaria imbricata, 2 year, in pots; Pinus Lambertiana and Benthamiana, 2 year, in pots; Cupressus torulosa and Juniperus ericoides, 6 to 9 inches, pots; Thuja Lobbii, 9 to 15 inches, pots; Yews, from 1 to 8 feet; Green Hollies and Berberis aquifolia, 1½ to 2 ft.; Scotch Fir, 2 to 3 ft.; Spruce Fir, 1½ to 2 ft.

WILLIAM BOOSEY, the Nurseries, Macclesfield, and Middlewich, Cheshire.

WANTED, Transplanted CRAB STOCKS.

R. GLENDINNING has great pleasure in offering the undermentioned fine CONIFERS, which have been annually transplanted, and will move with perfect safety:—

Araucaria imbricata (perfect specimens), 2 to 9 feet
Cedrus Deodara „ 1 to 10 feet
„ atlantica „ „ 1 to 10 feet
Cupressus Lawsoniana, 1 to 3 feet
„ macrocarpa, 1 to 15 feet
„ Nutkaensis (Thujopsis borealis), 1 to 8 feet
Picea nobilis (fine), 1 to 6 feet
„ Nordmanniana, 1 to 10 feet
„ Pinsapo, 1 to 6 feet
Pinus Benthamiana, 1 to 5 feet
„ excelsa, 1 to 12 feet
„ Fremontiana, 1 to 4 feet
„ Jeffreyi, 1 to 2 feet
„ Koraensis, 1 to 4 feet
„ monticola, 1 to 10 feet
„ tuberculata, 1 to 4 feet
Taxus baccata erecta (splendid specimens), 1 to 9 feet.

Also all the other leading kinds in fine well grown plants. The above are remarkably handsome plants, and perfectly healthy, not having suffered from the severity of the past winters. Price on application.

Chiswick Nursery—March 1.

New Cinerarias, Gloxinias, and Pelargoniums.

F. AND A. SMITH can still supply a few sets of their New GLOXINIAS, CINERARIAS, and PELARGONIUMS.
See *Gardeners' Chronicle* of Oct. 5, 1861, and CATALOGUE, which may be had gratis.
Dulwich, Surrey, S.

Superb Balsams.

F. AND A. SMITH are now sending out Seed of their Superior BALSAMS in collections of
9 Colours, separate .. .. .. 2s. 6d. each.
The same, mixed .. .. .. 2 0 „
Half the quantity .. .. .. 1 0 „
The above are in 18 distinct and bright colours, of carefully selected Seed, from the most double varieties.
Dulwich, Surrey.

SUPERB HOLLYHOCKS.—
12 Superior Show Flowers .. .. 18s. 0d.
12 Good ditto 9 0
The Trade supplied.
For CATALOGUES, address R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk.

DOBSON'S SPLENDID SEEDS.—CALCEOLARIA, unequalled, hybridised, per packet, 1s. 6d., 2s. 6d., 3s. 6d., 5s.
CINERARIA, very splendid, 1s., 2s. 6d., 3s.
PRIMULA SINENSIS FIMBRIATA, ex. ex., 1s., 2s. 6d., 5s.
Post free.
J. DOBSON & SON, Woodlands Nursery, Isleworth.

Rhododendrons for Under Cover.

JOHN WATERER has an immense quantity of the above in fine bushy plants, of sizes suitable for immediate planting into Covers.
☞ It is worthy of remark that in the most severe weather Rhododendrons are never injured by Hares or Rabbits. Samples, with prices, forwarded on application.
The American Nursery, Bagshot, Surrey.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England.
The Catalogue may also be had at Mr. MAY'S, 1, Wellington Street, Strand, W.C.
Knap Hill Nursery, near Woking, Surrey.

Aster Seed of Superior Quality.

J. AND J. FRASER, of the Lea Bridge Road Nurseries, Leyton, N.E., beg to announce that they are now prepared to send out Collections of the finest FRENCH ASTERS.
J. & J. FRASER feel much pleasure in stating that the first Prizes for these Asters at the Royal Horticultural Society and Crystal Palace Exhibitions were awarded to flowers produced from Seed supplied by them.
A PRICED LIST will be forwarded on application.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK.
EXHIBITIONS of PLANTS, FLOWERS, and FRUIT, WEDNESDAYS, May 28, June 18, and July 9.
AMERICAN PLANTS, MONDAY, June 9.
Tickets are now being issued, and can be obtained at the Gardens only by Vouchers from Fellows or Members of the Society. Price on or before SATURDAY, May 17, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.
SPRING EXHIBITIONS open to the Fellows of the Society and their friends only,
WEDNESDAYS, March 26, April 2, 9, 16, 23, 30, and May 7.
J. DE C. SOWERBY, Secretary.

BURTON-UPON-TRENT FLORAL and HORTICULTURAL SOCIETY.—The FIRST EXHIBITION this year will be held on JUNE 18.
First Class open to all England.
Schedules with prizes affixed to be obtained on application to the Secretary, Mr. ATTERBURY, 81, High Street, Burton-on Trent.

ANNUAL EXHIBITION of ROSES in BIRMINGHAM (OPEN TO ALL ENGLAND).
A very general desire having been expressed, both by Amateurs and Nurserymen, to carry out the suggestion made in the *Midland Counties Herald* of the 18th of July last, for the Establishment of an ANNUAL EXHIBITION of ROSES, to be held in the Town Hall, Birmingham, the undersigned invite all who may be disposed to give their assistance to the project to meet in the Committee Room of the Town Hall, on THURSDAY, March 13, at 12 o'Clock, when it will be proposed to appoint a Committee, and to make other arrangements.
The Mayor of Birmingham has courteously consented to take the Chair on this occasion.
It is intended also to include at the same time an Exhibition of GARDEN ORNAMENTS and HORTICULTURAL TOOLS.
T. B. WRIGHT, J. COLE, B. A. HALLAM,
CHARLES J. PERRY, HENRY POPE, E. W. BADGER.
Communications and suggestions are invited, and may be addressed, previous to the Meeting, to Mr. B. A. HALLAM or Mr. E. W. BADGER, Honorary Secretaries *pro tem.*, at the *Midland Counties Herald* Office, Birmingham.—March 1.

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.
The next ORDINARY MEETING of this Committee will take place on TUESDAY, March 4, at 12 o'Clock.
All persons, whether Fellows of the Society or not, are invited to send New Plants and Flowers for examination.
The subjects for examination are to be delivered at South Kensington, not later than 11 o'clock, A.M.; and all necessary particulars respecting them to be forthwith communicated, in writing, to the Secretary.
THOMAS MOORE, Secretary to the Committee.

ROYAL HORTICULTURAL SOCIETY.
FRUIT COMMITTEE.
A MEETING of the FRUIT COMMITTEE will be held on TUESDAY, March 4th, for the Examination of such FRUIT and VEGETABLES as may be submitted, and for Awarding the following Prizes:—
Class A.—The Best and Second Best Three Dishes of DESSERT APPLES, distinct sorts 20s., 10s.
Class B.—Ditto ditto PEARS .. .. 20s., 10s.
Class C.—Ditto ditto KITCHEN APPLES .. .. 20s., 10s.
Class D.—The Best and Second Best Bunch of Early GRAPES .. .. 20s., 10s.
Class E.—Ditto ditto Late GRAPES .. .. .. 20s., 15s.
Class F.—Best and Second Best Dish of STRAWBERRIES, not less than 30 fruit .. 20s., 10s.
☞ All packages must be at the Rooms at South Kensington, by 10 o'Clock of the day of Meeting, and together with any communications, addressed to
ROBERT HOGG, Secretary to the Committee.

ROYAL HORTICULTURAL SOCIETY.
March 19.—HYACINTH and CAMELLIA SHOW. Admission 2s. 6d.
April 9.—AZALEA SHOW. Admission 2s. 6d.
May 21.—FIRST GREAT SHOW. Admission 5s.*
*** During the Season the Inauguration of the Memorial of the Exhibition of 1851 is expected to take place.
June 11.—SECOND GREAT SHOW. Admission 5s.
*** In May or June, AMERICAN PLANTS. Admission 2s. 6d.
June 26.—ROSE SHOW. Admission 2s. 6d.
July 2.—THIRD GREAT SHOW. Admission 5s.
Sept. 10.—AUTUMN SHOW. Admission 2s. 6d.
October 8, 9, and 10.—INTERNATIONAL FRUIT, VEGETABLE, ROOT, CEREAL, and GOURD SHOW. The Roots, Cereals, and Gourds will remain on view until the 18th. Admission on October 8, 2s. 6d.; 9th to 18th, 1s.
* On the days of the Great Shows the charges will be 7s. 6d.
Packets of 25 Five Shilling Tickets, price 5l., available according to the daily charges, on any day on which money is taken.
Season Tickets of INTERNATIONAL EXHIBITION, price 3l. 3s., and Joint Season Tickets freeing also to the Horticultural Gardens, price 5l. 5s., can be had at the Offices.
Bands will play every week day from May 1 to October 18.
The next Ballot for Fellows is on the 7th of March.
Schedules of Prizes may be had on application to Mr. EYLES, South Kensington, W.
ANDREW MURRAY, Assistant Secretary.

The Gardeners' Chronicle.

SATURDAY, MARCH 1, 1862.

MEETING FOR THE ENSUING WEEK.

TUESDAY, March 4 { Royal Horticultural (Fruit and Flora Committees) at S. Kensington .. Noon

A CERTAIN Count, well known from his love of good cheer to all the *élite* of Berlin, once expressed to us the liveliest satisfaction at the refutation of EHRENBERG'S notion of the animal nature of the flint-shelled Algæ (Diatomaceæ) by our countryman Mr. THWAITES. For conceiving that EHRENBERG'S views as to the possibility of these productions multiplying in the air when carried about by strong currents or trade winds, extended to the peopling of every breath of air we inhale with such organisms, he was infinitely disgusted at the idea of imbibing a quantity of "nasty" animals as he called them into his system. What, however, would have been his dismay could he have read the letter of "Medicus" in the *Times* of Feb. 21, in which it is asserted that a brown powder called drei, and occasionally administered with sinister purposes by gipsies, consists of an infinity of the spores of some Fungus which possesses the peculiar property of being developed only by intimate contact with living animal matter (as when swallowed, &c.), and that these spores when in such contact throw out innumerable greenish yellow fibres about 12 or 18 inches in length. When the drei is administered, says the scribe, usually in some warm drink, these spores are swallowed, attach themselves to the mucous membrane, germinate, throw out millions of these silky fibres, which grow with awful rapidity, first producing symptoms of hectic fever, then cough, eventually accompanied by incessant spitting of blood, till death inevitably supervenes, usually in about a fortnight or three weeks' time. A case of this description is asserted to have come under his notice in Italy. More is said to the same purpose, which it is unnecessary to reproduce here.

The whole, at first sight, looks like a "canard;" but it is possible that if such appearances really have presented themselves on a *post mortem* examination they had nothing to do with the administration of any drug. We do not dispute the fact that dangerous drugs are often administered by gipsies, especially such as have a tendency to produce abortion, a practice unhappily too prevalent in agricultural districts; nor would we deny that these may sometimes consist of the spores of bunt or puffballs, or of some other Fungus of which it is possible to collect them in any quantity. We have evidence to show that these are sometimes deleterious, as, for example, the spores of such acrid milk-bearing Fungi as *Lactarius vellereus*, a very small quantity of which will occasionally produce nausea and other dangerous symptoms. We however distinctly deny that there are any spores of Fungi which will vegetate only when in contact with a living animal substance, and it is quite certain that if drugs are frequently administered, consisting of spores which germinate to such a frightful extent, and induce such fatal symptoms, it would have been matter of notoriety long before the present time.

How "Medicus" has obtained his information he does not condescend to state, much less does he assure us that he has followed up step by step the germination of such spores. For analogous cases we must go to the insect world, in which something of the kind is not uncommon, as in the case of animals of the genus Iulus, reported by Dr. LEIDY and others, whose work we noticed in our volume for 1854, at p. 218. Such productions however do not arise from spores which could be collected in any quantity, so as to be administered under the form of a brown powder. If the Italian case of "Medicus" be genuine, we can give a much more rational solution of it. It is well known that the mucous membrane of persons in an unhealthy condition is liable to be attacked by Fungi. Many instances are on record, and the fact is so well known, that the occurrence of mould in the human subject after death is frequently passed over without observation as a common occurrence. These however, are mostly of small size and extreme delicacy. There is indeed a mould (Phycomyces nitens), whose threads reach a length of 12 or 18 inches, and are very conspicuous, which when growing is very nearly of the colour described in the letter above quoted, though when dry it assumes a deep green tint. This occurs on fatty substances of various kinds, whether animal or vegetable, and we can conceive it very possible that this might germinate in the stomach, and attain considerable dimensions there. But if so, its presence must be regarded as purely accidental, and the mould is one whose spores could not be collected in any quantity, and if collected would not form a brown powder. If it be alleged that such productions as *Leptomitus* and *Saprolegnia*, which often grow on living substances, are cases opposed to the criticism given above, we answer that, allowing them to be Fungi (which we readily do), they are as often developed on dead as on living animals, and indeed much more frequently, and that it would be absolutely impracticable to collect their minute hyaline spores. And these are the only Fungi of which it could for a moment be contended that they are especially of animal growth, with the exception of the various caterpillar Fungi, which do not answer the required conditions.

We have however, perhaps wasted too much time on this communication. Such triflers as the author deserve but little attention, except to guard others against their follies. It requires however some courage, says GOETHE, for men to be what Nature made them—even a fool complete weighs for something in Nature's scales.

ON Thursday a most important public meeting was held in London on the subject of female labour in Vancouver's Island and British Columbia. The chair was taken by the LORD MAYOR, supported by the Bishops of OXFORD, LONDON, and HONOLULU, Sir J. K. SHUTTLEWORTH, Mr. ARTHUR KINNAIRD, M.P., and other influential persons. The great object was to promote the free emigration of young females from this country.

We shall give a full account of the proceedings in our next.

—— WE trust that ere the season is too far advanced some of the clever plant growers, to whose skill our horticultural exhibitions are indebted for the major part of their attractions, may be induced to try their hand upon the DOUBLE ZINNIA ELEGANS as a pot plant for the autumn flower shows. As we stated on a former occasion, when we were the first to introduce the plant to English readers, there is reason to believe that as much success would presently be realised as in the case of Balsams, Cockscombs, and similar subjects; and if the plant should prove to be really tractable, as we imagine it is, an additional feature of no small interest would be added to the later exhibitions of the year, which stand much in need of something to break up their monotonous character. Naturally continuing to grow on till a late period of the autumn; as brilliant at the last as at the first, if not more so; branching freely, and no doubt yielding something in this respect to judicious manipulation, it seems as though every point would be favourable to the production of neat bushy specimens of this double Zinnia; and such specimens being obtained, and well furnished with the fine showy flower-heads which the plant is known to be capable of producing, the result could hardly fail to be satisfactory, provided the better-coloured varieties were secured. The attempt at least is worth making in good earnest.

—— While on this subject let us further recommend for a similar experiment the magnificent new INCURVED-FLOWERED HELICHRYSUMS. There is no reason why they should not be grown as perfectly as a Pelargonium, and being, not annuals as they are commonly called, but subshrubby perennials, these might be kept over from year to year if it were found that old plants were more amenable than seedlings to the treatment required. These Helichrysums may, moreover, be propagated by cuttings, so that the brilliant-coloured varieties which occur here and there amongst them, and which have not yet become fixed enough in character to be reproduced from the seeds, can be perpetuated. What a glorious appearance would be presented by half a dozen of these bright coloured, large-flowered novel forms of Everlasting, grown after the model, say, of Turner's Fancy Pelargonium!

There abundant time for both these subjects to be

forthcoming at the September and October shows of the present year, and we hope some one will set about preparing them.

GARDEN TRACERY.

(*Continued from p. 164*).

"THE TWELFTH PRACTICE.

"*To draw an oblong Square or Parallelogram.*

"After having measured the length *a b*, and the breadth *b c* of the parallelogram described upon the paper, and quoted them, as suppose 8 and 15 fathom, trace out the line A B of 15 fathom, and upon one of its extremities, as A, raise a perpendicular of 8 fathom long, as from A to C, by the sixth practice. Then fix a line of 15 fathom long to the stake C, and one of 8 fathom to the stake B; and where their extremities meet, as in D, drive a stake, and trace the lines B D and C D, which, with A B and A C, will form the parallelogram A B C D.

"The First Observation.

"If the oblong square were much bigger than this you must then raise, with the instrument, two perpendiculars upon the extremities of the line A B, according to the observation on the sixth practice, and make each of those perpendiculars equal to the breadth of the parallelogram.

"The Second Observation.

"To draw a perfect square, the practice is the same with that above, saving that the two perpendiculars must be drawn as long as the base of the square.

"THE THIRTEENTH PRACTICE.

"*To describe, with the Line, an Irregular Figure of four Sides.*

"Suppose the irregular figure to be *a b c d*, from the point *a*, with the interval *a c*, describe with the compasses an arch, as *c e*; and from the point *b*, with the interval *b d*, make another arch, as *d f*; measure the lengths *a b*, which suppose 25 fathom, *a c* 9 fathom, *b d* 11 fathom, and the cords of the arches or distances from *c* to *e* 10 fathom, and from *f* to *d* 14 fathom. Then trace upon the ground the line or base A B of 25 fathom long, and carry from A to E 9 fathom, and from B to F 11 fathom; plant two stakes in the points E and F, and taking a cord of 9 fathom fix'd to the stake A, and one of 10 fathom long fix'd to the stake E, bring their ends to meet in the point C, and drive a stake there: do the like on the other side, as upon the stake B fix a cord of 11 fathom, and one of 14 upon the stake F, bringing their extremities together in the point D, and tracing the lines A C, C D, D B, you form, with the base A B, the four-sided figure proposed.

"THE FOURTEENTH PRACTICE.

"*To draw an irregular Figure of four Sides with the Instrument.*

"The four-sided figure *a b c d*, is here supposed to be considerably bigger than the foregoing; as the base *a b* to be 100 fathom long, the side *a c* 20 fathom, and that of *b d* 30 fathom. Measure, with the protractor, the openings of the two angles that fall upon the base *a b*; suppose here the angle *a* to be 60 degrees, and that of *b* 100, quote all these measures exactly upon the plan, and trace out upon the ground the base line A B 100 fathom long, by the second practice; then place the semi-circle upon the stake A, and make an angle of 60 degrees, that is to say, equal to the angle *b a c* upon the paper, by the tenth practice; make the side *a c* 20 fathom, according to the plan, and drive a stake at C: likewise from the stake B make an angle of 100 degrees, and set off 30 fathom on the side B D, plant a stake at D, and trace the line D C from D to C, which, with the lines C A and D B, and the base A B, form an irregular four-sided figure like that of the plan.

"Observation.

"Every figure of many sides, whether regular or irregular, is called a polygon. Regular polygons take their names from the number of their sides, from the square to the figure of 12 sides.

The polygon of 5 sides is called a pentagon.
that of 6 ,, ,, an hexagon.
of 7 ,, ,, an heptagon.
of 8 ,, ,, an octogon.
of 9 ,, ,, an enneagon.
of 10 ,, ,, a decagon.
of 11 ,, ,, an endecagon.
and of 12 ,, ,, a dodecagon.

"THE FIFTEENTH PRACTICE.

"*To describe, with the Line, any Polygon whatsoever.*

"Suppose the regular polygon (*a*) to be of five sides, called a pentagon; draw from the upper angle (*a*) two lines to the extremities of its base *b* and *c*, which will form the triangle *a b c*. Measure one of these two lines only, and quote it upon the plan, the other being equal to it. Then trace upon the ground the triangle C D E, like that of *a b c* upon the paper, by the eleventh practice; which done, take two cords equal to the base D E, and putting their loops over the stakes C and D, bring their extremities together in the point G. Again shift the cords to the stakes C and E, and do the same in the point F, and plant stakes at F and G. Then trace the lines D G, G C, C F, and F E, which, with the base D E, form a regular pentagon, like that of *a* in the plan.

"Observation.

"For tracing any other polygon whatsoever, you must reduce it into triangles, as in the foregoing figure, and transfer each of those triangles one after another upon the ground, in the same order as they lie upon the paper; which is to be understood as well of irregular polygons, as regular; the only difference being, that in regular polygons the triangles are equal, and in irregular ones they are all unequal.

"THE SIXTEENTH PRACTICE.

"*To describe any Polygon whatsoever with the Instrument.*

"Observation.

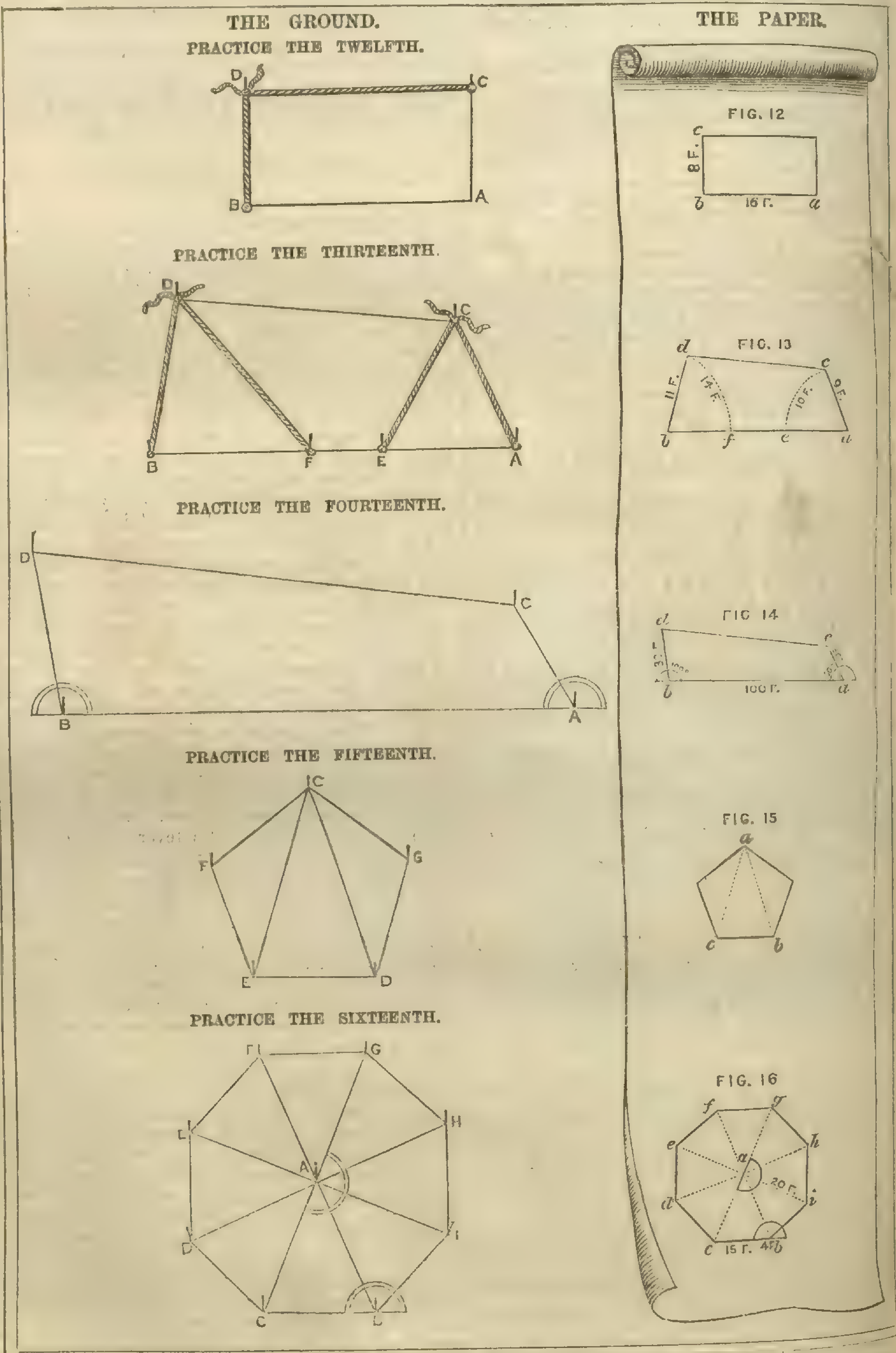
"This may be performed two different ways; for it may happen, either that the base of the polygon may be determin'd upon the ground, or that a fix'd point be given where its center must necessarily be.

"The First Way of Working.

"Suppose the line B C be drawn equal to one of the sides of the octogon *a*, which admit to be 15 fathom and 4 foot, measure upon the paper, with the protractor, one of the angles made by the meeting of two sides of the octogon, as *c* and *i*, which is what is called the angle of the polygon; set your semi-circle upon the ground over the point B, and make an angle equal to that of the octogon, which is 135 degrees, according to the following table; make the side B I 15 fathom and 4 foot, which is the length of the base *b c* in the plan; and do the same work from the points D E F G H, in all which fix stakes, and trace the sides of the polygon from one stake to another, which will make it regular, and like that of *a* upon the paper.

"The Second Way.

"If the center of the octogon only be determin'd upon the ground, as the stake A, you must draw, upon the plan, lines from the center *a* to all the angles of the polygon; take the length of one of these lines, called the radius, as *a i*, the others being equal to it, and all supposed to be 20 fathoms; then measure upon the plan, with the protractor, the angle made by the



meeting of two of these lines or radiuses at the center *a*, as *a b* and *a c*, which, according to the table, is 45 degrees, and is call'd the angle at the center. Set the semi-circle upon the ground over the center-stake A, and mark out, one after another, eight angles of 45 degrees, and upon each line or radius of these angles, measure from the stake A 20 fathoms and drive stakes there. Then draw the lines from stake to stake, and they form a regular octogon, like that of the plan.

"First Observation.

"To make this sixteenth practice common to all regular polygons, even from the triangle and square, to the figure of 12 sides, or the dodecagon, you may have recourse to the following table, where are contain'd the angles of the polygon, and those of the center; and it is sufficient for the work, to measure either one of the sides of the polygon, or the line drawn from its center to one of its angles.

Names of the Polygons.	Number of Degrees of the Angle of the Polygon.	Number of Degrees of the Angle of the Centre.
Triangle	90	120
Square	08	90
Pentagon	1	72
Hexagon	120	60
Heptagon	128$\frac{4}{7}$	51$\frac{3}{7}$
Octogon	135	45
Enneagon	140	40
Decagon	144	36
Endecagon ..	147$\frac{1}{2}$	32$\frac{8}{11}$
Dodecagon ..	150	30

"Second Observation.

"With respect to irregular polygons, you may make use of the methods taught in this exercise, either dividing them into triangles, from a point or center taken in them at pleasure, measuring, with the pro-

tractor, all the angles, and, by the scale, all the radiuses drawn to the angles of the polygon, setting off upon the ground the same openings of the angles, and the lengths found upon the plan; or else, measuring each angle of the polygon with the protractor, and afterwards its sides, as was just now mention'd above.

(To be continued.)

THE DWARF COCO NUT AT SYON.

THANKS to the skilful pencil of Mr. Fitch we are able to produce the above portrait of the Dwarf Coco Nut that lately flowered in the Stove of His Grace the Duke of Northumberland.

(See page 91).

MATERIALS BEST SUITED TO THE GROWTH OF ORCHIDS.

AFTER many years' experience I find that it would be difficult to say in what Orchids will not grow, for I have seen many of them living and even thriving under circumstances and in soils which would be fatal to almost any other tribe of plants; they can seldom, however, be had in perfection without proper means and appliances. Obviously the first thing is to provide such materials as the roots will luxuriate in, and I think that to a true lover of Orchids even the successful flowering of the plants themselves hardly yields more gratification than watching the progress of a healthy root action, especially when it is considered that it tends to induce successful results.

It is, of course, generally understood that Orchids are grown chiefly in peat and Sphagnum, with the exception of a few terrestrial species which require stronger soil; but under the name of peat I have seen such vile material used that the destruction of valuable specimens could be only a matter of time. Sometimes they are treated to a soil more suitable for American plants than Orchids, becoming, as it does, from constant watering, a close, soddened mass, causing certain destruction of the roots—or to stuff from a bog, when dry only fit for a hearth, but when exposed to the action of air and water rapidly approaching a state of decomposition. Sometimes rotten wood is freely used, but I consider it worse than useless; for charcoal, which is much more wholesome, answers every purpose.

Hypnum Moss, mixed to any extent with peat, is not conducive to the welfare of plants in pots, as I have found it to decay very rapidly when it changes to a dark mould. Sphagnum has not this disadvantage. I however managed a collection for several years tolerably successfully, with nothing but Hypnum for a Moss, but the peat was most excellent, and the Hypnum was only used for lining baskets, and for covering the roots of plants on blocks. I used it in flakes with the greenest side outwards, finishing by clipping off the loose ends. I should have continued its use, but the peat commons became enclosed, and I found Sphagnum to be a great assistance.

The kind of peat most suitable is that of a light, fibrous, and porous character, which can generally be found on heathy ground, where the common Ling (Calluna vulgaris) and Vacciniums abound, more especially where the Heath and turf are not often cut and pared. The material from such situations consists of decayed leaves and roots of the plants just mentioned, intimately mixed with a dead undergrowth of Moss and roots of Grasses.

Should soil of that kind not be obtainable, the next best substitute is the top spit of a heathy common, with the earthy portion well shaken out, retaining only the more fibrous part; in any case the brown is preferable to the black. Some editorial remarks appeared in your Paper for May, 1852, which made a strong impression on my mind; and I must make that my excuse for referring to them here. The occasion was that of a sale of imported plants by Stevens, and persons even who were not buyers, were recommended to go and see what they grew in, and on, in their wild state—"what masses of entangled roots, dead sticks and leaves, afford them sustenance; what swarms of Ferns and other plants crawl among them; what layers upon layers of the most humid but not wet, most rich but not stimulating, most cool but not cold, most rottable but not rotten, matters they delight in; and how, as they themselves decay, they furnish pabulum, on which they also feed and flourish by devouring their own substance. All these things the Orchid grower may see and largely profit by, has he but skill to interpret the universal language in which nature speaks to those who can decipher the living characters in which her operations are emblazoned in woods and fields and on rocks and mountain tops."

Keeping these principles in view, the supply of peat in this neighbourhood having failed, I have been using something very nearly approaching the material just described. At first sight it looks like so much tobacco, but upon close inspection and handling it is found to consist of minute portions of Oak and other leaves, intimately bound together by masses of fibres from Polypodium vulgare and other plants. I find this material beneath Fir and Oak trees, accompanied by an undergrowth of Laurels, Vacciniums, Heaths, &c., immediately on the surface of the red sandstone; in some cases I peel it off in flakes from the sandy rock itself. With proper modifications, such as practice points out to be necessary, most Orchids are quite at home in this material.

Sphagnum is almost indispensable, and may be used as it is found or chopped fine. I much prefer the latter, either for mixing with peat or for neatly topping up the surface after potting; the greenest, if kept damp, will commence growing, and be much more pleasing to the eye than bare peat. For potting nothing else is required except charcoal and small crocks or potsherds, a mixture of both being preferable. I use a large quantity of the former for drainage; it is light, and the roots frequently cling to it with avidity.

As regards baskets, I first line them with flakes of Moss, and then proceed, as in potting, with a mixture of peat, charcoal, and potsherds broken small, finishing off with chopped Sphagnum.

For blocks any hard wood will do, such as Whitethorn or Acacia, but where they can be obtained there is nothing like pieces of the branches of the Cork tree cut into different sizes. Having them here I always use them. *L. W. J.*

Indoor Gardening.

THERE are several modes of managing plants indoors, each of which is in fact adapted to some special sort of plant which thrives under that system, though not under others equally. The greatest number of plants are to be found perhaps in common plant stands and jardiniers; it is of these therefore generally that one has to speak. Then there are the plant cases, which give an exceptional atmosphere, and which being indeed small hothouses, enable us to grow stove plants, and to procure their flowers in winter.

Hanging baskets come under the list of open plant stands; and are often worse off than these, inasmuch as they are smaller, and hang more in a draught of air.

My present object however in naming plant stands, is to remind any indoor gardeners who are now buying new ones, to have such by all means as protect the flower pots, and give room for a *mass* of Moss to surround the stems.

The gilt and wire tables and all such like things for plants are infinitely worse than useless; the deepish baskets filled with trays of zinc, the wooden stands also made like boxes, and above all the beautiful fountain-shaped vases of majolica and such like ware, are the things really suitable for keeping plants in health. It is, too, rather difficult to suit the stands sometimes both to the room and flowers, and for this I think that the *English* majolica would answer every want. The French ware of this sort is by me disliked, because I do not see the appropriateness of "pretty pictures" on the flower vases, but some English majolica shown me some weeks ago (from Phillips's shop in Oxford Street), seemed to me quite perfect in soft rich colour, such as would harmonise with the flowers, and yet not be out of keeping in any sort of drawing-room. I know that such things are strictly beyond my "indoor garden" province; still they keep plants so healthy and look so charming for them, that I cannot help speaking a word here and there in their favour. I have seen too so many things intended for growing plants, and it is so seldom that any of these are suitable.

I do not know if all window gardeners care as much as I do for raising plants themselves. Bulbs and tubers are certainly for all such tastes the pleasantest, because they grow up so fast and are really pretty during all the time of growth; then, when they die down, they can be so easily stored away in dryness, till the time for repotting and for starting comes—thus

giving little trouble as regards the winter, when all our space is precious.

During the last week I have been very busy thus: When my Gloxinias and Achimenes and Begonia Evansiana died down last year I let the soil in the pots gradually get quite dry, after which, obtaining a large empty flower pot, I wrapped each tuber, or set of tubers, up in blotting-paper, and put each parcel separately into this said dry flower pot. The pot was then filled up with some dry silver sand and put to stand in a warm fireside corner.

Last week, then, I unpacked these parcels, and there was my Begonia with a tiny pink shoot appearing, Gloxinias starting with little clots of buds, Achimenes Dazzle, looking fat and plump. Each was forthwith placed in a very small-sized flower pot, to be grown on in a warm damp place till the roots touch the pot.

Charcoal drainage, plenty of Moss above it, and then some good leaf mould, seems to suit them nicely. I do not water mine at all when they are first planted, the soil, no doubt, being quite damp enough after the dry sand.

The Gloxinias ought to be planted nearly on the surface of the soil, and only one in a pot. The beautiful little Achimenes Dazzle may be in a 4-inch pot, but even though they flower in that in which they grow, they ought not to be planted less than three in a pot, to make a real good show, and even this should be deferred till March, unless indeed we want to force them on, which, for window gardeners, would be the worst sort of bad policy, as they blossom naturally just about August and September, when flowers sometimes are rather scarce indoors.

Begonias, amongst tubers, should about now be planted. Cocoa nut refuse suits them particularly well, and though I do not know if always *real* gardeners would be so fond of it, it really is to lady florists a very great help and benefit, cleaner than most things (especially if we get the husks and employ a small child to tear them up, shaking the powder out for us) and certainly very good for many kinds of plants. Begonia Evansiana is a great favourite of mine, though I believe that seedsmen consider it to deserve contempt, being very old. There is also a long leaved, pink flowered sort, which is very ornamental from its dark green foliage just touched with crimson on the stalks and edges, called I think, Begonia incarnata. These roots should be planted in 4 or 5-inch pots and put in a warm place, either in a hotbed or in a heated plant case. They come up very quickly if kept warm and moist, and make most charming foliage. Whether or not old-fashioned, an indoor gardener provided with some evergreens might be well content with nothing more than what tubers and bulbs would give her from one year's end to another. In summer, Ferns with Begonias make also most charming groups, and when blinds are kept always closed, and Geraniums and Fuchsias keep falling in the twilight of a London drawing-room, the Ferns and Begonias apparently enjoy the subdued light and moistness as much as do their owners. I confess it is very pleasant too now and then, entirely to shut up a glazed plant case filled with these, until dew has formed all over it, and the plants are bathed; when it is re-opened the freshness and the verdure is so truly charming, and the scent besides if we have one sweet thing in it has gathered such intensity, like summer flowers after a fall of rain. This plan indeed is only possible in that one way of growth, but by constant sponging or frequently bedewing, the plants may be very thriving in an uncovered stand; or a muslin curtain drawn over a bay window will often serve to keep in the plants' more congenial atmosphere. Anything to cause slight dewiness is the great thing for indoor gardeners. Their greatest difficulty is always from dryness and want of light. It is thus I think that semi-aquatic plants thrive so well in rooms.—Lilies of the kinds that bear much water; Vallota purpurea, which may stand in water; Callas also, which are never too wet while growing fast and flowering; Mimulus and Begonias under the same regime; with all the other kinds of quickly growing succulent plants, like Balsams. The plants that grow so fast as these generally drink much, and the water that they will stand having in their saucers just keeps the pots in a *safe* state of dampness, and fills the air around with a slight and refreshing dew.

Geraniums however are the reverse of all this, for I never did know plants so difficult to keep right in rooms. I believe the truth is, that while they must have air, they must have moisture also. My own best success has been in regularly bedewing them every night and morning, whether or not in blossom, and in always if possible letting them stand out of doors at night in the hot summer time to benefit by the dew. This way certainly gave fewest yellow leaves. *E. A. M.*

Home Correspondence.

Gourds.—The continental style of gardening is in many points very different from that of this country; in nothing is this more apparent than in the selection of plants for the decoration of the open garden—the flower-garden as we should call it; but that name would be a misnomer in Germany, for there they depend more upon foliage than flowers for the effect produced. Any one who has walked along either of the new streets recently made in the neighbourhood of the Thier Garten, Berlin, must have been forcibly struck with this difference. Doubtless there are many other places which could be pointed out where this may be seen as well, but I know of no place where it is better exhibited than there. In the semi-detached villas or mansions along these streets, the more wealthy merchants and men of property reside; and as the houses stand back from the road on either side, there is sufficient space for a garden in front of each. It is not my purpose now to speak of the Caladiums and other Aroids, the Cannas, or the many large foliaged plants which are there planted, but simply to point out that the idea aimed at is to produce, as far as possible, a semi-tropical kind of appearance. Groups and masses of fine luxuriant foliage are what they desire, flowers are quite a secondary consideration. Berlin, in fact, lays claim, and I believe with some reason, to having originated the idea of growing plants for the sake of their foliage, which is now fast spreading over all Europe. Among other things Gourds are largely employed in bringing about this much-desired semi-tropical appearance, and some grand effects are produced by them. Coiling their long shoots around and among the branches of an old tree, from which in autumn their large and brightly-coloured fruits hang, they look very conspicuous. They are largely used, too, for clothing wooden trellis-work fences. In such a position I have seen the fruit of the Club, the Pear, the Orange, the Bottle, and many other kinds attain a size quite equal to that we are accustomed to see them when grown in-doors. In many gardens they are planted upon terraces, and their long shoots trailing down the slopes have a fine effect; they suggest the idea of extreme luxuriance. It would require a very retentive memory to be able to visit all the palaces in the neighbourhood of Potsdam and afterwards recollect the distinctive characters of each; but I believe I am correct when I say that it is in the grounds belonging to the Palace of Sans Souci that there is a little villa built in the Pompeian style. It was erected by the late King, before he came to the throne; and everything in its vicinity is so managed as to give, as far as possible, an imitation of Italian scenery. On the southern slope of the hill behind there is a little vineyard, the only one I have seen so far north, and I believe it was planted more for effect than use. Nearer at hand were a field of Maize and a long wall covered with trellis work, over which Gourds of various kinds were trained. It was late in the summer when I visited the spot, and at that time there were many fruit of all sizes hanging ripe from the Vines; it gave this cool and retired walk, what to me appeared a very novel and pleasing effect. Before the frosts of autumn commence, the Gourds in many gardens are collected and arranged in groups in the entrance halls or in some corridor. The great size of some, the elegance of form or grotesque and curious forms of others, and the brilliancy of colouring in nearly all, render them very suitable for such a purpose. The manner in which they are grouped and arranged gives scope for the exhibition of much taste. Our summers vary so much in temperature that we can hardly depend upon being successful in the cultivation of some of the more tender kinds in the open air, but in very fine seasons there are few which might not be so treated. I have seen fine Club and Bottle Gourds grown out of doors in England. Everything depends upon their not receiving a check when planted out, and upon their having plenty of good food to live upon. *C. W. C.*

Opening of a Palm-spathe with an audible Report.—Yesterday I received some information likely to throw a new light upon the probable cause of the audible report by which the opening of the Palm-spathe at Kew was accompanied, or at least lead our inquiries into a new direction. My friend Professor Goeppert of Breslau writes to me that, wishing to show to his botanical class the internal structure of a female cone of Zamia integrifolia, he made a transverse section in the presence of his pupils, when to their mutual surprise an audible detonation was distinctly heard. All present having agreed that this report could proceed from no other source than the cone exhibited, Professor Goeppert without loss of time made another transverse cut, when again a report, though not so loud as the first, was heard. This experiment was then tried on a second very much smaller cone, and again a report was heard, though this time rather faint. Thinking that the cause might perhaps be sought in heat accumulated inside the spadix, a thermometer was inserted, but found not to be affected by this process. Prof. Goeppert thinks that compressed air may perhaps be the cause of this singular phenomenon, but does not venture to pronounce an opinion in the absence of further experiments. As there are numerous large Cycads in England bearing cones, he hopes that his accidental observation may stand a fair chance of being corroborated in this country. *Berthold Seemann.*

Gishurst Compound.—In reference to "G. W.'s" experiences with this, I must conclude that his red spider eggs are less tenacious of life and locality than mine are, as the painter's brush, loaded with Gishurst, 8 oz. to the gallon, had no more effect upon the eggs than "Death's dart upon Dr. Hornbook's potion-protected patients." It "just played dire on the bane, and did nae mair." No more for *their* destruction or removal, but I am by no means so assured of the innocency of the composition as regards the buds, seeing that in Spring, 1861, my orchard house Pears and Peaches, which early in February had been washed with 8 oz. to the gallon, dropped almost every fruit bud before expansion; and that several healthy Pears (it is yet too soon for the Peaches) which in December last were washed with 12 oz. to the gallon, while quite at rest, are now doing likewise in a most provoking and suspicious fashion; as witness the accompanying buds, black at the heart, which were just about to drop. In 1861 I was disposed to blame the previous winter's intense frost; but (though its effects are yet to be felt, I believe, upon various descriptions of trees) I now confess to harbouring considerable suspicions that the Gisburst had at least been aiding and abetting in the mischief. Since the above was penned, I find that the buds of an Easter Beurré Pear on the open wall, washed on the 24th January last with 16 oz. to the gallon, have nearly all been destroyed. *Microscope.* [We do not see how Gishurst can produce the effect described, although we have had a similar statement from another quarter. As to using 1 lb. to the gallon, we can hardly conceive any mischief even from this; but it may be like killing a man by gorging him with meat.]

Rainfall at Melbury, Dorsetshire, in 1861:—

	Ins.		Ins.
January	0.46	Brought forward ..	15.33
February	4.42	July	[illegible]
March	4.50	August	[illegible]
April	0.35	September	[illegible]
May	1.62	October	[illegible]
June	3.98	November	[illegible]
		December	[illegible]
	15.33	Total	[illegible]

The Tortoise.—It would be difficult to inform your Correspondent at "Norton, Stockton-on-Tees," of what part of the world his tortoise is a native, unless an inspection were procured. Tortoises will survive the rigour of our severest winters, provided they be properly located. Turn your tortoise into the kitchen garden (walled round of course), and the prisoner will require nothing more. When the sun's diminished splendour, on its journey to the south, shall warn the tortoise that frost and snow are not far off, it will form its own apartment under the surface of a bed; and there it will remain in safety and silence, until the cheering sun of early May shall have warmed it into motion, and then it will leave its solitary hole to glean a scanty fare amongst the surrounding vegetables: preferring Lettuces to all other plants. Mr. Atkins, the respected steward to the two last Earls of Westmorland, kept an aged tortoise in his garden for many years. In his last sickness he wished that it should be sent to Walton Hall. I prize it much. It has chosen a Strawberry bed, under which to make its winter-quarters. It invariably returns to the same place early in October, and it emerges from its dark dwelling early in May, when the returning sun offers it the comforts of approaching summer. It is welcome to the small support which nature demands for its unenviable existence. *Charles Waterton, Walton Hall, near Wakefield.*

Citrons.—I shall feel obliged by your naming the accompanying specimen from a tree trained on the back wall of my conservatory, about 45 years old, which yields annual crops varying from 35 to 70; there were 36 on the tree this season, and the fruit has been fine. *C. M. C., Rugby.* [It is the true Citron. It bears in Devonshire on protected pales.]

Moving large Trees.—I wish to remove to another position, about five yards distant, a favourite Pinus austriaca, between 9 and 10 feet high, some ten or eleven years old; and with that view I caused a trench a yard distant from the bole to be dug round it, about three months ago, as deep as any roots could be met with, cutting them off clean with a sharp knife, and refilling the trench with light soil in order to promote the formation of new fibres. Now, I should feel obliged to you if you would have the goodness to inform me whether, in the first place, you think that the tree may be safely moved at all, with no fear, or very little, of injury; and if so, secondly, what would be the best time for doing it, and whether any subsequent precautions are necessary. *An Eighteen Years' Subscriber.* [All has been done properly thus far. You may safely move it next August or September.]

Fat Catalogues.—This is a happy name; but a happier might be proposed. Suppose we call them Fudge Catalogues; and they really deserve the distinction. E. g., the Rev. H. H. Dombrain is stated by Messrs. Barr & Sugden to be Editor of the "Botanical Magazine"!! *O tempora! O mores!* By this standard shalt thou measure the rest. *Linager.*—In Messrs. Barr & Co.'s Catalogue and in their advertisement we are informed that their "Guide to the Flower Garden" is edited by a Rev. H. H. Dombrain, A.B., to ensure whose "literary accuracy" the work was carefully examined by an "eminent Latin scholar." I do not know who the reverend gentleman may be; perhaps, living at Deal he may be a nautical A.B; but if he is an A.B. (by which I imagine to be meant a modern pedantism for Bachelor of Arts) of either Oxford or Cambridge, I do protest against the libel which asserts that the Latinity of a member of either of our great schools of learning requires to be examined by the agent of a London seed shop. *A Country Parson.*—Since Messrs. Barr & Sugden have claimed, very imprudently as it appears to me, scientific accuracy for their new Seed Catalogue, permit me to take up the gauntlet they have thrown down. As you have justly remarked, the Catalogue itself is as good as

most others for practical purposes, especially that portion of it devoted to vegetable seeds. But since they challenge criticism, I must tell them that Alonsoa Warscewiczii (spelt Warszewiczii in the Catalogue) is not from Chili but from central America; that Alstrœmeria Van Houttei and A. chilensis are mere synonymes for the same plant; that Amblyolepis setigera is a Mexican and not an East Indian plant; that Anomatheca cruenta is not a rich orange but a pale red; that Aquilegia canadensis is dull orange-red and not purple; and that A. Skinneri is green and orange-red instead of scarlet and yellow. So much for the letter A as a sample. If further examples are needed, I beg to point out that the so-called Aquilegia formosa of gardens is nothing but a double variety of the A. vulgaris, and perfectly distinct from the A. formosa of Fischer, from Kamtschatka, which is not in cultivation. Under the head Aubergine a scarlet variety is given, which is a distinct species, the Solanum pseudo-melongena, Tenore; and Astragalus monspeliensis is said to be white, though everybody acquainted with it knows it to be purple. To go through the list would take more time than I can spare, and more space than you would perhaps afford me, and I will therefore only add to the above that Campanula alliariæfolia, a common perennial in my own vicinity, is given as blue, though it is in reality a creamy white. This is no doubt done on the authority of the "Cottage Gardeners' Dictionary," a work which, however useful for ordinary purposes, is worthless as a court of appeal. If these samples of inaccuracy are not enough I will quote others, but I fancy this will be sufficient to show the small claim the Catalogue has to the appellation of scientific. *Delta.* [These are extracts from our correspondence. The author of the remarks on the Catalogue of Messrs. B. and S. informs us that he had not observed the announcement of Mr. Dombrain's employment on that publication when he wrote his criticism, not one word of which, however, can be withdraw.]

Societies.

ROYAL HORTICULTURAL: *Feb.* 21 (*Election of Fellows*).—The Earl of Ducie, V.P., in the chair. On this occasion the following candidates were elected, viz.:—

W. Aikin, Esq.; Mrs. J. Archer, Rev. G. Arkwright, Mrs. Ashmore, C. E. Austin, Esq.; C. H. Barnes, Esq.; Mrs. J. Barry, Countess Caroline Bellew, Mrs. Berry, Mrs. R. M. Bird, J. Boldero, Esq.; Mrs. T. Borrett, J. Bowman, Esq.; Lord Burghley, M.P.; Mrs. T. Cardwell, Mrs. T. B. Cartwright, Mrs. Chadwick, H. Churchill, Esq.; Mrs. N. Clark, R. Clift, Esq.; Miss Collett; J. B. Cummins, Esq.; W. T. Dorey, Esq.; Capt. J. Dowman, Lord Dunkellin, M.P.; Earl Durham, H. E. C. Ewing, Esq., M.P.; A. Finch, Esq.; Earl Fitzwilliam, J. M. Frodsham, Esq., M.D.; Miss Franks, T. F. Galsworthy, Esq.; R. Garrard, Esq.; Mrs. Gilchrist, Mrs. Graham, H. H. Hammick, Esq.; C. B. Harris, Esq.; Rev. W. B. Hawkins, P. Herrick, Esq.; J. M. Hill, Esq.; J. Hill, Esq.; E. S. Hill, Esq.; J. Hodges, Esq.; W. S. Hodgkinson, Esq.; Miss E. How, R. Hunt, Esq.; General Kenah, G. Knight, Esq.; J. W. Leader, Esq.; A. Mackintosh, Esq.; J. M. Macleod, Esq.; J. McMaster, Esq.; G. Marley, Esq.; Hon. Mrs. William Maule, Rev. Charles Maxwell, Mrs. General Meynell, James Mitchell, Esq.; Mrs. Muspratt, John Noyes, Esq.; Major R. S. O'Brien, Mrs. Penson, Miss Pine, Mrs. Plunkett, D. Price, Esq.; T. Prothero, Esq.; Mrs. J. Ramsay, W. Rea, Esq.; Mrs. Reid, Miss A. Rigg, J. Rigg, Esq.; Sir W. Russell, Bart., C.B., M.P.; Mrs. C. Scott, Sir T. G. Skipwith, Bart.; W. H. Smallpiece, Esq.; H. Snaith, Esq.; E. J. Stanley, Esq.; Miss F. Stiebel, Mrs. C. Stone, W. Taprell, Esq.; Mrs. C. Tatham, Lady Tierney, G. H. Tonge, Esq.; W. H. Treen, Esq.; Madame Van de Weyer (Belgian Embassy), Colonel Westenra, A. W. White, Esq.; W. H. Whiffin, Esq.; Mrs. Wodehouse, and Mrs. Wyatt.

Notices of Books.

The Student's France (8vo., Murray, pp. 714.) We doubt whether there was any greater literary want than a really good English History of France. That want is now supplied by the work before us, printed in the same form as the Student's Hume and the Student's Gibbon, and like them copiously illustrated by capital engravings on wood. The history begins with the dim and uncertain traditions of the ages which preceded the Roman Conquest, and terminates with the famous *Coup d'état* and the accession of the present Emperor. The matter is well selected, and well condensed; the style is clear and forcible, and the volume is completed by a full and excellent Index.

A new volume (Part 15, fasc. 1) of *Decandolle's Prodromus* has just reached us. It forms a volume of [illegible]58 pages, and is entirely occupied by the genus Euphorbia, with three small allies. The author is M. Boissier, who enumerates 693 certain and 54 doubtful or insufficiently known species, arranged in [illegible]7 sections. It thus appears that the three largest groups of plants are at present Solanum, Senecio and Euphorbia. M. Boissier judiciously refuses to acknowledge the spurious genera rashly formed of late years, and either employs them as sections or dismisses them altogether to the limbo of wiredrawn fancies.

Timbs' Year Book of Facts in Science and Art (Lockwood & Co.) has so established itself as a useful record, that it is now looked for as regularly as an Almanac. The volume for the past year has just appeared, and continues to justify the favour which the work has received.

Coffee Planting in Ceylon (Taylor & Francis) is a Georgic in 7 Fyttes. The author treats Coffee as Virgil treated the Vine, and tells in Byronian measure how the planter must select his ground, and clear it, but himself, set out his bushes, prune them, tend them till they bear, provide a store, pick the fruit, rub down the "cherries," wash away the "parchment," and then,

> "Pack and despatch; when in your agent's clutch,
> The thorough drying it is his to do."

The advice is evidently that of a man well acquainted with his subject, as those who follow his instructions will soon discover. Hear what he says of digging the soil:—

> "There's one more subject I have yet to mention—
> The stirring up or digging of the soil;
> This is not certainly a new invention,
> But old as is man's destiny to toil.
> The question is, how best to do this trenching,
> Yet neither roots nor spreading branches spoil
> By pickaxe-handle nor wide-cutting spade;
> And so a fitting implement is made—
>
> "A long, sharp-pointed, heavy iron bar,
> Which, driven with force into the harden'd ground,
> Is then wrench'd down, and from a bursting star
> Upheaves, in loosen'd clods, the earth all round.
> This, on the whole, is the best way by far,
> From long experience, that I have found
> To break and mix the stores of rotten wood
> And ashes, and supply the plants with food.
>
> "And then the broken, up-turn'd clods of earth
> Absorb and sip in every bead of dew;
> And creeping mists, which would be little worth
> To baked-up soil, now yield their tribute too;
> And when of moisture there has been a dearth,
> There's nothing that will help your bushes through
> So well as this, save frequent irrigation—
> Which can't be done on any hill-plantation."

The *Botanical Magazine* for February contains figures of—*Clerodendron calamitosum*, a modest unobtrusive Javanese dwarf stove shrub, with abundant pure white blossoms, under which it is observed:—"Inquiries are often made why species of Clerodendron have received the specific names of fortunatum, infortunatum, and calamitosum. The earlier known species were supposed to have medicinal properties, and of various qualities; and hence the generic name from *kleros* a lot, or anything used in determining chances, and *dendron*, a tree. The first of the species just named being very good for the colic, was called fortunatum; two suspected of being injurious or poisonous, were called infortunatum and calamitosum."—*Aristolochia arborea*, a very curious tree-like species of Birthwort, from New Grenada, having an erect branched trunk of 6 or 8 feet high, large elliptic-oblong leaves, sometimes 2 feet long, and very oddly-shaped purplish brown flowers of moderate size, in small panicles issuing from the old wood at the base of the trunk; in the interior of the hooded flower is a very curious elevated cushion-like velvety disk, closing the orifice of the tube.—*Maxillaria venusta*, a beautiful Orchid from New Grenada, having large white flowers with long pointed sepals and petals, and a pouched lip of which the middle lobe is yellow and the two side lobes margined with crimson.—*Crocus ochroleucus*, a small creamy white flowered species stained with yellow at the base, brought by Dr. Hooker from the Anti-Libanus.—*Iris longipetala*, a handsome large flowered Californian perennial, in which the sepaline divisions of the flowers are marked over with bold streaks of bluish purple on a white ground, the two colours in nearly equal proportions.—*Leea coccinea*, the Panax and Aralia excelsa of gardens, supposed to be a native of Java, "for some years past cultivated in the stoves of European gardens, where it eminently deserves a place on account of its neat graceful habit, and the thick flowered cymes of scarlet flowers." The large leaves are elegantly tripinnate, with oblong lanceolate leaflets. It is the smallest species known, commencing to flower when less than a foot high.

The *Florist and Pomologist*, No. 2, is illustrated by clever drawings of *Bougainvillæa glabra* and the *Early York Peach*, both by Fitch. The Number also contains a plate of Pelargonium Sunset, which though inserted in the copy sent to us, was not, it appears, generally issued with the January Number, in consequence of an insufficient supply. The papers are brief, varied, and to the purpose. They comprise a capital article on Winter-ripened Grapes, by Mr. W. Thompson; an account by Mr. W. Dean of the pretty French or Fancy Pansies, now becoming popular in consequence of their having something like novelty of character, much more than can be said for the fine show Pansies, which are ditto ditto to the end of the chapter; some remarks on the Influence of Soil and Climate on Pears, by Mr. W. Ingram, who solicits co-operation in forming a pomological map of the country, and urges that we do not yet possess that precise and definite information which would enable us to assign to particular districts their appropriate varieties of fruit, notwithstanding that the subject has engaged the attention of the Royal Horticultural Society, as it did also that of the defunct Pomological Society; observations of winter-flowering plants, by Mr. Henderson of Trentham, who observes in contrast to the common complaint that winter is a dull time of the year for flowering plants, that "the plant houses here are more effective in December and January than in any other two months in the whole year," and then goes on to notice some of the materials used, among which is the charming Eucharis amazonica, "a perfect gem, and purity itself," which we are told "should never have a pot exceeding 4 or 5 inches, as much of its success depends upon being thoroughly pot-bound;" a few remarks on the Fig by Mr. Barnes of Bicton, and various et ceteras. This second number is an improvement on the first.

TRADE LISTS RECEIVED.—ADOLPHE PELÉ, fils, Catalogue des Plantes, &c. [List of Plants now on sale, &c.] This Catalogue is rich in hardy herbaceous, as well as other, plants.

Garden Memoranda.

THE GROVE, ROEHAMPTON, THE RESIDENCE OF MRS. S. LYNE STEPHENS.—This place, on the improvement of which large sums have from time to time been expended, is still well kept up. Immediately in connection with the house is a tastefully laid out flower garden, formed from designs furnished by Mr. Nesfield. It is in sunken panels, and contains some pretty tracery work in Box, the effect of which is heightened in summer by the introduction of flowering plants, both in beds and in vases, while dotted about here and there on the Grass are many handsome specimens of Thuja aurea, Irish Yews, and upright Cypresses. Around the bases of some of these shrubs, as well as on a long border connecting the kitchen and flower gardens, has been planted wild Thyme, which when in flower in June is said to have a pretty appearance. What may be called the flower garden proper is cut off from the lawn by a grey stone kerb or dwarf wall, of gracefull outline, whose angles and terminations are ornamented with miniature pillars, which support stone balls about 18 inches in diameter; beyond, immediately in front of the house, is a lake of considerable extent with a small island in it, which in addition to beautifying the foreground serves as a breeding place for water fowl. At the east end of the house is a Rosery surrounded by upright wire trellis work enclosing a series of beds covered over with iron trainers, upon which the plants are kept constantly tied down, and in that way they always present a trim appearance. At the other end of the mansion is a conservatory, the centre of which is filled with Orange trees in ornamental tubs, with flowering plants in pots set all round them. The walls are covered with climbers and Camellias, the former occupying the top, and the latter, some of which are finely in bloom, the bottom. Standard and other Roses are grown largely for the spring decoration of this house. Their treatment is as follows: when they have done flowering they are pruned, the soil is shaken from their roots, and the plants are placed in smaller pots, moving them into larger ones as they increase in growth. In short they are annually treated just as Geraniums usually are. Young plants for fresh stock are propagated from eyes, like Vines, put in about a fortnight ago, and grown on and flowered in small pots.

Out-door work, both in the flower and kitchen garden, is in a very forward state. The surface soil of shrubbery borders has been forked up, which gives them a clean looking fresh appearance; new walks have been made, and old ones edged and otherwise improved; in the kitchen garden pruning and nailing are finished, ground for Carrots and similar crops has been trenched 3 feet deep, and most of the borders and breaks have been dug.

Trees on walls generally promise to yield good crops, as do also standards. Several important illustrations of the good effects of root pruning may be seen here; some espalier trees that were growing so strongly as to produce nothing but rank wood and leaves were partly root pruned in the autumn of 1860; the operation checked their over luxuriance, but not sufficiently; last November they were again root pruned, taking care to well undermine the trees, and to cut all tap or "carrot" roots, which formed by far the greater proportion of what feeders they possessed, and now their exuberant growth is effectually checked, and they are literally covered with fruit-buds. On opening the soil, too, it is found that wherever the roots had been cut large quantities of healthy fibres have been thrown out, which being encouraged with a little fresh soil will keep the trees in a healthy fruit-bearing condition for years to come.

The appearance of forcing houses is likewise very satisfactory. The early Vinery has broken well, and has a bunch on every shoot even down to the bottom. It is filled with Mill Hill and common Black Hamburgh, Golden Hamburgh, Charlesworth Tokay, and Canon Hall Muscat. The most forward are the Black Hamburghs, the golden variety keeping pace with the Muscats. In the early Peach house fruit is just setting plentifully. The trees have had a liberal dressing with soft soap, sulphur, lime, and clay, to which was added a little Gishurst. With this the old wood was well painted: but not the young shoots or buds.

Miscellaneous.

Death of Dr. Mackay.—Another veteran botanist has quitted us. It is our sad duty to announce the decease, on the 25th ult., of James Townshend Mackay, LL.D., M.R.I.A., and curator of the Botanic Garden, Trinity College, Dublin. He was a man of singularly popular manners, and thoroughly versed in the Flora of Ireland, as was shown by his Flora Hibernica, published some years ago.

The Rainfall.—Various theories have been advanced as to the cause of the increase of rain in hilly districts: one (the most commonly received) is, that a current of

air saturated with vapour, on coming in contact with the cold hills has its vapour condensed, which falls in rain. This cannot, however, be so; if it were, we should invariably have rain when in the winter months a warm and saturated south-west wind succeeded a frost, as long as the ground remained unthawed, instead of a thin surface-fog, as usually obtains. In the autumn, too, after clear nights the dew-point temperature is often higher than that of the ground and pavement, under which circumstances we find the vapour condensed on the surface, which appears wet in consequence. The true explanation may be thus illustrated. It must first of all be mentioned, that it has been found by observation and experiment that the temperature of the air decreases 1½° of Fahr. for every 100 yards of ascent, that of the dew-point ⅓°; if then a stratum of air, in which the complement of the dew-point is 5° Fahr., be raised through a vertical space of 1200 feet, the vapour which it contains will begin to condense into cloud. Now, let us imagine a south westerly surface wind to be setting in from the Atlantic, at a temperature of 52° and a dew point 48°, as is frequently the case in the autumn and early winter. On reaching the land a ripple is produced, and in crossing the Dartmoor hills the whole stratum of air is lifted up about 1700 feet. In rising through this extent, the air expands and cools; at a height of 975 feet the cold produced by expansion will begin to condense the vapour into cloud, and all the hills above this elevation will be capped with fog, the temperature at this point being 48°; in a further ascent, the latent heat evolved by the process of condensation will prevent the air cooling as fast as it did to the extent of nearly three-fourths the amount; so that at 1700 feet the temperature will not be lower than 47°.3; under favourable circumstances, however, rain will ensue; on passing the hills the mist sinks, becomes warmed under greater pressure, and evaporates. The author was himself involved in a drizzling mist on the top of Great Links Tor, a hill nearly 2000 feet in height on the north-west side of the Moor, in August 1861, under similar circumstances. A strong S.S.W. wind was blowing, and at noon the tops of the higher hills were capped with cloud. On reaching the summit of the Tor shortly after, an instructive sight was presented to the eye. The particles of mist were swept up by the blast from the plain of condensation, carried over the summit of the Tor, and down on the other side, where they came under greater pressure and evaporated. The mist rapidly increased, the vapour plain descended, and the descent from the hill became a matter of great difficulty. During the remainder of the day rain fell in a thick drizzle. At Plymouth, which lay directed to windward, not a drop of rain fell, and the day was fine with much sunshine, and some cirrocumuli; and even at Tavistock, not eight miles off, there was only a slight shower. Often the Moor is enveloped in a thick fog for days together, rendering travelling impracticable. *Eaton in Proceedings of British Meteorological Society.*

The Eatable Frog.—This handsome species is common in all the warmer parts of the Continent, but in the vicinity of large cities is seldom seen, except in the ponds where it is preserved, and whence issues a horrid nocturnal concert in the breeding time. The proprietors of these froggeries supply the market regularly, and draw out the Frogs with large wooden rakes as they are wanted. In Paris these creatures are sold at a rather high price for the table, and as only the hind legs are eaten, a dish of Frogs is rather an expensive article of diet. It is needful to make a very early visit to the market, 4 or 5 A.M. being about the best time, to see the manner in which the Frogs are brought to market. They are generally sold by women, each of whom has by her side two tubs or barrels, one containing living Frogs, and the other having a leather band nailed to the side, in which is stuck a sharp, broad-bladed knife. When the purchaser has bargained for a certain number, the seller plunges her left hand into the one barrel, brings out a Frog by its legs, lays it across the edge of the second barrel, and with a single cut of the knife, severs the hind legs just above the pelvis, leaving the whole of the body and fore quarters to fall into the tub. The hind legs are then carefully skinned, and dressed in various ways, that with white sauce seeming to be the best, at all events according to my own taste. They require considerable cooking, but when properly dressed have a most delicate and peculiar flavour, which has been compared, but not very happily, to the wing of a chicken. I would suggest that a mixture of the smelt and the breast of the spring chicken would convey a good idea of the Edible Frog when cooked. Poachers are very apt to invade the froggeries, and without entering the boundaries often contrive to kidnap a goodly number of the inmates by a very curious mode of angling, something like "bobbing" for eels. They get a very long fishing-rod, tie a line of sufficient length to the tip, and at the end of the line they fasten, in place of a hook and bait, a simple piece of scarlet cloth. Thus prepared, they push the rod over the fence, let the scarlet rag just touch the surface of the water, and shake the rod so as to make the rag quiver and jump about. The Frog, thinking that it has found a very savoury morsel, leaps at the rag, closes its mouth firmly upon it, and is neatly tossed out of the water and over the hedge before it can make up its mind to loosen its hold. The colour of this species is bright green spotted with black, and having three bold yellow stripes along the back. The under parts are yellowish. In size it is rather larger than the common species. *Routledge's Illustrated Natural History, Part XXXVI.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Push on Azaleas with a warm moist atmosphere; for decorative purposes at this season few plants are more useful. Epacrises started now, so as to get their wood well ripened, may be had in full blossom in November. Of Amaryllids and Dielytra spectabilis there should likewise be a good supply; both may be had in bloom early in the season, and under good treatment they last long in beauty. Continue to repot such hard-wooded greenhouse plants as require it, so as to afford them every chance to make vigorous growth. Be careful however, before potting to have the ball in a nice moist state, and avoid giving large shifts to weakly growers; keep newly-potted specimens together as much as possible, and let the house be rather closer, and the atmosphere moister than usual. See that soft-wooded plants, as Pelargoniums, Cinerarias, &c., are allowed plenty of space, and that they are properly supplied with clear, weak manure water, and kept perfectly clear of insects. Give air freely to these on every favourable opportunity, but do not allow cold winds to blow over them and disfigure their foliage. Many Cinerarias will now be in full blossom, and in warm greenhouses will keep up a brilliant display for some time to come; seed may be saved from some of the best kinds, which when out of flower may be set aside for that purpose.

FORCING DEPARTMENT.

Pineries.—Maintain a growing moist atmosphere, but do not push young plants too rapidly until the days get longer, when there will be no danger of inducing weakly growth. Avoid allowing water to lodge in the hearts of plants showing fruit.

Vineries.—See that houses in which Vines are not yet started are properly cleaned. Most people paint the rods over with a composition of soft soap, sulphur, lime, and soot; but some, after scraping off the old bark, merely wash well with clean water, brushing it thoroughly into all crevices with a hard plate brush; this is preferred to using the composition just named, which sometimes injures the buds. Attend to disbudding and stopping, as may be necessary in succession houses, and see that inside borders are in a properly moist state, giving tepid manure water when necessary, and do not be afraid of giving too much of this to Vines showing fruit in pots. Shut up early in the afternoon. Where plants are grown under Vines look sharply for thrips, and use every means to keep clear of this pest, which if once allowed to get upon the Vines, will spread with amazing rapidity, and soon ruin the foliage. Azaleas are exceedingly subject to it, and should therefore never be grown in Vineries, when it is possible to accommodate them in other houses.

Figs.—Attend to the directions given in last week's paper, p. 166; preserve a proper degree of moisture in borders or pots, and guard against red spider by maintaining a moist healthy atmosphere and by a liberal use of the syringe. It is not usual to thin this fruit, but, in cases where the crop is very heavy, timely thinning may prevent this being done by natural means at a later period, and to too great an extent, and will also be of much service to the general health of the trees, and towards securing a good second crop.

Cherries.—In some places these will now be coming into bloom. In their treatment aim at imitating nature during a very favourable spring as nearly as possible, until the fruit is stoned, when they may be pushed on by a warm moist atmosphere. Here, as elsewhere, insects will have to be contended with, and must be eradicated immediately they are perceived.

Strawberries.—Bring on succession plants very gradually, and afford those in bloom a rather dry atmosphere, with a free circulation of air, as they set their fruit badly in a moist close atmosphere. Plants swelling their fruit must be liberally supplied with clear, rather strong, manure water, and if fine large fruit is expected thinning must be resorted to immediately the fruit is fairly set.

FLOWER GARDEN AND SHRUBBERIES.

Sweep and thoroughly clean lawns, and give them a double rolling with a heavy roller, to render the turf smooth and solid. If any alterations still remain unfinished every available hand should be concentrated on this work, so as to get it completed as soon as possible, while the weather is favourable. Look over beds planted with bulbs, and where necessary stir the surface so as to keep it open and friable, and also to give it a clean, neat, fresh appearance. Cuttings of Hollyhocks slipped off old plants with a heel, planted in very sandy soil, and afforded a gentle bottom-heat, keeping the leaves as cool as possible, should now be taken and will be found to root. Carnations and Picotees must now have attention. For growing purposes nothing is better than two parts sound virgin loam, one part of rotten horse manure, and one part sharp river sand; in this, with occasional doses of weak liquid manure during the growing season they succeed most satisfactorily. Seedling Pansies in beds should be gone over carefully, the surface soil stirred, and a dressing of manure put on.

HARDY FRUIT AND KITCHEN GARDEN.

As recommended last week, where the ground will admit of it, it will be found good practice in transplanting Cauliflowers to throw out shallow trenches, placing the soil on the north side, and putting the plants in the trenches, which will be thus sheltered from the north winds. Stir the soil among growing crops, as Lettuce, Spinach, &c. Clear off Broccoli, Brussels Sprouts, and things of that sort done with, and get the ground dug and otherwise prepared for other crops.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the Week ending Feb. 26, 1862, as observed at the Horticultural Gardens.

February	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep	Wind	Rain
Thurs. 20	21	29.645	29.467	58	29	43.5	46	43	S.	[illegible]
Friday 21	☾	29.914	29.782	58	39	48.5	46	43½	S.E.	[illegible]
Satur. 22	23	29.819	29.659	56	40	48.0	46	44	S.E.	[illegible]
Sunday 23	24	30.098	30.040	51	34	42.5	46½	44	E.	[illegible]
Mon. 24	25	30.124	29.956	41	35	38.0	46	43½	N.E.	[illegible]
Tues. 25	26	30.164	30.030	41	32	36.5	45	43½	E.	[illegible]
Wed. 26	27	30.310	30.283	36	34	35.0	44	43½	N.E.	[illegible]
Average		30.010	29.888	48.7	34.7	41.7	45.6	43.5		[illegible]

Feb. 20—Rain with warm south wind; fine; slight frost.
— 21—Fine; very fine; clear and fine at night.
— 22—Foggy; overcast; drizzly and mild.
— 23—Foggy; overcast; slight fog; overcast; foggy at night.
— 24—Uniform haze; densely overcast.
— 25—Dry cold haze; overcast; very cold easterly wind.
— 26—Overcast throughout; very cold N.E. wind.
Mean temperature of the week 2 4-10th deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending March 8, 1862.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 2 ..	49.1	36.1	42.6	14	.45 in.	2	7	4	—	3	12	5	3
Mon. 3 ..	49.4	32.8	41.1	15	.22	3	7	5	1	3	9	6	2
Tues. 4 ..	49.2	31.8	40.5	11	.48	3	9	2	3	3	8	6	2
Wed. 5 ..	48.5	31.6	40.1	9	.40	2	7	3	3	4	8	6	1
Thurs. 6 ..	48.5	32.2	40.3	13	.26	4	6	4	2	4	7	5	4
Friday 7 ..	49.1	32.1	40.8	13	.11	4	6	4	1	4	10	4	2
Satur. 8 ..	49.4	31.7	40.5	13	.17	3	7	2	2	5	7	4	6

The highest temperature during the above period occurred on the 7th, 1859—therm. 63 deg.; and the lowest on the 4th, 1852—therm. 15 deg.

Notices to Correspondents.

☞ Correspondents are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive After the Morning Post of Wednesday. Those received later will receive attention the week after.

Books: *Darlington.* We do not think Dr. Lindley will dispute the statements in the book you mention, inasmuch as they and far more have been stolen from himself.

Cannas: *Cornubia.* The sorts which the French plant out of doors can now be had of any of the great nurserymen. They are offered in all the principal French and Belgian Catalogues. You must plant them where they are well sheltered from wind, in your exposed county, and not at all shaded.

Dahlias: *B. and a Florist.* What say the Biglow Papers?

"Now don't go off half cock; folks never gains
By using Pepper sarse instead of brains."

We respectfully submit this to your sober consideration.

Heating: *W H M.* We very much fear your proposed method will be unsatisfactory. It is doubtful indeed whether, if you can persuade the water to move, it will retain any heat by the time it reaches the new house.

Hot-water Pipes: *W C.* On no account whatever paint them with any preparation of coal tar. If you do your plants will surely die. As to colour, black is the best and white the worst. Nothing is better than paint prepared from black oxide of manganese.

Insects: *W M.* The small active green insects you have found upon your Vines are the larvæ of one of the many species of field bugs (Phytocoris sp.). They suck the leaves in the same way as aphides, and may be easily destroyed by fumigation. We fear, however, as your leaves are riddled with small holes, that you have got the Vine weevil in your house. Search the plants at midnight, placing a sheet under them on which the weevils will fall on being alarmed by the sudden light of your lanthorn.—*Larix.* The small grubs sent, as injuring the roots of young Larches, are the larvæ of some kind of gnat. We do not think the mischief is done by them. If it is, gas tar water applied abundantly will destroy them. If not, you have probably the Larch weevil at work. *W.*

Names of Plants: *J D.* Canarina Campanula, and what appears to be Moræa Northiana, crushed by the Post Office.—*R J. Boston.* No doubt seeds of the Braziletto tree.—*Jeannette.* Leucoium vernum, quite different from L. æstivum, rare, and we think handsome, although white with a little green. —*Sir J L.* Peziza coccinea.

Orchids: *C D.* The estimate of the number of these plants was in the year 1845, 394 genera and 3000 species. Seventeen years have since elapsed, during which time very large additions have been made to our knowledge of the order. A careful re-examination of the genera fixes their present number at 433, which is probably near the truth. In computing species, or what are called so, much must be in the highest degree uncertain. The 4 genera Epidendrum, Oncidium, Stelis, and Pleurothallis, which have been lately very carefully worked up, alone contain 908 reputed species, or nearly one-third of all that, 17 years ago, were thought to exist. The quantity of unpublished species in our own Herbarium is so enormous that we should suppose the estimate not excessive at 6000. But then we must add that in our ignorance of the amount of variation to which these plants may be subject, coupled with our certainty that hybrids exist and that changes unknown among other plants do occur, it may be that our specific distinctions are in very many cases erroneous. Such indeed is our own belief, though in the absence of better information the systematic Botanist cannot refuse to employ them as hitherto.

Vines: *W J.* We are not sure that we quite understand your question. If you mean to force one kind of Grape and to retard another you must not put the roots of each into the same border; for the earth-warmth that is required to push the one forward will act equally on that which is to be kept back. As for Muscats you cannot give them too much heat, unless you go beyond what any plants will bear.

Water Rats: *J S.* If you put boluses of phosphoric rat poison into the holes of these pretty little creatures they will soon disappear. Whether they die or are disgusted we cannot say; but away they go. *Experto crede.*

To the Trade.

NEW SEEDS DIRECT FROM THE GROWERS.

CHARLES SHARPE AND Co., SEED GROWERS, Sleaford, will have much pleasure in forwarding on application their WHOLESALE PRICED LIST of AGRICULTURAL SEEDS, which have been grown upon their own land with the utmost care from the finest selected stocks. The advantages of procuring Seeds direct from the Growers are too obvious to require comment, and from the experience of C. SHARPE & Co. in the growing and harvesting of Seeds, a satisfactory result may be calculated on with certainty when their Seeds are used.

SHARPE'S IMPROVED LARGE SWEDE.—The largest and best cropping Swede in cultivation; it produces a finely-shaped large bulb, without a coarse top. A Coloured Lithograph of the Swede will be sent to purchasers.

CHARLES SHARPE & Co., Seed Growers, Sleaford, Lincolnshire,

To the Seed Trade.

THOMAS AYRES, SEEDSMAN and GROWER, Biggleswade, Beds., has to offer WHITE SPANISH ONION SEED, ALTRINGHAM and WHITE BELGIAN CARROT SEED; YELLOW GLOBE, ORANGE GLOBE, RED GLOBE, LONG YELLOW, LONG RED MANGEL WURZEL SEED; also several varieties of SWEDE and WHITE TURNIP SEED.

Also about 60 bushels of English SCARLET RUNNER BEANS, all the growth of 1861.

Prices forwarded on application.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

To the Seed Trade.

H. AND F. SHARPE can offer on very advantageous terms the under-mentioned sorts of SEEDS of 1861 growth and raised from selected stocks:—

Large York Cabbage	Bellamy's Green Marrow Peas
Long Red Surrey Carrot	Early Long-pod Beans
James's new Intermediate do.	Mackie's Monarch do
Fine Red Pickling Cabbage	Mangel Wurzel in sorts
Green Kohl Rabi	Turnip in sorts

Seed Growing Establishment, Wisbech.

Agriculture.

W. DRUMMOND AND SONS, Stirling, claim special attention to their ROOT SEEDS, which embrace several Improved Stocks of SWEDES and other TURNIPS, MANGEL WURZEL, &c.: also to remarkably fine samples of all the Varieties of CLOVERS, PERENNIAL and ITALIAN RYEGRASS and NATURAL GRASSES,—priced Catalogues of which, together with every description of seed required for the Farm, may be had, prepaid, on application.

Seeds forwarded Carriage Free to all parts of the Kingdom.

Seed Warehouse, Stirling, N.B.

To the Seed Trade.

FREDERICK W. WENDEL, SEED MERCHANT, Erfurt, Prussia, begs to offer the following Seeds of carefully selected Stock of good growth:—

CARROT: Altringham, Long Red; Orange Red, Belgian; Early Horn; Earliest ditto, for Forcing.

ONION: Straw Colour, true; Silver Skinned; Pale Red, or Flesh Colour, excellent for general crops; Pear-shaped Yellow; Yellow; Giant Madeira; James's Keeping.

BEET: Darkest Blood Red.

Prices, &c., for the above, to be had on application to GEO. MACINTOSH, Seedsman, &c., High Road, Hammersmith, W., London; and where also GENERAL PRICE LISTS can be obtained free and post paid.

WHEELER'S ORANGE GLOBE MANGEL, WHEELER'S IMPERIAL SWEDE, GRASS SEEDS for PERMANENT PASTURE, GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

THE ENGLEFIELD YELLOW GLOBE MANGEL WURZEL, warranted to grow more weight per acre than any other variety of Globe Mangel. The Raiser and Advertiser, Mr ANDREW HORSBURGH (Steward to R. Benyon, Esq.) Chalk Pit Farm, Englefield, Reading, Berks, has 15 sacks of hand picked seed for sale either in bulk or in bags of not less than 4 lbs., at 1s. 6d. per lb. Roots of this superior variety frequently weigh from 30 to 40 pounds each. Mr. HORSBURGH has taken upwards of 100 Prizes in Cups and Specie for Mangel Wurzel at Birmingham, Crystal Palace, Reading, Abingdon, &c. The above is not grown from seedling roots, but from large selected bulbs, which materially affects the weight per acre of a general crop.

Orders received by Mr. HORSBURGH, or by Mr. G. KNIGHTS, Whitton, Ipswich.

N.B.—The only reliable source to obtain the stock in its purity. All orders from persons unknown must be accompanied by a Post Office Order, or no notice will be taken of them.

To the Nobility, Gentry, Agriculturists, and the Public generally.

ALEX. PONTEY, of the Original Plymouth Nursery and Seed Establishment, established upwards of 54 years, supplies every requisite for the Farm, the Forest, the Vegetable Garden, the Flower Garden, the Fruit Garden, and the Conservatory. All Seeds proved before they are sent out. His celebrated GERMAN STOCKS and PÆONY FLOWERED ASTERS, which have given such satisfaction throughout the West of England, are now ready, and will be sent (post free) in packets of 12 splendid colours, separate, for 3s.; or same varieties mixed in 6d. or 1s. packets; and 1000 other varieties of Flower Seeds, in packets, from 2d. upwards.

Complete CATALOGUES are now ready, and will be forwarded free on application.

N.B.—Thirty four distinct varieties of TURNIPS, grown in the Trial Grounds last year, may be seen at the Seed Shop, 21, Cornwall Street.—Plymouth, March 1.

Royal South Hants Seed Establishment

PAGE AND TOOGOOD have the honour to offer the OSBORNE MANGEL, the stock of which was presented to them by His late R. H. the Prince Consort's Steward, A. TOWARD, Esq., by whom it is considered the best variety in cultivation. In shape it is as perfect as a Globe Turnip, with a similar tap root, the foliage small and very compact, indicative of less impoverishment of the soil than can be said of most other sorts. It has carried off every prize for shape where exhibited. A great portion of the seed has been ordered by those who saw it growing, and P. & T. being anxious to get it into general cultivation, would prefer supplying it in quantities not exceeding Ten Pounds.

PAGE'S IMPERIAL ORANGE GLOBE MANGEL.—A large stock of this has been provided to meet the demand that has arisen for it. Its superior weight producing and keeping qualities are well known. The prize for the best 10 Acres has again this year been awarded to it by the Botley Farmers' Club. STEWART MACNAGHTEN, Esq., grew 61 tons 2 cwt. per acre of it by ordinary cultivation. W. DICKINSON, Esq., produced six specimens, weighing when perfectly clean, without leaves or roots, 193 lbs., the largest of which, 44 lbs. At the Vale of Avon Farmers' Club, six prizes were awarded to it for acreage.

PAGE'S IMPROVED HARDY SWEDE still maintains its superior character for general cultivation. It carried the 10 Acre Prize at Botley.

BIRMINGHAM ROOT SHOW.—The Ten Guinea Cup for the best collection, and the Five Guinea Cup for Swedes have been again brought to Hampshire—being the third time in succession the former has been awarded to Sir W. Heathcote, Bt.—This not only reflects great credit upon the management and skill of his Steward, Mr. Charles, but the County should be proud of the distinction conferred upon it, by his energy and judgment, in carrying these Prizes (that for Swedes against 26 competitors). As Hampshire Seedsmen, we have great reason to speak of his success.

Special Contracts made for the supply of all AGRICULTURAL SEEDS in large quantities.

☞ Our Goods are delivered Carriage Free.

PAGE & TOOGOOD, Seed Merchants and Growers, Southampton.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.

METROPOLITAN SHOW, 1862.

Last day of Entry for Implements, March 31.

Last day of Entry for Stock, May 1.

STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. HALL DARE, Secretary.

12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, MARCH 1, 1862.

MEETINGS FOR THE ENSUING WEEK.

MONDAY,	March 3	London Farmers' Club (Mr. Howard on Steam Cultivation)	6 P.M.
WEDNESDAY,	— 5	Agri. Society of England	Noon

—— A LOCAL effort is now being made to which general interest attaches, and in which general interest ought therefore to be taken. Although especially a Gloucestershire concern, it is one to which every English-reading man may, without impertinence, ask leave to contribute, and towards which every English-reading man may, therefore, without impertinence, be asked to send his contribution.

There are great laws of Nature in the moral world on which agricultural progress hinges even more immediately than it does on the laws of matter studied by the chemist, the geologist, and botanist. It was doubtless as much in accordance with the former as the latter that the Patriarch ISAAC once sowed, as we are told, in Gerar, and "received in the same year a hundred fold." It is the character of the population—of its cultivators—more than the character of the soil or of the climate, which makes the agriculture of a locality prosperous or otherwise. A demoralised community is certain to be one of paupers clothed in rags, even though their land may flow with milk and honey.

There are contrasts enough in our little island arising out of local differences of geology or climate—contrasts in the quality and quantity of farm produce in even neighbouring parishes so great as to be almost startling—but nowhere are they so abrupt as where you see the results of recklessness and prudence, of listlessness and energy side by side.

We thus owe more as agriculturists—directly as the owners and the cultivators of the land—as producers and consumers of farm produce—to the great Teachers and Events by which our national and individual character has been moulded, than to any discoveries in science or contrivances in practice, though they may stand as landmarks in the course of our agricultural history. These latter are indeed to be attributed to qualities of mind of which those teachers and events must have the credit.

Such an event was the publication of the Bible in the English tongue — and such a teacher WILLIAM TYNDALE, by whom this was accomplished. TYNDALE was a Gloucestershire man, born at North Nibley, near Wotton-under-Edge, in the year 1484—he was the first man who, having translated the Scriptures into English, was also the means of their being printed and circulated—he spent and was spent in this work, even to the laying down of his life—and these, with the consequences of his noble work, are the reasons given for the memorial which is about to be erected in his honour. It is proposed to erect a column to his memory on Nibley Knoll. His name and character and work will thus be told to all the Vale of Severn. This man engaged that "if God did spare his life he would cause a boy that driveth the plough to know more of the Scriptures" than any of his persecutors did. And he completed his engagement by issuing successive editions of his translation of the Bible—one of the latest of them being printed in the vernacular or vulgar tongue, *i.e.*, in the dialect of his native county, so as to be within the ready understanding of the least intelligent. "And there is no memorial for him—none save that which is written where mortal eyes cannot read it yet."

Our national character—our agriculture as one of its developments—is owing more to such teachings as he first made generally known than to any other agency whatever.—"Prove all things—hold fast that which is good." "To him that hath shall be given, from him that hath not shall be taken even that which he hath." — Apart altogether from direct religious instruction and revelation, and considering the effect only of such maxims and directions as these, we owe more as Englishmen and agriculturists to the open Bible which TYNDALE first put into the hands of our common people, than to any other influence or agency whatever. We therefore feel that there is no impropriety in the *Agricultural Gazette* giving currency to the appeal that has been made on behalf of a monument to the memory of WILLIAM TYNDALE in the place of his birth. The project has received the sanction and assistance of the leading men in Gloucestershire, and the list of its promoters includes, we are glad to see, the names of several practical farmers.

If any of our readers desire to share in the cost and honour of this memorial, we shall be happy to take charge of any sums for the purpose which may be sent to us for transmission.

MR. HUTCHINSON, of Manthorpe Lodge, near Grantham, well known as an able and energetic agriculturist and land agent—also as the writer of works on Land Drainage — has lately issued a sixth edition of his pamphlet* on this subject, in which practical instructions are given for the drainage of land "on hydraulic and pneumatic principles." Of course it is well that all our efforts to fertilise the soil by the process called land drainage should be so conducted as to make full use of the weight and fluidity of the water and the air, and of the porosity of the soil, which is all that is meant by "hydraulic and pneumatic principles." It is possible so to conduct the process as that the weight of the water seeking by its pressure an exit through the subsoil may be either insufficient to overcome the capillary attraction by which the water is retained within the soil, or may be balanced to some extent (and so rendered useless) by water at a higher level at the outfall. The former case happens sometimes in shallow drainage, notwithstanding which the surface soil remains soaked and sodden; the latter case happens when due care is not taken to obtain an outfall corresponding to the depth of the drainage, as in a case brought some years ago before the Royal Agricultural Society of England, when it was recommended to give a syphon form to the underground exit channel, thinking thereby to draw from the deeper subsoil within the limits of the field the water gathering there into the surface ditch, though on a higher level outside!

All efficient drainage necessarily acts on "hydraulic principles." It is the weight of the water within the soil that is the ONLY efficient agent in the process. A thorough conviction of this one fact would tend more than anything else to correct error, ensure sound practice, and check all kinds of whims which now land those who humour them in useless expenditure. The soil and subsoil are porous. The rain which falls upon the surface of the former sinks downward until it reaches the surface of the latter; for in the majority of cases we must still consider the two as separate layers. If the separating surface is an impervious floor, made so by the trampling of draught animals along the furrow made by the plough, there the water lies: the soil becomes filled just as a cup is filled, and the sodden earth can neither prepare food fit for plants, nor can it actively feed

* Practical Instructions on the Drainage of Land on Hydraulic and Pneumatic Principles. S. RICH, High Street, Grantham.

such plants as may be rooted in it. If you make a hole in that subsoil it will fill with water, whose weight and fluidity together cause it to pour in from the impervious subsoil surface which has held it. In like manner, if you dig a ditch through it, or a drain with a pipe at its bottom covered and filled in with loosened and therefore pervious earth, the water will pour into it and find its way out of the drain's mouth. And a number of such drains near enough to one another would effect a certain drainage of the land whose benefit would be more obviously seen along the sides of those ditches or drains than elsewhere. But, now, break up this impervious floor on which your soil has been turned and stirred and otherwise manipulated, year after year. The water will then sink down into the subsoil, pressing everywhere in virtue simply of its weight and its fluidity, and find an exit wherever an exit may be opened for it.

When the subsoil of a deep soil thus made pervious, lies upon a rock or gravel for whose water there is natural exit in some spring at a lower level, then it is naturally drained, and exhibits naturally all those advantages which drained soils possess. If the subsoil be not naturally drained, then artificial exits must be provided. A channel at every 20 feet or thereabouts will take the water quickly enough away, even in the stiffer and less pervious cases. And if so deep as that there shall be a sufficient weight of water pressing downwards into them to overcome the capillary attraction by which the soil would otherwise retain it, then such exit channels will be real *drains*. The water falling on the surface will, on its way to these drains, permeate the whole soil and subsoil, will carry atmospheric warmth down in early spring, will carry air and all its fertilising ingredients into the great laboratory which the soil provides, will mix the ingredients of that laboratory, and make them act on the earth, will carry the food thus made to the roots of plants, which are everywhere spreading through the whole, and so induce activity of vegetable growth—will, in fact, fertilise the land.

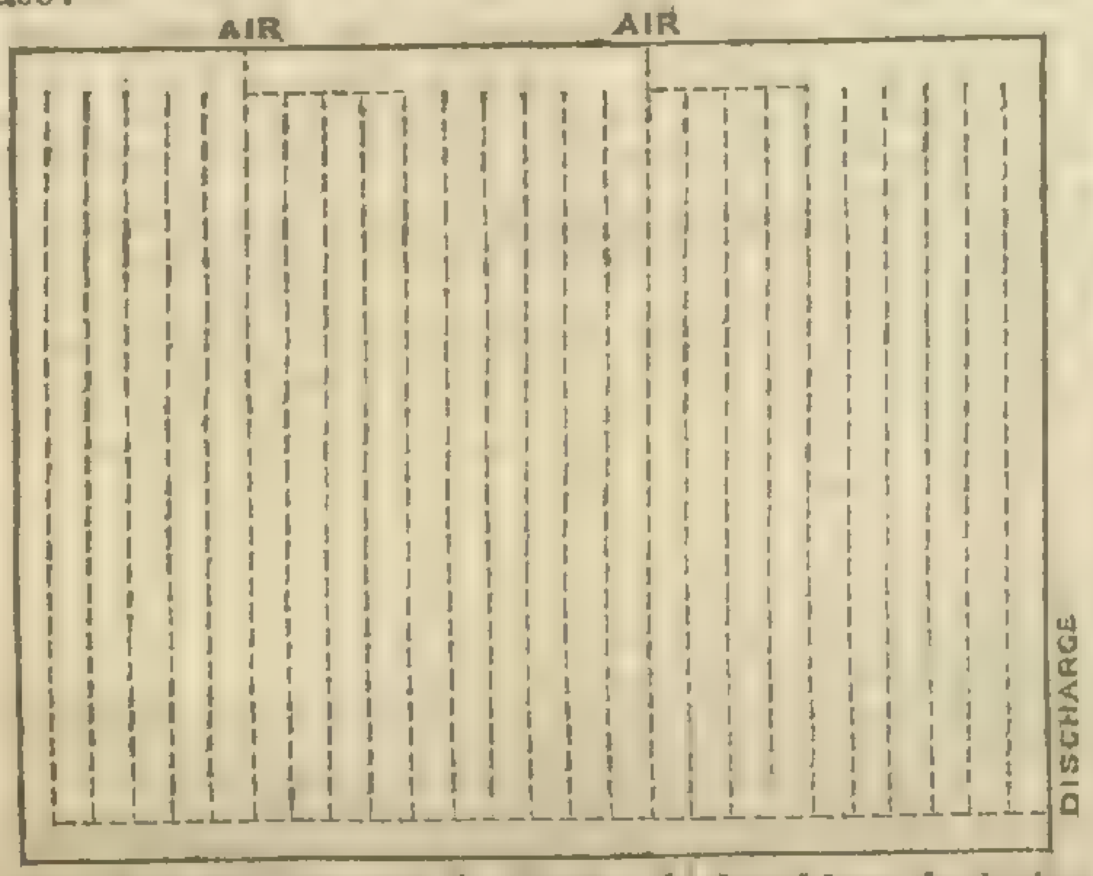
That we believe to be the theory of land drainage—the explanation of its wonderful influence for good on wet land: and the one and only efficient cause is the weight of the fluid water. Let us have a sufficient body of water—a sufficient depth of soil, or subsoil holding it—*above the drain*, in order that there may be weight enough in this agent to force its way, and thus bring all the advantages of its movement in its train. Let us have, moreover, exit channels, not only deep enough but frequent enough, in order that the motion outwards and downwards may be rapid enough to meet the case of a large supply from above, which might otherwise clog and soak and even flood the land, notwithstanding the existence of the channels.

The details of the land drainer's practice—the mode of marking out the lines of drain; the formation of ditches; the direction, size, length, frequency, and outfall of the "minor" and the "main" drains—the time of year in which to conduct the process; in fact the practical rules by which exit channels for the water are to be made and to be maintained, are all given trustworthily and instructively in Mr. HUTCHINSON's pages—as they have been given also in publications by the late JOHN GIRDWOOD, by HEWITT DAVIS, BAILEY DENTON, and many others. There is however in Mr. HUTCHINSON's publication a recommendation originating with himself, the argument for which is not, as we believe, consistent with those "hydraulic and pneumatic principles" on which his position is professedly based. The so called air-drainage of land is a device of this author for increasing the efficiency of drains. He digs a drain all round the *upper* ends of the system of drains which he has placed under and throughout the field, and this upper connecting drain is laid open to the air, and so the stream of water through the drains is said to pull in a current of air through the pipes, and this is said to have a fertilising effect upon the soil. We do not believe that any such effect will follow, for reasons which, on "hydraulic and pneumatic principles," seem to us sufficient.

The subject is, however, a fair one for experiment; and very probably it will be extensively tried. It has, indeed, been tried by Mr. HUTCHINSON himself, with results so extraordinarily in favour of his idea that one feels a great deal too much has been realised to admit of explanation by this cause. The following is the history in Mr. HUTCHINSON's own language:—

The field to which I shall refer is in the occupation of Mr. Stafford, of Marnham, near Newark on Trent, and consists of 10 acres of strong loamy soil, upon a clay subsoil. Mr. STAFFORD underdrained it with old-fashioned horse-shoe tiles without soles in 1843, by 25 parallel drains, 2 feet deep, and 5 yards apart, each discharged into a covered out-fall, at the bottom of the field. In the autumn of 1846, it occurred to me that this, being a shallow-drained field, presented a good opportunity for experiment; I divided it into five compartments; each containing five of the drains. With the two outside and centre compartments I did not interfere; into the other two compartments I introduced what I call an air-drain across the upper ends of the five drains in each case, to join them together. I then connected both the air-drains so cut with the adjacent open ditch, at the top of the field, in order to increase the natural current or circulation of air through the ordinary drains.

The following Diagram may serve to illustrate my case:—



The black lines represent the Fences; the dotted lines the drains.

The field was afterwards cultivated in the usual manner for Turnips, and I did not again visit it until Wednesday the 19th of May, 1847, the unusually heavy rains of the winter and spring having concluded late the previous evening, by a pouring rain of four hours duration; Mr. Stafford and I on this day traversed the field in all directions, and the superior condition of the soil, on the two air-drained pieces, was everywhere distinctly apparent; but what afforded proof more convincing and undeniable, was the circumstance that, on ploughing the field in the ordinary course of husbandry across all the drains, on the following morning (Thursday), wet bright marks were left by the plough on the land within the two outside and centre compartments, but no indications of wetness appeared on the two air-drained pieces.

We together again visited the field on the following 4th of August, when we found the Turnips, owing to the intervening and uninterruptedly dry weather, by no means flourishing, yet it was peculiarly gratifying to find the Turnips on the air-drained land, certainly one-half superior to those on the remainder of the field. Very soon after this latter date frequent and copious falls of rain ensued, and, in consequence, the Turnips on the non-air-drained land improved proportionately more than those on the air-drained, showing that the damp air at nights, &c. &c., had all along supplied moisture to the latter to a considerable extent.

As Wheat seed time approached, the whole field of Turnips was condemned as being too inferior to stand through the winter; therefore it was at once determined to clear the ground and sow Wheat, which, in each successive stage towards maturity, clearly appeared, as in the case of the Turnips and numerous other experiments under observation, most prosperous on the air-drained land.

In order to test the accuracy of our observations, the produce of the Turnips and the Wheat, in portions of nearly an acre in each of the several divisions, were carefully weighed, the result being as follows: viz.—

DESCRIPTIONS.	PRODUCE PER STATUTE ACRE.										
	TURNIPS.				WHEAT.				WHEAT STRAW.		
	Skirving's.		Pine-ap.		Weight.		Measure.				
	tons.	cwt.	tons.	cwt.	st.	lbs.	bush.	pks.	cwt.	qr.	lbs
Air-drained land,—two sorts of Turnips drawn off, succeeded by Wheat	16	4	10	8	129	4	28	3	27	2	20
Non-air-drained land,—ditto	13	12	6	16	94	4	21	0	20	2	24
Difference per statute acre in favour of air-drained land	2	12	3	12	35	0	7	3	6	3	24
The result of another experiment proved as follows, viz.—											
Air-drained land,—Potatoes ploughed up, succeeded by Wheat	..	..	..	..	158	8	35	0	35	3	16
Non-air-drained land,—ditto	..	..	..	..	134	4	29	3	30	0	10
Difference per statute acre in favour of air-drained land	..	..	..	.	24	4	5	1	5	3	6

The quality of the Wheat on the *air-drained* land was, in addition, judged to be superior by 3*d*. per bushel, and the straw of a brighter and better description. The general produce, I am very confident, would have been much larger had the drains been deeper.

The differences observed in favour of the air-drained land are much too great in our opinion to receive satisfactory explanation in this way. Some other difference of treatment unnoted must have existed to account for so great a difference of produce.

The fact is that all drainage is "air drainage;" and that indeed so far as the opening of a drain at its upper end to the air is effectual in facilitating the passage of water through it, there is to that extent a diminished right to claim on its behalf the results of air drainage. The air will then simply pour in at the upper end and pour out at the lower end, drawn along by the current of water through it, but not one particle of it will be of any use to plants. A drain is *receiving* at all its pores and cracks throughout its course. Nothing that is in it has any chance of getting upwards into the soil above it. Whatever enters will find its exit at the outfall: it has already done its work so far as the soil is concerned, and the sooner it is got rid of, the better. That is the reason why drains are made straight down the hill. The air which does good to plants is that which enters the surface of the soil and permeates both it and subsoil—dissolved in the water which thus traverses both, or drawn in after it as it sinks. If the drain were full of water from top to bottom, then the whole weight of *that* water as well as of what existed in the soil would be helping to press onwards out of the soil, and helping to pull air in. If in such a case you facilitated the passage of water through the drainage tube by opening its upper end you would destroy the influence, whatever that may be, which the weight of water in the tube would exert in pulling air and water after it through the land. All that the water in the pipe would do in such a case would be to pull air in at its upper end and set it free at its lower end. We do not however believe that the weight of the water in the drainage tube has any effect whatever except in inducing its own escape. The true agent in the drainage of the land is the weight of water within the soil. Let that have a chance of making its escape below the subsoil and it will draw air after it, and introduce an activity into the soil considered as a laboratory, which will tend much to its powers of feeding the plants growing within and upon it. The circumstance of the exit pipe being open at its upper end directly to the air, if influential at all, must to the small extent of its power diminish the activity of those passages within the soil from the air to that pipe along the whole course of its length, which alone (traversing the substance of the soil and subsoil) are usefully employed in feeding the soil-laboratory with reagents or the soil-warehouse with food.

BARLEY CULTURE.

AT a recent (1861) meeting of the Winfrith Farmers' Club (Dorsetshire), it was the universal testimony that early sowing was good policy. Illustrations are given of some of the principal varieties of this grain in the following page, and I give the following enumeration of some of them, as described on the occasion just referred to by Mr. Randal, a member of the Winfrith Farmers' Club.

The common, or early English Barley (*c*, Fig. 1) is most commonly cultivated through the kingdom; and although from time to time many other varieties have been introduced, it still maintains its position. It is suitable for light lands where the practice of sheep-folding prevails, and also for a greater range of soils than many other varieties; it has the advantage of coming to maturity earlier, requiring only from 14 to 16 weeks to perfect its growth. For light lands of

inferior descriptions this Barley appears better adapted than any other kind; and even on cold clay soil its early maturity and free manner of growing give it a decided superiority over those varieties which, although of finer quality, are of much slower growth; it also works very well in the malthouse.

The Chevalier Barley (*b*, Fig. 1) is a favourite with the maltster, and on good land answers the farmer's purpose well; but it is not in every district that so many bushels per acre of it can be grown as of the coarser varieties. It must be sown rather earlier in the season, as it requires a longer time to ripen than some of the more common sorts. The Leghorn Barley is a good sort, very fairly productive, and a good malting Barley, and it is often worth several shillings per quarter more than the coarser Barleys.

The Annat Barley (*a*, Fig. 1) is obtaining now a very wide reputation; but it has not the celebrity of the Chevalier for malting purposes. It is very productive on sandy loams. The Nottingham Barley makes a fine sample, but it is also considered coarse; it is generally of a good colour, and works well in the malthouse, and is sown rather largely in the north of England. The Pomeranian, or German Barley, is a sort introduced from the Continent, and cultivated successfully in the North; it is hardy, early, and generally productive; the straw is tall and strong, the ear long and open, the grain of good colour, and weighs well, generally forming a good sample, and is considered a good sort for cold soils and late districts. There is a sort called the Norfolk Sheetneck, which is spoken of as being very suitable for high and exposed situations. It has a long and tough straw, compact ear, with long and strong awns attached, and generally produces a sample good in quantity as well as in quality. There is also a very useful Barley called the July Barley; it can be sown later than any other sorts; it is suitable for all Barley soils, yields well, and is a good sample for the maltster. There are also several coarser varieties of Barley or Bere sown for feeding purposes, hardier than the better qualities of this grain.

In the cultivation of Barley, one great object to be attained before sowing it is to have the land perfectly clean and dry; and when Barley follows the Turnip crop it is well immediately after the Turnips are fed off, either to put a scarifier across the field or to plough it very shallow, for by so doing we get the sheep droppings more intimately mixed with the soil, and also prevent the dung being washed away by the rain, especially in the hilly districts. Shallow or thin ploughing for the Barley crop, is considered beneficial to the growth of Clovers, which, like Wheat, thrive and stand the winter better on a firm subsoil. In most rotations of crops, Barley follows the Turnip crop, and is succeeded by Clover. If the Turnip crop, to which a liberal amount of artificial manures has been given, is all fed off on the land, and the soil be further enriched by oil cake or corn given to the sheep, the land may be sometimes left in too high condition, and the Barley will grow too luxuriantly, and be laid, and the consequence is a very inferior sample of corn, and most likely the Clover plant killed. To remedy this, a certain proportion of the Turnips should be pulled and carted away for feeding elsewhere. Sufficient attention is not always paid to seed Barleys—the temptation of the higher price often takes all the best grain of the farm to the market, and the farmer often contents himself with sowing the light tailing. The seed ought to be of the best quality, fully matured, quite free from injury, and true in its variety. In sowing it some use the Suffolk drill, others prefer the old-fashioned plan of sowing broadcast. The drill is to be preferred, as it not only deposits the seed at an uniform depth, but also puts it out of the way of the birds, and effects a considerable saving in the quantity of seed required. Very early in the season three bushels per acre, or even less, is quite sufficient; but, as the season advances, a small addition to the quantity is required.

Mr. Randal, from whose paper on this subject the above remarks are taken, adds, "The early-sown Barley is always the best. I think we ought, if possible, to get the greater part of it in in the month of March, the earlier in the month the better; even the last week in February, if our hill land will work free, I do not think too early to begin sowing."

And this opinion was expressed by others.

Mr. Reader thought that where the general practice was to use large quantities of artificial manures for the root crop, and those roots fed off on the land, it was desirable the Barley should be sown early—in February if the land would work well. He had always found early sown produce a larger quantity of corn, and of a very superior quality, and the straw of late sown was generally weak, consequently was often laid down, and injured very much the Clover plant, which was a great consideration.

Mr. Meade stated, with regard to the time of sowing Barley, that the sooner it was done the better. He had once sown some in January, $2\frac{1}{2}$ bushels per acre, and farther on in the season had sown the remainder of the field, 3 bushels per acre. At harvest he found the earliest sown much thicker on the ground, a larger quantity of corn, and a very much better quality. The Chairman had never known late sowing of Barley to produce a good crop; the quantity of Straw would be very great, but the produce of grain was never nearly so good as early-sown corn.

Barley on Fallow.—In some districts of heavy land it is the common practice to sow Barley on a summer fallow; it is particularly so in Essex. There the farmers have long been accustomed to plough their fallows in August or September, on two-bout ridges, *i.e.*, of four furrows each, of about 3 feet breadth; if in August, some will reverse the ridges immediately after Wheat sowing, others before it. They water grip the field well, and in February plough and sow, still on the same ridge, but harrowed nearly flat, by harrows made for the purpose. If they have a dry season to plough and sow, they get good crops, but much ever depends on this in spring tillage of clay lands, especially if imperfectly drained. To lay their lands in such form as to admit the scarifier and drill, the horses walking only in the furrows, and to avoid any spring ploughing, is necessary on undrained soils, and attended with success; but the better plan is to thorough-drain the land, and then treat it like the rest.'

Drawings of the natural size are given of six of our principal sorts of Barley.

In Fig. 1 three full-sized ears are represented:—*a*, Annat Barley; *b*, Chevalier Barley; *c*, common English Barley; all described above.

In Fig. 2 are shown *d*, Fan or Sprat Battledore Barley; *e*, Victoria Bere; *f*, six-rowed Barley.

Fan or Battledore Barley is a short-strawed variety of no particular agricultural merit; but noteworthy for the curious form and width of the ear.

Victoria Bere has a longer ear upon longer straw, and yields grain of a better quality than the common Bere or Big, which is commonly cultivated in late climates, in Ireland and the Highlands of Scotland.

The six-rowed Barley has a much shorter ear, and yields a coarser grain.

March is the proper month for getting seed Barley into the ground. Crops later sown may be good, but if all circumstances be equal, the March-sown will be superior to any at a later season. It is sown commonly after Turnips, which root will not last for feeding upon the average of seasons longer than the middle of this month. I am not here asserting that April is improper for sowing Barley; I know the contrary from experience; but if soil and circumstances are equal, a March sowing will exceed an April one, on an average of several years, by 3 or 4 bushels in the crop. March may, however, pass away without a ploughing season for wet lands in the whole month, and advice to sow Barley in March must therefore always be under the proviso that the land is dry enough for ploughing.

On clay, or other heavy soils which will not bear sheep, Barley, if grown at all, should be sown after a scarify-

Fig. 1.

Fig. 2.

ing, in the first dry season, whether in February or March. In some clay countries, the farmers still bare-fallow their land, and lay it up in narrow ridges, well water-furrowed for the winter. In a hard frost they carry on their dung, and leave it in heaps till sowing time, when they spread before the ploughs. The same practice is adopted after Beans, Peas, Vetches, Potato, or Carrot land; all which crops are taken up in autumn, and the land is ploughed after them into ridges and well water-furrowed, ready for spring sowing. In such cases the great point is, to have the soil, previous to the crop, in such good order, that no other spring tillage than the seed earth, or scarifying, may be necessary. Whatever rotation of crops be adopted, Barley almost always follows an ameliorating crop, and must generally be followed by Clover. *Morton's Edition of Arthur Young's Farmer's Calendar.*

THE LAMBING SEASON.

Let me first ask what is the meaning of the term good or bad luck, so invariably applied to stock? Is it synonymous with good or bad management? I think not in all cases, though diligence is said to be the mother of good luck. The mortality among Down ewe flocks during the lambing time is frequently fearful. I should say about 4 per cent. are lost on an average, and the lambs reared nearly 15 per cent. less than the number of ewes put to the ram. The most careful manager as well as the most indifferent suffer in turn. We most of us know well enough what will do mischief, and endeavour to guard against it; we know that if ewes are kept on too much succulent food—such as too much Turnip or Grass (the one containing 90, the other 75 per cent. of water)—without a liberal allowance of hay, or other dry fodder, to counteract the effects—dropsical, or better known as "water-bellied," lambs may be expected, which most likely would be cast before their time, and serious loss ensue. Over-filling, or allowing the ewes to be blown up with gas, from eating greedily of Turnips or Turnip green, would have the same effect, as well as exposure in cold rough weather. The grand secret in feeding sheep of any description undoubtedly is to keep them regularly and well; if you let them back at one time and force them at another you must expect to suffer loss. But it requires the most experienced eye to tell when they begin to do badly; and it is almost an impossibility to keep sheep up to the mark in the open field during a month of wet weather. Some people may imagine that the farmer's life is all sunshine; they little know the care, anxiety, and forethought requisite to conduct well the single branch of our business now under consideration. Unwearied attention in all weathers must be paid to a breeding flock; and, after all, we must confess that

"'Tis not for mortals to command success."

It being November, we will suppose the draft sheep are all disposed of, and we have only the hoggs and flocks to provide for. They will now, on most farms, be living on Turnips and hay; if the ewes can draw out and pick about for an hour or two by day in a bare ewelease, so much the better; the hoggs, being in a dry fold before the ewes, would eat the greater portion of the greens, and the latter would clear up behind with less liability to get full. I have never had good luck when hurdling ewes to Grass and Turnips at the same time; they will eat so much hay, and with two changes are more likely to be overfed. I like them to get their hay the first thing in the morning, Turnips after breakfast if not frosty (hoar frost, I am sure, is very injurious), then, if convenient let them walk out for two or three hours and return to finish their hay and Turnips, and have the cribs replenished in the afternoon, if necessary; this treatment I continue through December and January. The latter end of the month a few lambs may be expected. The great objection to having the hoggs before the ewes is, that in wet weather they make the food so dirty, and after the frost has somewhat cut down the Turnip green they are better away. It is also now time for them to begin eating Swedes, and, if the crop be good, the expense of having their roots cut and put in troughs will be more than saved. As the ewes' time draws near, they should not be allowed to lie in a cold exposed situation on the Turnip land; much harm may be done in one wet night. About this time I like to commence giving them some wet Grass*; it helps to flush the milk. The forward ewes may be picked out, or all put in a fold by night, littered with straw, and surrounded with thatched hurdles and plenty of pens, to take the ewes, with their young as soon as dropped. It is convenient to have a good fixed yard; but an open fold, such as I have described, is more healthy. A yard, should, however, be in readiness in case of snow or rough weather, and roots stacked near for use when wanted. For the first two or three days the young lambs require every care and attention, and those short of milk must be assisted. A few Oats will not be thrown away on weak ewes just now, and oatmeal gruel, and Elder wine as a stimulant, should be always at hand. If a yard, as is sometimes the case, begins to smell close and unhealthy, the sheep should be at once removed. That fatal disease "heaving" is, I believe, to a certain extent infectious, and an affected ewe should be taken away as soon as possible. Nearly every shepherd has some favourite nostrum for this deadly malady; but to save a sheep is the exception rather than the rule; acute inflammation of the uterus is rapidly followed by mortification, and death soon ensues. This disease may be traced to various causes—a close unhealthy atmosphere on the one hand, cold, wet, and exposure on the other—too much condition in the animal, as well as too little; the state of the blood is, no doubt, the predisposing cause; a difficult labour frequently is attended with no bad result, whilst sometimes after two or three days have passed, a ewe which had gone off with her lamb apparently all right, may be seized and soon dead. Some persons consider Swede Turnips too inflammatory for ewes before lambing; but used moderately, I do not think they are objectionable. For a week or more the couples must be driven carefully to shelter every night, and if wet, or snow on the ground, some straw scattered under the leeward hedges for the lambs to lie on; the dams cannot be kept too well at this time, and liberal feeding will soon tell on the lambs. As the spring advances, the winter Grass, late Turnips, &c., will be consumed, and Clover, Rye, winter Oats and Barley, Trifolium and Vetches, of which a succession has of course been provided, supply their place. I may here observe that through March and April Oats, Peas, or a small quantity of Rape or oil-cake, may be given to the ewes with the greatest advantage, especially to the mothers of the wether lambs. The lambs learn to eat from the troughs with their dams, and they bear weaning better, and can be kept very much more healthy and thriving at a small extra expense per head; and not only your stock but your land will be considerably benefited. Happily I have suffered but little from that dread scourge, the scour, which sometimes nearly decimates the fall of lambs on some farms. *Mr. Genge, before the Dorchester Farmers' Club.*

* Does this mean Grass or a water meadow?—Ed.

Home Correspondence.

Steam Cultivation.—In your Leading Article some few weeks ago you expressed a hope that your readers were not yet tired of steam cultivation, for it was really the leading event of the year. For myself, I may say ever since the time when your paper drew attention to the subject my interest has increased, and I now look weekly for information and details of what is doing in various parts of the country; for it is evident that steam cultivation is surely making its way, and will to a great extent cut out the good old plough, an implement useful enough I grant to turn over and move the soil about 6 inches deep, but there its efficiency as an implement of tillage ends; this is done with two, three, or four horses, according to the nature of the soil. Your correspondent from Wester Ross speaks of ploughing stiff clay soil from 10 to 12 inches deep in the proper rotation, and thereby preventing the formation of the "pan" caused by the treading of the horses. I can only say that I think the pan will still form; and his is a depth in clay I have never yet been able to reach except by subsoiling; this I have done to some extent, but the wear and tear of the tackle, men, and horses is too great compared to the small amount of work done. How am I, then, to get at this precious subsoil? Your Leading Article of last week has fully answered this question; is so well and truthfully written that I could wish every "clay farmer" in the country could read it. We must expect to hear of great differences of opinion, the same amount of obstinacy and prejudice that attend all new methods and inventions; but it is not by these that the course of steam cultivation will be impeded, any more than the introduction of the threshing machine could be stopped by a lawless mob of men who could not understand the thing in days gone by. Those farmers who already possess a portable engine need not be at much expense to give the matter a trial. Look at the immense sums they expend in artificial manures, horse keep, labour, &c. I should not recommend Fowler's engine and system; it is not so simple or easily managed, less economical, and too heavy for general adoption for all practical uses on the farm. What is the use of a locomotive 12-horse power engine for threshing, grinding, chaff cutting, &c., when an eight-horse power portable engine would do it equally well and at much less expense, and cultivate the land also? You will assume, and rightly, from what I have written that I am an advocate for steam cultivation, and I have to thank your pages for much valuable information on the subject, and for confirming the idea which gradually forced itself upon me, when I have seen my steam engine idle in the stackyard; why should it not assist me in cultivating my land, &c.? Of all agricultural items the cost of horse labour, &c., at the present time, seems to me to be most expensive; the carters are the dullest and stable boys the most stupid labourers on the farm. Introduce the steam engine amongst this class of men and boys, it will quicken their step, improve their appearance, expand their intellect, they will earn more wages in less time, and, lastly, teach them to think, and understand their position in life, a subject upon which they now know little and care less. *W. S.*

Societies.

English Agricultural: *Feb. 26.*—Mr. Raymond Barker in the chair. A very scanty attendance.

Two subjects of considerable interest came before the meeting, introduced in both cases by a very able and instructive *resumé* by Mr. Frere of the communications respecting them which had been received.

1. *On Oilcake adulteration.*—It was alleged in a communication from Hull that more British made oilcake was annually sold than could possibly be manufactured from the quantity of Linseed that was annually imported, or used in oilmills in this country. The losses falling on the purchaser of the manufactured cake, thus of course adulterated with less valuable material, were shown by Mr. Frere to fall on landlord as well as cultivator, for a great part of the value of the oilcake consumed reaches the land, and is in fact in many districts allowed to the outgoing tenant. And this adulteration affects the value of the cake not only as food but as manure.

Mr. Fisher Hobbs referred to a previous discussion of the subject which took place in that room some years before, when it appeared that many qualities of cake were made at the same mills, differing in the quantity of bran and other adulterating material that had been used; and that so great was the inferiority owing to this adulteration that Foreign cake commanded a higher price than English in the market. The Society ought to do what lay in its power to protect its members from the wholesale injury thus inflicted. Mr. Holland, M.P., said that so far as publication of the evil and facilities for analysis offered to its members were concerned, the Society already did its best to protect its members; that anything beyond this, which should take the work of self-defence out of their hands, would be beyond its power, and would in fact rather do mischief than good.

2. *Russian Agriculture.*—The annual report of the Russian Agricultural Society had been presented by the Russian minister—and the contents of this volume, so far as interesting to the English agriculturist, were very ably described by Mr. Frere, who prefaced his lecture with the remark that the cessation of serfdom in that empire had placed its agriculture, like every other social interest, in a critical position. As a speaker reported in the volume had said—"How can we improve our forests when we hardly know if our woods are our own?—how can we carry out the details of improved management in our fields when we know not how to obtain and enforce the paid services of our labourers?" The questions which had come before the Russian Society were economical or social, and practical. Among the former were the proposal to establish a mutual assurance society among farmers—the offer of prizes for the best method of applying and employing farm labour—the establishment of banks for the loan of capital to the proprietors of land—the difficulties in the way of the enforced adoption of free labour in the cultivation of the land. It appeared that the farm capital needed for the efficient cultivation in different parts of Russia varies from 50*s.* to 70*s.* per acre.

The relation between the labourer and his employer is the great question of Russian agriculture at the present day. It was proposed to issue pass books to labourers instead of passports, which they have hitherto required. The former being more akin to the pass which in this country the journeyman receives from his trade, guaranteeing his recognition at a distance from home.

Among the practical points which had been mooted before the Russian Society were questions of drainage and irrigation, of horse management, of drying grain, of the remission of the duty on salt for agricultural purposes (the salt to be mixed with tar to confine it to its use for cattle food or as manure), of a model farm instituted near Moscow, &c.

On some of these points Mr. Frere compared English and Russian experience. He lamented the practice in our own country of taking labourers on hire without a character, and he believed that the institution of something like the pass-book system, by which a labouring man should take a previous employer's guarantee along with him when he left his service, would have a useful influence on character. The Russian suggestion that salt mixed with tar for agricultural purposes might be passed free of tax, was met by Mr. Fisher Hobbs with the remark, that some similar enfranchisement of malt as food for cattle would be a great boon to the English farmer.

The details of the Moscow model farm possess some interest. It consists of 712 acres, at an average rent of 1*s.* $1\frac{1}{2}$*d.* per acre—405 acres were ploughed, 24 let out on the allotment system, nearly 100 in woods, 44 in roads, 100 in water, and 27 in an experimental field. The rotation adopted was—1, Rye, fully manured; 2, Potatoes, half-manured; 3, English Oats; 4, 5, Clover depastured; 6, 7, Clover mown; 8, Pasture; 9, Russian Oats; 10, Fallow, Vetches, and Spurry broken up for No. 1 Rye, which is sown in August. The crops are—21 bushels of Rye, 288 bushels of Potatoes, 35 bushels of Oats, 19 cwt. of hay, 30 bushels of Russian Oats per acre. The Clover is sown down along with sedgy Grasses, the Turnip crop had been tried and failed. The whole gives but a poor idea of the present condition of Russian agriculture in even its best instances.

Mr. Holland, M.P., complimented the Editor on his lecture—referred to the fact there held out to us that competition with Russian agriculture is already before the English farmer, and that it behoves him to do his utmost to maintain the lead he now possesses. Mr. Holland said in reference to discussions at forthcoming meetings,

that he should move as an amendment on Sir C. Kerrison's proposal at the next Council Meeting (to instruct the Journal Committee to provide subjects for discussion at the Weekly Councils), that the resolution of last June 18 should be reverted to, by which a special committee apart from that in charge of the Journal should be appointed to select papers and take care that these meetings are turned to some useful account.

Next Wednesday is the Monthly Council—the Wednesday following, March 12, is set apart for Dr. Voelcker's lecture—and on Wednesday, March 19, there is some prospect of a discussion, led by Mr. Beale Brown, on the usefulness of cattle condiments.

Farmers' Clubs.

HEXHAM: *Artificial Manure*.—A full and elaborate paper on this subject was read by Mr. Wilson, M.R.A.C., of Woodhouse, in Morpeth, at the last meeting of this Society. We give the following practical instructions taken from this essay.

The action of artificial manures on the various kinds of soil varies according to the physical condition of the latter.

1.—Sandy Soils.

As a rule on such soils, manure should be applied in small quantities, in a soluble form, and for each individual crop; so as to produce a maximum benefit, and prevent a loss.

Cereal Crops.—For Wheat in autumn, 2 cwt. rape cake, and 1 cwt. superphosphate will be found a suitable application, but for spring-sown Wheat 1 cwt. each of guano (I mean Peruvian), nitrate of soda, and 2 cwt. of common salt, or 2 cwt. sulphate of ammonia and 2 cwt. salt will be an excellent dressing, and if this were divided and applied at three intervals till May, it would be still better. Barley following Turnips eaten on by sheep needs no manure when sown, but might receive 2 cwt. per acre of nitrate of soda and salt, or a similar quantity of sulphate of ammonia at a later stage of growth, with considerable benefit. Oats (after lea) are best manured at seed time, but in this case a second dressing may safely be applied with profit; say 2 cwt. guano at seed time, and 1 cwt. of nitrate of soda and 2 cwt. common salt as a top-dressing in April.

Root Crops.—Though nitrogen and phosphoric acid are the most important substances in a manure, still carbon is found to be the important element in the development of bulb; hence, when it does not exist in the soil in the necessary quantities for the Turnip crop, it must be supplied from without in the shape of manure. This is of great importance in this class of soils, which I have said contains 80 per cent. and upwards of sand. The best application then for a Turnip crop, on a soil of this description, would be 2 cwt. of superphosphate and 1 cwt. sulphate of ammonia, in conjunction with a dressing of well-rotted farm-yard manure; or where the latter cannot be had, 4 cwt. of rape cake may be substituted.

Leguminous Crops.—Peas, Beans, Lentils, Sainfoin, Vetches, Clover, &c., are especially benefited by the application of lime, sulphur, and the alkalies, hence gypsum, soot, sulphates of soda and potash, the ashes of hedge parings or young twigs, are best suited for top dressing; to these crops also sulphate of potash and gypsum, 2 cwt. each, would be found beneficial.

Gramineous Crops.—Grasses, both in permanent and artificial pastures, may receive 1 cwt. of guano and nitrate of soda towards the end of February, and a similar quantity in April.

2.—Calcareous Soils.

To this class belong that very extensive range of soils incumbent on the limestone formation, and all soils containing more than 20 per cent. of lime.

Cereal Crops.—Wheat being usually sown after clover on this description of soil, receives an application of farm-yard manure on the lea during the latter part of summer, which is immediately ploughed in. In spring, a top dressing is very desirable, and is now much more general than formerly. Nitrate of soda and common salt, 2 cwt. of each, applied separately or together, have invariably produced a good effect. These dressings should be applied towards the end of March, and after the land has been rolled, to consolidate it and counteract the effects of the previous frost. Professor Coleman, of Cirencester—where the light limestone soils of the oolite prevail—writes me that he has found this system of top-dressing a very paying one. He says:—"The first year I used nitrate of soda 1 cwt. and salt 3 cwt.,—last year, 1 cwt. nitrate of soda, ½ cwt. guano, and 3 cwt. salt, and in some cases 6 bushels of soot, well mixed together and sown with Reeves' patent distributor. The effects were very appreciable to the eye, and on comparison with a small portion left undressed, the difference was most striking; in the former, the stems were stouter and more even, with large bold ears, whilst in the latter were many short stems, with small ears; but when we come to the actual test—the produce per acre—the results are still more satisfactory; 1½ cwt. of nitrate of soda and 3 cwt. salt produced 13 to 14 bushels extra, besides 5 cwt. per acre more straw. Taking, then, the price at 6s. per bushel, we have a return of 80s. from an outlay of [illegible]. I believe that the nitrate of soda and salt alone would produce on our light land quite as good results as the above, but the guano was added as being a more permanent manure. Again, in Dr. Voelcker's experiments, in a field after two years grass, 1½ cwt. nitrate of soda and 3 cwt. salt produced about 46 bushels of clean Wheat, and costing only 25s. 6d. per acre, leaving a clear profit—taking the natural produce at 32 bushels—of [illegible] per acre, being sold at 6s. 3d. per bushel." From these, then, I think we have a right to assume that nitrate of soda and salt is the most suitable application, not only to Wheat, but to the rest of the cereal crops. Perhaps, however, [illegible], 1 cwt. of guano might be substituted for 1 cwt. of salt with good result.

Root Crop.—On the bare and light limestone soils, manures with soluble phosphates are most suitable to the Turnip crop, on this light and naturally dry land, often worth only about 15s per acre, excellent crops are produced by 2 to 3 cwt. of soluble superphosphate drilled with the "water drill." Guano does not ensure such a regular plant as superphosphate, though Swedes that are dressed with the former grow longer in the autumn. Where possible, the application of from 10 to 12 tons per acre of farm-yard manure is desirable, and to the Mangel crop it is indispensable, in addition to which I would suggest—for Mangel—3 cwt. superphosphate and 2 cwt. guano, with a liberal supply of salt, for it is a gross feeder.

Leguminous Crops.—These crops are especially suited to soils of this description, and, indeed, have received the appellation of "lime plants." Sulphate of ammonia 1 cwt., or sulphate of potash 1 cwt., with 2 cwt. of salt, or 2 cwt. guano, mixed with wood ashes, would be a good dressing.

Gramineous Crops.—Sulphate of ammonia 1 cwt., or nitrate of soda 1 cwt., with 3 cwt. salt, will be an excellent dressing; or instead of this, 2 cwt. guano and 2 cwt. salt will produce a beneficial effect. It would be still better if this application could take place at two separate times instead of the entire quantity at once.

3.—Clay Soils.

Distinguished by their stiff and adhesive nature. Though difficult to cultivate, some of them are extremely fertile, containing inexhaustible stores of the mineral food of plants. Consequently their productive powers may be said to depend rather on a judicious mechanical cultivation than on the application of manures, which, as a rule, should be applied in a bulky form.

Cereal Crops.—Wheat delights in strong lands. Being naturally rich in mineral fertilizers, and possessing that mechanical condition so essential to the successful growth of this important crop, this class has received the name of "Wheat soils." As a rule, manures rich in nitrogen, either in the shape of ammonia or nitrate, are most applicable to cereals on this land. This substance causes a rapid development of the stem, and stimulates the plant in its search for mineral food, besides acting to a considerable extent as a solvent of the inorganics. If artificial manure is to be applied to autumn sown Wheat after Clover, bare fallow or Beans, 4 cwt. of Rape-cake, or 3 cwt. guano, or even a mixture of these two substances, at 3 cwt. per acre, would be found effective. For Wheat after Turnips, I should not consider any artificial dressing necessary in the autumn, but 2 to 3 cwt. of guano, or 1½ cwt. sulphate of ammonia, with 2 cwt. salt, or 2 to 3 cwt. phospho-Peruvian guano applied in March, would be advisable. This would equally apply either to winter or spring Wheat, but for the latter I recommend early ploughing, and a partial dressing at seed time, and the remainder at a later period. I emphatically prefer guano and sulphate of ammonia to nitrate of soda on strong land, and as to salt, if not applied judiciously, it is in many cases actually injurious. Many of the manufactured Wheat manures are, I dare say, equally efficient as guano, but not having had any experience with them, I am not prepared to give an opinion; their value, however, for this purpose, must depend almost entirely on their nitrogenous constituents. Barley is ill suited to this description of land, and except under very high cultivation should never be attempted; when sown it should receive a dressing similar to Wheat. Oats are especially benefited by the use of 2 cwt. of guano at seed time, which is preferable to a later application: in fact, the most fabulous crops have sometimes resulted from this plan.

Root Crops are with difficulty grown on strong soils, unless the latter have received a deep and early ploughing in the autumn, and a subsequent judicious system of spring cultivation, both tending to produce a finely-divided condition of the soil. The liberal application of farm-yard manure in the autumn has mechanically a beneficial effect, though it is a common practice to apply it in a more concentrated form at seed time. For Turnips on this land, I still cling to ammoniacal applications, though undoubtedly they are benefited by a small proportion of soluble phosphate, either as a mixture with a special ammoniacal substance, or contained in combination with it in a general manure. I would suggest any one of the following, viz., 3 cwt. guano, or 2 cwt. superphosphate and 1 cwt. sulphate of ammonia, or even 2 cwt. guano and 1 cwt. of sulphate of ammonia per acre, of course, with farm-yard manure. For Mangel and Potatoes, I would simply increase the carbonaceous matter by an extra supply of dung, and apply 4 cwt. guano.

Leguminous Crops.—Clay soils contain all the necessary fertilisers which these crops require, such as the alkalies, &c., though they may not exist in a condition to be easily assimilated by the plant; a stimulant, therefore, in the shape of 2 to 3 cwt. of guano, applied as a top-dressing early in April, would add considerably to their productive powers; or, should there be a lack of lime in the soil, it may be specially supplied in the shape of gypsum, either alone or in conjunction with guano. For very early application to Beans or Peas, say at seed time, 3 to 4 cwt. of Rape cake may be used.

Gramineous Crops. — For artificial Grasses I would apply 3 cwt. guano, or 2 cwt. guano and 1 cwt. sulphate of ammonia, either all at once, towards the end of March, or at two different times previous to and after that period, as the season permits. For permanent pasture, the general management during preceding years would in a great measure guide me; if I knew it to have been grazed by cattle for a number of years, and the produce sold off the farm in the shape of beef, or more especially as milk or butter, without an equivalent being supplied by an allowance of cake. I would, without hesitation, give it a dressing of bone-dust, as the most effectual means of restoring the loss incurred; 20 bushels per acre applied early in winter would be enough. For land regularly mown, a compost of lime, soil, and salt, applied during the winter, is an excellent manure; or 2 cwt. guano and 1 cwt. superphosphate, given in March, would produce a luxuriant crop. Except on Grass land which has been thoroughly exhausted, the effects of bones will not be so visible; but on such land they produce a marvellous effect, as the exhausted pastures of Cheshire have demonstrated.

4.—Vegetable Moulds.

Clay or marl produces a beneficial influence by increasing the tenacity of the soil.

Cereal Crops.—The above-stated fact of the organic being in excess of the mineral matter in the soil, must here guide us in our application of artificial manures; inasmuch as from the large quantity of leaf-producing material, provided on the decay of this organic substance, the danger of flagging and going down must be guarded against. Salt is the most useful substance that can be applied for stiffening the straw; and to it might be added a soluble phosphatic manure, say 2 cwt. of the former, with 3 cwt. superphosphate sown broadcast in March. A similar dressing will be equally beneficial to the rest of the cereals. Oats and Rye are best suited to this class of soil, but as for Wheat it should never be sown till this excess of organic matter is partially removed, or when there is a clay subsoil within a reasonable depth from the surface.

Root Crops.—For the Turnip and Mangel crop, 4 cwt. superphosphate and 2 cwt. of salt would be an excellent manuring, in addition to which the physical condition of the soil would be materially improved by eating these crops on by sheep. Potatoes answer well on these soils, and may receive 3 cwt. superphosphate, 1 cwt. guano, and 1 cwt. sulphate of Potash. I would suggest, in conjunction with the above, an additional application of a few bushels of bone dust, so as to ensure a take of the subsequent Clover crop.

Leguminous Crops.—An abundant dressing for these crops would be 1 cwt. superphosphate, 1 cwt. sulphate of potash, and 1 cwt. gypsum, applied towards the end of March; or, if circumstances deem it more desirable, at two different periods.

Gramineous Crops.—Coarse grass is the natural and universal produce of such land, consequently, in an arable state, Italian Rye-grass grows most luxuriantly, and often to the exclusion of Clover and the finer Grasses. Where required, 2 cwt. each of nitrate of soda and common salt would produce a capital bite. A bone manure, partially soluble, with a slight admixture of a saline substance, will invariably produce good effects; but perhaps the best results on permanent pasture on these soils have been obtained from a compound dressing of lime, soil, and salt, the wonderful effects of which on land recently enclosed, and usually of a peaty nature, are familiar to most of you.

5.—Loamy Soils.

Are composed of clay, lime, sand, and organic matter in so finely-divided and equally-balanced a condition as to cause them to represent the most fertile soils, and to which the majority of our cultivated crops are suited.

Cereal Crops.—For winter Wheat, 4 cwt. Rape cake, or a dressing of bone-dust, applied at seed time, would be enough, if after Beans or bare fallow; but for spring application 3 cwt. guano used in March, or 2 cwt. each of nitrate of soda and salt, or even 1½ cwt. sulphate of ammonia and 2 cwt. salt at the beginning of April, would be a satisfactory dressing. If for spring Wheat, I would recommend 3 cwt. guano at seed time, or 1½ each of guano and nitrate of soda at a later period. For Barley, after Turnips, an artificial dressing will seldom be necessary, unless it be subjected to some unfavourable climatic influence; in which case the usual quantities of nitrate of soda and salt, or 2 cwt. each of guano and salt, would have the combined effect of producing a luxuriant growth, and at the same time a stronger stem, thus remedying a defect to which Barley is especially liable. When grown after Wheat, a practice now not uncommon on highly cultivated loams, a nitrogenous, in conjunction with a saline manure, may safely be used, without fear of over luxuriance; for instance, 1½ cwt. sulphate of ammonia and 2 cwt. salt, or 2 cwt. guano and 2 cwt. nitrate of soda, might be suggested. A considerable increase in the Oat crop will be found from 2 or 3 cwt. guano at seed time, and should a later dressing be necessary, 1½ cwt. sulphate ammonia and 2 cwt. salt may be applied; but I am strongly in favour of the guano at seed time.

Root Crops.—In the event of farm-yard manure having been applied in the autumn, or is to be applied at seed-time, for the Turnip crop, I should look to a soluble mineral manure as an artificial dressing, either in the shape of a superphosphate or a phosphatic guano. In case no dung is used, I should then add some nitrogenous substance, in a limited quantity. The following mixture would suit the latter case, viz.:—4 cwt. superphosphate and ½ cwt. sulphate of ammonia, or a common mixture used in Scotland, viz., 2 cwt. guano and 3 cwt. superphosphate; but perhaps a more desirable dressing still would be 3 to 4 cwt. of phospho-Peruvian guano, the result from which on loamy soils being already such as to give us every reason to foresee its more general application, to the exclusion of many of the manures at present in use, for it is my opinion that for general purposes it is the best manure as yet introduced. When farm-yard manure is used, 3 cwt. superphosphate will be found enough, though in some cases ½ cwt. sulphate of ammonia may be added. For Potatoes I would use 2 cwt. guano and 3 cwt. sulphate of potash, or 4 cwt. guano will be enough in conjunction with farm-yard manure. For Mangels 2 cwt. each of guano, superphosphate, and salt, or 4 cwt. phospho-Puruvian guano will be an excellent dressing with farm-yard manure.

Leguminous Crops are grown to great perfection on these soils, inasmuch as they contain a fair proportion of lime and the alkalies in an available condition, to which is due, I presume, the comparative inefficacy of alkaline substances when applied as a manure to these crops. For Beans or Peas, 2 cwt. guano or 2 cwt. phospho-Peruvian guano, or even 2 cwt. superphosphate and ½ cwt. sulphate of ammonia, will have a good effect if applied early in May, and grubbed in by the horse-hoe; a similar dressing may be used for Clover, &c., at an earlier period.

Gramineous Crops.—For artificial Grasses, 2 to 3 cwt. guano or 2 cwt. nitrate of soda will be enough if applied early in April; for permanent pasture, 2 cwt. superphosphate, 1 cwt. guano, and 1 cwt. nitrate of soda may be recommended.

I have thus briefly described a few of the most important substances which may be applied in the form of artificial manures to our various cultivated crops grown on different kinds of soil—and under a variety of circumstances. I have mentioned only a few of the most important and popular manures in use at the present day, purposely avoiding a reference to many of the manufactured manures—from a lack of space, as well as the absence of that knowledge and experience of their characteristics and utility which would qualify me to offer an opinion. [A reference to the remainder of the paper must be made hereafter.]

Reviews.

Arthur Young's Farmer's Calendar, describing the business necessary to be performed on various kinds of Farms during every Month in the Year. **Entirely re-written by J. Chalmers Morton. Routledge, Warne, & Routledge, Farringdon Street.**

At the season when spring time wakens up all kinds of life, and the activity of the agriculturist as well as the growth of the plants receives an impulse, it may be allowed us to call the attention of our readers to this book, modelled on that of Arthur Young, whose 20th Edition was published a quarter of a century ago. It professes, like its original, to describe the business necessary to be performed on various kinds of farms during every month of the year. How much it differs from its original may be gathered from the opening sentences of its preface, which we here transcribe:—

"So much of the original work has been cancelled in this edition of it, that the editor has to apologise for his title-page. The serial publication of the book was begun before he had realised how much of the 'Farmer's Calendar,' written more than half a century ago, is obsolete. And the name of Arthur Young has been thus unwittingly committed to an almost entirely new book, not one twentieth part of which is his authorship.

"During the quarter of a century which has elapsed since the last edition of his work, agriculture has benefited by scientific research, by mechanical ingenuity, by extended resources, and by increasing skill, vastly more than during any similar period in our history. Fertility has been increased by the operation of new processes, and of new implements; by the importation and the manufacture of new manures; by the cultivation of new plants; and by the maintenance of a larger stock of improved animals. National Societies have stimulated and directed improvements, by publishing both failures and successes; and there are now, from agriculturists and from scientific men, abundant records and satisfactory explanations of every branch and kind of agricultural experience. No wonder that any attempt to describe the practice and experience of the farmer now-a-day should force one almost entirely out of the track pursued by the agricultural writer of a previous generation.

"Besides abandoning most of what Arthur Young had written for the guidance of the farmer 50 years ago, the plan of his work, generally adhered to, has been so far altered as to

admit one new feature of considerable importance. Farm practice depends on climate and the weather more than on any other thing whatever. Great pains have been therefore taken to present in as condensed and compendious a form as possible weather tables of the different months at many different stations in the United Kingdom. Readers can thus determine how far the practice of one locality may be advisable in another'

Besides a very full account of the climate of every part of Great Britain, and a detailed description of all those points in which our present agriculture, as stated in the above quotation, differs from that of a quarter of a century ago, the present edition differs from the former in the completeness of its illustrations. Of these we take two instances, in one of which (to be given next week) the drainage of an estate is described :—

"In the diagram, in which the position of the drains on an estate of the oolitic formation, drained under Mr. Bailey Denton's directions, is given in detail, the uniform parallel drains on the more level fields upon the Oxford clay are fully represented at the foot of the map. The occasional drains, intended for the removal of spring water, and the lateral drains rendered necessary by the configuration of the land, and intended for the removal of water lodging in slacks upon the surface, are also recognisable in some of the middle fields. There too, and elsewhere, the less frequent generally parallel drains needed for the tapping of the more porous water-bearing strata are to be observed. Too great a stress cannot be laid on the necessity of such a plan of executed drainage being preserved. There are many instances in proof of this, where large sums of money have been lost entirely for want of a record of the operation. The tenants have changed, and the outfalls have been ruined and have disappeared." The "outlets" referred to in the map are open hinged gratings. The wells are points of junction enabling examination.

The following again, one of a large class of illustrations given in these pages, is a picture of the different Clovers grown in English fields :—

"Heads and leaf of the natural size of—1, Trifolium hybridum — Alsike Clover; 2, Trifolium incarnatum, above described; 3, Trifolium repens—White Clover; 4, Trifolium pratense perenne—Cow Grass; 5, Trifolium procumbens—Hop Trefoil; 6, Medicago lupulina—Black Medick, or Yellow Clover; 7, Trifolium pratense—common Red Clover."

Of the book thus illustrated it must suffice here to say that it professes to deal in detail with the whole field of farm practice, describing under the different months the operations which under every section of it there fall to be done. And this it attempts to do in a work costing less than one-fifth or one-sixth the price of previous systematic works on English Agriculture.

Farm Memoranda.

CHESHIRE FARM: *Report of a Mixed Dairy and Tillage Farm of* 250 *Acres.*—The general stock of the farm consists of 55 dairy cows, 12 two-year old heifers, 12 yearlings, and 2 bulls; 6 cart horses, 1 hack and pony, 2 two-year old and 2 yearling colts; 60 ewes, bought in September and sold after feeding their lambs, in the months of July and August following; from 50 to 80 wethers, purchased in June and sold off in October and November; 5 breeding sows, 2 brawns, and about 30 pigs. The young cattle are turned to Grass towards the end of March or beginning of April, and the dairy cows towards the first of May, and are pastured during the summer and autumnal months. About the beginning of November they are taken from the fields to the homestead, where they are tied up at nights, and if the weather is fine are allowed to range the fields in the day time for about another month: but if the land is wet they are confined at once to the cow-houses and cattle yard during the remainder of the winter, being turned out twice a day to water and for exercise. When first taken up they are fed upon Mangel and Turnip-tops; when the tops are all consumed the bulbs are commenced upon, beginning with the Turnips, which are cut daily with Moody's machine, and mixed with chaff or cut fodder and given twice a day at the rate of three half-pecks to each cow. The young cattle (excepting the calves) are usually kept in the fields until winter fairly sets in. They are then taken to the homestead and treated much the same as the dairy cows, and as many of the latter will be near their time of calving towards the end of February, hay is substituted for straw, excepting what is cut up and mixed with the Turnips or Mangels. As the cows drop their calves they are allowed a few crushed Oats daily, until they go to Grass.

The tillage land is rather more than one-fourth of the farm, the mowing including Clover about one-fifth, and the remainder pasture; thus, tillage 70 acres, mowing 50 acres, pasture 130 acres; of the above tillage about 45 acres are appropriated to the growth of grain crops—Wheat, Oats, and Barley, and 25 acres to the cultivation of green crops, consisting of Mangels, Swedes, and other Turnips; early and winter Potatoes, seeds for the farm, viz., Mangels, Swedes, &c. The usual course of cropping is Oats on Grass "ley" furrow; when the crop is removed the land "pin fallowed," as described in the operations for September, and sown with Wheat, which is succeeded by a green crop, Mangels, Turnips, or Potatoes, in drills 27 inches wide, the land having been manured with about 20 tons of good farm yard manure, or 14 or 15 tons and 3 or 4 cwt. of superphosphate of lime or other portable manure. Barley follows, and the land is laid down with Clover and Grass seeds, and continues in pasture for three or four years, when it is again broken up and undergoes the same course; the Clover crop is, however, sometimes mown, and in that case it is pastured with sheep or young cattle until about the middle of May, when it is shut up for seven or eight weeks, or until the crop is ready for the scythe; a second crop is seldom (if ever) taken, but is again pastured with sheep, and Turnips are frequently strewed over the field, for the sheep during the autumnal and winter months, which greatly improves the herbage.

AGRICULTURAL CLOVERS.

CALENDAR OF OPERATIONS.

January.—Carting out manure to the land intended for green crops, ploughing when the weather will admit of it, cutting Turnips or Mangels for the cattle and pigs every morning; this operation generally takes about three-quarters of an hour with Moody's cutters, two men, one boy, and the hack and pony, which serves for exercise. This is continued until the cows go to Grass. About the middle of the month we commence ploughing "leys" for Oats. The hedges which require cutting are commenced upon this month.

February.—Ploughing "leys" continued, preparing the land for green crops (if the weather will admit of it) and occasionally carting out manure; if the Wheat sowing was not completed before Christmas it is resumed this month; we find the early kinds of White Wheat, such as the "White Essex," "rough chaff," &c. answer the best for spring sowing.

March.—Commence sowing Oats on "leys;" sometimes they are sown by hand when the ploughing is very well executed, but generally they are drilled in, by which there is a saving of seed; towards the middle of the month Barley sowing is commenced, which is usually performed by the drill; early Potato planting is also the business of this month if the weather is favourable, and as hoeing Wheat is not practised here, the Wheat crops receive a good harrowing, and are afterwards rolled with a heavy roller.

April.—Barley sowing is frequently continued to the middle of the month, when the final preparations for the Mangel crop takes place, and the planting should, if possible, be completed by the end of the month; winter Potatoes are also planted early in the month, if the land can be got ready or them, and selected roots of Mangel are planted for seeds.

May.—If the Turnip land is not quite clean it now receives another ploughing or scarifying, and is fully prepared for sowing by the end of the month, which is considered quite soon enough for Swedes on an average of seasons; ewes and lambs are taken off the Clover roots, which are then shut up for mowing.

June.—Swede sowing, if not finished last month, is continued, and if there is any ground which has been cleared of its crop of Rye or Vetches for stall feeding, the land is ploughed and prepared for the "Green Melon" Turnip, or transplanted Swedes; about the third week in this month the crop of early Potatoes is commenced upon, and the land, as soon as cleared, is either sown with Swedes, Green Melon Turnips, or planted with strong Mangel plants raised for the occasion; mowing also commences about the end of the month.

July.—Mowing and hay making in full operation. Burgess & Key's mowing machine has been introduced on the farm, a hay tedder and horse rake are regularly at work. Scarifying between the Mangel drills and hoeing, taking out early Potatoes to the railway station, grubbing between Turnip drills and hoeing; carrying hay to rick or buildings. The Clover crop having been pastured late, is ready to be mown towards the middle of the month, and is pastured afterwards instead of being mown a second time.

August.—The land being early the first sown Oats are generally ready to be cut about the beginning of the month, which operation is performed by the common scythe. Wheat is usually the next crop on hand, and the old method of reaping with the sickle is still adhered to; then follows the Barley cutting, and that is also mown by hand, the reaping machine not having yet been introduced, in consequence of the crops generally being very heavy, and often laid. If there is much Clover in the crop and the weather unsettled, the Barley is "styched," that is, it is raised from the ground by placing three or four double handsful in the form of a pyramid, and tying it loosely just below the ears with a very few straws, to prevent its falling. This operation, although at first tedious, saves a deal of after trouble in turning the swathes, and preserves the colour of the grain, so essential for malting purposes.

September.—Soon after the "Ley" Oats are cleared from the ground the surface is thinly pared by the plough and thoroughly worked in preparation for Wheat, and during the month receives various stirrings by scarifying, harrowing, &c. the Wheat stubbles are also commenced upon in preparation for green crops the following year.

October.—The working of the stubble land goes on nearly through the month, when such as is required for Wheat receives its final ploughing: the crop of winter Potatoes is now taken up and stored, and the Mangel crop is generally stored before the end of the month. Wheat sowing is commenced about the third week, the "butts" are formed to suit one round of the drill after the land is well harrowed, the "reans" are cleaned out with the double mould board plough, so as to lay the whole as dry as possible. The Wheat crop is seldom hoed in the spring, but receives instead a good harrowing in March as before noticed.

November.—Wheat sowing continued, fallowing stubble ground, pulling and storing Turnips, which are frequently thrown into heaps of about a ton each, covered with straw, and carted home during slight frosty mornings.

December.—Winter fallowing, storing Turnips, if frosty, carting out manure, cutting Turnips daily for

the cattle, threshing Barley or Oats for a supply of straw for the cattle, planting out Turnips for seed in favourable weather. The threshing and winnowing of the grain is all performed by steam-power.

Miscellaneous.

Pleuro-pneumonia.—There is exposed weekly in the Edinburgh market an average number of twenty cows affected with pleuro-pneumonia, and these are placed at the very entrance to the market, as if designed to ensure the contamination of all animals admitted therein. The fatal effects produced upon the dairies in Edinburgh are enormous; upwards of a thousand head of cattle have this year fallen victims to the malady in this town. There are two causes which are the main sources for its propagation and diffusion These are the contamination in our public markets, and the unwholesome character of the places in which we are compelled to keep our cows in this city. It would be well for our city generally if those in authority would bestir themselves, and get proper cow-houses erected in the suburbs. All cows should be driven from the unwholesome hovels they now inhabit, and there should be an entire separation in our public market of cattle exposed for the butcher and those designed for feeding and milking purposes. *Scotsman.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Thursday, Feb. 27, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Barometer corrected to Freezing Point at Mean Sea Level.	Reading of Dry Bulb Thermometer.	Reading of Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	21	29.92	44	43	S.	2	2	56	40	64	36	0.05	44	43
Saturday ..	22	29.70	46	45	S.E.	2	8	56	43	72	39	..	44½	43½
Sunday ..	23	30.12	49	47	S.E.	1	5	52	46	60	44	0.03	45	44
Monday ..	24	30.16	42	41	E.	3	7	58	42	87	38	..	46	44½
Tuesday ..	25	30.13	38	36	E.	2	7	43	37	41	36	..	45	45
Wednesday .	26	30.30	35	33	N.E.	3	6	42	34	45	33	..	44	44½
Thursday ..	27	30.29	38	32	N.E.	3	7	37	32	39	32		42½	44

Notices to Correspondents.

PLANTATION: *Parmontly.* As a general matter a Fir plantation at 40 or 50 years of age should be out of all danger from animals. We do not think the treading of cattle's feet would injure trees of any description unless done to a great extent. If the plantation is a small one where the beasts would naturally stand much during summer for shelter, they would injure it; if a larger one, of course the risk is less. Sheep rubbing on trees do injury to young trees of a smooth bark, but not to rough trees like Scotch Fir. There is however always some attendant circumstances which must influence an opinion in judging of the advisability or otherwise of throwing open a plantation. *W. M., Parkside, February 25.*

SHEEP FEEDING: *J C Macdonald* asks what number of sheep ought to be attended by a shepherd and boy of 15 years of age, the sheep consisting of breeding flock to be folded on Swedes (the hurdles moved every alternate day), the roots to be drawn, cleaned, and cut by Gardner's cutter and served in troughs three times daily. Also what is a fair quantity for the sheep, hay being supplied in racks? [A man and boy will manage 300 Cotswold sheep, the roots being drawn and topped and tailed and thrown into heaps for them. And the sheep having a limited supply of hay in racks may be expected to consume rather more than 3 tons of clean roots daily.]

DAY'S LABOUR: *Cole.* It is customary to claim 10 hours work as a day's labour from the agricultural labourer when the daylight allows it—6 till 8, 9 till 12 (or 1), and 1 (or 2) till 6 are common hours. And in winter time breakfast would be taken before coming to work; *i. e.* until a man can begin the day at 6 he should work from 7 (or dawn) till 12, and from 1 till twilight. It is not customary to give an hour on Saturday afternoon.

PERMANENT GRASS SEEDS

FOR ALL SOILS.

SUTTON & SONS,

SEED GROWERS, READING, BERKS,

Have a most extensive and complete stock of all the best kinds of GRASS SEEDS for PERMANENT PASTURE, which they are now sending out daily to all parts of the Kingdom, mixed expressly to suit the soil for which they are intended and the purposes for which the Pasture is required.

It is believed that Messrs. SUTTON's Stock of GRASS SEEDS is the largest in the country, and certainly the quality cannot be surpassed. The sorts can be supplied separate or mixed to suit the soil, or the Light Large Seeds may be had in one mixture, and the Clovers and other Small Heavy Seeds in another; 2 bushels of the former and 12 lbs. of the latter per acre are supplied.

No. 1. MIXTURES for PERMANENT MEADOW and PASTURE, adapted to suit the soil .. .. 24s. to 32s. per acre
No. 2. MIXTURES for PERMANENT FIELD LAWNS, PARKS, and CEMETERIES .. .. .. 16s. per bushel
No. 3. MIXTURES for IRRIGATION or CATCH MEADOWS .. .. 25s. per acre
No. 4. MIXTURES for RECLAIMED, MARSH, or HEATH LAND .. .. 18s. to 20s. per acre
No. 5. MIXTURES for LOOSE BLOWING SANDS, HEAVY CLAYS, CHALKY SOILS, and SHARP GRAVEL
No. 6. MIXTURES of FINEST SHORT GRASSES for GARDEN LAWN .. .. .. 1s. per lb., or 18s. per bushel
No. 7. RENOVATING MIXTURE of CLOVERS and FINE GRASSES for OLD PARKS and MEADOWS, 9d. per lb., or, by the cwt., 80s.

N.B.—Messrs. SUTTON *furnish complete instructions for sowing and management with the Seed.*

OTHER AGRICULTURAL SEEDS,

ALL NEW AND UNADULTERATED.

CLOVERS.
English Red
White or Dutch
Trefoil
Alsike Hybrid
Cow Grass (true kind)

RYE-GRASS.
Sutton's Improved Italian
Dickenson's do. do.
Fine Imported Italian
Common
Pacey's Perennial

MANGEL WURZEL.
Long Red
Elvetham do.
Orange or Yellow Globe
Red Globe
Long Yellow

SWEDES.
Sutton's Champion
Ashcroft.—Skirving's
Hardy Purple
Marshall's Purple-top
Improved White

CARROTS.
White Belgian
Yellow Belgian
Large Altringham
James' Intermediate
Long Orange

SUNDRIES.
Holcus saccharatus
Lucerne
Drumhead Cabbage
Large Cattle Parsnip
Kohl Rabi, of sorts

Goods delivered Carriage Free. Priced Lists Post Free. Cash or reference requested with first orders.

Five per Cent. allowed for Payment on receipt of Goods.

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MANGEL WURZEL SEED,

FROM LARGE BULBS.

CHEAPER BY THE CWT. Per lb.—s. d.

SUTTON'S LARGE YELLOW GLOBE, saved from large roots, selected for their solidity and excellence of shape; the best for general use, thrives in all soils, and is the heaviest cropper known 0 8
SUTTON'S ORANGE GLOBE, beautiful shape, with smaller greens than other sorts, and consequently may stand closer together 0 8
RED GLOBE, ELVETHAM LONG RED, and others 0 8
LONG YELLOW or YELLOW TANKARD.. .. .. 0 8
YELLOW GIANT OVAL SHAPED, quite new, from the Continent 0 8

Prices per cwt. on application. Quantities of not less than ½ cwt. of any one kind will be charged at the wholesale price per cwt. Having quoted very low prices for the commencement of the season, early orders are requested.

We take great pains in selecting the best kinds of Mangel Wurzel, and have much pleasure in receiving continually from our customers great praise of the Seeds sent to them. The Letters received to that effect would fill a large volume. We must not publish many of them here; but we cannot refrain from presenting a few, as it is highly gratifying, after such a trying season as the last, to know that our Seeds were so much better than it would appear was generally the case last year.

P. H. FRERE, Esq., *Cambridge, Editor of the Royal Agricultural Society's Journal*, September 22, 1861.
"I write to say how well satisfied I am with the Mangel seed that you furnished me with in the late trying season. It was tried on one half of two fields, the one strong, the other light land, the other portions being sown with seed bought of a respectable local dealer. On the strong land your seed gave me a decidedly better plant; on the light land three or four times as many plants as the other dealer's seed."

The Rev. HUGH BACON, *Atherstone*, October 19, 1861.
"My plot of Mangels is far the best in the neighbourhood, and as it was your seed, it is fair that you should know it."

Mr. GOODMAN, *Bailiff to Sir John Cathcart, Cooper's Hill, Englefield Green*, October 15, 1861.
"I received the silver cup for the best 2 acres of Mangels from your seed."

The Rev. CHAS. JACKSON, *Bentley Parsonage, Farnham*, October 4, 1861.
"I have some superb Mangels from your seed this year—the finest bulbs and the smallest greens I have ever grown."

Mr. F. G. CROW, *Woolton Farm, Wingham*, December 19, 1861.
"My Mangel Wurzel is excellent, and much better than any in this neighbourhood. Two of my neighbours wish me to order theirs with mine next spring."

Mr. JOSEPH HARWOOD, *Alcester*, January 7, 1862.
"The seeds I had from you all came well, the Mangels better than any other which I planted."

Rev. T. BEST, *Red Rice, Andover*, November 7, 1861.
"I have a fine field of Mangel grown from your seed. I have also a good crop of Swedes from the seed which I had from you this year. The field is 12 acres, and my neighbours say they think it is the finest field of Swedes they ever saw. I beg you to accept my best thanks for the very successful way in which your care has carried me through this season."

Mr. JAS. WALKER, *Begbrooke Hill House, Kidlington, Oxon*, Sept. 18, 1861.
"I have taken eight First Class, one Second, and one Third Class Prizes, in the space of eight days, with roots all grown from seed supplied by you."

Mr. J. BISHOP, *Hamden House, Smarden, Kent*, August 19, 1861.
"The Mangel Wurzel are looking well from your seed: I am sorry I did not get all I used from you."

C. H. MALLOCK, Esq., *Cockington Court, near Torquay*, November 10, 1861.
"You expressed a fear that the Mangel seed which you sent might not all vegetate; on 20 acres planted with your seed there was hardly a vacancy."

The Rev. T. SANCTUARY, *Powerstock, Bridport*, August 2, 1861.
"My Mangels are probably the best in this neighbourhood, and as good as they well could be, and the Swedes also."

Mr. B. HUNT, Steward to W. Chute, Esq., *The Vine, Basingstoke*, July 30, 1861.
"I am pleased to say we have a first-rate crop of Mangel Swedes, and forward Turnips, which I should have no objection to show against any crops now growing in Hants or Berks."

G. BEAUMONT, Esq., *Bridgford Hill, Nottingham*, July 12, 1861
"I have a nice full crop of Mangel this year. I think every seed must have vegetated, and I bid fair to again get a prize at our neighbouring Agricultural Show."

J. C. ADKINS, Esq., *Milcote, Stratford-on-Avon*, June 12, 1861.
"You will, I am sure, be glad to know that I have a perfect plant of Mangel, not a gap worth notice on the entire area (about 70 acres): some of my neighbours, I am sorry to say, are not equally fortunate, for great complaints of thinness are heard. My prospect was never so good for a crop of roots as it is at present."

The Rev. J. G. NELSON, *Aldborough Rectory, Norwich*, June 11, 1861.
"I have a full plant of Mangels, a very rare thing this year in this neighbourhood."

J. B. TIBBITS, Esq., *Barton Seagrave, Kilkenny*, March 20, 1861
"I had nearly 40 tons to the acre of your Orange Globe Mangel last year, notwithstanding the unfavourable season."

F. W. OAKLEY, Esq., *Allesley Park, Coventry*, Feb. 13, 1861.
"The Mangel seed I had from you last year, produced the only good crop in the neighbourhood. I had for the season a splendid lot of them."

SUTTON'S PRICED LIST of FARM SEEDS for FEBRUARY & MARCH

May be had post free on application, addressed

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FOR THE PRESENT SEASON 1862,

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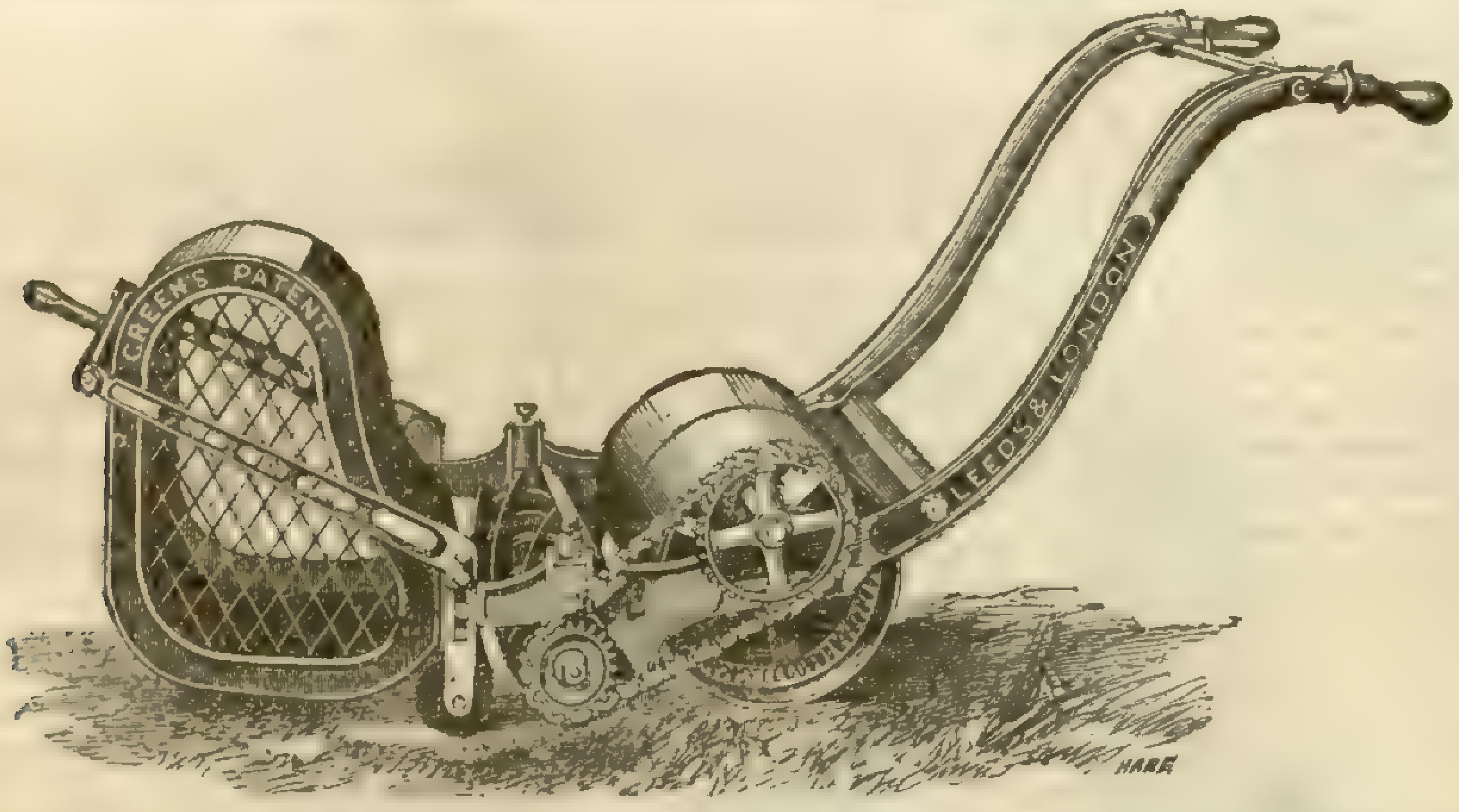

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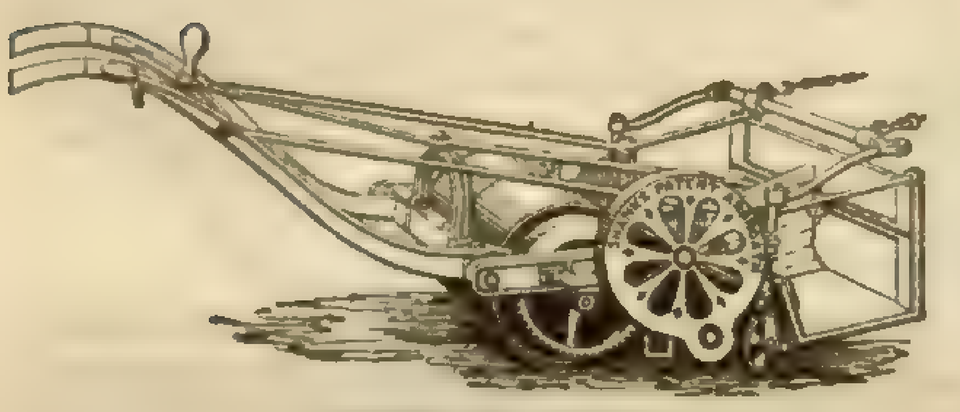
WITH SILENT MOTION IF SPECIALLY DESIRED.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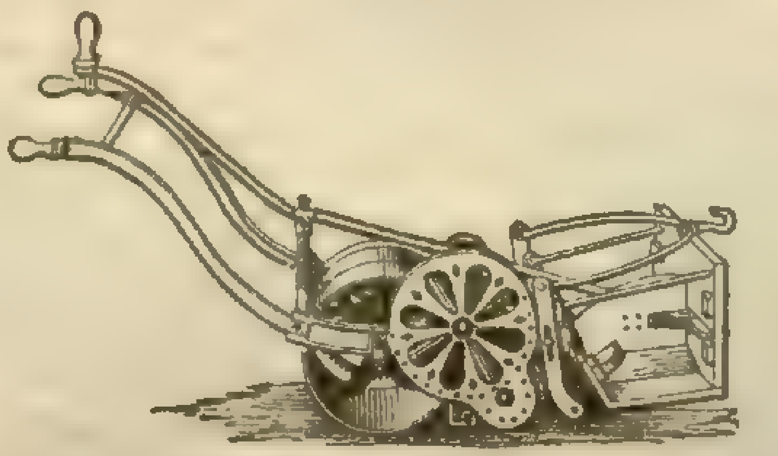
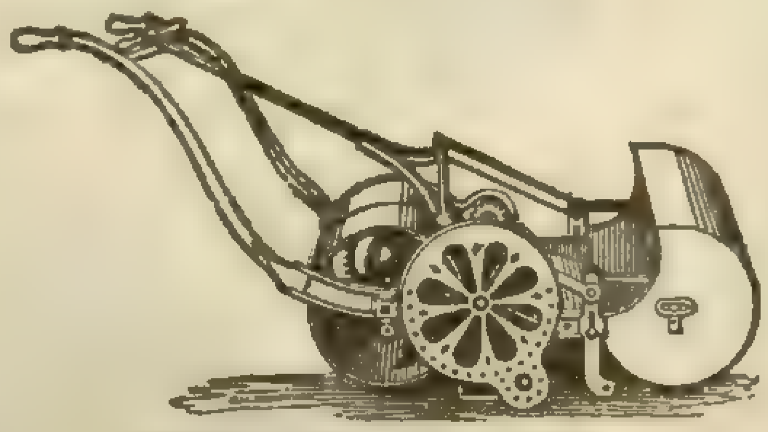

PONY MACHINE.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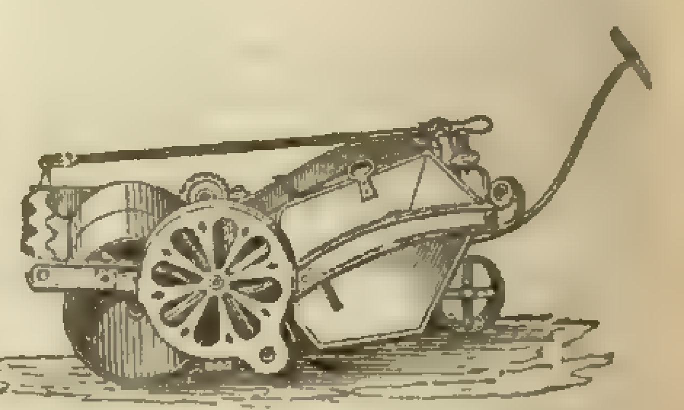
OLD HAND MACHINE.

J. B. BROWN and CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effect of the improvements of previous years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season. The style in which the work is executed cannot be surpassed—being very much neater than the Scythe, while at half the expense—*and it is quite immaterial whether the Lawn be level or otherwise, or whether the Grass be wet or dry.*

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SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Price		Width of Cutter.	Price	
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0		No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony.*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

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Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

SHANKS' NEW PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

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Width of Cutter.	Price		Width of Cutter.	Price	
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man*
No. 9.—22-inch Machine	8 7 6		No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*	No. 16.—12-inch Machine	5 0 0	*Ditto by a Boy*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

*** *The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

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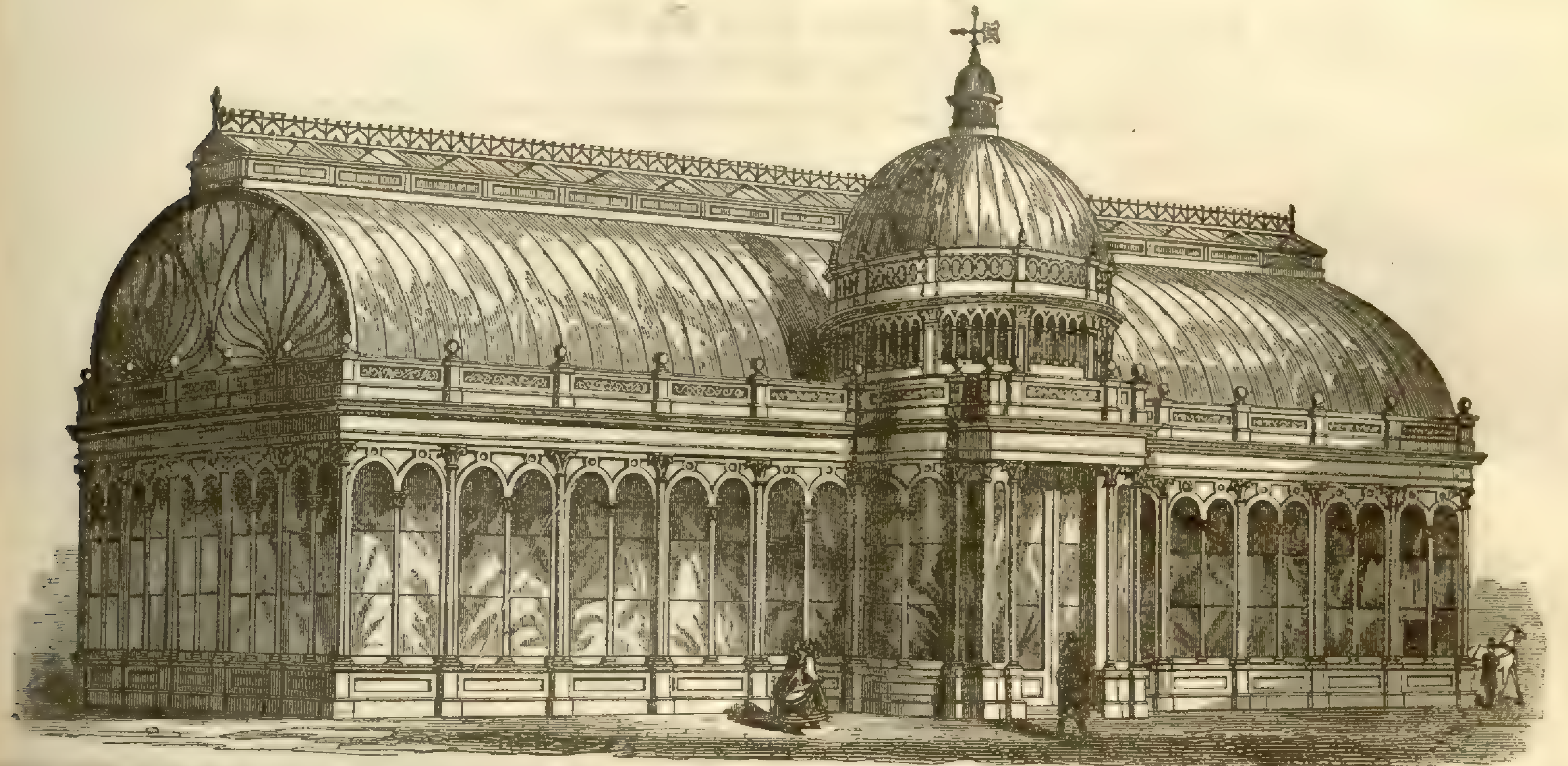
HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

PATRONISED BY THE QUEEN.



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WEEKS'S HOT-WATER APPARATUS continues to eclipse all spurious imitations of their renowned "ONE-BOILER SYSTEM." It exposes four times the quantity of heating surface to the action of the fire, consequently must be four-fold as powerful, and economical in the same ratio. It is described by the highest authority as the very best extant for both large and small works, which the following references will serve to corroborate. It has been adopted by

HER MAJESTY THE QUEEN
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THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM, AND NUMEROUS PUBLIC COMPANIES.

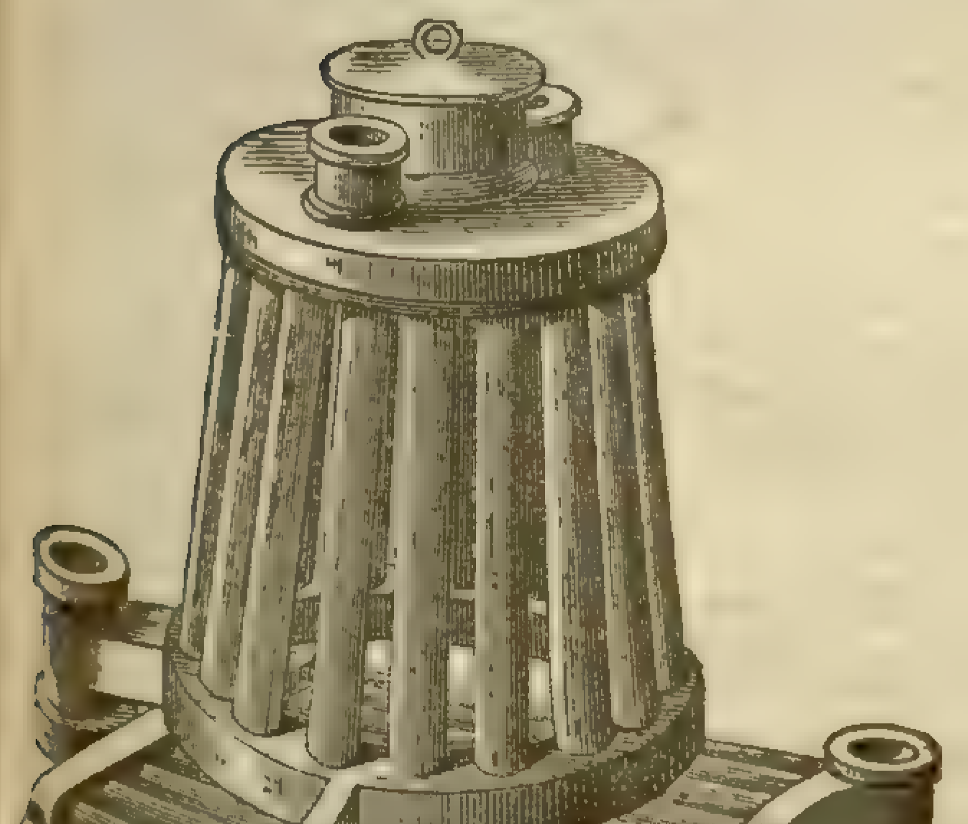
Catalogues free on application.

JOHN WEEKS & COMPANY, HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS ENGINEERS,
KING'S ROAD, CHELSEA, LONDON, S.W.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ORMSON'S PATENT JOINTLESS TUBULAR BOILER,

AN ORIGINAL INVENTION,



Brought out for the purpose, and is now fully acknowledged to surpass the OLD-FASHIONED JOINTED TUBULAR BOILERS, which have been made for the last 20 or 30 years by all other manufacturers. The ADVANTAGES of this PATENT will be manifest to every person's understanding from the following FACTS. For instance, one of the OLD-FASHIONED JOINTED BOILERS with 50 TUBES would have 100 JOINTS made of rope yarn and cement, exposed to the direct action of the FIRE, whereas in my PATENT there is NOT ONE JOINT so exposed. And it should be fully understood that as the OLD-FASHIONED JOINTED TUBULAR BOILER increases in SIZE, number of TUBES and JOINTS, its liability to LEAKAGE also increases, consequently

THE FOLLOWING IS THE REASON WHY

ORMSON'S ONE-BOILER SYSTEM

AND PATENT JOINTLESS TUBULAR BOILERS

have become so universally adopted on account of their superior power, great safety, and economy.

ORMSON'S No. 1 BOILERS	are heating upwards of	250	feet of Pipe.
ORMSON'S No. 2 BOILERS	" "	600	"
ORMSON'S No. 3 BOILERS	"	1300	"
ORMSON'S No. 4 BOILERS	" "	3000	"
ORMSON'S No. 5 BOILERS	" "	5000	"

Boilers of larger sizes if required to heat 12,000 or 15,000 feet of Pipe.

H. ORMSON having a most complete Set of Steam-power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, HORTICULTURAL BUILDER TO HER MAJESTY,
AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

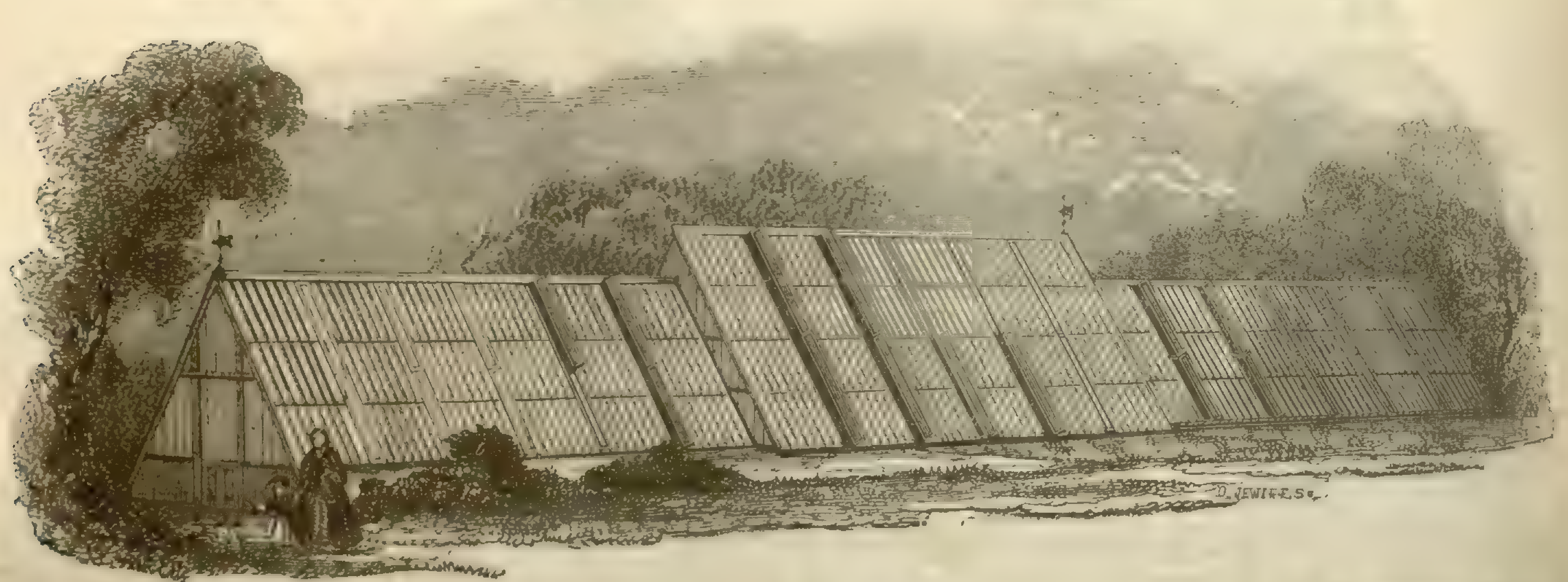
HOTHOUSES FOR THE MILLION.

ON THE PRINCIPLE INVENTED AND PATENTED BY

SIR JOSEPH PAXTON, M.P.

COMBINING SIMPLICITY, CHEAPNESS, EXCELLENCE, AND DURABILITY,

BEING CAPABLE OF FULFILLING IN THE MOST PERFECT MANNER ALL THE REQUIREMENTS OF HORTICULTURE.



The Cash Prices of Lean-to Houses complete are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£12 0 0	£16 0 0	£21 0 0	£28 10 0	£34 5 0
31 3 in length	16 10 0	21 2 6	26 10 0	37 12 0	45 16 0
41 11 in length	20 18 0	26 18 6	33 7 6	46 14 0	57 7 0
52 7 in length	25 12 6	32 15 0	40 5 0	55 16 0	68 18 0
63 3 in length	30 6 0	38 10 0	47 2 6	64 18 0	80 10 0
73 11 in length	34 12 6	43 15 0	53 7 6	74 0 0	92 0 0
84 7 in length	39 6 0	49 11 6	60 5 0	83 2 0	103 11 0
95 3 in length	43 19 0	55 10 0	67 2 6	92 5 0	115 2 0
105 11 in length	48 17 6	60 12 6	73 10 0	101 10 0	126 13 0

The Cash Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£24 0 0	£32 0 0	£42 0 0	£57 0 0	£68 12 [illegible]
31 3 in length	38 0 0	42 5 0	53 0 0	75 4 0	91 10 [illegible]
41 11 in length	41 16 0	53 17 0	66 15 0	93 8 0	114 14 [illegible]
52 7 in length	51 5 0	65 10 0	80 10 0	111 12 0	137 10 [illegible]
63 3 in length	60 12 0	77 0 0	94 5 0	129 16 0	161 0 [illegible]
73 11 in length	69 5 0	87 10 0	106 15 0	148 0 0	184 0 [illegible]
84 7 in length	78 12 0	99 3 0	120 10 0	166 4 0	207 2 [illegible]
95 3 in length	87 18 0	111 0 0	134 5 0	184 10 0	230 4 [illegible]
105 11 in length	97 15 0	121 5 0	147 0 0	203 0 0	253 6 [illegible]

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

The above prices do not include package, railway freight, heating apparatus, or erection, but we have made arrangements with Mr. Jones, of 6, Bankside, Southwark, London, to heat these houses on economical principles under our direction.

Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

SAMUEL HEREMAN, 7, PALL MALL EAST, LONDON, S.W.

PHOSPHO GUANO.

PETER LAWSON & SON, General Contractors,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. Voelcker, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.
(Signed) "Augustus Voelcker."

Opinion of Dr. Anderson, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.
(Signed) "Thomas Anderson."

Opinion of Dr. Stevenson Macadam, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for the Root Crops.
(Signed) "Stevenson Macadam."

Opinion of Dr. Hodges, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.
(Signed) "John F. Hodges."

Opinion of Dr. Apjohn, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadow or Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l.* 9*s.* 8*d.* per ton.
(Signed) "James Apjohn."

Price, Free on Rail, £12 5s. per Ton, Bags included.

*** *None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

PETER LAWSON & SON, 27, GREAT GEORGE STREET, WESTMINSTER, LONDON, S.W.

THE LONDON MANURE COMPANY
(Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

BURNARD, LACK, and CO.'S CONCENTRATED SUPERPHOSPHATE of LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.

CONCENTRATED TURNIP MANURE, equal in value to the preceding.

Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."

Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

Tenant Farmers' Manure Company.

ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by

THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.

For particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.

C. T. Macadam, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—

LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6	6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES ..	5	5
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8	0

These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

New Source of Ammonia.
To Manure Manufacturers and Dealers.

ULMATE of AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that Wool contains more Nitrogen (yielding Ammonia) than any other kind of animal matter proves the Ulmate of Ammonia to be a highly valuable manure, the Analyses by Professor Voelcker, the Chemist of the Royal Agricultural Society, and other high authorities, showing a per centage of Ammonia exceeding 14 per cent., or equal to an average sample of Peruvian Guano, and, from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of Ammonia. Being a fine dry powder, it is peculiarly suitable for use in the manufacture of manures, and preferable to the ordinary salts in use, sulphate of ammonia, nitrate of soda, &c. Samples, prices, and all information will be forwarded on application to Frederic J. Cornwell, Broker, 7, Great St. Helens, E.C.

LINSEED CAKES, RAPE CAKES, COTTON CAKES, also Materials used in the Manufacture of Manures, at the lowest market prices.

MINTON and CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.—March 1.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Sion House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Gardens, the late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the COLD WINDS & MORNING FROST.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for horticultural and floricultural purposes, for preserving Fruit and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide	..	..	1s. 6d. per yard run.
Four yards wide	..	..	3s. per yard.

An improved make, 3 yards wide, 2s. 6d. per yard run.
"Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.
Edward Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

PATENT GUTTA PERCHA SOLES.—
Important to Gardeners.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. Glenny, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels for two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they can repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the thin parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to use a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. Glenny."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Lining, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Sponge Bags, Curtain Rings, Galvanic Batteries, Calbo-Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.
The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

Page & Toogood, Royal South Hants Seed Establishment, Southampton.

NEAL'S PATENT APHIS PASTILS.

1s. and 2s. per packet.
From *Lloyd's Weekly*, July 7th, 1861.
"All we know is, that one of our larger houses took half a pound of tobacco, 2s., and that three pastils, 1s., do the same with no trouble. We have a score of letters on the same subject, but all to the same purport."

NEAL'S PLANT SOAP,
1s. per packet,
Makes the cheapest and most effectual Wash for destroying Mealy Bug, Thrips, Red Spider, American Blight, and all other Insect Pests.
Each Packet contains Four Cakes, each Cake makes One Gallon of Wash.
Sold by all principal Seedsmen.

Magnified Aphides.

Patentee:
J. Neal, Edward Street, Birmingham

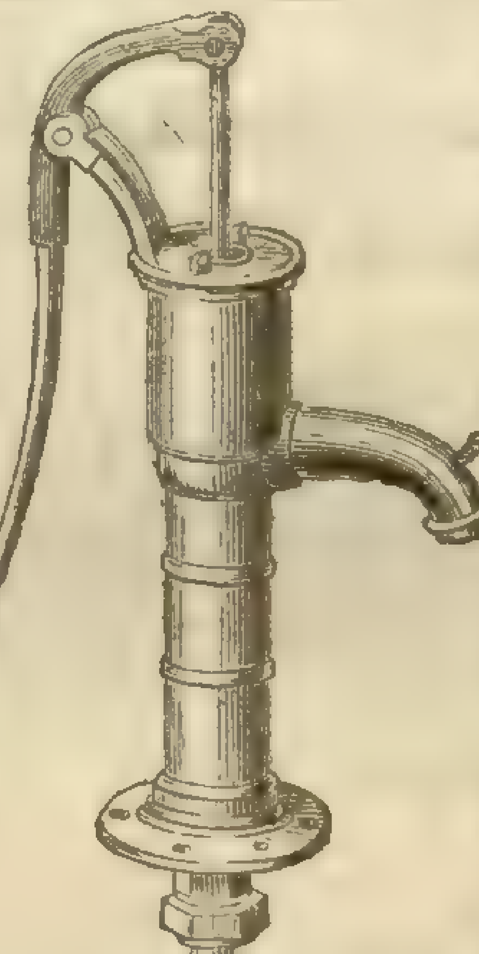
Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by
Price's Patent Candle Co., Limited.



J. TYLOR and SONS' PATENT IRON PUMP with reversible handle, for Shallow Wells, Hot-Houses, &c. Price 25s. 6d. each.

IRON YARD
and
GARDEN PUMPS
3 feet 6 inches under spout

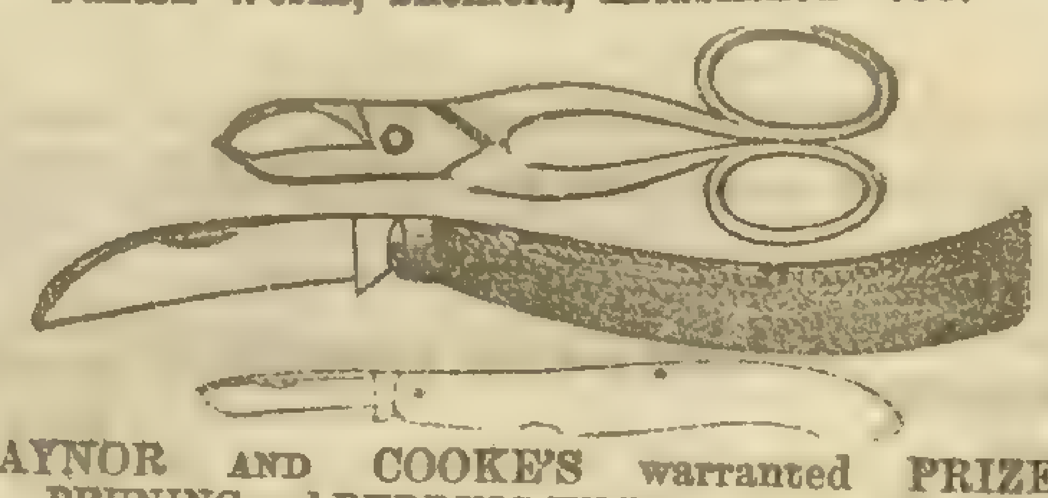
$2\frac{1}{2}$	3	$3\frac{1}{2}$ inch
43s.	53s.	60s. each.

J. Tylor and Sons manufacture PUMPS for DEEP WELLS which do not require any fixing below the level of the ground.

PUMPS of J. Tylor & Sons' manufacture to be obtained of Plumbers in all parts of the United Kingdom.

J. Tylor & Sons, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

Paxton Works, Sheffield, Established 1738.



SAYNOR and COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.
Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an article superior in quality to anything we have hitherto been able to offer, in PRUNING, BUDDING, and GRAFTING KNIVES, VINE and PRUNING SCISSORS, GARDEN SHEARS, &c., owing to their being tempered under an entirely new process, which renders the blade tough and not liable to break, and also gives the edge a lasting keenness which we can warrant them to retain for at least double the time they would under the old method of tempering, thus facilitating the work and saving the time usually lost by having constantly to renew the edge by sharpening, consequently making them more durable in wear and better adapted for all kinds of work, every blade being guaranteed of the same temper.

Caution. None are genuine except marked Saynor, or Saynor, Maker. Other marks would cause the purchaser disappointment.

Wind Power.

J. R. PEILL, 17, New Park Street, Southwark, S.E., begs to inform intending purchasers that he has now increased facilities for Manufacturing the Patent WIND ENGINES for Pumping, Grinding, Chaffcutting, Pulping, &c.

Prospectuses and all information may be obtained by enclosing one postage stamp, and a Wind Engine in full work may be inspected on the Premises daily.

TO BE LET, Two Acres of GARDEN GROUND, with Cottage, and range of nearly 100 feet of Glass Houses, on moderate terms, within 1½ mile of Marble Arch.—Apply at 33, Spital Square, on Monday or Wednesday next, from 12 to 3 o'clock.

To Nurserymen Kitchen Gardeners, &c.

TO BE SOLD, the INTEREST in the LEASE of that old and well-established Nursery, known as BARNES NURSERY, at Merrion, within 1½ mile of the City of Dublin, with the entire STOCK-IN-TRADE, consisting of Greenhouse and Hothouse plants in every variety, Timber and Fruit Trees, Flowers in pots, Shrubs, &c. The Nursery stands on 24 acres 2 roods and 36 perches statute measure, has extensive Green and Hothouses thereon, with all the requisites for the carrying on of the Nursery business; and is held for an unexpired term of 44 years, at the rent of 202*l.* per annum. There are two good substantial moderate sized two-story Dwelling Houses on the ground, with Lodges for foremen and labourers; also a handsome Shop on the public road at the entrance. This is the largest Nursery in Ireland, and its patrons comprise most of the nobility and gentry of the country. It stands on the direct road from Dublin to Kingstown, in the midst of all the fashionable Villas near Dublin; and a portion of the ground might be most profitably employed as a Vegetable Garden, there being no such accommodation near Kingstown, or that side of Dublin. Other portions of the land will presently acquire a high value for building, as it adjoins the extensive building ground of Lord Herbert of Lee, which is becoming rapidly in demand. A Lease for a more extended term can be obtained, if required. If necessary a portion of the purchase money would be allowed to remain out as a charge upon the property.

For particulars apply to John Riddich, Solicitor, 3, Eustace Street, Dublin.

The Proprietor would have no objection to enter into arrangements with an experienced Working Gardener, with a small capital, for the carrying on the business of the Nursery and Vegetable Gardens, or with one or more for the working of each separately.

Sales by Auction.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, March 4, at 12 o'Clock precisely, 250 Pens of choice POULTRY and PIGEONS from well known breeders and exhibitors.

On view the Morning of Sale, and Catalogues had.

Important Sale of Seeds from United States, Canada, California, Caucasus, Greece, and Mexico.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 5, at half-past 12 o'Clock precisely, a large quantity of CONIFEROUS SEEDS, comprising Cupressus funebris, C. Uhdeana, Lawsoniana; Juniperus excelsa; Pinus Coulteri, P. muricata; Abies Pinsapo, Fraseri, Nordmanniana, grandis, Cephalonica, Reginæ, Amaliæ; Wellingtonia gigantea; Virgilia lutea, alba, Apollinis, Ceanothus thyrsiflorus, &c.

On view the Morning of Sale, and Catalogues had.

Important Sale of Dried Plants.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on FRIDAY, March 7, at half-past 12 precisely, the Valuable and Important COLLECTION of DRIED PLANTS and FUNGI formed by the late Comte Alfred de Limminghe, of Brussels.

On view the Day prior and Morning of Sale, and Catalogues had.

Roses, Hollies, Fruit Trees, Bulbs, Lilies, Pinks, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, March 8, at half-past 12 o'Clock precisely, 2500 strong Bulbs of Gladioli—Brenchleyensis, Gandavensis, ramosus, floribundus; Standard, Dwarf and Climbing Roses, Pinks, Lilium giganteum, Polyanthus, Yuccas, Strawberries, Raspberries, Snowberries, Hollies, Filberts, Evergreens, Fruit Trees, Araucarias, Azaleas, Almonds, &c.

On view the Morning of Sale, and Catalogues had.

Clearance Sale for the British Land Company, Limited.

MESSRS. PROTHEROE and MORRIS are instructed to SELL by AUCTION, on the Premises, Tilney Hall, George Lane, Wanstead, Essex, N.E., within 10 minutes walk of the Snaresbrook Railway Station, on the Woodford and Loughton Branch, on WEDNESDAY, March 5, at 11 o'Clock, the whole of the EVERGREENS, DECIDUOUS SHRUBS, and ORNAMENTAL TREES; some handsome Dwarf-trained Fruit Trees, Box Edging, 2000 yards of Turf, Rhubarb, and Herbaceous Plants; two Rustic Summer Houses, Timber Trees, including three large Walnuts, Elm, &c.; a Lean-to Greenhouse, 24 feet 6 by 14 feet; a 3-Light Pit, Haymaking Machine, nearly new; Rick Cloth, a newly-erected Span-roof Greenhouse (Kent's Patent), put together with screws, 25 feet by 14 feet, complete; a useful Brown Cob, a covered Spring Van, and other effects.

May be viewed two days prior to the Sale. Catalogues may be had on the Premises; at the George Inn, Wanstead, N.E.; the Eagle, Snaresbrook, N.E.; at the Offices of the British Land Company Limited, 14, Moorgate Street, E.C.; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

Handsome English-grown Camellias, &c.
To Gentlemen, Nurserymen, Florists, and Others.

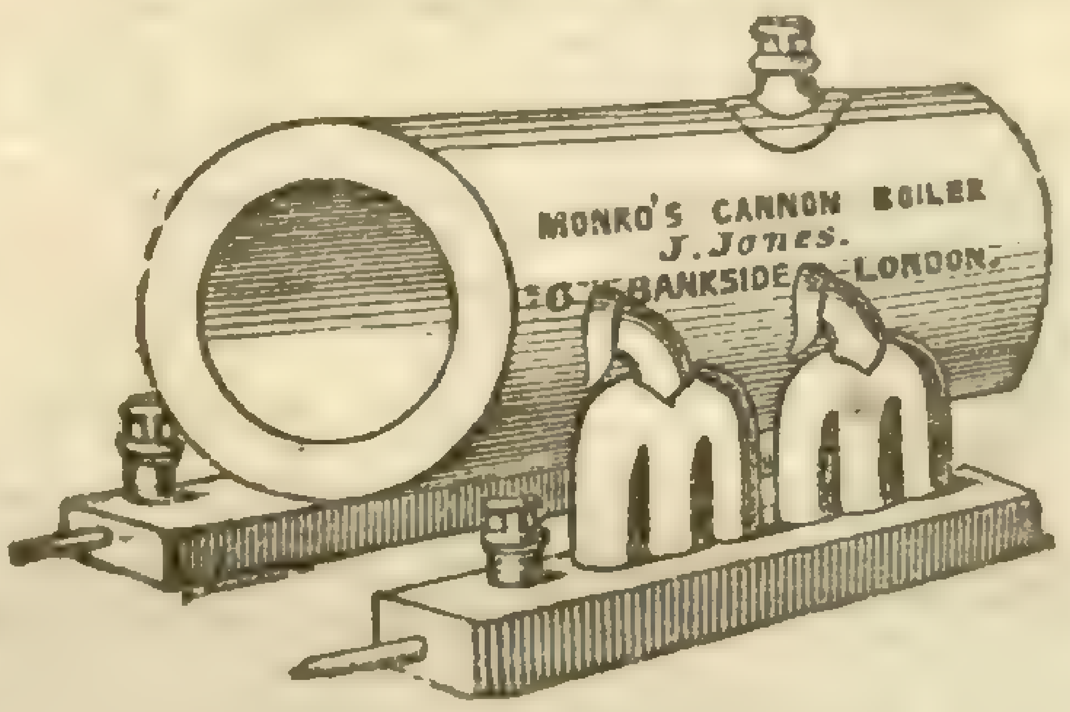
MESSRS. PROTHEROE and MORRIS will SELL by AUCTION at the Mart, on FRIDAY, March 7, at 12 o'Clock, about 200 choice DOUBLE CAMELLIAS, beautiful plants, from 1 to 6 feet, including the most approved kinds, abundantly furnished with bloom buds; fine AZALEA INDICA in flower; a superb assortment of about 300 very fine STANDARD, HALF-STANDARD, DWARF and CLIMBING ROSES; a fine collection of AMERICAN PLANTS; Lilium lancifolium rubrum, Ericas, Epacris, Fuchsias, Verbenas, Pæonias; Dahlias in dry roots, &c.

May be viewed the Morning of Sale; Catalogues had at the Mart; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

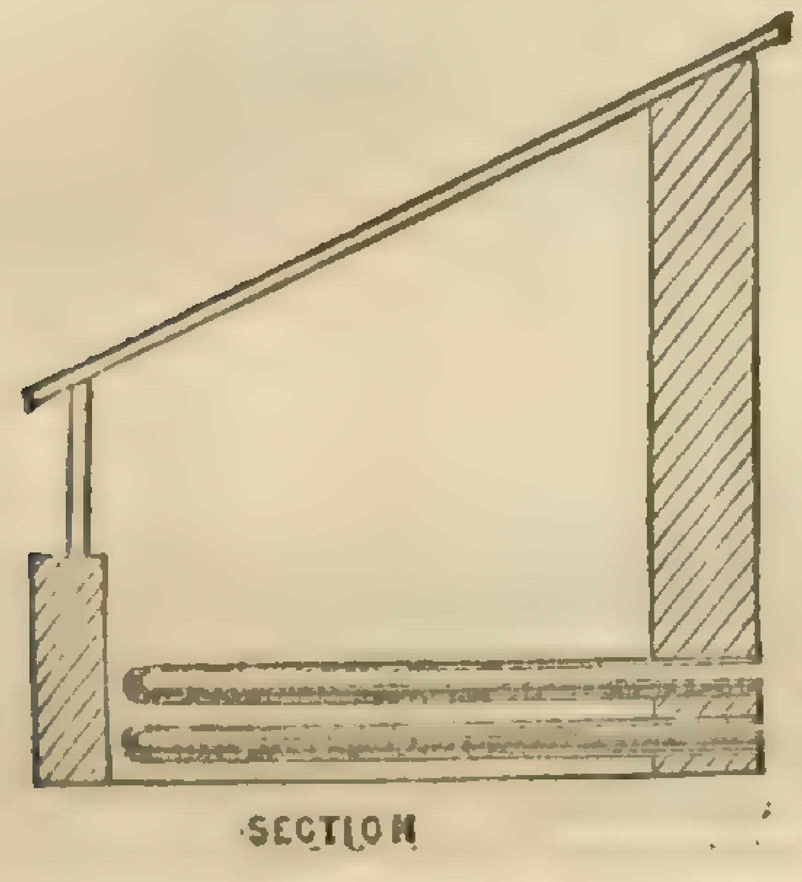
24-inch Wrought Iron	£6 10 0
30-inch "	7 10 0
36-inch "	8 10 0
48-inch "	12 0 0
60-inch "	20 0 0
72-inch "	25 0 0

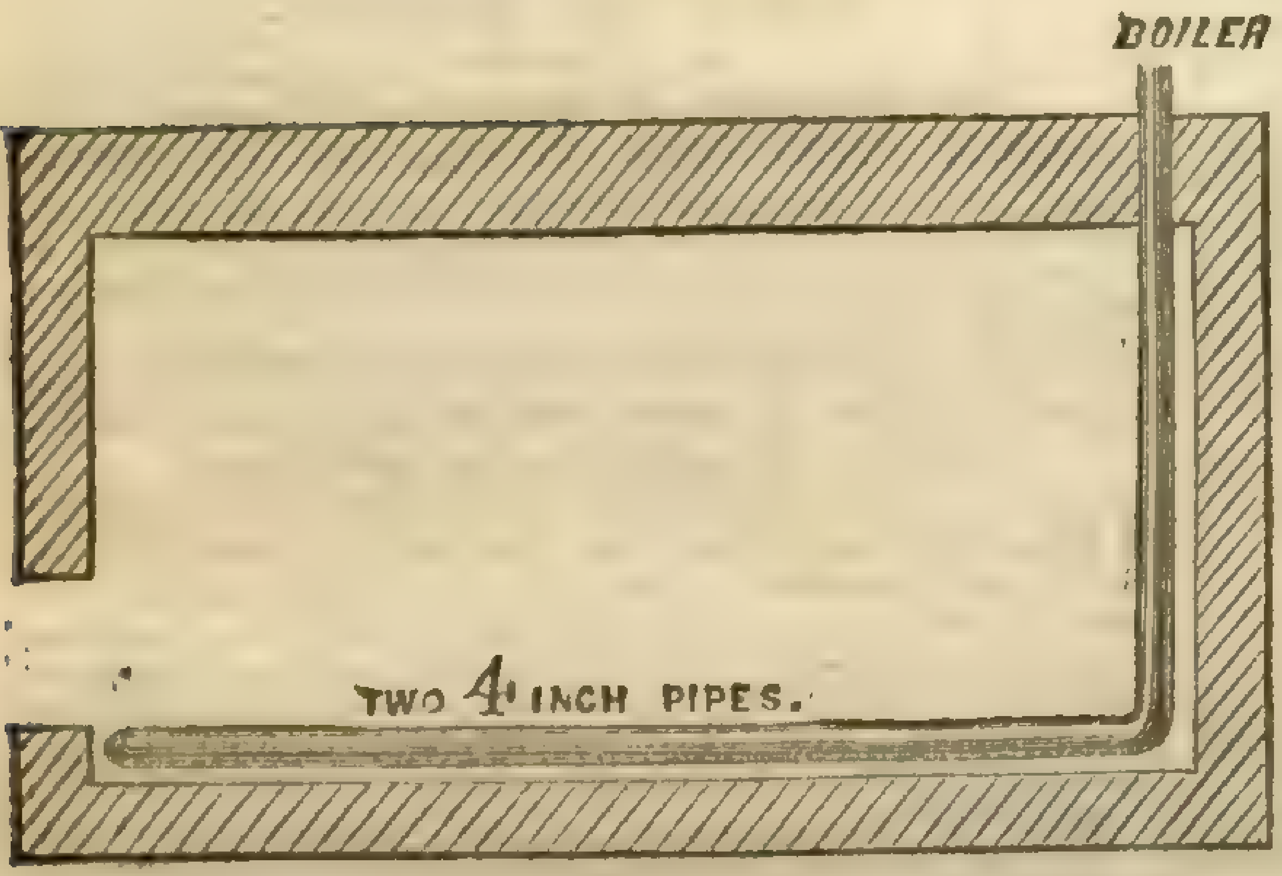


MONRO'S CANNON BOILER.

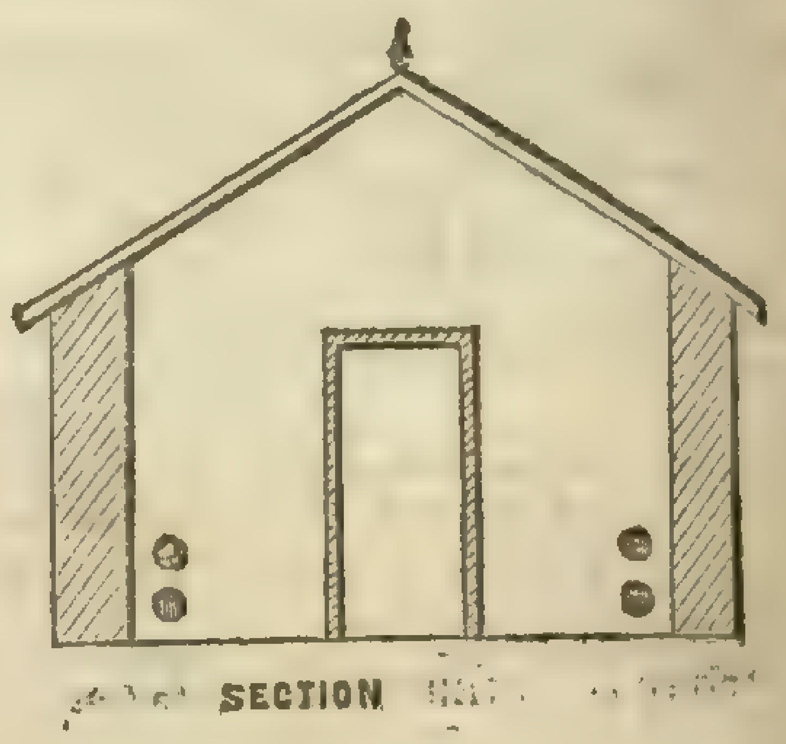
These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by

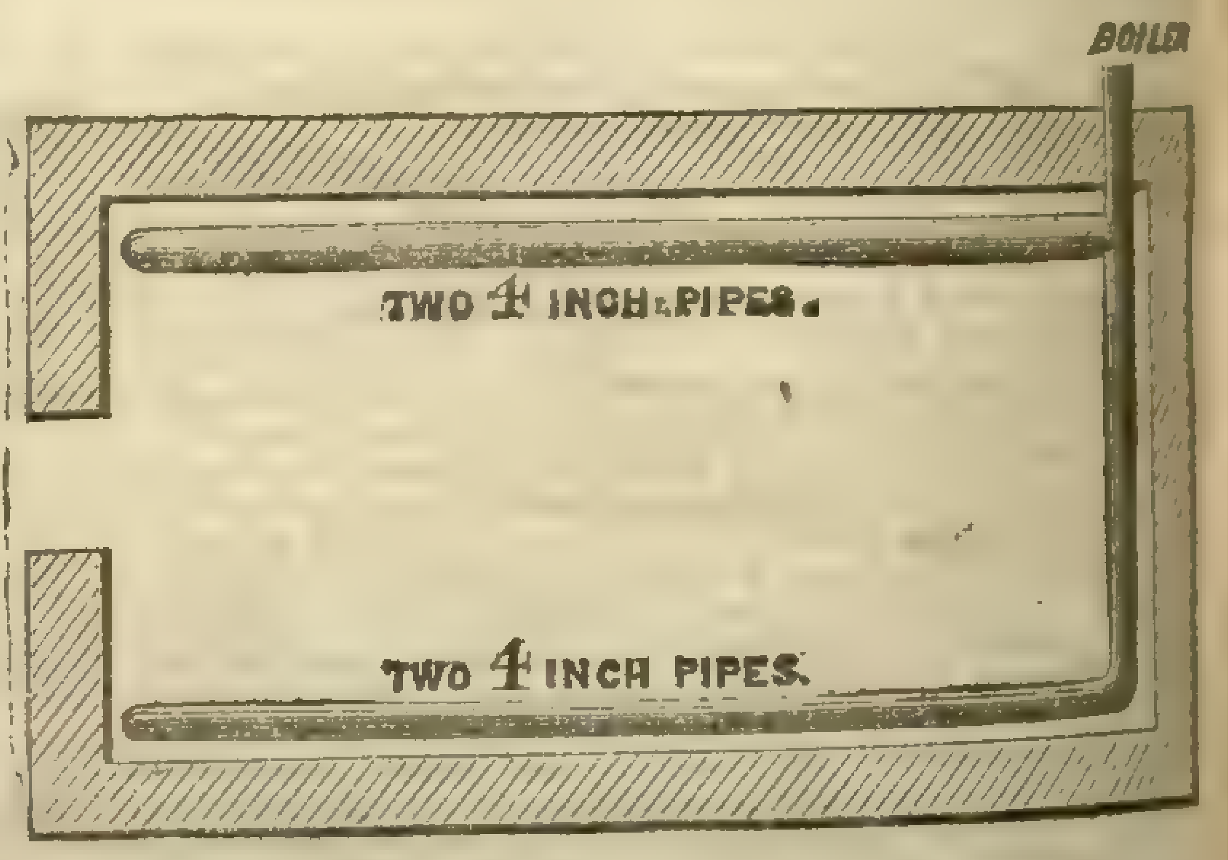
PLAN No. 1.





PLAN No. 3.





J. JONES,

6, BANKSIDE, SOUTHWARK,

LONDON, S.E.

Prices for

HOT-WATER PIPES, ELBOWS,

TEES, SYPHONS, VALVES,

TROUGH PIPES,

ORNAMENTAL COIL CASES,

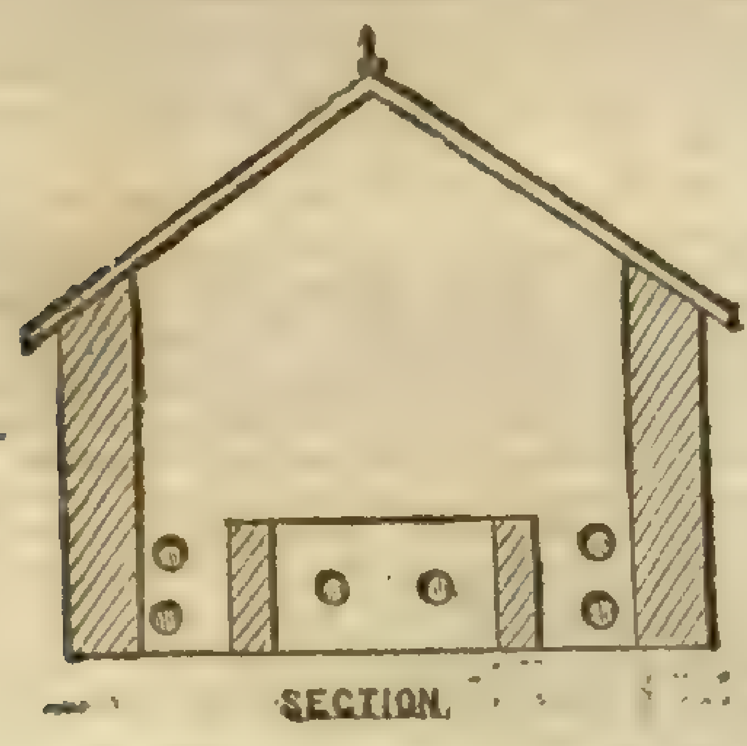
BECK'S PATENT VALVES, &c.; or

ESTIMATES

for

HOT-WATER APPARATUS,

PLAN No. 4.



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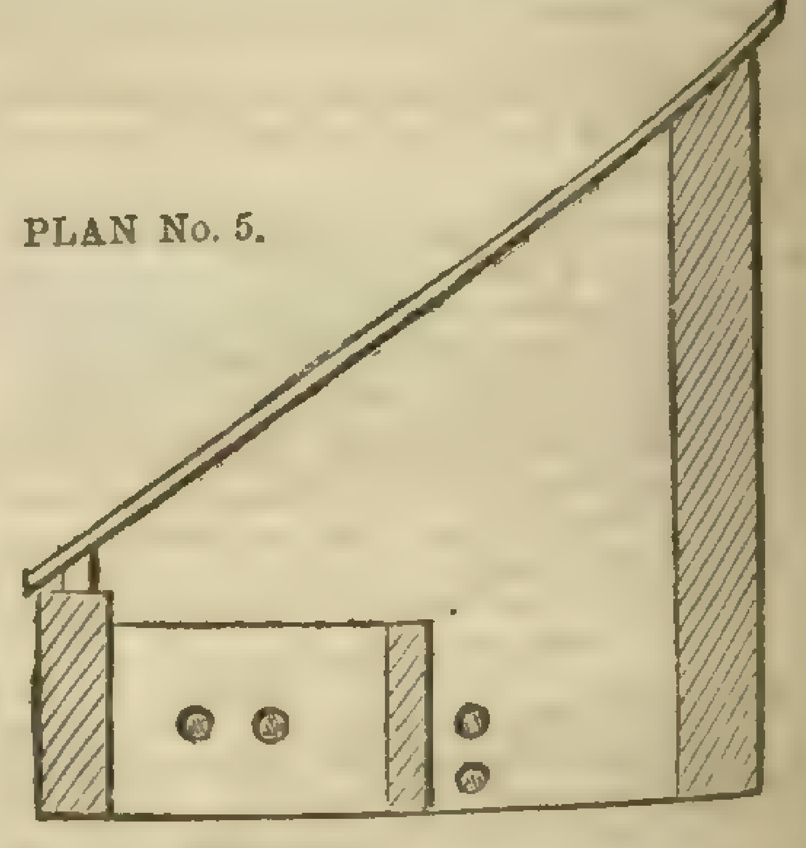
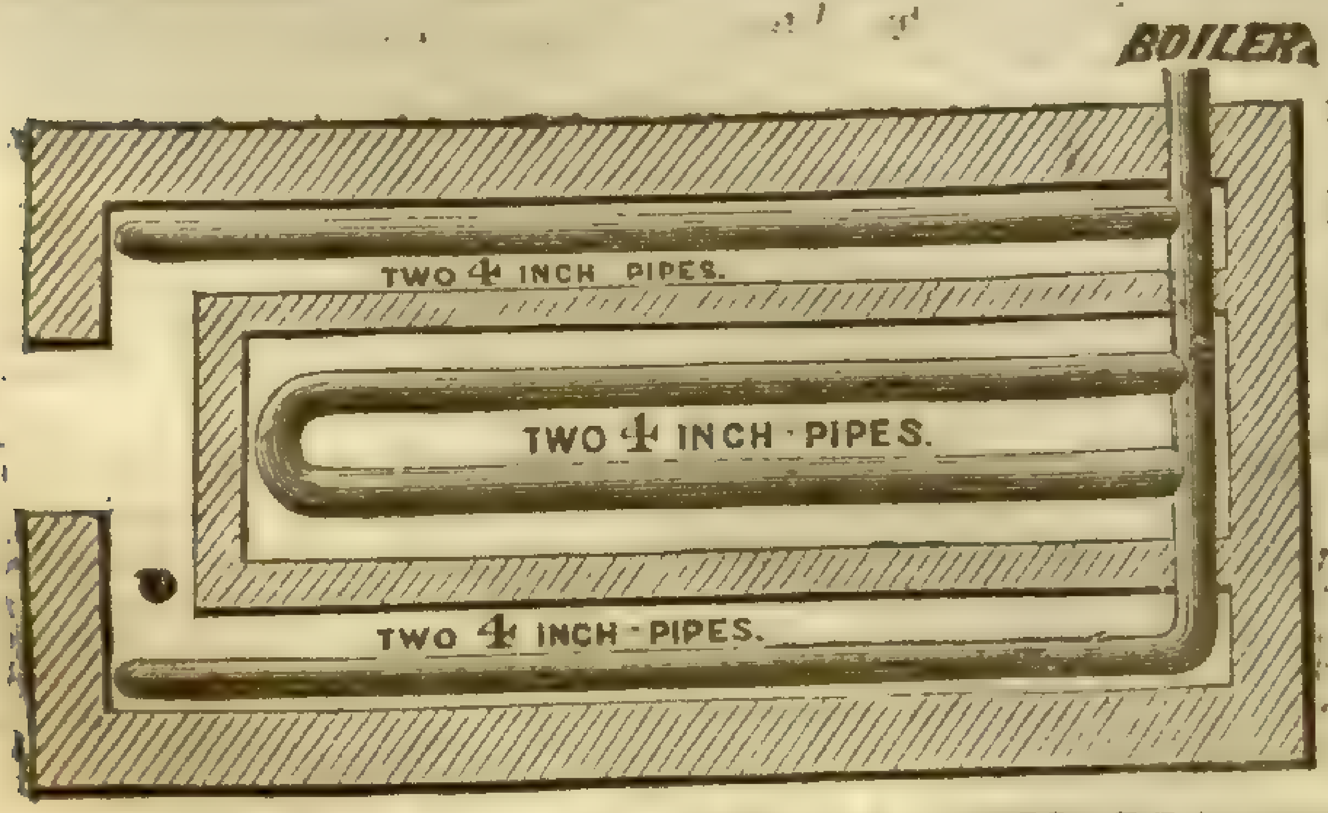
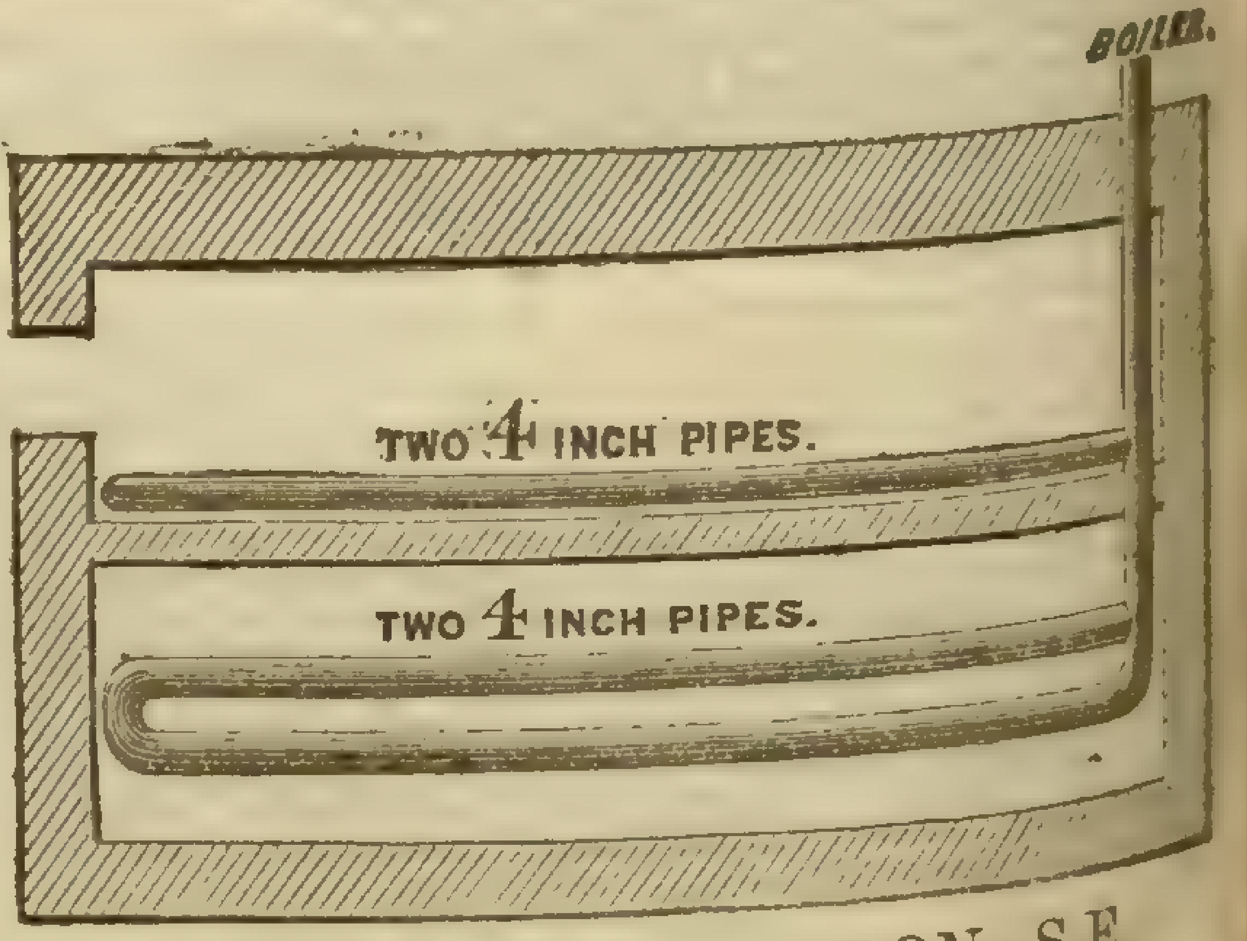


as shown in any of the annexed plans, and with Pipes of any size as required, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON, SADDLE, or CYLINDER BOILERS, will be sent, with an ILLUSTRATED CATALOGUE, free on application.



J. Jones has also made arrangements with Mr. Hereman, of Pall Mall, to Heat any Houses manufactured on Sir Joseph Paxton's principle.



J. JONES,

HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, SOUTHWARK, LONDON, S.E.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 10.—1862.] SATURDAY, MARCH 8. Price Fivepence. STAMPED EDITION, 6*d*.

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☞ NOTICE TO ADVERTISERS.—*Advertisements should be sent so as to reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

ROYAL HORTICULTURAL SOCIETY'S HYACINTH and CAMELLIA SHOW, WEDNESDAY, March 19, at South Kensington. Open at 1 o'Clock. Band commences at 2 30.
Tickets, 2*s*. 6*d*. each, can be had at the Gardens, and of the principal Librarians, Musicsellers, &c. Also Packets of 25 Five Shilling Tickets, price 5*l*., available according to the daily [illegible] during the season.

CRYSTAL PALACE.—The GRAND FLOWER SHOW will place on SATURDAY, May 24; and the GREAT ROSE SHOW on SATURDAY, July 5.
For Schedules of Prizes apply to Mr. W. HOUGHTON, Secretary to the Flower Show, Crystal Palace, Sydenham.

THE TUNBRIDGE WELLS HORTICULTURAL FÊTE for 1862 will be held on FRIDAY, July 4, in the Grounds adjoining the Calverly Hotel, and close to the Railway Station.
The Schedule of Prizes may be had upon application to Mr. [illegible] F. LOOF, Hon. Sec., 8, Parade, Tunbridge Wells.

GRAND EXHIBITION of CAMELLIAS, now in FULL BLOOM at the Vauxhall Nursery, Wandsworth Road, near the Toll Gate. Admission free, from 10 till 6.
MILNE & CO.

New Roses of 1862.
PAUL AND SON have now ready their usual fine Plants of the finest novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

New Roses, &c.
WM. PAUL'S CATALOGUE of NEW ROSES and SPRING PLANTS generally is now ready. Free by post on application to
WM. PAUL, Nurseries and Seed Warehouse, Waltham Cross, N.

New Roses for 1862.
J. AND J. FRASER, of the Lea Bridge Road Nurseries, N.E., beg to offer good Plants of the NEW ROSES of 1862
A DESCRIPTIVE LIST will be forwarded on application.

NEW ROSES for 1862.—36 varieties (the pick of the year) offered in fine strong plants, a DESCRIPTIVE LIST of which may be had on application to
BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

E. G. HENDERSON AND SON, NURSERYMEN AND SEED MERCHANTS, respectfully announce their NEW SEED CATALOGUE and GUIDE for 1862, free on application.
Wellington Nursery, St. John's Wood, London, N.W.

RUSSELL'S PYRAMID PRIMULA.—Seed of this magnificent strain, which cannot fail to give satisfaction. In packets, price 2*s*. 6*d*.
GEO. CLARKE, Nursery, Streatham Place, Brixton Hill, S.

AZALEAS, CAMELLIAS, EPACRIS, and ERICAS. —We respectfully invite an inspection of our Stock of the above, which is large, in the finest health, and full of flower buds.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

TRITOMA UVARIA.
For strong plants of this splendid flower apply to
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

ARAUCARIA EXCELSA for SALE, 12 feet high. Healthy and well furnished. Price on application to
MARTIN & SONS, Hull.

PELARGONIUMS.—Intending purchasers should send for our DESCRIPTIVE CATALOGUE, post free.
J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

DOBSON'S SPLENDID HYBRIDISED CALCEOLARIA, is unequalled for variety, form, distinct and striking colours and habit. In sealed Packets, 1*s*. 6*d*., 2*s*. 6*d*., 3*s*. 6*d*., and 5*s*. each.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIZE CINERARIA SEED.—Unsurpassed for quality. 1*s*., 2*s*. 6*d*., and 5*s*. per Packet.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIMULA SINENSIS FIMBRIATA, ex. ex.— Sealed Packets, 1*s*., 2*s*. 6*d*., and 5*s*.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

POLYANTHUS SEED from the best Laced Flowers, in packets. Sent free on receipt of 13 Postage Stamps.
JAMES WOODS, Florist, Harwich, Essex.

Good Seeds, Carriage Free.
SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

Choice New Flower Seeds, post free, See
SUTTON'S ADVERTISEMENT at page 162 of the *Gardeners' Chronicle* of Feb. 22.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

New Garden Seeds.
JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

Now Ready.
BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See large Advertisement.
Covent Garden Market, W.C.

Vegetable and Flower Seeds.
PAUL AND SON'S CATALOGUE of the above, including ASTERS and STOCKS, with DESCRIPTIVE LIST of the best 100 GLADIOLI, is now ready, post free.
"Old" Cheshunt Nurseries, Herts.

New Seeds of the best quality.
J. ROBERTS AND SON'S CATALOGUE is now ready. Post free on application
Seed Warehouse, Vale Street, Denbigh, N.W.

Seeds, Seeds, Seeds.
WM. CUTBUSH AND SON'S CATALOGUE is now ready, post free on application.
Seed Establishment, Highgate, London, N.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

Phalænopsis amabilis and rosea.
R. WARNER, Broomfield, Essex, has several fine Plants to dispose of; all healthy and good varieties. Prices on application.
When three or more are taken by Nurserymen an allowance will be made.

DOWNIE, LAIRD, AND LAING beg to intimate that their NEW CATALOGUE of FLORIST FLOWERS, NEW FLOWER SEEDS, &c., is now ready, and may be had free on application.
17, Frederick Street, Edinburgh, and Stanstead Park, Forest Hill, London, S.E.

Superb Hollyhocks.
WILLIAM PERRY has published a CATALOGUE of HOLLYHOCKS for the Spring of 1862, containing all the most popular kinds.
Also strong SEEDLINGS from best varieties, mixed, 4*s*. per doz., or 25*s*. per hundred.
Sawbridgeworth, Herts.

SEEDLING HOLLYHOCKS, saved from the finest named varieties in cultivation. Will bloom early this year. 10*s*. per 100. Trade price on application.
ROBERT WARD, The Rosery, Ipswich.

SUPERB HOLLYHOCKS.—
12 Superior Show Flowers .. .. 18*s*. 0*d*.
12 Good ditto 9 0
The Trade supplied.
For CATALOGUES, address R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk.

RASPBERRY CANES for SALE.—A large quantity of Raspberry Canes for Sale. Price on application to
WILLIAM BAGLEY, Munster Farm, Fulham, S.W.

To the Trade.
WILLIAM EPPS, Jun., begs to offer FINE DWARF-TRAINED PLUMS, 24*s*. per dozen.
The Nurseries, Ashford, Kent.

STRONG FRUITING VINES, 7*s*. 6*d*. and 10*s*. 6*d*. LIST gratis and post free.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

Lady Downe's Vines.
JAMES BACKHOUSE AND SON can offer fine healthy young plants.
York Nurseries.—March 8.

WELLINGTONIA GIGANTEA.—Seedling Plants of 1861 in single pots, per dozen, 21*s*. Price to the Trade per 100 on application.
J. HENCHMAN, Edmonton, near London, N.

COMMON LAURELS (Bushy).
4 to 5 feet, 20*s*. per 100; 170*s*. per 1000.
3 to 4 feet, 15*s*. per 100; 130*s*. per 1000.
R. HAYNES, Henwick Nursery, Worcester.

To the Trade.
WILLIAM WOOD AND SON beg to offer fine healthy 1 year Seedlings of UPRIGHT CYPRESS and CHINESE ARBOR VITÆ at 20*s* per 1000, or cheaper to purchasers of large quantities.
Maresfield, near Uckfield, Sussex.

Large Tartarian Arborvitæs.
FOR SALE, 600 of the above, all strong, healthy and well-formed, from 5 to 6 feet high, and in excellent condition for transplanting. Price moderate.
Apply to H. and F. SHARPE, Wisbech.

Agricultural Seeds.
GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

Agricultural and Garden Seeds.
H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

Present low Prices of Farm Seeds—See
SUTTON'S PRICED LIST, which will be sent free to any address.
SUTTON & SONS, Seed Growers, Reading.

How to Cultivate Asparagus.—See
SUTTON'S AMATEUR'S GUIDE, pages 6 and 27, post free for 6 Stamps, or gratis to customers.
SUTTON & SONS, Royal Berks Seed Establishment, Reading.

GIANT ASPARAGUS ROOTS, 2*s*. 6*d*. per 100.— This delicious vegetable does not require half the expense usually incurred in planting it. For instructions, see RICHARD SMITH'S SEED LIST for 1862.
RICHARD SMITH, Nurseryman, Worcester.

Henry's Prize Hybrid Leek.
DOWNIE, LAIRD AND LAING are now sending out Seed of the above in Packets at 1*s*.
17, Frederick Street, Edinburgh; and Stanstead Park, Forest Hill, London, S.E.

Altringham Carrot Seed.
CHARLES SHARPE AND Co., Sleaford, have the above to offer to the Trade; new Seed of their own growing. Price on application.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

NUTTING'S selected DWARF RED BEET, recommended by the Horticultural Society as the best in Cultivation. The Trade supplied.
NUTTING & SONS, Seed Warehouses, 60, Barbican, London, E.C.

SUTTON'S YELLOW GLOBE MANGEL WURZEL.—The heaviest and best sort known, price 8*d*. per lb., or 63*s*. per cwt. All other sorts 8*d*. per lb.
PRICED LISTS of FARM SEEDS, Post-free.
Royal Berkshire Seed Establishment, Reading.

DICKINSON'S ITALIAN RYE-GRASS SEED may now be had by Agriculturists applying to his Bailiff, Mr. W. HUNTER, New Park Farm, near Lymington, Hants. 48*s*. per quarter; or 7*s*. per bushel, for present payment only.

Good Clover Seed.
GENUINE NEW CLOVER SEED may be obtained of the undersigned. Prices (according to market and quantity required) will be forwarded on application.
SUTTON & SONS, Seed Growers, Reading, Berks.

DIOSCOREA BATATAS (or CHINESE YAM), 2*s*. 6*d*. per doz., 15*s*. per 100. Larger tubers, 3*s*. 6*d*. per doz.
JOHN CATTELL, Westerham, Kent.

Dioscorea Batatas, or Chinese Potato.
J. IVERY AND SON beg to inform their Patrons that this is the most favourable month for planting this useful Vegetable. Strong sets are now ready, at 1*s*. per dozen, or 7*s*. 6*d*. per 100; likewise whole Tubers, from 2*s*. 6*d*. to 6*s*. per dozen.
Dorking Nursery.

Dalmahoy Early Potatoes from Scotland.
PETER LAWSON AND SON can supply the above, and other varieties of SEED POTATOES.
27, Great George Street, Westminster, London, S.W.

SEED POTATOES—FORTY-FOLD.—The undersigned has a few Tons of the above at low rates. Prices on application.
CHRISTMAS QUINCEY, Seedsman, Peterborough.

Seed Potatoes.
H. AND F. SHARPE are now prepared to take orders at very moderate prices for all the leading sorts of POTATOES, including MYATT'S Prolific ASH-LEAVED KIDNEY, the finest and most prolific in cultivation.
Prices may be had on application.
Seed Growing Establishment, Wisbeach.

Ashleaf Kidney Potatoes.
JAMES BACKHOUSE AND SON can supply the above, true, and of very fine quality. Also SODEN'S EARLY OXFORD, LAPSTONE KIDNEY and DALMAHOY Prices on application.
York Nurseries.—March 8.

EARLY OXFORD POTATO, an excellent Cropper, and the best for eating all the year round, 6*s*. per bushel
A reduction made if 1 Ton or more be taken.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

WEBB'S IMPERIAL KIDNEY POTATOES for quantity, quality, beauty, and size, can hardly be equalled, and not surpassed by any other Potato. Price 12*s*. per bushel.
Apply GEORGE MACE, Calcot Gardens, near Reading.

TO POTATO GROWERS.—WALKER'S EARLY REGENTS 1*s*., DALMAHOYS 1*s* 6*d*. per Stone at Swaffham Station. The above grown from sets direct from the North of Scotland. Also "WHITE TRANSPARENT" CARROT SEED, of last year's growth, 2*s*. 6*d*. per lb.
Apply, THOS. M. HUDSON, Castleacre, Brandon.

NEWSPAPER

New Roses for 1862.
4000 Strong Plants in 51 New kinds.

WM. WOOD AND SON can supply really strong, robust, and healthy plants of all the NEW ROSES of 1862, worth growing, at 5s. each.
A liberal Discount allowed to the Trade.
DESCRIPTIVE CATALOGUES on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

STANDARD ROSES, with straight stems and good heads, the finest varieties; 30s., 36s., and 42s. per dozen.
GRAPE VINES for PLANTING OUT.—All the leading sorts, with stout, short-jointed, well ripened canes; 3s. 6d., 5s., and 7s. 6d. each.
GRAPE VINES for FRUITING in POTS.—Extra fine, strong bearing rods.
GLADIOLUS.—Splendid hybrids of Gandavensis, 6s., 9s., 12s., and 18s. per dozen; 100 distinct varieties, 84s.; 100 newer, 126s.
NEW BEGONIAS.—Twelve of the most distinct and beautifully variegated Continental varieties, strong plants, for 18s.
CAMELLIAS with FLOWER-BUDS.—Including the best new varieties, fine plants, 30s. to 42s.; extra size, 60s. and 84s. per dozen.
DESCRIPTIVE CATALOGUES, with all particulars, forwarded on application to
JAMES DICKSON & SONS, The "Newton" Nurseries, Chester.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.
For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.
Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.
The Royal Nursery, Bagshot, Surrey.

Gladioli and other Choice Bulbs for Spring and Summer Flowering.

B. S. WILLIAMS will be happy to forward, post free, to all applicants, his DESCRIPTIVE and PRICED CATALOGUE of the above, containing select lists of all the best varieties.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Phalænopsis Schilleriana.

B. S. WILLIAMS has much pleasure in informing his friends and the public that this new and beautiful VARIEGATED ORCHID is now in flower at the Nursery, and he will be happy to show it to any one favouring him with a visit.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.
*** The "Favourite" Omnibuses, from the London Bridge Railway Stations, by the Bank and Post Office; and from Charing Cross, through the Strand and Holborn, pass the Nursery every 10 minutes.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Excellence and Economy.

TO PURCHASERS OF VEGETABLE AND FLOWER SEEDS.—SEND FOR JAMES TYNAN'S CATALOGUE, select your own Seeds, and save one-half the cost. No other house supplies Seeds of equal quality on the same terms. Importer of German and other Seeds.
Seed Warehouse, 68, Great George Street, Liverpool.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.—

50 in 50 well selected vars.	..	..	..	£2 2 0
50 in 25	ditto	ditto	..	1 10 0
25 in 25	ditto	ditto	..	0 15 0
12 in 12	ditto	ditto	.. 6s., 9s., and	0 12 0

Mixed, 3s. 6d. per dozen; 25s. per 100.
BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

Superb Balsams.

F. AND A. SMITH are now sending out Seed of their Superior BALSAMS in collections of

9 Colours, separate	.. .. ..	2s. 6d. each.
The same, mixed	.. .. ..	2 0 ,,
Half the quantity	.. .. ..	1 0 ,,

The above are in 18 distinct and bright colours, of carefully selected Seed, from the most double varieties.
Dulwich, Surrey.

New Cinerarias, Gloxinias, and Pelargoniums.

F. AND A. SMITH can still supply a few sets of their New GLOXINIAS, CINERARIAS, and PELARGONIUMS.
See *Gardeners' Chronicle* of Oct. 5, 1861, and CATALOGUE, which may be had gratis.
Dulwich, Surrey, S.

Pelargoniums.

GEORGE SMITH begs to offer from a splendid Stock of Choice and well grown Plants the following, viz.:—

		per dozen
SHOW GERANIUMS from	.. ..	9s. to 30s.
French and English Spotted	.. ..	9s. to 30s.
Fancy	.. ..	9s. to 30s.
Pink, Scarlet and White, Zonale	.. ..	9s. to 12s.
Variegated Leaved	.. ..	9s. to 20s.

A DESCRIPTIVE CATALOGUE of the above, together with Fuchsias, Verbenas, Dahlias, Petunias, Chrysanthemums, Bedding Plants, &c., in exchange for one postage stamp.
Tollington Nursery, Hornsey Road, Islington, London, N.

Calceolaria Canariensis.

G. SMITH has great pleasure in recommending this unsurpassed and beautiful variety; it has been shown in the past season at all the leading exhibitions round London, and has established itself as the best for all purposes, as it gives two-thirds more bloom in a pot and one-third more in beds than any other Calceolaria in cultivation; colour bright Canary Yellow, the mouth closed, so as to resist the wet; the habit is all that could be wished. Has taken a First-class Certificate at the Royal Botanic Gardens, Regent's Park; also a First-class Certificate from the Floral Committee of the Horticultural Society, for its fine qualities. Now ready, in strong plants, at 1s. 6d. each, or 12s. per dozen. A remittance must accompany the order of unknown correspondents.
Tollington Nursery, Hornsey Road, Islington, London N.

EXHIBITION of NEW ROSES, HYACINTHS, &c.

THE COLLECTION OF HYACINTHS, NEW ROSES, &c.,

AT THE

WALTHAM CROSS NURSERIES,

Will this year be at its best the last 14 days of March. Every new variety of merit has been added, and the Show is expected to surpass that of last year.

Entrances: Platform, Waltham Station, E.C. Railway (half an hour's ride from London); and Turnpike Road, Waltham Cross, N. Admittance free.

WILLIAM PAUL, WALTHAM CROSS, N.—March 8.

N.B.—Strong Plants of all the NEW ROSES ready in April.

WM. CUTBUSH & SON'S
ANNUAL GRAND EXHIBITION OF HYACINTHS.

WM. CUTBUSH AND SON respectfully announce that their GRAND EXHIBITION of HYACINTHS and other SPRING FLOWERS will be held at their

NURSERIES, HIGHGATE, LONDON,

From THURSDAY, March 20, till SATURDAY, March 29. Admission Free each day, from 10 A.M. till 6 P.M.

This Collection is universally acknowledged to be unsurpassed in the Kingdom, and contains such varieties as cannot be seen elsewhere in the country.

HIGHGATE NURSERIES, LONDON, N.

ESTABLISHED UPWARDS OF A CENTURY.

NOVELTIES AND CHOICE SEEDS

OFFERED BY

BUTLER & McCULLOCH,

SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.

	Per Packet—s. d.
ACACIA ACANTHOCARPA, splendid blossoms and very graceful foliage	1 0
ALYSSUM SAXATILE COMPACTUM, profusely covered with rich golden blossoms, a suitable companion to Arabis alpina and Saponaria ocymoides	1 0
AQUILEGIA CARYOPHYLLOIDES, fine hardy perennial, blossoms richly striped	0 6
ARCTOTIS GRANDIFLORA, splendid bedding plant after the character of Gazanea splendens, but the blooms remaining always open	0 6
CANNA GIGANTEA, the finest foliage of all the Cannas, admirably adapted for centres of beds in warm situations	0 6
CELOSIA AUREA PYRAMIDALIS	1 0
,, KERMESINA PYRAMIDALIS. These plants are among the finest yet produced for conservatory, greenhouse, or drawing-room decoration, their compact habit and graceful feathery spikes of bloom have a most elegant appearance; colour, rich golden yellow and bright crimson	1 0
CLARKIA PULCHELLA FLORE PLENO, a new and desirable plant for ornamental purposes; colour a rich magenta	1 0
CLIANTHUS DAMPIERI, one of the finest greenhouse plants ever introduced, scarlet and black	2 6
CLINTONIA PULCHELLA ATROCINEREA	0 6
,, ,, GRANDIFLORA	0 6
CLITORIA GESNATIA ATROCŒRULEA, splendid greenhouse or conservatory climber, rich cerulean blue	1 0
CONVOLVULUS CANTABRICUS STELLATUS ..	0 6
CUPHEA ZIMPANI, one of the best for bedding purposes, colour violet purple	1 6
EUCHARIDIUM GRANDIFLORUM ALBUM	1 0
,, ,, ROSEUM	1 0

	Per packet—s. d.
DELPHINIUM GRANDIFLORUM CŒLESTINUM, celestial blue, spikes of bloom long and compact ..	[illegible]
GYNERIUM ARGENTEUM, PAMPAS GRASS, 6d. and	1 [illegible]
HIBISCUS GIGANTEUS, splendid greenhouse plant, seed very scarce	1 [illegible]
HUNNEMANNIA FUMARIÆFOLIA	[illegible]
IPOMŒA LEARII, superb greenhouse variety, rich blue, shading to red	1 [illegible]
IPOMŒA LIMBATA ELEGANTISSIMA, the finest outdoor variety; an intense purple centre, in the form of a star, with a broad pure white margin	[illegible]
JACOBÆA, new double magenta	1 [illegible]
LINUM FLAVUM, rich golden yellow, the best in habit of all the Linums, forms an admirable pot plant ..	1 [illegible]
LINUM LUTEUM CORYMBIFLORUM, straw-coloured variety, more diffuse in habit than the preceding ..	[illegible]
NEMESIA COMPACTA INSIGNIS, bright blue	1 [illegible]
,, ,, LA SUPERBE, delicate rose-coloured	1 [illegible]
ŒNOTHERA CAMPYLOCARPA GRANDIFLORA, crimson orange, very striking	1 [illegible]
ŒNOTHERA LAMARCKIANA, bright golden yellow, a profuse bloomer, with extraordinary large flowers ..	1 [illegible]
SOLANUM JASMINOIDES, splendid half-hardy climber, producing large bunches of white Jessamine-like blossoms	1 [illegible]
TROPÆOLUM CRYSTAL PALACE GEM	1 [illegible]
ZINNIA ELEGANS FLORE PLENO, the finest novelty that has been introduced for many years, blooming from July until the frost. The seed we offer is saved from the finest double varieties only, and cannot fail to give satisfaction .. .. 6d. and	1 [illegible]

DESCRIPTIVE SEED CATALOGUE

May be had free and post paid upon application, containing a List of all the Novelties and most approved varieties of FLOWER and VEGETABLE SEEDS.

To Exhibitors we can strongly recommend our assortments of ASTERS, BALSAMS, STOCKS, &c.

BUTLER & MCCULLOCH confidently recommend the following, as only such selections are made as will insure general satisfaction:—

COLLECTIONS OF FLOWER SEEDS.

Carriage Free.

New Annuals.

12 extra fine varieties ...	... 10s. 0d.	6 extra fine varieties ...		5s. 0d.

Half Hardy Annuals.

100 finest selected varieties	... 30s. 0d.	25 finest selected varieties	...	7s. 6d.
50 ,, ,,	... 15 0	12 ,, ,,	...	4 0

Hardy Annuals.

100 finest selected varieties	... 20s. 0d.	25 finest selected varieties	...	5s. 0d.
50 ,, ,,	... 10 0	12 ,, ,,	...	2 6

VEGETABLE SEEDS OF EVERY DESCRIPTION OF THE VERY BEST QUALITY.

BUTLER AND McCULLOCH, SEED MERCHANTS, COVENT GARDEN MARKET, W.C.

BARR & SUGDEN, 12 KING ST., COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

For Editorial Critique on the above Work see *Gardeners' Chronicle* of February 15, page 144; see also our two last Advertisements.

12, King Street, Covent Garden, London, March 6, 1862.

Letter of thanks from Messrs. BARR & SUGDEN *to the benevolent and microscopic Critic of their Seed Catalogue in the Gardeners' Chronicle.*

We beg to express in very strong terms our best acknowledgments to this gentleman for the manifestly great care with which he has perused our Catalogue. We thank him for pointing out the very few errors which even his lynx-eyed vision has detected. Candour prevents us from attempting for one moment denying their existence. We are thoroughly glad that in a production, hurriedly prepared, and unavoidably hastily printed, there are not many more. Such as they are they are easily explained. It was not necessary to allege ignorance of the gender of "Cosmos" to account for the adjectives having a feminine termination. Possibly the Critic remembers that this plant formerly bore, and in many Catalogues yet bears, and in Loudon's "Hortus Brit.," Edition 1839, the name of Cosmea. This, of course, had a termination of its adjective in *a* not *us*. In making the change from Cosmea to Cosmos, the requisite change in the termination of the adjective was inadvertently omitted. If the Critic will arm his microscope with a very high (fault-finding) power, and look into Sweet's "Hortus Brit." Third Edition, 1839, Edited by GEORGE DON, a man tolerably familiar with the fitting nouns and adjectives, what will he say on finding (p. 360) Cosmos followed by seven species ending in *us*, and one diversifolia, Ott.? Was this ignorance or inadvertence?—"We pause for a reply."

Respecting the error as to the native country of Convolvulus oleifolius, we at once admit it, as a casual mistake. It is some consolation that we did attribute it to a place which does exist, and which produces plants; because we were at first disposed to fancy that we had actually attributed it to the "Island of Barataria."

We had hoped that the "gentleman having brought up so much bile, was better." But we find we are mistaken, for he has again fallen foul of us respecting such "small deer" as the spelling the name of Alonsoa Warscewiczii, which he may find spelt in half a dozen different ways in as many different Catalogues. We must beware of him in future, saying with Sir Andrew Aguecheek, "An I had thought he had been valiant, and so cunning in fence, I'd have seen him —— ere I'd have challenged him," for

He can distinguish and divide
A hair 'twixt south and south-west side;
Knows more than forty of us do,
As far as words and terms can go.

Doubtless this erudite Critic, whom we are almost inclined to think must be himself—

"The faultless monster whom the world ne'er saw,"

knows well that absolute perfection belongs to no human work. The "immaculate" Horace, printed by the Foulis of Glasgow, each sheet of which was hung up, as soon as printed, in the Hall of the University of Glasgow, and a reward offered for the detection of any mistake, has six errors, most of them extremely minute; and the genuine Elzevir Cæsar has one in the paging (page 149, numbered 153), which serves to distinguish the genuine from the spurious. The Horace edited by Dr. Hunter of St. Andrew's, one of the most correctly printed books which ever appeared, has in Vol. II. p. 101, Epist. Lib. I. Epist. IX. line 1, an omission of one letter, by which the prosody of the line is spoilt. How this critic would have gloated over the discovery of these errors!

Next time he puts on his critical spectacles, we hope he will read, and remember these lines from Horace,

Verum ubi plura nitent in carmine, non ego paucis
Offendar maculis, quas aut incuria fudit,
Aut humana parum cavit natura.

Having presented this passage for his consideration, and sincerely hoping he may be guided by it in future, we now respectfully bid him adieu.

BARR & SUGDEN, SEEDSMEN, 12, King Street, Covent Garden, W.C.

All Orders amounting to 21s. sent Carriage Paid to any Railway Station in the Kingdom.

NEW HYBRID MELONS.

BARR AND SUGDEN have just received from their SARDINIAN CORRESPONDENT the following first-class MELONS, which have been carefully tested during the last two seasons against all the known favourites of this class. B. & S. therefore feel the greatest confidence in recommending them to their numerous patrons. Sent by post, each sort 2s. 6d. per packet, or a packet each of the 4 varieties for 7s. 6d.

MELON EMPRESS EUGENIE.—"This variety is a hybrid between Veitch's Perfection (green flesh) and Turner's Scarlet Gem; it has all the desirable characteristics of the former, having a lemon-coloured rind beautiful netted and being rich and melting in flavour, but the flesh is of a brilliant scarlet. This received a First class Certificate."

MELON PRINCESS ALICE.—"A most exquisite variety, of a unique character, to be chosen out among a thousand; form nearly round, and transparent pale buff, beautifully netted, and so thin that the colour of the flesh, a beautiful rosy pink, is seen through it. The flavour is most delicious, and the flesh is thick, melting, and somewhat resembling Turner's Scarlet Gem, but not so close in texture. It has received a First-class Certificate. 20 other varieties being shown."

MELON PRINCE IMPERIAL.—"A magnificent scarlet-fleshed Beechwood, from which variety it could not externally be distinguished. A most remarkable Melon, sugary and melting."

MELON QUEEN VICTORIA.—"It needs no further description of this Melon than to say that in appearance and quality it is a perfect 1st-class Bromham Hall in every respect, except the colour of the flesh, which is a fine deep red, melting and delicious. It has received a First class Certificate."

COLLECTIONS of VEGETABLE SEEDS for 1862.

These Assortments consist of selections from the different sections of our Catalogue, and are suited to Gardens of various sizes; they contain only the most approved Varieties, such as are in demand in Covent Garden Market, and those most suited to secure a succession of the best VEGETABLES from January to December.

		£	s.	d.
No. 6	Collection contains 20 quarts of Peas and other Seeds in proportion for One Year's Supply ...	£3	3	0
No. 5	Collection contains a proportionate quantity of Seed ditto ...	2	2	0
No. 4	ditto ditto ditto ditto ...	1	10	0
No. 3	ditto ditto ditto ditto ...	1	1	0
No. 2	ditto ditto ditto ditto ...	0	15	6
No. 1	ditto ditto ditto ditto ...	0	10	6

☛ For particulars of the above Collections, see our Advertisements of January 21 and 28.

BARR AND SUGDEN, 12, KING STREET, COVENT GARDEN, LONDON, W.C.
(OPPOSITE THE GARRICK CLUB).

Aster Seed of Superior Quality.

J. AND J. FRASER, of the Lea Bridge Road Nurseries, Leyton, N.E., beg to announce that they are now prepared to send out Collections of the finest FRENCH ASTERS.

J. & J. FRASER feel much pleasure in stating that the first Prizes for these Asters at the Royal Horticultural Society and Crystal Palace Exhibitions were awarded to flowers produced from Seed supplied by them.

A PRICED LIST will be forwarded on application.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1861 and SPRING 1862, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

Genuine Garden Seeds, Carriage Free.

GEORGE WOOLLETT'S PRICED CATALOGUE of VEGETABLE and FLOWER SEEDS is now ready, and will be forwarded free on application.

GEORGE WOOLLETT, Nurseryman and Seedsman, Caterham Surrey; and Cold Harbour Nursery, Brixton, S.

Catalogue of Cuttings.

JOHN MORSE'S SEVENTH ANNUAL CATALOGUE of the above is now ready, and will be forwarded, free by post, to any address on receipt of one stamp. It contains all the most choice and new varieties of Dahlias, Fuchsias, Verbenas, Chrysanthemums, Geraniums, Petunias, Phloxes, Pinks, Pansies, Calceolarias, Cinerarias, and all kinds of Bedding Plants, which can be sent free by post at one-third the price of plants.

The Nurseries, Dursley, Gloucestershire.

BEDDING PLANTS.

GERANIUM, CLOTH of GOLD, 6s. to 8s. per dozen.
" GOLDEN FLEECE, 6s. to 8s. per dozen.
" PRINCESS of PRUSSIA, 6s. to 8s. per dozen.
" BIJOU, 5s. to 6s. per dozen.

This is the finest variegated-leaved scarlet-flowered Geranium. See *Gardeners' Chronicle* and *Cottage Gardener*.

These will be sent out in April, and early orders will have the precedence whilst the stock lasts. They will be strong well-rooted plants.

Apply to WILLIAM BARRON, Elvaston Castle, Derby.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England.

The Catalogue may also be had at Mr. MAY'S, 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

Rhododendrons for Under Cover.

JOHN WATERER has an immense quantity of the above in fine bushy plants, of sizes suitable for immediate planting into Covers.

☛ It is worthy of remark that in the most severe weather Rhododendrons are never injured by Hares or Rabbits. Samples, with prices, forwarded on application.

The American Nursery, Bagshot, Surrey.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

NEW, CHOICE, and GENUINE FLOWER SEEDS,

free by Post:—

	s.	d.
100 Packets, choice sorts, including all the best Hardy, Half-hardy, and Greenhouse Annuals..	20	0
50 Packets ditto ditto	10	6
25 Packets ditto ditto	5	6
100 Packets very choice and showy Hardy Annuals ..	13	0
50 Packets ditto ditto	7	0
25 Packets ditto ditto	4	0
12 Packets ditto ditto	2	6
50 Packets Half-hardy Annuals	8	0
25 Packets ditto ditto	5	0
12 Packets ditto ditto	2	6

Smaller packets of above at half the prices quoted.

DAVID BROWNE, Seed Grower and Importer, 41, London Street, Norwich.

DOUBLE ZINNIAS.

ZINNIA ELEGANS FL. PLENO.—Very splendid mixed. Received from a celebrated florist in the South of France, who describes the seed to be saved from magnificent double flowers of unsurpassed beauty, not even semi-double flowers being allowed to bloom. Per packet, 1s.

ZINNIA ELEGANS FL. PLENO.—In 24 varieties separate. These are received from the same eminent florist as the preceding, and are reported to have obtained a first-class certificate "hors ligne," and were deemed worthy of being sent to Paris by his Excellency M. Rouher, Minister of Agriculture of France.

The collection of 24 varieties	18s.
The collection of 12 varieties	9s.
The collection of 6 varieties	5s.

(Corrected from the Catalogue, the price there incorrectly printed).

ZINNIA, NEW MEXICAN SP.—This species is entirely distinct in habit from the Zinnia elegans, dwarf and spreading, and may be regarded among annuals as the finest novelty introduced. It should be extensively grown by all growers of first-class bedding plants, and no flower garden should be without this interesting novelty. For description see Catalogue.

The SEED CATALOGUE, Cultural and Descriptive, supplied on application.

STEPHEN BROWN, Seed Grower and Importer, Sudbury, Suffolk.

Excellence and Economy Combined.

SUTTON'S COLLECTION of GARDEN SEEDS.

THE BEST YET OFFERED.

KITCHEN GARDEN SEEDS.

	£	s.	d.
No. 1. A COMPLETE COLLECTION for One Year's Supply of a Large Garden	3	0	0
No. 2. A COMPLETE COLLECTION, in smaller quantities	2	0	0
No. 3. Ditto ditto ditto ..	1	0	0
No. 4. Ditto ditto ditto ..	0	10	6

If some of the sorts are already possessed, increased quantities of others will be given in lieu of those to be omitted.

HARDY AND SHOWY FLOWER SEEDS (POST FREE),
Which may be sown where they are intended to bloom.

A Collection of the best 100 sorts known	£1	1	0
A Collection of the best 50 sorts known	0	10	6
A Collection of the best 36 sorts knewn	0	7	6
A Collection of the best 24 sorts known	0	5	0

BOKHARA CLOVER, BORAGE, and other Seeds for Bees.
Carriage Free by Rail to all parts of the Kingdom.
Address SUTTON & SONS, Seed Growers, Reading, Berks.

SEEDS FOR THE KITCHEN GARDEN.
SEEDS FOR THE FLOWER GARDEN.
SEEDS FOR THE FARM.

JOHN CATTELL'S CATALOGUE of the above is now ready, and will be forwarded post paid on application. It contains select Lists only of all the best VEGETABLE and FLOWER SEEDS, so that the Amateur with only a small Garden cannot fail to make a proper selection.

His COLLECTIONS of KITCHEN GARDEN SEEDS, which have always given the greatest satisfaction, are sent as usual, viz.:

	£	s.	d.
A Collection for Large Gardens, including every desirable kind of Vegetables, Salads, and Herbs	3	0	0
Ditto, ditto, for a Medium-sized Garden	2	0	0
Ditto, ditto, for a Small Garden	1	0	0
Ditto, ditto, for a Cottage Garden	0	10	6

The Carriage of all parcels of Seeds amounting to 10s. 6d. and upwards, paid to any Railway Station in England or Wales.
Nursery and Seed Establishment, Westerham, Kent.

Fear Not—Fear Not; a New Celery.

G. LAWRENCE, Gardener at the Countess of Ashburnham's, has much pleasure in offering to the public this beautiful CELERY, the best yet ever offered. It is of a beautiful pink hue, and most exquisite flavour, and allowed by all the nobility who have tasted it to be the finest flavour ever sent out. Very hardy, and stood the severity of the winters of 1860 and 1861 better than any other.

Sent out at 1s. 6d. a packet by G. LAWRENCE. Agent: Messrs. Osborn & Sons, Nurserymen, Fulham.

Wood's Defiance Cauliflower.

WM. WOOD AND SON have much pleasure in introducing this new and superior CAULIFLOWER to the notice of their friends and the public generally, and having tested it for several years against Walcheren and other approved varieties, they do not hesitate to pronounce it the best Cauliflower in cultivation. It is quite hardy, of dwarf habit, and produces immense large heads, which are very compact, and most deliciously flavoured.

Stock limited; price per packet, 2s. 6d.

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

*** SEED CATALOGUE post free on application.

Snow's Winter White Broccoli.

JAMES BACKHOUSE AND SON can supply the above named excellent variety, which formed fine heads in their Nurseries early in the winter of 1860. Also DALMENY PARK BROCCOLI; this variety suffered less than any other in their cultivation during the intense frost of 1860.

York Nurseries.—March 8.

VEGETABLE and FLOWER SEEDS of best quality.

Our "NEWTON HERO" CUCUMBER, 1s. 6d. per pckt. "One of the best of the 118 varieties grown by the Horticultural Society, and so highly spoken of in the report, which see."

PRICED LISTS post free upon application.

JAMES DICKSON & SONS, 102, Eastgate Street; the "Newton" Nurseries, Chester; and 23, Market Place, Manchester.

YOUELL'S NORFOLK HERO CUCUMBER. Without exception the best Ridge Cucumber known. 6 Seeds 1s., 18 Seeds 2s.

LAING'S MAMMOTH CELERY.—The very best, hardiest, and finest flavoured Red Celery in cultivation, 1s. and 2s. per packet on receipt of postage stamps.

See former advertisement.

YOUELL'S Royal Nurseries, Great Yarmouth.

YORKSHIRE HERO CUCUMBER (See former Advertisement), price 2s. per packet.
TRUE ORANGE GOURD, 6d. and 1s. per packet.
12 Varieties, Gourds, each separate, 2s. per packet.
PETURION GOURD, weight 240 lbs., 6d. and 1s. per packet.
TRUE TURK'S CAP GOURD, 1s. per packet.

E. P. DIXON & SONS, 57, Queen Street, Hull.

Stones or Sprotborough Cabbage Seed.

JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.

The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.

Price 3s. per lb., or 16l. per cwt.

New Seedling Pea.

COTTON'S LEVIATHAN PROLIFIC MARROW, the best for main crop, a large, wrinkled, rich Marrow Pea. From one Pea 11,000 Peas were produced the second year (see Dr. LINDLEY, *Gardeners' Chronicle*, Aug. 7, 1853). The flavour sugary, and the colour very green when boiled. Height from 5 to 6 feet. May be sown from February till June and July, in drills 5 to 6 feet apart, and 1 inch from Pea to Pea. Retail price, 2s. per quart.

From GILBERT KNILL COTTON'S Seed Warerooms, High Cross, Barnstaple; or HURST & M'MULLEN, 6, Leadenhall Street, London, E.C.

KITCHEN GARDEN SEEDS,

FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND
THOS. GIBBS & Co.
Corner of
HALF-MOON St.
PICCADILLY,
London.
APPOINTED AP. 3. 1844.
THE SEEDSMEN

AGRICULTURAL SEEDS,
GRASS SEEDS,
FARM SEEDS,
of all descriptions.

Thomas Gibbs

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

PETER LAWSON & SON,

THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

Have harvested their NEW SEEDS in excellent condition, and will se...

PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

RICHARD SMITH'S

LIST OF ALL THE BEST

VEGETABLE AND FLOWER SEEDS

Combines simplicity of arrangement, with prices, descriptions of size, height, colour, time of sowing, soil, duration, hardiness, &c., with useful hints on rearing and general management.

COLLECTIONS of SEEDS, of the Choicest Sorts, for One Year's Supply of a large Garden, consisting of 10 quarts of Peas and all other Vegetables in proportion .. .. £2 2 [illegible]
6 quarts Peas ditto ditto ditto .. .. 1 5 [illegible]
5 pints ditto ditto ditto ditto .. .. 0 12 [illegible]

Retail Seed Orders of 21s. and upwards free to any Railway Station.

ROSES.

STANDARD HYBRID PERPETUAL and other FINEST kinds .. .. 30s. per Dozen
HALF-STANDARDS ditto ditto ditto .. .. 24s. to 30s. "
DWARFS ditto ditto ditto ditto .. .. 12s. to 24s. "
NEW ROSES of 1861 .. .. 2s. 6d. to 5s. each

FRUIT TREES.

Thirty-five Acres of these; consisting of PEACHES, NECTARINES, APRICOTS, PEARS, PLUMS, CHERRIES, and APPLES, in Trained and Pyramidal Trees, Standards, Half-Standards, Bushes, Dwarfs, or Potted Trees for Orchard House culture.

EVERGREENS. | FLOWERING SHRUBS. | CONIFERS.

With all other Nursery and Seed Stock of the finest description and at Cheapest Prices—Lists of which may be had on application to

RICHARD SMITH, NURSERYMAN AND SEED MERCHANT, WORCESTER.

SEEDS FOR THE KITCHEN GARDEN.

WILLIAM WOOD & SON'S

COLLECTIONS OF VEGETABLE SEEDS

FOR ONE YEAR'S SUPPLY.

Containing only the most choice and approved kinds for giving a succession of Crops throughout the year. Any varieties not required should be mentioned, when an equivalent in others which may be preferred will be substituted.

No. 1. For a Large Garden (about three-quarters of an acre)	£4 0 0
No. 2. For a Medium-sized Garden (about half an acre)	2 10 0
No. 3. For a Small Garden (about a quarter of an acre)	1 5 0
No. 4. For a Smaller Garden	0 15 0

The Collection of Seeds for One Acre, enumerated in Dr. Hogg's "Year Book for 1862" (omitting Potatoes) will be supplied for 5l. 10s.

SEEDS for the FLOWER GARDEN.

FREE BY POST, EXCEPT SWEET PEAS AND LUPINS.

100 finest selected varieties, (post free) consisting of Hardy, Half Hardy, and tender ANNUALS, PERENNIALS, &c. .. .. 21s.

50 finest varieties (post free) .. .. 10s. 6d.
30 ditto ditto .. .. [illegible]
20 ditto ditto .. .. [illegible]

☞ PRICED CATALOGUES *post free on application.*

All Orders amounting to 10s. and upwards Free to London; and Extra Seeds presented for distant carriage.

WILLIAM WOOD & SON, NURSERYMEN AND SEEDSMEN, MARESFIELD, NEAR UCKFIELD, SUSSEX.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very reasonable terms. He also offers 20 pairs of best large varieties for 5s., and 25 pairs of best Pompones for 10s.; 20 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that his DESCRIPTIVE CATALOGUE for 1862, of NEW CHRYSANTHEMUMS and other PLANTS, is now ready, and will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Chrysanthemums.

W. HOLMES, F.R.H.S., has a fine stock of the above, including Little Harry, Lady Hardinge, Leda, Little Rifleman, Florence, &c., &c., all at 5s. per dozen.

DESCRIPTIVE CATALOGUES of the above, also Dahlias, Fuchsias, Verbenas, Geraniums, Antirrhinums, Petunias, &c., free for one stamp.

Frampton Park Nursery, Hackney, N.E.

SPLENDID NEW FUCHSIAS, DICTATOR and UNIVERSAL. Coloured Illustrations by Mr. ANDREWS of the two, in exchange for 12 postage stamps.

G. S. assures Fuchsia Growers that Universal is the finest Fuchsia ever offered. For description see CATALOGUE.

GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington, London, N.

J. HOLMES WOOD, Bower Nurseries, Maidstone (adjoining the Railway Station).

All the leading varieties of AZALEAS, in 60's, at 50s. per 100.

Standard and Trained FRUIT TREES of every description, 18s. per dozen.

Every description of CONIFERS, EVERGREEN and DECIDUOUS TREES and SHRUBS at moderate prices.

CAMELLIAS and AZALEAS, a splendid lot, well set with flower-buds, 15s., 18s., 21s., and 24s. per doz.

An immense variety of British and Foreign FERNS, 3s. to [illegible] per dozen.

GOLD and SILVER FISH, 4s. to 9s. per dozen, 2l. per 100, [illegible] per 1000.

B. GREEN, 154, Kingsland Road, N.E., 55 doors from Shoreditch Church.

REIGATE SILVER SAND, 16s. per ton, or 1s. 6d. per bushel, delivered to any London Wharf or Railway. Sacks 1s. 6d. each, or on hire 6d. each (five hold a ton).

PEAT, LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE.

JOHN KENNARD, Swan Place, Old Kent Road, London, S.E.

WILLIAM BARRON, Elvaston Castle, Derby, can supply strong and remarkably well-rooted plants as under:—

		Per 100—s.	d.
ABIES DOUGLASII, 3 years once transplanted..	..	25	0
This tree attains a height of more than 200 feet, highly ornamental, the same as the tall flagpole at Kew.			
PINUS LARICIO, 18 ins. to 2 feet ..	per 1000	70	0
This produces timber for railway sleepers sooner than the Larch, and is used as spars and masts in the French navy.			
BERBERIS DARWINI, the most beautiful of the tribe, fit either for the flower garden or game cover, with rich orange-coloured flowers; Pheasants are very fond of the berries, which are produced in profusion. Strong plants, 3 years old	per 100	20	0
Ditto ditto, 2 years old		15	0
Ditto ditto, 1 year old		12	6
PICEA NOBILIS, 3 to 4 years old, plants from seed,	each, 10s. to	15	0

This is the most lovely of all Firs.

WELLINGTONIAS from 2 to 9 feet. Also specimens of the rarest Conifers.

Remittances to accompany orders from unknown correspondents. Post-office Orders payable at Derby.

SELECT PRICED LISTS post free on application.

CHOICE SEEDS for PRESENT SOWING (Post Free).

	s.	d.
Asters, 12 Quilled German, Imported Collection ..	3	0
,, 18 Truffaut's Pæony-flowered	5	0
,, 12 ,, ,, ...	3	0
,, 8 ,, Chrysanthemum	3	0
Stock, 12 Germans, ex. fine	3	6
Larkspur, 10 Superb Varieties	3	6
Zinnia elegans, 6 Varieties	2	0
Balsam, ex. fine, Camellia-flowered, per Pkt. ..	1	0
,, Smith's 9 Varieties	2	6
Calceolaria, from our unequalled Collection, very superb 1s. 6d., 2s. 6d., 3s. 6d.,	5	0
Cineraria, unequalled for quality .. 1s., 2s. 6d.,	5	0
Cobœa scandens	0	6
Humea elegans	1	0
Lobelia speciosa	0	6
Lophospermum	1	0
Maurandya Barclayana	1	0
Mesembryanthemum tricolorum	0	6
Perilla Nankinensis	0	6
Petunia, choice selected	1	0
Primula sinensis fimbriata, ex. ex. .. 1s., 2s. 6d.,	5	0
Rhodanthe Manglesii	0	6
Verbena, from Barker's Choice Collection ..	1	0
Zinnia elegans flore pleno, double	1	0
Dean's Auricula-eyed Sweet William	1	0
12 Choice Hardy Annuals	2	6
12 ,, Half Hardy Annuals	4	0

J. DOBSON & SONS, Seedsmen, Isleworth, and Hounslow, W.

CUTHILL'S STRAWBERRY PLANTS. For fruiting this year. Highland Mary, 10s. per 100; Richard II., 10s.; Newton Seedling, 10s.; Princess Royal, 7s. 6d.; Prince of Wales, 7s. 6d.; Black Prince, 5s. Best CUCUMBER and MELON SEED, 1s. per packet. MUSHROOM SPAWN, 5s. per bushel. If Cuthill's five Pamphlets are taken, 5s.

JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

Strawberries for Forcing.

GEO. CLARKE has a large quantity of strong established Plants in Pots with excellent crowns; the sorts are KEEN'S SEEDLING, BRITISH QUEEN, SIR HARRY and ALICE MAUDE. Price 6s. per dozen.

Nursery, Streatham Place, Brixton Hill, S.

Strawberry Plants.

WM. JAS. NICHOLSON again offers strong laid Plants of his Grand Collection of more than 200 varieties of English, French, Belgian, American, and other STRAWBERRIES, including all the new and fine sorts.

A CATALOGUE sent on application.

A new, enlarged, and improved CATALOGUE will be published in autumn, when many new sorts, well tested, will be offered with confidence.

WM. JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

S T R A W B E R R I E S.

	Per 100—s.	d.		Per 100—s.	d.
Bicton Pine	2	6	Oscar	2	6
Black Prince	2	6	Prince Arthur (Ingram)	2	6
Crimson Queen of Dr. Rodin	3	6	Princess Frederick Wm. (Niven)	5	0
Elton Pine	2	6	Princess Royal	2	6
Goliath (Kitby)	2	6	Prolific (Myatt)	2	6
Grove End Scarlet ..	2	6	Sir Charles Napier ..	3	6
Hendries Seedling ..	5	0	Scarlet Pine	3	6
Jucunda	5	0	Sir Walter Scott.. ..	2	6
Keene's Seedling ..	2	6	Victoria (Trollope) ..	2	6
May Queen	2	6	Wonderful	2	6

JOHN CATTELL can supply strong plants of the kinds named above; the present month is a good time to make new beds or fill up vacancies.

Nursery and Seed Establishment, Westerham, Kent.

COB FILBERTS.—What yield most Sovereigns per acre?—COB FILBERTS, now selling on the market at 3s. per lb. and upwards. For Trees apply to GEORGE MACK, Calcot Gardens, near Reading.

Also may be had RED SKIN and WHITE SKIN FILBERTS, with other varieties of Cob Nuts.

NEW MELONS, NEW CUCUMBERS, NEW and CHOICE SEEDS of all the finest varieties for the FARM, the KITCHEN GARDEN, and the FLOWER GARDEN.

See our "Little Book" for 1862 (illustrated) which will be sent free on receipt of four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

WILD'S ORION MELON.—CRYSTAL PALACE FETE.—"The heaviest Melon, FIRST PRIZE, weighed 5lbs. The variety we believe was named 'Orion,' a green fleshed sort, which was also awarded the FIRST PRIZE for good flavour."—*Gardeners' Chronicle.* Free on receipt of stamped envelope, unknown correspondents, 6d. per packet. PRIMULA SEED, 2s. 6d. per packet as usual.

THOS. WILD, the Primulary, Ipswich.

Melons.

MESSRS. JOHN AND CHARLES LEE have seeds to offer of the undermentioned superb MELONS:—

BAILEY'S ECLIPSE.—Pale green flesh, melting to the rind, of exquisite flavour; weight 3 to 4 lbs.; handsome, very prolific, and has gained many prizes. Price 2s. 6d. per packet.

AMERICAN RIDGE.—Scarlet flesh, melting, and highly flavoured. Ripens in a COLD FRAME; very prolific. Price 1s. 6d. per packet.

Nursery and Seed Establishment, Hammersmith, London, W.

FRUIT TREES in POTS.—Those who require Fruit this summer from Trees in Pots are invited to inspect the stock of W. BARNES, whose trees have been established for two and three years; wood well matured and covered with bloom buds.

APRICOTS	CHERRIES	PEARS
APPLES	NECTARINES	PLUMS
	PEACHES.	

Prices on application to WM. BARNES, Camden Nursery, Camberwell, S.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, JUN., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.

CATALOGUES on application.

Muscat Escholata Grape.

MESSRS. J. AND C. LEE have the pleasure to offer strong well ripened Canes of this THE FINEST OF ALL MUSCAT GRAPES, which, though little known to Grape growers in general, deserves to be extensively cultivated. It combines the desirable qualities of setting freely with a large well shouldered handsome bunch, with berries of a rich amber colour almost as large again as those of the Muscat of Alexandria, and of the most luscious Muscat flavour.

Planting Canes	15s.	0d.	each
Fruiting Canes	21	0	,,
Extra strong Fruiting Canes ..	31	6	,,

Vineyard Nursery, Hammersmith, London, W.

Splendid Grape Vines.

WILLIAM BARNES has still to offer the following varieties of VINES from Eyes; the wood well ripened, length averaging from 5 to 9 feet; many of them fruit-bearing.

Royal Muscadine	Golden Hamburgh
White Dutch Sweetwater	Muscat do.
Muscat of Alexandria	Black do.
Cannon Hall Muscat	Bowood Muscat
West's St. Peter's	Muscat Muscadine
Black Frontignan	Lady Downe's Seedling
White do.	Barbarossa
Grizzly do.	Purple Constantine
Mill Hill Hamburgh	White Tokay

Prices will be forwarded on application.

Camden Nursery, Camberwell, S.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very large, and in all varieties of colour, in Seed or Roots; also FLORIST FLOWERS, POLYANTHUS in roots, and DOUBLE WHITE PRIMROSE.

Apply GEORGE MACK, Calcot Gardens, near Reading.

NEW SCARLET VERBENA, FOX-HUNTER.

HUGH LOW & CO.

HAVE pleasure in intimating that the entire Stock of the above-named VERBENA is in their possession, and they propose distributing it in April. Price 5s. per plant. Special quotations given to purchasers by the dozen. The merits of FOX-HUNTER have been so universally and extensively admitted, that H. L. & Co. think it needless to do more than add that a First-Class Certificate was accorded by the Floral Committee of the Royal Horticultural Society, when Cut Flowers were exhibited by the raiser, JOHN MILLER, Esq. of Upwey.

CLAPTON NURSERY, LONDON, N.E.

NEW AND CHOICE SEEDS.

BENJAMIN S. WILLIAMS

Begs to intimate that he will be happy to forward to all applicants his

NEW DESCRIPTIVE AND PRICED SEED CATALOGUE FOR 1862,

Containing Select Lists of all the best VEGETABLE and FLOWER SEEDS in cultivation, GLADIOLI and other BULBS for Spring and Summer Flowering, with useful suggestions for the guidance of Amateur Cultivators.

The following Choice FLOWER SEEDS are recommended with the greatest confidence, having for several years given universal satisfaction. Further particulars will be found in Catalogue.

GERMAN and other FLOWER SEEDS in Collections. Sealed packets as imported.

	s.	d.
ASTERS, Chrysanthemum-flowered, an assortment of 12 varieties	3	0
Cocardeau or Crown, an assortment of 4 varieties ..	1	0
French, Truffaut's Pæony-flowered, an assortment of 12 varieties	2	6
German, an assortment of 12 quilled varieties	2	0
German, an assortment of 12 tall pyramidal varieties	2	0
German, an assortment of 12 Globe flowered varieties	2	0
Giant Emperor, an assortment of 10 varieties	5	0
BALSAMS, Camellia-flowered from Messrs. Smith's collection of 9 varieties	2	6
Rose-flowered, an assortment of 12 varieties	3	0
CARNATIONS, an assortment of 12 splendid varieties, 20 seeds of each	5	0
An assortment of 12 splendid varieties, 10 seeds of each	3	0
CONVOLVULUS MAJOR, assortment of 9 varieties ..	1	6
DIANTHUS CHINENSIS, an assortment of 12 var. including Heddewigii, Imperial Double, and laciniatus ..	3	0
HOLLYHOCKS, an assortment of 12 splendid and distinct varieties	6	0
LARKSPURS, an assortment of 8 Rocket flowered vars. ..	1	6
An assortment of 8 Hyacinth and Rocket-flowered varieties	1	6
MARVEL OF PERU, an assortment of 8 fine varieties ..	1	6
PHLOX DRUMMONDI, an assortment of 8 splendid varieties	2	0
PELARGONIUMS—an assortment of 12 distinct fancy varieties, by name, in separate packets	6	0
An assortment of 12 distinct spotted and shaded large flowered French varieties, by name, in separate packets	6	0
An assortment of 12 distinct large flowered show varieties, by name, in separate packets	6	0
PICOTEES, an assortment of 12 splendid varieties, 20 seeds of each	5	0
An assortment of 12 splendid varieties, 10 seeds of each	3	0
PORTULACCAS, an assortment of 7 finest varieties ..	1	6
SCABIOUS, Sweet, an assortment of 6 fine new dwarf var.	1	0
STOCKS, Autumnal flowering, an assortment of 12 splendid varieties	3	0
Brompton or Biennial, an assortment of 12 splendid var.	2	6
Dwarf German 10 Week, an assortment of 12 splendid var.	2	6
Dwarf German, new large flowering, an assortment of 8 splendid varieties..	1	6
Emperor or Perpetual, an assortment of 8 splendid var.	2	0
Hybrid Giant, or Cocardeau Biennial, an assortment of 4 splendid varieties	1	0
New Pyramidal 10 Week, an assortment of 8 splendid varieties	1	6
SWEET PEAS, an assortment of 7 finest varieties ..	1	0
ZINNIA ELEGANS, an assortment of 6 splendid varieties	1	0
ZINNIA ELEGANS FLORE PLENO, an assortment of 12 splendid varieties	5	0

CALCEOLARIA, Herbaceous, finest mixed, 1s. 6d. and 2s. 6d. per packet.

CINERARIA, mixed seed from named flowers, 1s. 6d. and 2s. 6d. per packet.

PRIMULA, Red and White Fringed, mixed or separate (superior quality, see testimonials in Catalogue), 2s. and 3s. 6d. per packet.

PARADISE NURSERY, SEVEN SISTERS AND HORNSEY ROADS, HOLLOWAY, LONDON, N.

New Vegetables—Post free.

WM. WOOD AND SON beg to offer GENUINE SEEDS of the undermentioned CHOICE VEGETABLES, viz. :—

	Per packet—s.	d.
Carter's St. Osyth Beet	1	0
Nutting's selected ditto	0	6
Melville's Incomparable White Broccoli	1	0
Lee's New White Sprouting Broccoli	1	0
Snow's superb Winter White Broccoli	1	0
Kemp's Incomparable Cabbage	1	0
Wood's Defiance Cauliflower. (See separate advertisement)	2	6
Carter's Dwarf Mammoth Cauliflower	1	0
Cole's White Perfection Celery	2	6
Hood's Imperial Dwarf Red Celery	0	6
Ivery's Nonsuch Celery	0	6
Turner's Incomparable Celery	0	6
Melville's Variegated Garnishing Kale	1	0
Carter's Giant White Cos Lettuce	1	0
Carter's Giant Brown Cos Lettuce	1	0
Dunnett's Black-seeded Brown Cos Lettuce ..	1	0
Wheeler's Imperial Cos Lettuce	1	0
Wheeler's Tom Thumb Lettuce	1	0
The Student Parsnip	1	0
Parsnip Chervil .. .. 6d. and	1	0
Tomato de Laye	0	6

The above are all described in WM. W. & SON'S CATALOGUE.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and other FLOWER SEEDS, Choice GLADIOLI, &c., is now ready, and will be forwarded post free on application.

The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices.

An inspection and comparison with prices in other Catalogues is respectfully solicited.

The following, of which descriptions will be found in Catalogue, are specially recommended :—

		s.	d.
BEAN, Haricot Flagolet Jaune, six days earlier than any variety in cultivation	per quart	2	6
BEET, Compact Topped or Pine Apple Short Top,	per oz.	0	6
" Selected Dwarf Red (Nutting's)	"	0	9
CAULIFLOWER, Early Dwarf Erfurt	"	2	0
" New Early Mammoth or Frogmore Forcing ..	"	3	6
CELERY, Imperial Dwarf Red (Hood's)	"	1	0
CHÆROPHYLLUM BULBOSUM	"	2	0
CUCUMBER, TELEGRAPH	per packet	1	6
LETTUCE, MOOR PARK	per oz.	2	0
PEA, GENERAL WYNDHAM	per quart	1	3

Exotic Nursery, Tooting, Surrey S.

Garden Seeds.

PAGE AND TOOGOOD'S SPECIAL LIST will be forwarded post free.

P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

From MR. R. McDONALD, *Gardener to the* Rt. Hon. LORD WILLOUGHBY D'ERESBY, *Drummond Castle, Scotland, Jan.* 4, 1861.

"The seeds sent here by you for the last 23 years heregiven the greatest satisfaction, and considering the large supply required, it is of the greatest importance to have them of such first-rate quality and so true to name. The collections for cottagers have been very useful and have been the means of inducing many of them to grow a greater variety of vegetables than they have hitherto done."

From MR. DOWLING, *Gardener to* LORD HENRY CHOLMONDLEY, *Holly Hill, Jan.* 1, 1861.

"Nothing gives me so much pleasure as to speak of the excellent quality and trueness of the seeds you sent me for 1860. It is impossible to single out anything in particular, as all succeeded so well, and although a difficult season, I have never served a family better, which I attribute to the good quality of the seeds, and having been supplied by you for 30 years with the greatest satisfaction, my opinion is expressed with some confidence, and I also know your extreme desire at all times to meet the wishes of your customers."

From MR. WHALE, *Gardener to the* Rt. Hon. LORD RIVERS, *Rushmore, Dorset, December* 30, 1860.

"In enclosing you my 20th annual order, I am happy to say that I have always found your articles to be of the best quality, and they have always given me great satisfaction."

Royal South Hants Seed Establishment, Southampton.

Yorkshire and Lincolnshire Nursery and Seed Establishment.

MARTIN AND SONS respectfully offer a very superior Stock of TURNIP SEED, as under, the produce of their Seed beating all others at one of the principal Shows in Yorkshire, winning the "two Five Pound Silver Cups," the "Second principal Prize," and several of the minor prizes.

Catalogues with particulars on application.

Yorkshire Prize Swede Turnip	..	1s. per lb.
Golden Melon do. do.	..	
Rouge et Blanc Stone do.	..	
Improved White Globe do.	..	
Russian Green-top White do.	..	

Skirving's Green-top, Marshall's Purple-top, and all the principal kinds of Swede and White Turnips, at 9d. per lb.; by the bushel or cwt, cheaper.

KITCHEN GARDEN SEEDS.

MARTIN & SONS' No. 1 Collection contains 20 quarts Peas and other sorts in proportion, for 3l.; No. 2 Collection, 2l.; No. 3, 1l. 10s.; No. 4, 21s.; No. 5, 15s.

FLOWER SEEDS.

The 30 varieties which caused so great attraction and were admired by the hundreds of persons passing the Park Nursery, Hull, for 5s., free by post.

GLADIOLUS.

40 choice varieties for 1l. 5s., carriage paid.

NURSERY STOCK.

Our GENERAL NURSERY CATALOGUE may be had on application. We abound in Laurels, Yews, Arbor-vitæ, Thujopsis, Wellingtonias, Cedars, Juniper, Chestnuts, Limes, Maples, Mountain Ash, Weeping Ash, Weeping Elm, Privet, &c.

Nursery and Seed Establishment, Cottingham (A.D. 1788). Hull Nursery, Spring Bank; Hull Seed Establishment, Junction Street.

TURNIP, MANGEL, and AGRICULTURAL SEEDS of best Selected Stocks.—First class sample crop, 1861, at growers' prices.

JAMES FAIRHEAD & SON, Seed Growers and Merchants, 7, Borough Market, London, S.E.

Notice.

PURCHASERS of LARGE QUANTITIES of FARM or GARDEN SEEDS will be supplied liberally by SUTTON & SONS.

For prices apply (*stating quantity required*) to

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

The Alsike Hybrid Clover. Perennial Red Clover. True Perennial White Clover.

THE above kinds of CLOVERS will take well on land which has proved Clover-sick when sown with the common kinds of Clover.

They are all included in Messrs. SUTTON'S MIXTURE of GRASS SEEDS for PERMANENT PASTURE, and they may be purchased separately.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

AN AVENUE of PINUS BENTHAMIANA.—Should any gentleman feel desirous of planting as above this hardiest of all hardy long-leaved Pines, fine specimens can be supplied by CHARLES NOBLE, Sunningdale Nursery.

Several hundred to select from, and warranted to move safely.

POTATOES: Handsworth, Fortyfold, Dalmahoy, Shaw, Regent, Blues, Ash-leaf Kidney, &c.

GOOSEBERRIES: Crown Bob, Warrington, Whitesmith.

STRAWBERRIES: Admiral Dundas, British Queen, [illegible] Prince, Eleanor, Prince of Wales, Sir C. Napier, Wizard of the North, 2s.; Alice Maude, Elton Pine, Eliza, Keens' Seedling, 1s. 6d.; and Oscar, 3s. per 100. RASPBERRY CANES, &c.

GEO. CORNWELL, Seedsman, &c., Barnet, Herts, N.

SEED POTATOES, off the Lancashire Moss or Sand, viz., Fluke, Pink Eye, and White Kemp, Oxhorn, Lemon Kidney, Scotch Down, White Rock, Fortyfold. Many early varieties at very moderate prices. One trial will be the best recommendation.

Apply to H. BROWN, Seedsman, 4, Commutation Row, Liverpool.

FLUKE POTATOES, off the Lancashire Moss and Sand; EARLY PINK EYE KEMPS, very fine; TRUE ASHLEAF KIDNEY; OXHORN KIDNEY, a very prolific variety, good quality; WHITE BLOSSOM LEMON KIDNEY. Prices moderate.

A PRICED DESCRIPTIVE CATALOGUE of Garden and Flower Seeds is now ready.

HENRY BROWN, Seedsman, 4, Commutation Row, Liverpool.

EXTRAORDINARY POTATOES.—A Gentleman resident in the country, OFFERS for SALE a few bushels of POTATOES of a most wonderful kind. For the table they are unsurpassed, and their yield is astonishingly large, even on indifferent soil; and further, the disease never attacks them.

For price, &c., address "Z. Z." (No. 479), *Field Office*, [illegible], Strand, London, W.C.

PERMANENT GRASS SEEDS

FOR ALL SOILS.

SUTTON & SONS,

SEED GROWERS, READING, BERKS,

Have a most extensive and complete stock of all the best kinds of GRASS SEEDS for PERMANENT PASTURE, which they are now sending out daily to all parts of the Kingdom, mixed expressly to suit the soil for which they are intended and the purposes for which the Pasture is required.

It is believed that Messrs. SUTTON'S Stock of GRASS SEEDS is the largest in the country, and certainly the quality cannot be surpassed. The sorts can be supplied separate or mixed to suit the soil, or the Light Large Seeds may be had in one mixture, and the Clovers and other Small Heavy Seeds in another; 2 bushels of the former and 12 lbs. of the latter per acre are supplied.

MIXTURES FOR PERMANENT PASTURE,

Specially prepared to suit any soil. 24s. to 32s. per acre.

MIXTURES FOR RECLAIMED MARSHES AND HEATH LANDS.

Many acres of Land of this description have been successfully laid down to Permanent Pasture by us, with Seeds which we have invariably found to thrive on such soil. 20s. per acre.

MIXTURES FOR LAYING DOWN CHALKY OR GRAVELLY UPLANDS AND SHEEP DOWNS.

For this purpose Grass Seeds are annually collected from dry and hilly districts, where they are found growing spontaneously; and after many years' experience we can confidently assure our friends that a *good and permanent* Sward may be obtained on *any* Upland from this Mixture. Cost of Seeds, 30s. per acre.

MIXTURES FOR LAYING DOWN WATER MEADOWS.

In this department also we have been very successful, many customers having expressed their great gratification at the effect of these Seeds. Price 25s. per acre.

MIXTURES TO LAY DOWN NEW PARK LAWNS.

For this purpose all coarse growing kinds are carefully excluded, and the Sward will at all seasons present a luxuriant verdure, so desirable in Parks contiguous to the Mansion. The cost of Seeds for this purpose will be 16s. per bushel.

MIXTURES FOR FINE GARDEN LAWNS.

Including only the finest or shortest growing kinds, 18s. per bushel, or 1s. per lb.

MIXTURES OF GRASSES, CLOVERS, &c., FOR THREE OR FOUR YEARS' PASTURE, HAY, OR SOILING.

These we can supply of best quality at 22s. per acre, or if required to remain only for two years, the price will be only 18s. 6d. per acre. In ordering these Mixtures it is necessary to state whether they are required for Three or Four Years' Lay, and whether Clover or Meadow Grass Seeds are to preponderate in the Mixture.

PERMANENT EVERGREEN GRASSES FOR CHURCHYARDS AND CEMETERIES.

We have had the honour of supplying His Grace the Archbishop of Canterbury and many others of the Clergy with Grass Seeds for Churchyards and Cemeteries, which have given great satisfaction. Price of Seeds 1s. per lb. or 16s. per bushel.

MIXTURES FOR ORCHARDS AND PASTURES OVERSHADOWED WITH TREES.

An excellent Mixture can be supplied suitable for this purpose at 16s. per bushel.

ALSIKE CLOVER, PERENNIAL WHITE CLOVER, and PERENNIAL RED CLOVER are included in the Mixtures for Permanent Pasture.

N.B. Gentlemen possessing the True Perennial Clover Seeds, &c., can be supplied with a proper Mixture of GRASSES to sow with them, as under:—

MIXED FESCUES, COCKSFOOT, LOLIUMS, &c., best sorts for Permanent Pasture (omitting Clovers and other heavy Seeds), 9s. per bushel (18s. per acre).

Two bushels of the above and 12 lbs. of Mixed Clovers will be the proper quantities per acre for Permanent Pasture.

MIXED PERMANENT GRASS SEEDS of coarse kinds, for Cover, &c., 5s. per bushel.
Ditto ditto for Railway Embankments, &c., 6s. per bushel.

N.B. Should Grass Seeds be offered at lower prices than our quotations, we would advise intending purchasers to inquire the quantity supplied per acre of Natural Grasses, and also whether Alsike and other Perennial Clovers are included.

PRICED LISTS of separate GRASS SEEDS, CLOVERS, TURNIPS, MANGEL WURZEL, &c., may be had gratis and post free on application, addressed

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

Seeds.

THE SUDBURY COLLECTIONS ARE OF THE FINEST QUALITY AND THE CHEAPEST OFFERED.

STEPHEN BROWN, SEED GROWER and IMPORTER, offers the following.

VEGETABLE SEEDS:—

FIRST CLASS COLLECTIONS (the List of the Collection given in the Catalogue). 60s., 40s., 20s., and 12s. 6d.

SECOND CLASS COLLECTIONS of best older esteemed ... with less of those of new introduction. 50s., 32s. 6d., ..., and 10s. 6d.

FLOWER SEEDS.—Post free.

FIRST CLASS COLLECTIONS. including novelties of 1861 ... 1862. (The Collections are given in the Catalogue.)

HARDY ANNUALS.—100 vars., 15s.; 50 vars., 8s. 6d.; ... vars., 5s. 6d.; 20 vars., 4s.

... HARDY ANNUALS.—100 vars., 20s.; 50 vars., 12s. 6d.; ...; 20 vars., 6s.

GREENHOUSE ANNUALS.—20 vars., 7s. 6d.; 50 vars., 5s.

HARDY PERENNIALS.—100 vars., 20s.; 50 vars., 12s. 6d.; ... vars., 7s. 6d.

GREENHOUSE PERENNIALS.—50 vars., 18s.; 25 vars., 10s.; ... vars., 7s. 6d.

SECOND CLASS COLLECTIONS from the best popular older ...rieties. For prices see Catalogue.

GLADIOLUS and ROOTS for SPRING PLANTING.—An extensive Collection. See Catalogue.

... Carriage Free, to the amount of 20s. and upwards, to ... and all Stations on the two London and Norwich ...

The SEED CATALOGUE supplied on application.
Seed Establishment, Sudbury, Suffolk.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the ... effective and useful bedding variety known. During the ... season upwards of 5000 plants were grown in the gardens ... Dalkeith Palace, Edinburgh, grouped with the leading kinds ... plants, and in effect and splendour they far surpassed ... whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium ... in the greatest profusion all summer and autumn; ... plant very compact and vigorous, with good foliage.

For Testimonials and further particulars see *Gardeners' Chronicle* of February 22.

Plants in April, 1s. 6d. each. 12s. per dozen. 50s. per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses ... large and globular, borne on strong foot stalks well above ... foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium ... with dark zone. For large beds, lines in riband-borders, ..., this variety is one of the most useful and effective ... offered for sale.

Plants in April, 1s. 6d. each. 12s. per dozen. 75s. per 100.

CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

Per packet—	s.	d.	Per packet—	s.	d.
...laria, herbaceous..	2	6	Primula sinensis dentiflora	2	0
...laria cruenta ..	2	6	Primula sinensis albiflora	2	0
maritima	0	6	" " dentiflora kermesina splendens ..	2	6
...thus Ravennæ ..	1	0	Verbena venosa	0	6
...cha erinus speciosa	1	0			
" major ..	1	6			

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...year Seedling Alder	per 100,000	6	0	0
...year " Thorns, fine	" "	7	10	0
...year " do. do.	" "	10	0	0
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...year " do. do. strong	" "	7	10	0
...year " Silver Fir	" "	10	0	0
...year " do. do.	" "	17	10	0
...year " Pinus austriaca ..	" "	7	10	0
...year " " Cembra ..	per 10,000	3	15	0
...year " American Arborvitæ ..	"	5	0	0
...year " English Oak, only 20,000 remaining	per 1000	0	3	0
1 year " Sweet Briar, do. do. ..	"	0	1	6
Transplanted Norway Spruce, 9 to 12 inches	"	0	5	0
" do. do. 12 to 15 inches	"	0	10	0
" do. do. 15 to 20 inches	"	0	12	6
" White American do., 9 to 12 ins.	"	0	10	0
" Elm, 3 to 5 feet	"	0	15	0
...beris Darwinii, 1 foot, bushy ..	per 100	2	10	0
" dulcis, 1 foot "	"	0	7	6
Cotoneaster microphylla, 12 to 18 inches ..	"	0	15	0
Hardy Heaths, 15 named varieties, bushy	"	0	15	0
Juniperus tamariscifolia, 18 inches, bushy	"	2	10	0

... thousands sent on application. Any quantity above ... supplied at the same rate as per 100,000; for smaller ... see our PRICED LIST, which may be had free on application. Reference or cash from unknown correspondents.

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...borealis, 1 to 4 feet	" argentea, 1 to 4 feet
...ana, 4 to 5 feet	" chinensis, 5 to 7 feet
...bbi, 1 to 4 feet	" sphærica, 2 to 4 feet
...gantea, 1 to 4 feet	Cupressus Lawsonii, 1 to 4 feet
...americana, 6 to 10 feet	" Thyoides, 1 to 4 feet
...stigiata, 3 to 7 feet	Cephalotaxus Fortunii, 2 to 4 ft.
...ta, 3 to 5 feet	Cedrus Deodara, 1 foot to 8 feet
...um distichum, 4 to 6 ft.	" atlantica, 8 to 10 feet
...iana, 3 to 5 feet	Berberis japonica, 1 to 4 feet
..., 3 to 5 feet	" Beallii, 1 to 4 feet
...nica, fine blooming	" Darwinii, 1 to 4 feet
...ericoides, 1 to 3 ft.	Abies spec. Vancouver's Island
..., 1 to 5 feet	" lasiocarpa
..., 3 to 5 feet	" Pinsapo, 1 to 3 feet
...nis, 2 to 5 feet	" orientalis, 1 to 6 feet
...sa, 1 to 3 feet	" Douglasi, 2 to 3 feet
...ana, 1 to 3 feet	" Nordmanniana, 2 to 5 ft.
...amiana, 2 to 6 feet	" Menziesii, 3 to 10 feet
	Araucaria imbricata, 1 to 8 ft.

Ten Minutes' walk from the Station.

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(Post free)—	s.	d.	(Post free)—	s.	d.
50 choice sorts	12	0	12 choice sorts	3	0
36 ditto	9	0	Serpent Gourd, very handsome	0	6
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RICHARD SMITH, Nurseryman, Worcester.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.

EXHIBITIONS of PLANTS, FLOWERS, and FRUIT, WEDNESDAYS, May 28, June 18, and July 9.
AMERICAN PLANTS, MONDAY, June 9.

Tickets are now being issued, and can be obtained at the Gardens only by Vouchers from Fellows or Members of the Society. Price on or before SATURDAY, May 17, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

SPRING EXHIBITIONS open to the Fellows of the Society and their friends only,
WEDNESDAYS, March 26, April 2, 9, 16, 23, 30, and May 7.

J. DE C. SOWERBY, Secretary.

ANNUAL EXHIBITION of ROSES in BIRMINGHAM (OPEN TO ALL ENGLAND).

A very general desire having been expressed, both by Amateurs and Nurserymen, to carry out the suggestion made in the *Midland Counties Herald* of the 18th of July last, for the Establishment of an ANNUAL EXHIBITION of ROSES, to be held in the Town Hall, Birmingham, the undersigned invite all who may be disposed to give their assistance to the project to meet in the Committee Room of the Town Hall, on THURSDAY, March 13, at 12 o'Clock, when it will be proposed to appoint a Committee, and to make other arrangements.

The Mayor of Birmingham has courteously consented to take the Chair on this occasion.

It is intended also to include at the same time an Exhibition of GARDEN ORNAMENTS and HORTICULTURAL TOOLS.

T. B. WRIGHT, J. COLE, B. A. HALLAM,
CHARLES J. PERRY, HENRY POPE, E. W. BADGER.

Communications and suggestions are invited, and may be addressed, previous to the Meeting, to Mr. B. A. HALLAM or Mr. E. W. BADGER, Honorary Secretaries *pro tem.*, at the *Midland Counties Herald* Office, Birmingham.—March 8.

ROYAL HORTICULTURAL SOCIETY.—FLORAL COMMITTEE.

LIST OF AWARDS, March 4, 1862.

FIRST-CLASS CERTIFICATE.

Cattleya amethystoglossa, from Robert Warner, Esq., Chelmsford.

Tecoma sp. Chili, from Messrs. Veitch & Son, Exeter and Chelsea.

COMMENDATION.

Cypripedium barbatum var., from Mr. Williams, Paradise Nursery, Holloway.

SPECIAL CERTIFICATE.

To Mr. W. Paul, for a collection of Cut Blooms of 27 varieties of Camellia.

A SUB-COMMITTEE will meet on Wednesday, March 19 (Spring Show), to examine such New Plants and Seedlings as may be exhibited on that occasion.

THOMAS MOORE, Secretary to the Committee.

The Gardeners' Chronicle.

SATURDAY, MARCH 8, 1862.

THE PUBLIC MEETING to which we last week alluded (p. 187) was indeed important. Its object was nothing less than to save a nation from perdition. On the north-west coast of the Pacific Ocean we have planted two colonies, in comparison with whose future the greatest of the United States may sink into insignificance. Blessed with a climate that invigorates, not enervates, abounding in pastoral and agricultural land, rich in timber and mineral wealth, and in some places teeming with gold itself, the Colonies of Vancouver's Island and British Columbia are, if we include their vast political significance, two of the most valuable possessions of the Crown. They have the good fortune, moreover, to be governed by a man singularly sagacious and resolute, and so thoroughly acquainted with every part of the country, that his very name is a household word among the Indians on both sides of the prodigious barrier of mountains that shuts in his region from the East.

Nevertheless, these magnificent colonies are in the utmost peril, not from war, plague, pestilence, or famine, but from the greatest of all curses—the absence of female society. Some time ago it was, we believe, ascertained that the proportion of white women to men was 1 to 250. It must now be far less. At the great gold diggings, called the Cariboo mines, eye-witnesses assure us that it is no uncommon occurrence for 200*l.* to be taken out of a claim in a single day, and that quite lately some miners brought down to Victoria 20,000*l.*, "the result of a few months' toil." Such prospects inevitably attract adventurers in shoals. Last summer 2000 men were at work there, and in the present season at least 10,000 more are expected; and still no females except the miserable degraded Indian squaws.

One of the missionaries in British Columbia writes to the Bishop's Commissary here, "there is one thing which you may make public, nay, even proclaim upon the house-tops. It is this—the cure for what, if let alone, will ultimately ruin Religion and morals in this fine country, I mean an emigration of white women from Great Britain. Dozens of men have told me they would gladly marry if they could. I was speaking one evening on the subject of the dearth of females, and mentioned my intention of writing to beg that a plan of emigration may be set on foot; whereupon one member of the company immediately exclaimed, 'Then, sir, I preempt a wife;' another, and another, and all round the circle of those listening to me earnestly exclaimed the same. Fancy the idea of preempting a wife! Yet, I assure you, this touches at the root of the greatest blessing which can now be conferred upon this Colony from home."

Well might the Bishop of OXFORD exclaim at the meeting—"It is no use shrinking from this subject mawkishly or morbidly"! But we must quote his own eloquent words:—

"There is another matter to which I would refer—it relates to the due proportion of the sexes, and unless there can be that there can be no possession of a district as a home for man; for, deprive it of that, and you deprive it of the first conditions of home. This in itself is a fatal notion for a colony, for you turn it at once into a transitory dwelling for the most adventurous and generally the most lawless of those who have left home. There must be the dwelling-place of every deep degrading moral abomination unless you provide for an equality of the sexes. You first make all true relations between the settlers and the aborigines impossible. You have to deal with a degraded people—with a people who, under heathenism, have but a low squaw estimate of women, and yet you do to the native race a most deadly and irreparable wrong. *In young colonies the more you degrade the moral senses, the more deadly injury do you inflict.* They are to be the progenitors of nations. If Great Britain leaves on her colonies the imprint of the most hideous form, what will be the aspect of the progenitors of the coming people? It is no use shrinking from the subject mawkishly or morbidly. It is no use saying 'We must hope for the best.' That is the saying of the desperate gambler on the verge of ruin. We must not hope for the best with regard to our new settlements; but, knowing the mode, we must determine, with God's blessing, to do the best."

Thank God! we live in a country where humanity never sleeps. Only bring before the public a case of suffering, and on the instant sympathy starts forward to offer the helping hand. Can any case be more of suffering than this? Is there anything conceivable which more peremptorily demands immediate relief from the kind hearted and religious? We are sure that only one answer is possible—"there is nothing." Such practically was the reply at the late meeting at the London Tavern. It was instantly determined to form a COLUMBIAN EMIGRATION SOCIETY, for the purpose in the first instance of facilitating the emigration of industrious women to the colony.

The Hon. ARTHUR KINNAIRD earnestly recommended the prosecution of the proposed plan. The Bishop of LONDON, Sir J. KAY SHUTTLEWORTH, the Rev. T. J. ROWSELL, and Mr. EDEN COLVILE, all expressed the warmest interest in its success. Mr. COLVILE spoke as a Director of the West India Mail Packet Company, in connection with the Panama Railway, and with the noble liberality that has always characterised the great companies which he represents, promised the hearty co-operation of both the Hudson's Bay Company and the Steam Packet Company in carrying out the plans which may be adopted.

It gives us great pleasure to say that the Society is already formed. The Bishops of LONDON and OXFORD, with the LORD MAYOR, are Patrons. EDEN COLVILE, Esq., Hudson's Bay House; the Hon. ARTHUR KINNAIRD, M.P.; STEPHEN CAVE, Esq., M.P.; SAMUEL GREGSON, Esq., M.P.; CHARLES B. SKINNER, Esq.; HENRY M'CHLERY, Esq.; HENRY GIBBS, Esq.; W. C. SARGEAUNT, Esq.; and the Rev. JOHN GARRETT, M.A., form a Committee of Management. The Hon. ARTHUR KINNAIRD is Treasurer. Messrs. RANSOMS, DRUMMONDS, and MASTERMAN are the Bankers; and the Rev. JOHN GARRETT, vicar of St. Paul, near Penzance, with W. C. SARGEAUNT, Esq., of the Colonial Office,

act as Honorary Secretaries at the office of the Society, 54, Charing Cross.

Ladies' Committees are to be immediately formed, subscriptions collected, and every possible information given as to the best means of proceeding. In a circular already issued by the Secretaries, it is most truly said that, between the extreme distress existing in districts such as Coventry, and the number of friendless girls to be found in this country, a vast benefit may be done to Great Britain, and a real blessing conferred upon the colony, by *prudently* directing such a plan of emigration.

The Bishop of Oxford had already treated the matter in a thoroughly practical manner, in the speech we have just referred to, and we cannot do better than quote his Lordship's words—"Consider," he said, "the number of young girls in the various workhouses of this country. Look at the misery of their present life, and the misery of their future. The reports of all the inspectors tell us that young girls in workhouses, on verging into womanhood and becoming acquainted with others of their own sex who are older, and others of the sex which has driven them there, but too frequently become demoralized, to return again as the wretched inmates of the asylum of their youth, to hand over, as others did to them, the taint of evil. Let any practical man in Parliament, assisted by other practical men, bring this question before the House of Commons, that at the time of girlhood these inmates of our workhouses may be sent to our new colony, where they will be cared for by a Christian bishop, and where, having been first passed out to service, they will naturally, by the taking up of society, become wives and mothers in a Christian land."

In another place the Bishop skilfully touched the only difficulty that lies in the way of female emigration. "I know," he said, "many women in this land to whom have been denied the ties of family life, who would at my request undertake to provide a home for these friendless girls, and would go forth to see that on their passage they were secured from evil. As to the first, these girls would be received by the Bishop; and as to the second, there are at this moment in this land at home many ladies whose softening influences have been wasted on lapdogs, and which they would but too readily lend to the salvation of their fellow-creatures. It is a subject I dare hardly trust myself to speak upon when I think that a Christian woman's mind, filled with compassion, might, if drawn out, be made a blessing to her fellow creatures; to know that this mind, so capable of the laws of nature, is by the laws of society compelled to waste its sympathies on worthless objects; and to feel that we have not provided noble spheres of action for the noblest works of God. I know, I say, that on my own asking, and they would be proud were they asked, many such would go to British Columbia to guard these young girls."

We understand that a meeting of the Committee will be again held on Tuesday next, to organise the plans of the Society more completely.

Lycaste Skinneri seems about to have as great a future as the Tulip. Already something like a dozen varieties of colour are known among its exquisitely beautiful flowers, and we can entertain no doubt that it will break into plenty more, especially if recourse is had to hybridising. From deep rose to a skin only less white than the Hawthorn we have a complete set of transitions, and this in a plant conspicuous for its fine broad foliage, and most glorious in its ample floral garments.

It is not, however, wholly on account of its disposition to reward us by an endless variety of colour, and perhaps form, that we wish to attract attention to it, but because of all tropical Orchids it is one of the hardiest and most easy to cultivate. This has been very decisively shown by some late experiments by Mr. Skinner, to whose untiring energy we English* owe this and many another treasure. In a note received from him the other day he writes as follows:—

"On the 2d February, 1861, I received from Mr. Veitch a fine specimen with seven flower spikes all out, and took it to Hillingdon Cottage, placed it on the drawing-room table in an ornamental pot, and gave it every three days or so about four tablespoonfuls of water, occasionally wiping the leaves with a wet sponge when the dust got on them. There this plant stood throughout the severe weather we had—a fire in the room only during the afternoons and evenings, and on some days none at all. It never showed the least decay until the 16th of May, when it was for some purpose or other put into the greenhouse, and our gardener sprinkled water over it along with the other plants. Next morning I was shocked to see the flowers all with brown spots and withering. On the 18th May I took it back to Mr. Veitch still in full bloom (7 spikes) to bear testimony to its condition, and it lasted, though then much injured, a week on the stand by the seed room in their place. This experiment induced me to try again. On the 18th December, 1861, I brought down to this place two fine plants of the Lycaste, and two plants of Barkeria Skinneri, both in full bloom. Having been absent (with the exception of three days in January) since, I have had no control over them, but my sister followed the same plan as at Hillingdon, only with the Barkerias, which are attached to blocks, dipping the whole block into water for a few minutes every four or five days, according as we have much or little sun; and as the plants are now before me, I give you their condition. One of the Barkerias is as perfect as the day I brought it here. The other has all gone off within the last few days. One Lycaste is perfect, and as beautiful as the day I brought it here; the other has *lost* one flower, I fear by some accident, the other flower still good, but evidently a little "shady;" this plant has two flower stems coming on, and will bloom in a fortnight if we pushed them by more moisture. I expect frost has got on it after watering, for it stands close to the window in the drawing room, and this room, though smaller, is similarly treated to the one at Hillingdon—fires in the afternoon and evenings, with a southern aspect. What a treat to me is this, and I think you should know it, for people have said—'I love Orchids, but hate the stew pans one has to view them in.'"

It is clear that for Lycastes and Barkerias "stewpans" may be dispensed with. Plenty of Orchids like these are to be found in our gardens, brought from the Nubes or Highlands of Mexico and from Central America. It is also probable that mountain species of India, such as the delicious Cœlogynes, will thrive under the same treatment, and if so one more class of enjoyments is provided for the lovers of flowers.

Surely this is news worth telegraphing through the whole horticultural world! What a charm for a sick room! What a pet for the poor invalid who has nothing to love except her flowers! Imagine the pleasure of watching the buds as they form, visibly enlarging from day to day, and the slow unfolding of the perfect blossom, and then the delight at seeing it some morning, stimulated by even a winter's sun, suddenly throwing back its green cloak and displaying the wondrous beauty of its richly tinted lining. It is almost worth being ill to enjoy such a scene.

We recommend this matter to the attention of Miss Maling, herself the Queen of indoor gardeners, and we hope she will some day tell us all about it.

* It is only right to say that its first discoverer was Mr. Linden, who found it in the year 1840 growing in the forest of San Bartolo, in the Mexican province of Chiapas; one of his plants was shown in 1841 in Belgium under the name of Maxillaria virginalis.

New Plants.

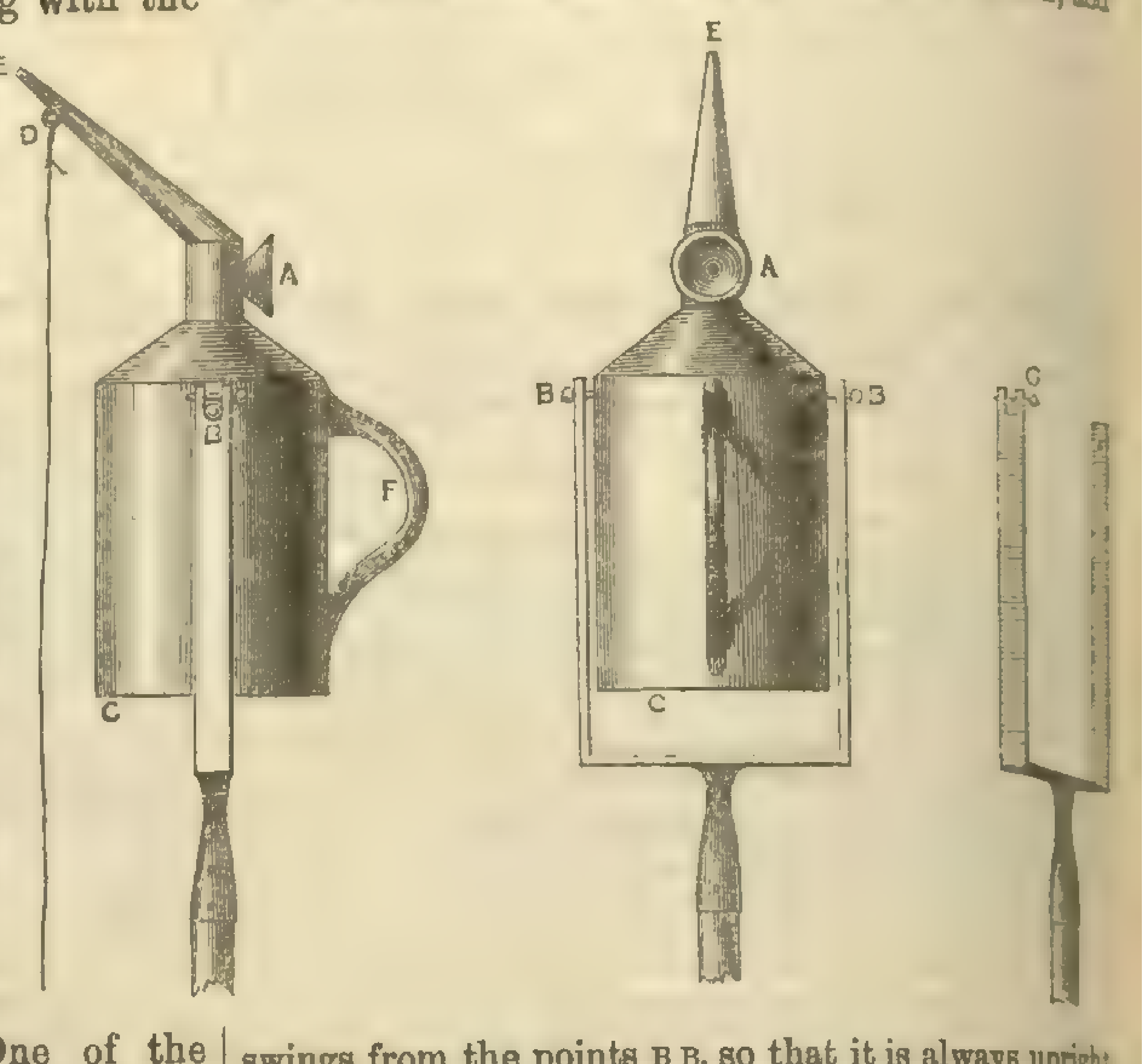
243. Lilium Fortuni.

At a recent meeting of the Floral Committee of the Royal Horticultural Society, Mr. Standish, of Bagshot, exhibited a Lily from Japan, sent home by Mr. Fortune. Unfortunately we only saw its remains, which although insufficient for definition, were quite enough to show that it is undescribed; wherefore we name it after its zealous discoverer. The only published Japanese species to which it approaches is Lilium callosum, but as that is a racemose Martagon, it cannot be the brother of this, which, on the contrary, is much nearer *L. tenuifolium*, resembling it in foliage, and *L. Catesbæi*, to which its flowers may be compared. As to *L. spectabile* and *sinicum*, their broad leaves and clawless petals are quite different.

The plant grows 18 inches high, has narrow grassy alternate leaves, and a solitary flower with long bilamellate unguiculate floral leaves, orange yellow, richly dotted with brown-purple. If it were not for its colour it might be almost referred to L. tenuifolium. It is a very pretty acquisition.

WATERING-CAN FOR HANGING PLANTS.

We find the following in the *Revue Horticole*. "In order to make it more easy to water plants in hanging vases or baskets, I have contrived the little machine represented in the following figures. In order to make it handy it only holds 3 or 4 quarts. It is supported by a pair of iron arms (fig. G) to which a wooden shaft is fixed of such length as may be required. The can is filled by a hole fitted with a funnel as at A A, and



swings from the points B B, so that it is always upright, the part C C being the heaviest. At D there is a little ring to which some string is fixed. To water a plant you have only to pull the string; the watering can swings over and the water escapes by the orifice E, on which a knob may be worked if it is desired. A handle F is added, so that the can may be used for watering little plants by merely removing the pin G. As for the length of the shaft it is better that it should be rather long. Mine measures 4 yards. *Edmond Rouet, Propriétaire à Lunel (Hérault).*"

THE TREES, &c., OF PARIS.

Upon reference to your last year's volume I am pleased to observe that the writer of the leading article which appeared on the 26th October, and myself, agree as to the causes of decay and early death amongst the trees of Paris, but I cannot with him allow the parties whose duty it was to see that they were properly planted, to take shelter behind the backs of "ignorant workmen," for if they rank amongst "the intelligent French planters who deprecate deep planting as much as we do," and yet so far forget their duty as to allow it to be practised to such an immense extent as has been done in Paris, they should be subjected to public censure for having wilfully frustrated the laudable efforts that are being made on such an extensive scale, to adorn one of the most beautiful cities in Europe. I trust, therefore, that the remarks that have appeared on this subject in the *Gardeners' Chronicle*—which I know is read in Paris—may meet the eye of some one whose duty it is to take cognisance of such matters, and who will insist on a new management.

I must still persist in asserting that both in the Tuileries and Luxembourg gardens little taste is displayed in any department. The arrangement of the plants in the borders, and the management of the Orange trees are so exactly alike at both places that they must surely be under the management of the same individual, and your Correspondent "B." admits that about the latter there is "an odour of senility."

I cannot conceive that "40 years ago" the French had anything worthy of being named in comparison with our splendid ribbon, paneled, or Mosaic borders and clumps of the present day. They could not have them, for the very reason that they had not the materials with which to compose them that we have. Within a hundred yards of where I write 50,000 of the following plants were last autumn producing an amount of bloom unknown to the borders in the Tuileries Gardens, though the position they occupy was 700 miles north of Paris, viz., Scarlet, Pink, and other Geraniums, Verbenas of every shade, yellow Calceolarias, blue Lobelias, Gazanias, Cerastiums, Centaureas, Alyssums, and a host of other plants common to modern British gardens now, but which had no existence in Europe 40 years back.

I now give a list taken on the spot of the plants in the best borders of the Tuileries Gardens, planted as they were without the least regard to arrangement, either as to height or colour, viz., Tagetes lucida, Heliotrope, the old variety; Fuchsias, Pink and Scarlet Geraniums, a very poor variety of shrubby Calceolaria (the plants had been taken up the year before, potted, and when put out last season must have been very leggy), Cannas, Gladioli, and Chrysanthemum frutescens or grandiflorum. Ten yards of any border, muddled together as these plants were, formed the exact counterpart of every other ten yards. The beautifully green Grass, the fine bright gravel of the walks, the Ivy borders, the statuary and the fountains were all that could be desired; and if proper taste and skill had been brought to bear on the borders and

champs, the gardens of the Tuileries would attract 10 visitors for every one they do now.

To justify what I formerly said about the Orange trees I will describe them, and the treatment I saw them receiving in September last. The trees were standing along the sides of broad walks, nearly a quarter of a mile long. They are said to be 200 years old—they are grown in square boxes 4 feet by 4½ feet—their stems from the surface of the soil to where they begin to branch may be on an average about 5 feet high; the diameter of the globular heads of crooked sticks with a thin crust of brown leaves on them, might be about 4½ feet. They were not exactly all of the same height, and presented what I may term a deformed uniformity. So much for the trees, now for the treatment I saw them receiving. Two men, on what are known here as painter's steps, were busily engaged with a pair of scissors each, clipping off every morsel of new wood the trees had made during the summer months to within one leaf of the old wood. I took up numbers of the sprigs so cut off and found them to be from 3 to 5 inches in length, with a few small embryo flower-buds on them. Not an open blossom had been on one of them during the season. I question if a Parisian ever saw an Orange on one of the said trees, and with their admirers—if they have any—their being orange trees at all must be a matter of faith and not of sight. The effect of cutting off all the young and active foliage from such trees must by reaction lead to the death of the greater part of the young roots called into existence by the leaves just named; and the poor plants must reappear on the stage next year to make another struggle for existence. All I have said here applies to the trees at Versailles as well as to those in Paris. The Orange trees at Herrenhausen I have not seen, but the fact that they are fine only proves what proper treatment may effect.

I could say much that might not be complimentary as to what I may term the hillocky style of gardening in the Champs Elysées. It is, however, far more pleasing than that of the Tuileries or Luxembourg.

It may seem ungracious so to criticise one's neighbours, but by that means, if our strictures are honest, we may hope to benefit them, and if what I have written seems offensive to any Frenchman, I shall be happy to send him my address, and if he honours me by a visit, and I don't succeed in convincing him by my practice that I am right, I shall be most happy to apologise.

I do not insist upon the poorness of the vegetables and salads in France; although they have often been held up as examples for us to follow. Their failures result chiefly from shallow culture. The same may be said of their agriculture; their land would produce double what it does if they ploughed 8 inches deep instead of 4 inches. *W. T.*

GARDEN TRACERY.

(Concluded from p. 189.)

"THE SEVENTEENTH PRACTICE.

"*To draw a Circle upon the Ground.*

"Suppose the stake A to be the center of the circle A which you would describe, measure, upon the plan, the distance from the center *a* to the circumference, as from *a* to *b*, suppose six fathoms, which is the semi-diameter or radius; put the loop of a line of six fathoms long over the stake A, and the point of a tracing-pin through a loop made at the other extremity B. Carry the line and tracing-point quite round about the center A, till you come to the place where you first began, as B, which traces your circle entirely, observing that the line be always strained alike, that nothing interrupts it, and that the tracing-pin be constantly held in the same inclination, it may slant a little in the direction of the line to be traced, but not to the inside nor outside of that line, for if the head of the tracing-pin be inclined nearer the centre than the loop, the tracing point will then act farther from the centre than it ought to do; besides which, let the stake in the center be held by somebody to keep it perpendicular, lest in straining the line too much it give way, and make the circle larger than would correspond with the dimensions taken from the plan.

"OBSERVATION.

"It is easy to apprehend, that the application of this practice may serve for tracing half or quarter circles, and, generally, any circular segment whatsoever.

"THE EIGHTEENTH PRACTICE.

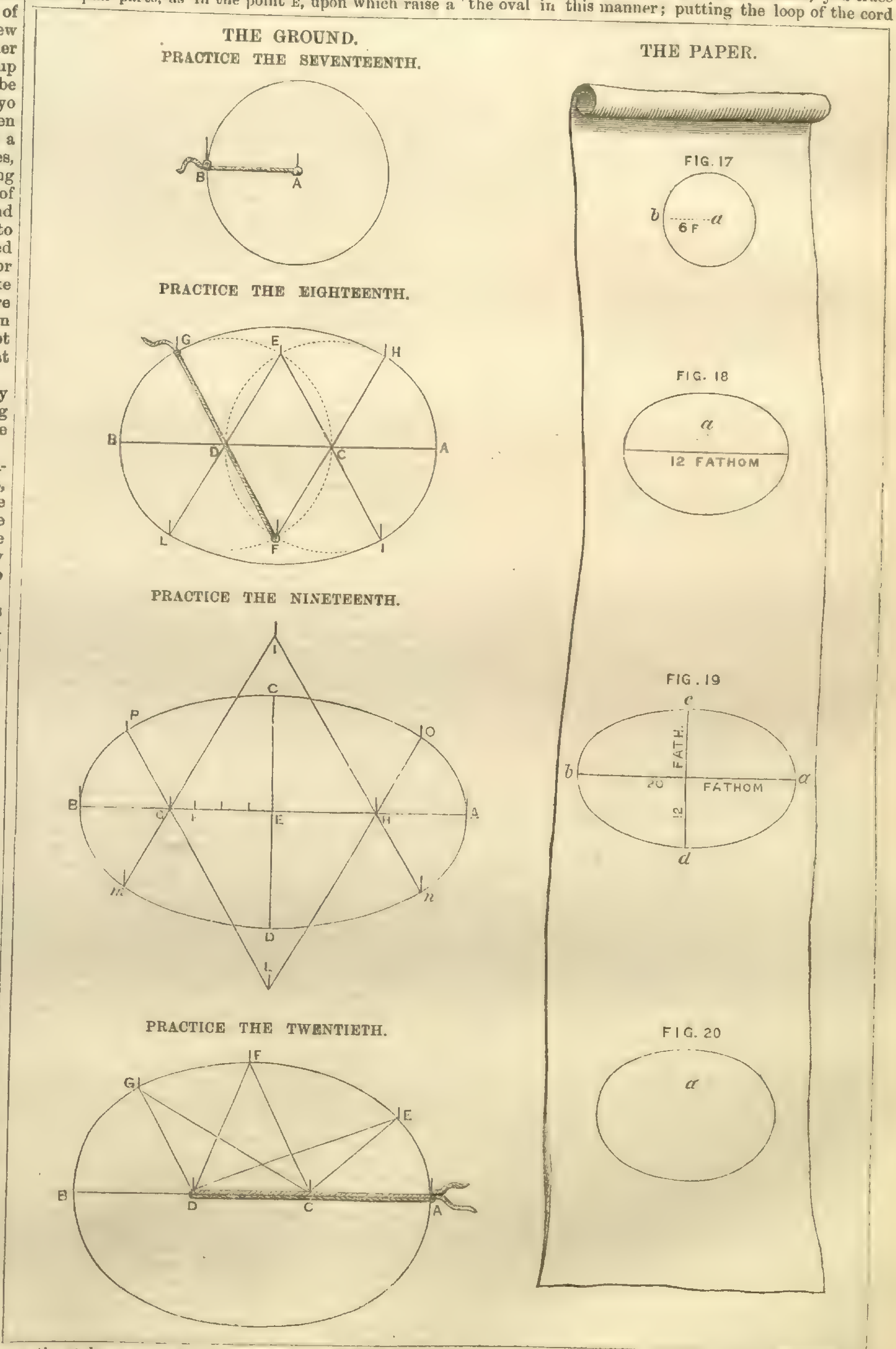
"*To draw an Oval upon the Ground.*

"Let the oval upon the paper be *a*, whose longest diameter only is determin'd 12 fathom; trace out upon the ground the line A B of 12 fathom long, and divide it into three equal parts, where plant stakes, as in the points C and D. Then take a cord of the length D B, or C A, with which trace lightly two circles, from the center-stakes C and D, which circles intersect one another in the point E and F; in these drive two stakes, and the points C D E F shall be the four centers of the oval. Fix the loop upon the stake F, and making it just touch or bear upon that of D, range it by the stakes F and D, to cut the circumference of one of the two circles, in a point where you drive a stake, as at G; do the same on the other side, for planting the stake H upon the circumference; and from the center F, without quitting the line, draw the arch G H, till you come to the stakes G and H. This done, shift the line, and putting it upon the stake E, do the same thing for planting the stakes L and I, and trace the arch I L; then joining these tracks with the two portions of circles at the extremities A and B, you deface the rest of these circles marked with points, that you find within the oval, which is all that will remain visible, and will in every respect be like that of *a* in the plan.

"THE NINETEENTH PRACTICE.

"*To trace an Oval, the two Diameters of which are determin'd upon the Paper.*

"Let the oval be *a b c d*, the longest diameter of which is 20 fathom, and the shortest 12, as quoted upon the paper. Trace upon the ground the line A B 20 fathom long, which terminate by two stakes, and divide it into two equal parts, as in the point E, upon which raise a perpendicular of 12 fathom long, by the fourth practice; take the half of this, which is 6 fathom, and measuring a cord of that length, lay it upon the great diameter A B, from one of its extremities, as from point B towards F, divide the space that remains between F, and the center E, into three equal parts, and set off one of these parts upon the same line beyond the point F, as G: then take the distance from the point G to the center E, and set it off upon the other opposite side, as from E to H, planting two stakes there, to range with those of the two ends A and B; and from these stakes G and H, draw the two equilateral triangles H I G, and H L G, according to the first observation of the eleventh practice: this done, prolong the sides of the triangles indefinitely, and trace them lightly, as I H N, and I G M, &c. and from these four points G H I L, as centers, you trace the oval in this manner; putting the loop of the cord



over the stake G, extend it to the extremity B, and draw the part of the circle to the indefinite lines M and P, where you are to stop. Then shift the cord of the same length on the opposite side, and fix the loop upon H, from whence draw the other circular segment, with the same caution, to stop the track when you come to the indefinite lines N and O, and drive small spikes in the intersections of these lines, as at the four points M P N O. Then take a longer cord, and putting the loop over the stake I, adjust its length to the point D, and trace the arch N D M till you come to the track and spikes of the circular segments, with which the tracing-point ought to fall in exactly. Finish the circumference of the oval, by shifting the loop of the cord to the other side upon the stake L, from which you describe, in like manner, the arch O C P. These two arches joining with the circular segments, entirely close the oval; after which, you deface the lines that served only to the construction of it, that nothing remain but the bare track of the oval, which will be found proportionable, and like that of the plan.

"THE TWENTIETH AND LAST PRACTICE.

"*To draw, upon the Ground, the Oval, commonly call'd the Gardener's Oval.*

"If you would draw an oval at pleasure, without any plan, or that you have one upon paper, such as the oval (*a*), whose diameters are not determined by numbers; trace upon the ground the line A B, which you are to terminate with stakes, and take thereon a length at pleasure, about a third, as from A to C. Set off the same length from the extremity B to D, and drive two strong stakes in the points C and D, which are the two centers of the oval. Then take a line without loops, bring it about the stake D, and extend it double to the

extremity H, where you join the two ends by a loop, through which you thrust a tracing point. Lead about this point from A to E, from E to F, from F to G, &c. taking care that the line be always equally strained, and that it slide and turn freely about the two stakes C and D. Continue thus to carry the line and tracing-pin till you come round again to the stake A from whence you set out; and by the different triangles which the line forms successively, in lengthening and shortening itself, it describes the oval without being shifted, and this being the most usual method of gardeners, the oval thus formed is called the gardener's oval."

Indoor Gardening.

WINDOW gardeners ought to be above "green fly." Still it is a melancholy fact that these flies do come sometimes, and that they are great nuisances; sometimes on spring bulbs, if not watered properly; sometimes on Verbenas, if without sufficient air; on Roses, if too dry; perhaps I may say on everything, if not closely cared for. There is, however, one remedy so useable by ladies, and so perfectly free from any sort of annoyance, that my object to-day in writing of green fly is to suggest the use of Dumont's Insect Powder, sold everywhere in little elastic balls by chemists, and perfectly invaluable for the destruction of these insects. So rapid and so sure is it in its work, when once it has been dusted on the branches infested by the flies, that I am quite debarred from using a popular Americanism, and saying that they "make tracks," since in point of fact the creatures vanish tracklessly, leaving no trace behind. The powder is itself quite harmless, and should be dusted on as slightly as possible when the plants are dry.

To-day I name these things particularly because they afford a means of really keeping the atmosphere of the plants in some degree moister than the dry air of our rooms. The Moss that fills these stands sends up an unseen vapour—the roots are kept too well supplied with moisture, and thus if shaded only from driest rays of sunshine, plants brought in in blossom will stand for a long time.

At the present time our stands are "filled" with a single plant; one great white Azalea, standing with drooping boughs and its Lily-like blossoms, makes a more lovely picture than a dozen colours. Low-growing Mosses, little Ferns, Cyclamens, and blue Scillas are, for such, a ground work among the most appropriate. How to keep these things healthy ought not to be difficult. The grand thing for this is to provide a cover! It is perfectly absurd the way in which people think of what they see their plants suffer, wholly forgetful of their acuter sufferings where given up to the tender mercies of housemaids and their brooms; good housemaids doubtless cover up the furniture, but they are the last gardeners to whom I would trust my plants. Fancy the plants—groups of fragile flowers at the point of every spray—and fancy the covering, even though perhaps it is light, thrown over these and resting against or knocking off the petals! The very first step taken towards making flowers last will I am sure be found in something like Chinese lanterns. Great thin paper or transparent linen covers, made up on slender frames, and put over the stands each night like a large bell glass. There is always some slight change at night in the temperature of a room, and a plan like this equalises and confines that air which surrounds the plants. It protects them from dust, and more than all it shelters them from the draughts that are prevalent in the early morning.

This being arranged, a regular morning's task should be to see what plants require water, everything being watered always with warm water. Azaleas in blossom should be daily watered, and sometimes it is practicable to bedew the foliage from the side away from the window, so as a little to refresh the foliage of the undergrowth, without letting water fall on the open blossoms. Sometimes, too, while a plant is blossoming, there is a sort of gap between two sets of blossom; with Roses and Azaleas this very often happens. Then the foliage and buds can have a thorough dewing. The Cyclamens, also, in which I so exceedingly delight, derive untold benefit from a proper washing every few days or so. The foliage looks charming when kept so fresh and clean, and a plant I had last November beginning then to blossom, has now got upwards of 30 buds and blossoms still; the scent too becoming more and more delightful.

It is a heavy trial, these said Cyclamens; they ought to be close to the light; and who can resist having them on the table! However, if anything, they are prettiest by candle light, so it is possible to give them by day the full light they crave, and yet to enjoy them perfectly in the evening. Mine are watered every morning regularly, but never are allowed to be in the least sodden; being lightly potted, the water runs through quickly, and is instantly discontinued. Each plant receives thus about a coffee cup full daily. These plants, however, are standing out, contrary to rule, in flower pots. Violets I find do best treated in exactly the same manner. Neither seem to bear being covered up, or having a steamy atmosphere.

My Cyclamens I should mention are all C. persicum; the best has foliage a very little marbled, but the great fragrance I attribute a good deal to the healthiness of the plant at present, since at first it certainly was not sweet at all. My plants were obtained at Messrs. Hooper's, of Covent Garden, but I do not know if they have any especial strain. The scent exactly resembles that of a very delicate lemon-scented Geranium. It is not in the least like that of the more powerful perfume of some other kinds of Cyclamens. *E. A. M.*

Home Correspondence.

Notes upon Ferns.—In looking over the dried specimens of Ferns collected in their native habitats, I have often been struck with the extreme elegance and beauty of the many species of Lindsæa, and wondered why we have not got them in cultivation. I turned to the genus Lindsæa in a catalogue of plants published only 10 years ago, and found that there were no less than 16 species enumerated there as being at that time in our English gardens. Can these all have been lost again after being once fairly established? If we turn to the "Catalogue of Ferns" published by the Curator of the Botanic Garden at Kew in 1857, we find only two kinds mentioned; many new Ferns have since that time been introduced, but to those which were then in cultivation, it is the most complete and trustworthy guide. We are forced then to the belief that they were all lost but the two enumerated—Lindsæa cultrata and L. Guianensis, the one from the East Indies, the other from the West. The latter I have too much reason to believe has since been lost, and while L. cultrata was quite common a little time since, it too is now becoming scarce. The last mentioned was raised by hundreds from spores, upon the continent, about the year 1856, and soon afterwards was to be seen in almost every good collection of Ferns in Europe, but now it is hardly ever to be met with. Within the last twelvemonths Mr. Low, the well known nurseryman of Clapton, has introduced several East Indian species, and some Australian kinds have found their way into other nurseries; it is greatly to be hoped that we shall manage to keep them. I may, perhaps, be permitted to digress for a moment to say that the curious little semi-pinnate, creeping Fern at first known as Lindsæa Lowii has been identified by Mr. J. Smith as being only the young form of a plant which in its adult state is extremely different, and belonging to a very different division of the family. It has been named Arthrobotrya articulata. It becomes eventually a strong climber, belonging to the Acrostichoid group, nearly allied to Polybotrya, but it has not yet exhibited its adult form in this country. To return to the true Lindsæa; I cannot but think that there must be some good reason why these are so difficult to keep. Can any one explain what that reason is? Is there any peculiarity, anything different from other Ferns, in the circumstances under which they naturally grow? The inquiry is well worth making, for as every Fern grower knows, from the beautiful figures published in Sir William Hooker's "Species Filicum," they possess as much elegance of shape and habit as the Adiantums, and even a greater variety of form; could they therefore be safely introduced and successfully cultivated they would form a grand addition to our Ferneries. A few years ago the same difficulties seemed to surround the various tropical kinds of Trichomanes and Hymenophyllum; they were imported and lost, and again introduced over and over again, but they have at length succumbed to cultivation, and all the difficulty about their management seems to have disappeared. It is quite likely that with a little careful attention the same result may be attained with Lindsæa. Should this be the case we shall have embellished our stoves with one of the most extensive and varied as well as one of the most beautiful and elegant genera of the whole family. *C. W. C.*

Orchards.—It is I believe a fact, that orchards, except where the land is first-class, only bear a good crop of Apples once in three years. Why is this? There are at least two reasons to be given. The trees are not pruned, and the ground wants manure. In the case of Espaliers, I find that they bear heavy crops every year. This I attribute to the high manuring of the beds in which the trees stand, and to hard pruning. Last year the blooms of my espaliers were greatly damaged by frost; still, several of them bore heavy crops, as was observed by "D." of Deal, when here. I appeal to his "Apple accuracy," and further hope, that you will submit these few words to the more accurate scholar of Barr & Sugden! seeing that I had only the advantage of being at Harrow and Oxford!

Barr & Sugden are the boys for Latin,
One translates it Satan, t'other Satin!

Excuse an oasis, but "Fat Catalogues," "Linager," and "A Country Parson" (you might as well kick over a beehive as attack a Parson!) amused me greatly. However, to proceed, it is no wonder that orchards, as usually treated, bear but once in three years. Cow stock or oxen are put into them to fill themselves by day, and are travelled back to the homestead to drop their manure on straw by night. Sheep, also, are depastured in the orchard, and at night are taken away to fold. A heavy crop of Apples, no pruning, and this mode of robbery, where the land is not deep and strong, naturally stops the crop for one or two years, till heaven does something for the tree which man denies it. If orchards were properly pruned and the trees supplied in a radius with manure (oilcake troughs, Turnips, and broken-mouthed ewes would do), good crops would be obtained annually. Moreover, the Grass plot in the radius should be occasionally turned upside down, and a little new maiden earth should be spread over the radius. The scraping of roads would be excellent for the purpose. I merely submit this to Barr & Sugden, availing myself of this opportunity of thanking them for their Catalogue, and cautioning them to beware in future of town and country parsons. *W. F. Radclyffe, Rector of Rushton.*

Gas Tar and Hot-water Pipes.—I do not believe that gas tar applied to hot-water pipes is injurious, provided it is applied when the pipes are hot and free ventilation given, as it then dries very quickly, and once dry no smell is thrown off. I used it till I heard of a better application, which is I presume some preparation of gas tar called "mineral varnish," and sold by Mr. Fisher, of Edmonton. I use this for all out-door purposes, hot-water pipes, frames inside and out, and for shelves covered with slate it is invaluable, as it dries in a day or two and prevents rotting. We apply it with a tar brush, and only once a year. *Thos. Taylor, Bocking.* [If Mr. Taylor had seen as much of the mischief caused by the use of gas tar in plant houses as we have done we think he would change his opinion.]

Gesnera Zebrina.—Finding, in Loudon's "Cyclopædia of Plants," this given as an evergreen perennial, I wish to ask whether it can be so grown? To have a plant of such beautiful foliage always in leaf is very desirable. Having no stove appliances I find the dry tubers very sluggish in starting. You would also oblige me by stating how Lilies of the Valley are retarded so as to have them flower in autumn. *O. P.*

Rainfall in January, 1862:—

Stations.	Height of Gauge. Above the Ground. Ft. in.	Height of Gauge. Above Sea Level. Feet.	Depth of Rain. Total for the Month. Inches.	Depth of Rain. Greatest fall in 24 Hours. Depth. Inches.	Depth of Rain. Greatest fall in 24 Hours. Date.	Rainy Days.
Little Bridy, Dorset	0 4	348	3.21	.48	8	20
Barnstaple, Devon	0 6	31	3.60	.60	30	22
Castle House, Calne, Wilts	0 11	330	3.35	.39	24	20
Camden Town, London	0 4	100	1.92	.38	30	20
Finchley Road, London	0 4	270	1.93	..	..	..
Ditto ditto	36 4	306	1.46	..	..	..
Oundle, Northampton	20 0	124	1.63	.35	12	14
Norwich	0 0	30	1.48	.22	13	15
Llanelltyd, Dolgelly	0 2	20	6.84	1.24	31	18
Derby	5 0	179	1.42	.22	24	15
Manchester	3 0	106	2.27	.38	31	18
North Shields	1 0	124	2.50	.35	10	23
Dumfries	0 5	63	3.91	.50	24	19
Nookton, Fife	0 6	80	4.60	.81	10	25
Sandwick, Orkney	2 0	78	4.02	.42	16	26

REMARKS:—

Calne.—Snow 1½ in. deep on the 21st.

Oundle.—Weather dull, but mild for the season.

Llanelltyd.—Snow on the 21st, thunder and lightning on the 23d from 10 to 11 P.M.

Derby.—Average (14 years) 2.28 inches.

Manchester.—Average (47 years) 2.26 inches.

Dumfries.—Snow on 17th, 18th, 19th, and 22d, yet the mean temperature of the month was nearly 4 degrees above that of last year. The Daisy and Snow-drop were in flower, and Blackbird and Thrush singing as in April.

Nookton.—Slight Snow storms on the 18th, 19th, and 22d.

Sandwick.—Average (20 years) 4.23 inches. Weather windy; but mild temperature, never having been down to freezing point.

G. J. Symons, Camden Road Villas.

The Python and her Eggs.—As great interest has been manifested by the public in the case of the python now incubating her eggs in this Society's Gardens, perhaps you would kindly allow me, in reply to numerous inquiries on this subject, to state summarily in your columns the result of experiments made on three different occasions on the temperature of the body of this animal as compared with that of the male, which is in the same compartment in the reptile-house, and is subject to exactly the same external circumstances. The instruments used have been provided expressly for the purpose by Messrs. Negretti and Zambra, whose well-known names are a sufficient guarantee for their accuracy:—

Date. 1862.		Female on her eggs.		Male in same den.		Difference.
Feb. 12.	Surface of body	73° 0'	..	70° 2'	..	2° 8'
	Between the coils	81° 6'	..	74° 8'	..	[illegible]
Feb. 28.	Surface of body	75° 4'	..	71° 8'	..	[illegible]
	Between the coils	83° 2'	..	74° 0'	..	12° 4'
March 2.	Surface of body	84° 0'	..	71° 6'	..	[illegible]
	Between the coils	96° 0'	..	76° 0'	..	[illegible]

March 2.—The eggs with the bulb of the thermometer inserted, 94° 7'.

I should mention that these experiments have been made by Mr. A. D. Bartlett, the Superintendent of the Society's Gardens, Mr. Negretti, Mr. Zambra, and myself. It appears to me that these results, giving as they do a difference varying from 6° 8' to 20° (of

Fahrenheit's scale) in temperature in favour of the incubating female, prove conclusively the truth of M. Valenciennes's views, as founded on the similar case which occurred in the Jardin des Plantes of Paris in 1841, and show that in the case of this cold-blooded vertebrate the heat of the female's body is abnormally increased during the process of incubation. I may add that one of the eggs, which was opened on the 15th day of incubation, contained a living embryo python about five inches in length, which is now before me. *P. L. Sclater, Secretary to the Zoological Society of London.*

Mushrooms.—It might be worth while inquiring whether or not the underground railway would be a good place in which to grow Mushrooms. The porters will have many dull inactive hours when "Cuthill's pamphlet" might lead them to be both usefully and profitably employed. We were told in Paris that all the supplies of Buttons in the markets were grown in the Catacombs. It would be a much more pleasant idea to know that ours came from the underground railway. *J. F., Cleveden, March 4.*

The Battle of the Catalogues.—When sport is scarce, and cover won't draw, it sometimes happens that all at once the hounds give tongue, they are laid on, away goes the well appointed field, each "scarlet" anxious to get a peep of Reynard; after a glorious run, when they come in at the death, hoping each one to get the brush, great is the disgust of the field to find they have been only hunting a red herring. I am sorry to inform your very eager correspondents, they have been doing the same sort of thing. I had not intended noticing the matter, but as my name has been brought prominently forward, I feel it due to myself to state the circumstances, exactly as they occurred. I was asked by Messrs. Barr & Sugden to write a few *cultural* articles for their Catalogue, to expunge or insert any flowers I considered deserving of either, and to correct such errors of grammar and diction as might strike me. This I did, but *I never wrote one line of the Botanical portion*, for the simple reason that I have never pretended to any botanical knowledge. I have been a writer on gardening matters for upwards of 20 years, and I never penned a line that implied that I had any. They informed me, as they stated in their advertisement, that a friend of theirs in London, a good botanist, would revise that portion. It was greatly to my surprise that I found when the Catalogue was printed, that my name had been printed as its editor, for even of those portions which I did write I would not have been responsible, as owing to their great press of business I never saw a revise, and those who know anything of publishing are aware how many blunders may be overlooked in a first proof; but what was I to do: either to demand the suppression of an issue of 15,000 copies, or else advertise that I was not responsible for it—neither of which would have been pleasing to me. I had therefore only to let it be, hoping that it would share the fate of other catalogues. Perhaps my stating this may be sufficient; but as surely appears on the face of it I would never have allowed my name to appear as editor of the "Botanical Magazine," for which I am about as competent as the Editor of the *Gardeners' Chronicle* to edit an Uncial Manuscript. I have moreover an immense objection to see my name in print. I have been now, as I have said, for 20 years a rather prolific writer on horticultural matters; and until, about six months ago, I assumed the editorial management of the "Floral Magazine" I never wrote except under an initial letter, and even now my contributions to the Journal of Horticulture and other periodicals are still so written. Of course I do not blame your correspondents. They did not know these circumstances; and but for their strictures I should never have troubled any one with them. They thought they were hunting the fox; in truth they have only got the "tail of the red herring" instead of the brush. Perhaps my good brother, the "Country Parson," whose *esprit de corps* I gratefully acknowledge, will allow me to say that the "A. B." *is a modern* pedantism dating back to 1591, when the university to which I have the honour to belong was founded; that it was first borne by James Ussher, sometime Archbishop of Armagh, and in our own days by (amongst others) Mr. Archer Butler, in whose early death the Church to which we both belong mourns the loss of a profound theologian, philosopher, orator, and poet. *H. H. Dombrain.*——In reference to the controversy with regard to our Catalogue, we think it only fair to the Rev. Mr. Dombrain to state that his name was inserted as Editor of the flower-seed department without his knowledge, and that we had no intention of conveying the impression that the portion of the work he undertook, *required* the revision of any other party. *Barr & Sugden, 12, King Street, Covent Garden.*——Allow me to assure you that Barr & Sugden did not so much as intimate to me their intention of mentioning me in any way in their Catalogue or Advertisements. I was very much surprised on seeing the reference to me at the top of the vegetable department of their Catalogue, and when I saw the advertisement I felt fairly enraged, and wrote requesting them not to repeat the paragraph which refers to me. The statement that the Rev. H. Dombrain edited the Flower Seed department is singular enough; Barr sent proofs to me, I read the articles and corrected many things such as could not have passed any educated man, and I see that many of my corrections have not been retained. I have not however so much as read one of the articles I wrote for it, and if the practical portion of the Catalogue deserves condemnation I will submit, but I fancy I shall escape, for I believe that the proofs of my articles were such as little fault will be found with. *Alpha.*

Societies.

Royal Horticultural: *March* 4 (*Floral Committee*).—Robert Warner, of Broomfield, showed on this occasion a fine plant of Cattleya amethystoglossa, a beautiful species with large delicate pink flowers minutely spotted with purple, and having a well-marked purple-tipped lip. Mr. Williams, Holloway, sent a Lælia, the flower of which had dropped, and a handsome variety of Bearded Lady's Slipper. Salpiglossis chilensis of Miers, a handsome Bignoniaceous plant from Chili, with crimson tubular blossoms, came from Messrs. Veitch; and a Violet and a Hybrid Stock, the last not in flower, were furnished by Captain Trevor Clarke. From J. Allnutt, Esq., came a large Scarlet Rhododendron, the flowers of which had become injured from travelling. Mr. Wm. Paul contributed a collection of Camellia blooms, among which were Victoria, elegans, elatior, conspicua, Double Striped, Imbricata, triumphans, imbricata, Donckelaari, Princess Bacchiochi, Nicholsii, Double White, ochroleuca, fimbriata, Eclipse, Aulica, and a beautiful red striped white kind shown without a name. These were all fine examples of their respective kinds.

March 4 (*Fruit Committee*).—Mr. Tillyard, gr. to J. Kelk, Esq., showed a bunch of Muscat Grapes, extremely well grown and beautifully ripened. Mr. Hill, gr. to R. Sneyde, Esq., sent a bunch of Lady Downe's Seedling, as a specimen of retarded Grapes. It was fresh as new fruit both in stalk and berries, the latter being quite plump and sound and covered with bloom. Trebbiana Grapes were contributed from Welbeck by Mr. Tillery; though well grown they were considerably past their best, many of the berries being shrivelled and approaching the condition of Raisins. Of Apples, Captain Tyrrell's gardener showed a good collection, in which among kitchen sorts were Royal Russet, Wellington, and Fordhook Bellefleur. The last was also shown among dessert kinds, along with Golden Russet and Court Pendu Plat. The last was beginning to decay, while the Fordhook Bellefleur was apparently just in perfection, and looked as if it might keep sound for many weeks to come. It resembles Bess Pool, but is somewhat angular, and more conical in shape than that variety. The tree is said to blossom later than most others, and on that account has a better chance of escaping spring frosts. Mr. Cunningham, gr. to the Bishop of London, showed as kitchen Apples, Northern Greening, Norfolk Beefing, and Wellington; and as dessert sorts, Ribston Pippin, Beechamwell, and Scarlet Nonpareil. These were all in a state of good preservation.

Linnean: *Feb.* 6.—G. Bentham, Esq., President, in the chair. W. Ferguson, Esq.; J. D. Moore, M.D.; H. Scott, M.D.; C. Tyler, Esq.; and J. Veitch, jun., Esq., were elected Fellows. The following papers were read:—1. "On the Anatomy of the Smynthuridæ," by John Lubbock, Esq. 2. "On the Geographical Relations of the Coleoptera of Old Calabar," by Andrew Murray, Esq. The object of this paper was to illustrate some of the more remarkable affinities observed between the Coleoptera of Old Calabar and those of other countries. The general result of the author's investigations was, that while by far the greater proportion of the Old Calabar species bear the West African facies, a small but perceptible proportion have the South American facies. The natural inference which would be deduced from these facts, namely, that at some period or other the two continents must have been contiguous or nearly so, was not, it was observed, a necessary sequence. "For example," Mr. Murray remarked, "no one will maintain that the Kentucky caves have ever been united or contiguous to the Carniolan caves, and yet the relationship and resemblances of the eyeless Coleoptera found in these, are greater than in any two species which can be contrasted from Old Calabar and South America. I assume as proved that Europe and North America have been at some period united, and that the affinity between Anophthalmus Bilimekii, and A. Tellkampfii may be explained on Mr. Darwin's theory, by assuming them to be the product of the same or allied Trechi which have wandered into the caves, and that the like conditions have impressed a like form on their offspring. This latter assumption is of course not Mr. Darwin's, for he repudiates the idea of physical condition making much if any impress upon life. I confess I am still a believer in that exploded heresy. I can see no other way of explaining the existence of these allied blind insects in caves so widely separated; and if it applies to the caves, it may equally apply to any district with well marked physical conditions." Although the number of American forms and alliances occurring in Calabar were regarded as too distinct and decided and too great to allow the attempt to explain them away by accidental introduction—as by the longicorns being floated across the Atlantic in the wood in which they may have been as chrysalids—it was regarded as at the same time too small in proportion to the general preponderance of true West African forms, to allow it to be supposed that the continuity or proximity if it ever existed was extensive or recent. After, however, making every allowance, the impression which remained on the author's mind was in favour of some sort of communication having existed between West Africa and South America, south of or nearly on the line of the equator, interrupted not only by a long breach of time but probably also by wide spaces of discontinuity. Other affinities of the Coleoptera of Calabar were traced with those of the Eastern coast of Africa—scarcely less interesting than those with the South American forms; with Cape species—more rarely; with those of Mozambique—more frequently and very interesting; and with those of India in a considerable number of instances. Mr. Murray had not met with any species showing relation to a purely Australian genus. On the whole he regarded the Coleoptera of Old Calabar as forming a distinct fauna, mainly impressed with the West African character: possessing none or next to none of the epigeal species either of Africa or any other country: with very little connection with the South African fauna, and a surprising want of the species common at no great distance in point of latitude along the Gold Coast, but separated by the mighty floods of the Niger: having considerable affinity with the eastern coast of equatorial Africa, and a few but distinct relations with both South America and India.

Entomological: *January* 27.—This was the anniversary meeting, at which Mr. F. Smith was elected President in the place of Mr. Douglas, who had completed the service of presidentship, and by whom an address was delivered on the state of the Society, and on the progress of entomology, which was ordered to be printed.

February 3.—F. Smith, Esq., in the chair. Messrs. Pascoe, F.L.S.; Lubbock, F.R.S.; and Mr. W. Saunders, Treas. R. Hort. Soc., &c., were nominated as Vice-Presidents for the ensuing year. Mr. J. Lubbock exhibited a drawing of a remarkable dipterous larva, which he had found under decaying logs of wood. Mr. Staunton exhibited the pupa of the singular genus Micropteryx, which, although in some respects resembling the pupæ of the Phryganeidæ, was in its essential characters a Lepidopterous insect. Mr. Ianson exhibited seven new British species of minute Coleoptera; a remarkable variety of Lycæna Phlæas was also exhibited in which the hind wings were marked with longitudinal pale streaks. Captain Russell gave an account of the capture by himself of several very rare British Lepidoptera, including Argynnis Lathoura, Eulepia grammica, and Callimorpha Hera; of the last very beautiful moth he had taken five specimens off a Bramble bush between Wrexham and Rhuabon, on the 27th July, 1859; one of these had been presented to the British Museum. A remarkable variety of Vanessa Urticæ (resembling that figured in "British Butterflies," H. and W., pl. 13, fig. 13) had been taken in Suffolk. Mr. Rye read the description of a species of Staphylinidæ, not hitherto indicated as British, namely the Lathrobium geminum, heretofore confounded with the common L. elongatum. Mr. Crotch described a species of Dermestes, D. Frischii (allied to D. vulpinus) new to the country, of which he had taken a specimen under a dead horse in the New Forest.

Notices of Books.

At length we have a second part of Lowe's *Manual Flora of Madeira* (Van Voorst), beginning with Calyciforæ, and ending with Punica, under which we are informed that the pretty P. nana, once so common in gardens, bears fruit as large or sometimes larger than that of the common Pomegranate. Independent of its valuable information on technical Botany, this little volume contains much interesting discussion upon subjects of another kind. Of the latter we give a few examples.

Geological Accuracy.—"The fossil leaves figured and described by Dr. Heer in his very valuable and interesting Memoir on the Fossil Pl. of S. Jorge (4to, Zurich, Nov. 1855), p. 28, t. ii. f. 1, 2, under the name of Corylus australis, appear to be impressions of the under surface of terminal lfts. of R. discolor. On the other hand fig. 3, by its freer coarser larger serrature and absence of cancellaeing or reticulating cross-veinlets, is rather an impression of the upper surface of a lft. of R. grandifolius." And again, "'Ulmus suberosa, Mönch,' of Heer's Fossil Pl. of S. Jorge, p. 28, t. i. f. 24, is the impression of a side-lft. of this Rubus; and not only t. ii. f. 3, of '*Corylus australis*,' but his '*Psoralea dentata*, Dec.?' p. 33, t. ii. f. 28, are also, most probably, impressions of the upper surface of side-lfts. of the same, the "little points" or dots of the latter exactly corresponding with impressions of the fine granulations or ultimate reticulate compartments on the upper surface of the lfts. of either R. grandifolius or R. discolor."

The Wild Parent of the Apple.—"Without personal study and investigation it may seem rash, in opposition to the stream of most practical botanists, to endorse the idea of De Candolle, that the original stock of the garden Apple (P. Malus, DC.) is specifically distinct from our common English wild Crab (P. acerba, D.C., P. Malus α, Koch and Bab. ll. cc., P. Malus E.B. t. 179). It may serve however to confirm this view, that the former tr. appears to extend much further south than the latter, which certainly is totally wanting, either wild or cultivated, in both the Madeiran and Canarian Archipelagos, as, from Brotero's Flora Lusit., it also seems to be in Portugal. Whether the nearly sessile fr. of the former, contrasted with the long-stalked fr. of the wild Crab (P. acerba, DC.) and certain garden Apples (*e.g.* the Golden Pippin) possibly derived from it, might not also, in addition to the lanuginose young leaves and germens, indicate a specific difference in the original stocks, is a further question. There is certainly an appreciable difference in the mode of growth or ramification, as well as in the habit of the two plants."

The Portugal Laurel.—"Almost extinct now in a wild state, but undoubtedly indigenous. Thirty years ago I found a fine tr. in full vigour in the forests of the Serra d'Agoa under Pico Grande, and on the path leading down to the bottom of the valley from the Caminho Central about a mile nearer the Jardim; also I have seen it in the Curral das Freiras on the right hand high above the road going down the Voltas; Rib. de São Martinho, a branch of the Rib. de João Gomes, near Funchal, Sr. J. M. Moniz. This last habitat precisely accords with that assigned by Masson (in BH.) long ago, "ad ripas rivulorum Curral dos Romeiros." The tr. at the Palheiro are affirmed by the old gardener to have been all brought thither originally from the Santo da Serra; and those at the Mount, in the grounds of the Quintas do Bello Monte and de Prazer below the church, are doubtless, from their size and age, of the native stock. Old stumps of this tr. are met with occasionally in various other places."

Madeira Wood Strawberries.—"The fr. is collected

mostly by the children of the country people, especially those of the Porto da Cruz district, and brought for sale in Funchal early in the morning daily during the season in small baskets neatly covered with Chesnut-leaves, their contents being sold for from 'half a bit' (2½d.) to twice as much each. The supply is most abundant in May and June. The fr. though small and acid is remarkably high-flavoured, especially late in the season." The last epithet leads us to wish, that some one would send hither a packet of seed; it may turn out permanently higher flavoured than the wood Strawberries of England. The white variety does not seem to be known in Madeira.

Trade Lists Received.—Thibaut & Keteleer, Rue de Charonne, 146, Paris, General Catalogue of Plants for Sale in the Spring of 1862. This includes a considerable number of Orchids, at prices ranging between 3 francs and 500.

Garden Memoranda.

Messrs. Milne & Co.'s Nursery, Vauxhall.—The fine collection of Camellias, for which this nursery has long been celebrated, is now in full bloom and well worth inspection. They form a beautiful bank, 160 feet in length, and 8 or 10 feet in depth, studded with flowers which are this season unusually large and fine. So glorious an exhibition in close proximity to the very heart of our great metropolis has for many years, as a matter of course, annually attracted great numbers of visitors; we regret, however, to state that this is the last season this rich floral treat will be afforded them; for the site occupied by the nursery for nearly 100 years past has within the last twelvemonths been wholly let for building purposes. At certain distances apart all along the centre of the house just alluded to, are planted out in the border specimen Camellias which reach nearly to the roof. These noble trees are loaded with blossoms, which are also produced in profusion by plants trained against the back wall. Double whites are literally masses of flowers just sufficiently relieved by green leaves to be set off to advantage, and among red varieties are magnificent examples of Chandleri, this year more mottled than usual; Donckelaari, in charming condition, even in the shape of small plants; elegans, corallina, althæiflora, and Woodsi. These are supported by multitudes of smaller plants, each of which promises to flower satisfactorily, so that a succession of bloom will be kept up for some time to come. Of Fortune's Cup of Beauty we noticed a fine plant, but not in flower, and of all the newer kinds there is a large collection.

Among seedlings recently raised in the nursery by Messrs. Chandler, its former proprietors, Punicea and Amœna are well spoken of. The first has been figured in the "Floral Magazine," and the last is described as being very double, and one of the best Carnation varieties in cultivation.

Miscellaneous.

Mediæval Gardens.—At the magnificent Châteaux of Blois and Gaillon, the most remarkable features are their gardens. They are, of course, laid out in the formal artificial manner usual in the gardens of the early period to which these examples belong. In the centre of both these gardens is a fountain of much elegance of design, although the jets of water issue from sources not altogether unobjectionable. The practice of throwing the water from the mouths of human masks cannot be defended, although it is a very common expedient. It was suggested probably by the gargoyles of Mediæval times, when monsters, often of the most preposterous design, were made to emit water, both in fountains and at the eaves of roofs; but these, also, may claim a far more ancient origin. We know how commonly the rainwater which fell on the roofs of Greek temples was made to issue from the mouths of lions carved on the cyma of the cornice: they were, in fact, the true gargoyles of the Greeks. The practice may perhaps be partly due to æsthetic causes; for there are few subjects more captivating to the sculptor than the lion's head, so admirably sculpturesque in the breadth and even in the grandeur of its details. But still another and remoter origin may be assigned to the practice. The overflowing of the Nile, which, as you know, annually reanimates that arid country, and gives occasion to so much periodical rejoicing, occurs when the sun is in Leo,—a coincidence quite sufficient to lead the Egyptians to adopt the lion's mouth as the source from whence their liquid treasures were made to issue. At the fountains of the Château d'Anet jets of water are seen issuing from Diana's bow, and from the horns of her accompanying stag. These devices are common enough at the period of which we are speaking, and can only be excused on the ground of the extreme difficulty (which all must have felt who have tried their hands at designing fountains) of devising any perfectly unobjectionable, and yet ornamental mode of emitting the water. But perhaps, the most notable feature in these early French gardens is the arcade, or covered way, which incloses the whole area. As a gallery offering a sheltered walk at all seasons of the year, whether too hot or too wet for out-of-door exercise, these covered walks must always have been a welcome refuge. The luxury was probably borrowed from the Italians, with whom these arcades or colonnades had already become a favourite adjunct to the villa. They also, in their turn, may claim a classic origin. Those who have read Pliny's description of his Villa Laurentina will remember how he dwells on the crypto porticus as one of the luxuries of his favourite retreat—a luxury which, though preserved in the cloisters of the Middle Ages, seems to have been, without good reason, overlooked and neglected in modern gardening. In these French gardens I also perceive indications of the pergola, or trellised walk, which forms so elegant as well as so commodious a part of almost every well-appointed Italian garden. *Prof. Smirke in the Builder.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—The cold dry winds which we are now experiencing will soon, unless means are used to counteract their effects, impair the beauty of some of the finest specimens in this house, particularly if their blooming has been forwarded in a close moist atmosphere. In admitting air therefore avoid allowing cold currents to blow over the plants. Many conservatories are very unfit places for Heaths, being generally too lofty and kept too warm for them; some of the winter flowering varieties are however very ornamental, and should be largely employed in their decoration during the spring months. As soon as they have done flowering let them be pruned back and give them a liberal shift when they start into growth, using good fibry peat for the purpose, and if they are well attended to during the growing season they will overcome any injury they may sustain through occupying an unsuitable position while in bloom. Azaleas, Camellias, Roses, early flowering New Holland plants, and forced bulbs will keep show houses gay for some time to come. Half hardy annuals may now be raised in heat, a very moderate degree being sufficient. Sow in wide pots or shallow pans in light soil, covering the seeds according to their size and placing them in a nearly spent hotbed. When the young plants are large enough to handle, transplant them into small pots, and still give them a little warmth, gradually reducing it, however, as the season advances, so as to harden them sufficiently to eventually bear exposure in open borders.

FORCING DEPARTMENT.

Pineries.—Look over young stock, occasionally examining and repotting such as is found to be in want of more pot room. The temperature may be slightly advanced as the amount of light increases, but this is a matter in which the state of the plants will be the best guide. Aim at securing strong dwarf plants, with a free habit of growth; and if this is obtained, it is immaterial whether the night temperature is 60° or 70°, and very much will depend upon circumstances as to which will be proper. Plants that may be unhealthy and in an unkind state, if kept near the glass, will be benefited by a considerably higher temperature than would be suitable for others in a free state of growth. These are circumstances, however, which can be properly judged of only by those in care of the plants, but they are easily understood by a little careful observation. Use every means to induce a vigorous root action, and if this is obtained free strong growth will result with otherwise ordinary care only.

Vineries.—See that Vines starting into growth are tied up in their places before the shoots get so long as to be liable to be broken off in the operation. Syringe frequently until the leaves begin to unfold; but use the syringe sparingly after that time. Where the buds do not promise to break regularly bend the Vines so as to place those that are backward in the most likely position to catch the sap, and this should be done directly any indications of their not breaking regularly are observed. If any of the bunches in houses where the berries are stoned look as if they would be improved by a few more berries being cut out, let this be done at once.

Figs.—Keep the shoots thin so as to expose the foliage to light and air, and persevere in the use of the syringe to prevent red spider. Give air freely on bright days, shutting early in the afternoon after syringing the house.

Peaches.—Proceed gradually with the disbudding of the early house, and where the fruit is very thick a portion should be removed as soon as fairly set; but the Peach is liable to drop until after stoning, and this must be borne in mind, and plenty left to allow for a few failing.

Strawberries.—Continue to bring on succession plants very gradually, and afford those in bloom a rather dry atmosphere, with a free circulation of air, as they set their fruit badly in a moist close atmosphere. Plants swelling their fruit must be liberally supplied with clear, rather strong, manure water, and if fine large fruit is expected thinning must be resorted to immediately the fruit is fairly set.

Cucumbers.—Maintain a steady heat for these of 65° or 70° at night. Give air on every favourable opportunity.

FLOWER GARDEN AND SHRUBBERIES.

The herbaceous ground should now be well cleaned and otherwise put in good order for the spring. As soon as favourable weather shall have set in, fill up vacancies either from the reserve garden or by sowing hardy annuals in the intermediate spaces. Many plants, as for instance Phloxes, Asters, &c., throw up too many flowering shoots; where such is the case thin them out so as to obtain not only fine heads of bloom but increased strength in the remaining shoots, to enable them to need less assistance from stakes. Hollyhocks for late blooming may be planted, as it is best where they are grown extensively to plant at two or three times to ensure a succession of bloom. They are very suitable for long lines, parallel with straight walks, fences, &c., where they produce a grand effect.

HARDY FRUIT AND KITCHEN GARDEN.

See that recently transplanted trees are secured against wind-waving, and on very dry porous soils the ground should be mulched to preserve it in a uniformly moist state. Get materials in readiness for the preservation of blossoms of fruit trees. Where nothing better or more convenient can be obtained, Yew or Spruce branches will be of service, provided they are so fixed as not to be liable to be blown against the blossoms; old fishing nets are also sometimes employed for the purpose. Where thicker coverings are used, they must be removed as frequently as may be convenient on fine days, so as to fully expose the trees to sun and air. Sow Broccoli in beds of rich light soil in an open situation for the main crop, and Cabbages, Cauliflowers, &c., in succession. Attend also to sowing small breadths of Turnips about once a fortnight, so as to secure having a regular supply in a fit state for use. Plant French Beans in small pots to be raised in a cold frame and planted out as soon as all danger of frost is over. A row of some early dwarf Pea put in close to the front wall of a Pine stove or other warm house will come into use at least a fortnight before Peas can be obtained from the open ground. Use the hoe freely among growing crops to keep the surface soil loose and friable.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON.
For the Week ending March 5, 1862. as observed at the Horticultural Garden

February and March.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth. 1 foot deep.	Temperature of the Earth. 2 feet deep.	Wind	Rain
Thurs. 27	28	30.205	30.041	37	32	34.5	43	43	N E	[illegible]
Friday 28	●	30.027	29.927	44	34	39.0	43½	42½	N E	[illegible]
Satur 1	1	29.955	29.777	43	29	36 0	43	42½	N E	[illegible]
Sunday 2	2	29.591	29.500	37	15	26.0	43	42	E	[illegible]
Mon. 3	3	29.285	29.224	49	14	31.5	41	42	N.W	[illegible]
Tues. 4	4	29.790	29.554	47	14	30.5	40	41	N.W.	[illegible]
Wed. 5	5	29.903	29.415	46	33	39.5	39	40½	S.W	
Average		29.822	29.491	43.3	24.4	33.8	41.8	41.9		[illegible]

Feb. 27—Overcast and cold throughout.
— 28—Overcast; low white clouds; windy at night,
March 1—Overcast; cold and dry; a little sun occasionally; clear slight frost.
— 2—Overcast and cold; clear; sharp frost at night.
— 3—Frosty; cloudy and cold; clear; frosty; severe towards morning.
— 4—Frosty; low white clouds with very clear intervals; clear and frosty.
— 5—Frosty; slightly overcast; boisterous with sleet and rain at night.

Mean temperature of the week 7¾ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending March 15, 1862.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 9 ..	49.8	31.3	40.5	9	0.47 in.	3	4	3	2	5	[illegible]	[illegible]	[illegible]
Mon. 10..	49.9	31.2	40.6	12	0.69	4	3	1	4	5	[illegible]	4	[illegible]
Tues. 11..	49.3	32.2	40 8	14	0.33	1	5	3	5	3	11	[illegible]	[illegible]
Wed. 12..	50.5	32 4	41.5	17	0.24	1	4	3	3	4	11	[illegible]	[illegible]
Thurs. 13..	50.6	34.4	42.5	13	0.36	1	2	6	3	3	[illegible]	[illegible]	[illegible]
Friday 14..	51.3	35.1	43.2	16	0.70	—	5	5	—	5	[illegible]	[illegible]	[illegible]
Satur. 15..	51.1	34.3	42.7	17	0.37	3	7	4	1	3	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 10th, 1826, 12th, 1841, and 15th, 1828—therm. 67 deg.; and the lowest on the 10th, 1847—therm. 7 deg.

Notices to Correspondents.

☞ Correspondents are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive after the Morning Post of Wednesday. Those received later will receive attention the week after.

Leafmould: *W M.* We are not aware that the mould produced exclusively by the decay of the leaves of the Laurel and other Evergreens, is less useful than that produced by the decay of the leaves of deciduous trees.

Melons: *Melo.* As far as we know Citron Melons are grown like other Melons.

Names of Plants. *J E G.* We never heard of a plant called Astrolamium. *Q H F.* It is not in our power to name a plant from a leaf. The temperature of your propagating pit may vary from 55° to 65° at night. If the fire is properly made up at 10 o'clock P.M., it ought to keep in till next morning at 6 o'clock. It would not be good economy to let it go out.

Pitcairnia chilensis: *Faber murinus.* There are several Pitcairnias from Chili, but we can find none with this name. If you send us a specimen we may be able to tell you what your plant really is.

Plans of a Lawn: *H M S.* Kemp's "How to Lay out a Garden."

The Gourd Show: *T J.* The Royal Horticultural Society did not offer prizes for Melons on this occasion. As for the Cassaba, we never yet saw a tolerable specimen ripened in this country. The same is true of Water Melons; the summers are too short, too cold, and too damp for these things. Of the Bread-fruit Melon, we know nothing.

Vinery: *R B.* It is wholly out of our power to answer inquiries privately. Grapes will ripen very well and with little or no aid from artificial heat in such a place as you describe. As to heating it we see no difficulty, if we understand your plan; any bricklayer would we imagine carry a small flue from your kitchen fire.

Misc.: Full price will be given for No. 43 for 1861.—*Ignor.* Your letter is sent to "C. W. C." The statement is perfectly true, although some ignorant person to whom you applied may not have known anything about it.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; Seed Market, Mark Lane, London, E C.
Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.
Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Seed Cakes, &c., of best quality at Market Prices.

To the Seed Trade.

THOMAS AYRES, SEEDSMAN and GROWER, Biggleswade, Beds., has to offer WHITE SPANISH ONION SEED, ALTRINGHAM and WHITE BELGIAN CARROT SEED; YELLOW GLOBE, ORANGE GLOBE, RED GLOBE, LONG YELLOW, LONG RED MANGEL WURZEL SEED; several varieties of SWEDE and WHITE TURNIP SEED. Also about 60 bushels of English SCARLET RUNNER BEANS, all the growth of 1861.
Prices forwarded on application.

To the Seed Trade.

H. AND F. SHARPE can offer on very advantageous terms the under-mentioned sorts of SEEDS of 1861 growth and raised from selected stocks:—

Large York Cabbage	Sangster's No. 1 Peas
Long Red Surrey Carrot	Bellamy's Green Marrow Peas
James's new Intermediate do.	Early Long-pod Beans
Fine Red Pickling Cabbage	Mackie's Monarch do
Green Kohl Rabi	Mangel Wurzel in sorts
	Turnip in sorts

Seed Growing Establishment, Wisbech.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,
And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.
We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.
Our "LITTLE BOOK" sent free for four stamps.
J. C. WHEELER & SON, Seed Growers, Gloucester.

THE ENGLEFIELD YELLOW GLOBE MANGEL WURZEL, warranted to grow more weight per acre than any other variety of Globe Mangel. The Raiser and Advertiser, Mr ANDREW HORSBURGH (Steward to R. Benyon, Esq.) Chalk Pit Farm, Englefield, Reading, Berks, has 15 Sacks of hand picked Seed for Sale either in bulk or in bags of not less than 4 lbs., at 1s. 6d. per lb. Roots of this superior variety frequently weigh from 30 to 40 pounds each. Mr. HORSBURGH has taken upwards of 100 Prizes in Cups and Specie for Mangel Wurzel at Birmingham, Crystal Palace, Reading, Abingdon, &c. The above is not grown from seedling roots, but from large selected bulbs, which materially affects the weight per acre of a general crop.
Orders received by Mr. HORSBURGH, or by Mr. G. KNIGHTS, Wattisham, Ipswich.
N B.—The only reliable source to obtain the stock in its purity. All orders from persons unknown must be accompanied by a Post Office Order, or no notice will be taken of them.

Agricultural Seeds.

MANGEL WURZEL SEED, 6d. to 8d. per lb., 40s. per cwt. Long Red and Yellow, Yellow Orange, and Red Globe (new bottle-shaped, grows an immense weight).
CARROTS. White, Yellow, Belgian, 1s. per lb. Long Surrey, 2s. 6d. per lb. Altringham, James's Keeping, and Intermediate, 3s. 6d. per lb.
SWEDES, 5s. per gallon, 32s. per bushel. Skirving's, Marshall's, Epps', and Matson's.
HYBRIDS, 5s. per gallon, 32s. per bushel.
TURNIPS of sorts, 4s. per gallon, 30s. per bushel.
The above are saved from selected stocks, and may be depended on.
WHOLESALE and RETAIL LISTS sent on application to EPPS' Seed Establishment, Maidstone.

To the Seed Trade.

FREDERICK W. WENDEL, SEED MERCHANT, Erfurt, Prussia, begs to offer the following Seeds of carefully selected Stock of good growth:—
CARROT: Altringham, Long Red; Orange Red, Belgian; Early Horn; Earliest ditto, for Forcing.
ONION: Straw Colour, true; Silver Skinned; Pale Red, or Flesh Colour, excellent for general crops; Pear-shaped Yellow; Yellow; Giant Madeira; James's Keeping.
BEET: Darkest Blood Red.
Prices, &c., for the above, to be had on application to GEO. MACINTOSH, Seedsman, &c., High Road, Hammersmith, W., London; and where also GENERAL PRICE LISTS can be had free and post paid.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
A LECTURE, by Dr. VOELCKER, on MILK, will be delivered to the Members at the Society's House, 12, Hanover Square, London, W., at half-past 12, on WEDNESDAY next, March 12.
By order of the Council. H. HALL DARE, Secretary.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.
Last day of Entry for Implements, March 31.
Last day of Entry for Stock, May 1.
STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to
H. HALL DARE, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, MARCH 8, 1862.

MEETING FOR THE ENSUING WEEK.

WEDNESDAY, March 12	Agri. Society of England .. (Dr. Voelcker on Milk.)	Noon

If any one desires to see AN AGRICULTURAL CONTRAST as great and striking as any which the land can exhibit, let him take the North Kent train as far as Lewisham, and at two miles south or thereabouts of Blackheath, walk on to the lands of Sir FRANCIS BARING, Bart., from those of Earl ST. GERMANS. They adjoin—he will but have to leap a ditch or cross a fence.

Originally they were alike — the difference between them, now so great, is entirely artificial. They are of course under the same climate—but the field you leave treads firm and dry as if it were the month of May or June; the one you reach is soft and wet as only February "fill dyke" can have made it. They are the same soil and subsoil naturally, but, from where the Wheat plant is coming up in thin dark green lines just beginning to flatten out for tillering you can see across the hedge Wheat fields looking like a water meadow or a plot of early Rye. You walk across and find the bushy rows a yellow green—the outside blades already withering, and the intervals cramful of Hariff, Speedwell, Couch and other Grass. Your boots, which have been hardly soiled by your walk across the fallow there, soon gather ten or a dozen pounds of clay apiece in as many paces here. As a tenant put the thing:—"I go out to find a hare, and can walk all day without fatigue, but on crossing over to my neighbour's land I am beat at once; and if I mount 'tis—''ware Wheat, 'ware Wheat,' on every hand. They come over my fields and can do no mischief anywhere. I never have to warn them off from anything whatever."

What is the contrast owing to? Essentially no doubt to that difference of character alluded to last week, which you can read as plainly in a man's fields as in his dress or his demeanour. More directly it is owing probably to differences in the management in these cases respectively of "the business of land owning." If a man looks after his business it will prosper, and *vice versa.* If in the one case a landowner pays occasional visits to his farm, and takes a personal interest in the prosperity of his tenants, while in the other the only interest taken is exhibited at the audit twice a year in the integrity of the rent roll—then it is probable that some such contrast as we are alluding to, will very soon arise between the two. If one landowner, either personally or by his tenant (to whom it has been made worth his while) shall direct and execute works of permanent improvement, while his neighbour, regardless of the land which yields it, merely sends his agent twice a year for rent and leaves the property otherwise from year to year to take care of itself, then no doubt there will soon be difference enough between the neighbouring estates. And this difference will arise as much from the retrogression of the one as from the progress of the other, for fences, buildings, roads uncared for, will decay, and land itself, if managed without capital or skill, deteriorates.

In the case before us the admirable condition of the land on one side of the fence is owing directly to its having been drained and deeply tilled and properly manured. Its miserable condition on the other side is because it has not been drained nor cultivated properly. More remotely doubtless it is owing, as already suggested, to differences in the relationship between landlord and tenant: the favourable case being that of a man selected for his energy and ability, and then armed with the motives to exertion which a lease on reasonable terms inspires.

Certainly nothing can be greater than the difference now existing between the two estates. On the one side you have crops of Wheat averaging 40 bushels, of Mangels averaging 40 tons,* of Clover selling at 15*l.* an acre, of Oats at 10 and 12 quarters per acre, and of Potatoes at 5 or 6 tons per acre—you have land in almost all its fields absolutely clean, and in as wholesome and as fertile a condition as can be desired. On the other you have really miserable crops clogged with rubbish, and the land so water logged and impracticable, and in altogether such a wretched plight, that looking at the nearness of the first market in the world for farm produce you are astonished at the contrast, not so much because of the richness of the artificial fertility which on one side it exhibits, as because of the neglected and impoverished fields which are also in the picture.

There are fields close by over which you walk, and the energetic tenant asks you: "Who can estimate the value of what Providence has been doing for this land all this winter? Drained several years ago, and deeply laid open by the steam plough last autumn—not a hoof or tread of any kind since then to harden the floor on which it lies, or to clog the surface—every part of it has been open to the air and rain and frost. One wants now to dung it out of a balloon! a thousand pities now to bring the dung-cart on it. Unless there is a certainty of a dry 'spell' during which to get the manure brought on, I shall put 10 cwt. of guano on by hand per acre, and get my Mangels without any other fertiliser."

* "*Averaging*"—this is not an estimate, but the statement of a man who sells the whole of his crop every year by weight.

On the other side of the fence, where land is naturally the same, four horses in a plough are turning over a Wheat stubble that was the scene of a Kentish ploughing match two years ago, and was thereafter sown with Wheat (3 bushels per acre)—the first sowing was killed by the frost of Christmas 1860; last spring it was sown with another 3 bushels of spring Wheat, and a miserable crop was reaped. It is now as full of Couch as it can be. In adjoining fields, as we have said, the growing Wheats are in a most unpromising condition, and the land is full of filth and water. Certainly there is a marvellous contrast between the two cases; and a capital lesson do they teach on the value of drainage and steam ploughing on clay land.

We shall hereafter give a fuller account of the North Park Farm near Lewisham which furnishes the favourable picture in the contrast thus referred to.

AN interesting Paper, given in another page, ON THE RISE AND PROGRESS OF STEAM CULTIVATION, was on Monday evening read by Mr. JAMES HOWARD, of Bedford, before a very large meeting of the Central Farmers' Club. Mr. HOWARD is and has been one of the largest manufacturers of steam cultivating apparatus in the kingdom. No fewer than 200 sets of steam "tackle" have left his works, and he concluded therefore from his knowledge of what other firms had done, that at least 400, perhaps 500, farmers in this country have already successfully applied steam power to the cultivation of the land. "*Successfully*" applied it, because it is a remarkable, and almost unparalleled circumstance in the history of any new invention, that in the case of steam cultivation there is an almost unanimous expression of satisfaction with the implements which have been sent out.

Mr. HOWARD, of Bedford, has long held the opinion that the Woolston system, in which a grubbing implement is drawn to and fro by a stationary engine of the ordinary threshing power, is the most efficient and economical method of steam cultivation. And the machinery manufactured at Bedford has thus been all of that description. The lecturer last Monday has thus long been committed to the preference and long been interested in the success of one particular form of steam cultivating apparatus. His lecture nevertheless received and entirely merited the praise of every speaker who referred to it, for its fair and even-handed discussion and description of the rival implement system. Nothing could be more disinterested or more simply historical and truthful than the record which it gave of attempts dating from very long ago indeed and extending up till the present day, which have at length resulted in the various successful methods now employed.

The speakers who followed him with rare exceptions gave merely a record of their own personal experience. They had, however, unfortunately all employed the Woolston grubber only—no representative appeared of an experience with FOWLER's apparatus—and it thus resulted that the discussion was a great deal more one-sided than the lecture it succeeded.

Mr. Alderman MECHI referred to the extremely shallow cultivation which clay lands now receive—to the superiority in point of depth and efficiency of a cultivation independent of horse-power—to the impossibility for instance of working such a tool as COTGREAVE's subsoiler by horses—although on his own farm that implement, drawn by steam, had made its mark, which after the lapse of years could still be read in the superiority of the crops grown where it had been used. He pointed out that so far from a subversion of the soil being possible only in the slice-by-slice fashion of the plough—it was only necessary that the particles of which the whole is made up, should be shifted relatively to one another and to the air, and the whole effect of tillage would be produced. He recommended the attempt being made to use the cheaper fixed engines of our farmeries by pulleys and sufficient length of wire rope in the cultivation of the land around them. A re-arrangement of fences in the immediate neighbourhood of the

buildings would alone be necessary to make a fixed engine applicable to the tillage of a very considerable extent of land. Mr. MECHI also praised Mr. HALKETT's guideway method of steam cultivation.

Mr. BRADSHAW of Guildford stated in detail his experience with SMITH's Cultivator. He had had it in the autumn of 1860—and worked it since with an 8 horse-power engine.

In February of last year he had begun with it upon his very late and backward tillage for root crops. Between February 15 and January 7 he had worked it 57½ days, paying 52*l*. 15*s*. 9*d*. for labour, 24*l*. for coals, and 4*l*. for oil—80*l*. 15*s*. 9*d*. in all for cultivating *one way* 327 acres. This had thus cost him 4*s*. 11*d*. per acre. The work had been done 8 and 10 inches deep, and was a most efficient tillage. His summer culture, including the tillage of 30 acres of Clover for Wheat, had occupied 9½ days, costing 7*l*. 11*s*. 4*d*. for labour, 4*l*. for coal, and 12*s*. 6*d*. for oil, or 12*l*. 6*s*. 6*d*. for the cultivation one way of 60 acres, equal to 4*s*. 1*d*. per acre. His autumn culture amounted to the cultivation both ways of 100 acres of Wheat stubble. 200 acres of one-way culture had taken 36 days, costing 27 . 10*s*. for labour, 13*l*. 10*s*. for coals, and 2*l*. for oil, or 4*s*. 3½*d*. per acre, and it was finished by Oct. 25. This was a very capital instance of good management and success, and was received as such by the meeting. Mr. BRADSHAW had thus accomplished 587 acres of work for about 136*l*. in labour, coals, and oil. To this of course must be added the cost of repairs, tear and wear, maintenance, and interest; but there is an immense margin obviously for the satisfaction of all these items before the sum is reached for which by horse-power such an extent and quality of work could have been accomplished. In fact it could not have been accomplished in that way at all. The labourers too were interested in the success of the system. His own had profited in every way by its introduction.

Dr. ELLIS welcomed the advent of the steam-engine on our fallows, as thereby removing from the agricultural labourer a burden of heavy work which now resulted in his premature old age; and much of which, accomplished under the influence of stimulants, only hastened that exhaustion of which every village now shows instances in prematurely bent old men.

Mr. W. SPEARING, of Marlborough, resenting in an entirely uncalled for manner this reference to the condition of the agricultural labourer, "threw back" upon the previous speaker, with much needless heat, as it appeared to us, the insinuation which his statement was imagined to convey against agricultural employers. Dr. ELLIS had uttered nothing that was not founded on his own professional observation, and nothing beyond what any benevolent and right minded man must cordially endorse.

Mr. WILLIAMS of Baydon, as one of the earliest of those pioneers of steam cultivation who are till extant, referred to his own calculation, read many years ago before the Club, in which a 6 acre piece was shown to be cultivable by steam power for 5*s*. 6*d*. an acre, and asked whether Mr. BRADSHAW's experience had not fully borne out his prediction. He referred to the fact that the *annual* cost, and not the first cost of any invention, is the great test of its expensiveness—that in fact as the discovery of a good rope for the purpose was the means of making steam-cultivation possible in any profitable manner—so still the annual wear and tear and cost of rope was the great difficulty in its way. He pointed out the much less expenditure in rope in FOWLER's method of traction than in the Woolston system, and on that among other things founded his preference of the former.

Mr. COLEMAN of Woburn urged various considerations in preference of the latter, among others, the alleged loss or expensive horse cultivation of the headland, which could be worked by steam-power only by the Woolston apparatus.

Mr. BENNET of Cambridge warned the energetic champions of a good cause against riding their hobby too hard. He could not believe that stiff land could be cultivated for 4*s*. 1*d*. per acre, as Mr. BRADSHAW had declared. With every confidence in the truthfulness of that gentleman, and in his desire to state his experience fairly, he really had not "gulp" enough to swallow a statement of that kind. He said, amid much laughter, that a learned counsel had once told him that he was never less sure of winning his cause than when he had witnesses ready to swear "through a deal board."

Mr. BRADSHAW offered his diary to Mr. BENNETT's inspection, and declared that there was not a possibility of any such mistakes as he imagined.

Mr. THOMAS SCOTT recommended the Woolston system and the use of HANCOCK's pulveriser plough—a "3-decker" implement, which as was afterwards pointed out to Mr. SCOTT, would have the effect of cutting into three every bit of Couch it met with in its way across the field.

Mr. SIDNEY did not think that the Club in selecting the subject on the card had anticipated a mere duel between Mr. FOWLER and Messrs. SMITH and HOWARD, or that a meeting of practical farmers was capable of discussing questions of mechanics. What was wanted was that practical farmers should relate their experience of the cost and results of steam culture on their own farms, as Mr. BRADSHAW had done. If a circular had been issued to the members of this Club asking them to state their results in this way, a body of most valuable evidence would have been collected capable of converting that large remainder of England which still holds by the plough and other horse-drawn tools.

Mr. DRING, of Long Sutton, on the invitation of the Chairman, immediately responded to Mr. SIDNEY's challenge, and gave by far the most interesting speech of the evening. He has now in use three sets of apparatus, and finds that the whole cost of one-way cultivation, including expenditure on labour, coals and oil, repairs, and tear and wear, and maintenance and interest, amounts to 8*s*. 6*d*. per acre. The double steam culture would cost 16*s*. an acre; that by horse, much less efficient, would cost 21*s*. 6*d*. But the value of a thing was with much force declared by Mr. DRING to be not what it cost, but what it was *worth*. And the value of steam cultivation was shown by the better crops which followed it—by the power of tilling the land which it gives us immediately after harvest, when alone you may say that Couch is mortal. Better pay your men 6*s*. a day than lose such a chance as fair weather in August and September gives you.

Mr. DRING could speak, too, of the effect of steam cultivation upon drainage. His neighbour's field had been thoroughly drained 20 years ago; but the drains had ceased to run, the land was hide bound and wet. His steam cultivator had gone through it first 4 inches and then 8 inches deep—below the old horse cultivation—and he had gone by in a fortnight's time, and the drains were running vigorously. A Peas stubble on his farm had been steam cultivated, and that meant "ploughed and dragged and harrowed all at a blow;" and another had been ploughed and cultivated by horse-power; the Wheat after the former was good, on the latter "the land was cold and black, and there was not half a plant, and what there was was blue."

At Wheat seed time his steam cultivator smashed up the land; three horses worked the drill, one pair harrowed before them, and one pair harrowed behind them, and thus they got over 8 or 9 acres a day. To do this all by horses would need at least 16 horses, and the work would not be done so well.

But it was not his recommendation to buy a steam plough in order to get rid of horses; he would keep his horses and use his steam power to improve rather than to cheapen the culture of his farm.

Mr. HOWARD replied very effectively to the various addresses of the evening, recommending Mr. BENNETT, of Cambridge, to study the many reports of experience in steam cultivation which have been published, and in which the "incredible" cheapness of it is fully proved, and stating his belief that immense improvements are yet forthcoming in the machinery and processes employed; but that those gentlemen who are waiting for a decided proof of superiority in the methods now in use before they fix on one of them for their own adoption, will be 10 times as much puzzled 10 years hence as they are at present.

—— A MEETING was held in the Corn Exchange at Driffield the other day with reference to the oilcake case, "JACKSON, farmer, of Gaston, *v.* HARRISONS, Linseed-cake manufacturers, of Driffield and Hull," alluded to at page 170; and for the purpose of adopting measures for the reimbursement of Mr. JACKSON the costs of his expensive and spirited action. Mr. GEORGE LEGARD, of Easthorpe, the chairman, was accompanied by Sir TATTON SYKES, Bart., "who was no sooner seen than the audience made the place ring again with deafening cheers."

Mr. LEGARD said: Questions of far wider interest than mere sympathy for a gentleman who had been unsuccessful in a legal proceeding were involved. The question to be decided was, on what principles were the numerous transactions to be conducted, which necessarily took place between the farmer on the one hand, and the tradesman on the other? and without which the improved processes of agriculture could not be carried on. If these transactions ceased to be above suspicion from what perhaps he might call the exigencies of the trade, which it was stated did not permit them to be really *bonâ fide*, then he thought the time had now arrived when farmers should unite and co-operate to protect themselves. A farmer could not be an analytical chemist, and examine all the complicated articles he must necessarily purchase; and was he to take those articles with his eyes shut, or was he to go upon the good faith of the party from whom he purchased them?

The resolutions adopted by the meeting included both the topics thus named. They were as follows:—

(1) "That this meeting being of opinion that the late trial of Jackson *v.* Harrison has been productive of good to the farmers generally, by opening their eyes to the necessity of their taking warranties in future as to the qualities (and fitness for cattle food) of the Linseed-cake they purchase; and being also desirous of testifying their approval of Mr. Jackson's spirited conduct in carrying on the late expensive action, hereby resolves to contribute towards reimbursing Mr. Jackson as far as possible the costs he has been put to in prosecuting the said action."

(2) "That this meeting, for the purpose of extending the contributions, think it desirable a committee should be formed for the purpose of soliciting donations towards the proposed fund."

(3) "That this meeting cannot separate without recording its protest against the statement voluntarily made by Dr. Letheby, at the late trial, to the fact that the farmers do not like the pure Linseed-cake, such statement being wholly incorrect, and entirely opposed to the experience of all persons here assembled; and this meeting will suggest the advisability of the farmers protecting themselves for the future by taking warranties from manufacturers that the cake they sell is unadulterated Linseed-cake, and fit for the purpose of feeding cattle."

In connection with this subject we may refer to a correspondence, on a similar subject, published in the *Cambridgeshire Chronicle* between Mr. GEORGE A. NEWTON, of Croxton Park, and Mr. C. VEASEY, of the Oil Mills, Huntingdon. The following are passages:—

1. *From* Mr. NEWTON *to the Cambridgeshire Chronicle.*

Before I purchased any cake, I was most particular in asking Mr. Veasey himself if the cake he charged me 10*l*. per ton for contained anything but Linseed. He replied most positively that it was made only of the best Black Sea Linseed. My feeding sheep improving very slowly. It was suggested to me that the oilcake must be bad: I therefore had it analysed. Dr. Voelcker states in his letter, dated Feb. 11th, that a cake as good, or better, can be made by mixing half a ton of bran and half a ton of genuine Linseed-cake, and that Mr. Veasey's cake is at least one-third adulterated. Mr. Veasey is now selling this cake at 10*l*. 10*s*. a-ton. I understand, from Dr Voelcker's letter, that its real value is about 8*l*. 5*s*., namely, half a ton of best genuine Linseed-cake, 6*l*.; half a ton of bran, 2*l*. 5*s*.

2. *From* DR. VOELCKER *to* MR. NEWTON.

Cirencester, Feb. 6, 1862.

This cake contains an unusually small quantity of oil, a smaller proportion of albuminous compound, and more woody fibre and mineral matters than is found in genuine Linseed-cake. This is, indeed, quite an inferior cake; and I find, both by my chemical analysis and by the microscope, that this cake is largely adulterated with bran. As bran is worth now from 4*l*. 10*s*. to 5*l*., it pays the maker well to mix a good deal of bran with oilcake.

3. MR. VEASEY *to* MR. NEWTON.

Huntingdon, Feb. 8, 1862.

When you first spoke to me about Linseed cake, you asked whether I used bran in the quality I quoted to you at 10*l*. per ton, I replied that I made a common quality of bran cake at 8*l*. per ton, but that yours would be made from average Black Sea Linseed; to this I have scrupulously adhered, but having this season orders for an unusually large quantity of bran cake, I have had, when orders came in requiring immediate despatch, (as has always been the case with yours) to turn instantly from one quality to another, in which case a trifling quantity will hang about the levers. This would account for the particles discovered by the microscope; the other particles have been discovered in all the analyses of cake made from this season's Black Sea Linseed, as, in consequence of the high price and great demand, the Greeks have shipped it off in a very filthy state, so much so that many of my friends have requested me to make an extra quality from the finest Bombay Linseed. For this I have charged 12*l*. per ton; but most of my customers have taken the 10*l*. 10*s*. cake, finding that their stock did remarkably well upon them.

Had I sent you 10*l*. 10*s*. cake, and charged you 12*l*., you would have had strong reasons for complaining of my conduct, but I can assure you that I have been as careful as possible, and, instead of making the large profit to which Dr. Voelcker alludes, can safely say that your cake, carriage paid to St. Neots, has not given a profit of 10*s*. per ton. As to a short quantity of oil, my presses are of such immense power that they take out all it is possible to procure.

Had it not been the market hour, I would have written to your servant; as it is, I write by first post fully and frankly, having nothing to conceal and nothing to fear.

Huntingdon, Feb 11, 1862.

I never seek to avoid publicity, and have therefore not the least objection to the publishing of Dr. Voelcker's letter and analysis accompanied by mine of the 8th.

The farmers all know that I make three qualities of cake, and sell them at their relative value; all have given full satisfaction, putting price and quality together.

4. DR. VOELCKER *to* MR. NEWTON.

Cirencester, Feb. 11, 1862.

Mr. Veasey must know as well as I do, that his cake is adulterated with a considerable proportion of bran and pollard.

It is not possible to determine with great precision the amount of bran and pollard in a cake, for when these matters are incorporated with a cake, mill-dust, Oat-dust, Rice dust, and similar refuse matters are generally incorporated with the cake at the same time. I have not much doubt that, in addition to the bran and pollard, your cake contains some such refuse, and I can positively say, that the adulterating material

altogether cannot be less than one-third, and may be more, of the whole weight of the cake.

I may also state that if you well mix together half a ton of ... and half a ton of genuine best Linseed-cake, you will get as good, if not a better feeding material than in 1 ton of your ... Mr. Veasey ought also to have told you that genuine Linseed-cake cannot be made at 10*l.* 10*s.* It costs not less than ... to 13*l.* per ton.

Even inferior and mixed cake costs as much as 11*l.* to ... 11*l.* per ton.

The above correspondence is sufficiently instructive as to the policy of the 3d resolution quoted above.

DRAINAGE OF AN OXFORDSHIRE ESTATE.

THE following engraving, taken from "Morton's Farmer's Calendar,"* and promised in our notice of that book last week, represents the plan of drainage actually accomplished on an estate upon the oolitic formation under Mr. Bailey Denton's management. The following is an extract referring to it.

"On the arrangement of the drains upon the land, it would seem plain that, as we have already provided for the exit of spring water, and as our object now is merely to remove from below the soil the water which falls upon its surface, the channels for that purpose should be placed as uniformly below as the water to be removed is supplied above. And this, as a general rule, does accordingly guide the practice of the drainer. Nevertheless, the structure of the subsoil does to some extent justify a departure from that uniform arrangement of drains which would at first seem to be justified by the uniform abundance of the rain-water supplied, and by the uniform luxuriance of vegetation desired. There is a propriety in placing drains at varying intervals within the soil so as to meet those variations in the quantity of water accumulated there which have arisen from a varying structure, and even, I may add, a varying surface, of the land, notwithstanding the uniform supply of rain-water on its surface. Take a single field and you will find that it is not altogether of uniform consistency to any considerable depth. No doubt the portion acted on by tillage (the soil) is very different in its consistancy from the subsoil, but this is a uniform want of uniformity. Go deeper and you will find the subsoil, which also must be drained, varying in its consistency. It may be a sand or gravel of varying depth, lying on a floor of clay, which has been water-worn and furrowed before this gravelly subsoil was brought upon it, or it may be itself a clay with porous partings or rocky beds here and there within it. All these things influence the passage of the water downwards; so that, while in a soil and subsoil of perfect uniformity, it is plain that the absorbent points on which we depend for insuring the percolation of the rain-water downwards ought to be perfectly equidistant, in an unequally constructed soil these absorbent points (or the drains which represent them) should be more frequent where the water naturally tends, than where, after a shower, less of it will be found. Of course as the object and the result of perfect cultivation is to bring about a uniform consistency to a greater depth than naturally exists, we ought not to accommodate our practice slavishly to conditions which have arisen out of, or have been effected by, imperfect cultivation. Still, in striving after a uniform result we must not in practice lose sight of the obstacles to that uniformity which nature interposes.

In the diagram in which the position of the drains on an estate of the oolite formation, drained under Mr. Bailey Denton's directions, is given in plan, the uniform parallel drains on the more level fields upon the Oxford clay are fully represented at the foot of the map. The occasional drains, intended for the removal of spring water, and the lateral drains rendered necessary by the configuration of the land, and intended for the removal of water lodging in slacks upon the surface, are also recognisable in some of the middle fields. There too, and elsewhere, the less frequent and partially parallel drains needed for the tapping of the more porous water-bearing strata are to be observed. Too great a stress cannot be laid on the necessity of the plan of executed drainage being preserved. There are many instances in proof of this, where large sums of money have been lost entirely for want of a record of the work. The tenants have changed, and the records are ruined and have disappeared." The "outlets" referred to in the map are open hinged gratings. The wells are points of junction enabling examination.

* Routledge, Warne, & Routledge, Farringdon Street, 1862.

ROYAL FARMS.

THE BAGSHOT AND RAPLEY FARMS.

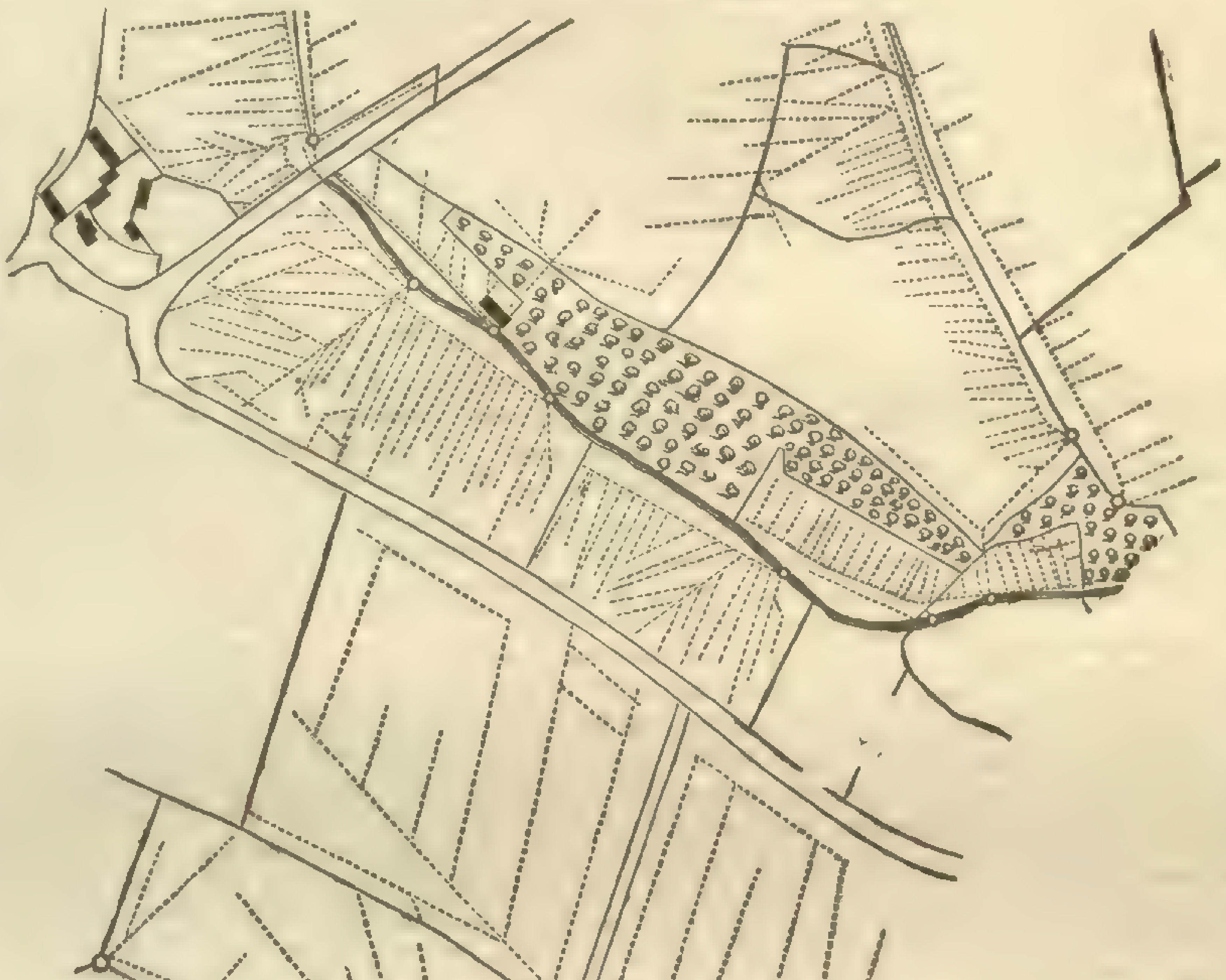
IF "a great head of game" be considered fatal to good agriculture, farms that are maintained chiefly for the purpose of a covert and provision for their game can hardly be expected to furnish agricultural lessons except by way of warning. We have, however, here lands mixed up with plantations and intersected everywhere with covers, where pheasants have fallen to a single gun at the rate of one per minute for an hour and a half together, and where a staff of keepers being maintained, rabbits necessarily abound—on which there is nevertheless many a point of interest to the farmer. They are the last of the large number of farms of which the late Prince Consort was the tenant, and to some of the points connected with them, in which both the landowner and the tenant farmer may be interested, we have now to direct attention.

Bagshot Park was the residence of the late Duke of Gloster. Mr. Toward, now over the Osborne estate, was manager here during the late Duchess of Gloster's life, and the gardens, then maintained in perfect order, still bear testimony to his taste and skill. The land, sandy and peaty all over that district, is especially adapted for the growth of Rhododendrons, and the grounds near the house must be a perfect blaze of beauty in the month of May. They are also interesting for the large number of fine specimen trees and shrubs which are here collected. One of the finest Plane trees in the country stands close to the house on one side, and one of the finest clumps of Cedar trees on the other. One of the few Deodars originally brought into this country stands in the shrubbery—now a noble specimen. Here also are remarkably fine specimens of the Chinese Juniper, an unusual example of the Scrub Pine (Pinus Banksiana), the finest Araucaria Cunninghamia lanceolata in England, and a wonderfully fine specimen of the Scotch Fir.

It is interesting to learn, as Mr. Standish informs us that the small leaved variety, which here presents a straight bole 30 inches in diameter and probably 40 or 50 feet in height, is of the Russian—the true Riga—variety of Pinus sylvestris, and much the finest of the three known to foresters—the Swiss variety being the least valuable; the Austrian next, and this Riga variety being worth by much the most. Other sorts of Pines have capital illustration here.

One or two remarkably large and handsome Beech occur. The Thorn, in individual trees here and there within the park, is no where larger or better grown. The Oak is occasionally very fine; one in particular in front of the mansion is a magnificent specimen. Of the graceful quick-growing *worthless* Turkey Oak, which flourishes on the same sandy soil with the Birch, there are several good examples.

PLAN OF DRAINAGE.



Like the Norfolk and Flemish, these farms are under the presidency of the Hon. Col. Hood. And all this was pointed out to us by Mr. Graham, the intelligent and energetic manager under him, as we walked from his house towards the estate under his superintendence. Mr. Graham was for some time with the late Mr. Wilson upon the Shaw and Home Farms, which have been already described. Leaving these for Bagshot and for Rapley, he came from an estate which had been long under good management, and was naturally of fair quality, to one which had long been almost entirely neglected, and was naturally one of the poorest districts in the country. He left farms furnished with buildings which emulate and in some features excel any others in the island, for land which is very poorly furnished with buildings and very imperfectly equipped in every way.

Of the Home Park and Shaw Farm during the last year (1857) of his management of it under the Prince, Mr. Wilson could state the average of their several crops as follows:—

Wheat, 42½ bushels per acre; Beans, 53 bushels per acre; Oats, 86 bushels per acre; Mangels, 42 tons per acre; Swedes, 14 tons per acre.

Mr. Graham left this first-class holding and occupation for one of the poorest districts in the country, where the gamekeeper, not the farmer, had been for many years in the ascendant, where the natural circumstances were unfavourable, and where for many years no attempt had been made at their improvement. There was, however, even here a good deal of agricultural interest to excite his effort. The land had many years before been under the management of one of the best farmers in the county. The late Mr. Burness, who was latterly with the Duke of Bedford at Woburn, had been manager at Rapley. The buildings he had erected, though now in a somewhat dilapidated state, possessed many good points.

One of the best arrangements of piggeries, since copied in all parts of the country, and now in full operation, was a principal feature. A water-power threshing machine, erected long ago, and then guarded night and day from the lawless hands of angry labourers—since however and for many years disused—was still found to be in working order. The condition of the land and the quality and quantity of the stock upon it were at the lowest ebb, and all this, bad enough in itself, was yet a good starting point for an energetic young man, who desired to carry out with vigour a plan of improvement.

The Bagshot and Rapley Farm, although paying a rent to H.M. Commissioners of Woods and Forests, and worked with the capital of the late Prince, were less immediately under his eye than any of the others, both owing to their distance from Windsor, and because they were retained in occupation almost entirely for shooting purposes. Nevertheless the expenditure year by year needed to bring them into good condition was not grudged, and in a few years time they would no doubt soon have been as interesting to the farmer as the sportsman.

The process is necessarily tedious. Over the principal part of the land the soil is the poorest black peaty sand and gravel. This, however, is more especially the case at Rapley. The land attached to Bagshot Park is of better quality, and yields fair crops. The accounts of both are kept together, and we learn from them that besides the Barley and Oats grown on the farm (all consumed by stock), there has been an expenditure annually of nearly 200*l.* on cattle food, and 180*l.* to 200*l.* a year have been spent on guano and artificial manures. In this way, then, besides attention to the drainage of the land, and its due cultivation on a restorative rotation of crops, it is plain that no means have been left neglected

by which a gradual increase of fertility may be attained. That much of the increased produce is and will be destroyed by game is inevitable; the farms will nevertheless be serving the purpose for which they were intended, which no doubt has been both to furnish the requisite amount of sport when required, and to supply an example of poor and light land farming of some interest to agriculturists.

The Bagshot Park, now occupied by Sir James Clark, Bart., her Majesty's Physician, includes about 60 acres of pasture and 100 acres of arable land. The adjoining Rapley Farm includes about 120 acres of pasture and 160 acres of arable land. The plough land in the former case is of fair quality. Very promising Wheat—a capital plant of Red Clover and Italian Rye-grass (seeded with 20 lbs. and 1 bushel per acre respectively) and now under a heavy dressing of farm dung—fields on which Turnips had been fed by sheep and lying now scarified so as to mix up the soil and sheep dressing and avoid the loss of the latter in case of rain—and a ploughed Wheat stubble ready for the Mangel and Turnip crop taken over one quarter of the farm—make up the cropping. A good deal of this arable land is sprinkled over with trees of Oak and Thorn; and, lying near the mansion, would add greatly to the beauty of the Park were it laid down in permanent pasture.

At Rapley the rotation includes two years in grass, the other crops being (1) Wheat or Oats; (2) Turnips, Mangels, and Potatoes; (3) Barley. On comparatively little of the land can a good Wheat crop be grown—it is a light poor soil, which would probably be improved by a dressing of the clay lying not very deep as a subsoil. It is being and will be greatly improved by liberal sheep farming. Very poor Turnips, owing to a bad seed time, and the subsequent attentions of rabbits and hares—comparatively poor Grass—fair crops of Barley and Oats, also of Potatoes, were grown here last year.

The Lupine, too has been successfully tried. Two bushels of seed were sown in May without a dressing in rows 9 inches apart. They needed diligent hoeing while very young, but as soon as the plants had fairly hold of the ground they grew rapidly, flowered in July and August, and by and by attained the condition of a half ripe crop. A boy with basket and knife preceded the sheep, which were then folded over the land. He cut the seed into his basket and the sheep fed after him. They ate readily the still succulent stems and leaves, and the crop has this especial advantage in the eyes of Mr. Graham, that it appears to be distasteful to all kinds of game. A very valuable crop for poor light land is thus available, especially where a "great head of game" exists—the principal points requiring attention during its cultivation being that it must be sown late enough and folded early enough to avoid frost, which at once destroys it, and that the land be kept clean by hoeing during its early growth. Buckwheat, especially a crop for the use of the game, is also sown to the extent often of 20 or 30 acres; 1½ bushels are sown in May, and the crop cut when most of the seed is formed, and turned as carefully as possible until dry enough for harvesting, when it is stacked in different parts of the covers as the gamekeepers direct.

The coarse Irish Cup Potato is grown to a considerable extent at Rapley. The crop is wholly consumed by pigs, being steamed and mixed with ground Oats and Barley, also the produce of the farm. The buildings are supplied with water power for the various purposes of threshing, cutting chaff, and grinding corn; and the yards and sheds and stalls are filled with a good stock of horses, cattle, and swine.

The farms are worked with 5 pairs of horses, some of them good Clydesdale mares, from which, by the Prince's prize Clydesdale stallion at the Shaw Farm, colts are bred. There are now 10 young Clydesdale horses in boxes and in sheds opening out upon a Grass field. The other stock includes about 60 cattle, half of them stores for fattening next summer and winter, and the remainder fatting beasts, Galloways and Short-horns, receiving 4 lbs. of cake a-piece, mixed hay and straw, chaff, and Swedish Turnips *ad. lib.* daily. About 300 sheep have been kept upon the farms—Hampshire Downs, and Cheviots. The ewes and lambs are fattened together during summer; the latter breeding flock being out upon the pastures, and the former folded on the Turnips. Seven or eight breeding sows of the Berkshire breed are kept, and there is generally a stock of 60 or 70 swine of various ages—fattening in the capital L-shaped range of sties, with central gangway and steaming-and-food house at the angle.

The buildings planned by the late Mr. Burness include a couple of square yards, with threshing and other barns at either end, and divided by the central piggery, the one side including byres and feeding houses, and the other being open to the sun. Opposite one of these yards on the open side stand stabling and cart sheds; and there are outlying house, granary, poultry house, &c. They are of wood and tile and thatch, and in a somewhat dilapidated plight.

The main items of receipt upon these farms are for cattle, sheep, pigs, and Wheat; the expenditure is, as we have said, large in manure, cattle food, and labour. In the last point especially the expenditure is large, as it must be in all old establishments conducted on the patriarchal system of keeping on old servants long after they have lost their efficiency, and pensioning them off when utterly unable to work. It is not to be wondered at that land in these circumstances and naturally poor, full of game,* and being gradually brought into condition in spite of all these drawbacks, should at present be an annual tax upon the purse and capital of the tenant.

The neighbourhood of the farm is interesting as the site of the great nurseries of American plants. Rhododendrons find here the natural circumstances under which they flourish. You take 40 strides to walk round a single plant, which 20 or 30 years ago was a mere bush; and everywhere there is evidence of a vigorous growth.

But the Bagshot district is also useful, because of the poverty of its natural condition, for all such operations as need mere standing ground. This, considering its neighbourhood to London, they can find no where cheaper in the country.

The manufacture of soldiers out of raw material supplied from lanes and pot-houses all over the country, has thus come to be conducted hereabout on a great scale.

And no less true an example of a *manufacture* out of raw material is furnished by the growth of Grapes under glass, which, under Mr. Standish and other nurserymen, is here conducted also on a great scale. Compost heaps, bones and ashes, and other fertilising matters furnish the materials out of which a living plant in an artificial climate *manufactures* produce for the Covent Garden Market—as is, indeed, related weekly in the *Gardeners' Chronicle.* And the very same means are in operation in Mr. Graham's hands upon the Rapley and Bagshot farms under the natural climate, aided, however, by the meagre natural supplies which their poor soils afford, and resulting in the manufacture of material for Smithfield and Mark Lane.

Home Correspondence.

The Tithe Commutation.—Is not the answer to "Tithe Owner" in the *Agricultural Gazette* of the 3d inst. likely to be misunderstood? Whatever injustice abstractedly may be involved in the mode of taking the corn averages, surely, as regards tithe, this must be compensated for? In the process of commutation the erroneous averages were in the first place taken to convert the money value of the tithe into bushels before they were used to determine the amount of subsequent payments upon those bushels. Suppose then the objectionable mode of taking the averages to give a result of double the prices which the grower actually receives; then manifestly when the tithe-owner's number of bushels were fixed he could have had only half the number he would have had if the averages had been correct. Still, so long as the same excessive mode of averaging should continue he would receive no injury, because the double price, on half the quantity, would of course be the same as correct price on the entire quantity, and so in proportion for any other supposed amount of error arising from the way in which the averages are taken. In short in the tithe commutation process the method of averaging is made to tell first against one party and then against the other, so that the errors in the system are made to work their own correction. The real injustice of the tithe commutation seems rather to arise from the omission of any reference to the quantity grown. The value of the ancient tithe depended both on price and quantity of crop, the value of tithe rent charge depends on price only, so that there would probably be highest tithe to pay if ever unhappily our corn crops should be a general failure. *A. B. C.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Monthly Council: *Wednesday, March 5.*—Present—Lord Walsingham, Vice-President, in the chair; the Earl of Powis, Lord Feversham, Lord Tredegar, The Hon. W. G. Cavendish, M.P.; Sir J. V. B. Johnstone, Bart., M.P.; Sir E. C. Kerrison, Bart., M.P.; Mr. Raymond Barker, Mr. Barthropp, Mr. Bramston, M.P.; Mr. Cantrell, Colonel Challoner, Mr. J. D. Dent, M.P.; Mr. Druce, Mr. Exall, Mr. Frere, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Holland, M.P.; Mr. Jonas, Mr. Lawrence, Mr. Pain, Mr. Rigden, Mr. Banks Stanhope, M.P.; Professor Simonds, Mr. Torr, Col. Towneley, Mr. Thompson, M.P.; Mr. Wells, and Mr. Jonas Webb.

The following Members were elected:—

Adams, Captain George Curtis; Anstey Hall, Coventry
Anderton, J.; Cleckheaton, Leeds
Astley, F. D. R.; Dukenfield, Ashton-under-Lyne
Bacon, Samuel, Jun.; Ratcliffe Culey, Atherstone
Barton, Richard; Caldy Manor, Birkenhead
Barnes, Thomas; Westland, Moynalty, Co. Meath, Ireland
Beadel, William James; Chelmsford
Bird, Josiah; Shouldham Abbey, Downham Market
Blackburne, James Taddy; 17, Parliament Street, S.W.
Blake, Thomas; Sycamore House, Dymchurch, Folkstone
Bonus, Schrœder; Point House, Blackheath, S.E.
Branwhite, Frederick; Chapel House, Long Melford, Suffolk
Brown, Thomas Phillpotts; The Wear End Ross
Brown, W. J.; Hazlebury House, Chippenham
Brown, Robert Palmer; Greenwich
Browning, Frederick; Le Patrimoine, St. Lawrens, Jersey
Carter, Richard H.; Hullavington, Chippenham
Cathcart, Robert (of Carbiston); Petcairlie House, Auchtermuchty, Fifeshire
Chater, John Samuel; Cappenham, Slough
Cooper, Charles Benjamin; The Manor, Micheldever, Hants
Cooper, Rous John; Blythburgh Lodge, Halesworth
Currie, William Pitt; Great Vaynor, Narberth, Pembrokeshire
Danger, Thomas; Huntstile, Bridgwater
Downward, John; Hampton Hall, Malpas
Duncombe, the Hon. William Ernest, M.P., The Lease, Bedale
Eardley, William; Larkton Hall, Malpas
Ellison, Francis Charles; Low Lizergh, Milnthorpe
Furnies, John; East Hill, Coxhoe, Ferry Hill, Durham
Fisher, John; Carrhead Farm, Cross Hills, Leeds
Giles, Henry, jun.; Bull Hall, Great Clackton, Essex
Gillett, Charles; Cote House, Bampton, Oxon
Gleed, Ellis L.; Hoo Hall, Wickham Market
Goodwin, Ralph Willis, Burnham Abbey, Maidenhead
Hardstaff, Douson; West Leake, Loughborough
Hardy, Richard; Marchington, Uttoxeter, Staffordshire
Horton, George; Harley, Much Wenlock, Salop
Ive, Edward P.; Langley, Slough
Ive, John G.; The Trenches, Langley, Slough
Jackson, Joseph; Aynscomb House, Orpington, Kent
Josling, George Berners; Rossling Hall, Dunmow
Le Cornu, Charles Philip; Beaumont, Jersey
Lees, William; Blacon Hall, Chester
Leigh, John Gerard; The Hoo, Luton, Bedfordshire
Lempriere, William; Rozel Manor, Jersey
Lowe, Joseph; Stackton Hall, Malpas
Master, Charles Hoskyns; Barrow Green House, Godstone, Surrey
Maynard, Robert; Whittlesford, Cambridge
Mourant, Edward; Samare's Manor, Jersey
Mulkern, Edmund Cowell; Leighfields, Ockley, Surrey
Neve, Charles; Shepenay Court, Maidstone
Parker, Rowland; Moss End, Burton, Westmoreland
Pennington, Richard; Westfield House, Rugby
Perkins, Charles Frederick; The Grange, Kingston, Taunton
Pinckard, George Henry; Combe Court, Chiddingfold, Godalming, Surrey
Platt, James; Newton, Malpas
Poynder, F. H. A.; Hartham Park, Corsham, Wilts
Preston, John Norcliffe; Flasby Hall, Gargrave-in-Craven
Pronger, James; Mill Farm, Beeding, Horsham
Puckle, Thos. Broadhurst; Woodcote Grove, Carshalton
Pullin, James; Wraysbury, Staines
Pullin, Stephen; Mildridge Farm, Horton, Slough
Rainforth, Edward; Monkhopton, Bridgnorth, Salop
Ransome, Frederick; Ipswich
Robinson, John George; Oakley Hall, Bishop's Stortford, Herts
Savory, Paul; Staines, Gloucester
Sewell, Rev, Thomas; The Cottage, Bolney, Cuckfield, Sussex
Shackle, Thomas; Hayes, Uxbridge
Sharman, S.; Home Farm, Little Crosby, Liverpool
Simpkin, Benjamin; Hoby, Leicestershire
Sladen, Douglas Brooke; 2, King's Arms Yard, E.C.
Smith, Henry; The Grove, Cropwell Butler, Bingham
Solby, George Bushell; Monkton Court, Ramsgate
Standing, Thomas; Fishergate, Preston
Tapply, E. S.; Bonnington, Hythe, Kent
Walker, Caleb; Chillesford Lodge, Wickham Market
Warwick, William Atkinson; Colchester
Weall Benjamin, Jun.; Woodhall, Pinner, Middlesex
Wheeler, A. C.; Kingsholm, Gloucester
Wolton, Samuel, Jun.; Hesgrave, Woodbridge
Wolton, Samuel; Newbourn Hall, Woodbridge

On the motion of Mr. Bramston, M.P., seconded by Lord Feversham, Mr. Fisher Hobbs was unanimously elected a Vice-President in the room of the late Earl of Yarborough.

Finances.—Mr. Branston, M.P., presented the Report, which stated that the Secretary's receipts during the past month had been examined by the Committee, and by the Society's accountants—Messrs. Quilter, Ball, & Co.—and found correct. The balance in the hands of the bankers on the 28th February was 2529*l*. 5*s*. 5*d*.

Journal.—Mr. Thompson, M.P., presented the Report of the Journal Committee, which recommended—1, that it be referred to the Council to decide whether the power now vested in the Journal Committee, of selecting papers to be read at the Weekly Councils, shall be extended to the selection of subjects to be discussed *vivâ voce*; and 2, whether lectures delivered at a Weekly Council shall be reserved for the Journal, or whether the representatives of the press shall be allowed to report them for publication in the papers.

These recommendations were unanimously adopted by the Council. The 3d portion of the report, recommending that 50*l*. be given for a Report on the Live Stock (British and foreign) exhibited at the Society's Show in Battersea Park, was amended by Mr. Torr, who was seconded by Mr. Jonas Webb, in the following terms:—That the Report of Live Stock be left to the Stewards and Judges of the Show, with the assistance of the Editor and Journal Committee, and with paid assistance if it should be deemed necessary, at a cost not exceeding 50*l*. The amendment was carried by a large majority.

Metropolitan Meeting.—Lord Walsingham read the report of the London Show Committee, who held weekly meetings in order to complete and perfect the arrangements for the Show in June. The drainage of the land in Battersea Park would be carried out under the superintendent of the park by the permission of the First Commissioner of Works. The arrangements with the railway companies for the conveyance of stock were very liberal towards the exhibitors in the foreign classes.

Foreign Stock.—Mr. Fisher Hobbs presented the Report of this Committee, recommending that the Secretary be directed to write to foreign countries asking advice as to Judges, and informing them of the concessions which had been granted for the transit of their stock and attendants to and from the show. This report was adopted.

Wool.—Lord Walsingham reported that the Royal Commissioners for the Great Exhibition of 1862

* We understand that great numbers of pied pheasants abound in the woods and plantations which everywhere intersect the Rapley Farm, the result probably of a cross with the silver pheasant, which was permitted by the late Prince for the sake of the appearance of the birds, but with considerable loss of quality and value in other respects.

required the fleeces to be in the building by the ... March, and the Committee would recommend the Council to extend the time for sending up the fleeces ... Hanover Square to the 20th inst, in order to afford ... for the necessary selection and arrangement. An opportunity would be afforded of exchanging the clip of ... for that of 1861 before the 20th May; in the first instance the best fleeces would be selected, and when ... exchange takes place, these will be exchanged ... the best then obtainable without reference ... ownership, but fleeces of 1861 may be retained if they prove to be the best. The names of ... owners will in all cases be specified. The Earl of ... having brought forward the motion of which his Lordship had given notice—"That the Society contribute ... sum of 100*l.* to the Memorial to his late Royal Highness the Prince Consort," it was seconded by Sir Edward Kerrison and carried unanimously. The Secretary having announced that Dr. Voelcker would deliver a lecture on Milk to the members on Wednesday, the 12th inst., at half-past 12, the Council adjourned to that day at 12 o'clock.

Farmers' Clubs.

London Central: *March 3.—Mr. James Howard ... Steam Cultivation: its Rise and Progress.*

The following paragraphs give the substance of this interesting lecture:—

Influence of Steam Power.—It may appear startling, but 'tis no less true, that to the discovery of the steam engine, more than to any other cause, this country owes its great wealth, its manufacturing greatness, and ... means of supporting its abundant population.

Until the discovery of this mighty agent, the population and the wealth of England were almost at a standstill. So ... as 1750 we only numbered 8 millions; and 200 years ... the population was 6½ millions. No sooner, however, was the steam engine fairly brought into use, than that wonderful expansion of our trade and commerce commenced, ... brought with it a corresponding increase in population, ... which has made England the great mart of the world. The ... processes and rapid results of the factory have of late ... been imported into the threshing of our crops; no ... then that the farmer has begun to regard the ploughing of his land by horse power as a slow and tedious operation, ... has become desirous of introducing into his fields the ... despatch, and the same powerful agency he has found of ... much advantage in the preparation of his grain for market.

History.—Although, until a recent period, public attention had scarcely been turned to the question, steam ploughing is by no means a new subject.

As long ago as 1618, one David Ramsey and a Thomas Wildgoose obtained a patent for "Newe, apte, or compendious ... or kindes of engines or instrumentes, and other p'fitable ... ns, wayes, and meanes, for the good of our Commonwealth, as well as to ploughe grounde without horses or oxen, ... to enrich and make better and more fertill, as well barren ..., salte, and sea sande, as inland and upland grounde, within our Kingdomes of England and Ireland, and our Dominion of Wales; as alsoe * * * * to make boates for the carriage of burthens and passengers runn vpon the water as ... in calmes, and more saff in stormes, then boates full ... in greate wynes."

In the same year that Ramsey took out his last patent, a William Parham and others had a patent granted for "a certain newe and readie waye for the good of our Commonwealth, for the earinge and plowinge of land of what kinde soever, without the vse or helpe of horses or oxen, by meanes of an engine, by them newly invented and framed."

About 40 years after Ramsey and Wildgosse, another ... arose named Francis Moore, who took out no less than ... patents, having for their object "the dispensing with ... power in tillage, navigation," &c., &c. Mr. Moore ... "his machine to go without horses." 'Tis recorded in a ... of the day, that Mr. Moore had such faith in his ... that he not only sold his own horses, but by his ... many of his friends imitated his example, fearing their ... would be affected by the general introduction of his ...

About the same time, 1770, another inventor appeared, a Richard L. Edgeworth, who patented an engine with "an ... railway," almost identical with that patented by the ... lamented Mr. Boydell.

In 1810, in which year a Major Pratt obtained letters ... for a steam ploughing apparatus. One of his schemes ... to place the engine and anchor on opposite headlands, or ... as Mac Rae's. The implement described by Major ... may be regarded as the first "balance plough," the ... being placed back to back, or heel to heel, and working ... fulcrum in the frame, one set being thereby raised out of ... while the other set was lowered into work.

Between 1810 and 1832, numerous schemes were propounded and patents taken out for ploughing, digging, or ... the land, by engines working in various ways, but I ... nothing of real value, until the latter year, when the ... lamented John Heathcoat, M.P., a lace manufacturer, of ..., obtained a patent "for certain new and improved ... of draining and cultivating land, and new or improved machinery and apparatus applicable thereto." ... engine travelled along the headlands, and when ploughing ... was constructed with an endless web, forming an endless ... His anchor, called by him "an auxiliary carriage," ... moved along the headland as the work proceeded. Mr. ... described in his specification, a means of making ... self propelling. The engine he proposed to fit with ... winding barrels, one on each side, so as to work either one ... sets of implements at a time.

In connection with Mr. Heathcoat's scheme, I may ... one fact, highly honourable to the foresight ... public spirit of the Highland and Agricultural Society of Scotland.

As long ago as 1837, this Society offered a premium of 500*l.* ... the first successful application of steam power to the cultivation of the soil. Mr. Hall Maxwell, the zealous and ... able secretary, writes me:—"At the Society's show ... Dumfries the same year, 100*l.* in addition was subscribed ... the expenses of exhibiting and working what was ... 'Heathcoat's Plough.'" The trial of this plough was to ... extent satisfactory, but the judges did not consider the ... sufficiently perfect to entitle it to the premium. ... Society, however, continued to offer the prize until the ... years afterwards the Royal Agricultural Society of ... and followed the example of the Highland Society by ... a prize of a similar amount, and it would have done ... saved a great deal of "heart-burning" if it had also followed the Highland Society in the simple wording of the offer, viz., "the first successful application of steam power to the cultivation of the soil."

(7) Mr. Heathcoat was followed by Alexander Mac Rae, who in 1839 obtained a patent for "machinery for cultivating land by steam power." The primary object, it would appear, was to adapt his apparatus for use in British Guinea, where the fields are intersected by wide ditches or canals.

Mac Rae, although his engine and anchor are shown working in boats, described his apparatus as applicable to unlevel lands by working the engine and anchor along the headlands.

The implement of this inventor is worthy of notice, for as the drawings show, it is arranged with the ploughs point to point, as Messrs. Fiskin's and Mr. Fowler's, to which it bears a strong resemblance; Mac Rae also anticipated our friend Mr. Williams of Baydon by having each plough independent of the other, like the coulters of a drill.

(8) In 1849, Mr. H. Hannam, of Burcote, near Abingdon, a well-known agriculturist, in connection with Messrs. Barrett & Exall, constructed an apparatus for steam ploughing which may be regarded as the first attempt to work ploughs or cultivators by the ordinary portable engine, and also to be the first attempt to plough the land by an engine stationed at one corner or outside the field. We have no evidence that wire ropes were ever employed for steam ploughing until those supplied to Mr. Hannam by Messrs. Barrett & Exall. From Mr. Exall I learn that the ropes were 1600 yards in length, and from the drawing exhibited it will be seen that they were coiled and un-coiled by a stationary windlass having two winding barrels in the same manner as those now in use. The ropes were also passed round pulleys at the corners of the fields, as shown in diagrams, and now so well known.

About 60 acres were ploughed or cultivated by this apparatus at the rate of about 5 acres per day, when it appears the rope, from deficient strength, or probably from bad handling, gave way. Doubtless, had more perseverance been shown, the parties would have been rewarded with greater success; but I very much question whether any system of rope traction would have become a permanent success but for the introduction of ropes made of steel wire, which has contributed very greatly to their durability.

(9) In 1851, at the Great Exhibition, Lord Willoughby D'Eresby showed a complete steam ploughing apparatus, consisting of two engines, with a winding barrel on each—*i.e.*, an engine for each headland. These advanced as the work proceeded. A number of ploughs on Lowcock's Turnwrest principle were placed in a frame and wound or drawn from engine to engine by a chain. I believe if a wire rope instead of a chain had been employed his lordship would have succeeded.

(10) Following up the course of invention we next come to the scheme of Messrs. Fiskin, of Stockton-on-Tees. A stationary engine was employed, a main object of Mr. Fiskin being to dispense with wire ropes and give off the power of the engine by means of a light endless hempen cord, worked at a high velocity, which passed round pulleys on a self-moving anchor, and thence to winding-drums placed upon the implement, the revolution of which imparted motion to the ploughs. The anchors were self-propelling, their onward motion being effected by the revolution of the pulley placed on the anchor and round which the rope was passed; second, the plough was on the balance principle, and was steered in either direction by means of locking the wheels. This apparatus was exhibited at the Royal Agricultural Meeting in 1855, and created quite a sensation; as well as making a very favourable impression.

(11) In 1854 Mr. Fowler exhibited at the Royal Society's Meeting held at Lincoln his steam draining plough and apparatus.

In the report of this meeting, published in the Journal, a diagram is given of this machine. The judges, in speaking of its wonderful performances, wind up with these remarks: "Surely this power can be applied to more general purposes; we earnestly commend the idea to our engineers and mechanists."

(12) Whether those to whom the idea was commended took much notice of it or not we do not know, but we do know that the idea commended itself to a farmer in the person of Mr. Smith, of Woolston, who in a published letter informed the public that he commenced his experiments after reading this report.

Mr. Smith subsequently ordered an apparatus of Mr. Fowler, with which he proposed to work, and subsequently did work his cultivator. An opinion has been prevalent that Mr. Smith has a claim to the invention of the whole apparatus, but in 1856, at a meeting of the Society of Arts, Mr. Smith admitted "that his first windlass was constructed by Messrs. Ransomes, under the direction of Mr. Fowler." I do not mention this to detract from the great merit due to Mr. Smith as a pioneer in steam cultivation, but simply that the merit should be properly divided or given to the right party; and I will remark, in passing, that I believe Mr. Smith has done as much or more than any other man, in arousing the country to the importance of steam culture, and to the fact that land can be economically worked by steam power; he has also proved that land can be successfully and continuously farmed by simply "smashing" or stirring, and that inversion of the soil is not so absolutely necessary to successful cultivation, as it was generally believed to be.

Causes of delayed Success.—Political economists tell us that the "machinery of a country will naturally correspond with its wants, and with the history and state of its people." This is undoubtedly true, the schemes we have described having been invented before they were really wanted or before their need was felt.

There can be no doubt that a redundant population and the paralysing effect of the old poor-law had considerable influence in retarding the use of machinery in farming; also the wide spread and deeply seated conviction that the employment of mechanical power diminished the demand for hand labour, and this conviction, which was shared by all classes, led people to take very little interest in labour-saving inventions.

Again, for want of railways, coal was at such a price, and so distant from the farm, that in most districts half the horse power that would have been saved by the introduction of steam power, would have been employed in hauling coal for the use of the engine.

The revolution which has taken place in farm practice by the substitution of the steam threshing-machine, for the flail and the horse-gear, has, doubtless, been brought about very much through the intersection of the country by railways.

This again has led the farmer to appreciate the value of and imbibe a taste for steam-driven machinery; it has, moreover, accustomed him to expend comparatively large sums of money in the purchase of machinery. We are creatures of habit, and 'tis astonishing, when we begin to spend money on machinery or anything else, how easy it is to jump from 300*l.* to 500*l.*, and from 500*l.* to 800*l.*

Classification of Inventions.—I divide the inventions, which since 1855 have been brought before the public, into the following classes:—1. Engines to travel over the surface drawing their implements with them. 2. Locomotive engines working on railways and drawing implements after them. 3. Engines moving along the head-lands and working implements by means of wire ropes. 4. Engines stationary whilst at work, and working implements by means of wire ropes. A number of schemes under each head have been either brought before the public or patented, and without using names more than absolutely necessary, I will simply allude to the alleged advantages and disadvantages of each system.

I would here take the opportunity of stating that in endeavouring to bring steam cultivation into practice, I believe no one has worked harder or spent his money more freely than Mr. John Fowler, and so far as I am concerned I hope he may be amply repaid for his great efforts.

(1) Engines which move over the land. Under these disadvantages, their weight is immense, and they have to propel themselves over surfaces more or less uneven or more or less yielding; the consumption of fuel and water is at least fourfold that of a stationary engine, and the repairs, owing to the irregularities of the surface of the land and greater friction—would probably be tenfold. The weight of such a machine, passing over the land, is also most objectionable. Mr. Romaine, to whom much praise is due, has worked hard to carry out the principle of a rotatory cultivator moving over the surface—a scheme so ably advocated by Mr. Wren Hoskyns. I believe, however, Mr. Romaine has abandoned the plan in favour of rope traction, for which he has obtained one or two patents.

(2) As to the scheme of laying down rails all over a farm and working locomotive engines upon them, whatever may be the economy and dispatch of such a system when once carried out, I think it highly improbable, considering the outlay to be 20*l.* to 30*l.* per acre, that it will ever come into use in this country, at all events not until landlords generally are much richer, and until a disposition to spend their money in the improvement of their estates has obtained more hold throughout the country.

(3) Next in order are the engines which travel along the headlands as the work proceeds. These doubtless employ their power more direct, and with a smaller quantity of rope than engines stationary at one point, but they have these drawbacks: when the soil is at all wet the passing of a heavy engine along the headlands and the necessary coal and water haulage after it, destroy in great measure the fertility of the headland, as well as leaving a good deal of hard work subsequently to be done by horse power in bringing the land to a tilth.

Again, in hilly countries the engine is at work sometimes a steep ascent and sometimes on as steep a descent, at times inclining to the right, and at others to the left; this will doubtless render the cost of keeping the engine in repair much greater than one that is stationary and always working upon the level. Another disadvantageous feature is that a headland all round must be left unbroken if the field has to be worked a second time by steam.

(4) Lastly, we will take the engines stationary while at work. The main objections urged against these schemes are, the extra length of rope required, and the loss of power by the employment of pulleys round which the ropes are passed; the advantages claimed are, they are less costly to purchase and to keep in repair, more simple of construction, consequently better adapted for ordinary farm labourers, and irregular shaped fields can be ploughed as well and almost as quickly as square ones. By stationing an engine at one point, fields of 30 or even 50 acres each can be cultivated without any remove of engine or apparatus, and if the farm be well laid out, twice this quantity can be done from one point. A pond or a well sunk at convenient spots saves all water carting, and the coal is all brought to one point instead of having to be carted after the engine.

Some parties have greatly exaggerated the loss of power entailed by the passing of ropes round pulleys. I have heard it stated in this room, that for every pulley used, a horse power is sacrificed. Now, so far from this being the case, I find by most careful experiments, that when working a cultivator drawing 15 cwt., and the ropes arranged in a square, the loss of power from friction is 25 lbs. per pulley, just one-sixth of a horse-power. Even this is not so great a disadvantage as at first sight would appear, for if the pulleys were reduced to two and the same strain put upon them, the friction would be increased one-third; this arises from the fact that the ropes would then have to pass half round the pulley instead of one-fourth only. The experiments at the Leeds meeting proved most conclusively that very little power was lost in the traction of the wire ropes, when properly supported upon pulleys.

Mr. Pike, in my neighbourhood, has a field of 50 acres, in which he stations an 8-horse engine at the extreme corner, where he has dug a pond. This 8-horse engine, without ever moving, breaks up this field of heavy tenacious soil to a depth of 7 or 8 inches, at the rate of 7 or 8 acres per day: so much for loss of power from pulleys and extra length of ropes.

Achievements.—Having now very imperfectly sketched the rise and progress of steam cultivation, I will in a few words sum up what I consider has already been achieved.

Some 400 or 500 farmers have purchased steam cultivating apparatus, of one kind or other. From the Britannia Iron Works, Bedford, alone, about 200 steam cultivators have been sent out.

The experience and the opinions of a large majority of the purchasers have been published, and all, or nearly all, have testified to their approval and appreciation of steam cultivation.

As to the future of steam tillage I shall say but little. What effect the general adoption of steam power on our farms will have upon the country no one can foresee. To expect that steam will do as much for agriculture as it has done for manufactures and commerce would be idle; but that it will enormously increase the productiveness of the country no one who has paid the least attention to the subject can for a moment doubt. Whether it will increase correspondingly the profits of the farmer we must wait to see; but it is worthy of remark that the most highly remunerative amongst the manufacturing trades of this country have been those which require a large plant in the shape of steam-driven machinery. To the landlords of the country the question of steam ploughing is of the greatest importance, and a few noblemen and landed proprietors have come forward and introduced steam cultivators on their estates: but it is mainly to the enterprise of the tenant farmers that the system has made so much way in the country. Landlords will consult their own interests, as well as that of their tenants, by removing all hindrances to the adoption of steam power. All unnecessary fences, to say

nothing of trees in ploughed fields, must be got rid of; the farms must be properly laid out; and above all, greater liberty of action must be given to the tenant in the course of cropping and other matters, before the resources of our farms will be fully developed. That the new order of things will have a considerable influence on the labourer, I have no doubt. The great advances which have been made of late in agriculture and the changes which are taking place, force on our notice the fact that a more intelligent and a more careful class of labourers are becoming indispensable to the farmer; and by employing these in the use of a higher order of machinery they will doubtless progress in intelligence accordingly. The dead level of wages will break down under this altered state of things, and there will be a field for the more intelligent and useful farm servant. Under the old order of things—however willing to encourage the skilful the farmer might be—this was difficult to be found. In conclusion, nothing indicates more clearly the great advance which is being made in the agriculture of this country than the introduction and spread of a better class of farm machinery. The machinery of a country has ever been a gauge of the intelligence of its inhabitants; iron-clad ships and rifled guns are not the implements of warfare of barbarous or semi-barbarous nations; nor are steam-driven threshing machines and steam ploughs the implements of a backward or bigoted agriculture.

Reviews.

What the Prophets Foretold. A Compendium of Scripture Prediction, &c. By John Algernon Clarke. Nisbet & Co., Berners Street.

We have not sufficient acquaintance with the literature of the subjects here discussed to be able to say in what degree the teachings of these pages give a new or more probable version than has yet appeared, of the predictions which are here classified and commented on. But it is plain that Mr. Clarke has been a diligent reader both of the Bible and of history; and that it is a reverent and truth-loving spirit which has guided his mind and pen. The following is the explanation which he offers of his motive for adding one more volume to the mass of recent Prophetic literature.

"Believing that the Bible, so far from limiting the study of its Prophecies to the erudite theologian, addresses them, like all other portions of its inspired contents, to the intelligence of common people,—we consider that the general scope and meaning of these predictions ought to be appreciable by any reader capable of grasping the common sense of Scripture on any other question. Intellectual ability and wealth of learning have not agreed upon a standard principle of interpreting prophecy, any more than they have unanimously consented to one scheme of doctrinal divinity, one view of the design and manner of sacraments, or one system of ecclesiastical polity; and why, therefore, may not the simple-minded, unscholarly reader—exercising his "right of private judgment" under the guidance of the enlightening Spirit—become as clear in his understanding of the foreshadowed course of Providence as he may be sound and evangelical in his creed? One preparation, however, is indispensable on the part of the reader. The subjects of prophecy being mainly historical, the student must, of necessity, possess such a knowledge of events and dates as will enable him to perceive the correspondence of predictions with the facts to which they relate. And accordingly, a book may be of value, in which the prophetic passages of the Bible, with others bearing upon them, are presented in a connected form, side by side with the historical information which furnishes the means of comparison."

We add that there is a special fitness in our thus bringing this volume under the notice of agricultural readers, for Mr. Clarke has long been known as one of the best and most intelligent of our agricultural writers. A man of extraordinary versatility and ability, with whose talents they have been long acquainted, here calls the attention to far more important subjects than any which have hitherto occupied their minds together.

Journal of the Bath and West of England Agricultural Society. Vol. X. Part I. Ridgway.

The Editor of this Journal is, as usual, beforehand with his work. Can any one explain why it is that the latter part of the volume for 1861, of the Journal of the Royal Agricultural Society of England, should not be published till March, 1862, and should, in fact, be preceded by the first part of the volume for 1862 of the Journal of the sister society?

A number of useful papers are here presented to the reader. Mr. Froude reports on the Implement Exhibition at Truro, and speaks especially of two classes of implements—reapers and washing machines respectively.

Mr. Smith, of South Molton, contributes a capital paper on Grass Lands. Mr. Darby gives an account of the Reclamation of Land in the Vale of Taunton Dean. Mr. Woodbury writes upon the Bee, Mr. Spender on Italian agriculture; and Dr. Voelcker gives a capital report on the Scouring lands of Central Somerset. Besides these there are reprints of Dr. Voelcker's paper on Cheese, and Dr. Anderson on Cattle Condiments, already published elsewhere.

Dr. Voelcker's paper on Scouring Lands, and Mr. Smith's on Grass-land Improvements generally, are very instructive and useful contributions to agricultural literature; and we hope hereafter to give a full account of both.

The volume is a very good illustration of scientific, practical, and official ability.

Farm Memoranda.

College Farm, Cirencester, *February.*—The weather during the past month has with the exception of a few days been most favourable for field operations, and work was never more forward.

Winter Wheat ("Free trade") was drilled after roots fed off on the 7th and 8th, and went in exceedingly well; it is a proof of the very healthy state of the land that though only recently fed off and much trodden in parts it required very little exposure, and broke up beautifully under the action of drags and harrows. We are in the habit of seeding rather thickly when we plant so late, and in this instance put 9½ pecks per acre. Though very late for real winter Wheat we do not despair of growing a good crop; last year we planted about the same time after Beans, and got ten sacks; the land is in very good condition. Our Nursery Wheat, 18 acres after roots, planted the end of December, begins to look thick and well, which is not the case with the later sown Clover lea Wheats, which are suffering severely from wireworm, and unless we could get them dry enough to Crosskill, soon will require redrilling, or at any rate Wheat must be dibbled in the worst parts. Wireworm is extremely prevalent on the light land in our district, and I expect to hear of loss of plant; at present, owing to the thick braird it may scarcely have been noticed. The mildness of the winter is, I presume, the cause of such a visitation. The rooks, of which we have a plentiful stock, are very busy where we can permit them to work, but unfortunately we must admit that they are graminiferous as well as insectivorous birds, and rather preferring the former food one would think, to see the quantity of Wheat pulled up and eaten. An early application of nitrate of soda and salt will probably check the wireworm, and also encourage the growth of the Wheat, but at present our manure though purchased has not arrived. The Crosskill roller is our best friend.

Peas.— Twelve acres of early grey Peas were drilled Feb. 14, in excellent condition. The land after Barley was steam ploughed in October and lay rough all the winter; a few days before planting, the Staffordshire harrow, a light cultivator, was used across the furrow, and two harrows produced a very fine tilth—3 bushels per acre, 17 inches apart. We are very fond of a moderate average of pulse crops—generally, soil permitting, about 10 acres of each (Peas and Beans); this year we have no suitable Bean land, and having a good stock of Beans in the rick yard we shall have a supply of straw, which is the principal object in growing these crops. Pea straw cut green is especially valuable, and we would not be without it on any account for our ewes at this season, believing it to be quite equal and indeed often superior to badly made hay; added to this the occasional growth of pulse crops, say once in eight or 12 years, results in a large yield without exhausting the soil for cereal crops. Of course every now and then we must expect a very deficient yield; but the cost of the crop is light, no artificial manure seems required, and by good hoeing they are really cleaning crops.

Vetches.—A sowing of winter Vetches, about 5 acres, was made on the 4th inst.—2½ bushels of seeds without winter Oats, which had been added in the two previous sowings at the rate of half a bushel per acre to increase the forage and to hold up the Vetch. As soon as these are well up we shall have our first sowing of spring Vetches; for this purpose we shall try the French, which bear a very good character, and are very much cheaper than English seed.

Steam Ploughing.—We are at present drilling white Talavera Wheat on our Bean and Pea land of last year, which has been steam ploughed, lightly cultivated and well worked, as it had patches of Couch-grass which have thus been brought to the surface and picked off; the land works well, though full soft for Wheat, but at this season this is not so objectionable. The steam plough has been working since the 14th on a neighbour's farm, and although at this moment stopped on account of an accident, it has been doing satisfactory work, and will as we become more accustomed to its management, succeed well and prove of very great value; already we find the difference in working after it, the cultivation is reduced to the minimum, and it seems to us not to be a question as to the comparative cost of any one operation by steam or horses, but the total cost of preparing for a crop (as roots) for instance, that ought to be a comparison. We firmly believe that land like ours, of moderate character, when kept fairly clean, will only require one steam operation—either a stubble ploughing or smashing up in the autumn, and the spring cultivation will be accomplished by a light horse cultivation and by drags and harrows, &c. Now compare this with the three furrows so generally necessary with horse cultivation, and we gain an idea of comparative cost. Then again the quality of the work is so superior—even on our lighter land the improvement is very manifest.

Live Stock.—To turn from the land to the stock. Sheep have progressed satisfactorily, the weather being very favourable for out-door feeding. Our first 60 tegs have been washed, and are now being shorn; they will average from 18 to 20 lbs. a quarter at about 11 to 12 months old, and cut 9 lbs. of wool, weights that are more selling than larger sheep; notwithstanding the reduced price, such sheep will not make a bad return—wool and carcass about an average of 54*s.* to 56*s.* a head. Lambing has commenced. The ewes being on Swedes with a mixture of middling hay and excellent Pea straw (long in racks) till after they have lambed, and then Sainfoin, hay, and Pea straw, with a little Mangel as well as Swede. On such food we have a good supply of milk, and the ewes, although having had nothing but straw in the way of dry food until about a fortnight back, are looking remarkably well, with a good colour to their coats, and in fair condition. We are convinced that with care in harvesting, and cutting the corn where it is possible rather green, straw may be to a very great extent substituted for hay, and thus a valuable farm product be economised, the necessity for so large a produce be removed, and consequently an increased amount of summer's keep (so very valuable) be obtained. The lambs drop healthy and vigorous, though at present mostly singles. If the ewes with doubles appear to want extra food, we are disposed to try a small quantity, say ¼ to ½ lb. a day, of nut meal by way of experiment. Being a regular sheep farm, we build an ewe pen near our food every season, and much prefer this plan, as we get a good stock of manure left behind for the land. The pen is roomy, and sheltered from N.W., N. and E., but open to S.; and, weather permitting, the lambs go out into the field during the day when they are 3 or 4 days old. Keeping them too long in the pen only tends to make them delicate, and when turned out to shift for themselves they go back.

Cattle.—We find little of importance to notice in this branch of our live stock. The cows mostly lying back rather late, we are very short of milk; occasional inconvenience of this sort is unavoidable. Oat straw has been substituted for Barley straw as fodder, and the animals look all the better for the change. As we know by analysis that this contains 10 per cent. of sugar, gum, &c., as well as a considerable quantity of soluble flesh-forming ingredients (about 2½ per cent.); while the Barley straw has only about 2¼ per centage of sugar, and rather over a half per cent. of soluble protein compounds, we are at no loss to understand the cause of improvement. The dry cows are getting a moderate allowance of roots; 25 to 30 lbs., with straw chaff and abundance of Oat straw in the racks, and look remarkably well. Although the Oats, being White Poland, a sort liable to shed, were cut quite green, the sample is in no way injured, weighing 45¼ lbs. per bushel, and yielding from 6 to 7 lbs. per acre. The fatting animals are now getting 2 qrs. per day of Nut meal and 3 lbs. of Barley meal mixed with pulped roots and chaff, and are gaining weight rapidly. *John Coleman, Royal Agricultural College, Feb.* 26.

Miscellaneous.

Edinburgh Wool Sales.—The attendance of buyers was very numerous, and the competition for good lots spirited, considering the dull state of trade at present existing. The white wools, as was to be expected, were generally of an inferior character to those offered at previous sales, and the quantity limited; but for these an advance on last sale's rates for similar wools was obtained, and all good parcels were keenly competed for. A few good lots of half bred wools realised prices ranging from 38*s.* to 40*s.* for hoggs, and 35*s.* to 36*s.* 6*d.* for ewes. In Cheviots, Haystoune ewes fetched 34*s.*, and others, including a large lot of Argyllshire ewe wool, beautifully managed, fetched 36*s.* per stone. In White Highlands there were some large lots of excellent quality. The Rannoch Lodge Clip fetched 17*s.* 6*d.* for salved ewes, 19*s.* for Wedders, and 21*s.* for hoggs, all unwashed; and for white ewes, unwashed, of the same clip, 19*s.* was realised. Several other clips reached from 17*s.* 6*d.* to 19*s.* for unwashed, and 20*s.* to 22*s.* for washed. In Laid Highlands, the quantity was small and quality inferior; but all was cleared out at prices fully up to the extreme rates going. Laid Cheviots, of which there was a splendid display of first class clips, were well cleared out, at prices ranging from 21*s.* 6*d.* to 27*s.* for ewes and wedders, and 24*s.* for hoggs. *Robert Girdwood, Edinburgh, Feb.* 27.

Nuisance Removal.—At the Aston Petty Sessions on the 14th ult. Mr. John Carter was summoned to answer an information laid against him on behalf of the Birmingham Water Works Company, who complained that on the banks of the Birmingham and Fazeley Canal, opposite the works of the Water Works Company, a nuisance injurious to the public health existed from the making of manure for agricultural purposes. The summons had not been taken out with the slightest vindictive motive; the object being merely to abate a nuisance that it was believed might by some chemical process be abated. It was decided that the case should be adjourned for a month, and that Dr. Hill and Dr. Wrightson should be appointed to report as to the state of the works, with power, if they disagreed, to appoint another medical gentleman to decide. At the adjourned hearing Drs. Hill and Wrightson presented their report, in which they stated that the works might be carried on so that they would not be any nuisance if

… remedies named in the report were adopted. The … report was as follows:—

"We beg to report that on the 19th of November we together … visited the manure works of Mr. Carter, situated at Aston. … works at the time appeared in full operation, but the … arising from the process of manufacture was exceedingly … We tested for the vapours of ammonia, and found … present in the air of the works, generally diffused, but … trifling in amount. It was suggested by Dr. Hill that for … absorption of ammoniacal and other fumes, acids should … added to the contents of the grinding troughs during the … reduction of the night soil, and that a layer of bone … should be strewed over the surface of the manure … further that for the destruction of any vapours that … escape absorption, vessels for the generation of chlorine, … constantly in slight action, be placed near the roof round … principal shed. We carefully examined the ovens where … refuse was drying, but did not detect any objection… odour arising from it. We are of opinion that if the mea… proposed be adopted and properly carried out no con… … of the surrounding atmosphere need in the slightest … be apprehended." As the course recommended in the … had been adopted by Mr. Carter, the information was … withdrawn.

MR. MOTTERAM said it was satisfactory to the town at large, … that this manufacture of Mr. Carter's—the application … chemistry to the production of agricultural manures—was … a nuisance, and that there was no necessity to stop the … manufacture of this article, which was now becoming so valua… … manure, and was so much sought after by agricultu… … They could not be unmindful of the serious difficulty … Corporation felt as to what they should do with the sewage of … town. On the north side of the town they had complaints … persons that the Corporation had extracted the sewage … from the brooks, and had made them so pure that … they wanted them for flooding their meadows they were …, and on the south they had complaints that the run… … of the sewage into the streams made them so impure that Mr. Adderley could not residee in his place, and proceedings were taken against the Corporation by Mr. Adderley, and also by Mr. Bollason, with respect to the matter. These actions were entered to get rid of the sewage matter.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Thursday, March 6, 1862.

Day of Week.	Day of Month.	Barometer corrected to Freezing Point at Mean Sea Level. (At 9 A.M., Railway Time)	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind Direction	Wind Force, 0–6	Amount of Cloud 0–10.	Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	28	30.09	34	32	N.E.	2	4	37	31	42	30	..	41½	43½
Saturday ..	1	30.03	37	35	N.E.	2	6	42	32	56	33	..	41	43
Sunday ..	2	29.66	32	30	E.	1	6	46	31	63	30	..	41	43
Monday ..	3	29.28	33	30	W.	2	7	36	24	51	19	..	40½	42½
Tuesday ..	4	29.65	28	22	N.	1	1	41	18	58	15	..	39½	42
Wednesday .	5	29.91	37	35	S.	2	2	44	24	67	19	..	38½	41½
Thursday ..	6	29.52	52	51	S.W.	3	7	53	35	54	31	0.40	39	41

Notices to Correspondents.

… MANURE: *J Kerrison*. The sample has been received … drives off a large quantity of ammonia obvious enough … nose and eyes. But this does not enable us to form … opinion of its agricultural value comparatively with Peru… … The Ichaboe guano smelt much more strongly … ammonia than the Peruvian, although with only … one half as much per ton. You should publish a … quantitative analysis.

… *Holywell Vicarage*. It can but be turned to a fertilising … by using it as litter in the cow-house and stable, … afterwards rotting in a dung-heap. About poultry … week.

… F. S. Your seeds are Beans of some field variety.

… *Holywell Vicarage*. It will not be good policy to use a … of soot immediately after liming. Better put the … into the compost heap and apply the mixture late in the … season.

TYNDALE MONUMENT: Any one who wishes to subscribe … memorial, referred to in a Leading Article last week, … by a cheque or Post-office order (Charing Cross) … to Mr. James Matthews, the publisher of this Paper, … office of the Paper, 41, Wellington Street, Strand, W.C. … receipt of subscriptions will be acknowledged by the … of the *Agricultural Gazette*, and afterwards by the … Secretary to the Fund in Gloucestershire. We have received … following sum:—

Messrs. Sutton & Sons, Reading .. £2 2 0

GENUINE ITALIAN RYE-GRASS, produced from the second cut of Foreign "Italian," weighing up to 21 lbs. per bushel, and "Pacey's" and "Evergreen" Perennial Rye-grass, weighing up to 28 lbs. per bushel, can be supplied direct from the Grower either now or in March (at the option of the purchaser), and samples will be forwarded free on application.

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PAGE'S IMPERIAL ORANGE GLOBE MANGEL.—A large stock of this has been provided to meet the demand that has arisen for it. Its superior weight producing and keeping qualities are well known. The prize for the best 10 Acres has again this year been awarded to it by the Botley Farmers' Club. STEWART MACNAGHTEN, Esq., grew 61 tons 2 cwt. per acre of it by ordinary cultivation. W. DICKINSON, Esq., produced six specimens, weighing when perfectly clean, without leaves or roots, 198 lbs., the largest of which, 44 lbs. At the Vale of Avon Farmers' Club, six prizes were awarded to it for acreage.

PAGE'S IMPROVED HARDY SWEDE still maintains its superior character for general cultivation. It carried the 10 Acre Prize at Botley.

BIRMINGHAM ROOT SHOW.—The Ten Guinea Cup for the best collection, and the Five Guinea Cup for Swedes have been again brought to Hampshire—being the third time in succession the former has been awarded to Sir W. Heathcote, Bt.—This not only reflects great credit upon the management and skill of his Steward, Mr. Charles, but the County should be proud of the distinction conferred upon it, by his energy and judgment, in carrying these Prizes (that for Swedes against 26 competitors). As Hampshire Seedsmen, we have great reason to speak of his success.

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,, ,, curled 0 6
,, Scotch dwarf curled 0 6
,, Variegated garnishing, as exhibited by him at the Royal Horticultural Gardens at Kensington and the Crystal Palace 0 6
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LOBELIA ERINUS SPECIOSA (true), saved from the Crystal Palace variety, and will come true from seed; cannot be too highly recommended for its intense blue colour and dwarf habit. All visitors to the Crystal Palace must have admired the immense lengths of edging of this kind, so artistically planted by Mr. Gordon .. .. .. 6d. and 1 0
TROPÆOLUM, Crystal Palace Scarlet, saved from the true variety; this is a well known bedding plant, extensively used at the Crystal Palace 1 0
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ATRIPLEX HORTENSIS RUBRA (Orache), highly recommended by many horticultural writers in preference to Perilla Nankinensis; as a decorative plant it is highly ornamental 0 3

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Asparagus.

YOUELL AND CO. having a large Stock of the above growing on the Sea Coast, of the finest quality, beg to offer it at the following prices:—

ASPARAGUS, GIANT, two years .. .. 2s. 6d. per 100.

BUCKLEY'S NEW CRIMSON RHUBARB.

Specimens have been sent to Dr. Lindley for his opinion. See the following in the *Gardeners' Chronicle* of February 26, 1859:—

"John Buckley, your specimens are very handsome, rich rose red quite through, and are evidently derived from Bucks, the true Rheum undulatum. When cooked they were remarkably free from stringiness."—2s. each; 20s. per dozen.

HAWKE'S CHAMPAGNE RHUBARB, new and fine, highly recommended, 12s. per dozen.

YOUELL'S NORFOLK HERO CUCUMBER, 1s. per packet.

LAING'S MAMMOTH RED CELERY, 1s. per packet.

Royal Nursery, Great Yarmouth.

To the Trade.

NEW SEEDS DIRECT FROM THE GROWERS.

CHARLES SHARPE AND CO., SEED GROWERS, Sleaford, will have much pleasure in forwarding on application their WHOLESALE PRICED LIST of AGRICULTURAL SEEDS, which have been grown upon their own land with the utmost care from the finest selected stocks. The advantages of procuring Seeds direct from the Growers are too obvious to require comment, and from the experience of C. SHARPE & Co. in the growing and harvesting of Seeds, a satisfactory result may be calculated on with certainty when their Seeds are used.

SHARPE'S IMPROVED LARGE SWEDE.—The largest and best cropping Swede in cultivation; it produces a finely-shaped large bulb, without a coarse top. A Coloured Lithograph of this Swede will be sent to purchasers.

CHARLES SHARPE & Co., Seed Growers, Sleaford, Lincolnshire.

Agriculture.

W. DRUMMOND AND SONS, Stirling, claim special attention to their ROOT SEEDS, which embrace several Improved Stocks of SWEDES and other TURNIPS, MANGEL WURZEL, &c.: also to remarkably fine samples of all the Varieties of CLOVERS, PERENNIAL and ITALIAN RYEGRASS and NATURAL GRASSES,—priced Catalogues of which, together with every description of seed required for the Farm, may be had, prepaid, on application.

Seeds forwarded Carriage Free to all parts of the Kingdom.

Seed Warehouse, Stirling, N.B.

Four Millions of Transplanted Quicks.

GEORGE CHIVAS offers the above, Two Millions of which are suitable for Railways, and Two Millions varying from strong to exceeding strong—a portion having been twice Transplanted. A bale containing 100 of each, five sizes, forwarded on receipt of 15s.; orders for 10,000 delivered free at any railway station.

Also Half a Million of Transplanted SPRUCE, and one of the largest general Nursery Stocks in the North-Western counties.

Chester, March 8.

R. GLENDINNING has great pleasure in offering the undermentioned fine CONIFERS, which have been annually transplanted, and will move with perfect safety:—

Araucaria imbricata (perfect specimens), 2 to 9 feet
Cedrus Deodara .. .. 1 to 10 feet
,, atlantica ,, ,, 1 to 10 feet
Cupressus Lawsoniana, 1 to 3 feet
,, macrocarpa, 1 to 15 feet
,, Nutkaensis (Thujopsis borealis), 1 to 8 feet
Picea nobilis (fine), 1 to 6 feet
,, Nordmanniana, 1 to 10 feet
,, Pinsapo, 1 to 6 feet
Pinus Benthamiana, 1 to 5 feet
,, excelsa, 1 to 12 feet
,, Fremontiana, 1 to 4 feet
,, Jeffreyi, 1 to 2 feet
,, Koraensis, 1 to 4 feet
,, monticola, 1 to 10 feet
,, tuberculata, 1 to 4 feet
Taxus baccata erecta (splendid specimens), 1 to 9 feet

Also all the other leading kinds in fine well grown plants.

The above are remarkably handsome plants, and perfectly healthy, not having suffered from the severity of the past winters. Price on application.

Chiswick Nursery—March 8.

200 CUCUMBER and MELON BOXES and LIGHTS, and from 400 to 500 LIGHTS for PITS of all SIZES kept in STOCK.

Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.

JAMES WATTS & Co., Hothouse Builders and Hot-Water Apparatus Manufacturers, near the Green Man, Old Kent Road, London, S.E.

References to the Nobility, Gentry, and Trade in most of the counties in England.

Parkes' Steel Digging Forks.

BURGESS AND KEY, 95, Newgate Street, E.C., London, being the Wholesale and Retail Agents for these celebrated Tools, have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN has obtained the FIRST PRIZE given by the Royal Agricultural Society at every Meeting since 1850. It is strongly recommended as the most perfect Churn now in use. Full particulars sent on application.

Agricultural Machinery.

CHAFF CUTTERS, TURNIP CUTTERS, PULPERS, MILLS, PLOUGHS, HARROWS, CARTS, &c., Delivered Carriage Free.

BURGESS & KEY, Manufacturers, 95, Newgate Street, London. PRICE LISTS free per Post.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype Trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.

THE GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C.

THE LONDON MANURE COMPANY (Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. Macadam, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0
These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

New Source of Ammonia.
To Manure Manufacturers and Dealers.
ULMATE of AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that Wool contains more Nitrogen (yielding Ammonia) than any other kind of animal matter, proves the Ulmate of Ammonia to be a highly valuable manure, the Analyses by Professor Voelcker, the Chemist of the Royal Agricultural Society, and other high authorities, showing a per centage of Ammonia exceeding 14 per cent., or equal to an average sample of Peruvian Guano, while, from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of ammonia. Being a fine dry powder, it is peculiarly suitable for use in the manufacture of manures, and preferable to the ordinary salts in use, sulphate of ammonia, nitrate of soda, &c.
Samples, prices, and all information will be forwarded on application to Frederic J. Cornwell, Broker, 7, Great St. Helens, E.C.
LINSEED CAKES, RAPE CAKES, COTTON CAKES, also all Materials used in the Manufacture of Manures, at the lowest market prices.

Patent Eureka Manure.
JOHN PRICE, Roundhill Farm, Mottram, near Manchester, informs Agriculturists and Horticulturists that he is appointed Agent for this MANURE, which for all Farm and Garden crops is equal to the best Peruvian Guano, at about half the cost. Analyses by eminent chemists show that the Manure contains a large amount of the two most prolific fertilisers known, viz., Phosphoric Acid and Ammoniacal Salts.
The EUREKA MANURE is composed of the strongest fæcal and urinary matter, highly concentrated and chemically prepared, and is different in its components and action from night soil.
Price per ton, including bags, 7*l*. cash; less than half a ton, 8*s*. per cwt., delivered Carriage free to any Railway or Canal Station nearest to the purchaser's residence.
Particulars and directions for use, with Testimonials, forwarded post free on application to the above address.

BURNARD, LACK, and CO.'S CONCENTRATED SUPERPHOSPHATE of LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3*s*. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.
This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3*s*. per Gallon (or 9*d*. fit for use), will be the cheapest. To publish testimonials is unnecessary.
May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,
Page & Toogood, Royal South Hants Seed Establishment, Southampton.

Magnified Aphides.

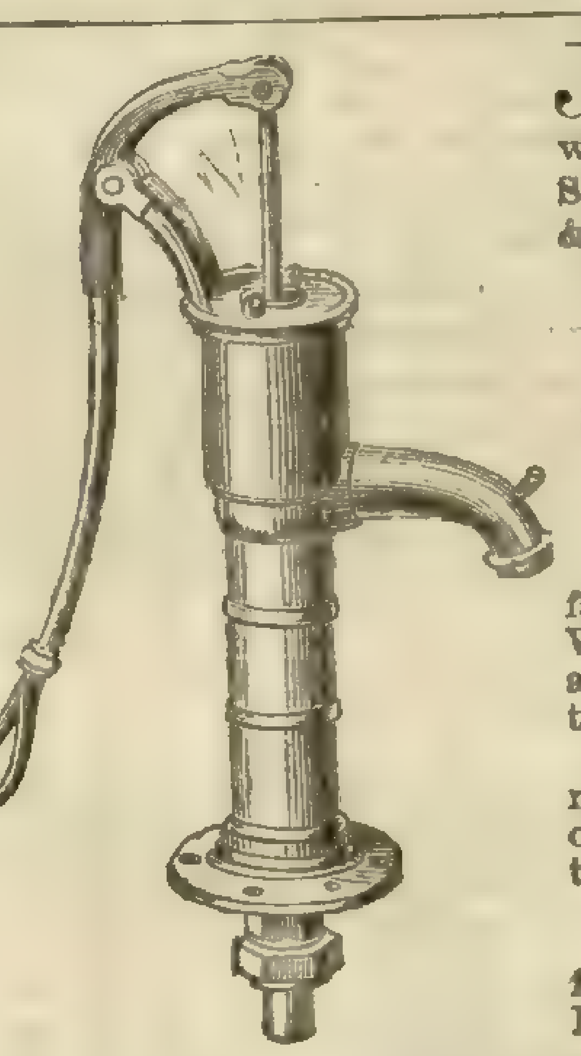
NEAL'S PATENT APHIS PASTILS.
1*s*. and 2*s*. per packet.
From *Lloyd's Weekly*, July 7th, 1861.
"All we know is, that one of our larger houses took half a pound of tobacco, 2*s*., and that three pastils, 1*s*., do the same with no trouble. We have a score of letters on the same subject, but all to the same purport."
NEAL'S PLANT SOAP,
1*s*. per packet,
Makes the cheapest and most effectual Wash for destroying Mealy Bug, Thrips, Red Spider, American Blight, and all other Insect Pests.
Each Packet contains Four Cakes, each Cake makes One Gallon of Wash.
Sold by all principal Seedsmen.
Patentee:
J. Neal, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.
This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.
Sold Retail by Nurserymen and Seedsmen in boxes, 1*s*., 3*s*., and 10*s*. 6*d*. each.
Wholesale by
Price's Patent Candle Co., Limited.

Genuine Tobacco Paper or Cloth for Fumigating.
GEORGE DARLINGTON'S IMPROVED TOBACCO PAPER retains its strength longer than any other, is more convenient for packing, and ready for use in one minute. Used by nearly all the principal Nurserymen and Florists, 1*s*. per lb. Allowance to the Trade on 28 lbs. and upwards.
To be had at 2, Orange Street, Bethnal Green Road, London. All Orders to be accompanied with a Post Office Order, payable Bethnal Green Road, N.E.

JOSEPH HAYWOOD and CO.,
Manufacturers of
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kinds of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield.

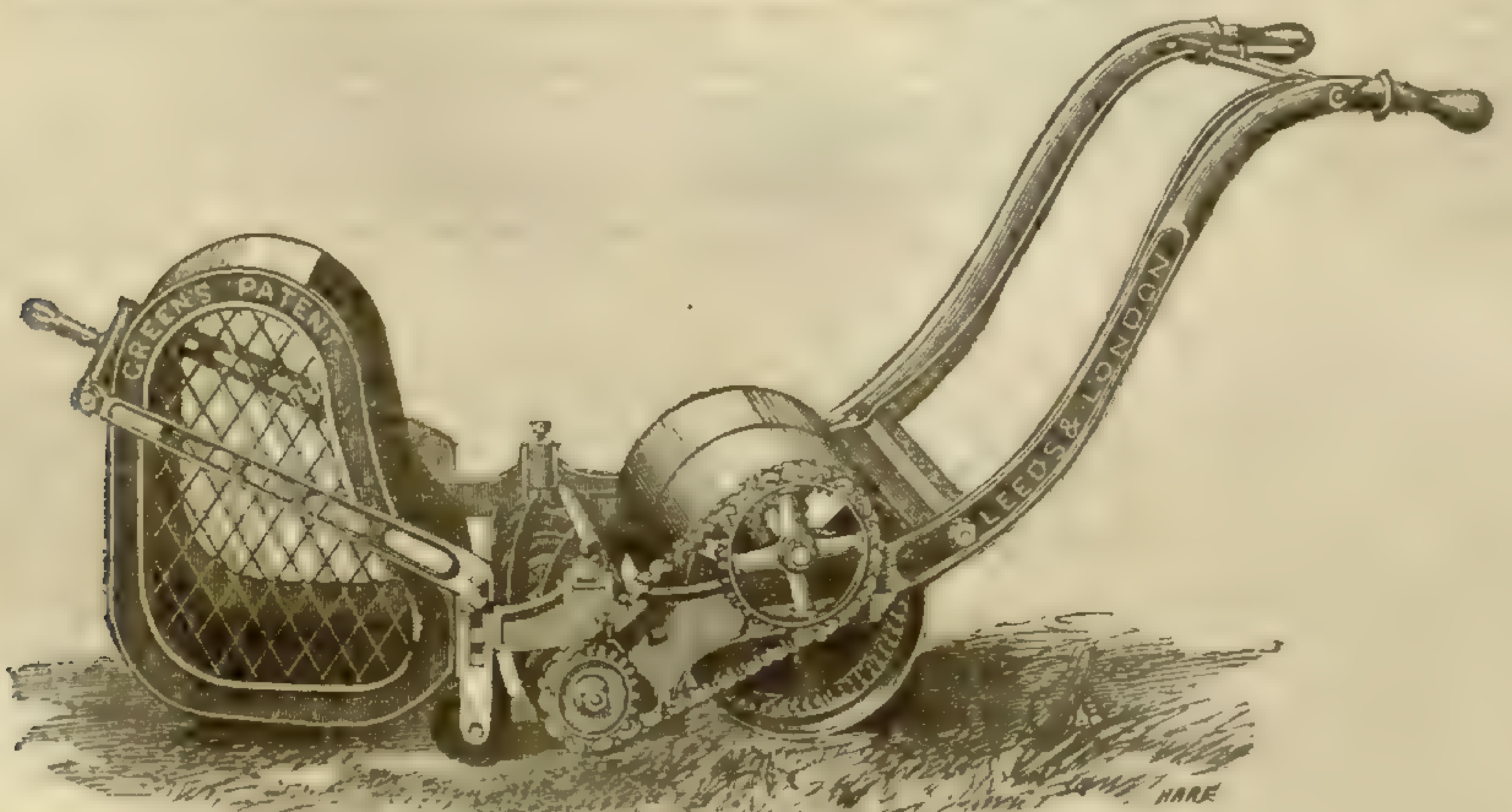


J. TYLOR and SONS' PATENT IRON PUMP with reversible handle, for Shallow Wells, Hot-Houses, &c. Price 25*s*. 6*d*. each.
IRON YARD and GARDEN PUMPS
3 feet 6 inches under spout
2½	3	3½ inch
48*s*.	58*s*.	66*s*. each.

J. Tylor and Sons manufacture PUMPS for DEEP WELLS which do not require any fixing below the level of the ground.
PUMPS of J. Tylor & Sons' manufacture to be obtained of Plumbers in all parts of the United Kingdom.
J. Tylor & Sons, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.
PROTECTION from the COLD WINDS & MORNING FROST.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.
Two yards wide .. .. 1*s*. 6*d*. per yard run.
Four yards wide .. .. 3*s*. per yard.
An improved make, 3 yards wide, 2*s*. 6*d*. per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1*s*. 4*d*. per yard run.
Elisha Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

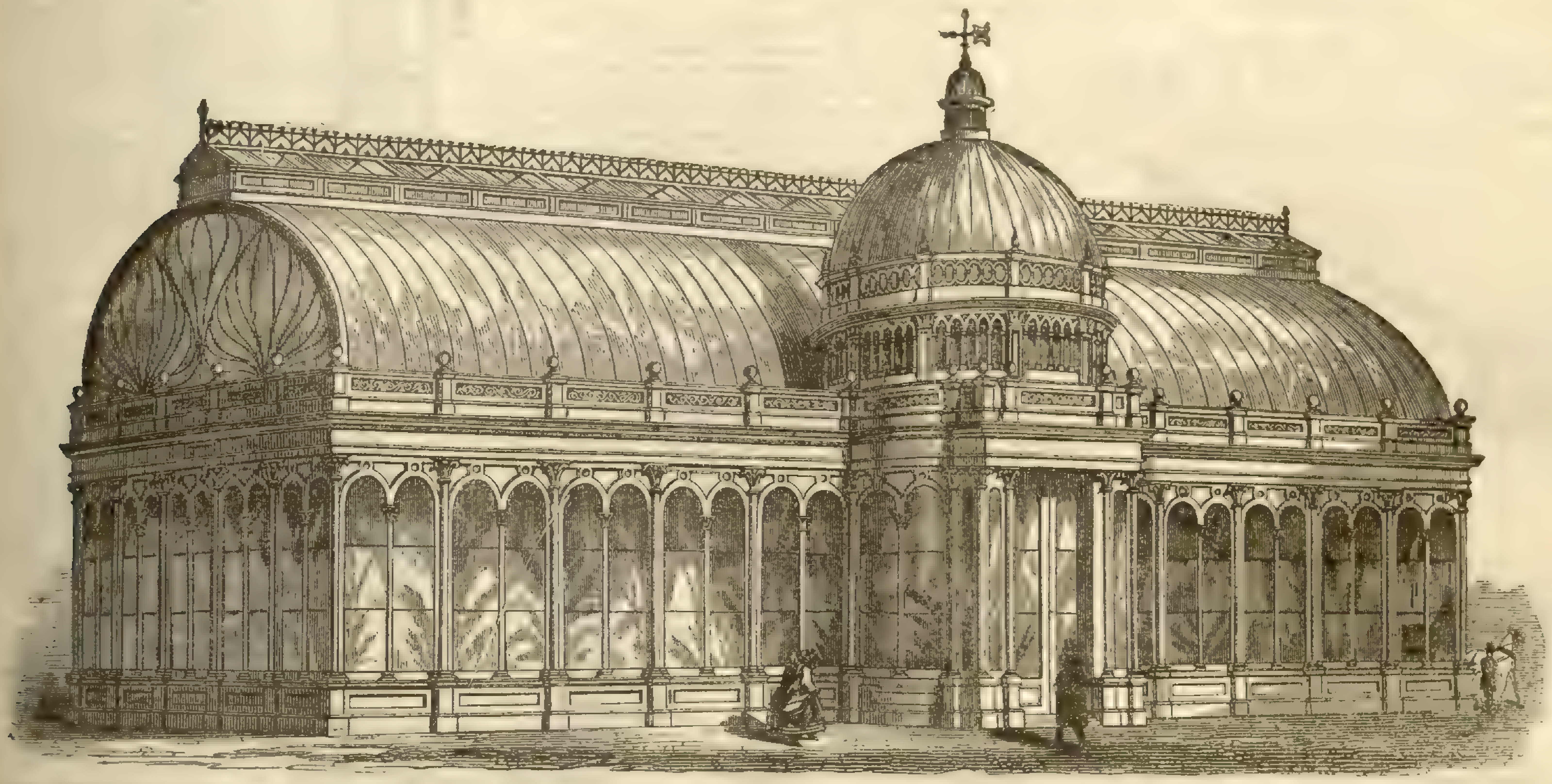
GREEN'S
LATEST IMPROVEMENTS IN
LAWN MOWING, ROLLING, and COLLECTING MACHINES
FOR THE PRESENT SEASON 1862,
FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.



The Improvements are of such an important character that all users should not fail to make themselves acquainted with them.
For ILLUSTRATED PRICE LISTS, with full particulars, address
T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.
OR ANY OF THE PRINCIPAL IRONMONGERS AND SEEDSMEN, &c., IN THE KINGDOM.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

PATRONISED BY THE QUEEN.



WEEKS'S CONSERVATORIES are peculiarly chaste in design. A choice variety now in preparation at their Steam-Power Works.

WEEKS'S NEWLY-INVENTED PEACH HOUSES give the utmost satisfaction. They require *no Brick foundation*, and are specially suited for covering Trees of long standing.

WEEKS'S FORCING HOUSES and **VINERIES** combine some valuable improvements.

WEEKS'S IMPROVED VENTILATING APPARATUS gives universal satisfaction.

WEEKS'S HOT-WATER APPARATUS continues to eclipse all spurious imitations of their renowned "ONE-BOILER SYSTEM." It exposes four times the quantity of heating surface to the action of the fire, consequently must be four-fold as powerful, and economical in the same ratio. It is described by the highest authority as the very best extant for both large and small works, which the following references will serve to corroborate. It has been adopted by

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN

THE TOWER OF LONDON
THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN

THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM, AND NUMEROUS PUBLIC COMPANIES.

Catalogues free on application.

JOHN WEEKS & COMPANY, HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS ENGINEERS,
KING'S ROAD, CHELSEA, LONDON, S.W.

BY HER MAJESTY'S ROYAL LETTERS PATENT.

ORMSON'S PATENT JOINTLESS TUBULAR BOILER,

AN ORIGINAL INVENTION,

Brought out for the purpose, and is now fully acknowledged to surpass the OLD-FASHIONED JOINTED TUBULAR BOILERS, which have been made for the last 20 or 30 years by all other manufacturers. The ADVANTAGES of this PATENT will be manifest to every person's understanding from the following FACTS. For instance, one of the OLD-FASHIONED JOINTED BOILERS with 50 TUBES would have 100 JOINTS made of rope yarn and cement, exposed to the direct action of the FIRE, whereas in my PATENT there is NOT ONE JOINT so exposed. And it should be fully understood that as the OLD-FASHIONED JOINTED TUBULAR BOILER increases in SIZE, number of TUBES and JOINTS, its liability to LEAKAGE also increases, consequently

THE FOLLOWING IS THE REASON WHY

ORMSON'S ONE-BOILER SYSTEM

AND PATENT JOINTLESS TUBULAR BOILERS

have become so universally adopted on account of their superior power, great safety, and economy.

ORMSON'S No. 1 BOILERS	are heating upwards of	250	feet of Pipe.
ORMSON'S No. 2 BOILERS	" "	600	"
ORMSON'S No. 3 BOILERS	"	1300	"
ORMSON'S No. 4 BOILERS	" "	3000	"
ORMSON'S No. 5 BOILERS	" "	5000	"

Boilers of larger sizes if required to heat 12,000 or 15,000 feet of Pipe.

H. ORMSON having a most complete Set of Steam-power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, HORTICULTURAL BUILDER TO HER MAJESTY,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

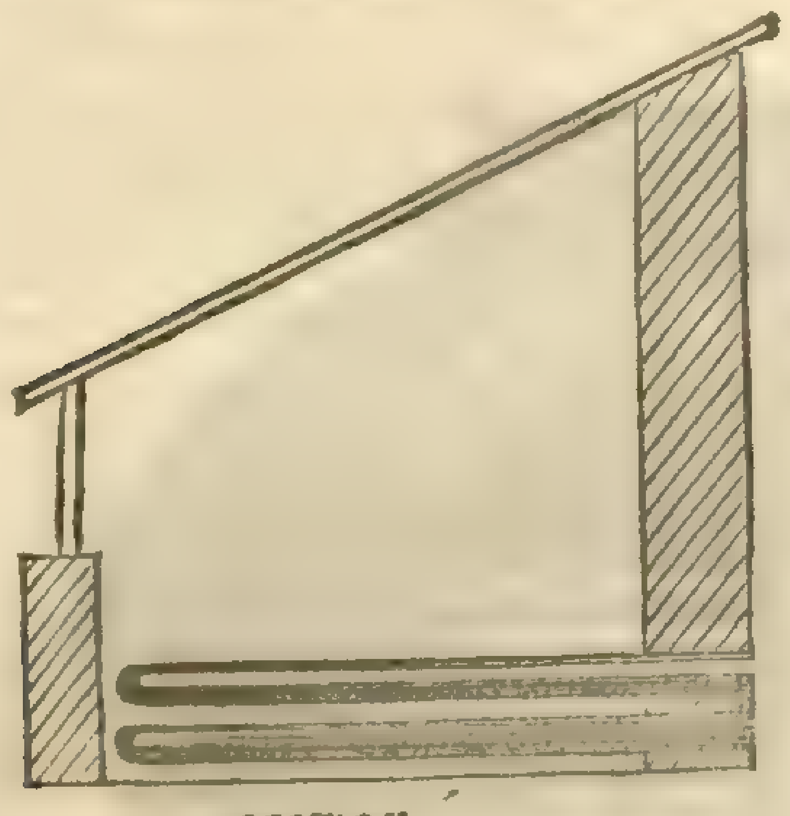
HOT-WATER APPARATUS.

J. JONES

BEGS TO OFFER A COMPLETE

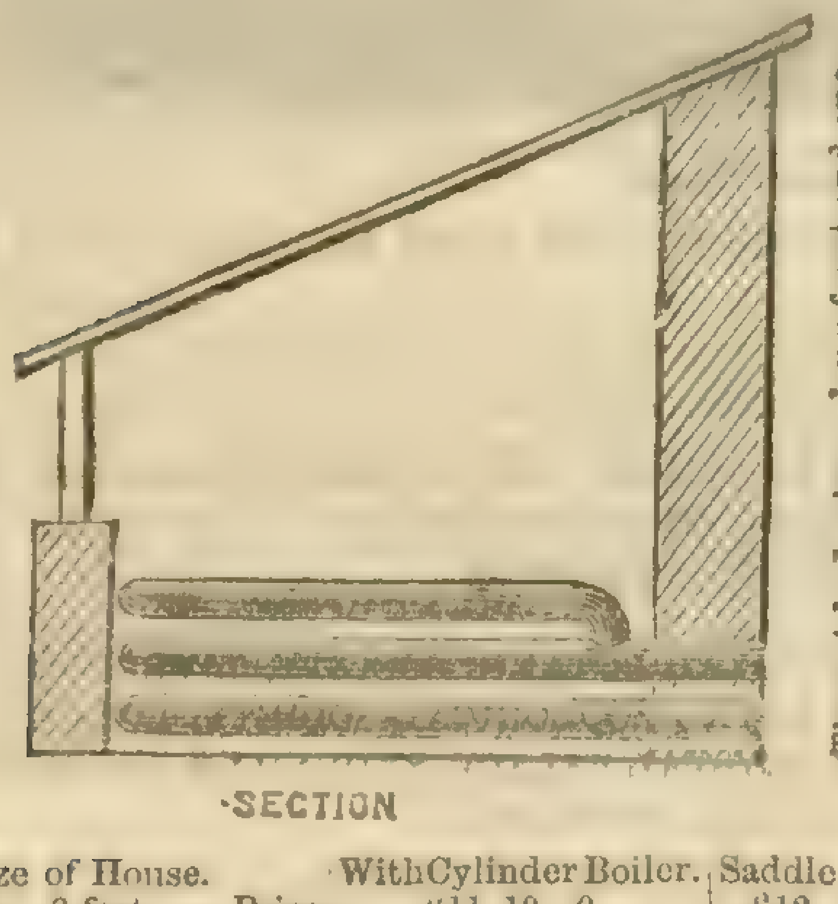
Hot-Water Apparatus for Houses

according to the following Plans, delivered Free to any Railway Station in England.



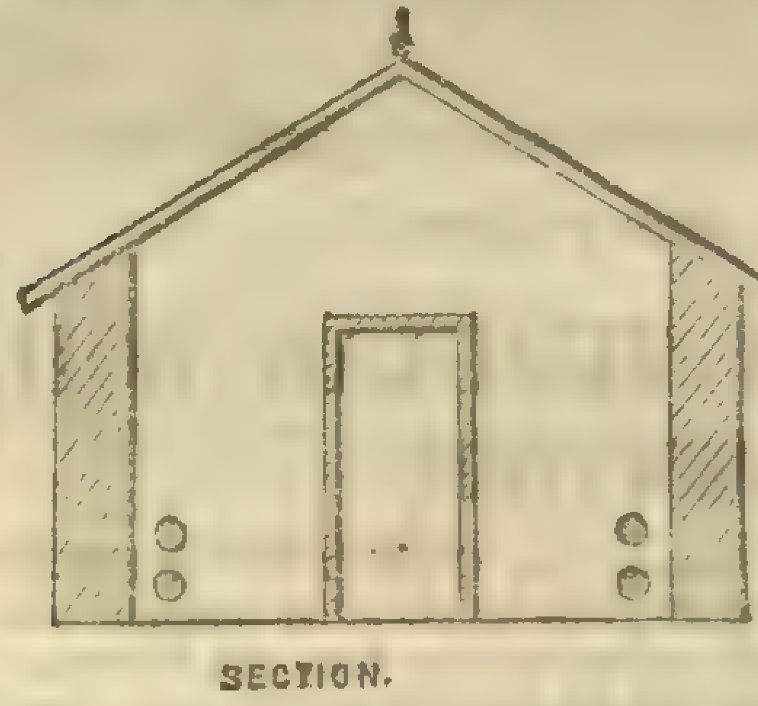
SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£8 0 0	£8 12 6
20 feet by 10 feet ..	,,	8 10 0	9 0 0
25 feet by 12 feet ..	,,	10 0 0	10 10 0
30 feet by 12 feet ..	,,	11 10 0	12 0 0
40 feet by 15 feet ..	,,	16 10 0	17 0 0
50 feet by 15 feet ..	,,	18 10 0	20 0 0



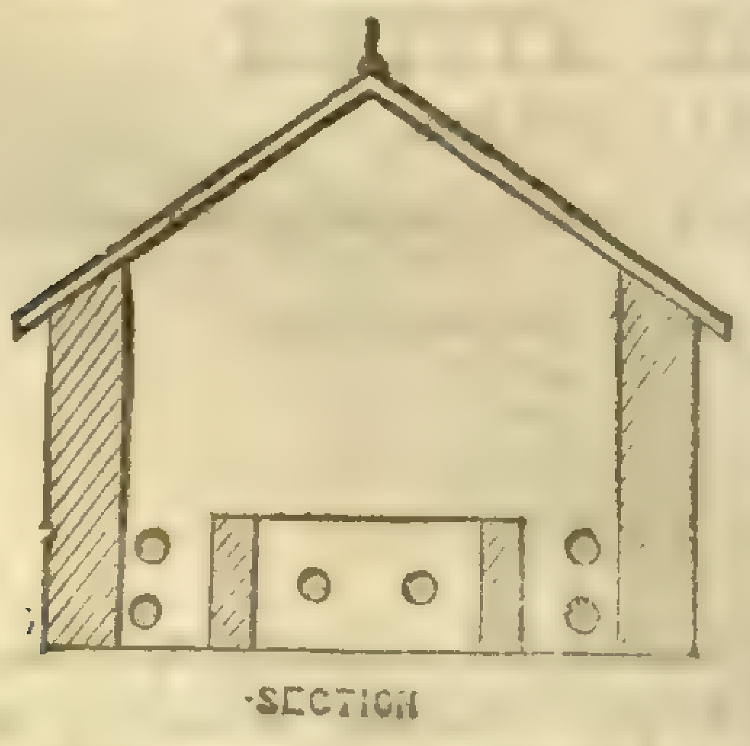
SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£11 10 0	£12 0 0
20 feet by 10 feet ..	,,	12 10 0	13 0 0
25 feet by 12 feet ..	,,	14 10 0	15 0 0
30 feet by 12 feet ..	,,	16 10 0	17 0 0
40 feet by 15 feet ..	,,	22 0 0	23 0 0
50 feet by 15 feet ..	,,	24 10 0	26 0 0



SECTION.

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£12 10 0	£13 0 0
20 feet by 10 feet ..	,,	13 10 0	14 0 0
25 feet by 12 feet ..	,,	16 10 0	17 0 0
30 feet by 12 feet ..	,,	19 0 0	20 0 0
40 feet by 15 feet ..	,,	24 10 0	25 10 0
50 feet by 15 feet ..	,,	27 0 0	28 10 0



SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£16 0 0	£17 0 0
20 feet by 10 feet ..	,,	17 10 0	18 10 0
25 feet by 12 feet ..	,,	21 10 0	22 10 0
30 feet by 12 feet ..	,,	25 0 0	26 0 0
40 feet by 15 feet ..	,,	31 0 0	32 0 0
50 feet by 15 feet ..	,,	33 10 0	35 0 0

The above prices include Boiler, strong Furnace-doors, Bars, Plate, Soot-doors, Damper, and Supply Cistern-pipes of 4-inch diameter, Elbows, &c.; all of the best quality.

Delivered free to any Railway Station in England. Terms: Nett Cash.

Estimates will be sent for the work fixed complete, or further particulars on application to

J. Jones, Hot-Water Apparatus Manufacturer, 6, Bankside, London, S.E.

Card.

SAMUEL N. McGERROW,
General Horticultural Builder,
Knotty Ash, near Liverpool.

Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

PORTABLE HOT-WATER APPARATUS, for Heating Conservatories, Hothouses, &c.

T. S. Truss, C.E., Sole Manufacturer. Offices: 53, Gracechurch Street, London, E.C.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large Apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

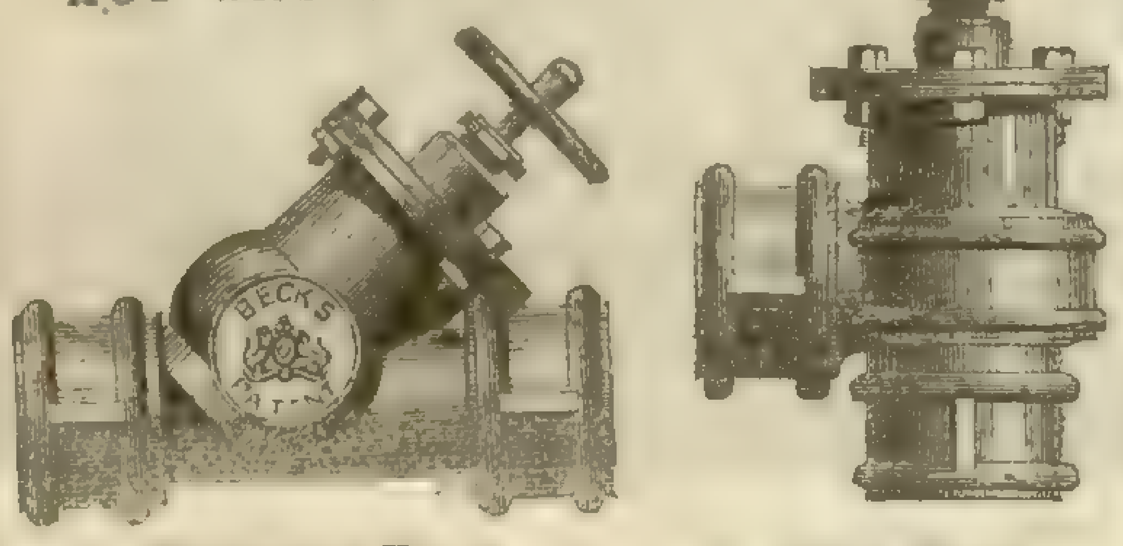
It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.

Particulars and prices post free on application to Musgrave Brothers, Ann Street Iron Works, Belfast.

Horticultural Works, Danvers Street, Chelsea, S.W.

BECK'S PATENT

HOT WATER VALVE.



Horizontal Valve. 2″ 18s. 6d.; 3″ 25s.; 4″ 30s.

Angle Valve. 2″ 17s.; 3″ 23s.; 4″ 28s.

JAMES GRAY, Sole Agent, begs to call attention to this most simple and perfect Valve ever invented. It is perfectly water-tight, and is never liable to get out of order, or to get fixed by standing.

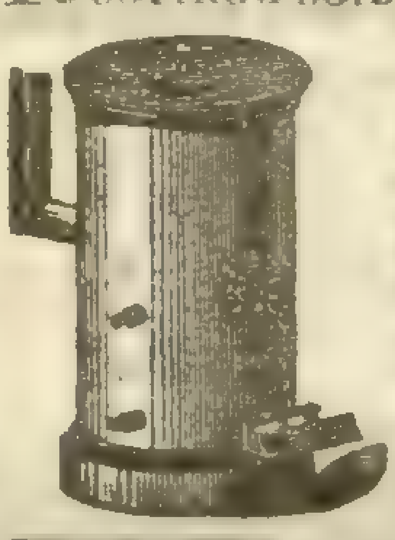
To Architects, Engineers, Gardeners, & Others.—Beck's Patent Valve has been submitted to several of the most scientific men of the day, and has invariably met with unqualified approval. A liberal Discount to the Trade.

Conservatories, Greenhouses, Vineries, and every description of Hothouse erected on the most improved principles, and of best materials, at the lowest possible price consistent with good workmanship.

Heating by Hot Water in all its branches. Boilers of every approved description, Tubular Saddle, Conical, &c.

James Gray, Horticultural Works, Danvers Street, Paulton's Square, King's Road Chelsea, S.W.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about [illegible] per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3l. 10s.

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

Hothouses for the Million.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to any Railway Station round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to Samuel Hereman, 7, Pall Mall East, London.

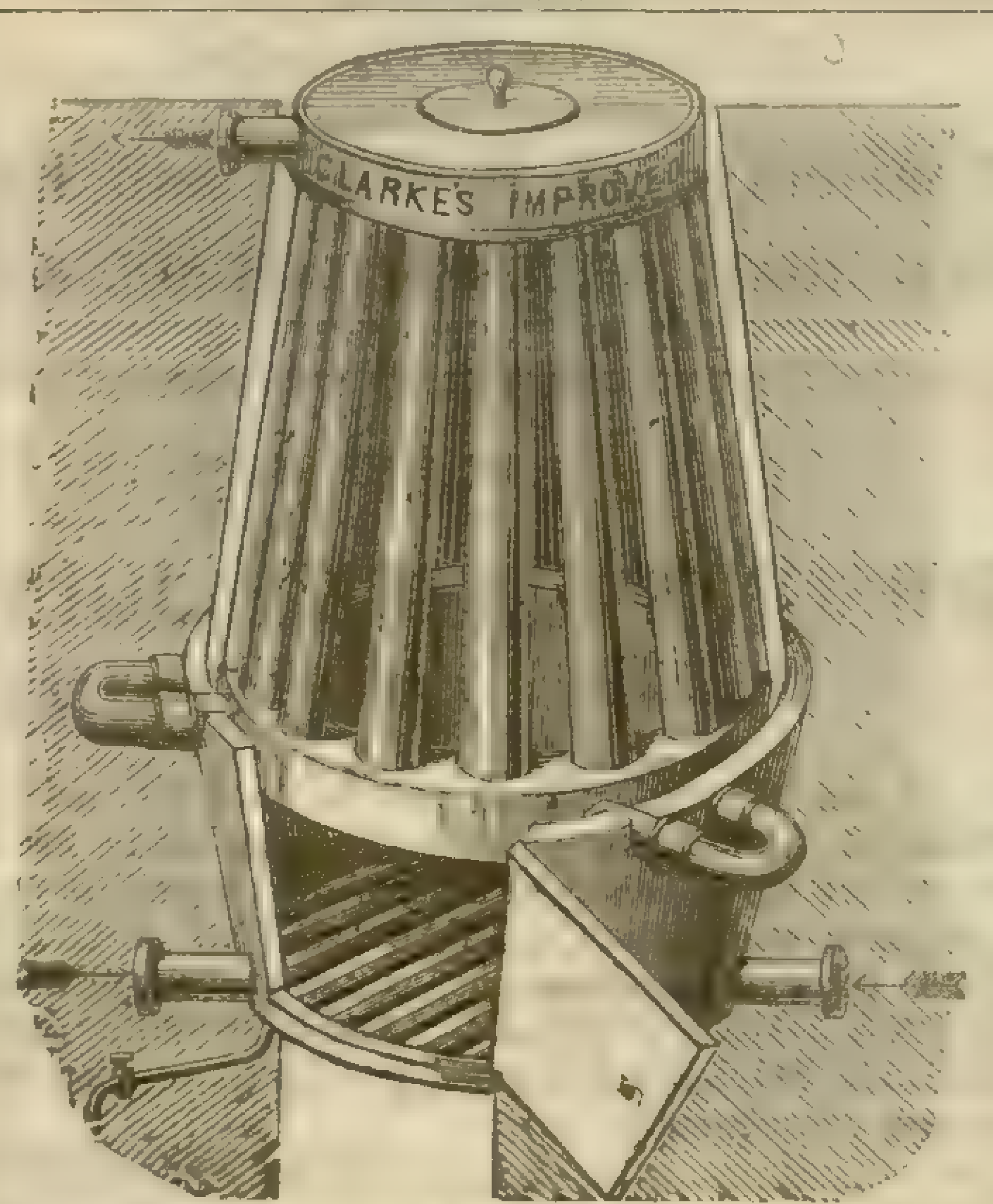
JOSEPH SMITH, Horticultural Builder, New Road, Hammersmith, W., has for Sale FIVE GREENHOUSES, viz:—

A Span roof,	27 feet	by 16 feet,	for	. £47 0 0
A Lean-to,	36 ,,	by 12 ,,	,,	.. 52 0 0
Ditto,	24 ,,	by 12 ,, 6 in.	,,	.. 34 0 0
Ditto,	20 ,,	by 11 ,,	,,	.. 28 0 0
Ditto,	12 ,,	by 7 ,,	,,	.. 15 0 0

Also One Hundred 6 feet by 4 feet PIT LIGHTS for [illegible]; or separate, Fifty of them glazed with 21 oz. glass, 17s. each; and the other Fifty 16 oz. glass, 16s. each.

GARDEN FRAMES and HAND GLASSES at reduced prices.

N.B. Greenhouses substantially made and of good materials at 1s per foot. Foot Lights 8d. per foot, glazed and well painted.



CLARKE'S

NEW PATENT

CYLINDRICAL BOILER

Is now announced to be the most economical and efficient HEATING APPARATUS invented; and the Draught principle and Cylindrical Furnace surpasses everything brought before the Public. These Boilers are also very durable, the metal being half-inch thick and no joints exposed to the direct action of the fire; and although they possess such great power, the Heat can be regulated to the greatest nicety.

Estimates and Prices for all kinds of Heating, with first-class references, sent Post Free, by applying to the Eagle Iron Foundry, 25, Seel Street, Liverpool.

T. C. CLARKE,
CIVIL and HYDRAULIC ENGINEER, PROPRIETOR.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, Orwell Works, Ipswich.

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

NEARLY TWO HUNDRED SETS

OF

STEAM PLOUGHING and CULTIVATING APPARATUS

HAVE NOW BEEN SENT OUT BY

JAMES & FREDERICK HOWARD,

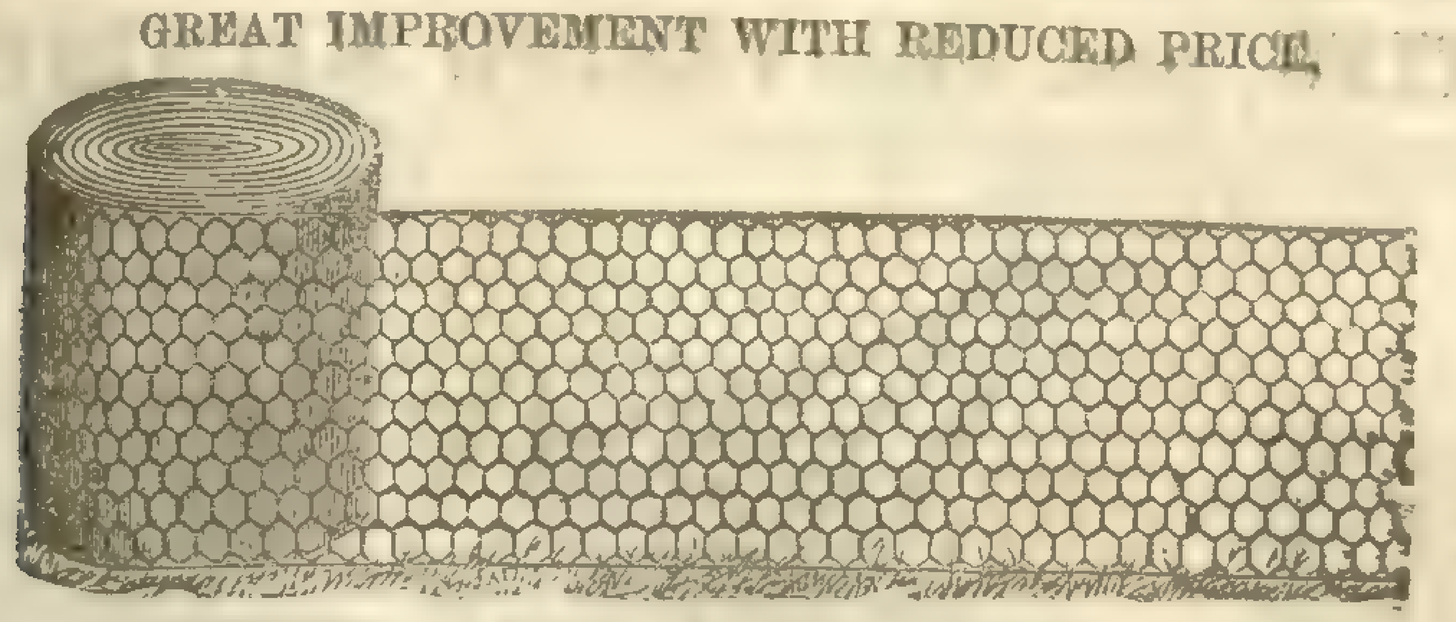
BRITANNIA IRON WORKS, BEDFORD.

Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

NEW IMPROVED PREMIUM WIRE NETTING.

GREAT IMPROVEMENT WITH REDUCED PRICE.



PRICES PER LINEAL YARD, 24 INCHES HIGH:—

Size of mesh	Mostly used for	Light. Japanned.	Light. Galvanized.	Medium. Japanned.	Medium. Galvanized.	Strong. Japanned.	Strong. Galvanized.	Extra Strong. Japanned.	Extra Strong. Galvanized.
[illegible] inch	Hares, Dogs, Poultry	3d.	4d.	3¾d.	5d.	4½d.	6d.	5½d.	7d.
[illegible] inch	Game or Poultry Netting	3½d.	4¼d.	4d.	5d.	5d.	6½d.	6½d.	8d.
[illegible] inch	Small Rabbits, Hares, &c.	4d.	4¾d.	4¾d.	6d.	5½d.	7d.	7d.	9d.
[illegible] inch	Smallest Rabbits..................	5d.	6d.	5¾d.	7d.	7d.	9d.	9d.	11d.

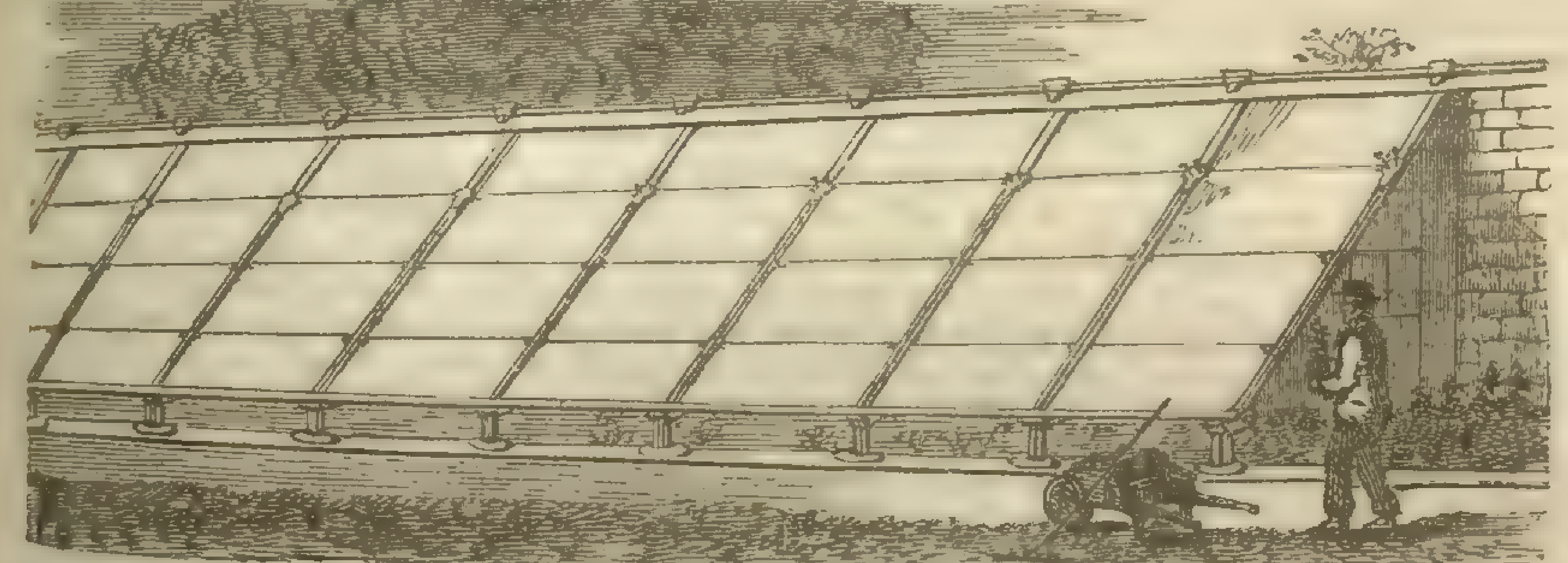
Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping [Po]rts in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

ST. PANCRAS IRON WORK COMPANY,

OLD ST. PANCRAS ROAD, LONDON, N.W.

BY ROYAL LETTERS PATENT.



SCOTT'S GLASS WALLS,

signed to meet the suggestions of JAMES SCOTT, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of manent structure. Further particulars and prices by post or on application.

ONSERVATORIES REENHOUSES OTHOUSES	PINE and MELON PITS VASES VERANDAHS	BALCONIES IRON SASHES IRON HURDLES	GATES TANKS HOT-WATER WORK.

PATENT WROUGHT-IRON STABLE FITTINGS AND ENAMELLED MANGERS.

Every description of IRONWORK. *Lists Free.*

. PANCRAS IRON WORK COMPANY, OLD ST. PANCRAS ROAD, LONDON, N.W

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, AND GATES.

THE PROPRIETORS OF THE ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON,

WERE AWARDED THE

ER MEDAL of the ROYAL AGRICULTURAL SOCIETY for their IRON HURDLES and GATES, hich, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30s. to 500l.

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

OFESSOR VARNELL'S ENAMELLED AND WROUGHT-IRON STABLE FITTINGS.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the , Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Veterinary College, and Professor Spooner of that Institution states that they should be used by all who e health and comfort of their horses. They can be had plain, galvanised, or enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized stalls and loose are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS,

ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W.,

OPPOSITE OLD ST. PANCRAS CHURCH.

Horticultural Works and Hot-Water Apparatus Manufactory,

Kensal Green, Harrow Road, London, W.

JOHN TAYLOR AND SON beg to call the attention of the nobility and gentry to the very superior manner in which they ERECT all kinds of CONSERVATORIES, VINERIES, GREENHOUSES, &c., combining every improvement with elegance of design and durability of materials and workmanship.

Their VENTILATING APPARATUS for the Fronts and Roofs of Houses has given the highest satisfaction. Churches, Chapels, Schools, Entrance Halls, Public Buildings, &c., heated with Hot-Water Apparatus in a most economical and efficient manner.

J. T. & SON have great pleasure in referring to numbers of the nobility and gentry by whom they are extensively engaged.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen-ranges, &c. Grooved Terro-metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall-Copings, Glazed Drain Pipes, &c. To be obtained of F. & G. ROSHER, at their Premises as above.

To Nurserymen Kitchen Gardeners, &c.

TO BE SOLD, the INTEREST in the LEASE of that old and well-established Nursery, known as BARNES NURSERY, at Merrion, within 1½ mile of the City of Dublin, with the entire STOCK-IN-TRADE, consisting of Greenhouse and Hothouse plants in every variety, Timber and Fruit Trees, Flowers in pots, Shrubs, &c. The Nursery stands on 24 acres 2 roods and 36 perches statute measure, has extensive Green and Hothouses thereon, with all the requisites for the carrying on of the Nursery business; and is held for an unexpired term of 44 years, at the rent of 202l. per annum. There are two good substantial moderate sized two-story Dwelling Houses on the ground, with Lodges for foremen and labourers; also a handsome Shop on the public road at the entrance. This is the largest Nursery in Ireland, and its patrons comprise most of the nobility and gentry of the country. It stands on the direct road from Dublin to Kingstown, in the midst of all the fashionable Villas near Dublin; and a portion of the ground might be most profitably employed as a Vegetable Garden, there being no such accommodation near Kingstown, or that side of Dublin. Other portions of the land will presently acquire a high value for building, as it adjoins the extensive building ground of Lord Herbert of Lee, which is becoming rapidly in demand. A Lease for a more extended term can be obtained, if required. If necessary a portion of the purchase money would be allowed to remain out as a charge upon the property.

For particulars apply to JOHN RIDDICH, Solicitor, 3, Eustace Street, Dublin.

The Proprietor would have no objection to enter into arrangements with an experienced Working Gardener, with a small capital, for the carrying on the business of the Nursery and Vegetable Gardens, or with one or more for the working of each separately.

Sales by Auction.

200 Standard and Half-Standard Roses,

ALSO A LARGE QUANTITY OF FRUIT TREES, COB NUTS, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, March 15, at Half-past 12 o'Clock precisely, 800 beautiful Dwarf-trained and Standard Peaches, Nectarines, Cherries, Plums, Apples, Pears, and Apricot Trees; 200 Standard and Half Standard Roses; a quantity of Filberts, Cob Nuts, Strawberries, Snowberries, Currants, Raspberry and Gooseberry Trees, &c.

On view the Morning of Sale and Catalogues had.

Hollies, Roses, Arbor Vitæ, Yews, Gladioli, Fruit Trees, Pinks, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 19, at Half-past 12 o'Clock precisely, a fine lot of Standard and Dwarf Roses, Hollies, Arbor Vitæ, Cypress, Yews, Gladiolus Brenchleyensis; Gooseberry, Raspberry, and Currant Trees; Trained and Standard Cherry, Nectarine, Plum, and Apple Trees; Asparagus, Phloxes, Pentstemons, Pinks, Pansies, Gazania splendens, Polyanthus, and other plants, all well grown, and first-rate sorts.

On view the Morning of Sale and Catalogues had.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Hally to SELL by AUCTION at the Mart, on WEDNESDAY, March 12, at 12 o'Clock, about 150 Fine Double CAMELLIAS from 1 to 6 feet, well set with bloom buds; Choice AZALEA INDICA in flower, about 200 handsome STANDARD and DWARF ROSES, a fine collection of AMERICAN PLANTS, Ericas, Epacris, Verbenas, Fuchsias, Pæonias, and Dahlias in dry roots; Lilium lancifolium, &c.

May be viewed the Morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

Sale of English-grown Camellias, Fruit Trees, &c.

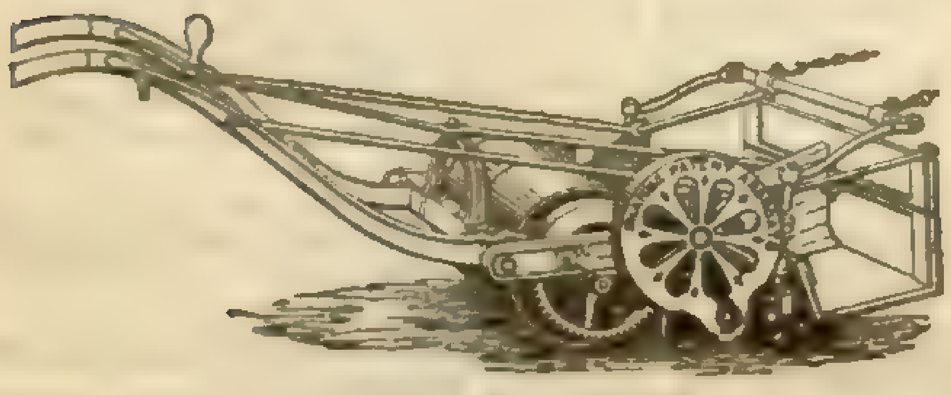
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Bartholomew Lane, City, E.C., on FRIDAY, March 14, at 12 o'Clock, about 150 Choice Double CAMELLIAS, beautiful plants, from 1 to 6 feet, including the most approved kinds, abundantly furnished with bloom buds; fine AZALEA INDICA, in flower; about 200 fine STANDARD ROSES; selected FRUIT TREES; a fine collection of AMERICAN PLANTS, Lilium lancifolium rubrum and album, Ericas, Epacris; Fuchsias, Verbenas, Pæonias, Dahlias in dry roots, &c. &c.

May be viewed the Morning of Sale; Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

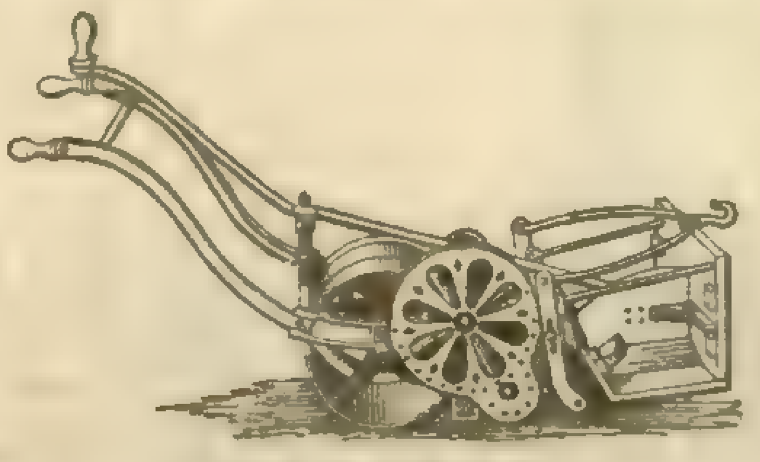
SHANKS' NEW PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

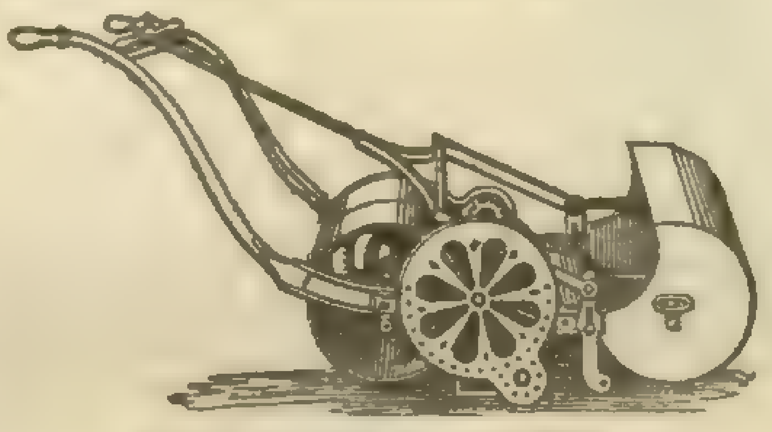
WITH SILENT MOTION IF SPECIALLY DESIRED.



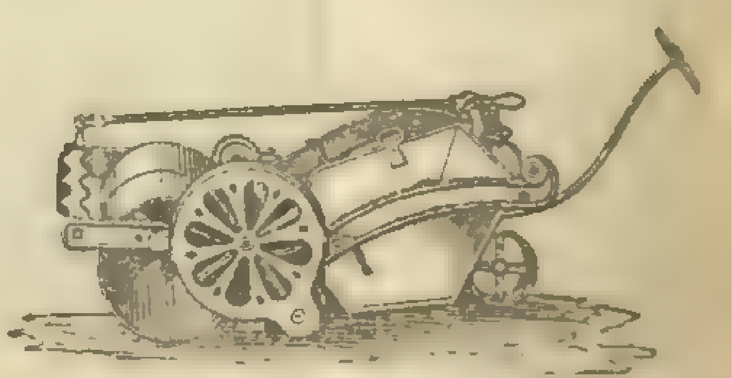
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

J. B. BROWN AND CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effect of the improvements of previous years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season.

The improvement whereby the noise occasioned by the working of the Wheels is entirely obviated, is this season made still more efficient. There is no method of imparting Motion to the working parts of almost any kind of Machinery at all to be compared to the Motion derived from Wheels; and the Patentees are gratified to state that they have not found it necessary to provide a substitute for this perfect method of imparting motion in introducing the silent movement into their Machines. The Cogs of the Wheels are made in the ordinary way, with ample bearing on each other, but so constructed and composed of Patent Material, as to be quite silent in working.

One of the most important considerations in making a Machine fit to be put into the hand of a labourer, to work without any difficulty, is simplicity of construction and arrangement, combined with strength and durability of the whole working parts, and J. B. BROWN & Co. have much pleasure in intimating that the efforts of the Patentees to attain this end have been completely successful. The Improved Machines for Horse and Pony Power, combining with these advantages the additional one of Delivering the Grass without stopping the Machine, make it peculiarly fit for all the purposes of Mowing, whether for Grass Walks, the Flower Garden, or the open Lawn. The style in which the work is executed cannot be surpassed—being very much neater than the Scythe, while at half the expense—*and it is quite immaterial whether the Lawn be level or otherwise, or whether the Grass be wet or dry.*

The peculiar advantages of Shanks' celebrated HORSE MACHINE may be thus described:—

1. The Cutter is so constructed that in Mowing the closest and finest Turf there is not the smallest appearance of ribbing.
2. The Drums are loose on the Shaft, and are made SELF-ACTING, so that in turning the Machine will Mow as well as when going in a straight line.
3. From the position of the Front Pulleys or Rollers the Machine will Mow on the most uneven Lawn, and the Plate at the same time is PREVENTED FROM INJURING THE TURF.
4. No Machine can turn quicker or more easily than this Machine. The two Front Pulleys swivel, and the Drums on the Shaft are loose, and yet kept in gear by Patent Spiral Springs, so that the Machine will turn into the most intricate windings of the Flower Garden, amongst Trees or Flower Beds, with perfect ease, and WITHOUT THE SMALLEST CHANCE OF INJURING THE SHRUBS OR FLOWERS.
5. The Wheels are all protected by Guards, which entirely prevent any particles of Cut Grass, Shrubs, or Flowers from getting into contact with the teeth. A Scraper is introduced to keep the Rollers clear of small stones or rubbish in crossing Gravel Walks, &c. The whole Machine is nicely balanced as regards equality of weight in front and back, and consequently is exceedingly STEADY IN WORKING. The Cutter works in Brass Bearings, and is now made so very strong that breakage is rarely heard of. Malleable Iron is always used for the Handles or Shafts, which are necessarily neater and much more durable than the usual Cast-iron ones.
6. One of the most valuable of the Patent Improvements the Patentees have effected in their Machine is in the method of emptying the Grass Box. The want of a speedy and efficient method for this purpose has been much felt for many years past. In the Spring more especially, when the Grass springs up rapidly, nothing is more annoying in working a Mowing Machine than the stopping and almost constant travel from the handles to the box, and *vice versa*, for the purpose of emptying the Grass. A great deal of time is thus lost, independent of the hard work to the man, not only in walking some hundreds of times the length of the Machine in a day, but more especially in the stooping posture which he has so often to endure. This great want in all Mowing Machines, whether past or present, is completely obviated in Shanks' Patent Mowing, Rolling, Collecting, and Delivering Machine. The improvement consists in the introduction of a simple and efficient Apparatus for emptying the box without the man being under the necessity of either leaving the handles or stopping the Machine. The immense advantages of this invention must be at once apparent to the practical Gardener. It will enable the Machine to do at least a third more work, while the labour and annoyance in working it, as compared with ordinary Machines, is three-fourths lessened. If a Lawn, which formerly took a Machine nine hours to Mow, can now be done in six hours, with three-fourths less labour to the man who works the Machine, nothing further is necessary to establish the utility and worth of the invention. The Grass is deposited on the Lawn in heaps ready for removal.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Price		Width of Cutter.	Price	
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0	*Drawn by a Horse.*	No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | Width of Cutter. No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey.*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

SHANKS' NEW PATENT HAND MACHINE for 1862, for Pushing or Drawing separately or together.

Messrs. SHANKS have this year further improved their Hand Machine by the introduction of stiffer Malleable Iron Shafts or Handles, also by strengthening the Cutter, and by constructing the Axles so as to reduce the friction, and thus lessen the draught to the smallest possible amount, the effect of which improvements will unquestionably be to confirm the high character the Machine has gained in previous years, as *the most complete, the cheapest, and most durable Lawn Mowing Machine extant.* The Machines are fitted with the same care and precision as the Horse and Pony sizes, and like them possess the same advantages of ability to Mow on uneven Lawns without injuring the Turf, also of having loose Rollers for ease in turning, of having Wheels properly guarded, and so placed as to give an equal balance to either side of the Machine. A Scraper is introduced to keep the Rollers clear of small stones and rubbish in crossing Gravel Walks, &c.

PRICES.

SHANKS' NEW PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Price		Width of Cutter.	Price	
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man*
No. 9.—22-inch Machine	8 7 6	*Easily Worked by Two Men.*	No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*	No. 16.—12-inch Machine	5 0 0	*Ditto by a Boy*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

*** *The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

SOLE AGENTS FOR LONDON:

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, and FREDERICK MULLETT EVANS, of No 19, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—SATURDAY, March 8, 1862.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 11.—1862.] SATURDAY, MARCH 15. {Price Fivepence. Stamped Edition, 6*d*.

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NOTICE TO ADVERTISERS.—*Advertisements should be sent so as to reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

ROYAL HORTICULTURAL SOCIETY'S HYACINTH and CAMELLIA SHOW, WEDNESDAY, March 19, at South Kensington. Open at 1 o'Clock. Band of the Life Guards at 2.30.
Tickets, 2*s*. 6*d*. each, can be had at the Gardens, and of the principal Librarians, Musicsellers, &c. Also Packets of 25 Five Shilling Tickets, price 5*l*., available according to the daily charges during the season.
Next Election of Fellows March 21.

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.
The next MEETING of this Committee for the Exhibition of NEW PLANTS and SEEDLINGS will be held in conjunction with the Show of Spring Flowers, which will take place in the Gardens of the Society on March 19.
A Sub-committee will be appointed to adjudicate upon the New Plants and Flowers exhibited, which, on this occasion, must be in the Gardens by 9 A.M., in accordance with the regulations for the Show.
The subjects which come within the province of the Committee may be entered on the morning of the 19th, without previous notice.
All persons are at liberty to exhibit.
THOMAS MOORE, Secretary to the Floral Committee.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK.
SPRING EXHIBITIONS ENLARGED.
The First EXHIBITION of SPRING FLOWERS this season will be held on WEDNESDAY, the 26th of this month, in the large Exhibition Ground. Admission only to Fellows and Members, their Orders, and Ivory Tickets.
These Exhibitions to continue every Wednesday from March 26 to May 7 inclusive.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK.
EXHIBITIONS of PLANTS, FLOWERS, and FRUIT, WEDNESDAYS, May 28, June 18, and July 9.
AMERICAN PLANTS, MONDAY, June 9.
Tickets to be obtained at the Gardens only by vouchers from Fellows or Members of the Society. Price on or before SATURDAY, May 17, 4*s*.; after that day, 5*s*.; or on the days of Exhibition, 7*s*. 6*d*. each.

CRYSTAL PALACE.—The GRAND FLOWER SHOW will take place on SATURDAY, May 24; and the GREAT ROSE SHOW on SATURDAY, July 5.
For Schedules of Prizes apply to Mr. W. HOUGHTON, Secretary to the Flower Show, Crystal Palace, Sydenham.

THE TUNBRIDGE WELLS HORTICULTURAL FÊTE for 1862 will be held on FRIDAY, July 4, in the Grounds adjoining the Calverly Hotel, and close to the Railway Station.
The Schedule of Prizes may be had upon application to Mr. F. LOOF, Hon. Sec., 8, Parade, Tunbridge Wells.

The Late Pomological Society.
NOTICE is HEREBY GIVEN, all Parties having CLAIMS on the LATE POMOLOGICAL SOCIETY must send in the same without delay to Mr. ARTHUR HENDERSON, Apple Place, Edgeware Road, London, W.

New Roses of 1862.
PAUL AND SON have now ready their usual fine Plants of the finest novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

New Roses, &c.
WM. PAUL'S CATALOGUE of NEW ROSES and SPRING PLANTS generally is now ready. Free by post on application to
WM. PAUL, Nurseries and Seed Warehouse, Waltham Cross, N.

NEW ROSES for 1862.—36 varieties (the pick of the year) offered in fine strong plants, a DESCRIPTIVE LIST of which may be had on application to
BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

TRITOMA UVARIA.
For strong plants of this splendid flower apply to
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

POLYANTHUS SEED from the best Laced Flowers, in packets. Sent free on receipt of 13 Postage Stamps.
JAMES WOODS, Florist, Harwich, Essex.

AZALEAS, CAMELLIAS, EPACRIS, and ERICAS.—We respectfully invite an inspection of our Stock of the above, which is large, in the finest health, and full of flower buds.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

JAMES CARTER AND CO.,
SEED MERCHANTS and NURSERYMEN,
237 and 238, High Holborn, London, W.C.

New Garden Seeds.
JAMES CARTER AND CO.,
237 and 238, High Holborn, London, W.C.

Genuine Farm Seeds.
JAMES CARTER AND CO.,
237 and 238, High Holborn, W.C.

Agricultural Seeds.
GEORGE GIBBS AND CO.,
SEEDSMEN,
26, Down Street, Piccadilly, London, W.

Now Ready.
BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See large Advertisement.
Covent Garden Market, W.C.

BARR AND SUGDEN, SEED MERCHANTS.—For important notice see large Advertisement, page 230.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

BARR AND SUGDEN'S ILLUSTRATED FLORAL GUIDE. Price 2*s*. 6*d*., sent Post paid.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

E. G. HENDERSON AND SON,
NURSERYMEN AND SEED MERCHANTS,
Respectfully announce their NEW SEED CATALOGUE and GUIDE for 1862, free on application.
Wellington Nursery, St. John's Wood, London, N.W.

Vegetable and Flower Seeds.
PAUL AND SON'S CATALOGUE of the above, including ASTERS and STOCKS, with DESCRIPTIVE LIST of the best 100 GLADIOLI, is now ready, post free.
"Old" Cheshunt Nurseries, Herts.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

SEEDLING HOLLYHOCKS, saved from the finest named varieties in cultivation. Will bloom early this year. 10*s*. per 100. Trade price on application.
ROBERT WARD, The Rosery, Ipswich.

SUPERB HOLLYHOCKS.—
12 Superior Show Flowers .. .. 18*s*. 0*d*.
12 Good ditto 9 0
The Trade supplied.
For CATALOGUES, address R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk.

PELARGONIUMS.—Intending purchasers should send for our DESCRIPTIVE CATALOGUE, post free.
J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

DOBSON'S SPLENDID HYBRIDISED CALCEOLARIA is unequalled for variety, form, distinct and striking colours and habit. In sealed Packets, 1*s*. 6*d*., 2*s*. 6*d*., 3*s*. 6*d*., and 5*s*. each.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIZE CINERARIA SEED.—Unsurpassed for quality. 1*s*., 2*s*. 6*d*., and 5*s*. per Packet.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIMULA SINENSIS FIMBRIATA, ex. ex.—Sealed Packets, 1*s*., 2*s*. 6*d*., and 5*s*.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

FINE DWARF-TRAINED FRUIT TREES. GREENGAGE and other PLUMS.
COXE'S ORANGE PIPPIN and other APPLES. Also fine PEARS.
Prices very moderate upon application to GEORGE GRAY, Nurseryman, Chertsey, Surrey.

To the Trade.
WILLIAM EPPS, Jun., begs to offer FINE DWARF-TRAINED PLUMS, 24*s*. per dozen.
The Nurseries, Ashford, Kent.

STRONG FRUITING VINES, 7*s*. 6*d*. and 10*s*. 6*d*.
LIST gratis and post free.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

GRAPE VINES.
Well-ripened Canes of all the best sorts can be supplied.
PINE APPLE PLANTS.
The best, largest, cleanest, and most healthy stock in this country. An inspection is invited at
WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

TO BE DISPOSED OF, upwards of 300 remarkably healthy and thriving PINE PLANTS, consisting of Fruiters, Successions, Suckers, and Crowns.
For particulars and terms apply at once to Messrs. J. C. WHEELER & SON, Nurserymen, Gloucester.

DWARF-TRAINED FRUIT TREES for SALE.—About 40 fine young Trees, consisting of PEACHES, NECTARINES, APRICOTS, and CHERRIES, of choice sorts.
Apply for particulars at Mr. WATSON'S Office, 24, Langham Street, Portland Place, W.

J. J. FOSTER, Anmer Nursery, Edgware, N.W., has a fine stock of EVERGREENS, Trained FRUIT TREES, ORNAMENTAL SHRUBS, and FOREST TREES, well grown in adhesive soil.
Prices on application.

Good Seeds, Carriage Free.
SUTTON AND SONS,
SEED GROWERS and MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

Present low Prices of Farm Seeds—See
SUTTON'S PRICED LIST, which will be sent free to any address.
SUTTON & SONS, Seed Growers, Reading.

Good Clover Seed.
GENUINE NEW CLOVER SEED may be obtained of the undersigned. Prices (according to market and quantity required) will be forwarded on application.
SUTTON & SONS, Seed Growers, Reading, Berks.

Agricultural and Garden Seeds.
H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

Altringham Carrot Seed.
CHARLES SHARPE AND Co., Sleaford, have the above to offer to the Trade; new Seed of their own growing. Price on application.

TO THE TRADE.—The Undersigned has a few cwt. of ALTRINGHAM CARROT (Red) to dispose of, the net growth of 1861. Prices and samples if required on application.
CHRISTMAS QUINCEY, Peterborough.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

MR. HUDSON, of Castle Acre, can supply his GOLDEN MELON SEED BARLEY, in quantities of 5 qrs. and upwards, at 45*s*. per qr. New sacks included. Also his prolific BEANS at 53*s*. per qr. with new sacks. These produced 6 qrs. per acre last harvest.

DICKINSON'S ITALIAN RYE-GRASS SEED may now be had by Agriculturists applying to his Bailiff, Mr. W. HUNTER, New Park Farm, near Lymington, Hants. 48*s*. per quarter; or 7*s*. per bushel, for present payment only.

GENUINE COW GRASS, an excellent sample, new seed, remarkably clean, 10*d*. per lb., or 84*s*. per cwt. Carriage free.
J. C. WHEELER & SON, Seed Growers, Gloucester.

TRUE DRUMHEADS for Cattle, 3*s*. 3*d*. per 1000; Fine EARLY PLANTS for the Gardens, 3*s*. 6*d*.; Prime RED PICKLERS, 4*s*. per 1000. Crates included.
By THOMAS WELLAND, Surrey Gardens, Godalming, Surrey.

RUSSELL'S PYRAMID PRIMULA.—Seed of this magnificent strain, which cannot fail to give satisfaction. In packets, price 2*s*. 6*d*.
GEO. CLARKE, Nursery, Streatham Place, Brixton Hill, S.

WELLINGTONIA GIGANTEA.—Seedling Plants of 1861 in single pots, per dozen, 21*s*. Price to the Trade per 100 on application.
J. HENCHMAN, Edmonton, near London, N.

To the Trade.
TRANSPLANTED SCOTCH FIRS, 12 to 18 inches, 6*s*. per 1000. 20,000 for 5*l*.
MORRISON BROTHERS, Aberdeen.

To the Trade.
WILLIAM WOOD AND SON beg to offer fine healthy 1 year Seedlings of UPRIGHT CYPRESS and CHINESE ARBOR VITÆ at 20*s* per 1000, or cheaper to purchasers of large quantities.
Maresfield, near Uckfield, Sussex.

Large Tartarian Arborvitæs.
FOR SALE, 600 of the above, all strong, healthy and well-formed, from 5 to 6 feet high, and in excellent condition for transplanting. Price moderate.
Apply to H. and F. SHARPE, Wisbech.

DIOSCOREA BATATAS (or CHINESE YAM), 2*s*. 6*d*. per doz., 15*s*. per 100. Larger tubers, 3*s*. 6*d*. per doz.
JOHN CATTELL, Westerham, Kent.

To Potato Growers.
JAMES CARTER AND CO. have a surplus stock of MYATT'S PROLIFIC and ASHLEAF KIDNEY POTATOES to dispose of in large quantities at a very cheap rate.
237 and 238, High Holborn, W.C.

Dalmahoy Early Potatoes from Scotland.
PETER LAWSON AND SON can supply the above, and other varieties of SEED POTATOES.
27, Great George Street, Westminster, London, S.W.

EARLY OXFORD POTATO, an excellent Cropper, and the best for eating all the year round, 6*s*. per bushel.
A reduction made if 1 Ton or more be taken.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

WEBB'S IMPERIAL KIDNEY POTATOES for quantity, quality, beauty, and size, can hardly be equalled, and not surpassed by any other Potato. Price 12*s*. per bushel.
Apply GEORGE MACE, Calcot Gardens, near Reading.

Restoration of the Old Irish Red Potatoes.
MR. THOMAS LEY, of Bideford, Devon, has on SALE a few Bags of the old sort of IRISH RED-ROUGH POTATOES, which by patience and perseverance he has restored after 12 years succession planting. Price 5*s*. per peck.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Double Dwarf Poppies.

HOOPER AND CO. offer Seed of their unequalled stock of the above. Colours brilliant and varied; and flowers double as a fine Hollyhock. Price 1s. per packet, post free.

GENERAL SEED CATALOGUE Post free on application.

HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.

Choice Calceolarias and Select Geraniums.

J. COLE begs to inform the admirers of the above that he can supply very strong unbloomed Seedling CALCEOLARIAS, from his matchless strain, without pots, 4s. per dozen, 20s. per 100; in pots, 5s. per dozen. Also choice Show FRENCH SPOTTED and FANCY GERANIUMS, strong established plants, 6s. per dozen; extra strong, 9s. and 12s. per dozen. List of sorts sent upon application.

Keyfield Nursery, St. Alban's, Herts.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.—

50 in 50 well selected vars.	..	..	£2 2 0
50 in 25 ditto ditto	..	..	1 10 0
25 in 25 ditto ditto	..	..	0 15 0
12 in 12 ditto ditto	..	6s., 9s., and	0 12 0

Mixed, 3s. 6d. per dozen; 25s. per 100.

BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

Superb Balsams.

F. AND A. SMITH are now sending out Seed of their Superior BALSAMS in collections of

9 Colours, separate	.. .. ..	2s. 6d. each.
The same, mixed	.. .. ..	2 0 „
Half the quantity	.. .. ..	1 0 „

The above are in 18 distinct and bright colours, of carefully selected Seed, from the most double varieties.

Dulwich, Surrey.

New Cinerarias, Gloxinias, and Pelargoniums.

F. AND A. SMITH can still supply a few sets of their New GLOXINIAS, CINERARIAS, and PELARGONIUMS.

See *Gardeners' Chronicle* of Oct. 5, 1861, and CATALOGUE, which may be had gratis.

Dulwich, Surrey, S.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1861 and SPRING 1862, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

Catalogue of Cuttings.

JOHN MORSE'S SEVENTH ANNUAL CATALOGUE of the above is now ready, and will be forwarded, free by post, to any address on receipt of one stamp. It contains all the most choice and new varieties of Dahlias, Fuchsias, Verbenas, Chrysanthemums, Geraniums, Petunias, Phloxes, Pinks, Pansies, Calceolarias, Cinerarias, and all kinds of Bedding Plants, which can be sent free by post at one-third the price of plants.

The Nurseries, Dursley, Gloucestershire.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England.

The Catalogue may also be had at Mr. MAY'S, 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

Rhododendrons for Under Cover.

JOHN WATERER has an immense quantity of the above in fine bushy plants, of sizes suitable for immediate planting into Covers.

☞ It is worthy of remark that in the most severe weather Rhododendrons are never injured by Hares or Rabbits. Samples, with prices, forwarded on application.

The American Nursery, Bagshot, Surrey.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

THE ENGLEFIELD YELLOW GLOBE MANGEL WURZEL, warranted to grow more weight per acre than any other variety of Globe Mangel. The Raiser and Advertiser, Mr. ANDREW HORSBURGH (Steward to R. Benyon, Esq.) Chalk Pit Farm, Englefield, Reading, Berks, has 15 Sacks of hand picked Seed for Sale either in bulk or in bags of not less than 14 lbs., at 1s. 6d. per lb. Roots of this superior variety frequently weigh from 30 to 40 pounds each. Mr. HORSBURGH has taken upwards of 100 Prizes in Cups and Specie for Mangel Wurzel at Birmingham, Crystal Palace, Reading, Abingdon, &c. The above is not grown from seedling roots, but from large selected bulbs, which materially affects the weight per acre of a general crop.

Orders received by Mr. HORSBURGH, or by Mr. G. KNIGHTS, Whitton, Ipswich.

N.B.—The only reliable source to obtain the stock in its purity. All orders from persons unknown must be accompanied by a Post Office Order, or no notice will be taken of them.

BARR & 12 KING ST. SUGDEN COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

NOTICE.—In consequence of private circulars issued by Messrs. Butler & McCulloch stating that Mr. BARR (of the Firm of BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.) is no longer in their employment (*a statement one would have thought unnecessary*), Mr. BARR, in publicly confirming the fact, has moreover much pleasure in announcing that the celebrated "Sardinian Correspondent," who for some years furnished Messrs. Butler & McCulloch with their Choicest Seeds, now no longer does so, but supplies instead the Firm of BARR & SUGDEN with his far-famed CARNATIONS, PICOTEES, PELARGONIUMS, and other Choice Seeds, which require for their maturation a warm climate; also his unrivalled collection of ORNAMENTAL GOURDS, surpassing in variety and beauty any collection ever offered to the British public. For the names and descriptions see our Advertisement in *Gardeners' Chronicle* of February 22 and March 1.

SEEDS FOR PRESENT SOWING.

COLLECTIONS of CARNATIONS and PICOTEES,

Saved by our Special "Sardinian Correspondent," and distinguished by his Crest, thus and initials G. E. S.

As usual, these seeds are warranted to yield 80 per cent. of splendid Double Flowers, surpassing in floral beauty and rich and brilliant colours those saved by any German, French, or Belgian cultivators.

For 27 years our "SARDINIAN CORRESPONDENT" has devoted his especial attention to improving these favourite "Domestic Flowers," and, for the last 10 years, they have held a first class position in this country; they are also celebrated on the Continent of Europe, in America, India, Australia, New Zealand; and indeed wherever the lovers of these flowers are located, these collections have found their way.

For many years they have been made a leading feature in advertisements. In floral committees they have been subjects of discussion. For Dr. Lindley's opinion of the high character of these flowers, see *Gardeners' Chronicle*, July 2nd, 1859, p. 562. Since that time considerable advancement has been made, so that we have no hesitation in affirming, that the high reputation these collections have attained will be more than realised by the seeds we have now the pleasure of offering.

For the colours contained in the following Collections see our "Guide to the Flower Garden," or our Advertisement of these on back page of *Gardeners' Chronicle*, January 11th.

CARNATIONS, Section I.

This Section consists of Four Collections, each forming a distinct feature.

COLLECTION A

Contains 12 superb varieties of 10 seeds each, 3s.
Double Collections, do. do., 20 seeds each, 5s.

I. SELFS.—One-coloured, possessing the delightful perfume of the old and highly prized Clove, with the smooth edged petals and exquisite symmetry of a florist's flower.

COLLECTION B

Contains 12 superb varieties of 10 seeds each, 3s.
Double Collections, do. do. 20 seeds each, 5s.

II. FLAKES.—The flowers of these are white, or some other delicate shade, beautifully striped or flaked, with a distinct and brilliant colour.

COLLECTION C

Contains 12 superb varieties of 10 seeds each, 3s.
Double Collections, do. do., 20 seeds each, 5s.

III. BIZARRES.—These are striped with two distinct and brilliant colours on a white or light ground.

COLLECTION D

Contains 12 superb varieties of 10 seeds each, 3s.
Double Collections, do. do. 20 seeds each, 5s.

IV. FANCY.—To the amateur this class will be specially interesting; the flowers are beautifully formed, and are either shaded, spotted, or mottled with rich and varied colours, thus imparting to the flower an extremely novel and beautiful appearance.

PERPETUAL or TREE CARNATION, Section III.

These are called "Tree" on account of their upright growth and branching habit, and "Perpetual" because they flower several times during the season. In winter and spring they may be had in bloom under glass, while in autumn they are amongst our most attractive border plants. This Section consists of four Collections.

COLLECTION H

Contains 12 fine varieties of 10 seeds each, 3s.
Double Collections, do. do., 20 seeds each, 5s.
Perpetual or Tree Self, or one-coloured.

COLLECTION I

Contains 12 fine varieties of 10 seeds each, 3s.
Double Collections, do. do. 20 seeds each, 5s.
Perpetual Flake, or two-coloured striped.

COLLECTION K

Contains 12 fine varieties of 10 seeds each, 3s.
Double Collections, do. do., 20 seeds each, 5s.
Perpetual Fancy, spotted, shaded, or mottled.

PICOTEE, Section IV.

The Picotee is distinguished from the Carnation by the flowers being margined instead of striped. This Section includes Three Collections.

COLLECTION L

Contains 12 superb varieties of 10 seeds each, 3s.
Double Collections, do. do., 20 seeds each, 5s.
Picotees, white ground, margined.

COLLECTION M

Contains 12 superb varieties of 10 seeds each, 3s.
Double Collections, do. do.. 20 seeds each, 5s. 6d.
Yellow Picotees, margined.

ASSORTMENTS FROM THE ABOVE COLLECTIONS:

CARNATIONS.—An assortment of 100 varieties, each consisting of 10 seeds .. .. 1[illegible]
CARNATIONS. ditto of 50 ditto .. 1[illegible]
PICOTEES. ditto of 100 ditto .. 1[illegible]
„ ditto of 50 ditto ..

Mixed Packets of Carnation, 1s. 6d.
Do. do. of Picotee, 1s.

PELARGONIUM SEED

Received from our "Sardinian Correspondent."

VARIEGATED LARGE-FLOWERED PELARGONIUMS.

Our "SARDINIAN CORRESPONDENT" having succeeded in obtaining from seed an entirely new class of variegated plants, viz., "Large-flowered" Pelargoniums of the diadematum tints, of fine form and brilliant colours, with the remarkable distinction of variegated foliage, we shall have the pleasure of offering, next season, Seed saved from these unique and beautiful silver-edged plants.

The interest that attaches to the raising of seedlings is much increased by the certainty of being rewarded with new and improved varieties, especially in a flower so popular and beautiful as the Pelargonium. To ensure the amateur against disappointment while in the pursuit of his interesting and favourite employment, our "Sardinian Correspondent," who is distinguished for his eminent success in raising many splendid and novel varieties,* remarkable alike in habit and substance, has saved for us seed from the very choicest of his extensive and magnificent collection, so that we feel the greatest confidence in recommending it to those who are desirous of raising real novelties.

SEALED COLLECTIONS of PELARGONIUM SEED.

COLLECTION O

Contains 12 splendid varieties, 10 seeds each, 5s. 6d., of large-flowered Pelargoniums.

COLLECTION P

Contains 12 splendid varieties, 10 seeds each, 5s. 6d., of spotted Pelargoniums.

COLLECTION Q

Contains 12 splendid varieties, 10 seeds each, 5s. 6d., of fancy Pelargoniums.

Assortment of 36 splendid varieties of large-flowered Pelargoniums, 10 seeds of each, 12s. 6d.

Assortment of 36 splendid varieties of Fancy Pelargoniums, 10 seeds of each, 12s, 6d.

* Dried Specimens of many magnificent Seedlings, flowered in 1861, may be seen at our Establishment.

BARR AND SUGDEN, SEED MERCHANTS,
12, KING STREET, COVENT GARDEN, LONDON, W.C.

EXHIBITION of NEW ROSES, HYACINTHS, &c.

THE COLLECTION OF HYACINTHS, NEW ROSES, &c.,

AT THE

WALTHAM CROSS NURSERIES,

Will this year be at its best the last 14 days of March. Every new variety of merit has been added, and the Show is expected to surpass that of last year.

Entrances: Platform, Waltham Station, E.C. Railway (half an hour's ride from London); and Turnpike Road, Waltham Cross, N. Admittance free.

WILLIAM PAUL, WALTHAM CROSS, N.—March 15.

N.B.—Strong Plants of all the NEW ROSES ready in April.

ESTABLISHED UPWARDS OF A CENTURY.

NOVELTIES AND CHOICE SEEDS

OFFERED BY

BUTLER & McCULLOCH,

SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.

NOVELTIES.

Per Packet—s. d.

SSUM SAXATILE COMPACTUM, profusely covered with rich golden blossoms, a suitable companion to abis alpina and Saponaria ocymoides 1 0

ILEGIA CARYOPHYLLOIDES, fine hardy perennial, blossoms richly striped with reddish crimson .. 0 6

TOTIS GRANDIFLORA, splendid bedding plant after the character of Gazania splendens, but the blooms remaining always open 1 0

LOSIA AUREA PYRAMIDALIS 1 0

„ KERMESINA PYRAMIDALIS. These plants are among the finest yet produced for conservatory, greenhouse, or drawing-room decoration. Their compact habit and graceful feathery spikes of bloom have a most elegant appearance; colour, rich golden yellow and bright crimson 1 0

RKIA PULCHELLA FLORE PLENO, a new and desirable plant for ornamental purposes; colour a rich magenta 1 0

ANTHUS DAMPIERI, one of the finest greenhouse plants ever introduced, scarlet and black 2 6

TONIA PULCHELLA ATROCINEREA 0 6

„ „ GRANDIFLORA 0 6

ORIA GESNATIA ATROCŒRULEA, splendid greenhouse or conservatory climber, rich cerulean blue 1 0

LVULUS CANTABRICUS STELLATUS .. 0 6

THEA ZIMPANI, one of the best for bedding purposes, colour violet purple 1 0

HARIDIUM GRANDIFLORUM ALBUM 1 0

„ „ ROSEUM.. .. 1 0

Per packet.—s. d.

GILIA ACHILLÆFOLIA ALBA, pure white 1 0

GRAMMANTHES GENTIANOIDES CINNABARINA, crimson scarlet 1 0

GRAMMANTHES GENTIANOIDES LILACINA, lilac 1 0

HUNNEMANNIA FUMARIÆFOLIA 0 6

JACOBÆA, new double magenta 1 0

LEPTOSIPHON, new dwarf hybrids, yellow, rose, lilac, brown, purple and crimson, mixed 1 0

LINUM FLAVUM, rich golden yellow, the best in habit of all the Linums, forms an admirable pot plant .. 1 0

LINUM LUTEUM CORYMBIFLORUM, straw-coloured variety, more diffuse in habit than the preceding .. 0 6

NEMESIA COMPACTA INSIGNIS, bright blue .. 1 0

„ „ LA SUPERBE, delicate rose-coloured 1 0

ŒNOTHERA CAMPYLOCARPA GRANDIFLORA, crimson orange, very striking 1 0

ŒNOTHERA LAMARCKIANA, bright golden yellow, a profuse bloomer, with extraordinary large flowers .. 1 0

SOLANUM JASMINOIDES, splendid half-hardy climber, producing large bunches of white Jessamine-like blossoms.. .. .. 1 0

TROPÆOLUM CRYSTAL PALACE GEM .. 1 0

ZINNIA ELEGANS FLORE PLENO, the finest novelty that has been introduced for many years, blooming from July until the frost. The seed we offer is saved from the finest double varieties only, and cannot fail to give satisfaction .. .. 6d. and 1 0

CHOICE SEEDS.

Per packet.—s. d.

CIA ACANTHOCARPA, pale red, splendid blossoms and very graceful foliage 1 0

CIA COCCINEA, rose, beautiful foliage 0 4

OLARIA, splendid mixed .. .. 1s. and 2 6

PSIS CARDAMINIFOLIA HYBRIDA.. .. 0 6

NA FINTELMANNIA, magnificent variety.. .. 1 0

GIGANTEA, the finest foliage of all the Cannas 1 0

ANTHEMUM TRICOLOR BURRIDGEANUM

ERBUM, a most beautiful Annual for beds, borders or cutting.. .. .. 0 6

ARIA, splendid mixed 1 0

PHINIUM CŒLESTINUM GRANDIFLORUM .. 0 6

RA CHLORANTHE FLORE PLENO 0 6

THUS HEDDEWIGII .. .. .. 6d. and 1 0

GOLDEN 1 0

SILVER 1 0

Per packet.—s. d.

LARKSPUR, Stock-flowered, 10 splendid varieties .. 2 6
The first season this beautiful variety has been offered in separate colours

LINUM, Scarlet .. .. .. 2s. 6d. per oz. 0 3

PELARGONIUM, splendid mixed 2

PHLOX DRUMMONDI RADOWITZKI, rose purple, striped with white 1 0

POLYANTHUS, splendid mixed 1 0

PRIMULA SINENSIS, extra choice 1 0

SOLANUM PYRACANTHUM, purple berries, scarlet spined 0 6

SPRAGUA UMBELLATA, white shaded and spotted with purple 1 0

SWEET WILLIAM, magnificent Auricula-flowered .. 1 0

GYNERIUM ARGENTEUM, PAMPAS GRASS.. .. 1 0

ERIANTHUS RAVENNÆ 1 0

ORNAMENTAL GOURDS.

50 beautiful varieties .. 10s. 6d. | 25 beautiful varieties .. 5s. 6d | 12 beautiful varieties .. 2s. 6d.

DESCRIPTIVE SEED CATALOGUE

To be had free and post paid upon application, containing a List of all the Novelties and most approved varieties of FLOWER and VEGETABLE SEEDS.

To Exhibitors we can strongly recommend our assortments of ASTERS, BALSAMS, STOCKS, CARNATIONS, PICOTEES, &c.

BUTLER & McCULLOCH confidently recommend the following Collections, assorted with the greatest care and discrimination:—

COLLECTIONS OF FLOWER SEEDS. (Carriage Free.)

New Annuals.

12 extra fine varieties ... ... 10s. 0d. | 6 extra fine varieties ... ... 5s. 0d.

Half Hardy Annuals.

50 finest selected varieties ... ... 30s. 0d. | 25 finest selected varieties ... ... 7s. 6d.
„ „ ... ... 15 0 | 12 „ „ 4 0

Hardy Annuals.

100 finest selected varieties ... ... 20s. 0d. | 25 finest selected varieties ... ... 5s. 0d.
„ „ ... ... 10 0 | 12 „ „ 2 6

VEGETABLE SEEDS *of every description of the very best quality.*

BUTLER AND McCULLOCH, SEED MERCHANTS, COVENT GARDEN MARKET, W.C.

New Roses for 1862.
4000 Strong Plants in 51 New kinds.

WM. WOOD AND SON can supply really strong, robust, and healthy plants of all the NEW ROSES of 1862, worth growing, at 5s. each.
A liberal Discount allowed to the Trade.
DESCRIPTIVE CATALOGUES on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

STANDARD ROSES, with straight stems and good heads, the finest varieties; 30s., 36s., and 42s. per dozen.
GRAPE VINES for PLANTING OUT.—All the leading sorts, with stout, short-jointed, well ripened canes; 3s. 6d., 5s., and 7s. 6d. each.
GRAPE VINES for FRUITING in POTS.—Extra fine, strong bearing rods.
GLADIOLUS.—Splendid hybrids of Gandavensis, 6s., 9s., 12s., and 18s. per dozen; 100 distinct varieties, 84s.; 100 newer, 126s.
NEW BEGONIAS.—Twelve of the most distinct and beautifully variegated Continental varieties, strong plants, for 18s.
CAMELLIAS with FLOWER-BUDS.—Including the best new varieties, fine plants, 30s. to 42s.; extra size, 60s. and 84s. per dozen.
DESCRIPTIVE CATALOGUES, with all particulars, forwarded on application to
JAMES DICKSON & SONS, The "Newton" Nurseries, Chester.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.
For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.
Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.
The Royal Nursery, Bagshot, Surrey.

Saffron Walden Nursery.
SUPERB DOUBLE HOLLYHOCKS.
NOW IS THE TIME FOR PLANTING!

WILLIAM CHATER has ready some thousands of SEEDLINGS suitable for planting in Borders, Shrubberries, or other ornamental grounds.
W. C. has also an immense Stock of fine healthy young Plants, named sorts, and invites attention to his newly classified list for full information respecting prices, colours, and description.
N.B. The Trade liberally dealt with, and special prices on application for quantities.
WILLIAM CHATER, Saffron Walden, Essex.

Excellence and Economy.

TO PURCHASERS OF VEGETABLE AND FLOWER SEEDS.—SEND FOR JAMES TYNAN'S CATALOGUE, select your own Seeds, and save one-half the cost. No other house supplies Seeds of equal quality on the same terms. Importer of German and other Seeds.
Seed Warehouse, 68, Great George Street, Liverpool.

SEEDS for the FLOWER GARDEN.
FREE BY POST.

		s.	d.
100 finest selected varieties, consisting of Hardy, Half Hardy, and tender ANNUALS, PERENNIALS, &c.		21	0
50 ditto	ditto	10	6
30 ditto	ditto	7	0
20 ditto	ditto	4	6

WILLIAM WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

ANNUALS TO BE DEPENDED ON.—
12 Best Annuals for .. .. 1s. 6d.
24 „ „ 3 0
50 „ „ 5 6
Carter's EARLY DWARF MAMMOTH CAULIFLOWER (true), 6d. and 1s. per packet. The above free by post on receipt of postage stamps or Post-office Order.
JOHN HOADE & SON, Addlestone Nursery, Surrey.

GENUINE SEEDS, WARRANTED,
Sent Free.

			s.	d.
50 packets most showy HARDY ANNUALS		..	5	0
25 packets	do.	do. ..	3	0
12 packets	do.	do. ..	1	9

One collection, containing 18 varieties of the finest HARDY ANNUALS, and eight varieties of the most approved VEGETABLE SEEDS, sent free on receipt of 48 stamps.
J. CARTER, 6, Charles Street, Middlesex Hospital, London, W.

Bedding Plants at 2s. 6d. per Dozen.

J. SCOTT'S well-known CATALOGUE of the above is now ready, and will be sent to all applicants on receipt of six postage stamps, which will be returned to all purchasers above 10s.
It contains a mass of Cultural and other information about Flowers and Flower Planting, Ribbons, Tessellated and Mosaic work, with Descriptive Lists of all the most ornamental Flower Garden Plants.
Mr. Beaton, in the *Journal of Horticulture* April 23, 1861, p. 58, says:—"But the best work on making Ribbon borders . . . . is the Bedding Plant Catalogue of Mr. Scott, of Merriott Nurseries; and besides, the Catalogue is the best arranged for young beginners of all that I have seen."
J. SCOTT, Merriott, Crewkerne, Somerset.

Pelargoniums.

GEORGE SMITH begs to offer from a splendid Stock of Choice and well grown Plants the following, viz.:—

		per dozen
SHOW GERANIUMS from	.. ..	9s. to 30s.
French and English Spotted	.. ..	9s. to 30s.
Fancy ..	.. ..	9s. to 30s.
Pink, Scarlet and White, Zonale ..	..	9s. to 12s.
Variegated Leaved	.. ..	9s. to 20s.

A DESCRIPTIVE CATALOGUE of the above, together with Fuchsias, Verbenas, Dahlias, Petunias, Chrysanthemums, Bedding Plants, &c., in exchange for one postage stamp.
Tollington Nursery, Hornsey Road, Islington, London, N.

Calceolaria Canariensis.

G. SMITH has great pleasure in recommending this unsurpassed and beautiful variety; it has been shown in the past season at all the leading exhibitions round London, and has established itself as the best for all purposes, as it gives two-thirds more bloom in a pot and one-third more in beds than any other Calceolaria in cultivation; colour bright Canary Yellow, the mouth closed, so as to resist the wet; the habit is all that could be wished. Has taken a First-class Certificate at the Royal Botanic Gardens, Regent's Park; also a First-class Certificate from the Floral Committee of the Horticultural Society, for its fine qualities. Now ready, in strong plants, at 1s. 6d. each, or 12s. per dozen. A remittance must accompany the order of unknown correspondents.
Tollington Nursery, Hornsey Road, Islington, London N.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, JUN., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.

CATALOGUES on application.

Splendid Grape Vines.

WILLIAM BARNES has still to offer the following varieties of VINES from Eyes; the wood well ripened, length averaging from 5 to 9 feet; many of them fruit-bearing.

Royal Muscadine	Golden Hamburgh
White Dutch Sweetwater	Muscat do.
Muscat of Alexandria	Black do.
Cannon Hall Muscat	Bowood Muscat
West's St. Peter's	Muscat Muscadine
Black Frontignan	Lady Downe's Seedling
White do.	Barbarossa
Grizzly do.	Purple Constantine
Mill Hill Hamburgh	White Tokay

Prices will be forwarded on application.

Camden Nursery, Camberwell, S.

Muscat Escholata Grape.

MESSRS. J. AND C. LEE have the pleasure to offer strong well ripened Canes of this

THE FINEST OF ALL MUSCAT GRAPES,

which, though little known to Grape growers in general, deserves to be extensively cultivated. It combines the desirable qualities of setting freely with a large well shouldered handsome bunch, with berries of a rich amber colour almost as large again as those of the Muscat of Alexandria, and of the most luscious Muscat flavour.

Planting Canes	15s. 0d.	each
Fruiting Canes	21 0	„
Extra strong Fruiting Canes ..	31 6	„

Vineyard Nursery, Hammersmith, London, W.

Melons.

MESSRS. JOHN AND CHARLES LEE have seeds to offer of the undermentioned superb MELONS:—

BAILEY'S ECLIPSE.—Pale green flesh, melting to the rind, of exquisite flavour; weight 3 to 4 lbs.; handsome, very prolific, and has gained many prizes. Price 2s. 6d. per packet.

AMERICAN RIDGE.—Scarlet flesh, melting, and highly flavoured. Ripens in a COLD FRAME; very prolific. Price 1s. 6d. per packet.

Nursery and Seed Establishment, Hammersmith, London, W.

WILD'S ORION MELON. — CRYSTAL PALACE FETE. — "The heaviest Melon, FIRST PRIZE, weighed 5lbs. The variety we believe was named 'Orion,' a green fleshed sort, which was also awarded the FIRST PRIZE for good flavour."—*Gardeners' Chronicle*. Free on receipt of stamped envelope; unknown correspondents, 6d. per packet. PRIMULA SEED, 2s. 6d. per packet as usual.

THOS. WILD, the Primulary, Ipswich.

EXTRA STRONG PEACH TREES in Pots, well set with Fruit Buds, grown under glass the last two years, well established in No. 8 Pots; extra strong CUCUMBER PLANTS in 48 Pots, first-rate sorts; and a few thousand Plants EARLY CAULIFLOWER (true).

JOHN BAILEY, Hope Nursery, George Street, Deptford, S.E.

FRUIT TREES in POTS. — Those who require Fruit this summer from Trees in Pots are invited to inspect the stock of W. BARNES, whose trees have been established for two and three years; wood well matured and covered with bloom buds.

APRICOTS	CHERRIES	PEARS
APPLES	NECTARINES	PLUMS
	PEACHES.	

Prices on application to WM. BARNES, Camden Nursery, Camberwell, S.

NEW MELONS, NEW CUCUMBERS, NEW and CHOICE SEEDS of all the finest varieties for the FARM, the KITCHEN GARDEN, and the FLOWER GARDEN.

See our "Little Book", for 1862 (illustrated) which will be sent free on receipt of four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

COB FILBERTS. — What yield most Sovereigns per acre?—COB FILBERTS, now selling on the market at 3s. per lb. and upwards. For Trees apply to GEORGE MACE, Calcot Gardens, near Reading.

Also may be had RED SKIN and WHITE SKIN FILBERTS, with other varieties of Cob Nuts.

CAMELLIAS, AZALEAS, and ORANGE TREES.—CAMELLIAS, full of Flower Buds, 18s., 21s., and 24s. per dozen. AZALEAS, ditto, 12s. to 30s. per dozen. ORANGE TREES with fruit and bloom, 2s. to 3s. 6d. each. British and Foreign FERNS, immense variety, 3s. to 12s. per dozen.

ROBERT GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.

RICHARD SMITH, Nurseryman, Worcester.

CHARLES NOBLE would remind all those interested that his Selection of RHODODENDRONS is unrivalled; that his Selection of CONIFERS is worthy of notice, and his Selection of HARDY EVERGREENS worth an inspection. The following handsome well-grown specimens can be obtained on very advantageous terms, and purchasers will consult their interests by visiting the Sunningdale Nursery, Sunningdale Station, South Western Railway.

Wellingtonia gigantea, 1 to 6 ft.	Juniperus Virginiana, 1 to 10 ft.
Thujopsis borealis, 1 to 4 feet	„ argentea, 1 to 4 feet
Thuja Warriana, 4 to 5 feet	„ chinensis, 5 to 7 feet
„ Lobbii, 1 to 4 feet	„ sphærica, 2 to 4 feet
„ gigantea, 1 to 4 feet	Cupressus Lawsonii, 1 to 4 feet
„ americana, 6 to 10 feet	„ Thyoides, 1 to 4 feet
Taxus fastigiata, 3 to 7 feet	Cephalotaxus Fortunii, 2 to 4 ft.
„ baccata, 3 to 5 feet	Cedrus Deodara, 1 foot to 8 feet
Taxodium distichum, 4 to 6 ft.	„ atlantica, 8 to 10 feet
Spiræa Nobleana, 3 to 5 feet	Berberis japonica, 1 to 4 feet
„ callosa, 3 to 5 feet	„ Beallii, 1 to 4 feet
Skimmia japonica, fine blooming plants	„ Darwinii, 1 to 4 feet
Retinospora ericoides, 1 to 3 ft.	Abies spec. Vancouver's Island
Pinus austriaca, 1 to 5 feet	„ lasiocarpa
„ Laricio, 3 to 5 feet	„ Pinsapo, 1 to 3 feet
„ insignis, 2 to 5 feet	„ orientalis, 1 to 6 feet
„ excelsa, 1 to 3 feet	„ Douglasi, 2 to 3 feet
„ Cembra, 1 to 3 feet	„ Nordmanniana, 2 to 5 ft.
„ Benthamiana, 2 to 6 feet	„ Menziesii, 3 to 10 feet
	Araucaria imbricata, 1 to 8 ft.

Ten Minutes' walk from the Station.

CUTHILL'S STRAWBERRY PLANTS. For fruiting this year. Highland Mary, 10s. per 100; Richard II., 10s.; Newton Seedling, 10s.; Princess Royal, 7s. 6d.; Prince of Wales, 7s. 6d.; Black Prince, 5s. Best CUCUMBER and MELON SEED, 1s. per packet. MUSHROOM SPAWN, 5s. per bushel. If Cuthill's five Pamphlets are taken, 5s.

JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

Strawberry Plants.

WM. JAS. NICHOLSON again offers strong laid Plants of his Grand Collection of more than 200 varieties of English, French, Belgian, American, and other STRAWBERRIES, including all the new and fine sorts.

A CATALOGUE sent on application.

A new, enlarged, and improved CATALOGUE will be published in autumn, when many new sorts, well tested, will be offered with confidence.

WM. JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

Strawberries for Forcing.

GEO. CLARKE has a large quantity of strong established Plants in Pots with excellent crowns; the sorts are KEEN'S SEEDLING, BRITISH QUEEN, SIR HARRY and ALICE MAUDE. Price 6s. per dozen.

Nursery, Streatham Place, Brixton Hill, S.

STRAWBERRIES in 6-inch pots for Forcing or Orchard-house culture.

The following varieties, very fine plants, capable of bearing a full crop, are offered, price per dozen or per 100 given on application:—

British Queen	Omar Pacha
Sir Harry	Oscar
Princess Frederick William	Carolina Superba
Ingram's Prince of Wales	Stirling Castle Pine
May Queen	Keen's Seedling

October Yellow Raspberries, a fine dessert kind, 3s. per doz.

THOS. RIVERS, Nurseries, Sawbridgeworth.

STRAWBERRIES.

	Per 100—s. d.		Per 100—s. d.
Bicton Pine	2 6	Oscar	2 6
Black Prince	2 6	Prince Arthur (Ingram)	2 6
Crimson Queen of Dr. Rodin	3 6	Princess Frederick Wm. (Niven)	5 0
Elton Pine	2 6	Princess Royal	2 6
Goliath (Kitby) ..	2 6	Prolific (Myatt) ..	2 6
Grove End Scarlet ..	2 6	Sir Charles Napier	3 6
Hendries Seedling ..	5 0	Scarlet Pine ..	3 6
Jucunda	5 0	Sir Walter Scott ..	2 6
Keene's Seedling ..	2 6	Victoria (Trollope)	2 6
May Queen	2 6	Wonderful	2 6

JOHN CATTELL can supply strong plants of the kinds named above; the present month is a good time to make new beds or fill up vacancies.

Nursery and Seed Establishment, Westerham, Kent.

Splendid New Strawberry Eclipse (Reeve).

MESSRS. VEITCH AND SON have much pleasure in calling attention to this really fine new variety, to which was awarded a FIRST-CLASS CERTIFICATE by the Fruit Committee of the Royal Horticultural Society, and which has gained several other prizes, both forced and from the open air.

It is an early variety, very large, and with a rich fine flavour, of a beautiful crimson colour, and a most abundant bearer. Full particulars will be found in advertisements which appeared in the *Gardeners' Chronicle* and *Journal of Horticulture* in August and September, 1861. It is also noticed in HOGG's "Gardeners' Year Book for 1862."

Price 4l. per 100; 12s. per dozen. Special prices to the Trade on application.

Royal Exotic Nurseries, Exeter and Chelsea.—March 15.

Quick.

H. AND F. SHARPE are prepared to offer of the finest quality,

Strong 2-years' Transplanted QUICK, 3 feet high,

Strong 2-years' Seedling do., 2 feet high,

at very moderate prices, which may be had, with samples, on application.

Seed Growing Establishment, Wisbeach.

R. GLENDINNING has great pleasure in offering the undermentioned fine CONIFERS, which have been annually transplanted, and will move with perfect safety:—

Araucaria imbricata (perfect specimens), 2 to 9 feet
Cedrus Deodara „ „ 1 to 10 feet
„ atlantica „ „ 1 to 10 feet
Cupressus Lawsoniana, 1 to 3 feet
„ macrocarpa, 1 to 15 feet
„ Nutkaensis (Thujopsis borealis), 1 to 8 feet
Picea nobilis (fine), 1 to 6 feet
„ Nordmanniana, 1 to 10 feet
„ Pinsapo, 1 to 6 feet
Pinus Benthamiana, 1 to 5 feet
„ excelsa, 1 to 12 feet
„ Fremontiana, 1 to 4 feet
„ Jeffreyi, 1 to 2 feet
„ Koraensis, 1 to 4 feet
„ monticola, 1 to 10 feet
„ tuberculata, 1 to 4 feet
Taxus baccata erecta (splendid specimens), 1 to 9 feet

Also all the other leading kinds in fine well grown plants.

The above are remarkably handsome plants, and perfectly healthy, not having suffered from the severity of the past winters. Price on application.

Chiswick Nursery—March 15.

TO THE TRADE.

		£	s.	d.
1 year Seedling Alder	per 100,000	6	0	0
1 year „ Thorns, fine	„ „	7	10	0
2 year „ do. do.	„ „	10	0	0
2 year „ Norway Spruce ..	„ „	5	0	0
3 year „ do. do. strong	„ „	7	10	0
1 year „ Silver Fir	„ „	10	0	0
3 year „ do. do.	„ „	17	10	0
1 year „ Pinus austriaca ..	„ „	7	10	0
1 year „ „ Cembra ..	per 10,000	3	15	0
3 year „ American Arborvitæ ..	„	5	0	0
2 year „ English Oak, only 20,000 remaining	per 1000	0	3	0
1 year „ Sweet Briar, do. do. ..	„	0	1	6
Transplanted Norway Spruce, 9 to 12 inches	„	0	5	0
„ do. do. 12 to 15 inches	„	0	10	0
„ do. do. 15 to 20 inches	„	0	12	6
„ White American do., 9 to 12 ins.	„	0	10	0
„ Elm, 3 to 5 feet	„	0	15	0
Berberis Darwinii, 1 foot, bushy ..	per 100	2	10	0
„ dulcis, 1 foot „	„	0	7	6
Cotoneaster microphylla, 12 to 18 inches ..	„	0	15	0
Hardy Heaths, 15 named varieties, bushy	„	0	15	0
Juniperus tamariscifolia, 18 inches, bushy	„	2	10	0

Sample thousands sent on application. Any quantity above 20,000 supplied at the same rate as per 100,000; for smaller quantities see our PRICED LIST, which may be had free on application. Reference or cash from unknown correspondents.

MORRISON BROTHERS, Aberdeen.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s.; 20 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that his DESCRIPTIVE CATALOGUE for 1862, of NEW CHRYSANTHEMUMS and other PLANTS, is now ready, and will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Chrysanthemums.

W. HOLMES, F.R.H.S., has a fine stock of the above, including Little Harry, Lady Hardinge, Leda, Linda, Rifleman, Florence, &c., &c., all at 5s. per dozen.

DESCRIPTIVE CATALOGUES of the above, also Dahlias, Fuchsias, Verbenas, Geraniums, Antirrhinums, Petunias, &c., free for one stamp.

Frampton Park Nursery, Hackney, N.E.

Choice Dahlia Seed.

GEO. RAWLINGS has a small quantity carefully saved, which he begs to offer in packets of 50 for 2s. 6d. Also a number of mixed pot roots at 10s. per 100, a rare, chance to decorate a Park or Public Garden. Also in May will be ready QUEEN of SUMMER, white, heavily tipped with carmine, a most lovely flower, 7s. 6d. per plant.

21, Globe Road, Bethnal Green.

Seeds.

THE SUDBURY COLLECTIONS ARE OF THE FINEST QUALITY AND THE CHEAPEST OFFERED.

STEPHEN BROWN, SEED GROWER and IMPORTER, offers the following.

VEGETABLE SEEDS:—

FIRST CLASS COLLECTIONS (the List of the Collections given in the Catalogue). 60s., 40s., 20s., and 12s. 6d.

SECOND CLASS COLLECTIONS of best older esteemed sorts, with less of those of new introduction. 50s., 32s. 6d., 17s. 6d., and 10s. 6d.

FLOWER SEEDS.—Post free.

FIRST CLASS COLLECTIONS, including novelties of 1861 and 1862. (The Collections are given in the Catalogue.)

HARDY ANNUALS. — 100 vars., 15s.; 50 vars., 8s. 6d. 30 vars., 5s. 6d.; 20 vars., 4s.

HALF HARDY ANNUALS.—100 vars., 20s.; 50 vars., 12s. 6d.; 30 vars., 8s.: 20 vars., 6s.

GREENHOUSE ANNUALS.—20 vars., 7s. 6d.; 50 vars., 5s.

HARDY PERENNIALS.—100 vars., 20s.; 50 vars., 12s. 6d.; 25 vars., 7s. 6d.

GREENHOUSE PERENNIALS.—50 vars., 18s.; 25 vars., 10s.; 12 vars., 7s. 6d.

SECOND CLASS COLLECTIONS from the best popular older varieties. For prices see Catalogue.

GLADIOLUS and ROOTS for SPRING PLANTING. — An extensive Collection. See Catalogue.

Goods Carriage Free, to the amount of 20s. and upwards, to London and all Stations on the two London and Norwich lines.

The SEED CATALOGUE supplied on application.

Seed Establishment, Sudbury, Suffolk.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the most effective and useful bedding variety known. During the past season upwards of 5000 plants were grown in the gardens at Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.

*** For Testimonials and further particulars see *Gardeners' Chronicle* of February 22.

Plants in April, 1s. 6d. each. 12s. per dozen. 50s. per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in riband-borders, and vases, this variety is one of the most useful and effective yet offered for sale.

Plants in April, 1s. 6d. each. 12s. per dozen. 75s. per 100.

CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

	Per packet—s. d.		Per packet—s. d.
Calceolaria, herbaceous ..	2 6	Primula sinensis dentiflora	[illegible]
Cineraria cruenta ..	2 6	Primula sinensis albiflora dentiflora	[illegible]
„ maritima	0 6	„ „ kermesina splendens ..	[illegible]
Erianthus Ravennæ ..	1 0	Verbena venosa	[illegible]
Lobelia erinus speciosa	1 0		
„ „ major ..	1 6		

A PRICED and DESCRIPTIVE CATALOGUE of Vegetable, Agricultural, and Flower Seeds, forwarded post free to all applicants.

Exotic Nursery, Tooting, Surrey, S.

MESSRS. BROWN AND CO. offer the following Selection of CHOICE PLANTS, which they will forward to any part of the kingdom:—

25 AZALEAS, new hardy Belgian varieties, one of a sort, on their own roots, by name, well set for bloom, fine for beds or pot culture for forcing ..
AZALEAS, hardy American varieties, do. do. ..
12 Hardy RHODODENDRONS, including scarlet, white, and rose colour .. ..
Fine Hardy Scarlet RHODODENDRONS, per doz...
New Yellow RHODODENDRONS, each .. 3s. 6d. to
Hardy HEATHS, LEDUMS, and KALMIAS, per doz.
ROSES, best sorts, Standards and Half-standards per doz. .. .. 12s. to
CLIMBING ROSES of best sorts, rapid growers, per doz... .. ..
6 Fine Hardy MAGNOLIAS, one of a sort ..
Choice CONIFERÆ, cheap; PRICE LIST by Post.
Greenhouse AZALEAS, fine varieties, per doz., 10s. to
CAMELLIAS, best double varieties, per doz. ..
Yellow PICOTEES and CARNATIONS, per doz ..

FRUIT TREES.

Fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Apples, Plums, and Pears, 2s. 6d. each, 24s. per doz.

Dwarf Plants of all the above kinds, grown especially for pot culture in orchard houses, &c., per dozen, 18s.

Filberts, Gooseberries, Currants, and Raspberries, per doz.

Evergreen Shrubs and Ornamental Trees of all kinds cheap.

American Nurseries, near Farnham, Surrey.—March 15.

DOUBLE ZINNIAS.

ZINNIA ELEGANS FL. PLENO.—Very splendid mixed. Received from a celebrated florist in the South of France, who describes the seed to be saved from magnificent double flowers of unsurpassed beauty, not even semi-double flowers being allowed to bloom. Per packet, 1*s*.

ZINNIA ELEGANS FL. PLENO.—In 24 varieties separate. These are received from the same eminent florist as the preceding, and are reported to have obtained a first-class certificate ... "hors ligne," and were deemed worthy of being sent to Paris to His Excellency M. Rouher, Minister of Agriculture of France.

The collection of 24 varieties	18*s*.
The collection of 12 varieties	9*s*.
The collection of 6 varieties	5*s*.

(Corrected from the Catalogue, the price there incorrectly printed).

ZINNIA. NEW MEXICAN SP.—This species is entirely distinct in habit from the Zinnia elegans, dwarf and spreading, and may be regarded among annuals as the finest novelty introduced. It should be extensively grown by all growers of first-class bedding plants, and no flower garden should be without this interesting novelty. For description see Catalogue.

The SEED CATALOGUE, Cultural and Descriptive, supplied on application.

STEPHEN BROWN, Seed Grower and Importer, Sudbury, Suffolk.

NEW, CHOICE, and GENUINE FLOWER SEEDS, free by Post :—

	s.	*d.*
100 Packets, choice sorts, including all the best Hardy, Half-hardy, and Greenhouse Annuals..	20	0
50 Packets ditto ditto	10	6
25 Packets ditto ditto	5	6
100 Packets very choice and showy Hardy Annuals ..	13	0
50 Packets ditto ditto	7	0
25 Packets ditto ditto	4	0
12 Packets ditto ditto	2	6
50 Packets Half-hardy Annuals	8	0
25 Packets ditto ditto	5	0
12 Packets ditto ditto	2	6

Smaller packets of above at half the prices quoted.

DAVID BROWNE, Seed Grower and Importer, 41, London Street, Norwich.

WILLIAM BARRON, Elvaston Castle, Derby, can supply strong and remarkably well-rooted plants as under :—

		Per 100—*s.*	*d.*
ABIES DOUGLASII, 3 years once transplanted.. .. This tree attains a height of more than 200 feet, highly ornamental, the same as the tall flagpole at Kew.		25	0
PINUS LARICIO, 18 ins. to 2 feet .. .. This produces timber for railway sleepers sooner than the Larch, and is used as spars and masts in the French navy.	per 1000	70	0
BERBERIS DARWINI, the most beautiful of the tribe, fit either for the flower garden or game cover, with rich orange-coloured flowers; Pheasants are very fond of the berries, which are produced in profusion. Strong plants, 3 years old	per 100	20	0
Ditto ditto, 2 years old		15	0
Ditto ditto, 1 year old		12	6
PICEA NOBILIS, 3 to 4 years old, plants from seed,	each, 10*s*. to	15	0

This is the most lovely of all Firs.

WELLINGTONIAS from 2 to 9 feet. Also specimens of the rarest Conifers.

Remittances to accompany orders from unknown correspondents. Post-office Orders payable at Derby.

SELECT PRICED LISTS post free on application.

E. G. HENDERSON AND SON respectfully offer

STUARTIA PENTAGYNIA.—A very handsome deciduous autumn-flowering hardy shrub, of Magnolia-like habit, with oval, ovally oblong leaves, and numerous large, conspicuous, well expanded, white saucer-shaped flowers, from 2 to 3 inches in width, with crimped edges. Its neat, bushy habit of growth, which only requires good ordinary soils, and profusion of showy blossoms during the late autumn months, merits a place in every good collection of shrubs, being well adapted for a prominent position upon the approach or front lawn of a flower garden. Strong bushy Plants, 3 feet high. 7*s*. 6*d*.

EXTRA TALL ROSES.—Standard, 5 and 6 feet stems, including the head, 6 and 7 feet. 3*s*. 6*d*. each.

FRUITING VINES.—Extra strong BLACK, GOLDEN, and MUSCAT HAMBURGHS; also BIDWELL SEEDLING, a ... hanging Grape, and others.

Wellington Nursery, St. John's Wood, London, N.

E. G. HENDERSON AND SON respectfully offer SEEDS of

CLIANTHUS DAMPIERI.—The most gorgeous plant in cultivation. Five seeds, 2*s*. 6*d*.

CALENDULA OFFICINALIS SUPERBA.—This beautiful ..., for which a premium was awarded by the Floral Committee of the Royal Horticultural Society, is now respectfully offered by Messrs. E. G. HENDERSON & SON, who hold the entire stock. The colours vary from a clear bright lemon-yellow, with orange centre, to the richest golden and bronze-yellow ground colour, richly tipped and shaded with dark ... Its long continued bloom, from June until November, renders it invaluable where late summer flowers are ...ed, or where gay colours are sought for picturesque ... in flower borders. Seed packets, 6*d*. and 1*s*.

CELOSIA PYRAMIDALIS AUREA, 1*s*. 6*d*.; RUBRA, 1*s*.—Beautiful annuals for pot culture, warm greenhouse, conservatory, or stove, producing numerous clusters of light ... and rich Magenta shaded crimson blossoms from ...ember to February.

COSMOS DIVERSIFOLIUS ATROSANGUINEUS.—A very ... perennial plant, with dwarf bushy growth, neat ... producing innumerable flowers throughout the season; ... rich dark crimson. A miniature Dahlia-like flower, its ... Dahlia-like tuberous roots require a similar care and ... to that tribe. Seed, 1*s*.

...NUM PERENNE CANDIDISSIMUM.—A fine pure white ... bedding plant. 1*s*.

HENDERSON'S PERFECTION SWEET WILLIAM.—The ... strain of Hunt's improved Auricula-eyed section. 6*d*

ŒNOTHERA LAMARCKIANA.—The largest flowered ... Œnothera. 6*d*. and 1*s*.

SAPONARIA CALABRICA ALBA. — Beautiful bedding ... 6*d*. and 1*s*.

NEMOPHILA ATOMARIA OCULATA. — The most distinct among novelties in this beautiful tribe. 6*d*. and 1*s*.

ZINNIA ELEGANS FLORE PLENO. 6*d*. and 1*s*.

GIANT EMPEROR ASTERS in 20 colours.

DWARF CHRYSANTHEMUM-FLOWERED ASTERS. — Most beautiful for bedding and margins.

...IA ARGENTEA, FERULA GLAUCA, DIPSACUS ...ELINI.—Ornamental garden plants. 6*d*. and 1*s*. See descriptions in Seed Catalogue.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, N. W.

WM. WOOD AND SON have much pleasure in offering their superb collection of

PHLOXES.

All the newest and most approved Continental varieties, 12*s*. to 18*s*. per dozen.

Older, but approved kinds, 6*s*. to 9*s*. per dozen.

100 Phloxes, in 50 sorts, for 40*s*.	25 Phloxes, in 25 sorts 12*s*. 6*d*.
50 ,, 25 ,, 21*s*.	12 ,, 12 ,, 9*s*. 0*d*.

PENTSTEMONS.

New and first-rate varieties	18*s*. per dozen.
Older, but approved kinds	6*s*. to 9*s*. ,,
50 Pentstemons, in 25 sorts	21*s*. 0*d*.
25 ,, 25 ,, ...	12 6
12 ,, 12 ,, ...	9 0

ANTIRRHINUMS.

Per dozen .. .. 6*s*., 9*s*., and 12*s*.

HERBACEOUS PÆONIAS.

Per dozen .. ..12*s*., 18*s*., and 24*s*.

HERBACEOUS PLANTS.

Per dozen .. .. 6*s*., 9*s*., and 12*s*.

Plants presented to compensate for carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

SPLENDID NEW FUCHSIAS, DICTATOR and UNIVERSAL. Coloured Illustrations by Mr. ANDREWS of the two, in exchange for 12 postage stamps

G. S. assures Fuchsia Growers that "Universal" is the finest Fuchsia ever offered. For description see CATALOGUE.

GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington, London, N.

To the Trade.

JAMES DICKSON AND SONS. "Newton" Nurseries, Chester, offer 1 year APPLE STOCKS, 2 year HOLLIES, 1 year LARCH, 2 year QUICKS, 2 year SPRUCE. Also Transplanted PEAR, APPLE, and MAHALEB CHERRY STOCKS, HAZELS, GRAFTED ELMS, and GREEN HOLLIES. Sizes and Prices on application.

Four Millions of Transplanted Quicks.

GEORGE CHIVAS offers the above, Two Millions of which are suitable for Railways, and Two Millions varying from strong to exceeding strong—a portion having been twice Transplanted. A bale containing 100 of each, of five sizes, forwarded on receipt of 15*s*.; orders for 10,000 delivered free at any railway station.

Also Half a Million of Transplanted SPRUCE, and one of the largest general Nursery Stocks in the North-Western counties.

Chester, March 15.

New and Choice Seeds offered by

B. S. WILLIAMS, Paradise Nursery, Holloway, N. *** The following are specially recommended for their beauty and superior qualities as worthy of cultivation in the most select collections. Descriptions will be found in CATALOGUE, forwarded post-free to applicants.

GERMAN and other **FLOWER SEEDS** in COLLECTIONS. See *Gardeners' Chronicle*, March 8.

	Per Packet—*s.*	*d.*
Aster, Cocardeau or Crown, finest mixed	0	6
,, French, finest mixed	0	6
,, German, finest mixed	0	6
,, Giant Emperor	0	6
Alyssum saxatile compactum	1	6
Amaranthus tricolor splendidissimus	0	6
Antirrhinum majus	0	4
Aquilegia vulgaris caryophylloides	0	6
Atriplex hortense purpurea	0	3
Balsam, Camellia-flowered, finest mixed	0	6
Bidens atrosanguinea (Cosmos diversifolia)..	1	0
Calceolaria, herbaceous, finest mixed .. .. 1*s*. 6*d*. to	2	6
Calliopsis cardaminefolia hybrida atrosanguinea	0	6
Celosia aurea	1	6
,, cristata (coccinea)	1	0
,, dwarf Cockscomb	1	0
,, spicata rosea	1	0
Cineraria cruenta, mixed seed from named flowers, 1*s*. 6*d*. to	2	6
,, maritima	0	4
Clarkia pulchella flore pleno .. .. 1*s*. to	2	6
Clianthus Dampieri	2	6
Convolvulus cantabricus stellatus novus	1	0
Delphinium formosum	0	3
Dianthus chinensis Heddewigii	0	4
,, ,, ,, flore pleno	1	0
,, ,, ,, imperialis hybridus ..	0	6
,, ,, ,, hybridus flore-pleno atropurpurea	0	6
,, ,, laciniatus	0	4
,, ,, nanus atrosanguineus..	0	6
Gazania splendens	0	6
Gladiolus Gandavensis (hybrids) .. .. .. 1*s*. to	2	6
Hollyhocks, choice seed from named flowers	0	4
Linum grandiflorum	0	3
Lobelia erinus speciosa	0	6
,, trigonicaulis	0	6
Lychnis Haageana	0	6
Marigolds, African and French	0	3
Œnothera Lamarckiana..	1	0
Perilla Nankinensis	0	3
Petunia, mixed seed from named flowers	0	6
Phlox Drummondii, finest mixed	0	4
,, ,, Radowitzi kermesina striata ..	1	0
Plantago purpurea	0	6
Portulacca Thellusonii, finest mixed..	0	3
Primula, Red and White-fringed. Very choice seed (See testimonials on Catalogue). mixed or separate 2*s*. to	3	6
Primula fimbriata kermesina splendens	2	6
Saponaria calabrica alba and rosea	0	6
Senecio elegans flore pleno (Magenta)	1	0
Solanum capsicastrum	0	4
,, pseudo-capsicum	0	4
,, species	0	4
Stocks, Brompton or Biennial, finest mixed	0	6
,, Dwarf German Ten-week ,, ...	0	6
,, Intermediate, red and white	0	6
Tropæolum Crystal Palace Gem	1	6
,, Tom Thumb, Scarlet and Yellow	0	3
Verbena venosa	0	4
,, finest mixed	0	6
Viola tricolor hybrida, saved from a selection of the best named varieties of Garden Pansy	0	6
Zinnia elegans	0	3
,, ,, flore pleno	0	6

Hardy Annuals, 12 varieties, 1*s*. 6*d*.; 25 varieties ..	3	0
Half Hardy Annuals, 12 do., 2*s*. 6*d*.; 25 ,, ..	5	0
Biennials and Perennials, 12 do., 2*s*.; 25 ,, ..	4	0
Ornamental Grasses, 12 do., 2*s*.; 25 ,, ..	4	0

VEGETABLE SEEDS of every description of the best quality.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

SEEDS FOR THE KITCHEN GARDEN.
SEEDS FOR THE FLOWER GARDEN.
SEEDS FOR THE FARM.

JOHN CATTELL'S CATALOGUE of the above is now ready, and will be forwarded post paid on application. It contains select Lists only of all the best VEGETABLE and FLOWER SEEDS, so that the Amateur with only a small Garden cannot fail to make a proper selection.

His COLLECTIONS of KITCHEN GARDEN SEEDS, which have always given the greatest satisfaction, are sent as usual, viz. :

	£	*s.*	*d.*
A Collection for Large Gardens, including every desirable kind of Vegetables, Salads, and Herbs	3	0	0
Ditto, ditto, for a Medium-sized Garden	2	0	0
Ditto, ditto, for a Small Garden	1	0	0
Ditto, ditto, for a Cottage Garden	0	10	6

The Carriage of all parcels of Seeds amounting to 10*s*. 6*d*. and upwards, paid to any Railway Station in England or Wales.

Nursery and Seed Establishment. Westerham, Kent.

Collection of Vegetable and Flower Seeds.

DOWNIE, LAIRD AND LAING beg to call the attention of Clergymen, Farmers, Amateurs, and others having small Gardens, to the undermentioned Collection of VEGETABLE and FLOWER SEEDS, comprising the most useful and approved varieties at present in cultivation, and which they warrant true to name and of the finest quality :—

PEAS for succession	6 quarts
BEANS, two sorts	2 ,,
,, French and Runners	2 pints
BEET, finest Dwarf Red	1 packet
BORECOLE, Cottager's Kale, &c.	3 ,,
BROCCOLI, three sorts	3 ,,
BRUSSELS SPROUTS	1 ,,
CABBAGE, four sorts for succession ..	2 ounces
CARROT, three sorts	3 ,,
CAULIFLOWER	2 packets
CELERY, Red and White	2 ,,
CRESS	6 ounces
CUCUMBER	1 packet
LEEK, Musselburgh	1 ,,
LETTUCE, Cos and Cabbage	2 ,,
MUSTARD	6 ounces
ONION, two sorts	2 ,,
PARSLEY, extra curled	1 ,,
RADISH, finest sorts	4 ,,
SAVOY, green curled	1 packet
SPINACH, Summer and Winter	6 ounces
TURNIPS, best Succession	3 ,,
VEGETABLE MARROW	1 packet
SWEET HERBS	4 ,,
FLOWER SEEDS.	
ASTER, finest mixed German	1 packet
STOCK ,, ,, ...	1 ,,
ANNUALS, hardy, finest sorts	15 ,,

The above for 20*s*. (Carriage paid); or half the Collection for 10*s*.

Stanstead Park, Forest Hill, London, S.E.; and at Edinburgh.

JOHN CATTELL having proved for several years the articles named below, recommends them with confidence as deserving of cultivation in every garden.

	Per packet—free by post—*s.*	*d.*
CATTELL'S DWARF PURPLE-TOP BEET, the best kind in cultivation	0	6
KALE, Buda or Asparagus (true)	0	6
,, Jerusalem, old kind	0	6
,, ,, curled	0	6
,, Scotch dwarf curled	0	6
,, Variegated garnishing, as exhibited by him at the Royal Horticultural Gardens at Kensington and the Crystal Palace	0	6
BROCCOLI, Conning's Reliance, withstood the severe winter of 1860 and 1861, when every other kind was destroyed, a late white, close heading variety	1	0
,, Walcheren, a splendid stock, very fine and true	1	0
CABBAGE, Cattell's Early Reliance, undoubtedly the best Cabbage in cultivation	0	6
,, Little Pixie, a fine summer Cabbage, similar to Dwarf York, but much superior	0	6
,, Cattell's Green Colewort	0	6
,, Couve Tronchuda or Portugal Cabbage, a delicious vegetable	0	6
CUCUMBER, Holmesdale Frame, a very handsome and prolific White Spine	1	0
,, General Wolfe, equally adapted for ridge or frame, for general use, will be a great favourite	1	0
LETTUCE, London White Cos (true)	0	6
SAVOY, Cattell's Dwarf Green Curled	0	6
,, ,, ,, ,, Drumhead..	0	6
TOMATO De Laye, a very fine variety	0	6

For other first-class Vegetables, see CATALOGUE.

FLOWER SEEDS.

	Per Packet, free by Post.	
Imported GERMAN ASTER .. .. 1*s*. to	3	6
,, ,, STOCK .. .. 1*s*. to	4	0
,, ,, WALLFLOWER .. .. .. 1*s*. to	3	6
From the same growers as usual, and which have always been highly commended by all purchasers.		
BALSAM, finest double, 9 varieties, in sealed packets, saved by Messrs. F. & A. Smith..	2	6
PRIMULA SINENSIS, finest fringed, saved by Messrs. F. & A. Smith	1	0
CALCEOLARIA, from very splendid spotted kinds, 1*s*. and	2	6
CINERARIA, from choicest named flowers .. 1*s*. and	2	6
DIANTHUS HEDDEWIGII	0	6
,, ,, atropurpureus fl. pl.	1	0
,, IMPERIALIS HYBRIDUS, very beautiful ..	0	6
,, ,, flore nigro purpureo	1	0
,, CHINENSIS NANUS, atrosanguinea flore pleno	0	6
LOBELIA ERINUS SPECIOSA (true), saved from the Crystal Palace variety, and will come true from seed; cannot be too highly recommended for its intense blue colour and dwarf habit. All visitors to the Crystal Palace must have admired the immense lengths of edging of this kind, so artistically planted by Mr. Gordon .. .. 6*d*. and	1	0
TROPÆOLUM, Crystal Palace Scarlet, saved from the true variety; this is a well known bedding plant, extensively used at the Crystal Palace	1	0
,, Crystal Palace Gem	0	6
,, Cattell's Dwarf Scarlet	0	6
,, ,, ,, Crimson	0	6
,, Yellow Tom Thumb	0	6
(The last four are very dwarf free blooming kinds and make beautiful beds in poor soil; if sown in rich soil they grow too freely, and do not show their true character.)		
ATRIPLEX HORTENSIS RUBRA (Orache), highly recommended by many horticultural writers in preference to Perilla Nankinensis; as a decorative plant it is highly ornamental	0	3

For other choice and select Annuals, Ornamental Grasses, &c., see CATALOGUE, pages 20 to 32.

Nursery and Seed Establishment, Westerham, Kent.

YOUELL'S NORFOLK HERO CUCUMBER.
Without exception the best Ridge Cucumber known. 6 Seeds 1*s.*, 18 Seeds 2*s.*

LAING'S MAMMOTH CELERY.—The very best, hardiest, and finest flavoured Red Celery in cultivation, 1*s.* and 2*s.* per packet on receipt of postage stamps.

See former advertisement.

YOUELL'S Royal Nurseries, Great Yarmouth.

YORKSHIRE HERO CUCUMBER (See former Advertisement), price 2*s.* per packet.

TRUE ORANGE GOURD, 6*d.* and 1*s.* per packet.
12 Varieties, Gourds, each separate, 2*s.* per packet.
PETURION GOURD, weight 240 lbs., 6*d.* and 1*s.* per packet.
TRUE TURK'S CAP GOURD, 1*s.* per packet.

E. P. DIXON & SONS, 57, Queen Street, Hull

CUCUMBER PLANTS, CUCUMBER PLANTS. Price 1*s.* 9*d.* per pot; 18*s.* per dozen. For sorts see Advertisement of March 1.

PANSIES, PANSIES, PANSIES. Extra strong Plants, best show varieties, 5*s.* per dozen.

VARIEGATED GERANIUM "BIJOU." Autumn struck plants, in small 60's, 5*s.* per dozen.

To save trouble all orders to be prepaid.

HENRY BROWN, Bounds Green, Colney Hatch, N.

Fear Not—Fear Not; a New Celery.

G. LAWRENCE, Gardener at the Countess of Ashburnham's, has much pleasure in offering to the public this beautiful CELERY, the best yet ever offered. It is of a beautiful pink hue, and most exquisite flavour, and allowed by all the nobility who have tasted it to be the finest flavour ever sent out. Very hardy, and stood the severity of the winters of 1860 and 1861 better than any other.

Sent out at 1*s.* 6*d.* a packet by G. LAWRENCE. Agent: Messrs. Osborn & Sons, Nurserymen, Fulham.

Wood's Defiance Cauliflower.

WM. WOOD AND SON have much pleasure in introducing this new and superior CAULIFLOWER to the notice of their friends and the public generally, and having tested it for several years against Walcheren and other approved varieties, they do not hesitate to pronounce it the best Cauliflower in cultivation. It is quite hardy, of dwarf habit, and produces immense large heads, which are very compact, and most deliciously flavoured.

Stock limited; price per packet, 2*s.* 6*d.*

WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

*** SEED CATALOGUE post free on application.

COLLECTIONS of VEGETABLE SEEDS.

					s.	d.
No. 1.	20 quarts of PEAS, and other Seeds in proportion				60	0
" 2.	12	"	"	"	40	0
" 3.	6	"	"	"	25	0
" 4.	6 pints	"	"	"	15	0
" 5.	4	"	"	"	10	0

All warranted of the finest quality, and embracing every kind desirable in the largest or smallest garden.

HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.

CATALOGUES post free.

New Cabbage for Present Sowing.

FEARNOUGHT CABBAGE (MELVILLE).— For description see "The Gardeners' Year Book" by Dr. Hogg, and advertisements in last month's *Gardeners' Chronicle.* May be had fit for use from November till Spring Cabbages are ready. Sow from 20th March to 8th April. Awarded First Class Certificate by the Royal Horticultural Society, 11th March, 1861. Price 1*s.* per packet.

STUART & MEIN, Seedsmen, Kelso, N.B., beg to intimate that they can still supply a few packets of the above valuable acquisition; it can also be had from the following, who have received supplies:—

Messrs. Dicksons & Brown, Manchester.
" Sutton & Sons, Reading.
" Nutting & Sons, 60, Barbican, London, E.C.
" Ivery & Son, Dorking, Surrey.
" A. Henderson & Co., Pine Apple Place, Edgeware Road, London, W.
" Charlwood & Cummins, Tavistock Row, Covent Garden, London, W.C.
" Fraser, Richardson, & Good, Bishopsgate Street, London, E.C.
" Stewart & Sons, Dundee.
" Downie, Laird, & Laing, Forest Hill, London, N.E.
Mr. Turner, Royal Nursery, Slough.
" Dean, Bradford Nursery, Shipley, Yorkshire.
" Parker, Exotic Nursery, Tooting, Surrey, S.
" Stark, Edinburgh.

Yorkshire and Lincolnshire Nursery and Seed Establishment.

MARTIN AND SONS respectfully offer a very superior Stock of TURNIP SEED, as under, the produce of their Seed beating all others at one of the principal Shows in Yorkshire, winning the "two Five Pound Silver Cups," the "Second principal Prize," and several of the minor prizes.

Catalogues with particulars on application.

Yorkshire Prize Swede Turnip ..
Golden Melon do. do. ..
Rouge et Blanc Stone do. ..
Improved White Globe do. ..
Russian Green-top White do. ..
} 1*s.* per lb.

Skirving's Green-top, Marshall's Purple-top, and all the principal kinds of Swede and White Turnips, at 9*d.* per lb.; by the bushel or cwt, cheaper.

KITCHEN GARDEN SEEDS.

MARTIN & SONS' No. 1 Collection contains 20 quarts Peas and other sorts in proportion, for 3*l.*; No. 2 Collection, 2*l.*; No. 3, 1*l.* 10*s.*; No. 4, 21*s.*; No. 5, 15*s.*

FLOWER SEEDS.

The 30 varieties which caused so great attraction and were admired by the hundreds of persons passing the Park Nursery, Hull, for 5*s.*, free by post.

GLADIOLUS.

40 choice varieties for 1*l.* 5*s.*, carriage paid.

NURSERY STOCK.

Our GENERAL NURSERY CATALOGUE may be had on application. We abound in Laurels, Yews, Arbor-vitæ, Thujopsis, Wellingtonias, Cedars, Juniper, Chestnuts, Limes, Maples, Mountain Ash, Weeping Ash, Weeping Elm, Privet, &c.

Nursery and Seed Establishment, Cottingham (A.D. 1788). Hull Nursery, Spring Bank; Hull Seed Establishment, Junction Street.

Garden Seeds.

PAGE AND TOOGOOD'S SPECIAL LIST will be forwarded post free.

P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

From Mr. R. McDONALD, *Gardener to the* Rt. Hon. LORD WILLOUGHBY D'ERESBY, *Drummond Castle, Scotland, Jan.* 4, 1861.

"The seeds sent here by you for the last 23 years have given the greatest satisfaction, and considering the large supply required, it is of the greatest importance to have them of such first-rate quality and so true to name. The collections for cottagers have been very useful and have been the means of inducing many of them to grow a greater variety of vegetables than they have hitherto done."

From MR. DOWLING, *Gardener to* LORD HENRY CHOLMONDLEY, *Holly Hill, Jan.* 1, 1861.

"Nothing gives me so much pleasure as to speak of the excellent quality and trueness of the seeds you sent me for 1860. It is impossible to single out anything in particular, as all succeeded so well, and although a difficult season, I have never served a family better, which I attribute to the good quality of the seeds, and having been supplied by you for 30 years with the greatest satisfaction, my opinion is expressed with some confidence, and I also know your extreme desire at all times to meet the wishes of your customers."

From Mr. WHALE, *Gardener to the* Rt. Hon. LORD RIVERS, *Rushmore, Dorset, December* 30, 1860.

"In enclosing you my 20th annual order, I am happy to say that I have always found your articles to be of the best quality, and they have always given me great satisfaction."

Royal South Hants Seed Establishment, Southampton.

VEGETABLE and FLOWER SEEDS of best quality.

Our "NEWTON HERO" CUCUMBER, 1*s.* 6*d.* per pckt. "One of the best of the 118 varieties grown by the Horticultural Society, and so highly spoken of in the report, which see."

PRICED LISTS post free upon application.

JAMES DICKSON & SONS, 102, Eastgate Street; the "Newton" Nurseries, Chester; and 23, Market Place, Manchester.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

NEW SCARLET VERBENA, FOX-HUNTER.

HUGH LOW & CO.

HAVE pleasure in intimating that the entire Stock of the above-named VERBENA is in their possession, and they propose distributing it in April. Price 5*s.* per plant. Special quotations given to purchasers by the dozen. The merits of FOX-HUNTER have been so universally and extensively admitted, that H. L. & Co. think it needless to do more than add that a First-Class Certificate was accorded by the Floral Committee of the Royal Horticultural Society, when Cut Flowers were exhibited by the raiser, JOHN MILLER, Esq. of Upwey.

CLAPTON NURSERY, LONDON, N.E.

PETER LAWSON & SON,

THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

PLYMOUTH SEED COMPANY,

PLYMOUTH,

ARE NOW EXECUTING ORDERS FOR ALL KINDS OF

FARM SEEDS,

Which have been selected with the utmost care from the best sources in this country and abroad, therefore they can strongly recommend all Seeds as being of the first quality.

MIXED GRASSES for LAYING DOWN LAND to PERMANENT PASTURE ... 24*s.* to 32*s.* per acre.
MIXED GRASSES for PERMANENT LAWNS ... ... 16*s.* per bushel, 1*s.* per lb.
MIXED GRASSES for HEATHY or MOORY LANDS ... ... 20*s.* per acre.
MIXED GRASSES for UPLANDS or SHEEP WALKS ... ... 24*s.* to 32*s.* per acre.
MIXED GRASSES for WATER MEADOWS... ... ... 25*s.* per acre.
MIXED GRASSES for RENOVATING OLD PASTURES ... ... 9*d.* per lb.
MIXED GRASSES for CEMETERIES, CHURCHYARDS, &c. ... ... 16*s.* per bushel, 1*s.* per lb.

	Per lb.—s. d.		Per lb.—s. d.
WHITE DUTCH CLOVER ...	10*d.* to 1 0	SCOTCH TURNIPS	0 10
RED " "	6*d.* to 0 10	GLOBE, in varieties	0 8
COW GRASS	8*d.* to 1 0	MANGEL WURZEL, common varieties	0 8
TREFOIL	6*d.* to 0 8	FISHER HOBBS'. ORANGE GLOBE...	2 6
ALSIKE, strongly recommended	2 0	MORTON'S YELLOW GLOBE...	1 6
PLYMOUTH IMPROVED PURPLE-TOP SWEDE TURNIP	1 0	LARGE WHITE BELGIAN CARROT	1 3
SKIRVING'S PURPLE-TOP Ditto	0 10	DRUMHEAD CABBAGE	2 6

And all other Farm Seeds at moderate prices.

KITCHEN GARDEN SEEDS, in Collections, which have given great satisfaction, 10*s.* 6*d.*, 15*s.*, 20*s.*, 40*s.*, 60*s.*, 100*s.*

FLOWER SEEDS, 100 packets, free by post ... 20*s.*
" 50 packets " ... 12*s.*

FLOWER SEEDS, 25 packets, free by post ... 6*s.*
" 12 packets " ... 3*s.*

CATALOGUES AND PRICE CURRENTS

Can be had on application, and every information given by applying to the Company,

UNION ROAD, PLYMOUTH, DEVON.

AN AVENUE of PINUS BENTHAMIANA.—Should any gentleman feel desirous of planting as above the hardiest of all hardy long-leaved Pines, fine specimens can be supplied by CHARLES NOBLE, Sunningdale Nursery. Several hundred to select from, and warranted to move safely.

WANTED, 2-year SEEDLING LARCH, BIRCH, ALDER, and MOUNTAIN ASH, 1-year SPANISH CHESNUTS, and BLACK THORNS or SLOES. Also transplanted Alders, Birch, Spruce, Elms, 2, 3, and 4 feet; and Huntingdon Willows, 6 to 8 feet, all clean and well grown. Quantity and cash price to
James Dickson & Sons, The "Newton" Nurseries, Chester.

Box Edging.

MR. JAMES VEITCH, Jun., is in want of a quantity of BOX EDGING. It must be dwarf and good, and warranted to plant at least three yards for one.
Parties having any to offer may send ONE yard as sample with terms carriage paid to London, to be forwarded by Parcels Delivery. The price to include free delivery into a Van at a Railway Station.
Royal Exotic Nursery, Chelsea, London, March 15.

Arabis lucida variegata.

The Best Hardy Variegated Edging Plant.

JOHN HOADE and SON beg to offer strong Plants of the above at 3s. per dozen. Extra strong, 4s. per dozen, package included.
Addlestone Nursery, Surrey.

GLENNY'S IMPROVED BALSAM, in sealed packets only, 6 Classes, 37 Stamps; Mixed Packets, Stamps; NEW EVERLASTING FLOWER, Large-flowering TEN-WEEK STOCK, LOBELIA SPECIOSA, 7 Stamps each; of the best HARDY ANNUALS, 30 Stamps.
Dungannon House, Fulham, S.W.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very large, and in all varieties of colour, in Seed or Roots; also FLORIST FLOWERS, POLYANTHUS in roots, and DOUBLE WHITE PRIMROSE.
Apply George Mace, Calcot Gardens, near Reading.

BEDDING PLANTS.—Parties requiring the above for delivery, now or in May, are invited to communicate with Edwin Cooling, Derby, stating kinds and quantity required, E. C. having one of the largest and best stocks of very good plants in the kingdom.
Edwin Cooling, Mile Ash Nurseries, Derby.

J. HOLMES WOOD, Bower Nurseries, Maidstone (adjoining the Railway Station).
All the leading varieties of AZALEAS, in 60's, at 50s. per 100.
Standard and Trained FRUIT TREES of every description, per dozen.
Every description of CONIFERS, EVERGREEN and DECIDUOUS TREES and SHRUBS at moderate prices.

Genuine Garden Seeds, Carriage Free.

GEORGE WOOLLETT'S PRICED CATALOGUE of VEGETABLE and FLOWER SEEDS is now ready, and will be forwarded free on application.
George Woollett, Nurseryman and Seedsman, Caterham, Surrey; and Cold Harbour Nursery, Brixton, S.

THOMAS HANDASYDE'S DESCRIPTIVE CATALOGUE of FLORISTS FLOWERS, New German and other FLOWER SEEDS, &c., containing all the novelties of the season, is now ready and may be had free on application. Also a large and healthy stock of all sorts of EVERGREENS at the
Glen Nurseries, Musselburgh, near Edinburgh.

FINE NEW CLOVER SEEDS;
IMPORTED ITALIAN RYE-GRASS;
GRASS SEEDS for PERMANENT PASTURE and for LAWNS.
The above are fully described, with lowest Cash Prices at which they can be delivered Carriage Free, in Wheeler's "Little Book for 1862," post free for four stamps.
J. C. Wheeler & Son, Seed Growers, Gloucester.

GRASS SEEDS for PERMANENT PASTURE.—Gentlemen contemplating laying down Land to Permanent Pasture this season, are respectfully requested to send for our Little Book on GRASSES and CLOVERS, profusely illustrated, and partly written by Professor Buckman, F.L.S., &c. Post free for 4 stamps.
J. C. Wheeler & Son, Seed Growers, Gloucester.

TURNIP, MANGEL, and AGRICULTURAL SEEDS of best Selected Stocks.—First class sample crop, at growers' prices.
Fairhead & Son, Seed Growers and Merchants, Borough Market, London, S.E.

RAYNBIRD, CALDECOTT, and BAWTREE, Seed Merchants and Growers, Basingstoke, Andover; Seed Market, Mark Lane, London, E.C.
Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.
Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Rape Seed Cakes, &c., of best quality at Market Prices.

POTATOES: Handsworth, Fortyfold, Dalmahoy, Shaw, Regent, Blues, Ash-leaf Kidney, &c.
GOOSEBERRIES: Crown Bob, Warrington, Whitesmith.
STRAWBERRIES: Admiral Dundas, British Queen, Black Prince, Eleanor, Prince of Wales, Sir C. Napier, Wizard of the North; Alice Maude, Elton Pine, Eliza, Keens' Seedling, and Oscar, 3s. per 100. RASPBERRY CANES, &c.
Geo. Cornwell, Seedsman, &c., Barnet, Herts, N.

SEED POTATOES, off the Lancashire Moss or Sand: Fluke, Pink Eye, and White Kemp, Oxhorn, Lemon, Scotch Down, White Rock, Fortyfold. Many early sorts at very moderate prices. One trial will be the best recommendation.
Apply to H. Brown, Seedsman, 4, Commutation Row, Liverpool.

FLUKE POTATOES, off the Lancashire Moss and Sand: EARLY PINK EYE KEMPS, very fine; TRUE ASH-LEAF KIDNEY; OXHORN KIDNEY, a very prolific and good quality; WHITE BLOSSOM LEMON KIDNEY. Prices moderate.
PRICED DESCRIPTIVE CATALOGUE of Garden and Flower Seeds is now ready.
Henry Brown, Seedsman, 4, Commutation Row, Liverpool.

EXTRAORDINARY POTATOES.—A Gentleman, resident in the country, OFFERS for SALE a few tons of POTATOES of a most wonderful kind. For the table they are unsurpassed, and their yield is astonishingly great even on indifferent soil; and further, the disease never attacks them.
For Price, &c., address "Z. Z." (No. 479), *Field* Office, 346, Strand, London, W.C.

GIANT ASPARAGUS ROOTS, 2s. 6d. per 100.—This delicious vegetable does not require half the expense usually incurred in planting it. For instructions, see Richard Smith's Seed List for 1862.
Richard Smith, Nurseryman, Worcester.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and other FLOWER SEEDS, Choice GLADIOLI, &c., is now ready, and will be forwarded post free on application.
The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices.
An inspection and comparison with prices in other Catalogues is respectfully solicited.
The following, of which descriptions will be found in Catalogue, are specially recommended:—

		s.	d.
BEAN, Haricot Flagolet Jaune, six days earlier than any variety in cultivation	per quart	2	6
BEET, Compact Topped or Pine Apple Short Top,	per oz.	0	6
„ Selected Dwarf Red (Nutting's)	„	0	9
CAULIFLOWER, Early Dwarf Erfurt	„	2	0
„ New Early Mammoth or Frogmore Forcing ..	„	3	6
CELERY, Imperial Dwarf Red (Hood's)	„	1	0
CHÆROPHYLLUM BULBOSUM	„	2	0
CUCUMBER, TELEGRAPH	per packet	1	6
LETTUCE, MOOR PARK	per oz.	2	0
PEA, GENERAL WYNDHAM	per quart	1	3

Exotic Nursery, Tooting, Surrey S.

BUSH VEGETABLE MARROW.—This valuable variety differs from the ordinary varieties of Vegetable Marrow in being but a sub-climber, and from its short-jointed character and abundant bearing its produce may be compared to a nest of fruits overlaying each other. The Custard Marrow is much inferior to the present one in habit of growth, prolific bearing, and rich flavour. Its fruit is of the same oblong form as the old Vegetable Marrow. Seed, 1s.
CITRON WATER MELON for Preserves (see Catalogue, p. 61). 1s.
HUBBARD and POLK SQUASH.—Two of the finest and largest grown, and estimated in America. 1s.
HENDERSON'S A 1 HOUSE CUCUMBER—Pronounced as the second best Black Spine out of 118 trials by the Royal Horticultural Society. 1s. and 2s. 6d.
HENDERSON'S A 1 RIDGE.—The best Ridge Cucumber grown. 1s. and 2s. 6d.
ICE CREAM and APPLE-PIE MELON GOURDS. 1s. each.
E. G. Henderson & Son, Wellington Nursery, St. John's Wood, London, N.W.

To the Seed Trade.

FREDERICK W. WENDEL, Seed Merchant, Erfurt, Prussia, begs to offer the following Seeds of carefully selected Stock of good growth:—
CARROT: Altringham, Long Red; Orange Red, Belgian; Early Horn; Earliest ditto, for Forcing.
ONION: Straw Colour, true; Silver Skinned; Pale Red, or Flesh Colour, excellent for general crops; Pear-shaped Yellow; Yellow; Giant Madeira; James's Keeping.
BEET: Darkest Blood Red.
Prices, &c., for the above, to be had on application to Geo. Macintosh, Seedsman, &c., High Road, Hammersmith, W., London; and where also GENERAL PRICE LISTS can be obtained free and post paid.

Agriculture.

W. DRUMMOND and SONS, Stirling, claim special attention to their ROOT SEEDS, which embrace several Improved Stocks of SWEDES and other TURNIPS, MANGEL WURZEL, &c.: also to remarkably fine samples of all the Varieties of CLOVERS, PERENNIAL and ITALIAN RYEGRASS and NATURAL GRASSES,—priced Catalogues of which, together with every description of seed required for the Farm, may be had, prepaid, on application.
Seeds forwarded Carriage Free to all parts of the Kingdom.
Seed Warehouse, Stirling, N.B.

To the Seed Trade.

H. and F. SHARPE can offer on very advantageous terms the under-mentioned sorts of SEEDS of 1861 growth and raised from selected stocks:—

Large York Cabbage	Sangster's No. 1 Peas
Long Red Surrey Carrot	Bellamy's Green Marrow Peas
James's new Intermediate do.	Early Long-pod Beans
Fine Red Pickling Cabbage	Mackie's Monarch do
Green Kohl Rabi	Mangel Wurzel in sorts
	Turnip in sorts

Seed Growing Establishment, Wisbech.

Farm Seeds.

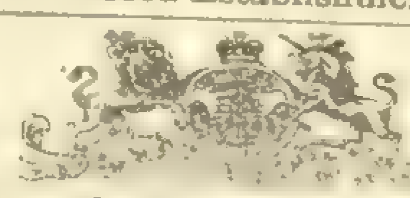
PAGE and TOOGOOD being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured, possess greater powers of germination, and are a desirable change for the northern and midland counties.
To publish the numerous testimonials P. & T. are favoured with is impossible, but the fact of their having had the honour for the last 8 or 10 years to supply the ROYAL FARMS at OSBORNE, will be a sufficient guarantee that their Seeds are of superior quality, and their prices are as low or lower than any respectable house in the Kingdom.
Present prices, Carriage free to all parts of England:—

Per lb.—	s.	d.	Per lb.—	s.	d.
Skirving's Swede ..	0	8	Yellow Tankard	0	9
Page's Improved Hardy	1	0	Fielder's Hardy Green Round	0	6
Fielder's Improved White	0	9	Early Six Weeks	0	6
Sutton's Champion ..	1	0	Kohl Rabi	3	6
Ashcroft	0	9	New Osborne Mangel.		
Greentop	0	8	Yellow Globe	0	6
Sussex or Jeffrey's ..	0	9	Page's Imp. Orange Globe*	0	8
Tankard	0	9	Red Globe	0	7
Red Round Turnip ..	0	8	Elvetham Long Red ..	0	8
Page's Impvd. Red Globe	0	9	Long Red	0	6
Scotch or Bullock ..	0	8	Long Yellow	0	8
Pomeranian White Globe	0	8	White Belgian Carrot ..	1	3
Early Green Globe ..	0	8	Cattle Cabbage	2	6
Early White Tankard ..	0	8	Cattle Parsnip	1	0
Page's Imp. Purple ditto.	1	0	Dwarf Essex Rape ..	0	4
Green ditto	0	8			

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.
Buckwheat, Mustard, Linseed, Tares, and Sainfoin. Fine Permanent Pasture and Lawn Grasses, as sown at the Royal farms, Osborne, for the last eight years, 1s. 3d. per lb.
Genuine Hampshire-grown Alsike Clover, Italian Rye-grass, Clover, &c., at lowest market prices. Special contracts for large quantities.
Royal South Hants Seed Establishment, Southampton.

Notice.

PURCHASERS of LARGE QUANTITIES of FARM or GARDEN SEEDS will be supplied liberally by Sutton & Sons.
For prices apply (stating quantity required) to Sutton & Sons, Royal Berkshire Seed Establishment, Reading.



Grand Exhibition of Unforced Hyacinths, Narcissus, and Tulips.

MESSRS. ARTHUR HENDERSON and CO.'S ANNUAL DISPLAY of the above "Galaxy of Flowers" will be held in the Lapageria House, beginning on March 26, and ending on April 10.
Pine Apple Place, Edgware Road, London, W.
Admittance Free.

ROYAL HORTICULTURAL SOCIETY.—The Council, with the view of promoting the improvement of Horticultural Implements, have appointed an IMPLEMENT COMMITTEE, consisting of Col. Challoner, Chairman, Mr. Edward Easton, Mr. John Fleming, Mr. Brandreth Gibbs, Sir Joseph Paxton, M.P., and Mr. James Veitch, Jun., who have decided upon holding Exhibitions of the following articles during the Society's Great Shows, on WEDNESDAYS, May 21, June 11, and July 2, viz.:—

Heating Apparatus, Improvements in Ventilation, &c.

Garden Machines, such as Mowing, Rolling, Transplanting, Fumigating, &c.

Improvements in Garden Tools and Cutlery, Garden Seats, &c.

Garden Ornaments in Wire Work, Trellises, Suspended Baskets, &c.

Garden Pottery, Conservatory Tubs, Garden Tallies and Labels, Tiles and Ornaments for Garden Edgings, &c.

Implements for Watering, &c. Protecting and Shading contrivances. Plant Guards and Supports. Decorations for Conservatories, Ornamental Flooring, &c.

Philosophical Instruments: Hygrometers, Thermometers, &c.

Bulky articles can only be shown in Model, and no Model may exceed 4 feet by 3 feet.

Applications for space must be sent in at least 10 days before the Show: and the articles themselves must be sent not later than the Friday before, and taken away on the Friday after the Show.

The Committee will examine the Articles exhibited before the opening of the Show, and Labels of Commendation will be placed on those articles which they consider deserving of it.

Schedules for space, &c., may be had by application to Mr. Eyles, the Garden Superintendent.

Andrew Murray, Assist. Sec.

The Gardeners' Chronicle.

SATURDAY, MARCH 15, 1862.

MEETINGS FOR THE ENSUING WEEK.

Wednesday, March 19	Royal Horticultural (Fruit and Floral Committees) at S. Kensington .. Noon
	Royal Horticultural (Exhibition of Early Spring Flowers at S. Kensington) 1 P.M.

There seems to be a prevalent notion that the accommodation of plants to new climates, or as it is called the Acclimatisation of Plants, is far more easy than is borne out by recorded facts or general experience. The limits within which such an accommodation as regards cultivation is practicable, for time must enter as an important element into the question, are extremely narrow, and confined mostly to mere annuals, which under the most unfavourable circumstances, except in the case of transportation to a country of excessive drought, are not exposed to such extreme changes as must necessarily prove fatal. In these the principle of natural selection may gradually produce a race more adapted to its new climate, and the skill of the cultivator, availing himself of this principle, will obtain in a few years varieties more suited to his peculiar ends, to produce which in a state of nature might have required centuries. It will for example scarcely be questioned that our hardy and tender varieties of Wheat proceed from one and the same stock, and that proper attention to the seedlings arising from any especial variety and a judicious choice amongst them may materially modify the produce. Wheat transported at once from a warm country to a cold one, or the contrary, will in general not prove favourable in the first instance to the cultivator. We have ourselves got the most meagre ears from Indian Wheat seed, where it is quite certain that English seed would have given a good result; and Labat, who wrote at the beginning of the last century, tells us that Wheat imported directly from France into the West Indian isles produced either wholly barren spikes or furnished with only two or three miserable seeds, while West Indian seed by its side yielded an enormous harvest.

It is very possible that in such a case as this a variety which at first could scarcely tolerate the change of circumstances might become productive. As a case in point the same author states that Peas introduced from France yielded but little the first year; that the produce increased the second year and was satisfactory the third year. We have ourselves tried the small variety of field Pea cultivated generally in India, whose seed is scarcely larger than that of the common Tare, and though the plants were healthy, the produce was so small the first year as to make it matter of surprise

that it could be worth cultivation at all. We have had however only a year's experience, and we shall look with interest to the result of this and one or two following seasons.

So far then we believe acclimatisation to be possible in the case of annual plants, especially where many varieties have been produced from species long and widely cultivated, whether by natural selection, by the skill of the cultivator, or by gradual use. In most cases, however, and in few more certainly than in our cereals, where there is no guiding hand the continuance of the stock in its new climate would be absolutely impossible; and much more would this be the case with perennial plants, which must be exposed to unwonted degrees of heat or cold which would at once prove fatal. We do not know that there is a single instance of a truly tropical plant establishing itself in a country exposed to severe frost. Nor do we think that any principle of selection within a limited time could so change the nature of such a plant as to give it sufficient powers of endurance. The Potato, as cultivated with us, is essentially an annual, but notwithstanding the numerous varieties which have been raised from seed, and the skill which has been exercised in the selection of every form possessed of valuable qualities, there is scarcely any tendency in a single variety to resist a very slight degree of frost. Where a plant, indeed, has a very wide geographical range, there may be some one variety more hardy than another, but the limits within which any great change of climate could be sustained are very narrow indeed, and except after a very long series of years no seedling of a really tropical species could ever adapt itself to northern latitudes of the temperate zone. Give time enough, and we know not what might be effected in the slow process of travelling from one zone to another, though in all probability under such circumstances the change would have been so great when it arrived at the end of its journey as to present the original plant under the form of another species.

If anything, however, is practicable in the way of acclimatisation amongst perennials, whether herbs, shrubs, or trees, it must be by gradual intermediate steps. Our Apples and other common fruits, when transported into countries which have no winter, cannot endure the excitement of constant growth in the absence of their usual winter inactivity. We would not, however, assert that by cultivation at short intervals in intermediate climates something might not be effected. To return to our authority whom we have before quoted, we learn that something like this has been effected in the cultivation of the Vine. Imported directly from France to the West Indies, it succeeded only with extreme difficulty, while the Muscat derived at once from Madeira and the Canaries thrives admirably. The principle seems to us of much importance, and at present to have received little attention.

As regards plants in a state of nature, it does not follow that the place in which they occur naturally is always that in which they succeed best. Experience has taught us that some of our common weeds when imported into new climates flourish to a degree perfectly surprising to those who have only witnessed their growth at home. Several of the native plants of Tristan d'Acunha were entirely driven out by some of our weeds, and the same process is taking place in Australia. A thousand causes influence the distribution of plants, and their complete success is the result of a victorious struggle between themselves and other individual species, whether of the animal or vegetable kingdom, as well as of the most perfect adaptation of climatic conditions to their perfect development and maximum of increase.

A consideration of the changes which have taken place in races of domestic animals restored to perfect freedom within the memory of man, will render us more alive to the results which may arise from the principle of natural selection, whether left to itself or judiciously improved in the vegetable world; and the more so when we consider that as animals are locomotive they have far more opportunity of adapting themselves to circumstances than plants, which are necessarily more limited in point of space, and can only move from place to place so far as the diffusion of their seeds or the extension of their roots and runners is possible. *M. J. B.*

LET us remind those who have not become experienced in the culture of PHLOXES, that now is the time to make preparation for the bloom of the next summer and autumn. Though these Phloxes are hardy perennials, and as such come within the means of all ranks of cultivators, yet the highest results of cultivation are not to be secured, by subjecting them to the negative treatment which is the common lot of hardy herbaceous plants. They must be specially cared for, if their full beauty is to be brought out; and this care they richly deserve, for there are few flowers which put on a gayer appearance in a garden than these do in their season, which extends through the months of July, August and September. Let it however be understood, that it is the vigorous varieties bred from Phlox decussata which are those specially worthy of this careful culture. Something may be done towards extending the blooming season by a careful selection of sorts, and something more by peculiarities of cultivation, the established one year old plants being rather earlier than young ones obtained from cuttings.

The first point to be observed in the treatment of these plants is that young plants obtained in the way to be indicated below, bear much finer flowers than old ones of the same kind, and are also dwarfer. Hence they may possibly be the best adapted for pot culture. Now, it is well known that the common mode of obtaining young plants of perennials such as Phloxes, is to take up and divide the old ones into small separate portions, each with a proportion of the old roots, and these divisions as they are called are then planted with more or less care. This is not however the plan to be recommended for obtaining young plants of choice Phloxes. A much more satisfactory one is to rear the young stock from cuttings, and the *modus operandi* is this:—"About the end of February or early in March the old plants to be propagated are to be removed to a close frame or greenhouse, where they may be excited to produce strong young shoots. These are as soon as possible to be taken off as cuttings, and rooted quickly in a hot bed, such as is used for propagating Dahlias, Verbenas, and other bedding plants. When rooted the cuttings are to be potted and repotted as required, so as to keep them gently progressing, and about May they are to be planted out in prepared beds of well enriched soil, having previously been gradually and thoroughly hardened to bear full exposure. It is necessary to excite the plants thus early in the season, to get the cuttings rooted and well established before the time comes for planting out, otherwise they will not flower, or will not flower satisfactorily. If this, however, is done, they will blossom vigorously about the beginning of September or late in August, the flowers will be large and bold in character, and the colours will be well brought out. Such plants are to be allowed to remain after flowering until the following spring, and then, having been transplanted into fresh rich soil, they will be at their best: that is to say, in their second season of flowering. After this they should be replaced by another generation of young cutting plants.

Those who are thinking of preparing pot plants for exhibition next autumn will do well to consult the practical hints given by Mr. HEALE in our columns last autumn (p. 866, 1861), where they will find many useful suggestions for their guidance. It seems probable that the one-year-old plants will be found on the whole the most suitable to start with for this object, on account chiefly of their being already furnished with several stems to form the bases of bushy well-furnished specimens. Nevertheless, as the young plants from spring cuttings are found to yield in the open beds the dwarfest plants as well as the finest flowers, the hint should not be lost upon the growers of pot specimens. It is not unlikely that after all, even for pots, these young cutting-plants would furnish the neatest and most effective flowering examples. We should certainly recommend trying the effect of such cutting-plants propagated at different periods of the spring, so as to ascertain experimentally the latest period at which, under the peculiar circumstances of pot culture, the cuttings could be planted so as to secure the development of a vigorous flower-panicle in the autumn.

Now that the growth and exhibition of pot specimens has been fairly set going, and that the ingenuity of cultivators will have been brought to bear on the question, a variety of plans will no doubt suggest themselves, and we may soon expect to see the most successful method of management determined. In the mean time there are two or three special points which it will be wise to keep constantly in view in any attempts to produce handsome well-furnished specimens of Phloxes in pots. (1) The dwarfer habited varieties are much more appropriate and effective than such as are of taller growth. A height of 2 feet should not be exceeded, and a maximum height of 1½ foot should be aimed at, to be obtained of course by judicious manipulation. (2) The terminal paniculate inflorescence must not be sacrificed ever to dwarfness, for the display of blossoms on the lateral twigs is mean-looking by comparison with them. (3) The plants must be very assiduously supplied with water all through their growth, without anything like excess; and they must as they come into flower be shaded from hot sunshine, and sheltered from rough winds and from rain, but this protection must be afforded them without involving anything like close confinement.

WE understand that the Council of the ROYAL HORTICULTURAL SOCIETY, with the view of promoting the improvement of gardening implements, has appointed an IMPLEMENT COMMITTEE, consisting of Col. CHALLONER, *Chairman;* Mr. EDWARD EASTON, Mr. JOHN FLEMING, Mr. BRANDRETH GIBBS, Sir JOSEPH PAXTON, and Mr. JAMES VEITCH, jun.; and that this committee has decided upon holding exhibitions of the following articles on the days of the Society's great shows, on Wednesday, May 21, Wednesday, June 11, and Wednesday, July 2, viz:—

Boilers, hot-water apparatus, improvements in ventilation, &c.; garden engines, hose, syringes, fittings, watering pots, fumigators, &c.; mowing machines, garden rollers, &c.; hand implements, garden cutlery, &c.; garden pottery, conservatory tubs, garden tallies and labels, tiles and ornaments for garden edgings; ornamental wire work, trellises, suspended baskets; netting or other covering for plants, fruit trees, and walls, plant guards and supports, hand and bell glasses; garden seats, tables, &c.

As the space in the Garden is very limited, bulky articles can only be exhibited in model, and no model may exceed 4 feet by 3 feet.

Applications for space, &c., must be made one week before the show. The articles to be exhibited must be sent in not later than the Monday before the show, and must be taken away on the Friday after. The committee will examine them before the show, and labels of commendation will be placed upon such as they think sufficiently meritorious.

Schedules may be had on application to Mr. EYLES, Garden Superintendent.

Indoor Gardening.

THERE is something extremely charming to the mind of a window gardener in being able to point to some special plant, and to declare she grew it. New beginners sometimes are, indeed, so tenacious that they quite look down upon buying even seedlings which are ready raised. Still this, by London people who have not got a hotbed or a heated seed-bed, or any sort of greenhouse, may fairly be looked upon quite as an advantage, in the case of tender annuals, or other seeds of this kind.

I confess, notwithstanding, that my sympathy is with the former class—it is so pleasant to have all the work oneself. Nor shall I soon forget a box I had one spring, in which it seemed to me that every seed came up, and which stored my windows afterwards with many delightful flowers.

The great thing of course is to sow such seeds as will bear pot culture, and to sow moreover what will do well in the place we live in. In London it seems to me that plants which grow up most quickly are those that answer best; and then we have to bethink us of the sweet smelling things and also of those that remain long in blossom.

In towns it is a blessing that people are not critical in regard of flowers, everything green and bright finds a most ready welcome, and hence the tangled balconies wreathed with dark Tropæolums, and festooned by branches of Cobœas and Sweet Peas, which look so fresh and gay. The seed sowing has two classes. There are the hardy annuals, which ought to be sown directly; Sweet Peas, Mignonette, Minor Convolvulus, White Alyssum, Tropæolums, Asters, Nemophila, Indian Pinks, Larkspurs, and Stocks, all of which require pots of soil, not quite brim full—the seeds to be scattered thinly, and to be covered about their own depth with some soil or cocoa stuff. Kept moist, but not watered overhead, these things come on well in a light and airy place. A frame on the leads, if there is no other spot for one, or a box in a window, will bring them on very well, the great thing to rejoice in being a short and stumpy stature, to attain which advantage we must thin or prick off carefully.

The more tender annuals are however the interest of this season. The exquisite Ipomœas, with their bells of white and blue and rose and purple, which grow so quickly and blossom so profusely as to render themselves amongst the most general favourites, ought now

to be sown indoors. Last year I had quantities of these pretty flowers trained over wire stands and up beside some windows, and though they do best in a sunny aspect they still require to have a great deal of shade and water. The pleasantest plan of any is to have a wire frame or trellis filled up low down with shorter bushier plants, which screen, but do not very often mix with, the climbing things behind.

The Ipomœas do best, if in 5 inch pots, when they are sown about five or six all round; but for the earliest flowers I have always found that a single seed sown in a three-inch flower-pot and left undisturbed will be sure to give a bright little wreath of blossoms. Burridge, rose-coloured; Bona Nox, white; and rubra cærulea, a purplish blue, are very pretty kinds. It is best, I think, in sowing to leave a hole in the middle of the pot, or to scoop out a little ditch round the edge, in which to pour the water. It never does with seedlings and amateurs to set the seed pots floating. The object is simply not to wet, but to keep the soil from actually drying up.

Digging the surface is also a great thing. Fault of a better spade a steel pen answers well for this purpose; and surface roots with seedlings ought to be much encouraged by little earthings-up when we see tiny white points appearing.

Balsams again are most amusing things to grow, because they contrive to get over the ground so fast. A good plan is that of sowing first in small 60-pots, letting them make their way up through successive changes, watering well, and giving them a warm and light and very well sheltered place. I say well sheltered, because no one knows how easily the stems of Balsams snap. This reminds me of flower sticks. Ladies are frightfully apt to bury just one inch of the stick in soil, and then to wonder that the support is shaky. Where a pot is being prepared for even a seed which is destined to grow up in it, the future flower stick should be fixed in with the soil going down absolutely to the very hole, and being surrounded by the drainage. A shaky stick is always hurting not only the stems but roots, not to speak of its unpleasant quality of making the whole untidy.

Celosias are very pretty plants to grow in pots, and so are some of the Amaranths, treated like Balsams, only with less water. Canary-flower ought always to be sown in the pots in which it may remain, and a large drainage hole in these cases is a great advantage. Transplanting or pricking out climbing plants is always injurious, as it checks their growth. Then, there is the charming Phlox Drummondi, and Mimulus, Indian Pinks, Primulas, Lobelias, Petunias; even most part of the hardy annuals, which are none the worse for a little heat. The only thing is to mind they do not get drawn up too tall, for it is not always gratifying to be assured "our plants have been growing beautifully—they are—oh *so* long!"

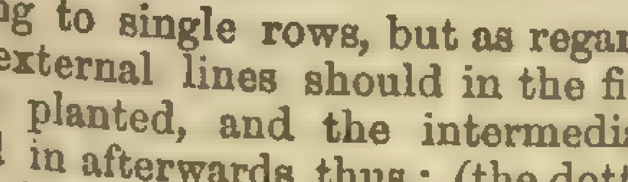
A very great point, indeed, is to guard against heavy showers and against twisting winds. A little air might benefit the young plants; but if they are sown in boxes or plant-cases, closing up the front when the sun is shining provides an instant vapour bath and an immediate shade from what would be too hot.

A thin sheet of Moss laid over each pot is said to be very useful in keeping the soil from drying, and so it no doubt is. Still there is the awkwardness of separating it if the plants must be pricked out, and one is apt to fidget about small things getting choked. Unless therefore they are seeds sown to stand, I hardly advocate the use of the Moss by window gardeners, except to cover the drainage. Sweet Peas and climbers root down into it wonderfully. I even mean to experimentalise on no drainage, but a quantity of Moss.

In growing seeds in plant cases I think it is best to have no hot water at night. It saves a vast deal of "drawing up," and if the top of the case is open then so all the better. I always am glad to give a quite cool place as soon as may be to seedlings. Many too, as German Asters for instance, require to be where they can have light on all sides to keep up the pyramidal form, and this is hard to give where we have a window. *E. A. M.*

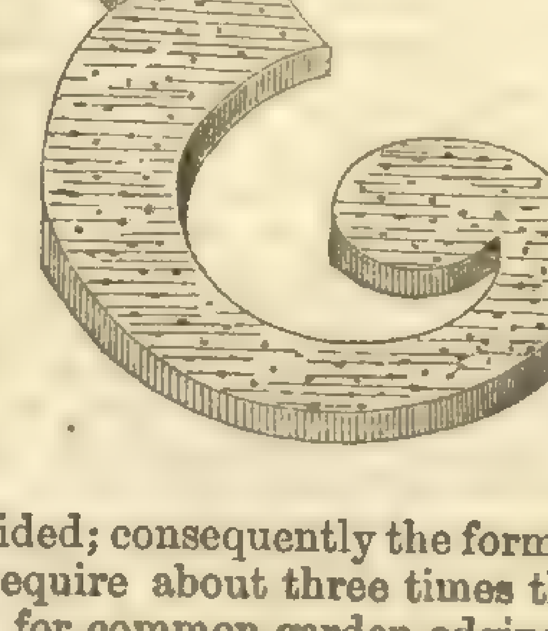
NOTES ON THE FORMATION OF BOX EMBROIDERY.

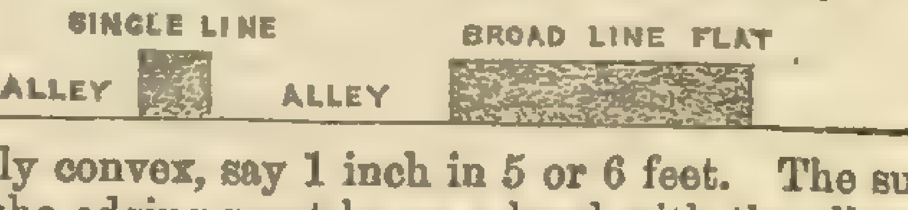
After the ground on which the design is to be embroidered has been perfectly levelled and well rolled, a principal centre line should be fixed and the leading lines accurately laid down. Having secured these by wooden pegs, some 6 inches apart, proceed to fill in the details, and when the outlines of the figures have been carefully constructed and drawn out, a sharp edge must be cut perpendicularly, against which to apply the Box as at *x*, thus.



Lines of Box vary considerably in thickness, mostly graduating to single rows, but as regards all portions their external lines should in the first instance be planted, and the intermediate spaces filled in afterwards thus; (the dotted lines show the planting lines.) When the whole is planted it should be clipped of an equal height, and flat at the top, no matter what thickness. Plants requisite for these purposes should be of vigorous and superior description. A full grown single line should not exceed 3 inches thick; in fact should be about 3 inches square. But as it would not be advisable to adopt this at first, much time will be saved in acquiring these dimensions by using plants as described above, say 2 inches high in foliage, and 1 inch thick at the collar of the stems. Hence the usual mode of sub-dividing Box as for edgings in kitchen gardens should be particularly avoided; consequently the formation of embroidery will require about three times the quantity of Box necessary for common garden edgings. With reference to the surfaces of flower beds, they should in effect be flat, but in reality may be very slightly convex, say 1 inch in 5 or 6 feet. The surface next the edging must be on a level with the alleys. In forming the latter a layer of finely sifted coal ash should be placed between the rough and fine gravels.

Perspective of a Scroll.—Top flat and sides perpendicular.





REPORT ON ANNUALS GROWN AT CHISWICK IN 1861.

(*From the Proceedings of the Royal Horticultural Society*).

The following brief descriptive notices will explain the characteristics and the merits of the Annual flowers grown for trial last summer at Chiswick, so far as these were developed in that locality, and in such a season as that of 1861.

Acroclinium atroroseum (E. G. Henderson & Son).—This variety did not prove to be either so large in the flower-heads or so rich in colour as the older form, A. roseum, from Mr. Wrench and Mr. Veitch. The latter is one of the most desirable annuals in cultivation, its gay rose pink everlasting flower-heads being produced for a long period in succession.

Antirrhinum majus.—Of this well known plant there were received, under the names of Papilionacea, Agathea, Delila, Brillant, and Firefly, from Messrs. Benary, Henderson, and Veitch, a series of light tubed forms having the lips rosy purple or crimson of various shades—very gay and showy Snapdragons, for the decoration of flower borders, but not having any peculiar merits or characteristics.

Arctotis breviscapa (Haage).—This formed dwarf hassocky tufts, furnished with long ragged pinnatifid leaves, and large orange-coloured Gazania-like flower-heads; the disk was black, and the base of the ray florets, which were orange above, was yellow. The plant was pretty as a single object, but did not appear likely to be effective in masses.

Calandrinia Burridgii.—A dwarf trailing plant, apparently a sort of C. speciosa, but very much inferior to it, the flowers being of a dull pale brick-dusty rose colour.

Calliopsis bicolor muscosa.—Syn.: *Calliopsis elegans muscosa* (Haage); *Calliopsis bicolor "Mousseaux"* (Carter & Co).—A very small proportion of this proved true; but when in its proper character, the branches were studded over thickly with little leafy points, giving them a shaggy or "mossy" character. This was however no improvement, but a mere curiosity of growth.

Calliopsis cardaminæfolia (Van Houtte).—Like the well-known C. bicolor (tinctoria) this proved to be a very ornamental plant, and distinct in character from its broad leaf-segments, and yellower capitulæ. Its root-leaves proved to be distinct from those of the stem, and enduring, not perishing like those of C. bicolor; they were bipinnate, with pinnatifid leaflets, the ultimate divisions being lanceolate. The stems grew 2 feet high, and bore a profusion of large flower heads, with orange-yellow florets, dark crimson at the base, similar to those of C. bicolor, to which it is about equal in merit.

Calliopsis cardaminæfolia hybrida (Thompson, Haage, Turner).—This was sent by Mr. Thompson as a variety of C. Atkinsoniana, and proved more like C. bicolor than the preceding. It grew 2 feet high, of erect habit, and compactly branched, the flower heads, probably owing to dry weather, rather small; they were yellow, more or less heavily stained at the base with dark crimson. The plants from Mr. Haage's seed, were still more remarkable for their dense compact close-branched erect habit, the individual plants forming little upright formal-looking bushes 1½ feet high, and from 1 foot to 1½ through, clothed with the flowers.

Calliopsis coronata.—A fine annual, not new, but deserving of more extended cultivation. The plants grew about 2 feet high, and bore broad ovate blunt-stalked leaves, which sometimes had and sometimes wanted one or two small basal leaflets. The flower heads were large, thrown well up above the leaves, their florets broad, toothed at the end, orange-yellow, marked near the base with small dark spots forming a ring around the disk. This is one of the better class of annuals, and along with C. Drummondii, C. bicolor, and Cosmidium Burridgii, all having a certain amount of similarity, may be generally recommended.

Calliopsis longipes (Carter & Co.)—A handsome late flowering sort, with something the habit and character of C. coronata. The stems grew 1½ feet high; the leaves were pinnate with few distinct lanceolate leaflets; and the flower heads were large clear orange yellow, elevated on long stalks.

Callirrhöe digitata (Carter & Co.).—Syn: *Callirrhoe pedata nana* (Carter & Co.).—This grew 3 feet high; the stout glaucous stems furnished with twiggy branches and long-stalked flowers. The leaves were tufted or pedately-parted, the upper ones simple. The mallow-like flowers were of a deep purple rose, with a white base The flowers were very rich in colour, and beautiful in themselves, but the plants were too tall and openly branched to be effective. It is only suitable for mixed and shrubbery borders.

Callistephus chinensis.—A large number of varieties of China Aster was sent for trial, by Messrs. Carter & Co., E. G. Henderson & Son, and Haage. Of these but few proved to be thoroughly true, and as a whole the collection was thought inferior to some of the better selected "strains" of Aster, both quilled and tasselled, which are known amongst cultivators. The best of those brought together on this occasion were those called Giant Emperor, sent from Messrs. Henderson & Son, which were dwarf habited, with very fine flower-heads formed of flat imbricated florets; some of the heads measured 4 inches across. The Cocardeau or Crown Asters, when perfect were very beautiful; they were tall growing loosely branched plants, with large heads formed of broad flat spreading florets, the central ones white surrounded by others of red or purple in different shades; the dark blue and deep rose-carmine with white centres were particularly handsome. The Dwarf Chrysanthemum-flowered was another very charming race of dwarf habit, 6 inches high, and throwing up several branches from the base, each terminating in a large imbricated flower-head. The Large-flowered Bouquet was a fine race of dwarf varieties, with large flower-heads seated so as to form a close mass enveloping the herbage. Those called Pyramidal German Asters grew about a foot high, erect and completely branched, and bore small flower-heads. The Imbricated Pompon was also a race of dwarf varieties with numerous irregular branches, and small compact well-filled flower-heads formed of shortish closely-packed florets. The Hedgehog proved to be a race of loosely quilled varieties, while the Globe and Globe Perfection were those with compact and symmetrical quilled centres. The colours in each of these groups were numerous and varied.

Campanula strigosa (Thompson).—A good free flowering and distinct border annual, without being very brilliant. It grew about 9 inches high, with dense dichotomously-branched stems, clothed with ovate hairy leaves, and bearing in the axils of the forks of the stem the good-sized recurved violet-purple flowers. The lobes of the calyx were acuminate, and their sinuses produced at the base into five blunt spurs or horns.

Celosia argentea.—Syn: *Celosia rosea* (E. G. Henderson & Son); *Celosia spicata rosea* (Parker& Williams).—An ornamental tender annual, growing 2 to 3 feet high, erect in habit, branching towards the top, and furnished with narrow lanceolate leaves, the larger of which were 6 or 7 inches long. The flowers come in long cylindrical terminal spikes, 6 to 9 inches long. thickly clothed with imbricating lanceolate bracts, which are at first rose-coloured, and gradually change below to a silvery white. Some plants raised from seeds, presented to the Society by Sir Gordon Cumming, proved to be quite like this except in having the leaves ovate.

Celosia coccinea.—Syn: *Celosia crimson feathered* (Parker & Williams); *Scarlet Cockscomb* (Veitch).—There was no appreciable difference in the plants produced from these two sources, both yielding plants varying somewhat in the colour of the leaves and flowers, but forming tall pyramidal branching bushes 4 to 5 feet high, furnished with broadly lanceolate or ovate-lanceolate leaves, which were sometimes red, sometimes green, and repand or wavy at the edge. The inflorescence, terminal on the branches and branchlets, was various, —spicate, paniculately spicate, or more or less dilated and cock's-combed, and the colour varied from a deep magenta to a deep crimson. Some of the plants, in which the inflorescence was most decidedly paniculate-spiked, gave promise of becoming the parents of a race of pyramidal red-flowered feathery sorts equal to the yellow variety now again finding its way into cultivation. Those having this peculiarity were much superior to the cock's-combed forms, though they were all very desirable as conservatory plants for the autumnal months.

Celosia coccinea pyramidalis (Wrench).—This was dwarfer and less symmetrically branched than the foregoing, and had broader leaves, and more irregular purple-rose or magenta flower-heads, which were either spicate, or paniculately-spicate, or cock's-combed, but with a greater tendency to become spicate than otherwise.

Chrysanthemum acaule (Van Houtte).—A bright-coloured plant, but rather weedy-looking, reminding one, in the flower-heads, of our native C. segetum, though the habit was very different. The plants formed close compactly spreading tufts, freely branched, but with a tendency to become bare in the centre. They grew about 6 inches high, the lower leaves oblong-cuneate, 2 or 3 inches long, and notched with a few coarse lobe-like teeth, the upper ones smaller and less toothed. The flower-heads, which were freely and continuously produced, had a ray of short flat yellow florets, spreading in a circle rather over an inch across, the disk or centre being also yellow. Its dwarfness and bright colour may render it useful as a front-row plant in annual borders.

Chrysanthemum carinatum Burridgeanum.—Chrysanthemum carinatum venustum.—These, as reported last year, proved to be very sportive, but when true, very beautiful. They were again tried this season, and with the same result.

Clarkia pulchella Tom Thumb (Carter & Co.).—The plants so named were not dwarf and compact like those originally exhibited, but were undistinguishable from the common form of the species.

Clintonia pulchella azurea grandiflora (Haage).—Clintonia pulchella atropurpurea (Haage).—Under ordinary out-door culture, the first of these did not present any appreciable difference from the common form of the species, which is one of the prettiest of dwarf annuals yet introduced to our gardens. The second was a very desirable and novel variety, quite distinct in colour, the usual light blue of the corolla being in this replaced by a deep reddish-violet. It was adjudged to be a meritorious plant of its class.

Collinsia marginata lutea (E. G. Henderson & Son).—This was not different from C. bicolor.

Convolvulus tricolor albo-plena.—Syn: *Convolvulus alba flore-pleno* (Turner).—A white variety of Convolvulus minor, with a few small petaloid developments in the throat of the corolla tube. Of no merit as a decorative plant.

Convolvulus tricolor monstrosus (Carter & Co.)—A large-flowered dark blue variety, very rich in colour.

Cosmidium filifolium Burridgii.—Syn: *Coreopsis Burridgii* (Carter & Co.) *Coreopsis Burridgii atropurpuream* (Carter & Co). *Cosmidium Burridgeanum* (Van Houtte).—A very handsome annual, very slightly differing in the two forms indicated by the names above quoted, under which the seeds were received. The plants grew about 2 feet high, with loosely branching stems, these being furnished with distantly pinnatifid leaves, having filiform leaflets. The flower-heads were large and elevated on long stalks above the foliage; the florets were deep orange, stained more than half-way up from the base with rich brownish-red. The plant is quite distinct from the old annual Coreopsis, now Calliopsis bicolor, and is equally desirable for the flower borders.

Cynoglossum Haynii (Van Houtte).—A tall erect much-branched plant, with hairy lance-shaped leaves, and erect spikes of small insignificant violet-blue boraginaceous flowers. Worthless as an ornamental plant.

Delphinium Ajacis var.—Syn: *Mauve-coloured Larkspur* (Carter & Co).—A good light purple double-flowered Rocket Larkspur.

Delphinium Consolidum tricolor (Carter & Co.).—A handsome double striped-flowered branching Larkspur, of various colours, the prevalent form being a pale rose, variously striped with blue and white.

Dimorphotheca Pongei flore-pleno.—Syn: *Calendula Pongei flore-pleno* (E. G. Henderson & Son; Turner.)—This, when in the simple state, very much resembled the old Cape Marigold. It formed a branching mass about a foot high, the stems furnished below with spathulate-oblong leaves four inches long, and coarsely inciso-dentate, and above with smaller ones, having four or five coarse lobe-like teeth. The flower-heads consisted of a ray of florets, white in front, brownish-purple behind, with a central mass of smaller florets occupying the disc; many of which latter showed a portion of their dark-coloured surface, and thus gave the flower-heads a dingy appearance. In some of the plants, the capitulæ

were what is called "single," and these were the more effective of the two forms.

Eschscholtzia tenuifolia (Wrench).—In the present warm dry season this little annual flowered freely, and formed a neat dwarf plant suitable for marginal lines in flower borders. The colour of the flowers was sulphur yellow

Gilia achilleæfolia alba nova (Carter & Co.)—A variety with white flowers; not effective.

Godetia Schaminii (Van Houtte).—Apparently distinct, of dwarf habit, the flowers rose-coloured with crimson spots, but very inferior to many others already in cultivation, and having no quality to recommend it.

Helichrysum apiculatum. — Syn.: *Helichrysum strictum* Haage.)—A neat little plant, somewhat resembling Morna. It grew about a foot high, erectly branched, with linear-oblong acute leaves, which, as well as the stems, were cottony. The flower-heads were small, bright yellow, and grew in compact corymbose masses.

Helichrysum bracteactum incurvum.—Under the names of H. macranthum compositum-coccineum, fuscum, atroroseum' ferrugineum, violaceum, and stramineum, both Messrs. E. G. Henderson & Son and Mr. Haage communicated a fine series of the new large incurved Everlastings. These promise to become exceedingly ornamental, and already afford a considerable variety of colour; but though sent in distinct colours, as above indicated, the varieties do not appear to have yet become fixed. This form of Everlasting is one which may be especially recommended. It not only forms a good out door late season annual, but is a capital pot plant. Some plants preserved from last year's stock by means of cuttings produced proliferous or hen and-chicken heads.

Helichrysum bracteatum minimum.— Syn: *Helichrysum miniature white* (E. G. Henderson & Son).—This belonged to a small-flowered race of varieties, evidently sported from the same source as the H. macranthum compositum, or large incurved flowered sorts. It formed a curious rather than a desirable variation, the individual flower-heads being about the size of those of Ammobium alatum. The plants were dwarfed and bushy in habit, and bore a profusion of these small capitulæ, some being white and some yellow.

Hunnemannia fumariæfolia (Carter & Co.)—A very good late-flowering Poppy-like plant, when treated as an annual. It was of erect branching habit, a foot and a half high, furnished with glaucous tripinnatifid leaves, with long linear segments. The flowers were of a bright yellow, about as large as those of Eschscholtzia, but not so freely produced.

Iberis umbellata atropurpurea. — Syn.: *Extra dark Candytuft* (Carter & Co.)—A very fine and really beautiful deep rich warm rosy-purple selected form of Candytuft, showing but little variation in respect to colour. A fine variety for beds and ribbons.

Impatiens Balsamina (Carter & Co).—This donation consisted of a collection of 12 varieties, which were of varied colours, and generally good in character, but were not specially cultivated.

Linaria bipartita splendida (Carter & Co.).—A fine selected form of L. bipartita, with the flowers of a very rich purple, but not quite uniform in respect to colour.

Linum grandiflorum.—Syn: *Linum grandiflorum rubrum* Wrench); *Linum grandiflorum purpureum* (Carter & Co.); *Linum grandiflorum verum* (Of some).—One of the finest of annuals, and now getting pretty well known. Its branching stems grew a foot and a half high, and bore in profusion the large rich crimson flowers in succession for a considerable period.

Linum luteum corymbiflorum (Carter & Co).—A late-flowering plant, curious, but not showy. The stems were 2 to 3 feet high, thickly leafy, the leaves lanceolate; the flowers in a corymbose head, each about an inch in diameter, opening of a pale buff-yellow and changing to straw colour.

Lobelia Erinus marmorata.—The variety called marmorata certainly belongs to L. Erinus, and is nearly related to L. Erinus speciosa It proved to be of vigorous habit, sportive as to its flowers, the best forms having a large broad lower lip, of a fine blue, with a large white central blotch. In some plants the whole flower was, however, of a greyish-white. This may be useful for its distinctness, and those forms in which white and blue are well contrasted are certainly pretty; but it is far less effective than the best old kinds, such as speciosa, above referred to.

Lobelia ramosoides.—The plant grown under this name proved to be nothing more than the common L. bicolor, the gracilis of most gardens.

Matthiola annua.—A large number of varieties of Annual Stock was presented by Messrs. Benary, Haage, Carter, and Turner. The collection contained some very fine sorts, which, however, not having any special names serving for their identification, it would generally be useless to specify. A few of the most noticeable were fine Early White, Rose, Crimson, and Isabella coloured varieties, from Mr. Benary; Yellow and White Wallflower-leaved, White, Rose, Carmine, and Light Blue, from Mr. Haage; and Crimson Dwarf Bouquet and Rose Dwarf Bouquet, from Mr. Turner.

Nemesia versicolor compacta (Carter & Co.) — Syn: *Nemesia compacta rosea* (Haage; E. G. Henderson & Son).—This variety was remarkably dwarf and compact in habit. It formed a pretty tufted annual, with a profusion of its white and rosy lilac flowers, which, though scarcely showy, were remarkably elegant. It is a good annual for mixed borders.

Nemophila atomaria oculata (Thompson).—This new form of Nemophila did not thrive in either of the situations in which it was planted, and only a moiety of the plants were true. When in character, its flowers are of the greyish blue seen in N. atomaria cœlestis, with a black ring around the centre formed by a large black spot at the base of each petal; and in this state it is a very elegant dwarf annual, with the flowers, however, smaller than in N. insignis and maculata.

Obeliscaria aurantiaca (Thompson).—A neat and rather desirable late-flowering plant for the borders. It grew 2 feet high, and the flower heads, which were supported above the herbage on stalks a foot long, were remarkable for the thick oblong dark-coloured disk upwards of an inch long, with the florets hanging as it were in a single row around its base. These drooping florets were concave, or boat-shaped, yellow with a dark chocolate-brown base, and when flattened out were nearly orbicular. The leaves were elegantly bipinnatifid with narrow segments.

Œnothera bistorta Veitchiana (Carter & Co.).—This showy and bright-looking annual manifested similar qualities to those reported on in the damp season of 1860; the flowers were bright-coloured and abundant, but the plant was rather straggling in habit. It is a pretty border flower, and suited for situations where symmetry of growth is not required.

Œnothera Lamarckiana.—Syn: *Œ. grandiflora Lamarckiana* Carter & Co.); *Œ. grandiflora, of Lamarck, not of Aiton.*—This proved to be a very showy large-growing border plant, and one of the best certainly of the large-growing Evening Primroses. It grew about 3 feet high, and had long spathulate-lanceolate finely downy root leaves, which were wavy on the margins and somewhat toothed; the stem leaves were sessile, broadly lanceolate, or ovate-lanceolate. The flowers were large and numerous, those which were undeveloped at the end of the stem, forming a kind of corymb, which ultimately lengthens into a raceme; the petals, which were of a bright clear palish yellow, were broad, obcordate, and over-lapping. In the bud state the long pointed calyx, which was tinged with tawny red, had its lobes separated at the tips.

"Œnothera Jamesii" (Thompson).—Under this name, which is that used by the German seedsmen, was received a plant very different from the species so called by botanists. This was a tall plant, 4 to 5 feet high, with root leaves similar to those of Œ. Lamarckiana, but those of the stem much more numerous, and of a narrowish lanceolate form. The flowers were produced only at the tips of the stems, and with their buds formed a kind of corymb there; they were also quite late, the plants being only very partially in bloom by the beginning of October. Though large and of a good yellow, they were not at all attractive, the obcordate petals not being broad enough to meet at their edges. The calyx-tube, as in Œ. Lamarckiana, was very much elongated. Both this and the preceding are closely allied to Œ. biennis, and perhaps mere forms of it.

Perilla ocymoides (Carter & Co.).—A useless plant so far as regards ornamental gardening. It grew about 3 feet high, erect, and erectly branched, the stems clothed with coarse green ovate Salvia-like foliage.

Phlox Drummondii Magenta (Carter & Co.).—One of the bright rose-coloured varieties, selected from this sportive species, the flowers in this case not being striped as in Radowitskii, but having the eye darker coloured. It was a rich coloured highly decorative plant.

Phlox Drummondii Radowitskii (Carter & Co.).—Syn: *Phlox Drummondii striata nana* (Haage).—A very pleasing and desirable variety of annual Phlox, having bright rose-coloured flowers with a streaked or radiating white eye. It is reproduced from seed with tolerable constancy, the variation in colour and marking of the flowers in the different plants being very slight. This may be strongly recommended for any of the purposes to which Phlox Drummondii is applicable.

Salpiglossis coccinea (Wrench).—The season proved favourable to this plant, which bloomed finely, affording a considerable variety of reddish tinted flowers for a long period. This and the allied forms of Salpiglossis are not seen so much in cultivation as they deserve to be.

Senecio elegans cupreata plena (Haage). — Senecio elegans nana cœrulea (Thompson); Syn: *Senecio elegans nana cœrulea plena* (Haage).—Dull coloured and very inferior varieties of the annual Jacobæa; the first having dull reddish, the second dull lilac flower heads.

Tropæolum majus, Tom Thumb Scarlet (Carter & Co.)—Tropæolum majus, Tom Thumb yellow (Carter & Co.)—These proved to be true and very desirable annuals of dwarf compact, free-flowering habit, suitable either for beds or for ribbons, or for patches in the borders; and being also equally well suited for pot-culture as window plants, or for the greenhouse. Various other Tropæolums were sown, but they were not constant like the foregoing. Solférino and Magenta from M. Vilmorin, the former a yellow with deep crimson spots, and the latter a bright scarlet, both runners, were among the best. Brilliant also yielded one or two fine scarlets, but of coarse habit.

Viola tricolor maxima nigra (Van Houtte).—An annual form of Pansy, with small dark maroon-purple flowers, totally eclipsed by the varieties of this flower in common cultivation in this country.

Zinnia aurea.—Syn: *Zinnia nova* (Thompson); *Sanvitalia sp. Mexico* (Haage).—Though but a few plants of this were reared, it promised to become a pretty, and was certainly a distinct, annual for border cultivation. The plants formed a spreading branching tuft about a foot high; the opposite hairy leaves were sessile, ovate-lanceolate, or ovate, with the points lengthened out. The flower-heads were terminal on the branches, the ray spreading out so as to measure about an inch and a half across, and formed of a single row of short broad crowded obovate florets of a rich orange yellow, the dark orange-coloured disk being moderately prominent. It did not come into flower till late in the season.

Zinnia elegans flore-pleno (Carter & Co.)—The plants of this desirable novelty, grown at Chiswick, proved to have for the most part rosy-violet coloured flower-heads, comparatively few of which were double, the bulk of the plants yielding only semi-double heads. When in its best state it was in every way deserving of recommendation.

Home Correspondence.

Mushrooms.—I am of opinion that amateurs, notwithstanding the good advice which from time to time appears in your columns, often lose their crops from over-watering. The state of the materials forming the bed should be their guide. When beds are made in October, November, and December, water is seldom required. I have a bed still in good bearing which was spawned on the 14th of last October, and which did not receive any water till December 21. Other beds, spawned December 5 and January 20, have never received any watering, although they are both bearing heavy crops of fine Mushrooms. With the aid of hot-water pipes I always secure a congenial moisture in the house, being guided in that respect by the condition of the external atmosphere. By this treatment I find that my crops are heavier and the flavour better than if more water was given; the beds also bear a much longer time. *J. R. T., Crowhurst Park, Sussex.*

Good Seeds badly treated.—An illustration that occurred to me of your remark that gardeners are more frequently to blame than seedsmen for the unproductiveness of seeds may amuse the Rector of Rushton, and will not appear incredible to you. A few weeks ago I procured a packet of six Cucumber seeds from Mr. Turner, which my man sowed in a pot, and, as I afterwards found, watered well and placed on the kitchen mantelpiece with a hand-glass over them while the bed was preparing for them. There was much warmth and little light; and so no one but my man could wonder that on my seeing the apparatus and lifting up the glass I found one seed had germinated, with a transparent stem some 3 inches long, and the cotyledons, not yet separated, crowning it. The other seeds had already perished. Yet the appearance of my garden generally does not indicate that it is tended by one of so much ignorance. *George Jeans, Alford.*

Apricots in Orchard Houses.—Failures in the crop of Apricots under glass often take place from two causes. The first and most general is from the confined air which glues the pollen to the anthers, and prevents its proper action. Those who have travelled in the South of France in March, when the Almond and Apricot trees are in full bloom, and have felt that bitter north wind, the "bise," sharp enough apparently to cut the blossoms to pieces, but which, judging from the enormous crops the trees bear, does not injure them in the least, may learn a lesson as to the treatment of Apricots in Orchard houses. A cold dry wind (if not a wind frost) may be suffered to blow through a house during the day where Apricots are in bloom with much benefit to the setting of the fruit. It is humid stagnant air which is so fatal to the crop, for after blooming apparently in great perfection in such an atmosphere, every blossom will often drop without setting a fruit. Another cause of want of success in Apricot culture under glass, is suffering the young shoots made in summer to grow their full length without being pinched, so that the few blossom buds formed are at the tips of the shoots. In the winter pruning these are shortened, to make the trees compact in shape, and thus the blossom buds are cut off. Every shoot should have its point pinched off as soon as it has made seven or eight leaves, and this all through the growing season; the trees treated thus become fruitful in the extreme, being full of short spurs covered with blossom buds. *T. R.*

Lindsæa Lowii.—In his "Notes on Ferns" in your last week's Paper your correspondent "C. W. C." has inadvertently stated that I have "identified" the Lindsæa Lowii of the gardens with the Fern to which I have, in my herbarium, given the MS. name Arthrobotrya articulata. As this may lead to the plant in question acquiring a name which is very probably erroneous, I must ask you to allow me to state that I merely surmised that the plant in the garden here might possibly be the young imperfectly developed state of the Fern alluded to, and in this I was supported by the opinion of an eminent botanical traveller; but the plant was then, and still is, too young to permit of identification. I may also add that the name Arthrobotrya is untenable from its too close resemblance to Arthrobotrys of Corda, a genus of Fungi. *J. Smith, Kew.*

Coniferous Queries.—How does Pinus Cephalonica comport itself when cut down? I have lately received the cone and seeds of Picea Reginæ Amaliæ, of which Dr. Seemann's account appeared in your pages some months ago, and among the seeds I have found a leaf or two. Judging from these materials I am unable to discover any specific difference between the so-called P. Reginæ Amaliæ and P. Cephalonica. The only peculiarity in habit noted by Dr. Seemann in his account is its readiness to throw out young shoots from its stump or amputated branches. Is this a peculiarity confined to P. Reginæ Amaliæ? It strikes me as not improbable that it may also belong to P. Cephalonica—at any rate the bushy growth and numerous replacements of leaders which are often to be seen in this tree as it grows in our northern climate seem to indicate a tendency that way, and perhaps some of your readers may be able to throw light upon it. What is the height, &c. of the largest P. Cephalonica in this country? Can any of your readers point to a taller one than 16 feet? What is the height of the tallest Pinsapo? What the height of the tallest Pinus Lambertiana in Britain? Mr. Wells, at Redleaf, has one (inarched on a Weymouth) which is now 35 feet high. The Earl of Shannon has a younger one at Castle Martyr, near Cork, of the same height; it was planted subsequently to 1845, while that at the Royal Horticultural Society's Garden at Chiswick, which is a product of the first importation of seed (received in 1826 or shortly after) is only 28 feet 5 inches high, although it must be nearly 20 years older. I know of none higher. Perhaps some of your correspondents may be able to point out one. *Excelsior.*

Hotbeds.—Almost every body who has a garden will now be thinking about putting up a hotbed in which to raise seeds, strike cuttings, and do lots of other things, but the nice point to ascertain is the kind of atmosphere the frame should have. The plan which I adopted years ago, and which I have never known to fail, is to put my garden lamp inside and shut down the sash; if the lamp burns the frame is right, if the light goes out the atmosphere is not sweet, and will kill everything put into it. This hint I hope may now be useful to many. *J. Rust, Fulham.*

Parasites.—Were I called upon to name the kind of plants for which I have more partiality than any other, I should at once give the preference to parasites. We often pride ourselves, and with good reason perhaps, upon the progress which horticulture has made of late years, but among the parasitic plants we have an almost untried field of action; here we have room for originality. The Royal Horticultural Society manage every year to introduce some novelties into their exhibitions, and I look forward to the day when their schedules will offer prizes for half a dozen or a dozen parasites in bloom. The epiphytes are successfully managed, the turn of the parasites will surely follow. There are men still living who, in their youth, looked upon Dr. Lindley and others who started the idea of growing Orchids as mere visionaries, as men of theories whose ideas could never be practically carried out. We can afford to laugh at such a notion now. The time will come when we shall flock in thousands to Kew to see the Rafflesia Arnoldi expand its blossoms, which are 4 feet in diameter. If it can be done it will be a greater attraction than the first flowering of the Victoria regia. And really there seems to be no insuperable obstacles to its introduction, though the doubtless would be to the keeping it alive year after year. It has, I believe, been flowered in one of the Dutch East Indian Botanic Gardens. One of the greatest difficulties would be the getting to the native

habitat of the Rafflesia, for it grows in the dense forests of the interior of Sumatra. It has been seen at Pulo Zebbar, which is two days' journey up the river Manna, according to Sir Stamford Raffles; but it may possibly be some day discovered in a still more accessible position, and then the taking up the root of the Cissus upon which it may be found growing in a growing state, and the sending it to England by the overland route, would not be so difficult. A good old stem of Cissus would not be easily killed in the time which would be occupied on the journey; and then if placed in a moist stove some of the buds of the Rafflesia might, perhaps, be induced to open. There was a second species of this genus, with smaller flowers, found by Dr. Blume in one of the little islands near Java; this was also growing upon a kind of Cissus. A tropical species of Cuscuta (or some allied genus) with waxy flowers, very sweet scented, and not unlike the bells of the Lily of the Valley, was so successfully introduced into the stoves of the Botanic Garden at Berlin that a few years ago it was necessary to destroy large quantities of it, in order to keep it within bounds. I fear this plant has since been lost. Should any of the tropical parasites be introduced, it may found that large plants are required for them to feed upon, but there is room to doubt that until it is proved, for some of the Australian Loranths are I see attached to very small branches of Gum trees. In fact, nothing but direct and repeated experiments can prove either that they are incapable of cultivation, or the best means of managing them. We see so many things accomplished now-a-days that our fathers looked upon as mere idle dreams, that we dare not say it is impossible to believe that our exhibition stages will never be adorned with the magnificent clusters of brilliantly coloured, red or yellow, Ixora-like, or Fuchsia-like flowers of some of the Loranths, or the delicate little waxy bells of Cassytha or Cuscuta. Our failures sometimes teach us as much as our successes. I am therefore induced to mention the following circumstance. A few years ago I raised from seed a few plants of one of the most interesting species belonging to the Natural Order of which the Mistletoe is the only British representative—it was Nuytsia floribunda. The Australian colonists have called this the Fire-tree, from the great number of scarlet flowers it produces. Unlike most of the plants of the order, it is said not to be a parasite, but to lead an independent life as a shrub. Relying, as I now think, but too implicitly upon this report, I believe I allowed those plants to starve to death. Seven seeds germinated; they had three cotyledons each, except one of them, which from some reason had only two. They soon began to damp off, and naturally enough I thought I had them in too moist a house. They were then tried in a dried place. Three of them lived for about four or five months, and had grown to about 2 inches in height, but they were yellow and sickly. As a last resource they were tried in a pot in which a Melaleuca was growing, in the hope that they would attach themselves to the root of that plant. Possibly they had been kept too long without their natural food, for they refused to recover and died a lingering death. There can, I think, be but little doubt, judging from the affinity of the plant, but that it requires support from the root of some other plant. Had I another opportunity of trying again I should sow the seeds in a pot where some other Australian plant is growing, believing that that would give them a better chance of succeeding. *C. W. C.*

Lycaste Skinneri.—Since this plant is likely at no very distant period to form one of the leading features in the decoration of our greenhouses and conservatories in winter, a few remarks on its general cultivation in this country may perhaps be useful. As regards hardiness Mr. Skinner tells us that in its native climate a travelling man often requires the protection of a great coat to shield him from the cold. It is easily imported if gathered in a dormant state, and well dried before being packed, which should be done in boxes made as air-tight as possible. If the plants arrive in good condition they should be exposed for a few days in a dry airy room or greenhouse previously to potting, which is best done in small pots (by all means avoid large ones) in a mixture of equal parts of peat and Sphagnum, or they will do equally well in peat alone if very open and fibrous. The pots must be well drained with potsherds or broken pieces of brick, and kept moderately dry until the roots begin to grow, after which watering may be increased gradually until the pseudo bulbs begin to form; afterwards they should be kept well watered until the bulbs have finished growing—in fact they may be kept constantly standing in water in the growing season when it is inconvenient to water them frequently, but surface watering is much to be preferred. I have often watered them twice a day in the hottest days of summer. After the young growths have perfected themselves, which will be about November, waterings must be very slight until the plants begin to show flower, then every third or fourth day will suffice. It is not to be expected that imported plants will flower the first season, but the cultivator will be richly rewarded at the end of the second year, and this in only a moderate greenhouse temperature. The blossoms are large, the colours rich and beautiful, and the individual flower will last in perfection, according to circumstances, from two to three months. A strong growth often produces from six to eight flowers in a season, not all at once but in succession. We have had a succession of flowers here since October last, and some of them are likely to continue until May next; occasionally we have counted two hundred blossoms expanded at one time. The following are a few Orchids which may be grown in an ordinary greenhouse, viz., all species of Odontoglossum, and some of them are amongst the finest Orchids in cultivation. Epidendrum vitellinum, Cœlogyne cristata and several others; Barkeria Skinneri, Aerides Warneri and rubrum. Many others might be added, but these are mentioned as being amongst the best. *R. Bullen, Royal Exotic Nursery, King's Road, Chelsea.*

Chit Chat respecting Variegation.—The observations I made some time ago in your columns about the cause of variegation in plants seem to digest badly with some of the good folks in the parish of St. Dunstan. First one has a go at them and then another; but all to no purpose. I wonder how it is they cannot agree among themselves? Why they are with variegation as the would-be knowing men were with the colour of the Chameleon. Anything I have seen in the way of opposition to my views on variegation appears to me as if the parties concerned in the matter had received their information second-hand. Therefore before any other opponent writes on the subject I would advise him to consult your last year's volume, p. 385, where he will find recorded the pith of the matter at issue. There is a wide difference between primary and secondary causes; I like to see a soldier who can recognise his own colours amidst the smoke of the enemy. A friend of mine once said, "do you believe that variegation is a disease, and that pollen has nothing to do with its origin?"—"To be sure I do," said I, "and if you think otherwise you are as bad as a member on the opposite bench, who, beginning to feel his weakness, said to his colleagues, 'Is not disease a step towards death?' as if there possibly could be two sides to that question. According to the general acceptation of the term, I am at this moment in perfect health; yet every pulse that beats in my veins is a step towards death. Disease! Who can catalogue its different phases, or who can deny its transmission from generation to generation, even under the garb of health? In some forms of disease, indeed, we can speak with more certainty as to their primary cause than we can as to their nature afterwards; and variegation may be taken as an instance of the truth of this statement."—"That may be," said my friend; "but you stated that you had never been able to get a variegated seedling, although you believed Flower of the Day Pelargonium to be one. Now, you know that is wrong; for you have had lots of them"—"Hold hard, friend," said I; "you mean one thing, and I meant another. The seedlings you allude to were the result of a diseased parent—the transmission of disease—in fact, secondary causes. Now, I repeat that I never have been able to get a variegated plant from seed; I mean from green parents, and since I last wrote on this subject, facts have come to my knowledge that proclaim Flower of the Day not to be the offspring of green parents, as many have been led to believe; but, like my seedlings, the result of using pollen from a diseased plant. Yes, and I may yet be able to say positively that Lee's Variegated, the male parent of Flower of the Day, was nothing but a chance sport, which many of the variegated plants we possess really are. It is possible for a seed partially destroyed by accident to produce a variegated plant, although such cases are of rare occurrence. Speaking of chance sports, to use a common phrase, I could let you see in a corner of our shrubbery, a low damp spot, a common Laurel as beautifully variegated as any plant you ever saw. Again, a large tree of the Scarlet-flowered Chesnut after being transplanted, some six years ago, pushed a variegated shoot, which has remained true ever since. Moreover, I hesitate not to say that if we were favoured with Mr. Fortune's or Mr. Veitch's statements on this subject, it would be found that the Japanese gardeners know perfectly well that these freaks of Nature are capable of being propagated, and that such things may have been in vogue in that country for hundreds of years past, whereas in Britain the day has only just dawned, so to speak, on their very existence. I may add, in conclusion, that in all cases which have come under my notice, accidental sports may be traced to some defective or decayed portion of the parent stem, thus furnishing strong proof that the primary cause is water absorbed by the plants while in a state of partial decomposition." *An Old Showman.*

Societies.

ROYAL SOCIETY OF AGRICULTURE AND BOTANY OF GHENT.—This Society held its 5th Quinquennial Exhibition of Flowering Plants, &c., on Sunday, Monday, and Tuesday, the 2d, 3d, and 4th of March, at the Casino, a large building belonging to the Society, and conveniently situated in the town of Ghent. The Casino cannot be less than 400 or 500 feet in length, and from 30 to 40 feet in breadth, with a noble dome 50 feet in diameter.

In the principal room, which is approached by a stone staircase, the most imposing portion of the Exhibition was held. This room is so arranged that it can easily be divided into three compartments. The first contains the staircase, which occupies a considerable portion of it; then comes a recess of about 30 feet, through which the grand room is entered. In this the plants were arranged on each side on a stage of three shelves and on a flat table in the centre. Another recess is passed and we reach another room similar in extent to the first; in this, which is heated by hot-water pipes, the Orchids and stove plants were arranged. Other portions of the building are heated by large stoves, by means of which a proper temperature is maintained.

In addition to what has just been described, a large space on the ground in front of the Casino, extending nearly its entire length, was covered partly with canvas and partly with glass. In this were exhibited all the hardy and half-hardy plants; it also contained a few Cinerarias. A table on which were 100 dishes of Apples and Pears occupied a recess at the north end. On the walls of the staircase leading to the exhibition room drawings of plants, for which prizes were offered, were displayed.

On the first day the plants are arranged as much as possible to suit the convenience of the judges. After the awards are made they are then rearranged with a view to effect, taking care however to keep together as many of the collections as possible. Judging and re-arranging occupied the whole of Saturday, even to a late hour.

As regards judges they consisted of 100 of the most celebrated horticulturists from all parts of Europe; their names having been called over by the president, they are then divided into two sections, which are again subdivided, making four sets of 25 men, each set electing a president and secretary to collect and declare the votes, and every juror is provided with a number of small strips of paper in addition to his schedule, &c. Business is then proceeded with, each judge noting down on one of the small strips of paper the number of the plants he considers worthy of a prize. These papers are collected by the secretary and handed to the president, who calls out the number, and the prizes are awarded by a majority of votes. This process occupies a very considerable amount of time, but as one day is wholly devoted to judging it is not a matter of much importance. An excellent breakfast is provided for the jury, and during the day every possible attention is paid to their comforts by the officers of the Society.

On this occasion the jury re-assembled on Sunday to meet the Comte de Flandres, who arrived at the Casino about noon, and was conducted over the exhibition by the presidents and the principal officers of the Society; the jury also joined in the procession. The show was now opened to members and their friends, and while the Prince was there, and during the greater part of the day the room was crowded with visitors. At 2 o'clock a grand banquet was given, at which the Prince presided; it took place in a magnificent room adjoining the theatre, where about 400 gentlemen sat down to dinner, consisting of members of the Society, their friends, and the jury. The dinner was of the most *recherché* description, and was served up in excellent style. The jury occupied the centre table, and received the greatest possible attention.

After the prizes were awarded, the re-arrangement of the plants very much improved the general effect. At the top of the staircase a collection of 75 Hyacinths, Tulips, Narcissus, and Crocuses was exhibited by M. Vanderlinden of Antwerp, and obtained a first prize. The same exhibitor also showed a collection of 50 Tulips, and obtained a similar award. Two collections of 8 bouquets of cut flowers, large, and cleverly arranged, for which a prize was assigned, were placed in this room by Mad. J. B. de Saegher. 50 Hyacinths, grown in very small pots, and remarkably finely flowered, were exhibited by Mad. Van Schertzer of Haarlem. Other Hyacinths and Tulips, together with some splendid examples of Tree Mignonette and 2 collections of Primroses, made up the exhibitions in this room. In the deep recesses on the left side of the next compartment was a collection of 50 Camellias, which, both as regards regularity of form and abundance of blooms, were matchless. The plants, which were cone-shaped, averaged from 4 to 10 feet in height; and not a leaf or a flower appeared out of place. This was indisputably the finest collection present, and justly deserved a 1st prize, which was awarded it. It was shown by M. Van den Bosche. A second collection of small plants was exhibited by M. Christ Van Loo.

At the entrance of the large room a beautiful specimen of Camellia Valtevaredo was exhibited by M. Van den Bosche, who obtained a 1st prize for it on account of its fine cultivation. It was conical in form, and being covered with hundreds of beautiful flowers it was considered the gem of the show. On a stage on the right hand side of the room a collection of 15 Camellias, little inferior in point of cultivation to those of M. Van den Bosche, was exhibited by M. Delimon Papeleu, and obtained a 1st prize. These were supported by groups of 30 Amaryllises, beautifully grown and flowered. For these a 1st prize was awarded to Mad. Van Schertzer of Haarlem. A collection of 25 Hybrid Rhododendrons, consisting of many fine varieties, was furnished by M. Ambroise Verschaffelt, and was awarded a 1st prize. Facing them was a collection of 25 Indian Azaleas exhibited by M. Van den Hecke de Lembeke, the president of the society, to whom a similar award was made, and on either side were placed collections of Ferns and Lycopods, while a large

circular recess contained a collection of 30 Palms, contributed by M. Verschaffelt. A collection of 25 Azaleas from M. Delimon Papeleu was most showy and effective, scarcely a leaf being seen, so profuse were the flowers. For this a 2d prize was awarded.

On the centre table Rhododendrons and Azaleas, &c., were associated with collections of 12 new Camellias, the 1st prize for which was awarded to M. Van Houtte; a 2d prize was voted to M. D. Vervaene, who also obtained a similar award for a single specimen Camellia, a noble plant of Jubilee, which was placed in the middle of the room. Collections of 30 varieties of Amaryllis (amateurs) filled up the remainder of the centre table. For these a 1st prize was awarded to M. Cam. Van den Bosche. M. Vervaene obtained 1st and 2d prizes for collections of 10 new Azaleas, and his son received similar awards for the best cultivated Azaleas. M. Vervaene also obtained 1st and 2d prizes for new Azaleas, all exceedingly fine, and sorts which when better known will doubtless become favourites.

On the left side of the rooms were arranged the nurserymen's collection of 25 Azaleas, for which the first prize was awarded to M. J. Vervaene & Co.; and the 2d to M. Verschaffelt.

In the centre of the left side of the dome was a pyramidal stage, 30 feet high, covered with Camellias, flanked with Azaleas and fine foliaged plants. The 1st prize for the latter was awarded to M. Verschaffelt. There were also several groups of Begonias, for which a 1st prize was awarded to M. Charles de Buck. Nurserymen's collections of 50 Camellias filled up the stage; for these 1st and 2d prizes were awarded to M. Vervaene; and a 3d to M. Boddaert.

The recess at the end of the room was wholly filled with flowering plants, consisting of Camellias, Azaleas, Rhododendrons, &c. For tree Ferns, which were placed at certain distances apart down the centre, a 1st prize was awarded to M. Verschaffelt.

New plants and Orchids in the dome were rewarded in the following manner. Six new Begonias, 1st prize, M. Verschaffelt, who also received similar awards for new Palms and Orchids, M. A. Van Geert being second. At the end of this room was placed a collection of 30 Ferns, amongst which were some fine tree kinds and many other well grown specimens of other sorts. These were contributed by M. Ch. de Kerchove-Delimon, President of the Society and Burgomaster of Ghent.

Six collections of new plants were exhibited, for which first and third prizes were awarded to M. L. Van Houtte, and the second to M. Verschaffelt, who also obtained a prize for 25 Caladiums. As a new plant, not in flower, presenting most merit, a first prize was awarded to Messrs. Veitch & Son for Caladium Veitchii; Mr. Linden, of Brussels, exhibited a collection of new plants not for competition. For collections of variegated plants a first prize was awarded to the President of the Society, and a similar award was made to M. le Baron Osy of Antwerp.

Garden Memoranda.

MR. STANDISH'S NURSERY, BAGSHOT.—The Bagshot Nursery of Mr. Standish is already famous as the quarter from which many of the new Chinese plants introduced by Mr. Fortune have been distributed. At the present time Mr. Standish is engaged in rearing the very interesting series of plants recently introduced by Mr. Fortune from Japan, of which a portion was seen in public last summer, almost immediately on their arrival in this country. Some which we particularly noticed on the occasion of a recent visit, as having already been extensively propagated by cuttings, were the handsomely variegated forms of Osmanthus aquifolius; a finely marked broad-leaved variegated variety of Eurya japonica; and Thujopsis dolabrata variegata, the latter a beautiful hardy Conifer, having, in this form, the twigs freely blotched with white, and thus acquiring an additional feature of beauty. Sciadopitys verticillata, the grand Parasol Fir or Umbrella Pine of Japan, has been extensively raised from seeds. We also noticed some strong plants coming on of Lilium Fortuni, the showy yellow-flowered species alluded to at p. 166, and some other Liliums, among which was one related to L. speciosum, and said to produce immense spotted blossoms. A beautiful little variegated Saxifraga related to sarmentosa, in which the leaves were charmingly marked with irregular sections of a clear soft flesh-colour, Mr. Fortune had brought over "by hand," so precious was it esteemed to be; and although as yet only in a very juvenile state, it appears as though it would be really an exquisite addition to the now popular group of variegated plants. Mr. Standish has also from the same source upwards of a dozen Japanese varieties of Chrysanthemum, among which are some belonging to the odd-looking groups which we figured last year, and one is said to have the florets handsomely striped. The plants are in a healthy and vigorous condition, so that in the ensuing autumn we shall see them in a flowering state.

Mr. Standish is growing and fruiting a large collection of the more select sorts of Grape Vine, partly with the view of hybridising for the purpose of obtaining new races, and we believe some little progress has already been made in carrying out this scheme. The Vines are grown in shallow borders, in small span-roofed pits, and are pictures of health and vigour. Other fruits are being got together for hybridization, and the experience which Mr. Standish has had in this way, from the time when Fuchsia Standishii appeared, down to the present day, would lead us to expect striking results.

We saw here some remarkable specimens of the choicer Ferns. Magnificent tufts of Todea hymenophylloides, *alias* pellucida, with thick stems one to two feet high, terminated by splendid heads of fronds; Lomaria discolor, with a clear stem nearly a couple of feet high, and with a dozen at least of its curious fertile fronds forming an erect group within the circle of broader sterile ones; Woodwardia orientalis, one of the most elegant of the larger growers of this elegant race; Cyathea Smithii, the handsomest of the dwarfer Cyatheas; Gleichenia alpina, a great rarity, like a pigmy dicarpa; and several of the choicer Hymenophyllums of New Zealand. We must not forget to mention one of the grandest of hardy evergreens, now flowering freely under what is scarcely a shelter of tiffany, the yellow flowers of which have a delicious rose scent, and the foliage of which is of itself a picture. We mean Berberis japonica, and its near ally B. Bealii, the latter of which seems to grow up more rapidly than the former.

Mr. Standish has commenced the formation of a new nursery of upwards of 80 acres at Ascot, on a site affording a variety of soils admirably suited for nursery purposes. Here it is intended to carry on fruit culture to a large extent, and the first of a series of houses specially designed for the purpose is in process of construction. Mr. Standish very wisely lays great stress on having a thorough command of bottom-heat, and ample provision is being made to supply this necessary *ad libitum* to the roots. A very ingenious boiler, manufactured for the purpose of burning the turf fuel of the district, has been made up with 2-inch pipes and siphon elbows. Some idea of the power which this boiler may be expected to possess, can be formed when it is stated that it presents 25,000 inches of heating surface, and that in reality it forms the furnace to contain the fuel. A considerable amount of power was necessary, inasmuch as the boiler is to heat some half dozen other large houses, which are to branch off from this central one now in process of construction.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Climbers beginning to push should after this time be frequently examined to prevent confused growth. Kennedyas, if crowded, should have their shoots thinned. Ipomœas and Thunbergias being subject to red spider should be well syringed to prevent that pest gaining ground. Where a large quantity of hardy shrubs is annually forced, either to decorate the drawing-room or the conservatory, it is not desirable to pot a fresh stock each season, as a number of deciduous things, such as Roses, Lilacs, Thorns, Honeysuckles, &c., may, by proper treatment, be made to bloom for several successive seasons. Select therefore the most suitable plants when removed from the houses, and give them some kind of temporary shelter to gradually harden their foliage; those cramped for pot room shift into a size larger pot in rich turfy loam, and towards the middle of next month plunge them in an open situation in order that the wood may get ripe early.

FORCING DEPARTMENT.

PINERIES.—Beware of a sudden rise in the bottom heat; when much new tan has been added, in consequence of recent shiftings or removals, this may readily take place. Constant attention to the trial sticks will therefore now be necessary in order to ensure success. For general purposes 80° to 85° will be amply sufficient. Increase atmospheric moisture with increase of heat and light, and give air freely in the early part of the day; shutting up a good amount of sun heat whenever a chance of doing so occurs.

VINERIES.—Give air as freely as the state of the weather will permit, using a little extra fire-heat, and leaving a little air on at night so as to prevent the bloom being injured by damp settling on the berries, as is apt to be the case where the house is closely shut up.

FIGS.—Where the early crop is approaching maturity the borders should be well watered, so as to avoid the necessity of having to water the soil after the fruit begins to ripen, which is injurious to the flavour, and is also apt to cause the fruit to burst prematurely, particularly if the trees have been rather dry at the root previously. So far as the present crop is concerned the trees can, perhaps, hardly be too dry at the root while the fruit is ripening, but where a second crop is expected care must be exercised to keep the trees in health, and to prevent the foliage becoming a prey to red spider, otherwise the second crop can hardly be expected to be good for much.

STRAWBERRIES.—Early plants ripening their fruit should be placed by themselves and kept moderately dry. Those in later stages of growth should however be well supplied with moisture both over head and at the root.

FRAMES.—All crops in these, such as Carrots, Potatoes, Radishes, and Peas, should have as much air as the state of the weather will permit, and be regularly supplied with water.

FLOWER GARDEN AND SHRUBBERIES.

Look well to recently transplanted trees and shrubs. Do not allow anything to suffer either from wind waving, or, in the event of dry weather setting in, from want of water at the root. In the case of large plants which require securing against wind use three strong tarred cords for each specimen; fix them to the plant by means of a collar made of strong metallic wire and thickly wrapped round with canvas to prevent its injuring the bark, and then tie them to strong pieces of Oak driven into the ground at proper distances from the stem of the tree. For specimens in prominent situations strong galvanised wires should be employed instead of cords, being neater in appearance; although somewhat expensive in the first instance they will last a lifetime. Take advantage of the present state of the ground to stir and rake the surface soil of shrubbery.

HARDY FRUIT AND KITCHEN GARDEN.

Seedling plants of Cauliflowers, Cabbages, &c., raised this spring should be pricked off when large enough to get stocky for final transplanting. As the future growth of the Cabbage tribe depends much on not being drawn when young, some attention should be paid to this point when they are in a seedling state, for the best after culture barely compensates for the first neglect. A crop of Globe Artichokes may soon be planted for producing a late supply of heads; the young side shoots taken from the old stools may be placed in lines 4 feet apart and 18 inches between the plants, or trenches may be dug 18 inches wide, and the same in depth, in which some well-rotted manure should be dug and the plants put out as above. Potato planting should now be finished as soon as possible. Potatoes and Onions should on no account be intermixed or shaded by other crops; there are however many things, such as Carrots, Parsnips, Turnips, and all the Cabbage family, which will not only bear being slightly shaded, but in warm summers enjoy it. Where kitchen gardens are small, therefore, mixed cropping is a point to which especial attention should be paid. The mixture must however be arranged so as not to interfere with earthing up or gathering.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the Week ending March 12, 1862, as observed at the Horticultural Garden.

March.	Moon's Age.	Barometer.		Temperature					Wind	Rain
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep		
Thurs. 6	7	29.505	29.448	58	45	51.5	40	40½	S.W.	[illegible]
Friday 7	☽	29.391	29.557	60	45	52.5	43½	41½	S.W.	[illegible]
Satur 8	9	29.631	29.541	61	41	50.0	45	42½	S.E.?	[illegible]
Sunday 9	10	29.547	29.394	54	36	45.0	47	43	S.?	[illegible]
Mon. 10	11	29.959	29.876	59	51	55.0	47	44	S.W.	[illegible]
Tues. 11	12	29.828	29.648	55	37	46.0	46	44½	S.W.	[illegible]
Wed. 12	13	29.697	29.642	58	35	46.5	47	44½	S.W.	[illegible]
Average		29.651	29.558	57.8	41.4	49.6	45.1	42.9		[illegible]

March 6—Densely overcast; rather boisterous at night.
— 7—Boisterous with rain; cloudy; overcast.
— 8—Fine; exceedingly fine; lightning in the evening, [illegible]
— 9—Cloudy, mild and fine, rain at night; mild.
— 10—Cloudy; mild and fine; rain at night.
— 11—Rain; overcast; fine at night.
— 12—Densely and uniformly overcast; cloudy; rain; fine.
Mean temperature of the week 8¾ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending March 22, 1862.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 16	51.7	34.7	43.2	11	0.68 in	—	8	[illegible]	—	2	11	[illegible]	[illegible]
Mon. 17	50.1	33.5	41.8	11	0.37	4	8	3	—	3	[illegible]	[illegible]	[illegible]
Tues. 18	50.5	33.8	42.1	11	0.24	3	8	2	2	2	[illegible]	[illegible]	[illegible]
Wed. 19	51.3	34.0	42.6	11	0.33	4	4	2	1	[illegible]	[illegible]	[illegible]	[illegible]
Thurs. 20	51.9	34.3	43.1	15	0.36	3	3	—	2	—	[illegible]	[illegible]	[illegible]
Friday 21	51.3	33.2	42.8	16	0.21	8	3	3	3	3	[illegible]	[illegible]	[illegible]
Satur. 22	50.6	34.7	42.6	17	0.44	6	3	4	2	4	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 19th and 20th, 1836—therm. 67 deg.; and the lowest on the 17th and 20th, 1845—therm. 17 deg.

Notices to Correspondents.

☞ CORRESPONDENTS are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

ANEMONES: *Flowerdale* will be obliged by some of our correspondents instructing him as to the best plan of making Anemones flower in autumn instead of spring.

BOOKS: *M White*. There are no general works on the Mascarene Flora. All you *can* do is to procure Aubert du Petit Thouars' works on the plants of the islands on the East of Africa, *if they can be had*. They were published in France many years ago.

CONIFERS: We have received from some unknown correspondent a parcel of twigs, without the least intimation of the purpose for which they have been sent.

DEODARA: *T H*. You had better move it at the end of August or beginning of September. There is greater risk now.

FRUIT-TREE BUDS AND GISHURST COMPOUND: *F C.* will be obliged by "Microscope" saying whether or not his Peach trees are planted out or in pots. F. C. has some in pots dropping their buds, while others in the same house, planted out and trained in the old way, are all that could be wished, and neither of them have had any Gishurst. Other cultivators are complaining of the dropping of the buds from their pot plants this season.

NAMES OF PLANTS: *Thos. Manton*. Some kind of shrubby Echium, not to be named from such a fragment.—*Nemo*. Galanthus plicatus.—*Dolgelly*. The male catkins of Garrya elliptica.—*T*. Sisyrinchium grandiflorum.—*Q H F*. Saxifraga Sarmentosa. With respect to your fire, a little practice will soon indicate the proper management. The damper should not be closed right up. Some space must be left to create a draught, or the fire will go out.

POTATOES: *E B*. We will do what we can next week. Perhaps you are not aware of the space your communication occupies.

MISC.: *Dawlish*. Surely ignorance and presumption have been sufficiently exposed. The humiliation is complete. *Væ victis* is not our motto; we prefer *parcere subjectis*.

KITCHEN GARDEN SEEDS,

FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND. THOS. GIBBS & Co. Corner of HALF-MOON St. PICCADILLY, London. APPOINTED AP. 3, 1844. THE SEEDSMEN

AGRICULTURAL SEEDS,

GRASS SEEDS,

FARM SEEDS,

of all descriptions.

Thomas Gibbs & Co.

CORNER OF HALF-MOON St. PICCADILLY, LONDON, W.

SUTTON'S

YELLOW GLOBE MANGEL WURZEL.

The heaviest and best sort known, price 8*d.* per lb., or 63*s.* per cwt.
All other sorts 8*d.* per lb.

PRICED LISTS of FARM SEEDS Post Free.

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

SEEDSMEN BY APPOINTMENT. Sutton AND Sons

PERMANENT GRASS SEEDS

FOR ALL SOILS.

SUTTON & SONS,

SEED GROWERS, READING, BERKS,

Have a most extensive and complete stock of all the best kinds of GRASS SEEDS for PERMANENT PASTURE, which they are now sending out daily to all parts of the Kingdom, mixed expressly to suit the soil for which they are intended and the purposes for which the Pasture is required. It is believed that Messrs. SUTTON'S Stock of GRASS SEEDS is the largest in the country, and certainly the quality cannot be surpassed. The sorts can be supplied separate or mixed to suit the soil, or the Light Large Seeds may be had in one mixture, and the Clovers and other Small Heavy Seeds in another; 2 bushels of the former and 12 lbs. of the latter per acre are supplied.

MIXTURES FOR PERMANENT PASTURE,

Specially prepared to suit any soil. 24*s.* to 32*s.* per acre.

MIXTURES FOR RECLAIMED MARSHES AND HEATH LANDS.

Many acres of Land of this description have been successfully laid down to Permanent Pasture by us, with Seeds which we have invariably found to thrive on such soil. 20*s.* per acre.

MIXTURES FOR LAYING DOWN CHALKY OR GRAVELLY UPLANDS AND SHEEP DOWNS.

For this purpose Grass Seeds are annually collected from dry and hilly districts, where they are found growing spontaneously; and after many years' experience we can confidently assure our friends that a *good and permanent* Sward may be obtained on *any* Upland from this Mixture. Cost of Seeds, 30*s.* per acre.

MIXTURES FOR LAYING DOWN WATER MEADOWS.

In this department also we have been very successful, many customers having expressed their great gratification at the effect of these Seeds. Price 25*s.* per acre.

MIXTURES TO LAY DOWN NEW PARK LAWNS.

For this purpose all coarse growing kinds are carefully excluded, and the Sward will at all seasons present a luxuriant verdure, so desirable in Parks contiguous to the Mansion. The cost of Seeds for this purpose will be 16*s.* per bushel.

MIXTURES FOR FINE GARDEN LAWNS.

Including only the finest or shortest growing kinds, 18*s.* per bushel, or 1*s.* per lb.

MIXTURES OF GRASSES, CLOVERS, &c., FOR THREE OR FOUR YEARS' PASTURE, HAY, OR SOILING.

These we can supply of best quality at 22*s.* per acre, or if required to remain only for two years, the price will be only 18*s.* 6*d.* per acre. In ordering these Mixtures it is necessary to state whether they are required for Three or Four Years' Lay, and whether Clover or Meadow Grass Seeds are to preponderate in the Mixture.

PERMANENT EVERGREEN GRASSES FOR CHURCHYARDS AND CEMETERIES.

We have had the honour of supplying His Grace the Archbishop of Canterbury and many others of the Clergy with Grass Seeds for Churchyards and Cemeteries, which have given great satisfaction. Price of Seed, 1*s.* per lb. or 16*s.* per bushel.

MIXTURES FOR ORCHARDS AND PASTURES OVERSHADOWED WITH TREES.

An excellent Mixture can be supplied suitable for this purpose at 16*s.* per bushel.

ALSIKE CLOVER, PERENNIAL WHITE CLOVER, and PERENNIAL RED CLOVER are included in the Mixtures for Permanent Pasture.

N.B. Gentlemen possessing the True Perennial Clover Seeds, &c., can be supplied with a proper Mixture of GRASSES to sow with them, as under:—

MIXED FESCUES, COCKSFOOT, LOLIUMS, &c., best sorts for Permanent Pasture (omitting Clovers and other heavy Seeds), 9*s.* per bushel (18*s.* per acre).

Two bushels of the above and 12 lbs. of Mixed Clovers will be the proper quantities per acre for Permanent Pasture

MIXED PERMANENT GRASS SEEDS of coarse kinds, for Cover, &c., 5*s.* per bushel.
Ditto ditto for Railway Embankments, &c., 6*s.* per bushel.

N.B. Should Grass Seeds be offered at lower prices than our quotations, we would advise intending purchasers to inquire the quantity supplied per acre of Natural Grasses, and also whether Alsike and other Perennial Clovers are included.

PRICED LISTS of separate GRASS SEEDS, CLOVERS, TURNIPS, MANGEL WURZEL, &c., may be had gratis and post free on application, addressed

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

To the Seed Trade.

THOMAS AYRES, SEEDSMAN and GROWER, Biggleswade, Beds., has to offer WHITE SPANISH ONION SEED, ALTRINGHAM and WHITE BELGIAN CARROT SEED; YELLOW GLOBE, ORANGE GLOBE, RED GLOBE, LONG YELLOW, LONG RED MANGEL WURZEL SEED; also several varieties of SWEDE and WHITE TURNIP SEED.
Also about 60 bushels of English SCARLET RUNNER BEANS, all the growth of 1861.
Prices forwarded on application.

To the Trade.

NEW SEEDS DIRECT FROM THE GROWERS.

CHARLES SHARPE AND Co., SEED GROWERS, Sleaford, will have much pleasure in forwarding on application their WHOLESALE PRICED LIST of AGRICULTURAL SEEDS, which have been grown upon their own land with the utmost care from the finest selected stocks. The advantages of procuring Seeds direct from the Growers are too obvious to require comment, and from the experience of C. SHARPE & Co. in the growing and harvesting of Seeds, a satisfactory result may be calculated on with certainty when their Seeds are used.
SHARPE'S IMPROVED LARGE SWEDE.—The largest and best cropping Swede in cultivation; it produces a finely-shaped large bulb, without a coarse top. A Coloured Lithograph of this Swede will be sent to purchasers.
CHARLES SHARPE & Co., Seed Growers, Sleaford, Lincolnshire.

WANTED, a few respectable DISTRICT AGENTS for a MANURE which is highly recommended and sold carriage free. Liberal terms given.
Address, with occupation and references, B. C., No. 10, Pall Mall East, London, S.W.

Agricultural Education.

HIGHLAND and AGRICULTURAL SOCIETY of SCOTLAND.

The EXAMINATION of CANDIDATES for the SOCIETY'S AGRICULTURAL DIPLOMA will take place in the Museum Hall, George IV. Bridge, Edinburgh, on WEDNESDAY, April 2.
Candidates must lodge intimation with the Secretary on or before March 26. JN. HALL MAXWELL, Secretary.
Edinburgh, March 15

ROYAL AGRICULTURAL SOCIETY of ENGLAND.

METROPOLITAN SHOW, 1862.
Last day of Entry for Implements, March 31.
Last day of Entry for Stock, May 1.
STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. HALL DARE, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, MARCH 15, 1862.

MEETING FOR THE ENSUING WEEK.

WEDNESDAY, March 19 { Agri. Society of England .. Noon (Mr. Beale Brown on Condiments.)

WE have at length accomplished the plan, originally proposed under happier circumstances, of describing the farms of which his Royal Highness the late PRINCE CONSORT was tenant; and in which during the year of his Presidency over the Royal Agricultural Society, both English and foreign Agriculturists would naturally have taken especial interest. Even the comparatively imperfect details which alone can be given in the columns of a Newspaper must have enabled our readers in some measure to realise what energy and intelligence have been lost to us both as agriculturists and as members of the Royal Agricultural Society of England by his untimely death.

It is satisfactory to learn that, hereafter and for the future to bear the name of "the PRINCE CONSORT'S" Farms, they will continue under the same immediate managers to illustrate the public spirit, enterprise, and perseverance of their former Tenant; and to furnish the same examples to landlord, tenant, and labourer, as when in the late PRINCE CONSORT'S hands. For owners of land the examples will be still maintained which he had given of the permanent improvement and efficient equipment of states—in all the particulars of buildings, drainage, roads, and fences. Tenant farmers will see in continued operation, year by year, both the systems of steam cultivation he had adopted; and they will witness the progress of herds of Shorthorns, Devons, and Herefords which the PRINCE had established with such ability and maintained with so much perseverance. On the last occasion of his visit to the Flemish Farm he was heard explaining the great expenditure which had been incurred by him as tenant, and the need and reasonableness of it in order to the attainment of high character for the valuable herd of Herefords which has on that farm been at length established. The reasonableness of this expenditure will year by year continue to appear, as, under the same system of management which he had laid down, these farms and their respective herds shall maintain in their career the reputation he had obtained for them.

It is a touching illustration of the pious care with which His agricultural reputation will be guarded, and with which the many useful agencies will be maintained which this one small section of his labours includes, that all the PRINCE'S intentions regarding farming matters where known will be literally carried out, and where they can be

imagined they will be carefully observed. Thus, we learn that all the stock which had been intended by him for exhibition at the Battersea Great Show, will, by HER MAJESTY'S direction, still be prepared and sent — the Royal Farms will be open to public inspection during the summer—and fields on Colonel HOOD'S suggestion have been set apart, in which, during the week of the great Show, steam cultivation will be shown in operation on one of them.

The management of the Home and Shaw Farms remaining as heretofore under the immediate superintendence of Sir C. B. PHIPPS, K.C.B.—that of the Norfolk and Flemish Farms under the direction of the Hon. Colonel A. N. HOOD —and the management of Windsor Park remaining in the hands of Major General SEYMOUR and the Deputy Surveyor, Mr. MENZIES—there is all the guarantee which devotion to the Memory of their Chief, knowledge of his intentions, and personal ability and zeal can give, that the public value and utility of these farms and the public interest in them will be maintained.

We may add that the accounts which have been given of these estates will be re-written and published by Permission, along with other particulars of the agricultural career which has made them interesting, so as to form a more formal and permanent record of the late PRINCE CONSORT'S relations to English Agriculture than can be provided for them in the columns of an agricultural periodical.

TILLAGE is an important subject at any season of the year; and the present season used to see the chief of the year's work with the plough. Old THOMAS TUSSER says of February—

> "Who slacketh his tillage, a carter to be,
> For groat got abroad at home shall lose three."

We now, however, aim at getting most of our work of this kind done in autumn, thus putting our land into such trim before winter as ensures for it that perfect tilth which a winter's frost alone can give it. The chief subjects now-a-day, therefore, for spring time, are seed and manure, and to both we shall from time to time direct the attention of our readers.

Artificial manures have been discussed during the past few weeks before many of our principal farmers' clubs. To the address of Mr. JOHNSON before the Central Farmers' Club, and to that of Mr. JACOB WILSON before that of Hexham, we have already alluded. The one gave general statistics of the subject with great fulness—the other the practical details of application, together with the special fitness of particular manures to particular crops and soils. There is, however, yet room for a fuller record of practice and experience than has yet appeared, and accordingly we have during the past few weeks sent out many inquiries into different parts of the country, asking for the usual practice on the farms in the neighbourhood, as to the quantity and time of the application of farm-yard dung, and of the various artificial manures, and as to the crops to which they are severally applied; also as to the enrichment of the farm-yard manure by the use of oil-cake and other artificial foods; also as to the use of lime. A great deal of very valuable information has been thus collected, which it will be our duty to collate, condense, and publish next week.

Among so large a number of agriculturists to whom these inquiries have been addressed, a considerable number, at this season especially, cannot spare the time for giving an elaborate and detailed reply, and we have not therefore answers from every one; but the list of those who have been good enough to give us this valuable information includes, it will be admitted, the principal men and largest farmers at both ends of the island, besides a large number of men of experience known as first-rate agriculturists in their respective localities. For the cordial acquiescence of such men in our attempt to ascertain for publication the general experience on this important subject our best thanks are due.

One or two of those whom we have addressed have declined in a good natured way to answer our questions.

One correspondent will we hope pardon the publication of a hearty and vigorous letter which puts the argument against such inquiries both as strongly and fairly as possible:—

"We are always glad to oblige the Editor of the *Agricultural Gazette*, but this is going rather too far. I look at your circular and the accompanying blank form and am astonished at your modesty!—I see the Agricultural Society have awarded the sum of 200*l*. to their chemical officer for his researches into top-dressings, and into the value of straw as food. Some of us know all about this already hereabouts. I cut up many straw ricks into chaff during 1860-61, and fed lots of stock on that and other food; top-dressed Wheat and many other things, all I knew—or where should I have been now? But information such as this your Society values at 200*l*. Your paper will be worth more than 6*d*. on the 22d of March, if you can get some of our first-class farmers to fill up your columns nicely. It is just such knowledge as this in medicine that makes one man rich and great—just the absence of such as this which makes another poor."

Of course the rejoinder is that to any one who has kindly contributed his experience on the points here mooted, we offer that which will in the great majority of instances be worth much more—namely, the combined experience of a hundred others over in the aggregate a hundred times his extent of land. Even in the instances in which gentlemen farming no less than 2000 acres of land have filled up our enquiry sheet, we shall next week have to offer them in return for their most valuable contribution, the still more valuable report of an experience gathered off 70,000 or 80,000 acres in 20 or 30 counties of England and Scotland.

To the many who have enabled us to promise this we owe our hearty thanks; and even to our tried and valued correspondent who has for once administered an undeserved rebuke, our gratitude is due—both thanks for the information which on many past occasions he has kindly given us, and that sort of gratitude as well which has been described as "a lively sense of favours yet to come."

—— THAT was a very comprehensive and able address given the other day at a meeting of the Worcestershire Agricultural Society by Mr. CURTLER. His object was to effect an amalgamation with the Evesham Agricultural Society—a body belonging for the most part to the same county, and having the same objects in view—and thus not only increase their mutual ability for the more effectual attainment of those objects by the increased momentum of a larger association, but also economise the administration of those funds which they can now respectively depend on.

What those objects are was also well defined; and in particular the necessity of bringing chemistry to the aid of agriculture, not so much for the light by which its theory and explanation is to be discovered, as for that by which roguery and fraud in many of our dealings as men of business are to be exposed and warned off. It is not so long ago that guano and superphosphate were altogether unknown, and the use of cake in cattle feeding was comparatively rare. Cattle condiments, too, are an entirely modern device. The aid of chemical analysis, by which the character and real value of all these substances is ascertained, was then of comparatively little use. Now, however, every one uses artificial manure, the majority buy artificial foods, and not a few buy condiments.

All these things are "artificial"—some of them are combinations of waste substances of uncertain quality. Both fraud and carelessness may be combined in their preparation. And whatever the intention, or the want of it, which may guide their manufacture, the quality of the manufactured substance, and its power to carry out the declaration of its salesman, is a thing of which we want some better and more trustworthy guarantee than his. Such a guarantee is offered by the analyst. The efficiency of certain ingredients in manure and in foods is known, and he tells us the quantity of these ingredients in samples of each respectively. Together with the stricter method of dealing which, as shown by recent trials, is needed between the farmer and his tradesmen, the declaration of composition given by chemical analysis will be his perfect safeguard against roguery and even against misadventure.

The manufacturer or broker must now—not on exceptional or suspicious demand, but as the rule of ordinary trade—warrant the character of the article he sells. Samples must be retained, and should experience not bear out the character warranted, these samples in the hands of the chemist will ascertain whether or not a just claim for damage lies against the tradesman.

The need of all this and the necessity of more light being thrown by chemistry on the subject of cattle condiments too—the worthlessness of which, as our columns show, is again exposed by Mr. LAWES—was well illustrated by Mr. CURTLER, and his argument for the amalgamation of the two Societies on account of the greater strength thus to be acquired was felt to be so strong, that the only attempt to meet it was by proposing to postpone the subject until after the meeting of the Royal Agricultural Society in 1863. This however failed, and the meeting was adjourned till an early day, when the whole subject will be again discussed —and when the proposal to secure the aid of Mr. SIBSON of the Royal Agricultural College as the chemist of the amalgamated Society will be considered.

It is not for the sake of Worcestershire alone that we thus call attention to this discussion before the Worcestershire Agricultural Society. In many other counties there are neighbouring, and necessarily to some extent rival institutions, whose respective fields would be not only enlarged but better cultivated were their separate and to some extent opposing forces joined. And the speeches of Mr. CURTLER and of Mr. HENRY HUDSON, both given in an adjoining page, deserve to be read all over the country.

We have not yet alluded to the latter, but it is as deserving the attention of those in the management of these societies and desirous of their prosperity as the former. Mr. HUDSON'S object is to secure for them the patronage of the ladies. Securing such interest in these societies they will maintain and increase their popularity, which otherwise seem fated to wane. Even should their action be confined as now to the annual show and meeting, such popularity would then certainly increase. For the two hours' listless visit once a year to the show, we should then have substituted a hearty holiday. This is no mere expectation—it is what has been experienced. At several of the provincial gatherings in Staffordshire, where ladies have consented to grace the annual meeting, and sit down at the yearly feast, a new life and heart have inspired the whole proceedings, which have carried the Society as on the crest of a wave right through the year. Hear an enthusiastic Correspondent on this subject:—

"Stratford tried it last year. The effect was magical; every seat was taken, and the large tent erected for the dinner was literally crammed. And apart from the effect on the mere proceedings of the day, this has been and again will be the best possible way of introducing our young people—far better than at agricultural balls. Let your pen be used and your voice raised to accomplish this. In many a glen and on many a mountain side blush unseen the fairest flowers of England's beauty! Let these anniversaries offer attractions to bring out these secluded ones. The *Gardeners' Chronicle* and a host of colleagues are doing their best to create a taste for flowers and fruit. An annual display of these at our agricultural gatherings would interest all classes, refine the taste, and do much good. Let us have your help."

Unquestionably the social advantages and results of the movement advocated by Mr. HUDSON, and the refining influences which he would thus bring to bear upon our agricultural gatherings must commend the proposal to everyone. And those in the immediate guidance of these Societies, whose power and usefulness depend on the income which these Societies and their office bearers have to administer, must join in the advocacy of what, more than any other thing, would ensure their popularity and therefore their efficiency.

—— A LECTURE on Milk, which as reported in another page will be read with very great interest, was given at the rooms of the Royal Agricultural Society by Professor VOELCKER last Wednesday.

—— The subject of Cattle Condiments, on which Mr. LAWES' further report is given in another column, is to be discussed next Wednesday, when we hope that ample evidence may be forthcoming, whether for or against these condiments, from those who have any experience of their use to record.

—— It is a thing on which the members of the Society are to be congratulated that Mr. FISHER HOBBS has been placed upon the list of the Vice Presidents of their Society. Mr. FISHER HOBBS has been a most public spirited and laborious member of the Council for many years—and the distinction thus conferred upon him not only marks the sense entertained by the Council of his personal services, but is at the same time an acknowledgment of the value of the practical element in its composition.

EXPERIMENTS WITH
THORLEY'S CONDIMENTAL FOOD
MADE AT ROTHAMSTED.—No. 2.

A few weeks ago I gave the result of some experiments on the feeding of Pigs, in which Barley meal alone was compared with Barley-meal seasoned with Thorley's condimental food. The result was, that the addition of Thorley's condimental food increased the appetite of the animals; somewhat diminished their capability of converting their food into increase; did not improve the quality of the meat,

and increased the cost at which a given weight of it was produced.

In the experiments now to be considered food of an inferior quality was given, as it is frequently stated that the addition of condiment converts a food of inferior into one of superior quality. As in the experiments previously described, two Lots, of four pigs were selected. To Lot 1 a mixture of Barley-meal and bran was given; and to Lot 2 a similar mixture with a certain quantity of Thorley's condimental food in addition.

Table I. gives the weights of the pigs at the commencement and at the conclusion of the experiment; their increase in weight; and the per cent. of carcass (weighed cold) in the fasted live-weight.

TABLE I.

Pigs.	Weights. At commencement, Nov. 1, 1861.	Weights. At conclusion, Jan. 24, 1862.	Increase in 12 weeks.	Per cent. carcass in fasted weight.
Lot 1. Four Pigs Fed on Barley-meal and Bran.				
	lbs.	lbs.	lbs.	
1	115	272	157	81¼
2	108	247	139	81¼
3	106	198	92	75¾
4	96	214	118	80
Total ..	425	931	506	
Average ..	106¼	232¾	126½	79½
Lot 2. Four Pigs Fed on Barley-meal, Bran, and Thorley's Food.				
1	115	238	123	78¾
2	108	210	102	80
3	106	210	104	78¾
4	102	277	175	83
Total ..	431	935	504	
Average ..	107¾	233¾	126	80¼

Table II. shows the total quantity of food consumed by each of the two lots in 12 weeks; the average amount consumed per head per week; the average amount consumed per 100 lbs. live-weight per week; and the average amount required to produce 100 lbs. increase in live weight.

TABLE II.

	Food Consumed. Total: by 4 Pigs in 12 weeks.	Per head per week.	Per 100 lbs. live-weight per week.	To produce 100 lbs. increase.
Lot 1. Four Pigs fed on Barley-meal and Bran.				
	lbs.	lbs. oz.	lbs. oz.	lbs. oz.
Bran	1024¾	21 6	12 10	202 8
Barley-meal .	1860¾	38 12	22 14	367 12
Total ..	2885½	60 2	35 8	570 4
Lot 2. Four Pigs fed on Barley-meal, Bran, and Thorley's food.				
Bran	1020¾	21 4	12 7	202 8
Barley-meal ..	1862¾	38 13	22 12	369 9
Thorley's food	105	2 8	1 4	20 13
Total ..	2988½	62 4	35 7	592 14

Table I. shows that at the commencement of the experiment the four pigs to be fed on Barley-meal and bran alone weighed 425 lbs., and those on Barley-meal, bran, and Thorley's food in addition, 431 lbs.; or 6 lbs. more than the other. At the conclusion those having Thorley's food weighed only 4 lbs. more than the others; the lot having Barley-meal and bran alone having in 12 weeks increased 506 lbs., and the lot with Thorley's food in addition 504 lbs., or 2 lbs. less. Yet those having Thorley's food, with 4 lbs. of bran less, consumed 2 lbs. of Barley-meal more than the others, and 105 lbs. of the condimental food in addition.

Reckoning the food consumed per 100 lbs. live weight per week, the lot without Thorley's food consumed 12 lbs. 10 oz. of bran, and 22 lbs. 14 oz. of Barley-meal, in all 35 lbs. 8 oz.; and those with Thorley's food consumed 12 lbs. 7 oz. of bran, 22 lbs. 12 oz. of Barley-meal, and 1 lb. 4 oz. of Thorley's food, in all 36 lbs. 7 oz. That is, the pigs which had Thorley's food consumed only 3 oz. of bran, and 2 oz. of Barley-meal, per 100 lbs. live weight per week less than the others, and against this they consumed 1 lb. 4 oz. of the condiment; in all therefore more food for a given live weight.

To produce 100 lbs. increase in live weight it required, without Thorley's food 202½ lbs. of bran, and 367 lbs. of Barley-meal—in all 570¼ lbs.; and with Thorley's food, 202½ lbs. of bran, 369 lbs. 9 oz. of Barley-meal, and 20 lbs. 13 oz. of the condiment in addition—in all 592 lbs. 14 oz. In other words, to produce 100 lbs. increase with Thorley's food, it required 1 lb. 13 oz. more Barley-meal than when the Barley-meal and bran were used alone, and 20 lbs. 13 oz. of the condimental food in addition.

From the foregoing statements, it will be seen that the result obtained on adding the condimental food to food of inferior quality, was entirely in accordance with that previously recorded with fattening food of a higher quality. That is to say, the pigs receiving the condiment consumed rather more total food in proportion to their weight within a given time. and gave less increase in live-weight for a given amount of food consumed. The difference in favour of the Barley-meal and bran alone would doubtless have been greater had it not been that one pig on that food (No. 3) fed badly throughout the experiment, and finally gave a very low proportion of carcass to live-weight, bringing the average per cent. of carcass of that lot about ¾ lb. below that of the other. The average per cent. of carcass of the three other pigs on Barley-meal and bran alone was, however, about ½ lb. higher than that of the four pigs having Thorley's food.

There is nothing therefore in the above results to recommend the use of Thorley's condiment with inferior fattening food to those who feed pigs for profit. In fact, the following balance sheet of the experiment shows that in fattening for 12 weeks there was a balance of 1*l.* 10*s.* 11*d.* in favour of the lot fed without Thorley's food, notwithstanding that one of the pigs in that lot did badly throughout the experiment as above stated.

Lot 1. With Barley-meal and Bran.	£	s.	d.
4 Pigs bought in at 41*s.* 6*d.* each	8	6	0
1860¾ lbs. Barley, at 37*s.* 6*d.* per quarter of 416 lbs., including grinding	8	7	8¾
1024¾ lbs. Bran, at 5*s.* 6*d.* per cwt.	2	10	3¾
	£19	4	0½
88 stone 5lbs. Pork, sold at 4*s.* 4*d.* per stone, sinking the offal	19	4	0½
	£0	0	0

Lot 2. With Barley-meal, Bran, and Thorley's Food.	£	s.	d.
4 pigs bought in, 41*s.* 6*d.* each	£8	6	0
1862¾ lbs. Barley, at 37*s.* 6*d.* per quarter of 416 lbs. including grinding	8	7	10¼
1020¾ lbs. bran, at 5*s.* 6*d.* per cwt.	2	10	1½
105 lbs. Thorley's food, at 40*s.* per cwt.	1	17	6
	21	1	5¾
90 stone 1 lb. pork, sold at 4*s.* 4*d.* per stone, sinking the offal	19	10	6½
	£1	10	11¼

The results of these experiments with pigs, in which Thorley's condiment was used with inferior fattening food, may be summed up as follows:—

1. The addition of Thorley's condimental food increased the amount of food consumed by a given weight of animal within a given time.

2. When Thorley's condiment was given it required more total food to produce a given amount of increase in live-weight.

3. In fattening for 12 weeks there was a difference of 1*l.* 10*s.* 11*d.* on the lot of four pigs, in favour of Barley-meal and bran alone, over Barley meal, bran, and Thorley's food in addition. *J. B. Lawes, Rothamsted, March* 1.

Home Correspondence.

Air Drainage.—I have read with much interest your article on Mr. Hutchinson's system of drainage, but I am inclined to think there is probably more in his pneumatic view than you seem willing to give him credit for. It is well known that rain water has much air (gases, &c.) mixed with it, which it does not readily disgorge. Chemical action also takes place during the passage of the water through the soil, gases are thus disengaged, and in very wet weather are probably in large quantities carried into the drains by the water. How does the air so carried into the drain ordinarily get away? Its tendency is to accumulate and to rise towards the upper part of the drains and to settle in badly laid and irregular portions. If the drains are open to the atmosphere it may in the well laid drains escape. If not (supposing the lower part of the drain to be filled with water) it must find its way through the soil, which being barely possible in very wet weather, it must necessarily check the beneficial action of the pipes by acting the part of the dog in the manger. We experience occasionally great inconvenience from the collection of air in the (cast-iron close-jointed) pipes leading to the water wheel, the power of which is sensibly diminished until the air is set free. The flow of water in the branch pipes to the water trough, and for the supply of the house, being sometimes stopped by it altogether. From these considerations I think there may be, and probably is, much in Mr. Hutchinson's views. After long continued dry weather the pores of the soil are filled with air. How does this air escape when a heavy rain comes—no doubt. much at the surface, as you may frequently observe—but much is confined by the water, as is noticed by its disengagement, as step by step you walk leisurely along ill-drained ground. Driven into the drain how does this get away?—(supposing the lower part of the pipes to be running full bow). I throw out these for your consideration, as I know that truth is your object. *John Thornhill Harrison, Frocester Court.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

A meeting of this Association was held on Wednesday last at the Society's rooms, Hanover Square, Mr. Raymond Barker in the chair. Among the gentlemen present were Lord Feversham, Sir E. Kerrison, M.P.; Sir J. Johnstone, M.P.; Mr. Brandreth Gibbs, Mr. Cantrell, Professor Müller, Mr. Adams (the American Minister), Mr. Frere, Mr. Hall Dare, Mr. Blackburn, Professor Voelcker, Mr. Moore, Mr. Beale Brown, &c.

Eight new members having been nominated, and the ordinary business of the Society transacted, Professor Voelcker proceeded to give a lecture upon the nature and composition of Milk. The lecture was illustrated by various diagrams, showing the constituent elements of milk in different animals, and also by a number of lactometers for the purpose of testing the purity of milk and cream.

The Professor observed that milk was essentially an emulsion of fatty particles in solution, of caseine, and milk sugar. The fatty matter was not contained in it in a free condition, but was enclosed in little globules, which when the milk got sour were precipitated. In other words, the butter and fatty portions were encased in curd or caseine. Those cells were of different sizes in different animals, and varied from the 1 2000th to 1-4000th of an inch in diameter, some of them being round, and others egg-shaped. In addition to the substances just mentioned, milk invariably contained a certain proportion of mineral matter, which consisted of the same material as the incombustible part of bone, the ash of which was rich in phosphate of lime and phosphate of magnesia. Thus bone, earth, butter, curd, milk-sugar, and mineral substances were the normal constituents of milk. In diseased milk there were a number of accidental substances which could not be identified by any chemical tests, but only by the microscope. Pus generally manifested itself under the microscope in diseased milk, but even the microscope was not sufficient in all cases to prove whether milk was wholesome or not. Many things which possessed a medicinal effect were speedily absorbed into milk and rendered often as medicinal as the original remedies; in the same way colouring matter such as the red of madder, the blue of indigo or the common weeds Mercurialis and Polygonum passed into the milk and tinged it. He need not remind the meeting also that the flavour of milk was sometimes materially affected by the food of the cows.

Milk was white on account of the suspended opaque globules, and generally speaking the bluer it was the less cream there was in it, because the globules separated and rose to the surface; consequently, in testing milk by the eye, the more opaque it was the more curd and butter it contained, and the richer it was. From September to November, generally speaking, the quality of milk became better, but it decreased in quantity, and if animals were stinted in food, not only would they yield very little, but what little they did yield would be very poor.

There was a great deal of difference indeed in the comparative richness of the milk of various animals.

He had analysed the milk of the cow, the ass, the goat, ewes, and also the milk of a carnivorous animal the dog, and it was a most singular fact that in all the various constituents of milk, and more especially in curd and butter, the milk of the dog was by far the richest. No kind of food could at all compare with it, and solid butcher's meat contained less nutritive qualities by far than did this description of milk. This would explain the difficulty of bringing up puppy-dogs by hand; and indeed if any one wished to preserve a rare or expensive puppy that had lost its mother, the only food that could be given at all approaching in nutrition the natural food of the puppy was a very concentrated and strong effusion of beef tea. It was also singular that naturally there was no sugar in the milk of a bitch; but after it had been domesticated and fed upon bread and starchy food it made its appearance. That showed the intimate connection between food and the composition of milk. Asses milk was extremely poor, containing as much as 91.65 parts of water out of 100 compared with 87.02 parts, which was the proportion in the milk of cows, and it was for that reason that it was good for invalids, because containing as it did less butter and curd it was far more easily digested. He might mention that milk sugar, or lactine as it was called in chemical language, was the best of all curatives for indigestion, and if a little child was suffering from it a teaspoonful or two of milk sugar was the safest and best of all aperients. He attributed the poverty of the milk of donkeys to the food upon which they fed, and expressed an opinion that if their diet was changed their milk would become much richer. Passing from one of the poorest to one of the richest, ewes' milk, he expressed great surprise at the variations he had found in the quality of that description of milk, and mentioned that the Duke of Richmond having had many losses among his lambs had employed him to analyse the milk of the ewes. He did so and did not find it unhealthy, but he was struck with the difference in quality to that of the milk of the ewes in the pen at College Farm, belonging to the Society. It was quite possible that from external circumstances the milk of the Duke of Richmond's ewes was poor, although he could detect no disease, either by the microscopic or any other tests. Generally speaking the milk of a cow was richest in quality after she had had her fourth calf, but a year or two after that period it degenerated and became quite poor, as he had proved by analysing the milk of a cow that had had ten calves, which was good for little or nothing. This showed the impolicy of dairymen keeping their cows too long.

Of course climate had a good deal to do with the quality of milk.

In moist and temperate climates the milk obtained was larger in quantity, though poorer in quality than in dry and warm countries. No doubt also the amount of moisture in the food, and the general state of health and condition of the animal, had a very marked influence on the quality of the milk. There was one popular error which he had seen produced in most agricultural treatises, and that was that the morning milk as a rule was richer than the evening milk. The result of actual experiment with 16 samples of milk, was that in eight cases the morning milk was poorer than the evening; in four cases it was richer, and in four cases there was no perceptible difference. On the whole he had come to the conclusion that it depended very much upon the nature of the food which the animals had consumed some four or five hours previously. At one time he found the milk of a dairy stock poorer in the evening, the cows being out in Grass during the day, and probably not getting a sufficient supply, but having received in the evening oil cake (Rape) they produced in the morning richer milk, and when in the day time they were given Barley-meal and Rape cake they produced a richer description of milk in the evening than they did in the morning.

Lord Feversham inquired whether there was much difference in the quantity given by the cows in the morning and the evening.

Professor Voelcker said that the difference in the yield was not much. It was generally believed that thorough-bred stock did not produce so much or so rich a quality of milk as the ordinary dairy stock, and he had found on testing this that such was the fact.

In September, 1860, he selected three common dairy cows and three pedigree Short-horns, and placed them in good pasturage on a farm near Bristol occupied now by Mr. Stratton, and at that time by Mr. Proctor. After he had kept them some time in pasture he gave them each 1 lb. of excellent Linseed cake for a week and afterwards increased it to 2 lbs. The result was this. On Grass alone the three pedigree cows produced 28 pints of morning and 21 pints of evening milk, making 49 for the day, the common dairy stock 31 pints in the morning and 21 in the evening, making for the day 52 pints. After the cows

had each had 1 lb. of oil-cake per day per week, the produce was, for the pedigree animals, 26½ pints in the morning, and 22 pints in the evening—making together 48½ pints; that of the common stock, 28½ pints in the morning, and 18 pints in the evening—making together 46½ pints. When 2 lbs. of oil-cake had been given, the pedigree cows produced 26½ pints in the morning and 21 in the evening—together 47½ pints; while the common dairy stock produced in the morning 30 pints, and in the evening 19 pints—making together 49 pints. It followed, therefore, that while the quality of the milk was not increased by the oil-cake, the quantity was slightly diminished. The additional food, therefore, had a tendency to fatten the animals. The quality of the food consequently did not always prove its adaptibility to the production of a good and abundant supply of milk; for besides the tendency which cows had to fatten in consequence of the consumption of rich food, there were other considerations to be taken into account before they could properly decide upon the quality of food which ought to be given to milch cows. It was well known that oily matters passed rapidly into the milk, and if Linseed-cake were supplied too abundantly it would not make butter; and this fact was brought forcibly to his attention some time ago, on analysing some milk for Mr. Barthrop, which could not be got to churn at all, but would do nothing but froth. It turned out that he gave his cows Linseed oil cake in very considerable quantities, the result of which was that a large quantity of liquid fat was formed, which passed into the milk and could not be churned into butter, but remained in a liquid state, notwithstanding that it was very cold weather when the analysis was made. He had never become acquainted with a more striking case showing the effect of oily fat in preventing the clotting of cream or butter. Bad oil cake, especially bad Linseed cake, did a great deal more harm than was generally supposed by dairymen, and the inferior taste of the milk of stall fed cows was well known, but he believed that it was not so well known that the wholesomeness of milk was more effected by the abominable impurities which were put into Linseed cake than by anything else. Oil-cake crushers at the present time seemed to have the privilege of incorporating every kind of oily refuse which they chose into the cake for cattle—no matter what it was; and since that practice had been adopted they heard far more frequently of diseased milk than before. He would suggest to dairy farmers that it was by far the most economical mode of proceeding to buy the very best Linseed cake they could get rather than to take the inferior kinds offered at a lower figure. The use of watery food was also general, and indeed answered the exact purpose of mixing the milk with water afterwards; for in point of fact water was not so frequently added afterwards as it was incorporated with milk while it was being secreted. Water which contained lactic acid had a tendency to produce an abundance of milk; and when animals were fed upon a highly concentrated description of food such as Bean-meal or cake it might be very advantageous to give them brewers' grains or distillery refuse, two substances which contained lactic acid; or to generate it by steeping Barley-meal some time in water and allowing it slightly to ferment. By giving a portion of that with Bean-meal or Rape those substances were much more valuable for the formation of milk of a good quality.

The learned Professor then proceeded to explain at some length the character of the various lactometers which he had before him.

He observed that the ordinary mode of testing milk by the specific gravity was not always the most correct, because it happened that if a certain quantity of cream was removed and water substituted, the specific gravity, as shown by the float, would be precisely the same. The best test was that obtained by gravitation after the separation of the milk from the cream. When the temperature was about 50 that separation took place in about 24 hours, and a very small quantity only remained in the milk. It was impossible, however long milk was kept, to separate the cream completely, and although it might stand 36 or 48 hours there would still be some portion of the fatty matter in milk. The longer however it stood the more dense would the cream become, and it was always as well to maintain as equal a temperature as possible when testing milk. When the cream was removed and the milk was watered, the lactometer indicated a lower specific gravity than it would in its natural condition. They could thus easily ascertain whether milk was watered, whether it was otherwise good; and it was very desirable to have a ready mode of testing it. He proposed to make analyses of various descriptions of milk purposely mixed with water and tested by a lactometer of the description before the meeting in order to assist at the solution of this difficult practical question. In conclusion he observed that the best lactometer he had yet seen was one similar to an alkalimeter now extensively used in the laboratories of analytical chemists, which consisted of a glass tube into which milk might be put, and which was furnished with an apparatus for letting off the skim milk when the cream was separated without allowing the latter to pass; after which the usual gravitation and microscopic tests could be applied. He thought that at no very remote period Mr. Griffin, the manufacturer of chemical apparatuses, by whom he had been greatly assisted in his investigation of all kinds of lactometers, would succeed in producing one which would be practically useful for the general testing of milk.

Mr. Beale Brown, in moving a cordial vote of thanks for the able lecture given by the Professor, took the opportunity of inquiring whether Gorse, which was plentifully used in Ireland, would not be a good and nutritive food for cows.

Professor Voelcker replied that he thought it would, being very healthy indeed for horses.

Lord Feversham seconded the motion, observing that he had listened with great attention to the lecture, and had been struck with the able manner in which the subject had been handled by the learned Professor. Of course in a matter so naturally discursive as the feeding of cattle, many points had necessarily been slightly touched upon or omitted altogether, and he could not help thinking that the quality of milk depended very much upon the breed of the cows. Unless therefore experiments were made with respect to the produce of all or most of the varieties, no sound general conclusion could be drawn. They had not heard anything with respect to the Herefords, Devons, and Alderneys. No doubt Grass-fed cows generally yielded an abundance of milk, and if the pasture was good there would be plenty of butter in it. With regard to winter keep he could not help thinking that Mangel Wurzel were an excellent substitute for Grass.

The Chairman observed that the question of separating the cream from the milk without skimming had come before the Society some years ago, and it was generally thought that it might be done by means of a syphon.

In reply to Mr. Moore, Professor Voelcker said that he considered shallow milk pans the best for throwing up cream. He did not disapprove of dairies being open to a free current of air, but the worst thing that could happen to milk was to have damp air hanging over it, and a gentleman who had recently published a little work in Sweden on the best mode of keeping milk had stated that on the appearance of a thunder-storm in summer weather he had found great advantage from lighting a fire in the dairy and keeping the air dry.

An animated conversation followed in which Mr. Blackburn, Mr. Moore, Mr. Cantrell, and other gentlemen took part, and in which the nutritive qualities of Bean-meal were attributed mainly to the presence of an abundance of phosphate of lime. It was also stated that the reason why Linseed oil was likely to give butter a peculiar flavour as compared with Rape-cake was that the latter was more unctuous and resembled more nearly the constituents of butter.

Mr. Blackburn, who supplies a large quantity of milk for the London market, and which is brought a distance of 25 miles by rail, mentioned that it was necessary to take care that the milk should not be placed in the cans in a warm state. When he first began to supply it he had it put into the cans just as it came from the cow, but he had frequently complaints that it arrived in so coagulated a state that it was nearly useless. The matter caused him a great deal of trouble, but at length he hit upon the plan of using a refrigerator and reducing the temperature to that of cold water, since which he had not had a single complaint.

A cordial vote of thanks was given to the learned Professor, and the Chairman having announced that at the next meeting a paper would be read by Mr. B. Brown on the subject of Condiments for Cattle, the proceedings were brought to a close.

On Wednesday the 26th inst. Mr. Holland, M.P., will read some "Notes on Steam Boiler Explosions."

Worcestershire Agricultural: At the annual meeting of this Society, held last week, the Committee's report was read:—

It stated that the total amount of premiums for 1861 was—Offered by the Society, 175*l.* 5*s.*; by private members, 155*l.* 2*s.*; total, 330*l.* 7*s.* These premiums, together with every outstanding account, have been paid, and the result is as follows:—Received of the Society during the year to December last, 588*l.* 10*s.*; expended, 596*l.* 16*s.* 5½*d.*; arrears of subscriptions since received, 23*l.*; balance in favour of the Society, 14*l.* 13*s* 6½*d.*

Mr. Curtler said:—When they had annual subscriptions, independent of private premiums, to the amount of 356*l.* 5*s.*, and that of that amount the sum they distributed in premiums was only 175*l.* 5*s.*, leaving a balance of 181*l.*, he thought that at all events they should keep clear of getting into debt. He must say that 150*l.* expenses, as compared with 300*l.* total subscriptions, was an outlay that deserved attention. For several years he had been of the notion that an extension of the Society by a junction with the Evesham Association would be productive of satisfactory results. To some extent he believed that the rivalry which had existed between the two societies had been prejudicial to both. With respect to their meetings he did not think that the members assembling once a year for a couple of hours was sufficient to ensure the success of the Society. The subjects they should discuss were too comprehensive, and the time too short to allow them to do more than the usual regular routine of business. They ought, therefore, to have meetings on other days, where the ins and outs, the pros and cons of the whole matter might be discussed, and all difficulties solved. He was satisfied that if a committee was formed so as to procure a meeting of land-owners and tenant farmers, it would be attended with very great success to the Society, and lead to the advancement of agriculture in this county.

One most vital matter connected with their business was the indifference, and, as he thought, short-sightedness of agriculturists, who, being repeatedly applied to to subscribe towards having an agricultural chemist appointed in connection with the Society, declined to do so. It was, he contended, a matter almost of impossibility to over-rate the importance of chemistry to agricultural pursuits. Evidence had been recently given that oil-cake was adulterated so as to become poisonous, cattle having died of it within a few days of its being administered to them. No doubt farmers in this neighbourhood would consider, and justly, that they were dealing with honest tradesmen, who would not sell adulterated articles if they knew it. But it should be remembered that those tradesmen were not chemists, that they were simply carrying on their trade on the faith of other persons' assurance, and that they, any more than the farmer himself, could not go beyond the best of their belief. The result might be that the oil-cake sold was either good for nothing, or that it would be poisonous and destructive to the animals. Mr. Lawes, who was a great authority on these matters, had, as many present were doubtless aware, published that very week a statement showing the utter inefficiency and the worthlessness of Thorley's food, which at one time was sold at 50*l.* a ton, and still fetched 40*l.* a ton, and a great deal of which was consumed in this county. Mr. Lawes showed the utter worthlessness of that food as regarded pig feeding—whereas any one who had read Thorley's publications must have seen that he stated the food was efficacious for pigs. Mr. Lawes had tried the food on the Duke of Bedford's estate, and found it not worth a snap of the finger. Numbers of proofs had also been afforded of the adulteration of guano, and the same might be said of every artificial manure. He had been told by a dealer in manures living in this city that a very large quantity of guano was sold annually in this county. Few, very few of those who purchased that manure and applied it to their land were able to judge of its real quality or value, and hence the necessity for chemical analysis. They had now a company established in London to provide all sorts of manures, blood manures and others, at large prices, but very few of the farmers knew exactly what they got or how it should be applied. Hence it was not unfrequent that they heard farmers complaining of their land that they could not get a good crop; that they must give up, and so forth; whereas they might, by spending 2*l.* or 3*l.* for a careful analysis, be able to tell whether the manure they had been using was applicable for the land, and if not what other manure was most suitable. Notwithstanding, however, the large amount of capital that was involved in such matters in this county, it was still a fact that hitherto they had been unable to raise 100*l.* for the employment of an analytical chemist to enable them to solve their difficulties. Mr. Curtler then spoke of the cheapness at which lime could be procured from Much Wenlock and Derbyshire—the latter being delivered at any station along the railway for 10*s.* 6*d.* per ton to almost the very farms of those who used it, instead of their having to fetch it from a distance of 13 or 14 miles as formerly. Lime might also be easily procurable from Earl Dudley's kilns at Martley, and from Earl Shrewsbury's kilns at Huddington, but as in respect to guano so also as to lime, great difference existed in the comparative value of the article, to ascertain which the services of an agricultural chemist were needed. In fact all these were matters of serious importance, and ought to be well considered. In proof of the value of a knowledge what manure was necessary and suited for land, he might notice the case of Mr. Lett, who paid 5*l.* for an analysis of soil, and at a cost of about 30*s.* per acre, effected, under the advice of a chemist, more good to his farm than he would have done by blindly laying out 3*l.* 10*s.* per acre. How much longer, then, he asked, would the Society go on without the assistance of chemistry? It seemed to him important for the interests of agriculture in the country that landlords and tenants should be brought together more by the Society, and that landlords should assist in the gradual progress of farming improvement, by giving prizes out of their own pockets for the best cultivated farms on their estates. If those premiums were given through the Society no man need fear incurring the odium of interference with his neighbours; they would have many a well cultivated farm, and the slovenly farmer would be induced to prick up his ears and discontinue his slovenly habits. Then if the land was over-run with game, over stocked with timber, or in other respects required improvement, mutual arrangements might be made alike advantageous to both landlord and tenant. It was all very well for certain landlords to talk about granting leases, or for tenants to discuss tenant right, but many difficulties would have to be settled before a satisfactory system of leases could be brought about, and those matters he considered might best be discussed by a combined central society. He proposed "That the meeting be adjourned for the purpose of a conference between the Worcestershire and Evesham societies, with a view to form an amalgamation, and to extend the operations and usefulness of the societies." The result he believed would be not only to make the Society more interesting in itself, but of more usefulness to the agriculture of the county at large.

Mr. Woodward seconded the motion proposed by Mr. Curtler for the adjournment of the meeting, expressing his approval of the observations made by that gentleman and the necessity for constituting the Society into, in many respects, a Farmers' Club, the members of which should meet often and discuss subjects of practical importance. Mr. Woodward remarked on the many and varied productions of the county, and the necessity for improving their cultivation as much as possible.

The Chairman said that whilst he felt much indebted to Mr. Curtler for the very valuable remarks he had made, it was but justice to the committee that he should say that every topic mentioned by Mr. Curtler had been most anxiously discussed by them, and that repeatedly. But it must be remembered that the Society had fallen into great pecuniary difficulties, and the committee had used their best endeavours to rid them of those difficulties.

The Chairman then read, as bearing on the proposed appointment of a chemist, a letter from Mr. Sibson, of the Royal Agricultural College, Cirencester. He fully concurred in the remarks that had been made on the subject by Mr. Curtler, and considered that it was impossible to over-rate the value of chemistry as applied to agriculture. He recommended however the postponement of the discussion and of the project for amalgamation with the Evesham Society until after the meeting of the Royal Agricultural Society, which would in all probability be held at Worcester in 1863.

Mr. Pakington said:—It was most important that the farmers of this county should obtain as much scientific knowledge as possible. From the discoveries of the present day, all must feel that there was a great power latent in the earth, and it required scientific knowledge, particularly of chemistry, to develop that power. He hoped that Mr. Curtler's observations, in nearly all of which he concurred, would go forth to those influential in the Evesham Society, and that all technical difficulties in the way of amalgamation might be removed. He saw no use in waiting till after the meeting of the Royal Agricultural Society. On the contrary, he hoped that all friends of agriculture in the county would unite for the concentration of the Society instead of having two separate associations.

Mr. H. Hudson, a member of the committee of the Evesham Society, said that that Society was in a very good position as regarded their funds, and, although he was not deputed by them to say so, yet, from what he

view of the opinion of the Evesham committee, they were not desirous to become more closely connected with the Worcestershire Society at present. He believed there was a prospect of an amalgamation being practicable hereafter, but he thought it would be better not to attempt that till after the Royal Agricultural Society's meeting next year. He felt satisfied not only that there was a prospect of that meeting being held in Worcester, but he looked upon it almost as a certainty. He had heard it stated that it would be totally impossible to take the stock and goods of various descriptions that would be supplied to the exhibition to Hereford with one line of railway, and, besides, there was that prejudice in Herefordshire for Hereford cattle, bulls, cows, and calves, that nothing else would have a chance. A man must give up all claim to being a Herefordshire man if he ventured to prefer anything else than the Hereford stock, the Hereford red cow with the white face; so strong was the prejudice existing in that county for their own particular stock. The Evesham Society had discussed the matter of want of interest in agricultural societies, and the committee of that Society had lately determined that it was desirable in every way to have some attraction for the fair sex. He thought that agricultural societies would prosper and do much better if they had the patronage and smiles of the fair ladies of the district. Therefore he was of opinion that some attraction should be held out to the ladies to attend the meetings of such societies, not simply to go through the show yard and have the superiority of different animals pointed out to them, but that other attractions should be afforded. Remembering the success that had attended the agricultural meeting at Stratford last year, the Evesham people proposed to carry out the same arrangements on a small scale, that there should be a flower show held on the same day as the agricultural meeting. By that means it was hoped the ladies would be induced to take an interest in the proceedings, and that they would be more successful. The flower show would not be held in connection with the agricultural society, but residents in Evesham had promised their assistance, and he hoped the result would be a good one. He had listened with great attention and interest to the discussions that day, and he agreed almost entirely with the Chairman. He believed that if they postponed the consideration of amalgamating the two societies till after the Royal Agricultural Meeting had been held next year, they would be more likely than at present to induce the Evesham Society to join them. The Worcestershire Society would in his opinion do much better if the citizens would have a flower show on the same day the exhibition was held. At any rate he would not recommend a conference with the Evesham committee at present.

Mr. CURTLER considered that no good could be gained by deferring the questions he had suggested till after the meeting of the Royal Agricultural Society, and therefore they might as well take steps for obtaining a business-like conference with the Evesham Society at once. With respect to Mr. Sibson's letter, it was one of great importance, but unless the meeting was adjourned he did not know how the committee could reply to it. As to the means for employing a chemist in connection with the Society, they might easily be raised. If each member, instead of subscribing 1*l.*, would increase the sum to 2*l.* or 3*l.* the difficulty would be removed. If the meeting was adjourned the committee would write to Mr. Sibson and obtain his terms, and would then be able to judge whether they were better than the terms offered by Mr. Trachsel some time ago, and whether the offer could be accepted. He confessed he had great diffidence and difficulty in pressing the motion after the observations of the Chairman, who he knew, possessed great influence in the Society, but he thought it was a motion that could do no harm and probably might do good. He therefore should like to hear further opinions upon it.

After considerable further discussion, in which Mr. Curtler, Mr. Hudson, Mr. Woodward, and Mr. Lett took part, the latter instancing the pecuniary good he had derived from taking the advice of Mr. Trachsel, an eminent chemist, in preparing a field for the growth of swedes, by which he saved 2*l.* an acre, the Chairman put Mr. Curtler's motion to the meeting, and it was carried unanimously. It was resolved that the adjourned meeting should be held on Saturday, the 12th of April.—*Abridged from the Worcester Chronicle.*

Reviews.

The Journal of the Royal Agricultural Society of England. Vol. XXII. Part II. J. Murray.

The Second Part of the Volume for 1861 has just appeared. Such delay is not for the interest of the Society or of its members. We have been all waiting for months for the report on the steam cultivation trial at Leeds in July last which has only now been published. And this is now old: neither Fowler nor Howard would now tie themselves down to the machinery exhibited at Leeds; and that which would have been a great addition to our knowledge if issued six months ago, is a drag and not a stimulant, appearing as it does after further improvements have been made.

The Part includes a long and elaborate account of […]shire agriculture, occupying 140 out of 240 pages—a very instructive and complete report by Dr. Voelcker on the composition and nutritive value of straw—an interesting account by M. Trehonnais of the water economy of France—the report of the Implement trials at Leeds—and shorter papers on Pedigree in Wheat by Mr. Hallett, on the statistics of the meat market by Mr. Herbert, on laying land down to Grass by Mr. Sutton, and on the management of Clover layers and other particulars by Mr. Lawrence.

It must suffice for the present if we thus simply enumerate the contents of the publication, leaving a fuller account of them till another day. Meanwhile, as illustrating the need which is felt of a greater variety and more immediate utility in its papers than it has for many years exhibited, we quote a passage of the article contributed by Mr. Lawrence:—

"It has been matter of common observation amongst the members of our Society that our Journal has of late years been wanting in variety of information, coveted more than ever by a very large proportion of the subscribers; and that it has been too much occupied by long scientific papers, to the exclusion of practical communications of experiments, and observations of the results of special modes of treatment in the culture of crops, and the management and feeding of animals, &c.

"I have been led by such remarks to compare the contents of some of the last volumes with those of the early volumes, and I find those remarks confirmed to an extent I had not looked for. The first six volumes of the Journal contain 326 articles, comprising an infinite variety of useful information, chiefly from members of the Society; the last six volumes, 16 to 21 inclusive, contain 157 articles only, less than half the number contained in the first six volumes.

"If agriculturists have not increased numerically, the number of the intelligent, the inquiring, and of the observing has greatly increased during the age of our Journal. It therefore may be desirable to consider how it has chanced that there should have been a contemporaneous diminution of communications, and whether there may not be some means of correcting this anomalous state of things. Is it not desirable to invite and encourage brief reports from members of the Society and others to the Journal, of facts observed in their own practice, and the results of any experiments or observations arising on any novel practice in their respective neighbourhoods?

"So long as our Journal is considered to be mainly designed for the promulgation of strictly scientific papers—valuable as undoubtedly they are—and for prize essays, many intelligent and observing farmers hesitate as to communicating results of their observations, under an impression they would not be valued or considered worthy of notice, or that they might be as an old story to their more advanced agricultural brethren. No doubt similar observations suggest like modifications of practice to many persons engaged in the same occupation; but when it is borne in mind that our Journal gets into the hands, directly, of several thousand members, and, indirectly, of many non-subscribers, the probability is that any special practice out of the ordinary routine of his county, which an individual has been led to adopt from his own observation and reasoning, will afford useful hints to many readers of the Journal."

Midland Counties Almanac and Rural Handbook. Fifth year of publication. A very cheap and well arranged almanac—loaded with agricultural and other advertisements, and otherwise justifying its title as a Rural Handbook.

Farm Memoranda.

BERWICKSHIRE MERSE FARM.—Berwickshire may be said to be divided into three parts. The Lammermuir range of hills extends along the north side of the county, at an altitude of 600 to 1200 feet, and is intersected by several streams and narrow strips of fertile land. Towards the west a series of flat and bleak moors leads to Lauderdale. The farms contain some portion (more or less) of arable land in haughs and on the lower hill-sides; but the distinguishing features of these districts are round-backed hills of Grass and heather, occupied by flocks of Cheviot and blackfaced sheep. The climate is somewhat late and precarious for corn growing, and it is largely for the sake of the Turnip crop that cultivation is carried on.

The principal district, and the one we have to do with, occupies the centre, south, and east of the county; and is called the Merse, from the extensive marshes which occupied all the low grounds a century ago or less. The eastern part rises towards a rocky sea-coast; but the general surface exhibits a series of undulating ridges, from 200 to 300 feet above sea-level; and is, with some exceptions, well drained by the White and Black Waters, and minor tributaries of the Tweed.

The soil is perfectly various; clay, loam, gravel, sand, Moss, and moor lying often in close proximity. If any classification can be made, we may designate the south as the clay district; it is there that bare fallows may be frequently seen. The staple of the Merse, however, is a Turnip soil, more or less tractable; and the course of cropping is a combination of the four and five-field systems.

The farm, from which occasional reports appear in your "Calendar of Operations," lies near the centre or "howe of the Merse," at an altitude of 200 to 300 feet; and rests on the sandstone of the coal measures, the coal being an absent member. The 500 acres are all arable; but some portions of alluvial flats are subject to danger from unusual floods; and, where not embanked, these haughs are allowed to lie in Grass for a time, to the extent of some 30 acres.

It may be mentioned by the way that old Grass land is seldom attached to a Merse farm, but is found in "policy grounds," the grazing of which is let by auction every spring. The soil agrees with the chequered character of the district; one half being good loam of varying strength, and the rest lighter and shallower, such as gravelly sand and moor. The subsoil was much of it naturally wet; but during half a century many deep stone drains were put in to intercept special springs or spouts, and about one half of the farm has been more recently drained with Government money. The fields are from 20 to 45 acres in extent, are bounded by straight single fences, and are accessible by private roads, maintained from the produce of a soil rich in whinstone boulders, large and small. The rotation of crops is—1st, Oats; 2d, Turnips, and a few acres of Potatoes; 3d, Wheat and Barley; and 4th, mixed Grasses and Clovers, about one-third part of which is allowed to lie a second year. A piece of Beans for home use is occasionally taken on part of the hay field; but the growth of pulse forms no part of the regular system. Topdressing of corn is practised only when a poor crop may be apprehended. The dung is applied to the drilled roots along with portable manures, and the succeeding grain crop is provided for by eating a portion of the Turnips with folded sheep. In sheltered yards and boxes we have as many cattle as will dispose of the straw, getting full Turnips, with a little cake and meal. These will be all off to Newcastle or Wakefield by the month of May, and perhaps a few lean ones brought in for the Grass. Of the flock of large-framed Leicester ewes, one half produce twins, and these lambs, along with a few more purchased, get sliced Swedes from the new year, and are fat at 14 months, leaving a good fleece of long-stapled wool. A few selected Tup hogs are retained till harvest time, and sold annually at the neighbouring market town.

Breeders from both sides of the Border take their rams to Kelso on the second Friday of September, and near 2000 each year are sold by auction to buyers from all parts of the kingdom.

The working strength of this farm includes six pairs of horses, each pair groomed and fed by its driver; besides a cattle-man, some 10 young people, and a steward for general superintendence. The shepherd is immediately responsible to his master. The men are paid chiefly in kind as follows: 60 bushels of Oats, 18 of Barley, and six of Peas, 1800 yards of Potato drill (with manure and horse-labour), the keep of a cow, a good cottage with pigsty, and coal at pit prices. Besides this the steward has 16*l.*, each ploughman 5*l.*, and the shepherd the keep of 10 ewes and three hogs. Each householder is bound to furnish a woman or boy at 1*s.* in summer and 10*d.* in winter; the Potatoes being looked upon as supplementing the money wage. All our workers are resident with their parents, but where the hind has to hire a stranger there is perhaps some justification of the popular term "bondage." In harvest time all hands get porridge and milk, bread and beer, and the "bondagers" being full reapers have some 3*s.* a day.

Burgess and Key's self-delivering machine is used where the corn is standing, but its weight is a great drawback, and a really heavy crop is more conveniently taken up by the hook. We have a good water-power for threshing, dressing, bruising, grinding, and chaff-cutting, but it fails much sooner in dry weather since the general extension of drainage. The high-speed or bolting drum is good for straw, but the tear and wear is much heavier than with our old beater. Our implements of tillage are few and simple; swing ploughs, harrows, a grubber or two, scufflers, and paring ploughs, besides drill and broadcast machines, and chain harrow. Last spring Fowler's tackle paid a short visit to a neighbouring farm, where it did its work most efficiently, and this is all that we have seen of steam-cultivation here at home. With fields so suitable for steam-work, this must be owing to the comparative facility with which our soils are managed with pair-horse implements. *J. T.*

SOUTH HANTS FARM: *Report to the end of February. Horse Labour.*—With scarcely any exception the horse-labour of the farm has been continuous during the past fortnight, the weather having been propitious for all kinds of field work, and the cultivation for all spring crops is in a more forward state than usual, and certainly a great contrast compared with last year. The past winter having been so dry, the land requires but little more than half the labour to bring it into a good tilth which it needed last spring; in fact, we should say that the temperature of the subsoil is as high as ever known at this season, therefore giving promise of an early spring. Ploughing for Oats, laying out chalk, carting manures, harrowing and cross ploughing for Potatoes have been going on most effectively without hindrance. The odd horse has also been constantly at work drawing Mangels, Carrots, &c. for the sheep and cattle, also carting Couch on to Grass land, working the chain harrow on the seeds to break down the stubble, which it does most effectually, and we have never seen it done so well by any other means. As we sow our Clover and

Grass on the Wheat in preference to sowing on the Barley or Oats (which is the usual plan), we have generally a good deal of stubble left, except on some parts of the broad Clover, which is mown in the autumn for cattle. We would here remark that Cambridge's chain harrow has been invaluable to us for many purposes for some years past, particularly for dressing down pasture land, for which purpose bushed harrows were formerly used; indeed for all uses where a fine tilth on the surface is needed, especially for seeding Clover in Wheat in spring, this implement is unequalled.

Horse Feeding, and Stable Management.—We never drive more than two horses in ploughing, and as our land is hilly and rather heavy tillage, it is necessary they should be well fed, and particularly as we use large up-standing horses; our allowance of corn has been 80 lbs. of white Oats, with 2 cwt. of Clover hay per horse per week, although through the winter, from the termination of Wheat sowing to the commencement of spring tillage, we give, instead of hay, Oat-straw *ad libitum*, with the same allowance of Oats. We limit them as to quantity of water, and never allow a horse to drink from a pond or a trough, but offer them water in a bucket three times a day. In this way they never get more than from 2 to 2½ gallons at a time, which is an ample quantity for the largest size farm horses. It is quite impossible to regulate the quantity of water the horses drink when led to a pond or trough; and in the summer season, when they are excited by hard work, their thirst induces them to drink too large a quantity of water, which in our opinion produces what is termed broken wind; and we believe, too, that it arises much oftener from this cause than any other, as we have never had a broken-winded horse since we left off the practice of leading them to a pond for drink.

The health of the horse must of course depend greatly upon the accommodation afforded, and the general management of the stable, and we must say that the ordinary stable management is a fruitful source of disease. This induced us some 12 or 13 years ago to take up the old stone floor of the stalls of our stable and excavate the earth about 18 inches; we then refill this space with dry loamy soil, upon which the horses are allowed to stand, the dung being removed daily as usual; after a few days this earth becomes quite hard and firm for the horses to stand upon, but still absorbs all the urine, which is our object, and by this means we obtain a perfectly pure and healthy atmosphere at all times, until the earth becomes saturated to excess, and begins to give off the fumes so offensive and detrimental in ordinary stables; the earth should then be removed and replaced with dry mould as before. The change will be required about twice a year, at about four months in the summer when the horses eat green food, and at eight months in the winter and spring. Since we have adopted this plan we have generally good health amongst our horses, not a single case of blindness, broken wind, grease, or any of those complaints incidental to ordinary stables, where the urine is too often allowed to sodden the floor of the stalls and render the air so foul that it must of necessity produce disease; and we venture to say and estimate, that horses will live from two to three years longer when accommodated with earth-floored stalls in this manner—the great advantage being apparent, when we estimate, under ordinary circumstances, the average depreciation in value per horse at 3*l.* per annum. The feeding racks are also important. Instead of the old kind of rack overhead with manger below in which the animals feed—the stronger one getting the lion's share of the food, we place the horses in pairs, in stalls divided with a boarded partition; the horses being tethered at either corner they are not liable to accidents by crossing ties, &c., nor can they interfere with each other at feeding time, as the box in which they are fed, being 2 feet by 2 feet, is placed at each corner of the stalls, with the rack for hay or straw between the two feeding boxes, wherein they can eat in common. Horses placed in pairs in this way should stand in the stable as they work in the field, those which are found to agree best together being paired out, and it will be found that the numerous losses which occur to farm horses; may often be traced to promiscuous intercourse in the stables or yards, which it is the especial object of this system of management to avoid.

Manual Labour.—This calls for no special remark, having been of the routine character described in our last report, both for men and women.

The Stock.—Another fortnight of uninterrupted fine weather has greatly improved and advanced the value of the sheep stock; we have continued to feed the London market with a few forward lambs weekly, which now fetch 7*s.* 4*d.* per stone, a satisfactory price to the graziers. The store pigs are best cared for when fed on white Carrots at this period of the year, receiving once a day a small quantity of grey Peas. It is the common practice to feed store pigs on Mangel *ad libitum* in the yards, but this is very detrimental to young pigs under six months old, although they may get Beans or Peas in addition; we have found that young pigs taken from the mother and fed in this way will die off gradually, and pine away into low condition first; when, however, examined after death, the lungs are found to be decayed and quite black. This has proved the case in our experience, and we have heard of it also as matter of complaint from various parties; we, therefore, do not hesitate to pronounce Mangel as a dangerous food for store pigs under six months old, but for fatting it may always form a profitable addition to meal, &c., in proper quantities at any age, for a statement of which we refer to our last report. *J. B.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, March 13, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth, 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	7	29.39	53	51	S.W.	4	6	57	47	61	45	0.20	42	41½
Saturday ..	8	29.64	51	49	S.	2	2	57	48	68	45	0.01	44	42½
Sunday ..	9	29.47	48	46	S.	3	3	61	44	81	41	0.09	45½	43½
Monday ..	10	29.92	48	46	W.	2	6	50	40	58	36	0.50	45½	44
Tuesday ..	11	29.82	49	48	S.	2	6	58	41	83	36	0.25	46	44½
Wednesday .	12	29.69	49	47	W.	2	5	55	45	61	42	0.01	46½	45
Thursday ..	13	29.98	44	43	N.	1	7	55	36	75	32	..	46½	45½

Notices to Correspondents.

Liquid Manure: *G P.* MacDougall's disinfectant will, we believe, remove the smell.

Poultry: *W. Hallen.* All you name is caused by vertigo, which probably arises from an injury to the back. It will, unless it yields to remedy, end in paralysis and death. It may have been caused by a blow with a switch or stick, or by a small stone. The only treatment is free purging with castor oil, a table spoon full every other day for eight days, and stimulating food such as bread and ale. If the bird is not important to you, we advise you to kill it. The recovery will be long. The gradual disappearance of the feathered tribes from market as spring approaches gives it a naked and clear appearance to which we have been unused of late. The wild birds that lately served to decorate the poulterers' shops are assuming summer plumage and preparing for the breeding season. Our scanty quotation is therefore confined to the inhabitants of the poultry yard.

Large Fowls	Each	4*s.* 0*d.*	to	4*s.* 6*d.*
Smaller ditto	,,	3 0	,,	3 6
Chickens	,,	2 0	,,	2 6
Goslings	,,	6 0	,,	6 6
Ducklings	,,	4 0	,,	4 6
Guinea Fowl	,,	2 6	,,	3 0
Rabbits	,,	1 4	,,	1 5
Wild ditto	,	0 8	,,	0 9
Pigeons	,,	0 8	,,	0 9

Phospho-Peruvian Guano: *Sub.* Its character and composition are described in our last year's volume. It is derived, as there described, from a guano occurring on Monk's Island, off Venezuela, which is procured in large lumps, reduced under a millstone with some difficulty into a brownish gray powder, containing organic matter which yields a small proportion of ammonia. It contains no less than 41.3 per cent. of phosphoric acid, 6 or 7 per cent. more than commercial bone ash usually contains; and it is therefore "a peculiarly valuable and excellent material for preparing artificial manures that are rich in soluble phosphate of lime." It contains, in fact, both less lime and more phosphoric acid than ordinary bone phosphate. Superphosphate, or rather soluble phosphate of lime, is made by taking away by means of sulphuric acid two-thirds of the lime with which the phosphoric acid is combined in bone phosphate; the remaining lime then forms, with the phosphoric acid, soluble phosphate, and at the same time a great deal of sulphate of lime is produced. The greater part of Monk's Island guano is composed of a phosphate which, containing less lime, requires less sulphuric acid for producing soluble phosphate, and the commercial product, which is a superphosphate, contains less sulphate of lime than when the ordinary phosphatic materials are employed. It is the resultant superphosphate thus produced which is advertised and sold as "Phospho-Peruvian Guano." The following figures represent its composition:—

	Macadam.		Anderson.
Soluble biphosphate of lime, 20.15, equal to ordinary bone phosphate rendered soluble	31.44	..	28.53
Insoluble phosphates	10.87	..	11.51
Hydrated sulphate of lime	38.92	..	38.67
Hydrated sulphuric acid	0.53	..	0.00
Alkaline salts	4.36	..	0.96
Sand	2.35	..	2.41
Ammonia	2.66	..	3.23

Subsoil Ploughing: *Chiddingstone.* It is, or was, common in Gloucestershire to do the so-called mole draining by means of a windlass on the headland, and the same plan might no doubt be adopted for your subsoiling. But you should inquire for a steam plough or steam cultivator.

THE LONDON MANURE COMPANY
(Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. Macadam, Secretary.
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 [illegible]
These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

New Source of Ammonia.
To Manure Manufacturers and Dealers.
ULMATE of AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that Wool contains more Nitrogen (yielding Ammonia) than any other kind of animal matter, proves the Ulmate of Ammonia to be a highly valuable manure, the Analyses by Professor Voelcker, the Chemist of the Royal Agricultural Society, and other high authorities, showing a per centage of Ammonia exceeding [illegible] per cent., or equal to an average sample of Peruvian Guano; while, from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of ammonia. Being a fine dry powder, it is peculiarly suitable for use in the manufacture of manures, and preferable to the ordinary salts in use, sulphate of ammonia, nitrate of soda, &c.
Samples, prices, and all information will be forwarded on application to Frederic J. Cornwell, Broker, 7, Great St. Helens, E.C.
LINSEED CAKES, RAPE CAKES, COTTON CAKES, also all Materials used in the Manufacture of Manures, at the lowest market prices.

Patent Eureka Manure.
JOHN PRICE, Roundhill Farm, Mottram, near Manchester, informs Agriculturists and Horticulturists that he is appointed Agent for this MANURE, which for all Farm and Garden crops is equal to the best Peruvian Guano, at about half the cost. Analyses by eminent chemists show that the Manure contains a large amount of the two most prolific fertilisers known, viz., Phosphoric Acid and Ammoniacal Salts.
The EUREKA MANURE is composed of the strongest fæcal and urinary matter, highly concentrated and chemically prepared, and is different in its components and action from night soil.
Price per ton, including bags, 7*l.* cash; less than half a ton, 8*s.* per cwt., delivered Carriage free to any Railway or Canal Station nearest to the purchaser's residence.
Particulars and directions for use, with Testimonials, forwarded post free on application to the above address.

BURNARD, LACK, and CO.'S CONCENTRATED SUPERPHOSPHATE of LIME; guaranteed to contain Phosphoric Acid soluble, equivalent to 40 per cent. of Tribasic Phosphate of Lime.
CONCENTRATED TURNIP MANURE, equal in value to the preceding.
Of these Manures Dr. Voelcker says:—"These results must be very gratifying to you, and are the best proof of the very high agricultural and commercial value which characterises your concentrated superphosphate."
Detailed analyses, with opinions of the late and present Chemists to the Royal Agricultural Society, with Testimonials, Prices, &c., may be had on application to Burnard, Lack, & Co., Sutton Road, Plymouth.

THE PULP or REFUSE from the COCOA NUT HUSK has been found an excellent substitute for Peat for growing Ferns, striking delicate flower cuttings, and covering Strawberry beds, &c. It is valuable in agriculture for opening and draining heavy land. If spread on pasture land it produces fine herbage and prevents it being burnt and parched in dry summers. It is also an excellent medium for mixing with artificial manures.
In consequence of numerous applications for this Cocoa Fibre Pulp, it is now packed in canvass bags containing about 3 bushels at 1*s.* 6*d.* per bag, and delivered at the Kingston Station free, or in London at a small extra charge. If a large quantity be taken the bags could be returned and an allowance made for them.
Letters with Post Office orders payable to J. Barsham & Co., Kingston Post Office, to be addressed to the Patent Cocoa Fibre Company, Kingston-on-Thames, S.W.

Upwards of 2000 Cases have been reported as Cured by
JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* each. A 1*s.* 6*d.* bottle will make [illegible] gallons fit for use.
Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Genuine Tobacco Paper or Cloth for Fumigating.
GEORGE DARLINGTON'S IMPROVED TOBACCO PAPER retains its strength longer than any other, is more convenient for packing, and ready for use in a minute. Used by nearly all the principal Nurserymen and Florists, 1*s.* per lb. Allowance to the Trade on 28 lbs. and upwards.
To be had at 2, Orange Street, Bethnal Green Road, London. All Orders to be accompanied with a Post Office Order, payable Bethnal Green Road, N.E.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

... & TOOGOOD, Royal South Hants Seed Establishment, ...ampton.

Magnified Aphides.

NEAL'S PATENT APHIS PASTILS.

1s. and 2s. per packet.

From *Lloyd's Weekly*, July 7th, 1861.

"All we know is, that one of our larger houses took half a pound of tobacco, 2s., and that three pastils, 1s., do the same with no trouble. We have a score of letters on the same subject, but all to the same purport."

NEAL'S PLANT SOAP,

1s. per packet,

Makes the cheapest and most effectual Wash for destroying Mealy Bug, Thrips, Red Spider, American Blight, and all other Insect Pests.

Each Packet contains Four Cakes, each Cake makes One Gallon of Wash.

Sold by all principal Seedsmen.

Patentee:

J. NEAL, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by PRICE'S PATENT CANDLE CO., Limited.

FOWLER'S STEAM PLOUGHING AND CULTIVATING PATENTS.

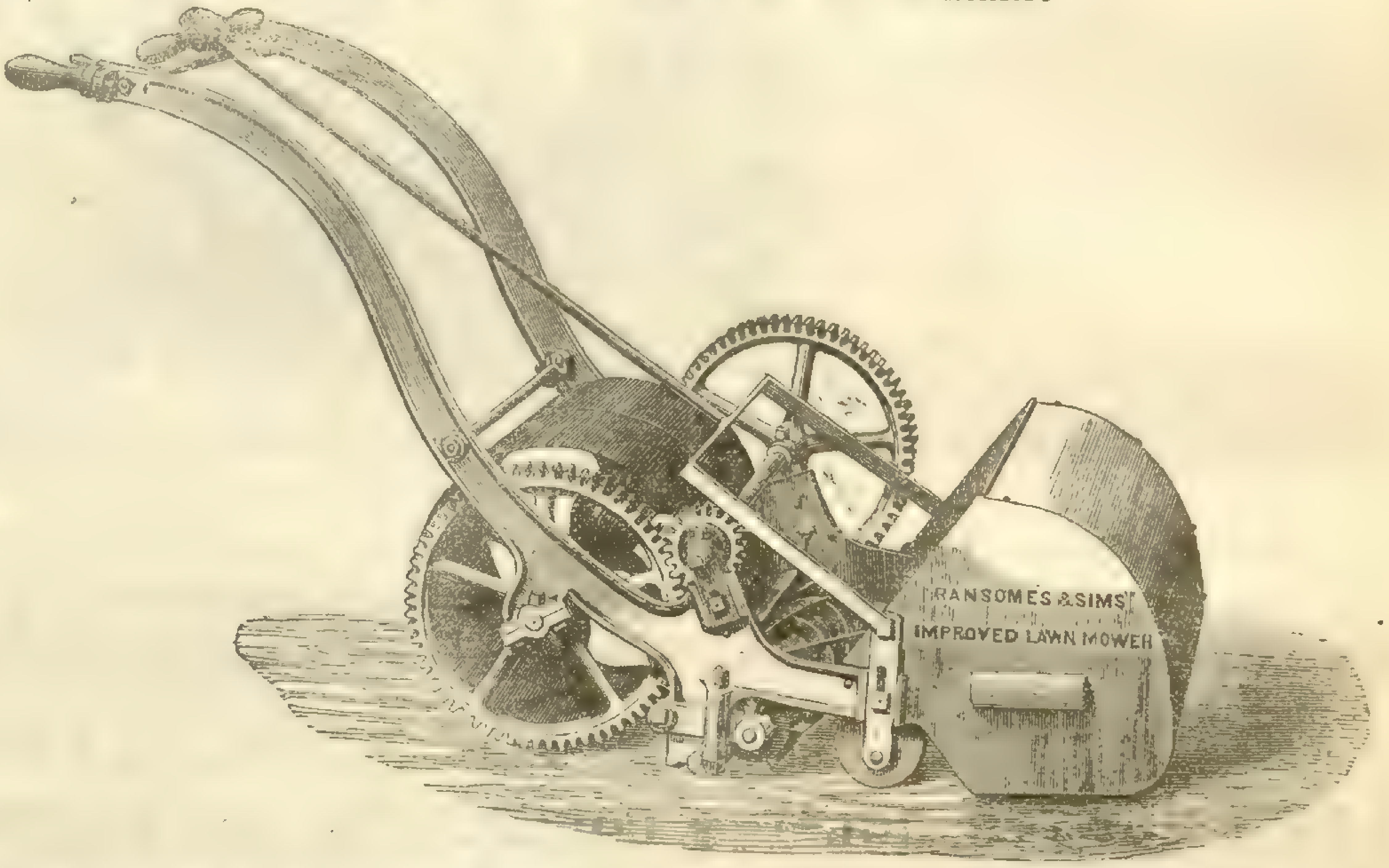
RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

RANSOMES & SIMS, IPSWICH,

MANUFACTURERS OF

IMPROVED LAWN MOWERS.



THESE LAWN MOWERS contain important improvements, rendering them efficient and perfect. They are made from new patterns designed so as to combine strength and lightness with simplicity of arrangement. They are a light handy Machine, almost noiseless in work, and so easy to manage that persons unaccustomed to Mowing can cut Grass without any difficulty.

Price:—14-inch, £6 10s.; 16-inch, £7; 18-inch, £7 10s.; 20-inch, £8.

Packing Cases 8s. 6d. each, which will be allowed if returned in good condition, Carriage paid.

Carriage paid to any Station within 100 miles of London or Ipswich.

PHOSPHO GUANO.

PETER LAWSON & SON, GENERAL CONTRACTORS,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports ... subjoined:—

...ion of Prof. VOELCKER, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars ... previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last ... In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.

(Signed) "AUGUSTUS VOELCKER."

Opinion of Dr. ANDERSON, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.

(Signed) "THOMAS ANDERSON."

Opinion of Dr. STEVENSON MACADAM, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients ... much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for ... Root Crops.

(Signed) "STEVENSON MACADAM."

Opinion of Dr. HODGES, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. ... with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as ... successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.

(Signed) "JOHN F. HODGES."

Opinion of Dr. APJOHN, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it ... value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows ... Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money ... is 12l. 9s. 8d. per ton.

(Signed) "JAMES APJOHN."

Price, Free on Rail, £12 5s. per Ton, Bags included.

None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to

PETER LAWSON & SON, 27, GREAT GEORGE STREET, WESTMINSTER, LONDON, S.W.

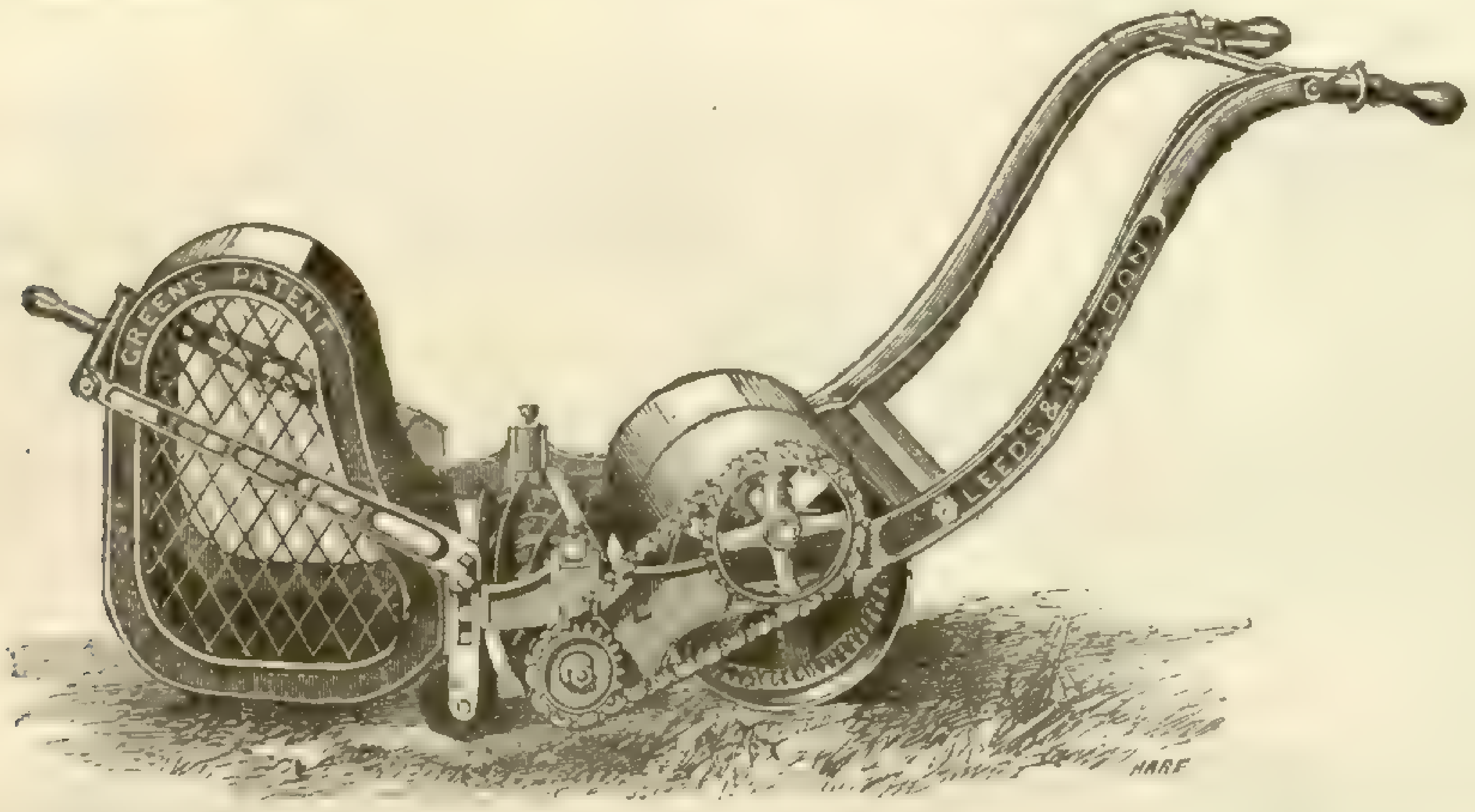
GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.



The Improvements are of such an important character that all users should not fail to make themselves acquainted with them.

For ILLUSTRATED PRICE LISTS, with full particulars, address

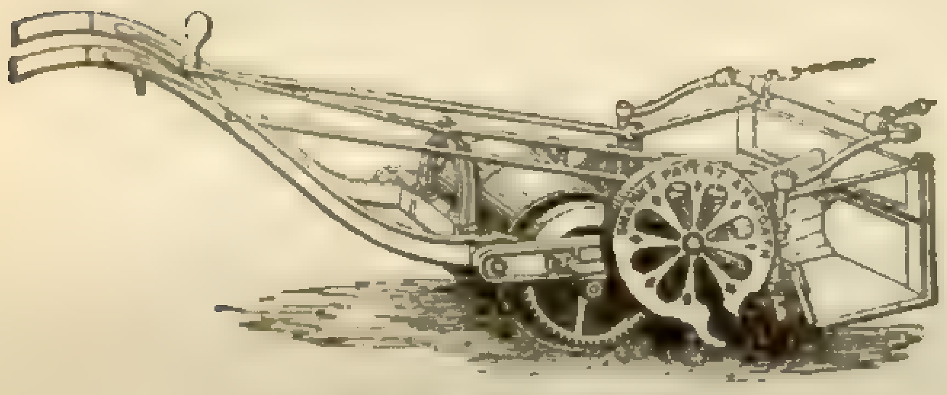
T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

OR ANY OF THE PRINCIPAL IRONMONGERS AND SEEDSMEN, &c., IN THE KINGDOM.

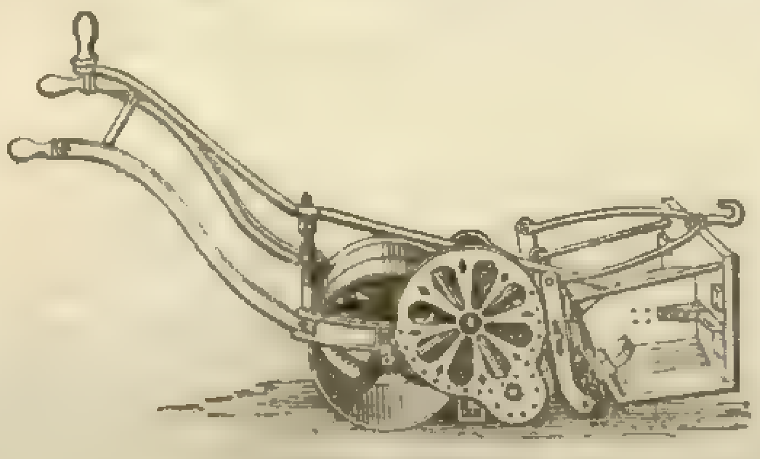
SHANKS' NEW PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

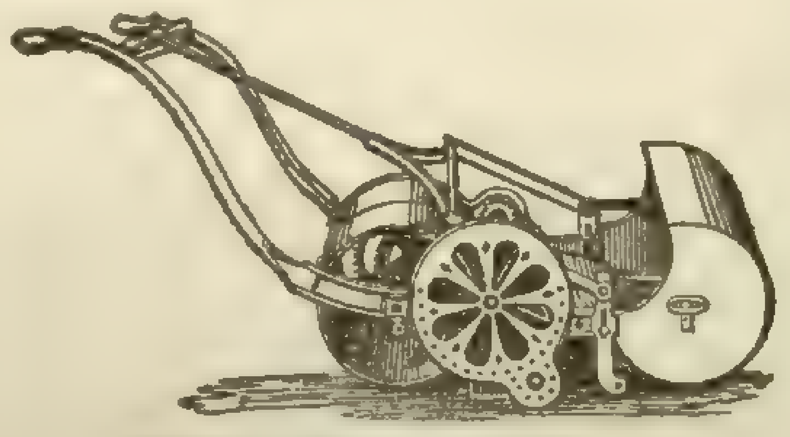
WITH SILENT MOTION IF SPECIALLY DESIRED.



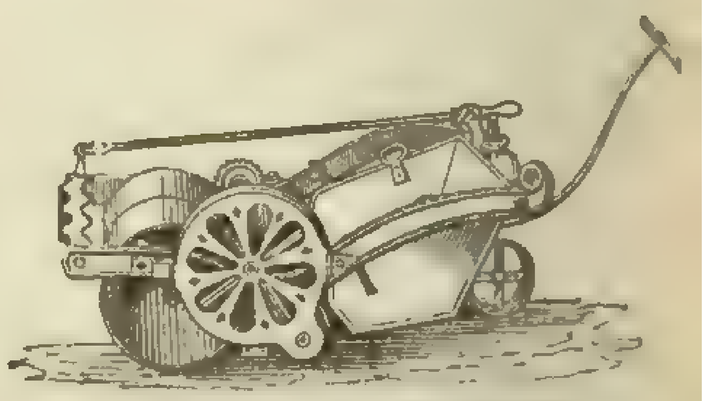
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

J. B. BROWN and CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effect of the improvements of previous years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	£	s.	d.	
No. 1.—48-inch Machine	£28	0	0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26	0	0	*Drawn by a Horse.*
No. 3.—36-inch Machine	£22	0	0	*Drawn by a Horse.*
No. 4.—30-inch Machine	19	0	0	*Drawn by a Horse or Strong Pony.*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | Width of Cutter. No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey.*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

PRICES.

SHANKS' NEW PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	£	s.	d.	
No. 8.—24-inch Machine	£8	17	6	*Easily Worked by Two Men.*
No. 9.—22-inch Machine	8	7	6	*Easily Worked by Two Men.*
No. 10.—19-inch Machine	7	12	6	*Ditto by a Man and Boy*
No. 11.—16-inch Machine	£6	17	6	*Easily Worked by a Man*
No. 12.—13-inch Machine	6	2	6	*Ditto by a Boy*
No. 16.—12-inch Machine	5	0	0	*Ditto by a Boy*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

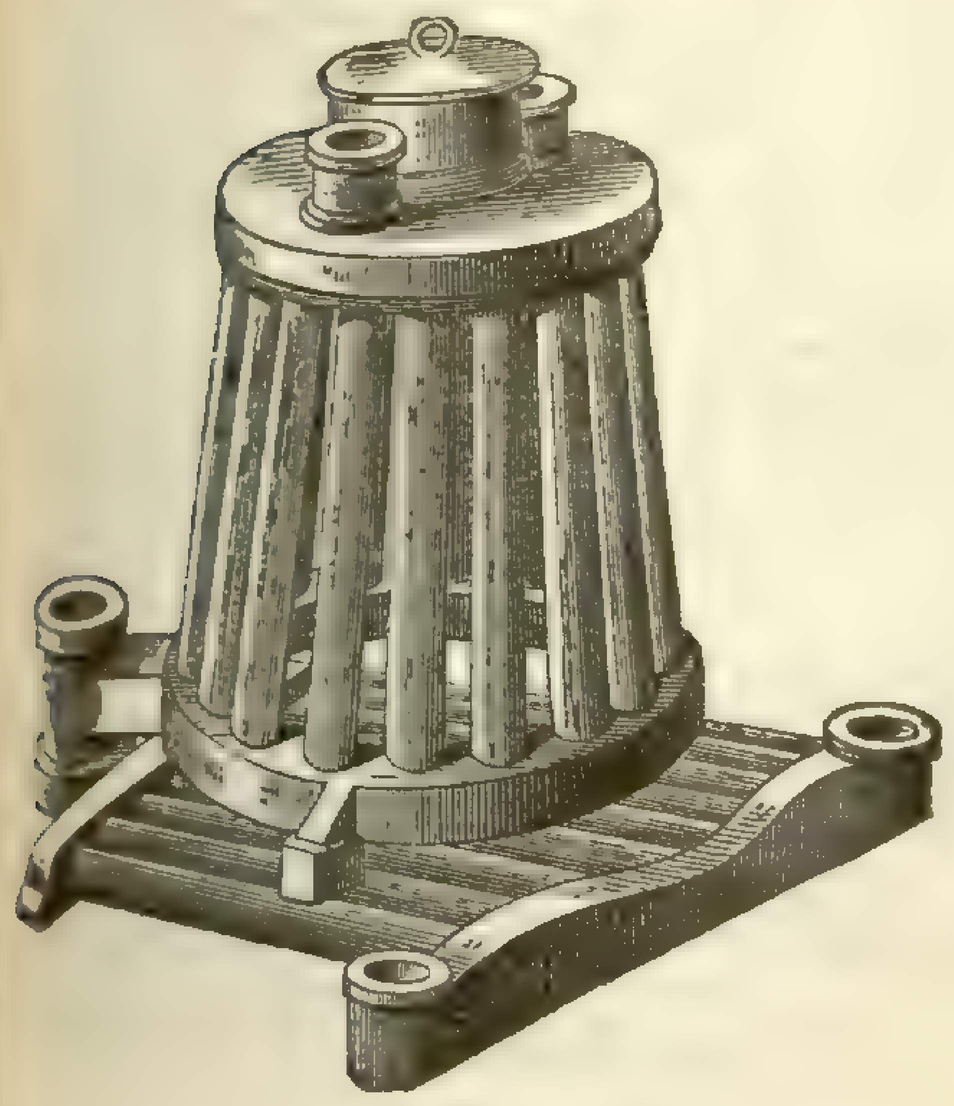
The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

*** *The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

SOLE AGENTS FOR LONDON:

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.



BY HER MAJESTY'S ROYAL LETTERS PATENT.

ORMSON'S PATENT JOINTLESS TUBULAR BOILER,

AN ORIGINAL INVENTION,

Brought out for the purpose, and is now fully acknowledged to surpass the OLD-FASHIONED JOINTED TUBULAR BOILERS, which have been made for the last 20 or 30 years by all other manufacturers. The ADVANTAGES of this PATENT will be manifest to every person's understanding from the following FACTS. For instance, one of the OLD-FASHIONED JOINTED BOILERS with 50 TUBES would have 100 JOINTS made of rope yarn and cement, exposed to the direct action of the FIRE, whereas in my PATENT there is NOT ONE JOINT so exposed. And it should be fully understood that as the OLD-FASHIONED JOINTED TUBULAR BOILER increases in SIZE, number of TUBES and JOINTS, its liability to LEAKAGE also increases, consequently

THE FOLLOWING IS THE REASON WHY

ORMSON'S ONE-BOILER SYSTEM

AND PATENT JOINTLESS TUBULAR BOILERS

have become so universally adopted on account of their superior power, great safety, and economy.

ORMSON'S No. 1 BOILERS	are heating upwards of		250	feet of Pipe.
ORMSON'S No. 2 BOILERS	„	„	600	„
ORMSON'S No. 3 BOILERS	„	„	1300	„
ORMSON'S No. 4 BOILERS	„	„	3000	„
ORMSON'S No. 5 BOILERS	„	„	5000	„

Boilers of larger sizes if required to heat 12,000 or 15,000 feet of Pipe.

H. Ormson having a most complete Set of Steam-power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

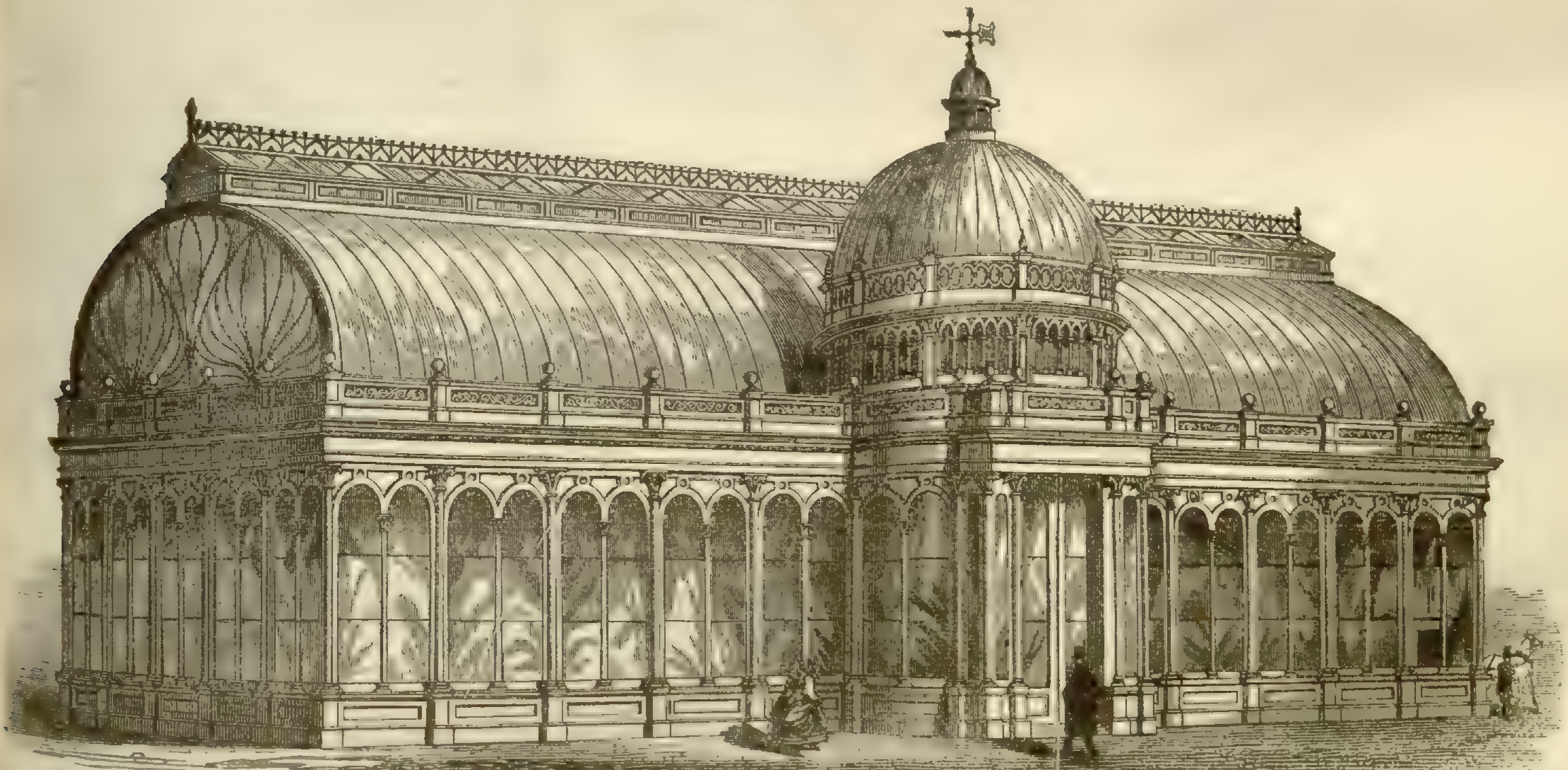
HENRY ORMSON, Horticultural Builder to Her Majesty,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

PATRONISED BY THE QUEEN.



WEEKS'S CONSERVATORIES are peculiarly chaste in design. A choice variety now in preparation at their Steam-Power Works.

WEEKS'S NEWLY-INVENTED PEACH HOUSES give the utmost satisfaction. They require *no Brick foundation*, and are specially suited for covering Trees of long standing.

WEEKS'S FORCING HOUSES and **VINERIES** combine some valuable improvements.

WEEKS'S IMPROVED VENTILATING APPARATUS gives universal satisfaction.

WEEKS'S HOT-WATER APPARATUS continues to eclipse all spurious imitations of their renowned "ONE-BOILER SYSTEM." It exposes four times the quantity of heating surface to the action of the fire, consequently must be four-fold as powerful, and economical in the same ratio. It is described by the highest authority as the very best extant for both large and small works, which the following references will serve to corroborate. It has been adopted by

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN

THE TOWER OF LONDON
THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN

THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM, AND NUMEROUS PUBLIC COMPANIES.

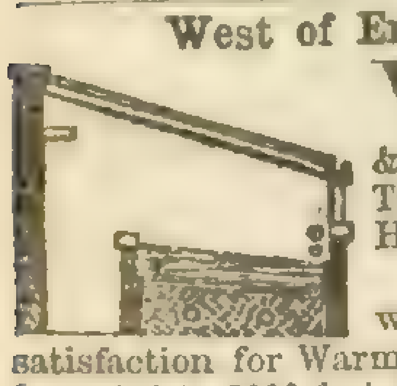
Catalogues free on application.

JOHN WEEKS & COMPANY, Horticultural Builders and Hot-Water Apparatus Engineers,

KING'S ROAD, CHELSEA, LONDON, S.W.

PORTABLE HOT-WATER APPARATUS, for Heating Conservatories, Hothouses, &c.
T. S. Truss, C.E., Sole Manufacturer. Offices: 53, Gracechurch Street, London, E.C.

Card.
SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

West of England, Ireland, and Wales.


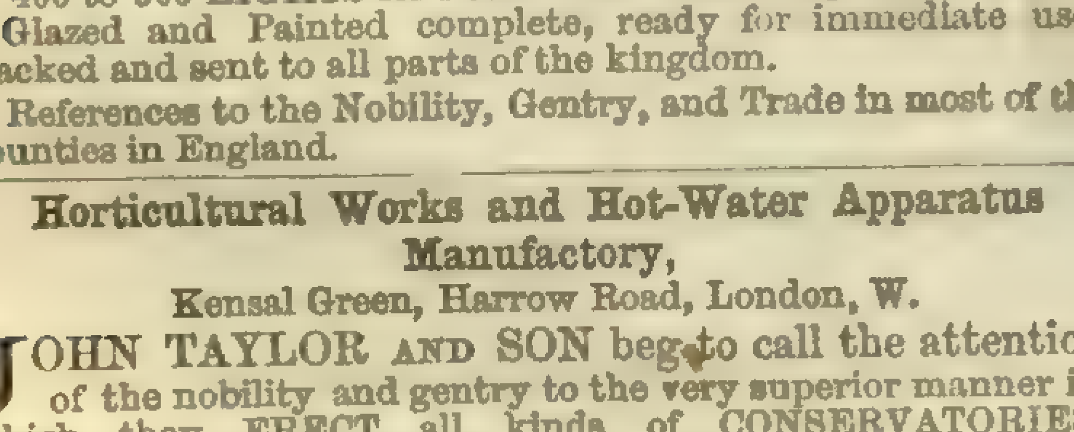
VINCENT SKINNER (late Partner with J. Weeks & Co.), erects CONSERVATORIES, HOTHOUSES, and HOT-WATER APPARATUS.
His improved Pipe Boilers, which give such universal satisfaction for Warming Churches and Hothouses, will heat from 100 to 2000 feet of Pipe.
Plans and Estimates on application to V. Skinner, Bridewell Street, Bristol.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

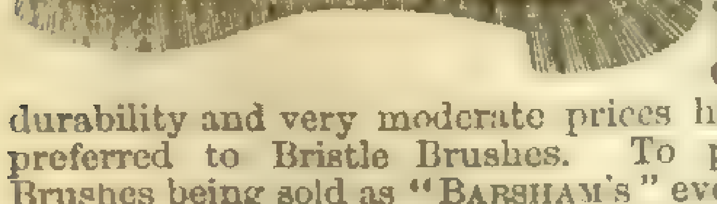
Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the Patentee's Warehouse, 155, Cheapside, London, E.C.
Price complete from 3l. 10s.
Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

Hothouses for the Million.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to any Railway Station round London.
Illustrated Circulars, with Lists of Prices, can be had on prepaid application to Samuel Hereman, 7, Pall Mall East, London.

JAMES WATTS and CO., Hothouse Builders and Hotwater Apparatus Manufacturers, near the Green Man, Old Kent Road, London, S.E.

200 CUCUMBER and MELON BOXES and LIGHTS, and from 400 to 500 LIGHTS for PITS of all SIZES kept in STOCK.
Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.
References to the Nobility, Gentry, and Trade in most of the counties in England.

Horticultural Works and Hot-Water Apparatus Manufactory,
Kensal Green, Harrow Road, London, W.
JOHN TAYLOR and SON beg to call the attention of the nobility and gentry to the very superior manner in which they ERECT all kinds of CONSERVATORIES, VINERIES, GREENHOUSES, &c., combining every improvement with elegance of design and durability of materials and workmanship.
Their VENTILATING APPARATUS for the Fronts and Roofs of Houses has given the highest satisfaction. Churches, Chapels, Schools, Entrance Halls, Public Buildings, &c., heated with Hot-Water Apparatus in a most economical and efficient manner.
J. T. & Son have great pleasure in referring to numbers of the nobility and gentry by whom they are extensively engaged.



BRUSHES of every description for the House, Stable, Dairy, and Ships are made of BARSHAM'S PATENT COCOA FIBRE. Their durability and very moderate prices have caused them to be preferred to Bristle Brushes. To prevent imposition by Brushes being sold as "Barsham's" every Patent Fibre Brush is stamped "J. Barsham's Patent, Kingston-on-Thames."
MATS are also made of Barsham's Patent Cocoa Fibre, and are in great repute.
Sold retail in every town in the United Kingdom, and by Dean & Co., London Bridge, E.C.

International Exhibition, 1862.
BENJAMIN EDGINGTON has peculiar ADVANTAGES to offer to Noblemen or Gentlemen requiring TENTS, RICK CLOTHS, FLAGS, DRESSED CLOTHS, SACKS, MATS, NETTING, ROPES, &c.
N.B. Early application must be made.
*** The Charing-Cross business having been REMOVED, the only establishment is at 2, Duke Street, London Bridge, S.E.

JOSEPH HAYWOOD AND CO.,
Manufacturers of
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kinds of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield.

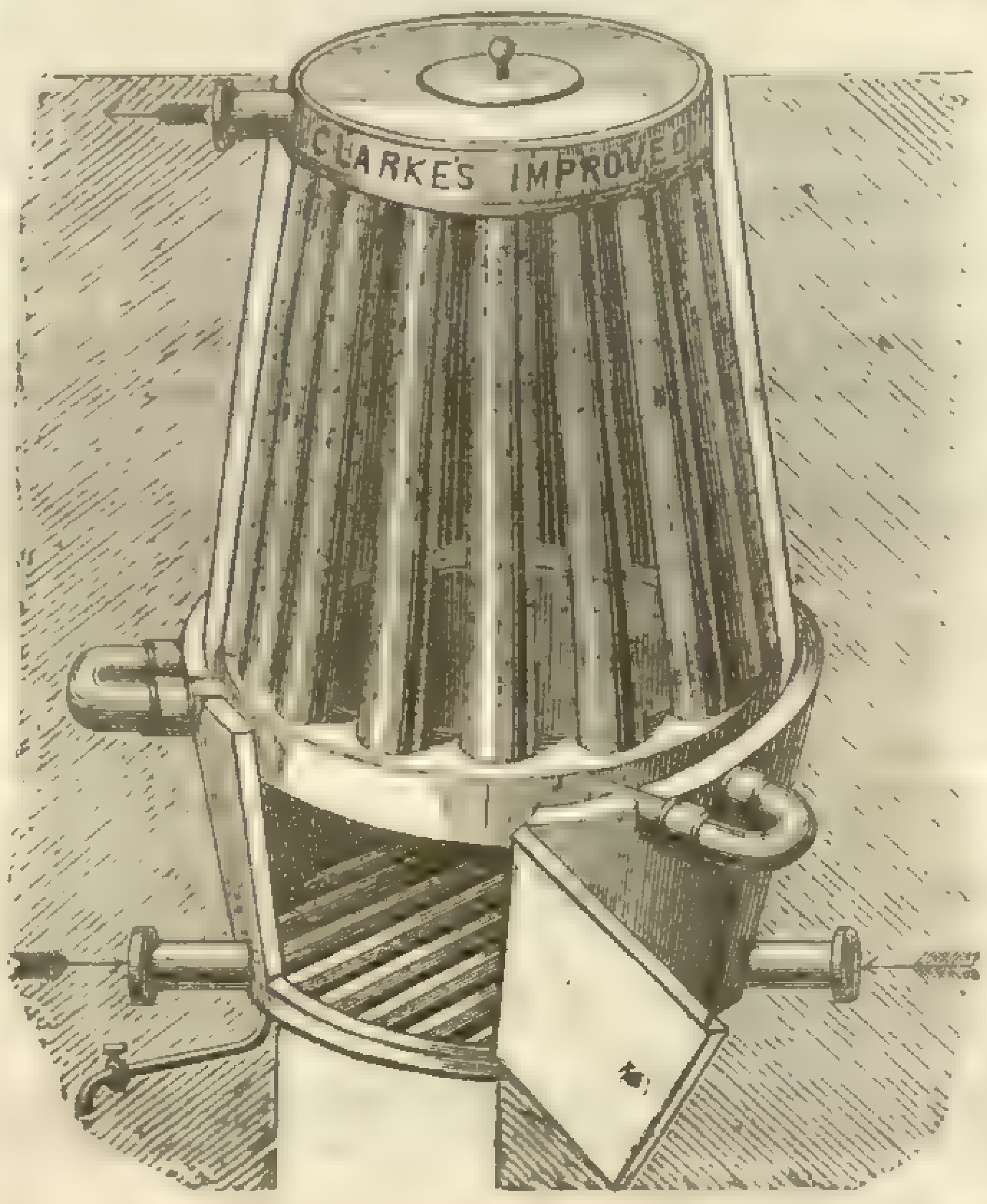
MUSGRAVE'S PATENT STABLE FITTINGS and HARMLESS LOOSE BOXES, PATENT IRON COW HOUSE FITTINGS, and IRON PIGGERIES.

These inventions are recommended as possessing ... advantages not to be found in anything hitherto made. At the late Meeting of the Royal Agricultural Society at Leeds, Musgrave Brothers received a Silver Medal, and two Awards of "Highly Commended," being the only Prizes conferred on any competitor in this class.
Particulars sent on application to the Inventors and Makers, Musgrave Brothers, Ann Street Iron Works, Belfast.

Important to Seedsmen and Nurserymen.
Sacks—Bags—Mats.
JAMES T. ANDERSON, Sack and Bag Maker, 34, Lime Street, Fenchurch Street, E.C., London, supplies SEED BAGS of a superior description at the following low prices:—

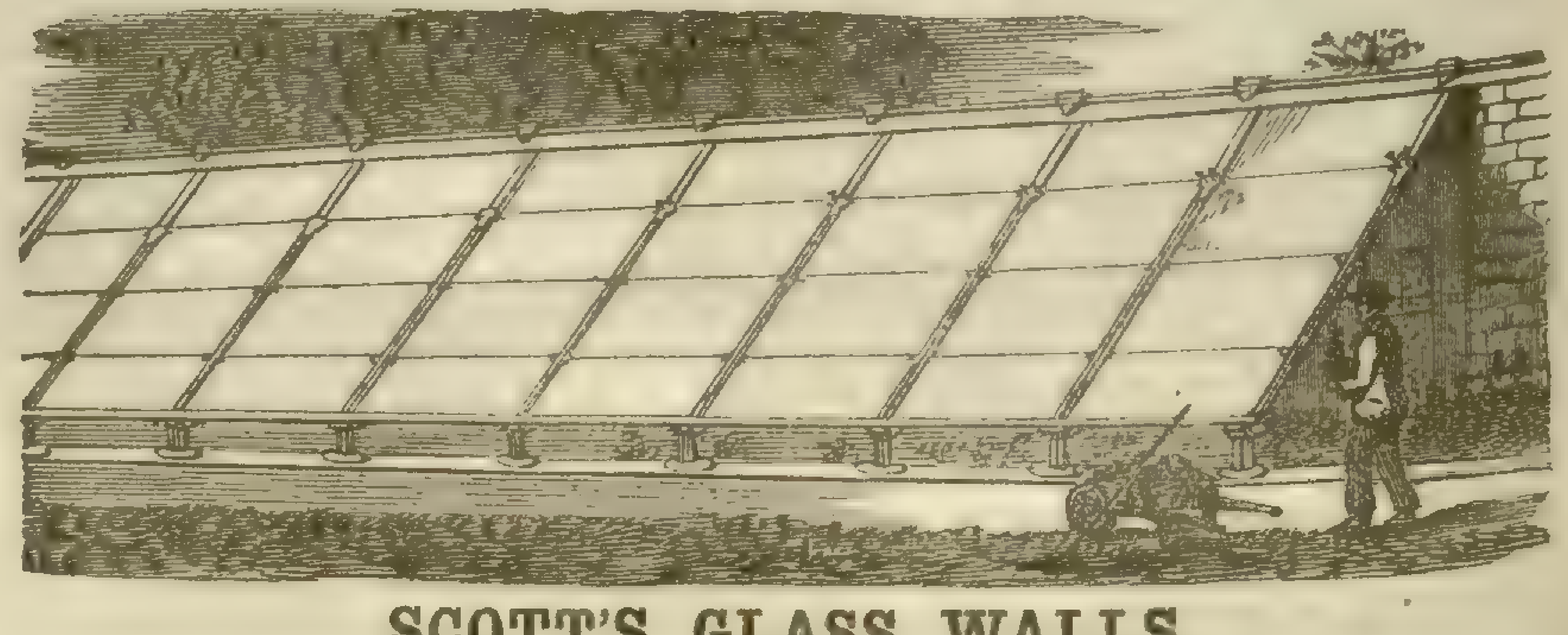
2 Bushel Bags..8s. 9d. per doz.	½ Bushel Bags..4s. 9d. per doz.
1 Bushel Bags..6s. 8d. ,,	Peck Bags ....3s. 6d. ,,

Coarser Bags much cheaper. 4 Bushel Sacks, 1s. each.
Petersburg Dunnage Mats, 2l. 10s., 2l. 15s., and 3l. per 100.
Archangel Mats (new), 8l. 10s.; (best), 9l. per 100.
Orders, enclosing remittance, promptly executed.



CLARKE'S
NEW PATENT
CYLINDRICAL BOILER
Is now announced to be the most economical and efficient HEATING APPARATUS invented; and the Draught principle and Cylindrical Furnace surpasses everything brought before the Public. These Boilers are also very durable, the metal being half-inch thick and no joints exposed to the direct action of the fire; and although they possess such great power, the Heat can be regulated to the greatest nicety.
Estimates and Prices for all kinds of Heating, with first-class references, sent Post Free, by applying to the Eagle Iron Foundry, 25, Seel Street, Liverpool.
T. C. CLARKE,
CIVIL and HYDRAULIC ENGINEER, PROPRIETOR.

NEARLY TWO HUNDRED SETS
OF
STEAM PLOUGHING and CULTIVATING APPARATUS
HAVE NOW BEEN SENT OUT BY
JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD.
Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.
Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

ST. PANCRAS IRON WORK COMPANY,
OLD ST. PANCRAS ROAD, LONDON, N.W.
BY ROYAL LETTERS PATENT.

SCOTT'S GLASS WALLS,
Designed to meet the suggestions of James Scott, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

CONSERVATORIES	PINE and MELON PITS	BALCONIES	GATES
GREENHOUSES	VASES	IRON SASHES	TANKS
HOTHOUSES	VERANDAHS	IRON HURDLES	HOT-WATER WORK.

PATENT WROUGHT-IRON STABLE FITTINGS AND ENAMELLED MANGERS.
Every description of IRONWORK. Lists Free.
ST. PANCRAS IRON WORK COMPANY, OLD ST. PANCRAS ROAD, LONDON, N.W.

Wind Power.

J. R. PEILL, 17, New Park Street, Southwark, S.E., begs to inform intending purchasers that he has now ... facilities for Manufacturing the Patent WIND ...INES for Pumping, Grinding, Chaffcutting, Pulping, &c. ... and all information may be obtained by ... postage stamp, and a Wind Engine in full work ... inspected on the Premises daily.

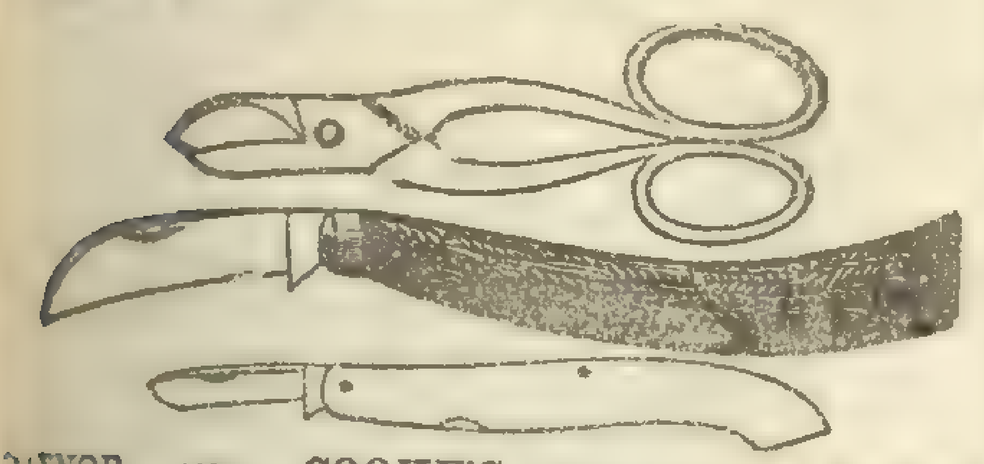
PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company ... the pleasure to acknowledge the receipt of the following ... G. GLENNY, Esq., the celebrated Florist:—

"...ntlemen,—I have worn Gutta Percha Soles and Heels ... years, and being so much in a garden as I neces... in all weathers, and with the ground in all states, I ... no account be without them. As a matter of ... I would recommend Gardeners to use them, for they ... repair the worn part at all times by warming the ... at the fire, and pressing it from the thick parts to the ... parts, as easily as if it were so much dough. I think it ... of all persons who must occasionally wet their feet to ... a material that completely defies damp. Many a ... would escape colds and rheumatism by the use of ... Percha Soles. Your obedient servant, G. GLENNY."

... variety of Gutta Percha articles, such as Mill Bands, ... Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, ... Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet ... Sponge Bags, Curtain Rings, Galvanic Batteries, Calbo... ...ers, &c., manufactured by the Gutta Percha Company, ... by their wholesale dealers in town or country.

THE GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, ... Road, London, E.C.

Paxton Works, Sheffield, Established 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c. ...d by all respectable Nurserymen and Seed Merchants in ... Kingdoms.

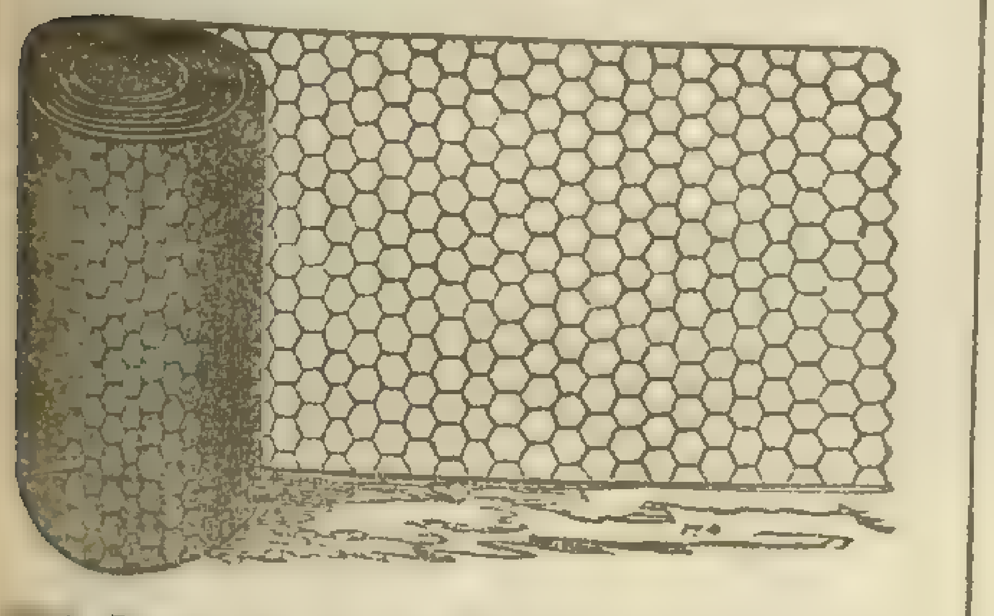
Important to Gardeners.

WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an ... superior in quality to anything we have hitherto been ... offer, in PRUNING, BUDDING, and GRAFTING ..., VINE and PRUNING SCISSORS, GARDEN ...ARS, &c., owing to their being tempered under an ... new process, which renders the blade tough and ... able to break, and also gives the edge a lasting ... which we can warrant them to retain for at ... double the time they would under the old method of ..., thus facilitating the work and saving the time ... lost by having constantly to renew the edge by ..., consequently making them more durable in wear ... better adapted for all kinds of work, every blade being ...ted of the same temper.

...s. None are genuine except marked SAYNOR, or ..., Maker. Other marks would cause the purchaser ...ntment.

BARNARD, BISHOP, AND BARNARDS, Norwich.

FURTHER REDUCTION in the PRICE of WIRE NETTING.—APRIL, 1861.

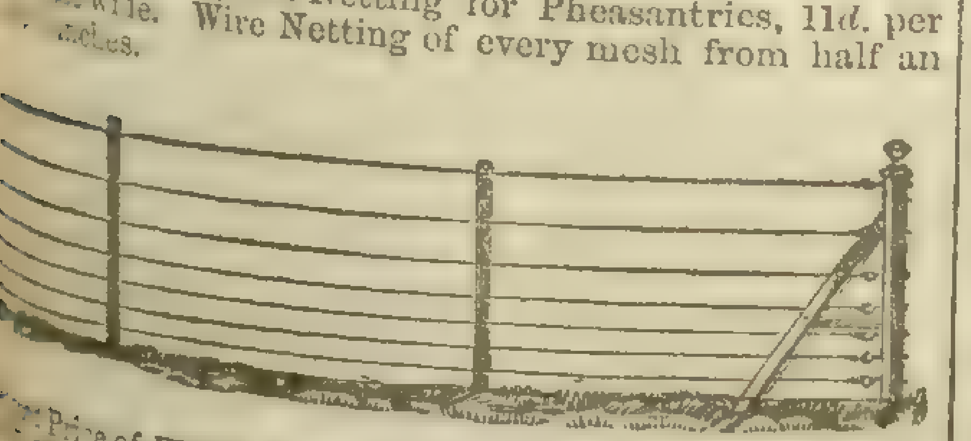


...D, BISHOP, & BARNARDS beg to inform their ... and the public that they have made a further reduction ... prices of Machine made Wire Netting, and also that all Nettings are now Galvanised after being made, which ... to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
...mesh, 24 inches wide..	No. 19	.. 4¼d.	.. 3½d.
,, ,, ,, ..	,, 18	.. 5	.. 4
,, ,, ,, ..	,, 17	.. 6½	.. 5
,, ,, ,, ..	,, 16	.. 8	.. 6½
,, ,, ,, ..	,, 19	.. 4¾	.. 4
,, ,, ,, ..	,, 18	.. 6	.. 4¾
,, ,, ,, ..	,, 17	.. 7	.. 5½
,, ,, ,, ..	,, 16	.. 9	.. 7

...e above kinds can be made any width (under 6 feet), ...portionate prices.

...Galvanised Poultry Netting, 7½d. per yard, 3 feet wide. ... Sparrow-proof Netting for Pheasantries, 11d. per ... wide. Wire Netting of every mesh from half an ... inches.



...Price of WIRE FENCING, and GALVANISED WIRE FENCING, suitable for the home trade or the colonies. ...res, 3 feet 6 inches high, pronged Standards, 8 feet ... wrought iron straining post and straining screws ... yards of Fencing, 10d. per yard. ... with Galvanised Wire Rope, 1s. per yard.

...ted Catalogues, with prices of every variety of Wire ... and Wire Netting, forwarded free on application. ... Fencing and Netting delivered Carriage Free at all ...cipal Railway Stations.

The Celebrated Suffolk Corn Drills,

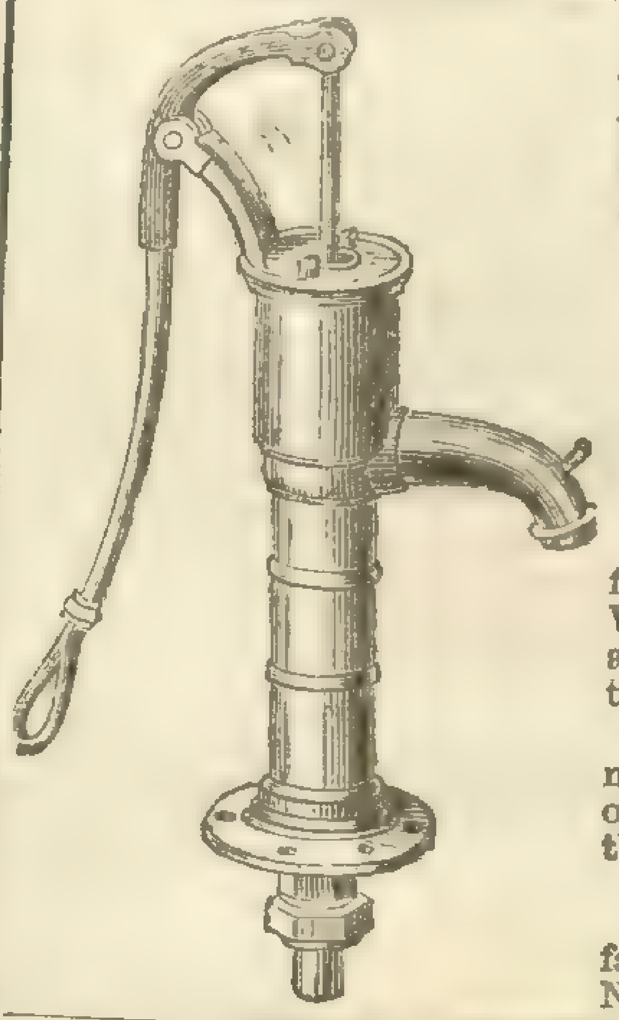
MANUFACTURED WITH ALL THE LATEST IMPROVEMENTS BY RICHARD GARRETT AND SON, Leiston Works, Suffolk.

Any size Drill will be supplied in one week from receipt of order. Every operation for which a drill can be employed is performed in the most efficient and economical manner by the Drills of R. GARRETT & SON'S Manufacture.

The well known GARRETT'S PATENT HORSE-HOE (sole Manufacturers and Inventors, RICHARD GARRETT & SON), will hoe any kind of Drilled Root or Grain Crop at the rate of 10 to 12 acres per day, and at a cost not exceeding 6d. per acre. The mode of steering and regulating the position of the Hoe Blades will be found very effectual.

CATALOGUES containing full description, with prices, sent postage free to any address on application to R. GARRETT & SON, Leiston Works, Suffolk.

N.B. Early orders are respectfully solicited for the ensuing season's use, and the delivery of any Drill or Hoe may be depended on in six clear days from receipt of order.



J. TYLOR AND SONS' PATENT IRON PUMP with reversible handle, for Shallow Wells, Hot-Houses, &c. Price 25s. 6d. each.

IRON YARD and GARDEN PUMPS

3 feet 6 inches under spout

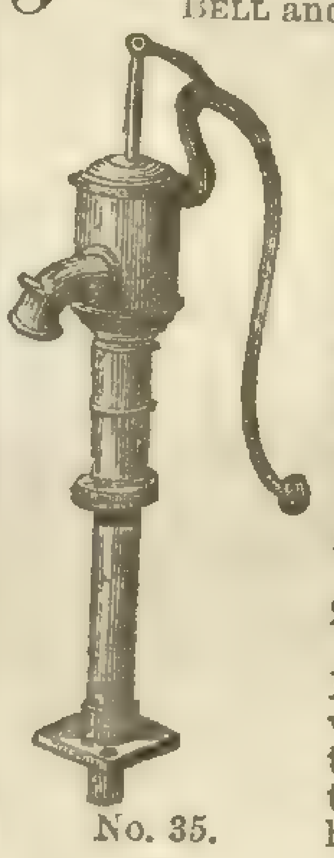
2½	3	3½ inch
43s.	53s.	60s. each.

J. TYLOR and SONS manufacture PUMPS for DEEP WELLS which do not require any fixing below the level of the ground.

PUMPS of J. TYLOR & SONS' manufacture to be obtained of Plumbers in all parts of the United Kingdom.

J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

JOHN WARNER AND SONS, BELL and BRASS FOUNDERS to HER MAJESTY, HYDRAULIC ENGINEERS, BRAZIERS, &c., 8, Crescent, Cripplegate, London, E.C.



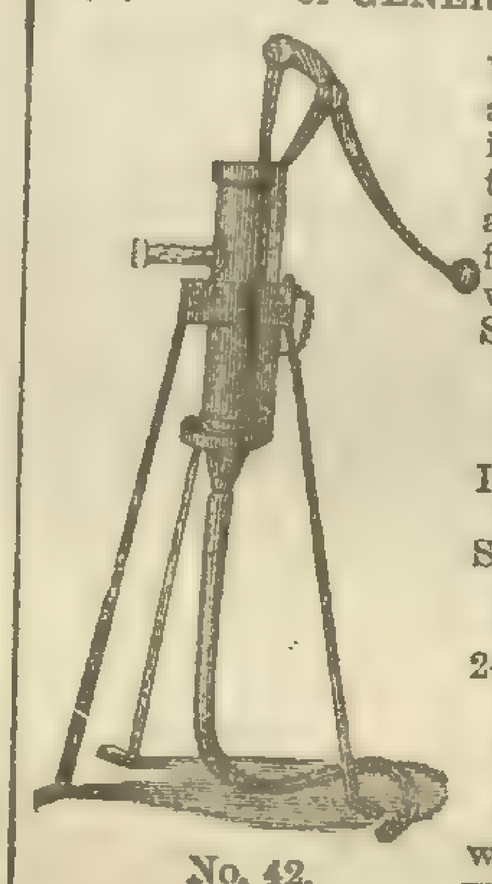
No. 35.

WARNER'S PATENT CAST-IRON PUMP, for raising Water from Wells not exceeding 25 feet in depth.

Diameter of Barrel.	Height.		£	s.	d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	1	0
2½ ,, long	3 ,, 3 ,,		1	10	0
3 ,, ditto	3 ,, 6 ,,		2	4	0
3½ ,, ditto	3 ,, 6 ,,		2	9	0
4 ,, ditto	3 ,, 6 ,,		2	18	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2	0	0
2½ ,, long ditto ditto ditto			2	14	0

This Pump is fitted with J. W. & SONS' Patent Vibrating Standard, Improved Revolving Cap, Metal Bucket, and Brass Suction Valve. By means of the Revolving Cap the handle can be shifted to the right or left hand, or opposite the nose, as desired.

WARNER'S IMPROVED LIQUID MANURE or GENERAL PORTABLE PUMP.



No. 42.

This Pump is fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

	£	s.	d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2	15	0
If fitted with Barrel of Planished Copper	3	4	0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2	9	0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires, in either 10, 12, or 15 feet lengths .. per foot	0	2	5

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2l. 5s.

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.

J. W. & SONS' Illustrated Catalogue forwarded post free on application.

The above may be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Cripplegate, London, E.C.

Hucclecote Gardens, 2½ Miles from Gloucester.

TO BE LET, with immediate possession, the above capital WALLED-IN GARDENS containing about 4 acres, with House, Farm Yards, Buildings, Orchard and Land adjoining, containing in the whole about 16 acres, with Greenhouses, Propagating Houses, Vineries, Pits, &c. Extent of Glass 5770 feet.

For particulars apply to W. KNOWLES, Auctioneer, 5, Barton Street, Gloucester.

Desirable Sheep and Corn Farm.

TO BE DISPOSED OF, the residue of a LEASE of 28 years (19 years unexpired) of a good SHEEP and CORN FARM in the north of Devon, situated about 4½ miles from Great Torrington, and 8 and 9 miles from the South Molton and Eggesford Stations. The Farm is about 320 acres; one-third Orchard, Meadow, and Pasture, and two-thirds Arable, is beautifully situated, and very healthy.

A comfortable and convenient DWELLING HOUSE, and good Outbuildings, with Labourer's Cottage. There is also Water Power for Threshing and general purposes. The tenant has the right of Shooting over the Farm, and over about 80 acres of Cover attached to the Farm; also the right of Fishing on about 4 miles of river. A good Salmon and Trout stream.—A. B., Post Office, Beaford, Devon.

TO BE LET, a FIRST-RATE NURSERY of 20 Acres, contiguous to Rail and Canal, with extensive Vineries, Propagating and Show-houses, and a good Stock. To be let in consequence of the sudden and total prostration of the tenant by paralysis. Immediate possession. Stock at valuation. Glass not to be paid for.

G. GLENNY, Fulham, S.W.

To Nurserymen Kitchen Gardeners, &c.

TO BE SOLD, the INTEREST in the LEASE of that old and well-established Nursery, known as BARNES NURSERY, at Merrion, within 1½ mile of the City of Dublin, with the entire STOCK-IN-TRADE, consisting of Greenhouse and Hothouse plants in every variety, Timber and Fruit Trees, Flowers in pots, Shrubs, &c. The Nursery stands on 24 acres 2 roods and 36 perches statute measure, has extensive Green and Hothouses thereon, with all the requisites for the carrying on of the Nursery business; and is held for an unexpired term of 44 years, at the rent of 202l. per annum. There are two good substantial moderate sized two-story Dwelling Houses on the ground, with Lodges for foremen and labourers; also a handsome Shop on the public road at the entrance. This is the largest Nursery in Ireland, and its patrons comprise most of the nobility and gentry of the country. It stands on the direct road from Dublin to Kingstown, in the midst of all the fashionable Villas near Dublin; and a portion of the ground might be most profitably employed as a Vegetable Garden, there being no such accommodation near Kingstown, or that side of Dublin. Other portions of the land will presently acquire a high value for building, as it adjoins the extensive building ground of Lord Herbert of Lee, which is becoming rapidly in demand. A Lease for a more extended term can be obtained, if required. If necessary a portion of the purchase money would be allowed to remain out as a charge upon the property.

For particulars apply to JOHN RIDDICH, Solicitor, 3, Eustace Street, Dublin.

The Proprietor would have no objection to enter into arrangements with an experienced Working Gardener, with a small capital, for the carrying on the business of the Nursery and Vegetable Gardens, or with one or more for the working of each separately.

Sales by Auction.

Sale this Day at Half-past 12 o'Clock precisely.

800 STANDARD AND HALF STANDARD ROSES, ALSO A LARGE QUANTITY OF FRUIT TREES, COB NUTS, &C.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, March 15, at Half-past 12 o'Clock precisely, 800 beautiful Dwarf-trained and Standard Peaches, Nectarines, Cherries, Plums, Apples, Pears, and Apricot Trees; 200 Standard and Half-Standard Roses, a quantity of Filberts, Cob Nuts, Strawberries, Snowberries, Currants, Raspberry and Gooseberry Trees, Pinks, Gladiolus Brenchleyensis. Gandavensis, ramosus, and floribundus, Pampas Grass, Standard Brooms, Honeysuckles, Syringas, &c.

On view the Morning of Sale, and Catalogues had.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, March 18, at 12 o'clock precisely, upwards of 250 PENS of choice Game, Hamburghs, Cochins, Turkeys, Game Bantams, Brahmas, Spanish, Carriers, Pouters, &c.

On View the Morning of Sale, and Catalogues had.

Hollies, Roses, Arbor Vitæ, Yews, Gladioli, Fruit Trees, Pinks, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 19, at half-past 12 o'Clock precisely, a fine lot of Standard and Dwarf Roses, Hollies, Arbor Vitæ, Cypress, Yews, Gladiolus Brenchleyensis; Gooseberry, Raspberry, and Currant Trees; Trained and Standard Cherry, Nectarine, Plum, and Apple Trees; Asparagus, Phloxes, Pentstemons, Pinks, Pansies, Gazania splendens, Polyanthus, and other plants, all well grown, and first-rate sorts.

On view the Morning of Sale and Catalogues had.

Fruit Trees, Roses, Specimen Conifers, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, March 22, at half-past 12 o'clock precisely, a Choice Assortment of FRUIT and other TREES, consisting of Standard, Half Standard, Dwarf and Trained Pear Trees, Plums, Apples, Cherries, Peach, Nectarine, and Apricot, also some Currant, Raspberry, and Gooseberry Trees, Strawberry Plants, &c. Standard and Dwarf Roses, Golden Brooms, Pampas Grass, Red Cedars, White Spruce, Laurels, Box-leaved Privet, Arbor-vitæs, Lord Weymouth Pines. Fine Specimen Plants of Red Cedars, Cedars of Lebanon, Abies Douglasii, A. excelsa, A. alba, A. nigra, Pinus excelsa, P. strobus, Taxodium sempervirens, Ilex Maderensis, from 5 to 10 feet high.

On View the Morning of Sale, and Catalogues had.

Important Sale of Coniferous Seeds

FROM CALIFORNIA, GREECE, ASIA MINOR, MEXICO, SPAIN, NORTH AMERICA AND RUSSIA, MOSTLY IN GOOD CONDITION AND LOTTED TO SUIT PRIVATE BUYERS AND THE TRADE.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 26, at half-past 12 precisely, a large quantity of valuable CONIFEROUS SEEDS, comprising

Pinus Benthamiana	Cupressus Lawsoniana
,, Lambertiana	,, Corneyana
,, Sabiniana	Juniperus excelsa
,, Coulteri	,, drupacea
,, insignis	,, rufescens
Abies Pinsapo	Cryptomeria japonica
,, Nordmanniana	Cedrus atlantica
,, grandis	Wellingtonia gigantea
,, Menziesii	Liriodendron tulipifera
,, Canadensis	Acer saccharinum
,, Cephalonica	Oredaphne Californica
,, Pichta	Chamærops humilis

&c. &c.

On view the Morning of Sale, and Catalogues had.

To Gentlemen, Florists, and Others.

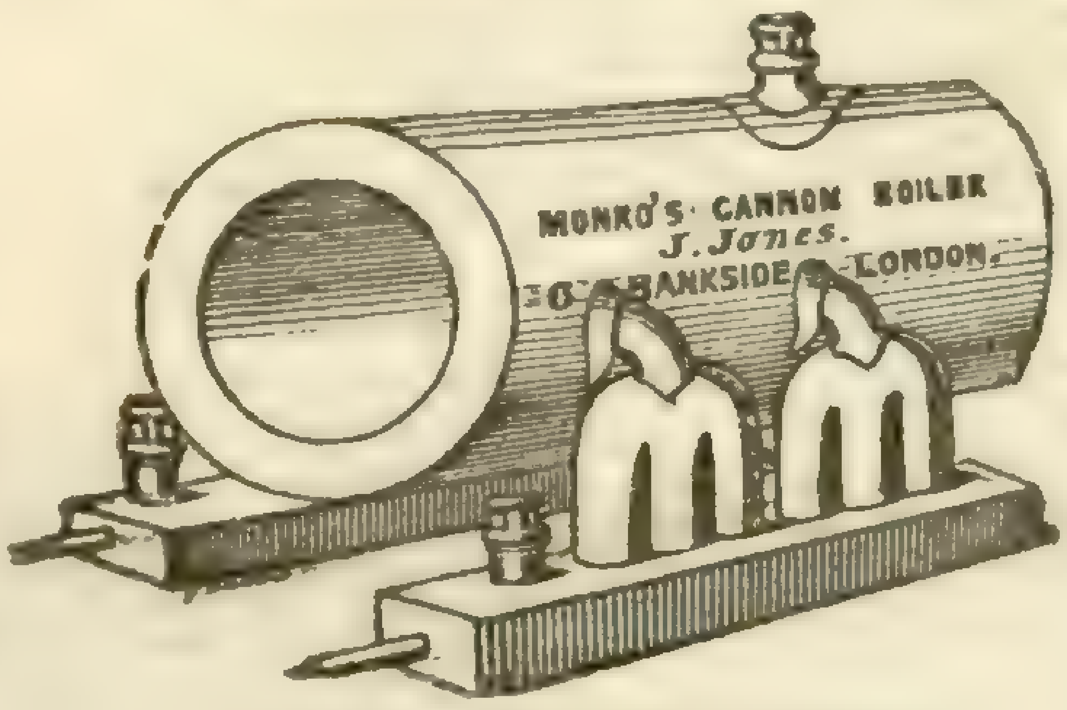
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at the Mart, Bartholomew Lane, City, E.C., on FRIDAY, March 21, at 12 o'Clock, a first-class Collection of CARNATIONS, PICOTEES, and PINKS, of remarkably fine growth, the surplus stock of a celebrated grower; 200 Standard, Dwarf and Climbing Roses, fine Camellias, Azalea indica, Ericas, Epacris, and other plants in bloom; selected Fruit Trees, Choice American Plants, Fuchsias, Verbenas, Pæonias, Dahlias in dry roots, &c.

On view the Morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

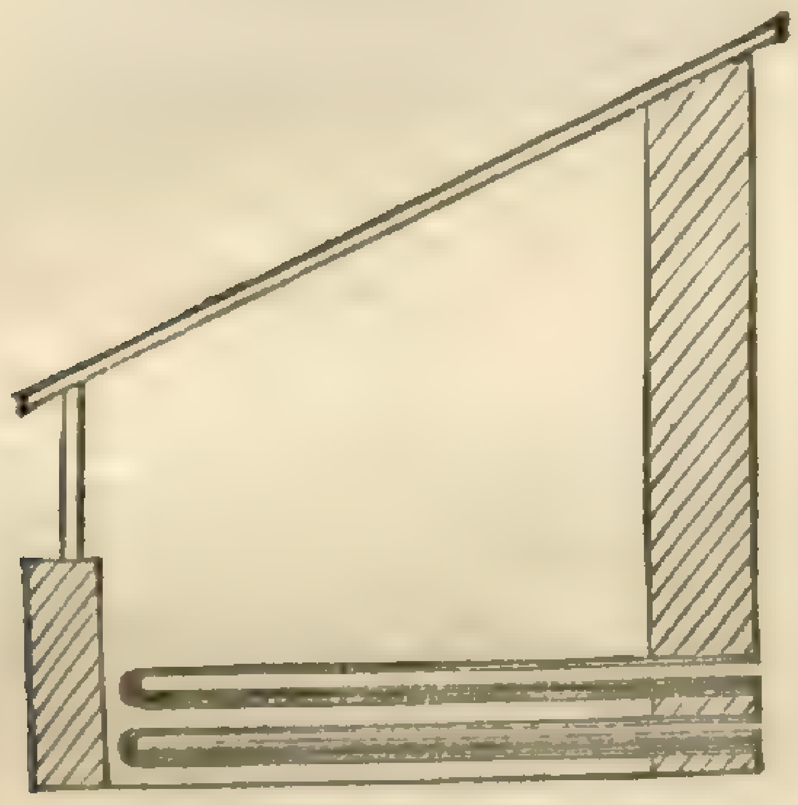
24-inch Wrought Iron	... ...	£6 10 0
30-inch „	... ...	7 10 0
36-inch „	... ...	8 10 0
48-inch „	... ...	12 0 0
60-inch „	... ...	20 0 0
72-inch „	... ...	25 0 0



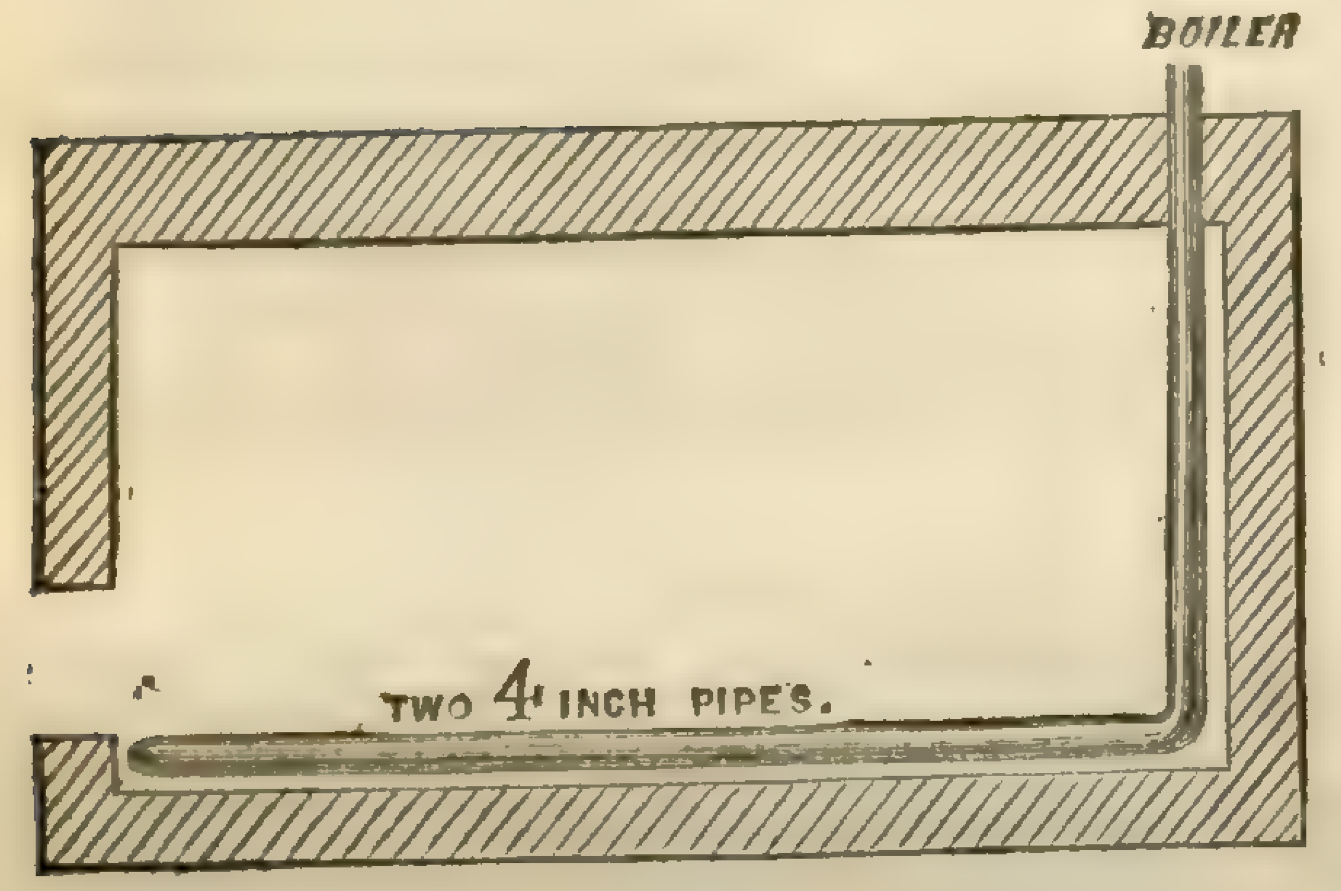
MONRO'S CANNON BOILER.

These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by

PLAN No. 1.



SECTION

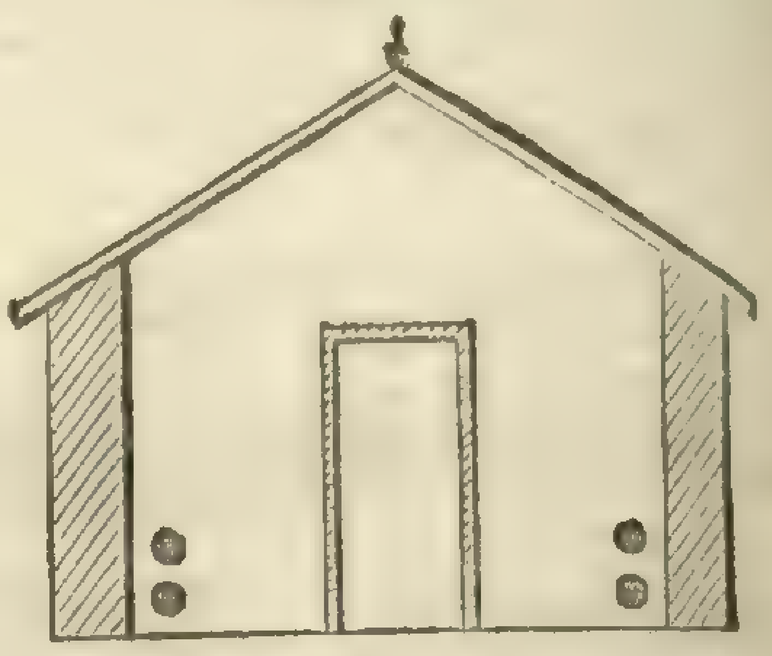


J. JONES,

6, BANKSIDE, SOUTHWARK,

LONDON, S.E.

PLAN No. 3.



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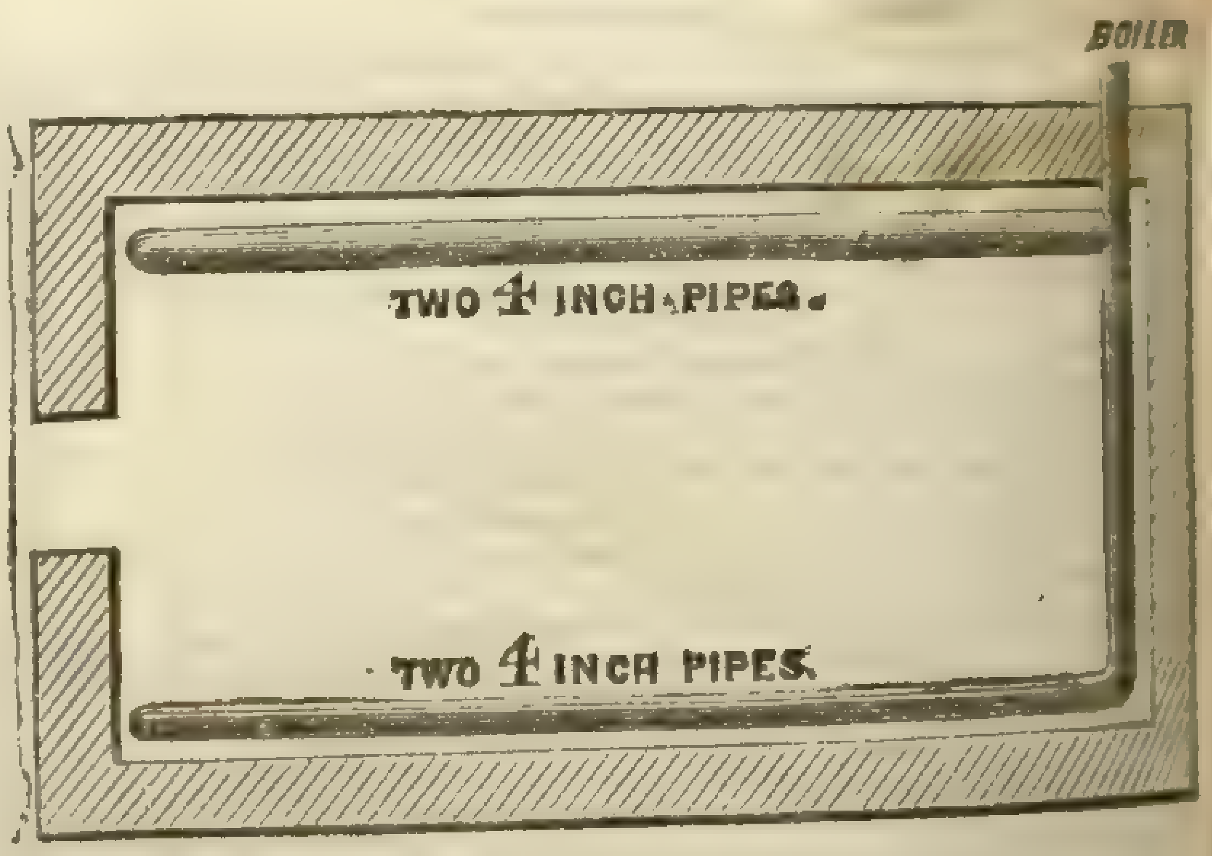


Prices for

HOT-WATER PIPES, ELBOWS,

TEES, SYPHONS, VALVES,

TROUGH PIPES,

ORNAMENTAL COIL CASES,

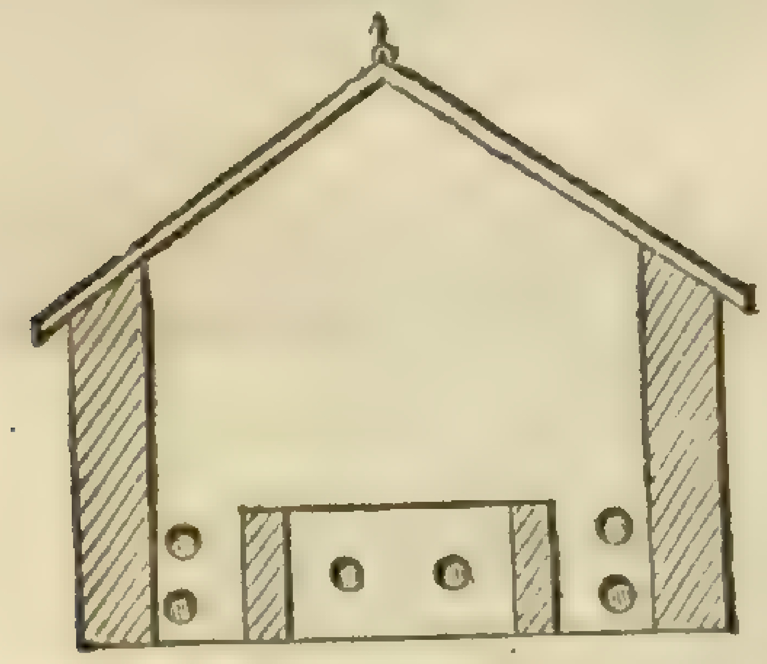
BECK'S PATENT VALVES, &c.; or

ESTIMATES

for

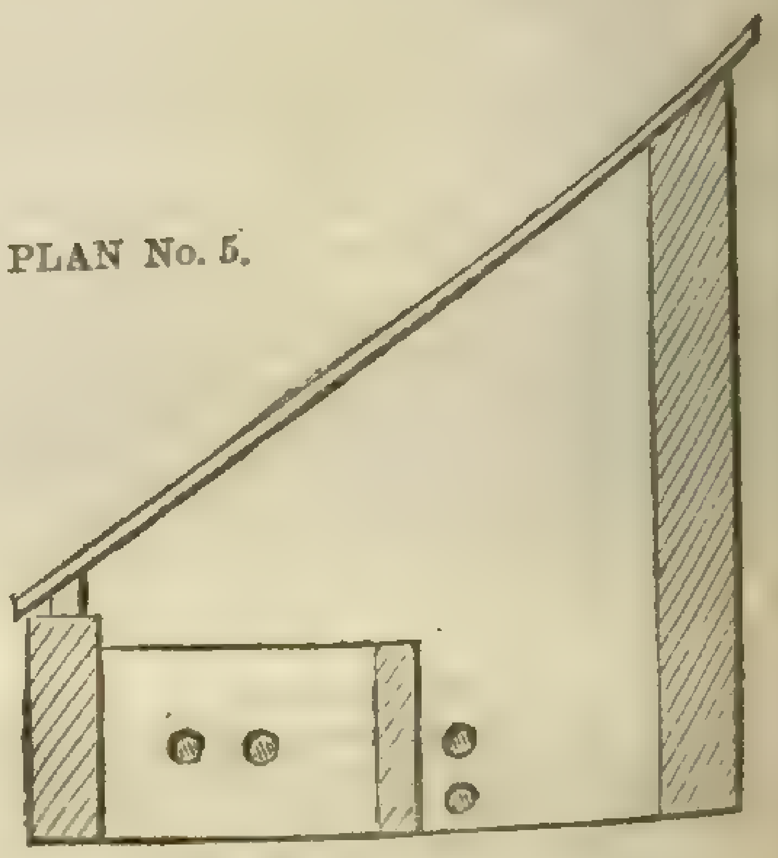
HOT-WATER APPARATUS,

PLAN No. 4.



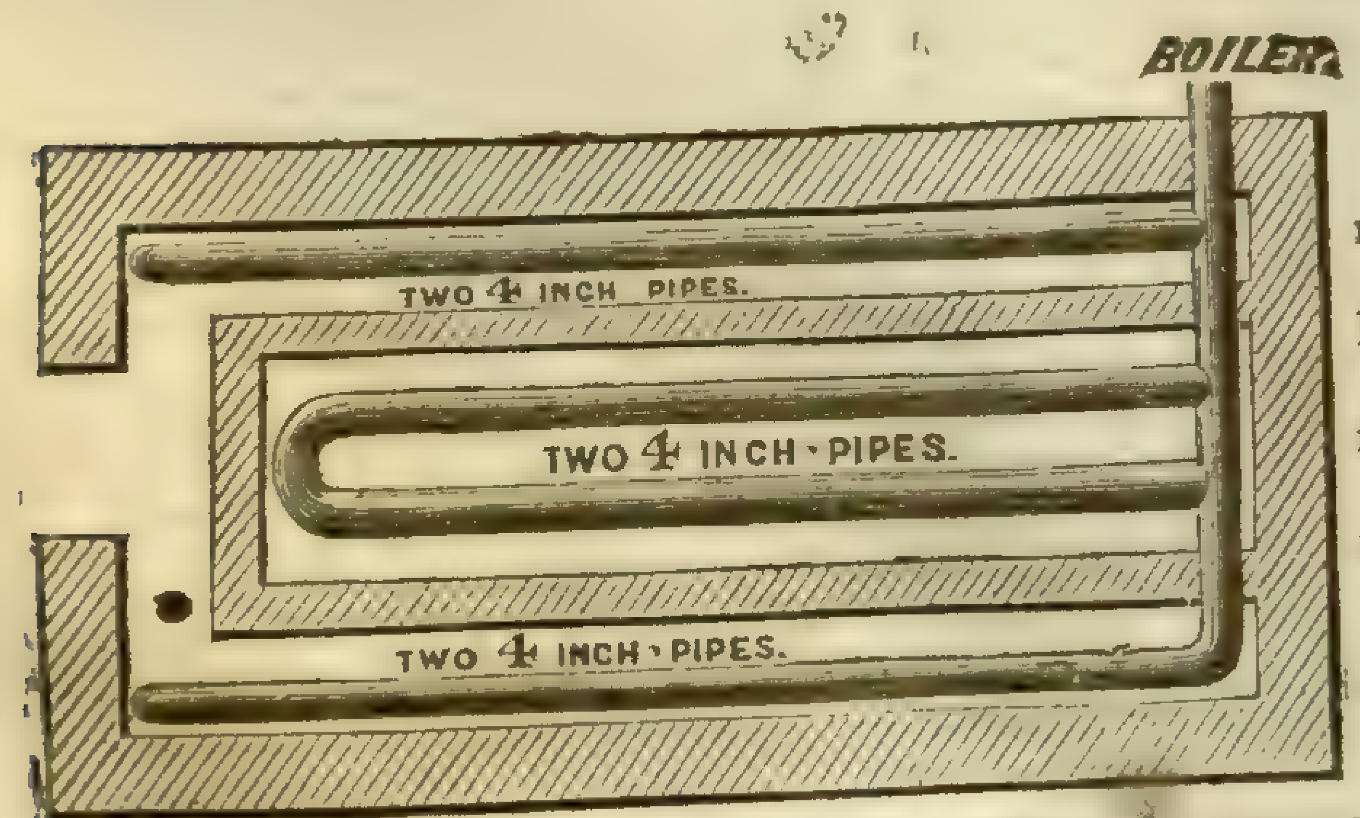
SECTION.

PLAN No. 5.

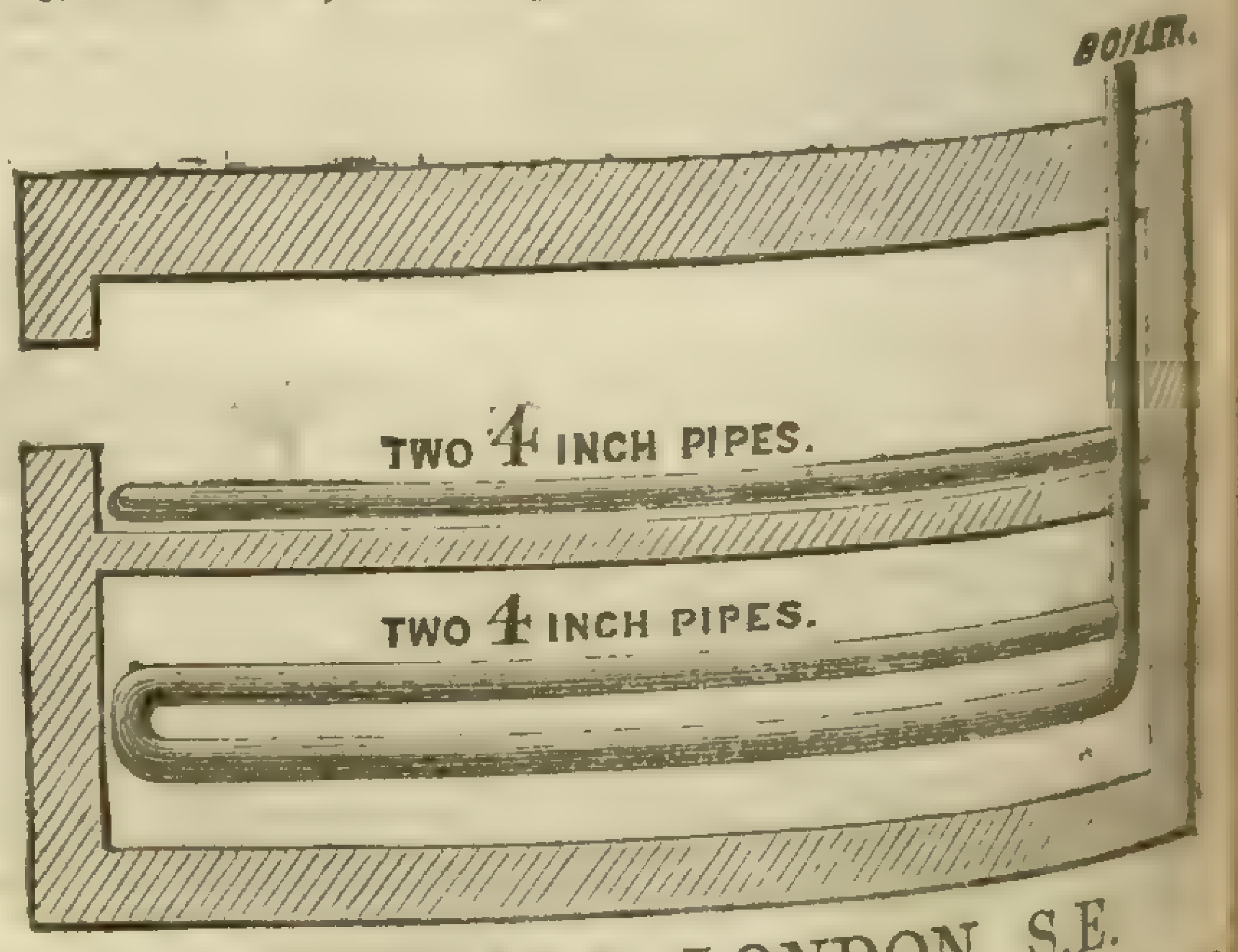


SECTION

as shown in any of the annexed plans, and with Pipes of any size as required, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON, SADDLE, or CYLINDER BOILERS, will be sent, with an ILLUSTRATED CATALOGUE, free on application.



J. Jones has also made arrangements with Mr. Hereman, of Pall Mall, to Heat any Houses manufactured on Sir Joseph Paxton's principle.



J. JONES,

HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, SOUTHWARK, LONDON, S.E.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 12.—1862.] SATURDAY, MARCH 22. {Price Fivepence. Stamped Edition, 6*d*.

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NOTICE TO ADVERTISERS.—*Advertisements should be sent so as to reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

GRAND EXHIBITION of CAMELLIAS. 10,000 Blooms now open. The largest collection known. A Priced and Descriptive CATALOGUE free upon application to
... & Co., Vauxhall Nursery, Wandsworth Road, ..., S.W.

New Roses of 1862.
PAUL AND SON have now ready their usual fine ... the finest novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

New Roses, &c.
WM. PAUL'S CATALOGUE of NEW ROSES and SPRING PLANTS generally is now ready. Free by post on application to
WM. PAUL, Nurseries and Seed Warehouse, Waltham Cross, N.

NEW ROSES for 1862.—36 varieties (the pick of the year) offered in fine strong plants, a DESCRIPTIVE LIST of which may be had on application to
BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

CHOICE CAMELLIA SEED, saved from one of the finest Collections in Europe. 1*s*. per packet.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

RUSSELL'S PYRAMID PRIMULA.—Seed of this magnificent strain, which cannot fail to give satisfaction. ...packets, price 2*s*. 6*d*.
GEO. CLARKE, Nursery, Streatham Place, Brixton Hill, S.

WANTED, Seedling RHODODENDRONS, 2 years old CATAWBIENSE, and 3 years old PONTICUM, ... plants. State height and price, per 1000, for cash.
JAS. CRAWFORD, Nurseryman, High Beech, Essex.

WANTED, about 25 Large SPRUCE FIR Trees, from 12 to 15 feet high.—Address, with price, &c, to ... BURNETT, Roehampton, near London, S.W.

WANTED, 6000 Transplanted BLACK THORN. State lowest cash price to
THOMAS WARNER, Nurseryman, Leicester Abbey.

Large Tartarian Arborvitæs.
FOR SALE, 600 of the above, all strong, healthy and well-formed, from 5 to 6 feet high, and in excellent condition for transplanting. Price moderate.
Apply to H. and F. SHARPE, Wisbech.

FOR SALE, a large quantity of BOX EDGING. Apply at
... 10, Turnham Green Terrace, Chiswick, Middlesex, W.

WELLINGTONIA GIGANTEA.—Seedling Plants of 1861 in single pots, per dozen, 21*s*. Price to the Trade per 100 on application.
J. HENCHMAN, Edmonton, near London, N.

ONE YEAR'S Seedling ARBUTUS, 30*s*. per 1000. 2 years' Seedling ARBUTUS, 40*s*. per 1000. A reduction will be made if a large quantity be taken.
RICHARD SMITH, Nurseryman, Worcester.

To the Trade.
TRANSPLANTED SCOTCH FIRS, 12 to 18 inches, 6*s*. per 1000. 20,000 for 5*l*.
MORRISON BROTHERS, Aberdeen.

Fox Covert or Embankment Planting.
WM. MAULE AND SONS have a quantity of fine 2-years GORSE or FURZE PLANTS to offer at ... per 1000. This and April is the best season for planting.
The Nurseries, Bristol.—March 22.

To the Trade.
JAMES DICKSON AND SONS, "Newton" Nurseries, Chester, offer 1 year APPLE STOCKS, 2 year HOLLIES, 1 year LARCH, 2 year QUICKS, 2 year SPRUCE. Also Transplanted PEAR, APPLE, and MAHALEB CHERRY STOCKS, HAZELS, GRAFTED ELMS, and GREEN HOLLIES. Sizes and Prices on application.

AN AVENUE of PINUS BENTHAMIANA.—Should any gentleman feel desirous of planting as above the hardiest of all hardy long-leaved Pines, fine specimens can be supplied by CHARLES NOBLE, Sunningdale Nursery. Several hundred to select from, and warranted to move safely.

Good Seeds, Carriage Free.
SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

New Garden Seeds.
JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

Now Ready.
BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See large Advertisement.
Covent Garden Market, W.C.

BARR AND SUGDEN, SEED MERCHANTS.—For important notice see large Advertisement, page 230.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

BARR AND SUGDEN'S ILLUSTRATED FLORAL GUIDE. Price 2*s*. 6*d*., sent Post paid.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

E. G. HENDERSON AND SON, NURSERYMEN AND SEED MERCHANTS. Respectfully announce their NEW SEED CATALOGUE and GUIDE for 1862, free on application.
Wellington Nursery, St. John's Wood, London, N.W.

Vegetable and Flower Seeds.
PAUL AND SON'S CATALOGUE of the above, including ASTERS and STOCKS, with DESCRIPTIVE LIST of the best 100 GLADIOLI, is now ready, post free.
"Old" Cheshunt Nurseries, Herts.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

Dahlias, &c.
C. E. ALLEN'S ANNUAL CATALOGUE is now ready, and can be had on application.
Shacklewell, near London, N.E.

PELARGONIUMS.—Intending purchasers should send for our DESCRIPTIVE CATALOGUE, post free.
J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

DOBSON'S SPLENDID HYBRIDISED CALCEOLARIA is unequalled for variety, form, distinct and striking colours and habit. In sealed Packets, 1*s*. 6*d*., 2*s*. 6*d*., 3*s*. 6*d*., and 5*s*. each.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIZE CINERARIA SEED.—Unsurpassed for quality. 1*s*., 2*s*. 6*d*., and 5*s*. per Packet.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIMULA SINENSIS FIMBRIATA, ex. ex.—Sealed Packets, 1*s*., 2*s*. 6*d*., and 5*s*.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

POLYANTHUS SEED from the best Laced Flowers, in packets. Sent free on receipt of 13 Postage Stamps.
JAMES WOODS, Florist, Harwich, Essex.

AZALEAS, CAMELLIAS, EPACRIS, and ERICAS.—We respectfully invite an inspection of our Stock of the above, which is large, in the finest health, and full of flower buds.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

OSCAR STRAWBERRY RUNNERS, 2*s*. per 100 at
WARREN'S Gardens, Isleworth, W.

To the Trade.
WILLIAM EPPS, Jun., begs to offer FINE DWARF-TRAINED PLUMS, 24*s*. per dozen.
The Nurseries, Ashford, Kent.

STRONG FRUITING VINES, 7*s*. 6*d*. and 10*s*. 6*d*. LIST gratis and post free.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

JAMES CRAWFORD, High Beech, Essex, has still on hand a quantity of strong healthy GRAPE VINES, nearly all the leading sorts, which he begs to offer at low prices.

GRAPE VINES. Well-ripened Canes of all the best sorts can be supplied.
PINE APPLE PLANTS,
The best, largest, cleanest, and most healthy stock in this country. An inspection is invited at
WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

TO BE DISPOSED OF, upwards of 300 remarkably healthy and thriving PINE PLANTS, consisting of Fruiters, Successions, Suckers, and Crowns.
For particulars and terms apply at once to Messrs. J. C. WHEELER & SON, Nurserymen, Gloucester.

GIANT ASPARAGUS ROOTS, 2*s*. 6*d*. per 100.—This delicious vegetable does not require half the expense usually incurred in planting it. For instructions, see RICHARD SMITH'S SEED LIST for 1862.
RICHARD SMITH, Nurseryman, Worcester.

Good Clover Seed.
GENUINE NEW CLOVER SEED may be obtained of the undersigned. Prices (according to market and quantity required) will be forwarded on application.
SUTTON & SONS, Seed Growers, Reading, Berks.

Agricultural Seeds.
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FARM SEEDS of the best quality can be supplied by the
PLYMOUTH SEED COMPANY, Plymouth.
Purchasers of large quantities treated liberally.

THE PLYMOUTH SEED COMPANY, Plymouth.
For Advertisement of FARM SEEDS, see page 234.

Agricultural and Garden Seeds.
H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

Present low Prices of Farm Seeds—See
SUTTON'S PRICED LIST, which will be sent free to any address.
SUTTON & SONS, Seed Growers, Reading.

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PURCHASERS of LARGE QUANTITIES of FARM or GARDEN SEEDS will be supplied liberally by SUTTON & SONS.
For prices apply (stating quantity required) to SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Altringham Carrot Seed.
CHARLES SHARPE AND Co., Sleaford, have the above to offer to the Trade; new Seed of their own growing. Price on application.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

FOR SALE, a quantity of SKIRVING'S SWEDE TURNIP SEED, from a selected stock which can be strongly recommended. Apply to the Grower,
Mr. WILLIAM CANT, Myland Lodge, Colchester, Essex.

MR. HUDSON, of Castle Acre, can supply his GOLDEN MELON SEED BARLEY, in quantities of 5 qrs. and upwards, at 45*s*. per qr. New sacks included. Also his prolific BEANS at 53*s*. per qr. with new sacks. These produced 6 qrs. per acre last harvest.

DICKINSON'S ITALIAN RYE-GRASS SEED may now be had by Agriculturists applying to his Bailiff, Mr. W. HUNTER, New Park Farm, near Lymington, Hants. 48*s*. per quarter; or 7*s*. per bushel, for present payment only.

GENUINE COW GRASS, an excellent sample, new seed, remarkably clean, 10*d*. per lb., or 84*s*. per cwt Carriage free.
J. C. WHEELER & SON, Seed Growers, Gloucester.

DIOSCOREA BATATAS (or CHINESE YAM), . 6*d*. per doz., 15*s*. per 100. Larger tubers, 3*s*. 6*d*. per doz.
JOHN CATTELL, Westerham, Kent.

To Potato Growers.
JAMES CARTER AND CO. have a surplus stock of ...ATT'S PROLIFIC and ASHLEAF KIDNEY POTATOES to dispose of in large quantities at a very cheap rate.
237 and 238, High Holborn, W.C.

Dalmahoy Early Potatoes from Scotland.
PETER LAWSON AND SON can supply the above, and other varieties of SEED POTATOES.
..., Great George Street, Westminster, London, S.W.

EARLY OXFORD POTATO, an excellent Cropper, and the best for eating all the year round, 6*s*. per bushel. A reduction made if 1 Ton or more be taken.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

WEBB'S IMPERIAL KIDNEY POTATOES for quantity, quality, beauty, and size, can hardly be equalled, and not surpassed by any other Potato. Price 12*s*. per bushel.
Apply GEORGE MACE, Calcot Gardens, near Reading.

FORTY-FOLD and DALMAHOY POTATOES, ALTRINGHAM CARROT SEED. Prices on application.
CHRISTMAS QUINCEY, Seedsman, Peterborough.

To the Trade.
H. AND R. STIRZAKER can still supply about 100 Bushels of the EARLY IMPROVED LEMON KIDNEY POTATOES, and a quantity of the EARLY OXFORD. Price on application at the Nurseries, near Lancaster.

Seed Potatoes.
WM. PAUL has to offer the following kinds of POTATOES of his own growth, warranted true and free from disease—EARLY SHAW, DALMAHOY, REGENT, and FLUKE. Put free on the Railway at Market prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

SEED POTATOES off Sandy Land.—Flukes, 5*s*. 6*d*., Early Pink Eyed and White Kemps, 5*s*. 6*d*.; Seedlings 4*s* 6*d*. per bushel. Downs, Rocks, and other sorts in proportion. Remittance or reference with orders.
ROBERT STEPHENSON, Pheasant Yard, Queen's Square, Liverpool, (late 26, St. John's Lane).

SEED POTATOES, off the Lancashire Moss or Sand, viz., Fluke, Pink Eye, and White Kemp, Oxhorn, Lemon Kidney, Scotch Down, White Rock, Fortyfold. Many early varieties at very moderate prices. One trial will be the best recommendation.
Apply to H. BROWN, Seedsman, 4, Commutation Row, Liverpool.

Pelargoniums.

WILLIAM HUSSEY begs to offer the undernamed collection, fine healthy plants, for 21s., basket, &c., included, viz.:—King of Purples, Lord Clyde, Othello, Rifleman, Lady Craven, Musjid, Leviathan, Peacock, Euphemia, Acme, Mrs. Turner, Lady Canning, Douglas, Cynthia Monarch, Prince of Prussia, King of Scarlets. Evening Star, Queen of May, Agnes, Bracelet, Rose Celestial, Competitor, Richard Benyon, Seraph, Mazeppa, Etna, Viola, Zeno, Fire Queen, Beadsman, Unique, Negro, Beauty, Autocrat, Marchioness of Tweeddale, Czar, Eastern Beauty, Ivanhoe, Omega.

Horticultural Gardens, Norwich.

Pelargoniums.

GEORGE SMITH begs to offer from a splendid Stock of Choice and well grown Plants the following, viz.:—

	per dozen
SHOW GERANIUMS from	9s. to 30s.
French and English Spotted	9s. to 30s.
Fancy	9s. to 30s.
Pink, Scarlet and White, Zonale	9s. to 12s.
Variegated Leaved	9s. to 20s.

A DESCRIPTIVE CATALOGUE of the above, together with Fuchsias, Verbenas, Dahlias, Petunias, Chrysanthemums, Bedding Plants, &c., in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London, N.

Calceolaria Canariensis.

G. SMITH has great pleasure in recommending this unsurpassed and beautiful variety; it has been shown in the past season at all the leading exhibitions round London, and has established itself as the best for all purposes, as it gives two-thirds more bloom in a pot and one-third more in beds than any other Calceolaria in cultivation; colour bright Canary Yellow, the mouth closed, so as to resist the wet; the habit is all that could be wished. Has taken a First-class Certificate at the Royal Botanic Gardens, Regent's Park; also a First-class Certificate from the Floral Committee of the Horticultural Society, for its fine qualities. Now ready, in strong plants, at 1s. 6d. each, or 12s. per dozen. A remittance must accompany the order to unknown correspondents.

Tollington Nursery, Hornsey Road, Islington, London, N.

WM. WOOD AND SON have much pleasure in offering their superb collection of

PHLOXES.

All the newest and most approved Continental varieties, 12s. to 18s. per dozen.

Older, but approved kinds, 6s. to 9s. per dozen.

100 Phloxes, in 50 sorts, for	40s.	25 Phloxes, in 25 sorts	12s. 6d.
50 „ 25 „	21s.	12 „ 12 „	9s. 0d.

PENTSTEMONS.

New and first-rate varieties	18s. per dozen.
Older, but approved kinds	6s. to 9s. „
50 Pentstemons, in 25 sorts	21s. 0d.
25 „ 25 „	12 6
12 „ 12 „	9 0

ANTIRRHINUMS.

Per dozen .. .. 6s., 9s., and 12s.

HERBACEOUS PÆONIAS.

Per dozen .. .. 12s., 18s., and 24s.

HERBACEOUS PLANTS.

Per dozen .. .. 6s., 9s., and 12s.

Plants presented to compensate for carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the most effective and useful bedding variety known. During the past season upwards of 5000 plants were grown in the gardens at Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.

. For Testimonials and further particulars see *Gardeners' Chronicle* of February 22.

Plants after April 20, 1s. 6d. each. 12s. per doz. 50s. per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in riband-borders, and vases, this variety is one of the most useful and effective yet offered for sale.

Plants after April 20, 1s. 6d. each. 12s. per doz. 75s. per 100.

CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

	Per packet—s. d.		Per packet—s. d.
Calceolaria, herbaceous ..	2 6	Primula sinensis dentiflora	2 0
Cineraria cruenta ..	2 6	Primula sinensis albiflora	2 0
„ maritima	0 6	„ „ dentiflora kermesina splendens ..	2 6
Erianthus Ravennæ ..	1 0	Verbena venosa	0 6
Lobelia crinus speciosa	1 0		
„ „ major ..	1 6		

A PRICED and DESCRIPTIVE CATALOGUE of Vegetable, Agricultural, and Flower Seeds, forwarded post free to all applicants.

Exotic Nursery, Tooting, Surrey, S.

JEAN VERSCHAFFELT'S NURSERY, Ghent, Belgium.

J. V. begs respectfully to announce that he intends sending out for the first time, on and after the 1st of September next, the following striking Novelties, viz.:—

1. CAMELLIA QUERCIFOLIA (J. Versch.).—The most curious and interesting Camellia known, as regards its leaves, which are Oak like; the flower being much the same as the universal favourite C. fimbriata alba. The plant is very showy, a good setter and very free bloomer. Prices are fixed as follows:—

Nice plants, 1 to 1½ feet high, 21s. each.
Do. do. with buds, 31s. „
A few extra sized plants at 42s. „

2. RHODODENDRON SOUVENIR DE JEAN BYLS (J. Versch.)—This is the last and also the finest seedling raised by Messrs. Byls, Ghent, from whom J. V. purchased the entire stock. It is perfectly hardy, having stood out the winter of 1860—1861, without losing a bud. It has very fine foliage, and the flowers are in large close bouquets, of a fine rose colour, with a fine blotch of bright yellow on the upper lobe. Altogether one of the best known kinds, very free and very late bloomer.

Good plants .. .. 21s.
Stronger plants .. .. 31s.
A few extra sized plants 42s.

The plants will be sent out, as far as possible, with buds. A carefully coloured plate will be sent to each subscriber. One plant over to the Trade for every three taken.

The Subscription List is now open, and early orders are solicited, as they will be sent in strict rotation.

All letters to be addressed to Jean Verschaffelt, Nurseryman, 43, Rue de la Caverne, Ghent, Belgium.

☞ A reference required from unknown correspondents.

Saffron Walden Nursery.

SUPERB DOUBLE HOLLYHOCKS.

NOW IS THE TIME FOR PLANTING!

WILLIAM CHATER has ready some thousands of SEEDLINGS suitable for planting in Borders, Shrubberries, or other ornamental grounds.

W. C. has also an immense Stock of fine healthy young Plants, named sorts, and invites attention to his newly classified list for full information respecting prices, colours, and description.

N.B. The Trade liberally dealt with, and special prices on application for quantities.

William Chater, Saffron Walden, Essex.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway: also to be had of Mr. John Kernan, Seedsman, 4, Great Russell Street, Covent Garden.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a [illegible] of the General Stock of the most extensive Nurseries in E[illegible]

The Catalogue may also be had at Mr. May's, 1, W[illegible] Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

WILLIAM BARRON, Elvaston Castle, Derby, can supply strong and well-rooted plants as under:—

ABIES DOUGLASII, 3 years once transplanted. per 1[illegible]

This tree attains a height of more than 200 feet, highly ornamental, the same as the tall flagpole at Kew.

PINUS LARICIO, 18 ins. to 2 feet .. . per 1000 [illegible]

This produces timber for railway sleepers sooner than the Larch, and is used as spars and masts in the French navy.

BERBERIS DARWINI, the most beautiful of the tribe, fit either for the flower garden or game cover, with rich orange-coloured flowers; Pheasants are very fond of the berries, which are produced in profusion. Strong plants, 3 years old per 100 [illegible]

Ditto ditto, 2 years old .. .. [illegible]

Ditto ditto, 1 year old .. . . [illegible]

PICEA NOBILIS, 3 to 4 years old, plants from seed, (This is the most lovely of all Firs.) each, 10s. to 15[illegible]

WELLINGTONIAS from 2 to 9 feet. Also specimens of the rarest Conifers.

Remittances to accompany orders from unknown correspondents. Post-office Orders payable at Derby.

SELECT PRICED LISTS post free on application.

NEW VARIEGATED FOLIAGED FUCHSIA,

CARTER'S METEOR.

This striking novelty, a double corolla'd variety, with crimson and yellow foliage, will be sent out on May 1.

JAMES CARTER & CO.'S GENERAL CATALOGUE of PLANTS,

Containing many desirable Novelties, will be published on May 1, and forwarded gratis and Post free on application.

JAMES CARTER & CO., 237, 238, & 261, HIGH HOLBORN, W.C.

SEED FARMS.
EAST HOUSE FARM, DEDHAM, ESSEX; and
THE SEED FARM, ST. OSYTH, ESSEX.

NURSERY.
CRYSTAL PALACE NURSERY,
Perry Hill, Sydenham, S.E.

ESTABLISHED UPWARDS OF A CENTURY.

BUTLER & McCULLOCH,

SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.

CARNATIONS and PICOTEES,

Saved on the Continent with the greatest care from one of the largest Collections in Europe, consisting of all the leading English and Continental kinds. For these our Establishment has for years been famous, and it is with great satisfaction that we are enabled to state that our Collections of these favourite Flowers are this season a great improvement on those of former years, while our prices for the same remain unaltered. We would especially direct the attention of Amateurs to the Seeds we now offer, as Flowers of the greatest merit, novelty, and beauty, may be expected from them.

Carnations.

	Per packet.—s. d.
A. 12 Superb varieties Self	5 0
B. 12 ditto ditto Flake	5 0
C. 12 ditto ditto Bizarre	5 0
D. 12 ditto ditto Fancy	5 0

Half packets of the above, 3s. each.

Yellow Carnations.

E. 12 Superb varieties Flake	5 6
F. 12 ditto ditto Bizarre and Self	5 6
G. 12 ditto ditto Fancy	5 6

Half packets of the above, 3s. 6d. each.

Perpetual or Tree Carnations.

	Per packet.—s. d.
H. 12 superb varieties Self	5 0
I. 12 ditto ditto Flake	5 0
J. 12 ditto ditto Bizarre	5 0
K. 12 ditto ditto Fancy	5 0

Half packets of the above, 3s. each.

Picotees.

L. 12 superb varieties, White Ground	5 6
M. 12 ditto ditto Yellow Ground	5 6

Half packets of the above, 3s. each.

Perpetual or Tree Picotees.

N. 12 Superb varieties	5 0

Half packets, 3s.

CARNATIONS, Choicest Mixed	2 6	CARNATIONS, Perpetual Mixed	2 6
PICOTEES, Choicest Mixed	2 6	PICOTEES, Perpetual Mixed	2 6

ORNAMENTAL GOURDS.

50 beautiful varieties .. 10s. 6d. | 25 beautiful varieties .. 5s. 6d | 12 beautiful varieties .. 2s. 6d.

DESCRIPTIVE SEED CATALOGUE

May be had free and post paid upon application, containing a List of all the Novelties and most approved varieties of FLOWER and VEGETABLE SEEDS.

To Exhibitors we can strongly recommend our assortments of ASTERS, BALSAMS, STOCKS, and other choice imported Flower Seeds.

Butler & McCulloch confidently recommend the following Collections, assorted with the greatest care and discrimination:—

COLLECTIONS OF FLOWER SEEDS. (Carriage Free.)

New Annuals.

12 extra fine varieties	10s. 0d.	6 extra fine varieties	5s. 0d.

Half Hardy Annuals.

100 finest selected varieties	30s. 0d.	25 finest selected varieties	7s. 6d.
50 „ „	15 0	12 „ „	4 0

Hardy Annuals.

100 finest selected varieties	20s. 0d.	25 finest selected varieties	5s. 0d.
50 „ „	10 0	12 „ „	2 6

VEGETABLE SEEDS *of every description of the very best quality.*

BUTLER AND McCULLOCH, SEED MERCHANTS, COVENT GARDEN MARKET, W.C.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

NOTICE.

In consequence of private circulars issued by Messrs. Butler & McCulloch stating that Mr. BARR (of the Firm of BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.) is no longer in their employment (*a statement one would have thought unnecessary*), Mr. BARR, in publicly confirming the fact, has moreover much pleasure in announcing that the celebrated "Sardinian Correspondent," who for some years furnished Messrs. Butler & McCulloch with their Choicest Seeds, now no longer does so, but supplies instead the Firm of BARR & SUGDEN with his far-famed CARNATIONS, PICOTEES, PELARGONIUMS, and other Choice Seeds, which require for their maturation a warm climate; also his unrivalled collection of ORNAMENTAL GOURDS, surpassing in variety and beauty any collection ever offered to the British public. For the names and descriptions see our Advertisement in *Gardeners' Chronicle* of February 22 and March 1.

SEEDS FOR PRESENT SOWING.

COLLECTIONS of CARNATIONS and PICOTEES,

Saved by our Special "Sardinian Correspondent," and distinguished by his Crest, thus and initials G. E. S.

As usual, these seeds are warranted to yield 80 per cent. of splendid Double Flowers, surpassing in floral beauty and rich and brilliant colours those saved by any German, French, or Belgian cultivators.

For 27 years our "SARDINIAN CORRESPONDENT" has devoted his especial attention to improving these favourite "Domestic Flowers," and, for the last 10 years they have held a first class position in this country; they are also celebrated on the Continent of Europe, in America, India, Australia, New Zealand; and indeed wherever the lovers of these flowers are located, these collections have found their way.

For many years they have been made a leading feature in advertisements. In floral committees they have been subjects of discussion. For Dr. Lindley's opinion of the high character of these flowers, see *Gardeners' Chronicle*, July 2nd, 1859, p. 562. Since that time considerable advancement has been made, so that we have no hesitation in affirming that the high reputation these collections have attained will be more than realised by the seeds we have now the pleasure of offering.

For the colours contained in the following Collections see our "Guide to the Flower Garden," or our Advertisement of these on back page of *Gardeners' Chronicle*, January 11th.

CARNATIONS, Section I.

This Section consists of Four Collections, each forming a distinct feature.

COLLECTION A

Contains 12 superb varieties of 10 seeds each, 3s.
Double Collections, do. do., 20 seeds each, 5s.

I. SELFS.—One-coloured, possessing the delightful perfume of the old and highly prized Clove, with the smooth edged petals and exquisite symmetry of a florist's flower.

COLLECTION B

Contains 12 superb varieties of 10 seeds each, 3s.
Double Collections, do. do. 20 seeds each, 5s.

II. FLAKES.—The flowers of these are white, or some other delicate shade, beautifully striped or flaked, with a distinct brilliant colour.

COLLECTION C

Contains 12 superb varieties of 10 seeds each, 3s.
Double Collections, do. do., 20 seeds each, 5s.

III. BIZARRES.—These are striped with two distinct and brilliant colours on a white or light ground.

COLLECTION D

Contains 12 superb varieties of 10 seeds each, 3s.
Double Collections, do. do. 20 seeds each, 5s.

IV. FANCY.—To the amateur this class will be specially interesting; the flowers are beautifully formed, and are either edged, spotted, or mottled with rich and varied colours, thus imparting to the flower an extremely novel and beautiful appearance.

PERPETUAL or TREE CARNATION, Section III.

These are called "Tree" on account of their upright growth and branching habit, and "Perpetual" because they flower several times during the season. In winter and spring they can be had in bloom under glass, while in autumn they are amongst our most attractive border plants. This Section consists of four Collections.

COLLECTION H

Contains 12 fine varieties of 10 seeds each, 3s.
Double Collections, do. do., 20 seeds each, 5s.
Perpetual or Tree Self, or one-coloured.

COLLECTION I

Contains 12 fine varieties of 10 seeds each, 3s.
Double Collections, do. do. 20 seeds each, 5s.
Perpetual Flake, or two-coloured striped.

COLLECTION K

Contains 12 fine varieties of 10 seeds each, 3s.
Double Collections, do. do., 20 seeds each, 5s.
Perpetual Fancy, spotted, shaded, or mottled.

PICOTEE, Section IV.

The Picotee is distinguished from the Carnation by the flowers being margined instead of striped. This Section includes Three Collections.

COLLECTION L

Contains 12 superb varieties of 10 seeds each, 3s.
Double Collections, do. do., 20 seeds each, 5s.
Picotees, white ground, margined.

COLLECTION M

Contains 12 superb varieties of 10 seeds each, 3s.
Double Collections, do. do.. 20 seeds each, 5s. 6d.
Yellow Picotees, margined.

ASSORTMENTS FROM THE ABOVE COLLECTIONS:

CARNATIONS.—An assortment of 100 varieties, each consisting of 10 seeds				..	18s.
CARNATIONS.	ditto	of 50	ditto	..	10s.
PICOTEES.	ditto	of 100	ditto	..	18s.
"	ditto	of 50	ditto	..	10s.

Mixed Packets of Carnation, 1s. 6d.
Do. do. of Picotee, 1s.

PELARGONIUM SEED

Received from our "Sardinian Correspondent."

VARIEGATED LARGE-FLOWERED PELARGONIUMS.

Our "SARDINIAN CORRESPONDENT" having succeeded in obtaining from seed an entirely new class of variegated plants, viz., "Large-flowered" Pelargoniums of the diadematum tints, of fine form and brilliant colours, with the remarkable distinction of variegated foliage, we shall have the pleasure of offering, next season, Seed saved from these unique and beautiful silver-edged plants.

The interest that attaches to the raising of seedlings is much increased by the certainty of being rewarded with new and improved varieties, especially in a flower so popular and beautiful as the Pelargonium. To ensure the amateur against disappointment while in the pursuit of his interesting and favourite employment, our "Sardinian Correspondent," who is distinguished for his eminent success in raising many splendid and novel varieties,* remarkable alike in habit and substance, has saved for us seed from the very choicest of his extensive and magnificent collection, so that we feel the greatest confidence in recommending it to those who are desirous of raising real novelties.

SEALED COLLECTIONS of PELARGONIUM SEED.

COLLECTION O

Contains 12 splendid varieties, 10 seeds each, 5s. 6d., of large-flowered Pelargoniums.

COLLECTION P

Contains 12 splendid varieties, 10 seeds each, 5s. 6d., of spotted Pelargoniums.

COLLECTION Q

Contains 12 splendid varieties, 10 seeds each, 5s. 6d., of fancy Pelargoniums.

Assortment of 36 splendid varieties of large-flowered Pelargoniums, 10 seeds of each, 12s. 6d.

Assortment of 36 splendid varieties of Fancy Pelargoniums, 10 seeds of each, 12s. 6d.

* Dried Specimens of many magnificent Seedlings, flowered in 1861, may be seen at our Establishment.

BARR AND SUGDEN, SEED MERCHANTS,
12, KING STREET, COVENT GARDEN, LONDON, W.C.

SEEDS for the FLOWER GARDEN.

FREE BY POST.

			s.	d.
100 finest selected varieties, consisting of Hardy, Half Hardy, and tender ANNUALS, PERENNIALS, &c.			21	0
50	ditto	ditto	10	6
30	ditto	ditto	7	0
20	ditto	ditto	4	6

WILLIAM WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

DOUBLE ZINNIAS.

ZINNIA ELEGANS FL. PLENO.—Very splendid mixed. Received from a celebrated florist in the South of France, who describes the seed to be saved from magnificent double flowers of unsurpassed beauty, not even semi-double flowers being allowed to bloom. Per packet, 1s.

ZINNIA ELEGANS FL. PLENO.—In 24 varieties separate. These are received from the same eminent florist as the preceding, and are reported to have obtained a first-class certificate "hors ligne," and were deemed worthy of being sent to Paris by his Excellency M. Rouher, Minister of Agriculture of France.

The collection of 24 varieties .. .. .. 18s.
The collection of 12 varieties .. .. .. 9s.
The collection of 6 varieties .. .. .. 6s.

(Corrected from the Catalogue, the price there incorrectly printed).

ZINNIA, NEW MEXICAN SP.—This species is entirely distinct in habit from the Zinnia elegans, dwarf and spreading, and may be regarded among annuals as the finest novelty introduced. It should be extensively grown by all growers of first-class bedding plants, and no flower garden should be without this interesting novelty. For description see Catalogue.

The SEED CATALOGUE, Cultural and Descriptive, supplied on application.

STEPHEN BROWN, Seed Grower and Importer, Sudbury, Suffolk.

PRIZE PHLOXES. | PRIZE GLADIOLUS.
PRIZE CHRYSANTHEMUMS.

JOHN CATTELL'S Collections of the above obtained the following Prizes at the London Exhibitions during the past season:—

PHLOXES.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

GLADIOLUS.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

CHRYSANTHEMUMS.

First Prize, for the best 24 Cut Blooms, at the Royal Horticultural Society's Grand Fruit and Chrysanthemum Show, held at South Kensington Gardens.

First Prize, for the best 24 Cut Blooms, at the Stoke Newington Chrysanthemum Exhibition.

First Prize, for the best 24 Cut Blooms, at the Crystal Palace Chrysanthemum Exhibition.

J. C.'s collections include every variety of note, and he now offers them at the low prices named below, the selection being left to himself.

PHLOXES, 6s., 9s., and 12s. per dozen.
CHRYSANTHEMUMS, 6s. per dozen.
GLADIOLUS, 6s., 9s., 12s., and 18s. per dozen bulbs

CATALOGUES will be ready shortly, and forwarded post paid on application.

Strong plants of the Chrysanthemums and Phloxes will be ready early in April.

Nursery and Seed Establishment, Westerham, Kent.

E. G. HENDERSON AND SON respectfully offer FUCHSIA COMET, FUCHSIA MINNIE BANKS, the two finest Exhibition varieties out, 5s., 7s. 6d., and 10s. 6d. each.

STUARTIA PENTAGYNIA.—A very handsome deciduous autumn-flowering hardy shrub. For description see *Gardeners' Chronicle* of March 15, and E. G. H. & SON'S SEED CATALOGUE, page 95.

Strong bushy Plants, 3 feet high, 7s. 6d.

FRUITING VINES.—Extra strong; Golden, and Muscat Hamburghs; also, Bidwell Seedling, a late-hanging Grape, and others.

SEEDS OF

Clianthus Dampieri.—The most gorgeous plant in cultivation Five seeds, 2s. 6d.
Calendula officinalis superba. 6d. and 1s. per packet.
Celosia pyramidalis aurea, 1s. 6d.; Rubra, 1s. per packet.
Cosmos diversifolius atrosanguineus, 1s. per packet.
Linum perenne candidissimum, 1s. per packet.
Perfection Sweet William, 6d. and 1s. per packet.
Œnothera Lamarckiana, 6d. and 1s. per packet.
Saponaria calabrica alba, 6d. and 1s. per packet.
Nemophila atomaria oculata, 6d. and 1s. per packet.
Zinnia elegans flore pleno, 6d. and 1s. per packet.
Giant Emperor Asters in 20 colours.
Dwarf Chrysanthemum-flowered Asters.—The most beautiful for bedding and margins.
Salvia argentea, Ferula glauca, Dipsacus Gmelini.—Ornamental garden plants, 6d. and 1s. per packet.
Bush Vegetable Marrow.—The most prolific and richly flavoured of any, 1s. per packet.

Wellington Nursery, St. John's Wood, London, N.W.

To the Trade.

PELARGONIUMS! PELARGONIUMS!

WM. POLLARD has to offer a large Stock of the above, in nice plants, at 50s. per 100, consisting of such as the following fine varieties, viz., Ajax, Czar, Douglas, Eclipse, Lord Clyde, Princess Beatrice, Monarch, Leviathan, Prince of Wales, Ringleader, Sir C. Campbell, Ariel, &c. &c.

Also the following English and Continental Spotted varieties:—Beadsman, Bracelet, Favourite, King of Purples, Mammoth, Rifleman, Sweep, Cleopatra, Octave Demay, Grand Duchess Stephanie, Guido, Osiris, Madame Rendatlerii, Mrs. Ellis, &c. &c.

W. P. begs also to offer the following superb FLOWER SEEDS, the quality of which is guaranteed first class:—

Per packet—	s.	d.
Double rose-flowered BALSAM, mixed, in 8 colours, from flowers 8 inches in circumference	1	1
VERBENA, very fine mixed	0	7
ANTIRRHINUM, do. do.	0	7
POLYANTHUS, do. do.	0	7
CINERARIA, from finest new named varieties	2	6
Do. from older do.	1	0
PANSY, very fine	0	7
PETUNIA (hybridised) from best named varieties; will contain many double and single flowers, striped, blotched, and self-coloured .. .. .. 1s. and	2	6

The above eight varieties will be supplied, consisting of upwards of 3000 seeds, for 6s. post free.

WM. P. can also supply 100 varieties of choice ANNUALS, BIENNIALS, and PERENNIALS for 10s., or 50 varieties for 5s. 6d., post free.

Ferrybridge Nursery, Yorkshire.

Grand Exhibition of Unforced Hyacinths, Narcissus, and Tulips.

MESSRS. ARTHUR HENDERSON AND CO.'S ANNUAL DISPLAY of the above "Galaxy of Flowers" will be held in the Lapageria House, beginning on March 26, and ending on April 10.
Pine Apple Place, Edgware Road, London, W.
Admittance Free.

New Roses for 1862.
4000 Strong Plants in 51 New kinds.

WM. WOOD AND SON can supply really strong, robust, and healthy plants of all the NEW ROSES of 1862, worth growing, at 5s. each.
A liberal Discount allowed to the Trade.
DESCRIPTIVE CATALOGUES on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

STANDARD ROSES, with straight stems and good heads, the finest varieties; 30s., 36s., and 42s. per dozen.
GRAPE VINES for PLANTING OUT.—All the leading sorts, with stout, short-jointed, well ripened canes; 3s. 6d., 5s., and 7s. 6d. each.
GRAPE VINES for FRUITING in POTS.—Extra fine, strong bearing rods.
GLADIOLUS.—Splendid hybrids of Gandavensis, 6s., 9s., 12s., and 18s. per dozen; 100 distinct varieties, 84s.; 100 newer, 126s.
NEW BEGONIAS.—Twelve of the most distinct and beautifully variegated Continental varieties, strong plants, for 18s.
CAMELLIAS with FLOWER-BUDS.—Including the best new varieties, fine plants, 30s. to 42s.; extra size, 60s. and 84s. per dozen.
DESCRIPTIVE CATALOGUES, with all particulars, forwarded on application to
JAMES DICKSON & SONS, The "Newton" Nurseries, Chester.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.
For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.
Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.
The Royal Nursery, Bagshot, Surrey.

New and Choice Seeds offered by

B. S. WILLIAMS, Paradise Nursery, Holloway, N.
*** The following are specially recommended for their beauty and superior qualities as worthy of cultivation in the most select collections. Descriptions will be found in CATALOGUE, forwarded post-free to applicants.
GERMAN and other FLOWER SEEDS in COLLECTIONS. See *Gardeners' Chronicle*, March 8.

	Per Packet—s. d.
Aster, Cocardeau or Crown, finest mixed	0 6
,, French, finest mixed	0 6
,, German, finest mixed	0 6
,, Giant Emperor	0 6
Alyssum saxatile compactum	1 6
Amaranthus tricolor splendidissimus	0 6
Antirrhinum majus	0 4
Aquilegia vulgaris caryophylloides	0 6
Atriplex hortense purpurea	0 3
Balsam, Camellia-flowered, finest mixed	0 6
Bidens atrosanguinea (Cosmos diversifolia)	1 0
Calceolaria, herbaceous, finest mixed .. 1s. 6d. to	2 6
Calliopsis cardaminefolia hybrida atrosanguinea	0 6
Celosia aurea	1 6
,, cristata (coccinea)	1 0
,, dwarf Cockscomb	1 0
,, spicata rosea	1 0
Cineraria cruenta, mixed seed from named flowers, 1s. 6d. to	2 6
,, maritima	0 4
Clarkia pulchella flore pleno .. 1s. to	2 6
Clianthus Dampieri	2 6
Convolvulus cantabricus stellatus novus	1 0
Delphinium formosum	0 3
Dianthus chinensis Heddewigii	0 4
,, ,, ,, flore pleno	1 0
,, ,, ,, imperialis hybridus	0 6
,, ,, ,, hybridus flore-pleno atropurpurea	0 6
,, ,, laciniatus	0 4
,, ,, nanus atrosanguineus	0 6
Gazania splendens	0 6
Gladiolus Gandavensis (hybrids) .. 1s. to	2 6
Hollyhocks, choice seed from named flowers	0 4
Linum grandiflorum	0 3
Lobelia erinus speciosa	0 6
,, trigonicaulis	0 6
Lychnis Haageana	0 6
Marigolds, African and French	0 3
Œnothera Lamarckiana	1 0
Perilla Nankinensis	0 3
Petunia, mixed seed from named flowers	0 6
Phlox Drummondii, finest mixed	0 4
,, ,, Radowitzi kermesina striata	1 0
Plantago purpurea	0 6
Portulacca Thellusonii, finest mixed	0 3
Primula, Red and White-fringed. Very choice seed (See testimonials on Catalogue). mixed or separate 2s. to	3 6
Primula fimbriata kermesina splendens	2 6
Saponaria calabrica alba and rosea	0 6
Senecio elegans flore pleno (Magenta)	1 0
Solanum capsicastrum	0 4
,, pseudo-capsicum	0 4
,, species	0 4
Stocks, Brompton or Biennial, finest mixed	0 6
,, Dwarf German Ten-week ,,	0 6
,, Intermediate, red and white	0 6
Tropæolum Crystal Palace Gem	1 6
,, Tom Thumb, Scarlet and Yellow	0 3
Verbena venosa	0 4
,, finest mixed	0 6
Viola tricolor hybrida, saved from a selection of the best named varieties of Garden Pansy	0 6
Zinnia elegans	0 3
,, ,, flore pleno	0 6

Hardy Annuals, 12 varieties, 1s. 6d.; 25 varieties	3 0
Half Hardy Annuals, 12 do., 2s. 6d.; 25 ,,	5 0
Biennials and Perennials, 12 do., 2s.; 25 ,,	4 0
Ornamental Grasses, 12 do., 2s.; 25 ,,	4 0

VEGETABLE SEEDS of every description of the best quality.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

EXHIBITION of NEW ROSES, HYACINTHS, &c.

THE COLLECTION OF HYACINTHS, NEW ROSES, &c.,
AT THE
WALTHAM CROSS NURSERIES,

Will this year be at its best the last 14 days of March. Every new variety of merit has been added, and the Show is expected to surpass that of last year.

Entrances: Platform, Waltham Station, E.C. Railway (half an hour's ride from London); and Turnpike Road, Waltham Cross, N. Admittance free.

WILLIAM PAUL, WALTHAM CROSS, N.—March 15.

N.B.—Strong Plants of all the NEW ROSES ready in April.

WM. CUTBUSH & SON'S
ANNUAL GRAND EXHIBITION OF HYACINTHS.

WM. CUTBUSH AND SON respectfully announce that their GRAND EXHIBITION of HYACINTHS and other SPRING FLOWERS will be Open to the Public at their

NURSERIES, HIGHGATE, LONDON,

Until the end of the Month. Admission Free, from 9 A.M. till dusk.

This superb Collection is unsurpassed in the Kingdom, and contains many new varieties that cannot be seen elsewhere.

The following Prizes were awarded us at the Royal Horticultural Society's Grand Exhibition on Wednesday last:

			MISCELLANEOUS.	
CLASS I. 18 Hyacinths	First Prize		50 Hyacinths, distinct kinds	First Prize
,, III. 6 Hyacinths, new distinct kinds	First Prize		36 Narcissus	Second Prize
,, V. 24 pots Tulips	First Prize			

HIGHGATE NURSERIES, LONDON, N.

PETER LAWSON & SON,
THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

SUTTON'S
YELLOW GLOBE MANGEL WURZEL

The heaviest and best sort known, price 8*d*. per lb., or 63*s*. per cwt.
All other sorts 8*d*. per lb.

PRICED LISTS of FARM SEEDS Post Free.

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

KITCHEN GARDEN SEEDS,
FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

THOS. GIBBS & CO. Corner of HALF-MOON St. PICCADILLY, London. ROYAL AGRICULTURAL SOCIETY OF ENGLAND. APPOINTED AP. 3. 1844. THE SEEDSMEN

AGRICULTURAL SEEDS,
GRASS SEEDS,
FARM SEEDS,
of all descriptions.

Thomas Gibbs
CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

NEW SCARLET VERBENA, FOX-HUNTER.

HUGH LOW & CO.

HAVE pleasure in intimating that the entire Stock of the above-named VERBENA is in their possession, and they propose distributing it in April. Price 5s. per plant. Special quotations given to purchasers by the dozen. The merits of FOX-HUNTER have been so universally and extensively admitted, that H. L. & Co. think it needless to do more than add that a First-Class Certificate was awarded by the Floral Committee of the Royal Horticultural Society, when Cut Flowers were exhibited by the raiser, JOHN MILLER, Esq. of Upway.

CLAPTON NURSERY, LONDON, N.E.

PLYMOUTH SEED COMPANY,

PLYMOUTH,

ARE NOW EXECUTING ORDERS FOR ALL KINDS OF

FARM SEEDS,

Which have been selected with the utmost care from the best sources in this country and abroad, therefore they can strongly recommend all Seeds as being of the first quality.

MIXED GRASSES for LAYING DOWN LAND to PERMANENT PASTURE ...	24s. to 32s. per acre.
MIXED GRASSES for PERMANENT LAWNS	16s. per bushel, 1s. per lb.
MIXED GRASSES for HEATHY or MOORY LANDS	20s. per acre.
MIXED GRASSES for UPLANDS or SHEEP WALKS	24s. to 32s. per acre.
MIXED GRASSES for WATER MEADOWS...	25s. per acre.
MIXED GRASSES for RENOVATING OLD PASTURES	9d. per lb.
MIXED GRASSES for CEMETERIES, CHURCHYARDS, &c.	16s. per bushel, 1s. per lb.

	Per lb.—s. d.		Per lb.—s. d.
WHITE DUTCH CLOVER ...	10d. to 1 0	SCOTCH TURNIPS	0 10
RED " "	6d. to 0 10	GLOBE, in varieties	0 8
COW GRASS	8d. to 1 0	MANGEL WURZEL, common varieties ...	0 8
TREFOIL	6d. to 0 8	FISHER HOBBS' ORANGE GLOBE...	2 6
ALSIKE, strongly recommended...	2 0	MORTON'S YELLOW GLOBE... ...	1 6
PLYMOUTH IMPROVED PURPLE-TOP SWEDE TURNIP	1 0	LARGE WHITE BELGIAN CARROT ...	1 3
SKIRVING'S PURPLE-TOP Ditto	0 10	DRUMHEAD CABBAGE	2 6

And all other Farm Seeds at moderate prices.

KITCHEN GARDEN SEEDS, in Collections, which have given great satisfaction, 10s. 6d., 15s., 20s., 40s., 60s., 100s.

FLOWER SEEDS, 100 packets, free by post ... 20s.	FLOWER SEEDS, 25 packets, free by post ... 6s.
" 50 packets " ... 12s.	" 12 packets " ... 3s.

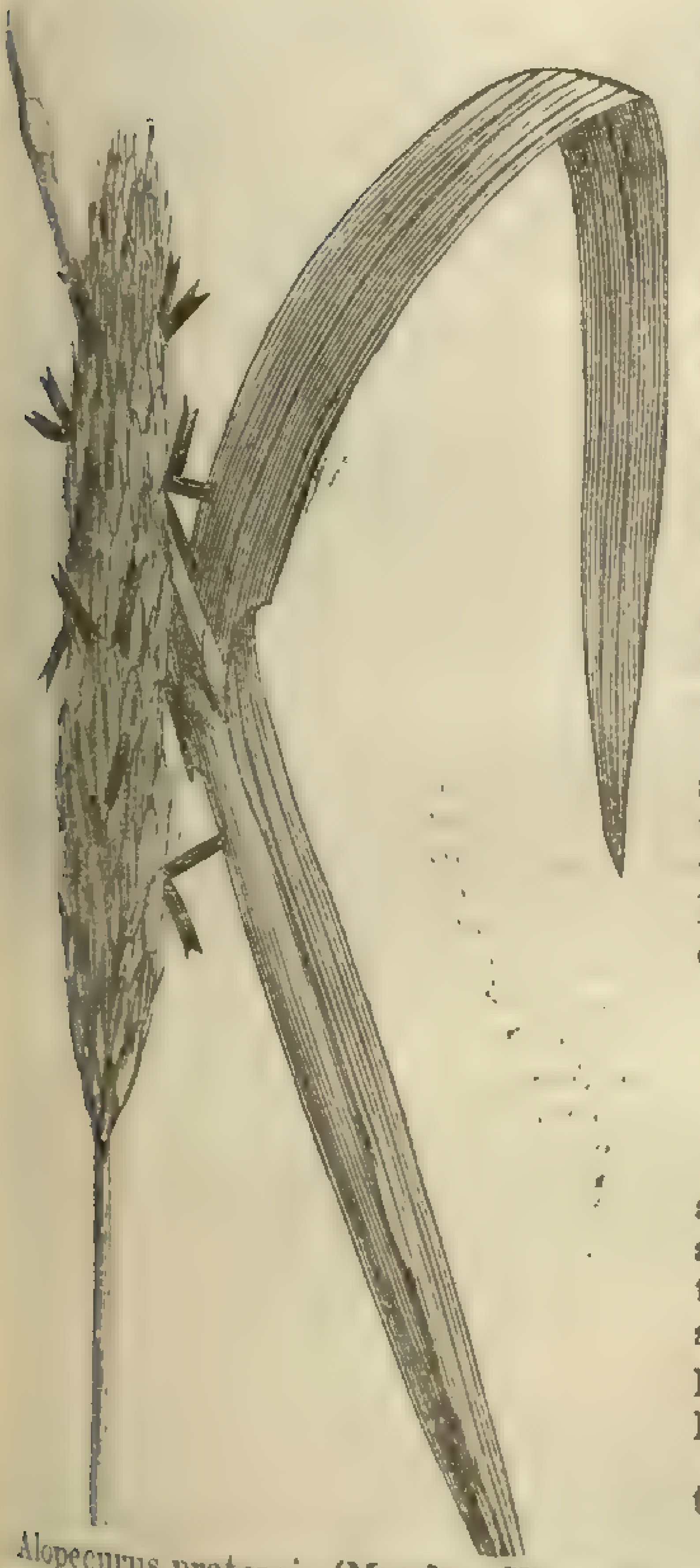
CATALOGUES AND PRICE CURRENTS

Can be had on application, and every information given by applying to the Company,

UNION ROAD, PLYMOUTH, DEVON.

J. C. WHEELER & SON, SEED GROWERS,

GLOUCESTER.



Alopecurus pratensis (Meadow Foxtail).

KNOWLEDGE of all matters connected with Grasses can hardly be too highly prized by the Farmer, as it gives him a practical insight into the nature of his land, which can hardly be otherwise attained. The importance of this will be most clearly made out by a study of the Foxtails.

The example before us is called Meadow Foxtail, as it is a constant denizen of rich and especially Lowland Pastures. The generic name is merely a translation of its common English name of Foxtail, which, from the form of its spike, it is supposed to resemble.

There is a species, common to poor Arable, known as the Slender Field Foxtail (A. agrestis). This, in the cultivated field, is an evidence of want of condition in the land, which can usually be remedied by drainage and liberal treatment.

A smaller form of Foxtail occurs in ditches and wet places; it is called the Procumbent Foxtail (A. geniculatus). Its presence in any situation, however dry at the time, shows that water was there for a great part of the year.

Meadow Foxtail, the only species employed by the Farmer, has a soft hairy seed, which should be distinguished from the comparatively smooth seed of the Field Foxtail, as the latter is a weed of a very pernicious kind. We always recommend some of this Grass in laying down Permanent Pasture in rich lowland positions, leaving it out where our seed is for dry uplands.

Grass and Clover Seeds for Permanent Pasture at 30s. per acre.

To this part of our business we have devoted some degree of attention, and we are pleased to say with some success. We are animated by this success to renewed efforts, and it will be our study to send such a mixture of the most nutritious and suitable Grasses, and such a mixture of Clover, as to create, in as short a time as possible, a rich Permanent Pasture, arranged and mixed to suit any particular soil, situation, or locality, which may be described to us.

The different soils and situations may be roughly classed under the following heads:—

1. Medium loamy soil.
2. Heavy stiff clay.
3. Light brashy or gravelly.
4. Under trees, as in orchards, parks, &c.

For each or either of the above we will supply a proper and suitable mixture, properly arranged, every sort complete, for 30s. per acre; so that all the purchaser would have to do would be to write and tell us the number of acres, and we would, without any further trouble on his part, prescribe and arrange the proper mixture and forward it to his address without delay.

Grasses and Clovers for One or Two Years' Lay, usually called "Seeds."

For One Year's Lay, at 14s. 6d. per acre | For Two Years' Lay, at 17s. 6d. per acre.

The quantity required per acre will be about 15 lbs. of mixed Clover Seed, and from 1 to 2 pecks of Grass Seed, to be sown about the end of March or beginning of April, with either Wheat, Oats or Barley. "The land is then to be harrowed or bush-harrowed across the drills of corn, if these are up, and rolled."

We are extremely careful in the selection of the finest and heaviest Grasses, and the cleanest and purest samples of Clovers for these "Seeds." Every season we supply our customers with "Seeds" for hundreds of acres, and with the greatest success. We can highly recommend our mixture as being of the very best quality.

We deliver our Grass and Clover Seeds Carriage Free by Rail, and allow 5 per cent. discount for Cash, according to the terms published in our "Little Book."

J. C. WHEELER AND SON, SEED GROWERS, GLOUCESTER.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, JUN., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.

CATALOGUES on application.

Muscat Escholata Grape.

MESSRS. J. AND C. LEE have the pleasure to offer strong well ripened Canes of this

THE FINEST OF ALL MUSCAT GRAPES,

which, though little known to Grape growers in general, deserves to be extensively cultivated. It combines the desirable qualities of setting freely with a large well shouldered handsome bunch, with berries of a rich amber colour almost as large again as those of the Muscat of Alexandria, and of the most luscious Muscat flavour.

Planting Canes	15s. 0d.	each
Fruiting Canes	21 0	"
Extra strong Fruiting Canes ..	31 6	"

Vineyard Nursery, Hammersmith, London, W.

Melons.

MESSRS. JOHN AND CHARLES LEE have seeds to offer of the undermentioned superb MELONS:—

BAILEY'S ECLIPSE.—Pale green flesh, melting to the rind, of exquisite flavour; weight 3 to 4 lbs.; handsome, very prolific, and has gained many prizes. Price 2s. 6d. per packet.

AMERICAN RIDGE.—Scarlet flesh, melting, and highly flavoured. Ripens in a COLD FRAME; very prolific. Price 1s. 6d. per packet.

Nursery and Seed Establishment, Hammersmith, London, W.

NEW MELONS, NEW CUCUMBERS, NEW and CHOICE SEEDS of all the finest varieties for the FARM, the KITCHEN GARDEN, and the FLOWER GARDEN.

See our "Little Book" for 1862 (illustrated) which will be sent free on receipt of four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

Pine Plants.

FOR SALE, a large quantity of RIPLEY QUEEN PINE PLANTS (both Succession and Fruiting) at much reduced prices. They are very strong and healthy, and warranted clean.

For price and particulars apply to JOHN WILMOT, Isleworth, Middlesex, W.

ESPALIER APPLES and PEARS.—About 40 to 50 of the best varieties, extra strong and healthy, from 24s. to 30s. per dozen. A LIST of SORTS on application.

Also extra strong CLIMBING ROSES, own roots, 3 to 4, feet, 6s. per dozen; less per 100. Usual discount to the Trade.

WM. KNIGHT, Floral Nursery, Hailsham, Hurst Green, Sussex

Splendid Grape Vines.

WILLIAM BARNES has still to offer the following varieties of VINES from Eyes; the wood well ripened, length averaging from 5 to 9 feet; many of them fruit-bearing.

Royal Muscadine	Golden Hamburgh
White Dutch Sweetwater	Muscat do.
Muscat of Alexandria	Black do.
Cannon Hall Muscat	Bowood Muscat
West's St. Peter's	Muscat Muscadine
Black Frontignan	Lady Downe s Seedling
White do.	Barbarossa
Grizzly do.	Purple Constantine
Mill Hill Hamburgh	White Tokay

Prices will be forwarded on application.

Camden Nursery, Camberwell, S.

FRUIT TREES in POTS.—Those who require Fruit this summer from Trees in Pots are invited to inspect the stock of W. BARNES, whose trees have been established for two and three years; wood well matured and covered with bloom buds.

APRICOTS	CHERRIES	PEARS
APPLES	NECTARINES	PLUMS
	PEACHES.	

Prices on application to WM. BARNES, Camden Nursery, Camberwell, S.

Strawberries for Forcing.

GEO. CLARKE has a large quantity of strong established Plants in Pots with excellent crowns; the sorts are KEEN'S SEEDLING, BRITISH QUEEN, SIR HARRY and ALICE MAUDE. Price 6s. per dozen.

Nursery, Streatham Place, Brixton Hill, S.

Strawberry Plants.

WM. JAS. NICHOLSON again offers strong laid Plants of his Grand Collection of more than 200 varieties of English, French, Belgian, American, and other STRAWBERRIES, including all the new and fine sorts.

A CATALOGUE sent on application.

A new, enlarged, and improved CATALOGUE will be published in autumn, when many new sorts, well tested, will be offered with confidence.

WM. JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

STRAWBERRIES.

	Per 100—s.	d.		Per 100—s.	d.
Bieton Pine	2	6	Oscar	2	6
Black Prince	2	6	Prince Arthur (Ingram)	2	6
Crimson Queen of Dr. Rodin	3	6	Princess Frederick Wm. (Niven)	5	0
Elton Pine	2	6	Princess Royal	2	6
Goliath (Kitby)	2	6	Prolific (Myatt)	2	6
Grove End Scarlet ..	2	6	Sir Charles Napier ..	3	6
Hendries Seedling ..	5	0	Scarlet Pine	3	6
Jucunda	5	0	Sir Walter Scott	2	6
Keene's Seedling ..	2	6	Victoria (Trollope) ..	2	6
May Queen	2	6	Wonderful	2	6

JOHN CATTELL can supply strong plants of the kinds named above; the present month is a good time to make new beds or fill up vacancies.

Nursery and Seed Establishment, Westerham, Kent.

COB FILBERTS.—What yield most Sovereigns per acre?—COB FILBERTS, now selling on the market at 3s. per lb. and upwards. For Trees apply to GEORGE MACE, Calcot Gardens, near Reading.

Also may be had RED SKIN and WHITE SKIN FILBERTS, with other varieties of Cob Nuts.

10,000 PANSIES.—Strong Plants in finest varieties, 4s., 6s., and 9s. per dozen.

CHRYSANTHEMUMS, fine show varieties, 4s. and 6s. per dozen.

PRICED CATALOGUE of FLORISTS' FLOWERS on application to HOLLAND & BAYLEY, Bradshaw Gardens, Chadderton, Manchester.

Excellence and Economy.

To PURCHASERS OF VEGETABLE AND FLOWER SEEDS.—SEND FOR JAMES TYNAN'S CATALOGUE, select your own Seeds, and save one-half the cost. No other house supplies Seeds of equal quality on the same terms. Importer of German and other Seeds.

Seed Warehouse, 68, Great George Street, Liverpool.

New Seed Catalogue for 1862.

WM. JACKSON AND CO., SEED GROWERS and NURSERY and SEED MERCHANTS, Bedale, Yorkshire, beg to inform Land Agents and Agriculturists that they will forward the above CATALOGUE free on application.

All extensive and improving Farmers should have this Catalogue.

WANTED, ALDER and BLACK ITALIAN POPLAR, 3 feet. State prices.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1861 and SPRING 1862, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

New Cinerarias, Gloxinias, and Pelargoniums.

F. AND A. SMITH can still supply a few sets of their New GLOXINIAS, CINERARIAS, and PELARGONIUMS.

See *Gardeners' Chronicle* of Oct. 5, 1861, and CATALOGUE, which may be had gratis.

Dulwich, Surrey, S.

SPLENDID NEW FUCHSIAS, DICTATOR and UNIVERSAL. Coloured Illustrations by Mr. ANDREWS of the two, in exchange for 12 postage stamps.

G. S. assures Fuchsia Growers that "Universal" is the finest Fuchsia ever offered. For description see CATALOGUE.

GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington, London, N.

Superb Hollyhocks.

R. B. BIRCHAM begs to state that he has several thousands of fine established plants of the leading varieties of SHOW HOLLYHOCKS, which he should be happy to offer upon advantageous terms to any nurseryman or florist who may require them.

Price per hundred upon application, and CATALOGUE forwarded by R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk. Carriage paid to London and Peterborough.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.—

	£	s.	d.
50 in 50 well selected vars.	£2	2	0
50 in 25 ditto ditto	1	10	0
25 in 25 ditto ditto	0	15	0
12 in 12 ditto ditto .. 6s., 9s., and	0	12	0

Mixed, 3s. 6d. per dozen; 25s. per 100.

BUTLER & MCCULLOCH, Seedsmen, Covent Garden Market, W.C.

ANNUALS TO BE DEPENDED ON.—

	s.	d.
12 Best Annuals for	1s.	6d.
24 " "	3	0
50 " "	5	6

Carter's EARLY DWARF MAMMOTH CAULIFLOWER (true), 6d. and 1s. per packet. The above free by post on receipt of postage stamps or Post-office Order.

JOHN HOADE & SON, Addlestone Nursery, Surrey.

GENUINE SEEDS, WARRANTED, Sent Free.

	s.	d.
50 packets most showy HARDY ANNUALS ..	5	0
25 packets do. do. ..	3	0
12 packets do. do. ..	1	9

One collection, containing 18 varieties of the finest HARDY ANNUALS, and eight varieties of the most approved VEGETABLE SEEDS, sent free on receipt of 48 stamps.

J. CARTER, 6, Charles Street, Middlesex Hospital, London, W.

BEDDING PLANTS.—Parties requiring the above for delivery, now or in May, are invited to communicate with EDWIN COOLING, Derby, stating kinds and quantity required, E. C. having one of the largest and best stocks of really good plants in the kingdom.

EDWIN COOLING, Mile Ash Nurseries, Derby.

BEDDING PLANTS.
GERANIUM CLOTH of GOLD, 6s. to 8s. per dozen.
" GOLDEN FLEECE, 6s. to 8s. per dozen.
" PRINCESS of PRUSSIA, 6s. to 8s. per dozen.
" BIJOU, 5s. to 6s. per dozen.

This is the finest variegated-leaved scarlet-flowered Geranium. See *Gardeners' Chronicle* and *Cottage Gardener*.

These will be sent out in April, and early orders will have the precedence whilst the stock lasts. They will be strong well-rooted plants.

Apply to WILLIAM BARRON, Elvaston Castle, Derby.

JEAN VERSCHAFFELT, Ghent, Belgium, begs to recommend the following:—

RHODODENDRON JEAN VERSCHAFFELT, strong plants, 12s. each.
CAMELLIA LEOPOLD I., 21s. each.
AZALEA INDICA PROF. LEMAIRE, 8s. each.
RHODODENDRON BARON DE CROESER, 6s.

All orders to be directed to JEAN VERSCHAFFELT, The Nursery, Rue de la Caverne, Ghent, Belgium.

H. LANE AND SON have to offer a large stock of fine blooming plants of AZALEAS and RHODODENDRONS, both common and named sorts.

Also a large collection of VINES from Eyes, very fine, with well ripened wood, and consists of all the best sorts.

Their well known ARAUCARIAS are allowed to be the finest stock in the world, and are from 1 to 10 feet.

Orders will receive prompt attention.

H. LANE & SON, The Nurseries, Great Berkhamsted, Herts.

Double Dwarf Poppies.

HOOPER AND CO. offer Seed of their unequalled stock of the above. Colours brilliant and varied; and flowers double as a fine Hollyhock. Price 1s. per packet, post free.

GENERAL SEED CATALOGUE Post free on application.

HOOPER & CO., Seedsmen, Covent Garden Market, London, W.C

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s.; 20 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that his DESCRIPTIVE CATALOGUE for 1862, of NEW CHRYSANTHEMUMS and other PLANTS, is now ready, and will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Chrysanthemums.

W. HOLMES, F.R.H.S., has a fine stock of the above, including Little Harry, Lady Hardinge, Leda, Linda, Rifleman, Florence, &c., &c., all at 5s. per dozen.

DESCRIPTIVE CATALOGUES of the above, also Dahlias, Fuchsias, Verbenas, Geraniums, Antirrhinums, Petunias, &c., free for one stamp.

Frampton Park Nursery, Hackney, N.E.

THOMAS HANDASYDE'S DESCRIPTIVE CATALOGUE of FLORISTS' FLOWERS, New German and other FLOWER SEEDS, &c., containing all the Novelties of the season, is now ready and may be had free on application. Also a large and healthy stock of all sorts of EVERGREENS at the

Glen Nurseries, Musselburgh, near Edinburgh.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very large, and in all varieties of colour, in Seed or Roots; also FLORIST FLOWERS, POLYANTHUS in roots, and DOUBLE WHITE PRIMROSE.

Apply GEORGE MACE, Calcot Gardens, near Reading.

GLENNY'S IMPROVED BALSAM, in sealed packets only, 6 Classes, 37 Stamps; Mixed Packets, 13 Stamps; NEW EVERLASTING FLOWER, Large-flowering TEN-WEEK STOCK, LOBELIA SPECIOSA, 7 Stamps each; 12 of the best HARDY ANNUALS, 30 Stamps.

Dungannon House, Fulham, S.W.

NEW, CHOICE, and GENUINE FLOWER SEEDS, free by Post:—

	s.	d.
100 Packets, choice sorts, including all the best Hardy, Half-hardy, and Greenhouse Annuals..	20	0
50 Packets ditto ditto	10	6
25 Packets ditto ditto	5	6
100 Packets very choice and showy Hardy Annuals ..	13	0
50 Packets ditto ditto	7	0
25 Packets ditto ditto	4	0
12 Packets ditto ditto	2	6
50 Packets Half-hardy Annuals	8	0
25 Packets ditto ditto	5	0
12 Packets ditto ditto	2	6

Smaller packets of above at half the prices quoted.

DAVID BROWNE, Seed Grower and Importer, 41, London Street, Norwich.

The Royal Horticultural Society's Exhibition.

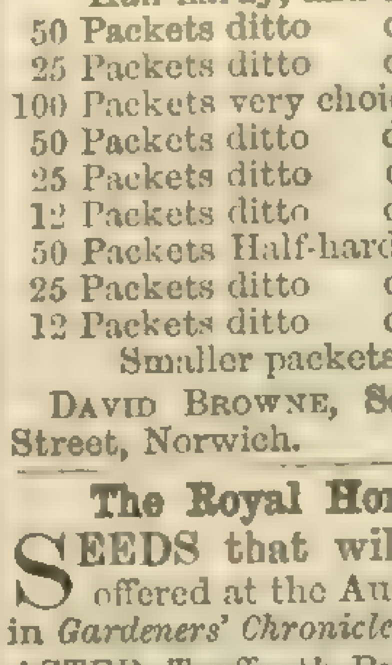
SEEDS that will be required to obtain the Prizes offered at the Autumn Show, Sept. 10. See advertisement in *Gardeners' Chronicle*, March 15.

	s.	d.
ASTER, Truffaut's Pæony-flowered, 24 varieties	4	0
" Giant Emperor, 13 varieties	6	6
" Dwarf Chrysanthemum-flowered, 10 varieties..	1	8
" Tall " " 12 " ..	2	0
" Double Crown, 4 varieties	0	8
" " Dwarf Pyramidal Bouquet, 12 varieties	2	0
" " Quilled, 12 varieties	2	0
" " " Hedgehog, 6 varieties	1	0
" " " Reid's extra fine per packet	0	6
" " Globe Pæony-flowered, new "	0	6
Mixed packets of each of the above kinds	0	6
STOCK, dwarf German Ten-week, 24 varieties.. ..	4	0
" large flowering " 20 "	3	4
" Autumnal or Intermediate, 8 "	1	4
" Emperor, 5 "	0	10
" Brompton, 6 "	1	0
For other choice varieties see Catalogue.		
Mixed packets of each of the above German Stocks ..	0	6
PHLOX DRUMMONDII, 13 new varieties, each p. pkt.	0	6
ORNAMENTAL GRASSES, EVERLASTINGS, and Imported GOURDS .. ..per packet	0	6

Free by post.

For the character of the above, see report of the Annuals grown at Chiswick, 1861, in *Gardeners' Chronicle*, March 15th, page 237.

JAMES TYNAN, Importer of Continental Seeds. Seed Warehouse, 68, Great George Street, Liverpool.



Garden Seeds.

PAGE AND TOOGOOD'S SPECIAL LIST will be forwarded post free.

P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

From Mr. R. McDONALD, *Gardener to the* Rt. Hon. LORD WILLOUGHBY D'ERESBY, *Drummond Castle, Scotland, Jan.* 4, 1861.

"The seeds sent here by you for the last 23 years have given the greatest satisfaction, and co[illegible]ring the large supply required, it is of the greatest importance to have them of such first-rate quality and so true to name. The collections for cottagers have been very useful and have been the means of inducing many of them to grow a greater variety of vegetables than they have hitherto done."

From MR. DOWLING, *Gardener to* LORD HENRY CHOLMONDLEY, *Holly Hill, Jan.* 1, 1861.

"Nothing gives me so much pleasure as to speak of the excellent quality and trueness of the seeds you sent me for 1860. It is impossible to single out anything in particular, as all succeeded so well, and although a difficult season, I have never served a family better, which I attribute to the good quality of the seeds, and having been supplied by you for 30 years with the greatest satisfaction, my opinion is expressed with some confidence, and I also know your extreme desire at all times to meet the wishes of your customers."

From Mr. WHALE, *Gardener to the* Rt. Hon. LORD RIVERS, *Rushmore, Dorset, December* 30, 1860.

"In enclosing you my 20th annual order, I am happy to say that I have always found your articles to be of the best quality, and they have always given me great satisfaction."

Royal South Hants Seed Establishment, Southampton.

Arabis lucida variegata.

THE BEST HARDY VARIEGATED EDGING PLANT.

JOHN HOADE AND SON beg to offer strong Plants of the above at 3s. per dozen. Extra strong, 4s. per dozen, package included.

Addlestone Nursery, Surrey.

Choice Calceolarias and Select Geraniums.

J. COLE begs to inform the admirers of the above that he can supply very strong unbloomed Seedling CALCEOLARIAS, from his matchless strain, without pots, 4s. per dozen, 20s. per 100; in pots, 5s. per dozen. Also choice Show FRENCH SPOTTED and FANCY GERANIUMS, strong established plants, 6s. per dozen; extra strong, 9s. and 12s. per dozen. List of sorts sent upon application.

Keyfield Nursery, St. Alban's, Herts.

Phloxes for Exhibition.

DOWNIE, LAIRD, AND LAING have much pleasure in announcing that they can supply intending Exhibitors with strong autumn and spring struck plants, from their first-class Collection of the above.

See Leader in *Gardeners' Chronicle*, March 15, 1862, p. 236.

CATALOGUES post free on application.

Stanstead Park, Forest Hill, London, S.E., and Edinburgh.

ROYAL HORTICULTURAL SOCIETY FLORAL COMMITTEE.

List of Awards of Sub-committee, March 19.

FIRST-CLASS CERTIFICATE.

Phyllagathis rotundifolia, from Messrs. Veitch & Son, Exeter and Chelsea
Camellia Comtesse Lavinia Maggi, from Messrs. Veitch & Son
Rhododendron Sesterianum, from Messrs. Veitch & Son
Rhododendron Princess Alice, from Messrs. Veitch & Son
Rhododendron Countess of Haddington, from Mr. Parker, Tooting
Dendrobium cucullatum, broad-lipped var., from Messrs. Low & Co., Clapton
Amaryllis Unique, from Mr. B. S. Williams, Holloway

The next MEETING of the Committee will take place on April 1. THOMAS MOORE, Secretary to the Committee.

ROYAL HORTICULTURAL SOCIETY.—GRAND HYACINTH and CAMELLIA SHOW, March 19.

[Her R.H. The Duchess of Cambridge and Princess Mary, attended by His Grace the Duke of Buckingham, Sir Wentworth C. Dilke, Mr. Fairbairn, and others, visited the Gardens early in the day.]

LIST OF AWARDS.

CLASS 1.—18 Pots of HYACINTHS, 12 distinct kinds. (Open.)
1st Prize, W. Cutbush & Son, Highgate Nurseries, 2l.
2d, W. Paul, Cheshunt Nurseries, Waltham Cross, 1l. 10s.
3d, C. Grimbly, Albion Nursery, Stoke Newington, 1l.

CLASS 2.—12 Pots of HYACINTHS, distinct kinds. (Prize offered by Mr. James Cutbush.) (Amateurs).
1st, W. Young, Gr. to R. Barclay, Esq., West Hill House Highgate, 2l. 2s.

CLASS 3.—6 Pots of HYACINTHS, distinct kinds. (Amateurs).
1st, W. Young, Gr. to R. Barclay, Esq., West Hill House, Highgate, 1l.
2d, A. Carr, Gr. to B. Noakes, Esq., North Hill, Highgate, 15s.
3d, Thomas Todman, Gr. to R. Hudson, Esq., Clapham Common, 10s.

CLASS 4.—6 Pots of HYACINTHS, new distinct kinds. (Open.)
1st, W. Cutbush & Son, Highgate Nurseries, 1l. 10s.
2d, W. Young, Gr. to R. Barclay, Esq., Highgate, 1l.
3d, Wm. Paul, Cheshunt Nurseries, Waltham Cross, 10s.

CLASS 5.—24 Pots of TULIPS, 3 Bulbs in a Pot, 6 kinds. (Nurserymen.)
1st, W. Cutbush & Son, Highgate Nurseries, 2l. 10s.

CLASS 6.—18 Pots of TULIPS, 3 Bulbs in a Pot, 4 kinds. (Amateurs.)
1st, Wm. Young, Gr. to R. Barclay, Esq., Highgate, 2l.

CLASS 7.—12 Pots of TULIPS, 3 Bulbs in a Pot, 3 kinds. (Amateurs.)
1st, W. Young, Gr. to R. Barclay, Esq., Highgate, 1l.

CLASS 8.—6 Plants, CAMELLIAS, distinct kinds. (Amateurs.) No competition.

CLASS 9.—4 Plants, CAMELLIAS, distinct kinds. (Amateurs.) No competition.

CLASS 10.—Single Plant of CAMELLIA (Open).
1st, John Standish, Royal Nursery, Bagshot, 1l.
2d, John Salter, Versailles Nursery, Hammersmith, 15s.
3d, A. Henderson & Co., Pine Apple Place, Edgeware Road, 10s.

CLASS 11.—9 Pots of LILIES OF THE VALLEY (Open).
1st, Mrs. Mary Conway, Earle's Court Nursery, Brompton, 1l.

CLASS 12.—6 Pots of STOVE AMARYLLIS, 3 kinds at least (Open).
1st, William Parker, Exotic Nursery, Tooting, 1l. 10s.
2d, William Lakeman, Grove Gardens, Hendon, 1l.

CLASS 13.—6 Pots of any kind of PRIMULA (Open).
1st, Thomas Todman, Gr. to R. Hudson, Esq., Clapham Common, 15s.
2d, Messrs. Dobson & Son, Woodlands Nursery, Isleworth, 10s.
3d, W. Cutbush & Son, Highgate Nurseries, 5s.

CLASS 14.—12 FORCED GERANIUMS (Open). No Competition.

CLASS 15.—12 Pots. SPRING PLANTS IN FLOWER, not Forced. (Open.)
1st, J. Veitch & Son, Royal Exotic Nursery, Exeter and Chelsea, 2l.
2d, J. & J. Fraser, Lea Bridge Road Nursery, Leyton, Essex, 1l. 10s.
3d, A. Henderson & Co., Pine-apple Place, Edgware Road, 15s.

CLASS 16.—12 PLANTS IN FLOWER, Forced.
1st, J. & J. Fraser, Lea Bridge Road Nurseries, Leyton, Essex, 2l.
2d, Wm. Young, Gr. to R. Barclay, Esq., Highgate, 1l. 10s.
3d, W. Cutbush & Son, Highgate Nurseries, 15s.

Prizes were awarded as under to the following MISCELLANEOUS PLANTS and FLOWERS.
1st, W. Cutbush & Son, for Collection of 50 varieties of Hyacinths, 1l. 10s.
Equal, A. Henderson & Co., for Collection of Hyacinths and Tulips, 1l. 10s.
Equal, W. Paul, for Collection of 100 Hyacinths, 1l. 10s.
2d, W. Cutbush & Son, for Collection of 35 varieties of Narcissus, 1l.
Equal, John Standish, for Collection of 5 Camellias, 1l.
Equal, Wm. Bull, for Collection of New and Rare Plants, 1l.
Equal, Thos. Todman, for Collection of 6 Roses, 1l.
3d, Wm. Paul, for 2 Boxes of Cut Roses, 15s.
Equal, B. S. Williams, for Collection of 13 Miscellaneous Plants, 15s.
Equal, Rev. F. Beadon, for 3 Boxes of Cut Camellias grown in the open air, 15s.
4th, Paul & Son, for Box of Cut Roses, 10s.
Equal, F. & A. Smith, Dulwich, for Collection of New and Rare Plants, 10s.
Extra, John Salter, for 2 Pots of Variegated Lilies of the Valley, 7s. 6d.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK.

SPRING EXHIBITIONS, ENLARGED.

The FIRST of the SEVEN SPRING EXHIBITIONS of FLOWERS this season, WEDNESDAY, March 26.

Admission only to Fellows and Members, their Orders, and by Tickets.

These Exhibitions to continue every Wednesday from March 26 to May 7 inclusive.

GENERAL EXHIBITIONS of PLANTS, FLOWERS, and FRUIT, WEDNESDAYS, May 28, June 18, and July 9.

AMERICAN PLANTS, MONDAY, June 9.

Tickets to be obtained at the Gardens only by vouchers from Fellows or Members of the Society. Price on or before SATURDAY, May 17, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

GRAND HORTICULTURAL FETE and ROSE SHOW in connection with the Exhibition of the NORTHAMPTONSHIRE AGRICULTURAL SOCIETY in BURGHLEY PARK, STAMFORD, on THURSDAY, July 17.

The Premiums offered amount to 200l., and are open to all England.

The Schedule, with Rules, &c., may be had upon application to Messrs. LAXTON & HEWITT, Hon. Secs., Stamford.

The Gardeners' Chronicle.

SATURDAY, MARCH 22, 1862.

SOME weeks since we offered a few remarks on a subject of no small interest in this country; namely, the PRESERVATION OF TREES FROM the attacks of BARK-BORING BEETLES, especially the well known Scolytus. It has long been known that experiments have been made in France to effect that object by means of scarification, or the removal of strips of bark; a process for which M. EUGENE ROBERT claims a patent! Such observations as the writer of these remarks had been able to make upon the results of the method having proved as unsatisfactory as the theory on which it rests (see *Gardeners' Chronicle* for 1859, p. 403), it became his public duty to do so; especially when the *Times* newspaper pronounced a eulogy upon it. Under such auspices it was to be feared that similar operations might be introduced into this country, and that money might be wasted here upon spoiling our noble English trees by adopting foreign quackery.

Dr. ROBERT has now replied to our remarks, and using the columns of the *Times*.*

He denies that his method is unsuccessful, admitting however that the cases referred to in the *Gardeners' Chronicle* are failures. As for the trees on the road to Vincennes, "the death of which was imminent," the patentee says he could do no more than stop the progress of the mischief, because he had been called in too late. And the same remark applies to those in the Allée de Marigny. But then he says, look at the healthy state of the trees under my management in the Bois de Boulogne, the Bois de Vincennes, and elsewhere. We may admit that the trees in these places look pretty well and are fairly tended; but such cases are not in point. We know of no old worm eaten trees in the first of these places, all the plantations being young; we did not know that the unlucky detached forts that ruined LOUIS PHILIPPE contained any old beetle-eaten trees, nor did we remark any at Vincennes when we last visited the wood. The patentee may be a good forester; but the question before the public is not the management of young trees; what requires to be shown is that his scarification will restore the health of old worm-eaten trees. Of that we have seen in France no evidence; nor in the letter to the *Times* does any appear.

We are told that the Minister of Agriculture recognises from this time forward that the methods of the patentee have been satisfactory in certain departments where he was authorised to employ them in consequence of the plantations being attacked by wood-eating insects. But before attaching any importance to this official certificate we must demand more legitimate testimony, and many particulars that are not furnished. It may be that trees have been doctored which ailed nothing; there may be *Malades imaginaires* among trees as well as among men. That such are to be found at Vincennes will be evident to any one with the eye of a forester. Trees there have been nicely scraped, and neatly scarified, and duly plaistered, which we ignorant English should have left alone. There is no sign of their ever having been sick. That such trees thrive under the application of the patent we can testify: but we must also add that they would have thriven equally well without it. We observe too that the term *threatened* is used by the patentee in speaking of plantations to the rescue of which he has been called. It is not clear to us that the threats of the beetles are always dangerous; even if they can be discovered.

As for the scrap of Latin with which the learned patentee adorns his letter, we own that it looks very like what we take the liberty of suspecting to be the case. We have heard in this country of people being frightened about diseases that have no existence, and which sharp-witted men claim credit for averting.

Then we are presented by Dr. ROBERT with a report of the Academy of Sciences, dated 14 years ago, in which the said Academy thinks that the methods laid before it *may* be very useful; that by their means he *will* arrest mischief, and so on. But what we want is a judgment, not a prediction. Has the work of the patentee produced the results spoken of? and at what cost? not will it. Let us have a favourable report from men of known scientific eminence, skilful, quick-sighted, and beyond the reach of influence; not chemists; not mere woodmen; not even dilettanti; but vegetable physiologists. We shall then have something on which to form a judgment; and if the facts prove to be in favour of the patentee, we shall be among the first to give them publicity.

In conclusion, Dr. ROBERT announces himself to be a Doctor of Medicine, a Knight of the Legion of Honour, a Knight Commander of the Royal Order of Gustavus Wasa, a Regnicolar Member (whatever that may be) of the Imperial and Central Agricultural Society of France, and member of many more learned societies in France and foreign countries. In relation to so important a subject we beg to offer him our congratulations; may he long live to enjoy such honours, and may he some day be able to convince the Institute that the portals of that great body should also be thrown open for his reception, in consideration of the distinguished merits to which he lays claim, but which we are hardy enough to dispute.

* We reprint his letter in order that our readers may have Dr. ROBERT's own words before them :—

Au Directeur du Times.

Monsieur le Directeur.—Vous avez bien voulu, dans votre numéro du 28 Janvier dernier, discuter ma méthode de traitement des arbres ravagés par les insectes xylophages. Je vous sais gré de l'initiative que vous avez prise dans une question qui intéresse surtout l'Angleterre, si justement fière de ses beaux Parks et jalouse de leur conservation. Votre article a donné lieu à une controverse, à laquelle je veux rester étranger, sur les mérites, quels qu'ils soient, du procédé dont je suis bien l'inventeur brévété, malgré toute assertion contraire. Je me garderai bien d'entamer ici une polémique avec mes adversaires sur une question jugée et un système appliqué en France depuis 18 ans sous les yeux du public, et à la requête des autorités locales; mais je me bornerai à relever le défi, un peu téméraire à mon avis, que me porte le *Gardeners' Chronicle* dans son numéro du 8 Février. Il n'admettra, dit-il, la valeur de mon système que quand il aura été soumis à l'Académie des Sciences et approuvé par elle. C'est par l'organe du *Times* que je prétends lui donner satisfaction, et je vous prie de publier le jugement textuel de cette Académie, prononcé dans sa séance du 27 Mars, 1848 :—

"Les procédés curatifs mis en usage par M. ROBERT peuvent être très utiles, et méritent une sérieuse attention. . . . Nous sommes convaincus que si l'on pratique en temps utile les scarifications dont ce naturaliste a fait usage, on arrêtera, en général, le mal avant qu'il ne soit invétéré. . . . Les résultats qu'on en a déja obtenus nous paraissent suffisamment complets pour nous autoriser à en conseiller l'emploi. Nous vous proposerons par conséquent à l'Académie d'approuver les recherches de M. ROBERT, et d'ordonner l'impression de son mémoire dans le *Recueil des Savants Etrangers*. Les conclusions de ce rapport ont été adoptées."

Pour corroborer, s'il en était besoin, le témoignage ci dessus, je n'hésite pas à produire l'extrait suivant d'une récente lettre émanant du Cabinet du Ministre de l'Agriculture, du Commerce, et des Travaux Publics en France :—

"Paris, le 28 Février, 1862.

"Monsieur,— . . . Je me plais à reconnaître dès à présent que vous avez obtenu des résultats satisfaisants par l'application de vos procédés dans les departements du Pas de Calais, du Nord, de la Somme, etc., où l'Administration vous avait chargé de traiter les plantations atteintes par le scolyte et les insectes xylophages.

"Le Ministre de l'Agriculture, etc. (Signé) ROUHER."

Je terminerai par une seule observation; c'est que l'objection contre ma méthode, tirée des exemples fournis par le *Gardeners' Chronicle*, porte à faux. Dans les arbres de la route de Vincennes, où la mort était imminente, je n'ai pu qu'arrêter les progrès du mal, car on m'avait appelé trop tard. Il en est de même de l'allée de Marigny. Mon critique de la *Gazette d'Agriculture* témoigne le désir de voir les résultats définitifs de ma méthode. Je suis charmé de pouvoir l'édifier à cet égard; et je l'engage à verifier l'état sanitaire des plantations des fortifications de Paris, du Quai d'Orsay, de l'Esplanade des Invalides, des avenues de la ville de Versailles, des Bois de Boulogne et de Vincennes, du Bois de Satory, et des Parcs de Meudon et de St. Cloud, travaux auxquels prenait un vif intérêt le Roi Louis Philippe, qui les avait ordonnés; enfin, des départements de la France où le succès de ma méthode n'a pas été contesté, et, comme il pourra bientôt le faire dans les départements qui successivement m'appellent au secours de leurs plantations menacées par la contagion, toujours croissante, de la maladie; car c'est ici que s'applique surtout la maxime —

"Principiis obsta, serò medicina paratur
Cum mala per tardas invaluere moras."

Je vous aurai, Monsieur le Directeur, une nouvelle obligation si vous vouliez bien publier cette réponse sommaire à des objections qui reposent sur des faits matériellement faux, et je vous prie d'agréer l'expression de la gratitude de votre très humble et très obéissant serviteur. EUGENE ROBERT.

Docteur en Médicine, Chevalier de la Légion d'Honneur, Chevalier-Commandeur de l'Ordre Royal de Gustave Wasa, Membre Régnicole de la Société Impériale et Centrale d'Agriculture de France, et de plusieurs sociétés savantes de France et étrangères.

24, Portland Terrace, Regent's Park, 10 Mars.

THE first flower show of the season, which took place on Wednesday at South Kensington, was most successful; one of the brightest and pleasantest of March days, one of the best displays of Hyacinths which the metropolis has ever witnessed, and a continuous throng of gay and eager visitors, being its most noticeable features, except the very extraordinary mismanagement of the officials.

In a floricultural point of view the specialty of the show was unquestionably the exhibition of Hyacinths. The leading collections of these flowers shown by Mr. CUTBUSH and Mr. W. PAUL were superb. The former set was pre-eminently so—bold dense even spikes of flowers, not overcrowded, symmetrically finished off at the top, bright and varied in colour, and with the foliage just enough developed to set off the spike. Those from Mr. PAUL were close upon them, but, we imagine, had had just a trifle too much forcing to get them ready to the day.

Those who are acquainted with the Hyacinth only in the form in which it now appears will have but a faint idea of the improvement which has been wrought amongst them within but a very few years. Their loose spikes, small bells, and narrow segments were till recently the prevalent features of the single-flowered varieties, and double-flowered sorts were largely grown. Now the doubles are almost entirely gone out, and the singles have been doubled in size, until they have become what we have just described them. The fine show varieties are all but exclusively single, a fact which affords complete evidence of their superior effectiveness. The singles form close, well furnished spikes, while the doubles, however beautiful in regard to the individual pips, are almost without exception thin, loose, and straggling in the spike. This is the secret of the one having risen in favour, while the other has fallen into the background. So that, excepting Laurens Koster, a really good double blue, and Lord Wellington, a tolerably good double blush, we now rarely see any of the double varieties in choice collections.

Of the single-flowered sorts the improvement is most evident amongst the whites in respect to the form of the individual flower or pip, and amongst the reds in respect to colour. It was but a very short time since that Lina was regarded as a great advance in the class of the bright reds, and so it was; even now it is a really lively-looking flower of crimson lake, well deserving extensive cultivation as a decorative sort; but in point of merit it is this season entirely eclipsed by three new kinds, all somewhat resembling it, but yet different. One of these is Reine des Jacinthes, which has bolder spikes and larger bells, and is altogether brighter and richer-looking. Another is Pelissier, equally meritorious and rather fuller and deeper in tint. A third, which we did not notice in the exhibition, is Victoria Alexandrina, a deep lake red with bells above the average size, and so remarkable for their smoothness that we regard it as the best of this group. Turning to the whites, we have, quite new, Paix de l'Europe, shown in several of the collections, and a really fine sort, pure in colour, bold in the spike, and above average size in the pips. Another, called Miss Burdett Coutts, a nearly pure white having the slightest possible streak of pink, is remarkable for its gigantic bells, and for the smooth fleshy texture of its broad rounded recurved segments. Alba maxima again is a fine pure white, with broad segments. The finest of all, however, as regards form, that we have met with is Snowball, which however we did not observe in the Show on Wednesday.

Now that it is attracting the notice which, as *par excellence* the flower for spring decoration, it so richly deserves, we shall see that the Hyacinth will not be confined, as it has so long, to the shades of the three colours, red, white, and blue. Already we have a class of pucy mauve tinted sorts, some of which indeed, as Regina Victoria and Honneur d'Overween, are dull and heavy-looking, but among which such as Prince of Wales and Haydn, the latter shown in two or three stands, are really distinct and telling sorts, effective when seen amongst others: the first is a pucy mauve with a deeper stripe down each segment; the latter is a lighter and more decided mauve, with a reddish purple stripe on each segment, and is a smooth well-formed flower. Another decided novelty, opening up quite a new feature amongst Hyacinths, is Duc de Malakoff, which has a bold truss and broad segments, and is very effective in contrast, the flowers being straw-

coloured with a stripe of rosy lake on each segment. Aurora though less telling is very pretty and entirely novel; it has pale straw-coloured tubes splashed with pink, and the face of the flower is pinkish with somewhat deeper stripes. Macaulay, a bright rose pink, moderately large, remarkably smooth, and a decided improvement on Milton, as that is on La Dame du Lac, is one of the telling novelties of the exhibition. We generally see, as we did on this occasion, a solitary specimen of the shy but brilliant Solfaterre, whose fiery orange red flowers stand out above all the rest; and we were glad to notice among the novelties one called Howard, nearly as bright, and apparently much more free, so that we may hope the latter will be obtainable by growers generally, if the former is not.

Year by year we notice with satisfaction the filling out of a class of Hyacinths distinguishable at a glance from the ordinary forms by the large size of their bells and the more rotund form of their parts. It is to this group that Snowball and Miss Burdett Coutts already mentioned belong, and another excellent one of a very pure white is Madame Van der Hoop. Here also come in Grand Lilas and Grand Vidette, two remarkably striking pale blues, and Grandeur à Merveille, Elfrida, and Tubæflora, all bold but blushing. We have not seen any high-coloured reds or deep blues of this group, but they may be expected ere long to reward the perseverance of some enterprising florist.

The more noticeable things in the remaining part of the Exhibition were a model Camellia of the eximia family, from Mr. Standish, called Sarah Frost, a really charming illustration of floral symmetry; another Camellia from Messrs. Veitch & Son, called Comtesse Lavinia Maggi, this as charming in colour as the other in form, the flower being double, and the colour blush white, boldly marked with very bright carmine; a form of Dendrobium cucullatum, from Moulmein, in which the lip was remarkable for its breadth, shown by Messrs. Low & Co.; a brilliant Amaryllis called Unique, from Mr. Williams; and two new Rhododendrons obtained by crossing the Himalayan species, wonderful things, with pale flowers, one was a dwarf habited plant bred between R. Edgworthii and ciliatum, and retaining all the fragrance of the former, shown by Messrs. Veitch & Son, and named Princess Alice. The other, called the Countess of Haddington, from Mr. Parker, was evidently some cross with R. Dalhousiæ.

Letters received by the last mail from Fernando Po report that Captain Burton, in company with the Spanish Judge Senor Calvo and Mr. Gustaf Mann, had scaled the unknown Cameroon mountain. At 7000 feet above the sea the climate was delightful, "birds singing as in Europe, 45° at night, and a sun which one may bask in." A real African-English Forget-me-Not (either a Myosotis or Cynoglossum) was found at the place called the half-way house, where we regret to add that the Captain was laid up by a severe cut on his foot.

—— We may add a few words to the memoranda concerning Annuals which occur at p. 237, this being the season for making selections preparatory to sowing. And first, let us remark, in respect to the position which these plants occupy as garden flowers, that there is at the present day, when the Verbena and Pelargonium and a very few other similar subjects monopolise as it were almost all the parterre, too great a disposition to reject altogether, not only annuals, but also the good old-fashioned race of border perennials. Granted, that in geometrical gardens, which depend as much for their beauty on even patches of well-assorted colours as upon the gracefulness of the lines by which these colours are bounded, such plants as those just alluded to are essential, yet we presume to think that the interest and beauty of a garden, using the term in a wider and general sense, may be very much increased by making room somewhere or other for a good assortment both of annuals and of herbaceous perennials. They are many of them most beautiful in themselves. They afford an immense variety, and herein lies one of their greatest attractions, for a garden having these, is not and cannot be a stereotyped design, as they are ever changing with the progressing seasons. And then to this charm of variety, they add the additional good quality of carrying on the flowering season from the earliest moments of spring to the latest hours of autumn. The flowers of the parterre are no doubt beauteous too, but in a different way, and all we urge is that they should not be suffered to banish altogether the more varied characters afforded by the classes we have referred to.

But besides all this, annuals are everybody's flowers. It is not every one who has or can have a geometrical parterre with its half dozen gaudy but often flaunting colours disposed in intricate tracery; but every one who has a garden may have a border of choice annuals and perennials, which he may contrive to keep gay and cheerful nearly all the year round. At present, we must limit our remarks to the annuals.

Let our readers take with us a hurried glance at some of the choicer materials which this class of plants affords for garden decoration. There is so much variety, and tastes vary so much as to what is thought most pleasing, that we may not attempt to place them in order of precedence; we shall therefore merely mention a few of the more prominent, or we may look in another direction. Probably the first place among them belongs to *Linum grandiflorum;* certainly it is very rich and effective when sown out as a hardy annual on good ground, which, by the bye, most annuals delight in, although they don't need the fussing necessary for most florists' flowers. Few cultivated flowers are more gay and cheerful than our old friend *Nemophila insignis,* the best variety of which is still pre-eminent amongst Nemophilas, and holds a very high rank amongst annuals. Then amongst Silenes we have several handsome kinds: there are *S. Atocion,* very dwarf and very pretty; *S. pseudo-Atocion* or *integripetala,* large-flowered, and very bright-looking; the old *S. pendula* of trailing habit, and *S. Armeria,* quite erect—all these of ornamental character. *Malope grandiflora* is a noble flower of large growth. Clarkia furnishes the deep coloured *C. pulchella pulcherrima,* and the double-flowered *C. p. flore-pleno,* both very showy and telling plants. Larkspurs yield almost all colours, both in the Rocket and branching form, and some double striped-flowered varieties of the last are particularly handsome. Some of the Viscarias, especially *V. oculata splendens,* are exceedingly brilliant. *Cosmidium filifolium Burridgianum* (generally miscalled Calliopsis in the seedshops), and most of the forms of *Calliopsis bicolor* (except the quilled one, which is ugly), are hardly surpassed during a considerable period of the late summer months by any flower that we cultivate. There are the pure white and the rich purple forms of *Iberis umbellata,* which are excellent for massing; there are *Erysimum Peroffskianum* and *Eschscholtzia crocea,* the former erect, the latter trailing, invaluable for their deep rich orange colour; there are the graceful *Gilias—tricolor, achilleifolia,* and *capitata,* and their near relatives the *Leptosiphons—androsaceus, densiflorus,* and *aureus;* there is *Collinsia bicolor,* and its varieties *multicolor* and *candidissima;* there are the dwarf crimson and scarlet and yellow Nasturtiums, plants of glowing brilliancy; there are *Acroclinium roseum* and *Rhodanthe Manglesii,* with their lovely pink everlasting flower-heads, and soon there will be the still finer *Rhodanthe maculata;* there are of the Lupines, *L. Dunnettii superbus* and *L. hybridus insignis,* both charmingly beautiful; and there are besides multitudes of others which space forbids our mentioning. We have as yet said nothing of the fine dwarf Chrysanthemum-flowered Asters, of the Crown Asters, of the Giant Emperor Asters; of the large-flowered German Stocks of various colours (two-thirds of which by the bye would be better got rid of); or of *Zinnia elegans,* both in its old "single" and the new "double" form. We claim, too, amongst the annuals, since they are cultivated as such, though we must own they don't strictly belong to the group, the magnificent *Dianthus Heddewigii,* the grand *Helichrysum bracteatum incurvum* (*Compositum maximum* of the shops) with its many glowing colours; and though last—for we must stop—not least as regards its beauty and utility, the deep azure *Lobelia Erinus speciosa.* Are not these enough to bring a flush to the cheeks of those who speak slightingly of annual flowers, and yet revel over a Scarlet Pelargonium or a Dahlia?

Not that all Annuals, any more than all Pelargoniums or all Dahlias, are worth being held in esteem. There are weeds among each; such, for example, in our Annual class, are most of the Eutocas, many Silenes, many Lupines, most of the Mallows, some Linarias, some Clarkias, all the Nigellas, which however are curious; Hawkweeds, Nolanas, and many more besides.

Indoor Gardening.

When the east wind has gone and the sharp frosts are over, the pleasantest time of the whole gardening year begins, and we can fill our window-boxes with very gay spring flowers to last us till the warm summer days enable us to bring out our treasured room plants for a little air. How sincerely do I wish that all town windows were made with glass recesses such as they have abroad, so that small winter gardens of some hardy things might not be impossible to those whose rooms are already filled with the more tender plants.

This however is not my present business. My present affair is strictly with spring flowers.

It is exceedingly odd how seldom one does see a really pretty window. Very often the pots are not placed *in* anything, and then it cannot be pretty, but even when there are boxes that might be nice they are not good patterns or not right colours, or else the flowers are evidently put in one by one, and not as a pretty *group.*

Really pretty and inexpensive window boxes seem still a desideratum; the blue and white tiles are perhaps the prettiest of those made; but they are sadly wanted of some still cheaper kind suited to fill up every cottage window. I did hear a talk of some of painted zinc, but these I have never seen; and most window boxes have the wretched failing of being pierced with holes, which though indeed desirable for a single flower pot standing in a saucer, is very miserable when it comes to dripping from an upstairs window.

My own boxes never have holes, or if they exist they are fastened up tight with corks, and thus it is that the boxes are so useful always throughout the year, holding the pots and sheltering them while acting as well as saucers (though not meant to be filled with water). The boxes, I think, should always have a layer of sand at the bottom, or else a lining of Cocoa-nut fibre or Moss. The sand answers much the best, only it is so heavy that if weight is undesirable it should not be used. I have had deep boxes filled nearly up with cinders, or ashes, or hay, or almost anything that came first, but the hay is only of temporary use, as it gets black and disagreeable, and might be unwholesome to heap up in a window.

The first thing generally that one adopts is sawdust. One also is apt to renounce it first! It gets into such a horrible cloggy mass, fills up the holes in the pots, falls about on everything if we move a pot, half decays, grows Fungi, and is, in short, a very bad thing indeed; and though it might do well just for a few hours, it would never answer for our summer boxes. Hay and Moss, on the contrary, suit the plants most perfectly: they root down into these and grow quite delightfully.

We must, however, take a box for granted, and now only think of the flowers for it. People in London may venture on double Daisies, and fill up with double dark brown Wallflowers, which are so very sweet and early. Others may have pots of Tulips; especially the dwarf double kinds; and Hyacinths and quantities of Anemones. Of the latter, the single kinds are very far the prettiest, and the brilliant scarlet sort, pale pink and white, and blue, make most delightful boxes. They should be grown in pots in a perfectly light place—never covered up except in heavy rains or at night from frost; and if under this treatment they blossom very early it will be found well when arranged in the window-boxes to take them in and place them in a sheltered place on a frosty night. A bell-glass otherwise can be then put over them to give a little shelter and prevent the early blossoms from being nipped by cold or battered by wind and rain.

There are, however, two kinds of window plants which seem to be almost forgotten, namely, Pansies and Auriculas, and yet there are few flowers that seem to me more charming. The Auricula, some may say, lasts so short a time, but in pots I have had it from Christmas till after Easter in constant blossom, though that was not indeed in London. Pansies are also the very things for windows, easily grown by cuttings planted in sand under a shaded glass—fond of water but also fond of sunshine, and giving such a great abundance of their lovely flowers. Where we have to fill a set of three windows looking any way but due north or south, the various coloured Pansies would make quite by themselves two very pretty boxes, and we might then have for the centre a box of Hyacinths, Tulips, or Anemones. The three latter require a close sort of green ground, but the Pansy generally has green enough itself.

Lilies of the Valley again are the most exquisite of flowers to blossom late in summer in a due north window, where they may be mixed with little Blue Lobelias. My way of having these has been to obtain the roots at the proper time, which is about November, and then, instead of bringing them on gradually, to keep them as dry as possible—while retaining their vitality—till, later in the year, they are placed in a box, and watered, and allowed to flower. My own, two years ago, were beautiful from July to October. I only name this now because those who wish to try it must beware at present both of warmth and moisture. The origin of my flowers coming at that unusual season was the simple fact that they had been quite forgotten, and left in their winter quarters till the end of June.

Window gardeners now, if they mean to strike any cuttings, should be putting a few old plants in warm sunny windows and watering them a little, that they may shoot out. Fuchsias, Begonias, Verbenas, and Lobelias are some of the easiest grown, and it will be time next week to talk of striking cuttings. *E. A. M.*

THE TYPE OF PERFECTION.

The Rev. W. F. Radclyffe, of Rushton Rectory, has published in a country paper a letter received from Mr. De Jonghe, of Brussels, of which the subjoined is a corrected translation:—

Nursery, 9, Chaussée de Neuwmolen.
Saint Gilles lez Bruxelles, Jan. 21, 1862.

Sir,—In Saturday's number of the *Gardeners' Chronicle* I have read with interest your article relative to Strawberries. It is this which induces me to send to your address, under cover, by post, an article written on the 17th of July last, during the latter part of the Strawberry season, and which I have caused to be since printed. You will receive at the same time the tracts concerning the varieties of Pears; they are all intended to be sent out before long. Amongst the number of seedlings in my gardens there is produced a distinct and perfected variation, which I have carefully studied; and if these observations as a whole should induce me to extend my attention farther, I shall then write the monograph instead of waiting any longer. I am obliged to act in this way for the satisfaction of my correspondents. La Constante will afford you an idea of what I mean by the

... perfection in the race of Strawberries. Amongst other ... fruits I reckon—1. A superb Cherry, belonging to the ... transparents. 2. A large Apricot. 3. A fine Prune, ... good, like La Reine Claude Dorée. 4. Several Pears ... Apples, and Gooseberries without end. In my opinion ... products follow in the suite of the Strawberry La Con... Although I am sure of it myself, yet it is necessary to ... before this opinion can be participated and adopted ... I hope that in the course of the year I shall be ... submit many of these products to the appreciation of ... amateurs. At the end of my article on Strawberries, ... speaking of certain collateral improvements which have ... produced in my series, I pray you to observe that that ... does not apply to the varieties which have been ... recommended to you by your friend Mr. Gloede. These last ... are too old for any of them to be comparable to La Constante. The others Mr. Gloede does not yet possess. I ... only concede that occasionally some plants have not ... all the requisite results in my experimental beds. ... Beurré Clairgeau, you will find the authentic notice of ... the *Gardeners' Chronicle*, p. 805, of the year 1854. The original ... tree was planted in my garden during the month of ...ember, 1851. For the fertility of the tree, the beauty of ... fruit, and the intrinsic qualities obtained from a tree ... in a suitable soil, whether on a wild Pear stock or on a ..., I have nothing to retract of what I had written in ... opposition to what had been inserted in the Transactions ... Pomological Society. At the end of the winters of ... and 1860-61, I have found, in a manner the most certain, ... this variety of Pear, obtained at Nantes, if planted in an ...sheltered situation, will not support in our country the ...mencies of the rigorous winters any more than any other ... variety, however hardy, on the Loire and thereabout, ... this without any exception. [The variety of Pear here ... to is doubtless the Beurré Clairgeau, which was raised ... Nantes; whence the original tree was removed to Brussels.] ... support of this assertion I pray you to read the notice at the ... of the monograph of Pear Prince Camille. That note had ... written the 20th of January, 1861 I can now confirm it. ...servations made at the close of the winter of 1860-61 have ...tributed much to my studies upon many points relative to ... tree culture. As soon as my engagements permit I shall ...municate the quintessence to the public, both by means of ... *Gardeners' Chronicl* and by monographic notices.

J. De Jonghe.

Mr. Radclyffe replied to the following effect:—

Rushton, January 27.

My dear Sir,—I thank you very much for your interest... letter, which will be read with great interest by ... as well as by myself. I thank you for raising ... Constante, which I consider inferior to none. Mr. ... and myself are both agreed as to its excellence. I ...tioned in a letter to him my good opinion of it some time ... which he responded in terms highly complimentary to ... Strawberry, and of course to you its raiser. I have also ... La Reine, which is a musky, high flavoured Strawberry. ... not quite sure about its capacity to bear such rigorous ... as we have lately had; the plants, however, at present, ... looking well. La Chalonaise (Nuaise), tender here, and ... Eliza Vilmorin (Gloede), hardy and vigorous, are two ... flavoured Strawberries. Your two and these two and Belle ...laise* and more especially the old French Black Hautbois ... Pine Apple of Strawberries—are all fine flavoured Straw... La Constante and Belle Bordelaise are both master...pieces, and do credit to their raisers. The best Strawberries ... for my soil and aspect, are Rivers' Eliza, La Constante, ... Queen, Wonderful, Trollope's Victoria, Scarlet Pine, Empress Eugenie, and Oscar. Since I have had the last, there ... not been sufficient sun to thoroughly ripen it, and eliminate ... flavour. The Frogmore late Pines are under trial, and I ... the look of them as plants. I anticipate the pleasure of ... my esteemed and valued friend, Mr. Gloede, in June, and ... I shall be able to show him some of the noblest plants ... the world, and with the heaviest crops. The crops here last ... were enormous; but we wanted more sun to produce ... I have only three kinds of Pears here, Marie Louise, ...gonelle, and old brown Beurré. Beurré Clairgeau came to ... from Cornwall, a mild climate.

* This is just the formerly well-known Prolific or Conical Hautbois, and one of the very best of the Hautbois.

Home Correspondence.

Opening of a Palm-spathe with an audible Report.—... have just received the following letter on this subject from Mr. Yates. *Berthold Seemann*:—Lauderdale House, Highgate, March 9, 1862. Although I have never seen or heard the explosion of which you speak ... your letter to the *Gardeners' Chronicle*, I remember ... occurrence in my collection of Cycads, which may ... in furnishing some answer to your question. In ... year 1851, the large Encephalartos horrida in my ...-house produced a cone of enormous dimensions. ... a female. In July the cone was quite mature. ... rhomboido-peltate terminations of the scales had ... to separate so as to show the orange-coloured ... beneath them. On one occasion, when I went ... at the plant, I was surprised to find that the ... had fallen from at least two-thirds of the axis, ... had evidently been projected from it with some ..., since, besides being scattered on every side, some ... them were enveloped and fixed among the leaves. ... fact, it appeared to me that the cone had exploded, ... *modus operandi* seemed to be the following:—... the proper period arrives, the scale separates from ... axis exactly as a leaf separates from the branch on ... it grows. Dr. Thompson, of Liverpool, thinks ... effected by a deposition of starch at the place of ...ment. However this may be, there is a natural ... at the base of the scale of a female Cycad, just as ... is in leaves, and even in leaflets at their points of attachment to the stalk or branch. Whilst a prepara... is thus made for the separation of all the scales ... the axis, the drupes increase so that their extre..., which are directed towards the axis, ... with more and more force against it. ... length the moment arrives when the pressure ... the axis is so strong, and the attachment ... the stalks to it so weak, that a hot gleam of ... sun is sufficient to detach the scales with sudden ...ence. In considering these appearances at the time ... they presented themselves, it seemed to me that ... process might aid in the dispersion of the seed. ... leaves encompass the cone on every side and form so dense a circuit, that the escape of the drupes appears impossible. The explosive faculty of the mature cone may overcome this difficulty. I may add that, if you examine the axis of the female cone of an Encephalartos, you will see that the scars, showing the attachment of the scales, are smooth, because the vessels in the bundles of woody fibres have closed. According to the preceding explanation, the phenomenon is analogous to the dispersion of seed in many other cases. On a hot summer's day, walking beside a hedge of Ulex Europæus, or Spartium scoparium, I have listened with much interest to the crackling of the ripe pods. A circumstance occurred here two or three years ago, which may throw some light on the subject. Certain members of the family were seated one summer's day at an open window looking into the garden, when they were startled by a noise. It appeared to have proceeded from the sudden expansion of the leaves of a large and fine Fourcroya gigantea, which were till then closely wrapt round one another. *James Yates.*

Conifers.—In answer to your Correspondent, "Excelsior" (see p. 238), I send the heights of the four tallest Pinus cephalonica at this place. They are growing on the calcareous beds of the lower green sand, about 500 feet above the sea.

No. 1. 26 feet.	No. 3. 23 feet 4 inches
No. 2. 23 feet 6 inches	No. 4. 19 feet

No. 4 was moved when about 8 feet high, and was checked accordingly. No. 1 has never been injured in any way by frost, but once lost its leader by a bird. It was planted 18 years ago. The other three all had their leaders checked last year, but did not lose them, nor have they ever lost any important laterals; but are symmetrical to the ground. These have been planted 16 years. I do not doubt that there are finer plants elsewhere, but as far as my observation goes there are few which have escaped injury from frost so well. They are remarkably beautiful when forming their young wood, which has a red hue in its early stages. This however is the time of greatest danger to the tree, as the young shoots are extremely brittle, and a heavy gale of wind will break off or distort them. They are all purposely planted in exposed situations, as most corresponding with their native habitat. I need hardly add that all the plants are seedlings, which were 10 or 12 years old when planted. *J. R. S. O., March* 17.

Parisian Gardening.—At page 212, your Correspondent "W. T.," has given our neighbours the French some hard hits; if however, as he says, he is 700 miles further north than Paris, I hope he is not 700 times colder, or his 50,000 bedding plants will be valuable by the spring months, especially if he has to give the same price for fuel which French gardeners pay. His remarks on the Versailles Orange trees I look upon as a matter of importance both to French and English gardeners who have large trees under their charge, and bad places in which to keep them. I remember some years ago a translation appearing in your paper which stated that the Versailles trees were dying from old age. It was convenient to let that pass, but I was inclined to attribute the failure to another cause. Those who had charge of them were not content with one crop of flowers; no, they must have two in one year. The trees were kept close before turning out and liberally watered, even in the dark places in which they were kept; the stem had to supply new shoots at the expense of the roots, in time exhausting the trees and nearly killing them. I see, however, no difficulty in recovering such as are not quite dead, and very little expense would attend the experiment. Perhaps I cannot do better, to illustrate my meaning, than explain my own case. Four years ago we had a fresh roof put upon our houses, which in every way resembled those at Versailles; the asphalte was bad and soon cracked. All temporary care could not prevent the trees from getting a good share of rain and snow water, with cold and damp, as there is no heating apparatus in the place; when turned out at the usual time the trees were pronounced dead, but with coaxing we got them round by putting them inside in time in autumn, except one of the finest, which was equal to many of the Versailles trees in stem. Little doubt would have existed as to how to treat this tree had we been fortunate enough to have a glass roof of sufficient height, but that we had not, and therefore we trusted to the good effects of another season. Every year up to the present time this tree has got worse, and last autumn, when we put it under cover, there were only 13 old leaves on it, and half way up the branches the appearance of an attempt at growth, which had become by autumn a little piece of green without a leaf. This winter I got some old lights and made a sort of shed over a pit, and in the middle constructed a square brick tub-like place, less than the old tub, pigeon-holed as far as the rubble, and filled the other part with heating material. The first week in February we put the tree inside, sawing the branches off to within 1 foot of the stem, and covered the latter with cow-dung and Moss. It has been in this situation about a month, and I can see little green eyes peeping out of the old wood in all directions. I suppose that this tree is 200 years old. If the French would therefore put up a glass shed against the most suitable of their many walls, and add bottom-heat, they would soon renovate their trees. I however saw little the matter with the Paris trees; it is a part of their style to keep them in the plight they are in. One of the finest ribbons I saw last season was at a place near the village of Boulogne, a few miles from Paris; it contained not only all the plants your correspondent named, but many others, and more in number; the Orange trees there also were completely covered with fruit, and I observed plenty of examples of successful tree lifting. There are several other places near Paris equally well managed, as for instance General Jacqueminot's Château at Meudon. It is only, however, of late years, if we except Kew, that our own public gardens could bear comparison with many of even our second-rate private gardening establishments. *J. F., Cliveden.*

The Nardoo (see p. 70).—You doubted a short time since if Marsilea quadrifolia could be cultivated in this country. I have half a dozen plants of it now growing nicely in water heated to about 70°. I enclose a leaf. *Wm. R.* [We are agreeably corrected.]

Rhododendron barbatum.—I am requested by Mrs. Vivian to forward for your inspection a specimen of Rhododendron barbatum, raised from seed sent her from the Himalaya Mountains by Mr. Pakenham Edgworth. It is the first time of its flowering at Singleton, or that we have heard of elsewhere in England. The plant is in splendid health, and has stood the winter without the slightest protection of any kind. *R. W., Singleton Gardens, Swansea.* [It is the true R. barbatum in beautiful condition. We have seen it in flower before, but long ago, and we forget where. The crimson of the flowers is magnificent.]

Gishurst Compound.—My orchard house Peaches are now all in pots, but part of them were planted in the border last season. All are to be equally unfruitful. In a short time I will report fully upon my Gishurst-treated trees (Pears, Peaches, Plums, and Apricots), but at present I may say that the state of the numerous fruit buds is not to be mistaken for a natural one. May not the failure of "T. C.'s" Peaches arise from the earth in the pots being too dry? *Microscope.*

Fat Catalogues. — Dear brother amateurs, keep the ball a-rolling. The Plethoric have returned our fire. They have despised reproof, sparingly and not unkindly given; go in at them. Imprimis, I entirely object to the structure of their descriptions as calculated to mislead us, and juggle us into buying what we don't want and nobody wants. There is both a *suppressio veri* and a perversion of the same with a very reprehensible spirit of exaggeration pervading the whole. Let us pluck one, fat and therefore ready for the spit. Let it be roasted. Under the following heads many of the items may be classified. Agapanthus:—Description, true; suppression, the time elapsing before seedlings are likely to flower of this common, easily propagated, and universally cultivated plant. Anomatheca cruenta is not a splendid Cape bulb, though a very pretty little thing in its way; applied to Disa grandiflora, Vallota or Brunsvigia the epithet might pass. Dear Katalogopoioi, Apple pie is good, so is Quince, applied in cautious and fractional proportion. Splendid! magnificent! gorgeous! These words are Quince. Make not your Apple-pie all Quince, O Katalogopoioi. Antholyza: season of growth, winter and early spring; will not bear a slight frost, even in Naples; no rational mode of cultivation given—cold frame not even suggested; flowering bulbs cheap and plentiful. To offer seeds of Cape Irideæ, unless very rare ones, is an absurdity, and tends to produce Fat. Aquilegia Skinneri is not a great novelty, and oh my! fancy a gigantic bright scarlet Columbine! Argemone: exceedingly showy, free-flowering plants, with large Poppy-like flowers; A. Hunnemanni, carmine and yellow; I appeal to you, my brother amateurs, whether the picture produced in your mind's eye is not that of a very handsome plant with large carmine flowers, yellow appearing somewhere, but not prominently. Arum italicum, Dracunculus; who would raise such things from seed? Asclepias curassavica: hardy! well, perhaps an inadvertence; let us hope so and pass on. Astragalus: description far too "showy and beautiful." Beaufortia, Metrosideros: dear old bottle-brushes and bores, with all your New Hollandish cousins and friends, I confess your merits — in your proper places and at an age to flower, but I protest against having your seeds crammed down my throat with ostentatious descriptions to gild the pill. Benthamia: description all right for the South of Devon; dear Corpulence, you shall have fruit of Benthamia and Anona squamata for dessert—when I ask you to dinner. Browallia: very handsome, profuse flowering, rich, strikingly beautiful! pretty Browallia! would your own mother know you by the description? Brugmansia, Buddleia, Cactus, Calycanthus: long fat descriptions of common plants, and—in the name of the Prophet, seeds! Spicy is the description of Calycanthus; it is all spice and no mistake. Even supposing me to invest in a fourpenny packet of Calla Æthiopica, would not every old woman in the parish peep from her window through its foliage and laugh me to scorn? Canna: confusion and error, but not your fault, Fatties; if Indica rubra is a new *species* it ceases to be Indica; iridiflora seed is not in the trade, and they know it, any more than Allium azureum and several other uncommon things, which nevertheless appear yearly in stereotyped falsehood. Celsia is a Scrophularian. Who wants seeds of the Judas tree? I will not buy Orange pips, nor Shaddock pips either, at the price or at any price, without first eating the Orange, even though my grandson should live to see the seedlings flower. Surely no careful editor would overlook the two items Colutea and Sutherlandia. Hemerocallis flava is not a bulb, but a very common herbaceous plant; I indignantly refuse to give sixpence a packet for seed thereof. Magnolia: I confess the description; but if a nurseryman sells me a seedling instead of a grafted plant I decline to deal with him again, knowing that I may wait half a lifetime to see it flower. Melianthus appears as a new and interesting bee plant. Quousque tandem! I doubt if any English bee ever saw it in flower. Moræa Iridioides: neither a bulb nor "very beautiful." Muscari: here you are, starch and feather Hyacinth seed, sixpence a packet! Who'll buy? Nymphæa cyanea, a "hardy" aquatic—I don't think. Opuntia: here I am deliberatel asked to grow Indian figs for dessert, and from seed! But of all the curious speculations, that of buying Date-stones i shilling packets is the most remarkable. The fattening properties of their luscious pericarp are suggestive. Physostegia: omit "splendid." Psidium; description deceptive, leading me to expect a crop of rich-coloured, delicious fruit, with a little protection out of doors. Punica: deceptive by omission of English name. Rhamnus; who on earth would sow Alaternus seed with a view to make highly ornamental furniture? Worse speculation than the Date stones. Salvia: given, a ribbon border of Salvia splendens as a hardy annual; required, the result. Yucca, Clitoria, Ipomœa, I pass ye; mine eyes are dimmed with the "dazzling scarlet" image of Phaseolus coccineus, and I feel weary and almost lenient, but—powers above!—what is this? Scilla Empress Eugenie; oh! ye Fat ones!—oh! ye Fat ones! *⁎*

Societies.

ROYAL HORTICULTURAL: *March 7 (Election of Fellows.)*—The Earl of Ducie, V. P., in the Chair. The following Candidates were elected Fellows, viz.:—

E. H. Baldock, Esq.; G. Beaufoy, Esq.; H. W. Birch, Esq.; Colonel E. Blake, S.C.B.; H. Boodle, Esq.: Mrs. Bowen, Sir V. Brooke, Bart.; W. Brown, Esq.; J. Browne, Esq.; T. Burnand, Esq.; A. Campbell, Esq.; J. W. Clutterbuck, Esq.; Colonel C Crutchley, C. F. Cundy, Esq.; Mrs. H. A. Darbishire, J. Day, Esq.; M. F. Dayrell, Esq.; W. Edney, Esq.; Hon. A. Egerton, M.P.; W. Emanuel, Esq.; Rear Admiral J. E. Erskine, Mrs. D. F. Evans, John N. Fazakerley, Esq.; His Excellency the Count de Flahault, W. A. Forsyth, Esq.; The Lady Mary Fox, J. J. Frost, Esq.; D. C Gardiner, Esq.; Captain T. Gardner, C. C. Gooch, Esq.; F. Goodall, Esq.; J. Greatorex, Esq.; Mrs Russell Gurney, Mrs. E Hackette, Captain H. B. Hankey, H. H. Harding, Esq.; Mrs. Harnett, G. F. Hedger, Esq.; Miss Emma Hill, Miss M. Hulse, F. Ibbotson, Esq; Rev G. Kemp, Mrs. Lee, R. Lemon, Esq., F.S.A; The Lord G. C. Gordon Lennox, M P.; Mrs. Lewis, Miss E. J. Lyall, W. J. Lysley, Esq, M.P.; Mrs. Malcolm, E. McMorland, Esq.; A. Milliken, Esq; O. Morgan, Esq., M.P., F.R.S.; F. J. Partridge, Esq; Mrs. W. Patten, G. J. Penny, Esq.; E. Pereira, Esq; Mrs. C. Plummer, Mrs. E. Potter, Miss Pulteney, Vice-Admiral G F. Rich, A. Richardson, Esq.; Captain E. W. Roberts, Mrs. W. R. Robinson, H. Ross, Esq.; W. H. Sams, Esq.; H. T. Sanderson, Esq., M.D.; Mrs. Smedley, W. Snell, Esq.; Miss Sulivan, J. C. Swail, Esq.; I. C. Thompson, Esq.; Hon. E. Trefusis, J. Walker, Esq; W. Walker, Esq.; C. Wetter, Esq.; Mrs. Wix.

March 19 (*First Spring Show*).—Of Hyacinths there was an excellent display; the best came from Messrs. Cutbush and Son of Highgate, who furnished of *yellows*, Ida; *reds*, Howard, Von Schiller, Lina, Macaulay, Koh-i-noor, Princesse Clothilde; *salmon*, Aurora; *mauve*, Haydn; *dark blues*, General Havelock, Argus (a fine kind with white centre and beautiful metallic lustre); *whites*, Mont Blanc, Mirandoline; *cream*, Orondates, Grandeur à Merveille; *pale blues*, Grand Lilas; and of *blacks*, or nearly so, Prince Albert. The same firm contributed in addition to these a large group of Miscellaneous Hyacinths, among which were many very finely bloomed plants; of varieties, of which Prince Albert may be taken as the type, we noticed La Nuit, Baron von Humboldt, Dandy, and Blackbird; of *blues*, Charles Dickens, Laurens Koster, Argus, Nimrod; *reds*, Queen Victoria (which is prettily striped with white), Mrs. Beecher Stowe, Baron von Schiller, Lina (one of the most vivid of all reds), Amy, Lady Sale, and Robert Steiger; *yellows*, Victor Hugo and Ida; *whites*, Madame Van der Hoop, Orondates, Voltaire, Mont Blanc, alba maxima, Queen Victoria, and Paix de l'Europe; *pale blues*, Couronne de Celle, Grand Lilas, Orondates, Vanspeyk (double); *bright blues*, Argus, Baron von Thuyll. Another nearly equally fine collection of Hyacinths was exhibited by Mr. Wm. Paul, who sent, among *dark* varieties, Baron von Thuyll, General Havelock, Argus, and Charles Dickens; *pale blues*, Orondates and Grand Lilas; *whites*, Madame Van der Hoop, alba maxima, Mont Blanc; *delicate pink*, tubæflora (a fine kind), Lord Wellington (double), and Grandeur à Merveille; *reds*, Macaulay. From Mr. Wm. Paul likewise came a large miscellaneous collection of Hyacinths, among which were Aurora rutilans, *red*, as were also Baron von Rothschild, Madame Rachel, Milton, L'Etincellante, and Mars. Among *pale blues* were Regulus, Grand Vainqueur, Bloksberg? and among *dark blues*, Prince of Saxe Weimar, Mimosa, Blue Mourant, and William the First. Of *whites* not already mentioned we noticed Grand Vidette and Queen of the Netherlands; of *double yellows*, Jaune Suprême and Alida Jacoba; and of *cream striped with red*, Sultan's Favourite. From Messrs. Dobson came 18 dwarf plants, among which were King of Holland, a *buff* sort; Heroine, *yellow*; and among *reds*, Bouquet triumphant; other varieties differed but little if any from kinds already enumerated. Mr. Grimbley, Albion Nursery, Stoke Newington, likewise sent a group of 18 Hyacinths, which although tolerably well flowered, were not near so compact or well cultivated as those from either Messrs. Cutbush or Paul.

A prize offered by Mr. James Cutbush, for 12 Hyacinths from amateurs, was won by Mr. Young, gr. to R. Barclay, Esq., West Hill House, Highgate. Among the sorts were fine examples of Lina, Gigantea, Madam Hodgson, Grand Lilas, B. von Schiller, Argus, Mont Blanc, Prince Albert, Duke of Wellington, Susannah Maria, Grandeur à Merveille, and Gen. Havelock. Mr. Taylor of Belmont, East Barnet, also competed for this prize.

Groups of six pots of Hyacinths were contributed by Mr. Young, Mr. Todman of Clapham, and Mr. Carr, of Highgate. Among these were Aurora, Lina, Princess Charlotte, Charles Dickens, Mrs. B. Stowe, and other well known kinds. Groups of six sorts were also contributed by nurserymen, who showed by far the best collections on this occasion.

Of new Hyacinths, some of the best are mentioned in another column. The following are a few of the best of older kinds picked out of the different collections, viz.:—*yellow*, Ida; *red*, Lina, Cosmos, Lady Sale, Madam Hodgson, Mrs. Beecher Stowe, and Von Schiller; *mauve*, Haydn, L'Unique; *white*, Grand Vainqueur, Grandeur à Merveille, Voltaire, Orondates, and Madame Van der Hoop; *blue*, Argus, Baron Van Thuyll, Charles Dickens, Grand Lilas, Orondates, Nimrod and Grand Vidette; *black*, Prince Albert, La Nuit, General Havelock and Blackbird.

Sets of Hyacinths placed closely together in china basins and wide Orchid pots with perforated sides, were contributed by Messrs. Henderson, of Pine-apple Place, and being arranged so as to produce striking contrasts of colour, they had a fine effect. Small circular flower stands made of wood, and consisting of three tiers of stages supported by little twisted wooden pillars, were exhibited by Messrs. Johnstone & Jeanes, cabinet makers, New Bond Street. In each stage are holes intended for holding water-glasses for cut flowers; but on this occasion they were filled with Hyacinths blooming in glasses. For this latter purpose they are perhaps however scarcely suitable; but skilfully filled with cut flowers they will doubtless make extremely pretty ornaments for indoor decoration.

Groups of 24 pots of Tulips, three bulbs in a pot, were furnished by Messrs. Cutbush and Mr. William Paul. Among the kinds were vermilion brilliant yellow, and white Pottebakker, Canary-bird, Carnation striped, Duc Van Thol, Tournesol, and Bruid Van Haarlem. These varieties were also shown in excellent condition by Mr. Young, of West Hill House, Highgate.

Of Narcissus one or two groups were shown, the most conspicuous sorts in which were Bazelman major, Crichton, Cleopatra, Belle Princesse, Perle Blanche, Gloriosa, and Grand Primo.

Amaryllises came from Mr. Parker, of Tooting, and Mr. Lakeman, of Hendon. The varieties were Sultan, Johnsoni psittacina, formosa, and delicata.

Of Chinese Primulas one or two extremely well grown collections were shown, consisting of double pink and white sorts, and also of single pink and white varieties. Mr. Bull again showed his semi-double white kind true from seed, and we observed examples of both the pink and white Fern-leaved sorts, which, when better known, may become favourites.

Roses in a cut state, good for the season, came from Mr. Wm. Paul; and one or two plants in pots, tolerably well bloomed, were shown by Mr. Todman, of Clapham.

Lilies of the Valley were shown by Mrs. Conway, of Earle's Court, Brompton; but though well grown they were not so finely in bloom as might have been wished. Another collection, much better flowered, was shown; but we could not learn by whom. From Mr. Salter came a variety with leaves striped with white.

Camellias though not plentiful were good. From North Stoneham boxes of cut flowers from the open air were contributed by the Rev. F. Beadon. Mr. Salter showed one or two good specimens, and a good group was exhibited by Mr. Standish; the latter contained two fine kinds, viz., Sarah Frost, a compactly formed red flower, occasionally striped with white, and a white-blossomed variety called Duchesse de Berri, with beautiful deep green foliage.

A capital collection of Miscellaneous Stove and Greenhouse plants was shown by Messrs. Veitch, consisting of a large crimson Rhododendron placed as a centre piece, around which were arranged Camellia Countess of Orkney, a white red-striped sort; C. Valtevaredo, Storeyi, and others; various Eriostemons, Boronia pinnata, and two white-flowered Epacrises. From Mr. Williams, of Holloway, also came a group of miscellaneous plants, among which were Vanda suavis, Dendrobium Heyneanum, Dendrochilum glumaceum, Ionopsis paniculata, Cyanophyllum magnificum, Sphærostema marmoratum, Clavija latifolia, and plants remarkable for the beauty of their foliage, together with a large old specimen of the purple Side-saddle plant. Other collections of miscellaneous plants were contributed by Mr. Bull and Messrs. Fraser and Henderson; from the first came different kinds of Palms, most of which have been noticed in former reports, Oreopanax dactylifolium, Rhopalas, Anthurium acaule, and a handsome specimen of the variegated Cyperus alternifolius, a plant which also appeared once or twice in other collections. The same exhibitor also had small specimens of Eurya latifolia variegata, and of the variegated variety of Osmanthus aquifolius. In Messrs. Fraser's group, which consisted chiefly of Eriostemons, Boronias, Heaths, and Epacrises, was Acacia longifolia magnifica, certainly one of the handsomest kinds in cultivation, its long spikes of bright yellow blossoms produced in great abundance having a very pretty effect. From Messrs. Henderson came Acacia Drummondi, also a pretty kind; Boronias, Eriostemons, Epacrises, and winter flowering Heaths, and a similar collection, in which was a pretty rosy salmon flowered Epacris, called Copelandiana. One or two little bushes of Azalea amœna came from Messrs. Lee of Hammersmith.

Among vegetables were variegated Kale from Messrs. Veitch, and extremely fine examples of Chinese Yam from Messrs. Ivery of Dorking, who for years past have been most successful in their attempts to make this a valuable garden esculent. None of the roots shown could have weighed less than from 5 lbs. to 6 lbs. each.

Most of the miscellaneous novelties shown came within the province of the Floral Committee, and there were some very fine things among them. One of the most promising was Rhododendron Princess Alice, a cross between R. Edgworthii and ciliatum, dwarf habited, with clean-looking foliage, and good-sized white blush tinted flowers, as sweet as those of the former parent. This was from Messrs. Veitch & Son, of Exeter and Chelsea, as was also another more nearly resembling Edgworthii, a cross between it and Gibsoni; this last, called R. Sesterianum, had very large white flowers. Another handsome hybrid Rhododendron, evidently bred from Dalhousiæ, and called Countess of Haddington, was sent by Mr. Parker, of Tooting; it was dwarf and sturdy habited, with large blush white handsome flowers. Mr. Veitch had, in addition to the plants just named, Phyllagathis rotundifolia, a handsome leaved Melastomad; a very beautiful Camellia called Comtesse Lavinia Maggi, blush white boldly striped with bright carmine, and full double; a Pancratium-like plant, probably a Hymenocallis, from the Philippine Islands; Acacia eriocarpa, tolerably well known and one of the best of the species for pot culture; two pretty Azaleas; and three varieties of Hardenbergia ovata with red, white and purple flowers. From Messrs. Low & Co., Clapton, was one of the varieties of Dendrobium cucullatum, from Moulmein. Mr. Standish had a new Japanese Skimmia. Messrs. Smith, of Dulwich, showed several yearling Cinerarias, among which Cadet, a deep crimson, Princess Alice, a large white with carmine margin, and The Emperor, maroon passing to crimson next a small white basal ring, were very promising sorts. Mr. Salter, of Hammersmith, showed the curious Mexican Bird plant, Heterotoma lobelioides, with oddly shaped red and yellow flowers. There was a poor specimen of Lælia superbiens from Mr. R. Warner. A glowing Amaryllis, a seedling from Ackermanni pulcherrima, and named Unique, with very rich crimson scarlet flowers of fine shape, came from Mr. B. S. Williams, of Holloway. Mr. Holland, of Spring Grove, sent a Cyclamen, said to have been in bloom for the last 2½ years; a basket of Cyclamens also came from Messrs. Paul & Son; and Messrs. Carter & Co. sent a Fuchsia metallica, a continental variety having the leaves tinted with reddish brown. Finally there were two new Roses, François Lacharme and Madame Furtado, contributed by Mr. Turner of Slough.

Notices of Books.

Die Krankheiten der Kulturgewächse ihre Ursachen und ihre Verhütung, von Dr. Julius Kühn. Berlin, 1858. 8vo, Pp. xxii. and 312. Tab. Lith. 7.*

Some five and forty years ago, when King's messengers were often charged with Perigord pies, Turkeys stuffed with Provençal Truffles and other delicacies for the Regent, a boar's head was consigned from Hanover to one of our Cabinet Ministers, with the intention of its being forwarded with the despatch box. By some accident however, it got into the hands of the Post Office authorities, and the charge for this most detestable of all rarities somewhat exceeded 40*l.* sterling. We have a distinct remembrance of partaking of this head, and the notion we then formed of its merits has not been improved by later experience. Its merits however, such as they were, were certainly not enhanced to the Minister, who in vain applied to the Post Office for relief, and his dismay was a source of much amusement to his colleagues. The work before us came into our hands in the first instance under somewhat similar circumstances. A kind friend on the Continent intended to frank it to us, but his intentions were quite frustrated, and we had to pay twice as much for it as the published price. We will not however say that the charge, though most persons in the present day are sensitive about heavy post office fines, detracted much from our appreciation of the merits of the book, for we were glad to avail ourselves of the information it contained, and it has been only from press of other matter that we have not brought it at an earlier period before the attention of our readers.

The work does not profess to be a general treatise on the diseases of plants, but is confined principally to the common objects of cultivation in the farm or kitchen garden, and with the exception of one or two of the most common diseases, independent of parasites, it is directed principally to those maladies which are due to the attacks of insects or parasitic Fungi. There is a great want of classification, the Botany is not irreproachable, and the literature of the author is extremely confined—some important diseases, as clubbing in Cabbages, are entirely omitted—yet there is much in the work which deserves attention, and there are matters scattered up and down in the book which are highly suggestive. We do not indeed always agree with the views of the author as to the nature of disease. He distinguishes, for instance, the destruction of the haulm in Potatoes from that of the tubers, attributing the former entirely to parasitic Fungi, while he considers the latter as arising entirely from physical causes, though it it is quite clear that the two are merely different conditions of one malady, the peculiar Fungus which destroys the haulm being visible enough in almost every tuber attacked by the especial Potato murrain. It is legitimate enough, though we believe it to be utterly erroneous, to attribute the Potato murrain to physical causes, but that the disease of the tubers and haulm belong to the same category, is we think beyond dispute. The strong part of the work is that which relates to the parasitic Fungi of Cereals, and in this the author has made a series of admirable observations, following in the steps of the Tulasnes and De Bary, and at once confirming what they have published, and giving additional information, the result of his own patient investigations. The details are of course not suited for our journal. Such indeed as are of general interest have already been reported, and the

* On the Diseases of Farm and Garden Plants, their causes and their remedies. By Dr. Julius Kühn.

Botanist may be referred to the book itself, where he will find a large quantity of excellent illustrations, executed in the best style of German lithography. As a specimen of the contents of the book we shall give the author's account of a curious disease to which the Fuller's Teazle is subject, and of which we have seen no previous notice. It will be remembered that Wheat is often destroyed by a minute worm which is generated in the seed; the roots of Cucumbers become gouty, to the great detriment of the plant, from a similar cause, and one or two other cases of like affections are recorded. This however appears to be quite new, and is certainly not one of the least interesting.

"The Teazle (Dipsacus fullonum, L.) suffers sometimes from a malady which is known under the name of Core-rot (Kernfäule), though there is no peculiar rotting, but simply a discoloration and withering of the head of blossoms. The flowers dry off at an early stage of growth, the cellular tissue of the interior of the head becomes brown, which at length is hollow from the contraction of the cellular substance. The discoloration commences at the base of the blossoms, and gradually extends inward, till the whole pith is affected. The bundles of vessels which form a network at the base of the blossoms retain their vitality longer than the surrounding tissues, and are still fresh and unaltered when the pith has become brown. Hence nourishment is capable of being conveyed to the pistils, even when the upper part of the blossoms is withered. The nuts which arise from them attain only half their normal size, and are more rounded than those which are healthy. The malady is more frequent in wet years than in dry, and is therefore popularly attributed to excess of moisture, and in case this explanation is inapplicable, it is supposed to arise from excess of nutriment.

"The diseased nuts when closely examined exhibit little white masses either beneath the crown of hairs, at their base, or even in the cellular substance from which they spring, which look like little patches of some mould. When examined even under a low magnifying power, it is clear that they are not due to the threads of a mould, but to myriads of minute worms entangled together, resembling somewhat the eels in vinegar or decaying Potatoes. They seem at first destitute of life, but after a short time they become active, and if the water is dried up, the same phenomena may be repeated almost indefinitely. If, however, they are kept too long in water, they altogether lose their vitality. There is no doubt that the little Vibrios are the cause of the disease."

One main object of Dr. Kühn's book is to combat an assertion of Schleiden's, that cultivation is the main cause of disease. As regards parasites, this is undoubtedly false, as plants in the wildest state are quite as subject to be attacked as under the most forcing and artificial manures. Dr. Kühn, however, in our opinion, rather exaggerates the matter, and seems to ignore the truth that most of the objects of culture in the garden are really themselves in a diseased condition, their very qualities which render them useful being abnormal developments, which are dependent on a state of the tissues which renders them peculiarly liable to be affected by physical agents.

We shall close our remarks by recommending the volume to the especial notice of the microscopist, who will find in it matter to lead him into many interesting lines of research that can scarcely end in mere amusement or pastime, with which his observations too often begin and end.

The *Botanical Magazine* for March contains figures of—*Stanhopea oculata*, one of the pale-coloured forms. *Iochroma grandiflorum*, a purple tubular-flowered Solanaceous stove shrub, with coarse foliage, synonymous with I. Warscewiczii. *Ligularia Kæmpferi aureo-maculata*, which name Sir W. Hooker adopts for the garden Farfugium grande, of which it is remarked: "It is far from being a new species or a new genus; it is a native indeed of Japan, and seems to have been known to all botanical visitors there from the days of Kæmpfer to the present time." Another Japanese species, L. gigantea, produces leaves "from 5 to 18 feet high, with the blade 5 feet in diameter." According to Siebold, a tuft of this latter species, which he introduced into Belgium some 30 years ago, is represented in the album of the Japanese court artist, Hoksai, as sheltering many gardeners from the rain with its ample leaves, which are always radical. *Dendrobium Lowii*, the beautiful yellow-flowered Bornean species, noticed in our columns last year (1861, p. 1046). *Anguria Warscewiczii*, a novel form of the Cucumber family, a climber, producing its "brilliant scarlet flowers in the depth of winter." The leaves are trifoliate, with the lateral leaflets semi-hastate, and the flowers, of which the males only are known, grow in short spikes at the end of a long axillary petiole. The calyx segments are thickened into gland-like knobs. The last number of the *Florist* contains a folding plate representing three new varieties of Chrysanthemum, Lady H. St. Clair, General Slade, and Duchess of Wellington; the first a magnificent white, the second the finest of the Indian reds with golden tips, and the third a most desirable rosy tinted flower, overpowered in the plate by the large size of its companions. These are some of the finest of the varieties of last season.

Among the papers, those on Bottom Heat, the Fancy Pelargonium, and Renovating Old Vines, are the most prominent. Referring to ants, Mr. Pearson, of Chilwell, remarks:—"I have often seen it stated that ants do no harm to plants, being merely in search of insects or honeydew, excepting where they attack ripe fruit or injure the plants by throwing out the soil. Knowing that many species of foreign ants live on vegetables, and observing many plants infested by them looking ill, and recovering when moved to another place, I have long had my doubts about the harmless nature of these insects. Within the last few days I have had positive proof they can do mischief. At the end of a large house full of forced Roses a Grosse Mignonne Peach is trained on a wall; it is now in full bloom, and the ants are eating out the anthers, pistils, and embryo fruits, leaving nothing but the petals surrounding a hollow empty cup. I presume they are in search of honey; but if they adopt such a means of obtaining it, may they not wound the foliage of a plant when its juices are in a saccharine condition for the same purpose, and thus cause honeydew?"

We have also before us a few arrears in the notice of other works.—The March Number of *Routledge's Illustrated Natural History* is chiefly occupied by the history of fishes.—*Cooke's Manual of Structural Botany* costs only a shilling, and is copiously illustrated with small woodcuts; its great fault is its pretending to teach far more than such a trifle can possibly explain, including chemical matters which belong properly to another branch of science. We must add that Mr. Cooke's definitions of terms are not always to be trusted. For instance, "glomerulus" is by no means what it is said to be.—Our eye rests upon the March Number of the *Floral Magazine*, containing varieties of Verbena Calceolaria, and Double Zinnia, the former of which are surely over-coloured.—Far more unpretending, but not less useful, is Miss Maling's penny tract called *Gourds for the Many* (E. Faithfull & Co.), which contains pretty nearly all that people need to know, skilfully culled from our own and other pages. It should be circulated among the peasants who love their gardens.

Trade Lists Received.—Linden's Catalogue, No. 17, of New and Rare Exotics (Brussels, 1862); Van Houtte's Price List of Hothouse and Hardy Plants (Ghent, 1862). Both these are rich in good novelties, and are well arranged. The descriptions of new things are modest, intelligent, and honest, as everything in gardening should be. Some of our audacious home catalogues cut a woful figure by the side of those from Belgium. The former remind one of modern crinolines, the vaster their dimensions the less value do they cover.

Garden Memoranda.

Bowling Green House, Putney Heath.—At few places are Cinerarias, Pelargoniums, or Chrysanthemums better grown than they are here by Mr. Shrimpton, and in the culture of Neapolitan Violets he is also equally successful. Of the latter he has at present framefuls of healthy plants beautifully in bloom that have never ceased to produce abundance of flowers ever since Christmas last. The treatment required to have them in this condition during the winter and spring months is as follows:—A compost of half turfy loam that has been turned over two or three times during the summer, and one-half rotten dung, should be well mixed together and ready for use by the end of September. At that time the Violet plants must be raised from the beds in which they have been growing during the summer, with as much earth at their roots as possible. They should then be divested of all their side shoots or runners. The proper sized pots for them are 7-inch ones. One strong plant should be put into each pot; but when they are weak, two or three, according to their size, may be put together so as to look like a single plant. The pots should be well drained, and if this is done with broken bones instead of potsherds so much the better; for the roots lay hold of the bones, which give vigour to the plants and make them bloom more profusely.

Having potted as many as are necessary for the season, a good supply of water should be given to settle the soil well about the roots. A sufficient number of old Melon boxes with the lights belonging to them should be arranged in a southern aspect, placing the boxes in such a manner that the lights will throw off rain quickly and thereby prevent drip, which in winter not only has a tendency to rot the plants, but also causes the flowers to be produced sparingly. The frames being placed in position, a layer of old tan should be put into them 4 inches thick; in this the pots should be plunged up to their rims, beginning at the back of the frame and arranging them in rows in succession till the frame is filled. It will be necessary to leave 3 inches space between the pots when the plants are large that air may be permitted to pass freely between them, and thus keep off damp, which, when it prevails, is apt to destroy the plants. If however they are so small as not to cover the tops of the pots, then the latter may be placed close together. When all has been completed let the lights be put on. When the temperature is above 5°, the lights may be removed entirely during the day, time, and at night they should be tilted up at the back for the admission of air. When the temperature of the air outside is below 50° the lights should be left on; but even then air should be admitted behind in the day-time. When the temperature is below 40° the admission of air should be very partial if it be admitted at all. At no time after the plants begin to bloom should the sashes be entirely removed, except for the purpose of watering and cleaning the plants, and of gathering the flowers. When the weather is cold and likely to be frosty coverings of mats should be applied at nights, making the thickness of the covering in proportion to the severity of the weather. In hard frost two mats should be put on as well as litter. The earth in the pots must never be allowed to freeze if it is possible to prevent it. The coverings must be removed on fine days. In March and April as much air as possible should be given if the weather is fine. The pots should be examined frequently at all times when the weather will permit. Weeds and decayed leaves must be cleared away, and a little water given when the soil is dry. Care must, however, be taken to wet the leaves as little as possible during the winter, moisture being injurious to them at that season. In March and April if the plants have been properly managed, they will then produce abundance of flowers, and consequently will require more moisture than during winter.

When the plants have done flowering they may be turned out of their pots and divided, some into five or six, others into two or three, and some not at all; for if made too small they will not be sufficiently strong by the time they are wanted for potting in autumn. When divided they should be planted out like Strawberry runners, a foot apart, in rich ground under a north wall. The plants should be kept clear of weeds during summer and watered only in dry weather. It is necessary that more than double the number of plants which may be wanted in autumn should be planted in spring to allow of a selection of the best for potting. By following this system of culture, Violets may be had from Christmas till April. One thing which the plants seem to be very fond of, is broken bones and bone-dust. By a liberal use of these Mr. Shrimpton has found his crops of flowers to be more abundant than when no such assistance was given.

Miscellaneous.

The Birmingham Rose Show.—A meeting of gentlemen desirous of establishing an annual Exhibition of Roses in Birmingham, open to all England, was held in the Town Hall on the 13th inst. Mr. Badger, one of the Honorary Secretaries, read letters from the Rev. S. Reynolds Hole, the founder of the National Rose Show, in which that gentleman intimated that he would gladly afford to the Committee the experience he had gained from the superintendence of the great Metropolitan Shows. He also stated, in reference to an advertisement he had published in the *Gardeners' Chronicle* inviting communications from persons interested in the establishment of a Midland or Northern Counties Rose Show, that at that time he was unaware of the projected Birmingham Show; but now, being quite convinced that two Midland Shows were unnecessary, he should propose to all his Midland friends to join him in co-operating with the promoters of the Show at Birmingham. He, however, added that he should take steps to establish a Northern Rose Show, and then all Rose growers in England would have ample opportunities afforded them of showing or seeing the Queen of Flowers in her beauty. The Rev. P. M. Smythe moved the following resolution:—"That this meeting cordially approves of the proposal which has been made to establish in Birmingham an annual Exhibition of Roses and Garden Ornaments, and of Horticultura Tools, open to all England, and is prepared to afford its cooperation in whatever may be necessary to promote the success of such Exhibition." After which a large committee of management was appointed to carry out the resolution. Mr. John Lowe was glad that horticultural tools had been included as part of the Exhibition; but he hoped the words would not be so construed as to make the Exhibition a display of Birmingham manufactures generally. The Rev. P. M. Smythe suggested that glass ornaments, which formed such an attractive feature in the metropolitan exhibitions, should also be included in the decorative department at Birmingham. A vote of thanks to the Chairman terminated the proceedings, which appear to have met with universal approval.

What are Species among Plants?—Upon morphology of necessity depend the various systems of classification in plants, whether they be professedly artificial, or when a higher end is aimed at, as in the so-called natural system. In the one, the object is to detect with facility the species of any given plant; in the other, to learn as much as can be learned of its nature and its relationship to other plants; thus, the increased difficulty of the natural system is amply compensated for by the amount and value of the information gained in its prosecution. In both plans the object is the same—to throw together individual plants into groups called species, these again into higher groups, such as genera, orders, &c. The true nature and limits of species, nay, even the fact of their very existence or the reverse, have furnished a constant bone of contention. With one writer, the twist of a petal, the notching of a leaf, if tolerably constant, constitutes a species, while another overlooks slight variations, and masses into one readily definable group a host of plants presenting considerable diversity in form and appearance. Another says species are merely arbitrary creations of the botanist and have no real existence in nature. In questions of this kind the opinions and evidence of those naturalists, who devote their whole attention to this subject, who have the opportunity of examining

and comparing large suites of specimens from every possible locality, and grown too under every possible variety of external conditions, whose minds are trained to the careful philosophical investigation of what features are of importance, and what not, of facts which in one group are of the highest value for classificatory purposes, in another of no value at all, is of greater weight than that of other naturalists, whose views are less philosophic, and whose studies range over fewer plants, confined to more limited areas and subjected to fewer variations in external conditions. If the opinions of the latter be nearest to the truth, we shall be obliged almost to assume that there is little or no variation in species: these are the observers, to use Hudibrastic phrase,

> "Who can distinguish and divide
> A hair, 'twixt south and south-west side,"

and thus, what their opponents would consider as trifling variations, are considered by the hair-splitters to form distinct species. But if the views and practice of the former class of observers be most consistent with the facts of the case, then we must assume, as most of us have done, until the advent of Mr. Darwin's wonderful book, that each species is liable to vary within certain limits as yet not defined, and probably very different in degree in different species. But whether or not Mr. Darwin's conclusions be just, there cannot be the slightest doubt that he has done good service in lessening the breach between the two classes of observers before referred to, and by showing how truly valuable and mutually important are their observations, conducted though they may be on somewhat opposite principles. It is unnecessary here to enter at any length into Mr. Darwin's views, as they have been already commented on in this journal, and his notions as to the origin of, and relationship of existing species are generally known. For a clear exposition, however, of the rules and methods employed by systematists in framing their modes of classification, the thirteenth chapter of Mr. Darwin's book may be with great profit consulted. In his eyes, "the natural system is genealogical in its arrangement, with the grades of difference between the descendants from a common parent expressed by the terms genera, families, orders, &c." *Maxwell Masters in the British and Foreign Medico-Chirurgical Review.*

A Huge Cuttle-fish.—Several instances are on record of the occurrence of enormous Cephalopods, which almost seem to warrant the belief, formerly prevalent in Scandinavia, in the existence of the Kraken. M. Milne-Edwards quotes Aristotle as speaking of a great Cuttle-fish five fathoms in length, and refers to other observers, such as Péron, who found, in the waters surrounding Tasmania, a Squid, of which the arms measured 7 or 8 inches in diameter, and 6 or 7 feet in length; Quoy and Gaimard, who collected in the Atlantic, near the equator, the fragments of an enormous mollusk of the same kind, the weight of which they estimated at 100 kilogrammes; and Rang, who saw, in the same waters, a Cephalopod of a red colour, with a body the size of a large cask. A specimen of one of those monstrous Cuttle-fishes was thrown upon the shores of Jutland in 1853: its body, which was cut up by the fishermen for bait, furnished loads for several wheel-barrows; and the pharynx, which was preserved, is as large as a child's head. This animal was described by M. Steenstrup under the name of Architeuthis dux; and M. Moquin-Tandon mentions that M. Steenstrup showed M. Auguste Duméril a portion of one of the arms, as thick as a man's thigh. Fragmentary specimens of a similar nature are contained in the Museum of the Royal College of Surgeons in London, and in that of Utrecht; those in the latter have recently been described and figured by M. Harting. A specimen of one of these enormous mollusca has just been seen by the crew of a French man-of-war, and escaped capture only by leaving a part of his tail behind him. On the 30th November last, at 2 in the afternoon, the French steamer "Alecton," being then about 40 leagues N.E. of Teneriffe, fell in with a gigantic Cuttle fish, of a brick-red colour, which appears to have been disporting itself at the surface of the sea. The captain gave immediate orders to attempt its capture; but a strong gale which was then blowing caused the ship to roll much, and rendered its handling difficult, whilst the monster, apparently foreseeing the fate that was preparing for him, displayed great intelligence in avoiding the vessel. He was, however, hit with several bullets, and at last struck with a harpoon, and seized by a cord with a slip-knot. At this moment, when every preparation was being made to secure it, the animal, by a sudden violent movement, drew the harpoon out of its soft flesh, and at the same time the noose slipped over its skin down to the caudal extremity, where it held, but in hoisting the animal out of the water the part thus seized broke off, and only a fragment, weighing about 20 kilogrammes, was brought on board. Both sailors and officers were anxious to have a boat lowered in order to go in pursuit of the creature; but the captain, fearing lest some harm should happen to the boat's crew in their struggle with so novel an opponent, declined this step, and left the mutilated mollusk to its fate. The ship was brought sufficiently near the Cuttle-fish to enable one of the officers to make a drawing of it. Its length was 15 or 18 feet; and its eight arms, covered with suckers, were estimated at 5 or 6 feet long. Its eyes, flush with the surface of the head, were of enormous size, and their fixity is described as giving them a frightful aspect. The mouth, resembling the beak of a parrot, might be nearly 18 inches [in diameter]. The body was fusiform, much thickened in the centre, and its weight was estimated at 2000 kilogrammes (above 4000 lbs.). The fins formed two large, rounded, fleshy lobes. *Comptes Rendus, in Annals of Natural History.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—A thorough revision of plants in the different houses where plant growing and forcing are carried on in a mixed way is necessary some time during spring, and the present is as good a time as any for the operation, the shutting up of late Vineries or Peach houses generally offering facilities for this arrangement, and of course for relieving the other structures. Exhausted forcing stock should by all means have a pit or frame fitted up especially for it. It should by no means be allowed to mix with the general stock. The amateur may carry out this principle with a small frame. A bed of fermenting material of a mild character covered 6 or 8 inches deep with tan, and well topped up with linings and mats at night, is the thing required. A bottom-heat of 80°, with frequent syringing and the plants plunged, of course, will restore them to perfect health and prepare them for another campaign. Orchids should now be allowed a slight advance in temperature, especially by shutting up early. Fuchsias will be benefited by the application of clear liquid manure. Very liberal shifts will be necessary at this period, more especially with those intended for very large specimens. Cinerarias for late blooming should, if pot bound, be shifted; likewise let plants in need of water have immediate attention—nothing conduces more to the encouragement of insects than suffering plants to become checked through drought. By starting Camellias into growth about this time, and getting their wood ripened early, they will be in full blossom in November, at which season their flowers retain their beauty much longer than after the sun becomes powerful in spring. Proceed as diligently as possible with the repotting of such of the hard-wooded greenhouse plants as require it, so as to afford them every chance of making a vigorous growth. Be careful, however, before potting, to have the ball in a nice moist state, and avoid giving large shifts to weakly growers.

FORCING DEPARTMENT.

Pineries.—Attend carefully to the bottom-heat, particularly where this is produced by fermenting materials, as tan, &c., and see that it is not allowed to rise too high, which it is exceedingly apt to do after fresh materials have been added, either during bright weather which we hope to have soon, or where there are pipes under the bed. Where much fire heat is used it requires some practice and attention to be able to keep the soil in a proper state as regards moisture, but this must be effected at any expense of attention if success is to be insured. Maintain a thoroughly moist atmosphere, but do not push young stock too fast until we may be favoured with more sunshine, when if all is right at the roots there will be no danger of drawing the plants, as would be the case in the present state of the weather. Avoid allowing water to lodge in the hearts of plants showing fruit, and spare the flowers of those in bloom with the syringe. Pot off or plant out suckers as they can be obtained sufficiently strong, and attend to keeping up a regular succession of plants, which is the surest way of providing for a succession of fruit.

Vineries.—See that the houses in which the Vines are not yet started are properly cleansed, the Vines painted with the usual composition of soft soap, sulphur, &c., and everything put into proper working order; also get the rods bent in time to induce the buds to push regularly. Attend to disbudding and stopping, &c., as may be necessary in the succession houses, and see that the inside borders are kept properly moist, giving tepid manure-water as may be necessary to effect this, and do not be afraid of giving too much of it to Vines in pots.

Melons.—Encourage those newly planted out with a moist warm atmosphere, so as to get them into full growth as quickly as possible; but plants that are fairly established should be kept cooler, admitting air on every favourable opportunity, in order to secure short-jointed fruitful wood. Keep the shoots thin and regular, pinching out any not wanted, but avoid stopping the main shoots until they reach the sides of the pit, when by pinching out the points the laterals will start into growth and show fruit abundantly; and by this time the plants will have gained sufficient strength to set and carry a fair crop. Do not exceed 65° at night, and admit air when the glass rises to 75°, but do this very carefully on cold days. Endeavour to maintain a steady bottom-heat of about 80° or 85°, and keep the soil in a healthy state as to moisture. See to providing plenty of young plants for succession crops.

Cherry House.—Syringe the trees daily with water at the same temperature as that of the house. Loosen the surface soil in the pots or borders with a hand fork, and supply the plants liberally with water until the fruit begins to change colour, after which gradually decrease the quantity and cease syringing; give abundance of air on all favourable opportunities.

FLOWER GARDEN AND SHRUBBERIES.

As soon as the weather shall have become a little more favourable, a good collection of annuals, whether hardy or tender, should be sown. For the latter a slight hotbed is requisite. The more choice hardy kinds should be sown in patches and covered with a garden pot, taking care to remove it when they are coming up in the day time, covering them at night. If any rough or unimportant shrubbery borders require a little gaiety and business presses, a mixture of some of the hardier sorts might be made, such as Collinsias, Clarkias, Mallows, Larkspurs, and Candytufts, &c., and strewed at random over the open parts of the border after a thorough cleaning. Dahlias should be increased without delay, Lobelias should be potted and put into a dung bed. German and Ten Week Stocks should be sown in fresh soil in a cold frame or one that will soon cool down, and a few early German Asters on a slight heat. Let walks out of order be turned forthwith, and fresh coated with gravel. Follow up matters of propagation, and see that cuttings of young stock are carefully shaded when necessary.

HARDY FRUIT AND KITCHEN GARDEN.

Attend carefully to the protection of blossoms of Apricots, Peaches and Nectarines; but remove the covering as frequently as may be convenient on fine days, so as to fully expose the trees to sun and air. Get a supply of tobacco water in readiness to attack aphides immediately they make their appearance. Sow Broccoli on beds of light dry rich soil in an open situation for the main crop, and Cabbages, Cauliflowers, Lettuces, &c., in succession.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the Week ending March 19, 1862, as observed at the Horticultural Garden.

March.	Moon's Age.	Barometer.		Temperature					Wind	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep		
Thurs. 13	13	29.990	29.914	54	38	46.0	46¼	45	N	[illegible]
Friday 14	14	30.112	30.084	49	38	43.5	46½	45	N E	[illegible]
Satur 15	15	30.098	30.013	49	39	44.0	47	45	N E	[illegible]
Sunday 16	○	29.950	29.813	46	38	42.0	46	45	N E	[illegible]
Mon. 17	17	29.746	29.730	45	35	40.0	46	44½	S	[illegible]
Tues. 18	18	29.763	29.671	49	25	37.0	46	44½	S W	[illegible]
Wed. 19	19	29.608	29.495	53	35	44.0	46	44	N E	[illegible]
Average		29.895	29.817	49.3	35.4	42.3	46.3	44.7		[illegible]

March 13—Drizzly; overcast and cold.
— 14—Hazy and cold throughout.
— 15—Foggy; overcast; cloudy, with cold wind.
— 16—Foggy; overcast; heavy rain at night.
— 17—Foggy; hazy and cold; rain at night.
— 18—Hazy and cold; fine; frosty at night.
— 19—Foggy; light hazy clouds; cold wind; slight rain at night.

Mean temperature of the week ½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending March 29, 1862.

March.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 23 ..	50.6	33.8	42.2	15	0.60 in.	6	6	1	1	1	12	4	[illegible]
Mon. 24 ..	50.7	32.1	41.4	12	0.13	4	5	4	—	3	[illegible]	[illegible]	6
Tues. 25 ..	50.4	32.6	41 5	12	0.60	3	10	5	—	2	4	[illegible]	[illegible]
Wed. 26 ..	50.3	32 3	41 3	13	0.17	—	6	4	2	5	6	6	[illegible]
Thurs. 27 ..	51.8	34.4	43.1	12	0.37	2	7	3	2	3	[illegible]	[illegible]	[illegible]
Friday 28 ..	53.8	34.0	43 9	15	0.68	4	6	6	2	2	6	[illegible]	[illegible]
Satur. 29 ..	53.2	33.5	43.4	12	0.33	1	4	8	3	2	7	[illegible]	[illegible]

The highest temperature during the above period occurred on the 27th, 1830—therm. 75 deg.; and the lowest on the 25th, 1850—therm. 14 deg.

Notices to Correspondents.

☞ Correspondents are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

Books: *Alpha.* We should think the shilling treatise on Paxton's patent hothouses, by Hereman, would give you the information you seek. It is published by Bradbury & Evans, Whitefriars.

Cattleyas: *R C K* says that last August he impregnated a flower of C. crispa with pollen from C. amethystina, and has now on the plant a fine fruit the size of a bantam's egg, not yet ripe. He asks, 1, whether this is unusual; 2, if any of our readers have succeeded in obtaining seedlings; and 3, for any practical advice as to germinating the seed and treating the seedlings.

Helichrysums: *W H.* The Incurved-flowered Helichrysums (H. bracteatum incurvum) are those called compositum maximum in the seed shops. There are several distinct colours. You will find a figure in the first volume of the "Floral Magazine," No. 11, Plate 41. There is a dwarf small-flowered race which is probably meant by nanum. The large-flowered ones, however, may be kept dwarf, if not grown too rank and fleshy, as they break freely.

Marantas: *An Old Reader* has probably omitted to give his M. Warczewitzii sufficient bottom heat, when watering it. Such things are impatient of cold at the root. Or perhaps he has not rested it properly. It is impossible to say anything further, and the above are mere guesses. The soil in which it is planted is proper.

Medical Plants: *W R.* Doubtless Monarda punctata is to be found in some of our public botanical gardens. It has no other name.

Pinery: *G H.* There is no reason why Sir Joseph Paxton's roofs should not be applied to Pine-growing. They may be had of various sizes. We should use either a span roof or a lean-to, according to the cost. Either will do. There is a capital, and cheap, building of this sort in the rear of the Conservatory in the Garden of the Royal Horticultural Society at South Kensington. For further information apply to Mr. Samuel Hereman, Sir Joseph's agent.

Scarlet Aubergine: *A B C.* The "Aubergine, scarlet, 1½ foot, from France," is we suppose the Solanum pseudo-melongena, Tenore, as "Delta" says. The plant, which is quite unknown to us, is reported to be the same as the Solanum tomatiforme of some continental gardens, and Tenore says it is cultivated here and there in Italy, under the name of Melenzane del Brasile. We translate his description of the fruit:—Berries large, fleshy, 4-celled, sphæroidal, even, variegated with red and green, eatable.

FINE NEW CLOVER SEEDS;
IMPORTED ITALIAN RYE-GRASS;
GRASS SEEDS for PERMANENT PASTURE and for LAWNS.
The above are fully described, with lowest Cash Prices at which they can be delivered Carriage Free, in WHEELER'S "Little Book for 1862," post free for four stamps.
J. C. WHEELER & SON, Seed Growers, Gloucester.

GRASS SEEDS for PERMANENT PASTURE.—Gentlemen contemplating laying down Land to Permanent Pasture this season, are respectfully requested to send for our little Book on GRASSES and CLOVERS, profusely illustrated, and partly written by Professor Buckman, F.L.S., F.G.S., &c. Post free for 4 stamps.
J. C. WHEELER & SON, Seed Growers, Gloucester.

TURNIP, MANGEL, and AGRICULTURAL SEEDS of best Selected Stocks.—First class sample crop, 1861, at growers' prices.
JAMES FAIRHEAD & SON, Seed Growers and Merchants, Borough Market, London, S.E.

Imported Italian Rye-grass,

Specially selected and recleaned, weighs 18 lbs. per bushel, and gives a growth more than double that of the usual importations.

W. DRUMMOND AND SONS have much satisfaction in calling attention to this article, which will be found very superior to the general run of foreign Italian. Price 7s. per bushel.
Carriage paid to the principal Railway Stations, in quantities of 5 bushels and upwards.
W. DRUMMOND & SONS, Seedsmen, Stirling, N. B.

To the Seed Trade.

THOMAS AYRES, SEEDSMAN and GROWER, Biggleswade, Beds., has to offer WHITE SPANISH ONION SEED, ALTRINGHAM and WHITE BELGIAN CARROT SEED; YELLOW GLOBE, ORANGE GLOBE, RED GLOBE, LONG YELLOW, LONG RED MANGEL WURZEL SEED; also several varieties of SWEDE and WHITE TURNIP SEED. Also about 60 bushels of English SCARLET RUNNER BEANS, all the growth of 1861.
Prices forwarded on application.

To the Trade.

NEW SEEDS DIRECT FROM THE GROWERS.

CHARLES SHARPE AND Co., SEED GROWERS, Sleaford, will have much pleasure in forwarding on application their WHOLESALE PRICED LIST of AGRICULTURAL SEEDS, which have been grown upon their own land with the utmost care from the finest selected stocks. The advantages of procuring Seeds direct from the Growers are too obvious to require comment, and from the experience of SHARPE & Co. in the growing and harvesting of Seeds, a satisfactory result may be calculated on with certainty when their Seeds are used.
SHARPE'S IMPROVED LARGE SWEDE.—The largest and best cropping Swede in cultivation; it produces a finely-shaped bulb, without a coarse top. A Coloured Lithograph of this Swede will be sent to purchasers.
CHARLES SHARPE & Co., Seed Growers, Sleaford, Lincolnshire.

New Cabbage for Present Sowing.

FEARNOUGHT CABBAGE (MELVILLE).— For description see "The Gardeners' Year Book" by Dr. Hogg, and advertisements in last month's *Gardeners' Chronicle.* It may be had fit for use from November till Spring Cabbages are ready. Sow from 20th March to 8th April. Awarded First Class Certificate by the Royal Horticultural Society, 11th March, 1862. Price 1s. per packet.
STUART & MEIN, Seedsmen, Kelso, N.B., beg to intimate that they can still supply a few packets of the above valuable acquisition; it can also be had from the following, who have received supplies:—
Messrs. Dicksons & Brown, Manchester.
" Sutton & Sons, Reading.
" Nutting & Sons, 60, Barbican, London, E.C.
" Ivery & Son, Dorking, Surrey.
" A. Henderson & Co., Pine Apple Place, Edgeware Road, London, W.
" Charlwood & Cummins, Tavistock Row, Covent Garden, London, W.C.
" Fraser, Richardson, & Good, Bishopsgate Street, London, E.C.
" Stewart & Sons, Dundee.
" Downie, Laird, & Laing, Forest Hill, London, N.E.
Mr. Turner, Royal Nursery, Slough.
" Dean, Bradford Nursery, Shipley, Yorkshire.
" Parker, Exotic Nursery, Tooting, Surrey, S.
" Stark, Edinburgh.

Farm Seeds.

PAGE and TOOGOOD being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured, possess greater powers of germination, and are a desirable change for the northern and midland counties.

To publish the numerous testimonials P. & T. are favoured with is impossible, but the fact of their having had the honour for the last 8 or 10 years to supply the ROYAL FARMS at OSBORNE, will be a sufficient guarantee that their Seeds are of superior quality, and their prices are as low or lower than any respectable house in the Kingdom.

Present prices, Carriage free to all parts of England:—

	Per lb.—s.	d.		Per lb.—s.	d.
...g's Swede ..	0	8	Yellow Tankard	0	9
... Improved Hardy	1	0	Fielder's Hardy Green Round	0	6
...'s Improved White	0	9	Early Six Weeks	0	6
...'s Champion	1	0	Kohl Rabi	3	6
...top	0	9	New Osborne Mangel.		
... or Jeffrey's ..	0	8	Yellow Globe	0	6
...ard	0	9	Page's Imp. OrangeGlobe*	0	8
... und Turnip ..	0	9	Red Globe	0	7
... Impvd. Red Globe	0	8	Elvetham Long Red ..	0	8
... or Bullock ..	0	9	Long Red	0	6
...alian White Globe	0	8	Long Yellow	0	8
... Green Globe ..	0	8	White Belgian Carrot ..	1	3
... White Tankard ..	0	8	Cattle Cabbage	2	6
... Imp. Purple ditto.	1	0	Cattle Parsnip	1	0
... ditto	0	8	Dwarf Essex Rape ..	0	4

...ts of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.
...wheat, Mustard, Linseed, Tares, and Sainfoin. Fine ...ent Pasture and Lawn Grasses, as sown at the Royal ..., Osborne, for the last eight years, 1s. 3d. per lb.
...ine Hampshire-grown Alsike Clover, Italian Rye-grass, ..., &c., at lowest market prices. Special contracts for ... quantities.
Royal South Hants Seed Establishment, Southampton.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.
Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.
Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

The Alsike Hybrid Clover.
Perennial Red Clover.
True Perennial White Clover.

THE above kinds of CLOVERS will take well on land which has proved Clover-sick when sown with the common kinds of Clover.
They are all included in Messrs. SUTTON'S MIXTURE of GRASS SEEDS for PERMANENT PASTURE, and they may be purchased separately.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,
And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.
We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.
Our "LITTLE BOOK" sent free for four stamps.
J. C. WHEELER & SON, Seed Growers, Gloucester.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.
Last day of Entry for Implements, March 31.
Last day of Entry for Stock, May 1.
STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. HALL DARE, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, MARCH 22, 1862.

MEETING FOR THE ENSUING WEEK.

WEDNESDAY, March 26 { Agri. Society of England .. Noon (Mr. Holland, M.P., on Steam Boiler Explosions.)

EVERYBODY knows that Linseed cake consists of the ground-down tissue of the Flax seed, from which as much of the oil as can be expressed has been taken. The process of extracting it has been facilitated by the application of heat to the ground-down mass before subjecting it to pressure. When cake so prepared has been made from a good sample of seed—that is, Flax seed which has been freed from the dirt which more or less always adheres to the roots of the plants when pulled—when again it has either been grown clean or all weed seeds have been carefully separated from it, it will be sweet to the taste and not biting on the tongue; it may be masticated without a cracking between the teeth, which when it occurs results from the presence of some harder more shell-like seed skin than that of the Flax seed, which is soft, pliable, and mucilaginous; it will, too, be free from grittiness, which is due to the presence of bits of stones and dirt.

Now this is the condition in which Linseed cake used to be got, and it was upon such good and fair samples that its fame was justly established, and as a result it would appear that a large manufacturing interest had gradually sprung up, the members of which had at their "crushing mills" two articles to dispose of, namely, Linseed oil and cake, as makers of those articles from Linseed or Flax seed. At some there were in addition Rape oil and cake, made in like manner from Rape seed.

That cakes made in the straightforward way here mentioned should be valued at a good price, is only what might have been expected, and this soon brought about a competition, based, among others, on the following practices:—

1. The oil crushers gradually came to be less and less particular about clean seeds.

2. Some went a little bit further and bought all kinds of inferior and cheaper oleaginous and even other seeds for crushing.

3. Others reground the cake with refuse of all kinds, and so made a cake for the market by a second process.

4. And there are still others who do not crush seed for oil at all, but make a cake out of a mixture of the cheapest materials that they can get.

These then may be considered as so many phases of dishonesty, practised on the Continent as well as at home, and not even confined to the old world, as our Transatlantic cousins are seldom too nice about their cake.

1. As evidence upon the subject of carelessness in the selection of Linseed for crushing, we would direct attention to the following results of an analysis of six different samples of seed which has been handed to us by Prof. VOELCKER. These were from bulk as imported, and of course if a first-rate cake was to be manufactured it could only be by a careful separation of the dirt itself and the weeds, which are worse, as they are seldom merely innocuous, but many of them have active poisonous principles; such, for example, are the Mustard and probably also the Darnel, of which Sir J. E. SMITH remarks—"The seeds are of very evil report for causing intoxications in men, beasts, and birds, and bringing on fatal convulsions. HALLER speaks of them as communicating these properties to beer." *English Flora*, vi., p. 175.

The authority just quoted gives as habitats for the Lolium temulentum ("drunken Darnel" of old authors)—"in fields among Wheat, Barley, and Flax." It was formerly abundant in our corn crops, and Sir W. J. HOOKER says, "The seeds mixed with Wheat, and made into bread, have proved highly injurious to those who have eaten it."

If then these reports be true, it is fortunate that for many years our corn crops have been remarkably free from this Grass, but the student of Grasses will seldom fail to find it growing in the Flax crop. In one of the samples of Flax seed now before us, we have estimated as much as 5 per cent. by weight of Lolium seed—quite sufficient, if the report of its effects be true, to give a pernicious quality to cake. Upon the presence of this seed in Flax we may give our experience of its rapid increase. In a crop of Flax from imported seed we obtained some fine specimens of the Grass in question for our herbarium; however, it was not in great quantity, but as the seed of this crop was again sown on the same farm *uncleaned*, we are in the condition to show from good practical evidence that the resulting Flax was much in the minority, the bulk being principally made up of *Sinapis nigra* (Black Mustard); *Cuscuta epilinum* (Flax Dodder); and *Lolium temulentum* (the Bearded Darnel).

TABLE OF ANALYSES OF SOME FLAX SEED OR LINSEED.

Name.	Flax Seed.	Weeds.	Dirt.	Total.	Remarks on Weeds.
1. Tilset Linseed ..	40	44	16	100	Mustards, Buckwheat (wild), Cress.
2. Odessa Linseed	76	20	4	100	Wild Buckwheat, Indian Rape, Mustards, Lychnis, and Corn Cockle.
3. Riga Linseed ..	72	28	0	100	Darnel, Jack by the Hedge, Purging Flax, Thistles.
4. Black Sea Linseed ..	80	19	1	100	Mustards, Wild Buckwheats, &c.
5. Noishanski Linseed ..	82.5	7.5	0	100	Cress, Darnel, &c.
6. Bombay Linseed ..	95	3	2	100	Mustards and Bindweed.

These results show us that while some samples may be more than half weeds and dirt, yet that next to pure examples are possible.

The seeds of the Indian Flax are nearly twice the size and weight of the northern samples. Whether the plant is larger, and what influence it may have upon its oil producing powers, we do not know, but of course the larger the seed the easier to clean.

The difference in size and weight will be seen from the following estimation:—

100 seeds of Riga Linseed weighed .. .. 6.1 grains
100 seeds of Bombay Linseed weighed .. .. 12.5 "

2. Our second position admits of easy proof. Farmers well know that they have a ready market at the crushing mill for as much Charlock and Wild Mustard seed as they may have on hand, and these are, as stated, no doubt "crushed for their oil." But what becomes of the cake? Is it thrown away? We can only say that we have never known of an instance of this; we have on the contrary reason to think that it is thoroughly utilised, and the utmost stretch of honesty we should expect would be that it might be sold at a cheaper rate, or indeed at "what it might fetch."

But more, we happen to know that our home supply in this way (though we are aware of one farmer supplying many bushels of Charlocks, &c. in one year), is by no means sufficient for the market, for foreign dirt of this kind is imported in large quantities, and dirty as are some of the Linseeds as taken to the mill, yet *mixings* are occasionally added in no stinted allowance.

3. The practice of regrinding or rather remixing by a second process, is becoming much too common.

The mixing of all sorts of seeds with the oil-producing seed, renders the expression of the oil by no means so easy. Linseed then is ground and crushed for the oil, and afterwards mixed and reground with all kinds of sophisticating material, and then manufactured into cake.

4. That the manufacture of sophisticated cake is carried on as a separate business, is a fact beyond dispute. There are those who procure cake, sometimes of inferior sort, as a wine maker may use poor claret as a basis for port, and mix it with any other materials that can be got.

Thus every seed that is pressed for oil, whether poisonous, merely medicinal or inert, will yield a cake after the expression of the oil, which cake finds a market for mixing. But oleaginous seeds are not enough for this business, and so mill refuse and sweepings, bran, &c., are used in immense quantities as mixings for cake.

The following are amongst some of the foreign matters which we have seen as forming part of Linseed-cake; and though our remarks have been herein confined to Linseed cake, yet it is but right to say that they will equally apply to the manufacture and sophistication of Rape cake :—

LIST OF FOREIGN MATTERS FREQUENT IN LINSEED CAKE.

Dirt..	Probably derived from pulling.
Rice dust	From the preparation of these kinds of grain for particular purposes, &c.
Barley clippings.. ..	
Oat clippings	
Bran.	
Rape.	
White Mustard	Seeds mostly used for the preparation of particular kinds of oil, &c.
Black Mustard	
Castor-oil Beans	
Croton oil Beans.. ..	
Cotton	
Hemp	
Sunflower	
Poppy	
Beech Mast	
Almond	
Nuts	

These remarks, then, it is hoped will be sufficient to enlighten the farmer upon a matter of great importance. Good cake honestly made from pure seed is a valuable article, and there can be no doubt upon the matter that the purer it is the better. The notion that "our mixture is preferred to the genuine" could never have been entertained for a moment were it not that even what is called genuine is sometimes less than half Linseed; as thus—there are not wanting manufacturers who have got to call and perhaps believe cake to be genuine when made from the Tilset Seed which we analysed, notwithstanding this seed contained 44 per cent. of weeds and 16 per cent. of dirt.

Cake then, like manures and seeds, is cheaper in proportion to purity and quality; and to ascertain this analysis should be made of the bulk. It is then purely a buyer's question to see to genuineness, for habits of trade become at last so strong and conventional that straightforward men in other respects get to praise wares that a little consideration would show are not so good as they ought to be.

The publican round the corner puts up "Barclay and Perkins's Entire," when he knows that he has made three barrels from two. You may see "Genuine Coffee" on a paper, half of the contents of which was Chicory, and though in this case some people pretend to like it better for the admixture, yet the statement is equally untrue.

The fact is, we have mental toppers as well as actual ones, for as old HUMPHREY said, the biggest Strawberries are put at the top of the pottle, and so when *genuine* is mentioned there is reason to think that the mind sees the genuine at the top of the sample, and thinks not of anything else.

—— BARELY half of the returns we have received on the subject of artificial and other manures can appear in this week's paper. The remainder will be given next week, and a number of exceedingly interesting reports accompanying these returns will be given in future numbers of the *Agricultural Gazette*. Any attempt to gather the lessons which this immense mass of experience teaches must for the present be postponed.

—— M. TREHONNAIS writes by authority of the French Minister of Agriculture to announce that, besides the prizes already announced in the official programme of the Show at Poissy next month, there will be a cup, value 100 guineas, given to the best animal in the exhibition, irrespective of country or breed, in addition to the two great prizes of honour already offered by the French Government.

"This prize is the gift of the late lamented PRINCE CONSORT, and owes its existence to the following interesting occurrence, which is another instance of the generosity of that good and great patron of agriculture: At the Universal and International Agricultural Exhibition held in Paris in 1855, his ROYAL HIGHNESS, who was an exhibitor of stock, was awarded several prizes, the aggregate amount of which came to about 75*l*. The PRINCE immediately expressed his intention to apply this sum to the presentation of a cup, to be competed for at some future Exhibition held under similar circumstances. The forthcoming Poissy show has appeared to the French Government—to whom a magnificent cup was duly forwarded from London—an appropriate occasion to fulfil the generous intentions of the Royal donor, and the Minister of Agriculture has lately decided that it should be competed for by the two exhibitors to whom the two prizes of honour—the one for native and the other for foreign breeds—should be awarded."

There cannot be a doubt that the competition for this prize will excite very great interest.

NOTES ON STEAM CULTIVATION.

SUGGESTED BY THE DISCUSSION AT THE CENTRAL FARMERS' CLUB, MARCH 3, 1862.

WE think with yourself it is a matter of regret the discussion was so much more "one-sided" than the opening paper, and will therefore venture to offer the results of our own experience, obtained from working both systems on the same occupancy; and in contradiction to Mr. Sidney's kindly offered advice, we would maintain that the first and chief consideration is to ascertain which is the best system, *i.e.*, the one best adapted to our particular circumstances.

We were supplied with a set of Fowler's tackle in the spring of 1860, and have been working it ever since without the advantage of his recent improvements; and with a set of Howard's in July last year.

It will be granted, at starting, that the principle of the "direct traction" system is a simpler and less wasteful application of the power of the engine than the "roundabout" system; and that it is equally available and cheaper is the conclusion we have arrived at. Much stress is laid on the larger outlay required; but regarding it on commercial principles, it is plain that if an outlay of 900*l*. returns a larger per centage than one of 500*l*., it is the better investment. That such is the case in this instance we consider—

I. From the cheaper rate at which the tackle is kept in repair and its value maintained.

II. From the cheaper rate at which the required results are also obtained; taking into account the various working expenses, interest on capital, horse and manual labour, &c.

We have also found the direct traction tackle by far the more readily and easily managed. This of course presupposes that its capabilities have been tested in an open tract of land, or in large fields, where it had fair play. Indeed we may regard among its advantages this collateral one—that it does not simply adapt itself to existing circumstances, but that it claims to be a system of itself, and enforces the levelling and removal of fences, hedge-row timber, the relaying out farms, straightening and making good roadways, and last, but most important, perfect underdrainage—all which operations are necessary to the full development of the resources of our soils.

The main objections urged to the application of this system, besides that of first cost, are: The injury done to the land on which the engine travels; the loss of power required in self propulsion; and expense of carting water, &c.

Roadways, to some extent, must be left for the general haulage of the crops, manure, &c.; and when we consider that the engine only requires one of the ordinary width, and only then at a distance of 150 to 200 rods apart, but little can be put to its Dr. side on this account; indeed, as previously urged, the enforcing of the making of such hard roadways will be a positive benefit to the occupation; and if well metalled, or with rails laid on sleepers on the same principle as railways are formed, the propelling power required will be reduced to a minimum; and it must also be borne in mind that the self-moving anchor requires no headland nor way prepared for it, but cuts its own track, along any curve, at a distance from the engine, as above stated, of 80 to 100 rods.

But the main advantage in the direct traction principle is, that it gives the most power on the hauling rope, at the cheapest rate. Without going into calculations as to how much power is lost at each pulley, it is apparent that this system is the only one which has yet produced the magnificent work exhibited by the "Balance Plough." The stirring or smashing of the surface soil, 6 to 9 inches deep, effected by all the "Cultivators" out, whether 2 or 4 wheeled, is as far from approaching such work as they themselves distance, in their results, the applications of horse power. We effect by it, as a rule, the thorough displacement and admixture of from 10 to 12 inches of soil in the driest weather, breaking through the pan underlying the previously cultivated portion; and by retaining the wedge cutting share and part of the breast, we are enabled to do this without rendering inversion necessary, and yet without leaving a stone unmoved or root-weed unsevered.

We again explain that we confine ourselves to a report of our own experience. Our "roundabout" tackle, during the drought of last autumn, needed to have its work selected, and was found most useful in cross-cultivating where the direct traction and plough-share had previously broken up the soil.

We feel also justified in laying much stress on the facilities to get a quantity of work done at the right time (and in no cases is the proverb "time is money" more applicable than in autumn cultivation) by the more easily managed and less costly machinery of the direct traction system. It is those persons only who have opportunities of daily contrasting the two systems who can form a correct idea of the power consumed (in practice) in winding ropes on and off drums, round snatch-blocks, and in dragging double the necessary length of rope backwards and forwards, sometimes on the porters, but more frequently along the ground; or of the vexatious loss of valuable time in the repairs of the breakages of "cheap" machinery, and in the packing up and laying out at each removal, both of men and horses; besides the extra acreage expenditure for manual labour, which alone goes far towards paying interest on the extra capital employed at starting.

Not having had any experience of Mr. Fowler's system of adapting his plough and tackle to a stationary engine, nor of his plan of mounting the ordinary portable engine on a self-propelling windlass, we forbear to speak of them; but judging from the result of recent trials, and the subsequent advertisements of our leading agricultural machinists, we may infer that other systems, besides the two commented on, will soon be brought out for approval or otherwise of the practical agriculturist.

If the principle of a stationary power is found available, we should presume that the hint thrown out by Mr. Alderman Mechi, that it should be derived from an engine fixed at the homestead, will obtain further consideration.

We do not however wish it to be inferred that we have lost sight of, or have not experienced, the advantages of a low-priced set of tackle, adapted for use under our present circumstances, and as an auxiliary to our ordinary cultivating power; as was so well expressed by Mr. Dring. But, as it is quite evident the steam engine must supply our chief motive power, and as so much depends on the encouragement our inventors receive at the starting of the several systems for adapting it to our purpose, we should be sorry to have it go forth without protest that our motto need be other than "Practice with Science;" or that the make-shift system which we take the "roundabout" to be should be considered as the only one which has yet commended itself, by actual experience and contrast, to the favour of the British farmer. *"South Essex," March* 10.

NOTES OF CROPPING AND MANURING OF LIGHT SOILS.

No. 1. ABERDEENSHIRE.—*Lime* before a Turnip crop, 80 bushels to light land, 120 bushels to heavy land. Farm now all limed between 1851 and 1857. *Manure* enriched by consumption of 60*l*. to 80*l*. worth of oilcake. Guano, †Peruvian & Koorya Moorya,* applied over 22 or 30 acres. Seeds on 1st and 2d years, Clover and Rye-grass. *Thomas Turnbull,* [illegible], *Rhynie.*

No. 2. FORFARSHIRE.—*Lime* generally on Grass, 50 to 80 bushels per acre, once in a rotation of seven years in compost. *Manure* enriched by 100*l*. a year in oilcake and diseased Potatoes. Dung for Wheat when sown, Barley in spring. * Guano applied to Oats on about 40 acres. † 2 cwt of sulphate of ammonia over a few acres for early cutting. *W. Smith,* [illegible] *Drum, Brechin.*

3. FORFARSHIRE.—*Lime* little used in this quarter. * 1 cwt. of sulphate of ammonia used along with 1 cwt. of guano on Clover. *H. Bell, Ferryden Farm, Montrose.*

4. FIFESHIRE.—*Lime* not much used. *Dung* enriched by consumption of 10 tons of Linseed and Rapecake. * [illegible] applied to Potatoes, part on stubble and part in drills, and [illegible] 2 cwt. of guano is given to the land when planting that was dunged on stubble. † The guano is given to Barley only when the Turnips are all taken off the land. ‖ 1 cwt. nitrate of soda is given along with 2 cwt. of guano to Clover. *J. Morton, Lambie Letham, by St. Andrews.*

5. EDINBURGH.—*Lime,* applied 6 tons per acre to prevent Finger-and Toe in Turnips. * 1 cwt. of Rapecake applied [illegible] Wheat, 2 to 4 acres of Mangels are grown with 20 tons of [illegible] 2 cwt. of Peruvian guano, 1 cwt. of superphosphate, 1½ cwt. of common salt, 1 Bolivian guano. *Dung* enriched by consumption of 60 tons of Linseed cake and Rape cake every year. Buy 900*l*. to 1000*l*. per annum of artificial manure. *J. M., Mid* [illegible]

6. AYRSHIRE.—Greater part light and sandy, some [illegible] drift sand. *Lime,* 3 tons per acre to green crops where [illegible] never been limed before. *Dung* enriched by 350*l*. to [illegible] meal and cake consumed yearly. * 35 acres of Wheat or [illegible] † 1 cwt of guano and 1 cwt. of nitrate of soda, applied [illegible] over 5 acres cut for forage. *Mr. McJannet,* [illegible] *Irvine.*

7. AYR.—*Lime,* 8 tons per acre on clay soils to Oats after [illegible] intervals. Besides 1 cwt. of guano, 1 cwt. of nitrate of soda [illegible] 1 cwt. of sulphate of ammonia are applied to Clover and Rye-grass. *A Longmuir, Roseholme, Irvine.*

8. WIGTOWN.—*Lime,* 1½ ton per acre every 6th year [illegible] stubble before green crop. *Dung* enriched by consumption [illegible] 10 to 12 tons of Linseed and Rape cake, 4 or 5 tons of [illegible] meal and 3 or 4 tons of crushed Oats. †2 cwt. of Peruvian guano to Wheat "sometimes." The dung used on Swedes [illegible] Turnips as far as it goes, and when no dung is applied, 4 cwt. instead of 2 of guano are added; 2 cwt. of Upper Peruvian guano applied to Potatoes and to Turnips and Swedes, [illegible] 2 cwt. of Proctor & Ryland's Turnip manure besides [illegible] above; 3 cwt. of Upper Peruvian guano applied to Mangels. *A. H. M'Clean, Auchneal, Stranraer.*

9. ROXBURGH.—*Lime,* 4 tons of gas lime applied to Oats [illegible] 9 bushels of wood ashes applied with good effect to Barley [illegible] *Dung* enriched by 5 lbs. of oilcake given daily to fatting cattle [illegible] six weeks before they are sold. * The 20 tons of dung applied only to 32 acres of Swedes, 40 acres of Turnips getting [illegible] per acre of bonedust instead. † 1½ cwt. of nitrate applied [illegible] to 12 acres of Clover. ‡ 6 cwt. Rape-cake applied to Potatoes with the dung.

10, BERWICKSHIRE.—*Lime.* 6 tons per acre on Grass at [illegible] 12 to 15 years intervals. Mixed artificial is made of 2 tons Peruvian guano, 4 tons of Bolivian, 7 tons of superphosphate

LIGHT SOIL FARMS: CROPPING IN ACRES: MANURING PER ACRE.

No., &c.	ACRES.		Wheat.	Barley (Ba) Oats (O)	Beans (Be) Peas (P)	Rape (R) Vetches (V)	Turnips (T) Swedes (S)	Mangel (M) Potatoes (P)	Clover (C) Mixed Seeds (S)
	Permanent Pasture.	Arable.							
ACRES	6	325	..	130 (O)	..	24 (T)	40 (S)	1 (P)	130 (S)
Farm dung	..	..	..	..	..	14 tons	16 tons	28 tons	..
Peruvian Guano	..	..	..	..	..	1 ton & 1 cwt.	1½ ton 1 cwt.	..	1½ cwt.*
Bonedust	..	..	..	..	..	4 bushels	6 bushels	..	..
ACRES	..	317	20	30 (Ba)	80 (O)	25 (T)	10 (S)	12 (P)	140 (S)
Farm dung	..	..	10 tons	10 tons	..	12 tons	14 tons	15 tons	..
Peruvian guano	..	..	2 cwt.	..	2 cwt.*	2 cwt.	2 cwt.	..	..
Superphosphate	..	..	..	..	..	2 cwt.	2 cwt.	2 cwt.	..†
ACRES	..	200	33	33 (Ba)	33 (O)	..	33 (T & S)	33 (P)	33 (C)
Farm dung	..	..	..	..	..	..	15 tons	15 tons	..
Peruvian guano	..	..	..	..	..	..	3 cwt.	..	1 cwt.*
ACRES	..	315	45	45 (Ba)	69 (O)	45 (T)	25 (S)	35 (P)	51 (S)
Farm dung	..	..	..	..	..	..	20 tons	25 tons*	..
Peruvian guano	..	..	2 cwt.	2 cwt.*	..	3 cwt.	3 cwt.	2 cwt.	2 cwt.
Superphosphate	..	..	..	..	..	3 cwt.	..	..	1 cwt.‖
ACRES	..	650	80	110 (Ba)	110 (O)	30 (Be)	100 (S & T)	45 (P)	160 (C & S)
Farm dung	..	..	..*	..	..	16 tons	15 tons	22 tons	..
Peruvian guano	..	..	1¼ cwt.	1 cwt.	1 cwt.	..	1½ cwt.	3 cwt.	..
[illegible]vian guano	..	..	1 cwt.	1 cwt.	1 cwt.	..	1 cwt.	2 cwt.	..
Superphosphate	..	..	1 cwt.	1 cwt.	1 cwt.	..	1 cwt.	2 cwt.	¾ cwt.
ACRES	100	200	35*	35 (O)	..	4 (M)	16 (T)	15 (P)	35 (C)
Farm dung	..	..	..	..	..	35 tons	30 tons	30 tons	..
Peruvian guano	..	..	..	1½ cwt.	..	3 cwt.	2½ cwt.	2½ cwt.	1 cwt.†
ACRES	..	64	16	16 (O)	..	1 (M)	5 (S)	10 (P)	16 (S)
Farm dung	..	..	..	25 tons	..	40 tons	40 tons	40 tons	..
Peruvian guano	..	..	..	2 cwt.	..	4 cwt.	5 cwt.	4 cwt.	1 cwt.*
ACRES	..	300	25	70 (O)	10 (T)	40 (S)	4 (M)	3 (P)	148 (S)
Farm dung	..	..	..	..	20 tons*	20 tons*	30 tons	25 tons	..
Peruvian guano	..	..	2 cwt.†	2 cwt.	2 cwt.	2 cwt.	3 cwt.	2 cwt.	1 cwt.‖
Common salt	..	..	..	..	2 cwt.	2 cwt.	6 cwt.‖	..	..
ACRES	..	412	20	80 (Ba)	100 (O)	12 (Be)	72 (S & T)	16 (P)	112 (C & S)
Farm dung	..	..	..	..	..	12 tons	20 tons*	12 tons	..
Peruvian guano	..	..	..	..	..	..	3 & 4 cwt.	..	..
Nitrate of soda, &c.	..	..	..	..	..	1 cwt.	8 bushels*	6 cwt.‡	1½ cwt.†
ACRES	51	438	..	110 (O)	60 (Ba)	54 (S)	25 (T)	6 (P)	85 (C)
Farm dung	..	..	..	..	..	14 tons	12 tons	14 tons	..
Mixed	..	..	..	..	..	5 cwt.	5 cwt.	5 cwt.	..
ACRES	112	788	130* 70 (Ba)	165 (O) 10 (Be)	(S R)	75 (T)	90 (S)	10 (P)	230 (C)
Farm dung	..	..	..	..	..	12 tons	14 tons	15 tons	..
Peruvian guano	..	..	..	1½ cwt.†	..	..	..	3 cwt.	..
Superphosphate	..	..	..	..	4 cwt.	3 cwt.	3 cwt.	..	..
ACRES	100	310	50	50 (Ba)	50 (O)	30 (S)	20 (T)	50 (Be & P) &c.	50 (C & S)
Farm dung	..	..	..	..	..	12 tons	10 tons	10 tons	..
Superphosphate	..	..	1 cwt.	..	..	5 to 6 cwt.*	2 cwt.*	3 or 4 cwt.	2 cwt.
Nitrate of soda	..	..	1 cwt.	..	..	..	..	..	1 cwt.
ACRES	350	500	80	10 (Ba)	100 (O)	100 (T)	10 (S & M)	10 (P)	10 (C & S)
Farm dung	..	..	..	..	..	15 tons	20 tons	..	..
Peruvian guano	..	..	..	..	2 cwt.	2 cwt.	2 cwt.	1 cwt*	..
Bonemeal	..	..	..	..	..	8 bushels	8 bushels†	..	..
ACRES	50	100	20	10 (Ba)	20 (O)	5 (T)	5 (S)	30 (P)	10
Farm dung	..	..	..	..	..	15 tons	14 bushels*	10 tons†	..
ACRES	140	300	50	50 (Ba & O)	35 (Be)	25 (R & T)	35 (S)	15 (M)	90 (C & S)
Farm dung	(10 to 15 tons)†	..	..	..	15 tons*	..	10 to 15 ts.	15 tons	..
Peruvian guano	(2 or 3 cwt.)	..	..	..	..	1 cwt.	(2½ cwt.)	2½ cwt.	..
Superphosphate	..	..	..	..	..	2½ cwt.‖	(5½ cwt.)	2½ cwt.	..
ACRES	50	200	50	50 (Ba)	..	45 (T)	..	5 (P)	50 (C)
ACRES	50	210	30	30 (Ba)	15 (O)	15 (Be)	22 (S & T)	8 (P)	90 (S)
Farm dung	Some	..	..	..	..	..	20 tons †	20 tons	15 tons *
Peruvian guano	1 cwt.	..	..	..	..	..	2 cwt.†	2 cwt.	1 cwt.
ACRES	100	400	60 (Ba)	100 (O)	20 (T)	10 (S)	10 (M)	40 (P)	160 (S)
Farm dung	..	..	..	..	10 tons	10 tons	12 tons	10 tons	(On 80 acr. 4 cwt.)
Superphosphate	..	..	3 cwt.	3 cwt.	2 cwt.	2 cwt.	2 cwt.	2 cwt.	..
ACRES	180	144	54	18 (O & Ba)	18 (O)	10 (S)	24 (M)	2 (Cab)	18 (C)
Farm dung	(70 tons per acre)*	..	..	..	12 tons	20 tons	20 tons	20 tons	10 tons (less)
Guano	1½ cwt.†	..	..	..	..	..	2½ cwt.	..	..
[illegible]ddy	..	..	..	..	10 cwt.	15 cwt.	30 cwt.	..	..
Salt	..	..	3 cwt.	2 cwt.	..	..	4 cwt.	..	..
ACRES	24	900	200	160 (Ba & O)*	38 (R & T)	20 (M)	160 (S & T)	9 (P)	342 (S)
Farm dung	..	..	6 tons	..	..	8 tons	6 tons	..	..
Peruvian guano	..	..	¾ cwt.	¾ cwt.	1 cwt.	1 cwt.	1 cwt.	..	¾ cwt.
Superphosphate	..	..	..	..	1 cwt.	1 cwt.	1 cwt.	..	..
Nitrate of soda	..	..	½ cwt.	½ cwt.	½ cwt.	..	..	..	½ cwt.
Bonedust	..	..	..	..	..	8 bushels	10 bushels	..	..
Rape cake	..	..	5 cwt.	..	..	1¼ cwt.	1 cwt.	6 cwt.	..
Salt	..	..	2 cwt.	2 cwt.	1 cwt.	2 cwt.	1 cwt.	..	2 cwt.
ACRES	100	170	15	70 (Ba & O)	50 (T)	20 (S)	6 (M)	2 (P)	45 (S)
Farm dung	8 tons (½)	..	..	..	..	12 tons	15 tons	10 tons	..
Superphosphate	..	..	..	..	5 cwt.	2 cwt.	2 cwt.	..	..
Salt	..	..	..	..	3 cwt.	4 cwt.	6 cwt.	3 cwt.*	..
ACRES	40	240	80	40 (Ba)	40 (Be)	10 (T)	10 (M)	20 (S)	40 (C)
Farm dung	..	..	..	..	12 tons	10 tons	12 tons	12 tons	..
Superphosphate	..	..	..	..	..	2 cwt.	2 cwt.*	2 cwt.	..
ACRES*	162	228	57	57 (O & B)	..	..	57 (T, S, M)	..	57 (C)
ACRES	97	114	30	20 (Ba)	20 (T & S)	10 (S)	2 (M)	2 (P)	30 (C)
Farm dung	..	..	18 tons	..	15 tons	15 tons	15 tons	20 tons	..
Superphosphate	..	..	..	..	3 cwt.	3 cwt.†	7 cwt.*	..	..
ACRES	90	140	70	4 (O)	11 (T)	20 (S)	4 (M)	..	35 (C)
Farm dung	..*	..	..	12 tons	12 tons	15 tons	20 tons	..	..
Superphosphate	..	..	..	..	2 cwt.	2 cwt.	2 cwt.†	..	..
ACRES	114	104	26	26 (Ba)	8 (T)	14 (S)	8 (M)	1 (P)	20 (C)
Farm dung	..	..	12 tons	..	..	16 tons	20 tons	20 tons	..
Superphosphate	..	..	..	..	5 cwt.	8 cwt.	4 cwt.*	..	..

320 bushels of bonedust, 30 cwt. of common salt. The bones are saturated with liquid manure, and 5 cwt. of sulphuric acid added, left for 14 days, and then mixed altogether, another 5 cwt. of acid being sprinkled over the heap. Salt is sown over the Oat crop early in spring on lea, 10 days before ploughing, to destroy slugs, &c. *J. Nisbet, Rumbleton, Greenlaw.*

11. NORTHUMBERLAND.—* *Lime*, 6 to 7 tons an acre on Turnip land once in 15 or 20 years. *Dung* enriched by consumption of cake, &c. to a moderate extent. * The Wheat and Barley after Turnip half eaten on land. † The Oats after Grass receiving 1½ cwt. of guano when required; 30 acres of Clover cut for horses and hay. The manure for Turnip land partly in autumn, partly in drill in spring. *J. Laing, Cornhill, Coldstream.*

12. NORTHUMBERLAND.—*Lime*, 6 to 8 tons per acre on lea for Oats, or on fallow at various intervals. *Dung* enriched with 20 or 30 tons consumed of cake and Beans. * Bone meal added to the extent of 4 cwt., with 2 or 3 cwt. of superphosphate for Swedes and Turnips; a few acres of Mangel grown and manured as for Swedes, &c. *T. P. Dod, Anick Grange, Hexham.*

13. CUMBERLAND.—*Lime*, 180 bushels per acre on Oat stubble every 10 years. *Dung* enriched by 200*l.* worth of cake and cattle food. * Potatoes out of lea receive 5 cwt. of common salt. † 5 acres of Mangels receive 2 cwt. more of Peruvian guano and 6 cwt. of common salt. The bonedust is applied to Swedes and Turnips. Compost of earth and lime applied to Grass land. *W. E. James, Lottrian Gill, Carlisle.*

14. DURHAM.—*Lime*, 1 chalder to Potatoes. * 14 bushels of bonedust per acre to Swedes. † 5 cwt. of common salt to Potatoes. *G. Bell, Hallgarth Street, Durham.*

15. YORKSHIRE.—*Lime*, 405 tons on fallow. *Dung* enriched by from 10 to 20 tons of cake, and some Oats, Barley, and corn. * Dung applied to Beans in autumn if possible. Oats after Wheat receive a dressing of 2 cwt. of guano and 1 cwt. nitrate of soda. † These dressings for pasture land are occasional —and one or other of those named are applied. ‖ Instead of 2 cwt. of superphosphate, 4 or 5 cwt. are sometimes applied for Turnips. *J. Dent Dent, Ribston Hall, Wetherby.*

16. YORKSHIRE.—*Lime*, very little, on seed land for Wheat. *Dung* enriched by about 15 tons of Linseed cake consumed. The manure of the farm includes 300 tons of dung, 5 tons of Peruvian guano and 5 of superphosphate, 400 bushels of bonedust, 5 tons of Rape cake, 3 tons of salt. *T. Taylor, Darrington, Pomfret.*

17. LANCASHIRE.—*Lime*, 4 to 5 tons per acre applied to green crops once in seven or eight years. *Dung* enriched by 200*l.* of cattle food consumed. * Dung applied to mown seeds, also to some of the permanent Grass after mowing, along with some boiled bones. † 20 tons of dung applied to 4 acres of Mangels, the Swedes and Turnips getting only guano and superphosphate. *F. Twining, Parbold Hall, Wigan.*

18. LANCASHIRE.—No lime. *Dung* enriched by consuming 10 tons Rapecake, 6000 bushels grains, 100 sacks of Pea flour, and all the Oats grown on the farm. *R. Bell, Mosbro' Hall, St. Helens.*

19. NOTTINGHAMSHIRE.—*Lime*, 1 ton per acre over Wheat on Clover lea to kill slugs, every eight years. *Dung* enriched by 30 tons of cake and 200 quarters of corn. * 70 tons of dung applied over the pasture annually, with tank water. † 1½ cwt. of nitrate of soda applied per acre to mown ground. *C. Paget, Ruddington Grange. Nottingham.*

20. NOTTINGHAM.—*Lime*, 1 ton per acre to Turnips, Swedes, and Mangel Wurzel every nine or 10 years. *Dung* enriched by 700*l.* or 800*l.* of cake and corn, exclusive of home corn. The figures of dung relate to only 30 acres of Wheat and 20 acres of Turnips, all Swedes and Mangel Wurzel; of guano to 6 acres of Wheat, 10 of Barley and Oats, 25 acres of Clover, all of the rest; about nitrate of soda to 6 acres of Wheat and 10 acres of Barley and Oats; about Rapecake to 16 acres of Wheat, all of the rest; about salt to 60 acres of Wheat, 10 acres of Barley and Oats, 25 acres of Clover. *H. J. Wilson, Mansfield.*

21. DERBYSHIRE.—*Lime*, 1 ton per acre on seeds once in eight years. *Dung* enriched by consumption of 6 to 8 tons of cake, 6 to 8 quarters of Linseed, 100 quarters of Barley and Oats. Peruvian guano used occasionally on Wheat and Turnips; salt used occasionally on Wheat; 4 cwt. of lime dug in over Potatoes as they are coming through.

22. WARWICK.—*Lime*, 12 quarters per acre on fallow once in 12 years. *Dung* enriched by 80*l.* worth of extra cattle food. * 2 cwt. of guano and 11 cwt. of common salt per acre to Mangels. *W. Gibbs, Alveston Hill, Stratford.*

23. *Lime*, 12 bushels per acre to Barley after Turnips once in 10 to 15 years. * The dung applied to the Turnip and Mangel greater, along with 2 to 14 cwt. of Lawes's superphosphate per acre. *E. Bowen, Crofton, Bromfield.*

24. HEREFORDSHIRE.—*Lime*, 2½ tons per acre on Turnips and fallow every four years. *Dung* enriched by cake consumed. * 7 cwt of common salt to the Mangel Wurzel; † 20 bushels of bonedust to the Swedes. *W. Price, Benhall, Ross.*

25. HEREFORDSHIRE.—*Lime*, 1 ton, with 20 tons of soil, on Clover once in four years. *Dung* enriched by 250*l.* worth of cattle food yearly. * 20 acres of pasture manured with compost of 10 tons of salt, 30 tons of lime, 100 tons of farm dung, and 200 tons of road scrapings, &c.; ½ cwt. of nitrate of soda applied to any corn crop injured by wireworm. *T. Duckham, Baysham Court, Ross.*

26. MONMOUTHSHIRE.—*Dung* enriched by a few tons of Linseed cake. * 5 cwt. of common salt used per acre on Mangel Wurzel. ——, *Raglan.*

27. NORTHAMPTON.—* 4 to 6 cwt. of common salt used on Barley and Wheat. † 4 cwt. of common salt and 4 cwt. of blood manure for Mangel Wurzel. ——.

28. LINCOLNSHIRE.—*Dung* enriched by 50 acres of Oats, 13 of Barley, 35 of Peas and Beans; and 500*l.* or 600*l.* of cattle food being consumed. * 4 cwt. of Rapecake on 20 or 30 acres of Wheat. † The 184 acres of Barley and Oats included only 15 acres of Barley, which receive about 7 tons of farm dung per acre. Superphosphate sown with water drill. *A. S. Ruston, Chatteris.*

29. NORFOLK.—No *lime*. *Dung* enriched by large consumption of Linseed cake and corn meal. * 2½ cwt. of guano on the 100 acres of Barley and Oats after Wheat. My farm is now with the consent of my excellent landlord put into five shifts or courses, viz., 160 acres Wheat, 160 acres Barley, Oats after Wheat, 160 acres Barley, Wheat after roots, 160 acres roots, 160 acres Clover. This year I have sown the whole of my land with Wheat after roots, as the foreigners are sending us so much Barley as compared with what used to be imported. *J. Hudson, Castle Acre.*

30. NORFOLK.—Besides the crop stated there are 20 acres of White Beans receiving 12 loads of dung per acre, and 30 acres of Peas unmanured, and 10 tons of Potatoes dunged. *Lime*, 3 tons per acre of refuse gas lime on Wheat stubble once in 8 years. *Dung* enriched by cattle receiving 4 to 7 lbs. of Linseed cake, and ¼ to ½ peck of meal daily. * 1 cwt. of nitrate of soda for Oats, and 2 cwt. of Rape cake, and 2 cwt. of salt when grown after Wheat. Wheat receives ½ cwt. of nitrate of soda, and 1 cwt. of salt when grown after Turnips. Mangels receive 2 cwt. of Rape cake and 5 cwt. of fishery salt in addition to dung and guano. *Charles Sewell Read, Plumstead House, Norwich.*

31. SUFFOLK.—*Dung* enriched by 100 to 120 tons of oilcake consumed. * Besides 100 acres of Peas there are 30 acres of Tares. † 2 cwt. of guano on Barley "if required." Occasionally ¾ cwt. of nitrate of soda on Wheat, and 6 or 7 cwt. of Rape cake in lieu of dung. *J. C. Goodwyn, Covehithe, Wangford.*

32. HERTS.—25 acres of Beans not included in these figures; they are dunged with 15 tons of dung in the autumn. * Of the Oats, only 11 acres receive dung, the remainder receive

1 cwt. of Peruvian guano, and 1 cwt. of nitrate of soda is applied; 1 cwt. of guano is also given to the Wurzels. 30 to 40 bushels of soot applied on 15 acres of Wheat. Dung enriched by 15 tons of Linseed cake and 10 tons of Cotton and Rape cake (steamed food). *J. Pollard, Highdown, Hitchin.*

33. BEDFORDSHIRE — Proctor and Ryland's Barley manure, 3 cwt. per acre, used on 20 to 25 acres; 3 to 4 cwt. of their Turnip manure used on some of the roots. *Dung* enriched by more than 1000*l.* worth of cake and corn. *C. Howard, Biddenham.*

34. OXFORD.—Besides the cropping stated there are 10 acres of Rape receiving 2 cwt. of superphosphate and 1 cwt. of salt per acre; and 20 acres of Oats receiving 2 cwt. of ulmate per acre. *Dung* enriched by cake consumed. * Nitrate of soda, 1 cwt. per acre on Wheat. *F. J. Dashwood, Northbroke Farm.*

35. BERKS.—*Dung* enriched by pigs being fed on 200 quarters of meal and Beans. Pig manure and ashes, and a few tons of superphosphate are drilled before Turnips. *J. B. Spearing, Moulsford, Wallingford.*

36. BERKS.—*Dung* enriched 30 per cent. by cake and corn consumed. * 4 cwt. of salt used per acre, 1 cwt. of nitrate of soda used with good effect on Wheat. *A. Horsburgh, for R. Benyon, M.P., Englefield, Reading.*

37. GLOUCESTERSHIRE.—*Dung* enriched by 10 tons of oilcake

LIGHT SOIL FARMS: CROPPING IN ACRES: MANURING PER ACRE.—*Continued.*

No., &c.	ACRES. Permanent Pasture.	ACRES. Arable.	Wheat.	Barley (Ba) Oats (O)	Beans (Be) Peas (P)	Rape (R) Vetches (V)	Turnip (T) Swedes (S)	Mangels (M) Potatoes (P)	Clover (C) Mixed Seeds (S)
27. ACRES	..	..	70	80 (Ba)	10 (T)	30 (S)	10 (M)	..	50 (C)
Farm dung	..	..	..	..	16 tons	16 tons	20 tons	..	..
Superphosphate	..	..	..	3 cwt	2 cwt	3 cwt	..	..	..
Nitrate of soda	..	..	1 cwt*	¾ cwt	..	..	†	..	..
28. ACRES	125	975	378*	184 (Ba) & O)	85 (Be & P)	120 (R)	6 (Car)	58 (M W)	106 (C)
Farm dung	..	..	7 tons	..	7 tons	..	7 tons	7 tons	..
Superphosphate	..	..	..	2 cwt	..	2 or 3 cwt	2 cwt	2 cwt	..
29. ACRES	200	800	160	260 (Ba)	60 (O)	20 (T)	106 (S)	40 (M)	160 (C)
Farm dung	..	..	10 tons	..	..	10 tons	10 tons	10 tons	..
Peruvian guano	..	..	1½ cwt	2½ cwt*	2½ cwt	..	..	..	..
Superphosphate	..	..	..	..	..	3 cwt	3 cwt	2½ cwt	..
Common salt	..	..	2 cwt	2 cwt	2 cwt	..	..	3 cwt	..
30. ACRES	50	600	200	100 (Ba)	50 (O)	60 (S)	30 (T)	50 (M)	50 (C)
Farm dung	..	..	8 tons	..	..	8 tons	..	12 tons	8 tons
Peruvian guano	..	..	..	1 cwt	..	..	..	1 cwt	..
Superphosphate	..	..	..	1 cwt	*	2 cwt	4 cwt	..	..
31. ACRES	340	1560	390	390 (Ba)	100 Peas*	110 (T)	160 (S)	120 (M)	260
Farm dung	..	..	10 tons	..	..	..	..	10 tons	..
Peruvian guano	..	..	..	2 cwt†	..	..	2 or 3 cwt	3 cwt	..
Rapecake	..	..	(6 or 7 cwt)	..	..	..	7 cwt	7 cwt	..
32. ACRES	34	440	65	104 (Ba)	56 (O)	20 (R)	70 (S & T)	10 (M)	56 (C)
Farm dung	..	..	..	..	15 tons*	..	10 tons	15 tons	..
Superphosphate	..	..	..	..	..	2 cwt.	2 cwt.	2 cwt.	..
33. ACRES	120	320	90	70 (Ba)	15 (B & Pe)	10 (T)	44 (S)	20 (M)	60 (C)
Farm dung	..	..	..	..	12 tons	12to14tons	12to14tons	12to14tons	7 to 8 tons
34. ACRES	100	500	100	100 (Ba)	80 (B & Pe)	10 (T)	60 (S)	30 (M)	90 (C & S)
Farm dung	..	..	12 tons	..	..	10 tons	16 tons	20 tons	top dress
Peruvian guano ..	..	..	*	..	..	1 cwt.	1½ cwt.	2 cwt.	..
Common salt	..	..	2 cwt.	..	..	1 cwt.	2 cwt.	2½ cwt.	..
35. ACRES	219	560	130	100 (Ba)	30 (O)	40 (R)	120 (T S N)	..	120 (C)*
Farm dung	..	..	12to15tons	..	..	..	..	..	..
36. ACRES	140	360	120 (W B and O)	30 (Ba)	25 (T)	15 (S)	20 (M)	5 (P)	60 (C)
Farm dung	..	..	..	..	10 tons	15 tons	15 tons	15 tons	30 tons
Peruvian guano	..	..	..	..	1 cwt.	1 cwt.	1 cwt.	..	..
Superphosphate	..	..	..	..	2½ cwt.*	2½ cwt.*	2½ cwt.*	..	..
37. ACRES	64	200	96 (W & Ba)	4 (Car)	4 (Cab)	25 (S & T)	12 (M)	3 (P)	48 (C)
Farm dung	..	..	..	..	10 tons	10 tons	10 tons	..	8 tons
Superphosphate	..	..	..	3 cwt.	3 cwt.	3 cwt.	3 cwt.	..	..
38. ACRES	66	626	135	85 (Ba)	15 (O)	50 (T)	50 (S)	10 (M)	220 (C & S)
Farm dung	..	..	..	..	..	..	20 tons	20 tons*	..
Superphosphate	..	..	..	..	..	2†	12†	..	..
39. ACRES	256	425	56	120 (Ba & O)	5 (Pe)	30 (T)	30 (S)	4 (M)	180 (C & S)
Farm dung	..	..	..	..	..	10 tons	10 tons	12 tons	8 tons *
Superphosphate ..	..	..	..	..	..	2 cwt.	2 cwt.	3½ cwt.	..
40. ACRES	170	90	12	4 (Ba)	25 (O)	15 (T)	12 (S)	2 (M)	28 (C)
41. ACRES	80	110	35	20 (Ba)	12 (T)	15 (S)	8 (M)	..	25 (C)
Farm dung	..	..	..	..	..	..	18 tons	..	28 tons
Peruvian guano	..	..	..	..	1 cwt.	1 cwt.	1 cwt.	..	..
Superphosphate ..	..	..	..	..	3 cwt.	4 cwt.	4 cwt.*	..	..
42. ACRES	5	600	150	90 (Ba)	70 (O)	30 (S)	48 (M)	90 (P)	120 (C)
Farm dung	..	..	..	..	..	14 tons	14 tons	18 tons	10 tons*
Peruvian guano	..	..	2 cwt.	2 cwt.	2 cwt.	..	..	1½ cwt.	..
Superphosphate ..	..	..	..	1½ cwt.	1½ cwt.	3 cwt.	3 cwt.	1½ cwt.	..
Common salt	..	..	2 cwt.	1½ cwt.	1½ cwt.	..	..	2 cwt.	..
43. ACRES	18	225	50	70 (Ba & O)	12 (Pe)	30 (R & T)	24 (S & M)	4 (P)	15 (C)
Farm dung	..	..	12 tons	..	..	12 tons *	.. †	12 tons	..
44. ACRES	30	330	80	60 (Ba)	60 (O)	33 (S)	33 (M)	..	66 (C)
Farm dung	12 tons	..	..	..	..	17 tons	17 tons	..	17 tons
Superphosphate	..	..	..	..	..	3½ †	3½*	..	..
45. ACRES	50	700	250	100 (O & Ba)	30 (Pe)	95 (S T R)	40 (M)	40 (Pot)	200 (C & S)
Farm dung	..	..	32 tons	..	20 tons	32 tons	40 tons	40 tons	20 tons
46. ACRES	..	1400	200	300 (O & Ba)	10 (Pe)	30 (R)	150 (T)	105 (S & M)	300 (C & S*
Farm dung	..	..	12 tons	..	..	12 tons	..	..	..
Bonedust	..	..	..	..	..	8 bushels	8 bushels	8 bushels	..
47. ACRES	90	400	60	60 (Ba & O)	5 (R)	60 (T)	15 (S & M)	7 (P)	160 (C, &c.)
Farm dung	..	..	..	..	..	..	..	..	10 tons
Peruvian guano	..	..	1½ cwt.	1½ cwt.	1½ cwt.*	2 cwt.*	3 cwt.*	4 cwt.*	..
48. ACRES	60	240	40 (W & O)	30 (Ba)	12 (T)	10 (S)	8 (M)	3 (P)	?
Peruvian guano	..	..	1 cwt.	..	½ cwt.	1 cwt.	1 cwt.	..	..
Superphosphate	..	..	..	..	3 cwt.*	3 cwt.*	4 cwt.†	..	..
Nitrate of soda	..	..	..	½ cwt.	14 lbs.	14 lbs.	..	..	..
49. ACRES	45	185	25	35 (Ba)	20‡ (T)	10 (S)	5 (M)	..	20 (C)
50. ACRES	30	120	20	40 (Ba & O)	5 (R)	35 (S & T)	2 (M)	1 (P)	20 (C)
Farm dung	..	..	..	..	..	17 tons	25 tons	..	..
Peruvian guano	..	..	..	..	(3 qrs.)†	2 cwt.*	2 cwt.*	6 cwt.	..

and 50 quarters of meal consumed by cattle, and sheep fed with cake, &c. Wheat, 48 acres, receive 30 bushels of soot and 2 cwt. of salt. *C. Lawrence, Cirencester.*

38. GLOUCESTERSHIRE.—*Dung* enriched by 400*l.* or 500*l.* worth of cake and Corn per annum. * 2 cwt. of guano and 5 of soot, and 4 cwt of Mangel Wurzel in addition. † 14 bushels, and 8 bushels of bonedust respectively, in addition to Turnips and Swedes. 30 bushels of soot applied to weak parts of Wheat. *E. Drew, Calcot.*

39. GLOUCESTERSHIRE.—*Dung* enriched by considerable consumption of cake. * Dung on only part of Clover. Bonedust partly on Turnips and Swedes. Field ashes to Turnips and Swedes. *S. Rich, Didmarton.*

40. SOMERSET.—*Lime*, 70 bushels per acre to Wheat, and 50 bushels to Turnips, every 2 or 3 or 4 years. Superphosphate on Swedes and Mangels. ——, *Dulverton.*

41. SOMERSET.—*Lime*, 20 hhds. mixed with soil per acre on Grass every five or six years. *Dung* enriched with large consumption of cake and corn. * 4 cwt. of salt per acre in addition. *E. Corner, Holford, Bowater.*

42. SURREY.—*Dung* enriched by large consumption of prepared cattle food. Large quantities of manure bought. * 10 tons of dung on 90 acres of Clover. ——, *Croydon.*

43. KENT.—*Dung* enriched by fattening 80 to 100 hogs. * The dung applied to Rape. Turnips on half the ground receive 4 cwt. of superphosphate without dung. * Swedes and Mangels receive 12 cwt. of guano and 2 cwt. of superphosphate per acre. ——, *Dover.*

44. KENT.—*Chalk* applied at the rate of 33 loads per acre on pasture occasionally. *Dung*, enriched by cattle being fed on cake. * 5 or 6 cwt. of salt per acre in addition. † Turnips and Swedes receive also 8 to 12 bushels of bonedust, 10 to 15 bushels of soot are sown on wheats. *A. Lillico for Col. Leonard, Coney Hall Farm, Bromley.*

45. SUSSEX.—*Dung*, immense quantities purchased. Also enriched by purchase of about 50 tons of cake. ——, *Brighton.*

46. HANTS.—* besides 250 acres of Sainfoin. *Dung* enriched by purchased cattle food. Turnips and Swedes receive also 1 cwt. of guano per acre, and the latter get 20 bushels of ashes and 10 bushels of pig manure, &c. *W. Pothecary, Tytherley Manor, Stockbridge.*

47. DEVON.—*Besides 1½ cwt. of superphosphate, seaweed, about 20 tons per acre on 60 acres of Barley. ——, *Plymouth.*

48. DEVON.—*Lime*, 4 tons per acre to Barley when laying down for seeds, once in 5 or 6 years, * besides 1 cwt. of bonedust per acre and 1 cwt. of common salt, † besides 2 cwt. [illegible] common salt. Soot is applied to Wheat and Potatoes, ashes to Swedes and Mangel Wurzel; 60*l.* or 80*l.* of cattle food bought yearly. *Dung* applied to pasture, Potatoes, and Clover. *C. H., Dartmouth.*

49. DEVON.—*Lime* 120 bushels per acre to corn crop every 7 or 8 years. *Dung* enriched slightly by oilcake applied to green crop, with 1 or 2 cwt. of superphosphate. Lime used to raise the Wheat crop; 2 cwt. of Peruvian guano when lime is not applied. *S. Cornish, Kingsbridge.*

50. CORNWALL.—*Lime*, 90 bushels per acre for Wheat and old pasture once in 7 years. *Dung* enriched by consumption of Barley and Oats. * 2 cwt. of superphosphate in addition to Swedes, and 4 cwt. to Wurzel. † 3 quarters of bonedust for Rape, one-third of the pasture land manured each year. *J. Wills, Launceston.*

NOTES OF CROPPING AND MANURING OF STIFF SOILS.

51. PERTHSHIRE.—No lime. *Dung* enriched by consumption of cake, also of diseased Potatoes (this year 70 tons). When Wheat and Turnips receive farm-yard dung generally one-half the quantities of artificial stated are applied. Purchased manures cost us 22*s.* 6*d.* to 25*s.* an acre all over the farm. ——, *Strathearn.*

53. STIRLINGSHIRE.—*Lime*, 7 or 8 tons per acre on fallow break, Turnips, &c., once in from 6 to 12 years. *Dung* enriched by a few tons of oilcake and grain. * Also 2 cwt. of superphosphate. † Also 1 cwt. of nitrate of soda. Street manure applied when dung is deficient. Blaydon's corn manure sometimes applied to Oats, and their Turnip manure sometimes substituted for guano, &c. *Alex. Buchanan, Whitehouse Farm, Stirling.*

54. LANCASHIRE.—*Lime*, 10 cwt. per acre mixed with salt in autumn applied to all crops. * 20 tons of farm dung per acre applied to root crops in autumn; manure for all crops. *Robert Neilson, Halewood, Liverpool.*

55. LINCOLNSHIRE.—*Lime*, sometimes on Wheat, 6 chaldrons per acre every 8th year. *Dung* enriched with cake. * And 5 cwt. of common salt per acre. *R. Dudding, Wragby, Lincolnshire.*

56. CHESHIRE.—*Bonedust* on all Pasture at the rate of 3 tons per acre, and 20 acres annually liquid manure. *Lime* does not act well with bones. *Dung* enriched with 5 tons of oilcake and meal, and 400 or 500 bushels of Oats, 4 or 5 cwt. of bone sawings per acre for Oats, and Knight's Potato manure 3 or 4 cwt. per acre for Potatoes, Griffin & Morris's Bean manure occasionally; 10 cwt. of bonedust on Clover when no dung is applied there; it is generally applied to Grass mowing. ——, *Middlewich.*

57. WARWICKSHIRE.—*Lime*, 12 quarters per acre on fallow every 12 or 18 years. *Dung* enriched by four tons of cake consumed. Bonedust, 10 cwt. per acre to old turf has done good. *J. W. Burberry, The Chase, Kenilworth.*

58. WARWICKSHIRE.—*Lime*, 10 quarters per acre on fallow every eight years; five quarters per acre on Grass land every five years. *Dung* enriched by purchased cattle food. † 7 cwt. of bonedust applied to pasture land; * 6 acres of Carrots also grown, with 2 cwt of guano, 4 of superphosphate, and 4 of common salt. *T. Bowick, Bailiff to Lord Leigh, Stoneleigh Abbey, Warwick.*

59. WARWICKSHIRE.—*Lime*, 3 tons per acre, say 12 to 16 qrs. on Wheat after Beans. *Dung* enriched by consumption of 6 tons cake, 10 quarters of Beans, 10 tons of bran, 100 quarters of home produce.—* And 16 bushels of bone dust occasionally. † And 3 cwt. of superphosphate to Turnips, 4 cwt. to Swedes.

60. BUCKS.—No lime. *Dung* enriched by a few tons of purchased food for cattle, and meal. * 30 acres, viz., 30 acres of Trefoil and Tares (15 acres each) consumed on land by sheep, and then put to Rape, manured with 10 tons of dung in autumn and again 10 tons in spring. † Occasionally perhaps 10 acres yearly, ‖ and 2 cwt. salt.

61. BERKSHIRE.—*Lime*, 100 bushels per acre on newly broken up land. *Dung* enriched by large consumption of cake both in yards and fields. * 1½ cwt. of nitrate of soda to Oats, and 1 cwt. to permanent Grass, in addition to the manure stated. [A further most interesting report will be published hereafter.] *W. J. Moscrop, on the Farm of R. Campbell, Esq., Buscot Park, Lechlade.*

62. WILTSHIRE.—Clay on the chalk. *Dung* enriched by the consumption of a few tons of cake. * 1½ cwt. of Peruvian guano also applied. † 30 acres of Swedes manured as here described, and 35 acres of Turnips receive no dung, and only 1½ cwt. of superphosphate. *T. H. Redman, Overtown, Swindon.*

62. SUFFOLK.—*Dung* enriched by large use of oilcake. * Lawes' manure applied to Mangels, and 2½ cwt. of salt applied to Wheat. The 20 acres of Turnips are after Vetches and Trefoil, fed off early with sheep. ——, *Framlingham.*

64. ESSEX.—*Lime*, 40 bushels an acre, applied once a year to pasture. *Dung* enriched by large quantities of Rape and cotton cake, Bean meal, &c. * 12 acres of Italian Rye-grass irrigated. 3 cwt. of Prentice's manure to Barley and Oats. *J. J. Mechi, Tiptree.* (Fuller report hereafter.)

65. ESSEX.—*Lime*, 160 bushels per acre once in 6 to 9 years. *Dung* enriched by 580*l.* of grain and cake consumed per annum. * Of the 50 acres here named, 14 are Italian Rye-grass, receiving 18 tons of dung, 2 cwt. of guano, and 1 cwt. of sulphate of ammonia per acre. *Collinson Hall, Sen., Prince's Gate Dairy Farm, Romford.*

66. SURREY.—*Lime*, 20 bushels per acre on Clover every seven or eight years. *Dung* enriched by 300*l.* of cake, and 1[illegible] of purchased manure; * 2 cwt. of Lawes' Barley manure applied; † and 2 cwt. of guano.

67. KENT.—*Dung* enriched by 200*l.* of cake; * 32 acres Swedes dunged, and 2 cwt. of superphosphate, 6 cwt. of bonedust, 1 cwt. of salt; 8 acres Mangel Wurzel dunged, 1 cwt. of guano, 2 cwt. superphosphate, 6 cwt. bonedust. 1 cwt. salt; † [illegible] 40 acres of Sainfoin receiving a dressing of dung when ploughed up at the end of the year. *Basil Hodges Vincent, Margate.*

68. HANTS.—*Chalk* 30 tons per acre once in 30 years, to [illegible] crops. *Dung* enriched by consumption of cake.—* Also 2 cwt. of nitro-phosphate. *J. Charles, Home Farm, Hursley*

69. HEREFORDSHIRE.—*Lime* 50 bushels per acre every 4 or 5

...re to Wheat; *the 8 bushels of bonedust applied to 10 acres ...Peas. Beans receive nothing. †40 acres of Turnips receive 4 cwt. of superphosphate. 25 acres of Swedes receive 8 bushels of bonedust. ‖20 acres of Oats receive 4 cwt. of "Oat manure."

STIFF SOIL FARMS: CROPPING IN ACRES: MANURING PER ACRE.

No., &c.	ACRES. Pasture.	ACRES. Arable.	Wheat.	Barley (Ba) Oats (O)	Beans (Be) Peas (P)	Rape (R) Vetches (V)	Swedes (S) Bare Fallow (F)	Mangels (M) Potatoes (Po)	Clover (C) Seeds (S)
ACRES	..	300	90	25 (Ba)	50 (O)	36 (Po)	27 (F)	36 (S & T)	36 (C)
Farm dung .. tons	..	..	12 to 16	..	..	12 to 16	..	..	..
Guano .. .. cwt.	..	..	2*	2½	1½	1½	..	2½	1½†
Bonedust .. bushels	..	..	4*	6	2	2	..	4	..
Rapecake .. .. cwt.	..	..	2*	..	1	1½	..	1½	..
ACRES	19	116	19	19 (Ba)	19 (O)	19 (Be)	15 (T)	4 (S)	19
Farm dung .. tons	..	..	..	..	..	25	30 tons	30 tons	..
Peruvian guano cwt.	..	..	..	..	..	..	1*	1*	1†
ACRES	20	280	110	..	55 (O)	..	55 (S & M)	..	55 (C & S)
Peruvian guano .. cwt.	..	..	1	..	1	..	1*	..	½
Superphosphate ..	..	..	3	..	3	..	3	..	2½
Common salt	..	..	2	..	2	..	3	..	2
ACRES	300	300	100	15 (Ba)	60 (O)	2 (Po)	30 (R & T)	8 (Ma)	30 (C)
Farm dung .. tons	6	..	..	..	..	10	6	8	..
Superphosphate ..	..	..	..	..	..	..	3	4*	..
ACRES	135	74	20	20 (O)	50 (Be)	4 (Po)	6 (S)	4 (Ma)	15 (C)
ACRES	100	200	42	30 (Ba)	14 (O)	6 (Be)	6 (Pe)	30 (S & T)	30 (C)
Farm dung	..	..	..	..	..	10	..	..	10
Proctor & Ryland's manure .. cwt.	..	..	4	..	..	..	..	..	..
ACRES	700	100	20	25 (Ba)	10 (O)	10 (Be)	8 (S)	4 (Po)	16 (Ma)*
Farm dung .. tons	12	..	..	..	..	12	12	12	16
Peruvian guano .. cwt.	1	..	1	..	1	..	2	2	3
Superphosphate	2	..	3	..	2	..	5	4	4
Common salt	2	..	2	3	3	..	4	4	4
ACRES	100	100	40	10 (Ba)	5 (O)	10 (Ba)	13 (S & T)	7 (Ma)	14 (C)
Farm dung	10*	..	..	..	..	20	15 to 20	25	15
Peruvian guano	..	..	2	..	2	..	..†	3	..
Common salt	..	..	2	..	2	..	2 or 3	4	..
ACRES	100	340	130	40 (Ba & O)	40 (Be)	30 (R)*	30 (S & T)	10 (Ma)	60 (C)
Farm dung .. tons	..	..	..	..	15	20*	10	15	10
Peruvian guano .. cwt.	:	..	1½†	..	..	2	2	2‖	..
ACRES	1400*	600	200	150 (O)*	50 (T)	..	100 (S)	50 (M)	150
Farm dung .. tons	..	..	..	..	..	..	10	10	..
Peruvian guano .. cwt.	1½	..	2	..	1	..	2	3	2
Superphosphate .. cwt.	8	..	..	..	4	..	4	4	..
Bonedust .. .. bush	15	..	..	..	15	..	15	15	..
Common salt	1	..	2	2	1	..	1	5	..
ACRES	170	410	160	40 (O)	30 (Be & P)	50 (R & V)	65 (T & S)	5 (Ma)	45 (C)
Farm dung .. tons	..	..	12	..	..	..	10†	15*	..
Superphosphate cwt.	..	..	..	..	..	..	2½	3	..
ACRES	60	240	90*	30 (Ba & O)	30 (Be)	20 (V & T)	20 (S)	20 (Ma)	30 (C)
Farm dung .. tons	..	..	..	..	20	..	20	20*	..
ACRES	6	170	50	24 (Ba&O)	18 (Be)	8 (Pe)	8 (V & S)	15 (M)	30 (C & S)
Farm dung .. tons	..	..	..	..	12	..	12	16	..
Peruvian guano	2	..	..	3	..	..	..	4	..
ACRES	106	280	80	15 (Ba)	50 (O)	10 (R)	10 (T)	35 (M)	50 (C)
Farm dung .. tons	..	..	..	10	..	..	14	20	14*
Peruvian guano cwt.	..	..	..	..	1	2	3	3	2
Sulphate of ammonia cwt	..	..	1	34	34	..	..	..	*
Salt	..	..	2	3	3	2	2	5	2
ACRES	170	170	60	20 (Ba)*	20 (O)	40 (Be & P)	6 (S)	12 (M)	14 (C)
Farm dung .. tons	..	..	..	..	..†	20	25	25	..
ACRES	7	280	70	50	16 (O)	15 (Be & P)	4 (Po)	40 (S & M)	40 (C)*
Farm dung .. tons	..	..	..	..	25	25	25	25*	25
ACRES	560	213	35	70 (Ba & O)	35 (Be)	20 (S)	2 (P)	16 (M & Ca)	35 (C)
Farm dung .. tons	..	..	..	..	20	20	..	20	..
Guano .. .. cwt.	..	..	..	..	..	..	2	..	1
Bonedust .. bushels	..	..	..	..	..	4	..	4	..
Salt .. .. cwt.	..	..	..	..	..	2*	2	3	..
ACRES	300	350	115	65 (Ba&O)‖	24 (B & P†)	14 (R & V)	65 (S & T)†	5 (Ma)	60 (C)
Farm dung .. tons	..	..	15	..	..	12	18	18	..
Bonedust	..	..	..	..	8	..	8	8	..
ACRES	112	..	220	90 (Be)	50 (Pe)	..	..	..	30 (C & S)

...y greatly enriched by consumption of oilcake. *P. Norman ...ards, Brinsop Court.*

... ESSEX.—*Lime*, occasionally Wheat, Pea, and Fallow land. *Dung* occasionally for Wheat and Beans. Apply dung to Clover. A trifling consumption of cake and meal. —— *Essex Farmer of 40 years.*

Home Correspondence.

Incentives to Feeding.—Incentives to induce animals ...feed always seem to me to imply sickness, or previous ...ness, or improper feeding. Animals, on the whole, ...gorgers, insomuch, that we say of a man that is a ...eater and drinker, he is "a complete animal." ...ve always thought that the man who will invent ..."compost" that will stop a little the feeding pro...ities of man and beast will make his fortune, and ...benefactor to his country, and especially to large ...ies. I used, when curate of Mapowder 27 years ...to farm, graze, and stall feed, and I never found ...a healthy animal properly fed ever wanted an ...ntive to feed. I know that all through Nature ...is an analogy. Vegetables, animals, human ...(different links in creation) have analogies, that ...may predicate something of one that you may ...predicate of the other. Hence, those who advocate ..."entives" argue, do not human beings use sauces? ...and soon want a doctor). Do not aldermen ...re ragouts and seasonings? (aye, and soon want a ...). This necessity for "incentives" only proves that ...have been improperly fed, and that having ...gorged by the aid of stimulus and dis...ed their stomachs, they want more ex...e and the stimulus of a horse-whip! This ...nds me of what Abernethy said to one fed by ...ulus, upon his asking him what would cure the gout: "Why," said he, "live on sixpence a day and earn it!" I have no doubt that animals fed highly should occasionally be let out to take a little exercise, and breathe fresh air; and I think that when off their feed, which generally proceeds from over-heating or improper feeding, a drench of Epsom salts is the best restorative of appetite. Remove the fever, and the appetite will return immediately. Incentives to feed I suppose mean tonics, and tonics imply previous disease, or weakening of the digestive organs, and for strengthening those organs tonic incentives may be very useful; but, as I am arguing for a principle that I never saw upset, I must deny that a healthy animal, properly fed with proper food, wants any incentives whatever to make it feed. I am not confounding incentives to feeding with things that contain fattening properties. I have in my parish a friend and tenant (also tenant of Mr. Sturt), Mr. John Ford, who I believe to be second to none in this kingdom for "judgment" in feeding fat cattle, and maintaining their appetite in the last and critical stage of fattening. I have frequently seen his fat cattle, with heavy flanks and tremendous backs and sides, stoop down and eat the straw given them for food, the day before being sent to the Baker Street Show. That feeding of straw shows the maintenance of appetite to the last, and is the test of a professor in the art of stall-feeding. He has won a first and second prize at Baker Street, besides a "Commendam;" in the former case running superior to one whom the nation deeply mourns. I was curate of Mapowder 27 years ago, and well know the excellent family of James, from whom I received the greatest kindness during my three years residence. The two sons, James and Charles, the successful exhibitors of Herefords, were then little children. I remember well the first Hereford sire, introduced by the late Mr. James (I think) from the celebrated herd of Mr. Turner, of Noake, Herefordshire. I attended my friend's funeral. Long may his exemplary family prosper, and accept this heartfelt tribute from one whose memory and affections are not impaired by time! *W. F. Radclyffe, Rushton, Blandford, Dorset.*

Chaff Cutters.—As we are all gradually believing that it is far more profitable to consume our straw rather than tread it under foot, let us inquire in what condition it is most available to the animal. Many years ago a money-making and very extensive Essex farmer recommended that I should cut it into very short chaff, say something less than ¼ inch, and to do this I purchased from Gardner, of Banbury, his chaff-cutter with fixed mouths to the chaff box. After some years and wearing out many of his knives and the machine itself, I found that its manufacture in its original form was given up, so I had a very strong one constructed with fixed mouths; and after trying several others with rising mouths and a hanging weight, I have come to the conclusion that to cut strong Wheat straw so fine as I have described, and to do it clean and well, the mouths of the boxes must be rigid, so that the straw is closely compressed and that the knives may work close to the front of the box. Our people find practically that horses, cattle, and most particularly sheep, prefer it short cut. It mixes more readily with meal, or with pulped roots. It is more readily acted upon by hot water or steam, the short cut splitting as well as cutting it. A little more power is required, and some care in feeding, but it pays to cut short. *J. J. Mechi, March* 17.

Air Drainage.—Surely Mr. Harrison must have overlooked that "after long continued dry weather" drains cannot commence "running full bow" until water by its greater weight has driven all the air out either at the drain's mouth, or by bubbles at the earth's surface; and if he will reflect a little he will find himself in error in his comparison of a cast iron pipe to a tile drain in the earth; the former is impervious from end to end, whereas the latter is porous from end to end. I have for many years been a practical observer of the matter, and certainly agree with you. *A. Z.*

Prizes given by Agricultural Societies.—Now that Agricultural Societies are being established throughout the country, I suggest, with a view to extend their usefulness, that the prizes given should not be confined to the exhibition of the best breed and fat stock, but that prizes should also be given for the best managed farms, more especially for the best management and care of young growing stock, for however much care may have been taken in obtaining the best breed of stock, very great losses are sustained throughout the country from the want of proper care and management, more especially during the autumn and early winter, for at that season the nights get longer and colder, and their food at the same time gets weaker. It is the exposure of the stock upon the wet cold ground at this season, without shelter and proper food, that is the chief cause of the rot in sheep and the lung disease in bullocks, which is sure ultimately to end in serious losses. The great importance of increasing the quantity of stock is generally acknowledged, more especially sheep, as the high price of mutton and wool is a great inducement to extend sheep farming throughout the country, and there is no reason why it should not be extended, and profitably, providing proper means are taken to protect the sheep from disease. But it must be borne in mind that the more sheep farming is extended, the more care and attention is required in their management. For we do not hear of rot in sheep that are bred and kept upon dry sound land, but it is when sheep are fed and kept upon cold wet undrained land, that thousands rot every wet season; therefore the remedy is obvious—that to extend sheep farming, and increase the breeding and rearing of stock with satisfaction and profit, land must be drained, shelter and proper food provided at the proper time, and let it be remembered that thoroughly draining the wet land has the effect of increasing the quantity and improving the quality of the pasture land, and thereby increasing also the quantity and improving the quality of beef, mutton, and dairy produce, and promoting at the same time a more healthy atmosphere for man and beast; and as all are liable to suffer loss by purchasing stock in a diseased state, let us all render what assistance we can to prevent its occurrence by offering prizes for the best management in the different departments of farming practice. Such reports by competent men, showing the cause of success or failure, must be valuable to both landlord and tenant. *Benjamin Ransby, Perrysfield Farm, Oxted, Surrey, March* 15.

Town Sewage.—We must rejoice that Parliament is at length about to take up this question. It is a corollary to and consequence of our new sanitary arrangements. I presume that this parliamentary committee will exhaust the subject by enquiry into the agricultural as well as sanitary view of the case. My ten years' experience practically convinces me that the application of sewage to the soil is as simple and as easy

as our common water supply to our houses. But then it must not be left to individual caprice or ignorance, but treated, like our railways, with engineering and well proved skill. In Italy, where irrigation is extensively practised, a competent governmental board of scientific engineers regulate the affair by fixed and well tested rules. Unfortunately in this country, neither our landlords nor tenants yet believe in the utility or practicability of applying manure mixed with water to the soil. At this moment I see my men applying to my pasture in the form of rain 100 gallons per minute of excrement and water, and I see passing through the drains this same water, minus the good things which the clay has the especial power to obstruct and fix for the use of plants. I know that without this liquid application my Grasses would be poor in quality and small in quantity, and I know too, that the opposite of all this results from this precious liquid application. What does it cost to put on this 100 gallons per minute anywhere on my farm? Working nine hours clear, at 100 gallons per minute, we put on 54,000 gallons, or about 250 tons, equal to a rainfall of 2½ inches on 1 acre; we generally prefer putting this quantity on 2 acres. Being now from long experience masters of the position, the cost is as follows:—

Engine Driver		2s.	6d.
2 Labourers		4	0
8 Cwt. of Dust Coal, 10s. per ton		4	0
Cartage, 2s. 6d. per ton		1	0
		11	6
Oil, wear and tear, Interest on Capital investment, &c., would be most amply covered by a charge of		8	6
	£1	0	0

so that the whole cost would be less than one penny per ton, and with the best pumping engines it would be less, probably only ¾d. per ton. As there are 226 dry days in the year, 90 days almost dry (say less than 1-10th of an inch rainfall), it is evident that irrigation from the London sewers might be extensively used. Beyond this on 21 days we have only 1-10th to 1-5th of an inch rainfall. The days of great rainfall are only 28. Before we can estimate the area to which our Metropolitan sewage should be employed, let us ask how many acres are annually exhausted of their crops to feed the people of London and to give them drink. Taking into account the weekly consumption by our paupers, prisoners, and lunatics (a low scale of consumption) and taking the gross available produce per acre of the United Kingdom, the population of London would require the produce of at least 6,000,000 of acres, and yet it is proposed to put all this produce, when excrementized, on to some 10,000 or 20,000 acres of land! A corn merchant assures me that the horses of London alone consume 30,000 quarters of Oats weekly, or 1,560,000 quarters annually. These at an average of 6 quarters per acre would clear 260,000 acres, and the hay they consume would clear probably another 150,000 acres. Of course some large portion of the food of London is of foreign import. Indeed the excremental residuum of the consumable articles we import from abroad should greatly enrich our soil. Last year we paid foreigners for those consumable imports about 75,000,000*l.* sterling! I may in a future paper say something about the detailed manipulation of the system; in the meantime I would refer to the copious paper (in my book) on the sewage of towns as it affects British agriculture. *J. J. Mechi, March* 19.

Cows on Poor Stiff Clays.—We must all admit that it is desirable to breed or rear a portion of our stock, and that the good people of this country must have milk, butter, and cheese, as well as bread and meat; but I would warn cow, ewe, and colt farmers on poor soils that unless they use much purchased food and manures their production of grain will be small and unremunerative. A very striking illustration of this took place on my pasture opposite my drawing-room last season. The field is a poor plastic yellow clay, and was laid down to Grass about 12 years ago, after draining and clay burning. Sewage irrigation makes it produce rich and abundant Grasses, which are fed up to the 12th of May, mowed for hay in June, irrigated with guano immediately afterwards, and the aftermath fed until October. Last year one-half of the pasture was depastured by milch cows, highly fed with cake, &c., on Mr. Horsfall's principle; the other half with 25 young calves, weaned and growing. The contrast of the two portions was remarkable in the autumn, and equally so this spring. The cow-fed side showed a drab-coloured, poverty-stricken appearance, as if they had the heart out of the soil; whilst on the calf-fed side all was green and thrifty looking. The field has been since irrigated all over it, and the calf-fed side shows us wealth against poverty. I have therefore sown 3 cwt. of Prentice's manure (containing much soluble phosphate, with nitrogen and other matters) on the poor looking side, and am also giving it an ample supply of farm sewage irrigation, but I doubt whether it will be able to rival the calf-fed side this season. This proves beyond a doubt that cows in milk abstract from the soil and impoverish it, much more than very young growing animals. The calves were Short-horns. Chemists have proved to us by analysis, how inferior is the manure, both liquid and solid, from milch cows and ewes as compared with fattening animals. The very best test of a fertile soil is its power to maintain in condition a dairy of cows. Such land would grow grain and roots superabundantly. Very lean cows indicate unmistakeably poor soil and poor feeding, with small profit. Poor Grass lands unfortunately abound in this kingdom—much to the injury of its population. In my next I shall refer to town sewage and its value on poor pasture. *J. J. Mechi, March* 18.

Societies.

ROYAL AGRICULTURAL.—A discussion upon "Condiments" took place at the meeting of the Royal Agricultural Society on Wednesday last, Col. Challoner in the Chair.

Mr. BEALE BROWNE, in introducing the subject, said:—

It was one which for some time he had desired to bring under the notice of the Society. He should however confine himself to a few remarks of a practical nature, his object being to raise a discussion upon a matter which he considered fraught with the utmost interest to agriculturists at large. Of course, when he first intimated his intention of bringing the question forward, he naturally expected that his motives would be impugned. Several gentlemen had asked him if he had become a shareholder in Thorley's concern. Now he had never spoken to or even seen Mr. Thorley, and if that gentleman were in the room, he should not know him. His only inducement for introducing the question was his strong belief that this condiment was a valuable thing for the feeding of cattle generally, and especially of those which were in a declining condition. As regarded the different kinds of condiments in use, of course a great many more were now advertised to the world, but that which had received the greatest attention was Thorley's, and as Thorley's was alone the one on which he had had any experience, upon that alone he was competent to speak. Scientific men had united in crying it down. Now he would be the last man to speak against science; on the contrary he revered science, and if he were prepared to bow before any men in the world it would be men of science. But he called no man on earth 'master,' and he could see that scientific men, so far as their views upon condiments were concerned, were clearly and decidedly in error. He was sorry that this should be so because he liked to see science and practice go together, and that had hitherto been the case in reference to agriculture. To illustrate this he need only refer to the researches of Liebig. When he (Mr. B. Browne) first engaged in agricultural pursuits, now 40 years ago—if he had calves or young animals to bring up, he always found his labourers say, 'We don't care if you will only give us some bran.' Well, they blindly gave the animals bran; but Liebig was the first to inform them that bran formed bone, and was, therefore, absolutely necessary for the stamina of young animals. Upon that point, consequently, science and practice went hand in hand, and he regretted that the same course had not been taken with regard to condiments. Though he spoke of Mr. Thorley's condiment only, he should be sorry to be understood as crying down all others. Many of them might be equally valuable, but it was with Thorley's alone he intended to deal. He had used previously and with advantage many of the ingredients contained in that condiment, but it would be rather unfair towards a man who had taken great pains to get a prescription well combined to take certain things out of it and then say "I have given these a trial already." If this were done universally, what would become of medical science? Dr. Dickson, the man who first set his face against bleeding, was a pioneer of the medical profession, and introduced a tonic treatment for the purpose of raising the constitution and enabling it to resist disease. Many leading men got hold of the prescription and said it contained certain ingredients which were well known before; but surely that was not a fair mode of dealing with it. In the same manner Mr. Thorley had combined certain ingredients together and had composed a food, which so far as he (Mr. B. Browne) had tested it was an excellent tonic for animals, while it possessed great feeding qualities also. He freely admitted that at first he was prejudiced against Thorley's food, but he had previously used some of its ingredients with great advantage. Some years ago, owing to illness in his family, he thought he would give up agriculture for a short time and go abroad. He therefore sold off his stock of sheep, reserving only a few valuable favourites. He then went away for a certain time, during which these sheep got reduced to a very low ebb, and several of them died. The ewes were broken mouthed, and some of them had lost their teeth. They were living in a fine piece of Clover when he saw them in the spring of the year, and every one of them was like a bag of bones. They were then eating oil-cake and corn, and did not seem improved in the least. He was greatly distressed at it, and asked what he was to do. He was told it could not do much harm if he were to try Thorley's food. He accordingly wrote for a cask, with directions for use. He received it and gave it to the sheep, although he confessed he was not very sanguine as to the result. It was given with the oil-cake and corn, and the animals improved in such an extraordinary manner, that after they had been taking it for three or four weeks he hardly knew them again. When one cask was exhausted he left off giving it, and they left off corn and cake and did well. Their whole constitution seemed to have been renovated, and when he saw them a fortnight ago they were in a very fine condition for lambing. Some of them had double lambs, and he did not desire to see ewes in a finer or better condition. When he found this to be the case, being fond of agricultural pursuits and wishing to impart any little information he had upon the subject, he put a letter in the newspaper, and was told that the question was one which ought to be brought under the notice of the Royal Agricultural Society. Hitherto he had been singularly unfortunate in bringing matters before the Society. Some time ago he brought forward the subject of the high feeding of cattle and the clipping of sheep, but he found it was something like speaking to the deaf adder which

> "Stoppeth her ears to the voice of the charmer,
> Charm he never so wisely."

still he thought it right to come forward again without looking to the issue, believing that the subject of condiments was well worth consideration at the present time. The Council of the Royal Agricultural Society ought to be regarded as the pioneers of agricultural improvements generally, and the exponents of the views and wishes of society at large. If they were not, it was clear to him that they had mistaken their mission. They were not to act as dictators, but were to collect the views of the members and of the Society generally, and give them forth to the agricultural world. He sincerely trusted that the subject of condiments would receive the consideration to which it was fairly entitled. The opposition which Mr. Thorley had encountered was greater than was ever experienced by any one who had had the misfortune to propound anything new. New things generally had to contend with much opposition, but in this case he hoped that Mr. Thorley would be rewarded with success, and that agriculturists at large would benefit by his invention. If these condiments obtained the approval of the Royal Agricultural Society, in all probability their use would become more general, and then the price would be reduced so as to come within the reach of all, which he considered would be a very great boon.

Mr. CANTRELL said he was somewhat in the position of Mr. Beale Browne. He had been at first prejudiced against Mr. Thorley's food, but in March last year, in consequence of the weather, his cart horses were feeding upon hay and chaff and were doing very badly. He obtained some of Mr. Thorley's food and gave a little every day until the green food came, and he was bound to admit that the horses improved very much. Indeed they had improved so much that about a fortnight since he thought he would try the same thing again, but instead of giving them Thorley's food he gave them a condiment manufactured by Griffin & Co. of Wolverhampton, and he was astonished to see the difference which had been produced in the horses in so short a time. His carters, who were fond of anything that improved the horses, were continually begging him to increase the quantity.

Mr. RAYMOND BARKER asked how much was given to them.

Mr. CANTRELL said he gave not quite half a pint, and he neither warmed nor damped it. The carters wetted the chaff and made it very damp. They then took a pinch or two of the condiment, sprinkled it through a sieve, and mixed it all together. It was astonishing how much the cattle liked it, and how well they throve upon it. He owned that he had been much prejudiced against it at first, but those prejudices had altogether evaporated, and he should continue to use it.

Mr. H. COTTON said he had tried Mr. Thorley's condiment for two years, and the results had been in the highest degree satisfactory. An Irish mare, which was sent from Ireland in a gale of wind, and was in consequence very much out of condition, was so restored by it that he was enabled to hunt with her last year—a result which he attributed entirely to the rapid action of the condiment. He had also tried its effect upon dogs, and was convinced that if given to them after a long wet day in the fields, they would greatly benefit by it. With regard to cows it produced considerable improvement, both in flesh and in milk, and the same results had been produced in the case of pigs. He was himself the man who first introduced steam for agricultural purposes into the county of Kent; and although told at the time that he must be insane, he could now look out of his windows and see 7 or 8 engines going at once.

Mr. CANTRELL observed that the price of Thorley's food was 2*l.* a cwt. That which he had been using this year was 35s. and answered the same purpose.

Mr. BEALE BROWNE said the price of Mr. Thorley's food would be greatly reduced if it were adopted generally.

The CHAIRMAN asked if there would be any security that it would then be made of the same good materials as at present.

Mr. B. BROWNE replied in the affirmative, but did not think it could be materially reduced in price unless it came enormously into use: Mr. Thorley must already have spent a very large sum in advertisements.

Mr. SIMPSON, of Birmingham, said he was himself a manufacturer of these condiments, and would be happy, if necessary, to give any information to the merchant. A gentleman named Henri, and not Mr. Thorley, was the first manufacturer of these condiments, and the whole and sole value he attributed to them was not their feeding but the health giving properties which they possessed, which of course must depend upon the proper mixture of the ingredients of which they were composed. Speaking from experience he had found them more profitable when applied to young than to old stock.

Mr. CAVENDISH, M.P., asked if Mr. Simpson thought Thorley's food better for the rearing of calves than Linseed meal.

Mr. SIMPSON would not recommend Mr. Thorley's or any other man's. If a man wanted to rear a calf on skimmed milk instead of new, he would say use Linseed meal by all means; but he would put the condiment with it. A little would give increased health and improved tone to the animal's stomach, and thus enable the calf to make more out of the food. He had tried Wheat flour mixed with the condiment for calves and it did very well. One calf he kept for four months in that way cost 17*s.* 8*d.* for Wheat flour and condiment exclusively of milk. At 15 months old he sold her for 10*l.* to a butcher, who killed her for beef. He would guarantee, as far as price was concerned, to deliver an article equal to Thorley's at 14*l.* per ton. He found that he could produce an article that gave satisfaction to the consumers for 25*s.* a cwt., but a line must be drawn between a good and an inferior article, inasmuch as he could make a condiment at 14*l.* a ton or almost any price at which it might be required.

Mr. THOMPSON, M.P., thought Mr. Browne was wrong in assuming that there was any prejudice against Mr. Thorley's food. If there was, which he did not admit, Mr. Thorley himself must have created it. There was however a feeling against buying the food at its present price. If Mr. Thorley would reduce his expenses in advertising and take an equal sum from the price of his food, he would be more likely to succeed. His own experience of the value of these condiments was very slight. He had tried them on a small scale and was certainly not satisfied with the results, but the question was one which could only be settled by extensive trial. He trusted that this discussion might lead to such a result.

Mr. BARKER said that his neighbour Lord Camoys had used Thorley's condiment on a large scale both for horses and cattle, and found that it brought his cows and calves to maturity very well. In point of fact his lordship found so much success from its use that he would continue to persevere in it, and he did not look to see whether he could buy any such article of the same name at a less price. He thought however that those who were paying 45*s.* per cwt. would soon satisfy themselves whether that at 25*s.* was as good.

Major MUNN concurred with the previous speakers as to the value of the condiment, and stated instances in which his stock had greatly benefited by it.

A long and animated discussion followed, in which Professor Symonds and Mr. Lawes expressed themselves against the adoption generally of Thorley's food for cattle, on the ground that the analysis showed that its chemical compounds were incompatible, although, undoubtedly, it operated as a sort of tonic stomachic. The learned professor thought the effects produced might be obtained in a cheaper way. Mr. Lawes stated that his experiments were not satisfactory.

The CHAIRMAN, in bringing the discussion to a close, observed that in his opinion it would be extremely beneficial, inasmuch as farmers would now no longer be in the dark in regard to the effect of the food, but having had the question argued *pro* and *con.*, they would naturally draw their own conclusions.

A vote of thanks to the Chairman brought the discussion to a close.

Reviews.

The Journal of Proceedings of the Manchester and Liverpool Agricultural Society contains as usual instructive and satisfactory reports by the inspectors of crops and farms within the district of the Society; and as illustrating the detailed manner in which one of our most efficient provincial societies stimulates and encourages the agriculture of its locality, it deserves

...ation and perusal beyond the limits of the counties ...hich it is especially confined.

...r Book of Agricultural Facts, 1861. Blackwood ... Mr. Scott Burn's annual volume, just issued, ... had a very instructive and interesting year to ... Steam cultivation made great progress in it; ... accordingly fills a good many of the pages of this ...al periodical. The book is far from being a mere ...ilation, much of it is of the Editor's own author... And we shall from time to time lay before our ...ders passages taken from the lists of memoranda ...given as prepared by Mr. Scott Burn on the several ...ctions under which the whole agricultural subject is ...considered.

Miscellaneous.

Consumption of Roots.—Very few farmers take the ...uble of weighing the quantity of roots consumed by ...ir feeding bullocks. On a recent trial it was ascer...ained that a large three-year old ox ate as much as ... lbs. of yellow Turnips per day, and when this ...ntity of good Swedes, or even 100 lbs. less, was ...en to him, he disregarded entirely his more natural ...d—straw—although it was constantly set before him. ... seemed to prefer glutting down Swedes, and in ...d weather he had more or less of diarrhœa after...ards. If the same animal have the roots manufac...red or pulped down into very minute pieces, and if ...is mixed with finely chopped straw or chaff from ... threshing-mill, and given fresh, one-half of the ...mer quantity will fill him quite as well and feed ... much better, and his loose state of bowels will ...able him no longer. After careful experiments, we ...d that a large-sized ox can be fed off upon 6 or 8 stones ...lped Turnips, with the addition of a few pounds ...cake. Ten tons of pulped proved equal in feeding ...e to 15 tons given whole and sliced, so three beasts ...e kept in place of two, or in other words, 20 acres ...urnips are saved upon a 400-acre farm. The best ..., in our opinion, is to have the pulping and ...ing machinery driven by power, as it is ...ul work by manual labour, on a large scale espe.... We should recommend Bentall's pulper, ...ugh it may be still subject to improvement. We ...e tried various pulpers, and we found the Perth prize ...e worst of all; it may, however, be improved ...others. As to chaff-cutters, there are so many in ...market that it is difficult to hazard an opinion; but ...would not hesitate in taking a prize-machine from ... of the Royal English shows, from the great care ...t which their trials of machinery are conducted. ... very young cattle or beasts of any age, when just ...en from Grass, the value of a pulper is most apparent, ...they will then go on feeding at once; and at that ...son it is an excellent plan to put the Swede leaves ...ugh the pulper along with the bulbs. The quantity ...traw or chaff consumed varies from 10 to 20 lbs. per ...; and the whole theory of the success of this process ...eding appears to us to consist in the animal ...wing a much larger quantity of saliva than when ...g whole or sliced roots. Every one must have ...ed the saliva running from the mouths of their ... when chewing cold roots. The entire immunity ... choking or worrying is also a most pleasant ...re connected with the system, the conducting of ..., no doubt, entails something beyond the usual ...nse for attendance and labour; but when two men ... boy (and 2 cwt. of coals per day) can prepare and ...ully attend to 100 cattle, we consider ourselves ...ly repaid. *Correspondent of Scottish Farmer.*

...ports of Wheat, &c.—The following is the quantity ...heat imported:—

	Imperial qrs.	Total in	Imperial qrs.
[illegible]	6,966,838	1855	2,791,247
[illegible]	5,906,175	1854	3,695,437
[illegible]	4,023,547	1853	4,358,699
[illegible]	4,275,430	1852	3,004,261
[illegible]	3,465,313	1851	3,980,750
[illegible]	4,083,075	1850	3,675,461

...he following is the whole quantity of Foreign Wheat, ..., Oats, Rye, Beans, Peas, Maize, Wheat Flour and ...r Flour, imported into the United Kingdom:—

	Imperial and computed imperial qrs.	In.	Imperial and computed imperial qrs.
[illegible]	16,717,968	1855	6,884,501
[illegible]	14,977,504	1854	8,546,783
[illegible]	10,526,742	1853	10,589,158
[illegible]	11,738,631	1852	8,272,007
[illegible]	9,445,334	1851	10,281,182
[illegible]	9,702,473	1850	9,382,700

...ondent of Economist.

...n Dairies.—The cow is a native of hills and ...loving to ramble in green meadows and feast ...uriant pasture. She then gives freely a rich ...e in great abundance—refreshing, nourishing, ...engthening to the human frame. It is, there... matter of no little importance that such a useful ... and friend to man should be consigned to a ...n to sicken, languish, and die. If the dairies in ...gh are looked at, it will be found that many are ...e lanes and overcrowded districts where stables ...most ill-suited tenements are very roughly trans... into cow byres. The dairyman, not sure but ...may be warned off on the shortest notice, has ...ouragement to adopt means for the proper adap... of places for his purpose. The cows suffer greatly ... these circumstances, but kind nature soon puts ...d to their sufferings. A cow's life in this city is a short one, varying from one month to a year, and an average of about five months. A large proportion of our milk cows take disease from six weeks to two months after they are confined in the town byres, and the majority are killed at once or die. Some may suffer severely for a week or two, overcome the disease, and gradually regain their original health and strength; but of these there are unfortunately too few. *Scotsman.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Thursday, March 22, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Barometer corrected to Freezing Point at Mean Sea Level.	Reading of Dry Bulb Thermometer.	Reading of Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0-6	Amount of Cloud 0-10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	14	30.19	42	41	E.	2	6	53	40	62	40	0.01	46½	46½
Saturday ..	15	30.17	40	39	N.E.	3	7	45	39	49	39	..	46	45½
Sunday ..	16	30.00	40	40	N.E.	2	7	45	40	54	40	..	45½	45½
Monday ..	17	20.81	40	39	N.	1	8	44	38	48	38	0.55	45	45
Tuesday ..	18	29.80	40	39	S.W.	1	7	42	36	46	35	0.87	44½	45
Wednesday ..	19	29.66	41	40	N.W.	1	6	48	32	62	29	0.01	44½	46
Thursday ..	20	29.46	38	37	E.	3	8	49	37	64	36	0.01	41½	45

Calendar of Operations.

MARCH.

MID LOTHIAN: *March* 18.—A continuation of cold backward weather has prevented further progress being made with seed operations; and, indeed, comparatively little advance has been attained since March began. The Spring Wheat was nearly all sown in February, part of the Beans, and some few early Potatoes planted. Since, the cartage of manure to heaps in the fields; ploughing of land from which Turnip had been removed and intended for Barley, completing the ploughing of land for Oats after Pasture, Grass or hay stubble, cartage of guano, superphosphate, dissolved bones and nitrate of soda, laying in a stock of steam coals, besides supplying the wants of the ploughmen and labourers with this commodity. The disposal of the remaining portion of the Potato crop, partly for seed; the Dalmahoy early variety at 6*l.* 10*s.* per ton, sold in Edinburgh Market, and the Regent, for table use, at 5*l.* 5*s.* at the farm. The turning over of those retained for longer keeping in pits, the removal of the earth from all of them, and the slacking of the covering of earth on the Mangel, has formed the employment of the men and women during the past fortnight, as well as the pounding, riddling, and mixing of the guanoes, bones, &c. Sowed a mixture of ¾ cwt. nitrate of soda, 1 cwt. bone and superphosphate, and ½ cwt. bone meal per acre on Grass land for pasture. For hay sowed 1 cwt. Peruvian guano and 1½ cwt. superphosphate per acre on the 5th March, to be followed up with 1½ cwt. nitrate soda alone on the 1st April or thereabouts for early cutting Grass. Ready with mixtures of nitrate of soda and bones for Wheat top-dressing, so soon as the air becomes more genial. Seed Barley and Oats ready so soon as the weather fits. Tares also awaiting to be put in. One fifth of the ewes have lambed. The season not very auspicious, yet twins plentiful, but several deaths.

Notices to Correspondents.

BONES: *G R A.* Mix the bones with an equal quantity of wet sand, and soak the whole with about one-third their weight of sulphuric acid. This will answer very well if the sand is pure siliceous sand, but if it be calcareous it will not do. In that case you must put the bones into a vessel along with bones and acid half and half, and have an arrangement for drawing off the liquid after an hour or two, and then mix up the bones with sand in a heap under cover.

CIRENCESTER: *H C S.* We must make inquiry.

COTTAGES: *Skolasticus.* The plans referred to were quoted from the "Quarterly Review" for 1860, in a volume for that year, p. 868.

TURNIPS AND POTATOES: *A Sussex Clodhopper.* The growth of the two crops together has already been described by Mr. Randall in these columns. Perhaps he will, at your request, kindly state his practice and experience once more in one of his occasional reports.

GRASS: *J C S.* We do not know it, and the fragments are insufficient to identify it. We would pare and burn the field now, and get a crop of Swedes and thoroughly cultivate the land during its growth.

MANURE: *Fairplay.* It seems to us that the agreement with the tenant ties the manure to the land; and that the purchaser buying the land with that understanding can insist on its being observed. If the tenant left half a year before his annual term was up, he did so we presume by a special agreement, in which this manure question was considered.

To the Seed Trade.

H. AND F. SHARPE can offer on very advantageous terms the under-mentioned sorts of SEEDS of 1861 growth and raised from selected stocks:—

Large York Cabbage	Sangster's No. 1 Peas
Long Red Surrey Carrot	Bellamy's Green Marrow Peas
James's new Intermediate do.	Early Long-pod Beans
Fine Red Pickling Cabbage	Mackie's Monarch do
Green Kohl Rabi	Mangel Wurzel in sorts
	Turnip in sorts

Seed Growing Establishment, Wisbech.

To the Seed Trade.

FREDERICK W. WENDEL, SEED MERCHANT, Erfurt, Prussia, begs to offer the following Seeds of carefully selected Stock of good growth:—
CARROT: Altringham, Long Red; Orange Red, Belgian; Early Horn; Earliest ditto, for Forcing.
ONION: Straw Colour, true; Silver Skinned; Pale Red, or Flesh Colour, excellent for general crops; Pear-shaped Yellow; Yellow; Giant Madeira; James's Keeping.
BEET: Darkest Blood Red.
Prices, &c., for the above, to be had on application to GEO. MACINTOSH, Seedsman, &c., High Road, Hammersmith, W., London; and where also GENERAL PRICE LISTS can be obtained free and post paid.

Agriculture.

W. DRUMMOND AND SONS, Stirling, claim special attention to their ROOT SEEDS, which embrace several Improved Stocks of SWEDES and other TURNIPS, MANGEL WURZEL, &c.: also to remarkably fine samples of all the Varieties of CLOVERS, PERENNIAL and ITALIAN RYEGRASS and NATURAL GRASSES,—priced Catalogues of which, together with every description of seed required for the Farm, may be had, prepaid, on application.
Seeds forwarded Carriage Free to all parts of the Kingdom.
Seed Warehouse, Stirling, N.B.

Stones or Sprotborough Cabbage Seed.

JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3*s.* per lb., or 16*l.* per cwt.

Tulips.

FOR UNRESERVED SALE in the forthcoming season, by Order of the Executrix, the valuable COLLECTION of the late Mr. S. Gogay, of Walworth, containing all the chief varieties in cultivation; also Tulip Cabinets, Stage, Cloths, Irons, &c.
Catalogues will shortly be ready. All communications to be forwarded to H. WOLFE, 57, Elizabeth Street, Hackney Road, London, N.E.

COLLECTIONS of VEGETABLE SEEDS.

	s.	*d.*
No. 1. 20 quarts of PEAS, and other Seeds in proportion	60	0
" 2. 12 " " "	40	0
" 3. 6 " " "	25	0
" 4. 6 pints " " "	15	0
" 5. 4 " " "	10	0

All warranted of the finest quality, and embracing every kind desirable in the largest or smallest garden.
HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.
CATALOGUES post free.

Wood's Defiance Cauliflower.

WM. WOOD AND SON have much pleasure in introducing this new and superior CAULIFLOWER to the notice of their friends and the public generally, and having tested it for several years against Walcheren and other approved varieties, they do not hesitate to pronounce it the best Cauliflower in cultivation. It is quite hardy, of dwarf habit, and produces immense large heads, which are very compact, and most deliciously flavoured.
Stock limited; price per packet, 2*s.* 6*d.*
WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.
_ SEED CATALOGUE post free on application.

Dioscorea Batatas, or Chinese Potato.

J. IVERY AND SON beg to inform their Patrons that this is the most favourable month for planting this useful Vegetable. Strong sets are now ready, at 1*s.* per dozen, or 7*s.* 6*d.* per 100; likewise whole Tubers, from 2*s.* 6*d.* to 6*s.* per dozen.
Dorking Nursery.

FLUKE POTATOES, off the Lancashire Moss and Sand; EARLY PINK EYE KEMPS, very fine; TRUE ASHLEAF KIDNEY; OXHORN KIDNEY, a very prolific variety, good quality; WHITE BLOSSOM LEMON KIDNEY. Prices moderate.
A PRICED DESCRIPTIVE CATALOGUE of Garden and Flower Seeds is now ready.
HENRY BROWN, Seedsman, 4, Commutation Row, Liverpool.

POTATOES: Handsworth, Fortyfold, Dalmahoy, Shaw, Regent, Blues, Ash-leaf Kidney, &c.
GOOSEBERRIES: Crown Bob, Warrington, Whitesmith.
STRAWBERRIES: Admiral Dundas, British Queen, Black Prince, Eleanor, Prince of Wales, Sir C. Napier, Wizard of the North, 2*s.*; Alice Maude, Elton Pine, Eliza, Keens' Seedling, 1*s.* 6*d.*; and Oscar, 3*s.* per 100. RASPBERRY CANES, &c.
GEO. CORNWELL, Seedsman, &c., Barnet, Herts, N.

EXTRAORDINARY POTATOES.—A Gentleman, resident in the country, OFFERS for SALE a few bushels of POTATOES of a most wonderful kind. For the table they are unsurpassed, and their yield is astonishingly arge, even on indifferent soil; and further, the disease never attacks them.
For price, &c., address "Z. Z." (No. 479), Field Office, 346, Strand, London, W.C.

YOUELL'S NORFOLK HERO CUCUMBER. Without exception the best Ridge Cucumber known. 6 Seeds 1*s.*, 18 Seeds 2*s.*
LAING'S MAMMOTH CELERY.—The very best, hardiest, and finest flavoured Red Celery in cultivation, 1*s.* and 2*s.* per packet on receipt of postage stamps.
See former advertisement.
YOUELL'S Royal Nurseries, Great Yarmouth.

New Seedling Pea.

COTTON'S LEVIATHAN PROLIFIC MARROW, the best for main crop, a large, wrinkled, rich Marrow Pea. From one Pea 11,000 Peas were produced the second year (see Dr. LINDLEY, *Gardeners' Chronicle*, Aug. 7, 1853). The flavour sugary, and the colour very green when boiled. Height from 5 to 6 feet. May be sown from February till June and July, in drills 5 to 6 feet apart, and 1 inch from Pea to Pea. Retail price, 2*s.* per quart.
From GILBERT KNILL COTTON'S Seed Warerooms, High Cross, Barnstaple; or HURST & M'MULLEN, 6, Leadenhall Street, London, E.C.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and other FLOWER SEEDS, Choice GLADIOLI, &c., is now ready, and will be forwarded post free on application.

The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices.

An inspection and comparison with prices in other Catalogues is respectfully solicited.

The following, of which descriptions will be found in Catalogue, are specially recommended :—

		s.	d.
BEAN, Haricot Flageolet Jaune, six days earlier than any variety in cultivation	per quart	2	6
BEET, Compact Topped or Pine Apple Short Top,	per oz.	0	6
,, Selected Dwarf Red (Nutting's)	,,	0	9
CAULIFLOWER, Early Dwarf Erfurt	,,	2	0
,, New Early Mammoth or Frogmore Forcing	,,	3	6
CELERY, Imperial Dwarf Red (Hood's)	,,	1	0
CHÆROPHYLLUM BULBOSUM	,,	2	0
CUCUMBER, TELEGRAPH	per packet	1	6
LETTUCE, MOOR PARK	per oz.	2	0
PEA, GENERAL WYNDHAM	per quart	1	3

Exotic Nursery, Tooting, Surrey S.

Quick.

H. AND F. SHARPE are prepared to offer of the finest quality,

Strong 2-years' Transplanted QUICK, 3 feet high,
Strong 2-years' Seedling do., 2 feet high,

at very moderate prices, which may be had, with samples, on application.

Seed Growing Establishment, Wisbeach.

LARCH FIR, twice Transplanted, 25s. per 1000; a few 5 to 6 feet Transplanted ENGLISH OAK, and BEECH, 2 to 3 feet, all good stuff.

Apply to Geo. Frost, Nurseryman and Seed Grower, Brushford, Tiverton.

Also New English COW GRASS, 7½d. per lb. or 68s. per cwt.; TREFOIL, 30s. per cwt. Carriage paid. Samples on application.

R. GLENDINNING has great pleasure in offering the undermentioned fine CONIFERS, which have been annually transplanted, and will move with perfect safety :—

Araucaria imbricata (perfect specimens), 2 to 9 feet
Cedrus Deodara ,, ,, 1 to 10 feet
,, atlantica ,, ,, 1 to 10 feet
Cupressus Lawsoniana, 1 to 3 feet
,, macrocarpa, 1 to 15 feet
,, Nutkaensis (Thujopsis borealis), 1 to 8 feet
Picea nobilis (fine), 1 to 6 feet
,, Nordmanniana, 1 to 10 feet
,, Pinsapo, 1 to 6 feet
Pinus Benthamiana, 1 to 5 feet
,, excelsa, 1 to 12 feet
,, Fremontiana, 1 to 4 feet
,, Jeffreyi, 1 to 2 feet
,, Koraensis, 1 to 4 feet
,, monticola, 1 to 10 feet
,, tuberculata, 1 to 4 feet
Taxus baccata erecta (splendid specimens), 1 to 9 feet

Also all the other leading kinds in fine well grown plants.

The above are remarkably handsome plants, and perfectly healthy, not having suffered from the severity of the past winters. Price on application.

Chiswick Nursery—March 22.

CHARLES NOBLE would remind all those interested that his Selection of RHODODENDRONS is unrivalled; that his Selection of CONIFERS is worthy of notice, and his Selection of HARDY EVERGREENS worth an inspection. The following handsome well-grown specimens can be obtained on very advantageous terms, and purchasers will consult their interests by visiting the Sunningdale Nursery, Sunningdale Station, South Western Railway.

Wellingtonia gigantea, 1 to 6 ft.	Juniperus Virginiana, 1 to 10 ft.
Thujopsis borealis, 1 to 4 feet	,, argentea, 1 to 4 feet
Thuja Warriana, 4 to 5 feet	,, chinensis, 5 to 7 feet
,, Lobbii, 1 to 4 feet	,, sphærica, 2 to 4 feet
,, gigantea, 1 to 4 feet	Cupressus Lawsonii, 1 to 4 feet
,, americana, 6 to 10 feet	,, Thyoides, 1 to 4 feet
Taxus fastigiata, 3 to 7 feet	Cephalotaxus Fortunii, 2 to 4 ft.
,, baccata, 3 to 5 feet	Cedrus Deodara, 1 foot to 8 feet
Taxodium distichum, 4 to 6 ft.	,, atlantica, 8 to 10 feet
Spiræa Nobleana, 3 to 5 feet	Berberis japonica, 1 to 4 feet
,, callosa, 3 to 5 feet	,, Beallii, 1 to 4 feet
Skimmia japonica, fine blooming plants	,, Darwinii, 1 to 4 feet
Retinospora ericoides, 1 to 3 ft.	Abies spec. Vancouver's Island ,, lasiocarpa
Pinus austriaca, 1 to 5 feet	,, Pinsapo, 1 to 3 feet
,, Laricio, 3 to 5 feet	,, orientalis, 1 to 6 feet
,, insignis, 2 to 5 feet	,, Douglasi, 2 to 3 feet
,, excelsa, 1 to 3 feet	,, Nordmanniana, 2 to 5 ft.
,, Cembra, 1 to 3 feet	,, Menziesii, 3 to 10 feet
,, Benthamiana, 2 to 6 feet	Araucaria imbricata, 1 to 8 ft.

Ten Minutes' walk from the Station.

Forest Trees, Ornamental and Fruit Trees, &c.

THE SUBSCRIBERS call the attention of intending Planters to the undernoted Stock at their Nursery, Longniddry Station. The plants are fine; and as the grounds have to be cleared, they offer them at the following low prices, terms cash :—

TRANSPLANTED, the 1000.—Norway Spruce, 6 to 9 inches, 5s.; English Oak, 18 inches, 10s.; Laburnum, 10s.; Service, 7s.

TRANSPLANTED, the 100.—Cedrus Deodara, 21 to 30 in., 150s.; Irish Yews, 3 feet, 25s. per 100; 3 to 4 feet, 35s. per 100; 4 to 5 feet, 60s.; Thorn Quick, 6s.; Red Cedars, 9 to 15 ins., 3s.; 9 to 24 inches, 5s.; Aucuba japonica, 15s.; Pinus Cephalonica, 10s.; Tartarian Arborvitæ, 9 inches, 25s. per 100; Common Laurel, 3s. to 6s.; China and Climbing Roses, 10s.

SEEDLINGS, 2 years old, per 1000.—Norway Spruce, 1s.; Native Scots Fir, 1s.; Austrian Pine, 2s. 6d.; Pinus maritima, 2s.; Balm of Gilead, 5s.; Chinese Arborvitæ, 10s.; Pears, 5s.

TRANSPLANTED FRUIT TREES, &c.—Pear Stocks, 15s. per 1000; Gooseberries and Currants, of sorts, 50s. per 1000; Apple Stocks, 5s.; Trained Pears, of sorts, 100s. per 100; Dwarf Cherries, of sorts, 25s. per 100; Trained do. do., 75s. per 100; Raspberries, of sorts, 8s. per 100; Quince Stocks, 2s. 6d. per 100.

If large quantities are taken, a considerable reduction will be made.

David Reid & Son, Nurserymen and Seedsmen, Edinburgh.

GOLD and SILVER FISH, immense quantity, 4s. to 9s. per dozen, 2l. per 100, 18l. per 1000; Water Tortoise, 10s. per dozen; Orange Trees, with fruit and bloom, 2s. to 3s. 6d. each; Camellias, 18s. and 21s. per doz.; Azalea indica, 12s. to 30s. per dozen; British and Foreign Ferns, 3s. to 12s. per dozen.

Robert Green, 154, Kingsland Road, N.E., 55 doors from Shoreditch Church.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.

Richard Smith, Nurseryman, Worcester.

Genuine Garden Seeds, Carriage Free.

GEORGE WOOLLETT'S PRICED CATALOGUE of VEGETABLE and FLOWER SEEDS is now ready, and will be forwarded free on application.

George Woollett, Nurseryman and Seedsman, Caterham, Surrey; and Cold Harbour Nursery, Brixton, S.

WM. MAULE and SONS can supply splendid plants of CEDRUS DEODARA from 6 to 7 and 8 feet or more, either from the open ground or in large Pots, at 10s. 6d. each. Noblemen or Gentlemen planting Avenues or beautifying their Parks or Grounds will find this and the following month the most favourable for transplanting this tree.

The Nurseries, Bristol.—March 22.

Yorkshire and Lincolnshire Nursery and Seed Establishment.

MARTIN and SONS respectfully offer a very superior Stock of TURNIP SEED, as under, the produce of their Seed beating all others at one of the principal Shows in Yorkshire, winning the "two Five Pound Silver Cups," the "Second principal Prize," and several of the minor prizes.

CATALOGUES with particulars on application.

Yorkshire Prize Swede Turnip
Golden Melon do. do.
Rouge et Blanc Stone do.
Improved White Globe do.
Russian Green-top White do.
} 1s. per lb.

Skirving's Green-top, Marshall's Purple-top, and all the principal kinds of Swede and White Turnips, at 9d. per lb.; by the bushel or cwt, cheaper.

KITCHEN GARDEN SEEDS.

Martin & Sons' No. 1 Collection contains 20 quarts Peas and other sorts in proportion, for 3l.; No. 2 Collection, 2l.; No. 3, 1l. 10s.; No. 4, 21s.; No. 5, 15s.

FLOWER SEEDS.

The 30 varieties which caused so great attraction and were admired by the hundreds of persons passing the Park Nursery, Hull, for 5s., free by post.

GLADIOLUS.

40 choice varieties for 1l. 5s., carriage paid.

NURSERY STOCK.

Our GENERAL NURSERY CATALOGUE may be had on application. We abound in Laurels, Yews, Arbor-vitæ, Thujopsis, Wellingtonias, Cedars, Juniper, Chestnuts, Limes, Maples, Mountain Ash, Weeping Ash, Weeping Elm, Privet, &c.

Nursery and Seed Establishment, Cottingham (A.D. 1788). Hull Nursery, Spring Bank; Hull Seed Establishment, Junction Street.

REIGATE SILVER SAND, 16s. per ton, or 1s. 6d. per bushel, delivered to any London Wharf or Railway. Sacks 1s. 6d. each, or on hire 6d. each (five hold a ton).

PEAT, LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE.

John Kennard, Swan Place, Old Kent Road, London, S.E.

REIGATE SILVER SAND, first quality, 12s. per ton; 1s. per bushel. Delivered free in 2 bushel Bags to the Reigate Junction Railway. Bags, 1s. each; on hire, 4d. each.

A large quantity of superior BOG MOULD and PEAT at a moderate price.

W. Short, Agent, Ladbroke Road, Red Hill, Surrey.

LAWES'S MANURES. The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices :—

	£	s.	d.
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6	6	
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES	5	5	
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8	0	

These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

American and other Cakes at market prices.

Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

THE LONDON MANURE COMPANY (Established 1840,)

Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.

116, Fenchurch Street, E.C. Edw. Purser, Secretary.

Tenant Farmers' Manure Company.

ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.

Manufactured by

THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.

Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.

Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.

C. T. Macadam, Secretary.

Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

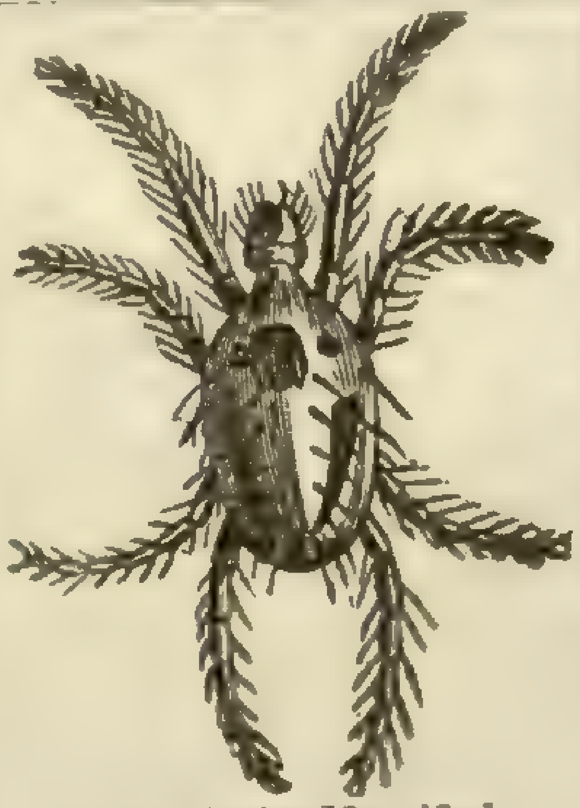
New Source of Ammonia.

To Manure Manufacturers and Dealers.

ULMATE of AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that Wool contains more Nitrogen (yielding Ammonia) than any other kind of animal matter, proves the Ulmate of Ammonia to be a highly valuable manure, the Analyses by Professor Voelcker, the Chemist of the Royal Agricultural Society, and other high authorities, showing a per centage of Ammonia exceeding [illegible] per cent., or equal to an average sample of Peruvian Guano; while, from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of ammonia. Being a fine dry powder, it is peculiarly suitable for use in the manufacture of manures, and preferable to the ordinary salts in use, sulphate of ammonia, nitrate of soda, &c.

Samples, prices, and all information will be forwarded on application to Frederic J. Cornwell, Broker, 7, Great St. Helens, E.C.

LINSEED CAKES, RAPE CAKES, COTTON CAKES, also all Materials used in the Manufacture of Manures, at the lowest market prices.



Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by Price's Patent Candle Co., Limited.

NEAL'S PATENT APHIS PASTILS.

1s. and 2s. per packet.

From *Lloyd's Weekly*, July 7th, 1861.

"All we know is, that one of our larger houses took half a pound of tobacco, 2s., and that three pastils, 1s., do the same with no trouble. We have a score of letters on the same subject, but all to the same purport."

NEAL'S PLANT SOAP,

1s. per packet,

Makes the cheapest and most effectual Wash for destroying Mealy Bug, Thrips, Red Spider, American Blight, and all other Insect Pests.

Each Packet contains Four Cakes, each Cake makes One Gallon of Wash.

Sold by all principal Seedsmen.

Patentee:

Magnified Aphides.

J. Neal, Edward Street, Birmingham.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT on Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3s per Gallon, sufficient to make four fit for use. Jars and Bottles charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

Page & Toogood, Royal South Hants Seed Establishment, Southampton.

Parkes' Steel Digging Forks.

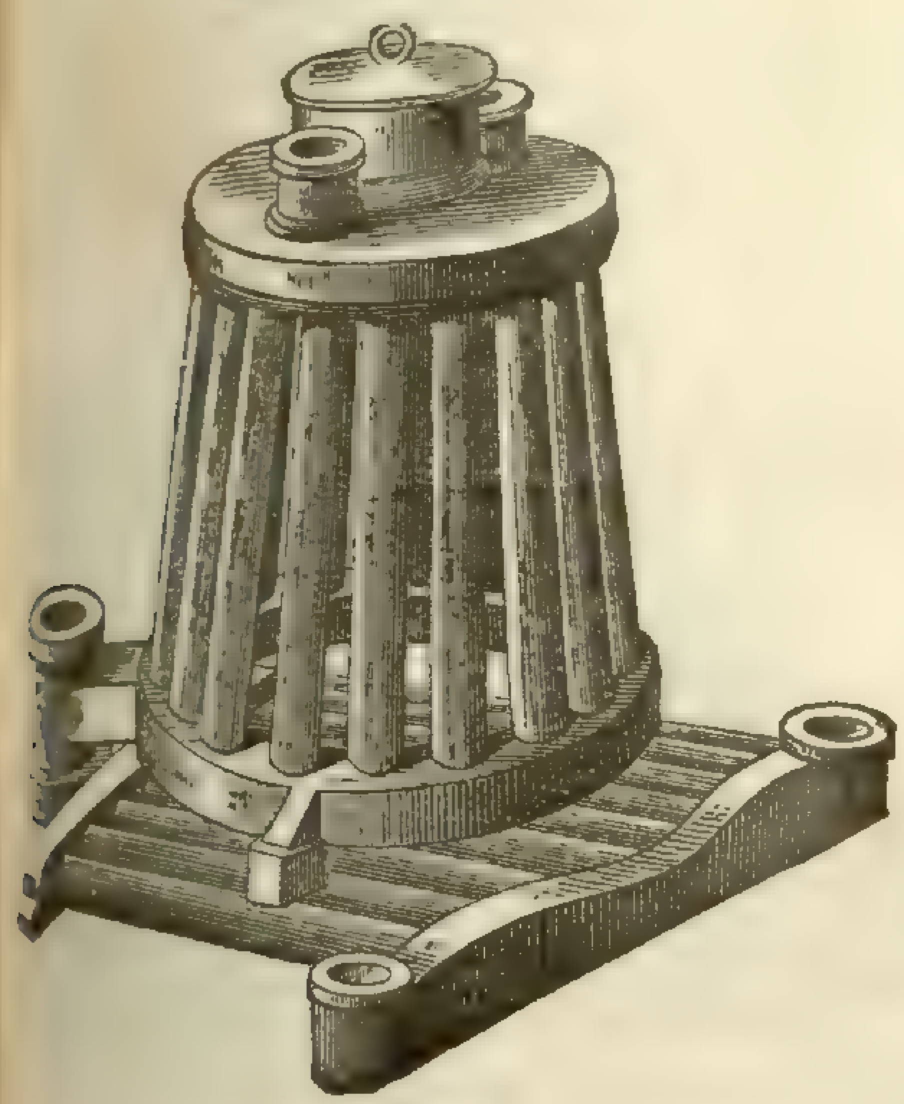
BURGESS and KEY, 95, Newgate Street, E.C. London, being the Wholesale and Retail Agents for these celebrated Tools, have always a large Stock on hand from which their Customers may select what they may require.

ANTHONY'S PATENT AMERICAN CHURN has obtained the FIRST PRIZE given by the Royal Agricultural Society at every Meeting since 1850. It is strongly recommended as the most perfect Churn now in use. Full particulars sent on application.

Agricultural Machinery.

CHAFF CUTTERS, TURNIP CUTTERS, PULPERS, MILLS, PLOUGHS, HARROWS, CARTS, &c., Delivered Carriage Free.

Burgess & Key, Manufacturers, 95, Newgate Street, London. PRICE LISTS free per Post.



BY HER MAJESTY'S ROYAL LETTERS PATENT.

ORMSON'S PATENT JOINTLESS TUBULAR BOILER,

AN ORIGINAL INVENTION,

Brought out for the purpose, and is now fully acknowledged to surpass the OLD-FASHIONED JOINTED TUBULAR BOILERS, which have been made for the last 20 or 30 years by all other manufacturers. The ADVANTAGES of this PATENT will be manifest to every person's understanding from the following FACTS. For instance, one of the OLD-FASHIONED JOINTED BOILERS with 50 TUBES would have 100 JOINTS made of rope yarn and cement, exposed to the direct action of the FIRE, whereas in my PATENT there is NOT ONE JOINT so exposed. And it should be fully understood that as the OLD-FASHIONED JOINTED TUBULAR BOILER increases in SIZE, number of TUBES and JOINTS, its liability to LEAKAGE also increases, consequently

THE FOLLOWING IS THE REASON WHY

ORMSON'S ONE-BOILER SYSTEM

AND PATENT JOINTLESS TUBULAR BOILERS

have become so universally adopted on account of their superior power, great safety, and economy.

ORMSON'S No. 1 BOILERS	are heating upwards of		250	feet of Pipe.
ORMSON'S No. 2 BOILERS	"	"	600	"
ORMSON'S No. 3 BOILERS	"	"	1300	"
ORMSON'S No. 4 BOILERS	"	"	3000	"
ORMSON'S No. 5 BOILERS	"	"	5000	"

Boilers of larger sizes if required to heat 12,000 or 15,000 feet of Pipe.

H. ORMSON having a most complete Set of Steam-power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

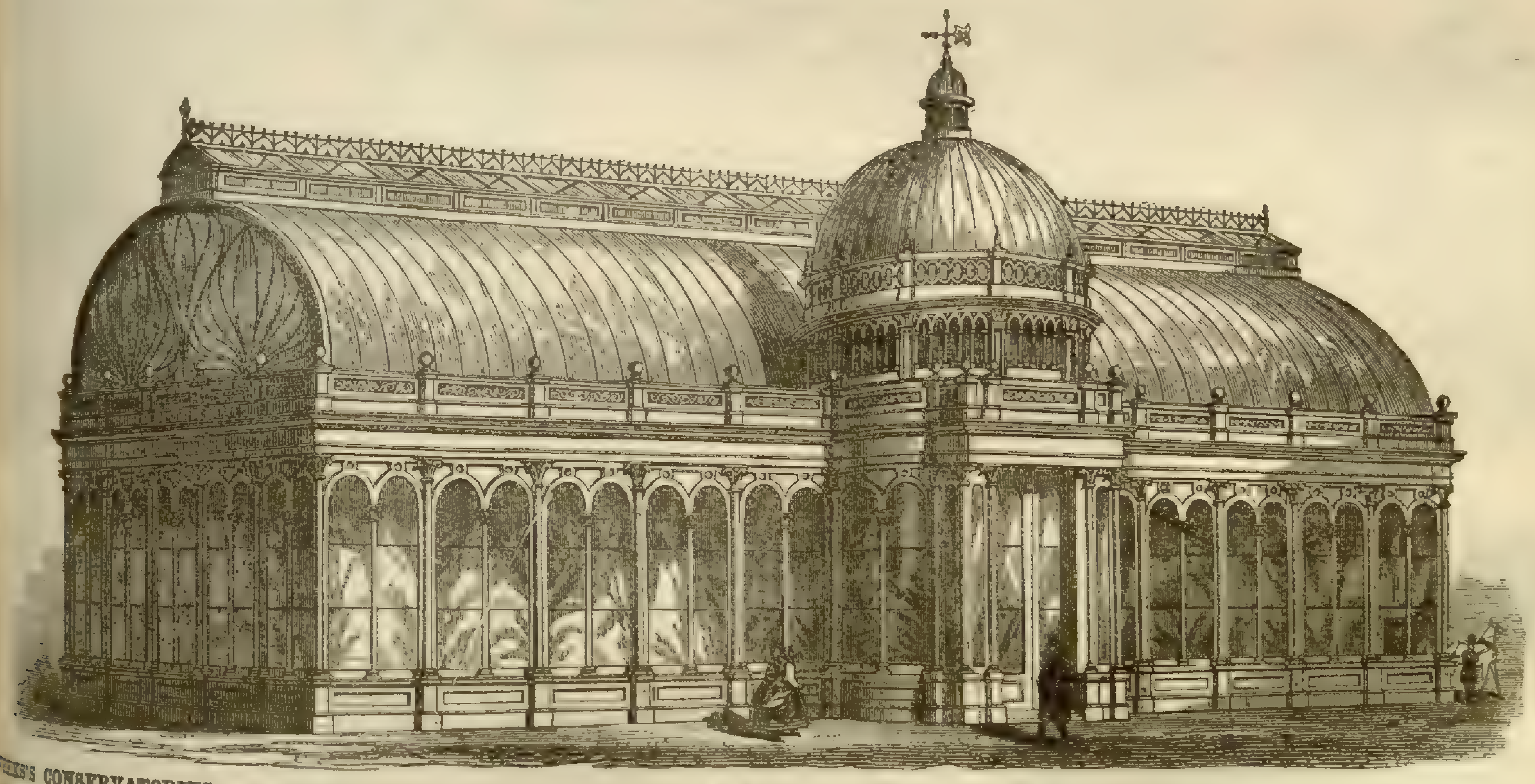
HENRY ORMSON, HORTICULTURAL BUILDER TO HER MAJESTY,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

HORTICULTURAL BUILDING AND HEATING BY HOT WATER.

PATRONISED BY THE QUEEN.



WEEKS'S **CONSERVATORIES** are peculiarly chaste in design. A choice variety now in preparation at their Steam-Power Works.

WEEKS'S **NEWLY-INVENTED PEACH HOUSES** give the utmost satisfaction. They require *no Brick foundation*, and are specially suited for covering Trees of long standing.

WEEKS'S **FORCING HOUSES** and **VINERIES** combine some valuable improvements.

WEEKS'S **IMPROVED VENTILATING APPARATUS** gives universal satisfaction.

WEEKS'S **HOT-WATER APPARATUS** continues to eclipse all spurious imitations of their renowned "ONE-BOILER SYSTEM." It exposes four times the quantity of heating surface to the action of the fire, consequently must be four-fold as powerful, and economical in the same ratio. It is described by the highest authority as the very best extant for both large and small works, which the following references will serve to corroborate. It has been adopted by

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
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HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN

THE TOWER OF LONDON
THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN

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THE CRYSTAL PALACE, SYDENHAM, AND NUMEROUS PUBLIC COMPANIES.

Catalogues free on application.

JOHN WEEKS & COMPANY, HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS ENGINEERS,

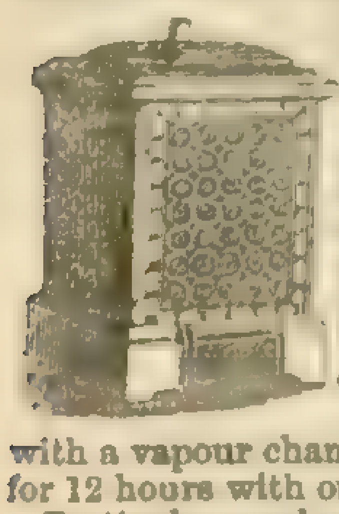
KING'S ROAD, CHELSEA, LONDON, S.W.

Card.

SAMUEL N. McGERROW,
General Horticultural Builder,
Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

PORTABLE HOT-WATER APPARATUS, for Heating Conservatories, Hothouses, &c.
T. S. Truss, C.E., Sole Manufacturer. Offices: 53, Gracechurch Street, London, E.C.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

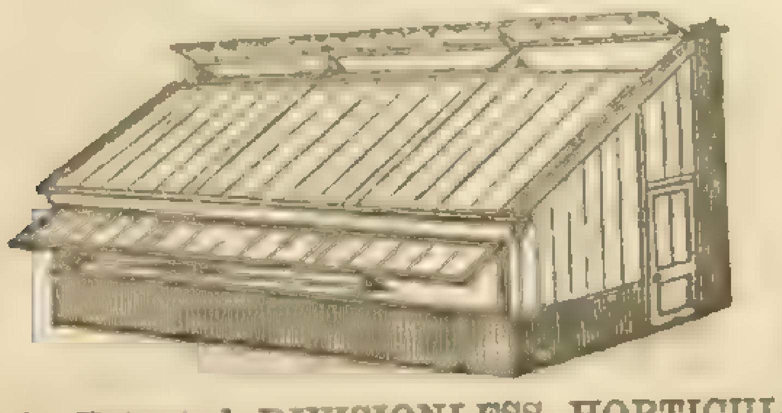


It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large Apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.
It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.
Particulars and prices post free on application to Musgrave Brothers, Ann Street Iron Works, Belfast.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the
Patentee's Warehouse, 155, Cheapside, London, E.C.
Price complete from 3l. 10s.
Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

T. G. MESSENGER, Horticultural Builder and Hot-Water Apparatus Manufacturer, Loughborough.



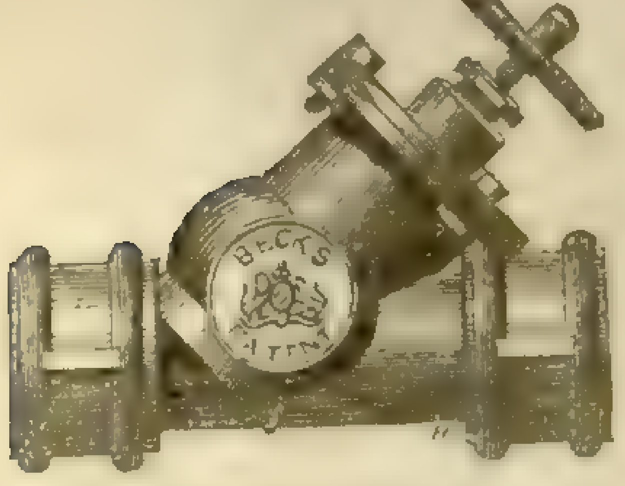
T. G. M.'s Patented DIVISIONLESS HORTICULTURAL BUILDINGS are cheaper, more durable, and lighter in appearance than any other made. The Ventilation is effected by a simple and much admired mechanical arrangement.

T. G. M.'s Patented TRIANGULAR TUBULAR BOILER for Heating Buildings with Hot Water has been extensively adopted by gentlemen who are willing to testify to its great efficiency and economy of fuel. Plans, Estimates, Testimonials, and every information sent free upon application.

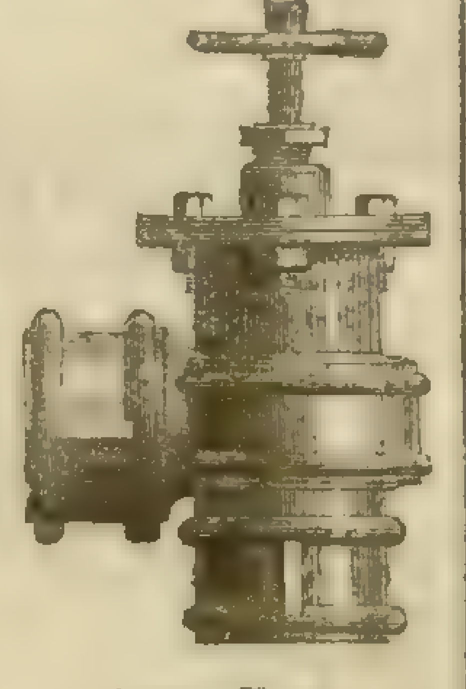
Horticultural Works, Danvers Street, Chelsea, S.W.

BECK'S PATENT

HOT WATER VALVE.



Horizontal Valve.
2" 18s. 6d.; 3" 25s.; 4" 36s.



Angle Valve.
2" 17s.; 3" 23s.; 4" 28s.

JAMES GRAY, Sole Agent, begs to call attention to this most simple and perfect Valve ever invented. It is perfectly water-tight, and is never liable to get out of order, or to get fixed by standing.
To Architects, Engineers, Gardeners, & Others.—Beck's Patent Valve has been submitted to several of the most scientific men of the day, and has invariably met with unqualified approval. A liberal Discount to the Trade.
Conservatories, Greenhouses, Vineries, and every description of Hothouse erected on the most improved principles, and of best materials, at the lowest possible price consistent with good workmanship.
Heating by Hot Water in all its branches. Boilers of every approved description, Tubular Saddle, Conical, &c.
James Gray, Horticultural Works, Danvers Street, Paulton's Square, King's Road Chelsea, S.W.

Horticultural Works and Hot-Water Apparatus Manufactory,
Kensal Green, Harrow Road, London, W.

JOHN TAYLOR and SON beg to call the attention of the nobility and gentry to the very superior manner in which they ERECT all kinds of CONSERVATORIES, VINERIES, GREENHOUSES, &c., combining every improvement with elegance of design and durability of materials and workmanship.
Their VENTILATING APPARATUS for the Fronts and Roofs of Houses has given the highest satisfaction. Churches, Chapels, Schools, Entrance Halls, Public Buildings, &c., heated with Hot-Water Apparatus in a most economical and efficient manner.
J. T. & Son have great pleasure in referring to numbers of the nobility and gentry by whom they are extensively engaged.

HOT-WATER APPARATUS.

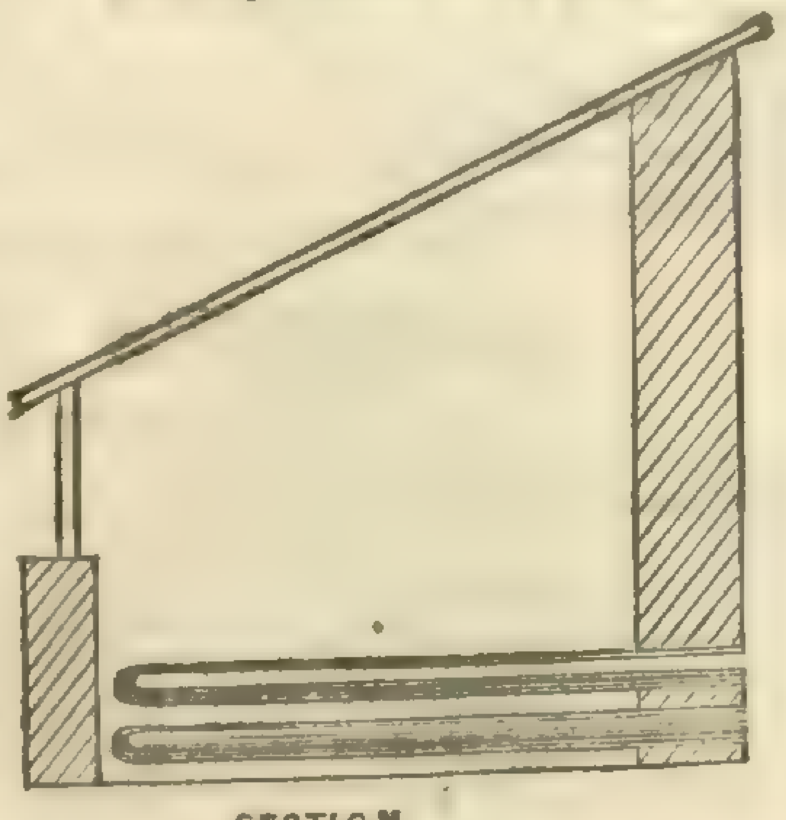
J. JONES

BEGS TO OFFER A COMPLETE

Hot-Water Apparatus for Houses

according to the following Plans, delivered Free to any Railway Station in England.

Plan No. 1.

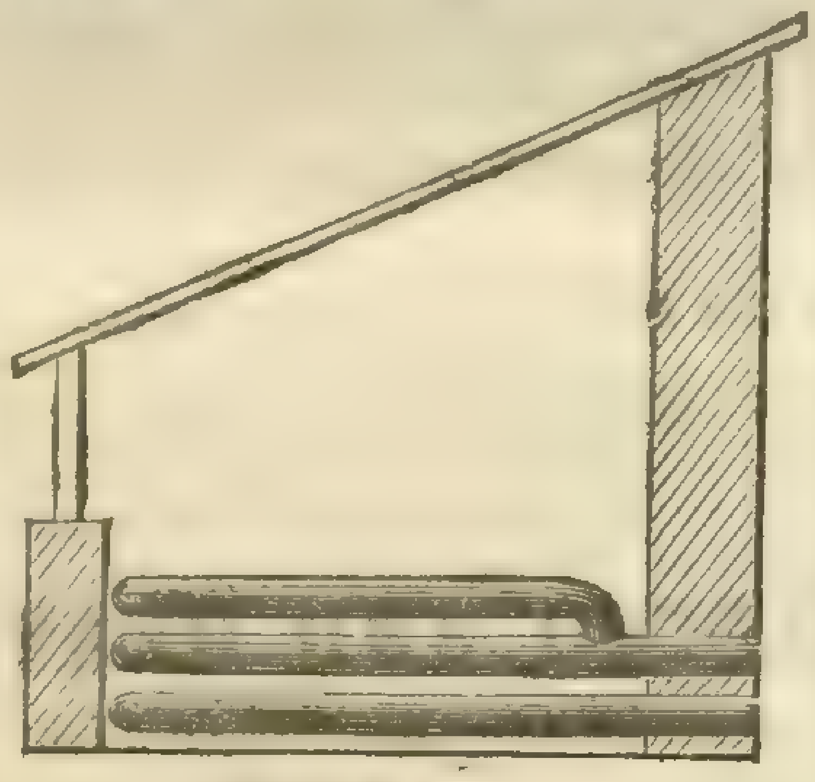


Two 4-inch pipes along front and one end of house.

SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£8 0 0	£8 12 6
20 feet by 10 feet ..	„	8 10 0	9 0 0
25 feet by 12 feet ..	„	10 0 0	10 10 0
30 feet by 12 feet ..	„	11 10 0	12 0 0
40 feet by 15 feet ..	„	16 10 0	17 0 0
50 feet by 15 feet ..	„	18 10 0	20 0 0

Plan No. 2.

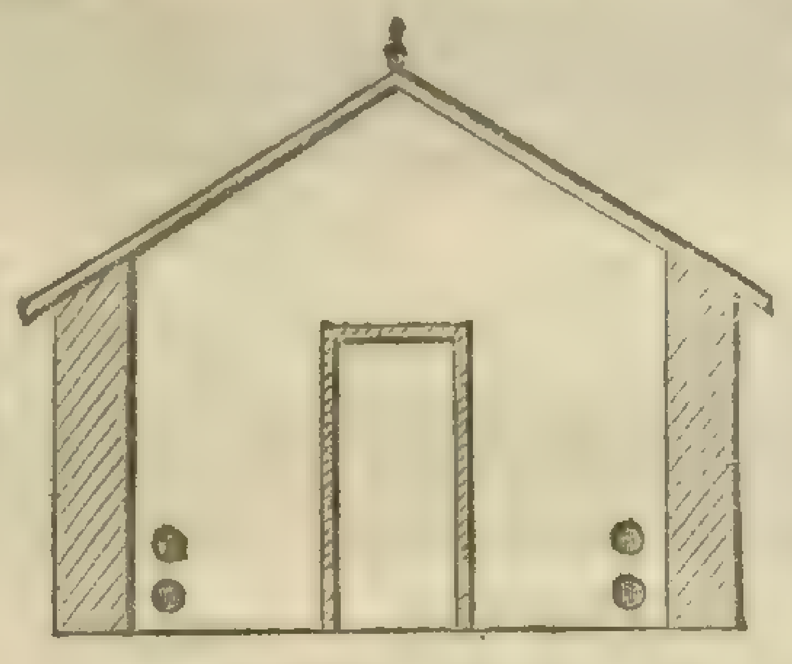


Three 4-inch pipes along front and one end of house.

SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£11 10 0	£12 0 0
20 feet by 10 feet ..	„	12 10 0	13 0 0
25 feet by 12 feet ..	„	14 10 0	15 0 0
30 feet by 12 feet ..	„	16 10 0	17 0 0
40 feet by 15 feet ..	„	22 0 0	23 0 0
50 feet by 15 feet ..	„	24 10 0	26 0 0

Plan No. 3.

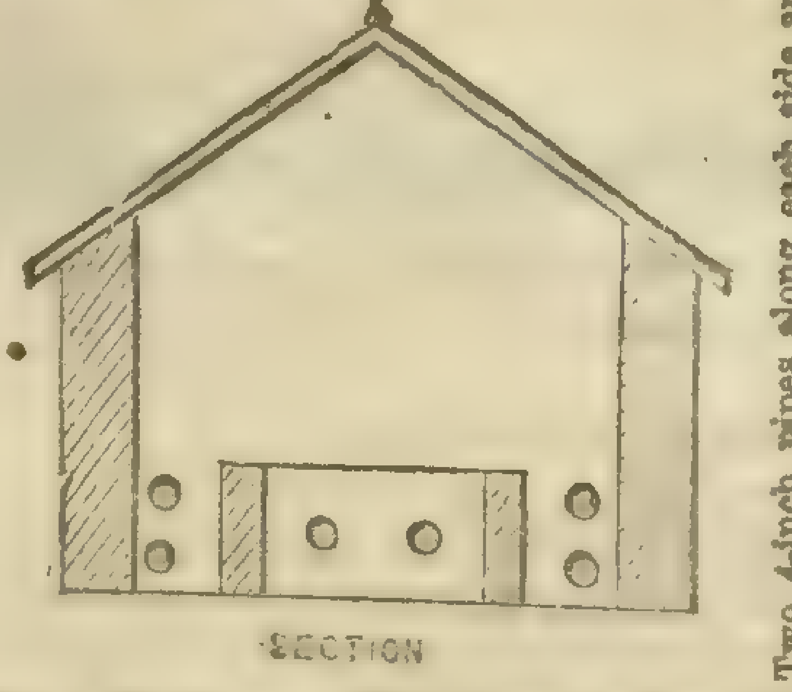


Two 4-inch pipes along each side and one end of house.

SECTION.

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£12 10 0	£13 0 0
20 feet by 10 feet ..	„	13 10 0	14 0 0
25 feet by 12 feet ..	„	16 10 0	17 0 0
30 feet by 12 feet ..	„	19 0 0	20 0 0
40 feet by 15 feet ..	„	24 10 0	25 10 0
50 feet by 15 feet ..	„	27 0 0	28 10 0

Plan No. 4.



Two 4-inch pipes along each side and one end of house, and two 4-inch pipes in pit for bottom heat.

SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£16 0 0	£17 0 0
20 feet by 10 feet ..	„	17 10 0	18 10 0
25 feet by 12 feet ..	„	21 10 0	22 10 0
30 feet by 12 feet ..	„	25 0 0	26 0 0
40 feet by 15 feet ..	„	31 0 0	32 0 0
50 feet by 15 feet ..	„	33 10 0	35 0 0

The above prices include Boiler, strong Furnace-doors, Bars, Plate, Soot-doors, Damper, and Supply Cistern-pipes of 4-inch diameter, Elbows, &c.; all of the best quality.
Delivered free to any Railway Station in England. Terms: Nett Cash.
Estimates will be sent for the work fixed complete, or further particulars on application to
J. Jones, Hot-Water Apparatus Manufacturer, 6, Bankside, London, S.E.

HORTICULTURAL BUILDINGS, with KENT'S PATENT WEATHERPROOF GLAZING.
A. Kent, 62, South Street, Chichester.

E. DENCH'S Horticultural Works, 152, King's Road, Chelsea, Manufacturer of every description of HORTICULTURAL BUILDINGS either in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without.
HOT WATER APPARATUS Manufacturer.

Hothouses for the Million.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to any Railway Station round London.
Illustrated Circulars, with Lists of Prices, can be had on prepaid application to Samuel Hereman, 7, Pall Mall East, London.

Greenhouse Wanted.

WANTED to PURCHASE, a good Second-hand Span-roofed GREENHOUSE, with Hot Water Apparatus and Stand complete. No objection to take Plants as well.—Address, with particulars, to L. L., Messrs. Carter & Bromley, Stationers, Royal Exchange, E.C.

FOR SALE, TWO well-built GREENHOUSES. Size, one 21 feet by 11 feet, and one 15 feet by 9 feet; Lean-to roof. Several GARDEN FRAMES, single and double, 8 feet by 6 feet and 5 feet by 6 feet 6 ins., and other useful sizes, cheap.
Jas. Smith, Carpenter, near the Creek, Jury Street, Hammersmith, W.

Garden Engines and Syringes.

J. TYLOR and SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

Fig. 598. J. Tylor & Sons' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. Tylor & Sons' improved Brass Pump, Universal Joint, and Registered Spreader which answers the purpose of the separate rose, fan, and jet.
15 gallons .. £5 12 6 | 28 gallons .. £7 2 9
Fig. 599. Ditto GALVANIZED IRON TUB.

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15 0	£3 5 0	£3 15 0	£5 0 0	£5 15 0

Fig. 618. No. I. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. £1 8 0 each.
No. 2. Ditto ditto 1 2 6 „
Telescope Branch Pipe for ditto .. 0 10 0 „

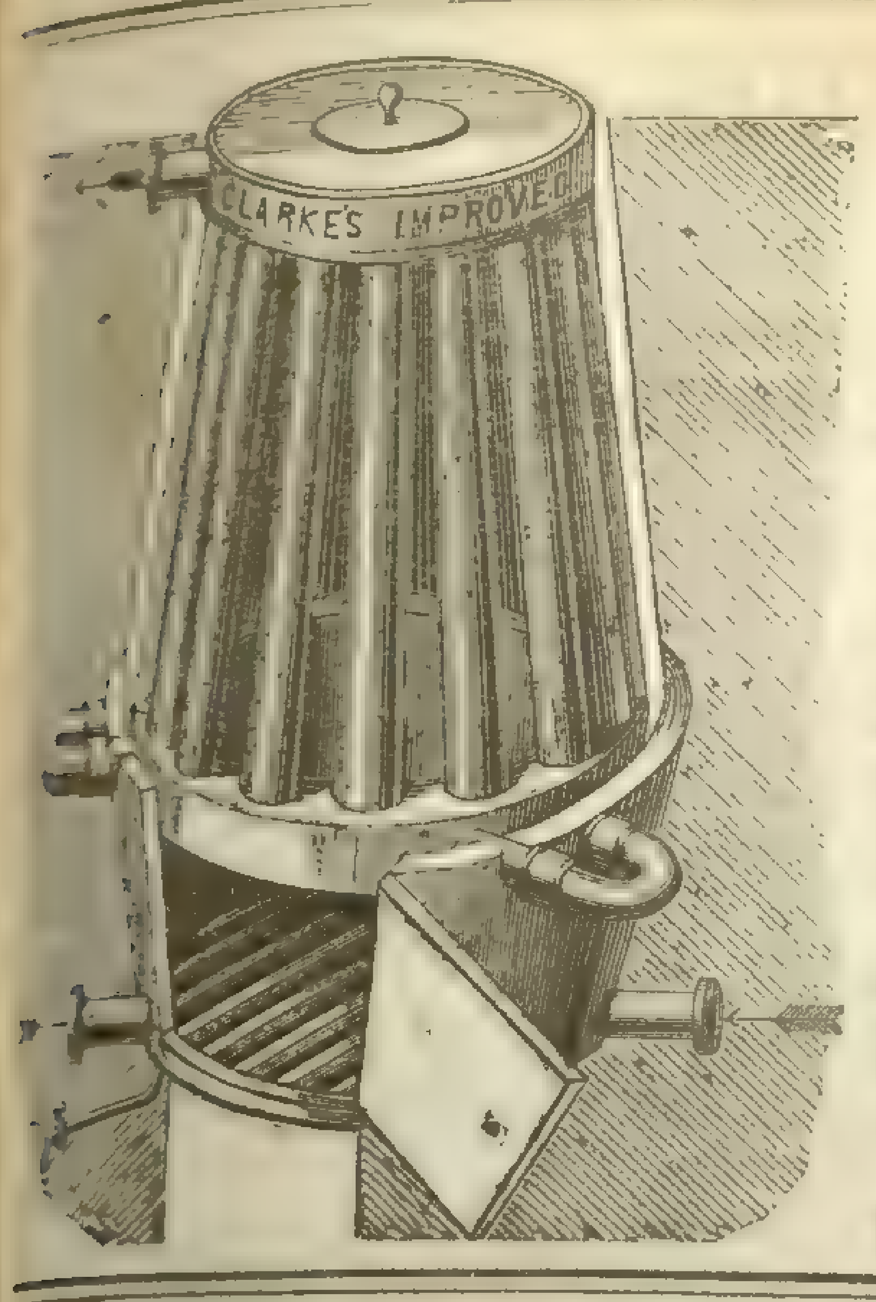
Fig. 619. Large GARDEN SYRINGE, with one rose and jet .. .. 11s. 6d. each
„ 620. Middle Ditto ditto 10 3 „
„ 621. Small Ditto ditto 9 0 „
„ 622. LADIES GARDEN SYRINGE, with do. 7 6 „

Fig. 623. READ'S SYRINGE, with two roses and one jet, 17s. 6d.
„ 624. READ'S SYRINGE, with one rose and jet, 15
„ 625. Improved ditto ditto large 14
Garden Engines and Syringes of J. Tylor & Sons' manufacture kept in stock by Ironmongers and Seedsmen in every part of the United Kingdom.
J. Tylor & Sons, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

Important to Seedsmen and Nurserymen.
Sacks—Bags—Mats.

JAMES T. ANDERSON, Sack and Bag Maker, 34, Lime Street, Fenchurch Street, E.C., London, supplies SEED BAGS of a superior description at the following low prices:—

2 Bushel Bags..8s. 9d. per doz. | ½ Bushel Bags..4s. 9d. per doz.
1 Bushel Bags..6s. 3d. „ | Peck Bags ....3s. 6d. „
Coarser Bags much cheaper. 4 Bushel Sacks, 1s. each.
Petersburg Dunnage Mats, 2l. 10s., 2l. 15s., and 3l. per 100.
Archangel Mats (new), 8l. 10s.; (best), 9l. per 100.
Orders, enclosing remittance, promptly executed.



CLARKE'S

NEW PATENT

CYLINDRICAL BOILER

Is now announced to be the most economical and efficient HEATING APPARATUS invented; and the Draught principle and Cylindrical Furnace surpasses everything brought before the Public. These Boilers are also very durable, the metal being half-inch thick and no joints exposed to the direct action of the fire; and although they possess such great power, the Heat can be regulated to the greatest nicety.

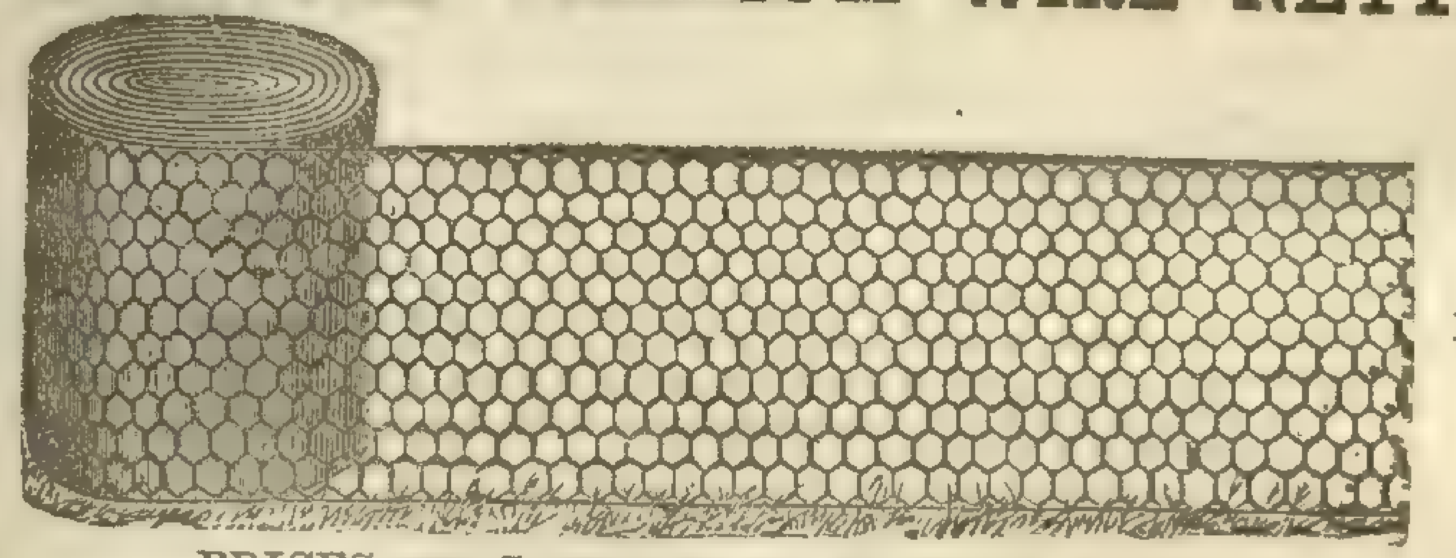
Estimates and Prices for all kinds of Heating, with first-class references, sent Post Free, by applying to the EAGLE IRON FOUNDRY, 25, Seel Street, Liverpool.

T. C. CLARKE,

CIVIL AND HYDRAULIC ENGINEER, PROPRIETOR

NEW IMPROVED PREMIUM WIRE NETTING.

GREAT IMPROVEMENT,



WITH REDUCED PRICE.

PRICES PER LINEAL YARD, 24 INCHES HIGH :—

[illegible] of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra Strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
[illegible]	Hares, Dogs, Poultry	3*d.*	4*d.*	3¾*d.*	5*d.*	4½*d.*	6*d.*	5½*d.*	7*d.*
[illegible]	Game or Poultry Netting	3½*d.*	4¼*d.*	4*d.*	5*d.*	5*d.*	6½*d.*	6½*d.*	8*d.*
[illegible]	Small Rabbits, Hares, &c.	4*d.*	4¾*d.*	4¾*d.*	6*d.*	5½*d.*	7*d.*	7*d.*	9*d.*
[illegible]	Smallest Rabbits..................	5*d.*	6*d.*	5¾*d.*	7*d.*	7*d.*	9*d.*	9*d.*	11*d.*

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping [...]s in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

*** *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged or [...] returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

[R]ANSOMES & SIMS, ORWELL WORKS, IPSWICH,

[...] the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

NEARLY TWO HUNDRED SETS

OF

STEAM PLOUGHING and CULTIVATING APPARATUS

HAVE NOW BEEN SENT OUT BY

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD.

[...] NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

[T]. ARCHER'S "FRIGI DOMO."—Patronised [by] her Majesty the Queen, the Duke of Northumberland [for Sion] House, his Grace the Duke of Devonshire for Chis[wick], Professor Lindley for the Horticultural Society, [Sir J.] Paxton for the Crystal Palace, Royal Zoological [...] Mrs. Lawrence of Ealing Park, &c.

[PROTEC]TION from the COLD WINDS & MORNING FROST. ["FRIG]I DOMO," a Canvas made of patent prepared Hair [...] a perfect non-conductor of Heat and Cold, keeping, [...] it is applied, a fixed temperature. It is adapted for [horti]cultural and floricultural purposes, for preserving [...] flowers from the scorching rays of the sun, from [...] attacks of insects, and from morning frosts. To be [had in any] required lengths.

[...] yards wide .. .. 1*s.* 6*d.* per yard run.
[...] yards wide .. .. 3*s.* per yard.
[...] improved make, 3 yards wide, 2*s.* 6*d.* per yard run.
["F]rigi Domo" Netting, 2 yards wide, 1*s.* 4*d.* per yard run.
[...] THOMAS ARCHER, Whole and Sole Manufacturer, 7, [...], Cannon St., City, E.C., and of all Nurserymen [and Seeds]men throughout the kingdom.

"It is much cheaper than Mats as a covering."

Seed and Corn Trade.

TO BE DISPOSED OF, an Old Established BUSINESS in the Country, with immediate possession. Capital 2000*l.* to 3000*l.*

Address, W., 64, King William Street, City. E.C.

TO BE LET, a FIRST-RATE NURSERY of 20 Acres, contiguous to Rail and Canal, with extensive Vineries, Propagating and Show-houses, and a good Stock. To be let in consequence of the sudden and total prostration of the tenant by paralysis. Immediate possession. Stock at valuation. Glass not to be paid for.

G. GLENNY, Fulham, S.W.

Hucclecote Gardens, 2½ Miles from Gloucester.

TO BE LET, with immediate possession, the above capital WALLED-IN GARDENS, containing about 4 acres, with House, Farm Yards, Buildings, Orchard and Land adjoining, containing in the whole about 16 acres, with Green-houses, Propagating Houses, Vineries, Pits, &c. Extent of Glass 5770 feet.

For particulars apply to W. KNOWLES, Auctioneer, 5, Barton Street, Gloucester.

Cottage.

WANTED, to RENT, with the option of Purchase, an eight or 10 roomed COTTAGE, with good Garden, within 30 miles of London. With two or three Acres of Land preferred.—Address particulars to X. X., care of Mr. Williams, 32, Bouverie Street, Fleet Street, E.C.

Herts, Kent, Surrey, or Sussex.

WANTED, to PURCHASE, a FREEHOLD COTTAGE or moderate-sized HOUSE, with or without Land, from two to 100 Acres. If out of repair, at a proportionate price, no objection.—Apply by letter, stating situation and price, to M. LOXFORD, care of Mr. Williams, 32, Bouverie Street, Fleet Street, E.C.

To Nurserymen, Kitchen Gardeners, &c.

TO BE SOLD, the INTEREST in the LEASE of that old and well-established Nursery, known as BARNES NURSERY, at Merrion, within 1½ mile of the City of Dublin, with the entire STOCK-IN-TRADE, consisting of Greenhouse and Hothouse plants in every variety, Timber and Fruit Trees, Flowers in pots, Shrubs, &c. The Nursery stands on 24 acres 2 roods and 36 perches statute measure, has extensive Green and Hothouses thereon, with all the requisites for the carrying on of the Nursery business; and is held for an unexpired term of 44 years, at the rent of 202*l.* per annum. There are two good substantial moderate sized two-story Dwelling Houses on the ground, with Lodges for foremen and labourers; also a handsome Shop on the public road at the entrance. This is the largest Nursery in Ireland, and its patrons comprise most of the nobility and gentry of the country. It stands on the direct road from Dublin to Kingstown, in the midst of all the fashionable Villas near Dublin; and a portion of the ground might be most profitably employed as a Vegetable Garden, there being no such accommodation near Kingstown, or that side of Dublin. Other portions of the land will presently acquire a high value for building, as it adjoins the extensive building ground of Lord Herbert of Lee, which is becoming rapidly in demand. A Lease for a more extended term can be obtained, if required. If necessary a portion of the purchase money would be allowed to remain out as a charge upon the property.

For particulars apply to JOHN RIDDICH, Solicitor, 3, Eustace Street, Dublin.

The Proprietor would have no objection to enter into arrangements with an experienced Working Gardener, with a small capital, for the carrying on the business of the Nursery and Vegetable Gardens, or with one or more for the working of each separately.

Sales by Auction.

Important Sale of Coniferous Seeds.

FROM CALIFORNIA, GREECE, ASIA MINOR, MEXICO, SPAIN, NORTH AMERICA AND RUSSIA, MOSTLY IN GOOD CONDITION AND LOTTED TO SUIT PRIVATE BUYERS AND THE TRADE.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, March 26, at half-past 12 precisely, a large quantity of valuable CONIFEROUS SEEDS, comprising

Pinus Benthamiana	Cupressus Lawsoniana
,, Lambertiana	,, Corneyana
,, Sabiniana	Juniperus excelsa
,, Coulteri	,, drupacea
,, insignis	,, rufescens
Abies Pinsapo	Cryptomeria japonica
,, Nordmanniana	Cedrus atlantica
,, grandis	Wellingtonia gigantea
,, Menziesii	Liriodendron tulipifera
,, Canadensis	Acer saccharinum
,, Cephalonica	Oredaphne Californica
,, Pichta	Chamærops humilis

&c. &c.

On view the Morning of Sale, and Catalogues had.

Fruit Trees, Conifers, Ornamental Shrubs, Roses, Azaleas, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, March 29, at Half-past 12 o'Clock precisely, a choice assortment of Plants, consisting of Dwarf-trained and Standard FRUIT TREES, SPECIMEN CONIFERS, including Pinus Benthamiana, Wellingtonia gigantea, Cedrus Deodara and atlantica, Red Cedars, Portugal Laurels, Rhododendrons, Azaleas, Standard and Dwarf Roses, Ornamental Flowering Shrubs, Pampas Grass, Raspberry, Gooseberry, and Currant Trees, Brooms, Arbor Vitæ, Gladiolus Brenchleyensis, Holly, Phloxes, Pentstemons, Chrysanthemums, Pinks, Fuchsias, &c.

On view the Morning of Sale and Catalogues had.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at the Mart, Bartholomew Lane, City, E.C., on FRIDAY, March 28, at 12 o'Clock, a first-class Collection of CARNATIONS, PICOTEES, and PINKS, of remarkably fine growth, the surplus stock of a celebrated grower; 200 Standard, Dwarf and Climbing Roses, fine Camellias, Azalea indica, Ericas, Epacris, and other plants in bloom; selected Fruit Trees, Choice American Plants, Fuchsias, Verbenas, Pæonias, Dahlias in dry roots, &c.

On view the Morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

Dane End, near Ware, Herts.

IMPORTANT SALE OF SHORTHORNED CATTLE, VALUABLE HORSES, PIGS, DORKING FOWLS, &c.

MR. STRAFFORD has received Instructions to announce for SALE by AUCTION, without reserve, on WEDNESDAY, the 30th of April next, at Dane End, near Ware, Hertfordshire, the Entire Herd of SHORTHORNS belonging to H. E. Surtees, Esq.; consisting of 50 Head of exceedingly well-bred Bulls, Cows, and Heifers. The foundation of this Herd was laid with three choice Heifers, "Anna Maria," "Jenny Lind," and "Marchioness," purchased of that deservedly eminent breeder, Mr. Wiley, of Brandsby, and directly descended from Stock bought by him at the Sales of Messrs. Colling and Mason. Since then some choice specimens have been added, bred from the Herds of Mr. Bates and others of celebrity. The young Stock are chiefly by the Duke of Argyll (11375) and Lumley (16478). The Cows and Heifers are principally in-calf to the latter Bull and Grand Vizier, a son of Mr. R. Booth's War Eagle (15483). The whole are in perfect health and regular breeders, and their dispersion affords an excellent opportunity to purchasers of first-class animals. Also, will be Sold, the very celebrated STALLION, Cleveland Duke, and other young Horses, with a Van suitable either for the conveyance of horses or cattle; a splendid collection of YORKSHIRE PIGS, bred from the famous Brandsby and Bushey sorts; and some choice DORKING POULTRY, from Captain Hornsby's prize birds.

Catalogues, with Pedigrees and other particulars, may be had on application to Mr. STRAFFORD, 13, Euston Square, London, W.; or of Mr. C. BENNETT, the Bailiff, at Dane End, near Ware, Herts.

HOTHOUSES FOR THE MILLION.

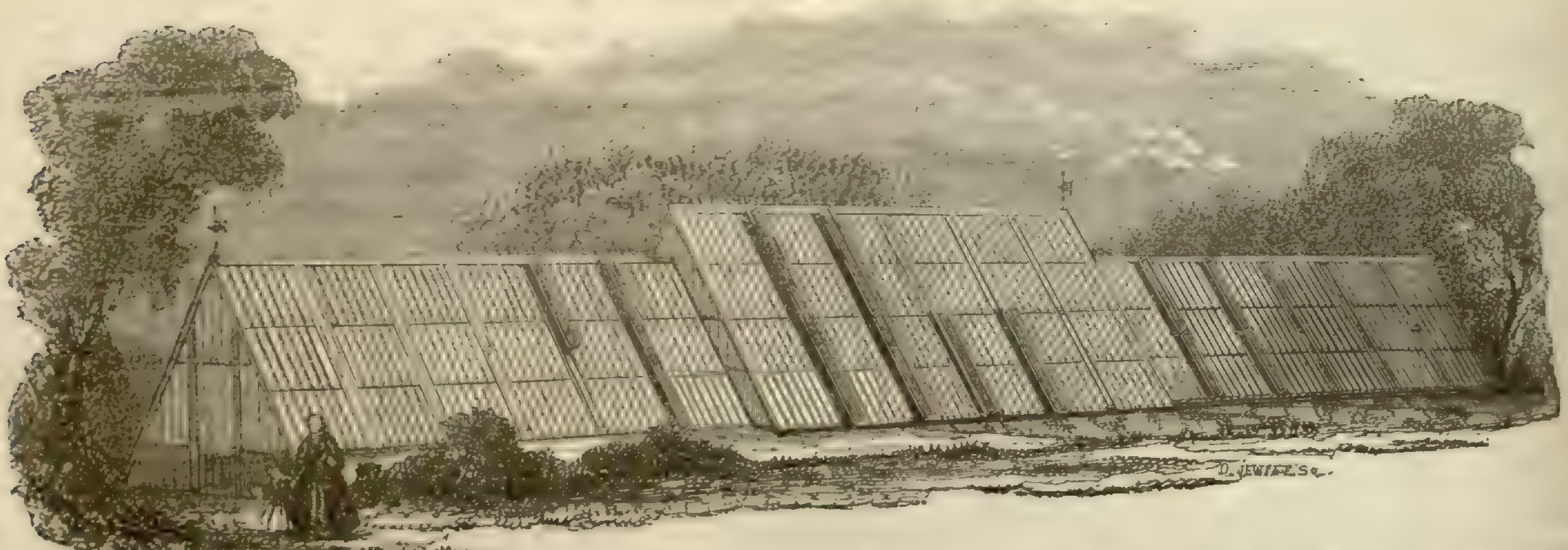
SAMUEL HEREMAN

BEGS TO EXPRESS HIS BEST THANKS FOR THE LIBERAL SUPPORT HE HAS RECEIVED IN THE MANUFACTURE AND SALE OF

THE PORTABLE AND ECONOMICAL HOTHOUSES,

INVENTED AND PATENTED BY

SIR JOSEPH PAXTON, M.P.



These Buildings are of unparalleled cheapness, and being composed of simple parts can be enlarged, removed, or adapted to any Horticultural purpose by ordinary labourers.

They are calculated for Gardens of the highest order, or Gentlemen's Gardens generally; for Market Gardens, where they may be made to cover any extent of surface, and also for Suburban, Villa, and Cottage Gardens.

The Cash Prices of Lean-to Houses complete are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£12 0 0	£16 0 0	£21 0 0	£28 10 0	£34 5 0
31 3 in length	16 10 0	21 2 6	26 10 0	37 12 0	45 16 0
41 11 in length	20 18 0	26 18 6	33 7 6	46 14 0	57 7 0
52 7 in length	25 12 6	32 15 0	40 5 0	55 16 0	68 18 0
63 3 in length	30 6 0	38 10 0	47 2 6	64 18 0	80 10 0
73 11 in length	34 12 6	43 15 0	53 7 6	74 0 0	92 0 0
84 7 in length	39 6 0	49 11 6	60 5 0	83 2 0	103 11 0
95 3 in length	43 19 0	55 10 0	67 2 6	92 5 0	115 2 0
105 11 in length	48 17 6	60 12 6	73 10 0	101 10 0	126 13 0

The Cash Prices of the Span-roofed Houses, with Water-troughs, Doors, and [illegible] complete, are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£24 0 0	£32 0 0	£42 0 0	£57 0 0	£68 12 [illegible]
31 3 in length	33 0 0	42 5 0	53 0 0	75 4 0	91 10 0
41 11 in length	41 16 0	53 17 0	66 15 0	93 8 0	114 14 0
52 7 in length	51 5 0	65 10 0	80 10 0	111 12 0	137 10 0
63 3 in length	60 12 0	77 0 0	94 5 0	129 16 0	161 0 0
73 11 in length	69 5 0	87 10 0	106 15 0	148 0 0	184 0 0
84 7 in length	78 12 0	99 3 0	120 10 0	166 4 0	207 2 0
95 3 in length	87 18 0	111 0 0	134 5 0	184 10 0	230 4 0
105 11 in length	97 15 0	121 5 0	147 0 0	203 0 0	253 6 0

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

The above prices do not include package, railway freight, heating apparatus, or erection, but we have made arrangements with Mr. Jones, of 6, Bankside, Southwark, London, to heat these houses on economical principles under our direction.

Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

SAMUEL HEREMAN, 7, PALL MALL EAST, LONDON, S.W.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 13.—1862.] SATURDAY, MARCH 29. Price Fivepence. Stamped Edition, 6*d*.

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NOTICE TO ADVERTISERS.—*Advertisements should be sent so as to reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

ROYAL HORTICULTURAL SOCIETY.—FLORAL COMMITTEE.
A MEETING of this COMMITTEE will take place on TUESDAY, April 1st, at 12 o'clock. The subjects for examination must be at South Kensington, for entry, by 11 A.M.
THOMAS MOORE, Secretary to the Committee.

Exhibition of Unforced Hyacinths, Narcissus, and Tulips.
MESSRS. ARTHUR HENDERSON AND CO.'S ANNUAL DISPLAY of the above "Galaxy of Flowers" is now in great perfection, and can be seen gratis.
Pine Apple Place, Edgware Road, London, W.

New Roses of 1862.
PAUL AND SON have now ready their usual fine Plants of the finest novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

NEW ROSES for 1862.—36 varieties (the pick of the year) offered in fine strong plants, a DESCRIPTIVE LIST of which may be had on application to BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

WANTED, from 1 to 2 dozen SPECIMEN ROSES grown in Pots, extra strong.
Direct J. B., *Gardeners' Chronicle* Office.

To the Trade.
NEW SEEDS direct from the Growers, CHARLES SHARPE & Co., Sleaford, Lincolnshire.
PRICED LIST for Spring 1862 sent on application.

Hendon Park Nurseries, N.W.
PANSIES in Pots.—Fine plants of all the best Show varieties. Twenty-four sorts for 10*s*. Plants fit for this ...'s Exhibitions.
EDWARD SHENTON.

Notice.
PURCHASERS of LARGE QUANTITIES of FARM or GARDEN SEEDS will be supplied liberally by ... & Sons.
... prices apply (stating quantity required) to SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Large Tartarian Arborvitæs.
...00 of the above, all strong, healthy and from 5 to 6 feet high, and in excellent condition. Price moderate.
Apply to H. and F. SHARPE, Wisbech.

WELLINGTONIA GIGANTEA.—Seedling Plants of 1861 in single pots, per dozen, 21*s*. Price to the ... per 100 on application.
J. HENCHMAN, Edmonton, near London, N.

J. J. FOSTER, Anmer Nursery, Edgware, N.W., has a fine stock of EVERGREENS, Trained FRUIT TREES, ORNAMENTAL SHRUBS, and FOREST TREES, grown in adhesive soil.
Prices on application.

ONE YEAR'S Seedling ARBUTUS, 30*s*. per 1000.
2 years' Seedling ARBUTUS, 40*s*. per 1000.
A reduction will be made if a large quantity be taken.
RICHARD SMITH, Nurseryman, Worcester.

Fox Covert or Embankment Planting.
WM. MAULE AND SONS have a quantity of fine 1-years GORSE or FURZE PLANTS to offer at ... per 1000. This and April is the best season for planting.
The Nurseries, Bristol.—March 29.

GORSE or FURZE for COVERTS, &c.—
Extra fine 2 years' plants at 5*s*. per 1000.
Do. 1 year do., at 2*s*. 6*d*. per 1000.
Sample if required.
JOHN PERKINS, 52, Market Square, Northampton.

To the Trade.
WILLIAM MOORE begs to offer 200,000 very fine 3-year SEEDLING NORWAY SPRUCE FIRS at ... per 1000.
N.B. No objection to Barter.
The Norfolk Nursery, East Dereham.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

New Garden Seeds.
JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

Genuine Farm Seeds.
JAMES CARTER AND CO., 237 and 238, High Holborn, W.C.

CHOICE CAMELLIA SEED, saved from one of the finest Collections in Europe. 1*s*. per packet.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

Now Ready.
BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See large Advertisement.
Covent Garden Market, W.C.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.—

50 in 50 well selected vars.	..	..	..	£2	2	0
50 in 25	ditto	ditto	..	1	10	0
25 in 25	ditto	ditto	..	0	15	0
12 in 12	ditto	ditto	6*s*., 9*s*., and	0	12	0

Mixed, 2*s*. 6*d*. per dozen; 17*s*. 6*d*. per 100.
BUTLER & McCULLOCH, Seedsmen, Covent Garden Market, W.C.

E. G. HENDERSON AND SON, NURSERYMEN AND SEED MERCHANTS, Respectfully announce their NEW SEED CATALOGUE and GUIDE for 1862, free on application.
Wellington Nursery, St. John's Wood, London, N.W.

Vegetable and Flower Seeds.
PAUL AND SON'S CATALOGUE of the above, including ASTERS and STOCKS, with DESCRIPTIVE LIST of the best 100 GLADIOLI, is now ready, post free.
"Old" Cheshunt Nurseries, Herts.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

Dahlias, &c.
C. E. ALLEN'S ANNUAL CATALOGUE is now ready, and can be had on application.
Shacklewell, near London, N.E.

POLYANTHUS SEED from the best Laced Flowers, in packets. Sent free on receipt of 13 Postage Stamps.
JAMES WOODS, Florist, Harwich, Essex.

RUSSELL'S PYRAMID PRIMULA.—Seed of this magnificent strain, which cannot fail to give satisfaction. In packets, price 2*s*. 6*d*.
GEO. CLARKE, Nursery, Streatham Place, Brixton Hill, S.

CHOICE MANGEL WURZEL SEED at low prices. CARRIAGE FREE, according to quantity required.
SUTTON & SONS, Seed Growers, Reading.

Dwarf-trained Peaches and Nectarines.
E. COOLING has a few very fine handsome trees still left. Price on application.
Mile Ash Nurseries, Derby.

STRONG FRUITING VINES, 7*s*. 6*d*. and 10*s*. 6*d*. LIST gratis and post free.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

JAMES CRAWFORD, High Beech, Essex, has still on hand a quantity of strong healthy GRAPE VINES, nearly all the leading sorts, which he begs to offer at low prices.

Notice to Exhibitors.
BUCKLAND SWEETWATER GRAPE (IVERY'S).—Prizes of 3*l*. and 2*l*. will be given for the best and second best 3 bunches of this GRAPE, to be exhibited at the Royal Botanic Society's Exhibition, July 9th, 1862, by JAMES IVERY & SON, Dorking.

Pine Plants.
FOR SALE, a quantity of very strong, healthy, and clean PINE PLANTS, various sizes, from Fruiting downwards.
Apply to M. ROCHFORD, Market Gardener, Page Green, Tottenham, N.

Pine Plants.
FOR SALE, a large quantity of RIPLEY QUEEN PINE PLANTS (both Succession and Fruiting) at much reduced prices. They are very strong and healthy, and warranted clean.
For price and particulars apply to JOHN WILMOT, Isleworth, Middlesex, W.

HAUTBOIS STRAWBERRY.—A few hundreds of the BLACK or PROLIFIC HAUTBOIS STRAWBERRY, warranted true, 5*s*. per 100. The plants are really good.
All the best kinds of STRAWBERRIES, 3*s*. 6*d*. to 5*s*. per 100.
DILLISTONE & Co., Nurseries, Sturmer, Halstead.

GIANT ASPARAGUS ROOTS, 2*s*. 6*d*. per 100.—This delicious vegetable does not require half the expense usually incurred in planting it. For instructions, see RICHARD SMITH'S SEED LIST for 1862.
RICHARD SMITH, Nurseryman, Worcester.

YOUELL'S NORFOLK HERO CUCUMBER. Without exception the best Ridge Cucumber known. 6 Seeds 1*s*., 13 Seeds 2*s*.
LAING'S MAMMOTH CELERY.—The very best, hardiest, and finest flavoured Red Celery in cultivation, 1*s*. and 2*s*. per packet on receipt of postage stamps.
See former advertisement.
YOUELL'S Royal Nurseries, Great Yarmouth.

Good Seeds, Carriage Free.
SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

Present low Prices of Farm Seeds—See
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SUTTON & SONS, Seed Growers, Reading.

Agricultural Seeds.
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FARM SEEDS of the best quality can be supplied by the PLYMOUTH SEED COMPANY, Plymouth. Purchasers of large quantities treated liberally.

THE PLYMOUTH SEED COMPANY, Plymouth.
For Advertisement of FARM SEEDS, see page 234.

Agricultural and Garden Seeds.
H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

To the Seed Trade.
ALTRINGHAM EARLY HORN and other kinds of CARROT SEED from Genuine Stock.
Apply to G. MACINTOSH, High Road, Hammersmith, W.

Altringham Carrot Seed.
CHARLES SHARPE AND Co., Sleaford, have the above to offer to the Trade; new Seed of their own growing. Price on application.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

MR. HUDSON, of Castle Acre, can supply his GOLDEN MELON SEED BARLEY, in quantities of 5 qrs. and upwards, at 45*s*. per qr. New sacks included. Also his prolific BEANS at 53*s*. per qr. with new sacks. These produced 6 qrs. per acre last harvest.

DICKINSON'S ITALIAN RYE-GRASS SEED may now be had by Agriculturists applying to his Bailiff, Mr. W. HUNTER, New Park Farm, near Lymington, Hants. 48*s*. per quarter; or 7*s*. per bushel, for present payment only.

Good Clover Seed.
GENUINE NEW CLOVER SEED may be obtained of the undersigned. Prices (according to market and quantity required) will be forwarded on application.
SUTTON & SONS, Seed Growers, Reading, Berks.

GENUINE COW GRASS, an excellent sample, new seed, remarkably clean, 10*d*. per lb., or 84*s*. per cwt Carriage free.
J. C. WHEELER & SON, Seed Growers, Gloucester.

FOR SALE, a quantity of SKIRVING'S SWEDE TURNIP SEED, from a selected stock which can be strongly recommended. Apply to the Grower,
Mr. WILLIAM CANT, Myland Lodge, Colchester, Essex.

DIOSCOREA BATATAS (or CHINESE YAM), 2*s*. 6*d*. per doz., 15*s*. per 100. Larger tubers, 3*s*. 6*d*. per doz.
JOHN CATTELL, Westerham, Kent.

TRUE LAPSTONE KIDNEY.—The Advertiser begs to offer a fine Stock of this unrivalled kind. Price, 8*s*. per bushel, or 21*s*. per sack. All other kinds worth cultivating
JOSEPH MAY, 15, Wellington Street, Strand, W.C.

To Potato Growers.
JAMES CARTER AND CO. have a surplus stock of MYATT'S PROLIFIC and ASHLEAF KIDNEY POTATOES to dispose of in large quantities at a very cheap rate.
237 and 238, High Holborn, W.C.

Dalmahoy Early Potatoes from Scotland.
PETER LAWSON AND SON can supply the above and other varieties of SEED POTATOES.
27, Great George Street, Westminster, London, S.W.

POTATOES, Cash Price.—Dalmahoy, 16*s*. per sack, 4 bushels; Early Shaws, 16*s*. or 7*l*. per ton; Blues, 12*s*. or 5*l*. per ton; Ashleaf, Fortyfold, Regents, &c. Sacks, 1*s*. each. STRAWBERRY PLANTS.—For price, &c., see March 22.
GEO. CORNWELL, Seedsman, &c., Barnet, Herts, N.

EARLY OXFORD POTATO, an excellent Cropper, and the best for eating all the year round, 6*s*. per bushel. A reduction made if 1 Ton or more be taken.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

WEBB'S IMPERIAL KIDNEY POTATOES for quantity, quality, beauty, and size, can hardly be equalled, and not surpassed by any other Potato. Price 12*s*. per bushel.
Apply GEORGE MACE, Calcot Gardens, near Reading.

SEED POTATOES off Sandy Land.—Flukes, 5*s*. 6*d*. Early Pink Eyed and White Kemps, 5*s*. 6*d*. Seedlings 4*s*. 6*d*. per bushel. Downs, Rocks, and other sorts in proportion. Remittance or reference with orders.
ROBERT STEPHENSON, Pheasant Yard, Queen's Square, Liverpool, (late 26, St. John's Lane).

Restoration of the Old Irish Red Potatoes.
MR. THOMAS LEY, of Bideford, Devon, has for SALE a few Bags of the old sort of IRISH RED ROUGH POTATOES, which by patience and perseverance he has restored after 12 years succession planting. Price 5*s*. per peck.

NEWSPAPER

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s.; 25 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that his DESCRIPTIVE CATALOGUE for 1862, of NEW CHRYSANTHEMUMS and other PLANTS, is now ready, and will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Chrysanthemums.

W. HOLMES, F.R.H.S., has a fine stock of the above, including Little Harry, Lady Hardinge, Leda, Linda, Rifleman, Florence, &c., &c., all at 5s. per dozen.

DESCRIPTIVE CATALOGUES of the above, also Dahlias, Fuchsias, Verbenas, Geraniums, Antirrhinums, Petunias, &c., free for one stamp.

Frampton Park Nursery, Hackney, N.E.

Double Dwarf Poppies.

HOOPER AND CO. offer Seed of their unequalled stock of the above. Colours brilliant and varied; and flowers double as a fine Hollyhock. *Price 1s. per packet, post free.*

GENERAL SEED CATALOGUE Post free on application

HOOPER & CO., Seedsmen, Covent Garden Market, London, W.C.

New Gloxinias.

MESSRS. F. AND A. SMITH beg to offer fine young healthy Plants of their NEW GLOXINIAS, which were exhibited at the Royal Botanic Gardens last year, when they received an "Extra Prize Medal" for their superior merit.

Our selection, 30s. per dozen.

New and beautiful variegated plant, CYPERUS ALTERNIFOLIUS VARIEGATIS, 21s. each.

F. & A. S. can offer the above in well established plants; it is the finest variegated Grass ever offered.

Dulwich Nurseries, near London, S.

Phloxes for Exhibition.

DOWNIE, LAIRD, AND LAING have much pleasure in announcing that they can supply intending Exhibitors with strong autumn and spring struck plants, from their first-class Collection of the above.

See Leader in *Gardeners' Chronicle*, March 15, 1862, p. 236.

CATALOGUES post free on application.

Stanstead Park, Forest Hill, London, S.E., and Edinburgh.

WM. WOOD AND SON have much pleasure in offering their superb collection of

PHLOXES.

All the newest and most approved Continental varieties, 12s. to 18s. per dozen.

Older, but approved kinds, 6s. to 9s. per dozen.

100 Phloxes, in 50 sorts, for 40s. | 25 Phloxes, in 25 sorts 12s. 6d.
50 „ 25 „ 21s. | 12 „ 12 „ 9s. 0d.

PENTSTEMONS.

New and first-rate varieties	18s. per dozen.
Older, but approved kinds	6s. to 9s. „
50 Pentstemons, in 25 sorts	21s. 0d.
25 „ 25 „	12 6
12 „ 12 „	9 0

ANTIRRHINUMS.

Per dozen .. .. 6s., 9s., and 12s.

HERBACEOUS PÆONIAS.

Per dozen .. ..12s., 18s., and 24s.

HERBACEOUS PLANTS.

Per dozen .. .. 6s., 9s., and 12s.

Plants presented to compensate for carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ESTABLISHED UPWARDS OF A CENTURY.

BUTLER & McCULLOCH,

SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.

CARNATIONS and PICOTEES,

Saved on the Continent with the greatest care from one of the largest Collections in Europe, consisting of all the leading English and Continental kinds. For these our Establishment has for years been famous, and it is with great satisfaction that we are enabled to state that our Collections of these favourite Flowers are this season a great improvement on those of former years, while our prices for the same remain unaltered. We would especially direct the attention of Amateurs to the Seeds we now offer, as Flowers of the greatest merit, novelty, and beauty, may be expected from them.

Carnations.

	Per packet.—s. d.
A. 12 Superb varieties Self	5 0
B. 12 ditto ditto Flake	5 0
C. 12 ditto ditto Bizarre	5 0
D. 12 ditto ditto Fancy	5 0

Half packets of the above, 3s. each.

Yellow Carnations.

E. 12 Superb varieties Flake	5 6
F. 12 ditto ditto Bizarre and Self	5 6
G. 12 ditto ditto Fancy	5 6

Half packets of the above, 3s. 6d. each.

CARNATIONS, Choicest Mixed	2 6
PICOTEES, Choicest Mixed..	2 6

Perpetual or Tree Carnations.

	Per packet.—s. d.
H. 12 superb varieties Self	5 0
I. 12 ditto ditto Flake	5 6
J. 12 ditto ditto Bizarre	5 6
K. 12 ditto ditto Fancy	5 0

Half packets of the above, 3s. each.

Picotees.

L. 12 superb varieties, White Ground	5 6
M. 12 ditto ditto Yellow Ground	5 6

Half packets of the above, 3s. each.

Perpetual or Tree Picotees.

N. 12 Superb varieties	5 0

Half packets, 3s.

CARNATIONS, Perpetual Mixed..	2 6
PICOTEES, Perpetual Mixed	2 6

ORNAMENTAL GOURDS.

50 beautiful varieties .. 10s. 6d. | 25 beautiful varieties .. 5s. 6d. | 12 beautiful varieties .. 2s. 6d.

DESCRIPTIVE SEED CATALOGUE

May be had free and post paid upon application, containing a List of all the Novelties and most approved varieties of FLOWER and VEGETABLE SEEDS.

To Exhibitors we can strongly recommend our assortments of ASTERS, BALSAMS, STOCKS, and other choice imported Flower Seeds.

BUTLER & McCULLOCH confidently recommend the following Collections, assorted with the greatest care and discrimination:—

COLLECTIONS OF FLOWER SEEDS. (Carriage Free.)

New Annuals.

12 extra fine varieties ... ... 10s. 0d. | 6 extra fine varieties ... ... 5s. 0d.

Half Hardy Annuals.

100 finest selected varieties	30s. 0d.	25 finest selected varieties	7s. 6d.
50 „ „	15 0	12 „ „	4 0

Hardy Annuals.

100 finest selected varieties	20s. 0d.	25 finest selected varieties	5s. 0d.
50 „ „	10 0	12 „ „	2 6

VEGETABLE SEEDS *of every description of the very best quality.*

GLADIOLUS, splendid mixed Seedlings of Gandavensis, 2s. 6d. per dozen; 17s. 6d. per order.

BUTLER AND McCULLOCH, SEED MERCHANTS, COVENT GARDEN MARKET, W.C.

SPLENDID NEW PLANTS.

MESSRS. VEITCH & SON

Desire to offer the following choice and very desirable NOVELTIES, which they feel confident will give general satisfaction, and prove most valuable acquisitions to all Collections of Plants.

RHODODENDRON PRINCESS ALICE (Veitch).

This exquisite variety is a hybrid raised by ourselves between Rhododendrons Edgworthi and ciliatum. The flowers are large, of a delicate rosy blush shading off to white, and possessing the DELICIOUS PERFUME of R. Edgworthi, with the neat foliage, dwarf habit, and freedom of blooming of R. ciliatum.

At the late Exhibition of the Royal Horticultural Society on the 19th inst. it received a FIRST CLASS CERTIFICATE, and was the admiration of all who saw it.

1st size, strong Plants	42s. each.
2d size do. do.	21s. „

RHODODENDRON SESTERIANUM.

This is another beautiful greenhouse hybrid, raised between Rhododendrons Edgworthi and Gibsoni. It has immense flowers of a beautiful clear white, with yellow spots on the upper petals, of great substance and fine form. The flowers are larger, and like the Princess Alice (if possible) more delightfully scented than those of R. Edgworthi.

It has already received two FIRST-CLASS CERTIFICATES viz., at the late meeting of the Royal Horticultural Society on the 19th, and at that of the Royal Botanic Society on the 26th inst.

This variety is of German origin, and we have purchased the stock of it for the English demand.

We believe these two fine Rhododendrons will be but the beginning of a race of sweet-scented kinds, which will hereafter be extended to the hardy ones.

Large Plants, 31s. 6d. each.
Smaller do., 21s. each.

CAMELLIA QUEEN of BEAUTIES (Reine des Beautes).

This is a most lovely variety, with flowers of a beautifully delicate blush, veined with deep pink, of good texture, and perfect imbricated form. It is of excellent habit and foliage.

We exhibited a small plant of it at the meeting of the Royal Botanic Society on the 26th inst., when it received a FIRST-CLASS CERTIFICATE.

We can confidently recommend it as a most distinct and really desirable variety.

Nice young plants, 21s. each.

CAMELLIA LAVINIA MAGGI.

This is another very beautiful Camellia, with large flowers, of fine form and substance. The ground colour is pure white, striped with rose and deep crimson. It received a FIRST-CLASS CERTIFICATE at the Royal Horticultural Society's Spring Show on the 19th inst.

Price 10s. 6d. to 21s. each.

ASPLENIUM FLABELLULATUM.

One of the prettiest and most graceful Stove species of this genus. It has tripinnate fronds, with small cuneiform, transparent pinnules, much serrated. The fronds, which are arranged almost in the form of a basket, are terminated by a long slender filament. The stalks are of a deep ebony black.

It received a FIRST PRIZE at the Royal Horticultural Society's Exhibition in June, 1861, and a FIRST CLASS CERTIFICATE at that of the Royal Botanic Society on the 26th inst.

Price 42s. each.

ASPLENIUM RACHIRHINÆ.

A very elegant species, distinguished from the preceding by its much larger fronds, which are more recurved and terminated by longer filaments, the pinnules not being transparent and less serrated. The rachis is green and furrowed, thus rendering it quite distinct.

It is a most graceful and beautiful Fern, very ornamental and of easy culture. It requires the temperature of a stove.

We exhibited it at the late Spring Show of the Royal Botanic Society, when it received a FIRST CLASS CERTIFICATE. Both these Ferns have been lately received from the Continent.

Price 42s. each.

ROYAL EXOTIC NURSERIES, EXETER AND CHELSEA.—March 29.

BARR & SUGDEN, 12 KING ST, COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

NOTICE.

In consequence of *private* circulars issued by Messrs. Butler & McCulloch stating that Mr. BARR (of the firm of BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.) is no longer in their employment (*a statement one would have thought perfectly unnecessary*), Mr. BARR, in *publicly* confirming the ... has moreover much pleasure in announcing that the *celebrated* "Sardinian Correspondent," who for some ... furnished Messrs. Butler & McCulloch with their Choicest Seeds, *now no longer does so*, but instead ... the Firm of BARR & SUGDEN with these, and with his far-famed CARNATIONS, PICOTEES, and PELARGONIUMS. This gentleman's Collections of the three latter are the most extensive in Europe, and ... is one of the most successful Amateurs in raising new and valuable varieties.

SEEDS FOR PRESENT SOWING.

COLLECTIONS of CARNATIONS and PICOTEES,

Saved by our Special "Sardinian Correspondent," and distinguished by his Crest, thus and ... G. E. S.

As usual, these seeds are warranted to yield 80 per cent. of splendid Double Flowers, surpassing in floral ... and rich and brilliant colours those saved by any German, French, or Belgian cultivators.

For 27 years our "SARDINIAN CORRESPONDENT" has devoted his especial attention to improving these ... "Domestic Flowers," and, for the last 10 years they have held a first class position in this country; ... are also celebrated on the Continent of Europe, in America, India, Australia, New Zealand; and indeed ... the lovers of these flowers are located, these collections have found their way.

For the colours contained in the following Collections see our "Guide to the Flower Garden," or our advertisement of these on back page of *Gardeners' Chronicle*, January 11th.

CARNATIONS, Section I.

The Section consists of Four Collections, each forming a ... feature.

COLLECTION "A"—SELFS.
Contains 12 superb varieties of 10 seeds each, 3s.

COLLECTION "B"—FLAKE.
Contains 12 superb varieties of 10 seeds each, 3s.

COLLECTION "C"—BIZARRES.
Contains 12 superb varieties of 10 seeds each, 3s.

COLLECTION "D"—FANCY.
Contains 12 superb varieties of 10 seeds each, 3s.

PERPETUAL or TREE CARNATION, Section III.

These are called "Tree" on account of their upright growth ... branching habit, and "Perpetual" because they flower several times during the season. In winter and spring they ... had in bloom under glass, while in autumn they are ... our most attractive border plants. This Section consists of four Collections.

COLLECTION "H"—SELFS.
Contains 12 fine varieties of 10 seeds each, 5s.

COLLECTION "I"—FLAKES.
Contains 12 fine varieties of 10 seeds each, 3s.

COLLECTION "K"—FANCY.
Contains 12 fine varieties of 10 seeds each, 3s.

PICOTEE, Section IV.

The Picotee is distinguished from the Carnation by the flowers being margined instead of striped. This Section includes Three Collections.

COLLECTION "L"—WHITE GROUND.
Contains 12 superb varieties of 10 seeds each, 3s.

COLLECTION "M"—YELLOW.
Contains 12 superb varieties of 10 seeds each, 3s.

ASSORTMENTS FROM THE ABOVE COLLECTIONS:

CARNATIONS.—An assortment of 100 varieties, each consisting of 10 seeds					18s.
CARNATIONS.	ditto	of	50	ditto	10s.
PICOTEES.	ditto	of	100	ditto	18s.
"	ditto	of	50	ditto	10s.

Mixed Packets of Carnation, 1s. 6d.
Do. do. of Picotee, 1s.

PELARGONIUM SEED, in Sealed Packets.

Received from our "Sardinian Correspondent."

COLLECTION "O"
Contains 12 splendid varieties, 10 seeds each, 5s. 6d., of large-flowered Pelargoniums.

COLLECTION "P"
Contains 12 splendid varieties, 10 seeds each, 5s. 6d., of spotted Pelargoniums.

COLLECTION "Q"
Contains 12 splendid varieties, 10 seeds each, 5s. 6d., of Fancy Pelargoniums.

Assortment of 36 splendid varieties of large-flowered Pelargoniums, 10 seeds of each, 12s. 6d.

Assortment of 36 splendid varieties of Fancy Pelargoniums, 10 seeds of each. 12s. 6d.

* Dried Specimens of many magnificent Seedlings, flowered in 1861, may be seen at our Establishment.

ORNAMENTAL FOLIAGED PLANTS.

Fine foliaged plants, and such as are of stately growth, have of late years been much sought after for the adornment of the ... garden, terraces, pleasure-grounds, lawns, select shrubberies, carriage-drives, &c.; besides relieving the monotony too ... to be met with, plants of this class impart a somewhat Oriental aspect.

The CANNA for such purposes stands unrivalled; its large picturesque foliage and spikes of vivid-coloured flowers produce a truly magnificent effect when planted in groups, whether on the lawn, in the centre of large beds, or in the mixed border. When planted in groups and edged with scarlet Geraniums, Verbenas, &c., they produce an effect beautiful ... description.

Strong Roots of the following splendid varieties have been forwarded to us by our "Sardinian Correspondent" from his ... collection, and, as they are all strikingly beautiful sorts, we feel the greatest confidence in recommending them for purposes above-named.

CANNA ROOTS.

... Roots, our own selection	£5	5	0	
... ditto	2	12	0	
25 Roots, our own selection	£1	6	6	
12 Ditto ditto	9s., 12s., to 0	18	0	

		Each—s.	d.
Canna	Achiris, dark red, 3 feet	1	6
"	Aurantiaca, orange leaves, lively green, 3 feet	1	0
"	Bicolor from Java, red and yellow, 3 feet	2	0
"	Cubensis	1	6
"	discolor	1	0
"	edulis, red, splendid, 3 feet	1	6
"	Gigantic Nova, scarlet leaves, very large, 5 feet	2	0
"	Indica, red, 2 feet	1	0
"	iridiflora, red, beautiful, 3 feet	1	6
"	Kegelii, shaded carmine, 3 feet	2	0

		Each—s.	d.
Canna	lutea picta, shaded yellow, 4 feet	1	0
"	Mulerii flowers, scarlet, very fine, 3 feet	2	0
"	Nepalensis, clear yellow, beautiful, 3 feet	1	6
"	patens superba, deep red, splendid, 5 feet	2	0
"	pedunculata, scarlet, 5 feet	2	0
"	Revesii, shaded yellow, 5 feet	2	0
"	Schubertii, ruby magnificent, 4 feet	1	0
"	Sellowii, scarlet, profuse bloomer	1	0
"	Speciosa, red, 4 feet	1	6
"	Warscewiczii, brilliant red, striped foliage	1	0

BARR AND SUGDEN, SEED MERCHANTS,
12, KING STREET, COVENT GARDEN, LONDON, W.C.
(OPPOSITE THE GARRICK CLUB.)

New Roses for 1862.
4000 Strong Plants in 51 New kinds.

WM. WOOD AND SON can supply really strong, robust, and healthy plants of all the NEW ROSES of 1862, worth growing, at 5s. each.
A liberal Discount allowed to the Trade.
DESCRIPTIVE CATALOGUES on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

NEW TEA-SCENTED ROSE for 1862, GLOIRE DE BORDEAUX.—The above, a Seedling from the well known favourite Tea Rose, Gloire de Dijon, was raised at Lyons, and is represented as being unquestionably the finest Tea-scented Rose of the season.

WM. WOOD & SON beg to intimate that they possess a very large Stock of the above in extra strong plants, which they are now sending out at 5s. each.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses for 1862.—4000 Strong Plants.

WM. WOOD AND SON are now executing orders for all the NEW ROSES of the season in strong healthy plants, Dwarfs, at 5s. each.
A liberal discount allowed to the Trade.
40,000 DWARF ROSES IN POTS FOR BEDDING.
The months of April and May are considered the most eligible for bedding-out Roses from pots.
W. W. & S. beg to offer a very large and healthy Stock on the following terms (viz):—

	Per doz.—s.	d.
Dwarf Hybrid Perpetual, Bourbon, Noisette, and Tea-scented Roses	18	0
Climbing Roses of sorts	12s. to 18	0
Dwarf China Roses	12	0
Tea-scented Roses in 6-inch pots for Greenhouse culture	30	0

Extra plants presented for distant carriage.
CATALOGUES free on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.
For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.
Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.
The Royal Nursery, Bagshot, Surrey.

PELARGONIUMS.—Intending purchasers should send for our DESCRIPTIVE CATALOGUE, post free.
J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

DOBSON'S SPLENDID HYBRIDISED CALCEOLARIA is unequalled for variety, form, distinct and striking colours and habit. In sealed Packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. each.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIZE CINERARIA SEED.—Unsurpassed for quality. 1s., 2s. 6d., and 5s. per Packet.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIMULA SINENSIS FIMBRIATA, ex. ex.—Sealed Packets, 1s., 2s. 6d., and 5s.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

New Plant Catalogue.

WM. RUMLEY AND SONS' NEW DESCRIPTIVE CATALOGUE of Fuchsias, Verbenas, Geraniums, Cinerarias, Petunias, Dahlias, Chrysanthemums, Stove, Greenhouse, Bedding Plants, &c., is now ready, and may be had on application.
Gilling, near Richmond, Yorkshire.

Superb Hollyhocks.

WILLIAM PERRY has a fine stock of plants in pots that will flower well this season, a CATALOGUE of which may be had on application, postage free.
Also very strong SEEDLINGS of mixed colours, price of which will be found in the Catalogue.
Sawbridgeworth, Herts.

Superb Hollyhocks.

R. B. BIRCHAM begs to state that he has several thousands of fine established plants of the leading varieties of SHOW HOLLYHOCKS, which he should be happy to offer upon advantageous terms to any nurseryman or florist who may require them.
Price per hundred upon application, and CATALOGUE forwarded by R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk. Carriage paid to London and Peterborough.

Saffron Walden Nursery.
SUPERB DOUBLE HOLLYHOCKS.
NOW IS THE TIME FOR PLANTING!

WILLIAM CHATER has ready some thousands of SEEDLINGS suitable for planting in Borders, Shrubberies, or other ornamental grounds.
W. C. has also an immense Stock of fine healthy young Plants, named sorts, and invites attention to his newly classified list for full information respecting prices, colours, and description.
N.B. The Trade liberally dealt with, and special prices on application for quantities.
WILLIAM CHATER, Saffron Walden, Essex.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England.
The Catalogue may also be had at Mr. MAY's, 1, Wellington Street, Strand, W.C.
Knap Hill Nursery, near Woking, Surrey.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.
The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.
The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garde

New Hardy Variegated Plant.
SCROPHULARIA NODOSA VARIEGATA.

B. S. WILLIAMS has much pleasure in stating that he has purchased the Stock of the above, which has proved to be the best plant for Edging Ribbon Borders or large beds yet introduced. (See Mr. Beaton's remarks in the *Journal of Horticulture*, August 27, 1861.)

B. S. W. can confidently recommend it for the above purposes, having seen it used largely at the Palace Gardens, Armagh, Ireland, for the last two years. It is of very easy culture and perfectly hardy, with ovate-oblong obtuse leaves broadly edged with white, forming a distinct and effective variegation.

Mr. G. Cooper, the Gardener, states in a letter to the Floral Committee of the Royal Horticultural Society:—"I have used it for the above-named purposes for the last three years, and find it to be the most effective plant with which I am acquainted. Its leaves match those of the Geranium for size, and set off the scarlet flowers so well that the effect is pleasing in the extreme. It looks well in all weathers, and neither extreme wet nor extreme dryness affect it in the least, as was satisfactorily proved in the years 1859 and 1860. It holds on its good appearance far into the winter, looking well from the middle or end of April to December. It will be found very useful to those who have but little time to propagate, and little room to winter bedding plants, as it can be kept without either labour, protection, or care."

Strong plants in May, 1*s*. 6*d*. each; 12*s*. per doz.: 80*s*. per 100.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Choice Dahlia Seed.

H. LEGGE has more than he requires, saved from his Unrivalled Collection, 50 Seeds for 2*s*. 6*d*. per packet. H. L. also intends sending out on the 1st of May his superb NEW DAHLIA "Prince of Wales," bright yellow, tipped with pure white, extra fine and constant. Those who do not grow this Fancy will lose the best of this year. 10*s*. 6*d*. per plant.

CATALOGUES can be had by inclosing One Stamp as above, Marsh Side, Edmonton, N.

New Dahlias.

JOHN KEYNES, F.R.H.S., Castle Street Nurseries, Salisbury, will be prepared to send out the following first-class New and approved DAHLIAS the first week of May.

J. KEYNES considers them quite equal to any he has had the honour to offer:—

	s.	*d.*
Black Prince (Keynes'), dark mulberry	7	6
Countess Portsmouth (Rawling's), cream-tipped cherry	10	6
Donald Beaton (Dodd's), dark maroon	10	6
Empress of India (Rawling's), very dark	10	6
Goldfinder (Keynes'), yellow tipped deep orange ..	10	6
Imperial (Keynes'), deep bright plum	10	6
John Harrison (Harrison's), light scarlet, red	10	6
Lady Elcho (Dodd's), light salmon	7	6
Maria Carter (Keynes'), white edged deep carmine ..	10	6
Minnie Dodds (Dodd's), dove colour	10	6
Oscar (Adde's), light scarlet	10	6
Sir J. Outram (Rawling's), dark velvet	7	6
Maid of Bath (Hooper's), white tipped purple	10	6
FANCY FLOWERS.		
Blondin (Dodd's), crimson tipped white	10	6
Goldfinch (Keynes'), cream striped pink	10	6
Mrs. Crisp (Keynes'), purple tipped white	10	6
Reliance (Rawling's), maroon striped white and purple	10	6

These flowers have been exhibited, and taken many First Class Certificates, and shown in the winning Stands which took 19 First Prizes at the Great Exhibitions of the Royal Horticultural Society, Crystal Palace, &c.

CATALOGUES, with instructions for their growth, will be sent on application.

Salisbury, March 29.

NEWEST SORTS of DAHLIAS.—The following Novelties are the quintessence of the sorts of this beautiful autumnal flower, which were brought into the markets this year at very high prices—18*s*., 24*s*., and 27*s*. a bulb. Without exaggeration it may be said that the whole are paragons, each presenting in colour and form either a novelty or an improvement. These new sorts have been obtained by the most celebrated Dahlia cultivators of Germany, Messrs. Sieckmann and Mardner, from whom the undersigned has acquired a selection of the choicest sorts which gained Prizes at the Dahlia Show at Erfurt last autumn.

1. GRANDIFLORA.

GERMAN PINK.—Delicate pale rose on white ground, with light purple violet; pink-like striped and sprinkled.

HONOUR of GERMANY.—Beautiful salmon red, pale leather-yellow towards the edges, also alternating with pale rose tips on charming cherry-red ground and back. Incomparable Novelty.

A. HENDERSON.—Dark cherry brown, with amaranthine and light violet border.

GARDENER'S SWEETHEART.—Light gold yellow, with brownish crimson tips, delicate colouring.

GARDENER'S FAVOURITE.—Dark rose peach blossoms, graceful tubular form.

AUTUMN QUEEN.—Pale pea green, with soft rose tint.

KOH-I-NOOR.—Light lemon yellow, large leaves.

LUDWIG STORCH.—Brilliant light Isabel colour on chamois ground, rare and beautiful colouring.

BEAUTIFUL PINK.—White, with light and dark purple violet, light blue stripes and sprinkles, beautiful rose form.

FATHERLAND'S ROSE.—Beautiful salmon rose, lighter towards the edges, rose form.

DELICATE PINK.—White, with delicate lilac and black purple, finely striped and sprinkled, charming.

2. LILLIPUTIANS (SMALL FLOWERED),
For small beds and pot cultivation.

GERMAN BELLIS.—Peach rose, with white tips.

„ SNOW ROSE.—Pure white, a beautiful Lilliputian in every sense.

ELIZABETH VON BETHMANN-HOLLWEG.—White, with light carmine ground and edges, very sharply and regularly marked.

MARGARET.—Shining gold yellow, with purple crimson tip.

MY LITTLE DEAR.—White, with purple violet tips; rose form.

LITTLE ROSA.—Pale lilac rose, with white centre.

GERMAN BOY.—Rose orange ground, deepening into crimson, with dark purple tips.

PRINCESS of LILLIPUTIANS.—White ground, with purple-violet tips, flowers abundantly.

PEARL.—This Dahlia is recommended as a Lilliputian of the first order. The flowers are pure white, well formed, of middle size, and upright; when only 1 foot high it already flowers abundantly. Well adapted for growing in pots.

Of the Novelties given above we furnish young, healthy, and vigorous plants at the choice of the purchaser, each sort, 6*s*.; and according to our own selection six sorts for 30*s*.; 12 sorts for 54*s*.; the whole collection for 80*s*. A liberal discount allowed to the Trade.

Our CATALOGUES of PLANTS for this year, Nos. 21 and 22, are forwarded post free on application.

N.B. Remittances to accompany orders from unknown correspondents. Letters prepaid, 6*d*.

H. LAURENTIUS, Horticultural Establishment, Leipsic, Saxony.

NEW FERNS.
ASPLENIUM FLABELLULATUM,
RACHIRHINÆ.

The above are two gems, and are now offered for the first time. An inspection is invited at

WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

NEW AZALEA INDICA.
BELLE GANTOISE,
HORTENSE VERVAENE.

Two very fine varieties, now offered for the first time. An inspection is invited at

WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Choice Vegetable and Flower Seeds.

B. S. WILLIAMS will be happy to forward post free to all applicants his PRICED and DESCRIPTIVE SEED CATALOGUE for 1862, containing Select Lists of all the best seeds in cultivation, with useful suggestions for the guidance of Amateur cultivators.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the most effective and useful bedding variety known. During the past season upwards of 5000 plants were grown in the gardens at Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.

. For Testimonials and further particulars see *Gardeners' Chronicle* of February 22.

Plants after April 20, 1*s*. 6*d*. each. 12*s*. per doz. 50*s*. per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in riband-borders, and vases, this variety is one of the most useful and effective yet offered for sale.

Plants after April 20, 1*s*. 6*d*. each. 12*s*. per doz. 75*s*. per 100.

CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

Per packet—	*s.*	*d.*	Per packet—	*s.*	*d.*
Calceolaria, herbaceous ..	2	6	Primula sinensis dentiflora	2	0
Cineraria cruenta ..	2	6	Primula sinensis albiflora	2	0
„ maritima	0	6	„ „ dentiflora kermesina splendens ..	2	6
Erianthus Ravennæ ..	1	0	Verbena venosa	0	6
Lobelia erinus speciosa	1	0			
„ „ major ..	1	6			

A PRICED and DESCRIPTIVE CATALOGUE of Vegetable, Agricultural, and Flower Seeds, forwarded post free to all applicants.

Exotic Nursery, Tooting, Surrey, S.

Pelargoniums! Pelargoniums!

WM. POLLARD has to offer a large Stock of the above, in nice plants, at 40*s*. per 100, consisting of such as the following fine varieties, viz., Ajax, Czar, Douglas, Eclipse, Lord Clyde, Princess Beatrice, Monarch, Leviathan, Prince of Wales, Ringleader, Sir C. Campbell, Ariel, &c. &c.

Also the following English and Continental Spotted varieties:—Beadsman, Bracelet, Favourite, King of Purples, Mammoth, Rifleman, Sweep, Cleopatra, Octave Demay, Grand Duchess Stephanie, Guido, Osiris, Madame Rendatlerii, Mrs. Ellis, &c. &c.

Very good older varieties .. .. .. 25*s*. per 100
„ „ without name .. 18*s*. „

W. P. begs also to offer the following superb FLOWER SEEDS, the quality of which is guaranteed first class:—

Per packet—	*s.*	*d.*
Double rose-flowered BALSAM, mixed, in 8 colours, from flowers 8 inches in circumference	1	1
VERBENA, very fine mixed	0	7
ANTIRRHINUM, do. do.	0	7
POLYANTHUS, do. do.	0	7
CINERARIA, from finest new named varieties	2	6
Do. from older do.	1	0
PANSY, very fine	0	7
PETUNIA (hybridised) from best named varieties; will contain many double and single flowers, striped, blotched, and self-coloured .. .. .. 1*s*. and	2	6

The above eight varieties will be supplied, consisting of upwards of 3000 seeds, for 6*s*. post free.

WM. P. can also supply 100 varieties of choice ANNUALS, BIENNIALS, and PERENNIALS for 8*s*. 6*d*., or 50 varieties for 4*s*. 6*d*., post free.

Ferrybridge Nursery, Yorkshire.

PRIZE PHLOXES. | PRIZE GLADIOLUS.
PRIZE CHRYSANTHEMUMS.

JOHN CATTELL'S Collections of the above obtained the following Prizes at the London Exhibitions during the past season:—

PHLOXES.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

GLADIOLUS.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

CHRYSANTHEMUMS.

First Prize, for the best 24 Cut Blooms, at the Royal Horticultural Society's Grand Fruit and Chrysanthemum Show, held at South Kensington Gardens.

First Prize, for the best 24 Cut Blooms, at the Stoke Newington Chrysanthemum Exhibition.

First Prize, for the best 24 Cut Blooms, at the Crystal Palace Chrysanthemum Exhibition.

J. C.'s collections include every variety of note, and he now offers them at the low prices named below, the selection being left to himself.

PHLOXES, 6*s*., 9*s*., and 12*s*. per dozen.
CHRYSANTHEMUMS, 6*s*. per dozen.
GLADIOLUS, 6*s*., 9*s*., 12*s*., and 18*s*. per dozen bulbs.

CATALOGUES will be ready shortly, and forwarded post paid on application.

Strong plants of the Chrysanthemums and Phloxes will be ready early in April.

Nursery and Seed Establishment, Westerham, Kent.

SEEDS for the FLOWER GARDEN.
FREE BY POST.

	s.	*d.*
100 finest selected varieties, consisting of Hardy, Half Hardy, and tender ANNUALS, PERENNIALS, &c.	21	0
50 ditto ditto	10	6
30 ditto ditto	7	0
20 ditto ditto	4	6

WILLIAM WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.

Calceolaria Canariensis.

G. SMITH has great pleasure in recommending this unsurpassed and beautiful variety; it has been shown in the past season at all the leading exhibitions round London, and has established itself as the best for all purposes, as it gives two-thirds more bloom in a pot and one-third more in beds than any other Calceolaria in cultivation; colour bright Canary Yellow, the mouth closed, so as to resist the wet; the habit is all that could be wished. Has taken a First-class Certificate at the Royal Botanic Gardens, Regent's Park; also a First-class Certificate from the Floral Committee of the Horticultural Society, for its fine qualities. Now ready, in strong plants, at 1*s*. 6*d*. each, or 12*s*. per dozen. A remittance must accompany the order to unknown correspondents.

Tollington Nursery, Hornsey Road, Islington, London, N.

WILLIAM BARRON, Elvaston Castle, Derby, can supply strong and well-rooted plants as under:—

ABIES DOUGLASII, 3 years once transplanted, per 100 25*s*. 0*d*.
This tree attains a height of more than 200 feet, highly ornamental, the same as the tall flagpole at Kew.

PINUS LARICIO, 18 ins. to 2 feet .. . per 1000 70 0
This produces timber for railway sleepers sooner than the Larch, and is used as spars and masts in the French navy.

BERBERIS DARWINI, the most beautiful of the tribe, fit either for the flower garden or game cover, with rich orange-coloured flowers; Pheasants are very fond of the berries, which are produced in profusion. Strong plants, 3 years old per 100 20 0
Ditto ditto, 2 years old 15 0
Ditto ditto, 1 year old 12 6

PICEA NOBILIS, 3 to 4 years old, plants from seed, (This is the most lovely of all Firs.) each, 10*s*. to 15 0

WELLINGTONIAS from 2 to 9 feet. Also specimens of the rarest Conifers.

Remittances to accompany orders from unknown correspondents. Post-office Orders payable at Derby.

SELECT PRICED LISTS post free on application.

E. G. HENDERSON AND SON respectfully offer FUCHSIA COMET, FUCHSIA MINNIE BANKS, the two finest Exhibition varieties out, 5*s*., 7*s*. 6*d*., and 10*s*. 6*d*. each.

STUARTIA PENTAGYNIA.—A very handsome deciduous autumn-flowering hardy shrub. For description see *Gardeners' Chronicle* of March 15, and E. G. H. & SON'S SEED CATALOGUE, page 95.

Strong bushy Plants, 3 feet high, 7*s*. 6*d*.

FRUITING VINES.—Extra strong; Golden, and Muscat Hamburghs; also, Bidwell Seedling, a late-hanging Grape, and others.

SEEDS OF

Clianthus Dampieri.—The most gorgeous plant in cultivation. Five seeds, 2*s*. 6*d*.

Calendula officinalis superba. 6*d*. and 1*s*. per packet.
Celosia pyramidalis aurea, 1*s*. 6*d*.; Rubra, 1*s*. per packet.
Cosmos diversifolius atrosanguineus, 1*s*. per packet.
Linum perenne candidissimum, 1*s*. per packet.
Perfection Sweet William. 6*d*. and 1*s*. per packet.
Œnothera Lamarckiana, 6*d*. and 1*s*. per packet.
Saponaria calabrica alba, 6*d*. and 1*s*. per packet.
Nemophila atomaria oculata, 6*d*. and 1*s*. per packet.
Zinnia elegans flore pleno, 6*d*. and 1*s*. per packet.
Giant Emperor Asters in 20 colours.

Dwarf Chrysanthemum-flowered Asters.—The most beautiful for bedding and margins.

Salvia argentea, Ferula glauca, Dipsacus Gmelini.—Ornamental garden plants, 6*d*. and 1*s*. per packet.

Bush Vegetable Marrow.—The most prolific and richly flavoured of any, 1*s*. per packet.

Wellington Nursery, St. John's Wood, London, N.W.

MESSRS. E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, have great pleasure in offering the following VERBENAS, selected as the finest kinds yet seen by them, surpassing others for brilliancy and effect in the primary object of massing in Flower-beds, being distinguished by the possession of those properties in habit, and long continuance in bloom which are essential in effecting the richest designs. In "Lady Grey Egerton" will be found the finest Magenta tint yet seen, with a corresponding habit; in "Sir Philip" the most brilliant carmine; in "Red Gauntlet" the most unique self of the season, with habit, size, outline, and colour in its favour, and in "Desdemona," a very splendid middle colour for rich relief—contrast with lighter shades. The first named varieties are from a splendid collection raised by Mr. Wills, of the Oulton Park Gardens, Cheshire; in which will be found a magnificent strain in advance of other seasons, for general effect and brilliant features.

☞ As the pure scarlet and white self sections do not (yet) offer any decided advance upon the well known favourite kinds, it is certain that the highest improvements will be found amongst the finest secondary tints which are so essential for full complement of colours and diversified effect, and it is amongst such that the kinds now enumerated will be found valuable acquisitions.

NEW VERBENAS.

DESDEMONA.—Rich dark magenta or plum-coloured crimson, with large bold truss, free growth, compact habit, and profuse bloom. Blossoms large, even, and broad-lobed. A splendid variety for massing with a lighter belt or margin of pure lilac or white; producing a larger truss than Purple King, with a richer colour tint, and the same even and regular growth.

LADY GREY EGERTON.—Beautiful new magenta-crimson, displaying a large well-expanded truss, with close broad flower-lobes of chaste and even outline, free and compact in growth, and brilliantly effective for broad ribbon rows, beds, or parterres; unequalled by any variety in its colour for decorative art in flower garden designs. If less brilliant than the following variety, it is more intensely beautiful by its comparatively rare and unique petal-tints.

SIR PHILIP.—An exceedingly brilliant and effective variety, with a free compact style of growth, and profuse blooming habit; a vivid carmine scarlet in colour, with large trusses and close, broad, even flower-lobes, unequalled for brilliancy of tint and effect in beds, belts, or massive groups. It is as pre-eminent as one in a thousand, and the most telling variety yet offered by E. G. H. & SON.

RED GAUNTLET.—An exceedingly fine variety of an unique and beautiful orange-tinted flame-scarlet colour, with a good free style of growth, and profuse blooming habit, flower truss large and compact, blossom lobes broad, close and even. A brilliant and effective kind, admirably adapted for bedding and large belts.

Plants 1st of May, each, 2*s*.; per dozen, 18*s*.; per 100, 75*s*.

Excellence and Economy.

PURCHASERS OF VEGETABLE AND FLOWER SEEDS.—SEND FOR JAMES TYNAN'S CATALOGUE, select your own Seeds, and save one-half the cost. No other house supplies seeds of equal quality on the same terms. Importer of German and other Seeds.

Seed Warehouse, 68, Great George Street, Liverpool.

Spring Catalogue.

JOHN CRANSTON'S SPRING CATALOGUE of "NEW ROSES" and PLANTS is now ready, and he wil happy to forward it on applicat

It contains a descriptive list of the New Roses for 1862; select lists of Stove and Greenhouse Plants, Ferns, Azaleas, Fuchsias, Geraniums, Verbenas, Gladioli, and Miscellaneous Bedding Plants, &c.

Nurseries, King's Acre, near Hereford.

New Verbenas, Fuchsias, Petunias, &c., of 1861.

WM. KNIGHT begs to announce that he can supply good struck plants of the above in healthy ..., from 5s. to 7s. per dozen.

Also extra strong CLIMBING ROSES, from 4s. to 6s. per dozen.

CATALOGUE post free on application.

Floral Nursery, Hailsham, near Hurst Green, Sussex.

GENUINE SEEDS, WARRANTED, Sent Free.

		s.	d.
30 packets most showy HARDY ANNUALS	..	5	0
25 packets do. do.	..	3	0
12 packets do. do.	..	1	9

One collection, containing 18 varieties of the finest HARDY ANNUALS, and eight varieties of the most approved VEGETABLE SEEDS, sent free on receipt of 48 stamps.

J. CARTER, 6, Charles Street, Middlesex Hospital, London, W.

New Seed Catalogue for 1862.

WM. JACKSON AND CO., SEED GROWERS and NURSERY and SEED MERCHANTS, Bedale, Yorkshire, beg to inform Land Agents and Agriculturists that they will forward the above CATALOGUE free on application.

All extensive and improving Farmers should have this Catalogue.

The Flower Garden.

WOOD AND INGRAM beg to announce that their PRICED DESCRIPTIVE CATALOGUE is now published, and will be sent free on prepaid application.

It contains a choice selection of Show, Fancy, Zonale, Variegated, and Hybrid Bedding Geraniums, Fuchsias, Dahlias, Verbenas, Hollyhocks, Calceolarias, Chrysanthemums, Pansies, Petunias, British and Exotic Ferns, Phloxes; Stove and Greenhouse, Herbaceous and Rockwork Plants; Hardy Bulbs, Bedding Plants of every description, &c.

Nurseries, Huntingdon.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

THOMAS HANDASYDE'S DESCRIPTIVE CATALOGUE of FLORISTS' FLOWERS, New German and other FLOWER SEEDS, &c., containing all the Novelties of the season, is now ready and may be had free on application. Also a large and healthy stock of all sorts of EVERGREENS at the

Glen Nurseries, Musselburgh, near Edinburgh.

Bedding Plants at 2s. 6d. per Dozen.

J. SCOTT'S well-known CATALOGUE of the above is now ready, and will be sent to all applicants on receipt of six postage stamps, which will be returned to all purchasers above 10s.

It contains a mass of Cultural and other information about Flowers and Flower Planting, Ribbons, Tessellated and Mosaic ..., with Descriptive Lists of all the most ornamental Flower Garden Plants.

Mr. Beaton, in the *Journal of Horticulture*, April 23, 1861, ... says:—"But the best work on making Ribbon Borders .... is the Bedding Plant Catalogue of Mr. Scott, Merriott Nurseries; and besides, the Catalogue is the best arranged for young beginners of all that I have seen"

J. SCOTT, Merriott, Crewkerne, Somerset.

BEDDING PLANTS.

GERANIUM CLOTH of GOLD, 6s. to 8s per dozen.
" GOLDEN FLEECE, 6s. to 8s. per dozen.
" PRINCESS of PRUSSIA, 6s. to 8s. per dozen.
" BIJOU, 5s. to 6s. per dozen.

This is the finest variegated-leaved scarlet-flowered Geranium. See *Gardeners' Chronicle* and *Cottage Gardener*.

These will be sent out in April, and early orders will have the precedence whilst the stock lasts. They will be strong well-rooted plants.

Apply to WILLIAM BARRON, Elvaston Castle, Derby.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very ... and in all varieties of colour, in Seed or Roots; also FLORIST FLOWERS, POLYANTHUS in roots, and DOUBLE WHITE PRIMROSE.

Apply GEORGE MACE, Calcot Gardens, near Reading.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and ... FLOWER SEEDS, Choice GLADIOLI, &c., is now ..., and will be forwarded post free on application.

The whole of the Seeds are warranted to be new and true to ..., and are charged at the lowest remunerative prices. ... inspection and comparison with prices in other Catalogues is respectfully solicited.

The following, of which descriptions will be found in Catalogue, are specially recommended:—

		s.	d.
..., Haricot Flagolet Jaune, six days earlier than any variety in cultivation	per quart	2	6
... Compact Topped or Pine Apple Short Top,	per oz.	0	6
... Selected Dwarf Red (Nutting's)	"	0	9
...LIFLOWER, Early Dwarf Erfurt	"	2	0
... New Early Mammoth or Frogmore Forcing ..	"	3	6
...ERY, Imperial Dwarf Red (Hood's)	"	1	0
...EROPHYLLUM BULBOSUM	"	2	0
...MBER, TELEGRAPH	per packet	1	6
...TUCE, MOOR PARK	per oz.	2	0
...A, GENERAL WYNDHAM	per quart	1	3

Exotic Nursery, Tooting, Surrey S.

AN AVENUE of PINUS BENTHAMIANA.—Should any gentleman feel desirous of planting as above this hardiest of all hardy long-leaved Pines, fine specimens can be supplied by CHARLES NOBLE, Sunningdale Nursery.

Several hundred to select from, and warranted to move safely.

To the Trade.

JAMES DICKSON AND SONS, "Newton" Nurseries, Chester, offer 1 year APPLE STOCKS, 2 year HOLLIES, 1 year LARCH, 2 year QUICKS, 2 year SPRUCE. Also Transplanted PEAR, APPLE, and MAHALEB CHERRY STOCKS, HAZELS, GRAFTED ELMS, and GREEN HOLLIES. Sizes and Prices on application.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.

RICHARD SMITH, Nurseryman, Worcester.

WM. MAULE AND SONS can supply splendid plants of CEDRUS DEODARA from 6 to 7 and 8 feet or more, either from the open ground or in large Pots, at 10s. 6d. each. Noblemen or Gentlemen planting Avenues or beautifying their Parks or Grounds will find this and the following month the most favourable for transplanting this tree.

The Nurseries, Bristol.—March 29.

AZALEA INDICA.—Beautiful bushy Plants from 1 to 2 feet high, worked and full of Flower Buds, 18s., 21s., and 24s. per dozen; CAMELLIAS, 15s. to 24s. per dozen; ORANGE TREES, with fruit and bloom, 2s. to 3s. 6d. each. The largest Collection in the Trade of British and Foreign FERNS, 3s. to 12s. per dozen.

R. GREEN, 154, Kingsland Road, 55 Doors from Shoreditch Church, N.E.

Pelargoniums.

GEORGE SMITH begs to offer from a splendid Stock of Choice and well grown Plants the following, viz.:—

		per dozen
SHOW GERANIUMS from	.. ..	9s. to 30s.
French and English Spotted	.. ..	9s. to 30s.
Fancy	.. ..	9s. to 30s.
Pink, Scarlet and White, Zonale	.. ..	9s. to 12s.
Variegated Leaved	.. ..	9s. to 20s.

A DESCRIPTIVE CATALOGUE of the above, together with Fuchsias, Verbenas, Dahlias, Petunias, Chrysanthemums, Bedding Plants, &c., in exchange for one postage stamp.

Tollington Nursery, Hornsey Road, Islington, London, N.

H. LANE AND SON have to offer a large stock of fine blooming plants of AZALEAS and RHODODENDRONS, both common and named sorts.

Also a large collection of VINES from Eyes, very fine, with well ripened wood, and consists of all the best sorts.

Their well known ARAUCARIAS are allowed to be the finest stock in the world, and are from 1 to 10 feet.

Orders will receive prompt attention.

H. LANE & SON, The Nurseries, Great Berkhamsted, Herts.

Garden Seeds.

PAGE AND TOOGOOD'S SPECIAL LIST will be forwarded post free.

P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

From MR. R. MCDONALD, *Gardener to the* RT. HON. LORD WILLOUGHBY D'ERESBY, *Drummond Castle, Scotland, Jan.* 4, 1861.

"The seeds sent here by you for the last 23 years have given the greatest satisfaction, and considering the large supply required, it is of the greatest importance to have them of such first-rate quality and so true to name. The collections for cottagers have been very useful and have been the means of inducing many of them to grow a greater variety of vegetables than they have hitherto done."

From MR. DOWLING, *Gardener to* LORD HENRY CHOLMONDELEY, *Holly Hill, Jan.* 1, 1861.

"Nothing gives me so much pleasure as to speak of the excellent quality and trueness of the seeds you sent me for 1860. It is impossible to single out anything in particular, as all succeeded so well, and although a difficult season, I have never served a family better, which I attribute to the good quality of the seeds, and having been supplied by you for 30 years with the greatest satisfaction, my opinion is expressed with some confidence, and I also know your extreme desire at all times to meet the wishes of your customers."

From MR. WHALE, *Gardener to the* RT. HON. LORD RIVERS, *Rushmore, Dorset, December* 30, 1860.

"In enclosing you my 20th annual order, I am happy to say that I have always found your articles to be of the best quality, and they have always given me great satisfaction."

Royal South Hants Seed Establishment, Southampton.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, JUN., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.

CATALOGUES on application.

FRUIT TREES in POTS.—Those who require Fruit this summer from Trees in Pots are invited to inspect the stock of W. BARNES, whose trees have been established for two and three years; wood well matured and covered with bloom buds.

APRICOTS	CHERRIES	PEARS
APPLES	NECTARINES	PLUMS
	PEACHES.	

Prices on application to WM. BARNES, Camden Nursery, Camberwell, S.

Splendid Grape Vines.

WILLIAM BARNES has still to offer the following varieties of VINES from Eyes; the wood well ripened, length averaging from 5 to 9 feet; many of them fruit-bearing.

Royal Muscadine	Golden Hamburgh
White Dutch Sweetwater	Muscat do.
Muscat of Alexandria	Black do.
Cannon Hall Muscat	Bowood Muscat
West's St. Peter's	Muscat Muscadine
Black Frontignan	Lady Downe's Seedling
White do.	Barbarossa
Grizzly do.	Purple Constantine
Mill Hill Hamburgh	White Tokay

Prices will be forwarded on application.

Camden Nursery, Camberwell, S.

NEW MELONS, NEW CUCUMBERS, NEW and CHOICE SEEDS of all the finest varieties for the FARM, the KITCHEN GARDEN, and the FLOWER GARDEN.

See our "Little Book" for 1862 (illustrated) which will be sent free on receipt of four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

A Few Choice Seeds.

WILD'S ORION MELON, Gratis.—PRIMULA, 2s. 6d. per pkt. | PANSY, 1s. per pkt. POLYANTHUS, 1s. per pkt.

Gilson's GLORY PEA, Pryor's COTTAGER'S KALE, Cole's CRYSTAL WHITE CELERY, 1s. per pound.

First-rate CALCEOLARIAS, nice plants, 2s. 6d. per dozen.

THOMAS WILD, The Primulary, Ipswich.

Strawberries for Forcing.

GEO. CLARKE has a large quantity of strong established Plants in Pots with excellent crowns; the sorts are KEEN'S SEEDLING, BRITISH QUEEN, SIR HARRY and ALICE MAUDE. Price 6s. per dozen.

Nursery, Streatham Place, Brixton Hill, S.

Strawberry Plants.

WM. JAS. NICHOLSON again offers strong laid Plants of his Grand Collection of more than 200 varieties of English, French, Belgian, American, and other STRAWBERRIES, including all the new and fine sorts.

A CATALOGUE sent on application.

A new, enlarged, and improved CATALOGUE will be published in autumn, when many new sorts, well tested, will be offered with confidence.

WM. JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

COB FILBERTS.—What yield most Sovereigns per acre?—COB FILBERTS, now selling on the market at 3s. per lb. and upwards. For Trees apply to GEORGE MACE, Calcot Gardens, near Reading.

Also may be had RED SKIN and WHITE SKIN FILBERTS, with other varieties of Cob Nuts.

Verbena Fireball.

MESSRS. J. AND C. LEE having thoroughly proved VERBENA FIREBALL last summer, can recommend it as one of the best, if not the best, and most useful for bedding purposes, combining, as it does, the intense scarlet and compact truss of Firefly with the robust and free-flowering habit of Purple King.

To be sent out in May, price 12s. per dozen.

Nursery and Seed Establishment, Hammersmith, London, W.

LITHOSPERMUM FRUTICOSUM

Is the neatest and prettiest little

HARDY EVERGREEN HERBACEOUS PLANT

That can be desired. Its slender branches are thickly covered with small dark green leaves, forming a perfect carpet which is studded with

THE LOVELIEST BLUE FLOWERS,

nearly half an inch in diameter, from May till September. If wintered in a cold greenhouse it flowers abundantly in February and March.

Messrs. J. C. LEE will be prepared to offer this "LITTLE GEM" in May, at 2s. 6d. each; larger plants, 5s. each.

Nursery and Seed Establishment, Hammersmith, London, W.

SPLENDID NEW FUCHSIAS, DICTATOR and UNIVERSAL. Coloured Illustrations by Mr. ANDREWS of the two, in exchange for 12 postage stamps.

G. S. assures Fuchsia Growers that "Universal" is the finest Fuchsia ever offered. For description see CATALOGUE.

GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington, London, N.

The Royal Horticultural Society's Exhibition

SEEDS that will be required to obtain the Prizes offered at the Autumn Show, Sept. 10. See advertisement in *Gardeners' Chronicle*, March 15.

	s.	d.
ASTER, Truffaut's Pæony-flowered, 24 varieties	4	0
" Giant Emperor, 13 varieties	6	6
" Dwarf Chrysanthemum-flowered, 10 varieties..	1	8
" Tall " " 12 " ..	2	0
" Double Crown, 4 varieties	0	8
" " Dwarf Pyramidal Bouquet, 12 varieties	2	0
" " Quilled, 12 varieties	2	0
" " " Hedgehog, 6 varieties	1	0
" " " Reid's extra fine per packet	0	6
" " Globe Pæony-flowered, new "	0	6
Mixed packets of each of the above kinds	0	6
STOCK, dwarf German Ten-week, 24 varieties.. ..	4	0
" large flowering " 20 "	3	4
" Autumnal or Intermediate, 8 "	1	4
" Emperor, 5 "	0	10
" Brompton, 6 "	1	0
For other choice varieties see Catalogue.		
Mixed packets of each of the above German Stocks ..	0	6
PHLOX DRUMMONDII, 13 new varieties, each p. pkt.	0	6
ORNAMENTAL GRASSES, EVERLASTINGS, and Imported GOURDS .. ..per packet	0	6

Free by post.

For the character of the above, see report of the Annuals grown at Chiswick, 1861, in *Gardeners' Chronicle*, March 15th, page 237.

JAMES TYNAN, Importer of Continental Seeds.

Seed Warehouse, 68, Great George Street, Liverpool.

NEW SCARLET VERBENA, FOX-HUNTER.

HUGH LOW & CO.

HAVE pleasure in intimating that the entire Stock of the above-named VERBENA is in their possession, and plants will be ready the last week in April. Price 5*s.* per plant. Special quotations given to purchasers by the dozen. The merits of FOX-HUNTER have been so universally and extensively admitted, that H. L. & Co. think it needless to do more than add that a First-Class Certificate was awarded by the Floral Committee of the Royal Horticultural Society, when Cut Flowers were exhibited by the raiser, John Miller, Esq. of Upwey.

CLAPTON NURSERY, LONDON, N.E.

NEW VARIEGATED FOLIAGED FUCHSIA,

CARTER'S METEOR.

This striking novelty, a double corolla'd variety, with crimson and yellow foliage, will be sent out on May 1.

JAMES CARTER & CO.'S GENERAL CATALOGUE of PLANTS,

Containing many desirable Novelties, will be published on May 1, and forwarded gratis and Post free on application.

JAMES CARTER & CO., 237, 238, & 261, HIGH HOLBORN, W.C.

SEED FARMS.
EAST HOUSE FARM, DEDHAM, ESSEX; and
THE SEED FARM, ST. OSYTH, ESSEX.

NURSERY.
CRYSTAL PALACE NURSERY,
Perry Hill, Sydenham, S.E.

ROYAL BOTANIC SOCIETY OF LONDON,

REGENT'S PARK, N.W.

SPRING SHOW, March 26, 1862.

12 CONIFEROUS or other HARDY EVERGREENS in POTS.

Large Silver-Gilt Medal to Mr. Standish, Bagshot.
Silver-Gilt Medal to Mr. Laing, Twickenham.
Silver Medal to Messrs. W. Cutbush & Sons, Highgate.
Small Silver Medal to Messrs. Jackson & Son, Kingston.

6 CAMELLIAS IN POTS.

Silver Medal to Mr. Cross, Gr. to Sir F. H. Goldsmid, Bart, St. John's Lodge, Regent's Park.
Silver Medal to Mr. Standish, Bagshot.
Small Silver Medal to Messrs. A. Henderson & Co., Pine Apple Place, Edgware Road.

12 CAMELLIAS, CUT BLOOMS.

Small Silver Medal to Mr. Burn, Gr. to Sir G. Isham, Bart., Lamport Hall, Northampton.
Bronze Medal to Messrs. Veitch & Son, Exeter and Chelsea.
Small Bronze Medal to Mr. William Paul, Cheshunt Nurseries, Waltham Cross.

12 CHINESE PRIMROSES.

Silver Medal to Mr. Todman, Gr. to R. Hudson, Esq., Clapham.
Bronze Medal to Messrs. W. Cutbush & Sons, Highgate.
Small Bronze Medal to Mr. Howard, Gr. to — Edgington, Esq., Battersea.

NEW PLANTS, &c.

1st Class Certificate to Messrs. Veitch & Son, Exeter and Chelsea, for Camellia Reine des Beautés, a lovely variety with remarkably symmetrical flowers, of moderate size, and of a delicate flesh colour, quite a gem.

1st Class Certificate to Messrs. Veitch & Son, for Rhododendron Nesterianum, a fine hybrid raised between R. Edgworthii and R. Gibsoni, the flowers large, very handsome, and pure white.

1st Class Certificate to Messrs. Veitch & Son for Asplenium flabellulatum, a very elegant dwarf bipinnate Fern with small lobed pinnules, the fronds rooting at the apex.

1st Class Certificate to Messrs. Veitch & Son for Asplenium rachirhizon, a handsome larger bipinnate Fern, also having a prolonged proliferous rachis.

1st Class Certificate to Messrs. Veitch & Son, for Phyllagathis rotundifolia, a very fine dwarf-habited Melastomaceous plant, with handsome broad-ribbed leaves of a dark metallic green.

1st Class Certificate to Mr. Hutt, Gr. to Miss Burdett Coutts, Holly Lodge, Highgate, for Cyperus alternifolius fol. variegatis, a very elegant dwarf Grass-like plant, with the leaves and stems freely striped with white.

1st Class Certificate to Mr. B. S. Williams, Holloway, for Cyperus alternifolius fol. variegatis, the same as the foregoing.

1st Class Certificate to Mr. B. S. Williams, Holloway, for Cibotium princeps, a rare and handsome large-growing tripinnate Fern, introduced by Mr. Linden from Mexico.

1st Class Certificate to Mr. B. S. Williams, Holloway, for Cypripedium barbatum var., a very fine form, in which the lip is large, and of a deep purplish red, the tips of the petals somewhat rosy, passing off to white, and the upper sepal very broad, and finely marked with white, purple, and green.

1st Class Certificate to Mr. William Paul, Waltham Cross, for H.P. Rose Beauty of Waltham, an English Seedling, of which several plants were shown; it was of vigorous habit, with large, full, and very handsome deep crimson flowers; an acquisition.

1st Class Certificate to Messrs. F. & A. Smith, Dulwich, for Cineraria Cadet, a dwarf habited rich deep crimson, of fine form and properties, with a brownish disk.

1st Class Certificate to Messrs. F. & A. Smith, Dulwich, for Cineraria Emily, a variety with moderate rosy-crimson tips, and dark disk, the base of the florets pure white; the tips are very abruptly and evenly marked, and pass down the sides of the florets.

NEW PLANTS, &c.

1st Class Certificate to Messrs. F. & A. Smith, for Primula sinensis delicata flore-pleno, a fine handsome double large flowered fimbriated variety, the flowers opening white and changing to a delicate flesh colour. Of this six plants raised from seed were shown.

1st Class Certificate to Mr. Standish, for a large collection of new Japanese and Chinese ornamental shrubs, for the most part recently introduced to this country by Mr. R. Fortune. The collection contained several interesting Conifers, and some very remarkable variegated plants, mostly hardy.

2d Class Certificate to Messrs. F. & A. Smith, Dulwich, for Cineraria Defiance, a large variety with the florets of a deep reddish puce colour surrounding a dark disk.

2d Class Certificate to Messrs F. & A. Smith, Dulwich, for Cineraria The Emperor, rewarded for its rich and novel colour only; this colour is a deep maroon crimson, very distinct from that of all other varieties; the florets become somewhat crimson at the base, where there is a very narrow white ring, around the grey disk.

The other subjects of this class shown were the following:—Acacia eriocarpa, one of the best Acacias for pot-culture, but now pretty widely distributed; Tradescantia odoratissima, a purple-flowered stove perennial; Camellia Leopold Premier, a showy crimson-flowered variety; and Oreopanax peltatum, all from Messrs. Veitch & Son. Amaryllis Unique, a fine seedling from A. Akermanni pulcherrima, partially faded, with several other much inferior Amaryllises, from Mr. B. S. Williams. Cobœa scandens variegata, a yellow-margined variety of the well-known Cobœa, from Messrs. E. G. Henderson & Son. Cinerarias—Attraction, rosy crimson tipped; British Sailor, reddish violet; Beauty of the Bower, large purplish crimson; and Rising Sun, bright rosy crimson—all showy sorts without any special merit, from Mr. Todman. Cinerarias from Messrs. F. & A. Smith as follows:—True Blue, violet purple, with reddish base and small white ring; Princess Alice, very large, grey disk, broad uneven white zone, and bright rosy-crimson tips; Prince of Hesse, large, purple reddish at the base, with white ring and dark disk; Gauntlet, large rose crimson self, with grey disk; Sir R. Peel, deep Magenta, with narrow white zone, and gray disk; Mrs. Boucicault, white florets, tipped slightly with rosy crimson, and with a grey disk; Rose of England, Magenta colour, with white zone and grey disk; Prince Alfred, large and showy, a Magenta self with grey disk; and The Premier, bright lake crimson, with small white zone, and grey disk. They were all showy sorts, but were not considered to possess special merit.

MISCELLANEOUS.

Silver Medal to Mr. William Paul, Waltham Cross, for a large collection of Hyacinths, consisting of most of the finer sorts now grown, shown in excellent condition.

Silver Medal to Messrs. W. Cutbush & Son, Highgate, for a collection of 300 Hyacinths, forming a remarkably attractive bank of flowers.

Silver Medal to Mr. B. S. Williams, Holloway, for a handsome group of Flowering and Ornamental-leaved plants.

Small Silver Medal to Mr. Hutt, Gr. to Miss Burdett Coutts, for a group of well-grown Ornamental-leaved plants.

Bronze Medal to Mr. William Paul, Waltham Cross, for three boxes of very beautiful Cut Roses.

Small Bronze Medal to Messrs. E. G. Henderson & Son, Wellington Road, St. John's Wood, for a collection of varieties of Cyclamen persicum, with flowers of various colours.

Small Bronze Medal to Messrs. E. G. Henderson & Son, St. John's Wood, for two well-bloomed specimens of Imatophyllum miniatum.

Small Bronze Medal to Messrs. Veitch & Son, Exeter and Chelsea, for a neatly grown plant of the beautiful striped-leaved Eriocnema marmoratum.

Small Bronze Medal to Mr. Hutt, Gr. to Miss Burdett Coutts, for a good example of moderate size, of the curious Alocasia metallica, the leaves of which resemble bronze shields.

Small Bronze Medal to Mr. Young, Gr. to Captain Barclay, Highgate.

ROYAL BOTANIC SOCIETY, Regent's Park.

GENERAL EXHIBITIONS of PLANTS, FLOWERS, and FRUIT—WEDNESDAYS, May 28, June 18, and July 9.

AMERICAN PLANTS—MONDAY, June 9.

Tickets to be obtained at the Gardens only, by vouchers from Fellows or Members of the Society. Price on or before Saturday, May 17, 4s; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

SPRING EXHIBITIONS every Wednesday to May 7, at 2 o'clock.

GRAND HORTICULTURAL FETE and ROSE SHOW in connection with the Exhibition of the NORTHAMPTONSHIRE AGRICULTURAL SOCIETY in BURGHLEY PARK, STAMFORD, on THURSDAY, July 17.

The Premiums offered amount to 200*l.*, and are open to all England.

The Schedule, with Rules, &c., may be had upon application to Messrs. Laxton & Hewitt, Hon. Secs., Stamford.

ROYAL HORTICULTURAL SOCIETY.

April 9.—Azalea Show	June 26.—Rose Show
May 21.—First Great Show	July 2.—Third Great Show
June 11.—Second Great Show	September 10.—Autumn Show

American Plants in May or June.

During the Season the Inauguration of the Memorial of the Exhibition of 1851 is expected to take place.

October, 8, 9, and 10—International Fruit, Vegetable, Root, Cereal, and Gourd Show.

Bands will play Daily, from May to October.

Next Election of Fellows, April 4.

Prior to April 30, Packets of 25 Five-shilling Tickets, price 5*l.*, available according to the Daily charges, can be had at the Garden.

ROYAL HORTICULTURAL SOCIETY.—A BALLOT for the undermentioned Plants will be held in the Council Room at the Garden, South Kensington, W., on FRIDAY, April 11, at 2 o'Clock.

Note.—The number of Plants for distribution is small in the first 10 Lots—more numerous in the remainder.

Lot

1. Agave sp. Species of American Aloe, Mexico
   Sempervivum calyciforme. Succulent greenhouse plant, Canary Islands
   Sempervivum tabulæforme. Succulent greenhouse plant, Canary Islands
2. Littæa xalapensis. Succulent greenhouse plant, Canary Islands
   Echeveria gibbiflora. Beautiful var. with mauve-coloured leaves, Mexico
   Stephanotis floribunda. One of the best stove creepers, bearing white fragrant flowers
3. Bonapartea glauca. Ornamental greenhouse plant, Mexico
   Agave coccinea. Ornamental greenhouse plant, Mexico
   Echeveria secunda, " " "
4. Greenovia rupifraga " " "
   Tacsonia tubiflora. Greenhouse creeper, bearing flowers resembling a Passion-flower
   Acacia Latrobei. Ornamental greenhouse plant
5. Aloe ferox. Succulent greenhouse plant
   Pincinectitia glauca. Ornamental greenhouse plant
   Bonapartea gracilis. " " "
   " robusta. " " "
6. Beschorneria yuccaoides. " " "
   Yucca filifera. " " "
   Cissus heterophylla. Stove climber
7. Rhododendron Nutalli. One of the most beautiful of the Bhotan Rhododendrons; flowers creamy white, and 4 inches in diameter
   Acacia pycnantha. Greenhouse shrub, Australia
   Dyckia bariflora. Succulent ornamental greenhouse plant
   Berberis Fortuni. Half-hardy Berberis, China
8. Echeveria pumila. Succulent ornamental greenhouse plant
   Thunbergia laurifolia. Handsome stove climber, with large lilac flowers
   Anthurium violaceum. Very pretty aracious plant, bearing white flowers and violet-coloured berries
9. Dasylirion longifolium. Ornamental greenhouse plant, Mexico
   Casuarina quadrivalvis. Greenhouse shrub, Australia
   Acacia myrtifolia. " "
   Jasminum revolutum. Half-hardy evergreen, bearing yellow flowers
   Acacia saligna. Ornamental Greenhouse shrub, Australia
10. Cissus discolor. Very ornamental stove climber, with variegated leaves
    Acacia longifolia. Greenhouse evergreen shrub, Australia
    Begonia Palatantia. Tall growing Begonia
11. Hibiscus rosa sinensis. Ornamental stove shrub
12. Acacia armata. Very ornamental greenhouse shrub
13. Cupressus Goveniana. Gowen's Cypress, California
14. Cotoneaster frigida. Hardy evergreen shrub
    " nummularia. " "
15. Shanghae Rose. Early flowering Spring Rose of Shanghae
    Solanum crispum. Hardy evergreen from Chili
16. Lonicera fragrantissima. Very fragrant hardy shrub, China
17. Calceolaria violacea. Calceolaria with pretty foliage and violet flowers
18. Acacia dealbata. Ornamental greenhouse tree
    Kennedya rubicunda. Greenhouse creeper
19. Polygonum complexum. A pretty little hardy plant for rock-work
20. Pinus insignis. From California
21. Abies Nordmanniana. One of the hardiest and best of Abies, Mingrelia
22. Seedling Camellias. Raised from Italian seeds

Fellows of the Society desirous of obtaining any of these plants, if Life Members of 40 guineas, or Annual Subscribers of 4 guineas, are requested to name six of the lots; if Life Members of 20 guineas, or Annual Subscribers of 2 guineas, to name three of the lots. When there is more than one kind in the lot, the successful balloter gets a plant of each.

The arrangements for conducting the Ballot render it necessary that the numbers of the lots should be sent to Mr. Murray, at the Offices of the Society, South Kensington, W., on or before Monday, April 7, after which date no applications can be attended to.

The result will be communicated in next month's "Proceedings," and the plants which the Fellows may obtain will be kept at Chiswick until the end of the season, and then forwarded, unless instructions to the contrary shall have been given.

BRIGHTON and SUSSEX FLORICULTURAL SOCIETY'S GRAND EXHIBITIONS for 1862 will be ... the following days, viz.:—
SUMMER SHOW—WEDNESDAY, June 25, and THURSDAY, June 26.
AUTUMN—WEDNESDAY, Sept. 17, and THURSDAY, ... on the same grand scale as in former years. Extra ... have been added in the 1st Division for the best ten ... of Stove and Greenhouse Plants. Also for Ornamental ... Fine-foliaged Plants; and prizes given for trays of six ... Vegetables.
Schedules can be obtained of the SECRETARY, 96, St. James's ... or E. SPARY, Queen's Graperies, Superintendent of the Exhibitions.
EDWARD CARPENTER, Secretary.
Brighton, March 29.

RUGBY HORTICULTURAL and COTTAGE GARDENERS' SOCIETY.
President—The Right Hon. the Earl of Denbigh.
The ANNUAL EXHIBITION will be held at Rugby on THURSDAY the 28th August, when, in addition to the usual ... Two Silver Cups and upwards of 80 Prizes, open to all England, will be offered for competition.
Schedules of Prizes can be obtained by sending Two Postage Stamps to Mr. SAVAGE, 49, Church Street, Rugby, the Hon. Sec.
Rugby—March 29.

BEDDING PLANTS.—Parties requiring the above for delivery, now or in May, are invited to communicate with EDWIN COOLING, Derby, stating kinds and quantity required, E. C. having one of the largest and best stocks of ... good plants in the kingdom.
EDWIN COOLING, Mile Ash Nurseries, Derby.

The Gardeners' Chronicle.

SATURDAY, MARCH 29, 1862.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, April 1	Royal Horticultural (Fruit and Floral Committees) at S. Kensington	Noon
FRIDAY, — 2	Royal Horticultural (General Meeting) at S. Kensington	1 P.M.

THERE have been periods of 7 or 10 years, in which SPRINGS UNFAVOURABLE FOR THE BLOSSOMS OF FRUIT TREES formed exceptions; but of late the contrary has been the case. Even although the weather in some of these seasons was such as to retard vegetation till a late period, yet killing frosts occurred later still. Indeed, our climate is so precarious that in face of the most alluring springs it is wise to prepare for the worst. A comparatively high temperature, with warm breezes from the south-west, will induce a full flow of sap and consequently a rapid development of blossom buds; and vegetation is susceptible of injury from frost according to the degree of excitement which prevails in the sap. But whilst every thing is rejoicing in such fine, mild weather, both night and day, preparations for a great and sudden change may be taking place over a vast portion of the Atlantic. The atmosphere may become charged with invisible aqueous vapour, raised from the ocean by the power of the sun's rays. In that state it is well known that a little water occupies a very large space; and it follows that when this vapour is again condensed into water it must leave a corresponding extent of vacuum, were it not that air moves gently or rushes violently to restore the equilibrium, according as the condensation of the vapour takes place slowly or rapidly. Sometimes a heavy fall of rain will occasion a diminution of the weight of the atmosphere equal to an inch of mercury, as indicated by the barometer. This is more than a quarter of a ton on every square yard.

To restore the balance to the average density for a single square yard would require an influx of more than 7000 cubic feet of air, assuming that 100 cubic inches of it weigh about 305 grains. That this must come from somewhere is certain. It may come from various quarters; but we often find that the main current is from the north-east, for the wind has been known to blow in spring from that quarter for three weeks, sometimes with a velocity of more than 20 miles an hour during the day, occasionally resting during the night, leaving its frozen traces before resuming its course the following day.

Notwithstanding partial interruptions it is easy to calculate that even at less than a rate of 20 miles an hour, a few days would suffice to bring cold air from the frozen regions of Siberia, and it then proves injurious to vegetation on account of its dryness; for being cold it has little capacity for moisture. The dense cold air of the north-east of Europe would rest on its frozen base, and we should be safe from it were it not set in motion in consequence of the vaporizing effects of the solar rays on the waters of the Atlantic; the atmosphere above this extensive and to us contiguous ocean being surcharged with vapour which may any day be precipitated, whilst we are enjoying perhaps very fine weather. Then we are liable to be visited by cold winds in their passage from the north-east to make up the void resulting from condensation in the south-west. It is therefore advisable to be prepared against them.

Various modes of protecting the blossoms of wall trees have been adopted; now their efficacy depends wholly on principles which it may be well to point out, and then persons can employ such means as they can most readily command in accordance with those principles.

In general the most injury is done by sudden frost occurring after a period of warm days and mild nights, when the sap is in full flow, for the more this is the case by far more susceptible is vegetation of the effects of cold, and frosty nights require to be more especially prepared against. Sometimes, when vegetation is in that state, irreparable injury to the season's crop is done in one night, though generally these late frosts occur on three successive nights. In applying protection, the two following principles should be kept in view:—1. *To prevent the escape of heat by radiation, or otherwise.* 2. *To prevent frozen particles of moisture from coming in contact with the shoots and blossoms.*

Heat has a tendency to become equalised. All bodies in consequence of this law continually radiate heat to the adjoining colder bodies. The earth and walls absorb heat during the day, and give it out during the night to the then colder air resting on their surfaces; and the air thus warmed protects the blossoms from freezing so long as it surrounds them. But it is a property of heated air to be specifically lighter, and consequently to ascend till its temperature becomes equalised with that of the general mass with which it mixes. Hence the beneficial effect of any such substance as coping boards which prevents its free escape from the surface of the wall.

Ice or frozen particles of moisture have a very different effect on vegetation as compared with dry air of the same temperature. Their power of extracting heat from vegetation is much greater. According to experiments carefully made, it was found that a pound of *water* at 32° on being mixed with a pound of water at 172°, gave a temperature equal to that of the mean of these, or 102°; but when a pound of *water* at 172° was added to a pound of *ice* at 32°, the latter was dissolved by the former, but the temperature of the solution was not 102°, but only 32°.

Until the shoots of trees are cooled down to the freezing point, blossoms in connexion with them take a part of their heat and are thus enabled to withstand a few degrees of frost in the air; but when the branches and in short all the parts of the tree above ground are covered with icy particles, the heat previously existing in the tree is much more rapidly extracted than would be the case by dry air, which is a comparatively slow conductor of heat.

The roots largely contribute heat to the branches, especially if the soil is warm. When the roots of greenhouse plants are in bottom-heat, their tops withstand a degree of cold that would otherwise prove fatal to them. This shows that heat is conducted from the warmer to the colder parts of the same plant, and thus maintains their temperature above the freezing point, although the air may be several degrees below it. But all the heat that could be conducted in this way would be of little avail to the blossoms or other parts of a plant if these were in contact with ice, or frozen particles of moisture, for the latter are capable of reducing a quantity of water equal to their own weight from the high temperature of 172° down to the freezing point. It is therefore evident that these frozen bodies should be prevented from coming in contact with fruit blossoms.

From what has been stated, we think it may be fairly concluded that the principles by which protecting operations should be guided, are those we have laid down. The means to be used, however varied they may be, should all bear reference to these two points—prevention of the free *ascent* of warm air; and of the *descent* of frozen particles. Coping boards will do both to a considerable extent, especially if made to fit as closely as possible under the coping of the wall. If only 9 inches wide, they afford a considerable amount of protection; but if made a foot in width or more, their effect would be still better.

With regard to the prevention of frozen particles from coming in contact with the trees, almost any textile fabric that admits light enough answers the purpose: the best is that which on being exposed shows the greatest coating of hoar-frost on its upper surface. Thin canvas or even Tiffany will do. Where coping boards are not at command, it is advisable to have the thin textile substance that extends in front joined to about 18 inches of rather thick material at top, in order to prevent the escape of the warmer air.

These remarks will, we trust, explain how many contrivances can be devised to secure, at small expense, valuable crops of fruit which would otherwise be lost. What those contrivances should be depends upon the means at a gardener's command, and his own ingenuity.

SIR JOSEPH PAXTON has formally signified his approval of ORCHARD HOUSES. His adhesion has been given in through Mr. HEREMAN, who is well known to speak his sentiments.* We therefore suppose that nobody will in future question the sterling value of these buildings. Their opponents have been signally defeated by common sense and skilful perseverance; and Mr. RIVERS may wear his laurels without further challenge. It was time for the question to be settled; and it now only remains to discover how these structures can be improved. Mr. HEREMAN has put this well.

"Orchard-house cultivation may be considered however only yet in its infancy; the wonders which have already been achieved merely suggest how much more may be accomplished, and it is not unlikely that England, with all its disadvantages of climate, will at no distant day be better supplied with the choicest fruit, and at a more moderate cost, than any other nation in the world: the cheapness of glass, wood, and iron, and the increasing interest at present taken in the cultivation of fruits, naturally lead to the conclusion that improvement will succeed improvement, until every working man will find it easy to obtain a portion of glass, and thus literally sit under his own Vine and Fig tree."

In order to assist the gardener in his reflections on this subject, the pamphlet from which the above is an extract has been published. It gives in great detail, with excellent engravings, between 30 and 40 patterns, variations, adaptations, and modifications of the manner in which the PAXTON roofs are or may be put together. In this way we have designs for propagating houses, shelter houses, Vineries, Pineries, ornamental conservatories, down to pet greenhouses for the inhabitants of little suburban cottages the boundary walls of whose gardens are not above 6 feet high. Nor is this all.

"Sir JOSEPH PAXTON's patent houses may be lengthened and enlarged so as to form the boundaries of gardens; they cost less than brick walls, and the crops of fruit furnished are certain, no matter how unpropitious may be the seasons. A garden of this description on a large scale we have lately erected, and with judicious management an immense annual produce is certain.

"A large connected winter garden† we have erected at Summerfield House, Birmingham, the seat of R. L. CHANCE, Esq.; it consists of span-roofs of 14 feet sashes, so arranged with lean-tos against the walls as to form an extensive promenade of several hundred feet in length. Groves of fruit trees are planted near the side of the walks of the span roof, Grapes hang over head, and Vines and various other fruit trees in pots occupy different parts; vegetables, late and early, fill up all the available space, and form an important feature during the whole of the winter and early spring. The walks are formed of neat paving tiles manufactured at the Tile Work, Himley, near Dudley, Staffordshire; they are cheap and form a beautiful tesselated pavement: the whole garden, when in fruit, presents one of the most enchanting effects that can be imagined."

This is very like the realization of a horticultural dream in which the *Gardeners' Chronicle* indulged some 17 or 18 years ago; and if such ranges were, as they often might be, heated by the waste water of a steam engine, the suggestion then made would be completely carried out.

It is the heating such buildings and all the expensive accessories of hot-water apparatus that stand most in the way of conservatories of some sort being placed in every garden. We are therefore glad to see that Mr. HEREMAN has fully illustrated the method of using common drain pipes for heating; for we know that they perfectly answer the purpose in small structures. How that simple work is to be executed can now be ascertained for a shilling.

—— THE VERBENA called Purple King is admitted on all hands to be a model variety as to habit for flower-garden beds. This habit may be briefly described as dwarfish but erect, compactly branched, and continuously blooming, its growth moreover being such as

* See *A Handbook of Vine and Fruit-tree Cultivation, as adapted to Sir Joseph Paxton's patent Hot-houses.* By SAMUEL HEREMAN. Bradbury & Evans. (A shilling pamphlet, full of engravings on wood.)

† A view of this was published last week at p 276; it is the last woodcut in the page.

to yield what is of some importance in the parterre, an even surface of flowers. In consequence of its possessing these characteristics, it is found that when beds are planted with this Purple King, they always appear well furnished. Another model sort as to habit is Tweedieana, but the habit is different from the former; it is sensibly dwarfer, and the branches, which are slender and so numerous as to cover the surface of the ground, are prostrate, and spread closely over a considerable area. Now, if the habit of these two well-known kinds, which, be it remembered, represent the only forms of the Verbena as to growth which are really suitable for flower-garden uses, be compared with that of nine-tenths, we might almost say ninety-nine hundredths of the varieties which annually pour in upon us, we shall find that very few indeed come at all near to the standard. If prostrate, they are too coarse, or straggling, or not evenly productive of flower trusses; if not prostrate they are stiff-habited, or openly-branched, and consequently their flower trusses, even though fine individually, do not mass well, and are therefore ineffective.

What we wish to impress upon the growers and raisers of new Verbenas is this: that as, in respect to their uses, the varieties must fall into one of two classes, either (1) bedding or (2) exhibition varieties, the fact should be accepted and recognised to the fall. This would do something to relieve our fat catalogues, and our experimental gardens too, of a vast amount of rubbish which occupies useful space in both, to the exclusion probably of better things. We may expect after so fine a season as the last that new Verbenas will appear this year in swarms, and it would be well therefore, if, before the blooming period arrives, the subject could be thoroughly considered, and discussed if need be, so that an understanding may be arrived at as to what is really wanted.

Our view of the matter is this. The flower-gardener requires for his bedding purposes, varieties with the habit of Purple King, and with flowers of pure distinct colours, or else varieties, also of decided colours, with the habit of Tweedieana. He does not want one single variety to which these definitions do not closely apply. He does not want large flower-trusses, if so be that the plants flower abundantly; indeed, a vast multitude of moderate sized or even smallish flower-trusses are more likely to yield him what is to him a *sine quâ non*, a continuous sheet of bloom. He does not care in the least whether the flowers themselves are individually of "fine form" or not, though they are none the worse for his purpose if they happen to possess this peculiarity, and perhaps not much the better; but it is in every way desirable that they should be of "good substance" as the phrase is, to bear up against ungenial weather; and a pure colour which will not be injured by rain or by hot sunshine, is essential to the notion of perfection in a Verbena taken from this point of view. It is this class of varieties, in which habit is the first requisite, that seems to stand most in need of reformation and replenishment, and we recommend it especially to the notice of the raisers of seedlings, who are probably rather too much given to select and to work upon flowers which approach the florist's standard, irrespective of habit, at least irrespective of these special features of habit which render the plants what they ought to be in the flower garden. Perhaps Censors and Floral Committees are not altogether blameless in the matter, as they would naturally reward those varieties which approach nearest to ideal perfection in form; but then on the other hand, the merit of bedding varieties can only be judged on the ground with the plants *in situ*; and until our leading tribunals are so organised as to be able to send out a staff of travelling censors to visit and report on plants that cannot be brought in true character to any meeting or exhibition—such a staff as we believe exists amongst our neighbours across the Channel—we must be content to overcome the difficulty as we best may.

The florist requires for exhibition purposes, including exhibition in the form of pot specimen plants (here and there successfully carried out), and exhibition in the form of cut flower-trusses, a set of varieties altogether distinct from those we have been speaking of; and it is these florist's varieties which in the very nature of things come to be most generally exhibited and certificated, to the neglect of "mere decorative sorts." For both the exhibition objects just indicated it is necessary to have varieties with large well-furnished trusses in which the individual pips are as large in size and as near perfection in form as may be attainable. In regard to habit of growth, the more essential features in this exhibition class are vigour and robustness of character, such as has been infused into the race of cultivated varieties by the blood of *V. teucrioides*—the curse, so to speak, of the bedding race, and the one obstacle which more than any other has stood in the way of the production of a series of varieties having the proper bedding habit. The varieties for pot culture require to be of compactly branched growth, combined with this vigour of constitution; but if the object is merely the production of flower-trusses to be exhibited in a cut state, habit becomes of little consequence, so that the requisite perfection of truss and pip is obtained, and hence it is little cared for. In this exhibition class there is much more scope in the way of colours than in the bedding class. Not only are all sorts of colours, of all describable and indescribable tints, admissible, but they may be self-coloured, that is of one uniform tint, or their hues may be variously blended or shaded, or they may have white or yellowish "eyes" more or less conspicuous, or a dark-coloured beauty spot may be planted just beneath the "eye." Some of the crimsons spotted in this way with maroon, and of the whites and pinks spotted with crimson, are very handsome, and the oculate or light-eyed varieties are also generally very beautiful. It is the breeding for this class of flowers, in which so many features totally incompatible with adaptation to flower-garden uses are legitimate, and more or less desirable, which has made the Verbena what it is as regards variety and perfection of form, and at the same time has rendered so large a proportion of the new varieties utterly useless for the parterre. Viewed as a florist's flower indeed the Verbena has reached to a very high position, such varieties as General Simpson and Nemesis being models of perfection in form, both as regards the individual flowers and the truss, and they are scarcely less meritorious in a decorative point of view, in consequence of their free-flowering habit. This habit however is not for bedding purposes equal to that of Purple King or Tweedieana, wanting the regularity and compactness of the former, and the close dwarf density of the latter. For the flower garden therefore these latter remain the highest models in respect to habit.

To sum up: These two groups of varieties of Verbena should at once be recognised everywhere and on all hands as being thoroughly distinct, for the absence of such general recognition can only lead, as it has led, to disappointment and dissatisfaction. All new varieties should be rigorously classified under one or the other of the groups, no ambiguity, no uncertainty being suffered to exist as to what they are respectively adapted for, that is whether for bedding out or exhibition. The group of flower-garden varieties is that which stands most in need of being augmented with varieties of proper habit and useful colours, for which purpose the varieties indicated as models of habit or those which approach near to them should be taken as points of departure. Evidently, therefore, the raisers of seedling Verbenas should start from two widely distant termini, inasmuch as there are two very distinct objects to be kept in view, leading to widely different results. We cannot think this has been sufficiently borne in mind or acted on, or we should have been supplied ere this with a better series of bedding sorts.

THE GENUS CYPRIPEDIUM.

OF all Orchids I must confess that I have a strong partiality for this genus—at least for the tropical species, which have many good qualities to render them desirable. They are very easily cultivated, are always objects of interest when in bloom, and when not in flower their compact habit, and in some species ornamental foliage, amply repay the cultivator for the little room and attention which they require.

To grow Cypripediums in perfection, it is necessary to know under what conditions they are found in their native habitats—such as soil, climate, and temperature; in fact, to go back to first principles. Nearly all the species are found in a wild state in elevated regions within the tropics, and in those hilly parts where the moisture which is evaporated on the lower and hotter levels is condensed, consequently dew is copiously deposited at night, and by day the atmosphere is nearly saturated with moisture. There also the change of seasons is almost imperceptible. The plants are with a few exceptions found in mossy crevices on the mountains of India.

I believe that the whole of the tropical species inhabit situations of that kind, with the exception of C. Lowii, which is found wild in thick jungles in Borneo and Sarawak; and C. insignis in colder situations in Sylhet. We are thus furnished with sufficient data to guide us in their cultivation as regards soil, temperature, and moisture. In practice I find them to luxuriate in Sphagnum, chopped fine and well drained; they will even reject peat if Sphagnum is within reach. They do not require so much heat and shade as the majority of Indian Orchids, but they like plenty of water at all seasons—both overhead and at the root. I always use it rather above the temperature of the house. I do not consider that they require any rest beyond what the dulness of our winter gives them, as they are not provided with the pseudo-bulbs so common to other Orchids, their supplies being drawn from the thick, fleshy roots imbedded in constantly damp Moss, which suits them well. Several of the species come almost under the head of variegated Orchids—such as venustum, barbatum, purpuratum, and javanicum, the leaves of all of which are beautifully mottled with different shades of green.

Of this genus, all we have in cultivation are well worthy of attention, and within the last ten years some real gems have been imported in considerable quantities. First must be mentioned C. hirsutissimum, a noble species from the East Indies, flowering about April. It occupies an intermediate position between C. Lowii and C. villosum, but it is more beautiful than either, the lamina of the petals being large and rich purple, the sepals and lip deep green tinged with purple, and the whole flower and spike very hairy.

C. Lowii is another remarkably showy species found wild on trees in thick jungles in Borneo and Sarawak; like the last it is chiefly remarkable for the petals, which are long and blotched with purple, the green being pale, lip purplish green and shining. Wild specimens have 8 to 10 flowers on a spike.

C. villosum is another fine species; it comes from India. Its foliage is longer and more erect than that of most others, forming a fine mass of vegetation; the flowers are large, yellowish brown; stems hairy. It is very striking in appearance, owing to the insides of the flowers shining as if French polished.

C. caudatum, one of the most extraordinary plants known, is a native of mountainous parts of Peru. It has sepals and lip of yellowish green; the petals are dull brownish purple, and are extended to a length of 18 or 20 inches. The growth of these tail-like appendages is very rapid after the flower opens, giving the plant a singular appearance. There is a variety of this species named roseum, brighter-coloured, and more showy. I give it more water than any of the others.

C. Fairieanum, from Assam, flowers in autumn. It is one of the most beautifully marked of the genus; it is green and white, with purple veins on the dorsal sepal.

C. venustum has very handsome foliage, mottled with dark green above and reddish purple beneath; it flowers here in the winter; it is a native of the Khasiya hills and mountains of Sylhet in India.

C. barbatum and C. purpuratum are much alike, the flowers of both being brownish purple, with the top of the dorsal sepal white with purple veins; purpuratum, however, has more white. Both are found on Mount Ophir.

Of C. barbatum there are several fine varieties, the best being superbum, which is much finer than the original species.

C. insigne, also from Sylhet, is a good old kind, and very accommodating in habit; it will grow in almost anything, and anywhere, but it dislikes too much heat; it enjoys a mixture of loam, peat, sand, and potsherds, and will do well with the treatment usually given to a moderately early Vinery.

I pot all, after flowering, in rather large pots, as the sorts require plenty of room, in about two-thirds potsherds and charcoal for drainage; the plants should be only slightly elevated above the rim of the pot, the temperature need not be so excessive as that which Indian Orchids generally receive. *L. W. J.*

Indoor Gardening.

THE time of year for striking cuttings has at last arrived, and few are the windows which do not witness sooner or later in this busy season some attempts of this kind.

The Geranium cuttings generally do best when taken so as to include three joints, through the lowest of which the cut passes. The leaves if large should be cut off near the stalk, and the cuttings should be either planted singly in small pots or pressed rather firmly against the edge of a larger flower pot. The centre of the pot, slightly hollowed, should be left quite empty to facilitate watering. Fuchsias also, if woody cuttings, do admirably thus treated. Heliotropes, Verbenas, Fuchsias, if young shoots, Lobelias, and Begonias, do most beautifully when planted in pans of silver sand, soaked and overflowed with a little sheet of water. The cuttings, as short as possible, may be stuck in all over, and if put into a warm and sheltered place they will grow most rapidly, and make the most charming bunches of little fibry roots. These things will even often strike in small bottles of rain water, the convenience of which is that they take so little room.

The cuttings grown in sand will generally be ready to plant out in pots by when the water has dried, and previously to drawing out the little plants it is well to soak the sand again most thoroughly.

Very small pots do best for planting out the cuttings—a little charcoal and then a little Moss should be used for drainage—then some leaf-mould and loam, or a little half charred soil from some turfy pasture, and all being moistened slightly a hole should be kept open into which to drop the cutting, filling up with soil if the plant was struck in soil, or with silver sand if the plant grew in sand or water.

The newly potted plants want a little shade just at first, and must be accustomed gradually to more and more of air. They should not however be exposed to hot sunshine or to heavy rains. The use of Moss in the flower pots will be found very great, and in giving a larger pot it need never be removed, as the roots grow down into it and seem greatly to delight in it.

Begonias are of all things delightful for window gardens if they are kept moist enough; but they ought very seldom to be exposed to hot sun in summer. The little Begonia Dregei grows from cuttings most easily, and is a charming little plant, in most constant beauty. This does remarkably well in Cocoa-nut refuse, and with charcoal and Moss for drainage. But for these kind of plants some sort of case-pots are wanted terribly, made without holes, and of some stuff like china so as not to be porous. Square pots I think would do best, as affording more space for filling with sand or fibre, or even for planting Moss; but something between expensive china and common red pottery is certainly wanted greatly, as much for greenhouse shelves as for our room windows. Holes are undesirable for these outer pots, and the plainer and simpler the colours can be, the better they suit with flowers. Terra-cotta is rather thick and takes up

much room, or its appearance is far better than the tile patterns, which are apt to be too staring.

Myrtles and Sweet Verbenas are plants that every one likes to grow; but it is very odd how seldom it is that people succeed in striking them at first.

The best way I know for the Myrtle is to take either half-hardened shoots, and plant them in soil as usual, or to use little points of very young shoots indeed, placing them in the before mentioned sand and water, by which I have struck great numbers. For the Verbena (Aloysia citriodora) taking a woody stem just about to bud out is the most certain method, though a strong young shoot in sand makes perhaps a prettier little plant, and grows much the quickest. The difficulty is, that it must be kept moist and warm, and yet neither too damp over head, or too closely shaded. The Sweet Verbena perfectly delights in Cocoa-nut fibre refuse. And it certainly is one of the most charming window plants. This is a plant, too, which we ought to keep on for years. Those I used to have when I was a child grew in the border all summer, and stood in the winter in the nursery window sill losing their leaves in autumn, and the too tall branches shortened. After Christmas they were put on the chimney piece at night, which brought them on quite fast. These plants do best with a little water regularly every day, and indeed for window gardeners I am beginning to have great suspicions that this is the safer course for most things; if a day's neglect does come, when we water rarely, it is so very likely to be just when it is most acutely felt. For growing plants, not endangered by cold, planted in well drained pots and rather lightly potted, I quite believe this daily watering will prevent many dropping Verbena leaves, and many falling Fuchsia buds—results of a sudden checking or of over dryness.

This method too, to lady gardeners, has the great beauty of simplicity; nothing is so perplexing as to know when to water. If one says daily—till the water just begins to run through, the saucers being emptied directly, I do not think that very much harm can happen to growing plants in summer. For pot plants however, standing in unprotected red porous flower pots, no one can hope to legislate—a couple of hours in a hot burning sun or in a windy place may produce a dry lack of soil—or standing in a moist damp place, upon some perhaps, it may so happen that they keep moist for days. The Verbena, however, at any rate should be daily watered, except in the late autumns, when only the sand surrounding the pot should provide it with slight moisture, and the Myrtles should be well watered from one year's end to the other, and above all well washed. *E. A. M.*

ON THE AERATION OF SOIL.

By M. JÆGER.

M. DANIEL HOOIBRENK, gardener at Heitzing, near Vienna, announced, in 1859, a new system of culture, calculated to insure a more vigorous growth than can be obtained by any other means. This consists in placing in the earth pipes or air channels pierced with holes which permit the air to penetrate throughout the mass of soil traversed by the roots. According to the inventor of this system, its advantages are numerous and important; he points out the following:—

1. The strongest clay soils, under the influence of currents of air transmitted through the pipes, are divided by thousands of small fissures and thus rendered friable, so that roots can easily penetrate them. The depth at which the pipes should be laid depends on the nature and consistence of the soil.

2. After the soil has been aërated by means of the pipes, the vegetation of plants growing in it becomes more active, especially in the cases of grain crops and vegetables. The roots finding the soil in a finely divided state penetrate deeper than usual, and are consequently safe from the vicissitudes of temperature which take place near the surface.

3. The looseness produced by the circulation of air in the soil causes a rapid absorption of rain-water and prevents caking of the surface. On the other hand during long-continued drought, the roots, owing to the great depth to which they have penetrated, are not exposed to the drying effects of the external air, and are enabled to obtain a supply of moisture which they could not do near the surface.

4. The air pipes passing through sour soil causes the Rushes to disappear, so that where only bad herbage formerly grew, the finer Grasses can be produced. These good effects are more particularly observed in boggy or marshy ground, which may thus be changed into fertile soil.

5. The soil, being always kept porous by the circulation of the air, can be more easily worked; and from its porousness preventing the accumulation of water, cultivation can be commenced earlier in spring.

6. Plants grown on soil thus improved produce a large mass of roots, and, consequently, being very strong, they require more space. There is therefore no need to sow so thickly as usual; and hence a considerable saving of seed is effected.

7. Manures are much more energetic in their action in soil which is aërated in this way than in that which has not been so treated; the reason of this being, according to M. Hooibrenk, that the aërated soil is kept uniformly moist throughout its thickness, and that being the case the decomposition of the fertilising substance is more rapid and uniform.

In short, the inventor of this system states that double and even triple the produce may be obtained from land so treated. This increase soon repays the expense of laying the air pipes. He also states that in the culture of the Vine the ripening of the fruit is greatly accelerated, and the quality improved. Such assertions could not fail to be received with doubt by many. Careful experiments were therefore made to test their truth by Messrs. Fichtner & Son.

The field in which these experiments were conducted consists of a bed of loam or sandy clay (*argilo-sableuse*) from 13 to 16 inches deep, resting on a subsoil of rounded pebble-stones, like those in an adjoining brook. On the other side of the field is another brook, about 6½ feet lower. This difference of level, taken in connection with the stony subsoil, made it doubtful at first whether the beneficial action of the air pipes would not be owing to their acting as drains in carrying off surplus water. The field contained rather more than 1½ acre, and had been in cultivation since 1852, but yielded only indifferent returns, at most about six for one of seed. Messrs. Fichtner placed four air pipes at the depth of 3 feet across the field. Their internal diameter was nearly 2½ inches. The field thus prepared was divided into a number of beds, at right angles to the direction of the air pipes, and extending to the portion of ground not furnished with the apparatus. Of the four pipes first laid down, two were joined by a communication pipe, and the mouth of one of them opened into the ash pit of a furnace, whilst the other extremity terminated in an air tank, the sides of which were of masonry.

The surface of ground furnished with air drainage was ½ acre and 22 poles. The furnace at the end of the pipe was intended to show that the atmospheric air could reach the fire by passing through the soil. To prove this the opening at the further extremity of the pipe was completely closed, and also the furnace and ash-pit doors, in such a way that no air could reach the fire to support combustion except by passing through the soil under which the pipe leading to the furnace was buried. The fire however burned perfectly well throughout the day. To burn 10 lbs. of wood in 2½ hours would require 8000 cubic feet of air, and this would have to traverse 108,000 lbs. of soil before it could reach the furnace. A similar circulation, though less active, must take place whenever there is a difference in the temperature of the air in the drains and that of the atmosphere, and from observations that have been made it has been found that a difference of this kind takes place at least once in 24 hours. M. Jæger remarks that wherever a furnace exists, its fire may be usefully employed in fertilizing, by means of air tubes, the adjoining ground; and that gardeners might thus make good use of their hothouse furnaces for improving borders and other parts of their gardens.

The advantageous action of the atmospheric air in passing through the soil is due to the fact of its losing a portion of its oxygen, and thus giving rise to the formation of a larger portion of carbonic acid. To determine the changes effected in these respects, Messrs. Fichtner have analysed the air contained in the tubes comparatively with that of the atmosphere. They found, after several days' uninterrupted heating by the furnace, during which time the circulation through the soil had been rapid, the air in the tubes had exactly the same composition as that of the atmosphere (21 per cent. of oxygen, and 79 of nitrogen) and contained in 10,000 parts 12·80 of carbonic acid. Two days after the fire was not kept up the air in the tubes had only 20·85 per cent. of oxygen, and contained 20·99 of carbonic acid in 1000 parts; and from four to six days after the fire was let out, they found 20.71 of oxygen and 35.72 of carbonic acid; six or eight days after, 20.08 per cent. of oxygen, and 35.73 per 1000 of carbonic acid. During these experiments they only found 4 parts of carbonic acid in 1000 of the air in the atmosphere.

The produce of the aërated soil, even taking into account the effect due to the working of the soil in laying the pipes, was considerably increased during the first and only year in which the results are known. A particular increase was observed in the yield of Sugar Beet. On the estate of Totis in Hungary, where similar experiments have been made, very encouraging results have been obtained. It is, however, impossible as yet to state anything precisely respecting them, and before we can draw conclusions we must wait till the experiments which are being made shall have been carried on for a sufficient length of time. *Gartenflora*, 1860, *abridged in the Journal de la Société d'Horticulture, Paris*, 1862.

Home Correspondence.

Gunnera scabra.—On account of the great size of its foliage this is one of the most effective plants that can be used as a single specimen on lawns. Although it has been for some little time in cultivation, yet until it flowered it could not be quickly propagated, and it is therefore hardly so well known or so extensively grown as it deserves to be; it has now, however, ripened seeds in this country, and therefore plants will soon be more plentiful. The Gunnera has been publicly exhibited as a pot plant, and as under these circumstances it looks only like a poor starved specimen of Rhubarb, this may have created a prejudice against the plant among some of those who saw it; few seeing it grown in such a way could form an idea of what a noble object it forms when planted in the open ground. A better idea of it might have been obtained from a single leaf cut from a good strong plant. The great, cordate, sinuated leaves are not, in fact, much unlike those of a luxuriant plant of Rhubarb, but they are much more rigid, and, being covered with asperities, they are harsh to the touch. The blades of the leaves on a fine plant in the Royal Botanic Gardens at Kew, last year were more than 4 feet in length and nearly as much in diameter. The inflorescence is inconspicuous and arranged in a dense cone-shaped mass, which is almost hidden among the leaves. The plant is a native of Chili, and Mr. Darwin, in "The Natural History of the Voyage of the Beagle," says that he has seen it there with leaves 8 feet in diameter. It will probably attain a size as great in this country, for every year adds to the strength of the plants, and consequently the size of the foliage. From the same authors we find that the inhabitants eat the stalks as we do those of Rhubarb, that they obtain a black dye from the plant, and use the roots in tanning leather. Whether it will ever become an economic plant in this country is a question which cannot yet be answered, it probably grows too slowly and would occupy too much room for such a purpose. It needs only a slight protection during winter, which is a fact very much in its favour. *C. W. C.*

Red River Fruit Tree.—In the first volume of Mr. Hinds' exploring expedition beyond the Red River, he speaks frequently of the Me-sas-ka-tu-mi-na tree (Amelanchier canadensis), and says it bears a quantity of very well flavoured fruit about the size of a Black Currant. He adds that in some parts the tree itself was 20 feet high. Is this tree known in England, and has the fruit the good qualities Mr. Hinds ascribes to it? If it has, it might make a useful addition to our desserts, and from the climate of which it is a native, it must be hardy. *A. R. C.* [Am. canadensis is scarcely more than a variety of A. florida, the common Snowy Medlar, which may be had of any of the nurserymen who sell hardy trees and shrubs. As for the fruit, which we have often tasted, we can say nothing in its favour, although, had we been as hungry as Mr. Hinds, it is probable that we should have been of his opinion.]

Conifers.—In answer to the queries of "Excelsior" (p. 238), I beg to say that the largest of the group of "Picea Cephalonica" here, is—height 22 feet, width through branches 17 feet, girth of stem 2 feet 8 inches. They are all very good specimens, though very young, having been planted out, small seedlings, in 1848. No doubt many finer are in Britain, where they are of greater size. *Shannon, Castle Martyr.*

The late Flower Show at Ghent.—This exhibition, occurring, as it does, only once in five years, is naturally looked forward to with intense interest by the people of Belgium, more especially by amateurs and nurserymen in the town of Ghent and its neighbourhood, all of whom make strenuous efforts to be well represented at this great gathering. It enjoys the especial patronage of the King; and everything that can be done to render it worthy of such distinction, and to give it a national and European importance, is done by the President and officers of the society. This being the case one naturally expects great results—in fact, this display might be considered the great floral exhibition of the continent. As you have already given a full report of the show, I purpose now to make only a few remarks upon such plants as showed superior cultivation, and upon the general effect of the exhibition. First, then, as regards the plants. On entering the exhibition room, my attention was directed to some beautiful specimens of Tree Mignonette of the large flowering kind; one plant only was placed in a 32-sized pot, it was about 1 foot 6 inches high, and about 1 foot through, well grown, and blooming as freely as though it was in the open borders at midsummer. Hyacinths, too, were fine, and were grown in very small pots—a size between 60's and 48's; some of the bulbs had thrown up several spikes of flowers, which were tied together so cleverly as to give the appearance of one fine spike. But the grand feature of the exhibition was undoubtedly the Camellias, which are favourites with the Belgians, and they arrive at a degree of perfection in its culture peculiar to themselves. Noble examples, fine in shape, excellent in health, met the eye at every turn. They were for the most part trained in the form of a cone, and were covered with flowers, and so much care is bestowed upon them that not a leaf or flower is out of place. A large half conical stage of great height was placed on the left hand side of the dome in the centre of the exhibition building. This was filled principally with Camellias, and was one of the most imposing features of the show. Some large specimens however had been placed at the top of this cone, which destroyed its symmetry and considerably marred the harmony of the arrangement. Next in point of effect were the Azaleas; two stages reaching nearly the whole length of the show room were filled with these plants, and although individually they would not bear comparison with the fine specimens brought to our summer exhibitions, there were nevertheless many good specimens amongst them, and for this early season of the year they were well coloured. Scarcely anything but flowers could be seen from one end of the stage to the other.

They were for the most part trained upon stems about 2 or 3 feet high, with flat or umbrella-shaped heads. At the end of the room, in a deep recess, was a miscellaneous group of flowering fine-foliaged plants, which were very happily arranged, showing conclusively that foliage as well as flowers is necessary for the effective grouping of plants. Amaryllises were contributed in fine condition and in great variety, much more so than I have ever seen them in England. They were exhibited both by amateurs and nurserymen, and well repaid any care that might have been bestowed upon their culture. A noble group of Palms was placed in a recess on the right hand side of the dome, supported on each side by masses of Tree Ferns, which were succeeded by Rhododendrons and Azaleas, an arrangement which, viewed as a whole, had a very pleasing effect. New plants were produced in abundance by several of the nurserymen of Ghent; but I saw nothing there that I had not previously seen in England, and it is not a little gratifying to us to know that the premier prize for new plants not in flower was borne away by a London nurseryman. The arrangement altogether was very creditable. The side stages were well filled and placed; not so, however, the centre table; on it high and low plants stood indiscriminately. Tree Ferns were also arranged at intervals down the centre; fine specimens, but wrongly placed, for they quite intercepted the general view of the exhibition. The footway also was narrow, not being more than 5 or 6 feet wide, and there were no barricades to protect the plants; but although the large room was very much crowded I did not observe that the least injury was done to the plants, or heard a complaint of inconvenience in examining them. It would be unfair to compare this exhibition, held so early in the spring, with our summer shows; but it must be obvious to even casual observers that with the exception of a few specialties a much higher degree of cultivation is attained in England than on the continent, and our summer shows are doubtless very far superior to any similar exhibitions held across the Channel. Continental gardeners doubtless excel us in certain modes of propagation, but it is quite obvious that we greatly excel in matters of general cultivation. *E.*

Birds and Blossom Buds.—Birds eat the blossom buds of my Pear trees. My gardener says they do so in search of an insect in the bud. If so, does the bird smell the insect or see it? I rather incline to the old opinion of the finches eating the bud. Will you enlighten us? In either case what is the remedy? Also, how can we destroy the Gooseberry caterpillar? *Woglog.* [Various remedies for Gooseberry caterpillar may be found in our volume for 1861, p. 556].

Fat Catalogues.—Now that such a sharp contest is going on regarding the Catalogue question, may I be permitted to call attention to the vagaries of plant Catalogue makers, some of whom really seem to labour under the impression that the great point is to render descriptions unintelligible. I have a catalogue now before me of a well-known London nursery. In it I find a Pelargonium described as a "charming souvenir for the drawing room," an Allamanda as "obscurely hispid," and a Convolvulus for a hanging basket as "picturesque." Pray what do you consider this word to mean. To me it sounds somewhat out of place when applied to the spots on a Geranium petal, the flower of a Fuchsia, or the leaf of a Caladium, indiscriminately. Then I wonder what that unfortunate plant Epigynium leucobotrys has done that it should be compared to astronomical objects, and what does "the vagrant hand of some lawless artist" mean. I should consider it to refer to an itinerant rustic painter of public-house signs who had walked away from his employment, taking with him the landlord's cash-box, or perhaps eloping with his wife. Can you inform me what a "star-tipt pearl" is? the connection between the two objects seeming rather distant, and in fact producing "a bold and striking contrast." I am so bewildered in the flowery maze of words that I cannot find time to point out the many other effusions before me, but I should think the writer would be an invaluable assistant to Messrs. Moses, or the other promoters of puffy poetical advertisements. I do wish the horticultural world would make up its mind to put down these senseless effusions, and encourage the publication of plain, common sense, unexaggerated Catalogues, giving the required information in a simple straightforward manner, and enabling one to form some idea as to what a plant is like, instead of by their verbosity confusing *A Puzzled Amateur.*

Glass Verandahs.—Can any one suggest a simple and convenient arrangement for sun blinds to a rather extensive verandah? Probably it would be better to have them underneath than over the glass. If upon rollers like those used for conservatories, how long might each roller be to be manageable? What material would answer best for the blind? The width of glass roof is about 13 feet. Would iron rods do for the rollers to run upon? and if so, what should be their thickness? *A Constant Reader.*

Weather Prognostics: The Summer of 1862.—The Vernal Equinoctial week from the 18th to 25th March is now past, and as it has deviated greatly from what is usual, in its weather characteristics, it affords me the opportunity of testing again, as in 1860, the merits of the principle I advocate, viz. that where that week, in any given portion, or in the whole of the British Isles, differs decidedly from what is usual in some of its weather characteristics, the same difference from what is usual and in the same particulars will distinguish more or less the ensuing summer from an ordinary one, and afford an opportunity thereby for usefully divining its probable nature beforehand. The winter of 1861-62, and the autumn and summer preceding, have not been unfavourable, but much the reverse; and all things in the field and garden in the south of England look well. But, guided alone by the nature of the week just elapsed, and to which I wish to call renewed attention, I wish to publish my fears, that those things now so promising are destined to pass through a summer deficient in its usual kindliness, and may not probably arrive at full perfection. *Thomas Dullsonlay, Sandgate.*

Early Grapes.—Along with this I send you a bunch of Grapes; I think you will agree with me when I say that the Vine is a good tempered plant, and easily forced at any time with a little care and attention. You will remember that I sent you Grapes in January from a house which I began to force on the 10th of August last; the present bunch is from a house begun on the 21st of last October. It is cut off a Vine at least 40 years old; it became necessary to remove the house to another part of the garden to make room for a new flower garden; the Vines were dug up carefully and laid in by the heels while the house was pulled down and rebuilt. They were then planted in the new border, which was well made on the 1st of March 1858, and were allowed to bear a small crop, which coloured beautifully, and took a first prize at a neighbouring show, beating some larger bunches and berries which were not so well coloured. Last year we had Grapes ripe on the 1st of May, on the same Vines from which we cut this year on the 14th of March. The house is a large one, 65ft. by 15ft. and is heated with old fashioned flues. *J. E. F., March 25th.* [The bunch sent is a beauty and wonderfully well coloured.]

Societies.

Royal Horticultural, *March* 21.—Sir Wentworth Dilke, Bart., V.P., in the Chair. The following candidates were elected Fellows, viz.:—

B. Albers, Esq.; Miss M. Atkinson; Mrs. Barclay; Mrs. Barlow; G. C. T. Bartley, Esq.; Major T. Bourne; Mrs. Boyle; Sir C. J. F. Bunbury, Bart.; Mrs. Butler; Viscount Castlerosse, M.P.; Lord Alan Spencer Churchill; Mrs. Clarke; Captain H. E. Coffin, R.N.; The Countess of Cork; R. A. Cosier, Esq.; Rev. A. Cruikshank, D.D.; Mrs. A. Cumming; S. A. Daintree, Esq.; Rev. W. H. Dickinson; Mrs. Dillwyn; W. E. Dixon, Esq.; W. M. Dolben, Esq.; Lady de Dunstanville; Miss Laura Elers; Mrs. Fleming; Lieut.-General Gascoigne; J. Gildea, Esq.; Mrs. B. Green; Miss Anne L. Guthrie; Lord Claud Hamilton, M.P.; R. Hampton, Esq.; R. Hayes, Esq.; S. H. Head, Esq.; C. Hellman, Esq.; J. Holl, Esq.; Mr. C. Lidgard; Lord George Loftus; Miss C. Mansell; W. Marshall, Esq., M.P.; F. O. Mayne, C.B.; Mrs. Mayer; Mrs. Morison; The Countess of Morton; Mr. J. Pearson; Mrs. Phillips; Captain Pixley, R.N.; Mrs. Pole; Mrs. Ramsden; Captain Sir C. Ricketts, Bart., R.N.; Mrs. Roberts; A. T. Roberts, Esq.; C. Robinson, Esq.; R. Ruding, Esq.; Sir Francis E. Scott, Bart.; Mrs. D. Stern; The Duchess of Sutherland; E. Thornton, Esq.; Prof. Tennant; Sir Humphrey de Trafford, Bart.; O. Viveash, Esq.; Mrs. Wilkinson; and Mr. Richard Wood.

Royal Botanic: *March* 26.—This was the first of a series of seven spring shows intended to be holden by this Society previous to the great summer *fêtes*. As an exhibition it was successful, but the day was wet, and few visitors attended. Of hardy evergreens, which were announced to include Conifers, the best group came from Mr. Standish, who showed neat specimens of the new Retinosporas, Sciadopitys, Thujopsis dolabrata and its variegated variety; the Holly-like Osmanthus aquifolius and the green-leaved Aucuba. Mr. Laing of Twickenham showed a larger group of ordinary nursery Conifers; and others came from Messrs. W. Cutbush & Son, and Messrs. Jackson & Son, the latter of whom included Chamærops excelsa. The pot Camellias were contributed by Mr. Cross, gardener to Sir F. H. Goldsmid, St. John's Lodge, who represented amateurs; and by Mr. Standish, Messrs. A. Henderson & Co., and Mr. Cutbush, who represented nurserymen. Among Mr. Cross's plants was one called Duc de Bretagne, a very handsome and well formed red flower of the eximia class. Mr. Standish had Duchesse de Berri and Sarah Frost, which were shown at South Kensington. Stands of cut Camellias were numerous. The best came from Mr. Burn, gardener to Sir C. Isham, Bart.; Messrs. Veitch and Mr. W. Paul. In the stand shown by the latter were Mathotiana, deep crimson; and Elatior, bright red; two of the finest blooms in the exhibition. Lucretia Gazzarini in Mr. Cutbush's stand, a red flower, with a broadish distinct white stripe down the centre of each petal, was very attractive. Chinese Primroses were shown by Mr. Todman, of Clapham, Mr. Cutbush, and Mr. Howard, the plants from the former exhibitor being much the best. The miscellaneous exhibitions contributed very much to the display. And foremost should be mentioned two very fine collections of Hyacinths from Messrs. Cutbush and Mr. W. Paul. A collection of 12 Hyacinths, finely grown, was also sent by Mr. Young of Highgate. Groups of Stove and Greenhouse Flowering and Foliage Plants were sent by Mr. Williams, Mr. Hutt, and Messrs. F. and A. Smith; Cyclamens by Messrs. E. G. Henderson and Messrs. Smith; and variegated Begonias by Mr. Hutt. There were some interesting novelties shown, the most remarkable of which were the following:—Camellia Reine des Beautés, from Messrs. Veitch; the flower, on a weak plant, was rather small, but of perfect form, and of a lovely flesh colour. Two handsome Ferns, shown as Asplenium flabellulatum and rachirhizon, also came from Messrs. Veitch. The variegated form of Cyperus alternifolius was shown by Mr. Williams and Mr. Hutt; and Mr. Williams also had a finely-coloured and broad-sepaled variety of Cypripedium barbatum; and a good plant of the rare Cibotium princeps. Mr. W. Paul showed several plants of his beautiful new Rose Beauty of Waltham, in fine condition. Numerous Seedling Cinerarias were sent by Messrs. F. and A. Smith, the best of which were:—Cadet, a dwarf grower, deep rich crimson, of fine form and properties; Emily, one of the tipped class, with pure white base and dark disk, remarkable for the very abrupt and even termination marking of the florets, which consists of a moderate tip of rosy crimson continued down both sides like a marginal strip; Defiance, a second class large showy reddish puce; and the Emperor, new in colour, which is a deep maroon or mulberry crimson, lighter just at the base, where it joins the small white zone which surrounds the grey disk; the colour however is its only merit. In addition to these we may mention Prince Alfred, a large Magenta self; Princess Alice, a very large grey-eyed flower, with bright rosy crimson tips; and Prince of Hesse, a large purple, with white zone and dark disk, as three showy decorative varieties.

Linnean: *Feb.* 20.—G. Bentham, Esq., President, in the chair. T. G. Ryland, Esq., was elected a Fellow. The following papers were read:—1. "On Prolification in Flowers, and especially on that kind termed Axillary Prolification." By Maxwell T. Masters, Esq. Axillary prolification was defined to be that condition of the flower in which one or more adventitious buds spring from the axils of one or more of the parts of the flower. The accessory bud may take the form of a leaf-bud, a branch, a flower bud, or a miniature inflorescence; it may be sessile, but is more frequently stalked, and in more than half the number of cases recorded and observed, is a flower bud or an inflorescence. This kind of adventitious growth is found to occur most frequently in the groups of Cruciferæ, Caryophyllaceæ, Resedaceæ, Leguminosæ, Rosaceæ, Umbelliferæ, and Campanulaceæ, and is therefore far more frequent among polypetalous than among monopetalous plants; it is indeed rarely met with amongst irregular monopetalous flowers. The new bud in most instances arises from within the axil of a sepal; next in frequency from that of the pistil in cases where the carpels are disunited and leaf-like, then from that of a petal, and least frequently from that of a stamen. It has been found that three-fourths of the entire number of genera recorded as having been affected by this irregular development possess in their normal state some peculiarity of the thalamus: thus, in about one-third the thalamus is more or less prolonged between some or other of the floral whorls; in about one fourth the stamens or carpels, or both, are numerous, and spring naturally from the thalamus; and in about one-sixth the thalamus is either enlarged into a disk or presents glandular swellings. As far as the author's own observation had gone, the flowers which are situated at the outside or lower portion of a many-flowered inflorescence are those most frequently affected. Various examples were then discussed. A Dianthus from the Chelsea garden had the stamens entirely suppressed, and adventitious buds supplied their place—this case, it was observed, having the more interest from its similarity to one described by Goethe (Metam. d. Pfl. c. 16, sect. 105) in which latter, however, median prolification also existed. The adventitious growth in this example occurred in the form of a circle of flower-stalks bearing alternate strap-shaped, petal-like scales, and one or two imperfect flower-buds, made up externally of leafy or petal-like scales, within which was a monosepalous calyx enclosing rudimentary petals, stamens, and carpels. In Trifolium repens the adventitious bud sometimes arises from the axil of a monocarpellary pistil. A very frequent malformation in Pears is one wherein a second Pear proceeds from the centre of the first, and even a third from the centre of the second; and Pears are also occasionally observed arising from the axils of the sepals of the primary Pear, or from the axils of leaves originating on the outer surface of the "fruits." The fruits of Opuntia Salmiana and O. fragilis have been observed to form small fruit-like branches around the top of their fruits, each bud springing from the axil of a little tuft of wool and spines, and growing out into a long shoot, producing flowers the following year, which flowers exhibit the same peculiarity. The fruits of Pereskia Bleo were mentioned as producing buds from their summits, in the same way as the Opuntia. In Philadelphus specimens the so-called calyx tube had been observed with two small bracts, from the axil of one of which a small flower bud proceeded. A very curious specimen of Daucus Carota had been gathered by Mr. Masters in Switzerland. In this, the calyx was tubular, and its limb divided into five short teeth; the carpels were leaf-like, disjoined, and not provided with ovules, and between them arose a central prolongation of the axis, which almost immediately divided into two branches, each terminated by a small umbel of perfect flowers surrounded by minute bracts. After some extended remarks, comparing the two forms of prolification, axillary and median, the author concluded with a table of the

genera in which axillary prolification had been observed, indicating from what particular organ the development had taken place, and also the form it assumed. 2. "On Inocarpus," by G. Bentham, Esq. Mr. Bentham having had recent occasion to examine, with Dr. Hooker, the structure of Inocarpus, had found that the received view of the nature of the ovary is in some important respects erroneous, and that the genus is in fact, as in appearance, closely allied to Etaballia, a beautiful tree of British Guiana, discovered by Schomburgk, next to which it must be placed in the Leguminosæ, notwithstanding the monopetalous corolla. The union, indeed, of all the petals at their base, or rather by their claws, is, it was remarked, but little more than that which occurs in most Trifoliums, in several Mimoseæ, &c.; the 10 monadelphous stamens are such as are frequent in Leguminosæ; and the ovary is characteristic of that order, "this being perhaps the only organ by which Leguminosæ can be always recognised through all their varied modifications." The doubts and contradictions of succeeding writers as to the position of Inocarpus in the natural systems, may now therefore be removed by referring it to the Leguminosæ. The so-called nut, but rather the kernel or seed of I. edulis, appears to be extensively eaten in its native country, and more especially in some of the eastern islands of the Indian Archipelago, where it is said to be very abundant. Rumphius states that when boiled or roasted in ashes it is sweet like the Spanish eatable acorns, and much prized by the natives of several of the islands. According to Forster it replaces Chestnuts in the Society and Friendly Islands, but is less agreeable, although sweetish. Roxburgh, who raised the tree in the Calcutta garden, says that the kernel is eatable, but not palatable. Mr. Bentham concluded with the technical characters of three allied genera referred to in his paper, namely Inocarpus, Etaballia, and the Bocco of Aublet. 3. "Note on Hamamelis and Loropetalum, with a description of a new Anisophyllea," by Prof. Oliver. An examination some time since of some of the Hamamelideæ for other purposes, had led Prof. Oliver to compare the American and Asiatic species referred to Hamamelis—H. virginica and H. chinensis, and the result had been that he felt satisfied they were not congeneric, and that they had been rightly separated by the Chinese plant under the name of Loropetalum, suggested by Mr. Brown. The paper contained a synopsis of the genera of Hamamelideæ. The Aniosophyllea was a new species from Malacca, gathered by Griffith, and named A. Griffithii. The author considers this genus was more correctly placed by Mr. Bentham in the order Rhizophoraceæ than it has since been by Drs. Hooker and Thomson in Hamamelideæ, or by Mr. Thwaites in Barringtoniaceæ. It has, he thinks, no very close affinity with any described genus, but excepting in its alternate leaves presents much in common with some Rhizophoraceous plants, though considerably removed from the true Mangroves. 4. "Notice of a collection of Algæ made on the N.W. coast of North America, chiefly at Vancouver's Island, by Dr. Lyall, in 1859-61," by Prof. Harvey. The whole number of ascertained species in this collection was stated to be 107, of which 100 were marine and the rest freshwater species. Of the former 11 were either new species or well marked new forms, to which Prof. Harvey had given specific names. The number of the species peculiar to the N.W. coast of America was 32, of which seven were Melanosperms and 25 Rhodosperms; 30 of the species were common to the Atlantic coasts of North America; 45 were natives of the British Islands, and generally of the Atlantic coasts of Europe; two were natives of the Mediterranean Sea, but not of the British Isles or of the Atlantic coasts of Europe; 23 were found on the West Coast of South America, of which 14 were also British; and 20 were common to Australia, of which 16 were also British. On the whole, Prof. Harvey thought the collection did not give evidence of a very extensive marine Flora, but rather of a vegetation abounding in species of larger and coarser growth, and deficient in those delicately organised species which frequent shallow bays and estuaries. The most remarkable and characteristic of the Vancouver Island Algæ were stated to be the Laminariaceæ, many of which are of gigantic size. Thus the Nereocystis Lütkeana has a stipes said to attain the length of 300 feet; and the Alariæ have fronds of 20 to 30 feet in length, an enormous size for an undivided lamina of cellular tissue.

LINNEAN: *March* 6.—G. Bentham, Esq., President, in the Chair. Albany Hancock, Esq.; Robert M'Lachlan, Esq.; and F. H. Hills, Esq., were elected Fellows. Prof. Babington presented specimens of Isoetes echinospora of Durieu, gathered near Llanberis, and stated that other specimens of the same species had been gathered by Mr. Wilson in a pool near Pen-y-cwn. The following paper was read:—"Observations on the Structure of the Retina and Tapetum of the Cod," by Dr. Cobbold.

Notices of Books.

A Treatise on Fruit Tree Grafting. [*Traité de la Greffe des Arbres Fruitiers, et specialement de la Greffe des Boutons à Fruit.*] By the Abbé Dupuy. 12mo, pp. 220. A. Goin, Quai des Grands Augustins. Paris.

This work is plainly written and illustrated with 100 lithograph engravings, by means of which the different processes and modes of grafting, budding and inarching described in the letter-press can be readily understood. Most of them are to be found in Thouin's Monograph des Greffes, and in Dubreuil's Cours d'Arboriculture, and the greater part of them may be set down as of little utility.

The principle on which grafting depends is simple and may be explained in few words. This we may be permitted to do in the first place, especially as many of the kinds of grafting recorded in modern works had been invented by persons who must have had a very imperfect knowledge of vegetable physiology.

Let us then premise:—

1. That no vital union takes place between the respective woods of stock and scion.
2. Nor between wood and bark.
3. Neither will the edges of outer barks unite.
4. Solid parts have no power to unite of themselves, and can only be kept in contact by mechanical means, or by the formation of new woody layers around them. This any one can prove to his own satisfaction by taking a grafted tree, and removing all the wood made subsequently to the grafting; this being done it will be seen that the cut surfaces of the stock and scion applied to each other at the time of grafting have never united; there will be no adhesion to prevent the scion being easily litted clean away from the stock.

If it is thus proved that *solid* parts will not unite, the junction or vital union must evidently be effected by means of *fluids*. Of these two kinds are found in trees, distinguished as the ascending and descending saps. The former, drawn from the soil by the roots, ascends through the vessels of the wood to the buds and leaves. Till it reach the latter it is an unorganised liquid. But after passing through the leaves, in which it has been exposed to the action of light, it is then capable of forming organised tissue, which it does as it returns between the wood and inner bark. It is there that the vital union between stock and scion takes place, in consequence of their respective organised tissues coming in contact. The principle of grafting then is reduced simply to the *placing sections of the stock and scion, so that their inner barks shall coincide and admit of the organising cellular tissue existing immediately under these barks coming in contact with each other.* The tissues in their thus liquid state coalesce, but they soon begin to form layers of young wood, and thus effect a substantial union. Frequently by the end of the same season, the wound caused by the operation of grafting becomes completely overgrown, and the original sections of stock and scion are encased in sound young wood, but as already observed their surfaces never unite—to suppose so is the greatest error into which authors on grafting have fallen. Even great physiologists have recommended saddle grafting, because by this mode a double surface of wood is brought in contact. We ought to explain that by this plan the stock is pared off on both sides till it is like a wedge; the scion is split and thinned to fit the prepared stock on which it is placed astride, and when tied it rests very securely. When the young wood however formed after grafting, was removed from one of these that had taken and grown well, the stock was easily freed of its rider, for the latter could be gently litted off, no adhesion of the wood on the sides having taken place.

According to the principle we have laid down, the most perfect mode of grafting would be to select a scion and stock of equal diameter; make a certain length of sloping cut in the one, and a corresponding cut in the other; then, presuming that the barks of both are of equal thickness, the two slopes will be counterparts of each other, and when joined the inner barks will everywhere coincide. It is however but seldom the case that both stock and scion are thus equal. On the contrary the former is often much thicker than the latter. However by taking off a thin slice from a thick stock or limb of a tree, it is possible to expose no more section of inner bark than can be covered by a section of the thinnest scion that it may be necessary to use. In the case of good scions and strong stocks the length of slope, presuming whip grafting is the mode employed, may be from 2½ to 3 inches, then when the inner barks join on both sides this gives 5 or 6 inches of coincidence. It often happens that the graft will take if all other circumstances are favourable, although it may be so badly fitted that the inner barks meet in little more than a single point; but then growth and consequently the healing over is delayed, and the union is long very unsound.

We have extended these preliminary remarks to greater length than we intended on taking up the work under notice; but they may be useful to some at this the usual grafting season. Besides if the principle just laid down be correct, and we believe it will be fully borne out by experience as well as by theory, reference to it will enable us to make short work of much that is in the volume before us. We have said that it is plainly written and may be easily understood. A sign-post may have these properties, but if it directs by a bad path when a much better would lead to the desired destination, all that can be said of it is that it plainly indicates the way to error.

Our limits will not admit of pointing out the merits and demerits of the numerous modes of grafting and budding contained in the work, but those of cleft grafting may be included in one comprehenssve sweep of condemnation. The modes of cleft grafting are illustrated by engravings, figs 36, 37, 38, 39, 40, 43, 47, 58, 64, 65, 66, 67, 69, 70, 82, 83, all on a bad principle. To show that it is so we shall take the simplest of the group, cleft grafting with a single scion (*Greffe en Fente à un seul scion*). The head of the stock is cut off horizontally; the stock is then split down the middle, so as to admit of the end of a scion, cut wedge shaped, to be inserted, and so as the respective inner barks of stock and scion may come in contact; in that case the graft will likely take, but at the same time the scion acts as a wedge and keeps the cleft open, and so it must remain except that it may become filled up with dead matter. The chasm may be closed up with grafting wax or some resinous substance to keep out the rain, but even this effectually prevents the sides of the cleft from ever coming together; and if they did they would not unite, for as we have already stated perfectly formed woods do not grow together.

But seeing that by taking a slice of bark and a very thin slice of wood along with it from the outside, we can expose as much section of inner bark as we require, why meddle with the sound heart wood of the stock at all? The only answer is that the cleft holds the scion securely, and tightly, like a vice; but it should be recollected that mere squeezing will not make the graft and scion unite, for their union depends entirely on the coalition of the cellular tissues in a fluid state. In addition to these facts others might be adduced to prove that cleft grafting is a barbarous mode. It is equalled however by the *Greffe en Vrille*, gimlet or bore grafting. In this a hole is bored obliquely downwards in the stock; the end of the scion is formed like a cone and driven into the hole till the barks join. In this way, perchance, the inner barks will meet, and if so the graft will probably take.

Crown grafting is less objectionable than cleft grafting, and should always be used in preference to that mode where large limbs of headed down trees have to be operated upon. The scion is cut wedge-shaped and introduced between the wood and the bark. It is the *insitio inter corticem et lignum* of Pliny. It has some objectionable points, but on the whole it answers very well for large limbs.

A considerable portion of the work is devoted to grafting with fruit buds, which L'Abbé Dupuy states is now being extensively practised. He dates the history of it from 1838, seemingly not aware that long before that period it was successfully practised in this country by the late Mr. Knight. We think it might be performed with great advantage in many cases. For instance, in most gardens there are generally some trees that have more blossom buds than are necessary for a crop, whilst others growing too strongly to wood have none, and cannot naturally become in a bearing state for many years. But such vigorous trees are those best adopted for nourishing inserted fruit buds, and there is no reason why such trees should not by the mode in question be as heavily laden with fruit as they can well bear, and that in the course of one or at most two years. It is done in the same way as ordinary grafting, excepting that scions furnished with fruit buds are selected instead of those with wood buds.

As the Abbé Dupuy intended his work for those who have small gardens, we think he might have omitted taking notice of very many fanciful modes of grafting which he details, and confined himself to those that are the best and most useful. Those who are curious as regards the former will find most of them well described and illustrated in our Volume for 1851.

Lady Dorothy Nevill has done a public service in translating Guérin-Méneville's account of the Ailanthus Silkworm (*Bombyx Cynthia*). This sort of caterpillar holds out a prospect of silk-rearing being profitably introduced among our peasantry. The success that attended the trials at Paris induced Lady Dorothy to undertake the management under her own eye at Dangstein, where the attempt has proved successful. The great advantage of employing the Cynthia in this northern climate consists in the tree upon which the silkworms feed being perfectly hardy, and willing to grow anywhere. It is also important to state that any quantity of the cocoons will be purchased by M. André, Marchand, No. 50, Rue des petites Écuries, Paris. Plants and eggs can be had of Mr. M'Ghee, Tyne Hall, Ilford, Essex. Upon the subject of plants M. Guérin makes the following remarks:—

"Quantities of Ailanthus trees have been planted on the Apennines because they resist the bite of animals, and no ground game will touch them on account of the smell they exude when a leaf is gathered, or a branch broken off. Those trees destined for the reception of the worms ought to be planted about a yard from each other; the chief stem cut down every year, so that the young shoots spring up and afford young tender leaves for the worms; and by planting them not too great a distance one from another the shoots join each other, and thus enable the worms to go from one plant to another. As I mentioned before, this tree may be multiplied by its roots, which can be cut off and planted as we do Potatoes."

The pamphlet costs a shilling, and is sold at 162, Fleet Street, London.

Garden Memoranda.

MESSRS. CUTBUSH'S EXHIBITION OF HYACINTHS AT HIGHGATE.—This has been thrown open to the public during the past week, and, judging by the freshness and beauty of the flowers, it may, doubtless, yet be inspected for some days to come. Never have the plants been finer than they are this year, or the bloom more perfect. Many hundreds of varieties of all shades of colour—reds, blues, blacks, whites, and yellows, are effectively arranged in a lean-to show-house, which at present may be said to be literally a blaze of flower. On a flat table in front are placed all the finer varieties, whose pots are covered with Moss, from among which the flower stalks issue with excellent effect. Among these, which are neatly edged with Mignonette, we noticed beautiful examples of the new kinds mentioned at p. 259. Among others not recorded in the list just referred to, are Noble par Merite, delicate pink, conspicuously striped with crimson; Solfaterre, orange scarlet, large and showy; Prince of Wales, deep purplish lilac; and Miss Burdett Coutts; the last, though not altogether new, is one of the best whites, its bells being large, of great substance, and nicely arranged on the spike. Baskets full of Cinerarias, Cytisus, Tulips, and Hyacinths are suspended from the roof, and here and there are vases filled with the same charming mixtures, all of which serve to vary and heighten the general appearance of the exhibition, which is well supported at the back by a stage full of Early Tulips and other plants in flower.

MESSRS. A. HENDERSON'S EXHIBITION OF HYACINTHS AT PINE-APPLE PLACE, EDGWARE ROAD.—Another display very similar to that just described may now be seen here. In a span-roofed house Hyacinths are tastefully arranged in rows round a flat table whose centre is occupied by Orange trees and other kinds of plants; the side shelves are full of Hyacinths, Early Tulips, and Narcissi, and round the whole has been put an edging of Lycopod, whose neat bright green leaves, just rising an inch or so above the Moss in which the Hyacinths are plunged, have a very pretty appearance. Among the Hyacinths are fine specimens of most of the sorts mentioned in last week's report at p. 262. Of Tulips, Queen Victoria is a fine kind, white delicately feathered with pink, and White Eagle is also good in its class. Of glowing scarlet sorts Brilliant is the most showy.

Miscellaneous.

Crown of Thorns (στέφανος ἐξ ἀκανθῶν, Matt. xxvii. 29). Our Lord was crowned with Thorns in mockery by the Roman soldiers. The object seems to have been insult, and not the infliction of pain as has generally been supposed. The Rhamnus or Spina Christi, although abundant in the neighbourhood of Jerusalem, cannot be the plant intended, because its thorns are so strong and large that it could not have been woven (πλέξαντες) into a wreath. The large-leaved Acanthus (Bear's-foot) is totally unsuited for the purpose. Had the Acacia been intended, as some suppose, the phrase would have been ἐξ ἀκάνθης. Obviously some small flexile thorny shrub is meant; perhaps Cappares spinosæ (Reland's Palestin. ii. 523). Hasselquist (Travels, p. 260) says that the Thorn used was the Arabian *Nabk*. "It was very suitable for their purpose, as it has many sharp thorns which inflict painful wounds; and its flexible, pliant, and round branches might easily be plaited in the form of a crown." It also resembles the rich dark green of the triumphal Ivy wreath, which would give additional pungency to its ironical purpose (Rosenmüller, Botany of Script., p. 202, Eng. ed.) On the Empress Helena's supposed discovery of the crown of thorns, and its subsequent fate, see Gibbon, ii. 306, vi. 66, ed. Milman. *Rev. F. W. Farrar in Smith's Dictionary of the Bible.* [Whatever truth there may be in these speculations, we certainly object to the statement that the "Rhamnus," by which Paliurus aculeatus is meant, could not have been woven into a wreath. Quite the contrary.]

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Attend to the potting of Heaths and other hard wooded plants as they require it; this operation may be performed with propriety at any season when the roots are making progress without unnatural excitement, but especially when the plants are commencing new growth, which, as regards the generality of hard wooded plants, takes place immediately after their season of flowering. Before potting take care that the old balls are sufficiently moist, for if potted in a dry state, it will be impossible afterwards to moisten them without souring and saturating the new soil. As soon as any plant has done flowering, its future shape should be adjusted by removing a portion of the old flowering stems, and unless seeds are an object they should never be allowed to ripen on any plant. Let climbers of different kinds, both in pots and borders, have due attention with regard to training, and allow no more shoots to remain than the space allotted to them will permit. Plants in conservatory borders—whether climbers or otherwise—which have been planted for some time, should have as much of the old exhausted soil removed as can be done without materially injuring the roots, and the space refilled with fresh compost, and, at the same time, any desirable alterations in arrangement should be made. By closely examining the stock many plants will be found which will succeed better planted out than confined in pots; in making a selection for this purpose, those sorts should be chosen which are remarkable either for the beauty of their flowers, or for continuing in bloom for a considerable period, or are particularly attractive and ornamental in their habit or foliage. Let the main portion of the soil for these plants consist of roughly-chopped turves of loam or peat, with an admixture of richer materials, according to their special requirements; but, for the sake of neatness, the surface should be covered with finer soil.

FORCING DEPARTMENT.

PINERY. — Look over growing stock, occasionally examining and repotting such as is found to be in want of more pot room. The temperature may be slightly advanced as the amount of light increases; but this is a matter in which the state of the plants will be the best guide. Aim at securing strong dwarf growth, and, if this is obtained, it is immaterial whether the night temperature is 60° or 70°. Plants that may be unhealthy or in an unkind state if kept near the glass will be benefited by a considerably higher temperature than would be suitable for others in a free state of growth. These are circumstances however, which can be properly judged of only by those in charge of the plants; but they are easily understood by a little careful observation. Use every means to induce a vigorous root action, and if this is obtained strong free top growth will be the result.

VINERY.—As thrips have of late years become troublesome upon Vines, a few hints as to the method of destroying them may not be out of place now, as the season is at hand in which they may cause great injury and annoyance, if not effectually kept under or destroyed. Fumigation with tobacco, after the plan here laid down, has been found by some most effectual. If the infested plants are growing in pots, and of a moderate size, place them together in a common plant pit; but when the Vines on the rafters are attacked, any other plants which are infested are removed to the same house. A quiet evening is selected for the operation, when the leaves of the plants are quite dry; the house is covered, if convenient, and fumigated with pure tobacco; during the whole of the next day it is kept close, and shaded if the sun comes out, to prevent the necessity of giving air; by thus retaining the fumes of the tobacco within the house, the insects, which were merely sickened by the previous evening's smoking, are prevented from reviving, which they would certainly do if fresh air was admitted into the house; but to make sure of destroying them the house is again fumigated on the second evening. On the second morning the plants are syringed and receive air as usual, but if the weather is very hot they must be attentively watched; this will destroy all the insects in existence at the time, but it will be necessary to repeat the process three times with an interval of eight or 10 days between each fumigation to destroy any which may happen to succeed them. A board should be fixed over the top of the smoking pot, about 6 inches above the rim, in order to diffuse the smoke, as it is liable to injure the leaves, if it comes directly in contact with them in a hot volume from the pot. Gishurst compound, applied according to directions given at p. 76, is also stated to kill thrips.

PEACHES AND NECTARINES.—Persist in stopping at all times every gross shoot on all the upper parts of the trees, allowing vigorous growth, however, to ramble when they push towards the extremities of the lower parts. This is the best way of equalising the sap. Syringe trees not in bloom freely, especially in the afternoon, and at that time endeavour to create sufficient atmospheric moisture for the night.

CHERRIES.—In the treatment of these aim at imitating nature during a very favourable spring as nearly as possible, until the fruit is stoned, when they may be pushed on by a warm moist atmosphere.

FIGS.— Stop frequently, and feed liberally with manure water.

STRAWBERRIES.—Keep up successions, and do not on any account allow those swelling fruit to suffer from want of water. Clear weak manure water given occasionally will also be found useful.

FLOWER GARDEN AND SHRUBBERIES.

If the soil of any beds or clumps for masses requires renewing or enriching by the addition of animal or vegetable manure, it should be immediately done in order that they may be ready to receive plants or seeds. Where the same or nearly the same plants are grown for a number of years successively on any of the beds, it is advisable once in 4 or 5 years to remove a large portion of the old mould, and to fill up again with fresh material; this practice, however, for some plants, as scarlet Pelargoniums for instance, would be rather injurious, for the latter generally grow more luxuriantly than is desirable, even in the poorest soil. Many bedding plants however, particularly Annuals, take more from the soil than can be supplied to it in a moderate top dressing, and where we find a certain kind of plant exactly suited to a particular situation, we do not change it every year, but prefer changing the soil. Perhaps no kind of flower garden is more generally interesting than one of mixed herbaceous plants, if they are tastefully arranged as regards height and habit of growth, colour, and season of flowering; and it is owing to a want of attention to these particulars that flower gardening of this description is so little in repute; the beds are too generally planted with little regard to system at first, and gaps which occur afterwards are supplied with little better taste. As the arrangement of the plants cannot be rectified during the season of growth, the best method of proceeding is to name them carefully as they come into flower, and to make memoranda of their height, colour, season, and other peculiarities of habit; with the assistance of this information, any cultivator may make a collection of herbaceous plants both beautiful and interesting.

HARDY FRUIT AND KITCHEN GARDEN.

While favourable weather continues, push forward all operations requiring attention here with the least possible delay. If not already done, get nailing finished, borders dug, and paths formed so as to give an appearance of neatness, and notwithstanding the present mild weather, be prepared with covering for the protection of fruit tree blossoms, which may yet be killed if we are caught napping. See to keeping up a succession of Peas and Beans; also plant out winter Lettuce on a rich, warm piece of ground, and provide a succession of Radishes and other small salad plants. Manure and dress Asparagus beds. Get Cauliflowers raised under glass hardened off, and pay every attention to those under hand glasses, in order to forward them as much as possible. Spinach, Early Horn Carrots, and Stone Turnips should be sown on a warm rich border; also Leeks, Brussels Sprouts, Savoys, German Greens, Snow's and early Sprouting Broccoli, and the main crop of Potatoes should be planted without delay.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the Week ending March 26, 1862, as observed at the Horticultural Garden

March.	Moon's Age.	Barometer.		Temperature					Wind	Rain
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Thurs. 20	20	29.416	29.316	39	30	34.5	45½	44	N.E.	[illegible]
Friday 21	21	29.678	29.372	43	32	37.5	44	44	N.	[illegible]
Satur 22	☾	29.979	29.921	44	31	37.5	44	43	N.	[illegible]
Sunday 23	23	29.817	29.517	44	34	39.0	44	43	S.E.	[illegible]
Mon. 24	24	29.542	29.454	65	39	52.0	45	43	S.	[illegible]
Tues. 25	25	29.472	29.436	63	46	35.5	47	44	S.W.	[illegible]
Wed. 26	26	29.500	29.369	56	40	48.0	47½	45	N.E.	[illegible]
Average		29.629	29.483	50.6	36.0	43.3	45.3	43.7		[illegible]

March 20—Overcast; cold rain; sleet, snow, cold wind and rain.
— 21—Cold rain and sleet; overcast; rain.
— 22—Overcast; hazy and cold; uniformly overcast; rain.
— 23—Constant, heavy rain; rather boisterous at night.
— 24—Uniformly overcast; fine; hot sun and showers; hazy.
— 25—Overcast and mild; rain; fine; rain at night.
— 26—Hazy with rain throughout.
Mean temperature of the week 1½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending April 5, 1862

March and April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 30	53.5	31.4	43.9	15	0.50 in.	3	5	5	1	6	9	4	[illegible]
Mon. 31	54.6	34.3	44.5	15	0.30	3	[illegible]	2	3	8	5	5	[illegible]
Tues. 1	53.2	34.6	43.9	20	0.76	3	8	3	3	5	9	1	[illegible]
Wed. 2	55.3	36.2	45.7	19	1.19	4	4	4	3	4	11	5	[illegible]
Thurs. 3	56.5	35.3	45.9	13	0.30	5	3	3	1	3	11	6	4
Friday 4	56.4	36.2	46.3	14	0.48	4	7	3	3	6	5	5	[illegible]
Satur. 5	57.0	35.4	46.2	16	0.30	2	6	4	2	3	5	12	[illegible]

The highest temperature during the above period occurred on the 3d, 1848—therm. 78 deg.; and the lowest on the 1st, 1838—therm. 16 deg.

Notices to Correspondents.

☞ CORRESPONDENTS are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

DISEASED GERANIUMS: *M S.* We have carefully examined your Geranium leaves, and believe that they are affected with the disease called spotting, which is generally traceable to a bad condition of the roots, arising often in the first instance from being left too dry, and then swamped with water. Besides the smaller pale spots, there are wider brown patches on which we thought some Fungus might be found, but we have failed to find any. *M J B.*

FRENCH GARDENING: *W T.* We have received your note, which you must excuse us for saying is not only no reply to "J. F.," but not fit for insertion in our columns.

GLASS: *Exeter.* On no account use yellow. You may employ blue if you like, or green, or what is best of all white, but yellow! no—no.

GOOSEBERRY CATERPILLARS: *St. Neots.* Pare off about 4 inches of the soil all round the Gooseberry bushes. Burn it well, and then restore it. But you have not a day to lose.

INSECTS: *K C, Bodmin.* The grubs which you have sent, found so destructive at the roots of Strawberry and other plants, are the larvæ of the striped backed weevil, Otiorhynchus sulcatus, one of the greatest garden pests where it has been allowed to get ahead. As soon as the plants indicate the presence of the enemy by flagging they should be carefully pulled up and searched, as well as the earth itself, for the grubs, which are easily visible, being white; and children should be set later in the year to look over the plants close to the roots for the beetles lurking there by day; at night they will be found (with a lanthorn) on the leaves engaged in gnawing the plants. They strongly object to gas-tar water. *W.*

NAMES OF FRUITS: *G T.* Your Pear is the Easter Beurré. It has not become melting in consequence of its having been gathered too soon.

NAMES OF PLANTS: *E B P.* Hyoscyamus Scopolia, a common herbaceous plant inhabiting the East of Europe.—*P.* The plant, bearing bright orange flowers, which filled a row of beds in front of the Crystal Palace, next to the Upper Terrace, last year, and which was still in full flower after the severe frost in November, is Gazania splendens.—*Closeburn.* Cornus mascula.—*Erica.* Erica Vernix.

A MEETING of the BREEDERS of COTSWOLD and LONG-WOOLLED SHEEP will be held at the King's Head, Cirencester, on MONDAY, April 7, at 3 o'Clock, to consider what steps had best be taken to counteract the attempted injury done to the Breeders of these Sheep, by the Council of the Royal Agricultural Society, in lowering the Prizes and withholding the Gold Medal this great Exhibition year, when for so many years previously they have been on even terms with the Leicesters and Southdowns.

AGRICULTURAL LABOURERS' HOME. — A PRIZE of FIFTY GUINEAS is offered by H. Tucker, Esq., Vice-President of the Faringdon Agricultural Library, for the best ESSAY upon the following subjects, relative to the Dwellings of the Labourer in the Agricultural districts of England:—

1. Tracing and explaining the cause of their present crowded and defective condition, with any authentic information illustrative of that condition.
2. The effects, moral and physical, which such condition have upon the inmates.
3. Suggestions as to the best practical means of ameliorating the evils, either by compulsory legislation or otherwise.

Persons competing for this Prize are requested to send their papers to Mr. E. W. MOORE, Coleshill, Highworth, on or before the 1st September next, endorsed with a motto corresponding to one in an enclosed envelope, which shall contain their name and address.

MONEY ADVANCED to FARMERS, and others of responsibility, upon Personal Securities, Farming Stock, &c., for long or short periods, from 5 per cent. interest per annum, in sums from 100*l*. to 3000*l*.

Applications, in the first instance, to be addressed to Mr. GOODALL, 12, Beaufort Buildings, Strand, London, W.C.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5*s*. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. HUMBERT, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

Land Drainage, Farm Buildings, and Land Improvements generally.

MR. BAILEY DENTON, AGRICULTURAL ENGINEER, maintains a large Staff for the execution of all works of Land Improvement (including Outfall and River-works) by Contract or Commission. He also reports on Improvements contemplated by Landowners, and prepares Plans and Specifications of Drainage, Farm Buildings with and without Machinery, Road making, &c., for execution by Landowners themselves through their own agents.

For terms apply to Mr. BAILEY DENTON, at No. 52, Parliament Street, Westminster, S.W.

Land Drainage.

WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.

Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.

No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &c. IN ENGLAND AND WALES AND IN SCOTLAND.

The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans or execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

YORKSHIRE AGRICULTURAL SOCIETY, 1862.
Open to the United Kingdom.
President.—H. S. Thompson, Esq., M.P.
Vice-Presidents.

The Right Hon. Lord Bolton	George Lane Fox, Esq.
The Right Hon. Earl Cathcart	The Right Hon. Lord Wenlock
The Right Hon. Lord Herries	The Rt. Hon. Lord Feversham

The TWENTY-FIFTH ANNUAL MEETING will be held at York on the 6th, 7th, and 8th of August, 1862, when 900*l*. will be awarded in Prizes and Medals.

Members of the Society not in arrear of subscription may make Entries and exhibit Stock, &c., free of charge; but non-members will be required to pay 10*s*. on each Certificate for Cattle, Horses, Sheep, and Pigs. This payment must be made to the Secretary at the time of Entry.

N.B. Blank Certificates of Entry may be obtained on application to the Secretary, at the Office of the Society, Kirk-Deighton, Wetherby, on or before July 21st.

CAUTION.—The Entry closes on the 21st of July.
Kirk-Deighton, Wetherby. JOHN HANNAM, Secretary.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.
Land being required for the purpose of exhibiting STEAM CULTIVATORS, during the first week in July, within an easy distance of London, and near a Station, Owners and Occupiers of Land are requested to communicate as to extent and locality with H. HALL DARE, Secretary.
12, Hanover Square, London, W.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.
Last day of Entry for Implements, March 31.
Last day of Entry for Stock, May 1.
STOCK PRIZE SHEETS, and particulars for EXHIBITION of IMPLEMENTS, are now ready, and will be forwarded on application to H. HALL DARE, Secretary.
12, Hanover Square, London, W.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern
for Cottage Houses, &c., to contain 50 gallons, 26*s*.; 80 gallons, 31*s*. each; and 140 gallons, 37*s*., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

Galvanised Iron Pumps
for Liquid Manure or Domestic Use, 3 inches diameter, 30*s*. and 32*s*. 6*d*. each; Tail Pipe for same at from 10*d*. per foot.

Galvanised Iron Swing Water Barrows
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35*s*. 0*d*. each.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to
JOHN FOWLER, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

The Agricultural Gazette.

SATURDAY, MARCH 29, 1862.

MEETING FOR THE ENSUING WEEK.
WEDNESDAY, April 2—Agri. Society of England .. Noon

—— WE have again to call attention to the immense mass of information given in other pages on the subject of lime, dung, and artificial manures. Some attempt will be made next week to give the main results to which the details thus collected appear to lead. The publication of the further reports with which this tabular matter was accompanied must be accomplished gradually.

THE subject of cattle condiments was fully discussed last week. A number of gentlemen, in every respect good witnesses, came before the English Agricultural Society to bear their testimony to the value of THORLEY's condiment under the circumstances in which their stock had been placed.

Mr. BEALE BROWNE had had a lot of old ewes out of condition, which in spite of Clover and oilcake did not appear to improve in the least —he gave them THORLEY's food in addition and they recovered almost at once. Mr. CANTRELL's horses had been doing very badly on hay and chaff—they improved very much on GRIFFIN's condimental food in addition. Mr. COTTON had had a mare sent from Ireland "in a gale of wind" which was in consequence very ill indeed, but on supplying her with this food she was rapidly restored. Major MUNN had had a lot of lambs suffering from the "hash" and dying rapidly— THORLEY's food set them on their feet again. An old Brougham horse, too, more than once had failed in health, and was similarly restored. Lastly, we had Mr. FRERE, the Editor of the Journal, whose milk cows had been falling off and doing badly, and whose yield of milk increased under the influence of THORLEY's food, and fell off again when that was taken away.

In all these cases we have a diseased or unhealthy condition of the animal removed by the use of condiment. They are all perfectly parallel cases with the genuine illustrations which we occasionally meet of the value of PARR's pills and HOLLOWAY's ointment. Some men are content to take a remedy without medical advice, because their neighbour has found it beneficial. If any one concludes when his stock are ailing to try these condiments because of the evidence thus brought before him he will be following their example. Are we to trust the advice of professional and educated men in the administration of remedies when our live stock are diseased? or, are we to use as universal remedy some "condimental" substance, of whose composition we know nothing?

Of HENRI's Patent Cattle Food we have indeed a published and guaranteed composition; but it is plain that in order to secure the right treatment of ailing stock we must not only know the composition and properties of the medicines, but we must be able to read the symptoms. Certainly we shall continue to advise our readers to seek the best professional advice when their stock are out of order, and not to trust as medicine remedies of whose uniform composition no guarantee is possible, of whose actual composition they can know hardly anything, and of whose fitness to the case, even if they did, the professional man alone can judge.

There were one or two pieces of evidence adduced in favour of these condiments as *food*, *i.e.*, when administered to animals in health.

Mr. COTTON, for instance, had tried THORLEY's food on cows and pigs, which had improved by means of it; he did not however refer to the quantity of ordinary food consumed along with it in order to obtain this result.

Mr. LAWES, on the other hand, had also tried it on sheep as well as on pigs, and his remarks seem to us to bear most fairly on the question:—

"The experience of Mr. BEALE BROWNE is, that certain old sheep of his which would not get fat on oil-cake, corn, and Grass, throve well upon the condiment. Well, that appears to be a question of medicine; but the question that affects us as agriculturists is, whether these things are of any benefit to the animal in health, or in any way a substitute for, or assistant to, their usual natural food. The medicinal part of the question, as to sick or diseased animals, is a very confined and limited one, indeed. I admit that there are tonic properties in these foods. In the course of my experiments nothing was so striking as the greatly increased consumption of food which the condiment gave. The pigs consumed a larger amount of food; but there is no benefit in that, unless they assimilate it as flesh. In those cases we get the consumption of food, but not the increase in the flesh. In other words, if I had been given the condiment, I had rather not have used it, because my animals ate more Barley-meal to produce the same amount of meat. At the same time that I made these experiments on pigs I also made some experiments on sheep, and although these are not quite concluded, I give you the outline of them at the end of 16 weeks. I got 20 sheep picked out of a very large flock, and they were all as nearly as possible of the same weight. Five of them were then put upon Linseed-cake, hay, and Swedes. They had a pound of hay per day, a half-pound of Linseed-cake, and as much Swedes as they liked to eat. The corresponding five received the same amount of hay, but only 6 instead of 8 oz. of Linseed-cake, and 2 oz. of Thorley's condiment, with Swedes *ad libitum*. To the remaining 10 we gave cotton seedcake instead of Linseed-cake. But I do not find that the sheep ate a bit more food when they received THORLEY's condiment than when they did not. The consumption in each case was exactly alike, so that we had not the same effects in the ruminant animal as in the pigs. The question is, how much food does it take to produce 100 lbs. increase of flesh in an animal? I found that without THORLEY's food it required 274 lbs. of Clover chaff, 137 lbs. of Linseed cake, and 3824 lbs. of Swedes; and with THORLEY's food, 285 lbs. of Clover chaff, 107 lbs. of Linseed cake, 3980 lbs. of Swedes, and 35 lbs. of THORLEY's food; the one being 4236 lbs. without THORLEY's food, and the other 4409 lbs. with THORLEY's food. That is to say, 200 lbs. more with the condiment. The sheep have not yet been killed. Still 16 weeks' experiments are sufficient to give a tolerable idea of what will be the result. Taking a gross amount of food to produce an increase of 100 lbs. of meat, I find it amount to 4536 lbs. without THORLEY's food, and 4576 lbs. with that food. The difference, you perceive, is not much; nevertheless, in both cases a larger quantity of food is required to give the same increase of flesh when THORLEY's food is added. And this is the result which science would predict. There is nothing in science to predicate that an article which has great tonic and stimulating properties is likely to increase the assimilation of food. You may make a large quantity of food pass through the stomach of an animal, but you cannot make him assimilate those foods. If, therefore, you regard these things as food for animals which are in good health, they are not to be recommended at all. Call them medicines, if you like. I have no doubt they have considerable medicinal properties, and do enable animals to digest their food where otherwise they would not do so."

It is perhaps fair to add to this, for what it may be worth, that Mr. BEALE BROWNE doubted if Mr. LAWES had entered on these experiments with an unprejudiced mind. We, nevertheless, entirely agree with Mr. BROWNE in saying that the discussion has been of great value and must do good. The character of these substances as food, and apart from their medicinal properties, was brought under notice, and Mr. THOMPSON's remarks on the point may be quoted as a statement of the case under that head.

"The gentleman who opened the discussion had laid great stress on the prejudice which Mr. THORLEY had encountered in bringing out his condiment. Mr. THOMPSON did not believe that there existed any

prejudice whatever against Mr. THORLEY, but merely a conviction that the money laid out in the purchase of his food for stock did not produce a remunerating return. He gave Mr. THORLEY great credit for the ingenuity of his placards and advertisements. There was scarcely a Railway station in the kingdom which did not exhibit a lively picture of the exhilarating effects of his condiment, but if he were to retrench a few of the thousands per annum expended in his pamphlets and placards, and were to reduce the selling price of his commodities accordingly, he would find the so called prejudice against him much lessened. The agricultural public were highly indebted to Mr. LAWES for the valuable article he had written on the value of THORLEY'S food as *food*. He had conclusively disposed of the question of its value as a feeding stuff, and shown that it would not pay to give it to an animal in perfect health. That however did not settle the *whole* question of condiments. There was an antecedent probability that well selected condiments might prove of use to an animal that was even slightly out of health. In the case of human beings nothing was more common than to derive great benefit from the judicious use of tonics to restore the tone to the digestion, and thus improve the health, and the advantageous use of condiments could only be ascertained by numerous and careful trials by the owners of stock. The results of such trials would show the conditions under which these medicated foods could be profitably used, and the doses which were most advisable, as well as the relative merits of the productions of different manufacturers.

—— THE Short-horn herd of Mr. JOLLY, of Warlaby, a neighbour of Mr. BOOTH, and using Booth bulls freely and constantly for many past generations of his stock, took place last week by the Messrs. WETHERELL. 16 cows and heifers fetched 948 guineas, or rather more than 59 guineas each—the highest prices being *British Empress*, purchased by Lord CATHCART for 120 guineas; *Sister Mary*, bought by Lord KINNAIRD for 220 guineas; *Vestal Queen*, bought by Mr. FERGUSON for 105 guineas; and *Lady Leonora*, by Lord CATHCART for 90 guineas. Ten bulls and bull calves sold for 420 guineas, 32 guineas each, the highest price being 66 guineas for a roan yearling, EMPEROR OF HINDOSTAN, bought by Mr. BARCLAY. Still higher prices were realised for cows and heifers afterwards sold from the herd of Mr. WETHERELL, of Aldborough; 11 cows and heifers realised no less than 77 guineas apiece—*Golden Duchess*, bought by Mr. LOGAN, fetching 195 guineas. She had been sold for 150 guineas when 5 weeks old. *Carnation* and *Lennox Beauty*, both bought by Sir A. ROTHSCHILD, realising 110 and 115 guineas each. Breeders in 1862 have thus shown as high a sense of the value of good blood as their predecessors in previous years, for these are quite first-class prices, and deserve a record in the history of the herd.

THE HISTORY OF STEAM CULTIVATION AT WOOLSTON.

PERMIT me to thank Mr. James Howard for his paper on steam cultivation, but I must beg space to clear away the mist in which my windlass appears enshielded. To do it completely and for ever I must strip truth naked, show all, and look to a just and generous public for a decision.

In 1845 I devoted the whole of Monday, Tuesday, Wednesday, Thursday, and Friday at the Royal Agricultural Society's show at Northampton, to see and examine for myself the wonders that were to be seen there. The Monday and Tuesday were spent entirely in the trial fields; the point most interesting to me was the heavy land trial field, where I saw deep ploughing, subsoiling, and other operations. The other three days were mainly spent in the show yard. I made some purchases and returned home. Not having seen a subsoil plough that I liked, I set-to with my blacksmith to make one (my No. 1 implement), with which I commenced deep cultivation. The first trial proved it to be right; for my Beans, on a portion of a field ploughed and subsoiled, were very much better than they were on another portion of the same field ploughed in the ordinary way. The land had all been treated alike, and was of the same quality. Thus encouraged I worked on, had other implements made to be worked by a powerful team of horses upon the cultivating principle, having found the Biddle cultivator not up to the mark for the heavy work that I had to do. I worked on, trying experiments down to March, 1855, by which time I had worked out a new system for many purposes very much better than the old one, but it had its drawbacks, and one a very bad one, that of a heavy team of 8 or 10 horses treading over damp land in the spring, increasing the work to be done, and which proved bad in quality when done. On the 12th of March, 1855, I received a letter from the Secretary of the Royal Agricultural Society informing me that as I had been an exhibitor at the Society's meeting at Lincoln in 1854, I might if I sent 4*d*. have a copy of the Society's report on the trials at Lincoln. My 4*d*. was sent off by that night's post, and on the 14th (Saturday) I received my 4*d*. worth. In the afternoon of that day I looked carefully through it, and was particularly struck with the report on the trial of Mr. Fowler's draining plough. Well, thought I, if a six-horse power engine can work that, that same power engine properly speeded can work a properly constructed cultivator, with which I should be able to get rid of the damaging effect of a heavy team of horses on damp land. I went to work at once, and before 12 o'clock on that night my whole plan was matured. I considered the matter until Thursday the 19th of March, 1855, on which day I went to London with a sketch of my implement, and took out my patent for it. This done I set my blacksmith to work to make my implement, got it ready for trial in time, tried it on a piece of dry hard Clover lea, with eight horses, a timber chain being placed between them and the implement to represent as nearly as I could rope traction. The implement stood well through the trial and made good work, but the timber chain and horses' tackle went to rack sadly. Well, thought I, this will do, but how about the engine and windlass? My poor old blacksmith could not help me, so off I go to the Royal Agricultural Society's meeting at Carlisle with a determination to find one who could. On the Monday I left Bletchley station at about 7 A.M., travelled 250 miles, and arrived at Carlisle about 5 P.M., went at once into the trial yard, where I met with Mr. R. Ransome, who inquired what I wanted there. I told him that I wanted a steam-engine. "Let us make it for you," was his reply. "Yes, but then I want a windlass for ploughing by steam power," and I explained to him the kind of thing I wanted, viz. two drums, to be framed upon a shaft to be worked alternately by a pinion somewhat similar to Fowler's draining one. He then said, "Let us see Fowler." We did; and I explained to him what I wanted, as well as telling them both that I meant to find some one to make it for me before I left Carlisle, and that I meant to pay ready money, so that if the experiment turned out to be a failure that it should be my loss. Upon this Mr. Fowler offered to contract to make the windlass for me. I then asked them both for their prices. They told me, and I accepted them at once. The next day I saw them again as well as Mr. A. Ransome, and reminded them all that I was in earnest. They agreed that I should have the engine and windlass by October 11. Having done all I had to do at Carlisle, and having seen all I could on the Tuesday, I returned home on Wednesday.

Mr. Howard can tell you, as he has told me, that he heard Mr. Fowler at the show laugh at my notion of ploughing by steam-power, saying that he had spent enough at draining to warn him against experimenting upon ploughing. I did not tell him or any other man at the show my mode of arrangement or of operations.

On the 8th of October, in reply to my inquiry, Mr. Fowler told me by letter that he had just put the windlass in the hands of the Messrs. Ransome. On the 13th of October I received the engine, and on the 23d the receipt for the money. December 15 (Saturday) I received the windlass; December 17 tried it, and pronounced that Mr. Fowler had fairly fulfilled his contract; I therefore sent him the money by that night's post. I must here tell you that before I could do more than just try I had to rearrange the windlass, put new pulleys on both it and the engine, and had to make new anchors to replace those received, which were good for nothing. These things done I started again, but found myself at fault in turning the implement. After making some experiments I invented the turning principle, which I patented Jan. 11, 1856 (Mr. Fowler patented his first windlass Jan. 3, and his plough Jan. 16, 1856); after getting a turning bow made and some other matters put right, I started again and finished two fields. On Jan. 30, 1856, on the invitation of Mr. Ransome and Mr. Fowler, I visited the Society of Arts, when I did state "that my windlass was made by the Messrs. Ransome under the direction of Mr. Fowler," but what of that?—since if Mr. Fowler did not make it himself, he was bound, as an honourable man, to instruct either them or some others to make it, to enable him to fulfil his contract. What, is he to have a slice of honour off the great lump that I have worked and fought hard for, and have honourably won, because, after he had been instructed by me and agreed to make a thing for me according to those instructions, he instructs the Messrs. Ransome to do it for him instead of doing it himself? Why, surely, if it is not my windlass it must be the Messrs. Ransome's; for if the honour (if there is any in it) does not belong to the original instructor, it must belong to them, for it cannot stop with a middle man. If the Messrs. Ransome are to have a slice my old blacksmith must have another, and So and So must have another, so that I, because I am only a farmer and an original instructor, must submit to be swallowed by all whom I employ. Now just compare my case with that of my Lord Willoughby D'Eresby; there does not appear to be any attempt made to swallow his inventions, yet I cannot think that his lordship threw off his coat, turned up his shirt-sleeves, and did all his blacksmithing himself any more than I did. Happily the matter does not rest upon the question as to who made the different parts of my apparatus, but the question is, who was it who originated and was the first to efficiently apply a complete set of apparatus, and thus solved the problem of practical steam cultivation. I claim the honour of having done all this, and that my start was March 19, 1855, the date of my first patent. The Royal Agricultural Society I am sure will be too generous to ask for a slice, although they did through their report call my attention to the subject, and they have a far better claim to it than Mr. Fowler, who perhaps would like to claim a slice because it was his draining tackle that was reported upon that induced me to try my hand at experimenting by steam-power; but that will never do, for if right is to run backwards his draining tackle will fall into the lap of Mr. Hannam. The fact is, Mr. Fowler had a chance, but he played with the mouse until he lost it. It was his tackle that was reported upon, then how was it that he did nothing to assist at Carlisle when the Society offered 200*l*.? Why, because he never took a bit of notice of the report, or thought of doing anything until after I had started and got well off. Then he tried to trip my heels up, but this he has not done, and his only chance is to prove that mine is not an efficient application. Let us see how this matter stands. The implement that I tried in June, 1855, is the one with which I have cultivated my farm ever since; it is in good working order, and will last longer than I shall. I have farmed my farm (which has been open to the inspection of all) with it regularly and successfully ever since Christmas, 1855. You and others of the press have inspected and reported upon it. I have proved that I can prepare six seed beds at less cost than dead fallows have each cost making on heavy clay lands with horses. (Let me call Mr. Bennett's attention to this. If he will visit my farm I will prove it to his face.) I have worked all my land 16 inches deep, and I have sold 156 sets of tackle. In the autumn of last year I had received more than 100 letters from gentlemen who had purchased my tackle, testifying their approval of my system, which I was about to have printed when you, sir, applied to me for the names and addresses of my customers, proposing to apply to them yourself. I appreciated this much, feeling that it was vastly more honourable for you to procure and publish reports than myself. You have some time since procured and published them, with others from the customers of Mr. Fowler and the Messrs. Howard. I have the reports before me, let us see what they prove. From reports from 68 of my customers, that is 67 in the table, and Mr. Hubbard, who has a set of Messrs. Howard's as well as mine, and has done 136 acres with the latter, and 100 acres with the former. Of the 68 there are five who have worked a plough, and have ploughed 386 acres; the rest of my customers, with all those of the Messrs. Howard who have adopted my system, not ploughing at all, have cultivated 15,156 acres. Of Mr. Fowler's 27 customers two do not plough at all. The whole of them have ploughed 3941 acres, and have cultivated 1989 acres; these make a total of 4327 acres ploughed, and 17,145 acres cultivated. All these gentlemen show that their work had been done cheaply, and it is admitted on all hands that work done by steam-power is better in quality than that done by horse-power. Surely, then, my case is proved—that I did in my mind's eye see on the 19th of March, 1855, a practical scheme for applying steam-power to the cultivation of the soil; that I did on that day put my hand to the plough, with a determination to solve the problem. That I never halted or looked back is well known; then Mr. Fowler has no chance, let his scheme be ever so good, but the returns prove fourfold in favour of my system. The fact is, he is now an antiquated follower of mine with 25 of his antiquated friends and two converts to my system.

In conclusion, I beg to thank the Royal Agricultural Society for what I saw at Northampton, and for their 4*d*. report; all those who have assisted in making apparatus for myself and customers; my 156 customers whose aid has spread my system throughout the land, especially my Lord Hatherton, who was my first customer, therefore stands godfather to my system; the Messrs. Howard's customers who have adopted my system, although they have gone astray for their tackle; those gentlemen who volunteered to give their practice in discussion at the Central Farmers' Club, especially Mr. Bradshaw and Mr. Dring; Mr. Fowler and his antiquated friends for their determined defence of the common plough against that terrible innovator the Woolston grubber; and you, sir, for reporting and spreading all that has been done throughout the land. *William Smith, Woolston, Bletchley Station, Bucks.*

NOTES OF CROPPING AND MANURING OF VARIOUS SOILS.

(Continued from last week.)

71. ELGINSHIRE.—*Lime*, from 20 to 40 bolls per acre, according to soil, once in a lease of 19 years. *Dung* enriched by consumption of cake (valued at one-fifth the cost of the cake). * Half the Barley manured with farm dung and half with guano. *J. Collie, Ardgay.*

72. BANFFSHIRE; *Lime*, 12 to 14 bolls per acre after Turnips, 15 to 20 years ago. *Dung* enriched with consumption of cake and Oats. * Also from 5 to 8 bushels of bonedust per acre. † The pasture is moorland. *J. Barclay, Braes of Enzie, Fochabers.*

73. FORFAR.—*Lime*, a small quantity in composts with manure for Barley to be sown with seeds every six years. *Dung* enriched by consumption of about 5 tons of Linseed cake per annum. * Also 1½ cwt. of Peruvian guano per acre for Turnips, and 2 cwt. per acre for 20 acres of Swedes and 5 acres of Mangels, and 7½ bushels of bone dust, 2½ being bone

VARIOUS SOILS: CROPPING IN ACRES: MANURING PER ACRE.

No., Soil, &c.	ACRES. Pasture.	ACRES. Arable.	Wheat.	Barley (Ba) Oats (O)	Beans (Be) Peas (P)	Rape (R) Vetches (V)	Swedes (S) Bare Fallow (F)	Mangels (M) Potatoes (Po)	Clover (C) Seeds (S)
Loamy Soil .. Acres	..	340	30	60 (Ba)	60 (O)	7 (Be)	60 (S & T)	3 (Ma)	100 (C & S)
Farm dung .. .. tons	..	..	20	20*	..	20 (Po)	..	20	..
Peruvian guano .. cwt	..	..	..	..	½	15	2	1½	..
Superphosphate	..	..	..	3*	1	..	2	1½	..
Black Loam, Clay and Light .. Acres	200†	382	15	40 (Be)	90 (O)	46 (T)	26 (S)	2—3 (Po)	152 (C)
Farm dung .. .. tons	..	..	..	..	..	10—15	20—25	20	..
Peruvian guano	..	..	2	..	..	..	1½	..	..
Superphosphate	..	..	..	..	..	2*	1½*	..	..
Loam on Clayey Gravel: also Light Soil .. Acres	10	290	50	80 (Ba &O)	10 (Be)	207	25 (S & M)	35 (Po)	65
Farm dung .. .. tons	..	..	18	15	10	—*	—*	12	..
Light Soil—Part Deep Loam .. .. Acres	35	180	30	60 (Ba)	30 (O)	26 (T)	14 (S)	16 (Po)	35 (C)‖
Farm dung .. .. tons	..	..	..†	..	..	7	8	8	..
Peruvian guano	..	..	..	..	..	12*	2*	3	..
Loam and Clay. Acres	30	830	65	90 (Ba & O)	20 (Be)	25 (T)	40 (S)	40 (Po)	50 (C)
Farm dung .. .. tons	..	..	..	..	14	10	10	10	..
Peruvian guano .. cwt.	..	..	2½*	2—3	..	3‡	4	3†	2—3‖
Clay, Sand, Loam.— Acres	2	670	166	150(Ba&O)	36 (Be)	60 (T)	46(S & M*)	70 (Po)	14 (O)
Farm dung .. .. tons	..	..	..	..	16	15	20	16	..
Peruvian guano .. cwt.	..	..	..	..	..	4—5	4—5	4—5	1†
Bonedust .. bushels	..	..	..	..	..	8—10	8—10	8—10	..
Stiff Clay, also very light Soils. .. Acres	9	304	53	55 (Ba)	29 (O)	30 (T)	24 (S)*	43 (Po)	63 (C & S)
Farm dung .. .. tons	..	..	..	..	..	..	18	20	..
Peruvian guano .. cwt.	..	..	2	1½	2	3	2	3—4	..
Superphosphate .. cwt.	..	..	..	..	..	3	2	..	..
Nitrate of soda .. cwt.	..	..	1½	1	..	..	½	1‡	1½
Light Loam, Clay.— Acres	52*	403	136 (Ba & W)	65 (O)	Few (R)‡	65 (S & T)	..	65 (Po)	65 (C & S)
Farm dung .. tons	..	..	..	..	..	15	..	18	..
Peruvian guano .. cwt.	..	..	1½†	2	..	2	..	2	..
Superphosphate	..	..	..	..	..	2	..	2	..
Loam and Clay.—Acres	..	300	60	40 (Ba & O)	12 (Be)	55 (S & T)	3 (Ma)	8—10 (Po)	&c. (C)
Farm dung .. tons	..	..	..	..	..	20	35	25	..
Peruvian guano .. cwt.	..	..	..	..	..	1½	2	..	..
Superphosphate .. cwt.	..	..	..	..	..	4—5	5	..	..
½ Light, ½ Heavy. Acres	160	954	80	120 (Ba)	200 (O)	145 (T)	50 (S)	(5 Po)	354 (C & S)
Farm dung .. tons	..	..	..	..	..	10	10	10	..
Peruvian guano .. cwt.	..	..	2*	..	2*	1½†	..	1½†	..
Clay, Loam, Sand, Gravel, &c. .. Acres	32	490	50*	55 (Ba)	100 (O)	45 (T)	40 (S)	10 (P)	145 (C & S)
Farm dung .. .. tons	..	..	..	..	..	10	12—16	16	..
Peruvian guano .. cwt	..	..	..	..	2†	1	2	1	1‖
Superphosphate .. cwt.	2	..	..	..	..	3‡	4‡	2	..
Common salt .. cwt.	..	..	8	8	..	8	8	..	..
¾ Loam, ¼ Clay.—Acres	230	860	110 (W & Be)‡	100 (Ba & O)*	10 (R)	40 (T†)	25†(S&Ma)	5 (Po)	60 (C)
Farm dung .. tons	..	..	..	..	15	20	20—25	20	..
Sand, Gravel, Clay, &c .. .. Acres	..	700	30	70 (Ba)	40 (O)	30 (T)	30(S&Ma*)	10 (Po)	50 (C)
Farm dung .. tons	..	..	12	..	..	12	18	12	..
Nitrate of soda .. cwt.	..	..	..‡	..†	1½	1‡	..‡	..	..
Various; Loam to Clay Acres	120	360	48 (W & Pe)*	85 (Ba &O)	7 (R)	30 (T)	23 (S & Ma†)	7 (Po)	160 (C & S)
Farm dung .. tons	..	..	..	..	..	10	13—14	14	..
Peruvian guano .. cwt.	..	..	..	2‡	2½	1½	1½	..	..
Superphosphate .. cwt.	..	..	..	..	½	3	3½	..	..
Mostly Alluvial — Acres	..	1200	..	..	..	10 (Ma)	150 (T & S)	15 (Po)	..
Farmyard dung .. tons	..	..	..	..	..	15	15	10†	..
Peruvian guano .. cwt.	..	..	..	..	..	8*	8	..	..
Strong Clay & Light Gravel .. .. Acres	70	600	15	165 (O)	40 (Ba)	5 (Pe)	70 (S & T)	3 (Po)	400 (C)
Farm dung .. tons	..	..	10†	..	..	10	12*	..	..
Clay, Loam and Light Acres	70	558	220 (W & Ba*)	30 (O)	18 (Be &V)	110 (S T & R†)	13 (Ma)	7 (Po)	150 (C)
Farm dung .. tons	10‡	..	..	..	10	10†	10	10	10‡
Peruvian guano .. cwt.	..	..	..	2½	..	1½	2½	2½	..
Superphosphate .. cwt.	..	..	..	..	..	2—2½	2—2½‖	..	..
Strong Loamy Soil.— Acres	153	97	40	15 (Ba)	20 (O)	8 (S & T)	1 (Ma)	1 (Po)	12 (C)
Farm dung .. .. tons	5*	..	..‡	..	..	15†	18†	15†	..*
Generally Loamy Soil Acres	..	85	6	3 (Ba)	10 (O)	(Be)	S & T	Po	(Cl)
Farm dung .. .. tons	..	..	10—20	20	..	15	15	25	..
Peruvian guano .. cwt	..	..	4*	4*	8	..	8	..	6†
Half Clay, half Loam Acres	120	300	60	60 (O)	25 (S)	..	25 (Ma)	9 (Po)	60 (C)
Farm dung .. .. tons	..	..	..	..	25	..	25	..	..
Peruvian guano .. cwt.	..	..	..	..	2	..	2	..	..
Soil Variable .. Acres	76‡	179	20	15 (Ba)	15 (O)	8 (S & T)	5 (Ma)	6 (Po)	15 (C)
Farm dung .. .. tons	..	..	..	..†	..	15—20	20*	15	..
Alluvial Loam. Acres	240	600	180(W & O)	20 (Ba)	40(Pe&Be)	50 (S & T & Ma)	20 (R)	25 (Po)	25 (C)
Farm dung .. .. tons	6—8*	..	..	..†	7—8†	15—20	10—12	8—10†	..
Superphosphate .. cwt.	..	..	..	..	..	2	½	..	..
Strong, yet Turnip Soil .. .. Acres	..	900	180	120(Ba&O)	65 (T)	65 (S)	20 (Ma)	2 (Po)	(Cl)
Farm dung .. .. tons	..	..	..	..	8	10	10	14	..
Superphosphate .. cwt	..	..	..	..	2	3	3*	..	..
Gravel, Loam, Clay.— Acres	*	650	160	75 (Be &V)	..	..	70 (Ma)	..	..
Farm dung .. tons	..	..	..	12	..	..	15—20	..	..

meal) to Turnips, Swedes, and Mangels per acre. Also 2 to 4 cwt. of home made artificial manure per acre. (Further report hereafter.) *A. Bowie, Mains of Kelly, Forfar.*

74.—FIFESHIRE.—* Also 1½ cwt. of superphosphate to Turnips, and 2 cwt. of superphosphate to Swedes per acre. † Also 4 cwt. of bone meal to the Wheat after Potatoes. ‖ 5 cwt. of nitrate of soda are applied to 4 acres of the Clover to secure an early cutting. *J. Pitcairn, Kinnaird.*

75. FIFESHIRE —*Lime*, 5 tons per acre once in 25 years. *Dung* enriched by consumption of 25 tons of cake, &c. per annum. * Or 5 cwt. of Rape cake per acre. † Or 6 cwt. of Rape cake per acre. ‡ Or 3 cwt. of superphosphate per acre. ‖ Or 1½ cwt. of nitrate of soda per acre. *R. Russell, Pilmuir, Leven.*

76. EAST LOTHIAN.—*Lime*, 50*l.* worth of lime applied in 80 carts of compost per acre over 15 or 20 acres of Turnip land annually. *Dung* enriched by consumption of 50 or 60 tons of cake or grain. * Only 6 acres of Mangels annually. † 1 cwt. of Peruvian guano and 1 cwt. of nitrate of soda over about 40 acres of the Clover for cutting. 500 tons of "police" manure applied to Turnips in aid of farm-yard dung. *G. Hope, Fenton Barns, Drem.*

77. EAST LOTHIAN.—Farm has been all limed. *Dung* enriched by 6 tons of oilcake yearly consumed. * 3 or 4 acres of Mangels and of Carrots also grown, receiving 20 tons of dung, 3 cwt. of superphosphate, and 3 cwt. of guano. Half the young Clover top-dressed with nitrate of soda. † Also 4 cwt. of bonedust and 2 cwt. of Rapecake. ———.

78. EAST LOTHIAN.—*Lime*, 56 or 60 bushels per acre on Grass once in 19 or 20 years. *Dung* enriched by 300*l.* or 400*l.* worth of cake, &c., yearly. * The Pasture is Links and Bent Grasses. † Also 1½ cwt. of nitrate of soda. Sometimes guano alone, 3 cwt. per acre. ‡ A few acres of Rape grown after the early Potatoes. Very few Mangels grown, and 5 cwt. of guano and 15 loads of dung, 3 cwt. of nitrate of soda applied to Clover to be mown. ———.

79. AYRSHIRE.—*Lime*, 80 to 100 bushels before Oats on pasture at various intervals, to keep Grass free of Moss. *Dung* enriched by consumption of oilcake and meal. Artificial manure applied to Wheat (1½ cwt. of nitrate of soda per acre) only if it looks weakly. The Beans are after Italian Rye-grass, which has been richly manured with liquid dressings. *And. W. Ralston, Lugg by Ayr.*

80. BERWICKSHIRE.—*Lime*, 6 tons per acre on light land and 8 tons on heavy land applied to Grass once in a lease of 19 years. *Dung* enriched by consumption of 30 tons of cake, &c. * Occasionally and when needed—Also 1 cwt. of nitrate of soda to Wheat, but this not generally. † Also 1½ cwt. of superphosphate per acre, on heavy land. The Swedes receiving 4 cwt. of superphosphate per acre, but no guano on light land. Potatoes receive 2 cwt. of superphosphate in addition. *G. Logan, Humehall.*

81. BERWICKSHIRE.—*Lime*, 4 to 7 tons per acre on Grass once in 21 years. *Dung* enriched by 5 to 15 tons of cake and all light corn, &c. * The Wheat receives 1 cwt. of nitrate of soda or 5 cwt. of Rape cake. † Oats receive 2 cwt. of guano or 1½ cwt. of superphosphate and ½ cwt. of nitrate of soda per acre. ‡ The Turnips and Swedes receive their superphosphate or 8 cwt. of bonedust besides the other dressing. ‖ Clover and Grasses receive 1 cwt. of Peruvian guano or 1 cwt. of nitrate of soda. ——, *Dunse.*

82. NORTHUMBERLAND.—*Lime*, 7 or 8 tons per acre, applied to green crops. *Dung* enriched by 50*l.* worth of cake and 50 qrs. of Bean and other meal. ‡ 30 acres of Beans. * 10 acres of Barley. † And 3 cwt. of mixed guano compost and Seaweed applied to permanent Grass. *Jacob Wilson, Woodhouse, Norfolk.*

83. NORTHUMBERLAND.—*Lime*, sometimes 6 or 7 tons per acre on old Grass, or on land to be laid down to Grass. *Dung* enriched by consumption of 100*l.* of cake, &c. per annum. * 4 acres of Mangels receiving 4 cwt. of common salt, besides the dung. † receiving 2 cwt of Peruvian guano also for lea land only. ‡ Receiving also 1 cwt of nitrate of soda, or 2 cwt. of sulphate of ammonia if the crop is not likely to prosper.—Also 12 to 15 bushels of bonedust per acre.—Also receiving common salt. The Wheat receives 3 cwt of dissolved bones at seed time per acre. *J. Atkinson, Bywell Hall, Stocksfield.*

84. NORTHUMBERLAND.—*Lime*, 5 tons every 10 or 15 years on fallow crop. *Dung* enriched by 17 tons of cake and corn. * 8 acres of Peas. † 3 acres of Mangels receiving rather more dung, also 2 cwt. of salt. ‡ 2 cwt. of guano to Barley when sown after Peas; and to Oats on poor soil and clay.

85. CUMBERLAND.—*Lime*, 6 tons per acre every 10 years on green crops. *Dung* enriched by 20 tons of cake. * Also 3 cwt. of blood manure per acre. † Also 1 cwt. of common salt.

86. DURHAM.—No *Lime*. *Dung* not enriched by consumption of bought cattle food. * And 4 cwt. per acre of guano. † To summer fallow.

87. YORKSHIRE.—*Lime*, 3 to 4 tons an acre, occasionally. *Dung* enriched by consumption of 4 or 5 lbs. of cake daily a head. * 100 acres of Barley. † 10 acres of Grass, 40 acres of Turnips, and 60 acres of Swedes, dunged as far as it will go. ‡ 10 to 20 acres of pasture, and 1-5th of the Clover dunged occasionally. ‖ Also 5 cwt. of common salt. *P. Stevenson, Thirsk.*

88. YORKSHIRE.—*Lime*, 8 tons per acre, every 5 years for Wheat ‡ after Clover and Fallow. *Dung* enriched by 5 tons of cake. * 2 cwt. of nitrate of soda and 2 cwt. of sulphate of ammonia applied to Clover and meadow land. † Also 1 ton of shoddy per acre; and for Swede Turnips and Mangels 10 cwt. of bonedust per acre. *H. Briggs, Wakefield.*

89. LANCASHIRE.—*Lime*, 8 tons per acre for Wheat. *Dung* not enriched by cattle food. * The guano used *or* the dung. † A capital crop from 6 cwt. per acre of guano (not applied over all). ——, *Garstang.*

90. CHESHIRE.—*Lime*, 3 tons per acre to green crop every 10 years. *Dung* enriched one-twentieth by cake. *Harold Littledale, Liscard Hall.*

91. CHESHIRE.—*Lime*, 3 or 4 tons per acre for Wheat or Clover Lea, occasionally. *Dung* not generally enriched by purchased food. * Also 6 cwt. of common salt per acre. † Also 2 cwt. of guano and 2 cwt. of salt mixed. ‡ 40 to 60 bushels of bonedust per acre to Grass land. *W. Palin, Tarvin.*

92. LINCOLNSHIRE.—No *Lime*. *Dung* enriched by 30 to 40 tons of cake consumed yearly. * 6 to 8 tons of dung occasionally on meadows. † 2 cwt. of guano per acre tried on a few acres of Peas, Barley, and Potatoes this year. *J. Clark, Long Sutton.*

93. LINCOLNSHIRE.—*Lime*, 5 tons per acre on Wheat and Turnips occasionally after 12 or 16 years. * Also 4 cwt of common salt. *Dung* enriched by 40 tons of cake consumed yearly. *F. Sowerby, Aylesbury.*

94. WARWICKSHIRE.—*Lime*, all limed 20 to 25 quarters per acre. Only a little meadow. *Dung* enriched by 300*l.* to 400*l.* worth of food, chiefly oilcake. * About 20 acres of mowing ground dressed annually with soil, &c., previously soaked with liquid drainage. *J. C. Adkins, Stratford.*

95. WARWICKSHIRE.—*Lime*, 2½ tons per acre every eight years for Swedes. *Dung* enriched by 5 or 6 tons of cake yearly. * Also 4 cwt. of Proctor's manure, + 10 loads of dung on part of

mowing ground each year. ‡ also 1 cwt. of salt per acre. ‖ 5 cwt of superphosphate on 10 acres of Swedes. If short of dung for Beans 4 cwt. of Proctor's Bean and Pea manure are applied. *J. Ford, Burford.*

96. Herefordshire.—No *Lime. Dung* enriched by large consumption of Beans and Oats, cake and corn—in stable, feeding stall and sheep fold. * Also 6 cwt. of common salt. † And 45 lbs. of sulphate of ammonia per acre. ‡ Also ½ cwt. of sulphate of ammonia per acre. ‖ *Or* 7 cwt. of Proctor's manure with the farm dung. ——, *near Ross*

97 A further report to appear. *Major E. Herbert, near Abergavenny.*

98 Oxfordshire.—*Lime*, 25 quarters per acre, for Barley and Turnips, after 10 years. *Dung* enriched by use of cake and meal. † Arable and pasture. ‡ 4 bushels per acre in addition of bonedust for Turnips and Swedes ‖ Also 8 bushels of bone dust and 4 cwt. of common salt * Also 3 cwt. of common salt per acre. *M. Savulge, Chipping Norton.*

99. Oxfordshire.—*Lime*, 15 quarters per acre on Oats after Wheat or Oat stubble for Swedes not limed before *Dung* enriched by 20 tons of cake and 10 tons of meal consumed by cattle and sheep * 16 tons of dung, or 3 cwt of guano thrown occasionally on about one-tenth part of the pasture. † 2 cwt of guano only when Barley or Oats follow Wheat. ‡ or 3 cwt. of superphosphate for the Turnip crop. Also 4 bushels of bones per acre for Turnips About 4 tons per acre of coal ashes applied as manure for Potatoes. *J. Watson, Agent to Earl of Macclesfield, Shirburn Castle.*

100. Oxfordshire.—No *Lime. Dung* enriched by 30 tons of Linseed cake, and all the Beans grown on farm, and 50 qrs of Barley. * 10 acres of Rape, Turnip, and Mangles, each—rest Swedes. The Mangels receive 5 cwt of common salt per acre

101 Herts —No *Lime. Dung* enriched by about 10 tons of cake and consumption of all the Oats and Peas and inferior Barley. * 10 tons of *Dung* about once in three years, when the land is mown † 100 acres of Wheat receiving 40 bushels of soot. *G. Webb, Redbourne.*

102. Norfolk.—No *Lime. Dung* enriched by 20 tons of cake and 800 bushels of Beans and Peas consumed yearly. * And 2 cwt. of guano with 3 cwt. salt per acre. *R. Banham, Wymondham.*

103. Norfolk —*Dung* enriched by 35 tons of Linseed cake, &c , and the same quantity of Rape cake, superphosphate, and guano ; but the greater part of it superphosphate. Three parts of the Turnip fed off with cake. *W. L. Stebbing, Stoke Ferry.*

104 Norfolk —No *Lime. Dung* enriched by 30 to 40 tons of cake * 1½ cwt. of guano applied to Oats, according to condition † And 5 cwt. of salt to 36 acres of Mangels. *W. Flatt, Stoke Ferry.*

105. Suffolk —No *Lime. Dung*, enriched with plenty of oilcake and corn consumed. * And 3 cwt. of guano per acre † If not dung enough 7 cwt. of Rape cake per acre, and 1 cwt. of nitrate of soda. ‡ On 20 acres of permanent Grass. *L. O. Cottingham, Saxmundham.*

106. Gloucestershire —Plenty of *Lime* in the soil. *Dung* enriched by consumption of all Peas and Beans, &c , and 15 to 20 tons of cake * And 80 bushels of ashes per acre, sheep having been fed on them in the house † And 1 cwt. of nitrate of soda, with 1 cwt. of common salt. One acre of Potatoes also grown without manure. *A. Bubb, Witcombe Court.*

107. Gloucestershire.—*Lime*, 80 bushels par acre once in eight years. *Dung* enriched by 300*l*. or 400*l*. worth of cake and meal consumed yearly. *And 3 cwt. of common salt. *J. Cobban, Whitfield.*

108. Gloucestershire.—*Dung* enriched by consumption of 30 tons of cake and 2 or 3 hundred quarters of Barley yearly. * Compost on about 40 acres a year. † On about one-fifth of the land. *G Edmonds, Eastleach.*

109. Gloucestershire.—*Dung* enriched by 250*l*. to 300*l*. worth of Barley, Beans, cake, and cattle food yearly. A few acres of Rape after Vetches also grown. ——

110. Gloucestershire.—*Dung* enriched by 100 tons of cake consumed yearly. * Over 20 or 30 acres a year. † The Vetches precede the Turnips; 2 cwt. of nitrate of soda per acre on Wheat occasionally. ‡ 5 cwt. of salt on Mangels per acre, and 2 cwt. on 30 or 40 acres of rough Grass. ‖ And 2½ cwt. of guano. *J. T. Harrison, Frocester Court.*

111. Gloucestershire.—*Dung* enriched by 500*l*. worth of food purchased yearly. * Over 50 acres of Clover. † Also 5 acres of Potatoes, receiving 10 tons of dung, 3 cwt. of guano, 2 of superphosphate, and 2 of common salt. ‡ Also 1¼ to 1½ cwt. of nitrate of soda. *J. Coleman, Cirencester, Agri. College.*

112. Gloucestershire.—* Sainfoin. *T. B. Browne, Salperton Park.*

113 Wilts.—No *Lime. Dung* enriched by consumption of all tail corn. * If anything a little nitrate of soda on Oats. † Burnt ashes with Turnip drill. ——.

114. Berks.—*Dung* enriched one-third more by use of artificial food. * And 3 cwt. of salt. † Ashes, 10 to 20 bushels per acre, on all Turnips and Mangels. Superphosphate for guano sometimes on Turnip and guano. *T. Owen, Hungerford.*

115 Kent.—*Dung* enriched by consumption of all grain grown, except Wheat, malting Barley, and a few white Peas. * And 4 cwt. of common salt on about 10 or 12 acres of Mangel Wurzel, also 2 cwt. of guano. † Also 1½ cwt. of guano or 2 cwt. of superphosphate on 10 acres of Rape, and 4 cwt. of superphosphate on 30 acres of Turnips. Some Rape grown after Peas with guano or superphosphate. *C. Harman, Deal.*

116. Kent.—*Dung* enriched by consumption of 28 tons of Rape cake and 2 of Linseed cake applied to Beans, Potatoes, Swedes, Mangels, and Clover; Swedes receiving in addition 2 cwt. of superphosphate per acre. *J. Henderson, Sandwich.*

117. Sussex.—*Dung* enriched by about 5 tons of cake annually consumed. The dressing to Wheat and other grain is given either by cart or sheepfold. 30 to 40 bushels of night soil and ashes also applied to Rape, Turnip, and Mangels. ——.

118. Sussex —*Lime*, 160 bushels per acre on Turnips and fallow for Wheat; not limed for 25 years. *Dung* much enriched. * Applied to Wheat on green crops as they require it. † Four bushels of bonedust per acre to Turnips; 1 or 2 cwt. of common salt on Barley and Oats, and 2 to 4 on permanent Grass. *J. Eames, Midhurst.*

119. Hants.—*Dung* enriched by fattening 80 bullocks and 200 sheep yearly. *W. Dickenson, New Park, Lymington.*

120. Hants.—*Chalk*, 18 tons per acre on fallow after 25 years. *Dung* enriched by consumption of 200*l*. worth of food bought yearly. *Dunged over 25 acres. † Dressed over 10 acres, ‖ 15 acres after corn and 15 acres with Potatoes. ‡ 5 acres of the Mangels after Clover. *J. Blundell, Bursledon.*

121. Dorsetshire —*Dung* enriched by 600*l*. worth of cake consumed yearly. * To part of crop † The dung and superphosphate to Rape (30 acres). ——

122. Dorset.—*Lime* 60 sacks per acre when necessary every 6 to 10 years. *Dung* doubled in value by consumption of bought food. * Also 8 acres of Rape, receiving 2½ cwt. of superphosphate per acre; and 4 acres of Potatoes limed. † 2 cwt. of guano when necessary. ‡ Also 4 cwt. of common salt. Ashes and gravel compost to green crops. *W. J. Pope, Bridport,*

123. Devon.—*Lime*, 4 tons per acre every 6 years for Barley.

VARIOUS SOILS: CROPPING IN ACRES: MANURING PER ACRE.—*Continued.*

No., soil, &c.	Acres. Pasture	Acres. Arable	Wheat	Barley (Ba) Oats (O)	Beans (Be) Peas (P)	Rape (R) Vetches (V)	Swedes (S) Bare Fallow (F)	Mangel (M) Potatoes (P)	[illegible] (S)
95. Strong, with loose Subsoil .. .. Acres	68	220	95(W&Ba)	40(Be&Pe)	10 (T)	20 (S)	10 (Ma)	1 (Po)	[illegible]
Farm dung .. tons	†	..	..	12—15	..	..	15	20*	[illegible]
Peruvian guano .. cwt.	..	..	..	..	3	4‖	4‡	..	..
96. Clay and Sandy Loam Acres	138	250	94	30 (O)	15 (T)	15 (S)	15 (Ma)	14 (Po)	6 (C)
Farm dung .. .. tons	..	..	12	..	..	10	14	12	..
Peruvian guano .. cwt.	..	..	..	2½	..	..	3*	4	[illegible]
Superphosphate .. cwt.	..	..	..	1	4†	5‡	..	2	..
97. Varies much .. Acres	137	185	60	30 (Ba)	15 (Be)	5 (T)	35 (S)	10 (Ma)	25 (C)
Farm dung .. tons	..	..	..	..	..	..	10	18	..
Peruvian guano .. cwt.	..	..	..	..	..	2	2—3	2—[illegible]	..
Superphosphate .. cwt.	..	..	..	..	..	4—5	5	5	..
98. Clay, Loam, Sand, Gravel .. .. Acres	..	1050†	W	Ba & O	Ma	Be	R & T	S	C
Farm dung .. .. tons	..	..	12	..	16	16	..	12	..
Peruvian guano .. cwt.	..	..	..	2*	..	..	..	..	..
Superphosphate .. cwt	..	..	..	..	4‖	..	4‡	4	..
99. Both Strong Loams and Gravel .. Acres	230	265	55	96 (Ba&O)	2(Be & Pe)	45 (S & T)	10 (Ma)	5 (Po)	27 (C)
Farm dung .. tons	..	..	..	..	16	12	18	..	16
Peruvian guano .. cwt	3*	..	..	2†	..	2—2½‡	3	..	..
100 Light Gravel and Clay Loams .. .. Acres	200	300	80	75 (Ba &O)	30 (Be)	20 (R & T)	60 (S& Ma)	1 (Po)	35 (C)
Farm dung .. .. tons	15*	..	..	..	15	20*	20*	..	..
101. Mixed Soils .. Acres	50	450	190 (W & Ba)†	70 (O)	20 (Pe)	20 (T)	60 (S)	15 (Ma)	70 (C)
Farm dung .. tons	10*	..	..	..	..	10	15	15	..
Peruvian guano .. cwt.	..	..	..	2	..	..	..	2	..
102. Various .. .. Acres	160	440	110	110 (Ba)	20 (Be)	40 (T)	40 (S)	30 (Ma)	[illegible]
Farm dung .. tons	..	..	10	..	8	..	10	10*	..
Bonedust .. .. bush	..	..	..	..	..	10	6	..	..
103. Clay, Clalk, Gravel. Acres	148	550	140	140 (Ba)	20 (Ba)	108 (T)	30 (Ma)	..	11[illegible]
Farm dung .. tons	..	..	10	..	10	..	10	..	..
Superphosphate .. cwt.	..	..	..	..	..	4	1	..	..
104. Stiff Chalky Farm on Chalk .. .. Acres	160	640	160	120 (Be)	30 (O)*	10 (Be)	90 (T & R)	96 (S&Ma)	160
Farm dung .. tons	..	..	12	..	..	14	..	10—12†	..
Superphosphate .. cwt.	..	..	..	..	..	..	3—4	2	..
105. Light & Heavy—Acres	70	350	100	100 (Ba)	30 (T)	40 (S)	30 (Ma)	..	50 (C)
Farm dung .. tons	16‡	..	20	..	..	..	16	..	..
Superphosphate .. cwt.	..	..	..†	..	3	4	..*	..	..
106. Gravel, Sand, and Clay .. .. Acres	60	126	63	12 (Be)	13 (Pe)	7 (T)*	16 (S)*	7 (Ma)*	1[illegible]
Farm dung .. tons	..	..	..	..	..	..	25	30	..
Peruvian guano .. cwt.	..	..	2½†	..	..	2½	..	2½	..
107. Clay, Loam, and Sand .. .. Acres	338	200	60	40(Ba & O)	10 (Pe)	36 (S & T)	10 (Ma)	4 (Po & Ca)	4[illegible]
Farm dung	..	..	..	..	..	15	15	15	..
Proctor's manure.. ..	..	..	..	..	..	3	3*	..	..
108. Clay, Lime and Sand. Acres	420	2010	450	411(Ba&O)	114(Be&P)	408 (S & T)	24 (Ma)	25 (R)	576 [illegible]
Farm dung	10*	..	10†	..	..	10	14	10	..
Superphosphate	..	..	..	..	..	2	2½	1½	..
109. Corn Brash, &c. Acres	90	175	43	42(Ba & O)	4 (Pe)	16 (T)	15 (S)	10 (Ma)	45 (C[illegible]
110 Various .. .. Acres	350	110	65	16(Be&Po)	7 (T)	9 (S)	17 (M)	7 (V)	16 [illegible]
Farm dung.. .. tons	10*	..	..	..	14	14	14	..†	..
Superphosphate .. cwt.	..	..	..	2½‖	2½	2½	2½‡	..	..
111. Varies from Brash to Marl .. .. Acres	40	400	100	80 (Ba & O)	20(Be&Pe)	8—10 (R)	90 (S & T)†	15 (M)	80 (C)
Farm dung.. .. tons	..	..	..	..	..	..	..	12	5*
Superphosphate	..	..	..	..	..	3	2—3	3	..
Common salt	..	..	3‡	..	..	..	2	3	..
112. Various .. .. Acres	..	170	150	170(Ba&O)	20 (Be &R)	170 (S & T)	10 (M)	100 (Sa)*	150 (C)
113. Red Soil or Stone-brash .. .. Acres	200	150	30	60 (Ba& O)	10 (T)	12 (S)	10 (M)	..	[illegible]
Farm dung.. .. tons	..	..	10	..*	..†	20	20	..	
114. Various .. .. Acres	..	600	140	100 (Ba)	40 (O)	100 (T)	40 (S)	30 (M)	70 [illegible]
Farm dung.. .. tons	..	..	14	..	..	..	..	12	..
Peruvian guano .. cwt.	..	..	..	..	..	2†	2†	2*	..
115. Clayloam, Calcareous Acres	200	360	90	110(Ba&O)	25 (Be)	30 (Pe)	30 (R&T)†	30 (S&M)*	45 [illegible]
Farm dung.. .. tons	..	..	15	..	25	..	..	12—15	..
Superphosphate .. cwt.	..	..	..	..	..	..	2—4	2	..
116. Rich Loam .. Acres	100	200	66	66(Ba & O)	22 (Be)	3 (S)	3 (Po)	16 (Ma)	..
117. Chalk and Clay. Acres	500	300	100	90(Ba & O)	30(Be&Pe)	(40 R)	15 (S)	6 (Ma)	20 [illegible]
Farm dung .. cwt.	..	..	20	..	..	20	20	20*	..
118. Various .. .. Acres	300	270	80—100	40 (Ba & O)	20(Pe&Be)	45 (S & T)	10 (Ma)	..	50 [illegible]
Farm dung * .. tons	..	..	15	..	15	15	15	..	..
Peruvian guano .. cwt.	1½—2	..	1½—2	1½—2	..	1½—3†	2—3	..	..
Superphosphate .. cwt.	..	..	..	1	..	2—4	2—4	..	..
119. Clay, Sand, Gravel. Acres	120	150	30	10 (Ba)	20 (O)	25 (Be)	20(Ma&Ca)	..	45 (It R[illegible]
Farm dung .. tons	..	..	..	..	..	15	20	..	1[illegible]
Peruvian guano .. cwt	2	..	2	2	2	..	3	..	3
Nitrate of soda .. cwt.	1	..	..	..	1	..	..	..	2
Common salt .. cwt	3	..	2	2	3	..	6	..	[illegible]
120. Clay, Loam, and Sand. Acres	25	100	40*	25†	2 (Ca)	15 (T)‖	11 (Ma)	15 (Po)	14 [illegible]
Farm dung .. tons	..	..	20	..	..	..	25‡	20	..
Peruvian guano .. cwt.	..	..	..	2	4	..	..	2	..
Superphosphate .. cwt.	2	..	..	..	..	..	2	..	..
121. Various on Chalk. Acres	400	600	150	120 (Ba)	30 (O)	50 (R & V)	70 (T)	100(S&Ma)	100 [illegible]
Farm dung .. tons	..	..	15*	15	15	15†	..	15—25	..
Superphosphate .. cwt.	..	..	..	..	..	2†	3	3	1—1[illegible]
Nitrate of soda .. cwt.	..	..	1	1½	..	..	..	1½	..
Common salt .. cwt	..	..	2	..	..	..	..	..	..

VARIOUS SOILS: CROPPING IN ACRES: MANURING PER ACRE.—*Continued.*

No., Soil, &c.	ACRES. Pasture.	ACRES. Arable.	Wheat.	Barley (Ba) Oats (O)	Beans (Be) Peas (P)	Rape (R) Vetches (V)	Swedes (S) Bare Fallow (F)	Mangels (M) Potatoes (P)	Clover (C) Seeds (S)
Marly, Sandy, &c. *Acres	400	180	80	32 (Ba & O)	6 (Be & Pe)	30 (S)	15 (T)	8 (Ma)	30 (C)
Farm dung .. tons	..	..	15	..	..	12—15	..	15—20	..
Superphosphate .. cwt	..	..	†	..	..	3—4	3	4‡	..
Heavy, Moderate, Light .. .. Acres	400	280	20	60 (Ba & O)	8 (T)	28 (S)	14 (Ma)	1 (Po)	149 (C & S)
Farm dung .. tons	..	..	..	..	..	12	20	..	..
Peruvian guano .. cwt	..	..	..	..	4	3*	5†	..	..
Rather Heavy . Acres	26	124	14	14 (Ba)	6 (O)	14 (S)	6 (Ma)	(R)	(C)
Farm dung .. tons	30	..	43	..	..	..	..	..	..
Peruvian guano .. cwt.	..	..	3—4	3	3	4—5†	6*	3	..
Nitrate of soda	3	..	..	..	..	..	..	..	3
Clay Slate .. Acres	130	138	20	64 (Ba & O)	10 (R)	10 (T)	15 (S)	15 (Ma)	24 (C)
Farm dung .. tons	..	..	..	..	..	25	25	25	..
Peruvian guano .. cwt.	..	..	..	..	2	2	2½	3	..
Superphosphate .. cwt.	..	..	..	..	2	2	2½	3	..
... dust .. bushels	..	..	..	..	..	20	20	20†	..
Clay and Gravel Acres	162	88	10	45 (Ba & O)	5 (Be)	7 (S & T)	7 (Ma)	4 (Po)	10 (C)
Sand, Loam, and Clay .. .. Acres	86	94	30	41 (Ba & O)	8 (Be)	10 (S)	6 (Ma)	4 (Po)	..
Farm dung .. .. tons	..	..	..	..	7*	10	10	7	..
Proctor's manure .. cwt	2—3	..	..	..	..	2	2	..	..
Superphosphate .. cwt.	..	..	2	2	..	..	..	..	..
Light, also Retentive Acres	495	375	140*	63 (Ba)†	20 (O)	12 (Be)	70 (S & T)	7 (Ma)	63 (C)
Farm dung .. tons	..	..	..	..	..	12	10—12	20	8
Superphosphate .. cwt.	..	..	..	8	..	..	4	4	..
Fen and Loam .. Acres	78	220	75	50 (Ba & O)	20 (Be)	30 (R & S)	10 (Ma)	7 (Po)	30 (C)
Farm dung .. .. tons	..	..	6—8	..	6—8	10	12	..*	..
... dust .. .. bush.	..	..	..	..	..	4	4†	..	..

... enriched by consumption of all the Barley and Oats ... and all the Wheat if that is under 5*s.* a bushel; and by ... of 25 tons of cake and 20 tons of bran yearly. ... 1 cwt. of superphosphate. † Also 6 cwt. of common ... *Barnwell, North Milton.*

... Cornwall.—*Dung* enriched by consumption of oilcake. ... 2 cwt. of superphosphate. † With 3 quarters of bone ... ——, *Feock.*

... Cornwall.—*Lime,* 100 to 120 bushels per acre every 7 or ... *Dung* enriched by consumption of 150*l.* to 200*l.* ... corn and artificial food. † And 4 to 5 cwt. of common ... acre. *W. Trethewy, Grampound.*

... Carmarthen.—*Lime,* 4 cartloads per acre once in 5 or ... on Wheat and pasture. *Dung* enriched 30*l.* per annum. ... *Rushmore.*

... Carnarvon.—*Lime,* 2 or 3 tons per acre for Wheat. ... by cake consumed, with gas lime. *W. F. Chap-... Llandudno.*

... Northamptonshire.—*Lime,* 24 bushels per acre every four ... years on Clover lea and Bean stubble, to kill slugs. ... enriched by 450*l.* worth of cake, &c., consumed yearly. ... Swedes receive 12 tons of dung per acre. † Barley ... receive 2 or 3 cwt. of salt per acre. *Owen Wallis, ... Grange.*

... Lincolnshire.—*Dung* enriched by 15 to 20 tons of ... cake yearly. † Common salt, 1 cwt. to Mangels ... ally. * Peruvian Guano, 1 cwt. to Potatoes occa-... *J. Whitwell, Peterborough.*

Home Correspondence.

... *Cultivation at Potterspury.*—Steam cultivation ... has received no great encouragement from ... landlords; the progress which it has made is chiefly ... to the enterprise of the tenant farmers. The ... of Grafton however, who stands high with his ... and who is ever anxious to promote their ... placed a field the other day at the disposal ... Hayes of the Watling Works, Stony Stratford, ... he might exhibit the powers of a new windlass ... by him. The best time for smashing ... is doubtless the dry summer months for a ... or an autumn breaking up of the stubbles for ... spring crops or roots. We make these remarks ... are based on experience) because we know that ... persons who witnessed the work done here the ... should it turn out a failure (which is possible ... of a lengthened continuance of wet weather) ... be disposed to deride the whole system. The ... windlass is made chiefly of wrought and cast iron; ... woodwork used is for the wheels, shafts, and ... When at work it is placed crosswise to the ... and consists of two drums for coiling and ... out the wire rope. It has three pulleys, the ... side connected with the drums, and the central ... only at the end of the furrow, and during the ... occupied in turning the implement, or in case of ... of any kind. By the action of a small con-... lever, the driving band is shifted off either of ... pulleys on to the central or neutral pulley, ... effect is an instantaneous stoppage of the ... The object of this is to prevent the ... of shutting off the steam, so that the engine ... kept running all the time on the neutral pulley ... setting in motion any other portion of the ... The main advantages which Mr. Hayes ... his windlass are that it requires but one man ... to it and the engine as well, the latter ... but little attention, and that by connecting ... lever before referred to, a small cord which ... the field to the anchor men, they are enabled ... the string to throw the implement out of ... This acts as a check upon the driver in case of ... activeness, and prevents a run in, and it also enables the implement to be worked in foggy weather or by moonlight. The implement used was the old Woolstone three-tine grubber. There was however on the ground another implement invented by a gentleman named Fisher, of Northamptonshire, the great merit of which appeared to consist in its cleaning itself and not clogging or driving. It was tried on a piece of land on which were some large patches of Twitch Grass. Although the soil was sticky from the late rains, the grubber (for so it is called) passed on its way with hardly a particle of Twitch adhering to the tines. This advantage seems to arise from the tines being faced with wood, with a rounded surface which allows the weeds more easily to pass off. It was at first drawn by eight powerful horses belonging to the Duke, and had there been no treading the work done might have been pronounced effective. So "pugged," however, had the land become from that cause that it was torn up in large slices or lumps, which unless the weather prove kindly will be difficult to reduce; when kicked the toe of the boot only left its impression, while when the same process was repeated on that portion of the field which had been steamed up, the clods readily flew to pieces. The work seemed to be heavy for the horses, but the wetness of the land, in Mr. Fisher's opinion, made the extra draught equal at least to that of two horses. It was afterwards hooked on to the engine, but having no turning bow and the steering lever having got broken the trial was not very successful. The day brought together a number of earnest men, anxious to give and receive information, but as a test of the capabilities of the steam cultivator it was of little use. The field was a very small one, and very narrow, with a roadway running up the middle, so that the implements took nearly as much time in turning as in working, and the wet state of the land told seriously against the quality of the work. We hope that when Mr. Hayes has another field day he will be more fortunate. Among the visitors who honoured the field with their presence were his Grace the Duke of Grafton, and also the Duchess, Lord Euston, the Hon. Col. Douglas Pennant, and a good number of the farmers in the neighbourhood assembled and evidently watched the proceedings with great interest. *F. B.*

Societies.

Royal Agricultural.—A meeting of the Royal Agricultural Association took place on Wednesday, at the Society's Rooms, Hanover Square, Mr. Fisher Hobbs in the Chair. The ordinary business of the Society having been transacted, and several new members elected, Mr. Holland, M.P., stated that he had brought some feeding stuff to exhibit which was of a different character from that discussed at their last meeting, and which consisted of a quantity of chopped hay and straw. He had always been in the habit of cutting up almost everything for feeding purposes in order to mix it up with pulpy food. Last year he was fattening an animal and got it to a certain degree of fatness, but to his surprise there it stopped. It was sufficiently fat, however, to be remunerative when he sold it. When it was slaughtered and opened, it was discovered that a piece of stick, about 3 inches in length, had been swallowed by the animal and had lodged within the stomach. The piece of stick had penetrated the side, but had not affected the vitality, although it had evidently prevented the animal getting so fat as it would have otherwise done. His attention having been called to the fact, and all his food cutting being done by steam, he had adopted a new contrivance, by which the chaff instead of falling on the floor fell through a kind of sieve, and then by means of a small steam-fan a current of air was created, which carried the cut-chaff into a proper receptacle and left the whole of the impurities behind.

Mr. Frere also stated that he had recently purchased a steam chaff-cutting locomotive machine, which would cut a ton an hour, and that the farmers in his neighbourhood had frequently had it out on hire with the most complete success.

Steam Boilers as applied to Agriculture.—Mr. Holland, M.P., then proceeded to call the attention of the Society to the question of agricultural steam boilers and their proper mode of treatment:—

He observed that steam was most extensively used now in agriculture in all parts of the country, in consequence of which it was their bounden duty to guard as much as possible against those accidents to which all steam machinery was liable. He did not mean to say that there were more explosions in agricultural steam boilers than in other descriptions of steam boilers, and one thing he could say, which was that our agricultural labourers made very efficient engine tenders after being well looked after for the first 12 months. Mr. J. C. Morton, in a very useful little book entitled the "Handbook of the Farm Labourer," published last year, stated that the steam power now in use in the agricultural districts was equal to 40,000 horse-power. It was necessary that for the efficient working of steam-engines the farmers, and those who had the care of engines, should know a little of the nature and properties of steam, and the manner in which it was generated. Mr. W. Crooke, a gentleman who had had a great deal to do with the analysis of metals through the medium of light, had stated in a letter to him that there were circumstances connected with the ebullition of water not generally known which would throw a great deal of light upon the causes of boiler explosions. For instance the exposure of boiling water to the air was always accompanied by great ebullition. One of the principal objects in steam boilers was to obtain sufficient steam while the boiling took place with perfect tranquillity. He attributed a great deal of the ebullition in boilers to the presence of impurities in the water; and he had observed that the infusion of alkalies had a great effect in preventing it. The question of the incrustation of boilers had always attracted great attention in consequence of the great danger as well as loss of steam power which occurred from it. That incrustation was occasioned by the deposition of particles of sandy impurities which were separated from the water in the process of boiling, and adhered to the sides and bottom of the boiler; the consequence of which was, that unless the boilers were kept cleared out, the iron of the boiler, not being protected by water above it, became exposed to the action of the fire until it was so weakened that in consequence of the pressure above the boiler collapsed and an explosion took place. There were two kinds of agricultural boilers—that which was part of a fixed machine, and that which was attached to the portable agricultural steam machine. The latter of these was far more liable to injury from incrustation, and for this reason. In respect to the fixed machine the water and fuel by which it was fed was always of one kind, whereas in respect to the locomotive machine, the water was taken from every ditch on the farms to which it went; it was constantly in the hands of different persons, subjected to different kinds of treatment, and filled with impurities, besides which it was often very imperfectly cleaned. It was not surprising then that boilers so neglected should become dangerous, the only wonder was that more explosions did not take place. They had heard from the evidence of Mr. Crook that the quality and impurity of the water with which a steam boiler was fed exercised a very considerable influence upon the aggregation of the deposit. Therefore anything should be put into the water that would tend to dissolve the impurities and enable them either to pass off with the steam or to be deposited at the bottom of the boiler in such a way that they might be easily removed. It was a mistake to suppose that the ordinary boiling point of water was 212°. Water boiled at various temperatures, according to Dr. Carpenter, which were very much dependent upon the amount of solid matter which it contained. The consequence of this was, that steam was often being generated at a time when the fires were low, and inasmuch as the persons having charge of the engine very often imagined that when the fires were put low, at their dinner hour for instance, no evaporation took place, they were apt to heap on fire when they returned with a view of getting the steam up rapidly, when of course, if the engine was in any way unsound, the additional pressure would cause it to burst. The ordinary remedy for that was, that something was made to give way very easily, and that probably was the reason why they heard more of accidents from agricultural steam boilers than of explosions.

Mr. Ransome recommended that the safety valve of a boiler should, on the return of the men, always be opened by hand and carefully examined to make sure that it was not obstructed in any way. The spring balance might then be screwed down to about 10 lbs., and when the steam blew off at that pressure it might be gradually screwed down to 45 or 50 lbs. The spring balance should not on any account be screwed down while the engine was not at work and the steam supposed to be not up. He was afraid that the spring balance of engines was often left screwed down while the men were at dinner, and on one occasion he had himself to interfere and to point out to the men the danger of such a proceeding. It was done under the impression that when the fires were low evaporisation did not take place, and as the men were anxious to get through their work as rapidly as they could, they imagined that keeping the spring balance screwed down would help them to get the steam up quicker when they returned to their work. That was a practice which was fraught with the greatest danger. In regard to solvents a discovery was lately made with reference to the good effect of mixing carbonate of soda in impure water, the chemical change resulting from which was that less ebullition was caused in consequence of the abstraction of the air from the solid particles, and it being blown off with the steam in the shape of gas. The result to be obtained if possible was the generation of steam at the lowest possible heat, and he might mention here that the expansion of pure soft water in the shape of steam was as 1 part of water to 1694 parts of steam. That was, that one pint of water would produce 1694 pints of steam. Water as they knew would boil at a much less heat when the pressure of air was removed, whereas under the highest degree of pressure it required the iron to be nearly red hot in order to generate steam, whereas if that pressure were removed the steam, from its greater elasticity, would have burst the vessel to pieces. This, too, showed the evil which must result from a boiler being burnt in consequence of incrustation, therefore it was a prime object to remove all impurities. For this purpose, Mr. Spiller, a gentleman connected with the chemical establishment of the War Department at Woolwich, had used caustic soda with great success, and he had stated it

to be an excellent prevention of incrustation. He thought it useful to agriculturists that such facts as these should be known, because at all events it would lead to an increase of care in the management of steam boilers. He could not help commenting upon the fact that the improvement in boilers had by no means kept pace with the improvement in other descriptions of steam machinery, and in fact as far as mere construction of boilers was concerned, they had made but very little advance since the time of Watt. There was one important point on which he thought a lesson might be taken from the manufacturers. In large towns such as London, Manchester, and Sheffield, Associations were formed for the purpose of preventing steam boiler explosions, and the principal mode in which they accomplished their object was by sending duly qualified persons round for the purpose of inspecting the boilers and engines of the members of the association, and pointing out their defects in time; by that method there could not be a doubt that a large amount of life and property had been saved, and he thought that if the agriculturists took a leaf out of the book of the manufacturers they would find that much good would result. He understood that Mr. Fowler was about to adopt at Swindon the plan of sending round an inspector to the various steam ploughs he had working in that district, and there would be no great difficulty in the farmers forming an association, in consequence of which all their steam machinery would come periodically under the inspection of some well qualified person. It was impossible to say how much time, trouble, and expense would be saved to the farmer by the adoption of such a system, while all danger in working by means of agricultural steam engines would be obviated, except such as arose from the manifest carelessness of the enginemen and stokers. As he had said, there were more injuries than explosions in agricultural steam machines, and he believed that the greatest number of such accidents arose from tampering with the safety valves, or else in consequence of the gauges being defective. In both these cases he thought the remedy would be simple, effective, and inexpensive.

MR. B. BROWNE expressed his satisfaction at seeing so important a subject brought before the Society. With reference to the removal of the impurities which were contained in the water, and which encrusted the boiler, he had found the greatest advantage from putting a sack of Potatoes 3 or 4 times a year into his boilers. He had also found that a decoction of carbonate of lime had had the effect of precipitating the impurities

MR. AMOS said that, having had a good deal of experience with reference to the examination of steam boilers after explosions had taken place, he had invariably found that the boilers to which such things happened were badly constructed from the first, and he explained that in the case of a badly constructed boiler the pressure on certain parts was far more injurious than in the case of well constructed articles. Too much attention could not possibly be devoted to safety-valves, and in every instance care should be taken that they were free. He mentioned one description of boiler in which every time the door was opened the safety-valve moved, so that it was always in order or the door could not be opened. In respect to solvents he mentioned peat water and bark tannin as excellent ingredients for the solution of impurities. He concurred in the statement made that the peasantry of this country made excellent engine tenders, because although they might not be scientific, they invariably abided by the instructions which they had received. Two safety valves, one of which should be beyond the control of the engine tender, would be undoubtedly an advantage.

After some further discussion a vote of thanks was unanimously accorded to Mr. Holland, and the Chairman announced that at the next meeting Mr. Frere would bring forward the question of feeding cattle on Mangel Wurzel in combination with artificial food. The proceedings then terminated.

Farm Memoranda.

SOUTH HANTS FARM.—*Report to the 15th March. Horse Labour.*—In our last report we stated the work of the farm to be in a more forward state than usual, since which so much time has been lost to the tillage of the land, owing to the succession of rainy weather, that the horse labour will soon be in arrear unless we get a more drying state of the atmosphere. It has been difficult to employ the horses with profit during the past fortnight; however some ploughing for Oats has been done, at other times carting manure, earth, &c., has been going on. We have also had one day sowing Oats on the 15th and in excellent season. The land having been ploughed for some time previous had become in a mellow friable state from the effect of a succession of frost and rain in alternation. We sow broadcast 4 bushels per acre of the White Canadian Oats; some sow more than 4 bushels of seed per acre, and some drill a less quantity, but we often find that a saving of a bushel of seed per acre realises no more than the extra cost of the drilling and labour attendant thereon; we prefer the second or third week in March for sowing this kind of Oat, if sown earlier they sometimes get a severe check and turn blue in the blade soon after coming up, in which case they seldom flourish afterwards; whereas if not sown too early they come up quickly and proceed towards maturity without a check, and as it is the peculiarity of this variety to ripen very early, it is highly desirable they should do so. This kind of Oat should only be sown on land in a high state of cultivation and in a forward climate, and under these circumstances they are the best variety to sow both for produce and value, for although they do not yield a larger crop than some other sorts of Black Oats, yet they fetch 5*s*. or 6*s*. per quarter more money, and the straw is more valuable than most other sorts for the feeding of cattle, &c. The early period of the harvesting too is important, as they are always fit to cut a week or 10 days before the Wheat; this is a great advantage in a wet harvest, and in ordinary seasons it enhances the value of the straw for fodder, it being cut and carted whilst the days are longer.

Hand Labour.—All out-door work has been much impeded, and the labour both of women and men has been comparatively profitless, owing to the continuation of wet weather; however at intervals the ordinary routine of farm work has been continued, such as hedging, trenching, filling manure, preparing and cutting roots for cattle and sheep, sorting and preparing seed Potatoes, breaking and screening guano in readiness for use to be applied for Potatoes and Oat crop.

The Stock.—The damp close weather has lately been unfavourable for the sheep stock; however, as the season is now somewhat advanced, our lambs and ewes also are rapidly proceeding towards maturity. We still continue to send lambs to London, and they realise a satisfactory price. We are now feeding our ewes for the last stage previous to going to market, and in addition to the Mangel, hay, and cake, as described in a former report, they now get a half pint of Beans each, which will soon render them fit for the butcher, particularly those which brought the earliest lambs. Our cow cattle are all kept under cover during the winter months, and the yearlings, both heifers and steers, continue in first-rate condition, being uninfluenced by the changes of weather; they have been fed during the past winter with Mangel, straw, and 1 lb. of oil cake each per day. The heifers and steers are each kept in pairs, in a building which was formerly used as a barn, but now being divided and partitioned with rails, makes excellent accommodation for young cattle, the space allotted to each pair being about 12 feet by 18 feet, the manure being allowed to accumulate under them, litter being added as cleanliness requires. In this way they are fed in the most simple and inexpensive manner, the Mangels, of which they get about 36 lbs. each daily, are cast into the pens just as they are taken from the heap, without cleaning or any preparation, the cattle eating the roots off the floor of the pens, and having the best Oat straw supplied in racks *ad libitum*; by this method of feeding the heifers, whether required for fatting, or for the dairy, are found to be in excellent health and condition. Young stock kept in open yards upon the same food as here described would not turn out in such good condition, and, from our experience in former years, we generally lost some animals by the disease called Quarter-evil; since, however, we have fed them under cover we have never lost an animal from disease during the past 12 or 13 years. The heifers and steers intended for fatting and selling off at 24 months old, will be allowed 2 lbs. of cake each after the middle of April and until they are put on root feeding again in the autumn. The heifers intended for the dairy will receive no cake when the Trifolium and Clover is cut and supplied to them; in the month of August they are sent to the bull, and therefore calve in the month of May following, but will continue to be kept under cover until after they have calved. In this way we have raised for years in succession much finer cows than we could by pasture grazing. *J. B.*

NORTH LINCOLNSHIRE, *March* 17.—The weather since this month came in has been quite unfavourable for spring sowing. On the 4th and 5th inst. we had hard frost; since that time damp, hazy weather, though not much rain has fallen. We seldom think of sowing spring corn in February, and as the weather has proved so unfavourable this last fortnight we have hardly made a start. Upon the drier soils a little has been done, likewise a few Beans here and there. This morning we have made a start with Poland Oats upon Turnip land, but it does not go very well; a dry wind or a few hours' sun would be of good service. We are sowing 4 bushels per acre. We have nothing but Turnip land to sow; should the weather be fine from this time, we could soon sow up to the sheep, gaining at the rate of 12 acres per day. All is sown with the drill in consequence of growing a moderate quality of Barley, we are thinking of sowing a less breadth of that grain, and more Oats, Oat straw being so much more valuable as fodder.

Horses.—These have been employed in ploughing Turnip land, carting manure out of the yards, delivering corn and other odd jobs of the farm.

Steam Cultivation.—We are anxious to get started this week, indeed the middle of last week we got our tackle out, and hardly got started before it came on rain, since which time we have not made another attempt; we shall find the great benefit of steam, as when our horses are sowing, the steam engine will be working the fallows for root crops. We are just starting with our second rope 1400 yards long, which we have got from Messrs. Howard, of Bedford; our first rope has done upwards of 1300 acres of land, and part of it is not near worn out; we have spliced about 500 yards of it to the new rope, the end farthest from the implement, that when we have an extra length wanted we may be able to use it. I attach great importance to having as few "settings down" as possible. The rope I have got from Messrs. Howard is much stronger than my first rope, and has cost no more money, so that I hope it will do more land. One great benefit of steam culture (among many others), is as an auxiliary force—not so much the saving of expense as the value of the work done, being able to work land when it ought to be worked, and when other forces are at other work, for instance, in smashing up Wheat stubbles immediately after harvest when horses could not do it, or are at other work, and going through fallow land early in the spring when horses are engaged spring seeding.

Sheep.—We are in the midst of our lambing season; we put the rams to the ewes on the 11th of October, consequently began lambing on the 7th of March, a good number of lambs are falling under favourable circumstances, having plenty of keeping. Our plan is to mark off the ewes that take the ram the first 10 days, those are drawn into the lambing fold when their time is up; the remainder are kept on the Turnip fold until another 10 days ewes come up; by that means we are not so crowded when lambing. They are all getting Swede and other Turnips with a liberal supply of Oats. Lambs are coming very strong, about two couples to three singles. Our first lot of fat ewes were clipped for Manchester market last Tuesday, where they met a bad market, only bringing some 50*s*. each for 29 lbs. per quarter; they were old ewes. We fear both beef and mutton will drop in price, in consequence of so many of our manufacturers being out of employment. Both hogs and fat sheep are doing well upon cut Swedes, with $\frac{1}{4}$ lb. of best Linseed cake. We hope to show 400 of the former at our ensuing Caistor Fair on the 11th of next month; these are sold in their wool to the graziers in the Lincolnshire market and other places. Cattle are doing well in the yards and will come out full of flesh, having been liberally supplied with roots, together with about 3 lbs. of Oil-cake. *S.*

Miscellaneous.

Possibility and Importance of Cheap Goods Traffic on Railways.—I will show you the importance as regards this traffic of a level line. To passenger traffic directness is essential. Every mile saved is two minutes saved, because passenger trains are so much below the power of the engines; although they are a little retarded in ascending, they make it up very nearly in descending. But the train never approaches the point at which the engine is brought up—I mean an ordinary train, with the engine in good order; and, therefore, as regards passenger traffic, providing the gradients are within reasonable limits they are not material to the speed, or even to the load; but when you come to have a coal traffic and a mineral traffic, which must be at a low cost, because it will not bear the charges which a railway is compelled to make—it is a totally different thing. Gradient, as regards coal traffic, has the same effect that distance has with regard to passenger traffic. Now I should observe that the promoters stated they would work the line, putting the rolling stock on, at half a farthing per ton, per mile, and I applied my mind to see upon what ground that was established. I find that the loads they calculated upon taking at the rate of 15 miles an hour, are loads which engines are taking when measured by the gradients over which they pass, and therefore the engines may do it. Then I know that at 15 miles an hour the wear and tear are reduced to the minimum, and the rolling stock will last as long as it would live, except from the effects of decay. The engines and the permanent way itself are subject to the most moderate action, and the cost of their maintenance reduced to the smallest possible amount. Then I investigated the elements of charge, because they are free from all the heavy expenses of passenger establishments, stations, and attendance; the liberty to pass roads anywhere they please, because the trains are not to pass at the rate of 50 miles an hour. The trains are under control, and I am perfectly satisfied they can do it for half a farthing per ton per mile, and even with a profit. If that be so, looking at the enormous expansion of traffic that must attend a railway of that kind, even for the agricultural interest, it will be of incalculable use, because it would enable parties to use it for purposes of which we have no conception. Manures could be carried for 100 miles where now they can be carried only 10 or 12. Grain can be brought from Lincolnshire to London for 6*d*. a quarter, and bricks, and even timber, will be diffused at a cost which will be a source of valuable revenue to the line, and an incalculable benefit to the district. *Mr. Bidder, Chairman at a Meeting of the Norfolk Railway Company.*

Village Readings.—I have met with instances where Miss Nightingale's "Notes on Nursing" have been read with much interest to classes of adult persons, and to advanced classes of girls in schools; and I have been assured that the information thus promulgated has been early attended with instances of beneficial sanitary reforms at their homes. The discussions on the text have elicited interesting local illustrations, and valuable directions of practical applications of the principle to peculiar local conditions. Miss Nightingale has prepared a new and cheap edition of the work, with some abridgement, but with important additions, for the use of the labouring classes. I venture to recommend, as highly important, that at each Mechanics' or Literary Institution, some one should be asked to read particular chapters of the work, as papers, to the members of the Institution, and then take discussions upon them, in which the observations of members might be contributed. (It were most desirable if some physician, or medical or health officer, could be got to undertake the task.) The chapter in the new edition on "Ventilation and Warming" would form a good paper for one evening's discussion. The chapter on the "Health of Houses" would also serve as another most important chapter for another evening's reading and discussion. The short chapter on "Personal Cleanliness" would supply a text for a separate distinctive discourse and discussion. Considering the immense proportion of deaths in the infantile stage in the United Kingdom, the great mass of which are preventible, the chapter on "Minding Baby" is one of commensurate importance, on which the attendance of the females of the families of members and their friends might be specially invited; and the medical practitioners of the neighbourhood should be asked to

state the results of their observations. Amongst competent medical professors of sanitary science, in America as well as in England, I have met with but one opinion, coinciding with my own, on the practical soundness and great value of the expositions in the "Notes," of sanitary principles, made from the authoress's own long and varied observation. By the liberality of Mr. Harrison, I am enabled to propose to the Council to forward to the managing committee of each Institution a copy of the new edition of the "Notes," with the view to their consideration of the eligibility of their use for the purpose I have suggested. It may be almost unnecessary to add, that much of the practical suggestions of the "Notes" would be most congenial to female classes. *Edwin Chadwick, Richmond, Surrey, in the Journal of the Society of Arts.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, March 27, 1862

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	21	29.51	35	34	N.E.	1	8	40	32	43	32	0 54*	43	44½
Saturday ..	22	30.00	37	34	N.	2	6	40	32	47	31	0.12†	42½	44
Sunday ..	23	29.83	37	36	S.E.	2	8	49	34	76	30	0.14	43	44
Monday ..	24	29 58	52	51	S.W.	2	6	53	37	59	37	0.36	43½	44
Tuesday ..	25	29.49	54	52	S.	1	5	65	47	92	43	..	46	44
Wednesday .	26	29.53	47	47	S.E.	1	8	60	45	75	33	0.05	47	45
Thursday ..	27	29.44	50	49	S.E.	1	6	57	46	70	46	0.14	48	46

* Melted Snow. † Melted Snow and Rain

Calendar of Operations.

MARCH.

West Sussex: *March* 11.—One of the sharpest frosts that we have had happened on the 3d and 4th, and this has been followed by very rough and heavy rains, and now we must have patience a little longer. Every kind of feed is abundant, and it will hardly be possible to clear off in time for Barley after the Swedes. The young seeds look promising, and as the weather has been easy on the hay, we may expect to be able to provide pretty well for next season. Wheat looks well, perhaps some of it too forward. The quantity of corn not threshed out is perhaps rather less than usual, and with Wheat the market is not over full; but Barley has lately been a dull trade at lower prices. We have had a heavier supply of it this season, owing to a partial failure in the Wheat; Oats and Peas remain about the same. We shall be getting in the spring corn as soon as possible, and then we must get ready for the Mangel, and some of the Wheat will have to be top-dressed with guano, which is the best manure that we can find on our heavy cold land for almost any crop. The ewes and lambs have done rather better than usual, but this has not been generally the case. Some have had very bad luck. There have been a few of the cross bred lambs in the market, but they have not sold so well. Beef has been plentiful, but the quality generally has not been superior, but we may expect that some of it will come out late and well; as it is so plentiful, many will keep them on to a late period, and we may find the stall fed and grass fed to join each other sooner than they usually do. *G. S.*

Notices to Correspondents.

Geo Cheshire: *Camphor.* Apply to the Trustees of W. Crosskill, Beverley, Yorkshire.

G. A. How much Arthur Young's "Farmer's Calendar" departs from its original may be gathered from the opening sentence of its preface, which we here transcribe: "So much of the original work has been cancelled that the editor has to apologise for his title-page. The serial publication of the book was begun before he had realised how much of the 'Farmer's Calendar,' written more than half a century ago, was obsolete. And the name of Arthur Young has been thus attached to an almost entirely new book, not one twentieth part of which is his own."

Disease. Acid: ... it is the characteristic and efficient agent in McDougall's disinfectant; perhaps this notice may procure an intimation of where you can obtain it in quantity.

Egyptian Lentils: *Hingham.* Apply to Messrs. Booker, Mark Lane.

THE LONDON MANURE COMPANY (Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
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Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0
These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

For Spring Corn. Also Top Dressing to Wheat and Grass.
SOMBRERO ISLAND AMMONIATED GUANO, or NITRATE of SODA, direct from the Docks. Genuine as imported.
This Guano has been extensively used since 1858, and has given great satisfaction (as can be seen by the testimonials received). It is cheap, and in many respects very superior to Peruvian Guano.
Orders received by any of the appointed Agents in the country; and W. Pickford, 148, Fenchurch Street, E.C, sole Agent in London to the Importers.
A parcel of fine thin LINSEED CAKE on Sale, 9l. 2s. 6d. per ton at the wharf.

New Source of Ammonia.
To Manure Manufacturers and Dealers.
ULMATE of AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that Wool contains more Nitrogen (yielding Ammonia) than any other kind of animal matter, proves the Ulmate of Ammonia to be a highly valuable manure, the Analyses by Professor Voelcker, the Chemist of the Royal Agricultural Society, and other high authorities, showing a per centage of Ammonia exceeding 14 per cent., or equal to an average sample of Peruvian Guano, while, from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of ammonia. Being a fine dry powder, it is peculiarly suitable for use in the manufacture of manures, and preferable to the ordinary salts in use, sulphate of ammonia, nitrate of soda, &c.
Samples, prices, and all information will be forwarded on application to Frederic J. Cornwell, Broker, 7, Great St. Helens, E.C.
LINSEED CAKES, RAPE CAKES, COTTON CAKES, also all Materials used in the Manufacture of Manures, at the lowest market prices.

REIGATE SILVER SAND, first quality, 12s. per ton; 1s. per bushel. Delivered free in 2 bushel Bags to the Reigate Junction Railway. Bags, 1s. each; on hire, 4d. each.
A large quantity of superior BOG MOULD and PEAT at a moderate price.
William Short, Ladbroke Road, Red Hill, Surrey.

JEAN VERSCHAFFELT, Ghent, Belgium, begs to recommend the following:—
RHODODENDRON JEAN VERSCHAFFELT, strong plants, 12s. each.
CAMELLIA LEOPOLD I., 21s. each.
AZALEA INDICA PROF. LEMAIRE, 8s. each.
RHODODENDRON BARON DE CRŒSER, 6s.
All orders to be directed to Jean Verschaffelt, The Nursery, Rue de la Caverne, Ghent, Belgium.

Imported Italian Rye-grass,
Specially selected and recleaned, weighs 18 lbs. per bushel, and gives a growth more than double that of the usual importations.
W. DRUMMOND and SONS have much satisfaction in calling attention to this article, which will be found very superior to the general run of foreign Italian. Price 7s. per bushel.
Carriage paid to the principal Railway Stations, in quantities of 6 bushels and upwards.
W. Drummond & Sons, Seedsmen, Stirling, N. B.

Agriculture.
W. DRUMMOND and SONS, Stirling, claim special attention to their ROOT SEEDS, which embrace several Improved Stocks of SWEDES and other TURNIPS, MANGEL WURZEL, &c.: also to remarkably fine samples of all the Varieties of CLOVERS, PERENNIAL and ITALIAN RYEGRASS and NATURAL GRASSES,—priced Catalogues of which, together with every description of seed required for the Farm, may be had, prepaid, on application.
Seeds forwarded Carriage Free to all parts of the Kingdom.
Seed Warehouse, Stirling, N.B.

DRUMHEADS for CATTLE, true and extra fine, 3s. 3d. per 1000; RED PICKLE PLANTS at 4s. per 1000; LETTUCE PLANTS, 4s. per 1000; EARLY CABBAGE, 3s. 6d. per 1000, packing included.
Thomas Welland, Surrey Gardens, Godalming, Surrey.

Dioscorea Batatas, or Chinese Potato.
J. IVERY and SON beg to inform their Patrons that this is the most favourable month for planting this useful Vegetable. Strong sets are now ready, at 1s. per dozen, or 7s 6d. per 100; likewise whole Tubers, from 2s. 6d. to 6s. per dozen.
Dorking Nursery.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, Nurseryman and Seedsman, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3s. per lb., or 16l. per cwt.

Wood's Defiance Cauliflower.
WM. WOOD and SON have much pleasure in introducing this new and superior CAULIFLOWER to the notice of their friends and the public generally, and having tested it for several years against Walcheren and other approved varieties, they do not hesitate to pronounce it the best Cauliflower in cultivation. It is quite hardy, of dwarf habit, and produces immense large heads, which are very compact, and most deliciously flavoured.
Stock limited; price per packet, 2s. 6d.
Wm. Wood & Son, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex.
*** SEED CATALOGUE post free on application.

Yorkshire and Lincolnshire Nursery and Seed Establishment.
MARTIN and SONS respectfully offer a very superior Stock of TURNIP SEED, as under, the produce of their Seed beating all others at one of the principal Shows in Yorkshire, winning the "two Five Pound Silver Cups," the "Second principal Prize," and several of the minor prizes.
CATALOGUES with particulars on application.
Yorkshire Prize Swede Turnip ..
Golden Melon do. ..
Rouge et Blanc Stone do. .. } 1s. per lb.
Improved White Globe do. ..
Russian Green-top White do. ..
Skirving's Green-top, Marshall's Purple-top, and all the principal kinds of Swede and White Turnips, at 9d. per lb.; by the bushel or cwt, cheaper.
KITCHEN GARDEN SEEDS.
Martin & Sons' No. 1 Collection contains 20 quarts Peas and other sorts in proportion, for 3l.; No. 2 Collection, 2l.; No. 3, 1l. 10s.; No. 4, 21s.; No. 5. 15s.
FLOWER SEEDS.
The 80 varieties which caused so great attraction and were admired by the hundreds of persons passing the Park Nursery Hull, for 5s., free by post.
GLADIOLUS.
40 choice varieties for 1l. 5s., carriage paid.
NURSERY STOCK.
Our GENERAL NURSERY CATALOGUE may be had on application. We abound in Laurels, Yews, Arbor-vitæ, Thujopsis, Wellingtonias, Cedars, Juniper, Chestnuts, Limes, Maples, Mountain Ash, Weeping Ash, Weeping Elm, Privet, &c.
Nursery and Seed Establishment, Cottingham (A.D. 1788). Hull Nursery, Spring Bank; Hull Seed Establishment, Junction Street.

CHARLES NOBLE would remind all those interested that his Selection of RHODODENDRONS is unrivalled; that his Selection of CONIFERS is worthy of notice, and his Selection of HARDY EVERGREENS worth an inspection. The following handsome well-grown specimens can be obtained on very advantageous terms, and purchasers will consult their interests by visiting the Sunningdale Nursery, Sunningdale Station, South Western Railway.
Wellingtonia gigantea, 1 to 6 ft.
Thujopsis borealis, 1 to 4 feet
Thuja Warriana, 4 to 5 feet
„ Lobbii, 1 to 4 feet
„ gigantea, 1 to 4 feet
„ americana, 6 to 10 feet
Taxus fastigiata, 3 to 7 feet
„ baccata, 3 to 5 feet
Taxodium distichum, 4 to 6 ft.
Spiræa Nobleana, 3 to 5 feet
„ callosa, 3 to 5 feet
Skimmia japonica, fine blooming plants
Retinospora ericoides, 1 to 3 ft.
Pinus austriaca, 1 to 5 feet
„ Laricio, 3 to 5 feet
„ insignis, 2 to 5 feet
„ excelsa, 1 to 3 feet
„ Cembra, 1 to 3 feet
„ Benthamiana, 2 to 6 feet
Juniperus Virginiana, 1 to 10 ft.
„ argentea, 1 to 4 feet
„ chinensis, 5 to 7 feet
„ sphærica, 2 to 4 feet
Cupressus Lawsonii, 1 to 4 feet
„ Thyoides, 1 to 4 feet
Cephalotaxus Fortunii, 2 to 4 ft.
Cedrus Deodara, 1 foot to 8 feet
„ atlantica, 8 to 10 feet
Berberis japonica, 1 to 4 feet
„ Beallii, 1 to 4 feet
„ Darwinii, 1 to 4 feet
Abies spec. Vancouver's Island
„ lasiocarpa
„ Pinsapo, 1 to 3 feet
„ orientalis, 1 to 6 feet
„ Douglasi, 2 to 3 feet
„ Nordmanniana, 2 to 5 ft.
„ Menziesii, 3 to 10 feet
Araucaria imbricata, 1 to 8 ft.
Ten Minutes' walk from the Station.

R. GLENDINNING has great pleasure in offering the undermentioned fine CONIFERS, which have been annually transplanted, and will move with perfect safety:—
Araucaria imbricata (perfect specimens), 2 to 9 feet
Cedrus Deodara „ „ 1 to 10 feet
„ atlantica „ „ 1 to 10 feet
Cupressus Lawsoniana, 1 to 3 feet
„ macrocarpa, 1 to 15 feet
„ Nutkaensis (Thujopsis borealis), 1 to 8 feet
Picea nobilis (fine), 1 to 6 feet
„ Nordmanniana, 1 to 10 feet
„ Pinsapo, 1 to 6 feet
Pinus Benthamiana, 1 to 5 feet
„ excelsa, 1 to 12 feet
„ Fremontiana, 1 to 4 feet
„ Jeffreyi, 1 to 2 feet
„ Koraensis, 1 to 4 feet
„ monticola, 1 to 10 feet
„ tuberculata, 1 to 4 feet
Taxus baccata erecta (splendid specimens), 1 to 9 feet
Also all the other leading kinds in fine well grown plants.
The above are remarkably handsome plants, and perfectly healthy, not having suffered from the severity of the past winters. Price on application.
Chiswick Nursery—March 29.

FINE NEW CLOVER SEEDS.
IMPORTED ITALIAN RYE-GRASS:
GRASS SEEDS for PERMANENT PASTURE and for LAWNS.
The above are fully described, with lowest Cash Prices at which they can be delivered Carriage Free, in WHEELER'S "Little Book for 1862," post free for four stamps.
J. C. WHEELER & SON, Seed Growers, Gloucester.

GRASS SEEDS for PERMANENT PASTURE.—Gentlemen contemplating laying down Land to Permanent Pasture this season, are respectfully requested to send for our little Book on GRASSES and CLOVERS, profusely illustrated, and partly written by Professor Buckman, F.L.S., F.G.S., &c. Post free for 4 stamps.
J. C. WHEELER & SON, Seed Growers, Gloucester.

Grass Seeds for all Soils.

SUTTON AND SONS having one of the largest and most complete Stocks of GRASS SEEDS in Europe, are able to supply every kind in cultivation, either separate or mixed, and at low prices in large quantities.
For prices apply, stating quantities required, to
[SU]TTON & SONS, Royal Berkshire Seed Establishment, Reading.

The Alsike Hybrid Clover.
Perennial Red Clover.
True Perennial White Clover.

THE above kinds of CLOVERS will take well on land which has proved Clover-sick when sown with the common kinds of Clover.
They are all included in Messrs. SUTTON'S MIXTURE of GRASS SEEDS for PERMANENT PASTURE, and they may be purchased separately.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

WHEELER'S ORANGE GLOBE MANGEL, WHEELER'S IMPERIAL SWEDE, GRASS SEEDS for PERMANENT PASTURE, GRASS SEEDS for LAWNS,
And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.
We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.
Our "LITTLE BOOK" sent free for four stamps.
J. C. WHEELER & SON, Seed Growers, Gloucester.

Farm Seeds.

PAGE and TOOGOOD being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured, possess greater powers of germination, and are a desirable change for the northern and midland counties.
To publish the numerous testimonials P. & T. are favoured with is impossible, but the fact of their having had the honour for the last 8 or 10 years to supply the ROYAL FARMS at OSBORNE, will be a sufficient guarantee that their Seeds are of superior quality, and their prices are as low or lower than any respectable house in the Kingdom.
Present prices, Carriage free to all parts of England:—

Per lb.—	s.	d.	Per lb.—	s.	d.
Skirving's Swede ..	0	8	Yellow Tankard	0	9
Page's Improved Hardy	1	0	Fielder's Hardy Green Round	0	6
Fielder's Improved White	0	9	Early Six Weeks .. .	0	6
Sutton's Champion ..	1	0	Kohl Rabi	3	6
Ashcroft	0	9	New Osborne Mangel.		
Greentop	0	8	Yellow Globe	0	6
Sussex or Jeffrey's ..	0	9	Page's Imp. OrangeGlobe*	0	8
Tankard	0	9	Red Globe	0	7
Red Round Turnip ..	0	8	Elvetham Long Red ..	0	8
Page's Impvd. Red Globe	0	9	Long Red	0	6
Scotch or Bullock ..	0	8	Long Yellow	0	8
Pomeranian White Globe	0	8	White Belgian Carrot ..	1	3
Early Green Globe ..	0	8	Cattle Cabbage	2	6
Early White Tankard ..	0	8	Cattle Parsnip	1	0
Page's Imp. Purple ditto.	1	0	Dwarf Essex Rape ..	0	4
Green ditto	0	8			

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.
Buckwheat, Mustard, Linseed, Tares, and Sainfoin. Fine Permanent Pasture and Lawn Grasses, as sown at the Royal farms, Osborne, for the last eight years, 1*s.* 3*d.* per lb.
Genuine Hampshire-grown Alsike Clover, Italian Rye-grass, Clover, &c., at lowest market prices. Special contracts for large quantities.
Royal South Hants Seed Establishment, Southampton.

TRUE SKERRY BLUE POTATO.—I will deliver in Liverpool or Glasgow this truly valuable Potato at 7*s.* per cwt. (of 112 lbs.)
It was raised in Skerry, Co. Antrim, about 3 or 4 years ago, where I this year imported it from. It possesses a fine flavour, very strong habit, and is one of the largest producing Potatoes ever planted. It will yet be the only Potato for extensive field culture.
ANDREW G. DALY, Hill Street, Newry, Nursery and Seedsman, Ireland.

EXTRAORDINARY POTATOES.—A Gentleman, resident in the country, OFFERS for SALE a few bushels of POTATOES of a most wonderful kind. For the table they are unsurpassed, and their yield is astonishingly large, even on indifferent soil; and further, the disease never attacks them.
For price, &c., address "Z. Z." (No. 479), *Field* Office, 346, Strand, London, W.C.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.
Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.
Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

To the Seed Trade.

H. AND F. SHARPE can offer on very advantageous terms the under-mentioned sorts of SEEDS of 1861 growth and raised from selected stocks:—

Large York Cabbage	Sangster's No. 1 Peas
Long Red Surrey Carrot	Bellamy's Green Marrow Peas
James's new Intermediate do.	Early Long-pod Beans
Fine Red Pickling Cabbage	Mackie's Monarch do
Green Kohl Rabi	Mangel Wurzel in sorts
	Turnip in sorts

Seed Growing Establishment, Wisbech.

TURNIP, MANGEL, and AGRICULTURAL SEEDS of best Selected Stocks.—First class samples, crop 1861, at growers' prices.
JAMES FAIRHEAD & SON, Seed Growers and Merchants, 7, Borough Market, London, S.E.

JOHN PERKINS'S YELLOW GLOBE MANGEL WURZEL SEED, 6*d.* per lb. Raised from large transplanted bulbs and selected under his own superintendence. PRICED LIST of other Farm Seeds post free.
JOHN PERKINS, Seed Merchant, 52, Market Square, Northampton.

HOOPER'S INCOMPARABLE PEA.—The finest and richest flavoured Pea in cultivation, yielding a supply by successive sowings from the end of June to the end of October. Price 2*s.* per quart.
HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.

KITCHEN GARDEN SEEDS,
FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND
THOS. GIBBS & CO.
Corner of
HALF-MOON St.
PICCADILLY,
London.
APPOINTED AP. 3. 1844
THE SEEDSMEN

AGRICULTURAL SEEDS,
GRASS SEEDS,
FARM SEEDS,
of all descriptions.

Thomas Gibbs & Co.
CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

PETER LAWSON & SON,
THE QUEEN'S SEEDSMEN,
EDINBURGH, LONDON, AND HULL,
27, GREAT GEORGE STREET, WESTMINSTER, S.W.,
Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

SUTTON'S
YELLOW GLOBE MANGEL WURZEL.

The heaviest and best sort known, price 8*d.* per lb., or 63*s.* per cwt.
All other sorts 8*d.* per lb.

PRICED LISTS of FARM SEEDS Post Free.

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

SUTTON'S
GRASS and CLOVER SEEDS for PERMANENT PASTURE.

The Seeds of each sort may be seen in large quantities in Messrs. SUTTON'S Warehouses, and growing Specimens of most of them in their Sample Grounds. The best and most suitable of them are contained in Messrs. SUTTON'S Mixtures for Permanent Pasture. They may all be purchased separately at moderate prices, according to quantity required.

Botanical Names.	English Names.
Achillea millefolium	Yarrow
Alopecurus pratensis	Meadow Foxtail Grass
Anthoxanthum odoratum	Sweet Vernal Grass
*Agrostis stolonifera	Creeping Bent Grass
*Cynosurus cristatus	Crested Dogstail Grass
Dactylis glomerata	Round Cocksfoot Grass
*Festuca duriuscula	Hard Fescue Grass
*Festuca elatior	Tall Fescue Grass
*Festuca gigantea	Giant Fescue
*Festuca heterophylla	Various-leaved Fescue Grass
*Festuca pratensis	Meadow Fescue Grass
*Festuca ovina	Sheep's Fescue Grass
*Festuca rubra	Reddish Fescue Grass
*Festuca tenuifolia	Fine-leaved Fescue Grass
*Festuca loliacea	Darnel-leaved Fescue
Glyceria fluitans	Floating Sweet Grass
Glyceria aquatica	Water Sweet Grass
*Holcus avenaceus	Tall Oak-like Soft Grass
*Lolium Italicum	Italian Rye Grass
*Lolium perenne	Perennial Rye Grass

Botanical Names.	English Names.
*Lolium perenne Stickneyanum	Stickney's Perennial Rye Grass
*Lolium perenne Paceyanum	Pacey's Perennial Rye Grass
*Lolium perenne sempervirens	Evergreen Rye Gasse
*Lolium perenne tenue	Slender Perennial Rye Grass
Phleum pratense	Timothy Grass
Poa pratensis	Smooth-stalked Meadow Grass
Poa trivialis	Rough-stalked Meadow Grass
Poa nemoralis	Woodside Meadow Grass
Poa angustifolia	Narrow-leaved Meadow Grass
Poa fertilis	Fertile Meadow Grass
Poa sempervirens	Evergreen Meadow Grass
Plantago lanceolata	Narrow-leaved Plantain Rib Grass
Trifolium repens	Common White Clover
Trifolium repens perenne	Perennial White Clover
Trifolium pratense perenne	Perennial Red Clover
Trifolium minus	Yellow Suckling
Medicago lupulina	Yellow Trefoil or Hop Clover
Lotus corniculatus	Birdsfoot Trefoil

As some Agriculturists prefer making their own selection of Grass Seeds, the above List is presented, but the greatest economy and certainty of success will be obtained by procuring our Mixtures, which are specially adopted for various soils, at 24*s.* to 32*s.* per acre.

SUTTON & SONS have had the honour of supplying their GRASS SEEDS to the several

ROYAL FARMS, and to the ROYAL HORTICULTURAL SOCIETY of LONDON, | THE CRYSTAL PALACE COMPANY, THE PEOPLE'S PARK (HALIFAX), THE ALDERSHOT CAMP.

And to most of the Public Gardens, Asylums, &c., in the Kingdom.

PRICED LISTS of the above, and of CLOVER, RYE-GRASS, TURNIP, MANGEL WURZEL, and other FARM SEEDS may be had post free on application, addressed

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

PLYMOUTH SEED COMPANY,

PLYMOUTH,

ARE NOW EXECUTING ORDERS FOR ALL KINDS OF

FARM SEEDS,

Which have been selected with the utmost care from the best sources in this country and abroad, therefore they can strongly recommend all Seeds as being of the first quality.

MIXED GRASSES for LAYING DOWN LAND to PERMANENT PASTURE ...	24s. to 32s. per acre.
MIXED GRASSES for PERMANENT LAWNS	16s. per bushel, 1s. per lb.
MIXED GRASSES for HEATHY or MOORY LANDS	20s. per acre.
MIXED GRASSES for UPLANDS or SHEEP WALKS	24s. to 32s. per acre.
MIXED GRASSES for WATER MEADOWS...	25s. per acre.
MIXED GRASSES for RENOVATING OLD PASTURES	9d. per lb.
MIXED GRASSES for CEMETERIES, CHURCHYARDS, &c.	16s. per bushel, 1s. per lb.

	Per lb.—s. d.		Per lb.—s. d.
WHITE DUTCH CLOVER ...	10d. to 1 0	SCOTCH TURNIPS	0 10
RED " " ...	6d. to 0 10	GLOBE, in varieties	0 8
COW GRASS	8d. to 1 0	MANGEL WURZEL, common varieties	0 8
TREFOIL	6d. to 0 8	FISHER HOBBS' ORANGE GLOBE...	2 6
ALSIKE, strongly recommended... ...	2 0	MORTON'S YELLOW GLOBE... ...	1 6
PLYMOUTH IMPROVED PURPLE-TOP SWEDE TURNIP	1 0	LARGE WHITE BELGIAN CARROT	1 3
SKIRVING'S PURPLE-TOP Ditto ...	0 10	DRUMHEAD CABBAGE	2 6

And all other Farm Seeds at moderate prices.

KITCHEN GARDEN SEEDS, in Collections, which have given great satisfaction, 10s. 6d., 15s., 20s., 40s., 60s., 100s.

FLOWER SEEDS, 100 packets, free by post ...	20s.	**FLOWER SEEDS**, 25 packets, free by post ...	6s.
" 50 packets " ...	12s.	" 12 packets " ...	3s.

CATALOGUES AND PRICE CURRENTS

Can be had on application, and every information given by applying to the Company,

UNION ROAD, PLYMOUTH, DEVON.

J. C. WHEELER & SON, Seed Growers,

GLOUCESTER.

Alopecurus pratensis (Meadow Foxtail).

KNOWLEDGE of all matters connected with Grasses can hardly be too highly prized by the Farmer, as it gives him a practical insight into the nature of his land, which can hardly be otherwise attained. The importance of this will be most clearly made out by a study of the Foxtails.

The example before us is called Meadow Foxtail, as it is a constant denizen of rich and especially Lowland Pastures. The generic name is merely a translation of its common English name of Foxtail, which, from the form of its spike, it is supposed to resemble.

There is a species, common to poor Arable, known as the Slender Field Foxtail (A. agrestis). This, in the cultivated field, is an evidence of want of condition in the land, which can usually be remedied by drainage and liberal treatment.

A smaller form of Foxtail occurs in ditches and wet places; it is called the Procumbent Foxtail (A. geniculatus). Its presence in any situation, however dry at the time, shows that water was there for a great part of the year.

Meadow Foxtail, the only species employed by the Farmer, has a soft hairy seed, which should be distinguished from the comparatively smooth seed of the Field Foxtail, as the latter is a weed of a very pernicious kind. We always recommend some of this Grass in laying down Permanent Pasture in rich lowland positions, leaving it out where our seed is for dry uplands.

Grass and Clover Seeds for Permanent Pasture at 30s. per acre.

To this part of our business we have devoted some degree of attention, and we are pleased to say with some success. We are animated by this success to renewed efforts, and it will be our study to send such a mixture of the most nutritious and suitable Grasses, and such a mixture of Clover, as to create, in as short a time as possible, a rich Permanent Pasture, arranged and mixed to suit any particular soil, situation, or locality, which may be described to us.

The different soils and situations may be roughly classed under the following heads:—

1. Medium loamy soil.
2. Heavy stiff clay.
3. Light brashy or gravelly.
4. Under trees, as in orchards, parks, &c.

For each or either of the above we will supply a proper and suitable mixture, properly arranged, every sort complete, for 30s. per acre; so that all the purchaser would have to do would be to write and tell us the number of acres, and we would, without any further trouble on his part, prescribe and arrange the proper mixture and forward it to his address without delay.

Grasses and Clovers for One or Two Years' Lay, usually called "Seeds."

For One Year's Lay, at 14s. 6d. per acre | For Two Years' Lay, at 17s. 6d. per acre.

The quantity required per acre will be about 15 lbs. of mixed Clover Seed, and from 1 to 2 pecks of Grass seed, to be sown about the end of March or beginning of April, with either Wheat, Oats or Barley. "The seed is then to be harrowed or bush-harrowed across the drills of corn, if these are up, and rolled."

We are extremely careful in the selection of the finest and heaviest Grasses, and the cleanest and purest samples of Clovers for these "Seeds." Every season we supply our customers with "Seeds" for hundreds of acres, and with the greatest success. We can highly recommend our mixture as being of the very best quality.

We deliver our Grass and Clover Seeds Carriage Free by Rail, and allow 5 per cent. discount for Cash, according to the terms published in our "Little Book."

J. C. WHEELER AND SON, SEED GROWERS, GLOUCESTER.

Upwards of 2000 Cases have been reported as Cured by

JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s. 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.

Seed Warehouse, 10 and 11, Exchange Street, Norwich.

To Nurserymen, Gardeners, and Seedsmen.

ALDERSON'S TOBACCO PAPER, of surpassing quality, being prepared by a superior process, in which the necessary strength is concentrated. It possesses the essential oil of Tobacco, and can be warranted the most effectual remedy for the extirpation of the Green Fly. References to the most eminent gardeners can be given. Goods to the Trade at wholesale prices, carriage free.

Address James Alderson, 30, Nelson Street, Leeds.

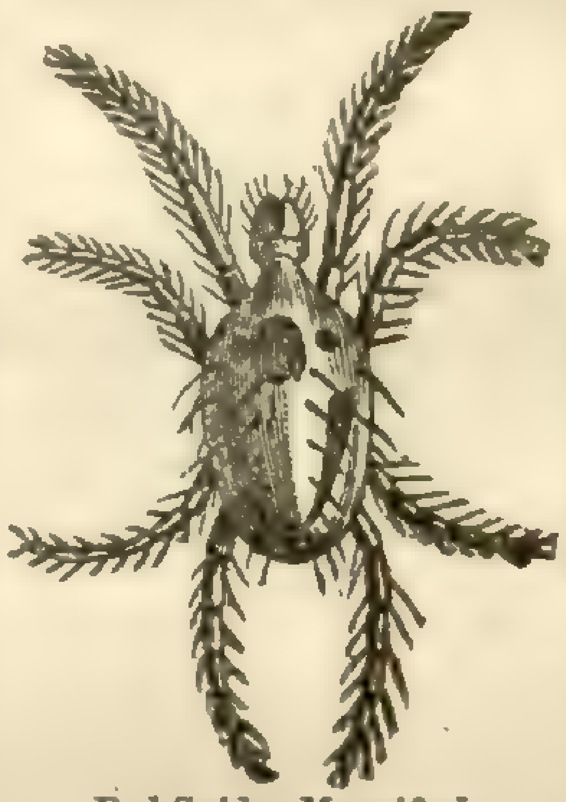
Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

Page & Toogood, Royal South Hants Seed Establishment, Southampton.



Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by Price's Patent Candle Co., Limited.

Magnified Aphides.

NEAL'S PATENT APHIS PASTILS.

1s. and 2s. per packet.

From *Lloyd's Weekly*, July 7th, 1861.

"All we know is, that one of our larger houses took half a pound of tobacco, 2s., and that three pastils, 1s., do the same with no trouble. We have a score of letters on the same subject, but all to the same purport."

NEAL'S PLANT SOAP,

1s. per packet,

Makes the cheapest and most effectual Wash for destroying Mealy Bug, Thrips, Red Spider, American Blight, and all other Insect Pests.

Each Packet contains Four Cakes, each Cake makes One Gallon of Wash.

Sold by all principal Seedsmen.

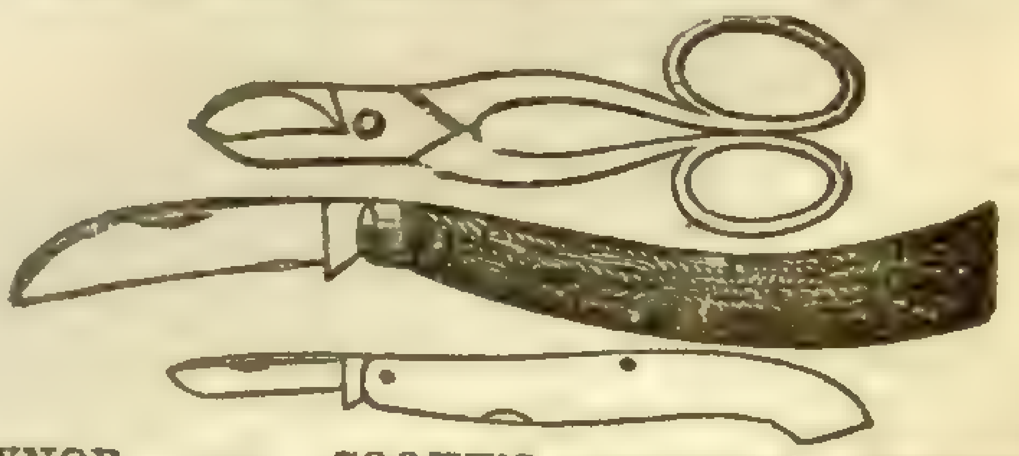
Patentee: J. Neal, Edward Street, Birmingham.

Wind Power.

J. R. PEILL, 17, New Park Street, Southwark, S.E., begs to inform intending purchasers that he has now increased facilities for Manufacturing the Patent WIND ENGINES for Pumping, Grinding, Chaffcutting, Pulping, &c.

Prospectuses and all information may be obtained by enclosing one postage stamp, and a Wind Engine in full work may be inspected on the Premises daily.

Paxton Works, Sheffield, Established 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c. Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

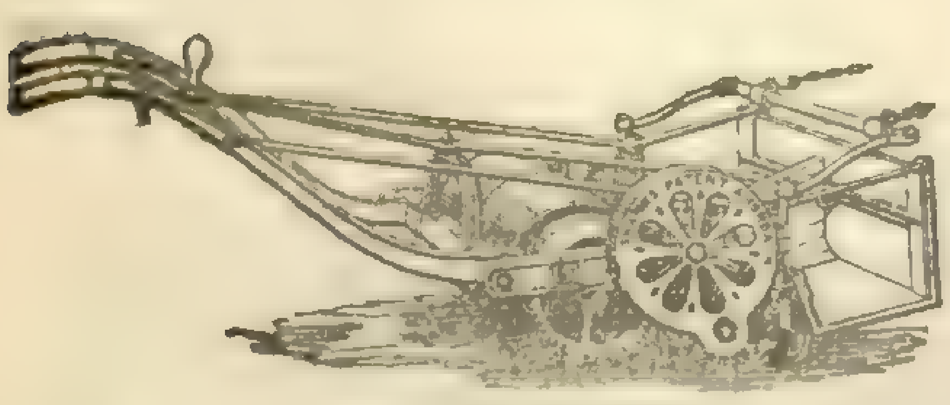
WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an article superior in quality to anything we have hitherto been able to offer, in PRUNING, BUDDING, and GRAFTING KNIVES, VINE and PRUNING SCISSORS, GARDEN SHEARS, &c., owing to their being tempered under an entirely new process, which renders the blade tough and not liable to break, and also gives the edge a lasting keenness which we can warrant them to retain for at least double the time they would under the old method of tempering, thus facilitating the work and saving the time usually lost by having constantly to renew the edge by sharpening, consequently making them more durable in wear and better adapted for all kinds of work, every blade being guaranteed of the same temper.

Caution. None are genuine except marked Saynor, or Saynor, Maker. Other marks would cause the purchaser disappointment.

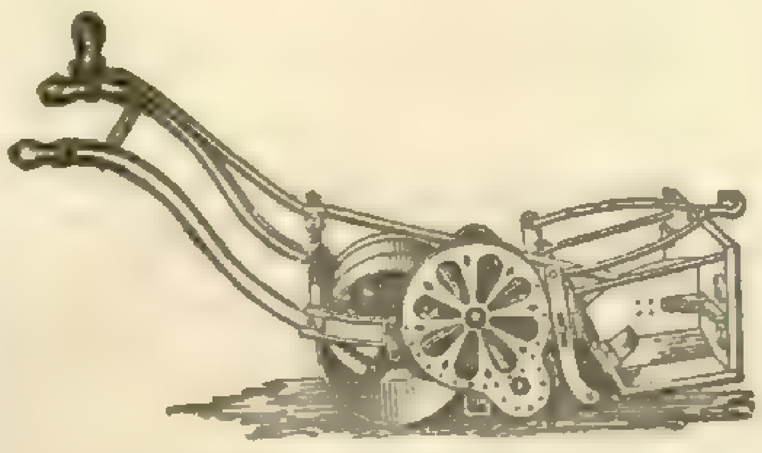
SHANKS' NEW PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

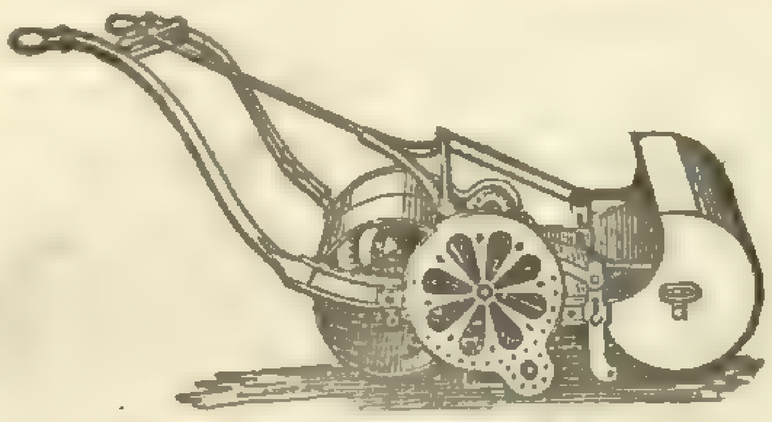
WITH SILENT MOTION IF SPECIALLY DESIRED.



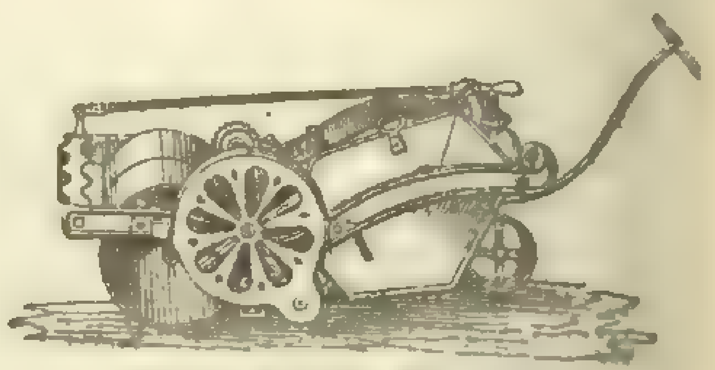
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

J. B. BROWN AND CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effect of the improvements of previous years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.		
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0	*Drawn by a Horse.*
No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | Width of Cutter. No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

PRICES.

SHANKS' NEW PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.		
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*
No. 9.—22-inch Machine	8 7 6	*Easily Worked by Two Men.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*
No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man.*
No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*
No. 16.—12-inch Machine	5 0 0	*Ditto by a Boy.*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

*** *The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

SOLE AGENTS FOR LONDON:

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

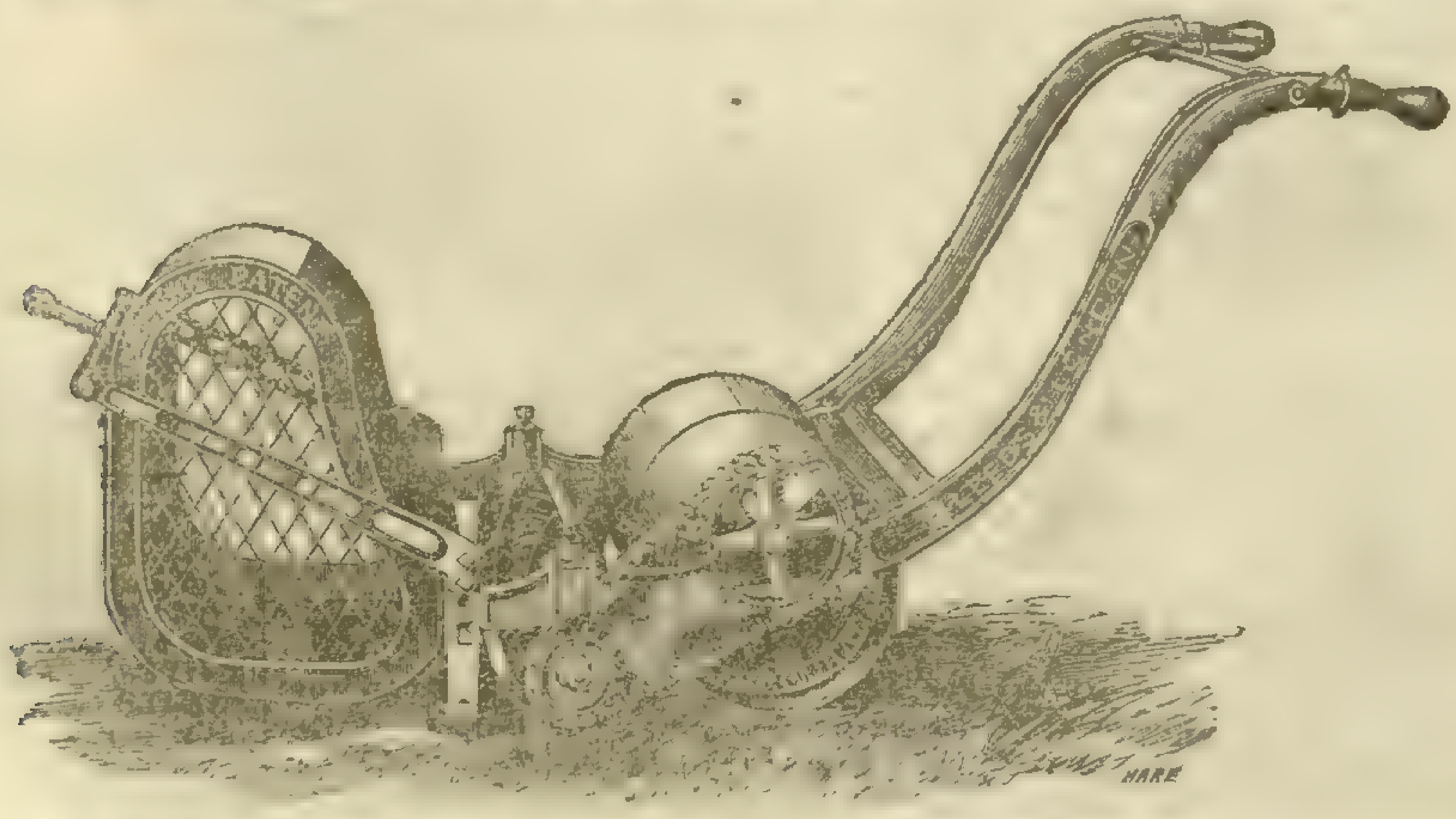
GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.



The Improvements are of such an important character that all users should not fail to make themselves acquainted with them.

For ILLUSTRATED PRICE LISTS, with full particulars, address

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

OR ANY OF THE PRINCIPAL IRONMONGERS AND SEEDSMEN, &c., IN THE KINGDOM.

JOHN WARNER AND SONS,
BELL and BRASS FOUNDERS to HER MAJESTY,
HYDRAULIC ENGINEERS, BRAZIERS, &c.,
8, Crescent, Cripplegate, London, E.C.

No. 35.

WARNER'S PATENT CAST-IRON PUMP, for raising Water from Wells not exceeding 25 feet in depth.

Diameter of Barrel.	Height.		£	s.	d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1	1	0
2½ ,, long	3 ,, 3 ,,		1	10	0
3 ,, ditto	3 ,, 6 ,,		2	4	0
3½ ,, ditto	3 ,, 6 ,,		2	9	0
4 ,, ditto	3 ,, 6 ,,		2	18	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2	0	0
2½ ,, long ditto ditto ditto			2	14	0

This Pump is fitted with J. W. & SONS' Patent Vibrating Standard, Improved Revolving Cap, Metal Bucket, and Brass Suction Valve. By means of the Revolving Cap the handle can be shifted to the right or left hand, or opposite the nose, as desired.

WARNER'S IMPROVED LIQUID MANURE or GENERAL PORTABLE PUMP.

No. 42.

This Pump is fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

	£	s.	d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2	15	0
If fitted with Barrel of Planished Copper	3	4	0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2	9	0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires, in either 10, 12, or 15 feet lengths .. per foot	0	2	5

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2*l.* 5*s.*

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.

J. W. & SONS' Illustrated Catalogue forwarded post free on application.

The above may be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Cripplegate, London, E.C.

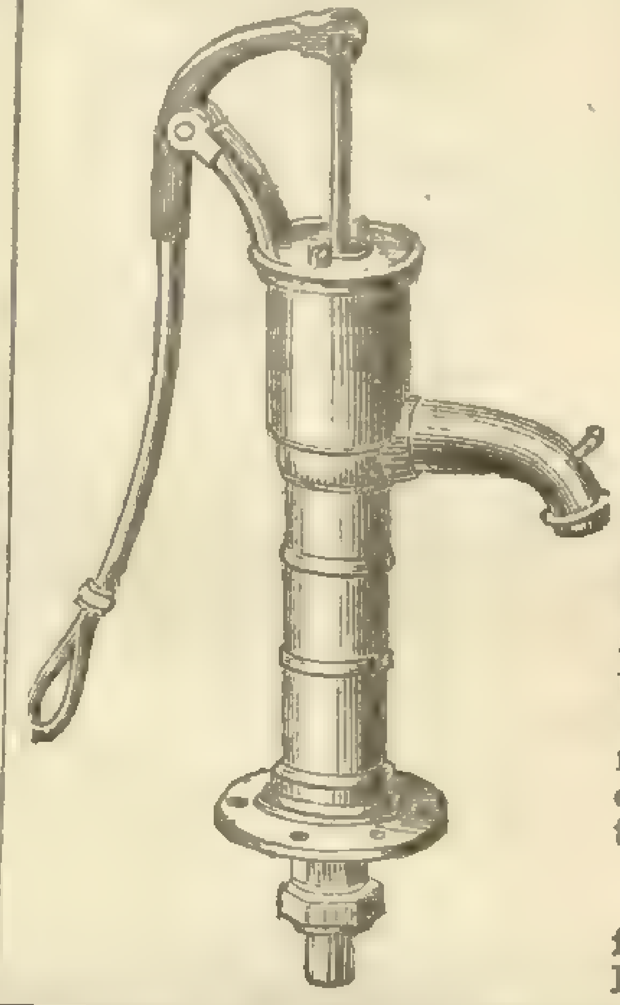
Important to Seedsmen and Nurserymen.
SACKS—BAGS—MATS.

JAMES T. ANDERSON, SACK and BAG MAKER, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), supplies SEED BAGS of a superior description at the following low prices:—
2 Bushel Bags..8*s.* 9*d.* per doz. | ½ Bushel Bags..4*s.* 9*d.* per doz.
1 Bushel Bags..6*s.* 3*d.* ,, | Peck Bags ....3*s.* 6*d.* ,,
Coarser Bags much cheaper. 4 Bushel Sacks, 1*s.* each.
Petersburg Dunnage Mats, 2*l.* 10*s.*, 2*l.* 15*s.*, and 3*l.* per 100.
Archangel Mats (new), 8*l.* 10*s.*; (best), 9*l.* per 100.

JOSEPH HAYWOOD AND CO.,
MANUFACTURERS OF
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.



J. TYLOR AND SONS' PATENT IRON PUMP with reversible handle, for Shallow Wells, Hot-Houses, &c. Price 25*s.* 6*d.* each.

IRON YARD and GARDEN PUMPS
3 feet 6 inches under spout
2½ 3 3½ inch
43*s.* 53*s.* 60*s.* each.

J. TYLOR and SONS manufacture PUMPS for DEEP WELLS which do not require any fixing below the level of the ground.

PUMPS of J. TYLOR & SONS' manufacture to be obtained of Plumbers in all parts of the United Kingdom.

J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

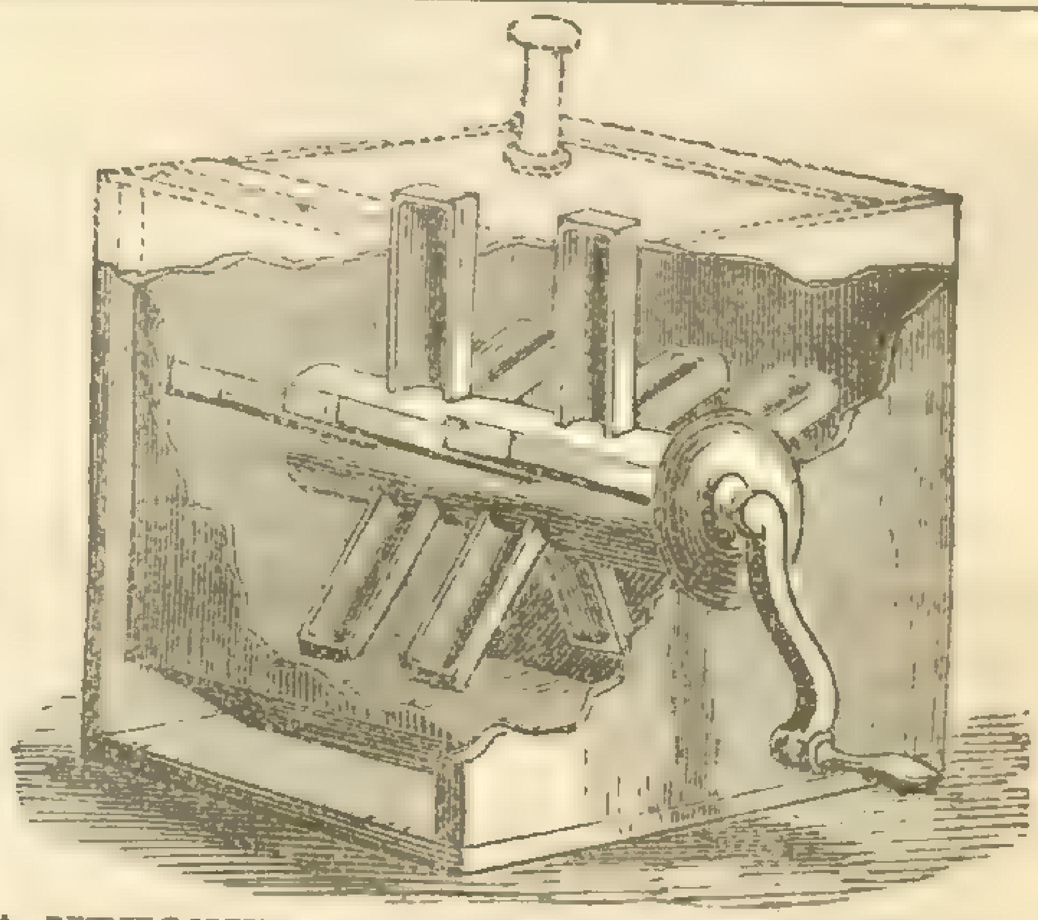
Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

MUSGRAVE'S PATENT STABLE FITTINGS and HARMLESS LOOSE BOXES, PATENT IRON COW HOUSE FITTINGS, and IRON PIGGERIES.

These inventions are recommended as possessing numerous advantages not to be found in anything hitherto made. At the late Meeting of the Royal Agricultural Society at Leeds, MUSGRAVE BROTHERS received a Silver Medal, and two Awards of "Highly Commended," being the only Prizes conferred on any competitor in this class.

Particulars sent on application to the Inventors and Makers, MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.



ANTHONY'S PATENT AMERICAN CHURN.—Butter is produced by this Churn in 12 minutes from cream; and so perfect is the operation, that more butter and better quality is obtained from the same quantity of cream than by any other method ever yet tried.

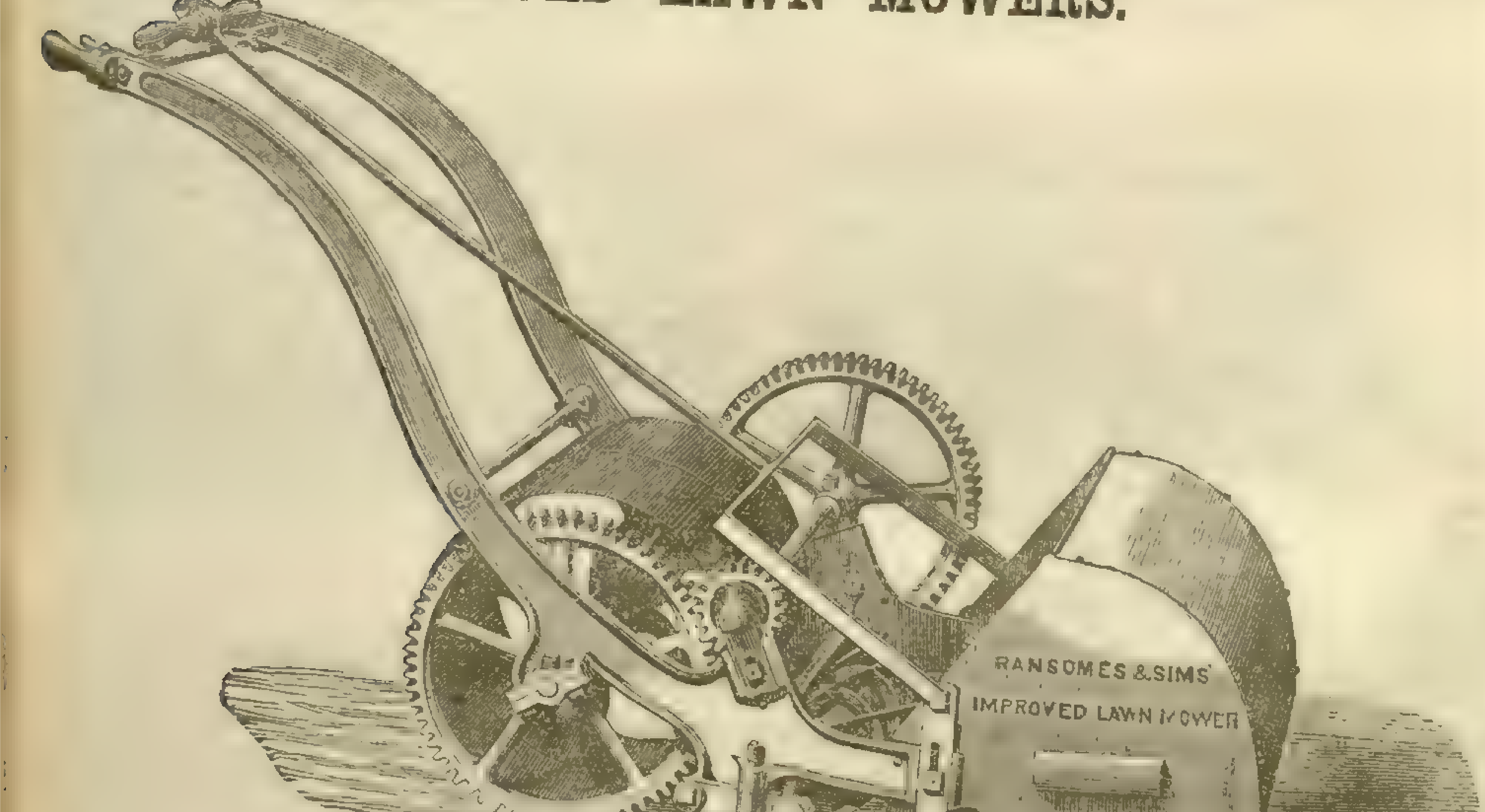
Upwards of 10,000 have been sold. Price Lists forwarded on application.

BURGESS & KEY, 95, Newgate Street, London, E.C.

NEARLY TWO HUNDRED SETS
OF
STEAM PLOUGHING and CULTIVATING APPARATUS
HAVE NOW BEEN SENT OUT BY
JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD.

Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.
Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

RANSOMES & SIMS, IPSWICH,
MANUFACTURERS OF
IMPROVED LAWN MOWERS.



THESE LAWN MOWERS contain important improvements, rendering them efficient and perfect. They are made from new patterns designed so as to combine strength and lightness with simplicity of arrangement. They are light handy Machines, almost noiseless in work, and so easy to manage that persons unaccustomed to Mowing can cut Grass without any difficulty.

Price:—14-inch, £6 10s.; 16-inch, £7; 18-inch, £7 10s.; 20-inch, £8.

Packing Cases 8*s.* 6*d.* each, which will be allowed if returned in good condition, Carriage paid.

Carriage paid to any Station within 100 miles of London or Ipswich.

Farms to Let and for Sale.

MESSRS. JOHNSON AND CO.'s REGISTER for APRIL contains particulars of upwards of 400 FARMS to be LET, throughout the United Kingdom.

May be had (prepaid by Post) by forwarding 12 Postage Stamps to the Farmers' and Estate Agency Office, 40, Broad Street Buildings, London, E.C.

Hucclecote Gardens, 2½ Miles from Gloucester.

TO BE LET, with immediate possession, the above capital WALLED-IN GARDENS, containing about 4 acres, with House, Farm Yards, Buildings, Orchard and Land adjoining, containing in the whole about 16 acres, with Green-houses, Propagating Houses, Vineries, Pits, &c. Extent of Glass 5770 feet.

For particulars apply to W. KNOWLES, Auctioneer, 5, Barton Street, Gloucester.

To Nurserymen, Kitchen Gardeners, &c.

TO BE SOLD, the INTEREST in the LEASE of that old and well-established Nursery, known as BARNES NURSERY, at Merrion, within 1½ mile of the City of Dublin, with the entire STOCK-IN-TRADE, consisting of Greenhouse and Hothouse plants in every variety, Timber and Fruit Trees, Flowers in pots, Shrubs, &c. The Nursery stands on 24 acres 2 roods and 36 perches statute measure, has extensive Green and Hothouses thereon, with all the requisites for the carrying on of the Nursery business; and is held for an unexpired term of 44 years, at the rent of 202*l.* per annum. There are two good substantial moderate sized two-story Dwelling Houses on the ground, with Lodges for foremen and labourers; also a handsome Shop on the public road at the entrance. This is the largest Nursery in Ireland, and its patrons comprise most of the nobility and gentry of the country. It stands on the direct road from Dublin to Kingstown, in the midst of all the fashionable Villas near Dublin; and a portion of the ground might be most profitably employed as a Vegetable Garden, there being no such accommodation near Kingstown, or that side of Dublin. Other portions of the land will presently acquire a high value for building, as it adjoins the extensive building ground of Lord Herbert of Lee, which is becoming rapidly in demand. A Lease for a more extended term can be obtained, if required. If necessary a portion of the purchase money would be allowed to remain out as a charge upon the property.

For particulars apply to JOHN RIDDICH, Solicitor, 3, Eustace Street, Dublin.

The Proprietor would have no objection to enter into arrangements with an experienced Working Gardener, with a small capital, for the carrying on the business of the Nursery and Vegetable Gardens, or with one or more for the working of each separately.

Sales by Auction.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at the Mart, Bartholomew Lane, City, E.C., on FRIDAY, April 4, at 12 o'Clock, a first-class Collection of CARNATIONS, PICOTEES, and PINKS, of remarkably fine growth, the surplus stock of a celebrated grower; Standard, Dwarf and Climbing Roses, Camellias, Azalea indica, Ericas, Epacris, and other plants in bloom; selected Fruit Trees, Choice American Plants, Fuchsias, Verbenas, Pæonias, Dahlias in dry roots, &c.

On view the Morning of Sale; Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

HOT-WATER PIPES

DELIVERED TO ANY STATION IN ENGLAND.

J. JONES

BEGS to state that he can now supply HOT-WATER PIPES and FITTINGS delivered Carriage Paid to any Railway Station in England, and that he has made very advantageous arrangements for delivery at the following Stations; and parties availing themselves of this offer will in many cases get their Pipes at a Country Station at a less price than would be charged in London.

Alfreton
Accrington
Ashbourne
Adlington
Ashby-de-la-Zouch
Atherstone

Bradford (Yorks.)
Burton
Burnley
Bolton
Bingham
Bulwell
Beverley
Bury
Bedale
Barnsley
Barton
Birkenhead

Chesterfield
Chester
Chorley
Chelford
Crewe
Cheadle
Congleton
Colwich

Derby
Dewsbury
Doncaster
Driffield
Droitwich
Dudley

Edgebaston
Eckington

Farnworth

Gainsborough
Grantham

Halifax
Harrogate

Ilkeston

Kirkham
Knapton
Knaresborough

Lancaster
Leeds
Liverpool
Loughborough
Leek
Lichfield
Leamington
Leicester
Lincoln

Macclesfield
Malton
Manchester
Mansfield
Market Harboro'
Marton

Nottingham
Normanton
Northallerton
Northampton

Oakham
Oldbury
Oldham
Ormskirk
Oswestry
Oundle

Preston
Pontefract
Peterborough
Penkridge

Retford
Richmond (Yorks.)
Rotherham
Rochdale
Rugeley
Rugby
Redditch

Shrewsbury
Stafford
Stourbridge
Salford
St. Helen's
Settle
Skipton
Stamford
Sleaford
Scarborough
Selby
Sheffield

Tamworth
Thirsk
Tipton
Trentham
Thrapston

Uttoxeter
Ullesthorpe

Worcester
Wolverhampton
Wellington (Salop)
Wrexham
Warrington
Wigan
Wakefield
Worksop
Wellingboro'

York

Also to any Station in Derbyshire, Shropshire, Warwickshire, Cheshire, Lancashire, Yorkshire, Leicestershire, Worcestershire, Lincolnshire, and Staffordshire.

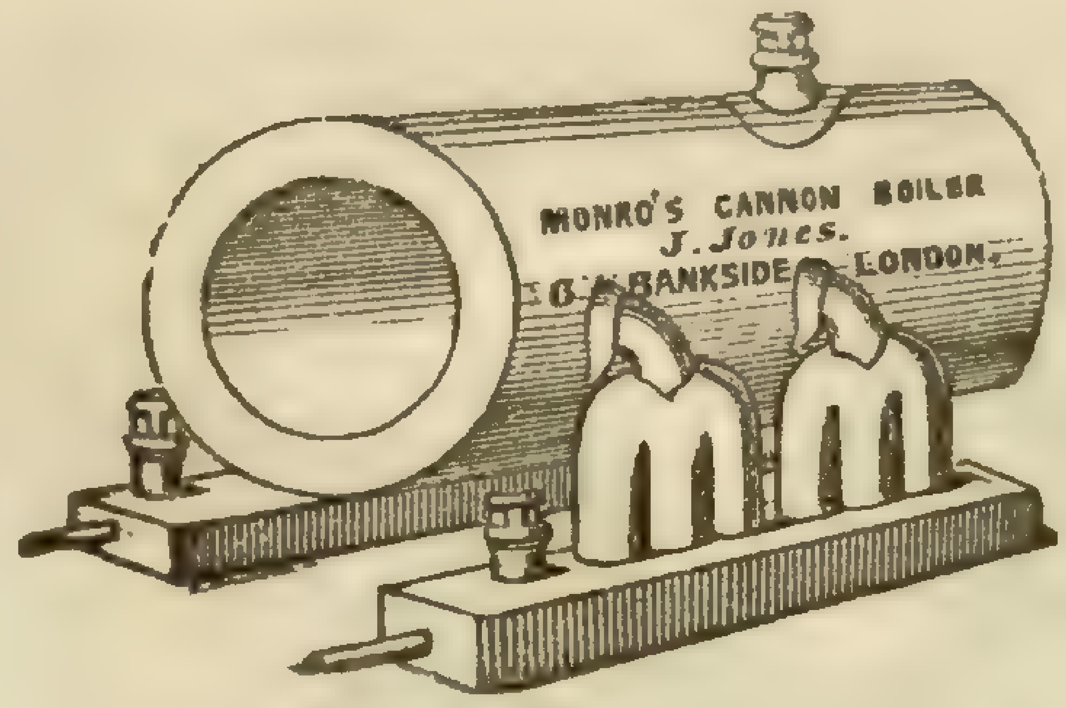
J. Jones will be happy to forward his ILLUSTRATED CATALOGUE of HOT-WATER PIPES, BOILERS, and FITTINGS, and PRICES for the same delivered Free to any Station; but parties requiring prices must state the quantities of Pipes, &c., required, and the Station to which they are to be delivered.

J. JONES, IRON MERCHANT AND HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

24-inch Wrought Iron	... ...	£6 10 0
30-inch „	... ...	7 10 0
36-inch „	... ...	8 10 0
48-inch „	... ...	12 0 0
60-inch „	... ...	20 0 0
72-inch „	... ...	25 0 0



MONRO'S CANNON BOILER.

These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by J. Jones, 6, Bankside, Southwark, London, S.E.

Prices for HOT-WATER PIPES, ELBOWS, TEES, SYPHONS, VALVES, TROUGH PIPES, ORNAMENTAL COIL CASES, BECK'S PATENT VALVES, &c.; or ESTIMATES for HOT-WATER APPARATUS, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON SADDLE, or CYLINDER BOILERS, will be sent, with an ILLUSTRATED CATALOGUE, free on application.

J. Jones has also made arrangements with Mr. Hereman, of Pall Mall, to Heat any Houses manufactured on Sir Joseph Paxton's principle.

J. JONES, HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, SOUTHWARK, LONDON, S.E.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by William Bradbury, of 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 19, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard Street, Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, March 29, 1862.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 14.—1862.] SATURDAY, APRIL 5. {Price Fivepence. STAMPED EDITION, 6d.

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☞ NOTICE TO ADVERTISERS.—*Advertisements should be sent so as to reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

CRYSTAL PALACE.—The GRAND FLOWER SHOW will take place on SATURDAY, May 24, and the GREAT ROSE SHOW on SATURDAY, July 5.
For Schedules of Prizes apply to Mr. W. HOUGHTON, Secretary to the Flower Show, Crystal Palace, Sydenham.

THE PLYMOUTH SEED COMPANY,
Plymouth.
For Advertisement of FARM SEEDS, see page 234.

New Roses of 1862.

PAUL AND SON have now ready their usual fine Plants of the finest Novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

NEW ROSES for 1862.—36 varieties (the pick of the year) offered in fine strong plants, a DESCRIPTIVE LIST of which may be had on application to
BENJAMIN R. CANT, St. John's Street Nursery, Colchester.

New Roses for 1862.

JOHN HARRISON has now ready fine plants of the best of the NEW ROSES, the CREAM of the year, at 5s. each. Also a great Stock of all the best varieties of Roses of ... and other favourite varieties in pots, DAHLIAS, HOLLYHOCKS, and other plants, CATALOGUES of which may be had free on application.
Darlington Nursery.

Hendon Park Nurseries, N.W.

PANSIES in Pots.—Fine plants of all the best Show varieties. Twenty-four sorts for 10s. Plants fit for this Spring's Exhibitions.
EDWARD SHENTON.

Large Tartarian Arborvitæs.

FOR SALE, 600 of the above, all strong, healthy and well-formed, from 5 to 6 feet high, and in excellent condition for transplanting. Price moderate.
Apply to H. and F. SHARPE, Wisbech.

VARIEGATED SAVIN—JUNIPERUS SABINI VARIEGATA.—Any one having the above to offer, will oblige by stating price and quantity they can furnish to CHARLES NOBLE, Sunningdale Nursery, South-Western Railway.

WELLINGTONIA GIGANTEA.—Seedling Plants of 1861 in single pots, per dozen, 21s. Price to the Trade per 100 on application.
J. HENCHMAN, Edmonton, near London, N.

GORSE or FURZE for COVERTS, &c.—
Extra fine 2 years' plants at 5s. per 1000.
Do. 1 year do., at 2s. 6d. per 1000.
Sample if required.
JOHN PERKINS, 52, Market Square, Northampton.

AN AVENUE of PINUS BENTHAMIANA.—Should any gentleman feel desirous of planting as above the hardiest of all hardy long-leaved Pines, fine specimens can be supplied by CHARLES NOBLE, Sunningdale Nursery.
Several hundred to select from, and warranted to move safely.

To the Trade.

WILLIAM MOORE begs to offer 200,000 very fine 3-year SEEDLING NORWAY SPRUCE FIRS at ... per 1000. N.B. No objection to Barter.
The Norfolk Nursery, East Dereham.

GREEN HOLLIES, &c.—Transplanted, 1 to 1½ ft., 1½ to 2 ft., and 2 to 3 ft., on land to be cleared. Prices on application. Also EVERGREENS of all sorts and of various sizes. This month the most suitable for Planting. Prices on application.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

Early Cabbage Plants.

W. VIRGO AND SON, Wonersh Nursery, Guildford, Have a large quantity of strong, healthy plants of the following sorts to offer for Sale at 3s. 6d. per 1000, viz.
EARLY YORK. | CATTELL'S RELIANCE.
" BARNES. | NONPAREIL and
BATTERSEA.

Stones or Sprotborough Cabbage Seed.

JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3s. per lb., or 16l. per cwt.

JAMES CARTER AND CO.,
SEED MERCHANTS and NURSERYMEN,
237 and 238, High Holborn, London, W.C.

New Garden Seeds.

JAMES CARTER AND CO.,
237 and 238, High Holborn, London, W.C.

Genuine Farm Seeds.

JAMES CARTER AND CO.,
237 and 238, High Holborn, W.C.

CHOICE CAMELLIA SEED, saved from one of the finest Collections in Europe. 1s. per packet.
JAMES CARTER & CO., 237 and 238, High Holborn, W.C.

BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See large Advertisement.
Covent Garden Market, W.C.

E. G. HENDERSON AND SON,
NURSERYMEN AND SEED MERCHANTS,
Respectfully announce their NEW SEED CATALOGUE and GUIDE for 1862, free on application.
Wellington Nursery, St. John's Wood, London, N.W.

BARR AND SUGDEN, SEED MERCHANTS.—For important notice see large Advertisement, page 230.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

BARR AND SUGDEN'S ILLUSTRATED FLORAL GUIDE. Price 2s. 6d., sent Post paid.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

RUSSELL'S PYRAMID PRIMULA.—The First Prize at the recent Exhibition of the Royal Horticultural Society was obtained by Mr. Todman, with plants of this variety. Packets of seed, price 2s. 6d., will be supplied by
GEO. CLARKE, Nursery, Streatham Place, Brixton Hill, S.

German Flower Seeds, Fresh Imported.

SUTTON AND SONS have imported a superior assortment of New GERMAN FLOWER SEEDS, a PRICED LIST of which may be had post free.

Vegetable and Flower Seeds.

PAUL AND SON'S CATALOGUE of the above, including ASTERS and STOCKS, with DESCRIPTIVE LIST of the best 100 GLADIOLI, is now ready, post free.
"Old" Cheshunt Nurseries, Herts.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

Dahlias, &c.

C. E. ALLEN'S ANNUAL CATALOGUE is now ready, and can be had on application.
Shacklewell, near London, N.E.

Dwarf-trained Peaches and Nectarines.

E. COOLING has a few very fine handsome trees still left. Price on application.
Mile Ash Nurseries, Derby.

STRONG FRUITING VINES, 7s. 6d. and 10s. 6d.
LIST gratis and post free.
JAMES CARTER & CO., 237 and 238, High Holborn, W.C.

Notice to Exhibitors.

BUCKLAND SWEETWATER GRAPE (IVERY'S).—Prizes of 3l. and 2l. will be given for the best and second best 3 bunches of this GRAPE, to be exhibited at the Royal Botanic Society's Exhibition, July 9th, 1862, by JAMES IVERY & SON, Dorking.

HAUTBOIS STRAWBERRY.—A few hundreds of the BLACK or PROLIFIC HAUTBOIS STRAWBERRY, warranted true, 5s. per 100. The plants are really good.
All the best kinds of STRAWBERRIES, 3s. 6d. to 5s. per 100.
DILLISTONE & CO., Nurseries, Sturmer, Halstead.

Double Dwarf Poppies.

HOOPER AND CO. offer Seed of their unequalled stock of the above. Colours brilliant and varied; and flowers double as a fine Hollyhock. Price 1s. per packet, post free.
GENERAL SEED CATALOGUE Post free on application.
HOOPER & CO., Seedsmen, Covent Garden Market, London, W.C.

BEDDING PLANTS.—Parties requiring the above for delivery, now or in May, are invited to communicate with EDWIN COOLING, Derby, stating kinds and quantity required, E. C. having one of the largest and best stocks of really good plants in the kingdom.
EDWIN COOLING, Mile Ash Nurseries, Derby.

PELARGONIUMS.—Intending purchasers should send for our DESCRIPTIVE CATALOGUE, post free.
J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

DOBSON'S SPLENDID HYBRIDISED CALCEOLARIA is unequalled for variety, form, distinct and striking colours and habit. In sealed Packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. each.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIZE CINERARIA SEED.—Unsurpassed for quality. 1s., 2s. 6d., and 5s. per Packet.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIMULA SINENSIS FIMBRIATA, ex. ex.—Sealed Packets, 1s., 2s. 6d., and 5s.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

Good Seeds, Carriage Free.

SUTTON AND SONS,
SEED GROWERS and MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds.

GEORGE GIBBS AND CO.,
SEEDSMEN,
26, Down Street, Piccadilly, London, W.

FARM SEEDS of the best quality can be supplied by the
PLYMOUTH SEED COMPANY, Plymouth.
Purchasers of large quantities treated liberally.

Agricultural and Garden Seeds.

H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

To the Trade.

SPECIAL SPRING CATALOGUE of AGRICULTURAL and GARDEN SEEDS (gratis) on application.
JAMES FAIRHEAD & SON, Seed Growers and Merchants, 7, Borough Market, London, S.E.

To the Seed Trade.

ALTRINGHAM EARLY HORN and other kinds of CARROT SEED from Genuine Stock.
Apply to G. MACINTOSH, High Road, Hammersmith, W.

Altringham Carrot Seed.

CHARLES SHARPE AND Co., Sleaford, have the above to offer to the Trade; new Seed of their own growing. Price on application.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

MR. HUDSON, of Castle Acre, can supply his GOLDEN MELON SEED BARLEY, in quantities of 5 qrs. and upwards, at 45s. per qr. New sacks included. Also his prolific BEANS at 53s. per qr. with new sacks. These produced 6 qrs. per acre last harvest.

Good Clover Seed.

GENUINE NEW CLOVER SEED may be obtained of the undersigned. Prices (according to market and quantity required) will be forwarded on application.
SUTTON & SONS, Seed Growers, Reading, Berks.

DICKINSON'S ITALIAN RYE-GRASS SEED may now be had by Agriculturists applying to his Bailiff, Mr. W. HUNTER, New Park Farm, near Lymington, Hants. 48s. per quarter; or 7s. per bushel, for present payment only.

GENUINE COW GRASS, an excellent sample, new seed, remarkably clean, 10d. per lb., or 84s. per cwt Carriage free.
J. C. WHEELER & SON, Seed Growers, Gloucester.

Yellow Globe Mangel Wurzel.

JOS. MAY begs to offer a pure Stock of the above, warranted English growth. Price per lb. or cwt. on application. Samples sent per post.
15, Wellington Street, Strand, W.C.

TURNIP, MANGEL, and AGRICULTURAL SEEDS of best Selected Stocks.—First class samples, crop 1861, at growers' prices.
JAMES FAIRHEAD & SON, Seed Growers and Merchants, 7, Borough Market, London, S.E.

LEWISHAM SWEDE.—This Turnip, grown from large sized transplanted bulbs, and which has given such universal satisfaction, can be supplied in quantity to the trade by the Growers,
JAMES FAIRHEAD & SON, 7, Borough Market, London, S.E.

FOR SALE, a quantity of SKIRVING'S SWEDE TURNIP SEED, from a selected stock which can be strongly recommended. Apply to the Grower,
Mr. WILLIAM CANT, Myland Lodge, Colchester, Essex.

To Potato Growers.

JAMES CARTER AND CO. have a surplus stock of MYATT'S PROLIFIC and ASHLEAF KIDNEY POTATOES to dispose of in large quantities at a very cheap rate.
237 and 238, High Holborn, W.C.

Dalmahoy Early Potatoes from Scotland.

PETER LAWSON AND SON can supply the above and other varieties of SEED POTATOES.
27, Great George Street, Westminster, London, S.W.

POTATOES, Cash Price.—Dalmahoy, 16s. per sack, 4 bushels; Early Shaws, 16s. or 7l. per ton; Blues, 12s. or 5l. per ton; Ashleaf, Fortyfold, Regents, &c. Sacks, 1s. each.
STRAWBERRY PLANTS.—For price, &c., see March 22.
GEO. CORNWELL, Seedsman, &c., Barnet, Herts, N.

EARLY OXFORD POTATO, an excellent Cropper, and the best for eating all the year round, 6s. per bushel.
A reduction made if 1 Ton or more be taken.
RICHARD SMITH, Nurseryman and Seed Merchant, Worcester.

DIOSCOREA BATATAS (or CHINESE YAM), 2s. 6d. per doz., 15s. per 100. Larger tubers, 3s. 6d. per doz.
JOHN CATTELL, Westerham, Kent.

Dioscorea Batatas, or Chinese Potato.

J. IVERY AND SON beg to inform their Patrons that this is the most favourable month for planting this useful Vegetable. Strong sets are now ready, at 1s. per dozen, or 7s. 6d. per 100; likewise whole Tubers, from 2s. 6d. to 6s. per dozen.
Dorking Nursery.

NEW TEA-SCENTED ROSE for 1862, GLOIRE DE BORDEAUX.—The above, a Seedling from the well known favourite Tea Rose, Gloire de Dijon, was raised at Lyons, and is represented as being unquestionably the finest Tea-scented Rose of the season.

Wm. Wood & Son beg to intimate that they possess a very large Stock of the above in extra strong plants, which they are now sending out at 5s. each.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., Nurseryman, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s.; 20 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

Chrysanthemums.

W. HOLMES, F.R.H.S., has a fine stock of the above, including Little Harry, Lady Hardinge, Leda, Linda, Rifleman, Florence, &c., &c., all at 5s. per dozen.

DESCRIPTIVE CATALOGUES of the above, also Dahlias, Fuchsias, Verbenas, Geraniums, Antirrhinums, Petunias, &c., free for one stamp.

Frampton Park Nursery, Hackney, N.E.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

New Gloxinias.

MESSRS. F. and A. SMITH beg to offer fine young healthy Plants of their NEW GLOXINIAS, which were exhibited at the Royal Botanic Gardens last year, when they received an "Extra Prize Medal" for their superior merit.

Our selection, 30s. per dozen.

New and beautiful variegated plant, CYPERUS ALTERNIFOLIUS VARIEGATIS, 21s. each.

F. & A. S. can offer the above in well established plants; it is the finest variegated Grass ever offered.

Dulwich Nurseries, near London, S.

Phloxes for Exhibition.

DOWNIE, LAIRD, and LAING have much pleasure in announcing that they can supply intending Exhibitors with strong autumn and spring struck plants, from their first-class Collection of the above.

See Leader in *Gardeners' Chronicle*, March 15, 1862, p. 236.

CATALOGUES post free on application.

Stanstead Park, Forest Hill, London, S.E., and Edinburgh.

Superb Hollyhocks.

WILLIAM PERRY has a fine stock of plants in pots that will flower well this season, a CATALOGUE of which may be had on application, postage free.

Also very strong SEEDLINGS of mixed colours, price of which will be found in the Catalogue.

Sawbridgeworth, Herts.

Superb Hollyhocks.

R. B. BIRCHAM begs to state that he has several thousands of fine established plants of the leading varieties of SHOW HOLLYHOCKS, which he should be happy to offer upon advantageous terms to any nurseryman or florist who may require them.

Price per hundred upon application, and CATALOGUE forwarded by R. B. Bircham, Hedenham Rosery, Bungay, Suffolk. Carriage paid to London and Peterborough.

Saffron Walden Nursery.

SUPERB DOUBLE HOLLYHOCKS.

NOW IS THE TIME FOR PLANTING!

WILLIAM CHATER has ready some thousands of SEEDLINGS suitable for planting in Borders, Shrubberries, or other ornamental grounds.

W. C. has also an immense Stock of fine healthy young Plants, named sorts, and invites attention to his newly classified list for full information respecting prices, colours, and description.

N.B. The Trade liberally dealt with, and special prices on application for quantities.

William Chater, Saffron Walden, Essex.

New Fuchsias and Verbenas of 1861.

B. W. KNIGHT, Florist, 67, High Street, Battle, Sussex, is now sending out the New FUCHSIAS of 1861, at 6s. per dozen; the New VERBENAS of 1861, at 4s. per dozen, securely packed in tin box, post free.

CATALOGUES sent on application.

New Verbenas, Fuchsias, Petunias, &c., of 1861.

WM. KNIGHT begs to announce that he can supply good struck plants of the above in healthy stuff, from 5s. to 7s. per dozen.

Also extra strong CLIMBING ROSES, from 4s. to 6s. per dozen.

CATALOGUE post free on application.

Floral Nursery, Hailsham, near Hurst Green, Sussex.

GENUINE SEEDS, WARRANTED,

Sent Free.

			s.	d.
50 packets most showy HARDY ANNUALS		..	5	0
25 packets	do.	do. ..	3	0
12 packets	do.	do. ..	1	9

One collection, containing 18 varieties of the finest HARDY ANNUALS, and eight varieties of the most approved VEGETABLE SEEDS, sent free on receipt of 48 stamps.

J. Carter, 6, Charles Street, Middlesex Hospital, London, W.

Verbena, "Sheppard's Ariosto Improved."

OSBORN and SONS will be prepared to send out the above-named NEW VERBENA on May 1 next. It is considered by all who have seen it one of the greatest acquisitions of the season either as a pot or bedding Verbena. The colour is that of "Ariosto," a beautiful rich mulberry, but in other respects it far outvies it—the truss and pip is very much larger, and the habit robust, covering the ground well and flowering freely and continuously. It was used last summer most successfully by Mr. Sheppard, the intelligent Gardener at Woolverstone Park, the seat of John Berners, Esq., near Ipswich.

In order to make it available for bedding largely the ensuing season, Osborn & Sons have resolved to distribute it at the following low rate:—

100 Plants	£5 0 0	12 Plants	£0 18 0
50 Plants	3 0 0	A Single Plant	0 2 6

Fulham Nursery, London, S.W.—April 5.

NEW ROSES for 1862.—4000 STRONG PLANTS.

WILLIAM WOOD & SON

Are now executing orders for all the NEW ROSES of the season, in strong healthy plants, Dwarfs, at 5s. each. A liberal discount allowed to the Trade.

40,000 DWARF ROSES in POTS for BEDDING.

The months of April and May are considered the most eligible for Bedding-out Roses from pots.

W. W. & S. beg to offer a very large and healthy Stock on the following terms, viz.:—

Dwarf Hybrid Perpetual, Bourbon, Noisette, and Tea-Scented Roses, per dozen		18s.
Climbing Roses, of sorts	,,	12s. to 18s.
Dwarf China Roses	,,	12s.
Tea-Scented Roses, in 6-inch pots, for Greenhouse culture	,,	30s.

Extra Plants presented for distant carriage.

CATALOGUES free on application.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

LITHOSPERMUM FRUTICOSUM

IS THE NEATEST AND PRETTIEST LITTLE

HARDY EVERGREEN HERBACEOUS PLANT

that can be desired. Its slender branches are thickly covered with small dark green leaves, forming a perfect carpet, which is studded with

THE LOVELIEST BLUE FLOWERS,

nearly half an inch in diameter, from May till September. If wintered in a cold greenhouse it flowers abundantly in February and March.

Messrs. J. & C. Lee will be prepared to offer this "Little Gem" in May, at 2s. 6d. each; larger plants, 5s. each.

NURSERY AND SEED ESTABLISHMENT, HAMMERSMITH, LONDON, W.

NEW VARIEGATED FOLIAGED FUCHSIA,

CARTER'S METEOR.

This striking novelty, a double corolla'd variety, with crimson and yellow foliage, will be sent out on May 1.

JAMES CARTER & CO.'S GENERAL CATALOGUE of PLANTS,

Containing many desirable Novelties, will be published on May 1, and forwarded gratis and Post free on application.

JAMES CARTER & CO., 237, 238, & 261, HIGH HOLBORN, W.C.

SEED FARMS.
EAST HOUSE FARM, DEDHAM, ESSEX; and
THE SEED FARM, ST. OSYTH, ESSEX.

NURSERY.
CRYSTAL PALACE NURSERY,
Perry Hill, Sydenham, S.E.

KITCHEN GARDEN SEEDS,

FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND
THOS. GIBBS & Co.
Corner of
HALF-MOON St.
PICCADILLY,
London.
APPOINTED AP. 3. 1844
THE SEEDSMEN

AGRICULTURAL SEEDS,

GRASS SEEDS,

FARM SEEDS,

of all descriptions.

Thomas Gibbs & Co.

CORNER OF

HALF-MOON St.

Piccadilly, London, W.

ESTABLISHED UPWARDS OF A CENTURY.

BUTLER & McCULLOCH,

SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.

Gladiolus, Seedlings of Gandavensis.

100 in 20 very Choice Varieties	.. ..	£2 2 0
50 in 20 ,, ,, ,,	.. ..	1 1 0
20 in 20 ,, ,, ,,	.. ..	0 10 0
12 in 12 ,, ,, ,,	.. .. 6s., 9s., and	12 0

Gladiolus, Seedlings of Ramosus.

100 in 50 very Choice Varieties	.. ..	2 2 0
50 in 50 ,, ,, ,,	.. ..	1 0 0
25 in 25 ,, ,, ,,	.. ..	0 10 0
12 in 12 ,, ,, ,,	.. .. 6s., 9s., and	12 0

Cheap Gladioli for Massing, Clumping, &c.

	per 100.
BRENCHLEYENSIS, vermilion	£1 5 0
GANDAVENSIS, scarlet and yellow	0 15 0
COURANTI FULGENS, brilliant crimson	1 1 0
TRIOMPHE D'ENGHIEN, carmine and yellow ..	1 1 0
2 Splendid Mixed Seedlings of GANDAVENSIS ..	0 17 6
QUEEN VICTORIA, scarlet and white	0 15 6
RAMOSUS, bright rose and white	0 15 6
Splendid Mixed Seedlings of RAMOSUS	1 0 6
FLORIBUNDUS, white and pink	0 15 6

BUTLER and McCULLOCH, SEED MERCHANTS, COVENT GARDEN MARKET, W.C.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

NOTICE.

In consequence of *private* circulars issued by Messrs. Butler & McCulloch stating that Mr. BARR (of the Firm of BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.) is no longer in their employment (*a statement one would have thought perfectly unnecessary*), Mr. BARR, in *publicly* confirming the fact, has moreover much pleasure in announcing that the *celebrated* "Sardinian Correspondent," who for some years furnished Messrs. Butler & McCulloch with their Choicest Seeds, *now no longer does so*, but instead supplies the Firm of BARR & SUGDEN with these, and with his far-famed CARNATIONS, PICOTEES, and PELARGONIUMS. This gentleman's Collections of the three latter are the most extensive in Europe, and he is one of the most successful Amateurs in raising new and valuable varieties.

SEEDS FOR PRESENT SOWING.

COLLECTIONS of CARNATIONS and PICOTEES,

Saved by our Special "Sardinian Correspondent," and distinguished by his Crest, thus and initials G. E. S.

As usual, these seeds are warranted to yield 80 per cent. of splendid Double Flowers, surpassing in floral beauty and rich and brilliant colours those saved by any German, French, or Belgian cultivators.

For 27 years our "SARDINIAN CORRESPONDENT" has devoted his especial attention to improving these favourite "Domestic Flowers," and for the last 10 years they have held a first class position in this country; they are also celebrated on the Continent of Europe, in America, India, Australia, New Zealand; and indeed wherever the lovers of these flowers are located, these collections have found their way.

For the colours contained in the following Collections see our "Guide to the Flower Garden," or our Advertisement of these on back page of *Gardeners' Chronicle*, January 11th.

CARNATIONS, Section I.

This Section consists of Four Collections, each forming a distinct feature.

COLLECTION "A"—SELFS.
Contains 12 superb varieties of 10 seeds each, 3s.

COLLECTION "B"—FLAKE.
Contains 12 superb varieties of 10 seeds each, 3s.

COLLECTION "C"—BIZARRES.
Contains 12 superb varieties of 10 seeds each, 3s.

COLLECTION "D"—FANCY.
Contains 12 superb varieties of 10 seeds each, 3s.

PERPETUAL or TREE CARNATION, Section III.

These are called "Tree" on account of their upright growth and branching habit, and "Perpetual" because they flower several times during the season. In winter and spring they may be had in bloom under glass, while in autumn they are amongst our most attractive border plants. This Section consists of four Collections.

COLLECTION "H"—SELFS.
Contains 12 fine varieties of 10 seeds each, 3s.

COLLECTION "I"—FLAKES.
Contains 12 fine varieties of 10 seeds each, 3s.

COLLECTION "K"—FANCY.
Contains 12 fine varieties of 10 seeds each, 3s.

PICOTEE, Section IV.

The Picotee is distinguished from the Carnation by the flowers being margined instead of striped. This Section includes Three Collections.

COLLECTION "L"—WHITE GROUND.
Contains 12 superb varieties of 10 seeds each, 3s.

COLLECTION "M"—YELLOW.
Contains 12 superb varieties of 10 seeds each, 3s.

ASSORTMENTS FROM THE ABOVE COLLECTIONS:

CARNATIONS.—An assortment of 100 varieties, each consisting of 10 seeds					18s.
CARNATIONS.	ditto	of 50	ditto	..	10s.
PICOTEES.	ditto	of 100	ditto	..	18s.
„	ditto	of 50	ditto	..	10s.

Mixed Packets of Carnation, 1s. 6d.
Do. do. of Picotee, 1s.

PELARGONIUM SEED, in Sealed Packets.

Received from our "Sardinian Correspondent."

COLLECTION "O"
Contains 12 splendid varieties, 10 seeds each, 5s. 6d., of large-flowered Pelargoniums.

COLLECTION "P"
Contains 12 splendid varieties, 10 seeds each, 5s. 6d., of spotted Pelargoniums.

COLLECTION "Q"
Contains 12 splendid varieties, 10 seeds each, 5s. 6d., of Fancy Pelargoniums.

Assortment of 36 splendid varieties of large-flowered Pelargoniums, 10 seeds of each, 12s. 6d.

Assortment of 36 splendid varieties of Fancy Pelargoniums, 10 seeds of each, 12s. 6d.

Dried Specimens of many magnificent Seedlings, flowered in 1861, may be seen at our Establishment.

ORNAMENTAL FOLIAGED PLANTS.

Fine foliaged plants, and such as are of stately growth, have of late years been much sought after for the adornment of the flower-garden, terraces, pleasure-grounds, lawns, select shrubberies, carriage-drives, &c.; besides relieving the monotony too frequently to be met with, plants of this class impart a somewhat Oriental aspect.

The CANNA for such purposes stands unrivalled; its large picturesque foliage and spikes of vivid-coloured flowers producing a truly magnificent effect when planted in groups, whether on the lawn, in the centre of large beds, or in the mixed flower border. When planted in groups and edged with scarlet Geraniums, Verbenas, &c., they produce an effect beautiful beyond description.

STRONG ROOTS of the following splendid varieties have been forwarded to us by our "Sardinian Correspondent" from his unrivalled collection, and, as they are all strikingly beautiful sorts, we feel the greatest confidence in recommending them for the purposes above-named.

CANNA ROOTS.

	£	s.	d.
100 Roots, our own selection	5	5	0
50 Ditto ditto	2	12	0
25 Roots, our own selection	1	6	6
12 Ditto ditto .. 9s., 12s., to	0	18	0

	Each—s.	d.
Canna Achiras, dark red, 3 feet	1	6
„ aurantiaca, orange leaves, lively green, 3 feet	1	0
„ bicolor from Java, red and yellow, 3 feet	2	0
„ Cubensis	1	6
„ discolor	1	0
„ edulis, red, splendid, 3 feet	1	6
„ gigantea nova, scarlet leaves, very largo, 5 feet	2	0
„ Indica, red, 2 feet	1	0
„ iridiflora, red, beautiful, 3 feet	1	6
„ Kegelii, shaded carmine, 3 feet	2	0
Canna lutea picta, shaded yellow, 4 feet	1	0
„ Mulerii, flowers scarlet, very fine, 3 feet	2	0
„ Nepalensis, clear yellow, beautiful, 3 feet	1	6
„ patens superba, deep red, splendid, 5 feet	2	0
„ pedunculata, scarlet, 5 feet	2	0
„ Reevesii, shaded yellow, 5 feet	2	0
„ Schubertii, ruby magnificent, 4 feet	1	0
„ Sellowii, scarlet, profuse bloomer	1	0
„ speciosa, red, 4 feet	1	6
„ Warscewiczii, brilliant red, striped foliage	1	0

BARR AND SUGDEN, SEED MERCHANTS,
12, KING STREET, COVENT GARDEN, LONDON, W.C.
(OPPOSITE THE GARRICK CLUB.)

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England.

The Catalogue may also be had at Mr. MAY's, 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

WM. WOOD AND SON have much pleasure in offering their superb collection of

PHLOXES.

All the newest and most approved Continental varieties, 12s. to 18s. per dozen.
Older, but approved kinds, 6s. to 9s. per dozen.
100 Phloxes, in 50 sorts, for 40s. | 25 Phloxes, in 25 sorts 12s. 6d.
50 „ 25 „ 21s. | 12 „ 12 „ 9s. 0d.

PENTSTEMONS.

New and first-rate varieties .. .. .. 18s. per dozen.
Older, but approved kinds .. .. 6s. to 9s. „
50 Pentstemons, in 25 sorts .. .. 21s. 0d.
25 „ 25 „ 12 6
12 „ 12 „ 9 0

ANTIRRHINUMS.

Per dozen .. .. 6s., 9s., and 12s.

HERBACEOUS PÆONIAS.

Per dozen .. ..12s., 18s., and 24s.

HERBACEOUS PLANTS.

Per dozen .. .. 6s., 9s., and 12s.

Plants presented to compensate for carriage.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

H. LANE AND SON have to offer a large stock of fine blooming plants of AZALEAS and RHODODENDRONS, both common and named sorts.

Also a large collection of VINES from Eyes, very fine, with well ripened wood, and consists of all the best sorts.

Their well known ARAUCARIAS are allowed to be the finest stock in the world, and are from 1 to 10 feet.

Orders will receive prompt attention.

H. LANE & SON, The Nurseries, Great Berkhampstead, Herts.

Calceolaria Canariensis.

G. SMITH has great pleasure in recommending this unsurpassed and beautiful variety; it has been shown in the past season at all the leading exhibitions round London, and has established itself as the best for all purposes, as it gives two-thirds more bloom in a pot and one-third more in beds than any other Calceolaria in cultivation; colour bright Canary Yellow, the mouth closed, so as to resist the wet; the habit is all that could be wished. Has taken a First-class Certificate at the Royal Botanic Gardens, Regent's Park; also a First-class Certificate from the Floral Committee of the Horticultural Society, for its fine qualities. Now ready, in strong plants, at 1s. 6d. each, or 12s. per dozen. A remittance must accompany the order to unknown correspondents.

Tollington Nursery, Hornsey Road, Islington, London, N.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the most effective and useful bedding variety known. During the past season upwards of 5000 plants were grown in the gardens at Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.

*** For Testimonials and further particulars see *Gardeners' Chronicle* of February 22.

Plants after April 20, 1s. 6d. each. 12s. per doz. 50s. per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in riband-borders, and vases, this variety is one of the most useful and effective yet offered for sale.

Plants after April 20, 1s. 6d. each. 12s. per doz. 75s. per 100.

CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

	Per packet—s.	d.
Calceolaria, herbaceous	2	6
Cineraria cruenta	2	6
„ maritima	0	6
Erianthus Ravennæ	1	0
Lobelia erinus speciosa	1	0
„ „ major	1	6
Primula sinensis dentiflora	2	0
Primula sinensis albiflora	2	0
„ „ dentiflora kermesina splendens	2	6
Verbena venosa	0	6

A PRICED and DESCRIPTIVE CATALOGUE of Vegetable, Agricultural, and Flower Seeds, forwarded post free to all applicants.

Exotic Nursery, Tooting, Surrey, S.

WILLIAM BARRON, Elvaston Castle, Derby, can supply strong and well-rooted plants as under:—

ABIES DOUGLASII, 3 years once transplanted, per 100 25s. 0d.
This tree attains a height of more than 200 feet, highly ornamental, the same as the tall flagpole at Kew.

PINUS LARICIO, 18 ins. to 2 feet .. . per 1000 70 0
This produces timber for railway sleepers sooner than the Larch, and is used as spars and masts in the French navy.

BERBERIS DARWINI, the most beautiful of the tribe, fit either for the flower garden or game cover, with rich orange-coloured flowers; Pheasants are very fond of the berries, which are produced in profusion. Strong plants, 3 years old per 100 20 0
Ditto ditto, 2 years old 15 0
Ditto ditto, 1 year old 12 0

PICEA NOBILIS, 3 to 4 years old, plants from seed, (This is the most lovely of all Firs.) each, 10s. to 15 0

WELLINGTONIAS from 2 to 9 feet. Also specimens of the rarest Conifers.

Remittances to accompany orders from unknown correspondents. Post-office Orders payable at Derby.

SELECT PRICED LISTS post free on application.

Grape Vines from Eyes.

JAMES VEITCH, Jun., Royal Exotic Nursery, King's Road, Chelsea, S.W., has still to offer a few nice Canes of the following sorts of GRAPE VINES, suitable for planting in Vineries, prices of which will be furnished on application :—

Muscat of Alexandria	Hamburgh, Golden
,, White Romain	,, Frankenthal
Muscadine, Royal	,, Muscat
Tokay, Charlesworth	,, Victoria
,, White	Trentham, Black
Hamburgh, Black	

April 5.

Vines from Eyes.

H. LANE and SON have to offer strong FRUITING CANES of the following sorts of VINES, viz. :—

Buckland Sweetwater	Golden Hambro'
Black Hambro'	Grizzly Frontignan
Charlesworth Tokay	Muscat Hambro'
Chasselas Musqué	Trentham Black
Dutch Hambro'	West's St. Peter

The Nurseries, Great Berkhampsted, Herts.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, Jun., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.

CATALOGUES on application.

FRUIT TREES in POTS.—Those who require Fruit this summer from Trees in Pots are invited to inspect the stock of W. Barnes, whose trees have been established for two and three years; wood well matured and covered with bloom buds.

CHERRIES	PLUMS
NECTARINES	PEACHES

Prices on application to Wm. Barnes, Camden Nursery, Camberwell, S.

Splendid Grape Vines.

WILLIAM BARNES has still to offer the following varieties of VINES from Eyes; the wood well ripened, length averaging from 5 to 9 feet; many of them fruit-bearing.

Royal Muscadine	Golden Hamburgh
White Dutch Sweetwater	Muscat do.
Muscat of Alexandria	Black do.
Cannon Hall Muscat	Bowood Muscat
West's St. Peter's	Muscat Muscadine
Black Frontignan	Lady Downe's Seedling
White do.	Barbarossa
Grizzly do.	Purple Constantine
Mill Hill Hamburgh	White Tokay

Prices will be forwarded on application.

Camden Nursery, Camberwell, S.

Strawberry Plants.

WM. JAS. NICHOLSON again offers strong laid Plants of his Grand Collection of more than 200 varieties of English, French, Belgian, American, and other STRAWBERRIES, including all the new and fine sorts. A Catalogue sent on application.

A New, Enlarged and Improved CATALOGUE will be published in Autumn, when many new sorts well tested will be offered with confidence.

William Jas. Nicholson, Egglescliffe, Yarm, Yorkshire.

Verbena Fireball.

MESSRS. J. and C. LEE having thoroughly proved VERBENA FIREBALL last summer, can recommend it as one of the best, if not the best, and most useful for bedding purposes, combining, as it does, the intense scarlet and compact truss of Firefly with the robust and free-flowering habit of Purple King.

To be sent out in May, price 12s. per dozen.

Nursery and Seed Establishment, Hammersmith, London, W.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Bedding Plants! Bedding Plants!

DILLISTONE and CO. beg to offer strong healthy Plants of the above for the approaching Summer, of all the most approved kinds, and guarantee to give every satisfaction to all parties who may be pleased to favour them with their orders.

100 Plants of the finest varieties, selected from the following, will be sent for 25s.; 50 ditto, 14s.; Hamper, &c., included.

Geraniums	Verbenas	Petunias
Calceolarias	Fuchsias	Dahlias
Heliotropes	Phlox	Ageratums
Lobelias	Salvias	&c., &c.

CLIMBERS of the following kinds will be included where it is desired, viz. :—

Cobœas	Eccremocarpus	Lophospermums
Maurandyas	Tropæolums	&c., &c.

A great reduction where 500 or more plants are taken. All the New Roses and Plants of the season. A remittance or reference from unknown correspondents is requisite. Post-Office Orders payable at Halstead.

Sturmer and Woodlands Nurseries, Halstead, Essex.

ON SALE, Large SPECIMEN PLANTS of AZALEA refulgens, Iveryana, Perryana, Præstantissima, and Glory of Sunning Hill; EPACRISES, I ERIOSTEMON, and a very large DENDROBIUM SPECIOSUM; also fine handsome Double White CAMELLIAS, fimbriata and Chandleri; DENDROBIUM nobile, Paxtoni, Dalhousianum, and densiflorum.

For particulars, apply to Mr. Watkinson, Seedsman, Manchester.

FOR SALE, 100 fine GREENHOUSE AZALEAS, from 2 to 5 feet in height, healthy and well-grown; 200 NEW HOLLAND PLANTS, fine healthy specimens, including the best varieties of Ericas, Epacris, Acacias, Boronias, Pimeleas, Chorozemas, Polygalas, &c.; 20,000 BEDDING PLANTS, of all sorts, fine strong stock; and 50 beautiful specimens of THUJA ORIENTALIS, from 4 to 6 feet high.

Also several WROUGHT-IRON BOILERS, Saddles, Conicals, and Retort, each capable of heating from 300 to 600 feet of 4-inch pipes. Most of them having not been long in use, are nearly as good as new.

For particulars apply to Mr. Dunn, Eardiston, Tenbury, Worcestershire.

NEW FERNS.

ASPLENIUM FLABELLULATUM, 42s. each.

,, RACHIRHINÆ, 42s. each.

The above are two gems, and are now offered for the first time. Also CIBOTIUM PRINCEPS, the most majestic of Ferns, 63s. each. An inspection is invited at

William Bull's Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

NEW AZALEA INDICA.

BELLE GANTOISE, 21s. each.

HORTENSE VERVAENE, 21s. each.

Two very fine varieties, now offered for the first time. Also

AZALEA DIEUDONNE SPAE,

,, DUC D'AREMBERG,

,, MADAME AMBROISE VERSCHAFFELT.

An inspection is invited at

William Bull's Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

CAMELLIA QUEEN of BEAUTIES, Sent out for the first time last autumn, has fully maintained the high character I then gave it. Vide report of the Royal Botanic Society's Spring Exhibition of the 26th ult. 21s. each. Also

CAMELLIA LAVINIA MAGGI, 10s. 6d.

,, BICOLOR DE LA REINE, 10s. 6d.

,, COMTE DE GOMER, 15s.

,, MONSIEUR D'OFFOY, 10s. 6d.

William Bull's Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

CALCEOLARIA SPARKLER (Shrubby). A really good thing, fine for bedding; colour bright crimson, with clear yellow cap, 5s. each; stock plants for propagating from, 10s. 6d. each.

William Bull's Establishment for New and Rare Plants King's Road, Chelsea, London, S.W.

CYPERUS ALTERNIFOLIUS VARIEGATUS. An exquisite variegated stove plant, 21s. each.

William Bull's Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

GERANIUM QUEEN of QUEENS. The best flowering variegated-foliaged variety ever offered, each flower considerably larger than a five-shilling piece. Price 10s. 6d.

William Bull's Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

GRAPE VINES. Well-ripened Canes of all the best sorts can be supplied.

PINE APPLE PLANTS.

The best, largest, cleanest, and most healthy stock in this country. An inspection is invited at

William Bull's Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

SPLENDID NEW FUCHSIAS, DICTATOR and UNIVERSAL. Coloured Illustrations by Mr. Andrews of the two, in exchange for 12 postage stamps.

G. S. assures Fuchsia Growers that "Universal" is the finest Fuchsia ever offered. For description see CATALOGUE.

George Smith, Tollington Nursery, Hornsey Road, Islington, London, N.

New Hardy Variegated Plant.

SCROPHULARIA NODOSA VARIEGATA.

B. S. WILLIAMS has much pleasure in stating that he has purchased the Stock of the above, which has proved to be the best plant for Edging Ribbon Borders or large beds yet introduced. (See Mr. Beaton's remarks in the *Journal of Horticulture*, August 27, 1861.)

B. S. W. can confidently recommend it for the above purposes, having seen it used largely at the Palace Gardens, Armagh, Ireland, for the last two years. It is of very easy culture and perfectly hardy, with ovate-oblong obtuse leaves broadly edged with white, forming a distinct and effective variegation.

Mr. G. Cooper, the Gardener, states in a letter to the Floral Committee of the Royal Horticultural Society :—"I have used it for the above-named purposes for the last three years, and find it to be the most effective plant with which I am acquainted. Its leaves match those of the Geranium for size, and set off the scarlet flowers so well that the effect is pleasing in the extreme. It looks well in all weathers, and neither extreme wet nor extreme dryness affect it in the least, as was satisfactorily proved in the years 1859 and 1860. It holds on its good appearance far into the winter, looking well from the middle or end of April to December. It will be found very useful to those who have but little time to propagate, and little room to winter bedding plants, as it can be kept without either labour, protection, or care."

Testimonial Received

From Mr. D. Ferguson, *Curator, Royal Botanic Gardens, Belfast.*

"Sir,—I have much pleasure in forwarding my testimony of the new Bedding Plant, Scrophularia nodosa variegata. I saw the plant on the 28th June last for the first time in the Palace Gardens, Armagh, and for a ribbon border I have no hesitation in saying it is the best plant I have yet seen. I called in the evening, after a heavy day's rain, which did not seem to affect the plant in the least. The leaf is large, with a pure white margin. I am glad you have the stock, as you cannot too highly recommend it as a bedding plant."

To Mr. B. S. Williams, *Paradise Nursery, March* 28.

Strong plants in May, 1s. 6d. each; 12s. per doz.: 80s. per 100.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

E. G. HENDERSON and SON respectfully offer FUCHSIA COMET, FUCHSIA MINNIE BANKS, the two finest Exhibition varieties out, 5s., 7s. 6d., and 10s. 6d. each.

STUARTIA PENTAGYNIA.—A very handsome deciduous autumn-flowering hardy shrub. For description see *Gardeners' Chronicle* of March 15, and E. G. H. & Son's SEED CATALOGUE, page 95.

Strong bushy Plants, 3 feet high, 7s. 6d.

FRUITING VINES.—Extra strong; Golden and Muscat Hamburghs; also, Bidwell Seedling, a late-hanging Grape, and others.

SEEDS OF

Clianthus Dampieri.—The most gorgeous plant in cultivation. Five seeds, 2s. 6d.

Calendula officinalis superba. 6d. and 1s. per packet.

Celosia pyramidalis aurea, 1s. 6d.; Rubra, 1s. per packet.

Cosmos diversifolius atrosanguineus, 1s. per packet.

Linum perenne candidissimum, 1s. per packet.

Perfection Sweet William, 6d. and 1s. per packet.

Œnothera Lamarckiana, 6d. and 1s. per packet.

Saponaria calabrica alba, 6d. and 1s. per packet.

Nemophila atomaria oculata, 6d. and 1s. per packet.

Zinnia elegans flore pleno, 6d. and 1s. per packet.

Giant Emperor Asters in 20 colours.

Dwarf Chrysanthemum-flowered Asters.—The most beautiful for bedding and margins.

Salvia argentea, Ferula glauca, Dipsacus Gmelini.—Ornamental garden plants, 6d. and 1s. per packet.

Bush Vegetable Marrow.—The most prolific and richly flavoured of any, 1s. per packet.

Wellington Nursery, St. John's Wood, London, N.W.

MESSRS. E. G. HENDERSON and SON, of the Wellington Nursery, St. John's Wood, have great pleasure in offering the following VERBENAS, selected as the finest kinds yet seen by them, surpassing others for brilliancy and effect in the primary object of massing in Flower-beds, being distinguished by the possession of those properties in habit, and long continuance in bloom which are essential in effecting the richest designs. In "Lady Grey Egerton" will be found the finest Magenta tint yet seen, with a corresponding habit; in "Sir Philip" the most brilliant carmine; in "Red Gauntlet" the most unique self of the season, with habit, size, outline, and colour in its favour, and in "Desdemona," a very splendid middle colour for rich relief—contrast with lighter shades. The first named varieties are from a splendid collection raised by Mr. Wills, of the Oulton Park Gardens, Cheshire; in which will be found a magnificent strain in advance of other seasons, for general effect and brilliant features.

As the pure scarlet and white self sections do not (yet) offer any decided advance upon the well known favourite kinds, it is certain that the highest improvements will be found amongst the finest secondary tints which are so essential for full complement of colours and diversified effect, and it is amongst such that the kinds now enumerated will be found valuable acquisitions.

NEW VERBENAS.

DESDEMONA.—Rich dark magenta or plum-coloured crimson, with large bold truss, free growth, compact habit, and profuse bloom. Blossoms large, even, and broad-lobed. A splendid variety for massing with a lighter belt or margin of pure lilac or white; producing a larger truss than Purple King, with a richer colour tint, and the same even and regular growth.

LADY GREY EGERTON.—Beautiful new magenta-crimson, displaying a large well-expanded truss, with close broad flower-lobes of chaste and even outline, free and compact in growth, and brilliantly effective for broad ribbon rows, beds, or parterres; unequalled by any variety in its colour for decorative art in flower garden designs. If less brilliant than the following variety, it is more intensely beautiful by its comparatively rare and unique petal-tints.

SIR PHILIP.—An exceedingly brilliant and effective variety, with a free compact style of growth, and profuse blooming habit; a vivid carmine scarlet in colour, with large trusses and close, broad, even flower-lobes, unequalled for brilliancy of tint and effect in beds, belts, or massive groups. It is as pre-eminent as one in a thousand, and the most telling variety yet offered by E. G. H. & Son.

RED GAUNTLET.—An exceedingly fine variety of an unique and beautiful orange-tinted flame-scarlet colour, with a good free style of growth, and profuse blooming habit, flower truss large and compact, blossom lobes broad, close and even. A brilliant and effective kind, admirably adapted for bedding and large belts.

Plants 1st of May, each, 2s.; per dozen, 18s.; per 100, 75s.

SUTTON'S COLLECTIONS of choice NEW FLOWER SEEDS (Post free).—Ladies and gentlemen requiring showy kinds of FLOWER SEEDS are respectfully recommended to leave the selection of sorts wholly or partly to us, and we will supply those which we know to be really worthy of cultivation.

COLLECTIONS of FLOWER SEEDS to be sent free by post.

	£	s.	d.
The best 100 sorts of Flower Seeds, hardy, half-hardy, and tender, with instructions	1	1	0
The best 50 sorts ditto, with instructions	0	10	6
The best 36 sorts ditto	0	7	6
The best 24 sorts ditto	0	5	0

Sutton & Sons, Seed Growers, Reading, Berks.

THOMAS HANDASYDE'S DESCRIPTIVE CATALOGUE of FLORISTS' FLOWERS, New German and other FLOWER SEEDS, &c., containing all the Novelties of the season, is now ready and may be had free on application. Also a large and healthy stock of all sorts of EVERGREENS at the

Glen Nurseries, Musselburgh, near Edinburgh.

Extra Sized and Young Specimen Hard-wooded Plants.

HUGH LOW AND CO. have to offer a large stock of the above, fine healthy well-grown Plants, well set with bloom, many of which are fit for exhibiting this season.

The undernamed are included—

Erica Albertus	Erica Vernoni
,, ampullacea	,, Victoria Regina
,, aristata major	Aphelexis (sorts)
,, candidissima	Azaleas (sorts)
,, Candolleana	Boronias (sorts)
,, Cavendishi	Chorozemas (sorts)
,, eximia	Dracophyllum gracile
,, intermedia	Dillwynias (sorts)
,, jubata	Epacris (sorts)
,, tortulæflora	Leschenaultias (sorts)
,, tricolors (sorts)	Pimeleas (sorts)
,, trossula	Polygalas (sorts)

etc., etc.

Prices, which are very moderate, may be had on application.

Clapton Nurseries, London, N.E.

The Royal Horticultural Society's Exhibition.

SEEDS that will be required to obtain the Prizes offered at the Autumn Show, Sept. 10. See advertisement in *Gardeners' Chronicle*, March 15.

	s.	d.
ASTER, Truffaut's Pæony-flowered, 24 varieties	4	0
,, Giant Emperor, 13 varieties	6	6
,, Dwarf Chrysanthemum-flowered, 10 varieties..	1	8
,, Tall ,, ,, 12 ,, ..	2	0
,, Double Crown, 4 varieties	0	8
,, ,, Dwarf Pyramidal Bouquet, 12 varieties	2	0
,, ,, Quilled, 12 varieties	2	0
,, ,, ,, Hedgehog, 6 varieties	1	0
,, ,, ,, Reid's extra fine per packet	0	6
,, ,, Globe Pæony-flowered, new ,,	0	6
Mixed packets of each of the above kinds	0	6
STOCK, dwarf German Ten-week, 24 varieties.. ..	4	0
,, large flowering ,, 20 ,, ...	3	4
,, Autumnal or Intermediate, 8 ,, ...	1	4
,, Emperor, 5 ,, ...	0	10
,, Brompton, 6 ,, ...	1	0
For other choice varieties see Catalogue.		
Mixed packets of each of the above German Stocks ..	0	6
PHLOX DRUMMONDII, 13 new varieties, each p. pkt.	0	6
ORNAMENTAL GRASSES, EVERLASTINGS, and Imperted GOURDS .. ..per packet	0	6

Free by post.

For the character of the above, see report of the Annuals grown at Chiswick, 1861, in *Gardeners' Chronicle*, March 15, p. 237.

James Tynan, Importer of Continental Seeds.
Seed Warehouse, 68, Great George Street, Liverpool.

NEW SCARLET VERBENA, FOX-HUNTER.

HUGH LOW & CO.

HAVE pleasure in intimating that the entire Stock of the above-named VERBENA is in their possession, and plants will be ready the last week in April. Price 5s. per plant. Special quotations given to purchasers by the dozen. The merits of FOX-HUNTER have been so universally and extensively admitted, that H. L. & Co. think it needless to do more than add that a First-Class Certificate was awarded by the Floral Committee of the Royal Horticultural Society, when Cut Flowers were exhibited by the raiser, John Miller, Esq. of Upwey.

CLAPTON NURSERY, LONDON, N.E.

HARDY JAPANESE PLANTS, NEW ROSES, &c.

JOHN STANDISH

HAS great pleasure in submitting to the consideration of his friends and the public in general the following List of NEW PLANTS, ROSES, &c., far exceeding in interest any that he has ever before had the opportunity of sending out at any one time; he would particularly direct attention to the Variegated and other JAPANESE PLANTS, which he believes will effect quite a revolution in Gardening, as their complete hardiness has in many instances been quite established. Obtained by that indefatigable and successful collector, Mr. Robert Fortune, they were sent home in such excellent condition as to excite the wonder of all who saw them at the opening fête of the Royal Horticultural Society, and were universally acknowledged to be the most remarkable collection ever imported into England.

The NEW ROSES have been exhibited in the winning stands both at the Crystal Palace and Royal Horticultural Society, and the entire stock is in the hands of J. S.

Amongst the NEW FERNS will be found many of great interest and novelty.

HARDY JAPANESE PLANTS.

THUJOPSIS DOLABRATA VARIEGATA.—It is impossible to speak in too high terms of this variegated plant. Those who know T. dolabrata can form some idea of it when J. S. states that every shoot is terminated by beautiful silvery leaves; its hardiness is established from the fact that it stood all last winter at Elvaston, when the Common Holly and Portugal Laurels were killed to the ground. Plants 63s. each in the spring.

RETINOSPORA OBTUSA.—An evergreen shrub of the Arbor-vitæ race, growing from 60 to 80 feet high, stiffer in its foliage than anything known, having the character of Cedar of Lebanon with Cypress leaves. The wood is used by the Japanese in various ways, shines beautifully without any polish when worked up. Plants now ready, 21s. each.

RETINOSPORA OBTUSA VARIEGATA.—Same species, with beautifully white variegation regularly occurring all over the plant. 31s. 6d. in April.

RETINOSPORA PISIFERA.—A very beautiful slender looking tree with sharp pinnated leaves. 21s. each.

RETINOSPORA PISIFERA AUREA.—Same species, but instead of the white variegation the terminal shoots are of a beautiful golden hue. Nothing can be more exquisite than this plant. 31s. 6d. in April.

RETINOSPORA PISIFERA VARIEGATA.—The same species with beautifully white variegated foliage. 31s. 6d. in April.

SCIADOPITYS VERTICILLATA.—This, the Umbrella Pine, as it is sometimes called, is one of the most remarkable of all the Coniferæ, described (by Siebold) as a very singular shrub or small tree, but in reality growing to the height of 100 to 150 feet, with its whorls arranged in the form of an extended parasol. As J. S. has several imported plants, the character of it can be well seen by any of his friends who may favour him with a visit. Seedling plants in the seed leaf, 42s. each; or a few imported plants, about 1 foot high, 10 guineas each.

EURYA LATIFOLIA.—A most exquisitely variegated shrub, the young shoots being of a brilliant rose colour, changing to white; when this becomes large and well established it will be one of the most beautiful plants known. 31s. 6d. each in April.

OSMANTHUS VARIEGATUS NANUS.—A dwarf Holly-like looking plant, perfectly hardy, and from the freeness of its growth likely to supersede many of the variegated species of Ilex now in our gardens. 31s. 6d. each, in April.

AUCUBA JAPONICA (true).—The shrub hitherto known under this name is merely a variegated variety of the one now introduced; it is covered with beautiful red berries about the size of the common Sorbus. 21s. each.

TAXUS FORTUNII.—An erect-growing species, somewhat similar in habit to the Irish Yew, but with very long leaves. Plants in spring. 21s. each in April.

BAMBUSA VARIEGATA.—A very beautiful dwarf growing plant, perfectly hardy. 21s. each, in April.

CAMPANUMŒA LANCEOLATA.—From N. China, probably hardy, but at any rate most useful as a greenhouse creeper. Peculiar bell-shaped flower, green and black, produced very freely all over the plant. Plants in Spring, 10s. 6d.

NEW FERNS.

LOMARIA FLUVIATILIS.—A very distinct species from New Zealand. Fronds nearly 1 foot long. 42s. each.

LOMARIA ELONGATA.—New Zealand. Pinnate leaves, 2 feet long, stouter than other Lomarias; very striking and beautiful. 42s. each.

NEW FERNS.

LOMARIA MAGELLANICA.—Perfectly hardy; stood all last winter, even in Yorkshire. 3s. 6d. to 10s. 6d. each.

CYATHEA DEALBATA.—Nice seedling plants, with fronds from 15 to 18 inches long, in 32-pots. 7s. 6d. each.

CYATHEA SMITHII.—Seedling plants. From 2 to 5 guineas.

CYATHEA CUNNINGHAMII.—A beautiful tree Fern, of not very large growth, suitable for small greenhouse. 2 to 5 guineas.

LASTREA ATRATA.—North China, very hardy, dark green foliage. 10s. 6d. each.

WOODWARDIA JAPONICA.—Hardy. From Japan and North China. 21s. each.

WOODWARDIA ORIENTALE.—Hardy. From North China, one of the finest of all hardy Ferns. 21s. to 31s. 6d. each.

TODEA PELLUCIDA.—A very beautiful tree Fern. 5s. to 10 guineas each.

CAMELLIA RETICULATA FLORE PLENO.—The largest and finest of all Camellias for effect. 31s. 6d. to 3 guineas each.

NEW ROSES.

COMTE DE FALLOUX, H. P.—A most free blooming variety of the Géant race, admirably adapted for a pot Rose or for bedding, as it never at any time of the year throws up a shoot without a bloom. Colour, bright scarlet crimson. 10s. 6d. each.

REYNOLDS HOLE, H. P.—A very strong and free blooming variety, throwing its blooms up well and very erect. Colour very lively pink, increasing in brilliancy as the flower gets age. For effect in gardens unrivalled; figured in the *Floral Magazine* for November, 1861. 10s. 6d. each.

GREGOIRE BOURDILLON, H. P.—A seedling from the Géant, very vigorous habit, larger and brighter than its parent; colour scarlet crimson. 10s. 6d.

MARGUERITE APPERT, H. P.—Large blush, shading off to white, beautifully cupped shape, vigorous habit. 10s. 6d. each.

ANDRE DESPORTES, H. P.—A seedling from Lord Raglan, very vigorous in habit, large rose-coloured flower. Admirably adapted for a pillar Rose. 10s. 6d. each.

JOHN STANDISH, H. P.—Deep violet crimson, very dark, perfectly imbricated, and blooming in clusters, vigorous habit, first-rate Rose. 10s. 6d. each.

Plants of Comte de Falloux now ready. Strong plants of the others will be ready the first week of May.

Besides the above J. S. can supply all the New Roses of this and last year, fine strong plants on their own roots, or grafted, from 2s. to 3s. 6d. each, or by the hundred at a considerable reduction.

VINES.

MUSCAT TROVERON.—One of the finest of all the White Grapes; as such it received a First-class Certificate at the July Show of the Royal Botanic Society. As large as a Black Hamburgh, bunches 15 to 20 inches long, with a fine rich acid and slight Frontignan flavour; one of the finest Grapes for Exhibition purposes. 10s. 6d. to 31s. 6d.

INGRAM'S HARDY PROLIFIC MUSCAT.—This Grape has fully sustained the character given to it by John Standish, as it has obtained the 5l. Prize given by Mr. Saunders for the finest Seedling Grape of last year; a First-class Certificate from the Fruit Committée of the Royal Horticultural Society, and an extra Prize from the Royal Horticultural Opening Show. 21s. to 63s. each.

In addition to the above a fine collection of all the leading kinds either as Fruiting Canes or small plants for planting out.

J. S. begs to intimate that he has a fine stock of all the leading HYBRID RHODODENDRONS, from 12l. to 20l. per hundred; a fine collection of HARDY ORNAMENTAL SHRUBS and TREES, and the finest GLADIOLI in the world. Also all the NEW PHLOXES of 1860 and 1861, raised by Lierval and others, from 1s. 6d. to 3s. 6d. each, and assures his friends and the public in general that everything sent out by him will be in the best possible condition, and will not fail to give satisfaction.

JOHN STANDISH, THE ROYAL NURSERY, BAGSHOT, SURREY.

Prize Phloxes. | Prize Gladiolus.
Prize Chrysanthemums.

JOHN CATTELL'S Collections of the above obtained the following Prizes at the London Exhibitions during the past season :—

PHLOXES.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

GLADIOLUS.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

CHRYSANTHEMUMS.

First Prize, for the best 24 Cut Blooms, at the Royal Horticultural Society's Grand Fruit and Chrysanthemum Show, held at South Kensington Gardens.

First Prize, for the best 24 Cut Blooms, at the Stoke Newington Chrysanthemum Exhibition.

First Prize, for the best 24 Cut Blooms, at the Crystal Palace Chrysanthemum Exhibition.

J. C.'s collections include every variety of note, and he now offers them at the low prices named below, the selection being left to himself.

PHLOXES, 6s., 9s., and 12s. per dozen.
CHRYSANTHEMUMS, 6s. per dozen.
GLADIOLUS, 6s., 9s., 12s., and 18s. per dozen bulbs.

CATALOGUES will be ready shortly, and forwarded post paid on application.

Strong plants of the Chrysanthemums and Phloxes will be ready early in April.

Nursery and Seed Establishment, Westerham, Kent.

Choice Dahlia Seed.

H. LEGGE has more than he requires, saved from his Unrivalled Collection, 50 Seeds for 2s. 6d. per packet. H. L. also intends sending out on the 1st of May his superb NEW DAHLIA "Prince of Wales," bright yellow, tipped with pure white, extra fine and constant. Those who do not grow this Fancy will lose the best of this year. 10s. 6d. per plant.

CATALOGUES can be had by inclosing One Stamp as above, Marsh Side, Edmonton, N.

NEWEST SORTS of DAHLIAS.—The following Novelties are the quintessence of the sorts of this beautiful autumnal flower, which were brought into the markets this year at very high prices—18s., 24s., and 27s. a bulb. Without exaggeration it may be said that the whole are paragons, each presenting in colour and form either a novelty or an improvement. These new sorts have been obtained by the most celebrated Dahlia cultivators of Germany, Messrs. Sieckmann and Mardner, from whom the undersigned has acquired a selection of the choicest sorts which gained Prizes at the Dahlia Show at Erfurt last autumn.

1. GRANDIFLORA.

GERMAN PINK.—Delicate pale rose on white ground, with light purple violet; pink-like striped and sprinkled.

HONOUR of GERMANY.—Beautiful salmon red, pale leather-yellow towards the edges, also alternating with pale rose tips on charming cherry-red ground and back. Incomparable Novelty.

A. HENDERSON.—Dark cherry brown, with amaranthine and light violet border.

GARDENER'S SWEETHEART.—Light gold yellow, with brownish crimson tips, delicate colouring.

GARDENER'S FAVOURITE.—Dark rose peach blossoms, graceful tubular form.

AUTUMN QUEEN.—Pale pea green, with soft rose tint.

KOH-I-NOOR.—Light lemon yellow, large leaves.

LUDWIG STORCH.—Brilliant light Isabel colour on chamois ground, rare and beautiful colouring.

BEAUTIFUL PINK.—White, with light and dark purple violet, light blue stripes and sprinkles, beautiful rose form.

FATHERLAND'S ROSE.—Beautiful salmon rose, lighter towards the edges, rose form.

DELICATE PINK.—White, with delicate lilac and black purple, finely striped and sprinkled, charming.

2. LILLIPUTIANS (Small Flowered),
For small beds and pot cultivation.

GERMAN BELLIS.—Peach rose, with white tips.

,, SNOW ROSE.—Pure white, a beautiful Lilliputian in every sense.

ELIZABETH VON BETHMANN-HOLLWEG.—White, with light carmine ground and edges, very sharply and regularly marked.

MARGARET.—Shining gold yellow, with purple crimson tip.

MY LITTLE DEAR.—White, with purple violet tips; rose form.

LITTLE ROSA.—Pale lilac rose, with white centre.

GERMAN BOY.—Rose orange ground, deepening into crimson, with dark purple tips.

PRINCESS of LILLIPUTIANS.—White ground, with purple-violet tips, flowers abundantly.

PEARL.—This Dahlia is recommended as a Lilliputian of the first order. The flowers are pure white, well formed, of middle size, and upright; when only 1 foot high it already flowers abundantly. Well adapted for growing in pots.

Of the Novelties given above we furnish young, healthy, and vigorous plants at the choice of the purchaser, each sort, 6s.; and according to our own selection six sorts for 30s.; 12 sorts for 54s.; the whole collection for 80s. A liberal discount allowed to the Trade.

Our CATALOGUES of PLANTS for this year, Nos. 21 and 22, are forwarded post free on application.

N.B. Remittances to accompany orders from unknown correspondents. Letters prepaid, 6d.

H. Laurentius, Horticultural Establishment, Leipsic, Saxony.

MESSRS. BROWN AND CO. offer the following Selection of CHOICE PLANTS, which they will forward to any part of the kingdom :—

	s.	d.
25 AZALEAS, new hardy Belgian varieties, one of a sort, on their own roots, by name, well set for bloom, fine for beds or pot culture for forcing ..	20	0
AZALEAS, hardy American varieties, do do. ..	15	0
12 Hardy RHODODENDRONS, including scarlet, white, and rose colour	12	0
Choice named Scarlet RHODODENDRONS, per doz.	21	0
New Yellow RHODODENDRONS, each .. 3s. 6d. to	5	6
Hardy HEATHS, LEDUMS, and KALMIAS, per doz.	6	0
CLIMBING ROSES of best sorts, per doz.	6	0
6 Fine Hardy MAGNOLIAS, one of a sort	10	0
Choice CONIFERÆ, cheap; PRICE LIST by Post.		
Greenhouse AZALEAS, fine varieties, per doz., 10s. to	15	0
CAMELLIAS, best double varieties, per doz. ..	28	0
Yellow PICOTEES and CARNATIONS, per doz. ..	10	0
Choice PINKS and CLOVES, per doz.	6	0
12 Best PHLOX PERENNIALS, one of a sort	6	0
12 Best vars. of CHRYSANTHEMUMS, one of a sort	6	0
Fine New GERMAN IRIS, per dozen..	6	0

A LIST of GREENHOUSE PLANTS, &c., by post.

American Nurseries, near Farnham, Surrey.—April 5.

Yorkshire and Lincolnshire Nursery and Seed Establishment.

MARTIN AND SONS respectfully offer a very superior Stock of TURNIP SEED, as under, the produce of their Seed beating all others at one of the principal Shows in Yorkshire, winning the "two Five Pound Silver Cups," the "Second principal Prize," and several of the minor prizes.

CATALOGUES with particulars on application.

Yorkshire Prize Swede Turnip	..	1s. per lb.
Golden Melon do. do.	..	
Rouge et Blanc Stone do.	..	
Improved White Globo do.	..	
Russian Green-top White do.	..	

Skirving's Green-top, Marshall's Purple-top, and all the principal kinds of Swede and White Turnips, at 8d. per lb.; by the bushel or cwt. cheaper.

FLOWER SEEDS.

The 80 varieties which caused so great attraction and were admired by the hundreds of persons passing the Park Nursery, Hull, for 5s., free by post.

BEDDING PLANTS.

Our Stock is immense, and strong healthy plants, from 2s. 6d. to 4s. per dozen; by the hundred, 20s. to 25s.; by the thousand, 8l. 8s., including the choicest of Verbenas, &c.

Nursery and Seed Establishment, Cottingham and Hull.

Garden Seeds.

PAGE AND TOOGOOD'S SPECIAL LIST will be forwarded post free.

P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the south being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

From Mr. R. McDonald, *Gardener to the* Rt. Hon. Lord Willoughby d'Eresby, *Drummond Castle, Scotland, Jan.* 4, 1861.

"The seeds sent here by you for the last 23 years have given the greatest satisfaction, and considering the large supply required, it is of the greatest importance to have them of such first-rate quality and so true to name. The collections for cottagers have been very useful and have been the means of inducing many of them to grow a greater variety of vegetables than they have hitherto done."

From Mr. Dowling, *Gardener to* Lord Henry Cholmondley, *Holly Hill, Jan.* 1, 1861.

"Nothing gives me so much pleasure as to speak of the excellent quality and trueness of the seeds you sent me for 1860. It is impossible to single out anything in particular, as all succeeded so well, and although a difficult season, I have never served a family better, which I attribute to the good quality of the seeds, and having been supplied by you for 30 years with the greatest satisfaction, my opinion is expressed with some confidence, and I also know your extreme desire at all times to meet the wishes of your customers."

From Mr. Whale, *Gardener to the* Rt. Hon. Lord Rivers, *Rushmore, Dorset, December* 30, 1860.

"In enclosing you my 20th annual order, I am happy to say that I have always found your articles to be of the best quality, and they have always given me great satisfaction."

Royal South Hants Seed Establishment, Southampton.

JEAN VERSCHAFFELT'S NURSERY, Ghent, Belgium.

J. V. begs respectfully to announce that he intends sending out for the first time, on and after the 1st of September next, the following striking Novelties, viz. :—

1. CAMELLIA QUERCIFOLIA (J. Versch.).—The most curious and interesting Camellia known, as regards its leaves, which are Oak like; the flower being much the same as the universal favourite C. fimbriata alba. The plant is very showy, a good setter and very free bloomer. Prices are fixed as follows :—

Nice plants, 1 to 1½ feet high, 21s. each.
Do. do. with buds, 31s. „
A few extra sized plants at 42s. „

2. RHODODENDRON SOUVENIR DE JEAN BYLS (J. Versch.)—This is the last and also the finest seedling raised by Messrs. Byls, Ghent, from whom J. V. purchased the entire stock. It is perfectly hardy, having stood out the winter of 1860—1861, without losing a bud. It has very fine foliage, and the flowers are in large close bouquets, of a fine rose colour, with a fine blotch of bright yellow on the upper lobe. Altogether one of the best known kinds, very free and very late bloomer.

Good plants . .	21s.
Stronger plants	31s.
A few extra sized plants	42s.

The plants will be sent out, as far as possible, with buds. A carefully coloured plate will be sent to each subscriber. One plant over to the Trade for every three taken.

The Subscription List is now open, and early orders are solicited, as they will be sent in strict rotation.

All letters to be addressed to Jean Verschaffelt, Nurseryman, 43, Rue de la Caverne, Ghent, Belgium.

☞ A reference required from unknown correspondents.

BRIGHTON and SUSSEX FLORICULTURAL SOCIETY'S GRAND EXHIBITIONS for 1862 will be held on the following days, viz. :—

SUMMER SHOW—WEDNESDAY, June 25, and THURSDAY, June 26.

AUTUMN —WEDNESDAY, Sept. 17, and THURSDAY, Sept. 18, on the same grand scale as in former years. Extra amounts have been added in the 1st Division for the best ten plants of Stove and Greenhouse Plants. Also for Ornamental and Fine-foliaged Plants; and prizes given for trays of six sorts of Vegetables.

Schedules can be obtained of the Secretary, 96, St. James's Street; or E. Spary, Queen's Graperies, Superintendent of the Exhibitions. Edward Carpenter, Secretary.

Brighton, April 5.

BISHOP AUCKLAND FLORAL and HORTICULTURAL SOCIETY,

The ANNUAL EXHIBITION of this Society will be held in Auckland Park (by kind permission of the Lord Bishop of Durham) about the usual time.

The following splendid Prizes are offered :—

For the best 8 Stove and Greenhouse Plants..	£20
„ 24 Dahlias	15
„ 12 Fancy Dahlias	3
„ 11 spikes Hollyhocks	10
„ 24 blooms „	3

With many others of great value.

Schedules of Prizes will shortly be issued, and further particulars will be duly advertised.

Rev. E. Healy }
S. J. Cherrett } Hon. Secretaries.

ROYAL BOTANIC SOCIETY, Regent's Park.

GENERAL EXHIBITIONS of PLANTS, FLOWERS, and FRUIT—WEDNESDAYS, May 28, June 18, and July 9.

AMERICAN PLANTS—MONDAY, June 9.

Tickets to be obtained at the Gardens only, by vouchers from Fellows or Members of the Society. Price on or before Saturday, May 17, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.

SPRING EXHIBITIONS every Wednesday to May 7, at 2 o'clock.

ROYAL HORTICULTURAL SOCIETY'S AZALEA SHOW, WEDNESDAY April 9, at South Kensington. Open at 1 o'Clock. Band commences at 3 o'Clock. Tickets 2s. 6d. each, can be had at the Garden, and of the principal Librarians, Music-sellers, &c. Also packets of 25 Five-shilling Tickets, price 5l., available according to the daily charges during the season.

A BALLOT for PLANTS on FRIDAY, April 11, at 2 o'Clock. For List and particulars see Wrapper of "Proceedings" for April.

The IMPLEMENT COMMITTEE appointed by the Council have decided upon holding Exhibitions during the Society's Great Shows, on WEDNESDAYS, May 21, June 11, and July 2.

Schedules for space, particulars, &c., can be had by application to Mr. Eyles, Garden Superintendent.

ROYAL HORTICULTURAL SOCIETY.—FRUIT COMMITTEE.

The next Meeting of this Committee will be held on TUESDAY, April 22, for the examination of such Fruits and Vegetables as may then be submitted for judgment, and when the following are offered :—

A. Best and second best Three Dishes of DESSERT APPLES, distinct sorts, 20s., 10s.

B. Ditto KITCHEN APPLES, 20s., 10s.

C. Best and second best Dish of STRAWBERRIES, not less than 50 fruits, 20s., 10s.

D. Best three heads of BROCCOLI, 10s.

All Fruit and Vegetables for exhibition must be delivered at the Rooms at South Kensington by 11 o'Clock on the day of Meeting.

Communications and packages to be addressed to
Robert Hogg, Secretary to the Committee.

NOTICE.

It is the intention of the Fruit Committee to grow this season in the Garden at Chiswick a collection of all the sorts of MELONS that can be obtained. Persons who are in possession of varieties of that fruit are therefore requested to send a packet of the Seed addressed to Mr. Eyles, Chiswick Gardens, Turnham Green, W., as early as possible. It would greatly facilitate the experiment if it were stated on the packet the shape and colour of the flesh of the several varieties.

ROYAL BOTANIC SOCIETY OF LONDON,

REGENT'S PARK, N.W.

SPRING SHOW, April 2, 1862.

6 CINERARIAS.

Silver Medal to Mr. Lamb, Gr. to Miss Thackerwaite, Southwell.

Silver Medal to Messrs. Dobson & Son, Isleworth.

Small Silver Medal to Mr. Wiggins, Gr., Worton Cottage, Isleworth. In this collection Duke of Cambridge, a rich deep crimson self, was very conspicuous.

Bronze Medal to Mr. James, Gr. to W. F. Watson, Esq., Isleworth.

6 AMARYLLIS.

Silver Medal to Mr. Parker, Tooting. The varieties named Ackermanni, with large dark crimson flowers, and vittata rubra, with lighter crimson flowers gracefully deflexed, were particularly handsome.

6 DOUBLE ALPINE PRIMROSES.

Bronze Medal to Messrs. Cutbush & Son, Highgate.

Small Bronze Medal to Messrs. Ivery & Son, Dorking.

6 CYCLAMENS.

Bronze Medal to Mr. Cross, Gr. to Sir F. H. Goldsmid, Bart., St. John's Lodge, Regent's Park.

Small Bronze Medal to Mr. C. Hutt, Gr. to Miss Burdett Coutts, Highgate.

NEW PLANTS, &c.

1st Class Certificate to Messrs. Veitch & Son, Exeter and Chelsea, for Rhododendron Princess Alice, a beautiful hybrid raised between R. Edgworthii and R. ciliatum, dwarf habited, plane neat foliage, and moderate-sized bell-shaped, and remarkably sweet-scented white flowers; well adapted for decoration.

1st Class Certificate to Messrs. Veitch & Son, for "Pancratium sp. Manilla," probably a Hymenocallis, a dwarf habited Amaryllidaceous plant, producing numerous scapes about a foot high each, bearing a solitary large white flower, of which the perianth segments are narrow and recurved at the point, and the coronet forms a broad flat 12-toothed cup from the edges of which rise six long erect stamens.

1st Class Certificate to Messrs. Veitch & Son, for Musa vittata, a handsomely striped form of Banana, the leaves of which are transversely marked with broad flakes of greyish green and white, the rest of the surface being dark green.

1st Class Certificate to Messrs. Veitch & Son, for Grevillea Hillii, an ornamental-leaved greenhouse shrub suitable for conservatories. The leaves are large, pinnatifid, with a few long lanceolate acute segments about an inch in width, decurrent along the rachis, and very much resembling the fronds of some pinnatified Pleopeltis or Phlebodium, or other polypodioid Fern.

1st Class Certificate to Mr. R Parker, Tooting, for Rhododendron Countess of Haddington, a very fine variety bred from R. Dalhousiæ, of stiff bushy habit, with elliptic lanceolate ciliated leaves, and large long-tubed white flowers deeply stained with pink, and produced from four to six in a truss.

1st Class Certificate to Mr. W. Bull, Chelsea, for Agave americana var. medio-picta, a very handsome form of American Aloe, in which the leaves are distinctly bordered with dark green, and have a broad golden yellow stripe down the centre; a very effective plant of its class.

1st Class Certificate to Mr. Bull, for Cyrtomium caryotideum, a bold-habited pinnate North Indian Fern, having curious three-lobed terminal pinnæ resembling the leaflets of Caryota urens. A good distinct Fern.

1st Class Certificate to Mr. Williams, Holloway, for Polystichum ordinatum, a handsome large-growing South American Fern, adapted for greenhouse conservatories. The fronds are 2 feet long or more, exclusive of the scaly stipes, springing from a stout erect caudex, broadly lanceolate, bipinnate, with rhomboidal pinnules lobed on the anterior margin. A bold habited elegant Fern.

2d Class Certificate to Messrs. Veitch & Son, for Lycaste Skinneri var., a handsome and distinct form, with broad pale rose sepals, deep rose-coloured petals, and a pale lip, having a yellow appendage in the throat, and marked with rosy blotches on the front lobe.

NEW PLANTS, &c.

2d Class Certificate to Mr. Early, Gr. to F. Pryor, Esq., Welwyn, for Cineraria Victoria, a clear white of tolerably good form, with broad florets and purple disk, but not shown in very good condition.

2d Class Certificate to Messrs. F. & A. Smith, Dulwich, for Cineraria carminata variegata; a variety in which the leaves are marked by a broad irregular creamy border, and have a pinkish tinge while young.

In this class there were also shown :—Stenogaster concinna, a charming dwarf Gesneraceous herb, with white and lilac flowers, rewarded last year; Rhododendron Sesterianum, a handsome fragrant hybrid, between R. Edgworthii and Gibsonii, awarded a 1st Class Certificate on March 26; Asplenium "flabellulatum" and Aspl. "rachirhinæ," two beautiful Ferns, also rewarded on March 26; Azalea Hortense Vervaene, a flesh coloured variety flaked with white and red—all shown by Messrs. Veitch & Son. Azaleas: Lord Canning, a bright deep rose of considerable promise; Lady Canning and Queen of Roses, rose colour; Duchess of Sutherland, pale rose; and Rifleman, salmon red—all from Mr. Todman, Gr. to R. Hudson, Esq., Clapham. Calamus micranthus, a graceful broad-leaved pinnate Palm, with spiny stems and rachides; Cordyline erythrorachis, a tolerably well known New Zealand plant, with long drooping red-striped leaves; Bambusa variegata, a stiff-habited short-leaved striped Grass; and a small-leaved variegated Begonia named Helena Uhde—all from Mr. Bull. Perpetual Moss Rose Hortense Vernet, a promising-looking light-flowered free blooming mossy variety, from Messrs Paul & Son, Cheshunt. Cineraria Lord Elgin, a pleasing soft magenta rose, certificated last year, and now shown in good character, from Mr. James, Gr. to W. F. Watson, Esq., Isleworth. Cineraria Mr Sowerby and Sunbeam, shades of deep magenta rose, from Messrs. Dobson & Son, Isleworth. Cinerarias Miss Eleanor and Lizzie, creamy white with purplish eye; and Rosa, rose crimson tipped, from Mr. Marcham, Gr. to E. Oates, Esq., Hanwell. Cinerarias Dark Beauty, dull deep rose crimson; Beautiful Star, rose-crimson tipped; Little Gem, deep rose crimson tipped; Decorator, large coarse rose crimson tipped and Defiance, large magenta rose—all from Mr. Wiggins, Worton Cottage. Hemerocallis "Kwanso" fl. pl. variegata, and H. elegans aureo-variegata, two striped-leaved sorts, not enough developed, from Messrs. F. & A. Smith, who also showed a good plant of Cyperus alternifolius variegatus, a beautiful variety, certificated on March 26; Rhodea japonica aureo-marginata; Aralia pulchella, an elegant slender shrub with digitately-lobed leaves. Cinerarias Royal Blue, a rather showy violet; Cadet, already rewarded; Mrs. Boucicault, Gauntlet, and Rose of England; Primula sinensis delicata fl. pleno, awarded a First Class Certificate on March 26; and some others.

MISCELLANEOUS.

Small Silver Medal to Mr. Williams, Holloway, for a miscellaneous collection of plants.

Bronze Medal to Mr. W. Paul, Waltham Cross, for three boxes of excellent cut Roses.

Bronze Medal to Messrs. Cutbush & Son, Highgate, for a collection of 50 finely-grown Hyacinths, in good condition.

Small Bronze Medal to Messrs F. & A. Smith, for a well grown plant of Pavetta borbonica.

Small Bronze Medal to Mr. W. Paul, Waltham Cross, for a box of very fine cut Camellias.

Small Bronze Medal to Mr. Todman, Gr. to R. Hudson, Esq., for 6 well-grown Chinese Primroses.

Small Bronze Medal to Messrs. Paul & Son, Cheshunt, for three boxes of cut Roses of good quality.

Small Bronze Medal to Mr Young, Gr. to R. Barclay, Esq., Highgate, for a miscellaneous collection of plants.

Mr. James, Isleworth, showed a box of 12 Pansies; Messrs. Ivery & Son, Dorking, some fine samples of Dioscorea Batatas; Messrs. Cutbush & Son a collection of Tulips; and Mr. Williams a stand of cut Camellias, in which one highly coloured striped variety marked "Seedling" appeared to be a flower of promise.

ROYAL HORTICULTURAL SOCIETY.—
FLORAL COMMITTEE.
LIST OF AWARDS, April 1, 1862.
FIRST CLASS CERTIFICATE.
Asplenium "flabellulatum," from Messrs. Veitch & Son, Exeter and Chelsea; and Mr. W. Bull, Chelsea.
Asplenium "rachirhinæ," from Messrs. Veitch & Son; and Mr. W. Bull.
Musa vittata, from Messrs. Veitch & Son.
Primula sinensis (fimbriata) delicata fl. pl., from Messrs. F. & A. Smith, Dulwich.
SECOND CLASS CERTIFICATE.
Cypripedium barbatum, var., from Mr. Williams, Holloway.
COMMENDATION.
Luzula sylvatica var. aureo-vittata, from Mr. Salter, Hammersmith.
The next MEETING of the Committee will take place on April 22. THOMAS MOORE, Secretary to the Committee.

GRAND HORTICULTURAL FETE and ROSE SHOW in connection with the Exhibition of the NORTHAMPTONSHIRE AGRICULTURAL SOCIETY in BURGHLEY PARK, STAMFORD, on THURSDAY, July 17.
The Premiums offered amount to 200*l*., and are open to all England.
The Schedule, with Rules, &c., may be had upon application to Messrs. LAXTON & HEWITT, Hon. Secs., Stamford.

Choice Vegetable and Flower Seeds.

B. S. WILLIAMS will be happy to forward post free to all applicants his PRICED and DESCRIPTIVE SEED CATALOGUE for 1862, containing Select Lists of all the best seeds in cultivation, with useful suggestions for the guidance of Amateur cultivators.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and other FLOWER SEEDS, Choice GLADIOLI, &c., is now ready, and will be forwarded post free on application.
The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices.
An inspection and comparison with prices in other Catalogues is respectfully solicited.
The following, of which descriptions will be found in Catalogue, are specially recommended :—

		s.	d.
BEAN, Haricot Flagolet Jaune, six days earlier than any variety in cultivation	per quart	2	6
BEET, Compact Topped or Pine Apple Short Top,	per oz.	0	6
" Selected Dwarf Red (Nutting's)	"	0	9
CAULIFLOWER, Early Dwarf Erfurt	"	2	0
" New Early Mammoth or Frogmore Forcing ..	"	3	6
CELERY, Imperial Dwarf Red (Hood's)	"	1	0
CHÆROPHYLLUM BULBOSUM	"	2	0
CUCUMBER, TELEGRAPH	per packet	1	6
LETTUCE, MOOR PARK	per oz.	2	0
PEA, GENERAL WYNDHAM	per quart	1	3

Exotic Nursery, Tooting, Surrey, S.

Wood's Defiance Cauliflower.

WM. WOOD AND SON have much pleasure in introducing this new and superior CAULIFLOWER to the notice of their friends and the public generally, and having proved it for several years against Walcheren and other approved varieties, they do not hesitate to pronounce it the best Cauliflower in cultivation. It is quite hardy, of dwarf habit, and produces immense large heads, which are very compact, and most deliciously flavoured.
Stock limited; price per packet, 2*s*. 6*d*.
WM. WOOD & SON, Nurserymen and Seedsmen, Maresfield, near Uckfield, Sussex
*** SEED CATALOGUE post free on application.

HOOPER'S INCOMPARABLE PEA.—The finest and richest flavoured Pea in cultivation, yielding a supply by successive sowings from the end of June to the end of October. Price 2*s*. per quart.
HOOPER & Co., Seedsmen, Covent Garden Market, London.

New Seedling Pea.

COTTON'S LEVIATHAN PROLIFIC MARROW, the best for main crop, a large, wrinkled, rich Marrow Pea. From one Pea 11,000 Peas were produced the second year (see Dr. LINDLEY, *Gardeners' Chronicle*, Aug. 7, 1853). The flavour sugary, and the colour very green when boiled. Height from 5 to 6 feet. May be sown from February till June and July, in drills 5 to 6 feet apart, and 1 inch from Pea to Pea. Retail price, 2*s*. per quart.
From GILBERT KNILL COTTON'S Seed Warerooms, High Cross, Barnstaple; or HURST & M'MULLEN, 6, Leadenhall Street, London, E.C.

TO THE TRADE.—
1 year Seedling Larch, Pinus austriaca, Birch, Sycamore, Apple Stocks, Pinaster.
2 years' Seedling Scotch and Spruce Fir, Quicks, Pear Stocks, Silver Fir, Beech.
Transplanted Pear Stocks, Strong Hazels, 2½ to 4 feet; Hornbeam, 2 to 4 feet, worked English Elms, Limes, Acacias, Poplars, Laburnums, 4, 5, 6, and 7 feet; Green Hollies, 1 to 1½, 2 to 3 feet, and strong Quicks Low prices on application.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

TO THE TRADE ONLY.
ABIES MENZIESII, 18 to 24 inches, 6*s*. per doz., 40*s*. per 100; do., 24 to 30 ins., 9*s*. per doz., 60*s*. per 100.
CUPRESSUS LAWSONI, 18 to 24 ins., 24*s*. per doz., 140*s*. per 100; do., 24 to 36 ins., 30*s*. per doz., 200*s*. per 100.
PICEA GRANDIS, 6 to 9 ins., 42*s*. per doz.; do., 12 to 18 ins., per doz.
PINUS INSIGNIS, 4 to 5 feet, 36*s*. per doz.; do., 5 to 6 feet, per doz.
THUJA LOBBI, 18 to 24 ins., 18*s*. per doz.; do., 24 to 36, 24*s*. per doz.
BERBERIS DARWINII, from seed, 3 to 6 ins., 70*s*. per 100; 6 to 9 ins., 35*s*. per 100; 18 to 24 ins., 120*s*. per 100.
RHODODENDRON MAXIMUM ALBUM, fine bushy stuff, ins. high, 60*s*. per 100.
RHODODENDRON PONTICUM, healthy and well set with buds, all sizes from 18 to 36 ins.
RHODODENDRONS, choice named and unnamed vars.
Ghent and American AZALEAS, by the doz., 100, or 1000.
SPRUCE FIR, handsome quartered stuff, 3½ to 4½ feet, 60*s*.; 4½ to 6 feet, 5*l*. per 100.
DOUBLE YELLOW PRIMROSES, 20*s*. per 100, or 400 for 3*l*.
TRADE CATALOGUES of GENERAL NURSERY STOCK on application.
Orders unaccompanied with either a remittance or reference will not be noticed.
THOS. CRIPPS, Nurseryman, &c., Tonbridge Wells, Kent.

Spring Catalogue.

JOHN CRANSTON'S SPRING CATALOGUE of "NEW ROSES" and PLANTS is now ready, and he will be happy to forward it on application.
It contains a descriptive list of the New Roses for 1862; select lists of Stove and Greenhouse Plants, Ferns, Azaleas, Fuchsias, Geraniums, Verbenas, Gladioli, and Miscellaneous Bedding Plants, &c.
Nurseries, King's Acre, near Hereford.

The Flower Garden.

WOOD AND INGRAM beg to announce that their PRICED DESCRIPTIVE CATALOGUE is now published, and will be sent free on prepaid application.
It contains a choice selection of Show, Fancy, Zonale, Variegated, and Hybrid Bedding Geraniums, Fuchsias, Dahlias, Verbenas, Hollyhocks, Calceolarias, Chrysanthemums, Pansies, Petunias, British and Exotic Ferns, Phloxes; Stove and Greenhouse, Herbaceous and Rockwork Plants; Hardy Bulbs, Bedding Plants of every description, &c.
Nurseries, Huntingdon.

NEW FUCHSIAS.
"MINNIE BANKS," and "COMET."
The above Fuchsias possess first-class properties, and show a striking advance on all others hitherto sent out. 3*s*. 6*d*. each, a few extra sized plants at 5*s*., 7*s*. 6*d*., and 10*s*. 6*d*.
Bougainvillæa speciosa (spectabile), true, 3*s*. 6*d*.
" glabra, 5*s*.
Fuchsia "True Blue" (double), 3*s*. 6*d*.
E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, W.

SUTTON'S COLLECTION of GOURDS and PUMPKINS, highly ornamental and useful.

	(Post free)—s.	d.		(Post free)—s.	d.
50 choice sorts	12	6	12 choice sorts	3	0
36 ditto	9	0	Serpent Gourd, very handsome	0	6
24 ditto	6	0			

SUTTON & SONS having imported Seeds of all the most ornamental and useful GOURDS, can supply a collection at very low charges (as see above).
Royal Berkshire Seed Establishment, Reading.

Two Hundred and Fifty Guineas in Ten Prizes.

FOR FIVE YEARS SUCCESSIVELY HIS LATE ROYAL HIGHNESS THE PRINCE CONSORT'S PRIZE CUPS HAVE BEEN AWARDED TO
SUTTON'S CHAMPION SWEDES at the Royal East Berks and South Bucks Agricultural Societies. New Seed now ready, 1*s*. per lb., or cheaper by the bushel, carriage free.
Royal Berkshire Seed Establishment, Reading.

The Gardeners' Chronicle.

SATURDAY, APRIL 5, 1862.

MEETING FOR THE ENSUING WEEK.
WEDNESDAY, April 9 { Royal Horticultural (Exhibition of Azaleas) at South Kensington 1 P.M.

CULTIVATORS do not yet seem, notwithstanding the strong instances which have from time to time been brought forward of the deleterious effects of FUNGOUS SPAWN UPON THE ROOTS OF PLANTS, to be sufficiently alive to the danger which arises from the use of compost into which imperfectly decomposed leaves or small twigs enter as an ingredient. In small establishments the gardener has frequently recourse to the decayed rubbish at the base of old faggot ricks, as well as to the heap of leaves, which is a still more fatal cause of mischief, because more likely to generate mycelium. This was pointed out to us at least 35 years ago by Mr. J. HENDERSON, the scientific gardener at Earl FITZWILLIAM'S, and we have had his evil report so strongly confirmed in every direction, that we should no more think of putting plants in such perilous soil than of watering them with a solution of arsenic.

In our Notices to Correspondents on Jan. 18th of the present year, in speaking of some diseased Geraniums submitted to us for examination, we suggested the probability of their being grown in compost consisting partly of half decomposed leaf-mould, and requested further information. Accordingly some of the mould was forwarded, and as we suspected it was full not only of bits of half decayed leaves but also of little pieces of stick, each of which was quite enough to infect any plant whose roots might come into its neighbourhood. If fungous matter should once be developed on them, no matter what might be the cultivation in other respects, the plants would be sure to be unhealthy if they did not altogether fail. We are not surprised then that the Geraniums, both in the hot and cold frame, suffered almost equally, and that other plants also failed; the disease appearing first in the stem, especially at the base, and the leaves in consequence soon showing unequivocal symptoms of the complete destruction which must soon follow. A glance, indeed, at what takes place in many of our woods might convince us of the pernicious nature of imperfectly decayed leaves. Where those white byssoid strata which are the first stages of many of our most common woodland Fungi abound, we scarcely ever see healthy plants amongst the leaves, and frequently there is no superficial vegetation at all. If leaf mould then is used it cannot be too thoroughly reduced to what the chemists call humus, or vegetable mould in its most perfect condition, which affords the base of ulmates and humates, before the gardener admits it into his potting shed. The peat which he uses has been subjected to half a century or more of decomposition, and far more rarely gives rise to fungous spawn; yet that like all other vegetable matter affords occasionally a fit place for the development of the spores of Fungi, though of species which are rarely troublesome.

Half the complaints which arise in cultivation, apart from those which owe their origin to parasitic growths upon the leaves, are due to the bad condition of the roots, and though this arises often from bad draining or poisonous matter in the soil, it is more frequently due than cultivators are apt to imagine, to the spawn of Fungi. *M. J. B.*

A FEW years since almost every disease to which plants are subject was attributed to a mysterious agent called BLIGHT, of which no one could give any intelligible account, but which like the cognate word Neuralgia, so common in the mouths of those who can give no more precise diagnosis, serve well enough to quiet those who neither look nor wish to look very deeply into the relations of cause and effect. It has moreover, like many other indefinite words, a show of wisdom, though it only serves to hide complete ignorance. It belongs in fact to the same school as that of many naturalists of the last century, and which is not yet quite extinct, who told wonderful tales of the storing up of corn by ants, of the care they took to supply it with mould in which it would not easily germinate, of their bringing it out to dry in the sun, and above all, to prevent the possibility of its sprouting, biting off the young germ—all of which depended mainly on their not taking pains to ascertain what it was that the ants so carefully tended, when a moment's observation, in spite of ancient reports on which they carelessly relied, would have shown that it was not corn, but ant eggs.*

In the present day no intelligent cultivator is contented with referring any mischief that may occur in his fields or gardens to such a questionable agent as blight, but at once strives to ascertain the cause, and in many cases if he cannot at once find any certain remedy, he has at least the satisfaction of knowing what his enemy really is, and has at least some chance, however faint, of contending against it more or less successfully.

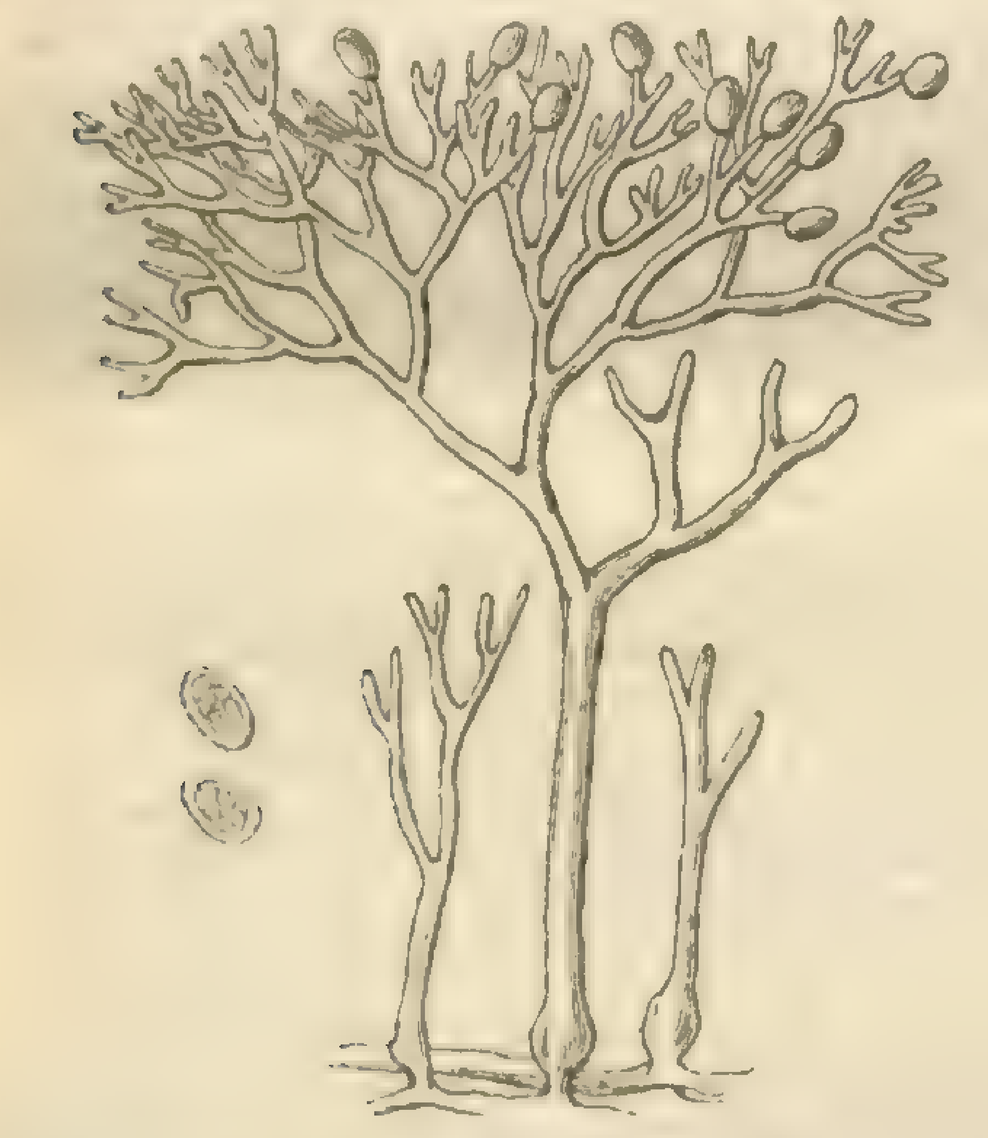
A curious case in point has lately been brought before our notice by an eminent nurseryman in the neighbourhood of London and an extensive Rose grower. A quantity of potted Rose plants in a cool house, perhaps suffered to get too cold for healthy winter growth, suddenly began to fail, and in a very short time after the attack every infected individual either perished or was past hope of speedy recovery. There was no white meal upon the leaves as in the common Rose mildew, but irregular pale brownish discoloured spots appeared upon the upper surface, which extended rapidly, so that in a short time the leaves withered and shrivelled up, and ultimately the whole plant was sacrificed. The disease was in fact in its progress and symptoms extremely like the Potato disease, and a minute examination of the under surface with the help of a lens exhibited a very delicate greyish mould scattered here and there, but not forming dense patches. More powerful magnifiers showed that not only was the disease closely allied to the Potato murrain, but that like that it was due to a minute species of *Peronospora*, quite distinct however from that which is so fatal to Potatoes, and certainly not hitherto described. The disease itself has never occurred to us before, and we should be glad to hear from those of our Correspondents who are cultivators of Roses for early flowering, whether they have ever met with a similar disease, distinguishing it carefully from the common white mildew, which is often very injurious, but never with such intensity or rapidity as the disease before us.

This new Rose mould is one of those in which, besides the usual propagation by spores, the contents of the spores themselves become organised,

* See for example the papers on ants so much admired in their day in the *Guardian* for September, 1713. The observations of course apply to common European ants; whether any ants in the East really lay up corn, is still a matter of controversy.

and if sufficient moisture is present, the resulting zoospores, after they have burst their common envelope, move about in every direction with almost inconceivable rapidity, like little infusorial animals, by means of lash-like threads. The spores will not germinate readily without a moist atmosphere, but the active zoospores require more than this, and must have some liquid matter in which to perform their evolutions. The way then to meet the evil, for there is little hope from the use of sulphur as in the case of common mildew, from the spawn of the Fungus running amongst the inmost tissues of the leaves, is to take care first that the house in which the plants are stored shall be well ventilated, that no syringing be used, and that no more water shall be given than is absolutely necessary, while care is taken that this shall go as little upon the leaves as possible. This is at all events a rational way of meeting the evil; though in the case of Fungi, which produce such a multiplicity of spores or other reproductive bodies, and those germinating so readily and propagating the species in so short a space of time, there is always much fear of failure. We need scarcely add that every withered or withering leaf should be carefully removed, and at once burnt.

We add a figure of this little parasite, which may be thus characterised:—



Peronospora sparsa: floccis sparsis nequaquam torulosis, ramulis ultimis vix uncinatis pallide griseis dichotomis, sporis subellipticis ($\frac{1}{1800}$ unc. long.).

On the under side of Rose leaves in conservatories. *M. J. B.*

THE PARIS SOCIETY OF ACCLIMATATION have published the rewards they last year conferred for merit in carrying out the purposes of their association. One gentleman receives a first class medal for *sending* seeds from China; another for his *report* upon new vegetables; another for *introducing* new plants to Bourdeaux. Second class medals are assigned to two gentlemen for *introducing* Chinese plants to Russia; another for *introducing* and *propagating* a Loasa (!) This seems to English eyes an inexplicable line of action. It also appears, however, that first class medals have been given to a person for acclimating various plants in Russia, to two others for acclimating exotics (*des végétaux exotiques*) somewhere; and a second class medal for acclimating the silk worm that feeds on the Ailanthus. It is not a little surprising that our French friends, usually so exact in the use of words and clear in their definitions, should envelope this acclimatation question in so dense a fog.

One useful line they certainly have taken. They offer a prize of 20*l*. for the "creation of Chinese Yams, better than what we now possess, and especially more easy to grow." This is sensible and intelligible; but we are unequal to the task of explaining what this has to do with acclimating the plant, which requires nothing of the sort; its hardy climatic qualities having been long ago fully demonstrated.

—— THE CAMELLIA occupies a position so preeminent that when really superior varieties of it are obtained, they assume a degree of importance which does not attach to novelties, even though they are highly meritorious, belonging to plants of a less permanent character. The present flowering season has introduced to our notice two novelties of the character above indicated—really striking and distinct varieties, possessing at the same time the very highest elements of beauty. We do not hesitate for a moment thus to speak of the REINE DES BEAUTÉS and of the COMTESSE LAVINIA MAGGI, two new Continental Camellias which have been exhibited in flower at the recent metropolitan spring shows. The first is of Belgian origin, and most perfect as regards the regular form of its petals, their smoothness of margin, and their substance, the colour of the flowers being a most lovely tint of blush-ing flesh-colour, somewhat like that which one occasionally sees amongst Balsams. The second, which we presume is Italian, is one of the most effective striped varieties yet obtained with flowers, moderate in size, double and regular in form, and in colour resembling the well-known *tricolor*, only brighter in the markings, the ground colour being a blush white, and the broad well defined stripes of a deep bright carmine. They are both charming acquisitions amongst the most noble of conservatory shrubs.

While on this subject, we may mention two other little known varieties which have been also exhibited, and which are so highly meritorious that we are sure those who may not have become acquainted with them, will thank us for thus specially directing their attention to them. One of these, called DUCHESSE DE BERRI, has the flowers very pure white, fully equal to those of the old double white variety, and accompanied by much better foliage, the leaves being very broad, dark green, and glossy, and the flowers large, full, double, and abundant. The other is called SARAH FROST, and is a model of symmetry in respect to form, the flowers of moderate size, and the colour rosy crimson, with a faint central white stripe to the petals. They might well replace some of the loose ragged sorts we sometimes still see cherished in country conservatories.

—— Like the "show" Pelargoniums, the "show" PANSIES seem to have nearly run their length, owing to the want of variety to be found amongst them; for though so-called novelties are still annually introduced in considerable numbers, and make their way perhaps from the dying out of many of the older kinds, yet as far as the public generally can appreciate, they present year after year little more than repetitions of a few stereotyped forms. Doubtless there are some distinctions; and there are also improvements as regards the properties of individual varieties, but we are sure no one who has observed the stands of Pansies which have of late years appeared at the exhibitions, will dissent from the statement that there is a great lack of variety, and still more, of novelty, amongst them. In fact, we have not unfrequently seen stands of 24 blooms, in which some eight or 10 of them were virtually alike. This state of things is to be regretted, as the Pansy certainly has a large share of the qualities adapted for a popular flower, and has long held its ground as such.

What is wanted is variety. And this seems likely to be supplied by the race of FANCY PANSIES now coming into fashion. As yet they are deficient in respect to certain properties, such as form, substance, and smoothness, but they have a charm of colouring which will win for them at once the favour of flower-lovers, and in the hands of the florists they will no doubt be gradually moulded into more perfect forms, as the French or spotted race of Pelargoniums already has been, or what will be equivalent thereto, their varied characteristics will be imparted to the better shaped class of florists' varieties: either way we shall get a combination of lively and varied colours, with smoothness of outline and surface, and density of substance.

It is to our French and Belgian neighbours that we are indebted for the position this group of Pansies has taken. Within the last three or four years considerable attention has been paid to the subject, and the results have been on the whole satisfactory, showing a decided advance; but since the death of M. Miellez, who was one of the principal growers of them, less advance has been made by the continental florists. The flower has now however been taken in hand by some of our English growers, and the Dean of Bradford has already exhibited in London some English raised sorts of superior merit, such as Princess Alice and Etoile du Nord, the former of which has now a commendation from the leading metropolitan floral tribunal.

Those who are not acquainted with the appearance of this group of Fancy Pansies will find a plate full of them in a recent number of Van Houtte's *Flore des Serres*. They differ from the ordinary Pansies in several features, such as the frequent absence of borders, the presence of blotches or fantastic markings on the petals, the frequent presence of very large dark central blotches, and the great variety of colours they present, the colours being not unfrequently variously shaded in the same flower. It will thus be seen that they have just that charm of variety which adds so much to the zest with which the fancy for a particular flower is taken up, and we look forward to a large increase of popularity in the Pansy, through their agency.

NOTES ON THE CONIFEROUS PLANTS OF JAPAN.

BY JOHN G. VEITCH.

THERE is probably no country in the world of the same area which produces so great a variety of Conifers as the group of islands composing the empire of Japan. From Nagasaki in the south to Hakodadi in the north, Conifers are everywhere abundant, and in great variety. Travellers have hitherto been enabled to explore but an exceedingly small portion of these islands, and it seems more than probable that the numerous mountain ridges of the interior produce a great number of entirely new and as yet undiscovered species.

The Japanese are great admirers of all evergreens, and much trouble is taken to cultivate them. The greater portion of the timber used for building and for all ordinary purposes is that of Coniferous trees. The annual demand is enormous throughout all parts of the empire, and it is said that landowners are compelled to plant a certain number of forest trees yearly, in order to replenish the stock of the country. Conifers are employed very largely for garden decoration. Clipped hedges of the Cryptomeria, Retinosporas, Biotas, &c., are very general, and scarcely a garden can be met with that does not contain specimens trained and cut into grotesque forms. The main roads which intersect this country are very generally planted on either side with rows of Conifers. Pinus densiflora and Massoniana, Cryptomeria japonica, and Thujopsis dolabrata, are the most common kinds employed for this purpose. Trees thus planted are very seldom cut down, and consequently they attain a great size, and form specimens of the utmost beauty.

Altogether Conifers form the most useful and the most generally employed trees in Japan. Most of the kinds which have been discovered by travellers have now been introduced to European gardens, and there being every prospect of the greater portion proving sufficiently hardy to withstand our severest winters, it is confidently hoped that ere long many of the beautiful species which are at present found in Japan only, will be distributed throughout our pleasure grounds, and flourish as luxuriantly as they do in their native country. Subjoined is a list of the principal species which have come under my notice, either in a wild state or cultivated in gardens. The Japanese names for the several species are given as far as can be correctly ascertained.

Abies Alcocquiana: Torao-momi.—A noble tree, discovered in September, 1860, during Mr. Alcock's trip to the sacred mountain of Fusiyama, and named in honour of that gentleman. It grows from 90 to 100 feet in height, at an elevation of 6000 to 7000 feet. The timber is good, and numbers of trees are being constantly felled and sold in the neighbouring towns.

Abies firma: Momi.—One of the finest species found in Japan, and one which will, doubtless, prove hardy in Europe. It is a handsome and remarkably straight growing tree, found at an elevation of 3000 to 4000 feet. It grows from 80 to 100 feet in height.

Abies Itsuga: Itsuga.—Found growing on Mount Fusiyama at an elevation of 6500 feet. It grows from 80 to 100 feet in height, and its timber is highly valued by the Japanese.

Abies Jezoensis: Jesso-Matsu.—A tree growing some 60 feet in height on the Island of Jesso.

Abies leptolepis: Fusi-matsu.—Found at an elevation of 8000 to 8500 feet on Mount Fusiyama. It is nearly allied to the common Larch, but differs from it in being a more slender tree, and having slightly different cones. It is remarkable as being the tree which grows at the greatest elevation on Mount Fusiyama. Its greatest height is 40 feet, but on reaching an elevation of 8500 feet it becomes a stunted bush of 1½ to 2 feet.

Abies microsperma.—A species hitherto found only in the vicinity of Hakodadi, on the island of Jesso. Very little is known about this tree, as two specimens only were seen, which were some 20 or 30 feet in height. It promises, however, to be one of the handsomest of its genus.

Abies polita: Tora-momi.—A large tree with pendulous green cones, found on the mountains of the north of Nippon, where it grows from 80 to 100 feet in height.

Abies Veitchii.—A species found at an elevation of 6000 to 7000 feet on Mount Fusiyama. It forms a beautiful tree from 120 to 150 feet in height, with small and very glaucous cones. The Japanese say that the species is peculiar to this mountain.

Abies bifida: Saga-momi.—A variety distinguished from others growing in this country, by its leaves being divided at the point into two sharp points. It does not grow wild in the districts to which Europeans have access, but is largely cultivated in gardens. The trunk of this tree is remarkably straight, attaining a height of 80 to 100 feet. As a timber tree it is invaluable to the Japanese.

Cunninghamia sinensis: Liu-kiu-momi.—Not seen in a wild state, but is commonly planted in gardens, where it forms a graceful tree with drooping branches, from 20 to 25 feet in height.

Juniperus japonica.—A dwarf shrub, found plentifully in most parts of Japan.

Juniperus rigida.—A handsome low tree, growing from 20 to 30 feet in height. It is found on the Hakone mountains, and at Atame on the east coast.

Nageia cuspidata.—A small tree said to be found in a wild state on the island of Jesso. It is cultivated in the gardens of Yeddo.

Nageia japonica: Nagi.—A handsome tree, growing from 30 to 40 feet in height. It is found on the mountains of the interior, and is cultivated in gardens.

Pinus densiflora: A-ka-matsu.—One of the com-

…nest and most useful Pines of the country. It grows to a height of 40 to 50 feet, and is found in abundance throughout the empire. Both resin and … are prepared from this and the following species.

Pinus Massoniana : Wo-Matsu.—A Pine somewhat similar to the latter, but attaining a greater size. It is planted to form avenues of immense length, and is the favourite species for horizontal training, for which the Japanese are famous. As a timber tree it is of great value.

Pinus Koraiensis : Wu-mi-matsu.—A tree extensively cultivated in gardens, but not found in a wild state in the localities to which foreigners have access. Its foliage short and very glaucous, forming a very pretty and distinct tree.

Pinus parviflora : Goyo-matsu.—A species nearly allied to the former. It is found on the Hakone mountains, and is largely cultivated in gardens. It grows from 30 to 40 feet in height. There are several species and varieties of Pines in Japan not yet determined by botanists. One of the most striking of these is the She-ro-y-matsu of the Japanese, the foliage of which is variegated.

Podocarpus Maki : Maki.—A small growing tree planted in gardens for ornamental purposes.

Podocarpus japonica.—A species discovered by Dr. Siebold. I have not met with it wild, but it is found in gardens.

Podocarpus macrophylla : Fou-maki.—An ornamental tree, growing from 20 to 30 feet high.

Retinospora obtusa : Hinoki, or Tree of the Sun.—This is one of the finest Conifers found in Japan. It forms a beautiful evergreen with dark green foliage. It is highly valued by the Japanese both for its timber and for ornamental purposes. It grows plentifully on the mountain ridges of the island of Nippon, and reaches a height of 50 to 60 feet. This will doubtless prove hardy in England, and will be a great acquisition to our gardens.

Retinospora pisifera : Sa-wa-ra.—A tree growing from 20 to 30 feet in height. Its foliage is of a lighter green than that of R. obtusa, and glaucous on the under side. Its habit is also more pendulous. It forms an elegant tree, but does not grow of sufficient size to be valuable for timber.

Retinospora squarrosa : Sinobu hiba.—A small-growing tree with glaucous foliage. Commonly planted for garden ornament. There are several species and varieties of Retinospora which assume very distinct characters, but which are as yet undetermined by botanists.

Sciadopitys verticillata.—The Umbrella Pine, or *Koya-Maki.*—This remarkable tree, which derives its name from having its leaves in whorls at the end of the shoots, is the only species of the genus known in Japan. It is a pyramidal tree with dense foliage, found abundantly on the Koya ridge of mountains in the province of Kiusiu, and on other mountains. Its greatest height is probably 70 to 80 feet, and a tree of this size constituting a perfect pyramid, clothed to the ground with branches, forms one of the handsomest specimens to be imagined. This and its varieties, one of which is variegated, are great favourites with the Japanese, and are largely planted in their gardens.

Taxus cuspidata : Ara-ra-gii.—A dense-growing shrub with dark green foliage. It is found at the foot of Mount Fusiyama, on the Hakone mountains, and on the island of Jesso. It grows from 15 to 20 feet high.

Thujopsis dolabrata : Asu-naro.—One of the most distinct and beautiful trees in Japan. It is found on the Hakone mountains and on other ridges in the north of Nippon, and also on the island of Jesso. It forms a most elegant tree, from 30 to 40 feet high. Its branches are somewhat pendulous, and loaded with foliage of the darkest green colour. This species and its varieties are extensively cultivated for ornamental purposes, and highly prized by the Japanese.

Torreya nucifera.—A tree growing from 23 to 30 feet in height, found on the hill sides in the south of Japan. Its foliage is of a dark glossy green colour, and the kernels of the nuts are dried and eaten by the Japanese.

Veitchia japonica.—Little or nothing is known of this genus. The accounts given by the Japanese are so conflicting as to make it impossible to place reliance on their statements.

Biota orientalis : Siwa.—A bush 18 to 20 feet in height, largely planted by the Japanese for forming hedges and for garden ornament.

Biota pendula : Ito-sugi.—A low growing bush, found in a wild state on the Hakone ridge of mountains. Its pendulous habit makes it a great favourite with the Japanese, who plant it largely in their gardens.

Biota japonica : Isa-bo-hi-ba.—A low, compact bush, only met with in gardens.

Cephalotaxus drupacea : Kay-a.—A tree growing from 35 to 40 feet in height, on the hill sides in the south of Japan. The kernels of the nuts of this tree are eaten by the Japanese.

Cephalotaxus pedunculata, Cephalotaxus umbraculifera : I-nu-kay-a.—These species were not found growing wild, but cultivated in gardens.

Cryptomeria japonica : Su gi.—The Cedar of Japan, is probably the commonest Conifer in the empire. It is found in all parts, from Nagasaki to Hakodadi. All soils seem to suit it. On the Hakone mountains, at an elevation of 6000 feet, it clings to the rocks with scarcely any soil to nourish it. There are numerous garden varieties, some of which have variegated foliage.

Indoor Gardening.

There are so many people who are fond of Ferns, that I think to-day perhaps I may venture to name a few of those that I have found to do very well in rooms, and to look very pretty in the cases there. I ought to premise, however, that my Fern cases are heated, or capable of being so, for till this was done the fronds were often too apt to damp off, and to those who have already got unheated plant cases I would advise some means, by the use of tin or stone bottles of hot water, of giving a little warmth to change and circulate the air when it gets too damp.

I have found the various kinds of Pteris and Davallia to be almost the easiest grown and most pretty Ferns when they are not wanted to be very large.

Pteris argyræa, P. tricolor, P. cretica albo lineata, P. tremula, and P. serrulata are amongst those at present most thriving in my own room. The P. argyræa and P. tremula grow extremely quickly and will very speedily mount up to 2 feet high, putting up quantities of beautiful green fronds; contrasting very well in their dark divided leaves and their wide white-striped fronds. P. tricolor is far more hard to grow; it requires a warm and very light position, and is much injured by wet standing on the leaves, which are always discoloured by it—indeed I fancy it does best when the leaves are seldom wet at all. All these plants seem however to thrive exceedingly well in those cases which by being closed at night give a little dew; this dew however must on no account whatever be allowed to condense and fall upon the leaves. I do not find frequent watering answer. The fibre or sand that fills the box being damp, we may trust a good deal to the dew for refreshing foliage, and to the sand for parting with moisture slowly; I seldom therefore water till the surface begins to be rather dry, except just over the heating apparatus when it is in frequent use, so as to dry up the sand that covers it.

The Davallias, again, are most charming plants. I find D. dissecta or D. decora to answer about the best, and there need be no heat at the roots at all. All my Pteris, therefore, I keep at the warmer, and all my Davallias at the cooler end of my case.

The Adiantums do best at the warmer end, where A. formosum, A. cuneatum, and A. Capillus-veneris grow extremely well. The Maiden's Hair grows marvellously in Cocoa-nut stuff, but though it likes at times a moist dewy atmosphere for a time, or a little of the softest syringing, it does not like anything like a continued close atmosphere, and damps off at once if we persist in giving it. It should be remembered how constantly it grows in perfectly airy places, though under the spray of waterfalls or in the splash of fountains, or on the sides of cliffs looking over the ocean.

The Allosorus crispus is another charming little Fern that grows quite delightfully in a warm shady corner, kept in a small pot, planted in sand and Cocoa stuff. I should be almost afraid to say how many new plants I made of mine last year, the little offshoots coming up incessantly.

The Dennstætia adiantoides is also a first-rate Fern to grow, one set of new fronds appearing as the first turn brown and are cut away.

With Ferns I think that cutting off damaged fronds is a very important point, and not the least advantage is the appearance of health maintained by this precaution. I have found charcoal drainage covered with moss, and then a soil composed of peat, sand, and Cocoa-dust, to be the most generally suitable for all the Ferns above mentioned. They can be either left in sunk pots or planted out in a Fern case.

A means was explained to me the other day of forming a charming moveable border of green Moss by planting Lycopodium denticulatum in squares or long strips of peat, so that they can be raised and laid down at pleasure. A very pretty plan is also described at length in the useful little "Book of Ferns" just published by Messrs. Hooper—that of lining a Fern house with galvanised wire netting, and forming by this means a regular wall of verdure. I have been told by persons who have adopted this mossy lining that frequent strong syringing full upon the walls with a syringe so fine as to be quite a dust of water, is the most effectual means of keeping the peat moist. Great care must be taken to prevent it from ever drying up entirely. When Ferns are kept in pots in a sitting room, their only hope of thriving is in damp double pots, with very frequent gentle syringing or bedewing. These hints are, however, meant quite for those who are beginning to grow Ferns, as (with the sole exception of the beautiful Pteris tricolor) all that I have named are of the very easiest and simplest kinds to manage. *E. A. M.*

Home Correspondence.

Glass Verandahs (see p. 286).—For some years I have found my flowers, fruits, Pines, and Grapes much protected, and kept in a healthy state, their colours improved and preserved in greenhouses and conservatories, by the following simple method of protecting them from the sun's rays without withdrawing its necessary warmth and light; being always equal in its light, they have constantly a bright healthy aspect. Take a quantity of chalk and skim milk; pound the chalk and mix it with the milk, until it is of the consistency of paint or paste—not too thin; lay it on the outside of your glass with a paint brush in dry weather, when it will harden and not wash off during the summer; it is easily removed with washing when the autumn makes the protection from heat unnecessary. When there is no sun its strong and equal light prevents any shade from injuring the plants, as it does not in any degree darken the houses. Thus the constant worry of blinds and their being generally out of repair is obviated, and by this plan, requiring only to be once done during the summer, unless unusually heavy rains should wash it off, a good deal of watching and labour is dispensed with. The cost is trifling and no risk incurred; it might be tried on a small scale with any inferior glass house to test its efficacy. I was some time inducing my gardener unwillingly to adopt it, but after one trial he was glad to dispense with every other protection with his fruits as well as flowers. *

Protecting Blossoms on Wall Trees.—I have read with attention, and, I hope, not without benefit, your remarks upon this subject. It is agreed on all hands that the evil to be guarded against is frost; and it seems to me that the only remedy, in the case of an open wall, is to prevent as far as possible the escape of the heat which it may contain. If I may be permitted to express an opinion with respect to hoar frost, I would venture to dissent from your doctrine, and maintain that it is one of the provisions of nature for the protection of plants. Hoar-frost is not the cause, but the effect of cold. It does not descend from the atmosphere in the frozen state, but is condensed and frozen upon the most exposed and insulated, and consequently the coldest points of the refrigerated leaves and branches. So far from increasing their cold, it surrenders to them a vast proportion of latent heat, on being first converted from vapour into water, and then into ice. Nor does the benefit end here; for when the ice melts the latent heat is re-absorbed, and the destructive effects of sudden thawing are averted. When branches get frozen, hoar-frost will follow, and blossoms will be destroyed; not by the hoar-frost, but by the cold which preceded it. I do not know whether I shall succeed, but I have lately covered up a number of Peach trees, by rearing up over them, against the wall, the lights which formed the roof of an old greenhouse. These lights, I expect, will shelter the blossoms, and will, to some extent, intercept, and return to the wall, the heat which would otherwise be radiated into space. *J. Cocks, Gardener, Clapham Park, April* 1. [It is evident that our remarks have been misunderstood.]

Gishurst Compound.—Previous to your correspondent's communication (see p. 261) I had given all my wall trees a stiff dose of Gishurst, mixed with black sulphur; it was applied when the buds were dormant, and without injury to them. Since then I mixed 1 lb. of Gishurst with 1 gallon of water, and made a second application on an Easter Beurré Pear tree infested with American blight. I was looking at the tree to-day. I perceive that the buds are all sound and bursting into flower, so I am quite convinced that Gishurst will never injure fruit-buds if applied at the right time. *W. F.*

Birds and Blossom Buds.—I can vouch for the fact that bullfinches will destroy the blossom-buds of Pear trees; they eat the heart of the bud, and unless destroyed they will soon clear the trees. They serve Gooseberry bushes in the same manner; their principal feeding time is early in the morning, and the only effectual way of getting rid of them is to shoot every one you can get near. They do not care for traps, baits, or scarecrows. *W. F.*

Pinus cephalonica.—The largest Cephalonian Fir in the grounds here is more than 29 feet high; the width through the branches is 23 feet; and the girth of stem, 1 foot from the ground, 3 feet 8½ inches. I have no means of knowing correctly when this tree was planted, but I am informed that it is between 18 and 20 years old. It stands 400 feet above sea level. *Charles M'Donald, Woodstock Park.*

Gishurst Compound.—I send the enclosed on the chance of your thinking the adventures of Gishurst in the colonies worthy of notice. I wish I could believe it possible that an improperly compounded brew had been sent out, as this would account for "Microscope's" experience, and one other I have heard of, but the care taken would seem to have guarded against any having passed out unnoticed. I was looking at some of my Peaches and Nectarines last night, crowded with healthy blossoms. These trees were drenched with 8 ounces to the gallon of Gishurst, far more thoroughly than was likely to be the case in other hands, my object being to test to the bottom the strength I was recommending; on other trees some buds had been touched. *George Wilson, Belmont, Vauxhall.* [The following are extracts from a letter from Mr. Carson, 39, Collins Street East, Melbourne:—The writer, having been resident in Melbourne since 1842, has devoted his leisure to gardening as a hobby, and avails himself of his agents to get anything new sent out with his goods. So seeing early notices of Gishurst compound in the *Gardeners' Chronicle* he had a few boxes for trial, then a trunk full, then a case of 200 lbs. from his London house. While he wa

using it, finding so much benefit in the case of scale on the Orange, American blight on the Apple, red spider on the Plums, green fly and mealy bug in the greenhouse, as a member of the Committee of the Victorian Horticultural and Floricultural Society the use of the compound was urged on the members and publicly in the *Argus* newspaper, so that the writer, who was known to so many, became in a manner responsible for the compound, and having impressed on some of the seedsmen that they were neglecting their own interest in not applying to be appointed agents and forwarding satisfactory references, they at last got a supply. Hence the cause of his troubling you with the present communication. Either the stuff they got was spurious or it was so old as to have lost its virtues. At all events he was met on all sides with the statement that the Gishurst was "no good;" it was tried and condemned at Toorak, the Governor Sir H. Barkly's garden, and many of our principal places, being found quite harmless to insects. It was no use his pointing to his garden, with about 500 trees of various sorts now clean that had been as bad as bad could be. In a few instances he had to endorse his opinion by giving a box or two of his own importing to test against what they had used, when the difference was at once acknowledged. In some cases the parties thinking it would prove as harmless as that they had previously used destroyed their plants as well as the insects, but added that they were pleased to find that they had been wrong in forming so hasty a conclusion.]

Rain.—The amount of rain here during the past month has been so large that I think it is worth recording. No less than 4.41 inches fell, which is 2.77 inches above the average of the 12 preceding years. The rain fell on 20 days, which exceeds the average by five. The nearest in moisture to the March just passed was that of 1851, when 4.33 inches were recorded. *W. W. Spicer, Itchen Abbas.*

Societies.

Royal Horticultural: *April* 1 (*Floral Committee*).—A few interesting plants were shown on this occasion. The most remarkable were—Musa vittata, a handsome striped-leaved Banana, which must form a very ornamental plant as it gains size and strength; this plant was shown by Messrs. Veitch & Son, who also had two very beautiful Ferns, distributed by Mr. Linden under the names of Asplenium flabellulatum and rachirhinæ(!); both have the petiole prolonged and proliferous at the point. These were also sent by Mr. Bull. Messrs. F. & A. Smith, of Dulwich, sent a very handsome Chinese Primrose of the fringed race, called delicata fl. pleno, seedling plants; the flowers of this were large, full, double, prettily fringed, white, changing to delicate flesh colour. A fine broad-sepaled variety of Cypripedium barbatum was shown by Mr. Williams of Holloway; and a striped-leaved variety of Luzula sylvatica, the stripes of which were golden yellow and well defined, came from Mr. Salter, of Hammersmith; this variety was shown under the name of aureo-vittata. Some seedling Azaleas were furnished by Mr. Todman, gr. to R. Hudson, Esq., Clapham; among them one named Lord Canning, of a bright rose colour, was a promising sort, but rather small. Messrs. Veitch & Son had a flowering plant of Wigandia caracasana; and also a distinct looking variety of Lycaste Skinneri with deep rose coloured petals, and a palish lip marked with rosy blotches, and having a yellow fleshy tongue-like appendage instead of the purple one more usually present.

Royal Botanic: *April* 2 (*Second Spring Show*).—Collections of Cinerarias were contributed by Messrs. Lamb, Wiggins, James, and Dobson; and of seedling Cinerarias one or two good sorts were produced. Among the latter Victoria, from Mr. Early, was a clear white, of tolerably good form, with broad florets and purple disk; Carminata variegata (Smith) had leaves edged with creamy white; Lord Elgin, purplish rose, was shown in good condition by Mr. James; Mr. Sowerby and Sunbeam came from Messrs. Dobson; and Eleanor and Lizzy, both good Cinerarias, were contributed by Mr. Marcham. Other Cinerarias worthy of especial notice were Dark Beauty, Beautiful Star, Decorator, Defiance, and Cadet; descriptions of these have been given in former reports. Amaryllises were shown by Mr. Parker, and Double Primroses by Messrs. Ivery & Son, of Dorking, and Mr. Cutbush, who also showed Hyacinths and Tulips. Mr. Cross and Mr. Hutt had each a collection of Cyclamens. From Messrs. Veitch & Son came a variety of Lycaste Skinneri, the new Hybrid Rhododendron Princess Alice, the white-flowered Pancratium-like plant shown the other day at South Kensington, Musa vittata, Grevillea Hilli, an ornamental-leaved shrub, and other plants fully noticed in former reports. Mr. Parker again contributed Rhododendron Countess of Haddington; Mr. Bull various fine-foliaged plants, among which a handsome form of American Aloe and Cyrtomium caryotideum, a rather striking North Indian Fern, were conspicuous; Polystichum ordinatum, a handsome large South American Fern, came from Mr. Williams; Azalea Hortense Vervaene, a flesh-coloured variety flaked with white and red, was shown by Messrs. Veitch, and Lord Canning, Lady Canning, Queen of Roses, Duchess of Sutherland, and Rifleman, all promising Azaleas, came from Mr. Todman, of Clapham. From Messrs. Paul & Son came a pretty Perpetual Moss Rose named Hortense Vernet. In addition to Cinerarias and Primulas, Messrs. F. & A. Smith had a group of fine-foliaged plants, among which were two striped-leaved varieties of Hemerocallis, Pavetta borbonica, and the pretty variegated Cyperus alternifolius. Various well grown plants also came from Mr. Williams, and Mr. Young had a small collection; Mr. Wm. Paul showed cut Roses and Camellias in excellent condition; and cut Roses likewise came from Messrs. Paul & Son. Among other Miscellaneous objects were a box of 12 Pansies, and some very fine examples of Chinese Yam from Messrs. Ivery, of Dorking.

Entomological: *March* 3. F. Smith, Esq., President, in the Chair.—The late President's anniversary address, together with that delivered by Mr. Stainton at the February meeting, having been printed, were distributed among the members. It was announced that the Council had resolved to discontinue the experiment of distributing the Transactions gratuitously, and had resolved that in future members resident within 15 miles of London should pay for the same at half the publication price, likewise that the ensuing Part of the Transactions would form the commencement of a new series. Mr. Newman exhibited a series of bred specimens of the genus Cabera, showing that the transverse bars on the wings of these moths do not indicate distinct species, of which he believed there were only two found in this country. The President exhibited a large and interesting series of specimens of insect architecture, chiefly produced by exotic species of bees and wasps. Mr. Nathaniel Plant exhibited the eggs of a species of butterfly from Paraguay, attached side by side in long strings to twigs. Dr. Wallace described a plan of mounting specimens of minute Lepidoptera upon thin slabs of wax, for facility of moving them without danger of injuring them. Mr. W. W. Saunders exhibited a portion of the stem of a Passiflora which had been attacked by the mealy bug, and which had produced wart-like swellings, above which the plants had died off. Also the larvæ and pupæ of Endomychus coccineus, the former of which feed upon a fine kind of Fungus growing beneath the bark of Elm trees. Also a piece of a twig containing the nests of Xylocopa divisa, and a remarkable species of Phasma from the Island of Aneiteum. Mr. Stainton exhibited specimens of Toxocampa Craccæ, one of the Noctuidæ, new to this country, of which several had been taken on the north coast of Devonshire by the Rev. Edward Horton. Mr. Kirby gave an account of Dr. Hagen's Bibliographia Entomologica now printing. Mr. Knaggs exhibited a case of insects from Australia. Dr. Power sent for exhibition a specimen of Endophlæus spinosulus, a genus of beetles new to this country, captured in the New Forest by C. Turner. A notice by Mr. George Wailes was read on Bembidium nigricorne, and a description of a new genus of North American moths by Mr. F. Walker. Mr. Kirby read a notice of the species of butterflies occurring in Sussex, and Captain Cox made some comments on the letters which have recently appeared in the *Times* in favour of M. Eugene Robert's plan of operating upon Elm trees against the ravages of Scolytus, Captain Cox claiming the merit of the invention of the system of debarking the trees, and pointing out the successful result of his experiment on trees in the Regent's Park many years ago, and which are still in good health. He also commented on the ravages of the Ægeria cynapiforme on the Oaks, and of Tinea Linneella on the Limes in our public parks.

Botanical of Edinburgh: *Feb.* 13.—T. C. Archer, Esq., President, in the Chair. The following communications were read:—

I. "*On the Farinaceous Grains, and the various kinds of Pulse used in Southern India.*" By Walter Elliot, Esq., Wolfelee. Mr. Elliot commenced by showing an extensive series of specimens. The greater portion of these—107 in number—represented varieties of Oryza sativa, the plant which yields Rice. The dry grains were less fully represented. Mr. Elliot explained the terms "wet" and "dry" grains as employed in India, and described the great works of irrigation by which water is obtained for the cultivation of the Rice-yielding grains, which cannot be raised without continued and ample supplies of water. The great reservoirs, some of which are from 30 to 50 miles in circumference, and the extensive system of canal irrigation, depend for their supplies of water on the south-western and north-eastern monsoons, which blow at stated periods, bringing with them enormous masses of clouds surcharged with rain, which, following the directions of the mountain system of India, discharge their contents on the different countries over which they pass. The Rice crops are grown at three different periods of the season, which lasts from June to October, when harvest begins. The different varieties exhibited were enumerated under their several heads as belonging to the early or late crops. But numerous as the specimens were they did not comprehend all the varieties recognised by the Indian farmers, one of whom sent as many as 190 named sorts from the province of Tanjore to the Madras Exhibition of 1857. The principal dry grain is the Sorghum vulgare, or greater Millet, the Indian names of which are "Cholam" and "Jowari." It is the staple grain of the East, and is extensively cultivated in all the southern countries of Asia, and throughout the whole of Africa, where it is called in Arabic "durra." It is also found in Europe in the countries bordering the Mediterranean, and in North and South America, and has probably a wider range than any other cereal except Wheat. Botanists enumerate seven species, which, for reasons given, Mr. Elliot considered could only be considered as varieties of Sorghum vulgare. A variety under the Kaffir name of "Imphi," possessing in a remarkable degree the saccharine property common to all varieties, had been introduced into India about 1856, with the expectation that it might be turned to account in the manufacture of sugar, and even supersede the Sugar-cane, which requires 18 months' culture, whereas the "Imphi" ripens in [illegible] days. After a careful series of experiments, however, which are detailed in the "Madras Journal of Science," M. Perrottet, an able French botanist of Pondicherry, pronounced against the feasibility of the suggestion. The remaining dry grains and pulses were enumerated with their synonyms in the vernacular tongues, and their value as articles of food, which had been determined after careful analysis by Mr. Mayer, Professor of Chemistry in the Madras University, was shown not to be inferior to the cereals of Europe. Ragi (Eleusine vulgare) contains of nitrogenous matter 18.12 per cent.; Cholm (Sorghum vulgare), 15.58; Bajra (Penicillaria spicata), 13.92; Rice (Oryza sativa), 9.08; while of the European grains, Wheat gives 14.45, or the best specimens, [illegible]; Oats, 13.93, or the best specimens, 17.24; Rye, [illegible], or the best specimens, 11.92. The deficiency of the nutritive element in Rice is compensated by the general practice of the natives, who always mix a proportion of Pulse, generally of Cajanus indicus, under the name of "dal" with it. The proportion of nutritious matter in the Pulses is from 28 to 30 per cent., and thus without any knowledge of science the Indian has practically arrived at the same conclusion as the chemist. At the conclusion of the paper Mr. Dalzell, of Bombay, stated that he concurred in Mr. Elliot's view of the different species of Sorghum being referable to one species, originally from Africa. He remarked that the saccharine variety had succeeded better in Western India than it appeared to have done at Madras, and that it was extensively cultivated by the people of Scindia. He added a curious fact regarding another of the dry grains—Paspalum scrobiculatum—used as an article of food by some of the poorer classes, which has a tendency to produce violent spasms, and even temporary insanity. The President observed that sugar produced from Sorghum was an article of export from Algeria.—II. "*On the Homologies of the Sporiferous Appendices of Anemia.*" By Mr. J. Scott.—III. "*Letter from Mr W. Shiress, Sandhurst, relative to the late expedition to the Gulf of Carpentaria, with a notice of the Nardoo Plant (Marsilea quadrifolia).*" This Nardoo is the sporocarp of Marsilea quadrifolia. The spores of the plant germinate in water and root in the soil at the bottom. When the water dries up, the sporocarps are left, and are gathered for food. On the return of moisture, the sporocarps absorb water and grow. The leaves of the plant are not unlike those of Trefoil. The sporocarps are pounded and used as flour. They are not very nutritious, consisting chiefly of starchy matter, as is the case with the rhizomes of Ferns, and other plants of that nature, and the bark of trees.—IV. "*On Cotton, transmitted by the Agri-Horticultural Society of Madras.*" By Professor Balfour. The following is an extract from a minute by Sir W. Denison:—I am induced to bring under the consideration of the Council questions connected with the improvement and extension of the growth of Cotton in the Presidency of Madras, by the publication of a resolution of the Governor-General in Council, to the effect that prizes of 10,000 rupees will be given during the years 1861-62, 1862-63 in each of the Presidencies of Fort William, Madras, and Bombay, under certain conditions made known in the proclamation. The subject of the extension of the cultivation of Cotton in the British colonies has been under my consideration for many years past. In Australia various attempts were made to introduce the finer species of American Cotton, and, so far as the quantity and quality of the Cotton was concerned, these attempts succeeded; but the high price of labour was a complete bar to the introduction of Cotton as a paying crop. Since my arrival in Madras the same subject has been brought before me in various ways, at one time in the shape of suggestions for the improvement of the means of conveyance by water or railways, for the purpose of bringing more cheaply to market the surplus produce supposed to exist in the interior; at another, as in the present instance, by proposals to stimulate the cultivation by the offer of prizes. I have in consequence been led to make a variety of inquiries from persons engaged in the cultivation of Cotton, and from others, and the following are the results to which these inquiries have led:—(1.) That the great surplus of Cotton supposed to exist in the interior of the country, and which only awaits cheaper means of conveyance to bring it to market, is the product of the imagination of those whose object it is to show that there is traffic sufficient to defray the cost of transport, as well as the interest of money invested in railroads or canals, as the case may be. Cotton is cultivated, and that largely, in various districts; but this is generally done by the Ryots under the stimulus of an advance of capital from a merchant or speculator, and on the security of a fixed price per pound for the crop. There is therefore little or no surplus beyond that already, so to say, mortgaged to the merchant, at a price low enough to enable him to pay all costs and charges to the port of shipment. (2.) That the extensive districts of what is emphatically called "Cotton soil," though well adapted to produce native Cotton, which is short in the staple and strong, not to say coarse, in the fibre, is not congenial to the growth of the fine species of American Cotton. This kind of Cotton I know, from experiments in Australia, to flourish in a light sandy loam, and I am told that similar results have been obtained here. The "Cotton soil," which is an adhesive black clay, almost of the consistence of birdlime, when thoroughly wet, dries into the consistency of a brick, but crumbles under the action of the sun and slight showers into a light dry powder. In the dry season this soil cracks deeply, showing, by the amount of shrinkage when the water evaporates, that it contains a very large proportion of clay. The experiments which have been made on the cultivation of the American Cotton in this soil have hitherto been unsuccessful. That there are soils in which these Cottons can be grown is very probable. In the red soil of Coimbatore Bourbon Cotton is grown to some extent, and it is possible that other sites may be found where the Upland or New Orleans Cotton may be grown with advantage. With a view, then, to the development of the Cotton-producing powers of India generally, by which the English manufacturers might be relieved from their present dependence upon the supply from America, two courses appear to present themselves:—(1.) The encouragement by every means of the introduction of the better species of American Cotton. (2) The improvement of the native Cotton, by increasing the length of the staple, and lessening the coarseness of the [illegible]. Attention paid to the last of these two schemes would be [illegible], and [illegible] to yield results more profitable to the cultivator, and more advantageous to the manufacturer, than any which would result from the cultivation of American Cotton. In the first place, we know there is a large extent of soil well fitted for the cultivation of this particular species; that little encouragement will be required to induce the ryots to cultivate it upon the soil; that any rise of price contingent upon the improvement of the quality of the Cotton, unaccompanied (as will be the case) with any increase in the cost of cultivation, is to the direct advantage of the ryot, and will do much to stimulate production; on the other hand, the cultivation of the American Cotton must be at first an experiment; it is known to be a precarious crop, and the better the quality and the higher the price the smaller is the yield per acre. While, however, I am inclined to advocate the improvement of the native Cotton as the most profitable crop, I am by no means disposed to check attempts to acclimatise the better descriptions, and I will now proceed to describe, first, the process by which it is probable that the native Cotton can be improved, and, secondly, the

steps which it would be desirable that the Government should take to encourage a series of experiments in various parts of the country, partly with a view to the introduction of new species of Cotton, partly with a view to the improvement of the indigenous species. I must premise that the mode of improving the native Cotton has been suggested by the Marquis of Tweeddale, who explained the process to Mr. Thomas, the Collector of Coimbatore, in a letter which that gentleman communicated to me. The process is as follows:—From the seed pods of this year's crop take out those seeds to which the largest fibres are attached, establishing a minimum length of fibre, and throwing away all those seeds the Cotton of which does not reach this standard; these selected seeds will be used for the next crop, and a similar process will be followed with this, the minimum length being increased every year. In this way in the course of a few years it is probable that a permanent addition will be made to the length and possibly to the fineness of the fibre, and it will then be easy to spread the seed of the improved kind over the whole of the indigenous Cotton fields of India. V. "*Remarks on the Polar or Compass Plant.*" By Wm. Gorrie, Esq. VI. *Dr. Alexander Dickson* exhibited a series of microscopical preparations showing the centrifugal development of the ovules on the placenta of *Primula vulgaris*. Also, a portion of a Poppy capsule macerated so as to show the arrangement of the vascular bundles—the strong ribs in the wall of the seed vessel corresponding to the lines of junction of contiguous carpels and not to midribs as might have been imagined. From these ribs are given off all the smaller vessels of the wall, as well as those ramifying in the placenta to supply the ovules.

Notices of Books.

Memoires et Souvenirs de A. P. De Candolle. Ecrits par lui-même. Geneva, J. Cherbuliez.

Twenty years have elapsed since the author and subject of this memoir died, and we confess that we are not certain that the public is a gainer by this long delay. It is true that in its publication A. De Candolle has thus been enabled to give his father's autobiography to the world in a more complete form, but we doubt whether this compensates for the vivid interest with which it would have been read while the name of the author was yet fresh in the minds of his contemporaries. That interest must now be necessarily diminished; and although the name of De Candolle can never fail to arrest the attention of botanists, this is very different from that loving, living interest which reads with eagerness the minutest incidents of a friend's life; and we cannot, therefore, but think that a smaller volume than the very bulky 8vo we have now before us would have satisfied the curiosity of its readers. Scientific men have not generally much leisure to bestow on reading for mere amusement, and a very large portion of this volume must certainly come under this head. To those who have time for such reading, however, and especially to those who like to watch how an author gradually and unconsciously unfolds his own character, this book will be interesting, for it is well written, and, although diffuse, keeps up the attention well.

Augustin Pyramus De Candolle, the great botanist of Geneva, was born in that city Feb. 4, 1778.

For the first few years of his life he was a precocious, sickly child; but at the age of seven a severe and alarming illness induced a complete change. He was sent into the country for the summer, and after the recovery of his health placed under the care of a private tutor until he was 11, when he entered college. Here he appears to have been extremely painstaking and industrious, continuing to study steadily when, at the age of 14, he was left alone in Geneva, on the occasion of his father being obliged to retire from the city at the dissolution of the Republic. In 1794 he attended a course of lectures on botany, by Vaucher, and from this epoch may be dated his love of that science, since from that time he began to work at it, though at first only as an amusement, and in a desultory manner. Three years afterwards he paid his first visit to Paris, in company with some fellow-students, equally ardent workers as himself, as was evidenced by their arranging to attend the different courses of lectures separately, each afterwards communicating to his companions what he had thus acquired. During this visit is recorded his first acquaintance with the elder Brongniart and Lamarck.

In the following year he again visited Paris, this time with the intention of remaining there. War was abroad, and discord reigned throughout the continent; Geneva had just been united to France. "I then felt that no career was open to me there, and that I must seek a position elsewhere. I decided on studying medicine at some foreign university, and at the same time to follow up botany, so as to give myself a double chance; to devote myself to science, if I should succeed, or to take up medicine should I find no opening in Natural History."

In Paris he soon took a disgust to the study of medicine, and gradually devoted himself more and more to that of botany; passing whole days at the Jardin des Plantes, and assisting M. de Lamarck in his "Dictionnaire Encyclopédique," and, under the auspices of Desfontaines, commencing a monograph of succulent plants, which, however, remained unfinished on account of a quarrel with his publisher. Henceforward his life was that of a conscientious and hard-working botanist, while his holidays were herborising excursions, which frequently afforded him rich harvests; for it was not then, as now, necessary to travel to the end of the world to obtain novelties.

In 1802 De Candolle married; a step which but stimulated him to greater exertions, that he might prove to doubting friends that it was possible to make a living out of botany; he accordingly entered into an arrangement with Lamarck to superintend a new edition of his "Flore Française." This became nearly a new work in his hands; he entirely remodelled it, and obtained from different quarters great additions to the original Flora. He was largely and gratuitously assisted in his labours by a young botanist of the name of Léman, who gave up two or three mornings every week to aid in arranging the collections which arrived from different quarters; a task in which he persevered during the whole time that M. De Candolle was occupied with the Flora.

In 1803 he delivered a course of lectures in the place of Cuvier, to which he calls attention as being the first on vegetable physiology ever delivered in France.

On the completion of the Flora, it became evident that many districts of France yet remained unexplored, and he had sufficient interest to induce the Government to pay his expenses during a series of annual excursions into some hitherto unexamined locality, with a view to supply the missing links. What with these expeditions and many others undertaken on his own account, De Candolle seems seldom to have passed a year without making one,—sometimes alone, but more generally with some congenial companions. On one of these occasions, when on the Jura with Biot and Bonpland, the party got into a position of considerable danger; when he records of the latter that "he expressed but one regret, namely, that he should have come to die on this mole-hill the Jura, after having safely ascended Chimborazo!"

At the age of 30 he was appointed professor at Montpellier, and quitted Paris, a little disgusted at having for the fourth time failed of being admitted as a member of the Institute.

In 1813 appeared the first edition of his "Théorie Élémentaire de la Botanique:" a work which he had long meditated, and at which he had in fact been working by degrees. In connection with this book he makes the following remarks, which are very just, and well worthy of being recorded:—"Although I had been considering the subject for a long time, I was surprised at the number of new ideas which arose, the moment I began to co-ordinate and revise my thoughts. This is frequently the result of revision, and explains why amateurs, who are never obliged to arrange their ideas, so seldom make discoveries, although often capable of doing so."

De Candolle seems to have mixed freely in the Protestant portion of the society of Montpellier; nearly every evening appears to have been given up to it: sociable, quiet evenings alternating with balls, picnics, and theatricals; all very plainly showing that botany did not absorb the whole of his time; in fact, he confesses that such amusements were a necessity to him. On the whole, De Candolle's life at Montpellier seems to have been precisely suited to his taste; he had a botanic garden to supervise, with an excellent assistant, and sufficient money to carry out his plans; and a large class of pupils, with whom he was extremely popular, and of many of whom he records the names, as having afterwards done good service to science; a proof that his method of instruction was good.

In 1813, however, an element of discord arose in the contest for the Rectorship of the University, and this was shortly followed by the overthrow of the Emperor Napoleon, and all the confusion which ensued thereupon. The immediate result at Montpellier was the sudden cessation of funds, on which De Candolle immediately took on himself the charge of supporting the garden from his own purse. Fresh discords arose when Louis XVIII. was made king; and to assist in suppressing them De Candolle came forward, and by voluntarily enrolling himself amongst the guard, induced many of the students to follow his example. His political opinions are not anywhere brought prominently forward, but being on the whole opposed to the Bonapartist rule, he availed himself of the privilege of his position to quit the guard on the return of Napoleon from Elba. At this time, the still vacant rectorship was offered to him, and accepted, after some shrewd calculations for and against the advantages to be derived from taking office in such uncertain times. As was to be expected, when the Bourbons returned to power, all those who had held posts during the hundred days were expelled from them; and this, combined with other reasons, determined De Candolle finally to quit Montpellier, provided he could obtain at Geneva the professorship of Natural History, which he had once before refused. While negotiations to this end were pending, he undertook a journey to England, early in the year 1816. Here he was most hospitably received, and made the acquaintance of all the botanists, and many other persons of note. Sir Joseph Banks of course occupies the first place; although, as he knew no French, and De Candolle could speak no English, their intercourse was necessarily limited. Next in importance comes Robert Brown, and in connection with him the vanity of M. De Candolle peeps out in rather an amusing manner: "As we are considered by our contemporaries as rivals for the sceptre of botany, I have done all I could to make this rivalry an honourable one. I have always thought, written, and spoken of Brown in terms of the highest approbation; I have received him in my house when he has visited Geneva; and, if I may not flatter myself with having gained his friendship, I have at least placed myself in a position very nearly resembling it."

M. De Candolle was of course present at the various scientific meetings which occurred during his stay in London; and we give his account of the Royal Society, both as interesting in itself, and as showing the impression made upon a stranger. "Marcet took me two or three times to the meetings of the Royal Society. They take place in the evening, and are so conducted as to be entirely devoid of interest. The memoirs are read by the Secretaries in the monotonous tone of persons who take no interest in them; no discussion takes place upon any of them, nor is the attention aroused by any specimens of the objects described. The members are seated like scholars on benches facing the president, who wears a large three-cornered hat, and bows solemnly from time to time, when the name of a new member is announced, or the thanks of the Society given for the present of some book. During the reading the attendants pass along the benches to offer to the members the closed urn in which they vote for or against the candidates for admission, and whose names have been conspicuously hung up during the regulated time. Nothing can be more monotonous or lifeless than these meetings, but they strongly attracted me on account of the many celebrated persons to be met there, the brilliant series of works of which the Society can boast, and the prominent part which it plays in the scientific world."

An excursion into Norfolk was next undertaken, to visit Sir William (then Mr.) Hooker, and Sir James Smith, or rather the herbarium of Linnæus in his possession. A short visit to Cambridge followed, and after remaining two months in England, De Candolle returned to France. He then learnt that the desired post at Geneva had been bestowed on him, and he accordingly only returned to Montpellier to deliver a final course of lectures, and to take leave of his pupils and brother professors before entering on his new sphere of action at Geneva.

It was in 1816 that M. de Candolle returned to his native city, Geneva, to take the professorship of Natural History; a chair which had been created expressly for him, and which, with the mistake usually made in those days, involved lecturing on Zoology as well as on Botany, only not including Mineralogy because there was already a professor of that subject. The zoological and botanical courses were given in alternate years, and were each comprised in 108 lectures; for this the stipend was 1500 fr., or rather more than 60*l*. a year. De Candolle, being anxious to add to this very moderate income, usually gave in addition an annual paid course of about 40 lectures, which were very popular, and the attendance on which averaged about 100 persons, or double the number of the students who attended the regular courses. By a calculation in the appendix, it appears that he delivered altogether, in Paris, Montpellier, and Geneva, nearly 3000 lectures, to about 6000 pupils; yet of this enormous number, not 10 are known to the world as botanists! a significant commentary on the system of teaching science by lectures, and not by making the pupil examine Nature, and work out his results for himself. It should be added, that De Candolle laboured under the disadvantage of having to lecture in the winter, when of course no living specimens of plants were procurable; but he does not seem to have felt the evil of this, for he naively confesses—

"I am convinced that an examination of specimens during the lecture is rather a hindrance than an assistance. The students make such objects a pretext for fun and disorder. Organised beings are complex in their structure, and young men are always tempted to examine the organs which are not under discussion. If the specimens are simply exhibited, they are scarcely seen; if they are passed round, they reach most of the students when the professor is speaking of something else, and only serve to distract their attention."

Nevertheless, he was very conscious of the meagre results of his lectures, especially when compared with the effect produced by his books; and he concludes the subject with the following very just remarks:—"Courses of lectures are useful, as serving to spread a general knowledge of the subject, and as affording an opportunity of ascertaining those who, for their zeal or talent, are worthy of being distinguished; but true disciples are rarely made save by familiar intercourse. This is especially true of the physical and natural sciences, in which it is necessary for the learner to make experiments, and to observe for himself. The influence of a teacher over his pupils depends less on his superior knowledge, than on the friendly interest which he takes in them; and this is why we so often meet with men of mediocre talent who have yet formed distinguished pupils."

De Candolle joined to an active and energetic disposition, order and method carried to a very high degree; and it was no doubt mainly owing to this that he was enabled to undertake such a variety of occupations. Besides taking a share in all the scientific movements of the city, he served on all sorts of commissions, many of them in no way connected with natural history; as, for instance, the first erection of suspension bridges in Switzerland, in which he bore a conspicuous part. It is impossible here to enumerate the many institutions he assisted in founding, or the many schemes he devised for bettering the condition of his countrymen; little marvel is it that with so many irons in the fire we should find him regretting the failure of some; the only wonder is that so many were

successful. An almost yearly attendance at the meetings of the Swiss Natural History Society, generally prolonged by an excursion of greater or less length, and an annual visit to Paris, occupied a portion of his time; and when at home his public duties and the many interruptions of foreign visitors left him but small leisure for purely botanical work; especially when it is remembered that here, as at Montpellier, *every* evening was devoted to society. What time he had for study may well be questioned, and we are bewildered when we learn that he published no fewer than 19 books, and 120 short memoirs or articles; and these not effusions which could be thrown off in a short time, but each representing a considerable amount of labour and research. One indeed, the work by which he is best known, namely, his Prodromus, remains unfinished to this day. Seven volumes of this appeared during his lifetime, the preparation of which extended over a period of 23 years, and embraced not only his own labours but also those of some other botanists.

Whether the Genevese were proud of their distinguished countryman, or that his agreeable manners made him popular, certain it is that he seems to have been peculiarly fortunate in finding assistance in his works whenever he needed it. The most striking instance of this occurred during the first year of his residence at Geneva, when a number of valuable figures of Mexican plants being unexpectedly redemanded by their owner, nearly 120 artists and amateurs spontaneously set to work to copy them for him; labouring so diligently that in ten days they completed 1200 drawings!

About 100 Societies in all parts of Europe ranked De Candolle among their members; on which he remarks, "These marks of encouragement or of approbation have been liberally bestowed on me, although I have strictly avoided soliciting them." A piece of modesty which we presume to have been unusual, since he deems it necessary to inform us of the fact among foreigners.

In 1835 he gave up his professorship, in which he was succeeded by his son, Alphonse De Candolle; and he was shortly afterwards seized with a severe illness. He recovered from this sufficiently to work occasionally at his favourite study, and to visit Paris, and join in fêtes given by Louis Philippe; but his health was never again strong, and in 1841 he died, at the age of 67.

There is no doubt that the elder De Candolle was a very remarkable man; but the general impression left by a perusal of his Memoirs is that he was rather a ready writer and a clever systematist, than a man of profound attainments or of original mind. The comparatively slight notices of botany further tend to produce this impression: his botanical journeys are scarcely touched on, and his botanical labours only adverted to in the briefest possible manner; whilst his amusements and nonscientific pursuits are dwelt on in detail, and seem from their variety and number quite incompatible with the habits of a philosopher or laborious naturalist. He was skilful in turning to the best account the energies of others; and by this means, no less than by his own well directed labours and undoubted talents, he advanced his favourite science in his day to a very remarkable degree; though neither as a reformer or discoverer. It therefore appears to us singular that he should place himself in the same rank as Robert Brown, and that his son should compare him with Linnæus, both men of a totally different stamp, and whose works are of as different a character.

Miscellaneous.

A New Hæmostatic.—The various remedies now in use for stopping a copious flow of blood, though generally active enough, as, for instance, lunar caustic, are not equally applicable to all cases, and any addition to the list of such remedies is always acceptable to the profession. Latterly a plant called pengawar jamba (Palea Cibotii), has been brought over from Java, which possesses extraordinary hæmostatic qualities. It is a kind of Fern, yielding a mass of delicate filaments so light and flexible as to be capable of floating a long time in the air. Their colour varies, according to their thickness, from a brownish gold hue to a greyish black. Six grains of these filaments form a sufficient quantity to stop the bleeding of an artery a twelfth of an inch in diameter. This substance displays such avidity for water that it is soaked through and sinks to the bottom of the vessel containing it in less than half a minute. If exposed to heat it exhales an empyreumatic perfume, and if it be burnt it explodes. Its styptic properties are naturally attributable to the rapidity with which its filaments, acting by capillary attraction, absorb the aqueous parts of the blood, and thus cause its immediate coagulation. Moreover, the elasticity of these filaments, swollen by the absorption of the liquid, causes them to form a kind of impenetrable pledget which, adhering to the wound, keeps it well closed. The advantages of this styptic over those already known, are: the promptness of the effect, and the possibility of producing the coagulum where other agents fail, as, for instance, in carcinomatous and scorbutic ulcers. Before using it, it must be triturated; a certain quantity is then applied to the wound, and a compress adapted over it. The styptic thus penetrates into the narrowest fissures, and instantly produces the desired effect. *Galignani.* [This is a well known styptic. Thirty years ago we had a box full of it, used however by us while shaving, and as amadou.]

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Those who wish to have Camellias in blossom from October till May must take care to force their plants into wood successively. If a given stock is divided into three portions, one to be subjected to this process in February, a second in March, and a third in April, this object would be effectually accomplished, provided the subsequent treatment was what it ought to be. Some force their Camellias in a house by themselves, where under good management they should now be growing satisfactorily. They should be slightly shaded in bright weather and syringed three or four times a day—in fact kept constantly moist. A temperature of about 60°, with a circulation of air day and night, will suit them perfectly. Abundance of weak and tepid liquid manure should be given them all the spring, but the moment they cease to make wood they should be subjected to a considerable amount of drought at the root; still, however, syringing and shading. Let the liquid manure be resumed as soon as the blossom-buds are fairly formed. Under this treatment they will be found to succeed remarkably well. In stoves both heat and moisture may now be increased, and have shading in readiness to ward off bright sunshine, should it occur, for an hour or two in the day. Use liquid manure constantly to stove plants in general. In greenhouses a shelf or two should be devoted to some of the free blooming hybrid Roses. Cuttings of these struck last summer, and kept through the winter in store pots, will, if potted now and put under high cultivation, make nice bushes for next autumn and the ensuing spring. They should be got forward indoors for a month, and when established in 5-inch pots receive their final shift at once. All blossom buds should be kept pinched off through the summer if intended for winter or early spring bloom. Cuttings of young wood struck now will flower nicely late in the autumn, provided they are duly attended to. Encourage afternoon or evening warmth; but give air freely all the early part of the day. Take care to fumigate little and often in all plant houses or pits whenever green-fly makes its appearance.

FORCING DEPARTMENT.

Pineries.—Look over young growing stock, occasionally examining and repotting such as is found to be in want of more pot room. The temperature may be slightly advanced, as the amount of sunlight increases, but this is a matter in which the state of the plants will be the best guide. Aim at securing strong dwarf plants, with a free habit of growth; and if this is obtained, it is immaterial whether the night temperature is 60° or 70°, and very much will depend upon circumstances as to which will be proper. Plants that may be unhealthy and in an unkind state, if kept near the glass, will be benefited by a considerably higher temperature than would be suitable for others in a free state of growth. These are circumstances, however, which can be properly judged of only by those in care of the plants, but they are easily understood by a little careful observation. Use every means to induce a vigorous root action, and if this is obtained free strong growth will result with otherwise ordinary care only.

Vineries.—See that Vines starting into growth are tied up in their places before the shoots get so long as to be liable to be broken off in the operation. Syringe frequently until the leaves begin to unfold; but use the syringe sparingly after that is the case, and only on the afternoons of bright days. Where the buds do not promise to break regularly, bend the Vines so as to place those that are backward in the most likely position to catch the sap, and this should be done directly any indications of their not breaking regularly are observed. If any of the bunches in houses where the berries are stoned look as if they would be improved by a few more berries being cut out, let this be done at once.

Figs.—Keep the shoots thin, so as to expose the foliage to light and air, and persevere in the use of the syringe to prevent red spider. Give air freely on bright days, shutting early in the afternoon after syringing the house.

Peaches.—Proceed gradually with disbudding, and where the fruit is very thick a portion should be removed as soon as fairly set; but the Peach is liable to drop until after stoning, and this must be borne in mind, and plenty left to allow for a few failing.

Cucumbers.—Maintain a steady heat to these at night, and allow it to rise a little with sun heat during the day. Give air on every favourable opportunity.

FLOWER GARDEN AND SHRUBBERIES.

Those who force Neapolitan Violets should for the next three weeks or a month propagate stock either by means of cuttings or runners. A full description of the kind of treatment they should receive was given the other day at p. 263. Young stock of choice Pansies of last autumn's striking should soon be got out in the flower garden beds or on borders. If the soil is in any way exhausted, a little fresh material should be put in every hole, viz., such as old rotten loamy turf mixed with well decayed leaf soil, a little soot, and a little coarse sand. Too much manure may induce larger blooms for a time, but it soon renders the plants unruly. Sow Sweet Peas and Mignonette. If the former are required early, soak them in warm water for several hours previously to sowing. Let the herbaceous ground and borders now be well cleaned and neatly raked. Fill up vacancies either from the reserve garden or by sowing annuals in the intermediate spaces. Many plants, as for instance Phloxes, Asters, &c., throw up too many flowering shoots; where such is the case thin them out at once, so as to obtain not only fine heads of bloom but increased strength in the remaining shoots, to enable them to need less assistance from stakes. Hollyhocks for late blooming may still be planted, as it is best where they are grown extensively to plant at two or three times to ensure a succession. Shrubberies should now be gone over, pruning in encroaching branches, and removing all dead and dying limbs. Dead shrubs, if any, should be removed at once, and replaced by others from the nursery or reserve garden.

HARDY FRUIT AND KITCHEN GARDEN.

Growth is slow this spring; but the disbudding of Peaches and Nectarines will soon require attention. First remove a portion of the superfluous shoots, and in a week or 10 days go over them and regulate them finally. The superfluous shoots of Apricots must also soon be removed and the remaining ones carefully examined in search of a green caterpillar which not only injures them but also eats holes in the young fruit, thereby causing it to gum, grow deformed, or fall off before it is stoned. As regards vegetables, continue to make periodical sowings of Spinach once a fortnight, and Peas, Beans, and Turnips once in three weeks. Successional sowings of all salads should be made with strict regularity, and proper attention should be paid to preserving them from the ravages of birds and insects. If the crops of Onions, Leeks, Parsnips, Beets, Salsify, Scorzonera, and Skirret are not yet sown no time should be lost, and the latest period for sowing the main crop of Carrots is near at hand. A sowing of tall Kidney Beans may now be made in early localities; the early sowing of this useful vegetable not unfrequently gets cut off by late spring frosts, but when this happens the ground should be left undisturbed, as shoots will be produced from beneath the surface.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the Week ending April 2, 1862, as observed at the Horticultural Garden.

March and April.		Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Temperature of the Earth 1 foot deep.	Temperature of the Earth 2 feet deep.	Wind	Rain.
Thurs.	27	27	29.394	29.243	60	43	51.5	48	45½	E	[illegible]
Friday	28	28	29.182	29.115	51	39	45.0	48½	46	N.E	[illegible]
Satur	29	29	29.243	29.192	51	38	44.5	48	46	N.E.	[illegible]
Sunday	30	●	29.321	29.288	59	41	50.0	48	46	S.W	[illegible]
Mon.	31	1	29.623	29.479	60	34	47.0	49	46	S.W	[illegible]
Tues.	1	2	29.844	29.769	58	48	53.0	49	46½	S.W	[illegible]
Wed.	2	3	29.639	29.497	57	56	56.5	49	47	S.W	[illegible]
Average			29.463	29.369	56.5	42.7	49.6	48.2	46.1		[illegible]

March 27—Foggy; hazy; warm south-west wind; rain at night.
— 28—Hazy with rain; densely overcast; cloudy.
— 29—Overcast; uniformly overcast; fine; overcast.
— 30—Overcast; cloudy, rain.
— 31—Overcast; cloudy and fine; showery; cool at night.
April 1—Partially overcast; cloudy; boisterous; slight rain.
— 2—Rain; cloudy; showery; rain at night.
Mean temperature of the week 5½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending April 12, 1862.

April.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	6 ..	57.1	56.1	46.6	12	0.30 in.	3	9	4	2	4	11	[illegible]	1
Mon.	7 ..	57.6	36.9	47.3	16	0.50	2	7	4	2	2	12	6	1
Tues.	8 ..	55.8	35.5	45.7	19	0.46	2	5	7	1	5	8	6	2
Wed.	9 ..	54.5	35.0	44.8	17	0.30	2	6	7	1	4	6	6	1
Thurs.	10 ..	55.3	33.1	44.2	13	0.27	2	5	8	3	3	6	6	[illegible]
Friday	11 ..	55.5	35.5	45.5	18	0.51	2	7	5	—	2	12	2	5
Satur.	12 ..	55.6	37.1	46.3	24	0.56	7	6	3	3	3	6	7	1

The highest temperature during the above period occurred on the 7th, 1859—therm. 79 deg.; and the lowest on the 10th, 1860—therm. 20 deg.

Notices to Correspondents.

☞ Correspondents are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

To Correspondents. So many letters are sent for the Editor to the Royal Horticultural Society that we are obliged to declare thus publicly that the *Gardeners' Chronicle* is not and never was, an organ of that most useful association. We are its admirers and sincere friends so long as it pursues its course of good sense, and not one inch further.

Bees and Peach Blossoms: *W N.* Bees do not prevent blossoms from setting. Quite the contrary; they assist the operation.

Books: *Cookham.* Lindley's School Botany.

Chinese Yam: *J R T.* This has been frequently noticed in our columns, especially at p. 168 of our Volume for 1860, to which we must beg to refer you.‡

Lilium giganteum: *Ab Initio.* This will not succeed out of doors. You must keep it in your greenhouse.‡

Names of Plants: *B B.* It is some common Moss. Probably Mnium cinclidioides not in fruit.

Orchard Houses: *P S.* Your Peach blossoms fall because the plants are very ill managed. The nature of the mismanagement we do not feel able to form a judgment on.

Paris: *Scotland.* Our pages are open to fair discussion and courteous language; but not to wrangling and incivility.

Rosemary: *A Constant Subscriber.* We are unaware of any preparation bearing the name of Extract of this plant. Oil of Rosemary is obtained by submitting the tops or tips of the shoots to distillation with water. A pound of the fresh herb yields about a drachm of the oil.

Tobacco Paper: *Constant Reader.* We cannot recommend dealers: most nurserymen sell it.

Water Plants: *P.* Nymphæa alba, Nuphar luteum and advena, Aponogeton distachyon, Menyanthes trifoliata, Hydrocharis Morsus Ranæ; Richardia æthiopica will probably live through the winter in Pembrokeshire. Of the less common Ferns, Struthiopteris is one you should have; and Cyrtomium falcatum.

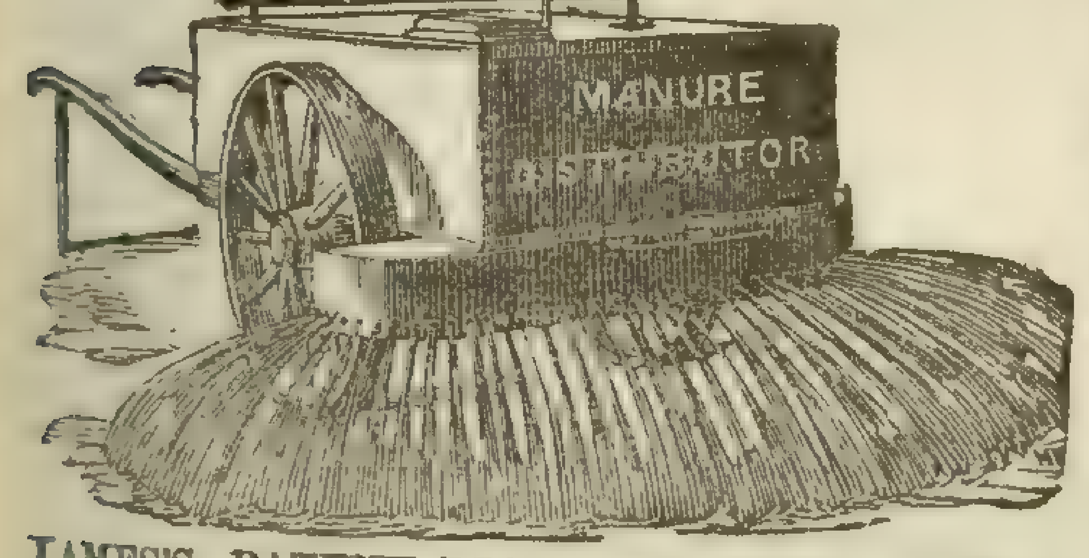
THE LONDON MANURE COMPANY
(Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. Macadam, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0
These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

New Source of Ammonia.
To Manure Manufacturers and Dealers.
ULMATE of AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that Wool contains more Nitrogen (yielding Ammonia) than any other kind of animal matter, proves the Ulmate of Ammonia to be a highly valuable manure, the Analyses by Professor Voelcker, the Chemist of the Royal Agricultural Society, and other high authorities, showing a per centage of Ammonia exceeding 14 per cent., or equal to an average sample of Peruvian Guano, while, from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of Ammonia. Being a fine dry powder, it is peculiarly suitable for use in the manufacture of manures, and preferable to the ordinary salts in use, sulphate of ammonia, nitrate of soda, &c.
Samples, prices, and all information will be forwarded on application to Frederic J. Cornwell, Broker, 7, Great St. Helens, E.C.
LINSEED CAKES, RAPE CAKES, COTTON CAKES, also all Materials used in the Manufacture of Manures, at the lowest market prices.

Prize Liquid Manure Distributor.



JAMES'S PATENT LIQUID MANURE DISTRIBUTOR or WATER-CART, warranted not to choke up or otherwise get out of order. It is thoroughly adapted for Drill Crops, or Pasture Land, or for Watering Streets; has been awarded NINE FIRST PRIZES.
Full Particulars and Testimonials may be obtained of the Patentee. Isaac James, Tivoli Waggon Works, Cheltenham.
N.B.—Improved LIQUID MANURE PUMPS, either fixed or portable.

Wind Power.
J. R. PEILL, 17, New Park Street, Southwark, S.E., begs to inform intending purchasers that he has now increased facilities for Manufacturing the Patent WIND ENGINES for Pumping, Grinding, Chaffcutting, Pulping, &c.
Prospectuses and all information may be obtained by enclosing one postage stamp, and a Wind Engine in full work may be inspected on the Premises daily.

THE LANDS IMPROVEMENT COMPANY.— Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To Landowners, the Clergy, Estate Agents, Surveyors, &c. in England and Wales and in Scotland.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. Humbert, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

MONEY ADVANCED to FARMERS, and others of responsibility, upon Personal Securities, Farming Stock, &c., for long or short periods, from 5 per cent. interest per annum, in sums from 100*l.* to 3000*l.*
Applications, in the first instance, to be addressed to Mr. Goodall, 12, Beaufort Buildings, Strand, London, W.C.

YORKSHIRE AGRICULTURAL SOCIETY, 1862.
Open to the United Kingdom.
President.—H. S. Thompson, Esq., M.P.
Vice-Presidents.
The Right Hon. Lord Bolton | George Lane Fox, Esq.
The Right Hon. Earl Cathcart | The Right Hon. Lord Wenlock
The Right Hon. Lord Herries | The Rt. Hon. Lord Feversham
The TWENTY-FIFTH ANNUAL MEETING will be held at York on the 6th, 7th, and 8th of August, 1862, when 900*l.* will be awarded in Prizes and Medals.
Members of the Society not in arrear of subscription may make Entries and exhibit Stock, &c., free of charge; but non-members will be required to pay 10*s.* on each Certificate of Cattle, Horses, Sheep, and Pigs. This payment must be made to the Secretary at the time of Entry.
N.B. Blank Certificates of Entry may be obtained on application to the Secretary, at the Office of the Society, Kirk-Deighton, Wetherby, on or before July 21st.
Caution.—The Entry closes on the 21st of July.
Kirk-Deighton, Wetherby. John Hannam, Secretary.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.
Last day of Entry for Stock, May 1.
STOCK PRIZE SHEETS and CERTIFICATES can be had on application to H. Hall Dare, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, APRIL 5, 1862.

MEETINGS FOR THE ENSUING WEEK.

Monday,	April 7	London Farmers' Club .. .. (Mr. Dumbrell on Dairying.)	6 p.m.
Wednesday,	— 9	Agri. Society of England.. .. (Mr. Frere on Artificial Manures.)	Noon

—— A large number of entries upon the Battersea lists of the English Agricultural Society's Show will be made of Short-horns, Herefords, and Devon Cattle, and of Windsor Pigs from the Prince Consort's "Home," "Norfolk," and "Flemish" Farms. They will be made in the name of the Hon. Colonel A. Nelson Hood, in whose hands the management of the Norfolk and Flemish Farms is vested. It is understood that the now established herds at all these farms will continue to compete as heretofore, but in the name of Colonel Hood, at not only the English Agricultural Society's meeting, but at the Smithfield and Midland Counties Association's shows, which had for so many years been patronised by the late Prince Consort.

We are also further permitted to state that the Prince Consort's Farms will be open to the inspection of agriculturists during the period of the Battersea Show, and that orders giving admittance will be obtainable by application to the Hon. Col. Hood, Cumberland Lodge, Windsor; or to him at the office of the Secretary of the Royal Agricultural Society of Battersea during the show.

The discussion at the last weekly meeting of the English Agricultural Society would, if fully reported, have occupied nearly 10 columns of our Paper. Although, however, a very condensed, and therefore necessarily imperfect report was alone possible, our readers have gathered the principal facts and suggestions that were brought under the notice of the meeting. Mr. Holland, M.P., to whom the credit is due of having originated one of the most instructive discussions which have yet been held in the Society's rooms, spoke of the explosive force of ebullition and its modifications by the infusion of various substances in the boiling water—of the behaviour of boiling water which has been deprived of the air naturally existing within it under ordinary circumstances—of the advantages of adding carbonate of soda to impure water—of the alleged merits of caustic soda (3 lb. per week for a boiler of 20-horse power) as inducing the immediate deposit of impurities in place of their slow crystallization as an incrustation on the inner surface of the boiler, and of the advantages of periodical inspection of steam engines in order to reduce liability to accident to a minimum.* Mr. Holland also referred to the great liability to accident from machinery in agricultural districts, quoting on the subject the experience of a Gloucestershire Union, in whose agricultural parishes accidents of this kind are not only relatively more numerous but absolutely more numerous than in its manufacturing parishes, although the population is not one-fifth agricultural.

* Mr. Holland quoted Mr. Ransome's rules for the management of the steam engine, and the quotation has been unfortunately printed in our report as if it had been a personal address by that gentleman, who was not present at the meeting.

The valuable remarks of Mr. Amos, who followed Mr. Beale Browne in the discussion, were last week reported. He agreed with Mr. Holland on the value of periodical inspections of agricultural engines, and also on the value of the agricultural labourer as capital "raw material" out of which to educate a patient, painstaking, and attentive engine driver.

Mr. Appold made an instructive remark bearing on one frequent cause of explosions.

He believed that the freer the water was from air, the more likely was the boiler to explode. He had taken water, got rid of the air, and heated the water up to 240° instead of 212°. One day he left it in his room with a thermometer in it, and soon afterwards it exploded, the steam blowing the thermometer out of the flask, so that there must have been a considerably greater pressure than at 240°, up to which point he had watched it; and from that he arrived at the conclusion that the purer the water, or freer from air, the more danger was there of accidents. Now with agricultural engines, if they shut off the water altogether, and allowed a small jet of steam to escape from the boiler, they would get rid of the whole of the air. For a time, if the valve closed, the water thus exhausted of air might lie still, but the moment the pressure was removed, however little, it boiled again, and an explosion might follow. If they kept the pump always going when the engine was at work, pumping the air in, there would be no chance of the water getting beyond boiling point.

Professor Wilson explained the action of lime water in throwing down the lime from water when it was held in solution by an excess of carbonic acid—that being the case generally in calcareous districts, where boilers were extremely liable to be encrusted.

Mr. Dent, M.P., urged the importance of the suggestion that agriculturists like manufacturers should unite for the periodical inspection of steam engines. If this could be done, and if, moreover, they could depend upon the manufacturers turning out good and efficient implements; and if agriculturists themselves would exercise some judgment in the choice of men to undertake the duty of engine driver—(they did not want men of great ability so much as clean, steady, painstaking men for the purpose)—they need no longer trouble themselves with scientific matters, such as the chemical qualities of the water, and so forth, but might hope to escape accidents by a moderate amount of care and prudence.

The discussion was closed by a sensible address from Mr. Fisher Hobbs, the Chairman:

"In steam agriculturists had a most useful but dangerous agent to deal with; and if it were not kept under proper control, no doubt even more serious consequences would ensue than had hitherto been experienced. It was gratifying to find that the views which Mr. Holland had enunciated, so much coincided with the opinions of men like Mr. Amos, Mr. Appold, and others. Some hints had been thrown out in the course of the discussion, which he was sure agriculturists would feel it a duty to act upon. The recommendation of Mr. Holland, with regard to the establishment of a system of inspection at different periods of the year, was one which those who employed steam power would be glad to adopt. Then, as to the properties of the water used for steam engines, he had no doubt that that too would receive a larger share of attention than it had hitherto done; and the suggestion of Mr. Frere, that, where it was convenient, iron rain-water tanks should be used, was also a good one. He was satisfied the discussion would not rest there, and felt assured that the meeting would unanimously vote their thanks to Mr. Holland for having introduced the subject.

In the last two Numbers of this Paper we have described by tabulated figures the actual practice of manuring on 2292 acres of light pasture land, and 11,760 acres of light arable land; 4305 acres of heavy pasture land, and 4523 acres of heavy arable land; 8384 acres of medium pasture land, and 23,357 acres of medium and various arable land—or in all about 55,000 acres of arable and pasture land on 129 farms in the principal counties of England and Scotland.* In addition to this

* The publication of so large a mass of details, including two or three thousand items, could hardly have been accomplished with an entire freedom from error, either of the original reporter or of the subsequent transcribers; and we have accordingly to request any of our readers who wish to retain a perfect report to make the following corrections on their copies:—In No. 7, pp. 266 and 267, all the entries are for the Scotch acre; the quantities for the Imperial acre will be one-fifth less. In No. 67, p. 268, the quantity of bone dust applied should have been stated 6 bushels, not 6 cwt. In No. 73, p. 291, instead of 207 in the 6th col. read 20 (T). The "further report" referred to will be given along with the others alluded to above. No. 82, p. 291, should have been signed *J. Wilson, Woodhorn, Morpeth.* In No. 110, for "*Dung* enriched by 100 tons of cake" read "100*l.* worth of cake, &c." The arable land is 130 acres.

enormous mass of information, which gives an extraordinary picture of the intelligence, capital, and energy now brought to bear on arable farming in this country, we have reports from nearly all our correspondents of the ordinary management of this department of agriculture in the neighb urhoods from which they respectively write. These reports we shall publish in succession during the next few weeks, and endeavour at intervals so to collate the facts thus collected as to elicit the lessons which they teach.

One point is illustrated already by the mere figures just quoted. All the farms from which returns have been taken, with the exception perhaps of the large extent quoted in No. 61, are essentially arable farms.

Of the 14,000 acres of light land only 2300, or less than one-fifth, are pasture. Of the 32,000 acres of medium and various soils, 8384, or rather more than one-fourth, are pasture. Of the 9000 acres of stiff land, 4300, nearly one half, are pasture. The character of the soil, and its consequent greater or less laboriousness of cultivation, thus determine whether the Grasses or arable crops are to be the produce of the farm. As to the treatment of these crops respectively as affected by the character of the soil or of the climate, that is a matter on which, as we shall hereafter see, the tables throw a great deal of light. Meanwhile look at the information which they give on the application of lime.

Mr. THOMAS, speaking of the paper read by Mr. CUTHBERT JOHNSON on artificial manuring at the Farmers' Club two months ago, blamed it because it was silent on the subject of lime; and both he and Mr. TRETHEWY urged the application of lime in ordinary arable culture as if it were an unaccustomed or novel practice. These tables show perfectly, what indeed was already known to almost every one, that excepting the chalk and limestone districts of the country, liming, at intervals varying from six to 20 years, is almost universal. From 10 cwt. up to 10 tons per acre applied at intervals of four years up to four or five times as long is the rule of English agriculture. When a large dressing is applied, as of 200 to 300 bushels per acre, a long period elapses before it is applied again, and thereafter a smaller application, as of 30 or 40 bushels applied in compost over the Clovers before breaking them up for Wheat once in a rotation, as in every other rotation, is a common application. It has the effect of rendering farm-yard manure more effective—of making clay lands work more kindly and produce more abundantly—and of diminishing, if not entirely removing on light soils, the liability to Finger-and-toe disease in Turnips. The instances in which the report declares no lime to be used are confined to those cases where either the subsoil or the farmer has already once for all filled the soil with an excessive dose.

"THE chief seed month is closing and nothing sown as yet," writes a Berwickshire correspondent; and he does but relate the general experience. So wet a March—one so entirely without the proverbial dust, has not been known for many years. The Thames valley is now fuller of water than it has been at this season within the memory of "the oldest inhabitant." The waters have stood deeper over the Thameside meadows during the past week than they did in the wettest time of the wet year 1860. The thing is not of such importance on the dry chalk and limestone soils which cover great part of southern and eastern England, and which require a wet season to produce a maximum produce; and perhaps it may not prove so serious a matter even for the stiff clays, if these are drained; for their Wheat, Beans, and Vetches are already up, and when suitable weather once more arrives the fallows may be attacked, with some prospect during the long summer months of their successful reduction. It is the loamy, perhaps adhesive loamy arable lands on the sandstone and marl formations of the country, not too stiff for Turnip and Barley culture, on which a great deal of spring cultivation has to be accomplished, that will chiefly suffer.

The immense interests at stake more immediately obvious, and perhaps even more permanently endangered during spring floods than during autumn, will once more bring before us as a first-class subject the question of arterial drainage, on which meetings of agriculturists and engineers have often enough been held during the past few years.

In 1859-60 Mr. GRANTHAM, a member of the Institute of Civil Engineers, read before the Institute an extremely instructive paper on arterial drainage and outfalls, in which the history of a great number of instances of successful management is given in detail; and the difficulties, both those natural ones which differences of level and character of soil present, and those artificial ones presented by the existing interests in mills, navigation, &c., were described. At Wareham, in Ireland, on the Bedford Level and the Great Lincolnshire fen district, on the Ancholme Level, in Yorkshire, the Hainault Forest enclosure, and on the Indian and Italian Rivers, Mr. GRANTHAM found the examples which he then urged, of the very great success which had attended the construction and improvement of arterial channels.

To this paper, after a long discussion before the first engineers of the country, a Telford medal was awarded; and the pamphlet recently printed,* containing both Mr. GRANTHAM's valuable paper and the addresses of subsequent speakers, well deserves the attention of the agriculturist. Immediately after Mr. GRANTHAM's paper followed the wet season of 1860, by which the necessity of improved arterial drainage was of course plainly proved. And during the week of the Smithfield Club in that year an influential meeting was held in London, at which the Earl of ROMNEY presided, to consider the necessity of a general Outfall Bill. A committee was then appointed to confer with the Government, and a deputation waited upon Sir G. CORNWALL LEWIS, then at the Home Office, and he directed the preparation of the Bill, which was subsequently passed by Parliament. Messrs. BAILEY DENTON and GRANTHAM and others assisted in drawing up the Bill.

Its provisions were necessarily of a somewhat novel character, and required special care both in its composition and powers. It is divided into three parts—the first extends the powers of the Commissioners of Sewers, in a very old Act, instituted under 23 HENRY VIII., but such as it was it has answered the purposes of a Drainage Act. Its jurisdiction was confined to the seaboard or the shores bordering on tidal rivers and the sea, and not farther inland than the level of the tide. The new Act extends the powers to the uplands under the control of the Inclosure Commissioners, who can direct inquiries to be made as to the necessities of forming Commissions for the sanction of the Crown, and they can give the power to borrow money and make rates. The second part enacts that drainage districts may be formed by a combination of the owners of the property within an area of country by the sanction of the Inclosure Commissioners, and generally by the same mode of proceeding as for granting Commissions of Sewers, except that the Inclosure Commissioners can grant a provisional order to be confirmed by Parliament. The third part provides a machinery to enable a private owner to obtain an outfall through an adjoining property. As far as the provisions of this Act have hitherto been considered and have been had recourse to, they are certainly found to afford great facilities for draining large areas that have lain for years in a worse than useless condition, and for cases where the expense and trouble of procuring a private Act of Parliament would have totally defeated any steps being taken to treat with them. Some applications for the use of the provisions of the new Act have been made, and have been sanctioned.

In all probability recent weather will have shown in many places the immense value of the powers thus conferred, and will induce a more rapid use of them than has hitherto been made.

It was a fortunate thing that Mr. GRANTHAM's paper just preceded a period of extreme rainfall, and called attention opportunely to the remedies whose necessity was thus so clearly proved.

The wet spring of 1862 has in like manner been preceded by another timely discussion of a similar subject before the Institute of Civil Engineers. A paper lately read by Mr. BAILEY DENTON on the effects of underdraining on the arterial channels and outfalls of the country, has once more drawn the very ablest minds in the country, including that of the Prime Minister, to the consideration of what is at any time an interesting question, and has this season again acquired a serious and even threatening importance.

To these papers and the discussion on them we shall again direct attention.

—— IT is intended to institute in the county of Cumberland some lasting tribute to the memory of the late Mr. BLAMIRE, of Thackwood, the late Chief Commissioner of Tithes. At a meeting recently held at Carlisle in promotion of this object, Mr. P. H. HOWARD, of Corby Castle, referred at some length to the agricultural and public career of the late Mr. BLAMIRE. He was the nephew of Mr. CURWEN, of Workington Hall, well known as a leading agriculturist. At those interesting agricultural meetings at Workington Hall, Mr. BLAMIRE first went through his apprenticeship in agriculture, and became known as an agriculturist himself. But it was in the formation, passing, and administration of the Tithe Commutation Act that his public services were rendered. Mr. BLAMIRE's speech in the session of 1836, when the Bill was brought in by Lord JOHN RUSSELL, so satisfied the Government of his ability and intelligence that they immediately adopted his suggestions; and Earl RUSSELL, unsolicited, asked him to take charge of the Bill when it should have passed the legislature. Having been appointed to the office of Chief Tithe Commissioner, many other kindred occupations or branches of local improvement were naturally in time attached to that office. There was enclosure, and everything connected with drainage, and there were other local improvements which were all naturally connected with the Tithe Commission. As Mr. HOWARD justly said:—In many parts of the country, in England at large, where these measures, originating in this way, are known to have produced immense material and social benefits—this project will be taken up, and receive an earnest support.

—— A COLLEGE and Educational Institution is about to be established in the county of Suffolk, at once as a noble memorial to the late PRINCE CONSORT, and a much wanted agricultural and middle class school. The county fund collected for this purpose already amounts to 8000*l*. The leading county gentlemen and the great manufacturing firms equally contribute to it; and Mr. GARRETT, of Saxmundham, who acts as Honorary Secretary, writes as follows:—

"This memorial will hand down to future generations a high testimony to the character of the PRINCE CONSORT, who was so energetic a promoter of progress in all that was scientific and beneficial amongst us. This institution will also unmistakably testify to the capability of the people of Suffolk to appreciate true worth, and evidence a laudable desire to imitate so noble an example, and by the founding and erecting such a scientific college and school as this now contemplated, to ensure a more enlightened race of men from the middle classes, calculated to keep time with manufacturing and mercantile districts."

CULTIVATION BY STEAM.

As a recently elected member of the Farmers' Club, as a landed proprietor, and as an amateur farmer, I wish to express my thanks to Mr. Jas. Howard for the able manner in which he has brought to the notice of the Club and agricultural world the subject of steam cultivation.

But at the same time I am desirous to draw further attention to this important question, with a hope that more accurate results may be arrived at, and greater practical information be elicited by discussion and agitation, than appear at present to be possessed by landlords and farmers. Although Mr. Howard entered very fully into the investigation of the rise and progress of steam cultivation, as a manufacturer and with a becoming delicacy of feeling he left untouched several points interesting to the practical man, and essential in the application of steam to successful practical agriculture.

The points I allude to appear to me of material importance to the successful progress of steam cultivation, and require further practical tests to prove the efficiency of the various systems now adopted, before the great body of British farmers will be satisfied to substitute for horse-power cultivation by steam as economical or advantageous.

I may state, *imprimis*, that from reason and theory, from reading and hearing the opinions of others, I am a warm advocate in favour of steam cultivation, and all my wishes are to aid in its development.

But to arrive at the practical result, how far steam-power is applicable to the cultivation of the soil, we must ascertain—

1st. Which is the best kind of implement, and therefore the most economical, for the application of steam-power to land?

2d. On what characters of soil can such implement be advantageously employed?

It appears from Mr. Howard's statement, as well as from the discussion which followed the reading of his paper, that cultivation of the soil by steam-power has been adopted by several farmers, and wherever adopted has given general satisfaction, insomuch that the results have been superior in all respects to those effected by horse-power.

We now appear, however, to have arrived at a period

* On Arterial Drainage and Outfalls. Printed by W. Clowes & Son, Stamford Street, Charing Cross. 1862.

when the agricultural world, or rather agricultural societies, should take upon themselves to decide, by extended, impartial, and most searching experiments, "Which is the best method of applying steam cultivation?" By this question I mean that it should be ascertained which implements, ploughs or cultivators, are most economical in cost while most efficacious in work; which are most readily moved by the lowest power; which undergo the least amount of expenditure in wear and tear of rope: which are followed by the most profitable crop: and which secure the cleanest condition for the land after the removal of the crop. The contest, or the doubt, as to which system is the best, appears to lie entirely between the merits of the steam plough and the steam cultivator. No more time should be lost in testing the real practical and relative merits of each and both. Agricultural societies would confer the greatest boon to the farmers of England, were measures at once adopted to decide these. And a very simple method suggests itself by which the results could be decided.

Large prizes have been offered for the best implements for the cultivation of the soil, in some instances as much as 500*l.* Awards have been made simply for implements, which were seen to effect nothing more than the ploughing of the land. No subsequent condition of such land has been considered as any element in the perfection of the implement, or of its prospective utility and value. In this omission I believe the real error has occurred. But the true tests of the advantages—the economy and the profit—of every system of steam cultivation, compared with horse-power, can only be arrived at by a series of experiments, widely differing in character and merit from the system of competition heretofore advocated and encouraged by the agricultural societies of this country. No true test of the relative advantages of cultivating the soil by plough or grubber moved by steam can be arrived at, unless the original cost of each implement be taken into consideration together with that of cost of wear and tear, expenditure of time, condition of the land, and the value of the crop produced; and this not only for one year but for a succession of some three or four years. The experiments suggested could be satisfactorily carried out on two fields. One should be selected in a heavy land district, the other of a light soil. A portion of each field should be allotted to horse-plough tillage, another to the steam plough, other portions to Mr. Smith's and Mr. Howard's cultivators. The results of cost of cultivation and produce should be most stringently estimated by impartial and disinterested judges, and an analysis of the results of two, three, or four years then given to the public. If the application of steam be proved unsatisfactory or unprofitable compared with horse cultivation, the question would be settled; and we should, at any rate, know that we had not yet arrived at an economical method of applying steam to the cultivation of land. If, on the other hand, the results prove satisfactory and profitable, nothing could more conduce to the progress of steam cultivation. Each system of cultivation, whether by plough or cultivator, could be judged of by its relative results. The practical farmer would be satisfied to adopt the best whenever he had the means to do so.

I need not enter into the details of these proposed competitive trials. The Royal Agricultural Society would meet with no insurmountable difficulty did they determine to carry out the experiment. Two fields of some 20 to 40 acres each might readily be secured for a sufficiently long period for such a purpose. I can only say, that if it would be any inducement to the Council to entertain this proposal, I shall be ready to place at their service 20 or 30 acres of light land, subject to any reasonable arrangement as to rent they may consider equitable. I should hope many possessing large properties, and therefore being more interested personally in the advance of steam cultivation than myself, would be found equally ready to assist in the undertaking to solve this problem.

The steam plough appears to me to carry with it several grave objections. It is a heavy implement; it requires a powerful engine; it requires a heavy rope; it costs a large sum of money; the share offers a large friction surface to the land in passing through the earth; it buries the top soil, root and seed weeds; it makes a good bed for the former to take fresh growth in.

The steam cultivator appears to be free from many of these objections. It is a less heavy implement; requires a lighter and less costly engine, thinner and cheaper wire rope; the teeth offer less friction surface to the soil than the plough. In dragging through the soil there is a continuous tendency to carry root weeds to the surface; it buries none; it loosens all; it opens up the earth (Mr. Smith says in his last letter his goes 16 inches deep); it gives free entrance to air and water.

These appear to be the relative properties of the two varieties of implements, as at present adapted to steam cultivation. It remains however for further experiment to decide which will produce the most profitable results.

On one of the warmest days of last October, a friend practically acquainted with the agriculture of many parts of England, induced me to pay a visit with him to Mr. Smith's farm at Woolston: and although we were perfect strangers to that gentleman, we were received by him on our arrival with the greatest kindness and the pleasantest welcome. We walked, first over a portion of a large field of very heavy land, which had been recently merely once cultivated by Mr. Smith's apparatus, after bearing an excellent crop of Beans. This land was as clean and free from weeds as my dining table. Our walking sticks could be pushed readily up to their middle with the slightest pressure into the ground. It was ready for Wheat after this one cultivation as soon as rain fell. We walked over another portion of the same large field, part of which had lately been a bank and ditch, now thrown into the field. This division had also recently been once under the action of the cultivator. Corresponding to the part where the bank and ditch formerly stood, we observed some long straggling pieces of Couch lying on the surface of the ground. The roots had been dragged out by the cultivator as it travelled through the earth, and were now drying under the rays of a rather warm autumnal sun. Here and there were seen a few pieces of Couch peeping up between the clods of earth. We had the curiosity to pull at these roots; they came up like pieces of string, without difficulty and without breaking, so perfectly loosened was the soil, so totally free and entire the root. On the surface and in the ground these pieces of Couch were in many instances half a yard in length. Would the plough have eradicated or left whole such Couch roots as these?

We walked to the end of this large field to a part carrying Swede Turnips. No light or heavy land ever produced a finer crop. This on land not heavily manured, but in a field consisting of heavy clay soil!

Under Mr. Smith's system of cultivation he told us he dare not manure heavily, otherwise his crops would be laid by rain or wind; his straw becomes a drug to him; he has greatly reduced his horse labour and cost of horse keep.

If so highly satisfactory on heavy land, what would be the effects of steam cultivation on light soils? and here I may put my second question—"On what characters of soil can steam cultivation be advantageously employed?"

If I might hazard a conjecture without much practical experience to guide me, I would assume that in all probability it will be ultimately proved that the only soils on which steam cultivation will not answer, are those shallow surface soils which lie immediately on pure chalk or gravel. But, I believe, on almost all light soils, especially those lying on clay, the steam cultivator or plough will be found advantageous and profitable.

We have however to ascertain what are the essential conditions of the land requisite for the profitable adaptation of steam cultivation, before we can ensure the greatest advantages.

When I first commenced my amateur pilgrimage through the mysterious paths of agriculture, I started my man "Thunder" with the four following maxims, as the basis of all future operations:—

1. Deep drainage; 2, deep cultivation; 3, few fences and ditches; 4, plenty of manure.

Thunder approved, and added, "You see, sir, them 'maximums,' as you is pleased to call that way of farming, is about right: for, says they down our part, 'if good farming won't pay, bad can't.'"

To apply these maxims to steam cultivation is not irreconcilable with sound practice; or perhaps I should rather say, to apply steam cultivation according to the above principles constitutes good farming.

Without the 1st (deep drainage), the 2nd (deep cultivation) is almost useless labour. The 2nd without the 3rd (few fences) is not only troublesome, but tedious and expensive. And lastly, by the 1st (deep drainage) with the 2nd (deep cultivation, by steam especially), the 4th (manure) can be very economically applied.

It has often been urged that the British farmer is one of a class surrounded with prejudices, and imbued with bigotry as to his system of farming being the best; that he is averse to economising his manure, draining his land, or subsoiling his fields. If his forefathers did well without these measures, why should not he succeed in a similarly safe path? It is just that word "safe" which explains the whole subject. The British farmer, as a rule, has not the advantages of high education, nor is he much conversant with the principles of natural philosophy, chemistry, geology, &c. He has been practically educated how to cultivate the land, and to judge of the value of stock, so that he may secure his rent thereby, and bring up his family respectably. He is a keen man of business—none more shrewd in his own sphere of life. Try a bargain with him, and probably you will not get the best of it. He cannot, however, afford to speculate in new implements, untested, unexplained, or incomprehensible to him as to their merits or powers. Death and quarter day he may be prepared for. As a rule, it is to be hoped he fears the latter no more than he should dread the former. But his rent must be forthcoming as the inevitable quarter day draws nigh. He knows he can be ready by following carefully in the beaten track of his ancestors; but he has yet to learn that he can as readily, if not more certainly and with greater advantages to himself, have the rent in hand by the employment of "these modern innovations."

Convince him by practical, impartial, honest and complete experiments that the steam plough or cultivator, or both, will do this, and within ten years every village, if not every farm, will see the steam engine moving the soil by means of the most approved implements. Agricultural societies can alone efficiently carry out experiments such as would satisfy the agricultural world. They alone can arrive at the impartial verdict, which implement can be most economically and therefore most profitably worked by steam. A prize of 500*l.* or 1000*l.* offered by the Royal Agricultural Society for such a purpose, would be worthy the position and the true objects of such a society; and would also be worthy the contest of those anxious to advance the interests of steam cultivation. The results of such a contest would entail lasting benefits on the tenant farmer, and on the landed proprietor—benefits which no other prize heretofore offered or awarded has ever been able to secure. The result would convince the farmers of England whether or not steam cultivation was a safe investment, and would satisfy landlords that some aid might with security be given to tenants to procure requisite implements.

In justice it may be said, that, if the farmer has as yet been slow in adopting steam cultivation, there is an equal amount of prejudice amongst the landlord tribe on this question: a prejudice based on an entire ignorance, in many instances, of all the principles of steam-power as applicable to agricultural operations.

Mr. Howard expressed a belief that steam cultivation was at present only in its infancy: need I say that a prize such as I have suggested would aid materially towards its growth, and perfect its maturity, especially if the prize were advertised, a year at least previous to the first trial.

Steam cultivation is not alone to be restricted to land already under tillage. In every instance (only perhaps excepting woodland recently cleared), I believe that the steam cultivator will prove the very best and the only instrument adapted to the breaking up of waste lands in a manner at all economical. England abounds in extensive waste heaths and commons. If any one wishes to satisfy himself of the extent of a portion only of the neglected lands of Great Britain, let him start from the neighbourhood of Bagshot in a south-westerly direction for the coast of the English Channel, and ride as far as Poole. He may pass over miles of heath road without paying a turnpike, and over hundreds, thousands of acres, without crossing a patch of very profitable cultivation. There are many large portions of this immense waste which, properly cultivated, would grow good crops. Much of it is a sandy surface with underlying clay. Steam cultivation would convert the greater portion of what is now, to a very considerable extent, a neglected, barren, profitless surface, into one capable of producing abundant green crops, excellent sheep feed and creditable cereals.

To bring the best of any of this land into cultivation under the ordinary method, costs from 6*l.* to 8*l.* an acre to trench; 6*l.* an acre to drain; 10*l.* an acre to manure and seed; three years to wait for a paying crop, without anything put down for loss of interest on purchase and improvement.

I believe all this land, at any rate the greater portion, may be brought economically into rapid and deep cultivation under the use of the steam cultivator. Thousands of acres might thus be rendered useful and productive, and hundreds of labourers employed and benefited, where now barren heaths and swampy surfaces leave the country dreary and cold, often unhealthy, and the scattered inhabitants uneducated and demoralised.

But still further I am inclined to go: and to designate the steam cultivator "par excellence" an implement of health: one capable of carrying out a sanitary reform of great national importance.

The deep cultivation of the soil renders the land dry in winter, less liable to parch in hot summer; it cuts through the water-holding substratum and permits the rain of heaven to percolate and carry downwards the reviving moisture to the growing crop. It cracks the soil so deeply that surface water no longer lies stagnant, to await evaporation, and thereby chill the surface as the malarious vapours fly upwards; it materially diminishes the consumption of food in horses, and lightens the labour of man. The land is rendered by deep cultivation, more salubrious and more productive. Ague disappears as the stagnant water departs from the vicinity of the homestead and the labourer's cottage; and the various evil influences, the root of fever, consumption, and other "ills that flesh is heir to," are modified in character and severity, or removed to other less highly cultivated districts.

The farmer sees, under this system of cultivation, his crops sprouting up a wholesome green in spring and yielding abundantly at harvest; his stock browse in healthful pasture and bring forth healthly kine; his family grow up strong and vigorous; his labourers become more active, will be better paid, more intelligent, and not so borne down by fatigue as at present. He is himself prosperous; thankful that quarter day brings with it no feelings of anxiety. He is on good terms with his landlord; and last, not least, grateful to his Creator for the many blessings which surround him.

Steam cultivation can, and will, do all this. It is already doing something towards it in some few

portions of England. How soon it will do so all over England depends much on our agricultural societies—most on the Royal Agricultural Society, and upon the measures adopted by it to promote the progress of steam cultivation. *George Pollock*, 27, *Grosvenor Street, W., March* 20.

OAT CULTURE.

(From Morton's Farmers' Calendar.*)

January.—Early in this month, if the weather be open, it is well to examine such fields as are intended for this crop, and consider, if there be any apprehension of being full of business in February and March, whether it would not be well to lessen the work of those more busy seasons by sowing some Oats now. The temper of the soil must govern this, but it is necessary to know that Oats sown so early succeed well. This has been proved by ample experience. And in the earlier editions of this work, experiments made so long ago as 1785, in proof of the advantages of early sowing, were recorded. Of these the account of that by the late Earl of Winchelsea may be still read with advantage. The Earl remarks:—

"I was induced to make the following trial, from having seen upon two very capital farms in Kent and Essex, great crops of Oats sown as early as Christmas week, and from being informed by the gentlemen who occupied those farms, that they always sowed their Oats as early as that, if the season admitted of it; and that they thought it the best time for sowing that grain. I wished to ascertain whether this plan would answer in a more northern county. The general time of sowing Oats here is from the beginning of March to the end of April; and it is the opinion of most people here, that Oats sown much earlier would be liable to be destroyed by spring frosts. Last winter was very favourable for the experiment, as the weather was open at Christmas for sowing, and the frost in the spring not severe. I divided a field of eight acres equally: one half was sown the day after Christmas day; the other half the middle of March. Five bushels per acre were sown broadcast on each part, and the same Oats; the sort a small white Oat, here called short smalls. The early sown were ripe and cut one week before the others; they were harvested equally well, without being exposed to any bad weather. I had a rood of each set out very carefully in the middle of the field, reaped and threshed as soon as carried. The produce and weight were as follows:—

Winchester Bushels.

Early sown .. per rood, 22 bshls.	
or per acre	11 qrs.
Late sown, 19 bshls. or per acre	9½ ,,
Weight per Winchester bushel as soon as threshed:—	
Early sown	44½ lbs.
Late sown	42½ lbs.

"The crop was, as you see, very good. The land yielded Potatoes the preceding year, 450 bushels per acre, and was not manured for that or the Oat crop: it had before that been in Grass for six or seven years. The soil a red loam. I am inclined to think that the early sowing will answer here, as this field is very high, and much exposed."

Though five bushels per acre are still a common, they are an unnecessary quantity of seed. Four bushels are amply sufficient, and when the land is in good tilth and in good condition, three bushels will be seed enough.

February.—Oats may now be sown, the later sorts at once, on any land which has grown a manured fallowed or restorative crop during the previous year, and has since been ploughed. In Scotland, the common place in the rotation for the Oat crop is after a Grass or Clover layer. In England, such a place is always kept for the Wheat crop; and Oats follow either Mangel Wurzel and other green crops, pulled and carried from the land, or Turnips sometimes which have been fed on the land, or a corn crop—as in the Cotteswold district, where it sometimes follows Wheat.

In the fen districts it sometimes comes after Rape or Clover, and is followed by Wheat. The Oat crop is more largely cultivated in the north than in England. It is a hardier grain, and will ripen under circumstances where Wheat would hardly attain maturity. According to the most recent agricultural statistics of the island, it appears that of the 152 plots of 100,000 acres each, of which English arable land consists, 38 are in Wheat, 26 are in Barley, 13 are in Oats, 7 are in Beans or Peas, 23 are in Turnips, 28 are in Clover and Grass, 9 are in bare fallow, and the remainder Potatoes, Vetches, Mangel Wurzel, &c.

In Scotland, again, of 35 such plots of 100,000 acres each, 2½ were in Wheat, 1½ in Barley, no fewer than 9 in Oats, ½ in Beans and Peas, 4¼ in Turnips, 1½ in Potatoes, 14¾ in Grass, and the rest in other crops of less importance.

It is from Scotland accordingly, where the relative importance of the crop is so much greater, that we learn almost all we know of the relative merits of the different sorts of Oat in cultivation.

The cultivation of the Oat consists in harrowing down the lea furrow or the ploughed land, whatever may have been the previous crop, and drilling in rows 9 to 12 inches apart, about 3 to 4 bushels per acre, according to the kind that is chosen. Where Clover has been ploughed with the skim-coulter, and followed by the drill-presser, and left for some weeks until thoroughly consolidated, Oats may be very well sown broadcast over the land without any previous harrowing. It falls between the ribs left by the presser, and being well harrowed down, it comes up in rows.

The sorts of Oat in cultivation are exceedingly numerous. An enumeration of these, with illustrations, is given in these pages; and the cultivation is still further described below. Meanwhile, as especially adapted for sowing this month, the Tartarian and late Angus Oats may be named; the former, whether black or white, are recognisable by the one-sided head and thin awny grain, weighing 38 to 40 lbs. per bushel, and needing at least one-third more seed per acre than many stouter smaller kinds; yielding also a bulky straw, and a great quantity of grain: the latter yielding a better quality of grain, and a tall upstanding straw, and valuable for resisting wind at harvest time better than most other sorts, and well adapted for early sowing, especially on clay soils in early districts.

March.—We give illustrations of the sorts of Oats commonly cultivated. The ears are drawn of half the natural size, and there is a floret beside each given of the full natural size:—A, White Tartarian Oat; B, Black do.; C. Naked Oat; D, Hopetoun Oat; E, Sandy Oat; F, Poland Black Oat; G, Potato Oat; H, Barbachlaw Oat. These, and other specimens of plants drawn in this book, have been obtained from the museum of Messrs. Lawson and Son, of Edinburgh. The specimen of Hopetoun Oat which has been drawn, hardly does justice to the ordinary more vigorous growth of the variety.

(A, B) White and Black Tartarian Oat. (C, D) Naked and Hopetown Oats

The Tartarian White Oat is a coarse thin grain rarely reaching 40 lbs. a bushel, but yielding a very bulky crop of both straw and grain. It is grown a good deal in the southern counties, and in the chalk districts. It is very late of ripening, and therefore unfitted for late climates and poor soils. The Black Tartarian is shorter strawed than the white variety, much earlier in ripening, and fitted therefore for later districts and poorer soils.

The Naked Oat is a very prolific sort, more liable, however, to loss by wind at harvest time than other kinds; and therefore not coming into favour, though it has long been known to English agriculture.

The Hopetoun Oat is one of many agricultural plants which are due to the energy and patient perseverance of Mr. Patrick Shirreff, of East Lothian. It is a tolerably early Oat, with a large panicle, and hardly therefore properly represented in our drawing (D). It yields a heavy grain and very long straw—its seed is distinguished by a small ruddy mark on its front, and its straw acquires a reddish hue as it ripens. It is well adapted to lately reclaimed land and the lighter class of soils, and has come largely into cultivation.

The Sandy Oat (E), of Aberdeenshire origin, has been in cultivation for the last 25 or 30 years. It has a smaller grain than some other kinds, but yields well, and possessing a remarkably stiff straw is especially adapted to soft and peaty soils.

The Poland Oat is a very short strawed and very early variety, and as such better able than other sorts to meet the difficulties of late districts and rich soils. The black variety of this Oat is represented at F, next page.

The Potato Oat (G) has long been in cultivation. It is rather a short-strawed sort, and yields the very best quality known to English agriculture. Its grain is short, and round, and white; the ear is somewhat compact. It is less adapted than some other sorts to the more clayey soils, and it is more liable on such soils to a disease called the tulip root, which is sufficiently described by its name. Potato Oats are liable to shed at harvest time, and should be cut before the straw has entirely lost its green colour.

The Barbachlaw Oat is a hardy and prolific sort, adapted for late climates and moorish soils. It yields a coarse thin grain, but is very productive both of straw and seed.

Besides the Oats thus named and illustrated, many others are known to Scotch and English farmers. Among them we may enumerate—the Angus Oats, the common Dun Oat, the Berlie and the Canadian Oat. The last-named is this year (1861) being largely cultivated in some of the southern counties, having acquired a high reputation in 1860 for the quality and quantity of its yield, notwithstanding the difficulties of an unusually wet season and harvest time. Forty-six pounds per bushel were a common weight for the Canadian Oat last year.

White Oats should be sown now, in preference to any other season; and, in the general conduct of them, the farmer should, as a general rule, avoid sowing them after other corn crops, by which they exhaust the land. They should receive the same preparation as Barley.

What good reasons are to be offered for sowing Oats on land in such bad order that Barley is not to be ventured in, I know not. The common argument is their hardiness, which will give a middling produce, about sufficient to pay expenses, and leave a trifling profit, when no other crop will do the like.

The question between Barley and Oats depends, first, on the relative price. Oats may be expected to yield two quarters or more per acre more than Barley: it is therefore easy to calculate, at given prices, which grain

* Routledge, Warne, and Routledge.

will pay the farmer best; but it is not to be forgotten, that Barley generally leaves the soil in much better heart than Oats leave it, the latter being a more exhausting crop. It is very common husbandry to put in Oats on one ploughing of old Grass, and on layers of shorter duration. The method is, to plough the land as early as possible, drill-press, if necessary, sow Oats broadcast, and harrow them under. And in Scotland the almost universal practice is thus to take Oats after Grass or Clover. In England Wheat is the more common succession. But in very many cases it is better to put Peas in on light land, and Beans on stiff soils, and to follow these with Oats or Wheat, according to circumstances. I have known Oats which had produced inferior crops, followed by Oats again the next year, and produce largely, which proved that they wanted tilth. Peas or Beans will rather improve than exhaust land, when put in thus on layers; whereas two crops of Oats will scourge the land too much.

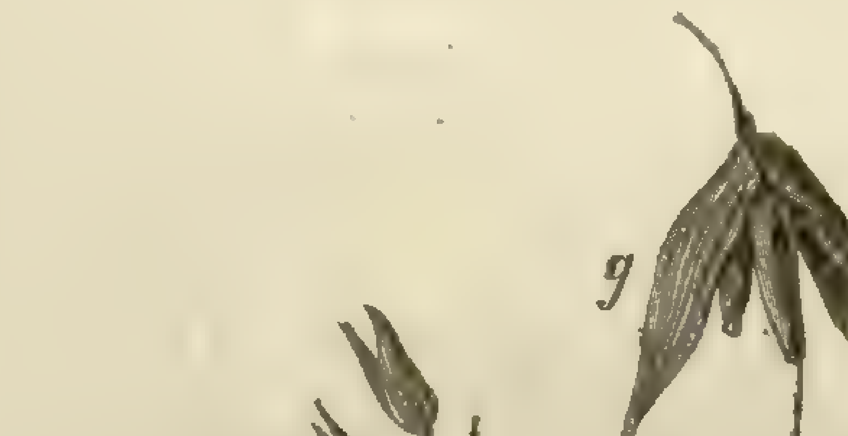
Let it, however, be well remembered, that these observations are made (so far as they relate to old Grass) on the supposition that the farmer will not, or is not allowed, to pare and burn, a method much superior, and which ought to be pursued in all cases where it is practicable.

A reference to the ordinary cultivation of the Oat crop has been already made. As to the quantity of seed required, two bushels per acre of the better kinds, as Potato and Poland Oats, will be as large a seeding as four bushels or even more of the lighter awny sorts—the Tartarian varieties, for instance.

APRIL.—Barley and Oats are both sown this month to a considerable extent, especially in the southern counties; and heavy crops are often had off late sown fields. It is, however, never to be recommended to delay the seed time of these crops beyond March when it can be avoided. A better produce both as to quality and quantity is obtained from the earlier sown crops.

(E) Sandy Oat.

(F) Black Poland Oat.



(G) Potato Oat.

(H) Barbachlaw Oat.

THE POTATO CROP.

It is now admitted on all hands that the Potato crop in Ireland (west especially) for 1861 is a complete failure; and, notwithstanding the experience of the past 17 years, preparations for planting on the very same ruinous principles are now in progress as extensively as ever. To stop people in this apparently ruinous work is impossible, but they may be assisted both by precept and example.

Now, the almost vital question is this: Can a full crop of Potatoes be grown in damp cold soils ere the blight claims the crop as its own? and after that crop is grown can it by any known process be preserved sound and fit for food? I will endeavour to prove to your satisfaction that this can and has been done. In this country so far back as the April of '48, when several small holdings of ground became vacant owing to the then occupiers emigrating to America, amongst these tenements was a three-acre field, then in stubble or rather weeds; for owing to a continuous course of ill treatment this portion of mother earth had to all appearance ceased to give any more food to her unkind sons. My wife thought it a pity to see the ground run worse than waste, so she applied to the incoming tenant to allow her to till one (Irish) acre for that one single crop of Potatoes. Permission was given upon condition that the ground was to be trenched to the depth of 18 ins. (no [illegible] job), and all weeds picked out, and to find manure, seed, labour, and all expenses. These were hard terms so near to the 1st of May. I wrote to the then Editor of the *Gardeners' Chronicle*, stating what I was about, and that the soil resting on a limestone gravel was cold and somewhat spewy, and abounded with the following plants, namely, Tussilago Farfar, Equisetum arvense, Triticum repens, and many other interesting plants which delight to honour such soils with their presence. I also requested the Editor's advice as to the description of manure I should employ, so as to force on a crop in such a soil, and at such an advanced period in the season.

I have now before me the Editor's reply in the issue of Saturday, April 29, 1848, page 294, and it is as follows: — "POTATOES. W. Jones. Is the land full of vegetable matter? if so, 3 cwt. of guano and 1 cwt. of sulphate of soda mixed together and sown broadcast in wet weather just as the Potatoes are coming through will be a good manure; if not, the above mixed with 10 or 20 cubic yards of manure." The soil was unusually deficient in vegetable matter, therefore the tiller bought 20 loads of bog mould, which had lain for some time in front of cabins. Three cwt. of guano was ground, sifted, and mixed with six loads of the mould; this was laid on a layer of 6 inches of the manure, and a coat of 6 inches of the same covered the pie and beaten closely with the spade, so as to turn off rain. The heap received three turns in seven days, and the same process of covering, beating, &c., was repeated each time same as at the first. This brought the time up to the 20th of May. Drills were then opened rather shallow, the "seed" set, and lightly covered with common manure, and over this was sown the heap in question, and drills covered as usual. The buds showed very strong over-ground in an unusual short space of time. Taking advantage of a very rainy day, the tiller employed a man to sow one cwt. of sulphate of soda; after this the growth was so amazingly rapid, that before the 20th of July, no vestige of row or drill could be seen, all being closed over. Blight set in towards the end of the month, the tubers being then large. About 4 tons were sold at market, and there could not be less than 4 other tons betwixt diseased tubers and tubers used as food. Many people now living can bear witness to the effects of that manure; for there were circumstances connected with the sowing of the mysterious looking stuff in a tempest, joined with the failure, of all the neighbouring crops, that made an impression upon their minds not easily to be eradicated. Being engaged at work of a different kind from that of tillage I had not a fair opportunity of testing manures on growing crops until the summer of 1860-61. In the summer of 1860 I top-dressed Potato drills (planted with common manure) with nitrate of soda, at the rate of 1¾ cwt. per acre Irish. The result was equally satisfactory and as decisive as that with the sulphate of soda; so much so that I wrote to Mr. Moore, of Glasnevin, at that time, saying that a full crop of Potatoes could be grown even in cold soils before the 1st of August.

I tried a lengthened series of experiments during last summer and autumn to test the best mode of guarding against blight extending to tubers, such as great earthing up and reversing of tops, cutting of tops, and using caustic lime on the bleeding stems, &c., but I found that none of these modes had much merit, except where moisture could be turned almost quite off; to effect this the tops must be pulled up the moment the plague spot makes its appearance, and a double breasted plough run deeply through the drills and rolled with an iron concave or series of concave rollers, so as to make the drill high, round, and firm. By this means all moisture is turned into the plough track, which lies below the level of the grown tubers. I find that anything left in the shape of haulm acts as a conductor for falling rains and should be removed. No one need hesitate to pull up the stalks when the plague sets in. For, once the spores of Botrytis infestans begin to circulate with the sap all growth is paralysed. I proved this last autumn by bringing a beam and scales on the ground, and weighing 20 yards of seven drills (all alongside each other), some of which were deprived of their foliage and stalks

and some were not, and I could find no difference in the weight of each drill worth speaking of.

The naked drills could be planted with many useful things instead of, as is the custom, to have the field covered with seed and other weeds the height of the surrounding fence, so that when a puff of wind comes the winged seeds fly off in clouds on errands of trouble to all who are so unfortunate as to lie beneath their sweep.

I do not pretend to say but what there are other hand manures equally as efficacious in their effects as those I have mentioned. I have tried all that have as yet found their way to this country, and can testify that none gives such an immediate start to the Potatoes as nitrate of soda. The period of the growth of the Potato in Ireland is so very brief (only from April to end of July at farthest) that a quick start, a rapid but short race, is of the last importance. In order to start successfully in this quick race, manure merchants or others should now arrange for the establishment of manure stores at convenient distances apart, from Kerry to Londonderry, and let them act upon the principle which I see meal merchants act upon, namely, take a bill for four or six months, and industrious well disposed people will always find some one to enter as their sureties. At any rate if something is not done, another year such as last may throw half of Ireland out of tillage altogether, and I regret to say that there is not at present the least appearance of anything that one could safely ground a hope that this year will prove more satisfactory to the small farmer than last or year previous. *William Jones.*

Home Correspondence.

The Mode of properly applying Lime involves the mode of preparing it for application. It reaches the farmer's land and is deposited thereon in the shape of stones or shells hot from the kiln, and in due time is spread, a dry powder; but in the interval between depositing and spreading it is not permitted to become wet, though rain should fall daily. Lime allowed to absorb water until it is wet, or "slobbed," in local phrase, is worthless. This however is easily avoided. Suppose a field in preparation for Potatoes and ready to receive its quota of lime. The ground is marked off into points, 2 poles apart, and thus there are 40 points per acre. The carts laden with shells are drawn on, and ½ a bushel is deposited on each point, the shells are then covered up with some of the surrounding earth, and an array of conical heaps—of soil apparently—soon present themselves all over the field. In a few days the lime begins to protrude, and shows itself bursting through its earthy covering; the farmer thrusts his stick into the heap, and if he can easily penetrate the lime he knows that it is sufficiently slacked or "slighted" to admit of mixing; the heap is then broken down, and the lime and earth forming it are mixed and again made up into a conical heap; the lime is then considered safe, and its virtues secured; in a day or two it may be spread, after which no fall of rain can injure it, no matter how long it may so remain before being ploughed or scuffled in. *P. C.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Wednesday, April 2.—At the Council Meeting on this day, Lord Portman, President, in the Chair, Col. the Hon. A. N. Hood was elected a Governor of the Society, and 57 new members were elected. The report of the proceedings has unfortunately (under the new arrangements by which we go to press at 2 P.M. on Friday) not reached us in time for appearance this week.

Reviews.

Farm Life; or Sketches from the Country. Saunders, Otley & Co., 66, Brook Street, Hanover Square.

This work contains 21 clever agricultural essays, "introductory," "retrospective," "prospective," and "resultant." They are written in a lively buoyant style, and will be read without labour. At the same time that they will attract to, and confirm the choice of, an agricultural life, they are full of useful and substantial information, and may be read with advantage, as they will with pleasure, by the agricultural student and practical man as well as by the country gentleman whose difficulties and duties are so well described in them.

The book may be cordially recommended as a racy description, by a clever and intelligent writer, of country life, as regards all classes—including therefore landlords, tenants, and labourers, with their "go-betweens," agents and bailiffs. We hope it will receive a large circulation.

Farm Memoranda.

CHATTERIS.—*Isle of Ely, April* 1.—Since our last report was written we have had considerable changes in the weather. February was a very favourable month for field operations, and we made the most of it. We never remember to have had the land in such excellent working order. The ground was sufficiently moist for all practical purposes, but not too wet; we were, therefore, enabled to harrow and clean, or to sow, as we wished. We availed ourselves of this fine weather for seeding purposes as far as was practicable, and put in 21 acres of Beans, 58 acres of Peas, and 15 acres of Poland Oats on the high land. These last were sown on the 21st and 22d February. We usually sow Oats early in March, but the weather being so favourable, and the soil in such fine working order, we could not resist the temptation of putting in these 15 acres, fearing a change of weather might soon occur, and we might be many weeks ere we could deposit the seed so satisfactorily again. The land in this instance was ploughed in the autumn 12 inches deep, and the Oats are now up, and look promising. We commenced sowing Poland Oats on the Fen lands on the 6th of March, and have put in 90 acres, 3½ bushels per acre. We have also sown 32 acres of Friezlands on Fen lands, and 30 acres of Black Tartarians, at the rate of 4 bushels per acre in both instances. The 90 acres of Polands and 10 acres of the Friezlands have been put in with the water drill, and 2 cwt. per acre of Lawes's superphosphate of Lime. The Polands are sown upon Coleseed land, *i. e.*, where Coleseed had been eaten off during the early part of the winter. The land is hot and gravelly; we finished sowing Oats on the 24th March. We have yet 15 acres of Barley to sow on high land, but the rain has prevented us preparing these lands. They were Wheat last year, and were cultivated and partly cleaned in the autumn, and half of them manured. They require a ploughing now to complete the cleaning ere they are sown. We have had very heavy rains during the last fortnight, and all our steam-engines have been at work pumping the water into the rivers, that it may be conveyed away to sea. Drainage is very essential to the successful cultivation of our Fen lands; and although they are porous, and the water percolates freely through them, yet, lying at so low a level, unless artificial means are used to pump the water from them, they would soon be inundated, and all crops must then sustain serious injury. Large sums of money have been expended during the last half century in cutting arterial drains and improving outfalls for conveying these waters more promptly to sea. Very few of our fen lands however drain naturally, but the waters have to be lifted by steam or wind power into these arterial drains. It is only some 15 or 16 years since the Middle Level, one of the divisions of the great Bedford Level, spent above half a million of money in improving its drainage by cutting new rivers and deepening old ones, and securing an improved outfall, and the result has proved that it was money well expended. But to return from this digression. The heavy rains have retarded all field operations, and the lands designed for Mangels cannot now be touched; and although work was in a state of great forwardness, should this weather continue much longer we shall be in sad confusion. We have planted 9 acres of Potatoes and have 5 more to plant when the weather will permit. Some of our horses are now idle, and others are only cutting the fallows across on light Fen soils. The high lands cannot be touched.

We never remember to have had so much good Grass keeping on the 1st of April as we have to-day. We are fully one month in advance of ordinary years. Last Saturday we put 76 shearling sheep from the yards upon some of our best Grass lands, purposing to take their wool, and send them away as mutton the early part of May. We are also waiting for a little finer weather to turn out 30 two-year old steers. The Grass needs them, and will be benefited by being eaten, ere it becomes old and sour. We contemplate putting upwards of 400 lamb-hogs from the yards upon the pastures towards the end of another week. We have had 500 sheep in yards all the winter, *i. e.*, since the middle of November, and have had but one solitary lame one, clearly showing that yard-keeping is not necessarily promotive of lameness. We have given our young sheep cut Mangels, hay-chaff, and a mixture of Oats and Peas, to the value of 3*d.* per head per week, and our old sheep Peas to the value of 6*d.* per head per week, with Mangels and chaff as the others. We prefer old sheep for Mangels, as they can bear them to so much greater an extent without being made to scour. We consider, after another winter's trial, the yarding of sheep a decided success. Mangels hold out well; but we shall have between 100 and 200 pigs eating them after the sheep and bullocks have gone to Grass. We must not conclude without a word upon the appearance of our Wheat crop. We have rolled all our fen Wheats with the heavy, uneven surfaced iron rollers, and they are now looking strong and well. They have retained their plant during the winter, and the rolling has tended to keep them on the ground, otherwise the tendency of the Wheats in this district is to run up into spindle, and to get away from the ground. But having a good plant they will probably be thick enough. Present appearances point to an early harvest. *R.*

SOUTH HANTS FARM.—*Report to the end of March. Horse Labour.*—Since our last report no work has been done with advantage on the land by horses, the past month of March must therefore be considered one of the worst ever known for the tillage of the land. We have only done two days of horse-labour on the land during the month. The work of the farm, however, at the end of February being in an unusually forward state, we may yet get weather to enable us to reap an average crop of Lent grain. It will however be against the obtaining Barley of malting quality, unless the seed can be put in before the middle of April. Owing to the weather being so wet, horse labour can hardly be said to have been profitable, and the work done has been carting gravel to roads, carting earth to heap, in order to be prepared for filling boxes and cattle pens at a future time. In our sandy loam soils the accumulating earth in ditches and sides of roads may be used to good account after mellowing in heap for 12 months, and turned occasionally. Carting Mangel, too, has been going on, taking them from heaps made in the field in autumn, and making heaps on various parts of the farm where they may be required for use during the next seven or eight weeks, and heaping them near the feeding houses; in this way Mangel is found to keep longer through the summer than when they are allowed to remain in heaps where first made, and we have found it best always to open the heaps, reform, and rethatch them, if required for feeding late into the summer.

Hand Labour.—This has been for men and women almost holidays, but a few days they have been hedging, banking, filling earth, gravel, &c., the women being employed in weeding chiefly. This is a good time to take up Docks and such weeds as require to be rooted up and carried away; we prefer sending the women to take up these weeds as soon as they show their first leaves, which is done with a small light pickaxe, and as soon as the corn and Grass have grown for a month, then a weed hook is used for cutting the annual weeds which die on the surface. We know that it is usual to make no distinction between the rooted perennial weeds and the annuals, this is however a great mistake, and fills the land with Docks and such like weeds.

The Stock.—All sorts of devices have been adopted on different farms to give the sheep a comfortable bed whilst feeding roots in the open fields; there are several points however to be considered in connection with this question, viz., the benefit of the stock, and equalisation of their droppings as manure, as well as the saving and efficient consumption of the root crop. Stock are often removed from field to field in wet weather, but for sheep feeding on roots out of troughs we hold it bad policy to remove them. Even when the land is dirty they do better to remain in the same field with a shifting fold, as their food is always clean and they have a more settled habit. The removal of ewes with lambs at side unsettles them all day, and the lambs do not go forward to feed and use the land gate as they should do. Spreading straw thickly on the land makes a clean bed for the sheep for a few hours, but they resort to it so much that too large a portion of the manure is left where the straw is laid, and to use it to a great extent and continue it for a month or more, makes it costly in many ways, and damages the land by so much carting. Our sheep have done badly, and we continue to lose many lambs from inflammation of the kidneys and stoppage of urine; this we find happens only to wether lambs, and although they only get Carrots in their own troughs yet they often get Mangels by feeding with the ewes. We have never known an instance of a case of this kind whilst feeding entirely on Swedes, Turnips or Carrots; this disease is certainly a drawback to the general advantages to be derived from the use of Mangels for sheep feeding; some say the disease arises from the deposit of sugar internally, but we incline to the opinion that it arises more from the excess of moisture contained in the Mangel, the ewe lambs do not suffer from the same cause, nor did we ever know a case until we commenced feeding with Mangels about six years ago, since which time we have lost about six or seven per cent. of our wether lambs, or rather obliged to kill them prematurely. This injury arising from the use of Mangels appears singular when it is considered that male calves and steers do not suffer in like manner, for although we have for many years fed our young cattle with Mangel only as roots we have never seen a case of the kind amongst them nor have we heard of it elsewhere; we have frequently found wether sheep suffer from the same disease whilst eating Mangel, but not to the same extent as lambs from two to three months old. We have been induced to call attention to this complaint, in order that a remedy may be sought for, but we find that the symptoms of the disease are not exhibited early enough to be treated successfully by medicine. There is also another way of viewing the question—is the loss occasioned sufficient to deter us from growing Mangels for stock feeding? we think not, because as regards proof, for feeding ewes or wether sheep, and also as a crop in value per acre, we know nothing equal to it. *J. B.*

Calendar of Operations.

MARCH.

BERWICKSHIRE MERSE FARM: *March* 31.—The chief [illegible] month is closing, and nothing sown yet, except a few acres [illegible] Beans. We are now suffering the penalty of a mild and [illegible] paratively dry February. During five weeks we have had [illegible] six days without rain, and only one drying day, being the [illegible] of the month. On the 2d there was snow, followed by [illegible] days of keen frost, and then 6 inches of snow, and heavy [illegible] on the 7th, with low barometer. Much snow fell [illegible] 22d, and generally the weather has continued rainy from [illegible] East, with the sky constantly obscured. The fall of rain [illegible] melted snow is about 4½ inches for the month. In these [illegible] cumstances our horses have been nearly idle for several [illegible] and we had some difficulty in finding an occasional [illegible] them in exercise. Grass has profited by the soft weather [illegible] if food were all they needed, the ewes ought to be well [illegible] is lucky that only a third part of the flock has [illegible] yet; the twins are sufficiently numerous, but [illegible] suffering from wet. We have plenty of good Swedes [illegible] yet, but the hoggs cannot do much good for want of a dry [illegible] However, it is plain that the weather must mend with [illegible]

new moon, and then all will be right. Stackyards are nearly empty. Barley is inquired for now that it is all done; Oats, however, are plenty; and Wheat is quite a drug, though by no means plenty. Fat Cattle have been difficult to dispose of, but the demand has slightly revived. There is an impression that sheep are not too numerous for the wants of the country. The Potato trade, which has long been very dull, shows signs of a revival. The last sown Wheat is pointing through, and the Oats looks well enough; but there are complaints current of slug and wireworm. A sort of epidemic influenza has been prevalent among horses this winter. Few places have escaped altogether, and some farmers have lost one horse out of four or five. Stimulants seem to afford the only allopathic remedy. With us every horse was seized, and homœopathy has carried us safely through. *J. T.*

Wester Ross: *March* 24.—The counry has a far less spring like appearance now than it had a month ago, the pasture and Wheat having had to take a retrograde step. Very little has been sown since February, nearly the whole breadth for Barley and a large proportion for Oats remaining yet to be sown. Ploughing for seed however is well advanced, a few days seasonal and the whole will be completed. A continuation of dry weather to admit of sowing has become exceedingly desirable. Turnip eating with sheep is nearly completed, and most of the hoggs have returned to their hill pastures, and all in first-rate condition. Cattle have thriven well, but are difficult to sell, and fetch a considerably reduced price from that of last year. Many of our winter stock were bought in at exorbitant prices, and after careful and costly feeding will bring little beyond the purchase price. On the whole, this year, which has been so advantageous to the English farmer, has been a very unprofitable one to us in the far north. Not only did our Wheat and Barley thresh out very unsatisfactorily, but the quality was so inferior as to affect the price materially. Barley, which was scarcely more than half a full crop, fetches now only 26*s.* per qr. Wheat and Oats fetch 54*s.* and 24*s.* respectively. Our workpeople have had abundant employment at unusually high wages, and the winter has been such as to admit of well nigh unbroken labour.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, April 3, 1862.

Day of Week.	Day of Month.	Barometer corrected to Freezing Point at Mean Sea Level. (At 9 A.M., Railway Time)	Reading of Dry Bulb Thermometer.	Reading of Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday	28	29.24	40	48	N.	1	6	66	47	92	47	0.39	50	46½
Saturday	29	29.27	43	42	N.	1	7	59	42	68	42		50	47
Sunday	30	29.88	46	45	S.	1	7	64	43	70	41	..	49½	47½
Monday	31	29.54	52	50	S.W.	1	4	55	41	75	38	0.14*	49½	48
Tuesday	1	29.8[illegible]	49	47	S.W.	2	6	60	41	85	38	0.02	50	48
Wednesday	2	29.66	53	52	S.W.	4	7	51	48	56	46	0.15	49½	48
Thursday	3	29.64	55	51	W.	1	3	57	46	66	44	0.20	50½	45

* Total Rain during the month of March, 4.10 inches.

Notices to Correspondents.

[Agri]cultural College: *N.* In students pay 80 guineas per annum. If with private room (bed-room and sitting-room [in o]ne), 20*l.* extra. Out students 40 guineas.

[Carbo]lic Acid: *Mr. Crabtree* has not given us his address.

[Ha]y: *H W C.* We do not understand your question. Old Hay [is a]s good as new, provided it be well ricked and thatched. [The p]aper read by Mr. Baldwyn before the Dublin Society [give]s as much information on the subject as you can desire. [Th]e "Farmer's Calendar" (Routledge) also is full on this [sub]ject.

[Milk] and Butter: *Subscriber.* Give the cow *cooked* food con[taini]ng 2 or 3 lbs. of Bean-meal and 2 or 3 lbs. of Rape-cake [...], the latter to be gradually got up to so great a quantity, [with] hay-chaff and Mangels.

[Moss i]n Grass: *J. Wood.* The Grass should be harrowed and [a com]post of lime spread on it—this will help to destroy the [moss]. Any ammoniacal manure, as sulphate of ammonia [(1 cwt.] per acre), will have the same tendency by increasing [the g]rowth of the Grass.

[Tick] Beans: *A Constant Reader* asks if any adopt this [prac]tice, which is recommended by Prof. Tanner in his [pa]per on the condition of soil proper for the growth of [...]; and will they state their experience of it?

[The] Agricultural College: *H C S.* It is not necessary for [studen]ts to have any previous agricultural knowledge, [thou]gh of course it is an advantage. They are received [wi]thin the walls and also as out students. The fee is, we [beli]eve, in the latter case 50*l.*; but you should apply to the [Se]cretary at the College, Cirencester, Gloucestershire.

BEDDING PLANTS.
GERANIUM CLOTH of GOLD, 6*s.* to 8*s.* per dozen.
„ GOLDEN FLEECE, 6*s.* to 8*s.* per dozen.
„ PRINCESS of PRUSSIA, 6*s.* to 8*s.* per dozen.
„ BIJOU, 5*s.* to 6*s.* per dozen.

This is the finest variegated-leaved scarlet-flowered Geranium. See *Gardeners' Chronicle* and *Cottage Gardener.*

These will be sent out in April, and early orders will have the precedence whilst the stock lasts. They will be strong well-rooted plants.

Apply to William Barron, Elvaston Castle, Derby.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.

Richard Smith, Nurseryman, Worcester.

WM. MAULE AND SONS can supply splendid plants of CEDRUS DEODARA from 6 to 7 and 8 feet or more, either from the open ground or in large Pots, at 10*s.* 6*d.* each. Noblemen or Gentlemen planting Avenues or beautifying their Parks or Grounds will find this and the following month the most favourable for transplanting this tree.

The Nurseries, Bristol.—April 5.

R. GLENDINNING has great pleasure in offering the undermentioned fine CONIFERS, which have been annually transplanted, and will move with perfect safety:—
Araucaria imbricata (perfect specimens), 2 to 9 feet
Cedrus Deodara „ „ 1 to 10 feet
„ atlantica „ „ 1 to 10 feet
Cupressus Lawsoniana, 1 to 8 feet
„ macrocarpa, 1 to 15 feet
„ Nutkaensis (Thujopsis borealis), 1 to 8 feet
Picea nobilis (fine), 1 to 6 feet
„ Nordmanniana, 1 to 10 feet
„ Pinsapo, 1 to 6 feet
Pinus Benthamiana, 1 to 5 feet
„ excelsa, 1 to 12 feet
„ Fremontiana, 1 to 4 feet
„ Jeffreyi, 1 to 2 feet
„ Koraensis, 1 to 4 feet
„ monticola, 1 to 10 feet
„ tuberculata, 1 to 4 feet
Taxus baccata erecta (splendid specimens), 1 to 9 feet

Also all the other leading kinds in fine well grown plants.

The above are remarkably handsome plants, and perfectly healthy, not having suffered from the severity of the past winters. Price on application.

Chiswick Nursery—April 5.

CHARLES NOBLE would remind all those interested that his Selection of RHODODENDRONS is unrivalled; that his Selection of CONIFERS is worthy of notice, and his Selection of HARDY EVERGREENS worth an inspection. The following handsome well-grown specimens can be obtained on very advantageous terms, and purchasers will consult their interests by visiting the Sunningdale Nursery, Sunningdale Station, South Western Railway.

Wellingtonia gigantea, 1 to 6 ft.
Thujopsis borealis, 1 to 4 feet
Thuja Warriana, 4 to 5 feet
„ Lobbii, 1 to 4 feet
„ gigantea, 1 to 4 feet
„ americana, 6 to 10 feet
Taxus fastigiata, 3 to 7 feet
„ baccata, 3 to 5 feet
Taxodium distichum, 4 to 6 ft.
Spiræa Nobleana, 3 to 5 feet
„ callosa, 3 to 5 feet
Skimmia japonica, fine blooming plants
Retinospora ericoides, 1 to 3 ft.
Pinus austriaca, 1 to 5 feet
„ Laricio, 3 to 5 feet
„ insignis, 2 to 5 feet
„ excelsa, 1 to 3 feet
„ Cembra, 1 to 3 feet
„ Benthamiana, 2 to 6 feet
Juniperus Virginiana, 1 to 10 ft.
„ argentea, 1 to 4 feet
„ chinensis, 5 to 7 feet
„ sphærica, 2 to 4 feet
Cupressus Lawsonii, 1 to 4 feet
„ Thyoides, 1 to 4 feet
Cephalotaxus Fortunii, 2 to 4 ft.
Cedrus Deodara, 1 foot to 8 feet
„ atlantica, 8 to 10 feet
Berberis japonica, 1 to 4 feet
„ Beallii, 1 to 4 feet
„ Darwinii, 1 to 4 feet
Abies spec. Vancouver's Island
„ lasiocarpa
„ Pinsapo, 1 to 3 feet
„ orientalis, 1 to 6 feet
„ Douglasi, 2 to 3 feet
„ Nordmanniana, 2 to 5 ft.
„ Menziesii, 3 to 10 feet
Araucaria imbricata, 1 to 8 ft.

Ten Minutes' walk from the Station.

H. AND R. STIRZAKER have to offer in very large quantities the following surplus NURSERY STOCK:—
Holly, Common, 1 to 1½ and 2 feet.
Brooms, 2 to 3 feet.
Laurel, Common, 1½ to 2 and 2 to 3 feet.
Laurel, Portugal, 1 to 1½, and 1½ to 2 and 2½ feet.
Laurustinus, young in pots, 6 to 9 inches.
Yews, English, 1½ to 2, and 2 to 3 feet.
Yews, Irish, in sizes from 2 to 6 feet.
Arbor-vitæ, American, in sizes, from 4 to 6 feet.
Arbor-vitæ, Chinese, in sizes, from 3 to 6 feet.
Cedrus Deodara, in sizes, from 2 to 5 feet.
Sweet Briar, strong, 2 to 3 feet.

They are well rooted, and the larger sized plants well furnished.

Purchasers of large quantities will be liberally dealt with.

Also fine autumn, sown Cabbage Plants of Early Red for pickling. Curled Savoy and Scotch Drumhead.

The Nurseries, near Lancaster.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very large, and in all varieties of colour, in Seed or Roots; also FLORIST'S FLOWERS, POLYANTHUS in roots, and DOUBLE WHITE PRIMROSE.

Apply George Mace, Calcot Gardens, near Reading.

New Ornamental Plant.

A. VAN GEERT, Ghent, Belgium, begs to offer good healthy young plants of the new AGAVE SCHIEDIGERA, the finest and most showy of this tribe. The following is the discoverer's description of the plant:—

"Habit and dimension of Agave filitera, which it far surpasses in beauty, with leaves a little larger, changing nearly in every plant from green to red; the smaller leaves on separating from the centre leave snowy white lines, and bear on the sides white ribbon-like filaments, which have a very showy appearance on the green or reddish flesh of the leaves." Price 10*s.* each, or 84*s.* per dozen.

A SUPPLEMENT to my CATALOGUE No. 50 is now ready, which may be had on application to my Agents, Messrs. R. Silberrad & Son, 5, Harp Lane, London, E.C.

Stotfold, near Baldock, Herts.

SAMUEL COCKING AND SON have on hand a superior Stock of AGRICULTURAL SEEDS of unrivalled quality, grown by themselves with the greatest care. Every attention is constantly given to ensure the very best kinds. Early orders are particularly desired, as the business done by this firm is very great during the seed season.

The Stock consists of the various kinds of Mangel Wurzel, Swede and other Turnip Seeds, Kohl Rabi, Mustard, Carrot, &c.

S. C. & Son attend Hertford, Hitchin, and Hemel Hempstead markets. Agents are appointed as under:—
Hertford.—Messrs. E. D. Rayment & Co., Grocers, &c.
Tring.—Mr. J. Dawe, Farmer.
Luton.—Mr. H. C. Brown, Corn Factor,
Hemel Hempstead.—Mr. J. Cross, Grocer, &c.
Hitchin.—Mr. W. Fells, Nurseryman, Market Place.
Bedford.—Mr. Graves, Grocer, opposite the Corn Exchange.

SUTTON'S GRASS SEEDS for ALL SOILS.—A copy of Mr. M. H. Sutton's Essay on Permanent Pastures, from the Journal of the Royal Agricultural Society, Vol. 22, Part 2, 1861, will be sent with every parcel of Grass Seeds.

Sutton & Sons have one of the largest and most complete Stocks of NATURAL GRASSES and CLOVERS in Europe, from which they prepare Mixtures expressly to suit the Soils for which they are required.

Seeds sent carriage free to all parts of the kingdom. Export orders delivered free to the ship's side in any English port.

PRICED LISTS gratis and Post free on application to Sutton & Sons, Royal Berks Seed Establishment, Reading.

SUTTON'S PERMANENT GRASS SEEDS.—Gentlemen intending to lay down land to permanent pasture, or for one or two years' lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass seeds most suitable. The ALSIKE, the PERENNIAL WHITE, and PERENNIAL RED CLOVER are included in all our mixtures, together with such of the under-mentioned as are best adapted to the land to be laid down. Prices, according to sorts and quantities required, 24*s.*, 26*s.*, 30*s.*, and 32*s.* per acre.

N.B.—*A copy of Mr. M. H. Sutton's Essay on Laying Down Land to Permanent Pasture, from the Journal of the Royal Agricultural Society, will be sent with every parcel of Grass Seeds.*

Achillea millefolium (Yarrow)
Agrostis stolonifera (Creeping Bent)
Anthoxanthum odoratum (Sweet Vernal)
Alopecurus pratensis (Meadow Foxtail)
Avena flavescens (Yellow Oat Grass)
Agrostis vulgaris (Common Bent Grass)
Cynosurus cristatus (Crested Dogstail)
Dactylis glomerata (Round-headed Cocksfoot)
Festuca duriuscula (Hard Fescue)
Festuca loliacea (Darnel Fescue)
Festuca ovina (Sheep's Fescue)
Festuca rubra (Red Fescue)
Festuca pratensis (Meadow Fescue)
Festuca elatior (Tall Fescue)
Festuca heterophylla (Various-leaved)
Festuca tenuifolia (Fine-leaved Fescue)
Glyceria aquatica (Water Sweet Grass)
Holcus avenaceus (Tall Oat-like Grass)
Lolium perenne (Perennial Rye-grass)
Lolium perenne sempervirens
Lolium perenne Paceyanum
Lolium perenne Stickneyanum
Lolium perenne tenue
Lolium italicum (Italian Ryegrass)
Lotus corniculatus (Birdsfoot Trefoil)
Medicago lupulina (Black Medick Grass)
Phleum pratense (Timothy)
Poa nemoralis (Wood Meadow Grass)
Poa pratensis (Smooth Meadow Grass)
Poa trivialis (Rough Meadow Grass)
Poa fertilis (Fertile Meadow Grass)
Poa sempervirens (Evergreen)
Trifolium minus (Red Suckling)
Trifolium pratense perenne (Perennial Red Clover)
Trifolium repens (White Clover)
Trifolium hybridum (Alsike Clover)

The above may be purchased separately at moderate prices. The best of them are included in Messrs. Sutton's Mixtures, 24*s.*, 26*s.*, 30*s.* and 32*s.* per acre.

N.B.—The Alsike Clover is included in all Messrs. Sutton's Mixtures.

Goods delivered Carriage Free to all parts.

Sutton & Sons, Seed Growers, Reading, Berks.

REIGATE SILVER SAND, 16*s.* per ton, or 1*s.* 6*d.* per bushel, delivered to any London Wharf or Railway. Sacks 1*s.* 6*d.* each, or on hire 6*d.* each (five hold a ton).

PEAT, LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE.

John Kennard, Swan Place, Old Kent Road, London, S.E.

REIGATE SILVER SAND, first quality, 12*s.* per ton; 1*s.* per bushel. Delivered free in 2 bushel Bags to the Reigate Junction Railway. Bags, 1*s.* each; on hire, 4*d.* each.

A large quantity of superior BOG MOULD and PEAT at a moderate price.

William Short, Ladbroke Road, Red Hill, Surrey.

PAINTED WOOD TALLIES, 3 inch, 6*d.*; 4½ inch, 9*d.*; 6 inch, 1*s.*; 9 inch, 1*s.* 9*d.*; 12 inch, 3*s.* 6*d.* per 100, cheaper by the 1000.

GREEN FLOWER STICKS, 1 foot, 2*d.*; 1½ feet, 3*d.*; 2 feet, 4*d.*; 3 feet, 6*d.* per dozen; unpainted ditto, same sizes and prices.

GENUINE PERUVIAN GUANO, 3*d.* per lb., 7 lbs. 1*s.* 6*d.*, 28 lbs. 5*s.*, 18*s.* per cwt.

FLOWER SEEDS for PRESENT SOWING, post free, 24 varieties, 2*s.* 6*d.*; 50 varieties, 5*s.*; 100 varieties, 10*s.* Culture and description on each packet.

B. J. Edwards, 222, Strand, London, W.C.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

To the Seed Trade.

H. AND F. SHARPE can offer on very advantageous terms the under-mentioned sorts of SEEDS of 1861 rowth and raised from selected stocks:—

arge York Cabbage	Sangster's No. 1 Peas
ong Red Surrey Carrot	Bellamy's Green Marrow Peas
ames's new Intermediate do.	Early Long-pod Beans
Fine Red Pickling Cabbage	Mackie's Monarch do
Green Kohl Rabi	Mangel Wurzel in sorts
	Turnip in sorts

Seed Growing Establishment, Wisbech.

JOHN PERKINS'S YELLOW GLOBE MANGEL WURZEL SEED, 6*d*. per lb. Raised from large transplanted bulbs and selected under his own superintendence. PRICED LIST of other Farm Seeds post free.

JOHN PERKINS, Seed Merchant, 52, Market Square, Northampton.

Imported Italian Rye-grass,

Specially selected and recleaned, weighs 18 lbs. per bushel, and gives a growth more than double that of the usual importations.

W. DRUMMOND AND SONS have much satisfaction in calling attention to this article, which will be found very superior to the general run of foreign Italian. Price 7*s*. per bushel.

Carriage paid to the principal Railway Stations, in quantities of 6 bushels and upwards.

W. DRUMMOND & SONS, Seedsmen, Stirling, N. B.

Agriculture.

W. DRUMMOND AND SONS, Stirling, claim special attention to their ROOT SEEDS, which embrace several Improved Stocks of SWEDES and other TURNIPS, MANGEL WURZEL, &c.: also to remarkably fine samples of all the Varieties of CLOVERS, PERENNIAL and ITALIAN RYEGRASS and NATURAL GRASSES,—priced Catalogues of which, together with every description of Seed required for the Farm, may be had, prepaid, on application.

Seeds forwarded Carriage Free to all parts of the Kingdom.

Seed Warehouse, Stirling, N.B.

FINE NEW CLOVER SEEDS.
IMPORTED ITALIAN RYE-GRASS;
GRASS SEEDS for PERMANENT PASTURE and for LAWNS.

The above are fully described, with lowest Cash Prices at which they can be delivered Carriage Free, in WHEELER'S "Little Book for 1862," post free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

GRASS SEEDS for PERMANENT PASTURE.—Gentlemen contemplating laying down Land to Permanent Pasture this season, are respectfully requested to send for our Little Book on GRASSES and CLOVERS, profusely illustrated, and partly written by Professor Buckman, F.L.S., F.G.S., &c. Post free for 4 stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

Farm Seeds.

PAGE and TOOGOOD being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured, possess greater powers of germination, and are a desirable change for the northern and midland counties.

To publish the numerous testimonials P. & T. are favoured with is impossible, but the fact of their having had the honour for the last 8 or 10 years to supply the ROYAL FARMS at OSBORNE, will be a sufficient guarantee that their Seeds are of superior quality, and their prices are as low or lower than any respectable house in the Kingdom.

Present prices, Carriage free to all parts of England:—

	Per lb.—*s.*	*d.*		Per lb.—*s.*	*d.*
Skirving's Swede ..	0	8	Yellow Tankard	0	9
Page's Improved Hardy	1	0	Fielder's Hardy Green Round	0	6
Fielder's Improved White	0	9	Early Six Weeks	0	6
Sutton's Champion ..	1	0	Kohl Rabi	3	6
Ashcroft	0	9	New Osborne Mangel.		
Greentop	0	8	Yellow Globe	0	6
Sussex or Jeffrey's ..	0	9	Page's Imp. OrangeGlobe*	0	8
Tankard	0	9	Red Globe	0	7
Red Round Turnip ..	0	8	Elvetham Long Red ..	0	8
Page's Impvd. Red Globe	0	9	Long Red	0	6
Scotch or Bullock ..	0	8	Long Yellow	0	8
Pomeranian White Globe	0	8	White Belgian Carrot ..	1	3
Early Green Globe ..	0	8	Cattle Cabbage	2	6
Early White Tankard ..	0	8	Cattle Parsnip	1	0
Page's Imp. Purple ditto.	1	0	Dwarf Essex Rape ..	0	4
Green ditto	0	8			

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.

Buckwheat, Mustard, Linseed, Tares, and Sainfoin. Fine Permanent Pasture and Lawn Grasses, as sown at the Royal farms, Osborne, for the last eight years, 1*s*. 3*d*. per lb.

Genuine Hampshire-grown Alsike Clover, Italian Rye-grass, Clover, &c., at lowest market prices. Special contracts for large quantities.

Royal South Hants Seed Establishment, Southampton.

PETER LAWSON & SON,

THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

SELECT MANGEL SEEDS, &c.,

FROM LARGE ROOTS.

Orange Globe, Long Red, Long Yellow, Yellow Oval, and Red Oval.

The Undersigned beg to offer the above, all *first-class, select Stocks*, saved from *large roots*, and genuine new Seeds, of strong growth, at 8*d*. per lb. or 63*s*. per cwt. Also

DICKSON'S SELECT PURPLE-TOP SWEDE.—A very choice stock grows an immense weight, 10*d*. per lb. or 80*s*. per cwt.

All other FARM SEEDS of superior character and quality at equally moderate prices. See

DESCRIPTIVE PRICED CATALOGUE of FARM SEEDS,

which will be forwarded *post free* on application.

Goods £2 in value delivered Free to any Railway Station.

FRANCIS ARTHUR DICKSON & SONS, SEED MERCHANTS AND NURSERYMEN,
106, EASTGATE STREET, CHESTER.

MANGEL WURZEL SEED,

FROM LARGE BULBS.

8d. per lb., or cheaper by the cwt.	Per lb.—*s.*	*d.*
SUTTON'S LARGE YELLOW GLOBE, saved from large roots, selected for their solidity and excellence of shape; the best for general use, thrives in all soils, and is the heaviest cropper known	0	8
SUTTON'S ORANGE GLOBE, beautiful shape, with smaller greens than other sorts, and consequently may stand closer together...	0	8
RED GLOBE, ELVETHAM LONG RED, and others	0	8
LONG YELLOW or YELLOW TANKARD	0	8
YELLOW GIANT OVAL SHAPED, quite new, from the Continent	0	8

Quantities of not less than half a cwt. of any one kind will be charged at the wholesale price per cwt.

We take great pains in selecting the best kinds of Mangel Wurzel, and have much pleasure in receiving continually from our customers great praise of the Seeds sent to them. The Letters received to that effect would fill a large volume. We must not publish many of them here; but we cannot refrain from presenting a few, as it is highly gratifying, after such a trying season as the last, to know that our Seeds were so much better than it would appear was generally the case last year.

P. H. FRERE, Esq., *Cambridge, Editor of the Royal Agricultural Society's Journal*, September 22, 1861.

"I write to say how well satisfied I am with the Mangel seed that you furnished me with in the late trying season. It was tried on one half of two fields, the one strong, the other light land, the other portions being sown with seed bought of a respectable local dealer. On the strong land your seed gave me a decidedly better plant; on the light land three or four times as many plants as the other dealer's seed."

The Rev. HUGH BACON, *Atherstone*, October 19, 1861.

"My plot of Mangels is far the best in the neighbourhood, and as it was your seed, it is fair that you should know it."

Mr. GOODMAN, *Bailiff to Sir John Cathcart, Cooper's Hill, Englefield Green*, October 15, 1861.

"I received the silver cup for the best 2 acres of Mangels rom your seed."

The Rev. CHAS. JACKSON, *Bentley Parsonage, Farnham*, October 4, 1861.

"I have some superb Mangels from your seed this year—the finest bulbs and the smallest greens I have ever grown."

Mr. F. G. CROW, *Woolton Farm, Wingham*, December 19, 1861.

"My Mangel Wurzel is excellent, and much better than any in this neighbourhood. Two of my neighbours wish me to order theirs with mine next spring."

Mr. JOSEPH HARWOOD, *Alcester*, January 7, 1862.

"The seeds I had from you all came well, the Mangels better than any other which I planted."

Rev. T. BEST, *Red Rice, Andover*, November 7, 1861.

"I have a fine field of Mangel grown from your seed. I have also a good crop of Swedes from the seed which I had from you this year. The field is 12 acres, and my neighbours say they think it is the finest field of Swedes they ever saw. I beg you to accept my best thanks for the very successful way in which your care has carried me through this season."

Mr. JAS. WALKER, *Begbrooke Hill House, Kidlington, Oxon*, Sept. 18, 1861.

"I have taken eight First Class, one Second, and one Third Class Prizes, in the space of eight days, with roots all grown from seed supplied by you."

Mr. J. BISHOP, *Hamden House, Smarden, Kent*, August 19, 1861.

"The Mangel Wurzel are looking well from your seed: I am sorry I did not get all I used from you."

C. H. MALLOCK, Esq., *Cockington Court, near Torquay*, November 10, 1861.

"You expressed a fear that the Mangel seed which you sent might not all vegetate; on 20 acres planted with your seed there was hardly a vacancy."

The Rev. T. SANCTUARY, *Powerstock, Bridport*, August 2, 1861.

"My Mangels are probably the best in this neighbourhood, and as good as they well could be, and the Swedes also."

Mr. B. HUNT, Steward to W. Chute, Esq., *The Vine, Basingstoke*, July 30, 1861.

"I am pleased to say we have a first-rate crop of Mangel, Swedes, and forward Turnips, which I should have no objection to show against any crops now growing in Hants or Berks."

G. BEAUMONT, Esq., *Bridgford Hill, Nottingham*, July 12, 1861.

"I have a nice full crop of Mangel this year. I think every seed must have vegetated, and I bid fair to again get a prize at our neighbouring Agricultural Show."

J. C. ADKINS, Esq., *Milcote, Stratford-on-Avon*, June 12, 1861.

"You will, I am sure, be glad to know that I have a perfect plant of Mangel, not a gap worth notice on the entire area (about 70 acres): some of my neighbours, I am sorry to say, are not equally fortunate, for great complaints of thinness are heard. My prospect was never so good for a crop of roots as it is at present."

The Rev. J. G. NELSON, *Aldborough Rectory, Norwich*, June 11, 1861.

"I have a full plant of Mangels, a very rare thing this year in this neighbourhood."

J. B. TIBBITS, Esq., *Barton Seagrave, Kilkenny*, March 20, 1861.

"I had nearly 40 tons to the acre of your Orange Globe Mangel last year, notwithstanding the unfavourable season."

F. W. OAKLEY, Esq., *Allesley Park, Coventry*, Feb. 13, 1861.

"The Mangel seed I had from you last year produced the only good crop in the neighbourhood. I had for the season a splendid lot of them."

SUTTON'S PRICED LIST of FARM SEEDS

May be had post free on application, addressed

SUTTON & SONS, ROYAL BERKS SEED ESTABLISHMENT, READING.

PLYMOUTH SEED COMPANY,

PLYMOUTH,

ARE NOW EXECUTING ORDERS FOR ALL KINDS OF

FARM SEEDS,

Which have been selected with the utmost care from the best sources in this country and abroad, therefore they can strongly recommend all Seeds as being of the first quality.

MIXED GRASSES for LAYING DOWN LAND to PERMANENT PASTURE	24s. to 32s. per acre.
MIXED GRASSES for PERMANENT LAWNS	16s. per bushel, 1s. per lb.
MIXED GRASSES for HEATHY or MOORY LANDS	20s. per acre.
MIXED GRASSES for UPLANDS or SHEEP WALKS	24s. to 32s. per acre.
MIXED GRASSES for WATER MEADOWS	25s. per acre.
MIXED GRASSES for RENOVATING OLD PASTURES	9d. per lb.
MIXED GRASSES for CEMETERIES, CHURCHYARDS, &c.	16s. per bushel, 1s. per lb.

	Per lb.—s. d.		Per lb.—s. d.
WHITE DUTCH CLOVER	10d. to 1 0	SCOTCH TURNIPS	0 10
RED " "	6d. to 0 10	GLOBE, in varieties	0 8
COW GRASS	8d. to 1 0	MANGEL WURZEL, common varieties	0 8
TREFOIL	6d. to 0 8	FISHER HOBBS' ORANGE GLOBE	2 6
ALSIKE, strongly recommended	2 0	MORTON'S YELLOW GLOBE	1 6
PLYMOUTH IMPROVED PURPLE-TOP SWEDE TURNIP	1 0	LARGE WHITE BELGIAN CARROT	1 3
SKIRVING'S PURPLE-TOP Ditto	0 10	DRUMHEAD CABBAGE	2 6

And all other Farm Seeds at moderate prices.

KITCHEN GARDEN SEEDS, in Collections, which have given great satisfaction, 10s. 6d., 15s., 20s., 40s., 60s., 100s.

FLOWER SEEDS, 100 packets, free by post ... 20s.
" 50 packets " ... 12s.

FLOWER SEEDS, 25 packets, free by post ... 6s.
" 12 packets " ... 3s.

CATALOGUES AND PRICE CURRENTS

Can be had on application, and every information given by applying to the Company,

UNION ROAD, PLYMOUTH, DEVON.

J. C. WHEELER & SON, SEED GROWERS,

GLOUCESTER.

Alopecurus pratensis (Meadow Foxtail).

KNOWLEDGE of all matters connected with Grasses can hardly be too highly prized by the Farmer, as it gives him a practical insight into the nature of his land, which can hardly be otherwise attained. The importance of this will be most clearly made out by a study of the Foxtails.

The example before us is called Meadow Foxtail, as it is a constant denizen of rich and especially Lowland Pastures. The generic name is merely a translation of its common English name of Foxtail, which, from the form of its spike, it is supposed to resemble.

There is a species, common to poor Arable, known as the Slender Field Foxtail (A. agrestis). This, in the cultivated field, is an evidence of want of condition in the land, which can usually be remedied by drainage and liberal treatment.

A smaller form of Foxtail occurs in ditches and wet places; it is called the Procumbent Foxtail (A. geniculatus). Its presence in any situation, however dry at the time, shows that water was there for a great part of the year.

Meadow Foxtail, the only species employed by the Farmer, has a soft hairy seed, which should be distinguished from the comparatively smooth seed of the Field Foxtail, as the latter is a weed of a very pernicious kind. We always recommend some of this Grass in laying down Permanent Pasture in rich lowland positions, leaving it out where our seed is for dry uplands.

Grass and Clover Seeds for Permanent Pasture at 30s. per acre.

To this part of our business we have devoted some degree of attention, and we are pleased to say with some success. We are animated by this success to renewed efforts, and it will be our study to send such a mixture of the most nutritious and suitable Grasses, and such a mixture of Clover, as to create, in as short a time as possible, a rich Permanent Pasture, arranged and mixed to suit any particular soil, situation, or locality, which may be described to us.

The different soils and situations may be roughly classed under the following heads:—

1. Medium loamy soil.
2. Heavy stiff clay.
3. Light brashy or gravelly.
4. Under trees, as in orchards, parks, &c.

For each or either of the above we will supply a proper and suitable mixture, properly arranged, every sort complete, for 30s. per acre; so that all the purchaser would have to do would be to write and tell us the number of acres, and we would, without any further trouble on his part, prescribe and arrange the proper mixture and forward it to his address without delay.

Grasses and Clovers for One or Two Years' Lay, usually called "Seeds."

For One Year's Lay, at 14s. 6d. per acre | For Two Years' Lay, at 17s. 6d. per acre.

The quantity required per acre will be about 15 lbs. of mixed Clover Seed, and from 1 to 2 pecks of Grass Seed, to be sown about the end of March or beginning of April, with either Wheat, Oats or Barley. "The seed is then to be harrowed or bush-harrowed across the drills of corn, if these are up, and rolled."

We are extremely careful in the selection of the finest and heaviest Grasses, and the cleanest and purest samples of Clovers for these "Seeds." Every season we supply our customers with "Seeds" for hundreds of acres, and with the greatest success. We can highly recommend our mixture as being of the very best quality.

We deliver our Grass and Clover Seeds Carriage Free by Rail, and allow 5 per cent. discount for Cash according to the terms published in our "Little Book."

J. C. WHEELER AND SON, SEED GROWERS, GLOUCESTER.

Upwards of 2000 Cases have been reported as Cured by

JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s. 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.

AGENTS:—
Messrs. Wood & Ingram, Huntingdon
" Wood & Sons, Maresfield, near Uckfield
" J. & J. Fraser, Lea Bridge Road, London, N.E.
" Grayson & Co. Bury St. Edmunds
" Wm. Urquhart & Son, Dundee
" Dicksons & Co., Waterloo Place, Edinburgh
" Minier, Nash & Nash, 60, Strand, London
" Fisher & Holmes, Handsworth, Sheffield
" Finney & Co., Gateshead
" Stuart & Mein, Kelso
Mr. Richard Smith, Worcester
Seed Warehouse, 10 and 11, Exchange Street, Norwich.

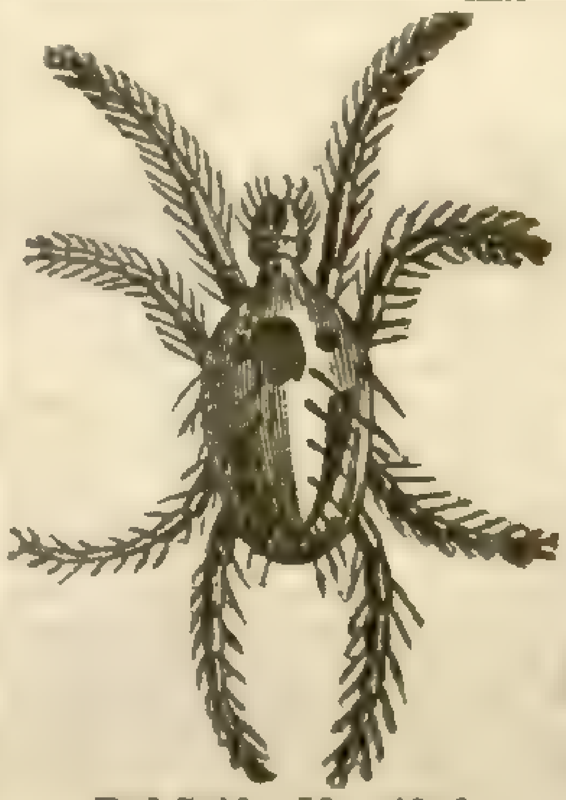
Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.



Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by PRICE'S PATENT CANDLE CO., Limited.

NEAL'S PATENT APHIS PASTILS.

1s. and 2s. per packet.

From *Lloyd's Weekly*, July 7th, 1861.

"All we know is, that one of our larger houses took half a pound of tobacco, 2s., and that three pastils, 1s., do the same with no trouble. We have a score of letters on the same subject, but all to the same purport."

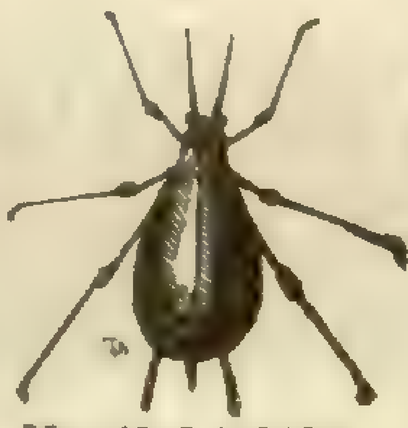
NEAL'S PLANT SOAP,

1s. per packet,

Makes the cheapest and most effectual Wash for destroying Mealy Bug, Thrips, Red Spider, American Blight, and all other Insect Pests.

Each Packet contains Four Cakes, each Cake makes One Gallon of Wash.

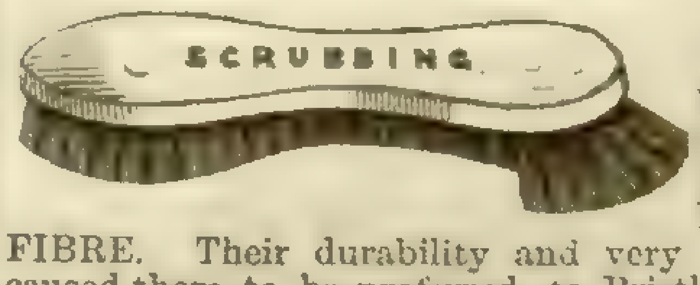
Sold by all principal Seedsmen.



Magnified Aphides.

Patentee: J. NEAL, Edward Street, Birmingham.

See Illustrated Catalogue of International Exhibition 1862, for



BRUSHES and every other description of Brush used in the House, Stable, Dairy, and Ships, made of BARSHAM'S PATENT COCOA FIBRE. Their durability and very moderate prices have caused them to be preferred to Bristle Brushes. There are some Fibre Brushes called "BARSHAM'S," but none are genuine unless stamped "J. Barsham's Patent, Kingston-on-Thames."

MATS are also made of Barsham's Patent Cocoa Fibre, and are in great repute.

Sold retail in every town in the United Kingdom, and by DEAN & Co., London Bridge, E.C.

COCOA NUT PULP or REFUSE has been found an excellent substitute for Peat for growing Ferns, striking delicate flower cuttings, covering Strawberry beds, planting Potatoes, Bulbs, &c., and is valuable for opening and draining heavy land. If spread on pasture land it produces fine herbage and prevents it being burnt and parched in dry summers. It is also an excellent medium for mixing with artificial manures.

Delivered at any of the Railway Booking Offices, London, at 1s. 6d. per bag, bag included, containing 3 bushels. Large quantities supplied at lower prices on application to the Patent Cocoa Fibre Company, Kingston-on-Thames, S.W.

Postage Stamps, or Post Office Orders, payable to J. BARSHAM & Co.

Important to Seedsmen and Nurserymen.

SACKS AND BAGS.

JAMES T. ANDERSON, SACK and BAG MAKER, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), continues to supply SEED BAGS at the following low prices:—

2 Bushel Bags..8s. 9d. per doz. | ½ Bushel Bags..4s. 9d. per doz.
1 Bushel Bags..6s. 3d. " | Peck Bags ....3s. 6d.

Coarser Bags much cheaper.

8 Bushel Grass Bags at 1s. each | 4 Bushel Sacks at 1s. each.

All orders promptly executed.

J. TYLOR and SONS' PATENT IRON PUMP with reversible handle, for Shallow Wells, Hot-Houses, &c. Price 25*s.* 6*d.* each.

IRON YARD and GARDEN PUMPS

3 feet 6 inches under spout

2½	3	3½ inch
43*s.*	53*s.*	60*s.* each.

J. Tylor and Sons manufacture PUMPS for DEEP WELLS which do not require any fixing below the level of the ground.

PUMPS of J. Tylor & Sons' manufacture to be obtained of Plumbers in all parts of the United Kingdom.

J. Tylor & Sons, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

Prices Reduced.

H. J. MORTON and CO., Galvanised Iron Works 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

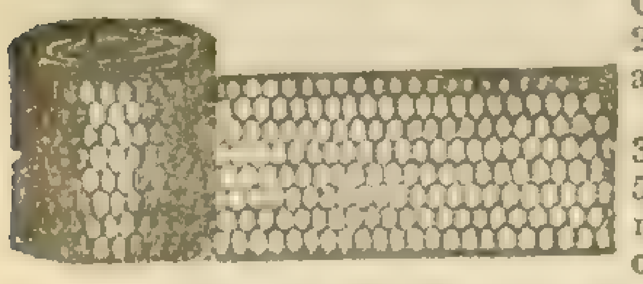
for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING

(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1*s.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 4*d.*, 4½*d.*, and 6¾*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 2¾*d.*, 3¾*d.*, and 5½*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.

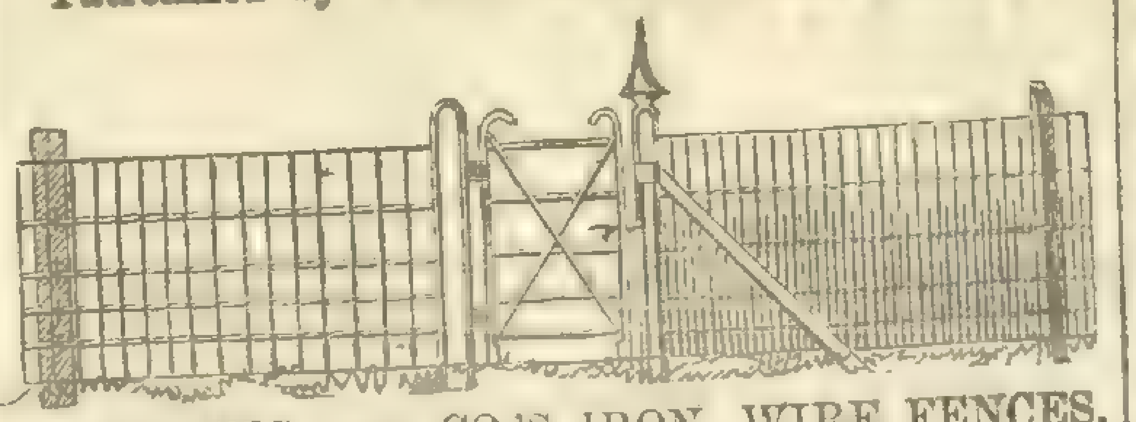
Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS

of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

Henry J. Morton & Co., 2, Basinghall Buildings, Leeds.

Patronized by H.R.H. the late Prince Consort.



GREENING and CO.'S IRON WIRE FENCES, manufactured by Patent Machinery, possess the following advantages:—

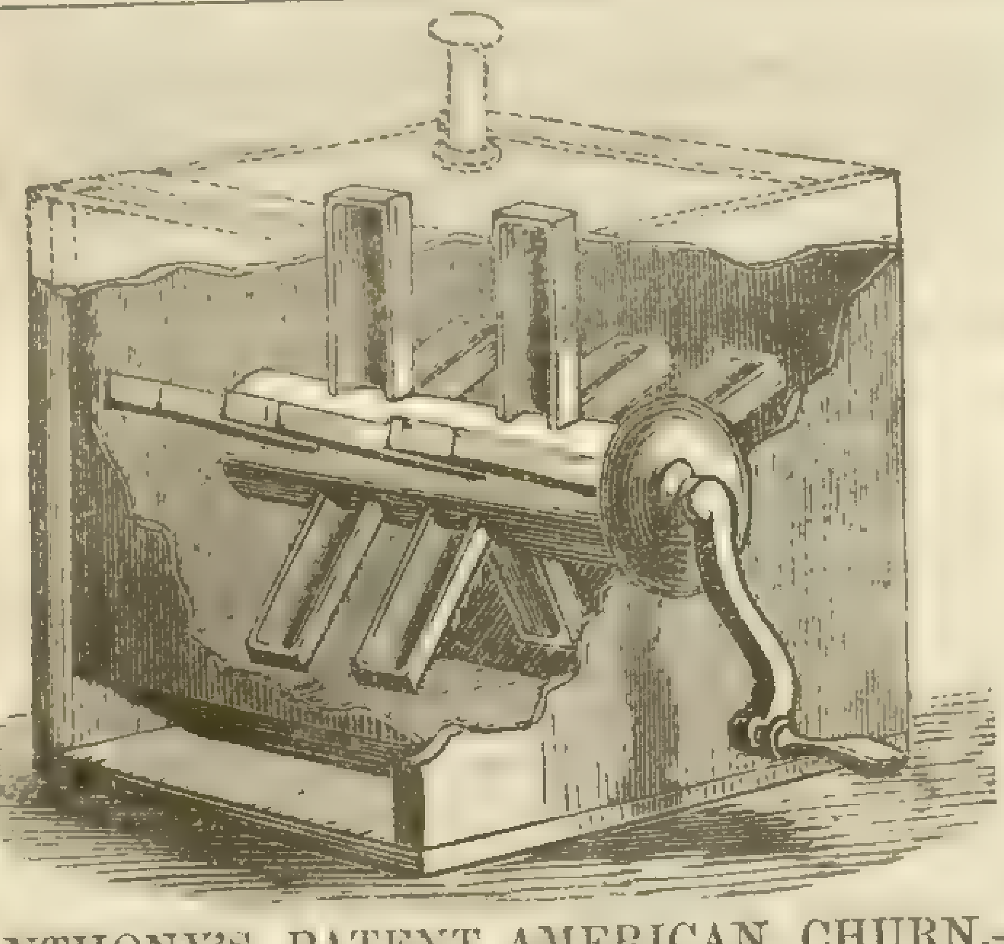
1st. Are easily fixed by unskilled labourers.
2nd. Require few and inexpensive supports.
3rd. Are ornamental in appearance.
4th. Have increased strength from their peculiar construction.
5th. Are but half the price of similar hand-made Fences.

Upwards of 40 varieties are made, the principal ones being:—

No. 1 A variety.—Cattle and Sheep Fence, 3ft. 9in. high, 1*s.* per yard.
No. 7 B variety.—Sheep folding Fence, 3ft. high, 9*d.* per yard.
No. 4. variety.—Hare and Rabbit-proof Fence.
No. 11. variety.—Poultry and Chicken-proof Fence.
No. 16. variety.—Italian pattern Garden Fence.
No. 20. variety.—An admirable substitute for the old-fashioned wire netting.

G. & Co. will be happy to forward, without charge, an explanatory Circular of the principal varieties. Their enlarged Catalogue of Fences and Gates post free on receipt of three stamps.

Address Greening & Company, Victoria Works, Oxford Street, Manchester.



ANTHONY'S PATENT AMERICAN CHURN.—Butter is produced by this Churn in 12 minutes from cream; and so perfect is the operation, that more butter and better quality is obtained from the same quantity of cream than by any other method ever yet tried.

Upwards of 10,000 have been sold. Price Lists forwarded on application.

Burgess & Key, 95, Newgate Street, London, E.C.

DUNN'S GARDENER'S PENCILS. Price 1*s.*, will refill for 6*d.*

DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.

Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.

These pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.

N.B.—A liberal allowance to the Trade.

Garden Engines and Syringes.

J. TYLOR and SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

Fig. 598. J. Tylor & Sons' BARROW GARDEN ENGINE, in best well painted Oak tub, fitted with J. Tylor & Sons' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet

15 gallons .. £5 12 6 | 28 gallons .. £7 2 0

Fig. 599. Ditto GALVANIZED IRON TUB.

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15 0	£3 5 0	£3 15 0	£5 0 0	£5 15 [illegible]

Fig. 618. No. I. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet ..	£1	8	0 each.
No. 2. Ditto ditto	1	2	6 ,,
Telescope Branch Pipe for ditto ..	0	10	0 ,,

Fig. 619. Large GARDEN SYRINGE, with one rose and jet	11*s.*	6*d.*	each
,, 620. Middle Ditto ditto	10	[illegible]	,,
,, 621. Small Ditto ditto	9	0	,,
,, 622. LADIES GARDEN SYRINGE, with do.	7	6	,,

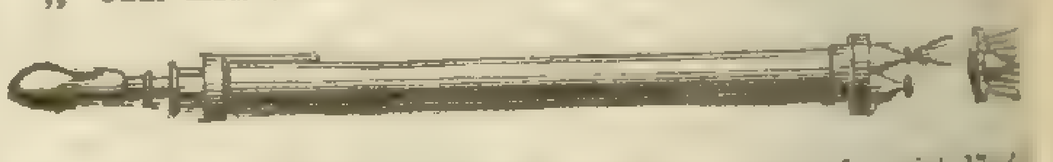


Fig. 623. READ'S SYRINGE, with two roses and one jet, 17*s.* 6
,, 624. READ'S SYRINGE, with one rose and jet, 15 [illegible]
,, 625. Improved ditto ditto large 14 [illegible]

Garden Engines and Syringes of J. Tylor & Sons' manufacture kept in stock by Ironmongers and Seedsmen in every part of the United Kingdom.

J. Tylor & Sons, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

PHOSPHO GUANO.

PETER LAWSON & SON, General Contractors,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. Voelcker, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.

(Signed) "Augustus Voelcker."

Opinion of Dr. Anderson, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.

(Signed) "Thomas Anderson."

Opinion of Dr. Stevenson Macadam, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for the Root Crops.

(Signed) "Stevenson Macadam."

Opinion of Dr. Hodges, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.

(Signed) "John F. Hodges."

Opinion of Dr. Apjohn, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows or Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l.* 9*s.* 8*d.* per ton.

(Signed) "James Apjohn."

Price, Free on Rail, £12 5s. per Ton, Bags included.

*** *None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

PETER LAWSON & SON, 27, GREAT GEORGE STREET, WESTMINSTER, LONDON, S.W.

Card.

SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

PORTABLE HOT-WATER APPARATUS, for Heating Conservatories, Hothouses, &c.
T. S. Truss, C.E., Sole Manufacturer. Offices: 53, Gracechurch Street, London, E.C.

HORTICULTURAL BUILDINGS, with KENT'S PATENT WEATHERPROOF GLAZING.
A. Kent, 62, South Street, Chichester.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the Patentee's Warehouse, 155, Cheapside, London, E.C.
Price complete from 3*l.* 10*s.*
Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

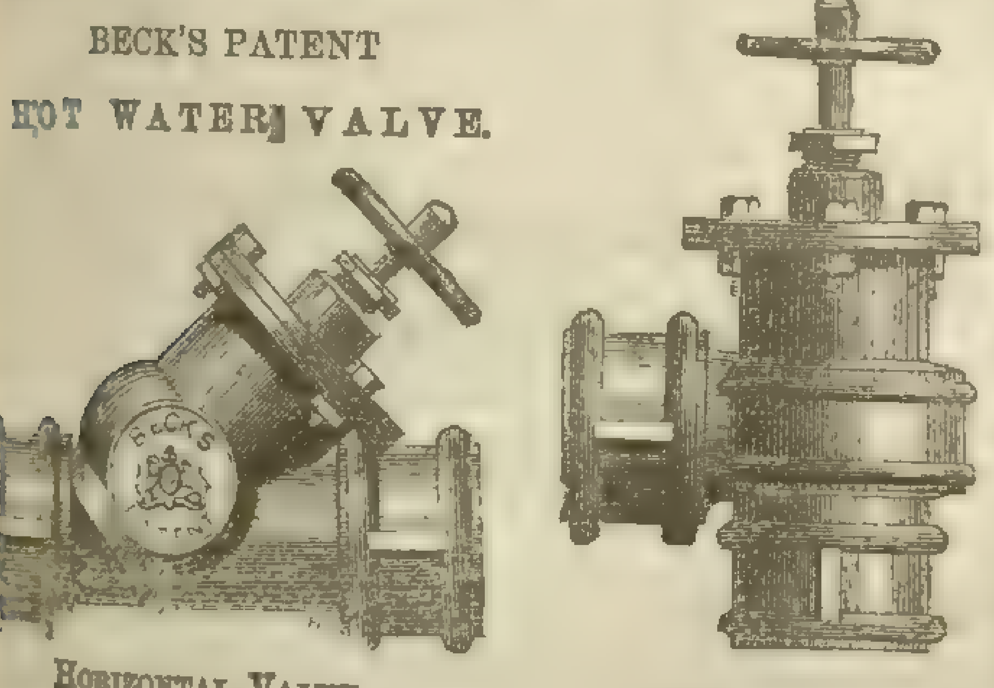
It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large Apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.
It is also made for Small Conservatories, ... vapour chamber, which maintains a moist atmosphere ... hours with once filling.
Particulars and prices post free on application to Musgrave Brothers, Ann Street Iron Works, Belfast.

Horticultural Works and Hot-Water Apparatus Manufactory,
Kensal Green, Harrow Road, London, W.

JOHN TAYLOR and SON beg to call the attention of the nobility and gentry to the very superior manner in which they ERECT all kinds of CONSERVATORIES, ...ERIES, GREENHOUSES, &c., combining every improvement with elegance of design and durability of materials and workmanship.
Their VENTILATING APPARATUS for the Fronts and ... of Houses has given the highest satisfaction. Churches, Chapels, Schools, Entrance Halls, Public Buildings, &c., heated with Hot-Water Apparatus in a most economical and efficien manner.
J. T. & Son have great pleasure in referring to numbers of the nobility and gentry by whom they are extensively engaged.

Horticultural Works, Danvers Street, Chelsea, S.W.

BECK'S PATENT
HOT WATER VALVE.



Horizontal Valve. 2" 18*s.* 6*d.*; 3" 25*s.*; 4" 30*s.*
Angle Valve. 2" 17*s.*; 3" 23*s.*; 4" 28*s.*

JAMES GRAY, Sole Agent, begs to call attention to this most simple and perfect Valve ever invented. It is perfectly water-tight, and is never liable to get out of order, or ... fixed by standing.
To Architects, Engineers, Gardeners, & Others.—Beck's Patent Valve has been submitted to several of the most scientific men of the day, and has invariably met with unqualified approval. A liberal Discount to the Trade.
Conservatories, Greenhouses, Vineries, and every description of Hothouse erected on the most improved principles, ... best materials, at the lowest possible price consistent ... good workmanship.
Heating by Hot Water in all its branches. Boilers of every approved description, Tubular Saddle, Conical, &c.
James Gray, Horticultural Works, Danvers Street, Paulton's Square, King's Road Chelsea, S.W.

GREENHOUSE for SALE.—The new Wood-work and Lights, glazed, unglazed, or finished complete, a ... roofed Greenhouse, 22 ft. 6 in. long by 12 ft. 6 in. wide. ... beaded sashes to sides and ends, with two doors to ... end, small lights on roof to hang for giving air. Can ... and for particulars apply to
J. Crook, Carpenter and Builder, Kilburn, N.W.

WIRE-WORK for the Garden, the Greenhouse, and the Conservatory. An Illustrated Catalogue, containing upwards of 90 Engravings, Post-free. WIRE NETTING, ... per yard. GARDEN SYRINGES, 6*s.* each.
William H. Honey, Manufacturer, 263, Regent Street, near Oxford Street Circus, W.

Oil Paint no longer Necessary.

HILL and SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish ... excellent substitute for oil paint on all out-door work, and ... two-thirds cheaper. It may be applied by an ordinary ..., requires no mixing or thinning, and is used cold. It ... in the grounds at Windsor Castle, Kew Gardens, and at ... of many hundreds of the nobility and gentry, from ... the most flattering testimonials have been received, ... Hill & Smith will forward on application.
... casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at ... Manufactory, or 1*s.* 8*d.* per gallon paid to any station in the ...m.
... to Hill & Smith, Brierley Hill Iron Works, near ..., and 76, Cannon Street, E.C., from whom only it can ... obtained.

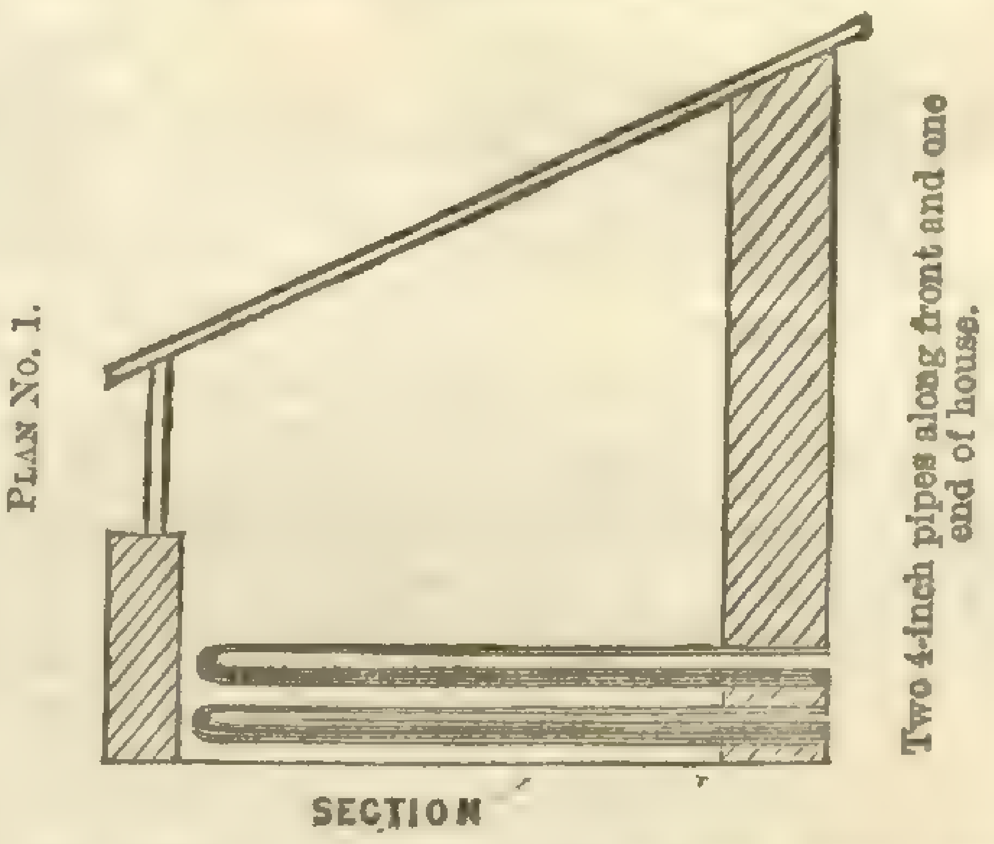
HOT-WATER APPARATUS.

J. JONES

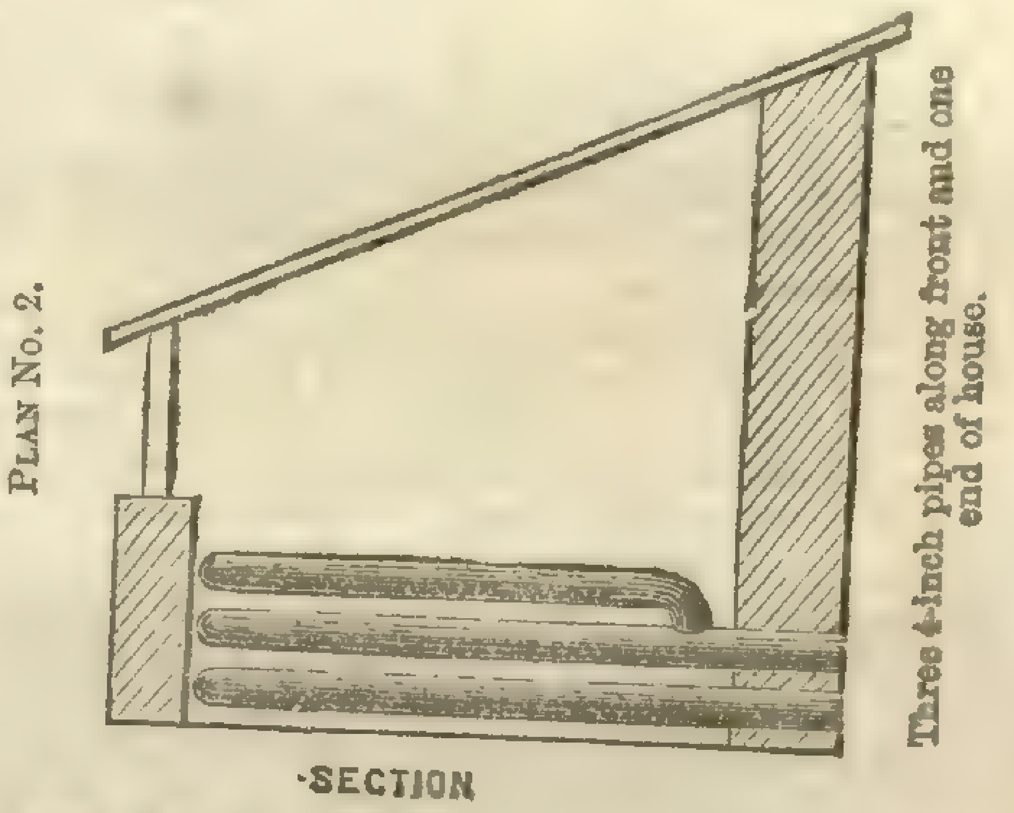
BEGS TO OFFER A COMPLETE

Hot-Water Apparatus for Houses

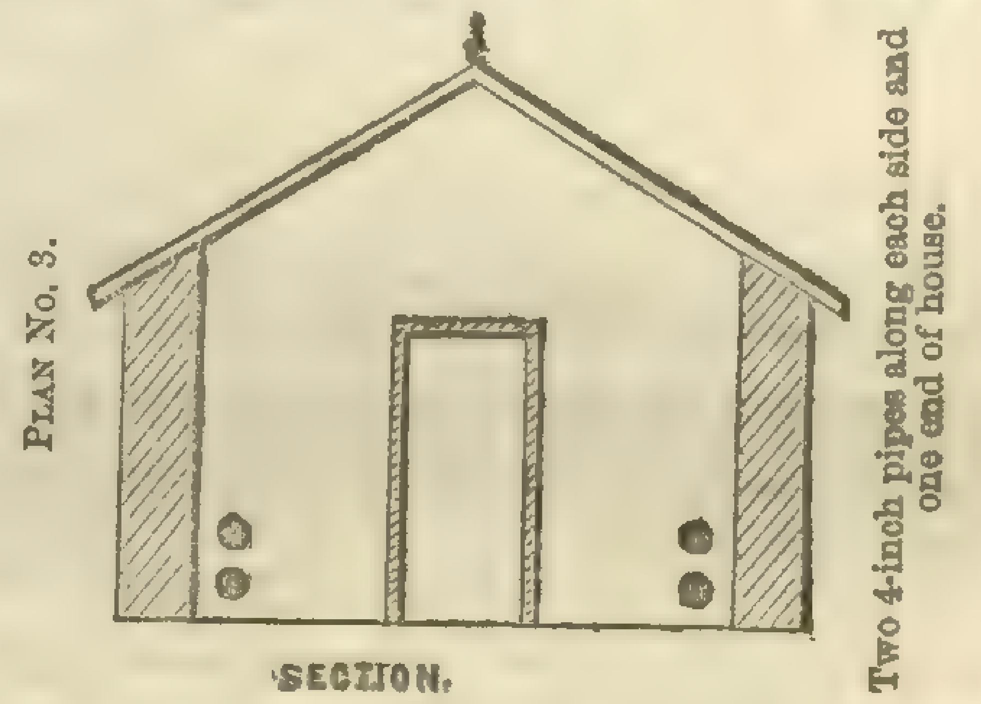
according to the following Plans, delivered Free to any Railway Station in England.



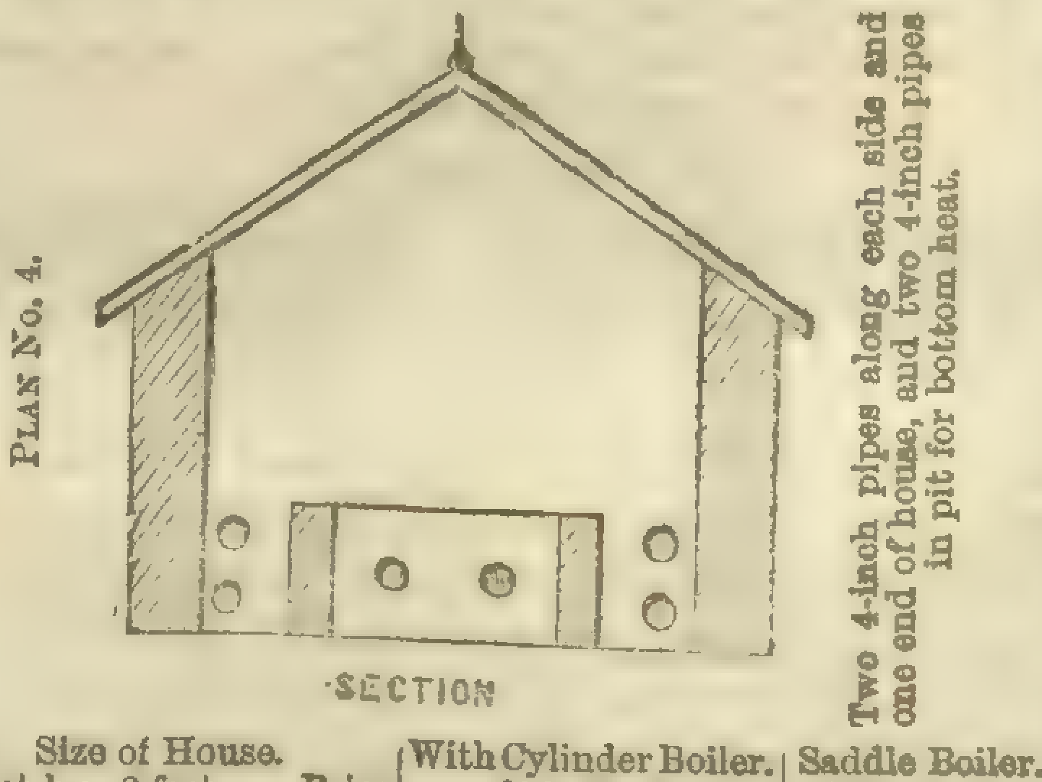
Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£8 0 0	£8 12 6
20 feet by 10 feet ..	„	8 10 0	9 0 0
25 feet by 12 feet ..	„	10 0 0	10 10 0
30 feet by 12 feet ..	„	11 10 0	12 0 0
40 feet by 15 feet ..	„	16 10 0	17 0 0
50 feet by 15 feet ..	„	18 10 0	20 0 0



Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£11 10 0	£12 0 0
20 feet by 10 feet ..	„	12 10 0	13 0 0
25 feet by 12 feet ..	„	14 10 0	15 0 0
30 feet by 12 feet ..	„	16 10 0	17 0 0
40 feet by 15 feet ..	„	22 0 0	23 0 0
50 feet by 15 feet ..	„	24 10 0	26 0 0



Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£12 10 0	£13 0 0
20 feet by 10 feet ..	„	13 10 0	14 0 0
25 feet by 12 feet ..	„	16 10 0	17 0 0
30 feet by 12 feet ..	„	19 0 0	20 0 0
40 feet by 15 feet ..	„	24 10 0	25 10 0
50 feet by 15 feet ..	„	27 0 0	28 10 0



Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£16 0 0	£17 0 0
20 feet by 10 feet ..	„	17 10 0	18 10 0
25 feet by 12 feet ..	„	21 10 0	22 10 0
30 feet by 12 feet ..	„	25 0 0	26 0 0
40 feet by 15 feet ..	„	31 0 0	32 0 0
50 feet by 15 feet ..	„	33 10 0	35 0 0

The above prices include Boiler, strong Furnace-doors, Bars, Plate, Soot-doors, Damper, and Supply Cistern-pipes of 4-inch diameter, Elbows, &c.; all of the best quality.
Delivered free to any Railway Station in England. Terms: Nett Cash.
Estimates will be sent for the work fixed complete, or further particulars on application to
J. Jones, Hot-Water Apparatus Manufacturer, 6, Bankside, London, S.E.

JOSEPH HAYWOOD AND CO.,
Manufacturers of
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

To Gardeners or Nurserymen.

TO BE LET on LEASE, with Immediate Possession, a NURSERY in the Vassall Road, Brixton, Surrey, S., with Greenhouses well stocked with Plants. The place is well situated for Jobbing Work, and the Rent is moderate.—Apply, D. T., as above.

To Nurserymen, Kitchen Gardeners, &c.

TO BE SOLD, the INTEREST in the LEASE of that old and well-established Nursery, known as BARNES NURSERY, at Merrion, within 1½ mile of the City of Dublin, with the entire STOCK-IN-TRADE, consisting of Greenhouse and Hothouse plants in every variety, Timber and Fruit Trees, Flowers in pots, Shrubs, &c. The Nursery stands on 24 acres 2 roods and 36 perches statute measure, has extensive Green and Hothouses thereon, with all the requisites for the carrying on of the Nursery business; and is held for an unexpired term of 44 years, at the rent of 20*l.* per annum. There are two good substantial moderate sized two-story Dwelling Houses on the ground, with Lodges for foremen and labourers; also a handsome Shop on the public road at the entrance. This is the largest Nursery in Ireland, and its patrons comprise most of the nobility and gentry of the country. It stands on the direct road from Dublin to Kingstown, in the midst of all the fashionable Villas near Dublin; and a portion of the ground might be most profitably employed as a Vegetable Garden, there being no such accommodation near Kingstown, or that side of Dublin. Other portions of the land will presently acquire a high value for building, as it adjoins the extensive building ground of Lord Herbert of Lee, which is becoming rapidly in demand. A Lease for a more extended term can be obtained, if required. If necessary a portion of the purchase money would be allowed to remain out as a charge upon the property.
For particulars apply to John Riddich, Solicitor, 3, Eustace Street, Dublin.
The Proprietor would have no objection to enter into arrangements with an experienced Working Gardener, with a small capital, for the carrying on the business of the Nursery and Vegetable Gardens, or with one or more for the working of each separately.

Sales by Auction.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION at the Mart, Bartholomew Lane, City, E.C., on FRIDAY, April 11, at 12 o'Clock, a first-rate Collection of CARNATIONS, PICOTEES, and PINKS, of remarkably fine growth, the surplus stock of a celebrated grower. A fine collection of American Plants, Choice Azalea indica, Ericas, Cinerarias, Geraniums, and other plants in bloom; a superb assortment of Choice Hardy Annuals, including Truffaut's celebrated imported Asters, Stocks, &c., with Fuchsias, Verbenas, Dahlias in dry roots, &c.
On view the Morning of Sale; Catalogues had at the Mart, and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

Swiss Cottage, Cheshunt.

Excellent Household Furniture, and Choice Greenhouse Plants.

MESSRS. CRAWTER and DEATH will SELL by AUCTION on THURSDAY, April 10, at 12 o'Clock, on the Premises, "The Swiss Cottage," Hammond Street, Cheshunt, by direction of the Proprietor, the Estate being Sold, the small but choice COLLECTION of GREENHOUSE PLANTS, comprising two fine specimens of Variegated Yuccas, American Aloes, a fine Guava, a few fine Standard Heliotropes and Fuchsias, Azaleas of various sorts, Oleanders, Hydrangeas, Pelargoniums, Cinerarias, Calceolarias; large specimens of Greenhouse Ferns, &c A variety of Garden Vases in Stone and China, Marble-top Garden Table, Iron and other Garden Seats, Frames, &c. A capital Mould Cart, a Light Spring Cart, and numerous other Effects.
May be viewed the day previous to and Morning of Sale, and Catalogues obtained at the usual Inns in the neighbourhood; and of Messrs. Crawter & Death, Auctioneers, Estate Agents, &c., Cheshunt, Herts.

Dane End, near Ware, Herts.

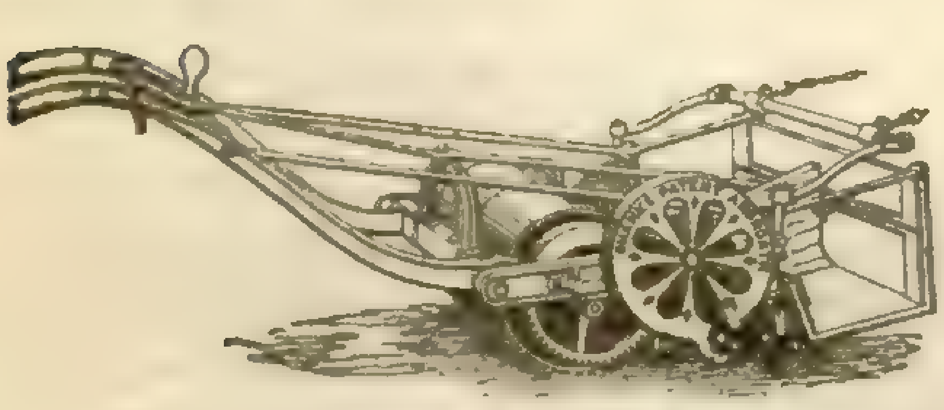
Important Sale of Shorthorned Cattle, Valuable Horses, Pigs, Dorking Fowls, &c.

MR. STRAFFORD has received Instructions to announce for SALE by AUCTION, without reserve, on WEDNESDAY, the 30th of April next, at Dane End, near Ware, Hertfordshire, the Entire Herd of SHORTHORNS belonging to H. E. Surtees, Esq.; consisting of 50 Head of exceedingly well-bred Bulls, Cows, and Heifers. The foundation of this Herd was laid with three choice Heifers, "Anna Maria," "Jenny Lind," and "Marchioness," purchased of that deservedly eminent Breeder, Mr. Wiley, of Bransby, and directly descended from Stock bought by him at the Sales of Messrs. Colling and Mason. Since then some choice specimens have been added, bred from the Herds of Mr. Bates and others of celebrity. The young stock are chiefly by the Duke of Argyll (11375) and Lumley (16473). The Cows and Heifers are principally in calf to the latter Bull and Grand Vizier, a son of Mr. R. Booth's War Eagle (15483). The whole are in perfect health and regular breeders, and their dispersion affords an excellent opportunity to purchasers of first-class animals. Also, will be Sold, the very celebrated STALLION, Cleveland Duke, and other young Horses, with a Van suitable either for the conveyance of horses or cattle; a splendid collection of YORKSHIRE PIGS, bred from the famous Brandsby and Bushey sorts; and some choice DORKING POULTRY, from Captain Hornsby's prize birds.
Catalogues, with Pedigrees and other particulars, may be had on application to Mr. Strafford, 13, Euston Square, London, W.; or of Mr. C. Bennett, the Bailiff, at Dane End, near Ware, Herts.

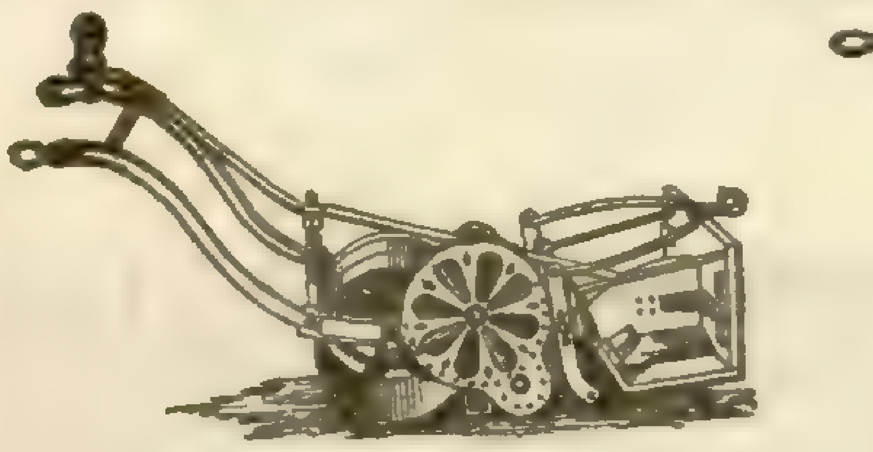
SHANKS' NEW PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

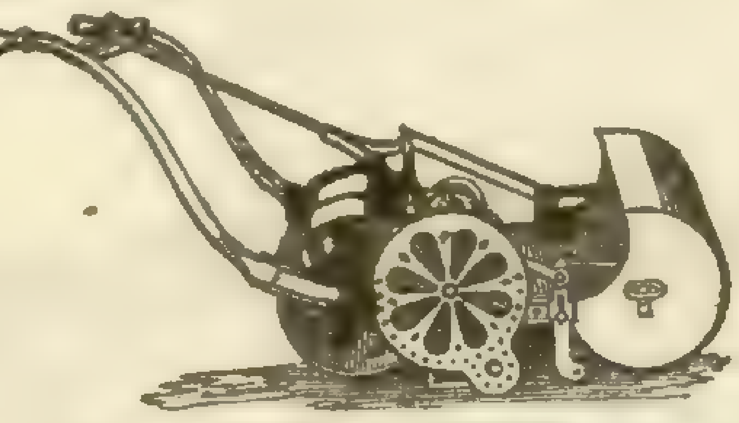
WITH SILENT MOTION IF SPECIALLY DESIRED.



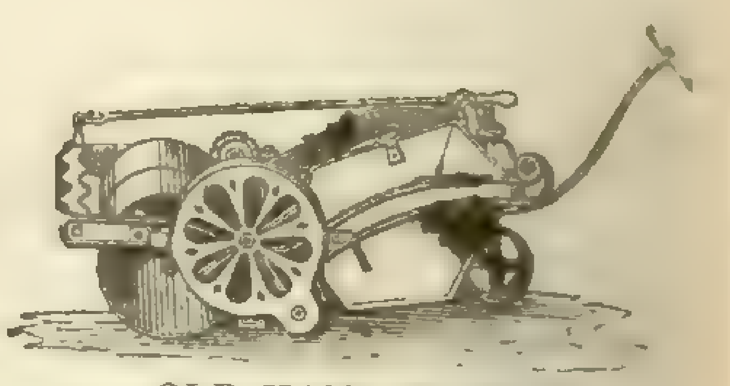
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

J. B. BROWN AND CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which
the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effects of the improvements of previous
years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every
one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season.

The improvement whereby the noise occasioned by the working of the Wheels is entirely obviated, is this season made still more efficient. There is no method of
imparting Motion to the working parts of almost any kind of Machinery at all to be compared to the Motion derived from Wheels; and the Patentees are gratified to
state that they have not found it necessary to provide a substitute for this perfect method of imparting motion in introducing the silent movement into their Machine.
The Cogs of the Wheels are made in the ordinary way, with ample bearing on each other, but so constructed and composed of Patent Material, as to be quite silent
in working.

One of the most important considerations in making a Machine fit to be put into the hand of a labourer, to work without any difficulty, is simplicity of construction
and arrangement, combined with strength and durability of the whole working parts, and J. B. Brown & Co. have much pleasure in intimating that the efforts of the
Patentees to attain this end have been completely successful. The Improved Machines for Horse and Pony Power, combining with these advantages the additional one
of Delivering the Grass without stopping the Machine, make it peculiarly fit for all the purposes of Mowing, whether for Grass Walks, the Flower Garden, or the open
Lawn. The style in which the work is executed cannot be surpassed—being very much neater than the Scythe, while at half the expense—*and it is quite immaterial*
whether the Lawn be level or otherwise, or whether the Grass be wet or dry.

The peculiar advantages of Shanks' celebrated HORSE MACHINE may be thus described:—

1. The Cutter is so constructed that in Mowing the closest and finest Turf there is not the smallest appearance of ribbing.
2. The Drums are loose on the Shaft, and are made SELF-ACTING, so that in turning the Machine will Mow as well as when going in a straight line.
3. From the position of the Front Pulleys or Rollers the Machine will Mow on the most uneven Lawn, and the Plate at the same time is PREVENTED FROM
INJURING THE TURF.
4. No Machine can turn quicker or more easily than this Machine. The two Front Pulleys swivel, and the Drums on the Shaft are loose, and yet kept in gear by
Patent Spiral Springs, so that the Machine will turn into the most intricate windings of the Flower Garden, amongst Trees or Flower Beds, with perfect ease, and
WITHOUT THE SMALLEST CHANCE OF INJURING THE SHRUBS OR FLOWERS.
5. The Wheels are all protected by Guards, which entirely prevent any particles of Cut Grass, Shrubs, or Flowers from getting into contact with the teeth. A
Scraper is introduced to keep the Rollers clear of small stones or rubbish in crossing Gravel Walks, &c. The whole Machine is nicely balanced as regards equality of
weight in front and back, and consequently is exceedingly STEADY IN WORKING. The Cutter works in Brass Bearings, and is now made so very strong that breakage is
rarely heard of. Malleable Iron is always used for the Handles or Shafts, which are necessarily neater and much more durable than the usual Cast-iron ones.
6. One of the most valuable of the Patent Improvements the Patentees have effected in their Machine is in the method of emptying the Grass Box. The want of a
speedy and efficient method for this purpose has been much felt for many years past. In the Spring more especially, when the Grass springs up rapidly, nothing is more
annoying in working a Mowing Machine than the stopping and almost constant travel from the handles to the box, and *vice versa*, for the purpose of emptying the Grass.
A great deal of time is thus lost, independent of the hard work to the man, not only in walking some hundreds of times the length of the Machine in a day, but more
especially in the stooping posture which he has so often to endure. This great want in all Mowing Machines, whether past or present, is completely obviated in Shanks'
Patent Mowing, Rolling, Collecting, and Delivering Machine. The improvement consists in the introduction of a simple and efficient Apparatus for emptying the Box
without the man being under the necessity of either leaving the handles or stopping the Machine. The immense advantages of this invention must be at once apparent
to the practical Gardener. It will enable the Machine to do at least a third more work, while the labour and annoyance in working it, as compared with ordinary
Machines, is three-fourths lessened. If a Lawn, which formerly took a Machine nine hours to Mow, can now be done in six hours, with three-fourths less labour to the
man who works the Machine, nothing further is necessary to establish the utility and worth of the invention. The Grass is deposited on the Lawn in heaps ready
for removal.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Price		Width of Cutter.	Price	
No. 1.—48-inch Machine	£28 0 0	Drawn by a Horse.	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0		No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*;
Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Width of Cutter.	Width of Cutter.
No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.*	No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.*	No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*;
Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

SHANKS' NEW PATENT HAND MACHINE for 1862, for Pushing or Drawing separately or together.

Messrs. SHANKS have this year further improved their Hand Machine by the introduction of stiffer Malleable Iron Shafts or Handles, also by strengthening the
Cutter, and by constructing the Axles so as to reduce the friction, and thus lessen the draught to the smallest possible amount, the effect of which improvements will
unquestionably be to confirm the high character the Machine has gained in previous years, as *the most complete, the cheapest, and most durable Lawn Mowing Machine*
extant. The Machines are fitted with the same care and precision as the Horse and Pony sizes, and like them possess the same advantages of ability to Mow on uneven
Lawns without injuring the Turf, also of having loose Rollers for ease in turning, of having Wheels properly guarded, and so placed as to give an equal balance to either
side of the Machine. A Scraper is introduced to keep the Rollers clear of small stones and rubbish in crossing Gravel Walks, &c.

PRICES.

SHANKS' NEW PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Price		Width of Cutter.	Price	
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man*
No. 9.—22-inch Machine	8 7 6		No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*	No. 16.—12-inch Machine	5 0 0	*Ditto by a*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks'
Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court,
Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister,
The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal
Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom,
as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

*** *The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

SOLE AGENTS FOR LONDON:

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 15.—1862.] SATURDAY, APRIL 12. {Price Fivepence. Stamped Edition, 6*d*.

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CRYSTAL PALACE.—The GRAND FLOWER SHOW will take place on SATURDAY, May 24, and the GREAT ROSE SHOW on SATURDAY, July 5.
For Schedules of Prizes apply to Mr. W. HOUGHTON, Secretary to the Flower Show, Crystal Palace, Sydenham.

New Roses of 1862.

PAUL AND SON have now ready their usual fine Plants of the finest Novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

TWELVE of the Finest NEW PERPETUAL ROSES (sorts that have not yet flowered in English Gardens) for Two Guineas.
RICHARD SMITH, Nurseryman, Worcester.

Vegetable and Flower Seeds.

PAUL AND SON'S CATALOGUE of the above, including ASTERS and STOCKS, with DESCRIPTIVE LIST of the best 100 GLADIOLI, is now ready, post free.
"Old" Cheshunt Nurseries, Herts.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

STRONG FRUITING VINES, 7*s*. 6*d*. and 10*s*. 6*d*. LIST gratis and post free.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

WELLINGTONIA GIGANTEA.—Seedling Plants of 1861 in single pots, per dozen, 21*s*. Price to the Trade per 100 on application.
J. HENCHMAN, Edmonton, near London, N.

GORSE or FURZE for COVERTS, &c.—Extra fine 2 years' plants at 5*s*. per 1000.
Do. 1 year do., at 2*s*. 6*d*. per 1000.
Sample if required.
JOHN PERKINS, 52, Market Square, Northampton.

Large Tartarian Arborvitæs.

FOR SALE, 600 of the above, all strong, healthy and well-formed, from 5 to 6 feet high, and in excellent condition for transplanting. Price moderate.
Apply to H. and F. SHARPE, Wisbech.

AN AVENUE of PINUS BENTHAMIANA.—Should any gentleman feel desirous of planting as above this hardiest of all hardy long-leaved Pines, fine specimens can be supplied by CHARLES NOBLE, Sunningdale Nursery. Several hundred to select from, and warranted to move safely.

GREEN HOLLIES, &c.—Transplanted, 1 to 1½ ft., 1½ to 2 ft., and 2 to 3 ft., on land to be cleared. Prices on application. Also EVERGREENS of all sorts and of various sizes. This month the most suitable for Planting. Prices on application.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

J. J. FOSTER, Anmer Nursery, Edgware, N.W., has a fine stock of EVERGREENS, Trained FRUIT TREES, ORNAMENTAL SHRUBS, and FOREST TREES, well grown in adhesive soil.
Prices on application.

FERNS.—Ten distinct species, adapted for North Border or Rockwork, collected from their natural habitats and delivered in London or suburbs, or despatched per Rail. One of each for 5*s*.; Two of each, 8*s*; Four of each, 15*s*.; or ... for 25*s*.
... LLOYD, 9, Chatham Road, Wandsworth Common, S.

New Fuchsias and Verbenas of 1861.

B. W. KNIGHT, FLORIST, 67, High Street, Battle, Sussex, is now sending out the New FUCHSIAS of 1861, at 6*s*. per dozen; the New VERBENAS of 1861, at 4*s*. per dozen, securely packed in tin box, post free.
CATALOGUES sent on application.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very large, and in all varieties of colour, in Seed or Roots; also FLORISTS' FLOWERS, POLYANTHUS in roots, and DOUBLE WHITE PRIMROSE.
Apply GEORGE MACE, Calcot Gardens, near Reading.

THOMAS HANDASYDE'S DESCRIPTIVE CATALOGUE of FLORISTS' FLOWERS, New German and other FLOWER SEEDS, &c., containing all the Novelties of the season, is now ready and may be had free on application. Also a large and healthy stock of all sorts of EVERGREENS at the
Glen Nurseries, Musselburgh, near Edinburgh.

BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See large Advertisement.
Covent Garden Market, W.C.

BARR AND SUGDEN, SEED MERCHANTS.—For important notice see large Advertisement, page 230.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

BARR AND SUGDEN'S ILLUSTRATED FLORAL GUIDE. Price 2*s*. 6*d*., sent Post paid.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

New Garden Seeds.

JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

Genuine Farm Seeds.

JAMES CARTER AND CO., 237 and 238, High Holborn, W.C.

CHOICE CAMELLIA SEED, saved from one of the finest Collections in Europe. 1*s*. per packet.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

German Flower Seeds, Fresh Imported.

SUTTON AND SONS have imported a superior assortment of New GERMAN FLOWER SEEDS, a PRICED LIST of which may be had post free.

ALL the best DAHLIAS in cultivation can be had in good plants, from 6*s*. to 4*s*. per dozen, at GEORGE EDWARD, Seedsman and Florist, 1, King Street, York.

EDWARD TAYLOR, FLORIST, Malton, Yorkshire, begs to announce his new CATALOGUE of FLORISTS' FLOWERS and BEDDING PLANTS, and to recommend it to the notice of large purchasers and the Trade. It will be forwarded gratis and post free on application.

Notice to Exhibitors.

BUCKLAND SWEETWATER GRAPE (IVERY'S).—Prizes of 3*l*. and 2*l*. will be given for the best and second best 3 bunches of this GRAPE, to be exhibited at the Royal Botanic Society's Exhibition, July 9th, 1862, by JAMES IVERY & SON, Dorking.

Fruit Trees in Pots.

YOUELL AND CO. can supply PEACHES, APRICOTS, CHERRIES, and PLUMS, good Trees covered with bloom, for fruiting this season, at 42*s*. per doz.
Royal Nursery, Great Yarmouth.

PINE APPLE SUCKERS:—200 fine strong healthy QUEEN SUCKERS for SALE, warranted clean and healthy. Some of them have been potted and have roots. Apply to Mr. M'GREGOR, Seedsman, Merthyr Tydvil.

PELARGONIUMS.—Intending purchasers should send for our DESCRIPTIVE CATALOGUE, post free.
J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

DOBSON'S SPLENDID HYBRIDISED CALCEOLARIA is unequalled for variety, form, distinct and striking colours and habit. In sealed Packets, 1*s*. 6*d*., 2*s*. 6*d*., 3*s*. 6*d*., and 5*s*. each.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIZE CINERARIA SEED.—Unsurpassed for quality. 1*s*., 2*s*. 6*d*., and 5*s*. per Packet.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIMULA SINENSIS FIMBRIATA, ex. ex.—Sealed Packets, 1*s*., 2*s*. 6*d*., and 5*s*.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

Hendon Park Nurseries, N.W.

PANSIES.—Fine plants of all the best Show varieties. Twenty four sorts for 10*s*. Plants fit for this Spring's Exhibitions.
EDWARD SHENTON.

Double Dwarf Poppies.

HOOPER AND CO. offer Seed of their unequalled stock of the above. Colours brilliant and varied; and flowers double as a fine Hollyhock. Price 1*s*. per packet, post free.
GENERAL SEED CATALOGUE post free on application.
HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.

HOOPER'S INCOMPARABLE PEA.—The finest and richest flavoured Pea in cultivation, yielding a supply by successive sowings from the end of June to the end of October. Price 2*s*. per quart.
HOOPER & Co., Seedsmen, Covent Garden Market, London.

Phloxes for Exhibition.

DOWNIE, LAIRD, AND LAING have much pleasure in announcing that they can supply intending Exhibitors with strong autumn and spring struck plants, from their first-class Collection of the above.
See Leader in *Gardeners' Chronicle*, March 15, 1862, p. 236.
CATALOGUES post free on application.
Stanstead Park, Forest Hill, London, S.E., and Edinburgh.

Superb Hollyhocks.

WILLIAM PERRY has a fine stock of plants in pots that will flower well this season, a CATALOGUE of which may be had on application, postage free.
Also very strong SEEDLINGS of mixed colours, price of which will be found in the Catalogue.
Sawbridgeworth, Herts.

Good Seeds, Carriage Free.

SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

THE PLYMOUTH SEED COMPANY, Plymouth.
For Advertisement of FARM SEEDS, see page 234.

FARM SEEDS of the best quality can be supplied by the PLYMOUTH SEED COMPANY, Plymouth.
Purchasers of large quantities treated liberally.

Agricultural and Garden Seeds.

H. AND F. SHARPE, SEED GROWERS, Wisbeach.
PRICED LIST of SEEDS on application.

To the Trade.

SPECIAL SPRING CATALOGUE of AGRICULTURAL and GARDEN SEEDS (gratis) on application.
JAMES FAIRHEAD & SON, Seed Growers and Merchants, 7, Borough Market, London, S.E.

DICKINSON'S ITALIAN RYE-GRASS SEED may now be had by Agriculturists applying to his Bailiff, Mr. W. HUNTER, New Park Farm, near Lymington, Hants. 48*s*. per quarter; or 7*s*. per bushel, for present payment only.

TURNIP, MANGEL, and AGRICULTURAL SEEDS of best Selected Stocks.—First class samples, crop 1861, at growers' prices.
JAMES FAIRHEAD & SON, Seed Growers and Merchants, 7, Borough Market, London, S.E.

FOR SALE, a quantity of SKIRVING'S SWEDE TURNIP SEED, from a selected stock which can be strongly recommended. Apply to the Grower,
Mr. WILLIAM CANT, Myland Lodge, Colchester, Essex.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

LEWISHAM SWEDE.—This Turnip, grown from large sized transplanted bulbs, and which has given such universal satisfaction, can be supplied in quantity to the trade by the Growers,
JAMES FAIRHEAD & SON, 7, Borough Market, London, S.E.

Altringham Carrot Seed.

CHARLES SHARPE AND Co., Sleaford, have the above to offer to the Trade; new Seed of their own growing. Price on application.

To the Trade.

CHRISTMAS QUINCEY, SEEDSMAN, Peterborough, has to offer, of his own growing, in large or small quantities, YELLOW GLOBE and RED GLOBE MANGELS, ALTRINGHAM CARROT; also DALMAHOY and FORTYFOLD POTATOES.—April 12.

To Potato Growers.

JAMES CARTER AND CO. have a surplus stock of MYATT'S PROLIFIC and ASHLEAF KIDNEY POTATOES to dispose of in large quantities at a very cheap rate.
237 and 238, High Holborn, W.C.

Dalmahoy Early Potatoes from Scotland.

PETER LAWSON AND SON can supply the above and other varieties of SEED POTATOES.
27, Great George Street, Westminster, London, S.W.

POTATOES, DALMAHOY and SHAW, 16*s*. per sack; Ashleaf, Fortyfold, Regents, &c. Sacks, 1*s*. each.
STRAWBERRIES.—Admiral Dundas, British Queen, Black Prince, Eleanor, Prince of Wales, Sir C. Napier, Wizard of the North, Oscar, Duc de Malakoff, 2*s*; Alice Maude, Elton Pine, Eliza, and Keen's Seedling, 1*s*. 6*d*. per 100.
GEO. CORNWELL, Seedsman, &c., Barnet, Herts, N.

DIOSCOREA BATATAS (or CHINESE YAM), 2*s*. 6*d*. per doz., 15*s*. per 100. Larger tubers, 3*s*. 6*d*. per doz.
JOHN CATTELL, Westerham, Kent.

Dioscorea Batatas, or Chinese Potato.

J. IVERY AND SON beg to inform their Patrons that this is the most favourable month for planting this useful Vegetable. Strong sets are now ready, at 1*s*. per dozen, or 7*s*. 6*d*. per 100; likewise whole Tubers, from 2*s*. 6*d*. to 6*s*. per dozen.
Dorking Nursery.

Early Cabbage Plants.

W. VIRGO AND SON, Wonersh Nursery, Guildford, have a large quantity of strong, healthy plants of the following sorts to offer for Sale at 3*s*. 6*d*. per 1000, viz.

EARLY YORK.	CATTELL'S RELIANCE.
" BARNES.	NONPAREIL and

BATTERSEA.

Stones or Sprotborough Cabbage Seed.

JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3*s*. per lb., or 16*l*. per cwt.

Agricultural Seeds.

GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

SPLENDID NEW PLANTS.

MESSRS. VEITCH & SON

Desire to offer the following choice and very desirable NOVELTIES, which they feel confident will give general satisfaction, and prove most valuable acquisitions to all Collections of Plants.

RHODODENDRON PRINCESS ALICE (Veitch).

This exquisite variety is a hybrid raised by ourselves between Rhododendrons Edgworthi and ciliatum. The flowers are large, of a delicate rosy blush shading off to white, and possessing the DELICIOUS PERFUME of R. Edgworthi, with the neat foliage, dwarf habit, and freedom of blooming of R. ciliatum.

At the late Exhibition of the Royal Horticultural Society on the 19th ult. it received a FIRST CLASS CERTIFICATE, and was the admiration of all who saw it.

1st size, strong Plants .. .. .. 42s. each.
2d size do. do. .. .. .. 21s. „

RHODODENDRON SESTERIANUM.

This is another beautiful greenhouse hybrid, raised between Rhododendrons Edgworthi and Gibsoni. It has immense flowers of a beautiful clear white, with yellow spots on the upper petals, of great substance and fine form. The flowers are larger, and like the Princess Alice (if possible) more delightfully scented than those of R. Edgworthi.

It has already received two FIRST-CLASS CERTIFICATES viz., at the late meeting of the Royal Horticultural Society on the 19th, and at that of the Royal Botanic Society on the 26th ult.

This variety is of German origin, and we have purchased the stock of it for the English demand.

We believe these two fine Rhododendrons will be but the beginning of a race of sweet-scented kinds, which will hereafter be extended to the hardy ones.

Large Plants, 31s. 6d. each.
Smaller do., 21s. each.

CAMELLIA QUEEN of BEAUTIES (Reine des Beautes).

This is a most lovely variety, with flowers of a beautifully delicate blush, veined with deep pink, of good texture, and perfect imbricated form. It is of excellent habit and foliage.

We exhibited a small plant of it at the meeting of the Royal Botanic Society on the 26th ult., when it received a FIRST-CLASS CERTIFICATE.

We can confidently recommend it as a most distinct and really desirable variety.

Nice young plants, 21s. each.

CAMELLIA LAVINIA MAGGI.

This is another very beautiful Camellia, with large flowers, of fine form and substance. The ground colour is pure white, striped with rose and deep crimson. It received a FIRST-CLASS CERTIFICATE at the Royal Horticultural Society's Spring Show on the 19th ult.

Price 10s. 6d. to 21s. each.

ASPLENIUM FLABELLULATUM.

One of the prettiest and most graceful Stove species of the genus. It has tripinnate fronds, with small cuneiform, transparent pinnules, much serrated. The fronds, which are arranged almost in the form of a basket, are terminated by a long slender filament. The stalks are of a deep ebony black.

It received a FIRST PRIZE at the Royal Horticultural Society's Exhibition in June, 1861, and a FIRST CLASS CERTIFICATE at that of the Royal Botanic Society on the 26th ult.

Price 42s. each.

ASPLENIUM RACHIRHINÆ.

A very elegant species, distinguished from the preceding by its much larger fronds, which are more recurved and terminated by longer filaments, the pinnules not being transparent, and less serrated. The rachis is green and furrowed, thus rendering it quite distinct.

It is a most graceful and beautiful Fern, very ornamental and of easy culture. It requires the temperature of a stove.

We exhibited it at the late Spring Show of the Royal Botanic Society, when it received a FIRST CLASS CERTIFICATE. Both these Ferns have been lately received from the Continent.

Price 42s. each.

ROYAL EXOTIC NURSERIES, EXETER AND CHELSEA.—April 12.

NEW AND BEAUTIFUL PLANTS.

WILLIAM BULL, F.R.H.S., F.R.B.S.,

NURSERYMAN AND NEW PLANT MERCHANT, KING'S ROAD, CHELSEA, LONDON, S.W.,

WILL COMMENCE SENDING OUT THE FOLLOWING NOVELTIES IN MAY NEXT.

The stock of some being limited, orders will be executed in strict rotation as received.

DROSERA WHITTAKERII (Planchon).

A charming little Australian Sundew, associating with the *Venus's Fly Trap*, the *New Holland Pitcher Plant*, and similar vegetable curiosities. The fleshy tubes produce a rosette-like tuft of inversely ovate leaves narrowed into a wedge-shaped base, slightly toothed around the broad blunt apex, and fringed on the upper surface and at the margin with transparent hairs, each of which is tipped by a red gland, secreting a little globular glistening dew drop; from the centre of the tuft spring up in succession several white flowers, which (on the young and probably not fully developed plants) are as large as a shilling, and grow separately on little stalks about as long as the leaves themselves. My correspondent, from whom the tubers were received, calls the plant the Blood-red Drosera, and states that the colonists designate it the Beef-steak Plant; he describes it as "resembling a large Daisy, but with larger leaves, and these of a deep blood red, and with flowers twice the size, of the purest white." The young plants are as yet only partially tinged with red, but even in this state the numerous red-tipped hairs give them a very interesting appearance. 21s. each.

GESNERA REFULGENS.

In this magnificent hybrid are combined some of the best qualities which a plant can possess, for it is not only of good habit and free flowering, but extremely showy, and also one of the most beautiful foliaged plants extant; the leaves are broadly cordate, 6 to 9 inches in diameter, and covered with innumerable crimson hairs, which give the foliage the appearance of rich crimson velvet; the flowers are produced in fine pyramids throughout the winter; tube and lobes rich orange scarlet, with yellow throat. When exhibited before the Floral Committee of the Royal Horticultural Society it was awarded a label of commendation for its ornamental character. 15s. each.

GESNERA VELUTINA.

This hybrid, though distinct from the preceding, embraces its main characteristics, the foliage very ornamental and similar in size, with a mottled green and brown surface, velvety with purplish red hairs; the flowers of a scarlet vermilion colour. 10s. 6d. each.

NEW TYDÆAS.

Pumila. Pygmæa. Tenella.

The above are offered as being pretty little neat dwarf-growing varieties, and hence much superior to many others of this family; their blossoms are tubular funnel-shaped, as in other kinds; the colours of each sort are varied, and embrace rose, rosy lake, rich carmine rose, and all are more or less spotted with rich crimson. 5s. each.

ANTHURIUM LEUCONEURUM.

A handsome variegated species from South America, with thick waxy cordate leaves, of a rich dark olive green colour, distinctly veined and spotted with grey. 60s. each.

BEGONIAS, New Species, or imported kinds.

Numerous as this handsome tribe has now become, these thoroughly distinct beautiful new species from Mexico will be great favourites, and their introduction hailed with much pleasure; themselves handsome decorative plants, they will be invaluable for hybridising purposes, and doubtless the progenitors of a new race.

Dælalea.

Smooth upper surface to the leaves, which are bright green, peculiarly reticulated all over with brown; flowers rosy white. 18s. each.

Imperialis.

Very novel and exceedingly handsome, the leaves having a rugose surface, thickly set with short stiff hairs, which is not unlike, and reminds one of, the surface of a Brussels carpet; deep olive colour, variegated with radiating bright green lines, which follow the course of the ribs and veins; small white flowers. 21s. each.

Imperialis smaragdina

Has the same remarkable and curious characteristics as the preceding, but the foliage of a bright emerald green. 18s. each.

Longipila.

The most beautiful flowering kind of this family, peduncules of blossom from 1 to 2 feet in length, of a bright but deep pink colour; the leaves olive green, with greyish green ribs. 18s. each.

Price of the set of four New Begonias, 2l. 8s.

NEW CALADIUMS.

These are all imported kinds from Brazil, and are offered as distinct and desirable additions to this ornamental family.

Devosianum.

Bright green leaves, blotched with pink and white. 21s. each.

Kochi.

Very dark green leaves, almost black, spotted with pure white. 15s. each.

Lemaireanum.

Bright green leaves, the central and principal ribs white. 21s. each.

Regale.

Broad cordate-ovate, mottled green leaves, with irregular white blotches. 21s. each.

Rubro Nervia.

Bright green leaves, ribbed and veined with red. 15s. each.

Splendidissima.

Very handsome, with broad bright crimson leaves; much superior to Baraquine, Bicolor splendens, or any of that section. 21s. each.

HEBECLINIUM ATRORUBENS.

This easy cultivated, free flowering, attractive plant has been discovered and sent from Mexico by M. Ghiesbreght; and now that nearly all the newly introduced plants are merely remarkable for their ornamental or variegated foliage, a beautiful flowering plant like this is really an acquisition. Its usual time of flowering is from January to April; the bright lilac feathery-like flowers are freely produced in immense corymbs, the footstalks of which are dark red, covered with crimson hairs, which in contrast with the flowers impart a pleasing feature; the plant can easily be grown in a cool stove or warm greenhouse. Added to the flowers of this plant being handsome, they are very sweet scented. 15s. each.

A NEW CATALOGUE OF BEAUTIFUL, NEW, AND RARE PLANTS

is in the Press and will shortly be issued, and will be forwarded on application by enclosing two stamps.

ESTABLISHMENT FOR NEW AND RARE PLANTS, KING'S ROAD, CHELSEA, LONDON, S.W.

NEW ROSES for 1862.—4000 STRONG PLANTS.

WILLIAM WOOD & SON

Are now executing orders for all the NEW ROSES of the season, in strong healthy plants, Dwarfs, at 5*s*. each. A liberal discount allowed to the Trade.

40,000 DWARF ROSES in POTS for BEDDING.

The months of April and May are considered the most eligible for Bedding-out Roses from pots.

W. W. & S. beg to offer a very large and healthy Stock on the following terms, viz.:—

Dwarf Hybrid Perpetual, Bourbon, Noisette, and Tea-Scented Roses, per dozen		18*s*.
Climbing Roses, of sorts	„	12*s*. to 18*s*.
Dwarf China Roses	„	12*s*.
Tea-Scented Roses, in 6-inch pots, for Greenhouse culture	„	30*s*.

Extra Plants presented for distant carriage.

CATALOGUES free on application.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

NEW VARIEGATED FOLIAGED FUCHSIA,

CARTER'S METEOR.

This striking novelty, a double corolla'd variety, with crimson and yellow foliage, will be sent out on May 1.

JAMES CARTER & CO.'S GENERAL CATALOGUE of PLANTS,

Containing many desirable Novelties, will be published on May 1, and forwarded gratis and Post free on application.

JAMES CARTER & CO., 237, 238, & 261, HIGH HOLBORN, W.C.

SEED FARMS.	NURSERY.
EAST HOUSE FARM, DEDHAM, ESSEX; and THE SEED FARM, ST. OSYTH, ESSEX.	CRYSTAL PALACE NURSERY, Perry Hill, Sydenham, S.E.

NEW SCARLET VERBENA, FOX-HUNTER.

HUGH LOW & CO.

HAVE pleasure in intimating that the entire Stock of the above-named VERBENA is in their possession, and plants will be ready the last week in April. Price 5*s*. per plant. Special quotations given to purchasers by the dozen. The merits of FOX-HUNTER have been so universally and extensively admitted, that H. L. & Co. think it needless to do more than add that a First-Class Certificate was awarded by the Floral Committee of the Royal Horticultural Society, when Cut Flowers were exhibited by the raiser, JOHN MILLER, Esq. of Upwey.

CLAPTON NURSERY, LONDON, N.E.

KITCHEN GARDEN SEEDS,

FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND
THOS. GIBBS & CO.
Corner of
HALF-MOON St.
PICCADILLY,
London.
APPOINTED AP: 3. 1844
THE SEEDSMEN

AGRICULTURAL SEEDS,

GRASS SEEDS,

FARM SEEDS,

of all descriptions.

Thomas Gibbs & Co.

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

GLADIOLUS, The finest Varieties for Exhibition, &c.

YOUELL & CO.

Beg to intimate, the present being the best time for planting the above, that they are in a position to supply the most choice kinds of this beautiful tribe, in strong flowering Bulbs as follows:—

No. 1 Collection contains 100 Bulbs, in 50 of the most choice and handsome kinds with Names	£5	0	0
No. 2 Collection contains 100 Bulbs, in 30 ditto ditto	3	15	0
No. 3 „ „ 100 Bulbs, in 25 ditto ditto	2	10	0

Or from 6*s*. to 18*s*. per dozen.

GLADIOLUS BRENCHLEYENSIS (True).

The most brilliant scarlet Gladiolus known, 4*s*. per dozen, 30*s*. per 100.

ROYAL NURSERIES, GREAT YARMOUTH.

New Roses, &c.

WM. PAUL'S CATALOGUE of NEW ROSES and SPRING PLANTS generally is now ready. Free by post on application.

BEAUTY OF WALTHAM, H.P.

This English raised seedling Rose has now received the highest awards ever given by the Royal Horticultural and Royal Botanic Societies. The flowers are large and full, colour brilliant cerise, the petals exquisitely curved in the way of Madame Charles Crapelet; the growth is vigorous, the foliage magnificent, and the plaut as hardy as the Dog Rose. Plants 5*s*. each, and orders executed in strict rotation as received.

HOLLYHOCKS.

A fine stock of all the best named sorts, 9*s*. to 24*s*. the dozen. All are raised from cuttings. None grafted.

Waltham Cross, N.

NEW TEA-SCENTED ROSE for 1862, GLOIRE DE BORDEAUX.—The above, a Seedling from the well known favourite Tea Rose, Gloire de Dijon, was raised at Lyons, and is represented as being unquestionably the finest Tea-scented Rose of the season.

WM. WOOD & SON beg to intimate that they possess a very large Stock of the above in extra strong plants, which they are now sending out at 5*s*. each.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.

For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.

Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.

The Royal Nursery, Bagshot, Surrey.

American Plants, &c.

MESSRS. WATERER AND GODFREY'S CATALOGUE for the present season is now ready, and may be had on application. It describes fully all RHODODENDRONS worth growing, and contains a List of AZALEAS, HARDY HEATHS, and other American Plants, as well as a summary of the General Stock of the most extensive Nurseries in England.

The Catalogue may also be had at Mr. MAY'S, 1, Wellington Street, Strand, W.C.

Knap Hill Nursery, near Woking, Surrey.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free an application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Tom Thumb Scarlet Geranium and Aurea floribunda Calceolaria.

ALEXANDER LAING begs to inform nurserymen, gentlemen, and the public in general, that he is in a position to offer good, healthy, well established Plants of the above, by the dozen, 100, and 1000, having an immense stock of both, all being autumn-struck Plants.

Prices on application to A. LAING, Nurseryman, Beverley, Yorkshire.—April 12.

LITHOSPERMUM FRUTICOSUM

Is the neatest and prettiest little

HARDY EVERGREEN HERBACEOUS PLANT

That can be desired. Its slender branches are thickly covered with small dark green leaves, forming a perfect carpet, which is studded with

THE LOVELIEST BLUE FLOWERS,

nearly half an inch in diameter, from May till September. If wintered in a cold greenhouse it flowers abundantly in February and March.

Messrs. J. & C. LEE will be prepared to offer this "LITTLE GEM" in May, at 2*s*. 6*d*. each; larger plants, 5*s*. each.

Nursery and Seed Establishment, Hammersmith, London, W.

CLEMATIS AZUREA GRANDIFLORA, 3 to 4 ft., fine flowering plants, all on their own roots, 9*s*. per doz.; per 100, 60*s*.

CLEMATIS HELENA, 9*s*. per doz.; per 100, 60*s*.
„ SOPHIA, 9*s*. „ „ 60*s*.
„ MONSTROSA, 12*s*. per doz.
Very showy large flowers.

BEDDING PLANTS.

GERANIUM BIJOU, 5*s*. to 6*s*. per doz.; per 100, 33*s*. This is the finest of variegated-leaved scarlet-flowered Geraniums. See *Gardeners' Chronicle* and *Cottage Gardener*.

Apply to WILLIAM BARRON, Elvaston Castle, Derby.

Bedding Plants at 2s. 6d. per Dozen.

J. SCOTT'S well-known CATALOGUE of the above is now ready, and will be sent to all applicants on receipt of six postage stamps, which will be returned to all purchasers above 10*s*.

It contains a mass of Cultural and other information about Flowers and Flower Planting, Ribbons, Tessellated and Mosaic work, with Descriptive Lists of all the most ornamental Flower Garden Plants.

Mr. Beaton, in the *Journal of Horticulture*, April 23, 1861, p. 58, says:—"But the best work on making Ribbon borders . . . . is the Bedding Plant Catalogue of Mr. Scott, of Merriott Nurseries; and besides, the Catalogue is the best arranged for young beginners of all that I have seen."

J. SCOTT, Merriott, Crewkerne, Somerset.

Rhododendron Campanulatum.

WM. JACKSON AND CO., NURSERY and SEED MERCHANTS, Bedale, Yorkshire, offer very strong plants of the above hardy RHODODENDRON, 1½ to 2 feet, from seed, at 7*l.* 10*s.* per 100, usually sold at 5*s.* each. RHODODENDRON JACKSONI, and vars., 1 to 2 feet, 10*l.* per 100. EVERGREEN PRIVET, 3 to 4 feet, strong, for fences; and UNDERWOOD, 1*l.* 15*s.* per 1000.

CYPRIPEDIUM INSIGNIS MAULII.—In the first week of JUNE next will be distributed to a full List of Subscribers of 3 Guineas this fine variety of Cypripedium. After that time the price will be 5 Guineas to Non-Subscribers. It is figured and described in the "Floral Magazine," and a Coloured Figure will be forwarded for inspection per Post to Cultivators of Orchids and intending Subscribers on application.

WM. MAULE & SONS, The Nurseries, Bristol.

SPLENDID PRIZE CINERARIA SEED.—Our Collections have been awarded as follows (the only times exhibited this season):—

First Prize for 6 Plants. Royal Botanic Society, Regent's Park, April 2, 1862.

First Prize for 9 Plants. Royal Horticultural Society, Kensington, on Wednesday last, April 9, 1862.

Packets of Seed from our unequalled collection, which contains nearly a hundred varieties, 1*s.*, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.* per packet.

Plants of the leading sorts may be had.

JOHN DOBSON & SONS, Woodlands Nursery, Isleworth, W.

Petunia Inimitabilis Eliza Mathieu.

GEO. SMITH has much pleasure in offering this most extraordinary and beautiful PETUNIA. It is twice the size of that well known and fine variety, Inimitabilis flore pleno. It is most distinct and constant, with mauve coloured ground, edged with one third pure white, and equally as double also, and as fine shape as a good Camellia. This splendid variety is figured in the *Florist* for the present month. Now ready in strong plants at 2*s.* each, or 18*s.* per dozen.

Another very beautiful variety of the same group is that named MARIE RENDATLER, with REX and other fine varieties, 2*s.* each.

The CATALOGUE of Choice Geraniums, Fuchsias, Verbenas, Petunias, and general Bedding Plants, now ready in exchange for one postage stamp.

GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington.

To the Trade.

JOHN NUNN has a surplus of the following Plants to dispose off:—

5000 YELLOW CALCEOLARIAS, aurea floribunda, autumn-struck, 12*s.* 6*d.* per 100.
5000 SCARLET GERANIUMS, autumn-struck, 12*s.* 6*d.* per 100.
5000 VERBENAS, spring-struck, 10*s.* 6*d.* per 100.
5000 Single and Double PETUNIAS, spring-struck, 12*s.* 6*d.* per 100.
5000 FUCHSIAS, spring-struck, 12*s.* 6*d.* per 100.
5000 DAHLIAS, spring-struck, 16*s.* per 100.

The best sent out in 1861, well rooted, shook out and packed.

N.B.—All orders to be accompanied with a Post-office Order.

Florist and Seedsman, St. Augustine's Street, Norwich.

Calceolaria Canariensis.

G. SMITH has great pleasure in recommending this unsurpassed and beautiful variety; it has been shown in the past season at all the leading exhibitions round London, and has established itself as the best for all purposes, as it gives two-thirds more bloom in a pot and one-third more in beds than any other Calceolaria in cultivation; colour bright Canary Yellow, the mouth closed, so as to resist the wet; the habit is all that could be wished. Has taken a First-class Certificate at the Royal Botanic Gardens, Regent's Park; also a First-class Certificate from the Floral Committee of the Horticultural Society, for its fine qualities. Now ready, in strong plants, at 1*s.* 6*d.* each, or 12*s.* per dozen. A remittance must accompany the order to unknown correspondents.

Tollington Nursery, Hornsey Road, Islington, London, N.

PRIZE PHLOXES. | PRIZE GLADIOLUS.
PRIZE CHRYSANTHEMUMS.

JOHN CATTELL'S Collections of the above obtained the following Prizes at the London Exhibitions during the past season:—

PHLOXES.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

GLADIOLUS.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

CHRYSANTHEMUMS.

First Prize, for the best 24 Cut Blooms, at the Royal Horticultural Society's Grand Fruit and Chrysanthemum Show, held at South Kensington Gardens.

First Prize, for the best 24 Cut Blooms, at the Stoke Newington Chrysanthemum Exhibition.

First Prize, for the best 24 Cut Blooms, at the Crystal Palace Chrysanthemum Exhibition.

J. C.'s collections include every variety of note, and he now offers them at the low prices named below, the selection being left to himself.

PHLOXES, 6*s.*, 9*s.*, and 12*s.* per dozen.
CHRYSANTHEMUMS, 6*s.* per dozen.
GLADIOLUS, 6*s.*, 9*s.*, 12*s.*, and 18*s.* per dozen bulbs

CATALOGUES will be ready shortly, and forwarded post paid on application.

Strong plants of the Chrysanthemums and Phloxes will be ready early in April.

Nursery and Seed Establishment, Westerham, Kent.

WILLIAM BARRON, Elvaston Castle, Derby, can supply strong and well-rooted plants as under:—

ABIES DOUGLASII, 3 years once transplanted, per 100 25*s.* 0*d.*
This tree attains a height of more than 200 feet, highly ornamental, the same as the tall flagpole at Kew.

PINUS LARICIO, 18 ins. to 2 feet .. . per 1000 70 0
This produces timber for railway sleepers sooner than the Larch, and is used as spars and masts in the French navy.

BERBERIS DARWINI, the most beautiful of the tribe, fit either for the flower garden or game cover, with rich orange-coloured flowers; Pheasants are very fond of the berries, which are produced in profusion. Strong plants, 3 years old per 100 20 0
Ditto ditto, 2 years old 15 0
Ditto ditto, 1 year old 12 6

PICEA NOBILIS, 3 to 4 years old, plants from seed, (This is the most lovely of all Firs.) each, 10*s.* to 15 0

WELLINGTONIAS from 2 to 9 feet. Also specimens of the rarest Conifers.

Remittances to accompany orders from unknown correspondents. Post-office Orders payable at Derby.

SELECT PRICED LISTS post free on application.

ESTABLISHED UPWARDS OF A CENTURY.

BUTLER & McCULLOCH,

SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.

Gladiolus, Seedlings of Gandavensis.

100 in 20 very Choice Varieties	£2 2 0
50 in 20 " " "	1 1 0
20 in 20 " " "	0 10 0
12 in 12 " " "	6*s.*, 9*s.*, and 12 0

Gladiolus, Seedlings of Ramosus.

100 in 50 very Choice Varieties	2 2 0
50 in 50 " " "	1 0 0
25 in 25 " " "	0 10 0
12 in 12 " " "	6*s.*, 9*s.*, and 12 0

Cheap Gladioli for Massing, Clumping, &c.

	per 100.
BRENCHLEYENSIS, vermilion	£1 5 0
GANDAVENSIS, scarlet and yellow	0 15 0
COURANTI FULGENS, brilliant crimson	1 1 0
TRIOMPHE D'ENGHIEN, carmine and yellow ..	1 1 0
2 Splendid Mixed Seedlings of GANDAVENSIS ..	0 17 6
QUEEN VICTORIA, scarlet and white	0 15 6
RAMOSUS, bright rose and white	0 15 6
Splendid Mixed Seedlings of RAMOSUS	1 0 0
FLORIBUNDUS, white and pink	0 15 6

BUTLER AND McCULLOCH, SEED MERCHANTS, COVENT GARDEN MARKET, W.C.

BARR & SUGDEN
12 KING ST. COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

CONVOLVULUS CANTABRICUS STELLATUS NOVUS (THE TRUE),

Raised by our SARDINIAN CORRESPONDENT," and brought out by us this Spring. It is one of the most beautiful Novelties of the Season. The plant is illustrated in our "Guide to the Flower Garden, &c." and also in the "Floral Magazine." In growth and habit resembling C. cantabricus, but with flowers and foliage perfectly distinct; the flowers are of a beautiful pink, with a pure white double star in the centre, and are produced in the greatest profusion; it forms a splendid bedding plant, and is exceedingly elegant in hanging baskets Seed 1*s.* per packet. Coloured Plates by ANDREWS, 6*d.* each.]

SEEDS FOR PRESENT SOWING.

COLLECTIONS of CARNATIONS and PICOTEES,

Saved by our Special "Sardinian Correspondent," and distinguished by his Crest, thus and initials G. E. S.

For the colours contained in the following Collections see our "Guide to the Flower Garden," or our Advertisement of these on back page of *Gardeners' Chronicle*, January 11th.

CARNATIONS, Section I.

This Section consists of Four Collections, each forming a distinct feature.

COLLECTION "A"—SELFS.
Contains 12 superb varieties of 10 seeds each, 3*s.*

COLLECTION "B"—FLAKE.
Contains 12 superb varieties of 10 seeds each, 3*s.*

COLLECTION "C"—BIZARRES.
Contains 12 superb varieties of 10 seeds each, 3*s.*

COLLECTION "D"—FANCY.
Contains 12 superb varieties of 10 seeds each, 3*s.*

PERPETUAL or TREE CARNATION, Section III.

COLLECTION "H"—SELFS.
Contains 12 fine varieties of 10 seeds each, 3*s.*

COLLECTION "I"—FLAKES.
Contains 12 fine varieties of 10 seeds each, 3*s.*

COLLECTION "K"—FANCY.
Contains 12 fine varieties of 10 seeds each, 3*s.*

PICOTEE, Section IV.

The Picotee is distinguished from the Carnation by the flowers being margined instead of striped. This Section includes Three Collections.

COLLECTION "L"—WHITE GROUND.
Contains 12 superb varieties of 10 seeds each, 3*s.*

COLLECTION "M"—YELLOW.
Contains 12 superb varieties of 10 seeds each, 3*s.*

ASSORTMENTS FROM THE ABOVE COLLECTIONS:

CARNATIONS.—An assortment of 100 varieties, each consisting of 10 seeds .. .. 18*s.*
CARNATIONS. ditto of 50 ditto .. 10*s.*
PICOTEES. ditto of 100 ditto .. 18*s.*
" ditto of 50 ditto .. 10*s.*

Mixed Packets of Carnation, 1*s.* 6*d.*
Do. do. of Picotee, 1*s.*

PELARGONIUM SEED, in Sealed Packets.

Received from our "Sardinian Correspondent."

COLLECTION "O"
Contains 12 splendid varieties, 10 seeds each, 5*s.* 6*d.*, of large-flowered Pelargoniums.

COLLECTION "P"
Contains 12 splendid varieties, 10 seeds each, 5*s.* 6*d.*, of spotted Pelargoniums.

COLLECTION "Q"
Contains 12 splendid varieties, 10 seeds each, 5*s.* 6*d.*, of Fancy Pelargoniums.

Assortment of 36 splendid varieties of large-flowered Pelargoniums, 10 seeds of each, 12*s.* 6*d.*

Assortment of 36 splendid varieties of Fancy Pelargoniums, 10 seeds of each, 12*s.* 6*d.*

Dried Specimens of many magnificent Seedlings, flowered in 1861, may be seen at our Establishment.

ORNAMENTAL FOLIAGED PLANTS.

Fine foliaged plants, and such as are of stately growth, have of late years been much sought after for the adornment of the flower-garden, terraces, pleasure-grounds, lawns, select shrubberies, carriage-drives, &c. Besides relieving the monotony too frequently to be met with, plants of this class impart a somewhat Oriental aspect.

The CANNA for such purposes stands unrivalled; its large picturesque foliage and spikes of vivid-coloured flowers producing a truly magnificent effect when planted in groups, whether on the lawn, in the centre of large beds, or in the mixed flower border. When planted in groups and edged with scarlet Geraniums, Verbenas, &c., they produce an effect beautiful beyond description.

CANNA ROOTS.

100 Strong Roots, our own selection	£5 5 0
50 Ditto ditto ditto	2 12 0
25 Strong Roots, our own selection	£1 6 6
12 Ditto ditto ditto	9*s.*, 12*s.*, to 0 18 0

BARR AND SUGDEN, SEED MERCHANTS,
12, KING STREET, COVENT GARDEN, LONDON, W.C.
(OPPOSITE THE GARRICK CLUB.)

The Royal Horticultural Society's Exhibition.

SEEDS that will be required to obtain the Prizes offered at the Autumn Show, Sept. 10. See advertisement in *Gardeners' Chronicle*, March 15.

	s.	d.
ASTER, Truffaut's Pæony-flowered, 24 varieties	4	0
,, Giant Emperor, 13 varieties	6	6
,, Dwarf Chrysanthemum-flowered, 10 varieties..	1	8
,, Tall ,, ,, 12 ,, ..	2	0
,, Double Crown, 4 varieties	0	8
,, ,, Dwarf Pyramidal Bouquet, 12 varieties	2	0
,, ,, Quilled, 12 varieties	2	0
,, ,, ,, Hedgehog, 6 varieties	1	0
,, ,, ,, Reid's extra fine per packet	0	6
,, ,, Globe Pæony-flowered, new ,,	0	6
Mixed packets of each of the above kinds	0	6
STOCK, dwarf German Ten-week, 24 varieties.. ..	4	0
,, large flowering ,, 20 ,, ...	8	4
,, Autumnal or Intermediate, 8 ,, ...	1	4
,, Emperor, 5 ,, ...	0	10
,, Brompton, 6 ,, ...	1	0
For other choice varieties see Catalogue.		
Mixed packets of each of the above German Stocks ..	0	6
PHLOX DRUMMONDII, 13 new varieties, each p. pkt.	0	6
ORNAMENTAL GRASSES, EVERLASTINGS, and Imported GOURDS .. ..per packet	0	6

Free by post.

For the character of the above, see report of the Annuals grown at Chiswick, 1861, in *Gardeners' Chronicle*, March 15, p. 237.

JAMES TYNAN, Importer of Continental Seeds.
Seed Warehouse, 68, Great George Street, Liverpool.

Choice Dahlia Seed.

H. LEGGE has more than he requires, saved from his Unrivalled Collection, 50 Seeds for 2s. 6d. per packet. H. L. also intends sending out on the 1st of May his superb NEW DAHLIA "Prince of Wales," bright yellow, tipped with pure white, extra fine and constant. Those who do not grow this Fancy will lose the best of this year. 10s. 6d. per plant.

CATALOGUES can be had by inclosing One Stamp as above. Marsh Side, Edmonton, N.

New Dahlias.

JOHN KEYNES, F.R.H.S., Castle Street Nurseries, Salisbury, will be prepared to send out the following first-class New and approved DAHLIAS the first week of May.

J. KEYNES considers them quite equal to any he has had the honour to offer:—

	s.	d.
Black Prince (Keynes'), dark mulberry	7	6
Countess Portsmouth (Rawling's), cream-tipped cherry	10	6
Donald Beaton (Dodd's), dark maroon	10	6
Empress of India (Rawling's), very dark..	10	6
Goldfinder (Keynes'), yellow tipped deep orange ..	10	6
Imperial (Keynes'), deep bright plum	10	6
John Harrison (Harrison's), light scarlet, red	10	6
Lady Elcho (Dodd's), light salmon	7	6
Maria Carter (Keynes'), white edged deep carmine ..	10	6
Minnie Dodds (Dodd's), dove colour	10	6
Oscar (Adde's), light scarlet	10	6
Sir J. Outram (Rawling's), dark velvet	7	6
Maid of Bath (Hooper's), white tipped purple	10	6
FANCY FLOWERS.		
Blondin (Dodd's), crimson tipped white	10	6
Goldfinch (Keynes'), cream striped pink	10	6
Mrs. Crisp (Keynes'), purple tipped white	10	6
Reliance (Rawling's), maroon striped white and purple	10	6

These flowers have been exhibited, and taken many First Class Certificates, and shown in the winning Stands which took 19 First Prizes at the Great Exhibitions of the Royal Horticultural Society, Crystal Palace, &c.

CATALOGUES, with instructions for their growth, will be sent on application.

Salisbury, April 12.

NEWEST SORTS of DAHLIAS.—The following Novelties are the quintessence of the sorts of this beautiful autumnal flower, which were brought into the markets this year at very high prices—18s., 24s., and 27s. a bulb. Without exaggeration it may be said that the whole are paragons, each presenting in colour and form either a novelty or an improvement. These new sorts have been obtained by the most celebrated Dahlia cultivators of Germany, Messrs. Sieckmann and Mardner, from whom the undersigned has acquired a selection of the choicest sorts which gained Prizes at the Dahlia Show at Erfurt last autumn.

1. GRANDIFLORA.

GERMAN PINK.—Delicate pale rose on white ground, with light purple violet; pink-like striped and sprinkled.
HONOUR of GERMANY.—Beautiful salmon red, pale leather-yellow towards the edges, also alternating with pale rose tips on charming cherry-red ground and back. Incomparable Novelty.
. HENDERSON.—Dark cherry brown, with amaranthine and light violet border.
GARDENER'S SWEETHEART.—Light gold yellow, with brownish crimson tips, delicate colouring.
GARDENER'S FAVOURITE.—Dark rose peach blossoms, graceful tubular form.
AUTUMN QUEEN.—Pale pea green, with soft rose tint.
KOH-I-NOOR.—Light lemon yellow, large leaves.
LUDWIG STORCH.—Brilliant light Isabel colour on chamois ground, rare and beautiful colouring.
BEAUTIFUL PINK.—White, with light and dark purple violet, light blue stripes and sprinkles, beautiful rose form.
FATHERLAND'S ROSE.—Beautiful salmon rose, lighter towards the edges, rose form.
DELICATE PINK.—White, with delicate lilac and black purple, finely striped and sprinkled, charming.

2. LILLIPUTIANS (SMALL FLOWERED),
For small beds and pot cultivation.

GERMAN BELLIS.—Peach rose, with white tips.
,, SNOW ROSE.—Pure white, a beautiful Lilliputian in every sense.
ELIZABETH VON BETHMANN-HOLLWEG.—White, with light carmine ground and edges, very sharply and regularly marked.
MARGARET.—Shining gold yellow, with purple crimson tip.
MY LITTLE DEAR.—White, with purple violet tips; rose form.
LITTLE ROSA.—Pale lilac rose, with white centre.
GERMAN BOY.—Rose orange ground, deepening into crimson, with dark purple tips.
PRINCESS of LILLIPUTIANS.—White ground, with purple-violet tips, flowers abundantly.
PEARL.—This Dahlia is recommended as a Lilliputian of the first order. The flowers are pure white, well formed, of middle size, and upright; when only 1 foot high it already flowers abundantly. Well adapted for growing in pots.

Of the Novelties given above we furnish young, healthy, and vigorous plants at the choice of the purchaser, each sort, 6s.; and according to our own selection six sorts for 30s.; 12 sorts for 54s.; the whole collection for 80s. A liberal discount allowed to the Trade.

Our CATALOGUES of PLANTS for this year, Nos. 21 and 22, are forwarded post free on application.

N.B. Remittances to accompany orders from unknown correspondents. Letters prepaid, 6d.

H. LAURENTIUS, Horticultural Establishment, Leipsic, Saxony.

WM. WOOD AND SON have much pleasure in offering their superb collection of

PHLOXES.

All the newest and most approved Continental varieties, 12s. to 18s. per dozen.
Older, but approved kinds, 6s. to 9s. per dozen.

100 Phloxes, in 50 sorts, for 40s.	25 Phloxes, in 25 sorts 12s. 6d.
50 ,, 25 ,, 21s.	12 ,, 12 ,, 9s. 0d.

PENTSTEMONS.

New and first-rate varieties	18s. per dozen.
Older, but approved kinds	6s. to 9s. ,,
50 Pentstemons, in 25 sorts	21s. 0d.
25 ,, 25 ,, ...	12 6
12 ,, 12 ,, ...	9 0

ANTIRRHINUMS.

Per dozen .. .. 6s., 9s., and 12s.

HERBACEOUS PÆONIAS.

Per dozen .. ..12s., 18s., and 24s.

HERBACEOUS PLANTS.

Per dozen .. .. 6s., 9s., and 12s.

Plants presented to compensate for carriage.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

YELLOW and other PICOTEES, the largest Stock in the world.
The Trade liberally supplied.
Star Nursery, Slough.

PANSIES, the largest Collection in England.
The Trade liberally treated.
Star Nursery, Slough.

HOLLYHOCKS, HOLLYHOCKS, HOLLYHOCKS.—Fine plants and good collections of the above.
CATALOGUES on application.
Any one will be well used both as to quality and quantity.
Star Nursery, Slough.

Star Nursery, Slough.

WM. BRAGG begs to inform the Public generally that he can supply any quantity of DAHLIAS and BEDDING and other PLANTS of various sorts on cheap terms.

About 40 FRUITING VINES in pots. Prices various, and may be had on application.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.

RICHARD SMITH, Nurseryman, Worcester.

Bedding Geraniums.

EDWARD T. ATHERTON, NURSERYMAN, Chatteris, begs to offer good strong Plants of the following GERANIUMS for cash:—

ZONALE OR HORSE. Per doz.—	s.	d.	VARIEGATED LEAVED. Per doz.—	s.	d.
Lady of Loretto ..	4	0	Mrs. Lennox	4	0
Countess of Bective ..	3	0	Hendersoni	4	0
Fothergilli	3	0	Beauty	4	0
Model Nosegay	3	0	Shottisham Pet ..	4	0
Little David	3	6	Alma	4	0
Pitt's Superb	3	0	Countess of Warwick ..	4	0
Imperial Crimson ..	3	6	Golden Chain	4	0
Scarlet Perfection ..	4	0	St. Clair	4	0
Bishopstowe Scarlet ..	4	0	Silver Queen	4	0
Blackheath Beauty ..	6	6	Bridal Wreath	4	0
Beauté de Meldoise ..	6	6	Culford Beauty	4	0
Tom Thumb	3	0	Burning Bush	6	6
Warranted true to name.			Golden Tom Thumb ..	6	6
VARIEGATED LEAVED.			Golden Cerise Unique ..	6	6
Bijou	4	0	Jane	6	6
Perfection	3	6	Julia	6	6

Bedding Plants! Bedding Plants!

DILLISTONE AND CO. beg to offer strong healthy Plants of the above for the approaching Summer, of all the most approved kinds, and guarantee to give every satisfaction to all parties who may be pleased to favour them with their orders.

100 Plants of the finest varieties, selected from the following, will be sent for 25s.; 50 ditto, 14s.; Hamper, &c., included.

Geraniums	Verbenas	Petunias
Calceolarias	Fuchsias	Dahlias
Heliotropes	Phlox	Ageratums
Lobelias	Salvias	&c., &c.

CLIMBERS of the following kinds will be included where it is desired, viz.:—

Cobœas	Eccremocarpus	Lophosphermums
Maurandyas	Tropæolums	&c., &c.

A great reduction where 500 or more plants are taken. All the New Roses and Plants of the season. A remittance or reference from unknown correspondents is requisite. Post-Office Orders payable at Halstead.

Sturmer and Woodlands Nurseries, Halstead, Essex.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the most effective and useful bedding variety known. During the past season upwards of 5000 plants were grown in the gardens at Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.

*** For Testimonials and further particulars see *Gardeners' Chronicle* of February 22.

Plants after April 20, 1s. 6d. each. 12s. per doz. 50s. per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in riband-borders, and vases, this variety is one of the most useful and effective yet offered for sale.

Plants after April 20, 1s. 6d. each. 12s. per doz. 75s. per 100.

CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

Per packet—	s.	d.	Per packet—	s.	d.
Calceolaria, herbaceous..	2	6	Primula sinensis dentiflora	2	0
Cineraria cruenta ..	2	6	Primula sinensis albiflora	2	0
,, maritima	0	6	,, ,, dentiflora kermesina splendens ..	2	6
Erianthus Ravennæ ..	1	0	Verbena venosa	0	6
Lobelia erinus speciosa	1	0			
,, ,, major ..	1	6			

A PRICED and DESCRIPTIVE CATALOGUE of Vegetable, Agricultural, and Flower Seeds, forwarded post free to all applicants.

Exotic Nursery, Tooting, Surrey, S.

SUTTON'S COLLECTIONS of choice NEW FLOWER SEEDS (Post free).—Ladies and gentlemen requiring showy kinds of FLOWER SEEDS are respectfully recommended to leave the selection of sorts wholly or partly to us, and we will supply those which we know to be really worthy of cultivation.

COLLECTIONS of FLOWER SEEDS to be sent free by post.

	£	s.	d.
The best 100 sorts of Flower Seeds, hardy, half-hardy, and tender, with instructions	1	1	0
The best 50 sorts ditto, with instructions	0	10	6
The best 36 sorts ditto	0	7	6
The best 24 sorts ditto	0	5	0

SUTTON & SONS, Seed Growers, Reading, Berks.

Best Early Broccolies in Cultivation.

MITCHINSON'S EARLY WHITE CORNISH BROCCOLI.
PENZANCE DWARF EARLY WHITE BROCCOLI.

Good Seeds of the above Choice Early Broccolies can be had at 1s. per packet at

MITCHINSON'S Seed Warehouse, Truro, Cornwall

Choice Vegetable and Flower Seeds.

B. S. WILLIAMS will be happy to forward post free to all applicants his PRICED and DESCRIPTIVE SEED CATALOGUE for 1862, containing Select Lists of all the best seeds in cultivation, with useful suggestions for the guidance of Amateur cultivators.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Vegetable and Flower Seeds, &c.

ROBERT PARKER begs to announce that his Select Descriptive and Priced CATALOGUE of AGRICULTURAL, KITCHEN GARDEN, Imported GERMAN and other FLOWER SEEDS, Choice GLADIOLI, &c., is now ready, and will be forwarded post free on application.

The whole of the Seeds are warranted to be new and true to name, and are charged at the lowest remunerative prices.

An inspection and comparison with prices in other Catalogues is respectfully solicited.

The following, of which descriptions will be found in Catalogue, are specially recommended:—

	s.	d.
BEAN, Haricot Flagolet Jaune, six days earlier than any variety in cultivation .. .. .. per quart	2	6
BEET, Compact Topped or Pine Apple Short Top, per oz.	0	6
,, Selected Dwarf Red (Nutting's) .. .. ,,	0	9
CAULIFLOWER, Early Dwarf Erfurt .. .. ,,	2	0
,, New Early Mammoth or Frogmore Forcing .. ,,	3	6
CELERY, Imperial Dwarf Red (Hood's) .. .. ,,	1	0
CHÆROPHYLLUM BULBOSUM .. .. .. ,,	2	0
CUCUMBER, TELEGRAPH .. .. .. per packet	1	6
LETTUCE, MOOR PARK .. .. .. per oz.	2	0
PEA, GENERAL WYNDHAM .. .. per quart	1	3

Exotic Nursery, Tooting, Surrey, S.

REIGATE SILVER SAND.—Best quality, 10s. per ton, cash. Delivered to the Reigate Junction Railway. Truck of 4 or more tons loose, 9s. per ton, cash; 2 bushel bags, 9s. per dozen; 10d. per bushel.

WILLIAM SHORT, Ladbroke Road, Red Hill, Surrey.

Herbaceous and Alpine Plants.

STEPHEN BROWN, Sudbury, Suffolk, offers the following excellent selection. CATALOGUES supplied.

200 Showy and fine sorts, including many scarce ..	3l.	12s.
100 ditto ditto ditto	2	0
100 Showy and good kinds ditto	1	5

Selections per dozen, 4s., 6s., 9s., 12s., and 18s.

50 fine dwarf varieties suitable for Rock, 20s., or per dozen, 5s. to 9s.

PHLOX—50 fine varieties, 25s., or 6s. to 9s. per dozen.
GERMAN DAISIES—12 fine varieties, 4s. per dozen.
ANTIRRHINUM—12 fine varieties, 6s.; 12 splendid, new, extra, 9s. per dozen.
POTENTILLA—King of Crimsons, the finest crimson grown, of dwarf compact growth, flowers 2 to 2½ inches across, each 1s. 6d.; 15s. per dozen.
POTENTILLA—Sudbury Gem, rich orange flower, deeply spotted bright red, each 1s., or 10s. per dozen.
POTENTILLA—12 splendid vars., including the two above-named, 9s.; 12 fine, 6s.
GYNERIUM ARGENTEUM (Pampas Grass), strong plants, 1s. to 2s. 6d. each.
PENTSTEMON—12 choice vars., 9s.
PÆONY—12 very fine Double Chinese vars., 15s.
POLYANTHUS—First-rate laced vars., mixed, 4s. per dozen; 25s. per 100. Seed of the same per packet, 1s.
GERMAN DAISIES—12 fine vars., 4s.
IRIS GERMANICA—40 splendid vars., 18s.; 20 for 9s.
ALYSSUM SAXATILE, 4s. per dozen.
AQUILEGIA CALIFORNICA—Improvement of Skinnerii, larger and much brighter, 1s. 6d. each.
CHELONE BARBATA COCCINEA—Very bright scarlet, showy continuous flowering plant, 5s. per dozen.
DIANTHUS LACINIATUS—Fine strong plants, 5s. per dozen.
LINUM FLAVUM—Strong planrs, 6s. per dozen.
LINUM LEWISII—Very fine large flowering blue, profuse and continuous, 5s. per dozen.
MATRICARIA EXIMIA—Flowers profusely and continuous, pure white, very close and double Pyrethrum-like flowers.
MIMULUS CARDINALIS, in four distinct vars., Aurantiaca, Kermesina, Lahmonii, and Prince Imperial.—Very showy, hardy, profuse, and continuous flowering. The four for 2s. 6d.
PYRETHRUM DUCHESSE DE BRABANT—Fine large bright rose, free, continuous flowering and attractive, 9s. per dozen.
SAXIFRAGE—12 vars., excellent for rock, 5s.
SEDUM FABIANUM RUBRUM—A very fine pinky lilac, with large heads of flowers, very showy either for pots or ground. each 1s.; 9s. per dozen.
SEDUM—10 fine vars., extra for rock, 5s.
STIPA PINNATA (Feather Grass)—Fine plants, 5s. per dozen; 30s. per 100.
TRITOMA GLAUCA—Fine plants, 2s. 6d.; per dozen 24s.; small plants, 12s. per dozen.
TRITOMA UVARIA—Fine plants, 1s. 6d.; per dozen, 15s.; small, 9s. per dozen.
SPERGULA PILIFERA—Turfs each 15 inches in circumference for dividing into numerous tufts, 3s. 6d. per dozen; 25s. per 100; 10l. per 1000.
ROSES in POTS, Dwarf Hybrid Perpetual, China, Tea, Bourbon, and Noisettes, 9s. to 15s. per dozen.
ROSES, CLIMBING, in pots, in vars., 9s. per dozen.
CLIMBING PLANTS, hardy, in pots, 20 fine vars., 18s.; 12 fine vars., 10s.
CONIFERÆ, 25 choice hardy vars, 50s.

BEDDING PLANTS.

The General Stock is very fine and strong, and ready for immediate delivery. Prices low.

CATALOGUES free on application.

For Goods 20s. and upwards, carriage free to London, and all stations on the two Norwich lines; and with orders of 40s. and upwards, extra plants gratis for further carriage.

Remittances required from unknown correspondents.

STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

ROYAL HORTICULTURAL SOCIETY.—PRIZES.
Lady Dorothy Nevill offers Two Prizes, one of 6 guineas and the other of 4 guineas, for the three most tastefully arranged GROUPS of FLOWERS for the DECORATION of the DRAWING-ROOM, to be awarded at the First Great Exhibition, May 21.
The mode of showing these is left to the taste of the Exhibitor.
The Prizes will be awarded by a Jury of Ladies.

SPECIAL PRIZES for the best Three GROUPS of FRUIT and FLOWERS for the DECORATION of the DINNER TABLE are offered by Sir C. Wentworth Dilke, Bart., Vice-President of the Royal Horticultural Society, to be awarded at the Second Great Exhibition, Wednesday, June 11. First Prize, Gold Knightian Medal, or 10*l.*; Second Prize, Gold Banksian Medal, or 7*l.*; Third Prize, Society's Large Silver Medal, or 3*l.*
Note.—Beautiful arrangement will be the test of merit in this Exhibition; valuable Flowers or Fruits are therefore not demanded.
Each set must consist of Three Groups, and may be either one of Flowers and two of Fruit, or two of Flowers and one of Fruit, or Fruit and Flowers mixed in all three.
They may be shown either in épergnes, glass or china dishes, wicker or wire work, or in any other way most to the taste of the Exhibitor.
Ladies are invited to join in the competition.
The Prizes will be awarded by a Jury of Ladies.

A PRIZE of 5*l.* is offered by one of the Fellows of the Royal Horticultural Society for the 12 best STANDARD PLANTS for the DECORATION of the DINNER TABLE, to be awarded at the Show of Autumn Flowers, on September 10.
The Plants must be ornamental, either for their foliage, flowers, or fruit, and must be grown in pots not exceeding 6 inches in diameter; the foliage, flowers, and fruit must not be less than 20 inches nor more than 24 inches clear from the bottom of the pot.
Elegance of form, slenderness of stem, and variety of colour, will be the tests of excellence.
The groups will be received as late as 10 o'clock, A.M., PROVIDED SPACE SHALL HAVE BEEN SECURED FOR THEM THE DAY BEFORE. Letters to be addressed to Mr. G. Eyles, Royal Horticultural Society's Garden, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY. AUTUMN SHOW, September 10, 1862.—An Additional Prize of 10*l.* will be given for the Best Specimen of a CONSERVATORY TUB. There is no restriction as to material, size, form, or design. It may be of wood, slate, stone, pottery ware, Terra Cotta, or any other substance. It may be in one piece or in many, fastened or bound together, so as to take to pieces. Fitness for its purpose, elegance of design, superiority of workmanship, and cheapness, will be the test of merit.

ROYAL HORTICULTURAL SOCIETY.
Special PRIZES for the March Show in 1863.
10*l.* for the Three Best CAMELLIAS.
3*l.* for the Three Best TREE MIGNONETTES.

ROYAL HORTICULTURAL SOCIETY. FLORAL COMMITTEE.
The Committee proposes to undertake, during the present season, an examination of the varieties of the following groups of Flowers; namely:—Variegated Pelargoniums, Fuchsias, Gloxinias, and Bedding and Pompon Dahlias. Novelties in the classes which have been already reported on, especially Bedding Pelargoniums, Verbenas, Pentstemons, and Annuals, will also be received and grown for trial.
Contributions towards completing the collections of the above-mentioned flowers, are invited to be sent as early as possible to "Mr. Eyles, Royal Horticultural Society's Garden, Chiswick, W."
Thomas Moore, Secretary to the Committee.

ROYAL HORTICULTURAL SOCIETY.—FLORAL COMMITTEE.
LIST OF AWARDS, APRIL 9, 1862.
First Class Certificate.
Rhododendron Denisonii, from Mr. Bousie, Stoke.
Azalea Duc d'Aremberg, from Messrs. F. & A. Smith, Dulwich.
Aralia leptophylla, Grevillea Hillii, from Messrs. Veitch & Son, Exeter and Chelsea.
Second Class Certificate.
Cineraria Lord Elgin, from Mr. James, Isleworth.
Commendation.
Rhododendron McNabii, from Mr. Bousie, Stoke.
Cineraria carminata variegata, from Messrs. F. & A. Smith.
Auricula Mrs. Eyles, from Jas. Holland, Gr. to R. W. Peak, Esq., Isleworth.
Primula sinensis (fimb. fl. pl.), The Fairy, from Messrs. F. & A. Smith.
Thomas Moore, Secretary to the Committee.

ROYAL BOTANIC SOCIETY, Regent's Park.
GENERAL EXHIBITIONS of PLANTS, FLOWERS, and FRUIT—WEDNESDAYS, May 28, June 18, and July 9.
AMERICAN PLANTS—MONDAY, June 9.
Tickets to be obtained at the Gardens only, by vouchers from Fellows or Members of the Society. Price on or before Saturday, May 17, 4*s.*; after that day, 5*s.*; or on the days of Exhibition, 7*s.* 6*d.* each.
SPRING EXHIBITIONS every Wednesday to May 7, at 2 o'clock.

GRAND HORTICULTURAL FETE and ROSE SHOW in connection with the Exhibition of the NORTHAMPTONSHIRE AGRICULTURAL SOCIETY in BURGHLEY PARK, STAMFORD, on THURSDAY, July 17.
The Premiums offered amount to 200*l.*, and are open to all England.
The Schedule, with Rules, &c., may be had upon application to Messrs. Laxton & Hewitt, Hon. Secs., Stamford.

BRIGHTON and SUSSEX FLORICULTURAL SOCIETY'S GRAND EXHIBITIONS for 1862 will be held on the following days, viz.:—
SUMMER SHOW—WEDNESDAY, June 25, and THURSDAY, June 26.
AUTUMN—WEDNESDAY, Sept. 17, and THURSDAY, Sept. 18, on the same grand scale as in former years. Extra amounts have been added in the 1st Division for the best ten plants of Stove and Greenhouse Plants. Also for Ornamental and Fine-foliaged Plants; and prizes given for trays of six sorts of Vegetables.
Schedules can be obtained of the Secretary, 96, St. James's Street; or E. Spary, Queen's Graperies, Superintendent of the Exhibitions. Edward Carpenter, Secretary.
Brighton, April 12.

ROYAL HORTICULTURAL SOCIETY.

AZALEA SHOW, April 9, 1862.

AWARDS OF THE JUDGES.

Class 1.—12 GREENHOUSE AZALEAS, distinct kinds. (Nurserymen.)
1st Prize to Charles Turner, Royal Nurseries, Slough, 2*l.*
2d, James Ivery & Son, Dorking and Reigate Nurseries, Surrey, 1*l.* 10*s.*
3d, J. & J. Fraser, The Nurseries, Lea Bridge Road, Leyton, Essex, 15*s.*

Class 2.—9 GREENHOUSE AZALEAS, distinct kinds. (Amateurs.)
1st, Thomas Todman, Gr. to R. Hudson, Esq., Clapham Common, 2*l.*
2d, Mr. Blog, Gr. to S. Gassiot, Esq., Clapham Common, 1*l.* 10*s.*
3d, Matthew Higgs, Gr. to Mrs. Barchard, Putney Heath, 15*s.*
4th, James Tegg, Gr. to Baron Hambro, Roehampton, 10*s.*

Class 3.—6 GREENHOUSE AZALEAS, distinct kinds. (Amateurs.)
1st, Thomas Todman, Gr. to R. Hudson, Esq., Clapham Common, 1*l.* 10*s.*
2d, James Tegg, Gr. to Baron Hambro, Roehampton, 1*l.*

Class 4.—6 GREENHOUSE AZALEAS, new distinct kinds. (Open.)
1st, Charles Turner, Royal Nurseries, Slough, 1*l.* 10*s.*
2d, James Ivery & Son, Dorking and Reigate Nurseries, Surrey, 1*l.*

Class 5.—3 GREENHOUSE AZALEAS, new distinct kinds. (Amateurs.)
1st, Thomas Todman, Gr. to R. Hudson, Esq., Clapham Common, 1*l.*

Class 6.—Single specimen of GREENHOUSE AZALEA. (Open.)
1st, Charles Turner, Royal Nurseries, Slough, 1*l.*
2d, James Ivery & Son, Dorking and Reigate Nurseries, Surrey, 15*s.*
3d, Thomas Todman, Gr. to R. Hudson, Esq., Clapham Common, 10*s.*

Class 7.—6 RHODODENDRONS in bloom, distinct kinds. (Open.)
1st, J. Veitch & Son, Royal Exotic Nursery, Chelsea and Exeter, 2*l.*

Class 8.—3 RHODODENDRONS in bloom, distinct kinds. (Open.)
1st, W. Young, Gr. to R. Barclay, Esq., West Hill, Highgate, N., 1*l.*

Class 9.—Single Specimen of RHODODENDRON. (Open.)
1st, J. Veitch & Son, Royal Exotic Nursery, Chelsea and Exeter, 1*l.*
2d, W. Young, Gr. to R. Barclay, Esq., West Hill, Highgate, 15*s.*

Class 10.—9 CINERARIAS, distinct kinds. (Nurserymen.)
1st, J. Dobson & Sons, Woodlands Nursery, Isleworth, 2*l.*
2d, Charles Turner, Royal Nurseries, Slough, 1*l.* 10*s.*

Class 11.—6 CINERARIAS, distinct kinds. (Amateurs.)
1st, P. Lamb, Gr. to Miss Thackthwaite, Norwood Green, Southall, 1*l.* 10*l.*
2d, John Wiggins, Gr. to Walter Beck, Esq., Worton Cottage, Isleworth, 1*l.*
3d, James Gray, Gr. to W. F. Watson, Esq., Isleworth, 15*s.*

Class 12.—12 SPRING FLOWERS, forced, distinct kinds. (Open.)
1st, J. & J. Fraser, The Nurseries, Lea Bridge Road, Leyton, Essex, 2*l.*
2d, Veitch & Son, Royal Exotic Nursery, Chelsea and Exeter, 1*l.* 10*s.*
3d, W. Cutbush & Son, Highgate Nurseries, N., 15*s.*

Class 13.—12 GREENHOUSE PLANTS in Flower, not forced, distinct. (Open.)
1st, J. Veitch & Son, Royal Exotic Nursery, Chelsea and Exeter, 2*l.*
2d, J. & J. Fraser, The Nurseries, Lea Bridge Road, Leyton, Essex, 1*l.* 10*s.*
3d, J. & C. Lee, Vineyard Nursery, Hammersmith, 15*s.*

Class 14.—12 HARDY HERBACEOUS PLANTS in Flower. (Open.)
1st, B. S. Williams, Paradise Nursery, Holloway, 1*l.*
2d, W. Young, Gr. to R. Barclay, Esq., West Hill, Highgate, 1*l.*

Class 15.—9 AURICULAS, distinct kinds. (Nurserymen.)
1st, Charles Turner, Royal Nurseries, Slough, 1*l.* 10*s.*
2d, J. Dobson & Son, Woodlands Nursery, Isleworth, 1*l.*

Class 16.—6 AURICULAS, distinct kinds. (Amateurs.)
1st, Rev. H. H. Dombrain, Deal, 1*l.* 10*s.*
2d, J. James, Gr. to W. F. Watson, Esq., Isleworth, 1*l.*
3d, James Holland, Gr. to R. W. Peak, Esq., Spring Grove, Isleworth, 10*s.*

Prizes were awarded as under for the following MISCELLANEOUS PLANTS and FLOWERS:—
1st, W. Bull, King's Road, Chelsea, for Group of New and Rare and other Plants, 1*l.* 10*s.*
Equal 2d, W. W. Cutbush & Son, Highgate Nurseries, N., for Collection of 50 Hyacinths, 1*l.*
Equal 2d, W. Paul, Cheshunt Nurseries, Waltham Cross, for 4 Boxes of Cut Roses, 1*l.*
Equal 2d, Paul & Son, The Old Nurseries, Cheshunt, Herts, 5 Boxes of Cut Roses, 1*l.*
Equal 2d, Paul & Son, The Old Nurseries, Cheshunt, Herts, for 12 Roses in Pots, 1*l.*
Equal 2d, W. Young, Gr. to R. Barclay, Esq., West Hill, Highgate, for 4 Tall Cacti, 1*l.*
Equal 2d, J. Luscombe, Combe Royal, Kingsbridge, South Devon, for Cut Blooms of Rhododendrons (hybrids from arboreum and cinnamomeum), grown in the open air, 1*l.*
Equal 2d, J. Veitch & Son, Royal Exotic Nursery, Chelsea, for Collection of Azaleas, 1*l.*
Equal 2d, B. S. Williams, Paradise Nursery, Holloway, for Collection of Amaryllis, 1*l.*
3d, John Salter, Versailles Nursery, Hammersmith, for Collection of hardy variegated plants, 15*s.*
4th, W. Paul, Cheshunt Nurseries, Waltham Cross, for Cut Rose Beauty of Waltham, 10*s.*
Equal 4th, Jas. Tegg, Gr. to Baron Hambro, Roehampton, for Erica Sindryana, 10*s.*
Equal 4th, W. Bragg, Star Nursery, Slough, for Box of Pansies, 10*s.*
Equal 4th, B. S. Williams, Paradise Nursery, Holloway, for a Collection of Plants, 10*s.*
Equal 4th, B. S. Williams, Paradise Nursery, Holloway, Alsophila species, 10*s.*
Extra, Charles Turner, Royal Nursery, Slough, for Seedling Cineraria Artiste, 7*s.* 6*d.*

ROYAL BOTANIC SOCIETY OF LONDON,

REGENT'S PARK, N.W.

SPRING SHOW, April 9, 1862.

12 HYACINTHS.
Silver Medal to Mr. Young, Gr. to R. Barclay, Esq., Highgate.
Silver Medal to Messrs. W. Cutbush & Son, Highgate.
Small Silver Medal to Mr. Turner, Slough.

6 VARIEGATED BEGONIAS.
Small Silver Medal to Mr. Lakeman, Gr. to J. Campbell, Esq., Hendon.
Bronze Medal to Mr. Cross, Gr. to Sir F. H. Goldsmid, Bart., St. John's Lodge, Regent's Park.
Bronze Medal to Mr. Young, Highgate.
Small Bronze Medal to Messrs. Cutbush & Son, Highgate.

6 EPACRIS.
Small Silver Medal to Mr. Cross, Gr., St. John's Lodge.

NEW PLANTS, &c.
1st Class Certificate to Mr. Standish, Bagshot, for Camellia Comtesse Lavinia Maggi, a very beautiful and perfect variety, with the flowers white, distinctly and freely striped with bright carmine.
1st Class Certificate to R. Warner, Esq., Broomfield, for Phalænopsis Schilleriana, a beautiful Manilla epiphyte, with prettily variegated leaves, and fragrant flowers nearly as large as those of P. amabilis, and of a delicate rose colour.
1st Class Certificate to Mr. R. Parker, Tooting, for "Yucca cornuta var.," a fine hardy evergreen, remarkable for its broad stiff concave or channelled leaves, of a deep green edged with red.
2d Class Certificate to Mr. W. Bull, Chelsea, for Colea Commersonii (floribunda), a small specimen of a stately stove plant, with immense whorls of about six imparipinnated leaves, consisting of six or eight pairs of elliptic oblong acuminate leaflets, and having large erect heart-shaped stipules in their axils.
2d Class Certificate to Mr. W. Bull, for Oreopanax dactylifolium, a Mexican shrub, with palmately lobed leaves clothed with rusty down, the segments themselves more or less lobed.
2d Class Certificate to Mr. Parker, for Centaurea argentea, a herbaceous plant with white cottony bipinnatifid leaves, having the crowded runcinate lobes cut into many divisions.

In this class were also shown the following:—Campylobotrys Ghiesbreghtii, a tall-growing species with four-angled stems; Gymnogramma pulchella crispa, a dwarf-habited Fern with the tips of the fronds curled under, and the under surface cream-coloured—both from Mr. Williams, Holloway. Gymnogramma Laucheana, a stiff-habited dwarfish gold Fern, said to be more hardy than others; Rhynchosia albo-nitens, a Mexican creeper with white blotched leaves, and long branched racemes of small brownish purple papilionaceous flowers. Begonia Keramis, the leaves of which are much silvered, and with a few acute marginal lobes—all from Mr. Bull. Cinerarias: Sensation, a large deep rosy crimson with white ring and large disk, showy; Amulet, a Magenta rose with well-defined white ring, and dark disk, but ribby; Fairy Ring, crimson rose with narrow white ring and dark disk; Cherub, a dark-disked variety tipped with deep rose-crimson; Flambeau, deep rose-crimson with dark disk; Modestum, magenta with white ring and grey disk; Roi de Feu, large deep crimson rose; and Primula sinensis (fimb. fl. pl.) delicata, already awarded a 1st class certificate—all from Messrs. F. and A. Smith, Dulwich. Fuchsia Meteor, a red-leaved variety described as having fine double flowers, but not yet in bloom—from Messrs. Carter & Co., Holborn.

MISCELLANEOUS.
Small Silver Medal to Mr. Williams, Holloway, for a collection of well-grown Ornamental-leaved Plants.
Small Silver Medal to Mr. Parker, Tooting, for a mixed group of showy flowering and other plants.
Bronze Medal to Mr. Cross, Gr., St. John's Lodge, for a mixed group of plants.
Bronze Medal to Messrs. Cutbush & Son, Highgate, for a fine collection of Tulips.
Small Bronze Medal to Messrs. Dobson & Son, Isleworth, for 6 Cinerarias; and the same for a collection of Tulips.
Small Bronze Medal to Mr. James, Gr. to W. F. Watson, Esq., Isleworth, for 6 Auriculas; the same for 6 Pansies in pots and the same for a stand of 12 blooms of Pansies.
Small Bronze Medal to Messrs. E. G. Henderson & Son, St. John's Wood, for a small miscellaneous collection, containing some shrubby examples of the large-flowered Mignonette.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s.; 20 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

Chrysanthemums.

W. HOLMES, F.R.H.S., has a fine stock of the above, including Little Harry, Lady Hardinge, Leda, Linda, Rifleman, Florence, &c., &c., all at 5s. per dozen.

DESCRIPTIVE CATALOGUES of the above, also Dahlias, Fuchsias, Verbenas, Geraniums, Antirrhinums, Petunias, &c., free for one stamp.

Frampton Park Nursery, Hackney, N.E.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Fine Vines from Eyes in Pots.

WM. CUTBUSH, JUN., Barnet Nurseries, Barnet, Herts, begs to invite an inspection of his fine STOCK of FRUITING and other VINES, consisting of all the best varieties in cultivation. Also to his fine stock of Specimen, Half-specimen, and young Plants of NEW HOLLAND PLANTS, INDIAN AZALEAS, and STOVE PLANTS.

CATALOGUES on application.

Strawberry Plants.

WM. JAS. NICHOLSON again offers strong laid Plants of his Grand Collection of more than 200 varieties of English, French, Belgian, American, and other STRAWBERRIES, including all the new and fine sorts. A Catalogue sent on application.

A New, Enlarged and Improved CATALOGUE will be published in Autumn, when many new sorts well tested will be offered with confidence.

WILLIAM JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

Superb Hollyhocks.

R. B. BIRCHAM begs to state that he has several thousands of fine established plants of the leading varieties of SHOW HOLLYHOCKS, which he should be happy to offer upon advantageous terms to any nurseryman or florist who may require them.

Price per hundred upon application, and CATALOGUE forwarded by R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk. Carriage paid to London and Peterborough.

Saffron Walden Nursery.

SUPERB DOUBLE HOLLYHOCKS.

NOW IS THE TIME FOR PLANTING!

WILLIAM CHATER has ready some thousands of SEEDLINGS suitable for planting in Borders, Shrubberries, or other ornamental grounds.

W. C. has also an immense Stock of fine healthy young Plants, named sorts, and invites attention to his newly classified list for full information respecting prices, colours, and description.

N.B. The Trade liberally dealt with, and special prices on application for quantities.

WILLIAM CHATER, Saffron Walden, Essex.

New Verbenas, Fuchsias, Petunias, &c., of 1861.

WM. KNIGHT begs to announce that he can supply good struck plants of the above in healthy stuff, from 5s. to 7s. per dozen.

Also extra strong CLIMBING ROSES, from 4s. to 6s. per dozen.

CATALOGUE post free on application.

Floral Nursery, Hailsham, near Hurst Green, Sussex.

Spring Catalogue.

JOHN CRANSTON'S SPRING CATALOGUE of "NEW ROSES" and PLANTS is now ready, and he will be happy to forward it on application.

It contains a descriptive list of the New Roses for 1862; select lists of Stove and Greenhouse Plants, Ferns, Azaleas, Fuchsias, Geraniums, Verbenas, Gladioli, and Miscellaneous Bedding Plants, &c.

Nurseries, King's Acre, near Hereford.

New Gloxinias.

MESSRS. F. AND A. SMITH beg to offer fine young healthy Plants of their NEW GLOXINIAS, which were exhibited at the Royal Botanic Gardens last year, when they received an "Extra Prize Medal" for their superior merit.

Our selection, 30s. per dozen.

New and beautiful variegated plant, CYPERUS ALTERNIFOLIUS VARIEGATUS, 21s. each.

F. & A. S. can offer the above in well established plants; it is the finest variegated Grass ever offered.

Dulwich Nurseries, near London, S.

Catalogue of Spring Plants now Ready.

GEORGE EDWARD, NURSERYMAN, 1, King Street, York, begs to inform the Public that his CATALOGUE of GERANIUMS, DAHLIAS, CARNATIONS, PICOTEES, FUCHSIAS, VERBENAS, and other Soft-wooded PLANTS, can be had on application.

The Catalogue contains a Treatise on the Cultivation of the Fuchsia, which he especially recommends to the notice of Amateurs.

York, April 12.

Verbena Fireball.

MESSRS. J. AND C. LEE having thoroughly proved VERBENA FIREBALL last summer, can recommend it as one of the best, if not the best, and most useful for bedding purposes, combining, as it does, the intense scarlet and compact truss of Firefly with the robust and free-flowering habit of Purple King.

To be sent out in May, price 12s. per dozen.

Nursery and Seed Establishment, Hammersmith, London, W.

The Flower Garden.

WOOD AND INGRAM beg to announce that their PRICED DESCRIPTIVE CATALOGUE is now published, and will be sent free on prepaid application.

It contains a choice selection of Show, Fancy, Zonale, Variegated, and Hybrid Bedding Geraniums, Fuchsias, Dahlias, Verbenas, Hollyhocks, Calceolarias, Chrysanthemums, Pansies, Petunias, British and Exotic Ferns, Phloxes; Stove and Greenhouse, Herbaceous and Rockwork Plants; Hardy Bulbs, Bedding Plants of every description, &c.

Nurseries, Huntingdon.

CHARLES TURNER'S GENERAL SPRING CATALOGUE of Achimenes, Azaleas, Cinerarias, Calceolarias, Chrysanthemums, both Large Flowering and Pompones; Dahlias, Fancy Dahlias, and Bedding Dahlias; Gloxinias; Pelargoniums, Show, Spotted, French, and Fancy; Variegated, Scarlet, and Hybrid Geraniums, and various other Bedding Plants; Hollyhocks, Heliotropiums, Petunias, Verbenas, as well as Florists' Flowers and Plants generally. The Eighteenth annual Edition of which is just published, and will be forwarded gratis and Post Free to any address.

CHARLES TURNER, The Royal Nurseries, Slough.

ONE-YEAR SEEDLING AMERICAN ARBOR-VITÆ .. .. per 1000 20s. 0d.
One-Year Seedling PICEA PINSAPO .. „ 60 0
„ „ ITALIAN UPRIGHT CYPRESS „ 20 0
Two-Year Seedling EVERGREEN OAKS .. „ 50 0
„ „ Transplanted CYPRESS, 6 to 9 in. „ 50 0

RICHARD SMITH, Nurseryman, Worcester.

COLLECTIONS of FLOWER SEEDS.

	s.	d.
The best 100 sorts, including hardy, half hardy, and tender	20	0
The best 50 ditto ditto ditto	10	0
The best 36 ditto ditto ditto	7	6
The best 24 ditto ditto ditto	5	0

RICHARD SMITH, Seed Merchant, Worcester.

SPLENDID NEW FUCHSIAS, DICTATOR and UNIVERSAL. Coloured Illustrations by Mr. ANDREWS of the two, in exchange for 12 postage stamps.

G. S. assures Fuchsia Growers that "Universal" is the finest Fuchsia ever offered. For description see CATALOGUE.

GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington, London, N.

GEORGE SMITH, FLORIST and SEEDSMAN, Common Side, Macclesfield, has now ready in good plants, package included:—

	s.	d.
12 finest Show PANSIES	6	0
24 „ „	10	0
24 DAHLIAS, fine sorts to name	6	0
24 VERBENAS of 1861	6	0
12 FUCHSIAS „	6	0

With a general assortment of BEDDING and GREENHOUSE PLANTS.

CATALOGUE on application.

The Gardeners' Chronicle.

SATURDAY, APRIL 12, 1862.

MANY years ago a writer on what is called practical Gardening addressed himself to the subject of American plants, in doing which he undertook to inform his readers how PEAT could be cheaply formed artificially. He expatiated on the beauty of such plants, the wonderful improvement made in their flowers, and the ease with which any body could grow them who had access to good peat. But as many persons are unable to procure the article, he ventured to enlighten them on the art of making it for themselves. Take, he said, leaves, the decaying refuse at the bottom of a woodstack, or of ditches and hedgerows, old tan, any garden rubbish; lay it in a heap to undergo further decomposition; after a time work it well with sand and loam, and then you have a mixture as good as peat from Bagshot or Wimbledon, or Woking.

With these recommendations let us request our readers to contrast the statements in a leading article of last week's *Gardeners' Chronicle* (p. 307), full of the wise counsels of long experience and sound scientific knowledge. Speaking of such a compost as that just described, the writer tells us that he should as soon think of potting plants in arsenic. And he is undoubtedly right. Anybody, in turning over such a heap after a few weeks of mild damp weather, will see here and there tiny streaks resembling bits of cotton wool, or films of cobweb. What are they but the insidious enemy from which death or incurable disease is about to spring? Every one of those tender threads carries mischief, and is a breeder of destruction among the crops to which it is applied. Even if the dangerous cobweb is not visible be sure it is there, only in a form too fine for human vision. You will know it by the fatal consequences it entails.

Some 20 years ago a zealous amateur, whose ambition soared higher than his purse, unluckily, for cheapness sake, took to growing Rhododendrons in the mischievous material described by "M. J. B." He obtained one spring some nice young plants from several nurseries, treated them with the greatest care, and was delighted at their healthy growth. But in the second spring something was the matter with his bushes. They flowered well, but made weak after-shoots; very few blossom-buds formed; by degrees a leaf or two here and there turned yellow and withered; and by the second autumn the plants were for the most part out of health. In the succeeding spring matters were worse; mischief made progress but growth not; small twigs now shrivelled, a branch or two here and there died and turned red; by another spring the case was hopeless. Upon taking the plants up it was found that the roots were dead at the point, and had made no growth; when broken they were brown, and the smallest possible white specks were found on the broken surface. This was an expensive experiment, and would have been still more unlucky had not our amateur convinced himself that he could not grow American plants in his land, and so discontinued his attempts.

There are only two ways in which leaves, bits of stick or rotten wood, twigs and similar refuse can be safely used. One way is to leave them in a heap till they are thoroughly rotted down, then to sift them through a fine sieve, rejecting the undecayed fragments, and again rotting down the siftings. The other is to char them; we do not mean to burn them; but to reduce them by heat and the exclusion of air to the state of charcoal dust: a process by no means so easy as may be supposed, but to be carried out by any experienced gardener after a few failures, which are sure to occur at first. And this is, in our opinion, by far the better method of the two; it is speedy, at once effectual, and destroys the eggs of every sort of insect. The former, on the other hand, is very slow, often the reverse of effectual, as we all know is more likely to invite the deposit of eggs than to destroy them, and does not possess one single advantage over charring except that any booby can do it.

THE Council of the Horticultural Society have given notice that in September next they will award a prize of 10*l.* to THE BEST ORNAMENTAL TUB for trees in pots. This is a decision which we believe would have been taken some time since had not the melancholy death of their Royal President caused such considerations to be postponed. Now that the announcement is made we trust that designers and workers in the materials required for garden "tubs," as they are called, will be alive to the importance of the subject. Nothing indeed can be more notorious than the absence from the shops of anything of the kind in the least resembling what is required for ornamental gardening. If any one thinks this a strong assertion, we invite him to inspect the hideous things which contain the beautiful trees now placed in Captain FOWKE's graceful conservatory in the Garden of the Society itself at South Kensington. Here and elsewhere stand pieces of hogsheads, clumsy rectangular cases of wood or slate, huge heavy brittle inverted and truncated cones (the ugliest of all forms) of pottery, or majolica abominations that make beauty herself repulsive. And this too in an age when the art of design is said to be making mighty progress under the influence, real or imaginary, of museums of science and art.

We have no intention of saying one word more upon the artistic part of the question. That must be left to the competitors for the prize. But it is desirable in the interest of gardeners that certain points—indispensible to the good health of trees or to the extensive employment of the article which shall be placed first by the Judges—should be clearly understood. In the first place the article must be reasonably low-priced; it must also be strong and durable; moreover if large it must be made so as to take to pieces, or if small so contrived that the ball of the plant can be easily withdrawn; and finally it must be made of materials that plants will thrive in. Every one of those conditions must be provided in addition to beauty of design.

Such being the case no metallic castings are admissible, partly because of their unmanageable temperature, and partly because of their oxidation. The material to be employed should be a fair non-conductor, and moderately porous. Possibly if unglazed pottery of any kind were proposed, some slight lining might be employed in addition to the earthenware; or a contrivance might be hit upon of interposing a layer of charcoal-fragments between the tub and the earth it contains. Skilful drainage and easy watering would also have to be provided.

Last of all comes the method of taking the tubs to pieces for removal, or when the roots require examination, or when exhausted earth has to be changed. It has been suggested that this might be effected by "staves" moveable like those in a wooden cask, all fitting together by a certain amount of bevelling at the edges. Such staves, or long pieces, might be richly ornamented, and securely bound together by copper or brass hoops made to open at some part of their length; tightened by a screw and nut, in the same way as a common French earthenware *poële* or fire-place. It is obvious that such hoops might be made to add much to the ornamentation of the "tub." The bottom of this would of course be moveable, might

be of wood, and could be so grooved at the circumference as to receive and secure the lower edge of the staves.

Could such, or any such, an apparatus be contrived, and the designer were to secure his right by patent, there can be no doubt that so large and steady a sale would be secured as to reward him nobly for his skill and taste.

It will be gratifying to our gardening friends to learn that the late Mr. George Harcourt of Nuneham has bequeathed to Mr. Henry Bailey, his skilful and excellent gardener, an annuity of 100*l.* a year for life, and a further sum of 100*l.* for the first year. Mr. Bailey has been at Nuneham for 26 years; and we trust he will long live to enjoy the well-deserved reward of his valuable services.

Probably there is no popular flower so ill represented in our public exhibitions as the Fuchsia, notwithstanding that it is naturally a plant of extreme elegance and beauty, and a great favourite with all amongst cultivators of every class. What we see exhibited in the majority of cases, consist of long straggling gawky bushes, half trees, mis-shapen, and lop-sided, with a very unequal distribution of flowers, the latter, especially when at all abundant, being altogether deficient in size and in quality. As usually produced Fuchsias are a blemish rather than otherwise in our exhibitions, and a never failing source of trouble and annoyance to judges as well as to exhibitors, as witness the discussion on the subject which took place during the past year. We now and then, indeed, hear of a few well-managed plants appearing at some country show, but such cases are rare; and certainly the metropolis has hitherto had nothing to boast of in this respect. We trust, however, the case is not hopeless.

The mistake which is made consists in showing old plants instead of young ones. Fuchsias 6 feet high, if well managed, may be all very well—a few of them—in a home conservatory, but brought out to an exhibition and staged half a dozen together to form a "collection," they are anything but calculated to excite admiration, and the greater the number of such collections brought together in competition, the further removed from admiration are the feelings they give rise to. When there is added to this large unwieldy size, as often happens, a total want of symmetry or proportion in the plants, the case is so much the worse; for when wanting in symmetry, whether it be a large specimen or a small one, a Fuchsia is wanting in one of its greatest beauties. In a plant so easily managed as this is, the exhibition of specimens which have not this quality of symmetry is moreover anything but creditable to the professional skill of the exhibitor. Even when well cultivated and not objectionable otherwise, the grenadier specimens we have been referring to are so ill-adapted for removal from place to place, that the sooner they are banished from flower shows the better. No doubt it is this growing and too common practice of exhibiting Fuchsia trees instead of dwarf neat well-grown bushes, which keeps away from our shows the many interesting novelties year after year produced, until their novelty has passed away, and with it half their charm.

Except when admissible as single specimens, or for some other special reason, no Fuchsia should be tolerated at a flower show after it is a year old. In other words, exhibition plants should always be grown from cuttings of the current year. It is quite within the bounds of possibility to produce from such plants handsome and thoroughly furnished specimens which would put to shame the majority of the plants which one generally meets with. Those who cannot do it may depend on it they have a lesson still to learn. There is even now time, though the season is far advanced, to produce good flowering plants by the late autumn months; but for our summer shows it would of course be necessary to commence some time earlier in the year.

Let us see what would be some of the advantages of following this plan, beyond the by no means inconsiderable ones of furnishing far handsomer subjects of exhibition, and avoiding most of the difficulties of transit from the garden to the show-ground. First, then, the flowers would be infinitely superior in quality. Every cultivator must know that he would obtain much finer blossoms from a young freely-grown plant than he could get out of a woody stem three, or four, or five years old, and it is the quality of the individual flowers, their size and substance, and the bright flush of colour incidental to youthful vigour, which makes all the difference between a first-class and an inferior specimen. Second: the new and superior varieties would have an earlier opportunity of appearing in public. Even the novelties of the current year, if "let out" in good time, and in a satisfactory state as to health and strength, might many of them make their *debut* in the course of the season; but varieties of the previous year would have no obstacle whatever but want of merit, to prevent them from winning public approval. Third: the number of exhibitors, and consequently of persons taking interest in the maintenance of exhibitions, would probably be increased, for but little accommodation would be required to grow the plants, and little difficulty would be experienced in transporting and staging them.

We repeat then, that no Fuchsia plant should be tolerated at a flower show after it is a year old, except it be admissible as a specialty, or as a single specimen of high cultivation. For the ordinary purposes of home decoration too, young plants like those referred to are far superior to older ones; though a few symmetrically grown pyramids, and here and there a well balanced standard, may also be found useful, especially when large conservatories have to be kept furnished with flowers.

If the managers of exhibitions and the framers of prize schedules, both metropolitan and provincial, would keep this desirable object, namely, the reformation of Exhibition Fuchsias, in view, and would uniformly work together to effect it, the reform would soon be accomplished; for if the awarding of prizes to the ill-conditioned samples now so often produced were rendered impossible by the conditions of the prize list, they would no longer continue to offend the public eye, but would be consigned to the rubbish heap, and their place supplied by others from which the cultivator might, with ordinary skill, hope to derive some credit. The classes we suggest for general adoption are these:—

Groups of 6, 9, or 12 varieties, from cuttings of the current year, in 8 or 10-inch pots.

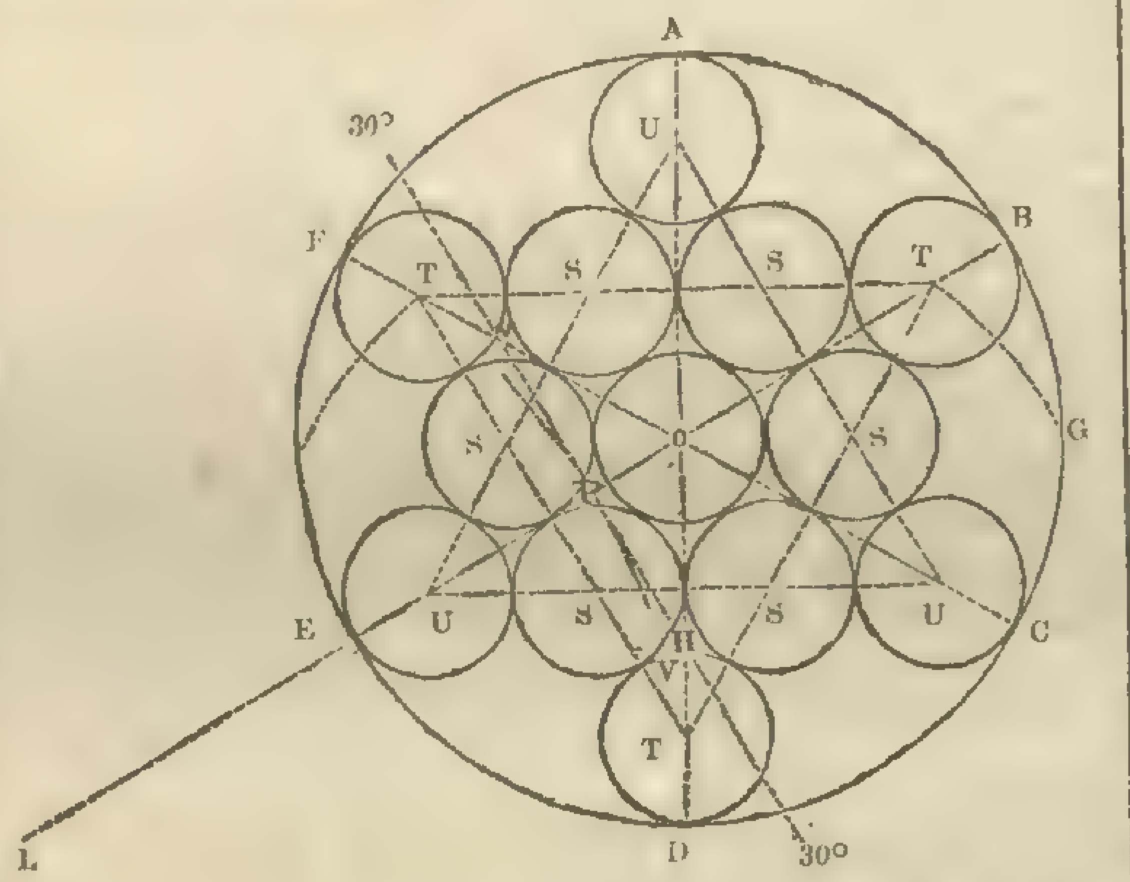
Groups of 3 standard plants, the stems not less than 2 feet high.

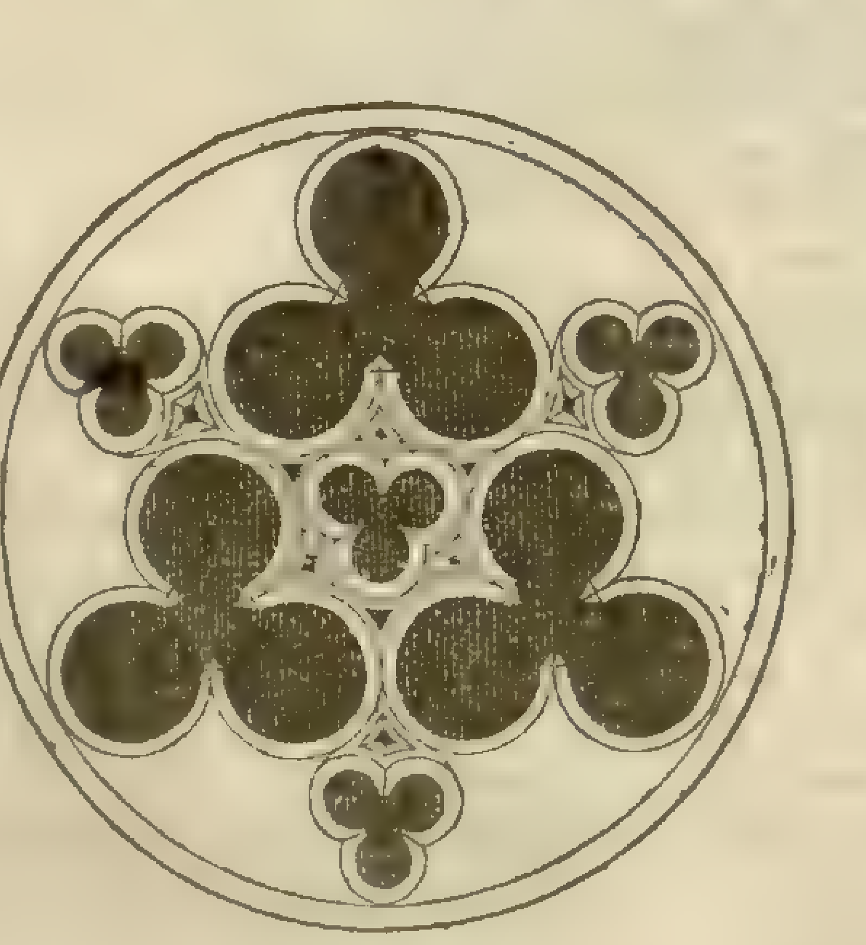
Single specimens of standard plants, with stems 2 to 3 feet high.

Single specimens of pyramidal plants, 4 to 6 feet high, and not less than 3 feet in diameter at the pot.

GEOMETRICAL TRACERY.

Some time since I was required to execute certain details of tracery; and being anxious to draw them upon some precise method (for I wished to centre the compasses at once, and not "feel" for it, as is too often the practice), I consulted several works on the subject, but found nothing very satisfactory; and this induced me to try for myself. I send you the result, being desirous that others may have any advantage that may be found in it. Whilst I am confident of its originality as regards myself, I cannot but feel that I may only be rediscovering after all.





In a given Circle to inscribe 13 *Circles.*—With the radius of the given circle prick off the points A, B, C, D, E, F, and draw the radiating lines. Bisect B C in G; and, through the points C E, half the radius O D in H. Take H G in the compasses, and with centre H describe the arc intersecting at T on line O B, and with the radius T B turn in the six outer circles. The intersection of two equilateral triangles drawn from the points T, T, T, U, U, U, will give the S centres. Describe with the same radius, T B, the remaining circles, and the figure is completed.

Or, with the radius D F describe arcs cutting at L, which take for a centre, and with the same radius describe an arc at P, through which draw a line, with your 30° intersecting at V V; then V D and V F are two diameters of the 13 circles, by which the others may be found.

I send a sketch of tracery founded on the diagram; but of course the figure will give the outline of a great number of others equally good. *Owen W. Davis, in the Builder of Jan.* 18. *Corrected.*

[Or, divide the diameter A D into nine equal parts; one of these laid off from A to U, B to T, &c., will give the centres from which the six outer circles can be readily described. The centres T, T, T, U, U, U, being thus determined, lines connecting will form the two intersecting triangles; and where their lines cross, with the same radius, describe the six inner circles, and the centre one; the figure is then completed.]

Indoor Gardening.

In writing of window-gardening in the *Gardeners' Chronicle*, I have always been hitherto rather afraid of referring too particularly to the "indoor plant cases," because, though I am myself so fond of them, I thought that they were not at present sufficiently well known to be of at all general interest. So many inquiries are however addressed to me about them, that I hope some account of their management and arrangement may not be uninteresting.

These cases are so arranged that a strong root heat can be maintained at one end of the case, while at the other there is none at all. The different temperature of the two ends keeps up a constant circulation of the air and effectually prevents the plants suffering by dampness or stagnation, except in cases of very gross neglect, or in instances where delicate leaves have been suffered to touch the glass and so to be injured by the condensation of vapour on it. Their great charm of course is the facility afforded by the plan for heating, for bringing into flower and keeping in good health many tender stove plants as well as delicate flowers, which would suffer from a dry atmosphere if kept on an open plant stand.

My own pet case, I confess, enjoys immense advantages—most lovely plants being continually provided for it by the kindness of Mr. Veitch, who thus affords me the opportunity of trying the success in it of many of the most likely plants to thrive there. This advantage indeed should be by rights to others as helpful as to myself—in affording the knowledge of the plants that have been actually tried and proved to answer well.

I now propose then to describe exactly the contents at present of my gayest plant case—the plants composing the group being all well suited as to the colour and habit, and nearly all being well proved to succeed in it, as I believe that all will. The variegated Hydrangea, the Orchid, and the Climbing Fern to be named hereafter, are however, as will be seen, experiments.

I will proceed, however, to give a few practical hints and details as to the process of filling these cases. And it may be well to begin by remarking that though, the first time of filling it, it is infinitely better to make the mossy surface the very last touch given, yet afterwards in altering the case it ought not ever to need to be disturbed, as even when the long tresses of Moss seem to wander over adjacent flower pots they may be raised, and returned again to their place upon the surface. In preparing the box itself for the plants' reception, there are two or three things worthy of remark.

1. One part being deeper than the other, there ought to be some charcoal provided in it, not only to enable the water to run down below the level of the roots of plants, but also in order to preserve that water pure, charcoal being for this particularly valuable. The smaller the pieces of charcoal are, the easier it will be to move and rearrange the plants in their box.

2. When heat is required, there is nothing that I have ever tried to be compared to silver sand for keeping the plants in health and retaining warmth. Sawdust, Moss, pure Cocoa fibre, Sphagnum, and many other things, have each proved inferior to sand for this use. A mixture of Cocoa nut refuse, however, with the sand makes a very excellent soil for Mosses and Ferns to root into.

3. If in any place a rather large-sized flower-pot has to rest directly on the surface of the hot water case, a piece of thick drugget or of felt does very well, used as a mat, to protect the roots from scorching.

So much for the box filling. It is often useful to keep the places vacant for the larger pots by standing empty ones where they are to be—afterwards either sinking a pot in these if likely to be very often changed, or taking out the place-keeper and dropping the proper pot into the space it leaves. Dry sand should be poured in all round if the new pot is smaller than that withdrawn, as it is much better to allow no vacant spaces.

I have come to the full conclusion, that in arranging such things it is best to aim at forming one simple connected group. As flowers are thus most often surrounded well by leaves, I endeavour to have a regular frame of green at each end of the case, and a green Moss carpet for the flowers to rest on. All the brightness then is collected into the single "bouquet" that forms just the centre, and if other flowers do stray beyond it, it is always evident that they are only strays. By this means one can fully enjoy the exquisite form and grace and colour of the lovely green things which lightly line each end, or creep along the glass in a festooning wreath. To do this effectively, the brighter

colours must be of a kind that match. A most popular centre is formed of the Dræcena terminalis, which answers in these cases the best of all plants I know—delighting in heat at its roots—and well repaying the trouble of occasional spongings of the foliage by the brilliant colour which it then assumes. The only difficulty it presents is that of interfering a little in tint with very bright scarlet flowers; it does therefore best amongst pink and crimson flowers more of its own nature. For this colour-reason alone then is my Dræcena banished—a cerise Azalea presents such attractions for a centre flower that it fairly possessed itself of that special place, and some beautiful spreading Orchid leaves look very well indeed, sweeping out beyond.

I am sorry to say indeed that in the matter of that Orchid I underwent a failure. Killed with kindness was near being the verdict. For in the cold weather lately when I crept near to the fire I carried the Orchid with me standing upon my work table, and no Orchid in its senses will endure being fried. I have since been told that it would have borne cold far better, and truly the very texture of its marvellously lovely flowers ought to have warned me not to dry it up. The flowers then shrivelled, and were all cut off; only the leaves look as lovely as ever still, and in my plant case I am trying hard to coax it into a fresh growth of flower buds, which with the Lycaste Skinneri is by no means unknown.

The sides of my case, however, to return to it, have chiefly evergreens. They clothe the glass walls so well and make so good a background. A Rhododendron and a Myrtle have been there all the winter. At the other end a climbing Cissus, a Passiflora kermesina and the Lygodium scandens—most exquisite of little graceful climbing Ferns, with its transparent delicate fronds. These little creepers are trained up sticks at present, but lines of black silk cord will be a better support when it comes to their wreathing along and around the top. A covering of Brasilian Moss is preparing to overrun the whole of the warmer end, with little sprays of the pretty Cæsium here and there asserting itself by its metallic lustre. At the other (cooler) end the Lycopodium denticulatum always grows most luxuriantly when it is allowed to be long enough undisturbed. Pteris tricolor, P. argyræa, P. cretica albo lineata, grow at the warmer side close to the glass in front, as they all like light and warmth. Adiantum cuneatum thrives delightfully always on the shadier side, and in the cooler part Pteris tremula, P. serrulata, and Davallia dissecta spread their green fronds about.

A beautifully variegated Hydrangea japonica is at the warmer end, and there still are a few Tulips, and one or two pink Hyacinths, as well as a Gardenia, which is growing nicely near to a red Begonia, but the colour of the group is certainly all gathered to the centre, where three Azaleas entirely seem to furnish it. One (A. Reddingi) is a brilliant, thick petalled, rosy sort of cerise, shading into crimson, or reddening again into a lighter and darker scarlet, while its graceful, half-open buds and its waving branches fill up the place delightfully—one (Azalea magnifica), with great white, rose-streaked flowers,—and one on the other side (A. magnifica flore plena) with perfectly white blossoms, exquisitely double, and looking like some most transparent Lily.

Azaleas, Rhododendrons, and Camellias are, in fact, of all plants, most perfect for these cases. They always look so utterly fresh and dewy, and so unspotted—when they fade, they fall; and thus we have not the drawback of seeing a flower withering. And indeed they are so lovely! The Princess Alice Rhododendron, for example, with the most delightful tinge of rose colour, has a delicious scent, and such perfect shape and foliage as to be from year's end to year's end delightful to grow on. This plant, however, like all other evergreens of the kind, should always be turned out for awhile while hardening its wood and making its next year's buds. With Camellias, also, this is essential; at least I have never tried to make any grow entirely in the cases, thinking it would be useless. When the growth is made, the hottest and sunniest window sill is a great deal more suitable to make the wood hard and dry.

There ought to be no difficulty in keeping up good heat. When it is not done there are two questions to be asked of the water-tank filler:—Did the water poured into the tank quite boil? (I have known it used lukewarm). Was the tank previously emptied? (Sometimes it is left half full.) Easy as they are to think of, a new servant for instance doing it is perfectly unaware of these points being important. Done properly however, at 8 or 9 in the morning, and at 4 or 5 in the afternoon, it all goes on like clockwork, and should one filling be missed even, the heat is fairly retained for quite 24 hours. *E. A. M.*

THE CLIMATE OF LONDON.

The following table, from its embodying the results of 36 years' observations at Chiswick, will afford reliable information to persons who may be desirous of comparing the climate of particular localities with that of the neighbourhood of London.

The barometer is one of Newman's Standard Barometers, having a tube 0.45 inch in diameter, and is placed in a room with a north aspect. The cistern is situated about 14 feet above the mean level of the Thames at Chiswick. The readings are made at 8 A.M., 1 P.M., and between 9 and 10 P.M., and are corrected for capillarity, capacity of cistern, and temperature. They consequently exhibit the height of a column of mercury at 32°.

The thermometers for ascertaining the temperature of the air are of Rutherford's construction, as improved by Newman. They are placed facing the north on a plot of Grass, the maximum one at 3 ft. from the ground, the minimum one at 1 ft. The former is merely protected from the sun's rays, the latter is freely exposed. The readings are made about 10 A.M., or so as to make sure that the temperature at the time does not exceed the maximum of the previous day.

The ground thermometers are merely ordinary thermometers, having very long tubes, which are carefully protected from contact with the soil. They are plunged near the others, and the temperature which they indicate is read at the same time.

The rain gauge has a circular receiving surface, a foot in diameter, which is situated 2 feet 9 inches from the ground. It is placed in an open space, and its indications are observed at 8 A.M.

In the accompanying table the mean pressure, temperature, and amount of rain are deduced from 36 years' observations, the ground temperature from 18 only.

Months.	Mean Pressure.	Temperature.			Ground Temperature.		Rain.
		Mean Maximum	Mean Minimum	Mean.	Mean at 1 foot Deep.	Mean at 2 feet Deep.	
	Inches.	Deg.	Deg.	Deg.	Deg.	Deg.	Inches.
January ..	29.897	42.81	31.02	36.91	40.51	40.66	1.628
February ..	29.903	45.72	31.68	38.70	40.86	40.74	1.442
March ..	29.913	50.78	33.37	42.07	42.14	42.19	1.311
April ..	29.922	57.44	36.18	46.81	47.28	46.32	1.579
May ..	29.935	64.62	42.01	53.31	53.05	52.10	1.917
June ..	29.931	71.98	48.64	60.31	60.41	58.30	1.960
July ..	20.924	74.01	51.31	62.96	63.23	61.49	2.465
August ..	29.916	73.44	50.50	61.97	62.90	61.59	2.425
September ..	20.875	67.67	45.93	56.80	58.75	58.45	2.469
October ..	29.842	59.23	41.69	50.16	53.35	53.90	2.695
November ..	29.930	49.68	35.21	42.44	46.59	47.56	2.261
December ..	29.930	45.35	33.31	39.33	42.33	43.43	1.473
Mean ..	29.910	58.61	40.02	49.31	50.91	50.56	23.645

From the above it appears that the—

Mean pressure is	29.910 inches.
Mean maximum temperature	58°.61
Mean minimum ditto	40°.02
Mean range of ditto	18°.59
Mean temperature	49° 31
Mean ground temperature at 1 foot deep	50° 91
Mean do. do. at 2 feet do...	50°.56
Mean annual amount of rain	23.645 inches.

It may be remarked that on the average of 23 years previous to 1849, the mean temperature of the air was 49.83
That of the 36 years previous to 1862, as will be seen from the above table, is 49.31

Difference, colder 0.52

R. Thompson.

Home Correspondence.

Madeira Trees.—In reading Capt. Cook's account of the Island of Madeira, I found the following statement: —"The hills in this country are very high, the highest, Pico Ruivo, rises 5068 feet, near an English mile, perpendicularly from its base, which is much higher than any land that has been measured in Great Britain. The sides of these hills are covered with Vines to a certain height, above which there are woods of Chesnut and Pine of immense extent, and above them forests of wild timber of various kinds not known in Europe, particularly two called by the Portuguese Mirmulano and Paobranco. The leaves of both, particularly the Paobranco, are so beautiful that these trees would be a great ornament to the gardens of Europe."—Vol. 2, page 10. As these forest trees seem to be hardy and capable of being grown in this country, any information on this subject I think would be beneficial to the public. *Thomas Thurlow, Baynards Park, Horsham.* [Whatever these trees may be, our correspondent may rest assured that they cannot be hardy in this country.]

Root Fungi.—The article by your able correspondent "M. J. B." to some extent I think elucidates the cause of potted Roses from seed going off during the first, second and even third years of their existence. Although I do not cultivate Roses for early flowering, I have during the past six years regularly raised many from seed, and during the winter have stored them in a growing or rather stationary unripe state in both a cool shady greenhouse, and also in a cold frame, but I have invariably lost more than half and sometimes nearly all my plants from what I now believe to be the ravages of "Peronospora sparsa," having been previously wholly unable to account for their disappearance. I have noticed particularly this season the rapid decline of a seedling of 1859, which had been wintered in a cold frame, and was at the commencement of the winter in an apparently healthy condition. The leaves first became spotted on their upper surface; I removed them; but the disease seemed to have taken firm hold of the stem, which ultimately became brown and covered with the greyish mould referred to by your correspondent. This plant had been the subject of my especial personal care, being raised from Lord Raglan and having withstood the winter of 1859 in the open air, unscathed, although nearly all the other seedlings of that year perished; in the case to which I allude a sucker, however, is now showing from the root, which has not yet been worked. I mention this as I have never noticed it in any other case, the disease usually working its way right down to the roots. I am persuaded that the absence of sunshine considerably tends to the spreading of the disease, and that where the plants have been previously weakened by attacks of mildew they have been more liable to perish by the Peronospora. I have no microscope sufficiently powerful to identify the parasite, but I have a specimen or two left, which I shall be happy to send your correspondent. *Thomas Laxton, Stamford.*

Magnolias.—Mr. Loudon in his "Gardeners' Magazine," Vol. 2, speaks in rapture of the beauty of the Magnolia conspicua with its "Tulip-like blossoms as white as snow and highly odoriferous." Having in view his admiration I planted one in front of my house, a southern aspect, in 1845; it is now 21½ feet high and covered with nearly 1000 blossoms in full bloom. Justly did Mr. Loudon further observe, "no person who has the slightest pretension to a love of plants and a garden ought to be without it." This beautiful tree has the additional recommendation of being perfectly hardy. *Richard Ward, Salhouse Hall, Norwich.*

Long Walk, Windsor.—What is being done to the fine old Elm trees which in summer afford such an agreeable shade to this favourite promenade? Is Dr. Robert at work with his patent scarifier, or what else is the matter? On the right hand side near the "cross gates," four trees partly decayed have been operated upon in the following singular manner. Their stems have been completely divested of their time honoured bark, from the ground all round up to a height varying from 10 to 15 feet, the decortication being carried quite in to the inner bark, which has received a thick coat of coal tar mixed apparently with a little ochre. Another tree nearer the statue at the end of the Walk has also been subjected to the same barbarous treatment. What good purpose can such a wild experiment, which cannot be effected without considerable labour, serve? A labourer I fell in with saw no traces of insects during the process of removing the bark, which was done with an adze, and I myself could see no indications of their presence. My informant stated that it was thought the operation would arrest decay; he however, added "that if the trees were not dying before, he had no doubt they would soon die now." We shall see; one would have thought that after what has been said in your columns respecting the inutility of the skinning system, no one would have attempted its introduction into this country. I shall, however, watch the result and report hereafter. *Etonian.*

Birds and Strawberries.—As the destructiveness of small birds has been lately mooted in your pages, perhaps the testimony of a country clergyman, who works his garden chiefly with his own hands, may be acceptable to some of your readers. I can speak feelingly of the havoc which the bullfinch and tit race make among the Gooseberry and Apple buds. Later in the year our energies are taxed to the utmost to protect the Strawberries from the blackbird and thrush. I proceed as follows: I run a galvanized iron lattice, one inch mesh and one foot high, round the bed, setting it up by means of iron pegs 18 inches long, with the head of the peg, a half T, turned outwards; the peg so run in and out through the lattice, and to the half T head the covering net is looped. The pegs are about the thickness of a lady's little finger, and set from 3 to 4 feet apart. I use iron round half hoops to support the net, 6 feet span, 3 feet rise in the centre, same thickness of iron as the pegs. When the net is spread, the fruit is secure, and the current of air as perfect as if the beds were not protected, and in damp cloudy weather this is no trifling gain. Some will say this is a very expensive plan. True; but the lattice and iron pegs and hoops, once bought, will last a life time. And the comfort of having the materials always at hand, and when in use not subject to the delays occasioned by the net catching upon roughly trimmed ashen hoops, is very great. And the nets (they should be bought new and previously tanned, and really well dried before laying them by), will last many years longer than if simply laid over the plants upon the ground. As for

the kind of Strawberry best fitted for use, every man's soil, aspect, and climate will best determine this. Many a nurseryman is unjustly blamed because his sorts, in themselves excellent, are not suited to the soil, and the unskilful treatment of the buyer. I must, however, shortly express my gratitude to Mr. Cuthill, of Camberwell, both for his excellent pamphlet upon the Strawberry, and also for two sorts of Strawberries with which he supplied me—"the Prince of Wales," a good bearer, large, hardy, and, with me, succeeding "Keen's Seedling;" and "The Princess Alice," medium size, good bearer, Hautbois flavour, hardy. Both I consider excellent; the Prince of Wales the most useful, kitchen and table. The Princess Alice second to none, save the old Queen, for dessert. I conclude with one piece of advice (not unneeded both by the gardener and amateur)—"Let your Strawberries be really ripe before you gather them." *G. E. Maunsell, Thorpe Malsow Rectory, Kettering.*

Crown of Thorns.—So far is it it from being impossible to weave the Paliurus aculeatus into a wreath, that the prettiest head dress we ever saw was made of this plant when just perfecting its fruit, and on this account we recommend it to the especial notice of the manufacturers of artificial flowers. It may, however, be remarked that Gleditschia triacantha is now commonly known in Italy by the name of Spina Christi, though of American origin, partly on account of its stiff thorns, partly because the compound thorns present something like the appearance of a cross. Our Correspondent, therefore, when he speaks of the thorns of Paliurus being so large and strong, which is by no means their character, perhaps had the Gleditschia in his eye, being deceived possibly by its popular name. It would indeed be difficult to twine that, though it would be easy enough to make a crown of Paliurus. *M. J. B.*

Alocasia metallica.—Has this flowered yet in this country? With me it produced an Arum-looking flower about three weeks ago, and is seeding freely. *William Tillery, Welbeck.*

Societies.

Royal Horticultural: *April* 9. — (*Second Spring Show.*)—The exhibition of Azaleas on this occasion was all that could possibly be desired; they were shown in that portion of the Arcade which is faced with glass close to the entrance, and, together with one or two collections of miscellaneous plants, formed a bank several plants deep and 150 feet in length. Looked upon *en masse* the display was most effective, and the plants individually were finely grown and extremely well flowered. The Arcade was tastefully prepared for their reception, the roof and back wall being lined inside with broadly striped drab and white canvas, put up so as to somewhat resemble an ordinary tent. Other portions of the exhibition were accommodated in the Society's Board-room, whose walls were lined all round with masses of gay flowering plants. The day, though dry, was cold and sunless.

In the class of 12 Azaleas, Mr. Turner of Slough showed a beautiful group consisting of The Bride, Duchesse and Duc de Nassau, Variegata, Marie, Gledstanesi, Constantia rosea, Eulalie, Gem, Adolphe, and Grand Monarque. From Messrs. Ivery of Dorking came Flower of the Day, white, occasionally striped with red; Criterion, Lord Raglan, Ardens, Vittata, Glory of Sunning Hill, Alba Illustrata, Marie, Bouquet de Flore, Amœna, General Williams, and Alba cincta. Messrs. Fraser of Lea Bridge had small plants of Roi Leopold, Magnifica, a semi-double sort; Rosy Circle, Aurora, Criterion, Amœna, Louise Margottin, Trotteriana, Double White, Mrs. Trip, Barclayana, and Flora.

Of groups of 9 Azaleas, the best came from Mr. Todman, gr. to R. Hudson, Esq., Clapham. It contained Coronation, Eulalie, Princess Royal, Concinna, Optima, Iveryana, Amœna, Dr. Livingstone and Bride. From Mr. Blog, gr. to S. Gassiot, Esq., Clapham, came Glory of Sunning Hill, Iveryana, Rosea, Magnifica, Broughtoni, Semi-double Purple, Coronata, and Magnificent. Mr. Higgs, gr. to Mrs. Barchard, Putney Heath, sent Duke of Devonshire, Louise Margottin, Duke of Wellington, Magnificent, Trotteriana, and Bride. Mr. Tegg, gr. to Baron Hambro, Roehampton, sent among others well-flowered plants of Leeana, Amœna, Eulalie, Admiration, and Gem.

Collections of 6 Azaleas were furnished by Messrs. Todman, Tegg, and Higgs. Among these were good plants of Coronata, Admiration, Marie, Criterion, Roi Leopold, Empress Eugenie, Stanleyana, Delicata, Striata formosissima, Gem, and Glory of Sunning Hill.

In the class of new kinds, Mr. Turner showed well bloomed plants of Duchesse de Nassau, a showy variety with large and striking salmon flowers, tinged in the upper petals with violet; Gem, a tolerably well known rosy salmon sort; Virgin Queen, a good white; Model, large rosy pink; Roi Leopold, salmon, with crimson spots on the upper petals; and Duc de Nassau, large showy crimson. Messrs. Ivery and Fraser also showed in this class, as did likewise Messrs. Todman and Tegg. Among these Distinction, pale salmon, edged with white; Princess Bathilda, purple, and Dr. Livingstone, finely shaped rosy pink, appeared to be the most distinct. In a group of small standard Azaleas shown by Messrs. Veitch the following appeared most worth attention, viz.:—Etendard de Flandres, white, occasionally striped with crimson; Etoile de Gand, salmon, broadly edged with white; Rubens, glowing rosy salmon; Consolation, pink; Hortense Vervaene, Herzog Adolphe von Nassau, crimson; and Bride, a white variety. Messrs. Smith had Duc d'Aremberg.

Of specimen Azaleas, Mr. Turner had Rosy Circle, a fine plant well bloomed; Messrs. Ivery sent Gem, and King of the Doubles; and Mr. Todman Princess Royal.

Of Stove and Greenhouse plants collections came from Messrs. Veitch, Fraser, and Lee. They consisted of Acacias, of which the best were Drummondi and longifolia magnifica, Boronias and Eriostemons of different sorts, Erica elegans, Hartnelli and others; an unusually well bloomed plant of Hederoma tulipiferum; various Camellias, Rhododendron Sesterianum, Epacrises, Pimelea Neipergiana, and Leschenaultia formosa.

Rhododendrons came from Messrs. Veitch and Mr. Young, gr. to R. Barclay, Esq. The former had a fine specimen of Gibsoni. Mr. Young sent Everestianum, Gulnare, white and pink, and "Nereus," a violet black blotched small flowered sort of considerable beauty. Mr. Parker showed a fine specimen of Countess of Haddington. Mr. Bousie, Stoke Park, had a sort with flowers like those of Edgeworthi, called Dennisoni, and another in the way of ciliatum, but much larger, called McNabianum. From Messrs. A. Henderson came R. Falconeri, bearing a beautiful truss of creamy white blossoms; and cut flowers of different varieties of R. arboreum and cinnamomeum from the open air were shown in good condition by J. Luscombe, Esq., of Combe Royal, Kingsbridge, Devon.

Of Cinerarias there was a nice display. The best came from Messrs. Dobson & Son, who contributed well-grown plants of Captain Schrieber, Master F. Watson, Louisa Pyne, Brilliant, Perfection, Hyperion, Mrs. Hoyle, Lady Seymour, and Mr. Marnock. From Mr. Turner came Queen Victoria, Adam Bede, Mrs. Hoyle, Eton Boy, Miss Franklin, Brilliant, Perfection, Reynolds Hole, and Regulator. Mr. Lamb, gr. to Miss Thackthwaite, Norwood Green, Southall, sent well-flowered plants of Mr. F. Watson, Perfection, Prince of Wales, Mrs. Hoyle, Beauty and Modesta. Mr. James, gr. to W. F. Watson, Esq., Isleworth, contributed Sarah, Lord Raglan, Lord Elgin, Perfection, Constancy, and Conqueror. From Mr. Wiggins, gr. to W. Beck, Esq., Worton Cottage, Isleworth, came Amy, Queen Victoria, Baroness Rothschild, Duke of Cambridge, Mrs. Coleman, and Perfection. Of seedlings one or two were shown. Mr. Turner furnished James Andrews, a bright purplish self; Vicar of Caunton, dark disk with a white ring round it and broadly edged with crimson; Prairie Bird, blue with small white ring round the disk; Mrs. Harvey, dark disk set in a broad belt of white and tipped with crimson; Great Western, something like James Andrews but with more crimson in it; Artist, crimson with pale centre; Queen of the May, dark disk encompassed by a white ring and tipped with crimson, and Eton Boy, crimson.

From Mr. Ivery came Distinction, a profuse blooming purplish crimson, with dark centre, having a small ring of white round it. Other sorts consisted of Dark Beauty (Wiggins'), a large crimson self; Lord Elgin, (James'), like it, but shaded with purple, a fine flower of good substance; Beautiful Star, dark disk with broad ring of white and crimson tip; Miss Eleanor, creamy white with dark centre; and Artiste.

Of forced spring flowers, two or three collections were exhibited. Messrs. Veitch showed Pheasant-eyed Pink, Roses and Orange trees in bloom, Deutzia gracilis, Lily of the Valley, Dielytra spectabilis, Queen Victoria Azalea and others, Lilacs, Rhododendron Catawbiense purpureum and Nobleanum mutabile, and a hardy pale yellow Azalea. Messrs. Fraser, Cutbush, and Young, also showed in this class. Their plants consisted of Rhododendron pontium, and Catawbiense, Dielytra spectabilis, Guelder Rose, Azaleas both hardy and tender, Dendrobium nobile, Kalmia latifolia, Pelargonium Reine Hortense, crimson flaked with white, Calla æthiopica, Tulips, Cytisus Attleana, Amaryllises, a light coloured Pelargonium called Albion, and one or two early flowering greenhouse plants.

A collection of Hyacinths, still in tolerably good condition, came from Messrs. Cutbush; the same firm also contributed a group of early Tulips, as did also Mr. Young of Highgate.

Auriculas were exhibited in good condition. The Rev. H. H. Dombrain, of Deal, had well bloomed plants of Maclean's Unique, Othello, Ne Plus Ultra, Page's Champion, Oliver's Lovely Ann, and Hudson's Apollo. From Mr. James came bright Phœbus, Morning Star, Royal Purple, Duke of Wellington, Mary Gray, and Waterloo. Mr. Holland, Hounslow, sent Mrs. Curren, Orion, May Queen, Negro, Viola and Circle. From Mr. Turner were good examples of Page's Champion, Ann Smith, Mrs. Smith, Fletcher's Mary Ann, Taylor's Glory, Netherwood's Othello, Dickson's Duke of Wellington, Spalding's Mary Gray, and Turner's Ensign. Messrs. Dobson showed Glory, Prince of Wales, Uncle Tom, Brutus, Privateer, Lovely Ann, Fair Maid, Apollo, and Waterloo. Mr. Holland showed a dove-coloured seedling, with a white eye, called Mrs. Eyles.

Of Hardy Herbaceous plants one or two collections were shown; the best came from Mr. Williams, Paradise Nursery, Holloway; it consisted of Draba aizoides, Arabis montana and albida variegata, Polemonium cæruleum variegatum, Orobus elegans, Statice macrophylla, Aubrietia deltoidea grandiflora, Periwinkle, Iberis Jamesiana, and Variegated Daisy. From Mr. Young came double yellow, lilac, and crimson Primroses, Daisies, and Violets. Mr. Salter had prettily variegated varieties of Hemerocallis flava, Lily of the Valley, Daisies, Farfugium, Symphytum, Arum italicum, White Lily (L. candidum), Orontium japonicum, and Luzula sylvestris.

Of Roses in pots Messrs. Paul & Son sent a small collection in which were good examples of Baron Gonilla, Souvenir de Leveson Gower, Niphetos, Anna Alexieff, and Vainqueur de Solferino. The same firm also showed charming boxfuls of cut Roses, as did also Mr. Wm. Paul. From the latter came beautiful examples of the new Rose Beauty of Waltham, a variety with a colour as brilliant as that of Gen. Jacqueminot.

Among Miscellaneous plants were collections from Mr. Williams, Mr. Bull, and Messrs. F. & A. Smith. In the first group were Tree Ferns, Vanda suavis, Coleus Verschaffelti, a very fine variety of Cypripedium barbatum, Dendrobium densiflorum, Cibotium princeps, the variegated variety of Cyperus alternifolius, and Chamærops humilis. Mr. Bull had variegated Begonias, Campylobotrys regalis and refulgens, Azaleas, Heaths, and plants remarkable for the beauty of their leaves. To the latter class belonged Messrs. Smith's plants. From Messrs. Veitch came Posoqueria undulata, the ever-blooming Stenogaster concinna, Aralia leptophylla, Grevillea Hilli, and one or two Azaleas. Messrs. A. Henderson showed the singular Arisema ringens, and a well-bloomed plant of Camellia Valteverado.

Some well-flowered Amaryllises came from Mr. Williams, who also showed a handsome Alsophila; and Messrs. Ivery again furnished remarkable specimens of Chinese Yam.

Linnean, *March* 20.—G. Bentham, Esq., President, in the chair. The Right Hon. Lord Lilford, St. George Jackson Mivart, Esq., W. J. Flower, Esq., and B. Leadbeater, Esq., were elected Fellows. The following paper was read:—"Observations on some Skulls from Ceylon, said to be those of Veddahs;" by G. Busk, Esq.

April 3.—G. Bentham, Esq., President, in the chair. Percival Foster, Esq.; S. Holmes Godson, Esq.; and J. Thomson, Esq., were elected Fellows. Dr. Cogswell exhibited a fine specimen of gold-bearing quartz, from the neighbourhood of Halifax, Nova Scotia; and Prof. Tennant, on the part of the Government of Nova Scotia, exhibited a valuable series of ores and specimen of gold from that province. It was stated on the authority of Mr. P. S. Hamilton, of Halifax, that Nova Scotia is "very rich in gold." The following papers were read:—1. "On the three remarkable sexual forms of Catasetum tridentatum, an Orchid in the possession of the Society," by C. Darwin, Esq. This was an account of a remarkable specimen gathered by Sir R. Schomburgk, and now in the museum of the Society, in which three distinct forms, representing respectively the plants known as Catasetum tridentatum, Monachanthus viridis, and Myanthus barbatus, are associated in the same spike of flowers. Sir R. Schomburgk has stated that he had seen hundreds of plants of C. tridentatum in Essequibo, without ever finding one specimen with seeds, but that he was surprised at the gigantic seed vessels of the Monachanthus. He had further remarked that here we have traces of sexual differences in Orchideous flowers; and it was this idea that Mr. Darwin followed out in the paper now read. The structure of the flowers in C. tridentatum, examined at various stages, was found to indicate that it is a male form, the points chiefly relied on being the shortness and smoothness of the ovary, the shortness of the ovule-bearing cords, the semi-atrophied condition of the ovules themselves, and the non-viscid condition of the stigmatic surface, so different from what occurs in all other Orchids except Cypripedium. In the Catasetum, owing to a twist in the ovary, the lip is uppermost. This latter feature also occurs in Monachanthus, but the column was stated to be much shorter; the antennæ or horn-like prolongations of the rostellum absent, though very prominent in Catasetum; the pollen masses rudimentary; the stigmatic chamber evident in the form of a deep transverse cleft; the ovary much longer, thicker, and furrowed; the ovule-bearing cords longer, and the ovules more pulpy. Hence Mr. Darwin concluded it to be a female plant. The flowers of Myanthus barbatus, the third form sometimes borne by this one plant, are very different in external appearance; they are generally reversed in position, that is, with the lip downwards; their antennæ not so long as in the Catasetum; the stigmatic chamber nearly intermediate in size between that of the Catasetum and the Monachanthus; the straight and well-furrowed ovary nearly twice as long as in the Monachanthus; the ovules apparently not so numerous, but opaque and pulpy; and the pollen masses apparently functionally perfect. The male and female organs being thus apparently perfect, Mr. Darwin concluded that Mycanthus barbatus may be considered as the hermaphrodite form of the same species, of which Catasetum tridentatum is the male, and Monachanthus the female. The genus Catasetum, Mr. Darwin continued, "is interesting in an unusual degree in several respects. The separation of the sexes is unknown in other Orchids, excepting probably in the allied genus Cycnoches, and in one other member of the Vandeæ, namely Acropera. In Catasetum we have three sexual forms, generally borne on separate plants, but sometimes mingled together, and these three forms are wonderfully different from each other, much more different than for instance a peacock from a peahen. Still

more interesting is this genus in its mechanism for fertilisation. We see a flower patiently waiting with its antennæ stretched forth in a well adapted position, ready to give notice whenever an insect puts its head into the cavity of the labellum. The female Monachanthus not having pollinia to eject, is destitute of antennæ. In the male and hermaphrodite forms, namely Catasetum and Myanthus, the pollinia lie doubled up like a spring ready to be instantaneously shot forth when the antennæ are touched. The disc end is always projected foremost and is coated with viscid matter which quickly sets hard, and firmly affixes the hinged pedicel to the insect's body. The insect flies from flower to flower till at last it visits a female or hermaphrodite plant; it then inserts one of the balls of pollen into the stigmatic cavity. When the insect flies away, the elastic caudicle, made weak enough to yield to the viscidity of the stigmatic surface, breaks and leaves behind the pollen mass; then the pollen tubes slowly protrude, penetrate the stigmatic canal, and the act of fertilization is completed. Who would have been bold enough to have surmised that the propagation of a species should have depended on so complex, so apparently artificial, and yet so admirable an arrangement? 2. "On the Discovery of Gladiolus illyricus, Koch, in the Isle of Wight," by A. G. More, Esq. This was the same species which had been found a few years since in the New Forest, and which has been generally named G. communis. Dr. Macdonald communicated the substance of a paper "On the Classification of the Warm-blooded Vertebrata and their parallelism."

Notices of Books.

Geneva, Past and Present. By E. M. Roose. 12mo. A. & C. Black: Edinburgh.

It is long since we have been doomed to read such an utterly uninteresting book as this. We presume it may possess some attractions to the author's *compagnons de voyage*, since it is stated to have been written at their request, but we cannot imagine any one else caring to waste their time over it. The greater part of it may be read, and far more pleasantly, in Murray's Handbooks, and the remainder is not worth reading. The style is confused and inelegant, and the topics incoherently jumbled together. What, for instance, is meant by saying that "De Candolle was the first director of the Botanical Gardens in this city, which he rendered eminently subservient to his theory of the organization of plants?"

As an example of the author's inaccuracy, we notice that he states that "De Saussure was the first, we believe, who ascended Mont Blanc." We certainly thought that the fame of "Jacques Balmat, dit Mont Blanc," was sufficiently established to have reached even Edinburgh, which, from various intimations, we conjecture to be the author's residence.

Moreover Mr. Roose is bigoted and intolerant, and the insipidity of his book being only relieved by the abuse which he heaps indiscriminately on all who have the misfortune to differ from him in their theological opinions, we lay the volume down with a feeling of relief, the only definite idea on coming to the end being, "Why was it written?"

The Twentieth Thousand of Murray's Handbook of Table-talk, the best travelling conversation book in four languages that was ever published, has just appeared. In this edition a vocabulary of Flowers, Vegetables, and common gardening words forms quite a new and very acceptable feature. The Editor will, we are sure, excuse us for remarking that *Pin sauvage* is the Pinaster, not the Scotch Fir; that the ordinary name of the latter is *Pin commun;* and that the botanical name of the Walnut tree is *Juglans regia.*

Le Jardin Fruitier du Muséum.—We continue the remarks on this work, broken off at p. 1032 of our last volume, by some observations on the *Chili Strawberry.* Although this variety is not itself well suited for our climate, yet as so many of our very best Strawberries have been derived from it, more or less directly, by crossing, and amongst others the British Queen, some extracts from Professor Decaisne's excellent account of it will doubtless prove interesting and useful to the cultivators of this favourite fruit.——Fruit very large, bluntly conical, pale rosy yellow on the shaded side, bright rose next the sun; seeds brown, large, and prominent; flesh soft, tolerably juicy, and sugary, slightly perfumed. Flowers large, petals 7 or 8, yellowish-white, stigmas very large, pale greenish yellow; of stamens there exist only some short thick filaments. Scapes stiff, elevated above the leaves, covered with long silky hairs. Runners vigorous, but not numerous, often extending 20 inches without forming a joint. Leaves thick, very large, erect; leaflets concave, so as to admit of seeing part of the under surface, on which the silky hairs are so numerous that it appears white. The plants are very vigorous in their native country, and generally so near the sea. At Brest we have seen plants of this Strawberry which were 25 years old, and which bore abundantly every year. It withstands badly the vicissitudes of the climate of Paris, and almost invariably dies after fruiting.

As its name denotes, this magnificent species came to us from Chili; but it is not confined to that part of South America, for several authors state that it is also found on the western side of North America, in California and Oregon.

The Chili Strawberry was first brought into Europe in 1712, by the French traveller Frezier, an officer of Marine Artillery.

"I have seen it," he writes to Duchesne, "cultivated in small valleys where a stream could be brought in for watering it, as it only rains in Chili in two months of the year. Under these circumstances it bears so abundantly that it is sold in the markets by the bushel, or in large measures like common fruits."

At the present day, as at the time when Frezier visited Chili, the Strawberry fields of Conception and those of the environs of Valparaiso are much resorted to by pleasure parties. The name of the Chili Strawberry in Spanish is *Frutilla,* and the excursion is termed *Andar a la Frutilla;* great numbers join in it, and after a long journey on horseback they gather and eat the Strawberries ripe and fresh in the fields where they grow.

Of the plants brought by Frezier, in 1712, only five survived the six months' voyage. Four of these were given to his friends at Marseilles, Valbonne, and Souzy; the fifth he planted in the neighbourhood of Brest, where it gave rise to thousands of plants which were cultivated in the communes of Plougastel, Loperhet, Dirinon, &c.

Professor Decaisne says that at his request M. Guiastrennec of Brest ascertained from good authority that upwards of 444 acres were occupied in the vicinity of that place with the Chili Strawberry, which did not appear to require on the coast of Brittany so much care in cultivation as the common market sorts do at Paris. The cultivators take the precaution to plant between the rows of Chili Strawberries other sorts furnished with good stamens. The Old Scarlet and male plants of the Hautbois were formerly employed for this purpose, but for these a very vigorous sort, of which the origin is unknown, has been substituted. It is called the *Fraisier de Barbarie,* and appears to be a cross between the Old Scarlet and the Chili. Every year gives rise to accidental seedling varieties in the Strawberry fields of Brittany; five or six decidedly good have been preserved. In the neighbourhood of Paris and elsewhere, except on the coast, the culture of the Chili Strawberry is very difficult, and if attempted, can only be continued by obtaining fresh plants every three or four years from Plougastel. At Verrières, where the Chili perished in unsheltered ground, I have succeeded in preserving it for 12 years by planting it in strong soil under the shade of a large Cork tree [*Chêne Liége, Quercus suber*], and by not removing the runners, these being allowed to replace naturally the old plants, the latter soon becoming exhausted. I planted near to the above the Old Scarlet, and successfully all the sorts in the collection; but it seemed to me that the excellent English variety, the *Deptford Pine,* was the best for planting near the Chili in order to set its fruits. I thus obtained some Chili Strawberries which on account of their great beauty and late period of ripening proved very interesting.

"The Chili Strawberry is very juicy, and much richer in soluble than in insoluble substances. Malic acid, nitrogenized substance, fatty matter, and parenchyma non-nitrogenized is found in medium proportion. The total amount of sugar in the fixed and more especially in the insoluble matters is greater than in most other varieties. Cane sugar is met with in notable quantity." *Chemical Examination of the Strawberry,* by M. Buignet.

[The Chili Strawberry crosses very readily with other sorts. We have seen it made the common female parent of more than 20 sorts, consisting of both Scarlets and Pines, and in the crossed progeny, characteristics of the respective male parents could be plainly recognised. For instance, the Grove End Scarlet has very widely serrated leaves; and those of its cross with the Chili were also remarkably so. Wilmot's Superb was a direct cross with the Chili. It was large, but had too much of the tender nature of the Chili. It was, however, much employed by the late Mr. Myatt in his crossing operations, and by perseverance he succeeded in raising the British Queen, Myatt's Eliza, &c. We believe that all the first crossings of the Chili will still prove too tender for our climate, but by again crossing these with hardier sorts any number of excellent varieties may be obtained. As already observed the Chili will cross readily with the Scarlet and Pine varieties, but not so with the Hautbois; and we doubt whether the Strawberry cultivators at Brest can derive any benefit from introducing the male Hautbois into their Chili plantations. Mr. Knight did once, it is true, effect a cross between the Hautbois and a Scarlet; but it had a very decrepid appearance, with a crumpled foliage, and was, moreover, almost a mule.]

Bishop's Thumb Pear.—This well-known variety, formerly much cultivated near London as a standard, is not referred to any French synonyme in the work before us. It is probably of Dutch origin. It appears from the drawing that it takes a high colour in France compared with the dark bronzy hue it assumes in this country. The description given in the "Guide to the Orchard" is appended to that of the fruit as produced in France, a very good plan, for what may be stated correctly of certain fruits grown in one country will not be so when these are grown in another; nor even in places not far apart in the same country.

Poire Petit-Oin. — Syn. Amadonte, Merveille d'Hiver, Merveille Bouvart, Petite Oie. [This variety proved only second rate when grown in this country.]

Poire Cornemuse.—Syn. Chair de Fille, Parabelle Petit Muzette, Poire en vis, Tetine. Season, end of July or beginning of August. This must not be confused with the Poire Musette, which has nearly the same form. The Cornemuse was described by Dom. Cl. Saint-Étienne in 1670.

Poire Moiré.—Syn. Beurré Moiré. Fruit middle-sized or rather large, pyriform or turbinate; stalk short and thick; eye placed in a slight depression, the segments of the calyx cottony, their points approaching each other [like those of the Doyenné, to which type of Pears this variety appears to belong]; skin yellow or olive-yellow, somewhat rough, sprinkled and marbled with ferruginous russet, generally marked with brown round the stalk. Flesh white, firm, granular, juicy but not buttery, sugary with slight perfume. A very good Pear. Season, October. The seedling tree was found in a hedge in the garden of M. de Bellefonds, Commune de Saint-Aubin de Luigné, near Angers, by a gardener named Moiré, and it was sent out in the trade under his name at the recommendation of the Society of Agriculture, Sciences, and Arts of Angers.

Nouveau Poiteau.—Syn. Tombe de l'Amateur. Fruit large, or very large, oblong. Stalk short, thick, obliquely inserted; eye in a slight depression, occasionally surrounded with slight protuberances; skin rough, green or olive-green, but almost entirely covered with large brown russet specks. Flesh white, or greenish white, exceedingly fine, juicy and melting, with a slightly acidulated sugary flavour. Season, November. The maturity of this fruit requires to be watched, as it is not indicated by any change in the colour, for this remains unaltered; but when fully ripe the skin becomes a little wrinkled near the stalk, and yields to slight pressure. When over ripe the fruit does not rot, but melts into a saccharine jelly.

Orange Rouge.—[The tree cankers in this climate, and the fruit proved of inferior quality.]

Poire Goubault.—Syn. Beurré Goubault. Fruit middle-sized, roundish, or apple-shaped. Stalk slender; eye open in a slight depression; skin smooth, pale yellowish green, sprinkled wlth very small brown dots. Flesh white, buttery, very melting and juicy, rich with slight perfume. Season, end of August or beginning of September. [This is a new variety, worthy of cultivation in England. It was raised, according to M. Liron d'Airoles, by M. Goubault, nurseryman, at Mille-Pieds, near Angers (Maine-et-Loire), and bore for the first time in 1842.]

Poire Six.—Syn. Beurré Six. Fruit irregularly oval tapering to the stalk, which is rather long and slender, marked with brown at its junction with the fruit; eye close in a small depression; skin green not only on the shaded side but likewise on that next the sun, and this uniform green colour it retains even when the fruit is ripe. Flesh greenish, remarkably fine and melting, very juicy, sugary, and rich. Season, October, November, and the fruit will sometimes keep till the end of December. Named after M. Six, a gardener at Courtray, in Belgium.

Poire Épine d'Été.—Syn. Bonne Poire de Louis XIV., Figue Musquée, Fondante Musquée, Grande Épine d'Été, Heathcol de Gore, Satin vert (of some). [Among the above synonyms, that of Heathcol appears to be a misprint for Heathcot; Gore's Heathcot is a name given by the Americans to a Pear which they say was originated by Mr. Heathcot on the farm of the late Governor Gore, and they accordingly rank it among their native Pears; but it appears from the work before us that it is the same as the Épine d'Été, an old French sort.] Season, end of August or beginning of September. An excellent early fruit, though not of large size.

Poire Louis Philippe.—Syn. Grand Salomon. Flesh white, tender but not melting, and inferior in quality to many others ripening at the same period. October, when ripe it quickly decays.

Miscellaneous.

Gold Fields in British Columbia.—The despatches from British Columbia, which are published this week, confirm the rumours which reached this country some time ago, about the new gold-fields in the Cariboo district. This district is inclosed between the great curve of the Fraser River and the River Quesnella. Though generally called "Cariboo," and occasionally printed on maps "Caribou,"—it is properly "Caribœuf" or the rein-deer country. Its auriferous character was discovered by a young man of the name of M'Donell, a native of the island of Cape Breton, of mixed French and Scotch descent, and who is described by Governor Douglas as combining in his personal appearance and character the courage, activity and remarkable powers of endurance of both races. His report to the Governor is interesting, and gives the idea of an almost exhaustless gold-field, extending through the quartz and slate formations, in a northerly direction from Cariboo Lake. The following instances of successful mining will probably convey a more precise notion of the value of this gold-field than any

general reports. John M'Arthur and Thomas Phillips arrived at Victoria, from Cariboo, on the 17th of August, with 9000 dollars' worth of gold-dust in their possession, being the fruits of three months' residence at the mines. They arrived there on the 1st day of May, and left again on the 1st day of August, having previously sold their mining claim at a high price to other persons. Their largest earnings for one day amounted to 525 dollars; and no single day's work yielded less than 25 dollars. Both those persons have been mining in California, and are acquainted with its resources, yet they give it as their opinion that Cariboo, as a "generally paying" country, surpasses the best days of California. Mr. Patterson and his brother arrived at New Westminster by the steamer of the 14th of September, with 10,000 dollars' worth of gold dust, the produce of five weeks' work at Cariboo. Mr. Patterson's mining claim was on the Lowhee, a tributary of Swift River, and about 16 miles distant from Antler Creek. The ground was composed of gravel and many quartz boulders, and the depth to the bed-rock was from 4 to 6 feet. beyond which he did not attempt to penetrate, though the richest deposit of gold was immediately over the bed-rock. The gold is in rough jagged pieces; the largest found by Mr. Patterson was over 6 ounces; but on the next claim to his, a piece of 10 ounces was picked up. An extract from a letter, dated 27th August, 1861, from the managing partner of a New Westminster firm at Cariboo, is characteristic:—"Hamburger went to Abbott, who used to be at Langley, and borrowed 2000 dollars. I must let you know that Abbott and Jordon have one of the richest claims in the country. The least they take out a-day, three of them, is 120 ounces. They have a flour-sack of gold 14 inches high. They will make, till fall, 100,000 dollars a piece. Out of one little crevice, while Hamburger was up there, he, Abbott, took 60 ounces out of it, and gold makes your eyes water, and you will never see a greater excitement as there will be next season. If you can send up such goods as we want, do so: as I will explain to you it is only five or six weeks more that pack trains can come in here, and then we can get any price for them; besides which, spring, when there is a lot of people rushing in, and we the only ones which have goods. You bet I would soak into them. The country is all right, there is more gold in it as there was in California; don't say nothing to nobody." But, as we know from the experiences of California and Australia, perhaps the best proof that these new gold-fields are really yielding a large crop is to be found in the highly embarrassing state of the local currency. Throughout the whole colony the scarcity of coin has been so great, and gold dust not being received for duties, that importers of goods have found it difficult to make their Custom House payments, and, it seems, they are frequently compelled to borrow money for that purpose at exorbitant rates of interest, varying from two per cent. per month and upwards. Indeed, almost all the business of the country is now transacted in gold-dust of uncertain value. In one of his last despatches, the Governor states that there is an amount of gold-dust in the hands of miners from Cariboo, residing at Victoria, exceeding one-quarter of a million sterling; and so great is the dearth of coin that it brings a premium of 5 per cent. and over when it can be procured, which, he says, is not very often, as men may be seen hawking bars of gold about the streets of Victoria, who cannot raise coin enough, even at high rates of discount, to defray their current expenses. *Athenæum.*

Fish Culture.—The salmon of Britain and the salmon of the Danube are undoubtedly of such value as to be worth cultivating in quantity; and it is certain that public attention is now being awakened to the breeding of fishes on a large scale; and we have some hopes of operations being speedily commenced on one or other of our large English rivers. Mr. Thomas Ashworth, who was one of the earliest in this country to foresee the importance of pisciculture, and who takes a warm interest in the breeding and preservation of salmon, is about to extend his operations in Ireland. Preparations, he tells us in a recent communication, have been made upon the estates of Lord Plunket, at Tourmakeady, on Lough Mask, and various other suitable situations, on the streams all round Loughs Mask and Corrib, and on the river Rabe. All the great district above the lough will be supplied with fish, and it is a fact that hitherto no salmon have been known to exist in that district, in consequence of the passage from Corrib to Mask having been through cavern and rocks, and therefore inaccessible to fish. An opening having lately been made for the fish to pass up, it is certain to be used by the salmon after they have been introduced into the upper streams; and by this plan waste rivers and waters that are now unproductive will be cultivated. This artificial fish passage is a capital example of engineering skill; it is about two miles in length, cut about five yards wide, and has nearly 30 feet of fall in it. This new district, if properly worked, will undoubtedly turn out a profitable supply of Irish salmon; and now-a-days, with railway and steamboat careering through the country, there is a ready market within an hour or two's distance for any quantity of this fine fish. Does fish-breeding pay? is of course, an important question. But the answer is entirely favourable; the financial results of pisciculture are highly encouraging. At the Stormontfield ponds, on the river Tay, the only expense beyond the construction of the breeding-beds, and the necessary reservoirs and runlets, is the small annual charge for wages to "Peter of the Pools," the faithful nurse of the young salmon, there being scarcely any other money cost. In fact, per individual fish, the annual money charge is not appreciable. The ponds at Stormontfield have had a marked effect on the produce of the Tay, having increased the rental, and consequently the annual profit, by at least ten per cent., affording good interest for the capital expended. The charges incurred in the construction of the French oyster-beds are not at all extravagant; the material used being of the simplest and most inexpensive description, much of it mere rubbish, helps to lessen the sum total. The full cost of an oyster-bed is less than ten pounds. As an example of the figures, we may cite the debtor and creditor account of the bank which has been constructed off the coast of Brittany at St. Brieux; and we shall adopt the official figures of M. Laviciare, commissary of the maritime inscription. These inform us that three fascines, selected by chance from an oyster bank laid down in the year 1859, contained 20,000 oysters each! "The expense of laying down the bank in question was 9*l.* 4*s.* 2*d.*, and if each of the fascines [300] laid down be multiplied by 20,000, 6,000,000 oysters will be obtained, and these at 16*s.* 8*d.* per thousand will yield a revenue of 5,000*l.*!"—an immense profit to obtain with so small an outlay. *Cornhill Magazine.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Attention will now be necessary to maintain a healthy atmosphere in this house; and no effort necessary to secure this should be spared, for it is needless to expect flowers to last in an unhealthy atmosphere. In giving air every care should be taken to avoid cold currents, opening the top ventilators only as long as these will suffice to prevent too high a temperature, and every available surface of bed or border should be kept constantly moist, in order to secure plenty of evaporation. Give frequent attention to climbers in free growth, regulating the young wood before it gets entangled, and see that Hardenbergias, &c., are properly supplied with water at the root. At this busy season there is great danger of neglecting winter-blooming plants, such as Epacrises, Daphnes, &c., but if these are to be had in anything like perfection next season they must be properly cared for now. Show houses are generally kept too close and warm for Epacrises and Heaths, and in that case they should be removed to the greenhouse as soon as they are out of bloom, affording them a rather damp and shady situation for a few weeks. Attend to repotting such as have started after being cut back, and keep them moist and rather close until the roots get hold of the fresh soil.

FORCING DEPARTMENT.

Pineries.—In cases where a regular supply of fruit is required at all seasons, it will be necessary to examine the stock of plants frequently, marking those considered the most likely for fruiting, so as to be able to keep them rather dry at the root for a month or so, which will in most instances have the desired effect of checking growth and throwing the plants into fruit. The only effectual method, however, of securing a supply of fruit at any particular time is foresight in the management of the stock, taking care to get the growth well ripened in sufficient time to allow of affording the plants a short period of comparative rest, which is the only certain means of inducing them to fruit at any desired season. With plenty of convenience this is easily enough managed, but where the accommodation is limited, it is by far the most difficult part of the culture of the Pine. Black Jamaicas and Cayennes are the best varieties for winter fruiting, and the stock of these should receive every attention at this season so as to induce them to make free growth, and a portion of them should be shifted into their fruiting pots as soon as possible. Use every means to afford growing stock a moist atmosphere.

Vineries.—In cases where Muscats are grown in the same house with Hamburghs and other free setting varieties the temperature must be kept sufficiently high during bloom, and until the berries are fairly set, to suit the Muscats; for a crop of these cannot be depended upon from the most healthy Vines, unless they can be afforded a brisk temperature while in bloom and setting their fruit. It will be better, however, to risk having the Muscat bunches somewhat thin than to injure other varieties by maintaining a night temperature of 75°, which is sometimes the practice; 68° or 70° will be found quite sufficient. Get the borders prepared for planting out young Vines, and if these are started into growth before planting do not keep them too warm, or it will be difficult to prevent their sustaining a check after planting out.

Melons.—Encourage those newly planted out with a moist warm atmosphere, so as to get them into full growth as quickly as possible; but plants that are fairly established should be kept cooler, admitting air on every favourable opportunity, in order to secure short-jointed fruitful wood.

Fig House.—Maintain steady treatment, as any check is apt to make the trees cast their fruit. Aim at preserving uniform growth.

Mushroom House.—Trap woodlice by means of flower-pots laid on their sides, placing in the bottoms of them a Mushroom, a cut Potato, or a little dry Moss. Watering occasionally round the sides of the bed with boiling water will also effectually thin their numbers.

Strawberries.—Water regularly and give abundance of air. Those which have ripened their fruit may be planted on a rich border to make runners; they may possibly also produce some late fruit if the autumn proves favourable.

FLOWER GARDEN AND SHRUBBERIES.

The cold winds which we are experiencing, render the management of bedding plants somewhat difficult; it is yet dangerous without great caution to risk even the hardier kinds from under the protection of glass. All that can safely be done until the weather becomes warmer, in the way of hardening stock preparatory to its being planted out, is to give as much air as circumstances will admit without injuring the plants, and to place Calceolarias and the strongest Verbenas in turf pits, where they can be protected. Such things, when removed to cold pits, should be planted out in light soil, which will save trouble in watering and be much better for the plants than keeping them confined in small pots.

HARDY FRUIT AND KITCHEN GARDEN.

Be prepared with a supply of Tobacco water with which to attack Aphides the moment they are perceived upon Peach trees. Go over Strawberry plantations made late last autumn, and replant places where the plants have failed. Get manure wheeled upon quarters where it may be wanted, and see that there is a good supply being prepared for the Celery crop, for without plenty of old rich manure large crisp Celery can hardly be obtained. As soon as the weather shall have become warm, get spring-raised Cauliflowers and Lettuces planted out, selecting for them a sheltered situation and light rich soil. A few branches of evergreens stuck amongst such things after planting so as to screen them from the sun is a great protection, and prevents their being dried up until the roots get hold of the ground. Attend to Vegetable Marrows, Tomatoes, &c., and endeavour to get strong plants, keeping them where they can be placed near the glass, and freely exposed to air on fine days; avoid getting them leggy and tender by too close treatment.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the Week ending April 9, 1862, as observed at the Horticultural Garden.

April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind	Rain
Thurs. 3	4	29.786	29.576	63	35	49.0	49½	47	S.W	[illegible]
Friday 4	5	30.041	29.980	60	38	49.0	50	47	S.W	[illegible]
Satur 5	6	30.050	29.883	56	47	51.5	50	48	S.W	[illegible]
Sunday 6	7	29.944	29.865	56	46	51.0	40	48	S.W	[illegible]
Mon. 7	☽	30.182	30.093	53	42	47.5	49½	48½	N.E.	[illegible]
Tues. 8	9	30.229	30.091	48	38	43.0	50	48	N.E.	[illegible]
Wed. 9	10	30.047	29.929	51	39	45.0	49	47	N.E.	[illegible]
Average		30.075	29.916	55.3	40.7	48.0	48.3	47.5		[illegible]

April 3—Overcast; warm; cloudy and fine throughout.
— 4—Overcast; cloudy, fine; overcast.
— 5—Overcast; cloudy; rather boisterous with rain.
— 6—Overcast throughout; rain at night.
— 7—Drizzly; overcast; cloudy.
— 8—Overcast; rain; heavy rain at night.
— 9—Rain; densely overcast; constant heavy rain at night.

Mean temperature of the week 2 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 35 years, for the ensuing Week, ending April 19, 1862.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 13 ..	55.5	34.1	44.8	15	0.45 in.	7	6	3	3	3	6	[illegible]	[illegible]
Mon. 14 ..	57.2	37.0	47.1	14	0.36	4	8	3	3	2	6	[illegible]	[illegible]
Tues. 15 ..	57.8	38.2	48.0	19	0.47	1	9	4	1	5	[illegible]	[illegible]	[illegible]
Wed. 16 ..	57.0	36.3	46.6	15	0.63	6	9	5	2	3	4	[illegible]	[illegible]
Thurs. 17 ..	57.2	35.8	46.5	14	0.32	8	7	6	2	1	7	[illegible]	[illegible]
Friday 18 ..	58.2	35.8	47.0	14	0.49	5	6	–	2	4	3	[illegible]	[illegible]
Satur. 19 ..	58.1	34.7	46.4	8	0.45	7	11	3	3	1	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 19th, 1854—therm. 77 deg.; and the lowest on the 16th, 1847, and 19th, 1852—therm. 20 deg.

Notices to Correspondents.

Books: *B.* There are Viviani, Voyage dans les Appennins; Tenore, Raccolta di viaggi fisico-botanici; Tenore, Relazione del viaggio in alcune luoghi di Abruzzo citeriore; and Gussone, Tre articoli risguardante le peregrinazioni fatte in alcuni luoghi del regno di Napoli. Pulteney has never been continued in any shape worth mentioning.

Gleichenias: *Ignoramus* says—"Would one of your correspondents publish his experience concerning the culture of Gleichenias?"

Guano: *A Lady.* The following may possibly answer your purpose; use a good handful in a pail of water; stir it well, let it stand for 24 hours and use the clear solution. The mud at the bottom of the pail may afterwards be worked into the soil sparingly. ‡

Insects: *G C C.* The caterpillars which are destroying the young Ash plants by eating the centre of the main stems are those of the Wood Leopard Moth, Zeuzera Æsculi, a beautiful moth which will appear in the perfect state in July; it is then very conspicuous, being white with steel blue spots. The best way to dislodge the caterpillars (only one of the four sent was full grown) is to puff the smoke of a cigar into their burrows, which are easily found, when the caterpillars quickly back out and must be trod upon, or otherwise destroyed. The species is generally rare. *W.*

Names of Plants: *Dido.* Pittosporum Tobira and Campanula garganica.—*S F.* 1, Pteris tremula; 2, Nephrolepis tuberosa; 3, Asplenium bulbiferum; 4, Scolopendrium vulgare.—*Basingstoke.* 1, Elæagnus fusca; 2, apparently a bit of Juniperus Sabina; 3, Lathræa Squamaria; 4, some Hippophaë, probably rhamnoides.—*A Gibb.* The Bottle tree is Delabechea australis; woolly leaved indeterminable without flowers. 2, some Dodonæa; 4, a Casuarina; 5, probably a Hakea. Such things cannot be named further, flowers being indispensable to their identification.

Pelargoniums: *T A.* The state of your leaves shows unmistakeably that the plants are suffering from damp and cold, or from damp in the absence of proper ventilation.

THE LONDON MANURE COMPANY
(Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. Macadam, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0
These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

New Source of Ammonia.
To Manure Manufacturers and Dealers.
ULMATE of AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that Wool contains more Nitrogen (yielding Ammonia) than any other kind of animal matter, proves the Ulmate of Ammonia to be a highly valuable manure, the Analyses by Professor Voelcker, the Chemist of the Royal Agricultural Society, and other high authorities, showing a per centage of Ammonia exceeding 14 per cent., or equal to an average sample of Peruvian Guano, while, from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of Ammonia. Being a fine dry powder, it is peculiarly suitable for use in the manufacture of manures, and preferable to the ordinary salts in use, sulphate of ammonia, nitrate of soda, &c.
Samples, prices, and all information will be forwarded on application to Frederic J. Cornwell, Broker, 7, Great St. Helens, E.C.
LINSEED CAKES, RAPE CAKES, COTTON CAKES, also all Materials used in the Manufacture of Manures, at the lowest market prices.

1862.
BURNARD, LACK and COS. PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.
Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. Voelcker, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer, lies in the fact, that he can weaken down with dry earth or ashes, at much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

Wind Power.
J. R. PEILL, 17, New Park Street, Southwark, S.E., begs to inform intending purchasers that he has now increased facilities for Manufacturing the Patent WIND ENGINES for Pumping, Grinding, Chaffcutting, Pulping, &c.
Prospectuses and all information may be obtained by enclosing one postage stamp, and a Wind Engine in full work may be inspected on the Premises daily.

ANTHONY'S PATENT AMERICAN CHURN.—Butter is produced by this Churn in 12 minutes from cream; and so perfect is the operation, that more butter and better quality is obtained from the same quantity of cream than by any other method ever yet tried.
Upwards of 10,000 have been sold. Price Lists forwarded on application.
Burgess & Key, 95, Newgate Street, London, E.C.

Upwards of 2000 Cases have been reported as Cured by JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.
Agents:—
Messrs. Wood & Ingram, Huntingdon
,, Wood & Sons, Maresfield, near Uckfield
,, J. & J. Fraser, Lea Bridge Road, London, N.E.
,, Grayson & Co. Bury St. Edmunds
,, Wm. Urquhart & Son, Dundee
,, Dicksons & Co., Waterloo Place, Edinburgh
,, Minier, Nash & Nash, 60, Strand, London
,, Fisher & Holmes, Handsworth, Sheffield
,, Finney & Co., Gateshead
,, Stuart & Mein, Kelso
Mr. Richard Smith, Worcester
Seed Warehouse, 10 and 11, Exchange Street, Norwich.

NEAL'S PATENT APHIS PASTILS are now acknowledged by all disinterested persons to be the only cheap and effectual way of smoking a Greenhouse: they destroy all insects, and cannot injure the foliage unless they are damp. Testimonials from Florists and Scientific men of the highest standing may be had on application.
NEAL'S PLANT SOAP
is a perfectly new preparation, free from all smell, little more than half the price of the ordinary compounds, is not injurious, but on the contrary useful to the health of the Plant; destroys Red Spider, Mealy Bug, American Blight, Mildew, Scale, Thrip, Green Fly, and all other Insect Pests, and is only 1s. a packet of four cakes.
Patentee:
Magnified Aphides. J. Neal, Edward Street, Birmingham.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of
PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong. 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.
This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.
May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,
Page & Toogood, Royal South Hants Seed Establishment, Southampton.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.
This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.
Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.
Wholesale by
Red Spider Magnified. Price's Patent Candle Co., Limited.

MONEY ADVANCED to FARMERS, and others of responsibility, upon Personal Securities, Farming Stock, &c., for long or short periods, from 5 per cent. interest per annum, in sums from 100*l*. to 3000*l*.
Applications, in the first instance, to be addressed to Mr. Goodall, 12, Beaufort Buildings, Strand, London, W.C.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To Landowners, the Clergy, Estate Agents, Surveyors, &c. in England and Wales and in Scotland.
The Directors beg leave to announce that the Company's Amendment Bill, 1859, has received the sanction of the Legislature. The Company now advance money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. Humbert, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

Land Drainage.
WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.
Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.
No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.
Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.
Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.
Applications to be made to William Clifford, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

Agricultural and Commercial Analyses.
PROFESSOR TUSON, F.C.S., Lecturer on Chemistry to the Royal Veterinary College, undertakes AGRICULTURAL, COMMERCIAL, TOXICOLOGICAL, and other ANALYSES.
A List of Fees and every information respecting analytica and all other kinds of chemical investigations may be obtained by applying to Professor Tuson, Royal Veterinary College, London, N.W.

FREE STUDENTSHIP
in the
EDINBURGH NEW VETERINARY COLLEGE.
SUMMER SESSION, 1862.—Gentlemen entering the New Veterinary College not later than the 7th May will be entitled to Compete for a FREE STUDENTSHIP at the close of the Summer Session.
For further particulars and prospectus apply to Professor John Gamgee, New Veterinary College, Edinburgh.

ESSEX AGRICULTURAL ASSOCIATION.—The ANNUAL SHOW will be held at Halstead, on TUESDAY, June 3. Amount of Prizes offered, 660*l*.
Special Prizes open to all England.
For the best Entire HORSE, for Agricultural Purposes, the Proprietor being a Member or paying an entrance fee of One Guinea—25*l*.
For the best Thoroughbred Entire HORSE, the Proprietor being a Member, or paying an entrance fee of One Guinea—25*l*.
For the best BULL, of any age, of a pure breed, the Proprietor being a Member, or paying an entrance fee of One Guinea—15*l*.
For the best RAM, of any age, of a pure breed, the Proprietor being a Member, or paying an entrance fee of One Guinea—10*l*.
POULTRY (in Classes) .. .. .. £38 10s.
STEAM CULTIVATION 50 0
IMPLEMENTS 50 0
SHEEP SHEARING 10 0
Conditions may be had on application to the Secretary, Mr. Robert Emson, Halstead, Essex.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.
BATTERSEA PARK, LONDON.
STOCK PRIZE SHEETS and CERTIFICATES will be forwarded on application.
CAUTION—LAST DAY of ENTRY, 1st MAY.
All Certificates received after that date will be returned to the Senders. H. Hall Dare, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, APRIL 12, 1862.

MEETING FOR THE ENSUING WEEK.

Monday, &c., April 14, &c. { International Fat Cattle Show at Poissy, near Paris.

An exceedingly interesting paper, professedly on Dairy Husbandry, but really confined to the subject of Butter-making, was on Monday last read by Mr. Dumbrell of Ditching, near Brighton, before the London Farmers' Club. Leaving it to others to seek the honour due to him who makes two blades of Grass to grow where only one had grown, Mr. Dumbrell sought the subordinate merit of making the most of the one blade, providing he could get it. And this in the circumstances in which he was placed was to be done by converting it into butter. For this purpose he had provided a herd of Channel Island cows. These, during the early summer months he tethered on natural pasture, giving them other food in addition at difficult seasons in the summer time and throughout the autumn, spring, and winter months. And arranging so that an equal number should come to the pail month by month, he contrived by cleanly management in the dairy, and by frequent churning, for on that he mainly depended for the quality of his produce, to provide a constant supply of good butter for his numerous customers—the residents in Brighton, whom he described as "the West End out of Town." The key to his economical use of the Grass lay in

tethering his cows and letting them have only 18 inches at a time (but 10 to 15 times a day if necessary) of fresh pasture. The key to his successful dairy management consisted in churning every day—"Do this and you may feed your cows on Turnips, Mangels, even Onions if you please, and you will not be troubled with their taste in the butter."

Mr. Dumbrell speaks of 18 years' experience on a herd of Channel Island cattle, varying from 130 to 150 of all ages, and his statements are to be received with respect. His paper will be found in another column. Though every speaker who followed him paid it the deserved tribute of admiration of its practical tone, yet many disputed its conclusions, and disapproved of the plans it recommended.

Mr. Little, of Chippenham, did not understand from the announcement of the subject that the discussion was to be confined to butter making. In his county dairy management means cheesemaking. The tethering of the large Short-horn cow, and the constant and detailed attention needed in the field under that system, would be impossible and undesirable, even were it practicable, in the case of the large herds which depasture the Grass fields in his county. Mr. Little recommended Keevil's cheese-making machine, which rendered the farmer independent of the dairymaid, whom it was more and more difficult to meet with.

Mr. Wood of Sussex could bear the witness of a neighbour to the practical utility and success of Mr. Dumbrell's plan, and especially of his tethering. Many a novelty appeared almost childish at first which on trial proved of substantial merit, and this was an illustration of it. He, like others, had at first thought the detailed superintendence of the tethering system a little and petty matter, but he had adopted it and found it beneficial not merely for the docile Channel Island cattle, but for the obstinate Sussex breed. He believed that Mr. Dumbrell's plan, in which the profit was obtained without expensive outlay, was after all the safest and the best.

Mr. Ellis, as a Short-horn breeder, but not possessing any special experience of the plans recommended by Mr. Dumbrell, recommended the Ayrshire Cow as more profitable than the so-called Alderney, on account especially of the greater value of the cow for fattening in case of her failing for the dairy. The Alderney crossed by the Short-horn was also useful both for the dairy and for grazing.

Mr. Ellis could not believe the tethering to be advisable for the large Short-horn cow. He agreed with all that Mr. Dumbrell had said about the need of ventilation in cow-houses and cleanliness in dairies. He did not believe that Turnips were to be recommended for the dairy cow, as they certainly affected the taste of milk and butter. The most effectual remedy he had found in the practice of pulping instead of slicing roots, and giving them thoroughly mixed with chaff of hay and straw. Cabbages he had found a capital food for dairy cows in winter time. Oilcake and meal given as adjuncts to other food for milch cows he had on the whole found profitable, taking into account the superior fertilising character of the manure thus made.

Mr. Middleton, of Buckinghamshire, spoke of his experience of a pure bred Short-horn herd for the dairy. He had obtained 5 or 6 cows of Colling's blood, and had now a considerable herd of pure bred Short-horns, and taking into account the greater value of the calves, he was satisfied that the annual income from the cows was, on the whole, increased. He could not agree with Mr. Dumbrell in his feeding. Butter made from cows when fed on Turnips and Mangel Wurzels is sure to be returned unsaleable, whatever the care taken in making it. Mr. Middleton's conclusion, founded on personal experience and on what he sees wherever he travels, is that the Short-horn breed is the characteristic and best dairy breed in England.

Mr. Coleman, of Woburn, recommended the Polled Suffolk breed as combining yield of milk with aptitude to fatten. He also said that the first cross of either Hereford or Ayrshire with the Short-horn improved its value as a grazing and also as a dairy breed, but that the cross, if again put to a pure bred Short-horn, was a worthless mongrel. On the subject of food he recommended the Red Carrot as the best winter food for the dairy cow, maintaining quantity, quality, and colour of butter in the winter months the best of any.

Mr. Cousmaker, of Guildford, made neither butter nor cheese from his dairy of cows, nor did he sell milk. He manufactured veal. The Jersey breed he believed to be the best dairy breed, but the Guernsey, on account of its greater size, &c., to be the best farmer's cow.

Mr. Lloyd, as the material of the milk pans, recommended slate, but spoke of a French porcelain as superior for the purpose to anything made in England, and expressed the hope that we should see specimens of it in the Great Exhibition.

The Chairman, in summing up a very interesting discussion, vindicated remarks he had made when introducing the lecturer, on the need of a superintendence of the dairy being exercised by the mistress of the house in order to a successful result.

Mr. Dumbrell replied upon the discussion generally. He farms 200 acres of pasture and 100 acres of arable land within eight miles of Brighton. He feeds on that land 150 head of the Channel Island breed, and winters 150 sheep, and this he does without any purchase of artificial food. The practice he had described suited his circumstances, and he believes it is calculated to succeed elsewhere, but of that every one must judge for himself.

OUTFALLS AND LAND DRAINAGE.

You observe truly in your last impression, the question of securing better outfalls is one of serious, and even threatening importance. I grieve to say that for any benefit the country generally can receive from the Act of last session, it is as far from an economical or thorough system of drainage as ever, the ground in which the Land Drainage Act would be most beneficial, being pre-occupied by local or private Acts, over which a public Act has not any control. The question whether owners of land within these fastnesses can derive any advantage from Mr. Clive's Act depends upon the construction of the 56th clause, which appears to give local trustees the power of making use of some of the provisions of the Act; but it is much to be feared very little benefit will result from this, as a clause to the same effect forms part of Lord Lincoln's Act. That local Acts attempting to combine navigation with drainage (nearly 900 of which have, if I am correctly informed, been passed) are illegal, *i.e.*, are directly contrary to the spirit of the law of England, I have not the least doubt. You are aware the Roman law is the basis of the law of England, M. De la Tréhonnais informs us in his interesting article upon the water economy of France in the last Number of the Royal Agricultural Society's Journal—"Wherever the power of Imperial Rome was extended the Roman laws were implanted. This explains how much of that old legislation is found in the codes of modern nations."

You are also aware that Britain formed a portion of Belgic Gaul, and was therefore subject to the Roman law, which "distinctly enforces the cleansing of the beds of rivers, with the object of either removing obstructions from their channels and so preventing their overflow, or secondly, of insuring the supply of wholesome and pure water to those who have a right to make use of them; or thirdly, guarding against the infection produced by stagnant water. In France, the State, as owner of all navigable rivers, is bound to clear them of all obstructions, as are likewise the proprietors of private streams over the whole extent of their possessions."

The free course of rivers appears to have been considered of so much importance in England, that we find the Barons demanded of King John the abolition of all weirs throughout the kingdom, which demand was granted, and in the subsequent reign it was enacted by the 23d chapter of Magna Charta (9th Henry III.) that every weir, not being near the sea coast, should be pulled down. The law, however, appears to have been neglected or evaded, as the 1st & 4th Chapters of Henry the IVth enact, that penalties be levied against persons "straitening," *i.e.* reducing the width of a weir. To divert the channel of a river and obstruct its course by placing a canal directly across it, as the practice has been for the last century and a quarter in England, appears to be therefore contrary to the laws of this country; and properly so, the object of them being "the common weal," for, wherever a combined system of drainage and navigation is attempted, it will be found that for every shilling gained by the carriage of goods along a canal, at least 20 are lost by the owners and occupiers of the adjoining lands, and consequently lost by the state. That a remedy would be found for this gigantic evil if the question were fully discussed there cannot be a doubt. I trust, therefore, the summer of 1862 will not be allowed to pass away without a complete and thorough investigation of the subject; for this purpose I would beg to propose a meeting should be held in London in May, and a second during the week in which the Royal Agricultural Society meet. *Civis.*

STEAM CULTIVATION.

North Park Farm, Lewisham.—The student of agricultural maxims should examine the market gardening around London. Where the supply of manure is exhaustless and the depth and thoroughness of tillage cannot be excelled you get of course the very greatest growth of which our climate is capable, and that is what our market gardens show. Take an energetic man whose agricultural education and experience have been acquired under circumstances of this kind, and place him within reach of abundance of manure on land which needs good tillage in order to its fertility, and even though it be beyond the limits of the London Market Garden system, you will in all probability soon see the best field cultivation and the best field crops of which ordinary agriculture can boast. This is what Earl St. Germans did when, 17 years ago, he accepted Mr. Edward Sheppard as the tenant of his North Park Farm near Lewisham.

We called attention to the vigorous management of the North Park Farm some weeks ago (p. 217). At a time when other land close by was still soft, and in fact puddled, it was treading firm and dry in consequence of efficient land drainage. When the former, sown earlier, was already covered with the bushy green of an over-seeded Wheat plant, now yellow enough, the latter showed the uniform dark green of thinly seeded Wheat fields, each plant separate from its neighbour, and all still retaining a healthy colour, notwithstanding a month of rain. It is not, however, to the difference between the North Park Farm growing out of market gardening, and the neighbouring land under agricultural management of the olden style, but to the merits of the former by itself that we have now to speak.

There never was a more capital illustration of the way in which the land exhibits the tenant. At the commencement of the tenancy worse than that which now acts as foil to it, for the latter may be supposed to have made some progress during the interval; undrained, in many fields, a shallow, unkind clay and clayey gravel, in managing which the tenant was the mere slave of the weather, it now lies in large fields, one of nearly 200 acres, drained and deeply tilled and full of dung. Formerly a disgrace to the agriculture of the day and of the place, for it is within sight of the Great Market, it is now a first class specimen of good management and large produce. The land has been all drained by the tenant (protected by a lease of 21 years), the material only being provided by the landlord. This has been done about 3ft. 6 inches to 4 ft. deep at intervals of 16 feet. A double interval was at first adopted in obedience to the prevalent Government system, but the drainage being imperfect it was interlined and so made what it is, as good as possible. In many of the fields a layer of concrete or ferruginous pan was found just under the shallow soil, the product, in all probability, of stagnant water and shallow cultivation. This was removed by subsoil plough, crowbar, pickaxe, and the cart. Deep cultivation followed drainage, and liberal dressings of manure soon brought the land to its present good condition. New buildings and a capital residence for the tenant have since been built, and the latter has at length allowed his energetic temperament to develope, as all agricultural energies ultimately will, into steam cultivation.

Now consider the particulars of this case: here is a farm of only 250 acres using 10 horses (for the work of carriage under the style of management adopted is enormous) and the tenant, a shrewd and intelligent man, believes it to be his interest to purchase Fowler's 10-horse engine, and his three or four-furrow plough. Its immediate result is that seven horses suffice for the work of the farm in place of 10. But it is plain that the profit of the transaction will not arise out of any saving of costs already incurred—the costs are in fact increased by it—the advantage will arise out of the deeper and better cultivation thus effected. Here in fact we have in operation a maxim which lies at the very antipodes of what was quoted with approval last Monday at the London Farmers' Club—that it is safest and best to get the profit without the outlay. This is true most likely in the majority of cases—but it is to the minority, of more vigorous and energetic temperament, that the hopes of our consumers and of the well wishers to our agriculture must be directed. During last autumn when Fowler's steam plough was brought upon the farm, about 160 acres of land were ploughed and worked with the digging breasts—a little of it on a neighbour's land. A thorough and deep tillage of stubbles was thus effected, and the land has lain all the winter in a perfectly dry, firm, and healthy state, undamaged either above or below by the tread of draught animals. The cost of the work is very considerable. It includes wages equal to 13*s.* a day; the engineer and ploughman receiving a guinea a week and the anchorman 15*s.* The coals consumed, half a ton daily, are costly too in Kent.

But the expense of the work, compared with its quality, is a profit-making outlay; and great as the produce of the land has hitherto been, the results of more through tillage still, already seen in the condition of the soil, are fully expected at harvest time. Of Mr. Sheppard's 250 acres about 20 are permanent pasture. Where ample manuring is applied a rotation of crops need not be maintained, but an alternate system of grain and green crops is for the most part observed—70 to 90 acres of Wheat and 30 to 40 acres of Oats are grown, an average produce of 5 and 10 quarters per acre respectively being obtained. The Rough Chaff variety of Essex White Wheat, a very short strawed variety of fine quality, and the Scotch Sandy Oat and the Tartarian

figured last week in our columns, are the sorts chosen. About 30 acres of Potatoes are grown. Autumn cultivation is followed by the manure cart during winter. The dung is spread and ploughed under as soon as the land is fit, and the Potatoes (Regents) are dibbled in at intervals of 18 inches, in rows 2 feet apart; two or three cwt. of guano are sown broadcast per acre as the plants are coming through and covered by the first hoeing. From 15 to 20 acres of Mangels are generally grown. Autumn cultivation and a very heavy dressing of Peruvian guano, sometimes as much as half a ton per acre, are the key to successful cultivation here. The seed is sown in drills on the flat, 24 inches apart, and set out to 15 or 16-inch intervals.

Mr. Sheppard grows his own seed, an Orange Globe being selected, and the palest coloured roots being chosen for seed, in order to obtain a heavy produce. This crop like every other—Wheat, straw, roots, hay, forage—is sold off the farm. About 30 acres of Vetches are grown and cut as forage and sold per acre. Some of these are followed by Broccoli if the weather suits, and this also is sold in the proper season. Twenty or 30 acres of Clover after Oats make up the farm, and of this too (first and second cut) a portion is sold. Besides all this, 5 or 6 acres of Rhubarb, and an acre or two of Seakale are grown. The latter — one-year old seedlings — are dibbled about 15 inches square on the well tilled ground, and removed in November and December to hot-water beds, sprouted in 6 weeks, and sold in Covent Garden. This, however, is only a fragmentary remainder of market gardening practice. The rest is all genuine agriculture—the cultivation of field crops for sale. It is plain that excepting the stable no manure whatever is made on the farm. Immense quantities are bought at brewers' stables and livery stables in the neighbourhood. That from cowhouses, the produce of purer food, is not worth nearly so much. Half-a-crown per horse of the team drawing it away is paid for dung at the stable door. A two-horse load thus costs 5*s.*; add to this the expense of the man and horse, taking generally only two journeys a day, and adding this 15*s.* to the purchase money paid, it will be understood that large produce is needed to make the system profitable.

There is indeed many a farm within 30 miles of London near a railway station where town dung is delivered more cheaply, and which is as well suited as the parish of Lewisham for this vigorous style of management, and that is one principal reason for this description of it in our columns. Twenty loads per acre over the Potatoes and for Vetches and occasionally for Mangels, though these are generally grown by guano only, represents the quantity purchased and applied.

For the Potato land some of the manure had been already brought on when we first walked over the land (p. 217), a large remainder had to be accomplished, and it was for this with doubtful weather before him that the tenant prayed for a balloon by which it might be done! Ever active to seize and make the most of an opportunity however, a couple of frosty mornings have since occurred which answered quite as well, and any labourer and horse about the place, or to be hired, was set to work, and the dung brought on in safety without a rut being left upon the surface of the field. The frost has gone and a month of rain has supervened and is still falling. Enforced idleness is worse to bear than labour, but this man can wait as well as work. And though unquestionably 400 tons of water fallen per acre have compressed the soil somewhat, and it will plough up firmer than it would have done; yet, uninjured by any act of cultivation, thrown together in the dry five months ago, and unworked since, with ample and sufficient drainage all through the season, it is not to be doubted that on the whole this constant passage of rain water through the land has been filling it with food for plants, and when again dry enough for tillage it will present as good a seed bed and feeding ground for the future crop as can be imagined.

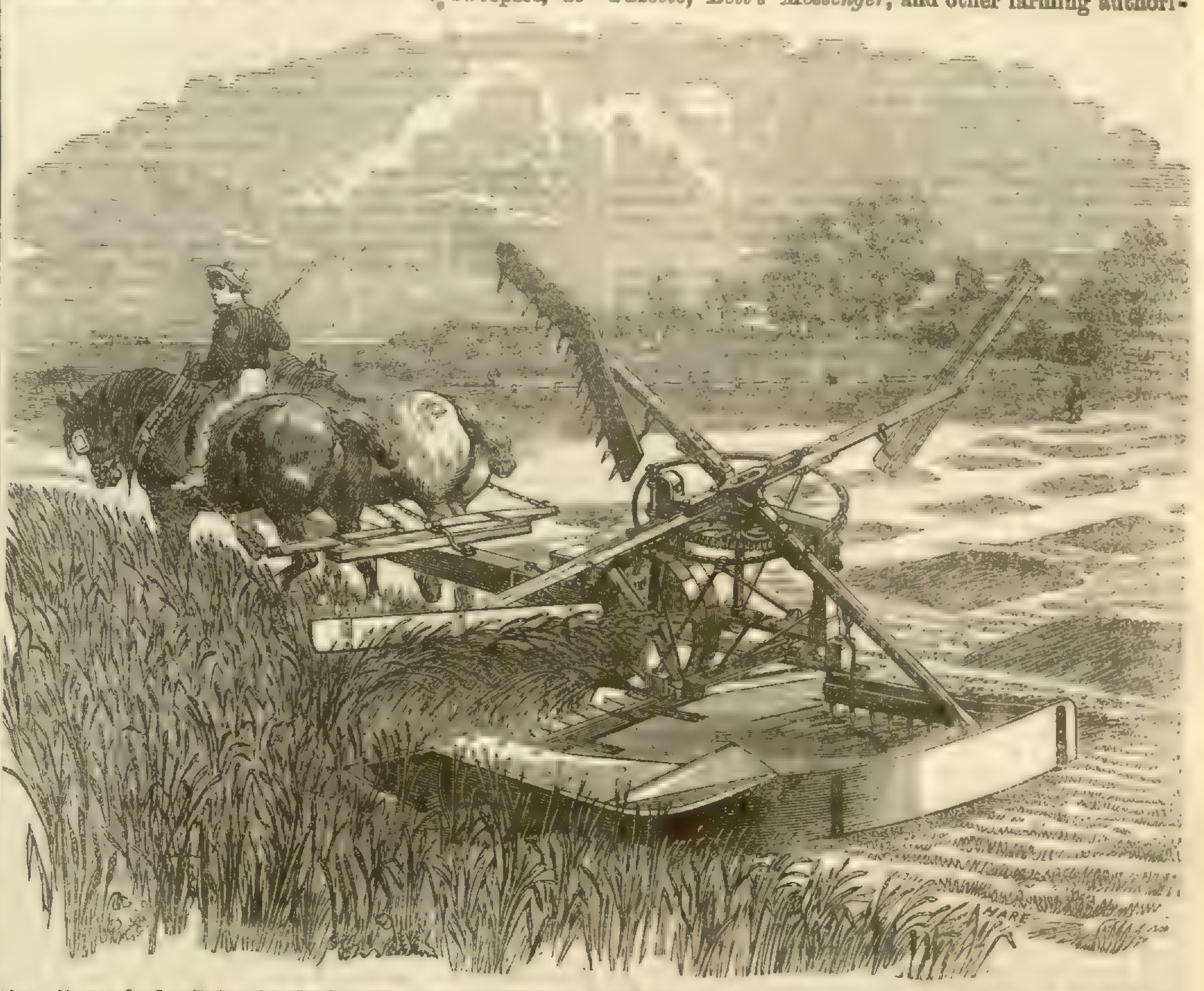
We may mention as an interesting matter of detail that in 1860, possibly as a consequence of wet and growing weather, the drains in a Mangel field became stopped by the Mangel roots, and so hindered the drainage of the Wheat field beyond. Mr. Sheppard at once cut a main through the Mangels, and a new cross drain between them and the Wheat, so as to take all the water from the drains of the Wheat fields thus securing that crop against injury, and he has found that the roots which filled the drains below have since the removal of the crop withered and disappeared, and the drainage of the lower field is now as good as ever again. This is a fact which teaches the efficiency of patience in cases when a remedy is often hurriedly and expensively applied.

THE NEW SELF-ACTING REAPING MACHINE.

The woodcut represents Mr. Samuelson's new automaton reaper, of which we reported some of the performances last autumn.

Its inventor is Owen Dorsey, of Maryland, United States. An older form of the same implement was sent to Mr. R. C. Ransome, by a correspondent in Australia, whither it had found its way from America, and where it appears to have done good work. In this machine, to quote the "Mechanics' Magazine," the reel and the rake or sheaf deliverer are, as it were, concentrated in a single apparatus, which at once brings the grain to the cutters, like the old reel, and removes it at intervals after it is cut, like the rakes of the various self-rakers previously spoken of. Besides the well-known constituents of the ordinary reaping-machine, it has a vertical shaft, whose base is in a line with the knives, but, of course, beyond and clear of them. This shaft, which revolves, carries a number of rakes or sweepers, so guided by a stationary cam surrounding it, that they enter the grain sideways, bring it back towards the knives, traverse the platform on a level, sweep off a sheaf, then rise so as to clear themselves from it, and drop into the standing grain at the next revolution.

According to the reports of the *Agricultural Gazette*, *Bell's Messenger*, and other farming authorities, it worked efficiently during the last harvest in various parts of the United Kingdom, but more especially in the border counties of Scotland and the Lothians, where reaping-machines are better understood and more generally used than in any other part of these islands.



We saw it do good service in Oxfordshire, and the opportunity which we had at the annual Birmingham cattle show, of again examining its mechanical construction, has by no means diminished the favourable impression which it made upon us on the former occasion.

Home Correspondence.

Steam Culture.—"South Essex" tells us that his (Fowler's) direct traction tackle "claims to be a system of itself, and enforces the levelling and removal of fences hedge-row timber, the relaying out farms, straightening and making good roadways." This may be all very well, but there is a limit beyond which it cannot be carried. Public roads and water courses must remain and will to a great extent prevent our farms being put upon the level or square. I only ask that all needless filthy hedges be got rid of, the roads on farms made good and the buildings placed conveniently to the land. This done I will undertake that my tackle shall accommodate itself to the rest. Now permit me to explain to "South Ess x" that his (Fowler's) tackle is not only direct traction, but also the "round-about system," for what is his rope at when at work, but at play at one catch all. Now a system that is not "round-about" is a direct pull without a back rope. Let "South Essex" send his order at once, I will supply them with some direct traction tackle that will work their implements without any back rope at all. I have one customer who is working direct without any back rope at all. My arrangement is to place a self-moving engine on the headland, with two drums combined, with 500 yards of rope upon each drum, to be led from the side of the tackle across the field. On the opposite headland I do not want an anchor at all, but another engine and drums with ropes similarly combined. With these two engines I work two implements passing and repassing in the middle of the field, the engines always winding the implements towards themselves, which are always both at work. After this I hope I shall not hear any more in disparagement of the "round-about system," especially as these two engines complete can be had at about the cost of one set of Fowler's tackle. Mark you, I am not recommending these combined engines, but I do recommend large occupiers to buy two sets of my tackle to effect this same object, for I can supply them at the same price as the cost of one set of Fowler's, and they have one vast advantage—that of working together for the first month or so after harvest, when one may go home to thresh, grind, &c., leaving the other to finish the autumn cultivation. The plan of working then is the same as the explanation given for the working of the two combined engines, except that the engines and windlasses are set down in the ordinary way, one on each headland, to do, say from 15 to 20 acres, with the ropes led round snatchblocks anchored at starting in the corners of the field, and brought along the headlands until the 15 or 20 acres are done, then the engines and windlasses are shifted on to do another 15 or 20 acres, and so on, until the whole field is done. I quite agree with Mr. Sidney that, having got apparatus, we want to know the best way of applying them. That this is no after thought I am able to prove, for on the 30th of December last I addressed a letter to the Council of the Royal Agricultural Society upon the very subject, and from a communication I have recently received from the editor of the Society's Journal I have every reason to believe that you will hear something more upon the point. *William Smith, Woolston, Bletchley Station, March 24.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

MONTHLY COUNCIL: *Wednesday, April 2.*—Lord Portman, President, in the Chair.

Colonel the Hon. A. N. Hood was elected a governor of the Society.

The following New Members were elected:—

Allcroft, John Derby, 9*, Wood Street, E.C.
Allen, Stephen H., Abbott's Ann, Southampton
Barter, George, Sarsden, Oxford
Barneby, John Habington, Brockhampton, Hereford
Beauchamp, T. W. B. Proctor, Langley Park, Norfolk
Brebner, James, Norfolk Farm, Windsor
Browning, James, Oxford
Boards, E., Edmonton, Middlesex
Blun lell, Wm. Henry, Kidderminster
Capper, R. Harcourt, The North Gate, St. Weonards, Herefordshire
Clarke, R. B., Haynes Hill, Barbadoes
Clutton, Wm., 1, Portland Villa, South Norwood, S.
Cotton, Major-General F. C., Cilhendre, Ruabon
Crewe, Sir J. H. Calke Abbey, Darby
Dalton, James, Fillingham Manor, Lincoln
Dester, Wm., Seckington, Warwick
Dobito, Geo., Lidgate, Suffolk
Dunnicliff, Wm. Trowell, Nottingham
Emery, Edward Crosweller, Hurston Place, Storrington, Sussex
Emery, Richard Coleman, Hurston Place, Storrington, Sussex
Forbes, John M., Dropmore, Maidenhead
Fountain, B. T., Stoke House, Buckingham
George, Thomas, Bythorn, Huntingdon
Godsal, P. Wm., Iscoyd Park, Flint
Goodey, Golden, Chapel, Essex
Grenfell, Arthur Riversdale, Travellers' Club, S.W.
Hawkins, T., Jun, Sugnas Farm, Hereford
Hewitt, James, Posbrooke, Hampshire
Hilliard, George Bridge, Springfield, Essex
Hole, James, Muskham Woodhouse, Nottingham
Hollings, John Albert, How Caple, Hereford
Kinloch, John, Logie, Forfar
Knapping, Dale, South Shoebury, Essex
Little, Edward, Lanhill, Chippenham
Lyell, Thomas, Shielhill, Forfar
Monkhouse, F. T., Dorney, Bucks
Moore, Henry, Elmley Castle, Worcester
Mott, Charles John, Lichfield, Stafford
Naper, James Lenox, Loughcrew, Meath, Ireland
Parson, William, Rivers Hall, Boxted, Essex
Parson, W. N. F., Rivers Hall, Boxted, Essex
Preece, John, Cressage, Salop
Pillias, Alexander, Bursledon, Hampshire
Roberts, Bennett, Stokes, Chester
Russell, Charles, Swallowfield, Berks

Sampson, Henry, Atkins, Rowney Abbey, near Ware, Hereford
Stallart, William, Brockhampton, Hereford
Stone, John Jefferies, Ashton Villa, Wick Lansham, Upper Lewisham Road, S.E.
Tait, Henry, Shaw Farm, Berks
Tattersall, Wm., Kirkstall Bridge, Leeds
Toward, Alexander, Osborne, Southampton
Walker, Marmaduke, Addington Lodge, Surrey
Goatsworth, John, Great Grimsby
Webb, Frederick Pace, Evesham, Worcester
Wiggins, Walter John, Wallington, Oxfordshire
Winterton, Thomas, Alzewas, Hays, Stafford
Woodburne, Thomas, Ulverston, Lancaster

Before the commencement of business, the President informed the Council that her Majesty had been graciously pleased to present the Society with a print of his late Royal Highness their President, for which the humble and grateful thanks of the Council were moved by the Earl of Powis and seconded by Mr. Jonas; and it was resolved that the President be requested to convey to her Majesty, through the proper channel, the humble and dutiful acknowledgments of the Council for her Majesty's gracious condescension.

Finances.—The Hon. Colonel Hood presented the Report, from which it appeared that the Secretary's receipts during the past month had been examined by the Committee, and found correct. The Secretary had issued a circular during the last month, to all Members owing their Subscriptions for the present year. 2146 letters had been sent out, and 1200*l.* already collected. The balance in the hands of the bankers on the 31st March was 3192*l.* 2*s.* 7*d.* The balance-sheet for the quarter ended 31st March, and the statement of subscriptions and arrears, were laid on the table, the amount of arrears then due being 579*l.*

The cows in Class IV. of Shorthorns at Leeds having failed to qualify for the prizes which were awarded to them, viz., No. 116, Duchess 77th, the property of Captain Gunter, of Wetherby, and No. 123, Queen Mab, the property of Richard Booth, of Warlaby, the Council directed that the prizes should be given to the owners of the animals considered next in merit by the judges, viz., 1st prize to No. 128, 2d Duchess of Gloucester, the property of Lady Pigot, of Branches Park, Newmarket; 2d prize to No. 124, Queen of the Vale, the property of Richard Booth, of Warlaby, Northallerton. And the heifer in Class V. of Shorthorns, viz., No. 137, The Soldier's Bride, the property of Richard Booth, of Warlaby, having likewise failed to qualify, the prize was directed to be given to the owners of the animals considered next in merit; 2d prize to No. 139, Claret, the property of Joseph Robinson, of Clifton Pastures, Newport Pagnell; 3d prize to No. 133, Duchess 79th, the property of Captain Gunter, of Wetherby.

Journal.—Mr. Thompson, M.P., presented the report, the first paragraph of which stated that there seems no longer any adequate motive for publishing Professor Simonds' lecture on Rot in a separate form. A division took place on this paragraph, it being resolved that the pamphlet ought to be published at once. 18 votes were given for immediate publication (the Professor having stated that the pamphlet would be ready in ten days), to 4 Noes. The report further intimated that the essay competing for the prize in Class I. (Agriculture of Staffordshire) is not considered deserving of the prize. It was determined that the offer of this prize should be deferred for another year.

London Show.—The Earl of Powis presented the report, stating that many offers had been made of land for the purpose of an exhibition of steam cultivators in the neighbourhood of the metropolis during the period of the Show, and recommending that a Sub-Committee be authorised to make the necessary arrangements for the lease of 150 acres offered. The programme of the prices of admission on the several days of the Show was prepared for publication. Mr. Milward accepted the office of Steward of Live Stock, Sir Edward Kerrison that of Steward elect of Implements, and Mr. Barnett and Mr. Wells of Stewards of Refreshments.

Memorials were presented, signed by the Mayors and Town Clerks of Cardiff, Hereford, and Worcester, soliciting the Council to hold the Society's Country Meeting at those places in the year 1863, and a Committee was appointed to inspect the various sites offered for Show-yard and trial fields, and report to the Council on the 7th of May.

A Meeting of the Society was held on Wednesday in the Society's rooms, Hanover Square, Sir E. Kerrison, M.P., in the chair. The subject for discussion was

The Growth of Mangel Wurzel.—Mr. Frere said his object was to report to the Society an experiment which he had undertaken with the view of instituting a comparison between the merits of Lawson's artificial guano and the ordinary Peruvian guano on the growth of Mangel Wurzels. There were two points in which Mangel Wurzel was a valuable crop; first, it would bear forcing, and next it would bear strong. Practical farmers knew extremely well that if they endeavoured to force their corn crops to a considerable strength there was danger from the increase of the straw, or from that straw going down and being lodged, and the yield of corn being in some cases decreased instead of increased, and also a falling off in the quality. There seemed hardly any bound to the power of forcing a crop of Mangel Wurzel, unless it was intended for the manufacture of sugar. Again it was a most valuable plant in respect of storing. He had been asked how it was possible to insure a succession of green food. But for Mangel Wurzel it would be difficult to say how a series of green crops could be so arranged as to provide for all the gaps in the season. A store of Mangel was a bank on which the farmer could draw at any season of the year, and so long as he had a good bank of that article in his fold he need not be under the fear of injury from a gap occurring between any other two green crops. His object had been to test the value of Lawson's artificial guano as against the Peruvian guano, and to ascertain which was the most valuable. He applied 4 cwt. of Lawson's guano and 4 cwt. of the Peruvian mixed with 4 cwt of common salt. The mixture was strewed on the ridges before the ridges were split in the spring; $1\frac{1}{2}$ cwt. of superphosphate, with 15 bushels of burnt ashes, were drilled in with the plants, and alongside of these were tried 10 tons of farm-yard manure, also with the addition of 4 cwt. of salt, and the mixture of 6 tons of farm-yard manure and 2 cwt. of Peruvian guano. The cost, both of Lawson's and of the Peruvian guano, might be taken at 2*l.* 10*s.* per acre. He thought he could hardly put a lower value than 8*s.* per ton on the farm-yard manure spread on the ground.

Mr. Holland inquired if all the articles were put on in the same way.

Mr. Frere replied that they were put on the ridges before the ridges were split. Before stating the result, he wished to mention the nature of the season, because a great deal depended upon that. In Cambridgeshire the seed was good and the plants so even that it was hardly necessary to transplant one plant in a hundred. The season was showery until the 9th of June. From that time there was a scorching burning summer almost without rain until the 1st of October. This was so peculiarly the case in his neighbourhood that his fields of White Turnips drilled in with artificial manure came up well and were singled out well; but in August they were to be seen burnt up almost like cinders and ashes. When the rain came in October, the piece of land manured with Lawson's guano was somewhat exhausted, and the leaves began to turn. That manured with the Peruvian guano still retained its full vigour in the leaf, and therefore there was a much greater increase in growth in the month of October in weight on the piece manured with guano, and also on that on which there was a mixture of guano and farm-yard manure, than upon the acre manured with Lawson's guano. When the crops were taken up, three drills on each piece were selected by himself with the utmost impartiality, and they measured 17 poles. The weight per acre was, under Lawson's guano, only 14 tons 18 cwt.; under the Peruvian guano, 22 tons 2 cwt.; under the farm yard manure, 16 tons 14 cwt; under the mixture of manure and guano, 21 tons 15 cwt. The land manured with the Peruvian guano therefore produced a considerably larger crop, not only than the land manured with Lawson's guano, but also than the land to which the farm-yard manure had been applied. This was no doubt owing in a great measure to the season, and if he were asked to explain the matter, his belief was that the use of the guano tended to a much larger development of the leaf. When he tried guano against the farm-yard manure four years ago, on nearly the same ground, the farm-yard manure and the guano gave the same weight of bulb, but the farm yard manure gave a greater amount of leaf than the guano. In a very dry season the plant derived as much growth through the medium of its leaves as of its roots. At all events, in a dry season, the proportion of the increase due to the leaf rather than to the root was much larger than in the rainy season. It was always of importance with respect to any experiment not to look merely to one year's growth, but to look back in a certain degree to previous crops in the same ground, and also to the condition in which the ground had been left. In 1859 that land was in Sainfoin, which had been sown as a layer with Barley. It was mown once, and fed off twice, part with ram lambs eating corn and cake, and afterwards with a flock of ewes. When the Sainfoin was being mown green he ascertained the amount grown on 22 poles to be 1 ton 84 lbs. The quantity mown in a day was for feeding 15 cart horses, and at that rate a cart horse was eating 1 cwt. 3 stone daily. At the same time $1\frac{1}{2}$ tons were being mown daily for cows and bullocks, and that fed 21. At the rate there were nearly 8 tons of the Sainfoin in its green state, which was probably equivalent to about 2 tons of hay. What was worthy of remark was, that sheep feeding was considered a sufficient preparation for the land without farm-yard manure for the Wheat grown in 1860. On those parts where the Mangels were grown with Peruvian guano, there had been no straw manure the year before, and probably for some 4 or 5 years. He wished to call particular attention to this point, because Mr. Lawes was of opinion that Mangels to be grown successfully must either have farm-yard manure applied at the time or just before they were sown, or at all events that the land must have been well dressed for the previous crop. It was desirable to look forward as well as backward; where the farm-yard manure was applied last year the leaves were ploughed in, and he reckoned on growing Barley this year without any further dressing. Where Mr. Lawson's guano and the Peruvian guano were applied last year, he should think it desirable to add a further dressing of 2 cwt. of guano for this year's Barley. His proximate estimate for the Barley crop was, that on adjacent land where he used Swedes, he expected to grow 46 bushels of Barley per acre. Where the land had had a double dressing of Peruvian guano, he expected to grow 40, but of somewhat inferior sample: when the farmyard manure was applied last year, he expected to grow 36 bushels of superior quality to that to which Peruvian guano was applied. If he drilled in Barley after guano this year without any further addition, and if he sowed Barley on that part of the land to which guano was applied last year without any further dressing, he only expected to reap 36 bushels. After all he should rather anticipate that the layer would be quite as good where the farmyard manure was applied three years ago without further dressing, as when the double dressing of guano was applied; therefore from first to last if he were to give a dressing of guano directly to the Mangel Wurzel, and afterwards to the Barley, the cost would be nearly identical with the single application of farmyard manure, for the first dressing of guano cost 50*s.*, and the next 25*s.*, and he estimated a single dressing of farmyard manure at 80*s.*, or a crown more than the other.

Mr. Cantrell.—Then, the balance was in favour of farmyard manure.

Mr. Frere.—No: he reckoned with a double dressing of guano, that he was going to grow a sack more Barley, although perhaps of inferior quality.

Mr. Cantrell understood that Mr. Frere had given the land dressed with guano a dressing of farm-yard manure for the Barley crop of next year.

Mr. Frere said he had not used any farm-yard manure for the Barley. He thought he had now nearly gone through the points to which he had desired to draw the attention of the meeting. These experiments applied only to a dry part of England in a very dry and scorching season—to a light land farm, to the stronger land of a light land farm. The weights were much under what might be obtained in much more favourable circumstances of climate and staple. Before concluding, he perhaps might be allowed, in illustration of the point to which Mangels might be forced, to mention a French experiment on the liquid manure farm of Voijeur. It appeared that with 35 tons per acre of farm-yard manure they grew only 25 tons of Mangels. With 8 tons of what they called vidange (the emptying of cesspools), they grew 26 tons. They diluted the Paris night-soil with four times its weight of water, and when they applied a double dressing of that night-soil and water, in all amounting to 11 tons of night soil, they grew 32 tons of Mangels. When they applied 35 tons of farm-yard manure and 11 tons of night-soil they grew 45 tons of Mangels per acre. The manure alone gave 25 tons per acre. The farm-yard manure with the mixture of night-soil and water gave 45 tons.

Mr. Holland inquired the quantities which had been produced by Mr. Lawson's guano, by the Peruvian guano, and by the mixture of guano and farm-yard manure.

Mr. Frere repeated the statement which he had previously given.

Mr. Holland understood they had all been put in at the same time.

Mr. Frere: They were all drilled on the 25th April. Perhaps it might not be unseasonable to mention the way in which the land was prepared. At one time, directly after harvest, they used to be anxious to get some stolen crops if they were able to do so, but our cold springs and dry summers prevented these stolen crops being of such use in the east as in the south and west. Directly after harvest they proceeded with all possible rapidity to prepare the land for Mangels. It was ploughed first, twice dragged, and then worked with three horses and the harrow in September. After Wheat sowing in November it was all ridged up, and the plough was worked between the ridges. It lay in ridges until the spring, and then the ridges were only just picked over to take out the weeds, and the manure was then put in and the ridges only required to be split. He had all his Mangel and Swede land lying in that state at this moment. With a continuous downfall of rain it seemed exceedingly doubtful when he might be able to go on to that land; but if that land had not been prepared to the utmost in the autumn he believed that in his own neighbourhood very few Mangels would have been put in this spring in due season.

Mr. Holland did not know the nature of the land or the climate in that part of the country. He supposed the land was not first rate, because the crops under each of these experiments had been very small in weight. He thought that the smallness of the crops might be attributed to the fact of the farm yard manure being put in at the same time as the seed. Experience showed that that was not the right way to go to work. If farm yard manure was mixed with the soil in the autumn it was out of the way of the Mangel seed and the Mangel root, when that root came into anything like play. A great quantity of Mangels in this country, he had no doubt, were destroyed in shape and value from having as they bulbed out to press against the long portions of straw and impediments of that kind connected with long farm-yard manure. In addition to that great feature the seed bed was got into nice order by having been worked in the autumn and in a state in which little more cultivation was required. They might put in the seed in the spring, break it up, and put in fresh soil, which must have a considerable influence over the crop. In one of the early numbers of the Journal there were some remarks of Mr. Pusey's on the action of dung, which were worthy of being referred to. Mr. Pusey said that he had tried manures separately, and had tried them together. These were his words—"The inference arrived at from this experiment is that it is more profitable to use some artificial manures in conjunction with dung than to use them singly. Thus guano and woollen rags used singly added to my crop only 5 tons per acre. The single dressing of dung added only 11 tons, and double that amount of dung did no good. But guano combined with the same amount of dung, and rags combined with the same amount of dung, each gave an addition, not of 16 tons of roots, according to their efforts when used singly, but of 20 tons, yielding each 36 tons—a produce very large indeed for land which four years ago when I took it in hand was said to be incapable of growing a Turnip." With reference to putting long farm dung exactly under the seeds of the Mangels he might refer to a paper which was read before the Council in 1852, and reported in the *Gardeners' Chronicle and Agricultural Gazette*. Mr. Gaddesden had paid a visit to Mr. Reeves, who resided at Leatherhead, in Surrey, and he said, "The land on which the best was grown appeared to be of a good useful character, having at the time of Mr. Gaddesden's visit a very promising plant of Wheat, and was stated to have had no manure upon it for four years. Mr. Reeves attributed his success in growing the White Silesian Beet to his thus not applying manure directly to the crop, and stated that when he had dunged for it the bulb proved small, and a large mass of fuzzy fibres, and gave but a small weight per acre, namely 15 to 18 tons; but that since he had put the manuring matter farther off the Beet crop he had raised fine large roots, of a great weight per acre, and he regarded the circumstance as a discovery in the culture of this plant, and Mr. Gaddesden considered that if Mr. Reeves' calculations were realised it would be so, and a very important one. Mr. Gaddesden was also shown the field which Mr. Reeves intended to sow with Silesian Beet in that week. The soil was a heavy clay, and not very promising." Thus it would appear from experience that the manure ought to be applied in the autumn and not in the spring.

Mr. Frere observed that the mode of application depended a great deal upon the nature of the soil. On a regular clay soil no doubt an autumn application of manure was desirable, if convenient, or consistent with the general economy of the farm. On a lighter loam he did not think it would be a great advantage, and when he grew Mangels on a light sandy soil he always used long farm manure direct from the farm yard, and strewed it in ridges, and ploughed it in at once; on that kind of land long fresh manure out of the farm yard was superior to the old weak rotted dung for Mangels.

Mr. Cantrell inquired if Mr. Frere had ever grown Mangels more than one year in succession.

Mr. Frere.—No, every other year.

Mr. Cantrell said that soon after the establishment of the East Berks Agricultural Association, he had a piece of ground on which he was trying to grow Mangels. He ridged the ground in the winter and dunged it, and in the spring planted out and grew Mangels on that ground for four years in succession.

Mr. Frere asked if the leaves were ploughed in.

Mr. Cantrell.—No: the leaves were given to the cows. It was a curious fact that the crop increased every year. The ground had not been in cultivation for a considerable time; he gave it a slight dressing of manure every year. He exhibited the roots at the East Berks Agricultural Show, and the late Mr. Palmer, then member for Berks, admired the roots very much, and offered a prize for the best cultivator of Mangels, and for four years afterwards was a competitor, and they took the first and second prizes alternately between them; no artificial manure was used, nothing but the farm yard manure. The ground was ridged in winter, dunged in the spring, and turned back again.

Mr. Jonathan Peel inquired if that land was still under Mangels.

Mr. Cantrell could hardly say. It formed part of the late Prince Consort's farm, and had been very much cut about; he believed it was now planted with ornamental trees. But the year when he (Mr. Cantrell) gave it up, he left 55 tons of Mangel on the adjoining field.

Mr. Peel said he had grown Mangel on a smaller piece of land six years in succession, and it had yielded a good crop all the time. His part of the country last year was very bad for growing Mangels. It was as much oppressed with wet as another portion which had been mentioned had been oppressed with sunshine. A friend of his had grown Mangel on the same ground 17 years in succession, and it was now being sown with Mangel again. It was of great importance to have Mangels, which required much care and attention, as near the homestead as possible. If this valuable root could be grown on the same land year after year without a sensible deterioration of the land or of the crop itself it would be of great interest to many farmers who, like himself, lived in a pastoral district where very little land was turned over.

Mr. Holland inquired if the land was manured every year.

Mr. Peel.—Yes.

Mr. Cantrell.—You do not consider it an exhausting crop?

Mr. Peel.—No. It was poor land when he began, and for the first two or three years the roots regularly increased in size. Perhaps they had now reached their maximum. He could not put any corn in, it had grown so rich. He did not know what to do with it, and was obliged to grow Mangels over and over again.

Mr. Frere asked if it was a strong soil.

Mr. Peel.—It was a light soil on a strong subsoil, but he took the precaution to trench it with a fork 2 spits deep before attempting to grow Mangels upon it. It had been drained twice—once a dozen years ago; and it was a curious thing, so far as the drainage was concerned, that he found not only on that part of the ground but on a great many other parts when the custom was when he first began to drain to invert a sod over the tiles in order to prevent its being choked up with loose earth, which seemed *à priori* to be a good reason; but that very field, when he first prepared a drainage on that system, showed him the disadvantage of the system, for he found it getting wetter and wetter every year. On minute examination he found, to his great astonishment, that although they had been 3 or 4 feet deep in the ground the roots of the sod were positively growing into the tile. It was positively choked up with shoots, so that it was no wonder the water could not pass through. Since that time he had avoided the system. He had found in other instances that the same results had taken place.

In reply to questions, Mr. Peel said he put in the Mangels

as shallow as he could, and ploughed as deep as he could. It was difficult last season, on account of the wet weather, to work the land to any advantage. He went from 8 to 10 inches deep.

A Member inquired what was the influence of salt?

Mr. Frere said that his farm was on a chalky stratum, which was generally recognised as a marine stratum. Many years ago he was induced to strew a large dressing of salt on every other ridge, and had it worked in, but he could never detect the slightest difference between the ridges dressed with salt and those that were undressed.

Mr. Cantrell said that last year he dressed his Mangels with salt, with the exception of one drift in the middle of the field, and could see no difference in the crop, except that the leaves on the land dressed with salt were of a paler colour than those which were dressed with farm-yard manure. He found no difference in the size of the roots.

The Chairman wished to take the opportunity of mentioning two experiments which had been made by his bailiff, Mr. [illegible]—one of them on a gravel soil in 1856, and the other on a light mixed soil in 1860. In the first experiment 20 loads of well prepared stable dung and 4 cwt. of guano produced 23 tons 16 cwt. of Mangels; 20 loads of farm-yard manure, 4 cwt. of guano, and 5 cwt. of salt, produced 30 tons 12 cwt. of Mangels; 20 loads of farm-yard manure, 1 cwt. of guano, 1 cwt. of superphosphate, 1 cwt. of blood manure, and 1 cwt. of salt, produced 25 tons 10 cwt.; 40 loads of farm-yard manure produced 21 tons 3 cwt. as against 30 tons 12 cwt. produced by [illegible] loads of farm-yard manure and 4 cwt. of guano; 2 cwt. of guano, 2 cwt. of superphosphate, 2 cwt. of blood manure and [illegible] cwt. of salt produced 20 tons 6 cwt.; 7½ cwt. of guano produced 17 tons 17 cwt.; 12 cwt. of superphosphate produced [illegible] tons 19 cwt.; 13 cwt. of blood manure produced 15 tons [illegible] cwt.; 1⅓ cwt. of guano, 1⅓ cwt. of superphosphate, [illegible] cwt. of blood manure, and 1⅓ cwt. of salt produced [illegible] tons 11 cwt.; 5 cwt. of guano produced 12 tons 15 cwt.; [illegible] cwt. of superphosphate produced 11 tons 18 cwt.; 8 cwt. of blood manure produced 12 tons 11 cwt.; showing most distinctly that the combination of farm-yard manure with some species of artificial manure has been generally most productive, and the best way of obtaining the greatest amount of Mangels. In 1860, the experiment over which he himself [illegible], was tried on fairly light land, the seed was drilled [illegible] inches, ridged and put in the first week in May, the dung being applied not in the manner suggested by Mr. Holland, but at the time of sowing on the ridge. That depended very much on the quality of the soil. In heavy soils, where it was difficult to get upon them, at certain seasons an early application of manure was excellent. But he questioned very much whether this was applicable to lighter soils, and whether it was not better in these cases to put on the manure at the time of sowing on the ridge. The result of the second experiment was this: 20 loads of good dung, without artificial manure, produced 16 tons 4 cwt.; [illegible] loads of dung, 2 cwt. of guano, 4 cwt. of salt produced [illegible] tons 14 cwt.; 20 loads of dung, 4 cwt. of blood and bone manure, and 4 cwt. of salt produced 24 tons 9 cwt.; 20 loads of dung, and 2 cwt. of guano produced 21 tons 15 cwt.; 20 loads of dung, 4 cwt. of superphosphate, and 4 cwt. of salt produced 22 tons 10 cwt.; 20 loads of dung and 4 cwt. of salt produced 20 tons 4 cwt.; 20 loads of dung and 4 cwt. of Mr. Lawson's superphosphate produced 18 tons 10 cwt.; 20 loads of dung, 4 cwt. of superphosphate, and 4 cwt. of salt produced 21 tons 10 cwt.; showing distinctly the advantage of the combination; and taking the value of each ton at 12*s.* 6*d.*, and taking into consideration the cost of application, it gave the highest gain between 2 cwt. of guano and 4 cwt. of salt. The gain by the application of artificial manure was 6*l.* 1*s.* 6*d.* per acre. The next highest was on the application of artificial manure, which was 4 cwt. of blood and bone manure, and [illegible] cwt. of salt; showing in both cases the advantages of salt as against those cases in which salt was not tried, either in conjunction with guano or artificial manure. The exact result at which he had arrived from these experiments was to apply every year somewhere about 2 cwt. of guano with 4 cwt. or [illegible] its quantity of salt. That was also the result of several [illegible] experiments made by Mr. Veary, and was now generally adopted as the best artificial manure to be applied with dung. A great increase in the produce was found from the moment of the combined application.

Mr. Holland observed that he was afraid his remarks had not been sufficiently explicit. He had spoken only on growing Mangels on a very heavy soil, the only soil on which he had had any experience. He ought to have made the distinction between that and lighter soils. The soil on which he grew Mangels was too stiff, and the only way in which he had been able to make it grow a root crop was by burning it, so as to cause a mechanical change in the soil and also a chemical change, because a large portion of the vegetable matter was burnt at the same time, and the superphosphates and salts remaining in the ashes had an influence on the crop. Mangel grew originally as a seaside plant, in heavy soil, approaching the sea shore, and perhaps a mixture of the sand and heavy [illegible] was just the thing that Mangel would delight in, and also a large quantity of salt.

Mr. Frere remarked that one point worthy of consideration was the size of Mangels. In France, where they were employed in the manufacture of sugar, size was preferred. He felt some doubt whether the worth of the large roots might not depend on the room in which it was stored. The choicest Peas when gathered in the autumn contained very little of the Pear sugar, and when they were fit for eating in the spring they were exceedingly sweet. He should be glad if science could inform them whether the same effect did not take place from the storing of Mangels.

Mr. Surtees said it was exceedingly difficult to know exactly when Mangels ought to be taken up, and what was the proper time for gathering Pears. That was a matter that puzzled gardeners almost more than anything else.

A short conversation then took place on the subject of [illegible].

After a cordial vote of thanks had been given to Mr. Frere, it was announced that at the next meeting the subject for discussion would be the preparation, mixing, and cooking food for cattle and sheep in the winter season.

Farmers' Clubs.

London: *April 7.—Dairy Management.*—The following paper was read by Mr. Dumbrell, of Ditchbury, [illegible].

After some remarks on the importance of the subject, he said—

I intend to confine my remarks this evening to that part of dairy management which relates to the manufacture of butter, as the production of milk and cheese would form subjects for separate discussion. Milk is now frequently sent 20 or 30 miles by railway, and I know of a large dairy of butter being sent in the same way 50 miles twice and three times a week; still it is [illegible], with a perishable article like butter, that it is convenient to be within reach of a railway station or a town. Some attention should also be paid to the kind of farm desirable for properly carrying out a dairy business. It should consist of a large proportion of permanent pasture, with some land adapted to the growth of roots.

Having decided upon the situation and class of farm required, the next consideration naturally points to the choice of animal; and here of course some diversity of opinion will exist.

For butter-making there is no breed producing the quantity and quality of cream equal to that of the Channel Islands or so-called Alderney cow. It may perhaps not be generally known that the term Alderney cow is a misnomer, as there are but few Alderney cows proper. There are the Jersey and the Guernsey breeds; the former is the smaller animal, and is in fact what we know by the name of the Alderney; the Guernsey is larger and coarser. They are equally good as regards quantity and quality of produce: but as in Jersey the laws for the preservation of the purity of the breed are more stringent than in Guernsey, greater dependence may be placed in having a pure-bred animal from the former than the latter island. Although a strong advocate for this breed, I feel bound to state that there are some objections to them. As imported, they are delicate, require great care to acclimatise, and from their comparative scarcity are expensive; and if by any accident they are lost to the dairy, they are almost worthless for fattening purposes. But as our object this evening is to consider the best mode of making butter, it is useless to endeavour to combine in one animal an aptitude to produce milk, and to fatten readily. I would however recommend the rearing of the pure-bred Jersey in this country, which, without losing its characteristics for the dairy, gains more strength, size, and constitution, and is better suited to our climate. There are other breeds producing a greater quantity of milk, but of an inferior quality. Next to the Channel Island breed in the production of butter, may rank the Ayrshire; and a cross between these two produces a very valuable animal, although no cross can improve the quality of the produce of the Jersey cow. There are of course many other breeds and cross-breeds which have their fair share of admirers, but it would be taxing your patience too severely to notice them in this paper.

Having now considered the situation and animal most desirable for a dairy-farm, we arrive at the most important part of our subject, as to the best mode of feed and general management, so as to obtain the largest quantity and best quality of produce.

Many gentlemen in this room have doubtless with myself derived much pleasure and instruction from the perusal of Professor Voelcker's lecture on milk, delivered before the Royal Agricultural Society a few weeks since, in which he has admirably combined science and practice. To those who have not had the good fortune to see it, I would observe that the Professor clearly points to the judicious feeding of dairy stock as the principal requirement to obtain a profitable amount of produce. In ordinary dairy management this is too frequently lost sight of and neglected. The poorest pastures in summer and the worst hay in the winter are generally appropriated for the use of the dairy stock on a farm. There is a Sussex proverb which calls the inferior hay the "cow hay;" and a tale is told of a farmer, who, upon being congratulated on the fineness of the hay season, expressed his anxiety at having no bad hay for his cows. Plentiful and judicious feed is as necessary to the production of milk and butter as it is to that of beef and mutton; and it is as unreasonable to expect an abundant yield of dairy produce without a continuous supply of proper food, as it would be to expect to fatten a bullock without necessary nourishment. With your permission we will consider the best means of feeding dairy stock throughout the year, and we will, if you please, begin at the time when they first go out to Grass; and I must ask you to forgive me if I, at this part of my subject, mount a hobby. There are men in the world who think they have earned that reward which is due to him who succeeds in making two blades of Grass grow where but one grew before. We have steam ploughs, sewage of towns, Mammoth Wheat, and a whole host of schemes whereby this desirable end is to be attained. Now, although I cannot claim this distinction, I merely wish to explain how the most can be made of the one blade after it is grown. I mean by adopting the system of tethering stock during the early summer months, and which I will endeavour to explain as concisely as possible. Each cow is provided with an iron stump 18 inches in length, with a tolerably stout chain attached 12 feet long, at the end of which is a ring; also a leather-headed halter with chain lead 4 feet in length, at the end of which is a T, so that it can be readily fastened to the 12 feet of chain before mentioned; each animal, therefore, has a range of 16 feet. The cows are staked down at equal distances, so that they do not touch each other. While the Grass is very short, it is necessary they should be moved twelve or fourteen times a day. As the feed becomes more abundant, they require moving less frequently. It is essentially necessary that only a small portion be given them at a time, 12 or 18 inches being quite sufficient. In fact, the cows should not be allowed at any time to place their feet on the Grass they are about to eat; hence arises one of the advantages of tethering, no Grass, under proper management being wasted. A plan for tethering is recommended in a French treatise on dairy management which states, "If the pasture is short, the cows may be left at liberty; but if abundant, and consisting of artificial Grasses, such as Lucerne, Vetches, Clover, &c., the cows should be confined by a rope to a picket or post in the field, where they are kept till they have eaten the grass, and for some time after, or until they have ruminated; they are then fixed in another spot; this change should take place five or six times a day." Now the objection to this plan is, that the animal would trample down and soil a great portion of the feed almost as much as though she were turned loose; whereas, in the system I have endeavoured to explain, this is obviated. The Grass should be eaten so close as to have the appearance of being mown. The cows must be led or have water brought to them twice a day. The Jersey breed are so docile that a man can lead five or six at one time. By the time that a dairy of say 20 or 25 cows have been staked over eight acres of meadow land, it will usually be found that the Grass upon that part of the field where they first began will be sufficiently grown to be gone over again; indeed, the same ground may be pastured three times in one season, particularly on a farm where the liquid manure is utilized, and which can be used nowhere with so much advantage as following the cows when tethered. Eight to ten acres of fair meadow land will be found sufficient, in an average of years, for 25 cows, from the time they leave the stall until after haymaking. A great assistance to this system is the addition of some artificial green crops, as Rye, Trifolium, Tares, &c.; for, during very hot weather, and when fly is troublesome, milch cows are much better under cover in their stalls than out of doors; they should then be tethered during the night and the cooler part of the day. Having I trust, explained this system with sufficient clearness, I will endeavour to point out the advantages of it: 1st, the stock can be taken out of their stalls earlier in the year; 2nd, no Grass is wasted; 3rd, a greater quantity of produce is realised, as the feed is uniform in quantity and quality, and the butter is better; and lastly and chiefly, because by economising the Grass a greater quantity of hay can be saved for winter use. I make no claim to having originated a new system of feeding. I merely wish to speak, with the authority of 18 years' experience, to the complete success of the plan, strengthened by the fact that it was received in my neighbourhood with quite the fair share of ridicule that is usually attached to new schemes, and is now frequently adopted, particularly by small occupiers, who are perhaps more anxious to economise feed than larger holders

To proceed: we may suppose that our tethering carries us to quite the end of June or middle of July, and now is the time, just before the growth of the after-Grass, when some care is required, and for which time some artificial provision is needed. Backward-sown Tares is the best food to meet the difficulty; with this assistance the after-Grass may be allowed to get a good head before it is begun. This brings us to the end of July, and the after-Grass will carry us well through August, and this is the best month of the whole year for butter-making. Through the month of September Mangel leaves will be found serviceable. For the end of September or beginning of October white Turnips should be provided. Towards the end of October a little hay morning and night is indispensable; and as the weather becomes cold and wet, cows must be taken into stalls at night; lying out in wet weather is detrimental in every way to dairy stock; but no weather is so injurious to the produce of milk, besides being likely to cause abortion or slinking, as white frosts, and the greatest care should be taken that cows in calf should not feed out at that time. White Turnips, with the remainder of the autumn Grass, will carry us on to the end of November, after which time Drum-head Cabbage must be provided for at least two months. On dry pasture land cows may leave the stalls in fine weather the whole winter, and the exercise and air will be found beneficial to them. On wet cold land, unless in very exceptional years, they cannot go out after the end of December. Cabbage is a very valuable winter feed, as it assists the colour of the butter, and is highly nutritious. Through February and March Swedes may be used, and will be found to produce more butter than any other root. During all this winter season a liberal supply of good hay, not heated, is requisite. At the beginning of April Mangels come in, and if the weather is fine, some old Grass, reserved from the autumn, is very useful, with the addition of spring Rape or late-sown white Turnips; this, with Rye, which must be used sparingly, brings us to our starting point. You will observe in these remarks no calculation is made for the use of artificial feed, such as oilcake, meal, grains, &c. As speaking from my own experience, I have never found it profitable; for although the animal may give an increased yield of produce for the additional feed, it is not sufficient to repay the outlay. There are times, of course, when adverse seasons must necessitate the use of artificial food, but as a rule it cannot be recommended.

The next point to be considered is the stalls, and upon whatever plan they may be constructed, there are four desiderata that must not be lost sight of—warmth, light, cleanliness, and perfect ventilation.

For Alderney cows, pens 6 feet 6 inches square will be found sufficient room for two. This includes the manger, which is on the ground. The water trough should be 2 feet from the ground. Behind the cows should be a drain 18 inches wide, to convey the liquid portion of the manure into an adjacent tank; also a path 4 feet wide. A frequent application of whitewash conduces materially to health. The cows should be combed and brushed daily, not only for the sake of cleanliness, but because also it promotes circulation.

Having now exhausted the out-door part of my subject, our next consideration will be the indoor department; and, in the first place, it is strongly to be recommended, where it is practicable, that the dairy be a distinct establishment, away from the residence of the proprietor.

A dairymaid's duties are too onerous to allow of any distraction, and we all know that domestic events will happen at times which require the whole strength of the company. The marriage of a daughter or the birth of a son might be tolerated, but there are the more frequently-occurring dinner parties, great washes, brewing days, &c., when even the important duties of the dairy become secondary. Therefore it is desirable to place the dairy under the care of responsible servants who have no other duties. A man and his wife and a boy are a sufficient staff to manage a dairy of 25 cows. The dairy room should be used for nothing but its legitimate purpose, the reception of milk. The floor should be a few feet under ground, dry, and airy, and shaded from the sun. Benches should be of open wood work. It should be heated in winter with hot-water pipes, so as to maintain a temperature of about 56°. This is the easiest mode of applying artificial heat, and as efficacious as any. From experiments which I have made upon the application of heat to milk, I have found that a sustained temperature of 56° raises as much of the cream as can be raised, and that although by increasing the temperature by direct application of heat, either by applying boiling water, or by placing the pans of milk on a hot plate, the cream may be drier, and appear thicker, yet there is in reality no increase of butter. A dry, warm temperature, and a current of air through the room, are the best conditions for raising cream: a heavy, damp atmosphere the worst. The milk pans should be of tin, oblong, with rounded corners. With round pans too much bench room is wasted. With earthenware pans, the lactic acid will, after a time, destroy the glazing; and glass pans chip too easily. A great many new inventions, in the way of churns, have enjoyed a brief existence, but the old-fashioned box and barrel churns still hold their own against all comers, and are not likely to be superseded. Now comes the great secret of successful butter-making, namely, churning frequently. Butter, to be perfect, must be churned every day, or, at any rate, every other day. The cream must not be in a state of decomposition, or you cannot possibly have good butter. Great attention must be paid to this point, and the most scrupulous cleanliness is required in every part of the management; and then, no matter upon what the cows are fed, whether white Turnips or Swedes, or whatever it may be, there will be no disagreeable taste found. Another thing that conduces very much to the production of a good quality of butter, is a succession of fresh calving cows. In a large dairy, care should be taken to have, as nearly as possible, an equal number of cows calve every month throughout the year. Cows should be dry for six weeks before calving, and during that time should be removed to more roomy stalls, with a large loose box to calve in. At this time the treatment must depend much upon circumstances; but in a general way the less done for the animal the better, and the more she is left to nature the better. Another point remains to be considered, the application of skim milk. This may either be used for cheese-making, or for rearing and fattening pigs. The quality of cheese made from skim milk is of course very inferior, particularly from Alderney cows; for although their produce is richer in cream than any other breed, the milk after the separation of the cream is the poorest. The fattening of pigs to a small weight is far more profitable, and forms rather an important item in "dairy management." They will require very little corn, as nothing fattens young pigs faster than milk. Great attention should be paid to the construction of the piggeries, warmth, cleanliness, and ventilation being as requisite here as in the stalls; and it will be found to promote cleanliness if the feeding troughs are placed in the stye rather than outside. Care should also be taken in feeding young pigs frequently: six or eight times a-day is not too often, and they will well repay the trouble. Liquid manure tanks should be attached to the piggeries. I may here remark that it is desirable on a dairy farm to carry, as much as possible, all the liquid manure, with all the dung made by the pigs and horses, on to the pasture land, and the manure made by the cows on the arable, as this change will be found to

sweeten the herbage of the meadow, and the cows will feed better. A frequent application of lime as manure to the meadows is to be recommended as sweetening and improving the herbage. In conclusion, I have to thank you for the kind attention with which you have listened to my remarks. I have endeavoured to treat the subject from an entirely practical point of view, and to apply to it that one great fundamental principle of practical farming, viz., to obtain the largest possible return at the smallest cost.

Farm Memoranda.

Northumberland Farm: *To the end of March.* —*Horse Labour.*—The almost uninterrupted succession of rainy days, and an absence of sunshine or a drying breeze to produce the March dust which usually accompanies a favourable seed time, has caused the motive power of the strong land farm to come almost to a standstill. The long cherished hope of sowing spring Wheat has been blighted, and we must now turn our attention to Barley sowing on the land which had been intended for Wheat. The horses have been chiefly employed in carting manure, materials for repairing hedges and roads, Turnips and such like. On the 22d inst. we certainly did manage to sow 16 acres of Heligoland Beans on a sharp dry hill, but with that exception we have never had another opportunity. The Beans were drilled with Garrett's Drill at the rate of 2 bushels per acre, and 16 inches apart, being the width suggested by Mr. Hope, of Fenton Barns, and which we find to be most suitable.

Hand Labour.—A great sameness has characterised the work of our labourers during the past two months, owing to the saturated condition of the land. Turning and carting manure, cutting old hedges, scouring ditches, preparing food for stock, and the usual barn work have chiefly engaged both the men and women. On the first Wednesday in March the annual hiring of the hinds took place at Morpeth; fewer changes than usual were made, and I think the prevailing wages would be about 14*s.* 6*d.* per week with house and garden free, coals carted and a few yards of Potatoes; in some cases an equivalent is given in corn and the keep of a cow, but this system is gradually drying out. Although engaged in March, the men do not change their places till 12th May. I may also remark that each man is bound to find a woman worker at 10*d.* per day for ordinary work and 1*s.* 6*d.* in harvest.

Cattle.—We are now fast clearing out our fat cattle as they become fit for the butcher, although the prices are by no means so tempting as at Christmas; the last lot of bullocks was disposed of at 7*s.* per stone of 14 lbs. The remaining fat stock are receiving from 7 to 9 stone per day of cut Swedes, 4 lbs. Bean meal and straw *ad libitum*, some a little hay. We have just filled two yards with 16 bullocks brought in, most of which will go off on Grass; these and the other store cattle are receiving a few yellow Turnips and straw, next month we expect some cows and heifers to calve.

Sheep.—Never have we had so quick a lambing time as during the present year, and despite the unfavourable season we have seldom been more fortunate. We have about two-thirds of doubles, and our loss does not amount to more than 1 in 20. A somewhat unusual occurrence happened in one day, (the 23d,) in the case of 3 ewes producing 9 lambs. The unlambed ewes are brought into a fold every evening, where they receive cut hay, chaff, and a few Oats, and during the day they run over an old pasture and have Turnips given every morning. The ewes with lambs are drawn away to different old pasture fields, in each of which a temporary home is built for protection from the bad weather; there they receive hay, chaff, Oats, and split Beans and cut Turnips. Owing to the excessively wet season we preferred keeping them on old pastures to putting them on to seeds. *J. W.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, April 10, 1862

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	4	30.08	48	43	N.W.	1	4	65	43	91	40	0.01	51	49
Saturday ..	5	30.09	50	47	S.	2	3	58	41	79	38	..	51½	49
Sunday ..	6	29.93	52	51	S.W.	3	7	54	50	62	47	0.01	51	49½
Monday ..	7	30.14	47	46	N.	1	7	57	46	64	46	0.24	51½	49½
Tuesday ..	8	30.30	44	43	N.E.	2	7	54	42	67	42	..	51½	49½
Wednesday.	9	30.12	43	42	N.E.	2	7	49	41	55	40	0.30	50½	49½
Thursday ..	10	30.99	43	42	N.W.	1	8	48	41	55	41	0.30	49	49

Miscellaneous.

Anonymous Writing in Agricultural Papers.—Though a remote antiquity may be claimed for agricultural literature, it must be admitted that its periodical press is comparatively new, and it is only recently that, if I may so speak, the pen has become a generally used agricultural implement. It is from this want of practice, I apprehend, that we constantly find in agricultural journals, as in local papers, denunciations of "anonymous scribblers," pompous demands for "the writer's name," remarks on persons being "ashamed of" or "afraid to give their names." Now it is because this seems to me to be very mischievous nonsense that I have addressed you on the subject. France may submit to the imperial demand that newspaper articles must be signed, but I trust that England will ever cherish its manly freedom from such a thraldom. If a man wishes to announce a fact, if he wishes to tell that something extraordinary has happened, it is fit and proper that he should give his name, in order that those who know him may judge how far the statement is supported by respectability and common sense, but when matters of opinion are discussed, when politics, or polemics, or political economy is in question, I cannot imagine what the writer's name has to do with the matter. I will, indeed, give several very substantial reasons why it is expedient that newspaper discussions should be conducted anonymously. In the first place it secures an equal hearing to each disputant, and leaves the matter at issue to be considered purely on its merits. Suppose some one who like myself has not the most remote pretension to a handle to his name, one of the Brown, Jones, and Robinson fraternity, goes into controversy with some noble or right hon. exhibitor at the Leeds show, he would at once be placed at a great disadvantage. Crowds reverence coronets. Then, again, a man from no reason but awkwardness (called by his friends bashfulness) shrinks from seeing his name in print. Is he to bear wrong in silence, or to bury his knowledge on some subject, or to suppress his evidence, if he does not choose to gratify an idle curiosity as to his name? Suppose a question of railway mismanagement become subject of public inquiry. The very men most capable of giving inform tion to the press, and through the press to the public, would have their hands tied. If their names must needs be published their situations might be forfeited. The most cogent reason, however, remains. Anonymous writing effectually prevents all personalities, all angry feeling between individuals. Let but the worthy people who discuss local subjects in provincial journals give their names on all occasions, and there will be a score of quarrels before the year is out, and the paper will become a curse to the little community in place of a benefit. The man who discusses matter of opinion in a newspaper should be prepared to take up his pen as a knight of old did his lance when he entered the jousts, who was ready to meet whoever came, though his vizor was down. He might look at his crest or his motto, but recked not how he spelt his name. *S., in the North British Agriculturist.*

Notices to Correspondents.

The Land Drainage Act, 1861: *J W T.* That is the title. Any bookseller will obtain it for you through his London correspondent.

Cesspool: *Suffolk Clergyman.* Throw in a lot of charcoal powder or black ashes, and mix it well up before removing the contents; and that will be done without a nuisance. Wheel it on to the garden and dig it in. Any crop will feed on it. Onions or Cabbages are perhaps the best to receive the application.

Grasses of Australia: *J G.* Mr. J. K. Archer having had six years' experience in Australia, says he found Rye-grass seed mixed with White Dutch Clover the very best for pasture. This is almost universally used throughout the whole of the colonies. The yield is about 20 bushels (20 lbs. per bushel) per acre, for a fair crop, but of course much depends upon housing it safely, as the hot scorching sun often renders it difficult to secure. The price usually ranges from 8*s.* to 12*s.*

Irish Peat Charcoal: *G R A.* It may be considered as a strong box for manure, not a manure in itself. If well charged with manure it will keep it with little waste, and if then applied to the soil it will gradually give up its stores for the use of plants. But the soil itself is a strong box for manure, and improves in this respect according as it is well cultivated. The Rev. H. Moule, of Fordington, near Dorchester, who has published a pamphlet on the subject, will tell you that there is no better strong box for manure than a heap of pulverised clay, which will over and over again absorb and render inodorous large quantities of ordure, until it shall become as good as guano for the land to which it is applied. So long as in a well cultivated soil we have the best security against the waste of the manure applied, we do not recommend the purchase of charcoal. If you half char a lot of vegetable refuse it will form a valuable ingredient in a compost—but that may arise in part from your thus rendering available as manure the mineral substances locked up in their substance.

Rats: *J R.* We do not see the advertisement you refer to, but this notice may bring you a repetition of it.

MESSRS. E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, have great pleasure in offering the following VERBENAS, selected as the finest kinds yet seen by them.
SIR PHILIP.—Exceedingly brilliant, vivid carmine scarlet.
LADY GREY EGERTON.—Beautiful new magenta-crimson.
RED GAUNTLET.—Beautiful orange-tinted flame-scarlet.
DESDEMONA.—Rich dark plum-coloured crimson.
Plants 1st of May, each, 2*s.* 6*d.*; per dozen, 18*s.*; per 100, 7*l.*
STUARTIA PENTAGYNIA.—A very handsome deciduous autumn-flowering hardy shrub. For description see *Gardeners' Chronicle* of March 15, and E. G. H. & Son's SEED CATALOGUE, page 95. Strong bushy Plants, 3 feet high, 7*s.* 6*d.*
FRUITING VINES.—Extra strong; Golden and Muscat Hamburghs; also, Bidwell Seedling, a late-hanging Grape, and others.

SEEDS OF
Clianthus Dampieri.—Seeds, 2*s.* 6*d.* per packet.
Calendula officinalis superba. 6*d.* and 1*s.* per packet.
Celosia pyramidalis aurea, 1*s.* 6*d.*; Rubra, 1*s.* per packet.
Cosmos diversifolius atrosanguineus, 1*s.* per packet.
Linum perenne candidissimum, 1*s.* per packet.
Perfection Sweet William, 6*d.* and 1*s.* per packet.
Œnothera Lamarckiana, 6*d.* and 1*s.* per packet.
Saponaria calabrica alba, 6*d.* and 1*s.* per packet.
Nemophila atomaria oculata, 6*d.* and 1*s.* per packet.
Zinnia elegans flore pleno, 6*d.* and 1*s.* per packet.
Giant Emperor Asters in 20 colours.
Dwarf Chrysanthemum-flowered Asters.—The most beautiful for bedding and margins.
Salvia argentea, Ferula glauca, Dipsacus Gmelini.—Ornamental garden plants, 6*d.* and 1*s.* per packet.
Bush Vegetable Marrow.—The most prolific and richly flavoured of any, 1*s.* per packet.
NEW FUCHSIAS.—"MINNIE BANKS" and "COMET" The above Fuchsias possess first-class properties, and show a striking advance on all others hitherto sent out. 3*s.* 6*d.* each, a few extra sized, 5*s.*, 7*s.* 6*d.*, and 10*s.* 6*d.* each.
Bougainvillæa speciosa (spectabile), true, 3*s.* 6*d.*
" glabra, 5*s.*
Fuchsia "True Blue" (double flowered), 3*s.* 6*d.*
E. G. Henderson & Son, Wellington Nursery, St. John's Wood, London, N.W.

Extra Sized and Young Specimen Hard-wooded Plants.
HUGH LOW AND CO. have to offer a large stock of the above, fine healthy well-grown Plants, well set with bloom, many of which are fit for exhibiting this season.
The undernamed are included—
Erica Albertus
" ampullacea
" aristata major
" candidissima
" Candolleana
" Cavendishi
" eximia
" intermedia
" jubata
" tortulæflora
" tricolors (sorts)
" trossula
Erica Vernoni
" Victoria Regina
Aphelexis (sorts)
Azaleas (sorts)
Boronias (sorts)
Chorozemas (sorts)
Dracophyllum gracile
Dillwynias (sorts)
Epacris (sorts)
Leschenaultias (sorts)
Pimeleas (sorts)
Polygalas (sorts)
etc., etc.
Prices, which are very moderate, may be had on application.
Clapton Nurseries, London, N.E.

Garden Seeds.
PAGE AND TOOGOOD'S SPECIAL LIST will be forwarded post free.
P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.
From Mr. R. McDonald, *Gardener to the* Rt. Hon. Lord Willoughby D'Eresby, *Drummond Castle, Scotland, Jan.* 4, 1861.
"The seeds sent here by you for the last 23 years have given the greatest satisfaction, and considering the large supply required, it is of the greatest importance to have them of such first-rate quality and so true to name. The collections for cottagers have been very useful, and have been the means of inducing many of them to grow a greater variety of vegetables than they have hitherto done."
From Mr. Dowling, *Gardener to* Lord Henry Cholmondeley, *Holly Hill, Jan.* 1, 1861.
"Nothing gives me so much pleasure as to speak of the excellent quality and trueness of the seeds you sent me for 1860. It is impossible to single out anything in particular, as all succeeded so well, and although a difficult season, I have never served a family better, which I attribute to the good quality of the seeds, and having been supplied by you for years with the greatest satisfaction, my opinion is expressed with some confidence, and I also know your extreme desire at all times to meet the wishes of your customers."
From Mr. Whale, *Gardener to the* Rt. Hon. Lord Rivers, *Rushmore, Dorset, December* 30, 1860.
"In enclosing you my 20th annual order, I am happy to say that I have always found your articles to be of the best quality, and they have always given me great satisfaction."
Royal South Hants Seed Establishment, Southampton.

Yorkshire and Lincolnshire Nursery and Seed Establishment.
MARTIN AND SONS respectfully offer a very superior Stock of TURNIP SEED as under, the produce of their Seed, beating all others at one of the principal Shows in Yorkshire, winning the "two Five Pound Silver Cups," the "Second Principal Prize," and several of the minor prizes.
CATALOGUES with particulars on application.
Yorkshire Prize Swede Turnip .. } 1*s.* per lb.
Golden Melon do. ..
Rouge et Blanc Stone do. ..
Improved White Globe do. ..
Russian Green-top White do. ..
Skirving's Green-top, Marshall's Purple-top, and all the principal kinds of Swede and White Turnips, at 8*d.* per lb.; by the bushel or cwt. cheaper.
FLOWER SEEDS.
The 30 varieties which caused so great attraction and were admired by the hundreds of persons passing the Park Nursery, Hull, for 5*s.*, free by post.
BEDDING PLANTS.
Our Stock is immense, and strong healthy plants, from 2*s.* 6*d.* to 4*s.* per dozen; by the hundred, 20*s.* to 25*s.*; by the thousand, 8*l.* 8*s.*, including the choicest of Verbenas, &c.
Nursery and Seed Establishment, Cottingham and Hull.

SUTTON'S GRASS SEEDS for ALL SOILS.—A copy of Mr. M. H. SUTTON'S *Essay on Permanent Pastures*, from the Journal of the Royal Agricultural Society, Vol. 22, Part 2, 1861, will be sent with every parcel of Grass Seeds.

SUTTON & SONS have one of the largest and most complete stocks of NATURAL GRASSES and CLOVERS in Europe, from which they prepare Mixtures expressly to suit the Soils for which they are required.

Seeds sent carriage free to all parts of the kingdom. Export orders delivered free to the ship's side in any English port.

PRICED LISTS gratis and post free on application to

SUTTON & SONS, Royal Berks Seed Establishment, Reading.

SUTTON'S PERMANENT GRASS SEEDS.—Gentlemen intending to *lay down land* to *permanent pasture*, or for One or Two Years' Lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass seeds most suitable. The ALSIKE, the PERENNIAL WHITE, and PERENNIAL RED CLOVER are included in all our mixtures, together with such of the under-mentioned as are best adapted to the land to be laid down. Prices, according to sorts and quantities required, 24*s*., 26*s*., 30*s*., and 32*s*. per acre.

N.B.—*A copy of Mr. M. H. Sutton's Essay on Laying Down Land to Permanent Pasture, from the Journal of the Royal Agricultural Society, will be sent with every parcel of Grass Seeds.*

Achillea millefolium (Yarrow)
Agrostis stolonifera (Creeping Bent)
Anthoxanthum odoratum (Sweet Vernal)
Alopecurus pratensis (Meadow Foxtail)
Avena flavescens (Yellow Oat Grass)
Agrostis vulgaris (Common Bent Grass)
Cynosurus cristatus (Crested Dogstail)
Dactylis glomerata (Round-headed Cocksfoot)
Festuca duriuscula (Hard Fescue)
Festuca loliacea (Darnel Fescue)
Festuca ovina (Sheep's Fescue)
Festuca rubra (Red Fescue)
Festuca pratensis (Meadow Fescue)
Festuca elatior (Tall Fescue)
Festuca heterophylla (Various-leaved)
Festuca tenuifolia (Fine-leaved Fescue)
Glyceria aquatica (Water Sweet Grass)
Holcus avenaceus (Tall Oat-like Grass)
Lolium perenne (Perennial Rye-grass)
Lolium perenne sempervirens
Lolium perenne Paceyanum
Lolium perenne Stickneyanum
Lolium perenne tenue
Lolium italicum (Italian Ryegrass)
Lotus corniculatus (Birdsfoot Trefoil)
Medicago lupulina (Black Medick Grass)
Phleum pratense (Timothy)
Poa nemoralis (Wood Meadow Grass)
Poa pratensis (Smooth Meadow Grass)
Poa trivialis (Rough Meadow Grass)
Poa fertilis (Fertile Meadow Grass)
Poa sempervirens (Evergreen)
Trifolium minus (Red Suckling)
Trifolium pratense perenne (Perennial Red Clover)
Trifolium repens (White Clover)
Trifolium hybridum (Alsike Clover)

The above may be purchased separately at moderate prices. The best of them are included in Messrs. SUTTON'S Mixtures, 24*s*., 26*s*., 30*s*. and 32*s*. per acre.

N.B.—*The Alsike Clover is included in all Messrs. Sutton's Mixtures.*

Goods delivered Carriage Free to all parts.

SUTTON & SONS, Seed Growers, Reading, Berks.

Stotfold, near Baldock, Herts.

SAMUEL COCKING AND SON have on hand a superior Stock of AGRICULTURAL SEEDS of unrivalled quality, grown by themselves with the greatest care. Every attention is constantly given to ensure the very best kinds. Early orders are particularly desired, as the business done by the firm is very great during the seed season.

The Stock consists of the various kinds of Mangel Wurzel, Swede and other Turnip Seeds, Kohl Rabi, Mustard, Carrot, &c.

S. C. & Son attend Hertford, Hitchin, and Hemel Hempstead markets. Agents are appointed as under:—

Hertford.—Messrs. E. D. Rayment & Co., Grocers, &c.
Tring.—Mr. J. Dawe, Farmer.
Luton.—Mr. H. C. Brown, Corn Factor,
Hemel Hempstead.—Mr. J. Cross, Grocer, &c.
Hitchin.—Mr. W. Fells, Nurseryman, Market Place.
Bedford.—Mr. Graves, Grocer, opposite the Corn Exchange.

Farm Seeds.

PAGE and TOOGOOD being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured, possess greater powers of germination, and are a desirable change for the northern and midland counties.

To publish the numerous testimonials P. & T. are favoured with is impossible, but the fact of their having had the honour for the last 8 or 10 years to supply the ROYAL FARMS at OSBORNE, will be a sufficient guarantee that their Seeds are of superior quality, and their prices are as low or lower than any respectable house in the Kingdom.

Present prices, Carriage free to all parts of England:—

Per lb.—	s.	d.
[illegible]ing's Swede ..	0	8
[illegible]'s Improved Hardy	1	0
Fielder's Improved White	0	9
[illegible]'s Champion ..	1	0
[illegible]	0	9
[illegible]	0	8
[illegible] or Jeffrey's ..	0	9
[illegible]rd	0	9
[illegible] Round Turnip ..	0	8
[illegible] Imp'd. Red Globe	0	9
[illegible] Bullock ..	0	8
[illegible]ian White Globe	0	8
[illegible] Green Globe ..	0	8
[illegible] White Tankard ..	0	8
[illegible] Imp. Purple ditto.	1	0
[illegible] ditto	0	8

Per lb.—	s.	d.
Yellow Tankard	0	9
Fielder's Hardy Green Round	0	6
Early Six Weeks	0	6
Kohl Rabi	3	6
New Osborne Mangel.		
Yellow Globe	0	6
Page's Imp. OrangeGlobe*	0	8
Red Globe	0	7
Elvetham Long Red ..	0	8
Long Red	0	6
Long Yellow	0	8
White Belgian Carrot ..	1	3
Cattle Cabbage	2	6
Cattle Parsnip	1	0
Dwarf Essex Rape ..	0	4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.

Buckwheat, Mustard, Linseed, Tares, and Sainfoin. Fine Permanent Pasture and Lawn Grasses, as sown at the Royal Farms, Osborne, for the last eight years, 1*s*. 3*d*. per lb.

Genuine Hampshire-grown Alsike Clover, Italian Rye-grass, Timothy, &c., at lowest market prices. Special contracts for large quantities.

Royal South Hants Seed Establishment, Southampton.

PETER LAWSON & SON,

THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

SUTTON'S

YELLOW GLOBE MANGEL WURZEL

The heaviest and best sort known, price 8*d*. per lb., or 63*s*. per cwt. ORANGE GLOBE and all other sorts 8*d*. per lb.

PRICED LISTS of FARM SEEDS Post Free.

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

CHINESE YAM, DIOSCOREA BATATAS.

SUTTON & SONS

Having a large stock of strong Roots for present planting, can supply them at the reduced price, 2*s*. 6*d*. per dozen or 15*s*. per 100, with Instructions on Cultivation.

N.B. *Each root will make several good sets.*

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.—April 12.

J. C. WHEELER & SON, SEED GROWERS,

GLOUCESTER.

Alopecurus pratensis (Meadow Foxtail).

KNOWLEDGE of all matters connected with Grasses can hardly be too highly prized by the Farmer, as it gives him a practical insight into the nature of his land, which can hardly be otherwise attained. The importance of this will be most clearly made out by a study of the Foxtails.

The example before us is called Meadow Foxtail, as it is a constant denizen of rich and especially Lowland Pastures. The generic name is merely a translation of its common English name of Foxtail, which, from the form of its spike, it is supposed to resemble.

There is a species, common to poor Arable, known as the Slender Field Foxtail (A. agrestis). This, in the cultivated field, is an evidence of want of condition in the land, which can usually be remedied by drainage and liberal treatment.

A smaller form of Foxtail occurs in ditches and wet places; it is called the Procumbent Foxtail (A. geniculatus). Its presence in any situation, however dry at the time, shows that water was there for a great part of the year.

Meadow Foxtail, the only species employed by the Farmer, has a soft hairy seed, which should be distinguished from the comparatively smooth seed of the Field Foxtail, as the latter is a weed of a very pernicious kind. We always recommend some of this Grass in laying down Permanent Pasture in rich lowland positions, leaving it out where our seed is for dry uplands.

Grass and Clover Seeds for Permanent Pasture at 30s. per acre.

To this part of our business we have devoted some degree of attention, and we are pleased to say with some success. We are animated by this success to renewed efforts, and it will be our study to send such a mixture of the most nutritious and suitable Grasses, and such a mixture of Clover, as to create, in as short a time as possible, a rich Permanent Pasture, arranged and mixed to suit any particular soil, situation, or locality, which may be described to us.

The different soils and situations may be roughly classed under the following heads:—

1. Medium loamy soil.
2. Heavy stiff clay.
3. Light brashy or gravelly.
4. Under trees, as in orchards, parks, &c.

For each or either of the above we will supply a proper and suitable mixture, properly arranged, every sort complete, for 30*s*. per acre; so that all the purchaser would have to do would be to write and tell us the number of acres, and we would, without any further trouble on his part, prescribe and arrange the proper mixture and forward it to his address without delay.

Grasses and Clovers for One or Two Years' Lay, usually called "Seeds."

For One Year's Lay, at 14s. 6d. per acre | For Two Years' Lay, at 17s. 6d. per acre.

The quantity required per acre will be about 15 lbs. of mixed Clover Seed, and from 1 to 2 pecks of Grass Seed, to be sown about the end of March or beginning of April, with either Wheat, Oats or Barley. "The land is then to be harrowed or bush-harrowed across the drills of corn, if these are up, and rolled."

We are extremely careful in the selection of the finest and heaviest Grasses, and the cleanest and purest samples of Clovers for these "Seeds." Every season we supply our customers with "Seeds" for hundreds of acres, and with the greatest success. We can highly recommend our mixture as being of the very best quality.

We deliver our Grass and Clover Seeds Carriage Free by Rail, and allow 5 per cent. discount for Cash according to the terms published in our "Little Book."

J. C. WHEELER AND SON, SEED GROWERS, GLOUCESTER.

RAYNBIRD, CALDECOTT, AND BAWTREE, Seed Merchants and Growers, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

To the Seed Trade.

H. AND F. SHARPE can offer on very advantageous terms the under-mentioned sorts of SEEDS of 1861 growth and raised from selected stocks:—

Large York Cabbage	Sangster's No. 1 Peas
Long Red Surrey Carrot	Bellamy's Green Marrow Peas
James's new Intermediate do.	Early Long-pod Beans
Fine Red Pickling Cabbage	Mackie's Monarch do
Green Kohl Rabi	Mangel Wurzel in sorts
	Turnip in sorts

Seed Growing Establishment, Wisbech.

JOHN PERKINS'S YELLOW GLOBE MANGEL WURZEL SEED, 6*d.* per lb. Raised from large transplanted bulbs and selected under his own superintendence. PRICED LIST of other Farm Seeds post free.

John Perkins, Seed Merchant, 52, Market Square, Northampton.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,
And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. Wheeler & Son, Seed Growers, Gloucester.

New Hardy Variegated Plant.

SCROPHULARIA NODOSA VARIEGATA.

B. S. WILLIAMS has much pleasure in stating that he has purchased the Stock of the above, which has proved to be the best plant for Edging Ribbon Borders or large beds yet introduced. (See Mr. Beaton's remarks in the *Journal of Horticulture*, August 27, 1861.)

B. S. W. can confidently recommend it for the above purposes, having seen it used largely at the Palace Gardens, Armagh, Ireland, for the last two years. It is of very easy culture and perfectly hardy, with ovate-oblong obtuse leaves broadly edged with white, forming a distinct and effective variegation.

Mr. G. Cooper, the Gardener, states in a letter to the Floral Committee of the Royal Horticultural Society:—"I have used it for the above-named purposes for the last three years, and find it to be the most effective plant with which I am acquainted. Its leaves match those of the Geranium for size, and set off the scarlet flowers so well that the effect is pleasing in the extreme. It looks well in all weathers, and neither extreme wet nor extreme dryness affect it in the least, as was satisfactorily proved in the years 1859 and 1860. It holds on its good appearance far into the winter, looking well from the middle or end of April to December. It will be found very useful to those who have but little time to propagate, and little room to winter bedding plants, as it can be kept without either labour, protection, or care."

The following Testimonials are selected from a large number received:—

From Mr. D. Ferguson, Curator, Royal Botanic Gardens, Belfast.

I have much pleasure in forwarding my testimony of the new Bedding Plant, Scrophularia nodosa variegata. I saw the plant on the 28th June last for the first time in the Palace Gardens, Armagh, and for a ribbon border I have no hesitation in saying it is the best plant I have yet seen. I called in the evening, after a heavy day's rain, which did not seem to affect the plant in the least. The leaf is large, with a pure white margin. I am glad you have the stock, as you cannot too highly recommend it as a bedding plant."

From Mr. James Maclean, Gardener to Colonel Leslie, M.P., Glasslough.

"I have much pleasure in bearing testimony to the beautiful effect produced by your variegated plant, Scrophularia nodosa variegata. I was at Kew, Chiswick, South Kensington, and many other places in July last, and I saw nothing like it or to be compared with it, as grown in the Palace Gardens, Armagh, last season. I consider it one of the best variegated bedding plants of its class."

From Mr. G. Anderson, Gardener to the Right Hon. Earl of Gosford, Gosford Castle.

"I have much pleasure in saying I saw the Scrophularia nodosa variegata in great profusion at the Palace Gardens, Armagh, last season, and consider it one of the best of that class for bedding-out purposes, and more particularly for ribbon borders, as we have nothing to equal it for beauty of foliage and habit of growth."

From Mr. Rew, Gardener to the Countess of Caledon, Caledon Hill.

"I can, with the greatest of confidence, highly recommend the plant, Scrophularia nodosa variegata, and believe it to be one of the best variegated plants for a ribbon border or edging yet introduced. We enter largely into variegated plants at Caledon Hill; but this new plant I must confess gave me a most agreeable surprise, when I saw it in the borders of the gardens of the Lord Primate. I feel quite certain it has only to become known to become a universal favourite, without the slightest chance of any party who may become possessed of it feeling disappointed—too often the case, I regret to say, with many of the new plants that of late have been issued."

From Mr. John Smith, Gardener to the Most Hon. Marquis of Downshire, Easthampstead Park, Wokenham, Berks.

"I am glad to see by the *Gardeners' Chronicle* you have become the possessor of that most valuable plant Scrophularia nodosa variegata; too much cannot be said in praise of the plant, as an acquisition to the Flower Garden. I saw it in the Palace Gardens, Armagh, in a ribbon border in fine condition, backed with Scarlet Geraniums and fronted with Lobelia speciosa; it was also used in many other ways, and in all cases had a fine and charming effect.

Strong plants in May, 1*s.* 6*d.* each; 12*s.* per doz.; 80*s.* per 100.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Evergreen Rye Grass or Perennial Devon Eaver.

G. FROST begs to offer the above from 18 to 28 lbs. per Bushel, New Seed grown in the noted districts of Norrth Devon. Also COW and RIB GRASS, TREFOIL, and WHITE DUTCH. Carriage paid.

Prices, which are very reasonable, may be had with samples on application to G. Frost, Nurseryman and Seed Grower, Brushford, Tiverton.

SMITH'S WORCESTERSHIRE SWEDE, the handsomest, most profitable, and best in cultivation, 1*s.* per lb.

SKIRVING'S IMPROVED SWEDE, saved from selected roots, 8*d.* per lb.

ORANGE GLOBE MANGEL WURZEL, the best for all kinds of soil, a very superior stock, 8*d.* per lb.

All other kinds of SWEDE and MANGEL, 8*d.* per lb. Cheaper by the bushel or cwt.

Richard Smith, Seed Merchant, Worcester.

Swede Turnips, &c.

HENRY BROWN'S DWARF-TOP BRONZE SWEDE is the best in cultivation. May be grown 20 to 26 lbs., is very solid and hardy, per lb. 1*s.*; also MANGELS, 6*d.* to 8*d.* per lb.

His PRICED DESCRIPTIVE LISTS of Farm, Garden, and Flower Seeds, can be had post free on application.

Henry Brown, Seedsman, 4, Commutation Row, Liverpool.

SHRUBS.—A gentleman having 18 Acres of Shrubberies (which the severity of last winter did not affect, from their sheltered position), has a quantity of SHRUBS to DISPOSE OF, from 3 to 12 years old, very choice and healthy, consisting of Worked Chesnuts, Ashes, and Mays of all sorts; Cedars, Cypress, Boxes, of all kinds; Laurustinuses, all sorts; Bays, Double Blossom Cherry, Weeping Ashes, Elms, Sycamores, Lilacs, Rhododendrons, and Laurels, at moderate prices, and will be packed and sent by Railway free.

Apply to Mr. Cattlin, 22, Ely Place, Holborn, London, W.C.

R. GLENDINNING has great pleasure in offering the undermentioned fine CONIFERS, which have been annually transplanted, and will move with perfect safety:—

Araucaria imbricata (perfect specimens), 2 to 9 feet
Cedrus Deodara ,, ,, 1 to 10 feet
,, atlantica ,, ,, 1 to 10 feet
Cupressus Lawsoniana, 1 to 3 feet
,, macrocarpa, 1 to 15 feet
,, Nutkaensis (Thujopsis borealis), 1 to 8 feet
Picea nobilis (fine), 1 to 6 feet
,, Nordmanniana, 1 to 10 feet
,, Pinsapo, 1 to 6 feet
Pinus Benthamiana, 1 to 5 feet
,, excelsa, 1 to 12 feet
,, Fremontiana, 1 to 4 feet
,, Jeffreyi, 1 to 2 feet
,, Koraensis, 1 to 4 feet
,, monticola, 1 to 10 feet
,, tuberculata, 1 to 4 feet
Taxus baccata erecta (splendid specimens), 1 to 9 feet

Also all the other leading kinds in fine well grown plants.

The above are remarkably handsome plants, and perfectly healthy, not having suffered from the severity of the past winters. Price on application.

Chiswick Nursery—April 12.

CHARLES NOBLE would remind all those interested that his Selection of RHODODENDRONS is unrivalled; that his Selection of CONIFERS is worthy of notice, and his Selection of HARDY EVERGREENS worth an inspection. The following handsome well-grown specimens can be obtained on very advantageous terms, and purchasers will consult their interests by visiting the Sunningdale Nursery, Sunningdale Station, South Western Railway.

Wellingtonia gigantea, 1 to 6 ft.	Juniperus Virginiana, 1 to 10 ft.
Thujopsis borealis, 1 to 4 feet	,, argentea, 1 to 4 feet
Thuja Warriana, 4 to 5 feet	,, chinensis, 5 to 7 feet
,, Lobbii, 1 to 4 feet	,, sphærica, 2 to 4 feet
,, gigantea, 1 to 4 feet	Cupressus Lawsonii, 1 to 4 feet
,, americana, 6 to 10 feet	,, Thyoides, 1 to 4 feet
Taxus fastigiata, 3 to 7 feet	Cephalotaxus Fortunii, 2 to 4 ft.
,, baccata, 3 to 5 feet	Cedrus Deodara, 1 foot to 8 feet
Taxodium distichum, 4 to 6 ft.	,, atlantica, 8 to 10 feet
Spiræa Nobleana, 3 to 5 feet	Berberis japonica, 1 to 4 feet
,, callosa, 3 to 5 feet	,, Beallii, 1 to 4 feet
Skimmia japonica, fine blooming plants	,, Darwinii, 1 to 4 feet
Retinospora ericoides, 1 to 3 ft.	Abies spec. Vancouver's Island
Pinus austriaca, 1 to 5 feet	,, lasiocarpa
,, Laricio, 3 to 5 feet	,, Pinsapo, 1 to 3 feet
,, insignis, 2 to 5 feet	,, orientalis, 1 to 6 feet
,, excelsa, 1 to 3 feet	,, Douglasi, 2 to 3 feet
,, Cembra, 1 to 3 feet	,, Nordmanniana, 2 to 5 ft.
	,, Menziesii, 3 to 10 feet
,, Benthamiana, 2 to 6 feet	Araucaria imbricata, 1 to 8 ft.

Ten Minutes' walk from the Station.

TO THE TRADE.—1 year Seedling Larch, Pinus austriaca, Birch, Sycamore, Apple Stocks, Pinaster.

2 years' Seedling Scotch and Spruce Fir, Quicks, Pear Stocks, Silver Fir, Beech.

Transplanted Pear Stocks, Strong Hazels, 2½ to 4 feet; Hornbeam, 2 to 4 feet, worked English Elms, Limes, Acacias, Poplars, Laburnums, 4, 5, 6, and 7 feet; Green Hollies, 1 to 1½, 1½ to 2, 2 to 3 feet, and strong Quicks. Low prices on application.

James Dickson & Sons, "Newton" Nurseries, Chester.

TO THE TRADE ONLY.

ABIES MENZIESII, 18 to 24 inches, 6*s.* per doz., 40*s.* per 100; do., 24 to 30 ins., 9*s.* per doz., 60*s.* per 100.

CUPRESSUS LAWSONI, 18 to 24 ins., 24*s.* per doz., 140*s.* per 100; do., 24 to 36 ins., 30*s.* per doz., 200*s.* per 100.

PICEA GRANDIS, 6 to 9 ins., 42*s.* per doz.; do., 12 to 18 ins., 84*s.* per doz.

PINUS INSIGNIS, 4 to 5 feet, 36*s.* per doz.; do., 5 to 6 feet, 42*s.* per doz.

THUJA LOBBI, 18 to 24 ins., 18*s.* per doz.; do., 24 to 36 ins., 24*s.* per doz.

BERBERIS DARWINII, from seed, 3 to 6 ins., 70*s.* per 1000; 6 to 9 ins., 35*s.* per 100; 18 to 24 ins., 120*s.* per 100.

RHODODENDRON MAXIMUM ALBUM, fine bushy stuff, 18 to 30 ins. high, 60*s.* per 100.

RHODODENDRON PONTICUM, healthy and well set with bloom-buds, all sizes from 18 to 36 ins.

RHODODENDRONS, choice named and unnamed vars.

Ghent and American AZALEAS, by the doz., 100, or 1000.

SPRUCE FIR, handsome quartered stuff, 3½ to 4½ feet, 60*s.* per 100; 4½ to 6 feet, 5*l.* per 100.

DOUBLE YELLOW PRIMROSES, 20*s.* per 100, or 400 for 3*l.*

TRADE CATALOGUES of GENERAL NURSERY STOCK on application.

Orders unaccompanied with either a remittance or reference will not be noticed.

Thos. Cripps, Nurseryman, &c., Tonbridge Wells, Kent.

H. AND R. STIRZAKER have to offer in very large quantities the following surplus NURSERY STOCK:—

Holly, Common, 1 to 1½ and 2 feet.
Brooms, 2 to 3 feet.
Laurel, Common, 1½ to 2 and 2 to 3 feet.
Laurel, Portugal, 1 to 1½, and 1½ to 2 and 2½ feet.
Laurustinus, young in pots, 6 to 9 inches.
Yews, English, 1½ to 2, and 2 to 3 feet.
Yews, Irish, in sizes from 2 to 6 feet.
Arbor-vitæ, American, in sizes, from 4 to 6 feet.
Arbor-vitæ, Chinese, in sizes, from 3 to 6 feet.
Cedrus Deodara, in sizes, from 2 to 5 feet.
Sweet Briar, strong, 2 to 3 feet.

They are well rooted, and the larger sized plants well furnished.

Purchasers of large quantities will be liberally dealt with.

Also fine autumn, sown Cabbage Plants of Early Red for pickling. Curled Savoy and Scotch Drumhead.

The Nurseries, near Lancaster.

FOR SALE, 100 fine GREENHOUSE AZALEAS, from 2 to 5 feet in height, healthy and well-grown; 200 NEW HOLLAND PLANTS, fine healthy specimens, including the best varieties of Ericas, Epacris, Acacias, Boronias, Pimeleas, Chorozemas, Polygalas, &c.; 20,000 BEDDING PLANTS, of all sorts, fine strong stock; and 50 beautiful specimens of THUJA ORIENTALIS, from 4 to 6 feet high.

Also several WROUGHT-IRON BOILERS, Saddles, Conical, and Retort, each capable of heating from 300 to 600 feet of 4-inch pipes. Most of them having not been long in use, are nearly as good as new.

For particulars apply to Mr. Dunn, Eardiston, Tenbury, Worcestershire.

PAINTED WOOD TALLIES, 3 inch, 6*d.*; 4½ inch, 9*d.*; 6 inch, 1*s.*; 9 inch, 1*s.* 9*d.*; 12 inch, 2*s.* 6*d.* per 100, cheaper by the 1000.

GREEN FLOWER STICKS, 1 foot, 2*d.*; 1½ feet, 3*d.*; 2 feet, 4*d.*; 3 feet, 6*d.* per dozen; unpainted ditto, same sizes and prices.

GENUINE PERUVIAN GUANO, 3*d.* per lb., 7 lbs. 1*s.* 6*d.*, 28 lbs. 5*s.*, 18*s.* per cwt.

FLOWER SEEDS for PRESENT SOWING, post free, 24 varieties, 2*s.* 6*d.*; 50 varieties, 5*s.*; 100 varieties, 10*s.* Culture and description on each packet.

B. J. Edwards, 222, Strand, London, W.C.

To Architects, Landscape Gardeners, &c.

THE BURIAL BOARD for the BOROUGH of CHELTENHAM are desirous of receiving PLANS, ESTIMATES, and GENERAL SPECIFICATIONS for the Laying Out, Constructing Roads and Footpaths, Erecting Buildings on, Fencing in and Planting certain lands purchased by them for a Cemetery, the superficial area of which is 18 acres.

The designs must include a Ground Plan, showing the sites of the different buildings required, the courses of the carriage roads and walks, the courses also of the drains, the division of the land into the several sectional burial places, and the subdivision of such places into plots for burial.

The plan also should show the manner proposed for the ornamental planting of the land.

Should the intentions of the designers as to the laying out the land render it necessary, sections of the earthwork required, and formation of the ground surface as proposed to be made, should be provided, and such other details and suggestions as the competitors may think necessary to illustrate and make clear their designs.

Plans, Elevations, and Sections must be provided for two chapels, dead-house, lodge, gates, and walls at entrances, &c.

Specifications must accompany the plans, describing the manner of construction, the class and substance of material in the several buildings, and estimates of their several costs.

Plans, Specifications, and Estimates of the manner of laying out and planting the site, of forming and making the roads and ootpaths, and of the character and cost of fencing the site, to e also provided.

Plans, &c., may be either for forming and finishing the roads and footpaths, laying out and planting the site, or for fencing the site, or for the chapels and other buildings before mentioned, and the entrance walls and gates, or the whole of the works may be combined in the plans, &c., of any competitor; but the Board reserve the right of selection at their discretion from the plans, &c., submitted to them.

A premium of 40 guineas will be given for the best designs, Specifications, and estimates for the whole of the works sent in; and a premium of 20 guineas for the second best designs, specifications, and estimates for the whole of the works. Should designs, &c., be selected for part of the works only, a fair arrangement as to the premium will be made by the Board with the successful competitors.

The plans, &c., selected to become the property of the Board.

The plans, &c., are to be distinguished by a mark or motto, and accompanying them a sealed envelope, having the same mark or motto outside, and within the name and address of the designer, and the terms on which he will superintend and supply his professional services in execution of the works. Plans and particulars of the land may be had on and after the 29th March iustant, of Mr. Henry Dangerfield, Borough Surveyor.

The plans and other documents to be sent to me on or before the 29th day of May next.

G. E. Williams, Clerk to the Board.

Public Offices, Cheltenham, April 12.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.

Manufactory: Stoke-upon-Trent.—April 12.

Garden Border Edging Tiles.

F. AND G. ROSHER, Cement, Brick, and Tile Merchants, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.;
Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Chimney Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. Rosher, at their Premises as above.

PHOSPHO GUANO.

PETER LAWSON & SON, General Contractors,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. Voelcker, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.
(Signed) "Augustus Voelcker."

Opinion of Dr. Anderson, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.
(Signed) "Thomas Anderson."

Opinion of Dr. Stevenson Macadam, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for the Root Crops.
(Signed) "Stevenson Macadam."

Opinion of Dr. Hodges, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.
(Signed) "John F. Hodges."

Opinion of Dr. Apjohn, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows and Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l.* 9*s.* 8*d.* per ton.
(Signed) "James Apjohn."

Price, Free on Rail, £12 5s. per Ton, Bags included.

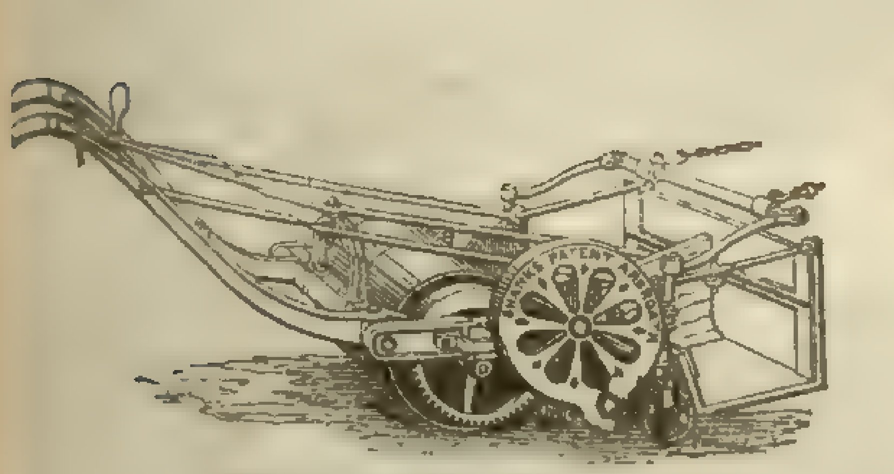
*** *None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

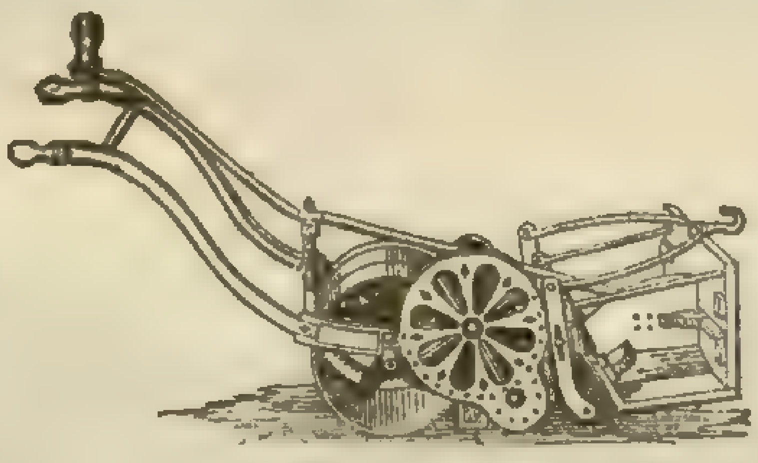
PETER LAWSON & SON, 27, GREAT GEORGE STREET, WESTMINSTER, LONDON, S.W.

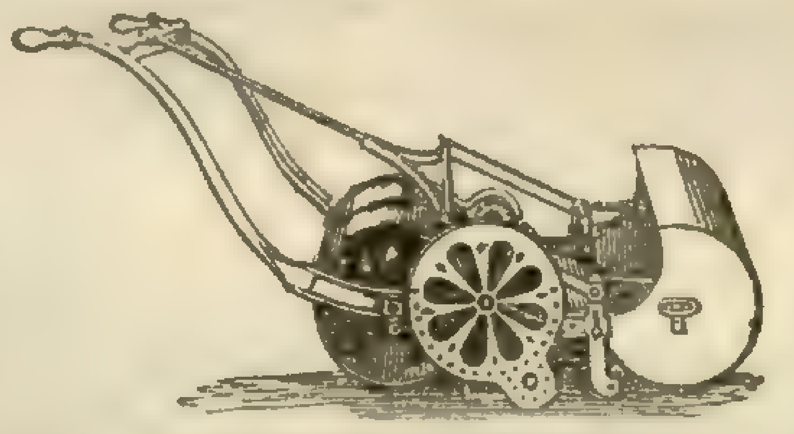
SHANKS' NEW PATENT

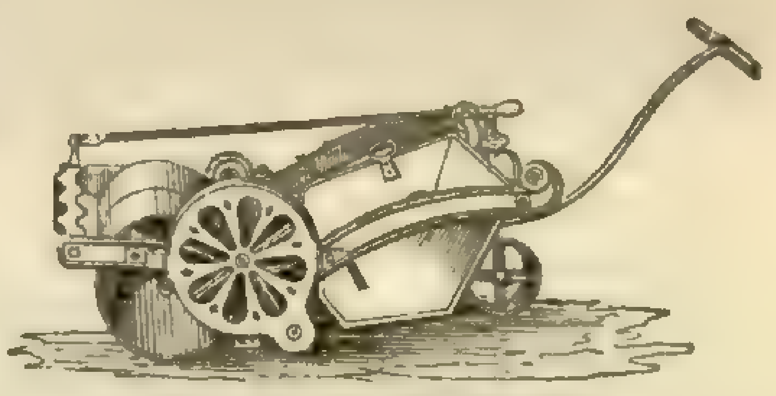
LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

WITH SILENT MOTION IF SPECIALLY DESIRED.


HORSE MACHINE.


PONY MACHINE.


NEW HAND MACHINE.


OLD HAND MACHINE.

J. B. BROWN and CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effects of the improvements of previous years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Price		Width of Cutter.	Price	
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0	*Drawn by a Horse.*	No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

PRICES.

SHANKS' NEW PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Price		Width of Cutter.	Price	
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man.*
No. 9.—22-inch Machine	8 7 6	*Easily Worked by Two Men.*	No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*	No. 16.—12-inch Machine	5 0 0	*Ditto by a Boy.*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Frogmore, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, the Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

*** *The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

SOLE AGENTS FOR LONDON:

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

HENRY J. MORTON AND CO.,
2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern
for Cottage Houses, &c., to contain 50 gallons, 26s.; 80 gallons, 31s. each; and 140 gallons, 37s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

Galvanised Iron Pumps
for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.

Galvanised Iron Swing Water Barrows
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35s. 0d. each.

FOWLER'S STEAM PLOUGHING AND CULTIVATING PATENTS.

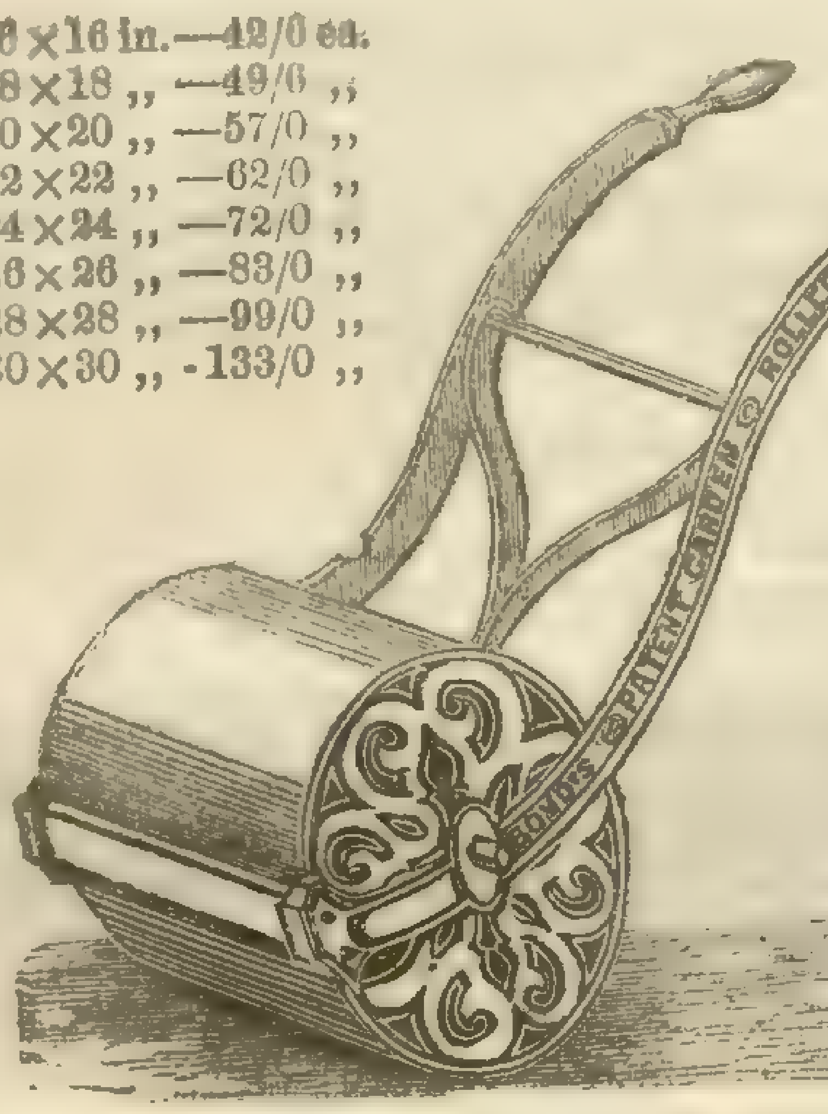
RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

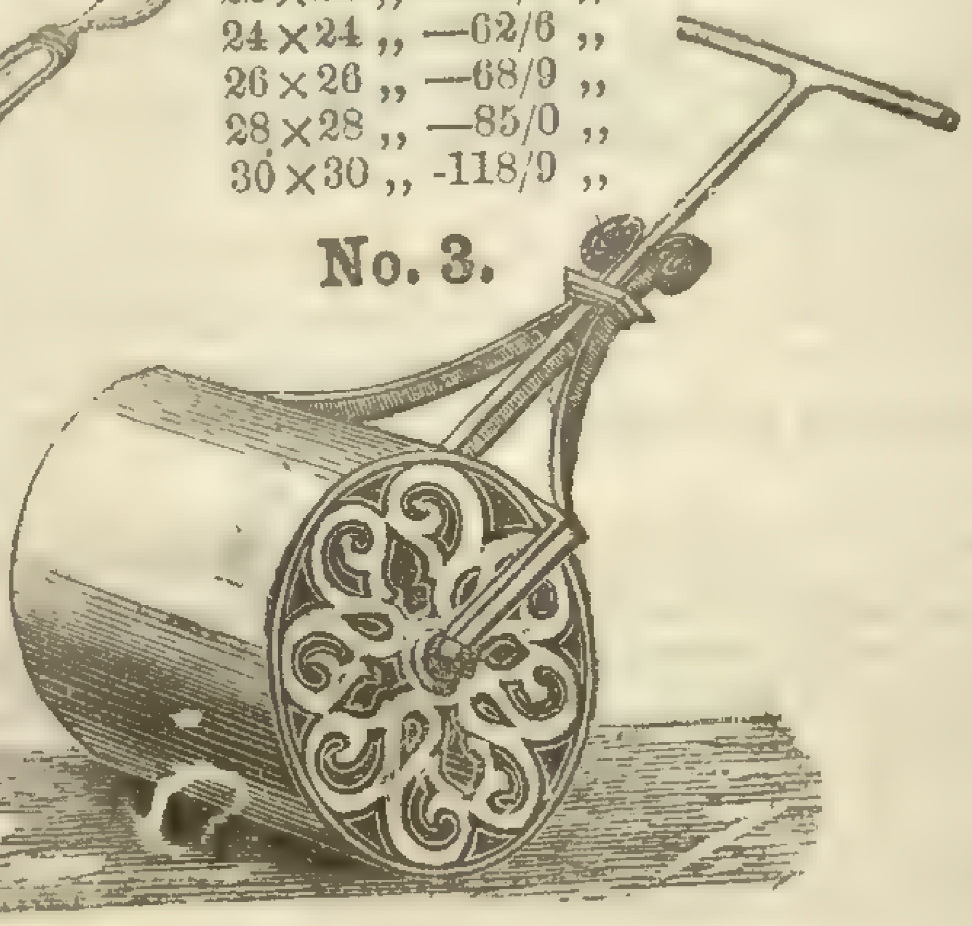
GARDEN ROLLERS.

The principal advantages of BOYD'S PATENT SHAFT ROLLER are, that while it saves labour and unnecessary fatigue, by its construction it can be pushed before you (thereby enabling you to see what you are doing), and it is guided when used in this way with the most perfect ease.

Besides this you have quite as much power for drawing it behind you as in Rollers of the old kind; and it is computed to require one-fourth less power than any other Roller without Shafts.



16×16 in.—42/0 ea.
18×18 ,, —49/6 ,,
20×20 ,, —57/0 ,,
22×22 ,, —62/0 ,,
24×24 ,, —72/0 ,,
26×26 ,, —83/0 ,,
28×28 ,, —99/0 ,,
30×30 ,, -133/0 ,,



16×16 in.—37/0 ea.
18×18 ,, —40/0 ,,
20×20 ,, —47/6 ,,
22×22 ,, —52/6 ,,
24×24 ,, —62/6 ,,
26×26 ,, —68/9 ,,
28×28 ,, —85/0 ,,
30×30 ,, -118/9 ,,

No. 3.

TO BE HAD OF EVERY IRONMONGER IN THE KINGDOM; ALSO OF THE MANUFACTURERS,
NEWTON, CHAMBERS, & CO., THORNCLIFFE IRON WORKS, NEAR SHEFFIELD.
AND OF J. JONES, 6, BANKSIDE, LONDON, S.E.

SAMUELSON'S SILENT, SELF-CLEANING, LAWN MOWERS,

WITH MANWARING'S PATENT NOISELESS GEAR, AND BOYD'S PATENT SELF-CLEANING BRUSH.

THESE STANDARD MACHINES ARE CONSTRUCTED WITH A SIMPLE AND DURABLE SILENT DRIVING GEAR.

PRICES, including Packing Case, and Carriage paid to any Railway Station in the Kingdom:—

	Width	Boyd's & Manwaring's Patent.	Manwaring's Silent Gear only.
MANUAL POWER	12 inches wide	£5 0 0	£4 12 0
	16 "	7 0 0	6 10 0
	19 "	7 10 0	7 0 0
	22 "	8 10 0	8 0 0
PONY POWER	22 inches wide	£9 5 0	£8 15 0
	25 "	12 0 0	11 10 0
	30 "	15 15 0	14 14 0

TESTIMONIAL.

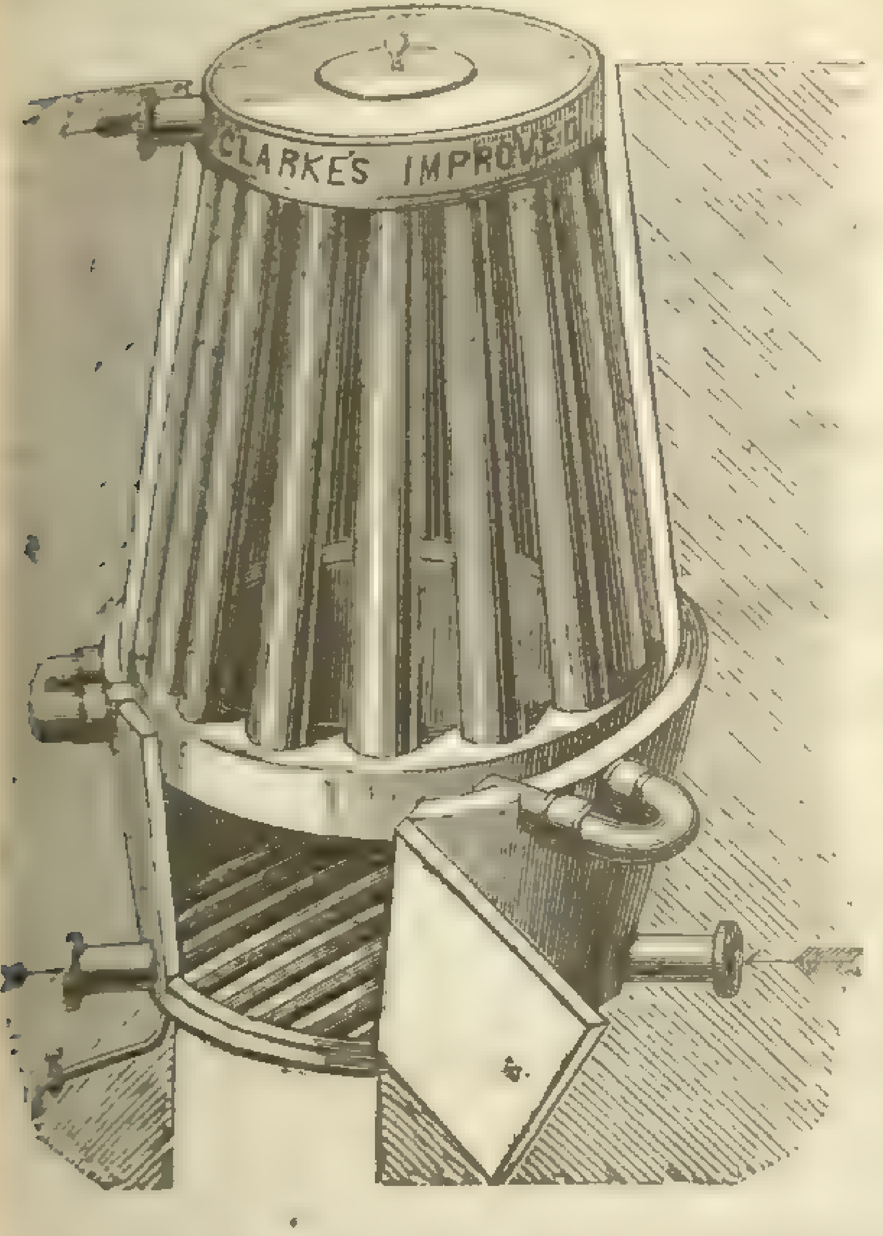
Donnington, Chichester, March 5.

SIR,—In reply to your letter of the 25th ult. respecting the Lawn Mower I had from you last year, I am pleased to give it my most decided approval; for although I have had one in use for the last 15 years, I have never had one that did its work as well as this, or which was so little liable to get out of order. I consider the cleaning and sharpening apparatus a very great improvement. I have a piece of lawn which in the days of the Scythe always took up two men's time for three days to roll, mow, and sweep, they can now with ease go over this ground with your Machine in a little over two hours, and leave it well finished, so that in fact these Machines soon pay for themselves in labour only, to say nothing of the many other advantages derived from them.—Yours faithfully,

W. J. HUMPLING.

Orders direct or through Dealers will be executed according to priority of receipt. May be obtained at the WORKS, Banbury; at MR. SAMUELSON'S Warehouses, 12, Parliament Street, Essex Bridge, Dublin; Newcastle; Stockton; York; Shrewsbury; and Bristol. Also of all Ironmongers and Seedsmen, and at

MR. SAMUELSON'S WAREHOUSE, 76, CANNON STREET WEST, LONDON.



CLARKE'S
NEW PATENT
CYLINDRICAL BOILER

Is now announced to be the most economical and efficient HEATING APPARATUS invented; and the Draught principle and Cylindrical Furnace surpasses everything brought before the Public. These Boilers are also very durable, the metal being half-inch thick and no joints exposed to the direct action of the fire; and although they possess such great power, the Heat can be regulated to the greatest nicety.

Estimates and Prices for all kinds of Heating, with first-class references, sent Post Free, by applying to the Eagle Iron Foundry, 25, Seel Street, Liverpool.

T. C. CLARKE,
CIVIL and HYDRAULIC ENGINEER, PROPRIETOR.

DEANE & COMPANY'S
HORTICULTURAL TOOLS.

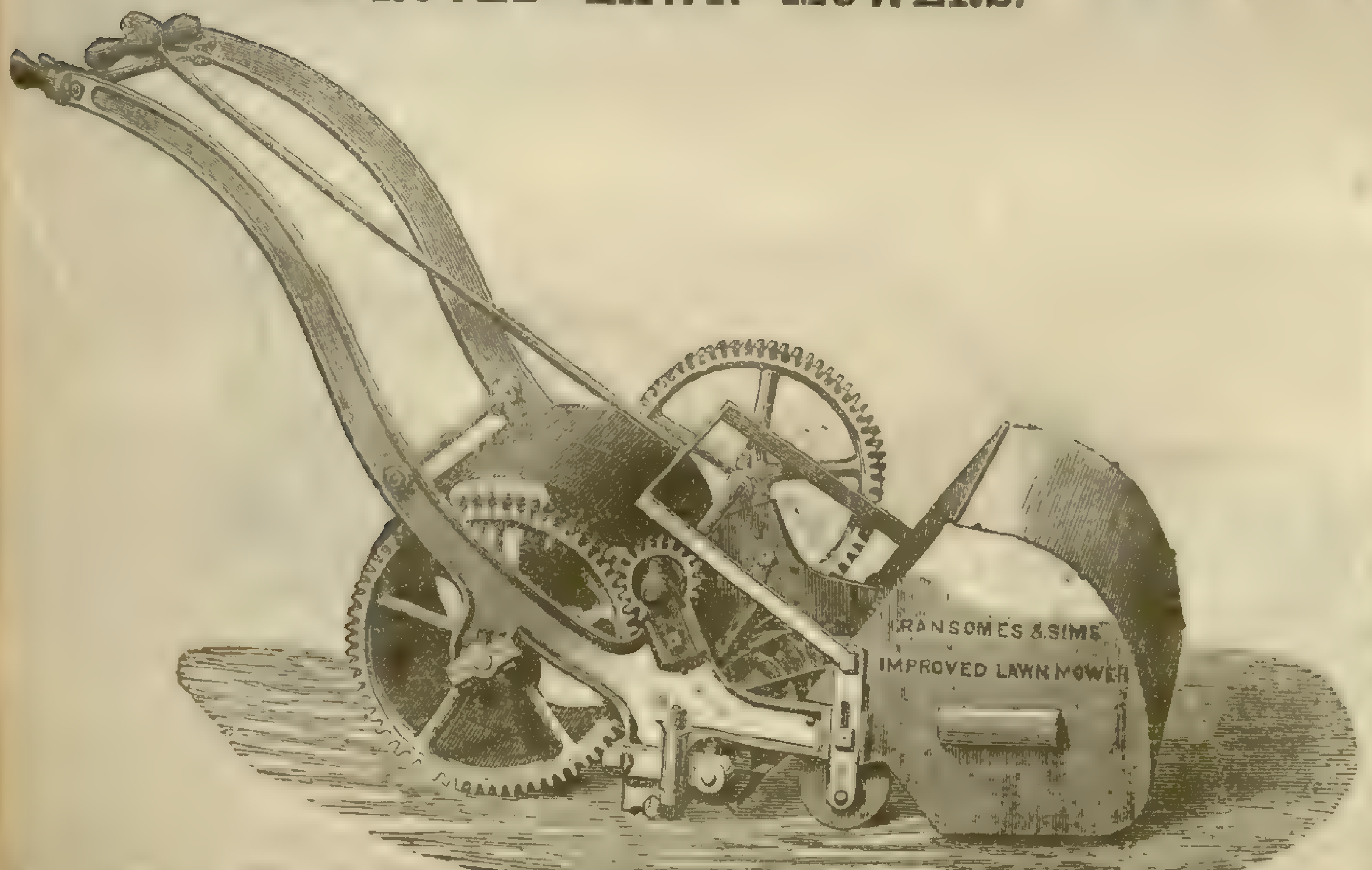
DEANE'S MOWING MACHINES, with Boyd's Patented Improvements, 5*l*., 7*l*., 7*l*. 10*s*., 8*l*. 10*s*.
GARDEN ENGINES, Galvanised Iron. Prices 55*s*., 65*s*., 78*s*., 90*s*., 100*s*., 110*s*.
GARDEN ENGINES, Wood, 90*s*., 110*s*., 138*s*.
FLOWER STANDS, 4*s*. 6*d*. each.
CAST-IRON ORNAMENTAL FLOWER STANDS, to hold Seven Vases, 27*s*.
GREEN'S PATENT MOWING MACHINES.
GREENHOUSE SYRINGES, 8*s*., 10*s*., 18*s*. 6*d*.
GARDEN ROLLERS, 1*l*. 14*s*. 6*d*., 2*l*., 2*l*. 12*s*., 3*l*. 3*s*., 3*l*. 18*s*., 4*l*. 13*s*., 5*l*. 12*s*., 7*l*. 10*s*.
GARDEN STOOLS, 4*s*. 6*d*.
GARDEN SEATS, from 25*s*.
BOYD'S SELF-ADJUSTING SCYTHE, 10*s*. 6*d*.
WIRE WORK, 18 in., 4*d*. per yard run.

Every Implement for Garden use on the lowest terms.

DEANE'S NEW ILLUSTRATED HORTICULTURAL LIST
Post Free on application.

DEANE'S, Opening to the MONUMENT, LONDON BRIDGE, E.C.

RANSOMES & SIMS, Ipswich,
MANUFACTURERS OF
IMPROVED LAWN MOWERS.



THESE LAWN MOWERS contain important improvements, rendering them efficient and perfect. They are made from new patterns designed so as to combine strength and lightness with simplicity of arrangement. They are light handy Machines, almost noiseless in work, and so easy to manage that persons unaccustomed to Mowing can cut Grass without any difficulty.

Price:—14-inch, £6 10s.; 16-inch, £7; 18-inch, £7 10s.; 20-inch, £8.

Packing Cases 8*s*. 6*d*. each, which will be allowed if returned in good condition, Carriage paid.

Carriage paid to any Station within 100 miles of London or Ipswich.

WANTED TO PURCHASE, from 2 to 5 Acres of GARDEN GROUND, with or without a Cottage, close to the high road and near a Town within 30 miles of London, North side preferred.

Address W. C., Post Office, Broadstairs, Kent.

To Nurserymen, Kitchen Gardeners, &c.

TO BE SOLD, the INTEREST in the LEASE of that old and well-established Nursery, known as BARNES NURSERY, at Merrion, within 1½ mile of the City of Dublin, with the entire STOCK-IN-TRADE, consisting of Greenhouse and Hothouse plants in every variety, Timber and Fruit Trees, Flowers in pots, Shrubs, &c. This Nursery stands on 24 acres 2 roods and 36 perches statute measure, has extensive Green and Hothouses thereon, with all the requisites for the carrying on of the Nursery business; and is held for an unexpired term of 44 years, at the rent of 20*l*. per annum. There are two good substantial moderate sized two-story Dwelling Houses on the ground, with Lodges for foremen and labourers; also a handsome Shop on the public road at the entrance. This is the largest Nursery in Ireland, and its patrons comprise most of the nobility and gentry of the country. It stands on the direct road from Dublin to Kingstown, in the midst of all the fashionable Villas near Dublin; and a portion of the ground might be most profitably employed as a Vegetable Garden, there being no such accommodation near Kingstown, or that side of Dublin. Other portions of the land will presently acquire a high value for building, as it adjoins the extensive building ground of Lord Herbert of Lee, which is becoming rapidly in demand. A Lease for a more extended term can be obtained, if required. If necessary a portion of the purchase money would be allowed to remain out as a charge upon the property.

The Proprietor would have no objection to enter into arrangements with an experienced Working Gardener, with a small capital, for the carrying on the business of Nursery and Vegetable Gardens, or with one or more for the working of each separately.

For particulars apply to John Riddick, Solicitor, 3, Eustace Street, Dublin.

Sales by Auction.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, April 15, at 12 o'Clock precisely, 200 Pens of choice POULTRY and PIGEONS, including many Prize Birds from well known breeders and exhibitors.

On view the Morning of Sale, and Catalogues had.

Roses, Carnations, Pinks, Hollies, Conifers, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, April 16, at half-past 12 precisely, a choice COLLECTION of ORNAMENTAL PLANTS, consisting of 30,000 Hollies, 3500 Conifers, comprising Wellingtonia gigantea, Cedrus atlantica and Deodara, Pinus excelsa, Mexicana, insignis and patula, Cupressus Lawsoniana and Cashmeriana, Thuja aurea, Abies Menziesii, &c.; 1000 choice Carnations, Pinks and Picotees, 150 Double White Tree Violets, 100 Delphinium mesoleucum, 100 Pentstemons, 200 Dwarf Roses, &c.

On view the Morning of Sale, and Catalogues had.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE and MORRIS are instructed by Mr. George Smith, Nurseryman, Hornsey Road, to SELL by AUCTION, at the Mart, on TUESDAY, April 15, at 12 o'clock, a portion of his surplus Stock of Show, Spotted, Fancy, Scarlet and Variegated GERANIUMS, including mostly the novelties of his costly collection. New Fuchsias, Petunias, Calceolaria Canariensis, &c.; some very handsome Azalea indica, Ericas, Cinerarias, and other plants in bloom, with a choice assortment of American Plants, Herbaceous Plants, Dahlias in dry roots, &c.

On view the Morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION at the Mart, Bartholomew Lane, City, E.C., on THURSDAY, April 17, at 12 o'Clock, a first-rate Collection of CARNATIONS, PICOTEES, and PINKS, of remarkably fine growth, the surplus stock of a celebrated grower. Handsome Azalea indica, Ericas, Cinerarias, and other plants in bloom; Choice American Plants, Dahlias in dry roots, Herbaceous Plants, together with the second portion of Mr. Smith's new Pelargoniums, Fuchsias, Verbenas, Petunias, Calceolarias, &c.

On view the Morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

Her Majesty's Royal Forests.—Oak Bark.

FOR SALE, about 2900 tons of TIMBER and FLITTERN BARK, situate at Windsor Park and at Bagshot, Alice Holt Forest, Woolmer Bere, Parkhurst, and the New Forest, Hampshire; Dean Forest and High Meadow Woods, Gloucestershire; Salcey and Hazleborough Wood, Northamptonshire; and Delamere Forest, Cheshire.

MESSRS. DRIVER have been honoured with instructions from the Hon. J. K. Howard, the Commissioner in charge of her Majesty's Woods and Royal Forests, to SELL by AUCTION, at the Mart, London, E.C., on FRIDAY, April 25, at 1 o'Clock precisely, the BARK in the above Forests, and which will be sold as standing at the pole with the exception of a portion thereof, which is some of the produce of last year and the year before, and is stacked. The Bark is now being stripped, and will be divided into lots, and will contain in the whole about 176 tons in Windsor Forest and at Bagshot, 25 tons in Alice Holt Forest, 6 tons in Woolmer Forest, 100 tons in Bere Forest, 10 tons in Parkhurst Forest, 1000 tons in the New Forest, 730 tons in Dean Forest, 470 tons in High Meadow Woods, 102 tons in Salcey Forest, 50 tons in Hazleborough Wood, and 220 tons in Delamere Forest.

Samples will be on view at the Offices of the Auctioneers, and at the Auction Mart, London. The Bark at Windsor Park and Bagshot may be inspected, and Catalogues obtained on application to Mr. W. Menzies, Park Side, Englefield Green, Staines; that at Alice Holt, Woolmer, Bere, and Parkhurst, on application to Mr. N. Hoinbotham, Holt Lodge, Farnham; that in the New Forest, on application to Mr. L. H. Cumberbatch, Queen's House, Lyndhurst; that at Dean Forest and High Meadow Woods, on application to Sir James Campbell, Whitemead Park, Coleford; and that at Salcey, Hazleborough Wood, and Delamere, on application to Mr. Thomas Linnell, Eddisbury Lodge, Delamere Forest.

Catalogues may also be had at the Office of Woods and Royal Forests, 2, Whitehall Place, S.W.; at the Auction Mart, London, E.C.; of Messrs. Clutton, 9, Whitehall Place, S.W.; and of Messrs. Driver, Surveyors, Land Agents, and Auctioneers, 5, Whitehall, London, S.W.

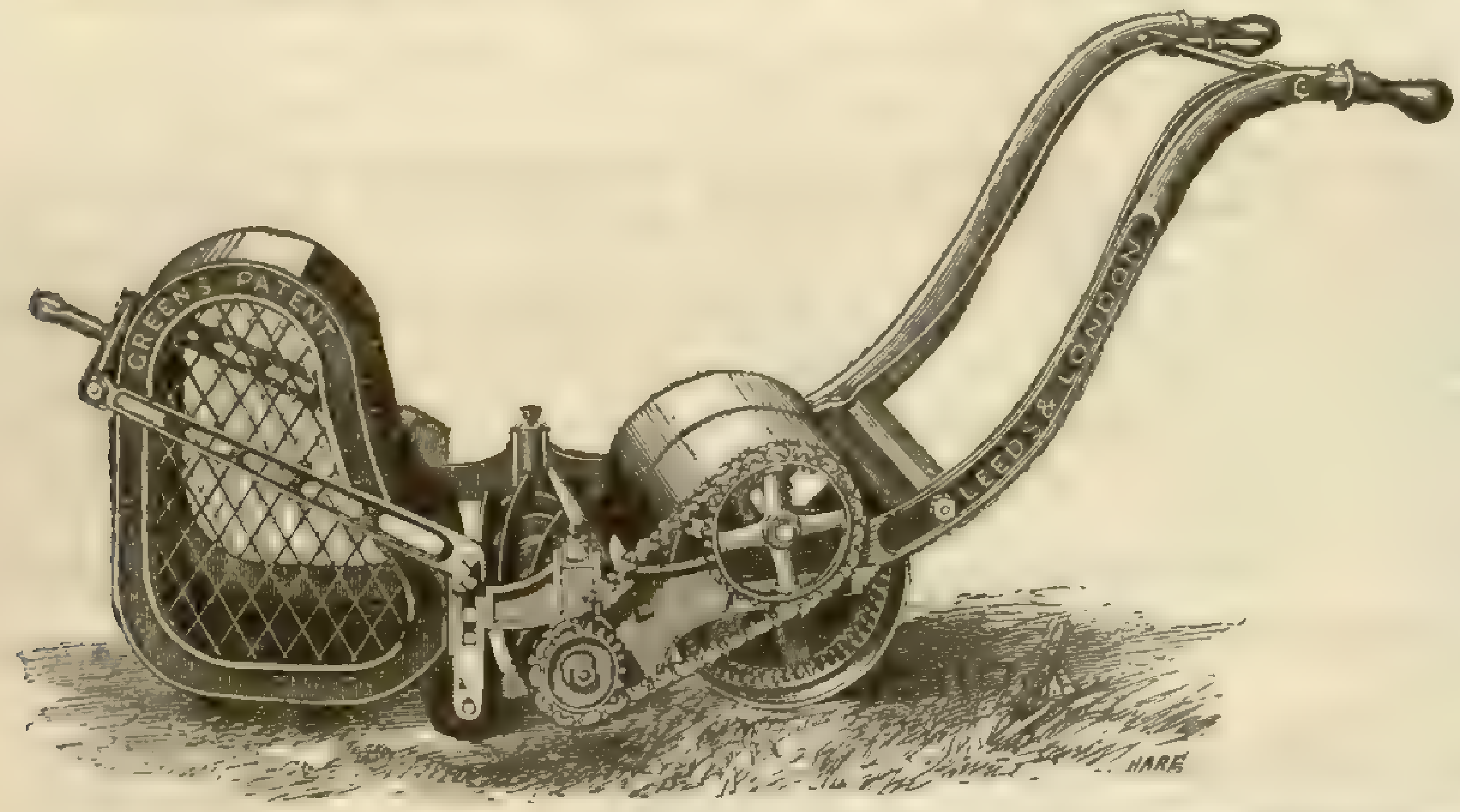
GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

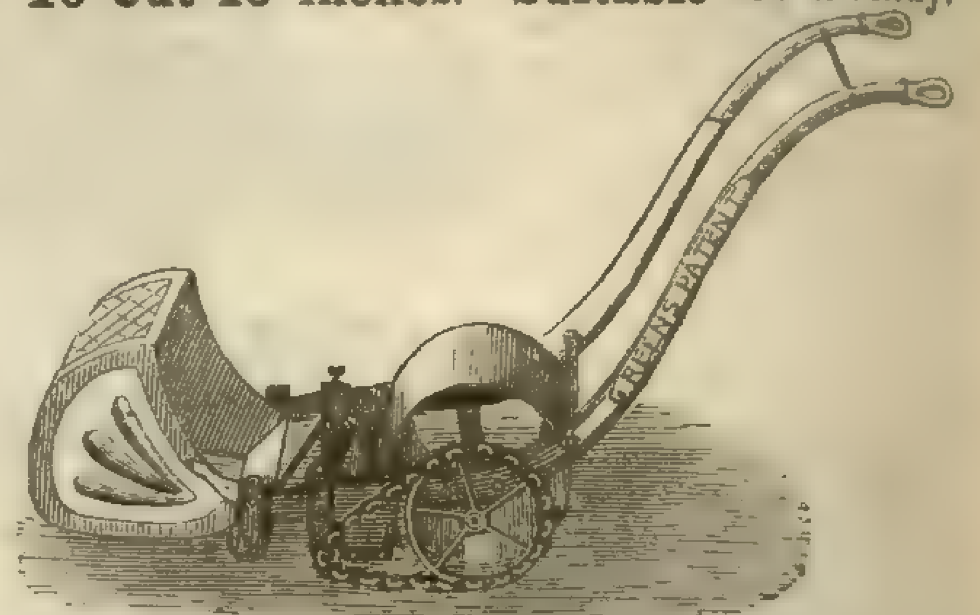
FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.



THOMAS GREEN can with confidence state that he has succeeded in bringing forward for the ensuing season a Machine which is so novel in its character that any person, however unskilled, is enabled to use it with confidence and ease; and by its thoroughly mechanical construction is pronounced by practical men to be the *ne plus ultra* of perfection. Every improvement that has suggested itself from past experience has been put to practical test, and the results are that the Machines for which Her Majesty's Royal Letters Patent *have recently been obtained* are immeasurably superior to anything of the kind ever brought before the Public. They combine all that efficiency and simplicity can express, and are calculated to keep Lawns in the highest state of perfection, which cannot be equalled by any other means. They are adapted both in size and price to the very smallest plots, as well as Lawns acres in extent.

Since their introduction the sale of these Machines has more than doubled each succeeding year, and has now attained *the largest sale of any Machine "extant;"* have proved to be the best, having carried off *every Prize* that has been given in all cases of competition. They are made from the best materials, and of superior workmanship; are delivered *Carriage Free* to all the principal Railway Stations and Shipping Ports in England; *are warranted to give satisfaction*, and if not approved can be at once returned, if sent carriage free to Leeds.

To Cut 10 inches. Suitable for a Lady.



This Machine will be securely packed and forwarded Carriage paid to any principal Railway Station or Shipping Port in England, on receipt of Post Office Order or Cheque for 3l. 10s. If not approved of, and sent back at once, the money will be returned.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

To Cut 18 inches	£7 10 0
To Cut 20 inches	8 0 0

Suitable for Two Men.

To Cut 22 inches	£8 10 0
To Cut 24 inches	9 0 0

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0	£21 10 0
To Cut 36 inches	23 0 0	24 16 0
To Cut 42 inches	26 0 0	28 2 0
To Cut 48 inches	29 0 0	31 8 0

Leather Boots for Horse, per set, £1 4s.

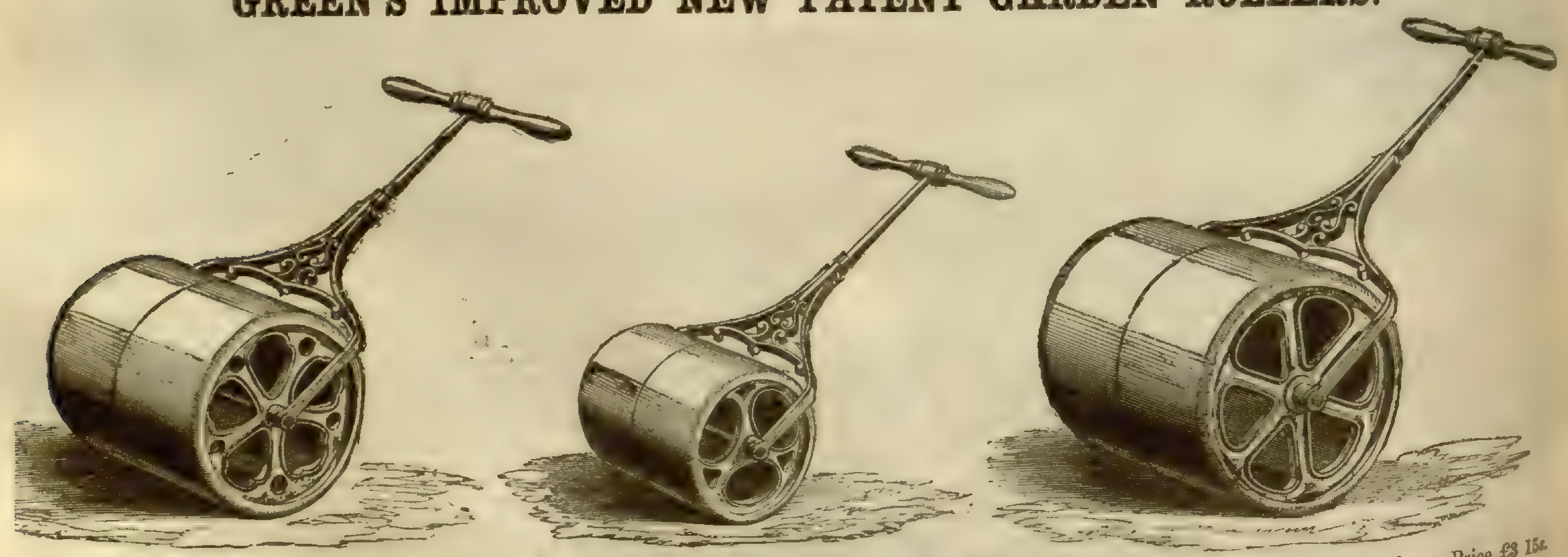
Donkey and Pony Machines, including Box of Requisites & Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0	£12 10 0
To Cut 26 inches	12 10 0	13 12 0
To Cut 30 inches	16 14 0	18 0 0

Leather Boots for Donkey, 16s.; for Pony, 20s.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length, 22 inches....Price £3 0s. | Diameter 16 inches, length, 17 inches....Price £2 5s. | Diameter 24 inches, length, 26 inches....Price £3 15s.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is *strikingly apparent when compared with any other Garden Roller yet brought out.* They are made in two parts, and are free to revolve on the axis, affording greater facility for turning, and the outer edges are rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green or Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by William Bradbury, of 13, Upper Woburn Place, and Frederick Mullett Evans, of No. 19, Queen's Road West, both in the Parish of St. Pancras, in the Co. of Middlesex, Printers, at their Office, Lombard St. Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St. Paul's, Covent Garden, in the said Co.—Saturday, April 12, 1862.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 16.—1862.] SATURDAY, APRIL 19. {Price Fivepence. STAMPED EDITION, 6d.

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ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.
A MEETING of this Committee will take place at 12 o'Clock on TUESDAY, April 22d, at South Kensington. Subjects for ...mination must be at the meeting room by 11 A.M.
THOMAS MOORE, Secretary to the Committee.

ROYAL HORTICULTURAL SOCIETY.—An ORDINARY GENERAL MEETING for the ELECTION of FELLOWS will be held at South Kensington on FRIDAY next, April 25. The Chair to be taken at 2 o'Clock. Fellows then elected (being also Season Ticket-holders), will by paying their subscriptions before April 30, be able to enter the Exhibition Building from the Garden on May 1.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK.
GENERAL EXHIBITIONS of PLANTS, FLOWERS, and FRUIT—WEDNESDAYS, May 28, June 18, and July 9.
AMERICAN PLANTS—MONDAY, June 9.
Tickets to be obtained at the Gardens only, by vouchers from Fellows or Members of the Society. Price on or before Saturday, May 17, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each.
SPRING EXHIBITIONS every Wednesday to May 7, at 2 o'clock.

CRYSTAL PALACE.—The GRAND FLOWER SHOW will take place on SATURDAY, May 24, and the GREAT ROSE SHOW on SATURDAY, July 5.
For Schedules of Prizes apply to Mr. W. HOUGHTON, Secretary to the Flower Show, Crystal Palace, Sydenham.

GRAND HORTICULTURAL FETE and ROSE SHOW in connection with the Exhibition of the NORTHAMPTONSHIRE AGRICULTURAL SOCIETY in BURGHLEY PARK, STAMFORD, on THURSDAY, July 17. The Premiums offered amount to 200l., and are open to all England.
The Schedule, with Rules, &c., may be had upon application to Messrs. LAXTON & HEWITT, Hon. Secs., Stamford.

New Roses of 1862.
PAUL AND SON have now ready their usual fine ... Pictures of the finest Novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

TWELVE of the Finest NEW PERPETUAL ROSES (sorts that have not yet flowered in English Gardens) for Two Guineas.
RICHARD SMITH, Nurseryman, Worcester.

Vegetable and Flower Seeds.
PAUL AND SON'S CATALOGUE of the above, including ASTERS and STOCKS, with DESCRIPTIVE LIST of the best 100 GLADIOLI, is now ready, post free.
"Old" Cheshunt Nurseries, Herts.

Clapton Nursery, London, N.E.
THE SPRING CATALOGUE of NEW and DESIRABLE PLANTS will be forwarded post free on application.
HUGH LOW & Co.

Now ready, and good Plants.
THE NEW and celebrated HOLLYHOCKS—JOSHUA CLARK, LADY KING, &c.
See CATALOGUE for price, &c.
Apply to WILLIAM CHATER, Nurseries, Saffron Walden.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very ...e, and in all varieties of colour, in Seed or Roots; also ...ISTS FLOWERS, POLYANTHUS in roots, and ...BLE WHITE PRIMROSE.
Apply GEORGE MACE, Calcot Gardens, near Reading.

WELLINGTONIA GIGANTEA.—Seedling Plants of 1861 in single pots, per dozen, 21s. Price to the ... per 100 on application.
J. HENCHMAN, Edmonton, near London, N.

ONE-YEAR SEEDLING AMERICAN ARBOR-VITÆ .. .. per 1000 20s. 0d.
...-Year Seedling PICEA PINSAPO .. " 60 0
" ITALIAN UPRIGHT CYPRESS " 20 0
...-Year Seedling EVERGREEN OAKS .. " 50 0
" " Transplanted CYPRESS, 6 to 9 in. " 50 0
RICHARD SMITH, Nurseryman, Worcester.

GREEN HOLLIES, &c.—Transplanted, 1 to 1½ ft. 1½ to 2 ft., and 2 to 3 ft., on land to be cleared. Prices on application. Also EVERGREENS of all sorts and of various sizes. This month the most suitable for Planting. Prices on application.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

JAMES CARTER AND CO.,
SEED MERCHANTS and NURSERYMEN,
237 and 238, High Holborn, London, W.C.

New Garden Seeds.
JAMES CARTER AND CO.,
237 and 238, High Holborn, London, W.C.

Genuine Farm Seeds.
JAMES CARTER AND CO.,
237 and 238, High Holborn, W.C.

CHOICE CAMELLIA SEED, saved from one of the finest Collections in Europe. 1s. per packet.
JAMES CARTER & CO., 237 and 238, High Holborn, W.C.

German Flower Seeds, Fresh Imported.
SUTTON AND SONS have imported a superior assortment of New GERMAN FLOWER SEEDS, a PRICED LIST of which may be had post free.

BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application. See large Advertisement.
Covent Garden Market, W.C.

ALL the best DAHLIAS in cultivation can be had in good plants, from 6s. to 4s. per dozen, of GEORGE EDWARD, Seedsman and Florist, 1, King Street, York.

Dahlias in any Quantity.
C. E. ALLEN having an unusually large and strong Stock of the above, can supply large quantities at low prices.
DESCRIPTIVE CATALOGUES forwarded on application.
Shacklewell, near London, N.E.

THOMAS BARNES will commence sending out on the 27th April his two NEW SEEDLING DAHLIAS, viz., Royal Purple and Blondin.
Descriptions and prices in T. B.'s CATALOGUE, which may be had on application.
Dane Croft Nursery, Stowmarket.

Catalogue of Plants.
THOMAS BARNES begs to intimate that his CATALOGUE of DAHLIAS, FUCHSIAS, CHRYSANTHEMUMS, VERBENAS, PETUNIAS, PANSIES, &c., with Miscellaneous Bedding Plants, &c., is ready and may be had on application.
Dane Croft Nursery, Stowmarket.

New Fuchsias and Verbenas of 1861.
B. W. KNIGHT, FLORIST, 67, High Street, Battle, Sussex, is now sending out the NEW FUCHSIAS of 1861, at 6s. per dozen; the NEW VERBENAS of 1861, at 4s. per dozen, securely packed in tin box, post free.
CATALOGUES sent on application.

STRONG FRUITING VINES, 7s. 6d. and 10s. 6d. LIST gratis and post free.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

Fruit Trees in Pots.
YOUELL AND CO. can supply PEACHES, APRICOTS, CHERRIES, and PLUMS, good Trees covered with bloom, for fruiting this season, at 42s. per doz.
Royal Nursery, Great Yarmouth.

PINE APPLE SUCKERS.—200 fine strong healthy QUEEN SUCKERS for SALE, warranted clean and healthy. Some of them have been potted and have roots.
Apply to Mr. M'GREGOR, Seedsman, Merthyr Tydvil.

Pine Plants.
WANTED, about a dozen or 20 PLANTS, to be ready to cut in two or three months, with price, sort, and size pot.
Address, Mr. MAXTON, Gardener, Knighton's, Finchley, Middlesex.

GEO. BAKER'S CATALOGUE of AMERICAN PLANTS and GENERAL NURSERY STOCK is now ready, and may be had on application.
American Nursery, Bagshot, Surrey.

PELARGONIUMS.—Intending purchasers should send for our DESCRIPTIVE CATALOGUE, post free.
J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

DOBSON'S SPLENDID HYBRIDISED CALCEOLARIA is unequalled for variety, form, distinct and striking colours and habit. In sealed Packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. each.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIZE CINERARIA SEED.—Unsurpassed for quality. 1s., 2s. 6d., and 5s. per Packet.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIMULA SINENSIS FIMBRIATA, ex. ex.—Sealed Packets, 1s., 2s. 6d., and 5s.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

Agricultural Seeds.
GEORGE GIBBS AND CO.,
SEEDSMEN,
26, Down Street, Piccadilly, London, W.

COLLECTIONS of FLOWER SEEDS.

				s.	d.
The best 100 sorts, including hardy, half hardy, and tender				20	0
The best 50	ditto	ditto	ditto	10	0
The best 36	ditto	ditto	ditto	7	6
The best 24	ditto	ditto	ditto	5	0

RICHARD SMITH, Seed Merchant, Worcester.

Good Seeds, Carriage Free.
SUTTON AND SONS,
SEED GROWERS and MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

Plants or Cuttings.
A CATALOGUE of FLORIST FLOWERS, embracing fine Continental varieties, at low prices, sent free by A. GIBB, Panmure Nursery, Broughty Ferry, N.B.
Cuttings one-fourth the price of Plants.

VARIEGATED SAVIN—JUNIPERUS SABINI VARIEGATA.—Any one having the above to offer, will oblige by stating price and quantity they can furnish to CHARLES NOBLE, Sunningdale Nursery, South-Western Railway.

50 CHOICE SHOW PANSIES, one of a sort to name (from Pots), for 16s. 6d.
25 Choice Show Pansies, one of a sort to name (from Pots), 8s. 6d. Hamper, &c., included.
A remittance or reference from unknown Correspondents.
WILLIAM FIELD, Florist, Flookersbrook, Chester.

To the Trade.
SPECIAL SPRING CATALOGUE of AGRICULTURAL and GARDEN SEEDS (gratis) on application.
JAMES FAIRHEAD & SON, Seed Growers and Merchants, 7, Borough Market, London, S.E.

WANTED, ASPARAGUS ROOTS, strong 2 and 3-year old.—Apply, with price and quantity to offer, to JAMES VEITCH & SON, Nursery, Exeter.

DICKINSON'S ITALIAN RYE-GRASS SEED may now be had by Agriculturists applying to his Bailiff, Mr. W. HUNTER, New Park Farm, near Lymington, Hants. 48s. per quarter; or 7s. per bushel, for present payment only.

TURNIP, MANGEL, and AGRICULTURAL SEEDS of best Selected Stocks.—First class samples, crop 1861, at growers' prices.
JAMES FAIRHEAD & SON, Seed Growers and Merchants, 7, Borough Market, London, S.E.

FOR SALE, a quantity of SKIRVING'S SWEDE TURNIP SEED, from a selected stock which can be strongly recommended. Apply to the Grower,
Mr. WILLIAM CANT, Myland Lodge, Colchester, Essex.

NEW TURNIP SEEDS from Selected Large Bulbs,
Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

LEWISHAM SWEDE.—This Turnip, grown from large sized transplanted bulbs, and which has given such universal satisfaction, can be supplied in quantity to the trade by the Growers,
JAMES FAIRHEAD & SON, 7, Borough Market, London, S.E.

To the Seed Trade.
WILLIAM EPPS, JUN., has to offer a few cwt. of WHITE BELGIAN, ALTRINGHAM, and EARLY HORN CARROT, also DRUMHEAD CABBAGE, at a very low price.
The Nurseries, Ashford.

To the Trade.
RED ALTRINGHAM CARROT SEED, YELLOW and RED GLOBE MANGEL, net growth of 1861. DALMAHOY and FORTYFOLD POTATOES. Prices on application.
CHRISTMAS QUINCEY, Seedsman, Peterborough.

To Potato Growers.
JAMES CARTER AND CO. have a surplus stock of MYATT'S PROLIFIC and ASHLEAF KIDNEY POTATOES to dispose of in large quantities at a very cheap rate.
237 and 238, High Holborn, W.C.

Dalmahoy Early Potatoes from Scotland.
PETER LAWSON AND SON can supply the above and other varieties of SEED POTATOES.
27, Great George Street, Westminster, London, S.W.

DIOSCOREA BATATAS (or CHINESE YAM), 2s. 6d. per doz., 15s. per 100. Larger tubers, 3s. 6d. per doz.
JOHN CATTELL, Westerham, Kent.

Dioscorea Batatas, or Chinese Potato.
J. IVERY AND SON beg to inform their Patrons that this is the most favourable month for planting this useful Vegetable. Strong sets are now ready, at 1s. per dozen, or 7s. 6d. per 100; likewise whole Tubers, from 2s. 6d. to 6s. per dozen.
Dorking Nursery.

Large York Cabbage.
H. AND F. SHARPE can supply Seed of the above of 1861 growth, and raised from their carefully selected stocks. Price very moderate.
Seed Growing Establishment, Wisbech.

Early Cabbage Plants.
W. VIRGO AND SON, Wonersh Nursery, Guildford, have a large quantity of strong, healthy plants of the following sorts to offer for Sale at 3s. 6d. per 1000, viz.
EARLY YORK. | CATTELL'S RELIANCE.
BARNES. | NONPAREIL and BATTERSEA.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3s. per lb., or 16l. per cwt.

NEW AND BEAUTIFUL PLANTS.

WILLIAM BULL, F.R.H.S., F.R.B.S.,

NURSERYMAN AND NEW PLANT MERCHANT, KING'S ROAD, CHELSEA, LONDON, S.W.,

IS NOW SENDING OUT THE FOLLOWING NOVELTIES FOR THE FIRST TIME.

NEW FUCHSIAS.

Unquestionably the best and most distinct collection ever offered at any one time, each possessing sterling merit, good habit, and a free blooming character.

BRAVO.—The corolla of this flower is so complex full, and double, as to appear like a plum-coloured ball set beneath short crimson sepals; peculiarly novel.

BRIGHTNESS.—A massive and noble flower, sepals unusually long, moderately reflexed, of the richest crimson; large and rich purple double corolla; an attractive kind.

GEM OF THE SEASON.—Deep crimson sepals, elegantly reflexed, very short, showing the corolla to great advantage; double, bright purple corolla; an immensely free bloomer, so much so as to make the plant one mass of flower; very short jointed, and compact in growth.

HER MAJESTY.—This, the Queen of white sepal'd Fuchsias, in style is somewhat after the well-known Duchess of Lancaster, but totally eclipses that variety, its ponderous flowers being individually twice the size and substance of that favourite kind.

INTERNATIONAL.—Light red tube and sepals; extraordinary large, double, peculiar barrel-shaped corolla of the most beautiful purple colour, striped and blotched with red at the base.

SENSATION.—A complete novelty and new shape, inasmuch as the corolla expands almost horizontally, of a rich purple colour; sepals bright crimson and beautifully reflexed; a peculiarly attractive variety.

THE BEST.—Good, stiff, large and shapely white corolla, much the finest of this class ever offered; sepals very bright scarlet, broad and elegantly reflexed.

TURBAN.—Very broad bright crimson sepals elegantly reflexed; an immensely large, beautifully formed, smooth, rich purple corolla.

Price of the above NEW FUCHSIAS, 10*s.* 6*d.* each; or the collection of eight for 63*s.*

NEW ANTIRRHINUMS.

The annexed have been selected from several thousand Seedlings; they are all distinct and good, and such as will give satisfaction.

ALBION.—Purple tube, mouth and lower lips cream colour, upper lips rosy purple.

ATTRACTION.—White tube, purple crimson with bright yellow mouth.

CANARY.—Clear yellow, orange mouth.

CHERUB.—Bright pink, lemon mouth.

DECLARATION.—Beautiful bright amaranth, yellow mouth and white tube.

FAIRY.—Deep rose with light mouth and orange centre, blush centre to lower lip.

GLOWWORM.—Vivid crimson, bright orange mouth.

HEBE.—Yellow, freckled and striped with crimson, bright yellow mouth.

HEROINE.—Very bright rose, with orange mouth, white tube.

LIVELINESS.—Rich velvet crimson, white tube and mouth.

METEOR.—Fiery crimson, very attractive and fine.

NEMESIS.—White tube, bright red with light mouth.

Price of the above NEW ANTIRRHINUMS, 3*s.* 6*d.* each, or 31*s.* 6*d.* the collection of 12.

NEW VERBENAS.

In announcing which, William Bull has the pleasure to say that they are all the seedling productions of C. J. Perry, Esq.

The following prizes have been awarded to Mr. Perry during the past season, and the seedling v arities here offered formed the chief feature in every collection.

Royal Botanic Society, June 12.
Collection of 24 .. .. Certificate of Merit.

Leamington Horticultural Society, June 18.
Collection of 18 .. . . 1st Prize.

Handsworth Horticultural Society, June 25.
Collection of 24 .. .. 1st Prize.
Collection of 12 .. .. 1st Prize.
Collection of 12 .. .. Extra Prize.
Collection of 12 Seedlings .. .. .. Certificate of Merit.

Royal Botanic Society, July 3.
Collection of 36 .. .. Bronze Medal.

Birmingham Botanic Society, July 4.
Collection of 24 .. .. 1st Prize.

Handsworth Horticultural Society, "Open to all England," July 23.
Collection of 24 1st Prize (a Silver Cup, value 7 guineas).
Collection of 12 .. .. 1st Prize.
Collection of 6 in pots .. .. 1st Prize.
Collection of 6 in pots .. .. Extra Prize.

Reading Horticultural Society, August 28.
Collection of 18 . .. . 1st Prize.

Rugby Horticultural Society, August 30.
Collection of 24 .. .. 1st Prize.

NEW VERBENAS.

Crystal Palace, September 4.
Collection of 24 .. .. 1st Prize.

Royal Horticultural, September 11.
Collection of 24 .. .. 1st Prize.

Brackley Horticultural Society, September 17.
Collection of 12 .. .. 1st Prize.

Hagley Horticultural Society, August 7.
Collection of 18 .. .. 1st Prize.
Collection of 12 .. .. 1st Prize.
Collection of 12 in pots.. .. .. 1st Prize.
Collection of 6 in pots . .. . 1st Prize.
Collection of 6 new in pots .. .. 1st Prize

Birmingham Botanic Society, August 15.
Collection of 24 .. .. 1st Prize

Handsworth Horticultural Society, August 20.
Collection of 18 .. .. 1st Prize.
Collection of 12 .. .. 1st Prize.
Collection of 6 in pots .. .. 1st Prize.

Banbury Horticultural Society, August 27.
Collection of 12 .. .. 1st Prize.

Opinions of the Press.

The *Gardeners' Chronicle*, June 15, 1861.

Report of the Royal Botanic Show, June 12.

"Verbenas were sent by several growers, the best being from Mr. Perry."

The *Gardeners' Chronicle*, Sept. 14, 1861.

Report of the Royal Horticultural Society's Show, Sept. 11.

"Of Verbenas, the best stand was contributed by Mr. Perry, of Castle Bromwich, near Birmingham. The sorts were chiefly seedlings, all large and handsome."

The *Florist and Fruitist*, Oct. 1861.

Report of the Crystal Palace Show, Sept. 4.

"Mr. Perry's Verbenas were superb, and fully maintained his position as a grower and raiser of these 'everybody's flowers,' as we heard them called."

Gossip of the Garden, Oct. 1861.

Report of the Crystal Palace Show, Sept. 4

"Verbenas in bunches of five trusses were well shown. The best collection, consisting for the most part of seedlings, was contributed by Mr. C. J. Perry."

Report of the Royal Horticultural Society's Show, Sept. 11.

"Among Verbenas, Mr. Perry's Seedlings were conspicuous. Of these fine sorts we hope to give detailed descriptions in a future number."

ANNIHILATOR.—An extra fine variety, colour brilliant shaded crimson, the pips closely set, very fine truss, pips circular with large pure white eye; the best shaped Verbena ever raised.

BLUE BEAUTY.—Deep blue with large pure white eye; very beautiful, quite a gem.

CHEERFUL.—Pink with crimson centre, fine in form and large truss; an excellent variety for all purposes.

COUNTESS OF AYLESFORD.—Deep rose with darker centre and large white eye: an abundant bloomer and very fine.

COUNTESS OF BRADFORD.—Mauve or pale lavender, of large size and perfect shape, both in pips and truss; an extra fine variety.

DECORATOR.—Brilliant crimson with white eye; a free bloomer, and fine in every way.

LIVELINESS.—Bright crimson, of a peculiar and pleasing shade, fine form, large white eye; very attractive.

QUEEN OF PRUSSIA.—Shaded purple, with large white eye and dark ring round the eye; a fine variety.

RAPHAEL.—Deep plum colour with large white eye; attractive and novel.

SPARK.—Fiery scarlet with yellow eye; the plant is a dwarf shrubby grower, and is the best scarlet bedder ever sent out.

THACKERAY.—Shaded rosy purple, with large white eye and conspicuous purple ring round the eye; pips of fine form and large; very distinct.

THE PALACE.—Flesh colour with crimson centre and white eye; a distinct and singular variety, quite a new style.

UNIQUE.—Puce with maroon centre and white eye; very distinct and striking.

Price of the above VERBENAS 5*s.* each, or the collection of 13 for 60*s.*

As a further proof of the excellence of C. J. Perry's Verbenas, he offers the following Challenge, Open to all England, to Exhibit in June, July, or August. 24 bunches of Verbenas, all the sorts raised by himself, five trusses of each sort in a bunch, in London or within 100 miles of Birmingham, for 10*l.* or 20*l.*, against all the other sorts in cultivation, both new and old, English and French, and including all the new kinds to be sent out this spring.

Any person accepting this Challenge must communicate with J. C. Perry, care of William Bull, to fix date and make arrangements before the 1st May.

NEW PETUNIAS.

The following are confidently offered as superior to any previously in cultivation; they have been raised at my Establishment by the most careful hybridisation, and are a small selection made from many thousand seedlings.

ACME.—White, striped and veined with bright blue, stiff shell-like flower of good form.

DAZZLE.—Beautiful rich crimson with intensely black centre, excellent form and of good substance.

EXCELLENT.—Deep pink shaded with violet, and very much veined with crimson over the entire surface of the flower.

GUIDO.—Broadly margined with French white, striped with red and dark crimson centre.

MONARCH.—An extremely large and full, fine double flower, rich crimson, free flowerer.

NONESUCH.—Bright rose mottled with white, pure white throat.

PALATIAL.—French white, each petal strikingly rayed with bright violet crimson.

REVIEW.—Bright crimson, broadly margined with rose, violet throat.

RUBY.—Crimson, intensely veined and striped with black, dark violet throat, stiff flower and excellent form.

SPECIAL.—Fine bold flower of excellent form, margined with rose and beautifully marbled, also striped and veined with violet crimson.

SUFFUSION.—Double, delicate pink, veined with purplish red.

SULTANA.—Blush, striped with purple, good form, novel and distinct.

Price of the above NEW PETUNIAS, 3*s.* 6*d.* each.

TROPÆOLUM BOUQUET.

A gem for bedding purposes, compact habit, height about 6 inches, flowering so profusely as to be literally one mass of blossom; colour chrome yellow, the three under petals clearly and distinctly spotted with bright red; calyx and proboscis or tube also bright red, a very showy and attractive variety, 3*s.* 6*d.* each.

The entire stock has been purchased from Mr. Barkas, of Godalming, the raiser of so many good Tropæolums.

GESNERA REFULGENS.

In this magnificent hybrid are combined some of the best qualities which a plant can possess, for it is not only of good habit and free flowering, but extremely showy, and also one of the most beautiful foliaged plants extant; the leaves are broadly cordate, 6 to 9 inches in diameter, and covered with innumerable crimson hairs, which give the foliage the appearance of rich crimson velvet; the flowers are produced in fine pyramids throughout the winter; tube and lobes rich orange scarlet, with yellow throat. When exhibited before the Floral Committee of the Royal Horticultural Society it was awarded a label of commendation for its ornamental character. Price 15*s.* each.

GESNERA VELUTINA.

This hybrid, although distinct from the preceding, embraces its main characteristics, the foliage very ornamental and similar in size, with a mottled green and brown surface, velvety with purplish red hairs; the flowers of a scarlet vermilion colour. Price 10*s.* 6*d.* each.

NEW TYDÆAS.

Pumila. | Pygmæa. | Tenella.

The above are offered as being pretty little neat dwarf-growing varieties, and hence much superior to many others in this family; their blossoms are tubular funnel-shaped, as in other kinds; the colours of each sort are varied, and embrace rose, rosy lake, rich carmine rose, and all are more or less spotted with rich crimson. Price 5*s.* each.

CHRYSANTHEMUM FIMBRIATUM.

An interesting and pretty novelty, all the petals beautifully fringed; flower medium size and very double, primrose colour. The entire stock has been purchased from Messrs. Spary and Campbell, of Brighton. Price 7*s.* 6*d.* each.

PHLOX ADMIRATION.

The entire stock of this exquisite variety has been purchased from that eminent Phlox cultivator, M. Lierval, of Paris. It only grows about a foot high, and has immense Hydrangea-like heads of blossom; the flowers individually are large, and of the most perfect form, colour bright red or carmine, with glowing crimson centre. The best Phlox ever offered. Price 7*s.* 6*d.* each.

GERANIUM SPARKLER.

A vivid scarlet, zonale variety, of excellent compact habit; flowers of good substance and form. Price 5*s.* each.

A NEW CATALOGUE OF BEAUTIFUL, NEW, AND RARE PLANTS

is now ready, which will be forwarded on application by enclosing two stamps.

ESTABLISHMENT FOR NEW AND RARE PLANTS, KING'S ROAD, CHELSEA, LONDON, S.W.

RDENER
RONICLE
NEWSPAI

NEW ROSES for 1862.—4000 STRONG PLANTS.

WILLIAM WOOD & SON

Are now executing orders for all the NEW ROSES of the season, in strong healthy plants, Dwarfs, at 5s. each.
A liberal discount allowed to the Trade.

40,000 DWARF ROSES in POTS for BEDDING.

The months of April and May are considered the most eligible for Bedding-out Roses from pots.

W. W. & S. beg to offer a very large and healthy Stock on the following terms, viz.:—

Dwarf Hybrid Perpetual, Bourbon, Noisette, and Tea-Scented Roses, per dozen		18s.
Climbing Roses, of sorts	,,	12s. to 18s.
Dwarf China Roses	,,	12s.
Tea-Scented Roses, in 6-inch pots, for Greenhouse culture	,,	30s.

Extra Plants presented for distant carriage.

CATALOGUES free on application.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

New Roses, &c.

WM. PAUL'S CATALOGUE of NEW ROSES and SPRING PLANTS generally is now ready. Free by post on application.

BEAUTY OF WALTHAM, H.P.

This English raised seedling Rose has now received the highest awards ever given by the Royal Horticultural and Royal Botanic Societies. The flowers are large and full, colour brilliant cerise, the petals exquisitely curved in the way of Madame Charles Crapelet; the growth is vigorous, the foliage magnificent, and the plant as hardy as the Dog Rose. Plants 5s. each, and orders executed in strict rotation as received.

HOLLYHOCKS.

A fine stock of all the best named sorts, 9s. to 24s. the dozen. All are raised from cuttings. None grafted.

Waltham Cross, N.

NEW TEA-SCENTED ROSE for 1862, GLOIRE DE BORDEAUX.—The above, a Seedling from the well known favourite Tea Rose, Gloire de Dijon, was raised at Lyons, and is represented as being unquestionably the finest Tea-scented Rose of the season.

WM. WOOD & SON beg to intimate that they possess a very large Stock of the above in extra strong plants, which they are now sending out at 5s. each.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses for 1862.

JOHN HARRISON has now ready fine plants of the best of the NEW ROSES, the CREAM of the year, at 5s. each. Also a great Stock of all the best varieties of Roses of 1861 and other favourite varieties in pots, DAHLIAS, HOLLYHOCKS, and other plants, CATALOGUES of which may by had free on application.—Darlington Nursery.

SUTTON'S

CHOICE FLOWER SEEDS, Free by Post and Rail.

Ladies and gentlemen requiring Showy kinds of FLOWER SEEDS, and who are not well acquainted with the sorts, are respectfully recommended to leave the selection to us, and we will supply those which we know to be really worthy of cultivation.

ANNUALS.

	£	s.	d.
1. The best 100 sorts (hardy, half-hardy, and tender), with instructions	£1	1	0
The best 50 sorts ditto ditto ditto	0	10	6
The best 36 sorts ditto ditto ditto	0	7	6
The best 24 sorts ditto ditto ditto	0	5	0
The best 24 sorts (hardy sorts only) ditto	0	5	0

PERENNIALS.

	£	s.	d.
The best 50 sorts (hardy, half-hardy, and tender)	0	10	6
The best 36 sorts ditto ditto	0	7	6
The best 24 sorts ditto ditto	0	5	0
The best 12 sorts ditto ditto	0	3	0

CLIMBERS.

	£	s.	d.
The best 12 sorts (hardy, half-hardy, and tender)	0	8	6
The best 6 sorts (hardy sorts only)	0	2	0

SUITABLE FOR ROCK-WORK.

	£	s.	d.
The best 12 sorts	0	8	6
The best 6 sorts	0	2	0

ORNAMENTAL GRASSES.

	£	s.	d.
14. Twenty-four fine selected sorts	£0	6	0
15. Twelve fine selected sorts	0	3	6
16. Six ditto	0	2	0

HARDY, WITH ORNAMENTAL FOLIAGE.

	£	s.	d.
17. Twelve fine varieties	0	5	0
18. Six fine varieties	0	2	6

EVERLASTING FLOWERS.

	£	s.	d.
19. The best 12 sorts	0	3	6
20. The best 6 sorts	0	2	0

ANNUALS FOR FORMING LARGE BEDS.

	£	s.	d.
21. Twelve large packets	0	9	0
22. Six large packets	0	5	0

GREENHOUSE SEEDS.

	£	s.	d.
23. The best 12 sorts	0	6	0
24. The best 6 sorts	0	3	6

SWEET SCENTED FLOWERS.

	£	s.	d.
25. The best 12 sorts	£0	3	6
26. The best 6 sorts	0	2	0

DWARF FLOWERS SUITABLE FOR EDGINGS.

	£	s.	d.
27. The best 12 sorts	0	3	6
28. The best six sorts	0	2	0

TREE AND SHRUB SEEDS.

	£	s.	d.
Fifty Hardy Sorts	1	5	0
Twenty-five ditto	0	12	6
Twelve ditto	0	6	0

NATURAL GRASSES.

	£	s.	d.
Twenty-five Hardy sorts	0	12	6
Twelve ditto	0	6	0

GOURDS—HIGHLY ORNAMENTAL AND USEFUL.

	£	s.	d.
Fifty Choice Sorts	0	12	6
Thirty-six ditto	0	9	0
Twenty-four ditto	0	6	0
Twelve ditto	0	3	0
Serpent Gourd, very handsome	0	0	6

ASSORTMENTS of GERMAN FLOWER SEEDS,

which can be Warranted Genuine, having been just imported direct from the Growers.

		s.	d.
Twenty varieties of fine quilled GERMAN ASTER	separate	4	0
Twelve ditto ditto	ditto	2	6
Six ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
Twelve varieties of NEW PYRAMIDAL GERMAN ASTER	separate	2	6
Six ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
Twelve varieties NEW GLOBE GERMAN ASTER	separate	2	6
Six ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
Twelve varieties NEW DWARF ASTERS	separate	2	6
Six ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
Twelve varieties TRUFFAUT'S FRENCH PÆONY-FLOWERED ASTER	separate	2	6
Six ditto ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
Eight splendid varieties DWARF CHRYSANTHEMUM-FLOWERED ASTER	separate	2	0
The above choice sorts in mixture	per packet	1	0
Four showy varieties NEW COCKADE or CROWN FLOWERED ASTER	separate	2	0
The above sorts in mixture	per packet	1	0
Six splendid varieties HELICHRYSUM	separate	2	0
The above choice sorts in mixture	per packet	1	0
Ten different vars. PAPAVER PÆONY-FLOWERED DOUBLE POPPY	separate	2	6
Six ditto ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
Twelve finest colours SALPIGLOSSIS VARIABILIS	separate	2	6
Six ditto ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
Ten different vars. SCABIOSA MAJOR	separate	2	6
The above choice sorts in mixture	per packet	1	0
20. Twenty-four varieties fine dwarf GERMAN TEN-WEEK STOCK	separate	4	0
21. Twelve ditto ditto ditto	ditto	2	6
22. Six ditto ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
23. Twelve varieties WALLFLOWER-LEAVED GERMAN TEN-WEEK STOCK	separate	3	0
24. Six ditto ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
25. Twelve varieties new large flowered GERMAN TEN-WEEK STOCK	separate	3	0
26. Six ditto ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
27. Six varieties MINIATURE GERMAN TEN-WEEK STOCK	separate	2	0
The above choice sorts in mixture	per packet	1	0
28. Twelve varieties AUTUMNAL FLOWERING TEN-WEEK STOCK	separate	3	0
29. Six ditto ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
30. Twelve varieties BROMPTON (BIENNIAL) STOCK	separate	3	6
31. Six ditto ditto ditto	ditto	2	0
The above choice sorts in mixture	per packet	1	0
32. Six varieties new CAPE or GIANT STOCK	separate	2	0
The above choice sorts in mixture	per packet	1	0

33. ZINNIA ELEGANS, NEW DOUBLE.—This is one of the most valuable additions that have been made of late years to our flower garden. It differs from the old variety of Zinnia with single blossoms by having the yellow centre or disc transformed into petals, so as to form perfect rosettes, as seen in a fine double French Marigold. It has received a first-class certificate from the Royal Horticultural Society of London. Our Seed is of the finest possible quality, having been saved from double flowers only.

		s.	d.
24 varieties, separate		10	0
12 ,, ,,		5	0
6 ,, ,,		2	6
Mixed	per packet	1	0
34. New SCARLET BOUQUET STOCK	ditto	1	0
35. Twelve varieties extra fine double HOLLYHOCK, from named sorts	separate	3	6
36. Six ditto ditto ditto	ditto	2	0
The above choice sorts in mixture	per packet	1	0
37. Twelve varieties double dwarf ROCKET LARKSPUR	separate	2	6
38. Six ditto ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
39. Ten varieties dwarf double HYACINTH-FLOWERED LARKSPUR	separate	2	6
40. Six ditto ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
41. Twelve vars. ROSE-FLOWERED BALSAM	separate	3	0
42. Six ditto ditto ditto	ditto	1	6
The same varieties in mixture	per packet	1	0
43. Twelve varieties fine new CAMELLIA-FLOWERED BALSAM	separate	2	6
44. Six ditto ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
45. Twelve vars. new MINIATURE BALSAM	separate	3	0
46. Six ditto ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
47. Twelve extra fine varieties GERMAN ZINNIA	separate	2	6
48. Six ditto ditto	ditto	1	6
The above choice sorts in mixture	per packet	1	0
49. Ten splendid varieties double WALLFLOWER from Erfurt	separate	3	0
50. Six ditto ditto	ditto	2	0
The above choice sorts in mixture	per packet	1	0

Fresh imported German Seeds produce finer Blooms, and more Double than any English Seed, however carefully selected; and the Assortments named in the foregoing List are genuine German Seeds just imported. WE WOULD ESPECIALLY RECOMMEND THE ASSORTMENTS Nos. 1, 6, 10, 12, 13, 15, 20, 27, 35, 37, 39, 43, 47, 49, which we would supply post free for 1*l.* 10*s.*

*** One of the above Collections of Choice Flower Seeds will prove an acceptable Present to a friend, and may be conveniently transmitted by post.

N.B. *Any of the above named Seeds will be sent Free by Post or Rail.*

SUTTON'S CATALOGUE of KITCHEN GARDEN, FARM, and FLOWER SEEDS

May be had gratis and post free on application, addressed

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.

For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.

Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.

The Royal Nursery, Bagshot, Surrey.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Hardy Ferns.

JOSEPH WOOD, FLORIST, Bowness, Windermere, begs to offer the following FERNS, at 25*s.* per 100 plants:— Polypodium Phegopteris, P. Dryopteris, P. calcareum, Allosorus crispus, Cystopteris fragilis, Lastrea Oreopteris, L. Filix-mas var Borreri, L. rigida, L dilatata, L. spinulosa, Athyrium Filix-fœmina, Asplenium Adiantum nigrum, A. marinum, A. Trichomanes, A. viride, A. Ruta-muraria, Scolopendrium vulgare, Hymenophyllum Wilsoni.

CLEMATIS AZUREA GRANDIFLORA, 3 to 4 ft., fine flowering plants, all on their own roots, 9*s.* per doz.; per 100, 60*s.*

CLEMATIS HELENA, 9*s.* per doz.; per 100, 60*s.*
" SOPHIA, 9*s.* " " 60*s.*
" MONSTROSA, 12*s.* per doz.
Very showy large flowers.

BEDDING PLANTS.

GERANIUM BIJOU, 5*s.* to 6*s.* per doz.; per 100, 33*s.* This is the finest of variegated-leaved scarlet-flowered Geraniums. See *Gardeners' Chronicle* and *Cottage Gardener*.

Apply to WILLIAM BARRON, Elvaston Castle, Derby.

WILLIAM BARRON, Elvaston Castle, Derby, can supply strong and well-rooted plants as under:—

ABIES DOUGLASII, 3 years once transplanted. per 100 25*s.* 0*d.*
This tree attains a height of more than 200 feet, highly ornamental, the same as the tall flagpole at Kew.
PINUS LARICIO, 18 ins. to 2 feet .. . per 1000 70 0
This produces timber for railway sleepers sooner than the Larch, and is used as spars and masts in the French navy.
BERBERIS DARWINI, the most beautiful of the tribe, fit either for the flower garden or game cover, with rich orange-coloured flowers; Pheasants are very fond of the berries, which are produced in profusion. Strong plants, 3 years old per 100 20 0
Ditto ditto, 2 years old 15 0
Ditto ditto, 1 year old 12 6
PICEA NOBILIS, 3 to 4 years old, plants from seed, (This is the most lovely of all Firs.) each, 10*s.* to 15 0
WELLINGTONIAS from 2 to 9 feet. Also specimens of the rarest Conifers.

Remittances to accompany orders from unknown correspondents. Post-office Orders payable at Derby.

SELECT PRICED LISTS post free on application.

CHARLES TURNER'S GENERAL SPRING CATALOGUE of Achimenes, Azaleas, Cinerarias, Calceolarias, Chrysanthemums, both Large Flowering and Pompones; Dahlias, Fancy Dahlias, and Bedding Dahlias; Gloxinias; Pelargoniums, Show, Spotted, French, and Fancy; Variegated, Scarlet, and Hybrid Geraniums, and various other Bedding Plants; Hollyhocks, Heliotropiums, Petunias, Verbenas, as well as Florists' Flowers and Plants generally.

The EIGHTEENTH ANNUAL EDITION of the above is just published, and will be forwarded gratis and Post Free to any address.

CHARLES TURNER, The Royal Nurseries, Slough.

Bedding Plants at 2s. 6d. per Dozen.

J. SCOTT'S well-known CATALOGUE of the above is now ready, and will be sent to all applicants on receipt of six postage stamps, which will be returned to all purchasers above 10*s.*

It contains a mass of Cultural and other information about Flowers and Flower Planting, Ribbons, Tessellated and Mosaic work, with Descriptive Lists of all the most ornamental Flower Garden Plants.

Mr. Beaton, in the *Journal of Horticulture*, April 23, 1861, p. 58, says:—"But the best work on making Ribbon borders . . . . is the Bedding Plant Catalogue of Mr. Scott, of Merriott Nurseries; and besides, the Catalogue is the best arranged for young beginners of all that I have seen."

J. SCOTT, Merriott, Crewkerne, Somerset.

Calceolaria Canariensis.

G. SMITH has great pleasure in recommending this unsurpassed and beautiful variety; it has been shown in the past season at all the leading exhibitions round London, and has established itself as the best for all purposes, as it gives two-thirds more bloom in a pot and one-third more in beds than any other Calceolaria in cultivation; colour bright Canary Yellow, the mouth closed, so as to resist the wet; the habit is all that could be wished. Has taken a First-class Certificate at the Royal Botanic Gardens, Regent's Park; also a First-class Certificate from the Floral Committee of the Horticultural Society, for its fine qualities. Now ready, in strong plants, at 1*s.* 6*d.* each, or 12*s.* per dozen. A remittance must accompany the order to unknown correspondents.

Tollington Nursery, Hornsey Road, Islington, London, N.

GLADIOLUS, The finest Varieties for Exhibition, &c.

YOUELL & CO.

Beg to intimate, the present being the best time for planting the above, that they are in a position to supply the most choice kinds of this beautiful tribe, in strong flowering Bulbs as follows:—

No. 1 Collection contains 100 Bulbs, in 50 of the most choice and handsome kinds with Names £5 0 0
No. 2 Collection contains 100 Bulbs, in 30 ditto ditto 3 15 0
No. 3 " " 100 Bulbs, in 25 ditto ditto 2 10 0

Or from 6*s.* to 18*s.* per dozen.

GLADIOLUS BRENCHLEYENSIS (True).

The most brilliant scarlet Gladiolus known, 4*s.* per dozen, 30*s.* per 100.

ROYAL NURSERIES, GREAT YARMOUTH.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

SEEDS FOR PRESENT SOWING.

CONVOLVULUS CANTABRICUS STELLATUS NOVUS (THE TRUE),

Raised by our "SARDINIAN CORRESPONDENT," and brought out by us this Spring. It is one of the most beautiful Novelties of the Season. The plant is illustrated in our "Guide to the Flower Garden, &c." and also in the "Floral Magazine." In growth and habit resembling C. cantabricus, but with flowers and foliage perfectly distinct; the flowers are of a beautiful pink, with a pure white double star in the centre, and are produced in the greatest profusion; it forms a splendid bedding plant, and is exceedingly elegant in hanging baskets. Seed 1*s.* per packet. Coloured Plates by ANDREWS, 6*d.* each.

ZINNIA ELEGANS FLORE PLENO (Barr & Sugden's variety).

Flowers very double, large, and extremely handsome.

An assortment of 18 splendid varieties... ... 10*s.* 6*d.*
" " 3 6
An assortment of 12 splendid varieties ... ... 6*s.*
Splendid mixed, per packet ... ... 1*s.*

COLLECTIONS of CARNATIONS and PICOTEES,

Saved by our Special "Sardinian Correspondent," and distinguished by his Crest, thus and initials G. E. S.

For the colours contained in the following Collections see our "Guide to the Flower Garden," or our Advertisement of these on back page of *Gardeners' Chronicle*, January 11th.

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This Section consists of Four Collections, each forming a distinct feature.

COLLECTION "A"—SELFS.
Contains 12 superb varieties of 10 seeds each, 3*s.*
COLLECTION "B"—FLAKE.
Contains 12 superb varieties of 10 seeds each, 3*s.*
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Contains 12 superb varieties of 10 seeds each, 3*s.*
COLLECTION "D"—FANCY.
Contains 12 superb varieties of 10 seeds each, 3*s.*

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COLLECTION "H"—SELFS.
Contains 12 fine varieties of 10 seeds each, 3*s.*
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Contains 12 fine varieties of 10 seeds each, 3*s.*

COLLECTION "K"—FANCY.
Contains 12 fine varieties of 10 seeds each, 3*s.*

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The Picotee is distinguished from the Carnation by the flowers being margined instead of striped. This Section includes Three Collections.

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Contains 12 superb varieties of 10 seeds each, 3*s.*
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Contains 12 superb varieties of 10 seeds each, 3*s.*

ASSORTMENTS FROM THE ABOVE COLLECTIONS:
CARNATIONS.—An assortment of 100 varieties, each consisting of 10 seeds .. .. 15*s.*
CARNATIONS. ditto of 50 ditto .. 1[illegible]
PICOTEES. ditto of 100 ditto .. 1[illegible]
" ditto of 50 ditto .. 10*s.*
Mixed Packets of Carnation, 1*s.* 6*d.*
Do. do. of Picotee, 1*s.*

PELARGONIUM SEED, in Sealed Packets.

Received from our "Sardinian Correspondent."

COLLECTION "O"
Contains 12 splendid varieties, 10 seeds each, 5*s.* 6*d.*, of large-flowered Pelargoniums.

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Contains 12 splendid varieties, 10 seeds each, 5*s.* 6*d.*, of spotted Pelargoniums.

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Contains 12 splendid varieties, 10 seeds each, 5*s.* 6*d.*, of Fancy Pelargoniums.

Assortment of 36 splendid varieties of large-flowered Pelargoniums, 10 seeds of each, 12*s.* 6*d.*

Assortment of 36 splendid varieties of Fancy Pelargoniums, 10 seeds of each, 12*s.* 6*d.*

Dried Specimens of many magnificent Seedlings, flowered in 1861, may be seen at our Establishment.

BARR AND SUGDEN, SEED MERCHANTS,

12, KING STREET, COVENT GARDEN, LONDON, W.C.

(OPPOSITE THE GARRICK CLUB.)

ESTABLISHED UPWARDS OF A CENTURY.

BUTLER & McCULLOCH,

SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.

Gladiolus, Seedlings of Gandavensis.

100 in 20 very Choice Varieties	..	£2	2	0
50 in 20 " " "	..	1	1	0
25 in 20 " " "	..	0	10	0
12 in 12 " " "	..	6s., 9s., and	12	0

Gladiolus, Seedlings of Ramosus.

100 in 50 very Choice Varieties	..	2	2	0
50 in 50 " " "	..	1	0	0
25 in 25 " " "	..	0	10	0
12 in 12 " " "	..	6s., 9s., and	12	0

Cheap Gladioli for Massing, Clumping, &c.

	per 100.		
BRENCHLEYENSIS, vermilion	£1	5	0
GANDAVENSIS, scarlet and yellow	0	15	0
COURANTI FULGENS, brilliant crimson	1	1	0
TRIOMPHE D'ENGHIEN, carmine and yellow	1	1	0
Splendid Mixed Seedlings of GANDAVENSIS	0	17	6
QUEEN VICTORIA, scarlet and white	0	15	6
RAMOSUS, bright rose and white	0	15	6
Splendid Mixed Seedlings of RAMOSUS	1	0	0
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BUTLER AND McCULLOCH, SEED MERCHANTS, COVENT GARDEN MARKET, W.C.

NEW VARIEGATED FOLIAGED FUCHSIA,

CARTER'S METEOR.

This striking novelty, a double corolla'd variety, with crimson and yellow foliage, will be sent out on May 1.

JAMES CARTER & CO.'S GENERAL CATALOGUE of PLANTS,

Containing many desirable Novelties, will be published on May 1, and forwarded gratis and Post free on application.

JAMES CARTER & CO., 237, 238, & 261, HIGH HOLBORN, W.C.

SEED FARMS.
EAST HOUSE FARM, DEDHAM, ESSEX; and
THE SEED FARM, ST. OSYTH, ESSEX.

NURSERY.
CRYSTAL PALACE NURSERY,
Perry Hill, Sydenham, S.E.

PETER LAWSON & SON,

THE QUEEN'S SEEDSMEN,

EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

KITCHEN GARDEN SEEDS,
FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

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THOS. GIBBS & CO.
Corner of
HALF-MOON St.
PICCADILLY,
London.
APPOINTED AP. 3. 1844
THE SEEDSMEN

AGRICULTURAL SEEDS,
GRASS SEEDS,
FARM SEEDS,

of all descriptions.

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CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

SUTTON'S

YELLOW GLOBE MANGEL WURZEL.

SEEDSMEN BY APPOINTMENT
Sutton AND Sons

The heaviest and best sort known, price 8d. per lb., or 63s. per cwt.
ORANGE GLOBE and all other sorts 8d. per lb.

PRICED LISTS of FARM SEEDS Post Free.

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

CHINESE YAM, DIOSCOREA BATATAS.

SUTTON & SONS

Having a large stock of strong Roots for present planting, can supply them at the reduced price, 2s. 6d. per dozen or 15s. per 100, with Instructions on Cultivation.

N.B. *Each root will make several good sets.*

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.—April 19.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s.; 20 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

Chrysanthemums.

W. HOLMES, F.R.H.S., has a fine stock of the above, including Little Harry, Lady Hardinge, Leda, Linda, Rifleman, Florence, &c., &c., all at 5s. per dozen.

DESCRIPTIVE CATALOGUES of the above, also Dahlias, Fuchsias, Verbenas, Geraniums, Antirrhinums, Petunias, &c., free for one stamp.

Frampton Park Nursery, Hackney, N.E.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Superb Hollyhocks.

R. B. BIRCHAM begs to state that he has several thousands of fine established plants of the leading varieties of SHOW HOLLYHOCKS, which he should be happy to offer upon advantageous terms to any nurseryman or florist who may require them.

Price per hundred upon application, and CATALOGUE forwarded by R. B. BIRCHAM, Hedenham Rosery, Bungay, Suffolk. Carriage paid to London and Peterborough.

New Verbenas, Fuchsias, Petunias, &c., of 1861.

WM. KNIGHT begs to announce that he can supply good struck plants of the above in healthy stuff, from 5s. to 7s. per dozen.

Also extra strong CLIMBING ROSES, from 4s. to 6s. per dozen.

CATALOGUE post free on application.

Floral Nursery, Hailsham, near Hurst Green, Sussex.

Spring Catalogue.

JOHN CRANSTON'S SPRING CATALOGUE of "NEW ROSES" and PLANTS is now ready, and he will be happy to forward it on application.

It contains a descriptive list of the New Roses for 1862; select lists of Stove and Greenhouse Plants, Ferns, Azaleas, Fuchsias, Geraniums, Verbenas, Gladioli, and Miscellaneous Bedding Plants, &c.

Nurseries, King's Acre, near Hereford.

New Gloxinias.

MESSRS. F. AND A. SMITH beg to offer fine young healthy Plants of their NEW GLOXINIAS, which were exhibited at the Royal Botanic Gardens last year, when they received an "Extra Prize Medal" for their superior merit.

Our selection, 30s. per dozen.

New and beautiful variegated plant, CYPERUS ALTERNIFOLIUS VARIEGATUS, 21s. each.

F. & A. S. can offer the above in well established plants; it is the finest variegated Grass ever offered.

Dulwich Nurseries, near London, S.

Rhododendron Campanulatum.

WM. JACKSON AND CO., NURSERY and SEED MERCHANTS, Bedale, Yorkshire, offer very strong plants of the above hardy RHODODENDRON, 1½ to 2 feet, from seed, at 7l. 10s. per 100, usually sold at 5s. each. RHODODENDRON JACKSONI, and vars., 1 to 2 feet, 10l. per 100. EVERGREEN PRIVET, 3 to 4 feet, strong, for fences; and UNDERWOOD, 1l. 15s. per 1000.

LITHOSPERMUM FRUTICOSUM is the neatest and prettiest little HARDY EVERGREEN HERBACEOUS PLANT that can be desired. Its slender branches are thickly covered with small dark green leaves, forming a perfect carpet, which is studded with THE LOVELIEST BLUE FLOWERS, nearly half an inch in diameter, from May till September. If wintered in a cold greenhouse it flowers abundantly in February and March.

Messrs. J. & C. LEE will be prepared to offer this "LITTLE GEM" in May, at 2s. 6d. each; larger plants, 5s. each.

Nursery and Seed Establishment, Hammersmith, London, W.

WM. WOOD AND SON have much pleasure in offering their superb collection of

PHLOXES.

All the newest and most approved Continental varieties, 12s. to 18s. per dozen.

Older, but approved kinds, 6s. to 9s. per dozen.

100 Phloxes, in 50 sorts,	for 40s.		25 Phloxes, in 25 sorts		12s. 6d.
50 "	25 "	21s.	12 "	12 "	9s. 0d.

PENTSTEMONS.

New and first-rate varieties	18s. per dozen.
Older, but approved kinds	6s. to 9s. "
50 Pentstemons, in 25 sorts	21s. 0d.
25 " 25 "	12 6
12 " 12 "	9 0

ANTIRRHINUMS.

Per dozen .. .. 6s., 9s., and 12s.

HERBACEOUS PÆONIAS.

Per dozen .. ..12s., 18s., and 24s.

HERBACEOUS PLANTS.

Per dozen .. .. 6s., 9s., and 12s.

Plants presented to compensate for carriage.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Ornamental Plant.

A. VAN GEERT, Ghent, Belgium, begs to offer good healthy young plants of the new AGAVE SCHIEDIGERA, the finest and most showy of this tribe. The following is the discoverer's description of the plant:—

"Habit and dimension of Agave filifera, which it far surpasses in beauty, with leaves a little larger, changing nearly in every plant from green to red; the smaller leaves on separating from the centre leave snowy white lines, and bear on the sides white ribbon-like filaments, which have a very showy appearance on the green or reddish flesh of the leaves." Price 10s. 6d. each, or 84s. per dozen.

A SUPPLEMENT to my CATALOGUE No. 50 is now ready, which may be had on application to my Agents, Messrs. R. SILBERRAD & SON, 5, Harp Lane, London, E.C.

Double Dwarf Poppies.

HOOPER AND CO. offer Seed of their unequalled stock of the above. Colours brilliant and varied; and flowers double as a fine Hollyhock. Price 1s. per packet, post free.

GENERAL SEED CATALOGUE post free on application.

HOOPER & Co., Seedsmen, Covent Garden Market, London, W.C.

THOMAS HANDASYDE'S DESCRIPTIVE CATALOGUE of FLORISTS' FLOWERS, New German and other FLOWER SEEDS, &c., containing all the Novelties of the season, is now ready and may be had free on application. Also a large and healthy stock of all sorts of EVERGREENS at the

Glen Nurseries, Musselburgh, near Edinburgh.

SPLENDID NEW FUCHSIAS, DICTATOR and UNIVERSAL. Coloured Illustrations by Mr. ANDREWS of the two, in exchange for 12 postage stamps.

G. S. assures Fuchsia Growers that "Universal" is the finest Fuchsia ever offered. For description see CATALOGUE.

GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington, London, N.

Verbena Fireball.

MESSRS. J. AND C. LEE having thoroughly proved VERBENA FIREBALL last summer, can recommend it as one of the best, if not the best, and most useful for bedding purposes, combining, as it does, the intense scarlet and compact truss of Firefly with the robust and free-flowering habit of Purple King.

To be sent out in May, price 12s. per dozen.

Nursery and Seed Establishment, Hammersmith, London, W.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the most effective and useful bedding variety known. During the past season upwards of 5000 plants were grown in the gardens at Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.

*** For Testimonials and further particulars see *Gardeners' Chronicle* of February 22.

Plants, 1s. 6d. each. 12s. per doz. 50s. per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in riband-borders, and vases, this variety is one of the most useful and effective yet offered for sale.

Plants, 1s. 6d. each. 12s. per doz. 75s. per 100.

CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

Per packet—	s.	d.	Per packet—	s.	d.
Calceolaria, herbaceous..	2	6	Primula sinensis dentiflora	2	0
Cineraria cruenta ..	2	6	Primula sinensis albiflora	2	0
" maritima	0	6	" " dentiflora kermesina splendens ..	2	6
Erianthus Ravennæ ..	1	0	Verbena venosa	0	6
Lobelia erinus speciosa	1	0			
" " major	1	6			

A PRICED and DESCRIPTIVE CATALOGUE of Vegetable, Agricultural, and Flower Seeds, forwarded post free to all applicants.

Exotic Nursery, Tooting, Surrey, S.

PRIZE PHLOXES. | PRIZE GLADIOLUS.
PRIZE CHRYSANTHEMUMS.

JOHN CATTELL'S Collections of the above obtained the following Prizes at the London Exhibitions during the past season:—

PHLOXES.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

GLADIOLUS.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

CHRYSANTHEMUMS.

First Prize, for the best 24 Cut Blooms, at the Royal Horticultural Society's Grand Fruit and Chrysanthemum Show, held at South Kensington Gardens.

First Prize, for the best 24 Cut Blooms, at the Stoke Newington Chrysanthemum Exhibition.

First Prize, for the best 24 Cut Blooms, at the Crystal Palace Chrysanthemum Exhibition.

J. C.'s collections include every variety of note, and he now offers them at the low prices named below, the selection being left to himself.

PHLOXES, 6s., 9s., and 12s. per dozen.
CHRYSANTHEMUMS, 6s. per dozen.
GLADIOLUS, 6s., 9s., 12s., and 18s. per dozen bulbs.

CATALOGUES will be ready shortly, and forwarded post paid on application.

Strong plants of the Chrysanthemums and Phloxes will be ready early in April.

Nursery and Seed Establishment, Westerham, Kent.

JEAN VERSCHAFFELT'S NURSERY, Ghent, Belgium.

J. V. begs respectfully to announce that he intends sending out for the first time, on and after the 1st of September next, the following striking Novelties, viz.:—

1. CAMELLIA QUERCIFOLIA (J. VERSCH.).—The most curious and interesting Camellia known, as regards its leaves, which are Oak like; the flower being much the same as the universal favourite C. fimbriata alba. The plant is very showy, a good setter and very free bloomer. Prices are fixed as follows:—

Nice plants, 1 to 1½ feet high, 21s. each.
Do. do. with buds, 31s. "
A few extra sized plants at 42s.

2. RHODODENDRON SOUVENIR DE JEAN BYLS (J. VERSCH.)—This is the last and also the finest seedling raised by Messrs. Byls, Ghent, from whom J. V. purchased the entire stock. It is perfectly hardy, having stood out the winter of 1860—1861, without losing a bud. It has very fine foliage, and the flowers are in large close bouquets, of a fine rose colour, with a fine blotch of bright yellow on the upper lobe. Altogether one of the best known kinds, very free and very late bloomer.

Good plants .. .. 21s.
Stronger plants .. .. 31s.
A few extra sized plants 42s.

The plants will be sent out, as far as possible, with buds. A carefully coloured plate will be sent to each subscriber. One plant over to the Trade for every three taken.

The Subscription List is now open, and early orders are solicited, as they will be sent in strict rotation.

All letters to be addressed to JEAN VERSCHAFFELT, Nurserymen, 43, Rue de la Caverne, Ghent, Belgium.

☞ A reference required from unknown correspondents.

ROYAL BOTANIC SOCIETY of LONDON, REGENT'S PARK, N.W.

SPRING SHOW, APRIL 16, 1862.

6 AZALEAS.

Silver Medal to Mr. Cross, Gr. to Sir F. H. Goldsmid, Bart., St. John's Lodge, Regent's Park.
Silver Medal to Mr. Turner, Slough.
Small Silver Medal to Mr. Todman, Gr. to R. Hudson, Esq., Clapham.

12 AURICULAS.

Small Silver Medal to the Rev. H. H. Dombrain, Deal.
Small Silver Medal to Mr. Turner, Slough.
Bronze Medal to Mr. James, Gr. to W. F. Watson, Esq., Isleworth.
Bronze Medal to Messrs. Dobson & Son, Isleworth.

6 VARIEGATED PLANTS.

Small Silver Medal to Mr. Lakeman, Gr. to J. Campbell, Esq., Hendon.
Small Silver Medal to Mr. Williams, Holloway.
Bronze Medal to Mr. Cross, Gr. to Sir F. H. Goldsmid, Bart.
Bronze Medal to Mr. W. Bull, Chelsea.
Small Bronze Medal to Mr. Young, Gr. to R. Barclay, Esq., Highgate.
Small Bronze Medal to Messrs. Cutbush & Son, Highgate.

NEW PLANTS, &c.

1st Class Certificate to Messrs. Low & Co., Clapton, for Dendrobium cucullatum majus, a fine Epiphyte from Moulmein, having long pendent stems clothed with large showy flowers, remarkable for their large concave lip, which is pubescent, a couple of inches across, cream-coloured, and slightly veined with rose.

1st Class Certificate to Messrs. Low & Co., for Dendrobium Lowii, a very fine and distinct bright yellow-flowered species from Borneo; it has a Tropæolum-like spur, and a lip marked with crimson lines and fringes.

1st Class Certificate to Messrs. Low & Co., for Dendrobium sp., a pretty plant with black-haired stems, short oblong leaves, and terminal flowers of moderate size, white with an orange spot near the base of the lip, the sepals oblong apiculate, and the petals and lip nearly equal roundish ovate and slightly notched.

1st Class Certificate to Mr. W. Bull, Chelsea, for Dracæna ferrea variegata, a handsome stove plant, with the broad deep rust-blood-coloured leaves freely variegated with red in the way of terminalis, to which it is much superior.

1st Class Certificate to Mr. Williams, Holloway, for a very handsome Fern, named "Alsophila sp.," in which the leaflets were elegantly undulated or frilled.

1st Class Certificate to Messrs. F. & A. Smith, Dulwich, for Primula sinensis (fimb. fl. pl.) rubra grandiflora, a fine full double red Chinese Primrose, and seed bearing like delicata.

1st Class Certificate to Mr. Turner, Slough, for Rose Catherine Guillot, a charming bright rose-pink new French Hybrid Perpetual, with full, cupped, and very fragrant blossoms.

1st Class Certificate to Mr. Turner, Slough, for Cineraria The Artist, a bright rose crimson with narrow white ring at the base of the florets surrounding the greyish disk; a showy variety, of good form.

2d Class Certificate to Mr. Bull, Chelsea, for Dracæna Ghiesbreghtii, an elegant Mexican species, with long narrow green leaves, which are nearly erect at the base, and arch out gracefully at top.

2d Class Certificate to Mr. Bull, for Hippomane longifolia, a foliage plant with the leaves narrowish, upwards of a foot long, and undulately-spiny on the margin, like those of the Holly.

The remaining exhibitions of this class were—Azalea Clapham Hero, from Mr. Todman, Clapham: a rather pleasing variety of a purplish-rose colour, and almost self-coloured; pretty, but less effective than the spotted sorts. Azalea Belle Gantoise: a light or lilac rose with a narrow indistinct white edge, moderately spotted, and occasionally flaked, but deficient in form; and Cattleya intermedia rosea, blush with violet rose lip—both from Mr. Bull, Chelsea. Auricula Mrs. Eyles, from Mr. Holland, Gr. to R. W. Peake, Esq., Isleworth: a light dove colour or mauve purple, tolerable as to form and paste, and distinct-looking in a collection. Auricula Moloch, from the Rev. G. Jeans, Alford, Lincolnshire: a large crimson-maroon self, very uneven. Cineraria Conqueror, a bright magenta rose with gray disk, from Mr. Lee, Gr. to F. Farnell, Esq., Isleworth. Cinerarias from Messrs. F. & A. Smith, Dulwich, as follows:—Fairy Ring, crimson rose with narrow white ring and dark disk; Amulet, a pleasing Magenta rose, with remarkably pure white ring and dark disk; Sensation, a large showy deep rose crimson, with white ring and dark disk; Modestum, light rose with white ring and grey disk; Flambeau, deep rose crimson with dark disk; Cherub, a bright purplish rose-crimson self with purple eye; and Roi de Feu, similar in colour to the last. Cinerarias from Mr. Turner as follows:—James Andrews, a fine and distinct dark rosy violet with dark disk; Great Western, a very dark purplish rose with small black disk; Vicar of Caunton, a bright heavy edged rose with moderate sized clear white ring and dark eye; The Winner, white with heavy tip of deep rose and purplish disk; Queen o' the May, bright Magenta rose, with purple eye and moderate white zone; Royalty, white with medium tip of Magenta rose, and very pale grey disk; Sportsman, bright Magenta rose. Tea Rose Comtesse Ouvaroff, a new blush variety, from Mr. Turner. Tulip Lac van Rheims, a red and white variety with white-edged leaves, from Messrs. Cutbush & Son. Primula sinensis (fl. pl.) delicata, already awarded a First-class Certificate, from Messrs. F. & A. Smith. An evergreen continuous-blooming Cyclamen, probably C. europæum, from Mr. Holland, Isleworth.

MISCELLANEOUS.

Small Silver Medal to Messrs. Dobson & Son, Isleworth, for a large collection of Cinerarias.

Small Silver Medal to Messrs. Cutbush & Son, for a mixed collection of Plants.

Bronze Medal to Messrs. Cutbush & Son, for a collection of 100 Tulips; and also for 18 fine fresh samples of Hyacinths.

Bronze Medal to Messrs. Paul and Son, Cheshunt, for 3 boxes of good cut Roses.

Bronze Medal to Mr. Williams, Holloway, for a collection of Variegated and other Hardy Herbaceous Plants.

Small Bronze Medal to Mr. Bragg, Slough, for 2 boxes of Pansy Blooms.

Small Bronze Medal to Mr. James, Isleworth, for a box of Pansy Blooms.

Amongst some plants from Messrs. A. Henderson & Co., Pine Apple Place, were 3 plants of the curious Arad, called Arisæma ringens. Mr. Wiggins, Gr. to W. Beck, Esq., sent a collection of Cinerarias and some other plants; Mr. Young sent a group of Rhododendrons; Mr. Todman, a group of Azaleas; Mr. Bull, a group of New Begonias; and Mr. Noble, some fine Rhododendrons, unfortunately damaged by the morning's frost.

ROYAL HORTICULTURAL SOCIETY.—FRUIT COMMITTEE.

The next MEETING of this Committee will be held on TUESDAY, April 22, for the examination of such Fruits and Vegetables as may then be submitted for judgment, and when the following are offered:—

A. Best and second best Three Dishes of DESSERT APPLES, distinct sorts, 20s., 10s.
B. Ditto KITCHEN APPLES, 20s., 10s.
C. Best and second best Dish of STRAWBERRIES, not less than 50 fruits, 20s., 10s.
D. Best three heads of BROCCOLI, 10s.

All Fruit and Vegetables for exhibition must be delivered at the Rooms at South Kensington by 11 o'Clock on the day of Meeting.

Communications and packages to be addressed to

ROBERT HOGG, Secretary to the Committee.

NOTICE.

It is the intention of the Fruit Committee to grow this season in the Garden at Chiswick a collection of all the sorts of MELONS that can be obtained. Persons who are in possession of varieties of that fruit are therefore requested to send a packet of the Seed addressed to Mr. EYLES, Chiswick Gardens, Turnham Green, W., as early as possible. It would greatly facilitate the experiment if it were stated on the packet the shape and colour of the flesh of the several varieties.

A PRIZE of 5*l*. is offered by one of the Fellows of the Royal Horticultural Society for the 12 best STANDARD PLANTS for the DECORATION of the DINNER TABLE, to be awarded at the Show of Autumn Flowers, on September 10.

The Plants must be ornamental, either for their foliage, flowers, or fruit, and must be grown in pots not exceeding 6 inches in diameter; the foliage, flowers, and fruit must not be less than 20 inches nor more than 24 inches clear from the bottom of the pot.

Elegance of form, slenderness of stem, and variety of colour, will be the tests of excellence.

The groups will be received as late as 10 o'clock, A.M., PROVIDED SPACE SHALL HAVE BEEN SECURED FOR THEM THE DAY BEFORE. Letters to be addressed to Mr. G. EYLES, Royal Horticultural Society's Garden, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY. PRIZES.

Lady Dorothy Nevill offers Two Prizes, one of 6 guineas and the other of 4 guineas, for the three most tastefully arranged GROUPS of FLOWERS for the DECORATION of the DRAWING-ROOM, to be awarded at the First Great Exhibition, May 21.

The mode of showing these is left to the taste of the Exhibitor.

The Prizes will be awarded by a Jury of Ladies.

ROYAL HORTICULTURAL SOCIETY. AUTUMN SHOW, SEPTEMBER 10, 1862.—An Additional Prize of 10*l*. will be given for the Best Specimen of a CONSERVATORY TUB. There is no restriction as to material, size, form, or design. It may be of wood, slate, stone, pottery ware, Terra Cotta, or any other substance. It may be in one piece or in many, fastened or bound together, so as to take to pieces. Fitness for its purpose, elegance of design, superiority of workmanship, and cheapness, will be the test of merit.

ROYAL HORTICULTURAL SOCIETY. Special PRIZES for the March Show in 1863.

10*l*. for the Three Best CAMELLIAS.
3*l*. for the Three Best TREE MIGNONETTES.

MESSRS. BROWN AND CO. offer the following Selection of CHOICE PLANTS, which they will forward to any part of the kingdom:—

25 AZALEAS, new hardy Belgian varieties, one of a sort, on their own roots, by name, well set for bloom, fine for beds or pot culture for forcing ..
AZALEAS, hardy American varieties, do. do. ..
12 Hardy RHODODENDRONS, including scarlet, white, and rose colour .. ..
Choice named Scarlet RHODODENDRONS, per doz.
New Yellow RHODODENDRONS, each .. 3s. 6d. to
Hardy HEATHS, LEDUMS, and KALMIAS, per doz.
CLIMBING ROSES of best sorts, per doz. .. ..
6 Fine Hardy MAGNOLIAS, one of a sort .. ..
Choice CONIFERÆ, cheap; PRICE LIST by Post
Greenhouse AZALEAS, fine varieties, per doz. 10s. to
CAMELLIAS, best double varieties, per doz. ..
Yellow PICOTEES and CARNATIONS, per doz. ..
Choice PINKS and CLOVES, per doz. .. .. ..
12 Best PHLOX PERENNIALS, one of a sort .. ..
12 Best vars. of CHRYSANTHEMUMS, one of a sort
Fine New GERMAN IRIS, per dozen.. .. ..

A LIST of GREENHOUSE PLANTS, &c., by post.

American Nurseries, near Farnham, Surrey.—April 19.

MESSRS. E. G. HENDERSON AND SON, of the Wellington Nursery, St. John's Wood, have great pleasure in offering the following VERBENAS, selected as the finest kinds yet seen by them.

SIR PHILIP.—Exceedingly brilliant, vivid carmine scarlet.
LADY GREY EGERTON.—Beautiful new magenta-crimson.
RED GAUNTLET.—Beautiful orange-tinted flame-scarlet.
DESDEMONA.—Rich dark plum-coloured crimson.

Plants 1st of May, each, 2s. 6d.; per dozen, 18s.; per 100, ...

STUARTIA PENTAGYNIA.—A very handsome deciduous autumn-flowering hardy shrub. For description see *Gardeners' Chronicle* of March 15, and E. G. H. & SON'S SEED CATALOGUE, page 95. Strong bushy Plants, 3 feet high, 7s. 6d.

FRUITING VINES.—Extra strong; Golden and Muscat Hamburghs; also, Bidwell Seedling, a late-hanging Grape, and others.

SEEDS OF

Clianthus Dampieri.—Seeds, 2s. 6d. per packet.
Calendula officinalis superba. 6d. and 1s. per packet.
Celosia pyramidalis aurea, 1s. 6d.; Rubra, 1s. per packet.
Cosmos diversifolius atrosanguineus, 1s. per packet.
Linum perenne candidissimum, 1s. per packet.
Perfection Sweet William, 6d. and 1s. per packet.
Œnothera Lamarckiana, 6d. and 1s. per packet.
Saponaria calabrica alba, 6d. and 1s. per packet.
Nemophila atomaria oculata, 6d. and 1s. per packet.
Zinnia elegans flore pleno, 6d. and 1s. per packet.
Giant Emperor Asters in 20 colours.
Dwarf Chrysanthemum-flowered Asters.—The most beautiful for bedding and margins.
Salvia argentea, Ferula glauca, Dipsacus Gmelini.—Ornamental garden plants, 6d. and 1s. per packet.
Bush Vegetable Marrow.—The most prolific and richly flavoured of any, 1s. per packet.

NEW FUCHSIAS.—"MINNIE BANKS" and "COMET." The above Fuchsias possess first-class properties, and show a striking advance on all others hitherto sent out. 3s. 6d. each; a few extra sized, 5s., 7s. 6d., and 10s. 6d. each.

Bougainvillæa speciosa (spectabile), true, 3s. 6d.
" glabra, 5s.
Fuchsia "True Blue" (double flowered), 3s. 6d.

E. G. HENDERSON & SON, Wellington Nursery, St. John's Wood, London, N.W.

Two Hundred and Fifty Guineas in Ten Prizes.

FOR FIVE YEARS SUCCESSIVELY HIS LATE ROYAL HIGHNESS THE PRINCE CONSORT'S PRIZE CUPS HAVE BEEN AWARDED TO

SUTTON'S CHAMPION SWEDES at the Royal East Berks and South Bucks Agricultural Societies. New Seed now ready, 1s. per lb., or cheaper by the bushel, carriage free.

Royal Berkshire Seed Establishment, Reading.

YELLOW and other PICOTEES, the largest Stock in the world.
The Trade liberally supplied.
Star Nursery, Slough.

PANSIES, the largest Collection in England.
The Trade liberally treated.
Star Nursery, Slough.

HOLLYHOCKS, HOLLYHOCKS, HOLLYHOCKS.—Fine plants and good collections of the above.
CATALOGUES on application.
Any one will be well used both as to quality and quantity.
Star Nursery, Slough.

Star Nursery, Slough.

WM. BRAGG begs to inform the Public generally that he can supply any quantity of DAHLIAS and BEDDING and other PLANTS of various sorts on cheap terms.

About 40 FRUITING VINES in pots. Prices various, and may be had on application.

Tom Thumb Scarlet Geranium and Aurea floribunda Calceolaria.

ALEXANDER LAING begs to inform nurserymen, gentlemen, and the public in general, that he is in a position to offer good, healthy, well established Plants of the above, by the dozen, 100, and 1000, having an immense stock of both, all being autumn-struck Plants.

Prices on application to A. LAING, Nurseryman, Beverley, Yorkshire.—April 19.

Strawberry Plants.

WM. JAS. NICHOLSON again offers strong laid Plants of his Grand Collection of more than 200 varieties of English, French, Belgian, American, and other STRAWBERRIES, including all the new and fine sorts. A Catalogue sent on application.

A New, Enlarged and Improved CATALOGUE will be published in Autumn, when many new sorts well tested will be offered with confidence.

WILLIAM JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

The Gardeners' Chronicle.

SATURDAY, APRIL 19, 1862.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, April 22	Royal Horticultural (Fruit and Flora Committees) at S. Kensington	Noon
FRIDAY, — 25	Royal Horticultural (General Meeting) at S. Kensington	2 P.M

It is of great importance to all of us, whatever may be our especial calling, to have just notions of the intimate connection of CAUSE and EFFECT. Half the folly and more than half of the bad reasoning and consequent defective action which we meet with in the world arises from inadequate conceptions on this point. Table turning, spirit rapping, clairvoyance, and a host of cognate fancies, all turn upon the same hinge, and we might add that there are other more widely spread infatuations warmly cherished by persons who ought to know better, which arise from no other source.

Amongst other wrong notions, which have obtained almost universal assent in times past, and which still prevail to a great extent amongst the ignorant and unthinking, few have been greater hindrances in the way of just investigation than that of spontaneous generation, and perhaps it has been no less mischievous to the practical man than to the mere student. The gardener and the farmer perhaps are amongst the severest sufferers. So long as the little parasites, whether belonging to the animal or vegetable kingdom, which are so injurious to healthy growth, are regarded as the mere creatures of circumstance, the offspring simply of peculiar combinations of chemical elements, assisted by especial conditions of temperature, moisture, light, electricity, or other physical agents, it seems quite useless to do much by way of prevention; and it is so much more easy still to slumber under such a theory, than to stir up one's active energies, to ascertain the real cause of evil, that many a cultivator is as unwilling as ever to admit that the diseases against which he has to contend, are due to causes over which he has a greater or less degree of control, and would rather wrap himself up in his ignorance and still talk of a blight or blast or stroke of lightning, or indeed of any thing rather than something approaching to the truth.

We believe therefore that we are doing good service to many of our readers in laying before them some observations respecting the convincing experiments which have lately been conducted by M. PASTEUR, with a view to ascertain, if possible, to what cause we may attribute the sudden appearance of moulds and animalculæ in situations where at first sight it is very difficult to conceive the presence of eggs or reproductive cells.

The time is past when the advocate for spontaneous generation could appeal to the development of intestinal worms in animals apparently without any previous parent in favour of spontaneous generation. The real history of some of those which formerly presented the greatest difficulties, as of flukes, tapeworms and other of these parasites, is now ascertained beyond a shadow of doubt, and it will soon be as strong a proof of ignorance to adduce their appearance as an argument in support of the theory, as it would be to suppose that bees, like those of Aristæus, could be generated from a putrid carcase, or that fly blows are the product of fermentation. But the truth is that the presence of mould and animalculæ in infusions is no stronger proof than the cases just mentioned.

The difficulty is this, that if such substances as are peculiarly subject to the attack of mould or infusoria, are boiled so as to destroy all eggs or spores which they may contain, unless all access to the outward air be cut off, or at least to living germs which it may contain, these productions will still be developed.

The first question which arises then, is whether such germs are really present in the air. That they do exist appears plainly from the fact that if single flakes of snow be suffered to melt upon a slip of glass and the drop of fluid at once secured and insulated, in many cases a variety of bodies will be observed which perfectly resemble the spores of moulds or the lowest Infusoria. This plan has not been tried by M. PASTEUR, but specimens collected at Highgate were submitted to us a few years back which were perfectly convincing. M. PASTEUR adopted instead a very ingenious plan which had the same effect. He caused a strong current of air to pass through a minute pellet of gun cotton, confined in a narrow tube, which was then dissolved in a mixture of alcohol and ether, and in almost every case after the subsident matter had been properly washed with distilled water, there was an abundant supply of organised particles.

The next question was, whether after sugared water or other fluids had been boiled, and the access to living germs from without completely cut off, either moulds or infusoria would make their appearance in them. For this purpose, after they were boiled, air was admitted only through a red-hot tube, so that whatever germs it might contain would be sure to perish, and the orifice then sealed up; and in the case of sugar-water and yeast-water sweetened, which are peculiarly liable to the growth of moulds and infusoria when exposed to the free air, not a single trace of organised matter ever made its appearance in them when so treated. If, however, the tube were broken and free air admitted after the lapse of many months, living organisms were developed within the course of a few hours, clearly from germs derived from the atmosphere. If, however, a little pellet of Cotton, through which air had been filtered, were introduced, though no other source of pre-existent germs were present, organised beings equally appeared in the fluid. The most convincing proof, however, that these beings are due to the admission of such germs, and that their absence was not due to any alteration that might have taken place in the air itself in consequence of being calcined, is deduced from the fact that if the neck of the flask in which the fluid was boiled was drawn out to a fine point and bent two or three times, so as to make the access of any germs from without difficult, though the air itself was freely admitted, the fluid remained as free from organised beings as if the tube were hermetically sealed.

If the fluid employed were neutral or alkaline, as milk, or yeast water neutralised by chalk, a temperature of a few degrees higher was necessary to destroy completely the germs which it might contain.

These experiments, which were repeated in every possible form, are quite conclusive; and it was found in corroboration of them that if air in the catacombs, where it was nearly stagnant, and therefore in comparison little liable to be mixed with extraneous matter, was admitted to the boiled fluid, the tube being sealed immediately after the admission, either no organised beings appeared at all, or only in a greatly diminished ratio, and that in proportion as air was taken from different heights on lofty mountains, the quantity of organisms which appeared was in an inverse ratio with the increased height, or in other words, the higher the flask was taken up, the fewer organisms appeared, till the effect was in many cases as completely null as if no atmospheric air at all had been admitted.

In these experiments, so far as could be seen, there was no source of error, as is especially to be noted in experiments made with a bath of mercury, in which germs are frequently admitted with the dust which is always more or less mixed up with the quicksilver itself.

One curious matter still remains to be noticed which appeared in the course of the experiments. It has been generally thought by the advocates of the doctrine of spontaneous generation that the presence of something derived immediately from organised matter, without any process positively destructive to life, was indispensable for the production of moulds and infusoria, as though the principle of life were a necessary element. Albuminous matters might preserve, they thought, in some mysterious way, some relics of vitality, which would permit them to become organised on the admission of oxygen, under favourable conditions of temperature and moisture. M. PASTEUR accordingly made a mixture consisting of distilled water, crystallised sugar, tartrate of ammonia, the ashes of yeast to supply phosphates, and pure carbonate of lime, and in the presence of calcined air spores were admitted, and the moulds flourished just as freely as if they had been developed in sugar water, or yeast water sweetened with sugar.

The whole question was revived a short time since by M. POUCHET, and M. PASTEUR'S experiments were directed in consequence towards the refutation of the new advocate of the theory. We have however, from the nature of our Journal, been obliged to avoid every thing except the plain matter of fact as proved by M. PASTEUR. The presence of oxygen, it appears, is absolutely necessary for the production of moulds, and so much is this the case, that where Bacteria and other minute infusoria first make their appearance, they multiply so fast and consume so much oxygen that no moulds can establish themselves, and when at last the whole of the oxygen present in the sealed flask is replaced by carbonic acid gas, the infusoria themselves vanish.

On the whole, then, it is quite clear that the sooner we divest ourselves of the notion of spontaneous generation in the garden and fields the better. It may be difficult, indeed, for the farmer to account for the appearance of a mass of Vibrios in the midst of his Wheat, producing the disease called earcockle, or for the gardener to explain the generation of hosts of these minute animals in the roots of his Cucumbers, making them gouty and unfit to perform their proper functions; but though the access of such minute creatures from without may be past his comprehension, both farmer and gardener will be quite sure that they did not arise without pre-existent germs, and their business therefore is, if possible, to prevent their access. In the same way we must, if possible, attack the microscopic vegetable parasites which do us so much mischief. To be forewarned is in some measure to be forearmed, and the better knowledge we have of the real nature of our enemies, the more likely it is that we shall be able to contend against them successfully. *M. J. B.*

THE ink of the remarks we made last week on the importance of CHARRING REFUSE was scarcely dry when a friend put into our hands some very valuable practical observations on the same subject, which are printed on the Agricultural side of to-day's issue, and to which we invite most particular attention. The writer, than whom there is no man living more thoroughly conversant with country affairs, is not a visionary; he proposes no difficult or expensive process, nor does he speak merely of what he hopes or expects; on the contrary, all he suggests he does himself, and anybody in a farm, however small, can do the same. It will be seen that he to a great extent employs the deodorising plans of the Rev. Mr. MOULE, to the complete efficacy of which we too can bear witness; and it will surely be a reproach to the agriculturists of this kingdom if they do not thus economize materials, the annual value of which is to be calculated by hundreds of thousands of pounds sterling.

WE learn from the *Revue Horticole* that PIERRE PHILIPPE ANDRÉ VILMORIN-ANDRIEUX, the NESTOR of French Horticulturists, died on the 21st of last month, on his estate at Barres, in the 86th year of his age. He was a man of singular intelligence, and, in the days of his active life, of equal energy; to which he added a love for scrupulous accuracy in the conduct of experimental gardening,

which long since procured him the honour of a chair in the Institute. We well remember him in the year 1817, when in the end of November he was daily observing whatever was noticeable in his experimental ground near Paris; how carefully he watched his fruit room; how he studied the respective qualities of the varieties it contained; how he tested and tasted and tried and tried again the merits of the vegetables then in season, aided by the skill of a capital cook. Never since have we found Aubergines, or Cardoons, or Tomatos like his. In addition to the other services M. Vilmorin rendered to France was the formation of the valuable collections of corn and fodder plants and esculent vegetables, from which we have here derived so much advantage.

—— The acquisition of a race of Double Chinese Primroses capable of being propagated by seed, is a fact of no small interest in ornamental gardening. Every one knows how valuable a plant for indoor decoration is the Chinese Primrose in any of the forms now so freely cultivated—especially valuable, because so easily obtained from seeds. The white, the flesh-coloured, the deep rose, and the more recent salmon-rose fringe-edged varieties with single flowers, are all, in their way, desirable for the purpose indicated, whether employed in a greenhouse or conservatory, in a drawing room or hall, or even on an inner window sill.

It is curious to observe, however, that in this Chinese Primrose the usual order of "improvement" is reversed, and it is in the fringe-edged and not the smooth-edged forms that we find the modern improvements embodied. The double-flowered varieties indicate another form in which improvement has taken place; and these double Primulas not being spoiled by the duplication of their parts as some flowers are, and having the advantage of greater endurance which generally accompanies such duplication, have always stood high in favour. They were not however flowers of the many, because being only capable of multiplication by cuttings, they were always rare and comparatively high-priced, and moreover rather delicate of constitution.

Two or three years ago an accidental double-flowered deep rose-coloured seedling, called atro-rosea, was shown by Mr. Turner and others, and in this a more vigorous constitution seemed to have been secured, but we are not aware that it was at all capable of bearing seed. Subsequently, in the course of last year, Mr. Bull introduced to notice two continental forms called nivea plena and rubella plena, having indeed only semi-double flowers, but having, it was stated, the very important capacity of self-reproduction in this semi-duplicated state. That such is the fact has been proved by seedling plants, the progeny of those exhibited last year, which have been shown with the same kind of semi-double flowers, during the present spring. A still more beautiful variety, however, also reproducible from seed, because numerous seedling plants exactly alike have been shown, has quite recently been brought before the public by Messrs. F. & A. Smith. This newest variety is called delicata: it is large-flowered, fringe-flowered, and fully double, and the colour, which is white at first, becomes a delicate flesh-colour when fully matured. The seed-bearing capacity of this new variety seems to be confirmed by the structure of the flowers; for in some of these which we have closely examined, we find that in the centre of the central tuft are some petaloid bodies, like small corollas, with a pin-eyed stigma evident in the tube. The same growers have a double red which they call rubra grandiflora, but whether this is self-productive we are not aware.

From the sportive character of this Chinese Primula, which it will thus appear has already yielded something like a dozen well-marked forms and colours, there is great probability that we shall soon obtain self-productive full double forms of all the various colours, including the striped or red-flaked. That a most valuable addition to our greenhouse spring-flowers has been already obtained in this variety delicata, there is no doubt whatever; and as an earnest of the sportive tendency to which we allude, we may mention that a dwarfer and more compact-growing plant, with flowers of the same colour as delicata, but even still more closely filled out with a petaloid centre, has been obtained by the Messrs. Smith. This little beauty they have called The Fairy.

—— One of the most beautiful of ornamental-foliaged plants which has yet been introduced to our gardens, is that called Musa vittata, if we may trust the representation given of it in Van Houtte's *Flore des Serres*; and that this may be trusted, we think a very young plant shown the other day to the Floral Committee by Messrs. Veitch & Son affords sufficient evidence. This striped-leaved Banana was, it appears, met with in dense shady forests in the Island of St. Thomas, situated in the Gulf of Guinea, by Mr. W. Ackermann, a former pupil of the School of Horticulture over which Mr. Van Houtte presides, and who is now occupied in collecting plants for Mr. Van Houtte's establishment. M. Rodigas, by whom the account of the plant in the book referred to has been drawn up, seems disposed to think it may be a striped-leaved variety of Musa chinensis (Cavendishii), but this cannot be ascertained until it produces flowers, and the figure scarcely bears out this opinion so far as the foliage and habit are concerned. It is, however, said to be dwarf-growing.

This question of nomenclature does not in the least affect its beauty, or its value as an ornament to our plant stoves. The comparatively dwarf habit will moreover add considerably to its adaptation for general cultivation. The plant is of course free-growing, like Musas in general, having an erect stem, formed by the sheathing bases of its leaf-stalks, and at the top of this stem a crown of oblong bluntish leaves. The leaves are freely marked in the direction of the veins, with bands or stripes of white, and grayish and yellowish green of two or three shades, on a dark green ground. The stripes being bold and well defined, as well as distributed over the whole surface of the leaf, and the broad surface of the leaves themselves being well adapted to display them, a very striking and effective form of variegation is the result. Altogether this Musa stands in the foremost rank amongst what are called ornamental-foliaged plants, a group which has of late years taken so prominent a position in our gardens and hothouses.

—— We recommend to the serious attention of Orchid growers the following return by Mr. Skinner of the State of the Orchids at Malvern Link, brought from Messrs. Veitch's, December 18, 1861: and left in the drawing room ever since.

March 25, 1862.

1. *Lycaste Skinneri.*—Old flowers now off. Two new flowers, one opened this morning exquisitely marked, the other flower will open in about a week hence. Two more flower shoots coming forward, one 2 inches high, the other 4 inches, all from one pseudo-bulb, making seven flowers already this season.
2. *Lycaste, another Specimen.*—I have to-day cut off the two old flowers; the petals of both still full of colour, but the sepals withered at the extremities. Two new flowers, one opened to-day deep rose colour, the other will require 14 days yet. One more flower stem half an inch high, making five flowers during the season.

Barkeria Skinneri.—In exactly the same condition as when brought from Chelsea three months ago, every flower extant and in its pristine beauty.

The weather for the last month has been variable, but for eight days very severe, snow and frost. Fires as usual after 2 o'clock only.

SIKKIM AND BHOTAN RHODODENDRA OUT OF DOORS.

Your readers will not have forgotten the interest that was excited—some 8 or 10 years ago—by Dr. Hooker's discovery in the Sikkim Himalaya of a large number of entirely new Rhododendra, some of them far surpassing in the amplitude of their foliage and the beauty of their flowers, all the species previously described. These were speedily followed by other novelties from the rich valleys of Bhotan, whither Mr. Booth had been despatched on a botanical mission at the instance of his uncle the late lamented Dr. Nuttall. And since many of the finest species—whether from Sikkim or Bhotan—were found at great elevations, it seemed reasonable to expect that they would succeed perfectly in this country, with the same treatment that is given to what are usually styled "American plants." Impressed with this idea, and having, as I thought, carefully studied their habits in the admirable "Journals" of Dr. Hooker, I fitted up for their reception a dark rocky glen, through which there ran a stream of water, thus insuring shade and constant moisture. And as the peat in which they were planted was of the very best quality, water freely given in dry weather, and the drainage carefully attended to, everything seemed to be done that could be done to insure success. Nevertheless (except among some of the small Alpine species), not one single kind of flower has ever been produced, and this notwithstanding that the plants grew vigorously and have many of them attained a large size!

I confess myself at a loss to account for so complete a failure. It was not the general unsuitableness of the climate to the growth of Rhododendra, for the tribe, as a whole, flourish admirably here. Neither was it the severity of our winters, for these seemed to do the strangers no harm. True, their leaf-buds being prematurely excited by the first mild days of spring were usually cut off by late frosts, but then they speedily pushed forth new shoots, and there is no reason why these should not have yielded flower-buds; at all events many of the tender hybrids now so plentiful in our gardens, manage to develope flowers upon their second growth when the first has been destroyed. Even R. campanulatum, a former introduction from the same country, never fails to flower with me, as indeed it did most beautifully last week; though, as happened also on Friday night, its first shoots are almost invariably destroyed.*

* A plant that was sent out by the nurserymen several years since as R. robustum, with leaves resembling those of R. campanulatum, only that they are twice as large, has lately flowered here, and proves to be an inferior variety of the latter species. The flowers fall as much short of the original type as the leaves exceed it.

As my failures may serve as a guide, or rather beacon, to other cultivators, I had perhaps better enumerate the species that formed the subject of my experiments. They were as follows: — Rhododendron Thomsoni, fulgens, caliculatum, lanatum, Hodgsoni, all apparently perfectly hardy. R. Falconeri, Shepherdi, Jenkinsi, Wightii, nearly but not quite hardy. Alpine species—R. lepidotum, setosum, glaucum, ciliatum. These, planted in the most exposed situations, have flowered repeatedly, though frequently interfered with by late frosts. R. anthopogon perished in the winter 1860-61, a circumstance I could scarcely regret, as the pungent disagreeable odour of its young leaves rendered it quite an annoyance even fifty yards off. If one small plant could make itself so powerfully felt, no wonder the natives of the Himalayas complain of headaches when they traverse large tracts covered by the species.

If any of your readers have succeeded better than I have done in their attempts to cultivate out of doors this beautiful section of a beautiful family, I hope they will communicate their experiences through the pages of the *Gardeners' Chronicle*, to which I also propose next week to contribute an article on the cultivation of Sikkim and Bhotan Rhododendrons under glass. *J. B., Biddulph Grange, April* 14.

THE ORCHARD HOUSE AT HALLINGBURY PLACE, NEAR BISHOP'S STORTFORD.

This house illustrates so well what may be done with old garden walls in old gardens that a short notice and description of it may not be unacceptable to lovers of orchard-house culture, and perhaps more so at this moment from its having a new convert in Sir Joseph Paxton, who if I mistake not was a few years ago rather strong in his opposition to it. It is now some three or four years since the proprietor of the above demesne, a great lover of fruit culture, resolved to build a lean-to house in front of a very old wall with a south-west aspect, on which were trained Peach and Nectarine trees in various stages of growth and health, as usual with such trees trained to old walls, and accordingly a house 200 feet long, 15 feet wide, 12 feet high at back, and 4½ feet in front, was erected. In front it is ventilated by sashes on pivots 5 feet by 3, sliding shutters in the old wall at back. and alternate squares of glass framed and on hinges at top. The rafters 4½ inches by 1½, and fixed 20 inches apart. It is divided by glass partitions into four compartments, each of which has its peculiar climate.

On entering the door, at the south-east end, which opens from the lawn, I found the usual orchard-house temperature, as no heat is employed; the trees on the walls, both old and young, were in full bloom, and apparently in the most perfect health—literally covered with blossoms. On each side of the central walk is a row of espalier Peaches and Nectarines trained horizontally. These trees were also covered with blossoms; behind and in front Plum and Cherry trees in pots had set their fruit abundantly; and the compartment, the morning being bright, had a most cheerful and beautiful aspect. On opening the door to the next compartment one passed from April to July, for here the trees were in full foliage, and Peaches and Nectarines about the size of small Walnuts. In this compartment as in the first named, are two rows of espaliers horizontally trained, every branch and shoot covered with fruit, which Mr. Spivey the gardener had commenced to thin. I observed particularly an espalier Early York Peach, a Downton Nectarine, two or three Grosse Mignonne and Early Grosse Mignonne Peaches, perfect pictures of health and fertility. These rows of espalier Peaches were planted under some doubts and fears at the recommendation of Mr. Rivers, for it was thought and half feared by him even that the extreme vigour of Peach trees in a favourable climate could scarcely be restrained, and that the sap, as usual with Peach trees, would, in spite of summer pinching and root pruning, ascend too rapidly to the upper tier of branches, weakening and rendering the lower tiers unfruitful; it is therefore highly gratifying to observe the perfect state of these trees, every tier of branches being a rope of fruit. To Mr. Spivey's skill and rigid attention is owing this great success, for every young shoot, as soon as it has made five or six leaves, is pinched down to three full sized leaves, and biennially in autumn, about the second week in October, the trees are all root-pruned, and at the same time abundantly watered with manure water given to their roots before all the soil is filled in. The house is then thrown open for the autumn.

This systematic, and I think I may add scientific culture, has made the trees what they are, perfect specimens of health and productiveness. On the back wall of this compartment are some large old trees trained to it, and owing to the climate they have lost all the signs of decrepitude which they had before they were covered with glass. They do not bear so abundantly as the espaliers, and one large tree, the Barrington Peach, is very shy in setting its fruit; but the fruit they give is generally of an enormous size. Besides the espaliers and wall trees in this compartment are numerous trees in 15 and 18-inch pots, pyramids and bushes, and they are really quite grand in their luxuriant growth and abundance of fruit; so far from these potted trees giving small fruit, as some persons with a peculiar turn of mind presume they must do, as the necessary sequence of pot culture, some of the finest of Peaches are produced, measuring 10 and 11 inches in

circumference; and some Peaches of the St. Catherine, a late Clingstone variety from trees in pots, have measured 14 inches in circumference.

The third compartment from the south-east entrance is devoted to Figs, forced. These are for the most part the White Marseilles and the Brown Turkey, grown in tubs; the fruit is a little more than half grown, and will ripen early in May. So abundantly are they bearing that the branches are even now weighed down with the weight of fruit. Trees of the same kinds trained to the back wall are inclined to grow too luxuriantly in spite of root pruning, and being young they have but a thin crop on them. Some trees of the White Ischia (called the Singleton Fig by some) grown in tubs, seldom or never set their first crop; but the second, which ripens in July, is always most abundant. This is a most delicious summer Fig, almost unequalled in flavour.

The fourth compartment is devoted to some Vines trained to the roof, gently forced, and to Stanwick Nectarines in pots. These are upright trees, their shoots pinched in. They are literally masses of fruit, and owing to their having with gentle heat abundance of air by day and some at night, the fruit seems to be swelling kindly. I may observe that in the compartment devoted to the forcing of Peaches, the trees are covered with the largest and most luxuriant foliage I ever saw; not an aphis or spider, or the marks of one, can be seen. There is perhaps no fruit tree more beautiful in its leaves than a Peach or Nectarine tree when they are in perfect health, and their graceful lanceolate shape fully developed.

I have thought it almost a duty to describe this orchard-house, because it so forcibly shows what may be done in a very old garden with old walls. *T. R.*

Indoor Gardening.

I WILL now go on to say a few words on the management of the plants in the indoor plant cases—of course referring solely to the patent heated ones.

There are four things [particularly that I find it necessary to avoid.

1. Closeness.
2. Wetness.
3. Faded flowers or fallen leaves.
4. Flowers and delicate foliage being too near the glass.

For the first, I find, judging by many carefully tried experiments, that it is much better to sacrifice a little of the heat for the sake of a better ventilation, and at the same time, the warmth at the roots of the more tender plants enables them to bear the lowered temperature without the slightest check. The glass sides on their part prevent any drying current, and keep in a great measure the warm and moist air confined.

In very cold weather of course it would be extremely dangerous to expose the plants often to a total change of air. At such times then I only raise the upper glass an inch or two. At the present time my plants do extremely well with the case quite closed at night, and taken off altogether at about 10 o'clock each morning, when the perfume of the flowers comes out into the room.

For wetness, I find that water is much more easily added than dried up, and a thick heavy steam is extremely different from a soft dewy vapour, and not half so desirable. My own plants certainly are never really dry, at least never when I can see to them; but at the same time they are seldom made very wet, as keeping the sand just moist appears to me to be all that they require.

In watering the case it must be remembered that naturally the sand on the heated side dries first, and I have sometimes been troubled by the surface seeming to be only moistened, while underneath, just where dampness is most wanted, the sand is found to be all quite dry and powdery. I have often in such cases taken out a pot from the heated end and poured water slowly into the hole thus made, so as to fill it up somewhere about 2 inches; sometimes very rapidly, sometimes more slowly, the water is soaked up, and repeating this a few times the whole of the lower surface is moistened without drenching that at the top, which might cause too much steam.

I never water the larger plants over the leaves, and, though I know that this is contrary to all rule, I prefer avoiding to water over even my Ferns and Mosses. It seems to me that the dewy vapour with which the case becomes naturally filled at night is amply sufficient, and remembering how in South America, for example, days and weeks may pass without a drop of rain, but with regular soaking night dews, I cannot but think that the nature of many of our tender plants is such as to accommodate itself best to such a treatment, and the Ferns certainly, which revel in the dew, would be spotted and stained by a drop of water.

Of course care must be taken to prevent too great condensation of the dew on the upper glass. If water should by chance collect there at any time too abundantly, the glass should be taken off and dried. But for preventive measures, a woollen cover, such as a thick piece of green baize laid upon the top at night, gives no trouble and saves all risk of dropping.

As to the unhealthy effect and the great unsightliness of decaying leaves and flowers, they are so apparent that it can be only necessary to hint at the caution wherewith they ought to be removed, so as to prevent all danger of fine dust-like particles conveying seeds of mould to other plants standing near. It is curious, too, that while healthy plants may seem quite uninjured by such attacks, if one cutting or seedling of a rather yellow and unhealthy pot full begins at all to suffer, the chances are that the others will be hurt also. Dusting with sulphur, I may mention by the way, is a good remedy to be tried in such cases. This may be dusted on sometimes very easily with a dry paint-brush.

When air however is given, when there is not too much moisture, and when the flowers and leaves are prevented (except thick leaves of evergreens) from touching the glass sides, very little "damping" is likely to take place, supposing heat to be given, at least now and then. *E. A. M.*

THE STIFF-STEMMED TOMATO.

(*Tomate à Tige Roide.*)

[Extracted from the *Revue Horticole* for April, 1862.]

THE common Tomato and all its varieties succeed very well in the west and centre of France. It is cultivated on a large scale in certain parts of the Charente-Inférieure, the Deux-Sèvres, and La Vendée. Two years ago, M. Mervault, mayor of Saint-Giles (Vendée) did an extensive business in supplying Tomatos for preserves. He planted them in the open field, and could furnish a considerable quantity, notwithstanding the remarkably wet summer. From the middle of July our markets are crowded with Tomatos. The restaurateurs and hotel keepers form a numerous class of purchasers, which the gardeners adopt means to supply, but it must be admitted that they are neglectful of some points of good cultivation. They sow in April on a hotbed, and if they have not sashes they content themselves with covering the seedlings with some bell glasses; pots they cannot afford; some of the more careful sow occasionally in pans, the greater number sow in decayed hotbed soil; then about the middle of May, when the plants are sufficiently strong, they plant them out where they are to remain in a soil well dug and manured: that is all. With regard to pinching and training, although it would be advantageous to follow good directions that have been given with respect to these operations, yet unfortunately they do nothing of the sort; consequently the Tomatos overcrowd each other, the branches fall on the ground, and many of the fruits rot before maturity.

These bad consequences may however be avoided in future by cultivating the new stiff-stemmed sort of Tomato. It was exhibited last season at Toulouse. M. Boncenne states that he has grown it, and can therefore speak from experience as to its excellent qualities. It requires no more care than the common sort, and is even believed to be hardier. Its stem is thick and strong, and grows to the height of 18 or 20 inches; its branches are short and support well the fruit. It has the appearance of a small shrub, which requires no stake to keep it upright. The head bears a number of fine red fruits, of a regular form, and of which the flesh is succulent, with fewer seeds than that of the common Tomato. It is doubtless not so productive as the latter if we compare individual plants, but as double the number of plants can be grown in a certain space the amount of produce is equal.

This new kind of Tomato affords another important advantage. It can be readily propagated by cuttings, so that good strong plants can be obtained in spring before the common sort is sown; and moreover degeneration, so apt to occur in the Solanaceæ, is by this means prevented.

M. Boncenne details his mode of cultivation as follows: "In April, 1861, I sowed some of the stiff-stemmed Tomato; the seed came up well, and when the plants were strong enough they were planted out in the open border about 16 inches apart. They pushed astonishingly; but as I wished to show this interesting novelty at the horticultural exhibition of Fontenay-le-Comte, I planted six or eight in small pots, and afterwards shifted them into large ones; I gave plenty of water throughout the summer, and by the end of September I had a handsome shrub 20 inches high in each pot, loaded with flowers, green fruit and ripe. After the exhibition the weather became bad, and I placed the Tomato plants in a greenhouse near the light; they made fresh shoots, and the fruits, still green when introduced, became of a fine red. When the weather became severe, growth was arrested; I kept the plants clear of dead leaves, and removed some small branches that had begun to decay. After the middle of January vegetation recommenced, and about the 1st of February I took off and struck cuttings separately in small pots in heat under a bell glass; they were rooted in a fortnight, repotted, and placed in a Melon frame. I intend to plant them out as soon as danger of frost is over. If cuttings were struck towards the end of autumn, instead of January, I believe the young plants would grow throughout the winter, and would flower, on being planted out, as soon as the weather would permit. In that case ripe Tomatos could be obtained much earlier than they could by cultivating the common sort in the usual way." ||

THE PYTHONESS.

THE public have been informed by the "London Review" that "all hopes of hatching are now at an end." I never had any hopes at all of the lately adopted midwifery. Success would have been at utter variance with the infallible economy of old Dame Nature herself.

Should some future Pythoness be coaxed to circumvent her eggs with the intention of rendering them fruitful, I will ask permission (not having the fear of snakes before my eyes) to enter the lying-in apartment. There I would introduce my hand amongst the folds of her hard, and cold, and scaly body; and if I found warmth and softness in it, analogous to what exists in regular incubators, then indeed I will frankly own that I have been in error.

I am quite of opinion, that, had any infant serpent popped its head out of an egg, placed under the maternal care of our captive Pythoness, it would have owed its existence to warm air and warm blankets, and to nothing else. *Charles Waterton, Walton Hall, near Wakefield.*

DEEP WELL AT BRIGHTON.

WELL digging is a subject sometimes treated upon in the pages of the *Gardeners' Chronicle*, and it may not be altogether uninteresting, or without its use to others who may be engaged on similarly extensive works, to record the success which has recently been accomplished in this way at Brighton. There was a scarcity of good water in that town, and it had become absolutely necessary to obtain a supply which should be copious in quantity and good in quality. After the lapse of a long time, and with considerable expense and trouble, this result has been attained; the water came gushing into the well at the Warren Farm on the 23d of March, when it had been dug to a depth of 1285 feet. The bells pealed forth in testimony of the public rejoicing; the rate-payers, who had begun to think that there was unusual wisdom in the old maxim—"'Tis better to let the well alone," now went about congratulating each other; and of course there have been the usual amount of complimentary speech making at public dinners. Mr. Henry Catt, a gentleman of Brighton, who is well-known for his geological attainments, and who has naturally watched the operations with great interest, gave a dinner to the workmen, and they were afterwards presented with a silver medal each, struck to commemorate the event. Mr. Huggett, the Superintendent, received one of the same struck in gold, as a testimony to the energy and perseverance he has all along displayed.

The well at the Warren Farm was commenced in March, 1858, by Mr. Samuel North, who had contracted to sink it 400 feet, which, as it would have been some 30 feet below the level of the sea, was about the depth at which it was expected that water would be found. This shaft was 6 feet in diameter; after sinking it nearly 38 ft. deeper than was specified in the contract without obtaining water, Mr North gave up the affair. Two horizontal borings, each 30 feet in length, were then made, one at a depth of 418 feet, and the other a little lower in the opposite direction, but still without success. It was then determined to carry the shaft downwards again, but this time only 4 feet in diameter. Operations were continued night and day, and at length, when a depth of 1285 feet was attained, the water came gushing in most plentifully. The men who were last engaged at the bottom of the well said they had been digging all day, and although they had sent as much stuff as usual to the surface yet they seemed to get no deeper. There can be no doubt that their statement was correct, the extreme pressure of the water was forcing up the green sand in which they were working as fast as they could remove it. The water burst through with a loud report and most fortunately when no one was at the bottom; it was just at the time when the men were shifted. This was a most providential occurrence, for doubtless had it been at any other time several lives would have been lost, as the water came in so rapidly that three-quarters of an hour after it burst through, there was a column of water 400 feet high, the workmen who saw it say that the surface appeared as if boiling from the force with which it came in. Platforms had been erected about 100 feet apart in the lower well, and several of these were under water before the tools, &c., could be removed; in 36 hours it had risen above 800 feet. Mr. George Maynard, the surveyor, reports that the water is very pure, and that its specific gravity is scarcely greater than that of distilled water.

So far all is satisfactory; with regard to the cost of the well, now that water has been obtained, the rate-payers seem to consider that it was at a very moderate price. The total cost, the official report tells us, was 6583*l.* 4*s.*; so that every person residing in a house of the annual rent of 20*l.* will have had to pay about 10*s.* and others in a similar proportion.

Looking at the well simply in a geological point of view it is very instructive. Even at the present day there are still people who look upon the speculations of science as of little practical utility; they sneer at the suggestions which they call theoretical. Such men should learn a lesson from an instance like that of which we are speaking; perhaps they will, but they are not the men to learn, though facts as clear as possible be placed before them. In this case, as in many others, science had predicted the result, and the circumstances prove beyond a doubt that those predictions were founded upon trustworthy grounds (although they were purely theoretical), for they were literally fulfilled. Scientific men had said that if water was not found upon the top of the bed of clay known as the Gault, there would surely be a plentiful supply in the lower green sand. The stratum last named had not been penetrated more than 2½ feet when the long-desired water came gushing in as we have seen. It is this same stratum which is said to feed some of the large ponds found in the county. Sir Roderick Murchison and the officers at the Museum of Practical Geology gave many valuable suggestions during the progress of the works, and probably the well might have been abandoned long ago had it not been for the confidence with which they predicted ultimate success. The only thing which was not anticipated by them was the great thickness of some of the strata; but that, of course, could not be foreseen, as there was no section of the beds in the immediate neighbourhood. The well was sunk at first through the upper chalk, and then came the lower chalk, distinguished from the upper stratum by the absence of the bands of nodular flint which form so striking and characteristic a feature of the upper chalk. The lower chalk was found to be 168 feet in thickness. Then came a stratum of grey with patches of blue marl 172 feet thick, followed by a blue marl with occasional veins of grey for 150 feet further. This in its turn was succeeded by a stratum of sand and clay, which from its looseness rendered it necessary to "stein" the sides of the well as the men proceeded. At 965 feet from the surface the upper green sand made its appearance: it was pierced, as was also the gault, without success; the gault was developed to a much greater thickness than had been anticipated; it was, however, finished at 1228 feet from the top of the well. Then came a few green and brown sandy layers, and at last [the true lower green sand beds were reached, and the result has already been stated.

The heat and the pressure of the air upon their bodies rendered it extremely difficult for the men to work at such a

depth; six hours was quite as much work as they could get through in the day. Still the work was carried on continuously by constant relays of workmen, and no one rejoiced more in the success which has crowned their exertions than those men by whose labour it has been brought about. Many wells have been bored to a depth as great, or even greater, than this; but I do not know of one which has been dug to such a depth. *C. W. C.*

[Suppose this well had been bored, not dug, how much would the ratepayers have saved? Two thirds?]

Home Correspondence.

Birds and Strawberries.—In answer to several letters addressed to me relative to my plan of protecting Strawberries, I beg to say that the galvanised lattice may be procured of any ironmonger at 8*d.* the running yard, and the iron pegs and half hoops also at 2*d.* or 3*d.* per lb. The additional length, 18 inches, of the pegs is to allow them a firm hold in the earth, into which they should be thrust until the head of the peg is flush with the top wire of the lattice. I see that by a slip of the pen I wrote "Princess Alice" for "Princess Royal," in speaking of Mr. Cuthill's Strawberries. The "Princess Royal" is the one with the Hautbois, or Pine-apple flavour, and for dessert is far superior to "Princess Alice." As to my method of cultivation, I must plagiarise from Mr. Cuthill's pamphlet, for I am indebted to him for it. I trench the ground to the cale or subsoil, be it as deep as it may. I then tread it as hard as possible, give a heavy dressing of rotten manure, fork it in, and tread again as hard as possible. Upon clay soils this must be modified; and the runners planted in rows 2 feet asunder, and 18 inches from plant to plant in the row. I never fork or dig the beds, but top dress—with soot in February, with long litter about April, leaving it on through the bearing season. I water plentifully with guano water (two garden trowels full to 36 gallons of water), from the end of April until the fruit is set, then plentifully with clear water until the fruit begins to turn colour. Then I cease from giving moisture and put on the nets. When the crop is off I clean the beds, and about the end of October or beginning of November cover them well with half-rotten manure, allowing the crown of each plant to just peep through. All weeding is done by hand, or with the hoe when possible. This last dressing is never removed, but by degrees melts into the soil. I take off the long litter when I clean the beds. With my soil, red loam, this treatment answers well. *G. E. Maunsell, Thorpe Malsor Rectory, Kettering.*

Madeira Trees.—Although you doubt the two Madeira trees mentioned by Capt. Cook being hardy in England, yet one, the Paobranco (Olea excelsa), certainly is so in the southern counties; as is also a Laurus, which passes for Laurus canariensis (not Apollinaria canariensis), and may be his other tree, unknown to me by the name he gives it—Mirmolano. This Laurus is not patens, nor indica, nor barbusana—something nearer to nobilis than any of these—but is very hardy. There should be in Madeira an Ardisia, a Juniper, a tree Heath, a Myrica, and a Pinus worth trying as possibly hardy in England. *I.*

Salmon.—What are Danubian salmon alluded to in the last Number of your Paper? I thought no true salmon was found in any river running into the Mediterranean. Salmon trout, salmon peel, seem equally deficient in South European waters; excepting those outside the Straits of Gibraltar. River and lake trout of various species abound in countries on the Mediterranean—but I never heard of any of our northern seagoing species there. *I.*

Vine Borders and Guano.—Is guano a fit manure to sow upon Vine borders? I have to-day been examining the roots of my Vines, which are showing very weakly, and I find that the fibres near the surface are all dead. Last year my predecessor I hear had the borders strewn with guano, which of course caused the Grapes to be finer, but they did not colour well, and I am afraid that the guano has burnt the roots. As I have not before heard of guano being used in a "raw" state for such a purpose, perhaps some of your correspondents will favour me with their opinion on the subject. *W. Lee, Gardener, Combermere Abbey, Salop.*

Ailanthus glandulosa.—I am anxious to preserve the name of this beautiful tree, which bids fair to become a "household word" among us, from a mis-spelling which would destroy the poetry of its origin. Loudon (Arboretum et Fruticetum, vol. i., p. 490), spells it as above, and states that in its proper habitat, the Moluccas, it is called the "Ailanto," the word signifying the "Tree of Heaven," from its luxuriant and stately growth. The Germans have paraphrased this word, and christened the tree "Gotterbaum" (God's tree). The spelling "Ailanthus" has, doubtless, arisen from a mistaken notion that the name was compounded with the Greek *anthos*, which is the termination of so many botanical names, the supposition being confirmed by the insertion of the *h* by the French botanists to preserve the hardness of the *t*. If the very pretty name "Ailanto" were generally used instead of the Latin form, all liability to commit the common error referred to would be removed. *Charles J. George, Bury St. Edmunds.*

Fruit shedding in Orchard Houses.—About three weeks ago my Peach, Nectarine, and Plum trees in pots in my Orchard house were beautifully set with fruit, promising an abundant crop, but since that time the fruit has rapidly fallen off, and on many trees none is left. Having never failed before, and the tree being under the same care, I am at a loss to account for the cause of failure. *F. H. S.* [Trees drop their fruit or fail in setting it from various causes, such as badly ripened wood; weakness from overbearing, the quantity of blossom buds being much in excess of the due proportion which they ought to bear to wood buds, and the consequent limited flow of sap. In this case vigour should be restored by encouraging shoots and foliage in the ensuing summer. Trees in pots are sometimes injured by too much dryness at the root in autumn.]

Fuchsias for Exhibition.—Your remarks relative to the necessity of adopting a uniform standard of growth and age as regards Fuchsias for show are worthy of being well considered. The perplexing subject still is, however, the novelty or otherwise of the plants exhibited, but this in my opinion should not influence the decision of the judges, who should chiefly if not altogether reward good growth. Many will not pay 10*s.* 6*d.* or 5*s.* for a small plant, if even a good new variety, so easily propagated as the Fuchsia is, especially at a time when so many varieties are being thrust before the public annually, whose merits in many cases have not been proved by any but the raiser. Besides, if amateurs and gentlemen's gardeners are to compete with nurserymen, the chance of obtaining the awards would be in favour of the latter, owing to the opportunities they have of making choice of the best plants of novelties introduced every year into the floral market. Why not have separate classes assigned to them, as in the case of most other productions for competition. You justly observe that the sized plants recommended by you would induce many with less accommodation than the present exhibitors, to grow for floral shows. As regards myself, however, I have not observed that exhibitors of Fuchsias as a rule are fewer than those in other classes of florists' flowers. *John F. M'Elroy, Stamford Hill, N.*

Gooseberry Caterpillar.—Allow me to mention a simple precaution which we adopt here every spring in reference to this pest. Just as the buds begin to look green we procure a quantity of lime from the kiln, break it into pieces about the size of a goose egg, and then put about four lumps under each bush. In the course of a day or two, according to the weather, it becomes slacked sufficiently to spread, which is done with the back of a rake evenly all round the stem of each tree. In this state it is allowed to remain until the following winter, when it is spread and the ground dug over. I may mention that my Gooseberry trees are all trained to a single stem varying in height from 6 inches to 2 feet. I have now been here 13 seasons, and I can assure your readers that the plan just described answers the purpose better than any other I ever tried. I frequently see my neighbours' Gooseberry trees swarming with caterpillars when my own are as near free as possible, for if I see the fly I kill it if I can, or when I perceive any signs of the other pests I pick them off before they have time to increase. Between the caterpillars last summer and the bullfinches this spring one of my neighbours last week was obliged to destroy his trees, through not having adopted the simple precaution just recorded. *John Marshall, Gr. to Archibald Worthington, Esq., The Mount, Whitchurch, Salop.*

Societies.

ROYAL BOTANIC: *April 16. (Fourth Spring Meeting).*—Collections of Azaleas, Auriculas, and Variegated Plants were shown in good condition on this occasion, the varieties being chiefly those produced at South Kensington on the 9th inst. Messrs. Low sent Dendrobium cucullatum majus, from Moulmein; D. Lowii, a fine distinct bright yellow-flowered species from Borneo; and another Dendrobium, with black-haired stems, short oblong leaves, and terminal flowers of moderate size, white with an orange spot near the base of the lip. Mr. Bull contributed Dracæna ferrea variegata, a handsome stove plant, with the broad rich brown-coloured leaves freely variegated with red in the way of terminalis, to which it is superior; also D. Ghiesbreghtii, a pretty Mexican species, with long narrow green leaves, which are nearly erect at the base, and arch out gracefully at top; Hippomane longifolia, a stately plant with the leaves narrowish, upwards of a foot long, and undulately-spiny on the margin, like those of a Holly. Mr. Williams, Holloway, had a very handsome Alsophila, in which the leaflets were elegantly undulated or frilled. Messrs. F. & A. Smith sent a fine double red Chinese Primrose. Mr. Turner, Rose Catherine Guillot, a charming bright rose-pink new French Hybrid Perpetual, with full, cupped, and very fragrant blossoms. The same exhibitor also sent Cineraria The Artist, a bright rose crimson with narrow white ring at the base of the florets surrounding a greyish disk; a showy variety, of good form. Other exhibitions consisted of Azalea Clapham Hero, from Mr. Todman, a promising variety of a purplish-rose colour; A. Belle Gantoise, a light or lilac rose with a narrow indistinct white edge, moderately spotted, and occasionally flaked, but deficient in form; and Cattleya intermedia rosea, blush with violet rose lip—both from Mr. Bull. Auricula Mrs. Eyles came again from Mr. Holland. A. Moloch was shown by the Rev. G. Jeans. Cineraria Conqueror, a bright Magenta rose with gray disk, came from Mr. Lee, Gr. to F. Farnell, Esq., Isleworth, and the following Cinerarias from Messrs. F. & A. Smith:—Fairy Ring, crimson rose with narrow white ring and dark disk Amulet, a pleasing Magenta rose, with remarkably pure white ring and dark disk; Sensation, a large showy deep rose crimson, with white ring and dark disk; Modesta, light rose with white ring and grey disk; Flambeau, deep rose crimson with dark disk; Cherub, a bright purplish rose-crimson self with purple eye; and Roi de Feu, similar in colour to the last. Of other Cinerarias Mr. Turner sent the following:—James Andrews, a fine distinct dark rosy violet with dark disk; Great Western, a very dark purplish rose with small black disk; Vicar of Caunton, a bright heavy edged rose with moderate sized clear white ring and dark eye; The Winner, white with heavy tip of deep rose and purplish disk; Queen o' the May, bright Magenta rose, with purplish eye and moderate white zone; Royalty, white with medium tip of Magenta rose, and very pale grey disk; Sportsman, bright Magenta rose. Tea Rose Comtesse Ouvanoff, a new blush variety, also came from Mr. Turner. Tulip Lac van Rheims, a red and white variety, with white-edged leaves, came from Messrs. Cutbush. Among other subjects of exhibition were Tulips and Hyacinths from Messrs. Cutbush; Cut Roses from Messrs. Paul & Son; Hardy Herbaceous Plants from Mr. Williams; Pansies from Messrs. Bragg & James; Rhododendrons from Mr. Young and Mr. Noble; and various Cinerarias from Mr. Wiggins.

Notices of Books.

Volcanos. By G. P. Scrope, M.P. Second Edition. Longman & Co. 8vo.

Most of us can remember the time when we believed a volcano to be "a burning mountain;" and though, as we grew older, this definition gave way to one somewhat more resembling the truth, still to the large majority of Englishmen we imagine that the ideas connected with volcanos are not only somewhat vague, but, even among intelligent and educated persons, fall far short of the terrible reality. Indeed, we suppose that it would be impossible for any description, however vivid, to convey to the mind the full conception of a volcano in eruption. Here we have happily no experience of such a phenomenon, and it is difficult for us to realize alike the entire horror of the scene, or the comparative indifference with which the natives of volcanic countries look upon their alarming neighbour. We can scarcely understand how the inhabitants of Stromboli, according to Mr. Scrope, even make use of their volcano as a weather glass.

Volcanos appear, at all periods of the world's history, to have played a conspicuous part in the alterations that have been and are still taking place upon the surface of the globe; nor is this difficult to understand, when we read such accounts as the following.

"The description given by Dr. Lauder Lindsay of the chief features of an eruption which took place in May of last year (1860) from the volcano of Kotlugja in Iceland may assist us to form some faint conception of the vast changes occasionally brought about in the physical configuration of a large tract of country by such occurrences within the course of a very brief time. The eruption was preceded, as usual, by local earthquakes. Then a dark columnar cloud of vapour was seen to rise by day from the mountain, and by night balls of fire (volcanic bombs) and red hot scoriæ, to the height (it would seem) of 24,000 feet—being seen from a distance of 180 miles. Deluges of water rushed from the heights, bearing along whole fields of ice, and rocky fragments of every size, some vomited by the volcano, but in great part torn from the flanks of the mountain itself, and carried to the sea, there to add considerably to the coast line, after devastating the intervening country. In truth, no more powerful causes of superficial change on the face of the earth can be conceived than such paroxysmal eruptions from snow-covered volcanoes. Fortunately they are but 'few and far between,' as well in time as in space, or the surface of the globe would be uninhabitable."

The following extracts give a definite idea of the enormous amount of matter sometimes discharged by volcanos, and of the length of time during which it remains heated.

"The quantity of lava emitted by a single eruption, and the extent of surface covered by it, are often very great. The volcano of Skaptar Jokul in 1783 sent forth two prodigious streams—one about 50 miles in length, with a breadth in places of 15; the other 40 in length, and seven miles wide in parts. Its thickness was more than 500 feet in some places, and it has been calculated that the entire mass exceeds in bulk that of Mont Blanc. This is perhaps the most copious lava-stream known to have been produced by a single eruption. [But it is not improbable that it may be paralleled by some which have proceeded from the great South American or Kamtschatkan volcanos."

"Under favourable circumstances, a body of lava will certainly retain an intense heat and liquidity in its interior during a very long period. Sir William Hamilton lighted small strips of wood by inserting them into the fissures of a lava-current from Vesuvius nearly four years after its emission. Currents of Etna are mentioned by Ferrara and Dolomieu as still moving down the sides of the mountain 10 years after the eruption by which they are produced, and others as emitting vapour 26 years after their escape from the volcano. In the case of Jorullo (in Mexico), a massive bed of lava appears to have retained an extreme internal heat, attested by the exhalation of steam in

considerable quantity from numerous fissures in almost every part of its surface till within a very few years, though the eruption by which it was emitted dates from 1759."

We have preferred giving these more popular descriptions of volcanic action, rather than endeavour to lay before our readers any account of Mr. Scrope's arguments and views; in the first place, it would be impossible to do this properly in the limited space at our disposal; and in the second place we doubt whether it would be interesting, except to those who have some previous knowledge of geology. To such we heartily recommend the book, assuring them that it will repay perusal. Mr. Scrope is well known in the geological world from the attention which he has long paid to this subject, and it is almost superfluous to say that the clearest and fullest account of volcanic action is to be found in his pages.

The Floral Magazine for April.—The plates in this Number are less conventional than usual. Those of Ideus Verschaffelti, some new varieties of Pentstemon, and a Convolvulus are praiseworthy; but we must exclude a Camellia bearing the extraordinary name of Master Rosea. As to the Convolvulus, the figure of which is graceful and well drawn by Mr. Andrews, what can we say of the letter-press accompanying it? The Editor calls it *Convolvulus cantabricus, stellatus novus*, a ridiculous mouthful of bad Latin fit only to appear in some fat catalogue. In the first place there is no such plant as *Convolvulus cantabricus*; what is meant must be *C. Cantabrica*, the old *Cantabrica quorundam* of Clusius, with whose writings most lovers of garden flowers are acquainted, although not botanists. In the next place the thing figured is not that *Cantabrica*; it is no more like it than a hat is like a handsaw. What is more, we venture to assert that it is merely a pretty variety of the common *Convolvulus arvensis* or Lesser Bindweed of the fields, a charming wild flower no doubt, but not in urgent need of a grand new blundering Latin name. Really Mr. Lovell Reeve, the publisher of this periodical, himself a man of science, is very ill served.

The April Number of the *Botanical Magazine* contains figures of the following plants:—*Physurus maculatus*, a species sent by Mr. Cross from Tropical America to Messrs. Osborn & Sons of Fulham; it has dark green lanceolate leaves marked by one or two lines of oblong white blotches near the midrib. *Ceropegia Gardneri*, a curious Ceylon stove climber, of the Asclepiadaceous family, with the oddly-shaped flowers whitish and thickly blotched over with dark reddish brown; the flowers have a curved tube inflated below and narrowed upwards, the lobes of the limb segments in the bud state folded in a remarkable manner "so as to present five spreading lobes like the lobes of a star-fish," and when fully developed (not expanded, for the lobes adhere by their apices) of a broadly heart-shaped form. *Begonia prismatocarpa*, a dwarf repent species from Fernando Po, whose only recommendation to cultivators is the brightness of the yellow of its small two-petaled flowers. *Scilla Berthelotii*, sent from the Cameroons River, in tropical Africa, and identified with a Canary Island plant; it has three lanceolate leaves, and a raceme of insignificant pale pinkish flowers. *Bulbophyllum Rhizophoræ*, "a lovely little plant, if minutely examined as the structure of the flowers testifies it to be;" found growing on Mangroves in the Nun River; it is a small epiphyte, with pendent spikes of minute red flowers. *Clomenocoma montana*, known in gardens as Hebeclinium aurantiacum, a tall scarcely branched almost subshrubby plant, native of Guatemala, and remarkable for its Zinnia-like composite flower heads, with bright orange-coloured ray florets.

The current Number of the *Florist and Pomologist* contains figures of *Petunia Eliza Mathieu*, the largest and best of the double Petunias of the "Inimitable" section yet produced, the flowers being as large as a Camellia, and regularly filled out to the centre, the colour a violet rose blotched with white; and of the Transparent Gage, "a dessert Plum of the greatest beauty, and the most exquisite flavour, ripe in the beginning and middle of September." It is one of many new forms produced from the well-known Green Gage. Amongst the more important papers is one entitled "All about Grapes," by Mr. Tillery, of Welbeck, who observes:—"No Grapes ripened in January and February, that I have tasted yet, could be compared in flavour with well kept Muscats, West's St. Peter's, Black Tripoli, and Lady Downe's Seedling." The Dean, of Bradford (whose name by the bye was misprinted as "the Dean of Bradford," in some remarks on Fancy Pansies, at p. 308) contributes instructions to Pansy growers, with a descriptive list of the best new varieties; another correspondent has some very well directed remarks on the new Fuchsias one never sees after they are "let out," in which the exhibition of young plants instead of old scrubs is strongly urged; and some lover of Cherries has drawn such a pleasant picture of the delights of growing this fruit in Orchard houses, that those who can must try the plan.

This month's *Gossip of the Garden* has amongst its original articles some very apposite remarks on "the Verbena considered as a florist's flower," by Mr. C. J. Perry. As regards exhibiting Verbenas, Mr. Perry thinks the most effective plan is in bunches of five trusses, neatly arranged together: not crushed into a ball, but placed so that each truss can be separately seen, which is easily managed by placing four trusses together to form a square, and then one truss on the top. "By this method the centre truss is as completely seen as if it were shown separately, and the other four are each seen to the extent of three-fourths of their whole surface." They shouldn't be shown as single trusses, being too fragile, the heat of the room and other causes making them drop or shrivel; but these inconveniences are not so much felt when the trusses are shown in bunches. There are some critical remarks on Dr. Horner's paper on the properties of the Tulip, in which the first importance is assigned to "form" in preference to "marking." In an article on "the Dahlias of 1861," in which his experience of their relative merits is given, Mr. Keynes remarks that northern growers "are evidently making rapid strides in the cultivation of this noble flower (*lumpish* although it be), and if they continue to improve in the same proportion, they will soon prove a match for the southerns." Andrew Dodds, a very dark maroon, is the sort which Mr. Keynes sets down as the "finest dark variety in cultivation; and without doubt the leading flower of the season." "Reminiscences of an Old Florist," by Mr. J. Slater, relate chiefly to Auriculas. Among other curious records of this flower, Mr. Slater states that the oldest varieties known are Rule, Arbiter, Hortaine, and Pott's Eclipse, the first and second of which can be traced back as far as 1757, nearly 105 years ago, and the third to 1767, nearly 95 years since. About 1785 the following sorts, namely, Grime's Privateer, Popplewell's Conqueror, Walker's Goldfinch, and Gorton's Champion, with some others, were introduced.

Miscellaneous.

The Arrangement of Colours.—What Mr. Crace said the other night at the Society of Arts concerning the colours employed in the International Exhibition, applies so well to flower gardening that we quote his words:—"Avoid blazing contrasts of colour, such as bright red next bright green; or bright blue next bright yellow; such contrasts are not harmonious: let one of the two colours always be subservient to the other. It is not so much what colour a material is, but how that colour is made to appear. It is necessary to bear in mind that all colours have their complementaries, which add to or detract from the beauty of the adjoining colours, according to what they may be. Thus, the complementaries of red are green, of blue are orange; of yellow are violet. If you cut out pieces of grey paper in an ornamental form, and stick a piece on each of the three colours I have named, you will find, in a shaded light, the grey will be fully tinted by the complementaries of these colours. But you cannot lay down precise rules. An experienced artist can bring any two colours together by properly modulating them. Nothing is so charming and so refreshing to the eye as an harmonious arrangement of colours. They are 'like a sweet chord of music to the sense.' The hand of Nature never errs, whether it brings together scarlet and crimson, as in the Cactus; scarlet and purple, in the Fuchsia; yellow and orange, as in the Calceolaria; or the colours in the varied plumage of exotic birds—the harmony is always beautiful, ever perfect. I will suggest a few contrasts:—

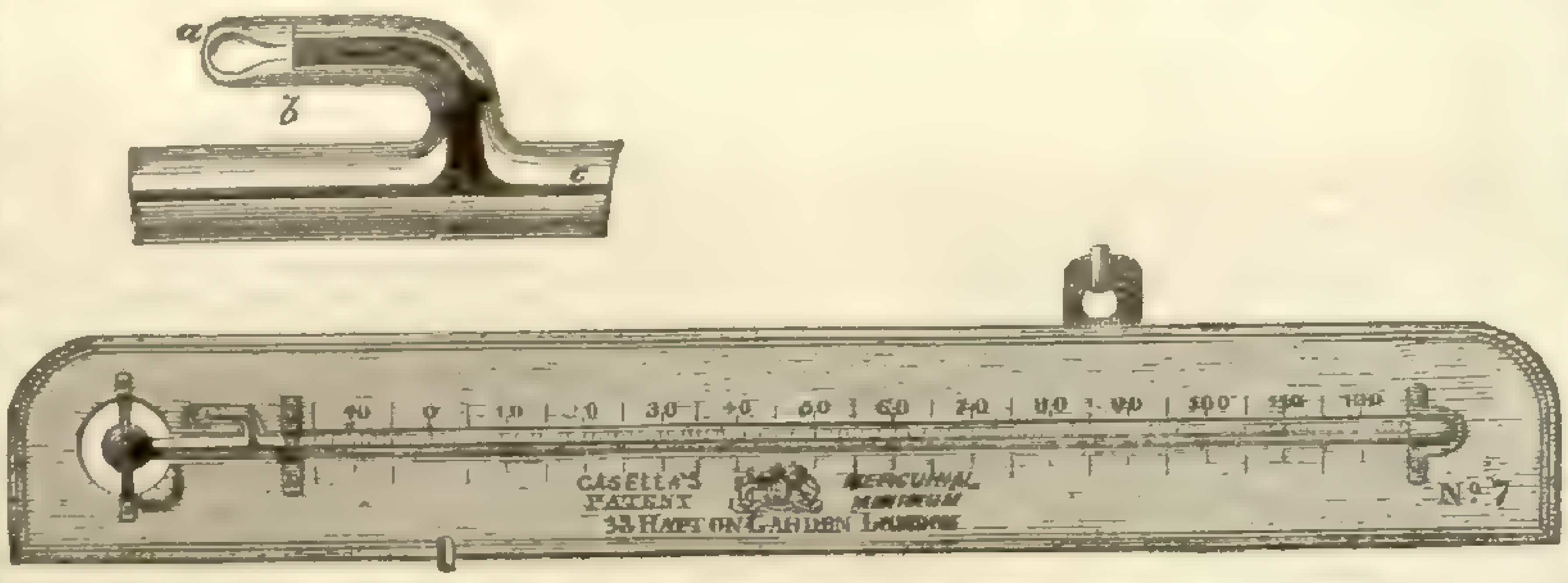
1. Black and warm brown	7. Maroon and warm green
2. Violet and pale green	8. Deep blue and pink
3. Violet and light rose colour	9. Chocolate and pea green
4. Deep blue and golden brown	10. Maroon and deep blue
5. Chocolate and bright blue	11. Claret and buff
6. Deep red and grey	12. Black and warm green."

Curious Dispute between Two Nurserymen.—At the Trowbridge County Court last week (before Judge Caillard and a jury), a case was heard which excited considerable interest amongst nurserymen and florists. Mr. Samuel Walters, nurseryman, of Hilperton, sued Mr. Thomas Almey, nurseryman, of Oakham, Rutlandshire, to recover 11*l*. 4*s*. for Apricot, Peach, and Rose trees, sold to the defendant and delivered in December, 1859. Mr. Bartram, who appeared for the plaintiff, said the trees were ordered by a written order, were packed with due care and delivered to the Great Western Railway Company at Trowbridge, who forwarded them per the Midland Line to defendant's residence. The account had been sent in, but never paid, defendant refusing to do so for reasons stated in his defence. In reply the defendant pleaded a set-off of 4*l*., and alleged that the trees were so carelessly packed that when they reached him they were all killed by the frost. The parties it seems are brothers-in-law, and a son of the plaintiff is in defendant's employ. The order was written by this son, but without, it was contended, defendant's authority, though he admitted in cross-examination speaking to plaintiff on the subject before the order was sent. Defendant also alleged that one of plaintiff's sons had 2*l*. 10*s*. worth of plants of him, and that the other borrowed 30*s*., saying that their father would be responsible. His Honour submitted the following as most important points for the consideration of the jury. Were the plants packed with due care and properly delivered, and was the plaintiff responsible for the actions of his sons? The jury gave a verdict for the full amount with costs.

The Green Tree Frog.—This pretty creature is mostly found upon trees, clinging either to their branches or leaves, and being generally in the habit of attaching itself to the under side of the leaves, which it resembles so strongly in colour, that it is almost invisible even when its situation is pointed out. When kept in a Fern-case, it is fond of ascending the perpendicular glass sides, and there sticking firmly and motionless, its legs drawn closely to the body, and its abdomen flattened against the glass. The food of the Tree-Frog consists almost entirely of insects, worms, and similar creatures, which are captured as they pass near the leaf whereto their green foe is adhering. It is seldom seen on the ground except during the breeding season, when it seeks the water, and there deposits its eggs much in the same manner as the common Frog. The tadpole is hatched rather late in the season, and does not attain its perfect form until two full months have elapsed. Like the Toad, the Tree-Frog swallows its skin after the change. The common Tree-Frog is wonderfully tenacious of life, suffering the severest wounds without seeming to be much distressed, and having even been frozen quite stiff in a mass of ice without perishing. The following interesting account of a young Tree-Frog is by Mr. G. S. Ullathorne:—"My acquaintance with this interesting reptile (which had already passed through all the stages of the tadpole state) began in the following manner:—I was at school in Hanover at the time, and used frequently to take walks in the neighbouring woods, with a companion. During one of these walks we came across three Green Frogs (or rather they came across our path). Guessing at once they were Tree-Frogs, and thinking that they were just the things to keep, we were 'down upon them,' and tied them up in our handkerchiefs. I contented myself with one, and let my companion have the others. When I arrived safely at my journey's end with my Frog, I procured for him a good-sized glass jar, put a little water in the bottom, a branched stick for him to climb up (though he generally preferred the sides of the glass), covered the top of the jar with a piece of muslin, and installed him on a shelf with a salamander (*Salamandra maculosa*), a ring snake (*Natrix torquata*), and various other 'pets.' My great amusement was to watch the little creature eat. When I put a fly into his jar, as long as the fly remained quiet the Frog took no notice of it, but directly the fly began buzzing about, the Frog would wake up from his lethargic state, and on a suitable opportunity would make a leap at the poor fly, adroitly catch it in his mouth (though he sometimes missed his mark), and I need hardly add, swallow it. On one occasion, I gave my little favourite a very large 'bluebottle,' almost as large as himself, but nothing daunted, he caught it in his mouth and endeavoured to swallow it, though in vain, for had I not been there I verily believe he would have been choked. Before he changed his skin, which he did now and then, his colour became much darker and looked more dirty, and he went into quite a torpid state, but when the event was over, he appeared greener and livelier than ever. One day, after I had had him for some time, I was playing upon the pianoforte, when I was astonished by an extraordinary sound, but on looking round I discovered the cause of the great noise, for there was my Frog swollen to an immense extent under the chin, and croaking in a very excited manner, making quite a loud noise. I mention this circumstance because it has been imagined that a solitary Tree-Frog will not croak, but mine certainly proved to the contrary, for though the first croaking was evidently the effect of the piano, yet he would frequently croak after that time without being excited by any apparent noise whatever. I may here mention that the noise of a quantity of Frogs croaking and nightingales singing has frequently kept me awake for a considerable time during a spring night. And now comes the most melancholy part of my story. Leaving my Frog carelessly on the window-sill, I went to school; when I came back there was the glass certainly, and the Frog also, but oh! distressingly melancholy to relate, the water was quite hot from the intense heat of the sun, and the poor Frog was scorched, or rather boiled to death—he was quite discoloured, being instead of green a sort of yellow. And thus ends my tale." *Routledge's Illustrated Natural History, Part XXXVI.*

New Mercurial Minimum Thermometer.—At a recent meeting of the British Meteorological Society, Dr. Thompson directed the attention of members to this instrument, and exhibited one. He spoke favourably of the behaviour of the thermometer, as far as his observations had extended, and gave a general description of its arrangement. In the conversation which followed, Mr. Casella described it more fully. The annexed drawing, with a detailed account, approved by Mr. Casella, appears in the Journal of the Society. The object of this instrument is to enable meteorologists to employ mercury in the registration of cold, as they have heretofore done in the registration of heat, and without having recourse to bulky instruments. At each indication the mercury returns to its normal state, no portion being separated to form an index; neither are detached or foreign indices employed. The thermometer, which is of an ordinary size, is shown in next page It has a small glass branch tube attached near the bulb, which is also shown on a larger scale above it. The internal arrangement of this supplementary or branch tube is a pyriform chamber (*a*), with a diaphragm at *b*, having a small aperture intervening between the chamber and the rest of the branch. The stem is graduated, when all the lower part of the instrument, except the little chamber *a*, is full of mercury. When this instrument is properly set,

it shows the temperature of the place at the time of setting. If the temperature then *rises*, the bulk of mercury expands as usual; but the resistance offered at the aperture *b* is less than that presented by the capillary bore of the long tube; and therefore the column in the stem remains stationary, the increased bulk of mercury passing through the small aperture into the pyriform cavity *a*; and the minimum temperature is retained. When the temperature *falls* after the instrument has been set, the mercury of course contracts; but there is a greater amount of adhesion at the larger surface at *b* than in the capillary bore. The mercury remains stationary in the limb *d*, and as the contraction continues, it recedes along the stem; and the minimum temperature is registered for the reason (given above) that any subsequent expansion sends the mercury into the cell in chamber *a*, and not along the capillary bore. To set the instrument, place it in a horizontal position, with the back plate suspended on a nail, and the lower part supported on a hook. The bulb end may now be gently raised or lowered, causing the mercury to flow until the bent part (*d*) is full and the chamber (*a b*) quite empty; at this point the flow of mercury in the bore of the tube is suddenly arrested, and indicates the exact temperature of the bulb or air at the time. On an increase of temperature the mercury will expand (as above explained) into the small chamber (*a b*); whilst a return of cold will cause its recession from this chamber only, until it reaches the diaphragm (*b*). Any further diminution of heat withdraws the mercury down the bore to whatever degree the cold may attain, where it remains until further withdrawn by increased cold, or till reset for future observation. By this means cold may be registered to any fraction of a degree observable on the most delicate standard thermometer. No vicissitudes of climate or transit can in any way disarrange the instrument. Whatever temperature the instrument may indicate when set, or may recede to afterwards, or may rise to after this, it must resume the same conditions at every return to a similar degree of cold; that is to say, whatever degree of cold it may indicate *at any* observation, its condition, and consequently its *precision, must always be precisely the same* on every return to the same degree; and this whatever heat may have intervened. Again, when, after being set, any mercury is observed in the small chamber, the column only represents the extreme of cold that has been registered. On causing this to flow out of the chamber, present temperature will be shown; but of course this indication cannot be obtained while any mercury is within the chamber (*a b*). *L. M. Casella, Jun.*



Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Proceed with staking and tying up of plants which require assistance of that kind, but if former directions, relative to growing plants with short jointed wood, have been carried out a good deal in the way of stakes may be dispensed with, although some will be necessary to give the plant its desired shape; on no account, however, use more than will effect that purpose. Turn all plants frequently round in order that they may not become one-sided. The greatest care will be necessary to prevent soft-wooded stove-plants from drawing; as these will now be making rapid progress they should have a large share of light shading only during the middle of the day. Some of those potted early may now require a second shift; in this, however, be guided by the purpose for which the plant is grown. Take every favourable opportunity of fumigating to keep down insects, and syringe frequently, but in doing this take care not to injure the young foliage of large-leaved plants. Should twiners or specimens planted out in beds get infested with insects these should be cleaned with Gishurst Compound, or they should be syringed with the following mixture, viz.:—½ lb. of soft soap, 1 gallon of tobacco water, and 6 gallons rain water, properly dissolving the soft soap in a portion of the water. But as there is some uncertainty about the strength of this mixture, and about its action on different plants, it should not be used without first making sure that it will not injure the foliage or young shoots, and also that it is sufficiently strong to destroy the insects. The drainage of young hard-wooded plants should often be examined, in order to see that it is effective. At this season several of the New Holland plants are either as a matter of course in bloom, or approaching that condition; they will, therefore, require to be well supplied with water, more especially large specimens not shifted since last season. Cuttings struck for a stock of winter-flowering plants will now require potting off. As it is not desirable that these should be grown to a large size, keep them rather short of pot-room; a hot-water pit will answer best for growing these and similar things in. The plants can then be brought close up to the glass, and by a little attention will become by the autumn stout and bushy, with well ripened wood; they may then be brought into bloom at pleasure.

FORCING DEPARTMENT.

Pineries.—In cases where a regular supply of fruit is required, we may repeat that it will be necessary to examine the stock of plants frequently, marking those considered the most likely for fruiting, so as to be able to keep them rather dry at the root for a month or so which will, in most instances, have the desired effect of checking growth and throwing the plants into a bearing state. The only effectual method, however, of securing a supply of fruit at any particular time is, as we have formerly stated, foresight in the management of the stock, taking care to get the growth well ripened in sufficient time to allow of affording the plants a short period of comparative rest. In cases where a regular supply of fruit has to be furnished from limited accommodation, it is perhaps safest to grow the plants in pots, so as to secure perfect command over the roots, and also to be able to move them to a cooler pit or otherwise, as may be necessary. The planting out system is now, however, the one followed in most places. Continue to use every means to afford growing stock a moist atmosphere. Give air when favourable, but avoid cold draughts, and use shading to assist in keeping down the temperature without being under the necessity of admitting cold drying air too freely.

Vineries.—Afford a sharp heat for Muscats while in bloom and setting their fruit. Get borders prepared for planting out young Vines, and if these are started before planting do not keep them too warm, or it will be difficult to prevent their sustaining a check after planting out.

Cucumbers.—Encourage newly put out plants with a moist warm atmosphere, so as to get them into active growth quickly; but plants that are fairly established should be kept cooler, admitting air on every favourable opportunity, in order to secure short-jointed fruitful wood; all draughts must, however, be avoided, more especially while the wind is as cold as it is at present.

Fig-house.—Give air and water as before, but do not syringe trees over head whose first crop is ripening off, or use cold water.

Strawberries.—Give abundance of air on every favourable opportunity, and let late crops be carefully attended to with water.

FLOWER GARDEN AND SHRUBBERIES.

Look over all recently transplanted shrubs and trees for the purpose of ascertaining whether or not they are securely staked, for if allowed to roll about with wind the tender roots are often broken off and the plants are consequently deprived of their only means of obtaining nourishment. Mowing will soon require attention; therefore have the turf swept, well rolled, and made thoroughly firm without loss of time, and remember that if the first is deferred till the Grass has got long it will require much time and labour to get the turf again into proper order. Get also walks edged and otherwise put into proper repair. Attend carefully to the stock of bedding plants; get rooted cuttings potted off as soon as they are fit, and encourage them with a gentle bottom-heat and careful management to make quick growth, for after this there is no time to be lost. Some of the less tender things if well established may be planted out in a turf pit on poor sandy soil where they can be protected from frost or cold winds; but they must be prepared for this by previously inuring them to full exposure to sun and air whenever the weather will permit. Their place under glass can be profitably occupied with recently potted off tuff, and with ordinary care most plants will do better out than stunted in small pots.

HARDY FRUIT AND KITCHEN GARDEN.

As soon as the weather shall have become more genial to the opening bloom, protecting material might be gradually removed from Peach, Nectarine, and Apricot trees; this must, however, be done in a way that will not subject the bloom to injury from too sudden exposure. Where canvas screens on rollers are employed they will of course be rolled up by day and let down at night; if the night, however, should become warm they need not be lowered quite down, as a little extra air will be more beneficial than otherwise, for blossoms of Peach and Apricot trees are not unfrequently injured by too much covering. Where Peach and Nectarine trees are sufficiently advanced proceed gradually with disbudding, but remove only a portion of the buds at once, selecting the strongest first and going over the trees two or three times at intervals of about a week. This will avoid checking the trees to the same extent as when disbudding is done all at once. Look carefully over Apricot trees and destroy caterpillar wherever it is found. This is sometimes very destructive to the foliage, and also the fruit when neglected but for a few days. Figs must soon have their winter protection taken away, and have the necessary thinning and tying. If possible the bloom of the choicest kinds of Pears should have some little protection; where the trees are against walls this is easily done, but with espaliers and low standards the difficulty is greater; for the latter a slight frame shaped like an umbrella, and covered with canvas, might be fixed over each tree; of course the frame should exceed in diameter that of the tree. For espaliers a width or two of canvas should be fixed on a frame over the line of trees. If these kinds of protection are placed 2 feet above the trees they will keep them safe from any frost that may now be expected, provided it is not accompanied by wind. As soon as the principal kitchen crops are in the ground and the main quarters have got their supply of dung wheeled on to serve for the season, proceed to make good any part of Box edgings not in order, either by taking the whole up and replanting or by filling up blanks. Take advantage of showery weather when it occurs to plant out Lettuce, Cauliflower, &c., and see to getting Tomatos, Cucumbers, Vegetable Marrows, &c., prepared for planting out. Make a sowing of Sweet Basil, Marjoram, Savory, &c., on a light, rich, warm border; also get early Celery prepared for planting out. Attend to plants for succession crops, keeping them at all times well supplied with water.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,

For the Week ending April 16, 1862, as observed at the Horticultural Gardens.

April.	Moon's Age.	Barometer.		Temperature					Wind	Rain
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Thurs. 10	11	30.000	29.904	56	39	42.5	49	47½	N.E.	[illegible]
Friday 11	12	30.166	30.077	45	27	36.0	49	47	N.E.	[illegible]
Satur 12	13	30.248	30.138	46	21	33.5	48	47	N.	[illegible]
Sunday 13	14	30.139	29.852	46	20	33.0	47	47	N.	[illegible]
Mon. 14	○	30.177	29.872	48	25	36.5	46	46	N.W.	[illegible]
Tues. 15	16	30.089	29.900	50	20	35.0	46	45½	N.E.	[illegible]
Wed. 16	17	30.141	29.820	52	42	47.0	46	45	S.W.	[illegible]
Average		30.137	29.937	49.0	27.7	37.6	47.3	46.4		[illegible]

April 10—Hazy; overcast; cloudy.
— 11—Densely clouded; cold north east wind; densely overcast slight frost.
— 12—Clear; fine; cold dry air; frosty at night.
— 13—Clear and cold; fine; clear and frosty.
— 14—Fine; densely overcast; slight frost,
— 15—Cloudy and cold; sunshine at intervals; partially overcast sharp frost.
— 16—Clear; overcast; cold S. W. wind; overcast; slight rain at night.

Mean temperature of the week 8½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK

During the last 36 years, for the ensuing Week, ending April 26, 1862.

April.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 20	58.5	34.8	46.6	14	0.39 in.	5	7	5	2	—	[illegible]	[illegible]	[illegible]
Mon. 21	58.2	37.1	47.7	14	0.28	4	6	6	3	2	4	[illegible]	[illegible]
Tues. 22	58.2	37.5	47.9	19	0.32	5	8	6	3	1	4	[illegible]	[illegible]
Wed. 23	57.9	36.9	47.4	19	0.52	2	8	5	1	4	5	5	[illegible]
Thurs. 24	58.6	35.9	47.2	14	0.60	5	6	5	5	1	[illegible]	[illegible]	[illegible]
Friday 25	59.2	37.4	48.3	16	1.40	5	7	6	3	[illegible]	[illegible]	[illegible]	[illegible]
Satur. 26	57.7	36.0	46.9	15	0.53	4	8	3	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 25th, 1840—therm. 80 deg.; and the lowest on the 24th, 1854—therm. 18 deg.

Notices to Correspondents.

Bulbs: *N. E. L. L.* If you must take your bulbs up while still in active growth you cannot do better than follow the treatment recommended by your Gardener, viz., to carefully replant them in a somewhat shady situation, and when the leaves shall have become ripe and dead to take the bulbs up and store them in some dry place free from frost. The great secret with regard to successful management is to keep the leaves healthy and free from injury until they lie down naturally; if that is not done they cannot be expected to bloom well next season. ‡

Convolvulus mauritanicus: *W T.* We have not had an opportunity of examining this plant. The name is unknown to us except as that of some garden thing. Send us a specimen when in flower and we will pass judgment on it.

Correspondence.—We can offer no opinion on the matter; nor, indeed, do we quite see what it is you mean.

Dahlia Cuttings: *Q H F.* Your failure is doubtless to be attributed to too much heat and moisture; try the effect of cooler treatment and a drier atmosphere.

Fungi: *Clara.* We are unable to refer to any chemical analyses of Fungi to be depended on. They are notoriously more highly azotised than any other vegetable bodies. As for collecting their "seeds" you may as well attempt to catch the motes in a sunbeam.

Names of Fruits: *J B D H.* 1, discoloured, but appears to be Mère de Ménage; 3, Scarlet Crofton; 5, Lemon Pippin; Cat's Head; 2 and 5 are worthless and unknown. ‡

Names of Plants: *Stoke.* We cannot undertake to name Mosses which have no relation to gardening.—*C W.* Zephyranthes rosea.—*Lanark.* Illicium floridanum.—*A C.* A Bromeliad, and perhaps a Vriesia; but too much withered to be positively identified.

Ornamental Tubs: *Paul Potter.* We can offer no further advice on this important subject, which we are glad to find already attracting attention. Whatever form is adopted this condition is indispensible: that the sides shall be flat not convex. They must also be heavy at the base, or they will not carry the top-weight of the plants. You may obtain useful hints from the study of ancient models in the museums of this and other countries.

Paint: *E R.* Use the black oxide of Manganese.

Ribbon Borders: *Inquirer.* We do not conceive it possible to form a good ribbon by any possible combination of seeds. It should be formed by bedding plants alone.

THE LONDON MANURE COMPANY (Established 1840,)
are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the offices, or of the local Agents.
C. T. Macadam, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0
These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

New Source of Ammonia.
To Manure Manufacturers and Dealers.
ULMATE of AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that Wool contains more Nitrogen (yielding Ammonia) than any other kind of animal matter, proves the Ulmate of Ammonia to be a most valuable manure, the Analyses by Professor Voelcker, Chemist of the Royal Agricultural Society, and other high authorities, showing a per centage of Ammonia exceeding 14 per cent. or equal to an average sample of Peruvian Guano, and from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of Ammonia. Being a fine dry powder, it is peculiarly suitable for the manufacture of manures, and preferable to the other salts in use, sulphate of ammonia, nitrate of soda, &c. Samples, prices, and all information will be forwarded on application to Frederic J. Cornwell, Broker, 7, Great St. Helens, E.C.
LINSEED CAKES, RAPE CAKES, COTTON CAKES, also all Materials used in the Manufacture of Manures, at the lowest market prices.

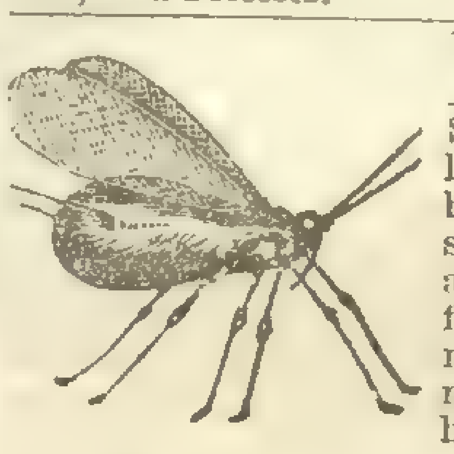
40 to 45 per Cent. of Soluble guaranteed.
1862.
BURNARD, LACK and CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.
Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. Voelcker, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Circulars, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., forwarded on application to Burnard, Lack & Co., Plymouth.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. Bailey Denton, Land Agent and Surveyor, Watford, Herts, and the Works can, if desired, be entirely executed under powers obtained by special Acts of Parliament, by Money raised by loan and paid off (both principal and interest) by small annual instalments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

THE CONSERVATIVE LAND SOCIETY.
Eligible Ground Rents, Freehold Building Land, and Freehold Houses in Occupation.
1. Roehampton Park Estate (Surrey, East), Third and last Allotment; No. 2. Building Plots (Round Hill Park Estate, Brighton), Fourth Allotment; No. 3. Ground Rents, on the Ditchling and Roman Road (North Bow); No. 4. Freehold Houses in Round Hill Crescent, Brighton; No. 5. Freehold Houses at Camberwell, Enfield, and Leasehold Houses at [illegible].
The above important Allotment will take place on and after WEDNESDAY, the 30th inst., at the Offices, No. 33, Norfolk Street, Strand, London, W.C., offering an excellent occasion for investment, either in Houses, Ground Rents, or Land.
Plans of the Estates will be forwarded by post, on receipt of six stamps for each separate plan. Printed Particulars of the Estate will be forwarded free of charge.
Building Plots and Houses.—The price of each Plot or House includes the cost of Conveyance. A member may borrow seven-eighths of the Purchase-money. In the case of Houses, the legal charges are 1l. 1s., exclusive of Stamp Duty of 6d. per cent. To secure the Borrowing Powers under the land system of the Conservative Land Society, one-eighth of the cost of each Plot must be paid down; the balance in thirty instalments at the rate of 10s. for every 50l. of purchase-money.
Ground Rents.—The Conveyance and every cost is included in the price. The entire Purchase-money must be paid up on or before the 30th May, 1862. The Purchasers will receive rents from date of completion of purchase.
Charles Lewis Gruneisen, Secretary.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To Landowners, the Clergy, Estate Agents, Surveyors, &c. in England and Wales and in Scotland.
The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

Blight.
A PORTABLE INSTRUMENT for FUMIGATING GREENHOUSES, STOVES, and FRAMES, or SHRUBS and FLOWERS in the open air, without injuring the most delicate plant; delivering the smoke cold, in a dense mass, and effecting a great saving of Tobacco. Price 10s. and upwards.
Manufactured and supplied to the Trade by Messrs. Barber & Groom, London; and may be had of all Ironmongers, Seedsmen, and Florists.

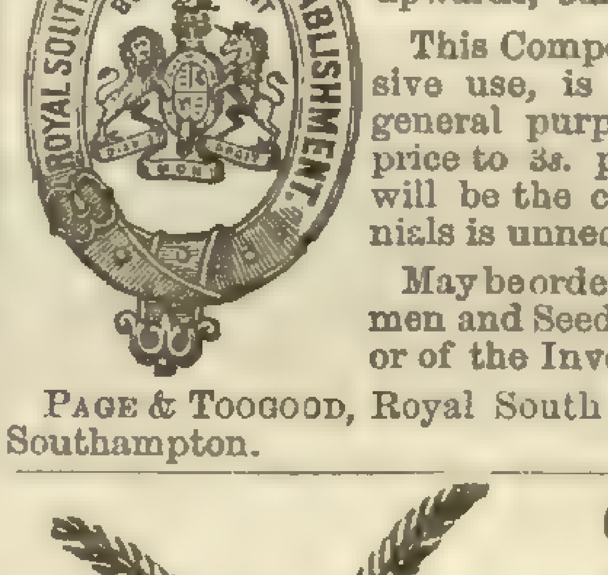


NEAL'S PATENT APHIS PASTILS, One Shilling and Two Shillings per packet, are now acknowledged by all disinterested persons to be the only cheap and effectual way of smoking a Greenhouse: they destroy all insects, and cannot injure the foliage unless they are damp. Testimonials from Florists and Scientific men of the highest standing may be had on application.

NEAL'S PLANT SOAP
is a perfectly new preparation, free from all smell, little more than half the price of the ordinary compounds, is not injurious, but on the contrary useful to the health of the Plant; destroys Red Spider, Mealy Bug, American Blight, Mildew, Scale, Thrip, Green Fly, and all other Insect Pests, and is only 1s. a packet of four cakes. May be obtained of all principal Seedsmen.

Magnified Aphides.
Patentee:
J. Neal, Edward Street, Birmingham.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of
PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.
This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.
May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,
Page & Toogood, Royal South Hants Seed Establishment, Southampton.



Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.
This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.
Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.
Wholesale by
Price's Patent Candle Co., Limited.

Upwards of 2000 Cases have been reported as Cured by
JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.
Agents:—
Messrs. Wood & Ingram, Huntingdon
,, Wood & Sons, Maresfield, near Uckfield
,, J. & J. Fraser, Lea Bridge Road, London, N.E.
,, Grayson & Co. Bury St. Edmunds
,, Wm. Urquhart & Son, Dundee
,, Dicksons & Co., Waterloo Place, Edinburgh
,, Minier, Nash & Nash, 60, Strand, London
,, Hurst & McMullen, 6, Leadenhall Street, London
,, Fisher & Holmes, Handsworth, Sheffield
,, Finney & Co., Gateshead
,, Stuart & Mein, Kelso
Mr. Richard Smith, Worcester
Seed Warehouse, 10 and 11, Exchange Street, Norwich.

SUTTON'S GRASS SEEDS for ALL SOILS.—
A copy of Mr. M. H. Sutton's *Essay on Permanent Pastures*, from the Journal of the Royal Agricultural Society, Vol. 22, Part 2, 1861, will be sent with every parcel of Grass Seeds.
Sutton & Sons have one of the largest and most complete Stocks of NATURAL GRASSES and CLOVERS in Europe, from which they prepare Mixtures expressly to suit the Soils for which they are required.
Seeds sent carriage free to all parts of the kingdom. Export orders delivered free to the ship's side in any English port.
PRICED LISTS gratis and post free on application to
Sutton & Sons, Royal Berks Seed Establishment, Reading.

SUTTON'S PERMANENT GRASS SEEDS.—
Gentlemen intending to LAY DOWN LAND to PERMANENT PASTURE, or for One or Two Years' Lay, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass seeds most suitable. The ALSIKE, the PERENNIAL WHITE, and PERENNIAL RED CLOVER are included in all our mixtures, together with such of the under-mentioned as are best adapted to the land to be laid down. Prices, according to sorts and quantities required, 24s., 26s., 30s., and 32s. per acre.
N.B.—*A copy of Mr. M. H. Sutton's Essay on Laying Down Land to Permanent Pasture, from the Journal of the Royal Agricultural Society, will be sent with every parcel of Grass Seeds.*
Achillea millefolium (Yarrow)
Agrostis stolonifera (Creeping Bent)
Anthoxanthum odoratum (Sweet Vernal)
Alopecurus pratensis (Meadow Foxtail)
Avena flavescens (Yellow Oat Grass)
Agrostis vulgaris (Common Bent Grass)
Cynosurus cristatus (Crested Dogstail)
Dactylis glomerata (Round-headed Cocksfoot)
Festuca duriuscula (Hard Fescue)
Festuca loliacea (Darnel Fescue)
Festuca ovina (Sheep's Fescue)
Festuca rubra (Red Fescue)
Festuca pratensis (Meadow Fescue)
Festuca elatior (Tall Fescue)
Festuca heterophylla (Various-leaved)
Festuca tenuifolia (Fine-leaved Fescue)
Glyceria aquatica (Water Sweet Grass)
Holcus avenaceus (Tall Oat-like Grass)
Lolium perenne (Perennial Rye-grass)
Lolium perenne sempervirens
Lolium perenne Paceyanum
Lolium perenne Stickneyanum
Lolium perenne tenue
Lolium italicum (Italian Ryegrass)
Lotus corniculatus (Birdsfoot Trefoil)
Medicago lupulina (Black Medick Grass)
Phleum pratense (Timothy)
Poa nemoralis (Wood Meadow Grass)
Poa pratensis (Smooth Meadow Grass)
Poa trivialis (Rough Meadow Grass)
Poa fertilis (Fertile Meadow Grass)
Poa sempervirens (Evergreen)
Trifolium minus (Red Suckling)
Trifolium pratense perenne (Perennial Red Clover)
Trifolium repens (White Clover)
Trifolium hybridum (Alsike Clover)
The above may be purchased separately at moderate prices. The best of them are included in Messrs. Sutton's Mixtures, 24s., 26s., 30s. and 32s. per acre.
N.B.—*The Alsike Clover is included in all Messrs. Sutton's Mixtures.*
Goods delivered Carriage Free to all parts.
Sutton & Sons, Seed Growers, Reading, Berks.

FREE STUDENTSHIP
in the
EDINBURGH NEW VETERINARY COLLEGE.
SUMMER SESSION, 1862.—Gentlemen entering the New Veterinary College not later than the 7th May will be entitled to Compete for a FREE STUDENTSHIP at the close of the Summer Session.
For further particulars and prospectus apply to Professor John Gamgee, New Veterinary College, Edinburgh.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.
BATTERSEA PARK, LONDON.
STOCK PRIZE SHEETS and CERTIFICATES will be forwarded on application.
CAUTION—LAST DAY of ENTRY, 1st MAY.
All Certificates received after that date will be returned to the Senders. H. Hall Dare, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, APRIL 19, 1862.

It is quite certain that the Great International Exhibition of 1862, truly representing the period of its occurrence, will far outstrip its predecessor by whatever scale it may be measured.

In 1851 we had extraordinary evidence of human sovereignty over the material world. That sovereignty is, however, completer every year that passes, and the contents of the present Exhibition building already show that a wonderful advance has been achieved since then. Take, for instance, the creation and direction of Power as one great exhibition of this sovereignty; it is marvellously illustrated here. The masses of machinery, nothing less than stupendous, gathered in the western annexe at Kensington—marine engines, locomotive engines, beam engines; the collection of tools by which such Power is utilised and applied in the manufacture of machinery—lathes, planing, slotting, boring tools; the machinery made by means of tools like these, illustrative of every kind of home and colonial manufacture:—In all this there will be such proof as the world has never hitherto seen gathered in one spot of Material Power, under Human guidance.

But it is not for a grand display of Power only, under man's control, that this Exhibition has been planned. The multifarious useful products of that Power are more especially the objects of the Show,

and everything connected with the House, the Clothing, or the Food—the Recreation, Education, and, indeed, the Mind of man, is represented here.

In almost every one of these departments agriculturists are actively engaged—in all of them, of course, equally with other people, they are interested. They are in almost every case the producers of the material used; in very many, and especially in the most important of them all, they are the manufacturers of the product for which the material is provided.

But another grand distinction between the two Exhibitions lies in the illustration which will be given now not merely of the Useful but the Beautiful. Works of art are remembered as the occasional gems of the Crystal Palace 11 years ago. On this occasion one of the best departments of the Exhibition is set apart expressly for the illustration of the Foreign and British Schools of Art, and the noblest Picture Galleries in the world will be covered with the finest paintings of all countries.

Let us add of the Building in which all this is being gathered, that no one need deprecate or fear the adverse criticism to which it has proved obnoxious. It is admirably adapted to its intended purpose, and the eye as well as the judgment of the spectator is gratified as soon as he is within its walls. There is the beauty of both form and colour everywhere displayed within the building, and whatever be the judgment of the man outside, the spectator of its contents will pronounce it worthy of them. It is these which will attract the crowds of visitors which will throng its floors and galleries; and it is the report which the earlier spectators make of them that will decide the question of Profit or Loss attending the Exhibition in a financial point of view. Knowing what this report must be, we may be sure that the man who guarantees 10,000*l.* upon its failure does not incur one shilling's worth of risk.

British agriculture will in the department of its machinery be better illustrated in this Exhibition than it was last time. The advance made since 1851 is great enough to make the difference striking. The eastern annexe is already nearly full of the implements familiar to the attendant at the annual meetings of the English Agricultural Society, and the agricultural exhibitors are far in advance of all others in the stage of completeness which their arrangements have already attained. The great firms have all come vigorously into competition here. RANSOMES, GARRETTS, HORNSBY, BARRETT & EXALL, CLAYTON & SHUTTLEWORTH, and other well known names, are already emblazoned on galleries erected and stored with noble specimens of first-class manufacture. The HOWARDS are busily at work on the equipment of a stand which shall equal any of them. And towering over its neighbours stands the name of JOHN FOWLER upon a pedestal or trophy surmounted by his balance plough and surrounded by his steam-cultivating apparatus, occupying thus the prominent position which it deserves, and in itself a great landmark of the progress which agriculture has achieved since 1851.

A VERY curious and important paper appeared in the *Veterinarian* for February, 1862, which is highly worthy the attention of our readers, not only as a record of some very interesting facts, but as holding out a serious warning against the false economy of using bad corn as food. Mr. MITCHELL, of Leeds, the gentleman who first called attention to the matter, has kindly promised to supply us with specimens of the corn in question, but in consequence of severe illness he has not at present been able to fulfil his promise. As the subject is of such immediate interest, however, we have determined to reserve for future remark anything that may be presented by the specimens on their arrival, and to present the facts as they are presented to us in Professor VARNELL's paper.

In a letter dated August 27, 1861, Mr. MITCHELL states that a gentleman in his neighbourhood has lost six horses in a very sudden manner. A *post mortem* examination convinced some of the most eminent veterinary surgeons in the surrounding district, that their death was due to poison, but an analysis of the intestines or their contents as well as of the food which they had eaten failed to show the presence of any mineral poison, or of any appreciable deleterious organic substance. Three feeds however of the Oats which formed the principal part of their food were administered to a horse by way of experiment, and death rapidly ensued.

At the same time an old though healthy mare was purchased and placed in the same box, but fed upon food obtained from a different source, and after a week as she was still in good health she was removed. A second experiment however was made with a pony, which was placed in a stable, at several hundred yards distance, and after three feeds with the suspected Oats he was found dead, having eaten only a part of the third feed.

It was pretty clear therefore that the Oats were the cause of mischief, but whether the evil proceeded from the Oats themselves or from any vegetable poison mixed with the Oats was doubtful. It was determined therefore to consult the best authorities in London, and an ample supply of the Oats was forwarded for the sake of experiment as well as of analysis.

Accordingly on the 10th of September, 1861, a brown mare was procured by the College for the purpose of testing the Oats. She did not fail quite so soon as in the two preceding experiments, but on the third day her hinder extremities became partially paralysed, and on the fifth she died. The Oats were again analysed in London, and showed no traces of any known mineral or vegetable poison, but from the whole history of the case it seemed certain that the evil, whatever it was, was intimately connected with the Oats themselves.

On a closer examination of the corn, apart from any chemical investigation, it was observed, first, that it was musty and of a bad quality. It is not stated whether it was the produce of the previous rainy season, but in all probability such was the case. Many of the grains were then found to be matted together in lumps by a thready cobweb-like substance.* The greater part were covered with a black smutty matter, and the grain decomposed, the fecula being replaced by a blackish grey substance which often projected beyond the surface. On examination this was found to consist of one or more species of mould. The examiner referred what he saw to the genus *Aspergillus*, but it is clear from the figures that there was certainly some species of *Ascophora* as well, and probably the common *Penicillium* was also present.

Without the opportunity of personal examination we are unable to say whether any species of *Ustilago* had a part in the matter, but it is not probable that this was the case, as the spores of the *Ustilago* of the Oat are easily blown away by the wind. The effects therefore produced by *Ustilago hypodytes* as reported by Mr. EDWIN SIDNEY, or of the large Ustilago of the Reed, whose evil properties were first made known by Mr. MARSHALL of Ely, are not so much to the point as those which relate to the occasional effects produced by mouldy provisions strongly resembling those which presented themselves in the cases before us.

Professor BURNETT, in his "Outlines of Botany," gives an account of the supposed deleterious effects of bread and animal provision when extensively covered with mould. A substance called Italian cheese, made of fragments of pork, strongly seasoned and converted into a sort of pie, is much used in some parts of the continent. This substance when mouldy has in many cases proved fatal. Dr. PAULUS, of Saltz, records three deaths out of seven persons who were attacked with dangerous symptoms after partaking of such food, and many other cases are reported by other observers.

Mouldy bread and flour are also sometimes productive of similar evils. A case occurred at Hammersmith, about 1831, in which a family suffered from the use of some bread which was covered with a yellow mould. The bread however was itself of bad quality, the mould having appeared the very day the bread was baked. On analysis no poison was found, but the same bread when administered to a cat and dog was equally deleterious.

A question, however, arose whether the poison was in the food itself, or in the mould. Five grains of the mould, carefully separated from the bread, therefore were administered and produced no bad effect, though a small piece of the bread from which the mould had been scraped produced colicky pains and a tendency to diarrhœa. To test the matter more closely, a quantity of dough was allowed to become mouldy in a damp place, and when the mould was carefully removed, it was made into a small loaf and baked, and the loaf thus formed had precisely the same poisonous properties as the Hammersmith bread, while the mould itself was eaten by a cat and dog with perfect impunity.

The subject attracted great notice in Paris some years ago, from the barrack bread becoming covered with a bright red mould almost as soon as it was baked, due to a species of Penicillium, *P. sitophilum*, but we are not aware that it led to any positive results as to the deleterious effects of the Fungus.*

On the whole, then, it may perhaps appear doubtful whether the mould in the cases quoted above was the real cause of mischief, so much as the decomposition which the several substances had undergone, though it must be remembered that in such cases it is absolutely impossible to separate the parasite completely from the matrix on which it grows, the spawn or mycelium penetrating in every direction, and perhaps being equal in quantity to the threads which appear externally.

It is not necessary for us to enter into the peculiar symptoms presented by the several horses. It is sufficient to state that they were upon the whole such as would be caused by the administration of a narcotic-irritant poison, like that of Fungi. Whether, however, the ill effects produced were due to decomposition of the Oats themselves, or to the mould which grew upon them, the lesson is precisely the same, namely to give a caution against the use generally of bad food. Mouldy hay and mouldy grain alike, are sure in the end to be the dearest.†

Should we be fortunate enough to obtain a sample, attention shall be paid to this and other matters arising from the question, which even in its present imperfect form can scarcely fail to be interesting. *M. J. B.*

ANOTHER marvellous illustration has just been given of the value of good breeding in the Shorthorn world. Mr. THORNE, of Thorndale, Duchess County, New York, is well known in this country as a principal purchaser of the high priced cattle at the Tortworth sale, and since then as the purchaser of the herd of Messrs. BECAR & MORRIS, his great rivals at that sale. He sent over several young bulls and heifers of the Duchess and Oxford tribes last year, which were eagerly bought up at 300 guineas each. Another shipment has just arrived, and been at once disposed of. Among them is the DUKE OF GENEVA, a two-year old bull of pure Duchess blood, as will be learned from the following pedigree. His grand-dam was the 700 guinea cow at the Tortworth sale.

DUKE OF GENEVA.

Red, calved February 16, 1860; bred by Mr. J. O. SHELDON, Geneva, New York; got by Second Grand Duke (12961).

Dam (Duchess 71st) by Duke of Gloster (11382).
Gd (Duchess 66th) by 4th Duke of York (10167).
Ggd (Duchess 55th) by 4th Duke of Northumberland (3649).
Gggd (Duchess 38th) by Norfolk (2377)
Ggggd (Duchess 33d) by Belvedere (1706).
Gggggd (Duchess 19th) by Second Hubback (1423).
Ggggggd (Duchess 12th) by The Earl (646).
Gggggggd (Duchess 4th) by Ketton 2d (710).
Ggggggggd (Duchess 1st) by Comet (155).
Gggggggggd by Favourite (252).
Ggggggggggd by Daisy Bull (186).
Gggggggggggd by Favourite (252)
Ggggggggggggd by Hubback (319).
Gggggggggggggd by J. BROWN's Red Bull (97).

He has been sold to the Hon. Col. PENNANT, M.P., Penrhyn Castle, Bangor, for 600 guineas, and is own brother to 2d Duke of Thorndale of last year, sold at 400 guineas to Messrs. HOWARD & ROBINSON.

A four-year old bull, LORD OXFORD, by DUKE OF GLOSTER 11382 (calved Sept. 16, 1857), also of Kirkleavington breeding, has been sold to the Duke of DEVONSHIRE for 400 guineas. His dam Oxford 13 was sold a calf at the Kirkleavington sale. LORD OXFORD 2d by 4th DUKE OF THORNDALE, one of the bulls imported last year and purchased by Mr. HALES for 400 guineas, is from the same cow as the last-named bull. He is a fi

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* Wheat of 1860, which was in general in a very bad condition, exhibited frequently a curious appearance when stored up in large quantities. If the surface Wheat was removed gently, the subjacent grain was found to form more or less solid pyramids of different heights, which were found on examination to arise from the grains being bound together by threads spun by a little mite. The Wheat from these pyramids was extremely clammy when handled, and had a peculiar smell. In this case no mould was present, but it is possible that the Oats in question might have been mity as well as mouldy.

* The mould it should be observed was not confined to the bread in this instance, but was found equally on the Wheat and flour of which it was made. The heat to which the Fungus spores are exposed in the process of baking is not fatal to their vegetation, and accordingly, almost before the bread was cold, the Fungus began to grow in the inside of the loaves, which soon became of a bright pink or salmon colour. The particular species of mould had not been previously observed by Mycologists.

† Headaches are sometimes produced by the clouds of spores which spring up from mouldy hay when taking in a stack, and the same effect has been observed to arise from the spores of such moulds as the common species of *Penicillium* and *Aspergillus* in other situations, when produced in excessive abundance.

months' old calf. He is bought by Mr. T. Atherton, of Speke, for 250 guineas.

The fourth of the present importation is the Bishop of Oxford, a yearling bull, own brother to the Oxford heifer imported last year, and bought by Mr. MacIntosh. He is bought cheap, being out of condition. Mr. Slye, of Lancaster, pays [illegible] guineas for him.

These figures sufficiently illustrate the enormous value of animals of the Duchess and Oxford tribes of Short-horns, and deserve a record in the history of the breed.

— Our readers will have noticed in our advertising columns the announcement of the sale at Little Munden, near Ware, Herts, of the exceedingly well-bred herd of Mr. Surtees, which is to take place on Wednesday, April 30. The herd is descended for the most part from the stock of Mr. Wiley, of Brandsby, and through him from the well known stock of Messrs. Colling and Mason. Since then some choice specimens have been added, bred from the herds of Mr. Bates and others of celebrity. The young Stock are chiefly by the Duke of Argyll (11375) and Lumley (16478). The Cows and Heifers are principally in-calf to the latter Bull and Grand Vizier, a son of Mr. R. Booth's War Eagle (15483). The whole are in perfect health and regular breeders, and their dispersion affords an excellent opportunity to purchasers of first-class animals.

ECONOMY IN THE PRESERVATION AND STORING OF MANURE UPON A FARM OR GARDEN.

The following statement will, it is hoped, be found interesting to your readers. It is based entirely upon experience gained during the last 10 years, in which the following practice has been observed, viz.:—

In the autumn in each year, immediately after harvest, all the hedges and ditches upon a farm of about [illegible] acres of mixed gravel and clay land are trimmed and cleaned, and the whole consumed in one or more large heaps by charring or smother-burning, great care being taken that the wood, rough Grass, and weeds, of which the heap is composed, is sufficiently covered from time to time with earth, to prevent the escape of any flame; and as the heaps are consumed, daily additions of a further quantity are made, as much earth being charred as possible. The whole having been thus converted into a well-burnt mass, by which means the weeds and waste are cleared up and the farm made neat, a most valuable heap of material for the preservation and economical storing of manure applicable to root and other crops is obtained at a very trifling cost.

When the heap is cold it is carted and placed under an inexpensive shed made of very rough materials, viz., oak posts fixed into the ground, with rough Larch poles for the plating and rafters. The covering is composed of the chips obtained from the hoop-maker, but the roof may be covered with any material most easily and cheaply obtained. The advantage of chips or straw is, that the covering is warm for the fowls, which are made to roost in the roof, so that the powerful manure from them may be economised and preserved for use.

It is probably well known to all your readers, that charred, or burnt earth, cinders, ashes, &c., are complete deodorisers, and all offensive substances thrown into the heap become, in the course of a few hours, entirely free from smell. The first shed erected for the purpose above described did not cost more than [illegible]. It was constructed of a few poles, with a roof of thatched hurdles put up by a hedge carpenter. This fact is mentioned to show that no one need be deterred from adopting the system by reason of expense. When the ashes have been placed under the shed, all the refuse of the house and premises, which in most cases is entirely wasted, is thrown upon or amongst them. The urine from the house is removed in a vessel kept for the purpose. All the blood and animal refuse, &c., are thrown into the heap, as also the soil from privies, and in the course of a few hours any offensive smell is entirely destroyed. The manure thus made during [illegible] months has been found sufficient to provide a good and cheap dressing to be drilled in with the root crops, and excellent results have been obtained—as many as [illegible] acres in one year have been thus manured.

Having by experience ascertained the complete deodorisation of all offensive substances by being mixed with burnt earth, the material has since been used for destroying all unpleasant smells in stables, cow-houses, and pig-styes with entire success. Buildings which would otherwise smell very strongly, are rendered as free from offensive savour as any dwelling room. The burnt earth is placed all over the floors to the depth of about $1\frac{1}{2}$ to 2 inches, and is occasionally moved up with a pointed tool. All liquids are absorbed and deodorised, and solid portions of the excrements are daily thrown into the adjoining yard. When the burnt earth is well saturated it is removed to the shed, and another covering is substituted. Not only is all the liquid manure thus secured and economised, but the health of the cattle is better provided for. Although scarcely necessary to refer to the expense of the above operations, it being exceedingly small, yet it may be satisfactory to some to have data from which the cost may be calculated:—

1. The clearing of the hedges and ditches is a necessary work upon all well managed farms, whether the rubbish is burnt or not.

2. The carting into heaps for burning, and the subsequent removal to the shed, is done with the odd horse or a pony and an old man.

3. The collection of the refuse and waste of the house, &c., is easily done. The household servants place their portion of the refuse in a vessel provided for the purpose, and the cowman or odd man removes it to the heap once or twice daily.

4. The distribution over the land is done by means of the drill, as any other manure of a like kind is spread. *J. C.*

THE ORWELL WORKS.

Nothing would more tend to the liberal, hearty, and efficient guidance of the Royal Agricultural Society of England than a visit by the members of the Council to all the great manufactories of agricultural machinery in succession. And they might very well begin with that of Messrs. Ransomes & Sims, who ranked first and earliest in their patronage of the Society, for that originally was the true relationship between them. The Society's charter does indeed specify, as one of the objects of its institution (4th) "the encouragement of men of science in their attention to the improvement of agricultural implements, the construction of farm buildings and cottages, the application of chemistry to the general purposes of agriculture, the destruction of insects injurious to vegetable life, and the eradication of weeds,"—thus lumping together a great number of distinct and separate subjects; but any one who looks at the early history of the body will learn that their greatness as the improver of our agricultural machinery was forced upon them. It was unawares that they met the want which was already felt by the Ransomes and by the public generally, of some means by which local needs and local knowledge might be made to interpenetrate each other. This was effected by the travelling annual show, whose value not only as a mart but as a great means of instruction was taught both to the public and to the Society itself by the enterprise of the leading manufacturers, and among the first by Messrs. Ransome. Thus at the Oxford show we read that the Gold Medal of the Society was awarded to Messrs. Ransome, of Ipswich, "who contributed largely to the exhibition, having sent up their waggons laden with more than 6 tons of machinery and implements, the superior manufacture and variety of which commanded universal approbation."

At Cambridge again, the second of the Society's shows, Messrs. Ransome of Ipswich "appeared to the judges to merit the commendation of the Society as well for their unrivalled collection of machinery of all descriptions as for the superiority which their machines exhibited as regards skill in execution. A bank of their ploughs was arranged and elevated on planks to the height of at least 20 feet, and struck the eye of the beholder as he entered the yard, nor did a nearer inspection of them diminish his admiration.

At the third meeting, that of Liverpool, in one of the earliest paragraphs of the judges' report, they say:—"To Messrs. Ransome of Ipswich, the Society is indebted for what may be termed the great novelty of the meeting, viz. the exhibition of a portable steam engine for the purpose of threshing corn, as applied by this enterprising and well known firm, to whom agriculturists are already indebted for their improvements in ploughs, and particularly for the introduction of the cast iron case hardened shares, &c."

All this then is proof of that public spirited enterprise which, located at Ipswich, had long before sought a field at the meetings of the Bath and West of England Agricultural Society, though the whole breadth of the island lay between them; and now led the van of that wonderful progress and improvement which, under the influence of a great annual show travelling from one locality to another all over the kingdom, the machinery of English agriculture soon exhibited.

Let us repeat, it would enlighten many of the Council of the Agricultural Society if they would visit the great establishments at Ipswich, Bedford, Saxmundham, Grantham, Lincoln, Banbury, and elsewhere, and learn the magnitude of that Interest which has grown up along with themselves. Meeting as we met, at 1 o'clock one day last week, a thousand men and boys pouring out of the gates within which the Orwell Works are situated, and learning that in wages alone many times the whole annual income of the Society are yearly spent by but one of the many firms employed in the agricultural machine manufacture, they would come to estimate aright the claims of such a body to consideration, and come to feel that suggestions or objections urged, though by a single firm (much more by a number of the most important of them), cannot be founded on caprice or temper, but necessarily rest on real and essential grounds of justice, or of necessity.

The Orwell Works have grown to their present noble dimensions through a long series of years. The visitor who stands upon the tower overlooking them, sees the work not only of 1100 men scattered in foundry, yards, and workshops over 11 acres of ground—he sees the work of three generations of men, and looks back over 70 or 80 years of patient industry and skill.

The grandfather of the younger members of the present firm—the son of a schoolmaster at Wells, in Norfolk—was apprenticed to an ironmonger 80 years ago. He there acquired considerable skill as a self-taught engraver—opened an ironmonger's shop in Norwich—started a small brass foundry there—and was then induced by Mr. Gurney, an ancestor of the present well-known family, to commence the work of an iron founder as well. He took out his first patent (1785) for tempering plough shares. His second patent for chilled cast iron shares is dated 1805. Before then he had parted from Mr. Gurney and migrated to Ipswich—and the present Works thus originated with one gifted with great natural ability and resolution, who had when still a young man already successfully directed his attention to the improvement of the leading agricultural implement the plough, and acquired experience in the difficulties of business and in the mode of meeting them. He hired a malthouse as his place of work—opened his foundry—took out various patents for improvements in ploughs, and rode about the country selling them. He was a man of great ingenuity, of active mind, and great skill as a workman—all of which was shown during his early experience — for he occupied himself not merely with ploughs and agricultural implements, but we learn that he ground the specula of reflecting telescopes and in various ways showed his scientific tastes.

He and Mr. Simpson, of Crettingham, and old Mr. Poppy, of Witnesham, were constantly engaged in experiments having for their object the improvement of the plough. The old plough of the Eastern Counties had a wooden frame, the sole plate being shod with iron, and a hammered ploughshare being fitted on to the wooden core. A cast-iron share with a chilled and hardened under surface fitting on to a cast-iron sole plate or sled upon an iron "plough ground" was the great improvement due to Mr. Robert Ransome, with whom the present firm originated. This was a great step towards the present state of things—the weight of the plough was thus at the bottom, the wearing of the working parts tended to keep them sharp and efficient, there was no loitering and lounging about the village smithy on the plea of mending or new metal needed. Even agricultural prejudices were bound ultimately to give way, and so they did.

For this, however, a great deal of the credit is due to the younger son, the present senior member of the firm. His elder brother was early apprenticed to the business. A man both of great bodily power and great mental ability, he soon acquired great skill as a mechanic, and on the retirement of the foreman he proved of great assistance to the prosperity of the firm. The whole framework of the plough was next made of iron, and there was an especial advantage in this as regards that portion of it in contact with the soil, which had formerly been of wood, and therefore liable to rot. Pushed into all quarters of Suffolk, Norfolk, and Essex with varying fortune but ultimate success by the younger brother, who as a young man became sole traveller for the firm, it soon acquired a reputation and a standing. The first object was to take the ploughs of different localities and adapt the patented parts made at Ipswich to them, and thus to acquire a demand for castings all over the neighbouring countries. And this plan had been carried right across the island, for while the young men still were boys the father had attended meetings of the Bath and West of England Agricultural Society, and pushed his ideas, single-handed and a stranger, among the country gentlemen and agriculturists of the Western counties. Nothing can be named which illustrates better the strong character and public spirit of the man. It is, however, also an illustration of his quality that all his chosen associates, the men with whom he associated himself either in his business or as friends, have risen to eminence in their respective walks. Those who patronised his ploughs the earliest, included the names now best known as agriculturists in the Eastern Counties.

All this while the character of the firm—that of all its members—was becoming known, not merely for sterling moral worth, but for those traits of punctuality, perseverance, industry, and kindliness towards rivals and opponents, which have been all along maintained, and in which let us add that the Ransomes are no exception to the general body of English agricultural machine makers. Nothing astonished the German and Austrian manufacturers at the great agricultural show at Vienna a few years ago more than the way in which the obvious rivalry and keen competition prevalent among the English exhibitors was combined with terms of the most perfect friendliness and good fellowship.

A career of very great success, resulting now, may we not say, in preeminence among those English manufacturers who make all classes of agricultural implements, has shown how compatible this demeanour is with the personal interests of those who adopt it. Some eighty medals have been received for success in competition with other makers. The gold medals of the English and Irish agricultural societies — those awarded at the French agricultural shows by the government of France—and other prizes and distinctions without number, show how constant and how successful has been the attention of the firm, not merely to the improvement of the plough, but of the

threshing machine, the movable steam engine, the scarifier, chaff-cutter, corn bruiser, &c.

We have referred in some detail to that progress in the improvement of the plough by which the firm originally acquired its reputation, but a tale of equal interest could be told of the moveable horse-power threshing machine, which dates from 40 or 45 years ago, when in conjunction with Mr. Shepherd, a mill-wright, the Scotch machine was modified so as to make it portable.

The history of the locomotive engine is connected with that of the threshing machine. The engine shown at Liverpool was one in which Davies' rotary or disc engine was employed. Another shown at the Southampton meeting and still at work in the Orwell factory shows essentially the same arrangement of parts as that which is now generally adopted.

It was not until the date of the Gloucester meeting that the present form of the engine was decided on, and perfect success was attained. Since then a large share of business in this department has fallen to the firm—and a very large number of men are now engaged in meeting a very unusual demand from abroad, and in preparing for the Exhibition and the Battersea Show.

The present Orwell Works cover a space of about 11 acres, with a frontage of several hundred yards to the dock. Centrally in the midst of them stand lines of building, including the series of counting houses and clerks' offices necessary for the management of so large a business. Beyond this, and south of it, lie smiths' shops and foundries, and between them and the water various stores and warehouses, the latter being arranged along the edge of the water, so as to enable easy loading and despatch. Every appliance for dealing with large masses of metal, or for turning out details, from the Nasmyth steam hammer to the common anvil—from the heaviest casting to the ploughshare of many different patterns—is here provided. On the northern side of the ground lie the buildings where the moveable steam-engines and threshing-machines are erected, where mill work is being turned out, where chaff-cutters and grinding and crushing machines for stable and other use are being made, and where a considerable steam and hand power is engaged on the wedge and trenail manufacture. This last is a wonderful illustration of the rapidity achieved by systematic arrangement and division of labour. Deals are cut up into short pieces, divided, put in lathes and turned into short cylinders of perhaps 2 inches in diameter, steamed, forced through a narrower cylindrical collar, and thus condensed, again put on lathes and turned at either end, at the rate of 10 or 12 for every lathe per minute. Thus made, they are used as wedges for holding rails to their chairs, and for other purposes where security is needed that no shrinkage shall ensue on lapse of time.

On the eastern side of the ground, further from the docks, lie the timber-yards and the saws, and planing and slotting and morticing tools, by which economy and perfection of work is obtained in all woodwork framing, as, for instance, that of threshing machines.

Several steam-engines—one of 60-horse power, are used in various parts of the buildings, and about 1100 hands are employed.

In a central position stands a building set apart as an eating house, where the mechanics and others employed who may live at a distance take their meals. There is here also a library having about 300 subscribers at 1*d*. a week each, which is managed by the workmen, and contains a good collection of works, showing signs (the most of them) of constant use.

This short account of the Orwell Works must not be concluded without reference to the show-room and warehouse nearer the market place in the town, where specimens of all the agricultural machines stand conveniently for inspection, and where those which can be worked by steam-power are shown at work. It is this kind of illustration that our leading agricultural machine-makers urge upon the Agricultural Society should be given at their annual shows: and which will indeed be given more systematically at the Battersea meeting than has hitherto been attempted. Chaff-cutters, corn-crushers, Turnip-pulpers, threshing machines, &c., &c., are thus shown in actual work before intending purchasers, and there is ample opportunity given for leisurely examination.

No one paying a visit to the Orwell Works can leave without a very deep impression of the magnitude of that Interest which can require for its constant supply many such Works as are here in operation—of the value of that persistent industry which within the memory of a present member of the firm has created such a manufactory—of the great skill of both invention and organisation which is now applied to the cheapening and improvement of agricultural machines.

AGRICULTURAL STATISTICS.

Numerous and varied have been the schemes drawn out for the collection of statistics; among the most odious of which may be mentioned that of appointing the police to the office of enumerators, a plan in itself both ridiculous and mischievous, as well as opposed to the feelings of the people of this country. The plan suggested in the *Agricultural Gazette* of January 25 is not without its faults and failings. The writer there makes no mention of the time when these statistics should be taken, which is an item of considerable importance if it be intended to benefit the farmer by its publicity, for it requires no very able pen to prove that the position of the stock farmer is not identical with that of the corn farmer, and therefore that the nature of, and period for requiring, statistical information is quite different. The former requires to know the crop of lambs, &c. of the preceding spring so as to regulate his autumn sales or purchases, whilst the latter is more interested in the yield of the grain crops of his country; information concerning the one can be supplied during the summer, whilst the other can only be made known at a later period. A mention is made, however, of a very unnecessary clause, which would be most obnoxious to the farmer, and for a certainty strike the very foundation from the entire scheme, and result in its signal failure, viz. to append the estimated value to each article on the farm. This will never do on English soil, nor is it needed; all that is really required is an account of the acreage and produce in bulk, which the intelligent British farmer will not hesitate to supply; but if a too prying investigation into his pocket be made, John Bull immediately rebels with the exclamation—"I won't have it." The writer tumbles irretrievably into the mire when he completes his scheme by asserting that the moderate sum of 40,000*l*. per annum would cover the expenses to the country; why it is well enough known that the collection of agricultural statistics in Scotland, under the able management of Mr. Hall Maxwell, did not cost more than one-seventh of that amount, and that this country would never sanction such an expenditure for the development of a scheme at present so unpopular.

Without further adverting to the above report (Jan. 25), the following rough though practical sketch may be offered; the great matter being to secure an independent machinery, for public opinion would soon right any system into the most useful and practical shape. It must be remembered that

England contains	40	counties.
Wales	12	"
Scotland	32	"
Total	84	
England contains	9854	parishes
Wales	844	"
Scotland, about	879	"
Total	11,577	

Comprising about 56 millions of acres, the machinery for which would require:—

11,577	Honorary valuers	
84	Superintendents, at 50*l*. ..	£4200
1	Commissioner	500
6	Clerks, at 100*l*.	600
	Stationery, printing, &c. ..	300
		£5600 total expenses.

Causes of neglect, &c., would cause other contingent costs, but not to swell the total to 10,000*l*.

The appointment of officers to be as follows:—

1. The whole to be under the Board of Trade, who would appoint the commissioner.

2. Valuers to be elected by every parish at the same time that other parochial officers are elected. Office to be honorary and annual.

3. Superintendents to be elected by valuers for not less than three years.

The Duties of Officers:—

1. The commissioner to provide forms which the superintendent or valuers should send by post to every occupier of land to the annual value of 10*l*. and upwards, requiring a return of the number of horses, cattle, sheep and pigs kept by him on 1st of July, and of the acreage of crops on 1st of August; and superintendents to send forms to valuers for an estimate of the acreage yield of corn, Turnips, and Potatoes, at some time fixed in each county by the superintendent, but so as to enable the returns to be published by October 1.

2. Valuers to complete any returns not made by occupant, and any valuer neglecting duty may be superseded by the Commissioner, and a paid valuer appointed by the superintendent in his place. Superintendent may likewise be removed for neglect of duty and successor appointed by Commissioner.

3. Valuer to have power to examine crops, &c., in the event of an occupier refusing to give the necessary returns, or the valuer doubting their correctness; any damage done thereby to be fixed by arbitration and paid for.

4. Return of stock to be made to superintendent or valuer by the occupant on July 1st, the return of acreage of crops to ditto on the 1st of August.

5. Return of estimated yield of corn, Turnips, and Potatoes, at such time as superintendent shall direct, but so as to enable returns to be published by Oct. 1.

6. Gross amount of stock, acreage and yield of crops in the parish to be furnished to the superintendent, and the gross amount of the same for the county to be furnished to the Commissioner.

7. Publication of the above as follows:—viz.,

One of stock by August 1.
One of acreage of crops by Sep. 1.
One of estimated yield by Oct. 1.

J. W.

THE PRACTICE OF MANURING.

1. Norfolk, *near North Walsham*.—The questions [illegible] forwarded me are such as I cannot satisfactorily answer [illegible] system of farming being upon no settled or definite [illegible]. The soil is a good loam. I almost invariably grow a [illegible] the arable with roots; one sixth or a seventh with [illegible] other artificial Grasses; the remainder with grain [illegible], Wheat predominating. The Grasses coming less frequently, there is not so much risk of failure. I am subject to [illegible] my Corn laid, especially Barley, to avoid which I often [illegible] a field or two of Wheat, and occasionally Oats after [illegible], followed by Barley to be sown again with Beans, or laid to [illegible] as circumstances may require. My land will not [illegible] admit of sheep feeding. The greater portion of the [illegible] crop is brought to the yards and consumed by grazing [illegible] with 7 or 8 cwt. of Linseed cake to each acre of roots. [illegible] straw of the farm being required for bedding, gives the [illegible] quantity of dung, which is applied to Wheat, Beans, and [illegible]. I have no means of proving to what extent the manure [illegible] improved by cake feeding. I use artificial manure for the [illegible] crop, and once applied 3 cwt. of Peruvian Guano to a [illegible] Wheat (being short of dung) and spoiled the crop—it [illegible] straw and mildewed—produced only 3 qrs. per acre of [illegible] quality; whereas a small portion of the same [illegible] manured with dung produced 5 qrs. of superior [illegible] (probably I applied too much guano.) I sow 3 cwt. [illegible] guano, and 3 or 4 cwt. of salt per acre for Mangel Wurzel, with 10 or 12 tons of farm yard manure. For Swedes (I seldom grow the common Turnip) I sow about 4 cwt. per acre of superphosphate (always prepared by myself), with 7 or 8 tons of farm-yard manure. I [illegible] fully satisfied with the results of this practice; indeed, where sufficient dung can be spared I should scarcely recommend (upon good Turnip soils) the use of any artificial manure. [illegible] have repeatedly proved that if 12 or 15 tons per acre of [illegible] dung is applied for Swedes, artificial manures do not give a corresponding increase for the outlay, but injure the quality of the roots and induce a tendency to decay. I am decidedly of opinion that where Swedes are to be grown upon good land in fair condition, a liberal quantity of dung should be used without artificial, or but a limited quantity with it. A better practice is, where dung is scarce and required for [illegible] purposes, to use artificial manures only for Swedes; say 4 cwt. per acre of home prepared superphosphate with 2 cwt. of guano per acre—a little more or less according to the quality and condition of the soil.

Lime is only used in this neighbourhood to form a compost with the borders of the fields and other refuse—as a bottom [illegible] receptacle in the dung heaps. My own practice is to use about 30 bushels per acre for such bottoms for all the dung heaps required for the root crop. After they are well saturated with the drainings from the dung the heaps are twice carefully turned and thoroughly intermixed. By such application [illegible] lime—we keep up a small supply in the soil—probably as much as the various crops require.

Where marl or clay is applied liming is unnecessary. It [illegible] good practice to marl or clay these lands occasionally; but in many parishes it is not to be found within carting distance. In the neighbourhood of rivers or canals it is frequently brought by craft.

With regard to artificial food and manure, this seems [illegible] fitting opportunity to say a few words on the subject of adulteration. Every one knows how prevalent is the practice of adulterating manure, but I fear the adulteration of so-called Linseed-cake is now carried to a more serious extent. [illegible] matter how great the demand for cake the supply is [illegible] in advance of it. I have lately examined a few parcels purchased by my neighbours (small farmers), at about [illegible] per ton. I could discover but few traces of Linseed; the bulk being composed of bran and other cheap substances, worth about 5*l*. or 6*l*. per ton.

Too great publicity cannot be given to this matter, as I feel convinced that many hundreds of thousands of pounds are annually wasted by the farmers in the United Kingdom in the purchase of adulterated cattle food and artificial manures. It is time that decisive steps should be taken by the more intelligent agriculturists of England to arrest the progress of this increasing evil. I cannot at the moment conceive a more simple plan than by appointing analysing chemists in every central town in each county. All suspected articles could then without much trouble or difficulty be submitted to a test. The cost of such appointments and the prosecution of frauds would not probably exceed ¼*d*. per acre upon all cultivated land. *W. Cubitt, Bacton Abbey.*

2. Gloucestershire, *near Tetbury*.—Yard dung as a rule is applied to the root crops, mostly to the Swedes and Mangel. Lime is but little used. Artificial manure is also mostly confined to the root crops. Soot, nitrate of soda, sulphate of ammonia, guano, bones, and special manures are occasionally applied to the several corn crops and pasture land. Our soil has a tendency to produce straw, and we think the application of manures to our cereals causes an excess of flag to the straw, producing blight and mildew.

The following are the results of an experiment from the application of artificial manures to Wheat (applied April [illegible], 1860), following a two years lea; the soil a dead sand, and [illegible] more than half a plant from the effects of the severe winter.

	£	s.	d.
Lot 1.—Without manure gave 16 bushels and 20 lbs. at 6*s*.	4	1[illegible]	[illegible]
Straw, 1 ton 1 cwt. 1 qr. 24 lbs., at 1*s*. ..	1	1	[illegible]
Total	£5	1[illegible]	[illegible]
Lot 2.—Wheat manure, at a cost of 32*s*. per acre, (special), 20 bushels at 6*s*.	6	[illegible]	[illegible]
Straw, 1 ton 6 cwt. 3 qrs. 4 lbs., at 1*s*. ..	1	[illegible]	[illegible]
Total	£7	[illegible]	[illegible]
Lot 3.—Guano, at 32*s*., 24 bushels, 28 lbs., at 6*s*. ..	7	6	[illegible]
Straw, 1 ton 9 cwt. 2 qrs. 4 lbs., at 1*s*. ..	1	9	[illegible]
Total	£8	1[illegible]	[illegible]
Lot 4.—Nitrate of soda, at 32*s*. per acre, 30 bushels 24 lbs., at 6*s*.	9	2	[illegible]
Straw, 1 ton 13 cwt. 3 qrs. 8 lbs., at 1*s*. ..	1	1[illegible]	[illegible]
Total	£10	1[illegible]	[illegible]

The straw and corn was kindest and best where the Wheat manure was applied, the next where no manure was used, then the guano, and lastly the nitrate, almost double the quantity of tail from Lot 3 as from Lots 1 and 2, and Lot [illegible] double Lot 3. The whole was weighed up 60 lbs. per bushel, and sold at the price given, viz. 6*s*.; the price put for the straw, 20*s*. per ton, I think quite enough for consumption on the farm. The result would leave a loss of 4*s*. 9*d*. per acre from the Wheat manure, a profit of 1*l*. 4*s*. 9*d*. for guano, and 3*l*. 4*s*. [illegible] for the nitrate of soda.

The same experiment repeated in 1861 to Wheat, also after two years' lea, but to a full plant.

	£	s.	d.
No 4.—Without manure, gave 31 imperial bshls. and 9 lbs. of head Wheat, and 60 lbs. of tail, sold at 6*s*. 4½*d*. per bushel	9	18	[illegible]
60 lbs. tail	0	[illegible]	[illegible]
1 ton 5 cwt. 2 quarters 24 lbs. straw, at 1*s*. ..	1	5	9
Total	£1[illegible]	[illegible]	[illegible]

No. 3.—Nitrate of soda, at a cost of 2*l.* per acre.

	£	s.	d.
35 imperial bushels and 44 lbs. head Wheat, at 6s. 3d.	11	3	4
64 lbs. tail	0	5	9
1 ton 16 cwt. 1 quarter and 26 lbs. straw, at 1s.	1	16	6
Manure, 2*l.*; loss, 4*s.* $2\frac{3}{4}$*d.*	£13	5	7

No. 2.—Guano, at a cost of 2*l.*

	£	s.	d.
35 imperial bushels, 9 lbs. head, at 6*s.* $4\frac{1}{2}$*d.* ..	11	4	$0\frac{3}{4}$
40 lbs. tail	0	4	$1\frac{1}{2}$
1 ton 11 cwt. 8 lbs. straw, at 1*s.*	1	11	0
Manure, 2*l.*; loss, 10*s.* $7\frac{1}{2}$*d.*	£12	19	$2\frac{1}{4}$

No. 1.—Wheat Manure (Special) at 2*l.* per acre.

	£	s.	d.
32 bushels 32 lbs. head Wheat, at 6*s.* $4\frac{1}{2}$*d.* ..	10	7	4
64 lbs. Tail	0	5	3
1 ton 10 cwt. 3 qr. 6 lbs. straw, at 1*s.*	1	10	9
Manure, 2*l.*; loss 1*l.* 6*s.* $5\frac{3}{4}$*d.*	£12	3	4

In the course of eight or nine days after application (in May) there was a decided change in the appearance of the manured portions, the guano and nitrate being much on a par, the Wheat manure approaching them; in the course of a month the nitrate took the lead, the guano and Wheat manure were about equal. A fortnight after this, the nitrate stole ahead, and the guano now beating the Wheat manure; the middle of July the nitrate portion went down with every storm and began to show unmistakable signs of blight and mildew. So also did the guano portion, but not to such an extent, whilst the Wheat manured was quite clear and bright. The weights of the respective lots per Imperial bushel was as follows, and accounts for the difference in price on Lot 3:—

Lot 4, just 61 lbs.
Lot 3, just 60 lbs.
Lot 2, bare 61 lbs.
Lot 1, good 61 lbs.
} per Imperial bushel.

I will now give you a little experiment or two with roots. Swedes planted June 7th, 1854, taken up Dec. 14, and free from rootlets and top.

1st.

Description of Manure.	Weight per acre. Tns.	cwt.	qrs.	lbs.	Cost per acre. £	s.	d.	
None	7	11	1	0		..		It was a season in which a great many roots decayed, 5 per cent. rotten.
[illegible] bushels of ashes ..	12	3	0	9	0	2	6	$4\frac{1}{2}$ ditto.
Ditto, & 4 cwt. guano	19	14	1	7	2	15	6	30 ditto.
Ditto, 2 cwt. guano, and [illegible] bushels of bones ..	18	1	3	19	2	15	0	22 ditto.
Ditto and 10 bushels of bones ..	20	10	2	4	2	15	0	17 ditto.
Ditto, & 5 cwt. superphosphate ..	21	17	2	5	2	5	0	Almost 50 do.
Ditto, & 20 yds. dung, 4 bshl. bones, and [illegible] cwt. guano,	28	9	0	0	4	5	0	8 ditto.

The 1st was a portion of the general cultivation of the farm, the crop of which was very good, but a large portion [illegible]

[illegible] Swedes planted the latter end of May, 1859, on the ridge, [illegible] of the manure sown and covered in the ridge, the remainder drilled with about 40 bushels of ashes per acre.

2d.

Quantity and Description of Manure.	Cost per Acre £	s.	d.	Weight pr acre. Tns.	cwt.	qrs.	lb.
[illegible] bushels bones	3	2	6	17	16	3	11
[illegible] cwt. Turnip manure ..	3	4	0	19	8	3	20
[illegible] cwt. guano	2	17	0	17	4	3	9
[illegible] cwt. Turnip manure ..	4	16	0	19	12	3	21
[illegible] bushels bones	4	13	9	20	16	3	27
[illegible] cwt. guano	4	5	6	18	2	3	13
[illegible] cwt. Turnip manure.. } [illegible] bushels bones.. .. }	3	2	3	20	0	3	10
[illegible] cwt. guano .. .. } [illegible] bushels bones.. .. }	2	18	9	17	10	3	10
[illegible] cwt. guano .. .. } [illegible] cwt. Turnip manure.. }	3	0	6	15	16	3	0
[illegible] yds. dung, at 3*s.* 6*d.* } [illegible] bushels bones, at 25*s.* }	4	15	0	24	15	0	25

[illegible] could record another or two; the results, however, are so similar that it would be merely repetition. As regards the [illegible]ness in the last, there were but few rotten previous to the [illegible] frost; if, however, there was a difference, the greatest [illegible] was after the Turnip manure and next the guano. [illegible] have applied farm-yard manure, guano, and nitrate of [illegible] my pasture land with decided advantage (but not to a [illegible] extent). I have likewise tried (special) Grass manure, [illegible] with a like benefit. Bones I have not tried; but have [illegible] in more than one instance of their answering well. [illegible] *Ince, Calcot.*

Essex.—*The Plastic Clay Soils in Essex.*—Under the old [illegible] of management the crops chiefly depended for their [illegible] from the natural resources of the soil, as developed [illegible] in fallow. This "fallow and crop" system has long [illegible] way to a four-course shift—Clover and Pulse alternating [illegible] the two cereal crops of the shift.

The four-course system is now in its turn rapidly giving way [illegible] of alternate husbandry. Even in leases the term will [illegible] become obsolete, the interests of the owner of the soil [illegible] secured by covenants to enforce the due application of [illegible] manure arising from the hay, straw, roots, &c., and leaving [illegible] free to pursue the course of cropping most advan[illegible] to himself and the community at large.

The chief agents in promoting this beneficial modification [illegible] extension of cropping may be classified, 1. Mechanical, [illegible] Natural; the one depending and supplementing the [illegible]. And success depends upon the due proportion between [illegible] being carefully observed.

Under previous systems the manure was applied direct to [illegible] cereal crop, now more generally to the intermediate one, [illegible] either fallow, Clover, or Pulse.

[illegible] naked fallow is not entirely superseded, but comes [illegible] frequently in the rotation, and even then some portion of [illegible] interval of 14 to 18 months, which used to be con[illegible] the correct period, is now made some use of for the pro[illegible] of feed, either by Winter Tares, Ryegrass, and Trefoil [illegible] grown for spring use, or spring sown Tares, Mangels, [illegible] for the autumn. In all cases the most approved method is to lay up the Fallow with a deep winter ploughing for surface tillage in the spring, so as to check the annual weeds and Grasses which would otherwise infest the future croppings.

The adoption of this modification as a system much depends on the land being underdrained, but even then what with our imperfect drainage and misapplied motive power, a succession of wet seasons compels a return to the summer fallowing.

The chief manurial agents in this extension of croppings, which from being extraneous to the same supply of the farm may be deemed "artificial," are lime and guano.

The former has long been used, and without its direct application no progress can be made, as the soil is itself deficient of calcareous matter.

For convenience of transport and rapidity of action, it is usually applied as lime, fresh drawn from the kilns, but where water carriage is available the chalk as dug is employed at the rate of 20 to 30 cart loads per acre.

The lime at its first application is generally put on during the fallow—and practical experience maintains that it matters not whether applied in its caustic or hydrate state (appearing therein somewhat at variance with scientific deduction).

Perhaps after being powdered by the action of the air it has the advantage of being increased in bulk, and so more easily and perfectly incorporated with the soil.

After this first application the lime is administered in smaller doses, and most beneficially when incorporated with ditch parings, hedge rows, &c. The mixing should be done before the lime is "slaked," as thereby it cleanses and prepares the "raw material" for immediate service as manure, and it forms also a vehicle of conveying this smaller dressing of 4 to 5 hundreds per acre equally over the land.

A supply of this material will be abundant for some short period, as the gradual progress of the rope system of tillage must necessitate the removal of the artificial earthen mounds (and the equally artificial Pollards, trees, &c., with which our landscape is so disfigured).

Lime is also applied as a top-dressing to the old layer, and poor or coarse pasture lands with excellent effect. And in wet seasons is very generally so applied to the Clover lea before ploughing to destroy the slugs, which would otherwise weaken if not destroy the Wheat plant.

While the liming and tillage operations supply the mineral constituents for the croppings, farm-yard manure and guano are the chief sources of the nitrogenous ingredients.

Notwithstanding its apparent high price, guano maintains from its character as a "general" manure, and its resemblance to farm-yard dung, its position as the safest artificial. The recent researches of Prof. Voelcker, showing the avidity and tenacity with which clays store up for future use food for plants, both when applied to them in dressings, or as it becomes developed out of themselves, have testified to the correctness of our ordinary practices, however long their *rationale* may remain unexplained; for it has long been recognised and acted upon that it mattered not when or how we applied our dung, as sooner or later it would come into use, and so it is with this artificial; whether buried by the plough in the deep winter furrow or used as a top dressing, if only properly incorporated it always does its work, and can generally be "seen" in the subsequent cropping also. To cereals, its chief value seems to be as a support and stimulant in the early spring, when the wet state of the soil and atmosphere prevents the elaboration of natural supplies of food.

Too little is at present known of the first principles of our agricultural practices to insure confidence in the application of special manures, and as therefore the prejudice against their direct application to the cereal crop is not yet overcome, the guano is more generally used for a Mangel crop as an addition to the ordinary supply of farm yard manure; its use also is much extending to the intermediate Clover and Pulse crop, and as a top dressing to pastures. Two to 3 cwt. per acre is the ordinary dressing, for Mangels the same quantity of salt is mixed with it, but this substance, so valuable on lighter soils, acts very dangerously on the clays. Nitrate of soda would probably be much in favour as a top dressing, could its too rapid action be safely held in check by the same admixture.

It is also generally an acknowledged principle that the soil should itself provide these "artificials," that is that a sufficient portion of the hay and straw should be sold to pay the lime or guano bill.

Turnips and other autumn crops are practically excluded from our rotation, not only from the risk in securing them when grown, but because they occupy the land in the eight or 10 weeks immediately subsequent to the harvest, which is already looked upon as the most important period of the year for tillage operations, and on the use or neglect of which the subsequent year's crop will mainly depend.

Indeed, as has recently and fully been shown in the *Agricultural Gazette*, but to which the attention of our brother agriculturists cannot be too frequently directed, the clay land farmer has now reserves at his bidding—in the inexhaustible supply of manurial power in his soil, and the unlimited and available mechanical power of setting it free through the agency of his steam-engine, which is now prepared both to drain and cultivate at an economical rate, which (reserves) if skilfully handled will enable him in ordinary seasons to supply the bread market at as cheap a rate as his light land brother can perform the same task for the meat market.

Home Correspondence.

Steam Culture, Woolston System.—Permit me to thank Mr. Pollock for his paper on cultivation by steam, and to state that since reading on March 14, 1855, the R. A. Society's Lincoln report, I have persevered to procure for myself the most simple and durable apparatus and also to find out the best way of applying it. Now upon this seven years' practice I find that it may be laid down as a rule that for a six years' course of cropping on heavy land the seed beds may be prepared at the following operations, no matter what the weather may be. I will begin upon the Wheat stubble for roots. One steam smashing, one cross cultivating with horses, one ridging and one subsoiling with horses; for Barley after roots one steam smashing and one cross cultivating with horses; Clover will follow the Barley and the Clover-lea may be ploughed with horses for Wheat, then smash up by steam the Wheat stubble, and cross cultivate it with horses for Beans, and then smash up by steam the Bean stubble and cross cultivate it with horses for Wheat, and you will have done. With these operations and good management your land may be kept as clean as a garden, and will have been worked 16 inches deep for roots, yet you will have smashed it over only four times for the six crops, which shows that the wear and tear, as well as cost, must be light. Now I do not know of any other system that can, as a rule, go through a six years' cropping with so few operations, yet keep the land free from weeds, and as clean as Mr. Pollock's dining table. I have done pretty well all I now know how to do on my little farm, for I feel completely master of my system. As well as having explained it to gentlemen who have visited me, I should be pleased to work any number of acres for any number of years under the supervision of the Royal Agricultural Society, not for a prize but to prove under the Society's scrutinising eye that my system requires no operations other than those shown above to prepare and keep land clean for six crops, and thus enable that noble Society to teach England's sons a simple way of applying the power of steam to agriculture. *William Smith, Woolston, Bletchley Station, Bucks, April 7.*

Pleuro-pneumonia.—I saw a great number of cattle had died near or in Edinburgh of pleuro-pneumonia. This disease is easily cured by homœopathic treatment; it has been done in my own case very recently, and the process is easy and quick. The only obstacle to the health being continued is that the cows in and around Edinburgh are stalled in very sad, unhealthy, ill-arranged, ill-ventilated places; such a continuance of foul air to which they are exposed will certainly leave them open to every contagious and local affection. Can any of your readers say why feeding cows living on Turnips or other roots should not have water? *J. R.* [The Turnips contain 90 per cent. of water, and when given in abundance are watery enough to satisfy thirst as well as hunger].

Cows and Calves.—Mr. Mechi, in a late article, speaks of the much greater luxuriance of the pasture in front of his house where calves had been pastured as compared with another part fed with cows, which he contends is due to the large proportion of phosphate taken away by the latter. Surely growing animals such as calves will use up very nearly as much phosphate in proportion to the food consumed as milch cows, but in either case the phosphate will have been more than returned by his liberal dressing of liquid manure. Is not the effect to be attributed rather to the mechanical injury done to the soil and the Grasses by the injurious effect of the tread of the larger animal? *W. C. S.*

Mangel Wurzel.—The time of sowing the seed of this most excellent root is near at hand, and it is of great importance that the seed should be deposited by the end of April, for it frequently happens when it is deferred beyond that time dry weather sets in, and the seed lies dormant so long that it has scarcely time to produce a heavy crop. Mangel Wurzel will bear more forcing than Swedes, but if over forced there is some danger of their becoming hollow at the crown, and in that case they do not keep sound so long as when they are close at the top. Probably it is not generally known that Mangel Wurzel is excellent food for horses in moderation, say 30 to 40 lbs. per day, along with corn and chaff, for a working cart horse. Horses not accustomed to them when young may not like them at first, but they are easily taught to eat them, and soon become very fond of them. Horses thus treated have seldom anything the matter with them, and scarcely if ever require medicine. There is no crop grown where the quality varies so much, and this arises from the purity or impurity of the seed, very much of which in consequence of ignorance in the cultivation of it is entirely worthless, and lead to serious losses and disappointments; whereas well selected genuine seed is invaluable, for if cultivation and all other things are right, there can be very little fear of a good crop, the value per acre of which is double that of either Wheat, Barley, or Oats, and the cost of the best seed which can be procured does not amount to more than one-half the cost of the above grain. *W. P.*

Societies.

Fat Cattle Show at Poissy.—We have a short report to present of the meeting which has been held here during the past week. It was not till Wednesday that the public were admitted, and we shall give further details next week. The exhibition did not however create such interest as such a meeting would have done in England. The press of people was not great, and the company seemed to consist mainly of small farmers from the immediate neighbourhood and large landed-proprietors from all parts of France. The Paris people are on fish diet this week, and take no interest in such carnal things as beef and mutton.

The English contributions to the show are not so numerous as we expected to find them—they are referred to below.

Of the French cattle shown, somewhere about 500 head, of sheep 300, and of pigs 130, we shall have further remarks to make next week.

In order to form some opinion of the value of a sentence it is necessary to know something of the constitution of the jury from which it emanates. There have been two juries engaged in this case, one for the cattle classes, and one for sheep and pigs. As it is a fat stock show a butcher is on each jury, and a distinguished member of the veterinary profession. For the rest we find landed proprietors, inspectors of agriculture, a member of the French Zoological Society, and Mr. Fisher Hobbs, our only English representative, except Captain Ball from Dublin. So far as we could see the judging was careful, although the breeders will say the butchers had it a little too much their own way. Many of the men who professed to judge evidently did not know much about the matter, and had the good

sense to leave the decision to those who did. Altogether great satisfaction is expressed with regard to the awards, and we learn that the rule that was made with regard to the slaughter of the prize animals will not be insisted on in the case of such stock as is required for the Smithfield Show.

On Wednesday the public was admitted to the Show, and at 12 o'clock the Minister of Agriculture went down by special train to Poissy, attended by a number of Senators, made a formal circuit of the Show, and finally distributed the prizes to the successful competitors in a very tastefully decorated pavilion. Of course the procession was guarded by soldiery, and bright colours flaunted in the breeze, and music gave forth its strains, and eloquence from Gallic lips all conspired to impart effect and point to the affair. The French public had nothing to pay, and seemed well pleased with the arrangement. Let us first turn our attention to the English classes. In the 1st class, for steers not exceeding 3 years, there is but one animal, bred and exhibited by Ed. Holland, Esq., M.P. This received the prize. In the ox class, above 3 years, the only animal (bought by Mr. Crisp, of Butley Abbey, Suffolk, of Earl Spencer, and 1st prize ox at Smithfield) is disqualified, because it wants but a few days of the four months during which, before entry, the exhibitor should have had it in his possession. It is a pity so fine an animal should have been disqualified upon such slight grounds.

In the 3d class, for heifers under three years, a beautiful roan, bred and exhibited by Mr. Thomas Ball, receives the 1st; a very fat roan heifer, bred by Mr. Tennant of Yorkshire, the 2d; and Mr. Joseph Pain's pretty white heifer the 3d prize. There are six entries in all. Lady Pigot carries off the 1st prize and the Gold Medal of Honour awarded to the best animal in the female English classes, in the 4th class of cows; Mr. Jonas Webb stands next, and Mr. Richard Eastwood follows with a red and white cow related to the Butterfly herd. There are five animals in the class which well support the reputation of the breed, and go far to redeem the apparent slur under which the steer and oxen classes rest.

Of the Devons there are but six, and these six are all prize animals. Mr. Heath, of Ludham, takes a 1st prize in the steer and ox classes respectively, and Mr. Pain of Crayford, Kent, for a fine specimen of an ox, the 3d prize. There are no heifers; and Messrs. Hambro of Milton Abbey, Dorset; Mr. C. Smyth of Somerset; and Mr. Edward Pope of Great Toller, Dorset, stand respectively 1st, 2d and 3d.

The Herefords are well represented. Mr. Heath stands 1st, with the 1st prize ox at Birmingham and Smithfield (last show); Mr. Monkhouse is 2d, and Mr. Williams of St. Mary's, Kingsland, Hereford, 3d. There are but four in all, Mr. Monkhouse, of Stow, Hereford, having two. The only Hereford ox, belonging to Mr. Heath, receives the 1st prize. Of the two heifers, one belonging to Mr. Williams receives the 2d prize, and of three cows Mr. Turner's is 1st, with the 2d prize at Leeds, and Mr. Morris, of Sherrow, Breconshire, with the 1st prize at Breconshire, is 2d. Of the five polled steers, Mr. MacCombie took 1st prize, and Mr. James Stewart the 2d prize, both animals being Aberdeens. And in the oxen class, containing but three animals, Mr. MacCombie of Lillyfour reaped such honours that we must take breath and a fresh dip of ink to relate them. In the first place the 1st prize is awarded to him; in the second, he would have received the Silver Cup, worth 120*l.* had the exhibitor been the breeder also, which he is not, that being the prize of honour for the best male animal in any of the classes not French. Losing this, a Gold Medal of Honour was awarded instead. The Gold Medal given with each 1st prize also goes to decorate the sable front of this great *bœuf*, and beyond this the exhibitor receives the 100 Guinea Silver Cup, presented for competition by the late Prince Consort, as being the owner of the best animal in any class, whether British or French. We understand the jury was perfectly unanimous on this point. It will be remembered that this Aberdeen ox won the 1st prize at Smithfield and Birmingham, and excited at both meetings much remark. It may interest some of our readers to know that in girth he measures 9 ft. 8 inches, in length from tail to chine, 5 ft. 6 inches, from tail to horns, 7 ft. 9 inches, in height 5 ft. 1 inch, and that the measure below the knee is 9 inches. The Aberdeen heifers are three in number; all belong to Mr. MacCombie, and one receives a 2d prize. The polled cows number three. Mr. MacCombie again wins the 1st prize, but this time with a Galloway, which we thought handled rather loose. Of the Highland oxen there are two, one exhibited by Mr. O. Wallis, of Overstone Grange, Northampton, 1st, and one by Mr. J. Stewart, 2d. One cow of the same breed exhibited by Mr. Stewart takes 2d prize. There is one representative of the great Irish ox, which has been worked for 9 years out of 12, and one Kerry cow 3 feet 6 inches in height, as a contrast to him.

In the Sheep classes we must for the present merely name as receiving the leading prizes Mr. West, of Bletchington (1st); Mr. Taylor, of Kingham (2d); Mr. Tombs, of Gloucestershire (3d), in the Long-woolled class; Sir T. Barrett Lennard, of Essex (1st), and Lord Walsingham (2d), in the Southdowns; Mr. Holland, M.P. (1st), Mr. Baldwyn, of Luddington (2d), and Mr. King Tombs (3d), in the Shortwools not Southdowns. Mr. Crisp, of Butley Abbey, Mr. J. Waters, of Moscombe, Sussex, and Sir R. Throckmorton, have taken the leading prizes in the pig classes.

Farm Memoranda.

College Farm: *Cirencester.*—The record of operations for the past month is of an extraordinary nature. We are accustomed to wind and dust and plenty of cold, but with these disagreeables, and greatly dependent upon them, we generally have a splendid season for perhaps some of the most important tillage operations of the year, viz., the preparing sheep trod land for Barley, planting spring corn, and crossing fallows either with cultivator or plough, and thus checking the growth of weeds until a more leisure time allows of eradicating or more properly attempts at eradication. How different is the story this time! The months seem to have changed places, and the usual fill-ditch February passed over with a rainfall of about .50, whilst from the 7th to the 31st of March nearly 5.5 inches are recorded; and the country in all directions appears to be in a wetter state than has been known at the same period for many years past. With the most favourable weather to follow, it is impossible but that many of the early root crops will be planted much after the usual season, and Barley, of which very little indeed was planted before the rains, must be late, and in many cases find a very uncongenial seed bed. The remains of the present crop, wherever the quality is fair, may pay well for keeping. It will, we think, be shown by the returns that there is a small breadth to be planted compared with last year. When our last report was written, we were congratulating ourselves on the forwardness of work; now we can foresee abundance to do and very little time to do it in. We were very fortunate in drilling the strongest field on the farm, 14 acres after Mangel with white Poland Oats, finishing the very day that rain commenced, viz., the 6th March; had we missed the opportunity it must have been unsown now, instead of looking exceedingly promising. We drilled $3\frac{1}{4}$ bushels 8 inches apart.

During the three weeks of wet weather, it was often difficult to find employment for the teams. Whenever the weather permitted out-door work something was done—either carting manure from the yards into long, moderately wide and rather high heaps, carting road scrapings to cover over the same, and thus preserve the manure from being washed. A large quantity of Grass parings and road dirt have been collected to form the nucleus, so to speak, of a compost heap for the Grass land next year. Such dressing seems to do much good on our poor cold pastures. Lastly, carting road metal, which requires frequent renewing.

On naturally dry land, or where the soil is well drained, the Wheat looks healthy, though perhaps rather too vigorous. On wet land it has spindled a good deal, and in some cases looks yellow; dry east wind would afford a beneficial check. With the exception of two small pieces, late sown and badly got in, which have suffered severely from wireworm, the Wheat on the College Farm looks very well indeed, quite forward enough for the time of year.

A portion of the top dressings have been sown, principally broadcast, as it was often too wet to allow of the distributor working. 1 cwt. nitrate of soda, $\frac{1}{2}$ cwt. guano, and $2\frac{1}{2}$ cwt. salt have been principally used, at a cost, including labour of mixing and sowing, of 25*s.* per acre. In each field a narrow strip has been left undressed by way of experiment.

Sheep.—Lambing is over, and considering the weather we have been tolerably fortunate, losing 4 ewes out of 200, and a few lambs. We have now living one-fifth more lambs than there were ewes put to the ram. Being so constantly on the manure both ewes and lambs have suffered from foot rot, and lately symptoms of rheumatism have appeared—the lambs being stiff in their limbs. Salt, chalk, and corn (bruised Oats) for the lambs is the treatment recommended. Should cold wet weather continue we must expect severe losses. Fat sheep have been sold 18 to 20 lbs. a quarter, at $6\frac{1}{2}$*d.*, all shorn. Keep of all kinds is abundant. The Swedes, where left in the ground, have made top very fast, and will soon, if not checked, be in flower. As the roots are very true we purpose leaving an acre for seed.

Grass is very forward, and in many places stock are already turned out, but whilst roots are so plentiful it seems wiser to keep the cows up. *John Coleman, Royal Agricultural College Farm, April 10.*

Miscellaneous.

Bread from Germinating Wheat.—Professor Nickels has recently directed the attention of the Agricultural Society of Nancy, France, to a very simple process of treating germinating Wheat, so as to make it fit for use in bread. On account of the heavy rains in many parts of France last autumn, the harvest was gathered in a damp state, and much of the Wheat germinated, so as to be unfit for food. This serious evil attracted the attention of Mr. Nickels, who immediately made experiments to ascertain some cheap and efficient method of removing it: and he succeeded in obtaining very satisfactory results, simply by the use of salt. The two principal ingredients of Wheat are starch and gluten, both of which are insoluble in water, but become soluble after germination. Thus the starch becomes dextrine; the gluten loses that elasticity necessary to make good dough; and the bread made from it is heavy, indigestible, and injurious to health. By the addition of salt, however, the gluten is restored to its natural state of insolubility, and is rendered fit for making good bread. Mr. Nickels ascertained that about 4 oz. of salt, mixed with 13lbs of flour from germinated Wheat, yield about 17 lbs of excellent bread. About 2 lbs of salt, worth $1\frac{3}{4}$*d.*, will be sufficient for 110 lbs. of flour, producing about 148 lbs. of bread.—*Builder.*

An Act to amend the Laws regarding the Removal of the Poor, and the Contribution of Parishes to the Common Fund in Unions.—Whereas it is desirable that the laws for the removal of the poor should be amended: Be it therefore enacted by the Queen's most excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present parliament assembled, and by the authority of the same, as follows:—1. That after the 25th day of March next the period of three years shall be substituted for that of five years specified in the first section of the statute 9th and 10th Victoria, chapter 66, and the residence of a person in any part of a Union shall have the same effect in reference to the provisions of the said section as a residence in any parish. 2. Where a child under the age of 16 years, residing with its surviving parent, shall be left an orphan, and such parent shall at the time of death have acquired an exemption from removal by reason of a continued residence, such orphan shall, if not otherwise irremovable, be exempt from removal in like manner and to the same extent as if it had then acquired for itself an exemption from removal by residence. 3. Where a married woman shall have been or shall be deserted by her husband, and shall after his desertion reside for three years in such a manner as would, if she were a widow, render her exempt from removal, she shall not be liable to be removed from the parish wherein she shall be resident, unless her husband return to cohabit with her. 4. Where any destitute wayfarer, wanderer, or foundling shall be or become chargeable upon the common fund of any Union, the cost of the relief of such wayfarer, wanderer, or foundling shall continue to be charged to such common fund until the relief shall be discontinued. 5. When any person shall be or become chargeable upon the common fund of a Union, by reason of some accident or sickness which will not produce permanent debility, the chargeability upon such fund shall cease when the person shall be cured, and thenceforth, if the relief continue, the cost thereof shall be charged to the parish where the poor person shall be then residing unless he shall be in the workhouse of the Union, and in such case it shall be charged to the parish wherein he was residing when he was removed to such workhouse, and the overseers of the parish so charged may apply for and obtain an order of removal. 6. The cost of the examination of any lunatic pauper, present or future, of his removal to and from, and his maintenance in any asylum, licensed house, or registered hospital, who would under any provision of the 16th and 17th Victoria, chapter 97, be chargeable to a parish in a union, shall from and after the 25th day of March next be borne by the common fund of the union comprising such parish. 7. The guardians of any union may obtain orders upon the guardians of any other union, or upon the guardians or overseers of any parish not comprised in a union, or upon the treasurer of the county, and may appeal against or defend any orders in respect of any lunatic paupers hereby made chargeable upon the common fund of the union, in like manner and subject to the same incidents and provisions as are contained in the said last cited Act in respect of lunatic paupers chargeable to any parish in such union: Provided that every appeal now pending may be continued and determined as though this act had not been passed. 8. The temporary provisions of the several statutes whereby the costs of the relief, burial, and maintenance of certain paupers have been made chargeable upon the common fund of unions until the end of this session of Parliament are hereby made perpetual. 9. And whereas it is also expedient to alter the mode in which the contributions of parishes to the common fund of the union in which they are comprised are now calculated; Be it therefore enacted, that after the 25th day of March next the several parishes comprised in any union already formed, or hereafter to be formed, under the provisions of the 4th and 5th of William the 4th, chapter 76, shall contribute to the common fund thereof, in proportion to the annual rateable value of the lands, tenements, and hereditaments in such parishes respectively assessable by the laws in force for the time being to the relief of the poor, and in no other manner, whether the lands, tenements, and hereditaments shall be actually rated or not, and whether the rate levied shall be collected in full or upon any composition: Provided always that nothing herein contained shall alter or affect the liability of any parish comprised in any such union in regard to any charge lawfully created in the said union, and secured upon the poor rates of all or any of the parishes comprised therein, which shall have been created at any time previous to the said 25th day of March; but the same shall continue to be charged and payable in like manner as it would by law have been charged and payable if this act had not been passed; Provided also that nothing herein contained shall apply to any contribution which shall be in arrear from any parish in such union on the said 25th day of March, but the same

shall be recoverable and shall be applicable in the same manner as if this act had not been passed. 10. The guardians of every such union, in computing the amount of contribution to the common fund from the several parishes, shall take the annual rateable value of such property in every parish therein from the valuation upon which such parish was assessed to the county rate, or, where there is no county rate, to the borough or ward rate, or other rate in the nature of a county rate, at the last assessment made not less than one month next preceding the day when the order for such contribution is made. 11. No order of guardians for contribution purporting to be made in accordance with this Act shall be deemed to be void by reason of any error in the estimate of the rateable value of the property in any parish in the union upon which the contribution shall have been calculated; but every parish affected by such error shall be entitled to have the same set right in the making out and closing of the accounts of the union or at the audit thereof. 12. The words used in this Act shall be construed in the like manner as in the said Act of King William the Fourth; and the provisions contained therein and in the subsequent Acts explaining and extending the same, and not repealed, shall, so far as they shall be consistent herewith, be extended to this Act.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, April 17, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0-6	Amount of Cloud 0-10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	11	30.19	43	41	N.E.	2	6	48	40	50	40	0.28	48½	48½
Saturday ..	12	30.33	39	35	N.	2	2	45	27	53	25	..	47	48
Sunday ..	13	30.22	40	37	N.W.	1	5	47	27	69	23	..	47	48
Monday ..	14	30.23	42	38	N.W.	1	5	47	30	70	27	..	46½	47½
Tuesday ..	15	30.12	40	39	N.	2	7	49	31	70	29	0.02	46½	47½
Wednesday ..	16	30.18	45	41	S.W.	2	5	50	27	78	24	..	46	47
Thursday ..	17	29.88	50	44	N.W.	2	2	51	45	61	43	..	46	47

Calendar of Operations.

APRIL.

Berwickshire Merse Farm: *April* 12, 1862.—Two days of piercing dry north wind have brought frost enough to prevent harrowing. The sun however let us work after noon, but the cold wind still prevails, and trampled Turnip-land is as hard as the road. We believe most of the Oat seed is safe, but the remainder of Barley must wait for softening showers, and meanwhile fallow for Potatoes will get a preparatory stirring. Fallows never were so green at the season, a bad result of the soft and open weather. The Wheat plant is being much cut up. Young Grass, where not overstocked, has lost little of its colour; but the older lambs are dropping off rather unaccountably. A large portion of Hoggs are still getting sliced Swedes, but those who have them on Grass cannot hope to weather it thus very long. Fat cattle are waiting for a small advance in price, and their early stored roots are perfectly good yet. Stacks are rare, and the expected rise in corn must be nearer at hand than it was. *J. T.*

South Hants Farm: *March—Horse Labour &c.*—After a long period of delay, horse labour on the land has been again proceeded with; the delay however has not been so great since our last report, for although the weather has been wet during the first few days in the month, yet we have been enabled to roll the Clovers and pasture lands, since which we have commenced sowing, and have this day finished sowing Oats, and seeded all our best grain, because we do not sow any Barley, our land being in too high condition to produce a good malting sample; we have found in past seasons that the crop has grown so rank and luxuriant as to lodge before harvest, in which case the grain is sure to be thin and light. The last time we grew any Barley, which is now about four years since, we had a remarkable illustration of the advantage of growing the white Canadian Oats in preference to Barley, part of a field being cropped with Barley, and part with white Oats. The land being previously treated and prepared in the same manner, was sown about the same time; at the harvest the Oats were ripe three weeks earlier than the Barley, and on threshing the crop, the Oats yielded 18 sacks per acre and weighed 45 lbs. per bushel, whilst the Barley only gave 4 sacks per acre of thin inferior grain. Both samples of corn were sold in the same market, on the same day, at 28s. 6d. per quarter. The value of the Oat straw as fodder was also much greater than the Barley straw. The result of this comparative crop, added to our former experience in the matter, quite decided us in giving up the culture of Barley on loamy land in a high state of cultivation. We have noticed for some years past and heard many parties complain that they cannot grow the Barley so good in sample as formerly, even on kind soils well adapted for its culture; this arises probably from two or more causes; first of all Barley will not bear excessive manuring on any soil, but we fear that a constant repetition of the crop every four years has much to do with the ill success complained of. *Hand Labour.*—The work performed both by the men and women has been of the same unimportant character as stated in our last report; during wet days the men have been breaking and sifting guano, and mixing with damp ashes ready for use in manuring for Potatoes, the season for planting of which has been so long deferred that the women have been employed during the wet days in turning the heaps of seed Potatoes, to prevent their growing out, for we find when they are allowed to make long spindles in the heap they grow very weak when planted; weeding and such-like work has been continued in fine weather. *The Stock.*—The present season is certainly one of the most remarkable on record, as regards a plentiful provision of food for sheep and cattle. The root crops are still unexhausted, and the Grass and green crops of every kind in an unusually forward state; store or stock animals are in consequence selling at very high rates. Stock are generally doing well, although we have had rather more lameness amongst the sheep lately, produced no doubt by the succession of wet weather; we do not however fear the lameness, our remedy being complete. We view the matter now as a question of labour only, because if every sheep is attended to the second day after showing lameness, a cure is effected without injury to the general health and condition of the animal; and we find that during the past seven or eight years that we have suffered 6d. each loss on our sheep or lambs during any one year, and the cost of treatment when judiciously and constantly applied is very moderate. Our dairy cows are now beginning to drop their calves and therefore require constant care and attention; our practice is to wean all our short-horned calves a few days' old, giving milk only when we have sufficient; however, when the milk runs short, hay-tea is mixed with the milk and a little Barley or cake meal added; this sustains the calves in fair condition until they begin to look for food. They then get Barley or cake meal in troughs, which teaches them to eat it readily by the time they cease to have milk; at which time they require more nutritious food. Our earliest lots of ewes and lambs were finished on the 7th of April, consisting of half the flock of Down ewes and their lambs, both sold on the same day, the lambs realising a satisfactory price, and the ewes averaging 15s. each over cost price in October last; the horned ewes and lambs were sold in like proportion, and at the same time. The remaining stock of ewes and lambs have just finished feeding the Swedish Turnips, and are now put to feed on stubble Turnips, sown late for the particular purpose of feeding in the month of April; this being our usual practice. We sow the Aberdeen variety of Turnips for this purpose, because they stand the winter well, and are later to seed flower, and the roots more nutritious than the common Turnip; and as we require them for feed just about the period they begin to flower, this variety answers well. The mode of feeding is to fold off with the ewes, the lambs going forward and taking off the flowers, which are certainly first-rate food for them; after the ewes have eaten off the greens, the roots being rather hard, they do not readily consume them; it is our practice, therefore, to take all the roots that are large enough (as fast as the greens are eaten) and prepare them and cut with Gardner's cutter, and in this way, a little cake-meal being mixed with the cut roots, the sheep eat them readily and do remarkably well; they are, however, now getting a few Mangels cut and mixed with them, which is a good addition. *J. B.*

Notices to Correspondents.

Alderney Cows: *R. P.* says: A great many of our cows which are Alderneys have died; they gradually get thinner, and towards the last rapidly weaker; their coats stare and the evacuations are very loose, and of a disagreeable smell, and their pulse is slow and weak; we had the farrier to them; he says it arises from a disordered digestion and gave them tonics and oilcake, but it did not do them any good. One or two I have had opened, but have not had an opportunity of seeing them, but have been told their livers were rotten and their lungs were affected, but they had no cough. [This is, we believe, a disease of the liver (not of the lungs), and arises probably from some error in feeding. Calomel half a drachm, opium powdered half a drachm, suspended in gruel may be given twice a day, for two or three days, and a blister rubbed into the right side. The animals should be allowed to eat salt, and Linseed cake is a proper diet. *W. C. S.*]

Barren Field: *Fifteen Years' Subscriber.* If not poisoned you should be able to fertilise it by adding vegetable and mineral manures, and probably the best plan will be to try Buckwheat and plough it in. If you can get a compost made of lime and any vegetable refuse as a dressing, apply it liberally. We don't suppose the land will be fit for Sainfoin for a year or two.

Bickford's System of Irrigation: *E K.* It is discussed in the Journal of the Bath and West of England Society. Whether that article has been separately published we do not know. It is also discussed in the Farmer's Calendar (Routledge).

Carbolic Acid: *Falcon* says: An interesting statement of the effect of carbolic acid on the drainage of Exeter appeared some time ago in a periodical. It was not, however, sufficiently explicit to enable the reader to derive any practical advantage from the account. Perhaps those who experimented on the occasion will be kind enough to give a detailed notice of the quantity used, from whom the acid is to be procured, and any other information necessary, for the benefit of those who have farm yard manure tanks, the contents of which are at present useless, from the annoyance to the neighbourhood during distribution.

Grasses: *W. H.* For permanent Pasture on heavy soils, to be sown without a crop, put in about 50 lbs. of seeds per acre, including 2 or 3 lbs. of each of the usual Fescues except F. rubra, a large quantity of F. loliacea, 3 lbs. each of Timothy, Cocksfoot and Foxtail grass, 5 lbs. each of Perennial and Italian Ryegrass, 3lbs each of Poa trivialis and P. nemoralis, and 5 lbs each of red and white Clovers. Sow them without a crop. Read Mr. Thompson in the Journal of the English Agricultural Society on their further management.

Leather: *G Coombes.* We can find no information on the composition of leather clippings. But it is doubtless rich in nitrogenous matter. In the conversion of skin into leather there is however such an insolubility and fixity of character conferred upon it that it is rendered useless as manure, except after such a tedious process of rotting and disintegration as will practically render it valueless.

Mangels: *T G.* If rotten they may be *usefully* added to the dung-heap. But they should keep on through the summer.

Tolls: *C. Panter.* We are not learned in the law; but it is plain that the spirit of the Act, and of decisions under it, is against the charges you name, viz., for carting the tops of trees (not timber) from one part of a farm to the other, and for the farmer riding his pony from one part of the farm to the other.

Transmutation: *Chester.* It is possible only within very narrow limits, and is confined to such characters as do not determine botanical identity. Things bring forth of their kind: Oats cannot be made to produce Wheat!

Stotfold, near Baldock, Herts.

SAMUEL COCKING and SON have on hand a superior Stock of AGRICULTURAL SEEDS of unrivalled quality, grown by themselves with the greatest care. Every attention is constantly given to ensure the very best kinds. Early orders are particularly desired, as the business done by this firm is very great during the seed season.

The Stock consists of the various kinds of Mangel Wurzel, Swede and other Turnip Seeds, Kohl Rabi, Mustard, Carrot, &c.

S. C. & Son attend Hertford, Hitchin, and Hemel Hempstead markets. Agents are appointed as under:—

Hertford.—Messrs. E. D. Rayment & Co., Grocers, &c.
Tring.—Mr. J. Dawe, Farmer.
Luton.—Mr. H. C. Brown, Corn Factor.
Hemel Hempstead.—Mr. J. Cross, Grocer, &c.
Hitchin.—Mr. W. Fells, Nurseryman, Market Place.
Bedford.—Mr. Graves, Grocer, opposite the Corn Exchange.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,
And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. Wheeler & Son, Seed Growers, Gloucester.

To the Trade.

New Seeds Direct from the Growers.

CHARLES SHARPE and CO., Seed Growers, Sleaford, will have much pleasure in forwarding on application their WHOLESALE PRICED LIST of AGRICULTURAL SEEDS, which have been grown upon their own land with the utmost care from the finest selected stocks. The advantages of procuring Seeds direct from the Growers are too obvious to require comment, and from the experience of C. Sharpe & Co. in the growing and harvesting of Seeds, a satisfactory result may be calculated on with certainty when their Seeds are used.

SHARPE'S IMPROVED LARGE SWEDE.—The largest and best cropping Swede in cultivation; it produces a finely-shaped large bulb, without a coarse top. A Coloured Lithograph of the Swede will be sent to purchasers.

Charles Sharpe & Co., Seed Growers, Sleaford, Lincolnshire.

Yorkshire and Lincolnshire Nursery and Seed Establishment.

MARTIN and SONS respectfully offer a very superior Stock of TURNIP SEED, as under, the produce of their Seed beating all others at one of the principal Shows in Yorkshire, winning the "two Five Pound Silver Cups," the "Second principal Prize," and several of the minor prizes.

CATALOGUES with particulars on application.

Yorkshire Prize Swede Turnip ..
Golden Melon do. do. ..
Rouge et Blanc Stone do. .. } 1s. per lb.
Improved White Globe do. ..
Russian Green-top White do. ..

Skirving's Green-top, Marshall's Purple-top, and all the principal kinds of Swede and White Turnips, at 8d. per lb.; by the bushel or cwt. cheaper.

FLOWER SEEDS.

The 30 varieties which caused so great attraction and were admired by the hundreds of persons passing the Park Nursery, Hull, for 5s., free by post.

BEDDING PLANTS.

Our Stock is immense, and strong healthy plants, from 2s. 6d. to 4s. per dozen; by the hundred, 20s. to 25s.; by the thousand, 8l. 8s., including the choicest of Verbenas, &c.

Nursery and Seed Establishment, Cottingham and Hull.

Farm Seeds.

PAGE and TOOGOOD being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured, possess greater powers of germination, and are a desirable change for the northern and midland counties.

To publish the numerous testimonials P. & T. are favoured with is impossible, but the fact of their having had the honour for the last 8 or 10 years to supply the ROYAL FARMS at OSBORNE, will be a sufficient guarantee that their Seeds are of superior quality, and their prices are as low or lower than any respectable house in the Kingdom.

Present prices, Carriage free to all parts of England:—

	Per lb.—s.	d.		Per lb.—s.	d.
Skirving's Swede ..	0	8	Yellow Tankard	0	9
Page's Improved Hardy	1	0	Fielder's Hardy Green Round	0	6
Fielder's Improved White	0	9	Early Six Weeks	0	6
Sutton's Champion ..	1	0	Kohl Rabi	2	6
Ashcroft	0	9	New Osborne Mangel.		
Greentop	0	8	Yellow Globe	0	6
Sussex or Jeffrey's ..	0	9	Page's Imp. Orange Globe*	0	8
Tankard	0	9	Red Globe	0	7
Red Round Turnip ..	0	8	Elvetham Long Red ..	0	8
Page's Impvd. Red Globe	0	9	Long Red	0	6
Scotch or Bullock ..	0	8	Long Yellow	0	8
Pomeranian White Globe	0	8	White Belgian Carrot ..	1	3
Early Green Globe ..	0	8	Cattle Cabbage	2	6
Early White Tankard ..	0	8	Cattle Parsnip	1	0
Page's Imp. Purple ditto.	1	0	Dwarf Essex Rape ..	0	4
Green ditto	0	8			

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club.

Buckwheat, Mustard, Linseed, Tares, and Sainfoin. Fine Permanent Pasture and Lawn Grasses, as sown at the Royal farms, Osborne, for the last eight years, 1s. 3d. per lb.

Genuine Hampshire-grown Alsike Clover, Italian Rye-grass, Clover, &c., at lowest market prices. Special contracts for large quantities.

Royal South Hants Seed Establishment, Southampton.

RAYNBIRD, CALDECOTT, and BAWTREE, Seed Merchants and Growers, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

SMITH'S WORCESTERSHIRE SWEDE, the handsomest, most profitable, and best in cultivation. 1s. per lb.

SKIRVING'S IMPROVED SWEDE, saved from selected roots, 8d. per lb.

ORANGE GLOBE MANGEL WURZEL, the best for all kind of soil, a very superior stock, 8d. per lb.

All other kinds of SWEDE and MANGEL, 8d. per lb. Cheaper by the bushel or cwt.

Richard Smith, Seed Merchant, Worcester.

Farm Seeds, Carriage Free.

HOGG and WOOD, Coldstream, Seedsmen by appointment to the Northumberland Agricultural Society, can supply all Seeds requisite for the Farm; including CLOVERS, ITALIAN and PERENNIAL RYE-GRASS, GRASS SEEDS for laying down to permanent pasture, TURNIPS, and MANGEL WURZEL, &c., the whole of which are either grown by themselves or carefully selected from the best samples in the market.

Early Orders are respectfully solicited.

Coldstream, N.B.—April 19.

NEW ANTIRRHINUMS.

Very splendid, rich and striking.

	s.	d.
GEM OF SUDBURY.—Bright red, white throat, yellow mouth and lips marked with a horizontal band of blood colour, large, novel, and rich flower, each ..	3	6
JEWEL.—Rich magenta colour, white throat and mouth, very beautiful and attractive	2	6
TRIUMPH.—Extra rich crim, white throat and yellow lip, a brilliant and bold flower	3	6
VARIEGATA.—Upper part of the flower very richly shaded purple with edging of yellow, exceedingly bright yellow mouth, with clear primrose lip crossed horizontally with a band of red, throat pure white, very attractive	3	6

The plants are fine and strong. The 4 varieties together for 10s. 6d. Usual allowance to the Trade.

Fine selections of other new and very choice Varieties, 6s. and 9s. per dozen.

NEW MIMULUS.

CARDINALIS BRILLIANTE, extra bright scarlet, very striking and rich. The form of this flower is good, and being a very free and continuous flowering plant, it is particularly desirable as an effective bedder. Very strong plants, each 3 6

The usual allowance to the Trade.

CARDINALIS LAHMONII, KERMESINA, and PRINCE IMPERIAL, three fine distinct colours, each 9d. or 6s. per doz.

HERBACEOUS and ALPINE PLANTS.

A very superior collection. For PRICED LIST of a few desirable sorts see *Gardeners' Chronicle* of April 14, page 329.

The NEW SPRING CATALOGUE of Bedding, Stove, and Greenhouse Plants supplied on application.

Stephen Brown, Seed and Nursery Establishment, Sudbury, Suffolk.

New Plants for 1862.

Antirrhinums and Pentstemons.

STUART and MEIN, Nurserymen, Kelso, N.B., beg to announce that they are now sending out their New Varieties of the above. The Antirrhinums and Pentstemons will be found superior to, and distinct from, existing varieties, and are guaranteed to be First Class. They have been all submitted for opinion—with the exception of Antirrhinum Mrs. S. Kerr—to the Editor of *Gossip of the Garden*, and for descriptions see *Gossip of the Garden* for November, 1861.

ANTIRRHINUMS.

	s.	d.		s.	d.
Jessie	2	6	Miss Makdougall ..	3	6
Hero	2	6	Minnie	2	6
Miss Sanchez	2	6	Leviathan	2	6
Annie	2	6	Mrs. S. Kerr, pure white, delicately striped with rose and dark crimson; fine	2	6
Mrs. B. Mein	3	6			
Ducrow	2	6			
The Bride	3	6			
Distinction	2	6			

The Set for 30s.; Older Varieties, by name, 6s. per dozen.

PENTSTEMONS.

	s.	d.		s.	d.
Compacta	2	6	Emperor	3	6
Lord Elcho	5	0	Lord Clyde	3	6
Lady Binning ..	3	6	Mrs. J. W. Dickson ..	5	0

The Set for 20s.; Older Varieties, by name, 6s. to 9s. per dozen.

For descriptions of the above see CATALOGUE, which can be had on application.

Plants sent to compensate for carriage, and a liberal discount to the Trade.

Choice Seeds Free by Post.

		s.	d.
ANTIRRHINUM, from a beautiful strain ..	per packet	1	0
PENTSTEMON do. do. ..	"	1	0
PHLOX, from finest named sorts	"	1	0
PANSY do. do.	"	1	0
HOLLYHOCK do. do.	"	1	0

New Chrysanthemums.

DOWNIE, LAIRD, and LAING are now sending out the following NOVELTIES, at 7s. 6d. each.

LADY H. ST. CLAIR.—Colour white, slightly tinged with cream, centre very high, full, and well-incurved, awarded a First-Class Certificate by the Royal Horticultural Society of London, November 6, 1861. The following is the report on the flower as then shown:—"The finest of the novelties then and there produced, undoubtedly the finest new variety shown, and this a very decided acquisition to the class of white flowers, was the Lady H. St. Clair, from Messrs. Downie, Laird, & Laing. This flower was in every way first-class, and is decidedly the best white Chrysanthemum yet produced." See *Gardeners' Chronicle*, Nov. 9, 1861. Also awarded a certificate at the Crystal Palace, Nov. 13, 1861, for the best of all white Chrysanthemums. See *Cottage Gardener*, Nov. 19, 1861.

STRIPED QUEEN OF ENGLAND.—Blush white, flaked with purple, centre very high, full, and well incurved, commended by the Floral Committee of the Royal Horticultural Society of London, November 9, 1861. The following is their report on this flower:—"Perhaps, however, the most novel in character was, after all, a canvas-striped sport, called Striped Queen, obtained by Messrs. Downie, Laird, & Laing. The stripes are not very bold, but they are abundant and unmistakeable, so that here, as far as we know, is an entirely new character into which this grand autumnal flower has broken. It now rests with the fortunate possessors to fix so desirable a feature."

MISS ROBERTSON.—White, slightly shaded with rose, deepening towards the centre, high, and well incurved, a beautiful show flower.

CATALOGUES free by post on application.

Stanstead Park, Forest Hill, London, S.E.; and Edinburgh.

New Hardy Variegated Plant.

SCROPHULARIA NODOSA VARIEGATA.

B. S. WILLIAMS has much pleasure in stating that he has purchased the Stock of the above, which has proved to be the best plant for Edging Ribbon Borders or large beds yet introduced. (See Mr. Beaton's remarks in the *Journal of Horticulture*, August 27, 1861.)

B. S. W. can confidently recommend it for the above purposes, having seen it used largely at the Palace Gardens, Armagh, Ireland, for the last two years. It is of very easy culture and perfectly hardy, with ovate-oblong obtuse leaves broadly edged with white, forming a distinct and effective variegation.

Mr. G. Cooper, the Gardener, states in a letter to the Floral Committee of the Royal Horticultural Society:—"I have used it for the above-named purposes for the last three years, and find it to be the most effective plant with which I am acquainted. Its leaves match those of the Geranium for size, and set off the scarlet flowers so well that the effect is pleasing in the extreme. It looks well in all weathers, and neither extreme wet nor extreme dryness affect it in the least, as was satisfactorily proved in the years 1859 and 1860. It holds on its good appearance far into the winter, looking well from the middle or end of April to December. It will be found very useful to those who have but little time to propagate, and little room to winter bedding plants, as it can be kept without either labour, protection, or care."

The following Testimonials are selected from a large number received:—

From Mr. D. Ferguson, *Curator, Royal Botanic Gardens, Belfast.*

"I have much pleasure in forwarding my testimony of the new Bedding Plant, Scrophularia nodosa variegata. I saw the plant on the 28th June last for the first time in the Palace Gardens, Armagh, and for a ribbon border I have no hesitation in saying it is the best plant I have yet seen. I called in the evening, after a heavy day's rain, which did not seem to affect the plant in the least. The leaf is large, with a pure white margin. I am glad you have the stock, as you cannot too highly recommend it as a bedding plant."

From Mr. James Maclean, *Gardener to Colonel Leslie, M.P., Glasslough.*

"I have much pleasure in bearing testimony to the beautiful effect produced by your variegated plant, Scrophularia nodosa variegata. I was at Kew, Chiswick, South Kensington, and many other places in July last, and I saw nothing like it or to be compared with it, as grown in the Palace Gardens, Armagh, last season. I consider it one of the best variegated bedding plants of its class."

From Mr. G. Anderson, *Gardener to the Right Hon. Earl of Gosford, Gosford Castle.*

"I have much pleasure in saying I saw the Scrophularia nodosa variegata in great profusion at the Palace Gardens, Armagh, last season, and consider it one of the best of that class for bedding-out purposes, and more particularly for ribbon borders, as we have nothing to equal it for beauty of foliage and habit of growth."

From Mr. Rew, *Gardener to the Countess of Caledon, Caledon Hill.*

"I can, with the greatest of confidence, highly recommend the plant, Scrophularia nodosa variegata, and believe it to be one of the best variegated plants for a ribbon border or edging yet introduced. We enter largely into variegated plants at Caledon Hill; but this new plant I must confess gave me a most agreeable surprise, when I saw it in the borders of the gardens of the Lord Primate. I feel quite certain it has only to become known to become a universal favourite, without the slightest chance of any party who may become possessed of it feeling disappointed—too often the case, I regret to say, with many of the new plants that of late have been issued."

From Mr. John Smith, *Gardener to the Most Hon. Marquis of Downshire, Easthampstead Park, Wokenham, Berks.*

"I am glad to see by the *Gardeners' Chronicle* you have become the possessor of that most valuable plant Scrophularia nodosa variegata; too much cannot be said in praise of that plant, as an acquisition to the Flower Garden. I saw it in the Palace Gardens, Armagh, in a ribbon border in fine condition, backed with Scarlet Geraniums and fronted with Lobelia speciosa; it was also used in many other ways, and in all cases had a fine and charming effect.

Strong plants in May, 1s. 6d. each; 12s. per doz.; 80s. per 100.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

To Architects, Landscape Gardeners, &c.

THE BURIAL BOARD for the BOROUGH of CHELTENHAM are desirous of receiving PLANS, ESTIMATES, and GENERAL SPECIFICATIONS for the Laying Out, Constructing Roads and Footpaths, Erecting Buildings on, Fencing in and Planting certain lands purchased by them for a Cemetery, the superficial area of which is 18 acres.

The designs must include a Ground Plan, showing the sites of the different buildings required, the courses of the carriage roads and walks, the courses also of the drains, the division of the land into the several sectional burial places, and the subdivision of such places into plots for burial.

The plan also should show the manner proposed for the ornamental planting of the land.

Should the intentions of the designers as to the laying out the land render it necessary, sections of the earthwork required, and formation of the ground surface as proposed to be made, should be provided, and such other details and suggestions as the competitors may think necessary to illustrate and make clear their designs.

Plans, Elevations, and Sections must be provided for two chapels, dead-house, lodge, gates, and walls at entrances, &c.

Specifications must accompany the plans, describing the manner of construction, the class and substance of material in the several buildings, and estimates of their several costs.

Plans, Specifications, and Estimates of the manner of laying out and planting the site, of forming and making the roads and footpaths, and of the character and cost of fencing the site, to be also provided.

Plans, &c., may be either for forming and finishing the roads and footpaths, laying out and planting the site, or for fencing the site, or for the chapels and other buildings before mentioned, and the entrance walls and gates, or the whole of the works may be combined in the plans, &c., of any competitor; but the Board reserve the right of selection at their discretion from the plans, &c., submitted to them.

A premium of 40 guineas will be given for the best designs, Specifications, and estimates for the whole of the works sent in; and a premium of 20 guineas for the second best designs, specifications, and estimates for the whole of the works. Should designs, &c., be selected for part of the works only, a fair arrangement as to the premium will be made by the Board with the successful competitors.

The plans, &c., selected to become the property of the Board.

The plans, &c., are to be distinguished by a mark or motto, and accompanying them a sealed envelope, having the same mark or motto outside, and within the name and address of the designer, and the terms on which he will superintend and supply his professional services in execution of the works. Plans and particulars of the land may be had of Mr. Henry Dangerfield, Borough Surveyor.

The plans and other documents to be sent to me on or before the 29th day of May next.

G. E. Williams, Clerk to the Board.

Public Offices, Cheltenham, April 19.

Horticultural Valuer.

MR. A. CHANDLER (of the late Firm of Chandler & Sons), begs to offer his services as above.

28, Priory Road, Wandsworth Road, S.

200 CUCUMBER and MELON BOXES and LIGHTS, and from

400 to 500 LIGHTS for PITS of all SIZES kept in STOCK

Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.

References to the Nobility, Gentry, and Trade in most of the counties in England.

James Watts & Co., Hothouse Builders and Hot-Water Apparatus Manufacturers, near the Green Man, Old Kent Road, London, S.E.

GREEN'S PATENT MOWING MACHINE for SALE.—The undersigned have had consigned to them for Sale, by a lady who has no further use for it, a 21-inch GREEN'S PATENT MOWING MACHINE, with 1861 improvements, which has only been used a time or two, and is as good as new. Original cost 7l. 10s.; will be sold for 5l. Full particulars on application to

Francis & Arthur Dickson & Sons, Seed Merchants, &c., Chester.

TANNED NETTING for the Protection of Fruit Trees, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Cotton Netting, Tiffany, Scrim Canvas for Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c.

Be particular, John Edgington & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

TANNED NETTING at Reduced Prices.—200 square yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. New Canvas for Wall Fruit, Greenhouse Shades, and Tulip Covers.

Address in full, Frederick Edgington, Marquee, Flag, and Banner Manufacturer, Thomas Street, Old Kent Road, London, S.E.

TANNED GARDEN NETTING for preserving Seed Beds, Fruits, Strawberries, from frost, blight, birds, &c., and as a Fence for fowls, &c. 1 yard wide, 1½d.; 2 yards, 3d.; 3 yards, 4½d.; and 4 yards, 6d. per yard, in any quantity, may be had at Chas. Wright's, 376, Strand, W.C.

GREENHOUSE and FLOWER-POT STICKS VARNISHED:—1 foot, 3d.; 1½, 4d.; 2, 5d.; 2½, 7d.; 3, 10d.; 4, 1s. 6d. per dozen. DAHLIA STICKS VARNISHED, per dozen:—3 feet, 1s. 6d.; 4, 2s. 3d.; 5, 3s.; 6, 3s. 6d. An allowance to Nurserymen.

NETTING for Fruit Trees, Seed Beds, Ripe Strawberries, &c. TANNED NETTING for Protecting the above from Frost, Blight, Birds, &c., 2 yards wide, 3d. per yard, or 100 yards, 20s.; 4 yards wide, 6d. per yard, or 50 yards, 20s. NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 5d. per yard; 4 yards wide, 10d. per yard; 6 yards wide, 1s. 3d. per yard; ¾-inch mesh 4 yards wide, 1s. 4d. per yard.

Can be had in any quantity of Eaton & Deller, 6 and 7, Crooked Lane, London Bridge, E.C.

SHAW'S TIFFANY.—Protect the Bloom of your Wall Trees in time with the best and cheapest of all materials—SHAW'S TIFFANY.

Apply to John Shaw & Co., the Manufacturers, for Samples and Prices, 29, Oxford Street, Manchester.

Important to Seedsmen and Nurserymen.

Sacks and Bags.

JAMES T. ANDERSON, Sack and Bag Maker, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), continues to supply SEED BAGS at the following low prices:—

2 Bushel Bags..8s. 9d. per doz.	½ Bushel Bags..4s. 9d per doz.
1 Bushel Bags..6s. 3d. "	Peck Bags ....3s. 6d.

Coarser Bags much cheaper.

8 Bushel Grass Bags at 1s. each | 4 Bushel Sacks at 1s. each.

All orders promptly executed.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the COLD WINDS & MORNING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide	1s. 6d. per yard run.
Four yards wide	3s. per yard.

An improved make, 3 yards wide, 2s. 6d. per yard run.

Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.

Elisha Thomas Archer, Whole and Sole Manufacturer, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

WIRE-WORK for the Garden, the Greenhouse, and the Conservatory. An Illustrated Catalogue, containing upwards of 90 Engravings, Post-free. WIRE NETTING, 2 feet high, 5d. per yard. GARDEN SYRINGES, 6s. each.

William H. Honey, Manufacturer, 263, Regent Street, near Oxford Street Circus, W.

PATENT GUTTA PERCHA SOLES.—Important to Gardeners.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. Glenny, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. Glenny."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, type trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.

The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C.

PHOSPHO GUANO.

PETER LAWSON & SON, GENERAL CONTRACTORS,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. VOELCKER, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.

(Signed) "AUGUSTUS VOELCKER."

Opinion of Dr. ANDERSON, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.

(Signed) "THOMAS ANDERSON."

Opinion of Dr. STEVENSON MACADAM, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for Root Crops.

(Signed) "STEVENSON MACADAM."

Opinion of Dr. HODGES, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.

(Signed) "JOHN F. HODGES."

Opinion of Dr. APJOHN, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows and Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l.* 9*s.* 8*d.* per ton.

(Signed) "JAMES APJOHN."

Price, Free on Rail, £12 5s. per Ton, Bags included.

*** *None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

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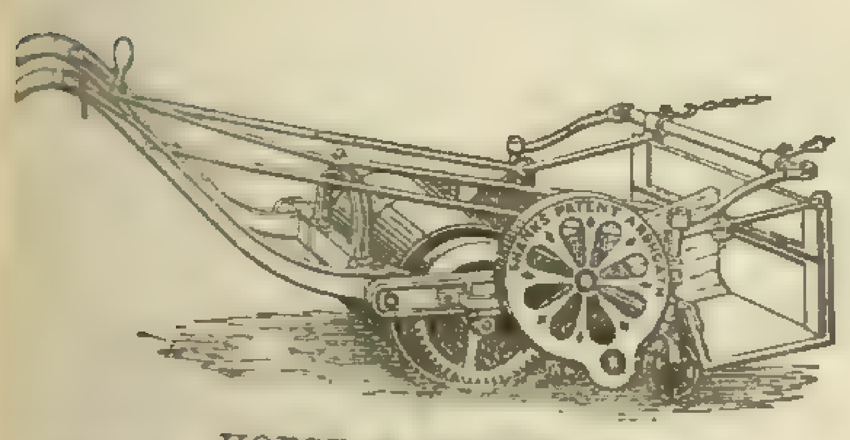
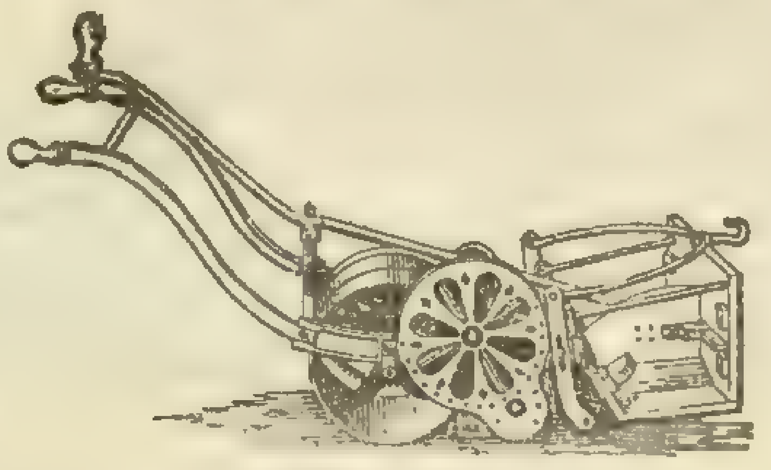
SHANKS' NEW PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

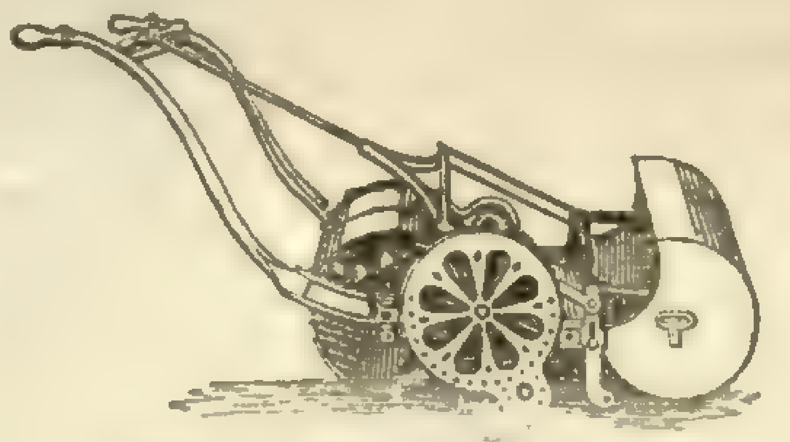
WITH SILENT MOTION IF SPECIALLY DESIRED.



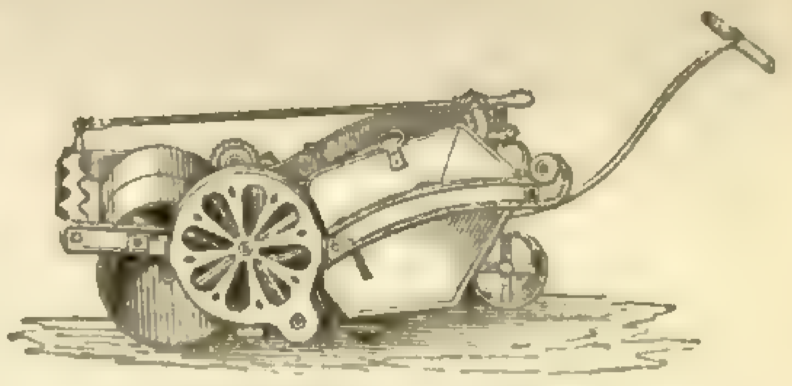
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

J. B. BROWN AND CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effects of the improvements of previous years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0	*Drawn by a Horse.*	No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

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Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

PRICES.

SHANKS' NEW PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

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No. 9.—22-inch Machine	8 7 6	*Easily Worked by Two Men.*	No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*	No. 16.—12-inch Machine	5 0 0	*Ditto by a Boy.*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, the Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

*** *The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

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GENERAL HORTICULTURAL BUILDER,
Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large Apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.

Particulars and prices post free on application to MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

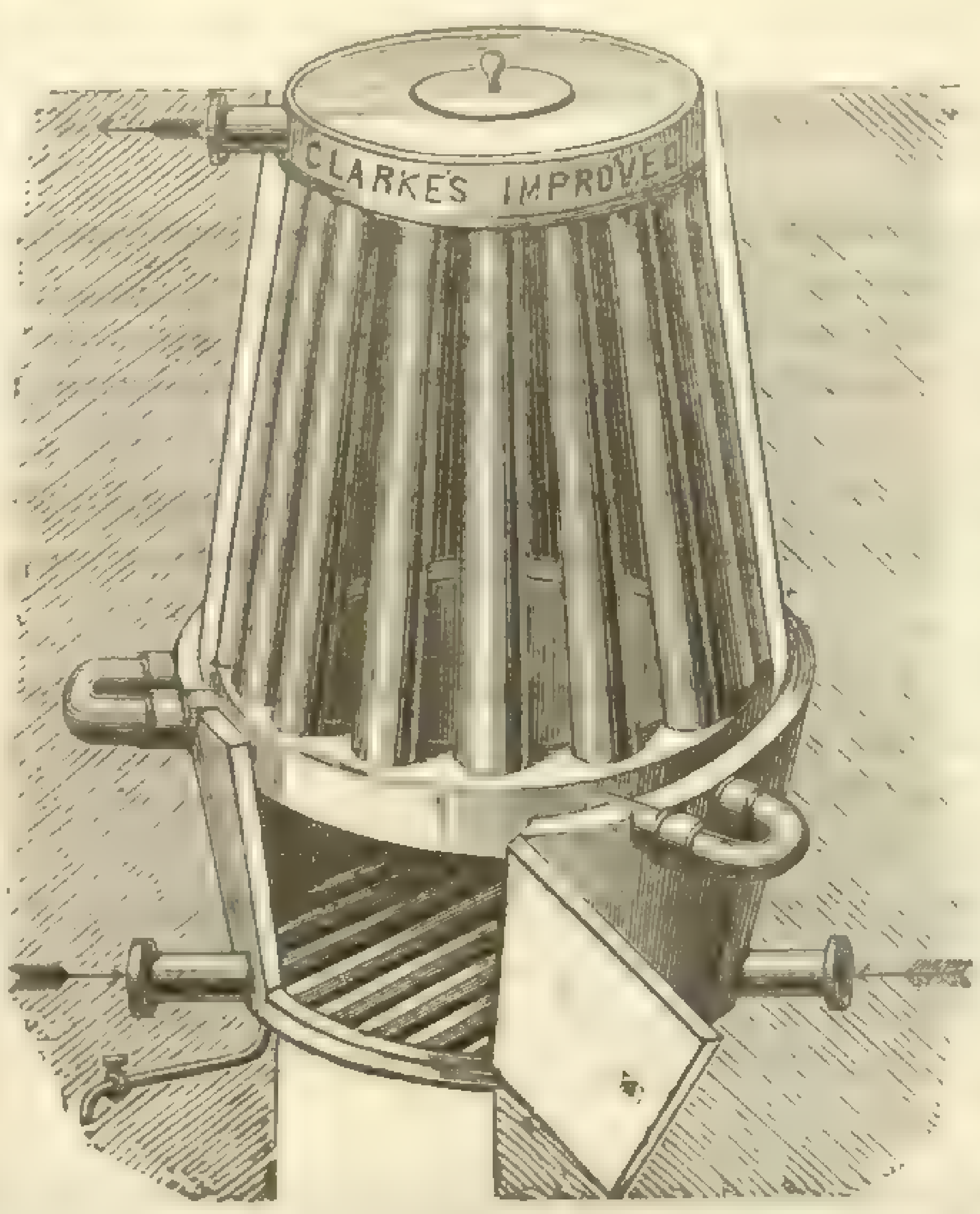
Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

TO BE SOLD, an ORCHARD HOUSE, recently erected. Ground plan, 26 by 13 feet; covered with 345 square feet of 16 oz. glass. Lowest price 20*l.*, including about 50 TREES in pots, now in perfection and bloom.
Apply to Mr. R. STEPHENS, Acton, Middlesex.

PORTABLE HOT-WATER APPARATUS, for Heating Conservatories, Hothouses, &c.

T. S. TRUSS, C.E., Sole Manufacturer. Offices: 53, Gracechurch Street, London, E.C.



CLARKE'S
NEW PATENT
CYLINDRICAL BOILER

Is now announced to be the most economical and efficient HEATING APPARATUS invented; and the Draught principle and Cylindrical Furnace surpasses everything brought before the Public. These Boilers are also very durable, the metal being half-inch thick and no joints exposed to the direct action of the fire; and although they possess such great power, the Heat can be regulated to the greatest nicety.

Estimates and Prices for all kinds of Heating, with first-class references, sent Post Free, by applying to the EAGLE IRON FOUNDRY, 25, Seel Street, Liverpool.

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GARDEN ROLLERS.

The principal advantages of BOYD'S PATENT SHAFT ROLLER are, that while it saves labour and unnecessary fatigue, by its construction it can be pushed before you (thereby enabling you to see what you are doing), and it is guided when used in this way with the most perfect ease.

Besides this you have quite as much power for drawing it behind you as in Rollers of the old kind; and it is computed to require one-fourth less power than any other Roller without Shafts.

16×16 in.	—42/6 ea.
18×18 ,,	—49/6 ,,
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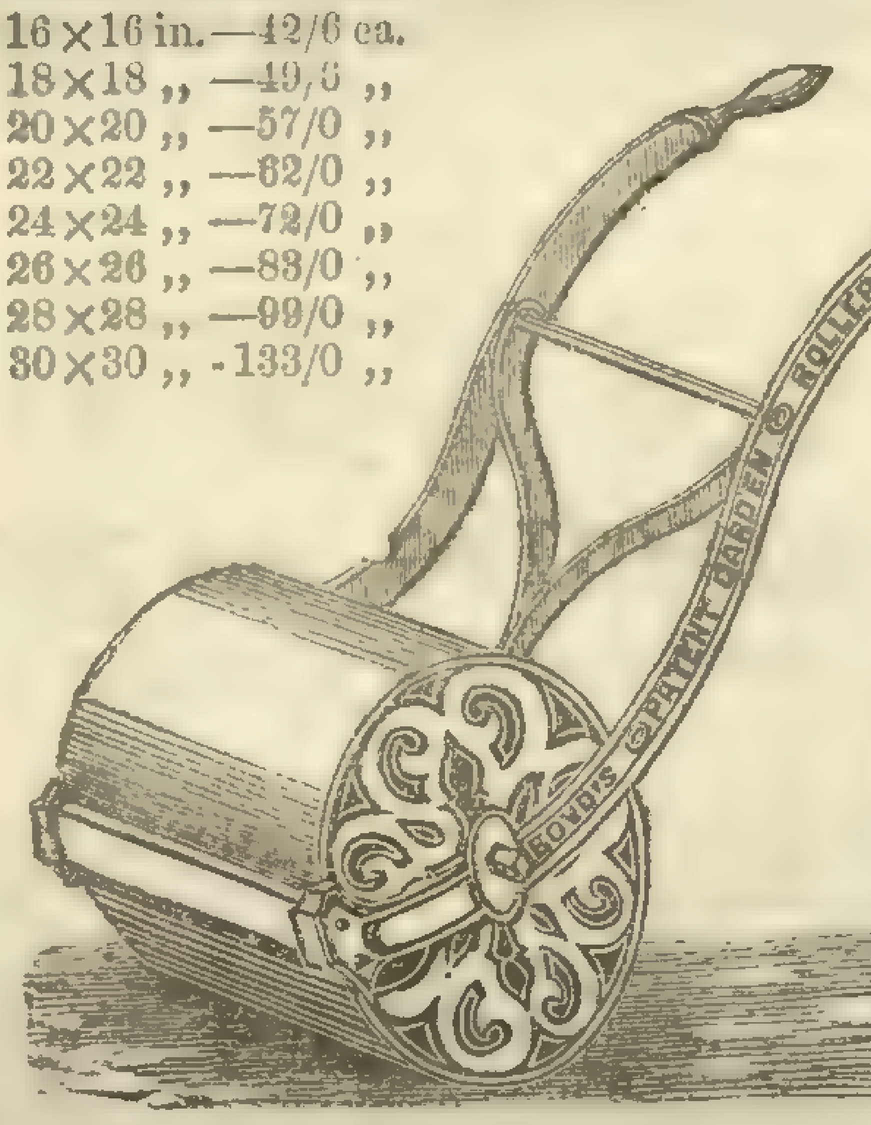
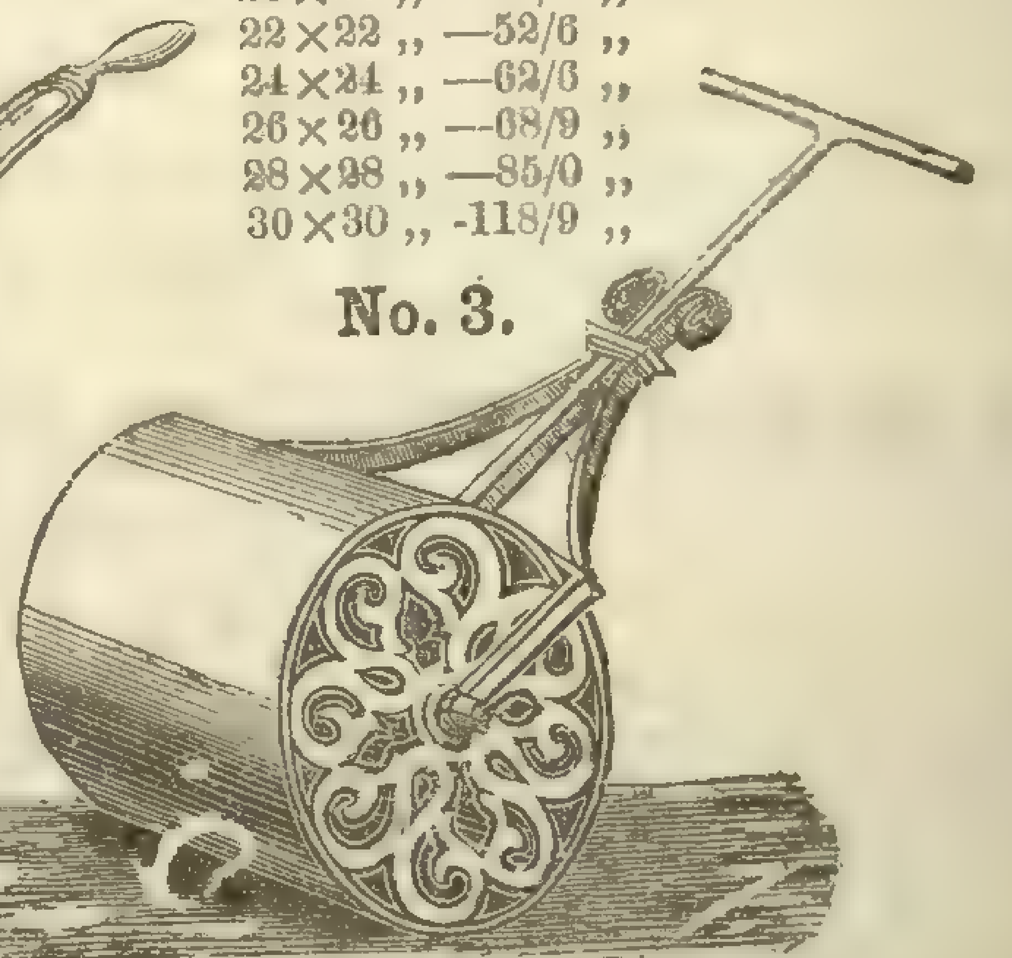
24×24 ,,	—72/0 ,,
26×26 ,,	—83/0 ,,
28×28 ,,	—99/0 ,,
30×30 ,,	-133/0 ,,



16×16 in.	—37/6 ea.
18×18 ,,	—40/0 ,,
20×20 ,,	—47/6 ,,
22×22 ,,	—52/6 ,,
24×24 ,,	—62/6 ,,
26×26 ,,	—68/9 ,,
28×28 ,,	—85/0 ,,
30×30 ,,	-118/9 ,,

No. 3.



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GREEN'S
LATEST IMPROVEMENTS IN
LAWN MOWING, ROLLING, and COLLECTING MACHINES
FOR THE PRESENT SEASON 1862,
FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

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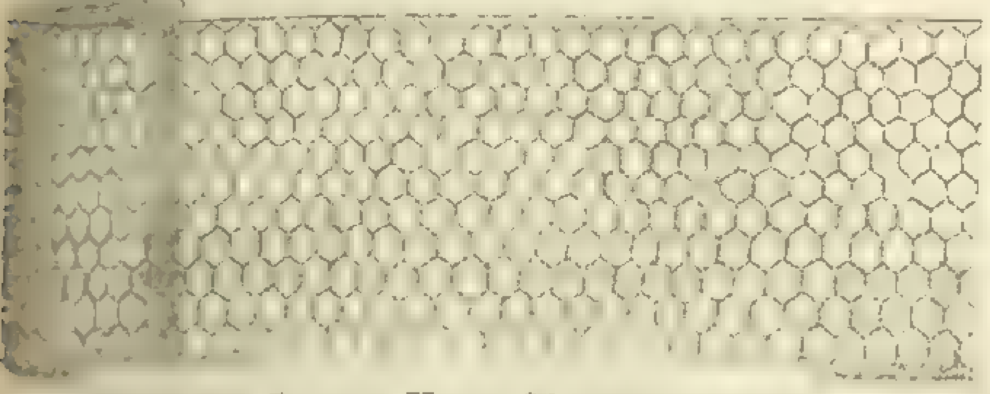
DINN'S GARDENER'S PENCILS,
Price 1s., will refill for 6d.
DINN'S MARKING INK PENCILS will permanently mark iron, plant labels of wood, zinc, &c., to the finest ... for which purpose required.
... all Seedsmen, Stationers, &c., by Post for 13 Penny ... the Manufactory, 1, Dalston Terrace East, London.
... pencils may be procured at the Office of the *Journal of* ... culture, 162, Fleet Street, E.C.
N.B.—A liberal allowance to the Trade.

NIXEY'S IMPROVED TWO-WHEEL WATER BARROW.—In extensive use at the Royal Botanic and Royal Zoological Gardens, London; Turner's Royal Nursery, Slough, and other large Establishments.
By this Machine a Boy can deliver 36 gallons of Water any reasonable distance with the greatest ease. Price 6l. 6s.; with ... Disperser, which is a great acquisition, price 8l. 8s.
THOMAS NIXEY, Van, Cart, and Waggon Works, Slough.

NEW IMPROVED PREMIUM WIRE NETTING.
Great Improvement with Reduced Price.



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Size of Mesh.	Mostly used for	Light.		Medium.		Strong.		Extra Strong.	
		Jap	Gal.	Jap	Gal.	Jap	Gal	Jap	Gal.
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Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England, and 200 yards or upwards delivered free to most ... Scotland and Ireland.
Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.
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Patronised by H.R.H. the late Prince Consort.

GREENING AND CO.'S IRON WIRE FENCES, manufactured by Patent Machinery, possess the following advantages:—
1. Are easily fixed by unskilled labourers.
2. Require few and inexpensive supports.
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5. Are but half the price of similar hand-made Fences.
Upwards of 40 varieties are made, the principal ones are:—
... variety.—Cattle and Sheep Fence, 3ft. 9in. high, 1s. per yard.
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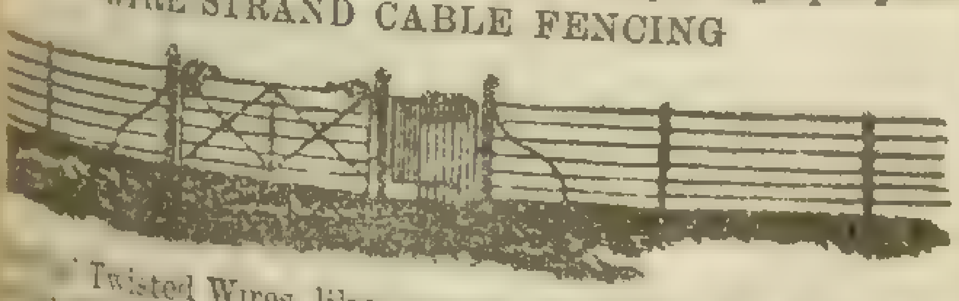
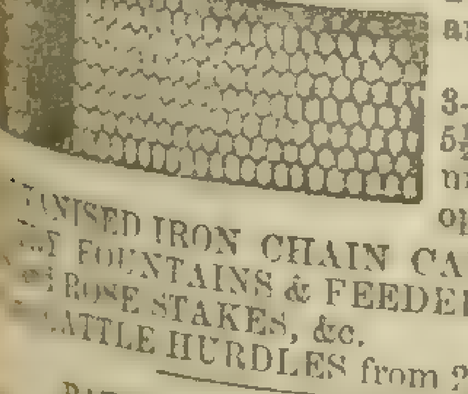
... variety.—An admirable substitute for the old-fashioned wire netting.
G. & Co. will be happy to forward, without charge, an Illustrated Circular of the principal varieties. Their enlarged ... of Fences and Gates post free on receipt of three stamps.
... GREENING & COMPANY, Victoria Works, Oxford Street, Manchester.

Prices Reduced.
J. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.
GALVANISED IRON ROOFING
for ... Buildings and other Roofs; the cheapest, most durable and neatest Roofing in use; also Spouting at 10½d. per yard.
WIRE STRAND CABLE FENCING



(... Twisted Wires like a rope or cable), the strongest, ... and neatest fence in use, will resist the largest cattle, ... bend or get out of form by trespassing upon or ..., with five lines of the Galvanised Strand, iron main ..., pronged Standards, from 1s. per yard.
... is far cheaper than posts and rails, or any kind of ..., and possesses four times the strength of solid ..., not rust nor corrode. Upwards of 1200 miles of ... supplied.
GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 4d., 4½d., and 6¾d. per yard.
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GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, ... FOUNTAINS & FEEDERS, PRONGED DAHLIA ... ROSE STAKES, &c.
... CATTLE HURDLES from 2s. per yard.
PATENT IMPROVED GAS WORKS
... for the use of Private Houses, Mansions, Railway ..., Mills, Collieries, Mines, Villages, &c. Works from ... lights estimated for. The works can be entrusted to ... ordinary labourer.—Apply to
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F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.
They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.
N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.
Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.
To be obtained of F. & G. ROSHER, at their Premises as above.

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PRUNING and BUDDING KNIVES,
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Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
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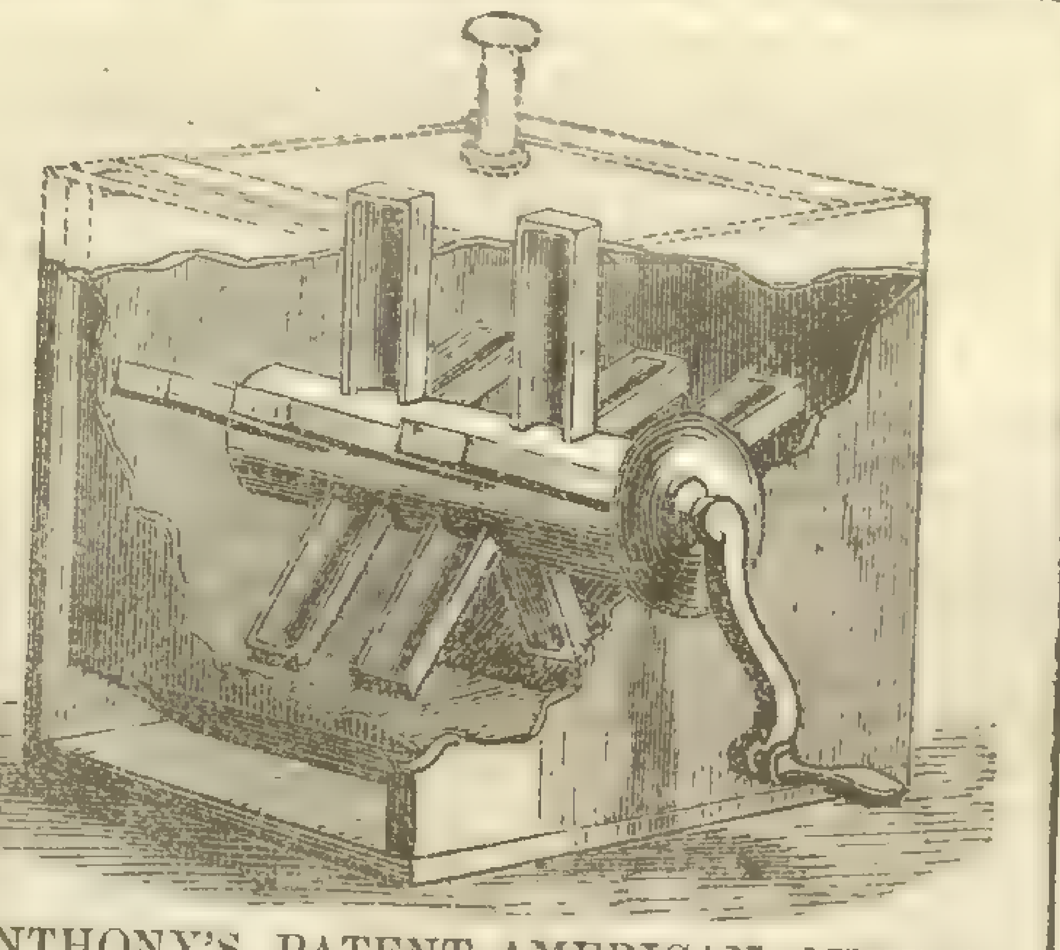

ANTHONY'S PATENT AMERICAN CHURN.—Butter is produced by this Churn in 12 minutes from cream; and so perfect is the operation, that more butter and better quality is obtained from the same quantity of cream than by any other method ever yet tried.
Upwards of 10,000 have been sold. Price Lists forwarded on application.
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MR. JOHN WATERS (Canal, Salisbury) begs to give notice that the Sixth Day's SALE of the effects of the late Col. EDWARD BAKER (on WEDNESDAY, the 30th inst. at half-past 1 o'Clock precisely) will include the large and valuable Collection of GREENHOUSE and STOVE PLANTS, FRUITING and SUCCESSION PINES, &c., Catalogues of which may be obtained on application.

TO BE LET on LEASE, LLANGWARREN FARM in Pembrokeshire, 12 miles from Haverfordwest Station, consisting of 475 Acres, about one half Pasture. The Land has been in the hands of the owner for the last 10 years, and is in a high state of cultivation. The Feeding-sheds will hold 100 Head of Cattle.
Apply to J. B. LAWES, 1, Adelaide Place, London Bridge, E.C

To Nurserymen, Kitchen Gardeners, &c.
TO BE SOLD, the INTEREST in the LEASE of that old and well-established Nursery, known as BARNES NURSERY, at Merrion, within 1¼ mile of the City of Dublin, with the entire STOCK-IN-TRADE, consisting of Greenhouse and Hothouse plants in every variety, Timber and Fruit Trees, Flowers in pots, Shrubs, &c. This Nursery stands on 24 acres 2 roods and 36 perches statute measure, has extensive Green and Hothouses thereon, with all the requisites for the carrying on of the Nursery business; and is held for an unexpired term of 44 years, at the rent of 202l. per annum. There are two good substantial moderate sized two-story Dwelling Houses on the ground, with Lodges for foremen and labourers; also a handsome Shop on the public road at the entrance. This is the largest Nursery in Ireland, and its patrons comprise most of the nobility and gentry of the country. It stands on the direct road from Dublin to Kingstown, in the midst of all the fashionable Villas near Dublin; and a portion of the ground might be most profitably employed as a Vegetable Garden, there being no such accommodation near Kingstown, or that side of Dublin. Other portions of the land will presently acquire a high value for building, as it adjoins the extensive building ground of Lord Herbert of Lee, which is becoming rapidly in demand. A Lease for a more extended term can be obtained, if required. If necessary a portion of the purchase money would be allowed to remain out as a charge upon the property.
The Proprietor would have no objection to enter into arrangements with an experienced Working Gardener, with a small capital, for the carrying on the business of Nursery and Vegetable Gardens, or with one or more for the working of each separately.
For particulars apply to JOHN RIDDICK, Solicitor, 8, Eustace Street, Dublin.

Sales by Auction.

Important Notice.
MR. J. C. STEVENS begs to announce that he will SELL by AUCTION during the month of May, at his Great Room, 38, King Street, Covent Garden, W.C., 250,000 Choice BEDDING PLANTS, comprising most of the new sorts.
Catalogues are preparing.

Bulbs, Conifers, Roses, Pinks, Fruit Trees, Evergreens, &c.
MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, April 23, at half-past 12 o'Clock precisely, a choice ASSORTMENT of PLANTS, consisting of Ornamental Evergreens, Hollies, Roses, Pinks, Fuchsias, Chrysanthemums, Gazanias, Phloxes, Bulbs, Flower Seeds, Laurels, Handsome Conifers, Yews, Araucarias, Fruit Trees, Rhododendrons, Azaleas, Heaths, Almonds, Vines, Thorns, Privet, Chesnuts, Hand Lights, &c., all very healthy and well-grown Plants.
On view the Morning of Sale, and Catalogues had.

To Gentlemen, Florists, and Others.
MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at the Mart, Bartholomew Lane, City, E.C., on FRIDAY, April 25, at 12 o'Clock, a first-rate Collection of CARNATIONS, PICOTEES, and PINKS, of remarkably fine growth, the surplus stock of a celebrated grower. Handsome Azalea indica, Ericas, Cinerarias, Geraniums and other plants in bloom; Choice American Plants, Dahlias in dry roots, Fuchsias, Verbenas, Petunias, Calceolarias, &c.
On view the Morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex.

Ipswich.
HIGHLY IMPORTANT AND EXTENSIVE SALE.
MESSRS. NEWSON AND SEXTON are instructed by the Directors of Ransome's Patent Siliceous Stone Company, to SELL by AUCTION, without reserve, in April and May, in consequence of important alterations and enlargement of the Works, the ENTIRE MANUFACTURED STOCK at the Works, at Ipswich, consisting of every requisite for Gardens, Pleasure Grounds, and Terraces, in Vases, Flower Borders, Fountains, Jardinets, and other Garden and Park Decorations; Chimney Pieces, Trusses, Brackets, Terminals, Monuments, Mural Tablets, and a great variety of decorative Builder's requirements. The First Sale will take place on FRIDAY, April 25, at the Flint Wharf, Ipswich, and will consist of nearly 500 Lots of Vases, Fountains, Flower Border sand Boxes, Jardinets, and every requisite for the Garden, Pleasure Ground, Terrace, and Park; a large quantity of Brackets, Trusses, Mural Monuments, Columns, and Pilasters, and Dressing and Mouldings and every requirement for Builders and Architects.
The Sale will be absolute and without reserve, and three months' credit will be given on all purchases above 20l. on approved joint security. The Auctioneers call the especial attention of Noblemen, Gentlemen, Gardeners, Architects, and Builders to these Sales, which will comprise nearly 20,000l. worth of this beautiful material, which for durability, fineness of texture, and colour, is equal to any natural stone.
DESCRIPTIVE CATALOGUES may be had at the Works, Ipswich, and of the Auctioneers, Bury, Ipswich, and 35, Lincoln's Inn Fields, W.C.

SALE BY MESSRS. DRIVER.
Her Majesty's Royal Forests.—Oak Bark.
FOR SALE, about 2900 tons of TIMBER and FLITTERN BARK, situate at Windsor Park and at Bagshot, Alice Holt Forest, Woolmer Bere, Parkhurst, and the New Forest, Hampshire; Dean Forest and High Meadow Woods, Gloucestershire; Salcey and Hazleborough Wood, Northamptonshire; and Delamere Forest, Cheshire.
MESSRS. DRIVER have been honoured with instructions from the Hon. J. K. Howard, the Commissioner in charge of her Majesty's Woods and Royal Forests, to SELL by AUCTION, at the Mart, London, E.C., on FRIDAY, April 25, at 1 o'Clock precisely, the BARK in the above Forests, and which will be sold as standing at the pole with the exception of a portion thereof, which is some of the produce of last year and the year before, and is stacked. The Bark is now being stripped, and will be divided into lots, and will contain in the whole about 176 tons in Windsor Forest and at Bagshot, 25 tons in Alice Holt Forest, 6 tons in Woolmer Forest, 100 tons in Bere Forest, 10 tons in Parkhurst Forest, 1000 tons in the New Forest, 750 tons in Dean Forest, 470 tons in High Meadow Woods, 102 tons in Salcey Forest, 50 tons in Hazleborough Wood, and 220 tons in Delamere Forest.
Samples will be on view at the Offices of the Auctioneers, and at the Auction Mart, London. The Bark at Windsor Park and Bagshot may be inspected, and Catalogues obtained on application to Mr. W. MENZIES, Park Side, Englefield Green, Staines; that at Alice Holt, Woolmer, Bere, and Parkhurst, on application to Mr. N. HIGINBOTHAM, Holt Lodge, Farnham; that in the New Forest, on application to Mr. L. H. CUMBERBATCH, Queen's House, Lyndhurst; that at Dean Forest and High Meadow Woods, on application to Sir JAMES CAMPBELL, Whitemead Park, Coleford; and that at Salcey, Hazleborough Wood, and Delamere, on application to Mr. THOMAS LINNELL, Eddisbury Lodge, Delamere Forest.
Catalogues may also be had at the Office of Woods and Royal Forests, 2, Whitehall Place, S.W.; at the Auction Mart, London, E.C.; of Messrs. CLUTTON, 9, Whitehall Place, S.W.; and of Messrs. DRIVER, Surveyors, Land Agents, and Auctioneers, 5, Whitehall, London, S.W.

Dane End, near Ware, Herts.
IMPORTANT SALE OF SHORTHORNED CATTLE, VALUABLE HORSES, PIGS, DORKING FOWLS, &c.
MR. STRAFFORD has received Instructions to announce for SALE by AUCTION, without reserve, on WEDNESDAY, April 30, at Dane End, near Ware, Hertfordshire, the Entire Herd of SHORTHORNS belonging to H. E. Surtees, Esq.; consisting of 50 Head of exceedingly well-bred Bulls, Cows, and Heifers. The foundation of his Herd was laid with three choice Heifers, "Anna Maria," "Jenny Lind," and "Marchioness," purchased of that deservedly eminent Breeder, Mr. Wiley, of Bransby, and directly descended from Stock bought by him at the Sales of Messrs. Colling and Mason. Since then some choice specimens have been added, bred from the Herds of Mr. Bates and others of celebrity. The young stock are chiefly by the Duke of Argyll (11375) and Lumley (16478). The Cows and Heifers are principally in calf to the latter Bull and Grand Vizier, a son of Mr. R. Booth's War Eagle (15483). The whole are in perfect health and regular breeders, and their dispersion affords an excellent opportunity to purchasers of first-class animals. Also, will be Sold, the very celebrated STALLION, Cleveland Duke, and other young Horses, with a Van suitable either for the conveyance of horses or cattle; a splendid collection of YORKSHIRE PIGS, bred from the famous Brandsby and Bushey sorts; and some choice DORKING POULTRY, from Captain Hornsby's prize birds.
Catalogues, with Pedigrees and other particulars, may be had on application to Mr. STRAFFORD, 13, Euston Square, London, W.; or of Mr. C. BENNETT, the Bailiff, at Dane End, near Ware, Herts.

SUTTON'S COLLECTIONS of choice NEW FLOWER SEEDS (Post free).—Ladies and gentlemen requiring showy kinds of FLOWER SEEDS are respectfully recommended to leave the selection of sorts wholly or partly to us, and we will supply those which we know to be really worthy of cultivation.

COLLECTIONS of FLOWER SEEDS to be sent free by post.

	£	s.	d.
The best 100 sorts of Flower Seeds, hardy, half-hardy, and tender, with instructions	1	1	0
The best 50 sorts ditto, with instructions	0	10	6
The best 36 sorts ditto	0	7	6
The best 24 sorts ditto	0	5	0

Sutton & Sons, Seed Growers, Reading, Berks.

Choice Vegetable and Flower Seeds.

B. S. WILLIAMS will be happy to forward post free to all applicants his PRICED and DESCRIPTIVE SEED CATALOGUE for 1862, containing Select Lists of all the best seeds in cultivation, with useful suggestions for the guidance of Amateur cultivators.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Best Early Broccolies in Cultivation.

MITCHINSON'S EARLY WHITE CORNISH BROCCOLI.

PENZANCE DWARF EARLY WHITE BROCCOLI.

Good Seeds of the above Choice Early Broccolies can be had at 1s. per packet at

Mitchinson's Seed Warehouse, Truro, Cornwall.

New Seedling Pea.

COTTON'S LEVIATHAN PROLIFIC MARROW, the best for main crop, a large, wrinkled, rich Marrow Pea. From one Pea 11,000 Peas were produced the second year (see Dr. Lindley, *Gardeners' Chronicle*, Aug. 7, 1853). The flavour sugary, and the colour very green when boiled. Height from 5 to 6 feet. May be sown from February till June and July, in drills 5 to 6 feet apart, and 1 inch from Pea to Pea. Retail price, 2s. per quart.

From Gilbert Knill Cotton's Seed Warerooms, High Cross, Barnstaple; or Hurst & M'Mullen, 6, Leadenhall Street, London, E.C.

Swede Turnips, &c.

HENRY BROWN'S DWARF-TOP BRONZE SWEDE is the best in cultivation. May be grown 20 to 26 lbs., is very solid and hardy, per lb. 1s.; also MANGELS, 6d. to 8d. per lb.

His PRICED DESCRIPTIVE LISTS of Farm, Garden, and Flower Seeds, can be had post free on application.

Henry Brown, Seedsman, 4, Commutation Row, Liverpool.

SEAKALE SETS for SALE.—The Seakale Sets are far superior to Seed, and are grown by all the Market Gardeners round London to ensure a regular crop and superior crowns for Forcing for next winter's use. Good strong sets may be had at 10s. per 1000. Those in the Trade liberally treated with for any larger quantity.

William Bagley, Munster Farm, Fulham, S.W.

Choice Dahlia Seed.

H. LEGGE has more than he requires, saved from his Unrivalled Collection, 50 Seeds for 2s. 6d. per packet. H. L. also intends sending out on the 1st of May his superb NEW DAHLIA "Prince of Wales," bright yellow, tipped with pure white, extra fine and constant. Those who do not grow this Fancy will lose the best of this year. 10s. 6d. per plant.

CATALOGUES can be had by inclosing One Stamp as above, Marsh Side, Edmonton, N.

NEWEST SORTS of DAHLIAS.—The following Novelties are the quintessence of the sorts of this beautiful autumnal flower, which were brought into the markets this year at very high prices—18s., 24s., and 27s. a bulb. Without exaggeration it may be said that the whole are paragons, each presenting in colour and form either a novelty or an improvement. These new sorts have been obtained by the most celebrated Dahlia cultivators of Germany, Messrs. Sieckmann and Mardner, from whom the undersigned has acquired a selection of the choicest sorts which gained Prizes at the Dahlia Show at Erfurt last autumn.

1. GRANDIFLORA.

GERMAN PINK.—Delicate pale rose on white ground, with light purple violet; pink-like striped and sprinkled.

HONOUR of GERMANY.—Beautiful salmon red, pale leather-yellow towards the edges, also alternating with pale rose tips on charming cherry-red ground and back. Incomparable Novelty.

A. HENDERSON.—Dark cherry brown, with amaranthine and light violet border.

GARDENER'S SWEETHEART.—Light gold yellow, with brownish crimson tips, delicate colouring.

GARDENER'S FAVOURITE.—Dark rose peach blossoms, graceful tubular form.

AUTUMN QUEEN.—Pale pea green, with soft rose tint.

KOH-I-NOOR.—Light lemon yellow, large leaves.

LUDWIG STORCH.—Brilliant light Isabel colour on chamois ground, rare and beautiful colouring.

BEAUTIFUL PINK.—White, with light and dark purple violet, light blue stripes and sprinkles, beautiful rose form.

FATHERLAND'S ROSE.—Beautiful salmon rose, lighter towards the edges, rose form.

DELICATE PINK.—White, with delicate lilac and black purple, finely striped and sprinkled, charming.

2. LILLIPUTIANS (Small Flowered),

For small beds and pot cultivation.

GERMAN BELLIS.—Peach rose, with white tips.

" SNOW ROSE.—Pure white, a beautiful Lilliputian in every sense.

ELIZABETH VON BETHMANN-HOLLWEG.—White, with light carmine ground and edges, very sharply and regularly marked.

MARGARET.—Shining gold yellow, with purple crimson tip.

MY LITTLE DEAR.—White, with purple violet tips; rose form.

LITTLE ROSA.—Pale lilac rose, with white centre.

GERMAN BOY.—Rose orange ground, deepening into crimson, with dark purple tips.

PRINCESS of LILLIPUTIANS.—White ground, with purple-violet tips, flowers abundantly.

PEARL.—This Dahlia is recommended as a Lilliputian of the first order. The flowers are pure white, well formed, of middle size, and upright; when only 1 foot high it already flowers abundantly. Well adapted for growing in pots.

Of the Novelties given above we furnish young, healthy, and vigorous plants at the choice of the purchaser, each sort, 6s.; and according to our own selection six sorts for 30s.; 12 sorts for 54s.; the whole collection for 80s. A liberal discount allowed to the Trade.

Our CATALOGUES of PLANTS for this year, Nos. 21 and 22, are forwarded post free on application.

N.B. Remittances to accompany orders from unknown correspondents. Letters prepaid, 6d.

H. Laurentius, Horticultural Establishment, Leipsic, Saxony.

GEORGE SMITH, Florist and Seedsman, Common Side, Macclesfield, has now ready in good plants, package included:—

		s.	d.
12 finest Show PANSIES ..	..	6s.	0d.
24 " ..	..	10	0
24 DAHLIAS, fine sorts to name		6	0
24 VERBENAS of 1861 ..		6	0
12 FUCHSIAS ..	..	6	0

With a general assortment of BEDDING and GREENHOUSE PLANTS

CATALOGUE on application.

CYPRIPEDIUM INSIGNIS MAULII.—In the first week of JUNE next will be distributed to a full List of Subscribers of 3 Guineas this fine variety of Cypripedium. After that time the price will be 5 Guineas to Non-Subscribers. It is figured and described in the "Floral Magazine," and a Coloured Figure will be forwarded for inspection per Post to Cultivators of Orchids and intending Subscribers on application.

Wm. Maule & Sons, The Nurseries, Bristol.

The Royal Horticultural Society's Exhibition.

SEEDS that will be required to obtain the Prizes offered at the Autumn Show, Sept. 10. See advertisement in *Gardeners' Chronicle*, March 15.

	s.	d.
ASTER, Truffaut's Pæony-flowered, 24 varieties	4	0
" Giant Emperor, 13 varieties	6	6
" Dwarf Chrysanthemum-flowered, 10 varieties..	1	8
" Tall " " 12 " ..	2	0
" Double Crown, 4 varieties	0	8
" " Dwarf Pyramidal Bouquet, 12 varieties	2	0
" " Quilled, 12 varieties	2	0
" " " Hedgehog, 6 varieties	1	0
" " " Reid's extra fine per packet	0	6
" " Globe Pæony-flowered, new "	0	6
Mixed packets of each of the above kinds	0	6
STOCK, dwarf German Ten-week, 24 varieties.. ..	4	0
" large flowering " 20 "	3	4
" Autumnal or Intermediate, 8 "	1	4
" Emperor, 5 "	0	10
" Brompton, 6 "	1	0
For other choice varieties see Catalogue.		
Mixed packets of each of the above German Stocks ..	0	6
PHLOX DRUMMONDII, 13 new varieties, each p. pkt.	0	6
ORNAMENTAL GRASSES, EVERLASTINGS, and Imported GOURDS .. ..per packet	0	6

Free by post.

For the character of the above, see report of the Annuals grown at Chiswick, 1861, in *Gardeners' Chronicle*, March 15, p. 237.

James Tynan, Importer of Continental Seeds.

Seed Warehouse, 68, Great George Street, Liverpool.

Bedding Geraniums.

EDWARD T. ATHERTON, Nurseryman, Chatteris, begs to offer good strong Plants of the following GERANIUMS for cash:—

Zonale or Horse. Per doz.—	s.	d.	Variegated Leaved. Per doz.—	s.	d.
Lady of Loretto ..	4	0	Mrs. Lennox	4	0
Countess of Bective ..	3	0	Hendersoni	4	0
Fothergilli	3	0	Beauty	4	0
Model Nosegay	3	0	Shottisham Pet ..	4	0
Little David	3	6	Alma	4	0
Pitt's Superb	3	0	Countess of Warwick ..	4	0
Imperial Crimson ..	3	6	Golden Chain	4	0
Scarlet Perfection ..	4	0	St. Clair	4	0
Bishopstowe Scarlet ..	4	0	Silver Queen	4	0
Blackheath Beauty ..	6	6	Bridal Wreath	4	0
Beauté de Meldoise ..	6	6	Culford Beauty	4	0
Tom Thumb	3	0	Burning Bush	6	6
Warranted true to name.			Golden Tom Thumb ..	6	6
Variegated Leaved.			Golden Cerise Unique ..	6	6
Bijou	4	0	Jane	6	6
Perfection	3	6	Julia	6	6

Bedding Plants! Bedding Plants!

DILLISTONE and CO. beg to offer strong healthy Plants of the above for the approaching Summer, of all the most approved kinds, and guarantee to give every satisfaction to all parties who may be pleased to favour them with their orders.

100 Plants of the finest varieties, selected from the following, will be sent for 25s.; 50 ditto, 14s.; Hamper, &c., included.

Geraniums	Verbenas	Petunias
Calceolarias	Fuchsias	Dahlias
Heliotropes	Phlox	Ageratums
Lobelias	Salvias	&c., &c.

CLIMBERS of the following kinds will be included where it is desired, viz.:—

Cobœas	Eccremocarpus	Lophospermums
Maurandyas	Tropæolums	&c., &c.

A great reduction where 500 or more plants are taken. All the New Roses and Plants of the season. A remittance or reference from unknown correspondents is requisite. Post-Office Orders payable at Halstead.

Sturmer and Woodlands Nurseries, Halstead, Essex.

Garden Seeds.

PAGE and TOOGOOD'S SPECIAL LIST will be forwarded post free.

P. & T. being Seed Growers, intermediate profits are avoided, and consequently their prices much lower than is generally charged. Seeds saved in the South being better matured possess greater powers of germination, and are a desirable change for the Northern and Midland Counties.

From Mr. R. McDonald, *Gardener to the* Rt. Hon. Lord Willoughby d'Eresby, *Drummond Castle, Scotland, Jan.* 4, 1861.

"The seeds sent here by you for the last 23 years have given the greatest satisfaction, and considering the large supply required, it is of the greatest importance to have them of such first-rate quality and so true to name. The collections for cottagers have been very useful and have been the means of inducing many of them to grow a greater variety of vegetables than they have hitherto done."

From Mr. Dowling, *Gardener to* Lord Henry Cholmondley, *Holly Hill, Jan.* 1, 1861.

"Nothing gives me so much pleasure as to speak of the excellent quality and trueness of the seeds you sent me for 1860. It is impossible to single out anything in particular, as all succeeded so well, and although a difficult season, I have never served a family better, which I attribute to the good quality of the seeds, and having been supplied by you for 30 years with the greatest satisfaction, my opinion is expressed with some confidence, and I also know your extreme desire at all times to meet the wishes of your customers."

From Mr. Whale, *Gardener to the* Rt. Hon. Lord Rivers, *Rushmore, Dorset, December* 30, 1860.

"In enclosing you my 20th annual order, I am happy to say that I have always found your articles to be of the best quality, and they have always given me great satisfaction."

Royal South Hants Seed Establishment, Southampton.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.

Richard Smith, Nurseryman, Worcester.

R. GLENDINNING has great pleasure in offering the undermentioned fine CONIFERS, which have been annually transplanted, and will move with perfect safety:—

Araucaria imbricata (perfect specimens), 2 to 9 feet
Cedrus Deodara " " 1 to 10 feet
" atlantica " " 1 to 10 feet
Cupressus Lawsoniana, 1 to 3 feet
" macrocarpa, 1 to 15 feet
" Nutkaensis (Thujopsis borealis), 1 to 8 feet
Picea nobilis (fine), 1 to 6 feet
" Nordmanniana, 1 to 10 feet
" Pinsapo, 1 to 6 feet
Pinus Benthamiana, 1 to 5 feet
" excelsa, 1 to 12 feet
" Fremontiana, 1 to 4 feet
" Jeffreyi, 1 to 2 feet
" Koraensis, 1 to 4 feet
" monticola, 1 to 10 feet
" tuberculata, 1 to 4 feet;
Taxus baccata erecta (splendid specimens), 1 to 9 feet

Also all the other leading kinds in fine well grown plants.

The above are remarkably handsome plants, and perfectly healthy, not having suffered from the severity of the past winters. Price on application.

Chiswick Nursery—April 19.

TO THE TRADE ONLY.

ABIES MENZIESII, 18 to 24 inches, 6s. per doz., 45s. per 100; do., 24 to 30 ins., 9s. per doz., 60s. per 100.

CUPRESSUS LAWSONI, 18 to 24 ins., 24s. per doz., 160s. per 100; do., 24 to 36 ins., 30s. per doz., 200s. per 100.

PICEA GRANDIS, 6 to 9 ins., 42s. per doz.; do., 12 to 18 ins., 84s. per doz.

PINUS INSIGNIS, 4 to 5 feet, 36s. per doz.; do., 5 to 6 feet, 42s. per doz.

THUJA LOBBI, 18 to 24 ins., 18s. per doz.; do., 24 to 36 ins., 24s. per doz.

BERBERIS DARWINII, from seed, 3 to 6 ins., 70s. per 1000; 6 to 9 ins., 35s. per 100; 18 to 24 ins., 120s. per 100.

RHODODENDRON MAXIMUM ALBUM, fine bushy stuff, 18 to 30 ins. high, 60s. per 100.

RHODODENDRON PONTICUM, healthy and well set with bloom-buds, all sizes from 18 to 36 ins.

RHODODENDRONS, choice named and unnamed vars.

Ghent and American AZALEAS, by the doz., 100, or 1000

SPRUCE FIR, handsome quartered stuff, 3½ to 4½ feet, 60s. per 100; 4½ to 6 feet, 5l. per 100.

DOUBLE YELLOW PRIMROSES, 20s. per 100, or 400 for 3l.

TRADE CATALOGUES of GENERAL NURSERY STOCK on application.

Orders unaccompanied with either a remittance or reference will not be noticed.

Thos. Cripps, Nurseryman, &c., Tonbridge Wells, Kent.

TO THE TRADE.—1 year Seedling Larch, Pinus austriaca, Birch, Sycamore, Apple Stocks, Pinaster.

2 years' Seedling Scotch and Spruce Fir, Quicks, Pear Stocks, Silver Fir, Beech.

Transplanted Pear Stocks, Strong Hazels, 2½ to 4 feet; Hornbeam, 2 to 4 feet, worked English Elms, Limes, Acacias, Poplars, Laburnums, 4, 5, 6, and 7 feet; Green Hollies, 1 to 1½, 1½ to 2, 2 to 3 feet, and strong Quicks. Low prices on application.

James Dickson & Sons, "Newton" Nurseries, Chester.

H. and R. STIRZAKER have to offer in large quantities the following surplus NURSERY STOCK:—

Laurel, Common, 1½ to 2 and 2 to 3 feet.
Laurel, Portugal, 1 to 1½, and 1½ to 2 and 2½ feet.
Yews, English, 1½ to 2, and 2 to 3 feet.
Arbor-vitæ, American, in sizes, from 3 to 6 feet.
Arbor-vitæ, Chinese, in sizes, from 3 to 6 feet.

They are well rooted, and the larger plants well furnished.

The Nurseries, near Lancaster.

BERBERIS JAPONICA.—This fine hardiest of all hardy plants has no equal for planting in shady situations, game covers, &c. Its fruit is greedily devoured by Pheasants, and its magnificent foliage forms an under cover of surpassing beauty.

The plants can be supplied by Charles Noble, Bagshot.

TO BE SOLD IMMEDIATELY, in Two or more Lots, a quantity of choice STOVE and GREENHOUSE PLANTS, FERNS, ORCHIDS, &c., many of them being specimen plants and fit for exhibition.

Apply to Mr. Joseph Tanton, Gardener, Crowhurst Park, Battle, Sussex.

FOR SALE, a noble Specimen of CYANOPHYLLUM MAGNIFICUM.—Height 4 feet 10 inches, with 6 pair of splendid leaves from 2 feet to 2 feet 10 inches in length, and from 1 foot to 1 foot 5 inches in breadth, and making another pair of leaves. Growing in a tub, 1 foot 3 inches by 1 foot 3 inches, at Castle Hamilton, Killeshandra, Co. Cavan, Ireland, the seat of J. Hamilton, Esq.

For particulars inquire of the Gardener.

NURSERY STOCK, young stuff, to be SOLD for a nominal sum, as the Land is for Sale. About [illegible] Acacia, Ash, Alder, Laburnum, Birch, &c., 3 feet to [illegible] feet, about 2000 Box, Berberis, &c.; Spruce, Scotch, and Larch Fir, Privet, Quick, Mulberry, &c., 1 foot to 3 feet, in all about [illegible] 4s. per hundred would be taken for the whole. They are [illegible] minutes walk from Lewisham Station.

Apply to G. Baldwin, Greenwich Road, Greenwich; or Mr. Gaines, Herbalist, Covent Garden Market, W.C.

REIGATE SILVER SAND, 16s. per ton, or 1s. 6d. per bushel, delivered to any London Wharf or Railway. Sacks 1s. 6d. each, or on hire 6d. each (five hold a ton).

PEAT, LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE.

John Kennard, Swan Place, Old Kent Road, London, S.E.

REIGATE SILVER SAND, first quality, 12s. per ton; 1s. per bushel. Delivered free in 2 bushel Bags to the Reigate Junction Railway. Bags, 1s. each; on hire 4d. each.

A large quantity of superior BOG MOULD and PEAT at a moderate price.

William Short, Ladbroke Road, Red Hill, Surrey.

Printed by William Bradbury, of 13, Upper Woburn Place, in the Parish of St. Pancras, in the Co. of Middlesex, and Frederick Mullett Evans, of No. 11, Bouverie Street, in the Precinct of Whitefriars, City of London, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington Street, Parish of St Paul's, Covent Garden, in the said County.—April 19, 1862.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 17.—1862.] SATURDAY, APRIL 26. {Price Fivepence. Stamped Edition, 6d.

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Notice to Advertisers.—*Advertisements should be sent so as to reach the Office by the* Thursday *in each week; and they should be written on one side of the paper only.*

ROYAL HORTICULTURAL SOCIETY.—FRUIT COMMITTEE.
The next Meeting of this Committee will be held on TUESDAY, May 6, for the examination of such Fruits and Vegetables as may then be submitted for judgment, and when the following are offered:—
Class A. Best three dishes of DESSERT APPLES, distinct kinds, 20s., 10s.
B. Best dish of PEACHES, 20s., 10s.
C. Ditto NECTARINES, 20s., 10s.
D. Best MELON, 20s., 10s.
E. Best three dishes of STRAWBERRIES, distinct kinds, 20s., 10s.
F. Best dish of CHERRIES, 20s., 10s.

NOTICE.
It is the intention of the Fruit Committee to grow this season in the Garden at Chiswick a collection of all the sorts of MELONS that can be obtained. Persons who are in possession of varieties of that fruit are therefore requested to send a packet of the Seed addressed to Mr. Eyles, Chiswick Gardens, Turnham Green, W., as early as possible. It would greatly facilitate the experiment if it were stated on the packet the shape and colour of the flesh of the several varieties.

ROYAL BOTANIC SOCIETY, Regent's Park.
GENERAL EXHIBITIONS of PLANTS, FLOWERS, and FRUIT—WEDNESDAYS, May 28, June 18, and July 9.
AMERICAN PLANTS—MONDAY, June 9.
Tickets to be obtained at the Gardens only, by vouchers from Fellows or Members of the Society. Price on or before Saturday, May 17, 4s.; after that day, 5s.; or on the days of Exhibition, 7s. 6d. each. Tickets will be sent by Post on the receipt of proper vouchers, with Post Office Order payable to James De C. Sowerby, Post Office, Albany Street, N.W., or Postage Stamps.
SPRING EXHIBITIONS every Wednesday to May 7, at 2 o'clock.

CRYSTAL PALACE.—The GRAND FLOWER SHOW will take place on SATURDAY, May 24. Admission [illegible] Tickets, purchased prior to the day of Exhibition, 5s.; on the Day, 7s. 6d.; and by One Guinea Season Tickets on payment of Half-a-Crown.
For SCHEDULE of PRIZES apply to Mr. W. Houghton, Secretary to the Flower Show, Crystal Palace, Sydenham.

GRAND HORTICULTURAL FETE and ROSE SHOW in connection with the Exhibition of the NORTHAMPTONSHIRE AGRICULTURAL SOCIETY in BURGHLEY PARK, STAMFORD, on THURSDAY, July 17. The Premiums offered amount to 200l., and are open to all England.
The Schedule, with Rules, &c., may be had upon application to Messrs. Laxton & Hewitt, Hon. Secs., Stamford.

COVENTRY and WARWICKSHIRE FLORAL and HORTICULTURAL SOCIETY.
At the FIRST EXHIBITION this Season of the above Society, which will be held on TUESDAY, June 24, in the [illegible] Field, Coventry, an Open Prize of 5l. for the best, and [illegible] 10s. for the second best set of 12 MISCELLANEOUS STOVE and GREENHOUSE PLANTS will be given, open to [illegible] Warwickshire, the Specimens being *bonâ fide* the property of the Exhibitor. Each competitor will be required to pay an entrance fee of 10s. three clear days before the day of exhibition, to Mr. W. Peters, Bailey Lane, Coventry.
Edw. Phillips, M.D., Hon. Secretary.

New Roses of 1862.
PAUL AND SON have now ready their usual fine Plants of the finest Novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

TWELVE of the Finest NEW PERPETUAL ROSES (sorts that have not yet flowered in English Gardens) for Two Guineas.
Richard Smith, Nurseryman, Worcester.

Agricultural Seeds.
GEORGE GIBBS AND CO., Seedsmen, 26, Down Street, Piccadilly, London, W.

J. J. FOSTER, Anmer Nursery, Edgware, N.W., has a fine stock of EVERGREENS, Trained FRUIT TREES, ORNAMENTAL SHRUBS, and FOREST TREES, well grown in adhesive soil. Prices on application.

BUTLER AND McCULLOCH'S SEED CATALOGUE for 1862 forwarded free and post paid upon application.
Covent Garden Market, W.C.

BARR AND SUGDEN, Seed Merchants.—For important notice see large Advertisement, page 230.
Barr & Sugden, Seed Merchants, 12, King Street, Covent Garden, W.C.

BARR AND SUGDEN'S ILLUSTRATED FLORAL GUIDE. Price 2s. 6d., sent Post paid.
Barr & Sugden, Seed Merchants, 12, King Street, Covent Garden, W.C.

JAMES CARTER AND CO., Seed Merchants and Nurserymen, 237 and 238, High Holborn, London, W.C.

New Garden Seeds.
JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

Genuine Farm Seeds.
JAMES CARTER AND CO., 237 and 238, High Holborn, W.C.

CHOICE CAMELLIA SEED, saved from one of the finest Collections in Europe. 1s. per packet.
James Carter & Co., 237 and 238, High Holborn, W.C.

WM. PAUL'S NURSERIES open to the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London. Every garden requisite, from the commonest to the choicest, at reasonable prices.
CATALOGUES free by Post.
Nurseries and Seed Warehouse, Waltham Cross, N.

Hurst House Seedling Pine.
B. S. WILLIAMS can supply strong Plants of this choice new Pine at 15s. and 21s. each.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Now ready, and good Plants.
THE NEW and celebrated HOLLYHOCKS—JOSHUA CLARK, LADY KING, &c.
See CATALOGUE for price, &c.
Apply to William Chater, Nurseries, Saffron Walden.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very large, and in all varieties of colour, in Seed or Roots; also FLORISTS' FLOWERS, POLYANTHUS in roots, and DOUBLE WHITE PRIMROSE.
Apply George Mace, Calcot Gardens, near Reading.

German Flower Seeds, Fresh Imported.
SUTTON AND SONS have imported a superior assortment of New GERMAN FLOWER SEEDS, a PRICED LIST of which may be had post free.

POLYANTHUS and PANSY SEED, first quality, in packets, 1s. 6d. and 2s. 6d.
To be had at Wm. Clark, 25, Bishopsgate, E.C.

PELARGONIUMS.—Intending purchasers should send for our DESCRIPTIVE CATALOGUE, post free.
J. Dobson & Sons, Woodlands Nursery, Isleworth, W.

DOBSON'S SPLENDID HYBRIDISED CALCEOLARIA is unequalled for variety, form, distinct and striking colours and habit. In sealed Packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. each.
J. Dobson & Sons, Seedsmen, Isleworth, W.

PRIZE CINERARIA SEED.—Unsurpassed for quality. 1s., 2s. 6d., and 5s. per Packet.
J. Dobson & Sons, Seedsmen, Isleworth, W.

PRIMULA SINENSIS FIMBRIATA, ex. ex.—Sealed Packets, 1s., 2s. 6d., and 5s.
J. Dobson & Sons, Seedsmen, Isleworth, W.

WELLINGTONIA GIGANTEA.—Seedling Plants of 1861 in single pots, per dozen, 21s. Price to the Trade per 100 on application.
J. Henchman, Edmonton, near London, N.

New Fuchsias and Verbenas of 1861.
B. W. KNIGHT, Florist, 67, High Street, Battle, Sussex, is now sending out the NEW FUCHSIAS of 1861, at 6s. per dozen; the NEW VERBENAS of 1861, at 4s. per dozen, securely packed in tin box, post free.
CATALOGUES sent on application.

Catalogue of Plants.
THOMAS BARNES begs to intimate that his CATALOGUE of DAHLIAS, FUCHSIAS, CHRYSANTHEMUMS, VERBENAS, PETUNIAS, PANSIES, &c., with Miscellaneous Bedding Plants, &c., is ready and may be had on application.
Dane Croft Nursery, Stowmarket.

High Beech, Essex.
JAMES CRAWFORD has still on hand a fine stock of strong healthy GRAPE VINES, all the best sorts, which he begs to offer at low prices.

PINE APPLE SUCKERS.—200 fine strong healthy QUEEN SUCKERS for SALE, warranted clean and healthy. Some of them have been potted and have roots.
Apply to Mr. M'Gregor, Seedsman, Merthyr Tydvil.

Specimen Plants fit for Exhibition.
TO BE SOLD IMMEDIATELY, in Two or more Lots, a collection of choice STOVE and GREENHOUSE PLANTS, FERNS, ORCHIDS, &c.
Apply to T. Papillon, Esq., Crowhurst Park, Battle, Sussex.

Good Seeds, Carriage Free.
SUTTON AND SONS, Seed Growers and Merchants, Royal Berkshire Seed Establishment, Reading.

SUTTON'S MIXTURES of CLOVERS and GRASS SEEDS for One Year's Lay, including 14 lbs. of ALSIKE and other CLOVERS, 15s. per Acre.
Royal Berkshire Seed Establishment, Reading.

PURCHASERS of Large Quantities of MANGEL WURZEL, TURNIP, or CLOVER SEEDS will be treated liberally on application to
Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

Lupins for Poor Soils.
SUTTON AND SONS recommend LUPINS to be sown now on poor soils (either sand, gravel, or stonebrash), for sheep feed or for ploughing in as manure. Price 20s. per bushel.
Royal Berkshire Seed Establishment, Reading.

Lucerne Seed fresh Imported.
SUTTON AND SONS have a fresh importation of LUCERNE SEED, very fine, 10d. per lb., or cheaper by the cwt.
Royal Berkshire Seed Establishment, Reading.

To the Trade.
SPECIAL SPRING CATALOGUE of AGRICULTURAL and GARDEN SEEDS (gratis) on application.
James Fairhead & Son, Seed Growers and Merchants, 7, Borough Market, London, S.E.

TURNIP, MANGEL, and AGRICULTURAL SEEDS of best Selected Stocks.—First class samples, crop 1861, at growers' prices.
James Fairhead & Son, Seed Growers and Merchants, 7, Borough Market, London, S.E.

YELLOW and RED GLOBE MANGELS from selected and transplanted Bulbs; nett growth, 1861; 32s. per cwt. (Bags included).
ALTRINGHAM CARROT, 2s per lb., 10l. per cwt.
Trade price on application.
Christmas Quincey, Seedsman, Peterborough.

Laing's Improved Swede Turnip Seed.
H. AND F. SHARPE have a fine stock of the above to offer to the Trade at a low figure. Also PURPLE TOP and SKIRVING'S IMPROVED SWEDE, raised by themselves from selected bulbs. Prices on application.
Seed Growing Establishment, Wisbeach.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
William Morton, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

FOR SALE, a quantity of SKIRVING'S SWEDE TURNIP SEED, from a selected stock which can be strongly recommended. Apply to the Grower,
Mr. William Cant, Myland Lodge, Colchester, Essex.

LEWISHAM SWEDE.—This Turnip, grown from large sized transplanted bulbs, and which has given such universal satisfaction, can be supplied in quantity to the trade by the Growers,
James Fairhead & Son, 7, Borough Market, London, S.E.

DICKINSON'S ITALIAN RYE-GRASS SEED may now be had by Agriculturists applying to his Bailiff, Mr. W. Hunter, New Park Farm, near Lymington, Hants. 48s. per quarter; or 7s. per bushel, for present payment only.

To the Trade.
WHITE BELGIAN CARROT SEED.—A few cwt., fine. Price on application to
Stephen Brown, Sudbury, Suffolk.

DIOSCOREA BATATAS (or CHINESE YAM), 2s. 6d. per doz., 15s. per 100. Larger tubers, 3s. 6d. per doz.
John Cattell, Westerham, Kent.

Large York Cabbage.
H. AND F. SHARPE can supply Seed of the above of 1861 growth, and raised from their carefully selected stocks. Price very moderate.
Seed Growing Establishment, Wisbech.

BEDDING PLANTS.—A large and splendid assortment at reasonable prices. CATALOGUES may be had on application to
John Moore & Son, Nurserymen, Perry Barr, near Birmingham.

Clapton Nursery, London, N.E.
THE SPRING CATALOGUE of NEW and DESIRABLE PLANTS will be forwarded post free on application.
Hugh Low & Co.

Vegetable and Flower Seeds.
PAUL AND SON'S CATALOGUE of the above, including ASTERS and STOCKS, with DESCRIPTIVE LIST of the best 100 GLADIOLI, is now ready, post free.
"Old" Cheshunt Nurseries, Herts.

TRUE DWARF BOX, of superior quality for Edgings, &c.
Apply to James Dickson & Sons, The "Newton" Nurseries, Chester.

BERBERIS JAPONICA.—This fine hardiest of all hardy plants has no equal for planting in shady situations, game covers, &c. Its fruit is greedily devoured by Pheasants, and its magnificent foliage forms an under cover of surpassing beauty.
The plants can be supplied by Charles N[illegible] Bagshot, R[illegible]

Roses in Pots.

H. LANE AND SON have great pleasure in offering a large quantity of ROSES in POTS, suitable for bedding, consisting of all the most popular varieties, as this is the best season for planting or growing in the Conservatory or Greenhouse.

Also most of the NEW SORTS of the season, some few of them being sold out.

The Nurseries, Great Berkhampstead, Herts.

New Roses, &c.

WM. PAUL'S CATALOGUE of NEW ROSES and SPRING PLANTS generally is now ready. Free by post on application.

BEAUTY OF WALTHAM, H.P.

This English raised seedling Rose has now received the highest awards ever given by the Royal Horticultural and Royal Botanic Societies. The flowers are large and full, colour brilliant cerise, the petals exquisitely curved in the way of Madame Charles Crapelet; the growth is vigorous, the foliage magnificent, and the plant as hardy as the Dog Rose. Plants 5s. each, and orders executed in strict rotation as received.

HOLLYHOCKS.

A fine stock of all the best named sorts, 9s. to 24s. the dozen. All are raised from cuttings. None grafted.

Waltham Cross, N.

NEW TEA-SCENTED ROSE for 1862, GLOIRE DE BORDEAUX.—The above, a Seedling from the well known favourite Tea Rose, Gloire de Dijon, was raised at Lyons, and is represented as being unquestionably the finest Tea-scented Rose of the season.

WM. WOOD & SON beg to intimate that they possess a very large Stock of the above in extra strong plants, which they are now sending out at 5s. each.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.

For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.

Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.

The Royal Nursery, Bagshot, Surrey.

THOMAS HANDASYDE'S DESCRIPTIVE CATALOGUE of FLORISTS' FLOWERS, New German and other FLOWER SEEDS, &c., containing all the Novelties of the season, is now ready and may be had free on application. Also a large and healthy stock of all sorts of EVERGREENS at the

Glen Nurseries, Musselburgh, near Edinburgh.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

LITHOSPERMUM FRUTICOSUM is the neatest and prettiest little

HARDY EVERGREEN HERBACEOUS PLANT

that can be desired Its slender branches are thickly covered with small dark green leaves, forming a perfect carpet, which is studded with

THE LOVELIEST BLUE FLOWERS,

nearly half an inch in diameter, from May till September. If wintered in a cold greenhouse it flowers abundantly in February and March.

Messrs. J. & C. LEE will be prepared to offer this "LITTLE GEM" in May, at 2s. 6d. each; larger plants, 5s. each.

Nursery and Seed Establishment, Hammersmith, London, W.

The Royal Horticultural Society's Exhibition.

SEEDS that will be required to obtain the Prizes offered at the Autumn Show, Sept. 10. See advertisement in *Gardeners' Chronicle*, March 15.

	s.	d.
ASTER, Truffaut's Paeony-flowered, 24 varieties	4	0
,, Giant Emperor, 13 varieties	6	6
,, Dwarf Chrysanthemum-flowered, 10 varieties ..	1	8
,, Tall ,, ,, 12 ,, ..	2	0
,, Double Crown, 4 varieties	0	8
,, ,, Dwarf Pyramidal Bouquet, 12 varieties	2	0
,, ,, Quilled, 12 varieties	2	0
,, ,, ,, Hedgehog, 6 varieties	1	0
,, ,, ,, Reid's extra fine per packet	0	6
,, ,, Globe Paeony-flowered, new ,,	0	6
Mixed packets of each of the above kinds	0	6
STOCK, Dwarf German Ten-week, 24 varieties	4	0
,, Large flowering ,, 20 ,, ...	3	4
,, Autumnal or Intermediate, 8 ,, ...	1	4
,, Emperor, 5 ,, ...	0	10
,, Brompton, 6 ,, ...	1	0
For other choice varieties see Catalogue.		
Mixed packets of each of the above German Stocks ..	0	6
PHLOX DRUMMONDII, 13 new varieties, each p. pkt.	0	6
ORNAMENTAL GRASSES, EVERLASTINGS, and Imported GOURDS .. ..per packet	0	6

Free by post.

For the character of the above, see report of the Annuals grown at Chiswick, 1861, in *Gardeners' Chronicle*, March 15, p. 237.

JAMES TYNAN, Importer of Continental Seeds.

Seed Warehouse, 68, Great George Street, Liverpool.

NEW ROSES for 1862.—4000 STRONG PLANTS.

WILLIAM WOOD & SON

Are now executing orders for all the NEW ROSES of the season, in strong healthy plants, Dwarfs, at 5s. each.

A liberal discount allowed to the Trade.

40,000 DWARF ROSES in POTS for BEDDING.

The months of April and May are considered the most eligible for Bedding-out Roses from pots.

W. W. & S. beg to offer a very large and healthy Stock on the following terms, viz.:—

Dwarf Hybrid Perpetual, Bourbon, Noisette, and Tea-Scented Roses, per dozen		18s.
Climbing Roses, of sorts	,,	12s. to 18s.
Dwarf China Roses	,,	12s.
Tea-Scented Roses, in 6-inch pots, for Greenhouse Culture	,,	30s.

Extra Plants presented for distant carriage.

CATALOGUES free on application.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

NEW VARIEGATED FOLIAGED FUCHSIA,

CARTER'S METEOR.

This striking novelty, a double corolla'd variety, with crimson and yellow foliage, will be sent out on May 1.

JAMES CARTER & CO.'S GENERAL CATALOGUE of PLANTS,

Containing many desirable Novelties, will be published on May 1, and forwarded gratis and Post free on application.

JAMES CARTER & CO., 237, 238, & 261, HIGH HOLBORN, W.C.

SEED FARMS.	NURSERY.
EAST HOUSE FARM, DEDHAM, ESSEX; and THE SEED FARM, ST. OSYTH, ESSEX.	CRYSTAL PALACE NURSERY, Perry Hill, Sydenham, S.E.

JAMES CARTER & CO.'S
NEW PLANTS FOR 1862.

FUCHSIAS—New Varieties for 1862.

The set (1 of each) .. .. 15s.

CARTER'S METEOR.—This very beautiful ornamental foliaged novelty is a most desirable acquisition; the leaves are of a rich golden yellow, variegated with bronze; the ends of all the young shoots are rich crimson; the plant altogether having almost the appearance of some of the highly coloured Amaranthus; flowers semi-double, red .. Each, 7s. 6d.

The following three varieties, with double corollas, were raised by Mr. H. Harrison, of Dedham. We have much pleasure in recommending them as very superior, in habit of growth and freedom of blooming, to the general run of the old Fuchsias:—

HARRISONII.—Bright scarlet tube, sepals reflexed quite back, corolla rich dark purple, very bold and spreading Each, 3s. 6d.

GREAT EXHIBITION.—Crimson sepals well reflexed, corolla very rich plum colour, the flowers on the parent plant measured 1½ to 2 inches in diameter; a free growing very short-jointed variety .. .. Each, 5s.

TROPHY.—Sepals and tube light scarlet, sepals of great length and well reflexed, corolla very stout and spreading, of a deep violet purple colour .. .. .. Each, 3s. 6d.

LOBELIA SPECIOSA KERMESINA.

This beautiful new variety was raised at our Seed Farm, Dedham, Essex, and is, we believe, destined to rank in general estimation with the well known Lobelia erinus speciosa, of which it is a variety, and which it very much resembles in freedom of growth, habit, and profusion of bloom. The flowers are of a deep purplish scarlet colour. It will be a great acquisition for Flower Garden decoration.

Price per plant, 1s. 6d. Per dozen, 12s. Per 100, 50s.

CERASTIUM BIEBERSTEINII.

When the old Cerastium tomentosum was first publicly used as an edging plant in the Crystal Palace Gardens, every lover of garden ornament was delighted with the effect produced, and it was generally admitted that a step had been taken in the right direction for the permanent decoration of the Flower Garden; and this plant, being perfectly hardy, soon became an universal favourite. We now, therefore, invite especial attention to another, and still more beautiful, of the Cerastiums, viz., Biebersteinii. In habit still more compact and very distinct from C. tomentosum, each individual leaf being much larger, and covered on each side with a dense silvery-white woolly substance, resembling that on the beautiful Salvia patula argentea; this, and the flowers, which are also much larger, renders the plant far more striking than C. tomentosum; indeed, when placed side by side, the latter has a dull appearance.

It is perfectly hardy, and maintains its lovely white appearance even in mid-winter, so that it must prove a valuable acquisition to our Winter Gardens, when planted in contrast with other things. It is, therefore, with much pleasure we introduce it, and doubt not that it will soon be considered indispensable to every garden.

That it may be extensively used this season, we are induced to offer it at the following low prices for strong plants:—

Per dozen, 9s. and 12s. For 50 plants, 35s. and 40s. (strongest). Per 100, 70s. (strongest).

ANTIRRHINUMS.—New Varieties of 1862.

Each 1s. 6d. The Collection, 10s. 6d.

We have much pleasure in recommending the following superb varieties of this highly ornamental flower, selected from more than 3000 plants which bloomed at our St. Osyth Seed Farm last season—each variety is most distinct and much superior to anything hitherto offered.

TOM THUMB.—An exceedingly pretty, very dwarf, compact growing variety, both in colour and habit very much resembling the favourite scarlet intermediate Stock; a most desirable variety for bedding.

GLORIOSA.—Crimson self, very large flowers, robust habit, a most effective variety.

DELICATA.—Clear blush ground, beautifully striped with bright crimson, strong habit and most profuse bloomer.

NAPOLEON III.—Brilliant crimson, pure white centre, very free bloomer.

MADLLE TIETJENS.—Pure white tube, with white lip, richly flaked and blotched with carmine, very free habit.

BUTTERFLY.—White tube, lower lip richly blotched with bright crimson, top lip mottled yellow, centre rich orange, very strong habit, a most charming variety.

SOVEREIGN.—Delicate creamy white, profusely spotted with clear rose, forming an immense truss or spike, often a foot long—strong grower.

BEAUTY.—Pure white ground, beautifully mottled, and flaked with bright rose.

EXCELSIOR.—Rich orange tube, lobes of a most delicate bronze, centre bright yellow, a very uncommon colour in this class, and a most effective variety.

TROPÆOLUM TRICOLOR AURANTIACUS.

An indigenous Chilian variety of the old tricolor, of an exceedingly showy character, very free blooming, with delicate laciniate foliage; colour bright orange, shading to scarlet. Strong roots, each 10s. 6d.

CARTER'S DRAWING ROOM PLANT GUIDE,

Or Spring Supplement to JAMES CARTER & Co.'s "Gardener's and Farmer's Vade Mecum," illustrated in colours, the most complete Plant Guide published, forwarded post paid on receipt of six postage stamps (gratis to Customers).

237 & 238, HIGH HOLBORN, W.C.

SUTTON'S
YELLOW GLOBE MANGEL WURZEL.

The heaviest and best sort known, price 8*d.* per lb., or 63*s.* per cwt.
ORANGE GLOBE and all other sorts 8*d.* per lb.

PRICED LISTS of FARM SEEDS Post Free.

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

KITCHEN GARDEN SEEDS,

FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

THOS. GIBBS & CO. Corner of HALF-MOON St. PICCADILLY, London. ROYAL AGRICULTURAL SOCIETY OF ENGLAND. APPOINTED AP. 3. 1844. THE SEEDSMEN

AGRICULTURAL SEEDS,

GRASS SEEDS,

FARM SEEDS,

of all descriptions.

Thomas Gibbs & Co.

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

PETER LAWSON & SON,
THE QUEEN'S SEEDSMEN,
EDINBURGH, LONDON, AND HULL,

27, GREAT GEORGE STREET, WESTMINSTER, S.W.,

Have harvested their NEW SEEDS in excellent condition, and will send PRICED LISTS Free by Post on application.

27, GREAT GEORGE STREET, WESTMINSTER, S.W.

FARM SEEDS, at fair Market Prices.

PAGE & TOOGOOD

Having had the honour of supplying the ROYAL FARMS at OSBORNE for the last eight or ten years, the GOVERNMENT REFORMATORY, PARKHURST, and many of the principal Agriculturists in the kingdom, will be sufficient guarantee that their SEEDS are of SUPERIOR QUALITY, and their prices are as low—or lower—than any respectable house in the Trade.

At the Botley Club, the Prize for the best Ten Acres Swedes was awarded
PAGE'S IMPROVED (grown by John Crosskey, Esq.)

Heaviest weight of Mangel, per acre, 61 tons 2 cwt.
PAGE'S IMPROVED ORANGE GLOBE (grown by Stewart Macnaghten, Esq.).

Mangel, sown July 7, Weight and Shape,
PAGE'S IMPROVED RED GLOBE (grown by W. Warner, Esq.).

Mangel, 50 tons per acre,
PAGE'S IMPERIAL ORANGE GLOBE (grown by W. Dickinson, Esq.).

Carrots, 35 tons per acre,
PAGE'S IMPORTED WHITE BELGIAN (grown by R. Trench, Esq.)

Six Prize Swedes, for heaviest Weight,
PAGE'S IMPROVED (grown by W. C. Humphries, Esq.)

Vales of Avon and Stour (Farmers' Club).

...of Avon, Prize for best 5 acres Mangel.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Salway).
Second best.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. H. Bone).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Baker).
Best 2 acres ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Jas. Salway).
Second ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by General Robertson).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Bone).

PRESENT PRICES (Rail Carriage Free to all parts of England):—

	Per lb.—*s.*	*d.*
...ING'S SWEDE	0	8
... IMPROVED HARDY	1	0
...'S do WHITE	0	9
...N CHAMPION	1	0
...FT	0	9
...TOP	0	8
... JEFFERY'S ...ARD	0	9
...UND TURNIP	0	9
...IMPROVED RED GLOBE	0	8
	0	9

	Per lb.—*s.*	*d.*
SCOTCH or BULLOCK	0	8
POMERANIAN WHITE GLOBE	0	8
EARLY GREEN GLOBE	0	8
„ WHITE TANKARD	0	8
PAGE'S IMPROVED PURPLE do.	1	0
GREEN ditto	0	8
YELLOW TANKARD	0	9
FIELDER'S HARDY GREEN ROUND	0	6
EARLY SIX WEEKS	0	6
KOHL RABI	3	6

	Per lb.—*s.*	*d.*
NEW OSBORNE MANGEL.		
YELLOW GLOBE	0	6
PAGE'S IMPERIAL ORANGE GLOBE*	0	8
RED GLOBE	0	[illegible]
ELVETHAM LONG RED	0	8
LONG RED	0	6
LONG YELLOW	0	8
WHITE BELGIAN CARROT	1	3
CATTLE CABBAGE	2	6
CATTLE PARSNIP	1	0
DWARF ESSEX RAPE	0	4

* Roots of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club, and yielded 61 tons per acre.

NEW ALSIKE CLOVER, 1*s.* 3*d.* per lb.; BUCKWHEAT, MUSTARD, LINSEED, TARES, and SAINFOIN. Fine PERMANENT PASTURE GRASS, ITALIAN RYE GRASS, CLOVER, &c., at lowest Market Prices.

Special Contracts for Large Quantities.

OXFORD STREET AND ABOVE BAR, SOUTHAMPTON.

SMITH'S WORCESTERSHIRE SWEDE, the handsomest, most profitable, and best in cultivation, 1*s.* per lb.
SKIRVING'S IMPROVED SWEDE, saved from selected roots, 8*d.* per lb.
ORANGE GLOBE MANGEL WURZEL, the best for all kinds of soil, a very superior stock, 8*d.* per lb.
All other kinds of SWEDE and MANGEL, 8*d.* per lb. Cheaper by the bushel or cwt.
RICHARD SMITH, Seed Merchant, Worcester.

Swede Turnips, &c.

HENRY BROWN'S DWARF-TOP BRONZE SWEDE is the best in cultivation. May be grown 20 to 26 lbs., is very solid and hardy, per lb. 1*s.*; also MANGELS, 6*d.* to 8*d.* per lb.

His PRICED DESCRIPTIVE LISTS of Farm, Garden, and Flower Seeds, can be had post free on application.

HENRY BROWN, Seedsman, 4, Commutation Row, Liverpool.

INDIAN MAIZE MEAL.—The best food for Pigs, Cattle, and Poultry, perfectly pure as received from the Mills in the United States. Free at the London Docks at 19*s.* net per barrel of 196 lbs.

Address "MAIZE MEAL," 13, Bread Street, London, E.C.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

J. C. WHEELER AND SON Glo'ster

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

Chinese Yam, Dioscorea Batatas.

SUTTON AND SONS having a large stock of strong Roots for present planting, can supply them at the reduced price, 2*s.* 6*d.* per dozen or 15*s.* per 100, with Instructions on Cultivation.

N.B.—Each root will make several good sets.

Royal Berkshire Seed Establishment, Reading.—April 26.

SUTTON'S PERMANENT GRASS SEEDS.—Gentlemen intending to LAY DOWN LAND to PERMANENT PASTURE, are recommended to communicate with us, stating the nature of the soil and situation, that we may advise as to sorts of Grass seeds most suitable. The ALSIKE, the PERENNIAL WHITE, and PERENNIAL RED CLOVER are included in all our mixtures, together with such of the under-mentioned as are best adapted to the land to be laid down. Prices, according to sorts and quantities required, 24*s.*, 26*s.*, 30*s.*, and 32*s.* per acre.

N.B.—*A copy of Mr. M. H. Sutton's Essay on Laying Down Land to Permanent Pasture, from the Journal of the Royal Agricultural Society, will be sent with every parcel of Grass Seeds.*

Achillea millefolium (Yarrow)
Agrostis stolonifera (Creeping Bent)
Anthoxanthum odoratum (Sweet Vernal)
Alopecurus pratensis (Meadow Foxtail)
Avena flavescens (Yellow Oat Grass)
Agrostis vulgaris (Common Bent Grass)
Cynosurus cristatus (Crested Dogstail)
Dactylis glomerata (Round-headed Cocksfoot)
Festuca duriuscula (Hard Fescue)
Festuca loliacea (Darnel Fescue)
Festuca ovina (Sheep's Fescue)
Festuca rubra (Red Fescue)
Festuca pratensis (Meadow Fescue
Festuca elatior (Tall Fescue)
Festuca heterophylla (Various-leaved)
Festuca tenuifolia (Fine-leaved Fescue)
Glyceria aquatica (Water Sweet Grass)
Holcus avenaceus (Tall Oat-like Grass)
Lolium perenne (Perennial Rye-grass)
Lolium perenne sempervirens
Lolium perenne Paceyanum
Lolium perenne Stickneyanum
Lolium perenne tenue
Lolium italicum (Italian Ryegrass)
Lotus corniculatus (Birdsfoot Trefoil)
Medicago lupulina (Black Medick Grass)
Phleum pratense (Timothy)
Poa nemoralis (Wood Meadow Grass)
Poa pratensis (Smooth Meadow Grass)
Poa trivialis (Rough Meadow Grass)
Poa fertilis (Fertile Meadow Grass)
Poa sempervirens (Evergreen)
Trifolium minus (Red Suckling)
Trifolium pratense perenne (Perennial Red Clover)
Trifolium repens (White Clover)
Trifolium hybridum (Alsike Clover)

The above may be purchased separately at moderate prices. The best of them are included in Messrs. SUTTON'S Mixtures, 24*s.*, 26*s.*, 30*s.* and 32*s.* per acre.

N.B.—*The Alsike Clover is included in all Messrs. ... Mixtures.*

Goods delivered Carriage Free to all parts.

SUTTON & SONS, Seed Growers, Re...

Bedding Plants at 2s. 6d. per Dozen.

J. SCOTT'S well-known CATALOGUE of the above is now ready, and will be sent to all applicants on receipt of six postage stamps, which will be returned to all purchasers above 10s.

It contains a mass of Cultural and other information about Flowers and Flower Planting, Ribbons, Tessellated and Mosaic work, with Descriptive Lists of all the most ornamental Flower Garden Plants.

Mr. Beaton, in the *Journal of Horticulture*, April 23, 1861, p. 58, says:—"But the best work on making Ribbon borders . . . . is the Bedding Plant Catalogue of Mr. Scott, of Merriott Nurseries; and besides, the Catalogue is the best arranged for young beginners of all that I have seen."

J. Scott, Merriott, Crewkerne, Somerset.

Bedding Plants. Bedding Plants.

J. H. BIRD, F.R.H.S., can now supply the following PLANTS for Bedding Out, good stuff.

Fuchsias, Verbenas, Gazanias, Calceolarias, Cupheas, Heliotropes, Lobelias, Ageratums, Petunias, Single and Double; Salvias, Tom Thumb and Variegated Geraniums, autumn-struck Plants, at 12s. per 100 or 5l. per 1000. The same goods, spring-struck, at 8s. per 100 or 3l. 10s. per 1000.

N.B. All orders to be prepaid, or they will not be executed. No charge for hampers.

Stoke Newington—April 26.

BEDDING PLANTS, of superior description, and in large quantities, strong and healthy.

PANSIES.—The finest show and fancy varieties in pots.

DAHLIAS.—Choicest show, fancy and lilliputian varieties.

VERBENAS.—Firefly, Mrs. Moore, and Snowflake, the best scarlet, blue, and white for bedding.

All stout vigorous plants. Price per 100 or 1000, with DESCRIPTIVE CATALOGUE, on application to James Dickson & Sons, The "Newton" Nurseries, Chester.

Cheap Bedding Plants.

N. LAWRENCE begs to offer strong and healthy Plants, autumn-struck, of all the best varieties, and guarantees to give every satisfaction to all parties who may favour him with their orders.

Plants of the best varieties selected from the following, will be sent for 20s. per 100:—Geraniums, Calceolarias, Heliotropes, Lobelias, Petunias, Fuchsias, Verbenas, Phlox, Dahlias, Salvias, Cupheas, Gazanias, &c. Climbers will be included where desired of the following kinds:—Cobœas, Maurandyas, Eccremocarpus, Tropæolum, Lophospermums, &c.

Show, French and Fancy GERANIUMS, 60 varieties, very strong and healthy, full of flower buds, in large and small 48-size pots, 5s. per dozen; 35s. per 100. Packing included.

PHLOXES, which gained the First Prize at the Crystal Palace Grand Show, September, 1861, the set of 18 for 15s.; older varieties, 3s. 6d. per doz.

Post Office Orders payable at Chatteris.

The Nurseries, New Road, Chatteris, Cambridgeshire.

Bedding Plants.

MARSH and PERKINS have great pleasure in offering the following, all strong and well established Plants, ready by 12th May:—VERBENAS: Defiance, Mrs. Holford, Purple King, Géant des Batailles, 2s. per dozen. SCARLET GERANIUMS, 2s. to 3s. per dozen. CALCEOLARIAS: Aurea floribunda, 2s. 6d.; Mackayii, 2s.; Prince of Orange, 2s. HELIOTROPES, 2s. per dozen.

N.B. A reference required from unknown correspondents.

42, Drapery, Northampton.

Bedding Plants! Bedding Plants!

DILLISTONE and CO. beg to offer strong healthy Plants of the above for the approaching Summer, of all the most approved kinds, and guarantee to give every satisfaction to all parties who may be pleased to favour them with their orders.

100 Plants of the finest varieties, selected from the following, will be sent for 25s.; 50 ditto, 14s.; Hamper, &c., included.

Geraniums	Verbenas	Petunias
Calceolarias	Fuchsias	Dahlias
Heliotropes	Phlox	Ageratums
Lobelias	Salvias	&c., &c.

CLIMBERS of the following kinds will be included where it is desired, viz.:—

Cobœas	Eccremocarpus	Lophospermums
Maurandyas	Tropæolums	&c., &c.

A great reduction where 500 or more plants are taken. All the New Roses and Plants of the season. A remittance or reference from unknown correspondents is requisite. Post-Office Orders payable at Halstead.

Sturmer and Woodlands Nurseries, Halstead, Essex.

Bedding Geraniums.

EDWARD T. ATHERTON, Nurseryman, Chatteris, begs to offer good strong Plants of the following GERANIUMS for cash:—

Zonale or Horse.	Per doz.—s.	d.	Variegated Leaved.	Per doz.—s.	d.
Lady of Loretto	4	0	Mrs. Lennox	4	0
Countess of Bective	3	0	Hendersoni	4	0
Fothergilli	3	0	Beauty	4	0
Model Nosegay	3	0	Shottisham Pet	4	0
Little David	3	6	Alma	4	0
Pitt's Superb	3	0	Countess of Warwick	4	0
Imperial Crimson	3	6	Golden Chain	4	0
Scarlet Perfection	4	0	St. Clair	4	0
Bishopstowe Scarlet	4	0	Silver Queen	4	0
Blackheath Beauty	6	6	Bridal Wreath	4	0
Beauté de Meldoise	6	6	Culford Beauty	4	0
Tom Thumb	3	0	Burning Bush	6	6
Warranted true to name.			Golden Tom Thumb	6	6
Variegated Leaved.			Golden Cerise Unique	6	6
Bijou	4	0	Jane	6	6
Perfection	3	6	Julia	6	6

WILLIAM BARRON, Elvaston Castle, Derby, can supply strong and well-rooted plants as under:—

ABIES DOUGLASII, 3 years once transplanted, per 100 25s. 0d.
This tree attains a height of more than 200 feet, highly ornamental, the same as the tall flagpole at Kew.

PINUS LARICIO, 18 ins. to 2 feet .. . per 1000 70 0
This produces timber for railway sleepers sooner than the Larch, and is used as spars and masts in the French navy.

BERBERIS DARWINI, the most beautiful of the tribe, fit either for the flower garden or game cover, with rich orange-coloured flowers; Pheasants are very fond of the berries, which are produced in profusion. Strong plants, 3 years old per 100 20 0
Ditto ditto, 2 years old 15 0
Ditto ditto, 1 year old 12 6

PICEA NOBILIS, 3 to 4 years old, plants from seed, (This is the most lovely of all Firs.) each, 10s. to 15 0

WELLINGTONIAS from 2 to 9 feet. Also specimens of the rarest Conifers.

Remittances to accompany orders from unknown correspondents. Post-office Orders payable at Derby.

SELECT PRICED LISTS post free on application.

50 CHOICE SHOW PANSIES, one of a sort to name (from Pots), for 16s. 6d.

25 Choice Show Pansies, one of a sort to name (from Pots), 8s. 6d. Hamper, &c., included.

A remittance or reference from unknown Correspondents.

William Field, Florist, Flookersbrook, Chester.

CALCEOLARIAS (Bedding Varieties).—The four varieties named below are Seedlings of my own raising, and are now offered for the first time; they have been tested the last two seasons, and found to be superior for bedding purposes to any varieties in cultivation,

Price 18s. per Dozen.

ADMIRAL WARDE, dark crimson, very dwarf, splendid habit, a most profuse bloomer; wet weather does not injure it to any extent, as a few hours' sun restores it to its usual brilliancy.

GENERAL WOLFE, shaded crimson, a most profuse bloomer and splendid habit, a great advance upon any existing dark bedding Calceolaria, the flowers are medium size, and stand the weather better than any other kind.

ELEGANTISSIMA, yellow, slightly spotted with brown, very free flowering, and of graceful habit.

GOLDEN DWARF, very dwarf, splendid habit, bright colour.

John Cattell, Nursery and Seed Establishment, Westerham, Kent.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the most effective and useful bedding variety known. During the past season upwards of 5000 plants were grown in the gardens at Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.

*** For Testimonials and further particulars see *Gardeners' Chronicle* of February 22.

Plants, 1s. 6d. each. 12s. per doz. 50s. per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in riband-borders, and vases, this variety is one of the most useful and effective yet offered for sale.

Plants, 1s. 6d. each. 12s. per doz. 75s. per 100.

CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

	Per packet—s.	d.		Per packet—s.	d.
Calceolaria, herbaceous	2	6	Primula sinensis dentiflora	2	0
Cineraria cruenta	2	6	Primula sinensis albiflora	2	0
„ maritima	0	6	„ „ dentiflora kermesina splendens	2	6
Erianthus Ravennæ	1	0	Verbena venosa	0	6
Lobelia erinus speciosa	1	0			
„ „ major	1	6			

A PRICED and DESCRIPTIVE CATALOGUE of Vegetable, Agricultural, and Flower Seeds, forwarded post free to all applicants.

Exotic Nursery, Tooting, Surrey, S.

New and Beautiful Plants.

F. and A. SMITH have much pleasure in intimating that they are now prepared to send out the following NEW PLANTS, of which they possess the entire stock. Early orders are solicited, which will be executed in strict rotation as received:—

FUCHSIAS.

COLOSSUS.—This is a variety of magnificent proportions, very large and double. 7s. 6d. each.

ENSIGN.—Distinct and beautiful. Fine for exhibition purposes. 5s. each.

GLADIATOR.—Very large and double. 5s. each.

LADY BLANCHE.—White corolla; distinct and fine. 5s. each.

HUMBOLDT.—Large and fine for exhibition. 5s. each.

QUEEN OF SUMMER.—Very fine and distinct. 5s. each.

RIFLEMAN.—Large double variety. 5s. each.

The seven varieties for 30s.

PETUNIAS.

PRIME MINISTER.—A very fine bright double crimson flower, very large and fragrant. 3s. 6d. each.

ROSE OF ENGLAND.—One of the finest yet offered for bedding purposes; bright rose, with clear white throat. 3s. 6d. each.

EMERALD.—Bright rosy purple, with a margin of bright green. 3s. 6d. each.

MRS. SMITH.—Very distinct pure white, blotched and striped violet. 3s. 6d. each.

CLARA.—White, striped and shaded with bright rose. 3s. 6d. each.

GAIETY.—Rosy purple, striped and blotched white. 3s. 6d. each.

The set of six for 18s.

Golden variegated GERANIUM, "Goldfinch," 3s. 6d. each.

ZONALE GERANIUM, "Beauty of Dulwich," 3s. 6d. each.

For full descriptions of the above see F. & A. Smith's CATALOGUE of NEW and RARE PLANTS, which will be sent post free on application.

The Nurseries, Dulwich, London.—April 26.

Hardy Variegated Plant.

SCROPHULARIA NODOSA VARIEGATA.

B. S. WILLIAMS has much pleasure in stating that he has purchased the Stock of the above, which has proved to be the best plant for Edging Ribbon Borders or large beds yet introduced. (See Mr. Beaton's remarks in the *Journal of Horticulture*, August 27, 1861.)

B. S. W. can confidently recommend it for the above purposes, having seen it used largely at the Palace Gardens, Armagh, Ireland, for the last two years. It is of very easy culture and perfectly hardy, with ovate-oblong obtuse leaves broadly edged with white, forming a distinct and effective variegation.

Mr. G. Cooper, the Gardener, states in a letter to the Floral Committee of the Royal Horticultural Society:—"I have used it for the above-named purposes for the last three years, and find it to be the most effective plant with which I am acquainted. Its leaves match those of the Geranium for size, and set off the scarlet flowers so well that the effect is pleasing in the extreme. It looks well in all weathers, and neither extreme wet nor extreme dryness affect it in the least, as was satisfactorily proved in the years 1859 and 1860. It holds on its good appearance far into the winter, looking well from the middle or end of April to December. It will be found very useful to those who have but little time to propagate, and little room to winter bedding plants, as it can be kept without either labour, protection, or care."

For further Testimonials see former Numbers of the *Gardeners' Chronicle*.

Strong plants, the first week in May, 1s. 6d. each; 12s. per doz.; 80s. per 100.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Calceolaria Canariensis.

G. SMITH has great pleasure in recommending this unsurpassed and beautiful variety; it has been shown in the past season at all the leading exhibitions round London, and has established itself as the best for all purposes, as it gives two-thirds more bloom in a pot and one-third more in beds than any other Calceolaria in cultivation; colour bright Canary Yellow, the mouth closed, so as to resist the wet; the habit is all that could be wished. Has taken a First-class Certificate at the Royal Botanic Gardens, Regent's Park; also a First-class Certificate from the Floral Committee of the Horticultural Society, for its fine qualities. Now ready, in strong plants, at 1s. 6d. each, or 12s. per dozen. A remittance must accompany the order to unknown correspondents.

Tollington Nursery, Hornsey Road, Islington, London, N.

Prize Phloxes. | Prize Gladiolus.
Prize Chrysanthemums.

JOHN CATTELL'S Collections of the above obtained the following Prizes at the London Exhibitions during the past season:—

PHLOXES.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

CHRYSANTHEMUMS.

First Prize, for the best 24 Cut Blooms, at the Royal Horticultural Society's Grand Fruit and Chrysanthemum Show, held at South Kensington Gardens.

First Prize, for the best 24 Cut Blooms, at the Stoke Newington Chrysanthemum Exhibition.

First Prize, for the best 24 Cut Blooms, at the Crystal Palace Chrysanthemum Exhibition.

J. C.'s collections include every variety of note, and he now offers them at the low prices named below, the selection being left to himself.

PHLOXES, 6s., 9s., and 12s. per dozen.
CHRYSANTHEMUMS, 6s. per dozen.
GLADIOLUS, 6s., 9s., 12s., and 18s. per dozen bulbs.

CATALOGUES are now ready, and will be forwarded post paid on application.

Strong plants of the Chrysanthemums and Phloxes are now ready.

Nursery and Seed Establishment, Westerham, Kent.

JAPANESE TREES.—A few days since, while sitting in our office, there walked in a gentleman with an intelligent face and frank pleasant manner, introducing himself as Dr. Hall, of Japan, whom we had for some time well known by reputation. In the course of much pleasant conversation about the climate and productions of that country, he informed us that for the past two years he had resided at Yokohama, and being greatly interested in trees and plants had, for his own amusement, collected in his garden all of any interest which Japan contained. It being known that he was a buyer, plants were brought him from the interior, from mountain and valley, until his collection was as rich as any botanical collectors could make it, if they had access to every part of the country, which they may not have for years. Expecting to return home this year, he had also collected a large quantity of seeds of trees and plants, many of them unknown either in Europe or this country.

These plants and seeds he had brought with him, except some six Wardian cases yet to arrive, and proposed to place them all in our hands for propagation and culture.

It gave us much pleasure to meet his wishes, and he returned the next day with his collection.

If you have ever seen the eagerness with which a connoisseur in pictures superintends the unpacking of some gems of art, among which he thinks he may possibly find an original Raphael or Murillo, you will have some idea of the interest with which all, both employers and propagators, surrounded those cases while they were being opened. Among the living plants, and in fine condition, was that beautiful new evergreen Thujopsis dolabrata; then a new species of Cryptomeria, with some fine new Conifers without name; then 15 new double-flowering Cherries, one of them described by Dr. Hall to be as large as a Rose; eight new Wistarias, of different sorts, some with variegated foliage, and one with racemes a foot and a half long; seven Salisburias, with variegated foliage; the green Aucuba, a new Japan Berberry, a new Magnolia, a dozen Maké, the great timber tree of Japan; five new Hibiscus; 45 Maples, many of them variegated, and some as drooping in their branches as the Weeping Ash; a Weeping Pyrus japonica, that, grafted on a large Quince or Apple, would make a beautiful tree covered with brilliant crimson and scarlet flowers.

There were also four new sorts of Weigela, some of them with variegated foliage; seven new Honeysuckles; a variegated Elæagnus; three new Oaks, one with variegated foliage and leaves a foot long, and another with very curious indented leaves; a new Chestnut; six new Japan Lilies, different from anything yet known here; eight new Columbines and other herbaceous plants; a variegated, a dwarf, and a giant Bamboo; and six new sorts of Chrysanthemums of superior beauty; as these plants are all alive and in good condition, we hope that another year will enable us to disseminate them.

Among the seeds, which are in fine condition, are a quantity of Sciadopitys verticillata, a new Conifer, described by those who have seen it as being very unique and possessing unusual beauty; 10 distinct sorts of Retinospora pisifera, a new evergreen shrub, some of which have variegated foliage; Pinus Massoniana, both cones and clean seed; a new variegated Pine; a fine lot of Thujopsis dolabrata; Abies firma; six new sorts of Conifers; a lot of Wistaria seed; a peck or more of the Green Aucuba; the Japan Persimmon; seed of new Japan Lilies; new Acacias; variegated Camphor Tree; Seeds of a Tree with variegated leaves, and growing like the Poplar; another Tree, growing like the Poplar, with variegated leaf and yellow Hibiscus-like flower; a new Weeping Tree, with white flowers; a new Juniper, new Magnolias, Maples, and Chrysanthemums; a quantity of Maké, the great timber tree of Japan; a quantity of variegated Ginko tree; a new Fern; a new Primrose, whose flowers are produced in an upright cluster, the shape of a pagoda; and a large number of other Tree and Shrub Seeds, described by Dr. Hall as unlike anything we have here, and as possessing great beauty.

To name these we shall have to call in the aid of our friend Dr. Torrey, as soon as their lineaments shall have obtained by growth sufficient distinctness to enable him to pronounce upon them. Dr. Hall speaks of the great variety of trees in Japan with variegated leaves, and which are among these. They will give a new beauty to our lawns, and be more permanent than flowers. It gives us much pleasure to speak at this early period of the arrival of these plants and seeds in this country, both because we wish the horticultural world to know how much it is indebted to the enterprise and plant love of Dr. Hall, and because a collection so rich and so varied has never been obtained from any country, even by the best English collectors, while the similarity of the Japanese climate to our own renders this collection of peculiar value. The Wardian cases yet to arrive contain Conifers and other rare plants, the character of which will be announced as soon as opened.

Parsons & Co.

Flushing, New York, March 20.

Early Cabbage Plants.

W. VIRGO and SON, Wonersh Nursery, Guildford, have a large quantity of strong, healthy plants of the following sorts to offer for Sale at 3s. 6d. per 1000, viz.

EARLY YORK.	CATTELL'S RELIANCE.
,, BARNES.	NONPAREIL and

BATTERSEA. RED CABBAGE PLANTS, 5s. per 1000.

Stones or Sprotborough Cabbage Seed.

JOHN SCHOLEY, Nurseryman and Seedsman, Pontefract, has the above to offer to the Trade, his own growing of 1861.

The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.

Price 3s. per lb., or 16l. per cwt.

SEAKALE SETS for SALE.—The Seakale Sets are far superior to Seed, and are grown by all the Market Gardeners round London to ensure a regular crop and superior crowns for Forcing for next winter's use. Good strong sets may be had at 10s. per 1000. Those in the Trade liberally treated with for any larger quantity.

William Bagley, Munster Farm, Fulham, S.W.

MESSRS. E. G. HENDERSON and SON, of the Wellington Nursery, St. John's Wood, have great pleasure in offering the following VERBENAS, selected as the finest kinds yet seen by them.

SIR PHILIP.—Exceedingly brilliant, vivid carmine scarlet.
LADY GREY EGERTON.—Beautiful new magenta-crimson.
RED GAUNTLET.—Beautiful orange-tinted flame-scarlet.
DESDEMONA.—Rich dark plum-coloured crimson.

Plants 1st of May, each, 2s. 6d.; per dozen, 18s.; per 100, 75s.

STUARTIA PENTAGYNIA.—A very handsome deciduous autumn-flowering hardy shrub. For description see *Gardeners' Chronicle* of March 15, and E. G. H. & Son's SEED CATALOGUE, page 95. Strong bushy Plants, 3 feet high, 7s. 6d.

FRUITING VINES.—Extra strong; Golden and Muscat Hamburghs; also, Bidwell Seedling, a late-hanging Grape, and others.

SEEDS OF

Clianthus Dampieri.—Seeds, 2s. 6d. per packet.
Calendula officinalis superba. 6d. and 1s. per packet.
Celosia pyramidalis aurea, 1s. 6d.; Rubra, 1s. per packet.
Cosmos diversifolius atrosanguineus, 1s. per packet.
Linum perenne candidissimum, 1s. per packet.
Perfection Sweet William, 6d. and 1s. per packet.
Œnothera Lamarckiana, 6d. and 1s. per packet.
Saponaria calabrica alba, 6d. and 1s. per packet.
Nemophila atomaria oculata, 6d. and 1s. per packet.
Zinnia elegans flore pleno. 6d. and 1s. per packet.
Giant Emperor Asters in 20 colours.

Dwarf Chrysanthemum-flowered Asters.—The most beautiful for bedding and margins.

Salvia argentea, Ferula glauca, Dipsacus Gmelini.—Ornamental garden plants, 6d. and 1s. per packet.

Bush Vegetable Marrow.—The most prolific and richly flavoured of any, 1s. per packet.

NEW FUCHSIAS.—"MINNIE BANKS" and "COMET."

The above Fuchsias possess first-class properties, and show a striking advance on all others hitherto sent out. 3s. 6d. each, a few extra sized, 5s., 7s. 6d., and 10s. 6d. each.

Bougainvillæa speciosa (spectabile), true, 3s. 6d.
" glabra, 5s.
Fuchsia "True Blue" (double flowered), 3s. 6d.

E. G. Henderson & Son, Wellington Nursery, St. John's Wood, London, N.W.

NEW ANTIRRHINUMS.

Very splendid, rich and striking.

	s.	d.
GEM OF SUDBURY.—Bright red, white throat, yellow mouth and lips marked with a horizontal band of blood colour, large, novel, and rich flower, each ..	3	6
JEWEL.—Rich magenta colour, white throat and mouth, very beautiful and attractive	2	6
TRIUMPH.—Extra rich crim, white throat and yellow lip, a brilliant and bold flower	3	6
VARIEGATA.—Upper part of the flower very richly shaded purple with edging of yellow, exceedingly bright yellow mouth, with clear primrose lip crossed horizontally with a band of red, throat pure white, very attractive	3	6

The plants are fine and strong. The 4 varieties together for 10s. 6d. Usual allowance to the Trade.

Fine selections of other new and very choice Varieties, 6s. and 9s. per dozen.

NEW MIMULUS.

CARDINALIS BRILLIANTE, extra bright scarlet, very striking and rich. The form of this flower is good, and being a very free and continuous flowering plant, it is particularly desirable as an effective bedder. Very strong plants, each 3 6

The usual allowance to the Trade.

CARDINALIS LAHMONII, KERMESINA, and PRINCE IMPERIAL, three fine distinct colours, each 9d. or 6s. per doz.

HERBACEOUS and ALPINE PLANTS.

A very superior collection. For PRICED LIST of a few desirable sorts see *Gardeners' Chronicle* of April 14, page 329.

The NEW SPRING CATALOGUE of Bedding, Stove, and Greenhouse Plants supplied on application.

Stephen Brown, Seed and Nursery Establishment, Sudbury, Suffolk.

New Dahlias.

JOHN KEYNES, F.R.H.S., Castle Street Nurseries, Salisbury, will be prepared to send out the following first-class New and approved DAHLIAS the first week of May.

J. Keynes considers them quite equal to any he has had the honour to offer:—

	s.	d.
Black Prince (Keynes'), dark mulberry	7	6
Countess Portsmouth (Rawling's), cream-tipped cherry	10	6
Donald Beaton (Dodd's), dark maroon	10	6
Empress of India (Rawling's), very dark	10	6
Goldfinder (Keynes'), yellow tipped deep orange ..	10	6
Imperial (Keynes'), deep bright plum	10	6
John Harrison (Harrison's), light scarlet, red	10	6
Lady Elcho (Dodd's), light salmon	7	6
Maria Carter (Keynes'), white edged deep carmine ..	10	6
Minnie Dodds (Dodd's), dove colour	10	6
Oscar (Adde's), light scarlet	10	6
Sir J. Outram (Rawling's), dark velvet	7	6
Maid of Bath (Hooper's), white tipped purple	10	6

FANCY FLOWERS.

	s.	d.
Blondin (Dodd's), crimson tipped white	10	6
Goldfinch (Keynes'), cream striped pink	10	6
Mrs. Crisp (Keynes'), purple tipped white	10	6
Reliance (Rawling's), maroon striped white and purple	10	6

These flowers have been exhibited, and taken many First Class Certificates, and shown in the winning Stands which took 19 First Prizes at the Great Exhibitions of the Royal Horticultural Society, Crystal Palace, &c.

CATALOGUES, with instructions for their growth, will be sent on application.

Salisbury, April 26.

THOMAS BARNES will commence sending out on the 27th April his two NEW SEEDLING DAHLIAS, viz., Royal Purple and Blondin.

Descriptions and prices in T. B.'s CATALOGUE, which may be had on application.

Dane Croft Nursery, Stowmarket.

TO BE SOLD IMMEDIATELY, in Two or more Lots, a quantity of choice STOVE and GREENHOUSE PLANTS, FERNS, ORCHIDS, &c., many of them being specimen plants and fit for exhibition.

Apply to Mr. Joseph Tanton, Gardener, Crowhurst Park, Battle, Sussex.

JOHN KERNAN, 4, Russell Street, Covent Garden, W.C., offers to the Trade, Market Gardeners, and the Public generally, a fine supply of SCARLET RUNNERS, warranted of English growth, as the Foreign do not set their bloom; also Newington Wonder and Early Cream Dwarf FRENCH BEANS, with all other approved kinds of Agricultural, Vegetable, and Flower Seeds, to be depended upon as described, and not as purported to be in certain Catalogues, compiled with slight knowledge by curates having no cures, and using learned names entirely unknown before for the sole purpose of swelling out, per order of puffing Seedsmen, what the Press justly call a "Fat Catalogue," no matter whether an "Illustrated Guide" or a "Vade Mecum," alike calculated to mislead the public by the insertion of articles as much like the description given as "a hat is like a hand-saw," a practice not likely to be corrected unless some profound practical botanist like Dr. Lindley should condescend to lash their folly with such severe but just censure as the late J. C. Loudon thundered against illiterate, ignorant, conceited, puffing, upstart, provincial nurserymen.

AGRICULTURAL SEEDS.

John Kernan, Seed Merchant, 4, Russell Street, Covent Garden, has on hand a splendid collection of the above, all of which are warranted new and saved from the purest stocks.

Alsike Clover, per lb., 1s.
English Red do., per lb., 7d. and 8d.
Welsh do., per lb. 7d. and 8d.
Cow Grass, per lb., 9d.
White Dutch, per lb. 9d.
Trefoil, per lb., 4d.
Lucerne, per lb., 9d.
Cow Cabbage, per lb. 1s. 6d.
Furze, per lb. 1s.
Natural Grasses in distinct varieties, 6s. to 10s. per bushel.
Scotch Perennial Rye-grass, 6s. to 7s. per bushel.
Imported Italian do., 6s. to 7s. per bushel.
Spring and Winter Tares, 7s. per bushel.
Buckwheat, 6s. per bushel.
White Belgian Carrot, 1s. per lb.
Low Mustard for torpid lands, 7s. per bushel.
Mangel Wurzel in varieties, 6d. per lb.
Swede and all other approved kinds of agricultural Turnips, 6d. per lb.
Parsley for sheep walks, 16s. per bushel.
Kohl Rabi, 3s. per lb.
Peruvian Guano, 14l. per ton, together with every other article necessary for farming purposes.

AGRICULTURAL SEEDS.—The under-named Agricultural Seeds offered by Charles Sharpe & Co., have all been grown upon their own Seed Farms, and from selected Transplanted Roots: they may be depended upon as true and of superior quality. Offers will be made where large quantities are taken.

MANGEL WURZEL.

Per lb.	s.	d.	Per lb.	s.	d.
Improved Yellow Globe	0	6	Elvetham Long Red ..	0	6
,, Red ,,	0	6	Long Yellow	0	6

SWEDE TURNIPS.

	s.	d.		s.	d.
Purple top	0	8	Improved Dwarf Purple top	0	10
Sharpe's Improved large	0	10	Green-top..	0	8
Sutton's Champion ..	1	0	Matson's Purple-top ..	0	8
Laing's Purple-top ..	0	8			

TURNIPS.

	s.	d.		s.	d.
Red Globe	0	8	Green-top Yellow Scotch	0	9
Lincolnshire Red Globe	0	9	Purple-top Yellow Scotch	0	9
Henley's White Globe ..	0	6	Tankards of Sorts ..	0	10
Green Globe		6	Orange Jelly	0	10
Early Stone, or Six Weeks	0	8	And other varieties.		

To the Trade.

New Seeds Direct from the Growers.

CHARLES SHARPE and CO., Seed Growers, Sleaford, will have much pleasure in forwarding on application their WHOLESALE PRICED LIST of AGRICULTURAL SEEDS, which have been grown upon their own land with the utmost care from the finest selected stocks. The advantages of procuring Seeds direct from the Growers are too obvious to require comment, and from the experience of C. Sharpe & Co. in the growing and harvesting of Seeds, a satisfactory result may be calculated on with certainty when their Seeds are used.

SHARPE'S IMPROVED LARGE SWEDE.—The largest and best cropping Swede in cultivation; it produces a finely-shaped large bulb, without a coarse top. A Coloured Lithograph of the Swede will be sent to purchasers.

Charles Sharpe & Co., Seed Growers, Sleaford, Lincolnshire.

Yorkshire and Lincolnshire Nursery and Seed Establishment.

MARTIN and SONS respectfully offer a very superior Stock of TURNIP SEED, as under, the produce of their Seed beating all others at one of the principal Shows in Yorkshire, winning the "two Five Pound Silver Cups," the "Second principal Prize," and several of the minor prizes.

CATALOGUES with particulars on application.

Yorkshire Prize Swede Turnip ..
Golden Melon do. do. ..
Rouge et Blanc Stone do. .. } 1s. per lb.
Improved White Globe do. ..
Russian Green-top White do. ..

Skirving's Green-top, Marshall's Purple-top, and all the principal kinds of Swede and White Turnips, at 8d. per lb.; by the bushel or cwt. cheaper.

FLOWER SEEDS.

The 80 varieties which caused so great attraction and were admired by the hundreds of persons passing the Park Nursery, Hull, for 5s., free by post.

BEDDING PLANTS.

Our Stock is immense, and strong healthy plants, from 2s. 6d. to 4s. per dozen; by the hundred, 20s. to 25s.; by the thousand, 8l. 8s., including the choicest of Verbenas, &c.

Nursery and Seed Establishment, Cottingham and Hull.

REIGATE SILVER SAND.—Best quality, 10s. per ton, cash. Delivered to the Reigate Junction Railway. Truck of 4 or more tons loose, 9s. per ton, cash; 2 bushel bags, 9s. per dozen; 10d. per bushel.

William Short, Landscape Gardener, &c., Red Hill, Surrey.

Upwards of 2000 Cases have been reported as Cured by

JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.

Agents:—

Messrs. Wood & Ingram, Huntingdon
,, Wood & Sons, Maresfield, near Uckfield
,, J. & J. Fraser, Lea Bridge Road, London, N.E.
,, Grayson & Co. Bury St. Edmunds
,, Wm. Urquhart & Son, Dundee
,, Dicksons & Co., Waterloo Place, Edinburgh
,, Minier, Nash & Nash, 60, Strand, London
,, Hurst & McMullen, 6, Leadenhall Street, London
,, Fisher & Holmes, Handsworth, Sheffield
,, Finney & Co., Gateshead
,, Stuart & Mein, Kelso
Mr. Richard Smith, Worcester

Seed Warehouse, 10 and 11, Exchange Street, Norwich.

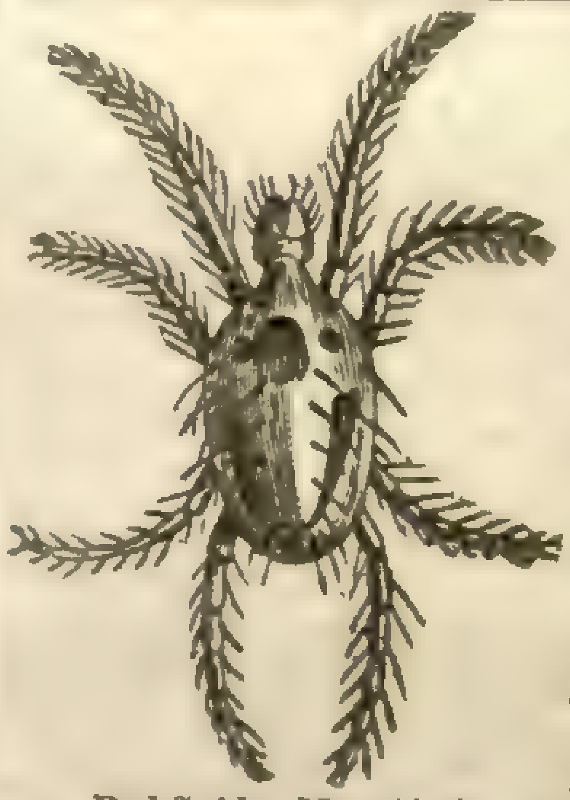
Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

Page & Toogood, Royal South Hants Seed Establishment, Southampton.



Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by Price's Patent Candle Co., Limited.

NEAL'S PATENT APHIS PASTILS, One Shilling and Two Shillings per packet, are now acknowledged by all disinterested persons to be the only cheap and effectual way of smoking a Greenhouse: they destroy all insects, and cannot injure the foliage unless they are damp. Testimonials from Florists and Scientific men of the highest standing may be had on application.

NEAL'S PLANT SOAP

is a perfectly new preparation, free from all smell, little more than half the price of the ordinary compounds, is not injurious, but on the contrary useful to the health of the Plant; destroys Red Spider, Mealy Bug, American Blight, Mildew, Scale, Thrip, Green Fly, and all other Insect Pests, and is only 1s. a packet of four cakes. May be obtained of all principal Seedsmen.

Magnified Aphides.

Patentee:
J. Neal, Edward Street, Birmingham.

Blight.

BROWN'S PATENT FUMIGATOR.—A Portable Instrument for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers in the open air, without injuring the most delicate plant; delivering the smoke cold, in a dense mass, and effecting a great saving of Tobacco. Price 10s. and upwards.

Manufactured and supplied to the Trade by Messrs. Barber & Groom, London; and may be had of all Ironmongers, Seedsmen, and Florists.

WIRE-WORK for the Garden, the Greenhouse, and the Conservatory. An Illustrated Catalogue, containing upwards of 90 Engravings, Post-free. WIRE NETTING, 2 feet high, 5d. per yard. GARDEN SYRINGES, 6s. each.

William H. Honey, Manufacturer, 263, Regent Street, near Oxford Street Circus, W.

PATENT GUTTA PERCHA SOLES.—Important to Gardeners.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. Glenny, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. Glenny."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.

The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C.

RICHARD SMITH'S LIST of all the EVER-GREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 12 postage stamps.

RICHARD SMITH, Nurseryman, Worcester.

H. AND R. STIRZAKER have to offer in large quantities the following surplus NURSERY STOCK :—
Laurel, Common, 1½ to 2 and 2 to 3 feet.
Laurel, Portugal, 1 to 1½, and 1½ to 2 and 2½ feet.
Yews, English, 1½ to 2, and 2 to 3 feet.
Arbor-vitæ, American, in sizes, from 3 to 6 feet.
Arbor-vitæ, Chinese, in sizes, from 3 to 6 feet.
They are well rooted, and the larger plants well furnished.
The Nurseries, near Lancaster.

Green Hollies.

CORNELIUS WHITEHOUSE (late WHITEHOUSE & WHITTAKER), Brereton Nursery, Rugeley, Staffordshire, offers several hundred thousand stout, free-growing, and exceedingly well rooted 2-year Seedling, and extra transplanted HOLLIES, from 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, and 18 to 24 inches and upwards. Also fine plants of HEMLOCK SPRUCE, ABIES CANADENSIS, 6 feet and upwards. Trade price, low, on application.

To Parties requiring Specimens of
ARAUCARIA IMBRICATA, 1 foot to 12 feet,
CEDRUS DEODARA, 6 feet to 25 feet,

GEORGE BAKER begs to offer the above fine handsome Trees, the whole of which have been regularly transplanted to insure their safe removal. Prices of each will be sent on application.

G. B.'s GENERAL CATALOGUE will be forwarded free by post.

American Nursery, Bagshot, near the Sunningdale Station, South Western Railway.

CLEMATIS AZUREA GRANDIFLORA, 3 to 4 ft., fine flowering plants, all on their own roots, 9s. per doz.; per 100, 60s.
CLEMATIS HELENA, 9s. per doz.; per 100, 60s.
" SOPHIA, 9s. " " 60s.
" MONSTROSA, 12s. per doz.
Very showy large flowers.
BEDDING PLANTS.
GERANIUM BIJOU, 5s. to 6s. per doz.; per 100, 38s. This is the finest of variegated-leaved scarlet-flowered Geraniums. See *Gardeners' Chronicle* and *Cottage Gardener*.
Apply to WILLIAM BARRON, Elvaston Castle, Derby.

CYPRIPEDIUM INSIGNIS MAULII.—In the first week of JUNE next will be distributed to a full List of Subscribers of 3 Guineas this fine variety of Cypripedium. After that time the price will be 5 Guineas to Non-Subscribers. It is figured and described in the "Floral Magazine," and a Coloured Figure will be forwarded for inspection per Post to Cultivators of Orchids and intending Subscribers on application.

WM. MAULE & SONS, The Nurseries, Bristol.

SPLENDID NEW FUCHSIAS, DICTATOR and UNIVERSAL. Coloured Illustrations by Mr. ANDREWS of the two, in exchange for 12 postage stamps.

G. S. assures Fuchsia Growers that "Universal" is the finest Fuchsia ever offered. For description see CATALOGUE.

GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington, London, N.

Verbena Fireball.

MESSRS. J. AND C. LEE having thoroughly proved VERBENA FIREBALL last summer, can recommend it as one of the best, if not the best, and most useful for bedding purposes, combining, as it does, the intense scarlet and compact truss of Firefly with the robust and free-flowering habit of Purple King.

To be sent out in May, price 12s. per dozen.

Nursery and Seed Establishment, Hammersmith, London, W.

GEORGE SMITH, FLORIST and SEEDSMAN, Common Side, Macclesfield, has now ready in good plants, package included :—

12 finest Show PANSIES ..	..	6s. 0d.
24 " " " ..	..	10 0
24 DAHLIAS, fine sorts to name		6 0
24 VERBENAS of 1861 ..	..	6 0
12 FUCHSIAS ..	..	3 0

With a general assortment of BEDDING and GREEN-HOUSE PLANTS.

CATALOGUE on application.

CHARLES TURNER'S GENERAL SPRING CATALOGUE of Achimenes, Azaleas, Cinerarias, Calceolarias, Chrysanthemums, both Large Flowering and Pompones; Dahlias, Fancy Dahlias, and Bedding Dahlias; Gloxinias; Pelargoniums, Show, Spotted, French, and Fancy; Variegated, Scarlet, and Hybrid Geraniums, and various other Bedding Plants; Hollyhocks, Heliotropiums, Petunias, Verbenas, as well as Florists' Flowers and Plants generally.

The EIGHTEENTH ANNUAL EDITION of the above is just published, and will be forwarded gratis and Post Free to any address.

CHARLES TURNER, The Royal Nurseries, Slough.

SUTTON'S COLLECTIONS of choice NEW FLOWER SEEDS (Post free).—Ladies and gentlemen requiring showy kinds of FLOWER SEEDS are respectfully recommended to leave the selection of sorts wholly or partly to us, and we will supply those which we know to be really worthy of cultivation.

COLLECTIONS of FLOWER SEEDS to be sent free by post.

		£	s.	d.
The best 100 sorts of Flower Seeds, hardy, half-hardy, and tender, with instructions	..	1	1	0
The best 50 sorts ditto, with instructions	..	0	10	6
The best 36 sorts ditto	..	0	7	6
The best 24 sorts ditto	..	0	5	0

SUTTON & SONS, Seed Growers, Reading, Berks.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe. Also to their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which for want of space there, is erected at the Crystal Palace, Sydenham.

Royal Berkshire Seed Establishment, Reading.

AZALEAS and CAMELLIAS full of Flower Buds, 18s., 21s., and 24s. per dozen. The largest Stock in the Trade of BRITISH and FOREIGN FERNS, 3s. to 12s. per doz.; AQUARIUMS and FERN CASES of every description, GOLD and SILVER FISH, 100,000, 4s. to 9s. per doz., 3l. per 100, 18l. per 1000.

R. GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church, N.E.

SPLENDID PRIZE CINERARIA SEED.—Our Collections have been awarded as follows (the only times exhibited this season) :—

First Prize for 6 Plants. Royal Botanic Society, Regent's Park, April 2, 1862.

First Prize for 9 Plants. Royal Horticultural Society, Kensington, on Wednesday last, April 9, 1862.

Packets of Seed from our unequalled collection, which contains nearly a hundred varieties, 1s., 2s. 6d., 3s. 6d., and 5s. per packet.

Plants of the leading sorts may be had.

JOHN DOBSON & SONS, Woodlands Nursery, Isleworth, W.

Strawberry Plants.

WM. JAS. NICHOLSON again offers strong laid Plants of his Grand Collection of more than [illegible] varieties of English, French, Belgian, American, and other STRAWBERRIES, including all the new and fine sorts. [illegible] Catalogue sent on application.

A New, Enlarged and Improved CATALOGUE will be published in Autumn, when many new sorts well tested will be offered with confidence.

WILLIAM JAS. NICHOLSON, Egglescliffe, Yarm, Yorkshire.

Choice Dahlia Seed.

H. LEGGE has more than he requires, saved from his Unrivalled Collection, 50 Seeds for 2s. 6d. per packet. H. L. also intends sending out on the 1st of May his superb NEW DAHLIA "Prince of Wales," bright yellow, tipped with pure white, extra fine and constant. Those who do not grow this Fancy will lose the best of this year. 10s. 6d. per plant.

CATALOGUES can be had by inclosing One Stamp to above, Marsh Side, Edmonton, N.

Choice Vegetable and Flower Seeds.

B. S. WILLIAMS will be happy to forward post free to all applicants his PRICED and DESCRIPTIVE SEED CATALOGUE for 1862, containing Select Lists of the best seeds in cultivation, with useful suggestions for the guidance of Amateur cultivators.

Paradise Nursery, Seven Sisters and Hornsey Road, Holloway, London, N.

Best Early Broccolies in Cultivation.

MITCHINSON'S EARLY WHITE CORNISH BROCCOLI.

PENZANCE DWARF EARLY WHITE BROCCOLI.

Good Seeds of the above choice Early Broccolies can be had at 1s. per packet at

MITCHINSON'S Seed Warehouse, Truro, Cornwall.

COLLECTIONS of FLOWER SEEDS.

The best 100 sorts, including hardy, half hardy, and tender				[illegible]
The best 50	ditto	ditto	ditto	[illegible]
The best 36	ditto	ditto	ditto	[illegible]
The best 24	ditto	ditto	ditto	[illegible]

RICHARD SMITH, Seed Merchant, Worcester.

BARR & SUGDEN
12 KING ST COVENT GARDEN

SEED MERCHANTS AND FLORISTS,
12, KING STREET, COVENT GARDEN, W.C.
OPPOSITE THE GARRICK CLUB.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

SEEDS FOR PRESENT SOWING.

CONVOLVULUS CANTABRICUS STELLATUS NOVUS (THE TRUE),

Raised by our "SARDINIAN CORRESPONDENT," and brought out by us this Spring. It is one of the most beautiful Novelties of the Season. The plant is illustrated in our "Guide to the Flower Garden, &c." and also in the "Floral Magazine." In growth and habit resembling C. cantabricus, but with flowers and foliage perfectly distinct; the flowers are of a beautiful pink, with a pure white double star in the centre, and are produced in the greatest profusion; it forms a splendid bedding plant, and is exceedingly elegant in hanging baskets. Seed 1s. per packet. Coloured Plates by ANDREWS, 6d. each.

ZINNIA ELEGANS FLORE PLENO (Barr & Sugden's variety).

Flowers very double, large, and extremely handsome.

An assortment of 18 splendid varieties... ... 10s. 6d. | An assortment of 12 splendid varieties ... ... [illegible]
" " ... ... 3 6 | Splendid mixed, per packet ... ... [illegible]

For COLLECTIONS of CARNATIONS and PICOTEES,

Saved by our Special "Sardinian Correspondent," and distinguished by his Crest, thus [crest] and initials G. E. S., see last week's *Gardeners' Chronicle*.

PETUNIA MADAM FERGUSON.

D. FERGUSON

Offers the above on and after May 5, at 5s. per plant; 6 plants for 21s.; per 100, 10l. As the stock is limited, those who wish to secure this fine Bedding-out variety had better lose no time in sending their orders. See the *Florist* for August, 1861, from which the following is extracted :—

PETUNIA MADAM FERGUSON.—Alterations both in the form and colour of Petunias have of late been numerous and striking; but among single kinds we have seen none so constant and beautiful as the variety which forms the subject of our Plate this month, and of which a charming specimen, loaded with upwards of a hundred flowers, in which there did not appear the slightest tendency to sport, was shown at the last Royal Botanic Society's exhibition in Regent's Park. This favourite kind, for so it was considered by all who saw it at the "Park," was raised by Mr. Ferguson, of Stowe, in Buckinghamshire, in the spring of 1860; but being the smallest among thousands of Seedlings, it did not flower till October in that year, when its first blooms were submitted to the inspection of Mr. Beaton, who pronounced it to be "a most charming flower," and added, "You are welcome to make me godfather to it." The flowers are of a rich glossy silky white, regularly and distinctly marked with five bands or stripes of beautiful bright purplish crimson. This variety has a hard wiry habit, and a strong disposition to bloom in a small state; under ordinary treatment it is therefore somewhat difficult to propagate. Out of doors it makes a good bed, and under glass both in the shape of bushes in pots or trained up pillars, it is both pleasing and effective, and in the evening it is reported to emit an agreeable perfume.

Extract from Mr. BULL'S *Catalogue.*

PETUNIA MRS. FERGUSON.—White, distinctly rayed with bright crimson; a unique, superb, and attractive variety.

D. F. offers to Public Companies BEDDING-OUT PLANTS by the 5000, 10,000, 50,000, or 100,000 on very reasonable terms; also splendid CEDRUS DEODARA, 6 to 14 feet. IRISH and COMMON YEWS.

STOWE, BUCKINGHAM.—April 26.

New Dahlias.

CHARLES TURNER has now ready fine plants of those popular and superior new varieties :—
LORD DERBY, MRS. BUSH, MODEL, CHIEFTAIN, DELICATA, CAPTAIN HARVEY, CYGNET, UNA, &c.
Also all the best established varieties, in strong plants, at moderate prices.
See CATALOGUE just published and which will be forwarded gratis and post free to any address.
The Royal Nurseries, Slough.

New Verbenas, Fuchsias, Petunias, &c., of 1861.

WM. KNIGHT begs to announce that he can supply good struck plants of the above in healthy stuff, from 5s. to 7s. per dozen.
Also extra strong CLIMBING ROSES, from 4s. to 6s. per dozen.
CATALOGUE post free on application.
Floral Nursery, Hailsham, near Hurst Green, Sussex.

Tom Thumb Scarlet Geranium and Aurea floribunda Calceolaria.

ALEXANDER LAING begs to inform nurserymen, gentlemen, and the public in general, that he is in a position to offer good, healthy, well established Plants of the above, by the dozen, 100, and 1000, having an immense stock of both, all being autumn-struck Plants.
Prices on application to A. Laing, Nurseryman, Beverley, Yorkshire.—April 26.

To Florists and Nurserymen.

INTERNATIONAL BAZAAR, South Kensington. —The Management have placed Two Tables in the centre of the Building, near the Fountains, for the DISPLAY of SPECIMEN PLANTS not for Sale. They may consist of Plants in bloom, of Palms, large Ferns, or with beautiful or curious foliage, &c., with grower's name or other particulars attached. They will be under the especial care of Mr. W. Cutter. Other spaces will be selected for Plants on Sale, by special arrangement from the 1st of May to the 30th of October.
For particulars apply to Mr. W. Cutter.

ROYAL BOTANIC SOCIETY of LONDON, Regent's Park, N.W.

SPRING SHOW, APRIL 23, 1862.

6 PELARGONIUMS.

Silver Medal to Mr. Cross, Gr. to Sir F. H. Goldsmid, Bart., St. John's Lodge, Regent's Park.
Silver Medal to Mr. Turner, Slough.
Small Silver Medal, to Messrs. J. & J. Fraser, Lea Bridge Road, Leyton.

6 BRITISH FERNS.

Bronze Medal to Miss Clarkson, Avenue Road, St. John's Wood.
Small Bronze Medal to Mr. B S. Williams, Holloway.

24 PANSIES, CUT BLOOMS.

Bronze Medal to Mr. James, Gr. to W. F. Watson, Esq., Isleworth.
Small Bronze Medal to Mr. Bragg, Slough.

NEW PLANTS, &c.

1st Class Certificate to Mr. Everest, Reading, for Genista Everestiana, a beautiful greenhouse shrub, resembling G. canariensis, but having rich orange-yellow flowers.
1st Class Certificate to Mr. Standish, Bagshot, for a beautiful striped-leaved Japanese Polygonatum, with red stems, finely variegated leaves and white green-tipped flowers.
1st Class Certificate to Mr. Bull, Chelsea, for Woodwardia orientalis, a fine hardy Japanese Fern, with pinnato-pinnatifid fronds, remarkable for producing a profusion of young plants on the upper surface.
2d Class Certificate to Mr. Standish, for a dwarf Japanese Dendrobium, with short oblong leaves, and small fragrant white flowers, very interesting as a hardy greenhouse free-blooming Orchid.
2d Class Certificate to Mr. Standish, for "Cyrtomium sp. China," an erect-growing and moderate-sized pinnate Fern, with thin light green pinnæ.
2d Class Certificate to Mr. Bull, for Lomatia elegantissima, a slender greenhouse shrub, rewarded for its elegantly dissected leaves.
2d Class Certificate to Mr. Bull, for Agave filifera, a stiff close-habited Aloe-like plant, with the margins of the leaves thread-bearing.
2d Class Certificate to Mr. Bull, for "Araucaria sp.," a vigorous-habited glaucous-leaved plant, resembling A. Cookii.
2d Class Certificate to J. Walker, Esq., Hunsdon, Herts, for Pomaderris discolor, a rare and elegant greenhouse shrub of compact habit, having ovate-lanceolate dark green leaves, and becoming loaded with feathery masses of light yellow flowers.
2d Class Certificate to Messrs. Carter & Co, Holborn, for Fuchsia Meteor, on account of its beautiful foliage, which is yellowish green upwards, passing into deep red.
There were also of this class—Epacris transparens, from Mr. Standish; a palish red and white variety in the way of grandiflora. Camellia Commodora, from Mr. Bull, a promising double white, not quite in condition for judgment; it had broad imbricating reflexed petals, and flowers of moderate size. Rhododendron Verschaffeltii from Mr. A. Verschaffelt, a variety with ponticum-like leaves, and fair trusses of pale lilac flowers richly spotted on the upper segment with purplish red. Sarracenia purpurea, a spotted rosy Cyclamen persicum, and Amaryllis marginata elegans, from Mr. Williams. Cinerarias Mary Jane, and Flora, rosy tipped, and Eliza purple tipped, superior varieties, from Mr. Penwell, Gr. to J. Browning, Esq., Leyton.

MISCELLANEOUS.

Silver Medal to Mr. Williams, Holloway, for a mixed collection of Plants.
Bronze Medal to Messrs. E. G. Henderson & Son, St. John's Wood, for a small collection of Plants, including a finely bloomed Rudgia leucocephala.
Bronze Medal to Messrs. W. Cutbush & Son, Highgate, for a mixed collection of Plants.
Bronze Medal to Messrs. Dobson & Son, Isleworth, for a collection of Cinerarias.
Bronze Medal to Mr. Cross, St. John's Lodge, for a collection of Indian Azaleas.
Bronze Medal to Mr. Turner, Slough, for a fine group of Auriculas.
Bronze Medal to Messrs. J. & J. Fraser, Leyton, for a small collection of Greenhouse Plants.
Bronze Medal to Messrs. Paul & Son, for a collection of Pot Roses; and also for a collection of cut blooms of Roses.
Small Bronze Medal to Mr. James, for a collection of Auriculas.
Small Bronze Medal to Messrs. W. Cutbush & Son, for a collection of Tulips; and also for a well-kept group of Hyacinths.
There were additional Pansies from Mr. James and Mr. Bragg, the latter having also a collection of Belgian or Fancy varieties; and of Auriculas from Messrs. Dobson & Son.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., Nurseryman, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10s., and 25 pairs of best Pompones for 10s.; 20 pairs of best large varieties, cuttings, 5s.; and 25 pairs of best Pompone cuttings, 5s. To save trouble, all orders to be pre-paid.
NEW CATALOGUE now ready, for one stamp.

Chrysanthemums.

W. HOLMES, F.R.H.S., has a fine stock of the above, including Little Harry, Lady Hardinge, Leda, Linda, Rifleman, Florence, &c., &c., all at 5s. per dozen.
DESCRIPTIVE CATALOGUES of the above, also Dahlias, Fuchsias, Verbenas, Geraniums, Antirrhinums, Petunias, &c., free for one stamp.
Frampton Park Nursery, Hackney, N.E.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.
Versailles Nursery, William Street, near Hammersmith Turnpike, W.

New and Cheap Plants of 1861.

J. COURCHA can supply 12 New DAHLIAS for 6s.; 12 New VERBENAS for 4s.; 12 New FUCSHIAS for 5s.; and 12 New CHRYSANTHEMUMS for 5s. Older Varieties, 16s. per 100.
CATALOGUES can be had on application at Wellington Row, Hart's Lane, Bethnal Green Road, London, N.E.

New French Fuchsias, Verbenas, and Petunias of 1862.

J. COURCHA is now sending out Plants at the following Prices:—
12 NEW FRENCH VERBENAS for 12s.
3 NEW FRENCH FUCHSIAS for 12s.
3 Ditto ditto PETUNIAS for 9s
CATALOGUES can be had on application at Wellington Row, Hart's Lane, Bethnal Green Road, London.

Dioscorea Batatas, or Chinese Potato.

J. IVERY and SON beg to inform their Patrons that this is the most favourable month for planting this useful Vegetable. Strong sets are now ready, at 1s. per dozen, or 7s. 6d. per 100; likewise whole Tubers, from 2s. 6d. to 6s. per dozen.
Dorking Nursery.

WM. WOOD and SON have much pleasure in offering their superb collection of

PHLOXES.

All the newest and most approved Continental varieties, 12s. to 18s. per dozen.
Older, but approved kinds, 6s. to 9s. per dozen.

100 Phloxes, in 50 sorts, for 40s.		25 Phloxes, in 25 sorts	12s. 6d.
50 ,, 25 ,,	21s.	12 ,, 12 ,,	9s. 0d.

PENTSTEMONS.

New and first-rate varieties	18s. per dozen.
Older, but approved kinds	6s. to 9s. ,,
50 Pentstemons, in 25 sorts	21s. 0d.
25 ,, 25 ,, ...	12 6
12 ,, 12 ,, ...	9 0

ANTIRRHINUMS.

Per dozen .. .. 6s., 9s., and 12s

HERBACEOUS PÆONIAS.

Per dozen .. ..12s., 18s., and 24s.

HERBACEOUS PLANTS.

Per dozen .. .. 6s., 9s., and 12s.
Plants presented to compensate for carriage.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Two Hundred and Fifty Guineas in Ten Prizes.

For Five Years Successively His Late Royal Highness the Prince Consort's Prize Cups have been Awarded to
SUTTON'S CHAMPION SWEDES at the Royal East Berks and South Bucks Agricultural Societies. New Seed now ready, 1s. per lb., or cheaper by the bushel, carriage free.
Royal Berkshire Seed Establishment, Reading.

The Gardeners' Chronicle.

SATURDAY, APRIL 26, 1862.

MEETINGS FOR THE ENSUING WEEK.

Thursday,	May 1	—Linnean	8 p.m.
Friday,	— 2	Royal Horticultural (General Meeting) at S. Kensington	2 p.m

Some months ago a very fine Review, while hypercriticising the new Garden of the Royal Horticultural Society at South Kensington, took occasion to sneer at what it called Nesfield's "polychrome" beds in that place. (Polychrome, be it observed, is only a superfine word, meaning particoloured; and we recommend it to the notice of fat catalogue makers.) These are geometrical beds containing summer flowers skilfully arranged in ribands, compartments, scrolls, or otherwise, separated from each other by narrow paths or alleys formed of permanent coloured materials instead of vulgar red gravel. Flowers are planted on the spaces allotted to them, according to the taste of the gardener, thus enlivening the ground as usual during the summer season; and when the flowers are gone, the clever combination of coloured materials is substituted for them, keeping up the effect as far as brute materials can replace the glowing tints of life. In summer the former are disregarded; it is in winter that the parti-coloured arrangements are found to tell; and tell they do most effectually, as the numerous visitors to the South Kensington Garden during the present long winter have not failed to perceive.

The use of such materials, although brought to great perfection by Mr. Nesfield, is anything rather than a modern invention. On the contrary, it was well known to the French garden artists of the time of Louis Quatorze, who first introduced the term "embroidered parterres"; which are the best things in the way of garden ornament left by that meretricious age. "Parterres of embroidery," says a writer of the time, "are so called because the Box wherewith they are planted imitates embroidery upon the ground. These are the finest and most magnificent of all, and are sometimes accompanied with knots and scrolls of Grass work. Their bottom should be sanded, the better to distinguish the foliage and flourished work of the embroidery, which is usually filled with smith's dross or black earth." He also recommends powdered tiles or bricks when a red colour is desired. As for our English flower borders, which continue to exist in all their original ugliness, rectangular, or oval, or circular, or shapeless holes cut in turf, hideous in winter, and not much better in summer, the writer we quote adds "Parterres after the English manner are the plainest and meanest of all," a proposition which we think no one will dispute. Their sole merit, at the best, is their cheapness, and the very minute amount of skill demanded in laying them out.

The great difficulty that presents itself to those who wish to employ embroidered parterres is that they belong to a well nigh lost art. How to describe intricate figures on ground, even although excellent working drawings are supplied to the gardener, is known to few; and unless the utmost exactness is observed in imitating the artist's pattern his design is sure to prove abortive. Nevertheless it is an art easily acquired by those who are so fortunate as to have serviceable eyes, and there is no want of such men among gardeners. The first step taken securely the rest is easy. That first step is a knowledge of the manner of executing accurately simple figures, concerning which very full information has been given in our columns during the present spring. The most complicated patterns are merely multiplications and combinations of a few elementary forms. To contrive such patterns is altogether a different matter, and belongs, not to the executive gardener, but to the garden artist.

By way of assisting in the introduction of a style which the taste of a Nesfield has now identified with England and its horticultural magnificence, we propose occasionally to give coloured patterns and designs for embroidery work in the manner of which a first specimen appears in the *Gardeners' Chronicle* of to-day. This is one of those simple arrangements which are easily varied, and which suits even the smallest place where decorated ground-work is likely to be adopted. And in order to show exactly how the work is to be done, we add notes by Mr. Eyles, under whose eyes the embroidery at S. Kensington was executed, in addition to which we have the satisfaction to present our readers with remarks by Mr. Nesfield himself.

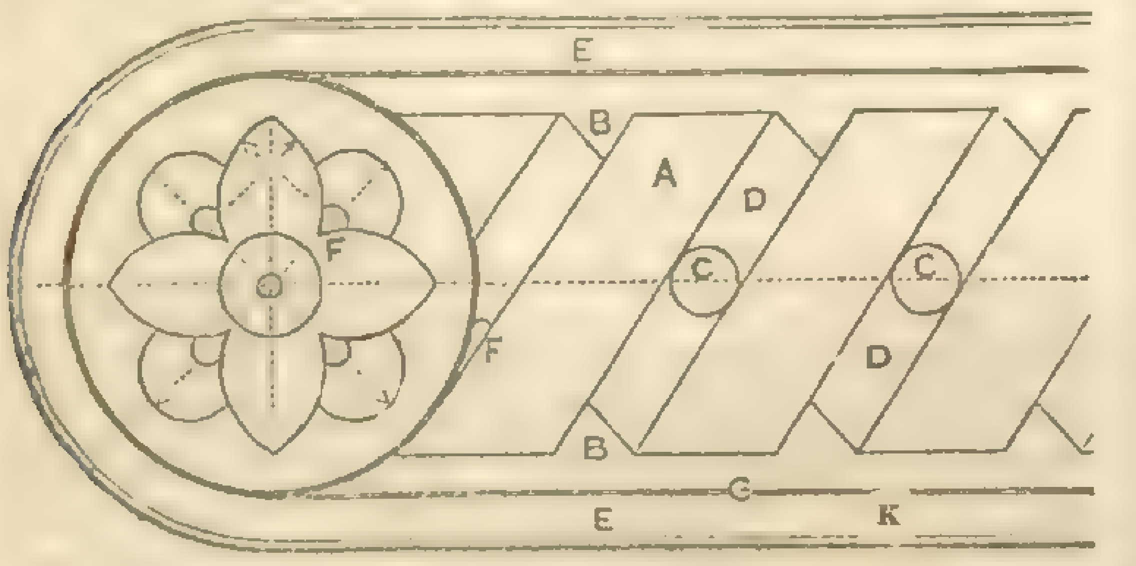
[Note by Mr. Nesfield.]

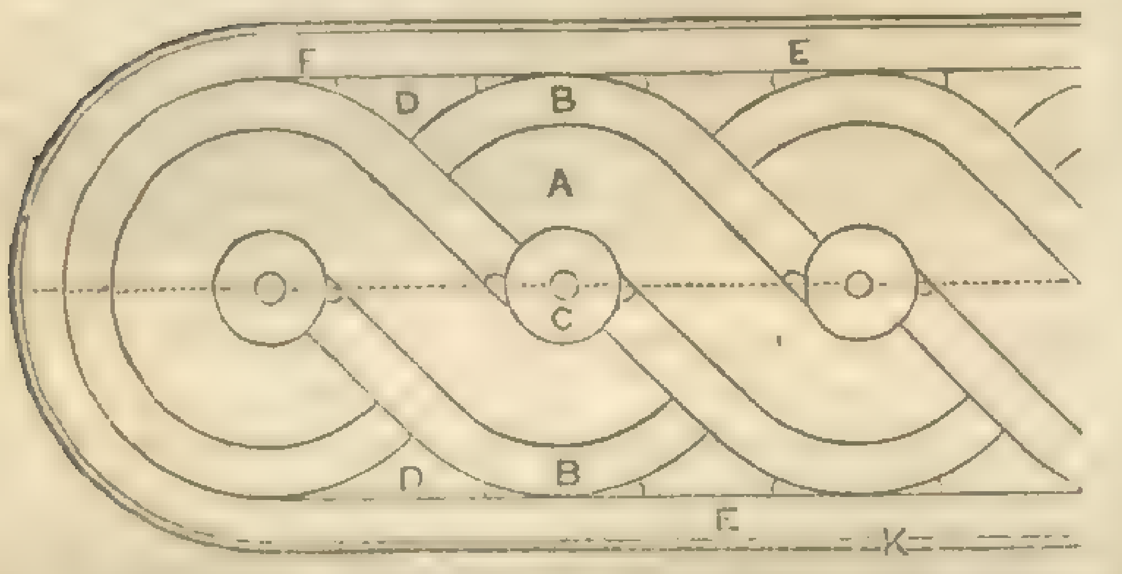
In gardens of any extent it is frequently expedient to occupy verges of subordinate walks with flowers as well as shrubs; the prevailing method respecting the former being that of cutting beds upon Grass, either rectangular, circular, or tortuous, which, although effective during the flowering season, are yet wretchedly bald and unmeaning in our long winters. When such beds are few and very simple on contracted verges this may be of no great moment, but on an extended scale the objection is aggravated, particularly when complex patterns are attempted, such as are so often perpetrated for principal features of gardens. These are especially objectionable, because it is not only impossible with the edging tool to maintain good drawing or precision as to curves, scrolls, &c., but Grass alleys (frequently very narrow) require the greatest care in mowing, and are therefore very troublesome to keep. Whereas when breadth of verge is ample, Box embroidery should be adopted as best affording opportunity for endless varieties of geometric figures; as long as sufficient space is provided for flowers, and by the aid of coloured alleys, the insipid winter effect alluded to is obviated, to say nothing of trouble lessened in good keeping. Very dwarf evergreens, such as Aucuba, Holly, Portugal Laurel, &c., are frequently applied to empty beds on Grass as a winter compensation, and although this is better than nothing, yet the effect is monotonous inasmuch as green is opposed to green (*i.e.*, the Grass and permanent shrubs), but if the same materials were used sparingly and with discretion in empty embroidered beds there would be some chance of lively combinations,

through the medium of good forms, and the contrast of coloured alleys.

The accompanying examples of embroidered compartments are from the new Royal Horticultural Gardens, and in consequence of their oblong shape are termed Friezes.

In order not to interfere with the coloured figures we give lettered woodcuts, which explain the meaning of the various lines and tints employed in the figures.





A. Beds edged with Box, sufficiently wide for riband planting and separated by gravel alleys, respectively top-dressed with colour about ¼ inch, till renewal is necessary (about once a year).

B. Yellow.—Broken adamantine clinker or Derbyshire gravel—the former the best.

C. White.—Derbyshire spar from Bakewell.

D. Blue.—Westmoreland slate—not Bangor, which is inky in wet weather.

E. Red.—Broken orangy red brick. The most luminous comes from Reading, Berks.

F. As alleys are difficult to flatten in very acute angles, the effect of slightly filling up with Box is desirable.

G. A circumscribing line of Box (sometimes double or treble, as the scale may require) not only enriches but favours the addition of a coloured alley.

K. Stone kerb (either Portland or artificial Portland, which is stronger, cheaper, and resists wet better than the real), most important as a decided separation between Grass and a compartment, and particularly as requiring no edging tool; a kerb may be from 3 to 5 inches below the Grass, thus converting a compartment into a panel.

N.B. After Box is planted, alleys should be carefully formed with common gravel and beaten hard previous to colouring; but a most essential material to make sure of preventing worm casts is a layer of sifted coal ashes between the rough and fine gravels. In designing friezes, simplicity of lines is desirable, particularly for riband planting. *W. A. Nesfield.*

[Practical Instructions for Executing Embroidered Work; by Mr. Eyles.]

Having determined upon the site for the embroidery, the ground should be well drained and dug over about a foot deep. This done the levels must then be put in. Should the site chosen be a dead level drive in a stout peg to the desired depth; take a common mason's level and with that put in as many more pegs the same height as the first as will be required all over the space. The more level pegs are put in in reason the better, as they will materially assist future operations. If the site chosen should be on a sloping bank or hanging level, two depths must be determined upon, one at the highest and the other at the lowest part. This done, any number of levels might be put in by the use of three boning sticks. Boning sticks should be about 3 feet long, made of deal 1 inch thick by 3 wide, and a cross at the top, and any person holding one of these upon the lower level, and another person holding another at the top, can direct a third person to put in any number of level pegs between the two points. The level pegs all being arranged, proceed to level the ground with the spade, keeping it full up to the top of the pegs; this done tread it regularly all over, then rake it carefully and well roll it with a garden roller.

The ground should now present a surface as flat as a drawing board, and you may proceed to trace out upon it the figure of the embroidery. Strain a line at right angles upon the ground, and a corresponding line should be drawn upon your plan. These lines will enable you to trace the plan accurately, and you may augment them as much as you consider necessary. The centres of the principal figures should also be found by measuring off from the central line, and all cardinal points accurately indicated before you proceed with the details. If this is carefully done you will have so many guides and helps to assist you in tracing your plan. Always bear in mind that geometric figures must be true, and if not carefully done you will most assuredly have something very much like angles in your circles, which would entirely spoil the appearance of your work.

After you have traced the plan to your satisfaction, get a number of small pegs about 6 inches long and the size of a goose quill and stick them into the lines, about 4 or 6 inches apart. These will enable you at any time to retrace your pattern, which is very apt to become obliterated by heavy rains. You may now proceed to cut out your trench for planting the Box; this should be done by a sharp spade and by an expert workman, carefully following the lines of the plan, and when a double line of Box is required one side should be planted and well secured before proceeding with the other.

The Box should be all cut to the same lengths and thickness, so that when planted it should present a perfectly uniform line.

When the Box is planted the soil should be taken from the walks, as well as the portion intended for the coloured gravels, to the depth of 6 inches. This done, place from 2 to 3 inches of cinder ashes all over the bottom—this is indispensable to prevent the worms working through to the gravel—afterwards fill up with common gravel to within one inch of the top, and the remainder with the coloured gravels intended to form the pattern. That portion intended for flowers should be nearly dry, and all necessary arrangements completed before putting on the coloured gravels.

The materials for producing the various colours are: Red, red brick; Blue, Westmoreland slate; White, Derbyshire white spar; Chrome, Derbyshire yellow spar; Warm Cream, adamantine clinker; Coal might be used for black where necessary.

The material should be broken to the size of a hazel nut or a little smaller; the colours may be produced by just sprinkling the surface say half an inch thick with the coloured gravels, and where this is done it must be filled to within that distance of the top with common gravel.

We learn with great satisfaction that the Marquess of Lansdowne has appointed to the highly responsible post of Steward of the Bowood estates in Wiltshire his most intelligent and experienced Gardener, Mr. Spencer, who also retains the Garden management. May sterling merit be always thus rewarded, and may good masters never want such deserving servants to promote.

—— The following additional return by Mr. Skinner will show the state of the Orchids in the drawing room mentioned at p. 356, up to nearly the present time, being a month later than last report.

April 22, 1862.

1. *Lycaste Skinneri.* — Flowers mentioned 25th March both in perfect beauty; deep rich crimson, and as nearly alike as possible, dark lip. New flower stems now 7 and 4½ inches high respectively.
2. *Lycaste, another Specimen.*—Two flowers now out, perfectly alike, a rich blush rose, the upper lobe of the lip *yellow*, like those exhibited at South Kensington on the 9th April; one of these flowers opened on the 16th inst. New flower stem now 4½ inches high.
3. *Barkeria Skinneri*, on a block, has yet five flowers on it, as perfect as in December, but within these three days past 10 flowers have faded and fallen off; two fresh shoots half an inch high have made their appearance.

—— It is announced that the Council of the Royal Horticultural Society has consented to allow a liberal prize for the best collection of plants for dinner-table decoration, which has been placed at their disposal, to be competed for at one of the autumn exhibitions to be held at South Kensington. The intention of this prize is we believe two-fold, first to bring together as many kinds of plants thought to be suitable for the special object in view, in order that it may be seen which are the most appropriate; and, secondly, after this has been ascertained, to induce those who grow plants for the flower markets, to turn their attention to the production of a supply of plants of a character suitable for placing on a first-class dinner table. Had the announcement been made earlier, no doubt a greater variety would have been forthcoming, but even now we may look forward to a very interesting display.

The exact conditions of the competition will of course be at once announced. We may however indicate that the special feature which it is desired to bring out is appropriateness of form and proportions combined with elegance of character in standard plants of small size, such as may be set into handsome stands upon the table. It is important that the stems of the plants, which must be near two feet high in the clear, should be as slender as possible so as not to obstruct the view across the table, and they must be self supporting, or nearly so, as well as straight and handsome. The head must be of moderate size, well fitted to the stem, and well balanced. It will doubtless be found that plants with drooping flowers will be the most suitable and effective. Then again the flowers or plants should not only be handsome in themselves, but without strong or marked odour of any kind.

There are many plants which may be made to comply with these conditions. One of the most readily available no doubt is the Fuchsia, of which there will be no difficulty in rearing a supply from cuttings, carried up with a single stem to the height required, and then made to develope a head of drooping branches. The Abutilons would do well as far as the flowers are concerned, but would perhaps not be quite so manageable. The varieties of Epiphyllum truncatum, worked on stems of the Cereus now becoming employed for this purpose instead of the Pereskia, would be charming. Dracæna terminalis of the proper height would suit admirably. Perhaps Persian or Rouen Lilacs specially prepared would do. Deutzia gracilis would come in as an early subject; and as well as the Lilac might be forced. Probably some of the Acacias of moderate size and rather lax habit would form good subjects in their season. The double flowered Myrtles would do admirably; and perhaps some Roses, but they must not be powerfully scented. The free growing Acacia lophantha would no doubt be very well adapted for the purpose if a good head of its elegant foliage were developed at the proper elevation. There are numerous other plants that may come in at different seasons.

As there is something of formality in setting out a dinner table, it must be borne in mind that the plants will be required to match, at least in pairs or in duplicates of pairs, with some larger and some smaller for the different positions. Three sizes in fact will be wanted, and the more perfectly the plants of each size match among themselves the more successful the result

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Indoor Gardening.

One of the prettiest ways of having flowers in rooms is perhaps the fashion of little hanging baskets. In flower stands and on tables, and even in window boxes, it is often difficult to arrange climbers nicely; they either require height in the way of trellises, which we find it hard to give, or they droop down in an ungraceful fashion. In the use of hanging baskets neither of these things happen. The climbers may if they like twine up the wires or cord, or they may still more prettily droop down round the basket. One of the prettiest things for this is the little Campanula, its bright blue flowers trail down neatly and yet closely into a lovely carpet, and if in the midst we place a pretty Fern, its fronds wave over and make quite a perfect centre. I was told the other day that the Adiantum cuneatum, one of the very loveliest sorts of Maiden Hair, did well for such a purpose, and this would be, I think, the prettiest kind to try: although it is a stove Fern it has been kept for years in a room window, and, in fact, it seems one of the most easy of its class to manage.

The wild pink Geranium is another delightful and very aromatic basket plant, and the little blue Lobelia, and the beautiful Torenia asiatica are also amongst those which droop down gracefully and show their beautiful blue flowers.

In arranging these baskets the grand thing, I think, is to give enough drainage. I always put broken charcoal, covered with a thin layer of Moss, adding afterwards the soil that the plants require, and the charcoal occupying a space of perhaps 2 inches a little water generally collects there. Any one used to watering these baskets soon comes to know by weight if they are dry or wet, and if by any chance one morning the soil should seem still moist, the daily watering ought to be then omitted.

Common black hair-pins are excellent pegs to use for fastening down the runners of creeping things, when we want not to show a quantity of sticks, and for tying up window plants the narrow dark green ribbon often used for book markers is the best and neatest substitute for bass when a thin strip of it is not found suitable. I have often tried tying up plants with worsted, but that holds water too much and is also untidy looking, and threads of netting silk, though invaluable for trainers (on which the plants twine themselves), are too apt to cut the stems to be safe for tying.

Any baskets that are to be hung up ought to be fitted with an inner lining to contain the roots, and this should be surrounded by something calculated to prevent over dryness to it. I do not generally like wire stands for plants, but when they are used, and when some means is found of protecting the pots sufficiently, they may be made really beautiful by pink and white and blue Ipomœas climbing all about them. The different varieties of *Quomoclit* I think are the best to use for this, with the exceedingly pretty "rubro-cœrulea," which I have often grown, and consider a charming annual. It will not however bear a great deal of sun, and is especially injured by the hot summer rays striking upon the stem or collar when it is exposed. In placing it in a window box I therefore always manage to have one plant in front of it to give a little shelter. Mignonette thus proves a capital fosternurse to a great many plants.

The wire stand that I had last year was one of those in steps—three on each side, and a wide shelf beneath. Very green and spreading Ipomœas were placed in the lower steps, Roses, or Geraniums, or Fuchsias in the others, and two or three more Ipomœas with Mignonette below. The leaves and tendrils entwined themselves most gracefully round every wire, and ran round every edge, while the varied flowers that opened every morning and closed up at night looked extremely

say. Each of these pots of climbers contained several plants—the pots were 32's and the soil leaf mould. They required generally very abundant watering at the roots—indeed a day's dryness at any time caused some of the leaves to assume a yellow and faded look. *E. A. M.*

SIKKIM AND BHOTAN RHODODENDRA UNDER GLASS.

(*Continued from* p. 356.)

Foiled in all my attempts to induce these plants to flower out of doors, I next directed my attention to their cultivation under glass, and accordingly I made arrangements with Mr. Ormson for the re-erection, attached to the house at Biddulph Grange, of the large conservatory that he had exhibited (in 1857-58) in the Gardens of the Horticultural Society at Chiswick. It was re-erected however with considerable modifications in the ground plan, for what was seen at Chiswick as a parallelogram, with glass on all its sides, was reproduced here somewhat in the form of the letter T (W, N, E, S) with glass only on two of its sides (*i.e.* the east and west), while its remaining boundaries (the north and south) were formed by portions of the house walls. It should also be mentioned that on its western side it is shaded to some extent by trees, and that on the east it is connected with a billiard room, from which it is separated only by its own sashes. Enough has now been stated to show that the site selected for the Rhododendron house would have been altogether unsuited for the growth of such plants as are ordinarily met with in conservatories; indeed, how to overcome its dark and cheerless aspect was a problem that all the resources of landscape gardening had hitherto failed to solve. Yet these drawbacks seemed to point out the spot as particularly well suited to the object in view, for if the Himalayan Rhododendra preferred—as we are told by Dr. Hooker they did—the dark and shady sides of the mountains, then of course if we are to cultivate them successfully we must not expose them to the full blaze of the sun's rays acting on a glass roof with a southern exposure.

The house was ready for the reception of the plants in the spring of 1859. It is span-roofed, about 18 feet wide by 20 high. In the centre, throughout its entire length, there is a raised bed or border, 9 feet wide, surrounded by a stone kerb, 20 inches high. The bed itself is filled with open fibrous peat to the depth of 4 feet, resting on flags set hollow, and under which a current of air is constantly passing. The house is heated by hot-water pipes (placed some above and others below the walks), and by the sides of which air—gently warmed of course—is freely introduced. There are other arrangements, not necessary to particularise, for securing an ample ventilation, which is of the last importance to the well-doing of the plants. These were all turned out about the middle of April into the border prepared for them, and in which they speedily showed themselves to be quite at home. But before I proceed with my narrative, I had better furnish you with a list of the subjects experimented on, and which were the following species:—

From Sikkim.	From Bhotan.
R. Dalhousianum	R. Shepherdi
" Edgworthi	" Jenkinsi
" Maddeni	" Kendricki
" Falconeri	" Hookeri
" Aucklandi	" Windsori
" æruginosum	" Boothi
" Thomsoni	" eximium
" fulgens	" Nuttalli
" argenteum	" calophyllum
" niveum	" Gambelli
" Wightii	" Crocketti
" campylocarpum	" Lambertianum } Nuttall MSS.
" Hodgsoni	" Batemanni } Nuttall MSS.
" Campbelli	" longifolium
" lanatum	
" formosum	
" Veitchii	
" virgatum	

Besides the above there were divers unproved seedlings from the Himalaya, as also R. jasminiflorum, R. javanicum, R. Fortuni, R. retusum, &c., from other quarters. And in addition to the above I planted out in the same border a number of other plants, such as Thibaudias, Gaylussaccias, Vacciniums, Gaultherias, Psammisias, Mahonias, &c. which are usually found growing among the Rhododendra in their native habitats, but which I must leave without further notice for the present, as they will naturally form the subject of a separate article.

Although I was, on the whole, perfectly satisfied with the progress of the plants during their first year, yet I speedily found that I had much to learn, and learn it too at the cost of many disappointments. The first of these regarded standards grafted on stocks of the ordinary kinds, and which to accelerate flowering and to produce, as I thought, immediate effect I had rather freely introduced. R. Wightii was the first to fail; it set numerous flower-buds, but died before they had time to expand. R. Hodgsoni soon followed, and R. argenteum though it did not die, yet became so unsightly in consequence of the enlargement of the grafted portion to twice the thickness of the stock, that I was compelled to banish it. Possibly when stocks of their own kith and kin can be procured, these Himalayan Rhododendra may endure to be grafted; but as far as my own experience goes it is quite useless to attempt anything of the kind with the stocks that nurserymen at present employ. This was disappointment the first. For my second, a leading article that appeared two years since in the *Gardeners' Chronicle* must be held responsible. As I have already observed the plants had, on the whole, progressed satisfactorily during their first year. They made vigorous growths, and some, *e.g.* R. Windsori, R. Nuttalli, R. Maddeni, &c., produced a few heads of flower. This was under a temperature varying between 45° and 55° in the winter months, and between 55° and 70° at other times when there was no sun. Water was given to them while growing, freely though not excessively; and the atmosphere of the house was always mild and grateful. But in the article I have referred to the writer gave such a picture of the heat and moisture of the climate of Sikkim during the season in which the Rhododendra made their annual growth, that I was induced during the second year to increase considerably both the temperature and humidity of my house, of course at the sacrifice to a great extent of its *agrémens* as a promenade. On this account it is satisfactory to record the entire failure of the experiment, for I do not think that a single plant was benefited by the change, while half at least of the entire collection appeared to have been seriously incommoded by it. There was almost an entire absence of flower-buds, and the leaves and shoots were distorted and puny. I leave the writer of the article in question to explain these phenomena, as also another which I confess is to me almost equally inexplicable, although I have observed it repeatedly, and in the case of several different species, *e.g.*, R. Hodgsoni, R. lanatum, R. Falconeri, &c. These, when out of doors, are always impatient to push their shoots, which, if the weather be mild, are considerably advanced before the end of February, but with heat and protection they do not move for a month later. How is this? When they do move it is with an ill grace; indeed I had better say at once that it is mere waste of room to attempt to grow the hardier race of Sikkim and Bhotan Rhododendra under glass, at all events where any degree of artificial warmth is maintained.

But notwithstanding all these drawbacks and disappointments, and after all the hardier kinds have been eliminated, there remains a noble group of from ten to twenty species, which will, I am convinced, amply repay all the care bestowed upon their cultivation, and rival, if they do not surpass, the most attractive denizens of our ordinary conservatories. Add to this the rare merit of their preferring a situation on the dark side of a dwelling-house, and in which it would be preposterous to put up any other plant structure whatsoever—except, perhaps, a stove for tropical Ferns, and these would not succeed except under a climate and under conditions far less healthful and agreeable than are required for the charming Rhododendra of Sikkim and Bhotan.

I have already mentioned the flowering of certain species, *e.g.* R. Nuttalli, R. Windsori, R. Maddeni, and in addition to these I have flower buds this year for the first time on R. eximium (Nuttall, probably a fine variety of R. Falconeri), R. Gambelli (Nuttall MSS. not R. Campbelli), R. Jenkinsi, &c., but they have not yet (April 22) opened their blossoms. *J. B., Biddulph Grange, April 22.*

CHERRIES.

[A capital article extracted from the last Number of the Florist. We can hardly mistake the writer, who surely dwells somewhere in Hertfordshire.]

I am a great lover of birds and also of Cherries; but, in the last-mentioned love item, the birds beat me hollow, for I seldom or never see one ripe on my standard trees in the open air, and if I protect my dwarf bushes with nets, the blackbirds and missel thrushes tear them open with their strong claws, and chatter defiance when I approach them. I began quite to yearn for ripe Cherries and to cast about how I should procure them, when the orchard-house culture of them occurred to me. I therefore consulted our oracle, and built a small span-roofed house, 25 feet by 14, 9 feet high to the ridge, and 5 feet high at sides. As it is not in an ornamental part of my garden, I had the sides and ends made of ¾-inch boards, with a shutter on hinges a foot wide on each side. I made a path 3 feet wide along the centre, and planted on each side of it a row of nice pyramids of the compact-growing varieties, such as the May Duke, Archduke, Duchess de Palluau, Empress Eugenie, Reine Hortense, Nouvelle Royale, Royal Duke, and Coe's Carnation, all budded on the Mahaleb stock and planted about 2 feet 3 inches apart. Behind them, next to the sides, I placed some low pyramids and bushes of the Bigarreau and Heart Cherries budded on the common Cherry stock; and, as these Cherries are all vigorous growers when planted out, I had them potted in 13-inch pots in some light sandy loam and manure from an old hotbed, two-thirds of the former to one of the latter, well rammed down, so that the surface of the earth was quite hard. On this hard surface I placed in March some manure 2 inches thick. My success last summer (1861) was quite refreshing, for the very few Cherries on my trees in the open air were quickly dispatched by my singing friends, the blackbirds and thrushes; but my house full of fine ripe fruit was effectually "tabooed" in this way. As soon as my Cherries began to colour—*i.e.*, when boys gobble them down declaring they are ripe—I had the shutters opened and some iron wire netting, with meshes about an inch in diameter, placed over the aperatures occupied by the shutters when closed. This was nailed firmly inside to the sides of the house, so as effectually to resist the fingers of boys and the claws of birds. By placing it inside, it does not hinder the shutters being closed when the house requires fumigation, which with Cherries, so liable as they are to be infested with black aphis, is frequently necessary. This is one of the reasons why I recommend Cherries to be cultivated in small houses appropriated to them only, rather than in large houses with other orchard-house trees. Another reason is, that they require less syringing than Peaches and Nectarines, for a thorough syringing once a week before 8 A.M. during the growing season will keep the leaves and fruit free from dust, and as soon as the latter commences to colour this may be discontinued, or the large and fine sorts, such as the Elton, Bigarreau, and others, are apt to crack. Cherries while ripening delight in a dry warm atmosphere, such as they rarely have in England in the open air, but which in an orchard-house exists in perfection.

In the commencement of this article, I have named such compact-growing sorts as may be cultivated as pyramids and planted out on each side of the central path. I will now point out some varieties which succeed best when grafted on the common Cherry-stock, and which are of too vigorous habits to be planted out in a small house, but which may be cultivated with great success in 13-inch pots.

The most select of this class are the Elton, Downton, Bigarreau, Black Tartarian, Belle d'Orleans, Early Purple Guigne, Florence, Knight's Early Black, Bigarreau Napoléon, Governor Wood, an American sort, and some of the French Guigne Cherries which do not succeed well in the open air in England, such as the Guigne Grosse Noire, Guigne Grosse Rouge, Guigne Rouge Tardive, Guigne Marbrée Précoce, Guigne Marguérite, and some others. The Late Duke and Morello should not be omitted, for if kept from wasps by the trees being enclosed in bags of tiffany, they may be had in perfection till late in October.

All Cherries under glass, whether planted out or in pots, must be under one system of pruning or rather pinching, for as soon as a young shoot has made five or six leaves its top should be pinched or cut off to three full-sized leaves, not counting two or three at the base, which are generally small and without buds in their axils. This pinching process must be continued all through the summer till the trees cease to make young shoots. My Cherries commenced to ripen last year (1861) something in the following order:—The Empress Eugénie was the first to show colour, followed closely by May Duke; but the first that ripened were the Early Purple Guigne and Belle d'Orleans, and this was the first week in June, or thereabouts. The latter kind is remarkable for its sweetness; but it is not so piquant as the former. Empress Eugénie is much like the May Duke—not quite so rich; but, from its ripening 8 or 10 days before it, it is valuable, and it bears abundantly. Among early kinds Knight's Early Black takes a high rank, and that very old and rather acid small Cherry, the Early May, is really worthy of a pot for it ripens very early, and in a sunny season in May, thus doing justice to its name. The Elton is remarkable for its fertility and the richness of its flavour, when grown under glass; and the Florence, with its very firm flesh, when fully ripe in August, is excellent. I need not, however, particularise any further, for, as far as my experience has gone, all Cherries, when well ripened, are most agreeable. The great satisfaction a Cherry-house gives is the certainty of your fruit being safe from boys and birds; and I felt pleasure last year when, towards the last week in May, I saw my trees full of fruit, just showing their Cherry summer-reminding tints—put a padlock on the door and put the key in my pocket, only to be delivered occasionally to a trusty man, who gave the trees water when they required it. My Cherry-eating visits to my house continued to September, and it was really a pleasure—although a small one—to watch the progress of my trees, to taste the different varieties, and to take notes as to their periods of ripening and their qualities. As small pleasures help to brighten the path of life, allow me to advise some of your readers to build a Cherry-house, and try and find one most agreeable source of satisfaction. *Cerasus.*

Home Correspondence.

Danubian Salmon (see p. 358).—I have seen nothing about this salmon in the papers, but I suppose it is the Salmo Hucho, the Huck or Reo, a peculiar salmon found in the Danube and its affluents. *H.*

Alocasia metallica.—This flowered with us last autumn several successive times; in appearance it is very like some of the Arums. If fine foliage is required we consider it best to remove the flowers. *W. Greenshields, The Gardens, Culzean Castle.*

Conifers.—I shall be much obliged if you will tell me when Thujopsis dolabrata and Libocedrus tetragona were introduced into England. The former you first mention on Sept. 23, 1854, as having been obtained for the Botanic Garden, Leyden; the latter, Gordon says, was not introduced when he wrote his "Pinetum," and yet Mr. P. S. Robertson mentions them both as having withstood the severity of the winter of

1852-3, at the Golden Acres Nursery, Edinburgh (see *Gardeners' Chronicle*, April 30, 1853, page 278). *C. Palmer, Manchester.*

The Stiff-Stemmed Tomato.—Is not this the Solanum Gilo, Raddi, of Brazil? That has downy leaves, an egg-shaped fruit, of a beautiful and delicate red colour, scarcely shining: a handsomer object than the irregular, polished, scarlet fruit of the common Tomato. *I.*

Gooseberry Caterpillar (see p. 358)—I too have tried slaked lime this year upon one bush which was even thus early infested, and with the best results, but as my mode of application differs somewhat from that of your Whitchurch correspondent, and being I think more expeditious, I give it in detail as follows:—Select a tub with a cover. Take, say 50 qts. of fresh quicklime, slake it carefully, *i. e.* not using too much water, then cover it up immediately so as to prevent the escape of the steam or vapour. In 48 hours the lime will be reduced to a fine powder, with which dust the trees infested early in the morning while the dew is on them. The caterpillars fall instantly. *St. Bertin, St. Omer, France, April* 22.

Camellia reticulata.—This has flowered splendidly and abundantly this year out of doors, as a shrub among others, with Heaths and Rhododendrons. *I.*

Gleichenias.—In answer to a correspondent who requests information as to the cultivation of Gleichenias, I beg to communicate the result of my experience. The Australian Gleichenias may be cultivated in an ordinary greenhouse with other Australian plants. Their leaves are, however, rather apt under such treatment to turn brown towards the end of the winter, and the plants certainly prefer during the months of February, March, and April, to be placed in a house where some fire-heat is used. Gleichenia rupestris seems to me the hardiest of those that I have cultivated, and may safely be treated as a greenhouse plant. Next as to hardiness I should place dicarpa, flabellata, microphylla, and semivestita, then rupestris, dichotoma and necistophylla. Although these last certainly like an intermediate house at this time of year, still I may mention that they all stood 2° of frost in a New Holland house last November. This temperature killed Gleichenia bifurcata, which might have been anticipated, as it is a tropical species from Java. All Gleichenias like plenty of light, and though as I have stated they enjoy an intermediate house, yet nothing injures the appearance of specimen plants of these Ferns more than growing them in stoves, as their branches from want of light and too much heat become extremely straggling and unsightly. They are best potted in shallow pans like large seed pans, the pan being first filled nearly to the top with crocks, and the plant placed in fibrous peat rather above the rim of the pot—very much in fact as one would pot a Cattleya or Dendrobium. They root almost entirely on the surface, and as soon as the rhizomes begin to run freely the plant should be placed in a pot not less than 12 inches in diameter. I have grown them in various soils with almost equal success, but I think that fresh fibrous peat is rather to be preferred. The only further attention they require is never to allow the soil to get quite dry. Gleichenias are really very easy plants to cultivate. They are deservedly general favourites with horticulturists, and their high price is the only obstacle to their being placed in every collection. They happen unfortunately to be extremely difficult to propagate, so much so that I believe that Gleichenia necistophylla, though no very recent introduction and perhaps the finest of the genus, is hardly to be obtained in England. Besides the Gleichenias which I have cultivated I may mention that several South American species have been recently imported by an eminent nurseryman, and that there is reason to suppose that they may prove hardy. *W. W.*

Rain.—With us the rainfall for March this year has been 6 inches four-fifths. *I., Dorset.*

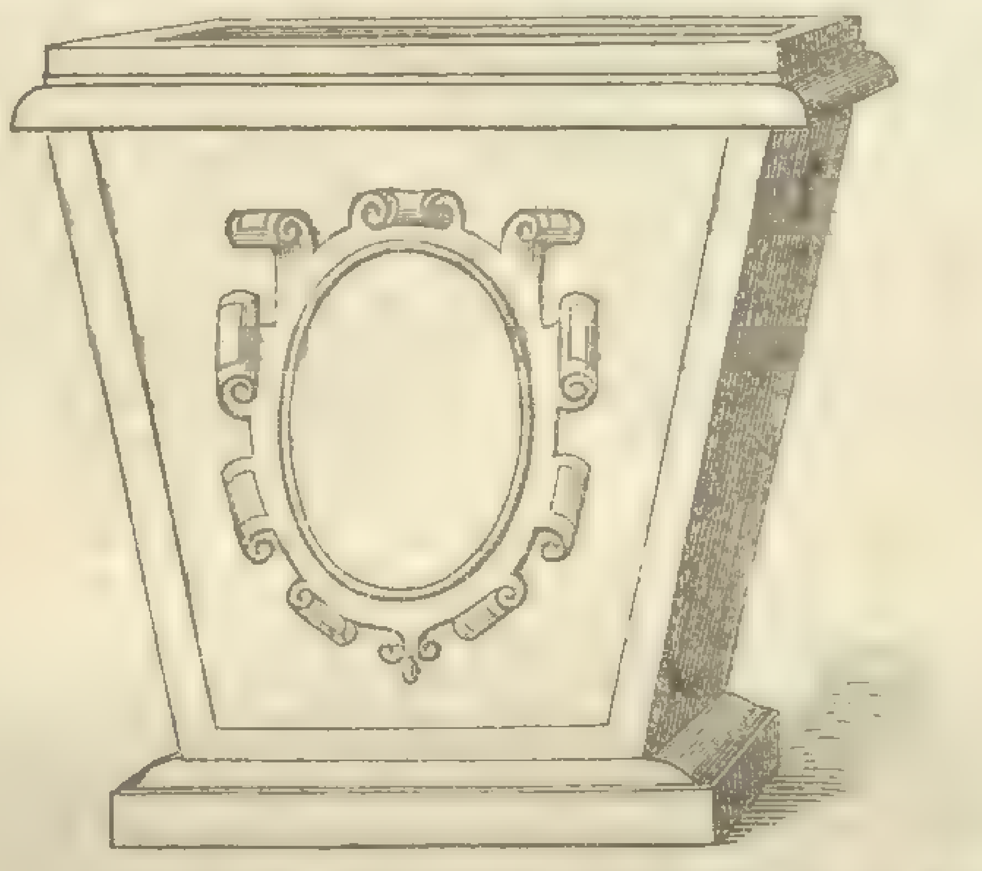
Vine and Fruit Tree Wash.—Equal parts of tobacco, flowers of sulphur, and soft soap, say 1 lb. of each, are put into a large copper of water, say 50 quarts, and allowed to boil a whole day. Then I take some of the slaked lime and soot, make a paste of them, and mix them in some of the above mixture, so as to make a thick wash, and apply it with an ordinary painter's brush. I wash my Peach walls with it. In mixing the lime and soot a most pungent odour of ammonia will escape, giving a good idea of the effect which this mixture has on insect life. *St. Bertin, St. Omer, France.*

The Brighton Well.—What was the inclination of the strata through which the deep well was sunk at Brighton? Lying probably conformable to the southerly dip of the Wealden elevation at no great distance, it may be considerable, which would add much to the depth of beds to be pierced through. *I.*

The Virtues of Peat Charcoal.—(A true copy of a letter from a florist at Camberwell, to the Secretary of the Irish Amelioration Society): "Sir,—On the 4th of July my wife died just as the hot weather set in. As soon as the coffin came, one thing that I forgot was, I did not put charcoal peat in first, which nearly spoiled my experiment, but I covered her all over 4 inches thick with it. The experiment answered famously, and in case of cholera, &c., peat charcoal cannot be too much used, and all undertakers ought to insist on its use. I have tried mice, rats, fish, &c., but have never before had the humane body tried in it. This experiment cannot be too well known. *July* 16, 1852. P.S. This was our agreement whoever happened to die first." [Good reader, *Quid rides?*]

Birds and Fruit Buds.—In reply to the inquiry of your correspondent "Woglog" (p. 286) it is clear that the birds eat the Pear buds, otherwise they would all be found on the ground under the trees, which they are not. I find that the birds commence operations very early in the year; Easter Beurré, as showing bloom sooner than most other varieties, is first attacked. As soon as this is perceived I smear all the fruit buds with a mixture of soot, soft soap and water. If much rain falls it may be necessary to retouch them. This generally keeps the buds safe till they burst, and the separate flower buds show themselves, by which time the chief danger is past. *G. S.*

An Idea for a Tub.—It strikes me that a form like this would be useful and cheap. It is no suggestion of mine, but comes from the mind of a man remarkable for his appreciation of beauty. It might be easily made



to take to pieces. The medallion on the side might be much richer, and infinitely varied. Moreover, it might be made separately of plastic material and secured by nails or otherwise to the sides. *Antipatent.*

Convolvulus Cantabrica.—As my Latinity is called in question, in making the above masculine, a reference to any Latin Dictionary will prove that it is so; as to the length of name, is it longer than Vaccinium Vitis Idæa, foliis variegatis, which has passed the ordeal of the Royal Horticultural Society? *Editor of Floral Magazine.* [As this correspondent does not understand these subjects, there is no common ground on which an argument can be raised.]

Convolvulus mauritanicus.—This is a low prostrate species with dark blue flowers, annual or short-lived perennial, but easily kept up by cuttings. I think it has a variety or allied species in Sicily. Convolvulus Cantabrica is an equally pretty low plant, with silky leaves and light pink flowers, half shrubby, native of lower Austria and Italy, south of France and Spain. Both these species are good rock plants, neither of them twiners, the last-named is rather shy of cultivation. *I.*

Societies.

Royal Horticultural: *April* 4.—The Earl of Ducie, V.P., in the Chair. The following candidates were elected, viz.:—

Mrs. Abbott; the Marquis of Abercorn, K.G.; C. Bath, Esq.; Mr. Geo. Batley; S. Batten, Esq.; Miss S. J. Beattie; J. Bentley, Esq; J. G. Blake, Esq.; Miss M. Black; H. Bowden, Esq.; Mrs. T. R. Branfoot; Lieut.-Col. G. J. Brown; Mrs. Bryant; Mrs Byde; the Lady Carbery; Mrs. J. S. Christian; Mrs. Coffin; Captain G. Cookes; the Earl of Cork and Orrery; Dr. Cornwell; Mrs. J. Corscaden; Miss Cureton; the Lord De Tabley; G. D. Wingfield Digby, Esq.; F. W. Docker, Esq.; J. Donald, Esq.; R. Ellis, Esq.; Miss Field; Robert Fortune, Esq.; Mrs. Gallagher; Miss Gladstone; B. Grahame, Esq.; P. Graham, Esq.; H. A. Green, Esq; Miss A. Greenbank; T. H. Hall, F.R.S.; Miss Harle; Rt. Hon. Sir W. G. Hayter, Bart., M.P.; Rev. A. Hewitt; W. H. Hindley, Esq.; Rev. C. Jackson; H. Langham, Esq.; Mrs. Langton; A. Leveau, Esq.; Mrs. E. Lutwyche; J. MacNaughtan, Esq.; J. W. Malcolm, Esq., M.P.; R. Mather, Esq.; Mrs. Mildmay; Hon. Mrs. W. Napier; Mrs. W. D. H. Oehme; C. S. Paris, Esq.; R. K. Penson, Esq.; J. Peters, Esq.; Hon Mrs. E. Phipps; A. S. Pigeon, Esq.; Mrs. J. Rae; Mrs. Ramsay; Mrs Ridley; W. Robinson, Esq; the Lady Rollo; Miss Rose; the Lord Cosmo Russell; G. D. Ryder, Esq; T. Savin, Esq.; S. Scott, Esq.; Mrs. Seal; H H Seymour, Esq.; Mrs. General Spottiswoode; Mrs. H. Stern; Miss M. J. Stevenson; Miss Eleanor Stewart; J. A. Shaw Stewart, Esq.; H. C. Sturt, Esq.; W. Stutfield, Esq.; W. B. Thomas, Esq.; F. W. Tomlinson, Esq.; Lieut.-Col. Sir William Topham; Hon. F. S. H. Villiers; and Mrs. Wilkin.

April 22 (*Floral Committee*).—A few very interesting plants were shown. Foremost among them was a new striped-leaved Japanese Convallaria or Polygonatum from Mr. Standish, of Bagshot, a plant of great beauty; it had red stems and beautifully striped leaves, the flowers being white with green tips. Another fine thing was Genista Everestiana, from Mr. Everest, of Reading, a seedling plant, with foliage resembling canariensis, but with deep orange-yellow flowers, a very great advance on the older kinds. A Cyrtomium from China, unlike the two already in cultivation, having smaller thinner-textured pinnæ, came from Mr. Standish; Lithospermum fruticosum, a neat dwarf subshrubby Boragewort from the South of Europe, with beautiful blue flowers and apparently well suited for rockwork, came from Messrs. Lee, of Hammersmith. Isaac Anderson Henry, Esq., sent a good hybrid Clematis, between azurea grandiflora and lanuginosa, and some crosses of Indian Rhododendrons, not superior to others already shown. Mr. Bull exhibited several ornamental plants, including Dracæna Ghiesbreghtii from Mexico, with narrow green leaves and of graceful habit; and Lomatia elegantissima, a greenhouse shrub with finely divided leaves. Mr. Tillery sent from Welbeck a very fine Bhotan Rhododendron, with large white flowers. A lilac-flowered Gentian, not very showy, raised from seeds collected on the Andes of Quito, came from Mr. Anderson Henry; and amongst other plants produced was a neat dwarf white-flowered Japanese Dendrobium, from Mr. Standish, which may be useful as a free flowering greenhouse Orchid.

Fruit Committee: April 22.—On this occasion Mr. Thomson, of Dalkeith, exhibited a well kept bunch of Lady Downe's Seedling Grape, plump as new fruit, fresh, and well flavoured, showing, under good management, how late in the season this Grape may be preserved. Two collections of Kitchen Apples were also shown, one from Mr. Turner of Slough, the other from Mr. Ivery of Dorking. The sorts consisted of French Crab, Wellington, Norfolk Beefing, and one or two others of less merit. Messrs. Ivery also showed three dishes of dessert Apples, all more or less shrivelled. Specimens of Frogmore Protecting Broccoli, a valuable variety at this season of the year, were shown by Mr. Turner.

Royal Botanic: *April* 23.—Various collections of Stove and Greenhouse plants were exhibited on this occasion, and there were also two or three good groups of Pelargoniums. The latter came from Messrs. Turner, Cross, and Fraser. Among new plants not noticed in our report of the Floral Committee of the Horticultural Society given above, were Woodwardia orientalis from Mr. Bull, a Japanese Fern, expected to be hardy and having handsome leaves remarkable for producing young plants freely on their upper surface; the same exhibitor likewise sent Agave filifera, a compact growing plant with the edges of the leaves thread-bearing; also an Araucaria in the way of Cookii, and a white flowered Camellia named Commodora. From J. Walker, Esq., Hunsdon, Herts, came Pomaderris discolor, a rare greenhouse shrub, with pretty dark green leaves and feathery masses of pale yellow flowers. Messrs. Carter again showed Fuchsia Meteor, a variety remarkable for its rich reddish brown leaves. Mr. Verschaffelt, of Ghent, showed Rhododendron Verschaffelti, a red spotted lilac-flowered variety. The purple Side-saddle plant, and a pretty variety of Cyclamen persicum, came from Mr. Williams, who also contributed along with a mixed collection of plants a very handsome Amaryllis named marginata elegans, and Cinerarias Mary Jane, Flora, and Eliza, all poor varieties, came from Mr. Penwell, gr. to J. Browning, Esq., Leyton. Messrs. Dobson also furnished a good group of Cinerarias and Pansies, and we also noticed Pansies, Auriculas, and Azaleas from other growers. Messrs. Cutbush again showed Hyacinths and Tulips. Roses both in pots and in a cut state were shown by Messrs. Paul & Son. Rudgia leucocephala, well flowered, came from Messrs. E. G. Henderson, who also showed a small collection of other plants. Miss Clarkson and Mr. Williams each showed a small group of British Ferns.

Entomological: *April* 7.—F. Smith, Esq., President, in the Chair. The Secretary announced that the first Part of the third series of the Society's "Transactions" was ready for delivery to members. Amongst the donations was a new Danish Natural History Journal, presented by Professor Schiodte, containing one memoir of much botanical interest; and the first portion of a work on the butterflies of South Africa by Mr. Trimen, published at the Cape of Good Hope. Mr. S. Stevens exhibited a new British species of Pselaphids, taken in the north of England by Mr. Little. Mr. Newman exhibited a remarkable female specimen of Liparis dispar, which possessed the antennæ and general appearance of the male of that species. Mr. Stainton exhibited the wingless female of Orgyia Ericæ, and made some observations on the species of the genus, the females of some of which do not quit the cocoon, whilst others simply crawl to the outside and deposit their eggs on its surface. Mr. Fenn exhibited a rare moth, Laphygma exigua, taken on Sallow blossoms on the 24th March last. Mr. Fereday read some observations on varieties of Tæniocampa munda, considering that these varieties were the product of parents which must have varied from each other, and that where both parents belong to the typical form of the species no varieties would occur. Mr. Walker read some observations on the fritillary butterflies, Argynnis Cybele and Aphrodite, tending to show that they were local varieties of one species. The Secretary read some extracts from the Proceedings of the Society of Arts on the ravages of the borer or caterpillar of the Diatræa sacchari in the sugar canes of the Mauritius, communicated by Mr. Morris. Mr. Pascoe exhibited three kinds of individuals which he had observed in Xenocerus semiluctuosus, one of the Anthribids from the Moluccas; these were a fully developed male, a female, and a male which had short antennæ and the general appearance of the female. Professor Westwood suggested that this was another instance of that peculiarity which had long been noticed in many cornuted

species of insects, of the existence of two well-marked kinds of males, but hitherto the remarkable discrepancy between such individuals had not been traced in the antennæ, as in the Xenoceri in question. The President exhibited a monstrous specimen of Chrysomela Banksii, having the extremity of one of the hind legs furnished with two small supplemental tarsi, thus giving it the appearance of a bird's foot. Mr. F. Moore exhibited a very fine collection of illustrations of the silk-producing species of Bombycids from the East, contained in fourteen drawers, of which he gave an account, and which was intended for the Indian department of the International Exhibition of 1862. A paper by Dr. Schaum was read "On the restoration of obsolete names in Entomology," in which the author was liberal in his animadversions on some of our English authors, as Marsham, Stephens, Hope, and Waterhouse. This paper led to considerable discussion.

Reviews.

Flowers for Ornament and Decoration, and how to arrange them. By Miss Maling. 12mo. Smith & Elder.

This little book contains many useful hints to those who wish to try their hand at the arrangement of flowers, and to compete for the prizes offered by Sir C. Wentworth Dilke at the Royal Horticultural Gardens this summer. If most minute directions and most artful and clever contrivances can ensure success, Miss Maling's book will be invaluable. We must own however that we have some doubt if persons who have not naturally an eye for colour and for what constitutes beauty, can ever be taught by directions. It is well known that foreigners are far more skilful than the English in artfully making up flowers, and Miss Maling has given us an insight into their mechanical contrivances, that until explained seem most mysterious.

Some of the combinations of colour recommended by her are certainly very pretty, and her choice of flowers varied and good when they can be followed, but we do not know where she would go to find Snowdrops and Bluebells available at the same time to form her "lovely groups," unless indeed they came from her own window garden, and it seems a pity to rob a favourite window or greenhouse to decorate the table or form a bouquet for the hand; since in carrying out Miss Maling's principles of arrangement very few kinds of flowers should be used in the same group, and consequently some quantity must be had to produce any effect at all.

Miss Maling does not confine herself to the decoration of the table only, but gives full instructions for the management of flowers for ornamenting the person and dress, for hanging baskets, floral pavements, &c.

American Disunion: Constitutional or Unconstitutional? A Reply to Mr. James Spence upon the question "Is Secession a Constitutional Right?" Discussed in his recent Work, "The American Union." By Charles Ed. Rawlins, jun. London, Hardwicke. 8vo., pp. 228.

In this work, the title of which sufficiently explains the nature of its contents, an attempt is made to prove that the secession of the Confederated States is a clear violation of the Federal compact, and not, as contended by their supporters, the exercise of a constitutional right.

A Summer Tour in the Grisons and Italian Valleys of the Bernina. By Mrs. Henry Freshfield. London, Longmans. 8vo., pp. 292.

Comparatively little is known of that part of Switzerland to which this volume refers; and those who are inclined to leave the more frequented routes and visit the secluded valleys of the Grisons and the Bernina will find useful information in Mrs. Freshfield's pages.

Instructions to Claimants for Repayment of Property and Income Tax. By Francis Muir. Blackwood & Sons, Edinburgh and London.

Those who have paid more than they need in respect of property and income tax and desire to try and get their over-payments back, will find in this little pamphlet directions how to proceed. It must not however be supposed that the author guarantees success to those who follow his instructions.

Trade Lists Received.—P. Tourrès, Horticulteur à Macheteaux, près Tonneins (Lot-et-Garonne), Bordeaux. Catalogue des Cultures.——L. Jacob-Makoy et Cie., Horticulteurs, près de la Station des Guillemins et du Viaduc de Ste-Véronique, Liège. Prix-Courant pour 1862 des Plantes Disponibles.

Garden Memoranda.

Gunnersbury Park, Ealing.—The improvements that have taken place in the general appearance of the gardens here have been favourably alluded to in former reports. What we would now therefore more particularly direct attention to is the garden buildings, in which within the last few years great alterations have been effected. Instead of pits heated with fermenting material in which Pine Apples were wont to be grown, two convenient new houses have been built for their accommodation. These are each 66 feet long, 16 feet wide, and have what are termed half span roofs 10 feet in height. A shelf on the back wall affords room for Strawberries in pots, and one round the fronts and ends is furnished with French Beans, from which supplies have been obtained all through the winter.

In the centre of each house is a plunging bed supported by brick walls, and heated by means of hot-water in 4-inch pipes. The latter are laid among brickbats, over which is placed a layer of coarse gravel, and above that is laid the soil, a good loam, well enriched with manure, in which the fruiting Pines are planted out. Among the latter are some Queens and Cayennes just beginning to colour. When done fruiting the old plants are thrown away and their places filled with the most promising plants from among those in succession pits, where they are also planted out and look most vigorous, clean, and healthy. Contiguous to these are two neat span-roofed plant stoves, in which, among other things, are some good examples of Orchids, especially of Dendrobium nobile and Farmeri, both of which are now beautifully in bloom.

Among more recent alterations is a new gardener's house which has lately been built on the site of the old one, and attached to it is a span-roofed Vinery of large size, in which late Grapes are grown. Under the Vines some fine specimens of Azaleas and other greenhouse plants set on a floor covered with white Derbyshire spar have a dressy appearance, and render the house enjoyable early in the season, when otherwise there would be nothing but leafless Vine rods. The latter are now, however, breaking freely, and among them are two promising examples of Golden Hamburgh.

We have on former occasions stated that Mr. Forsyth, the gardener, had faced 125 feet of ordinary south wall with glass as follows. He made no expensive Peach borders, but merely took things as they originally stood. The piece of wall selected for experiment was at the time covered with Peach and Nectarine trees. The latter were unfastened; the wall, an old one, was faced with Portland cement and wired. The trees were then re-trained and covered with glass in the shape of a case, with upright front about 6 feet in height set 5 feet out from the wall, from the top of which to the top of the front was placed a sloping roof with sliding sashes. The lights in front were also swung by their middle on pivots, so as to secure at will abundant ventilation, and below that in about a foot in height of brickwork, ventilators were fixed immediate opposite a flow and return hot-water pipe with which the whole could be heated. These ventilators, owing to their position, are found very useful in winter, the air from them getting partially warmed in passing over the pipes before it enters the house. Inside this long narrow Peach house, for so it may be called, have been ripened annually for the last 4 or 5 years full crops of finely coloured and well flavoured fruit, which may be had in perfection early, and by dividing the range into compartments and having the pipes furnished with "stops" so as to have a succession of fruit, a good supply may be kept up till that on open walls is fit for table. The advantages of a contrivance of this kind have proved of such service that this Peach case has lately been greatly extended in length and another range of glass, in all about 400 feet, on a similar plan has also just been put up against a wall with a western aspect. In this are to be grown Peaches, Nectarines, and Figs, both planted out and in pots. The former—established trees on the wall—are now well set with fruit, and Figs promise to bear abundantly. Immense quantities of Strawberries are grown in pots set on shelves along the front of these cases, and from warmer houses ripe fruit has been gathered ever since the 28th of February, and that in comparatively tolerable abundance—a fortunate circumstance in a season like the present, when most people are complaining of the scarcity of ripe Strawberries. The sorts are chiefly Keens' Seedling and Alice Maude, the latter being rather a favourite here for early forcing.

Two small houses heated with hot water are devoted to the growth of Cucumbers, which are planted in good rich turfy soil, and trained on trellises near the glass. They are now bearing fine crops; in short Cucumbers are "in cut" here the whole year round. As regards treatment, that during winter is nearly the same as in summer, the only difference of importance being that during the dull months the atmosphere is kept rather drier than in summer, and that the soil for winter work is chiefly peat, whereas less costly material answers sufficiently well for summer compost.

Grapes, in the culture of which Mr. Forsyth is very successful, promise to be good. In the early houses a few of the bunches are just beginning to colour; the sorts are chiefly Black Hamburgh and Dutch, and Stillwell Sweetwater; some in pots are also furnished with good bunches, which, if all goes on well, will be ripe in May. A house for early and another for late fruit, has recently been planted. For the latter Lady Downe's Seedling has been selected, a variety whose value for late bearing is every year becoming more appreciated.

In the Orangery the trees still keep improving, the vigorous treatment to which they were subjected some years ago, and which is fully recorded in former reports, having had a beneficial and lasting effect upon them. The larger trees, though at one time nearly lost, are now really good specimens, and the progress of younger plants is equally satisfactory.

On the lawn, which is neatly mown, and in excellent condition, is a beautiful example of a crimson Rhododendron called Cunninghami, which during the last week has been covered with blossoms. The fine Conifers too, for which this place has become justly celebrated, exhibit robust health and symmetrical proportions, such as belong only to picked specimens like those now under notice; indeed Cupressus macrocarpa, Abies Pinsapo, and one or two trees of Araucaria imbricata, are remarkable not only for size, but for fine form, and the same character also belongs to Abies nobilis and many others. We likewise noticed one or two unique bushes of Thuja aurea, which at this season of the year have a neat and pretty appearance.

A. Mongredien's, Esq., Forest Hill, Sydenham.—There is now in flower here a plant of the Sikkim Rhododendron Nuttalli; it has six fine trusses of bloom on it, varying in colour between a cream and a yellow; the flowers are very large, measuring quite 3 inches in diameter.

Miscellaneous.

A Frog Found Alive in Coal.—The following is an extract from a letter received lately by Mr. Russell, from the manager of his Tyr Nicholas Colliery, Cum Tylery, near Newport:—"Our men in the heading in the rock vein coal, yesterday (March 10), in a fall in the face of the heading, found in a hole in the pricking in the top of the coal, and in the nine-inch bed of coal, a live frog. The hole was not more than 3½ inches in diameter, and this found in the soft holing. There is a slight hollow over the coal where the frog was found. It began moving about as soon as it was released, but seems larger and more lively to-day. It is kept shut up in clay, to exclude the air from it. Now, this is 200 yards below the surface where this little thing was found, and I do not suppose anyone can form an idea how long it has been there." [Mr. Russell is going to send to the Great Exhibition a block of coal between seven and eight feet long, selecting the piece in which the frog was found, the *locus in quo* being exactly in the centre, and the block will be so cut out that the frog and its strange domicile will be clearly shown in front.] *South Wales Paper.*

The Toad.—Dull and apathetic as the Toad may seem, it has in it an affectionate and observant nature, being tamed with wonderful ease, and soon learning to know its benefactors and to come at their call. Mr. Bell had one of these creatures, which was accustomed to sit on one hand and take its food out of the other. Many persons have possessed tame Toads, which would leave their hiding place at the sound of a whistle or call, and come hastily up to receive a fly, spider, or beetle. Toads can be rendered useful even in a house, for they will wage unceasing war against cockroaches, crickets, moths, flies, and other insect pests. It is worthy of notice, that the Toad will never catch an insect or any other prey as long as it is stationary, but on the slightest movement, the wonderful tongue is flung forward, picks up the fly on the tip, and returns to the throat, placing the morsel just in the spot where it can be seized by the muscles of the neck, and passed into the stomach. So rapidly is the act performed, that Mr. Bell has seen the sides of a Toad twitching convulsively from the struggles of a beetle just swallowed, and kicking vigorously in the stomach. Though apparently unfit for food, the Toad is eaten by some nations, and certainly is not more unprepossessing than the Iguana. The Chinese, however, are in the habit of eating a species of Toad for the purpose of increasing their bodily powers, thinking that the flesh of this creature has the property of strengthening bone and sinew. This animal is extremely tenacious of life, and is said to possess the power of retaining life for an unlimited period if shut up in a completely air-tight cell. Many accounts are in existence of Toads which have been discovered in blocks of stone when split open, and the inference has been drawn that they were inclosed in the stone while it was still in the liquid state, some hundreds of thousands of years ago, according to the particular geological period, and had remained without food or air until the stroke of the pick brought them once more to the light of day. Such an account appears at once to be so opposed to all probability as to challenge a doubt; but if there had been sufficient testimony, even to one such fact, an unprejudiced thinker would be justified in placing it among the wonderful but veritable occurrences that occasionally startle mankind. But there really seems to be no account which is sufficiently accurate to permit of such a conclusion. In more than one case, the whole story has proved to be nothing more than an imposition; and in others, there is hardly sufficient evidence to show that some crevice did not exist, which would supply the inclosed animal with sufficient air for its narrow wants, and permit many minute insects to crawl into the cavity which held the imprisoned Toad. There is no doubt that in many cases a little Toad has crept into a rocky crevice after prey or in search of a hiding place, and by reason of its rapid increase in size been unable to make its exit. As, moreover, the creature is very long lived, it would, by frequent movements, give a polish to the walls of its cell in a few years; a circum-

stance that has been employed as a proof of the antiquity of the Toad and its residence. Similar instances are known where the animal has been found enclosed in timber. Here, however, is less difficulty in accounting for the fact, because the growth of wood over a wounded part is often extremely rapid, and has been known to cause the enclosure of nails, tools, and even birds' nests with their eggs. Even in such a case, there is not sufficient evidence to prove that the closure was absolutely perfect, and that the Toad was hermetically sealed in the wooden walls of its cell. Dr. Buckland made some experiments on this supposed property of the Toad, and enclosed a number of these creatures in artificial chambers, made to represent as nearly as possible the rock and wood in which the imprisoned Toads have been found. None of these experiments met with success; and in those cases where the Toads lived longest, the plaster was found imperfect. Some of the Toads whose cells were really air-tight died in a month or two. *Routledge's Illustrated Natural History, Part XXXVI.*

Gardens in Spring.—On the 16th inst. the Hon. G. W. Fitzwilliam's hounds met in Bulwick Park, and numerous ladies were present to see the hounds "throw off." After the hounds had left the Park the ladies congregated in the gardens, where a charming sight presented itself—a broad walk 150 yards long as gay with spring flowers as many gardens of no small pretensions are in autumn. The first row consisted of the purple Aubrietia, next white Arabis, then the old double yellow Daffodil, and behind them large bunches of red Crown Imperials. The parterres in front of the mansion were also all ablaze with spring flowers; and of the pretty pink Heath, Erica herbacea, there were rows that would reach in one line 400 yards. We remember Lord Aveland's gardens at Normanton last spring being extremely gay with spring flowers, and we understand that his lordship and Mrs. Tryon carry out spring gardening to a greater extent than it is at most places where floriculture prevails on a much larger scale than either at Normanton or at Bulwick. We would say after this to all possessors of flower gardens—no longer have them as naked as a fallow field when they might be decked in their beautiful spring garb. The success of Mr. Gray at Normanton, and of Mr. Jas. Kidd at Bulwick, should stimulate other gardeners to similar energy and tact, whereby they may secure equally interesting displays of winter and spring hardy flowers. It is true many of such plants are considered to be common; nevertheless they are very pretty when well cultivated and arranged with effect. *Country Paper.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Among winter blooming plants, few are more attractive or useful than Gesnera oblongata and Euphorbia jacquiniflora, both being profuse bloomers, and remaining long in beauty. These should be extensively grown wherever winter flowers are valued, and therefore they should be afforded every necessary accommodation and attention at the present season, in order to secure good specimens for next winter. Attend also to affording other winter plants sufficient pot room and a growing temperature, so as to induce free growth, and get the wood well ripened early in autumn, which is the secret of having them finely in bloom throughout the winter. Chinese Primroses, especially the double varieties, are also deserving of every attention. Pot off seedlings of the fringed and semi-double kinds, and encourage them with a moist genial atmosphere, shading them slightly on bright days. Unless there is a good stock of young plants of the best double varieties at hand the flowers should be picked off the old plants as soon as they show symptoms of weakness, shaking the exhausted soil from their roots, and repotting in light fibry peat, well intermixed with sand, keeping the plants well down in the pots, and placing them in a warm shady situation. This will obviate the difficulty which many experience in the management and propagation of these showy winter flowers; for if the plants have not been too much exhausted by blooming, young roots will be freely emitted from every branch, and when this happens the plants should be broken up and repotted separately, affording them a rather warm and thoroughly moist atmosphere until they have become well established, when with ordinary care they will grow and form fine specimens. Fuchsias intended for winter work must also soon receive attention; when growing freely the atmosphere can hardly be kept too moist, and they will also be greatly benefited by occasional supplies of manure water. Young growing specimens of hard wooded greenhouse plants should likewise be kept as moist and warm as can be done without inducing weakly growth. See that these are properly supplied with water at the roots, and do not allow them to sustain any check from want of pot room. In stoves train shoots of climbers as they advance in growth; also attend to the stopping and training of other plants and afford free growing subjects plenty of room. Achimenes and Gloxinias, filling their pots with roots, will enjoy an occasional watering with weak manure water. Persevere in keeping down insects, which if allowed will now progress with great rapidity. Very little fire heat will be sufficient if the practice of shutting up early in the afternoon is adopted. Proceed with repotting Orchids as they require it. Do not use the syringe too freely on such as are just starting into growth, but keep the atmosphere thoroughly moist. See that specimens on blocks or in baskets are not allowed to suffer for want of water.

FORCING DEPARTMENT.

Pineries.—Where the quality of the fruit is the first consideration, which it is or should be in every instance, care must be observed to have the soil about the roots in a rather dry state during the ripening period, and where it can be done without injuring the rest of the stock, the atmosphere should be kept rather dry, admitting air more freely while the fruit is colouring; for there is no chance of first-class quality if the soil is very wet about the roots, and the atmosphere kept close and saturated with moisture during the ripening period. In the case of plants growing in pots the trouble of collecting and placing together those approaching ripeness, so as to be able to treat them properly, would be well repaid. Use fire-heat as sparingly as may consist with maintaining the proper degree of temperature. Be very careful to keep growing plants properly supplied with water at the root, and give plenty of manure water to those in vigorous growth.

Vineries.—Where Muscats are grown for a late crop the night temperature of the house must not be allowed to fall too low after the bunches begin to appear, and a temperature of from 65° to 70° must be maintained while the fruit is setting to ensure good sized, close bunches. Keep a sharp look out for red spider in houses where the fruit is colouring, and if this pest makes its appearance lose no time in coating the hot-water pipes with sulphur. It will soon be time to think of removing the litter from outside borders, but if it is found that the roots have crept up into it, which may probably be the case where the Vines were started early in the season, the decayed portion at the bottom should be left, and every caution used not to disturb the young roots. And if many roots are found at the surface it will be necessary, after removing the litter, to top-dress the border to prevent these getting dried up; a slight coat of turfy loam, leaf soil, and horse-droppings will answer very well for this purpose. See that the borders of houses where the fruit is swelling are not allowed to get too dry.

Peaches.—There will be little trouble from insects where the trees are in a healthy vigorous state; but the dry state of the atmosphere we are now experiencing and comparatively cold nights rendering fire-heat still necessary, is a very favourable state of things for red spider; therefore any weakly or overcropped trees must be carefully watched. See that inside borders are properly supplied with water, keeping the atmosphere moist, and that every means are used to keep the trees in vigour; if red spider should make its appearance wash repeatedly with the engine until it becomes thoroughly eradicated. Thin the fruit immediately the crop is stoned, leaving no more on than the trees can bring to perfection; any other course will only end in the production of small worthless fruit. Give air freely to houses in which the crop is ripening; but at the same time exclude if possible cold winds.

Melons.— Maintain a rather close, moist, warm temperature to plants recently planted out until they get into full growth, but avoid inducing a gross habit by too much moisture and warmth after the roots fairly get hold of the soil, for it is generally somewhat difficult to secure a crop from wood of this description. Give air as freely as the state of the weather will admit, in order to secure firm short-jointed wood, and where the crop is setting, as the young fruit is very apt to damp off unless the atmosphere is kept moderately dry. Endeavour to secure a steady bottom-heat of about 75° or 80° for plants in all stages, and also to keep the soil in a proper state as to moisture; avoid having to water while the crop is setting, by well soaking the soil before the principal blossoms begin to expand.

FLOWER GARDEN AND SHRUBBERIES.

It is still dangerous to expose even the hardier sorts of bedding plants from under protection. All that can be safely done until the nights become warmer in the way of hardening stock preparatory to its being planted out, is to give as much air as circumstances will admit without injuring the plants, and to place Calceolarias and the stronger kinds of Verbenas in turf pits where they can be securely protected at nights and sheltered from drying winds. Such things when removed to cold pits should be planted out in fine sandy soil, a plan which will save trouble in watering and be much better for the plants than keeping them confined in small pots. Tender annuals that have been raised in heat should be pricked out in light soil under cover, in order to get them strong before planting out time. If not already done hardy annuals should be sown after the first shower, and do not forget plenty of Mignonette and Stocks, the fragrance of which will always render them favourites.

HARDY FRUIT AND KITCHEN GARDEN.

Disbud Peach and Nectarine trees as soon as the young shoots will admit of it; but do this carefully at first, going over them two or three times so as to prevent a too sudden check to the flow of sap, and afford the fruit the protection of the leaves, &c., as long as it can be done without injury. Look sharply after green fly, and apply tobacco water the moment it is perceived; on light sandy soils, however, it may be kept in check by frequent washings with the engine. But whatever method is preferred, see that it is applied before such pests get established. Let a sowing of Endive now be made; also early Dutch Turnips on a cool border. Let full crops of Kidney Beans be planted forthwith, and a row of Knight's Marrow Peas or the British Queen. The row should be prepared after the way of a Celery drill, and the manure completely saturated with moisture. Sow Radishes and small salad.

STATE OF THE WEATHER AT CHISWICK NEAR LONDON,
For the Week ending April 23, 1862, as observed at the Horticultural Garden.

April.	Moon's Age.	Barometer.		Temperature					Wind	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Thurs. 17	18	29.824	29.795	59	35	47.0	46	45½	W.	[illegible]
Friday 18	19	29.869	29.785	57	45	51.0	47	45½	S.W.	[illegible]
Satur 19	20	29.810	29.790	59	48	53.5	48	46	S.W.	[illegible]
Sunday 20	21	29.953	29.917	61	38	49.5	49	46	S.W.	[illegible]
Mon. 21	☾	29.950	29.948	64	37	50.5	50	48	S.W.	[illegible]
Tues. 22	23	29.731	29.543	60	42	51.0	50	48	S.W.	[illegible]
Wed. 23	24	29.854	29.628	61	39	50.0	51	48	S.W.	[illegible]
Average		29.856	29.629	60.1	40.5	50.3	48.7	46.7		[illegible]

April 17—Clear; fine; low dusky clouds; fine.
— 18—Cloudy; fine; overcast; slight rain.
— 19—Cloudy; with strong S. W. wind; boisterous at night.
— 20—Slightly overcast and fine throughout.
— 21—Fine; cloudy and fine; very fine.
— 22—Fine; boisterous, with rain; fine at night.
— 23—Cloudy; very fine throughout.
Mean temperature of the week 3 1-5th deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending May 3, 1862.

April and May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 27 ..	57.7	35.4	46.6	16	0.14 in.	11	2	8	2	5	5	2	1
Mon. 28 ..	59.8	35.9	47.9	14	0.64	4	6	6	4	5	5	3	3
Tues. 29 ..	60.8	37.8	49 3	12	0.75	4	4	7	2	4	8	1	6
Wed. 30 ..	61.3	40 1	50.7	14	0.31	5	3	8	1	3	7	4	5
Thurs. 1 ..	61.1	39.6	50.3	12	0.51	3	6	7	3	5	7	4	1
Friday 2 ..	62 4	39.5	51.0	13	0.72	3	8	10	-	5	6	2	2
Satur. 3 ..	61.6	40.0	50.8	17	0.58	2	7	9	1	4	6	1	6

The highest temperature during the above period occurred on the 28th, 1840—therm. 81 deg.; and the lowest on the 29th, 1861—therm. 18 deg.

Notices to Correspondents.

Convolvulus mauritanicus: *W T.* We find that this plant was figured in the Botanical Magazine, t. 5243, but so recently that the name has not found its way into systematic works. It is very near C. tricolor, the common Convolvulus minor of gardens, but not so pretty.

Crickets: *Pershore.* Wide mouthed pickle bottles, with a little treacle and water or beer in them as a bait, sunk in your Mushroom beds, will be found a good trap for these pests; Penny's paste and Chase's Beetle poison are also both said to kill them. Under your circumstances, however, the first plan will perhaps be best and safest. Watering round the sides of the beds with boiling water will also kill many, but in doing this you must take care not to injure the Mushrooms. ‡

Cucumbers: *J S.* Your Cucumber leaves have all the appearance of being sunburnt. The mischief, however, has probably arisen from the difference between the temperature of your beds and that of the external air being so great, that cold has produced the effect of heat. Whether this conjecture is right or wrong, it is clear that your plants have been affected by some physical cause, and that all the pentasulphide of calcium, lime, and tar water, &c. &c. in the world would avail you nothing. *M J B.*

Dracæna terminalis: *W D.* All the many plants of this common species now in cultivation have been propagated here, or nearly all.

Fleming's Salting Machine: *Const. Reader.* You will find it advertised at p. 6 6 of our Volume for 1860.

Hailstorm Insurance: *J M* inquires where he can insure his greenhouses against hailstorms.

Hemp: *A Subscriber.* This word is by no means confined to the fibre of one plant. There is common Hemp, a Hemp-nettle, Bowstring Hemp and Manila Hemp, all names applied to totally different plants. Common Hemp comes out of Cannabis sativa; Manila Hemp out of Böhmeria nivea, or Musa textilis. All these substances undoubtedly come under the Factory Act.

Insects: *R B.* Your Pear twigs are infested with a large Coccus. Hot water and soft soap, with a carefully applied thumb-nail, are excellent remedies.—*C M.* We are unable to give you the name of the small insects which have bored small holes in the chalk and lined them with fine webs; firstly, because the fact is quite new to us, and secondly, because we could find no insect in the specimens. If you succeed in meeting with others we shall be much obliged to you to communicate them to us. *W.*

Iron Ships: *Southsea.* The book referred to by "J. W." in the *Times* is entitled "On Naval Timber and Arboriculture with critical notes on Authors who have recently treated the subject of planting. By Patrick Mathew," and a valuable work it is. It was published in 1831 by Black, Edinburgh, and Longmans, London. The author has been an occasional correspondent of the *Gardeners' Chronicle*, and his articles have always been marked by sound knowledge of his subject.

Names of Plants: *C C.* Omphalodes verna.

Paint: *M L.* We use it ourselves and like it; but it cannot be brought to so good a face as white lead. Black oxide of Manganese is better.

Peaches: *T H.* The appearance of your Peach leaves is singularly like that of some Cherry leaves affected by frozen drops of water, which we figured some years ago in our columns. We conceive that when your trees were syringed the drops of water remained a long time on the leaves, and that from radiation, or some other cause, they rapidly evaporated, in consequence of which the temperature was so depressed as to destroy the subjacent tissue. We think that this must have been the case, because there has been an evident attempt to throw off the decayed parts, which would scarcely have been the case had the plant itself been unhealthy. We shall, however, in all probability return to the matter, which seems instructive. *M J B.*

Plant Catalogues: We have received a very long defence of the magniloquent phrases now so commonly used in trade catalogues, and we would have printed the notions of the writer had he understood the real nature of the objection so cleverly put by a "Puzzled Amateur" at p. 286. There is an old English proverb that "fine words butter no bread," this we submit to the consideration of the writer, along with the remark that puffing is not Botanical Description.

Erratum.—At p. 358, col. *a*, of last week's Number, "Laurus *patens*" ought to be *fœtens*, a well known species, and native of Madeira.

THE LONDON MANURE COMPANY
(Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
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BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
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ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
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The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—

LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6	6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES ..	5	5
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8	0

These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

New Source of Ammonia.
To Manure Manufacturers and Dealers.
ULMATE of AMMONIA.—The undersigned has been appointed Sole Agent from the Ulmate of Ammonia Company for the sale of this important Ammoniacal Manure. This substance is produced from Wool, and the fact that Wool contains more Nitrogen (yielding Ammonia) than any other kind of animal matter, proves the Ulmate of Ammonia to be a highly valuable manure, the Analyses by Professor Voelcker, the Chemist of the Royal Agricultural Society, and other high authorities, showing a per centage of Ammonia exceeding 14 per cent., or equal to an average sample of Peruvian Guano, while, from the price at which it is offered, it will at once be seen that it is a highly advantageous and cheap source of ammonia. Being a fine dry powder, it is peculiarly suitable for use in the manufacture of manures, and preferable to the ordinary salts in use, sulphate of ammonia, nitrate of soda, &c.
Samples, prices, and all information will be forwarded on application to Frederic J. Cornwell, Broker, 7, Great St. Helens, E.C.
LINSEED CAKES, RAPE CAKES, COTTON CAKES, also all Materials used in the Manufacture of Manures, at the lowest market prices.

40 to 45 per Cent. of Soluble guaranteed.
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BURNARD, LACK and CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.
Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
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The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

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Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To Landowners, the Clergy, Estate Agents, Surveyors, &c. in England and Wales and in Scotland.
The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
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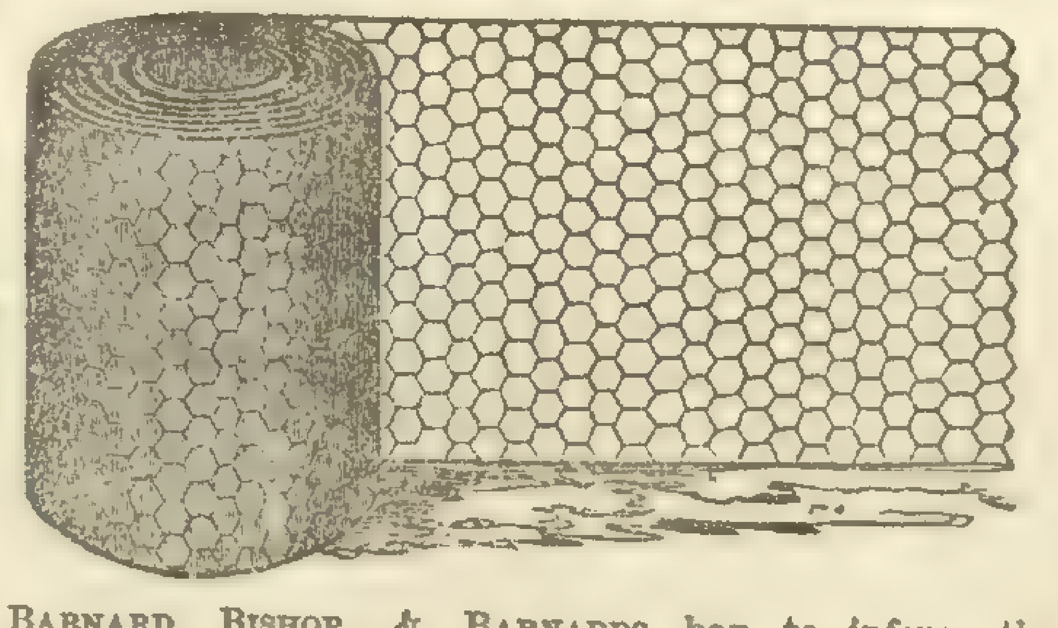
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

HENRY J. MORTON and CO.,
2, Basinghall Buildings, Leeds.
Galvanised Iron Water Cistern
for Cottage Houses, &c., to contain 50 gallons, 26*s.*; 80 gallons, 31*s.* each; and 140 gallons, 37*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.
Galvanised Iron Pumps
for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.
Galvanised Iron Swing Water Barrows
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35*s.* 0*d.* each.

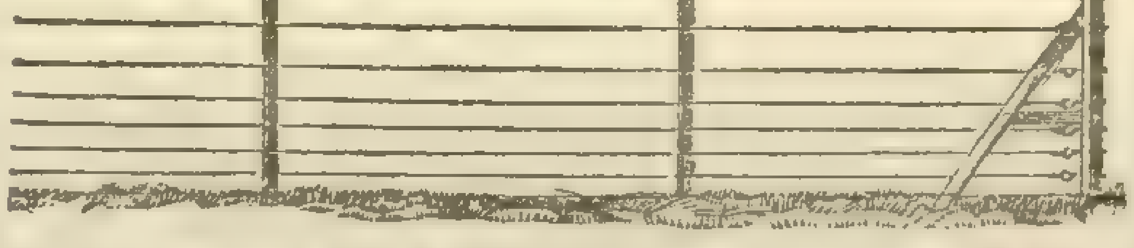
BARNARD, BISHOP, and BARNARDS,
Norwich.
FURTHER REDUCTION in the PRICE of WIRE NETTING.—April, 1861.



Barnard, Bishop, & Barnards beg to inform their friends and the public that they have made a further reduction in the prices of Machine-made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch mesh, 24 inches wide..	No. 19	.. 4¼*d.*	.. 3½*d.*
2-inch ,, ,, ,, ..	,, 18	.. 5	.. 4
2-inch ,, ,, ,, ..	,, 17	.. 6½	.. 5
2-inch ,, ,, ,, ..	,, 16	.. 8	.. 6½
1⅝-inch ,, ,, ,, ..	,, 19	.. 4¾	.. 4
1⅝-inch ,, ,, ,, ..	,, 18	.. 6	.. 4¾
1⅝-inch ,, ,, ,, ..	,, 17	.. 7	.. 5½
1⅝-inch ,, ,, ,, ..	,, 16	.. 9	.. 7

All the above kinds can be made any width (under 6 feet), at proportionate prices.
Strong Galvanised Poultry Netting, 7½*d.* per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11*d.* per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.



Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.
Five wires, 3 feet 6 inches high, pronged Standards, 8 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10*d.* per yard.
The same with Galvanised Wire Rope, 1*s.* per yard.
Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.
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Hydraulic Engineers, Braziers, &c.,
8, Crescent, Cripplegate, London, E.C.

No. 35.

WARNER'S PATENT CAST-IRON PUMP, for raising Water from Wells not exceeding 25 feet in depth.

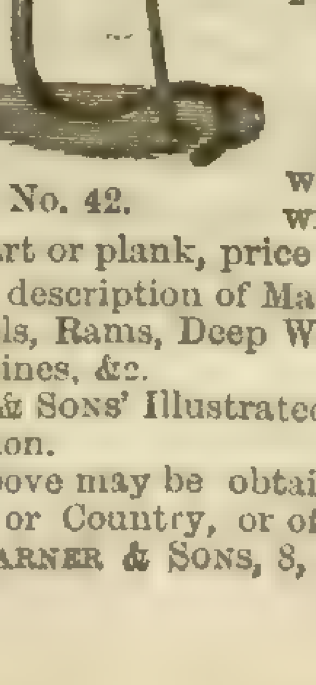
Diameter of Barrel.	Height.		£ s. d.
2½ in. short	1 ft. 7 in.	Fitted for lead,	1 1 0
2½ ,, long	3 ,, 3 ,,	gutta percha	1 10 0
3 ,, ditto	3 ,, 6 ,,	or cast iron	2 4 0
3½ ,, ditto	3 ,, 6 ,,	flanged pipe	2 9 0
4 ,, ditto	3 ,, 6 ,,	as required.	2 18 0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2 0 0
2½ ,, long ditto ditto		ditto	2 14 0

This Pump is fitted with J. W. & Sons' Patent Vibrating Standard, Improved Revolving Cap, Metal Bucket, and Brass Suction Valve. By means of the Revolving Cap the handle can be shifted to the right or left hand, or opposite the nose, as desired.

WARNER'S IMPROVED LIQUID MANURE or GENERAL PORTABLE PUMP.
This Pump is fitted with Warner's Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

	£ s. d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2 15 0
If fitted with Barrel of Planished Copper	3 4 0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2 9 0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires, in either 10, 12, or 15 feet lengths .. per foot	0 2 5

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2*l.* 5*s.*



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Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.
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The above may be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, John Warner & Sons, 8, Crescent, Cripplegate, London, E.C.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to
John Fowler, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

Land Drainage.
WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.
Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.
No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.
Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.
Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.
Applications to be made to William Clifford, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

THE SPARKENHOE FARMERS' CLUB will hold their GREAT ANNUAL MEETING on the Race Course at Leicester, in conjunction with the Autumn Show of the Leicester and Leicestershire Floral and Horticultural Society, on SEPTEMBER 2, 3, and 4, under the patronage of the Mayor and Corporation.
President.—The Right Hon. Lord John Manners, M.P.
Supported by the Nobility, Clergy, and Gentry.
Lady Patroness.—The Countess Howe.
Prizes about 1100*l.* in value will be awarded, including the following:—

Steam Cultivation	£70	0	0
Implements, Ploughing, &c.	80	0	0
Best Fat Beast	35	0	0
Best Store Beast	30	0	0
Best Long-woolled Sheep	15	0	0
Best Short-woolled Sheep	15	0	0
Best Entry of Pigs	13	0	0
Best Nag Horse	25	0	0
Best Cart Horse	25	0	0
Poultry, Rabbits, &c.	70	0	0
Cheese, Corn, Wool, and Roots	130	0	0
Fruits, Flowers, Plants, and Vegetables ..	160	0	0

Prize Lists and further particulars may be had on application, and all Certificates of Entry must be returned to me on or before August 7.
Thomas Davenport, Secretary and Collector.
Ashby-de-la-Zouch, April 26.

ESSEX AGRICULTURAL ASSOCIATION.—The ANNUAL SHOW will be held at Halstead, on TUESDAY, June 3. Amount of Prizes offered, 660*l.*
Special Prizes open to all England.
For the best Entire HORSE, for Agricultural Purposes, the Proprietor being a Member or paying an entrance fee of One Guinea—25*l.*
For the best Thoroughbred Entire HORSE, the Proprietor being a Member, or paying an entrance fee of One Guinea—25*l.*
For the best BULL, of any age, of a pure breed, the Proprietor being a Member, or paying an entrance fee of One Guinea—15*l.*
For the best RAM, of any age, of a pure breed, the Proprietor being a Member, or paying an entrance fee of One Guinea—10*l.*

POULTRY (in Classes)	£38	10s.
STEAM CULTIVATION	50	0
IMPLEMENTS	50	0
SHEEP SHEARING	10	0

Conditions may be had on application to the Secretary, Mr. Robert Emson, Halstead, Essex.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
METROPOLITAN SHOW, 1862.
BATTERSEA PARK, LONDON.
STOCK PRIZE SHEETS and CERTIFICATES will be forwarded on application.
CAUTION—LAST DAY of ENTRY, 1st MAY.
All Certificates received after that date will be returned to the Senders. H. Hall Dare, Secretary.
12, Hanover Square, London, W.

The Agricultural Gazette.

SATURDAY, APRIL 26, 1862.

"The Italian Rye-grass is own brother to Couch;" so exclaimed a disappointed cultivator of it at the recent meeting of a Farmers' Club. "Of all the plants cultivated by the farmer there is none which will profitably repay so liberal a treatment, such large dressings of manure, as the Italian Ryegrass." That is the other *dictum* on the subject. We pin our faith to the latter statement of the two; and believe that there is no crop known to English agriculture from which a larger produce can be obtained per acre in a season by suitable cultivation.

The wiry spindled growth which the plant presents on poor land in dry seasons, as the natural return for inadequate supplies of food, is no answer to the man who recommends its cultivation because of the 50, 60, 70 tons per acre of green food which under liberal treatment he has obtained from it. The plant needs rich dressings of manure and will repay them; without them it is no better than many varieties of the ordinary perennial Rye-grass, and, indeed, may be much worse. But what explanation is possible of the sentence with which we commence these remarks? How are we to account for the belief that Italian or any other Rye-grass breeds Couch? There is no relationship between the two whatever—no blood relation-

ship we mean. Those affinities which exist are merely observed resemblances such as justify the classification of plants together, without in the least implying a common origin or a common descent. There is no more relationship, in the ordinary sense, between Couch-grass and Italian Rye-grass than between a Thistle and a Fig tree.

The explanation we believe mainly to depend on the foulness of the seeds we sow. The farmer who condemned Italian Rye-grass had been really *sowing* the Couch-grass which he believed it bred. Professor Buckman has for years done good service by exposing the foulness of the seeds that are commonly sold in the market, and the case of Italian Rye-grass is but one of a multitude in which, as he has pointed out, the agriculturist is truly the cultivator of weeds as much as he is of the plants which professedly he grows. By neglect —by hoeing when the plants have already formed their seeds—by actually sowing the seeds of weeds in the purchased grain and Turnip seed and Grass seeds which he puts into his land, the farmer is really the cultivator of weeds. And if there were not too great a dissimilarity of appearance between them to permit the assertion, there is many another crop besides Italian Rye-grass, which on the same principle as guided the decision of the Italian Rye-grass grower, might be also named as being "Own brother to Couch."

The listlessness with which an evil of this kind is borne by English agriculturists—the readiness with which they accept a certain growth of Charlock, Thistles, Docks, and other weeds as inevitable, contrasts somewhat shamefully with the energy which our fellow countrymen on the other side of the globe display in connection with the same subject. We learn from the *Melbourne Argus* of Feb. 24, that it is proposed in that colony to set apart 20,000*l*. for the purpose of making provision for the eradication of Thistles and the "Bathurst burr" on the unoccupied lands of the colo y. This sum has not actually been voted; but that the proposal should have occupied attention and been referred to a committee of the Board of Agriculture for their report upon it shows how seriously the evil of unrestricted weed growth has there come to be felt. The mischief affects land of greater value here than there, and it is to be hoped that at least equal energy here as there may be directed to effect what is unquestionably one great improvement needed in British agriculture, viz., the restriction of our present great expenditure in drainage, manuring, tillage, &c., to those plants by whose produce the farmer is to be repaid his outlay.

Whatever may be the ultimate result of the late discussion at the weekly council of the Royal Agricultural Society on the subject of the so-called "Condimental Foods," there can be no doubt that its immediate effect has been to excite considerable attention amongst graziers and agriculturists. It must be accepted as a fact that the use of some of these foods for animals very much out of condition has been in certain instances attended with a favourable effect; but there is very little evidence, except that of Mr. Lawes, of their effect on fatting stock in a good state of health. Any additional evidence on this point must therefore be of interest and utility, because, as Mr. B. Browne intimates, in order that such food may be cheapened its use must be greatly extended (the raw materials we presume are therefore abundant), which cannot be the case so long as it is confined to aged, inferior, or diseased animals.

Various analyses of these foods have shown that, compared with Pulse or Linseed-cake, they are very inferior as regards the flesh-making elements, and also compared with the latter as regards oil or fat. On the other hand they are rich in other unazotised matter, and more particularly in sugar. It will be found, we believe, that the birth of these foods is coincident with the importation of the Locust Bean or Sugar-pod into this country. The Locust Bean contains 50 per cent. of sugar, and we well know that not only is sugar very grateful to animals, but from its much greater solubility it can be taken into the system much more readily than starch and gum. The beneficial use of molasses and treacle as well as malt, both to invalids and fatting animals, has long been known; and we are told that in the sugar season the negroes employed grow fat from partaking freely of the article.

The Sugar-pod contains very little either of oil or nitrogenous matter, and, as it forms with Rice often a large proportion of these foods, their deficiency in flesh-making materials is explained; for if half the composition were made up of Lentils, Beans, and Linseed meal, there would still be as compared with these ingredients a deficiency of 50 per cent. of nitrogenous and oily matters. If we were speaking of a food costing about 10*l*. per ton, there would on this score be very little to complain of, except that it could not then, in any sense, be regarded as an essence or a concentrated food, as was formerly asserted in its behalf.

It is alleged however that this is of little account, as the chief value of the food does not consist in its nutritious but in its "condimental" properties. One of its advocates and manufacturers asserts that it may be considered in the same light as pepper and salt and various sauces, without which meats and fish would be vapid. Let us consider for a moment whether this is a fair comparison. Salt, we know, is essential to both bipeds and quadrupeds; it supplies hydrochloric acid for the gastric juice, and soda for the bile, and thus conduces materially both to the acidifying and alkaline processes to which food is subjected. It is, however, largely furnished in all vegetable food; but as it sometimes is not sufficiently abundant, access to it should be always given, which indeed can be readily done so as to suit the taste, by a supply of rock salt, which animals will lick when nature dictates.

With regard, however, to Pepper and Mustard, so necessary and grateful to the human palate, we are met on the threshold by the fact that a hot taste is exceedingly distasteful to herbivorous animals; they will, it is well known, reject both Rape and Linseed cake as well as other food, when they contain seeds having a hot or very bitter taste. Thus when a stimulant to the stomach is sometimes needed, it is necessary to drench the animal in order to administer gentian and ginger, our best vegetable tonics, or even when it is desired to administer spirits, wines, or ale. In the presence of these facts it is difficult for an observer of nature to believe that a healthy animal requires the aid of condiments acting in the same manner as pepper and mustard.

Although in certain cases there can be no objection to the administration of such mild and pleasant carminatives as Carraway seed, Aniseed and Fenugreek, which may be regarded as mild and grateful stimulants, and which often form part of the condiment, there is one fact which modern practice has developed, and which has been both explained and supported by science—and that is the advantage of combining nutritious food such as Linseed cake, with other common food, so as to extend its use throughout the day instead of giving it as formerly all at one time. We should not like to take all our meat at one meal and all our vegetables at another; the liver and the stomach would revolt at such unreason. Why then should we expect it to be successful with animals? It is true, they have been fatted under or in spite of the system, but it has only been by Nature's power to pass, almost untouched, through the body one half of the nourishment which it has cost so much to furnish. Within the last few days the following facts, which we were before aware of, have been corroborated.

Some time since, Mr. H. B., a skilful grazier, as well as an excellent agriculturist, induced by the offer of various silver cups to be given away by the manufacturer of one of the most noted of these foods, purchased a few casks, followed rigidly the directions given for its use both to cattle and pigs, and was successful in winning his share of prizes. It is true every attention was paid the animals, and they were furnished with roots, and hay, and cake, and meal. Perhaps the evil effect may be due to these foods, and the good to the condiments admixed, or perhaps the reverse, but when the animals were slaughtered (there were five of them), in every case there were found numerous small abscesses or tubercles amongst the fat, and particularly around the kidneys. In the case of the pigs thus fed, in addition to this, the livers were considerably diminished, hard, and scirrous. Now, although the flesh might not be injured at the time they were slaughtered, yet what would have been the case if these animals had been kept on for several months? These appearances are certainly analogous to the effects developed in Mr. Pawlett's sheep; and, connected with them and Mr. Lawes's curious instances as to the food stimulating the appetite without adding to the dead weight of the animal, they form an interesting series of results as to the use of condiments, calculated rather to act as a warning than as an example.

It might perhaps for the moment be urged that the appearances developed by a *post mortem* examination might be due to the animals having too much of the condiment mixed with their ordinary food, to which it is replied that the directions given with the food were carried out to the letter. And although in these instances the results did not affect the pecuniary returns, yet they would have been detrimental if not fatal had the animals been store beasts, or kept on for some long period. With these results before us, we think we are justified in arriving at the following conclusions:—

1. That there is an advantage in giving rich food in a finely divided state, and mixed throughout the day with the other ordinary diet rather than by itself.

2. That for animals in a diseased or debilitated state there is an advantage in substituting sugar in the place of starch, in consequence both of its greater solubility and of its being more pleasing to the palate.

3. That in such instances there is often a benefit from combining mild stimulants with the food.

4. But that animals in a state of health, whether intended for fatting or stores, do not require anything more than sound, wholesome, and nutritious food, unaided by artificial stimulants.

5. That such stimulants *may* have a very injurious effect, that their use must always be exceptional, and that their profitableness to the purchaser must always be extremely doubtful, considering that in order to meet the large expense of advertising, agency, and profit to the manufacturer, their price is put at more than three times the value of their simple feeding qualities.
W. C. S.

PERUVIAN GUANO FOR TURNIPS.

Some farmers place little faith in experiments, and continue year after year to throw away immense sums in the use of Peruvian guano alone, because they have found, as a rule, that it always tells where it is applied. They point to the conflicting results of experiments, forgetting the true cause of the variableness of these results—viz. the difference in soils, the different kinds of crop, also the purity of the manures, and accuracy in conducting the experiments. These are not mere probabilities, but I believe them to be the true cause of the confusion of opinion amongst farmers regarding what is the most profitable manure to use.

The following experiments may, I hope, throw a little light upon the subject. I shall proceed to state as clearly as I can all the particulars regarding them:—

I. Previous Rotation of the Field.—Grass, Oats, Potatoes, Wheat, Barley, Turnips, Barley, Turnips. The Potatoes were heavily manured with about 25 cart-loads of farmyard manure per acre, and a mixture of guano, Rape-dust, and Superphosphate, at the rate of 4 cwt. per imperial acre. The Barley, after Wheat, got 3 cwt. Peruvian guano, and 1 cwt. superphosphate per acre. The Turnips following received 20 carts of farmyard manure per acre on the stubble, and 4 cwt. of mixture of half Peruvian guano and superphosphate per acre in the drill. The Turnip crop was a complete failure, owing to the nature of the season. The succeeding crop of Barley was very good, and the next is the crop of Turnips with which the experiments were made. The variety of Turnips was East-Lothian purple-top Swede. The experimental plots were all sown on the 2d day of June.

II. Particulars Regarding the Application of the Manures.—The manures were sown by the hand by two people accustomed to the work, and in order to assist them in getting them to sow the proper quantity on each plot, consisting of 10 drills, I made them sow 10 drills at the same rate per acre immediately before beginning the experiments. No farmyard manure was applied with the artificial manures. It was a calm day—scarcely a breath of wind; the manures were therefore not mixed with each other. The field where the experiments were made is perfectly square. I made all the measurements with a line, and the calculations were made by a land-measurer.

III. Results.—In testing the experiments, I weighed 50 yards of the four centre drills of each experiment, on the north end of the field, where I thought the soil most equal.

In regard to the soundness of the bulbs, I could detect little variation, the quality of the Turnips after the guano being quite as good as the others. In no season do I ever remember to have noticed so few decayed bulbs.*

The result of these experiments is, that the largest outlay has given the largest return, and it remains yet to be proved to what extent this may be carried with a profit.

I shall conclude with a few observations on the experiments themselves.

No. 1. Peruvian guano appeared far before all the others during the whole season, and the crop then weighed was the heaviest. I attribute this to some peculiarity in the season, because for three previous years I found a mixture better than guano alone.

No. 2. Phospho-Peruvian (Lawson's). I found this manure decidedly inferior to cheaper home mixtures.

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* It must be kept in mind that the period of sowing, 2d June is quite late enough for Swedes: this, however, would have the effect of preventing them decaying.—Ed.

No. 3. A trial of increased proportion of phosphates.

No. 4. For comparison with Nos. 2 and 3.

No. 5. The mixture I used over the whole field.

No. 6. Townsend's manure—a very good fertiliser, but a farmer can often manufacture a better and cheaper manure at home, as the results prove.

All the experiments after No. 6 were applied at the rate of 8 cwt. per acre, to test the qualities of superphosphate when used alone.

No. 7. Superphosphate manufactured by Messrs. Maclaren, Leith, and supplied by Messrs. Cunningham. This superphosphate had the highest analysis, from the very large per-centage of soluble phosphates, but it will be observed that the crop was the lightest; and I may mention a curious fact regarding this trial. In the month of August the crops after Nos. 8, 9, and 10, appeared so unfavourable that I top-dressed them (leaving, of course, 50 yards of each experiment), as I thought I was going to lose the crop, while the appearance of No. 7 was so favourable that I did not top-dress it. The inference from this is, that the soluble phosphates nourished the plants up to this time, and then the deficiency of insoluble phosphates was felt afterwards. It is therefore quite possible that manufacturers may err in making too great a proportion of the phosphates soluble.

No. 8. Dissolved bones, manufactured by Mr. Robertson, Dunbar.

No. 9. Bolivian guano. The results of this experiment show the superiority of guano to phosphates.

No. 10. Superphosphate—manufactured by Messrs. Bell & Son, Leith.

No. 11. I made this mixture to try what could be done without Peruvian guano: the result is very favourable: its cost is little over 9*l.* per ton, and gives a much larger crop than more expensive mixtures.

At this moment, notwithstanding all that science has done, Peruvian guano appears to be the best and cheapest artificial manure we can use. I hope the day is very distant when the supply will be exhausted, but it cannot always equal the increasing demand. When the day does come, I hope it may be the fortune of the farmer to have a cheap and good substitute at his command. And it is not only for the interest but the duty of farmers to give agricultural chemists every assistance in their power, by making repeated trials in exposition of their theories.

No.	Rate per Acre.		Cost. £	s.	d.	Result. Tons.	cwt.	st.	lb.
1	6 cwt. Peruvian guano ..	..	3	18	0	22	18	4	12
2	6 cwt. Phospho-Peruvian	..	3	12	0	18	17	1	8
3	2 cwt. Peruvian .. ; 4 cwt. superphosphate	6 cwt.	2	14	0	18	16	0	3
4	4 cwt. Peruvian .. ; 2 cwt. superphosphate	6 cwt.	3	6	0	20	2	5	6
5	1½ cwt. Peruvian guano ; ½ cwt. sulph. of ammo. ; 2 cwt. Rape .. .. ; 2 cwt. superphosphate	6 cwt	2	18	0	18	18	0	8
6	6 cwt. Townsend's manure	..	2	14	0	16	6	1	13
7	8 cwt. Maclaren's superphoshate		2	16	0	15	6	0	4
8	8 cwt. Robertson's dislvd. bones		3	4	0	15	10	3	6
9	8 cwt. Bolivian guano ..	..	2	16	0	16	8	0	0
10	8 cwt. Bell's superphosphate	..	2	16	0	15	14	4	3
11	2 cwt. sulpht of ammo. ; 4 cwt. Rape dust .. ; 2 cwt. Bolivian guano	8 cwt.	3	14	0	21	5	4	2

Mr. J. D. Shirreff, Saltcoats, East Lothian.

COMPARISON OF BREEDS OF SHEEP.

By the Parlington Tenants Club.

The members of this Club having brought to a close their experiment of winter feeding the following different breeds of shearing sheep for the purpose of ascertaining with an equal or given quantity of food the class best adapted to their locality, comply with the wishes of their friends in publishing the result.

It may be remembered by those parties interested in this experiment that they published in October last a tabular statement, giving the result of the summer grazing, and at the same time admitted that such statement required consideration, was open to criticism, and reminded by its imperfections that first trials were rarely satisfactory.

Perhaps the principal objection to that test might be the unequal state of the condition in which the sheep came to fold; to meet this the members have this winter purchased Lincoln, Leicester, North and Shropshire Down lambs, to again test the summer grazing.

At the close of the last summer grazing on the 4th October, in order to place the sheep upon the most even state of condition, six of the best were selected from each class and turned upon Rape, so that nature might have its course, with natural food and without stint, until the 11th Nov., during which time.—

The Cross from the Teeswater gained	2 stones	2 lbs.
The North Sheep gained	5 ,,	1 ,,
The Lincolns gained	3 ,,	6 ,,
The Shropshire Downs gained	0 ,,	6 ,,
The Leicesters gained	1 ,,	13 ,,
The Cotswolds gained	5 ,,	8 ,,
The South Downs lost	0 ,,	11 ,,

On Nov. 11th the sheep were again folded, and it may be fairly presumed that the several classes were then in a pretty equal state for laying on fat and the start fair. If a lead could be supposed it might be to the Cotswolds, from the start they had made at the latter part of the summer grazing and the shoot out at the Rape.

The whole of the sheep have had as many Swede Turnips as they could consume and ½ lb. of Linseed cake per day, with the exception of the Lincolns, and these for 42 days had ¼ lb. extra; but it will be seen by the following tabular statement that these 63 lbs. have been placed to the debit of their account in like manner as the various weights of Turnip consumed have been to the several classes.

The whole of the sheep were sold on the same day in the Leeds market, obtaining the following prices per lb.

The Cross from the Teeswater	6*d.*
The North Sheep	6
The Lincolns	5¾
The Shropshire Downs	6¼
The South Downs	6½
The Leicesters	5¾
The Cotswold	6

The above prices fairly representing the different qualities.

The Lincolns were bred by Thomas Greetham, Esq.
The South Downs by George Savile Foljambe, Esq.
The Shropshire Downs by Messrs. Crane.
The Leicesters (Sir Tatton Sykes') by Henry Hill, Esq.,
The Cotswolds by Edmund Ruck, Esq.

The object of this experiment being for the purpose of obtaining information and not the promotion of any particular class, the members leave their friends to draw their own conclusions, but as the Lincolns have, mutton and wool combined, come out so well, they have to observe that this class is what is called the Improved Lincoln, a happy combination of Lincoln and Leicester blood. The pure Leicester will be seen to maintain its character for aptitude to fatting with diminished offal. The mutton of the Down, especially the Shropshire Down, with its increased wool, bears its own testimony, and will force its own way with thinking men.

Description or Class of Sheep.	Live Weight of Six Wether Sheep when shorn on the 25th February, 1862. Stns.	lbs.	Weight of Mutton when slaughtered. Stns.	lbs.	Weight of Tallow. lbs.	Weight of Wool. lbs.	Weight of Pelts. lbs.
The Cross from the Teeswater ..	85	3	53	1	106	43	85
North Sheep	83	12	53	12	96	43½	83
Lincolns	92	1	59	12	105	66	103
South Downs	71	..	47	7	97½	38	65¾
Shropshire Downs ..	85		58	1	103	42¼	91
Leicesters	80		53	4	90½	44	78¼
Cotswolds	76	5	47	6	79	54	90

Description or Class of Sheep.	Weights gained during the time of Feeding from the 11th November to February 14. In Live Weight. Stns.	lbs.	In Mutton. Stns.	lbs.	In Wool. lbs.	oz.
The Cross from the Teeswater ..	13	7	8	6	14	5
North Sheep	12	11	8	3	14	8
Lincolns	16	1	10	7	22	..
South Downs	11	13	8	..	9	5
Shropshire Downs ..	15	11	9	12	14	3
Leicesters	14	10	9	10	14	11
Cotswolds	12	6	7	11	18	..

Description or Class of Sheep.	Value of the Preceding Mutton and Wool. Of the Mutton. Price per lb. d.	£	s.	d.	Of the Wool. Price per lb. s.	d.	£	s.	d.
The Cross from the Teeswater ..	6	2	19	0	1	6	1	1	6
North Sheep	6	2	17	6	1	5½	1	1	1¾
Lincolns	5¾	3	10	5¼	1	6	1	13	0
South Downs	6½	3	0	8	1	5	0	13	2½
Shropshire Downs ..	6¼	3	11	10½	1	5¼	1	0	7¾
Leicesters	5¾	3	5	2	1	6	1	2	0
Cotswolds	6	2	14	6	1	6	1	7	0

Description or Class of Sheep.	Food Consumed during the preceding time of Feeding. Swede Turnips. Stns.	Linseed Cake. lbs.	Value of the Food, Calculating Turnips at 6s. 8d. per ton, and Cake at 10*l.* 10s. per ton. £	s.	d.	Value of Mutton and Wool added together. £	s.	d.	Value of the Food deducted from the Value of the Mutton and Wool, shewing the relative Value that one Class of Sheep bears to another. £	s.	d.
The Cross from the Teeswater ..	978	300	3	8	10½	4	0	6	0	11	7¾
North Sheep	914	300	3	6	2½	3	18	7¾	0	12	5¼
Lincolns	930	363	3	13	0¼	5	3	5¼	1	10	5
South Downs	684	300	2	16	7½	3	13	10½	0	17	3
Shropshire Downs ..	924	300	3	6	7½	4	12	6¼	1	6	10¾
Leicesters	877	300	3	4	8	4	7	2	1	2	6
Cotswolds	926	300	3	6	9¼	4	1	8	0	14	9½

Thomas J. Fox.

Home Correspondence.

Edinburgh Wool Sales, April 16.—The attendance of buyers was very numerous, and the competition for good lots spirited. There were a few lots of good half-breds and Cheviots, although the last of the season, and these brought high prices. The Parkhouse half-bred ewes, 36*s.* 6*d.*, and hogs, 40*s.*; Dysart hogs, 38*s.*; Ackergill hogs, 38*s* 6*d.*; Peeblesshire hogs, 40*s.* and 41*s.*; Easter Knowe hogs, 41*s.* 6*d.*; and several lots of ewes at 36*s.* 6*d.* Cheviot ewes fetched 33*s* to 36*s.*,—at which latter price a large quantity was sold; and for hogs of the same clip, 37*s.* was refused. The demand for White Highland was exceedingly animated, and prices ruled high. Unwashed fetched from 17*s.* 6*d.* to 20*s.* 6*d.*—amongst the best of which are Newby, Glenmore, New Rattray, Maiden Coates, &c.—and 21*s.* 6*d.* was got for washed wool. A lot of laid was sold at 13*s.*, from sample after sale, and 13*s.* 6*d.* was got for one lot at sale. In laid Cheviots, prices kept firm, although the demand was not particularly lively, except for good lots, which are now scarce, prices running from 18*s.* to 22*s.* for unwashed, and for washed, 20*s.* to 24*s.*; and for first-class Sutherland, from 21*s.* to 28*s.* The quantity offered by Mr. Girdwood was about 1300 bales of wool, the bulk of which was cleared out; and about 5000 skins, which sold at extremely high prices, under a most spirited competition, 213 lots passing the hammer in an hour and a half. *Robert Girdwood.*

Steam Cultivation.—I have some news to tell that I think will be interesting. Yesterday morning I sent with the seed Barley my new combined cultivating, drilling, and harrowing machine into my No. 4 heavy land field, which contains 10 acres, is cold heavy clay, hilly and uneven. After Swedes fed on the land down to the beginning of March, its surface caused by the late heavy rains looked as hard as a road. The tackle was all placed and in order for starting at 9 o'clock; we worked on with my 8-horse power engine at a pressure of 50 lb. per inch till 6 o'clock, and again half a day this day, thus finishing in 1½ day, including meal times and all stoppages for arrangement of rope, &c. the whole 10 acres, including the headlands. The land is well cultivated, beautifully drilled, which will be proved by the straight rows of Barley that will come up as living witnesses, and even without the harrow the Barley is well covered. After laying a few days to dry, a light one-horse harrow will do it good to move and destroy the here and there little bits of Crowfoot and other Grasses that were to be seen upon the land before the cultivator passed over it. A better seed bed I never saw, horse labour cannot equal it at any cost. Yet see the cost of doing it. Engineer 1½ day, 5*s* 3*d.*; windlass man, two drill men, and an assistant and two anchor men at 2*s.* 6*d.* per day each, 22*s.* 6*d.*; three boys 6*d.* per day each, two to attend to the rollers, and one to fetch water from a ditch, 3*s.* 6*d.*; 14 cwt. of coal, 14*s.*; oil, 1*s.* 6*d.*, and estimated wear and tear, 15*s.* Total, 3*l.* 1*s.* 9*d.*, or 6*s.* 2*d.* per acre. This proves that the last month's wet weather has only held me back, for almost as soon as favourable weather comes my heavy land work is done. Not so with the horse farmer, for if we look about we may see in every heavy land district one who after feeding his roots on, or carting them off, has ploughed his land either in the autumn, or in the fine month of February, in which state it now lays, with an under-surface as raw as uncooked liver, caused by the last wet month; another may have ploughed his land in the autumn, and again this spring; yet there is no appearance of its being sown well, be the operations and cost what they may. There is one other point to be considered, that of produce. I feel quite certain that I shall have from one to two quarters per acre more than either of them. The work done is open to the inspection of all, with all the information that I can give. *William Smith, Woolston, Bletchley Station, Bucks, April* 17.

Cotswold Sheep.—Permit me, through the medium of your Paper, to suggest to the breeders of Cotswold sheep that the best way of proving to the world that this breed is worthy of more attention than the prizes offered by the Royal Agricultural Society would lead many to infer, is to send as many specimens as possible and of the best, to the forthcoming Battersea Park Show. *Peter Dryland.*

Societies.

Poissy.—A few more words about our place in the Great International Fat Stock Show held here last week:—

In the English Classes the most importance of course attaches to the Short-horn breed. Putting Mr. MacCombie's wonderful ox for the time out of the question, there can be no doubt about the place occupied by the Short-horns, even though we have left our best animals at home. There is nothing in the pure French Durhams that can cope with the steer and ox we exhibit, and as to the heifers and cows, now for the first time at M. Trehonnais' earnest pleading admitted to compete in French shows, our neighbours have much to do before they can overtake us. The steers and oxen, heifers and cows, are one year younger with us than in the French classes; but yet the measurement and live weights all go to show that the pure French Durham does not acquire that development in France which it does in England, and certainly is later in arriving at the same maturity. There is in

our opinion even more to be done with Durham crosses with local French breeds, such as those of Normandy and the Charolaise and Bretonne, &c., than by the exclusive attention to the pure Durham.

There were some 60 English sheep. The Southdowns were well represented by Lord Walsingham and Sir Thomas Barrett Lennard. Sir Thomas took the 1st prize for a pen of sheep 24 months old, beautiful animals, bearing the Babraham and Richmond stamp. Lord Walsingham also showed a lot 22 months of age. The latter were close clipped, a fact somewhat disadvantageous to the Southdown; while Sir Thomas's sheep had been clipped some time ago, and showed on thighs, plates and neck wool 1½ and 2 inches long. His lordship, like nearly every other exhibitor, had understood the French regulation, while Sir Thomas had not done so; and some little discussion arose as to whether the sheep of the latter should not be disqualified. The matter was solved by clipping one selected by the jury. The decision remained the same after this process. The 10 months' sheep of Lord Walsingham received the 2d prize, and were much admired. We never remember to have seen so fine a pen. The pure Southdowns are wonderful; but still, on close observation, we remarked a great delicacy of constitution, indicated by the fine transparent ears and short wool. The crosses are most successful, particularly with the Berrichon breed. The Leicester class has no entries, but its influence is shown in the most marked manner amongst the Dishley Merinos. The Merino is the chief breed to France; and now that meat for even the French million has become an important object, while the finest wools come from the Australasian colonies, the Merino itself must be transformed into a more mutton yielding sheep, and as at Poissy in 1857, the large thick frames and plentiful mutton of the Dishley Merinos excited universal surprise. Mr. West's Cotswolds are exceedingly good, taking the prize of honour as the best of the English sheep classes. Mr. Holland's Shropshire are splendid sheep. Of Romney Marsh the same remark cannot apply, though there is an increasing demand in France for the sort. No Cheviot Blackfaces were exhibited, and there was no entry in the Dutch, Belgian, and German classes.

As to pigs there was a magnificent show both of large and small breeds, evidently native races improved by many successive crosses with the best English, particularly with Suffolks — and though English breeders cannot hope to win much honour in the field, still they have the satisfaction of knowing that the present perfection of the French breed will have to be maintained by a constant flow of new blood from England.

The following account of the French breeds of cattle is condensed from the report in the *Times* newspaper:—

France has six agricultural divisions, each two-thirds as large as all England; and to comprehend the differences pertaining to the native breeds it is necessary to know somewhat of the lands on which they are respectively found. A few words will suffice. (1). In the North-western division we see the most advanced husbandry, the most important centres of manufacturing industry, and the largest means of communications by railway, roads, canals, and rivers. One-sixth of the territory of France, it contains more than a fourth part of the population, and contributes nearly half the national revenue. (2) The flourishing department of Le Nord may rank with the finest English counties. The marshes and arable lands of Flanders display the most extensive culture and profuse manuring; and, while England devotes three-quarters of her area to the grazing of cattle, Flanders employs only one quarter, yet keeps a larger proportion of stock. (3). Le Nord is also a land of corn, Flax, oleaginous seeds, of lucrative rural manufacture in oil-mills, distilleries, breweries, Potato-starch works and sugar mills. The growth of Beetroot for sugar is the main feature of the farming; and the feeding of stock on the pulp and leaves of the raw material has multiplied the number of cattle 16-fold since the commencement of this trade. (4). Normandy is a country of pastures and large dairy farms, held under long leases, and not by the system of *métayage*, so prevalent in the south, a country also of fine merino sheep, of abundant poultry, and good wages for labour. In the north-eastern division the barren hills of Champagne embosom its famed Vineyards: and the farm-houses are grouped in villages, whence issue to the fields at dawn the cows and sheep obedient to the herdsman's horn. Burgundy glories in its Vine-clad hills of the Côte d'Or; and Franche Comté, on the slopes of the Jura, rears dairy cattle, its little farmers associating in Swiss fashion in co-operative dairies, for cheese-making on a large scale. The western division, jutting out into the Atlantic, and watered by the spreading Loire, yields its fertility to the toil of prosperous husbandmen, Vine-dressers, and gardeners. The valley of the Loire is well called the garden of France: Saintogne and Angoumois distil Cognac, and the Celtic cultivators of Brittany rear their noted herds of milch kine. The central division consists half of mountain, as the ranges of Auvergne and Limousin—and half of barren plain—as the desolate desert of Sologne. The province of Berri, where the most antique rural life is to be seen, is being transformed by the enterprising agriculture of its large proprietors. The south-western division is two thirds in mountain beneath the summits of the Pyrenees, the remainder a plain watered by the Garonne. It is a poor district, having millions of acres of reclaimable land, in a climate which educes agricultural products out of many kinds of vegetation, the chestnut yielding an abundant edible crop, the walnut furnishing one-third of the oil made in France, while plums and dried fruits are exported in prodigious quantity. The vineyards of Bourdeaux and Toulouse form one third of those in all France. In the last or south-eastern division the principal feature is the valley of the Rhone, with many large commercial towns. In the district of Trevaux a large tract of clay country is artificially flooded for the breeding of fish. In the Cevennes are found the Mulberry plantations, with their silkworms. Olive groves abound, and a succession of harvests of Madder, Tobacco, roots, vegetables, and Wheat are ripened by the fervid sun in the well-watered valleys. The tropical climate of Provence causes the Palm and Orange to flourish in the open air; but wide districts are infertile, either from the destructive violence of mountain torrents, or a lack of the Italian irrigation practised in the county of Avignon. In winter the waste plain of Arles grazes the fine-woolled sheep that, in migratory flocks of 10,000 to 40,000, each headed by trained companies of goats with bells round their necks, are driven in spring a month's journey to the slopes of the Alps. Now the extraordinary diversities of climate, soil, situation, and peculiarities of husbandry in these six grand divisions of France have developed more than a score breeds of native cattle; which have been classified, however, under six or seven well-defined types. The north-western and western divisions, being pre-eminent for dairying —supplying most of the 16,000,000 lbs. of butter sold yearly in the Halle of Paris—possess three noted breeds of dairy cattle. The "Flemish" cows, of which the department of Le Nord has 200,000, are very celebrated as milkers, their butter being esteemed as unsurpassed in quality, if not the best known. Stall-fed in winter, in the most liberal yet economical manner, and grazed on splendid pasture or Clover in summer, ordinary cows give eight or nine quarts daily, winter and summer; the finest cows, during the time they are at their best, yield 16 to 20 quarts daily. But they are considered as slow feeders, the oxen demanding the very highest food when fattening. If there is a point in which our English cattle are deficient it is in feats at the pail; but we certainly could not advise any importation of the blood of these Flemish cows when we have Irish and Ayrshire milkers equal in dairy merit, and at the same time thrifty feeders. For milking and creaming qualities, and producing rich yellow butter, our Channel Island cows are superior to the Flemish. Some give as much as 20 to 26 quarts of milk daily, and many yield 10 up to 14 lbs. of butter each weekly. And this is without the corn, meal, cooked foods, and distillery nutriment with which the Flemish cattle are favoured. Moreover, the Channel Island stock, though diminutive, have the merit of fattening rapidly, and yielding excellent meat. Flemish cattle are of a deep dark-red colour, large-framed, long-legged, and commonly ill-shaped. The few of these oxen exhibited have little flesh upon them and one crossed with Shorthorn is big, but of low quality. The few Flanders cows, too, at Poissy possess little merit in the eyes of either butcher or dairyman. The brindled, and black and yellow streaked "Norman" breed thrives upon its luxuriant native pastures, but on poorer forage quickly degenerates. Its great size and substantial frame fits it for being moulded into a race of fine meat-producing animals. The effect of crossing with the Short-horn is evidenced at the present show in removing the faults of angularity in form and overplus of bone, and giving more rapid fattening propensity. Thus, comparing one seven-years old Norman ox with a four years old cross bred, we observe that while the height is reduced 7 inches, the length from tail to shoulder lessened by 11 inches, and the neck shortened 7 ins., the girth is not much altered, being 8 feet 6 inches in the cross-bred, instead of 9 feet 1 inch in the three-years old Norman. The form is compact, and the flesh of beautiful quality. The cows are superb milkers, though of slow growth and difficult to fatten, but a few successive crossings with Short horn bulls produce most excellent animals. One of these exhibited is a splendid cow, with the character of a prime Short-horn, especially broad hips, good back, and handsome head. The third variety of milch kine is the little 'Breton,' famous for its diminutive proportions, its fine bone, and colour in patches of black and white. This native of the heaths of Brittany is very popular, partly because cheap to purchase, partly because a pretty toy animal for the suburban resident, and partly because of its supposed large supply of milk in proportion to the food consumed. There appear to be no reliable grounds for this opinion; experience would show that the Alderneys are very far superior in this respect. Bred on rich land, the size of the breed increases; a cross with the Short-horn is found remarkable for early maturity and beautiful quality of meat, and crossing with Ayrshire gives us a valuable ox as well as a first rate dairy cow, well exemplified in those now exhibited. In the central division of France, along the upper valley of the Loire, we find the Charolais breed, or native French Short horn, distinguished by its white coat. It is rather symmetrically and compactly formed, but smaller than our Short horn; but it is not meritorious in the main points of feeding quickly or yielding much milk. Crossing with English Short-horns is largely practised, giving a produce of larger frame, better forequarter, better loin and rump, of kindly-handling flesh, robust constitution, fine bone, and with a handsome head; but the difficulty is to preserve the white coat, which white Short-horn bulls do not always perpetuate. The pure Charolais now at Poissy are a surprising improvement upon the show of 1857; they have good rounds of beef, full chines, short necks, and short good heads, displaying, however, too many hollow backs, narrow rumps, and the defect of the shoulder-point and elbow-joint standing out almost to a deformity. Many Charolais crosses with Short-horn are exhibited, most of them very excellent animals indeed. They are generally well formed, covered with plenty of good flesh, though the white coat has changed to a brindled buff or light yellow roan. Salers, Auvergne, and Limousin have developed breeds of draught oxen. The Salers cattle are of large size, of bright red colour, with heavy upturned horns; some of them stand four inches higher at the loin than at the shoulder, and the shoulder-blade and elbow-joint are immense, while the ribs are pinched in. They are made into beef at seven to 10 years old. Those shown younger carry very little meat. The Limousin are of a yellow brown or dark fawn colour, with upturned horns, having purple tips. They show many level backs, some good rounds, and some nice firm meat; but the defective shoulder is observable—indeed, one beast has a hollow eight inches deep immediately behind the elbow. Some of the Short-horn and Limousin crosses at once exhibit most of the faults amended; several are heavy-fleshed animals, with a nice quality and kindly coats.

Farmers' Clubs.

WINFRITH.—*The Cultivation of Roots.*—At the last monthly meeting of this Club Mr. T. H. Saunders, of Watercombe, introduced this subject for discussion.

Mr. SAUNDERS said the science of root-growing, and the best sorts to sow, is the foundation-stone to all good farming; particularly on the light soils of this district, as well as the cold hill land around, as I always find my corn crops succeed, in rotation, best after good roots. I generally sow nearly the whole of my Turnips and Swedes after a previous green crop of some kind has been fed off on the land; but to follow this system, your land should be nearly or quite free from Couch Grass. If you have a piece or two which is not quite so, as soon as possible after the corn is removed, previous to sowing your green crop in the autumn, put in the Bentall broadshare, or some such other implement, and pare the land whilst the weather is hot. If it is well worked after, the little Grass will soon be dead; but to do this effectually the corn should be cut very close to the land, or the stubble will be very troublesome in the dressing. As soon as you think all on the top is dead, plough your land as soon as possible, and keep working it about as much as possible when the weather is dry, until you think the land is clean; then, without any more ploughing, I generally sow my Rye, Vetches, or winter Barley.

The first piece of Wheat stubble which is ploughed, and very clean, I sow to Trifolium as soon as the corn is off, otherwise I cannot ensure a plant; but for my first feed in the spring before Turnips, I sow some Italian Rye with corn in the previous spring, or for second feed, I sow some Hop and a [illegible] Dutch seed, to feed before Turnips instead of Vetches, as I think it answers better on light or sandy lands. But on no account do I recommend you to sow any of the [illegible] mentioned seeds to feed off before sowing the Turnips, if your land is not in a proper state of cleanliness, so that you [illegible] send a man over the Turnips or Swedes with a [illegible] basket to take up all the Grass that is left and [illegible] amongst your Turnips, at a cost of from 1s. 6d. to 3s. per acre; otherwise you had better omit having a green crop of any [illegible] and well fallow your land, or it will be in a foul state throughout the whole rotation. Where you have a field of high cold land with a north aspect, on which you cannot by early sowing get a green crop up fit to feed in a fair season, time enough to sow any kind of Turnip, I should recommend you to sow your first Swedes on a bare fallow, whilst your sheep are feeding the green crops on the more favourable situations of the farm. Also on the strong clay land, where you want to ensure a Swede crop, I think it is dangerous to attempt a green crop before Swedes, because if the weather is very dry you cannot get the seed to grow until the season is too far gone, and then you lose your crop of Swedes. I have a variety of soils on my farm, but I have not found much difference as to which grows the best roots after a green crop, provided the weather is not too dry to get the land finely pulverised, so as to vegetate to seed; but in a very dry season I find the free working and rather loamy light soil to vegetate the seed, and carry on the plant best during the dry weather. I have a small portion of very strong clay land which I never attempt to sow to any green crop, if I want to make sure of growing Turnips.

Now I will go back to the autumn part of the year; and supposing the land to be clean and fit to begin ploughing for the different kinds of green crops, if you have some yard manure to spare for the land coming in course for Turnips, put on seven or eight good cart loads per acre, or more if you can spare it, before your plough; this will have the effect of forwarding very much your green crops, as well as bringing your Turnips to a much heavier weight. When you plough your land after the green crop is fed, the plough should be sufficiently deep to bring up all the yard manure ploughed in in autumn; but when first ploughed in it should be but a moderate depth, or the manure which the sheep leave by feeding the green crop will be turned in too deep for the Swedes or Turnips to derive any benefit therefrom. By well working the land the yard manure will be well mixed up in the land, when the young Turnip plant will soon find out and feed on it, which will be soon visible to the eye. But supposing your land to be in fallow and you wish to put on some yard manure, I say put it on before you plough the last time except one; I prefer March or the beginning of April. Plough it in immediately, still working the land at different times, until you want to plough it for sowing, when most of the manure will come to the top; then the drags and harrows will well mix it with the top surface, where it quickly comes in contact with the young plant, as before described. I have at different times had a part of a field which I could not manure until the last ploughing, when I put on a like quantity of the same kind of manure which was ploughed in at the usual depth, and the seed sown at the same time as where the yard manure had been ploughed up by the last ploughing; but the result to the crops was generally very different, and I have found three or four tons of Swedes per acre more in the latter case. I believe that the manure ploughed in deep is sealed down by the weight of the furrow, and in a great measure remains dormant until brought up again; but land that has only one ploughing is different, for the furrow lies as it were rather hollow, and admits air to the roots, which will feed the plants with the manure. I generally drill my Swedes with about two or three cart-loads of compost per acre, made of pig dung and earth, and a little dry ashes if I have any, sufficient just to make it run well through the drill, with about two sacks of bone-dust, and about two cwt. of superphosphate if the land has had no yard manure, but if so, less artificial manure will do. If it is very dry, I don't like to plough my fallow land and sow the seed as soon as it is ploughed, as you turn the dry under, and then you drill the seed down into the dry earth, when it often vegetates and then dies away. I like to plough the land and work it down tightly, then leave it rolled down for a few days, by which time you will find the dry earth is become moist; then drill the seed, which will generally come away quickly. You need not drill so deep as when you drill amongst the dry knobbly earth just ploughed, as deep drilling is very injurious to Swedes or Turnips. I have known many failures for want of this precaution. After the land has lain for a few days it should be well harrowed to kill any weeds that may have vegetated. The process which I have now been speaking of only applies to a very dry season. I have no objection to drilling close after the plough in a moist season, as for fallow land, when you have moist earth to turn under, as the seed will come away before the weeds are up to choke the plant; but if your land is very subject to weeds, I think it a good plan to plough the land a fortnight before the season at which you wish to sow, during which time you can give it several harrowings, which will destroy all the annual weeds, and you will then be enabled to see to hoe your Turnips much better, as the plants will be clean. I don't like to cover the seed more than one inch or one and a-half deep, which must depend on the season; if it is a wet season the shallower is the best.

I will now explain in what way I usually prepare my land to receive the Swede or Turnip seeds after the green crops are fed off. I never on any occasion plough any of the land but once after being fed off; but I like to plough as close after the sheep as is convenient, and then roll it down, and I prefer to give it one turn in a place with the drag, and then let it lie in that way for a week—or a fortnight is better—if the season and green crop is not too far gone. The earlier you can get your green crop fed off the better; if it is a month before you want to sow, it will much better ensure you a good crop of roots, as the sun and atmosphere assist to pulverise the soil. If the seed is sown a week or sometimes a fortnight later under this process, I have often found my roots better in the end than those sown nearly close after the plough, when the land comes up cloddy, and cannot be properly worked fit to sow. My usual practice is to get as much land ploughed up and dragged as I possibly can, then, if I can get but a middling shower of rain, I commence working all that is so prepared with drags, harrows, and chain harrow. Nothing is so essential to the working of land after a green crop, to produce a fine pulverised soil, as the chain harrow, following after the drags, by which I seldom have a failure of seed, if properly put in. With regard to the time of sowing, I think it entirely depends on the soil, climate, and to what purpose the roots are to be applied. This, then, must be left entirely to the judgment of the cultivator. I think many of us are often in too much of a hurry to sow our first feed, which spoils the autumn growth of the roots when they are not wanted for feeding until winter or spring, and then their quality is found to be bad and there is no proof in them. As many of our farms in this district are particularly subject to mildew, our greatest aim ought to be to sow the different crops at such times that they will become ripe when we want to feed them.

Now, I come to the best sorts to grow. That is a question which I cannot decide, as different people are of different opinions; but I will state what my usual practice has been. I generally sow White Globe or Pomeranian about the first of June for my first feed, as many as I think I require for three

weeks' or a month's feeding. Then, in about a fortnight or three weeks after, I sow another piece to come in succession of the same kind; and about the same time I sow some yellow Tankard or common green round, which will come for feeding in succession to sow Wheat during the autumn. About the first or second week in July I begin to sow the common green round Turnips for the winter, after I think it too late to continue my Swede sowing; but I prefer Swedes up to that time on all the land where I have fed my green crops, which I want to stand over the winter for spring corn. As regards Swedes, I begin sowing my coldest lands, if the green food is fed off, the first week in June, and, if I think they will be required to be fed early in the beginning of winter, I put Skirving's, as they grow the largest root. Next I sow the Sussex, or what some called Wyat's; they do not grow quite so heavy a crop, but you can grow them thicker, so as to make up for their size, as they seldom if ever mildew, and are of first-rate quality, if they are to be fed before March, and do not get injured by frost. But for those I want for feeding after March is in, I find the old green-top to be most depended upon, unless the two before-named sorts are pulled up before the frost sets in, to which I will hereafter allude. The old green-top Swedes, although they look small in the autumn compared with the other two sorts, grow during the winter months, and I generally find them keep more sheep per acre after the middle of March, and they will be sound and good all through the spring, if the greens are mown off as soon as they begin to shoot. To ensure getting the different sorts all right, I generally grow the seeds myself, and sell what I do not want every year. With regard to storing the two first-named early sorts of Swedes, I find those pulled in November and December, although the winter has been mild, are of very superior quality to those that have stood in the ground, when they are cut in the same field. I find the best and cheapest way is to stack them in the field where they grow, in small heaps, about two cartloads each, of an oval shape, 4 feet wide at the bottom, something in form of a Potato pit, and all packed with the greens on, and the crowns of the Turnips hanging downwards, so that the greens act as thatch for the heaps, and I generally put a little earth just to cover the top lines, as a "ridge wad" is to a rick. I find them thus much drier and better than if pulled up and put in rows all through the field, with earth ploughed up against them. If the roots are hoed rather thin it can be done very well for 4s. per acre; but if thick, 5s. is a good price; all should be pulled. If you cut them from the heaps, you should take care to have the trimmings well spread about the field, otherwise your corn crop will be laid where the heaps have been trimmed. I have found them keep much better this way than where put in large heaps and covered up; although I recommend a few large heaps where you think you are likely to be cutting in frosty weather, to be earthed up so as to keep the frost out. I think it is the water in the veins of the Swedes which they draw from the earth when they are in the land, during frosty weather, that is frozen and burst the veins. This will not be the case if they are pulled before frost, as I once had some Skirving's Swedes pulled up before frost, put in rows, and earth ploughed over, while one ridge was pulled and laid on the land just as they were pulled up, and remained so during a severe winter; but they were not injured, though those in the remainder of the field were nearly all killed by the frost, and quite rotten. I do not think any one should attempt to grow Swedes oftener than once in eight years in the sandy heath soils of this district, where the land is subject to club root, unless it is chalked, as I think the Mangel roots then very much better adapted for such soils; and we all should have a portion of Mangels for feeding beasts and sheep in spring, as it is much better than Swedes after about the middle of April. You cannot be too liberal with your hoeings. They ought all to be horse-hoed twice before they are singled by hand, as you can see how to go close to the plant the second time. I am not an advocate to single the plants until they are sufficiently strong to stand against the hoe; and as soon as they get upright, give them another horse-hoeing, which will kill the weeds that have been pulled between the drills by the hand-hoe. Regarding the distance of my Swedes and Turnips, I drill all at 18 inches apart, and, as I sow nearly all after a green crop, and find that a thick plant is the most weight, I endeavour to get them left from 7 to 9 inches between the plants.

Mr. W. Budden thought that, with the trouble and expense of preparing compost to drill with artificials, which would cost 7s. or 8s. a cartload, it would be much better if they gave a little more artificial manure and used one of Garratt's drills with Chambers' patent barrow, which had given satisfaction to every one who had seen it at work. It also saved a great deal of time with their cattle, and enabled them to get their work more forward, while the Turnips would come away quite as well. In dry seasons Mr. Saunders said it would be better for the plants if there was an application of ashes. That might be the case if they drilled sufficient per acre—say five or six loads—but a small quantity was no good at all, and what they did get together he was quite sure would do more good on the Grass lands. He drilled nothing but manures, superphosphate or guano, but half-inch bones he could not get to run regularly through the drill, but he could sow them broadcast.—*Abridged from Dorset County Chronicle.*

Reviews.

British Farming, a Description of the Mixed Husbandry of Great Britain. By John Wilson, Farmer, at Edington Mains, Berwickshire. With numerous Illustrations. Adam & Charles Black, Edinburgh.

In this volume a short history of British agriculture and a very full and exact description of its practice is given in terse, good, lucid English. Mr. Wilson, having long been known in the agricultural world as a man of great intelligence, practical skill, and sound judgment, was applied to by Messrs Black to write the articles Agriculture, Dairying, and Drainage in their new edition of the "Cyclopædia Britannica." And since the completion of that great work he has, at the request of the Publishers, embodied these articles in such additional matter as serves to make the whole a complete and systematic treatise on the history and practice of British agriculture. The work is thoroughly practical (*i. e.*, calculated to guide the practical man), and yet so written as to interest the general reader, who will gather from it more perfectly than from any other volume we are acquainted with, at once the gradual growth and the present magnitude of the great interest which it describes.

The chapters in which its history is given relate the progress during successive periods, as from 1688 to 1760, from 1760 to 1815, and since 1815. A good deal of this progress has been due to the energy and intelligence of Scottish cultivators and inventors. Referring to some of the latest reports of progress in the English Agricultural Society's Journal, Mr. Wilson thus alludes to this fact:—

"Scottish agriculturists, in reading these reports, will probably note with self-gratulation, that some of the improvements referred to as of recent introduction in England, viz., two-horse ploughs and one-horse carts, have long been established among themselves. Indeed they will find graceful notice of the fact on the face of these reports. Unless altogether blinded by prejudice they will, however, see that our brethren south of the Tweed have already outstripped us in many particulars, and that unless our national society, our mechanists, and farmers, exert themselves with corresponding judgment and zeal, we must henceforth be fain to follow, where we at least fancy that we have hitherto been leading."

It will be gathered from the extremely fair use thus made of the instances to which allusion had been made, that though written by a Scotchman this work is an unprejudiced picture of British agriculture, and that no exclusive superiority is claimed for the particular agricultural districts of the island. The needs of specific districts are, however, pointed out, and one in particular, to which attention has of late been drawn, is thus described:—

"Some of these Fen-lands and estuary drainage works have been accomplished in the face of natural obstacles of the most formidable character, and constitute trophies of engineering talent of which the country may well be proud. Great as the natural difficulties are which have to be encountered in such cases, there are others of a different kind which have often proved more impracticable. It has been found easier to exclude the sea and restrain land-floods, than to overcome the prejudices and reconcile the conflicting interests of navigation companies, commissioners of sewers, owners of mills, and landed proprietors. Although all these classes suffer the most serious losses and inconveniences from the defective state of many of our rivers, yet it is found extremely difficult to reconcile their conflicting claims, and to allocate to each their proper share of the cost of improvements by which all are to benefit.

"It is interesting to know that the necessity for trunk drainage, and the means of accomplishing it, were distinctly set before the public 200 years ago by a practical draining engineer, to whose writings the attention of the agricultural community has been frequently directed of late by Messrs. Parkes, Gisborne, and others. From the third edition (1652) of "The Improver Improved," by Walter Blithe, the author referred to, in which the true principles of land drainage are stated as distinctly, and urged as earnestly, as by any of our modern writers, we here quote the following remarks:—

"'A strait watercourse, cut a considerable depth, in a thousand parts of this nation, would be more advantageous than we are aware of, or I will task myself here to dispute further. And though many persons are interested therein, and some will agree, and others will oppose; one creek lyeth on one side of the river, in one lord's manor, and another lyeth on the other side, and divers men own the same; why may not one neighbour change with another, when both are gainers? If not, *why may they not be compelled for their own good, and the commonwealth's advantage?* I daresay thousands of acres of very rich land may hereby be gained, and possibly as many more much amended, that are almost destroyed; but a law is wanting herein for the present, which I hope will be supplied if it may appear advancement to the public; for to private interests it is not possible to be the least prejudice, when every man hath benefit, and each man may also have an equall allowance if the least prejudiced.

"'But a word or two more, and so shall conclude this chapter—and it is a little to further this improvement through a great destruction (as some may say); it is the removing or destroying of all such mills, and none else, as drown and corrupt more lands than themselves are worth to the commonwealth, and they are such as are kept up or dammed so high as that they boggyfie all the lands that lye under their mill-head. Such mills as are of little worth, or are by constant great charges maintained, I advise to be pulled down; the advance of the land, when the water is let run his course, and not impounded, will be of far greater value many times. But in case the mills should be so necessary and profitable too, and far more than the lands they spoil, I shall then advise, that under thy mill-dam, so many yards wide from it as may prevent breaking through, thou make a very deep trench all along so far as thy lands are putrefied, and thereinto receive all the issuing, spewing water, and thereby stop or cut off the feeding of it upon thy meadow, and carry it away back into thy back-water or false course, by as deep a trench, cut through the most low and convenient part of thy meads. But put case that thou shouldst have no convenient fall on that side thy mill-dam, then thou must make some course, *or plant some trough under thy mill-dam,* and so carry it under into some lower course that may preserve it from soaking thy meadows or pastures under it; and by this means thou maist in a good measure reduce thy land to good soundness, and probably wholly cure it, and preserve thy mill also.'

"It is painful to reflect, that after the lapse of two centuries we should still see, as Blithe did, much 'gallant land' ruined for want of those draining operations which he so happily describes."

Besides its historical and more general discussion of the various topics which an agricultural work embraces, full details are given of the actual processes and subjects of cultivation. The tillage of the soil, the management of crops and animals, and the most recent improvements adopted, are all fully described; and the practical reader sees throughout that he is learning from the instructions of a practical writer.

The remarks of such a man on the subject of agricultural education are likely to exert a powerful influence, and we transcribe them here as the last specimen for which we have room at present of this very important contribution to our agricultural literature:—

"The great difficulty at present lies in finding appropriate occupation for youths betwixt their 15th and 20th years. In many cases the sons of farmers are during that period put to farm labour. If they are kept statedly at it, and are made proficient in every kind of work performed on a farm, it is a good professional training as far as it goes. The more common one—at least as regards the sons of the larger class of farmers—which consists of loitering about without any stated occupation, attending fairs and markets, and probably the race-course and hunting-field, is about the most absurd and pernicious that can well be imagined. Such youths are truly to be pitied; for they are neither inured to bodily labour, nor afforded the benefits of a liberal education. It need not surprise any one that such hapless lads often prove incompetent for the struggles of life, and have to yield their places to more vigorous men who have enjoyed the benefit of 'bearing the yoke in their youth.' Unless young men are kept at labour, either of mind or of body, until continuous exertion during stated hours, confinement to one place, and prompt obedience to their superiors, have ceased to be irksome, there is little hope of their either prospering in business, or distinguishing themselves in their profession. Owing to the altered habits of society, there is now less likelihood than heretofore of such young persons as we are referring to being subjected to that arduous training to bodily labour which was once the universal practice; and hence the necessity for an appropriate course of study to take its place. Many Scottish farmers endeavour to supply this want by placing their sons for several years in the chambers of an attorney, estate-agent, or land surveyor; partly in order that they may acquire a knowledge of accounts, but especially for the sake of the wholesome discipline which is implied in continuous application and subjection to superiors. It is also common for such youths to be sent to Edinburgh for a winter or two to attend the class of our accomplished professor of agriculture, and perhaps also that of chemistry and the Veterinary College. This is well enough in its way; but yet there is wanting in it an adequate guarantee that there is real study—the actual performance of daily mental work. The Agricultural College at Cirencester appears to come more fully up to our notion of what is needed for the professional training of farmers than any other institution which we yet possess. We shall rejoice to see such opportunities of instruction as it affords multiplied in Great Britain. After enjoying the benefits of such a course of training as we have now indicated, young men would be in circumstances to derive real advantage from a residence with some experienced practical farmer, or from a tour through the best cultivated districts of the country. We are well aware that what we have now recommended will appear sufficiently absurd to the still numerous class of persons who believe that any one has wit enough to be a farmer. But those who are competent to judge in the case can well afford to smile at such ignorance. They know that agriculture is at once an art, a science, and a business; that the researches of naturalists, chemists, geologists, and mechanicians are daily contributing to the elucidation of its principles and the guidance of its practice; and that while its pursuits afford scope for the acutest minds, they are relished by the most cultivated. As a business it shares to the full in the effects of that vehement competition which is experienced in every other branch of industry, and has besides many risks peculiar to itself. The easy routine farming of the olden time is gone for ever; and without a good measure of tact, energy, and industry, no man can now obtain a livelihood by it. It were well that all this were better known; for nothing has been more common than for parents who have sons that are too dull for scholars, or too indolent for trade, to put them to farming; or than for persons who have earned a competency in some other calling, to covet the (supposed) easy life of a farmer, and to find it to their sorrow a harassing and ill-requited one."

Calendar of Operations.

APRIL.

South Northampton.—The weather since the first six days of March has been of so damp and hazy a character as to preclude all possibility of profitably employing the horses on the land. During the latter part of the month a great quantity of rain has fallen; and although to day is fine, the glass is still very low, with but little appearance of settled weather. We finished sowing spring Wheat on the 5th, and although our land is naturally dry, lying as it does on the sandstone of the lower oolite, our horses have only done one or two days ploughing since that date. Our buildings being central, we prefer thinning the whole of the manure in the yards a month or six weeks before using it, and carting it direct to the field and depositing it at once in the ridges when the season for Turnip sowing has arrived, by which we save one filling into the carts, and the manure suffers less washing and deterioration. We have a large breadth of Barley to sow, and unless the weather soon becomes settled the prospect of a good crop will be greatly lessened. Invariably we find where the land is in high condition the early sown crops yield the greater quantity and best quality of grain. On such lands the crop when early sown is generally slower of growth, consequently the straw is more bony and less easily lodged; whilst land low in condition produces the best crop when later sown, if put in under favourable circumstances, and grows freely without receiving any check, such land seldom growing too much straw. *Manual Labour.* The men have been employed during the month attending to stock, cleaning hedges, and filling up all gaps with strong Quicks from the nursery. We have had a number of boys at 4*d.* to 6*d.* per day employed in looking over the whole of the Turnip break before the sheep; each being furnished with a light steel fork, they dig out all the small pieces of Twitch that have escaped detection in the summer. This we find the best system of keeping in bounds this pest of the light-land cultivator, these boys being superintended by

an old man; this we think is of great benefit in training them to become useful labourers, as we generally find them much more active and handy when they grow up than others who are old before going to work. *Cattle.*—We have now disposed of the greatest part of the fat beasts, the prices at which we have sold them has varied from 4*s.* to 4*s.* 8*d.* per 8 lbs., which leaves only a small margin for cost of keeping, they being worth from 4*s.* 8*d.* to 5*s.* per 8 lbs. when put into the stalls in November; therefore they will scarcely pay for food and attendance this season. Our young stock have had a liberal allowance of Oat-chaff and pulped roots, with 2 lbs. of Linseed cake per diem; they will turn out to Grass in good condition. This being our first year's experience on a large scale of pulping, we are thoroughly convinced of the economy and utility of the system, having wintered 140 head, which we think would present a creditable appearance in any locality. *Sheep.*—The fall of Lambs this season has been unusually good; they are also stronger and more healthy than common; we have had very few die from disease this winter. The smallest of our fat sheep we have been selling in the wool at 5*s.* 4*d.* to 5*s.* 6*d.* per 8 lbs., while the heavier weights we are clipping, those out of the wool making from 4*s.* 4*d.* to 4*s.* 6*d.* per 8 lbs. The wether tegs intended for the butcher between this and the end of May have ½ lb. each per day of Linseed cake, with a small quantity of cut chaff and as many cut Swedes as they can eat. *G. M.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, April 24, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6.	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.										Inches.		
Friday ..	18	29.90	51°	48°	S.W.	2	4	58°	43°	72°	40°	..	47½°	47°
Saturday ..	19	29.86	52	50	S.W.	3	6	60	47	74	45	0.01	48½	47½
Sunday ..	20	29.99	55	53	S.W.	2	5	58	50	65	48	..	49	47½
Monday ..	21	30.00	56	52	S.W.	2	4	64	47	78	45	..	50½	48
Tuesday ..	22	29.72	59	55	S.W.	3	5	64	46	78	42	..	51½	49
Wednesday .	23	29.66	48	46	S.W.	3	4	60	46	66	44	0.46	51½	49½
Thursday ..	24	30.02	51	49	S.	1	6	61	41	78	37	..	51½	49½

Notices to Correspondents.

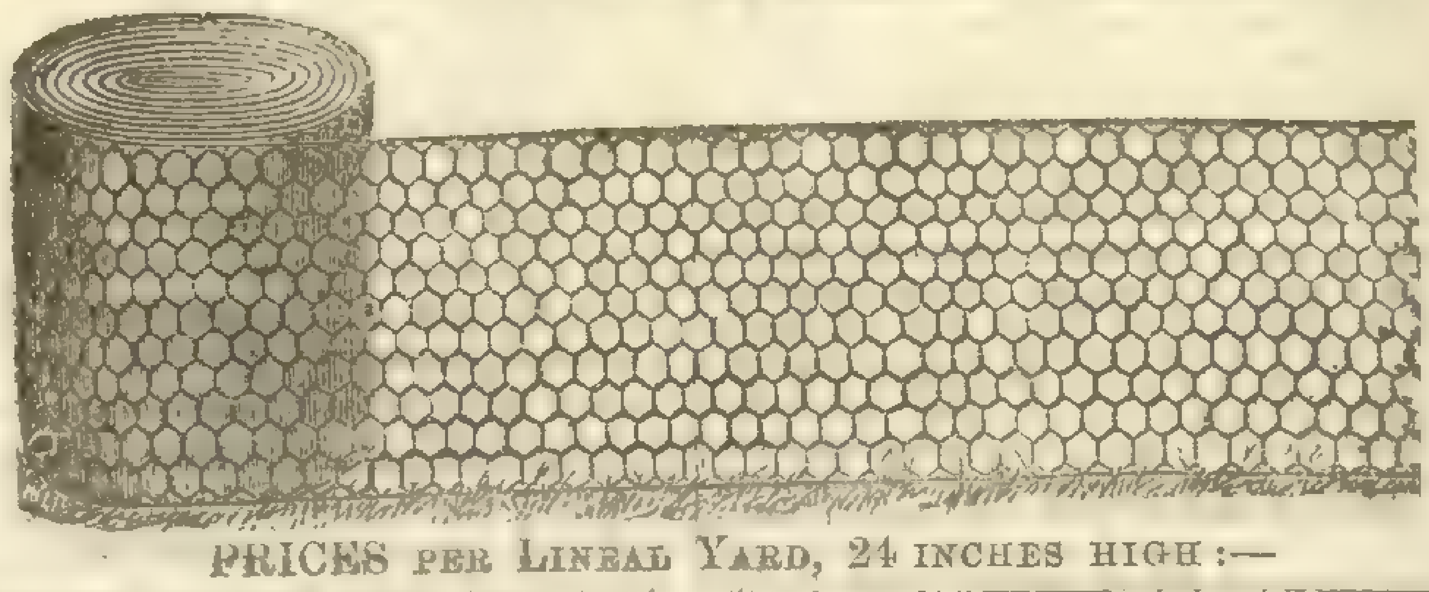
Bokhara Clover: *Vertue & Co.* The following is Mr. Lawson's account of the plant:—"This plant formed the subject of a paragraph which in 1838-39 went the round of the agricultural and several other periodicals, entitled 'New Era in Agriculture,' and describing it as a Tree-Clover, a few seeds of which had just been brought to England from Bokhara by a gentleman, who stated that, in that country, it attained a height of 14 feet, and yielded several cuttings per annum of highly nutritious food for cattle and horses; also that its bark yielded a fibre similar to and used for the same purposes as that of Hemp, &c. The Bokhara Clover is now ascertained to be a large growing variety of the Melilotus leucantha (page 146 of Ag. Manual), which was known in the south of Russia, and other parts of the Continent, for some years prior to its introduction to Britain, under the name of M. leucantha major. In September, 1840, a plant was exhibited at the Highland and Agricultural Society's Show at Aberdeen, which was grown in Perthshire by Mr. Archibald Gorrie, who had the seeds from its introducer through J. C. Loudon, Esq., London, and which had six or eight stems measuring about 10½ feet in height, each of these being furnished with numerous side branches, and clothed with a profusion of white-flowered racemes having a slight agreeable odour, and seemingly much sought after by bees. Its bark, although fibrous, seems however very deficient in that property when compared with that of Hemp; and when intended for feeding the plants should be cut when little more than a third of their full height, as their stems afterwards become very hard or woody. Like the other more common species of Melilot, this should be treated as a biennial, and sown or planted in rows not less than a foot distant, and fully 9 inches apart in the rows."

Bones: *G R A.* We should be inclined to mix the bones with an equal quantity of wet sand, and soak the whole with about one-third their weight of sulphuric acid. This will answer very well if the sand is pure siliceous sand, but if it be calcareous it will not do. In that case you must put the bones into a vessel along with bones and acid half and half, and have an arrangement for drawing off the liquid after an hour or two, and then mix up the bones with sand on a heap under cover. Bones are phosphate of lime, super phosphate is lime united with a larger quantity of phosphoric acid, by which it becomes soluble in water, and is more immediately active as a manure in the soil.

Grass: *C.* If you have a good crop of Grass that when cut will make 30 cwt. of hay, you may get from 4*l.* to 6*l.* for it, according to the value of hay at the time.

NEW IMPROVED PREMIUM WIRE NETTING.

GREAT IMPROVEMENT,



WITH REDUCED PRICE

PRICES PER LINEAL YARD, 24 INCHES HIGH:—

Size of mesh.	Mostly used for	Light. Japanned.	Light. Galvanized.	Medium. Japanned.	Medium. Galvanized.	Strong. Japanned.	Strong. Galvanized.	Extra Strong. Japanned.	Extra Strong. Galvanized.
2¼ inch	Hares, Dogs, Poultry	3*d.*	4*d.*	3¾*d.*	5*d.*	4½*d.*	6*d.*	5½*d.*	7*d.*
2 inch	Game or Poultry Netting	3½*d.*	4½*d.*	4*d.*	5*d.*	5*d.*	6½*d.*	6½*d.*	8*d.*
1⅝ inch	Small Rabbits, Hares, &c.	4*d.*	4½*d.*	4½*d.*	6*d.*	5½*d.*	7*d.*	7*d.*	9*d.*
1½ inch	Smallest Rabbits..................	5*d.*	6*d.*	5¾*d.*	7*d.*	7*d.*	9*d.*	9*d.*	11*d.*

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

*** *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, AND RAILING OF CAST AND WROUGHT IRON, COMBINED IN VARIOUS STYLES.

IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c. The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c. Illustrated CATALOGUES and DRAWINGS free on application to

COTTAM & CO., ENGINEERS AND IRON FOUNDERS,
2, WINSLEY STREET (Opposite the Pantheon), OXFORD STREET, LONDON, W.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, Orwell Works, Ipswich,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

DEANE & COMPANY'S
HORTICULTURAL TOOLS.

DEANE'S MOWING MACHINES, with Boyd's Patented Improvements, 5*l.*, 7*l.*, 7*l.* 10*s.*, 8*l.* 10*s.*
GARDEN ENGINES, Galvanised Iron. Prices 55*s.*, 65*s.*, 78*s.*, 90*s.*, 100*s.*, 110*s.*
GARDEN ENGINES, Wood, 90*s.*, 110*s.*, 138*s.*
FLOWER STANDS, 4*s.* 6*d.* each.
CAST-IRON ORNAMENTAL FLOWER STANDS to hold Seven Vases, 27*s.*
GREEN'S PATENT MOWING MACHINES.
GREENHOUSE SYRINGES, 8*s.*, 10*s.*, 18*s.* 6*d.*
GARDEN ROLLERS, 1*l.* 14*s.* 6*d.*, 2*l.*, 2*l.* 12*s.*, 3*l.* 3*s.*, 3*l.* 18*s.*, 4*l.* 13*s.*, 5*l.* 12*s.*, 7*l.* 10*s.*
GARDEN STOOLS, 4*s.* 6*d.*
GARDEN SEATS, from 25*s.*
BOYD'S SELF-ADJUSTING SCYTHE, 10*s.* 6*d.*
WIRE WORK, 18 in., 4*d.* per yard run.

Every Implement for Garden use on the lowest terms.

DEANE'S NEW ILLUSTRATED HORTICULTURAL LIST POST FREE ON APPLICATION.

DEANE'S, Opening to the MONUMENT, LONDON BRIDGE, E.C.

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OF

STEAM PLOUGHING and CULTIVATING APPARATUS

HAVE NOW BEEN SENT OUT BY

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD.

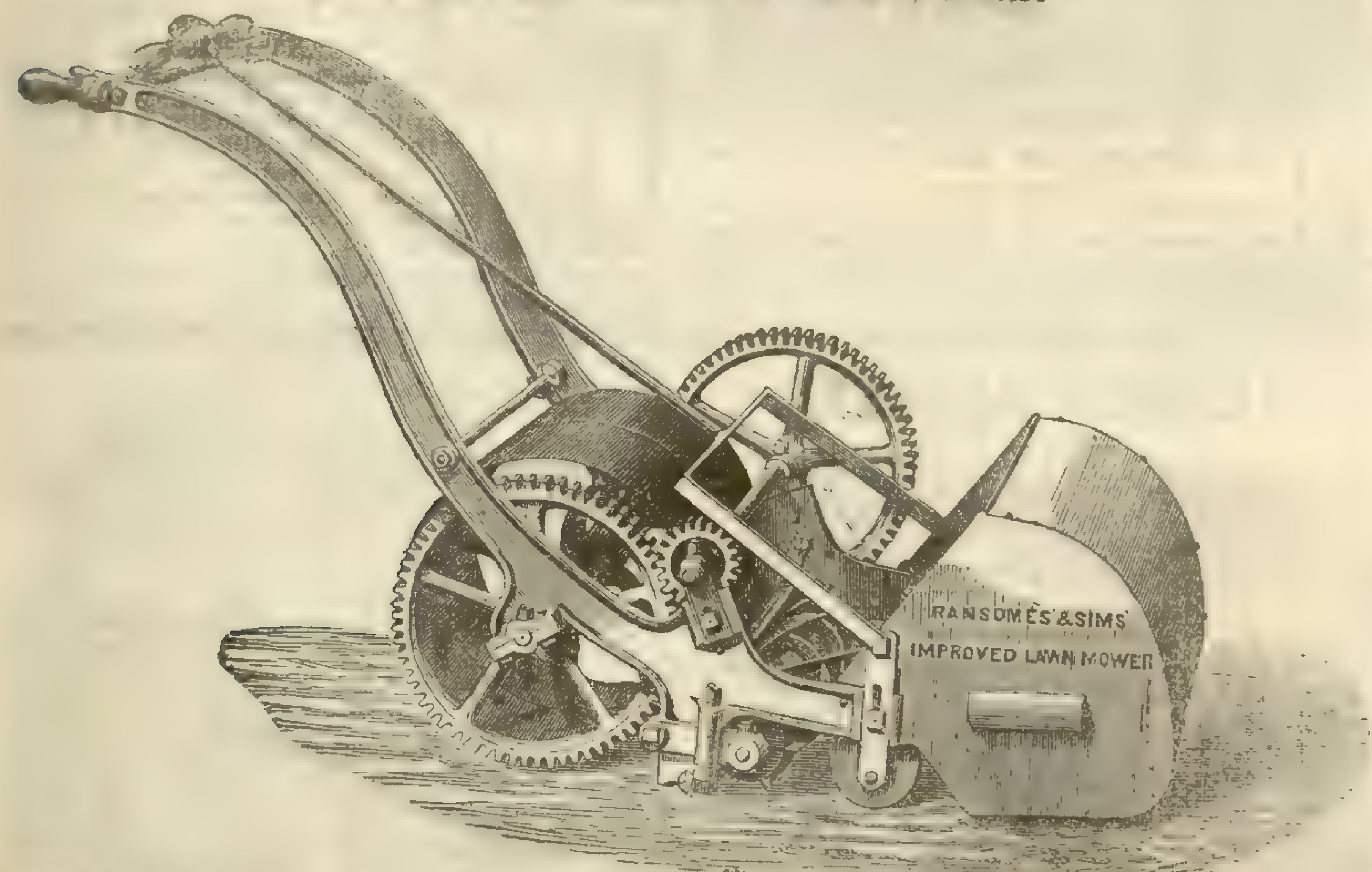
Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

RANSOMES & SIMS, Ipswich,

MANUFACTURERS OF

IMPROVED LAWN MOWERS.



THESE LAWN MOWERS contain important improvements, rendering them efficient and perfect. They are made from new patterns designed so as to combine strength and lightness with simplicity of arrangement. They are light handy Machines, almost noiseless in work, and so easy to manage that persons unaccustomed to Mowing can cut Grass without any difficulty.

Price:—14-inch, £6 10s.; 16-inch, £7; 18-inch, £7 10s.; 20-inch, £8.

Packing Cases 8s. 6d. each, which will be allowed if returned in good condition, Carriage paid.

Carriage paid to any Station within 100 *miles of London or Ipswich.*

MUSGRAVE'S PATENT STABLE FITTINGS and HARMLESS LOOSE BOXES, PATENT IRON COW HOUSE FITTINGS, and IRON PIGGERIES.

These inventions are recommended as possessing numerous advantages not to be found in anything hitherto made. At the late Meeting of the Royal Agricultural Society at Leeds, Musgrave Brothers received a Silver Medal, and two Awards of "Highly Commended," being the only Prizes conferred on any competitor in this class.

Particulars sent on application to the Inventors and Makers, Musgrave Brothers, Ann Street Iron Works, Belfast.

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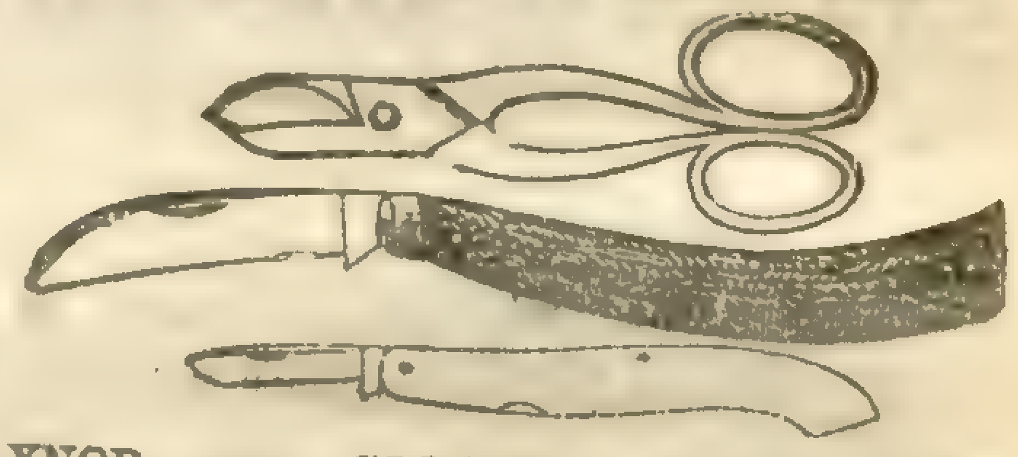
Glamorgan Works, Sheffield.

Paxton Works, Sheffield, Established 1738.



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Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an article superior in quality to anything we have hitherto been able to offer, in PRUNING, BUDDING, and GRAFTING KNIVES, VINE and PRUNING SCISSORS, GARDEN SHEARS, &c., owing to their being tempered under an entirely new process, which renders the blade tough and not liable to break, and also gives the edge a lasting keenness which we can warrant them to retain for at least double the time they would under the old method of tempering, thus facilitating the work and saving the time usually lost by having constantly to renew the edge by sharpening, consequently making them more durable in wear and better adapted for all kinds of work, every blade being guaranteed of the same temper.

Caution. None are genuine except marked Saynor, or Saynor, Maker. Other marks would cause the purchaser disappointment.

PHOSPHO GUANO.

PETER LAWSON & SON, General Contractors,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. Voelcker, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.

(Signed) "Augustus Voelcker."

Opinion of Dr. Anderson, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.

(Signed) "Thomas Anderson."

Opinion of Dr. Stevenson Macadam, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for the Root Crops.

(Signed) "Stevenson Macadam."

Opinion of Dr. Hodges, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.

(Signed) "John F. Hodges."

Opinion of Dr. Apjohn, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows or Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l*. 9*s*. 8*d*. per ton.

(Signed) "James Apjohn."

Price, Free on Rail, £12 5s. per Ton, Bags included.

**** None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

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E. DENCH'S Horticultural Works, 152, King's Road, Chelsea, S.W., Manufacturer of every description of HORTICULTURAL BUILDINGS either in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without.
HOT WATER APPARATUS Manufacturer.

Hothouses for the Million.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 80 feet in length, can be had for less than 17*l.* SPAN ROOFS, 30 feet in length, for 33*l.*; and all other dimensions at equally low prices. Delivered free to any Railway Station round London.

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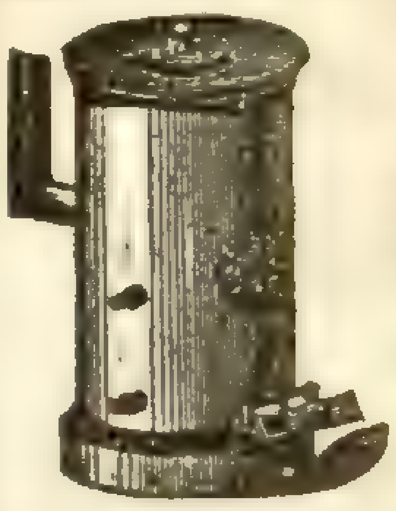
RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

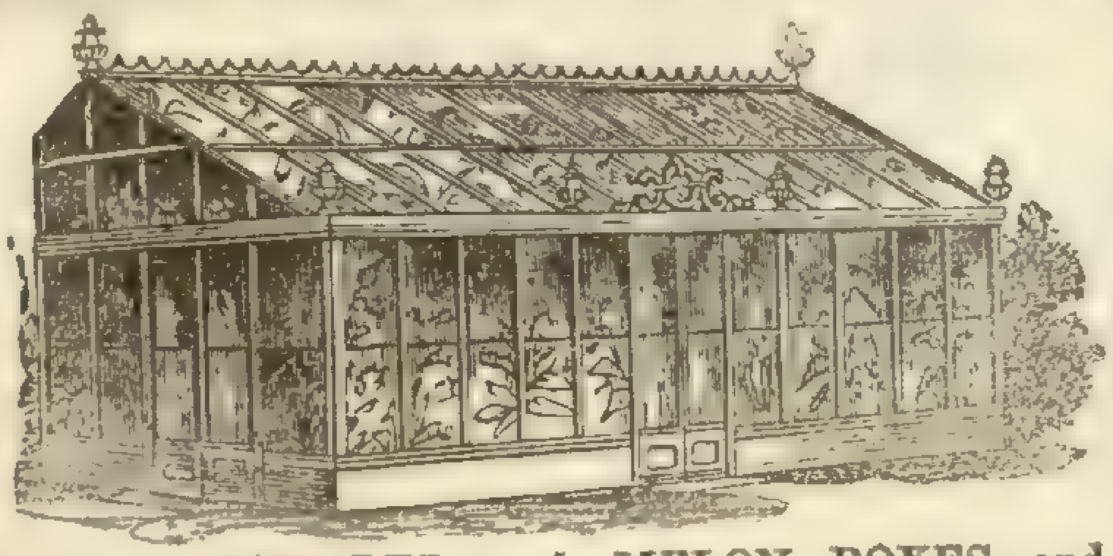


Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

JAMES WATTS and CO., Hothouse Builders and Hotwater Apparatus Manufacturers, near the Green Man, Old Kent Road, London, S.E.



200 CUCUMBER and MELON BOXES and LIGHTS, and from 400 to 500 LIGHTS for PITS of all SIZES kept in STOCK.

Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.

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Kensal Green, Harrow Road, London, W.

JOHN TAYLOR and SON beg to call the attention of the nobility and gentry to the very superior manner in which they ERECT all kinds of CONSERVATORIES, VINERIES, GREENHOUSES, &c., combining every improvement with elegance of design and durability of materials and workmanship.

Their VENTILATING APPARATUS for the Fronts and Roofs of Houses has given the highest satisfaction. Churches, Chapels, Schools, Entrance Halls, Public Buildings, &c., heated with Hot-Water Apparatus in a most economical and efficient manner.

J. T. & Son have great pleasure in referring to numbers of the nobility and gentry by whom they are extensively engaged.

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His improved Pipe Boilers, which give such universal satisfaction for Warming Churches and Hothouses, will heat from 100 to 2000 feet of Pipe.

Plans and Estimates on application to V. Skinner, Bridewell Street, Bristol.

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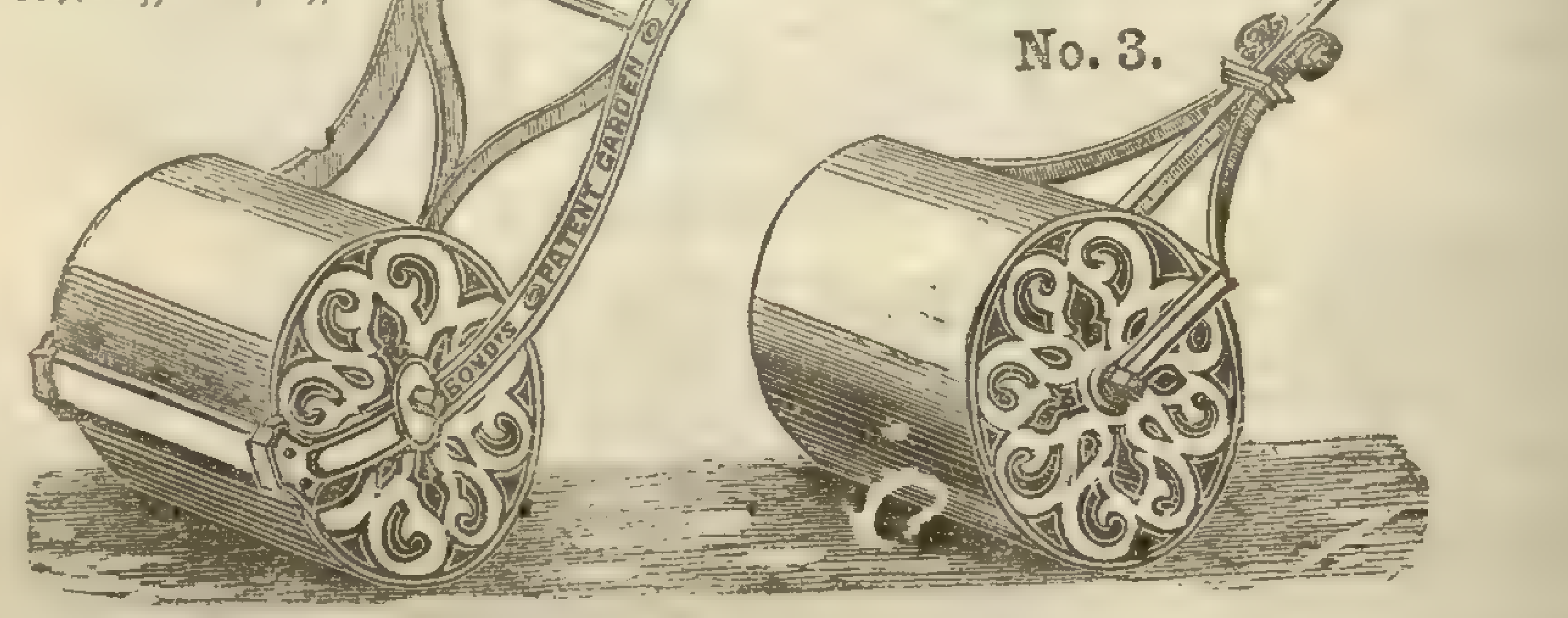
The principal advantages of BOYD'S PATENT SHAFT ROLLER are, that while it saves labour and unnecessary fatigue, by its construction it can be pushed before you (thereby enabling you to see what you are doing), and it is guided when used in this way with the most perfect ease.

Besides this you have quite as much power for drawing it behind you as in Rollers of the old kind; and it is computed to require one-fourth less power than any other Roller without Shafts.

16×16 in.	—42/6 ea.
18×18 ,,	—49/6 ,,
20×20 ,,	—57/0 ,,
22×22 ,,	—62/0 ,,
24×24 ,,	—72/0 ,,
26×26 ,,	—83/0 ,,
28×28 ,,	—99/0 ,,
30×30 ,,	-133/0 ,,

16×16 in.	—37/6 ea.
18×18 ,,	—40/0 ,,
20×20 ,,	—47/6 ,,
22×22 ,,	—52/6 ,,
24×24 ,,	—62/6 ,,
26×26 ,,	—68/9 ,,
28×28 ,,	—85/0 ,,
30×30 ,,	-118/9 ,,

No. 3.



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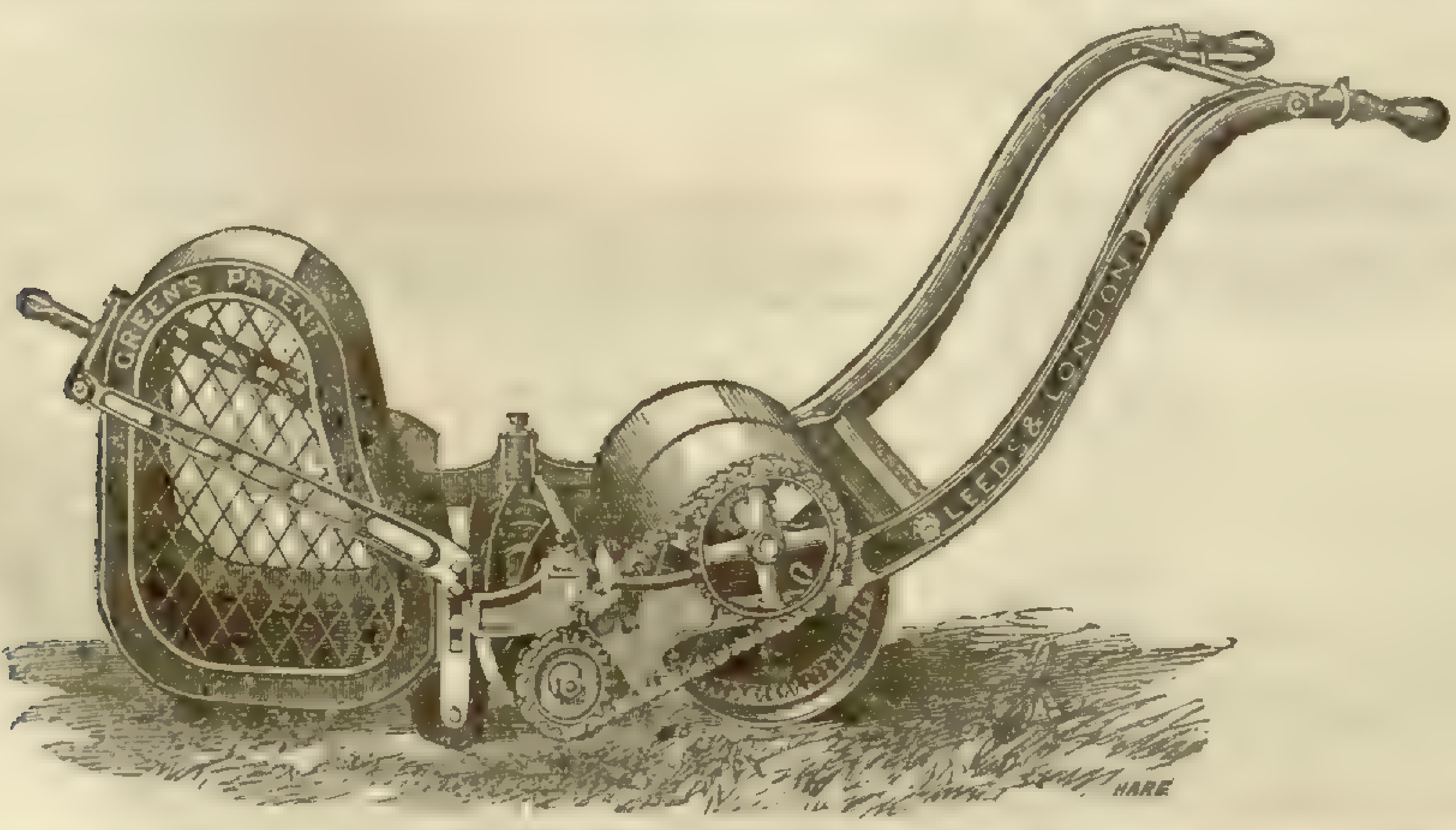
LAWN MOWING, ROLLING, and COLLECTING MACHINES
FOR THE PRESENT SEASON 1862,
FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.



The Improvements are of such an important character that all users should not fail to make themselves acquainted with them.

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WHERE SAMPLES MAY BE SEEN.

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INTERNATIONAL EXHIBITION.

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H. ORMSON

Most respectfully begs to call the attention of the Nobility, Gentry, &c., to the CONSERVATORY as above represented, which is now being **ERECTED for EXHIBITION as a SPECIMEN of his ABILITY to DESIGN and BUILD such STRUCTURES;** and which on inspection he flatters himself will be found to combine **NOVEL and BEAUTIFUL OUTLINE, CHASTENESS and ELEGANCE in DETAIL, with STRENGTH and LIGHTNESS of CONSTRUCTION.** The interior enrichment will also be found very beautiful, a view of which will shortly appear in the *Gardeners' Chronicle.*

***** THIS CONSERVATORY will be for SALE.**

H. ORMSON *having a most complete Set of Steam Power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.*

ORCHARD HOUSES on Mr. RIVERS'S PLAN,

Fixed on Cast Iron Posts requiring no Brickwork. These houses will be found cheaper than those advertised by any other Builder. The prices given will include Cast Iron Posts and Fixing.

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IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

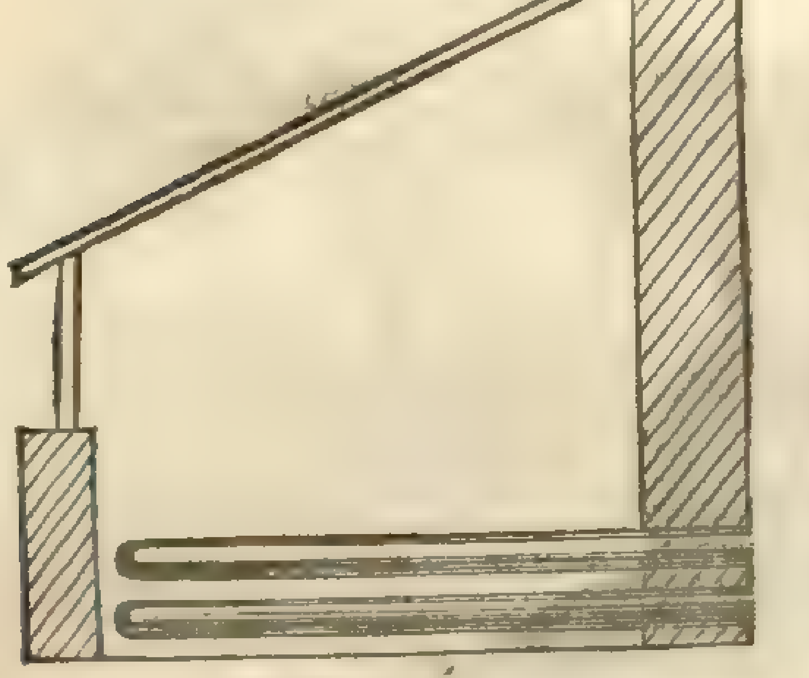
HENRY ORMSON, HORTICULTURAL BUILDER TO HER MAJESTY,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

HOT-WATER APPARATUS.

J. JONES
BEGS TO OFFER A COMPLETE
Hot-Water Apparatus for Houses
according to the following Plans, delivered Free to any Railway Station in England.

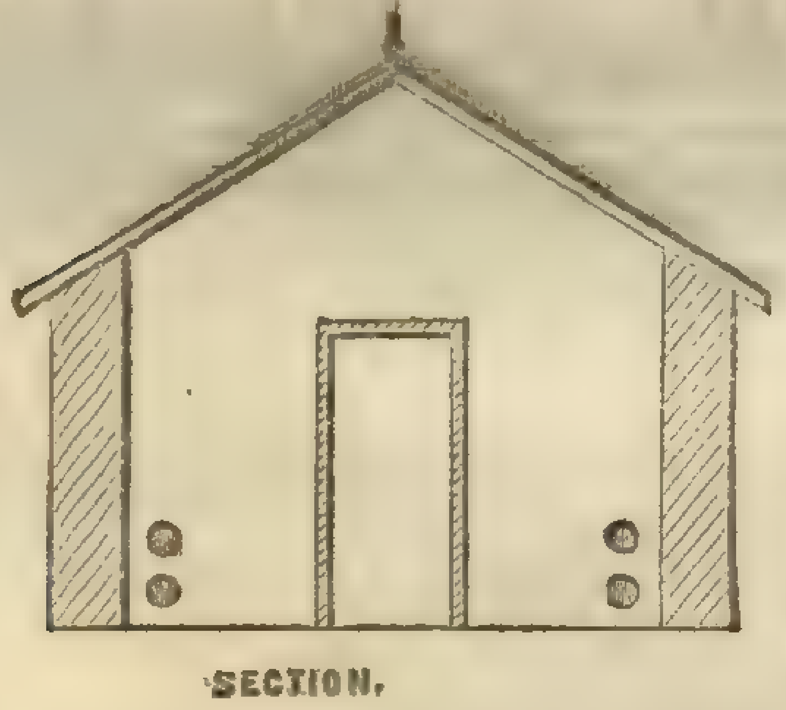


SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	[illegible] 0 0	£8 12 6
20 feet by 10 feet ..	,,	8 10 0	9 0 0
25 feet by 12 feet ..	,,	[illegible]	10 10 0
30 feet by 12 feet ..	,,	11 10 0	12 0 0
40 feet by 15 feet ..	,,	[illegible] 10 0	17 0 0
50 feet by 15 feet ..	,,	18 10 0	20 0 0

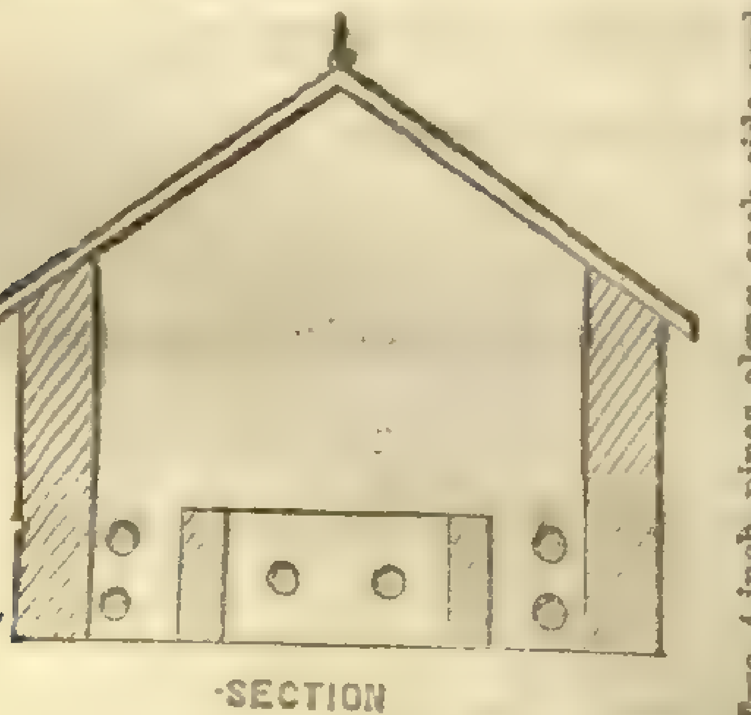
SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£11 10 0	£12 0 0
20 feet by 10 feet ..	,,	12 10 0	[illegible] 0 0
25 feet by 12 feet ..	,,	14 10 0	[illegible] 0 0
30 feet by 12 feet ..	,,	16 10 0	17 0 0
40 feet by 15 feet ..	,,	[illegible]	[illegible] 0 0
50 feet by 15 feet ..	,,	21 10 0	26 0 0



SECTION.

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£12 10 0	£13 0 0
20 feet by 10 feet ..	,,	13 10 0	14 0 0
25 feet by 12 feet ..	,,	16 10 0	17 0 0
30 feet by 12 feet ..	,,	19 0 0	20 0 0
40 feet by 15 feet ..	,,	24 10 0	25 10 0
50 feet by 15 feet ..	,,	27 0 0	28 10 0



SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£16 0 0	£17 0 0
20 feet by 10 feet ..	,,	17 10 0	18 10 0
25 feet by 12 feet ..	,,	21 10 0	22 10 0
30 feet by 12 feet ..	,,	25 0 0	26 0 0
40 feet by 15 feet ..	,,	31 0 0	32 0 0
50 feet by 15 feet ..	,,	33 10 0	35 0 0

The above prices include Boiler, strong Furnace-doors, Bars, Plate, Soot-doors, Damper, and Supply Cistern-pipes of 4-inch diameter, Elbows, &c.; all of the best quality.

Delivered free to any Railway Station in England. Terms: Nett Cash.

Estimates will be sent for the work fixed complete, or further particulars on application to

J. Jones, Hot-Water Apparatus Manufacturer, 6, Bankside, London, S.E.

WILLIAM HURD, Horticultural Builder and Hot-Water Apparatus Manufacturer, Radnor House, Radnor Street, King's Road, Chelsea, S.W.

TUBULAR BOILERS, from 3 guineas.

WILLIAM HASTINGS, Horticultural Builder and Hotwater Apparatus Manufacturer, 2, Northampton Place, Old Kent Road, London, S.E.

Begs to inform his friends in all parts of the country that he has commenced business at the above address, and trusts from his long experience in Horticultural works in all its branches, combined with strict integrity and punctuality, to merit their support.

N.B. Plans and Estimates on application as above.

Horticultural Joinery, &c., of every Description.

T. J. MARKALL, 1, Fieldgate Street, Whitechapel Road, E.

Sashes, 3*d*. per foot sup.; primed and glazed, 6*d*.

Price List forwarded on receipt of stamp.

JOSEPH SMITH, New Road, Hammersmith, calls attention to his Prices for ready-made GREENHOUSES. Lean-to, 23 ft. 6 in. by 12 ft. 6 in., 32*l*.; ditto, 23ft. 6 in. by 11 ft. 6 in., 28*l*.; ditto, 94 ft. 6 in. by 13 feet, glazed 21 oz. glass, 94*l*. 10*s*.; Span-roof, 27 ft. by 10 ft., 45*l*.; ditto Vinery, 47 ft. long, sides roof, 14 ft., 75*l*.; Second-hand Lean-to, 12 ft. by 7 ft., 15*l*. A large assortment of LIGHTS in Stock, well painted; those glazed with 15-oz. glass 8*d*. per foot, with 21 oz., 9*d*. per foot.

Horticultural Valuer.

MR. A. CHANDLER (of the late Firm of Chandler & Sons), begs to offer his services as above.

28, Priory Road, Wandsworth Road, S.

Garden Engines and Syringes.

J. TYLOR and SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

Fig. 598. J. Tylor & Sons' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. Tylor & Sons' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

15 gallons .. £5 12 6 | 28 gallons .. £7 2 0

Fig. 599. Ditto GALVANIZED IRON TUB.

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15 0	£3 5 0	£3 15 0	£5 0 0	£5 18 0

Fig. 618. No. I. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. £1 8 0 each.
No. 2. Ditto ditto 1 2 6 ,,
Telescope Branch Pipe for ditto .. 0 10 0 ,,

Fig. 619. Large GARDEN SYRINGE, with one rose and jet .. .. 11*s*. 6*d*. each
,, 620. Middle Ditto ditto 10 3 ,,
,, 621. Small Ditto ditto 9 0 ,,
,, 622. LADIES GARDEN SYRINGE, with do. 7 6 ,,

Fig. 623. READ'S SYRINGE, with two roses and one jet, 17*s*. 6*d*
,, 624. READ'S SYRINGE, with one rose and jet, 15 0
,, 625. Improved ditto ditto large 14 0

Garden Engines and Syringes of J. Tylor & Sons' manufacture kept in stock by Ironmongers and Seedsmen in every part of the United Kingdom.

J. Tylor & Sons, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

ANTHONY'S PATENT AMERICAN CHURN.—Butter is produced by this Churn in 12 minutes from cream; and so perfect is the operation, that more butter and better quality is obtained from the same quantity of cream than by any other method ever yet tried.

Upwards of 10,000 have been sold. Price Lists forwarded on application.

Burgess & Key, 95, Newgate Street, London, E.C.

TANNED NETTING at Reduced Prices.—200 square yards, 14*s*.; 500 yards, 30*s*.; 1000 yards, 50*s*. Scrim Canvas for Wall Fruit, Greenhouse Shades, and Tulip Covers.

Address in full, Frederick Edgington, Marquee, Flag, and Banner Manufacturer, Thomas Street, Old Kent Road, London, S.E.

TANNED GARDEN NETTING for preserving Seed Beds, Fruits, Strawberries, from frost, blight, birds, &c., and as a Fence for fowls, &c. 1 yard wide, 1½*d*.; 2 yards, 3*d*.; 3 yards, 4½*d*.; and 4 yards, 6*d*. per yard, in any quantity, may be had at Chas. Wright's, 376, Strand, W.C.

GREENHOUSE and FLOWER-POT STICKS VARNISHED:—1 foot, 3*d*.; 1½, 4*d*.; 2, 5*d*.; 2½, 7*d*.; 3, 10*d*.; 4, 1*s*. 6*d*. per dozen. DAHLIA STICKS VARNISHED, per dozen:—3 feet, 1*s*. 6*d*.; 4, 2*s*. 3*d*.; 5, 3*s*.; 6, 3*s*. 6*d*. An allowance to Nurserymen.

NETTING for Fruit Trees, Seed Beds, Ripe Strawberries, &c. TANNED NETTING for protecting the above from frost, blight, birds, &c., 2 yards wide, 3*d*. per yard, or 100 yards, 20*s*.; 4 yards wide, 6*d*. per yard, or 50 yards, 20*s*. NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 5*d*. per yard; 4 yards wide, 10*d*. per yard; 6 yards wide, 1*s*. 3*d*. per yard; ¾-inch mesh 4 yards wide, 1*s*. 4*d*. per yard.

Can be had in any quantity of Eaton & Deller, 6 and 7, Crooked Lane, London Bridge, E.C.

BRITTAIN'S PATENT GARDEN NETTING will be found superior to every other article for the protection of Fruit Trees from frost, birds, &c.; whilst rendering this service light and air are not impeded. It is also a beautiful Shading for Hothouses, and is cheaper, being more durable than any kind of Tiffany, or other material in use. NETTINGS, No. 1, 15*s*.; No. 2, 18*s*. 9*d*.; and No. 3, 22*s*. 6*d*. per piece, or 4*d*., 5*d*., and 6*d*. per square yard. Pieces, 30 yards long, 55 inches wide. GARDEN MATS, highly recommended, 50 by 70 inches, 20*d*. each.

Agents: Robt. Heinekey & Co., 20, Harp Lane, Tower Street, London, E.C.

SHAW'S TIFFANY.—Protect the Bloom of your Wall Trees in time with the best and cheapest of all materials—SHAW'S TIFFANY.

Apply to John Shaw & Co., the Manufacturers, for Samples and Prices, 29, Oxford Street, Manchester.

POULTRY, &c., SHOWS.—A few hundred of GALVANIZED WIRE PENS for Poultry and Pigeons, with GALVANIZED SHEET IRON SCREENS, all in good condition, to be Sold a Bargain.

Application to be addressed Box 197, Post Office, Birmingham.

A. J. BOOT'S PATENT ANTI-CORROSIVE ENGRAVED GARDEN LABELS, 25, Queen Street, Hulme, Manchester. Sizes and prices with sample sent to all parts of the kingdom on receipt of two postage stamps.

SMITH and HODNETT, Brettell Lane (near Railway Station), Stourbridge, Manufacturers of all kinds of Flower Pots, Sea Kale Pots, Rhubarb Pots, Propagating Pots, &c. Works established 1512.

List of Sizes of Flower Pots:—

Diameter, inches	20	16½	14½	12½	10½	9	8	7	6	5½	5	4	[illegible]
No. to Cast	1	2	3	4	6	8	12	18	24	30	36	48	60

Grass Mowing Machines.

BURGESS and KEY'S GRASS MOWING MACHINES are constructed to cut the heaviest crops of Grass, both the wheels being geared, and sufficient weight in the machine to give grip on the ground. As there is every prospect of the Grass being heavy this season, B. & K. draw special attention to the following Extract from the Report of the Engineer of the Royal Agricultural Society of the trial of Mowers at Leeds: "but there is reason to fear that the Machine [Wood's] would be too light for heavy crops."

"Burgess & Key's was strong, well made, and suitable for the cutting of heavy crops."

Price of Burgess & Key's Mower, 25*l*. Combined Reaper and Mower, 30*l*.

Burgess & Key, 95, Newgate Street, London, E.C.

BURROW'S LANDSCAPE GLASSES, for the Field, the Opera, and the Sea, 3½ and 6 guineas.

BURROW'S TARGET TELESCOPE for the Long Ranges, 25*s*. and 30*s*., free by post.

BURROW'S NEW POCKET BAROMETER, for Travelling, 4 guineas.

Full particulars on application to W. & J. Burrow, Great Malvern.

London: B. Arnold, 72, Baker Street, W.; and Wales & McCulloch, 56, Cheapside, E.C.

Garden Border Edging Tiles.

F. and G. ROSHER, Cement, Brick, and Tile Merchants, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. Rosher, at their Premises as above.

Oil Paint no longer Necessary.

HILL and SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which Hill & Smith will forward on application.

Sold in casks of about 30 gallons each, at 1*s*. 6*d*. per gallon, at the Manufactory, or 1*s*. 8*d*. per gallon paid to any station in the kingdom.

Apply to Hill & Smith, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

Horticultural Glass Warehouse.

THOMAS MILLINGTON, 87, BISHOPSGATE STREET WITHOUT, E.C.
LISTS FORWARDED ON APPLICATION.

Glass for Greenhouses.

JAMES PHILLIPS AND CO. beg to submit their prices as follows:—

ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 280 feet, 2¼d. and 3d. per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each, Package included.

				3rds.	4ths.
12 by 9,	13 by 9,	14 by 9,	15 by 9	14s. 0d.	12s. 6d.
12 ,, 10,	13 ,, 10,	14 ,, 10,	15 ,, 10		
13 ,, 11,	14 ,, 11,	15 ,, 11,	16 ,, 11	16s. 0d.	13s. 6d.
14 ,, 12,	15 ,, 12,	16 ,, 12,	17 ,, 12	per 100 feet.	
18 ,, 12,	19 ,, 12,	20 ,, 12,	16 ,, 13		
17 ,, 13,	18 ,, 13,	19 ,, 13,	20 ,, 13		
16 ,, 14,	17 ,, 14,	18 ,, 14,	20 ,, 14		

Various other sizes.

GLASS FOR ORCHARD HOUSES,
As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.	Common	.. 13s. 6d.	.. £0 18s.
20 in. by 13 in.	Superior do. ..	.. 16 0	.. 1 3
20 in. by 14 in.	English Glass ..	.. 18 0	.. 1 9
20 in. by 15 in.			

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11s. 6d.
8 ,, 6	8½ ,, 6⅜	9 ,, 7	9½ ,, 7½	
		10 ,, 8	10½ ,, 8½	12 6

Boxes 2s. each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.
16 oz. 4ths. 1¾d., 2d., and 2½d. 21 oz. 2¾d., 3d, and 3½d.
,, 3ds, 2d., 2½d., and 3d. ,, 3d., 3½d, and 4d.

London Agents for Hartley's Improved Patent Rough Plate.
Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.
Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.
JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, London, E.C.

Horticultural Tools.

PARKES' STEEL DIGGING FORKS. — Ploughs, Harrows, Scarifiers, Carts, and Chaff-cutters, 50s. each. Garden rollers, Lawn-mowers, Garden Tools of all kinds. Galvanised Wire Netting, 1d. per foot, Delivered carriage free. Price Lists on application.
BURGESS & KEY, 95, Newgate Street, E.C.

Patent Indoor Plant Cases.
SOLE MANUFACTURERS,

PICKARD AND CO., HORTICULTURAL BUILDERS, Caledonian Road, King's Cross, N.
Illustrated Priced List on application.
Description and Instructions in Miss MALING'S "Flowers and Foliage," free by post for 13 stamps.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.—April 26.

NIXEY'S IMPROVED TWO-WHEEL WATER BARROW.—In extensive use at the Royal Botanic and Royal Zoological Gardens, London; Turner's Royal Nursery, Slough, and other large Establishments.
By this Machine a Boy can deliver 36 gallons of Water any reasonable distance with the greatest ease. Price 6l. 6s.; with Patent Disperser, which is a great acquisition, price 8l. 8s.
THOMAS NIXEY, Van, Cart, and Waggon Works, Slough.

Important to Seedsmen and Nurserymen.
SACKS AND BAGS.

JAMES T. ANDERSON, SACK and BAG MAKER, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), continues to supply SEED BAGS at the following low prices:—

1 Bushel Bags..8s. 9d. per doz.	½ Bushel Bags..4s. 9d. per doz.
¾ Bushel Bags..6s. 3d. ,,	Peck Bags ....3s. 6d.

Coarser Bags much cheaper.
5 Bushel Grass Bags at 1s. each | 4 Bushel Sacks at 1s. each.
All orders promptly executed.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the COLD WINDS & MORNING FROST. "FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide	.. ..	1s. 6d. per yard run.
Four yards wide	.. ..	3s. per yard.

An improved make, 3 yards wide, 2s. 6d. per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.
ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

DR. ROBERTS'S Celebrated OINTMENT, called the POOR MAN'S FRIEND, is confidently recommended to the Public as an unfailing remedy for wounds of every description, for ulcerated sore legs if of 20 years' standing, burns, scalds, bruises, chilblains, scorbutic eruptions and pimples in the face, sore and inflamed eyes, sore heads, &c. Sold in pots at 1s. 1½d., and 2s. 9d. each. Also his PILULÆ ANTISCROPHULÆ, confirmed by more than 40 years' experience to be, without exception, one of the best alterative medicines ever compounded for purifying the blood, and assisting nature in all her operations. Hence they are useful in scrofula, scorbutic complaints, glandular swellings, particularly those of the neck, &c. They form a mild and superior family aperient, that may be taken at all times without confinement or change of diet. Sold in boxes at 1s. 1½d., 2s. 9d., 4s. 6d., 11s., and 22s. each. Sold wholesale by the Proprietors, BEACH & BARNICOTT, at their Dispensary, Bridport; by the London Houses; and Retail by all respectable Medicine Venders in the United Kingdom.
OBSERVE.—No Medicines sold under the above names can possibly be genuine unless "BEACH & BARNICOTT, late Dr. ROBERTS, Bridport," is engraved and printed on the stamps affixed to each package."

CHUBB'S PATENT SAFES, the most secure against Fire and Thieves.
CHUBB'S FIRE PROOF STRONG ROOM DOORS: CHUBB'S PATENT DETECTOR LOCKS and STREET DOOR LATCHES; CHUBB'S CASH and DEED BOXES.
Illustrated Price List gratis and post free.
CHUBB & SON, 57, St. Paul's Churchyard, London, E.C.

FENDERS, STOVES, FIRE-IRONS, and CHIMNEY-PIECES.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW-ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, CHIMNEY-PIECES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments, 3l. 15s. to 33l. 10s.; Bronzed Fenders, with standards, 7s. to 5l. 12s.; Steel Fenders, 3l. 3s. to 11l.; ditto, with rich ormolu ornaments, from 3l. 3s. to 18l.; Chimney-pieces, from 1l. 8s. to 100l.; Fire-irons, from 2s. 3d. the set to 4l. 4s. The BURTON and all other PATENT STOVES, with radiating hearth-plates.

BEDSTEADS, BATHS, and LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW-ROOMS devoted exclusively to the SEPARATE DISPLAY of LAMPS, BATHS, and METALLIC BEDSTEADS. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	.. ..	12s. 6d. to 20l. 0s. each.
Shower Baths, from	.. ..	8 0 — 6 0 each.
Lamps (Moderateur) from	..	6 0 — 8 10 each.

(All other kinds at the same rate.)
Pure Colza Oil.. .. .. .. 4s. 3d. per gallon.

DISH COVERS and HOT-WATER DISHES in every material, in great variety, and of the newest and most recherché patterns. Tin Dish Covers, 6s. 6d. the set of six; Block Tin, 12s. 3d. to 35s. 6d. the set of six; elegant modern patterns, 39s. 9d. to 69s. the set; Britannia Metal, with or without silver-plated handles, 3l. 11s. to 6l. 8s. the set of five; Electro Plated, 9l. to 21l. the set of four; Block Tin Hot-water Dishes, with wells for gravy, 12s. to 30s.; Britannia Metal, 22s. to 77s.; Electro Plated on Nickel, full size, 9l.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 500 Illustrations of his illimited Stock of Sterling Silver and Electro Plate, Nickel Silver, and Britannia Metal Goods, Dish Covers, Hot Water Dishes, Stoves, Fenders, Marble Chimneypieces, Kitchen Ranges, Lamps, Gaseliers, Tea Trays, Urns, and Kettles, Clocks, Table Cutlery, Baths, Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Room, Cabinet Furniture, &c., with Lists of Prices, and Plans of the 20 large Show Rooms, at 39, Oxford Street, W.; 1, 1A, 2, 3 and 4, Newman Street; 4, 5, and 6, Perry's Place; and 1, Newman's Mews, London, W.C.

GLENFIELD PATENT STARCH, used in the Royal Laundry.—The ladies are respectfully informed that this Starch is exclusively used in the Royal Laundry, and Her Majesty's Laundress says, that although she has tried Wheaten, Rice, and other Powder Starches, she has found none of them equal to the Glenfield, which is the finest Starch she ever used.
WOTHERSPOON & Co., Glasgow and London.

SAUCE.—LEA AND PERRINS beg to caution the Public against Spurious Imitations of their world-renowned
WORCESTERSHIRE SAUCE.
Purchasers should
ASK FOR LEA & PERRINS' SAUCE,
Pronounced by Connoisseurs to be
"THE ONLY GOOD SAUCE."
*** Sold Wholesale and for Export, by the Proprietors, Worcester; Messrs. CROSSE & BLACKWELL, Messrs. BARCLAY & SONS, London, &c., &c., and by Grocers and Oilmen universally.

DINNEFORD'S PURE FLUID MAGNESIA has been during 25 years emphatically sanctioned by the medical profession, and universally accepted by the public, as the best remedy for acidity of the stomach, heartburn, headache, gout, and indigestion, and as a mild aperient for delicate constitutions, more especially for ladies and children.—It is prepared in a state of perfect purity and uniform strength only by DINNEFORD & Co., 172, New Bond Street, London, and sold by all respectable Chemists throughout the world.

GENTLEMEN desirous of extending the business of FIRE and LIFE ASSURANCE may be appointed AGENTS, either publicly recognised or private, by addressing Letters to "No. 1150," CITY OF GLASGOW BANK, Argyle Street, Glasgow.

THE LIVERPOOL and LONDON FIRE and LIFE ASSURANCE COMPANY,
Offices, 1, Dale Street, Liverpool, and 20 and 21, Poultry, London, E.C.
ESTABLISHED 1836.
FIRE DEPARTMENT.—The Annual Premiums exceed 360,130l., and the influence of this Company in determining rates of Premium has uniformly been given to proposals for improving the character of risks, whereby high Premiums may be rendered unnecessary.
LIFE DEPARTMENT.—The Annual Premiums exceed 135,974l.: the Accumulated Reserve in this department is 762,262l.
RESOURCES.—The invested funds of the Company exceed 1,311,905l., and the liability of Proprietors is unlimited.
SWINTON BOULT, Secretary to the Company.
JOHN ATKINS, Resident Secretary, London.
N.B. All the recent reductions in the Tariff have been adopted by this Company.

LAW LIFE ASSURANCE SOCIETY, Fleet Street, London, E.C. Established 1823.
The Invested Assets of this Society exceeds FIVE MILLIONS STERLING; its Annual Income is FOUR HUNDRED and NINETY-FIVE THOUSAND POUNDS.
Up to December 31, 1861, the Society had paid in Claims upon Death—Sums Assured £4,329,378
Bonus thereon 1,115,298
Together £5,444,676
The Profits are divided every fifth year. All participating Policies effected during the present year will, if in force beyond December 31, 1864, share in the Profits to be divided up to that date.
At the Divisions of Profits hitherto made, Reversionary Bonuses exceeding THREE and a HALF MILLIONS have been added to the several Policies.
Prospectuses, Forms of Proposal, and Statements of Accounts may be had on application to the Actuary, at the Office, Fleet Street, London, E.C.
April 26. WILLIAM SAMUEL DOWNES, Actuary.

Prize Medal, Paris Exhibition 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose.
M., B., & Co.'s new and delicious Perfumes the Fairy Bouquet and the Oxford and Cambridge Bouquet, in bottles 2s., 3s. 6d., and 5s. METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box.
Sole Establishment, 130B and 131, Oxford Street, 2d and 3d doors West from Holles Street, London, W.

TO BE LET on LEASE, LLANGWARREN FARM in Pembrokeshire, 12 miles from Haverfordwest Station, consisting of 475 Acres, about one half Pasture. The Land has been in the hands of the owner for the last 10 years, and is in a high state of cultivation. The Feeding-sheds will hold 100 Head of Cattle.
Apply to J. B. LAWES, 1, Adelaide Place, London Bridge, E.C.

Woodford, Essex.

FARM to LET, from Michaelmas next, about 190 acres, chiefly Grass, with or without Farm House and convenient Buildings, or part of the Land may be had separately.
Inquire of Mr GEORGE SALTWELL, Highams, Woodford, N.E.

To Nurserymen, Kitchen Gardeners, &c.

TO BE SOLD, the INTEREST in the LEASE of that old and well-established Nursery, known as BARNES NURSERY, at Merrion, within 1¼ mile of the City of Dublin, with the entire STOCK-IN-TRADE, consisting of Greenhouse and Hothouse plants in every variety, Timber and Fruit Trees, Flowers in pots, Shrubs, &c. This Nursery stands on 24 acres 2 roods and 36 perches statute measure, has extensive Green and Hothouses thereon, with all the requisites for the carrying on of the Nursery business; and is held for an unexpired term of 41 years, at the rent of 202l. per annum. There are two good substantial moderate sized two-story Dwelling Houses on the ground, with Lodges for foremen and labourers; also a handsome Shop on the public road at the entrance. This is the largest Nursery in Ireland, and its patrons comprise most of the nobility and gentry of the country. It stands on the direct road from Dublin to Kingstown, in the midst of all the fashionable Villas near Dublin; and a portion of the ground might be most profitably employed as a Vegetable Garden, there being no such accommodation near Kingstown, or that side of Dublin. Other portions of the land will presently acquire a high value for building, as it adjoins the extensive building ground of Lord Herbert of Lee, which is becoming rapidly in demand. A Lease for a more extended term can be obtained, if required. If necessary a portion of the purchase money would be allowed to remain out as a charge upon the property.
The Proprietor would have no objection to enter into arrangements with an experienced Working Gardener, with a small capital, for the carrying on the business of Nursery and Vegetable Gardens, or with one or more for the working of each separately.
For particulars apply to JOHN RIDDICK, Solicitor, 3, Eustace Street, Dublin.

Salisbury, Wilts.

MR. JOHN WATERS (Canal, Salisbury) begs to give notice that the Sixth Day's SALE of the effects of the late Col. EDWARD BAKER (on WEDNESDAY, the 30th inst. at half-past 1 o'Clock precisely) will include the large and valuable Collection of GREENHOUSE and STOVE PLANTS, FRUITING and SUCCESSION PINES, &c., Catalogues of which may be obtained on application.

Sales by Auction.

Extensive Sales of Bedding Plants.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, May 7; TUESDAY, May 13; and WEDNESDAY, May 21, at Half-past 12 o'Clock precisely each day, 250,000 Choice BEDDING PLANTS, comprising healthy and well grown plants of most of the newest varieties.
On view the Morning of Sale, and Catalogues had.

Carnations, Pinks, and Picotees, Gladioli, Conifers, Evergreens, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, April 29, at half-past 12 o'Clock precisely, 1500 very choice CARNATIONS, PICOTEES, and PINKS, 2100 Gladiolus Brenchleyensis, choice Herbaceous Plants, Statice maritima rosea, Double White Tree Violet, French Pyrethrums, Bellis aucubæfolia, Gazania pavonia, Passiflora cærulea, Cheiranthus alpinus, Feathered Grass, Dianthus hybridus multiflorus, Conifers, Evergreens, Flower Seeds, &c.
On view the Morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, May 14, at half-past 12 o'Clock precisely, the remaining portion of Dr. Butler's well-known Collection of ORCHIDS, about 150 Plants selected from his best varieties, and intended for his private growth, but will now be sold without reserve. Also a Collection of Hybrid Seedlings AMARYLLIDÆ from seed saved from the finest varieties.
On view the Morning of Sale, and Catalogues had.

To Gentlemen, Florists, and Others.

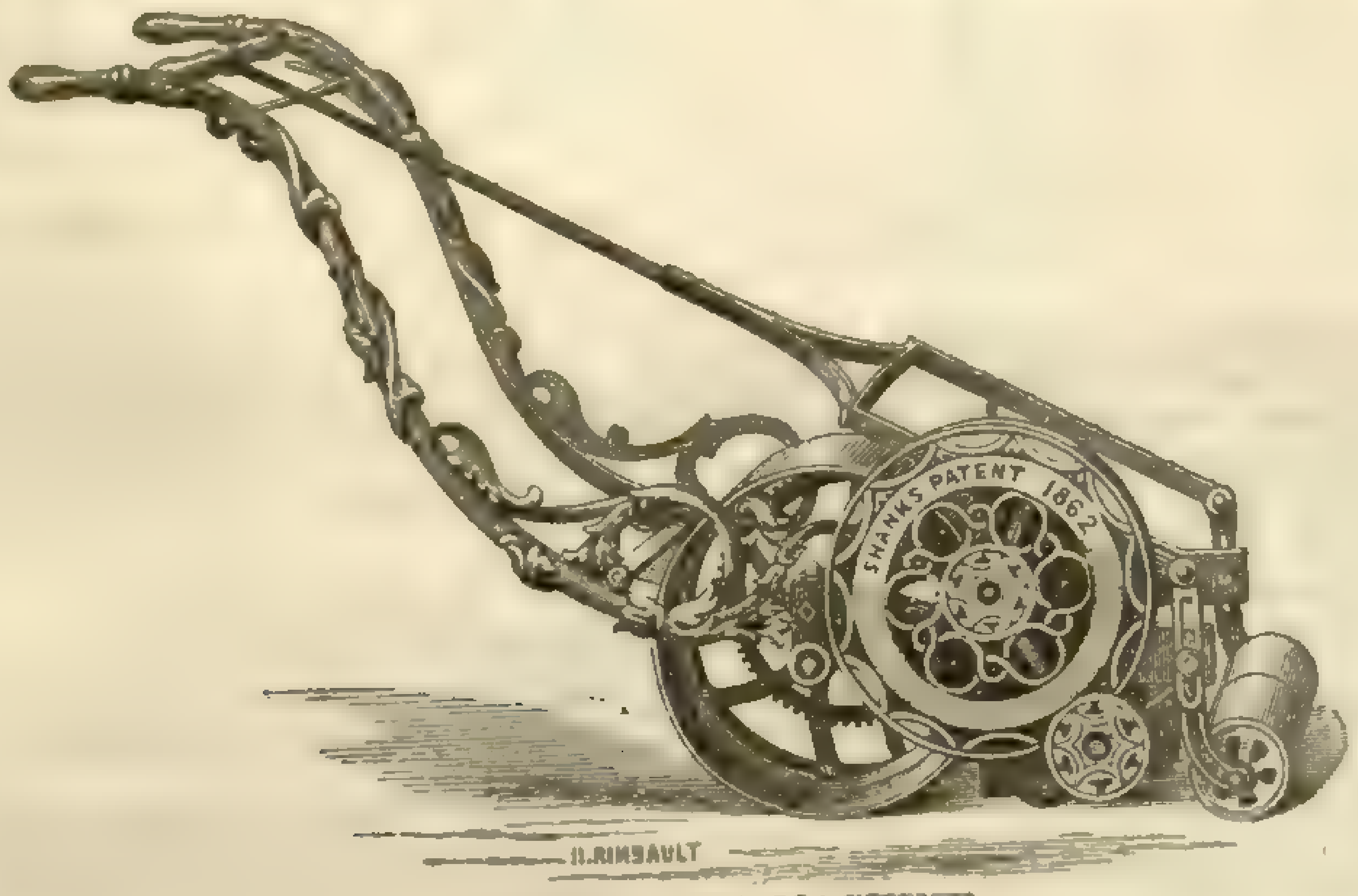
MESSRS. PROTHEROE AND MORRIS will Sell by Auction, at the Mart, Bartholomew Lane, E.C., on FRIDAY, May 2, at 12 o'Clock, a large assortment of fine AZALEA INDICA, ERICAS, GERANIUMS, CINERARIAS, ACACIAS, CALCEOLARIAS, and other plants in bloom; Climbing Roses, superior imported German and other Flower Seeds; American Plants, choice Dahlias, Fuchsias, Verbenas, Herbaceous Plants, &c.
On view the Morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nursery, Leytonstone.

MESSRS. PROTHEROE AND MORRIS will offer by PUBLIC AUCTION about the middle of May (if not previously disposed of by private contract), the LEASE of a compact NURSERY situate in the Leytonstone Road; 13 years unexpired at a Ground Rent of 10l. per Annum, with a good 8-roomed Dwelling House, Shop, Stabling and Cart Sheds; also the STOCK in TRADE, consisting of several thousand Greenhouse and Bedding Plants; 4 Span Roof Greenhouses, Brick Pits, Boxes, Seed Drawers, &c.; of which due notice will be given by the Auctioneers and Valuers, American Nursery, Leytonstone, N.E.

SHANKS' NEW IMPROVED PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

WITH SILENT MOTION IF SPECIALLY DESIRED.



LARGE HAND MACHINE.

12-INCH, or LADY'S MACHINE.

J. B. BROWN AND CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effects of the improvements of previous years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season.

SHANKS' NEW IMPROVED PATENT HAND MACHINE for 1862.

Messrs. Shanks have just brought out for this season an entirely new Machine, which combines, in addition to the improvements of last year's Machine, other improvements of importance, with the most tasteful design, which is duly protected by Registration. The Patentees have been particularly careful in observing that all the parts possess sufficient strength and firmness to enable them to stand satisfactorily the tear and wear of out-door work, and the rather rough handling these Machines are sometimes subject to from the labourer unskilled in machinery. J. B. Brown & Co. are gratified in being able to offer to the Public a Machine, which is not only a graceful ornament to the Flower Garden, but the most perfect and the most easily worked Lawn Mower that has ever been in use. The Cutter (the most important part of the Machine) is this season still further strengthened. The Bearings, and everything tending to increase friction, and consequently the draught, are carefully constructed to reduce the friction to the smallest possible amount. The Machines are fitted with the same care and precision as the Horse and Pony sizes, and like them, possess the same advantages of ability to Mow on uneven Lawns without injury to the Turf, of having loose Rollers for ease in turning, of having Wheels properly guarded, and so placed as to give an equal balance to either side of the Machine. The annoyance which is often given in other Lawn Mowing Machines, by the Bearings of the Cutter getting loose, and the latter wearing down on the plate, is also obviated in the new Machine. No change of Rollers is necessary in Mowing a Verge or Close to a Flower Bed.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0		No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | Width of Cutter. No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

PRICES.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man.*
No. 9.—22-inch Machine	8 7 6		No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*			

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Messrs. Shanks have also brought out this season a new SMALL MACHINE, of the same graceful model as their other Hand Machine, which is specially intended to be used by Ladies or Gentlemen for recreation or amusement in the Flower Garden, and for Small Gardens where no regular Gardener is kept. This elegant and neat Machine has three great recommendations, viz.:—it is very cheap, very light, and very easily worked. Not the least difficulty or trouble need be anticipated in the management or working of this Machine, while the work executed is not only vastly superior to the Scythe, but a great deal sooner accomplished. No person having a Lawn, however small, should be without one of these useful Machines.

PRICES, including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 16.—16-inch Machine ...	£6 5 0	*Easily worked by a Stout Lad.*	No. 18.—12-inch Machine	£5 5 0	*Easily worked by a Lady.*
No. 17.—14-inch Machine ...	£5 15 0				
Silent Movement, 7*s.* 6*d.* extra.			Silent Movement, 4*s.* extra.		

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

**** The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

SOLE AGENTS FOR LONDON:

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 18.—1862.] SATURDAY, MAY 3. {Price Fivepence. STAMPED EDITION, 6*d*.

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☞ NOTICE TO ADVERTISERS. — *Advertisements should reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

ROYAL HORTICULTURAL GARDEN.—Admission to the Public THIS DAY, 5*s*. each. Bands at Half-past 3 o'Clock.

CRYSTAL PALACE.—The GRAND FLOWER SHOW will take place on SATURDAY, May 24. Admission by Tickets, purchased prior to the day of Exhibition, 5*s*.; on the Day, 7*s*. 6*d*.; and by One Guinea Season Tickets on payment of Half-a-Crown.
For SCHEDULE of PRIZES apply to Mr. W. HOUGHTON, Secretary to the Flower Show, Crystal Palace, Sydenham.

HORTICULTURAL SOCIETY of EDINBURGH.—The above Society will hold their SUMMER COMPETITION and EXTRA PROMENADE SHOW in the Experimental Gardens, Inverleith Row, JUNE 3, 1862.
Parties who intend to compete for the special collection of plants, No. 1, first prize, 10*l*. 10*s*., given by Mr. Methven; second and third, by the Society; if more than three collections 1*l*. will be allowed for expenses.
We beg to remind those members in arrears that they must be paid up before that date.
WILLIAM YOUNG, Secretary, 33, South Bridge.

To Florists and Nurserymen.
INTERNATIONAL BAZAAR, SOUTH KENSINGTON.—The Management have placed Two Tables in the centre of the Building, near the Fountains, for the DISPLAY of SPECIMEN PLANTS not for Sale. They may consist of Plants in bloom, of Palms, large Ferns, or with beautiful or curious foliage, &c., with grower's name or other particulars attached. They will be under the especial care of Mr. W. CUTTER. Other spaces will be selected for Plants on Sale, by special arrangement from the 1st of May to the 30th of October.
For particulars apply to Mr. W. CUTTER.

New Roses of 1862.
PAUL AND SON have now ready their usual fine Plants of the finest Novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

TWELVE of the Finest NEW PERPETUAL ROSES (sorts that have not yet flowered in English Gardens) for Two Guineas.
RICHARD SMITH, Nurseryman, Worcester.

Roses in Pots.
H. LANE AND SON have great pleasure in offering a large quantity of ROSES in POTS, suitable for bedding, consisting of all the most popular varieties, as this is the best season for planting or growing in the Conservatory or Greenhouse.
Also most of the NEW SORTS of the season, some few of them being sold out.
The Nurseries, Great Berkhampstead, Herts.

WM. PAUL'S NURSERIES open to the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London. Every garden requisite, from the commonest to the choicest, at reasonable prices.
CATALOGUES free by Post.
Nurseries and Seed Warehouse, Waltham Cross, N.

Agricultural Seeds.
GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

BERBERIS JAPONICA.—This fine hardiest of all hardy plants has no equal for planting in shady situations, game covers, &c. Its fruit is greedily devoured by Pheasants, and its magnificent foliage forms an under cover of surpassing beauty.
The plants can be supplied by CHARLES NOBLE, Bagshot.

TO BE SOLD IMMEDIATELY, in Two or more Lots, a quantity of choice STOVE and GREENHOUSE PLANTS, FERNS, ORCHIDS, &c., many of them being specimen plants and fit for exhibition.
Apply to Mr. JOSEPH TANTON, Gardener, Crowhurst Park, Battle, Sussex.

THOMAS HANDASYDE'S DESCRIPTIVE CATALOGUE of FLORISTS' FLOWERS, New German and other FLOWER SEEDS, &c., containing all the Novelties of the season, is now ready and may be had free on application. Also a large and healthy stock of all sorts of EVERGREENS at the
Glen Nurseries, Musselburgh, near Edinburgh.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

New Garden Seeds.
JAMES CARTER AND CO., 237 and 238, High Holborn, London, W.C.

Genuine Farm Seeds.
JAMES CARTER AND CO., 237 and 238, High Holborn, W.C.

CHOICE CAMELLIA SEED, saved from one of the finest Collections in Europe. 1*s*. per packet.
JAMES CARTER & CO., 237 and 238, High Holborn, W.C.

BUTLER AND McCULLOCH'S SELECT LIST of BEDDING PLANTS may be had free and post paid upon application.
BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, W.C.

Clapton Nursery, London, N.E.
THE SPRING CATALOGUE of NEW and DESIRABLE PLANTS will be forwarded post free on application.
HUGH LOW & CO.

RUSSELL'S PYRAMID PRIMULAS.—Now is the time to Sow. The First Prizes at the Royal Horticultural and Botanic Exhibitions were obtained by Mr. Todman with these varieties. Packets of Seed, price 2*s*. 6*d*. each, to be had of GEORGE CLARKE, Nursery, Streatham Place, Brixton Hill, S.

NEW CINERARIA, LITTLE MARY (COOLING).—Pure white ground edged with bright crimson, dark disc, circular and very smooth, habit very dwarf and compact; will prove a first-class exhibition or market variety. Strong blooming plants, 5*s*. each.
EDWIN COOLING, Mile Ash Nurseries, Derby.

NEW DAHLIA, VOLUNTEER (COOLING).—Salmon buff (an improvement on "Lollypop"), immense depth, good outline, and thoroughly constant. Recommended as a pleasing addition to any stand. Strong plants in May, 7*s*. 6*d*. each.
EDWIN COOLING, Mile Ash Nurseries, Derby.

Dahlias in any Quantity.
C. E. ALLEN having an unusually large and strong Stock of the above, can supply large quantities at low prices.
DESCRIPTIVE CATALOGUES forwarded on application.
Shacklewell, near London, N.E.

THOMAS BARNES will commence sending out on the 27th April his two NEW SEEDLING DAHLIAS, viz., Royal Purple and Blondin.
Descriptions and prices in T. B.'s CATALOGUE, which may be had on application.
Dane Croft Nursery, Stowmarket.

Nurseries, Saffron Walden.
SUPERB DOUBLE HOLLYHOCKS.—Some few thousands of Plants yet for Sale. Seedlings, unbloomed, 18*s*., 25*s*., or 30*s*. per 100. Large plants, with colours, 25*s*, 30*s*., or 40*s*. per 100. Named varieties, in pots, 12*s*., 20*s*., or 40*s*. per dozen.
Apply to WILLIAM CHATER.

ONE-YEAR SEEDLING AMERICAN ARBOR-VITÆ .. .. per 1000 20*s*. 0*d*.
One-Year Seedling PICEA PINSAPO .. „ 60 0
„ „ ITALIAN UPRIGHT CYPRESS „ 20 0
Two-Year Seedling EVERGREEN OAKS „ 50 0
„ Transplanted CYPRESS, 6 to 9 inches „ 50 0
RICHARD SMITH, Nurseryman, Worcester.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very large, and in all varieties of colour, in Seed or Roots; also FLORISTS' FLOWERS, POLYANTHUS in roots, and DOUBLE WHITE PRIMROSE.
Apply GEORGE MACE, Calcot Gardens, near Reading.

New Fuchsias and Verbenas of 1861.
B. W. KNIGHT, FLORIST, 67, High Street, Battle, Sussex, is now sending out the NEW FUCHSIAS of 1861, at 6*s*. per dozen; the NEW VERBENAS of 1861, at 4*s*. per dozen, securely packed in tin box, post free.
CATALOGUES sent on application.

Catalogue of Plants.
THOMAS BARNES begs to intimate that his CATALOGUE of DAHLIAS, FUCHSIAS, CHRYSANTHEMUMS, VERBENAS, PETUNIAS, PANSIES, &c., with Miscellaneous Bedding Plants, &c., is ready and may be had on application.
Dane Croft Nursery, Stowmarket.

High Beech, Essex.
JAMES CRAWFORD has still on hand a fine stock of strong healthy GRAPE VINES, all the best sorts, which he begs to offer at low prices.

Hurst House Seedling Pine.
B. S. WILLIAMS can supply strong Plants of this choice New Pine at 15*s*. and 21*s*. each.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

TO NURSERYMEN, FLORISTS, &c.—Some hundreds of the best Early Varieties of GERANIUMS to be sold cheap (they have been used for furnishing), young Plants, in 48 and 32-pots. Cut down will make capital Plants for next year.
For price, &c., apply to W. J. LUCKING, Nurseryman, Westbourne Park, W.

Good Seeds, Carriage Free.
SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

SUTTON'S MIXTURES of CLOVERS and GRASS SEEDS for One Year's Lay, including 14 lbs. of ALSIKE and other CLOVERS, 15*s*. per Acre.
Royal Berkshire Seed Establishment, Reading.

PURCHASERS of LARGE QUANTITIES of MANGEL WURZEL, TURNIP, or CLOVER SEEDS will be treated liberally on application to
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Lupins for Poor Soils.
SUTTON AND SONS recommend LUPINS to be sown now on poor soils (either sand, gravel, or stonebrash), for sheep feed or for ploughing in as manure. Price 20*s*. per bushel.
Royal Berkshire Seed Establishment, Reading.

Lucerne Seed, fresh Imported.
SUTTON AND SONS have a fresh importation of LUCERNE SEED, very fine, 10*d*. per lb., or cheaper by the cwt.
Royal Berkshire Seed Establishment, Reading.

ITALIAN RYE-GRASS SEED.—In clearing out, the Advertiser offers 20 Quarters of above, at 31*s*. 6*d*. per quarter, Cash.
G. DIXON, Seed Factor, Kendal.—May 3.

To the Trade.
SPECIAL SPRING CATALOGUE of AGRICULTURAL and GARDEN SEEDS (gratis) on application.
JAMES FAIRHEAD & SON, Seed Growers and Merchants, 7, Borough Market, London, S.E.

To the Trade.
WHITE BELGIAN CARROT SEED.—A few cwt., fine. Price on application to
STEPHEN BROWN, Sudbury, Suffolk.

TRUE DRUMHEADS for CATTLE (Fine), at 3*s*. 3*d*. per 1000, packing included. Grown in light soil.
THOMAS WELLAND, Surrey Gardens, Godalming, Surrey.

Laing's Improved Swede Turnip Seed.
H. AND F. SHARPE have a fine stock of the above to offer to the Trade at a low figure. Also PURPLE TOP and SKIRVING'S IMPROVED SWEDE, raised by themselves from selected bulbs. Prices on application.
Seed Growing Establishment, Wisbeach.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

LEWISHAM SWEDE.—This Turnip, grown from large sized transplanted bulbs, and which has given such universal satisfaction, can be supplied in quantity to the trade by the Growers,
JAMES FAIRHEAD & SON, 7, Borough Market, London, S.E.

Cabbage Plants.
H. AND R. STIRZAKER have yet to offer about 150,000 SCOTCH DRUMHEAD CABBAGE PLANTS, autumn sown, also a few thousands of fine RED, for pickling; and EARLY, in varieties. Prices on application.
The Nurseries, near Lancaster.

Large York Cabbage.
H. AND F. SHARPE can supply Seed of the above of 1861 growth, and raised from their carefully selected stocks. Price very moderate.
Seed Growing Establishment, Wisbech.

Early Cabbage Plants.
W. VIRGO AND SON, Wonersh Nursery, Guildford, have a large quantity of strong, healthy plants of the following sorts to offer for Sale at 3*s*. 6*d*. per 1000, viz.
EARLY YORK. | CATTELL'S RELIANCE.
„ BARNES. | NONPAREIL and
BATTERSEA. RED CABBAGE PLANTS, 5*s*. per 1000.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3*s*. per lb., or 16*l*. per cwt.

Best Giant Asparagus.
WM. JACKSON AND CO., NURSERY and SEED MERCHANTS, Bedale, Yorkshire, have a large stock of the above, strong plants, 4 years old, transplanted in Nursery lines, at 1*l*. 5*s*. per 1000. This is the best season to plant. Orders attended to on receipt.

DIOSCOREA BATATAS (or CHINESE YAM), 2*s*. 6*d*. per doz., 15*s*. per 100. Larger tubers, 3*s*. 6*d*. per doz.
JOHN CATTELL, Westerham, Kent.

Dioscorea Batatas, or Chinese Potato.
J. IVERY AND SON beg to inform their Patrons that this is the most favourable month for planting this useful Vegetable. Strong sets are now ready, at 1*s*. per dozen, or 7*s*. 6*d*. per 100; likewise whole Tubers, from 2*s*. 6*d*. to 6*s*. per dozen.
Dorking Nursery.

NEW AND BEAUTIFUL PLANTS.

MESSRS. VEITCH & SON

Being desirous during this, the season of the GREAT INTERNATIONAL EXHIBITION, of bringing before the Horticultural world a more than usually rich and interesting Collection of Novelties, have much pleasure in submitting the following very CHOICE and BEAUTIFUL PLANTS, the greater part of which have been introduced by themselves through Mr. JOHN G. VEITCH, from JAPAN and other parts of the East, and through their Collector Mr. RICHARD PEARCE, from Chili and Peru.

Never before at any one time have Messrs. V. & SON had the pleasure of offering so really valuable a selection of NEW PLANTS, and one which they feel confident will give as complete satisfaction as their Novelties of previous seasons have done.

NEW JAPANESE AND OTHER HARDY PLANTS.

ABIES FIRMA (Zuccarini).

A magnificent and perfectly hardy Evergreen tree found in the Midland and Northern provinces of Japan, from whence it was introduced by Mr. John G. Veitch. Growing to a great height it forms a tree of noble aspect, and is one of the most useful and generally employed timber trees in the Japanese empire.

This most distinct and beautiful species belongs to the Silver Fir section, and it affords us much satisfaction to be the medium of introducing so fine and ornamental a tree to European Gardens. Fine Seedling plants, price 42*s.* each.

AMARANTHUS MELANCHOLICUS var. RUBER.

A plant with striking blood-red foliage, introduced by Mr. J. G. Veitch from Japan, where it was selected by him from amongst many other varieties, as the one most valuable for flower garden decoration and other ornamental purposes; but particularly as an edging, or ribbon border plant.

Its habit is very compact, attaining a height of about 1 foot, and the bright shining colour of its leaves gives it a decided superiority over any other fine foliaged bedding plant.

It will probably supersede the Perilla Nankinensis, and all other plants of that description.

It was exhibited at the meeting of the Royal Horticultural Society in July and August 1861, when it received a Commendation. Price 2*s.* 6*d.* each; 24*s.* per dozen; 7*l.* 10*s.* per 100.

EUONYMUS RADICANS FOL. VARIEGATIS.

A very pretty little shrub received from Japan, of neat habit, with small ovate leaves of a bright green, blotched and margined with silvery white, and perfectly hardy in this country.

Its dwarf habit and distinct variegation will render it particularly useful for forming edgings to beds and covering banks and rockwork.

We exhibited it at the Royal Horticultural Society's Exhibition in June, 1861, when it received a FIRST-CLASS CERTIFICATE. Price 10*s.* 6*d.* each.

EURYA LATIFOLIA VARIEGATA.

A Japanese shrub of particularly good and compact habit, and remarkable for the great beauty of its fine variegated foliage.

It has acuminate leaves of a dark green colour, finely edged and blotched with white and flushed with fiery orange red. It can be confidently recommended as one of the most ornamental shrubs of recent introduction.

It has received a FIRST-CLASS CERTIFICATE from the Royal Horticultural Society's Floral Committee. Sent to us from Japan by Mr. J. G. Veitch. Price 31*s.* 6*d.* each.

LIBOCEDRUS TETRAGONA (Endlicher).

This really fine and distinct hardy Conifer has been already fully described by us in previous circulars and advertisements.

It is a native of the Andes of Chili, where it is found just below the snow line, forming an evergreen pyramidal tree of great size and beauty, and producing most excellent and durable timber, which is said to be almost imperishable.

At the Royal Horticultural Society's Exhibition in June 1861 it received the FIRST PRIZE as a hardy ornamental plant.

Although it appeared in our List of New Plants for last year, we feel its sterling worth entitles it to a repetition on this occasion. Small plants, 21*s.*; larger ditto, 42*s.* A few extra sized ditto, 63*s.*

MIMULUS CUPREUS.

This beautiful hardy Perennial plant was sent to us from the Andes of Chili by our zealous collector Mr. Pearce, who found it growing at an elevation of from 6000 to 7000 feet above the level of the sea.

It attains a height of from 4 to 8 inches, producing during the summer months a profusion of the richest orange crimson flowers, and from its dwarf habit and brilliant colour it will be found invaluable either as an edging to large beds or for the filling of small ones, as well as for the decoration of the Greenhouse.

It has received SILVER MEDALS from both the Royal Horticultural and Royal Botanic Societies. Price 3*s.* 6*d.* each; 30*s.* per dozen.

OURISIA SPECIES.

A new and beautiful perfectly hardy herbaceous plant sent to us from Chili by our collector, Mr. Pearce, who found it growing at a great elevation on the Andes.

In habit it somewhat resembles a Primula, forming a tuft of rounded leaves from which spring numerous elegant spikes of bloom of about a foot in height. The long tubular flowers, which are abundantly produced, are Pentstemon-like, and of a most brilliant scarlet colour. It is perfectly hardy, having withstood the severity of the two past winters uninjured.

We hope in a few days to have its correct specific name determined, when it will be duly published, and it will be exhibited at the ensuing Metropolitan Shows. Price 5*s.* each.

PINUS DENSIFLORA (Siebold).

This tree is found over the whole empire of Japan, where it is extensively planted for its timber.

It will prove to be a distinct and ornamental species of the long leaved class of Pines, growing to a considerable height, and will undoubtedly be perfectly hardy.

Introduced from Japan by Mr. J. G. Veitch. Price 7*s.* 6*d.* each; 60*s.* per dozen.

PINUS KORAIENSIS (Siebold).

This fine Pine, which is found growing in great abundance in the northern parts of Japan and Manchuria, is confidently recommended as being PERFECTLY HARDY and able to withstand the severest of our European winters.

It is a long-leaved species with beautifully glaucous foliage, and will be a valuable addition to our hardy ornamental Pines. The Cones are large and highly ornamental.

Sent to us from Japan by Mr. J. G. Veitch. Price 10*s.* 6*d.* each.

RETINOSPORA LYCOPODIOIDES?

This new species is another of our recently valuable introductions from Japan. It is of dwarf rigid habit, with fine dark green foliage and spreading branches, and forms a very distinct and interesting plant. It is PERFECTLY HARDY.

It was exhibited by Messrs V. & SON at the Royal Horticultural Society's Exhibition in June 1861, when it received a medal. Price 21*s.* each.

RETINOSPORA OBTUSA (Siebold).

This is one of the FINEST of Japanese hardy Evergreen Conifers, forming a tree of large dimensions and beautiful aspect.

It will doubtless prove to be highly useful as a timber tree, as well as for ornamental planting. Introduced from Japan by Mr. J. G. Veitch.

Messrs. V. & SON having last year been very successful in raising a considerable quantity of this fine tree, and Mr. J. G. Veitch having brought with him a second supply of seeds, they have much pleasure in offering plants at such a price as shall lead to its being extensively planted, as they believe it will become a successful rival of the beautiful Cupressus Lawsoniana in its elegance of growth. Price 10*s.* 6*d.* each; 5*l.* 5*s.* per dozen.

RETINOSPORA PISIFERA (Siebold).

This fine species forms a more slender tree than the preceding. It has sharp pointed leaves, beautifully glaucous on the under side, and is really a very distinct and ornamental tree. Introduced from Japan by Mr. J. G. Veitch.

Messrs. V. & SON are also enabled to offer this tree on the same terms as the preceding. Price 10*s.* 6*d.* each; 5*l.* 5*s.* per dozen.

SCIADOPITYS VERTICILLATA (Siebold). The Umbrella Pine of Japan.

It is with much pleasure that we are enabled to offer plants of this really distinct and highly interesting Conifer, justly described by botanists as one of the finest of all Eastern Evergreen trees.

It attains a height of from 80 to 90 feet, and is of a perfectly pyramidal habit. The leaves are long, of a beautiful green colour and singularly arranged in whorls, from which peculiarity it derives its name of "THE UMBRELLA PINE."

It is a source of peculiar satisfaction to Messrs. V. & SON, that Mr. John G. Veitch has the honour of first introducing into Europe this splendid tree. It has already proved itself PERFECTLY HARDY; young seedling plants having withstood near London the frosts of the past winter without the slightest injury.

Messrs. V. & SON having succeeded in raising a splendid young stock of Seedling Plants, have decided upon charging such a price as will insure its general distribution throughout the country.

1-year old Seedling Plants, in Pots, 10*s.* 6*d.* each; 5*l.* 5*s.* per dozen.
A few Imported Plants, 12 to 15 inches, prices on application.

N.B.—Messrs. V. & SON would beg to call attention to the Woodcut of this fine tree, which was published by Professor LINDLEY, in the *Gardeners' Chronicle* of Jan. 11, 1862, from a figure sent home by Mr. John G. Veitch.

THUJA PYGMÆA.

A perfectly hardy Japanese species, remarkable for its exceedingly dwarf habit. Its beautiful dark green foliage forms a cushion-like tuft, giving it a most distinct and novel appearance, and rendering it one of the prettiest of Dwarf Coniferæ.

It received a Medal at the Royal Horticultural Society's Exhibition in June 1861. Price 21*s.* each.

THUJA (BIOTA) FALCATA.

A Japanese Arbor-vitæ of the Thuja orientalis class, sent to England by Mr. John G. Veitch. It is a plant of very neat foliage, and exceedingly upright and pyramidal in its growth.

This perfectly hardy variety is employed in large quantities by the Japanese for forming hedges, for which purpose its close compact habit renders it most suitable. Fine Seedling plants, 10*s.* 6*d.* each.

THUJOPSIS DOLABRATA. (Siebold).

This beautiful and perfectly hardy tree has been described by us on so many previous occasions, and is now so well known, that any lengthened notice of it here is rendered unnecessary.

We feel ourselves however fully justified in including this remarkable plant amongst our Japanese Novelties for the present season.

Mr. J. G. Veitch having met with it on several occasions whilst travelling in Japan, describes it as one of the finest and most distinct hardy evergreen trees known. Strong plants. Price 21*s.* to 63*s.* each.

THUJOPSIS DOLABRATA VARIEGATA.

This fine plant is a variegated variety of the preceding, having the same graceful habit, with the greater part of its foliage distinctly variegated. Sent us from Japan by Mr. J. G. Veitch. Young plants in thumb pots, 63*s.* each.

NEW STOVE AND GREENHOUSE PLANTS.

ALOCASIA MACRORHIZA VARIEGATA (Hooker).

A variegated plant of noble aspect, with handsome Caladium-like foliage of a pale green color, marked with bold yet irregular blotches of white.

It is of free vigorous growth, and is certainly a great addition to our variegated stove plants.

It has received FIRST-CLASS PRIZES, both from the Royal Horticultural and Royal Botanic Societies. Price 31*s.* 6*d.* each.

CALADIUM VEITCHII (Lindley).

This truly magnificent plant has been exhibited by us on so many occasions, and its peculiar form and great beauty are so well known, that any lengthened notice of it would now be quite superfluous.

It is sufficient to say that its large sagittate leaves are of a rich bronzy green on the upper side and a deep purple on the under, with a beautiful metallic lustre, and of an extraordinary substance.

It has been awarded Prizes at all the principal Metropolitan shows, and it also received the highest prize for new plants offered at the recent grand exhibition at Ghent in Belgium.

We have no hesitation in recommending this as one of the finest ornamental plants ever introduced, and one which has only to be seen to be admired.

It was sent to us from Borneo by Mr. Thos. Lobb. Price 63*s.* to 105*s.* each.

FICUS COOPERI (Veitch).

This very distinct and beautiful foliaged greenhouse plant was brought us from New South Wales by Sir Daniel Cooper, after whom it is appropriately named.

It is of free and vigorous growth, with large dark green glossy leaves, and the veins, which are prominent, are of a deep crimson colour.

This plant is undoubtedly a most desirable addition to the class of ornamental foliaged plants, and it will prove of equal utility for room or conservatory decoration with the well known Ficus elastica. Price 10*s.* 6*d.* each.

NEPENTHES DOMINIANA (Veitch).

This, the first hybrid Nepenthes ever raised, was produced at our Exeter Nursery by our indefatigable Foreman, Mr. Dominy, between N. Rafflesiana and an imported unnamed species with green coloured pitchers.

It partakes of the strong robust habit of N. Rafflesiana, having pitchers intermediate between the two parents.

It forms a most desirable addition to this beautiful and interesting genus. Fine healthy seedling plants, 31*s.* 6*d.* each.

MESSRS. VEITCH AND SON'S ADVERTISEMENT OF NEW AND BEAUTIFUL PLANTS.

(Continued.)

RHODODENDRON PRINCESS ALICE (Veitch).

A really beautiful hybrid raised by ourselves between Rhododendrons Edgworthi and ciliatum.

The flowers are large, of a delicate rosy blush, shading off to white, possessing the delicious perfume of R. Edgworthi, with the neat foliage, dwarf habit and freedom of flowering of R. ciliatum.

It has received FIRST-CLASS CERTIFICATES from the Royal Horticultural and Royal Botanic Societies, and has been universally admired by all who have seen it. Price 21*s.* each.

RHODODENDRON SESTERIANUM.

Another fine Greenhouse hybrid raised between Rhododendrons Gibsoni and Edgworthi. Its large flowers are of a beautiful clear white, with yellow spots on the upper petals, and of fine form and substance.

The blooms are larger, and if possible more deliciously scented than those of R. Edgworthi. It is of German origin.

It has this season been awarded Two FIRST-CLASS PRIZES at the Spring meetings of the Royal Horticultural and Royal Botanic Societies. Price 21*s.* each.

SCHISMATOGLOTTIS VARIEGATA (Hooker).

This very pretty stove plant was sent to us from Borneo by Mr. Thomas Lobb.

The leaves are borne on erect slender footstalks somewhat resembling those of a Maranta. They are long, of a soft glossy green, with a central, broad, feathery line running through the entire length of the leaf.

Its neat dwarf habit and the well contrasted colours of its foliage will render it a pleasing addition to the stove. Price 21*s.* each.

STENOGASTRA CONCINNA.

A charming little stove plant, producing an abundance of white and purple flowers. It possesses the valuable property of continuing in flower throughout the year.

Its habit is particularly dwarf and neat, peculiarly adapting it for cultivation in plant cases or under glass shades in rooms. It is really a little gem. Price 7*s.* 6*d.* each.

SPHÆROGYNE LATIFOLIA.

A plant of truly noble aspect. In habit it somewhat resembles the far famed Cyanophyllum magnificum, but whilst being perfectly equal to that species in the magnificence of its foliage, it far surpasses it in habit and the general beauty of its appearance.

The stem and leaf-stalks are red and thickly covered with reversed hairs. Its magnificent ovate leaves are of a rich velvety olive green colour on the upper surface, and of a beautiful red underneath.

We have no hesitation in confidently recommending this plant as a really first-class novelty and one of the finest of the season.

ALOCASIA ZEBRINA?

This, one of the most remarkable and striking plants we have ever had the good fortune to introduce, was sent us by Mr. John G. Veitch from the Philippine Isles.

Its leaf-stalks, which are upwards of 2 feet in length, are of a pale yellow colour, marbled and banded in the most distinct manner with dark green.

The leaves are large, of a velvety green colour, and having the sagittate form peculiar to this family.

At the present time, when plants with effective foliage are in such request, this cannot fail to be generally admired and become an especial favourite.

N.B. *We propose exhibiting these two plants in fine condition at the London Exhibitions during the summer, and hope to be able to have a sufficient quantity of plants to distribute them during the ensuing autumn.*

In the meantime orders will be taken, which will be executed strictly in the rotation received.

TWELVE NEW AND BEAUTIFUL FERNS,

INTRODUCED BY MESSRS. VEITCH & SON FROM JAPAN, CHILI, AND BORNEO.

ACROPHORUS AFFINIS (Moore).

A large-growing elegant Davallioid Stove Fern from Borneo, whence it was sent to us by our eminent Collector Mr. Thomas Lobb. It has a thick scaly rhizome creeping on the surface, and producing large finely divided fronds 2 to 3 feet long. These fronds are elongately triangular, elevated on long green stipites, tripinnate or almost quadripinnate, with small oblong close linear acute single toothed segments. It is a very beautiful and distinct species. Good plants, 7*s.* 6*d.* each.

ADIANTUM CHILENSE (Kaulfuss).

THE CHILIAN MAIDEN HAIR FERN.

A remarkably beautiful species sent us, together with the following two other Adiantums from Chili, by our Collector Mr. Richard Pearce.

It has polished ebony coloured stipites and rachides, and fronds a foot or more in length, triangular in outline, subtripinnate, with large smooth roundish trapeziform pinnules, simple and finely denticulate in the sterile parts, somewhat lobed and notched where fertile, the sori reniform, lying in the sinuses of the lobes.

The smooth looking glaucous green broad-pinnuled fronds have a very distinct and remarkably handsome appearance, and altogether we may confidently pronounce it to be one of the finest of the genus. It will be a hardy greenhouse kind. Good plants, 10*s.* 6*d.* each.

ADIANTUM SCABRUM (Kaulfuss).

THE SILVER MAIDEN HAIR FERN.

A delicately coloured SILVER Fern sent us from Chili with the other two by Mr. R. Pearce. The plant is of dwarfish habit, with oblong fronds, having slender black stipites and rachides; they are bipinnately divided, with rather large roundish or somewhat trapeziform pinnules, denticulate at the margin, and sprinkled on both surfaces with farinose powder.

A very distinct and beautiful Hardy Greenhouse Fern, forming a fine contrast with the following Golden one. Fine plants, 10*s.* 6*d.* each.

ADIANTUM SULPHUREUM (Kaulfuss).

THE GOLDEN MAIDEN HAIR FERN.

One of the most lovely of the genus, also introduced with the two former species through Mr. Pearce from Chili.

The fronds, which grow in thick tufts, are about a foot long, and have the slender ebony coloured stipites and rachides usual in the genus; they are triangular ovate in outline, tripinnately divided, the pinnules rather small, roundish, with the margins lobed, and elegantly toothed, each of the lobes being notched, with a reniform sorus in the sinus.

In addition to these features, which render it worthy of universal cultivation for its beautiful form, the whole under surface is dashed over with a Golden coloured powder, as in the Gymnogrammas and other Gold Ferns. It is really a most charming hardy Greenhouse species. Fine plants, 10*s.* 6*d.* each.

N.B. *These three beautiful Adiantums were Exhibited at the Royal Botanic Society's Meeting on April 30, when they each received first prizes.*

CHEILANTHES MYSURENSIS (Wallich).

A very elegant small growing species of a favourite genus of Ferns.

Our present stock has been raised from spores collected in Nagasaki, Japan, by Mr. John G. Veitch. The plants form dwarf tufts, the fronds growing six or eight inches or sometimes a foot in length, narrow lanceolate, bipinnate, the pinnules oblong, and crenated on the margin, where the fructification is produced.

The fronds are very shortly stalked, the rachis and stipes being of a dark purplish brown, and clothed with scales; it is a very desirable Greenhouse Fern, and well suited for small Fern cases. Good plants, 7*s.* 6*d.* each.

LASTREA OPACA (Hooker).

This Fern will certainly prove a very distinct and valuable introduction for the hardy Fernery.

It produces tufts of firm opaque fronds of a dark green color, and very desirable; the outline is almost pentangular from the development of the basal posterior pinnules, and the pinnæ and fronds are very gracefully acuminate; the fronds are bipinnately divided, the pinnules being narrow-oblong and more or less falcate and deeply lobed; the segments ovate, those on the hinder side of the lowest pinnæ being very much larger than those on the anterior side.

The young immature fronds are more or less olive tinted.

This plant was introduced from Yokohama, Japan, by Mr. John G. Veitch, and we have every reason to believe it will prove to be one of our finest hardy Ferns. Good plants, 10*s.* 6*d.* each.

LOMARIA CRENULATA (Moore).

A very neat looking and perfectly hardy evergreen Fern introduced by our collector Mr. Pearce from Chili, and a most desirable plant for the out door Fernery.

The plant forms a close tuft about 6 inches high; the sterile fronds narrow lanceolate, almost pinnate, with small oblong acute crenulate divisions; the fertile fronds rather taller on reddish stalks, linear and crenulate.

It is perfectly distinct in its appearance from the many other fine hardy Lomarias already in cultivation. Good plants, 7*s.* 6*d.* each.

MICROLEPIA STRIGOSA (Presl).

This is an elegant free-growing Fern of moderate size, introduced by Mr. John G. Veitch, from Nagasaki, in Japan. It has bright green hairy fronds of about a couple of feet in height, ovate acuminate in form, bipinnate or tripinnate with roundish oblong or somewhat trapeziform pinnules, more or less lobed or toothed on the margin. It is of creeping habit.

Its moderate size and lively colour will render it a most desirable hardy greenhouse Fern. Fine plants, 7*s.* 6*d.* each.

POLYSTICHUM FLEXUM (Remy).

A fine coriaceous and perfectly hardy Fern, sent from Chili by Mr. Pearce, which has stood with us the two last winters entirely exposed, without suffering the least injury.

The plant has a somewhat creeping rhizome, from which grow up to the height of about a couple of feet the firm looking triangular fronds, which are tripinnate, with oblong toothed segments, and are remarkable for their thick leathery texture.

It forms a fine bold Fern for out door rockeries. Good plants, 7*s.* 6*d.* each.

POLYSTICHUM SETOSUM (Schott).

A very fine perfectly hardy evergreen Fern from Yokohama in Japan, another of the numerous introductions of Mr. John G. Veitch.

It is a tufted growing species of moderate size, with firm ovate-acuminate bipinnate fronds of 2 to 3 feet or more in height, the pinnules of which are trapezio-oblong, acute, auricled, and sometimes slightly toothed, but most remarkable for bearing a fringe of setæ or stiff hairs, which stand up from the plane of the frond, giving it a bristly appearance on the surface. We most confidently recommend this as a very ornamental species, and a great acquisition for out-door Ferneries. Fine plants, 10*s.* 6*d.* each.

WOODSIA POLYSTICHOIDES, var. VEITCHI (Hooker).

A very distinct and charming dwarf Fern, found in Yeddo by Mr. John G. Veitch.

The narrow almost linear fronds grow 6 or 8 inches or more in height, and are pinnately divided, the pinnæ being about an inch in length, linear oblong, and distinctly auricled with a row of sori near each margin, the whole surface above and beneath being covered with short close hairs.

It will prove a most interesting Fern for hardy Fern cases, being remarkably distinct from all other Woodsias known in cultivation. Good plants, 10*s.* 6*d.* each.

WOODWARDIA ORIENTALIS (Swartz).

One of the finest of all hardy Ferns. We have raised it in considerable abundance from spores gathered in Japan, by Mr. John G. Veitch, and are thus enabled to offer it a very low price for so fine a Fern.

It forms a thick crown from which the rather large spreading triangular fronds proceed; these fronds are pinnate-pinnatifid, with lanceolate acute serrated segments 1 or 2 inches in length, the larger ones somewhat crenately-lobed and the whole frond bearing on the upper surface more or less profusely little bulbiform plants opposite the sori, the fronds sometimes being completely covered with these young plants.

This peculiarity, together with the distinct bold character of the broad firm textured fronds, renders it one of the most interesting and beautiful among the hardy species of this family. Fine plants, 21*s.* each.

NEW AND RARE ORCHIDACEOUS PLANTS.

CATTLEYA DOMINIANA.

This is one of the beautiful and interesting hybrid Orchids raised by our Exeter foreman, Mr. Dominy, and is described in the *Gardeners' Chronicle* as follows:—

"The parents are Cattleya amethystina and C. labiata, thus forming a hybrid between a one and a two leaved species. In general aspect the flowers are of the size of a small bloom of Cattleya Mossiæ, of a pale rose colour, and very handsome."

It was exhibited at a meeting of the Royal Horticultural Society, and awarded a FIRST CLASS CERTIFICATE. Fine plants, 31*s.* 6*d.* each.

CYPRIPEDIUM Sp. N.

A species of noble aspect with broad leathery erect-growing foliage. This really distinct plant was sent from the Philippine Isles by Mr. J. G. Veitch. It has not yet flowered in this country, but judging from the dried flowers sent from its native habitat, it will form a fine and distinct species. Well established plants, 10 to 15 Guineas each.

DENDROBIUM TAURINUM (Lindley).

A remarkably beautiful species sent from the Philippine Islands by Mr. J. G. Veitch.

The flowers, which continue in perfection for a lengthened period, are produced in long spikes. In colour they are of a delicate white, shaded with pink, with beautifully reflexed sepals of a rosy purple, and, as the name indicates, having the appearance of a bull's head.

Previous to the introduction of these plants we believe there was but one solitary specimen in England, and that in the particularly rich collection of Mr. Rucker. Fine healthy established plants, 10 to 15 Guineas each.

PHALÆNOPSIS SCHILLERIANA.

This distinct and truly magnificent species having both fine variegated foliage and long spikes of flesh-coloured flowers, may be justly termed one of the finest of all Orchideæ.

The flowers, which are nearly as large as those of P. amabilis, are produced in great abundance, there being often from 80 to 100 blooms on a single spike.

Mr. J. G. Veitch having sent us a quantity of fine plants direct from the Philippine Islands, we are enabled to offer well-established specimens at the under-mentioned rate, 10 Guineas each.

VANDA BATEMANI.

We have much pleasure in being enabled to offer fine healthy plants of this scarce and noble Orchid, having received a consignment direct from its native habitat, where it was found by Mr. John G. Veitch. It is so well known that no further comment is necessary. Fine young plants, 7 to 10 Guineas each.

Plants will be ready for delivery on and after May 12.

ROYAL EXOTIC NURSERIES, EXETER AND CHELSEA.—May 3.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Chrysanthemums.

W. HOLMES, F.R.H.S., has a fine stock of the above, including Little Harry, Lady Hardinge, Leda, Linda, Rifleman, Florence, &c., &c., all at 5*s.* per dozen.

DESCRIPTIVE CATALOGUES of the above, also Dahlias, Fuchsias, Verbenas, Geraniums, Antirrhinums, Petunias, &c., free for one stamp.

Frampton Park Nursery, Hackney, N.E.

Chrysanthemums, Chrysanthemums.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, N., begs to inform his friends and the public that he can now supply, from his great collection of the above, Plants in any quantity from a dozen to a thousand on very liberal terms. He also offers 20 pairs of best large varieties for 10*s.*, and 25 pairs of best Pompones for 10*s.*; 20 pairs of best large varieties, cuttings, 5*s.*; and 25 pairs of best Pompone cuttings, 5*s.* To save trouble, all orders to be pre-paid.

NEW CATALOGUE now ready, for one stamp.

New Verbenas, Fuchsias, Petunias, &c., of 1861.

WM. KNIGHT begs to announce that he can supply good struck plants of the above in healthy stuff, from 5*s.* to 7*s.* per dozen.

Also extra strong CLIMBING ROSES, from 4*s.* to 6*s.* per dozen.

CATALOGUE post free on application.

Floral Nursery, Hailsham, near Hurst Green, Sussex.

New Dahlias.

CHARLES TURNER has now ready fine plants of those popular and superior new varieties:—

LORD DERBY, MRS. BUSH, MODEL, CHIEFTAIN, DELICATA, CAPTAIN HARVEY, CYGNET, UNA, &c.

Also all the best established varieties, in strong plants, at moderate prices.

See CATALOGUE just published, and which will be forwarded gratis and post free to any address.

The Royal Nurseries, Slough.

CHARLES TURNER'S GENERAL SPRING CATALOGUE of Achimenes, Azaleas, Cinerarias, Calceolarias, Chrysanthemums, both Large Flowering and Pompones; Dahlias, Fancy Dahlias, and Bedding Dahlias; Gloxinias; Pelargoniums, Show, Spotted, French, and Fancy; Variegated, Scarlet, and Hybrid Geraniums, and various other Bedding Plants; Hollyhocks, Heliotropiums, Petunias, Verbenas, as well as Florists' Flowers and Plants generally.

The EIGHTEENTH ANNUAL EDITION of the above is just published, and will be forwarded gratis and Post Free to any address.

CHARLES TURNER, The Royal Nurseries, Slough.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

CYPRIPEDIUM INSIGNIS MAULII.—In the first week of JUNE next will be distributed to a full List of Subscribers of 3 Guineas this fine variety of Cypripedium. After that time the price will be 5 Guineas to Non-Subscribers. It is figured and described in the "Floral Magazine," and a Coloured Figure will be forwarded for inspection per Post to Cultivators of Orchids and intending Subscribers on application.

WM. MAULE & SONS, The Nurseries, Bristol.

NEW TEA-SCENTED ROSE for 1862, GLOIRE DE BORDEAUX.—The above, a Seedling from the well known favourite Tea Rose, Gloire de Dijon, was raised at Lyons, and is represented as being unquestionably the finest Tea-scented Rose of the season.

WM. WOOD & SON beg to intimate that they possess a very large Stock of the above in extra strong plants, which they are now sending out at 5*s.* each.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses, &c.

WM. PAUL'S CATALOGUE of NEW ROSES and SPRING PLANTS generally is now ready. Free by post on application.

BEAUTY OF WALTHAM, H.P.

This English raised seedling Rose has now received the highest awards ever given by the Royal Horticultural and Royal Botanic Societies. The flowers are large and full, colour brilliant cerise, the petals exquisitely curved in the way of Madame Charles Crapelet; the growth is vigorous, the foliage magnificent, and the plant as hardy as the Dog Rose. Plants 5*s.* each, and orders executed in strict rotation as received.

HOLLYHOCKS.

A fine stock of all the best named sorts, 9*s.* to 24*s.* the dozen. All are raised from cuttings. None grafted.

Waltham Cross, N.

WILLIAM BARRON, Elvaston Castle, Derby, can supply strong and well-rooted plants as under:—

ABIES DOUGLASII, 3 years once transplanted. per 100 25*s.* 0*d.*
This tree attains a height of more than 200 feet, highly ornamental, the same as the tall flagpole at Kew.

PINUS LARICIO, 18 ins. to 2 feet .. . per 1000 70 0
This produces timber for railway sleepers sooner than the Larch, and is used as spars and masts in the French navy.

BERBERIS DARWINI, the most beautiful of the tribe, fit either for the flower garden or game cover, with rich orange-coloured flowers; Pheasants are very fond of the berries, which are produced in profusion. Strong plants, 3 years old per 100 20 0

Ditto ditto, 2 years old 15 0

Ditto ditto, 1 year old 12 6

PICEA NOBILIS, 3 to 4 years old, plants from seed, (This is the most lovely of all Firs.) each, 10*s.* to 15 0

WELLINGTONIAS from 2 to 9 feet. Also specimens of the rarest Conifers.

Remittances to accompany orders from unknown correspondents. Post-office Orders payable at Derby.

SELECT PRICED LISTS post free on application.

INTERNATIONAL EXHIBITION.

WILLIAM BULL, F.R.H.S., F.R.B.S.,

NURSERYMAN AND NEW PLANT MERCHANT,

KING'S ROAD, CHELSEA, LONDON, S.W.,

Begs to suggest to his customers and all who are interested in Horticulture and visiting London this season, that his Establishment is within a short distance of the Exhibition, and that he will have much pleasure in showing his extensive Collection of Novelties and Rare Plants to those favouring him with a visit.

NEW ROSES for 1862.—4000 STRONG PLANTS.

WILLIAM WOOD & SON

Are now executing orders for all the NEW ROSES of the season, in strong healthy plants, Dwarfs, at 5*s.* each. A liberal discount allowed to the Trade.

40,000 DWARF ROSES in POTS for BEDDING.

The months of April and May are considered the most eligible for Bedding-out Roses from pots.

W. W. & S. beg to offer a very large and healthy Stock on the following terms, viz.:—

Dwarf Hybrid Perpetual, Bourbon, Noisette, and Tea-Scented Roses, per dozen 18*s.*

Climbing Roses, of sorts ... ... ,, 12*s.* to 18*s.*

Dwarf China Roses ... ... ,, 12*s.*

Tea-Scented Roses, in 6-inch pots, for Greenhouse Culture ... ... ,, 30*s.*

Extra Plants presented for distant carriage.

CATALOGUES free on application.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

JAMES CARTER & CO.'S

NEW PLANTS FOR 1862.

FUCHSIAS—New Varieties for 1862.

The set (1 of each) .. .. 15*s.*

CARTER'S METEOR.—This very beautiful ornamental foliaged novelty is a most desirable acquisition; the leaves are of a rich golden yellow, variegated with bronze; the ends of all the young shoots are rich crimson; the plant altogether having almost the appearance of some of the highly coloured Amaranthus; flowers semi-double, red .. Each, 7*s.* 6*d.*

The following three varieties, with double corollas, were raised by Mr. H. Harrison, of Dedham. We have much pleasure in recommending them as very superior, in habit of growth and freedom of blooming, to the general run of the old Fuchsias:—

HARRISONII.—Bright scarlet tube, sepals reflexed quite back, corolla rich dark purple, very bold and spreading Each, 3*s.* 6*d.*

GREAT EXHIBITION.—Crimson sepals well reflexed, corolla very rich plum colour, the flowers on the parent plant measured $1\frac{1}{2}$ to 2 inches in diameter; a free growing very short-jointed variety .. .. Each, 5*s.*

TROPHY.—Sepals and tube light scarlet, sepals of great length and well reflexed, corolla very stout and spreading, of a deep violet purple colour .. .. .. Each, 3*s.* 6*d.*

LOBELIA SPECIOSA KERMESINA.

This beautiful new variety was raised at our Seed Farm, Dedham, Essex, and is, we believe, destined to rank in general estimation with the well known Lobelia erinus speciosa, of which it is a variety, and which it very much resembles in freedom of growth, habit, and profusion of bloom. The flowers are of a deep purplish scarlet colour. It will be a great acquisition for Flower Garden decoration.

Price per plant, 1*s.* 6*d.* Per dozen, 12*s.* Per 100, 50*s.*

CERASTIUM BIEBERSTEINII.

When the old Cerastium tomentosum was first publicly used as an edging plant in the Crystal Palace Gardens, every lover of garden ornament was delighted with the effect produced, and it was generally admitted that a step had been taken in the right direction for the permanent decoration of the Flower Garden; and this plant, being perfectly hardy, soon became an universal favourite. We now, therefore, invite especial attention to another, and still more beautiful, of the Cerastiums, viz., Biebersteinii. In habit still more compact and very distinct from C. tomentosum, each individual leaf being much larger, and covered on each side with a dense silvery-white woolly substance, resembling that on the beautiful Salvia patula argentea; this, and the flowers, which are also much larger, renders the plant far more striking than C. tomentosum; indeed, when placed side by side, the latter has a dull appearance.

It is perfectly hardy, and maintains its lovely white appearance even in mid-winter, so that it must prove a valuable acquisition to our Winter Gardens, when planted in contrast with other things. It is, therefore, with much pleasure we introduce it, and doubt not that it will soon be considered indispensable to every garden.

That it may be extensively used this season, we are induced to offer it at the following low prices for strong plants:—

Per dozen, 9*s.* and 12*s.* For 50 plants, 35*s.* and 40*s.* (strongest). Per 100, 70*s.* (strongest).

ANTIRRHINUMS.—New Varieties of 1862.

Each 1*s.* 6*d.* The Collection, 10*s.* 6*d.*

We have much pleasure in recommending the following superb varieties of this highly ornamental flower, selected from more than 3000 plants which bloomed at our St. Osyth Seed Farm last season—each variety is most distinct and much superior to anything hitherto offered.

TOM THUMB.—An exceedingly pretty, very dwarf, compact growing variety, both in colour and habit very much resembling the favourite scarlet intermediate Stock; a most desirable variety for bedding.

GLORIOSA.—Crimson self, very large flowers, robust habit, a most effective variety.

DELICATA.—Clear blush ground, beautifully striped with bright crimson, strong habit and most profuse bloomer.

NAPOLEON III.—Brilliant crimson, pure white centre, very free bloomer.

MADLLE TIETJENS.—Pure white tube, with white lip, richly flaked and blotched with carmine, very free habit.

BUTTERFLY.—White tube, lower lip richly blotched with bright crimson, top lip mottled yellow, centre rich orange, very strong habit, a most charming variety.

SOVEREIGN.—Delicate creamy white, profusely spotted with clear rose, forming an immense truss or spike, often a foot long—strong grower.

BEAUTY.—Pure white ground, beautifully mottled, and flaked with bright rose.

EXCELSIOR.—Rich orange tube, lobes of a most delicate bronze, centre bright yellow, a very uncommon colour in this class, and a most effective variety.

TROPÆOLUM TRICOLOR AURANTIACUS.

An indigenous Chilian variety of the old tricolor, of an exceedingly showy character, very free blooming, with delicate laciniate foliage; colour bright orange, shading to scarlet. Strong roots, each 10*s.* 6*d.*

CARTER'S DRAWING ROOM PLANT GUIDE,

Or Spring Supplement to JAMES CARTER & Co.'s "Gardener's and Farmer's Vade Mecum," illustrated in colours, the most complete Plant Guide published, forwarded post paid on receipt of six postage stamps (gratis to Customers).

237 & 238, HIGH HOLBORN, W.C.

KITCHEN GARDEN SEEDS,

FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

AGRICULTURAL SEEDS,

GRASS SEEDS,

FARM SEEDS,

of all descriptions.

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

LITHOSPERMUM FRUTICOSUM

IS THE NEATEST AND PRETTIEST LITTLE

HARDY EVERGREEN HERBACEOUS PLANT

that can be desired. Its slender branches are thickly covered with small dark green leaves, forming a perfect carpet, which is studded with

THE LOVELIEST BLUE FLOWERS,

nearly half an inch in diameter, from May till September. If wintered in a cold greenhouse it flowers abundantly in February and March.

Messrs. J. & C. LEE will be prepared to offer this "LITTLE GEM" in May, at 2*s*. 6*d*. each; larger plants, 5*s*. each.

NURSERY AND SEED ESTABLISHMENT, HAMMERSMITH, LONDON, W.

HARDY JAPANESE PLANTS, NEW ROSES, &c.

JOHN STANDISH

HAS great pleasure in submitting to the consideration of his friends and the public in general the following List of NEW PLANTS, ROSES, &c., far exceeding in interest any that he has ever before had the opportunity of sending out at any one time; he would particularly direct attention to the Variegated and other JAPANESE PLANTS, which he believes will effect quite a revolution in Gardening, as their complete hardiness has in many instances been quite established. Obtained by that indefatigable and successful collector, Mr. Robert Fortune, they were sent home in such excellent condition as to excite the wonder of all who saw them at the opening fête of the Royal Horticultural Society, and were universally acknowledged to be the most remarkable collection ever imported into England.

The NEW ROSES have been exhibited in the winning stands both at the Crystal Palace and Royal Horticultural Society, and the entire stock is in the hands of J. S.

Amongst the NEW FERNS will be found many of great interest and novelty.

HARDY JAPANESE PLANTS.

THUJOPSIS DOLABRATA VARIEGATA.—It is impossible to speak in too high terms of this variegated plant. Those who know T. dolabrata can form some idea of it when J. S. states that every shoot is terminated by beautiful silvery leaves; its hardiness is established from the fact that it stood all last winter at Elvaston, when the Common Holly and Portugal Laurels were killed to the ground. Plants 63*s*. each in the spring.

RETINOSPORA OBTUSA.—An evergreen shrub of the Arbor-vitæ race, growing from 60 to 80 feet high, stiffer in its foliage than anything known, having the character of Cedar of Lebanon with Cypress leaves. The wood is used by the Japanese in various ways, shines beautifully without any polish when worked up. Plants now ready, 21*s* each.

RETINOSPORA OBTUSA VARIEGATA.—Same species, with beautifully white variegation regularly occurring all over the plant. 31*s*. 6*d*. in April.

RETINOSPORA PISIFERA.—A very beautiful slender looking tree with sharp pinnated leaves. 21*s*. each.

RETINOSPORA PISIFERA AUREA.—Same species, but instead of the white variegation the terminal shoots are of a beautiful golden hue. Nothing can be more exquisite than this plant. 31*s*. 6*d*. in April.

RETINOSPORA PISIFERA VARIEGATA.—The same species with beautifully white variegated foliage. 31*s*. 6*d*. in April.

SCIADOPITYS VERTICILLATA.—This, the Umbrella Pine, as it is sometimes called, is one of the most remarkable of all the Coniferæ, described (by Siebold) as a very singular shrub or small tree, but in reality growing to the height of 100 to 150 feet, with its whorls arranged in the form of an extended parasol. As J. S. has several imported plants, the character of it can be well seen by any of his friends who may favour him with a visit. Seedling plants in the seed leaf, 42*s*. each; or a few imported plants, about 1 foot high, 10 guineas each.

EURYA LATIFOLIA.—A most exquisitely variegated shrub, the young shoots being of a brilliant rose colour, changing to white; when this becomes large and well established it will be one of the most beautiful plants known. 31*s*. 6*d*. each in April.

OSMANTHUS VARIEGATUS NANUS.—A dwarf Holly-like looking plant, perfectly hardy, and from the freeness of its growth likely to supersede many of the variegated species of Ilex now in our gardens. 31*s*. 6*d*. each, in April.

AUCUBA JAPONICA (true).—The shrub hitherto known under this name is merely a variegated variety of the one now introduced; it is covered with beautiful red berries about the size of the common Sorbus. 21*s*. each.

TAXUS FORTUNII.—An erect-growing species, somewhat similar in habit to the Irish Yew, but with very long leaves. Plants in spring. 21*s*. each in April.

BAMBUSA VARIEGATA.—A very beautiful dwarf growing plant, perfectly hardy. 21*s*. each, in April.

CAMPANUMŒA LANCEOLATA.—From N. China, probably hardy, but at any rate most useful as a greenhouse creeper. Peculiar bell-shaped flower, green and black, produced very freely all over the plant. Plants in Spring, 10*s*. 6*d*.

NEW FERNS.

LOMARIA FLUVIATILIS.—A very distinct species from New Zealand. Fronds nearly 1 foot long. 42*s*. each.

LOMARIA ELONGATA.—New Zealand. Pinnate leaves, 2 feet long, stouter than other Lomarias; very striking and beautiful. 42*s*. each.

NEW FERNS.

LOMARIA MAGELLANICA.—Perfectly hardy; stood all last winter, even in Yorkshire. 3*s*. 6*d*. to 10*s*. 6*d*. each.

CYATHEA DEALBATA.—Nice seedling plants, with fronds from 15 to 18 inches long, in 32-pots. 7*s*. 6*d*. each.

CYATHEA SMITHII.—Seedling plants. From 2 to 5 guineas.

CYATHEA CUNNINGHAMII.—A beautiful tree Fern, of not very large growth, suitable for small greenhouse. 2 to 5 guineas.

LASTREA ATRATA.—North China, very hardy, dark green foliage. 10*s*. 6*d*. each.

WOODWARDIA JAPONICA.—Hardy. From Japan and North China. 21*s*. each.

WOODWARDIA ORIENTALE.—Hardy. From North China, one of the finest of all hardy Ferns. 21*s*. to 31*s*. 6*d*. each.

TODEA PELLUCIDA.—A very beautiful tree Fern. 5*s*. to 10 guineas each.

CAMELLIA RETICULATA FLORE PLENO.—The largest and finest of all Camellias for effect. 31*s*. 6*d*. to 3 guineas each.

NEW ROSES.

COMTE DE FALLOUX, H. P.—A most free blooming variety of the Géant race, admirably adapted for a pot Rose or for bedding, as it never at any time of the year throws up a shoot without a bloom. Colour, bright scarlet crimson. 10*s*. 6*d*. each.

REYNOLDS HOLE, H. P.—A very strong and free blooming variety, throwing its blooms up well and very erect. Colour very lively pink, increasing in brilliancy as the flower gets age. For effect in gardens unrivalled; figured in the *Floral Magazine* for November, 1861. 10*s*. 6*d*. each.

GREGOIRE BOURDILLON, H. P.—A seedling from the Géant, very vigorous habit, larger and brighter than its parent; colour scarlet crimson. 10*s*. 6*d*.

MARGUERITE APPERT, H. P.—Large blush, shading off to white, beautifully cupped shape, vigorous habit. 10*s*. 6*d*. each.

ANDRE DESPORTES, H. P.—A seedling from Lord Raglan, very vigorous in habit, large rose-coloured flower. Admirably adapted for a pillar Rose. 10*s*. 6*d*. each.

JOHN STANDISH. H. P.—Deep violet crimson, very dark, perfectly imbricated, and blooming in clusters, vigorous habit, first-rate Rose. 10*s*. 6*d*. each.

Plants of Comte de Falloux now ready. Strong plants of the others will be ready the first week of May.

Besides the above J. S. can supply all the New Roses of this and last year, fine strong plants on their own roots, or grafted, from 2*s*. to 3*s*. 6*d*. each, or by the hundred at a considerable reduction.

VINES.

MUSCAT TROVERON.—One of the finest of all the White Grapes; as such it received a First-class Certificate at the July Show of the Royal Botanic Society. As large as a Black Hamburgh, bunches 15 to 20 inches long, with a fine rich acid and slight Frontignan flavour; one of the finest Grapes for Exhibition purposes. 10*s*. 6*d*. to 31*s*. 6*d*.

INGRAM'S HARDY PROLIFIC MUSCAT.—This Grape has fully sustained the character given to it by John Standish, as it has obtained the 5*l*. Prize given by Mr. Saunders for the finest Seedling Grape of last year; a First-class Certificate from the Fruit Committee of the Royal Horticultural Society, and an extra Prize from the Royal Horticultural Opening Show. 21*s*. to 63*s*. each.

In addition to the above a fine collection of all the leading kinds either as Fruiting Canes or small plants for planting out.

J. S. begs to intimate that he has a fine stock of all the leading HYBRID RHODODENDRONS, from 12*l*. to 20*l*. per hundred; a fine collection of HARDY ORNAMENTAL SHRUBS and TREES, and the finest GLADIOLI in the world. Also all the NEW PHLOXES of 1860 and 1861, raised by Lierval and others, from 1*s*. 6*d*. to 3*s*. 6*d*. each, and assures his friends and the public in general that everything sent out by him will be in the best possible condition, and will not fail to give satisfaction.

JOHN STANDISH, THE ROYAL NURSERY, BAGSHOT, SURREY.

Bedding Plants. Bedding Plants.

J. H. BIRD, F.R.H.S., can now supply the following PLANTS for Bedding Out, good stuff.

Fuchsias, Verbenas, Gazanias, Calceolarias, Cupheas, Heliotropes, Lobelias, Ageratums, Petunias, Single and Double; Salvias, Tom Thumb and Variegated Geraniums, autumn-struck Plants, at 12*s*. per 100 or 5*l*. per 1000. The same goods, spring-struck, at 8*s*. per 100 or 3*l*. 10*s*. per 1000.

N.B. All orders to be prepaid, or they will not be executed. No charge for hampers.

Stoke Newington—May 3.

Bedding Plants.

F. AND A. SMITH'S Stock of the above is very large this season, and the plants strong, consisting of all the well known and approved sorts for that purpose, prices of which will be forwarded on application.

The Nurseries, Dulwich, Surrey, S.

Bedding Plants.

MARSH AND PERKINS have great pleasure in offering the following, all strong and well established Plants, ready by 12th May:—VERBENAS: Defiance, Mrs. Holford, Purple King, Géant des Batailles, 2*s*. per dozen. SCARLET GERANIUMS, 2*s*. to 3*s*. per dozen. CALCEOLARIAS: Aurea floribunda, 12*s*.; Mackayii, 2*s*.; Prince of Orange, 2*s*. HELIOTROPES, 2*s*. per dozen.

N.B. A reference required from unknown correspondents. A DESCRIPTIVE PRICED CATALOGUE forwarded post free on application to

42, Drapery, Northampton.

Bedding Plants at 2s. 6d. per Dozen.

J. SCOTT'S well-known CATALOGUE of the above is now ready, and will be sent to all applicants on receipt of six postage stamps, which will be returned to all purchasers above 10*s*.

It contains a mass of Cultural and other information about Flowers and Flower Planting, Ribbons, Tessellated and Mosaic work, with Descriptive Lists of all the most ornamental Flower Garden Plants.

Mr. Beaton, in the *Journal of Horticulture*, April 23, 1861, p. 58, says:—"But the best work on making Ribbon borders . . . . is the Bedding Plant Catalogue of Mr. Scott, of Merriott Nurseries; and besides, the Catalogue is the best arranged for young beginners of all that I have seen."

J. SCOTT, Merriott, Crewkerne, Somerset.

Bedding Plants! Bedding Plants!

DILLISTONE AND CO. beg to offer strong healthy Plants of the above for the approaching Summer, of all the most approved kinds, and guarantee to give every satisfaction to all parties who may be pleased to favour them with their orders.

100 Plants of the finest varieties, selected from the following, will be sent for 25*s*.; 50 ditto, 14*s*.; Hamper, &c., included.

Geraniums	Verbenas	Petunias
Calceolarias	Fuchsias	Dahlias
Heliotropes	Phlox	Ageratums
Lobelias	Salvias	&c., &c.

CLIMBERS of the following kinds will be included where it is desired, viz.:—

Cobœas	Eccremocarpus	Lophospermums
Maurandyas	Tropœolums	&c., &c.

A great reduction where 500 or more plants are taken. All the New Roses and Plants of the season. A remittance or reference from unknown correspondents is requisite. Post-Office Orders payable at Halstead.

Sturmer and Woodlands Nurseries, Halstead, Essex.

The Finest Bedding Plants in Cultivation.

EXTRA FINE STOCK.

JOHN KEYNES has 30,000 of the Finest PLANTS for BEDDING OUT now ready at 16*s*. per hundred (or 2*s*. 6*d*. per dozen if taken singly), consisting of the following varieties:—

Scarlet Geraniums	Ageratums and Heliotropes
Ivy-leaf ditto	Nierembergias and Alyssums
Aurea floribunda Calceolaria	Lobelia speciosa and Cupheas
Amplexicaulis ditto	Gazania splendens
Rugosa ditto	Cerastium tomentosum
Purple Bedding Petunia	Lantana delicatissima
Purple Verbenas	British Flag Geranium
White ditto	4*s*. per dozen.
Scarlet ditto	

Variegated Geranium, consisting of Bijou, Attraction, Countess of Warwick, Flower of the Day, Emperor, Golden Chain, and Cloth of Gold, 6*s*., 9*s*., and 12*s*. per dozen. All in the finest order.

NEW ROSES and DAHLIAS also ready.

Castle Street Nursery, Salisbury.

New Catalogue.

F. AND A. SMITH'S new CATALOGUE is now published, and will be forwarded post free on application. It contains a DESCRIPTIVE LIST of all the leading Stove and Greenhouse Plants, Exotic Orchids and Ferns; also a fine collection of Geraniums, Fuchsias, Camellias, Azaleas, Cinerarias, Dahlias, Petunias, Verbenas, Phloxes, &c.

The Nurseries, Dulwich, Surrey, S.

New Plant Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce the publication of their NEW SPRING CATALOGUE of BEDDING and other ORNAMENTAL PLANTS on May 1, including descriptions of the undermentioned POMPON DAHLIAS, &c.

Angel of Peace	Little Mary
Annie	Little Prince
Butterfly	Little Valentine
Fairy Nymph	Pearl of Lilliputs
Goldlight	Silver Pheasant
Jeannette	Star
Little Darling	Tom Tit
Little Dorrit	and others.

BANKS'S NEW FUCHSIAS.

WILLS'S NEW VERBENAS.

FERN-LEAVED PRIMULAS, white and red fringed.

BEDDING TROPÆOLUMS—elegans coccinea, Model, Constellation, and Beauty of Oulton Park.

PETUNIA MAGNIFICENS.

GLOXINIAS—Brilliant, Leviathan, Bird of Paradise, and Most Beautiful; these four are very large, new in colour, and distinct.

AUCUBA HIMALAICA, the finest habited plant of all the new Aucubas.

GERANIUMS of the Zonale section—Magenta, new colour Woodwardiana, best formed large petal-flowered; Baron Ricasoli, without exception the best bedding or Vase Geranium of any at present known.

GERANIUMS, MINIMUM Section, Harry Hieover.
„ NOSEGAY „ Pink Pearl.
„ VARIEGATED „ Sunset, Gold Leaf, Mrs. Milford, the Countess, Gold Pheasant, Little Beauty, &c.

Wellington Nursery, St John's Wood, London, N.W.

Tom Thumb Scarlet Geranium and Aurea floribunda Calceolaria.

ALEXANDER LAING begs to inform nurserymen, gentlemen, and the public in general, that he is in a position to offer good, healthy, well established Plants of the above, by the dozen, 100, and 1000, having an immense stock of both, all being autumn-struck Plants.

Prices on application to A. LAING, Nurseryman, Beverley, Yorkshire.—May 3.

Calceolaria Canariensis.

G. SMITH has great pleasure in recommending this unsurpassed and beautiful variety; it has been shown in the past season at all the leading exhibitions round London, and has established itself as the best for all purposes, as it gives two-thirds more bloom in a pot and one-third more in beds than any other Calceolaria in cultivation; colour bright Canary Yellow, the mouth closed, so as to resist the wet; the habit is all that could be wished. Has taken a First-class Certificate at the Royal Botanic Gardens, Regent's Park; also a First-class Certificate from the Floral Committee of the Horticultural Society, for its fine qualities. Now ready, in strong plants, at 1s. 6d. each, or 12s. per dozen. A remittance must accompany the order to unknown correspondents.

Tollington Nursery, Hornsey Road, Islington, London, N.

CALCEOLARIAS (Bedding Varieties).—The four varieties named below are Seedlings of my own raising, and are now offered for the first time; they have been tested the last two seasons, and found to be superior for bedding purposes to any varieties in cultivation.

Price 18s. per Dozen.

ADMIRAL WARDE, dark crimson, very dwarf, splendid habit, a most profuse bloomer; wet weather does not injure it to any extent, as a few hours' sun restores it to its usual brilliancy.

GENERAL WOLFE, shaded crimson, a most profuse bloomer and splendid habit, a great advance upon any existing dark bedding Calceolaria, the flowers are medium size, and stand the weather better than any other kind.

ELEGANTISSIMA, yellow, slightly spotted with brown, very free flowering, and of graceful habit.

GOLDEN DWARF, very dwarf, splendid habit, bright colour.

JOHN CATTELL, Nursery and Seed Establishment, Westerham, Kent.

New Bedding Calceolarias.

JAMES BURLEY begs to offer the following as first-class Bedding varieties. They have all been proved last season bedded out; they were awarded an Extra Prize at the Crystal Palace Show, Sept. 4, 1861, as cut blooms:—

		£	s.	d.
ETNA.—Crimson, tinted with scarlet, habit first-rate, a most abundant late blooming variety	Per dozen	0	12	0
VICTOR EMMANUEL.—Fine red scarlet, distinctly pitted with crimson dots, fine dwarf habit, only growing from 9 inches to 1 foot high. This is the nearest to scarlet of any we have.	Per dozen	0	12	0
ANGUSTIFOLIA GLOBOSA.—A distinct and valuable new variety, growing only from 9 inches to 1 foot high, very hardy constitution, very short jointed woody habit; the colour is that of a soft and bright primrose—a first-class bedder.	Per doz.	0	12	0

JAMES BURLEY, Nurseryman, Limpsfield, Surrey.

SPLENDID SHRUBBY CALCEOLARIAS, for Conservatory or Greenhouse decoration. They are equally well adapted for exhibition purposes. I think I need only remark as a guarantee of their sterling merit that all the leading prizes have been awarded to them. They can be had in bloom from May to October.

		s.	d.
GENERAL HAVELOCK.—Rich maroon or violet crimson, in dense flat corymbs, presenting a broad surface of bloom to the eye	each	1	0
QUEEN of OUDE.—Rich bronzy crimson, shaded with light scarlet, and freckled over with crimson spots, bright and beautiful	each	1	0
LORD RAGLAN.—A fine reddish scarlet, distinctly pitted with crimson dots	each	1	0
KING of SARDINIA.—Orange ground, margined with scarlet, and crimson velvet-like spots	each	1	0
EMPEROR.—Fine large crimson, distinctly spotted all over the flower		1	0
PRIMROSE PERFECTION.—Clear primrose yellow, a most profuse bloomer		1	0
LORD DERBY.—Beautiful orange, distinctly spotted all over		1	0
AMBASSADOR.—A rich brown scarlet		1	0
LITTLE DORRIT.—A pleasing soft yellow, a fine shaped flower, dwarf and good habit, a most abundant bloomer	each	1	6
MAGENTA.—Beautiful dark velvet crimson tinted with scarlet, of fine shape and habit		1	6
PRINCESS HELENA.—Yellow, finely shaded with primrose, very effective, fine habit and shape		1	6
THE HON. MRS. ADAMS.—Primrose colour, distinctly spotted all over with crimson spots, a fine shaped flower of good habit		1	6
THE QUEEN.—Pure yellow, beautifully marked all over the flowers with rich cinnabar red spots. A great improvement on Lady Palmerston		1	6

JAMES BURLEY, Nurseryman, Limpsfield, Surrey.—May 3.

Choice Vegetable and Flower Seeds.

B. S. WILLIAMS will be happy to forward post free to all applicants his PRICED and DESCRIPTIVE SEED CATALOGUE for 1862, containing Select Lists of all the best seeds in cultivation, with useful suggestions for the guidance of Amateur cultivators.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway London, N.

SPLENDID NEW FUCHSIAS, DICTATOR and UNIVERSAL. Coloured Illustrations by Mr. ANDREWS of the two, in exchange for 12 postage stamps.

G. S. assures Fuchsia Growers that "Universal" is the finest Fuchsia ever offered. For description see CATALOGUE.

GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington, London, N.

COLLECTIONS of FLOWER SEEDS.

	s.	d.
The best 100 sorts, including hardy, half hardy, and tender	20	0
The best 50 ditto ditto ditto	10	0
The best 36 ditto ditto ditto	7	6
The best 24 ditto ditto ditto	5	0

RICHARD SMITH, Seed Merchant, Worcester.

Flower Seeds, free by post,

SUTTON'S COLLECTIONS of choice NEW FLOWER SEEDS (Post free).—Ladies and gentlemen requiring showy kinds of FLOWER SEEDS are respectfully recommended to leave the selection of sorts wholly or partly to us, and we will supply those which we know to be really worthy of cultivation.

FLOWER SEEDS, FREE BY POST.

	£	s.	d.
The best 100 sorts of Flower Seeds, hardy, half-hardy, and tender, with instructions	1	1	0
The best 50 sorts ditto, with instructions	0	10	6
The best 36 sorts ditto	0	7	6
The best 24 sorts ditto	0	5	0

SUTTON & SONS, Seed Growers, Reading, Berks.

RHODODENDRONS, SMALL,

FOR THE TRADE ONLY.

				Per 1000.
500,000	Rhododendron ponticum,	3 yrs.	Seedling	10s.
100,000	ditto	ditto	4 yrs. ditto	15s.
200,000	ditto	ditto	3 yrs. & 1 yr. transpltd.	25s.
100,000	ditto	ditto	2 yrs. & 2 yrs. ditto	30s.

Unknown correspondents will save time by sending Post Office Orders, or a respectable reference in the Trade, with their orders. Five per cent. allowed for cash sent with the order. 100 of each can be sent as samples if required.

Address, JAMES SMITH, Darley Dale Nurseries, near Matlock.

SPECIAL OFFER to AMATEURS, EXHIBITORS, &c.—All the best NEW VERBENAS of 1861 for all purposes, in 48 varieties, for 16s., strong Plants, package included; also 25 of the very best NEW FUCHSIAS of 1861, for 12s.; also 12 First-rate DOUBLE PETUNIAS, for 6s.; also 12 First-rate DAHLIAS, for 5s.

WM. KNIGHT can with confidence recommend the above Plants, having Exhibited them at Brighton and other places last season, open to all England, and gained First Prize in every instance. Price to the Trade by the 100 or 1000.

Floral Nursery, Hailsham, near Hurst Green, Sussex.

New and Beautiful Plants.

F. AND A. SMITH have much pleasure in intimating that they are now prepared to send out the following NEW PLANTS, of which they possess the entire stock. Early orders are solicited, which will be executed in strict rotation as received:—

FUCHSIAS.

COLOSSUS.—This is a variety of magnificent proportions, very large and double. 7s. 6d. each.

ENSIGN.—Distinct and beautiful. Fine for exhibition purposes. 5s. each.

GLADIATOR.—Very large and double. 5s. each.

LADY BLANCHE.—White corolla; distinct and fine. 5s. each.

HUMBOLDT.—Large and fine for exhibition. 5s. each.

QUEEN of SUMMER.—Very fine and distinct. 5s. each.

RIFLEMAN.—Large double variety. 5s. each.

The seven varieties for 30s.

PETUNIAS.

PRIME MINISTER.—A very fine bright double crimson flower, very large and fragrant. 3s. 6d. each.

ROSE of ENGLAND.—One of the finest yet offered for bedding purposes; bright rose, with clear white throat. 3s. 6d. each.

EMERALD.—Bright rosy purple, with a margin of bright green. 3s. 6d. each.

MRS. SMITH.—Very distinct pure white, blotched and striped violet. 3s. 6d. each.

CLARA.—White, striped and shaded with bright rose. 3s. 6d. each.

GAIETY.—Rosy purple, striped and blotched white. 3s. 6d. each.

The set of six for 18s.

Golden variegated GERANIUM, "Goldfinch," 3s. 6d. each.

ZONALE GERANIUM, "Beauty of Dulwich," 3s. 6d. each.

For full descriptions of the above see F. & A. SMITH'S CATALOGUE of NEW and RARE PLANTS, which will be sent post free on application.

The Nurseries, Dulwich, London.—May 3.

PRIZE PHLOXES. | PRIZE GLADIOLUS.
PRIZE CHRYSANTHEMUMS.

JOHN CATTELL'S Collections of the above obtained the following Prizes at the London Exhibitions during the past season:—

PHLOXES.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

CHRYSANTHEMUMS.

First Prize, for the best 24 Cut Blooms, at the Royal Horticultural Society's Grand Fruit and Chrysanthemum Show, held at South Kensington Gardens.

First Prize, for the best 24 Cut Blooms, at the Stoke Newington Chrysanthemum Exhibition.

First Prize, for the best 24 Cut Blooms, at the Crystal Palace Chrysanthemum Exhibition.

J. C.'s collections include every variety of note, and he now offers them at the low prices named below, the selection being left to himself.

PHLOXES, 6s., 9s., and 12s. per dozen.
CHRYSANTHEMUMS, 6s. per dozen.
GLADIOLUS, 6s., 9s., 12s., and 18s. per dozen bulbs

CATALOGUES are now ready, and will be forwarded post paid on application.

Strong plants of the Chrysanthemums and Phloxes are now ready.

Nursery and Seed Establishment, Westerham, Kent.

Petunia Inimitabilis Eliza Mathieu.

GEO. SMITH has much pleasure in offering this most extraordinary and beautiful PETUNIA. It is twice the size of that well known and fine variety, Inimitabilis flore pleno. It is most distinct and constant, with mauve coloured ground, edged with one third pure white, and equally as double also, and as fine shape as a good Camellia. This splendid variety is figured in the *Florist* for the present month. Now ready in strong plants at 2s. each, or 18s. per dozen.

Another very beautiful variety of the same group is that named MARIE RENDATLER, with REX and other [illegible] varieties, 2s. each.

The CATALOGUE of Choice Geraniums, Fuchsias, Verbenas, Petunias, and general Bedding Plants, now ready in exchange for one postage stamp.

GEORGE SMITH, Tollington Nursery, Hornsery Road, Islington.

New Fuchsias—Universal and Dictator.

GEO. SMITH begs to inform the readers of the *Gardeners' Chronicle* that he is now sending out FUCHSIA UNIVERSAL, the most splendid Fuchsia ever offered. Colour deep violet, very large and double corolla, with bright crimson tube and sepals, with extra fine habit, 10s. 6d. per plant.

G. S. regrets to say that he is not able to send out DICTATOR, as the plant has wintered badly.

G. S. will be happy to supply SCARLET GERANIUM FIREFLY, one that received a Label of Commendation at the Horticultural Society's Floral Meetings, and also UNA, a fine bright Pink of extra form and size, 5s. each.

Also Six superb SEEDLING VERBENAS for 25s.; for full description see CATALOGUE, which will be forwarded on application.

GEO. SMITH, Tollington Nursery, Hornsey Road, Islington, London, N.

Hardy Variegated Plant.

SCROPHULARIA NODOSA VARIEGATA.

B. S. WILLIAMS has much pleasure in stating that he has purchased the Stock of the above, which has proved to be the best plant for Edging Ribbon Borders or large beds yet introduced. (See Mr. Beaton's remarks in the *Journal of Horticulture*, August 27, 1861.)

B. S. W. can confidently recommend it for the above purposes, having seen it used largely at the Palace Gardens, Armagh, Ireland, for the last two years. It is of very easy culture and perfectly hardy, with ovate-oblong obtuse leaves broadly edged with white, forming a distinct and effective variegation.

Mr. G. COOPER, the Gardener, states in a letter to the Floral Committee of the Royal Horticultural Society:—"I have used it for the above-named purposes for the last three years, and find it to be the most effective plant with which I am acquainted. Its leaves match those of the Geranium for size, and set off the scarlet flowers so well that the effect is pleasing in the extreme. It looks well in all weathers, and neither extreme wet nor extreme dryness affect it in the least, as was satisfactorily proved in the years 1859 and 1860. It holds on its good appearance far into the winter, looking well from the middle or end of April to December. It will be found very useful to those who have but little time to propagate, and little room to winter bedding plants, as it can be kept without either labour, protection, or care."

For further Testimonials see former Numbers of the *Gardeners' Chronicle*.

Strong plants, the first week in May, 1s. 6d. each; 12s. per doz.; 80s. per 100.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

REIGATE SILVER SAND.—Best quality, 10s. per ton, cash. Delivered to the Reigate Junction Railway. Truck of 4 or more tons loose, 9s. per ton, cash. 2 bushel bags, 9s. per dozen; 10d. per bushel. Peat Soils.

WILLIAM SHORT, Landscape Gardener, &c., Red Hill, Surrey.

PETUNIA MADAM FERGUSON.

D. FERGUSON,

To enable the Million to have their bed of this fine Bedding-out variety, offers it on and after May 19, at 2s. 6d. per plant; 21 plants for 21s.; and if 60 plants are taken, 6d. each. All Orders of One Guinea and upwards Carriage Free to all Railway Stations in Great Britain and Ireland, and Paris, without any charge for Packing or Baskets. A liberal allowance to the Trade if 100 and upwards are taken. See the *Florist* for August, 1861, from which the following is extracted:—

PETUNIA MADAM FERGUSON.—Alterations both in the form and colour of Petunias have of late been numerous and striking; but among single kinds we have seen none so constant and beautiful as the variety which forms the subject of our Plate this month, and of which a charming specimen, loaded with upwards of a hundred flowers, in which there did not appear the slightest tendency to sport, was shown at the last Royal Botanic Society's exhibition in Regent's Park. This favourite kind, for so it was considered by all who saw it at the "Park," was raised by Mr. Ferguson, of Stowe, in Buckinghamshire, in the spring of 1860; but being the smallest among thousands of Seedlings, it did not flower till October in that year, when its first blooms were submitted to the inspection of Mr. Beaton, who pronounced it to be "a most charming flower," and added, "You are welcome to make me godfather to it." The flowers are of a rich glossy silky white, regularly and distinctly marked with five bands or stripes of beautiful bright purplish crimson. This variety has a hard wiry habit, and a strong disposition to bloom in a small state; under ordinary treatment it is therefore somewhat difficult to propagate. Out of doors it makes a good bed, and under glass, both in the shape of bushes in pots or trained up pillars, it is both pleasing and effective, and in the evening it is reported to emit an agreeable perfume.

Extract from Mr. BULL's Catalogue.

PETUNIA MRS. FERGUSON.—White, distinctly rayed with bright crimson; a unique, superb, and attractive variety.

D. F. offers to Public Companies BEDDING-OUT PLANTS by the 5000, 10,000, 50,000, or 100,000 on very reasonable terms; also splendid CEDRUS DEODARA, 6 to 14 feet. IRISH and COMMON YEWS.

STOWE, BUCKINGHAM.—May 3.

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.

LIST OF AWARDS, APRIL 22, 1862.

FIRST CLASS CERTIFICATE.

Polygonatum oppositifolium v. albo-vittatum, from Mr. Standish, Bagshot.
Genista Everestiana, from Mr. Everest, Reading.
Acanthad: Weir No. 11, from the Society's Garden.
Physurus fimbrillaris, from the Society's Garden.

SECOND CLASS CERTIFICATE.

Cyrtomium anomophyllum, from Mr. Standish.
Lithospermum fruticosum, from Messrs. J. & C. Lee, Hammersmith.
Clematis azureo-lanuginosa, from Isaac Anderson Henry, Esq., Ellenburgh.
Dracæna Ghiesbreghtii, from Mr. Bull, Chelsea.
Lomatia elegantissima from Mr. Bull.
Chameranthemum verbenaceum, from the Society's Garden.

COMMENDATION.

Acanthad: Weir No. 39, from the Society's Garden.

The next MEETING of this Committee will take place on TUESDAY, May 6, at 12 o'Clock. The subjects for Exhibition must be at South Kensington for entry by 11 A.M.

THOMAS MOORE, Secretary to the Committee.

ROYAL HORTICULTURAL SOCIETY.—

A BALLOT for the undermentioned PLANTS will be held in the Council Room at South Kensington, S.W., on WEDNESDAY, May 28, at 2 o'Clock.

Lot
1. TERRESTRIAL ORCHID, with striped leaves.
2. PHYSURUS FIMBRILLARIS. An Orchid with beautifully silver-veined leaves.
3. IPOMŒA SANGUINEA. Creeper, with scarlet flowers. „ SP. CHAMERANTHEMUM SP. A pretty variegated stove plant.
4. STIFFTIA CHRYSANTHA. Stove shrub with orange flowers.
5. ERANTHEMUM LEUCONEURUM. Variegated leaves.
6. CHAMERANTHEMUM VERBENACEUM. A pretty variegated stove plant.
7. „ BEYRICHII VAR. Pretty variegated stove plant.
8. CLEMATIS BRASILIENSIS. New creeper.
9. RHEXIA SP. Stove plant.
10. JUSSIÆA ANASTOMOSANS. Stove aquatic.
11. PLEROMA SEMIDECANDRUM. Stove shrub, bearing purple flowers, from the Tejuca Hills.

(Lots 3–11: From seeds collected near Belem, Rio Janeiro, by the Society's collector, Mr. Weir, and sent home in Nov., 1861.)

12. ABIES DOUGLASII. One of the finest and hardiest Fir trees from North-West America. „ NORDMANNIANA. One of the hardiest and best of Abies, Mingrelia.
13. DISA GRANDIFLORA. A beautiful terrestrial Orchid, Cape of Good Hope. OXALIS MANDIOCCANA. Very pretty plant, bearing yellow flowers. APHELANDRA SP. Variegated leaves.
14. CALLIPTERIS MALABARICA. Beautiful stove Fern.
15. CEANOTHUS AZUREUS PALLIDUS. Hardy shrub from California.
16. ABIES MENZIESII. Hardy coniferous tree, North-West America.
17. CRYPTOMERIA LOBBII. Hardy coniferous tree, China. NERGALI, OR HILL-BAMBOO OF THE PUNJAUB. Hardy. CUPRESSUS MACROCARPA. Hardy, from California.
18. CYRTOMIUM CARYOTIDEUM. Evergreen Fern, India & China. PTERIS CRETICA ALBO-LINEATA. A handsome variegated Fern, Java.
19. SCINDAPSUS PICTUS (POTHOS ARGYRÆA). Beautiful variegated stove creeper. ACHIMENES CAPREOLATA. Variegated leaves.
20. DIOSCOREA SP. Mottled-leaved creeper. DICHORIZANDRA SP. With very fine leaves. PHYSURUS SP.
21. VARIOUS BULBS, LILIUM, &c. Unnamed. Presented by W. Wilson Saunders, Esq.
22. SEEDS OF CUZOO CORN. Presented by G. T. Davy, Esq.

Fellows of the Society desirous of obtaining any of these plants, if Life Members of 40 guineas, or Annual Subscribers of 4 guineas, are requested to name *six* of the lots; if Life Members of 20 guineas, or Annual Subscribers of 2 guineas, to name *three* of the lots When there is more than one kind in the lot, the successful balloter gets a plant of each. The arrangements for conducting the Ballot render it necessary that the numbers *only* of the lots should be sent to Mr. MURRAY at the Offices of the Society, South Kensington, W., on or before Friday, May 23d, *after which date no applications can be attended to.* The result of the Ballot will be communicated in the "Proceedings" for July, and the plants which the Fellows may obtain will be forwarded from Chiswick as soon after the Ballot as possible.

GRAND HORTICULTURAL FETE and ROSE SHOW

in connection with the Exhibition of the NORTHAMPTONSHIRE AGRICULTURAL SOCIETY in BURGHLEY PARK, STAMFORD, on THURSDAY, July 17.

The Premiums offered amount to 200*l.*, and are open to all England.

The Schedule, with Rules, &c., may be had upon application to Messrs. LAXTON & HEWITT, Hon. Secs., Stamford.

COVENTRY and WARWICKSHIRE FLORAL and HORTICULTURAL SOCIETY.

At the FIRST EXHIBITION this Season of the above Society, which will be held on TUESDAY, June 24, in the Bull Field, Coventry, an Open Prize of 5*l.* for the best, and 2*l.* 10*s.* for the second best set of 12 MISCELLANEOUS STOVE and GREENHOUSE PLANTS will be given, open to all England, the Specimens being *bonâ fide* the property of the Exhibitor. Each competitor will be required to pay an entrance fee of 10*s.* three clear days before the day of exhibition, to Mr. W. PETERS, Bailey Lane, Coventry.

EDW. PHILLIPS, M.D., Hon. Secretary.

BISHOP AUCKLAND FLORAL and HORTICULTURAL SOCIETY.

The ANNUAL EXHIBITION of this Society will be held in Auckland Park (by kind permission of the Lord Bishop of Durham), on FRIDAY, August 29.

The following splendid Prizes are offered:—

For the best 8 Stove and Greenhouse Plants	£20
„ 24 Dahlias	15
„ 12 Fancy Dahlias	8
„ 11 spikes Hollyhocks	10
„ 24 Blooms „	3

With many others of great value.

Schedules of Prizes are now ready and may be had on application to the Secretaries, and further particulars will be duly advertised.

REV. E. HEALY, S. J. CHERRETT } Hon. Secretaries.

ROYAL BOTANIC SOCIETY of LONDON,
REGENT'S PARK, N.W.

SPRING SHOW, APRIL 30, 1862.

6 ROSES in POTS.

Silver Medal to Messrs. Paul & Son, Cheshunt.
Bronze Medal to Mr. Cross, Gr. to Sir F. H. Goldsmid, Bart., St. John's Lodge, Regent's Park.

COLLECTION of CUT ROSES.

Small Silver Medal to Messrs. Paul & Son, Cheshunt.

6 EXOTIC FERNS.

Small Silver Medal to Mr. Hutt, Gr. to Miss Burdett Coutts, Highgate.
Small Silver Medal to Mr. Williams, Holloway.
Bronze Medal to Mr. Young, Gr. to R. Barclay, Esq., Highgate.
Small Bronze Medal to Mr. Cross, Gr. to Sir F. H. Goldsmid, Bart.

6 LYCOPODIUMS.

Small Silver Medal to Messrs. W. Cutbush & Son, Highgate.
Bronze Medal to Mr. Young, Gr. to R. Barclay, Esq.

NEW PLANTS, &c.

1st Class Certificate to Messrs. Veitch & Son, Exeter and Chelsea, for Adiantum chilense, a handsome Fern from Chili, having gracefully drooping triangular tripinnate fronds, about a foot in length, of a glaucous green colour, with broad roundish trapeziform pinnules.

1st Class Certificate to Messrs. Veitch & Son, for Adiantum sulphureum, the Golden Maiden-hair, a very handsome dwarf tufted Chilian Fern, 8 or 10 inches high, with tripinnate fronds clothed beneath with yellow farinose powder; the pinnules small, roundish, and conspicuously notched at the edge.

1st Class Certificate to Messrs. Veitch & Son, for Adiantum scabrum, the Silver Maiden-hair, a dwarf bipinnate Chilian species, with the large roundish pinnules clothed with white farinose powder.

1st Class Certificate to Messrs. Veitch & Son, for Aralia leptophylla, an elegant stove shrub, with digitate leaves formed of several long slender linear-lanceolate leaflets.

1st Class Certificate to Mr. Standish, Bagshot, for Lomaria elongata, a noble-habited hardy New Zealand Fern, with bold pinnatifid fronds having broad decurrent segments to the sterile fronds, the narrow linear segments of the fertile ones being also remarkably decurrent.

1st Class Certificate to Mr. Standish, for Asplenium dissimile, from Chatham Island, a handsome-looking, much divided, rigid coriaceous Fern, of which the fronds are oblong ovate acuminate, tripinnate, with bilobed narrow wedge-shaped or simple linear segments; the sterile fronds, with toothed cuneate segments, having a very distinct character.

1st Class Certificate to Mr. Turner, Slough, for Pelargonium (Zonale) Nesfield, a dwarf compact-habited and sturdy variety, with well-marked moderate-sized horse-shoe foliage, and full stout trusses of large bright scarlet flowers, freely produced.

2d Class Certificate to Messrs. Ivery & Son, Dorking, for Azalea Rifleman, a very promising semi-double sort, with firm smooth white flowers of good form, sparingly striped with bright carmine, and in several instances showing a double row of broad flat smooth segments.

2d Class Certificate to Mr. Barnes, Camberwell, for Azalea Colossus, a large and showy variety of a salmony rose, with a compact cluster of deep red spots on the upper segment.

2d Class Certificate to Mr. Williams, Holloway, for Yucca concava, a fine distinct hardy species, with broad wavy red-edged glaucous leaves.

2d Class Certificate to Mr. Bull, Chelsea, for Dracæna fragrans latifolia, an erect growing plant with broad handsomely recurved leaves, and a branched terminal panicle of numerous clustered pale greenish flowers.

2d Class Certificate to Mr. Turner, Slough, for Pink Rubens, a new dwarf forcing variety, likely to be useful for general cultivation, apparently a cross between the old white and Anna Boleyn, having the free-blooming dwarf habit of the former, and very sweet blush coloured flowers, blotched and irregularly laced with deep crimson.

The remaining subjects in this class were:—Pancratium or Hymenocallis sp., from the Philippine Islands, already awarded a First-class Certificate at one of the earlier meetings, from Messrs. Veitch & Son; who also sent the very curious Ataccia cristata. Clematis atro-purpurea, with narrow-sepaled pale violet flowers in the way of C. azurea; Azalea Etendard de Flandres, a white sort with red stripes of two shades of colour; Azalea Hortense Vervaene, with distant red flakes on a pale flesh coloured ground, and with purple spots on the upper segment; Petunia Captivation, rose purple with white edge; Petunia Admiration, rose with light throat; Drosera Whittakeri, a pretty little curiosity associating with the Fly-trap and Cephalotus, and forming little rosulate tufts of spathulate leaves fringed with red-tipped hairs—all from Mr. Bull, Chelsea. Azalea elegantissima, a white of average properties, occasionally striped with salmon red; Azalea Fascination, an indifferent-shaped white, much marked with narrow unequal bars of carmine red—both from Mr. Williams, Holloway. Blechnum Spicant diversifrons, and B. Spicant subserratum, two interesting varieties of Hardy Ferns, but not sufficiently developed, from Messrs. Ivery & Son, Dorking. Sphærostema marmoratum, Adelaster albivenis, Cobœa scandens variegata, and Callipteris malabarica, from Mr. Hutt, Gr. to Miss Burdett Coutts. Pelargonium St. Clair, a promising rich crimson seedling, with a black spot on each petal, and a bluish tint towards the centre, from Mr. Turner, Slough, who also showed—Cinerarias: Eldine the Fair, a large heavily rose-tipped sort, with dark disk and white base; Miss Franklin, white, with rosy tips and dark disk; King of Purples, a deep rosy violet, with dark disk; and The Winner, a lively Magenta rose, with grayish eye; the two latter especially being of rather more than average merit.

MISCELLANEOUS.

Silver Medal to Mr. Williams, Holloway, for a miscellaneous collection of Plants.
Silver Medal to Mr. Turner, Slough, for a very interesting and showy collection of French and other Pelargoniums.
Small Silver Medal to Mr. Noble, Bagshot, for 6 Hardy Rhododendrons.
Small Silver Medal to Mr. Hutt, for a miscellaneous collection of Plants.
Bronze Medal to Messrs. A. Henderson & Co., Pine-apple Place, for 3 fine Greenhouse Plants.
Bronze Medal to Mr. Bragg, Slough, for 24 Cut Pansies.
Small Bronze Medal to Mr. James, Gr. to W. F. Watson, Esq., Isleworth, for 24 Cut Pansies.
Small Bronze Medal to Mr. James, for 12 well-grown Pansies in pots.
Small Bronze Medal to Messrs. Dobson & Son, Isleworth, for 8 Cinerarias.
Small Bronze Medal to Mr. Cross, Gr. to Sir F. H. Goldsmid, Bart., for 6 Azaleas.
Small Bronze Medal to Messrs. Cutbush & Son, Highgate, for 50 Tulips.

Messrs. Cutbush also exhibited a group of 15 well-kept Hyacinths; and a neatly grown plant of Pteris tricolor was sent by Mr. Young, Gr. to R. Barclay, Esq.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK.

GENERAL EXHIBITIONS of PLANTS, FLOWERS, and FRUIT—WEDNESDAYS, May 28, June 18, and July 9.

AMERICAN PLANTS—MONDAY, June 9.

Tickets to be obtained at the Gardens only, by vouchers from Fellows or Members of the Society. Price on or before Saturday, May 17, 4*s.*; after that day, 5*s.*; or on the days of Exhibition, 7*s.* 6*d.* each. Tickets will be sent by Post on the receipt of proper vouchers, with Post Office Order payable to JAMES DE C. SOWERBY, Post Office, Albany Street, N.W., or Postage Stamps.

The last SPRING EXHIBITION, Wednesday, May 7, at 2 o'Clock.

The Gardeners' Chronicle.

SATURDAY, MAY 3, 1862.

MEETING FOR THE ENSUING WEEK.

TUESDAY, May 6 { Royal Horticultural (Fruit and Floral Committees) at S. Kensington .. Noon

WE find that owing to some unintentional infringement of Post Office regulations several stamped copies of last Saturday's *Gardeners' Chronicle* have been charged 1*s.* 4*d.* each by Postmasters. Wherever we have been made aware of the circumstance the money has been repaid to our subscribers; and we beg all others who have been subjected to this vexatious impost, to inform us of it in order that we may reimburse them.

ONE of our national peculiarities is that of forming SOCIETIES for every conceivable object. Natural History, Physics, Arts, Literature, Antiquities, Divinity, Humanity, Rifle Shooting, Mischief-making, and even Politics are so many genera, under which numberless species stand arranged. Other countries have followed our example in a small degree, but the extent to which British Associations have been carried is something unique in the History of Mankind. Upon the whole the system has worked immense good, and it is very unusual to find an English Society rendering itself a laughing stock. Quite recently, however, one of these bodies has rendered itself so distinguished by its peculiarities as to demand some special notice.

A small group of well-meaning gentlemen has assumed the name of the ACCLIMATIZATION SOCIETY OF GREAT BRITAIN, IRELAND, AND THE COLONIES. Two years have elapsed since they were brought together. Two reports have been issued, and a sort of supplement appeared on the 1st of April last, to which we shall have to refer presently. Their report, dated March 25, 1862, commences by announcing great success in writing letters and obtaining answers, several of which are duly printed, we cannot say because of any information they contain, but for the gratification of the members of this learned body. The report then proceeds to enumerate the "various experiments that are being conducted by the Society." One would naturally have expected to find these experiments directed to the work of "acclimatation;" that is to say of rendering species, naturally too tender to bear our climate, hardy enough to be profitably domesticated. It was for this purpose that the Society was established, and for this a generous lady, acting under bad advice, actually subscribed the sum of 500*l.* We say bad advice because it is notorious that acclimatation is a chimæra. Now the experiments reported on have no relation to acclimatation; they are a mere record of attempts, more or less successful, of *introducing* novelties; a duty that has for years been well performed by the Zoological and Horticultural Societies. The crowning experiments recorded in the report before us are those which relate to the Chinese Yam, and some "Arum." The Society has actually succeeded in getting the Chinese Yam to grow; nay they have distributed it so that "samples are now in the hands of several persons for cultivation." Prodigious! Surely the reporters must have been shut up in some Noah's Ark not to know that the Chinese Yam has already been so long in cultivation that its treatment is as familiar to all intelligent gardeners as that of the Potato. It is perfectly hardy, and always was so; its nature is unchanged, and so far as climate is concerned is unchangeable. As to the "Arum" which a Mr. PETER MARTIN, of Guernsey, "saw at first sight" was a member "of the Arrow tribe," whatever that may mean, what we learn from the report is this, 1, that the plant has bulbs, a statement to which we take exception; 2, that its produce is so enormous that 193*l.* sterling per acre may be realised from it. Unluckily however the plant is fearfully acrid, causing "a most intolerable and itching sensation to the hand, and especially

between the fingers," as a remedy for which Mr. MARTIN adviseth the application of oil of Cloves or sweet oil. There is also another small drawback; this Arum "of the Arrow tribe," is apt to be attacked by a disease which spreads until the plant "disappears altogether;" as is the case with "another Arum named *Serpentaria*, which he also has in his garden." We do not ask what this Serpentaria is, because Mr. MARTIN's lucubration tells us it would be useless to inquire.

Such is the second report of this Society. The supplement issued on the 1st of last April, a fitting day, is the most extraordinary document that ever appeared from an English association. It informs its readers that the Society has 41 Patrons who are all willing to *accept* valuable animals or birds; that it has received a valuable present from Nova Scotia consisting of 13 addled eggs of a Teatrayo (*risum teneatis*); that a gentleman has offered to send Elands from South Africa, prepayment being required, "which condition does not meet the views of this Society;" that Mr. GRANTLEY BERKELEY has succeeded in producing a hybrid between a Pintail Drake and a Thames Rat (!); that the same gentleman has another sort of Teatrayo, and does not know what to do with it; that a Wombat has been acclimatized, fatted, and cooked for eating; but "when the interesting and delicious novelty was introduced the company suddenly turned pale and rushed hastily out of the room. As none of them returned the Society are unable to report upon this valuable and odoriferous acquisition." "In conclusion the Society beg to say that the public do not subscribe as they ought to do."

At first we took this supplement for a squib; but seeing that it is headed "Acclimatization Society, Duke Street, Adelphi," and looking at the peculiar style of the document, we are obliged to regard it as a genuine effusion—at least until we have some evidence to the contrary.

AT a recent meeting of the Imperial Horticultural Society of Paris it was announced that all the valuable MODELS OF FRUIT in its possession would be sent to this country for admission to the great International Exhibition soon about to open. M. LIRON D'AIROLES has added his own collection, consisting of between 400 and 500 varieties; and it is expected that in the autumn French horticulture will be further illustrated by magnificent collections of the fruits then ripe, which are to appear at the great Exhibition of the Royal Horticultural Society. We say then, once more, to our friends on this side the Channel, "Look out, and take care that your laurels are not removed to other brows. You have skill with a bad climate; Continentals have skill and a good climate. The odds are against you; and the more honour to you if you win or even hold your own."

WE have already hinted at an interesting discussion which has lately been carried on in the pages of *Gossip*, upon the question whether "form" or "colouring" be the more important of two of the great properties which constitute ideal PERFECTION IN A TULIP, viewed as a florist's flower; and we now propose to give a *résumé* of the arguments on both sides. The great properties alluded to, which we will here set down according to alphabetical precedence, are included under the heads:—Colour, Form, Marking, Purity, Smoothness, and Substance. Colour includes the points of clearness, of richness, or it may be of brilliancy in the respective parts, whether light or dark. Form relates to the shape of the perianth-segments—petals as they are usually called, and also to the shape or outline of the flower as a whole. Marking is the darker tracery or variegation on the light ground, and is distinguished into what is called "feather" and "flame." Purity applies especially to the base of the perianth-segments and to the filaments, and indicates the absence of any stain or discoloration. Smoothness applies both to evenness of margin and evenness of surface. Substance indicates the thickness of the petals, the thicker being the richer-coloured and more durable, and therefore the more desirable. The problem is, to settle the relative value of these qualities in estimating the value of those flowers which come nearest to ideal perfection.

Dr. HORNER, of Hull, an old and experienced florist, by whom the question was opened, found it necessary at the outset to reduce it within narrower limits by combining these qualities under the two heads already indicated, namely FORM, including Smoothness and Substance, and COLOUR, including Marking, Purity, and Brilliancy or Richness. It has occurred to me, he remarks, "that we may derive important aid in settling this question, by a reference to other objects—to the Fine Arts—where both form and colour are cherished; by looking to Sculpture for instance, to Painting, or what comes still more close, to other florists' flowers." In respect to Sculpture, he remarks that form is the grand feature, the great desideratum; but Sculpture fails as a means of comparison, for the Tulip is a painted thing, nay, more, it is definitely painted, for the painting or marking must be in certain places and there only, as on the edge, or on the centre of the petal, so that unless we had definitely painted sculpture we are stopped. Painting, he goes on to say, supplies a more tangible parallel. A landscape, for instance, comprising trees with other objects, gives us both form and colour, we might almost say marking too. In a picture, it is argued, the effect and value as a work of art lies chiefly in the natural and true disposition of its colours, and in the fine and rich tone of colouring, for these give reality to objects. Hence the writer concludes that the argument to be deduced from painting is in favour of colouring or marking over form. Taking for comparison some other florists' flowers, as the Picotee for instance, between the edging of which and the feathering of the Tulip the parallel is close—it is urged that no fine form or substance of petal would satisfy us, if the edging were defective, or the colours dull; while with a pure ground colour and a perfect and richly coloured edging, slight deficiencies of form would be passed over. Then, again, the colour and marking of a Tulip is held to be definite, whilst form is not so, at least not so definite. The marking *must* be in certain parts of the flower and there only, while the colour whether of the ground or of the markings *must not* be dull or obscure; but the form is not so positively settled, some maintaining in theory that it should be the third of a hollow ball with the top of the petals straight—kettle-drummish as the Doctor archly puts it, and others that it should be just half a ball, or a plain hemisphere with the petals rounded at top; while in practice, if it be round on the shoulder and duly broad and rounded at the top of the petals, the half-circle is apt to be forgotten. Hence Dr. HORNER concludes that a departure from the assumed standard of perfection in form is more readily tolerated than a defect of marking or colouring—the marking being the distinguishing trait of this flower, and that which makes it what it is; and he sums up thus:—Marking combined with purity and brilliancy of colour, throughout the petals, constitutes the first property of the Tulip; while Form with substance and smoothness of petal is but the second. But no flower is of value or worthy consideration, in which form is in any material degree defective, be the colouring ever so fine and exact.

To this it is replied by Mr. WATERSTON of Paisley, that whilst in Sculpture, which was appealed to, the evidence is entirely in favour of form, so also in Painting, the foundation of success, the real merit that is, lies chiefly in correct drawing—that is to say, in form; the most natural and attractive colouring and the finest touches where the drawing or perspective is defective, being considered by real judges to be so much lost labour. So in respect to other florists' flowers: the Auricula, the Pansy, the Hollyhock, the Rose, the Camellia, and others, form is held to be indispensable; not only, it is urged, is fine form combined with substance and smoothness of petal the first and most essential property in these flowers, but it is decidedly so in the Tulip, the subject of the present discussion.

An anonymous writer, dating from London, puts the question in this form:—"I take it for granted Dr. HORNER will allow that his proposition is of little or no value, unless it can be shown that it will bear a practical as well as a theoretical exposition." He then goes on to assume that the judges, say at the National Show in May next, will find two seedlings to be tested; the one, A, with "marking, &c., perfect," but "form, &c., a little deficient;" the other, B, just the reverse. According to Dr. HORNER's rule the former would be preferred; but probably the very next season the marking, seldom if ever perfect for two successive seasons, may be no better in A than in B, and this would render a reversion of the former judgment necessary, B having the advantage of a better form; and so they might go on changing places each alternate year. With such a test, therefore, judgment would always rest on a shifting foundation. And then in the class of seedling breeders, which have no marking, it is asked, what is to be done with them, "brilliancy of colour in a breeder being perhaps the least desirable property, as the most brilliant-coloured invariably 'break' the contrary." This writer maintains that "marking, however beautiful and desirable, is too changeable and capricious a property to hold the *first* place."

In this controversy, as often happens in similar cases, we are inclined to think that both parties are to some extent right, and both wrong. It is clear from the statements put forward, no less than from the concurrent opinion of florists, that unless the qualities of fine form and good pure colouring are *combined*, so far as they can be in each particular instance, a flower cannot be perfect or even in a condition approaching perfection. Form, however, as displaying all other beauties to the best advantage, appears to us the fundamental property, the foundation on which all other good qualities should be built up. Even the subsidiary properties of substance and smoothness, the one necessary to give endurance to form, and strength and depth to colour, and the other an absolute condition of refinement, are really we think, in a technical sense, of more importance in a florist's flower than the element of colour. Of course the reverse of this is the case in a popular flower. Colour would there carry the day.

Here there is a table of precedence, so far as regards the properties herein alluded to, as we would construct it:—

1. Form, general and particular, the groundwork of perfection.
2. Smoothness or refinement, the good breeding, so to speak, of the flower.
3. Substance or constitutional rigour, the test of capacity of endurance.
4. Colour, Purity, and Marking, the pretty face, as it were, crowning all other excellencies, and making them still more enjoyable.

This table of precedence we intend to apply to the "properties" of florists' flowers in general, some of which, however, introduce other "properties" prominently to our notice. As this, however, is to be a homily on Tulips, let us, in conclusion, give Dr. HORNER space to state his estimate of the gaudy flower:—"Truly," he says, "it must be confessed that the Tulip is altogether an unique flower; it stands alone, incomparable! Consider it well—a single flower—erect, elegant in form, and matchless in the variety of its colours, crowning the very summit of a pillar, which is tall, straight, round and graceful; its leaves of a cheerful green, elegantly curved on either side, lending additional charm to the perfect whole. Truly there is a majesty and beauty here which challenges our admiration."—†

New Plants.

243. BIOTA FALCATA (*a Garden form*).

We already possess in gardens several varieties of the beautiful Biota orientalis; the Japanese have others; and a further addition to the series of forms appears in the plant now about to be mentioned. When Mr. J. G. Veitch, whose safe return to his native country loaded with valuable acquisitions we have great pleasure in announcing, was at Yokahama, in Japan, he found there a Chinese Arbor Vitæ, with a dense conical habit, from 12 to 15 feet high, and great green cones, the spine at the end of whose scales is curved backwards like a small sickle. Among the Japanese dried specimens for which we are indebted to Mr. Fortune, what appears to be the same plant also occurs. It is different from any of the Biotas in cultivation, as far as we can judge from the examination of dried specimens, and thus requires a name. That which we propose refers to the long curved spines of the cones; and we see no need of adding the word orientalis, which is not required by Botanists, and can be of no use to others.

THE RHODODENDRONS OF SIKKIM AND BHOTAN.

(*Continued from* p. 381.)

ANOTHER attractive feature of the Himalayan Rhododendrons, and one to which the species of Europe and America can lay no claim, is the beauty of their young shoots. The striking effect of R. argenteum in its native hills has been well described by Dr. Hooker, but it has a rival in R. longifolium,* the leaves of which when first evolved look as if they had been electroplated. R. niveum under the same circumstances is perfectly white, and hence the name. Other species, *e. g.*, R. Hookeri and some of the varieties of R. Aucklandi, have their shoots protected by bracts deeply stained with crimson, and thus for a short time approach the very gayest of the Scitamineæ in their appearance. The shoots of R. Nuttalli are tipped with purplish chocolate, while those of R. Boothii are liver-coloured and fringed with beautiful white hairs. Unfortunately these tints speedily pass away, like those of the Oak in spring; but while they do last, they impart a great additional charm to the Rhododendron house. Before I quit the subject it may be well to make a few separate remarks on some of the more notable members of the fine group of plants under discussion, commencing with:—

R. Nuttalli.—This, in the opinion of Dr. Nuttall, was the *facile princeps* of all Rhododendrons, and certainly, after having seen its flowers in high perfection, I cannot but fully sympathise with my lamented friend in his admiration of its charms. It produces its trusses freely, the time for their opening being (here) the latter end of May or beginning of June. Each flower, and there are several in a truss, is fully 4 inches across, the petals being of the purest white, while the throat of the corolla is lined with the richest orange. The flowers, moreover, are deliciously sweet. The foliage is striking, although its habit in a wild state, as I am informed by its fortunate discoverer Mr. Booth, is straggling and unsightly. But these defects may be readily overcome under cultivation, by simply disbudding the ends of the shoots, which are thus compelled to branch. The plant is already 10 feet high, and, treated in the way I have described, can even now boast of a handsome head 5 feet across. In Bhotan R. Nuttalli attains the stature of a tree 30 feet high, but by the time it has reached to but half that height among ourselves, it will, I am

* Probably a dwarf variety of R. argenteum, though with longer leaves. The finest specimen I have yet seen is in Lady Dorothy Nevill's rich collection at Dangstein.

convinced, have established its claim to take the very first place among the most splendid ornaments of our conservatories.

R. Windsori.—Another of Mr. Booth's invaluable discoveries. The habit is not unlike that of the old R. arboreum, but the underside of the leaves is without the silvery film so characteristic of the latter species. The flowers also are richer in their colour, and finer in their trusses, and are freely produced. They are marked with black at the foot of the corolla, which has all the appearance of having a bee, or some such insect, lodged in its throat. They have also the rare merit (among Rhododendrons) of continuing a long time in beauty. On my plant the first trusses began to open at the end of January, and the last had not fallen on the first day of this present month of April!

R. Maddeni.—A charming species; flowers pure white, and deliciously sweet. They open just before those of R. Nuttalli, and are produced in profusion. A small shrub of the easiest culture.

R. Dalhousianum.—This has disappointed everyone. The habit is awkward, and the flowers, which are a dirty green when they first expand, fall off just as they become white. I tried to grow this species trained against a wall of the Rhododendron house, where it grew and flowered freely, but was always unsightly.

R. Edgworthi.—This I also tried against the same wall, which it covered with beautiful foliage, but, perhaps for want of sufficient light, the flower buds have hitherto dropped off. I think, too, that it possibly requires more heat than the other kinds with which it is associated here. At all events it flowered well with me when kept in a pot in a warmer house, as it has also done in many other collections.

R. Aucklandi.—This is a most stately plant and rapid grower; but no flowers as yet. Many other fine species I pass unnoticed, because they have not yet blossomed, but when they do so I hope to send you a few supplementary notes. In the meanwhile many interesting hybrids—obtained by crossing the Sikkim species among themselves—are beginning to appear, the first fruits, doubtless, of a splendid and abundant harvest yet to come. Alas, that so bright a prospect should also have its darker side; but as the products of the hybridiser's skill multiply amongst us, all traces of the original forms will inevitably disappear from our gardens, and nowhere, but in their native Himalayas, will the species be seen as they started into being at the fiat of the Almighty! *J. B., Biddulph Grange.*

Indoor Gardening.

OUR indoor flowers will now be coming into great beauty, and at least demanding something of summer treatment—somewhat perhaps of more frequent watering, more air no doubt, and if in flower more shading.

I think one of the prettiest window plants at this time of year is the little white Deutzia gracilis; its pretty snowy clusters, though they are not fragrant, wave about so gracefully. I had a plant of this some years ago, and having been cautioned to cut in my Fuchsia some time after flowering, I extended the same treatment also to my Deutzia, and was much distressed on finding I had snipped off all the hope of the next year's blossoms. I need hardly say that plants of this kind blossom next year on the young shoots of this, so that the more there are of these the more flowers we get. The favourite Fuchsias now will take a good deal of water after their repotting, or after at least renewing the top soil in their pots, while starting them into growth. A sunny window and abundant air are the great things for these—as well as for Fairy Roses, which are such pets of every one's, and which will now be covered with their pretty buds.

I have found some injury often happen to window plants by the upper sashes of windows being down all day, people quite forgetting that this brings a double glass between the plants and the light, as well as causing the air to come from over head instead of letting it play in amidst the leaves. I think this is one reason perhaps why cottage flowers often answer so much better than those in our drawing-rooms, because the cottage plants are put just to stand outside upon the sill, where naturally they get abundant air and light till, late in the evening, they return to their usual shelter. Of course some precaution is necessary that the pots may not be blown down; I have generally had my own placed in boxes, which are just fixed by a screw to the window frame.

The interstices between the pots should be filled with something that can hold some moisture. Some people are very fond of giving their plants stimulants. I do not see that this does very much good to window gardeners, but I mention it here to caution them that even if they should intend it, it ought not to be till the buds begin to form for blossom; if they give it sooner they will be apt to have many more leaves than flowers.

The Balsams now ought to be growing nicely; they have in windows a look of suitability, from their compact sort of growth, that makes one rather fond of them; but I do not think they are very exalted in their social rank, and it is provoking to have window plants without scent.

The Heliotrope certainly is safe from this last fault. Dryness is its great enemy. But Fuchsias are really the most positive window plants; for from their nature they seem capable of being grown there as well as they can be anywhere, and the very prettiest Fuchsias that I ever saw—graceful drooping fountain-shaped little shrubs covered with red bells, were such as had been grown without a scrap of greenhouse—struck in a hot-bed and then brought on in-doors.

I do not know why Fuchsias now should generally be so shapeless. I wonder sometimes whether they get fair play at first, or whether they are allowed to stand in the midst of numbers, getting long and lanky.

Some sorts of Fuchsia especially are only beautiful in their natural fountain shape — and this is spoilt directly if we begin our so-called training, or allow the plant to get drawn up with others. A 4-inch pot of nice well charred loam on a window-sill—moderate daily watering and careful turning round every day regularly so as to stop lop-sidedness, are the great requirements of these delightful window plants. *E. A. M.*

NOTES ON THE PLANTS OF PERU.—No. III.

(*Continued from p.* 1047, 1861.)

IN my last I gave some account of my progress up the Guayaquil River as far as Bodegas. General Franco had promised Mr. Mocatta, H.B.M. Vice Consul for Guayaquil, that, on arrival at Bodegas, he would immediately send a sufficient number of men with me in a canoe to a place called Cataramas, which was his most advanced outpost, and which was only a short distance below Ventanas. But this promise was not fulfilled. After repeated inquiries at the General's house concerning the men that were to be sent with me, I was at last informed that the army was about to march upwards, and that I could then go along with it. I did not like this arrangement, and so I looked about and got a person who undertook to convey myself and my cases in a canoe to Ventanas. On the afternoon of the same day a portion of the raft on which the boxes were placed gave way, and the cases, along with several little articles of my own, were precipitated into the river; and it was with no little difficulty that I succeeded in picking them up, as they were being carried away by the current. Early next morning the cases were put into a large canoe, and we proceeded up the Caracol branch of the Guayaquil River. After overcoming great difficulties, we reached the village of Caracol about midnight. At Caracol I had to remain for three days, for the person who brought me up the river had a large raft at this place loaded with Plantains, which he wished to dispose of, as a considerable quantity had already been carried off by the "patriots." In the woods around Caracol, I observed several species of Ficus, some of which grow to an immense size, also Mimosæ, Randias, Melastomaceæ, Smilax, and Monsteras. In open places the trees are loaded with Bromeliads, and with several kinds of Orchids, principally Oncidiums, Epidendrums, and Stelis. Bromelias are not, however, confined to open situations, for I have seen them growing equally abundant in shady places and in the bottoms of deep precipitous ravines, where the sun's rays are never seen. After leaving Caracol, our progress was much retarded by sand-banks and trunks of trees which had been carried down by floods during the rainy season. In consequence of these obstructions we were frequently compelled to get out of the canoe and drag it over sand-banks and other hindrances, and in so doing exposed ourselves to the mercy of hundreds of alligators which swarmed in the bed of the river. We reached Cataramas late on the evening of the 21st of July, and bivouacked on a large sandbank in a bend or turning of the river. Here we found a large pile of drift wood, beside which we lighted a fire in order to prepare our coffee. As we were busily engaged in cooking, a few sparks happened to fly in the direction of the pile of drift wood and set it on fire. The night, although dark, was intensely hot, so that the drift wood —which was dry as powder—soon swelled into an immense flame, lighting up the opposite bank of the river, and exposing to view about 20 full-grown alligators, streched out at full length on the sand, and looking on apparently with the utmost unconcern. I never saw anything so fine as the scene presented by this burning pile of drift wood. A large-leaved Ficus lined the banks of the river, from which hung curtains of Passion flowers, Bignonias and Aroids, and these, intermingled here and there with several fine specimens of Palms and Salix Humboldtiana, had a grand and picturesque appearance, exhibited as they were under the red flames of the burning drift wood.

About 1 A.M. we re-entered our canoe and continued our upward course. As we proceeded, the landscape gradually assumed an elevated position, and presented, in the Fern covered banks of the river, a deep layer of blue clay below and a deposit of a sandy character above. The layer of clay was thickly intermixed with the trunks and branches of trees, similar to the bogs or peat mosses of Britain, but the upper deposit contained nothing but the living roots of trees and shrubs, which were bent and twisted in a most remarkable manner, forming a perfect network over the surface of the ground.

About 5 P.M. on the 22d we reached Ventanas, which was in possession of the Quitinian troops under General Flores. On the following day, notice of my arrival was communicated to Mr. Spruce and Dr. Taylor, by an officer who was returning on some emergency to the interior. On the arrival of Dr. Taylor at Ventanas, the cases were again put into canoes and taken about three miles farther up the river, where they were deposited in the house of a person who owned a large plantation of Theobroma Cacao. On the following day Dr. Taylor and myself started for Limon, a distance of about 60 miles. The road, or rather pathway (for there are no roads in Equador) passed over ridge-like hills, and along the edge of steep ravines, the slopes of which were covered with a dense lofty forest. In the ravines, I saw growing many fine specimens of the Grias cauliflora, from 50 to 60 feet in height. On approaching the base of the Cordillera, Ferns become more abundant, and in the deeper ravines they almost entirely cover the trunks and branches of the trees. From the branches hang also long strings of Selaginellas, some of them from 30 to 40 feet in length, which silently swing backward and forward with the currents of air that now and then sweep up and down the ravines.

We reached Limon late on the afternoon of the 27th of July. Here I met Mr. Spruce, who had chosen this place for making collections of seeds and plants of the Cinchona succirubra, or "Red Bark" of commerce. Previous to his arrival at this place, Mr. Spruce had been informed by the Cascarilleros that there were many "beds" of young plants to be found in the forests around Limon, but after Dr. Taylor, accompanied by several men, had searched for a whole month, they had not found a single plant. It was therefore necessary to resort to artificial methods in order to obtain plants of a size suitable for the cases. On the 29th and 30th of July, with the assistance of two Indians, I dug a pit, and prepared a compost, consisting of equal parts of earth, decayed leaves, and sand, for the reception of cuttings. By the 8th of August I had planted upwards of 1000 cuttings. After putting in the cuttings, I found that I had two difficulties to contend with. First, I was compelled to water the cuttings through Bamboos, which from their peculiar construction, spouted forth the water in a very irregular manner, shaking, and sometimes washing out altogether several of the cuttings from their primary position. In the second place, I had no other shade than that afforded by the leaves of a species of Gynerium (G. saccharoides), which became entirely useless after a few days' exposure to the rays of the sun. *Robert Cross, Sierra de Caxanuma, near Loxa, Oct.* 1861.

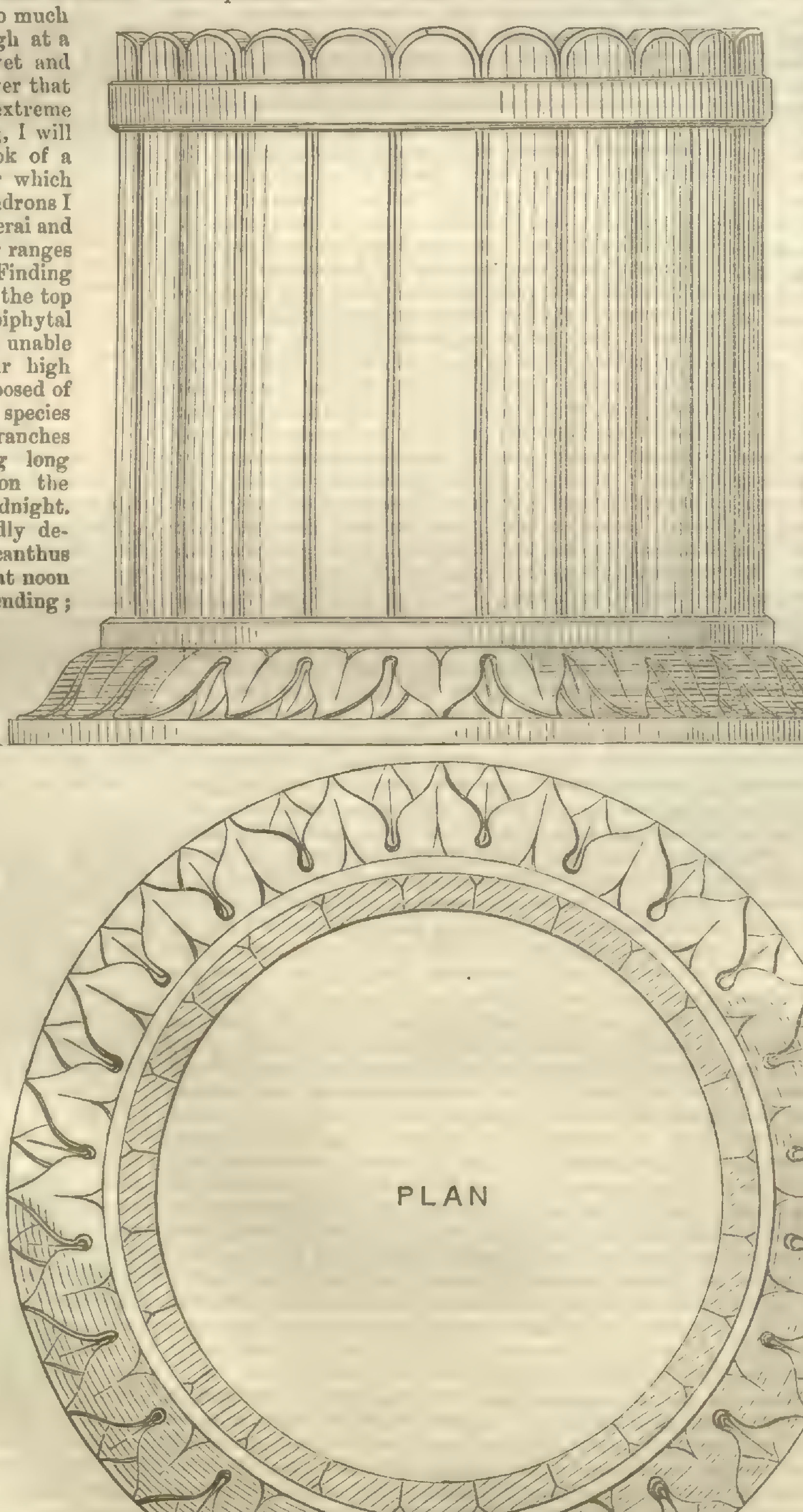
Home Correspondence.

Cause and Effect.—The whole world, more or less, mistakes these two inseparables. I say inseparables, because where there is effect there must be cause; but, while the effect is visible, the cause is not so. Take a few instances of wrongly attributed causation. If a person's head aches people imagine that the cause of it is something in the head, whereas the ache proceeds by sympathy from a disordered stomach. The French, till Arago corrected the error, imagined that the moon (La Lune rousse) in March was baleful to vegetation, whereas the moon has no atmosphere, but is a harmless opaque body, affecting the earth only by tidal attraction. Radiation, which takes place most when the moon is red and the sky cloudless, is the cause of disaster. A south wall, by reason of radiation, suffers most in spring, when the days are hot and the nights are clear and frosty. Nothing therefore but glass, or a sheet that acts the part of a cloud to stop back the heat, is of any avail for things that are tender and suffer from radiation. A south wall is therefore more insidious than an east or north wall, where things remain in a deathlike abeyance till unchecked growth sets in and danger is over. Peach blossom buds have fallen off here even before the trees were nailed, and before it was necessary to cover with sheets. The promise was very great. I was laid up with a rheumatic attack for some time, and on reviewing them when I got better I was amazed to see the mischief done by something. I called my servant, who nails the trees for me, and asked him if he had been "besoming" the trees. "No," said he, "it is those mischievous toads of bullies (bullfinches)." "How many,' said I, "were there—two thousand?" "No; I only saw two." "Did you see them on the trees?" said I. "No." "Then," said I, "why do you accuse them?" "Oh!" said he, "they are mischievous toads; I never knew any good of them yet." Now, my belief is that the causes in my case are the extreme wetness of the ground and the sunless spring weather. Doubtless they would also fall from the opposite cause, viz, extreme drought. As soon as I had made up my mind that the mischief was not done by birds, but by the extremely wet state of the ground, I sent my man for Parkes's fork and pricked up the ground a little. Since then the remaining blooms have done well, and I shall get a sprinkling. But my man sticks to it like a martyr, "It is those mischievous bullies." And clever will be the tutor who will teach him and a thousand others to distinguish between right and wrong causation. Finding that I could not convince him, I said, "You put me in mind of an embarrassed counsel, who, when he does not know what to say abuses the plaintiff's attorney; the bullfinches are the plaintiff's attorneys." "Will" hates the tomtits as much as the bullies. I suppose, he will call them the plaintiff's solicitors. In

both cases, I must, as plaintiff, substitute the word "defendants," as I am plaintiff! I am a hard cropper, and this may have something to do with the fall of bloom buds. The Roses and Strawberries will be very good. The former are budding fast, and the latter are noble plants (I never saw finer), and promise a great crop. The winter has been severe, and the spring has been much worse than last year. *W. F. Radclyffe, Rushton Rectory.*

Sikkim and Bhotan Rhododendrons.—Having read "J. B.'s" remarks on these I venture to make a few observations on the subject. First, then, the majority of these Rhododendrons now in cultivation that have attained any great size must be plants raised from the originally imported seed, and as a rule I find from what little experience I have had in raising seedlings of previously introduced and long acclimatised Rhododendrons that they are generally more vigorous and luxuriant in habit than grafted varieties, and that in a majority of instances they do not flower until they have attained a considerable size and age—in short, have become in some degree stunted. To gain time I have not unfrequently had recourse to grafting, and the grafted plants have flowered some years before the parent so that if this rule be applied to the Sikkim and Bhotan species I may reasonably assume that sufficient time has not elapsed since their introduction to give them a fair trial. Again, these being new and rare species, more than ordinary care and attention have been bestowed upon them, which has no doubt produced a too luxuriant growth, thereby frustrating the object in view. Moreover, although in their native habitat they may be densely shaded and growing in rocky glens, I think we should not give them a similar situation in this country, as the sun is so much more powerful in their latitude, although at a high elevation, than in the alternately wet and cold climate of England. To show however that even in the case of wild plants shade and extreme moisture do not promote their flowering, I will give a short extract from my note book of a botanical excursion into Bhotan, during which journey I obtained most of the Rhododendrons I introduced. We had passed through the Terai and were approaching the foot of the higher ranges of the Himalayas. December 15, 1849.—Finding a good supply of water we encamped on the top of a hill called Fascherong. Observed Epiphytal Rhododendrons and Vacciniums, but was unable to obtain specimens on account of their high position on the trees. Forest chiefly composed of persistent leaved Oak and Chesnut, with a species of Platanus almost leafless; from the branches of the latter more particularly hung long streamers of Usnea. Observed snow on the nearest mountain, thermometer 33° at midnight. December 16.—Started early, road rapidly descending, vegetation tropical. Thyrsacanthus and Begonias abundant. Thermometer at noon 94° Fahr. in shade. Road irregularly ascending; observed Epiphytal Rhododendrons, &c. Continued to ascend; observed Rhododendron Camelliæflorum, R. Edgworthi, and R. Boothii, with abundance of seed and flower buds on them; found many on old decayed and blown down trees on the ground, destitute of seed or flower buds. With great difficulty and delay I obtained seed of these species by climbing such trees as were practicable, and cutting off the boughs on which they were located. Night coming on obliged us to encamp at the foot of the Oola Mountain, atmosphere very close and malarious. December 17. — Started at our usual time; country densely wooded; observed the Rhododendron. I discovered yesterday also large underwood trees of R. argenteum destitute of seed or flower buds. Continued to ascend; came upon a dense thicket of R. Jenkinsi. I was very much disappointed at not being able to discover a single seed pod on these; soil apparently deep decayed vegetable matter. Continued our ascent; mountain less densely wooded; came upon large thickets of R. argenteum, R. latifolium, and R. Jenkinsi; seeds and flower buds abundant. Fine clear day; thermometer 81° at noon in shade. Continued to ascend, passing through large masses of Rhododendrons, with here and there a solitary tree of Pinus longifolia and Oaks. Continued to ascend; discovered R. Falconeri and eximium, growing in the crevices of protruding masses of sandstone rock; soil stiff and clayey; procured seeds and specimens. Attaining a higher elevation found a species of Primula, a Convallaria, and Sedum; at this elevation ice and snow abundant, proceeded on our way with difficulty. The road, a water-worn track, covered with ice or drifts of snow; a solitary gnarled Oak or Pinus struggling for existence. Found here R. campylocarpum, R. Keysii, and R. Hookeri, with leaves coiled up like so many Havannah cigars, and assuming a very winterly appearance. This vegetation, with slight variation, continued to the summit of the mountain; the day was advancing rapidly, and we were compelled to hasten our steps. The descent on the north eastern side was rapid; R. Hookeri, two or three species of Gaultheria, Primulas, &c., grew alongside our pathway; soil stony, and for the most part composed of clay. Proceding downwards we came upon extensive thickets of R. Kendrickii, among which we encamped for the night; this is the coldest night I have experienced since leaving England. Thermometer 7° Fahrenheit. 18th December.—This morning the Coolies were glad to make an early start, for being thinly clad they had passed a miserable night; descending a few miles we came upon an extensive and almost level tract of country, with a tuft of Grass here and there, and a few Gaultherias. The stiff stony soil slightly Moss grown, and this for miles in extent, was studded with the white and crimson R. arboreum, forming one of the gayest and most beautiful sights I ever beheld. The above may tend to show that shade and moisture may produce luxuriance but not flowers. I think if your correspondent "J. B." would treat his plants less tenderly, and give them a more sunny aspect, he would have a much better chance of success. *T. J. Booth, Rainhill Nursery, near Prescot.*

Tubs.—As an *idea* for a tub that suggested last week has much merit. But my friend S.S., a very distinguished artist, has sketched another form or two, one of which is here represented. It is made of wooden (Oak) staves, with an iron band and base, and would certainly be an improvement upon the best of the tubs now in use. In fact, for purposes of decoration, several patterns appear to me to be required. *Jael.*



Gooseberry Caterpillar.—I wrote to you on this subject (see p. 382) on the 20th inst., and I am afraid prematurely. 1. Lime-dust does not kill Gooseberry caterpillar; 2. The insect I am troubled with is not the true caterpillar which infested all the north of France last year, but a small straw-coloured one with square black spots and a red line down each side, spinning a fine web from its mouth to drop from branch to branch. The bush spoken of is the only one infested yet. My gardener painted the stems of all the others with coal tar, and they are as yet quite free and healthy. The wash I spoke of (see p. 382) is good, and being applied with a syringe on Peach trees kills the aphis immediately. There is a most abundant promise of all kinds of fruit here; Peach and Nectarine trees which were not protected only having suffered from the late frosts. *St. Bertin, St. Omer, France, April* 27.

Larch.—I have charge of about 200 acres of wood, chiefly Larch, the age of which ranges from 30 to 50 years. When cut down, about one-fifth shows unmistakable evidence of common rot; in some cases the white thread-like substances only extend a few inches from the ground, some a few feet, and other trees are so affected as to render them quite useless to the carpenter. A railway will shortly be in course of construction in the neighbourhood, when a ready and convenient market may be found, and it struck me that all this Larch should be cut and sold, and its site replanted with more suitable trees, or turned into pasture, or to keep up appearances a new plantation may perhaps be formed in rear of the old one. But, let me ask, will Larch trees in this damp and cold climate form wood as durable as that of Scotch Firs or Spruce? This is a question of importance to us, and a reply to it from some planter of experience would much oblige me. Perhaps I should state that the greater part of the Larch is planted on the north-east slope of a hill, and the hill rising behind into the mountain leaves an almost unlimited tract to plant, so that the nakedness would only remain during a very short period, should the owner decide on planting, and the old wood would form a very much improved pasture. Perhaps I should also observe that in no case could the ground be tilled. *William Jones, Kilboy.*

Embroidered Parterres. — Mr. Nesfield's coloured designs for garden embroidery given in your last week's Paper, cannot fail to do much in the way of introducing this beautiful improvement to public notice. The Royal Horticultural Gardens at South Kensington afford striking evidence of the success of the system of decoration. It is only doing justice however to Mr. John Gribbin, to say that he did the embroidery at South Kensington, and that he has done more of this work under Mr. Nesfield than any other man; a knowledge of this fact may do Mr. Gribbin good, and at the same time enable Fellows of the Society and others to know that they can have similar plans carried out by the man who laid down the plans for Mr. Nesfield in the garden in question. *F.R.H.S., April* 30. [This is quite true.]

Death of the Rev. F. W. Hope. —The Rev. Frederick William Hope, M.A., D.C.L., F.R.S., L.S., &c., a distinguished entomologist and one of the most munificent benefactors of the University of Oxford, has died at the age of 65. He was educated at Christ Church College, graduated B.A. in 1820, took his M.A. degree in 1823, and having in 1849 presented the whole of his entomological collections to the University, received the honorary degree of D.C.L. in 1855 on the occasion of laying the first stone of the new University Museum. He moreover presented his unrivalled entomological library and large collection of original drawings to the University, as well as very large additions to the other departments of the museum. His donations were not, however, confined to natural history, but included one of the largest collections ever formed of engraved portraits and topography (not fewer than 200,000), accompanied by a fine biographical and topographical library; his last donation to the University having been the remarkable series of the works of British essayists formed by his father, amounting to about 1200 volumes. He moreover founded and endowed the Professorship of Zoology, and was the author of numerous memoirs published in the Transactions of the Linnean, Zoological, and Entomological Societies (of the two latter of which he was one of the chief founders), as well as of a work on Coleopterous insects. *W.*

Societies.

ROYAL HORTICULTURAL, *April* 25.—The Bishop of Winchester, V.P., in the Chair. The following candidates were elected, viz.:—

C. J. Allen, Esq.; J. Anderson, Esq.; T. Ashton, Esq.; H. Austin, Esq.; T. H. Baker, Esq.; Miss Bannatyne, E. Barnard, Esq.; W. Bartlett, Esq.; the Marchioness of Bath; Lady H. Beach, E. Benham, Esq.; Mrs. William Bird, Mrs. E. Boggis; W. C. Beadle, Esq.; C. Bowyer, Esq.; J. Brogden, Esq; W. H. Brown, Esq.; Mrs. Browne, Miss Brownrigg, Mrs. J. W. Buckley, Mrs. Burkinyoung, Mrs. Carew; A. Carter, Esq., Mrs. Childers, H. Christy, Esq.; J. F. Christy, Esq.; H. A. Clavering, Esq.; Dowager Lady Clinton, Mrs. Cockerton, Hon. Mrs. C. Cust; Thomas Delarue, Esq.; Mrs. Dickson, Mrs. H. Dixon, Mrs Domville, Hon. Lady Doughty, Mrs. Dowling, Mrs Dryden, Sir James Duke, Bart, M.P.; the Viscountess Dungannon, Mrs. Eden, Mrs. Evans, Miss Fendall; G. S. Fenning, Esq.; Mrs. Fenning, Mrs. Fesser, Mrs. Fitzgerald, Mrs Fitzherbert, Mrs Fletcher, the Viscount Folkestone, Mrs. Fraser, C. T. Gabriel, Esq.; Lady Payne Gallway, A. Garratt, Esq.; F. W. Grafton, Esq.; Lady Grey, W. H. Griffiths, Esq.; E. C. Hampton, Esq.; the Countess of Harrington, F. T. Hay, Esq.; Rev. G. Heathcote, J. M. Heathcote, Esq.; E. Hedge, Esq.; J. G. Hepburn, Esq.; C. Hodgson, Esq.; H. Hollingsworth, Esq.; G. E. Jarvis, Esq; Mrs. Jeula, Mrs. Kay, T. Kibble, Esq.; T. King, Esq.; H. Linson, Esq; W. J. Lancaster, Esq.; Mrs. Lapworth, A. F. Lattey, Esq.; W. Lavie, Esq.; Mrs. Le Conteur, J. Long, Esq.; Mrs. Lowe, Lady Lugard, Mrs. Lye, Mrs. Mackinnon, Hon. Mrs. MacLeod, F. Martin, Esq.; Mrs. Mölling, Mrs. Neal, N. Neal, Esq.; W. A. Oakley, Esq.; Mrs. Ouvry, Mrs. Page, Mrs. Palmer, Rear-Admiral Sir T. Sabine Pasley, Bart.; H. J. Pattison, Esq.; Mrs. Pell, B. Piercy, Esq.; H. Alfred Pitman, Esq.; Captain Pounden, Rothwell Pounsett, Esq.; Mrs. Powell, the Viscount Powerscourt, Mrs. Raphael, J. Rawlings, Esq.; Mrs. Reay, Captain Reddish, J. B. Redman, Esq.; Rev. D. Robinson, N. Robson, Esq.; Mrs. Rougemont, Mrs. Royle, Baroness de Samuel, Mrs. Sandeman, J. K. Saul, Hon. Mrs. Saumarez, A. Schröder, Esq.; W. J. Sharpe, Esq.; Mrs. Sibeth, Miss Marian Smith, J. Somes, M.P.; J. Sprett, Esq.; Miss Stirke, Mrs. Stucké, R. D. Thomson, Esq.; Major Traherne; Miss Tringham, Captain Tyrrell, R.N.; Arthur de Samuel de Vahl, Esq.; Mrs. Vallance, Mr. G. Videon, C. Vine, Esq.; J. Walker, Esq; Mrs. Walls, Mrs. Watson, Mr. R. Webb, Lady Vaughan Williams, Miss Wilson, Miss Woodburn, Mrs. Woodroffe, Mrs. Wylde, W. Young, Esq.

ROYAL BOTANIC: *April* 30.—Roses, both in pots and in a cut state, were furnished on this occasion by Messrs. Paul & Son, Mr. William Paul and Mr. Cross, of Regent's Park; Mr. Williams, of Holloway; Mr. Hutt, gr. to Miss Burdett Coutts, Mr. Young, gr. to R. Barclay, Esq., and one or two others contributed groups of Ferns and Lycopods, and there were also exhibited various collections of Pelargoniums, Rhododendrons, and miscellaneous plants. From Messrs. Veitch came Adiantum chilense, a handsome Fern, with gracefully drooping triangular tripinnate fronds, about a foot in length; A. sulphureum, the Golden Maiden-hair, a very handsome dwarf tufted Chilian Fern, 8 or 10 inches high, with tripinnate fronds, clothed beneath with yellow powder, the pinnules small, roundish, and conspicuously notched at the edge; also A. scabrum, the Silver Maiden-hair, a dwarf bipinnate Chilian species, with the large roundish pinnules clothed with white powder. The same nurserymen likewise contributed Ardisia leptophylla, an elegant stove shrub, with digitate leaves formed of several long slender linear-lanceolate leaflets. Mr. Standish, Bagshot, had Lomaria elongata, a noble-habited New Zealand Fern, stated to be hardy; also Asplenium dissimile, from Chatham Island, a handsome-looking, much divided, and rigidly coriaceous Fern, of which the fronds are oblong, tripinnate, with bilobed narrow wedge-shaped or simple linear segments; the sterile fronds, with toothed segments, having a very distinct character. From Mr. Turner, Slough, came Pelargonium (Zonale) Nesfield, a dwarf compact-habited and sturdy variety, with well marked moderate-sized horse-shoe foliage, and tall stout trusses of large bright scarlet flowers, freely produced. Messrs. Ivery of Dorking showed Azalea Rideman, a very promising semi-double sort, with firm smooth white flowers of good form, sparingly striped with bright carmine, and in several instances showing a double row of broad flat smooth segments. Mr. Barnes, Camberwell, had Azalea Colossus, a large and showy variety of a salmony rose with a compact cluster of deep red spots on the upper segment. From Mr. Williams, Holloway, came Yucca concava, a fine distinct hardy species, with broad wavy red edged glaucous leaves. Mr. Bull, Chelsea, furnished Dracæna fragrans latifolia, an erect-growing plant with broad handsomely recurved leaves, and a branched terminal panicle of numerous clustered pale greenish flowers. A Pink named Rubens came from Mr. Turner; it was stated to be a new dwarf forcing variety, likely to be useful for general cultivation, apparently a cross between the old white and Anna Boleyn, having the free blooming dwarf habit of the former, and very sweet blush coloured flowers, blotched and irregularly laced with deep crimson. Other subjects consisted of Tacca cristata, a singular looking plant from Messrs. Veitch; from Mr. Bull came Clematis atro-purpurea, with narrow-sepaled pale violet flowers in the way of C. azurea; Azalea Etendard de Flandres, a white sort with red stripes of two shades of colour; Azalea Hortense Vervaene, with distant red flakes on a pale flesh-coloured ground, and with purple spots on the upper segment; Petunia Captivation, rose purple with white edge; P. Admiration, rose with light throat, and Drosera Whittakerii, a pretty little curiosity associating with the Fly-trap and Cephalotus, and forming little rosulate tufts of spathulate leaves fringed with red-tipped hair. Azalea elegantissima, a white of average properties, occasionally striped with salmon red; A. Fascination, an indifferent-shaped white, much marked with narrow unequal bars of carmine red—came from Mr. Williams, Holloway. Blechnum Spicant diversifrons, and B. Spicant subserratum, two interesting varieties of Hardy Ferns, but not sufficiently developed, were furnished by Messrs. Ivery. Sphærostema marmoratum, Adelaster albivenius, Cobœa scandens variegata, and Callipteris malabarica, came from Mr. Hutt. Pelargonium St. Clair, a promising rich crimson seedling, with a black spot on each petal, and a bluish tint towards the centre, was contributed by Mr. Turner, who also showed—Cinerarias: Eldine the Fair, a large heavily rose-tipped sort, with dark disk and white base; Miss Franklin, white, with rosy tips and dark disk; King of Purples, a deep rosy violet, with dark disk; and The Winner, a lively Magenta rose, with grayish eye; the two latter especially being of rather more than average merit.

Notices of Books.

The Student's Manual of Geology. By J. Beete Jukes, F.R.S. A. & C. Black. Second Edition

Mr. Jukes is well known in the scientific world as an indefatigable geological explorer, a successful teacher, and the accomplished scientific companion of Captain Blackwood, R.N., in his surveying voyage of the North-east shores of Australia, Torres Straits, and New Guinea. In the latter capacity he acquired a fund of information relating to the physical features of the globe, and witnessed many of those strifes of earth, air, and ocean, from which after years of conflict, result the grandest phenomena that geology has revealed to us. As in the works of his early master, Sir Henry de la Beche, and of his often quoted and all but venerated brother labourer, Darwin, so we find in Mr. Jukes's writings the evidence of his having served an apprenticeship to science in the torrid zone, and a higher realisation of the irresistible might of existing causes as intensified in equatorial regions, than we are accustomed to find in the works of geologists who know by books alone the effects of the tornado, the earthquake, the bore, and the coral insect. From all these reasons, no less than from his well-known solidity of understanding, we were led to expect a work of more than ordinary originality and merit from Mr. Jukes, nor have we been disappointed: that our expectations were well founded, is, indeed, proved by the present being the second edition which has appeared of the "Student's Manual."

On the other hand, we cannot suppress our conviction that all so-called introductions to geology, or elements of that science, are and must be essentially disappointing. Geology is not a science in the same sense that chemistry, botany, and zoology are sciences; it is, in the words of Mr. Jukes, "not so much one science, as the application of all the physical sciences to the examination and description of the structure of the earth, the investigation of the processes concerned in the production of that structure, and the history of their action."

An introduction to geology, therefore, is primarily a more or less unsatisfactory attempt to convey such rule of thumb knowledge of every such science (without stopping to acquire the principles of any) as may explain geological phenomena as they present themselves to an inquiring mind. Hence geology is a science whose principles may be expounded in a philosophical manner, but whose elements are rooted in an exact knowledge of many branches of physical and biological science. At the same time, Mr. Jukes is right in saying that "The reader must not infer from what has been said, that in order to be a geologist, he must be thoroughly acquainted with the whole circle of the physical and natural sciences. Such universal acquirement few men have the power to attain to, and of these still fewer retain the ability and the will to make original advances in any particular branch. No man, however, can be a thorough geologist without being acquainted, to some extent, with the general results of other sciences, and being able both to understand them when stated in plain untechnical language, and to appreciate their application to his own researches. Such a general acquaintance involves neither profound study, nor requires any great power of mind above the average of human intellect. It is, indeed, what every well-educated man ought to possess."

With the view of assisting the student to acquire a sufficient knowledge of these, Mr. Jukes has accordingly given short summaries of chemistry, crystallography, botany, &c., which, though too brief to be of any real use in instruction, will be useful as serving to keep clearly before the student the main facts in each science which he requires to aid him in his geological studies.

The volume embodies all the latest information in the various departments of geology, and it has the merit of being methodically arranged and copiously indexed. Beginning with rocks, their composition, classification, &c., are first described; these are followed by rock-beds, disturbances of the earth's crust, faults, cleavage, denudation, mining, &c. The second part is devoted to Palæontology; and the third is entitled "History of the Formation of the Crust of the Earth," under which name are described the various geological "periods," from the Palæozoic to the recent or rather present period. In such a very comprehensive volume, it is difficult to choose any part for extraction; but perhaps the following remarks on the practical importance of fossils may prove of interest.

"Coal is usually associated with black and gray shales in the carboniferous formation, and the same association occurs in other formations, where the coal is too impure or in too small quantity to be valuable. Black and gray shales also occur in parts of the carboniferous series, where there is no coal, and in other formations entirely devoid of coal. The coal miner being always accustomed to see coal associated with black and gray shale, and not having had occasion, like the geologist, to see black and gray shales in other formations, naturally looks upon the occurrence of the black and gray shale as indicative of the presence of coal. The geologist, having a wider experience, knows that all 'indications' are worthless as evidence of the presence of the 'carboniferous formation,' except the occurrence of the 'carboniferous fossils.' Within my own experience large sums of money have been absolutely thrown away, which the slightest acquaintance with palæontology would have saved. I have known, even in the rich coal district of South Staffordshire, shafts continued down below the coal measures deep into the Silurian shales, with crowds of fossils brought up in every bucket, and the sinker still expecting to find coals in beds below those Silurian fossils. I have known deep and expensive shafts sunk in beds too far above the coal measures for their ever being reached, and similar expensive shafts sunk in black shales and slates in the lower rocks far below the coal measures, where a pit might be sunk to the centre of the earth without ever meeting with coal. Nor are these fruitless enterprises a thing of the past. They are still going on in spite of the silent warnings of the fossils in the rocks around, and in spite of the loudly expressed warnings of the geologists who understand them, but who are supposed still to be vain theorists, and not to know so much as the practical man."

Mr. Jukes indicates throughout his book the sources whence he has obtained his facts, and at the same time refers his readers to those authors who have treated at large upon the subjects on which he has only touched, thus adding doubly to the value of his information.

Garden Memoranda.

SHARDELOES PARK, AMERSHAM, BUCKS, THE SEAT OF T. T. DRAKE, ESQ.—This fine place is by no means so well known as it deserves to be; for in the opinion of many it is one of the most unique specimens of a perfect English residence which we possess. It is situated in the county of Bucks, close to Amersham, about 26 miles from London, in a country beautifully varied by chalk hills, topped with imposing masses of playfully undulated Beech woods, the effect of which is charming. It possesses also another great attraction—the whole of its present arrangement is due to the great Repton, and it certainly is one of his grandest works. With regard to the antiquity of the place, perhaps we may quote the following from Lipscombe's History and Antiquities of the county of Buckingham:—"This hamlet, though not separately surveyed at the time of the Conquest, seems from an early period to have been a possession of considerable importance.

"Early in the reign of Edward III., that monarch granted to William de Latymer one messuage and one caracate of land, with their appurtenances, called Shardiloes, in Aymendesham (now called Amersham), which formerly belonged to Simon de Bereford, then lately among the King's enemies; to hold till the end of 12 years, paying 100*s.* annual rent.

"In the time of Queen Elizabeth the family of the Tothills had acquired from the Cheynes the manor of Shardiloes. Wm. Tothill, Esq., who was one of the 6 Clerks in Chancery, and married Catharine, daughter of Sir Jno. Denham, Knt., appears to have resided at Shardiloes. They had the extraordinary number of 33 children; Joanne, the eldest daughter and coheiress, was married to Francis Drake, Esq., of Esher, in Surrey, a gentleman of the Privy Chamber to James I.

"Sir Wm. Drake, M.P. for Amersham from 1661 to 1688, grandson of Joanne Tothill, married Elizabeth, second daughter and heiress of Sir William Montague, Knt. Lord Chief Baron of the Exchequer, who succeeded him, and was married secondly to Samuel Trotman, Esq., of Siston, in the County of Gloucester.

"This Sir Wm. Drake who had acquired by purchase the manor of Aymondesham, thus united it to Shardiloes, and became not only a constant resident there, but was a great benefactor to the town, in which he built the market house, placing there his arms. He died in 1590, and his descendants have ever since been in possession of the estates here."

The house is a neat modern building, situated on a lofty eminence near the road leading from Aylesbury to London, and about a mile from Amersham. The slope to the water from the north front of the house, which is ornamented by fluted Corinthian columns, is remarkably fine. The house is approached by a gentle ascent, leading to the entrance hall, which is 30 feet square, the principal apartments being of proportionate dimensions.

Having passed up the approach road we arrive at a level platform on the top of a hill, from whence the view is unsurpassed in beauty, and where such palaces

as Blenheim or Stowe might have been placed with great propriety. Such buildings with such scenery would have formed a perfect whole; but alas! it was not to be, so letting the house pass, one can only feel lost in admiration of the splendid scenes created by the genius of Repton.

Repton speaks thus of the character and situation of Shardeloes. "Shardeloes," he says, "has been very aptly described by a gentleman of the most correct taste (the Right Hon. William Burke), when he called it 'a perfect specimen of an elegant English residence,' and if we consider it only from the high road, which is the point of view from which strangers form their judgment, it appears perfectly beautiful and free from every defect, but upon nearer examination it will be found that the high road, which is the part from whence the reputation of Shardeloes has been deservedly established, is one of the chief defects of the place, considered as a whole—because it forms a line of separation between the two parts of the Park, which ought to be united in reality, as well as in appearance. This separation is the more striking, as another line of disunion is made by the water, which obliges us to pass round one of its extremities, and even to quit the park before we can arrive at the scenery which displays its allurements in front of the house. These two defects would easily be remedied—the first by giving a communication under the turnpike road, the other by a bridge, or rather a dam to appear like a bridge, which would give a new character to the water if judiciously managed, and connect the house with an object which ought never to be too distant from it, since one of the greatest comforts of a country residence is a spacious and well sheltered kitchen garden."

For this comfort Shardeloes is particularly distinguished. At no place in this country is there a finer kitchen garden, or a more productive one; it is managed in an economical manner, and has no pretensions to high keeping, but weeds are not allowed to luxuriate. It is our intention in a continuation of this paper to devote a portion of it to the cultural particulars here exemplified. But we must first strive to do something like justice to the domain.

We have already dilated upon the two greatest faults in the place, the smallness of the house and the division of the Park by the turnpike road. But with these exceptions it is perfectly unique. Situated on a lofty chalk hill the view from the house is most lovely. Looking down a steep slope of the most beautiful turf, on which are groups of scattered trees, one sees the lake, and beyond it are occasional glimpses of distances of green turf, which are seen over the tops of and between the trees, and extend to the top of some boldly outlined and distant chalk hills, covered with Beech woods. Great attention has been paid to the outlines of these woods, which abound in variety and intricacy, much assisted by the ever varying ground.

The timber consists principally of Beech, although there are some respectable Oaks and Elms, and we noticed some fine old Lime trees. Every advantage has been taken of the place, and the grouping is really and truly beautiful. It is certainly a proud monument to the memory of the late talented Mr. Repton. *H. B., C.M.H.S., Amersham.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Azaleas, as they go out of bloom, should have their seed vessels picked off, and those that require more pot room should be shifted at once. Some recommend mixing a portion of loam in soil intended for these; but strong rich fibry peat, with plenty of silver sand, forms the best compost for them. After potting every plant should be neatly staked and tied before taking it out of the potting shed, for besides this being better done at once it will not occupy half the time it would do if deferred until the plants have made their growth. These beautiful plants are exceedingly subject to thrips, and unless a sharp war is carried on with these pests immediately they make their appearance it will be difficult to subdue them. To avoid the nuisance of having to fumigate houses or pits, have a light frame of a convenient size covered with oiled calico in which to smoke the plants. This may be placed over the infested plants in any of the houses or on a bed of coal-ashes out of doors and filled with tobacco smoke by means of a fumigator, and allowed to remain for a few hours. If the calico is properly put upon the frame so as not to allow any smoke to escape, every insect to which tobacco smoke is inimical will be destroyed. This simple and cheap contrivance is both serviceable and economical, as very little tobacco serves when the smoke cannot escape, and it is a great comfort to be able to smoke plants without being obliged to inhale disagreeable fumes. Go over the conservatory frequently to regulate growth and to see that the borders are kept moist, giving a thorough soaking when necessary, for mere surface waterings will not reach the roots, and although useful in keeping the atmosphere moist will not serve to maintain the plants in vigour after this season. Now is a good time to weed out all extraneous or fading plants from both this and other plant structures: better destroy inferior stock than suffocate the good. Where a system of high cultivation is carried out crowding will assuredly defeat the end in view. Have an eye to the propagation of stock for succession or winter flowering in due time. Take care to secure cuttings of such plants as Brugmansias, Clerodendrons, Erythrinas, Poinsettias, Eranthemums, and of those useful winter flowering plants Euphorbia jacquiniflora and Gesnera bulbosa. As regards Orchids, those who have only one house to grow their whole stock in must make a compromise in point of temperature between those which are natives of hot moist countries and those which come from cooler regions. To accomplish this a free circulation of air should be kept up during the earlier part of the day and even a little at night if possible, accompanied with a great amount of atmospheric moisture, and to accommodate with as little sacrifice as possible such as Aerides, Saccolabiums, Dendrobiums, &c., a considerable amount of heat should be shut up very early in the afternoon. Centradenias now exhausted with flowering should be shaken out of their pots and repotted. Fibrous loam, fibrous heath soil with charcoal and coarse sand make an excellent compost for them. Make cuttings of them as soon as nice young wood can be obtained. See that all tender annuals have timely attention in regard to shifting, pricking out, liquid manure, &c.

FORCING DEPARTMENT.

Pineries.—As has been previously stated, the only effectual method of securing a supply of fruit at any particular time is foresight in the management of the stock, taking care to get the growth well matured in sufficient time to allow of affording the plants a short period of comparative rest, which is the only certain means of inducing them to fruit at any desired season. With plenty of convenience this is easily enough managed, but where the accommodation is limited, it is by far the most difficult part of the culture of the Pine. And in cases where a regular supply of fruit has to be furnished from limited accommodation, it is safer to grow the plants in pots, so as to secure perfect command over the roots, and also be able to move the plants to a cooler pit or otherwise, as may be necessary. Black Jamaicas and Cayennes are the best varieties for winter fruiting, and the stock of these should receive every attention at this season as to induce them to make free growth, and a portion of them should be shifted into their fruiting pots as soon as possible. Use every means to afford growing stock a moist atmosphere, which in the present state of the weather is a work that requires much attention, but must be done if the plants are to be kept in first-rate condition. Give air freely, but avoid draughts of cold drying air, and use shading to assist in keeping down the temperature without being under the necessity of admitting cold drying air too freely.

Vineries.—Where Muscats are grown in the same house with Hamburgs the temperature must be kept sufficiently high during bloom, and until the berries are fairly set to suit the Muscats; for a crop of these cannot be depended upon from the most healthy Vines, unless they can be afforded a brisk temperature while in bloom and setting their fruit. It will be better, however, to risk having the Muscat bunches somewhat thin than to injure other varieties by maintaining a night temperature; 68° or 70° will be found quite sufficient. Get the borders prepared for planting out young Vines, and if these are started into growth before planting do not keep them too warm, or it will be difficult to prevent their sustaining a check after planting out. See that Vines in pots or boxes are well supplied with manure-water at the root.

Figs.—Attend to stopping and thinning the shoots, and aim at securing short-jointed strong growth by exposing the young wood to all the light possible. This will of course necessitate keeping the trees rather thin, but it is useless hoping for a crop of good fruit from trees that are crowded with wood. Keep the atmosphere moist, and give the foliage a good washing with a syringe after shutting up the house in the afternoon.

Melons.—Maintain a rather close, moist, warm temperature to plants recently planted out until they get into full growth, but avoid inducing a gross habit of growth by too much moisture and warmth after the roots fairly get hold of the soil.

Cucumbers.—Encourage newly put out plants with a moist warm atmosphere, so as to get them into active growth quickly; but plants that are fairly established should be kept cooler, admitting air on every favourable opportunity, in order to secure short-jointed fruitful wood; all draughts must however be avoided.

Strawberries.—Give abundance of air on every favourable opportunity, and let late crops be carefully attended to with water.

FLOWER GARDEN AND SHRUBBERIES.

Now that we have weather favourable for most operations in these departments, ample employment will be afforded for all the strength which in most cases can be concentrated upon them. Hardy annuals must be sown at once, covering them lightly with fine soil. Stocks, Pentstemons, Antirrhinums, Hollyhocks, &c., that have been properly hardened off should be planted where they are to bloom, as also any remaining stock of biennials and perennials. The planting of tender Roses should not be longer delayed, and those previously planted must be examined, replacing those that appear to be much injured by the weather. Get bedding plants hardened off as expeditiously as possible, but in removing them from pits and frames place them where they can be covered at night in case of necessity, and also take care that they are not injured by too sudden exposure to bright sunshine.

HARDY FRUIT AND KITCHEN GARDEN.

Recently transplanted trees and shrubs must be carefully attended to. While the ground is dry get manure wheeled upon quarters where it will soon be wanted, and see that there is a good supply being prepared for the Celery crop; for without plenty of old rich manure large crisp Celery can hardly be obtained. Get spring-raised Cauliflowers and Lettuce planted out, if not yet done, selecting for them a sheltered situation and light rich soil. A few branches of evergreens stuck amongst such things after planting, so as to screen them from the sun, is a great protection, and prevents their being dried up until the roots get hold of the ground. A sloping bank should now be prepared, and planted with runners of Alpine Strawberry for fruiting in September and October; plant three in a patch in the form of a triangle, 15 inches apart. The ground between should be covered with slates when the plants have become established. Take care to thoroughly clean all Strawberry plantations before the runners have made much progress. Continue to disbud Peach and Nectarine trees as soon as the young shoots will admit of it, and look sharply after insects, which must now be carefully kept in check. Thin suckers from Raspberries, leaving four or five to each stool.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending April 30, 1862, as observed at the Horticultural Gardens.

April.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind	Rain.
Thurs. 24	25	29.995	29.864	69	37	53.0	51	48	S.	[illegible]
Friday 25	26	29.862	29.834	76	43	59.5	51	48½	S.W.	[illegible]
Satur 26	27	29.871	29.846	67	35	51.0	52	49	S.W.	[illegible]
Sunday 27	28	30.026	30.015	70	31	50.5	55	49	W.	[illegible]
Mon. 28	●	30.124	30.017	74	32	53.0	53	50	W.	[illegible]
Tues. 29	1	30.247	30.027	69	34	51.5	54	51	E.	[illegible]
Wed. 30	2	30.085	29.924	74	43	58.5	54	51	S.E.	[illegible]
Average		30.030	29.392	71.3	36.4	53.8	52.8	49.5		[illegible]

April 24—Fine; very fine; rain at night.
— 25—Rain; thunder 9—10 A.M.; cloudy, sultry at intervals; very fine.
— 26—Rain; cloudy; very fine; rain at night.
— 27—Very fine throughout; slight frost at night.
— 28—Very fine, with dry air; cool at night.
— 29—Fine; dry haze; fine throughout.
— 30—Fine; with slight dry haze; very fine.
Mean temperature of the week 5½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending May 10, 1862.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 4	61.7	37.9	49.8	12	0.70 in.	6	10	8	–	5	4	2	1
Mon. 5	61.8	38.8	50.3	19	1.26	5	11	4	3	7	4	1	1
Tues. 6	60.41	38.6	49.5	13	0.68	–	11	5	4	4	6	4	2
Wed. 7	61.41	40.2	50.9	15	0.39	4	6	6	2	5	6	3	2
Thurs. 8	61.22	39.2	50.2	15	0.62	2	6	7	–	6	5	6	4
Friday 9	61.55	39.6	50.5	14	0.60	3	9	7	1	4	10	2	–
Satur. 10	61.83	40.0	50.9	15	0.33	4	6	8	1	2	8	4	3

The highest temperature during the above period occurred on the 4th, 1833, and 6th, 1830—therm. 81 deg.; and the lowest on the 8th, 1855—therm. 21 deg.

Notices to Correspondents.

Books: We understand that a fine copy of Sowerby's 'English Botany,' in 36 vols, *bound* and *fully coloured*, may be had for 18*l*., upon application to *J E S*, 1, Nelson Cottages, Turnham Green, W. Those who can afford such a purchase will do well to take advantage of this opportunity.

Cannes: *Dn.* The papers you mention have never reached us. An engraving of the scissors will appear soon. The Governor of the Cape Colony can send you Proteas and such things, and any of the Australian Governors can furnish Banksias, &c.

Cherries: *An Amateur.* No doubt the beetle is the common grey Curculio, which feeds by night. Draw the twigs gently through your hand soon after dark; the beetles will remain in the palm, whence pop them into cold water until you have time to exchange it for boiling. A wide mouthed bottle is the usual recipient. *Or* you may spread a white cloth under the trees, then shake them down, and sweep them into cold water, to be afterwards exchanged for boiling. Gishurst Compound cannot possibly have any effect upon these hard-shelled insects.

Convolvulus Cantabrica: *Greenhorn.* This is the proper way of writing the name, as we have before stated. We decline opening our columns to a discussion between ignorant people as to whether the sun's light illuminates or obscures, or whether there ever was such a personage as King George the First.

Heating: *V.* Hotwater pipes, beyond all question.

Melons: *Ballybrack.* If we understand your question rightly, you have two pipes for bottom-heat and two for top heat. The latter should not be covered over with anything; on the contrary they should stand as clear as possible of all other arrangements, in order that the heat given off by them may pass at once into the atmosphere of your house. The two for bottom heat may occupy a hollow chamber closed in with slate, which will form a bottom for your bed; the soil for the latter should be rich turfy loam, put in at first in the form of hillocks, about 18 inches or 2 feet deep, one under each sash; plant on the top of these, and as the Melons grow fill up between the hillocks with more soil until you have made the surface of the bed level. If you have no slates, then you may bury your pipes about 6 inches deep in rough gravel; over that lay turves with the Grassy sides downwards, and on these make your bed as has just been directed. Wood bottoming is bad, inasmuch as it is apt to encourage the growth of Fungi.‡

Names of Plants: *S H.* Tasmania aromatica and Leucopogon pimeleoides.—*W G.* As far as we can judge from a single flower it is Cyrtanthus obliquus.

Rust in Grapes: *Vitis.* This disease prevents the growth of the skin and causes the berries to burst. It arises from many causes: as for instance cold currents of air, handling, or contact with the greased hair of the head. As you say yours became affected immediately after the first thinning, we imagine that either handling or rubbing with the hair has done the mischief.‡

YELLOW and RED GLOBE MANGELS from selected and transplanted Bulbs; nett growth 1861, 32s. per cwt (Bags included).
ALTRINGHAM CARROT, 2s per lb., 10l. per cwt.
Trade price on application.
CHRISTMAS QUINCEY, Seedsman, Peterborough.

Swede Turnips, &c.

HENRY BROWN'S DWARF-TOP BRONZE SWEDE is the best in cultivation. May be grown 20 to 26 lbs, is very solid and hardy, per lb. 1s.; also MANGELS, 6d. to 8d. per lb.

His PRICED DESCRIPTIVE LISTS of Farm, Garden, and Flower Seeds, can be had post free on application.
HENRY BROWN, Seedsman, 4, Commutation Row, Liverpool.

SMITH'S WORCESTERSHIRE SWEDE, the handsomest, most profitable, and best in cultivation, 1s. per lb.
SKIRVING'S IMPROVED SWEDE, saved from selected roots, 8d. per lb.
ORANGE GLOBE MANGEL WURZEL, the best for all kinds of soil, a very superior stock, 8d. per lb.
All other kinds of SWEDE and MANGEL, 8d. per lb. Cheaper by the bushel or cwt.
RICHARD SMITH, Seed Merchant, Worcester.

Matchless Swede.

JOHN KEYNES has again secured a fine Stock of this splendid TURNIP, which for hardiness, beauty, quality, and crop, cannot be surpassed. The advantage of sowing from Seed grown in the Lothians, pure and unadulterated, has been appreciated by all who have favoured J. Keynes with their confidence. Two pounds of pure Turnip Seed will go as far as three that has been mixed with Old Seeds. The price of this matchless Purple-top East Lothian Swede, superseding all others, is 9d. per lb.

J. KEYNES, in answer to many inquiries, begs to state he will not be undersold by any party, for any description of Turnip or Mangel, the selection of which is of unquestionable superiority.

Salisbury.—May 3.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

Farm Seeds, Carriage Free.

HOGG AND WOOD, Coldstream, SEEDSMEN by appointment to the Northumberland Agricultural Society, can supply all Seeds requisite for the Farm; including CLOVERS, ITALIAN and PERENNIAL RYE-GRASS, GRASS SEEDS for laying down to permanent pasture, TURNIPS, and MANGEL WURZEL, &c, the whole of which are either grown by themselves or carefully selected from the best samples in the market.

Early Orders are respectfully solicited.

Coldstream, N.B.—May 3.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,
And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe. Also to their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which for want of space there, is erected at the Crystal Palace, Sydenham.
Royal Berkshire Seed Establishment, Reading.

MONEY to LEND to Farmers of responsibility, upon personal securities, stock, &c., in sums from 200l. to 1000l., for long or short periods, from 5 per cent.
Apply by letter to Mr. GOODALL, 12, Beaufort Buildings, Strand, London, W.C.

ROYAL INSTITUTION of GREAT BRITAIN, Albemarle Street.—Professor S. ANDERSON, F.R.S.E., will COMMENCE a COURSE of SEVEN LECTURES on AGRICULTURAL CHEMISTRY THIS DAY at 3 o'clock, to be continued on SATURDAYS until June 14.
H. BENCE JONES, Hon. Sec.

SUTTON'S
YELLOW GLOBE MANGEL WURZEL.
The heaviest and best sort known, price 8d. per lb., or 63s. per cwt.
ORANGE GLOBE and all other sorts 8d. per lb.
Also SUTTON'S CHAMPION SWEDE and other TURNIP SEEDS at moderate prices.
PRICED LISTS of FARM SEEDS Post Free.
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

FARM SEEDS, at fair Market Prices.

PAGE & TOOGOOD

Having had the honour of supplying the ROYAL FARMS at OSBORNE for the last eight or ten years, the GOVERNMENT REFORMATORY, PARKHURST, and many of the principal Agriculturists in the kingdom, will be sufficient guarantee that their SEEDS are of SUPERIOR QUALITY, and their prices are as low—or lower—than any respectable house in the Trade.

At the Botley Club, the Prize for the best Ten Acres Swedes was awarded
PAGE'S IMPROVED (grown by John Crosskey, Esq.)
Heaviest weight of Mangel, per acre, 61 tons 2 cwt.
PAGE'S IMPROVED ORANGE GLOBE (grown by Stewart Macnaghten, Esq.).
Mangel, sown July 7, Weight and Shape,
PAGE'S IMPROVED RED GLOBE (grown by W. Warner, Esq.).
Mangel, 50 tons per acre,
PAGE'S IMPERIAL ORANGE GLOBE (grown by W. Dickinson, Esq.).
Carrots, 35 tons per acre,
PAGE'S IMPORTED WHITE BELGIAN (grown by R. Trench, Esq.)
Six Prize Swedes, for heaviest Weight,
PAGE'S IMPROVED (grown by W. C. Humphries, Esq.)

Vales of Avon and Stour (Farmers' Club).
Vales of Avon, Prize for best 5 acres Mangel.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Salway)
Second best.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. H. Bone).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Baker).
Best 2 acres ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Jas. Salway).
Second ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by General Robertson).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Bone).

PRESENT PRICES (Rail Carriage Free to all parts of England):—

Per lb.	s.	d.	Per lb.	s.	d.	Per lb.	s.	d.
SKIRVING'S SWEDE	0	8	SCOTCH o' BULLOCK	0	8	NEW OSBORNE MANGEL.		
PAGE'S IMPROVED HARDY	1	0	POMERANIAN WHITE GLOBE	0	8	YELLOW GLOBE	0	6
FIELDER'S do WHITE	0	9	EARLY GREEN GLOBE	0	8	PAGE'S IMPERIAL ORANGE GLOBE*	0	8
SUTTON'S CHAMPION	1	0	" WHITE TANKARD	0	8	RED GLOBE	0	7
ASHCROFT	0	9	PAGE'S IMPROVED PURPLE do.	1	0	ELVETHAM LONG RED	0	8
GREENTOP	0	8	GREEN ditto	0	8	LONG RED	0	6
SUSSEX or JEFFERY'S TANKARD	0	9	YELLOW TANKARD	0	9	LONG YELLOW	0	8
RED ROUND TURNIP	0	9	FIELDER'S HARDY GREEN ROUND	0	6	WHITE BELGIAN CARROT	1	3
PAGE'S IMPROVED RED GLOBE	0	8	EARLY SIX WEEKS	0	6	CATTLE CABBAGE	2	6
	0	9	KOHL RABI	3	6	CATTLE PARSNIP	1	0
						DWARF ESSEX RAPE	0	4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club, and yielded 61 tons 2 cwt. per acre.

NEW ALSIKE CLOVER, 1s. 3d. per lb.; BUCKWHEAT, MUSTARD, LINSEED, TARES, and SAINFOIN. Fine PERMANENT PASTURE GRASS, ITALIAN RYE GRASS, CLOVER, &c., at lowest Market Prices.

Special Contracts for Large Quantities.

OXFORD STREET AND ABOVE BAR, SOUTHAMPTON.

The Agricultural Gazette.

SATURDAY, MAY 3, 1862.

AN account of the ceremonial by which the International Palace of Art and Industry was on May-day opened to the public will be found in other columns.

Besides their share in the general sentiment of the day and of the multitude, which found expression in the Prayer and Praise then offered up, agriculturists have a stand-point all their own whence the spectacle was witnessed, and all those grand utterances heard which so intensified its beauty and effect.

"The world-compelling plan"

here so wondrously developed originated with the first of English Agriculturists, for so we may fitly designate—and this year more properly than ever previously—the PRINCE from whom the idea of an International Exhibition sprang. And none could feel more sincerely than his brother agriculturists, how the rejoicing of this bright day was, as the Prayer expressed it, tempered with the grievous sorrow of His absence and our loss.

But, turn from their origin to the glorious results of those great efforts whose fruits are here spread out:—The treasures here collected and dedicated to GOD'S service are essentially products of the world's Agriculture. Like Man himself, in his material nature, all are of those "hidden stores which the surface of the earth has brought forth abundantly:" and everywhere, as matchless Poetry and Music uttered it, is either

"Harvest tool or Husbandry."

A more literal interpretation of the place held by agriculturists, and especially by British agriculturists, in this great gathering and show, scarcely if at all detracts from the pre-eminence of their position. Although badly housed, the department of agricultural machinery, of which detailed reports will from time to time appear in our columns, is perfectly satisfactory. Certainly there is no section of the show in which the English exhibitors are more clearly in advance of all Foreign competition; nor are any of the classes more manifestly led by their respective maxima than in those of agricultural products and agricultural machinery. There is a wider interval between the leaders and the "ruck" in the race of competition here than in any other section; and in both it is the English exhibitor who wins. Mr. HALLETT'S "Pedigree Wheat" may be named as the easy winner in the former class, and a large number of well-known English names come in abreast as winners on the latter course. In both these instances foreign competition is comparatively insignificant. To this, however, as well as to our own exhibitors, we hope to do completer justice hereafter.

"WHAT shall be done with the juveniles? Where can our comely Olive-branches be planted out, to root, and bud, and blossom on their own account?" This inquiry, perplexing to Paterfamilias, is no less problematical to the political economist. When the census returns crept out, how the local newspapers of agricultural counties framed apologies for the non-increase or actual diminution of their market-towns! And how must that "country party," the plodding little farmer, feel staggered at the thought that his parish cannot feed its young families when grown up! And what a serious fact it is that stern necessity is driving out of our rural districts the reared produce of the nursery, as well as taking off

continual droves of food-consuming beings from the field and stall.

But have we really attained to the maximum possible agricultural population? Can no means be found to accommodate in villages and employ on England's broad acres at least a portion of the surplus people who are now compelled either to emigrate into cities full of steam-engines and handicraft, or to take flight in large flocks for distant climes—unlike the swallows, never to return? Well, undoubtedly improvements in husbandry give employment to many more hands, and so backward is the condition of nine-tenths of our farms compared with the excellence of tillage, weeding, and stock feeding found on the more advanced tenth, that a rapid extension of first-class practice would materially relieve this dark shadow in England's picture. Now many people have many schemes for promoting the progress of agriculture—most of these means, whether political, social, or consisting of discoveries in the art, being of excessively slow growth, and likely to produce abundant cuts of nutritive Grass long after the poor steed has been starved to a skeleton. Gradual extension of better practice will do something; but, as in the history of other arts, the introduction of some great and beneficent novelty, chemical or mechanical, is to be looked for as the ready relief from pressure and difficulty. Have we then, at present, any one agency more than another calculated to secure the needed rapidity of development of our husbandry—if not on the light soils where artificial manures are capable of almost indefinite augmentation of produce, at any rate on medium lands—and on those wonderful clays which chemists pronounce so richly fertile, but which implements find so intractile and perverse? For an answer we must refer to Mr. JAMES HOWARD'S views on Steam cultivation, comprised in his able, impartial, and authoritative paper, read to and well canvassed by our "Club."

Intelligent, travelled cultivators of the soil always felt, from what they saw among the spindles, hammers, pumps, wheels, cranks, of the factories, that steam is the thing for getting on with business; and few home-bird farmers yet remain who have not received a like lesson from the expeditious threshing-drum (perhaps not only a "combined" but a "finisher") — humming away a tremendous spirit-stirring tune, as it eats up a big rick in one short day, keeping the "feeder" and the "jackstraws" warm. The British nation must earn much of its bread by the steam-engine; and to prevent our rustic people gathering round engines in the town, we must introduce more coal and hot-water power on our farms. This inference is being largely acted upon; with extraordinary, and in some cases, with astounding results. Not that the steam plough at once doubles the amount of labour on a previously highly wrought farm: that is not the point we wish to urge. That the pay and the status of the labourers on such holdings are ameliorated, is one happy result, whether the number of hands be increased or no. But the increased employment comes in this way: steam culture at once introduces a first-class system of management upon farms that were not previously worked on the best principle. No one point has been more satisfactorily proved than this: that the steam plough, by lessening the farmer's outlay in the maintenance of tillage-animals, enables him to expend more in hand-labour—in more perfect cleansing and manipulation of crops; that, by procuring greater yields of roots and feeding crops, it provides more work for men in cattle-fattening and the management of live stock, especially in the winter months, when the farmer has invariably paid off all but his "regular" hands. It is a cheering circumstance that the Farmers' Club to which so many minds look for trustworthy information, has been able to certify the great progress already made by the steam-driven tine and share. We are told that between 400 and 500 farmers have already "successfully applied" steam ploughing—"an almost unparalleled circumstance in the history of any new invention," consisting in the all-but unanimous testimony of the purchasers of apparatus in favour and high recommendation of what at first sight might have been a costly and hazardous speculation. Mr. HOWARD announces as the great general inference from all the evidence collected, that steam-power is a most valuable auxiliary to horse-power in tillage; that for the hard work of the farm, steam is a cheaper force than that of horses; that it accomplishes deeper and more efficient cultivation; that it enables the farmer to perform his tillage operations at the best season of the year; that it secures better crops with less manure, especially on clays and loams; that, owing to its loosening of the subsoil, the drainage is more effective, and no water-furrows are required, even on the strongest land; that it not only effects a considerable diminution in the number of horses required, but also enables those draught animals which are still necessary to be kept at less than usual expense. Now if these seven points are thoroughly considered, it will be found that they involve the completest advance and amelioration of farm practice; so great and so remarkable, indeed, that the wonder is how such a transformation in the farmer's position, his means, resources, and profits, can have resulted simply from the use of a new machine. And it does appear that we now possess in more than one practical form an agent likely, and in a very little time too, to revolutionise clay husbandry, amazingly raise the standard of general cultivation, and so increase our rural population and relieve the anxiety of many a political economist.

THE PRACTICE OF MANURING.

[THE following reports accompanied the tabulated statements given in the *Agricultural Gazette* of March 22 and 29. They are numbered to correspond with the reports already given.]

LIGHT SOIL FARMS.

No. 1. ABERDEENSHIRE.

In regard to profit or loss from the use of artificial manure I may say that in 1860 a field of 48 acres was in first year's Grass. I divided it into four parts nearly equal (by paling). To one part early in April gave 1½ cwt. of Peruvian guano per acre, pastured it first with cows, then with horses, then with sheep very close; then relieved it of stock for two weeks, when it was again a fine pasture; was again eaten down as mentioned above, the sheep continuing upon it till the end of November. The effect of the guano was not all gone that season, for next spring the Grass grew up early, and continued to grow much better than the other parts of the field, and this season I expect a heavier crop of Oats from it than from the other parts. As nearly as I can estimate, the 12 acres top-dressed produced as much keep for stock the first year as 20 acres undressed. Taking both years into account, I am sure the profit from the application of guano was not less than 20*s.* per acre.

In regard to the ordinary practice in this quarter, I may say that very generally farm yard manure is applied at the time of sowing to the Turnip crop. Artificial manures of all sorts are used by all the farmers, chiefly for the Turnip crop; at the same time many farmers use them for the grain crop, more especially for Oats when growing upon poor land, or upon land in poor condition. Peruvian guano and bones are generally considered the best of these manures. Lime is used by many farmers in small quantities, say 10 or 12 bushels per acre, put on the land generally after a Turnip crop; that is the land is ploughed, the seed, Oats or Bere, sown and harrowed, the lime is put on, the Grass seeds sown, harrowing finished and then rolled. In this way a good sole of Grass is commonly produced. *Thomas Turnbull, Smithston, Rhynie.*

8. WIGTOWN.

I generally top-dress my worst lea land when I sow my Oats with 2 cwt. of Peruvian and Upper Peruvian, equal quantities; and I also top-dress my land which has received no dung with the green crop, when I sow the corn crop, at about the same rate as above. I always consider it pays well, besides putting the land in better condition for Grass.

The same course is generally applied in this district, but manures are not so largely used; lime has of late begun to be more used, as it prevents, to some extent, the Finger-and-toe in Turnips. I would prefer to use a larger quantity of lime than I do on that account, but I would spoil it for grain crops, as they loose the foot.

I used to apply 2 cwt. best Peruvian guano to top-dress my Wheat, but found it in this moist climate to make too much straw, and produce a very poor sample. I now only top-dress the very lightest land. *A. H. M'Clean, Auchneal, Stranraer.*

10. BERWICKSHIRE.

I farm under the five-course system, viz. Oats (after two years' Grass), Turnips, Barley or Oats, sown up with seeds and Grass for two years. I do not apply any manure to my corn crops, as I grow quite enough of straw without; neither do I give any manure to my Grass, except what is cut for hay, to which I apply 1 cwt. nitrate of soda, 1 cwt. sulphate of ammonia, and 2 cwt. of salt. These I mix together before sowing. For my root crops, 85 acres, I use the following mixture along with the dung above mentioned:—2 tons Peruvian guano; 4 tons Bolivian do.; 7 tons superphosphate of lime; 320 bushels of bone dust; 30 cwt. salt.

The above I mix as follows. I thoroughly saturate the bones with liquid manure, and afterwards going over them with, say 5 cwt. of sulphuric acid diluted with water, I allow them to remain in that state for 14 days, when I mix them with the guano, superphosphate, and salt, and again going over the heap with the acid as before to prevent any escape of ammonia. I find that the above mixture grows a very good and sound crop. The salt for my Oat crop is sown early in spring on the lea, 10 days or a fortnight before being ploughed. My reason for applying it in this way is, that as a destroyer of slugs and other grubs it is more likely to come in immediate contact with them than if sown in any other way; also that it has a tendency to strengthen the straw of the Oat crop.

The general practice of the neighbourhood, so far as the root crops, is much the same as my own on the same kind of land. I do not think salt is generally used in this district. On the clay land, in the East of Berwickshire, there is more guano used and less superphosphate. Lime is generally applied every 10 years on that kind of land. *John Nisbet, Rumbleton, Greenlaw.*

13. CUMBERLAND.

For the last 20 years I have had no losses from the use of artificial manure, but once I purchased from a firm in Newcastle-on-Tyne, so called dissolved bones for 20 acres of Turnips, which were a total failure, and as the firm also failed that winter, I was left without a remedy. The head ridges, accidentally manured with guano, were a good crop.

Guano and bones used together answer best on my land. I have tried almost all artificial manures, but find nothing better. The bones are in a state of meal.

Farm-yard dung in this neighbourhood is usually put on for bare fallow, Potatoes, or Turnips. Lime is very little used since the introduction of guano; in my opinion much more might be used to advantage. Artificial manures are very largely used for Turnips, applied just before sowing. Arable land here lies two or more years in Grass before being broken up for Oats. No Wheat is grown after Clover or Grass. *W. E. James, Lothian G., Carlisle.*

15. YORKSHIRE.

My farm consists of three farms taken during the last ten years one after the other, and drained at considerable expense; many fences thrown down and fields enlarged; about 100 acres I am only now taking possession of. The farms were much out of order, and are not yet up to the mark. On Grass, especially newly laid down, I am this year trying several mixtures, such as 4 qrs. per acre ½-inch bones; 2 cwt. guano, 1 cwt. sulphate of ammonia; 4 cwt. superphosphate, 1 cwt. sulphate of ammonia; and a good dressing of farm-yard manure for Swedes and white Turnips. I am also trying different mixtures. Lime from the county of Durham I find a great fertiliser, and I usually lime as soon as I have drained. The soil is naturally wet, and not satisfactory in the yield of corn, though producing very fair root crops when well manured. I have grown excellent Swedes and Mangel Wurzel. I prefer a mixture of farm-yard manure, and an addition of 1 to 2 cwt. guano, and 2 to 4 cwt of superphosphate. I generally apply in money value from 35*s.* to 40*s.* of artificial manure with farm-yard manure; from 50*s.* to 60*s.* when I have no farm-yard manure. I cannot give you any accurate results of the produce from such manure, but I can generally show as good root crops as need be seen. *John Dent Dent, Ribston Hall, Wetherby.*

18. LANCASHIRE.

I do not find lime do any good on Moss land. Superphosphate and guano are generally applied in this locality with farm-yard manure for Potatoes and Turnips, &c., but lime is very little used; about 10 tons of farm-yard manure and 2 cwt. guano or superphosphate are found to give better crops than a larger quantity of dung alone. No regular system of cropping is followed in this locality, the general practice is to allow the ground to lie in Grass two years, then plough and plant Potatoes, and then Oats or Barley. Others take Oats after Grass, and then Potatoes or Mangels, Swedes and Turnips; and then lay down to Grass for two years, with a crop of Barley and Wheat making a five years course. Very few sheep are kept. The Grass is generally mown twice each year. When this is done about 3 or 4 cwt. guano or superphosphate is applied in the spring of each year, which is of great benefit to both first and second cuttings. The farms are generally small and not much stock kept, except a few cows on each farm. Most of the produce is carted to Liverpool and other towns in the neighbourhood. The farm-yard manure is invariably used to root crops. *R. Bell, Mosbro Hall, St. Helens.*

20. NOTTINGHAMSHIRE.

The practice of the neighbourhood is very various; some use lime largely, others not at all. The effect seems very various, too; I have seen two parts of the same field, one limed, the other left, and not the least difference; again, in other fields, the lime will be paid for several times over in the quality and quantity of the crops. On this newly reclaimed land lime seems to have extraordinary influence in destroying a troublesome fine growing sort of Grass, a native of the soil; and on the whole it seems well worth the cost, which is about 15*s.* a ton in the field.

As a rule, dung is applied to the root crop, put into the ridges just before sowing. Some of our best farmers, however, trust exclusively to artificial manures for roots, and reserve the whole of the dung for the Wheat in autumn.

The ordinary application for Turnips is 2 to 3 quarters of bones with or without farm yard dung. Rape dust is used by some, 5 to 8 cwt. per acre. The use of superphosphate is on the increase, but can hardly be called general. Other artificials are on many farms never seen; of course there are always exceptions.

It will be understood that where it is said (on the other side) so much manure for so many acres, it is meant that the application is partial in the case of dung, because we can't provide more; and in the case of artificials on corn it is only put on the worst and poorest land; and on seeds to force a large crop for mowing green and for hay. Many trials have proved that a mixed application succeeds best in the uncertainty as to season. *H. J. Wilson, Mansfield.*

21. DERBYSHIRE.

As our soil is light we do not grow much Wheat, and generally on Clover leas, &c. it is not manured regularly, but when it requires help it is top-dressed in spring with 1½ cwt. guano, or 2 cwt. corn manure per acre.

Barley and *Oats* are seldom manured, being grown after green crops, as we farm on the four-course system.

Turnips. After various experiments with artificial manures, I find superphosphate to suit our land best of any, to which we often add 6 or 8 cwt. bone dust per acre, or as many stones of guano.

Swedes. With this crop 2 cwt. superphosphate drilled under the seed is an excellent plan to force a vigorous plant. The farm-yard manure is applied twice, one half being ploughed in after the land is cleaned in autumn, the other half put in the ridges when the crop is sown. We have ploughed in the half dressing of manure for 26 acres of Swedes, &c., this season.

In addition to the other green crops we grow about 5 acres of Carrots, Parsnips, Cattle Cabbage, and Kohl Rabi, manuring the land much the same as for Swedes, only manuring about one-third heavier. With this management, and taking care to till the land as much as possible in autumn, and to hoe the green crops frequently, we seldom fail to get good crops, and to winter feed 50 beasts for the butcher also about the same number of sheep besides giving Turnips and roots to most of the store stock. We use no hay for our feeding cattle, but chop straw mixed in cisterns with boiled linseed and ground corn, the cistern lids being closed for 24 hours when the mixture is in a fit state to use. As a proof that this system of farming succeeds well, we can now keep more than twice the number of stock on this farm than were kept 18 years ago when I undertook the management of it, and grow nearly double quantity of corn.

There are a few farms in this neighbourhood managed in much the same manner as ours, but on clay lands the general practice is to summer fallow for Wheat, and to apply from 2 to 3 tons of lime, and about 8 tons of farm-yard manure per acre. A few acres of Swedes and Potatoes are grown with farm-yard manure, and the remainder of the manure is applied to growing the hay crop. The common Turnips are generally grown with artificial manures, the use of which is gradually extending, the greater portion of the Turnips being eat on the land by sheep.

As dairying and cheesemaking is followed by nearly all the tenant farmers in this neighbourhood, the proportion of arable land to pasture is seldom one-half, so that this can scarcely be called an arable district. Lime is often used as a top-dressing to poor Grass land, and in some cases bones, both dressings with good results. *H. Compion, Alderwasley.*

27. NORTHAMPTON.

Farm-yard manure is in this neighbourhood mostly applied to the fallow for the production of the Turnip crop. Within the last few years the system of giving the young seeds a light dressing of well rotted yard manure during the winter or early spring is becoming more general.

No lime is used in this locality, the soil generally containing a sufficient quantity, though in some cases where high farming is practised we think it might be used beneficially.

The use of artificial manures is yearly becoming more

extended, both for roots and corn; and I think it is now generally admitted by most practical men that an outlay of from 20s. to 40s. per acre, according to circumstances, and when judiciously applied, is a profitable investment of capital.

The manure most used is superphosphate for Turnips and Swedes, and nitrogenous manures, guano, nitrate of soda, and ... for Cereals.

A considerable quantity of common salt is used principally on the Wheat crop; it is generally put on at two dressings, one in autumn and another in spring. When used in considerable quantities it consolidates the soil and prevents the growth of annual weeds, such as Poppies, to which some of the land is particularly liable.

28. LINCOLNSHIRE.

I sow 50 acres in one year, and 24 another of Wheat land with Rape ... because it is too far removed from the premises for carriage of dung. The other Wheat land is all manured in July and September, except where manured in the winter or spring for Beans, Peas, or roots. Lea land is sometimes manured for Peas, if not for the Wheat.

I sow all my Fen Oats with superphosphate of lime and the water drill, and I consider I generally get 1½ to 2 quarters per acre for my manure (2 cwt. per acre costs 15s.). I always leave a width of drill without the manure.

I find superphosphate of lime on fen lands yields a more satisfactory return than Peruvian guano. I have several times tried the latter, but not with so much success as I had expected. I consider fen soils are more deficient in the phosphates than in ammonia. Whether this is attributable to the natural constitution of the soils, or whether it may to some extent be accounted for from the fact that the soil is so open and porous and accessible to atmospheric influences, that it becomes more largely an absorbent of ammonia from the atmosphere, I cannot tell. I have sometimes been led to hold this theory. Is it possible?

For actual and ascertained results of the use of superphosphate of lime see the Tables in my Water-drill Paper in Royal Agricultural Society's Journal. I sow all my Mangels and Rape with 2 cwt., or from 2 to 3 cwt per acre of superphosphate of lime, and also about 140 acres of my Oats and my 15 acres of Barley, and 6 acres of Carrots, and all except the Carrots with the water drill.

I have given my acreage of crops for the current year, as it is probably about an average. My high land for Mangels I manure in the frost in the winter. My fen land at the time of seeding.

I keep eight sows, and feed all the pigs they breed. This adds to the amount of my purchased food considerably. My sheep in yards eat Peas and Oats, my own produce, with a small quantity of purchased food.

Of course my farming is not exactly like any body else's. I probably use more artificial manure with corn than is generally used; but for Mangels and Rape about the same. Some use bones, but superphosphate is more largely used than it was. The water drill has done much to occasion this. Very few use as much of their own produce as 200, but where they keep bullocks, sell their own corn, and buy cake. Very few use 5 tons of cake to 100 acres of land; probably 2 to 3 would be nearer.

For seeds I usually sow 10 lbs. Red Clover and 4 lbs. Timothy Grass per acre, and not more than one field per year with Red Clover alone. *A. S. Ruston, Chatteris.*

30. NORFOLK.

Wheat grown on Clover Lea is not dressed with artificial manure, but farm yard dung is applied in the summer. Wheat after Mangels, Swedes, and Beans, is top-dressed with ½ cwt. of soda and 1 cwt. of salt. No manure is applied for Barley after Turnips; but when grown on a Wheat stubble 1 cwt. of guano and 1 of superphosphate, or ½ cwt. of soda, 2 of rape cake, and 2 of salt is harrowed in before the drill. Oats are always grown after Wheat, and 1 cwt. of soda, 2 of rape cake, and 2 of salt are applied per acre. I always put on long dung in the winter for Mangels, and then sow 1 cwt of guano or 2 of Rape cake with 5 cwt. of fish salt (composed chiefly of herring scales and broken fish). For Swedes, 12 loads of farm dung (fermented) and 2 cwt. of superphosphate. No dung is used for white Turnips, and 2 cwt. of superphosphate is sown and 2 more drilled with the seed. Clovers are dressed with farm dung in the winter, or directly after the hay is off in July. The pastures are dressed with a compost made of road scrapings, manure, and lime.

This neighbourhood being good land, and almost all farmed on the four course, and having likewise much marshy ground, which produces a lot of fodder, requires but little artificial manure. There is no chalk or marl within an easy distance, but some is conveyed by water, and applied at the rate of ... loads per acre about every 12 years; but marling is only done by those tenants whose agreements compel them to apply it. No lime is used by any farmer save myself that I know of. *Clare Sewell Read.*

33. BEDFORDSHIRE.

For this neighbourhood on clay land the manure is used for either Wheat or Barley after fallow, and Beans. On gravel the manure is generally used for the Turnip crop. The gravel farms have generally a proportion of clay land attached, so that Beans are grown and farm yard manure used. Lime is very little used. Artificial manure is applied to the root crops, but not to a very considerable extent. The corn crops when required generally are dressed with guano. 320 acres of arable is the gross amount, including roads, hedges, &c. The payments for cake and corn are 1014*l.* from Oct. 12, 1860, to Oct. 12, 1861. I have a small farm at Bedford between ... acres, included in my statement, upon which I adopt the 5 course system, viz., Turnips, Wheat, Barley (part seeds and Beans), Wheat. I find it answer upon this land exceedingly well. At Biddenham I adhere closely to the 4-course system. I spend between 4 *l.* and 50*l.* in artificial manures, chiefly for dressing Barley and Wheat. I have not found a corresponding return for the outlay upon root crops. I intend to try a few experiments again this season. I also spend about 10*l.* per annum for salt. *C. Howard, Biddenham.*

36. BERKSHIRE.

I find by the use of 1 cwt of guano, 2½ of superphosphate, and ... of salt, I can grow 10 tons per acre more roots.

For Grass, I find after a number of trials with all sorts of manures by themselves, and likewise a mixture of different sorts, that in the end 2 cwt. of bones and 8 cwt. of salt is the best and cheapest, giving me 10 cwt. of hay per acre more up to the third year. Guano would come next, then nitrate of soda. I leave the dung out, as I cannot spare it for Grass land. Great returns I have got from 8 cwt. of salt .... *The late Andrew Horsburgh at Englefield.*

[Since the publication of the original tabular report we have had to lament the sudden death of Mr. Horsburgh, who has been cut off in the prime of life and in the midst of his usefulness as an intelligent agriculturist and good practical farmer.]

39. GLOUCESTERSHIRE.

About one-seventh of arable is down in Sainfoin, and when pared and burnt for roots requires no farm-yard manure and little artificial to produce a good crop. The same remark applies to stubble ground stifle burnt. I last year grew an excellent crop of Turnips on Wheat stubble stifle burnt, and 1½ cwt. superphosphate lime sown broadcast, but on part of field (artificial omitted) the crop was very good. Nearly all the dung for Turnips, &c., is applied when old and rotten. Clover, succeeding roots and corn after Sainfoin, is generally better than the rest. The finger and toe disease in Turnips, &c., is little known here, the several crops having a long return.

Artificial manure is now much used, with dung and ashes, for roots, and by itself on remote parts of farms, to save carriage of dung. *Sides Rich, Dulverton.*

40. SOMERSETSHIRE.

We have no regular course of cropping our land as in corn countries, the arable part of it being the poorest, and the rough climate for harvesting makes it very unprofitable for growing corn. My plan is to let the land rest as much as possible and grow as many green crops as I possibly can. I find it an excellent plan to grow a crop of Rape with 1½ cwt. of superphosphate mixed with ashes and put in as early as possible in the spring, and then manured with lime as before stated, an excellent preparation for Wheat. We use our dung generally for Turnips. As for myself I do not use a heavy lot of dung at once, as I drill 2 cwt. of ordinary superphosphate besides, and I generally succeed in growing a fair crop. I always make it a rule to grow Swedes after Wheat, as the lime works wonders in our poor soil, and I hardly ever fail with 2 cwt. of Burnard, Lack & Co's. concentrated superphosphate. I generally manage to take a breaking crop of Oats where I have limed for Wheat, and then use my dung on that land for Turnips. I use 4 cwt. of Burnard, Lack & Co.'s Mangel manure per acre for Mangel; I generally put on a little dung on the Mangel ground in the autumn. I very often seed out some part if not all my Swede ground in Rape, and not sow corn. As to the ordinary farm practice of this neighbourhood, I think I may add lime is getting in more use than ever, as a great deal passes through my farm for this, Exford, Withypool, and part of Dulverton parishes. I see a great increase in the use of it for the last 18 months. ——, *Dulverton.*

41. SOMERSETSHIRE.

The general custom of the country on most farms which consist of heavier land than mine, and more adapted for Wheat and Beans and less roots:—The farm-yard dung is generally applied to Wheat and Bean crop; if to the former the dung is mixed with the headlands, and allowed to remain for some time to decompose; for the latter it is spread in a raw state as when taken from the stalls. What little lime is used on the arable is generally put in large heaps and slacked with water, and then spread on the land unmixed, but at times some is mixed with the headlands as the dung.

With regard to liming the pastures on my farm, I endeavour to mix it with soil, such as road scrapings, &c.; but when no soil can be had then it is applied unmixed, after being well slacked in large heaps, and I find it is a good thing to sweeten the herbage, and of course the stock eat it closer. *Ed. Corner, Holford.*

44. KENT.

With regard to the question of "profit or loss arising from the use of artificial manures," never having attempted to farm without them I can only say this—if there is a loss in using them there must be a much greater loss in doing without them, although those who follow the practice are happily ignorant of the loss they sustain annually by saving a manure bill. I do not see how it is possible to farm light land without bones in one form or another. I use them exclusively on one half of my fallow break for the production of Swedes; to the other half (Mangels) I give a half dressing of farm-yard manure, and use the balance for Clover and meadow land when I consider it preferable to any artificial manure. Any further information is at your service.

The practice of farmers in this neighbourhood is so varied that it will be a difficult matter to arrive at anything intelligible. I will endeavour however to answer your question as to the crops to which farm-yard manure are applied, &c.

Generally, farm-yard manure is applied to roots and Wheat, very little lime used as manure. Some years ago I saw a field of old pasture dressed by Mr. Caird, which greatly improved it, but it is not common practice. Bone dust and superphosphate of lime seem to be the favourite artificial manures, although some large farmers get along and keep their land in tolerable condition with a very small quantity of it; their practice is to feed all the roots upon the ground, and tread down the straw by cattle fed upon Linseed cake; others again grow most of their roots by artificial manure feed, half or two-thirds upon the ground, carry the balance home, and are thereby enabled to keep more stock, increase the quantity as well as improve the quality of their manure, most of which is ploughed in for Wheat. As a general rule it must be admitted that without a liberal use of artificial, a large head of cattle cannot be provided for. *A. Lillico, Bromley.*

47. DEVONSHIRE.

The usual custom of this locality is to take from the arable once in six years a green crop, then follows Wheat, then Barley or Oats, and with the last crop is sown Grass seeds—about 7 lbs. Red Cow Grass, 1 lb. of White Dutch, 2 lbs. of Trefoil, and 5 gallons of Devon Eaver Grass; this is generally mown for hay the following year; the land is then stocked with cattle for two years, then prepared again for roots, in some instances after the Wheat crop a fallow is made with a green crop, before sowing it to the last crop of corn, but the former method succeeds the best in this locality.

Generally speaking half of the farm-yard manure is used for green crops, and the remainder for the permanent Grass land; and the majority of farmers apply about 15 tons of lime per acre for the Wheat crop, which is considered sufficient manure for both crops of corn, but on my own farm I do not find lime profitable and prefer guano. I get a great quantity of sea-weed, which I plough on the Wheat eddishes for the coming Barley or Oat crop. When I have not enough I apply from 1 to 2 cwt. of guano. I make it a rule, and believe it to be wise, to apply the bulk of farm-yard manure for the permanent Grass land in October and February. I find a crop of Turnips grown with superphosphate comes cheaper than guano, but the succeeding crop of Wheat is a loser, or rather Wheat is better if the Turnip crop is produced by guano by 20 per cent. ——, *Plymouth.*

48. DEVONSHIRE.

In using artificial or portable manures, I prefer as great a mixture as possible; hence I mix guano, soot, superphosphate of lime, crushed bones, and common salt combined. With manure thus combined, drilled in with the seed, but the seed not falling immediately on the manure, a thin stratum of soil being interposed, I grow good crops of Mangels, Swedes, and Turnips. For Cabbages (Drumhead), to this mixture I add a small portion of farm-yard manure, and set them at the angles of squares 3 feet apart each way. I put this compost immediately under the plant.

We manure for Wheat by top dressing occasionally 1 to 1½ cwt. of guano per acre with advantage, or soot to the amount of 20 bushels. Soot I find equal to guano. Should Barley or Oats look weak we top dress. Oats we generally sow on the lea. Barley after roots and Wheat. On these soils I think it profitable to use lime for the seeds and Grasses. My premises are a covered yard, in which the manure is made and carried off. Great benefit we derive from top dressing pasture with it, and raising roots by artificial composts. We purchase many loads of street sweepings from the town of Dartmouth contiguous, which we screen as a diluent for the phosphates, guano, &c.

It is a practice with my neighbours to burn the eddish for root crop, manuring with the ashes, by which they obtain respectable crops of Turnips; but for Mangels they use farm-yard dung. Our soils are commonly so shallow on the coast where I am located, that the turf cannot be buried by the plough. We are subject to strong winds, the sea being my southern boundary. Practice is influenced accordingly. *C. H., Dartmouth.*

50. CORNWALL.

Farmyard dung is applied in various ways in this district; some farmers use it for Wheat, others for Swedes, and again a considerable portion is applied on pasture land. With regard to artificial manures every kind is liberally used for green crops, and when genuine, with success. Our district being better adapted for Grass and green crops than corn is the reason the arable land remains so long in pasture. I have found by experience that lime is the very best manure we can use for Wheat. I have tried it against bone, guano, and dung, and although the two latter will in some instances give more straw the grain is deficient in quantity and quality. Anything that I have omitted to notice I shall be happy to give you if required. *John Wills, Launceston.*

THE TRANSFER OF LAND.

LEGAL reform has been a remunerative calling for 20 years. It has brought men—most able men—to distinction, wealth and power. In consequence all our easy reforms have been effected. It was not very difficult to find simple words to accomplish that which complicated words were accomplishing. The law of land has been immensely simplified, and the terms of an ordinary conveyance in a simple case are now plain and intelligible. Sanguine men hoped that when this had been effected, land would of necessity be easily and cheaply transferable. But two much more subtle and ineradicable influences remained to counteract it.

First, it is the practice of Englishmen to introduce optional complexities into landed property. In the middle ages the tenure of land was the basis of a military system: it is now the basis of a domestic system. Families are provided for by various interests in estates,—the greater interest to one, the lesser to another—a present interest for life to one, a life interest in expectancy to a second, an absolute ownership, after many years and many events, to a third. The land is used to secure a certain and indefeasible provision for minors, for wives, for widows, for unborn persons. Often no single person can be produced upon a field to say he owns that field. It is held by a little Parliament of persons, and every year a birth may add to the number of them. Land, too, is used as the best security for loans of money. Every one of these many owners of the divided inheritance who is *compos mentis* and fit to manage his own affairs can raise money on his interest in the soil, and each one of these mortgages is a new complication with which the land is burdened. At a sale each of these complications has to be unravelled.

Nor is this all. There is a second difficulty:—What is ownership? Suppose a man stand on a field and says, "I own this field," are you to believe him? He is "in possession." Suppose he is farming it, as he says, for himself, or receiving the rent of it from another,—is that a proof of ownership? We all know that it is not. A mere casual intruder may occupy an estate for years, and at every assizes there are many ejectments of wrongful possessors. We have to investigate not only possession, but the right to possess. And this is a very serious matter. Land is a permanent thing; each generation deals with it in its time, and by its continued endurance it survives them all. To know that a person has a right to sell you a piece of land, you must know that no other person has a valid claim to it. Lapse of time will bar claims no doubt, but that time is in all equitable systems of jurisprudence considerable. By the law of England a man must pursue his right within 20 years; if he neglects it longer, he forfeits it. To prevent ignorant and feeble persons from being deprived of their property this interval cannot be shortened. Yet its effect is to keep open claims for a long period. Suppose an estate under a will is first to go to A for life, then to B for life, then to C for life, and to D in absolute ownership. A is turned out, and B and C neglect their succession; do not hear of it very likely. But their neglect must not hurt D; he should not suffer from any default but his own. Accordingly, at the death of C, D has 20 years to pursue his right, and if you give successive claimants that period each, half a century is soon gone.

In the early days of legal innovation just after the Reform Bill, many persons who should have known better fancied that these evils would be cured by what was then called registration. Sir John, afterwards Lord Campbell, proposed that all deeds and all transactions relative to land should be registered, and that no deed should be effective and no transaction valid unless the specified record was inscribed at the specified place.

But a little consideration showed that this suggestion would not lessen the existing complications at all; it would only show precisely what they were. The necessity of a permanent record of every transaction would perpetuate the memory of all transactions. It would augment the existing detail rather than diminish it. One great advantage, indeed, the scheme possessed. No deed could be kept back for a fraudulent purpose; nothing could be concealed,—for all documents were to be collected and accessible. But even this advantage was purchased by the possibility of a new fraud. The person who could get his deed registered first was to enjoy the results of that deed; if, therefore, a second mortgagee could steal a march upon the first, and be registered first, no one could oust him, and an irrevocable injustice would have been committed. But whether the advantage thus gained was less or greater than the price at which it was obtained, we need not discuss now. The registration of assurances has long been abandoned because it was seen that it would not accomplish the result. It would not make the transfer of land cheaper than it now is.

After the rejection of the registration of deeds, an expedient often confounded with it, but really differing from it in every essential particular, was suggested. This is called the registration of titles, but would be more graphically described as the registration of selling powers.

The object desired is to render land equally saleable with stock or shares, and the obvious method is to imitate the procedure already in use in the case of stock and shares. That procedure is in substance a refusal to recognise any but the simplest species of ownership. The registry of stock at the Bank is a registry of persons who have complete selling power over it: no life interest, no term of years, no subordinate rights are recognised there. A person who thinks himself aggrieved may, if in time, delay a sale by a distringas.

But subject to the possibility of that check, the registered owner of stock is to all intents and purposes, in the eye of the Bank, the real owner, though in numberless cases he is a mere trustee, without any real interest in the property whatsoever. It is the same with railway shares and railway debentures: the nominal owner is to all intents and purposes the real owner. In like manner, it has been proposed that there

should be a conclusive register of landed property, and that a purchaser should look only to the name in the register, and should derive from that nominal owner a conclusive and indefeasible title.

But to this plan there is an objection, we do not say sufficient to outweigh its advantages, yet still considerable. Land, as we have explained, is subject to an infinite number of minor interest, and the essence of the proposed scheme is to neglect all those interests. For the sake of simplifying the transfer, it neglects to ascertain who in right or equity should be the transferring parties; to make sales easier, it invents a convenient seller; to be able to give a title, at the risk of injustice it creates a title.

Lord Westbury's Bill endeavours to steer,—whether effectually or not it will be for the legal profession and for the public to decide,—a middle course between both these extremes. It provides a registered owner with a complete power of selling what he is registered to have. An absolute owner of an estate can go through a certain procedure, bar all other interests, place his name in the "Book," and give an indefeasible Parliamentary title to any purchaser; and certain specified owners, who have not the entire fee simple, but who yet have a large interest, can do so likewise. The register is conclusive (it may, it is true, except certain specific claims or questions); but as far as its phrases go, it is unimpeachable. Any one who should lose by an erroneous registration, any neglected claimant or over looked heir, is to be compensated out of the Consolidated Fund. But an absolute owner once registered may begin to complicate his estate again, and Lord Westbury only says that if he does, he must register all he does. The effect will be this. A is registered as owner of a property, and if he does nothing, he can sell it quite simply and easily; but if instead he mortgages it, or settles it on his wife, or makes charges for his children, or, as is often the case, does all these together, he must enter it in the "Book"; the purchaser must examine the record after the first registration. In simple cases the registrar will state the substance of a deed on the record; but in a perplexed case he may, and of course will, use the very words of the deed itself. The plan is in essence and in its simplest description a registry of indefeasible title up to a given day, and a registration of deeds and assurances after that day.

We would not hastily give a judgment on a most careful and elaborate scheme, and the Law Lords are as good critics of such a measure as could be found; but we cannot help doubting whether any part of the plan, save that which gives an indefeasible title to the first person registering, will be found valuable or desirable. Land, under its provisions, will no longer be like stock or like railway shares. There will be an investigation not much different from what now takes place. The investigation may be divided into fragments it is true; some of it will be made when the deed is registered as a necessary preliminary, and some of it when the estate is sold; but the sum total will be much the same. A purchaser will have to look into a complex mass of deeds and facts as much as now.

The truth is, the difficulty is one of substance. The beneficial ownership of land is in a very complicated state. If you recognise the reality, you require at each step much difficult research; if you do not recognise the reality, you run a risk of injustice. You suppose an owner who is not the real one, who may do what the latter does not wish, who may defraud him. There is no third expedient. We may choose simplicity at the expense of truth, or adhere to truth at the sacrifice of simplicity; but we cannot have simple facts when the actual facts are perplexed.

We doubt, therefore, as to the expediency of Lord Westbury's scheme for recording assurances. If anything be done, we think it would be better really and effectually to assimilate the transfer of land to that of shares. Let A register, and when registered let him be absolute until he brings B, with a proper transfer, to register in his room.

Lord Westbury likewise proposes a register of unguaranteed titles. A person with an apparent ownership of a specified nature may register it in the hope that by lapse of time it may become better, and enable him at last to claim an indefeasible title. But we see little advantage in the register of such initiatory rights. The register does not make their transfer easier,—does not alter their nature one *iota* for the better or for the worse; and as the sole object is to facilitate the transfer of land, we see no use in provisions which cannot have that effect. Probably, however, few will register an incomplete title; it will be notice to all the world that they have not a complete one.

Lord Westbury's Bill has, however, two other admirable provisions. He enables the Court of Chancery, upon proper petition, to act as an Encumbered Estates Court, and to give an indefeasible title to a purchaser. Sales under the direction of the Court now only give a good title if all parties are before it. An absent infant may upset the whole. It is likewise provided that registered deeds should be printed,—and those who know how much the fear of real legibility has shortened Chancery proceedings will rejoice at seeing the same system extended. Half of mankind are utterly ignorant of the real state of their landed property, because they cannot read the vast MSS. in which alone that state is described. Somewhat complicated the facts will often be of necessity and in themselves, but a sensible man of business habits and accurate mind would find, we will answer for it, a printed deed no formidable matter. The language would speedily become plain and sensible, if it was thought that plain and sensible men would read it.

Most of Lord Westbury's Bill is, therefore, very excellent, and the dubious part is well worth the most careful thought. At present we are inclined to think that a simpler course would be better — that there should be an absolute owner of every registered estate in every case, as of consols and shares—and that there would be little hardship in this, as registration is by Lord Westbury's Bill to be voluntary; but we do not wish to dogmatise too confidently upon a subject which is extremely complicated, and upon which the best authorities are very much divided. *The Economist.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

A meeting of this Association took place on Wednesday last, at their Rooms in Hanover Square, for the purpose of discussing the question of the expediency or otherwise of Cooking Food for Cattle. Mr. Raymond Barker occupied the chair. The usual business of the Society having been transacted, and 36 new members elected,

Mr. Frere, the Editor of the Journal, said that the subject selected for that day's discussion was the preparation, mixing, and cooking food for cattle and sheep. He should, in opening the question, build his remarks upon Prof. Voelcker's article on straw, published in the Journal, on Mr. Lawes's report of some experiments he had made at the Duke of Bedford's farm, and on a small incident of his own experience during the last autumn. The farms to which this question was of the greatest importance were arable farms, on which a great breadth of straw was grown to be converted into manure, and the problem was to make the straw as available as possible for food. In Professor Voelcker's paper on straw he stated that it was an undoubted fact that some particular feeders were in possession of the secret of converting considerable quantities of straw into beef. What that secret was was possibly not known even to themselves. The combination with which the straw was given or the preparation to which it was subjected before it was placed in the feeding troughs might have something to do with the success they had obtained, but it was still more probable that it arose from the superior condition of the straw that was used. The learned Professor had also pointed out that the albuminous compound in straw would vary between 1½ and 3 per cent., and the oil from 1 to 2. The remainder would consist chiefly of woody fibre, the inference being that straw could not rank high as a heating material, unless the cellular and woody fibre could be assimilated. He further remarked that there was no doubt that that was so in respect to Grass, Clover, and roots. He then traced the effect of treating the straw with dilute acids and alkalis, and he found that by that means a considerable quantity of the woody fibre which was previously insoluble in water was rendered soluble. In Wheat straw it was nearly 20 per cent., and in Oat straw under favourable circumstances much more. There remained in Wheat straw 54 per cent. which these dilute acids could not act upon, but which, the Professor remarked, the animals might still be enabled to digest in part. Those remarks of the Professor might naturally suggest to practical farmers whether they could not advantageously employ mineral acids or alkalis in preparing straw; but a most distinct negative was given to that, and the aim of the farmer should be to produce a vegetable acid, such as lactic acid, by fermentation rather than to supply mineral acids. The question then seemed to be—were they able by any species of cooking and preparing, or mixing food, to originate such chemical changes as would produce lactic acid in such a manner as to aid the digestive process of the animals. In an experiment made by Mr. Lawes, in which he used 5 lb. only of oil-cake compound, he obtained an average gain of 19.4 lb. of live weight per week; whereas in a previous experiment, in which 8 lb. of oil-cake was used, the gain over the whole period of the experiment was only 12.3 lb.; and over the last and strictest part of it only 9.2 lb.; there having in the first part of it been a gain of 18.5 lb. It was possible that the large increase in the first period was to be attributed to the change which the animals underwent in passing froom green to dry food. In addition to the corn and cake given in the last and most successful experiment, 135 lbs., or nearly 10 stone a week, of Grass and hay was given, the cost of which might be taken at 4*s.* a week, and which would not be generally available to arable farmers. He thought the compound given could hardly be put at less than 3*s.* per week, the hay at 4*s.*, and Swedes at 1*s.* 6*d.*, making a total cost of 8*s.* 6*d.* per week, on which the weekly increase of the animal was 19.4 lbs.; but it was to be remembered that that was the increase in live weight, and not in meat. He should be glad to know what actual increase Mr. Lawes estimated that would give in meat. He would also observe that the least successful experiment was commenced in October, when the cattle were fresh from ranging the Grass, and the most successful in March, after they had been a long time in the yard, and had been accustomed to the diet there. The experiments would have been more conclusive if they could have been made at the same season of the year. Mr. Lawes had stated that the quantity of manure made in the boxes when the litter was 20 lbs. a day amounted to little over 5 cwt. a week—5½, he thought, or about 22 cwt. a month. Practical men feeding in boxes were apt to imagine that they made a much larger quantity of manure than that, even when they only furnished just the needful quantity of straw for litter. He had lately spoken to two experienced farmers upon this point, and it was their impression that they made from 12 to 15 cwt. a week. Probably the difference would arise from the manure spoken of by Mr. Lawes having been carefully dried for the purpose of scientific examination. One more point struck him in these experiments, and that was that they were all made from picked animals of two breeds, which were hardly dairying breeds at all. He believed at the Duke of Bedford's farm it was the practice to allow the calf to run with its mother and have all her milk, the only profit derived being from the rearing of the calf, in which case it was very difficult to say what price ought to be put upon it at its birth, when it was the only source of remuneration until the cow herself was converted into beef.

Mr. Lawes said that the real object of the experiments he had made at the Duke of Bedford's farm was to ascertain the amount and the composition of the dung, so as to ascertain if possible the amount of the loss of the valuable manure called ammonia. The Duke was kind enough to place his premises at his disposal, and the experiments were conducted with every possible care, the weights, &c., being most accurately ascertained and noted. He did not, however, wish those results to be taken as the comparative results of feeding with cooked, or dry and common food, because the animals which were fed on dry oilcake did not give the results they ought to have given. The average increase in such cases was as 1 to 18 lbs. of food given, which was not a fair average when cattle were fed on dry food. He thought that in making experiments they ought to attend more to average results than to those arising from particular experiments, and was of opinion that many of the errors which arose were attributable to their not taking a sufficiently wide basis. There was no doubt that an increase of 1 to 18 was not a general result, the average being, as he had stated in various papers, 1 to 12 or 13 lbs.; therefore to say that cooking gave such a result as that would be hardly fair. There were two branches for consideration in this question, first, whether the increased labour expended in preparing the food and the cost of the fuel would not be more than equivalent to the saving; and, secondly, whether the increase of the animal was, so to say, an increase of a good quality. He was rather inclined to think that the quality of an animal fed upon cooked food was not quite so good as when fed upon dry food. Pigs, for instance, showed any change in feeding very rapidly, but if a pig were fed with boiled Swedes, although it would increase rapidly in size and weight, yet the character of the pork would be inferior, and it would, to use a common expression, boil away. The reason of that was—as the animal increased a certain amount of water was displaced and fat substituted, but if it were fed with boiled Swedes largely, the water would increase as well as the fat, and the flesh would boil away. He also mentioned a case in which he had tested the merits of steeped Barley in feeding cattle, with pretty nearly the same results, that was to say, that though the increase was rapid the quality of the beef was deteriorated compared with that which resulted from the increase of animals fed on dry Barley.

Mr. Dent, M.P., inquired whether that observation would apply to pulped food not being cooked.

Mr Frere thought it would not. There were probably hardly sufficient facts before them to judge with accuracy on this question. Certainly there would be very little good in saving 20*l.* a year by the use of cooked food if it cost 10*l.* for labour and 10*l.* for fuel; indeed there would appear to be a loss if the quality of the beef was deteriorated.

Mr. Dent said that most farmers were inclined to give up cooking, but not so with respect to pulping the food. He kept from 70 to 80 head of cattle, from sucking calves up to full-grown beasts, and he should be glad to hear the opinion of scientific gentlemen present with respect to the effect of pulping food and giving it to cattle pretty fresh, before much fermentation had taken place.

Mr. Frere replied that practical farmers now gave roots, cake, and meal, all mixed together and supplied at all meals to the cattle, and not as formerly only at alternate meals. That was what he had practically seen. He had lately visited the farm of the Duke of Bedford at Woburn, and he found that they made a considerable point of boiling a few pounds of oil-cake for the off stock and pouring it over the chaff as a means of making the cattle eat the straw more freely, and the more generous the diet the less difference there was. Last autumn he was anxious to try this point of cooking, and he ordered 10 beasts to have 2 lbs. of Bean meal boiled and poured over the chaff. After standing 24 hours, 2 lbs. of cake was added, and the mixture was served the next day. One of the beasts obstinately refused it, and preferred even to eat the straw from the cart-horse stable. That animal, which was the worst of the lot, was ordered unboiled Bean meal mixed with straw moistened the day before, and a small quantity of malt combs or chives also moistened the preceding day, the consequence of which was that it became the very best, and weighed 8 stone more than the others of the same size. He communicated these facts to Professor Voelcker, who replied to him in a letter in which he stated "The incident you mention with respect to your black-nosed bullock is curious. I don't like the boiled Pea meal, or to pour it afterwards over roots and chaff. Substances so rich in nitrogenous matter as Pea and Bean meal are very apt to give rise to putrefaction instead of lactic acid fermentation. For the same reason it will not do to mix much cake mucilage with other food, and to let it be a long time. If soon consumed after the addition of the cake jelly, no harm is done; but if left too long after the addition, incipient putrefaction and mould (both of which are highly injurious to the preparation of cattle food) become perceptible in the meso. The more nitrogenous matter in the material employed, the greater the tendency to putrify. When malt combs are soaked in water, and then mixed with chaff, lactic acid is readily formed if there is sufficient waterpresent, and the temperature is sufficiently high. Sugar in the presence of much water and a sufficient quantity of albuminous matter becomes changed into lactic acid — an acid which has the same per centic composition as milk itself. Too much or too little albuminous matter is alike unfavourable to the production of lactic acid. From a previous conversation with Professor Voelcker he had turned his attention to the question of fermentation so as to form lactic acid, and probably the mixture of malt combs and straw-chaff on the day previous to eating the food, might be the means by which the transformation was to some extent effected, or at least commenced. He was rather inclined to attribute the successful feeding of this one animal, not so much to the highly nitrogenised character of the food, as to the fact that it had been moistened the day before; and if, as it would seem from Professor Voelcker's statement, that produced incipient putrefactive fermentation, he should be glad to know what probable effect food in which putrefactive fermentation had commenced would have upon the digestion of the animal. He might mention that the particular food he gave to the animals he had mentioned, was 1 lb. of malt combs a piece, 3 lbs. of Linseed, 2 lbs. of Cotton-cake, 3 lbs. of Bean-meal, 2 lbs. of Charob or Locust Bean, 28 lbs. of Mangels, and 8 lbs. of straw, and he found that 2 lbs. of malt combs took up two gallons of water, and that 4 gallons were taken up by 8 lbs. of straw. His own impression was that there were modes of preparing food more economical to the farmer and better for the cattle than those of preparing it by means of fire or steam; for instance, he thought mixing in such a way as to produce slight fermentation produced a large amount of lactic acid.

Mr. Lawes pointed out that all fermentation necessarily implied the slow consumption of that most valuable of all materials in feeding, namely carbon, and observed that an animal never stopped feeding until it had obtained a sufficient quantity of soluble carbon. That soluble carbon was the very first thing that disappeared in fermentation, so that he did not think that they could arrive at any economy of food by fermentation, although they might make more pass through the stomach of the animal.

After some further conversation, Professor Simonds, in rising to answer the question as to whether the commencement of putrefactive fermentation was likely to interfere with the process of digestion, observed that it was well known that the food of carnivorous animals was consumed chiefly when in a state of putrefaction, but the antiseptic powers of gastric juice were so strong that it was rendered sweet at once. The gastric juice of carnivorous and herbivorous animals did not differ, so that the same action would take place with reference to the consumption of food in which putrefactive fermentation had taken place. He did not consequently consider it likely to interfere with the digestive powers of the animal. His opinion with reference to all these matters was that they leant too much with chemistry, and not sufficiently with physiology. Mr. Lawes had truly stated that the question was, commercially speaking, whether giving cooked food would

in reality pay. They ought not to be surprised to find that cooked foods were not so well calculated to build up the animal and obtain a good quality of flesh. It had been shown that it technically speaking boiled away and the reason given no doubt was the just one, that if food was given containing a large quantity of water, more water was absorbed into the organisation of the animal than if dry food were given. Speaking as a pathologist he believed that a great number of the diseases of the lower animals were to be traced to the bad quality of blood arising from an excess of water and a deficiency of nitrogenised food. The practical farmer knew very well that in the lambing season if the ewes eat too much wet Turnips or wet tops, a bad quality of blood was produced, and the ewes would become diseased and die unless a large quantity of dry nitrogenised food were given. There was another question with reference to cooked food. Admitting for a moment that it was an advantage to the animal and that it accumulates a large quantity of flesh in a short space of time, and that they regarded that for argument sake as so much gain, he was inclined to think that it arose from the facility it gave for the digestion of the food by anticipating a part of the process which it underwent from the action of the gastric juice. For a simple-stomached animal like the horse they knew very well that the food would be at once converted into a fibrous mass, a chemical change took place, and that pulpy material on passing into the intestinal canal became mixed with various secretions, including bile, another chemical change took place, and the chyme was separated from the chyle, and the latter being the nutritious portion of the food was absorbed into the blood. The question was, whether in giving an animal, and especially a ruminant animal, cooked food, they did not to a considerable extent supersede mastication; if so they would supersede insalivation, and thus interfere with one of the first processes of nature, and do harm. What was the action of the saliva on the food? Without going into the intricacies of the question, they had the amylaceous parts of the food first converted into sugar or gummy matter, which was a soluble material chemically allied to sugar; and, as had been stated, it was only after a sufficient quantity of carbon had been obtained that an animal ceased to feed. A provision was made in the ruminant animal for stirring up, if he might so express it, the food, and a chemical change took place in its character before it passed into the true digestive stomach; there was a re-mastication and a re-insalivation, and inasmuch as the secretions coming from the rumin were very analogous to those with which the food were mixed in the mouth, it remained not only mixed with saliva a much longer time, but was mixed with a much greater quantity of saliva. If then by the use of cooked food they dispensed with part of the operations of nature and sent the food quicker into the intestinal canal, they would dispense with the process of re-mastication and re-insalivation; and he could easily understand why, although a large increase might take place in bulk, the quality of the animal might become bad. For the same reason it was objectionable to pulp food too fine, but they might with advantage soften chaff that was 4 or 5 inches long, so as to commence the process of converting the amylaceous part of the food into sugar without interfering with the functions of the rumin. There was no doubt in the world that they could induce animals to eat a larger quantity of food by imparting a relish to it, which they could do by throwing a small quantity of cooked oil-cake over it; but on the whole he was not in favour of the so-called cooking of food either as a means for the preservation of the health of animals or of promoting the process of digestion. He was inclined to think, physiologically speaking, that by pulping food, cutting straw, and mixing it with a solution of oil-cake, they would gain their point at a much lower expense and in a much better manner for the animal economy.

The CHAIRMAN, in proposing a vote of thanks to Mr. Frere, which was seconded by Sir J. Johnstone, remarked upon the valuable nature of the discussion which it had given rise to, observing that it was one in which all farmers and breeders of stock must take the very deepest interest.

The proceedings then terminated.

DUBLIN: At the Annual Spring Show of this Society held last week, rather less than the usual number of live stock was exhibited, as will appear from the following entries in two years respectively:—

	1861.	1862.
Short-horns	240	214
Miscellaneous pure breeds	64	70
Fat oxen	28	24
Fat cows	32	24
Fat heifers and extra stock	21	32
Total of neat stock	385	364

This falling off is entirely in the section of Short-horned yearling bulls, the other sections being fully as well represented in point of numbers as in 1861. In point of quality, however, the improvement this year is very marked; and it may be said that there have been comparatively few inferior animals exhibited.

In the course of the evening, when the medals and prizes were awarded in the theatre of the Society's House, His Excellency the LORD LIEUTENANT made the following remarks on the present condition of Ireland:—

"I can assure you it is with more than even usual satisfaction that I find that I need not depart on this occasion from that uniform strain of compliment and congratulation which it has hitherto been my happy privilege to address to the members of the Royal Dublin Society at the period of their annual Easter meetings. For I will own to you that I was not without some degree of misgiving on this subject. I knew that the recent cycles of seasons through which we have passed have been of the most trying and unpropitious character. In the year 1859 there was a feature which has certainly since been very amply—too amply atoned for—there was a prolonged absence of rain which materially injured our pasture. In the years 1860 and 1861, I need hardly remind you, there was a great excess of rain, which did infinite damage to the country—which covered our plains with inundations not yet wholly subsided—and which added a severe scarcity of fuel to the diminished production of food. Of course, these results could not take place without occasioning much partial distress. I naturally should not think of entering now upon any controversy as to the extent and amount of that distress. Most trying it is, indeed, to those who are entrusted with any discretion or responsibility at such periods to refrain from having to resort to the most obvious and immediate methods of relief; and I believe there have been—and till very lately have been—conditions of Irish society in which there might have been an overpowering necessity for applying the most inartificial and blundering methods of relief. The land was to a great extent divided between a sinking proprietary and a pauper peasantry. But now, except in very rare instances, it is in the district in which it is effected by the persons who are themselves interested—it is by spontaneous and independent effort that the struggle is made, and for the most part made successfully. Of course we must still reckon upon encountering the occasional rigour of the seasons, just as in the sister countries probably still wider ravages are being now inflicted by the shocks of foreign conflicts and the stoppage of raw materials. But I trust it will prove to be with the passions and the wrath of man as we know it will be with the strife and turbulence of the elements, since Nature is always found to restore her own excesses, and in sufficient periods to maintain her own averages. However, I entirely agree with the general bearing of the remarks which have been made by the Earl of Clancarty—that, whether we look to the geographical position of Ireland, or to the character of her soil, there will be always such a prevalence of moisture and humidity as will make pasturage, and the production of animals, the most secure and remunerating form which our national industry can assume. I do not, of course, mean, as I am sure he did not mean, or no friend of Ireland could mean, to disparage tillage, or the proper production of corn crops in those districts which are by nature suited for them. Those districts abound in Ireland, and more especially is this the case with regard to Oats. But still, coupling the physical condition of the country with the close proximity of those large English and Scotch markets where there is such a vast consumption of meat, I believe that Providence has mainly appointed Ireland to be the mother of flocks and herds, and I, consequently, believe that she will fare all the better the more truly she keeps to her natural vocation. And in this useful and patriotic path no more salutary or efficient encouragement can be afforded her than is supplied by these annual exhibitions, coupled with those of the Royal Agricultural Society—these annual spring exhibitions which take place under the auspices of the Royal Dublin Society. These exhibitions, within the comparatively short limits of my own experience, have evinced a most remarkable progress. It is within these limits that you have housed your cattle, and we hear that in another year you are likely to roof your implements. I need not point out to you what an interesting and suggestive exhibition the implements collected in your yards to-day furnish to you, or over how wide an extent of usefulness they range. The facility of transport, to which we are indebted to our railway friends, has done an infinite deal in promoting every kind of agricultural competition; and we read now, too, of international exhibitions. The Emperor of the French has, with great sagacity, instituted them in his capital; and I am sure we shall be glad to find that one of our most well-known exhibitors, who has obtained a prize in the competition of to-day, not content with the laurels he gathers in your show—I refer to Mr. Ball—has carried away the prize for heifers in the capital of France. I need not say how entirely I agree with the reference which Mr. Naper so aptly made even to the superior care and anxiety which we owe to the permanent welfare of those labourers who, in fact, really furnish the national wealth, which it should be the object of this exhibition to promote. We know that in the last 20 years, notwithstanding any of the drawbacks and vicissitudes to which I have referred, and of which we lately had experience, yet the stock of Ireland has increased in value within that period from 21 millions to 33 millions. And with respect to quality, I think it is very probable that almost the worst animal in the yard to-day was as good a one as the prize animal of the same period back. I trust earnestly, my lords and gentlemen, that the varied accidents of these exhibitions, the number by which they are attended, the patronage by which they are honoured, the skill by which they are fostered, may all progressively advance. It is true that we cannot warm our skies with unclouded sunshine, we cannot mature unfailing crops, we cannot guard our sheep and cattle from all kinds of diseases; but we may continually furnish fresh aids to man in the struggle which he must always have to keep up with nature, giving the largest command over her bounties and making difficulties themselves the spurs to his industry and the elements of his success."

STATISTICAL: *Agricultural Wages in Scotland and in Ireland.*—At the last monthly meeting, Mr. Edwin Chadwick, C.B. in the chair, a paper was read by Mr. FREDERICK PURDY, on the rate of agricultural wages in Scotland and Ireland, founded on a Parliamentary return for Scotland and one for Ireland, both modelled upon the English return, and both for the same period, the half-year ended at Christmas, 1860.

Dividing Scotland into three groups, viz., the northern, containing nine counties, from Shetland to Kincardine, the men's wages were 12*s.* 2¾*d.* per week on the average; women's, 5*s.* 1¼*d.*; and children's (under 16), 4*s.* The men's average earnings by task work were 13*s.* 6*d.* In three of the counties, men's harvest wages were 14*s.*, 15*s.*, and 19*s.* respectively. The midland group embraced nine counties, beginning with Forfar and ending with Bute. Here the men's wages were 13*s.* 2*d.*; the women's, 5*s.* 7*d.*; and children's, 4*s.* The task work wages of the men 14*s.* 8*d.* a week. The southern group contained the 13 remaining counties. The men's, women's, and children's wages were 13*s.* 2*d.*, 6*s.*, and 4*s.* 9*d.* respectively. The task work wages, 15*s.* 8*d.* In some of the midland districts the harvest wages were very high, as in Dumbarton, 24*s.*; Forfar, 25*s.*; and 26*s.* 6*d.* in Perthshire. The following comparative table was then exhibited to the Society. The figures for 1835-44 were obtained in respect of every parish in which the facts were recorded from the statistical survey of Scotland:—

Number of Counties.	Men's Wages. 1835-44.	Men's Wages. 1860.	More in 1860.	Per cent. more.
	s. d.	*s. d.*	*s. d.*	
Northern group, 7 ..	8 1	12 2	4 1	50.5
Midland group, 5 ..	9 9	13 2½	3 5½	35.5
Southern group, 5 ..	9 5	13 0	3 7	38.1
Scotland (part of) ..	8 11	12 8½	3 9½	42.5

The statistics of the cost of the food consumed and of the clothes worn by the Scotch peasantry both in present and in former times were next treated of by the writer with a view to illustrate the command which the money wages at the respective periods gave the labourer over the articles of his consumption.

The Irish returns were displayed under each province.

In Ulster the wages of the men during the half-year averaged 7*s* 3½*d.* per week, the women 4*s.*, and the children (all the latter being less than 16 years of age) 3*s.* 2*d.* It was noticed that in Ireland the wages of one woman and of one child were together generally equal to those of one man, but that in Scotland the men's wages were considerably above the remuneration obtained by a woman and a child together. The task work earnings of men in Ulster were 9*s.* 4*d.* a week. The Connaught men had 7*s.*, women 3*s.* 11*d.*, and children 3*s.* 1*d.* Men's task work, 8*s.* 10½*d.* In Leinster men obtained 7*s.*, women 3*s.* 9*d.*, and children 2*s.* 9*d.* The task work earnings of the men, 9*s.* 9*d.* Finally, in Munster the men were paid 7*s.* 2½*d.*, the women 4*s* 3*d*, and the children 3*s.* The task work earnings of the men, 9*s.* 2*d.* To ascertain what has been the rise in agricultural wages, the evidence taken before the Lands Commission of 1844 had been searched, and the following rates, resting upon the testimony of nearly 400 witnesses, were announced as the result of the inquiry, for the first term of the comparison below:—

	Men's Wages. 1844.	Men's Wages. 1860.	More in 1860.	Per cent. more.
	s. d.	*s. d.*	*s. d.*	
1. Ulster	5 1	7 3½	2 3½	43.4
2. Connaught ..	3 9	7 0¼	3 3¼	87.2
3. Leinster	4 8½	6 11½	2 3	47.8
4. Munster	4 0	7 1	2 11	72.9
Ireland	4 6	7 1	2 7	57.4

It was stated that in some parts of Connaught in 1844, so great was the depression of the labourers, that many were glad to work for their daily food as their only wages. The average cost per head for the food of an Irish agricultural labourer's family, deduced from a very extensive series of returns obtained by the Irish Poor-law-office in 1854-55, was 1*s.* 1*d.* per head. It was stated as an interesting and important fact that since the famine Indian meal had been greatly used instead of Potatoes, a labouring man using 3 lbs. of the former instead of 10 lbs. of the latter; and it was shown, by the aid of a table of nutritive equivalents prepared by Dr. Lankester, that in the given weight of meal the flesh-forming elements greatly, and the heat-giving constituents considerably, prevailed over those yielded by the much larger weight of Potatoes. It appeared that, taking the wages of the agricultural labourer as unity, the weaver was paid 1½; the shoemaker, 2; the tailor, 2; the baker, 2⅓; the carpenter, 2⅔; and the bricklayer and mason, three times as much, at the same time and in the same districts throughout Ireland.

The paper concluded by bringing the principal facts for the different parts of the United Kingdom together.

It was shown that men's wages in England and Wales averaged 11*s.* 6*d.*; in Scotland, 12*s.* 9*d.*; and in Ireland, 7*s.* 1*d.* That in 23 years the rise in the English wages had only been 12 per cent.; but that in Scotland, at an interest of 20 years, the rise was 42½ per cent., and in Ireland over 57 per cent. It was strenuously maintained that the English wages were kept down by two causes, viz., the cruel and impolitic settlement laws, and the large expenditure for out-door relief. Is it not manifest that when we distribute in England 3,000,000*l.* a year as untested relief among the labouring population by the hands of the employers of labour, we place at the disposal of the latter an instrument as powerful as it is pernicious for depressing the fair wages of the workman? It is well known that the lowest wages in England were paid in the most pauperised counties. But in Ireland, where there is no out-door relief, the least and the most pauperised provinces are on a par as regards the wages of independent labour. In Ulster men's wages are 7*s* 3½*d.*, and that province has fewest paupers; and in Munster, the most pauperised, the wages are only 1½*d.* a week less. Taking corresponding districts in England, we find that in Northumberland wages are 14*s.*, while in Dorset they are only 9*s.* 4*d.*, or 30 per cent. less. Is there any escape from the conclusion?

The CHAIRMAN, in proposing a vote of thanks to Mr. Purdy for his valuable contribution to the industrial statistics of the empire, observed that there was yet one further addition to be made to them, though the data were not readily accessible, viz., the difference of productive result attendant on different amounts of wages, and the stimuli of food.

Thus, he had found that a 16*s.* a week labourer in Lancashire and Yorkshire was worth as much to the employer as the 8*s.* or 9*s* labourer of the pauperised close parishes of Buckinghamshire or Oxfordshire. A mile of road worked in Ireland by navvies at 2*s.* a day or more (often many of them Irishmen, for Paddy when regimented followed fairly the lead even of the Lancashire navvies), was found not to cost more than a mile of road exactly the same sort worked by the common rural Irish labourers at little more than 1*s.* a day wages. High wages were by no means equivalent to dear service. The high-waged English workman was on the whole as cheap to use—time as well as amount of result considered—as the great majority of low-waged labourers throughout the world. The advance in wages by no means indicated equivalent advances in the cost of production. The demand for labour in towns would lead to emigration there from the country, to a rise of wages, and promote the use of machinery. There was one very important point of progress in an agricultural and social point of view, especially in Ireland, viz., the advance of the weekly wages beyond the money power of cottier labour and proprietory. In a text book on agriculture, by Mr. E. Murphy, the Professor of Agriculture at Queen's College, Cork, he sets down 8 acres as the quantity of land workable at high culture by a farmer and his family (and that by a degree of skill not always found in large farms), the money result obtainable by the labour of this family, and that too, if they had no casualties, was 23*l.* per annum, or say 8*s.* 10½*d.* per week, or 1*s.* 3*d.* per diem, exclusive of milk and Potatoes. Milk and Potatoes were frequently given plus the money wages set down in the statistics. But the average wages of the family of men, women, and children had now risen to 14*s.* 5*d.* weekly on the average in Ireland, whilst in Scotland the family wages had got to 23*s.* 11*d.* weekly. The money power of these wages was greater than Burns, as cottier or small farmer, could get: more than Burns himself could have got; the family living on wages might feed better than Burns could on the produce of his small farm.

Farm Memoranda.

SOUTH HANTS FARM: *End of April.*—The weather has been so fine since our last report that the horse labour has been continued with every advantage. Our sowing of Lent grain being finished we have turned our attention to sowing Clover and Grass seeds, which we always do in the young Wheat, and on that part of the crop which follows the Potato crop of the previous year, and the plant generally succeeds well in this way; more particularly when the kinds of Clover are alternated, for on the four-lair system the land being seeded to Grass once in four years, the different sorts would be 12 years apart, when the broad Clover is followed by Trefoil and Dutch Clover, nor is it advisable where there is a fair prospect of the Clover plant taking to put any Rye-grass in admixture, except for feeding purposes, as the Rye-grass, particularly the Italian variety, weakens the Clover plant and greatly diminishes the second cutting; it is also unfavourable for the succeeding Wheat crop, especially on thin soils, and on any land it involves early ploughing and heavy manuring to obtain a good crop of Wheat after. The horses have

been employed chiefly in preparing the land for Potatoes and ridging up in readiness for planting; indeed the planting is done as fast as the ridge ploughing; instead of planting the Potatoes under furrow as heretofore, we have this year adopted a new plan advocated and introduced to our notice last October by Mr. Lucas at the Botley and South Hants Farmers' Club, his theory being that the Potato sets should be planted on the surface and the land hilled or ridged over them. The earth lifted to to do this leaves a trench between the hills or ridges sufficiently deep to lay the land dry at all times, and this seems to be the merit of the plan, for we have always found the disease most destructive to the crop in the parts of fields where the water laid most, and could not readily and freely escape. This is an important matter, when it is asserted by Mr. Lucas that he has grown an excellent crop of different sorts of Potatoes for 10 years in succession without any diseased tubers. We are therefore looking forward to obtain a perfectly sound and abundant crop, having adopted the principle alluded to by planting in the following manner:—We apply 4 cwt. per acre of Peruvian guano previously prepared and mixed with damp ashes, this being sown broadcast on the surface, the plough in the act of ridging by throwing two furrows together necessarily buries the whole of the manure in the middle of the ridges. The Potatoes of a small size are then planted with a setting stick by the women about 3 inches deep on the top of the ridges. In this way the plants come up quickly, and as soon as they strike out roots they have the full advantage of the manure immediately. Another portion of our land being manured with box-made dung, it is applied between the ridges, which on being ploughed and reversed buries the manure in the centre of the ridges, the Potatoes being planted on the top of the ridges as before described, and we hold this method to be a great improvement upon the usual and our former manner of planting under the furrow, and it is not more expensive either in hand or horse labour. *The Stock.*—The ewes and lambs are still feeding off late sown stubble Turnips, and although they are now in bloom, yet it gives an abundance of food; some of the stalks are not consumed, but the leaves, flowers, and roots are still nutritious, and having a rather larger quantity than usual of this kind of food, we have been induced for the last three weeks to cut daily the stalks of the Turnips (although now in flower), and give to our young cattle under cover, which eat them with great avidity, and do remarkably well, receiving however a small quantity of Mangel twice a day, with a little cake in addition. We have now sold the most of our fatting bullocks, and taking the different sorts and ages they have realised upon the average about 5*s.* per stone of 8 lbs. This we must consider a satisfactory price, as it not only applies to oxen, but also to steers and heifers from 20 to 24 months old, as well as some cows of different ages. The crops of Grass, more particularly Trifolium, are very forward this year, and in a few days will be fit to cut for the cart horses, and it is very desirable to commence using this crop as early as possible, for its season is very short, and the horses at this, being the busiest, period of the year rejoice in early green food, and soon begin to show the effect and benefit they derive from it, both in appearance and capability of work; it should however, when used for the first few days, be mixed with hay, as any sudden change of food is apt to derange the digestive organs. The season for sowing Barley and Oats is fast drawing to a close, and rather than sow later than the middle of April the land may be perhaps better given up to other crops. There has, however, been this year so much delay that much of the Lent grain will be put in later than usual, and there is at present a most vigorous growth of both Barley and Oats, and they came up very quickly, the land being moist with a high temperature. The Wheat crop looks well upon all dry soils in good condition, and is everywhere very forward; in fact present appearances generally indicate that the harvest will be unusually early. The season is now arrived for getting in the Mangels and Carrots, we are however so busy with Potato planting that we cannot attend to the root crops until the first week in May; the land generally is in a good state to receive the seed, being full of moisture, and in the process of preparing for roots great care should be taken to preserve the moisture by using the scarifier in preference to the plough wherever practicable. *J. B.*

Calendar of Operations.

APRIL.

MID-LOTHIAN FARM: *April.*—The work on the farm has been almost entirely confined to putting in spring corn. On the 5th a commencement was made with Oat sowing. Barley followed, and now all is completed: not however without several interruptions from heavy rains and severe frost. The land wrought well for Oats and for part of the Barley; that newly ploughed, however, has turned up tough, and will be cloddy if drought sets in. A mixture of Peruvian and Bolivian guanos with superphosphate at the rate of 2 cwt. per acre, has been sown over the whole Oat and Barley land, costing 20*s.* per acre imperial; 4 bushels Oats, and 3 bushels Barley (the quantity of seed) sown broadcast; four single turns of the harrow completes the cover, followed by stoning the land and rolling for the easier and safer working of machines in harvest. Grass seeds are now being sown, consisting of 1 bushel common Rye-grass, ½ bushel Italian; 4 lbs. red, 2 lbs. white, 4 lbs. yellow, 2lbs. Cowgrass, and 1½ lbs. Alsike per acre imp. Potato planting next occupies attention. Part of the land has been grubbed, and is now ready for drilling without a plough furrow just now. Seed is now cut at the rate of 10 cwt. per acre. Beans have been harrowed down with the circular drill harrow, and are brairding. From the continuance of cold weather the Grass fields stocked with sheep are scarce of food, and as Turnips are nearly done, food for stock will become scarce before second cutting Grass can be ready. Lambing of (?) sheep nearly over, a goodly number of twins, with a considerable number of deaths among the ewes from disease connected with lambing, chiefly inflammation. Some cases of joint ill also among the lambs, of which, after it has gone a certain length, there is no cure.

NORTH LINCOLNSHIRE: *April* 21.—Almost the whole of March (with the exception of two or three days about the 20th, and up to the 5th of this month) was a continuation of wet weather, consequently spring sowing was very much kept back; since that time we have made good progress, and have come nearly to a conclusion, only having five acres to sow where the sheep are just finishing the Turnip. We cannot say that Oats and Barley have gone in well, as in consequence of the continued wet weather, perhaps we were too anxious to get upon land before it was prudent; and in addition to that, the late consumed Swedes were eaten off so wet, the land got so much poached, that it is difficult to get a good seed bed. Growing Wheat is looking well, with few exceptions, and is very forward, and to all appearance must be much earlier to harvest than spring sown Corn. *Steam Culture.*—The cultivator has been doing us good service these last ten days, having gone through nearly 70 acres twice over, part when it was full of twitch, with the 3-tined implement, and the remainder with the 7-tind implement, the latter doing about 14 acres per day. I have got so much work before me I really do not know what I should do without steam. *Sheep.*—The lambing season has come to a conclusion under more favourable circumstances than we could at one time have expected. We have about 650 lambs, from 600 ewes put to the ram in October. Our Caistor Fair was held on the 11th and 12th inst, at which place we sold 396 be hogs at about 54*s.* each, a very good price for one-year-old sheep, not having been kept high. They go into the Lincolnshire Marshes to be grazed this summer. Fat sheep, which we are clipping weekly for Manchester market, are not so satisfactory, hardly making 6*d.* per lb. *Cattle.*—Pastures are forward. We have turned 90 good three-year-old bullocks out to good pastures, to which we shall give 4 lbs. of fat oilcake, and hope to have them off prime fat in June and July. The value we put upon them at present is 19*l.* each. Younger cattle we have still in the yards for a week or two. They go upon poorer pastures with sheep. *S.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Thursday, May 1, 1862.

Day of Week.	Day of Month.	Reading of (At 9 A.M., Railway Time) Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.										Inches.		
Friday ..	25	29.87	63°	60°	S.	1	8	66°	48°	83°	43°	0.13	52°	50°
Saturday ..	26	29.88	55	54	S.E.	1	7	73	49	88	46	0.29	54	50½
Sunday ..	27	30.09	53	50	W.	1	8	64	39	77	36	...	53½	51
Monday ..	28	30.18	60	55		1	1	66	37	80	35	...	54	51½
Tuesday ..	29	30.29	61	55	S.E.	2	1	72	40	91	35	...	55	52
Wednesday ..	30	30.12	62	56	S.E.	2	1	70	45	85	39		55½	52
Thursday ..	1	29.95	60	56	S.	2	5	74	52	89	47	0.03	56	52½

Notices to Correspondents.

GAS: *T B B.* Can any of our readers in Scotland give us information of the cost and mode of working gas producing apparatus for the supply of farmsteads and private establishments.

GAS LIME: *Constant Reader.* You will find all about gas lime in Johnston's "Agricultural Chemistry," or in Morton's "Cyclopædia of Agriculture." Lime takes up sulphur, &c., from the gas, and after long process of oxidation by exposure to the air, it becomes to that extent an inferior gypsum. You should lay it up in heaps, and turning it frequently in composts it will improve by exposure, and may be used with safety and benefit on the land. Or it may be spread broadcast (3 or 4 tons per acre) over the stubbles.

IMPORTS OF GUANO: *Baxter.*

Year.	Tons.	Year.	Tons.	Year.	Tons.
1841	2,881	1848	71,414	1855	305,061
1842	20,398	1849	83,438	1856	191,501
1843	3,002	1850	116,925	1857	288,362
1844	104,251	1851	243,014	1858	353,541
1845	283,300	1852	129,889	1859	84,122
1846	89,203	1853	123,166	1860	141,435
1847	82,392	1854	235,111	1861	178,423

Verbena, Lady Victoria Scott.

ROBERT PARKER has much pleasure in offering this beautiful Verbena, which has proved to be the most effective and useful bedding variety known. During the past Season upwards of 5000 plants were grown in the gardens of Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.

The following Testimonials are selected from a large number received by Mr. Thomson from visitors to Dalkeith in the past season:—

"I have much pleasure in saying that I have seen no scarlet bedding Verbena that can approach your Lady Victoria, as I saw it at Dalkeith on August 21st, and it was well tested, being extensively grown alongside of Verbena Miss Trotter, which it resembles, but far surpasses in general effect.
"*October* 4, 1861. ANDREW TURNBULL, Bothwell Castle."

"Your bright crimson Verbena, Lady Victoria Scott, which I saw at Dalkeith, is decidedly superior to any other variety which I have ever seen for bedding purposes; its compact, vigorous, and free-blooming habit makes it quite a novelty for the flower garden. ANDREW HOWDEN,
"*October* 5, 1861. Coltness, Wishaw, Glasgow."

"Lady Victoria Scott, as I saw it towards the end of the season, was unquestionably superior in every respect to Miss Trotter, growing side by side, having a more robust habit, denser heads of bloom, and flowers of a more glaring crimson scarlet hue. For bedding purposes, I believe it to be a variety of premier excellence. J. ANDERSON,
"*October* 6, 1861. Meadow Bank, Uddingstone."

"Your seedling Verbena, Lady Victoria Scott, stands pre-eminent for its unexampled effect in the parterre. It possesses every desirable quality the fancy can conceive; as seen by me at Dalkeith this season, the display it made was rich beyond conception. JOHN REID, Orton Hall, Peterborough."
"*October* 7, 1861.

"I was much pleased with the Verbena, Lady Victoria Scott, which I saw at Dalkeith Palace in the month of July last. It is a seedling from Miss Trotter Verbena, on which it is a decided improvement. It has a compact habit of growth, and is a free bloomer. A desirable variety which cannot fail to give satisfaction. GEO. WESTLAND, Kingston Hall."
"*October* 8, 1861.

"I had many opportunities of seeing the Lady Victoria Scott Verbena, in all stages of growth, from the middle of June to the end of September. I consider it the most effective bedding Verbena of the day. It was extensively used at Dalkeith this season, and planted side by side with Miss Trotter, offering a fair and impartial chance of comparison. The most ordinary observer could see at a glance that Miss Trotter is to be no longer inquired after, it is so distinctly surpassed in robustness of habit, earliness, and profusion of bloom, and brillancy of colour; for the three latter properties it cannot be approached by any existing Verbena.
"*October* 8, 1861. A. MCLEOD, Newbattle Abbey, Dalkeith."

"I have great pleasure in bearing the highest testimony to your valuable Verbena Lady Victoria Scott (colour bright crimson, an exceeding free bloomer, very compact and vigorous habit), which I saw growing at Dalkeith Palace Gardens in August last, never having seen any Verbena so effective, completely dazzling at a distance of 100 yards, and putting in the shade every other Verbena near it, and having the good qualities of being able to resist any amount of rain.
"*October* 12, 1861. W. CUTBUSH, Barnet, Herts."

"In reply to the inquiry as to my opinion of Verbena Lady Victoria Scott, let me say, that in common with all who saw it bedded by the thousand at Dalkeith this season, I thought it the most effective bedding plant I ever saw. Its dwarf compact habit and dense mass of brilliant scarlet bloom, leaves nothing to be desired either for beds or riband-borders.
"*October* 16, 1861. H. ROSE, Fleurs Castle, Kelso."

"I have no hesitation in giving you my opinion about your Verbena, Lady Victoria Scott; when I saw it at Dalkeith last August it was the finest Verbena I have seen.
"*November* 4, 1861. A. WILLIAMSON, Royal Garden, Kew."

Plants 1*s.* 6*d.* each; 12*s.* per dozen; 50*s.* per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot-stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in riband-borders, and vases, this variety is one of the most useful and effective yet offered for sale. Plants 1*s.* 6*d.* each; 12*s.* per dozen; 75*s.* per 100.

Exotic Nursery, Tooting, Surrey, S.

JEAN VERSCHAFFELT'S NURSERY, Ghent, Belgium.

J. V. begs respectfully to announce that he intends sending out for the first time, on and after the 1st of September next, the following striking Novelties, viz.:—

1. CAMELLIA QUERCIFOLIA (J. VERSCH.)—The most curious and interesting Camellia known, as regards its leaves, which are Oak like; the flower being much the same as the universal favourite C. fimbriata alba. The plant is very showy, a good setter and very free bloomer. Prices are fixed as follows:—

Nice plants, 1 to 1½ feet high, 21*s.* each.
Do. do with buds, 31*s.* "
A few extra sized plants at 42*s.* "

2. RHODODENDRON SOUVENIR DE JEAN BYLS (J. VERSCH.)—This is the last and also the finest seedling raised by Messrs. Byls, Ghent, from whom J. V. purchased the entire stock. It is perfectly hardy, having stood out the winter of 1860—1861, without losing a bud. It has very fine foliage, and the flowers are in large close bouquets, of a fine rose colour, with a fine blotch of bright yellow on the upper lobe. Altogether one of the best known kinds, very free and very late bloomer.

Good plants .. .. 21*s.*
Stronger plants .. .. 31*s.*
A few extra sized plants 42*s.*

The plants will be sent out, as far as possible, with buds. A carefully coloured plate will be sent to each subscriber. One plant over to the Trade for every three taken.

The Subscription List is now open, and early orders are solicited, as they will be sent in strict rotation.

All letters to be addressed to JEAN VERSCHAFFELT, Nurseryman, 48, Rue de la Caverne, Ghent, Belgium.

☞ A reference required from unknown correspondents.

Hardy Scarlet Rhododendrons and other American Plants.

JOHN WATERER has the pleasure to announce that his ANNUAL CATALOGUE of the above popular plants, as exhibited in the Royal Botanic Gardens, Regent's Park, London, is now published, and will be forwarded on application. Intending planters and amateurs desirous of blending colours are invited to possess a copy, as faithful descriptions of all the RHODODENDRONS are given.

The Catalogue contains a selection of the best and really Hardy CONIFERS, with heights and prices, the whole of which having been removed the past spring are in a capital state for transplanting. Also EVERGREENS and ORNAMENTAL SHRUBS and TREES of the leading kinds.

The American Nursery, Bagshot, Surrey, near the Sunningdale Station, South Western Railway; also to be had of Mr. JOHN KERNAN, Seedsman, 4, Great Russell Street, Covent Garden.

The Royal Horticultural Society's Exhibition.

SEEDS that will be required to obtain the Prizes offered at the Autumn Show, Sept. 10. See advertisement in *Gardeners' Chronicle*, March 15.

	s.	d.
ASTER, Truffaut's Pæony-flowered, 24 varieties	4	0
„ Giant Emperor, 13 varieties	6	6
„ Dwarf Chrysanthemum-flowered, 10 varieties..	1	8
„ Tall „ „ 12 „ ..	2	0
„ Double Crown, 4 varieties	0	8
„ „ Dwarf Pyramidal Bouquet, 12 varieties	2	0
„ „ Quilled, 12 varieties	2	0
„ „ „ Hedgehog, 6 varieties	1	0
„ „ „ Reid's extra fine per packet	0	6
„ „ Globe Pæony-flowered, new „	0	6
Mixed packets of each of the above kinds	0	6
STOCK, Dwarf German Ten-week, 24 varieties.. ..	4	0
„ Large flowering „ 20 „	3	4
„ Autumnal or Intermediate, 8 „	1	4
„ Emperor, 5 „	0	10
„ Brompton, 6 „	1	0
For other choice varieties see Catalogue.		
Mixed packets of each of the above German Stocks ..	0	6
PHLOX DRUMMONDII, 13 new varieties, each p. pkt.	0	6
ORNAMENTAL GRASSES, EVERLASTINGS, and Imported GOURDS .. ..per packet	0	6

Free by post.

For the character of the above, see report of the Annuals grown at Chiswick, 1861, in *Gardeners' Chronicle*, March 15, p. 237.

JAMES TYNAN, Importer of Continental Seeds.
Seed Warehouse, 68, Great George Street, Liverpool.

NEW ANTIRRHINUMS.

Very splendid, rich and striking.

	s.	d.
GEM OF SUDBURY.—Bright red, white throat, yellow mouth and lips marked with a horizontal band of blood colour, large, novel, and rich flower, each ..	3	6
JEWEL.—Rich magenta colour, white throat and mouth, very beautiful and attractive	2	6
TRIUMPH.—Extra rich crim, white throat and yellow lip, a brilliant and bold flower	3	6
VARIEGATA.—Upper part of the flower very richly shaded purple with edging of yellow, exceedingly bright yellow mouth, with clear primrose lip crossed horizontally with a band of red, throat pure white, very attractive	3	6

The plants are fine and strong. The 4 varieties together for 10s. 6d. Usual allowance to the Trade.

Fine selections of other new and very choice Varieties, 6s. and 9s. per dozen.

NEW MIMULUS.

CARDINALIS BRILLIANTE, extra bright scarlet, very striking and rich. The form of this flower is good, and being a very free and continuous flowering plant, it is particularly desirable as an effective bedder. Very strong plants, each .. .. 3s. 6d.

The usual allowance to the Trade.

CARDINALIS LAHMONII, KERMESINA, and PRINCE IMPERIAL, three fine distinct colours, each 9d. or 6s. per doz.

HERBACEOUS and ALPINE PLANTS.

A very superior collection. For PRICED LIST of a few desirable sorts see *Gardeners' Chronicle* of April 14, page 329.

The NEW SPRING CATALOGUE of Bedding, Stove, and Greenhouse Plants supplied on application.

STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

NEW SHRUBBY CALCEOLARIAS.

—The following new and beautiful varieties have been selected with great care out of many hundreds of my Seedlings. For novelty, brilliancy in colour, and habit, they are far superior to any shrubby Calceolarias yet offered, and will be found invaluable for bedding purposes. They are equally well adapted for pot culture, for greenhouse, and also for exhibition purposes, as most of them were exhibited last season in the collections that obtained the first and extra prizes at the London Exhibitions; also at Tunbridge Wells.

PRINCE OF WALES, a soft crimson scarlet, fine shape, a most abundant bloomer, and will make a fine bedder; was in the collection that obtained the Silver Gilt Medal at the Royal Botanic in June. Each, 5s.

ANGUSTIFOLIA SUPERBA, a fine yellow, both for greenhouse and also for bedding purposes; was awarded an Extra Prize at the Royal Botanic in June last. This also will make a most useful pot and market plant, being so dwarf and stiff in growth; habit good, and the medium size foliage, which is well shown, really makes it so ornamental. I have proved it also these two seasons as a first-rate bedder. 5s.

MODEL, a fine large straw-coloured yellow, distinctly spotted all over with crimson spots; a first-rate shaped flower. This also was in the collection that obtained the Silver Gilt Medal at the Royal Botanic in June, 1861. 5s.

MONARCH, an immense large fine-shaped flower; colour self yellow, beautifully spotted and blotched all over the flower with crimson. 5s.

DUKE OF WELLINGTON, a beautiful dark crimson puce, medium size flower, habit of General Havelock, with exquisite foliage. This will make a fine bedder; it is so dwarf in growth. 5s.

LADY HAVELOCK, a beautiful deep yellow ground, spotted all over with velvet spots, with a fine white crimson throat. This variety is quite as distinct in foliage as anything I have seen, being in the way of angustifolia, only so rich and graceful in appearance, which makes the plant ornamental. Habit good, fine-shaped flower. 5s.

KING OF PRUSSIA, orange ground, margined with scarlet, beautifully spotted all over with crimson spots. This is a noble flower in the way of King of Sardinia, only a much finer shaped flower. 5s.

SOIRÉE, medium size globe flower; colour yellow, finely dotted over with crimson spots, with a fine dark belted throat, exceedingly showy. 5s.

I have appointed Messrs. WM. ROLLISSON & SONS, of Tooting, my sole Agents for the above plants, of whom they can now be had; also of myself.

A liberal allowance will be made to the Trade. Post-office Orders made payable in favour of JAMES BURLEY, at Godstone, Surrey.

JAMES BURLEY, Nurseryman, Limpsfield, Surrey.—May 3.

To the Trade.

NEW SEEDS DIRECT FROM THE GROWERS.

CHARLES SHARPE AND CO., SEED GROWERS, Sleaford, will have much pleasure in forwarding on application their WHOLESALE PRICED LIST of AGRICULTURAL SEEDS, which have been grown upon their own land with the utmost care from the finest selected stocks. The advantages of procuring Seeds direct from the Growers are too obvious to require comment, and from the experience of C. SHARPE & Co. in the growing and harvesting of Seeds, a satisfactory result may be calculated on with certainty when their Seeds are used.

SHARPE'S IMPROVED LARGE SWEDE.—The largest and best cropping Swede in cultivation; it produces a finely-shaped large bulb, without a coarse top. A Coloured Lithograph of the Swede will be sent to purchasers.

CHARLES SHARPE & CO., Seed Growers, Sleaford, Lincolnshire.

Verbena Fireball.

MESSRS. J. AND C. LEE having thoroughly proved VERBENA FIREBALL last summer, can recommend it as one of the best, if not the best, and most useful for bedding purposes, combining, as it does, the intense scarlet and compact truss of Firefly with the robust and free-flowering habit of Purple King.

To be sent out in May, price 12s. per dozen.

Nursery and Seed Establishment, Hammersmith, London, W.

Green Hollies.

CORNELIUS WHITEHOUSE (late WHITEHOUSE & WHITTAKER), Brereton Nursery, Rugeley, Staffordshire, offers several hundred thousand stout, free-growing, and exceedingly well rooted 2-year Seedling, and extra transplanted HOLLIES, from 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, and 18 to 24 inches and upwards. Also fine plants of HEMLOCK SPRUCE, ABIES CANADENSIS, 6 feet and upwards. Trade price, low, on application.

To Parties requiring Specimens of

ARAUCARIA IMBRICATA, 1 foot to 12 feet,
CEDRUS DEODARA, 6 feet to 25 feet,

GEORGE BAKER begs to offer the above fine handsome Trees, the whole of which have been regularly transplanted to insure their safe removal. Prices of each will be sent on application.

G. B.'s GENERAL CATALOGUE will be forwarded free by post.

American Nursery, Bagshot, near the Sunningdale Station, South Western Railway.

New Ornamental Plant.

A. VAN GEERT, Ghent, Belgium, begs to offer good healthy young plants of the new AGAVE SCHIEDIGERA, the finest and most showy of this tribe. The following is the discoverer's description of the plant:—

"Habit and dimension of Agave filifera, which it far surpasses in beauty, with leaves a little larger, changing nearly in every plant from green to red; the smaller leaves on separating from the centre leave snowy white lines, and bear on the sides white ribbon-like filaments, which have a very showy appearance on the green or reddish flesh of the leaves." Price 10s 6d. each, or 84s. per dozen.

A SUPPLEMENT to my CATALOGUE No. 50 is now ready, which may be had on application to my Agents, Messrs. R. SILBERRAD & SON, 5, Harp Lane, London, E.C.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by PRICE'S PATENT CANDLE CO., Limited.

Magnified Aphides.

NEAL'S PATENT APHIS PASTILS, One Shilling and Two Shillings per packet, are now acknowledged by all disinterested persons to be the only cheap and effectual way of smoking a Greenhouse; they destroy all insects, and cannot injure the foliage unless they are damp. Testimonials from Florists and Scientific men of the highest standing may be had on application.

NEAL'S PLANT SOAP

is a perfectly new preparation, free from all smell, little more than half the price of the ordinary compounds, is not injurious, but on the contrary useful to the health of the Plant; destroys Red Spider, Mealy Bug, American Blight, Mildew, Scale, Thrip, Green Fly, and all other Insect Pests, and is only 1s. a packet of four cakes. May be obtained of all principal Seedsmen.

Patentee: J. NEAL, Edward Street, Birmingham.

Upwards of 2000 Cases have been reported as Cured by

JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.

AGENTS:—

Messrs. Wood & Ingram, Huntingdon
„ Wood & Sons, Maresfield, near Uckfield
„ J. & J. Fraser, Lea Bridge Road, London, N.E.
„ Grayson & Co. Bury St Edmunds
„ Wm. Urquhart & Son, Dundee
„ Dicksons & Co., Waterloo Place, Edinburgh
„ Minier, Nash & Nash, 60, Strand, London
„ Hurst & McMullen, 6, Leadenhall Street, London
„ Fisher & Holmes, Handsworth, Sheffield
„ Finney & Co., Gateshead
„ Stuart & Mein, Kelso
„ Martin & Son, Hull
„ Mr. John Harrison, Darlington
Mr. Richard Smith, Worcester

Seed Warehouse, 10 and 11, Exchange Street, Norwich.

THE LONDON MANURE COMPANY

(ESTABLISHED 1840,)

Are now prepared to send out the following MANURES:—

CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

Tenant Farmers' Manure Company.

ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
MANUFACTURED BY

THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land

Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.

Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.

C. T. MACADAM, Secretary.

Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.

The Manures manufactured by J. B. LAWES for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—

	£	s.
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6	6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES ..	5	5
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8	0

These Manures can be obtained of MR. LAWES, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American and other Cakes at market prices.

Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed. 1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.

Extract of Opinion from MR. WAY, *January* 23, 1862.

"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."

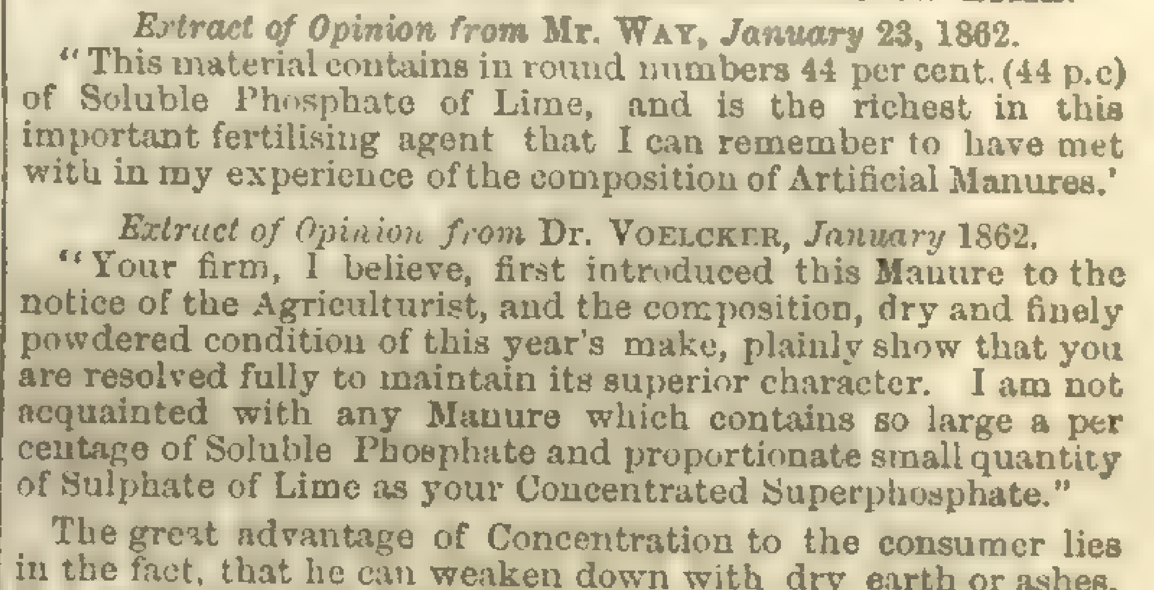
Extract of Opinion from DR. VOELCKER, *January* 1862.

"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."

The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.

Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & CO., Plymouth.

Liquid Manure Distributor.



THE JUDGES of the Liverpool, Manchester, and Staffordshire Agricultural Shows, 1861, have each awarded the First Prize to I. JAMES, Tivoli Works, Cheltenham, for his LIQUID MANURE DISTRIBUTOR, making a total of 17 Prizes. It is also well adapted for Watering Streets, supplying the Steam Plough, Irrigating, or for a Fire Engine. Also his last great improvement in WASHING MACHINES, which have been awarded several First Prizes, and will wash 20 Shirts in 20 minutes.

Blight.

BROWN'S PATENT FUMIGATOR.—A Portable Instrument for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers in the open air, without injuring the most delicate plant; delivering the smoke cold, in a dense mass, and effecting a great saving of Tobacco. Price 10s. and upwards.

Manufactured and supplied to the Trade by Messrs. BARBER & GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

PHOSPHO GUANO.

PETER LAWSON & SON, General Contractors,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. Voelcker, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.
(Signed) "Augustus Voelcker."

Opinion of Dr. Anderson, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.
(Signed) "Thomas Anderson."

Opinion of Dr. Stevenson Macadam, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for the Root Crops.
(Signed) "Stevenson Macadam."

Opinion of Dr. Hodges, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.
(Signed) "John F. Hodges."

Opinion of Dr. Apjohn, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows or Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l.* 9*s.* 8*d.* per ton.
(Signed) "James Apjohn."

Price, Free on Rail, £12 5s. per Ton, Bags included.

_ *None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

PETER LAWSON & SON, 27, GREAT GEORGE STREET, WESTMINSTER, LONDON, S.W.

SAMUELSON'S SILENT, SELF-CLEANING, LAWN MOWERS,

WITH MANWARING'S PATENT NOISELESS GEAR, AND BOYD'S PATENT SELF-CLEANING BRUSH.

THESE STANDARD MACHINES ARE CONSTRUCTED WITH A SIMPLE AND DURABLE SILENT DRIVING GEAR.

PRICES, including Packing Case, and Carriage paid to any Railway Station in the Kingdom:—

		Boyd's & Manwaring's Patent.	Manwaring's Silent Gear only.
MANUAL POWER	12 inches wide	£5 0 0	£4 12 0
	16 "	7 0 0	6 10 0
	19 "	7 10 0	7 0 0
	22 "	8 10 0	8 0 0
PONY POWER	22 inches wide	£9 5 0	£8 15 0
	25 "	12 0 0	11 10 0
	30 "	15 15 0	14 14 0

Testimonial. Donnington, Chichester, March 5.

Sir,—In reply to your letter of the 25th ult. respecting the Lawn Mower I had from you last year, I am pleased to give it my most decided approval; for although I have had one in use for the last 15 years, I have never had one that did its work as well as this, or which was so little liable to get out of order. I consider the cleaning and sharpening apparatus a very great improvement. I have a piece of lawn which in the days of the Scythe always took up two men's time for three days to roll, mow, and sweep; they can now with ease go over this ground with your Machine in a little over two hours, and leave it well finished, so that in fact these Machines soon pay for themselves in labour only, to say nothing of the many other advantages derived from them.—Yours faithfully,
W. J. Humpling.

Orders direct or through Dealers will be executed according to priority of receipt. May be obtained at the Works, Banbury; at Mr. Samuelson's Warehouses, 12, Parliament Street, Essex Bridge, Dublin; Newcastle; Stockton; York; Shrewsbury; and Bristol. Also of all Ironmongers and Seedsmen, and at

MR. SAMUELSON'S WAREHOUSE, 76, CANNON STREET WEST, LONDON, E.C.

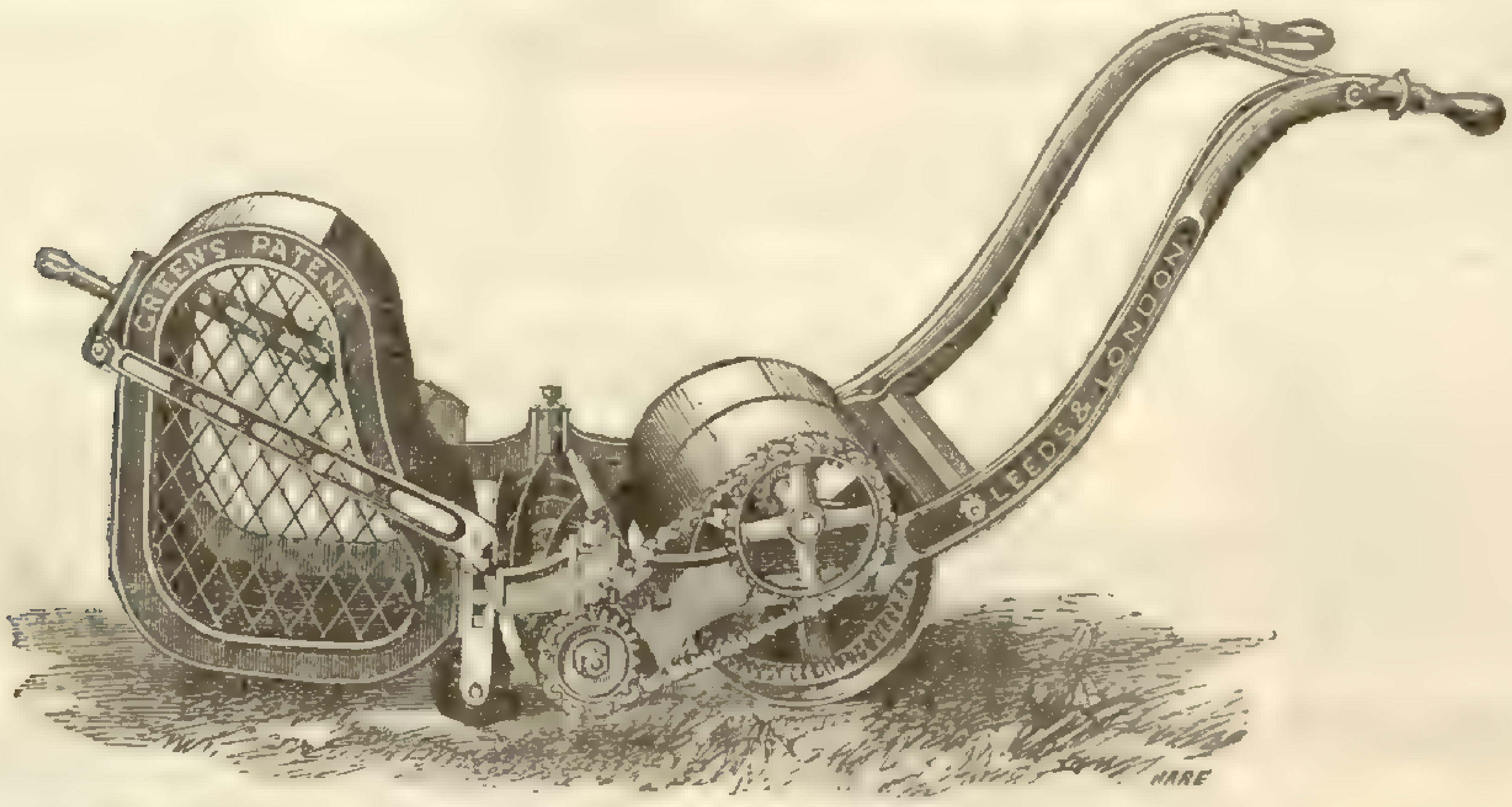
GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.



The Improvements are of such an important character that all users should not fail to make themselves acquainted with them.

For ILLUSTRATED PRICE LISTS, with full particulars, address

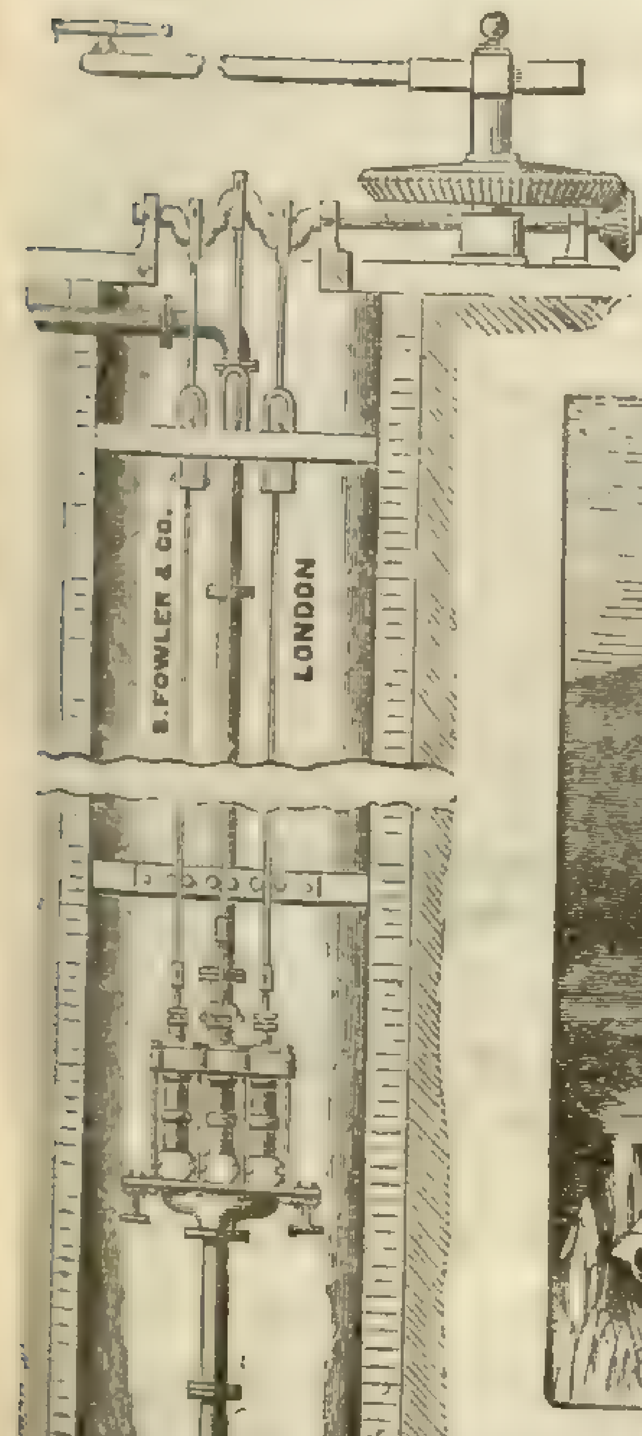
T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

OR ANY OF THE PRINCIPAL IRONMONGERS AND SEEDSMEN, &c., IN THE KINGDOM.

BENJAMIN FOWLER & CO.,

MANUFACTURERS OF PUMPS AND HYDRAULIC MACHINERY,

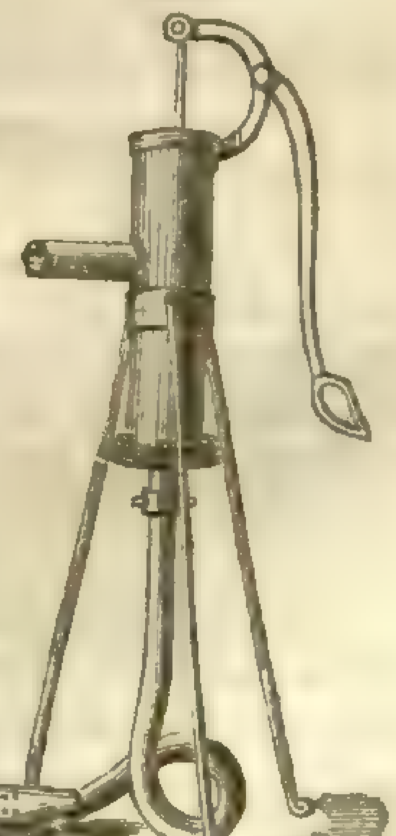
WHITEFRIARS STREET, FLEET STREET, LONDON, E.C.



No. 37.

THE accompanying Sketches show some useful forms of apparatus in general demand for Raising and Forcing Water or Liquid Manure. The Landscape Sketch shows the adaptation of Fowler's Improved Hydraulic Rams for the supply of Mansions, Farms, &c. A large number of these simple Self-acting Machines are in use, giving great satisfaction. Their adoption is not confined to positions as shown below, as they are suited to any situation where a few feet fall can be obtained from a spring, brook, or stream; they will force to an elevation equal to ten or more times the number of feet of fall, and to any distance.

No. 4.



No. 38.

No. 37. FOWLER'S Improved Simple HORSE GEAR for raising water from deep wells with double or treble pumps. B. F. & Co. also make and fix Deep Well Pumps of all descriptions for hand power.

No. 4. FOWLER'S CAST IRON BORED PUMPS of all sizes, with improved brass valves for Garden and Farm use, from 1*l*. 5*s*. each.

No. 38. FOWLER'S Galvanized Portable LIQUID MANURE PUMPS, with flexible suction hose. Price with 10 feet of pipe and strainer, 4*l*. 5*s*.

No. 138. FOWLER'S Improved DOUBLE ACTION FORCE PUMP in frame. These excellent pumps are largely used and much approved.

No. 46*a*. FOWLER'S Superior DOUBLE-ACTION PORTABLE FORCE PUMPS and simple FIRE ENGINES for Water or Liquid Manure. Prices, 5*l*. 15*s*., and 7*l*. 10*s*.

No. 50. FOWLER'S Improved (Holman's Patent) DOUBLE-BARREL PUMPS, FARM FIRE ENGINES, and IRRIGATING PUMPS. Prices, from 12*l*. 10*s*.

No. 49. FOWLER'S Improved GARDEN ENGINES of all sizes, in Oak and Galvanized Iron Tanks, from 50*s*. each.

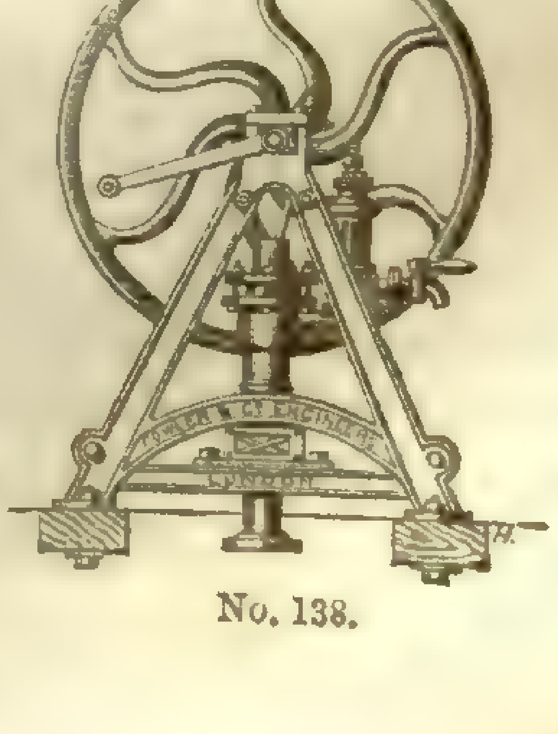
No. 49A. FOWLER'S Improved SWING WATER CARRIERS, holding 24 and 35 gallons. Prices, 42*s*. 6*d*., and 50*s*.

No. 49.

No. 46*a*.

No. 50.

No. 49 A.



No. 138.

FURTHER PARTICULARS, ESTIMATES, AND ILLUSTRATED PRICE LISTS ON APPLICATION.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.

Manufactory: Stoke-upon-Trent.—May 3.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

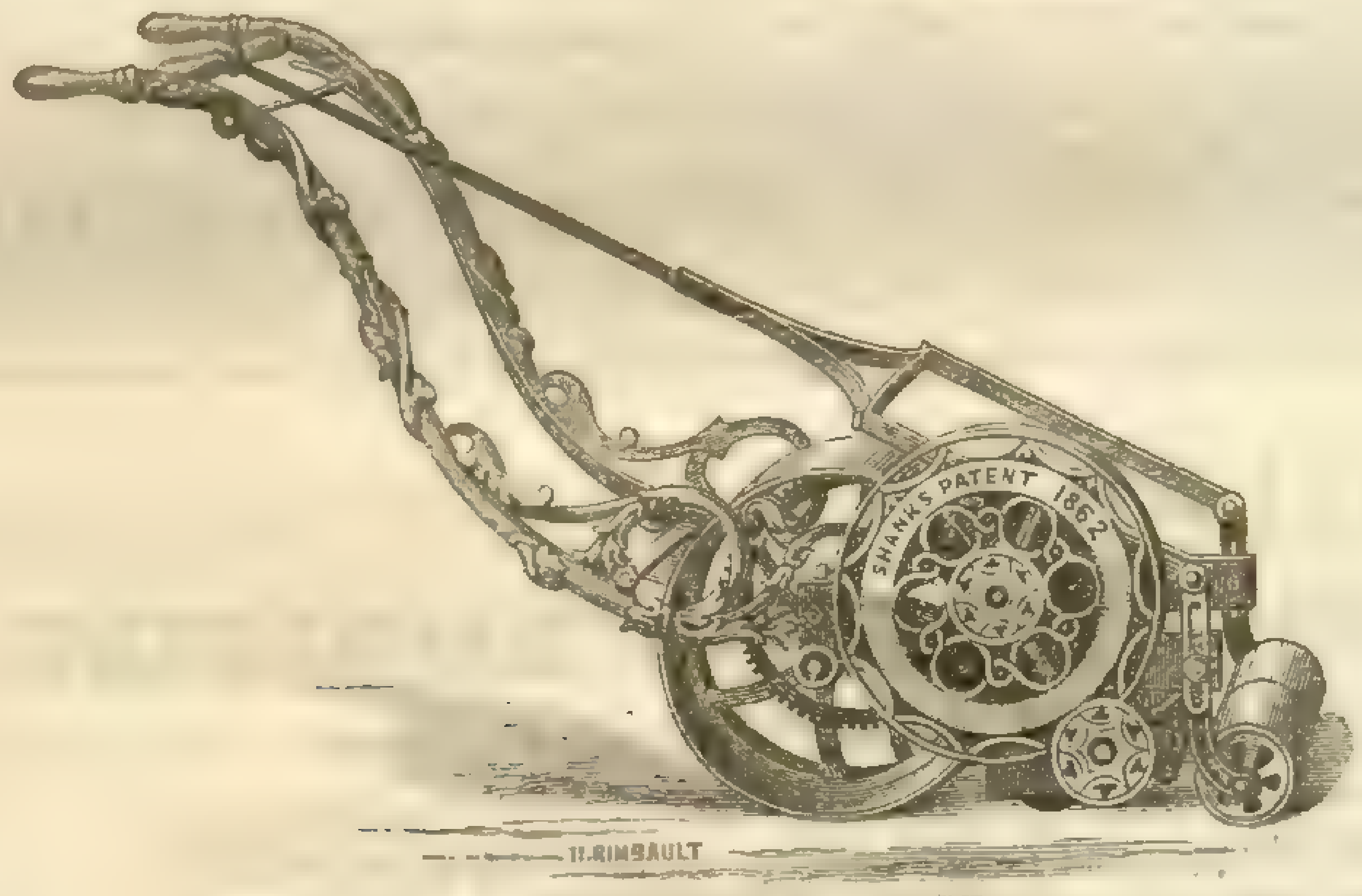
Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

TWO HUNDRED SETS
OF
STEAM PLOUGHING and CULTIVATING APPARATUS
HAVE NOW BEEN SENT OUT BY
JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD.

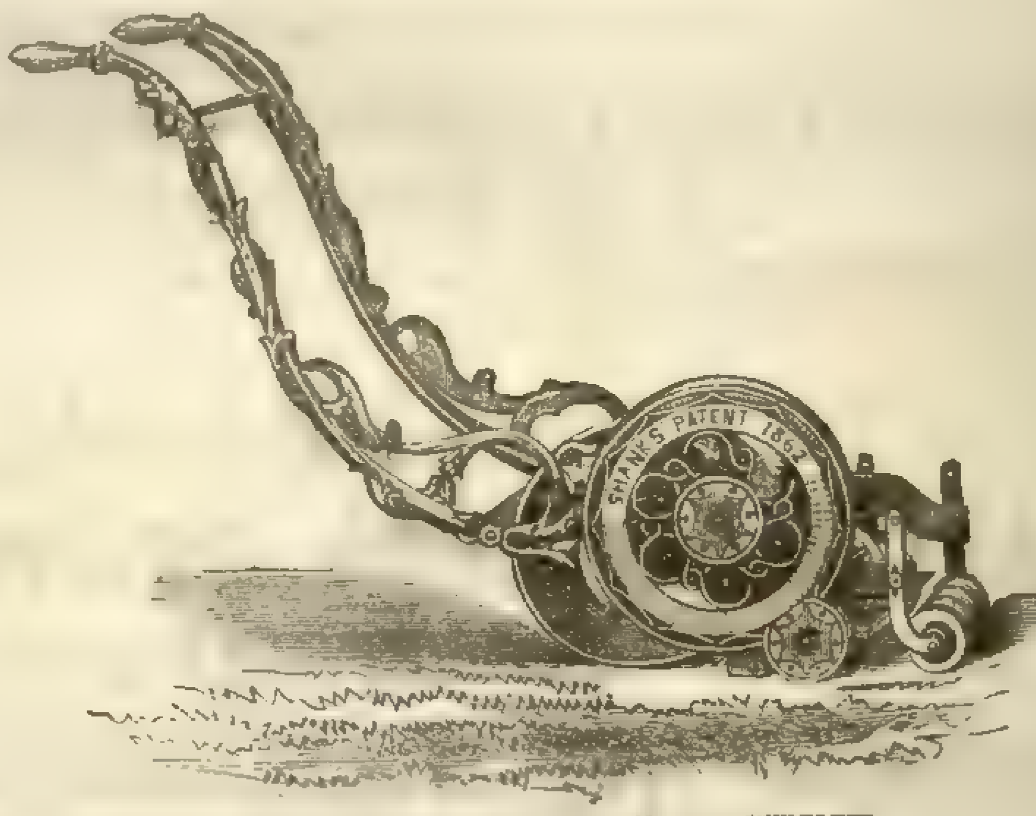
Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

SHANKS' NEW IMPROVED PATENT
LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,
WITH SILENT MOTION IF SPECIALLY DESIRED.



LARGE HAND MACHINE.



12-INCH, or LADY'S MACHINE.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0		No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | Width of Cutter. No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

PRICES.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man.*
No. 9.—22-inch Machine	8 7 6		No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*			

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Messrs. SHANKS have also brought out this season a new SMALL MACHINE, of the same graceful model as their other Hand Machine, which is specially intended to be used by Ladies or Gentlemen for recreation or amusement in the Flower Garden, and for Small Gardens where no regular Gardener is kept. This elegant and neat Machine has three great recommendations, viz.:—it is very cheap, very light, and very easily worked. Not the least difficulty or trouble need be anticipated in the management or working of this Machine, while the work executed is not only vastly superior to the Scythe, but a great deal sooner accomplished. No person having a Lawn, however small, should be without one of these useful Machines.

PRICES, including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 16.—16-inch Machine	£6 5 0	*Easily worked by a Stout Lad.*	No. 18.—12-inch Machine	£5 5 0	*Easily worked by a Lady.*
No. 17.—14-inch Machine	£5 15 0				
Silent Movement, 7*s.* 6*d.* extra.			Silent Movement, 4*s.* extra.		

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

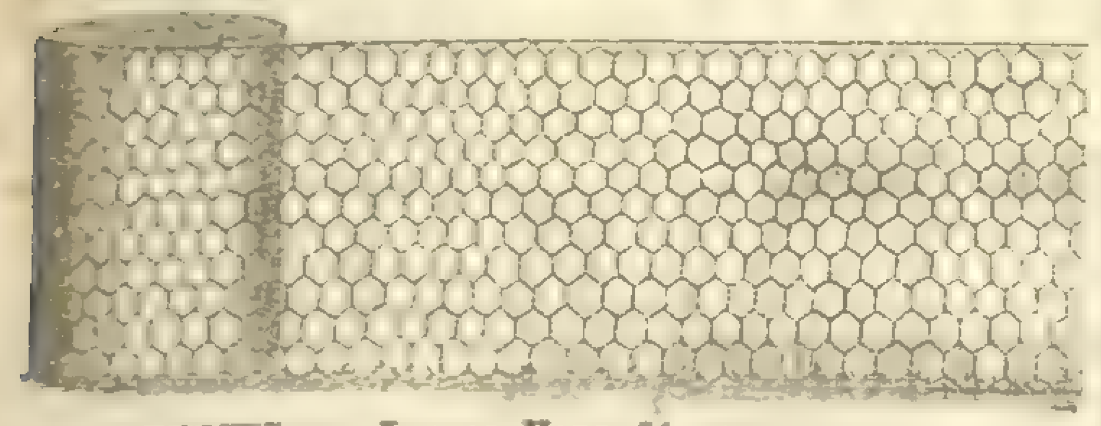
Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

*** *The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

SOLE AGENTS FOR LONDON:

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

NEW IMPROVED PREMIUM WIRE NETTING.
Great Improvement with Reduced Price.



PRICES PER LINEAL YARD 24 INCHES HIGH

Size of Mesh.	Mostly used for	Light. Jap	Light. Gal.	Medium Jap	Medium Gal.	Strong. Jap	Strong. Gal	Extra Strong. Jap	Extra Strong. Gal.
2¼ in.	Poultry ..	3d.	4d.	3¾d.	5d.	4½d.	6d.	5½d.	7d.
2 in.	Poultry ..	3½d.	4¼d.	4d.	5d.	5d.	6½d.	6½d.	8d.
1¾ in.	Small Rabbits	4d.	4¾d.	4¾d.	6d.	5½d.	7d.	7d.	9d.
1½ in.	Smallest Rabbits	5d.	6d.	5¾d.	7d.	7d.	9d.	9d.	11d.

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

. Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.

J. B. Brown & Co., 18, Cannon Street, City, London, E.C.

Patronised by H.R.H. the late Prince Consort.

GREENING AND CO.'S IRON WIRE FENCES, manufactured by Patent Machinery, possess the following advantages:—

1st. Are easily fixed by unskilled labourers.
2nd. Require few and inexpensive supports.
3rd. Are ornamental in appearance.
4th. Have increased strength from their peculiar construction.
5th. Are but half the price of similar hand-made Fences.

Upwards of 40 varieties are made, the principal ones being:—

No. 1 A variety.—Cattle and Sheep Fence, 3ft. 9in. high, 1s. per yard.
No. 7 B variety.—Sheep folding Fence, 3ft. high, 9d. per yard.
No. 4. variety.—Hare and Rabbit-proof Fence.
No. 11. variety.—Poultry and Chicken-proof Fence.
No. 16. variety.—Italian pattern Garden Fence.
No. 20. variety. — An admirable substitute for the old-fashioned wire netting.

G. & Co. will be happy to forward, without charge, an explanatory Circular of the principal varieties. Their enlarged Catalogue of Fences and Gates post free on receipt of three stamps.

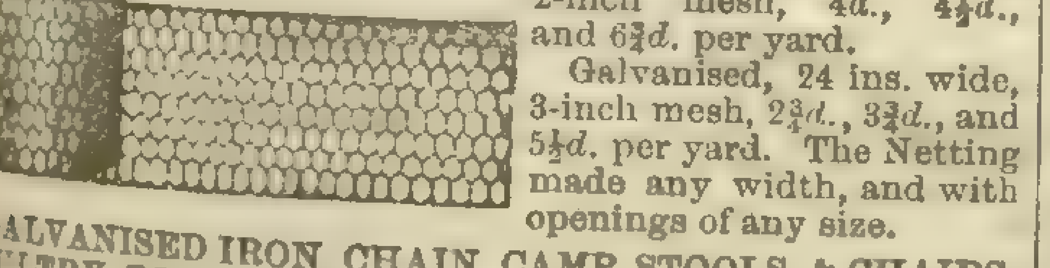
Address Greening & Company, Victoria Works, Oxford Street, Manchester.

Prices Reduced.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING
for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.

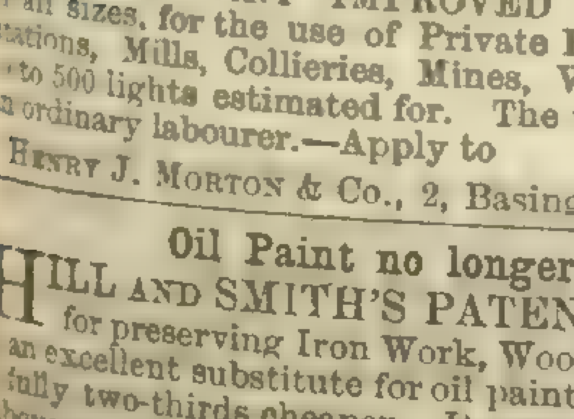
WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1s. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 4d., 4½d., and 6¾d. per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 2¾d., 3¾d., and 5½d. per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.
Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS
of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 1 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

Henry J. Morton & Co., 2, Basinghall Buildings, Leeds.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which Hill & Smith will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.

Apply to Hill & Smith, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

JOSEPH HAYWOOD AND CO.,
MANUFACTURERS OF
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

Garden Engines and Syringes.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

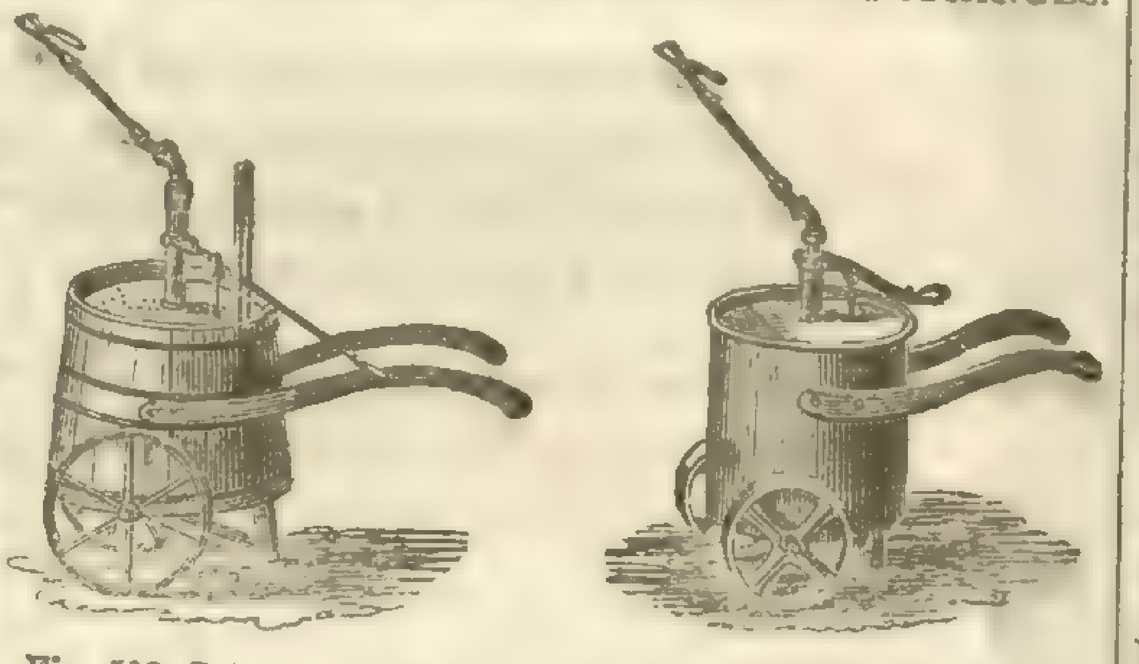


Fig. 598. J. Tylor & Sons' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. Tylor & Sons' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

15 gallons .. £5 12 6 | 28 gallons .. £7 2 0

Fig. 599. Ditto GALVANIZED IRON TUB.

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15 0	£3 5 0	£3 15 0	£5 0 0	£5 10 0

Fig. 618. No. I. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. £1 8 0 each.
No. 2. Ditto ditto 1 2 6 "
Telescope Branch Pipe for ditto .. 0 10 0 "

Fig. 619. Large GARDEN SYRINGE, with one rose and jet .. .. 11s. 6d. each
" 620. Middle Ditto ditto 10 3 "
" 621. Small Ditto ditto 9 0 "
" 622. LADIES GARDEN SYRINGE, with do. 7 6 "

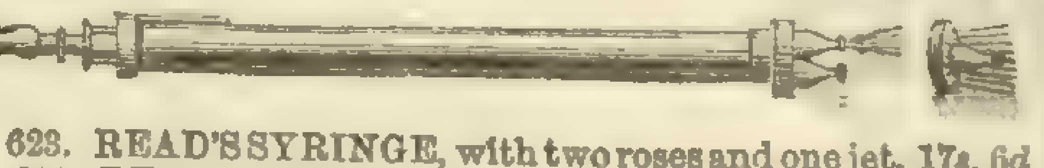


Fig. 623. READ'S SYRINGE, with two roses and one jet, 17s. 6d
" 624. READ'S SYRINGE, with one rose and jet, 15 0
" 625. Improved ditto ditto large 14 0

Garden Engines and Syringes of J. Tylor & Sons' manufacture kept in stock by Ironmongers and Seedsmen in every part of the United Kingdom.

J. Tylor & Sons, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

WANTED to RENT, by a first-class tenant, a good FARM, of not less than 400 acres in extent, in the South West of England, conveniently situated, with the Shooting.

Particulars to Agricola, care of Messrs. Dawson, 74, Cannon Street, City, London, E.C.

TO BE LET on LEASE, LLANGWARREN FARM in Pembrokeshire, 12 miles from Haverfordwest Station, consisting of 475 Acres, about one half Pasture. The Land has been in the hands of the owner for the last 10 years, and is in a high state of cultivation. The Feeding-sheds will hold 100 Head of Cattle.

Apply to J. B. Lawes, 1, Adelaide Place, London Bridge, E.C.

To Nurserymen, Kitchen Gardeners, &c.

TO BE SOLD, the INTEREST in the LEASE of that old and well-established Nursery, known as BARNES NURSERY, at Merrion, within 1½ mile of the City of Dublin, with the entire STOCK-IN-TRADE, consisting of Greenhouse and Hothouse plants in every variety, Timber and Fruit Trees, Flowers in pots, Shrubs, &c. This Nursery stands on 24 acres 2 roods and 36 perches statute measure, has extensive Green and Hothouses thereon, with all the requisites for the carrying on of the Nursery business; and is held for an unexpired term of 44 years, at the rent of 202l. per annum. There are two good substantial moderate sized two-story Dwelling Houses on the ground, with Lodges for foremen and labourers; also a handsome Shop on the public road at the entrance. This is the largest Nursery in Ireland, and its patrons comprise most of the nobility and gentry of the country. It stands on the direct road from Dublin to Kingstown, in the midst of all the fashionable Villas near Dublin; and a portion of the ground might be most profitably employed as a Vegetable Garden, there being no such accommodation near Kingstown, or that side of Dublin. Other portions of the land will presently acquire a high value for building, as it adjoins the extensive building ground of Lord Herbert of Lee, which is becoming rapidly in demand. A Lease for a more extended term can be obtained, if required. If necessary a portion of the purchase money would be allowed to remain out as a charge upon the property.

The Proprietor would have no objection to enter into arrangements with an experienced Working Gardener, with a small capital, for the carrying on the business of Nursery and Vegetable Gardens, or with one or more for the working of each separately.

For particulars apply to John Riddick, Solicitor, 8, Eustace Street, Dublin.

Sales by Auction.

Periodical Sale of Poultry and Pigeons.

MR. H. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, May 6, at 12 o'Clock precisely, a choice assortment of POULTRY and PIGEONS, consisting of upwards of 200 Pens from the yards of Mrs. Stow, Messrs. Tudman, Cartwright, and others, consisting of Cochins, Dorkings, Spanish, Hamburghs, Brahmas, Game, Aylesbury, and Rouen Ducks, &c., also some first-rate Pigeons from the renowned Studs of Messrs. Fulton, Edge, and other well known fanciers.

On view the Morning of Sale, and Catalogues had.

Extensive Sales of Bedding Plants.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, May 7; TUESDAY, May 13; and WEDNESDAY, May 21, at half-past 12 o'Clock precisely each day, 250,000 Choice BEDDING PLANTS, comprising healthy and well grown plants of most of the newest varieties.

On view the Morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, May 14, at half-past 12 o'Clock precisely, the remaining portion of Dr. Butler's well known Collection of ORCHIDS, about 150 Plants selected from his best varieties, and intended for his private growth, but will now be Sold without reserve. Also a Collection of Hybrid Seedlings AMARYLLIDÆ from seed saved from the finest varieties.

On view the Morning of Sale, and Catalogues had.

Importation of Orchids from the East Indies,
IN THE FINEST POSSIBLE CONDITION.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY, May 22, at half-past 12 o'Clock precisely, an Importation of Rare and Valuable ORCHIDS, comprising

Vanda Batemani	Cypripedium species nova
" violacea	Dendrobium taurinum
Phalænopsis amabilis	Aerides quinquevulnerum
" rosea	" Warneri
" Schilleriana	" rubrum
Saccolabium species nova	&c., &c.

On view the Morning of Sale, and Catalogues had.

Choice Tulips.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Charles Turner to SELL, at the Royal Nurseries, Slough, at 12 o'Clock, on THURSDAY, May 15, 100 rows of his finest TULIPS, in bloom. Comment would be superfluous, as it is well known that the Slough Collection consists of the finest varieties in cultivation.

Catalogues of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.; or at the Royal Nurseries, Slough.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Bartholomew Lane, E.C., on FRIDAY, May 9, at 12 o'Clock, a choice collection of GREENHOUSE PLANTS, consisting of Azalea Indica, Ericas, Acacias, Geraniums, Calceolarias, and other plants in bloom; fine Climbing Roses, Rhododendrons, Kalmias, and Herbaceous Plants; with a selected assortment of Ornamental Plants for Bedding; Verbenas, Fuchsias, Dahlias, &c.

On view the Morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nursery, Leytonstone.

Mile End Nursery.
To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Mile End Nursery, Bow Road, Middlesex, E., on WEDNESDAY, May 21, at 12 o'Clock, about 10,000 BEDDING and other GREENHOUSE PLANTS, remarkably well grown, consisting of Show and Scarlet Geraniums, Fuchsias, Verbenas, Heliotropes, Calceolarias, Petunias, Lobelias, &c.; choice CLIMBING PLANTS, including Cobæa scandens, Eccremocarpus, Tropæolum Triomphe d'Iris and Canariensis, Lophospermum, Maurandya, &c. May be viewed prior to the Sale.

Catalogues may be had on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, N.E.

MESSRS. PROTHEROE AND MORRIS will offer by PUBLIC AUCTION about the middle of May (if not previously disposed of by private contract), the LEASE of a compact NURSERY situate in the Leytonstone Road; 13 years unexpired at a Ground Rent of 10l. per Annum, with a good 8-roomed Dwelling House, Shop, Stabling and Cart Sheds; also the STOCK in TRADE, consisting of several thousand Greenhouse and Bedding Plants; 4 Span Roof Greenhouses, Brick Pits, Boxes, Seed Drawers, &c.; of which due notice will be given by the Auctioneers and Valuers, American Nursery, Leytonstone, N.E.

Vauxhall Nursery, late Chandler's.
Preliminary Notice of Important Sale of Nursery Stock.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Milne & Co., to SELL by AUCTION upon the Premises, on TUESDAY and WEDNESDAY, the 20th and 21st inst., the whole of the PLANTS, GLASS, &c., consisting of a large Collection of CAMELLIAS, including the large specimens which have rendered the Establishment famous for so many years; and which are well deserving the attention of gentlemen requiring specimens for furnishing their Conservatories. The varieties are amongst the best in cultivation; they are handsome and symmetrical in form, and perfectly safe to move.

Specimen AZALEAS suitable for Exhibition, half specimens and smaller plants fit for nurserymen's stock; a large assortment of good and rare STOVE and GREENHOUSE PLANTS, Ferns, Lycopods, Camellia Stocks and Bedding Plants; the whole of the above is clean, healthy, well-grown stock, and will be offered in large and small lots to suit all classes of purchasers.

The GLASS consists of a Propagating House, 60 feet by 20, nearly new, and fitted up with Propagating and Grafting cases, a large Stove, and several Lean-to and Span-roofed Greenhouses, and a great number of Pit Lights in excellent condition. Saddle and Conical Boilers, and several hundred feet of 3 and 4-inch Piping.

Two nests of Seed Drawers and other Shop Fittings, Barrows, Garden Engines, and other Implements.

The whole to be unreservedly disposed of, as the ground is to be immediately built upon.

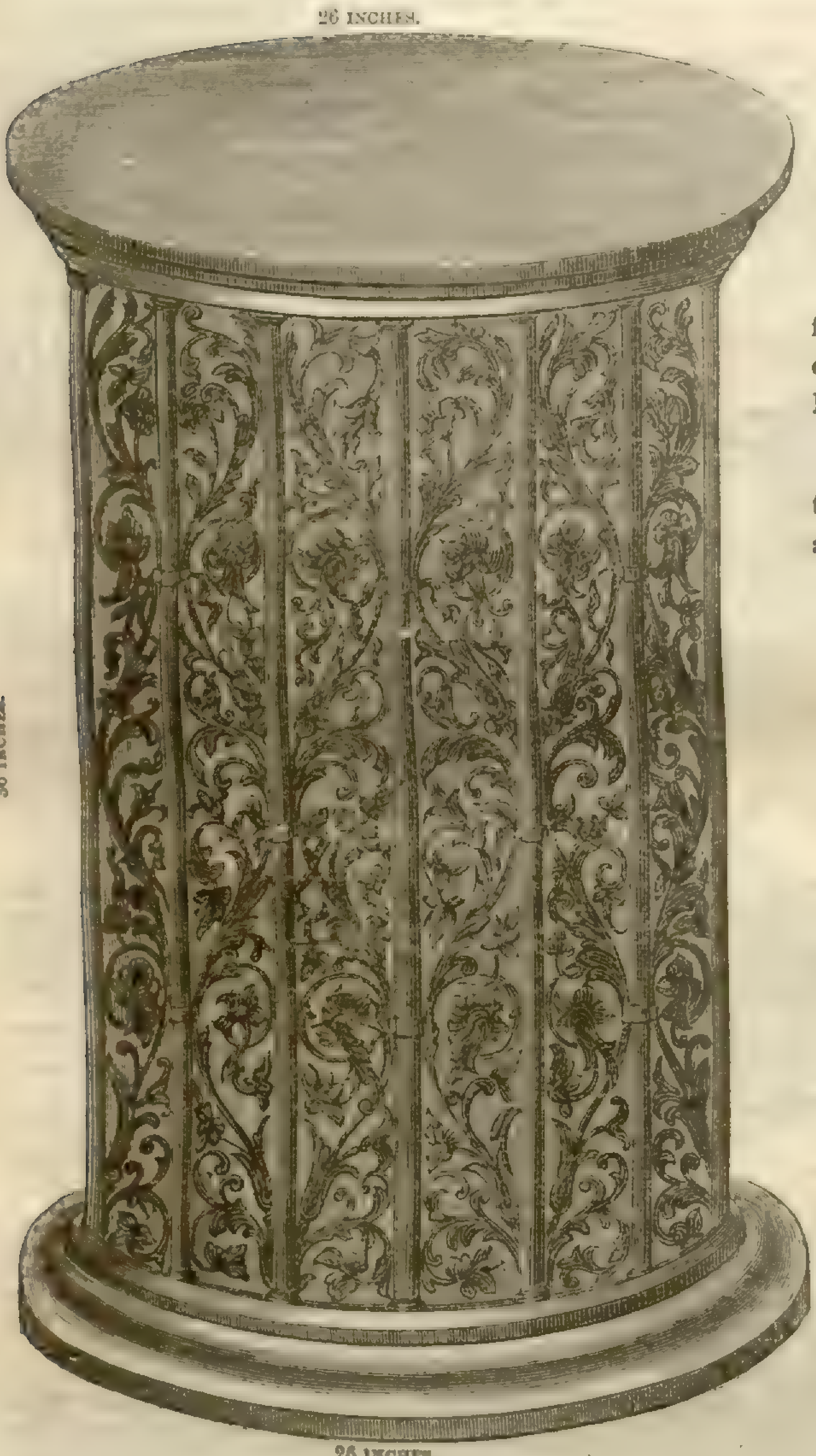
A future Advertisement will announce the issue of Catalogues and further particulars.

HEATING BY HOT WATER.

IMPROVED ROUND COIL AND ORNAMENTAL CASE,

FOR

WARMING HALLS, PUBLIC BUILDINGS, CONSERVATORIES, &c.



ROUND COIL CASE.

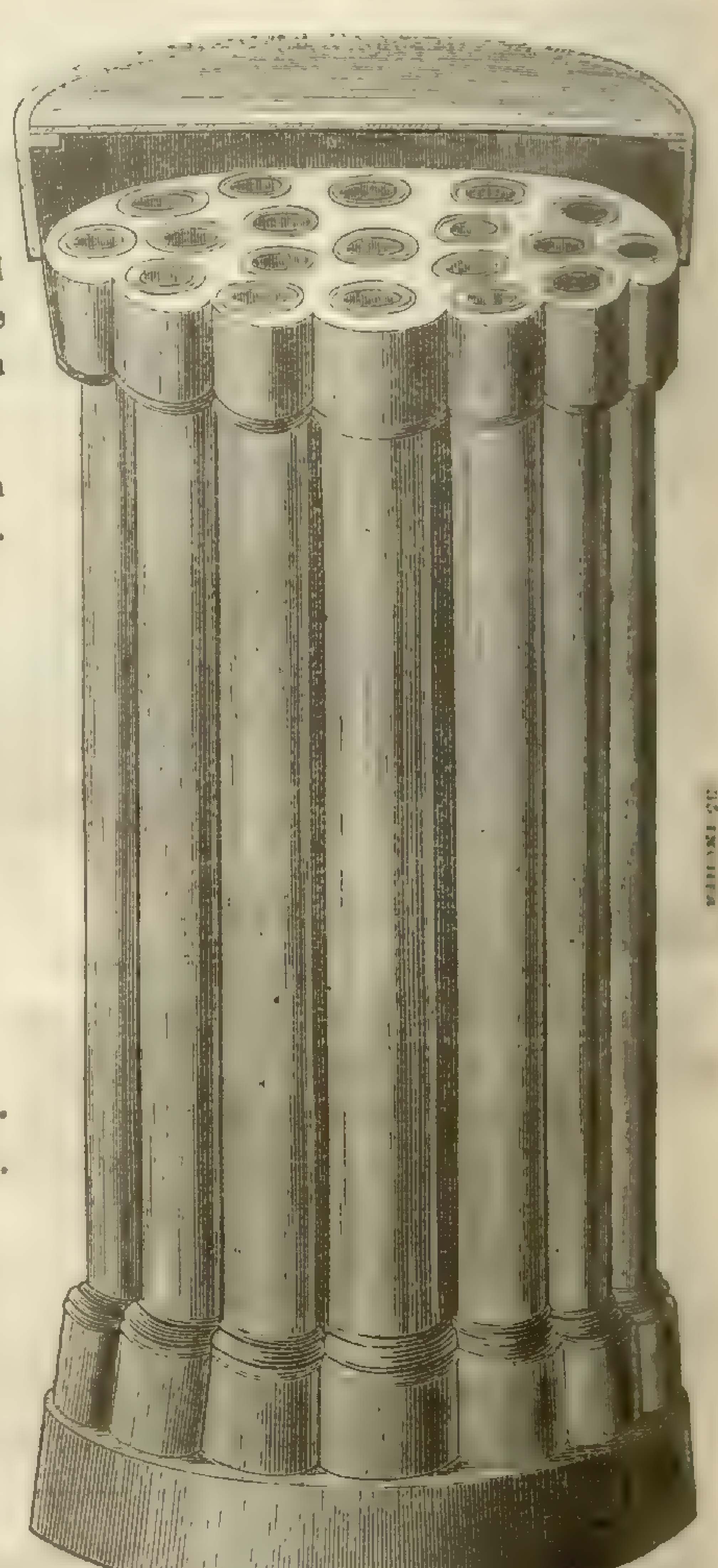
Any number of these Coils may be Heated from an independent Boiler, or they may be connected by means of a small Wrought-iron Pipe to any Pipes now in use.

A Vase, or any other Ornament, placed on the top of the Case has a very good appearance.

PRICE.

Coil fitted ready for use	£5 10*s*.
Case	£3 10*s*.

Case, if Bronzed, 20*s*. extra.



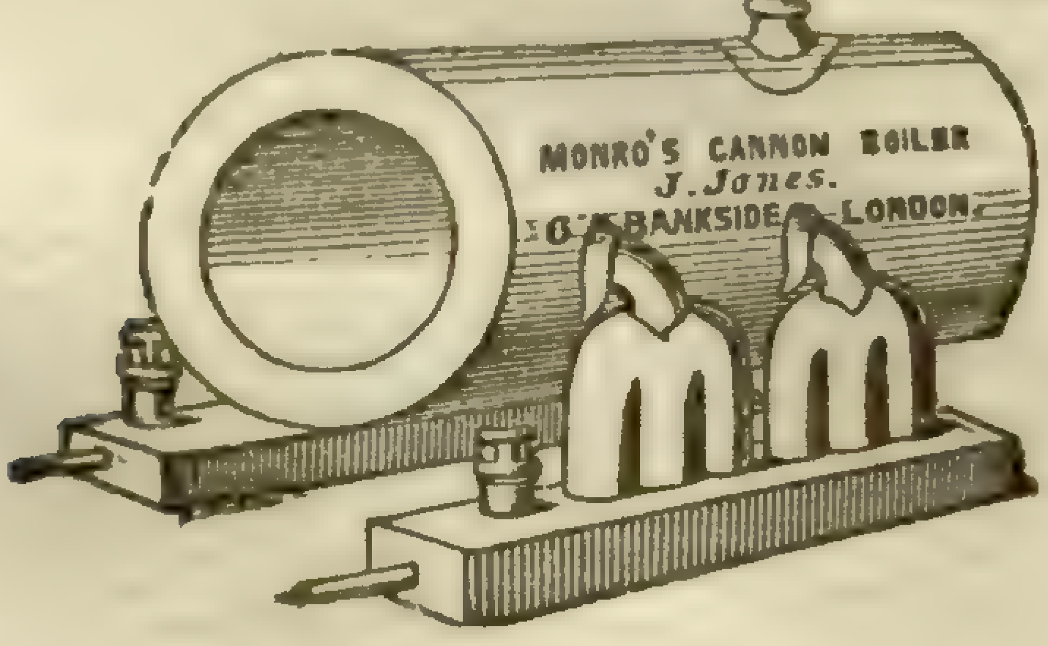
COIL of 19 2-inch PIPES.

J. JONES,

IRON MERCHANT AND HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

HOT-WATER APPARATUS OF EVERY DESCRIPTION ERECTED COMPLETE.

MONRO'S CANNON BOILER.



PRICE.		Each.
24-inch Wrought Iron	... ...	£6 10 0
30-inch „	... ...	7 10 0
36-inch „	... ...	8 10 0
48-inch „	... ...	12 0 0
60-inch „	... ...	20 0 0
72-inch „	... ...	25 0 0

These Boilers have now been fixed in all parts of the Kingdom, and they have in all cases given the greatest satisfaction. They have been worked by most of the first Horticulturists of the day, and have been pronounced as the best working, and at the same time the safest and most economical Boiler ever invented. They are now made of various sizes, suitable for Heating a small Greenhouse, or a range of Forcing Houses of any extent. They are also well suited for Heating Buildings of every description. With these Boilers Water can be thoroughly Heated in a large quantity of Pipe, in a short space of time. They only require a small amount of depth to set them in, and therefore the cost of setting is moderate, and they can be placed in situations where it would not be possible to set an Upright Boiler.

Many more advantages that these Boilers possess might be named, but J. JONES considers that the large number of them now fixed, and the satisfaction they have given, is the greatest recommendation. These Boilers are now kept in stock of all sizes, and are to be obtained only of

J. JONES,

IRON MERCHANT AND HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 19.—1862.] SATURDAY, MAY 10. { Price Fivepence. STAMPED EDITION, 6d.

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ROYAL HORTICULTURAL GARDEN,
South Kensington.
Admission during May:—MONDAYS, TUESDAYS, WEDNESDAYS (except 21st), and THURSDAYS, One Shilling. FRIDAYS, Half-a-Crown. SATURDAYS, Five Shillings. Band daily at 3.30.
WEDNESDAY, 21st, FIRST GREAT SHOW, 7s. 6d., or by Tickets previously purchased, Five Shillings.
Next Election of Fellows, May 12.

ROYAL BOTANIC SOCIETY,
REGENT' PARK.
EXHIBITIONS of PLANTS, FLOWERS, and FRUIT—WEDNESDAYS, May 28, June 18, and July 9.
AMERICAN PLANTS—MONDAY, June 9.
SATURDAY next, May 17, is the LAST DAY upon which the 4s. Tickets and the Fellows' Packets of 30 will be issued.

CRYSTAL PALACE.—The GRAND FLOWER SHOW will take place on SATURDAY, May 24. Admission by Tickets, purchased prior to the day of Exhibition, 5s.; on the Day, 7s. 6d.; and by One Guinea Season Tickets on payment of Half-a-Crown.
For SCHEDULE of PRIZES apply to Mr. W. HOUGHTON, Secretary to the Flower Show, Crystal Palace, Sydenham.

GRAND HORTICULTURAL FETE and ROSE SHOW in connection with the Exhibition of the NORTHAMPTONSHIRE AGRICULTURAL SOCIETY in BURGHLEY PARK, STAMFORD, on THURSDAY, July 17.
The Premiums offered amount to 200l., and are open to all England.
The Schedule, with Rules, &c., may be had upon application to Messrs. LAXTON & HEWITT, Hon. Secs., Stamford.

TO FLORISTS and GARDENERS.—A PIECE of PLATE, value 5l. 5s., will be given at the HORTICULTURAL EXHIBITION to be held at Grantham, Lincolnshire, on July 7, for the best 12 STOVE or GREENHOUSE PLANTS. Schedules may be had by sending Stamped directed Envelope to Mr. LYNE, Stationer, Grantham.

New Roses of 1862.
PAUL AND SON have now ready their usual fine Plants of the finest Novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

TWELVE of the Finest NEW PERPETUAL ROSES (sorts that have not yet flowered in English Gardens) for Two Guineas.
RICHARD SMITH, Nurseryman, Worcester.

WM. PAUL'S NURSERIES open to the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London. Every garden requisite, from the commonest to the choicest, at reasonable prices.
CATALOGUES free by Post.
Nurseries and Seed Warehouse, Waltham Cross, N.

Nurseries, Saffron Walden.
SUPERB DOUBLE HOLLYHOCKS.—Some few thousands of Plants yet for Sale. Seedlings, unbloomed, 18s., 25s., or 30s. per 100. Large plants, with colours, 25s, 30s., or 40s. per 100. Named varieties, in pots, 12s., 20s., or 40s. per dozen.
Apply to WILLIAM CHATER.

COLLECTIONS of FLOWER SEEDS.

	s.	d.
The best 100 sorts, including hardy, half hardy, and tender	20	0
The best 50 ditto ditto ditto	10	0
The best 36 ditto ditto ditto	7	6
The best 24 ditto ditto ditto	5	0

RICHARD SMITH, Seed Merchant, Worcester.

GLENNY'S unrivalled IMPROVED BALSAM SEED, from flowers three inches over, 6 Classes, 27 Stamps; Mixed packets, 13.
G. GLENNY, Horticultural Agent, Fulham, S.W.
. NURSERIES to LET.

ONE-YEAR SEEDLING AMERICAN ARBOR-VITÆ .. .. per 1000 20s. 0d.
One-Year Seedling PICEA PINSAPO .. " 60 0
" ITALIAN UPRIGHT CYPRESS " 20 0
Two-Year Seedling EVERGREEN OAKS " 50 0
" Transplanted CYPRESS, 6 to 9 inches " 50 0
RICHARD SMITH, Nurseryman, Worcester.

BERBERIS JAPONICA.—This fine hardiest of all hardy plants has no equal for planting in shady situations, game covers, &c. Its fruit is greedily devoured by Pheasants, and its magnificent foliage forms an under cover of surpassing beauty.
The plants can be supplied by CHARLES NOBLE, Bagshot.

BUTLER AND McCULLOCH'S SELECT LIST of BEDDING PLANTS may be had free and post paid upon application
BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, W.C.

JAMES CARTER AND CO.,
SEED MERCHANTS and NURSERYMEN,
237 and 238, High Holborn, London, W.C.

Cerastium Biebersteinii, 9s. and 12s. per doz.
JAMES CARTER AND CO., SEEDSMEN and NURSERYMEN, 237 and 238, High Holborn, W.C.

The Greatest Novelty of the Season.
CARTER'S "METEOR," new crimson variegated foliaged FUCHSIA, Post Free for 8s.
JAMES CARTER & Co., Seedsmen and Nurserymen, 237 and 238, High Holborn, W.C.

Bedding Plants.
G. AND W. DEAN are now sending out their usual strong healthy BEDDING PLANTS at moderate prices. These plants were struck in the autumn and well-hardened off.
Apply to Willow Grove, Chislehurst, Kent.

Waterloo and Fisherton Nurseries, Salisbury.
GEORGE HINXMAN begs to inform his Customers and the Public generally that his SPRING CATALOGUE of DAHLIAS, BEDDING, and other Plants, is now ready. Post free on application.

PELARGONIUMS.—Intending purchasers should send for our DESCRIPTIVE CATALOGUE, post free.
J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

DOBSON'S SPLENDID HYBRIDISED CALCEOLARIA is unequalled for variety, form, distinct and striking colours and habit. In sealed Packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. each.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIZE CINERARIA SEED.—Unsurpassed for quality. 1s., 2s. 6d., and 5s. per Packet.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

PRIMULA SINENSIS FIMBRIATA, ex. ex.—Sealed Packets, 1s., 2s. 6d., and 5s.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

RUSSELL'S PYRAMID PRIMULAS.—Now is the time to Sow. The First Prizes at the Royal Horticultural and Botanic Exhibitions were obtained by Mr. Todman with these varieties. Packets of Seed, price 2s. 6d. each, to be had of GEORGE CLARKE, Nursery, Streatham Place, Brixton Hill, S.

FOR SALE, a rare collection of NAMED TULIPS, about 700, late property of Mr. W. Hardstone, Florist, of St. Mary Cray, deceased. May be seen in bloom by application to Mr. R. TOWNSEND, Builder, St. Mary Cray.

TULIPS for SALE.—Two beds of first-rate flowers now in bloom, of 35 and 33 rows each, stages, awnings, cabinets, &c. Also a handsome FLAGSTAFF, 62 feet high, complete, with all its fittings and gear. Terms moderate.
May be seen at Myrtle Cottage, Twickenham Common, S.W.

VERBENA "FIREFLY."
Colour intense scarlet, fine habit; one of the best bedding Verbenas yet raised. Price 4s. per doz, 25s. per 100.
CARSTAIRS & SONS, Nursery, Edinburgh.
100 Bedding-out Plants for 20s.; 500, 4l. 10s.; or 1000 for 8l. 8s.
CATALOGUES free on application.

VARIEGATED GERANIUMS.—We have upwards of 3000 strong Plants, in 50 varieties, of VARIEGATED GERANIUMS. Price from 3s. per doz. and 20s. per 100.
CATALOGUES on application to
GODWIN & PADMAN, Broadfield Nursery, Sheffield, or J. C. PADMAN, Boston Spa, Tadcaster.

Bedding Plants as per Dozen.
GERANIUMS.—Tom Thumb, Brilliant, Flower of the Day, Mangles's Silver, Kingsbury Pet, and other sorts of Geraniums; also LOBELIAS, HELIOTROPES, and other Bedding Plants, at 2s. a dozen.
Apply to JOHN BOSWORTH, Gardener, Chatteris, Cambridgeshire.

FUCHSIAS and GERANIUMS.—FUCHSIAS in variety, from 3s. per doz.; 20s. per 100.
FUCHSIAS, 25 varieties, sent out in 1861, 6s. to 9s. per doz.
GERANIUMS, Show, French and Fancy, from 6s. per doz.
GODWIN & PADMAN, Broadfield Nursery, Sheffield; or J. C. PADMAN, Boston Spa, Tadcaster.

New Fuchsias and Verbenas of 1861.
B. W. KNIGHT, FLORIST, 67, High Street, Battle, Sussex, is now sending out the NEW FUCHSIAS of 1861, at 6s. per dozen; the NEW VERBENAS of 1861, at 4s. per dozen, securely packed in tin box, post free.
CATALOGUES sent on application.

TO BE SOLD IMMEDIATELY, in Two or more Lots, a quantity of choice STOVE and GREENHOUSE PLANTS, FERNS, ORCHIDS, &c., many of them being specimen plants and fit for exhibition.
Apply to Mr. JOSEPH TANTON, Gardener, Crowhurst Park, Battle, Sussex.

New Delphinium "Beauty."
J. AND J. FRASER, Lea Bridge Road Nurseries, N.E., have much pleasure in announcing that they are now prepared to send out plants of the above. It was examined by the Floral Committee of the Royal Horticultural Society, July 12, 1862, and was awarded a Label of Commendation
Description and Price on application.

Good Seeds, Carriage Free.
SUTTON AND SONS,
SEED GROWERS and MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

SUTTON'S MIXTURES of CLOVERS and GRASS SEEDS for One Year's Lay, including 14 lbs. of ALSIKE and other CLOVERS, 15s. per Acre.
Royal Berkshire Seed Establishment, Reading.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

Cabbage Plants.
H. AND R. STIRZAKER have yet to offer about 150,000 SCOTCH DRUMHEAD CABBAGE PLANTS, autumn sown, also a few thousands of fine RED, for pickling; and EARLY, in varieties. Prices on application.
The Nurseries, near Lancaster.

Early Cabbage Plants.
W. VIRGO AND SON, Wonersh Nursery, Guildford, have a large quantity of strong, healthy plants of the following sorts to offer for Sale at 3s. 6d. per 1000, viz.
EARLY YORK. | CATTELL'S RELIANCE.
" BARNES. | NONPAREIL and
BATTERSEA. RED CABBAGE PLANTS, 5s. per 1000.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3s. per lb., or 16l. per cwt.

SEAKALE SETS for SALE.—The Seakale Sets are far superior to Seed, and are grown by all the Market Gardeners round London to ensure a regular crop and superior crowns for Forcing for next winter's use. Good strong sets may be had at 10s. per 1000. Those in the Trade liberally treated with for any larger quantity.
WILLIAM BAGLEY, Munster Farm, Fulham, S.W.

DIOSCOREA BATATAS (or CHINESE YAM), 2s 6d. per doz., 15s. per 100. Larger tubers, 3s. 6d per doz.
JOHN CATTELL, Westerham, Kent.

Dioscorea Batatas, or Chinese Potato.
J. IVERY AND SON beg to inform their Patrons that this is the most favourable month for planting this useful Vegetable. Strong sets are now ready, at 1s. per dozen, or 7s. 6d. per 100; likewise whole Tubers, from 2s. 6d. to 6s. per dozen.
Dorking Nursery.

Agricultural Seeds.
GEORGE GIBBS AND CO.,
SEEDSMEN,
26, Down Street, Piccadilly, London, W.

High Beech, Essex.
JAMES CRAWFORD has still on hand a fine stock of strong healthy GRAPE VINES, all the best sorts, which he begs to offer at low prices.

PINE PLANTS.—A quantity of very healthy, strong Plants, in all sizes, from a stock that never had scale, and their pots full of roots.
Apply to M. ROCHFORD, Market Gardener, Page Green, Tottenham, N.

GEORGE BAKER respectfully invites an inspection of his extensive collection of RHODODENDRONS, AZALEAS, and other AMERICAN PLANTS, which are now fast coming into bloom.
The Nursery is one mile from Sunningdale Station, South Western Railway.
American Nursery, Bagshot, Surrey.

Dahlias.
JAMES FAIRHEAD AND SON beg to state their CATALOGUE of DAHLIAS is now ready, post free on application, offering all the leading established varieties, healthy Plants, and guaranteed true to their kinds, 3s. 6d. and 9s. per dozen.
7, Borough Market, London, S.E.

Dahlias.
CHARLES TURNER has fine Plants by the thousand, now ready, in great variety, both for Exhibition and the Flower Garden. BEDDING DAHLIAS of the best kinds, 6s. per dozen.
The Royal Nurseries, Slough.

NEW CINERARIA, LITTLE MARY (COOLING),—Pure white ground edged with bright crimson, dark disc, circular and very smooth, habit very dwarf and compact; will prove a first-class exhibition or market variety. Strong blooming plants, 5s. each.
EDWIN COOLING, Mile Ash Nurseries, Derby.

NEW DAHLIA, VOLUNTEER (COOLING).—Salmon buff (an improvement on "Lollypop"), immense depth, good outline, and thoroughly constant. Recommended as a pleasing addition to any stand. Strong plants in May, 7s 6d. each.
EDWIN COOLING, Mile Ash Nurseries, Derby.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very large, and in all varieties of colour, in Seed or Roots; also FLORISTS' FLOWERS, POLYANTHUS in roots, and DOUBLE WHITE PRIMROSE.
Apply GEORGE MACE, Calcot Gardens, near Reading.

NEWSPAPER

NEW AND BEAUTIFUL PLANTS.

WILLIAM BULL, F.R.H.S., F.R.B.S.,

NURSERYMAN AND NEW PLANT MERCHANT, KING'S ROAD, CHELSEA, LONDON, S.W.,

IS NOW SENDING OUT THE FOLLOWING NOVELTIES FOR THE FIRST TIME.

NEW FUCHSIAS.

Unquestionably the best and most distinct collection ever offered at any one time, each possessing sterling merit, good habit, and a free blooming character.

BRAVO.—The corolla of this flower is so complex, full, and double, is to appear like a plum coloured ball set beneath short crimson sepals; peculiarly novel.

BRIGHTNESS.—A massive and noble flower, sepals unusually long, moderately reflexed, of the richest crimson; large and rich purple double corolla; an attractive kind.

GEM OF THE SEASON.—Deep crimson sepals, elegantly reflexed, very short, showing the corolla to great advantage; double, bright purple corolla; an immensely free bloomer, so much so as to make the plant one mass of flower; very short jointed, and compact in growth.

HER MAJESTY.—This, the Queen of white sepal'd Fuchsias, in style is somewhat after the well-known Duchess of Lancaster, but totally eclipses that variety, its ponderous flowers being individually twice the size and substance of that favourite kind.

INTERNATIONAL.—Light red tube and sepals; extraordinary large, double, peculiar barrel-shaped corolla of the most beautiful purple colour, striped and blotched with red at the base.

SENSATION.—A complete novelty and new shape, inasmuch as the corolla expands almost horizontally, of a rich purple colour; sepals bright crimson and beautifully reflexed; a peculiarly attractive variety.

THE BEST.—Good, stiff, large and shapely white corolla, much the finest of this class ever offered; sepals very bright scarlet, broad and elegantly reflexed.

TURBAN.—Very broad bright crimson sepals elegantly reflexed; an immensely large, beautifully formed, smooth, rich purple corolla.

Price of the above NEW FUCHSIAS, 10s. 6d. each; or the collection of eight for 63s.

NEW ANTIRRHINUMS.

The annexed have been selected from several thousand Seedlings; they are all distinct and good, and such as will give satisfaction.

ALBION.—Purple tube, mouth and lower lips cream colour, upper lips rosy purple.

ATTRACTION.—White tube, purple crimson with bright yellow mouth.

CANARY.—Clear yellow, orange mouth.

CHERUB.—Bright pink, lemon mouth.

DECLARATION.—Beautiful bright amaranth, yellow mouth and white tube.

FAIRY.—Deep rose with light mouth and orange centre, blush centre to lower lip.

GLOWWORM.—Vivid crimson, bright orange mouth.

HEBE.—Yellow, freckled and striped with crimson, bright yellow mouth.

HEROINE.—Very bright rose, with orange mouth, white tube.

LIVELINESS.—Rich velvet crimson, white tube and mouth.

METEOR.—Fiery crimson, very attractive and fine.

NEMESIS.—White tube, bright red with light mouth.

Price of the above NEW ANTIRRHINUMS, 3s. 6d. each, or 31s. 6d. the collection of 12.

NEW VERBENAS.

In announcing which, William Bull has the pleasure to say that they are all the seedling productions of C. J. Perry, Esq.

The following prizes have been awarded to Mr. Perry during the past season, and the seedling varieties here offered formed the chief feature in every collection.

Royal Botanic Society, June 12.
Collection of 24 .. .. Certificate of Merit.

Leamington Horticultural Society, June 18.
Collection of 18 .. .. 1st Prize.

Handsworth Horticultural Society, June 25.
Collection of 24 .. .. 1st Prize.
Collection of 12 .. .. 1st Prize.
Collection of 12 .. .. Extra Prize.
Collection of 12 Seedlings .. .. .. Certificate of Merit

Royal Botanic Society, July 3.
Collection of 36 .. .. Bronze Medal

Birmingham Botanic Society, July 4.
Collection of 24 .. .. 1st Prize.

Handsworth Horticultural Society, "Open to all England," July 23.
Collection of 24 1st Prize (a Silver Cup, value 7 guineas).
Collection of 12 .. .. 1st Prize.
Collection of 6 in pots .. .. 1st Prize.
Collection of 6 in pots .. .. Extra Prize.

Reading Horticultural Society, August 28.
Collection of 18 .. .. 1st Prize.

Rugby Horticultural Society, August 30.
Collection of 24 .. .. 1st Prize.

NEW VERBENAS.

Crystal Palace, September 4.
Collection of 24 .. .. 1st Prize.

Royal Horticultural, September 11.
Collection of 24 .. .. 1st Prize.

Brackley Horticultural Society, September 17.
Collection of 12 .. .. 1st Prize.

Hagley Horticultural Society, August 7.
Collection of 18 .. .. 1st Prize.
Collection of 12 .. .. 1st Prize.
Collection of 12 in pots .. .. 1st Prize.
Collection of 6 in pots .. .. 1st Prize.
Collection of 6 new in pots .. .. .. 1st Prize

Birmingham Botanic Society, August 15.
Collection of 24 .. .. 1st Prize

Handsworth Horticultural Society, August 20.
Collection of 18 .. .. 1st Prize
Collection of 12 .. .. 1st Prize.
Collection of 6 in pots .. .. 1st Prize

Banbury Horticultural Society, August 27.
Collection of 12 .. .. 1st Prize.

Opinions of the Press.

The *Gardeners' Chronicle*, June 15, 1861.

Report of the Royal Botanic Show, June 12.

"Verbenas were sent by several growers, the best being from Mr. Perry."

The *Gardeners' Chronicle*, Sept 14, 1861.

Report of the Royal Horticultural Society's Show, Sept. 11.

"Of Verbenas, the best stand was contributed by Mr. Perry, of Castle Bromwich, near Birmingham. The sorts were chiefly seedlings, all large and handsome."

The *Florist and Fruitist*, Oct. 1861.

Report of the Crystal Palace Show, Sept. 4.

"Mr. Perry's Verbenas were superb, and fully maintained his position as a grower and raiser of these 'everybody's flowers,' as we heard them called."

Gossip of the Garden, Oct. 1861.

Report of the Crystal Palace Show, Sept. 4

"Verbenas in bunches of five trusses were well shown. The best collection, consisting for the most part of seedlings, was contributed by Mr. C. J. Perry."

Report of the Royal Horticultural Society's Show, Sept. 11.

"Among Verbenas, Mr. Perry's Seedlings were conspicuous. Of these fine sorts we hope to give detailed descriptions in a future number."

ANNIHILATOR.—An extra fine variety, colour brilliant shaded crimson, the pips closely set, very fine truss, pips circular with large pure white eye; the best shaped Verbena ever raised.

BLUE BEAUTY.—Deep blue with large pure white eye; very beautiful, quite a gem.

CHEERFUL.—Pink with crimson centre, fine in form and large truss; an excellent variety for all purposes.

COUNTESS OF AYLESFORD.—Deep rose with darker centre and large white eye: an abundant bloomer and very fine.

COUNTESS OF BRADFORD.—Mauve or pale lavender, of large size and perfect shape, both in pips and truss; an extra fine variety.

DECORATOR.—Brilliant crimson with white eye; a free bloomer, and fine in every way.

LIVELINESS.—Bright crimson, of a peculiar and pleasing shade, fine form, large white eye; very attractive.

QUEEN OF PRUSSIA.—Shaded purple, with large white eye and dark ring round the eye; a fine variety.

RAPHAEL.—Deep plum colour with large white eye; attractive and novel.

SPARK.—Fiery scarlet with yellow eye; the plant is a dwarf shrubby grower, and is the best scarlet bedder ever sent out.

THACKERAY.—Shaded rosy purple, with large white eye and conspicuous purple ring round the eye; pips of fine form and large; very distinct.

THE PALACE.—Flesh colour with crimson centre and white eye; a distinct and singular variety, quite a new style.

UNIQUE.—Puce with maroon centre and white eye; very distinct and striking.

Price of the above VERBENAS 5s. each, or the collection of 13 for 60s.

As a further proof of the excellence of C. J. Perry's Verbenas, he offers the following Challenge, Open to all England, to Exhibit in June, July, or August, 24 bunches of Verbenas, all the sorts raised by himself, five trusses of each sort in a bunch, in London or within 100 miles of Birmingham, for 10*l.* or 20*l.*, against all the other sorts in cultivation, both new and old; English and French, and including all the new kinds to be sent out this spring.

Any person accepting this Challenge must communicate with J. C. Perry, care of William Bull, to fix date and make arrangements before the 1st May.

NEW PETUNIAS.

The following are confidently offered as superior to any previously in cultivation; they have been raised at my Establishment by the most careful hybridisation, and are a small selection made from many thousand seedlings.

ACME.—White, striped and veined with bright blue, stiff shell like flower of good form.

DAZZLE.—Beautiful rich crimson with intensely black centre, excellent form and of good substance.

EXCELLENT.—Deep pink shaded with violet, and very much veined with crimson over the entire surface of the flower

GUIDO.—Broadly margined with French white, striped with red and dark crimson centre.

MONARCH.—An extremely large and full, fine double flower, rich crimson, free flowerer.

NONESUCH.—Bright rose mottled with white, pure white throat.

PALATIAL.—French white, each petal strikingly rayed with bright violet crimson.

REVIEW.—Bright crimson, broadly margined with rose, violet throat.

RUBY.—Crimson, intensely veined and striped with black, dark violet throat, stiff flower and excellent form.

SPECIAL.—Fine bold flower of excellent form, margined with rose and beautifully marbled, also striped and veined with violet crimson.

SUFFUSION.—Double, delicate pink, veined with purplish red

SULTANA.—Blush, striped with purple, good form, novel and distinct.

Price of the above NEW PETUNIAS, 3s. 6d. each.

TROPÆOLUM BOUQUET.

A gem for bedding purposes, compact habit, height about 6 inches, flowering so profusely as to be literally one mass of blossom; colour chrome yellow, the three under petals clearly and distinctly spotted with bright red; calyx and proboscis or tube also bright red, a very showy and attractive variety, 3s. 6d. each.

The entire stock has been purchased from Mr. Barker, of Godalming, the raiser of so many good Tropæolums.

GESNERA REFULGENS.

In this magnificent hybrid are combined some of the best qualities which a plant can possess, for it is not only of good habit and free flowering, but extremely showy, and also one of the most beautiful foliaged plants extant; the leaves are broadly cordate, 6 to 9 inches in diameter, and covered with innumerable crimson hairs, which give the foliage the appearance of rich crimson velvet; the flowers are produced in fine pyramids throughout the winter; tube and lobes rich orange scarlet, with yellow throat. When exhibited before the Floral Committee of the Royal Horticultural Society it was awarded a label of commendation for its ornamental character. Price 15s. each.

GESNERA VELUTINA.

This hybrid, although distinct from the preceding, embraces its main characteristics, the foliage very ornamental and similar in size, with a mottled green and brown surface, velvety with purplish red hairs; the flowers of a scarlet vermilion colour. Price 10s. 6d. each.

NEW TYDÆAS.

Pumila. | Pygmæa. | Tenella.

The above are offered as being pretty little neat dwarf-growing varieties, and hence much superior to many others of this family; their blossoms are tubular funnel-shaped, as in other kinds; the colours of each sort are varied, and embrace rose, rosy lake, rich carmine rose, and all are more or less spotted with rich crimson. Price 5s. each.

CHRYSANTHEMUM FIMBRIATUM.

An interesting and pretty novelty, all the petals beautifully fringed; flower medium size and very double, primrose colour. The entire stock has been purchased from Messrs. Spary and Campbell, of Brighton. Price 7s. 6d. each.

PHLOX ADMIRATION.

The entire stock of this exquisite variety has been purchased from that eminent Phlox cultivator, M. Lierval, of Paris. It only grows about a foot high, and has immense Hydrangea-like heads of blossom; the flowers individually are large, and of the most perfect form, colour bright red or carmine, with glowing crimson centre. The best Phlox ever offered. Price 7s. 6d. each.

DROSERA WHITTAKERII (Planchon).

A charming little Australian Sundew, associating with the Venus's Fly Trap, the New Holland Pitcher Plant, and similar vegetable curiosities. 21s. each.

A NEW CATALOGUE OF BEAUTIFUL, NEW, AND RARE PLANTS

is now ready, which will be forwarded on application by enclosing two stamps.

ESTABLISHMENT FOR NEW AND RARE PLANTS, KING'S ROAD, CHELSEA, LONDON, S.W.

NEW, BEAUTIFUL, AND RARE PLANTS.

B. S. WILLIAMS,

PARADISE NURSERY, HOLLOWAY, LONDON, N.,

Begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well-assorted Collections of EXOTIC ORCHIDS, FERNS, and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

B. S. W. has much pleasure in offering the following valuable selection of NEW and RARE PLANTS :—

NEW AND RARE ORCHIDACEOUS PLANTS.

PHALÆNOPSIS SCHILLERIANA.

B. S. W. has received direct from Manilla some fine specimens of this magnificent Orchid, the finest ever offered, and all well-established on blocks. The foliage is beautifully variegated, ground colour dark green, with irregular bands of white over the whole surface. The flowers are 3 inches across, of a beautiful mauve edged with a lighter colour; the lip mauve, spotted with dark spots. Having flowered it this spring it is proved to be the finest Orchid in cultivation. Many specimens B. S. W. sold last summer have flowered and been exhibited at the various meetings this spring, and received First Class Certificates. B. S. W. exhibited a plant of this without flower at the Royal Botanic Society, Regent's Park, last July, and received the First Prize for a New Plant on account of its fine foliage. A drawing taken from a plant flowered by B. S. W. can be seen at the nursery. The dried spike, imported with the plants last spring, had more than 100 flowers upon it. Prices on application.

PHALÆNOPSIS ROSEA.

This is another rare plant from Manilla, of which B. S. W. can offer fine established plants as well as those of a smaller size. The flowers are white tipped with pink, lip a deep violet; a pretty flowering species, with beautiful light green foliage. Fine plants from 4 to 7 guineas each.

PHALÆNOPSIS AMABILIS.

This is a beautiful Orchid. Several plants which B. S. W. imported last spring have flowered and proved superior to any other variety of Amabilis in cultivation; the flowers are larger and of a more delicate white, with a large proportion of pink in the centre of the flower. There are some with light green foliage, others of a darker green; the underneath part of the leaf is of a beautiful dark plum colour, which gives the plant a magnificent appearance without flower, especially when growing on blocks and suspended, so that the underneath part of the foliage can be seen to advantage.

B. S. W., having very recently received another consignment of some fine plants of this direct from Manilla, is enabled to offer it at very moderate prices, and can confidently state that these are the finest plants B. S. W. has seen offered. Only been a few months imported; are well established on its native wood. Fine plants from 4 to 7 guineas each.

CYPRIPEDIUM GRANDIFLORUM.

A rare, beautiful, and distinct species; flowers very large, and the foliage finely variegated. This is also a magnificent plant, without flower, and makes a fine plant for Exhibition. Good plants 4 to 7 guineas each.

CYPRIPEDIUM BARBATUM GIGANTEUM.

This fine variety B. S. W. now offers for the first time. The flowers of this are much larger than those of any other kind at present in cultivation, a variety of barbatum. The upper part of the flower very broad, and of a delicate white striped with a rich purple. The lip is of immense size, colour dark purple. The leaves are beautifully variegated. It is a free flowering variety, and will continue in blossom seven weeks. Price 3 to 5 guineas each.

VANDA VIOLACEA.

This splendid rare Orchid is but very little known among the growers of this beautiful class. Some fine plants having been imported from Manilla last spring, they are now well established flowering plants, many having bloomed last year. The blossoms are produced on spikes from 9 to 12 inches long, which are white with violet spots; lip white, beautifully striped with violet; a distinct kind and very compact in growth. Fine plants, 5 to 7 guineas each.

CHOICE FERNS.

ADIANTUM SULPHUREUM.

The Golden Maiden Hair Fern.

A very handsome dwarf tufted hardy greenhouse Fern. Fronds about a foot high, finely divided and clothed beneath with a yellow coloured powder, as in other Gold Ferns. The pinnules small and conspicuously notched at the edge. Strong plants shortly at 10*s.* 6*d.* each.

CHOICE FERNS.

ADIANTUM CHILENSE.

The Chilian Maiden Hair Fern.

Another beautiful genus with gracefully drooping triangular tripinnate fronds about a foot in length, of a glaucous green colour, with large smooth roundish trapeziform pinnules Altogether a very elegant hardy greenhouse species Strong plants shortly, 10*s.* 6*d.* each.

PTERIS CRISPA.

This beautiful greenhouse Fern is quite distinct, and very elegant. Fronds about 14 inches high, tufted caudex, with lively light green foliage, truly a very pretty species. Price 7*s.* 6*d.* each.

ATHYRIUM FILIX-FŒMINA FRIZELLIÆ.

A very elegant and curious form of Lady Fern, found a few years since in Ireland by Mrs. Frizele, after whom it has been named. The fronds are from a foot to a foot and a half in length, with beautiful light green foliage and graceful habit. Price 5*s.* to 10*s.* 6*d.* each.

RHIPIDOPTERIS PELTATA.

A very pretty, small-growing Parsley-like Fern, with a creeping caudex; fronds about three inches high. This is a very distinct species, and will doubtless become a favourite with all cultivators of this interesting class. Price 21*s.* each.

GYMNOGRAMMA WETENHALLIANA.

A very elegant dwarf tasselled Fern of free habit. The fronds are about a foot in length, variously branching, and very finely crested, arching outwards, and beautifully covered with a sulphury white powder. Received a prize at the Royal Botanic Society, Regent's Park, as a new plant. Price 10*s.* 6*d.* each.

MISCELLANEOUS NEW AND RARE PLANTS.

AMARYLLIS UNIQUE (Williams).

A very handsome variety of extra fine form, the petals being very broad; the colour is a deep brilliant scarlet, the centre of the petals being shaded with black, and the throat having white markings; altogether it is very elegant. Was awarded a First-Class Certificate by the Floral Committee of the Royal Horticultural Society in March last, and is figured in the "Floral Magazine" for the present month. Price 42*s.* each.

AMARYLLIS ACKERMANNI PULCHERRIMA.

This is another beautiful variety with very strong flower spikes, from four to six flowers on each, measuring 6 inches across. Upper segments a beautiful rich violet purple, shading off to crimson; lower petals slightly striped with rosy red, of excellent form and substance. The above two Amaryllises are without doubt the finest ever offered. Price 42*s.* each.

AZALEA ELEGANTISSIMA (Williams).

A beautiful and distinct variety; flowers pure white, finely striped with light salmon red, of excellent form and substance; splendid habit, good grower, and very free flowering. Each, 10*s.* 6*d.*

AZALEA SPLENDIDISSIMA (Williams).

Ground colour white, regularly striped and splashed all over with rich light carmine, and red throat shaded with yellow; good form and substance, of fine waxy texture, very free flowering, and first-rate habit; quite distinct. B. S. W. having proved the above Azaleas for the last two years can confidently recommend them. Each, 10*s.* 6*d.*

ALOCASIA METALLICA.

A magnificent ornamental foliaged plant imported from Borneo, allied to Caladium, with rich lustrous metallic bronzy leaves, 14 inches in length, 10 inches in breadth, which it retains in perfect beauty the whole year. It is of compact habit, and unquestionably a most beautiful acquisition. Price 42*s.* each.

MISCELLANEOUS NEW AND RARE PLANTS.

CORDYLINE INDIVISA (J. & C. Lee).

A magnificent hardy greenhouse or conservatory plant attaining the height of from 10 to 20 feet; leaves 5 to 6 feet in length and 6 to 9 inches in breadth; their colour is of the richest green, with a broad and prominent midrib of crimson brown running through the entire length, and numerous red and white lines running parallel to it; the whole surface is overlaid with rich golden bronze, producing an elegant effect. Price 42*s.* to 105*s.* each.

CYPERUS ALTERNIFOLIUS VARIEGATUS.

A remarkably elegant and graceful plant for Conservatory or table decoration as well as a splendid plant for exhibition; grows from a foot to a foot and a half high, with beautiful drooping light green grassy-like foliage striped with white. Was awarded a First-class Certificate as a New Plant from the Royal Botanic Society this spring. Price 15*s.* to 21*s.* each.

YUCCA CONCAVA.

B. S. W. begs to offer this beautiful ornamental plant for the first time. A magnificent distinct hardy species, with broad wavy red-edged glaucous leaves of a very graceful habit. B. S. W. can confidently recommend this as the finest hardy Yucca in cultivation, having received a Certificate at the Royal Botanic Society, Regent's Park. It makes a splendid plant for garden decoration, either for vases or terraces. Stock limited. Plants from 5 to 10 guineas each.

SPHÆROSTEMA MARMORATA.

This handsome variegated stove climber, introduced from Borneo, is a very valuable addition to the group of ornamental foliaged plants. It is of free growth, with large ovate acuminate green leaves, covered with irregular sized blotches of white. Price 10*s.* 6*d.* to 21*s.* each.

GERANIUM ADMIRATION (Williams).

A very beautiful dwarf growing variety, with dark horseshoe foliage; trusses medium size, flowers of the richest scarlet, produced on strong foot-stalks in the greatest profusion. Proved to be one of the best dwarf bedding varieties in cultivation. Price 2*s.* 6*d.* each, or 24*s.* per dozen.

GERANIUM METEOR (Williams).

Dwarfer and more compact than Tom Thumb; foliage medium size, and very flat, broad margin of silvery white; trusses large, on strong foot-stalks, and well above the foliage. An abundant bloomer, flowers brilliant scarlet, fine form. Proved to be the best silver variegated Geranium for small beds and edgings yet introduced. Price 1*s.* 6*d.* each, or 12*s.* per dozen.

HURST HOUSE PINE.

This is a valuable acquisition to all Pine-growers. The plant is of dwarf robust habit, producing fruit from 4 lbs. to 6 lbs. in weight, of the richest flavour, and no doubt will prove to be the best dwarf Pine in cultivation. Price 15*s.* to 21*s.* each.

HARDY VARIEGATED PLANT,

Scrophularia nodosa variegata.

B. S. W. has much pleasure in stating that he has purchased the stock of the above, which has proved to be the best plant for Edging Ribbon Borders and large beds yet introduced; its leaves match those of the Geranium for size, and set off the scarlet flowers so well, that the effect is pleasing in the extreme. It looks well in all weathers, and neither extreme wet nor extreme dryness affect it in the least, as was satisfactorily proved in the years 1859 and 1860. It holds on its good appearance far into the winter, looking well from the middle or end of April to December. It will be found very useful to those who have but little time to propagate, and little room to winter bedding plants, as it can be kept without either labour, protection, or care. It was awarded a Certificate at the Royal Botanic Society's Meeting, May 7, 1862.

For Testimonials see former Advertisements in the *Gardeners Chronicle.* Strong plants, 1*s.* 6*d.* each; or 12*s.* per dozen.

The "Favourite" Omnibuses, from the London Bridge Railway Stations, by the Bank and Post Office; and from Charing Cross, through the Strand and Holborn, pass the Nursery every 10 minutes.

PARADISE NURSERY, SEVEN SISTERS AND HORNSEY ROADS, HOLLOWAY, LONDON, N.

NEW TEA-SCENTED ROSE for 1862, GLOIRE DE BORDEAUX.—The above, a Seedling from the well known favourite Tea Rose, Gloire de Dijon, was raised at Lyons, and is represented as being unquestionably the finest Tea-scented Rose of the season.

WM. WOOD & SON beg to intimate that they possess a very large Stock of the above in extra strong plants, which they are now sending out at 5s. each.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses, &c.

WM. PAUL'S CATALOGUE of NEW ROSES and SPRING PLANTS generally is now ready. Free by post on application.

BEAUTY OF WALTHAM, H.P.

This English raised seedling Rose has now received the highest awards ever given by the Royal Horticultural and Royal Botanic Societies. The flowers are large and full, colour brilliant cerise, the petals exquisitely curved in the way of Madame Charles Crapelet; the growth is vigorous, the foliage magnificent, and the plant as hardy as the Dog Rose. Plants 5s. each, and orders executed in strict rotation as received.

HOLLYHOCKS.

A fine stock of all the best named sorts, 9s. to 24s. the dozen. All are raised from cuttings. None grafted.

Waltham Cross, N.

Roses in Pots.

H. LANE AND SON have great pleasure in offering a large quantity of ROSES in POTS, suitable for bedding, consisting of all the most popular varieties, as this is the best season for planting or growing in the Conservatory or Greenhouse.

Also most of the NEW SORTS of the season, some few of them being sold out.

The Nurseries, Great Berkhampstead, Herts.

B. WITHAM'S SPRING CATALOGUE of ROSES, BEDDING PLANTS, &c., is now ready, and maybe had, post paid, on application.

A large Stock of upwards of 200 sorts of the best and newest ROSES grown, fine, strong, and healthy plants in pots, from 9s. to 18s. per dozen; also an extensive stock of all kinds of BEDDING PLANTS from 3s. to 6s. per dozen, now on sale, at Clough Nursery, Mottram, near Manchester.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.

For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.

Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.

The Royal Nursery, Bagshot, Surrey.

RHODODENDRONS, SMALL, FOR THE TRADE ONLY. Per 1000.

500,000	Rhododendron ponticum,	3 yrs. Seedling	..	10s.
100,000	ditto	ditto	4 yrs, ditto	15s.
200,000	ditto	ditto	3 yrs. & 1 yr. transpltd.	25s.
100,000	ditto	ditto	2 yrs. & 2 yrs. ditto	30s.

Unknown correspondents will save time by sending Post Office Orders, or a respectable reference in the Trade, with their orders. Five per cent. allowed for cash sent with the order. 100 of each can be sent as samples if required.

Address, JAMES SMITH, Darley Dale Nurseries, near Matlock.

SPECIAL OFFER to AMATEURS, EXHIBITORS, &c.—All the best NEW VERBENAS of 1861 for all purposes, in 48 varieties, for 16s., strong Plants, package included; also 25 of the very best NEW FUCHSIAS of 1861 for 12s.; also 12 First-rate DOUBLE PETUNIAS for 6s.; also 12 First-rate DAHLIAS for 5s.

WM. KNIGHT can with confidence recommend the above plants, having Exhibited them at Brighton and other places last season, open to all England, and gained First Prize in every instance. Price to the Trade by the 100 or 1000.

Floral Nursery, Hailsham, near Hurst Green, Sussex.

LITHOSPERMUM FRUTICOSUM is the neatest and prettiest little HARDY EVERGREEN HERBACEOUS PLANT that can be desired Its slender branches are thickly covered with small dark green leaves, forming a perfect carpet, which is studded with THE LOVELIEST BLUE FLOWERS, nearly half an inch in diameter, from May till September. If wintered in a cold greenhouse it flowers abundantly in February and March.

Messrs. J. & C. LEE will be prepared to offer this "LITTLE GEM" in May, at 2s. 6d. each; larger plants, 5s. each.

Nursery and Seed Establishment, Hammersmith, London, W.

New Dahlias.

JOHN KEYNES, F.R.H.S., Castle Street Nurseries, Salisbury, will be prepared to send out the following first-class New and approved DAHLIAS the first week of May.

J. KEYNES considers them quite equal to any he has had the honour to offer:—

	s.	d.
Black Prince (Keynes'), dark mulberry	7	6
Countess Portsmouth (Rawling's), cream-tipped cherry	10	6
Donald Beaton (Dodd's), dark maroon	10	6
Empress of India (Rawling's), very dark	10	6
Goldfinder (Keynes'), yellow tipped deep orange ..	10	6
Imperial (Keynes'), deep bright plum	10	6
John Harrison (Harrison's), light scarlet, red	10	6
Lady Elcho (Dodd's), light salmon	7	6
Maria Carter (Keynes'), white edged deep carmine ..	10	6
Minnie Dodds (Dodd's), dove colour	10	6
Oscar (Addo's), light scarlet	10	6
Sir J. Outram (Rawling's), dark velvet	7	6
Maid of Bath (Hooper's), white tipped purple	10	6
FANCY FLOWERS.		
Blondin (Dodd's), crimson tipped white	10	6
Goldfinch (Keynes'), cream striped pink	10	6
Mrs. Crisp (Keynes'), purple tipped white	10	6
Reliance (Rawling's), maroon striped white and purple	10	6

These flowers have been exhibited, and taken many First Class Certificates, and shown in the winning Stands which took 19 First Prizes at the Great Exhibitions of the Royal Horticultural Society, Crystal Palace, &c.

CATALOGUES, with instructions for their growth, will be sent on application.

Salisbury.—May 10.

INTERNATIONAL EXHIBITION.

WILLIAM BULL, F.R.H.S., F.R.B.S.,

NURSERYMAN AND NEW PLANT MERCHANT,

KING'S ROAD, CHELSEA, LONDON, S.W.,

Begs to suggest to his customers and all who are interested in Horticulture and visiting London this season, that his Establishment is within a short distance of the Exhibition, and that he will have much pleasure in showing his extensive Collection of Novelties and Rare Plants to those favouring him with a visit.

NEW ROSES for 1862.—4000 STRONG PLANTS.

WILLIAM WOOD & SON

Are now executing orders for all the NEW ROSES of the season, in strong healthy plants, Dwarfs, at 5s. each.

A liberal discount allowed to the Trade.

40,000 DWARF ROSES in POTS for BEDDING.

The months of April and May are considered the most eligible for Bedding-out Roses from pots.

W. W. & S. beg to offer a very large and healthy Stock on the following terms, viz.:—

Dwarf Hybrid Perpetual, Bourbon, Noisette, and Tea-Scented Roses, per dozen	**18s.**
Climbing Roses, of sorts ... ... ,,	**12s. to 18s.**
Dwarf China Roses ... ... ,,	**12s.**
Tea-Scented Roses, in 6-inch pots, for Greenhouse Culture ... ... ,,	**30s.**

Extra Plants presented for distant carriage.

CATALOGUES free on application.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

OPPOSITE THE GARRICK CLUB.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

All Orders amounting to 21s. sent Carriage paid.

ANNUALS BY WEIGHT FOR PRESENT SOWING.

THE FOLLOWING ARE ALL EXCEEDINGLY SHOWY AND VERY EFFECTIVE FOR BEDDING, EDGING, OR COVERING LARGE BANKS.

	Per oz.—s.	d.
Alyssum, sweet, white ..	1	0
Calliopsis bicolor nana, crimson and yellow	1	6
,, ,, ,, mixed	1	6
Campanula pentagonia, purple	0	9
Candytuft crimson, rose-crimson	0	9
,, sweet scented, white	0	9
Clarkia pulchella grandiflora, rose	0	9
,, ,, alba grandiflora, white	0	9
,, ,, integripetalon, rosy crimson	1	6
Collinsia bicolor, purple and white	0	9
,, ,, alba, white	1	0
Convolvulus minor, dark blue	0	9
Cosmidium Burridgeanum, yellow and crimson	1	6
Delphinium cardiopetalon, blue	2	0
Dianthus chinensis (Indian Pink), mixed	1	6
Erysimum Perowskianum, orange	0	9
Eschscholtzia crocea, orange	1	0
,, ,, alba, white	1	0
Eucharidium grandiflorum, pink	1	0
Godetia insignis, red-lilac, blotched with purple	1	0
,, rosea alba, white, blotched with carmine	1	0
Larkspur, tall, Stock-flowered, double, very handsome	1	6
,, dwarf Stock-flowered, double, very handsome	1	6
Leptosiphon aureus, golden yellow	2	6
,, densiflorus, rose lilac	1	0
,, ,, albus, white	1	0

	Per oz.—s.	d.
Limnanthes grandiflora, yellow and white	0	9
Linum grandiflorum, scarlet	2	6
Lupinus subcarnosus, crimson and blue	2	0
,, venustus, blue	1	0
,, hybridus, mixed	1	6
Malope grandiflora	1	0
Mignonette .. per lb., 5s. 6d.,	0	6
,, new large flowered .. ,, 7s. 6d.,	0	9
Nasturtium, Tom Thumb Dwarf, mixed	1	6
,, ,, ,, scarlet	2	6
,, ,, ,, yellow	3	6
,, ,, ,, yellow, spotted crimson	1	6
,, ,, ,, rich crimson	1	0
Nemophila insignis grandiflora, blue .. per lb., 7s. 6d.,	0	9
,, maculata, white, spotted purple	0	9
Nolana atriplicifolia, blue and yellow	0	9
Oxyura chrysanthemoides	1	6
Pea, Sweet, mixed colours .. per lb., 2s.,	0	3
Saponaria calabrica, rose	2	0
,, ocymoides	3	6
Schizanthus pinnatus	1	0
Schizopetalon Walkerii, white, fragrant	3	0
Silene pendula, pink	0	9
Venus's Looking-glass, blue	1	0
Virginian Stock, red	0	9
Viscaria oculata, pink and crimson	1	0
Whitlavia grandiflora, violet blue	2	0

FLOWER SEEDS.

FOR SHRUBBERIES, WOODLAND WALKS, RAILWAY EMBANKMENTS, DECORATION OF WILDERNESSES, &c.,

5s. 6d. per pound, or 9d. per ounce.

In a conversation with our SARDINIAN CORRESPONDENT some few years ago, he pictured to us in terms somewhat glowing the rich native flora of Italy and many other parts of the Continent, at the same time stating that, where Nature failed to adorn, Art became her handmaiden. This conversation originated the idea of adding to the native flora of Britain, and which we at once endeavoured to carry out, by mixing nearly 100 sorts of the hardiest and most showy annuals; and it is with no small degree of pleasure we now find that what then to our minds was an experiment, has proved of the utmost importance. Many gentlemen having availed themselves of the suggestion have scattered these seeds on large rockeries; rooteries, natural and artificial; in shrubberies; woodland walks; carriage drives, and wildernesses; also by the side of rivulets, and wherever a floral display was desired beyond the limits of the flower garden, and the result has been most satisfactory, imparting beauty where there was none before, and an interest to the most uninteresting localities.

FOR A SUMMER AND AUTUMN DISPLAY,

Sow during March and April, simply scattering the seed broadcast, at the rate of 6 or 7 lbs. per acre, and without covering it; but later in the season it must either be covered, or sown during wet weather.

FOR A SPRING AND EARLY SUMMER DISPLAY,

Sow in September and October.

BEDDING-OUT PLANTS.

100 assorted, sent carriage paid for 25s.; 50 ditto for 12s. 6d.; 25 ditto for 7s.

No charge made for packing or package.

Choice Vegetable and Flower Seeds.

B. S. WILLIAMS will be happy to forward post free to all applicants his PRICED and DESCRIPTIVE SEED CATALOGUE for 1862, containing Select Lists of all the best seeds in cultivation, with useful suggestions for the guidance of Amateur cultivators.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New General Catalogue for 1862.

B. S. WILLIAMS begs to inform his friends, patrons, and the public in general, that his NEW PRICED and DESCRIPTIVE CATALOGUE of Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c., is now published and will be forwarded post free on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Dahlias.

GODWIN AND PADMAN have strong plants of all the best varieties of SHOW and FANCY DAHLIAS, 1861 varieties, 9s. per dozen; 70s. per 100. Older varieties, 3s. per dozen; 20s. per 100.
CATALOGUES on application to
GODWIN & PADMAN, Broadfield Nursery, Sheffield; or J. C. PADMAN, Boston Spa, Tadcaster.

New Dahlias.

CHARLES TURNER has now ready fine plants of those popular and superior new varieties:—
LORD DERBY, MRS. BUSH, MODEL, CHIEFTAIN, DELICATA, CAPTAIN HARVEY, CYGNET, UNA, &c.
Also all the best established varieties, in strong plants, at moderate prices.
See CATALOGUE just published, and which will be forwarded gratis and post free to any address.
The Royal Nurseries, Slough.

SPLENDID NEW FUCHSIAS, DICTATOR and UNIVERSAL. Coloured Illustrations by Mr. ANDREWS of the two, in exchange for 12 postage stamps.
G. S. assures Fuchsia Growers that "Universal" is the finest Fuchsia ever offered. For description see CATALOGUE.
GEORGE SMITH, Tollington Nursery, Hornsey Road, Islington, London, N.

PRIZE PHLOXES. | PRIZE GLADIOLUS.
PRIZE CHRYSANTHEMUMS.

JOHN CATTELL'S Collections of the above obtained the following Prizes at the London Exhibitions during the past season:—

PHLOXES.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

CHRYSANTHEMUMS.

First Prize, for the best 24 Cut Blooms, at the Royal Horticultural Society's Grand Fruit and Chrysanthemum Show, held at South Kensington Gardens.
First Prize, for the best 24 Cut Blooms, at the Stoke Newington Chrysanthemum Exhibition.
First Prize, for the best 24 Cut Blooms, at the Crystal Palace Chrysanthemum Exhibition.
J. C.'s collections include every variety of note, and he now offers them at the low prices named below, the selection being left to himself.
PHLOXES, 6s., 9s., and 12s. per dozen.
CHRYSANTHEMUMS, 6s. per dozen.
GLADIOLUS, 6s., 9s., 12s., and 18s. per dozen bulbs.
CATALOGUES are now ready, and will be forwarded post paid on application.
Strong plants of the Chrysanthemums and Phloxes are now ready.
Nursery and Seed Establishment, Westerham, Kent.

KITCHEN GARDEN SEEDS,

FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND
THOS. GIBBS & CO. Corner of HALF-MOON St. PICCADILLY, London.
APPOINTED AP. 3, 1844
THE SEEDSMEN

AGRICULTURAL SEEDS,

GRASS SEEDS,

FARM SEEDS,

of all descriptions.

Thomas Gibbs & Co.

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

Verbena Fireball.

MESSRS. J. AND C. LEE having thoroughly proved VERBENA FIREBALL last summer, can recommend it as one of the best, if not the best, and most useful for bedding purposes, combining, as it does, the intense scarlet and compact truss of Firefly with the robust and free-flowering habit of Purple King.
To be sent out in May, price 12s. per dozen.
Nursery and Seed Establishment, Hammersmith, London, W.

SUTTON'S
YELLOW GLOBE MANGEL WURZEL.

SEEDSMEN BY APPOINTMENT. Sutton and Sons

The heaviest and best sort known, price 8d. per lb., or 63s. per cwt.
ORANGE GLOBE and all other sorts 8d. per lb.
Also SUTTON'S CHAMPION SWEDE and other TURNIP SEEDS at moderate prices.
PRICED LISTS of FARM SEEDS Post Free.
ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

Verbenas, Verbenas.

JOHN PYLE can supply the above, very strong plants, at 14s. per 100. No better plants in England. Wrranted true to colour. Also from cutting pots, at 6s. per 100; strong cuttings of the same, 2s. 6d. per 100. SCARLET GERANIUMS and Flower of the Day, strong plants, 16s. per 100; a variety of other Bedding Plants, 12s. per 100; from cutting pots, 6s. per 100. Packed and sent free five miles, or to all the London Stations, but not less than 10s. worth sent. To save trouble all orders to be prepaid.
St. John's Nursery, Upper Holloway, N.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the most effective and useful bedding variety known. During the past season upwards of 5000 plants were grown in the gardens at Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.
*** For Testimonials and further particulars see *Gardeners' Chronicle* of May 3.
Plants, 1s. 6d. each. 12s. per doz. 50s. per 100.
GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in riband-borders, and vases, this variety is one of the most useful and effective yet offered for sale.
Plants, 1s. 6d. each. 12s. per doz. 75s. per 100.
CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

Per packet—	s.	d.	Per packet—	s.	d.
Calceolaria, herbaceous..	2	6	Primula sinensis dentiflora	2	0
Cineraria cruenta ..	2	6	Primula sinensis albiflora	2	0
„ maritima	0	6	„ „ dentiflora kermesina splendens ..	2	6
Erianthus Ravennæ ..	1	0	Verbena venosa	0	6
Lobelia erinus speciosa	1	0			
„ .. major	1	6			

A PRICED and DESCRIPTIVE CATALOGUE of Vegetable, Agricultural, and Flower Seeds, forwarded post free to all applicants.
Exotic Nursery, Tooting, Surrey, S.

FARM SEEDS, at fair Market Prices.

ROYAL SOUTHAMPTON SEED ESTABLISHMENT. BY APPOINTMENT

PAGE & TOOGOOD

Having had the honour of supplying the ROYAL FARMS at OSBORNE for the last eight or ten years, the GOVERNMENT REFORMATORY, PARKHURST, and many of the principal Agriculturists in the kingdom, will be sufficient guarantee that their SEEDS are of SUPERIOR QUALITY, and their prices are as low—or lower—than any respectable house in the Trade.

At the Botley Club, the Prize for the best Ten Acres Swedes was awarded
PAGE'S IMPROVED (grown by John Crosskey, Esq.)
Heaviest weight of Mangel, per acre, 61 tons 2 cwt.
PAGE'S IMPROVED ORANGE GLOBE (grown by Stewart Macnaghten, Esq.).
Mangel, sown July 7, Weight and Shape,
PAGE'S IMPROVED RED GLOBE (grown by W. Warner, Esq.).
Mangel, 50 tons per acre,
PAGE'S IMPERIAL ORANGE GLOBE (grown by W. Dickinson, Esq.).
Carrots, 35 tons per acre,
PAGE'S IMPORTED WHITE BELGIAN (grown by R. Trench, Esq.)
Six Prize Swedes, for heaviest Weight,
PAGE'S IMPROVED (grown by W. C. Humphries, Esq.)

Vales of Avon and Stour (Farmers' Club).

Vales of Avon, Prize for best 5 acres Mangel.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Salway)
Second best.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. H. Bone).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Baker).
Best 2 acres ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Jas. Salway).
Second ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by General Robertson).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Bone).

PRESENT PRICES (Rail Carriage Free to all parts of England):—

Per lb.—	s.	d.	Per lb.—	s.	d.	Per lb.—	s.	d.
SKIRVING'S SWEDE	0	8	SCOTCH or BULLOCK	0	8	NEW OSBORNE MANGEL.		
PAGE'S IMPROVED HARDY ..	1	0	POMERANIAN WHITE GLOBE	0	8	YELLOW GLOBE	0	6
FIELDER'S do. WHITE	0	9	EARLY GREEN GLOBE ..	0	8	PAGE'S IMPERIAL ORANGE GLOBE*	0	8
SUTTON'S CHAMPION	1	0	„ WHITE TANKARD ..	0	8	RED GLOBE	0	7
ASHCROFT	0	9	PAGE'S IMPROVED PURPLE do.	1	0	ELVETHAM LONG RED ..	0	8
GREENTOP	0	8	GREEN ditto	0	8	LONG RED	0	6
SUSSEX or JEFFERY'S TANKARD	0	9	YELLOW TANKARD	0	9	LONG YELLOW	0	8
RED ROUND TURNIP	0	9	FIELDER'S HARDY GREEN ROUND	0	6	WHITE BELGIAN CARROT ..	1	3
PAGE'S IMPROVED RED GLOBE	0	8	EARLY SIX WEEKS	0	6	CATTLE CABBAGE	2	6
	0	9	KOHL RABI	3	6	CATTLE PARSNIP	1	0
						DWARF ESSEX RAPE	0	4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club, and yielded 61 tons 1 cwt. per acre.

NEW ALSIKE CLOVER, 1s. 3d. per lb.; BUCKWHEAT, MUSTARD, LINSEED, TARES, and SAINFOIN. Fine PERMANENT PASTURE GRASS, ITALIAN RYE GRASS, CLOVER, &c., at lowest Market Prices.

Special Contracts for Large Quantities.

OXFORD STREET, AND ABOVE BAR, SOUTHAMPTON.

The Sulphur Maidenhair—Adiantum sulphureum.

JAS. BACKHOUSE AND SON having imported a fine Stock of this new and very beautiful FERN direct from Chili, together with the handsome ADIANTUM CHILENSE, have pleasure in offering nice Plants of them. Prices on application.
DROSERA BINATA—The Forked-leaved Australian Sundew.—A fine and very interesting species, making leaves 1 foot high, covered with "dewy" crimson hairs. Easy to cultivate. Price 21s. each.
CATTLEYA WAGNERI v. ROSEA.—A lovely species imported by J. B. & Son from South America, with large pure white blossoms, having a rich orange throat. Labellum beautifully crisped—the crisped portion alone being delicate rosy pink. Fine flowering plants, 210s. to 315s.
York Nurseries.—May 10.

GOLD and SILVER FISH, 4s. to 9s. per doz.; 2l. per 100; 18l. per 1000. AZALEAS and CAMELLIAS, full of Flower Buds, 18s., 21s., and 24s. per doz. ORANGE and LEMON TREES, full of Fruit, 2s. 6d. to 6s. each. BRITISH and FOREIGN FERNS, 3s. to 12s. per dozen.
ROBERT GREEN, 154, Kingsland Road, 55 doors from Shoreditch Church, N.E.

TAN GRATIS in the immediate neighbourhood of Covent Garden Market.
Apply to ESSEX & SONS, 28, Stanhope Street, Clare Market, W.C.

REIGATE SILVER SAND.—Best quality, 10s. per ton, cash. Delivered to the Reigate Junction Railway. Truck of 4 or more tons loose, 9s. per ton, cash; 2 bushel bags, 9s. per dozen; 10d. per bushel. Peat Soils.
WILLIAM SHORT, Landscape Gardener, &c., Red Hill, Surrey.

REIGATE SILVER SAND, best quality, 12s. per Ton or 1s. 3d. per Bushel, at Swan Place; delivered five miles, or to any London Wharf or Railway, 16s per Ton, or 1s. 6d. per Bushel. Kentish and Hampshire PEATS, YELLOW LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE from Kingston. An inspection invited.—J. KENNARD, Purveyor to Her Majesty, Swan Place, Old Kent Road, London, S.E.

Bedding Plants. Bedding Plants.

J. H. BIRD, F.R.H.S., can now supply the following PLANTS for Bedding Out, good stuff.

Fuchsias, Verbenas, Gazanias, Calceolarias, Cupheas, Heliotropes, Lobelias, Ageratums, Petunias, Single and Double; Salvias, Tom Thumb and Variegated Geraniums, autumn-struck Plants, at 12s. per 100 or 5l. per 1000. The same goods, spring-struck, at 8s. per 100 or 3l. 10s. per 1000.

N.B. All orders to be prepaid, or they will not be executed. No charge for hampers.

Stoke Newington—May 10.

BEDDING PLANTS.—Our stock of Bedding Plants includes Agatheas, Ageratums, Calceolarias in variety, Bedding Dahlias, Fuchsias, Gazanias, Geraniums scarlet and white, with intermediate shades; Geraniums variegated, Heliotropes, Konigas, Lantanas, Lobelias, Pentstemons, Pyrethrum, Salvias, Senecios, Tropæolums, Verbenas, &c. &c.

DESCRIPTIVE PRICED CATALOGUES, including also Stove and Greenhouse Plants, on application to

GODWIN & PADMAN, Broadfield Nursery, Sheffield; or J. C. PADMAN, Boston Spa, Tadcaster.

Bedding Plants at 2s. 6d. per Dozen.

J. SCOTT'S well-known CATALOGUE of the above is now ready, and will be sent to all applicants on receipt of six postage stamps, which will be returned to all purchasers above 10s.

It contains a mass of Cultural and other information about Flowers and Flower Planting, Ribbons, Tessellated and Mosaic work, with Descriptive Lists of all the most ornamental Flower Garden Plants.

Mr. Beaton, in the *Journal of Horticulture*, April 23, 1861, p. 58, says:—"But the best work on making Ribbon borders . . . . is the Bedding Plant Catalogue of Mr. Scott, of Merriott Nurseries; and besides, the Catalogue is the best arranged for young beginners of all that I have seen."

J. SCOTT, Merriott, Crewkerne, Somerset.

Bedding Plants! Bedding Plants!

DILLISTONE AND CO. beg to offer strong healthy Plants of the above for the approaching Summer, of all the most approved kinds, and guarantee to give every satisfaction to all parties who may be pleased to favour them with their orders.

100 Plants of the finest varieties, selected from the following, will be sent for 25s.; 50 ditto, 14s.; Hamper, &c., included.

Geraniums	Verbenas	Petunias
Calceolarias	Fuchsias	Dahlias
Heliotropes	Phlox	Ageratums
Lobelias	Salvias	&c., &c.

CLIMBERS of the following kinds will be included where it is desired, viz.:—

Cobæas	Eccremocarpus	Lophospermums
Maurandyas	Tropæolums	&c., &c.

A great reduction where 500 or more plants are taken. All the New Roses and Plants of the season. A remittance or reference from unknown correspondents is requisite. Post-Office Orders payable at Halstead.

Sturmer and Woodlands Nurseries, Halstead, Essex.

The Finest Bedding Plants in Cultivation.

EXTRA FINE STOCK.

JOHN KEYNES has 30,000 of the Finest PLANTS for BEDDING OUT now ready at 16s. per hundred (or 2s. 6d. per dozen if taken singly), consisting of the following varieties:—

Scarlet Geraniums	Ageratums and Heliotropes
Ivy-leaf ditto	Nierembergias and Alyssums
Aurea floribunda Calceolaria	Lobelia speciosa and Cupheas
Amplexicaulis ditto	Gazania splendens
Rugosa ditto	Cerastium tomentosum
Purple Bedding Petunia	Lantana delicatissima
Purple Verbenas	British Flag Geranium
White ditto	
Scarlet ditto	4s. per dozen.

Variegated Geranium, consisting of Bijou, Attraction, Countess of Warwick, Flower of the Day, Emperor, Golden Chain, and Cloth of Gold, 6s.; 9s., and 12s. per dozen. All in the finest order.

NEW ROSES and DAHLIAS also ready.

Castle Street Nursery, Salisbury.

NEW BEDDING TROPÆOLUM, ECLIPSE.—This charming variety was raised by R. HEADLY, Esq., of Cambridge, and will prove a great addition to this favourite class of Bedding Plants. It is of the same habit as Elegans, but rounder blossom, colour intense scarlet, a great acquisition. Plants 3s. 6d. each.

CHARLES TURNER strongly recommends the above, also begs to call attention to his extensive Stock of Strong Plants of all the leading kinds of VARIEGATED GERANIUMS, so desirable for the Flower Garden. BEDDING PLANTS in great variety at moderate prices.

The Royal Nurseries, Slough.

To Gentlemen, Florists, &c.

A SPLENDID BED of TULIPS, 120 Rows, the Stock of Mr. T. MAY, of Fifty Years Cultivation, to be sold in Small Lots or otherwise to suit purchasers. May be viewed at LEE'S Nursery, Canonbury Square, New North Road, Islington.

Particulars of Mr. MAY, 2, Northampton Street, Canonbury, Islington.

The Royal Horticultural Society's Exhibition.

SEEDS that will be required to obtain the Prizes offered at the Autumn Show, Sept. 10. See advertisement in *Gardeners' Chronicle*, March 15.

	s.	d.
ASTER, Truffaut's Pæony-flowered, 24 varieties	4	0
„ Giant Emperor, 13 varieties	6	6
„ Dwarf Chrysanthemum flowered, 10 varieties..	1	8
„ Tall „ „ 12 „ ..	2	0
„ Double Crown, 4 varieties	0	8
„ „ Dwarf Pyramidal Bouquet, 12 varieties	2	0
„ „ Quilled, 12 varieties	2	0
„ „ „ Hedgehog, 6 varieties	1	0
„ „ „ Reid's extra fine per packet	0	6
„ „ Globe Pæony-flowered, new „	0	6
Mixed packets of each of the above kinds	0	6
STOCK, Dwarf German Ten-week, 21 varieties.. ..	4	0
„ Large flowering „ 20 „	3	4
„ Autumnal or Intermediate, 8 „	1	4
„ Emperor, 5 „	0	10
„ Brompton, 6 „	1	0
For other choice varieties see Catalogue.		
Mixed packets of each of the above German Stocks ..	0	6
PHLOX DRUMMONDII, 13 new varieties, each p. pkt.	0	6
ORNAMENTAL GRASSES, EVERLASTINGS, and Imported GOURDS .. ..per packet	0	6

Free by post.

For the character of the above, see report of the Annuals grown at Chiswick, 1861, in *Gardeners' Chronicle* March 15, p. 237.

JAMES TYMAN, Importer of Continental Seeds.

Seed Warehouse, 68, Great George Street, Liverpool.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Chrysanthemums.

W. HOLMES, F.R.H.S., has a fine stock of the above, including Little Harry, Lady Hardinge, Leda, Linda, Rifleman, Florence, &c., &c., all at 5s. per dozen.

DESCRIPTIVE CATALOGUES of the above, also Dahlias, Fuchsias, Verbenas, Geraniums, Antirrhinums, Petunias, &c., free for one stamp.

Frampton Park Nursery, Hackney, N.E.

CYPRIPEDIUM INSIGNIS MAULII.—In the first week of JUNE next will be distributed to a full List of Subscribers of 3 Guineas this fine variety of Cypripedium. After that time the price will be 5 Guineas to Non-Subscribers. It is figured and described in the "Floral Magazine," and a Coloured Figure will be forwarded for inspection per Post to Cultivators of Orchids and intending Subscribers on application.

WM. MAULE & SONS, The Nurseries, Bristol.

Clerodendron Thomsonæ.

HUGH LOW AND CO. have much pleasure in offering the above named new and very beautiful flowering Climbing Plant. The flowers are produced in numerous clusters, and the contrast of colour presented by the large white calyx and crimson corolla renders it a most desirable plant for cultivation. It is figured and fully described in *Botanical Magazine* for current month. Plants are now ready, price 7s. 6d.

Clapton Nursery, London, N.E.

J. BUXTON can supply the following beautiful Double PETUNIAS, strong plants, including several of the leading varieties, as under:—

Eliza Mathieu	Marie Rendatler
Jeanne d'Arc	Lehrer Louis
Inimitabilis Rex	Madame Jules Elie
„ flore pleno	

6s., 9s., and 12s. per dozen.

Fine specimens of the above varieties for decorative purposes. Price on application.

COLEUS VERSCHAFFELTI, strong plants, 1l. and 1s. 6d. each.

Springfield, Wandsworth Road, S.W.

SPLENDID PRIZE CINERARIA SEED.—Our Collections have been awarded as follows (the only times exhibited this season):—

First Prize for 6 Plants. Royal Botanic Society, Regent's Park, April 2, 1862.

First Prize for 9 Plants. Royal Horticultural Society, Kensington, on Wednesday last, April 9, 1862.

Packets of Seed from our unequalled collection, which contains nearly a hundred varieties, 1s., 2s. 6d., 3s. 6d., and 5s. per packet.

Plants of the leading sorts may be had.

JOHN DOBSON & SONS, Woodlands Nursery, Isleworth, W.

New Fuchsias—Universal and Dictator.

GEO. SMITH begs to inform the readers of the *Gardeners' Chronicle* that he is now sending out FUCHSIA UNIVERSAL, the most splendid Fuchsia ever offered. Colour deep violet, very large and double corolla, with bright crimson tube and sepals, with extra fine habit, 10s. 6d. per plant.

G. S. regrets to say that he is not able to send out DICTATOR, as the plant has wintered badly.

G. S. will be happy to supply SCARLET GERANIUM FIREFLY, one that received a Label of Commendation at the Horticultural Society's Floral Meetings, and also UNA, a fine bright Pink of extra form and size, 5s. each.

Also Six superb SEEDLING VERBENAS for 25s.; for full description see CATALOGUE, which will be forwarded on application.

GEO. SMITH, Tollington Nursery, Hornsey Road, Islington, London, N.

Calceolaria Canariensis.

G. SMITH has great pleasure in recommending this unsurpassed and beautiful variety; it has been shown in the past season at all the leading exhibitions round London, and has established itself as the best for all purposes, as it gives two-thirds more bloom in a pot and one-third more in beds than any other Calceolaria in cultivation; colour bright Canary Yellow, the mouth closed, so as to resist the wet; the habit is all that could be wished. Has taken a First-class Certificate at the Royal Botanic Gardens, Regent's Park; also a First-class Certificate from the Floral Committee of the Horticultural Society, for its fine qualities. Now ready, in strong plants, at 1s. 6d. each, or 12s. per dozen. A remittance must accompany the order to unknown correspondents.

Tollington Nursery, Hornsey Road, Islington, London, N.

New Bedding Calceolarias.

JAMES BURLEY begs to offer the following as first-class Bedding varieties. They have all been proved last season bedded out; they were awarded an Extra Prize at the Crystal Palace Show, Sept. 4, 1861, as cut blooms:—

	s.	d.
ETNA.—Crimson, tinted with scarlet, habit first-rate, a most abundant late blooming variety. Per dozen	12	0
VICTOR EMMANUEL.—Fine red scarlet, distinctly pitted with crimson dots, fine dwarf habit, only growing from 9 inches to 1 foot high. This is the nearest to scarlet of any we have. Per dozen	12	0
ANGUSTIFOLIA GLOBOSA.—A distinct and valuable new variety, growing only from 9 inches to 1 foot high, very hardy constitution, very short jointed woody habit; the colour is that of a soft and bright primrose—a first-class bedder. Per dozen	12	0

JAMES BURLEY, Nurseryman, Limpsfield, Surrey.

CALCEOLARIAS (Bedding Varieties).—The four varieties named below are Seedlings of my own raising, and are now offered for the first time; they have been tested the last two seasons, and found to be superior for bedding purposes to any varieties in cultivation.

Price 18s. per Dozen.

ADMIRAL WARDE, dark crimson, very dwarf, splendid habit, a most profuse bloomer; wet weather does not injure it to any extent, as a few hours' sun restores it to its usual brilliancy.

GENERAL WOLFE, shaded crimson, a most profuse bloomer and splendid habit, a great advance upon any existing dark bedding Calceolaria, the flowers are medium size, and stand the weather better than any other kind.

ELEGANTISSIMA, yellow, slightly spotted with brown, very free flowering, and of graceful habit.

GOLDEN DWARF, very dwarf, splendid habit, bright colour

JOHN CATTELL, Nursery and Seed Establishment, Westerham, Kent.

Green Hollies.

CORNELIUS WHITEHOUSE (late WHITEHOUSE & WHITTAKER), Brereton Nursery, Rugeley, Staffordshire, offers several hundred thousand stout, free-growing, and exceedingly well rooted 2-year Seedling, and extra transplanted HOLLIES, from 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, and 18 to 24 inches and upwards. Also fine plants of HEMLOCK SPRUCE, ABIES CANADENSIS, 6 feet and upwards. Trade price, low, on application.

CHARLES TURNER'S GENERAL SPRING CATALOGUE of Achimenes, Azaleas, Cinerarias, Calceolarias, Chrysanthemums, both Large Flowering and Pompones; Dahlias, Fancy Dahlias, and Bedding Dahlias; Gloxinias; Pelargoniums, Show, Spotted, French, and Fancy; Variegated, Scarlet, and Hybrid Geraniums, and various other Bedding Plants; Hollyhocks, Heliotropiums, Petunias, Verbenas, as well as Florists' Flowers and Plants generally.

The EIGHTEENTH ANNUAL EDITION of the above is just published, and will be forwarded gratis and post free to any address.

CHARLES TURNER, The Royal Nurseries, Slough.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe. Also to their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which for want of space there, is erected at the Crystal Palace, Sydenham.

Royal Berkshire Seed Establishment, Reading.

Splendid New Bedding Plants.

MESSRS. VEITCH AND SON have much pleasure in offering the under-mentioned, which they can confidently recommend as valuable additions to this class of plants:—

AMARANTHUS MELANCHOLICUS (var. RUBER).—A plant with striking blood-red foliage, introduced by Mr. J. G. Veitch from Japan, where it was selected by him from amongst many other varieties as the one most valuable for flower-garden decoration and other ornamental purposes, but particularly as an EDGING OR RIBBON PLANT. Its habit is very compact, attaining a height of about 1 foot, and the bright shining colour of its leaves gives it a decided superiority over any other fine foliage bedding plant. It will, we believe, supersede the Perilla Nankinensis and all other plants of that class. It was exhibited at the Meetings of the Royal Horticultural Society in July and August, 1861, when it received a Commendation. Price 2s. 6d. each; 24s. per dozen; 7l. 10s. per 100.

MIMULUS CUPREUS.—This beautiful hardy perennial was sent from the Andes of Chili by our zealous collector Mr. Pearce, who found it growing at an elevation of from 6000 to 7000 feet above the level of the sea. It attains a height of from 4 to 8 inches, producing during the summer months a profusion of the richest orange crimson flowers, and from its dwarf habit and brilliant colour it will be found invaluable either as an edging to large beds or for the filling of small ones, as well as for the decoration of the greenhouse. It has received Silver Medals from both the Royal Horticultural and Royal Botanic Societies. Price 3s. 6d. each, or 30s. per dozen. Plants are now ready for distribution.

Royal Exotic Nurseries, Exeter and Chelsea.—May 10.

N.B. Usual discount to the Trade. Special offer in quantity.

MESSRS. VEITCH AND SON beg to call attention to the following New GLOXINIAS and FUCHSIAS, plants of which are now ready for distribution:—

NEW SEEDLING GLOXINIAS.

The following set of four New Gloxinias were raised by us at Chelsea from some of the finest flowers in cultivation, and will be found improvements on those previously distributed:—

CONSTANCE.—Crimson purple edged with mauve, and white throat. An erect flower of great beauty.

DIADEM.—A large drooping flower, with bright scarlet lobes edged with pink.

HERO.—Erect flower, resembling Constance, but having a distinct scarlet blotch on each lobe. A very fine variety.

LEANDER.—In the way of the well-known G. fulgens, but far surpassing that variety in form, size, and brilliancy of colour.

5s. each, or the set for 15s.

NEW FUCHSIAS.

HUGH MOLLON (MOLLON).—A showy ornamental variety of free dwarf habit; good foliage; producing an abundance of large flowers, with tube and sepals of a pale pink and a prominent reddish purple corolla. It was submitted to the Royal Horticultural Society's Floral Committee, and was awarded a Label of Commendation. It will certainly prove a distinct and fine addition to any collection. 7s. 6d. each.

COLONEL POUGET.—Tube and sepals crimson, with bluish purple double corolla, and of dwarf compact habit. 5s. each.

VIRGIN QUEEN (MOLLON).—Tube and sepals waxy white, with deep purple crimson corolla. A free bloomer. 5s. each.

Or the set of three for 15s.

Plants are now ready for distribution.

Royal Exotic Nurseries, Chelsea and Exeter.—May 10.

N.B.—The usual discount to the Trade.

FINE NEW PELARGONIUMS of 1861, 18s. per dozen.

	per doz.
Fine older PELARGONIUMS	12s.
NEW VERBENAS of 1861..	4s.
Best older ditto	8s.
Finest Exhibition PHLOXES	6s.
12 finest NEW DAHLIAS of 1861	8s.
Older ditto	4s.
CALCEOLARIA Sparkler (Bull), the finest shrubby crimson .. .. 2s. each	18s.
CALCEOLARIA Angustifolia globosa (Burley), fine yellow .. .. 1s. each	12s.
CALCEOLARIA Canariensis (Smith), fine yellow ..	9s.
BEDDING GERANIUM Lady Rokeby Bull, very fine	

Most other Bedding or Flower Garden Plants, from 2s. 6d. per dozen, or 15s. to 20s. per 100. Catalogues on application to

HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

ROYAL HORTICULTURAL SOCIETY.—The Council, with the view of promoting the improvement of Horticultural Implements, have appointed an IMPLEMENT COMMITTEE, consisting of Col. CHALLONER, Chairman, Mr. EDWARD EASTON, Mr. JOHN FLEMING, Mr. BRANDRETH GIBBS, Sir JOSEPH PAXTON, M.P., and Mr. JAMES VEITCH, Jun., who have decided upon holding Exhibitions of the following articles during the Society's Great Shows, on WEDNESDAYS, May 21, June 11, and July 2, viz. :—

Heating Apparatus, Improvements in Ventilation, &c.

Garden Machines, such as Mowing, Rolling, Transplanting, Fumigating, &c.

Improvements in Garden Tools and Cutlery, Garden Seats, &c.

Garden Ornaments in Wire Work, Trellises, Suspended Baskets, &c.

Garden Pottery, Conservatory Tubs, Garden Tallies and Labels, Tiles and Ornaments for Garden Edgings, &c.

Implements for Watering, &c. Protecting and Shading contrivances. Plant Guards and Supports. Decorations for Conservatories, Ornamental Flooring, &c.

Philosophical Instruments: Hygrometers, Thermometers, &c.

Bulky articles can only be shown in Model, and no Model may exceed 4 feet by 3 feet.

Applications for space must be sent in at least 10 days before the Show; and the articles themselves must be sent not later than the Friday before, and taken away on the Friday after the Show.

The Committee will examine the Articles exhibited before the opening of the Show, and Labels of Commendation will be placed on those articles which they consider deserving of it.

Schedules for space, &c., may be had by application to Mr. EYLES, the Garden Superintendent.

ANDREW MURRAY, Assist. Sec.

ROYAL BOTANIC SOCIETY of LONDON,
REGENT'S PARK, N.W.

SPRING SHOW, May 7, 1862.

6 CALCEOLARIAS.

Silver Medal to Mr. James, Gr. to W. F. Watson, Esq., Isleworth.

Silver Medal to Messrs. Dobson & Son, Isleworth.

Bronze Medal to Mr. Shepherd, Gr. to H. Greening, Esq., Highgate.

Small Bronze Medal to Mr. Cross, Gr. to Sir F. H. Goldsmid, Bart., St. John's Lodge.

6 VARIEGATED CALADIUMS.

Small Silver Medal to Mr. Hutt, Gr. to Miss Burdett Coutts, Highgate.

Small Silver Medal to Mr. R. Parker, Exotic Nursery, Tooting.

Bronze Medal to Messrs. Cutbush & Son, Highgate.

NEW PLANTS, &c.

1st Class Certificate to Mr. Noble, Bagshot, for Rhododendron Boothii, a very distinct dwarfish evergreen shrub, with acute elliptic leaves and waxy yellow shortly bell-shaped flowers having spreading convex segments.

1st Class Certificate to Mr. Standish, Bagshot, for Retinospora pisifera aurea, a well-marked variety of one of the new Japanese Conifers, in which the young shoots are of a lively yellowish hue, as in Thuja aurea.

1st Class Certificate to Mr. Standish, for Osmanthus ilicifolius fol. variegatis, a free growing dwarf hardy Japanese shrub, with flat Holly-like leaves irregularly edged with creamy white.

1st Class Certificate to Mr. Standish, for Eurya angustifolia, a finely variegated dwarf-habited Japanese shrub, with narrowish acuminate irregularly serrated leaves conspicuously edged with white.

2d Class Certificate to Mr. Standish, for Weigela Stelzneri, a dwarfish compact-habited variety, with deep rose-coloured flowers, raised in the Belgian gardens.

2d Class Certificate to Mr. Williams, Holloway, for Scrophularia nodosa variegata, a hardy herbaceous plant adapted for bedding, having the blunt oblong ovate leaves broadly margined with creamy white.

2d Class Certificate to Mr. Standish, for Aucuba japonica picturata, a very promising looking variety, with the leaves green at the edge, and marked with a bold irregular yellow blotch in the centre. It was hardly enough developed.

2d Class Certificate to Mr. Standish, for Microlepia scabra? a pinnato-pinnatifid Fern, with creeping rhizome and long narrowish hairy fronds, well adapted for suspending in baskets.

2d Class Certificate to Mr. Williams, for Pteris serrulata augusta, an elegant dwarf Fern of arching habit, with bipinnate fronds, and few long narrow linear acuminate serrated divisions, which are much narrower than in the usual form of the well known P. serrulata.

The remaining exhibitions of this character were :—Cœlogyne sp., from Messrs. Low & Co , an epiphyte with long thin somewhat four-angled stems, and short terminal erect spikes of yellowish-green flowers, the lip papillate and speckled with blackish brown. Epacris May Queen, a light red with white tips in the way of miniata, from Mr. Standish; who also sent Weigela Van Houttei, which has large indistinctly two-coloured rosy flowers. Azalea elegantissima, a fairly shaped white variety, occasionally striped, from Mr. Williams.

MISCELLANEOUS.

Small Silver Medal to Mr. Noble, Bagshot, for 11 Rhododendrons.

Small Silver Medal to Mr. Williams, Holloway, for a Miscellaneous Collection.

Small Silver Medal to Mr. Cross, Gr. to Sir F. H. Goldsmid, Bart., Regent's Park, for a Miscellaneous Collection.

Bronze Medal to Mr. Cross, for 6 Azaleas.

Bronze Medal to Mr. Young, Gr. to R. Barclay, Esq., Highgate, for a collection of Foliage Plants.

Bronze Medal to Mr. James, Isleworth, for 12 finely bloomed Pansies in pots.

Bronze Medal to Mr. Hutt, Gr. to Miss Burdett Coutts, Highgate, for a Miscellaneous Collection.

Bronze Medal to Messrs. E. G. Henderson & Son, St. John's Wood, for Rhododendron Nuttalli and other plants.

Small Bronze Medal to Mr. Bragg, Slough, for a stand of Pansies; also for a collection of Fancy Pansies.

Small Bronze Medal to Mr. James, for a Stand of Pansies.

Small Bronze Medal to Messrs. Dobson & Son, Isleworth, for 24 Cut Tulips; also for 6 Cinerarias.

Among other exhibitions were a Collection of Pot Tulips from Messrs. Cutbush & Son; a stand of Cut Verbenas, and some dwarf herbaceous Calceolarias from Messrs. Dobson & Son; and a stand of Pansies from Mr. Shenton, Hendon.

Fine Exhibition Hollyhocks.

HENRY MAY was awarded the first Prize for the best stand of HOLLYHOCKS at the Autumn Exhibition of the Royal Horticultural Society, London, besides the First Prizes at 21 other large Shows, and his blooms were the admiration of all. Fine plants are now ready.

12 fine sorts, named	12s.
12 fine for exhibition	24s.
12 extra fine for exhibition	36s.

DESCRIPTIVE CATALOGUES on application to
HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

New Plants.

AMBROISE VERSCHAFFELT'S CATALOGUE of NOVELTIES is now ready, and can be obtained free, by writing to
AMBROISE VERSCHAFFELT, Nurseryman, Ghent, Belgium.

New Plant Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce the publication of their NEW SPRING CATALOGUE of BEDDING and other ORNAMENTAL PLANTS on May 1, including descriptions of the undermentioned POMPON DAHLIAS, &c.

Angel of Peace	Little Mary
Annie	Little Prince
Butterfly	Little Valentine
Fairy Nymph	Pearl of Lilliputs
Goldlight	Silver Pheasant
Jeannette	Star
Little Darling	Tom Tit
Little Dorrit	and others.

BANKS'S NEW FUCHSIAS.
WILLS'S NEW VERBENAS.
FERN-LEAVED PRIMULAS, white and red fringed.
BEDDING TROPÆOLUMS—elegans coccinea, Model, Constellation, and Beauty of Oulton Park.
PETUNIA MAGNIFICENS.
GLOXINIAS—Brilliant, Leviathan, Bird of Paradise, and Most Beautiful; these four are very large, new in colour, and distinct.
AUCUBA HIMALAICA, the finest habited plant of all the new Aucubas.
GERANIUMS of the Zonale section—Magenta, new colour Woodwardiana, best formed large petal-flowered; Baron Ricasoli, without exception the best bedding or Vase Geranium of any at present known.
GERANIUMS, MINIMUM Section, Harry Hieover.
" NOSEGAY " Pink Pearl.
" VARIEGATED " Sunset, Gold Leaf, Mrs. Milford, the Countess, Gold Pheasant, Little Beauty, &c.
Wellington Nursery, St John's Wood, London, N.W.

☞ *We have the pleasure of announcing that two more of Mr.* NESFIELD'S *graceful border patterns are in the hands of the chromo-lithographer, and may be expected at or about the end of May.*

The Gardeners' Chronicle.

SATURDAY, MAY 10, 1862.

AN opinion has prevailed almost universally, that one of the main benefits derived from the DEPOSITION OF DEW on the leaves of plants is the supply of moisture to replace by absorption the loss which has been sustained by evaporation during the day. All our text books concur in this opinion, but if credit is to be given to the experiments lately made by DUCHARTRE, this, like so many other notions which we have cherished almost from infancy, must be given up, and we must rest content with a very different solution. It is indeed the work of a life to unlearn the wrong notions we have imbibed, and few have the grace to part with them complacently.

In experiments such as those which are necessary to establish the actual effect of dew on plants, it is extremely difficult to avoid causes of error. M. DUCHARTRE has, however, taken the utmost pains to get rid of every other element which might enter into the question, and as far as we can see there is no loophole. His plants, first planted and established in common garden pots, were placed in a glass cylinder, closed below and open above, to the top of which were fitted accurately two sections of a hemisphere with a hole in the centre for the passage of the stem, the whole being exactly luted after the plant and its pot had been properly secured, so as to leave no room even round the stem for the admission of anything from without, and made so strong that the whole would bear the handling necessary to remove the dew which might settle on the glass, or for other necessary purposes, without danger of any derangement. Each apparatus was then weighed accurately, and exposed to the full effect of the radiation of a cloudless sky. Dew was deposited in each experiment in greater or less abundance, but when the glass was perfectly cleaned, and the dew removed from either surface of the leaves with a sponge, in no case was there any accession of weight such as would be due to the absorption of moisture by the surface. In most indeed there was rather a diminution than an accession of weight, and this, whether the dew were wiped from the leaves or suffered to evaporate.

As a fair example of the result of M. DUCHARTRE'S experiment, we will take that of *Veronica Lindleyana*, a plant peculiarly suited to the purpose, from the smoothness of its leaves. In the especial cases we have chosen out of those reported the plants had 11 pairs of leaves and gave the following results. It should be observed that we have not reduced the French weights to English, because the proportion is the point of consequence, and this will be shown better than by reducing the grammes to grains or ounces, the one being too small and the other too large. In the first case there was a loss of 1-20th of a gramme, or about the 4-5ths of an English grain; in the second, of 3-20ths of a gramme, or about $2\frac{1}{2}$ grains, while in the third there was an accession of 3-10ths of a gramme, or about 5 grains.

Weight in grammes before experiment of plant in hermetically sealed vessel.	Weight when covered with dew.	Weight when dew was sponged off.
1914.70	1915.20	1914.65
1570.00	1578.80	1569.85
1514.05	1519.70	1514.35*

In two experiments made simultaneously with the two last, but with plants not hermetically sealed, and the soil left exposed to radiation, the results were as follows. In the first there was an accession of weight when the dew was removed of 3 grammes or about 46 grains, and in the second of nearly 7 grammes or about $106\frac{1}{2}$ grains.

Weight in grammes of plant before experiment, the soil being exposed.	Weight when covered with dew.	Weight when dew was sponged off.
969.50	975.30	972.50
1034.95	1046.10	1041.85

For further illustrations we must refer to DUCHARTRE'S paper just published in the Annales des Sciences Naturelles. Numerous other instances no less conclusive are there given, from which it appears clearly that no dew was absorbed by the plants, though where the surface of the soil was exposed, a considerable quantity was imbibed by it. The benefit derived then from dew, so far as any portion of it enters into the plant, is not to be attributed to direct absorption by the leaves, but to the portion which is taken up by the soil immediately, or where the dew is heavy as it trickles down from the leaves. This is not however the only benefit, the coating of dew completely puts a stop to evaporation, which indeed is not extreme at night, even where there is no dew, and therefore allows any moisture which may be taken up by the roots, or imparted by them, to have its full effect.

M. DUCHARTRE moreover gives the following reason, founded on his own observations or those of others, why the dew is not absorbed. 1. Because a certain portion of air always adheres to the surface of the leaves, preventing the dew drops from coming into actual contact with it. 2. The act of evaporation during the day time from the leaves causes a deposition of matter, resinous or otherwise, which makes absorption difficult. 3. The structure of the leaves themselves, in consequence of which air exists between the cells of their parenchym, makes the entrance of water from without difficult.

Whatever may be thought of this reasoning, it does not affect the fact as stated by M. DUCHARTRE that dew is not absorbed by the plant itself. We have already seen how large a quantity is taken up by the soil when exposed, while in many cases that which runs from the leaves is considerable, especially in some parts of the tropics, and in Alpine districts. The dew, indeed, is sometimes so profuse in tropical countries, as reported by M. BOUSSINGAULT, that a person sleeping on the border of a forest may have a perfectly dry berth, while the dew is falling amongst the trees a few yards off so profusely as to form a continuous shower.

M. DUCHARTRE examined the effect of fogs on plants in a similar way, but his experiments were not numerous; still, so far as they went, they tallied completely with those he had made respecting dew.

It is to be regretted that he did not try what the effect of syringing was, whether forcible and copious, or gentle and slight so as to resemble dew rather than rain. In either case it is obvious that the soil will receive a considerable portion, and it is probable that the result depends rather on the temporary prevention of evaporation or transpiration, than on any absorption by the surface. It is, however, to be remembered that forcible syringing will bring the drops more closely in contact with the cuticle, and the leaves may,

* In this case some dew still adhered to two young spikes of flowers which it was not possible to clear off perfectly.

therefore, be in a condition more readily to absorb the moisture.

The whole subject, however, of syringing requires close examination, and we feel sure that where it is carried on without due attention to the immense effect produced by external cold and radiation on the hygrometric condition of the air in forcing houses, many a mistake will be made, and the effect may be directly injurious. If either the drops of water are cooled down too much, or from the reduced temperature the air parts with its moisture, and the drops evaporate too rapidly so as to produce a local depression of temperature on the leaves, we shall have effects precisely the same as if the spots had been actually frozen; and if at the same time, from the increased dryness of the air, the other portions are affected, we shall have at once combined the effects of sun-burning and frostnip, circumstances so analogous to each other that even Virgil spoke of the burning effect of cold. *M. J. B.*

—— WELL, there is after all a quaintness about the AURICULA, which one can hardly help liking. To be sure the more highly esteemed personages in this confraternity of Primroses, the beknighted orders of Green, and Gray, and White, the aristocracy, so to speak, of the race, are not so gay and jolly-looking as the plebeian and tabooed Alpines, and the only just tolerated Selfs, but then there is quality and high-breeding evident on the very face of them; and they have a staid and demure, yet, in their way, stately aspect, which quite becomes the rank they hold in the scale of domesticated flowers. And then they look so unlike most other members of the floral fraternity, with their frills and ruffs of green and gray; indeed, they seem as if they were determined not to countenance, by their example at least, anything like flaunting or flirtation amongst FLORA's train.

The high-bred Auriculas are interesting moreover from the fact of their having sprung up under a state of domestication, being, in fact, the offspring of civilisation and high cultivation. And mark their nobility of character! In one class holding high rank amongst them, the state robes of crimson or purple, which they are by birth entitled to wear, are partially laid aside, or it may be they are veiled by a plain green mantle. In those cases in which the flower thus becomes partially resolved again into its elemental leaf, we have examples of the order of Green-edges. Others there are that will wear powder over their verdant floral mantle. some of these which have it thinly scattered are known as the Gray-edges, while others which have it more heavily laid on, constitute the order of White-edges. These high-born flowers, it must be confessed, wear paste, but in the case of some amongst them the paste is of marvellous purity. In this feature indeed consists one of the chiefest technical merits of the upper class of Auriculas: they must wear paste, but then it must be so to speak pure as a diamond.

In looking over a considerable number of these quaint but now uncommon flowers—flowers by-the-bye which are well worth bringing back into popular favour—such an assemblage of them for instance as might have been seen the other day in the Regent's Park Gardens, on the occasion of the National Auricula Show, the eye soon becomes tutored to assent to many at least of the points of merit, the properties as they are called, on which those who are well up in the fancy insist. We are not about to define these properties, since they have been already sufficiently discussed in the pages of various publications devoted to matters of this kind; but we may state enough to illustrate the remark just made. As regards the individual flower then, that is to say the pip, for such the separate flower is called, the points of merit to which we particularly allude range under these three heads: tube, paste, and margin. Now it is held, and we as outsiders quite assent to the dictum, that the tube, the hollow centre or throat that is, should be perfectly round, and not exceeding one-fourth the diameter of the entire pip. The effect of this is to bring the parts into proportion; if larger the tube looks gaping, if smaller the several parts of the flower are unbalanced. Then comes the paste which should surround the tube or throat, in the form of a circlet, perfectly round, smooth, and white, without crack or blemish, and equalling half the width of the tube. It is the density and purity of this inner circle which gives brilliancy and effectiveness to the whole flower. The rest is margin, which should be even both as to edge and surface, forming a circlet of the breadth of the tube and twice the breadth of the paste, the inner side of the circlet being the ground colour, the outer either green, gray or white, and the two colours, whatever they may be, occupying about equal portions of the margin, but joining in a broken or feathery line. So that, dividing the diameter of the flower into eight parts, the tube ought to occupy two parts, the paste two parts, and the margin four parts, consisting of about two parts ground-colour and two parts edging. When there is an opportunity of taking in at one view a considerable number of plants, as there was on the occasion just adverted to, one has no difficulty in assenting to these as points of merit, and in detecting the inferiority of those varieties which do not come up to this standard: those for example in which the tube is broad and gaping, or in which the paste is broken or deficient in density or purity, or in which the ground-colour is too narrow (such flowers if greens are very green) or breaks through to the edge, the latter a very common fault in the higher-coloured sorts. So far then we agree with the technical rules set down as a test of excellence.

There was one rule, however, adopted at the exhibition in question, to which we cannot assent, a rule the operation of which rendered the first prize collection one of the most miserable-looking exhibitions in the whole show. The rule seems to have been that the truss should consist of not fewer than three pips: this being virtually] a declaration that three pips are sufficient for a truss. Now let any one with the least appreciation of the beautiful take a fairly vigorous Auricula, which left to itself will produce a truss of from 10 to 20 flowers, and set it beside one of the paltry-looking things which the three-flower rule admits, and we venture to say, the puny abortion would be condemned instanter. Why the practice is almost as bad as would be the reduction of the parts of a Tulip flower to three; let any one but just try that experiment and see the havoc made with what is naturally a flower of beautiful proportions. So with the Auricula, it will bear naturally, if it be healthy as it ought to be, a truss which would put to shame the triflorous exhibitions tolerated by the rules of the National Auricula show. Our forefathers did better than this, for they came nearer the standard of beauty. When the Auricula was a popular flower amongst London growers—a state of things which the change in taste and the death of some veteran florists, and the removal of others, has seemingly put an end to—the rule was, that the pips should form a "close compact truss of flowers, not less than seven in number, and all alike in colour, size, and property." This was the rule; it was acted up to; and the sooner it is revived the better, if the Auricula is to win its way again into public favour. The metropolitan growers of those days were not afraid to submit to this test, which while it allowed a fair field for the battle of technical excellencies in which the florists love to engage, did not convert a beautiful plant into a mere scarecrow. Let it be understood that it is not the censorship that we now criticise, but the rule which puts three flowers in place of seven as the minimum of a perfect truss.

At this Auricula show we noticed that the growers from the north of England carried off most of the principal prizes. We observed also that Mr. HEADLY's George Lightbody, which was alluded to at p. 944 of our last year's volume, and which has suffered detraction at the hands of some writers, was placed as the premier Auricula of the exhibition.

—— To the list of Gold and Silver Ferns cultivated in gardens, we may now add THE GOLDEN AND THE SILVER MAIDENHAIR, which we observe are advertised by Messrs. VEITCH & SON. The former is known to botanists by the name of *Adiantum sulphureum*, given to it by KAULFUSS, and is a very elegant plant with small-pinnuled dwarfish fronds, clothed on the under surface with a somewhat spare coating of yellow farina, similar to that which occurs on other Golden Ferns. The Silver Maidenhair is called *Adiantum scabrum*, and is a somewhat larger plant than its golden ally, and frosted over on both surfaces with white powdery matter. Both plants are natives of Chili, and should therefore rank amongst our hardiest greenhouse plants. They will be very welcome additions to collections of choice Ferns.

—— Of the ORNAMENTAL-LEAVED PLANTS now coming into use, in flower gardening arrangements, as supplementary to beds of flowers, and imparting a varied and somewhat tropical aspect to the situations in which they are introduced, the best of those which have as yet been tried in this country appear to be found amongst the Cannas and Caladiums. The most worthy among the former prove to be C. Annæi, C. gigantea, and C. zebrina. The best of the latter by far for this object and the best planted near water, is C. esculentum. Such is the experience of Mr. Fleming, of Clieveden, who has also pointed out that the most suitable places for the introduction of plants of this character are undulatory surfaces of the pleasure ground, or the neighbourhood of water, or amongst miscellaneous beds of American plants, rather than in geometrical flower gardens. The beds for these foliage plants should be of some simple form, so as to produce a definite mass, the soil should be rich, to encourage free development, and the beds should be entirely occupied by foliage plants, and not surrounded by flowers.

Both the Caladium and the Cannas are easily kept during winter in any out of the way dryish place, not subject to frost, and are prepared by being started in gentle heat in spring. The Cannas are found very useful as indoor decoration plants for a while before being taken for bedding out. Here is another good hint from Mr. Fleming's papers on this subject recently printed in the *Florist*. The better sorts of Rhododendron being generally grown with plenty of "breathing room," a few of the Variegated Negundo, and of the Red Virginian Maple introduced into the spaces between them produce a capital effect, inasmuch as they are found to add much to the interest of the Rhododendron beds after the flowers of the latter are past, and their own particular features are well brought out by the abundant full green of the Rhododendrons.

New Plants.

244. THUJOPSIS LÆTEVIRENS.

T. foliis læte virentibus lateralibus patulis apice incurvis dorsalibus oblongis adpressis obtusis.

This exquisitely beautiful little Japanese evergreen has reached Messrs. Veitch in the form of a small living and perfectly healthy plant. That it is a Thujopsis the peculiar condition of the foliage seems to show, even in the absence of fruit, which has not been seen. It is described by Mr. J. G. Veitch as a "dwarf growing plant; habit erect and bushy. Foliage of a very light green." To us it looked at first sight like some erect woody Lycopod, and we almost doubted whether it was a Conifer at all, until the white spaces on the under side of the leaves, by which Thujopsis is known, caught the eye. A friend suggests that the specific appellation of this should be Veitchii; but that name is renowned enough already, and the world is becoming sick of the toadyism and bad taste which lead men to tack one and the same person to heaps of garden things.

245. PLANERA ACUMINATA.

P. foliis ovatis acuminatis grossè acutè serratis ramulisque pubescentibus, achæniis rugulosis obliquis monospermis.

A noble deciduous tree found near Yeddo by Mr. J. G. Veitch, 90 to 100 feet high, with a remarkably straight stem. In aspect it resembles an Elm. We understand that a plank of it in the Exotic Nursery, Chelsea, where it has been raised, measures 3 feet 3 inches across. Mr. Veitch informs us that it is one of the most useful timber trees in Japan. Its long taper pointed leaves with coarse very sharp serratures appear to distinguish it satisfactorily from the Planera Richardi of the North West of Asia.

Indoor Gardening.

As the summer advances indoor gardeners sometimes find themselves rather cramped for room. The seedlings and the cuttings take up but little space, but when the contents of the nursery pot come to be divided into about a dozen distinct and separate plants, the plant stand seems to have grown very small, and all we can do is to choose out the best and dismiss the rest unsparingly. It never answers to have too many plants. One ill grown thing spoils a whole group of beauties, and none will grow well when deprived of abundant light. Some plants of course require sunshine while others prefer the shade, and while they are in flower most window plants should be preserved from sunshine. Still this only enables us to fill our different windows with plants that will thrive in them; it offers no encouragement for rows behind rows of unhappy straggling things which get scarcely any light, or for such close packing as leaves no room for growth.

A very good way of arranging rows of plants is to have alternately a tall and bushy tree, and a low growing thing that makes a pretty surface. Begonias, Fuchsias, Geraniums, and Roses are thus mixed up with pots of low Campanulas, and of the blue Lobelias, Mimulus, and such things; and these prevent a bare appearance low down, while affording the larger plants more room to spread out above. If these plants are not in a box, indeed, there must be generally a very apparent want of uniformity; but I hope that no one will be thinking of window plants without boxes, and even in the use of boxes it is often difficult to make all the pots of one height, when, as is often necessary, their sizes are very various. My own readiest way of getting over this is to sink the pot into the empty mouth of another of the same size, or of a degree smaller; the sunken pot of course cannot go down far, and this is easier done than making a heap of anything in the box; since, unless sand is used, it requires very firm pressure to compress the Moss sufficiently, and for all useful objects the Moss does as well or better when not very closely packed.

I beg to recommend to window gardeners an exceedingly old and common-place Geranium—album multiflorum. It is generally seen in a rather ragged state, as it does not bear any wind or draught without becoming shaky, but in a window or in a plant-case it really is a very nice old flower. The foliage is particularly large and dark and grows well down, while the flowers grow 10 or 12 perhaps in a spike, and look very light and waxen. I have had a plant of this for nearly three weeks in my plant case (put there just coming into flower) and its leaves and blossoms are in most perfect health. For a much grander plant, though also one most easy to keep in beauty, I ought to mention to-day the Azalea "Model," as it is about now in blossom, and is so very lovely. A plant of this that Mr. Veitch was so good as to send me lately is perfectly glowing under the shadow of the darker foliage at the cool end of my case. The blossoms are very large and of a shaded rose colour that is perfectly beautiful. By candle light this flower is one of the most brilliant, and it is very lasting on account of its thick petals. It has very dark glossy foliage, peculiarly suited to set off its flowers, and I certainly consider it the best room Azalea that I have ever had. Mine has been in full blossom with all the buds open for just 10 days, and no flower at

present betrays that it has been unfolded longer than since the morning. Azalea variegata also is very pretty, especially for a place where the light shows through it, each petal being shaded towards the edge into a pretty white, just streaked sometimes with the pink, which deepens down the centre. This plant, however, though it is very pretty, is in quite a different style to the beautiful "Model," which seems to me well named both for flowers and growth. *E. A. M.*

LASTREA DILATATA AND ITS VARIETIES.

With the exception of a few very marked forms of the nature of sub-species, this freely distributed British Fern has not until lately been observed to sport into so extended a series of varieties or variations, as most of the other common species; but as the keen eyes of Fern fanciers peer more closely into its native haunts, it is found that many very curious and interesting forms occur. The normal condition is to have a short caudex, upright or nearly so, and furnished like the stipes with entire lance-shaped pointed scales of a light brown colour, and having a much darker bar up their centre; to have also fronds of an ovate outline, twice or thrice pinnate, with spinoso-mucronate serratures. These features include plants varying very greatly in size, from 6 or 8 inches to 5 feet or more, the two extremes, which are perhaps permanent, being sometimes looked on as varieties. For the most part the fronds are from 2 to 4 feet high, and of an arching or semi-drooping character.

Falling under the plant thus indicated as a type, but themselves of the rank of subspecies, are the following, which gradually pass from the normal ovate to an oblong-lanceolate outline of frond:—DUMETORUM, a dwarfish ovate variety, found well marked in Westmoreland; COLLINA, a medium-sized plant, with narrow-elongate ovate fronds, occurring in a characteristic form both in Westmoreland and Arran; ALPINA, with fronds varying from 6 inches to 2 or 3 feet in height, and from ovate to oblong in outline, and when fresh of a soft succulent herbaceous texture, so that when dried it becomes very thin, a common form on the Scottish highlands, and passing into the north of England; CHANTERIÆ, a tall slender plant, with lance-shaped fronds, broadest upwards, a West of England plant; GLANDULOSA, a tall erect robust-habited plant, from the Forest of Dean, with oblong-lanceolate fronds, the link connecting dilatata with spinulosa; and LEPIDOTA, a very remarkable form of doubtful origin, having short broadly ovate quadripinnate fronds, the stipes and ramifications of which are so completely clothed with contorted whole-coloured rusty scales as to give them a scurfy character.

These all are abundantly distinct for the purposes of the cultivator, having marked individuality as to size, form, habit, and aspect; but independently of these, and of such as can be associated with them, this common Fern yields more than a quarter of a century of distinct recognisable forms, some of which have been only very recently found. There is a group of minimums; several interrupted laciniated and crested forms; and others of vigorous habitand gigantic stature, sometimes tall-fronded with a narrowish outline, sometimes thick-fronded with a bulky aspect and almost leathery texture, sometimes broad-fronded and remarkable chiefly for the expansion of their surface.

During the past year considerable additions have been made to the previously known British varieties. The smallest of these novelties which has come to our knowledge is UNCINELLA, a Somerset variety, having the lamina of its fronds rather shortly ovate, and 4 to 5 inches long. It is bipinnate or nearly tripinnate, the pinnules rather peculiarly decurrento-confluent, and their teeth rather large for so small a plant, with a marked tendency in the teeth themselves or the lobes which they terminate to become incurved. Another from the west of Scotland, which we propose to call CONCINNA, has a lamina of about 9 inches on a 6-inch stipes, and is somewhat oblong-ovate in outline, tripinnate with the parts small, the pinnules stalked, subfalcate, and acute, cut into small linear-oblong lobes which have a few sharp teeth, most evident at their tips, the anterior basal lobes being most prominent; sori small. It is very neat and pretty. That we call LEPIDA, from the confines of Yorkshire and Lancashire, is a rather larger but slender form, with more distant pinnæ and pinnules, the latter more obtuse, and with the lobes, which are oblong and sharply toothed, more widely separated; the fronds including the stipes are upwards of a foot and a half long. Then comes HANKEYANÆ, a Cumberland plant, also remarkably slender and elegant, and with the pinnæ and pinnules peculiarly distant. In this the pinnules are long and narrow, the parts small and finely toothed, and the whole so remarkably convex that the fronds cannot be flattened. A form very like this has been found near Aberdeen. Finally, in this series comes a Lowland Scotch plant which we call LATA, a broad form with large pinnules, not like the large broad ordinary plants common in England, but having a peculiar leafy character from the coarse lobes of the pinnules being broadly confluent.

Then of the oblong-fronded series we have STRICTA, a Somerset plant, with a narrow lamina of 8 or 9 inches to the upright-growing fronds, and the pinnæ all directed upwards at an angle of about 45 degrees; it is a very unusual-looking dilatata. Another is RECURVIFOLIA, from Aberdeen and Moffat, the latter rather the broader of the two, both comparatively dwarf plants, and remarkable for having rather crowded sessile pinnules, very decidedly convex on their upper surface, the fronds having at the same time a tendency to concavity along the centre of the pinnæ. A third neat and very elegant form, received from the west of Scotland, which we call ADNATA, though small, the lamina being less than a foot long, is to the eye a much divided variety, from its evenly and deeply cut character. It is rather slender; and the pinnules are sessile, and of a nearly regular oblong-ovate acute form, cut nearly to the midrib, and to about the same extent all the way up, into small even-sized acutely-toothed lobes, so that the midrib of the pinnules appears to have a narrowish equal wing throughout its length, with which the lobes are adnate.

Larger forms of the oblong-fronded series occur in the variety ALTA, an Aberdeen plant of erect robust habit, 4 or 5 feet high. This is distinctly tripinnate, with the pinnules averaging an inch, the larger ones 2 inches long, the lobes rather distant, oblong, a quarter of an inch long and strongly toothed at the tips, almost entire towards the base where they are more or less confluent. The prominent apical toothing somewhat resembles that of grandidens. It is we understand a well-marked and abundant wild plant. Another very beautiful Scottish plant, but from the west coast, we propose to call ORDEANÆ, though of its position in this group we are not quite certain, having only seen portions of its fronds. It seems to be a larger grower but slender, its parts being small like those of micromera. The pinnules are from ¾ to 1½ inch long, with small distinct oblong or sometimes slightly falcate lobes, deeply cut into smaller lobes or teeth. Its finely divided condition makes it a very elegant plant. The variety ROBUSTA from the lowlands of Dumfriesshire is again quite unlike any of the foregoing. It is tall and very stout, with crowded broadly-ovate stalked pinnules, the lobes of which, the basal ones at least, are rather ovate than oblong: the teeth are small but spreading in the way of collina and grandidens.

The foregoing are all varieties in which the development is of a normal character, but there are some fine-looking novelties of the interrupted or abnormal series. The most striking of these we propose to name BLAKEI, after Mr. James Blake, by whom it was found near Aberdeen. It is a tall upright plant, resembling alta just noticed, and is indeed evidently a depauperated form which has originated from that variety. The whole of the frond is affected by that irregular development of the parts to which Fern fanciers owe some of the most highly prized sports of the Fern family; this is so completely the case in the var. Blakei, that the frond becomes symmetrically unsymmetrical if such a paradox can be conceived, and it is this which, along with the tall oblong outline, is the peculiar feature of the plant.

We must just mention RAMOSA, another type of variation, in which the stipes and rachis become forked so as to produce a branched frond. It is a plant of Scottish origin we believe, having come to us through the Botanic Gardens of Edinburgh and Glasgow. This is a variation of the dumetorum sub-species.

In noticing a short time since some of the more remarkable new forms of Lady Fern, we should not have omitted to mention as the finest of all the crested forms, and certainly a most charming ornamental Fern, ATHYRIUM F. F. ELWORTHII, a "seedling" raised by Mr. Elworthy of Nettlecombe. It is of the multifidum and corymbiferum class, with fine bold crests at the tips of its fronds and pinnæ, and the pinnules exhibiting also more or less of a crested character.

The plants to which this very rapid sketch refers are all such as Fern fanciers would welcome to their gardens. *M.*

NOTES ON THE PLANTS OF PERU. No. IV.

(*Continued from p. 405.*)

I RESUME the narrative of my Cinchona experiences:—As the season advanced my difficulties with the cuttings increased. Finding that the Gynerium leaves did not answer well, I had recourse to Palm fronds, and subsequently to the leaves of Plantains, Musa sapientum, which I found to answer best of all. The Plantain leaves kept the atmosphere of the pit cool and moist, and although they also required to be renewed, it was only the work of a few minutes, as seven or eight of the largest leaves covered the pit. I was however somewhat doubtful as to the number of healthy young plants I might obtain from the bed of cuttings, and so I resolved on making a number of layers. I accordingly made daily excursions into the surrounding forest in search of suckers which had sprung up from the roots of trees formerly felled, or for branches of trees so near the ground as to be capable of being layered. The process of layering was certainly the most difficult and dangerous work I have yet had to perform. There is in general no great risk attendant on travelling through the primitive forest, and making collections of specimens for botanical purposes; but carefully fixing down shoots or branches of the "Red Bark"—which are in all stages fragile—amidst a mass of decaying leaves and Lycopodiums, where there is sure always to be plenty of snakes, is a very different matter. By the 2d of September I had put down nearly 700 layers, all of which I felt certain would root sooner or later.

Early in September, Dr. Taylor, who had gone to inspect some seed-bearing trees of the "Red Bark" at a place called San Antonia, about a day's journey from Limon, returned with the information that the capsules were still green, and that in all probability they would not be fit to gather for a fortnight. Mr. Spruce, however, was anxious to see them himself, as the seeds at Limon had already been gathered; therefore on the arrival of Dr. Taylor he left for San Antonia. Early in September I again put in nearly 700 cuttings, selected from strong well ripened shoots, for the primary cuttings, most of which were taken from weak immature branches in accordance with the wishes of Mr. Spruce (who was desirous of planting as many as possible in the cases), had dwindled away to nothing. By the middle of September the weather became more cloudy, with now and then heavy showers of rain, which greatly accelerated the rooting of both layers and cuttings. In the beginning of November I prepared a compost consisting of equal parts decayed leaves and sand, for the transplantation of the cuttings and layers. I had previously examined the layers, of which from the beginning I had entertained good hopes, and I found that they had already nice fibrous roots, for, when putting them down, I ringed each shoot in order to facilitate their rooting. On his return from San Antonia, Dr. Taylor had unfortunately got a thorn in the joint of the middle finger of his left hand, and, as his arm above the elbow now began to exhibit a gangrenous appearance, he resolved on returning to his home in the Sierra or hilly country. I was therefore left alone in the forest, with only one Indian for a companion, who was however of great service to me, as he had accompanied me when I was putting down the layers, and could remember where each shoot had been placed. By the 10th of November I had transplanted all the cuttings and layers which were well rooted into the bed previously prepared for them. The layers I found to be far better rooted than the cuttings. The roots of the latter appeared strong and healthy, but the plants themselves were exceedingly brittle, and, on transplanting, many of them lost their leaves, and finally died. The immediate cause of death was removal before the roots had become properly furnished with fibres. The wiry matured roots of the layers, however, on being transferred to the bed of prepared compost, soon pushed large healthy clusters of fibres, while the plants produced vigorous well developed leaves and shoots. During the remaining days of November I occupied myself chiefly in making observations on the general conditions under which the "Red Bark" seemed to flourish.

The surface of the country around Limon consists of a series of low rounded eminences, running parallel with each other from east to west. The western portion of these is gradually lost in the large savannahs from whence rise the different streams which ultimately form the dark muddy waters of the Guayaquil River. Towards the east they rapidly rise into high turreted hills, and finally unite with the great platform from whence rise several lofty mountain peaks and the celebrated Chimborazo, the summit of which is constantly covered with snow. The alluvial deposit on the rounded eminences just mentioned is in many places of great depth, and very similar both in composition and colour to Wimbledon loam. The hills and valleys around Limon are covered with a dense tropical vegetation. On the slopes may be seen many lofty specimens of the Ivory Nut Palm standing prominently above the trees of the forest. In the deeper ravines, beside little streams, or at the base of broken banks, grow many fine examples of tree Ferns from 40 to 50 feet in height. The actual number of species of plants which exists in the forests around Limon must be great, and many of them probably new; among them, however, Ficus, Solanums, Piperads, and Melastomads are undoubtedly most numerous. Solanums abound, from small tiny herbaceous plants up to large wide spreading trees. Piperads I have seen growing as Epiphytes not more than an inch in length, but as trees they grow from 20 to 30 feet in height. Throughout the forest are also to be found three kinds of Cinchona, Crotons, Ingas, Bamboos, and Psidium Cattleyanum. Around the trees twine Aristolochias, Bignonias, Passion flowers, Smilax, Rubus, and Monsteras. In dry situations grow gigantic Castor-oil plants (Ricinus communis), the valuable properties of which are unknown to the inhabitants. On the ground, or on trunks or branches of trees (for really there does not seem to be any special law or limit to the habitation of plants in the primitive forests of the tropics) grow Caladiums, Tradescantias, Mimosæ, Calceolarias, Fuchsias, Cinerarias, Begonias, and Achimenes. In addition to these there is a vast variety of Ferns, such as Aspleniums, Adiantums, Lastreas, Blechnums, Lomarias, Diplaziums, Gleichenias, Gymnogrammas, Lygodiums, Nephrolepis, Trichomanes, and several sorts of Lycopodiums, Lichens, and Fungals. Along the banks of some of the deeper ravines grow perfect plants of the Didymochlæna truncatula, and Hemidictyon marginatum. The former I have seen in general under dense shade on heaps of decaying leaves. The latter I always found growing by the edge of streams or rivulets, with its fronds overhanging and sometimes dipping

into the water. Several kinds of Ferns seem to thrive equally well under the shade of trees, or exposed to the full rays of the sun; of this class are Aspleniums, Blechnums, Lygodiums, and Nephrolepis. But Lastreas, Hymenophyllums, and Trichomanes, are most frequently found in dark shady places where there is always plenty of moisture. In open exposed situations the trunks and branches of trees are crowded with Orchids, such as Schomburgkia, Oncidiums, Stanhopeas, and Epidendrums. Their pseudo-bulbs, which are at first diminutive, gradually acquire strength from full exposure to the sun and atmospheric influences, and soon attain their proper size, pushing forth spikes of flowers, the odour of which I have much enjoyed when travelling through the forest.

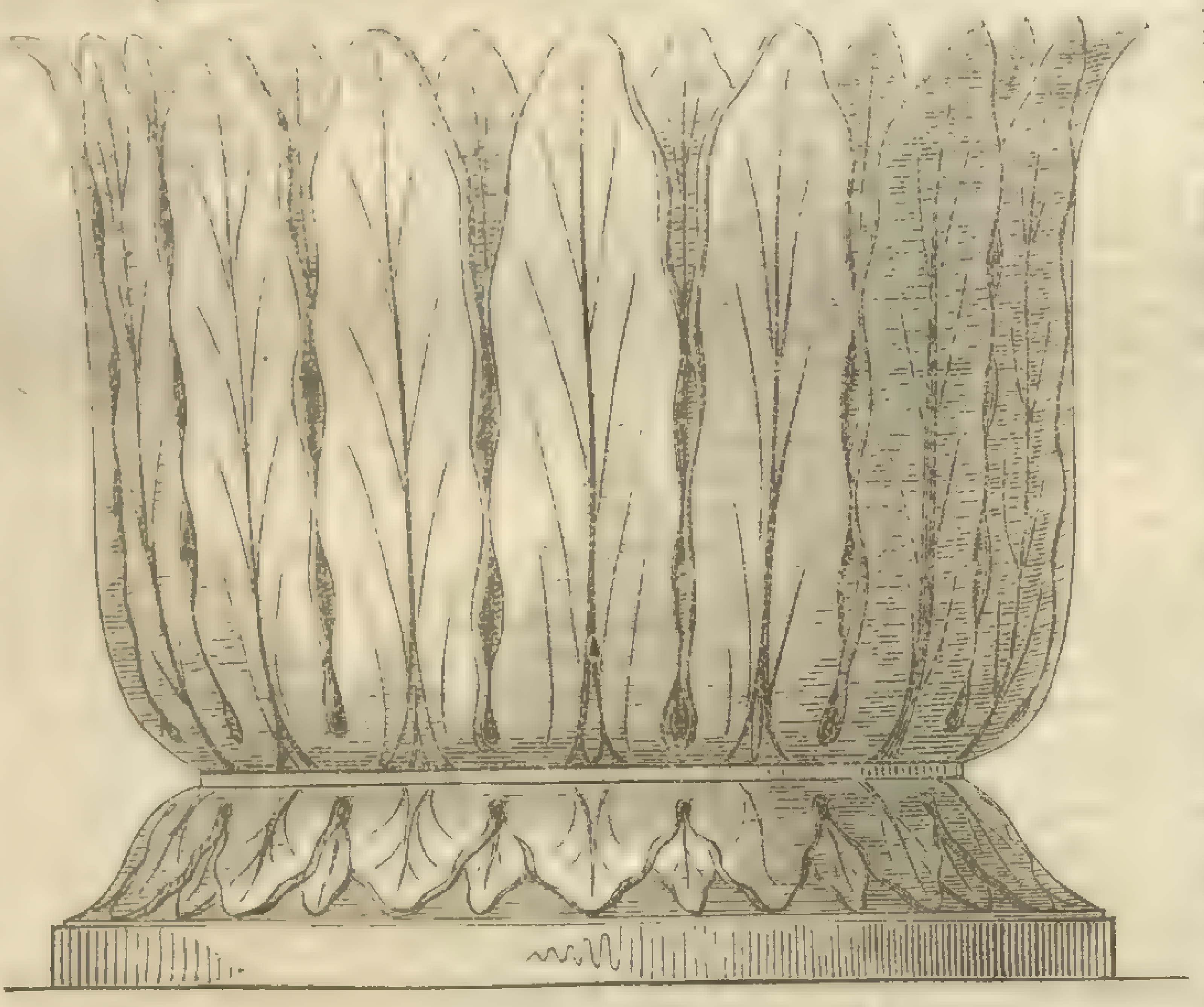
Under dense shade Orchids are rare. In such places they would soon degenerate, and die out with "spot" as they are continually doing in England. I have been told that when properly cultivated in England Orchids produce finer flowers than in their native country, a statement with which I cannot agree. On some of the more elevated heights above Limon, where the trees are thinly distributed and of somewhat stunted form—presenting an appearance very similar to that of old orchards in England, I have seen Oncidiums in so great abundance, and their flowers in such profusion, that, when viewed at a distance in the morning sunlight, it seemed as if the scattered woodlands were on fire. On examination I found the roots of each plant firmly adhering to the bark of the tree on which it was growing, and some of the roots I traced along the branches 8 to 10 feet distant from the parent plant. Different, however, is the artificial system of treatment pursued in England. There I once saw, when on a visit to a certain establishment near London, a valuable collection of Orchids crammed into a little dark pit, the glass of which had been carefully painted over and in the day time was covered with mats or cloth—thus effectually excluding that which gave life and vigour to the plants within. When cultivators of Orchids can be prevailed on to unroof their houses during the summer months they may then materially improve the state of their plants, and obtain a greater quantity of bloom. At the present time, however, even the finest specimens which are annually exhibited at the London flower shows, with their pseudo bulbs in most instances supported by stakes, would present but a poor appearance if placed, for purposes of comparison, beside those I have seen on the wonderful slopes of the Andes, bedewed as they are by mists from the mountain summits, washed by torrents of rain, and lighted up by the sun. *Robert Cross, Sierra de Caxanuma, near Loxa, November* 1861.

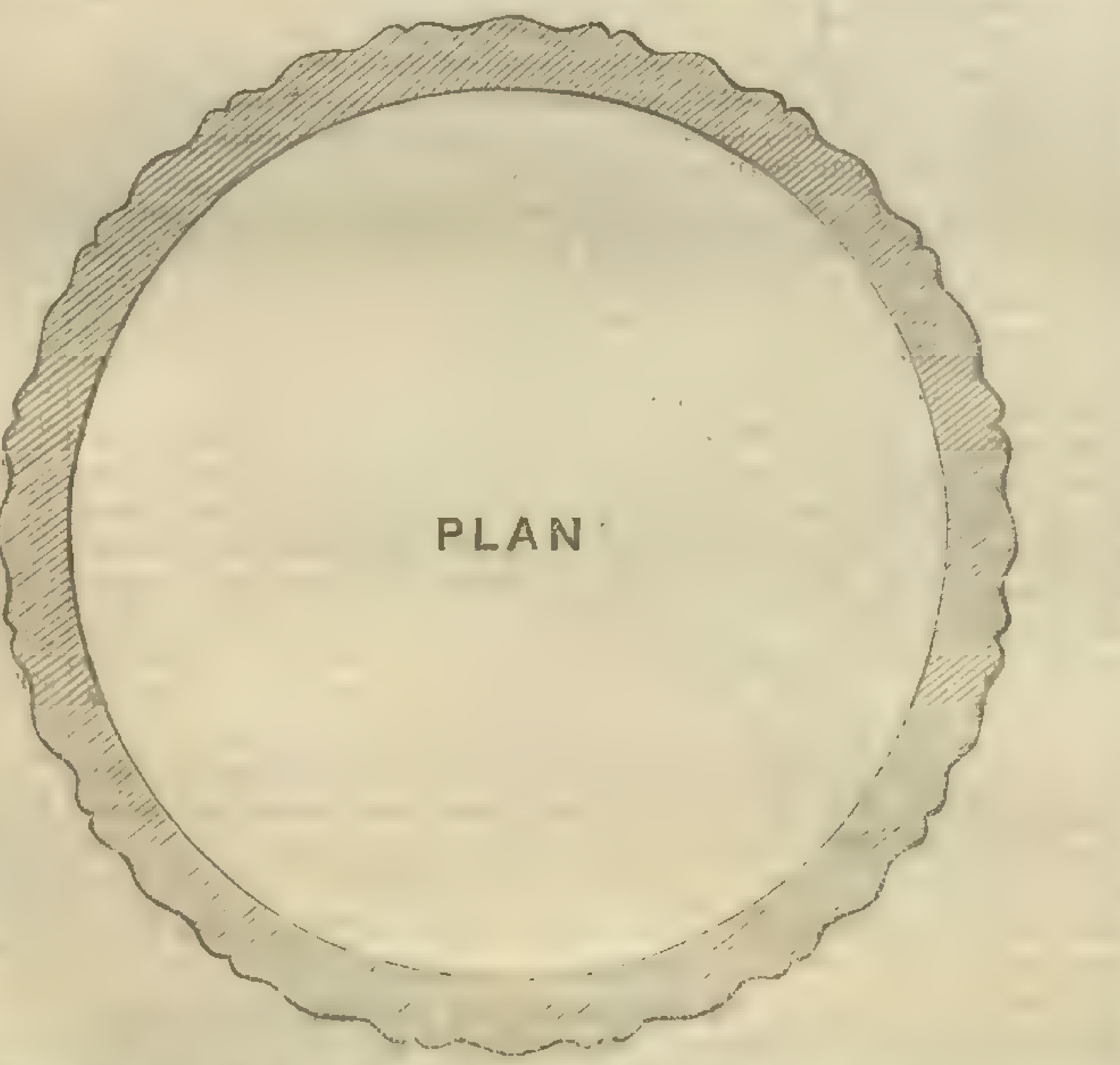
Home Correspondence.

Ulex strictus.—Does this bloom freely generally? I have a vigorous growing plant of it here, which has this year one solitary flower; last season it was the same. It has been planted out about five years, and is now 2½ feet high, and 7 or 8 feet in circumference. About 6 yards off is a fine specimen of U. nanus, sometimes but improperly I believe called U. hispanicus, which has bloomed freely in season ever since it was planted, and in a few days will exhibit a mass of yellow flowers. Also U. europaeus, very abundant in the hedges and heaths of this neighbourhood, flowers freely from Christmas to the present time. Although I have instanced these two varieties in connection with U. strictus I am not certain that any conclusion may be drawn from the fact that because they bloom freely U. strictus should do so too. The compact and not inelegant habit of the plant has caused it to be propagated at the different nurseries, and I have met with many specimens at different places, but none in bloom. Does it bloom in Ireland, its native country? if so, is it on account of the greater moisture of the climate there—and if it be shown that it does not bloom well in England, is it worthy of the conspicuous place very frequently assigned to it? If any of your correspondents can supply the information here sought, they will oblige at least one of their number. It is worthy of remark that many of our spring flowering shrubs have this season bloomed most profusely, and among them Berberis Darwinii, Spiræa prunifolia fl. pl., Amygdalus persica and Deutzia gracilis have been very beautiful objects. These are named with the view of reminding amateurs who may not possess plants of them that they are deserving of a place in every garden, and being perfectly hardy might well take the place of Laurels, Lilacs, and Laburnums, which are apt to be found rather too abundantly in moderate sized and small gardens. *Adolphus H. Kent, Grammar School, Blechingley, Surrey.*

Leaf-eating Caterpillars.—My Cherry and Plum trees in an Orchard-house are infested, not more than usual, but very much, with three or perhaps four different species of leaf-eating caterpillars, which also eat the fruit as soon as set. I do not enclose specimens, as I suppose they are what all orchard-house Cherry trees are subject to. The most numerous is a small grey caterpillar with a black head that sews the young leaves together and discovers its presence by that means; and though both I and my man look over the trees every day, we always find more game than we want. Leaves that certainly were free yesterday have a caterpillar to-day, and sometimes so small a one as to suggest that it has been deposited, or hatched, the night before. Are they thus deposited? Or are they hatched from cases stuck to the branches which have previously eluded our eyes? Or how do they come? Neither of us have succeeded in detecting a moth, or a butterfly, in the house. They are almost always single, though occasionally two are found together, so that I suppose they must be deposited (the eggs I mean) in the places where they are found, and not in a case containing many. But they are often in the heart of a young leaf not yet opened. *George Jeans, Alford, Lincolnshire.*

Another idea for a Tub.—Is not the last sketch too plain? It is hard to judge without seeing it put into execution, but it appears to me that it wants the decorative character looked for in a well kept architectural garden. A very near relative of S. S., a gentleman





well known to me, has hit off the enclosed, which seems deserving of consideration, at least as one of the varieties that Jael thinks desirable. It could not however be constructed in anything except pottery, and would therefore be inapplicable to large conservatory plants. *Beeal.*

Gleichenias.—In a few remarks that I made on the cultivation of Gleichenias in your Paper of April 26, I observe that I have by mistake put Gleichenia rupestris first on my list. I intended to have said that Gleichenia speluncæ is the hardiest of the genus. One kind which I mentioned was by an error printed necistophylla—it should have been spelt hecistophylla. *W. W.* [We are obliged, though reluctantly, to call attention to this typographical error. It is impossible to know what the proper spelling is of Garden names unless our Correspondents write legibly.]

Uprooted Conifer.—I enclose a small sprig of a species of Cedar. The tree was blown flat down in the early part of the winter of 1860 by a sudden gust of wind. It was set up again and supported by props, and seemed none the worse, sending out vigorous shoots in the ensuing spring and continuing perfectly healthy all the succeeding summer and winter. Within the last few weeks it has however ceased to grow, is rapidly turning brown, and evidently dying, as will be seen by the specimen sent. Is this attributable to the accident of 1860, or can any other cause be suggested? and can any remedy be applied? The tree is about 15 feet in height. *C. E. F.* [This appears to be a bit of Juniperus phœnicea. We do not think it possible to prevent its dying. The accident of 1860 seems to be the cause.]

Sikkim and Bhotan Rhododendrons under Glass.—When the main range of hot-houses was erected here, I had a space left amongst the sheds and offices on the back wall for a house to be roofed with glass, for retarding or keeping plants longer in flower than they otherwise would be doing in the summer months. This house or shed is about 76 feet in length, 12 feet in breadth, and about 18 feet in height, and is not heated. I find that the Sikkim and Bhotan Rhododendrons are quite at home in it, although they seldom get a glimpse of sunheat. In the beginning of April several of the Bhotan seedling Rhododendrons showed flower buds, and I then introduced them into a plant house, where they flowered beautifully; one variety having white flowers with a yellowish tint at the bottom. The blooms individually were as large as those of Edgworthi and as sweet scented. Nuttalli has also flowered very finely. Unfortunately the greater part of the Bhotan seedlings came here unnamed. All the Sikkim varieties that I have are named. Dalhousianum flowers freely with me every year, as do also Edgworthi, Maddeni, and virgatum. Those that have not flowered yet are Wightii, fulgens, campylocarpum, Hodgsoni, Campbelli, Thomsoni, Aucklandi, argenteum and Falconeri. The plants are mostly small, and none of them are grafted; they stood in the back house just mentioned in the severe winter of 1861, and were not in the least injured. The only extra attention paid to their culture is in the growing time, when they are kept well watered at the root and syringed overhead. *William Tillery, Welbeck.*

Why have my Peach blossoms fallen?—I have the care of an orchard house of considerable size. Its dimensions are as follows: viz., length 83 feet, width 26 feet, height at sides 8 feet, height at centre 12 feet; there is no bench of any description inside. It has merely a glass roof and sides resting on 18-inch brickwork, with a door at each end and wooden ventilators all round just above the bricks. It contains 200 trees in pots, varying from 11 to 18 inches in diameter, which have been grown under glass from 1 to 4 years. Planted out in the centre bed are also 50 standard trees which have been growing two years; the whole of them were lifted and replanted the first week in December, and those in pots were top-dressed at the same time; the wood was well ripened and the trees had a most promising appearance. The whole of the time they were in bloom nothing could be more promising; the weather being very fine, air was given daily from 8.30 A.M. till 5.0 P.M., the flowers were also fertilised with a camel-hair pencil. All seemed to be progressing gaily, the majority of the blooms seemed set, and the petals had fallen, so as red spider was increasing, I had them syringed once a day and occasionally twice, nevertheless the buds fell off day after day like caterpillars from a Gooseberry bush. Most of the Plums and Apricots however under the same treatment have set nicely. This is but a repetition of last year's experience, but then I attributed the failure to the effects of the previous sunless summer. The wood was never ripe, and the leaves did not come off till spring; moreover they were not top-dressed nor transplanted till February, so to that I attributed the first year's failure. I know that Peaches can be grown successfully in pots, as I have seen more than one excellent crop. I feel convinced in my own mind that one of the two following causes is the reason of all my disappointment; either they had too much water at the root, or they were topdressed too late. During the month they were in bloom they were watered twice a week or three times a fortnight, according to the state of the weather; during March they had water perhaps twice or three times; they have, however, had none since they were top-dressed, when they had a moderate soaking. I shall feel obliged if some more experienced cultivator than myself will give his opinion on the subject, in order that I and others may avoid a reoccurrence of such disasters in future. *Perplexity.*

The Designs for Tubs.—I consider as a matter of taste S. S.'s tub a failure, because it represents that which it is not, viz., a portion of an architectural column or an Arnott stove. My humble notion is that a tub should tell its own tale as a tub, in which case the first scratch is right in principle. *W. A.*

Paxton's Houses.—Have these succeeded well for growing Vines and Peaches? In the Handbook published by Mr. Hereman he mentions having heated one house (page 17) with circular draining tiles. Have these been found to answer as well as metal pipes, and what size should they be for a range of houses about 100 feet long? *Hibernicus.*

Rose Grower's Pruning Hook.—The following is a rough sketch of a tool I have had constructed for removing the suckers and side shoots from Briars and worked Roses. I have found it so useful and effective that I think it worth a trial by your Rose-growing readers and the growers of fruit trees also. It is made from a piece of sheer steel; the full length of the instrument is 16 inches; the handle or stem is ¾ inch wide, and made oval for convenience of holding.

The blade end is 4 inches long, about 1 inch wide, and has a curved or bill point; the under side is quite flat, the inner edge bevelled off knife-like, and the outer edge also bevelled round the curve, and about one-third down the blade. It is necessary to have a shoulder to the blade, in order to prevent the hand being cut when the other end is used. This is made chisel-pointed and about 1½ inch wide, to remove the soil and cut through the suckers. For the latter operation either end may be made available according to circumstances, but the use of the instrument will soon suggest itself to the enthusiastic Rose grower. During this season of the year I find such a tool one of my daily wants, for no amount of attention at the time of planting will prevent Briars sprouting and throwing up suckers until the worked heads are thoroughly established, and I am satisfied a good deal of labour and many Roses may be saved by keeping it as I do constantly at hand when amongst Roses. *T. Laxton, Stamford.*

Societies.

Royal Horticultural: *May* 2.—The Earl of Ducie, V.P., in the Chair. The following candidates were elected, viz.:—

J. Blackburn, Esq.; Mrs. Boylan, W. H. Bradbury, Esq.; J. Brooks, Esq.; Mrs. Browne, C. Butler, Esq.; Miss S. Cobb, Mrs. Cope, Miss Davis, J. Fisher, Esq.; G. P. Gilchrist, Esq.; C. T. Gingell, Esq.; H. Gotto, Esq.; Mrs. Hakewill, Mrs. Hankey, Lord Wm. Montagu Hay; T. How, Jun., Esq.; Mrs. Isenberg, Miss Kerr, Mrs. King, J. W. Larking, Esq.; A. H. Linnington, Esq.; G. B. Lorimer, Esq.; Mrs. Lucas, The Hon. Claud Lyon, R. McCalmont, Esq.; F. R. Newton, Esq.; W. P. Norbury, Esq.; W. H. Ollivier, Esq.; J. Peck, Esq.; Mrs. Rydon; Mr. A. Salter, E. A. Sanford, Esq.; Colonel Simpson, A. Swanston, Esq.; J. H. Thompson, Esq.; and Major-Gen. Sir Andrew Scott Waugh.

May 6 (*Floral Committee*). — Messrs. Lee of Hammersmith furnished on this occasion two plants of a yellow Azalea named Altaclerensis, a cross between A. sinensis and one of the Ghent varieties; it was considered to be a good addition to outdoor yellow sorts. From Messrs. E. G. Henderson came a variegated variety of Tilia europæa, a cut sprig of a superb new purple violet Swainsona, Rhododendron Edgworthi, Dalhousianum and Nuttalli, all in full flower, Hederoma tulipiferum and various bedding Geraniums of the Horse-shoe leaved class; among the latter were Madame Vaucher, one of the best whites; Woodwardianum, cerise; Magenta, useful on account of its fine colour, and Francois Desbois, all valuable kinds. Mr. Barnes, Southampton Street, Camberwell, contributed a beautiful Azalea named Bride of Abydos, the flowers of which are large, white flaked with pink, and possess great substance; of this variety three plants were exhibited, all excellent in habit and evidently free in growth. From Mr. Standish came varieties of Weigela rosea called Stelzneri and Van Houttei, the variegated varieties of Osmanthus ilicifolius and of Eurya angustifolia, Aucuba japonica picturata, a valuable evergreen, with medium-sized glossy green leaves, the majority of which are blotched with yellowish white; the same exhibitor likewise furnished the charming Retinospora pisifera aurea and a variety of Microlepia exhibited on former occasions. Azalea Lustrous, a sort in the way of Coronata, came from Mr. Kinghorn. Messrs. Veitch sent several plants of a handsome double purple and white Petunia named Madame Rendatler, the beautiful Adiantums mentioned last week at p. 407, various Caladiums and Begonias, and the singular looking Attacia cristata. Cypripedium Lowi in flower came from Mr. G. W. Binns, Esq., Huddersfield; and from Mr. Verschaffelt came an Azalea named Souvenir du Prince Albert, remarkable for the novelty of its colour, which was white with a heavy rosy purple feather down the middle of each petal.

May 6 (*Fruit Committee*).—From Mr. Hall, gr. to Capt. Tyrrell, came three dishes of Apples, among which the most remarkable was Fordhook Bellefleur, a beautiful variety as high coloured as Bess Pool, but different in shape, good in flavour, and an excellent keeper; this variety appears to be unknown beyond the collection of Capt. Tyrrell, to whom a first prize was awarded at last meeting (see p. 382) for Apples. A dish of Stirling Castle Peach was shown by Mr. Carmichael of Dunmore. Though somewhat bruised, they were in sufficiently good condition to show that this is a useful variety for early forcing. Other objects of exhibition consisted of a few Grapes greatly past their best, and some Cabbages and Broccoli, both apparently of little merit.

Notices of Books.

The *Floral Magazine* for May has a good figure of a rich crimson Hippeastrum called Amaryllis Unique, raised by Mr. B. S. Williams. There is also a striking representation of the fine rich salmon-coloured single Hyacinth called the Duc de Malakoff, from Mr. Cutbush. The other two plates are occupied by three circular Pelargoniums, and three varieties of the common Epacris impressa, which is named E. hybrida, though we are not told with what or of what it is a hybrid, a question as difficult to answer as why Vallota should be called a Vallotta.

Garden Memoranda.

Shardeloes, the Seat of T. T. Drake, Esq.—In our former remarks (see p. 407), we attempted to show forth some of the peculiarities of this beautiful place; let us now illustrate them a little further.

"In the observations upon modern gardening" (says Mr. Repton), "by the late Mr. Whateley, is a passage which so fully expresses my sentiments, that I beg to make the following quotation from that most ingenious work:—The outlines of a wood may always be great, and sometimes beautiful; the first requisite is irregularity, that a mixture of trees and underwood should form a long straight line can never be natural, and a succession of easy sweeps and gentle rounds, each a portion of a greater or a less circle, comprising altogether a line literally serpentine, is (if possible) worse. It is but a number of irregularities put together in a disorderly manner, and equally distinct from the beautiful of art and of nature. The true beauty of an outline consists rather in breaks than sweeps, rather in angles than in rounds, in variety, not in succession.

"The outline of a wood is a continued line, and small variations do not save it from the insipidity of sameness; one dark recess, one bold prominence has more effect than 20 little irregularities; that one divides the trees into parts, but no breach is thereby made in its unity, a continuation of wood always remains. The form of it only is altered and the extent is increased. The eye which hurries to the extremity of whatever is uniform, delights to trace a varied line through all its intricacies; it passes from stage to stage, and to lengthen the progress, the parts must not on that account be multiplied till they are too minute to be interesting, and so numerous as to excite confusion; a few large points should be strongly distinguished in their form, their direction, and their situation, and these may be afterwards decorated with subordinate varieties, and the mere growth of the plants will occasion some irregularity. On many occasions more will not be required."

We have thought it right to quote the whole of this extract, because the sound principles laid down in it are ever most fully exemplified in what this place displays, more particularly as to the outline of woods and plantations. One thing we were sorry to notice, that no thinning had ever taken place, and that many of the clumps of Beech trees were merely etiolated poles, so drawn up that if one or two were cut down the others would soon follow them from the action of the wind; they are now in that state that it is difficult to recommend what to do.

One thing we have been long convinced of, and that is, that nine-tenths of the men who undertake to manage wood, know nothing about it as to picturesque management. They may and do understand the value of it for timber, and other practical purposes, but they totally defeat the purpose by carrying the rule principle through to the outsides. We think that woods should have a space near the outside, where the trees should be allowed to develope themselves picturesquely. We would give no pruning to their stems except rubbing off the young shoots up to the browsing line, as soon as formed, and varying the outline by cutting some away. Within this margin regular lines of trees might stand, and every appliance for getting the most perfect and unblemished timber be used; while the trees so pruned and trained would present the appearance of an ordinary wood viewed *en masse.*

Before we take leave of the charming place we must make a brief note on the rectory. The situation of the house is very pleasant, placed upon a lofty chalk hill, and surrounded by Beech woods. It looks down upon the town of Amersham, which forms a pretty panorama and is backed by the outlying woods of the Shardeloes estate, forming altogether a most lovely view. A little distance from the rectory there is to be seen a unique prospect of the whole arrangements of Shardeloes—which we can only repeat are truly artistic and most thoroughly picturesque. Let those who respect the memory of Repton visit this his shrine, and pay him the homage he so justly deserves as one of the greatest pioneers in the beautiful art of landscape gardening.

The kitchen garden is situated at the north-western corner of the park, about half a mile from the house. It is placed at the bottom of a gentle slope to the south, which falls away to the lake; the only objection being that from its proximity to the water it is liable to be more severely affected by the visitations of spring frost. It consists of 5 acres of ground within the walls, and is remarkable for fine produce of all kinds. There is not a better garden in this country, but there is a want of finish and neatness, its object being a purely practical one. No weeds are, however, allowed to grow.

The garden is unfortunately placed by the side of a turnpike road from Wendover to Amersham, and great annoyance is found from the clouds of dust raised by sheep passing from the vale of Aylesbury to London market. Behind the garden is an orchard consisting of 6 acres, and yielding in a good season 150 bushels of Apples.

There are five old Vineries, which are placed about the middle of the slope of the garden; their produce is very fine and abundant. They stand upon a bank, which from the front plate of the houses slopes 9 feet 6 inches in 70 feet. The Vine border is 23 feet wide, then there is a drain 6 feet in depth, filled in with flints. Then comes a terrace wall 1 yard in height, and then a sharp sloping border down to a Grass walk, which runs the whole length of the garden, 323 yards. On one side of this walk is planted a row of Filberts; these are regularly pruned and trained, and are both ornamental and productive. Looking through these and the stems of large trees outside one sees the lake below, and the prospect is charming.

Running on the top of the same bank on which the Vineries are situated is a south wall, 11 feet in height, having the same fall as the Vine border, 9 feet 6 inches in 70 feet. This wall is covered with the most beautiful Peaches, and they are in a fine fruiting condition. We saw them in full bloom the other day, and we think we never saw before anything to equal them; they are protected with thin string netting, or if weather is likely to be severe a thicker netting is put on at night. We have ourselves long thought that with the variableness of this our climate it is folly to waste gentlemen's money in pruning and training Peach trees, and then in some unlucky April night to lose the whole of them. Since orchard houses have got into fashion they offer us most available resources, and a mere glass case, with a hot water pipe, upon a south wall, gives us another.

Let us mention the dimensions of one or two of the trees on this wall. The first is an Elruge Nectarine, 13 yards in length, well furnished, and covering every bit of the wall from top to bottom. The next is a Red Magdalen Peach, 12 yards long, and equally well furnished. The other trees, although somewhat less, are equally good. This is certainly, after the severe spring frosts which we have had in late years, a most wonderful wall of trees; but we must remember that the situation is most thoroughly drained. Continuing in a line with the Peach wall is also a fine Pear wall, and in various parts of the garden are fine specimens of Plum trees loaded with blossoms. Common fruits, as Gooseberries and Currants, Raspberries and Strawberries, are very fine and produced in the greatest abundance, while every article in the way of vegetable produce is plentiful in succession, good in quality, and altogether what it should be, and the practised eye can in a moment detect that all is well managed.

Some Pines are grown here, but not very extensively; their culture as proved by the London exhibitions is very good, and there are two houses for growing specimen Geraniums, which are noble plants, and will doubtless be somewhere among the winners at the May show.

Melons are also well and extensively grown in frames, upon beds of decayed leaves.

There are about 5 acres of short Grass surrounding the house and some little flower garden, which it is not worth while to notice. There is, however, an Orangery containing 16 very fine trees.

Upon the whole we know no place of greater interest to the landscape or to the practical gardener; here the one may see the finest principles of his art fully illustrated and developed according to the rules of authoritative theory, and the other may see the practical workings of his art carried out. *H. B., C.M.R.H.S.*

Miscellaneous.

Cements. — Lime and egg cement is frequently made by moistening the edges to be united with white of egg, dusting on some lime from a piece of muslin, and bringing the edges into contact. A much better mode is to slack some freshly-burned lime with a small quantity of boiling water; this occasions it to fall into a very fine, dry powder, if excess of water has not been added. The white of egg used should be intimately and thoroughly mixed, by beating, with an equal bulk of water, and the slacked lime added to the mixture, so as to form a thin paste, which should be used speedily, as it soon sets. This is a valuable cement, possessed of great strength, and capable of withstanding boiling water. Cements made with lime and blood, scraped cheese, or curd, may be regarded as inferior varieties of it. Cracked vessels of earthenware and glass may often be usefully, though not ornamentally, repaired by white lead spread on strips of calico, and secured with bands of twine. But, in point of strength, all ordinary cements yield the palm to Jeffrey's Patent Marine Glue, a compound of India-rubber, shell-lac, and coal-tar naphtha. Small quantities can be purchased at most of the tool ware

houses, at cheaper rates than it can be made. When applied to china and glass, the substances should be cautiously made hot enough to melt the glue, which should be then rubbed on the edges, so as to become fluid, and the parts brought into contact immediately. When well applied to the stem of a common tobacco-pipe it will break at any other part, in preference to the junction. The colour of the glue prevents its being used for china. *Technologist for May.*

Eel Breeding.—The oyster-beds laid down on the sea coast of France, and the eel-breeding establishment in the lagoons of Comaccio, are notable as achievements in the art of pisciculture. The eel is esteemed a curious fish, and it has been made the theme of many a story and legend. Some people—the Scotch in particular—have so great a prejudice against this fish, that they will not partake of it; but, for all that, eels are wholesome and savoury food, and they can be had in such countless quantities as to form a welcome addition to our unsteady fish supplies. At Comaccio an extensive commerce has been carried on for about three centuries, principally in this one fish. This traffic has had its origin in the careful observation of the habits and growth of the eel family; as is well known, the eel migrates to the sea in order to spawn, and the fry ascends our rivers and canals in order to fatten. In the lagoons at Comaccio an ingenious series of dykes and canals have been provided, in order to facilitate the entrance and exit of the fish. The natural situation of the place is conducive to the commerce carried on there. "The lagoon of Comaccio," says M. Coste, "is situated on the coast of the Adriatic, below the mouth of the Po and the territory of Ravenna, about 30 miles from Ferrara, and forms an immense swamp nearly 140 miles in circumference, and about 4 feet deep, with a simple strip of earth separating it from the sea; while two rivers, the Reno and the Volano, form this vast swamp into a species of delta, similar to that formed by the Rhone at Camargue." As a provision for the growth of the enormous herds of serpentine cannibals which are bred in the lagoon, vast quantities of a small fish named the aquadelle are provided; and that their small fry are devoured in countless numbers, is evident from the value which the eels so speedily acquire. A pound weight of eel fry at its entrance into the lagoon will embrace 1800 young fish, and these will, in the course of a year or two, weigh about 4 tons, and attain a money value of 41*l.* sterling. The mullet is also assiduously "cultivated" at Comaccio, the rapidity of its growth forming the chief inducement; and when the reader knows that in its infantile state 6000 mullet go to the pound, while at the expiry of a year each individual weighs 4 ounces, he will not be surprised that so profitable a trade should be eagerly carried on. In addition to its engineering attractions, and they are numerous, Comaccio is also remarkable for the social condition of its people. The persons more immediately employed in the fisheries live in barracks, and undergo something akin to military discipline. They receive but scanty wages, and are simple in their habits and modes of life, an allowance of fish forming their staple diet. They have occasional fêtes and rejoicings, most of which are connected with their daily avocation. For instance, when a division of the community succeed on any night in securing a "shot," which weighs 48,000 lbs., a gun is fired, which communicates the glad tidings of the whole community. Next day is held as a holiday, and is devoted to rejoicings of all kinds, and in particular to a splendid dinner cooked from a portion of the captured fish, and washed down by the appropriate wine. The eels begin to ascend from the sea to the lagoon in February, and this emigration lasts for a period of two months, when the sluices are closed and the breeding begins. The supplies are gathered in with great solemnity, religious services being held at the commencement and at intervals throughout the season. Another curious feature of the place lies in the fact that the greater quantity of the produce is sold ready cooked! There is an immense kitchen, where the larger eels are roasted and the smaller fish are fried: there is any quantity of spits, and a perfect brigade of male and female cooks. The extent of the cooking business may be guessed from the fact, that it requires a canal to carry away the oil which exudes from the fish as they are roasting: as the larger eels are brought into the kitchen they are dexterously prepared for the spit by being cut up into proper lengths, the heads and tails being laid aside as a perquisite for the poor; the smaller fish, with a slight trimming, are spitted alive. The flat fish are fried with the oil from the eels, in gigantic frying-pans. The scene in the great kitchens of Comaccio, especially when there is a more than ordinary supply of fish, is a very animated one. In addition to the cooked fish, which are sent into the cities of Italy, a portion is sold in a salted state, while another portion is cooked by being boiled alive and then dried by exposure to the air. The inhabitants of this isolated lagoon are hardy and industrious, and much resemble the quaint fishing population of our own shores, as indeed do most of the continental maritime population. *Cornhill Magazine.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory &c.—Slight shade will now be indispensible on the forenoons of bright warm days; air should also be admitted freely. As soon as cold frames and pits become clear of bedding stuff they should be occupied with young stock of hard-wooded plants, for the summer growth of which they are better adapted than large houses. Such places will also be found suitable for dwarf Lobelias, Salvia splendens, S. gesneræflora, and many other things which are generally grown for flowering in the conservatory in summer and autumn; indeed most plants which require only a moderate temperature will be more manageable here and thrive better than in lofty houses with double the attention. As early flowering New Holland plants go out of bloom they should be treated in the way most favourable to secure compact growth, placing them in an airy part of a greenhouse. When the buds have fairly started will be the proper time for shifting such as require more pot room, as they can then be kept somewhat close for a fortnight to encourage a free root action without incurring the risk of the buds breaking scantily. Look well to the stock of plants for summer and autumn decoration, and do not allow them to sustain any check through want of pot room or carelessness in watering. Fuchsias for late blooming must not be kept too warm; they should be placed in a moist shady house, where they will grow much more freely than in a high temperature. Stove plants will now be pushing freely, and will require frequent attention as regards stopping and training. Look sharply after insects, and attend to cleanliness, washing the floors and pots as often as it may be necessary to do so. Go over creepers frequently, so as to regulate their growth and prevent confusion, which without attention soon happens. Syringe and shut up early on the afternoons of bright days, and be as sparing as possible in the use of artificial heat. Afford Orchids in growth a thoroughly moist atmosphere, giving them a good steaming every bright afternoon by syringing and shutting up early. Examine the plants individually every other day, and water such as require it, but be careful not to give too much to those starting into growth; a cool atmosphere will greatly assist in prolonging the beauty of such as are in bloom.

FORCING DEPARTMENT.

Pineries.—For plants intended for winter fruiting employ a somewhat lighter soil than is generally employed for Pines, as there will not be so much danger of getting this too wet as when a strong tenacious loam is used. A compost consisting of about two-thirds mellow turfy loam, with one-third good strong turfy peat, adding a liberal sprinkling of clean sharp sand and some crushed broken bones, when they can be obtained, will be found to answer perfectly. In this the plants root vigorously, and fruiters can be liberally supplied with manure water without any danger of the soil getting sodden. But the great advantage of a light soil is that it soon parts with its moisture, and the plants are more manageable in the way of getting them into fruit at the proper time. Maintain a thoroughly moist atmosphere, especially where the fruit is swelling, and give plenty of manure water to all growing stock, as well as to plants in fruit.

Vineries.—See that inside borders are properly supplied with water, giving sufficient quantities to thoroughly moisten the whole mass of soil. The Vine is a gross feeder, and absorbs great quantities of water when in vigorous health and swelling a heavy crop, Give Vines in pots manure water, first diluting it slightly with warm water to bring it to about the same temperature as that of the house. Attend to the regulation of the growth, stopping laterals, and timely thinning the bunches and berries; see also that the Vines in the late houses are tied up in their places before the shoots get too far advanced, as there is considerable danger of breaking these off when they are allowed to get too long before the rods are tied up. Look sharply after red spider, using every means to keep clear of that pest.

Figs.—Attend to stopping and thinning the shoots, and aim at securing short-jointed strong growth by exposing the young wood to all the light possible. This will of course necessitate keeping the trees rather thin, but it is useless hoping for a crop of good fruit from trees that are crowded with wood. Keep the atmosphere moist, and give the foliage a good washing with a syringe after shutting up the house in the afternoon.

Cucumbers.—Continue to afford a moist warm atmosphere, so as to get young plants into active growth quickly; but plants fairly established should be kept cooler, admitting air on every favourable opportunity, in order to secure short-jointed fruitful wood; all draughts must however be avoided.

Strawberries.—Give abundance of air on every favourable opportunity, and let late crops be carefully attended to with water.

FLOWER GARDEN AND SHRUBBERIES.

Watch Rose buds inserted last August; rub off those on the stock in a progressive way, and let all Roses, whether standard or dwarf, be well top-dressed with good rotten manure if not already done. The Moss and Provence kinds intended for forcing next winter should have a rich mulching, fairly covering the pots. Where Roses are infested with grub it will be necessary to go over the plants frequently to destroy this pest. Green-fly is also sometimes troublesome; a good washing with the garden-engine on two or three successive evenings will greatly assist in getting rid of these destructive pests, but this must be done after all danger of frost is over. Planting of bedding stock must be deferred for a week or two yet. Begin with Calceolarias, Verbenas, Scarlet Geraniums, &c., leaving Heliotropes, Lantanas, Anagallis, and such things as are usually injured by frost until planting of the more hardy kinds is completed. Branches of evergreens are easily obtained about most places, and a sprinkling of these stuck into the beds after planting will be of great service in protecting the plants from the drying effects of bright sunshine, and will also help to ward off frost should it occur. In the meantime, as before recommended, get all beds well prepared for the reception of their summer occupants, thoroughly pulverising the soil by occasional diggings; also get arrangements for planting decided on, so as to be able to add manure or leaf-mould for such things as will be benefited by such additions to the soil.

HARDY FRUIT AND KITCHEN GARDEN.

Disbudding Peaches and Nectarines must soon be commenced, removing a few of the strongest shoots at first from the most vigorous branches, leaving weaker ones to be operated on hereafter. Go over Apricot trees and remove all strong shoots not required to fill up vacancies on the wall. The fruit will soon require thinning, an operation which must be performed at different times, and always with care and judgment. Pay attention to the destruction of insects in order to afford the young shoots a fair chance to make healthy growth. Look after caterpillar on Gooseberry trees. One way of getting rid of this pest is to give the trees a heavy washing with a powerful engine, throwing the water against the under sides of the leaves, which will wash off the caterpillars; they may then be readily killed on the ground. Trenches must soon be got filled with fermenting materials in readiness for Cucumbers, &c., and expose the plants rather freely to light and air, to prepare them for planting under the protection of hand-glasses. If not already done see to sowing plenty of sweet Basil, Savory, &c., on a warm border of light rich soil. Every spare half hour may now be profitably employed in stirring the ground among growing crops. Vegetation is now beginning to make progress; and weeds, like other things, grow apace; they therefore require sharp looking after. Planting, if any, in the way of vegetables, should be done, as indeed it usually is, in drills. In that way the plants get more effectually watered, and the first hoeing, by filling in the drills, acts as a slight earthing up. Keep paths clean, straighten their edges, and endeavour to render them not only neat, but otherwise as comfortable as circumstances will admit for walking on.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.

For the Week ending May 7, 1862, as observed at the Horticultural Garden

May.		Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth		Wind	Rain
			Max.	Min	Max.	Min.	Mean	1 foot deep.	2 feet deep		
Thurs.	1	3	29.913	29.900	79	50	64.5	55	52	S.E.	.02
Friday	2	4	30.162	30.078	65	35	50.0	56	52	N.	.00
Satur	3	5	30.146	29.796	59	45	52.0	55	52½	E.	.00
Sunday	4	6	29.776	29.673	78	50	64.0	55	52½	S.	.12
Mon.	5	7	29.932	29.922	79	52	65.5	56	53	S.	.00
Tues.	6	8	30.043	29.894	84	52	68.0	58	53½	N.W.	.46
Wed.	7	☽	29.919	29.735	61	44	52.5	59	54½	S.W.	.80
Average			29.984	29.857	72.1	46.8	59.5	56.3	52.8		1.40

May 1—Hazy, with slight rain; very fine; thunder and lightning 8 P.M. rain.
— 2—Overcast; very fine; fine; cool at night.
— 3—Overcast; cold and overcast, cold east wind; lightning.
— 4—Fine; brisk south wind; rain at night.
— 5—Very fine; white clouds with clear blue sky in intervals, very fine
— 6—Cloudy and warm: very fine; heavy thunderstorm at night, with sheet lightning almost continuous; the hottest day that has occurred in the first week of May during the last 50 years.
— 7—Cloudy and warm; heavy and constant rain.
Mean temperature of the week 9 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK

During the last 36 years, for the ensuing Week, ending May 17, 1862.

May.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	11	62.4	40.5	51.4	14	0.52 in.	6	8	5	1	5	6	3	2
Mon.	12	63.5	41.1	52.3	17	1.14	6	7	8	1	5	5	1	3
Tues.	13	63.5	39.1	51.3	17	1.10	2	10	5	2	3	7	4	3
Wed.	14	63.6	40.6	52.1	14	0.66	3	7	8	1	4	7	4	2
Thurs.	15	64.9	41.0	53.0	12	0.41	4	9	3	2	8	7	2	1
Friday	16	66.1	43.2	54.7	14	0.34	6	6	6	–	2	11	3	2
Satur.	17	65.2	42.0	53.6	15	0.58	2	7	4	1	4	10	4	4

The highest temperature during the above period occurred on the 15th and 17th, 1833—therm. 86 deg.; and the lowest on the 15th, 1850—therm 25 deg.

Notices to Correspondents.

Exhibitions: *T M.* Any one can show at the Royal Horticultural Exhibitions. His being a Fellow is neither advantageous nor disadvantageous. The competition is open to all the world

Insects: *A M.* We presume the white mass of floccosity on the bit of bark sent is Coccus Fagi. *W.*

Names of Plants: *G W.* 1, Pilea herniarioides; 2, Andromeda cassinifolia.—*C P.* It is a bit of either Juniperus chinensis or Cupressus funebris. You will hardly succeed in striking it.—*G H S.* Eriophorum angustifolium.—*H B.* A morsel of some Potentilla—perhaps P. fruticosa.—*F H C.* Pavia lutea.

Mespilus japonica: *J E Rothbury.* This plant, more properly called Eriobotrya japonica, always bears when properly managed in a conservatory. The fruit is about as good as a Masculine Apricot.

Peach Leaves: *Sub.* Your leaves are ruined by cold at night.—*Hibernicus.* Cold and wet are the causes of your misfortunes.

Stopping Vines: *An Old Subscriber.* If you have plenty of room in your house you may stop at the second joint beyond the bloom, and as soon as the shoots have extended so far. You may stop at the first joint beyond the bloom it by leaving the shoots longer you would occasion over-crowding.

Tangerine Oranges. *An Old Sub.* Repot them now, putting them for a few days into a pit with a smart bottom heat. A few days will secure them.

Misc.: *Castle Ashby.* If you will send to your agents, or furnish us with your address, a copy will be forwarded you. An explanation was given in the *Gardeners' Chronicle* on Saturday.

THE LONDON MANURE COMPANY
(Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. Macadam, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—

LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES ..	5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8 0

These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.
BURNARD, LACK and CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.
Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures.'
Extract of Opinion from Dr. Voelcker, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5*s*. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. Humbert, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

Land Drainage.
WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.
Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.
No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.
Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.
Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.
Applications to be made to William Clifford, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To Landowners, the Clergy, Estate Agents, Surveyors, &c. in England and Wales and in Scotland.
The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, Old Palace Yard, Westminster, S.W.

GOOD TURNIP SEEDS,
Carriage Free, at Low Prices.
Sutton & Sons,
Royal Berkshire Seed Establishment,
Reading.
PRICED LISTS gratis and post free.

To the Trade.
SPECIAL SPRING CATALOGUE of AGRICULTURAL and GARDEN SEEDS (gratis) on application.
James Fairhead & Son, Seed Growers and Merchants, 7, Borough Market, London, S.E.

LEWISHAM SWEDE.—This Turnip, grown from large sized transplanted bulbs, and which has given such universal satisfaction, can be supplied in quantity to the trade by the Growers,
James Fairhead & Son, 7, Borough Market, London, S.E.

Swede Turnips, &c.
HENRY BROWN'S DWARF-TOP BRONZE SWEDE is the best in cultivation. May be grown 20 to 26 lbs., is very solid and hardy, per lb. 1*s*.; also MANGELS, 6*d*. to 8*d*. per lb.
His PRICED DESCRIPTIVE LISTS of Farm, Garden, and Flower Seeds, can be had post free on application.
Henry Brown, Seedsman, 4, Commutation Row, Liverpool.

SMITH'S WORCESTERSHIRE SWEDE, the handsomest, most profitable, and best in cultivation, 1*s*. per lb.
SKIRVING'S IMPROVED SWEDE, saved from selected roots, 8*d*. per lb.
ORANGE GLOBE MANGEL WURZEL, the best for all kinds of soil, a very superior stock, 8*d*. per lb.
All other kinds of SWEDE and MANGEL, 8*d*. per lb. Cheaper by the bushel or cwt.
Richard Smith, Seed Merchant, Worcester.

Skirving's King of the Swedes.
WILLIAM SKIRVING, Queen Square, Liverpool, begs to acquaint the Farmers of the United Kingdom that he has fixed the price of his new variety of Swede TURNIP at 1*s*. 3*d*. per lb., bags included.
W. S. can with perfect confidence recommend this variety of Swede as by far the best now in cultivation, in every respect. This assertion is made after several years' experiments with every sort of Swede now grown.
Seed of this variety being now offered for the first time to the Public, can be had only from W. S. direct.

Matchless Swede.
JOHN KEYNES has again secured a fine Stock of this splendid TURNIP, which for hardiness, beauty, quality, and crop, cannot be surpassed. The advantage of sowing from Seed grown in the Lothians, pure and unadulterated, has been appreciated by all who have favoured J. Keynes with their confidence. Two pounds of pure Turnip Seed will go as far as three that has been mixed with Old Seeds. The price of this matchless Purple-top East Lothian Swede, superseding all others, is 9*d*. per lb.
J. Keynes, in answer to many inquiries, begs to state he will not be undersold by any party, for any description of Turnip or Mangel, the selection of which is of unquestionable superiority.
Salisbury.—May 10.

RAYNBIRD, CALDECOTT, and BAWTREE, Seed Merchants and Growers, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E C.
Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.
Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,
And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.
We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.
Our "LITTLE BOOK" sent free for four stamps.
J. C. Wheeler & Son, Seed Growers, Gloucester.

To the Trade.
New Seeds Direct from the Growers.
CHARLES SHARPE and CO., Seed Growers, Sleaford, will have much pleasure in forwarding on application their WHOLESALE PRICED LIST of AGRICULTURAL SEEDS, which have been grown upon their own land with the utmost care from the finest selected stocks. The advantages of procuring Seeds direct from the Growers are too obvious to require comment, and from the experience of C. Sharpe & Co. in the growing and harvesting of Seeds, a satisfactory result may be calculated on with certainty when their Seeds are used.
SHARPE'S IMPROVED LARGE SWEDE.—The largest and best cropping Swede in cultivation; it produces a finely-shaped large bulb, without a coarse top. A Coloured Lithograph of the Swede will be sent to purchasers.
Charles Sharpe & Co., Seed Growers, Sleaford, Lincolnshire.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to
John Fowler, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

WIRE-WORK for the Garden, the Greenhouse, and the Conservatory. An Illustrated Catalogue, containing upwards of 90 Engravings, Post-free. WIRE NETTING, feet high, 5*d*. per yard. GARDEN SYRINGES, 6*s*. each.
William H. Honey, Manufacturer, 263, Regent Street, near Oxford Street Circus, W.

THE SPARKENHOE FARMERS' CLUB will hold their GREAT ANNUAL MEETING on the Race Course at Leicester, in conjunction with the Autumn Show of the Leicester and Leicestershire Floral and Horticultural Society, on SEPTEMBER 2, 3, and 4, under the patronage of the Mayor and Corporation.
President.—The Right Hon. Lord John Manners, M.P. Supported by the Nobility, Clergy, and Gentry.
Lady Patroness.—The Countess Howe.
Prizes about 1160*l*. in value will be awarded, including the following:—

Steam Cultivation	£70 0 0
Implements, Ploughing, &c.	80 0 0
Best Fat Beast	35 0 0
Best Store Beast	30 0 0
Best Long-woolled Sheep	15 0 0
Best Short-woolled Sheep	15 0 0
Best Entry of Pigs	13 0 0
Best Nag Horse	25 0 0
Best Cart Horse	25 0 0
Poultry, Rabbits, &c.	70 0 0
Cheese, Corn, Wool, and Roots	130 0 0
Fruits, Flowers, Plants, and Vegetables ..	160 0 0

Prize Lists and further particulars may be had on application, and all Certificates of Entry must be returned to me on or before August 7.
Thomas Davenport, Secretary and Collector.
Ashby-de-la-Zouch, May 10.

WARWICKSHIRE AGRICULTURAL SOCIETY.
The WARWICKSHIRE AGRICULTURAL SOCIETY will hold their GREAT ANNUAL EXHIBITION at Aston Park, Birmingham, on the 17th, 18th, and 19th of SEPTEMBER next, under the Patronage of the Mayor and Corporation. President, the Right Hon. the Earl of Warwick. Prizes to the amount of 970*l*. will be awarded as under:—

Labourers and Servants	£97 0
Ploughmen, Drainers, and Hedge-cutters ..	43 10
Cattle	257 0
Sheep	188 0
Pigs	28 0
Horses	142 0
Implements	85 0
Steam Cultivation	50 0
Wool	21 0
Cheese	8 0
Fruit and Flowers	50 0

More than half the above Prizes are offered by the Birmingham Local Committee, and are open to all England.
The Entries close on AUGUST 1st.
Prize Lists, and every information, may be obtained on application to Mr. John Moore, Secretary, Warwick; or to
John B. Lythall, Local Secretary.
Offices, 14, Temple Street, Birmingham, May 10.

THE BIRMINGHAM CATTLE and POULTRY SHOW, 1862.
The FOURTEENTH GREAT ANNUAL EXHIBITION of FAT CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, ROOTS, BARLEY, and IMPLEMENTS, will be held in Bingley Hall, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, the 1st, 2d, 3d, and 4th of December next, when PRIZES—Cups or other Articles of Silver Plate, and Gold and Silver Medals—to the amount of 1835*l*., will be awarded in the following divisions, viz.:—

Fat Cattle	£715 15
Fat Sheep	239 5
Fat Pigs	56 15
Breeding ditto	63 0
Roots	56 14
Barley	10 10
Poultry and Pigeons	682 15

Prize Lists may be obtained from the Secretary.
John B. Lythall, Secretary.
Offices, 14, Temple Street, Birmingham, May 10.

The Agricultural Gazette.

SATURDAY, MAY 10, 1862.

We see it is announced in the *Times* that the Lima merchants who have taken the guano contract for this country have formed themselves into a body, entitled the Guano Consignment Company to Great Britain; and that Messrs. Thomson, Bonar & Co. have been appointed the agents, and will carry on the business here.

It is not in the least likely that any alteration in the agency through which the Peruvian Government may dispose in this country of their great staple commodity will at all diminish the price at which English farmers will obtain it. Guano will realise a price here dependent not on the facilities or difficulties which exist between England and Peru, but on the value which it possesses as compared with other fertilising substances when once it is landed on our shores. For that reason we are always glad to welcome as doing real agricultural service every fresh competitor in the manure market likely to command a portion of that custom which has been so largely confined till now to the importers of Peruvian guano.

No other importance than that of a mere exceptional phenomenon is fairly attachable to the result recorded by Mr. Frere at the late discussion before the English Agricultural Society, as having followed his use of the so-called Phospho-Peruvian guano, which in his experience proved comparatively inefficient as a manure; and the experiments of Mr. Shirreff published the other week, which have been before the agricultural public in Scotland for some time, have been proved by the discussion there raised on them to have little more than a similar exceptional value. The composition of the manure in question quite bears out the general experience hitherto observed of its great value as a manure for the Turnip crop, and therefore as a competitor with and a

cheapener of Peruvian guano; and no one need be deterred by the facts recorded either by Mr. Frere or Mr. Shireff from the confident use of it for this purpose. Our columns to-day and last week have shown how largely on the light lands of this country guano is displaced in the artificial manure market by the use of the superphosphates, to which class the "Phospho-Peruvian guano" belongs.

We have, however, yet another competitor with the Peruvian government to welcome in "The North Sea Fisheries Guano Company," of which a prospectus has just been issued. The composition of the manure prepared from the refuse of the cod fish indicates a very high fertilising value. Only 9 per cent. is waste, 21 per cent. is phosphate of lime and magnesia, and 61 per cent. is organic matter, yielding about 14 of ammonia. This corresponds very nearly to the composition of a guano, which was indeed to have been expected, seeing that guano must essentially contain just the elements of dried fish. The quantity of material available for the manufacture of this manure is very large, as appears from the following passages from the Prospectus of the Company:—

"As regards quantity, the fishery at the Lofoden Islands has been gradually increasing during the last 20 years, and in 1860 24,000,000 of cod, of the average weight of 200 fish to the ton, were caught. In the Findmarken fisheries, further northward, still larger quantities are taken, and instances have been known of the catch being so immense that the fish themselves have been thrown away from want of buyers, after the extraction of the liver for the oil.

"As the catch from the Lofoden fishery alone is 24,000,000 of cod, equal in weight to 120,000 tons, of which 72,000 tons is refuse, capable of producing from 15,000 to 20,000 tons of dry manure fit for the market, irrespective of the Findmarken fisheries, as well as the immense quantities of other kinds of fish suitable for manure, it will be manifest that an estimate of 5000 tons for the first season's produce will be far within the manufacturing capabilities of this Company."

As a last instance of a useful manure competing with the guano trade may be mentioned the "Ulmate of ammonia," of which an advertisement appears in our columns. Derived from wool it yields on decomposition a large proportion of ammonia; and it is, we imagine, especially useful in the manufacture of home-made mixtures, particularly for application to corn crops.

In the lecture which Dr. Voelcker delivered recently before the Royal Agricultural Society of England, he stated that the addition of a couple of lbs. of oil cake apiece to the food of dairy cows grazing on "what is at present Mr. Stratton's farm," near Bristol, produced no sensible effect on the quantity or quality of milk. This statement is opposed to the current opinion on the subject of feeding milch cows. It is, however, true in other cases besides that of Mr. Stratton, as we will proceed to show.

It so happened that at the time that Dr. Voelcker delivered his lecture, Dr. Kirkpatrick of the Albert or Royal Agricultural School, Glasnevin, had been carrying out some experiments to test the influence of different kinds of feeding on the quantity and quality of milk. Four cows of average size and in good milking condition were put under experiments. At each change of food an interval of several days was allowed to elapse before any record was made of the results. From the 13th March to the 9th April each of the cows consumed daily—75 lbs. Mangel Wurzel; 6 lbs. bran, which cost 6s. the cwt.; 4 lbs. Rape cake, which cost 7s. 6d. per cwt.; 18 lbs. straw.

During those twenty-five days the average yield of milk (10 quarts per day) was about the same as in the previous interval, when they were fed on more simple and less concentrated food. And on testing this milk by the lactometer, or by churning a given quantity of it, no perceptible improvement in the quality of milk obtained from raw roots and straw was observed. It was found, however, that the animals had increased considerably in weight. We give the numbers as they were noted:—

No. of Cow.	Weight on 13th March.		Weight on 7th April.	
	Cwt.	stones	Cwt.	stones
1	9	0	9	5
2	10	5	10	7
3 .. .	9	4	10	5
4	9	3	9	7
	38	4	41	0

The four cows had therefore increased in live weight 20 stones in 25 days. If we assume with Lawes and Gilbert that 70 per cent. of this increase is composed of flesh and fat, we can fairly approximate as to the money value of this increase.

To complete this experiment we require to know the quantity and quality of the excrements of the animals experimented upon. We shall supply this information as soon as the analyses are completed, the quantity having been ascertained with great care by two of the senior students of the Glasnevin Institution, who accorded their services for the purpose. *B.*

It will be seen from the report in another column that the Council of the English Agricultural Society have chosen Worcester as the scene of their meeting for 1863. The choice lay between it and Hereford, and the latter town was believed to have the better claim of the two — more especially because of its district being identified with one of our leading breeds of cattle. The resolution in favour of the former town was however carried, it will be seen, by a majority of 2 to 1.

We gave in June last a detailed report in our columns of a very able discussion at the Royal Agricultural Society of England on the subject of Wools, which led to the resolution of the Council at a subsequent Monthly Meeting, to exhibit a collection of fleeces illustrative of our native breeds of sheep, at the forthcoming International Exhibition. The collection, which will comprise fleeces of all our breeds, and their principal crosses, is now nearly complete, and forms a very fine series. Some of the fleeces contributed however are hardly so heavy and fine as are to be obtained; and as on this occasion it will be expected by all, but more particularly by the foreign visitors, that we are exhibiting our best, we are requested by the Wool Committee of the English Agricultural Society to state that they will gladly receive any very fine specimens of Lincoln fleeces and Lincoln Crosses, Leicesters and Leicester Crosses. In all cases the name and address of the grower will be attached to such fleeces as may be selected by the Committee for exhibition; and as the Collection has to be completed for the inspection of the Juries by the middle of May, it is desirable that those gentlemen who may be able and disposed to assist the object of the Society will at once communicate with the Secretary, Mr. H. Hall Dare, at 12, Hanover Square, W., who will furnish them with the necessary printed forms.

THE INTERNATIONAL EXHIBITION.

THE AGRICULTURAL DEPARTMENT.

Badly housed, under a flimsy roof, neither weather tight nor good-looking, and poked into an outlying corner of the building, which no one is likely to find unless he specially looks for it, this is nevertheless one of the most valuable sections of the vast Industrial Show here spread out. It is satisfactory to learn that at length it has been resolved to make an entrance to the Building at the farther end of this long gallery so that a thoroughfare may be established, and some share given to the exhibitors here, in that extraordinary publicity and display of which so wonderful an opportunity is given elsewhere within the building. And let us hope that some better management of the ventilating boards, and attention to the other defects in the roof, will save the goods here shown, whose bright metallic surfaces are especially liable to injury, from that scandalous downpour of rain on them against which the roof was no protection on Wednesday last.

On Thursday the jury having charge of agricultural and horticultural implements commenced the examination of their department. Their duties require them to determine the utility, simplicity, lightness as affecting cost of use, quality as affecting durability of use, and price of the machines shown. An inspection of every implement, catalogue in hand, and exhibitor close by, enables them to determine merit with sufficient accuracy without subjecting the machines to trial. Novelties under these circumstances they are very properly expressly instructed to be careful of rewarding —and in any case their awards will not determine relative but only positive merit. Add to this that the non-award of a medal (which is the distinction they have at their disposal) must often mean, not that no merit exists in the stand of an exhibitor, but that there are not medals enough at the disposal of the jury, and it seems plain that the value and significance of the distinction become reduced to a minimum. Let us now walk round the stands in the order of the catalogue.

2071. Messrs. Amies & Barford, of Peterborough, exhibit a steaming apparatus. A central steam boiler and fire box stands between two vessels for holding the food to be cooked, with which it is connected by pipe. On one side a cylinder is slung upon the steam pipe for one centre, and is made easily reversible for the purpose of emptying its contents after steaming; on the other side a fixed vessel stands to which steam has access. The centres on which the reversible cylinder is slung ought to be lower down than they are. The vessel might be held upright at first, even though it were topheavy, and as, after cooking, its contents sink, the centre of gravity of the whole would thus ultimately fall below the points of suspension, even were they much lower than they are. The labour of emptying the cooked material would thus be much diminished.—At this stand there is also shown the patent "differential" pulley-block, in which the rope carrying the weight is wound over first a large pulley, and then over a smaller one alongside, the two being cast together as if keyed to one axis. A pull on the rope hanging from the larger wheel lifts the weight by the difference between the radial motion of the larger wheel which lifts, and that of the smaller wheel which drops the weight in question, which besides being thus gradually lifted will remain stationary at any place where it is left, because before its own greater pull on the one side of the combined pulley than on the other, can result in lengthening out the rope or chain, it must slip in the bed of its groove, but this it cannot do, the two being in fact so fitted to each other as to give the one a hold upon the other.—A large model of farm buildings, by Mr. R. Mein, erected on the estate of the Duke of Bedford, is here exhibited. Besides here we have Lyne's (of Malmesbury) patent footpath gate, whose upright parallel bars are near enough to stop the way, but being held so by a hanging weight below are easily separated and fall together again behind the passer. It is probable that a Pig would find out the secret, but it would certainly be effectual against any other animal.

Cambridge's well known Clod crusher is exhibited here. There is a cake breaker with two pairs of rollers, the upper one furnished with pinnacle teeth, and the lower with close set square cut teeth for reducing the broken fragments to powder. And a water ballast roller, whose weight and efficiency are increased by the simple expedient of filling it with water, is also shown. The draught would, however, in this case be greater than were the weight disposed evenly around the rim of the roller, as it is when loops are left inside for carrying pigs of iron, which may be slipped in when extra weight is needed.

2072. Messrs. Ashby & Co., of Stamford, show their well-known haymaker, price 15*l.* 15*s.*; horse rake (8*l.* 8*s.*), rotatory harrows (6*l.* 6*s.*), pair of stones (Peak) capable of grinding, for farm purposes, 8 bushels an hour (35*l.*); three successive powers of chaffcutters, with 2 and 3 knives each, and varying up to 14*l.*, the price for horse-power; oilcake breakers, saw tables, horse works, and a small and simply constructed 2½-horse power movable steam engine, price 86*l.* 5*s.*, are also exhibited. The haymaker is easily put in and out of gear, and as easily reversed, the axle being hollow, enabling the connection of the movements at both wheels for this purpose, so that one leverage affects both sides at once. The horse-rake is easily lifted, the handle for that purpose exerting its pressure through pairs of quadrants, by which the power exerted at the end of the lever is exactly proportioned throughout the movement to the resistance to be overcome.

2073. Mr. Aveling, of Rochester, shows his well known moveable and self-driving farm engine, capable of drawing its threshing machine and other apparatus with it from farm to farm. It is of 10-horse power at 45 lbs. pressure, weighs 8 tons when full of water and loaded with fuel, costs 420*l.*, and is distinguished by the form of its boiler, which is an unbroken cylinder from end to end, and thus stronger, other things being equal—by its large fire box—and by many other details of construction, as in the chain by which its self driving power is obtained, and in the wheel rim by which security is obtained against a slip either sideways or backwards. It is a thoroughly substantial and well constructed machine.

2074. Messrs. Bain, M'Nicoll & Young of Edinburgh, exhibit wire netting, and gates combining marble and cast iron in the material of their construction. Also a specimen of wire fence and uprights, showing a good plan of tightening the several strands of wire of which it is composed.

2075. Mr. Ball, of Rothwell, shows a light and well made one-horse cart, from 12*l.* to 15*l.*, according to size and material; three ploughs of different sizes and extraordinary length of mould board, 3*l.* 15*s.* to 5*l.* 15.; a 5-tined cultivator with ample means for shifting the tines individually from side to side, 5*l.* 10*s.*; a double mould board plough with marker, 4*l.* 10*s.*; and a horse hoe, 2*l.* 5*s.*

2076. Mr. Bamlett, of Middleton Tyas, Yorkshire, shows his reaping machine on Hussey's principle. It has dnring the past two years been greatly improved, and in the hands of Messrs. Picksley & Sims of Leigh, it last year carried off the prize at the Leeds competition, where its draught proved lighter than any other. The individual teeth are rather sharper than the equilateral triangle; there are 21 on the 5-foot bar. It is driven by a 3-foot travelling wheel, an inner 20-inch spur wheel drives a 5-inch pinion, both being carefully protected and boxed in from dust and dirt. The pinion shaft carries a bevilled wheel 16 inches in diameter, which drives a 2½-inch pinion on the shaft which carries the 2-inch crank by which the oscillation of the blade is effected. The upshot of these arrangements is, that in every revolution of the wheel—*i.e.*, in a forward movement of 9 feet—the knives go to and fro 20 times; there is one traverse of the 3½ inch knives for every 2¼ inch forward movement. The price is 22*l.* 10*s.* for the two horse reaper. It has guide rods on both sides

for lifting the ears to be cut and for dividing the part being operated on from the standing corn. There is an arrangement for dropping the platform on which the cut corn falls, and of facilitating the hind delivery. A quadrant attachment to this platform may be added, by which a side manual delivery may be effected.

2077. Messrs. Barnard & Bishop, of Norwich, show disc pulpers for roots, on the principle first brought out by Bush & Barter, of Ireland. The discs are cast metal quadrants in a circular upright frame. All four quadrants may be armed for pulping, or every alternate quadrant may be blank. These quadrants are cast with the necessary teeth and slots, and cutting quadrants may be substituted for the pulpers.—A number of chairs and forms in which wire netting or mail formed the seat are exhibited here. Pig troughs, too, remarkably cheap but too slight—3 feet by 11 inches—price 10*s*.

2078. Messrs. Barrett, Exall, and Andrews, Reading. We have here one of the first-class stands in the Exhibition. It contains a full-sized threshing machine in which a drum throughout of forged iron with perforated beater, works against a concave also of forged iron and capable of being accurately set; the threshed corn is thrown on Venetian shakers cranked at the fore-end of the machine, by which the straw is gradually shaken and pushed off. The corn falls on two reciprocating riddles, the chaff blown away, and the remainder falls into the patent corn elevator—a rapidly moving set of fans revolving in an interiorly roughened box, so that the grain is by centrifrugal force and the air blast together thrown up an inclined channel to the top of the machine after being well rubbed and cleaned of awn or husk. The lighter stuff is blown right away, the remainder falls into a revolving screen by which the dust and small seeds are separated from the grain, and both fall into sacks. The machine for six to eight horse power costs 91*l*. There is at this stand a 10-horse-power fixed engine, price 230*l*. with boiler; a small moveable engine, patent safety horse works; pair of mill-stones; haymaking machine with reversing movement at either end; three-knived chaff machine with spring movement for lifting the feed lid; small hand threshing machine; large chaff cutter on Passmore's principle; oilcake breakers, corn crushers, &c. Altogether a first-class illustration of the powers of a leading firm in the agricultural machine-making trade.

2079. Mr. Bentall, of Heybridge, Essex, shows chaff cutters, horizontal disc Turnip cutters on Phillip's principle; Gardiner's Turnip cutters, Turnip pulper and corn crushers; broadshares, barrows, ploughs, threshing and dressing machine, Bean and Oat kibbling machine. The pulper, with its spiral cleaner, is now a standard English agricultural implement—the chaff cutter with sliding pinions fitting into one or other of three separate sizes of toothed wheels, and so effecting three different lengths of cut—the double smooth wheels for crushing corn capable by a simple movement of being set and kept at any required interval. The bean kibbler in which one wheel forces the grain between itself and a fixed projecting spur, the interval here too being variable, and thus capable of breaking the corn up into smaller or larger fragments. The broadshare is a capital tool for surface cultivation—the harrows are characterised by their strong frame-work of angle iron.

2080. Mr. Begbie, of Haddington, should have shown a sask-holder and lifter, and a seed machine, both of which, however, have it appears gone astray upon their journey south!

2081. Mr. Bell of Inchmichael here exhibits the original reaping machine in its present form. It is to his brother the Rev. P. Bell that we owe the horse reaper; and though it is now turned out almost as much changed from the hands of the inventor as it is from the hands of the many—Americans and others—who have improved upon it, yet we cannot look without respect on the implement before us, as more nearly than any of the others representing the original idea from which they all have sprung. The machine is pushed by a pair of horses walking in its wake. Its movements are derived from the pair of carriage wheels on which it is carried. A McCormick's knife is now adopted, and in place of a revolving web a series of straps armed with studs revolves from one side or the other, and so lays the cut corn in a swathe on the left hand or the right.

2082. Mr. Boby, of Bury St. Edmunds, shows his well-known corn screen, furnished or not with a corn blower and elevator. In this a long inclined plane of longitudinal wires at the proper interval has these tied together every 5 or 6 inches by a cross wire, while immediately below this a set of discs hang loosely once in every transverse interval, and a string of these to every longitudinal interval of the mesh thus created. The tops of each set of discs appear above the surface of the screen. Each transverse string of the discs is fixed to the frame in which the up and down oscillation of the wire screen takes place, and the consequence is that every separate section of the screen is kept unclogged, and clean, and that the grain in passing down has to jump over the projecting row of discs, and is thus subjected in the course of one passage to the influence of as many as six or eight separate well-cleaned screens. It is unquestionably the best corn screen of the day.—Among other things shown at this stand is a haymaking machine with an ingeniously devised arrangement for altering the motion of the barrels, or for putting them altogether out of gear, or for raising or lowering the apparatus from the ground.—A rotary pump on the screw principle is shown for brewery use.

THE PRACTICE OF MANURING.

[The following reports accompanied the tabular statements given in the *Agricultural Gazette* of March 22 and 29. They are numbered to correspond with the reports already given.]

STIFF SOIL FARMS.

No. 51. Perthshire.

When Wheat and Turnips are manured with farm-yard dung, generally about half the quantity of the artificial mixture is applied.

My experience is that Peruvian guano, bone meal, and Rape dust suit best for my soil. The artificial and purchased farm yard manures generally cost me at the rate of from 22*s*. 6*d*. to 25*s*. per imperial acre all over the farm.

Lime principally used to newly bought in land. Artificial manures more extensively used every year. ——, *Strathearn*.

53. Stirlingshire.

Farm-yard dung is commonly applied to the Bean crop and Turnips. The common practice as to lime is to apply it to the Turnip crop or bare fallow.

Artificial manures are generally applied to the green crops and Clover, and sometimes to Oats; where these manures have been judiciously selected and applied, I have found them to pay well on Turnips and Clover. *A. Buchanan, Whitehouse Farm*.

54. Lancashire.

I use farm-yard manure only to green crops, spread broadcast and ploughed in in the autumn, a month after which I spread the lime and salt, mixed some time previously with salt, in the proportion of 1 salt to 4 lime, and frequently turned over under cover till thoroughly fallen.

I make the superphosphate at home from bone-ash from South America, containing 75 and 80 per cent. of phosphate of lime, ground to powder and dissolved in sulphuric acid, the proportions of guano, sulphate of magnesia, potash, or soda (according to the crop), being mixed in while the mass is in a state of effervescence. This mixture is applied in spring.

I always manure after any crop. *R. Neilson, Halewood, Liverpool*.

56. Cheshire.

Farmyard manure is generally applied to Grass mowing and seeds, other Grass land being chiefly boned, and bones are found to answer remarkably well in Cheshire.

Lime is sometimes used after the rate of 4 or 5 tons to the statute acre on the fallows for Wheat, and is found to be beneficial. It would be more used were it not that instances have been very remarkable where bones being afterwards applied have failed to produce their usual and much to be desired effect.

Artificial manures are more used than they were a few years back to make up the deficiency in farm-yard dung, which is more or less felt on every farm. The effect is prompt and active, but not enduring, and therefore requires prudence in the application where profit and loss is the question. ——, *Middlewich*.

58. Warwickshire.

The land in this parish is very variable, and the rotations are as various as the soil; the four or five course on the lighter soils, and the six course on those stronger, yet admitting of Turnips in the rotation,—2 years' seeds, Wheat, Oats or Barley, Turnips, Barley or Wheat, or Oats, Wheat, &c.

I have found Proctor & Ryland's Wheat manure beneficial to the Wheat crop, but my experience of top-dressing Barley does not warrant my recommending the practice, as it very much increases the liability to lodge in the straw. I have applied 10 cwt. per acre of crushed bones to my old turf with satisfaction and advantage. *J. W. Burbery, Kenilworth*.

59. Warwickshire.

I have used artificial manures very freely both as a farmer and farm manager in Warwickshire, and I have been always fully satisfied with the returns.

Artificial manures if applied with judgment at the proper time and season there can be no doubt of their profit.

I find large dressings of bones to be more profitable than small ones on Grass land, more especially that which is given to Moss, and much more lasting in its effects. 10 to 20 cwt., instead of 4 to 8 cwt.

Farm-yard manure is commonly applied to roots, Beans, Clover seed, fallow Wheat, and Grass land for mowing. Lime is not much used in this neighbourhood, and only in small quantity. I am about to try some experiments with more heavy dressings of lime, not feeling satisfied with the results of the small ones.

Artificial manures are not very much used, except for root growing, the heavy dressings from the city of Coventry being much preferred by the farmers of this neighbourhood. I bring regularly 20 to 25 tons from the Coventry barracks per month, which is no doubt the best manure for stiff soils. *W. Aitchison, Berkswell*.

60. Buckinghamshire.

The farm-yard dung is generally applied to the Bean, Tares, and root crop in the neighbourhood. On some farms where the 5-course system is carried out it is applied to the Oat crop, which precedes the root crop, and then guano or other artificial dressing for the roots; but this system does not apply to the clay land. No lime used.

Other artificial dressings occasionally used for cereals, but guano generally for the roots. *S. Byers, Stapton*.

61. Berkshire.

With regard to the dressing for permanent Grass, $1\frac{1}{2}$ cwt. of guano, 3 cwt of superphosphate, 1 cwt. of nitrate of soda, 15 bushels of bonedust, and 1 cwt. of common salt per acre, have been applied over 1000 acres with a most magical effect. It may, however, be well to add that the land previous to the application was undrained, and that the draining and manuring were carried on almost simultaneously, and also renovating Grass seeds, at a cost of about 10*s*. peracre sown. Since the application the fields have been pastured principally with sheep eating Cotton seed and Linseed cake, by which the improved character of the herbage has not only been maintained, but very much increased. Some fields, the herbage of which was deemed almost worthless, and was considered high rented at 7*s*. per acre, is so entirely altered in character as to be able to fatten sheep and small cattle with a little cake. Any one pondering over the pros and cons as to the desirability or otherwise of breaking up for the purpose of improving Grass, would do well to a pay a visit here. When nitrate of soda was used the guano was omitted, but the greater portion had the guano, and with more effect than the nitrate.

Lime is very little used in this district.

Farm-yard dung is applied either to the young Clover early in spring or during a summer fallow, as a rule. The practice on this farm is to apply it in autumn for the ensuing root crops.

I have no direct experiment to prove the profitableness of the appliance of artificials, but have not the slightest doubt that the more liberal the application, up to a certain point, the more certain is the profit.

Superphosphate of lime is the artificial mostly used for the root crops in this district, from 2 to 4 cwt., and generally applied with the water drill. *W. J. Moscrop, for R. Campbell, Esq., Lechlade*.

64. Essex.

The farm-yard manure is generally applied to the Wheat, young Clovers, and Beans. Guano is used upon Mangel, Turnips, and spring grain crops.

Prentice's (of Stowmarket) manure is much used for Grass and root crops hereabout, having been frequently tested against guano. Superphosphate or bones do not show any results in this neighbourhood. Peruvian guano or Prentice's manure make the difference on poor lands between a miserable and a good crop. The difference is striking. I have used Peruvian guano for 18 years.

Chalking is much used on the stiff yellow clays—about 20 to 40 tons per acre. It is said not to answer a second time unless at very long intervals.

On my farm I depend mainly on home-made manure from fattening animals. Where we take bearded Wheat after red Wheat we apply Prentice's manure or guano. I invariably mix salt with the guano. On the light land I sow about 6 bushels of salt per acre for Barley, it stiffens the straw and prevents destruction by wire-worm.

Wood and coal ashes do much good on our stiff yellow clays, so do burned clay ashes, or rather brickdust. In former times much potass was made on this farm and in this neighbourhood. The lees were very excellent manure. Old people of the neighbourhood are well aware of this fact. *J. J. Mechi*.

65. Essex.

My lime is placed 1 bushel on each rod, and covered up with earth, and when slacked spread. My dung carted on to the land as soon as made, if possible. I prefer annual mending with dung and chemicals, having no routine crops—often growing five white crops in succession. I make no whole fallows, burn 20 acres per annum with four rod fires, making the ashes as black as possible. I keep 120 cows and wean 20 per annum. No mutton. All milk.

My neighbours adopt the 4 course system generally, but now agree that with plenty of manure they could crop everlastingly.

I have been a chemical farmer since 1835, and on my heavy soil think sulphate of ammonia the best outlay. I have often had 8 to 10 bushels of Wheat extra from sulphate and salt; Oats and Barley from 8 to 16 bushels extra. I used to keep exact details, which were troublesome; from experience and time, I make the outlay in confidence now.

I cut my Oats very early, to prevent shelling, never thresh them. Cut all into chaff, which makes the only food my horses have or require—a great saving. *Collinson Hall, Romford*.

67. Kent.

The practices of this neighbourhood are very irregular, the rotation of crops differing according to the season, situation of farm or fancy of the occupier. The manure is generally applied in the autumn for Wheat, being placed on the land that has grown Beans and Clover and ploughed in. Where Barley is taken after a portion of the Wheat crop, it is usual to apply solid manures for it. The use of artificial manures is not great. Round the coast a good deal of Seaweed is collected, and in fact forms part of the composts of the scavengers, and is in consequence distributed wherever the manure from the town may be drawn. My mode of application of farm manure differs as you will see from the foregoing, being all applied in the winter, and for green or pulse crops, with the single exceptions of what is used for the few acres of Oats grown, and for the Sainfoin when ploughed up. Sometimes a few acres of Radish seed are grown by me: when this is the case they displace part of the Bean crop, and receive the same treatment as to manure. A part also of the Turnip land is sometimes sown with Tares, which are cut green and used for soiling in the yards, or folded on the land by sheep. I have also carted some hundreds of loads of manure from Ramsgate and Margate, but from the improved drainage and better sanitary regulations adopted in those towns, this supply is so diminished in quantity, and the quality rendered so inferior, that I am discontinuing the cartage of it, and arranging for the feeding of more stock, and the purchase of larger quantities of artificial manure instead. *Basil Hodges, Vincent, Margate*.

68. Hants.

On light lands adjoining mine, manures from the yard generally applied to Wheat on the Clover stubbles, 3 to 4 cwt. of superphosphate, or 2 cwt. of superphosphate and 1 cwt. of guano drilled with 20 or 30 bushels of ashes per acre for roots, which consist generally of Swedes, Turnips, and Rape. Mangels receive 15 to 20 yards of manure from the stalls in addition. My land is a heavy clay, whilst that of the neighbourhood is principally a light chalky soil, which is cultivated on the four-course system, whilst mine it will be seen is on the six-course shift, viz., roots, Barley, Beans, Wheat, Clover, and Oats; the roots are drawn off and consumed in boxes with me, but on the light soil folded on the ground, the root crops succeeded generally by Barley or Oats, and which is sown with seeds and Clover succeeded by Wheat, then roots, Vetches, Rye, Rape, and such food for sheep folds as may be required, follows the Wheat crop. *James Charles, Hursley, Winchester*.

LOAMY AND VARIOUS SOILS.

71. Elgin.

The soil throughout the district is mostly of a light tendency and not requiring lime, there is however some loamy clay, with which lime answers well, and where it has been applied to great advantage previous to the introduction of guano superphosphates, but now that these manures have come into more general use, as also the pasturing of Grass and eating off of Turnips by sheep, liming is not pursued to the same extent. The bulk of the farmyard manure is used for Wheat, which is sown on the light land after two years' Grass, where Oats is taken after Grass. No farmyard manure is used, but in some cases a little guano, say 1 cwt. per acre, is given with much advantage, and the farmyard manure kept for the after crop, which in both cases is green crop followed by Barley sown with Grass. The use of artificial manure is becoming daily more general, and on many farms there is scarcely an acre of crop laid down without either a good supply of farmyard manure, or from 2 to 3 cwt. of guano or superphosphate, it being found that a liberal outlay for such fully repays itself. *A. Collie, Adgay*.

72. Banffshire.

As the soil and climate of my farm is very variable, I must crop accordingly, having some years very little Wheat, but I crop in a five-course rotation. I put dung, as far as possible, in my Turnip shift, partly on the stubble and plough down, and what I cannot get over with dung I eat half of Turnips off with sheep, and last year I gave 2 cwt. Townsend manure per acre, which I found answers well. I also applied corn manure 2 cwt. per acre, from Messrs G. & G. Kynock, Keith, prepared by them, which I found to answer very well, and I could recommend either of the above manures for Wheat, Barley, or Oats. *J. Barclay, Braes of Enzie*.

73. Forfar.

Purchased food.—I breed all the cattle required for this farm part for the butcher, part for the breeder. I consider the appliance of the best oilcake to the cow the most profitable, as it increases the milk and imparts health to the calf. I do not think oilcake (not to speak of condiments) at its price will pay in fattening animals, unless in the finishing process, say six to eight weeks before slaughtering.

Artificial Manures.—My farm being generally dry I have often in dry seasons lost by the application of guano, &c., to the cereals. If the season is moist, the land being in good manurial condition, you will have plenty of straw and grain without it. Upon other soils the effect may be different. As a general rule I consider that guano will not add much to the

yield of grain, unless upon soils poor and cold, likely to yield low averages. I never now use it to cereals.

For Turnips, &c.—If you can grow a heavy crop of Swedes, Turnips, or Mangels with artificials alone, at a cost of from 3*l.* to 3*l.* 10*s.* per acre, thereby placing the farm manure application nearer the after crops in the rotation, the profit will be pretty obvious. I grow all my Swedes, Turnips, and Mangels after Wheat (in the six-course) with artificial manures alone, the Wheat as stated receiving 18 tons or thereby of well made manure per acre. The Turnips come in for a share of this, and along with the artificials generally produce me very heavy crops of fine feeding quality. The artificial application amounts to 8 or 10 cwt. per imperial acre, six of them purchased and two to four "home made," literally at the above cost.

General Farm Practice of Neighbourhood.—Farm-yard manure commonly applied to Turnips, Potatoes, Barley, and Wheat. Lime never used unless in the compost heap and the reduction of weeds; or occasionally as a preventive of "finger and toe" in Turnips. Artificial manures generally used for the growth of Turnips; occasionally applied to cereals and the leguminous crops.

74. Fifeshire.

The 4 cwt. of bone meal which I give to my Wheat is only to the Potato land, and I find the bone meal is better than the Peruvian guano, value for value, applied to autumn Wheat.

As I generally consume about one-half of the Turnips on the field I do not require to give extra manure for the Barley.

I have found guano to increase the Potato disease, and in years when the disease was bad I have applied guano at a loss, and in years when the disease was not prevalent have found the application of guano to leave a profit.

Farm-yard dung applied to Wheat, Potatoes, and Turnips.

I generally apply 5 cwt. of nitrate of soda to 4 acres of Clover to secure an early cutting. Have not found it pay to go over the whole crop. *J. Pitcairn, Kinnaird, Newburgh.*

76. East Lothian.

One-third of Turnip land may be manured in autumn. Never apply manures direct to white corn crops, excepting top dressing a few acres of each variety that may not be looking well in spring. Artificial manures have always paid me well, except for Turnip crops in 1858 and 1859, and this year for Potatoes. Turnips and Swedes were a failure in those years, and the Potatoes this last year were more diseased fo every additional pound of guano given. *G. Hope, Fenton Barns*

77. East Lothian.

Potatoes.—20 acres manured with 20 tons of farm-yard manure, and 4 cwt. Peruvian guano per acre. These are for lifting about the middle or end of July. Instead of 4 cwt. of Peruvian, 2 cwt. of Peruvian and 2 cwt. of bones would grow a larger crop, but as it is a great tendency of bones to keep the Potatoes growing late in the season, and the principal object is to have these Potatoes early in the market, we prefer to use pure Peruvian, which rushes them soon up. We also find manuring in the drill, both to grow a larger crop and make them earlier than stubble-manured land; 12 acres I manure with artificial manures only, being made after Turnips to get rid of wild Oats, with 3 cwt. Peruvian, 1 cwt. nitrate of soda, 4 cwt. bone dust, 2 cwt. Rape dust. Six acres of stubble are manured with 15 tons of farm-yard manure, and in the drill 4 cwt. of Peruvian, 2 cwt. of superphosphate. I let about 5 acres annually to cottagers. I give the land free of rent charge on condition of being allowed to put in their manure which they collect from cows, pigs, at the rate of about 35 tons per acre. I have been going over my worst field in this way, and the benefit of it is now apparent.

Turnips.—11 acres of stubble are manured with about 15 tons of dung, and I give 2 cwt. Peruvian, 2 cwt. superphosphate in drill. Nineteen acres receive artificial manure alone, viz., 3 cwt. Peruvian, 3 cwt. superphosphate. Swedes, 24 acres, receive 18 tons farmyard manure in the stubble; 2 cwt. Peruvian, 2 cwt. superphosphate, ½ cwt. nitrate of soda.

Wheat.—What I have sown has got 2 cwt. of Peruvian guano. I intend to try top-dressing with 1½ cwt. nitrate of soda and ½ cwt. salt.

Barley.—I top-dress half of it with 1 cwt. of nitrate, 1½ cwt. Peruvian. If late in the season before we get it sown, I shall apply 1 cwt. of salt to check and stiffen the straw. I remember making some experiments a few years ago in top-dressing, and I found a profit of 37*s.* per acre from using 1 cwt. per acre of salt, with 2 cwt. of sulphate of ammonia for Wheat.

Oats.—Two cwt. of Peruvian after Grass. I grow a few acres after Carrots. I give a little superphosphate mixed with Peruvian, the soil being too light for pure Peruvian.

In regard to the practice of my neighbours, Potatoes and Swedes get all the farmyard manure. Large quantities of artificial manures are used as stimulants. The farms have been all thoroughly limed long ago. We seldom have finger-and-toe in Turnips, which shows the lime still to retain its effect, although in some instances it might be profitable soon to repeat it.

I shall use on my farm (32 acres of stiff clay, 82 acres of very light sandy soil, 172 acres of medium soil, 304 acres of arable, and 9 acres of permanent pasture), about 18 tons Peruvian guano, 12 tons bones and superphosphate, 5 tons nitrate of soda, 3 tons Rape dust, and 3 tons salt. I may vary some of these applications according to the season. ——, *Drem.*

78. East Lothian.

We generally reckon on a profit of 50 per cent. from the application of portable manures, but if the season is wet there is no profit at all. I refer to the top dressing of grain crops; as for green crops, we cannot grow crops to please us without artificials. Turnips often cost 12*s.* a ton, however—I mean those grown in excess of farm yard dung.

The ordinary practice of the district is one-third Wheat and Barley, one-third Potatoes and Turnips, and one-third Oats and Grass. The Grass is left down for one or two years, and then Oats or Barley is taken.

Not much liming in East Lothian in general. It costs 12*s.* a ton. It is thought a cure for finger and toe in Turnips, and it is reckoned best when ploughed down on the Grass. It is laid in small heaps, covered for a few weeks with earth, and then spread, not being thought to act the first year at all.

I fight shy of manure compounds. I use only guano, bones dissolved, and nitrate, as stated.

79. Ayrshire.

With regard to the advantages of using a genuine artificial manure, we have had many experiments. Almost every year we grow part of the Turnip crop (10 to 20 acres) on a mixture of Peruvian guano and superphosphate of lime alone, and raise heavy crops in a fair season. The superphosphate we manufactured ourselves.

In this neighbourhood farm-yard dung is principally applied to Turnips and Potatoes, and occasionally as a top-dressing for Wheat. Lime is generally applied either to pastures which are becoming fogged (mossy) or along with an Oat crop. Artificial manures when used with green crops are sown in the drill along with the farm-yard manure, or alone; Peruvian guano, nitrate of soda, superphosphate of ammonia, &c., are used as a top-dressing for Clovers, Wheat, Oats, &c. *A. W. Ralston, Lagg, by Ayr.*

81. Berwickshire.

One year's practice differs very much from another. A few years ago we used three times as much Peruvian Guano instead of dissolved bones. Raw bones in moderate quantity are substituted for guano and superphosphate, where roots are wanted to stand the frost. When farm-yard manure is awanting for part of the white Turnips we double the allowance of artificials. The kinds and qualities of artificial manures are varied according to the available stock of dung, and the character and condition of the soil.

The quantity of cake purchased depends on the prospects and results of the root crops. When these are well secured nothing feeds better. The general practice here, as throughout the district, is to apply the dung and portable manures to roots on drilling, and a small allowance of the latter to cereals when a deficient crop is feared.

Slaked lime used to be wrought into the fall eak in spring. It is now frequently applied in summer to Grass intended for an Oat crop, if the soil is in good heart; otherwise it is better to put it on Turnip land just before ploughing for Barley. When applied at this last-mentioned period it is believed to cure Finger-and-Toe most effectually. The strictly manurial effect of lime is perhaps less since the introduction of guano. *J. Thomson, Dunse.*

Home Correspondence.

McDougall's Patent Disinfecting Powder.—I notice in the *Gardeners' Chronicle* of the 19th inst., a request that the parties supplying carbolic acid to Exeter and elsewhere would communicate with you. I have pleasure in complying with your wish, being the patentee and sole manufacturer of the prepared carbolic acid. It is in use at Carlisle, Exeter, and several other towns, and at many large institutions, such as prisons, asylums, workhouses, &c., and is completely successful. I enclose a sketch of the simple apparatus required, with explanation and directions for use. I have for the last two years applied the sewage of Carlisle after disinfection to 120 acres of land, with the most satisfactory result. I should be happy to give particulars. *Alex. McDougall, Riga Street, Shudehill, Manchester.*——[The apparatus required includes (1) a large barrel standing on the ground to contain water; (2) a tub let into ground into which the lime is put; (3) a tub let into ground into which the carbolic acid is dropped from the small cask (4)—a small cask containing the carbolic acid. *Directions for Use.*—The barrel (1) is filled with water, which passes (in a quantity regulated by a tap) through the pipe which conveys it to the bottom of the tub (2). The pipe forms a coil at the bottom of the tub, and is perforated with holes (the end being closed), so that the water rises up and causes agitation. A little slaked lime is put in, which is kept in solution by the agitation; the lime water passes over from the surface into the tub (3). The cask of carbolic acid (4) is so placed that the acid may drop from a tap into the stream of lime-water just as it is passing into the tub. Thus passing in together the lime-water and acid become mixed, and form a brownish fluid which falls into the tub (3) and passes off from the surface into the stream of sewage. The proportions are 1 gallon of carbolic acid to 5 lbs. of lime, and 60 or 70 gallons of water.]

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Monthly Council: *Wednesday, May 7.*—Present: Lord Portman, President, in the chair. The Duke of Marlborough, Earl Cathcart, Earl of Powis, Lord Feversham, Lord Leigh, Lord Tredegar, Lord Walsingham, Hon. W. Cavendish, M.P.; Hon. Col. Cotton, Hon. Col. Hood, Hon. A. Vernon, Sir J. Johnstone, Bart., M.P.; Sir E. Kerrison, Bart., M.P.; Sir W. Miles, Bart., M.P.; Sir Watkin Wynn, Bart., M.P.; Mr. Raymond Barker, Mr. Barnett, Mr. Barthropp, Mr. Bramston, M.P.; Mr. Cantrell, Col. Challoner, Mr. Dent, M.P.; Mr. Druce, Mr. Exall, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Holland, M.P.; Mr. Wren Hoskyns, Mr. Humberston, M.P.; Mr. Hutton, Mr. Jonas, Mr. Lawes, Mr. Lawrence, Mr. Pain, Mr. Pope, Mr. Randell, Mr. Rigden, Mr. Shuttleworth, Mr. R. Smith, Mr. Banks Stanhope, M.P.; Mr. Thomson, M.P.; Mr. Torr, Mr. Turner, Mr. Wallis, Mr. Wells, Mr. Burch Western, Mr. H. Wilson, Professor Wilson, Mr. Frere, Professor Simonds, and Dr. Voelcker.

The Earl of Shrewsbury and Talbot, of Ingestre Hall, Staffordshire, was elected a Governor of the Society.

The following new members were elected:—

Allnutt, John, Clapham Common, S.
Ayles, Stephen; Hill Place Farm, Braishfield, Romsey
Bradbury, Wm.; Biddulph, Congleton
Baines, F. W.; Norfolk Farm, Windsor Park, Staines
Barbour, Geo.; Bolesworth Castle, Tattenhall, Cheshire
Blashill, Henry; Steps Farm, Bishopstone
Beevor, John, M.D.; Newark-on-Trent
Butt, S. G.; Great Abshot, Titchfield
Bushby, H. J.; 40, Chester Square, S.W.
Bullock, Wm.; Foulkbourn Hall, Witham
Cranston, Thos.; Little Dilwyn, Leominster
Chapman, R. H.; Upton, Nuneaton
Clarke, W. B.; Barwickstead, Bechermont, Whitehaven
Cliffe, Thos.; Crew Gates, Crewe
Collins, Wm.; Aston Farm, Stone, Staffs.
Croft, Sir John, Bart, Kingstown, Sittingbourne
Colthurst, J.; Chew Court, Chew Magna, Bristol
Curzon, The Hon. S. C. H. Roper; Grove House, Tooting, S.
Darling, Robert; Plawsworth, Fence Houses
Dewe, W. T.; Coates, Cirencester
Death, Ambrose; Lawshall, Suffolk
Evans, H. R., Jun., Swanstone Court, Dilwyn, Leominster
Fisher, J.; Red Lion Hotel, Banbury
Field, Geo.; Ashurst Park, Kent
Field, Samuel; Farnsfield, Southwell
Fuller, R. W.; Croydon, S.
Grant, John; 11, Albion Place, Maidstone
Graham, James; 1, Blackburn Buildings, York Road, Leeds
Garne, Robert; Churchill Heath, Chipping Norton
Goodchild, P. P.; The Rectory, Hackney, N.E.
Gould, J.; Newhall, Broadclist, Devon
Gibbons, Henry; Hampton Bishop, Hereford
Griffin, A. E.; Wolverhampton
Gilstrap, W.; Farnham Hall, Bury St. Edmunds
Hainworth, Wm.; Hitchin
Hawxwell, Alfred; Thirsk
Holland, Wm.; Streetlay, Lichfield
Howes, Philip; 45, Hamilton Terrace, W
Holben, R. R.; Barton, Cambridge
Jaques, R. M.; Eastby Abbey, Richmond, Yorkshire
Kirwan, J. S.; Moyne, Ballyglunin, Co. Galway
Kirkham, T.; Biscathorpe, Lincoln
Lawson, Wm.; Beayton, Carlisle
Langdale, W. A.; Holmwood Park, Dorking
Lindley, Wm.; Sutton, S.
Lowe, Thomas; Calverley Hall, Handley, Chester
Lucas, B.; Chesterfield
Mackenzie, E.; Tawley Court, Henley-on-Thames
Marshall, E. H.; Weetwood Hall Leeds
Morris, John; Wightwick House, Wolverhampton
Morshed, Sir Warwick; Forest Lodge, Binfield
Noel, Eugène T.; 36, Westbourne Terrace, W.
Oliver, R. J.; Docking, Lynn, Norfolk
Onslow, Major Pitcairn; Dunsborough House, Ripley, Surrey
Onslow, A.P.; Send Grove, Ripley, Surrey
Phillips, H.P.; Willesden Paddocks, Kilburn
Robinson, R.; Utkinton, Tarporley
Sharp, H. Morton; Monks Hardwick, St. Neots
Smith, R.; Tonbridge Wells
Shaw, H. G.; The Hollies, Wilmslow, Cheshire
Savidge, Matthew; Churchill Mount, Chipping Norton
Stevens, Wm.; Gatehampton, Reading
Steedman, G.; Yardley, Worcester
Storer, The Rev. John; Hellidon, Daventry
Treadwell, John; Westcott Field, Waddesdon, Aylesbury
Tennant, R.; Scarcroft Lodge, Leeds
Warner, Rd.; Weston Hill, Nuneaton
Walker, John; Goldington, Bedford
White, Robert; Egypt House, West Cowes, Isle of Wight
Williams, A. G.; Easthampstead Park, Berks
Woolrich, H. C.; Well House, Handley, Chester

Finances.—The Hon. Col. Hood presented the report of the Committee, from which it appears that the Secretary's receipts during the past month had been examined by the Committee, and by Messrs. Quilter, Ball, and Co., the Society's accountants, and were found correct. The balance in hands of the bankers on the 30th April amounted to 4298*l.* 19*s.* Mr. Thompson laid on the table Prof. Simonds's Pamphlet on "The Rot in Sheep," and on account of its size, viz. 96 pages, recommended that it be sold at 2*s.* per copy.

Veterinary.—The Committee reported the receipt of Professor Simonds' long and careful report of his investigations into the disease that has appeared from time to time since 1855 in the neighbourhood of Ilchester. The Committee also consider it of importance not only that this investigation should be continued, but that a Botanical and Chemical one should be added, and therefore recommended that Professor Buckman should be requested to examine the pastures, and Professor Voelcker the water in that locality. The report was adopted, and the Council ordered the subject to be brought forward for consideration and discussion at a Weekly Council in June.

Chemical.—The attention of this Committee having been drawn to the subject of "Valuation of Manures," Professor Voelcker read a short paper upon it, referring to the difficulty he experienced in being frequently applied to to give tables of money valuations of artificial manures sent to him for analysis. He explained very fully that the practical value of a manure depends not merely on the elements it contains, but is very importantly affected by the conditions in which they are present in the compound; and are thus made more or less readily available to the growing plant. He showed that the effective use of a fertiliser in the soil cannot be determined by a mere statement of the market value of its individual constituents, and that the attempt to do this was often a source of deception, and comparatively useless. The Committee thought it desirable that a short statement to this effect should be entered in the Minutes, in the shape of a general caution to parties sending for analyses.

2d, The Professor also stated to the Committee that many cases had of late been referred to him of Linseed and other cake of such inferior quality, from adulteration and other causes, as to be positively detrimental to the health of stock, and in some cases showing even poisonous qualities, which he attributed to the presence of Darnel, Cockle, and other seeds with the Linseed. He exhibited two specimens of Linseed containing a large admixture of other seeds in the sample, of which he had counted 29 sorts. Most of these he had planted experimentally at Cirencester College, in order to ascertain as many as possible of the plants they belonged to, and he would report upon them at a future meeting.

3d, The Professor proposes to give a lecture the last Wednesday of this month at 12.30 on the manurial properties of Town Sewage.

4th, He reported the progress of a series of experiments on salt and nitre top dressings on Wheat not yet completed.

5th, The next number of the Journal will contain an interesting paper by the Professor on the manufacture of cheese.

London Show.—Colonel Challoner presented the report, which recommended the usual application to be made for the assistance of a body of the Metropolitan Police, in the Show-yard at Battersea Park; also the appointment of an additional steward to superintend the exhibition of steam cultivators at Farningham. This report was adopted, and Mr. Wren Hoskyns consented to act as the additional steward.

Country Meeting of 1863.—The report of the Council Inspection Committee having been read, the Council were favoured by the attendance of the following deputations, viz., from

Cardiff.—C. D. M. Talbot, Esq., M.P., Lord-Lieutenant of the county; H. Hussey Nojan, Esq., M.P. for the county; Henry Austen Bruce, Esq., M.P. for

Merthyr Tydfil; C. W. David, Esq., Mayor of Cardiff; John Bird, Esq., Deputy Mayor; Mr. Alderman Pride, Mr. Alderman Alexander, John Stuart Corbett, Esq., Agent to the Trustees of the Marquis of Bute; Geo. Fisher, Esq., Engineer to the Taff Vale Railway Company; R. Matthews, Town Clerk.

Hereford.—The Worshipful the Mayor; Mr. Alderman Bodenham; Mr. Alderman Jay; Mr. Alderman Cain; Lord Bateman, Lord-Lieutenant of the County of Hereford; J. H. Arkwright, Esq., the High Sheriff of the County of Hereford; the Rev. Archer Clive; the Hon. Captain W. Clive, M.P.; George Clive, Esq., M.P.; H. M. Clifford, Esq., M.P.; Sir John Walsh, Lord-Lieutenant of Radnorshire; L. V. Watkins, Esq., Lord-Lieutenant of Breconshire; Sir H. G. Cotterell, Bart.; the Marquis of Camden; Sir George Cornewall Lewis, Bart., M.P.; Lord Llanover, Lord-Lieutenant of Monmouthshire; H. Mildmay, Esq., M.P.; Sir John Walsh, Bart., M.P.; the Lord Bishop of Hereford.

Worcester.—The Rt. Rev. the Lord Bishop of Worcester; The Hon. F. Lygon, M.P. (Chairman of the Committee of the Worcestershire Agricultural Society); the Rt. Hon. Sir J. S. Pakington, Bart., M.P., G.C.B; Sir T. E. Winnington, Bart., M.P.; Sir E. A. H. Lechmere, Bart. (High Sheriff of the County); H. F. Vernon, Esq., M.P.; O. Ricardo, Esq., M.P.; R. Padmore, Esq., M.P., Joseph Firkins, Esq. (Mayor of Worcester); G. W. Hastings, Esq.; W. Woodward, Esq.; E. Evans, Esq. (President of Worcester Chamber of Commerce); J. W. Lea, Esq. (Vice-President of Worcester Chamber of Commerce); A. Buck, Esq.; Henry Lakin and W. H. Bentley, Joint Honorary Secretaries.

These gentlemen having communicated to the Council the fullest local information connected with their respective districts, and having answered satisfactorily the inquiries made of them by the Council, the President expressed to them the best thanks of himself and the Council, for their kindness in having attended the meeting that day, and for the deep interest they had evinced in promoting the objects of the Society.

The Deputations then withdrew; when the Council proceeded to the consideration of the particular locality best suited under all circumstances, for the holding of the Country Meeting next year, and after some discussion of the respective advantages of each position to which their attention had been called, it was decided, on the motion of Mr. Thompson, M.P., seconded by Mr. Torr, in favour of the city of Worcester by 32 to 16.

House List.—Agreeably with the Bye-laws the Council arranged by ballot an election list to be recommended by them for adoption at the ensuing general meeting on the 22d inst.

The President having moved to rescind the order of Council for holding the Annual Country Meeting at Windsor, the Council resolved that the Country Meeting this year be held at Richmond, Surrey, at 12 noon, on Saturday, the 5th July.

An error having been discovered in the conditions of entry for bulls, and the Council considering it is expedient to alter the prescribed condition so far as to permit bulls to compete for prizes that have served three different cows or heifers in any of the months of 1862 prior to May 1.

The Council then adjourned to Wednesday next the 14th inst., at half-past 12 o'Clock.

On Wednesday the 21st inst., Mr. Caird, M.P., will give a short account of the present state of agriculture in Algeria.

Farmers' Clubs.

London: May 5.—*County Expenditure and County Rates.*—A lecture on this subject, of which the following is an abridgment, was on Monday last given before the London Farmers' Club by Mr. H. Corbet, their Secretary:—

Some years since, the selection of this subject would have been received with a kind of blank surprise, and even now its consideration may be regarded in certain quarters as more or less of an impertinence. In the good old times, the expenditure of public money was clearly nobody's business. But we have outlived that golden age, and now few men have a better time of it than the public's own officers. We submit them to the most searching examinations—we puzzle them with the most wonderful questions, before ever we think of admitting them into office at all; and even when we do get them there, it is no longer all immunity and indolence from "10 till 4." From the Prime Minister to the parish clerk—from the national debt to the new water-rate—there is not an executive nor a trust but that has been looked up of late in right of might by the public. Always excepting, that is, County Expenditure and County Rates. It would be idle to search for any other such an instance of nobody seeming to know how the money comes or to care how it goes. So carefully is the county rate now mixed up with the poor rate, that it is only after much study that a man can arrive at any conclusion as to what he is paying for the one, and how much for the other. Formerly, the gaol rates and others were paid direct, in a specific form and under a certain name—as a gaol rate—by every occupier, who was allowed to deduct the amount from his next half year's rent, just as the tenant still does the property and the land taxes. Now, however, it is all jumbled together as a poor rate, and you may go on from the board of guardians to their treasurer, and from him to the county treasurer, and thence to the magistrate's clerk who has issued the precept, even up to the magistrates themselves who have ordered it, without learning anything very definite. There is no manner of doubt but that the greatest difference of opinion exists as to the way in which this expenditure is regulated.

On the one hand you will find the rate-payers petitioning against the present system, passing resolutions at their local clubs to the same effect, or, as in the far greater majority of cases, indulging in that private purposeless grumbling which has hitherto done so much to carry the claims of the English farmer, and that he still fondly relies on to do so much more for him. On the other side, we have the very magnates of magistrates only justly indignant that any one should presume to doubt their being the best men of business in the world, or that the business in question could be by any possibility better done than it now is. Sir John Pakington has declared with all proper modesty, and in Hansard stands the record, that "we all in our consciences know there is nothing to complain of in the internal management of the affairs of our counties; that there is no extravagance, no mismanagement, but merely the honest discharge by the gentlemen of England of the functions which the law imposes on them." Mr. Warner Henley, another chairman of his bench, maintains "they had hitherto managed their affairs very smoothly;" and Sir Matthew Ridley has echoed Sir John as to "the transaction of financial business in every county by a numerous body of gentlemen, who had performed this for a long period to the advantage and satisfaction of the public." These three honourable gentlemen, be it remembered, are not only themselves prominently engaged in the disbursement of the county funds, but are as directly identified in the House as representatives of the Agricultural Interest. And by this evidence there is nothing to complain of, but everything is done to the satisfaction and advantage of the public! It might perhaps have been better, if not more decent, had this opinion been suffered to come from others, instead of as the self-eulogy of a man on his own acts. But how answer the rural rate-payers to this? Let us go a little below the surface, and we shall soon see there are very few counties in England but where there is something to complain of, and where everything is by no means done to the satisfaction of the public. The system so conveniently described as doing things smoothly enough—perhaps the very worst way in the world of doing business—has been broken through, and the people who find the money are at length beginning to think for themselves. Like Macduff's men, "the cry is, Still they come." Still does the County Expenditure increase. Still are there lavish orders for larger gaols, more asylums, new police stations, and so on, until one begins to fear that any addition to the population can demonstrate itself only in thieves and idiots. In every direction are there murmurs, while some districts have already proceeded to petition against the evils and injustice they are suffering under.

The following, from the Midlands, is so well drawn, and so much to the point, that I may not only read it here with advantage, but it may stand for a model to others who may in duty bound ever pray:

To the Honourable the Commons of the United Kingdom, in Parliament assembled.—The humble Petition of the Rate-payers residing within the union of , in the county of , showeth that the amount of county taxation has very much increased, and is become a most serious burden; and that the county justices, in whom the power to levy and expend the rates is vested, are totally irresponsible to the rate-payers. Your petitioners consider this power of taxation without representation to be entirely at variance with the principles of a free constitution. Further, your petitioners consider that the present system of collection, by which the county rates are merged in the poor rates, is highly objectionable, as it tends to conceal from the general body of rate-payers the large amount they are called on to contribute to the county rates. Wherefore, your petitioners humbly pray that your Honourable House will be pleased to enact a measure for the separation of the financial from the judicial duties of county justices, and to appoint county finance boards, in which the rate-payers may be fairly represented, for the management of county finances. And your petitioners as in duty bound will ever pray.

The backbone of this prayer is, that the rate-payer be duly represented at a properly constituted County Finance Board. As it is, any one to whom the Lord Lieutenant chooses to pay the compliment of putting in the Commission is at once qualified to deal with, or even direct, the outlay of the most serious sums.

Any young gentleman just of age, a second son without a shilling in the county, a retired citizen with scarcely a higher stake, or a country parson with no greater—any of these have the right, and many do take a very active part in the expenditure of the county funds. They are often comparatively idle men, with no personal interest in the matter to act as a check upon them; and hence the fanciful absurdities we so often see in the way of costly ornament and theoretical arrangement in our prisons and madhouses. There is no philanthropy so cheap as that you can indulge in at another person's expense, and a reverend gentleman who would call in a real man of business to aid him in building a greenhouse or planning a school-room, will feel himself thoroughly qualified to give orders for 30,000*l.* or 40,000*l.* worth of bricks and mortar when he has nothing to pay for them. * * * As regard not simply saving, but any actual economy of administration, perhaps the most celebrated case of the kind is that mentioned in the memoirs of the late Mr. Miller, where it is stated that the magistrates in a certain county resolved to build a new gaol out of the materials of the old one, and to keep the prisoners in the old gaol till the new one was finished! In Worcestershire, where the County Rate is fearfully high, the gaol chapel has been pulled down, and built up again, three or four times in the experience of one man. "The original debt," as it is called in the balance-sheet of the county—the original debt of that pet plaything of a prison at Reading was 42,000*l.*; and now, to back this, the magistrates have built a new county-hall in the same town at an estimate of 13,000*l.*, but with an actual expenditure of more than 20,000*l.* The new police-stations in the same happy county are as much overdone, as indeed, they have been in many others. In Cornwall, for example, these buildings will cost the county 40,000*l.*—that at Wadebridge is over 11,000*l.*; while they have to pay another 40,000*l.* for a new gaol, pulling down a very good one that cost 20,000*l.*, which, with an additional outlay of another 10,000*l.*, would have answered every purpose. So that in the matter of this one building the ratepayers consider and maintain that about 30,000*l.* has been wantonly thrown away. Of course the Cornish men have petitioned, as well they might. The Wiltshire Lunatic Asylum was built at a first cost of somewhere about 52,000*l.*; but there is still a new wing now to be added. The militia stores of the same county took 7,500*l.*, but with the residences yet to be built; while stabling for policemen's horses, and carriage-houses for policemen's coaches, are worked up in a style that few of the luckless ratepayers would ever venture on for their own humble equipage. But I should only weary you with a multiplication of such cases of gross extravagance and miserable mismanagement, many to be found still nearer home. I could travel with you from Leicestershire to Bedfordshire, from Bedfordshire to Buckinghamshire, from Bucks to Berks, and from Berks to Wilts, all in one connecting line, and all alike disaffected. In Leicestershire the burden has become insupportable, and a county agitation is there on the eve of being organised. Bedfordshire, again, has petitioned; while Berks still "grins and bears it," though the Hungerford Farmers' Club, which represents alike Berks and Wilts, last year passed a strong resolution in favour of Financial Boards.

Let me borrow a word here from one of the speakers at that meeting, Mr. Wilks, of Bayden: "He felt that the ratepayers had a right to demand a fair control over the outlay of their own money. In the first leaf of the report to which he had referred were the names of the committee of visitors of the Asylum; and in looking over those names, he would venture to say that he could point to many individual farmers in this county who paid more to the County Rate than all the committee together, whilst as to the eight gentlemen forming the finance committee, there were scores of farmers whose respective payment of rates to the county would exceed that of the whole eight.

As the management of the poor under the elective system had proved so advantageous to both paupers and rate-payers, compared to what it was when entirely in the hands of the magistracy, he considered that it would be only a fair conclusion to anticipate a similar result if the elective system were resorted to in the matter then under discussion." The heaviest items in the County Expenditure are the prisoners and the police. There is the keep of the culprit, generally enormously high, everything being done by the visiting committee to make him nice and comfortable. Then there is the expense of taking him to trial, often enough to the most one-sided place in the district, and other such items, perhaps more or less unavoidable. The charge for the county police is a new feature that many districts in the outset resisted, and really, as it would seem, with some showing. When we remember the extraordinary duties in which, of late, it has been proposed to employ the Force, one might imagine that time hung heavy enough on their hands. The Government, for one, would wish the police constable to keep a sharp eye on the farmer, to call in now and then to ascertain what he is doing, and to report accordingly by means of an official paper he carries with him. There are benches of magistrates, in that luckless county of Berks amongst others, who have deliberately expressed their approval of such arrangement. Then there are other benches who have petitioned in concert that the new police should be imbued with more especial powers as supplementary game-keepers, and to, above all things, look after the poachers! With such examples before them, have the farmers no prayer of their own to make for the services of "the blues?" Why, if I ever lived again, as I once did, adjoining any heavily preserved coverts, I would send to the chief constable for a couple of his men to watch night and day for trespassers, the hares and rabbits, and other such rogues and vagabonds that come after my young Wheats and Barleys—quite as big thieves in their way as the poachers who come after them. Does it not sound something like a swindle that the rural rate-payer should be called upon to maintain the rural police to collect agricultural statistics for the use of the Government, or to act as "watchers" for gentlemen who deal in game? Petition for this! Why, rather than he should be turned to such uses and abuses, the farmer should petition that the men should come crow-keeping, or pig-minding, or anything to keep them respectable. It is only since putting this paper together that I have seen that capital letter of Mr. G. Lane Fox to the pheasant-coddling, fox-killing landowners of Yorkshire, and let us learn from a magistrate to what uses he would put the police to keep them out of mischief. "If," he says, "a duty was put upon fox-traps, I will not enter into statistics, but say 2*d.* on every trap, to be collected at once by the rural police, who are short of work, it would raise a sum that would extricate Mr. Gladstone from his coming difficulties, and enable him to allow the inoffensive beer barrel to be 'kept dark.'" Further, let us ever bear in mind that these same over-preserving landlords, whose own mal-practices fill the gaols with prisoners, and the parish with policemen, are the great administrators of the County Rates, which they are doing so much to increase. Lessen the incentives to crime, and we shall have proportionately less call for "original" gaols at 40,000*l.* apiece. * * *

There is no doubt the publication, with full particulars, of county expenses must do some good, as pointing out how the money goes. But it would be idle to stop here, simply satisfied that if it takes 42,000*l.* for a gaol, and 20,000*l.* for a hall, a grand total of 62,000*l.* should be arrived at.

Clear accounts are very well so far as they go; but they are not everything, or we shall stand no higher than the conscientious insolvent, who prepared an elaborate schedule to show that he had spent every shilling he could lay his hands on, and was complimented accordingly by the Commissioners who passed him. Then, as to the plea of only carrying out the instructions given. Of course an inspector of prisons or asylums must try to find something to suggest or to order; or, if he finds nothing to do, the Government may soon do without him. But don't let the county be so over-eager in obeying his behests. One of the first duties of a properly constituted Financial Board should be to inspect the inspector, and to see whether there be reason and right for the outlay he orders. A little proper caution and remonstrance in this way would do a deal of good, and materially lessen the labours of the worthy gentlemen who cast up the tens till they come to the thousands, and then complacently testify that "it's all right." The mistake of the present administrators of the county rate is simply that they evince more anxiety to show how they can spend money than how they can save it. It is here that a well-appointed Financial Board—say composed one-half of magistrates and the other half of ratepayers—would tell. No doubt, on the first recognised principles of representation, the rural ratepayer has a right to sit at such a council. But there is one fatal objection to any such a constitution being carried out. The farmer, we are confidently assured, would not attend to the duties of the office, as of course he does not attend to his duties as Guardian. The very same reason was once offered for not placing him on the direction of the Royal Agricultural Society; and the experience of this Club shows further, that he will not put himself out of the way to look after his own interests. Never was so false or so unaccountable an assumption. If agriculturists will come up month after month, some of them hundreds of miles, to attend a meeting in town, can it be argued that they will refuse to go a few miles occasionally to look after their own immediate business in their own county. There is, as I believe, a very urgent necessity that they should look to this. Some years since the County Rate was comparatively small to what, as a rule, it has now increased to, even with the best management. A number of new items of expenditure have from

time to time been thrown on this fund, and the responsibilities of its control have become proportionately greater.

Let us take example by what has happened so recently in the House, and which should be an especially apt illustration for a Farmers' Club. How then did the Hop growers obtain their point?

And when Sir John Trelawney's County Expenditure Bill was introduced last year, Mr. Bernal Osborne declared that "the next election for Cornwall would go very much on the question of Financial Boards." Why should not the next election for everywhere—Wilts, Hants, Berks, Beds, or Bucks—go very much on the same question? Let the oppressed ratepayer face his own representative—let him petition, let him confer with the Chancellor or the Home Secretary, and let him argue it again and again through his own Honourable M.P., as they have done so successfully in Sussex and Kent. Let the central Society pass the resolution or prepare the petition, and then let every man in his own county press the point to his own member. This makes, in every sense, a home question of it; and it is by such general action—the calling of a meeting, and the issue of a petition wherever the evil exists, that county expenditure will be reformed and county rates decreased.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, May 8, 1862.

Day of Week.	Day of Month.	At 9 A.M. Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level. (Inches.)	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground. (Inches.)	Temperature of the Earth. 1 foot deep.	2 feet deep.
Friday	2	30.18	53°	50°	N.W.	2	5	77°	40°	91°	48°	0.03	57°	53°
Saturday	3	30.19	49	46	E.	3	6	65	40	87	36	..	57	54
Sunday	4	29.72	62	58	S.	1	4	63	40	73	45	..	55	54
Monday	5	29.97	60	59	S.	2	2	71	52	84	49	0.09	56	53½
Tuesday	6	30.10	58	57	N.W.	1	6	76	56	96	52	0.87	58	54
Wednesday	7	29.82	56	52	S.W.	1	5	69	52	94	49	0.81	68	54½
Thursday	8	29.91				2	5	63	47	74	45		67	55

Calendar of Operations.

Wester Ross: *May 5.*—More favourable weather we have not had for many years at this season than we have now had for several weeks. The sowings of Oats and Barley were completed last month in excellent condition, and the weather is now well suited for weeding and preparing the ground for green crops. Potato planting, where not already accomplished, is being proceeded with with all speed, but from the severity of the disease last year, and from rotting in the pits, there is a difficulty in finding a sufficiency of seed. Notwithstanding the risk, nay the almost certainty of loss, connected with Potato planting, there is the greatest unwillingness on the part of rich and poor to give it up. Last year, many a poor man paid the rent of the ground, planted it with Potatoes, applied his whole year's manure, and would have had little difficulty in carrying home on his back the whole produce. And still there is hope that this year will not be like last. For some seven weeks we will be busy preparing for, and laying down the Turnip crop. Should the weather permit we will commence sowing Swedes next week, and we seldom complete the sowing of common Turnips until towards the end of June. The breadth of Swedes sown is annually increasing, and this year they will cover about one half of our lot. For several years we have given about 2*l.* worth of artificial manure per acre; but as the stuffs are incalculably multiplying, and as the sellers of the same are endless, each of whom asserts that he has a better claim upon us than all the world besides, no wonder that we become perplexed and bewildered, and find it an utter impossibility to adopt a course that will not be an offence to not a few of our worthy manure friends. The crops are progressing satisfactorily. The autumn Wheat is generally thickly planted, has a fine healthy colour, and is on the whole very promising. Oats and Barley have speedily come above ground, and appear close and vigorous. In many of the fields of young Grass in this neighbourhood there is a great lack of Clover, certainly not arising from the severity of the winter, but otherwise on all low-lying farms the Grass is so well advanced that the stock are rejoicing in the midst of plenty.

Notice to Correspondents.

Mangel Wurzel: *Constant Reader.* Mangels should be uncovered and the heaps turned. They will be good juicy food all through the summer and autumn. How far they will last into next winter we do not know.

Upwards of 2000 Cases have been reported as Cured by JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1*s* 6*d*., 2*s*. 6*d*., and 5*s*. each. A 1*s*. 6*d*. bottle will make 12 gallons fit for use.

Agents:—
Messrs. Wood & Ingram, Huntingdon
,, Wood & Sons, Maresfield, near Uckfield
,, J. & J. Fraser, Lea Bridge Road, London, N.E.
,, Grayson & Co. Bury St. Edmunds
,, Wm. Urquhart & Son, Dundee
,, Dicksons & Co., Waterloo Place, Edinburgh
,, Minier, Nash & Nash, 60, Strand, London
,, Hurst & McMullen, 6, Leadenhall Street, London
,, Fisher & Holmes, Handsworth, Sheffield
,, Finney & Co., Gateshead
,, Stuart & Mein, Kelso
,, Martin & Son, Hull
Mr. John Harrison, Darlington
Mr. Richard Smith, Worcester
Seed Warehouse, 10 and 11, Exchange Street, Norwich.

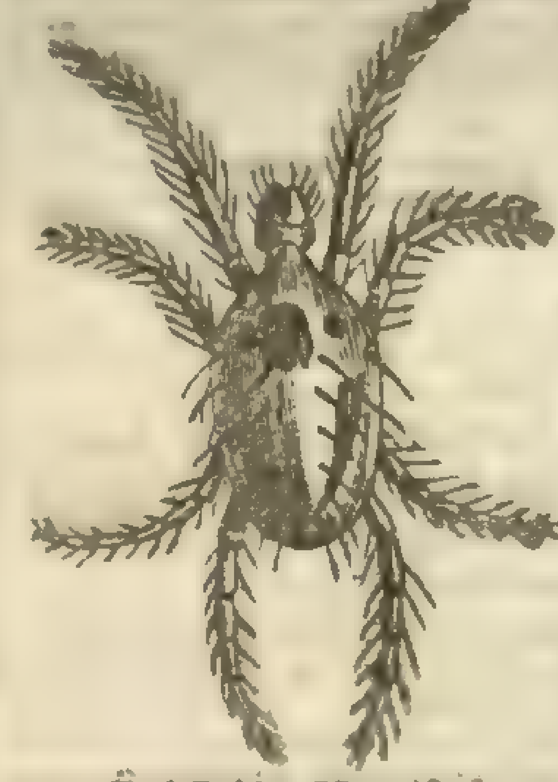
Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3*s*. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3*s*. per Gallon (or 9*d*. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

Page & Toogood, Royal South Hants Seed Establishment, Southampton.


Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1*s*., 3*s*., and 10*s*. 6*d*. each.

Wholesale by
Price's Patent Candle Co., Limited.

Magnified Aphides.

NEAL'S PATENT APHIS PASTILS, One Shilling and Two Shillings per packet, are now acknowledged by all disinterested persons to be the only cheap and effectual way of smoking a Greenhouse: they destroy all insects, and cannot injure the foliage unless they are damp. Testimonials from Florists and Scientific men of the highest standing may be had on application.

NEAL'S PLANT SOAP
is a perfectly new preparation, free from all smell, little more than half the price of the ordinary compounds, is not injurious, but on the contrary useful to the health of the Plant; destroys Red Spider, Mealy Bug, American Blight, Mildew, Scale, Thrip, Green Fly, and all other Insect Pests, and is only 1*s*. a packet of four cakes. May be obtained of all principal Seedsmen.

Patentee:
J. Neal, Edward Street, Birmingham.

PATENT SELF-REGULATING WIND ENGINE, for Pumping, Oat Crushing, Grinding, Chaff Cutting, &c., is now brought to great perfection, and has the following advantages over the Steam Engine:—

It Costs Nothing for Fuel.

Will work safely Night and Day without risk of Fire or Explosion.

Is easily and cheaply erected, and requires scarcely any attention.

All particulars may be obtained on application to Bury & Pollard, Sole Manufacturers, Park Iron Works, New Park Street, Southwark, S.E., where a Wind Engine in full work may be inspected.

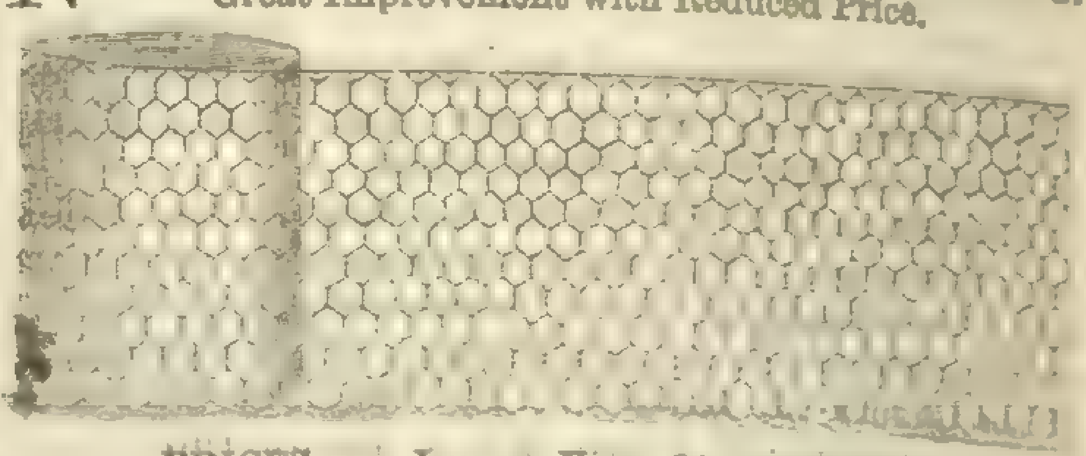
Oil Paint no longer Necessary.

HILL and SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which Hill & Smith will forward on application.

Sold in casks of about 30 gallons each, at 1*s*. 6*d*. per gallon, at the Manufactory, or 1*s*. 8*d*. per gallon paid to any station in the kingdom.

Apply to Hill & Smith, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

NEW IMPROVED PREMIUM WIRE NETTING.
Great Improvement with Reduced Price.



PRICES per Lineal Yard 24 inches high.

Size of Mesh	Mostly used for	Light. Jap	Light. Gal.	Medium. Jap	Medium. Gal.	Strong. Jap	Strong. Gal	Extra Strong. Jap	Extra Strong. Gal.
2½ in.	Poultry ..	3*d*.	4*d*.	3¾*d*.	5*d*.	4½*d*.	6*d*.	5½*d*.	7*d*.
2 in.	Poultry ..	3½*d*.	4¼*d*.	4*d*.	5*d*	5*d*.	6½*d*.	6½*d*	[illegible]
1⅝ in.	Small Rabbits	4*d*.	4¾*d*.	4¾*d*.	6*d*.	5½*d*	7*d*	7*d*	[illegible]
1½ in.	Smallest Rabbits	5*d*.	6*d*.	5¾*d*.	7*d*.	7*d*.	9*d*.	9*d*.	11*d*.

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

*** Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.

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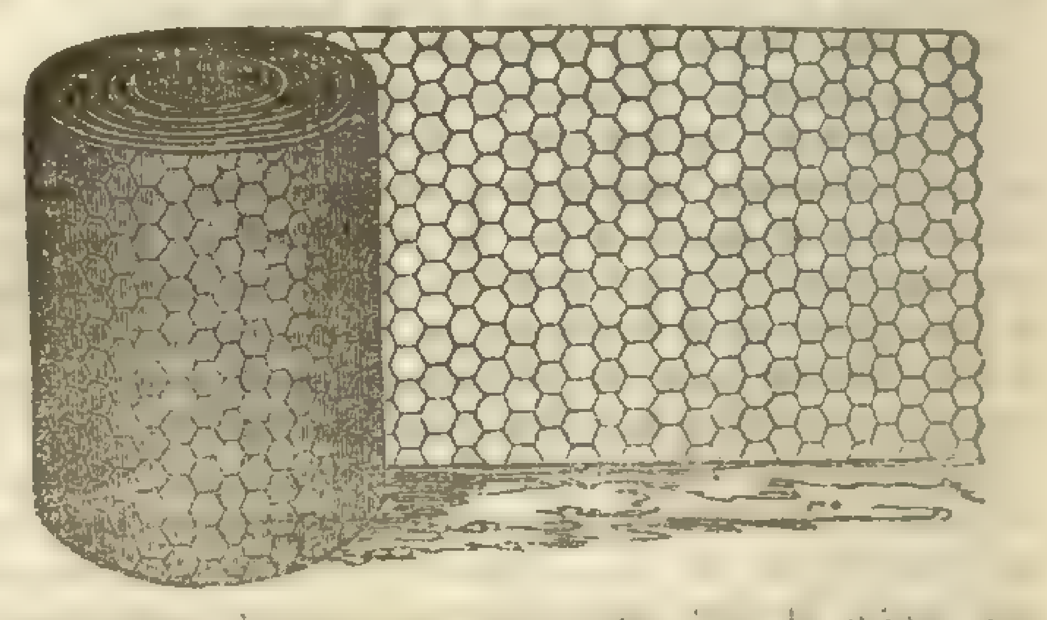
BARNARD, BISHOP, and BARNARDS, Norwich.
FURTHER REDUCTION in the PRICE of WIRE NETTING.—April, 1861.



Barnard, Bishop, & Barnards beg to inform their friends and the public that they have made a further reduction in the prices of Machine-made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch mesh, 24 inches wide..	No. 19	4½*d*.	3½*d*.
2-inch ,, ,, ,, ..	,, 18	5	4
2-inch ,, ,, ,, ..	,, 17	6½	5
2-inch ,, ,, ,, ..	,, 16	8	6½
1⅝-inch ,, ,, ,, ..	,, 19	4¾	4
1⅝-inch ,, ,, ,, ..	,, 18	6	4½
1⅝-inch ,, ,, ,, ..	,, 17	7	5½
1⅝-inch ,, ,, ,, ..	,, 16	9	7

All the above kinds can be made any width (under 6 feet) at proportionate prices.

Strong Galvanised Poultry Netting, 7½*d*. per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11*d*. per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.

Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.

Five wires, 3 feet 6 inches high, pronged Standards, 8 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10*d*. per yard.

The same with Galvanised Wire Rope, 1*s*. per yard.

Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.

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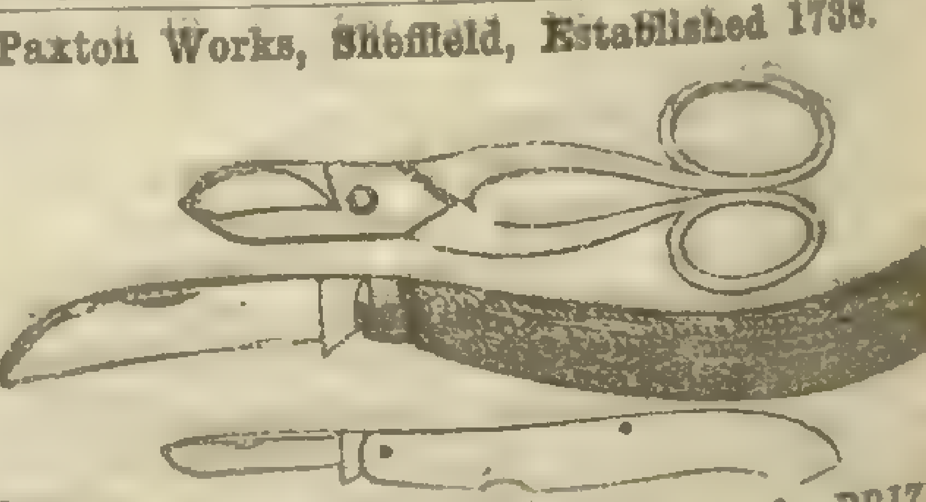

SAYNOR and COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.
Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an article superior in quality to anything we have hitherto been able to offer, in PRUNING, BUDDING, and GRAFTING KNIVES, VINE and PRUNING SCISSORS, GARDEN SHEARS, &c., owing to their being tempered under an entirely new process, which renders the blade tough and not liable to break, and also gives the edge a lasting keenness which we can warrant them to retain for at least double the time they would under the old method of tempering, thus facilitating the work and saving the time usually lost by having constantly to renew the edge by sharpening, consequently making them more durable in wear and better adapted for all kinds of work, every blade being guaranteed of the same temper.

Caution. None are genuine except marked Saynor, or Saynor, Maker. Other marks would cause the purchaser disappointment.

TWO HUNDRED SETS

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STEAM PLOUGHING and CULTIVATING APPARATUS

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Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

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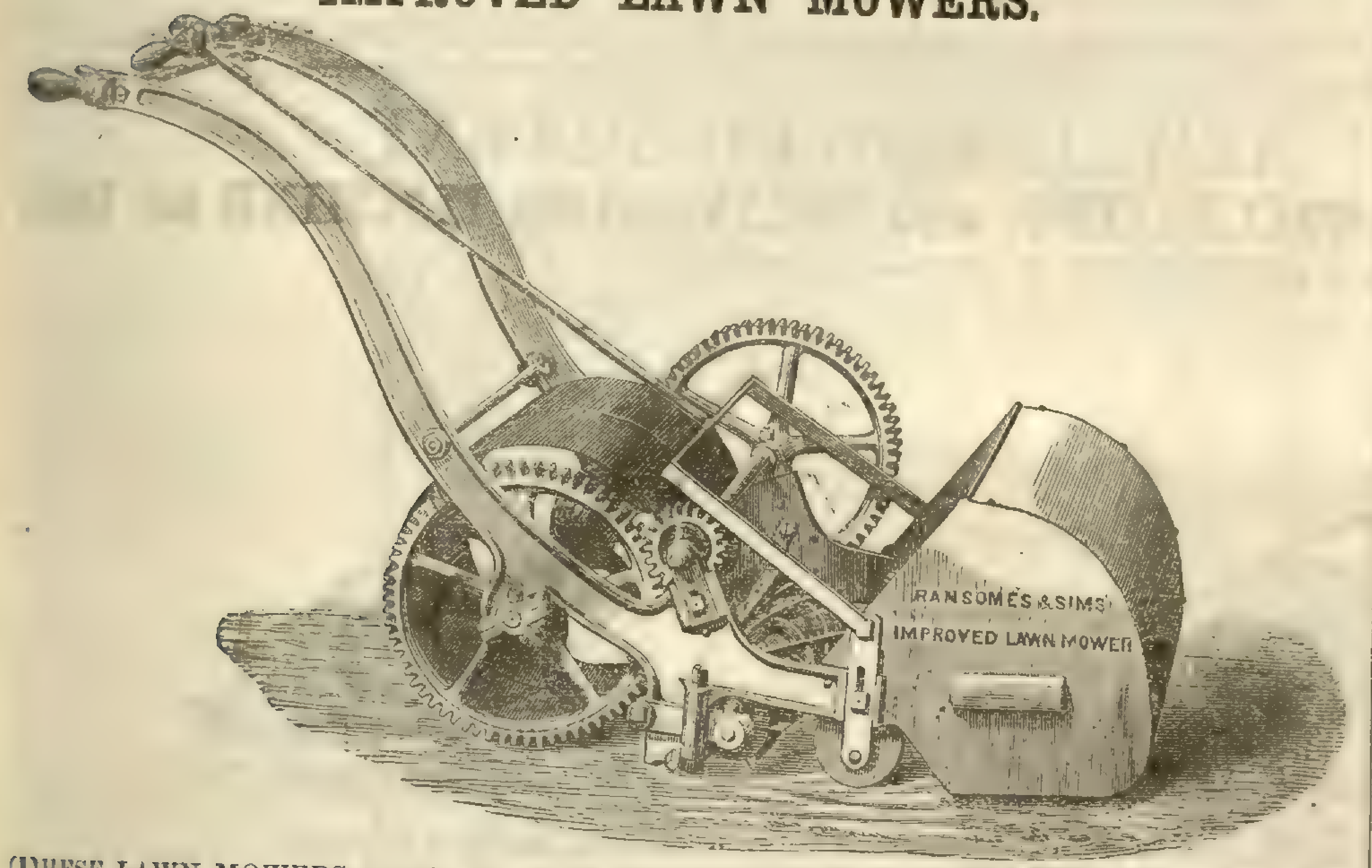
MANUFACTURERS OF

IMPROVED LAWN MOWERS.



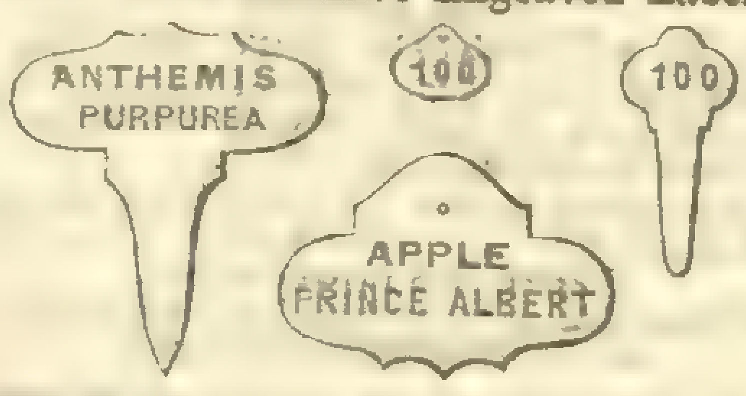
THESE LAWN MOWERS contain important improvements, rendering them efficient and perfect. They are made from new patterns designed so as to combine strength and lightness with simplicity of arrangement. They are light handy Machines, almost noiseless in work, and so easy to manage that persons unaccustomed to Mowing can cut Grass without any difficulty.

Price:—14-inch, £6 10s.; 16-inch, £7; 18-inch, £7 10s.; 20-inch, £8.

Packing Cases 8s. 6d. each, which will be allowed if returned in good condition, Carriage paid.

Carriage paid to any Station within 100 miles of London or Ipswich.

Patent Anti-Corrosive Engraved Labels.



A. J. BOOT, 25, Queen Street, Hulme, Manchester. —Sizes and prices with sample sent to all parts of the Kingdom on receipt of two postage stamps.

JOHN WARNER AND SONS,
BELL and BRASS FOUNDERS to HER MAJESTY,
HYDRAULIC ENGINEERS, BRAZIERS, &c.,
8, Crescent, Cripplegate, London, E.C.

No. 35.

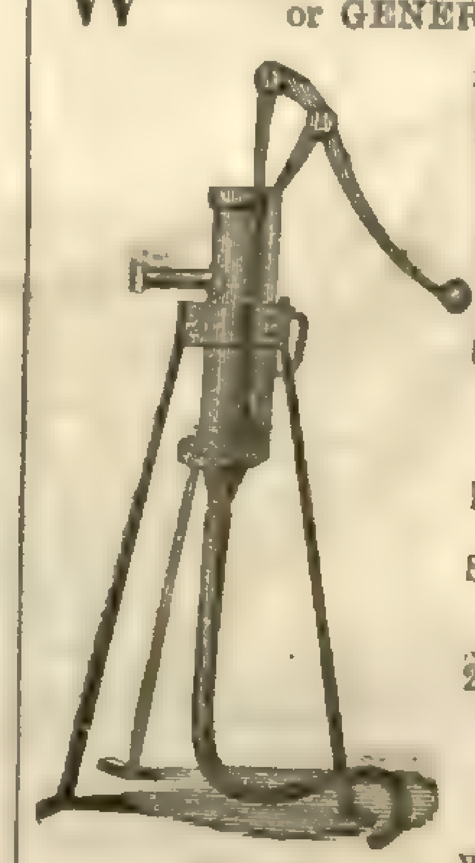
WARNER'S PATENT CAST-IRON PUMP, for raising Water from Wells not exceeding 25 feet in depth.

Diameter of Barrel.	Height.		£ s. d.
2½ in. short	1 ft. 7 in.	Fitted for lead, gutta percha or cast iron flanged pipe as required.	1 1 0
2½ ,, long	3 ,, 3 ,,		1 10 0
3 ,, ditto	3 ,, 6 ,,		2 4 0
3½ ,, ditto	3 ,, 6 ,,		2 9 0
4 ,, ditto	3 ,, 6 ,,		2 18 0

2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing 2 0 0
2½ ,, long ditto ditto ditto 2 14 0

This Pump is fitted with J. W. & SONS' Patent Vibrating Standard, Improved Revolving Cap, Metal Bucket, and Brass Suction Valve. By means of the Revolving Cap the handle can be shifted to the right or left hand, or opposite the nose, as desired.

WARNER'S IMPROVED LIQUID MANURE or GENERAL PORTABLE PUMP.



No. 42.

This Pump is fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

	£ s. d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2 15 0
If fitted with Barrel of Planished Copper	3 4 0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2 0 0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires, in either 10, 12, or 15 feet lengths .. per foot	0 2 5

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2*l.* 5*s.*

Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.

J. W. & SONS' Illustrated Catalogue forwarded post free on application.

The above may be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, JOHN WARNER & SONS, 8, Crescent, Cripplegate, London, E.C.

PHOSPHO GUANO.

PETER LAWSON & SON, GENERAL CONTRACTORS,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. VOELCKER, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.

(Signed) "AUGUSTUS VOELCKER."

Opinion of Dr. ANDERSON, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.

(Signed) "THOMAS ANDERSON."

Opinion of Dr. STEVENSON MACADAM, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for the Root Crops.

(Signed) "STEVENSON MACADAM."

Opinion of Dr. HODGES, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.

(Signed) "JOHN F. HODGES."

Opinion of Dr. APJOHN, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows or Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l.* 9*s.* 8*d.* per ton.

(Signed) "JAMES APJOHN."

Price, Free on Rail, £12 5s. per Ton, Bags included.

*** *None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

PETER LAWSON & SON, 27, GREAT GEORGE STREET, WESTMINSTER, LONDON, S.W.

Important to Seedsmen and Nurserymen.
SACKS AND BAGS.

JAMES T. ANDERSON, SACK and BAG MAKER, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), continues to supply SEED BAGS at the following low prices :—

2 Bushel Bags. .8s. 9d. per doz. | ½ Bushel Bags. .4s. 9d. per doz.
1 Bushel Bags. .6s. 3d. ,, | Peck Bags . . . .3s. 6d.

Coarser Bags much cheaper.
3 Bushel Grass Bags at 1s. each | 4 Bushel Sacks at 1s. each.
All orders promptly executed.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

SAMUELSON'S LAWN MOWING MACHINES,

WITH MANWARING'S PATENT NOISELESS GEAR, AND BOYD'S PATENT SELF-CLEANING BRUSH. Also,

SAMUELSON'S IMPROVED GARDEN ENGINES, WATER BARROWS, SYRINGES, WIRE NETTING, &c.

CATALOGUES FREE, ON APPLICATION TO BRITANNIA WORKS, BANBURY, OR TO

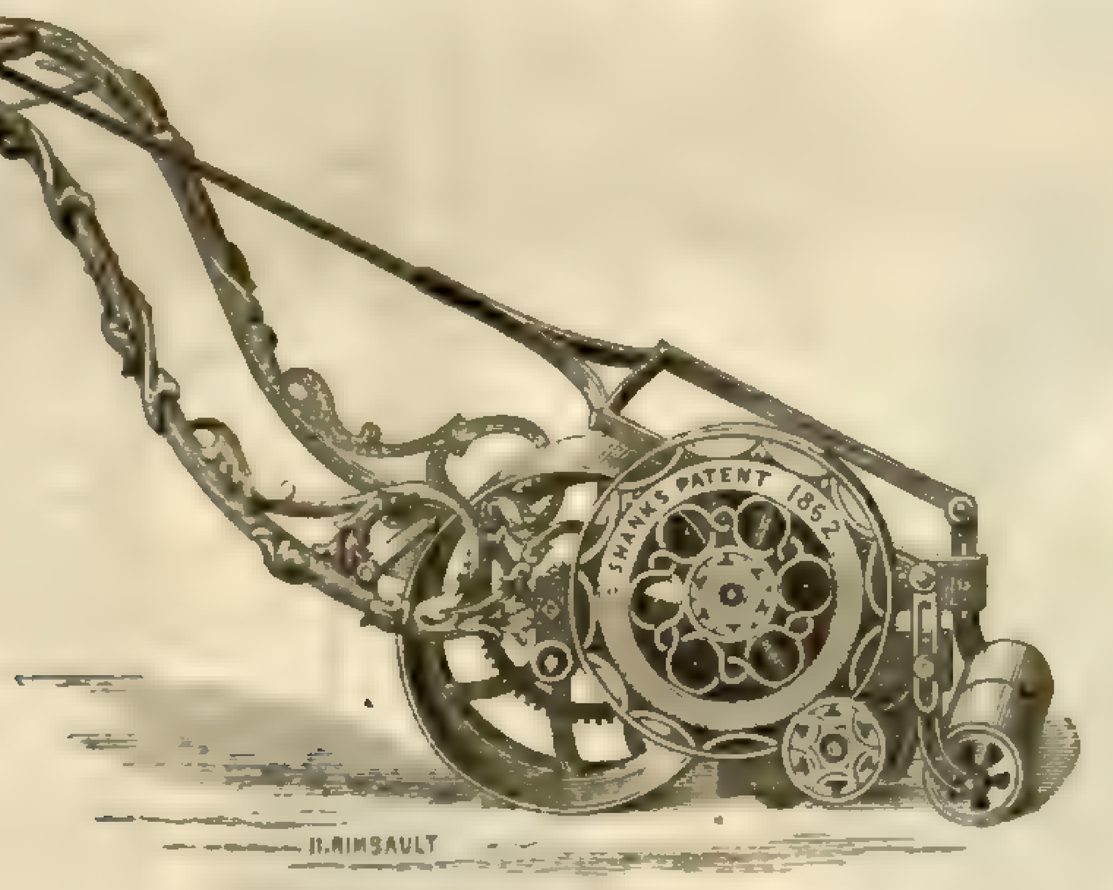
MR. SAMUELSON'S LONDON WAREHOUSE, 76, CANNON STREET WEST, CITY,

WHERE SAMPLES MAY BE SEEN.

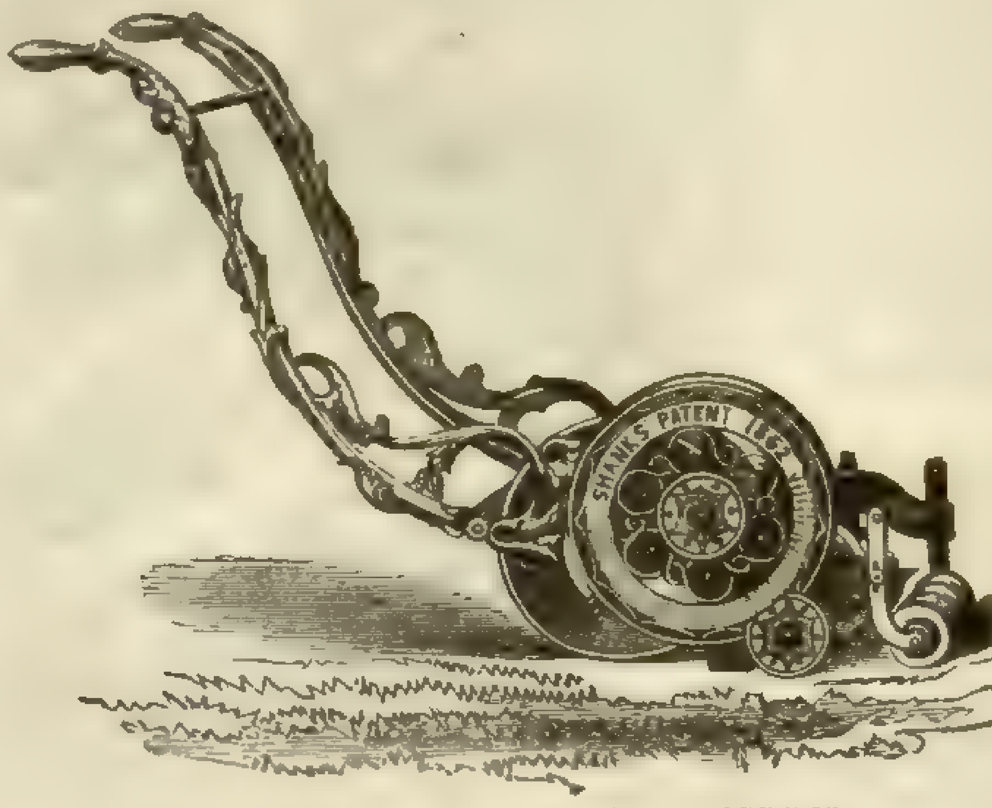
DEPOTS also at SHREWSBURY, YORK, STOCKTON, and NEWCASTLE. Dublin Warehouse: 12, PARLIAMENT STREET, ESSEX BRIDGE.

SHANKS' NEW IMPROVED PATENT
LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

WITH SILENT MOTION IF SPECIALLY DESIRED.



LARGE HAND MACHINE.



12-INCH, or LADY'S MACHINE.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.		
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0	*Drawn by a Horse.*
No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40s.; for Nos. 3 and 4 Machines, 30s.; Box, with complete Set of Tools, 10s.; Silent Movement, 20s.; Boots for Horses' Feet, 24s. per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | Width of Cutter. No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30s.; for No. 7 Machine, 25s.; Box, with complete Set of Tools, 7s. 6d.; Silent Movement, 12s. 6d.; Boots for Pony, 21s.; Donkey, 16s. per set.

PRICES.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.		
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*
No. 9.—22-inch Machine	8 7 6	*Easily Worked by Two Men.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*
No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man*
No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25s.; Box, with complete Set of Tools, 5s.; Silent Movement, 7s. 6d. extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Messrs. SHANKS have also brought out this season a new SMALL MACHINE, of the same graceful model as their other Hand Machine, which is specially intended to be used by Ladies or Gentlemen for recreation or amusement in the Flower Garden, and for Small Gardens where no regular Gardener is kept. This elegant and neat Machine has three great recommendations, viz.:—it is very cheap, very light, and very easily worked. Not the least difficulty or trouble need be anticipated in the management or working of this Machine, while the work executed is not only vastly superior to the Scythe, but a great deal sooner accomplished. No person having a Lawn, however small, should be without one of these useful Machines.

PRICES, including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.		
No. 16.—16-inch Machine ...	£6 5 0	*Easily worked by a Stout Lad.*
No. 17.—14-inch Machine ...	£5 15 0	*Easily worked by a Stout Lad.*
No. 18.—12-inch Machine	£5 5 0	*Easily worked by a Lady.*

Silent Movement, 7s. 6d. extra. (Nos. 16, 17) — Silent Movement, 4s. extra. (No. 18)

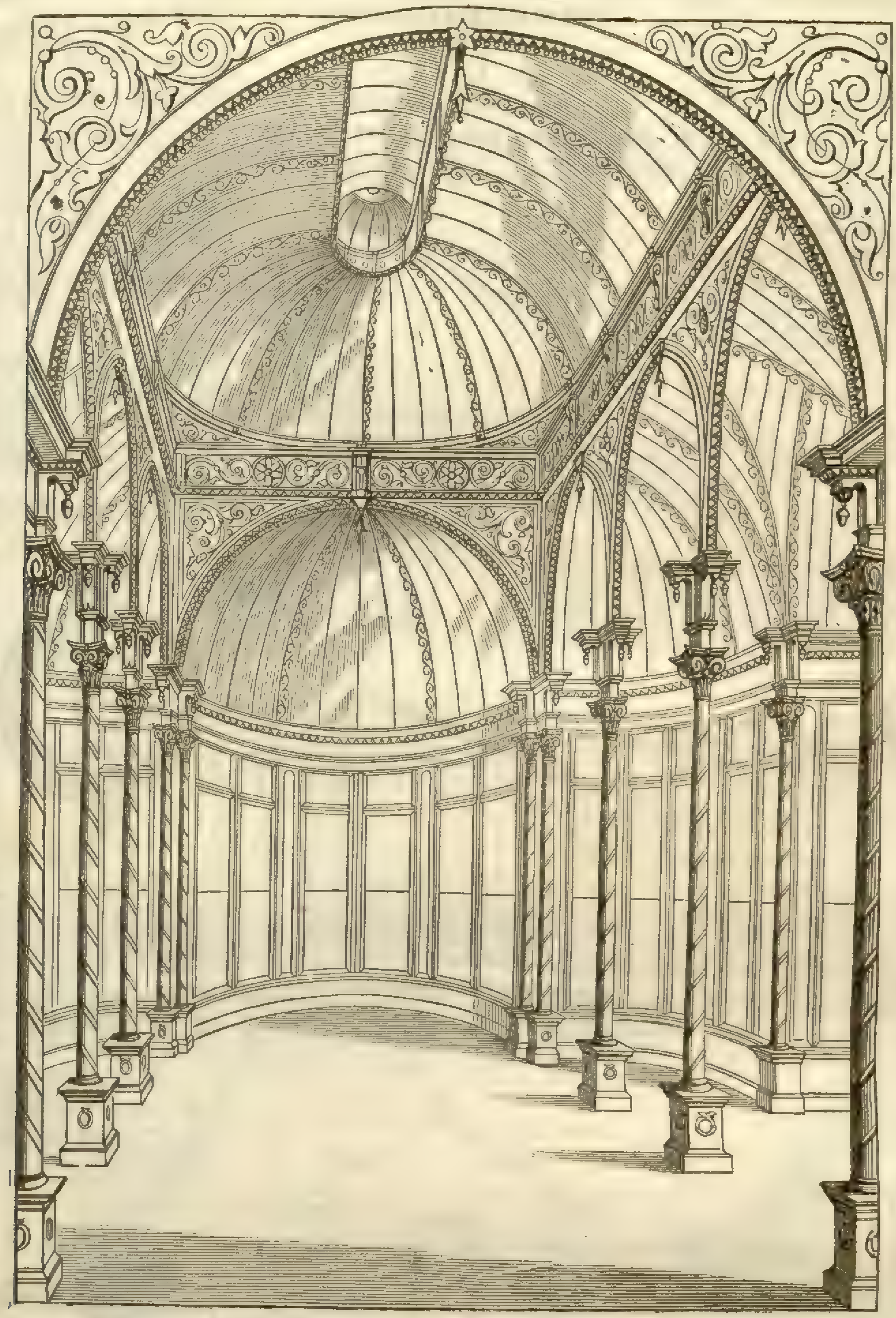
The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

*** *The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

SOLE AGENTS FOR LONDON:

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.



INTERNATIONAL EXHIBITION.

CLASS 9, OPEN COURT, EASTERN ANNEXE.

H. ORMSON

Most respectfully begs to call the attention of the Nobility, Gentry, &c., to the INTERIOR VIEW of the CONSERVATORY as above represented, which is now **ERECTED for EXHIBITION as a SPECIMEN of his ABILITY to DESIGN and BUILD such STRUCTURES**;

and which on inspection he flatters himself will be found to combine

NOVEL and BEAUTIFUL OUTLINE, CHASTENESS and ELEGANCE in DETAIL, with STRENGTH and LIGHTNESS of CONSTRUCTION.

An External View of which recently appeared in the *Gardeners' Chronicle.*

***** THIS CONSERVATORY is for SALE.**

H. Ormson *having a most complete Set of Steam Power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.*

ORCHARD HOUSES on Mr. RIVERS'S PLAN,

Fixed on Cast Iron Posts requiring no Brickwork. These houses will be found cheaper than those advertised by any other Builder. The prices given will include Cast, Iron Posts and Fixing.

For Ormson's PATENT JOINTLESS TUBULAR BOILERS, see former Advertisements in the *Gardeners' Chronicle.*

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, Horticultural Builder to Her Majesty,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

HORTICULTURAL BUILDINGS, with KENT'S PATENT WEATHERPROOF GLAZING.
A. KENT, 62, South Street, Chichester.

WILLIAM HURD, HORTICULTURAL BUILDER and HOT-WATER APPARATUS MANUFACTURER, Radnor House, Radnor Street, King's Road, Chelsea, S.W. TUBULAR BOILERS, from 3 guineas.

E. DENCH'S HORTICULTURAL WORKS, 152, King's Road, Chelsea, S.W., Manufacturer of every description of HORTICULTURAL BUILDINGS either in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without.
HOT WATER APPARATUS Manufacturer.

West of England, Ireland, and Wales.

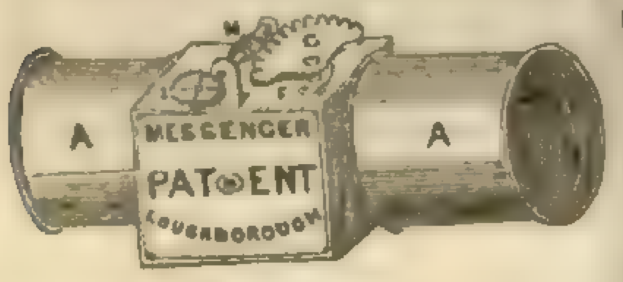
VINCENT SKINNER (late Partner with J. WEEKS & Co.), erects CONSERVATORIES, HOTHOUSES, and HOT-WATER APPARATUS.

His improved Pipe Boilers, which give such universal satisfaction for Warming Churches and Hothouses, will heat from 100 to 2000 feet of Pipe.

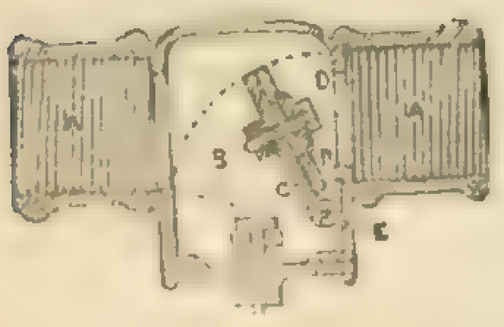
Plans and Estimates on application to V. SKINNER, Bridewell Street, Bristol.

MUSGRAVE'S PATENT STABLE FITTINGS and HARMLESS LOOSE BOXES, PATENT IRON COW HOUSE FITTINGS, and IRON PIGGERIES.

These inventions are recommended as possessing numerous advantages not to be found in anything hitherto made. At the late Meeting of the Royal Agricultural Society at Leeds, MUSGRAVE BROTHERS received a Silver Medal, and two Awards of "Highly Commended," being the only Prizes conferred on any competitor in this class.
Particulars sent on application to the Inventors and Makers, MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.



ELEVATION.



SECTION.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough, has recently patented a Valve which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under.

Two-inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s.

A liberal discount to the Trade.

Hothouses for the Million.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to any Railway Station round London.
Illustrated Circulars, with Lists of Prices, can be had on prepaid application to SAMUEL HEREMAN, 7, Pall Mall East, London.

JAMES WATTS AND CO., HOTHOUSE BUILDERS and HOTWATER APPARATUS MANUFACTURERS, near the Green Man, Old Kent Road, London, S.E.

200 CUCUMBER and MELON BOXES and LIGHTS, and from
400 to 500 LIGHTS for PITS of all SIZES kept in STOCK.
Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.
References to the Nobility, Gentry, and Trade in most of the counties in England.

JOSEPH SMITH, New Road, Hammersmith, calls attention to his Prices for ready-made GREENHOUSES. Lean-to, 23 ft. 6 in. by 12 ft. 6 in., 32l.; ditto, 23ft. 6 in. by 11 ft. 6 in., 28l.; ditto, 94 ft. 6 in. by 13 feet, glazed 21 oz. glass, 94l. 10s.; Span-roof, 27 ft. by 10 ft., 45l.; ditto Vinery, 47 ft. long, sides roof, 14 ft., 75l.; Second-hand Lean-to, 12 ft. by 7 ft., 15l. A large assortment of LIGHTS in Stock, well painted; those glazed with 15-oz. glass 8d. per foot, with 21 oz., 9d. per foot.

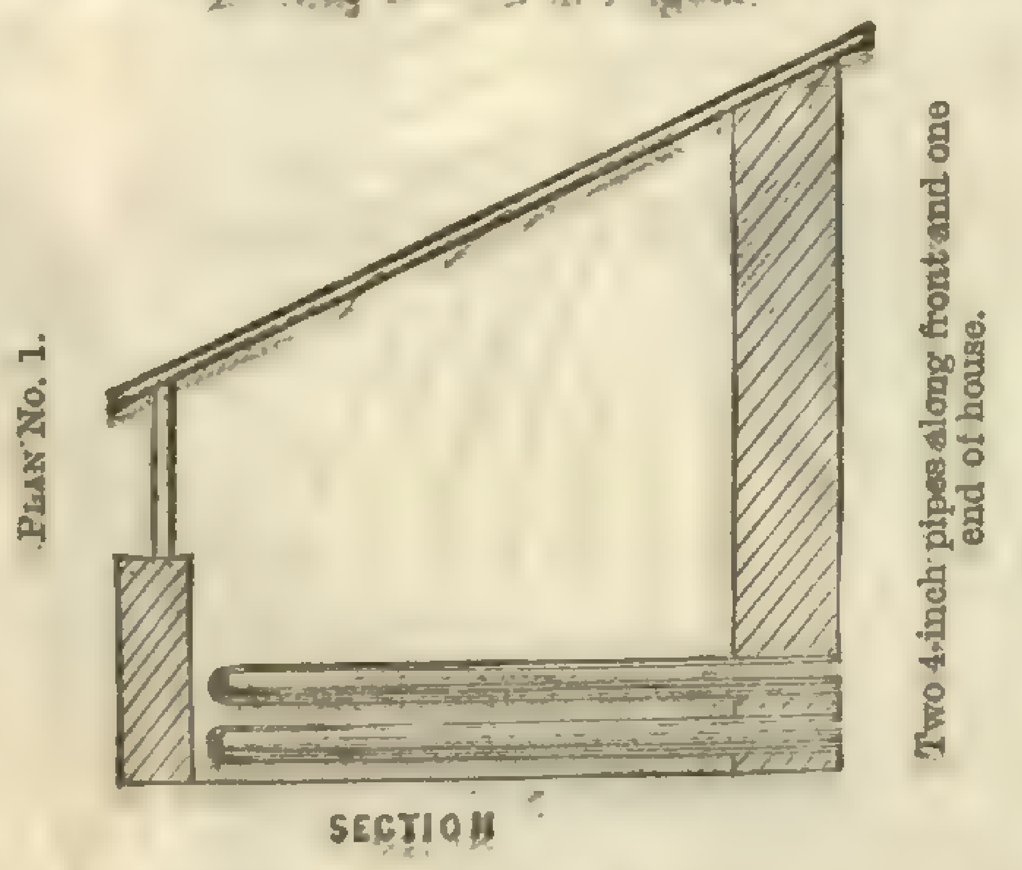
HOT-WATER APPARATUS.

J. JONES

BEGS TO OFFER A COMPLETE

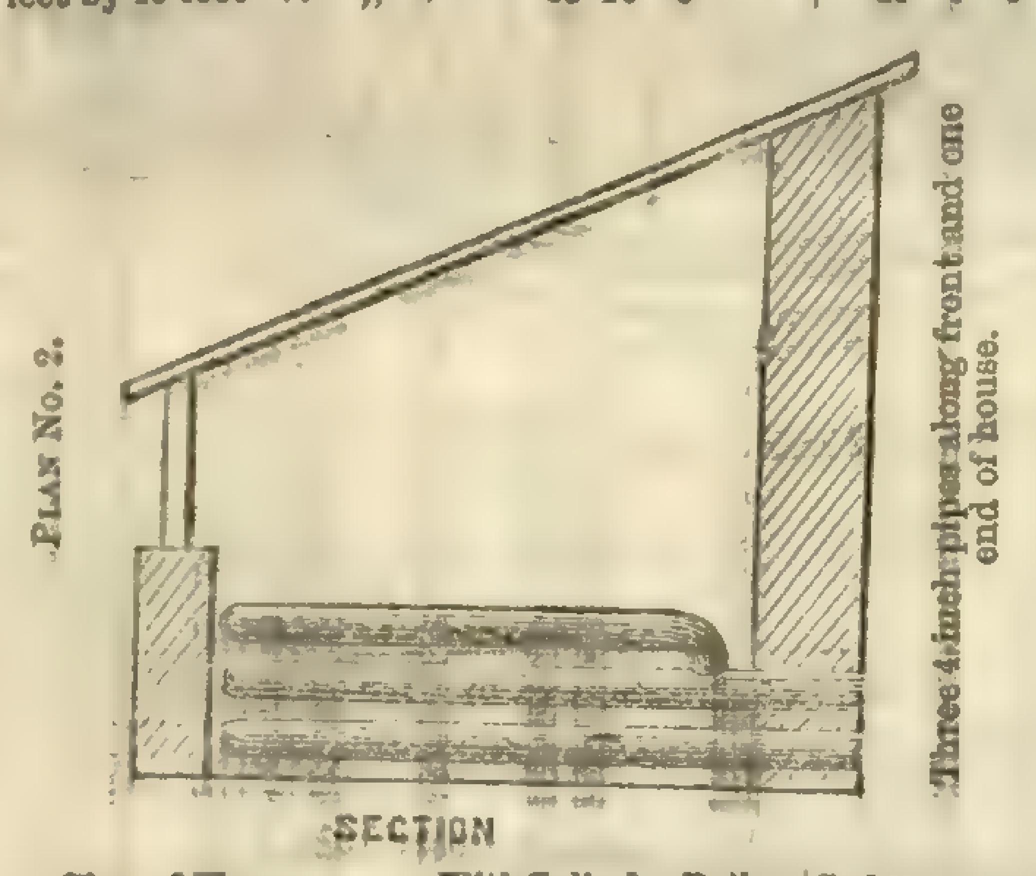
Hot-Water Apparatus for Houses

according to the following Plans, delivered Free to any Railway Station in England.



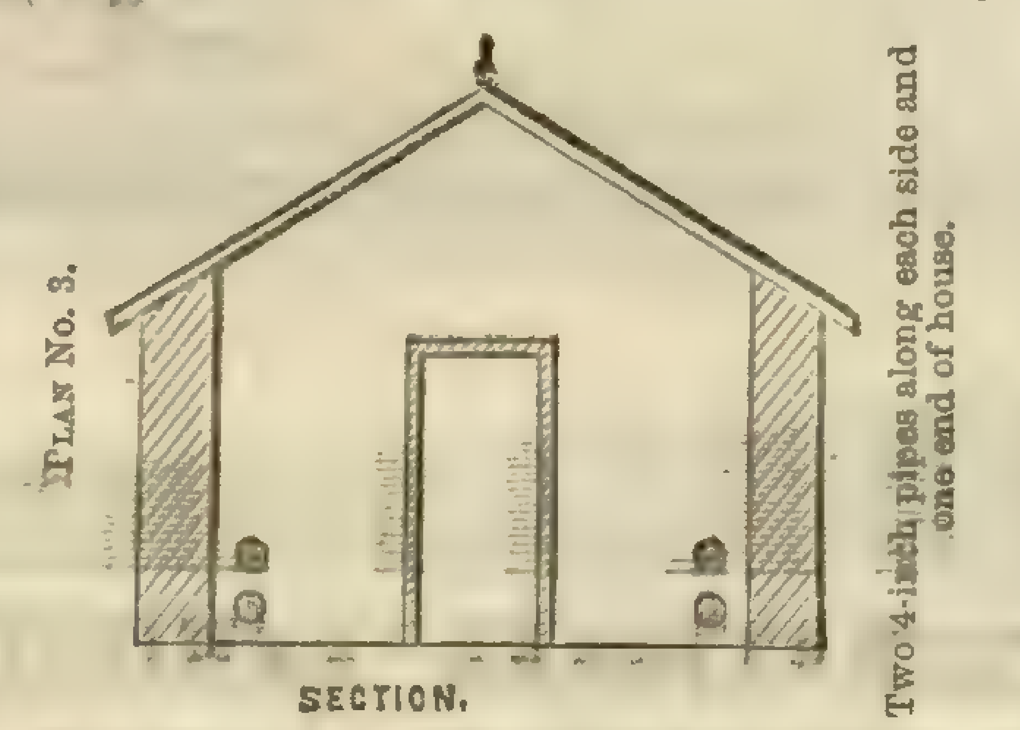
SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£8 0 0	£8 12 6
20 feet by 10 feet ..	"	8 10 0	9 0 0
25 feet by 12 feet ..	"	10 0 0	10 10 0
30 feet by 12 feet ..	"	11 10 0	12 0 0
40 feet by 15 feet ..	"	16 10 0	17 0 0
50 feet by 15 feet ..	"	18 10 0	20 0 0



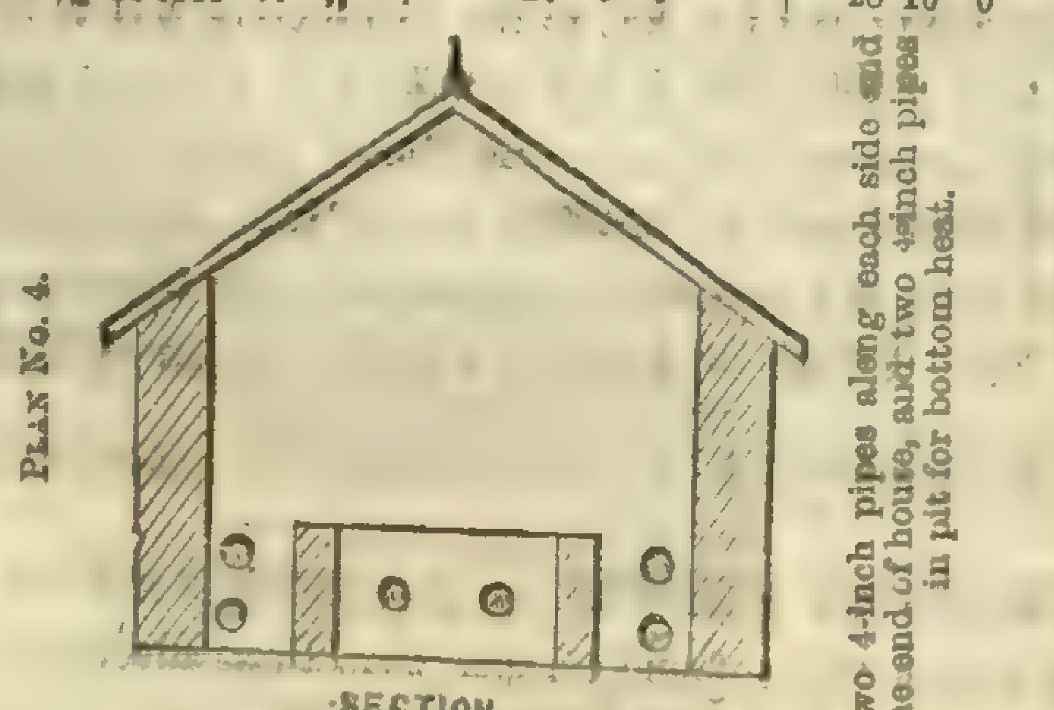
SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£11 10 0	£12 0 0
20 feet by 10 feet ..	"	12 10 0	13 0 0
25 feet by 12 feet ..	"	14 10 0	15 0 0
30 feet by 12 feet ..	"	16 10 0	17 0 0
40 feet by 15 feet ..	"	22 0 0	23 0 0
50 feet by 15 feet ..	"	24 10 0	26 0 0



SECTION.

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£12 10 0	£13 0 0
20 feet by 10 feet ..	"	13 10 0	14 0 0
25 feet by 12 feet ..	"	16 10 0	17 0 0
30 feet by 12 feet ..	"	19 0 0	20 0 0
40 feet by 15 feet ..	"	24 10 0	25 10 0
50 feet by 15 feet ..	"	27 0 0	28 10 0



SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£16 0 0	£17 0 0
20 feet by 10 feet ..	"	17 10 0	18 10 0
25 feet by 12 feet ..	"	21 10 0	22 10 0
30 feet by 12 feet ..	"	25 0 0	26 0 0
40 feet by 15 feet ..	"	31 0 0	32 0 0
50 feet by 15 feet ..	"	33 10 0	35 0 0

The above prices include Boiler, strong Furnace-doors, Bars, Plate, Soot-doors, Damper, and Supply Cistern-pipes of 4-inch diameter, Elbows, &c.; all of the best quality.
Delivered free to any Railway Station in England. Terms: Nett Cash.
Estimates will be sent for the work fixed complete, or further particulars on application to
J. JONES, Hot-Water Apparatus Manufacturer, 6, Bankside, London, S.E.

Card.
SAMUEL N. McGERROW, GENERAL HORTICULTURAL BUILDER, Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

Horticultural Buildings and Heating by Hot Water.
BURY AND POLLARD, PARK IRON WORKS, New Park Street, Southwark, S.E., Manufacturers of every description of Buildings for Horticultural Purposes, with their Improved CONICAL BOILER for heating the same, are prepared to undertake works of any magnitude, and refer among others to the celebrated range of Forcing Houses at Her Majesty's Gardens, Frogmore, and at Sir Robert Peel's, Drayton Manor, constructed under the superintendence of their Manager, Mr. JOHN JONES.
Further information forwarded on application.

Horticultural Works and Hot-Water Apparatus Manufactory,
Kensal Green, Harrow Road, London, W.
JOHN TAYLOR AND SON beg to call the attention of the nobility and gentry to the very superior manner in which they ERECT all kinds of CONSERVATORIES, VINERIES, GREENHOUSES, &c., combining every improvement with elegance of design and durability of materials and workmanship.
Their VENTILATING APPARATUS for the Fronts and Roofs of Houses has given the highest satisfaction. Churches, Chapels, Schools, Entrance Halls, Public Buildings, &c., heated with Hot-Water Apparatus in a most economical and efficient manner.
J. T. & SON have great pleasure in referring to numbers of the nobility and gentry by whom they are extensively engaged.

JOSEPH HAYWOOD AND CO.,
MANUFACTURERS OF
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kinds of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield.

Grass Mowing Machines.
BURGESS AND KEY'S GRASS MOWING MACHINES are constructed to cut the heaviest crops of Grass, both the wheels being geared, and sufficient weight in the machine to give grip on the ground. As there is every prospect of the Grass being heavy this season, B. & K. draw special attention to the following Extract from the Report of the Engineer of the Royal Agricultural Society of the trial of Mowers at Leeds: "but there is reason to fear that the Machine [Wood's] would be too light for heavy crops."
"BURGESS & KEY'S was strong, well made, and suitable for the cutting of heavy crops."
Price of BURGESS & KEY'S Mower, 25l. Combined Reaper and Mower, 30l.
BURGESS & KEY, 95, Newgate Street, London, E.C.

Garden Engines and Syringes.
J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

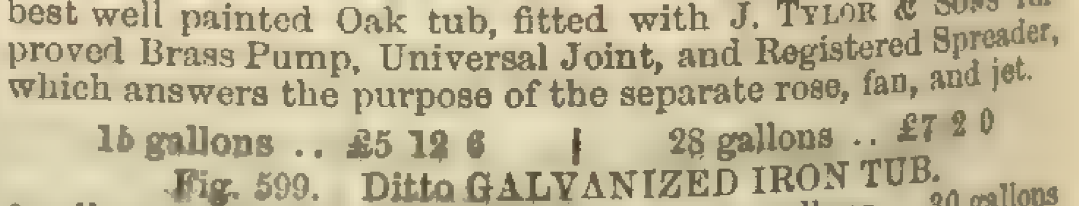


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

15 gallons .. £5 12 6 | 28 gallons .. £7 2 0

Fig. 599. Ditto GALVANIZED IRON TUB.

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15 0	£3 5 0	£3 15 0	£5 0 0	£5 18 0

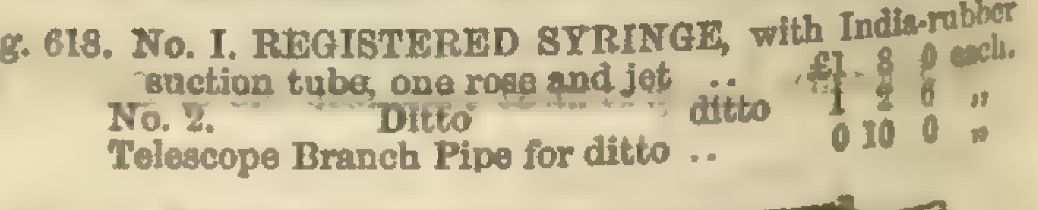


Fig. 618. No. I. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. £1 8 0 each.
No. 2. Ditto ditto 1 2 6 "
Telescope Branch Pipe for ditto .. 0 10 0 "

Fig. 619. Large GARDEN SYRINGE, with one rose and jet .. .. 11s. 6d. each
" 620. Middle Ditto ditto 10 3 "
" 621. Small Ditto ditto 9 0 "
" 622. LADIES GARDEN SYRINGE, with do. 7 6 "

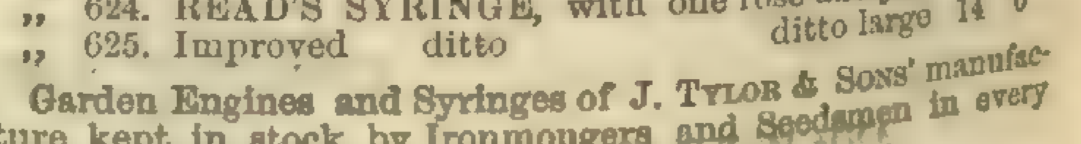


Fig. 623. READ'S SYRINGE, with two roses and one jet, 17s. 6d.
" 624. READ'S SYRINGE, with one rose and jet, 15 0
" 625. Improved ditto ditto large 14 0

Garden Engines and Syringes of J. TYLOR & SONS' manufacture kept in stock by Ironmongers and Seedsmen in every part of the United Kingdom.
J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

TANNED NETTING for the Protection of Fruit Trees, at 1*d.* per square yard; 200 yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Cotton Netting, Tiffany, Scrim Canvas for Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c.

Be particular, JOHN EDGINGTON & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

TANNED NETTING at Reduced Prices.—200 square yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Scrim Canvas for Wall Fruit, Greenhouse Shades and Tulip Covers.

Address in full, FREDERICK EDGINGTON, Marquee, Flag, and Banner Manufacturer, Thomas Street, Old Kent Road, London, S.E.

TANNED GARDEN NETTING for preserving Seed Beds, Fruits, Strawberries, from frost, blight, birds, &c., and as a Fence for fowls, &c. 1 yard wide, 1½*d.*; 2 yards, 3*d.*; 3 yards, 4½*d.*; and 4 yards, 6*d.* per yard, in any quantity, may be had at CHAS. WRIGHT'S, 376, Strand, W.C.

GREENHOUSE and FLOWER-POT STICKS VARNISHED:—1 foot, 3*d.*; 1½, 4*d.*; 2, 5*d.*; 2½, 7*d.*; 3, 10*d.*; 4, 1*s.* 6*d.* per dozen. DAHLIA STICKS VARNISHED, per dozen:—3 feet, 1*s.* 6*d.*; 4, 2*s.* 3*d.*; 5, 3*s.*; 6, 3*s.* 6*d.* An allowance to Nurserymen.

NETTING for Fruit Trees, Seed Beds, Ripe Strawberries, &c. TANNED NETTING for protecting the above from frost, blight, birds, &c., 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.*; 4 yards wide, 6*d.* per yard, or 50 yards, 20*s.* NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 5*d.* per yard; 4 yards wide, 10*d.* per yard; 6 yards wide, 1*s.* 3*d.* per yard; ¾-inch mesh 4 yards wide, 1*s.* 4*d.* per yard.

Can be had in any quantity of EATON & DELLER, 6 and 7, Crooked Lane, London Bridge, E.C.

BRITTAIN'S PATENT GARDEN NETTING will be found superior to every other article for the protection of Fruit Trees from frost, birds, &c.; whilst rendering this service light and air are not impeded. It is also a beautiful Shading for Hothouses, and is cheaper, being more durable than any kind of Tiffany, or other material in use. NETTINGS, No. 1, 15*s.*; No. 2, 18*s.* 9*d.*; and No. 3, 22*s.* 6*d.* per piece, or 4*d.*, 5*d.*, and 6*d.* per square yard. Pieces, 30 yards long, 55 inches wide. GARDEN MATS, highly recommended, 50 by 70 inches, 2*s.* each.

Agents: ROBT. HEINEKEY & Co., 20, Harp Lane, Tower Street, London, E.C.

BENJAMIN EDGINGTON, 2, Duke Street, foot of London Bridge, S.E., MARQUEE, TENT, RICK-CLOTH, and FLAG MANUFACTURER. RICK-CLOTHS.—New and Second-hand, with Poles and Ropes complete.

NETTING and BUNTING for preserving Fruit Trees from Frost and Birds, &c. Also Sacks and Bags, Rope, Garden Mats, Waggon Cloths, Horse Cloths, &c.

N.B. The Charing Cross business having been removed, the ONLY ESTABLISHMENT is at 2, Duke Street, London Bridge, S.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern

for Cottage Houses, &c., to contain 50 gallons, 26*s.*; 80 gallons, 31*s.* each; and 140 gallons, 37*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

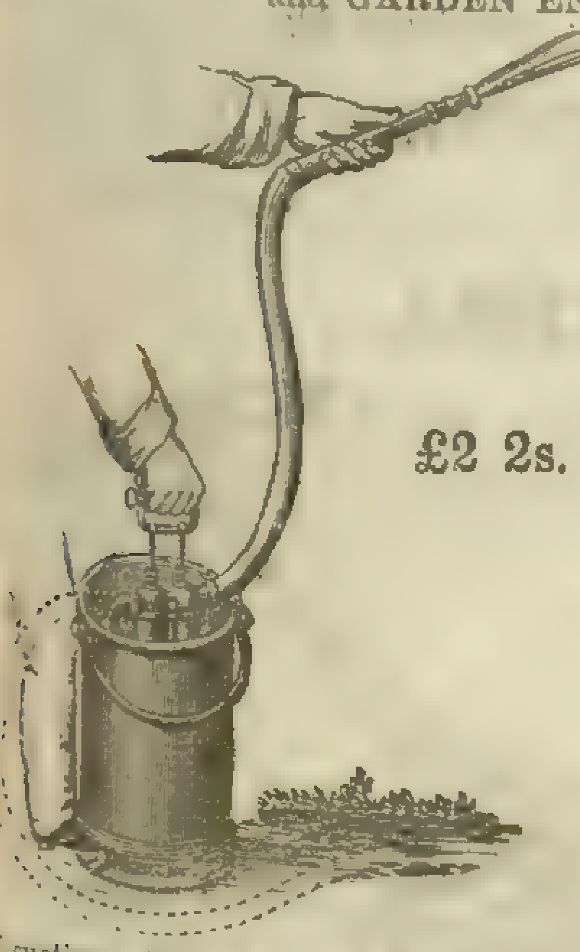
Galvanised Iron Pumps

for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

Galvanised Iron Swing Water Barrows

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35*s.* 0*d.* each.

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.



£2 2s.

An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.

One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.

It is an effective Garden Engine for cleansing or syringing wall-fruit or Rose Trees, Plants, or Vines.

It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.

No establishment, either private, commercial, or manufacturing, should be without one.

6 feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12*s.* Longer lengths of Suction at 1*s.* 6*d.* per foot.

May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,

JOHN WARNER & SONS, 8, Crescent, Cripplegate, London, E.C.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the COLD WINDS & MORNING FROST. "FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. 1*s.* 6*d.* per yard run.
Four yards wide .. .. 3*s.* per yard.
An improved make, 3 yards wide, 2*s.* 6*d.* per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1*s.* 4*d.* per yard run.

ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.

Manufactory: Stoke-upon-Trent.—May 10.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

TO BE SOLD, the unexpired Term of a LEASE for 8 or 12 years, dated Michaelmas, 1860, of a capital FARM in North Hants, with good Residence and 146 Acres of excellent Land, 43 Acres being Pasture, 80 Acres Arable, and 23 Acres Wood, with suitable Farm Buildings and Labourers' Cottages. The covenants are liberal, and immediate possession may be obtained by a Tenant to be approved by the landlord, and who will take live and dead Stock, Crops, Tillages, &c., at a valuation.

For further particulars apply to Mr. JOSEPH BLUNDELL, Land Agent, &c., Bursledon, Southampton.

TO BE LET on LEASE, LLANGWARREN FARM in Pembrokeshire, 12 miles from Haverfordwest Station, consisting of 475 Acres, about one half Pasture. The Land has been in the hands of the owner for the last 10 years, and is in a high state of cultivation. The Feeding-sheds will hold 100 Head of Cattle.

Apply to J. B. LAWES, 1, Adelaide Place, London Bridge, E.C.

Morecambe Bay.

TO BE LET for a Term, Furnished, the HOUSE and ESTATE called BLAWITH END, close to the Railway Station at Grange, in North Lancashire, on the Ulverstone and Lancaster Railway; with 6-stalled Stable, Farm Buildings, Pasture, Meadow Lands and Woods adjoining; aspect South, with complete Drainage, Ventilation, and Water Supply; 12 Bed, Bath, and Dressing Rooms; Entrance Hall; Dining, Drawing, and Breakfast Rooms; Store Room, 2 Kitchens (with lift fitted complete), Butler's Pantry, and all necessary offices; Lavatory, 4 Waterclosets, &c.; Gardener's Cottage and Kitchen Garden. Land, 60 to 100 acres as agreed on, with use of grounds.

Grange is on Limestone; climate very similar to that of Devonshire. Its Railway distances are, 9 hours from London, about 3 hours from Manchester or Liverpool, and 6 miles from Windermere Lake.

Apply to W. E. MAUDE, Esq., Blawith, near Grange, North Lancashire; or to Messrs. ROBINSON & TOMLIN, Solicitors, 48, Conduit Street, London, W.

BLACK KERRY CATTLE.—Select animals of this valuable and small breed can be delivered in Cork by RICHARD G. CAMPION, Esq., Holly Hill, Bathcormac, who always holds a large stock of the same.

Sales by Auction.

IMPORTANT SALE OF THE REMAINDER OF
Jonas Webb's Renowned Flock of Pure Southdowns,
AT BABRAHAM, CAMBRIDGE.

MESSRS. STRAFFORD AND J. CARTER JONAS (who are jointly concerned on this occasion) have been honoured with Instructions from Mr. Jonas Webb, to SELL by AUCTION, without reserve, on WEDNESDAY, June 18 (the week previous to the Meeting of the Royal Agricultural Society of England), at Babraham, near Cambridge, the entire remainder of this celebrated Flock of Pure SOUTHDOWNS, being the Lambs from the Flock which was sold last year, and comprising about 200 YEARLING RAMS, and 350 YEARLING EWES, all bred by Mr. Webb, from his favourite animals, and more particularly by the Canterbury Prize Rams. In inviting the attention of Agriculturists and Southdown Breeders to this important event, the Auctioneers feel that the world-wide fame of the Babraham Flock renders it unnecessary to say more in a preliminary advertisement than to refer to the result of last year's sale, as a proof of the high esteem in which this Flock is still held, not only in England, but throughout America, Australia, Canada, France, Germany, and all parts of the Continent, and to remark that this sale offers to the public the last possible opportunity of purchasing pure Southdowns of Mr. Jonas Webb, as he has determined not to breed another Sheep for letting or sale.

☞ Further particulars will appear in future Advertisements, and Catalogues may in due time be obtained of Mr. STRAFFORD, 13, Euston Square, London; and of Mr. J. CARTER JONAS, Cambridge.

Bow.—Bedding Plants.

MR. J. WILLMER begs to announce that he has received instructions from Mr. M'Rae to SELL by AUCTION, on the Premises, Tredegar Nursery, Addington Road, Bow, E. on SATURDAY, May 17, at 12 o'Clock, 100,000 BEDDING PLANTS, comprising Calceolarias, Verbenas, Intermediate Stocks, Scarlet Geraniums, Heliotropes, Cupheas, Lobelias, Variegated Alyssum, Hydrangeas, Fuchsias, Pelargoniums, Salvias, Petunias, Ageratums, Variegated Geraniums, Crassulas, Gazania splendens, Cobœa scandens, Tropæolum canariensis, Clematis, Passiflora, &c.

May be viewed the day preceding and Morning of Sale, and Catalogues had on the Premises, and of the Auctioneer, Springfield Nursery, Sunbury, Middlesex, S.W.

Tulips, Tulips, Tulips.

MR. J. WILLMER begs to announce that he has received instructions from Mr. Batten to SELL by AUCTION, on the Premises, Brook Street, Upper Clapton, N.E., on MONDAY, May 26, at 12 o'Clock, his choice collection of TULIPS, which comprises most of the leading varieties in cultivation.

May be viewed One Week prior to the Sale, and Catalogues had on the Premises, and of the Auctioneer, Springfield Nursery, Sunbury, S.W.

Important Sale of Bedding Plants.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, May 13, at half-past 12 o'clock precisely, a CHOICE ASSORTMENT of BEDDING PLANTS, consisting of Geraniums, Calceolarias, Verbenas, Cupheas, Salvias, Pentstemons, Cinerarias, Alyssums, Heliotropes, Gazanias, &c., &c., all very healthy and well-grown plants, being the 2d portion of the Stock of 250,000.

On View the Morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS has received instructions to SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, May 14, at half-past 12 o'Clock precisely, the remaining portion of Dr. Butler's well-known Collection of ORCHIDS, about 150 Plants selected from his best varieties, and intended for his private growth, but will now be Sold without reserve. Also a Collection of Hybrid Seedlings AMARYLLIDÆ from seed saved from the finest varieties.

On view the Morning of Sale, and Catalogues had.

Importation of Orchids from the East Indies,
IN THE FINEST POSSIBLE CONDITION.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY, May 22, at half-past 12 o'Clock precisely, an Importation of Rare and Valuable ORCHIDS, comprising

Vanda Batemani	Cypripedium species nova
,, violacea	Dendrobium taurinum
Phalænopsis amabilis	Aerides quinquevulnerum
,, rosea	,, Warneri
,, Schilleriana	,, rubrum
Saccolabium species nova	&c., &c.

On view the Morning of Sale, and Catalogues had.

Choice Tulips.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. Charles Turner to SELL, at the Royal Nurseries, Slough, at 12 o'Clock on THURSDAY, May 15, 100 rows of his finest TULIPS, in bloom. Comment would be superfluous, as it is well known that the Slough Collection consists of the finest varieties in cultivation.

Catalogues of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.; or at the Royal Nurseries, Slough.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Bartholomew Lane, E.C., on FRIDAY, May 16, at 12 o'Clock, a choice collection of GREENHOUSE PLANTS, consisting of Azalea Indica, Ericas, Acacias, Geraniums, Calceolarias, and other plants in bloom; fine Climbing Roses, Rhododendrons, Kalmias, and Herbaceous Plants; with a selected assortment of Ornamental Plants for Bedding; Verbenas, Fuchsias, Dahlias, &c.

On view the Morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nursery, Leytonstone.

Camberwell.—10,000 Bedding and other Plants.
TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Taylor, to SELL by AUCTION on the Premises, Springfield Nursery, High Street, Camberwell, S., on SATURDAY, May 17, 1862, at 11 o'Clock, 10,000 Bedding and other PLANTS, consisting of fine Show Scarlet and Variegated Geraniums, Ericas, Acacia, Calceolarias, Fuchsias, Verbenas, Petunias, Lobelias, and other useful and Ornamental sorts.

May be viewed prior to the Sale, CATALOGUES may be had on the Premises, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

Vauxhall Nursery, late Chandler's.
IMPORTANT SALE. TO NOBLEMEN, GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Milne & Co., to submit to an unreserved SALE by AUCTION on the Premises, Vauxhall Nursery, Wandsworth Road, London, S., on THURSDAY and FRIDAY, May 29 and 30, at 11 o'Clock, in consequence of the Ground being required for Building Purposes, the whole of the valuable GREENHOUSE and STOVE PLANTS, including all the magnificent specimen CAMELLIAS which have rendered the Establishment famous for so many years, and which are well deserving the attention of Gentlemen requiring specimens for furnishing their Conservatories, being handsome and symmetrical in form, and perfectly safe to remove; very fine Azalea Indica suitable for exhibition, as well as half specimens and smaller plants fit for nurserymen; choice Ericas, Epacris, Boronias, Eriostemon, Acacia, Aphelexis, Cacti, Correa, Cyclamen, Daphne, Diosma, Ficus, Ardisia, Begonia, Achimenes, Amaryllis, Aphelandra, Croton, Allamandas, Dipladenias, &c., Lycopods, Ferns, Camellia Stocks, several thousand Bedding Plants of the usual assortment, together with seven Greenhouses, 11 ranges of Pits, Boxes, several hundred feet of 3 and 4 inch hot-water Piping, Conical and Saddle Boilers. Two nests of Seed Drawers and other shop Fittings, Barrows, Garden Engines, Implements and other effects.

May be viewed prior to the Sale Catalogues may be had on the Premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

Annual Sale—Star Nursery, Slough, Bucks.

MR. PREECE is instructed by the Proprietor, Mr. W. Bragg, to SELL by AUCTION, without reserve, on THURSDAY, May 15, at 12 for 1 o'Clock, upon the Premises, adjoining the Great Western Station, Slough, several Thousand choice BEDDING-OUT and other PLANTS, of various sorts, in first-rate condition, including Tom Thumb, Golden Chain, Lady Plymouth; Variegated and other first-class Geraniums, Hollyhocks, Dahlias, Pansies, Pinks, Picotees, Cloves, Camellias, Roses in pots, &c. &c.

May be viewed the Morning of Sale. Catalogues may be had at the Dumb Bell Inn, Taplow; on the Premises, Slough; of the Auctioneer, Maidenhead; and by post on application.

Tulips.

MR. WILMER is instructed to submit to PUBLIC COMPETITION on TUESDAY, May 27, on the Premises, adjoining Burt's Lime Works, Surrey Canal Bank, Albany Road, Camberwell, the COLLECTION of the late Mr. S. Gogay, comprising most of the leading varieties, among which are the following:—Rose Lac, Arlotte, Lady Helen Marr, Pandora Salvator Rosa, Strong's King, Walker's Duchess of Sutherland, Stein's Victoria, Thalia, Goldham's Fanny Kemble, John Kemble, Charles Kemble, Gem, Rose Unique, Julius Cæsar, Marc Antony, Star, Marquis of Anglesea, Marshal Soult, Fortunatus, Robert Burns, Sir R. Peel, Coriolanus, &c.

May be viewed the day prior to the Sale. Catalogues to be had on the Premises, and at the Fountain Tavern, Camberwell Gate; also of the Auctioneer, Springfield Nursery, Sunbury, S.W.

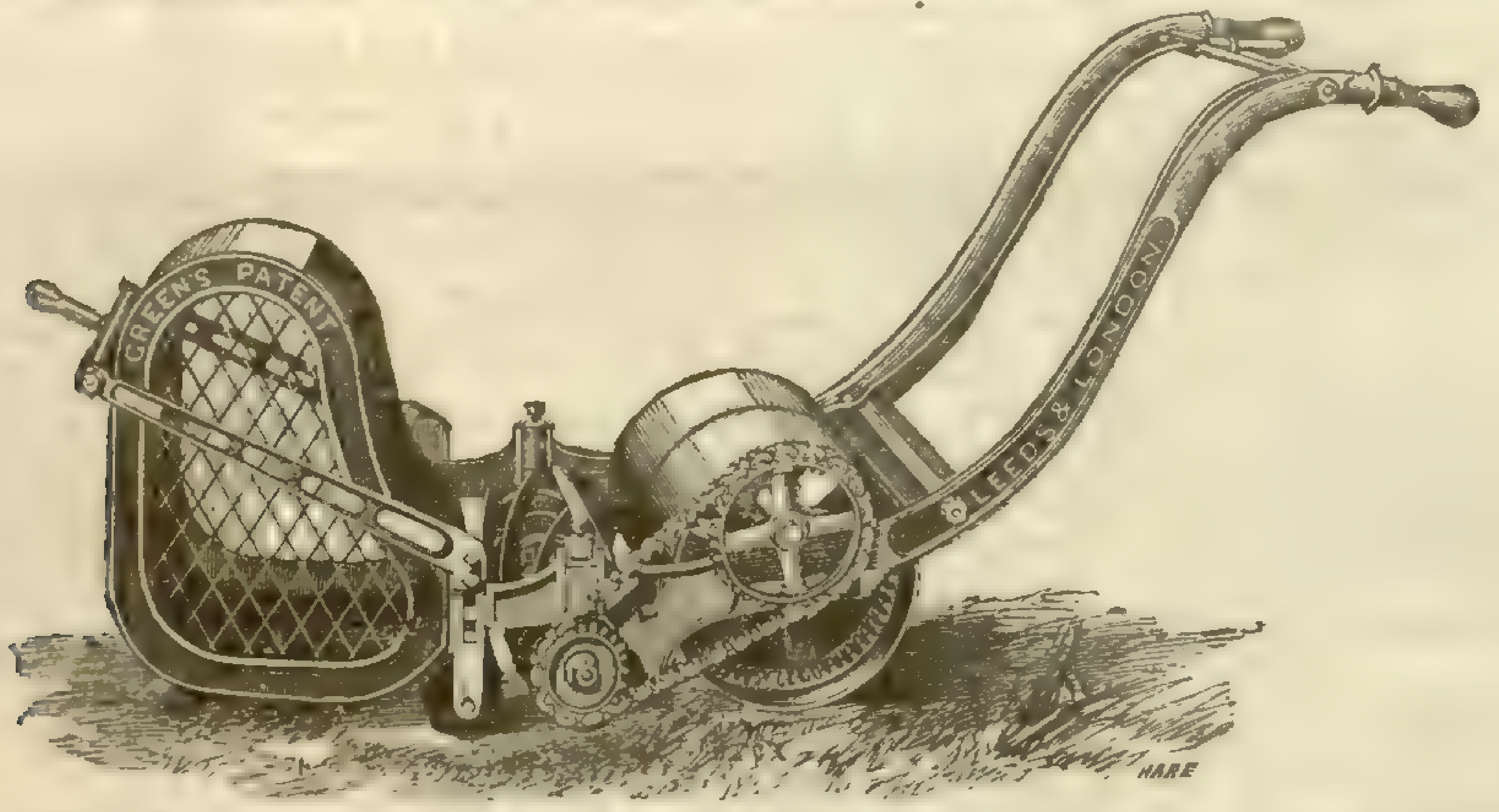
GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.



THOMAS GREEN can with confidence state that he has succeeded in bringing forward for the ensuing season a Machine which is so novel in its character that any person, however unskilled, is enabled to use it with confidence and ease; and by its thoroughly mechanical construction is pronounced by practical men to be the *ne plus ultra* of perfection. Every improvement that has suggested itself from past experience has been put to practical test, and the results are that the Machines for which Her Majesty's Royal Letters Patent *have recently been obtained* are immeasurably superior to anything of the kind ever brought before the Public. They combine all that efficiency and simplicity can express, and are calculated to keep Lawns in the highest state of perfection, which cannot be equalled by any other means. They are adapted both in size and price to the very smallest plots, as well as Lawns acres in extent.

Since their introduction the sale of these Machines has more than doubled each succeeding year, and has now attained *the largest sale of any Machine "extant;"* have proved to be the best, having carried off *every Prize* that has been given in all cases of competition. They are made from the best materials, and of superior workmanship; are delivered *Carriage Free* to all the principal Railway Stations and Shipping Ports in England; *are warranted to give satisfaction*, and if not approved can be at once returned, if sent carriage free to Leeds.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

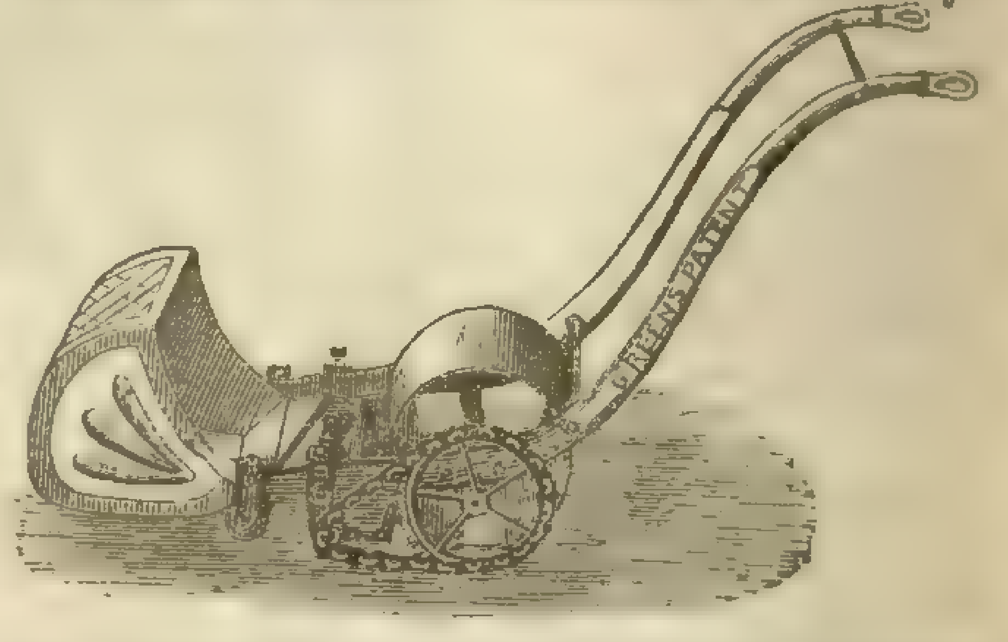
Suitable for One Man and Boy.

To Cut 18 inches	£7 10 0
To Cut 20 inches	8 0 0

Suitable for Two Men.

To Cut 22 inches	£8 10 0
To Cut 24 inches	9 0 0

To Cut 10 inches. Suitable for a Lady.



This Machine will be securely packed and forwarded Carriage paid to any principal Railway Station or Shipping Port in England, on receipt of Post Office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0 ...	... £21 10 0
To Cut 36 inches	23 0 0 ...	... 24 16 0
To Cut 42 inches	26 0 0 ...	... 28 2 0
To Cut 48 inches	29 0 0 ...	... 31 8 0

Leather Boots for Horse, per set, £1 4*s.*

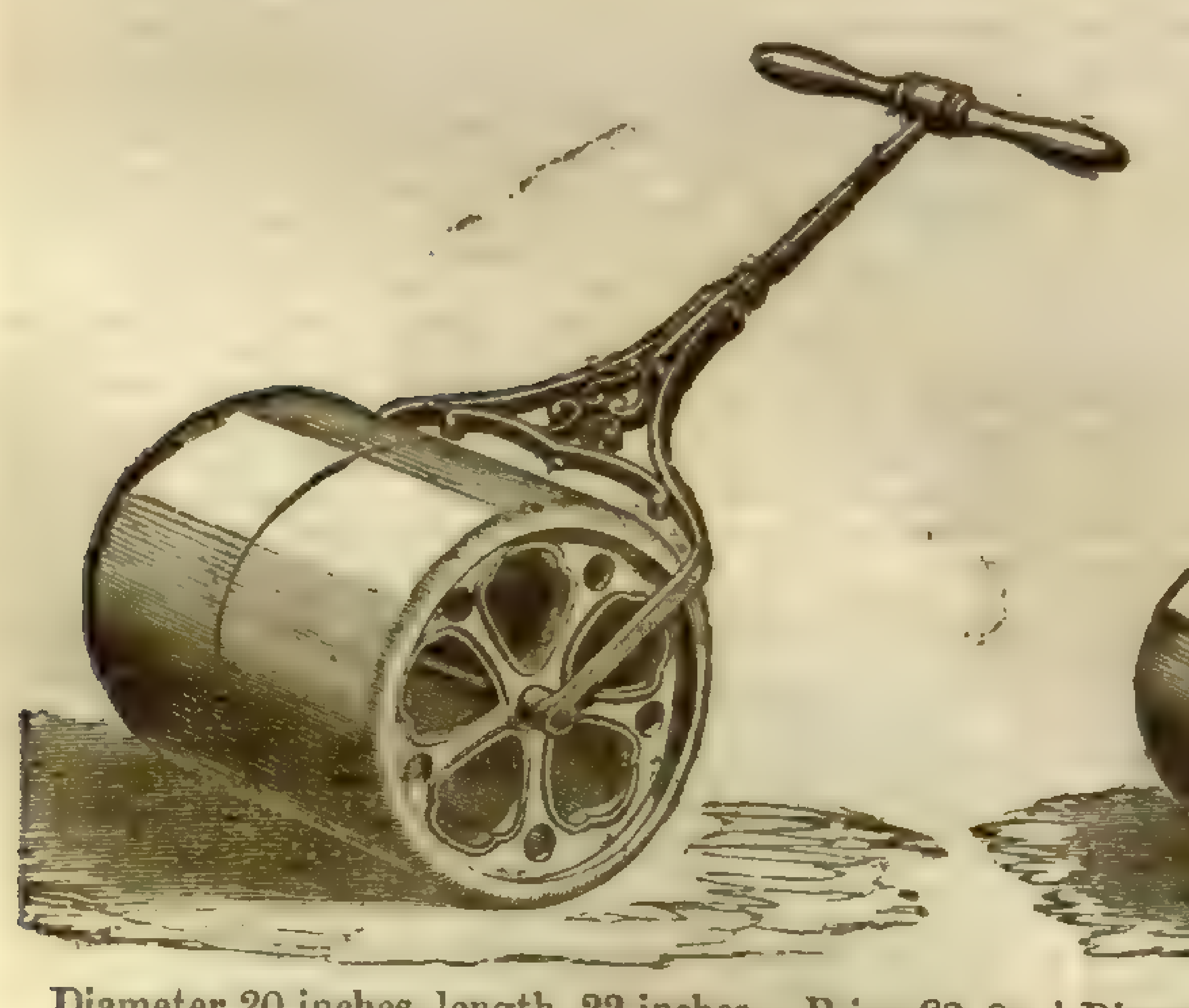
Donkey and Pony Machines, including Box of Requisites & Traces.

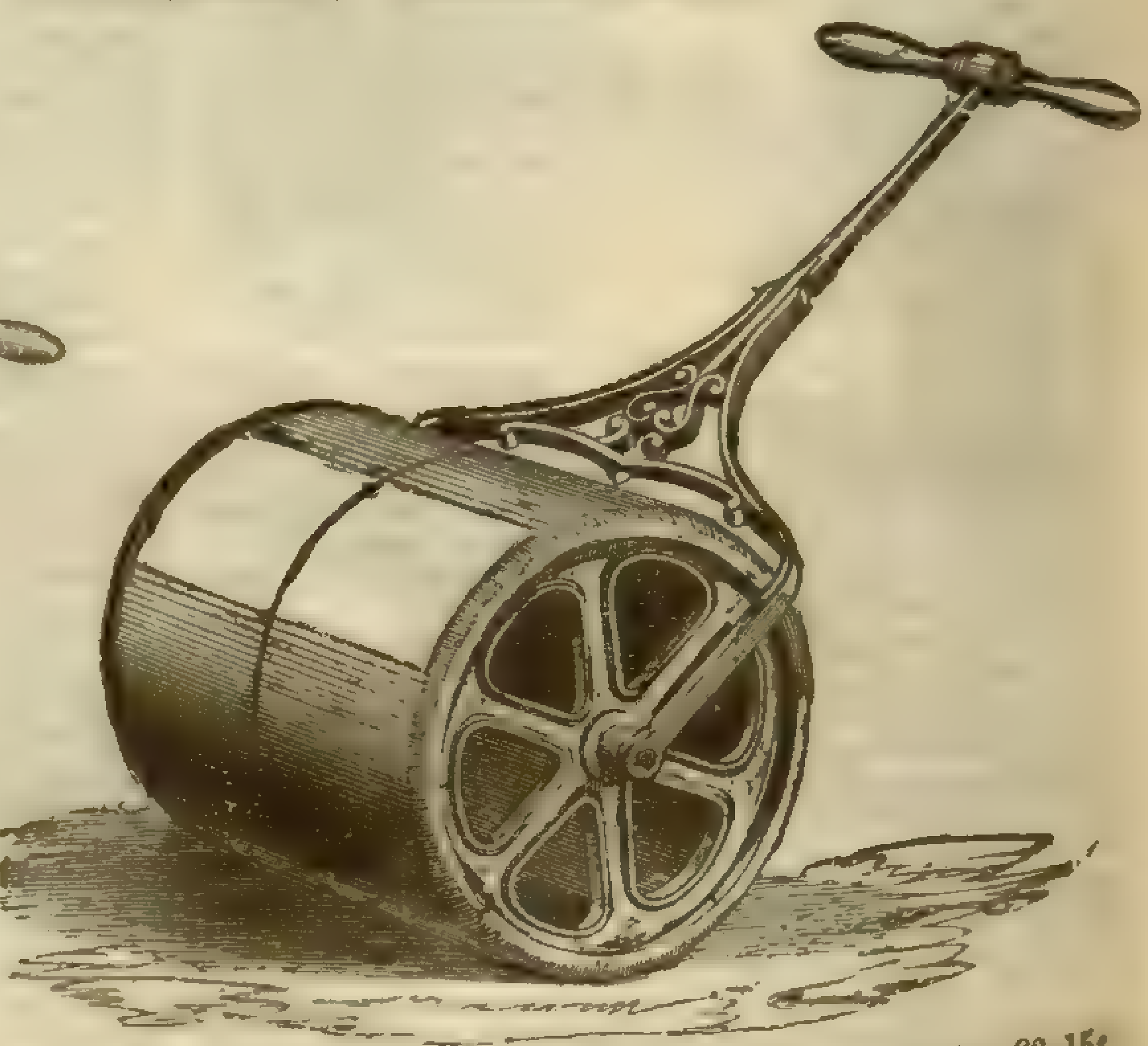
	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0 ...	... £12 10 0
To Cut 26 inches	12 10 0 ...	... 13 12 0
To Cut 30 inches	16 14 0 ...	... 18 0 0

Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.





Diameter 20 inches, length, 22 inches....Price £3 0*s.* | Diameter 16 inches, length, 17 inches....Price £2 5*s.* | Diameter 24 inches, length, 26 inches....Price £3 15*s.*

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is *strikingly apparent when compared with any other Garden Roller yet brought out.* They are made in two parts, and are free to revolve on the axis, affording greater facility for turning, and the outer edges are rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green or Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 20.—1862.] SATURDAY, MAY 17. {Price Fivepence. STAMPED EDITION, 6*d*.

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HORTICULTURAL GARDEN,
SOUTH KENSINGTON.
Admission during May:—MONDAYS, TUESDAYS, WEDNESDAYS (except 21st), and THURSDAYS, One Shilling. FRIDAYS, Half-a-Crown. SATURDAYS, Five Shillings. Band daily at 4 o'clock.

ROYAL HORTICULTURAL SOCIETY'S FIRST GREAT SHOW, WEDNESDAY, May 21, at South Kensington. Open at 1 o'clock. Bands commence at 4 o'clock. Admission 7*s*. 6*d*. each, or by Tickets previously purchased, 5*s*. each, at the Garden, and of the principal Librarians, Music-sellers, &c. Should the weather be wet, Visitors can pass under cover from the Exhibition or Garden Entrances to the Show.

GREAT SHOW of ROYAL HORTICULTURAL SOCIETY, MAY 21.—The Garden will be open at 1 o'clock. Visitors cannot be admitted either from the Exhibition to the Garden, or to the Exhibition through the Garden, before that hour.

PRIZES.—Lady DOROTHY NEVILL offers Two Prizes, one of Six Guineas, and one of Four Guineas, for the Three most tastefully arranged GROUPS of FLOWERS for the DECORATION of the DRAWING-ROOM, to be awarded at the First Great Show of the Royal Horticultural Society, May 21. The mode of showing them is left to the taste of the Exhibitor. Ladies are invited to join in the competition.
The Prizes will be awarded by a Jury of Ladies.
The Groups will be received as late as 10 o'Clock on the Morning of the Show, provided space shall have been secured for them the day before, by application to Mr. EYLES, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.
The next MEETING of this Committee for the Exhibition of NEW PLANTS and SEEDLINGS will be held in conjunction with the First Great Show of the season, which will take place in the Gardens of the Society on May 21. The above subjects will form Classes 22, 23, 24, and 26 of the Schedule for that day; and Sub-committees will be appointed to adjudicate upon them.
Class 22 is for New or Rare Tender Plants in flower.
Class 23 is for New or Rare Tender Plants not in flower.
Class 24 is for New or Rare Hardy Ornamental Plants.
Class 26 is for Seedling Florist's Flowers, and Garden Hybrids of all kinds.
The subjects exhibited in the above Classes on this occasion must be in the Gardens by Half-past Eight o'clock in the morning, in accordance with the regulations; but they may be entered on the morning of the 21st without previous notice.
All persons are at liberty to exhibit.
THOMAS MOORE, Secretary to the Floral Committee.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK, N.W.
The FIRST EXHIBITION of PLANTS, FLOWERS, and FRUIT will take place on WEDNESDAY, May 28.
Tickets to be obtained at the Gardens only, by Vouchers from Fellows or Members of the Society, price 5*s*.; or on the day of the Exhibition, 7*s*. 6*d*. each.
The Gates open at 2 o'clock.

LINNEAN SOCIETY,
BURLINGTON HOUSE, PICCADILLY.
The ANNIVERSARY MEETING of this Society will be held here on SATURDAY, the 24th of this month, at 3 o'clock precisely, for the ELECTION of a COUNCIL and OFFICERS for the ensuing year; and the Members of the Society will afterwards Dine together, at the Freemasons' Tavern, Great Queen Street, Lincoln's Inn Fields. Dinner to be on the Table at 6 o'clock.
N.B. Tickets for the Dinner, including Tea and Coffee, at 2*s*. each, may be had of Mr. KIPPIST, at the Apartments of the Society; or at the Bar of the Tavern.
May 17. GEORGE BUSK, Secretary.

CRYSTAL PALACE.—The GRAND FLOWER SHOW will take place on SATURDAY, May 24. Admission by Tickets, purchased prior to the day of Exhibition, 5*s*.; on the Day, 7*s*. 6*d*.; and by One Guinea Season Tickets on payment of Half-a-Crown.
For SCHEDULE of PRIZES apply to Mr. W. HOUGHTON, Secretary to the Flower Show, Crystal Palace, Sydenham.

Circular.
THANKING my Friends for their long-continued support to the firm of DAVID REID & SON, I beg to announce that I have relinquished business in Edinburgh, and that future commands addressed to me, as under, will have my best attention. It being desirable to balance the books of the late firm at once, I trust our friends will make immediate remittances, and lodge all accounts with a view to settlement.
I am, dear sir, yours truly, DAVID A. REID.
Address, Park Attwood, Bewdley, Worcestershire.
Edinburgh, May 10.

JAMES CARTER AND CO.,
SEED MERCHANTS and NURSERYMEN,
237 and 238, High Holborn, London, W.C.

Cerastium Biebersteinii, 9s. and 12s. per doz.
JAMES CARTER AND CO., SEEDSMEN and NURSERYMEN, 237 and 238, High Holborn, W.C.

The Greatest Novelty of the Season.
CARTER'S "METEOR," new crimson variegated foliaged FUCHSIA, Post Free for 8*s*.
JAMES CARTER & Co., Seedsmen and Nurserymen, 237 and 238, High Holborn, W.C.

BUTLER AND McCULLOCH'S SELECT LIST of BEDDING PLANTS may be had free and post paid upon application.
BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, W.C.

Choice Bedding Plants.
YOUELL AND CO. have an extensive stock of all the choicest as well as the newest introductions in BEDDING PLANTS, which they are supplying at 20*s*. to 30*s*. per 100.
Royal Nursery, Great Yarmouth.

Bedding Plants.
F. AND A. SMITH'S Stock of the above is very large this season, and the plants strong, consisting of all the well known and approved sorts for that purpose, prices of which will be forwarded on application.
The Nurseries, Dulwich, Surrey, S.

Bedding Plants, cheap and good.
DILLISTONE AND CO.,
Sturmer and Woodlands Nurseries.
See Advertisements in this Paper of the last month.

CHEAP BEDDING PLANTS.—One hundred Strong Plants (in pots) of all the leading kinds, including GERANIUMS, VERBENAS, CALCEOLARIAS, GAZANIAS, &c., for 17*s*. 6*d*.
Post Office Orders payable at Castle Hedingham, in favour of W. DILLISTONE, Munro Nursery, Sible Hedingham, Halstead, Essex.

CHEAP BEDDING PLANTS.—Large Purchasers of the above will be treated liberally on application to W. H. CAPARN & SON, King's Road Nursery, Newark, who have a splendid lot of well established plants.
Lists of very reduced prices may be had on application. The Trade supplied on liberal terms.

MESSRS. VEITCH AND SON beg to intimate that their CATALOGUE of NEW and RARE PLANTS for the present season, including descriptions of their various introductions from JAPAN, CHILI, and other Countries, is now ready, and will be forwarded on application.
Royal Exotic Nurseries, Chelsea and Exeter.—May 17.

JAMES BURLEY'S SPRING CATALOGUE of new shrubby CALCEOLARIAS, PELARGONIUMS, new ROSES, and BEDDING PLANTS is now ready, and will be forwarded post free on application.
Nursery, Limpsfield, Surrey.

New Plants.
AMBROISE VERSCHAFFELT'S CATALOGUE of NOVELTIES is now ready, and can be obtained free, by writing to
AMBROISE VERSCHAFFELT, Nurseryman, Ghent, Belgium.

Nurseries, Saffron Walden.
SUPERB DOUBLE HOLLYHOCKS.—Some few thousands of Plants yet for Sale. Seedlings, unbloomed, 18*s*., 25*s*., or 30*s*. per 100. Large plants, with colours, 25*s*, 30*s*., or 40*s*. per 100. Named varieties, in pots, 12*s*., 20*s*., or 40*s*. per dozen.
Apply to WILLIAM CHATER.

BERBERIS JAPONICA.—This fine hardiest of all hardy plants has no equal for planting in shady situations, game covers, &c. Its fruit is greedily devoured by Pheasants, and its magnificent foliage forms an under cover of surpassing beauty.
The plants can be supplied by CHARLES NOBLE, Bagshot.

New Fuchsias and Verbenas of 1861.
B. W. KNIGHT, FLORIST, 67, High Street, Battle, Sussex, is now sending out the NEW FUCHSIAS of 1861, at 6*s*. per dozen; the NEW VERBENAS of 1861, at 4*s*. per dozen, securely packed in tin box, post free.
CATALOGUES sent on application.

Dahlias.
JAMES FAIRHEAD AND SON beg to state their CATALOGUE of DAHLIAS is now ready, post free on application, offering all the leading established varieties, healthy Plants, and guaranteed true to their kinds, 3*s*. 6*d*. and 9*s*. per dozen.
7, Borough Market, London, S.E.

WEBB'S GIANT POLYANTHUS and GIANT COWSLIP.—These beautiful early spring flowers, very large, and in all varieties of colour, in Seed or Roots; also FLORISTS' FLOWERS, POLYANTHUS in roots, and DOUBLE WHITE PRIMROSE.
Apply GEORGE MACE, Calcot Gardens, near Reading.

Agricultural Seeds.
GEORGE GIBBS AND CO.,
SEEDSMEN,
26, Down Street, Piccadilly, London, W.

TO BE SOLD IMMEDIATELY, in Two or more Lots, a quantity of choice STOVE and GREENHOUSE PLANTS, FERNS, ORCHIDS, &c., many of them being specimen plants and fit for exhibition.
Apply to Mr. JOSEPH TANTON, Gardener, Crowhurst Park, Battle, Sussex.

Good Seeds, Carriage Free.
SUTTON AND SONS,
SEED GROWERS and MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

TWELVE of the Finest NEW PERPETUAL ROSES (sorts that have not yet flowered in English Gardens) for Two Guineas.
RICHARD SMITH, Nurseryman, Worcester.

New Roses of 1862.
PAUL AND SON have now ready their usual fine Plants of the finest Novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

WM. PAUL'S NURSERIES open to the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London. Every garden requisite, from the commonest to the choicest, at reasonable prices.
CATALOGUES free by Post.
Nurseries and Seed Warehouse, Waltham Cross, N.

New Chrysanthemums, Hardy Variegated Plants, &c.
JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.
Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Chrysanthemums.
W. HOLMES, F.R.H.S., has a fine stock of the above, including Little Harry, Lady Hardinge, Leda, Linda, Rifleman, Florence, &c., &c., all at 5*s*. per dozen.
DESCRIPTIVE CATALOGUES of the above, also Dahlias, Fuchsias, Verbenas, Geraniums, Antirrhinums, Petunias, &c., free for one stamp.
Frampton Park Nursery, Hackney, N.E.

New Catalogue.
F. AND A. SMITH'S new CATALOGUE is now published, and will be forwarded post free on application. It contains a DESCRIPTIVE LIST of all the leading Stove and Greenhouse Plants, Exotic Orchids and Ferns; also a fine collection of Geraniums, Fuchsias, Camellias, Azaleas, Cinerarias, Dahlias, Petunias, Verbenas, Phloxes, &c.
The Nurseries, Dulwich, Surrey, S.

Verbena Fireball.
MESSRS. J. AND C. LEE having thoroughly proved VERBENA FIREBALL last summer, can recommend it as one of the best, if not the best, and most useful for bedding purposes, combining, as it does, the intense scarlet and compact truss of Firefly with the robust and free-flowering habit of Purple King.
To be sent out in May, price 12*s*. per dozen.
Nursery and Seed Establishment, Hammersmith, London, W.

TROPICAL FRUITS.—Any one having Plants to DISPOSE of—either for Money or in Exchange—of the DARIEN, MANGO, and MANGOSTEEN, is requested to send full particulars to EXOTICUS, *Gardeners' Chronicle* Office, W.C.
This Advertisement will not be repeated.

FOR SALE, by a Gentleman's Gardener in the country, a surplus stock of BEDDING PLANTS, consisting of about 1500 Calceolarias, Gazanias, Tom Thumb and other Geraniums, &c. The above are all autumn struck, very large healthy plants, and such as a nurseryman could not supply. The whole or part would be sold at a low price. Also six large bushes of INDIAN AZALEAS.
Apply W. J., Post-Office, 103, Tottenham Court Road, London.

White Swede.
JAMES FAIRHEAD AND SON, 7, Borough Market, S.E., offer a selected Stock of the above, crop 1861.
Price on application.

NEW TURNIP and MANGEL SEEDS, from selected bulbs, first class stocks, sold at moderate prices, by
FAIRHEAD & SON, Seed Growers, Lewisham; and 7, Borough Market, S.E.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3*s*. per lb., or 16*l*. per cwt.

SEAKALE SETS for SALE.—The Seakale Sets are far superior to Seed, and are grown by all the Market Gardeners round London to ensure a regular crop and superior crowns for Forcing for next winter's use. Good strong sets may be had at 10*s*. per 1000. Those in the Trade liberally treated with for any larger quantity.
WILLIAM BAGLEY, Munster Farm, Fulham, S.W.

DIOSCOREA BATATAS (or CHINESE YAM), 2*s*. 6*d*. per doz., 15*s*. per 100. Larger tubers, 3*s*. 6*d* per doz.
JOHN CATTELL, Westerham, Kent.

Dioscorea Batatas, or Chinese Potato.
J. IVERY AND SON beg to inform their Patrons that this is the most favourable month for planting this useful Vegetable. Strong sets are now ready, at 1*s*. per dozen, or 7*s*. 6*d*. per 100; likewise whole Tubers, from 2*s*. 6*d*. to 6*s*. per dozen.
Dorking Nursery.

NEW AND BEAUTIFUL PLANTS.

MESSRS. VEITCH & SON

Being desirous during this, the season of the GREAT INTERNATIONAL EXHIBITION, of bringing before the Horticultural world a more than usually rich and interesting Collection of Novelties, have much pleasure in submitting the following very CHOICE and BEAUTIFUL PLANTS, the greater part of which have been introduced by themselves through Mr. JOHN G. VEITCH, from JAPAN and other parts of the East, and through their Collector Mr. RICHARD PEARCE, from Chili and Peru.

Never before at any one time have Messrs. V. & SON had the pleasure of offering so really valuable a selection of NEW PLANTS, and one which they feel confident will give as complete satisfaction as their Novelties of previous seasons have done.

NEW JAPANESE AND OTHER HARDY PLANTS.

ABIES FIRMA (Zuccarini).

A magnificent and perfectly hardy Evergreen tree found in the Midland and Northern provinces of Japan, from whence it was introduced by Mr. John G. Veitch. Growing to a great height it forms a tree of noble aspect, and is one of the most useful and generally employed timber trees in the Japanese empire.

This most distinct and beautiful species belongs to the Silver Fir section, and it affords us much satisfaction to be the medium of introducing so fine and ornamental a tree to European Gardens. Fine Seedling plants, price 42s. each.

AMARANTHUS MELANCHOLICUS var. RUBER.

A plant with striking blood-red foliage, introduced by Mr. J. G. Veitch from Japan, where it was selected by him from amongst many other varieties, as the one most valuable for flower garden decoration and other ornamental purposes; but particularly as an edging, or ribbon border plant.

Its habit is very compact, attaining a height of about 1 foot, and the bright shining colour of its leaves gives it a decided superiority over any other fine foliaged bedding plant.

It will probably supersede the Perilla Nankinensis, and all other plants of that description.

It was exhibited at the meeting of the Royal Horticultural Society in July and August 1861, when it received a Commendation. Price 2s. 6d. each; 24s. per dozen; 7l. 10s. per 100.

EUONYMUS RADICANS FOL. VARIEGATIS.

A very pretty little shrub received from Japan, of neat habit, with small ovate leaves of a bright green, blotched and margined with silvery white, and perfectly hardy in this country.

Its dwarf habit and distinct variegation will render it particularly useful for forming edgings to beds and covering banks and rockwork.

We exhibited it at the Royal Horticultural Society's Exhibition in June, 1861, when it received a FIRST-CLASS CERTIFICATE. Price 10s. 6d. each.

EURYA LATIFOLIA VARIEGATA.

A Japanese shrub of particularly good and compact habit, and remarkable for the great beauty of its fine variegated foliage.

It has acuminate leaves of a dark green colour, finely edged and blotched with white and flushed with fiery orange red. It can be confidently recommended as one of the most ornamental shrubs of recent introduction.

It has received a FIRST-CLASS CERTIFICATE from the Royal Horticultural Society's Floral Committee. Sent to us from Japan by Mr. J. G. Veitch. Price 31s. 6d. each.

LIBOCEDRUS TETRAGONA (Endlicher).

This really fine and distinct hardy Conifer has been already fully described by us in previous circulars and advertisements.

It is a native of the Andes of Chili, where it is found just below the snow line, forming an evergreen pyramidal tree of great size and beauty, and producing most excellent and durable timber, which is said to be almost imperishable.

At the Royal Horticultural Society's Exhibition in June 1861 it received the FIRST PRIZE as a hardy ornamental plant.

Although it appeared in our List of New Plants for last year, we feel its sterling worth entitles it to a repetition on this occasion. Small plants, 21s.; larger ditto, 42s. A few extra sized ditto, 63s.

MIMULUS CUPREUS.

This beautiful hardy Perennial plant was sent to us from the Andes of Chili by our zealous collector Mr. Pearce, who found it growing at an elevation of from 6000 to 7000 feet above the level of the sea.

It attains a height of from 4 to 8 inches, producing during the summer months a profusion of the richest orange crimson flowers, and from its dwarf habit and brilliant colour it will be found invaluable either as an edging to large beds or for the filling of small ones, as well as for the decoration of the Greenhouse.

It has received SILVER MEDALS from both the Royal Horticultural and Royal Botanic Societies. Price 3s. 6d. each; 30s. per dozen.

OURISIA SPECIES.

A new and beautiful perfectly hardy herbaceous plant sent to us from Chili by our collector, Mr. Pearce, who found it growing at a great elevation on the Andes.

In habit it somewhat resembles a Primula, forming a tuft of rounded leaves from which spring numerous elegant spikes of bloom of about a foot in height. The long tubular flowers, which are abundantly produced, are Pentstemon-like, and of a most brilliant scarlet colour. It is perfectly hardy, having withstood the severity of the two past winters uninjured.

We hope in a few days to have its correct specific name determined, when it will be duly published, and it will be exhibited at the ensuing Metropolitan Shows. Price 5s. each.

PINUS DENSIFLORA (Siebold).

This tree is found over the whole empire of Japan, where it is extensively planted for its timber.

It will prove to be a distinct and ornamental species of the long leaved class of Pines, growing to a considerable height, and will undoubtedly be perfectly hardy.

Introduced from Japan by Mr. J. G. Veitch. Price 7s. 6d. each; 60s. per dozen.

PINUS KORAIENSIS (Siebold).

This fine Pine, which is found growing in great abundance in the northern parts of Japan and Manchuria, is confidently recommended as being PERFECTLY HARDY and able to withstand the severest of our European winters.

It is a long-leaved species with beautifully glaucous foliage, and will be a valuable addition to our hardy ornamental Pines. The Cones are large and highly ornamental.

Sent to us from Japan by Mr. J. G. Veitch. Price 10s. 6d. each.

RETINOSPORA LYCOPODIOIDES ?

This new species is another of our recently valuable introductions from Japan. It is of dwarf rigid habit, with fine dark green foliage and spreading branches, and forms a very distinct and interesting plant. It is PERFECTLY HARDY.

It was exhibited by Messrs V. & SON at the Royal Horticultural Society's Exhibition in June 1861, when it received a medal. Price 21s. each.

RETINOSPORA OBTUSA (Siebold).

This is one of the FINEST of Japanese hardy Evergreen Conifers, forming a tree of large dimensions and beautiful aspect.

It will doubtless prove to be highly useful as a timber tree, as well as for ornamental planting. Introduced from Japan by Mr. J. G. Veitch.

Messrs. V. & SON having last year been very successful in raising a considerable quantity of this fine tree, and Mr. J. G. Veitch having brought with him a second supply of seeds, they have much pleasure in offering plants at such a price as shall lead to its being extensively planted, as they believe it will become a successful rival of the beautiful Cupressus Lawsoniana in its elegance of growth. Price 10s. 6d. each; 5l. 5s. per dozen.

RETINOSPORA PISIFERA (Siebold).

This fine species forms a more slender tree than the preceding. It has sharp pointed leaves, beautifully glaucous on the under side, and is really a very distinct and ornamental tree. Introduced from Japan by Mr. J. G. Veitch.

Messrs. V. & SON are also enabled to offer this tree on the same terms as the preceding. Price 10s. 6d. each; 5l. 5s. per dozen.

SCIADOPITYS VERTICILLATA (Siebold). The Umbrella Pine of Japan.

It is with much pleasure that we are enabled to offer plants of this really distinct and highly interesting Conifer, justly described by botanists as one of the finest of all Eastern Evergreen trees.

It attains a height of from 80 to 90 feet, and is of a perfectly pyramidal habit. The leaves are long, of a beautiful green colour and singularly arranged in whorls, from which peculiarity it derives its name of "THE UMBRELLA PINE."

It is a source of peculiar satisfaction to Messrs. V. & SON, that Mr. John G. Veitch has the honour of first introducing into Europe this splendid tree. It has already proved itself PERFECTLY HARDY; young seedling plants having withstood near London the frosts of the past winter without the slightest injury.

Messrs. V. & SON having succeeded in raising a splendid young stock of Seedling Plants, have decided upon charging such a price as will insure its general distribution throughout the country.

1-year old Seedling Plants, in Pots, 10s. 6d. each; 5l. 5s. per dozen,
A few Imported Plants, 12 to 15 inches, prices on application.

N.B.—Messrs. V. & SON would beg to call attention to the Woodcut of this fine tree, which was published by Professor LINDLEY, in the *Gardeners' Chronicle* of Jan. 11, 1862, from a figure sent home by Mr. John G. Veitch.

THUJA PYGMÆA.

A perfectly hardy Japanese species, remarkable for its exceedingly dwarf habit. Its beautiful dark green foliage forms a cushion-like tuft, giving it a most distinct and novel appearance, and rendering it one of the prettiest of Dwarf Coniferæ.

It received a Medal at the Royal Horticultural Society's Exhibition in June 1861. Price 21s. each.

THUJA (BIOTA) FALCATA.

A Japanese Arbor-vitæ of the Thuja orientalis class, sent to England by Mr. John G. Veitch. It is a plant of very neat foliage, and exceedingly upright and pyramidal in its growth.

This perfectly hardy variety is employed in large quantities by the Japanese for forming hedges, for which purpose its close compact habit renders it most suitable. Fine Seedling plants, 10s. 6d. each.

THUJOPSIS DOLABRATA (Siebold).

This beautiful and perfectly hardy tree has been described by us on so many previous occasions, and is now so well known, that any lengthened notice of it here is rendered unnecessary.

We feel ourselves however fully justified in including this remarkable plant amongst our Japanese Novelties for the present season.

Mr. J. G. Veitch having met with it on several occasions whilst travelling in Japan, describes it as one of the finest and most distinct hardy evergreen trees known. Strong plants, price 21s. to 63s. each.

THUJOPSIS DOLABRATA VARIEGATA.

This fine plant is a variegated variety of the preceding, having the same graceful habit, with the greater part of its foliage distinctly variegated. Sent us from Japan by Mr. J. G. Veitch. Young plants in thumb pots, 63s. each.

NEW STOVE AND GREENHOUSE PLANTS.

ALOCASIA MACRORHIZA VARIEGATA (Hooker).

A variegated plant of noble aspect, with handsome Caladium-like foliage of a pale green color, marked with bold yet irregular blotches of white.

It is of free and vigorous growth, and is certainly a great addition to our variegated stove plants.

It has received FIRST-CLASS PRIZES, both from the Royal Horticultural and Royal Botanic Societies. Price 31s. 6d. each.

CALADIUM VEITCHII (Lindley).

This truly magnificent plant has been exhibited by us on so many occasions, and its peculiar form and great beauty are so well known, that any lengthened notice of it would now be quite superfluous.

It is sufficient to say that its large sagittate leaves are of a rich bronzy green on the upper side and a deep purple on the under, with a beautiful metallic lustre, and of an extraordinary substance.

It has been awarded Prizes at all the principal Metropolitan shows, and it also received the highest prize for new plants offered at the recent grand exhibition at Ghent in Belgium.

We have no hesitation in recommending this as one of the finest ornamental plants ever introduced, and one which has only to be seen to be admired.

It was sent to us from Borneo by Mr. Thos. Lobb. Price 63s. to 105s. each.

FICUS COOPERI (Veitch).

This very distinct and beautiful foliaged greenhouse plant was brought us from New South Wales by Sir Daniel Cooper, after whom it is appropriately named.

It is of free and vigorous growth, with large dark green glossy leaves, and the veins, which are prominent, are of a deep crimson colour.

This plant is undoubtedly a most desirable addition to the class of ornamental foliaged plants, and it will prove of equal utility for room or conservatory decoration with the well known Ficus elastica. Price 10s. 6d. each.

NEPENTHES DOMINIANA (Veitch).

This, the first hybrid Nepenthes ever raised, was produced at our Exeter Nursery by our indefatigable Foreman, Mr. Dominy, between N. Rafflesiana and an imported unnamed species with green coloured pitchers.

It partakes of the strong robust habit of N. Rafflesiana, having pitchers intermediate between the two parents.

It forms a most desirable addition to this beautiful and interesting genus. Fine healthy seedling plants, 31s. 6d. each.

MESSRS. VEITCH AND SON'S ADVERTISEMENT OF NEW AND BEAUTIFUL PLANTS.

(Continued.)

RHODODENDRON PRINCESS ALICE (Veitch).

A really beautiful hybrid raised by ourselves between Rhododendrons Edgworthi and ciliatum.

The flowers are large, of a delicate rosy blush, shading off to white, possessing the delicious perfume of R. Edgworthi, with the neat foliage, dwarf habit and freedom of flowering of R. ciliatum.

It has received FIRST-CLASS CERTIFICATES from the Royal Horticultural and Royal Botanic Societies, and has been universally admired by all who have seen it. Price 21*s.* each.

RHODODENDRON SESTERIANUM.

Another fine Greenhouse hybrid raised between Rhododendrons Gibsoni and Edgworthi. Its large flowers are of a beautiful clear white, with yellow spots on the upper petals, and of fine form and substance.

The blooms are larger, and if possible more deliciously scented than those of R. Edgworthi. It is of German origin.

It has this season been awarded Two FIRST-CLASS PRIZES at the Spring meetings of the Royal Horticultural and Royal Botanic Societies. Price 21*s.* each,

SCHISMATOGLOTTIS VARIEGATA (Hooker).

This very pretty stove plant was sent to us from Borneo by Mr. Thomas Lobb.

The leaves are borne on erect slender footstalks somewhat resembling those of a Maranta. They are long, of a soft glossy green, with a central, broad, feathery line running through the entire length of the leaf.

Its neat dwarf habit and the well contrasted colours of its foliage will render it a pleasing addition to the stove. Price 21*s.* each.

STENOGASTRA CONCINNA.

A charming little stove plant, producing an abundanse of white and purple flowers. It possesses the valuable property of continuing in flower throughout the year.

Its habit is particularly dwarf and neat, peculiarly adapting it for cultivation in plant cases or under glass shades in rooms. It is really a little gem. Price 7*s.* 6*d.* each.

SPHÆROGYNE LATIFOLIA.

A plant of truly noble aspect. In habit it somewhat resembles the far famed Cyanophyllum magnificum, but whilst being perfectly equal to that species in the magnificence of its foliage, it far surpasses it in habit and the general beauty of its appearance.

The stem and leaf-stalks are red and thickly covered with reversed hairs. Its magnificent ovate leaves are of a rich velvety olive green colour on the upper surface, and of a beautiful red underneath.

We have no hesitation in confidently recommending this plant as a really first-class novelty and one of the finest of the season.

ALOCASIA ZEBRINA?

This, one of the most remarkable and striking plants we have ever had the good fortune to introduce, was sent us by Mr. John G. Veitch from the Philippine Isles.

Its leaf-stalks, which are upwards of 2 feet in length, are of a pale yellow colour, marbled and banded in the most distinct manner with dark green.

The leaves are large, of a velvety green colour, and having the sagittate form peculiar to this family.

At the present time, when plants with effective foliage are in such request, this cannot fail to be generally admired and become an especial favourite.

N.B. *We propose exhibiting these two plants in fine condition at the London Exhibitions during the summer, and hope to be able to have a sufficient quantity of plants to distribute them during the ensuing autumn.*

In the meantime orders will be taken, which will be executed strictly in the rotation received.

TWELVE NEW AND BEAUTIFUL FERNS,

INTRODUCED BY MESSRS. VEITCH & SON FROM JAPAN, CHILI, AND BORNEO.

ACROPHORUS AFFINIS (Moore).

A large-growing elegant Davallioid Stove Fern from Borneo, whence it was sent to us by our eminent Collector Mr. Thomas Lobb. It has a thick scaly rhizome creeping on the surface, and producing large finely divided fronds 2 to 3 feet long. These fronds are elongately triangular, elevated on long green stipites, tripinnate or almost quadripinnate, with small oblong close linear acute single toothed segments. It is a very beautiful and distinct species. Good plants, 7*s.* 6*d.* each.

ADIANTUM CHILENSE (Kaulfuss).

THE CHILIAN MAIDEN HAIR FERN.

A remarkably beautiful species sent us, together with the following two other Adiantums from Chili, by our Collector Mr. Richard Pearce.

It has polished ebony coloured stipites and rachides, and fronds a foot or more in length, triangular in outline, subtripinnate, with large smooth roundish trapeziform pinnules, simple and finely denticulate in the sterile parts, somewhat lobed and notched where fertile, the sori reniform, lying in the sinuses of the lobes.

The smooth looking glaucous green broad-pinnuled fronds have a very distinct and remarkably handsome appearance, and altogether we may confidently pronounce it to be one of the finest of the genus. It will be a hardy greenhouse kind. Good plants, 10*s.* 6*d.* each.

ADIANTUM SCABRUM (Kaulfuss).

THE SILVER MAIDEN HAIR FERN.

A delicately coloured SILVER Fern sent us from Chili with the other two by Mr. R. Pearce.

The plant is of dwarfish habit, with oblong fronds, having slender black stipites and rachides; they are bipinnately divided, with rather large roundish or somewhat trapeziform pinnules, denticulate at the margin, and sprinkled on both surfaces with farinose powder.

A very distinct and beautiful Hardy Greenhouse Fern, forming a fine contrast with the following Golden one. Fine plants, 10*s.* 6*d.* each.

ADIANTUM SULPHUREUM (Kaulfuss).

THE GOLDEN MAIDEN HAIR FERN.

One of the most lovely of the genus, also introduced with the two former species through Mr. Pearce from Chili.

The fronds, which grow in thick tufts, are about a foot long, and have the slender ebony coloured stipites and rachides usual in the genus; they are triangular ovate in outline, tripinnately divided, the pinnules rather small, roundish, with the margins lobed, and elegantly toothed, each of the lobes being notched, with a reniform sorus in the sinus.

In addition to these features, which render it worthy of universal cultivation for its beautiful form, the whole under surface is dashed over with a Golden coloured powder, as in the Gymnogrammas and other Gold Ferns. It is really a most charming hardy Greenhouse species. Fine plants, 10*s.* 6*d.* each.

N.B. *These three beautiful Adiantums were Exhibited at the Royal Botanic Society's Meeting on April 30, when they each received First Prizes.*

CHEILANTHES MYSURENSIS (Wallich).

A very elegant small growing species of a favourite genus of Ferns.

Our present stock has been raised from spores collected in Nagasaki, Japan, by Mr. John G. Veitch. The plants form dwarf tufts, the fronds growing six or eight inches or sometimes a foot in length, narrow lanceolate, bipinnate, the pinnules oblong, and crenated on the margin, where the fructification is produced.

The fronds are very shortly stalked, the rachis and stipes being of a dark purplish brown, and clothed with scales; it is a very desirable Greenhouse Fern, and well suited for small Fern cases. Good plants, 7*s.* 6*d.* each.

LASTREA OPACA (Hooker).

This Fern will certainly prove a very distinct and valuable introduction for the hardy Fernery.

It produces tufts of firm opaque fronds of a dark green color, and very desirable; the outline is almost pentangular from the development of the basal posterior pinnules, and the pinnæ and fronds are very gracefully acuminate; the fronds are bipinnately divided, the pinnules being narrow-oblong and more or less falcate and deeply lobed; the segments ovate, those on the hinder side of the lowest pinnæ being very much larger than those on the anterior side.

The young immature fronds are more or less olive tinted.

This plant was introduced from Yokohama, Japan, by Mr. John G. Veitch, and we have every reason to believe it will prove to be one of our finest hardy Ferns. Good plants, 10*s.* 6*d.* each.

LOMARIA CRENULATA (Moore).

A very neat looking and perfectly hardy evergreen Fern, introduced by our collector Mr. Pearce from Chili, and a most desirable plant for the out door Fernery.

The plant forms a close tuft about 6 inches high; the sterile fronds narrow lanceolate, almost pinnate, with small oblong acute crenulate divisions; the fertile fronds rather taller on reddish stalks, linear and crenulate.

It is perfectly distinct in its appearance from the many other fine hardy Lomarias already in cultivation. Good plants, 7*s.* 6*d.* each.

MICROLEPIA STRIGOSA (Presl).

This is an elegant free-growing Fern of moderate size, introduced by Mr. John G. Veitch from Nagasaki, in Japan. It has bright green hairy fronds of about a couple of feet in height, ovate acuminate in form, bipinnate or tripinnate with roundish oblong or somewhat trapeziform pinnules, more or less lobed or toothed on the margin. It is of creeping habit.

Its moderate size and lively colour will render it a most desirable hardy greenhouse Fern. Fine plants, 7*s.* 6*d.* each.

POLYSTICHUM FLEXUM (Remy).

A fine coriaceous and perfectly hardy Fern, sent from Chili by Mr. Pearce, which has stood with us the two last winters entirely exposed, without suffering the least injury.

The plant has a somewhat creeping rhizome, from which grow up to the height of about a couple of feet the firm looking triangular fronds, which are tripinnate, with oblong toothed segments, and are remarkable for their thick leathery texture.

It forms a fine bold Fern for out door rockeries. Good plants, 7*s.* 6*d.* each.

POLYSTICHUM SETOSUM (Schott).

A very fine perfectly hardy evergreen Fern from Yokohama in Japan, another of the numerous introductions of Mr. John G. Veitch.

It is a tufted growing species of moderate size, with firm ovate-acuminate bipinnate fronds of 2 to 3 feet or more in height, the pinnules of which are trapezio-oblong, acute, auricled, and sometimes slightly toothed, but most remarkable for bearing a fringe of setæ or stiff hairs, which stand up from the plane of the frond, and give it a bristly appearance on the surface. We most confidently recommend this as a very ornamental species, and a great acquisition for out-door Ferneries. Fine plants, 10*s.* 6*d.* each.

WOODSIA POLYSTICHOIDES, var. VEITCHI (Hooker).

A very distinct and charming dwarf Fern, found in Yeddo by Mr. John G. Veitch.

The narrow almost linear fronds grow 6 or 8 inches or more in height, and are pinnately divided, the pinnæ being about an inch in length, linear oblong, and distinctly auricled with a row of sori near each margin, the whole surface above and beneath being covered with short close hairs.

It will prove a most interesting Fern for hardy Fern cases, being remarkably distinct from all other Woodsias known in cultivation. Good plants, 10*s.* 6*d.* each.

WOODWARDIA ORIENTALIS (Swartz).

One of the finest of all hardy Ferns. We have raised it in considerable abundance from spores gathered in Japan by Mr. John G. Veitch, and are thus enabled to offer it a very low price for so fine a Fern.

It forms a thick crown from which the rather large spreading triangular fronds proceed; these fronds are pinnate-pinnatifid, with lanceolate acute serrated segments 1 or 2 inches in length, the larger ones somewhat crenately-lobed and the whole frond bearing on the upper surface more or less profusely little bulbiform plants opposite the sori, the fronds sometimes being completely covered with these young plants.

This peculiarity, together with the distinct bold character of the broad firm textured fronds, renders it one of the most interesting and beautiful among the hardy species of this family. Fine plants, 21*s.* each.

NEW AND RARE ORCHIDACEOUS PLANTS.

CATTLEYA DOMINIANA.

This is one of the beautiful and interesting hybrid Orchids raised by our Exeter foreman, Mr. Dominy, and is described in the *Gardeners' Chronicle* as follows:—

"The parents are Cattleya amethystina and C. labiata, thus forming a hybrid between a one and a two leaved species. In general aspect the flowers are of the size of a small bloom of Cattleya Mossiæ, of a pale rose colour, and very handsome."

It was exhibited at a meeting of the Royal Horticultural Society, and awarded a FIRST CLASS CERTIFICATE. Fine plants, 31*s.* 6*d.* each.

CYPRIPEDIUM Sp. N.

A species of noble aspect with broad leathery erect-growing foliage. This really distinct plant was sent from the Philippine Isles by Mr. J. G. Veitch. It has not yet flowered in this country, but judging from the dried flowers sent from its native habitat, it will form a fine and distinct species. Well established plants, 10 to 15 Guineas each.

DENDROBIUM TAURINUM (Lindley).

A remarkably beautiful species sent from the Philippine Islands by Mr. J. G. Veitch.

The flowers, which continue in perfection for a lengthened period, are produced in long spikes. In colour they are of a delicate white, shaded with pink, with beautifully reflexed sepals of a rosy purple, and, as the name indicates, having the appearance of a bull's head.

Previous to the introduction of these plants we believe there was but one solitary specimen in England, and that in the particularly rich collection of Mr. Rucker. Fine healthy established plants, 10 to 15 Guineas each.

PHALÆNOPSIS SCHILLERIANA.

This distinct and truly magnificent species having both fine variegated foliage and long spikes of flesh-coloured flowers, may be justly termed one of the finest of all Orchidaceæ.

The flowers, which are nearly as large as those of P. amabilis, are produced in great abundance, there being often from 80 to 100 blooms on a single spike.

Mr. J. G. Veitch having sent us a quantity of fine plants direct from the Philippine Islands, we are enabled to offer well-established specimens at the under-mentioned rate, 10 Guineas each.

VANDA BATEMANI.

We have much pleasure in being enabled to offer fine healthy plants of this scarce and noble Orchid, having received a consignment direct from its native habitat, where it was found by Mr. John G. Veitch. It is so well known that no further comment is necessary. Fine young plants, 7 to 10 Guineas each.

Plants are now ready for delivery.

ROYAL EXOTIC NURSERIES, EXETER AND CHELSEA.—May 17.

PRIZE PHLOXES. | PRIZE GLADIOLUS.
PRIZE CHRYSANTHEMUMS.

JOHN CATTELL'S Collections of the above obtained the following Prizes at the London Exhibitions during the past season :—

PHLOXES.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

CHRYSANTHEMUMS.

First Prize, for the best 24 Cut Blooms, at the Royal Horticultural Society's Grand Fruit and Chrysanthemum Show, held at South Kensington Gardens.
First Prize, for the best 24 Cut Blooms, at the Stoke Newington Chrysanthemum Exhibition.
First Prize, for the best 24 Cut Blooms, at the Crystal Palace Chrysanthemum Exhibition.

J. C.'s collections include every variety of note, and he now offers them at the low prices named below, the selection being left to himself.

PHLOXES, 6*s.*, 9*s.*, and 12*s.* per dozen.
CHRYSANTHEMUMS, 6*s.* per dozen.
GLADIOLUS, 6*s.*, 9*s.*, 12*s.*, and 18*s.* per dozen bulbs

CATALOGUES are now ready, and will be forwarded post paid on application.

Strong plants of the Chrysanthemums and Phloxes are now ready.

Nursery and Seed Establishment, Westerham, Kent.

Stachys lanata.

B. S. WILLIAMS, Paradise Nursery, Holloway, N., has great pleasure in offering another fine plant for Edging or Ribbon borders. This is not a new plant, but one that is little known, and will without doubt rank among the finest plants for the above decorative purposes. The foliage is quite distinct, being the colour of Cerastium tomentosum, but much larger; leaves five inches long by one inch broad, and of a fine thick woolly texture, which, when the sun shines upon it, gives it a beautiful white frosty appearance. In growth it is from six to nine inches high, and very compact, forming a fine contrast when planted with yellow Calceolaria, Scarlet Geraniums, or any other plants of similar character. Having been used as a decorative plant for several years by the party from whom the stock has been purchased, was very much admired. This also makes a beautiful ornament for rockwork. Price per doz., 4*s.*; per 100, 25*s.*

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New Bedding Calceolarias.

JAMES BURLEY begs to offer the following as first-class Bedding varieties. They have all been proved last season bedded out; they were awarded an Extra Prize at the Crystal Palace Show, Sept. 4, 1861, as cut blooms :—

	s.	*d.*
ETNA.—Crimson, tinted with scarlet, habit first-rate, a most abundant late blooming variety. Per dozen	12	0
VICTOR EMMANUEL.—Fine red scarlet, distinctly pitted with crimson dots, fine dwarf habit, only growing from 9 inches to 1 foot high. This is the nearest to scarlet of any we have .. Per dozen	12	0
ANGUSTIFOLIA GLOBOSA.—A distinct and valuable new variety, growing only from 9 inches to 1 foot high, very hardy constitution, very short jointed woody habit; the colour is that of a soft and bright primrose—a first-class bedder .. .. Per dozen	12	0

JAMES BURLEY, Nurseryman, Limpsfield, Surrey.

New Plant Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce the publication of their NEW SPRING CATALOGUE of BEDDING and other ORNAMENTAL PLANTS on May 1, including descriptions of the undermentioned POMPON DAHLIAS, &c.

Angel of Peace	Little Mary
Annie	Little Prince
Butterfly	Little Valentine
Fairy Nymph	Pearl of Lilliputs
Goldlight	Silver Pheasant
Jeannette	Star
Little Darling	Tom Tit
Little Dorrit	and others.

BANKS'S NEW FUCHSIAS.
WILLS'S NEW VERBENAS.
FERN-LEAVED PRIMULAS, white and red fringed.
BEDDING TROPÆOLUMS—elegans coccinea, Model, Constellation, and Beauty of Oulton Park.
PETUNIA MAGNIFICENS.
GLOXINIAS—Brilliant, Leviathan, Bird of Paradise, and Most Beautiful; these four are very large, new in colour, and distinct.
AUCUBA HIMALAICA, the finest habited plant of all the new Aucubas.
GERANIUMS of the Zonale section—Magenta, new colour; Woodwardiana, best formed large petal-flowered; Baron Ricasoli, without exception the best bedding or Vase Geranium of any at present known.
GERANIUMS, MINIMUM Section, Harry Hieover.
" NOSEGAY " Pink Pearl.
" VARIEGATED " Sunset, Gold Leaf, Mrs. Milford, the Countess, Gold Pheasant, Little Beauty, &c.

Wellington Nursery, St John's Wood, London, N.W.

New and Beautiful Plants.

F. AND A. SMITH have much pleasure in intimating that they are now prepared to send out the following NEW PLANTS, of which they possess the entire stock. Early orders are solicited, which will be executed in strict rotation as received :—

FUCHSIAS.

COLOSSUS.—This is a variety of magnificent proportions, very large and double. 7*s.* 6*d.* each.
ENSIGN.—Distinct and beautiful. Fine for exhibition purposes. 5*s.* each.
GLADIATOR.—Very large and double. 5*s.* each.
LADY BLANCHE.—White corolla; distinct and fine. 5*s.* each.
HUMBOLDT.—Large and fine for exhibition. 5*s.* each.
QUEEN of SUMMER.—Very fine and distinct. 5*s.* each.
RIFLEMAN.—Large double variety. 5*s.* each.

The seven varieties for 30*s.*

PETUNIAS.

PRIME MINISTER.—A very fine bright double crimson flower, very large and fragrant. 3*s.* 6*d.* each.
ROSE of ENGLAND.—One of the finest yet offered for bedding purposes; bright rose, with clear white throat. 3*s.* 6*d.* each.
EMERALD.—Bright rosy purple, with a margin of bright green. 3*s.* 6*d.* each.
MRS. SMITH.—Very distinct pure white, blotched and striped violet. 3*s.* 6*d.* each.
CLARA.—White, striped and shaded with bright rose. 3*s.* 6*d.* each.
GAIETY.—Rosy purple, striped and blotched white. 3*s.* 6*d.* each.

The set of six for 18*s.*

Golden variegated GERANIUM, "Goldfinch," 3*s.* 6*d.* each.
ZONALE GERANIUM, "Beauty of Dulwich," 3*s.* 6*d.* each.

For full descriptions of the above see F. & A. SMITH'S CATALOGUE of NEW and RARE PLANTS, which will be sent post free on application.

The Nurseries, Dulwich, London.—May 17.

KITCHEN GARDEN SEEDS,
FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

ROYAL AGRICULTURAL SOCIETY OF ENGLAND
THOS. GIBBS & CO.
Corner of
HALF-MOON St.
PICCADILLY,
London.
APPOINTED AP. 3. 1844.
THE SEEDSMEN

AGRICULTURAL SEEDS,
GRASS SEEDS,
FARM SEEDS,

of all descriptions.

Thomas Gibbs

CORNER OF
HALF-MOON St.
PICCADILLY, LONDON, W.

GOOD TURNIP SEEDS CARRIAGE FREE
AT MARKET PRICES.

SEEDSMEN BY APPOINTMENT — Sutton AND Sons

SUTTON & SONS,

SEEDSMEN TO THE QUEEN,

CAN SUPPLY EVERY KIND OF

FARM and GARDEN SEEDS,

OF GENUINE AND SUPERIOR QUALITY.

Farmers and others residing in the most remote parts of the kingdom can procure good Seeds at very moderate prices from this Establishment CARRIAGE FREE.

Seeds for present Sowing.

CHAMPION and other SWEDES	TURNIPS, of sorts	GRASS SEEDS of every kind	FLOWER SEEDS
MANGEL WURZEL	GARDEN SEEDS	MUSTARD SEED	RAPE SEED, &c.

SUTTON & SONS have for many years devoted especial attention to the improvement of SWEDISH and other TURNIPS, sowing seed exclusively from selected stocks, and they respectfully invite inspection of the Coloured Drawings of their leading kinds, taken from Roots to which distinguished Prizes were awarded, which are arranged near the Carriage Department by the Western Entrance to the Crystal Palace, Sydenham, near the Handel Festival Orchestra; as also to the Collection of Dried Specimens of GRASSES at their Stand (in Class 3), International Exhibition, South Kensington.

For DESCRIPTIVE PRICED LISTS Post Free apply to

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

FARM SEEDS, at fair Market Prices.

ROYAL SOUTH HANTS SEED ESTABLISHMENT — BY APPOINTMENT

PAGE & TOOGOOD

Having had the honour of supplying the ROYAL FARMS at OSBORNE for the last eight or ten years, the GOVERNMENT REFORMATORY, PARKHURST, and many of the principal Agriculturists in the kingdom, will be sufficient guarantee that their SEEDS are of SUPERIOR QUALITY, and their prices are as low—or lower—than any respectable house in the Trade.

At the Botley Club, the Prize for the best Ten Acres Swedes was awarded
PAGE'S IMPROVED (grown by John Crosskey, Esq.)

Heaviest weight of Mangel, per acre, 61 tons 2 cwt.
PAGE'S IMPROVED ORANGE GLOBE (grown by Stewart Macnaghten, Esq.).

Mangel, sown July 7, Weight and Shape,
PAGE'S IMPROVED RED GLOBE (grown by W. Warner, Esq.).

Mangel, 50 tons per acre,
PAGE'S IMPERIAL ORANGE GLOBE (grown by W. Dickinson, Esq.).

Carrots, 35 tons per acre,
PAGE'S IMPORTED WHITE BELGIAN (grown by R. Trench, Esq.)

Six Prize Swedes, for heaviest Weight,
PAGE'S IMPROVED (grown by W. C. Humphries, Esq.)

Vales of Avon and Stour (Farmers' Club).

Vales of Avon, Prize for best 5 acres Mangel.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Salway)
Second best.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. H. Bone).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Baker).
Best 2 acres ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Jas. Salway).
Second ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by General Robertson).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Bone).

PRESENT PRICES (Rail Carriage Free to all parts of England) :—

Per lb.—	*s.*	*d.*
SKIRVING'S SWEDE	0	8
PAGE'S IMPROVED HARDY ..	1	0
FIELDER'S do. WHITE	0	9
SUTTON'S CHAMPION	1	0
ASHCROFT	0	9
GREENTOP	0	8
SUSSEX or JEFFERY'S ..	0	9
TANKARD	0	9
RED ROUND TURNIP	0	8
PAGE'S IMPROVED RED GLOBE	0	9

Per lb.—	*s.*	*d.*
SCOTCH or BULLOCK	0	8
POMERANIAN WHITE GLOBE	0	8
EARLY GREEN GLOBE ..	0	8
" WHITE TANKARD ..	0	8
PAGE'S IMPROVED PURPLE do.	1	0
GREEN ditto	0	8
YELLOW TANKARD	0	9
FIELDER'S HARDY GREEN ROUND	0	6
EARLY SIX WEEKS	0	6
KOHL RABI	3	6

NEW OSBORNE MANGEL. Per lb.—	*s.*	*d.*
YELLOW GLOBE	0	6
PAGE'S IMPERIAL ORANGE GLOBE*	0	8
RED GLOBE	0	7
ELVETHAM LONG RED ..	0	8
LONG RED	0	6
LONG YELLOW	0	6
WHITE BELGIAN CARROT ..	1	8
CATTLE CABBAGE	2	6
CATTLE PARSNIP	1	0
DWARF ESSEX RAPE	0	4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club, and yielded 61 tons 2 cwt. per acre.

NEW ALSIKE CLOVER, 1*s.* 3*d.* per lb.; BUCKWHEAT, MUSTARD, LINSEED, TARES, and SAINFOIN. Fine PERMANENT PASTURE GRASS, ITALIAN RYE GRASS, CLOVER, &c., at lowest Market Prices.

Special Contracts for Large Quantities.

OXFORD STREET, AND ABOVE BAR, SOUTHAMPTON.

New Ornamental Plant.

A. VAN GEERT, Ghent, Belgium, begs to offer good healthy young plants of the new AGAVE SCHIEDIGERA, the finest and most showy of this tribe. The following is the discoverer's description of the plant:—

"Habit and dimension of Agave filifera, which it far surpasses in beauty, with leaves a little larger, changing nearly in every plant from green to red; the smaller leaves on separating from the centre leave snowy white lines, and bear on the sides white ribbon-like filaments, which have a very showy appearance on the green or reddish flesh of the leaves."

Price 10s 6d. each, or 84s. per dozen.

A SUPPLEMENT to my CATALOGUE No. 50 is now ready, which may be had on application to my Agents, Messrs. R. Silberrad & Son, 5, Harp Lane, London, E.C.

JEAN VERSCHAFFELT'S NURSERY, Ghent, Belgium.

J. V. begs respectfully to announce that he intends sending out for the first time, on and after the 1st of September next, the following striking Novelties, viz.:—

1. CAMELLIA QUERCIFOLIA (J. Versch.).—The most curious and interesting Camellia known, as regards its leaves, which are Oak like; the flower being much the same as the universal favourite C. fimbriata alba. The plant is very showy, a good setter and very free bloomer. Prices are fixed as follows:—

Nice plants, 1 to 1½ feet high, 21s. each.
Do. do. with buds, 31s. ,,
A few extra sized plants at 42s. ,,

2. RHODODENDRON SOUVENIR DE JEAN BYLS (J. Versch.)—This is the last and also the finest seedling raised by Messrs. Byls, Ghent, from whom J. V. purchased the entire stock. It is perfectly hardy, having stood out the winter of 1860—1861, without losing a bud. It has very fine foliage, and the flowers are in large close bouquets, of a fine rose colour, with a fine blotch of bright yellow on the upper lobe. Altogether one of the best known kinds, very free and very late bloomer.

Good plants .. .. 21s.
Stronger plants .. .. 31s.
A few extra sized plants 42s.

The plants will be sent out, as far as possible, with buds. A carefully coloured plate will be sent to each subscriber. One plant over to the Trade for every three taken.

The Subscription List is now open, and early orders are solicited, as they will be sent in strict rotation.

All letters to be addressed to Jean Verschaffelt, Nurseryman, 43, Rue de la Caverne, Ghent, Belgium.

☞ A reference required from unknown correspondents.

LITHOSPERMUM FRUTICOSUM is the neatest and prettiest little HARDY EVERGREEN HERBACEOUS PLANT that can be desired. Its slender branches are thickly covered with small dark green leaves, forming a perfect carpet, which is studded with

The Loveliest Blue Flowers,

nearly half an inch in diameter, from May till September. If wintered in a cold greenhouse it flowers abundantly in February and March.

Messrs. J. & C. Lee will be prepared to offer this "Little Gem" in May, at 2s. 6d. each; larger plants, 5s. each.

Nursery and Seed Establishment, Hammersmith, London, W.

The Sulphur Maidenhair—Adiantum sulphureum.

JAS. BACKHOUSE and SON having imported a fine Stock of this new and very beautiful FERN direct from Chili, together with the handsome ADIANTUM CHILENSE, have pleasure in offering nice Plants of them. Prices on application.

DROSERA BINATA—The Forked-leaved Australian Sundew. —A fine and very interesting species, making leaves 1 foot high, covered with "dewy" crimson hairs. Easy to cultivate. Price 21s. each.

CATTLEYA WAGNERI v. ROSEA. — A lovely species imported by J. B. & Son from South America, with large pure white blossoms, having a rich orange throat. Labellum beautifully crisped—the crisped portion alone being delicate rosy pink. Fine flowering plants, 210s. to 315s.

York Nurseries.—May 17.

Green Hollies.

CORNELIUS WHITEHOUSE (late Whitehouse & Whittaker), Brereton Nursery, Rugeley, Staffordshire, offers several hundred thousand stout, free-growing, and exceedingly well rooted 2-year Seedling, and extra transplanted HOLLIES, from 9 to 12 inches, 12 to 15 inches, 15 to 18 inches, and 18 to 24 inches and upwards. Also fine plants of HEMLOCK SPRUCE, ABIES CANADENSIS, 6 feet and upwards. Trade price, low, on application.

To Gentlemen and Nurserymen Planting.

ON SALE, 2000 Specimen GREEN HOLLIES, from 4 to 9 feet high, well furnished to the ground. Will take up well with good balls of earth to the roots, and can be removed with safety. Arrangements can be made for delivery to any part of the country.

Apply to James Baker, Florist and Seedsman, 18, Renshaw Street, Liverpool.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

SEED MERCHANTS AND FLORISTS,

12, KING STREET, COVENT GARDEN, W.C.

Opposite the Garrick Club.

Price 2s. 6d., sent Post Paid,

THE ILLUSTRATED GUIDE TO THE FLOWER AND KITCHEN GARDEN,

ARRANGED AND CLASSIFIED ON AN ENTIRELY NEW PRINCIPLE.

All Orders amounting to 21s. sent Carriage paid.

ANNUALS BY WEIGHT FOR PRESENT SOWING.

THE FOLLOWING ARE ALL EXCEEDINGLY SHOWY AND VERY EFFECTIVE FOR BEDDING, EDGING, OR COVERING LARGE BANKS.

	Per oz.—s.	d.
Alyssum, sweet, white	1	0
Calliopsis bicolor nana, crimson and yellow	1	6
" " " mixed	1	6
Campanula pentagonia, purple	0	9
Candytuft crimson, rose-crimson	0	9
" sweet scented, white	0	9
Clarkia pulchella grandiflora, rose	0	9
" " alba grandiflora, white	0	9
" " integripetalon, rosy crimson	1	6
Collinsia bicolor, purple and white	0	9
" " alba, white	1	0
Convolvulus minor, dark blue	0	9
Cosmidium Burridgeanum, yellow and crimson	1	6
Delphinium cardiopetalon, blue	2	0
Dianthus chinensis (Indian Pink), mixed	1	6
Erysimum Perowskianum, orange	0	9
Eschscholtzia crocea, orange	1	0
" " alba, white	1	0
Eucharidium grandiflorum, pink	1	0
Godetia insignis, red-lilac, blotched with purple	1	0
" rosea alba, white, blotched with carmine	1	0
Larkspur, tall, Stock-flowered, double, very handsome	1	6
" dwarf Stock-flowered, double, very handsome	1	6
Leptosiphon aureus, golden yellow	2	6
" densiflorus, rose lilac	1	0
" " albus, white	1	0

	Per oz.—s.	d.
Limnanthes grandiflora, yellow and white	0	9
Linum grandiflorum, scarlet	2	6
Lupinus subcarnosus, crimson and blue	2	0
" venustus, blue	1	0
" hybridus, mixed	1	6
Malope grandiflora	1	0
Mignonette .. per lb., 5s. 6d.,	0	6
" new large flowered .. " 7s. 6d.,	0	9
Nasturtium, Tom Thumb Dwarf, mixed	1	6
" " " scarlet	2	6
" " " yellow	3	6
" " " yellow, spotted crimson	1	6
" " " rich crimson	1	0
Nemophila insignis grandiflora, blue .. per lb., 7s. 6d.,	0	9
" maculata, white, spotted purple	0	9
Nolana atriplicifolia, blue and yellow	0	9
Oxyura chrysanthemoides	1	6
Pea, Sweet, mixed colours .. per lb., 2s.,	0	3
Saponaria calabrica, rose	2	0
" ocymoides	3	6
Schizanthus pinnatus	1	0
Schizopetalon Walkerii, white, fragrant	3	0
Silene pendula, pink	0	9
Venus's Looking-glass, blue	1	0
Virginian Stock, red	0	9
Viscaria oculata, pink and crimson	1	0
Whitlavia grandiflora, violet blue	2	0

FLOWER SEEDS.

FOR SHRUBBERIES, WOODLAND WALKS, RAILWAY EMBANKMENTS, DECORATION OF WILDERNESSES, &c.,

5s. 6d. per pound, or 9d. per ounce.

In a conversation with our Sardinian Correspondent some few years ago, he pictured to us in terms somewhat glowing the rich native flora of Italy and many other parts of the Continent, at the same time stating that, where Nature failed to adorn, Art became her handmaiden. This conversation originated the idea of adding to the native flora of Britain, and which we at once endeavoured to carry out, by mixing nearly 100 sorts of the hardiest and most showy annuals; and it is with no small degree of pleasure we now find that what then to our minds was an experiment, has proved of the utmost importance. Many gentlemen having availed themselves of the suggestion have scattered these seeds on large rockeries; rooteries, natural and artificial; in shrubberies; woodland walks; carriage drives, and wildernesses; also by the side of rivulets, and wherever a floral display was desired beyond the limits of the flower garden, and the result has been most satisfactory, imparting beauty where there was none before, and an interest to the most uninteresting localities.

FOR A SUMMER AND AUTUMN DISPLAY,

Sow during March and April, simply scattering the seed broadcast, at the rate of 6 or 7 lbs. per acre, and without covering it; but later in the season it must either be covered, or sown during wet weather.

FOR A SPRING AND EARLY SUMMER DISPLAY,

Sow in September and October.

BEDDING-OUT PLANTS.

100 assorted, sent carriage paid for 25s.; 50 ditto for 12s. 6d.; 25 ditto for 7s.
No charge made for packing or package.

Clerodendron Thomsonæ.

HUGH LOW and CO. have much pleasure in offering the above-named new and very beautiful flowering Climbing Plant. The flowers are produced in numerous clusters, and the contrast of colour presented by the large white calyx and crimson corolla renders it a most desirable plant for cultivation. It is figured and fully described in the *Botanical Magazine* for current month. Plants are now ready, price 7s. 6d.

Clapton Nursery, London, N.E.

SPLENDID SHRUBBY CALCEOLARIAS, for Conservatory or Greenhouse decoration. They are equally well adapted for exhibition purposes. I think I need only remark as a guarantee of their sterling merit that all the leading prizes have been awarded to them. They can be had in bloom from May to October.

	s.	d.
GENERAL HAVELOCK.—Rich maroon or violet crimson, in dense flat corymbs, presenting a broad surface of bloom to the eye .. each	1	0
QUEEN of OUDE.—Rich bronzy crimson, shaded with light scarlet, and freckled over with crimson spots, bright and beautiful .. each	1	0
LORD RAGLAN.—A fine reddish scarlet, distinctly pitted with crimson dots .. each	1	0
KING of SARDINIA.—Orange ground, margined with scarlet, and crimson velvet-like spots .. each	1	0
EMPEROR.—Fine large crimson, distinctly spotted all over the flower	1	0
PRIMROSE PERFECTION.—Clear primrose yellow, a most profuse bloomer	1	0
LORD DERBY.—Beautiful orange, distinctly spotted all over	1	0
AMBASSADOR.—A rich brown scarlet	1	0
LITTLE DORRIT.—A pleasing soft yellow, a fine shaped flower, dwarf and good habit, a most abundant bloomer .. each	1	6
MAGENTA.—Beautiful dark velvet crimson tinted with scarlet, of fine shape and habit	1	6
PRINCESS HELENA.—Yellow, finely shaded with primrose, very effective, fine habit and shape	1	6
THE HON. MRS. ADAMS.—Primrose colour, distinctly spotted all over with crimson spots, a fine shaped flower of good habit.	1	6
THE QUEEN.—Pure yellow, beautifully marked all over the flowers with rich cinnabar red spots. A great improvement on Lady Palmerston	1	6

James Burley, Nurseryman, Limpsfield, Surrey.—May 17.

NEW SHRUBBY CALCEOLARIAS.—The following new and beautiful varieties have been selected with great care out of many hundreds of my Seedlings. For novelty, brilliancy in colour, and habit, they are far superior to any shrubby Calceolarias yet offered, and will be found invaluable for bedding purposes. They are equally well adapted for pot culture, for greenhouse, and also for exhibition purposes, as most of them were exhibited last season in the collections that obtained the first and extra prizes at the London Exhibitions; also at Tunbridge Wells.

PRINCE of WALES, a soft crimson scarlet, fine shape, a most abundant bloomer, and will make a fine bedder; was in the collection that obtained the Silver Gilt Medal at the Royal Botanic in June. Each, 5s.

ANGUSTIFOLIA SUPERBA, a fine yellow, both for greenhouse and also for bedding purposes; was awarded an Extra Prize at the Royal Botanic in June last. This also will make a most useful pot and market plant, being so dwarf and stiff in growth; habit good, and the medium size foliage, which is well shown, really makes it so ornamental. I have proved it also these two seasons as a first-rate bedder. 5s.

MODEL, a fine large straw-coloured yellow, distinctly spotted all over with crimson spots; a first-rate shaped flower. This also was in the collection that obtained the Silver Gilt Medal at the Royal Botanic in June, 1861. 5s.

MONARCH, an immense large fine-shaped flower; colour self yellow, beautifully spotted and blotched all over the flower with crimson. 5s.

DUKE of WELLINGTON, a beautiful dark crimson puce, medium size flower, habit of General Havelock, with exquisite foliage. This will make a fine bedder; it is so dwarf in growth. 5s.

LADY HAVELOCK, a beautiful deep yellow ground, spotted all over with velvet spots, with a fine white crimson throat. This variety is quite as distinct in foliage as anything I have seen, being in the way of angustifolia, only so rich and graceful in appearance, which makes the plant ornamental. Habit good, fine-shaped flower. 5s.

KING of PRUSSIA, orange ground, margined with scarlet, beautifully spotted all over with crimson spots. This is a noble flower in the way of King of Sardinia, only a much finer shaped flower. 5s.

DORÉE, medium size globe flower; colour yellow, finely dotted over with crimson spots, with a fine dark belted throat, exceedingly showy. 5s.

I have appointed Messrs. Wm. Rollisson & Sons, of Tooting, my sole Agents for the above plants, of whom they can now be had; also of myself.

A liberal allowance will be made to the Trade. Post-office Orders made payable in favour of James Burley, at Godstone, Surrey.

James Burley, Nurseryman, Limpsfield, Surrey.—May 17.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the most effective and useful bedding variety known. During the past season upwards of 5000 plants were grown in the gardens at Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.

⁂ For Testimonials and further particulars see *Gardeners' Chronicle* of May 3.

Plants, 1s. 6d. each. 12s. per doz. 50s. per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in riband-borders, and vases, this variety is one of the most useful and effective yet offered for sale.

Plants, 1s. 6d. each. 12s. per doz. 75s. per 100.

CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

	Per packet—s.	d.
Calceolaria, herbaceous	2	6
Cineraria cruenta	2	6
" maritima	0	6
Erianthus Ravennæ	1	0
Lobelia erinus speciosa	1	0
" " major	1	6
Primula sinensis dentiflora	2	0
Primula sinensis albiflora	2	0
" " dentiflora kermesina splendens	2	6
Verbena venosa	0	6

A PRICED and DESCRIPTIVE CATALOGUE of Vegetable, Agricultural, and Flower Seeds, forwarded post free to all applicants.

Exotic Nursery, Tooting, Surrey, S.

SPECIAL OFFER to AMATEURS, EXHIBITORS, &c.—All the best NEW VERBENAS of 1861 for all purposes, in 48 varieties, for 16*s*., strong Plants, package included; also 25 of the very best NEW FUCHSIAS of 1861 for 12*s*.; also 12 First-rate DOUBLE PETUNIAS for 6*s*.; also 12 First-rate DAHLIAS for 5*s*.

WM. KNIGHT can with confidence recommend the above plants, having Exhibited them at Brighton and other places last season, open to all England, and gained First Prize in every instance. Price to the Trade by the 100 or 1000.

Floral Nursery, Hailsham, near Hurst Green, Sussex.

RHODODENDRONS, SMALL,

FOR THE TRADE ONLY.

					Per 1000.
500,000	Rhododendron ponticum,	3 yrs. Seedling	..	..	12*s*. 6*d*.
100,000	ditto	ditto	4 yrs, ditto	..	15*s*.
200,000	ditto	ditto	3 yrs. & 1 yr.	transpltd.	25*s*.
100,000	ditto	ditto	2 yrs. & 2 yrs.	ditto	30*s*.

Unknown correspondents will save time by sending Post Office Orders, or a respectable reference in the Trade, with their orders. Five per cent. allowed for cash sent with the order. 100 of each can be sent as samples if required.

Address, JAMES SMITH, Darley Dale Nurseries, near Matlock.

Variegated Geraniums.

JOHN SAMPSON begs to offer good plants of leading varieties, 2*s*. to 3*s*. per dozen.

A good assortment of SCARLETS and other BEDDING PLANTS equally cheap.

FUCHSIAS of 1861, 4*s*.; older varieties, 3*s*. per dozen.

VERBENAS, Scarlet, White, and Purple, 15*s*. per 100.

First-class PELARGONIUMS, 6*s*. per dozen.

Pilsley Nurseries, Clay Cross.

SCARLET GERANIUM VICTOR EMMANUEL. —This is the finest variety ever introduced either as a Bedder or Pot Plant. It is a medium grower, of compact habit, and has dazzling orange scarlet flowers, of the finest form, borne in immense trusses, clear above the foliage; the centres of which have the peculiar merit of remaining clean and fresh till the outer flowers have expanded, rendering them thus complete balls of scarlet. It was submitted for trial to the Royal Horticultural Society last season, and by them received a most favourable report. See Proceedings, Vol. ii., No. 3. Strong plants, 12*s*. per dozen.

GEO. CLARKE, Nursery, Streatham Place, Brixton Hill, near London, S.

Choice Seeds.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give the greatest satisfaction.

PRIMULA, per packet, 2*s*. and 3*s*. 6*d*. each.

CALCEOLARIA, per packet, 1*s*. 6*d*., 2*s*. 6*d*., and 3*s*. 6*d*. each.

CINERARIA, per packet, 1*s*. 6*d*. and 2*s*. 6*d*. each.

For numerous Testimonials see SEED CATALOGUE, post free on application.

PLANTS of the NEW ZINNIAS.

ZINNIA MEXICANA.—A dwarf spreading bright yellow, with stripe of rich orange down each petal; a first-rate bedding plant. Strong in pots, 5*s*. per dozen.

ZINNIA ELEGANS PLENO.—Seedlings from a magnificent collection of extraordinary double flowers; mixed in a large variety of the richest colours. Strong in pots, 3*s*. 6*d*. per dozen; 25*s*. per 100.

A large stock of the finest BEDDING PLANTS, stout, vigorous, and strong, most of which will commence flowering immediately.

CATALOGUES on application.

STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

For a valuable selection of New and Rare Plants, see B. S. W.'s Advertisement in the *Gardeners' Chronicle*, May 10.

The Favourite Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

NEW ROSES for 1862.—4000 STRONG PLANTS.

WILLIAM WOOD & SON

Are now executing orders for all the NEW ROSES of the season, in strong healthy plants, Dwarfs, at 5*s*. each.

A liberal discount allowed to the Trade.

40,000 DWARF ROSES in POTS for BEDDING.

The months of April and May are considered the most eligible for Bedding-out Roses from pots.

W. W. & S. beg to offer a very large and healthy Stock on the following terms, viz.:—

Dwarf Hybrid Perpetual, Bourbon, Noisette, and Tea-Scented Roses, per dozen		18*s*.
Climbing Roses, of sorts	„	12*s*. to 18*s*.
Dwarf China Roses	„	12*s*.
Tea-Scented Roses, in 6-inch pots, for Greenhouse Culture	„	30*s*.

Extra Plants presented for distant carriage.

CATALOGUES free on application.

WOODLANDS NURSERY, MARESFIELD, NEAR UCKFIELD, SUSSEX.

NEW FUCHSIAS, VERBENAS, AND GERANIUMS.

B. W. KNIGHT, FLORIST,

67, HIGH STREET, BATTLE, SUSSEX,

is now sending out the following superb New Varieties for the first time. They are real gems, and will not fail to give general satisfaction.

NEW FUCHSIAS.

ALMA.—Tube scarlet, sepals scarlet tipped with green, broad and well reflexed; corolla large and very double, of a dark plum colour, beautifully striped with rose and scarlet. A decided acquisition to the double varieties, being of graceful habit, very constant, and a profuse bloomer. 10*s*. 6*d*.

BEAUTY.—Tube and sepals rosy carmine, gracefully recurved, corolla rosy lilac edged with carmine, beautifully expanded, a most profuse bloomer. An excellent variety for market purposes, as it is always in bloom. 7*s*. 6*d*.

CORONATION.—Tube and sepals bright scarlet, sepals broad and beautifully recurved, forming a perfect crown; they are very firm and stiff, retaining their graceful form till the bloom drops; corolla long, of a violet purple colour. A splendid variety. 7*s*. 6*d*.

DELICATA.—Tube and sepals white, the latter are well expanded; corolla rose edged with carmine, good habit, free bloomer, a fine light variety. 7*s*. 6*d*.

DUCHESS of KENT.—Tube and sepals pure white, the latter are gracefully recurved, showing a fine dark rosy purple corolla, a good stout flower of free habit. 7*s*. 6*d*.

LADY DOUGLAS.—Tube and sepals dark scarlet, the sepals are gracefully recurved, corolla dark crimson purple, well expanded, free branching habit, and a most profuse bloomer; habit similar to the Venus de Medici. 7*s*. 6*d*.

MARION.—Tube and sepals carmine scarlet, sepals broad and gracefully recurved, corolla rosy purple, large and well expanded, good habit, a fine show variety. 7*s*. 6*d*.

MISS VYSE.—Tube short, sepals broad and gracefully recurved, of a rich rosy scarlet colour; corolla rich blue, large and very firm, beautifully expanded. This will make a splendid exhibition plant, the flowers being so stiff and firm, and the habit being all that can be desired for that purpose. 10*s*. 6*d*.

WARRIOR.—This is a noble variety, tube and sepals rich red, the sepals are broad and well reflexed, corolla deep violet purple, large and very double, very constant, never producing a single bloom. This will be found a superb plant for exhibition, the blooms continue long in perfection, and being so very double are more like Ranunculuses than Fuchsias, giving this variety a decided pre-eminence among all the double kinds of this favourite plant. 10*s*. 6*d*.

NEW VERBENAS.

ALWAYS READY.—Rosy lilac, dark eye, surrounded with a ring of white, good truss, fine shape, good habit, a very distinct and desirable variety.

ALMA.—Rich crimson, white eye, good shape, large truss, dwarf compact habit, free bloomer. A fine variety for bedding or exhibition.

BEAUTY of BATTLE.—Beautiful rich cerise orange, tinged with blue, primrose centre, fine shape, good truss, extra superb.

GEM of the SOUTH.—Pure white, primrose eye, surrounded with a belt of rose, shape and truss good, very fragrant, a splendid variety, of good habit. This will be a favourite either for the border or for exhibition.

LITTLE PET.—Deep crimson scarlet, white eye, good shape, a most abundant bloomer, and keeping its rich colour through all weather, very dwarf and compact in habit. This will prove as great a favourite for bedding purposes as the well known Purple King, a fit companion for that variety, being similar in habit.

MAMMOTH.—Light blue, large white centre, fine shape, trusses as large as the Grand Eastern, extra fine.

MISS WRAIGHT.—Rich cherry scarlet, primrose centre, large and good, dwarf compact habit, good truss, a fine variety for bedding or exhibition.

SCHILLER.—Pure white, with a rich deep purple centre, medium truss, close compact habit, very dwarf, a profuse bloomer. A splendid variety for bedding, and will not fail to become a general favourite for a light bed; it is also a telling variety in the exhibition stand.

Plants of the above 3*s*. 6*d*. each, or the set for 1*l*. 2*s*.

NEW ZONALE GERANIUMS.

EVA.—This fine variety is of a beautiful salmon pink colour, large truss, good shape, and of close habit, foliage dark green with a dark horseshoe mark, a fine variety for pot culture. 5*s*.

LIZZIE.—Large rich scarlet, good shape and truss, dwarf close grower, fine horseshoe leaf, a good bedding variety. 5*s*.

PRINCE of WALES.—This splendid variety is of a brilliant scarlet colour, with flowers twice the size of Alma; good truss, free bloomer. The foliage is a dark green, slightly zoned with a dark mark, deeply edged with white. A decided acquisition to the variegated class, the blooms being so large, and the petals so firm and even, give to this variety a rival position among the white edged varieties, and it will be found a desideratum either for bedding or pot culture. 10*s*. 6*d*.

*** *The usual discount to the Trade.*

PETUNIA MADAM FERGUSON.

D. FERGUSON,

To enable the Million to have their bed of this fine Bedding-out variety, offers it on and after May 19, at 2*s*. 6*d*. per plant; 21 plants for 21*s*.; and if 60 plants are taken, 6*d*. each. All Orders of One Guinea and upwards Carriage Free to all Railway Stations in Great Britain and Ireland, and Paris, without any charge for Packing or Baskets. A liberal allowance to the Trade if 100 and upwards are taken. See the *Florist* for August, 1861, from which the following is extracted:—

PETUNIA MADAM FERGUSON.—Alterations both in the form and colour of Petunias have of late been numerous and striking; but among single kinds we have seen none so constant and beautiful as the variety which forms the subject of our Plate this month, and of which a charming specimen, loaded with upwards of a hundred flowers, in which there did not appear the slightest tendency to sport, was shown at the last Royal Botanic Society's exhibition in Regent's Park. This favourite kind, for so it was considered by all who saw it at the "Park," was raised by Mr. Ferguson, of Stowe, in Buckinghamshire, in the spring of 1860; but being the smallest among thousands of Seedlings, it did not flower till October in that year, when its first blooms were submitted to the inspection of Mr. Beaton, who pronounced it to be "a most charming flower," and added, "You are welcome to make me godfather to it." The flowers are of a rich glossy silky white, regularly and distinctly marked with five bands or stripes of beautiful bright purplish crimson. This variety has a hard wiry habit, and a strong disposition to bloom in a small state; under ordinary treatment it is therefore somewhat difficult to propagate. Out of doors it makes a good bed, and under glass, both in the shape of bushes in pots or trained up pillars, it is both pleasing and effective, and in the evening it is reported to emit an agreeable perfume.

Extract from Mr. BULL'S *Catalogue.*

PETUNIA MRS. FERGUSON.—White, distinctly rayed with bright crimson; a unique, superb, and attractive variety.

P.S. In answer to inquiries, the above Petunia had awarded to it in July last the highest Medal given by the Royal Botanic Society for such plants; also a First Class Certificate last week from the Royal Horticultural Society's Floral Committee, though it appears the Chronicler of the *Chronicle* was so much taken up with a different sample (that even one of the Committee said the Second Class Certificate was quite good enough for—indeed, I myself heard a Fellow hissing through his teeth, "hawker's stuff," as he gave them a side look), that he overlooked it.

About 1500 Plants of it will be sold by Messrs. Stevens, on WEDNESDAY, May 21.

STOWE, BUCKINGHAM.—May 17.

NEW TEA-SCENTED ROSE for 1862, GLOIRE DE BORDEAUX.—The above, a Seedling from the well known favourite Tea Rose, Gloire de Dijon, was raised at Lyons, and is represented as being unquestionably the finest Tea-scented Rose of the season.

WM. WOOD & SON beg to intimate that they possess a very large Stock of the above in extra strong plants, which they are now sending out at 5s. each.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses. &c.

WM. PAUL'S CATALOGUE of NEW ROSES and SPRING PLANTS generally is now ready. Free by post on application.

BEAUTY OF WALTHAM, H.P.

This English raised seedling Rose has now received the highest awards ever given by the Royal Horticultural and Royal Botanic Societies. The flowers are large and full, colour brilliant cerise, the petals exquisitely curved in the way of Madame Charles Crapelet; the growth is vigorous, the foliage magnificent, and the plant as hardy as the Dog Rose. Plants 5s. each, and orders executed in strict rotation as received.

HOLLYHOCKS.

A fine stock of all the best named sorts, 9s. to 24s. the dozen. All are raised from cuttings. None grafted.

Waltham Cross, N.

B. WITHAM'S SPRING CATALOGUE of ROSES, BEDDING PLANTS, &c., is now ready, and may be had, post paid, on application.

A large Stock of upwards of 200 sorts of the best and newest ROSES grown, fine, strong, and healthy plants in pots, from 9s. to 18s. per dozen; also an extensive stock of all kinds of BEDDING PLANTS from 3s. to 6s. per dozen, now on sale, at

Clough Nursery, Mottram, near Manchester.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.

For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.

Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.

The Royal Nursery, Bagshot, Surrey.

Exhibition of Rhododendrons.

JAMES VEITCH, JUN., begs to announce that he has a beautiful Collection of HARDY RHODODENDRONS arranged under Canvas, NOW IN FINE FLOWER, to an inspection of which he invites all lovers of this beautiful class of Plants.

Royal Exotic Nursery, Chelsea, S.W.—May 17.

CYPRIPEDIUM INSIGNIS MAULII.—In the first week of JUNE next will be distributed to a full List of Subscribers of 3 Guineas this fine variety of Cypripedium. After that time the price will be 5 Guineas to Non-Subscribers. It is figured and described in the "Floral Magazine," and a Coloured Figure will be forwarded for inspection per Post to Cultivators of Orchids and intending Subscribers on application.

WM. MAULE & SONS, The Nurseries, Bristol.

Bedding Plants at 2s. 6d. per Dozen.

J. SCOTT'S well-known CATALOGUE of the above is now ready, and will be sent to all applicants on receipt of six postage stamps, which will be returned to all purchasers above 10s.

It contains a mass of Cultural and other information about Flowers and Flower Planting, Ribbons, Tessellated and Mosaic work, with Descriptive Lists of all the most ornamental Flower Garden Plants.

Mr. Beaton, in the *Journal of Horticulture*, April 23, 1861, p. 58, says:—"But the best work on making Ribbon borders . . . . is the Bedding Plant Catalogue of Mr. Scott, of Merriott Nurseries; and besides, the Catalogue is the best arranged for young beginners of all that I have seen."

J. SCOTT, Merriott, Crewkerne, Somerset.

Bedding Plants! Bedding Plants!

DILLISTONE AND CO. beg to offer strong healthy Plants of the above for the approaching Summer, of all the most approved kinds, and guarantee to give every satisfaction to all parties who may be pleased to favour them with their orders.

100 Plants of the finest varieties, selected from the following, will be sent for 25s.; 50 ditto, 14s.; Hamper, &c., included.

Geraniums	Verbenas	Petunias
Calceolarias	Fuchsias	Dahlias
Heliotropes	Phlox	Ageratums.
Lobelias	Salvias	&c., &c.

CLIMBERS of the following kinds will be included where it is desired, viz.:—

Cobœas	Eccremocarpus	Lophospermums
Maurandyas	Tropæolums	&c., &c.

A great reduction where 500 or more plants are taken. All the New Roses and Plants of the season. A remittance or reference from unknown correspondents is requisite. Post-Office Orders payable at Halstead.

Sturmer and Woodlands Nurseries, Halstead, Essex.

The Finest Bedding Plants in Cultivation.

EXTRA FINE STOCK.

JOHN KEYNES has 30,000 of the Finest PLANTS for BEDDING OUT now ready at 16s. per hundred (or 2s. 6d. per dozen if taken singly), consisting of the following varieties:—

Scarlet Geraniums	
Ivy-leaf ditto	Ageratums and Heliotropes
Aurea floribunda Calceolaria	Nierembergias and Alyssums
Amplexicaulis ditto	Lobelia speciosa and Cupheas
Rugosa ditto	Gazania splendens
Purple Bedding Petunia	Cerastium tomentosum
Purple Verbenas	Lantana delicatissima
White ditto	British Flag Geranium
Scarlet ditto	4s. per dozen.

Variegated Geranium, consisting of Bijou, Attraction, Countess of Warwick, Flower of the Day, Emperor, Golden Chain, and Cloth of Gold, 6s., 9s., and 12s. per dozen. All in the finest order.

NEW ROSES and DAHLIAS also ready.

Castle Street Nursery, Salisbury.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe. Also to their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which for want of space there, is erected at the Crystal Palace, Sydenham.

Royal Berkshire Seed Establishment, Reading.

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.

LIST OF AWARDS, MAY 6, 1862.

FIRST CLASS CERTIFICATE.

EURYA ANGUSTIFOLIA, from Mr. Standish, Bagshot.
RETINOSPORA PISIFERA AUREA, from Mr. Standish.
ADIANTUM CHILENSE, from Messrs. Veitch & Son, Exeter and Chelsea
ADIANTUM SULPHUREUM, from Messrs. Veitch & Son.
ADIANTUM SCABRUM, from Messrs. Veitch & Son.
PETUNIA MRS. FERGUSON, from Mr. Ferguson, Stowe.
SWAINSONA VIOLACEA, from Messrs. E. G. Henderson & Son, St. John's Wood.
AZALEA (sinensis) ALTACLERENSIS, from Messrs. J. & C. Lee, Hammersmith.

SECOND CLASS CERTIFICATE.

TILIA EUROPÆA, FOL. ARGENTEIS, from Messrs. E. G. Henderson & Son.
AZALEA (indica) SOUVENIR DU PRINCE ALBERT, from M. Jean Verschaffelt, Ghent.
BEGONIA IMPERIALIS, from Messrs. Veitch & Son.
BEGONIA SMARAGDINA, from Messrs. Veitch & Son.
PETUNIA MADAME RENDATLER, from Messrs. Veitch & Son.
OSMANTHUS ILICIFOLIUS FOL. VARIEGATIS, from Mr. Standish.
MICROLEPIA SCABRA? from Mr. Standish.

COMMENDATION.

AZALEA (indica) BRIDE OF ABYDOS, from Mr. Barnes, Camberwell.
WEIGELA STELZNERI, from Mr. Standish.

Sub-committees of this Committee will meet on May 21, to examine the novelties exhibited. On this occasion the plants, &c., must be entered and staged before 10 o'clock.

THOMAS MOORE, Secretary to the Committee.

The Gardeners' Chronicle.

SATURDAY, MAY 17, 1862.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, May 21	Royal Horticultural (First Great Show) at South Kensington .. .. 1 P.M.
	Royal Horticultural (Fruit and Floral Committees) at S. Kensington Noon
SATURDAY, — 24	Linnean (Anniversary) .. .. 3 P.M.
	Crystal Palace Floral Exhibition Noon

IN another column will be found a French official report, the importance of which it is difficult to over estimate. We now know for certain the real value of the timber of that most beautiful tree the Douglas Fir; and what is more, we also know that it is unsurpassable in the qualities which render timber most valuable. It is clean grained, strong, elastic, light, and acquires large dimensions in ungenial climates. It thrives every where in the United Kingdom except the extreme north, and is therefore of all trees that which most deserves the attention of planters for profit. To which we may add that no evergreen surpasses it as an ornament of scenery.

Little or nothing was known of the Douglas Fir until it was brought into notice by the Horticultural Society, which received its seeds from the hardy collector whose name it bears, and distributed some thousands of young plants among its Fellows. As this happened about five and thirty years ago, there must already be an abundance of good specimens in the country. The purpose of this notice is to increase them to the utmost by inducing landed proprietors to substitute the Douglas Fir for the very inferior Spruce.

The Douglas Fir makes its first appearance on the mountains of Northern Mexico, in the country near the Real del Monte mines. Thence it follows northwards the western slope of the Rocky Mountains, at least as high as the now celebrated, but savage, Cariboeuf or Caribou gold field in British Columbia. DOUGLAS, the collector, who crossed the Rocky Mountains a little to the south, through the "Committee's Punchbowl pass," reported that it formed vast forests there on the lower ranges, and struggled upwards till it became mere scrub. We ourselves had till lately bark of the tree from those desolate regions fully 6 inches thick. There can be no doubt that the winters all over this part of British Columbia are severer than such as are usually known here. Governor DOUGLAS, in his report of Oct. 9, 1860, to the Duke of NEWCASTLE, speaks of the country between Douglas Town and Cayoosh (a district far to the south of the Committee's Punchbowl) as having moderate winters, "the minimum temperature being zero Fahrenheit: but the cold is seldom so severe." "The whole district," he adds, "may be described as a succession of valleys and mountains covered with woods almost to their rocky summits and abounding in rivers and streams of every size. Forests of magnificent trees, and great water power, constitute its natural advantages."

We mention these particulars in the hope that they may immediately produce a very large importation of Douglas Fir seeds from British Columbia. The trees there must have iron constitutions; their offspring may be expected to resemble them in every particular; the forests are perfectly accessible; and there is plenty of time for collectors to go and return before next spring. Two months will take an active man to New Westminster, the capital of British Columbia; two months more will suffice for obtaining seeds from the best districts, and two months more will bring him home again. Therefore to arrive here in February there would be time enough to go, collect, and return if he started in September. By this means young plants would soon become saleable at double the price of Spruce, a result that must be arrived at before any large plantations of the tree are likely to be formed.

Those who wish to see the timber of the Douglas Fir will find a flag-pole in the Royal Botanic Gardens, Kew, more than 200 feet high; another taller still was expected to be raised in the Royal Horticultural Society's Garden at Kensington, but we believe that no ship can be found to bring home so tall a spar; some planed specimens are lying in the Vancouver Court of the International Exhibition Building, and a plank from a tree grown in Northumberland, is, we believe, in the Museum of Œconomic Botany at Kew.

A CURIOUS and very destructive kind of canker on Apricot trees has lately occurred to us, perfectly distinct from any form of gumming, and as we believe at present unrecorded, though probably far from uncommon. Our attention was drawn to it, in a young Breda Apricot, by the sudden death of a small branch after the fashion which is so common in gumming. As however there was not the least symptom of that disorder, it became matter of interest to observe it more closely, and it was at once apparent that the branch some way down was studded with round or elliptic dark-brown discs, varying in diameter from three lines to an inch or more, from which the cuticle was rolled back all round exactly after the manner of many of the Fungi which affect the bark of dead branches, such as *Sphæria nummularia*. There is however a Fungus which sometimes occurs on Willows, figured by GREVILLE in his "Scottish Cryptogamic Flora," at t. 206, under the name of *Cryptomyces Wauchii*, which even more closely resembles our disease. Indeed it would scarcely be possible to give a more accurate figure of its appearance than that presented by the larger twig upon the plate in question.

On dividing the discs vertically and transversely we find that the cells immediately beneath the cuticle, which are called by authors the cork cells, are those which are most affected. The layer of these is much thickened, the walls discoloured, and the whole converted into a carbonaceous brittle mass which shells off after a time in the centre or occasionally towards the margin, exposing the discoloured parenchym of the bark lying immediately beneath the cork cells. The adjacent tissues, consisting of bundles of thick-walled cells mixed with further quantities of parenchym, are more or less affected, and in these, especially where fissures occur in the mass, numerous brown threads are found, often forming little necklaces though sometimes continuous, with a few scattered scarcely constricted articulations, and under favourable circumstances bearing obovate many-celled spores exactly like those of *Macrosporium* though much smaller, and probably identical with the black mould which is so troublesome in autumn on the leaves of Plum and other trees which have been previously covered with honey dew. These Fungi, however, have we believe nothing to do with the disease, and are mere aftergrowths, though doubtless where the malady has been once established they help to aggravate the evil and induce more speedy destruction. The layer nearest to the wood meanwhile, or that where life is most active, and which in fact is the seat of continuous growth, is uninjured, insomuch that the subjacent layer of wood is produced in quite as much if not in more abundance than in the other portions of the branch. Beyond this layer, however, there is an abrupt dead black disc on the surface of the wood of the previous year, exactly corresponding with the external diseased shield of bark, and beyond this all is dead down to the pith. It does not appear that the evil extends to the other side of the pith, but the

vital energies either are so depressed by this attack that the apparently uninjured tissues on the other side of the branch are unable to carry on a supply of sap; or possibly the supply is arrested by some shield placed lower on the branch.

It is quite clear that the original mischief took place the previous spring, just as the buds were expanding, whatever its cause might be; and that this cause was sufficiently intense to affect the external layer of the bark and the corresponding surface of young wood, but not such as to affect the Cambium cells, from which a coat of bark and wood was generated between the two diseased surfaces.

It should perhaps be stated that if a very thin horizontal slice be taken from the charred surface, little white spots are visible in it, reminding one of the *Dothidea* which grows so frequently on living stems of different species of Roses in our woods; but we do not find that these specks are composed of asci as in the Fungus in question; nor is there any known species of *Dothidea* found on plants of the same natural order as the Apricot of which it could with any probability be considered as an abnormal condition.

As at present we have met with a single instance only of the disease we are unable to say what appearance it presents at first, though we conjecture that the form is that of a swollen patch of cuticle. It is however clear that, whatever be the moving cause of the disease, unless it be detected in an early stage of development, nothing will save the branch, and that a *clean excision* of the diseased disc is the only probable remedy. We should be glad to hear whether any of our Correspondents have observed the malady; and if they have access to a good library, we would request them to refer to the figure quoted above from Greville's admirable publication, to avoid if possible any mistake. Even without the figure we fancy that there can be little danger of error if the brown disk surrounded by the border of curled cuticle is attended to, combined with the other peculiarities of the attack. *M. J. B.*

LETTERS from New York state that what is called the Stevens Battery, which is constructed with 8-inch iron plates, has its plates backed up by 18 inches of solid Locust wood (ROBINIA PSEUD-ACACIA). Considering how much this wood, hard as it is, will splinter, we should doubt its fitness for the purpose to which it has been applied.

—— THE following further report by Mr. SKINNER on the state of the Orchids in the drawing room at Malvern Link, previously alluded to in our columns at pp. 212, 356, and 380, will doubtless be read with interest.

May 12, 1862.

1. *Lycaste Skinneri.*—This has now four flowers on it. Those which opened on the 25th of March and 3d of April are still perfect. The two new flowers opened on the 10th inst., and yesterday a new pseudo-bulb, formed since January, has a flower stem showing.
2. *Lycaste, another specimen.*—The flowers mentioned in last report are still fine, though one shows a little injury on the lip. A new flower stem, 8 inches high, may flower in a week.
3. *Barkeria Skinneri.*—This met with an accident on the 3d of May; the flower stem got broken and has since been preserved in a flower-jar. I send you inclosed its remains to show that, but for this, it would still have been perfect, and indicating formation of seed vessels. I have the plant now *out of doors* in a standard Rose bush, to let it take its chance. Three new growths an inch high.

NOTE ON VANCOUVER ISLAND TIMBER

(ABIES DOUGLASII).

TWELVE specimens of squared mast timber from Vancouver Island were sent to Cherbourg by Mr. Thatcher in order to be experimented upon. They were all placed amongst timber of the first class; they were almost wholly free from knots throughout the main trunk, and the few knots which were at the head were small and adhered closely to the surrounding wood.

When received the wood appeared very flexible, the pieces taken off the angles in the process of rounding the masts were very long, and capable of being twisted several times without breaking.

Resistance.—In order to determine the resistance of the new wood it was compared with Florida Pine,* Pin du Nord (Scotch Pine?) and Canada Pine, specimens of each being bent until they broke.

The pieces experimented upon were 0.493 meter in length and 0.045 square meter in sectional area. These pieces were placed on two knife edges 0.40 meter apart and were bent by means of pressure applied to a third edge between the other two. Each time the pressure was applied it was continued until the flexure had remained constant for about a minute, when the pressure was removed in order that the elasticity of the wood might be ascertained. Beginning with a weight of 200 kil. the pressure was increased by 50 kil. at a time until the wood broke. The following Table shows the average pressure at which the prices experimented upon broke:—

Florida	870 kil.
Vancouver	866 ,,
Nord	800 ,,
Canada	635 ,,

The results of the above experiments are shown in the subjoined Table, in which R denotes the resistance to rupture per square centimeter; R′ the limit of elasticity per square cent.; E the coefficient of elasticity per square cent.

	R.	R′.	E.
Florida	573	279	88,771
Vancouver	570	277	89,492
Nord	526	274	92,024
Canada	417	252	60,965

As may be seen from this Table the Vancouver timber was proved to be very nearly though not quite equal to that of Florida.

Density.—In order that the hygrometrical state of the specimens experimented on might be the same, they were kept for a long time exposed to the same influences. Each piece was 0.493 meter long, so that its volume might be one cubic decimeter. Careful weighings gave the following results:—

	Weight in kilogr.
Florida	0.652
Nord	0.630
Vancouver	0.572
Canada	0.481

Five specimens of each sort kept in a dry place at a temperature of 37° C. for 144 hours gave the under-mentioned weights:—

Florida	0.640 kil.
Nord	0.636 ,,
Vancouver	0.528 ,,
Canada	0.480 ,,

It appears, therefore, that there is a difference of 13 per cent. in favour of the new wood compared with that of Florida.

The great advantages to be derived from the use of Vancouver timber are due to its extraordinary dimensions, which are such as to obviate the necessity of having recourse to compound masts.

A compound mast of 85 cent. in diameter and made up of Florida Pine in the middle and of Canada or Nord on the outside, weighs about	12,200 kils.
A single mast of Vancouver wood of the same dimensions does not weigh more than	8,900 ,,
Difference in favour of Vancouver ..	3,300 ,,

And the resistance of these two masts would be in the proportion of 766 to 866 = 0.86; so that the diameter of the single mast might be diminished, whereby economy in weight would be gained.

But it is in material and in workmanship that the greatest economy is obtained, as will be seen at once from the following Table:—

	Diameter.	Length.	Value of material.	Workmanship.
Compound mast ..	85 c.m.	33 m.	13,684,00	1,222,00
Mast of a single piece (Vancouver)	85 c.m.	33 m.	4,511,00	407,00
Difference ..	—	—	9,173,00	815,00

Which shows a gain of more than two-thirds in material and workmanship.

Results.—The facts relative to these 12 pieces of mast timber may be summed up thus:—

1. Almost complete absence of knots.
2. Resistance nearly equal to and weight a little less than that of Florida timber.
3. Substitution of masts of a single piece for masts of several pieces, by which a small gain in weight and a great gain in material and work are secured. (*Signed*) *Serres, Naval Engineer, Cherbourg, April* 6, 1860.

* We presume this to be Pinus australis (also called P. palustris.)

INTERNATIONAL EXHIBITION OF 1862.

OF the wondrous assemblage of articles of all kinds and shapes, brought together from every clime into that vast building which overhangs the gardens of the Royal Horticultural Society at South Kensington, there seem to be comparatively few which are of a strictly horticultural character. Such, at least, is the impression we have formed during our wanderings through the endless courts and avenues, amid the endless variety which bewilders the eye, and almost oppresses the imagination by its overpowering extent.

The horticultural matters which are exhibited occur chiefly in the eastern annexe. We commence our brief record of them with a notice of the conservatories and glass erections, which furnish the most prominent items; and we shall take these in the order in which we find them in the Official Catalogue:—

2105. Mr. T. H. P. Dennis of Chelmsford, exhibits a model of a metallic conservatory. It has a curvilinear span roof, and is ventilated by means of machinery which opens the upright sashes of the sides simultaneously. The improvement claimed in this erection lies in the mode of ventilation, and consists "in the ratchet and paul lever, which is self-acting, and at once secures the casement in any required position." The sashes are connected with a rod extending the length of the house, having at one end a cogwheel with stops, and moved by a small hand-lever. The model house exhibited does not correspond with the figure given in the official Illustrated Catalogue.

2119. Mr. Gray, of Danvers Street, Chelsea. This exhibition consists of a small neat conservatory of wood. It has rather high upright sides, and a span-roof, the sashes of which let down simultaneously by means of a small windlass for the purpose of ventilating the interior. The lower part of the upright sashes is also made to open for the same purpose by means of neat brass racks. The glass around the door-ways is stained and prettily ornamented. Altogether this is a convenient-looking structure of the useful class, such as might properly be attached to any suburban villa.

2217. Mr. S. Hereman, of Pall Mall East, has erected an example of Sir Joseph Paxton's patent hothouses for the million, the chief advantages of which are their reasonable cost, and the facility with which they may be erected, and again removed if desired on the expiration of a short tenure or when required for some other use. The sample exhibited is span-roofed, in which form these houses are adapted for orchard houses, Vineries, Pineries, and indeed every horticultural purpose; but they may be erected in the form of lean-to houses, and may thus be made extremely useful in covering walls already occupied by fruit trees, &c. They are rather of the useful than of the ornamental class, and it is stated of them that "their moderate cost places them within the reach of all." The ventilation, as is now pretty well known, is effected by means of long narrow wooden flaps, alternating with the roof sashes, (there are however no upright sides, so that the glazed portion is all roof,) consequently the airing takes place by means of cross-wise instead of lengthwise openings, which are more usual. This plan of ventilating seems to be an effectual and satisfactory one, while by a little mechanical contrivance it is very readily worked.

2160. Mr. Ormson, King's Road, Chelsea, has set up the very elegant curvilinear-roofed Conservatory of which an interior view is shown at p. 441, and an external view at p. 393. This is a light and graceful building, and is constructed of wood and iron, with a good deal of light ornamentation. The merits claimed for it are novelty and beauty of outline, chasteness and elegance in detail, and strength and lightness of construction, and these qualities it seems to possess.

2176. The St. Pancras Iron Work Company exhibit a small octagon Conservatory framed of Mahogany, and having a double-tier curvilinear roof. They have also what is called a glass wall, but which is more properly a glass front, forming in reality a narrow almost upright lean-to house. It appears to be a useful contrivance applicable to the same purposes as the lean-to forms of the Paxton house already mentioned. The structure consists of short iron standards fixed to a wooden plate, which is supported at the ground level on charred stakes driven into the earth. The standards support an iron plate which serves as a gutter. To this plate are fixed iron rafters, which reach to the top of the wall, where they are held by iron clips. The rafters are grooved for the reception of the glass, which is secured, the top plate by brass screws, the others by fixed stops and cork wedges. The space next the ground between the wooden and iron plates is closed by moveable wooden shutters about a foot in depth, which assist in the ventilation of the enclosed space. When these screens are not in use, the glass, which is in the form of large panes of sheet or rolled plate about three feet across, can be taken out and stored in boxes, while the framework being of light construction and durable material can be allowed to remain for future use, or may be removed at pleasure. It is stated that two men may take down or put up 200 to 300 feet run of this "wall" in a day. Ten-feet lights are said to cost about 15*s*. 6*d*., and 12 feet one, 18*s*, 6*d*. per foot run.

2188. J. M. Stanley and Co. of Sheffield. A small octagonal iron Conservatory with dome-shaped roof.

2191. Messrs. J. Taylor & Sons, of Kensal Green, have put up a small span-roofed Conservatory, which has a good deal of ornamentation in the form of iron castings. The upright sashes are opened for ventilation by means of a mechanical contrivance of easy application. It is a smaller building and of simpler form than that represented in the Illustrated Catalogue as being shown by this firm.

2201. Messrs. J. Weeks & Co, of King's Road, Chelsea, exhibit a small model of a curvilinear-roofed Conservatory with nave and transept, not having however any very peculiar features. Also a model plan of a series of numerous plain-looking working houses, such as would be suitable for an extensive commercial plant establishment.

Indoor Gardening.

MANY indoor gardeners have a great ambition to grow Tree Mignonette. I think myself it is a charming thing to do; but am very doubtful as to its success when the lady gardener is apt to be away from home for a month or two now and then. It is of all plants one that most requires care, for the first year at least.

I have however had it myself in a most satisfactory and barky state, and its wiry stems seem somehow to answer well for keeping the flowers fresh in our winter vases, while they are produced in great abundance. The spikes, however, are very small, and of course they have not the pretty feathery look that Mignonette has naturally, although of the two they are the most fragrant.

The difficulty is to keep it growing regularly, and to prevent its flowering sooner than we wish. Very young plants of Mignonette in pots are rather touchy things; they neither stand much dryness or a good soaking rain, and many a promising young plant have I lost from want of weather wisdom, when, leaving out a set on a fine summer's night, a heavy storm next morning has washed half the soil away. I think Tree Mignonette is therefore kept most safely when it is indoors, but in this case it should have as much air and light as possible, and should be always turned round daily.

The first sowing of Mignonette, however, is the most important point. It does not bear to be transplanted well, and even though a small pot might, it would seem, most easily be moved into a larger one without the least disturbance, the need of a stick close to the stem and going down to the bottom of the pot, makes this plan a difficulty.

At the same time larger pots of course take up more room, and when they are used the soil at the sides is apt to get sodden and caked or hardened before the young roots reach it, so that the watering has to be done carefully.

We have then to sow our seeds in pots in which the plants are likely to remain for years. The drainage in these cases is always a great point; charcoal has the advantage of especial lightness, and pieces of old mortar are also remarkably useful and make the flowers much sweeter. Loam with a little sand is the best soil to use, at any rate for indoors and if this has been charred a little on the kitchen shovel it will be all the better. Small bits and dust of mortar are very useful for mixing with the soil, in addition to the pieces of a larger size. The soil should be thoroughly well packed in, not left loose and shambly, but put in firmly and well shaken down, and it is very much better to be lumpy rather than fine. Some people I believe put in bits of sandstone, but this I have not tried. The stick should be a nice-looking one, of some rather tough brown wood. Ash is the very best, and it is worth while attending to, as an ugly stick is always so unpleasant, and a painted one is apt to be broken long before it is done with. The stick should be simply planted, as if it were the plant, down to the very bottom of the pot, and its height should be within an inch or two of the height we wish our little tree to attain. The pot should be a 32.

These arrangements being made, a few seeds of the large-flowered Mignonette should be sown just round the stick, and the pot should be kept in a window till the young plants appear. Very little watering is sufficient at first, and a little Moss or a piece of paper is a useful shade till the seeds have sprouted, just by way of preventing the necessity of much watering. A north window, or still better one north-east or north-west, is the best place for the seedlings during the summer months. They must be thinned out at once to three, and after a week or two only one should be left. A little earthing up is extremely useful, as the young plants seem somehow apt to get twisted round. As soon as one stem is tall enough to require tying it should be fastened loosely to the stick awaiting it. And from the first every appearance of flower buds should be at once cut out with a pair of sharp pointed scissors. The little side branches also should be stopped, that is pinched at the point, as soon as they begin to make a second pair of leaves. And after three or four months the little shortened branches may be themselves by degrees cut off. The leaves however are rather precious at first, as helping greatly to advance the growth and to feed the plant.

On a summer's evening the plants may be watered thoroughly over-head with a fine rose or syringe, and if preserved from frost and damp and kept in a light place they will begin to be shrubby by next spring, when perhaps one or two might be let begin to flower. They last for many years when once well trained, and are very useful from their winter flowering. *E. A. M.*

COMPANIONS OF THE SIKKIM AND BHOTAN RHODODENDRONS.

(*Continued from p. 406.*)

ALTHOUGH the conservatory I have described was intended to be chiefly devoted to the Sikkim and Bhotan Rhododendrons, still, in order to cover the surface of the borders in which they grew, as well as to obtain more variety of foliage, I gathered together a large assemblage of Mahonias, Thibaudias, &c., which as they are found associated with the Rhododendrons in a wild state might naturally be expected to prove their most suitable companions when under cultivation. Of course I was restricted in my choice to such plants as would not object to a Peat border nor to a certain amount of shade; they would also, for the most part, have to be of a lowly habit, so as not to interfere with the effect of the larger specimens of Rhododendrons. As might have been anticipated from an experiment in an entirely new direction, there were failures and disappointments not a few, but on the other hand there were some decided "hits," of which as well as of the failures, I shall now proceed to give a circumstantial account, commencing with the Mahonias. Of these there are three species in the house (*i.e.* M. nepalensis, M. trifurcata, M. Ehrenbergii), all plants of the highest interest, and all succeeding admirably. They appear to delight in an amount of shade such as no other plants, Ferns alone excepted, would endure. My plant of M. nepalensis is fully 12 feet high, and would have been much taller had I not lost two or three seasons—indeed, I had nearly lost my plant, by attempting to grow it out of doors. It was raised from seeds sent by Dr. Royle—shortly before his lamented death—to my neighbour, Mrs. Wilbraham, of Rode Hall, who very kindly transferred them to me. The only specimen that I retained after the plant had been found too tender for the open air, was placed in a pot in a warm greenhouse, where its appearance was far from prepossessing, having a tall, lanky, naked stem, crowned with a tuft of shabby leaves. I thought, however, it might, perhaps, be employed to fill temporarily a certain bare space in the Rhododendron border, and into this—probably the worst situation in the house—it was accordingly turned out. And now a marvellous transformation in its appearance at once ensued, in consequence of side-shoots bursting forth from all parts of the naked stem, which they speedily clothed with the most magnificent foliage! These side-shoots clung close to the central stem, like the branches of the Lombardy Poplar; indeed this fastigiate habit I conceive to be proper to all the Eastern Mahonias. It certainly is so in the case of M. Bealii, M. intermedii, M. japonica, M. Fortuni, and I believe also M. trifurcata, and M. Leschenaultii. Out of doors, where many of these plants will thrive, this habit is unsightly, because the stems are apt to lose their covering of leaves, but in a cool conservatory the whole of the latter are persistent.

My plant flowers in January and February, when its rich yellow racemes clustered together at the extremity of the shoots look like brilliant *coronas*, and have a strikingly beautiful effect. The leaves of M. trifurcata are even more magnificent than those of M. nepalensis (they are nearly 3 feet long), but the bunches of flower are much shorter, and therefore far less effective. Like the former species, M. trifurcata occupies a dark corner of the house where no other plant would succeed. M. Ehrenbergii comes from the new world, and in its bushy habit appears to resemble the western Mahonias (*e. g.* M. aquifolium and M. fascicularis), but it is more graceful. Its flowers too are extremely pleasing both in form and colour.

LUZURIAGAS.—Under this name several years ago I obtained from Mr. Standish two singular plants, viz., L. radicans and L. erecta, and which, coming from the higher ranges of the Chilian or Peruvian Andes would, it was hoped, have proved hardy. As they grow naturally under the shade of trees I planted them out in the first instance among the Sikkim Rhododendrons in the glen previously described, but the cold of our winters was too severe, and nothing but a timely removal to a greenhouse saved their lives. Here, confined in pots, they were anything but attractive, and I little expected the good service they would one day render me, by supplying, as they now do, the most effective carpet for the border in the Rhododendron house. When turned out into this they soon began to spread profusely on all sides, much after the fashion of some of the Lycopodiums, while their fronds vied in gracefulness with the most delicate of the Ferns.* Nor were they content simply to crawl upon the ground, for some of the stolones of L. radicans having come in contact with the trunk of Mahonia nepalensis swarmed up its stem like Ivy, and thus invested it with a new and peculiar charm. One of these Luzuriagas was figured not long since in the "Botanical Magazine," from specimens that had flowered in a cold frame at Kew. The flowers are pretty, but with me are rarely produced, probably on account of the distance of the plants from the light. *J. B., Biddulph Grange.*

* For bouquets, or for the decoration of epergnes for the dinner table, these fronds are invaluable, since to the elegance of a Fern they add the toughness of a Mahonia.

TRADE MEMORANDA.

WANTED, information concerning Mr. William Stainforth, of No. 1, Falcon Villa, Falcon Road, Battersea, said to be heard of at 10, Leicester Square, where, however, we find that he is not known.

Who is William Tane, or Tone, who distributes his favours from Dorchester?

Wanted, the present address of Mr. Thomas Dean, nursery foreman. Address to S. Walton, Britannia Nurseries, Whalley Range, Manchester.

Home Correspondence.

Magnolias.—At page 333 of a recent Number is a notice of a fine specimen of the beautiful and highly odoriferous Magnolia conspicua, growing at Salhouse Hall, Norwich. It is stated to be 21½ feet high, and to be covered with nearly 1000 blossoms in full bloom; it is further said that "this beautiful tree has the additional recommendation of being perfectly hardy"—a statement which I fear must now be received with considerable reservation, as subsequent frosts have proved thoroughly destructive to most plants in bloom. In Loudon's "Arboretum Britannicum," are notices of many remarkable trees of this Magnolia; one at Wormlebury measured in April, 1835, 27 feet high, covered a space laterally 24 feet, and had on it at that time 5000 flowers. At the same period there were in Messrs. Lee's Nursery, at Hammersmith, several standard plants more than 20 feet in height, which flowered magnificently every season. The same work also contains a drawing of the fine plant in front of the late Mr. Malcolm's house in the Kensington Nursery, which I have seen covered with 1100 blossoms. The largest plant however of this variety of Magnolia was that growing at Fromont, in the neighbourhood of Paris, in 1835. This measured 40 feet high; the circumference of the trunk at 2 feet from the ground was more than 2 feet, and the diameter of the space covered by its branches 24 feet. This is the tree the ripened seeds of which produced the Magnolia conspicua Soulangeana, a much hardier, nobler, and consequently more desirable variety than the original; it flowers too much later, and thereby in a great measure escapes the destructive ravages of spring frosts. In the spring of 1837 a small specimen of this was planted against a southern aspect wall of some 20 feet in height; it has long since covered the space assigned to it, and has only on a very few occasions suffered in any degree from atmospheric changes. A few days since I had the opportunity of seeing an admirable standard specimen of this variety in Messrs. Waterer & Godfrey's nursery at Knap Hill, where it is growing on the lawn in front of Mr. Godfrey's house; it was planted in 1838, on the same spot where the conspicua had been destroyed by spring frosts—it is 20 feet high, and with its spreading branches covers an area of 60 feet in circumference; it is now ornamented with at least 5000 flowers, only just sufficiently advanced to show the purple covering of the exterior petals. It has also the additional merit of flowering again in the autumn, when the branches are covered with ample and really beautiful foliage. *James Duncan, Basing Park.*

Insect Plagues.—I have recently removed to a new house, the garden of which adjoins a large timber merchant's and builder's yard, I am consequently overrun with earwigs, woodlice, and various other insects, which destroy almost everything in the garden. Gooseberry and Currant trees, Rose trees, Chrysanthemums, &c., all wither alike. Can any correspondent advise a cheap and effectual remedy? *F. P. B.*

Rhododendron Dalhousianum.—"J. B.'s" estimate of this Rhododendron does not appear to me to be quite correct. I have had a plant of it under my care for these last three years, which at the present time is in great beauty. I admit that the natural habit of the plant is bare and straggling, but with proper treatment that may be overcome. When my specimen first arrived it stood seven feet high and had eight terminal leaf tips and one flower bud. It is a grafted plant and has a single stem 18 inches in height where it branches into four limbs. These last I gradually bent outwards and downwards without breaking them, until I succeeded in making the terminal leaves touch the pot, thus causing the naked branches to assume a balloon like appearance. Then by tying a ball of wet Sphagnum on the upper side of the bends, and syringing daily, the old outer bark soon cracked and peeled off, leaving a smooth green cuticle, underneath which small nodules began to appear all over the bends, which soon took the form of buds and shoots. The young growth of the bent down points turned gracefully upwards and perfected 14 flower buds; the young growth on the bends had no flower buds the first year. The plant bloomed in April 1861, and for a fortnight was the admiration of all who saw it. It has gone on improving, and last summer it was furnished with 41 flower-buds, the first of which opened on the 30th of April, and now (May 8) there are on it above 100 delicately scented primrose blossoms, all fully expanded, and many more promise to come. In colour they are a greenish primrose when first open, but they gradually deepen in the first 24 hours to a bright rich primrose, which lasts about three or four day, when they become French white, irregularly freckled with red spots, and drop about the eighth or tenth day; at present the plant measures three feet high above the pot and three feet through. I may add that I plunge it out of doors during summer and autumn in the sunniest corner I can find for it. *James Leith, Gardener to William Thomson, Esq., Balgowen, Perthshire.*

Kalmias.—Can any of your Correspondents give me information respecting the successful growing and blooming of the Kalmia? We have had two large standards in pots for some years, one with white, the other with pink flowers; and excepting the first year when we got them from the nurseryman, they have never flowered. Should they be treated like Camellias? or like Rhododendrons in pots? *An Old Subscriber.*

Tanner's Bark.—My gardener has a great fancy for tanner's bark, and uses it fresh from the tannery, with all its pungent smell, to lay thickly upon the shrubbery borders, planted with choice shrubs of every sort usually found near a country house. The Rose borders were also covered with the same before the winter, and stable manure was added afterwards. The soil is a tiff and rather clayey one, and the reason given for

using the bark is that it loosens the ground and kills both weeds and insects. The first is simple enough, but supposing the two last to be as stated, I have fears that the shrubs may suffer. Would you therefore kindly give me the benefit of your opinion on the properties of bark, especially as to any objections to its use, in the way I have described. *W. O., Keswick.* [It is impossible to do any thing worse than to use tanner's bark thus, unless it is removed and not dug in. The least that can be said is that it is useless.]

Shedding of Peach Blossoms.—I can sympathise with your inquirer "Perplexity," as I have a Peach-house which has disappointed me exactly in the same way as his has done. My trees are planted out in two rows and trained to a wire trellis at the back and front of a house six foot wide; the roots in the front row are outside in a well-drained border. Nothing could surpass the beauty of the trees when in flower; the petals dropped, and plenty of fruit appeared to have set; but instead of swelling they all dropped off or were easily washed off when we began to syringe the trees. The front sashes slide behind each other, and one half of the roof lifts up for ventilation; when the thermometer got up to 50° air was given at front and top, but the house was shut quite close at night. I am of opinion that my disappointment is to be attributed to shutting up closely at night and opening too much in the day time, although I have not allowed the thermometer to fall below 50° when the ventilators were open; but the house being only six feet wide, there is always a strong draught when the doors or windows are open. As to Peach trees on open walls here that were in bloom at the same time, and covered with coarse canvas let down from the top of the wall to within 2 feet of the ground, and rolled up again on fine days, they are as thick as respects fruit as they can possibly be, nearly every bloom having set and swelled well; I hope, therefore, that we shall have this matter of blossom-shedding well considered, and if others who have failed like myself will give their opinion it may better enable those who have had more experience in orchard houses to show us beginners in what we have done wrong. *T. E., Shrewsbury.*

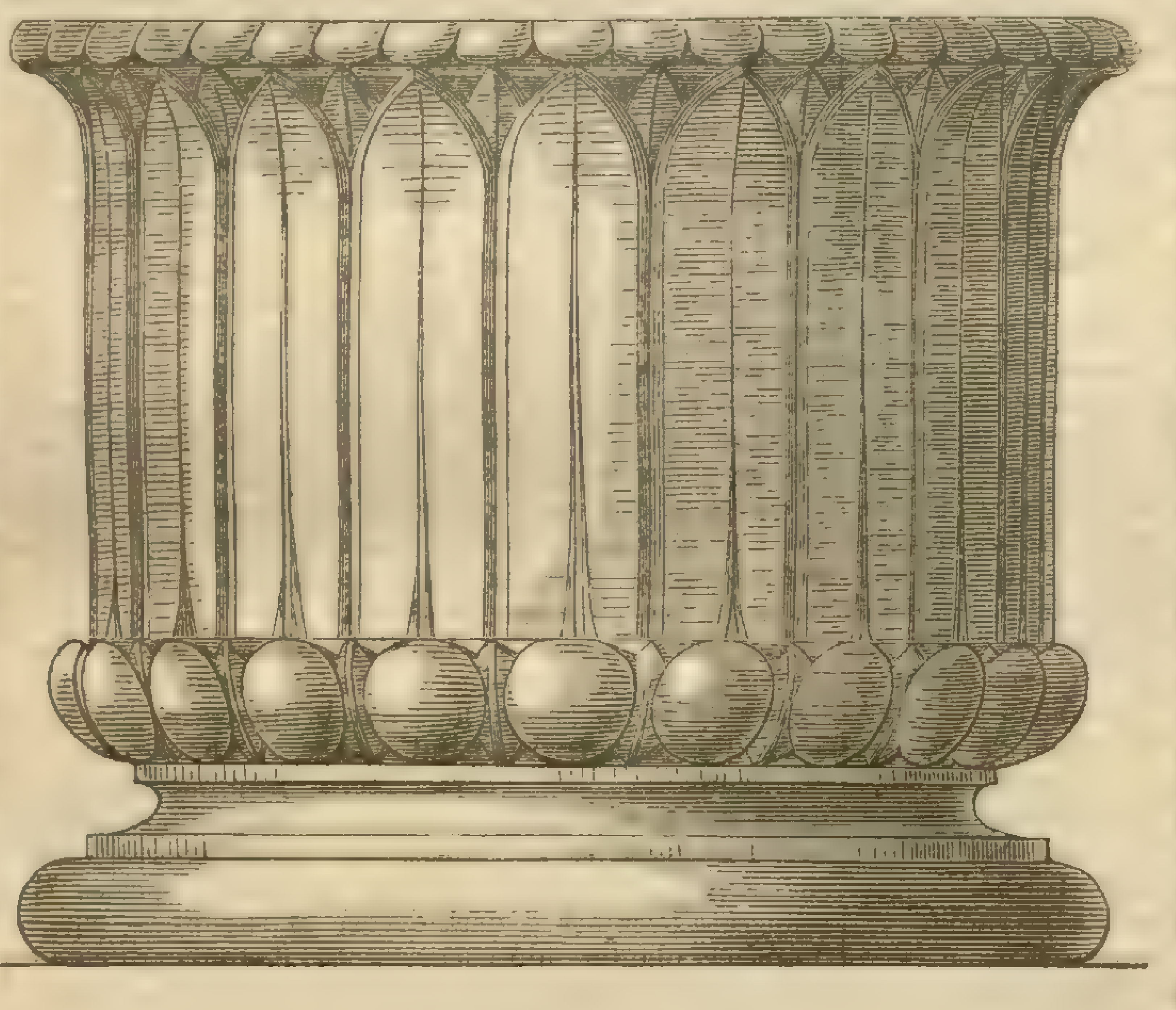
Orchard Houses.—I have an orchard house containing Pears, Peaches, Plums, and Apricots, and this morning I found the leaves of some of the Peach trees blighted and falling off. The previous evening they were quite healthy. Two leaves are enclosed. I should mention that we had last night a very severe thunder storm. What can have been the cause? Can the lightning have had anything to do with it? Greenfly were appearing a few days ago, and the house was smoked with tobacco. The trees in the house have thriven well this the first season, but Pears only promise well. *South of Scotland.* [The affection of your Peach leaves is very singular. We have lately seen two other affections of Peach leaves, which we are inclined to attribute to radiation or a marked difference between the outer and inner temperature. Yours possibly may have a similar origin, but without a knowledge of local circumstances, it is impossible to give any certain opinion. We hope shortly to make some observations on the cases to which we have just alluded, and respecting which we have received some data, and we shall then notice more particularly the curious condition of your Peach trees. *M. J. B.*]

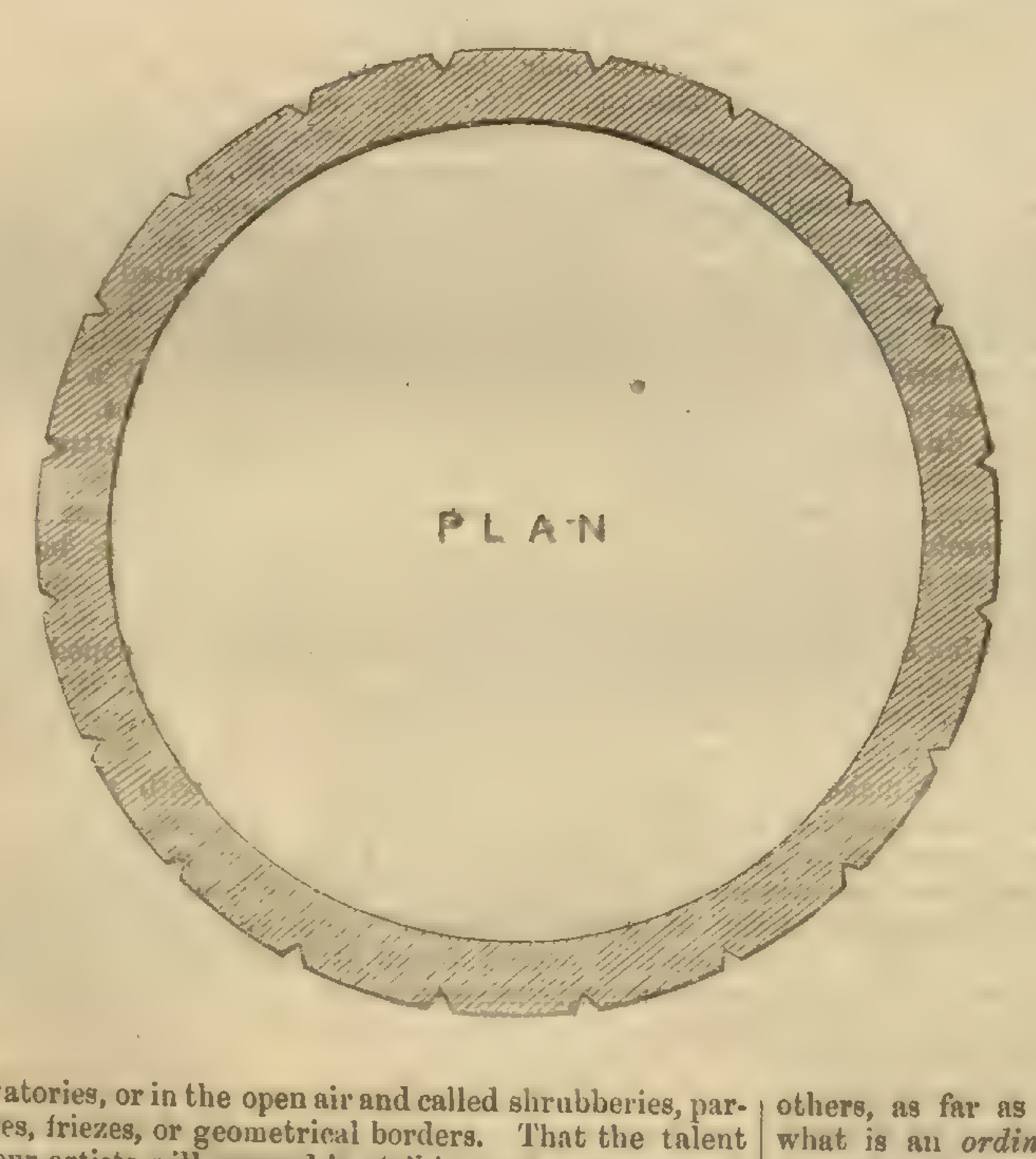
Picea nobilis.—We have a specimen of this here 18 feet in height and 15 feet through, which is now producing 150 cones. Would the tree suffer from leaving them all on to ripen, or would you advise me to remove some of them? *G. A., Finedon Hall.* [Take off two-thirds.]

Papyrus antiquorum.—Public attention has lately been repeatedly called in your columns to the plants used for grouping in the open garden, and the more evidence there is brought forward with regard to fine foliaged plants the better. In the course of a few years it may be expected that our gardens will present quite a different aspect. Although Cannas, Caladiums, and such like plants have been mentioned over and over again, yet I have not seen any notice of what is certainly one of the most distinct and beautiful plants used for this purpose in Germany. The plant to which I refer is the Papyrus antiquorum, and planted as a single specimen it has no rival in point of grace and elegance. In the neighbourhood of Berlin I have seen this planted in pairs, one on either side of a walk, alternately with Humea elegans, and nothing could equal these in elegance. It is impossible that anything could be more graceful than the drooping globular heads of linear segments supported by tall and slender stalks. They were a good deal sheltered from the wind by trees, and consequently they did not need much tying up. They were liberally supplied with water during the summer, as was indeed necessary with almost everything; and one pair which had an occasional soaking of very weak guano water showed by their superior luxuriance, that they have no objection to high living. In the autumn they were taken up and potted, and during winter kept in a corner of the stove. It is somewhat doubtful perhaps whether our ordinary summers may suit this plant in England, but as there are few stove plants which will not succeed in the open air during our three hottest months, the experiment would be worth trying. If any one has already tried the plant out of doors, he would be doing good service by chronicling his experience. I may observe that Musa Cavendishii did not succeed under the same treatment, the leaves looked yellowish and unhealthy, and a very little wind was sufficient to tear them up into ribbons. I have seen the Musa tried in many and widely separated places, and the result was never satisfactory. *C. W. C.*

Covering Wall-trees.—Would a glass covering to wall-fruit trees be a more advisable protection than a simple roller bunting blind, with a projecting coping in the wall. Would not the fruit in the latter case be better flavoured? *V.* [We think this an open question. Undoubtedly in some cases glass coverings are inferior to other kinds of shelter, as was exemplified some years ago in the Garden of the Horticultural Society at Chiswick.]

The Suggestions for Conservatory Tubs.—It must not be forgotten by the readers of the *Gardeners' Chronicle*, that the sketch by S. S. published a fortnight since was, like the others, merely suggestive. My object in sending it was to direct attention to a much neglected subject of very great interest to all who have decorated gardens, whether under glass and called con-





servatories, or in the open air and called shrubberies, parterres, friezes, or geometrical borders. That the talent of our artists will succeed in striking out patterns both cheap, suitable, and worthy of refined taste, I do not doubt, and by way of further assistance I send another idea by S. S., which appears to me a happy one. It is intended for construction in pottery, but might be easily modified so as to be executed in wood by means of separable staves. *Jael.*

Societies.

ROYAL HORTICULTURAL: *May* 12.—Sir Joseph Paxton, M.P., in the Chair. The following candidates were elected, viz.:—

Countess of Aylesford, Miss J. Aytoun, Mrs. F. St. John Balguy, R. Blake, Esq.; Mrs. Bonsor, Miss M. E. Burra, Mrs. Cubitt, The Countess of Dartmouth, B. Dobree, jun., Esq.; Sir Alex. Acland Hood, Bt., M.P.; Mrs. Innes, R. Jardine, Esq.; F. J. Jones, Esq.; Mrs Kennard, J. S. Leigh, Esq.; The Lady Anne Mackenzie, Mrs. Magenis, J Mann, Esq.; C. McLean McHardy, Esq.; Daniel O'Connell, Esq., M.P.; D. Pearce, Esq.; Col. J. Priaulx, J. D. Rochford, Esq.; Mrs. Saunders, T. Selby, Esq.; Captain E. C. Singleton, Captain M. Smith, Mrs. Gen. Swiney, W. J. Taylor, Esq.; T. Turner, Esq.; Miss Varnish, and F. Wright, Esq.

Notices of Books.

The Summer of 1862; *founded on the Vernal Equinox. With Observations on the Summer of England, coupled with Remarks on the Locality and Meteorology of Great Britain.* By Thomas Du Boulay. London, 246, Strand. Pp. 15.

The object of the author, we are told, is to explain the principle on which this prediction is founded, in order that he may induce others to take an interest in examining its truthfulness for themselves in future years.

"England is full of meteorological tables and figures for past years, without possessing at present a single principle to harmonise them or make them useful. They all refer to the condition of the *lower* atmosphere; and they give no account, and do not try to give any, of what is going on *above*, though the winds and weather below are often the direct results of other currents above, whose direction may be known at times by the clouds or traces of clouds floating in them. There are two opposing principles which seem to set in motion the chief lower winds in England: one is, that in which the air (properly speaking) is the prime mover, and drags along with it the watery vapour with which it is blended, of which an example may be found in the cold north-east winds of spring, or others of that character; the other, that wherein the moisture in the air is the probable prime mover, and compels the whole mass eventually to follow it: an instance of this may probably be found in the warm south winds of autumn, which at times are seen rushing with great force towards other advancing bodies of cold air from the north-west." Now, we cannot understand how moisture can be a prime mover. It ascends when acted upon by the power of the sun's rays; and when condensed by cold it descends by the force of gravitation; but by itself it can commence no movement.

"It is the writer's conviction that there are no cycles of the seasons, properly speaking, in the British Isles; no real return of the peculiar changes which mark every individual summer, and give its vegetation likewise a peculiar history, from its seed time to its maturity, but that the movements of the atmosphere form one series of interminable changes known only to God himself. It is not, therefore, in the spirit of prophecy that the writer is about to predict a very wet summer this year, but simply as an observer of signs, which he wishes to recommend to the notice of others. We may be quite unable to trace the combinations of the multiform influences which determine the movements of the winds, with their attendant results, on the seasons in these latitudes; but a fine sunset is recognised as a sign of a fine to-morrow, and so a remarkably fine vernal equinox may possibly be a sign of a remarkably fine summer, and so also a bad equinox of a bad summer; and it is the object of this pamphlet to say that these things are so, and to initiate others, as far as possible, into the means of judging what is an *ordinary equinox* predictive of an *ordinary summer*, and what an *extraordinary equinox* predicting an extraordinary one."

The writer states as a result of his inquiries that "*in all cases* the weather of the *vernal equinoctial week, from the* 18*th to the* 25*th March inclusive*, seemed cut off and separated, in meteorological character, to a remarkable degree, from that of the periods immediately preceding or following it; thus commending itself to the attention as a very remarkable portion of the year. Secondly, that the weather of that period, narrowly observed, was so strikingly copied and reproduced during some summers, and so failed, apparently, in being reproduced in others, that for 15 or 20 years it seemed a perplexing problem whether any conclusion that could be usefully depended on would result; and the whole investigation was from time to time on the point of being given up in despair, when it appeared that it was in the *extraordinary and strongly marked equinoxes and summers* that the resemblance of weather and atmospheric movements could be traced, and in the *moderate ordinary equinoxes and summers* that it could not. Here, therefore, comes out a useful rule. An

ordinary equinox is followed by an ordinary summer, and predicts it; and he asserts that an extraordinary equinox "predicts and is followed by an extraordinary summer, and one like it in character."

He only says, that he is convinced that such is the case, without giving a single example to corroborate his statement. This the readers of his pamphlet had a right to expect; but he merely says tables of the weather for past years abound, and are open to inspection. We accordingly referred to a series of these, and it appeared that in 1851 the equinoctial week, from the 18th to the 25th of March, was a remarkable period, no less than 1 inch and about one-fifth of rain having fallen. The months, May, June, July, August and September, which this period should typify, ought to have been excessively wet; but it so happened that the fall of rain in these five months was considerably below the average, amounting to only 8.42 inches, or averaging 1.68 inch per month, instead of 2 inches. The weather on the whole was remarkably fine. In the next season, 1852, in March of that year there fell only ¼ inch of rain, and in its equinoctial period *there was not one drop*; so that according to what is given out as a "useful rule," people might have staked any money on a fine dry summer; on the contrary, however, there were in June only four dry days, the amount for that month being 4.69 inches, or nearly 3 inches in excess of the usual quantity. In July the supply was ample; in August and September the quantity was again much above the average. Altogether, the five months which the equinoctial period typified to be dry, proved exceedingly wet, the total quantity being only a small fraction short of 16 inches. In the face of these facts and figures, so utterly at variance with the rules laid down, we cannot place any confidence in the predictions contained in the pamphlet before us. That "the summer season (of 1862) should also be *remarkable for less sunshine than usual, and more than usual cold*," we hope will prove to be the reverse of the prediction; and that it will be no more in conformity with the rules laid down than were the summers of 1851–2. "The worst part of the summer in the south [of England] should be about the centre of it—June, July, August; the best, comparatively, the early part—May." This comparatively best period has been, as we all know, remarkable for constant heavy rains and inundations; quite contrary to what the prognostication, made so recently as April 1862, would have led us to expect. Fine summers not unfrequently succeed wet springs; the *probability* therefore is that the summer of this year will be dry and fine notwithstanding the assertions on vague data to the contrary—very different indeed from those on which Admiral Fitzroy founds his highly important and useful warnings. Those deserve every attention—those in the pamphlet before us deserve quite the contrary.

Miscellaneous.

OFFICIAL REPORTS ON BRITISH COLUMBIA; ITS CLIMATE, AND FITNESS AS A COLONY FOR GARDENERS AND FARMERS.

(Extracts from Parliamentary Paper No. 2794, 1862. The authority is in all cases that of Governor Douglas.)

The banks of Pitt River are exceedingly beautiful; extensive meadows sweep gracefully from the very edge of the river towards the distant line of forest and mountain. The rich alluvial soil produces a thick growth of Grass interspersed with the Michaelmas Daisy, the wild Rose, and scattered groups of Willows. This fine district contains an area of 20,000 acres of good arable land, requiring no clearing from timber, and ready for the immediate operations of the plough. Many parts of it are however exposed to overflow, through the periodical inundations of the Fraser, which commence about the first week in June, and generally subside before the middle of July. Owing to this circumstance the Pitt River Meadows are not adapted for raising Wheat and other Cereals which require the entire season to mature, but may be turned to good account in growing hay and every kind of root crop, and may also be used extensively for pasturing cattle, and for the purposes of the dairy. The banks of Fraser River are almost everywhere covered with woods. Varieties of Pine and Firs of prodigious size, and large Poplar trees, predominate. The Vine and soft Maple, the wild Apple tree, the white and black Thorn, and deciduous bushes in great variety, form the massive undergrowth. The vegetation is luxuriant almost beyond conception, and at this season of the year presents a peculiarly beautiful appearance. The eye never tires of ranging over the varied shades of the fresh green foliage, mingling with the clustering white flowers of the wild Apple tree, now in full blossom, and filling the air with delicious fragrance. As our boat, gliding swiftly over the surface of the smooth waters, occasionally swept beneath the overhanging boughs which form a canopy of leaves, impervious to the sun's scorching rays, the effect was enchanting; yet amidst all this wealth and luxuriance of nature, I could not repress the wish that those gorgeous forests might soon be swept away by the efforts of human industry, and give place to cultivated fields and the other accessories of civilisation. This, however, will be a work of time, though there is no doubt that the facilities and inducements now held out to settlers in this colony by the pre emptive law and other enactments might enable thousands of the destitute poor of Britain, by a few years of steady industry, to secure for themselves happy homes and a comfortable independence for life. The tract through which we rode is well adapted for settlement, the soil being a deep rich loam, and the woods which once evidently covered the whole face of the country, having been in parts so completely destroyed by fire as to leave large patches of ground almost clear of timber. The tract alluded to and that extending to Smess River contains about 150,000 acres of land, easily cleared and generally well adapted for tillage; its advantageous position on the banks of a navigable river further recommend it as an eligible place of settlement.

The valley of the Shimilkomeen has many attractive features, no part of British Columbia being more beautiful as a country, or offering greater inducements to settlers. The whole of that district is watered by running streams, possesses a great deal of arable land, and is diversified by woodland and meadow. The climate is pleasant and healthy, the winters mild, and the capabilities of the district for raising and pasturing stock are very great. There is, moreover, satisfactory evidence that the rivers and soil are auriferous, and that gold will become a chief article of export and source of wealth.

Our latest accounts represent that 600 white miners were successfully employed on Quesnelle River, earning from 10 to 25 dollars a day. The spring freshets had driven them away from their claims in the beds of the rivers, and they had commenced operations on the hills and ravines, which have turned out to be highly auriferous. Several pieces of gold, varying from six to eight ounces, have been found in those new diggings, and the gold produced has a rougher surface and is in larger pieces than that found in the country west of Lytton.

A new gold district is also said to have been discovered in the southern part of British Columbia, at York Creek, a tributary falling into the Kettle fall River near the 49 parallel, and 400 miners, chiefly from Oregon, were reported to be engaged in working that field, and making wages from 15 to 20 up to as high as 100 dollars a day. It is anticipated that there will be a great rush of miners to that part of the country, and, if so, food will be required in large quantities, which will lead to a great increase of trade, and to the formation of new settlements in that part of the Colony by reason of this additional attraction.

The intelligence I had the honour to communicate to your Grace in my Despatch No. 70, of the 3d instant, respecting the discovery of rich and paying gold fields at Rock Creek and in the Shimilkomeen country, have been confirmed by the arrival of different persons with samples which they themselves have dug in those parts. The gold is nuggetty and of fine quality, being readily separated from the soil without the use of quicksilver, and is found away from the watercourses as well as in the river beds, and the miners are said to be realizing from 6 to 50 dollars a day to the man. One instance of remarkable success is mentioned in the report of Mr. O'Reilly, the Gold Commissioner at Fort Hope, it being of two miners, who realized in six weeks by mining the sum of 1300 dollars, and their confidence in the productiveness of the country was so great that they soon after invested the whole sum in the purchase of another claim. In consequence of those reports there has been a great rush of people to the new diggings, and all articles of consumption are scarce and selling there at a high price.

Port Pemberton is five miles distant from the Meadows, a fine tract of several thousand acres of rich alluvial land, situated at the mouth of the Lillooet River. A settlement is already formed at that attractive spot, and the soil is most productive, the settlers having raised this year excellent crops of Oats, Indian Corn, Potatoes, and hay; the Barley, however, was indifferent, in consequence it was supposed of imperfect tillage, but I never saw better garden-stuffs of all kinds, especially Tomatoes and Cucumbers, which were exceedingly fine. Mr. Jones, the oldest and principal settler, raised last year, as he assured me, a very fine crop of Potatoes, for which he found a ready sale at 5*d.* a pound, and thereby realized the large return of npwards of 240*l.* an acre. Having this year a much larger crop, he expects to do better, though the price of vegetables is now comparatively moderate, being 50 per cent. lower than last year. The gardens about this town (Lytton) are highly productive, and furnish a profusion and variety of vegetables; but, considering there is no want of good soil and clear land, I was surprised to find that not a single farm had been opened in the district. The want of roads and the enormous cost of transport may in some measure account for that circumstance, but it also strongly marks the character of a population devoted to other pursuits, and who probably look to other countries for a permanent home.

The country situated between Lytton and Rock Creek is highly attractive, and no other part of British Columbia, nor of the United States territory north of Columbia River, offers so many inducements in point of soil and climate to the enterprising emigrant. Its distance from the coast, and difficulties of access have hitherto almost excluded it from intercourse; but as those impediments are removed by the formation of roads, now in rapid progress, from the navigable points of Fraser River, it will no doubt become a centre of population and the seat of flourishing settlements. I will not attempt to describe its physical aspect; but to give a general idea in few words, I will observe that it forms an elevated table land of great extent, sometimes rising into hills, and is traversed by many noble valleys, and watered by numberless streams flowing into its great arteries the Thompson, Shimilkomeen, and Okanagon Rivers. There are many varieties of soils, much arable land, and a great deal that is fit only for pasture; but as a remark generally applicable, I may observe that the valleys contain a large extent of good open land; while the steeply swelling hills are mostly covered with trees formed into groups, or growing with park-like regularity, widely apart and free from brush or underwood; but the peculiar feature of the country is the profusion of Grass that covers both woodland and meadow, affording rich pastures for domestic animals, a circumstance which gives to this district an extraordinary value, as every part of the surface, whether hill or valley, may be turned to account and made available either for tillage or stock farming. The climate, like that of all other parts of the Colony, is perfectly healthy; and there is much less humidity at all seasons than in the districts bordering on Fraser River. Vegetation was nevertheless fresh and green to a degree that was hardly to be expected at that time of the year. The seasons exhibit no extremes of temperature, the summers being warm and the winters sharp but not severe.

The amount of land sales for the year 1860 is 10,962*l.*, which is less by 7915*l.* than the sales of 1859; a difference explained by the large sums received for building lots at New Westminster and other towns where land was required for commercial purposes and sold at high prices. A larger quantity of country land has been sold in 1860, but from the comparatively low price did not yield a proportionate revenue. There is no prospect of a material increase in land sales for 1861, except through the effect of emigration from Canada and Great Britain, as there is a very small farming population in the Colony, the working classes being chiefly miners, accustomed to excitement, fond of adventure, and entertaining generally a thorough contempt for the quiet pursuits of life.

The most interesting feature about New Westminster is the newly formed lines of road through the densely wooded country north of that town, which has induced settlers to turn their attention that way, and will probably lead to the rapid extension of settlement in the direction of Burrards Inlet. A similar result in promoting early settlement is anticipated from another new line of road which is being formed on the left bank of the Fraser, commencing a little below New Westminster, and running in a southerly direction towards the frontier. The forests opposite the town are beginning to yield to the woodman's efforts; and one enterprising proprietor, Mr. Brown, has discovered on his ground a large tract of excellent land, which certainly cannot be surpassed in point of fertility or quality of soil.

We are daily receiving the most extraordinary accounts of the almost fabulous wealth of the Antler Creek and Caribou diggings. Mr. Palmer, a respectable merchant, who arrived the other day from that part of the country with nearly 50 pounds weight of gold, which he kindly allowed me to examine, assured me that these accounts are by no means exaggerated. As an example of the extraordinary wealth of the country, he mentioned that four of his friends who are associated in a mining company, were making regularly from 16 ozs. to 37 ozs. of gold a day, being 4 ozs. to 9¼ ozs. each; by "fluming" another company of four men washed out with cradles, in his presence, 36 ozs. of gold in one day; and the yield of ordinary mining claims is from 20 to 50 dollars a day for each man employed. The gold in Caribou is not confined to the rivers. It is found in the gulches and table land 300 and 400 yards from the rivers, and much beyond their highest levels. About a foot of gravel overlies the red rock of light coloured shale extremely soft, or in mining phrase "rotten," where the gold is found in the rents of the shale. He says, there are mountains of quartz, and he is of opinion that some of the richest quartz leads in the world will be found there.

Leaving that place (Lytton) I travelled for 35 miles along the banks of Thompson's River by a good horse road lately made at a trifling cost, and successively visited the Buonaparte and Hat Rivers, and the Pavilion, where we fell upon the Fraser, and followed it downwards to Cayoosh. The district comprehended within those limits is exceedingly beautiful and picturesque, being composed of a succession of hills and valleys, lakes and rivers, exhibiting to the traveller accustomed to the endless forests of the coast districts, the unusual and grateful spectacle of miles of green hills, curving slopes, and level meadows, almost without a bush or tree to obstruct the view, and even to the very hill tops producing an abundant growth of Grass. It is of great value as a grazing district, a circumstance which appears to be thoroughly understood and appreciated by the country packers, who are in the habit of leaving their mules and horses here when the regular work of packing goods to the mines is suspended for the winter. The animals even at that season are said to improve in condition, though left to seek their own food, and to roam at large over the country, a fact which speaks volumes in favour of the climate and of the natural pastures. It has certainly never been my good fortune to visit a country more pleasing to the eye, or possessing a more healthy and agreeable climate, or a greater extent of fine pasture land; and there is no doubt that with a smaller amount of labour and outlay than in almost any other colony, the energetic settler may soon surround himself with all the elements of affluence and comfort. A good deal of running stock has been brought in for sale; but with the exception of eight or ten persons, there are no farmers in the district. One of these, Mr. McLean, a native of Scotland, and lately of the Hudson's Bay Company's service, has recently settled on a beautiful spot, near the debouch of Hat River, and is rapidly bringing his land into cultivation. He has a great number of horses and cattle of the finest American breeds; and from the appearance of the crops there is every prospect that his labour and outlay will be well rewarded. He is full of courage, and as confident as deserving of success. He entertains no doubt whatever of the capabilities of the soil, which he thinks will, under proper management, produce any kind of grain or root crops. The only evil he seriously apprehends is the want of rain and the consequent drought of summer, which has induced him to bring a supply of water from a neighbouring steam, by which he can at pleasure irrigate the whole of his fields. I received an equally favourable report from Mr. Reynolds, who commenced a farm at the Pavilion in the year 1859, and he has consequently had the advantage of two years' experience. His last crop, besides a profusion of garden vegetables, consisted of Oats, Barley, Turnips, and Potatoes, and the produce was most abundant. The land under Pototoes yielded 375 bushels to the acre. The Turnip crop was no less prolific; one of the roots weighed 26 lbs.; and Swedes of 15 lbs and 16 lbs. were commonly met with. He could not give the yield of Oat and Barley, the greater part having been sold in the sheaf for the use of the mule trains passing to and from the mines; but the crop, as was manifest from the weight and length of the straw, which attained a height of fully four feet, was remarkably good. He generally allows his cattle to run at large, and they seldom require to be housed or fed in winter. The cold is never severe; the greatest depth of snow in 1859 was 12 inches, and the following winter it did not exceed six inches. Ploughing commences about the middle of March. The summers are generally dry, and Mr. Reynolds is of opinion that irrigation will be found an indispensable application in the process of husbandry in this district. In the dry summer of 1859 he kept water almost constantly running through his fields; but applied it only twice during the summer of 1860, when the moisture of the atmosphere proved otherwise sufficient for the crops. The numerous streams which permeate the valleys of this district afford admirable facilities for inexpensive irrigation; so bountiful indeed has nature been in this respect, that it is hardly an exaggeration to say that there is a watercourse or rivulet for every moderate sized farm that will be opened in the district. The latest accounts from Caribou confirm the former reports of its vast auriferous wealth. About 1,500 men are supposed to be congregated in those mines, and the number is continually augmented by the arrival of fresh bodies of miners. It will be a work of difficulty to keep them supplied with food, a service which now gives employment to about 1,200 transport horses and mules; and I am in hopes that the large profits made in that business will lead to its extension.

The firm of Messrs. Levi and Boas, of New Wesminster, have kindly permitted me to communicate the following extract from a letter, dated 27th August 1861, which they very lately received from Mr. Levi, the managing partner of the firm at Cariboo. "Hamburger went to Abbott, who used to be at Langley, and borrowed 2,000 dols. I must let you know that Abbott and Jordan have one of the richest claims in the country. The least they take out a day, three of them, is 120 ounces. They have a flour sack of gold 14 inches high. They will make, till fall, 100,000 dollars a piece. Out of one little crevice, while Hamburger was up there, he, Abbott, took 60 ounces out of it, and gold makes your eyes water, and you will never see a greater excitement as there will be next season." I will not multiply these details, having said enough to show your Grace the opinion entertained by the public of the newly discovered gold fields, and of the probable influx of population from California and other countries which may be attracted by those discoveries. I need not assure your Grace that every precaution will, in that event, be taken to maintain the peace, order, and good government of the country, and to increase its permanent population: but it is impossible to repress a feeling of profound regret that so few of her Majesty's British subjects have yet participated in the rich harvests reaped in British Columbia, though there is certainly no country in the world that offers greater inducements to the labouring classes, or for the employment of capital. The settler enjoys the peculiar advantage in British Columbia of an unfettered choice of the public domain; and may, without expense or official delay, select any part of the Colony he pleases, as his future home; the ultimate price of country land being in no case over 4*s.* 2*d.* an acre, payable by instalments, spread over several years. In fact the system of no country can offer greater inducements to the settler and miner than the land regulations and mining laws of British Columbia. The miners at Cariboo have, I am glad to inform your Grace, suffered no privation whatever from the want of food. Besides the large importations of bread stuffs and salt meat packed in from Lillooet and Lytton, large droves of cattle have been sent to Antler Creek, where the native Grasses are nutritious and abundant; and fresh beef is now selling by retail at 1*s.* 8*d.* a pound. A mining town of some note has sprung into existence at Antler's Creek, and supplies of all kinds can be readily purchased. The traveller who is prepared to encounter famine in its gauntest forms on his arrival at Cariboo, is not a little astonished to find himself in the midst of luxury, sitting down every morning to

fresh milk and eggs for breakfast, and to as good a dinner as can be seen in Victoria.

"On many claims the gold is a perfect nuisance, as they have to carry it from their cabins to their claims every morning, and watch it while they work, and carry it back again (sometimes as much as two men can lift) to their cabins at night, and watch it while they sleep. There is no mistake about the gold. Steele is here; they took out 370 ounces one day. I was very glad to see the men so quiet and orderly; old Downie looked really almost aghast. He said, 'they told me it was like California in '49; why, you would have seen all these fellows roaring drunk, and pistols and bare knives in every hand. I never saw a mining town anything like this.' There were some hundreds in Antler, all sober and quiet. It was Sunday afternoon, only a few of the claims were worked that day. It was as quiet as Victoria. It may be interesting to his Excellency to hear of the almost fabulous amount of good which was taken out of a claim on Lightning Creek, belonging to a man named 'Ned Campbell.'

1st day	900 ounces
2nd day	500 ,,
3rd day	300 ,,

and other days proportionally rich. The information which I have thus laid before your Grace leaves no room for doubt as to the vast auriferous wealth and extraordinary productive capabilities of British Columbia; and with scarcely less probability it may be assumed as a natural consequence resulting from the marvellous discoveries at Cariboo, that there will be a rush thither and an enormous increase of population in spring. To provide for the wants of that population becomes one of the paramount duties of Government. I, therefore, propose to push on rapidly with the formation of roads during the coming winter, in order to have the great thoroughfares leading to the remotest mines, now upwards of 500 miles from the sea coast, so improved as to render travel easy, and to reduce the cost of transport, thereby securing the whole trade of the colony for Fraser's River, and defeating all attempts at competition from Oregon.

Ailantine. Silk for the Million, introduced under the Patronage of the Emperor Napoleon III., by Mr. F. E. Guérin-Méneville.—The Ailantine is a textile substance, more beautiful and much stronger than Cotton, and may be regarded, indeed, as intermediate between silk and wool. The Ailante (Ailantus glandulosa) is a hardy tree, possessing great vitality, and may be grown anywhere, even in the most arid and unfruitful soil, where neither cereals, nor herbage, nor succulent plants can be made to grow. The Ailante silk worm (Bombyx Cynthia) is as hardy as the plant it feeds upon. No severity of weather can detach it from the leaf to which it adheres, nor hinder it from spinning its cocoon. Both the Ailante tree and the silk-worm have been already extensively introduced with great success in various parts of Europe, Africa, America, and Australia. In very warm climates the Bombyx Cynthia gives two crops a year, but in colder regions only one. In the temperate portions of Europe, where the climate as in England, parts of France, and Holland, will not admit of the growth of Cotton, the Ailante may be cultivated so as to yield the following results. Taking a French hectare, equal to about 2½ English acres, as the basis of calculation, the outlay to be incurred would be:—

Purchase of 2½ acres of poor land	£8	0	0
Total cost of planting the Ailante therein, and interest	12	0	0
Total..	£20	0	0

While the annual produce, commencing on the fourth year, may be safely reckoned at from 12*l.* to 16*l.*, that is from 5*l.* to 6*l.* per year; a plantation of Mulberry trees yielding the same ratio of produce usually sells in France at from 400*l.* to 480*l.* the hectare, equal to about 160*l.* to 190*l.* per acre. It appears that Cotton from Sig in Algeria was sold in March last at Liverpool from 2*s.* to 2*s.* 2*d* per lb. Now although the present price of Ailantine is but a trifle higher than this quotation, the intrinsic value of the material is quadruple that of Cotton, as regards strength, durability, and beauty. Moreover Ailantine can, as we have already stated, be cultivated anywhere, and in the poorest of land, whilst it is well known that the Cotton plant can only be grown in warm climates and in well irrigated fertile soils. More than a million of the Ailante tree were planted in France in 1861, and more than 100 millions of seed sown, sufficient to cover twenty thousand hectares of land, or nearly 50,000 acres. It may finally be observed that the method invented by Mme. de Corneillan and M. Forgemol for winding off the raw silk from the cocoons considerably enhances the value of Ailantine. This very important new product has met with signal marks of public approbation: obtaining the unusually high prize of 40*l.* from the French Society of Acclimatization, also the large Gold Medal of the Society for the Encouragement of National Industry in France; besides which no less than 38 other medals have been awarded either to M. Guérin-Méneville, or to various agriculturists who have practically developed his discovery. The works of M. Guérin-Méneville on the cultivation of the Ailante tree and the proper management of the eggs of the silkworm, and every other necessary information connected with the subject, may be procured of Mr. A. Schulze, 13, Poland Street, Oxford Street.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—As early blooming plants go out of flower, seed pods if any should be picked off and the shoots cut back and arranged in the form most favourable for rendering them compact and bushy, placing them in an airy part of the greenhouse until they shall have fairly started into growth. The proper time for shifting such as require more pot room will be when the buds have fairly broken, as they can then be kept somewhat close for a fortnight to encourage free root action without incurring the risk of the buds breaking irregularly. Look well to stock for summer and autumn decoration, and do not allow it to sustain any check for want of pot room or inattention to watering. Fuchsias for late blooming must not be kept too warm; on the contrary, they should be placed in a moist, cool, shady house, where they will grow much more freely than in a high temperature. In stoves plants will now be pushing freely, and will require frequent attention in the way of stopping, training, &c. Keep them properly furnished with pot room, and afford them all the sunshine they will bear without scorching with a mild atmosphere, admitting air freely on fine days. Also give them sufficient space for the perfect development of their foliage. Pay strict attention to the destruction of insects and to keeping everything clean and neat. Go over creepers frequently so as to direct their growth and prevent them from getting too much entangled, which, without attention, would soon happen. Syringe and shut up early in the afternoons of bright days, and be as sparing as possible in the use of artificial heat. Afford Orchids that are pushing a moist growing atmosphere, giving them a good steaming every bright afternoon by syringing and shutting up early. Admit air in moderate quantities on mild days; but carefully avoid currents of drying wind. Examine the plants individually as often as can be done, and water such as require it; but be careful not to give too much to those starting into growth, and a cool atmosphere will greatly prolong the beauty of those in bloom. Auriculas must not be forgotten because the amateur has now many demands on his time; shade them in very hot sunny weather, though they cannot at this season of the year be easily too much exposed, provided the regular attendance is given to water, &c. Polyanthuses cannot bear the mid-day sun, except on very cool subsoils. A shady situation, under a hedge, with a north aspect, will be suitable for them during the next three months (that is to say if grown in pots). Do not forget to fertilise some of the best breeder Tulips, in order to obtain good seed. In choosing sorts to get seed from, let them be thick in the petal, round at the top, pure in the cup, and clean in the stamens.

FORCING DEPARTMENT.

Pinery.—Shift succession plants as they require it, and keep up a moist growing heat for them, varying from 70° at night to from 80° to 90° during bright days. By all means avoid too much bottom heat. Give air freely when the weather is fine; but avoid draughts, which have a tendency to brown and otherwise injure the plants. Water fruiting stock occasionally with liquid manure. All plants intended for winter fruiting must soon have their final shift, and be afforded a warmer drier atmosphere, in order to induce them to start. Syringe, however, occasionally, and shut up early in the afternoon.

Vineries.—In the case of fruit intended to be kept as long as possible, the berries should be thinned, so that they will hardly touch each other when fully swelled, for it is scarcely possible to keep Grapes very long after they get quite ripe, except they are severely thinned. Be particularly careful of the foliage of Vines intended to furnish a late supply, and if plants must be grown in the house, see that they are not infested with thrips or red spider, for if either of these pests is allowed to gain a footing on the Vines, the foliage will probably be greatly injured, and then there will be no chance of keeping the Grapes in good condition for any length of time. Muscats must be encouraged with a brisk temperature while setting.

Peach House.—Use means to eradicate insects, if any, from the early house; the trees should be perfectly free from them before the lights are removed. Syringe copiously to destroy red spider, dust freely with sulphur for mildew, and smoke with tobacco for green-fly.

Cherries.—Reduce the moisture when the fruit begins to colour, and increase the heat a little to accelerate the process of ripening. Keep the roots well supplied with water. When the fruit is gathered remove the trees if in pots to a shady situation out of doors.

Melons.—Still keep up a good heat in dung beds by means of linings. Give air freely. Sprinkle late varieties overhead early in the afternoon before closing up the frames; a little air may be left on during warm nights if the bottom heat is brisk. Keep the shoots thin and shade lightly if the weather should become very dry or hot.

Cucumbers.—Attend to watering and thinning out superfluous shoots.

FLOWER GARDEN AND SHRUBBERIES.

As stated last week, where Roses are beginning to be infested with grub, it will be necessary to go over the plants frequently in order to destroy that pest. Green fly is also often troublesome at this season; although doubtless the heavy rains which we have recently experienced will have served to check its progress, yet should the weather get warm and bright a good washing with the garden engine on two or three evenings in succession will assist greatly in getting rid of it. Attend diligently to Standard Roses; constant disbudding is necessary about this period; also keep down suckers; for this latter purpose the implement represented last week at p. 431 may be found useful. Although the weather has now become warm, we would not advise tenderer kinds of bedding plants to be turned out for eight days or so yet; in the meantime, however, see that they are kept in a healthy growing condition. When planted out, the benefit of forming little basins round each plant will be readily seen, more especially in the event of dry weather. Let the young shoots on all old Fuchsia stools be thinned out to five or six. Let also every attention be paid to propagating reserve stock to fill gaps, and take care that that already rooted has kindly cultivation forthwith, in order to be ready to fill blanks when wanted.

HARDY FRUIT AND KITCHEN GARDEN.

In order to have a good and constant supply of Endive a sowing should now be made. Endive is generally sown too thickly. Another good sowing should be made in the first week of July, and a third towards the middle, after which the plants will not attain full size. As soon as the plants are a few inches high some mow the tops of the leaves off with a scythe, cutting about one-third of the leaves away. This they do to stiffen the plants and cause more heart to develope itself; it also enables them to bear transplanting better. A good breadth of dwarf and compact Cabbages may soon be sown for early Coleworts; also a bed of Horn Carrots. This is a good time for a liberal sowing of Turnips; the Dutch or Stone are useful sorts for the kitchen garden. Prepare for Leeks by heavy dressings of manure, also for Celery.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.

For the Week ending May 14, 1862, as observed at the Horticultural Garden

May.	Moon's Age.	Barometer.		Temperature					Wind	Rain.
				Of the Air.			Of the Earth			
		Max.	Min	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Thurs. 8	10	29.888	29.782	65	43	54.0	58½	55	S.W.	.60
Friday 9	11	29.636	29.481	64	44	54.0	57	55	S.W.	.31
Satur 10	12	29.634	29.582	65	40	52.5	57	55	S.W.	.10
Sunday 11	13	29.686	29.588	62	43	52.5	57	55	W.	.04
Mon. 12	14	29.866	29.572	61	39	50.0	56	54	E.	.00
Tues. 13	●	29.858	29.836	61	33	47.0	57	54	N.E.	.00
Wed. 14	16	29.866	29.850	57	42	49.5	55	53½	N.E.	.13
Average		29.776	29.670	62.1	40.5	51.3	56.6	54.5		1.18

May 8—Cloudy and rather boisterous; fine; rather cloudy; heavy rain.
— 9—Rain; boisterous with rain; cloudy and wet.
— 10—Overcast; fine, with low white clouds; overcast; rain.
— 11—Showery; fine; rain at night.
— 12—Fine; overcast; dusky haze; fine.
— 13—Overcast and cold; cloudy and fine.
— 14—Hazy clouds, and cold; overcast; cold wind.
Mean temperature of the week equal to the average.

RECORD OF THE WEATHER AT CHISWICK

During the last 36 years, for the ensuing Week, ending May 24, 1862.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 18 ..	64.8	42.8	53.8	16	0.17 in.	2	7	5	3	3	10	5	1
Mon. 19..	66.1	43.2	54.7	12	0.50	2	7	7	2	4	4	3	—
Tues. 20..	66.5	43.4	54.9	17	0.44	2	6	7	3	4	9	1	4
Wed. 21..	66.4	45.2	55.8	15	0.36	3	6	10	2	5	5	3	2
Thurs. 22..	65.7	43.4	54.5	16	0.30	6	6	4	3	3	10	2	2
Friday 23..	67.9	45.4	56.7	12	0.53	1	6	6	3	3	8	4	5
Satur. 24..	68.3	44.4	56.3	11	0.54	3	7	6	1	5	10	3	1

The highest temperature during the above period occurred on the 22d, 1847—therm. 89 deg.; and the lowest on the 18th and 19th, 1854; 20th, 1853; 19th and 20th, 1856; and 24th, 1854—therm. 30 deg.

Notices to Correspondents.

Blight: *E P.* What you call by this name is a horrible Coccus, now about to hatch, as soon as the weather is warm enough. Unless removed the young will soon overrun the tree. Scrub the branches and *then* wash them with Gishurst Compound.

Damping off: *H C.* This is caused by insufficient ventilation. If a current of warm air, although damp, can be made to circulate freely among plants, there will be no "damping off." The use of opening top lights is to facilitate the escape of warm air, and thus to assist in keeping air in motion. Very little change of air is effected by merely leaving a door open, the rest of the house being close.

Insects: *C M.* We are sorry not to be able to give you the name of the animals which have burrowed into the chalk. You shall hear from us by post if we succeed in our investigations.—*T B.* Julus pulchellus. Your ground must be foul and the surface should be burnt when an opportunity occurs. Gas tar water may be serviceable.—*A W E.* The little beetles are the Otiorhynchus piceus. We have not previously heard of their attacking the bark of young trees immediately below the surface. We believe the leading shoot of the Scotch Firs must have been attacked by Hylurgus piniperda. The loose earth round the roots of the young plants should be scraped up and burnt. *W.*

Names of Plants: *An Enquirer.* The name of the Fungus which sprang up in the night in your forcing Asparagus frame, laid on the surface a yellow patch, and when pressed with the finger assumed an appearance similar to jelly, was the well-known Æthalium septicum.

Our Springs: *Peter Halliday.* The best of all guides for turning greenhouse plants out of doors is the leafing of the Mulberry tree. It was a rule with old gardeners never to trust the weather until this tree was in full leaf; and they could not have selected a truer indicator.

Peach Leaves: *J R.* Cold nights and wet roots are doubtless the cause of the mischief. Improved health may be expected when the weather gets warmer.—*C R T.* Yours are in the same state from the same cause. They will recover when warm days and nights arrive.

Potatoes: *Enquirer.* One way is as good as another. You gain nothing by setting them whole, provided the operator cuts them carefully into sets. If he breaks off the sprouts, that is altogether another affair.

Roses: *F R.* Syringe them well and frequently with clean water. If that will not do you must treat them with Tobacco smoke driven through fumigating bellows.

Rustic Chairs, &c. *A Subscriber* will be much obliged by the information being given as to the best method of preserving garden chairs and baskets made with bark, if necessarily much exposed to the weather, and also what will best ensure the bark adhering to them.

Scissors: *Cannes.* We should be obliged by your sending them.

Tubs: *Conway.* Under consideration.

Wistaria, &c.: *E D.* This plant does very well on a north wall, but it flowers much less profusely, and later. Weigela amabilis or coraensis. We fear that an Oxalis cannot be named from a drawing; but we shall be happy to look at it.

RAYNBIRD, CALDECOTT, AND BAWTREE, Seed Merchants and Growers, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices

Farm Seeds, Carriage Free.

HOGG AND WOOD, Coldstream, Seedsmen by appointment to the Northumberland Agricultural Society, can supply all Seeds requisite for the Farm; including CLOVERS, ITALIAN and PERENNIAL RYE-GRASS, GRASS SEEDS for laying down to permanent pasture, TURNIPS, and MANGEL WURZEL, &c., the whole of which are either grown by themselves or carefully selected from the best samples in the market.

Early Orders are respectfully solicited.

Coldstream, N.B.—May 17.

Swede Turnips, &c.

HENRY BROWN'S DWARF-TOP BRONZE SWEDE is the best in cultivation. May be grown 20 to 26 lbs., is very solid and hardy, per lb. 1s.; also MANGELS, 6d. to 8d. per lb.

His PRICED DESCRIPTIVE LISTS of Farm, Garden, and Flower Seeds, can be had post free on application.

Henry Brown, Seedsman, 4, Commutation Row, Liverpool.

SMITH'S WORCESTERSHIRE SWEDE, the handsomest, most profitable, and best in cultivation, 1s. per lb.

SKIRVING'S IMPROVED SWEDE, saved from selected roots, 8d. per lb.

ORANGE GLOBE MANGEL WURZEL, the best for all kinds of soil, a very superior stock, 8d. per lb.

All other kinds of SWEDE and MANGEL, 8d. per lb. Cheaper by the bushel or cwt.

Richard Smith, Seed Merchant, Worcester.

Skirving's King of the Swedes.

WILLIAM SKIRVING, Queen Square, Liverpool, begs to acquaint the Farmers of the United Kingdom that he has fixed the price of his new variety of Swede TURNIP at 1s. 3d. per lb., bags included.

W. S. can with perfect confidence recommend this variety of Swede as by far the best now in cultivation, in every respect. This assertion is made after several years' experiments with every sort of Swede now grown.

Seed of this variety being now offered for the first time to the Public, can be had only from W. S. direct.

Matchless Swede.

JOHN KEYNES has again secured a fine Stock of this splendid TURNIP, which for hardiness, beauty, quality, and crop, cannot be surpassed. The advantage of sowing from Seed grown in the Lothians, pure and unadulterated, has been appreciated by all who have favoured J. Keynes with their confidence. Two pounds of pure Turnip Seed will go as far as three that has been mixed with Old Seeds. The price of this matchless Purple-top East Lothian Swede, superseding all others, is 9d. per lb.

J. Keynes, in answer to many inquiries, begs to state he will not be undersold by any party, for any description of Turnip or Mangel, the selection of which is of unquestionable superiority.

Salisbury.—May 17.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. Wheeler & Son, Seed Growers, Gloucester.

To the Trade.

New Seeds Direct from the Growers.

CHARLES SHARPE AND CO., Seed Growers, Sleaford, will have much pleasure in forwarding on application their WHOLESALE PRICED LIST of AGRICULTURAL SEEDS, which have been grown upon their own land with the utmost care from the finest selected stocks. The advantages of procuring Seeds direct from the Growers are too obvious to require comment, and from the experience of C. Sharpe & Co. in the growing and harvesting of Seeds, a satisfactory result may be calculated on with certainty when their Seeds are used.

SHARPE'S IMPROVED LARGE SWEDE.—The largest and best cropping Swede in cultivation; it produces a finely-shaped large bulb, without a coarse top. A Coloured Lithograph of the Swede will be sent to purchasers.

Charles Sharpe & Co., Seed Growers, Sleaford, Lincolnshire.

REIGATE SILVER SAND.—Best quality, 10s. per ton, cash, delivered to the Reigate Junction Railway; truck of 4 or more tons loose, 9s. per ton, cash; 2 bushel bags, 9s. per dozen

PEAT SOILS, BEST GRAVEL, PLANS PREPARED, &c.

Trucks can be forwarded to all the principal cities, towns, and parts of this country.

William Short, Landscape Gardener, &c., Red Hill, Surrey.

TAN GRATIS in the immediate neighbourhood of Covent Garden Market.

Apply to Essex & Sons, 28, Stanhope Street, Clare Market, W.C.

REIGATE SILVER SAND, best quality, 12s. per Ton or 1s. 3d. per Bushel, at Swan Place; delivered five miles, or to any London Wharf or Railway, 16s per Ton, or 1s. 6d. per Bushel. Kentish and Hampshire PEATS, YELLOW LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE from Kingston. An inspection invited.—J. Kennard, Purveyor to Her Majesty, Swan Place, Old Kent Road, London, S.E.

International Exhibition.

FERNS, BEGONIAS, &c., are growing in COCOA-NUT REFUSE at the bottom of a case (with Cocoa-nuts on the top outside) in the centre of the Eastern Annexe.

Refuse delivered in London at 1s. 6d. per bag, containing 3 bushels. Large quantities on lower terms, on application to the Patent Cocoa-Fibre Co, Kingston-on-Thames, S.W.

Postage stamps or Post-office Orders payable to J. Barsham & Co.

Notice.—Dogs, Dogs, Dogs.

THE NORTH of ENGLAND EXHIBITION of SPORTING and other DOGS will be held in the gigantic New AGRICULTURAL HALL, Islington, London, N., JUNE 24, and four following days. The Committee have extended the time of Entry to May 23, when it will positively close.

Schedules of Prizes and forms of Entry can be had of the Secretary, T. D. Appleby. Offices, 61, Briggate, Leeds; and 38, Surrey Street, Strand, London, W.C.

N.B.—Prizes will be given for White Smooth TERRIERS over 6 and under 6 pounds weight.

YORKSHIRE AGRICULTURAL SOCIETY.—GREAT SHOW AT YORK.

AUGUST 6, 7, and 8. For Prize Sheets apply to

John Hannam, Secretary.

Kirk Deighton, Wetherby, May 17.

WARWICKSHIRE AGRICULTURAL SOCIETY.

The WARWICKSHIRE AGRICULTURAL SOCIETY will hold their GREAT ANNUAL EXHIBITION at Aston Park, Birmingham, on the 17th, 18th, and 19th of SEPTEMBER next, under the Patronage of the Mayor and Corporation. President, the Right Hon. the Earl of Warwick. Prizes to the amount of 970l. will be awarded as under:—

Labourers and Servants	£97 0
Ploughmen, Drainers, and Hedge-cutters ..	43 10
Cattle	257 0
Sheep	188 0
Pigs	28 0
Horses	142 0
Implements	85 0
Steam Cultivation	50 0
Wool	21 0
Cheese	8 0
Fruit and Flowers	50 0

More than half the above Prizes are offered by the Birmingham Local Committee, and are open to all England.

The Entries close on AUGUST 1st.

Prize Lists, and every information, may be obtained on application to Mr. John Moore, Secretary, Warwick; or to

John B. Lythall, Local Secretary.

Offices, 14, Temple Street, Birmingham, May 17.

THE BIRMINGHAM CATTLE and POULTRY SHOW, 1862.

The FOURTEENTH GREAT ANNUAL EXHIBITION of FAT CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, ROOTS, BARLEY, and IMPLEMENTS, will be held in Bingley Hall, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, the 1st, 2d, 3d, and 4th of December next, when PRIZES—Cups or other Articles of Silver Plate, and Gold and Silver Medals—to the amount of 1835l., will be awarded in the following divisions, viz.:—

Fat Cattle	£715 15
Fat Sheep	239 5
Fat Pigs	56 15
Breeding ditto	63 0
Roots	56 14
Barley	10 10
Poultry and Pigeons	632 15

Prize Lists may be obtained from the Secretary.

John B. Lythall, Secretary.

Offices, 14, Temple Street, Birmingham, May 17.

The Agricultural Gazette.

SATURDAY, MAY 17, 1862.

MEETINGS FOR THE ENSUING WEEK.

Tuesday,	May 20	Cornwall Agri. Society, at Liskeard.
Wednesday,	— 21	Agri. Society of England .. .. Noon (Mr. Caird, M.P., on Algerian Agriculture)
Thursday,	— 22	Agri. Society of England (General Meeting) .. .. Noon

The great disaster which has overtaken the occupiers and inhabitants of the low-lying lands in South Lincolnshire, has already everywhere been published by the daily press. We quote the following passage, abridged from the *Times*, which describes the scene, and the cause and extent of the disaster:—

The hill-country public, accustomed only to occasional overflows of brooks and the winter-flooding of river margin meadows, can have no idea of the dismay and consternation which have fallen upon a large portion of the Fen population, through the disaster to the middle level sluice. The great plain of peat fens and marine marshes, stretching 70 miles from Lincoln almost to Cambridge, with an area of nearly 700,000 acres, lies so low and horizontal that its surface is beneath the level of the sea at high water, though above the *datum* line of low water mark. On the map it appears like an enlargement of the great bay of the Wash; and a shallow inland bay it would be if the ocean were not held out by massive barrier banks. The Ouse, Nene, and other large rivers, bringing down the drainage of an upland tract five times larger than the Fen plain itself, have reached the sea level when they enter this district, and are conducted across it (a distance of 20 to 35 miles) between lofty embankments, which give the surface of the sluggish streams a fall of some few inches per mile. The downfall or drain-water of the flat land is collected and carried to the seaward channels and estuaries in artificial cuts, issuing through sluices having valve-doors, which exclude the rising tide, but open when this has fallen below the head of drain-water inside. So that (excepting a few insular high lands) the whole of this immense district of rich land, in the highest state of cultivation, with its crops, flocks, herds, its farmyards, innumerable villages, and thickly-peopled towns, exists upon the ability of its banks to withstand the hydrostatic pressure of high-rising fresh waters and the assault of stormy spring tides, and also upon the security of the capacious sluices which pour out its drainage into the large tidal rivers. In the present accident of the bursting of an important sluice the consequences are already extensive and alarming, and the danger of most widespread ruin is becoming painfully apparent. The site of the sluice is four miles south of Lynn, at the junction of the middle level main drain with the broad and deep Ouse; and this drain is a straight cut from the sluice 11 miles in a south-western direction to the district of the middle level, 140,000 acres in extent, of which it is the main artery and outfall. But the tract of country flanking the cut for 11 miles above the sluice does not drain through the cut, having outfalls of its own into the Ouse, and this neutral district is at present the greatest sufferer. Three to four miles from the destroyed sluice, the west bank of the cut gave way, precipitating the rapidly inflowing tide upon the fen land; and, though some of the minor holes were cleverly "taken," or stopped up with sacks of earth, the main breach continues open, being on Tuesday 40 yards in width. Such is the volume of water poured through this gap that on Tuesday night the extent of ground inundated was estimated at 15,000 acres, and two tides since then have probably spread the deluge over 20,000 acres. The districts at present flooded are "Marshland Fen," "the Smeeth," "Broad and Short Fens," and parts of "Magdalen Fen" and "Bardolph Fen." Farmyards are full of water, the straw floating about; barns have been hastily cleared of grain, and, where possible, ricks of Wheat and Beans are being carted to the higher spots of ground about the "Marshland" villages. Here also the sheep and cattle from the threatened or drowned fens have been collected. Cottagers have been driven at short notice from their homes, some moving their downstairs furniture into the chambers; others being able to carry off most part of their moveables in carts, and house after house is to be seen with waves lapping at the brick walls and wetting the door-handles, and on the outskirts of the bright sheet of water you see fine Wheat crops with their rank green flags, forward Peas and Beans, ridges where the Potatoes are but lately planted, fallows half prepared for Mangel and Turnip sowing—over all of which the water is stealthily creeping and killing all with its deep irrigation of brine. The loss of property it is impossible to calculate—perhaps 6l. to 10l. an acre for the cropping, now totally destroyed; but who can value the whole damage, except by saying that scores of farmers have had suddenly swept away every vestige of vegetable produce on their farms, and of course have all the year's expenses to meet with no haytime and no harvest. The greater portion of occupiers of the flooded fields have other land not likely to be reached by the salt deluge; but nevertheless it is probable that the greatness of the destruction will ruin hundreds of families.

A Committee of the House of Commons has been sitting for some weeks taking evidence on the subject of town sewage—on the possibility of turning it to agricultural account—and so of converting what is now a poison into food. Much of the evidence taken has been based on an experience so limited as to render it untrustworthy as the foundation of any recommendation which the committee may be expected to make—and a good deal has been vague and indefinite, not to say contradictory. There has nevertheless for many years been ample experience of the agricultural value of town sewage on a large scale—and there has long been a sufficient body of concurrent and trustworthy evidence on the subject.

No committee was needed to make it known either that sewage is at present generally both mischievous and wasted, or that in some localities it has been profitably put to use, while in others it has been expensively made harmless. Edinburgh, Glasgow, Ayr, Carlisle, Mansfield, Rugby, Leicester, Birmingham, Watford, Croydon—some for longer time than others—have most of them for years been known as the scene of great sewage operations and experiments. The collection of evidence from men whose experience of "town sewage" is derived from the waste of one household, and whose farm sewage includes the liquid manure of half a dozen beasts, can only import uncertainty and doubt—if it at all tends to belie the great facts with which most of us are already well acquainted.

What are the main grounds on which it is believed that town sewage can be turned to good account? Having lately visited Edinburgh, Glasgow, Ayr, Carlisle, Rugby, and Croydon, and walked over the ground thus manured, we are able to give the testimony on this question of an eye-witness as to those localities.

1. The streams which wash out Edinburgh are used for the irrigation of Grass lands at Craigentinny, Lochend, Grange, besides certain meadows west of the town.

a. The meadows at Craigentinny lie to the N.E. of Edinburgh, at the foot of the valley which drains two thirds of the ground on which the town stands. They are 190 acres in extent, of which 40 acres or thereabouts lie close along the shore, a narrow strip between it and the coast railway. The land is for the most part a free soil—next the sea it is a light sand—in places inland it is stiffer. It is a fan-shaped plot; the water enters at the handle, and travelling along the outsides is diverted to one or other of the "panes" between the outer artificial channels and the old water-course. It is let in pieces varying from a rood to an acre in extent, and has this Spring fetched prices varying from 20l. up to 41l. 10s. per imperial acre.

The sandy piece next the sea lets for 20l. to 25l. per acre, the inferior produce here being due partly perhaps to an original inferiority of soil, but chiefly, we imagine, to the fact that the water which pours over it has been used, all of it once, some of it twice before. At least half of the meadow is thus irrigated with tail water, and indeed it may be said that all of it is to some extent thus watered, for the Lochend meadows lie higher up the stream, and a quarter of the "Foul Burn" is diverted for use there, rejoining the main stream after having left much of its fertilising contents behind.

The lighter portions of the land yield the earliest swathe and come quickest to the scythe again. We saw a swathe cutting on the 23d of April, which must have weighed at least 10 tons per acre. There is, we believe, nothing elsewhere like it known to English agriculture. This great

quantity is the result not of a very tall but of a very thick growth. The blades of Grass are not more than 12 to 14 inches long, but they stand so thick and the stem of each is so soft and succulent and large that the lower part of each is blanched, and the stubble left is white.

In a day or two, or immediately after the whole Grass of any plot is taken away, the water is let on. The whole as to arrangement is a rough specimen of the ordinary ridge and furrow plan of irrigation, and the supply seemed to be ample according to the practice of the ordinary water meadow—forming a thin skin of flowing water visible everywhere on the surface of the land. A stream 2 feet wide and 1 foot deep, running at the rate of a mile an hour, was in one place supplying what we judged to be an acre of the land. This corresponds to 10,000 cubic feet per hour, and as the supply is kept on for about five hours at a time—it is equal to from 12 to 14 hundred tons per acre for a dressing. Such a dressing is generally all that the plot receives until the next cutting; but as during the season of growth all the stream is kept in use, excepting at flood times,* and all is watered in rotation, it may happen that another dose is available for the same land during the four to six weeks' interval which elapses before the swathe is again ready for the scythe. If there should be an opportunity of giving it a second dressing within three weeks, or at least a fortnight, of that time, the opportunity is taken.

From three to five cuttings are taken during the year—the first is not the heaviest, and indeed the cowfeeders who hire the plots are tempted to take the earliest earlier than they should both for the sake of an early bite of Grass and in order that a fifth swathe may be taken in October. Putting four cuttings as the average, and remembering that water is laid on to some extent during the winter season, it is not too much to estimate that every acre of the Craigentinny meadow receives 10,000 tons of sewage during the year. For this an average produce of at least 25*l.* or 6-10ths of a penny per ton may be obtained—and as this (half the meadow being watered with tail water) is obtained a second time, the whole worth extracted from the Edinburgh sewage here is rather more than 5 farthings per ton. As an additional illustration of the experience here, it may be supposed that the waste of 80,000 persons, probably imperfectly gathered however, is here utilised, and as the Lochend and Craigentinny lands amount to about 230 acres, that is at the rate of more than 300 persons per acre!

As to the cost of the operation—taken in one view, it is hardly anything; the sewage is obtained for nothing, the work of management does not cost more than 20*s.* a week at Lochend, and at Craigentinny it is managed by two men and probably costs under 100*l.* a year. But if any company or new proprietary proposed to undertake the work, they could not purchase the apparatus (the estate) under 500*l.* perhaps 600*l.* per acre, which is 2*s.* or more for every ton of the swill which is turned to account upon the land.

b. The Lochend meadows lie above Cragentinny. About a quarter of the Foul Burn is diverted and sent along channels on either side of the narrow grassy valley over which it is here spread. The plot is about 30 acres in extent, of which one-third may lie on the north-western side, about a hundred yards wide, sloping 1 in 25 or 30 towards the old water-course below; a quarter on the south-eastern side, a narrower strip, rather steeper; and the remainder is in the flat below. By reason of certain alterations upon the level of the main stream, the outfall to the drainage of this last portion has been temporarily stopped, the effect of which is very visible upon the crop. The plots—half an acre to one acre each—into which the whole is divided, have this year let for 18*l.* 10*s.* and upwards on the flat, and for 25*l.* up to 39*l.* 10*s.* on the sides. Drainage is an essential part of successful irrigation. Soil, as we were told by the intelligent superintendent here, is like man or any other animal; no nourishment of it is possible unless the food pass through it. You may present as much nutriment as you please to the surface, or the mouth, but in either case a stoppage is fatal. This is well seen at Lochend; patches of imperfect drainage, even on the steep sides of the valley, at once show the same defective growth, which is much more generally and obviously visible on the undrained flat at its foot.

Men and carts were busy removing a heavy swathe of Grass on the 23d of April. The Grass is in many places, both here and at Craigentinny, very weedy—full of Crowfoot; but the cows eat it all with greediness; and it is indeed very probable that the bitter of the Ranunculus may be a wholesome corrective of the extra succulence of the growth. Be that as it may the whole is removed and carted, much of it two miles, to the cow-house. The price of the food thus purchased growing on the ground must be at least 10*s.* a ton. When sold by weight it varies from 6*d.* to even 1*s.* a cwt., according to the demand. And the price per acre forbids our imagining it to cost less than the lower of these prices on an average throughout the year. Mr. TAYLOR, the farm manager for Mr. SCOTT, who is the tenant of the Lochend estate, considers it of importance not to let the water on until the scythe wound has fairly healed, and some natural unassisted growth of the stubble has taken place. It is thus a week or 10 days after a cutting before it is irrigated. The water is however then let over from 24 to 48 hours at a time, and as it is apparently at the same rate per hour as at Craigentinny, 4 or 5 times as much water is thus put on, and taking the produce at the rate already stated, we do not suppose that a farthing per ton is here made of the sewage which passes over the land. This however, for about a quarter of the stream, as already said, has to be added on to the sum already named as made at Craigentinny.

* One man manages the distribution of the water, but he has an assistant, so that between them a watch night and day is kept, especially for the diversion of a sudden flood, which is at once turned to waste: others are employed at busy times and especially in cleaning out the water carriers.

Besides the 30 acres of natural meadow where the sewage is thus used, Mr. SCOTT has 10 acres of higher land close by, which he manages to irrigate jet-fashion by subterranean pipes and surface hose. The stream diverted from the Foul Burn on the north-western side runs, about 500 tons per hour as we estimated it, along a channel by the upper edge of that side of the valley, and perhaps 10 or 12 feet above the old channel below. A portion of it is taken over a water wheel, and this, by a very simple arrangement of leverage and gearing, works four pumps, each delivering about one-fifth of a cubic foot at a stroke, and making about 25 strokes per minute. These 20 cubic feet of water per minute, equal to 30 tons per hour, are delivered by iron piping and hose at the rate of half an acre daily, or perhaps 600 to 800 tons per acre, over Italian Rye-grass after each cutting. The land is an extremely light sand with a deep sand pit in the middle of it, and it is said that 30 tons per hour delivered in the ordinary way on the ground in surface channels would sink away so rapidly, that the whole surface could not thus be wetted evenly, and the apparatus of hose and jet is thus made necessary. This piece of Italian Rye-grass is let in half-acre plots like the meadow and fetches 25*l.* an acre. It is sown by hand at twice, about 3 or 3½ bushels per acre in early autumn, not watered until after the first cut in the following May, and then watered only gently and with caution until the plant is fairly established. It is kept a second season, receiving then, as well as during the summer and autumn of the first year, a full allowance, and it is ploughed down in the autumn of the second year. A crop of early Potatoes is taken in the third year and the land is then again prepared for the seed.

c. The Grange meadows, the property of Sir J. DICK LAUDER, extend over about 20 acres, near Newington, a southern suburb of Edinburgh. The north side is watered from two streams, one of which is fouler than the other, and the Grass is proportionately richer there. We saw on several plots a growth equal to any at Craigentinny or Lochend, which had fetched close on 40*l.* an acre. On the south side of the valley the surface is watered with clear water—not fouler than any ordinary village stream—and the difference in the produce of the two sides is very remarkable. The rents obtained on that side vary from 12*l.* to 15*l.* per acre; on this from 25*l.* to 40*l.* The soil, as shown in market gardens close by, is a loose loam.

d. Let us now follow this Grass home. Mr. SANDERSON, a cow-keeper in Murray Street, off the East Cross Causeway, keeps 30 cows, chiefly Short-horns. He has taken seven plots of meadow land for them on all the different meadows we have named, paying 100*l.* for them. Two plots have been taken at 26*l.* 10*s.* per acre each; one at 31*l.*, one at 38*l.*, one at 27*l.*, two (being Italian Rye-grass at Lochend), at 27*l.* 10*s.* We may suppose that he has thus secured 200 tons of green food, equal to rations for his cows during 160 to 180 days of summer. He finds it capital milk-producing food. Notwithstanding these enormous rents—notwithstanding a distance varying from ½ a mile to 3 miles of carriage—notwithstanding that he is extremely liable to lose the milk of his cows by the foot-and-mouth disease, and his cows themselves by pleuro-pneumonia, yet we could learn that his business prospers. A cow may last a year and be sold fat, or she may last two months and die—there is much loss and injury owing to the place of these being filled by purchases in the market, where infection of either pleuro-pneumonia or distemper is indigenous; but notwithstanding all these costs and risks, a living and a profit are made by cow keeping. The management is as follows:—The cows receive about 1½ bushel apiece daily of "draff" from the distilleries—spent malt or "grains" as we call it—they get this all the year round, and from ¾ cwt. to 1 cwt. of Grass daily during summer, and about 1 cwt. of Turnips partly steamed during winter, with straw or fodder all the year round. In illustration of the cost of feeding, the price of the Grass has been already named, the "draff" costs 3*s.* a quarter, the Turnips from 15*s.* upwards per ton at the railway station,* the straw 3*d.* to 4*d.* a stone. The sales are milk at 9*d.* to 10*d.* a gallon, cream at 8*s.* a gallon, and about 140*l.* worth of dung annually (nearly 3*l.* per cow), which is bought and carried away by neighbouring farmers.

These particulars then may suffice as an account of the Edinburgh sewage meadows. We did not see those on the west side of the town, except from the railway carriage—they appeared as full of Grass and as busy with men and carts removing it (April 23!) as the others. What has been already stated sufficiently represents the Edinburgh experience on the subject of town sewage. We have yet to refer to the experience of farm sewage near Glasgow and Ayr—to the southern experience of town sewage at Carlisle, Rugby, and Croydon—and to those particulars of ordinary farm experience which throw light on the subject.

—— DURING the discussion before the London Farmers' Club on the subject of County rates which followed the reading of Mr. CORBET's clever paper reported in our columns last week, both sides of the question were well represented. Mr. Alderman MECHI defended the administration of the funds by the magistracy, a body under whom an immense improvement had taken place in the character of all county institutions, including prisons, police, and lunatic establishments. Mr. REEVE of Leicester illustrated these improvements by the case of Leicestershire, where notwithstanding the immense improvements which he recited, the county rate was decreasing; the Borough of Leicester, where the rates were managed by the ratepayers, as it was desired that they should be in counties, was in a much worse plight.

The only other speech for a reference to which we have room, is that of the Chairman, Mr. CHARLES HOWARD, which must be admitted to be a complete and satisfactory corroboration of the facts and arguments of the lecture read by Mr. CORBET.

Alderman MECHI had told them that he was a magistrate of the City of London, but he should also have told them that he was a member of the Corporation, and that as such he had been elected by the people. He should have told them, too, that the ratepayers of the City of London and all boroughs had a control over their expenditure; and all that the county ratepayers asked for was, that they should be placed on the same footing as their brethren in the towns. He could not for a moment suppose that Mr. REEVE, holding the old fashioned notions he had given expression to to-night, could possibly breathe in the advanced borough of Leicester, and he had, therefore, taken himself just outside it; and from all he had heard he was not surprised that Mr. REEVE should not be anxious for reform. Mr REEVE said it was argued that those who owned the soil should have the entire control of the county expenditure; but were the skill, the capital, and the industry of the tenant farmer to go for nothing? The raw material (land) would be of little use without them. He must remind Mr. REEVE that there were gentlemen in the Commission of the Peace in most of the counties who had no property in them whatever, and paid nothing to the county rates, but who had the power to vote away the public money. He (Mr. HOWARD) rejoiced to say that several members of noble family at the head of the county to which he belonged, together with many of our best magistrates, were entirely in favour of financial boards. He thought that the formation of such boards would be advantageous to the magistrates, as they would receive the assistance and co operation of the best men in each county. They would also bring the two classes of society more in contact with each other, and would so tend to narrow the gulf which at present existed between them.

—— Our readers may be aware that a project is on foot for presenting to Mr. JOHN FOWLER a testimonial of the esteem in which he is held by agriculturists and others, and of the obligation under which the agricultural interest has been laid by his energy, resolution, enterprise, and intelligence. Believing as everybody must, that the country is very much indebted to the pioneers of steam cultivation, and especially to one who has borne so heavily the cost and labour of the work as Mr. FOWLER unquestionably and pre-eminently has, we entirely agree in the propriety of the steps which have been taken to make this project known.

It is intended, we understand, that this testi-

* On an East Lothian farm lately 400 tons of Mangel Wurzel were sold by auction and bought by a cow-feeder in Glasgow at 17*s.* 6*d.* per ton, delivered at the nearest railway station.

monial, whatever form it take, shall be presented at a public meeting during the week of the Battersea Show, and we therefore add that those who sympathise in the proceedings should at once address themselves to the promoters of the movement, and to Mr. E. Ruck, of Castle Hill, near Cricklade, Gloucestershire, who is the Honorary Secretary.

THE INTERNATIONAL EXHIBITION.

AGRICULTURAL DEPARTMENT.

It must not be forgotten that useful as this section of the Great Show may be ; and great as is the advance since 1851 which unquestionably it exhibits ; and far (much farther than any other department) as it may prove the English exhibitors to excel their foreign competitors, yet it is in fact little visited and unattractive. It is placed in an out of the way corner—its utility is its only recommendation—it has no share in the advantage either of a magnificent show room, or of attractive neighbours, or yet of being placed in a thoroughfare so as to catch the eye of passers-by. The very poorest housing of the whole building is accorded to our agricultural machine makers ; and unquestionably the least eligible position. One does not care for the absence of colouring on the unplaned timbers of the structure—and the more essential particular of perfect shelter, in which the roof is even yet at fault, will undoubtedly be ultimately obtained. It is however to be hoped that the managers of the show will grant to this department, or rather to the public, the advantage of a thoroughfare through it, by opening an entrance to the building at the end of the Eastern annexe. We resume our walk round the stands.

2083. Mr. Boothman, of Gisburn Coates, near Skipton, Yorkshire, shows a most elaborate beehive, by which he can extract a comb, replace it, separate, join, feed, warm, or cool the bees, and do any other thing which the most fidgety apiarian can desire to do. The whole apparatus costs 4*l*. After all, as Sir J. Paxton tells us, it is not the machine or even the detailed management of the bees that determines the profitableness of bee-keeping. The *position* of the beehive in relation to the feeding ground is the principal thing to be considered. In a hilly country uniformly covered with bee food the possibility of profit may depend wholly on this point. The hive should be placed at the foot of the hill, not on the top ; the difference between going up hill and coming down is as great to a laden bee as it is to a laden man.

2084. J. Boyd, Lewisham, shows the ordinary Grass lawn mower with a fixed brush, against which the revolving cutter brushes itself clean. Boyd's well known scythes, with the arrangement for keeping the blade at any required angle to the handle and to the ground, are also shown here.

2085. Messrs. Brown & May, of Devizes, show a 7 or 8-horse power engine, also a patent sluice cock, &c., of which a further report hereafter.

2086. Messrs. Burgess & Key show two of their well known reapers ; one of the ordinary make with one driving wheel, the screw delivery, revolving reel, &c., price 35*l*. ; the other, with double driving wheel and with a novelty in the power of disconnecting the driving apparatus and slipping the whole of the cutting and delivery apparatus sideways over the driving wheels, so as to lessen the width from 10 feet to 8 feet, thus enabling it to pass through ordinary gateways. Two Grass mowers, one a combined reaper and mower, and the other a mowing machine only, are also exhibited. Both possess a leverage for lifting the cutter and a movement for putting the machine out of gear. The cutting is done by gearing from both wheels, so that it proceeds when the machine is turning a corner even though one of the wheels be then backing. The price of the mower is 25*l*.—it is capable of cutting a 4 feet 6 inches swathe, and it weighs 740 lbs. The combined reaper and mower has the conical divider of the reaping machine and the other apparatus of the mowing machine—it costs 30*l*.

2087. Mr. Burrell, of Thetford, shows Boydell's traction engine with self-acting revolving railway—costing 800*l*. for 10-horse power—an 8-horse power threshing machine—with a double blast dresser—a pair of millstones, &c.

2088. Busby & Co., Bedale, show a number of well-constructed tillage implements : horse-hoe, cultivator, ploughs, double mould board plough, turnwrist plough, a plough carrying a pressing wheel to close the joint of the furrow, &c., chain harrows (with an angular quadrilateral link covering) about two yards square, costing 6*l*. 6*s*. ; two carts, both very well and substantially made, one to be preferred for the lowness of its bed, price 15*l*. The mode of altering the relative position of the wheels in the case of the double wheeled plough, and so of determining the depth of the furrow slice, deserves examination. The quality of the machines exhibited here is good, both as to style and material of manufacture. The prices, too, seem moderate enough.

2089. Mr. Cambridge of Bristol shows 4 different sizes of his well known roller composed of rings having independent motion on a common axle, every alternate one (with a different pattern of rim) being slung upon it with a larger slot, thus permitting a free and up and down motion of its parts and thus crushing equally an uneven surface. There are also specimens here of the chain harrow, in which the mesh is a single square link. The whole covers about nine square yards of surface. Mr. Cambridge also shows zigzag harrows and zinc sieves of various sizes and patterns of surface.

PRACTICE OF MANURING.

(*Continued from* p. 436.)

[The following reports accompanied the tabulated statements given in the *Agricultural Gazette* of March 22 and 29. They are numbered to correspond with the reports already given.]

LOAMY AND VARIOUS SOILS.

82. Northumberland.

The quality of our farm-yard dung is considerably improved by box feeding, consuming a good deal of hay and meal as well as a small proportion of cake, and a thorough mixture of sea weed and fish manure, so that proportionably we use a very limited quantity of artificial manure. In this neighbourhood farm-yard dung is almost exclusively applied to the Turnip crop, and on the bare fallows which still exist on undrained land (the land is naturally too retentive to carry sheep). Lime is also applied generally to the fallows in the quantity already stated. Up to this time artificial manures have been chiefly applied only to the green crops, but the practice of top-dressing cereals is fast spreading. *J. Wilson, Woodhorn.*

83. Northumberland.

Blood manure acts well upon corn crops when applied with the seed in March and April. Likewise for a Turnip crop ; but let it be understood that the manure should contain bones (dissolved) or bone dust.

Not having fold yard dung for all the land intended for Turnips, I give 6 cwt. of dissolved bones and 6 bushels of bone dust to ensure a good crop of corn and seeds—I mean Clover. After the Turnips or Swedes, if the land is in a state to grow Clover, I sow it very soon after the spring-sown corn, sometimes the same day. This is applied for the Turnip crop only, when fold yard dung cannot be got.

As to the ordinary farm practice of this neighbourhood, the dung is applied in May and June to the Turnip crop if Turnip land, if not it is put upon the summer fallow in August and September, whatever is to spare after a small quantity of Turnips has been sown upon clay soils. On bare places and worn out soils most permanent good will be derived by splitting into the drills free fresh earth, or even Moss is useful, if good earth cannot be had.

Lime is sometimes put upon newly broken up land if it has any fibrous matter in it with advantage ; but I have been in the habit of thinking that lime is frequently used where it is of no use.

As regards artificial manures for profit and durability, I put most dependence upon good bones made very small for light land. I put most dependence upon bones of my own dissolving for heavy land. If I am afraid of Finger and Toe attacking the Turnip crop, or grub stopping a corn crop from prospering, I use gas tar before the seed is sown. *J. Atkinson, Stocksfield.*

88. Yorkshire.

We find the application of lime to the Wheat crop has the effect of stiffening the straw, producing a finer sample, and destroying the grub of wireworm. The shoddy we find to be a strong and durable manure, containing much nitrogen.

The nitrate of soda and sulphate of ammonia produces a heavy crop of Grass, but the former alone is a forcing manure, and not permanent, whereas the latter we find to be durable in its effects.

Our farm-yard manure is very good, as we keep upwards of 60 horses for colliery work, which consume a great quantity of purchased corn.

As to the ordinary practice of our neighbourhood, the farm-yard manure is chiefly applied to the Turnips and Swedes, and occasionally to Wheat fallows, as well as to meadow. Lime is chiefly applied to the Wheat fallows, in spare quantities. Artificial manures are applied generally to root crops only. *Henry Briggs, Wakefield.*

89. Lancashire.

Guano is greatly used on the mosses here for Potatoes, and answers remarkably well at the rate of 6 or 7 cwt. per acre, followed with a Wheat crop and top-dressed with about 4 cwt. per acre of British fertilizer compound. The common use of lime here is for top-dressing pasture, and fallow land for Wheat.

Peruvian Guano has the largest consumption here, and generally answers best for all purposes. A neighbour of ours has tried an experiment by the use of guano ; and he says that guano sown as a top dressing on Wheat after the harrow is better with 3 cwt. per acre than 4 per acre sown previous to the harrow being applied. This I can understand very well, as the guano sooner gets at the roots when sown after the harrow, as a great quantity must fall into the furrow, and be some time before the root can strike it. *R. Robinson, Garstang.*

91. Cheshire.

I seldom manure, especially for the Wheat crop, which is generally taken after Oats the second year after being broken up from Grass.

Barley is sown after a green crop generally, and therefore requires no manure.

Oats are almost invariably sown upon the Grass "lea," and are never manured for. I think very highly of good farm yard manure, and seldom use anything else to my crops, excepting 3 or 4 cwt. to an acre of superphosphate of lime, or Proctor & Ryland's manure, finely crushed bone, or 6 cwt. of salt to my Mangels and Turnips, in which case I use the farm yard more sparingly in proportion. Bone manure is applied to nearly all my permanent pasture land, and has a most beneficial effect.

The ordinary practice of this neighbourhood is to apply nearly the whole of the farm yard dung to green crops ; occasionally it is spread on the Grass land, either alone or in compost with soil. Lime is seldom used excepting in compost of road scrapings or rubbish collected from hedge backs, ditchings, &c. Guano at the rate of 2 cwt. to the acre in some times applied to the Potato crop. *W. Palin, Tarvin.*

93. Lincolnshire.

From three successive years' experiment I did not find m Turnips increased in weight by an application of 2 cwt. of the best Peruvian guano, where 10 tons of good farm yard manure and 2 cwt. of Lawes's superphosphate have been used, the latter put on by the liquid drill, consequently I have discontinued using guano.

In this neighbourhood farm-yard dung is generally applied to the root crops, but in many parts of the Wolds it is frequently put upon the seeds in July and August for the following Wheat crop.

Upon deep soiled fresh land, where Turnips are liable to run to "fingers and toes," and chalk cannot be easily got, lime is generally used and of great service.

Very few root crops are sown in this part of Lincolnshire without artificial manure. They are not extensively used to other crops. *F. Sowerby, Aylesbury.*

97. Glamorganshire.

The rotation followed by the best farmers in my immediate neighbourhood is Turnips, Barley, Clover, Wheat. Farmyard dung being applied for Wheat, and sometimes also a second application to the green crop at the time of sowing.

Lime was formerly much used for the Wheat crop, but since the introduction (within the last 16 years) of draining and artificial manures its use has greatly diminished. It is also used on the meadow land mixed with earth, &c., as a compost.

The use of artificial manures has greatly increased, and is now general. During the last four or five years the consumption of guano has, I think, diminished, owing to the introduction of other artificial manures. The consumption of superphosphate is on the increase, and is now considerable, so also is what may be termed the quack manures. Artificial manures are applied to none but green crops. *E. Herbert, Llansantffraed, Abergavenny.*

98. Oxfordshire.

It is difficult to state the profit on a farm by the use of artificial manures purchased from respectable manufacturers and judiciously applied ; in fact the majority of farms would be useless without the aid of such manures. On our own farms the quantity used per acre is large, but we generally take two white straw crops after roots.

In this neighbourhood we yearly see more oilcake used amongst the cattle and sheep, and superphosphate of lime is now the order of the day, generally applied to the root crops. The bulk of the farm-yard manure is also put on for the roots, a deal of which would be more profitably applied on the Clovers, Beans, and Oats. The five course system generally prevails. Lime would much improve a deal of land in this district. *M. Savidge, Sarsden.*

99. Oxfordshire.

Take another Oxfordshire example of about 500 acres, of which 265 are arable. Our rotation is known as the five-course—that is three white straw crops in five years (one-tenth Clover and one-tenth Beans) This rotation does very well where a large quantity of purchased food and manure is used, and particularly as in the case of this farm, nearly half being permanent Grass. The stock on the farm at present is 183 ewes with their lambs, 400 feeding sheep, and cattle of all ages 146, besides a stud of 20 hunting horses, all producing manure for the farm.

We work 44 acres on the four-course shift, and were the farm nearly all arable, and of medium quality, I would consider that the best course.

The land to be prepared for Swedes, &c, is cleaned by scarifying as soon as the corn crop is removed, then dunged and ploughed, and the artificial manure applied at the time of sowing. This artificial manure is 2 or 3 cwt. of Peruvian guano per acre over all green crops, and over Barley and Oats after Wheat—80 tons of cake and corn are used as cattle and sheep food annually.

Of the permanent Grass land, about 50 acres are irrigated by a small stream supplied by springs in the neighbourhood, rendered all the richer by passing through the village, &c. This meadow and about 20 acres more are mowed for hay every year.

The rest is pastured, and though not naturally of the best quality, is being much improved by about one-tenth being dressed each year with farm-yard dung, or 3 cwt. Peruvian guano per acre ; besides that, the cattle and sheep being prepared for the butcher are fed with cake during summer in the fields. *John Watson, Agent, Shirburn Castle.*

102. Norfolk.

The bones in every case are dissolved by me with sulphuric acid at the rate of 10 lbs. per bushel, and I consider 1 bushel of bones so dissolved equal in value "when applied to Turnips and Swedes," to one load of good farmyard dung. Lime is not used here ; farmyard dung is generally applied to the Wheat crop just before Michaelmas. Some, however, prefer to apply it to the Clover—I prefer the former, as in the latter case in wet seasons the hay is very inferior in quality, and the land is not so good for Wheat.

Farmyard dung is also used here for Beet, Turnips, and Swedes, with various artificial manures too numerous to name, but Peruvian guano and superphosphate of lime are the principal. *R. Banham, Wymondham.*

106. Gloucestershire.

My farm has been in Wheat every other year for upwards of 20 years. I never make a fallow excepting after Vetches or sometimes Clover. I use a good deal of Rape-cake, which is ground into a powder with either Linseed or Cotton-cake decorticated, in proportion of two of the former to one of the latter ; this is mixed with meal and given to the beasts with their chaff at the rate of 6 lbs. per head. I never allow any stock on the farm to eat hay or straw without being cut into chaff (with the exception of the milking cows, which are kept for the use of the house) ; the chaff is cut three parts straw and one part hay. I have always during the winter 42 beasts in the stalls, and 22 always, winter and summer, having either Clover, Vetches, or Grass cut for them, with chaff to mix the artificial food with. I only use artificial manures with my Wheat when I think it requires it, using in the autumn $2\frac{1}{2}$ cwt. of best guano, and in the spring 1 cwt of nitrate of soda with 1 cwt. of salt, and sometimes $\frac{1}{2}$ cwt. of guano with it. I have on some occasions tried the experiment accurately with different top-dressings, but always found the result to be in favour of nitrate of soda on my land, and my experience leads me to the conclusion that it is applied at from 20*s*. to 40*s*. per acre profit. *A. Bubb, Gloucester.*

107. Gloucestershire.

We manure about 30 acres of our permanent pasture yearly with 15 tons farm yard dung per acre when we have it to spare, or instead 3 cwt. per acre of Proctor's Grass Manure, which more than pays for itself the same year it is applied in the increased quantity as well as improved quality of the hay produced. We are so well pleased with the application of this artificial manure to our permanent pasture, that we shall continue to use it whenever we are short of farm yard dung ; by its use we are able to grow plenty of hay for our own use, instead of being obliged to buy. We also use large quantities of crushed bones on our permanent pasture after the rate of 20 bushels per acre with the very best and lasting results. *J. Cobban, Whitfield.*

109. Gloucestershire.

Having water meadow and pasture in a larger proportion than usual in this immediate neighbourhood, and also consuming a full quantity of artificial food, I use no artificial manure except a large quantity of turf and other ashes made on the farm. Also for the Turnips which follow Peas, I use some superphosphate of lime, as being late it is of importance to stimulate them a little, and by this means and carting off the Peas as they are cut and drying them in another field, I always get a good crop.

I skim the whole of my Wheat stubble, weather permitting, in the autumn, and stifle burn all that I can ; after the ashes are spread I manure during the autumn and winter with dung from the fold yards, unfermented, on all the portions of land which is intended for Peas, Vetches, and Turnips, and Swedes, to be fed off.

The Mangel and Swede land, from which the greater portion of the crop is to be carted to the fold yards, I manure very heavily with rotten dung on the land. I usually drill two rows of Mangel alternately with two rows of Swedes, and leave one row of Swedes to be fed off on the land and remove the other three. I am sorry I cannot give a correct idea of the weight

of manure applied, but I should think in this case nearly 20 tons per acre. I drill ashes with the whole of my root crops, about 20 bushels an acre.

My experience in applying artificial manures to Wheat is that it has a tendency to blight; indeed I find it impossible to increase the average produce much beyond 4 quarters of Wheat and 6 quarters of Barley, and 10 quarters of Tartarian Oats to the acre. Our land in its natural state will produce much more than a great deal of the Norfolk land, which, under good cultivation and a liberal supply of manure, is now producing most beautiful crops, but it will not what is called answer the whip if we manure too highly; the straw is increased but generally becomes diseased, and the corn of inferior quality and quantity short.

111. GLOUCESTERSHIRE.

The effect of top-dressings to Wheat has been extremely satisfactory; thus 1¼ to 1½ cwt. of nitrate of soda with 3 cwt. of salt, or 1 cwt. nitrate, ½ cwt. guano and 3 cwt. of salt, have increased our corn produce 10 to 12 bushels per acre, and given a corresponding increase of straw. Superphosphate of lime, or a mixture of this and bones, will produce good Swedes and Turnips without farm-yard manure.

The practice of this district is not to manure for Turnips, or generally for Swedes. Mangels generally have a good dressing of farm-yard manure.

The young seeds during the winter receive a moderate coat of tolerably rotten manure, which being carefully broken first by hand, and afterwards by chain or bush harrows, is soon carried down to the roots of the Clover. Sometimes when the seeds remain down for two years this manure is carted on during the second winter, and thus stimulates the flagging energies of the crop, and by an increased root growth prepares for the Wheat. This practice holds more particularly on the lighter soils. *J. Coleman, Cirencester.*

112. GLOUCESTERSHIRE.

The way I have accounted for the advantage of using decomposed manure, accounts for the wise practice of paring and burning in the Cotswolds. We have a super-abundance of vegetable matter, and the cheapest way of obtaining an alkali is to change some by the action of fire into an alkali, to render some of the remaining vegetable matter available for the food of plants. My plan is to draw out the manure made after this time, and through the summer and autumn for roots next year. The manure made in the winter I put on the Grass land after a gentle fermentation—the end of February or beginning of March, when the worms are encouraged to draw in the straws and loosen our naturally hide bound pastures, and by letting the rain percolate through the soil to lessen the inclination to Moss. I have found from years experience that nothing injures manure when spread more than frost. Last year in the autumn I spread manure in my park, its virtue was destroyed by the frost. I put on more in the beginning of March, and I am sure I gained a ton per acre besides superior quality. The bad pastures I am breaking up, but only to destroy the bad Grasses, and then to lay them down again after enriching the soil. They have a natural tendency to come to turf again. *T. B. Browne.*

113. WILTS.

In this county I find ploughing nearly to answer every purpose, the land never having been ploughed. My success with Turnips is autumn ploughing and ridging the land well up for the winter. If Turnips are sown direct on the tail of the ploughs, the land having been laid still six weeks previous to sowing, little artificial manure is ever required to hasten them out of the ground. All forcing with manure is bad for White Turnips. Get a Turnip crop and Barley, and all crops will follow.

I am sure that artificial manures are of no lasting benefit to any land unless to gain a large crop of Turnips, and by feeding them off with fatting sheep and not drawing them off for other stock, thereby obtaining good Barley crop, a good lea to be well mucked before sowing with Wheat. If Turnips and root crops are drawn off the land after having been joined by any artificial manure only, I am convinced the land is deteriorated.

WILTS.

I follow three different rotations of cropping, and apply the farm-yard dung for Beans, Swedes, and Vetches, the latter being followed by Turnips or Swedes. The superphosphate, or Turnip manure, 3 cwt. per acre, is all drilled with the liquid drill. If I have not sufficient farm dung for all the Grass land that is mown, I purchase about 3 cwt. Grass manure, of either Messrs. Lawes' or Proctor's to finish with, beside putting 3 or 4 cwt. per acre on the poorest grazing land. Superphosphate or Turnip manure is very generally applied to the root crops in this neighbourhood. Guano, and the other manures mentioned, are not so generally used. Farm-yard dung is not generally applied directly for Wheat except after Beans, but mostly for the root crop and Vetches, which are fed off with sheep. *T. Arkell, Swindon.*

114 BERKS.

The great advantage of using artificial manures is the saving of the farm-yard dung for your Wheat crop, and the great saving of carting manure to any great distance from the yards, and also of forcing the plant to the harvest (?) much sooner.

Generally to the Wheat crop, but some is applied for forward Turnips and Swedes. Also to the Mangels. *T. Owen, Hungerford.*

115. KENT.

My farm is on the four-course system, and a large breeding flock of sheep kept; about 25 Welsh heifers, coming two years, being brought into Barley and Oat straw yard every autumn; the next year's placed in a fatting yard, with a large portion of the Wheat straw for manure, and roots and hay and home-grown corn; these last, with pigs and the farm horses, convert the straw into manure. Some sheep every year being yard fed on Turnips and corn, while the flock contributes much to the productive powers of the farm. I am not able to give any express particulars of profit or loss from the use of artificial manure, but without it the Rape and roots would be deficient, and the substitution of farm-yard manure for it impracticable, as well as injurious to succeeding corn. *C. Hannam, Deal.*

116. KENT.

I have formerly used guano instead of farm yard manure for Swedes, but not with an equal result.

I purchase manure from Sandwich and elsewhere—when convenient to fetch it.

Artificial manure is seldom or never used here as a top dressing for Corn—for roots only; and I am told superphosphate is superseding the use of guano. One gentleman in this parish uses 4 or 5 cwt. only of superphosphate, and grows good Swedes. *J. Henderson, Sandwich.*

118. SUSSEX.

I have fattened from 15 to 40 beasts each winter in yards on roots, hay, oil-cake, and corn—my sheep eat a large quantity of cake—on Turnip seeds, Tares, &c. The last two years have been very unfavourable for this kind of land, some of our Wheat has been nearly a failure, all crops have yielded bad; sheep and cattle have also done badly. We find Peruvian guano the only manure that really does good on our malm land, from 2 to 3 cwt. per acre growing us a good crop of Swedes, Mangels, or Turnips; it also does well on our poor pastures. We find superphosphate of lime on our malm land has no good effect as a manure, having tried it repeatedly. Peruvian guano is the best and only profitable manure on this land, except farm-yard dung; superphosphate does well on our chalks, also on our lower clay loams—it is not worth sowing on our real malm lands.

Farm-yard dung is commonly applied for Wheat. Limeis applied to fallow for Wheat or Turnips. Artificial manures are commonly applied to Turnips, Swedes, and Mangels, occasionally to corn, Wheat, Oats, and Barley; never saw much good when put on for Beans or Peas. *J. Eames, Midhurst.*

119. HANTS.

Under the head of Turnips I would say no Turnips are grown except as a double or second crop. 30 acres are grown, *i.e.*, 15 acres double crop on the Potatoes. 15 acres stubble Turnips after straw crop.

Six acres of Mangels are grown after late Turnips fed in flower with roots of Mangel, cut and mixed with cake; cultivated and dressed with 25 tons of dung, and 2 cwt. of superphosphate per acre. 2 acres Carrots after Trifolium, cut and dressed with 4 cwt. Peruvian guano per acre. 5 acres Mangels are grown after Clover fed or cut early; one plough, and dressed with 25 tons dung and 2 cwt. superphosphate per acre.

Artificial Manures Experience. 4 cwt. Peruvian guano equal to 25 tons box dung per acre for the Potato crop. 2 cwt Peruvian guano and 2 cwt. superphosphate equal to 20 tons box dung for the Mangel crop. 2 cwt. Peruvian guano will increase a crop of Oats by 15 cwt. of straw and 6 sacks of grain per acre. The above are the effects of artificial manures on my own farm. *J. Blundell, Bursledon.*

121. DORSETSHIRE.

Wheat Crop.—Result with farm-yard manure: an increase of straw, crop very liable to blight, and much more infested with weeds than where no farm-yard dung has been applied. The increase in grain may probably average 1 qr. per acre, quality inferior. With 1 cwt of nitrate of soda and 2 of salt, at a cost of about 1*l.* 1*s.* per acre, the increase has generally been full 1 qr., the grain of good quality. When 1½ cwt. of nitrate of soda has been applied alone, the result has not been so good. Where 3 cwt. of salt has been applied alone the straw has always been shorter, but very bright and free from blight, and the grain heavy and of superior quality. I can only speak of one comparative experiment with salt, and in this the result was an increase of over 5 bushels of grain per acre over and above that portion of the field where no kind of manure had been applied.

Barley.—Where farm-yard manure has been applied the result has never been good. Where nitrate of soda has been applied the result has invariably been a decided loss, both grain and straw being of the most inferior description.

Mangels.—With 20 to 25 tons of farm-yard dung and 3 cwt. of superphosphate, the crop averages about 35 tons per acre, without tops and tails, ascertained by weighing several portions of a field.

Clover.—Nitrate of soda alone, or with salt, applied to this crop, has always given the most satisfactory results, adding very greatly to the bulk and to its early maturity.

122. DORSET.

Land intended for Wheat is almost invariably "folded" with sheep. Farmyard manure is applied to the "lea" and ploughed in a few weeks before the Wheat is grown. Should the plant appear weak, guano is harrowed in during the spring. For Mangels and a great portion of the Swedes farmyard manure is ploughed in during November, and when the seed is sown, either salt is sown broadcast, or superphosphate, ashes, &c., drilled in with the seed. I manure Grass lands with farmyard manure, at the end of four years with lime and earth, and at the end of (about) three years they require manure again.

Chalk is also used and proves very beneficial; small portions of various pastures where it was laid on about 50 years since (in contrast with other portions where it was not applied) present the appearance of a "water meadow." *W. J. Pope, Bridport.*

123. DEVON.

My second-class Grass land is generally manured as follows viz., farm-yard dung, 15 tons per acre once in three years, or bone-dust 10 cwt. per acre once in three years, if guano 2 cwt., and salt 2 cwt. per acre every year. This is varied according to circumstances.

I dung my arable land the second year that it is in Grass. Then it is prepared to produce a crop of Wheat when taken up again without any additional manure.

The ordinary practice of this neighbourhood is to lime for Wheat, 4 or 5 tons per acre. Some few persons dung for Wheat, the more common practice is to use farm-yard manure for green crops, and a little on the inferior Grass land. Very few persons use any oil-cake or consume their Barley and Oats, as there is not much stall feeding in this district.

Artificial manure for Turnips, guano and phosphate, some few use bone-dust.

Lime is commonly used on permanent pasture once in seven years at the rate of 4 to 5 tons per acre. *J. Horswell, Tavistock.*

124. CORNWALL.

I find Guano to answer better than any other manure, particularly on the thin land, which I use for every crop, and am certain it pays me well for the outlay, as I get double the quantity of straw, Corn, and roots I did before using it.

I put most of my farm-yard dung on the Grass land.

The farm-yard manure in our neighbourhood is generally applied for Wheat and Turnips, some on the Grass land; very little lime is used, and when for Wheat most farmers apply artificial manures for root crops.

125. CORNWALL.

I have used large quantities of artificial manures for several years, especially guano, and find that it answers exceedingly well on Grass, applied either in the autumn, winter, or spring, at the rate of 3 cwt. per acre. Two fields of Grass have been manured about 20 years with guano only, 3 cwt. to the acre. One of the fields, about 12 acres, has been cut to hay every year with the exception of one, and the quantity and quality of the Grass and hay are much improved.

I have also used it with great success for Wheat and Oats; 2 cwt of guano and 3 cwt. of salt per acre, sown on the Wheat in February, and harrowed in with the Oats. I formerly used half inch bones with great advantage, but whether it be owing to its being adulterated or not, its effects at present are neither so great or lasting as they were. I apply superphosphate mixed with guano for root crops; I formerly drilled it with the seed, but now sow it broadcast and drill the seed; the plan answers well.

The Ordinary Farm Practice of the Neighbourhood.—Farm yard dung is commonly applied, either mixed with earth or not, for Wheat and root crops. I invariably cart it on the stubbles and plough it in at once for the root crop, and many others do the same. Some farmers cart their long dung on the Grass in January and February, but it does not appear to answer.

Lime has been extensively used for 40 or 50 years. It is advisable not to repeat it very frequently. Large tracts of light waste lands have been enclosed during the past 30 years. Lime was of no value on them at first, but after being cultivated for several years, green crops grown frequently, and artificial manures applied largely, it has been found very useful, and a great preventive of the fingers and toes in Turnips. The application of salt mixed with guano to the corn crops and Grass is becoming very general, and it improves the quality and increases the quantity of the corn, especially so of the Wheat. *Henry Trethewy, Grampound.*

126. CAERNARVON.

In 1860 I grew 7 acres of Swedes with about 7 tons of farm-yard and 2 cwt. of Proctor and Ryland's Turnip manure, and had 30 tons 2 cwt. of Swedes per acre. In 1861 I grew in the adjoining field 7 acres of Swedes with about the same farm-yard, and only 1 cwt. Proctor and Ryland, and think my Turnips did not average 20 tons, and the bulbs very much smaller.

To Grass land the application of Proctor and Ryland's No. 2 bone manure, when I used it a few years back, was extra ordinary. I give oil cake to my milking cows and sheep, with Turnips and Mangels pulped and mixed with cut straw, and am convinced it improves the manure. It is all done by machinery and attended with a saving of something like 40 or 50 per cent. in hay, and the cattle all look better. I have not been long enough in this neighbourhood to know the general practice of my neighbours, but then they use a great deal of lime and little or no artificial, but think the latter are coming into more general use. I find by top dressing my Wheat and other crops in the spring the crops are more regular and much more luxuriant, and I fancy ripen more regular. *W. F. Chapman, Llandudno.*

127. NORTHAMPTON.

The matter below relates to my own farm only. The practice is so variable on other farms that it is not easily stated with sufficient conciseness.

Half the Wheat is sown after Turnips, Swedes, and Mangels, and half on Clover and Rye-grass lea.

The Barley succeeds the Wheat grown after Turnips and Swedes.

The seeds are sown with the Barley. They are manured, when practicable, during the autumn, or else the following summer.

Oats are grown on clay land after Mangels and Turnips.

Beans and Broad Clover are taken alternately on the clay soil, which is farmed on the four-course.

The Turnip soil is farmed on the five-course, viz., Turnips, Wheat, Barley, Seeds, Wheat.

On the clay soil the course of cropping is Mangels, Turnips, and Tares; Oats, Beans and Clover, alternately; Wheat.

Having a bone-mill on the farm I make my own superphosphate. I am only commencing to use it for Barley, but have used it for Turnips for many years with great success.

In addition to artificial food consumed on the arable land, a good deal of Cotton and Linseed-cake is consumed by bullocks grazed on the old pasture lands. *Owen Wallis.*

Home Correspondence.

Steam Cultivation.—When the clever and instructive work called "Talpa, or the Chronicles of a Clay Farm," was written a few years ago, the author probably little thought that the system of steam cultivation which he therein so powerfully depicts, would in so short a time so fully develop itself. In that work he says:—

"Again and again, be it repeated, it is not ploughing, neither is it digging that we want. These are only means. What we want is the seed bed; we care not for the process. Show me the soil, comminuted, aërated, and inverted 6 or 8 inches deep, and I will not ask you how it came so. What does that matter? If you wanted your coffee ground for breakfast to a certain fineness of texture, would you be very particular to ask whether the mill that crushed the fragrant berry had worked by horizontal, vertical, alternate, elbow crank, or by circular motion. If the farmer or the gardener could only have his seed bed made ready for him as fine as a new mole heap, according as he wants it, do you think he would care whether the soil had been first cut into longitudinal strips, plough-fashion, or into square cubes, spade-fashion, before it was finally granulated for use."

It was language such as this and the ideas conveyed in that work on the subject of steam cultivation that first awakened the attention of Mr. Smith (if I am in error in this I beg Mr. Smith's pardon); he began to study the matter deeply, made experiments which were tolerably successful, and took out patents for the same. Not, it is true, in the exact shape which Mr. Hoskyns dimly shadowed forth, viz., that of a locomotive engine, with a revolving cylinder of claws, paddle-wheel fashion, but with a stationary engine and windlass and cultivator. And now, after eight years of patient and unwearied perseverance in the application of steam to the tillage of the soil, with a certain and profitable result, the perplexing and difficult problem is solved. For what do we read in the letter to the *Times*, dated April 17, 1862, from Mr. W. Smith, of Woolston:—"that a heavy, cold, hilly and uneven clay soil field has been finished at one operation with his combined cultivating, drilling, and harrowing machine, and drilled with Barley at a cost of 6*s.* 2*d.* per acre. The Barley will come up, he says, as "living witnesses" to the truth of the operation.

What will my lords and gentlemen of the Royal Agricultural Society of England say to this? Will they still persist in saying that they think Mr. Smith mistaken in his novel and peculiar method? Will the Messrs. Fowler, Howard & Co., still manufacture implements to please them and obtain prizes? It is perhaps too much to expect from such an influential body of men, holding so high a position, to admit that they have been in error, and been beaten by a tenant farmer; but it matters little whether they do or not, for Mr. Smith is a long way on a-head, and is working his system with his brother farmers. The ploughing is as surely condemned, and will be superseded by the cultivator, as surely as the atmospheric engine was thrown out by the steam engine of Watt, with this memorable distinction—whereas the improvement of Watt over Newcomen's engine stands in force to this day, Smith's cultivator was scarcely acknowledged at first, but held its ground against all the old prejudices of ploughing that could be brought upon it, or any other cultivator that could be brought against it, combined with a method of tillage acknowledged for hundreds of years. It will be wise and prudent for all those farmers who contemplate steam tillage to take care that they are not led astray by any amount of prizes that may be given by the Royal Agricultural Society of England or any other; but carefully to examine the working of the different systems and judge for themselves, and if still undecided as to which is the best, to wait awhile and see what the future brings forth. I have a number

of private letters by me in answer to inquiries I have made for myself, in addition to which I have examined the systems; the letters are decidedly in favour of Smith's, which agrees with my own opinion. Messrs. Smith, Fowler, and Howard are total strangers to me—I have never seen the men. I have no prejudices, and my only desire is to assist in every way the progress of steam cultivation. *W. S., Guildford.*

Northumbrian Farming.—Artificial manures have been of great use to me instead of loss. The higher districts of the country have been benefited by them to an immense extent, as Turnips have been grown where carts could not have taken farmyard manure at all, even if the farmer had it to apply, which he had not. I may say with regard to the farming of this district (both sides of the Tweed) that the general mode of management is either on the four or five-course. The 1st being Turnips; 2d, Wheat or Barley; 3d, Grass depastured by sheep or cattle; and 4th, Oats. The second course the same, except that the land is two years in Grass instead of one. Very little hay is grown for sale, and only on newly-taken farms are Potatoes for sale allowed to be grown. The great feature is the breeding and feeding of Leicester sheep, which are generally sold off the shears in April, May, and June. The flocks of ewes are divided into three parts, and the oldest are sold in September every year to go to Yorkshire and other counties to have another crop of lambs. A good many cattle are reared, but the greater part are purchased from dealers who bring them from the south. The Leicesters are sold when in their second year. Half-breds and Cheviots are bought in winter to eat off what Turnips the farmer cannot consume, and a good many Turnips are taken by the week from those farmers who incline to let them. Large quantities of mountain sheep are reared on the Cheviots, for which Turnips to a great extent are required. Another characteristic of the agriculture of this district is the large quantity of old Grass land let by the proprietors every year by public auction. This Grass is taken to the amount I would say of more than 3-4ths by the farmers, the remainder generally by cattle dealers for their convenience. Most farmers take a field or two, and by this means are enabled to keep more stock than they could do otherwise. Within this 10 years a great quantity of land has been laid down to permanent pasture by the proprietors, by which they realise at least 1*l*. per acre more than they would do by letting the same land as tillage land. In cold late springs these old pastures let very high. I have more than once seen the best let at 6*l*. per acre. This seldom lets below 4*l*. This practice of letting extends all over this valley from Berwick upwards. Our hiring markets are now going on for farm servants. The young men living with their parents get 30*l*. a year, with 1200 yards of drill of Potato land. The married men have a free house and garden; they find a woman worker at 10*d*. per day, and if they have any more females in the house they get 1*s*. a day, with full wages in harvest. A cow is kept (the property of the servant), and they have 5*l*. of money each, with 7 bolls (of 6 bushels) Oats, 4 bolls of Barley, 2 of Beans or Peas, and 1 boll of Wheat each man, with 1200 yards of drill for Potatoes, which are for the most part planted by the farmer, the seed being found by him. Coals are brought from the collieries to the servants with their masters' carts. The hoeing of Turnips and most other light work is all done by females. I hope you will derive some information from these hurried and crude notes. *X.*

Practice of Manuring.—I may premise by saying that in Ireland farmyard manure is very rarely indeed, as with you in England, applied for any other than green crops. Sometimes it is used for top-dressing Grass land, and no doubt it produces good results, but I doubt very much the correctness of the practice. The functions of farmyard manure, like its composition, are complex. In the first place its action is largely attributable to the ammonia and phosphates which on decomposition it is capable of giving up to the soil; but that its superiority over all manures depends partly in many cases, and chiefly in some cases, on the moisture and carbonaceous matter it contains there can be no doubt. Now, when the soil is in need of these two substances, the application of farmyard manure as a top-dressing is a wasteful practice. As regards the application of lime, it appears to me a cause of regret that since the introduction of artificial manures lime has fallen into disuse. Formerly lime was too freely used in Ireland. Then, and I may say now too, the great mass of the agricultural classes understood but very imperfectly the action of this manure. It was regarded by many as a perfect and universal manure; and certainly it produced marked effects on a great variety of situations and under a great variety of circumstances. Since the introduction of artificial manures it has been used more by the poorer class of farmers than by the affluent and advanced agriculturists. When we consider all the real functions of lime, and more especially its power of rendering available for the crop some of those constituents of the soil, organic and inorganic, which would otherwise remain locked up as useless to the plants, we must come to the conclusion that to the high farmer the judicious use of lime would be highly remunerative. For, while he pays for the carriage of the nitrogen from South America in the form of guano and nitrate of soda, there may be a far greater quantity of it in the organic matter of his own soil, and which the judicious application of lime would render beneficial to his crops. I come now to remark on the subject of artificial manures, to which attention is very properly directed. Treatises, essays, and papers innumerable have been written on this subject. Yet anybody who understands the subject well must have observed how crude and unsatisfactory are the ideas of farmers on the true nature and properties of artificial fertilisers. And I fear this will continue until the elementary principles of agricultural chemistry become a fixed element in the instruction of the young farmers. I was very much struck with this while attending a prosecution instituted by the present Government against three brothers of the name of Creagh, who practised a most extraordinary system of concocting manures in Dublin. Illiterate men themselves, and utterly ignorant of all knowledge of the principles of manuring, they duped great numbers of illiterate and unfortunate Irish farmers to the tune of several thousands of pounds, beside the loss of their crops, which was more considerable. Well, besides those who are duped, farmers of position and intelligence lose considerably by the injudicious selection of artificial manures. This class of agriculturists are liable to commit error, (1) by not knowing those few well established laws in reference to manuring which may with safety be followed; (2) those who know those laws, but do not observe the circumstances by which they are modified. I will only take one example. It is now admitted that, generally speaking, phosphates should exist more abundantly in manure for the Turnip than for Wheat, and that nitrogen should be more abundant in a Wheat manure than in one for the Turnip. Now there are many cases in which this law will not hold. I have endeavoured to illustrate this in a paper which I read before the Royal Dublin Society some few years ago, and from which you will permit me to quote the following passages:—

"I think that the manures we apply may occasionally be rotated with decided advantage; and that on a soil where guano may at one time exceed superphosphate in its effects on Turnips, superphosphate may, at another time, produce a heavier crop than guano on the same soil. Experiments conducted on the Model Farm, Glasnevin, support this view of the case. Some years ago it was found that on certain fields guano was the best artificial manure for raising green crops, whereas good superphosphate gives best results in the same fields at present. In 1851 I weighed the entire produce of several experimental plots, a few items of which may be stated thus:—

	Turnips.	
	Sound. Tons.	Diseased. Tons.
30 tons farm-yard manure, gave ..	32 ..	3½
5 cwt. Peruvian guano	28½ ..	2½
8 cwt. Ritchie's vitriolised bone compound (a true superphosphate) ..	24¾ ..	1¾
No manure	19½ ..	1

Last season (1858) the order of merit of the two manures was reversed, and stood thus:—

	Tons.	Cwt.
20 tons farm-yard manure gave	22	0
Genuine Peruvian guano, at the rate of 3*l*. 2*s*. per statute acre, and gave	15	9
Ritchie's superphosphate gave	18	6

These experiments leave no doubt on my own mind that while guano, which depends for its efficacy chiefly on ammonia, may at one time produce the weightiest crop of Turnips, yet superphosphate of lime may, at another time, exceed guano on the same ground; that while on one soil guano would be the cheapest manure for raising a crop of Turnips, yet on another superphosphate might be found the more economical; and on a third soil, a mixture of guano and superphosphate would answer better than either used alone. Now, these conclusions, which I have deduced, not from any theoretical reasoning, but from actual experiments and observation, are not at variance with the Rothamstead experiments. The Glasnevin series of experiments were made on land in a state of average productiveness; those at Rothamstead on land far below this condition." *Thomas Baldwin.*

A Light Land Farm in Kent.—My answer to your questions would be of very little benefit to farmers generally; the land that I occupy is situate close to the towns of Ramsgate and Margate, so that I am nearly independent of artificial manure. I do not cultivate quite 400 acres of land, but I get on an average 2000 tons of dung a year independently of what I make on the farm. My system of cropping would be no guide for others that have not similar advantages. I usually grow half the arable land Wheat and Barley, seldom any Oats; the remaining half is green crops of almost every kind, viz., Beans, Peas, Carrots, Swedes, Potatoes, Clover, Sainfoin, Winter Tares (Radishes and Spinach for seed), Trifolium, Mangels. I have now 30 acres of Lucerne. The Turnips I grow are after winter Tares and Trifolium. I usually dung this land heavily, say 16 tons of town dung per acre, and drill 1 cwt. of Peruvian guano, 2 cwt. of superphosphate, and 20 bushels of ashes with the seed. What Rape I grow is after Peas, with the same dressing of guano, phosphate, and ashes, without the dung. I have in a small way tried many of the manures you name, and with but very little if any profit. I find, even with Mangels, Swedes, and Turnips, it does more to secure a plant than to add weight to the crop. Recollect this is on land that is well supplied with dung. We have several times weighed our Mangels where 3 cwt. of guano per acre has been applied in addition to the dung, and could find no additional weight, though in the early stage of growth there was a marked difference. I have had the management of land that has been poor. I found there that it was almost impossible to apply any manure that does not do good, temporarily at least; but experience proves to me that it is useless to apply to land anything that it has already got a sufficiency of. I think that a ton of town manure does not do more than half the good on my land that it did 20 years ago, when it was much poorer than it is now. I believe a proper change of manure is as requisite to land, and as a proper rotation of cropping few have better opportunities of testing this than I have; but as I have but very little knowledge of chemistry, and no means of analysing manure, I usually take care to mix all I have. My mixings are certainly a strange mixture; what I have from the towns consists of dung from the stable-keepers, cow-keepers, night soil, street sweepings, &c.; to this I add my farm-yard dung, often 4 bushels of soot to every ton of dung, and when we can get it about two layers of Sea-weed in every mixing; this I always turn once, sometimes twice, before I carry it on the land. I have tried dung more than once in its green state, but it was not satisfactory. Our soil is too light for it. By the bye, "What is the character of your soil?"—A good mould from 10 inches to 10 feet thick, resting on a chalk subsoil, always dry, that is requires no draining. The first foot contains a great portion of vegetable matter, just such land as a practical farmer would like to give 3*l*. per acre for; I am obliged to give 4*l*. for a great portion of it. Doubtless you will think I am fond of writing about myself, but you need not read it. I did not think when I began that I could have written so much. But a little about my neighbours. Artificial manure is not extensively used here; a little guano is used with superphosphate or bone-dust for Turnips, but our best farmers depend more on feeding their sheep and bullocks. Some are large consumers of cake, and most of them prefer Linseed-cake; Cotton-cake and Rape have been tried, but are not generally approved of; several spend more pounds per year on oilcake than they occupy acres. Sprats are used to some extent, and the quantity of Seaweed that is collected round the island is surprising; this does a great deal more good when carried a few miles from the sea on land that seldom has it. ——

A Clay Land Farm in Suffolk.—Having only at intervals made use of the manures quoted, and even then without any perseverance in system as to kind or to crop applied, I should not be justified in filling your columns. My farm is nearly 200 acres, nearly one-fourth pasture of long standing; the arable is chiefly thin-skinned heavy land with clay subsoil. My farm-yard manure is enriched by feeding my horses very well and by fatting about 16 bullocks in the yard with Stover (Clover hay), Linseed cake, and Bean meal; the pastures enriched by feeding sheep in the winter with Linseed cake. Lime is not used here, the distant land carriage making it too expensive. I have generally used 200 or 300 bushels of soot in a year wherever it may be wanted, when the available farmyard manure may be insufficient, or by itself; and either for corn, pulse, root, or pasture, and I occasionally buy hay and straw, and never sell any. There are very few farmers make more use than I have mentioned in this neighbourhood of what may be called the chemical manures. I endeavour to find 20 chaldron loads of manure for Turnips and Mangel Wurzel, and for Beans our course is fallow, Barley, Beans or Clover, Wheat. I give 20 loads for Clover if I can, and then none for Wheat; if the Clover be missed in manuring, then 20 loads for Wheat, and any surplus goes to the pasture. I do not grow Oats, Peas, nor Vetches, neither do I grow Swedes, having secured a plant of as good quantity of Mangel as I can. I make good fallows for Dale's Hybrid Turnips, leaving about one-third throughout fallow. I should have mentioned that I always have about 10 pigs in course of fatting, and not having a dairy the growing pigs have Beans in an enclosed yard. I do not grow Potatoes. *G. Edwards, Framlingham.*

Farm Memoranda.

ROYAL AGRICULTURAL COLLEGE, CIRENCESTER.—Our report for the past month is on the whole much more encouraging than that for March. The early part of April was anything but dry: rain up to the 11th, 1.41 inch. Very little cultivation was possible until after this date, when the weather steadily improved, enabling us to drill our first Barley (which went in well) on the 15th. This was principally due to the soil being of a dry nature, and to the excellent effects of the Staffordshire harrow, a species of light cultivator, drawn by four horses, and working 10 acres a day, which we greatly prefer to the action of two drags, especially on land that is at all stale, as it breaks up the furrow throughout its whole depth. Two turns of an ordinary harrow made a good seed bed, and into this 2½ bushels of Chevalier Barley from the chalk was drilled at 8 inches, and looks exceedingly healthy. Lightness and fineness of soil are certainly of equal if not greater importance than richness for Barley. Up to the end of April, to which period our report

dates, we had sown little more than half our Barley, owing to the abundance of roots, which had to be consumed or fed off. It is always desirable to finish Barley sowing by the end of April; but this can seldom be done with due regard to the well-being of the live stock, and we have generally found that good crops of Barley may be looked for when planted up to the 10th or 12th May, provided that the condition of the land, both as to food and physical state, is good.

The Wheat crop looks exceedingly promising; already the unmanured spots can be readily distinguished by the pale colour and poorer look of the crop. Indeed, wherever an over or under dose was administered by the sower, the fact is plainly visible. The superiority of the distributor over hand-sowing is very evident, but even with the machine the outsides of each drift get rather less than the rest, and this is equally obvious. The two fields which were thin have been partly filled up with April Wheat, dibbled by Sigma's dibble at the rate of 3 pecks, and drilled at 1½ bushel per acre. This has come up well, and the old plant having stooled out greatly, we are likely to have almost too much crop. Good condition or poverty of soil is very evident in cases of this sort. On poor thin land the plant will not pay to stand; on good rich soil it is surprising how little will make a crop.

The Steam Plough, having been fixed on some very wet land in a neighbouring parish, could only work during quite fine weather, and the average work per day was small, not more than three acres; it is no use trying to work when the land is too wet to do well. When the work was finished the cultivator was used on our own land, crossing fallows, and here 6 to 7 acres per day has been the average work, of a most satisfactory description, such work as could not have been done by any horse implement. On land much of which is hilly and in places full of rock, we do not look for a great saving in the cost of the operation, but in the excellency of the work and the increase of crop. Our Peas on the steam-ploughed ground look exceedingly well, and we cannot help thinking that in the case of roots the improvement will be still more marked. Towards the latter portion of the month the Potato crop was got in. We plant about 5 acres, selecting friable deep soil in good condition. We have adopted two plans; the deeper land being bouted up and back, and the lighter part ploughed with a narrow furrow 4 by 8, and Potatoes set every third furrow, at 9 inches apart in the rows. By keeping horses single on the unploughed land very good work was thus made; a chain harrow over the surface produces a very capital tilth. Small whole sets were used, and the sorts are Walnut-leaf Kidney, an excellent sort for early use; Fluke Kidneys, York Regents, and Irish Whites or Rocks. Though not a large producing soil, the quality of the Potatoes is good. Farmyard manure at the rate of 12 tons per acre was ploughed in by steam in autumn on part of the land; the remainder has received a dressing consisting of guano, superphosphate, salt, and nitrate of soda. The weather has been very favourable for keep of all kinds, and our Grass is forwarder than we ever remember. To a certain extent this may be due to the effect of the compost that was applied. Vetches will soon be ready to eat off.

The Sheep.—Ewes and lambs having run over the tops of the late Turnips, are now folded on young seeds, which it is intended to break up during the summer, and follow with Turnips. The Clover having failed, the ewes are kept back, and the lambs run through; from this they will go to Vetches or Grass. The lambs when weaned will be folded alternately on Vetches and seeds. The lambs still receive bruised Oats and Beans, and have improved considerably. We find they require great care and attention after weaning.

The Cattle have greatly improved in condition from the abundance of good Grass. They have nearly all calved, and go out during the day on the pastures, receiving cut Mangels and chaff night and morning. The yield of milk is good. The calves are separated from the mother after a few days and fed from the pail with plenty of new milk, into which is introduced after a fortnight a little fine meal, cattle food, &c. So soon as the calf is able to eat, Sainfoin, hay, and a small quantity of dust oil-cake with Beans is placed before them. With such treatment (care being taken that they do not drink the milk too fast) they will thrive well, especially if, as the weather gets warm, they are placed in a roomy yard; later on they will get Vetches in addition to the other food. The prospects of the season generally depend still to a very great degree upon the character of the weather during the month of May—should we have much wet weather, operations for the root crops will be very backward, and the produce will be seriously endangered. The Corn crops will become too luxuriant, and straw with the corn may be expected. A fine genial May with occasional rain will set everything right. The considerable excess of rain beyond the average up to the present time leads to the hope that a favourable month will follow. *John Coleman.*

Northumberland Farm.—April opened with as fine weather as could be desired for field operations, and continued thus up to the 12th, when the dry cold wind brought frost, which for a while retarded field work. However, we have no reason to find much fault with the weather when we contrast it with what we endured in March; for dry winds, with showers at intervals, have caused the land, which at one time seemed to defy every mechanical means of disintegration, to work into as fine a seed-bed as could be wished for. Spring grain, which was soon fully a month later than usual, has vegetated regularly, and the genial state of the weather towards the end of the month has furnished a plentiful supply of all kinds of Grass, so that we may expect to turn out our feeding cattle on to a full bite by the 12th of May.

Horse Labour.—Since our last report our horses have not been idle, the full force being concentrated to the operation of sowing, an increased supply of corn of course being given, so that we might take advantage of long days. The rest of the Beans and all the Oats were drilled during the first fortnight; the former at the rate of 2½ and 3 bushels, and 16 inches apart, and the latter at from 2 to 3 bushels per acre, and from 7½ to 9 inches apart. At a still later period the Barley was drilled after Turnips at 2 bushels per acre and 9 inches apart, with the exception of about 5 acres, which were drilled about 12 inches apart, as it is intended to lay it down to permanent Grass. The winter Wheat never looked better than at present; it has been well harrowed and rolled, and has tillered satisfactorily. The fallows for Turnips have been stirred across the winter furrow with Bentall's broadshare to a depth of 9 inches, with horses—a system very much superior to spring ploughing, though great importance is attached to thorough deep stirring for the first operation. This is a plan fast coming into general practice in this country, being a means of economising labour, and at the same time producing a superior degree of tilth. Carting draining pipes, manure, rolling Oats, and such like, make up the monthly work of the horse labour.

Manual Labour.—The work performed by the men and women has been of considerable more importance than that of the preceding month, such as the various operations of seed time, sorting Potatoes, picking Couch, gathering stones, threshing and dressing corn and such like.

Stock.—The rest of the fat stock have been sold this month, despite the miserably dull state of the fat market. Store cattle are comparatively dear, those already bought are receiving Turnips and straw; the cows, several of which have calved, are having Mangel and hay. The ewes have all lambed, and they have now abundance of Grass. We were unfortunate enough to lose a few very fine lambs, weighing about 6 lbs. per quarter, from stomach staggers we imagine, as it seemed the brain was considerably affected; however, after changing them to a more backward field with very little young Grass in it, we found that it was checked. The ewes and lambs are all on the old Grass, and the Hoggets on the 2-year old Grass. The Ram Hoggets have been washed and shorn, and are still receiving Swedes and artificial food on the Grass. *J. C.*

South Hants Farm: *May* 14.—It is unusual to have to report the cessation of tillage of the land for six days together in the month of May, but it has been thus during the past week; no land could be worked advantageously, owing to the excess of rain; this circumstance has caused delay, and prevented the drilling of Mangel and Carrots, which should be in the ground by the middle of May, if we are to anticipate a full crop. We only finished planting Potatoes on the 7th of the month, and it is certainly too late, but the season was delayed so much in preparing the land in the month of March that we could not plant them earlier, nor could we appropriate the land to other crops, for having in store a large quantity of seed Potatoes we were obliged to plant them, the period for selling them as seed being over. We are now turning our attention to getting in the Mangels. Our land intended for the crop has just been cleared of a crop of stubble Turnips, which were fed off on the land by sheep, and we had proposed to plough the land twice, and afterwards to ridge the land by throwing two furrows together, and lay in the box-made dung between the ridges, then by reversing them the dung is buried in the centre; our practice in such case is for women to dibble the seed by hand on the ridges. This is rather tedious work, but our experience in former seasons teaches that it is by far the surest method of obtaining a regular plant; this is in some measure due to the fact of the seed being buried at an even depth, whereas when drilled on the ridge, as we have often done it, the seed does not vegetate so well, being buried at irregular depths. The season being so far advanced, to gain time we are obliged to adopt a more expeditious mode of getting over the work; we therefore are now laying out the dung which we intend to plough in, and then drill the Mangel in the ordinary way, at intervals of 2 feet between the rows, and on the level. We also apply with the drill 2 cwt. of superphosphate per acre mixed with ashes. A part of the field is however to be cropped with Carrots, and we prefer the White Belgian and Red Altringham kinds, the former being well adapted for strong loamy land, the latter best suited to sandy loam soil, and we shall put in some of each kind this season; the Red Carrots to follow the stubble Turnip crop, and the White to succeed a crop of Trifolium, which we are just now clearing. In both cases the Carrots will be drilled after one ploughing, in the same manner as the land above stated was prepared for Mangels—except that instead of using dung fresh from the cattle boxes, we prefer using for Carrots good rotten dung, a near approach to mould, long dung being apt to make the plant grow forked and fibrous. We drill our Carrots at 20 inches apart between the rows, and on the level, and previous to drilling, the seed is hand rubbed, which frees it from the burr or husk, in which state it works freely as Turnip seed in the drill, and we prefer this method to mixing the seed with the manure, which is a common practice; the manure applied by the drill is the same as stated for Mangel. Many farmers put in Carrots as early as March or April, but we have succeeded best by drilling in the early part of May after one ploughing only, for we have always found that early sowing after fallows gives the weeds too much power over the crop, as the Carrots grow slowly at first, whereas after one ploughing there are but few weeds appear, and the seed drilled in May makes a rapid growth, the young plants being fit to hoe before the weeds can injure them; besides the security of obtaining a good plant, this method saves one hoeing, equal to 7*s.* or 8*s.* per acre. The crops of Grass are very early this year, and we expect to commence mowing for hay a crop of Italian Rye-grass and Trefoil about the 19th inst. The crop of Trifolium this year is also very early and abundant; we began cutting for all our cattle on the first day of the month, the crop being as heavy as we have ever seen it, and whilst young all stock do well upon it; and we reckon that a full crop gives a greater amount of feeding value per acre than any other single crop of the Clover tribe.

The Stock.—Our sheep are now nearly all gone; the lambs are sold, and only a few ewes remaining either of Somersets or Downs, and it is our regular custom to clear the farm of sheep stock during the summer months, and generally by the middle of May. We reckon that sheep do not pay in the summer months upon farms where a large acreage is given to sale crops, such as Corn, Potatoes, &c., under any circumstances in the district of South Hants they do not pay so well for feeding as they do in the winter months; an acre of Clover is far more valuable, cut for feeding cattle under cover, than for feeding sheep, besides which, the Wheat succeeds better after Clover cut twice than it does when the Clover is fed off by sheep during the summer. To return however to the feeding of stock, we use the Trifolium for feeding the horses, the fatting bullocks, the yearling heifers and steers, the calves from six weeks old and upwards, the breeding sows, and store pigs of all ages. The fatting bullocks get in addition about 20 lbs. of cut Mangels with 4 lbs. of cake meal mixed, the yearlings about 10 lbs. of Mangels with 2 lbs. of cake meal; this is very cheap feeding, and taking into consideration the progress the animals are making, it gives a good profit, for not only is the increased value of the animals great, but the manure is made very strong and in large quantities. *J. B.*

Miscellaneous.

Diseased Cattle.—In a report just issued by the Registrar-General of Scotland he calls the attention of the public to the fact that ever since pleuro-pneumonia broke out among the cattle of this country a few years since, the returns of mortality have shown that carbuncle, a disease formerly very rare, has become comparatively common. Dr. Livingstone observed in Africa that if the flesh of animals who die from pleuro-pneumonia is eaten it causes carbuncle in the persons who eat it, and that neither boiling nor roasting the flesh, nor cooking it in any way, gets rid of the poison. It is true that if such cattle are ever sold for food, they are killed before they fall victims to the disease naturally, but still the poison is in them. The report suggests as a subject for inquiry whether the new form of disease which we term diphtheria may not be partially induced by the use of diseased flesh.

Rapid Progress of Steam Cultivation.—"A gentleman informs us that he saw, a few days ago, from a spot in the neighbourhood of Sutton Maddock, in this county, no less than five steam cultivators at work on adjoining farms. One was employed by Mr. Thomas Nock; another by Mr. Henry Smith, New House; a third by Mr. Brown, of Brockton; a fourth by Mr. Richard Wilson, of Acleton; and the fifth by Mr. Phillips, of Brockton, this last being the property of Mr. Cooper, of Hilton. Of these, three cultivators were Howards', of Bedford; one Smith's, of Woolston, made by Howards; and one Robey's, of Lincoln. About six miles away a sixth steam cultivator (Howards') was at work, on the farm of Mr. Pullen, of Albrighton. These facts illustrate not only the rapid growth of steam culture, but equally the enterprise of the Salopian farmers. *Staffordshire Advertiser.*

Calendar of Operations.

MAY.

North West Bucks: *May* 7.—At length we have completed the sowing of Lent corn, which after a hindrance of exactly five weeks, during which we could not do a single day's work on our land, has gone in well. The chief part of the land intended for Oats and Barley having been steam cultivated in the autumn and afterwards ridged, has come down in splendid order. That portion of the farm intended for Mangels and Swedes having been treated in the same manner, we have been enabled to plant the former during the last week in April in a very satisfactory manner. We have observed several pieces in the neighbourhood intended for Mangels and Barley, which have been cross ploughed after the winter furrow,

which has cut up so roughly that it will require a great deal of labour and very favourable weather to make anything like a decent seed-bed. We are glad to notice the fact that two or three of our neighbours who have been opposed to steam cultivation have become converts to the system, and have ordered or are about to order sets of tackle. The Wheat on lands that are drained looks generally promising, and Beans remarkably well. Grass is abundant, and we turned out the greater part of our stock on 21st April. Mangels have held out well, and we have a good store left for the pigs during summer. The sheep, owing probably to a fine dry winter, have done exceedingly well; we have had a full crop of lambs, with very little loss. Labour has been abundant, and hence the task of cleaning the crops has been more easy than usual. Most of the Wheat and Bean hoeing has been accomplished. We have to-day been favoured with some fine showers, accompanied by thunder and lightning, which will soon bring up the Grass seeds, &c., just sown. Should the weather be favourable we hope next week to put in some Swedes. It is early enough, but on heavy land we never like to miss an opportunity when it will do well. Judging by the appearance of the crops generally, there seems a fair prospect of an early and bountiful harvest, and we trust that prospect may not be blighted.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, May 15, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	9	29.65	56	53	S.W.	2	4	64	46	80	44	0.15	57	55
Saturday ..	10	29.62	55	52	W.	2	6	62	47	79	46	0.17	56½	55
Sunday ..	11	29.73	55	51		2	3	63	47	77	45	0.08	56	54½
Monday ..	12	29.63	55	51	W.	1	4	64	44	88	41	0.01	56	54
Tuesday ..	13	29.92	51	48	N.E.	2	4	69	46	95	45	0.16	57	54½
Wednesday ..	14	29.92	51	48	N.E.	2	5	60	40	83	36	...	56	54½
Thursday ..	15	29.97	47	46	N.E.	3	7	59	42	79	39	0.04	55½	54½

Notices to Correspondents.

Cattle Cabbage: *J H H.* Transplant them now for use in September and October. A month later will do for early winter.

Lammermuirs: *A 15 Years' Subscriber.* We are not always at liberty to *publish* names. Please give your address and an answer shall be sent by post.

Lime: *Gurney's Manure.* Our Correspondent says:—"I shall feel greatly obliged to 'P. C.' to give one word of further explanation as to the best mode for the application of quick lime (Home Correspondence, p. 318). I do not quite understand whether or not 'P. C.' considers that lime loses its quality by being at once spread on the land from the kiln, as I have usually done; if so, I have been wrong in so doing. Would it be better to cover 30 or 40 bushels of quick lime with earth for a certain time, and then have it spread on the land, or is it better in small heaps? I put it on in winter, when it is difficult to get on the land with horses, &c., and should like to know the best plan of application."

Mr. Surtees' Herd of Short-horns: Dane End: *J L.* At Mr. Strafford's sale of this herd last week, 38 cows and heifers averaged 50*l.* 11*s.* 4*d.*; 12 bulls averaged 30*l.* 14*s.* 3*d.*; and the whole 50 2,290*l.* 1*s.*, and averaged 45*l.* 16*s.* Among the highest prices for females were Baroness, Mr. R. E. Oliver, 71 guineas; Lady Carlotta, Mr. E. Holland, M.P., 81 guineas; Peace, Mr. E. L. Betts, 120 guineas; Cleveland Lass, Mr. W. Wells, 72 guineas; Viscountess, Mr. R. E. Oliver, 73 guineas; Garcia, G. R. Barclay, of Keevil, 74 guineas; Duchess 10th, ditto, 60 guineas; Archduchess, Mr. E. L. Betts, 91 guineas; De Beriot, Major H. Dougal, 66 guineas; Duchess of Cleveland, Mr. R. E. Oliver, 100 guineas; and Rose of Raby, Mr. E. L. Betts, 76 guineas. Mr. John Abbey, of Wellingborough, gave 50 guineas, the highest bull price, for Raby, by Duke of Argyle (11,375;) and Mr. Otto Baldwin, of Sydney, took away Professor Frikell for 49 guineas.

Toll: *H. Gibson.* Chalk and lime exclusively used as a manure are not liable to toll.—*Another Correspondent* asks: Is a farmer or his bailiff liable to toll, passing through the turnpike gate on horseback when after his business, the occupation going on both sides of the gate?

THE LONDON MANURE COMPANY (Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. Macadam, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0
These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.
BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.
Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. Voelcker, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

Blight.
BROWN'S PATENT FUMIGATOR.—A Portable Instrument for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers in the open air, without injuring the most delicate plant; delivering the smoke cold, in a dense mass, and effecting a great saving of Tobacco. Price 10*s.* and upwards.
Manufactured and supplied to the Trade by Messrs. Barber & Groom, London; and may be had of all Ironmongers, Seedsmen, and Florists.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3*s.* per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.
This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3*s.* per Gallon (or 9*d.* fit for use), will be the cheapest. To publish testimonials is unnecessary.
May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,
Page & Toogood, Royal South Hants Seed Establishment, Southampton.

Magnified Aphides.
NEAL'S PATENT APHIS PASTILS, One Shilling and Two Shillings per packet, are now acknowledged by all disinterested persons to be the only cheap and effectual way of smoking a Greenhouse: they destroy all insects, and cannot injure the foliage unless they are damp. Testimonials from Florists and Scientific men of the highest standing may be had on application.
NEAL'S PLANT SOAP
is a perfectly new preparation, free from all smell, little more than half the price of the ordinary compounds, is not injurious, but on the contrary useful to the health of the Plant; destroys Red Spider, Mealy Bug, American Blight, Mildew, Scale, Thrip, Green Fly, and all other Insect Pests, and is only 1*s.* a packet of four cakes. May be obtained of all principal Seedsmen.
Patentee:
J. Neal, Edward Street, Birmingham.

Upwards of 2000 Cases have been reported as Cured by
JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* each. A 1*s.* 6*d.* bottle will make 12 gallons fit for use.
Agents:—
Messrs. Wood & Ingram, Huntingdon
,, Wood & Sons, Maresfield, near Uckfield
,, J. & J. Fraser, Lea Bridge Road, London, N.E.
,, Grayson & Co. Bury St. Edmunds
,, Wm. Urquhart & Son, Dundee
,, Dicksons & Co., Waterloo Place, Edinburgh
,, Minier, Nash & Nash, 60, Strand, London
,, Hurst & McMullen, 6, Leadenhall Street, London
,, Fisher & Holmes, Handsworth, Sheffield
,, Finney & Co., Gateshead
,, Stuart & Mein, Kelso
,, Martin & Son, Hull
,, F. & A. Smith, Dulwich, London
Mr. John Harrison, Darlington
,, Richard Smith, Worcester
Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Red Spider Magnified.
GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.
This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.
Sold Retail by Nurserymen and Seedsmen in boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* each.
Wholesale by
Price's Patent Candle Co., Limited.

KEATING'S PERSIAN INSECT DESTROYING POWDER.—Fleas in Dogs, Poultry, &c., are instantly destroyed, as also Bugs, Beetles, and every other Insect, by this Powder, which is perfectly harmless to animal life; Sportsmen particularly, will, therefore, find it invaluable.
Sold in Packets, 1*s.*, 2*s.* 6*d.*, and 4*s.* 6*d.* each, or post free for 14, or treble size for 36 postage stamps, by Thomas Keating, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.—May 17.

Garden Border Edging Tiles.
F. AND G. ROSHER, Cement, Brick, and Tile Merchants, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.
They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.
N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.
Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.
To be obtained of F. & G. Rosher, at their Premises as above.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.
PROTECTION from the COLD WINDS & MORNING FROST.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.
Two yards wide .. .. 1*s.* 6*d.* per yard run.
Four yards wide .. .. 3*s.* per yard.
An improved make, 3 yards wide, 2*s.* 6*d.* per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1*s.* 4*d.* per yard run.
Elisha Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

PATENT GUTTA PERCHA SOLES.—Important to Gardeners.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. Glenny, Esq., the celebrated Florist:—
"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. Glenny."
Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.
The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C.

PHOSPHO GUANO.

PETER LAWSON & SON, GENERAL CONTRACTORS,
EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. Voelcker, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.
(Signed) "Augustus Voelcker."

Opinion of Dr. Anderson, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.
(Signed) "Thomas Anderson."

Opinion of Dr. Stevenson Macadam, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for the Root Crops.
(Signed) "Stevenson Macadam."

Opinion of Dr. Hodges, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.
(Signed) "John F. Hodges."

Opinion of Dr. Apjohn, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows or Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l.* 9*s.* 8*d.* per ton.
(Signed) "James Apjohn."

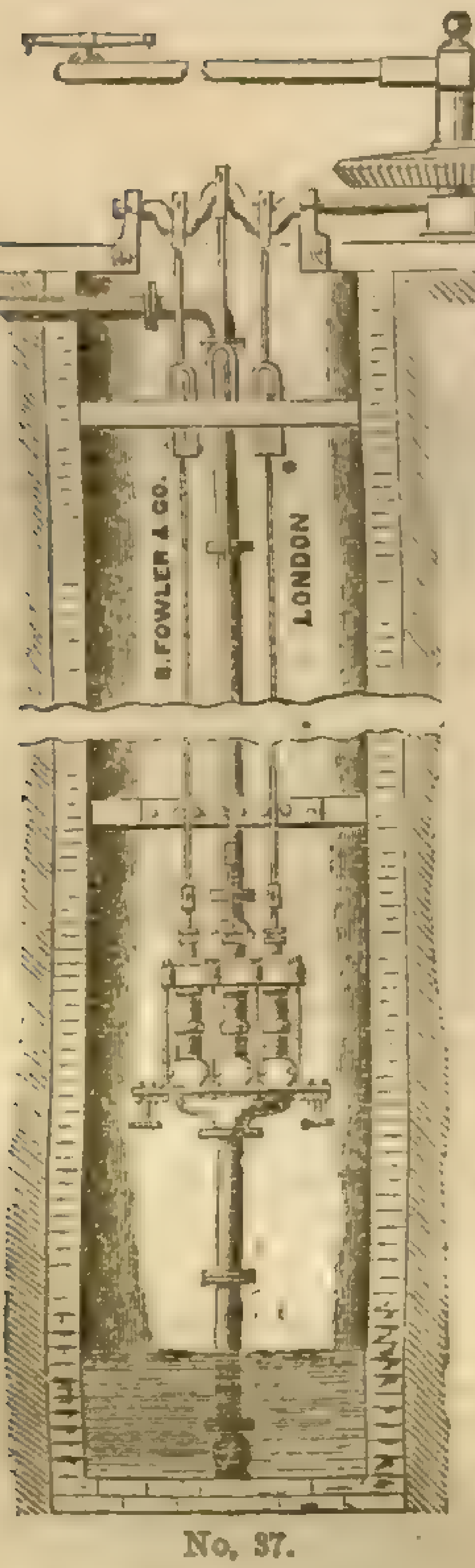
Price, Free on Rail, £12 5s. per Ton, Bags included.

*** *None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

PETER LAWSON & SON, 27, GREAT GEORGE STREET, WESTMINSTER, LONDON, S.W.

BENJAMIN FOWLER & CO.,
MANUFACTURERS OF PUMPS AND HYDRAULIC MACHINERY,
WHITEFRIARS STREET, FLEET STREET, LONDON, E.C.

THE accompanying Sketches show some useful forms of apparatus in general demand for Raising and Forcing Water or Liquid Manure. The Landscape Sketch shows the adaptation of Fowler's Improved Hydraulic Rams for the supply of Mansions, Farms, &c. A large number of these simple Self-acting Machines are in use, giving great satisfaction. Their adoption is not confined to positions as shown below, as they are suited to any situation where a few feet fall can be obtained from a spring, brook, or stream; they will force to an elevation equal to ten or more times the number of feet of fall, and to any distance.



No. 37.

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No. 37. Fowler's Improved Simple HORSE GEAR for raising water from deep wells with double or treble pumps. B. F. & Co. also make and fix Deep Well Pumps of all descriptions for hand power.

No. 4. Fowler's CAST IRON BORED PUMPS of all sizes, with improved brass valves for Garden and Farm use, from 1*l.* 5*s.* each.

No. 38. Fowler's Galvanized Portable LIQUID MANURE PUMPS, with flexible suction hose. Price with 10 feet of pipe and strainer, 4*l.* 5*s.*

No. 138. Fowler's Improved DOUBLE ACTION FORCE PUMP in frame. These excellent pumps are largely used and much approved.

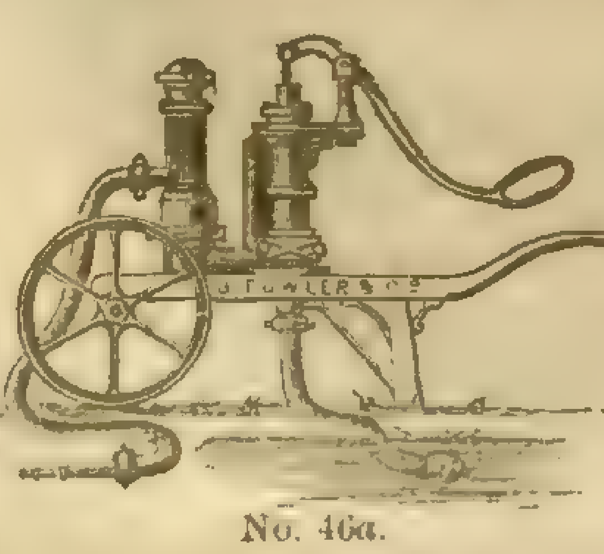
No. 46*a*. Fowler's Superior DOUBLE-ACTION PORTABLE FORCE PUMPS and simple FIRE ENGINES for Water or Liquid Manure. Prices, 5*l.* 15*s.*, and 7*l.* 10*s.*

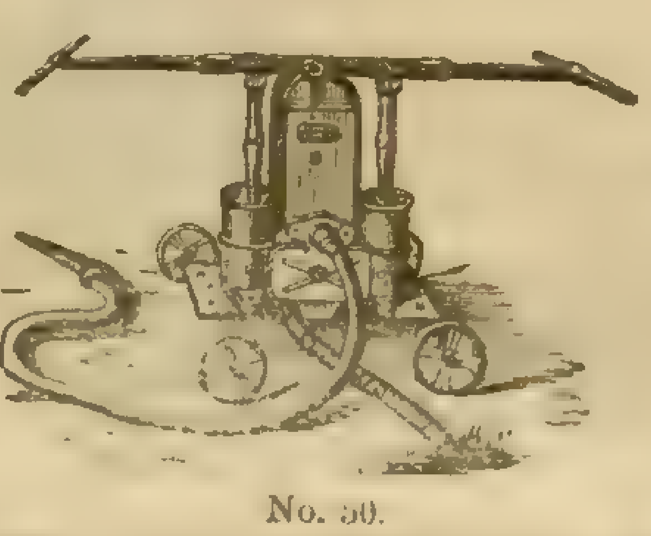
No. 50. Fowler's Improved (Holman's Patent) DOUBLE-BARREL PUMPS, FARM FIRE ENGINES, and IRRIGATING PUMPS. Prices, from 12*l.* 10*s.*

No. 49. Fowler's Improved GARDEN ENGINES of all sizes, in Oak and Galvanized Iron Tanks, from 50*s.* each.

No. 49A. Fowler's Improved SWING WATER CARRIERS, holding 24 and 35 gallons. Prices, 42*s.* 6*d.*, and 50*s.*

No. 49.


No. 46*a*.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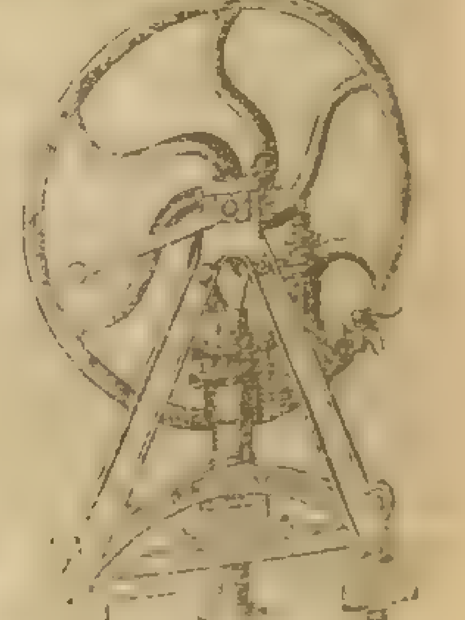
No. 49 A.


No. 138.

FURTHER PARTICULARS, ESTIMATES, AND ILLUSTRATED PRICE LISTS ON APPLICATION.

GREEN'S

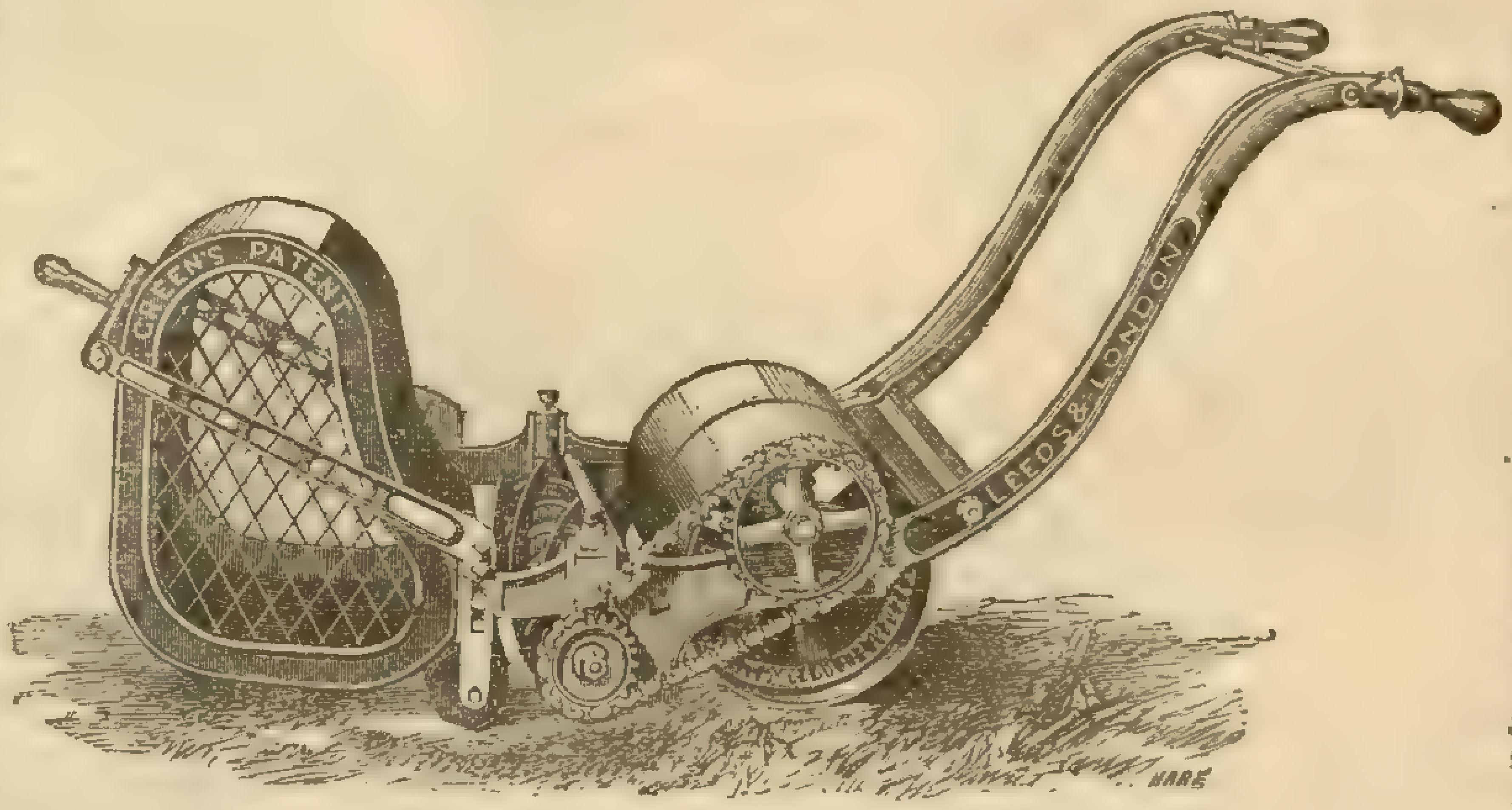
LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THOMAS GREEN can with confidence state that he has succeeded in bringing forward for the ensuing season a Machine which is so novel in its character that any person, however unskilled, is enabled to use it with confidence and ease; and by its thoroughly mechanical construction is pronounced by practical men to be the *ne plus ultra* of perfection. Every improvement that has suggested itself from past experience has been put to practical test, and the results are that the Machines for which Her Majesty's Royal Letters Patent *have recently been obtained* are immeasurably superior to anything of the kind ever brought before the Public. They combine all that efficiency and simplicity can express, and are calculated



to keep Lawns in the highest state of perfection, which cannot be equalled by any other means. They are adapted both in size and price to the very smallest plots, as well as Lawns acres in extent. Since their introduction the sale of these Machines has more than doubled each succeeding year, and has now attained *the largest sale of any Machine "extant;"* have proved to be the best, having carried off *every Prize* that has been given in all cases of competition. They are made from the best materials, and of superior workmanship; are delivered *Carriage Free* to all the principal Railway Stations and Shipping Ports in England; *are warranted to give satisfaction*, and if not approved can be at once returned, if sent carriage free to Leeds.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0	£8 15 0
To Cut 20 inches	8 0 0	9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0	£ 9 17 6
To Cut 24 inches	9 0 0	10 7 6

To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l*. 10*s*. If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0	£21 10 0
To Cut 36 inches	23 0 0	24 16 0
To Cut 42 inches	26 0 0	28 2 0
To Cut 48 inches	29 0 0	31 8 0

Leather Boots for Horse, per set, £1 4*s*.

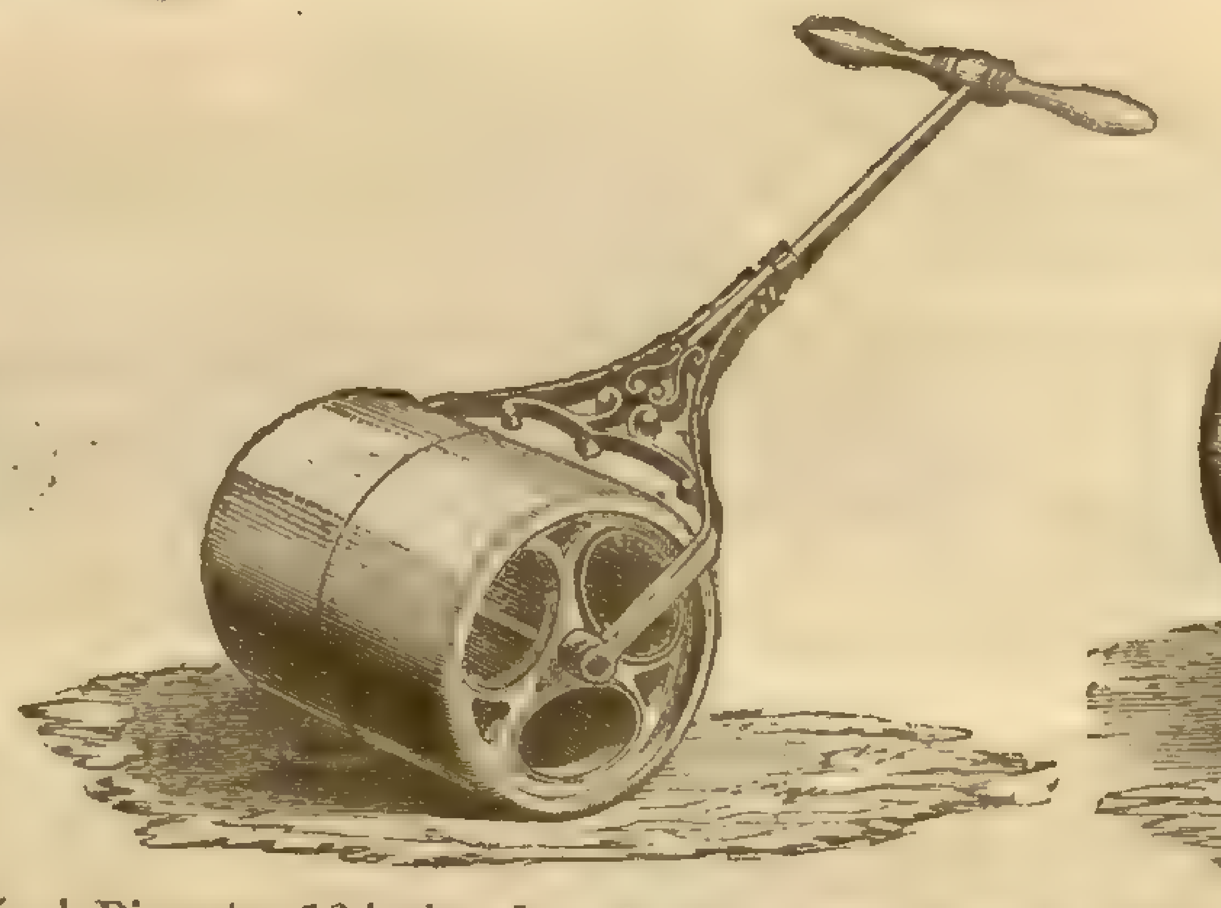
Donkey and Pony Machines, including Box of Requisites & Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0	£12 10 0
To Cut 26 inches	12 10 0	13 12 0
To Cut 30 inches	16 14 0	18 0 0

Leather Boots for Donkey, 16*s*.; for Pony, 20*s*.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length, 22 inches....Price £3 5*s*. | Diameter 16 inches, length, 17 inches....Price £2 10*s*. | Diameter 24 inches, length, 26 inches....Price £4 5*s*.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is *strikingly apparent when compared with any other Garden Roller yet brought out.* They are made in two parts, and are free to revolve on the axis, affording greater facility for turning, and the outer edges are rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green or Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

INTERNATIONAL EXHIBITION.

CLASS 9, OPEN COURT, EASTERN ANNEXE.

H. ORMSON

Most respectfully begs to call the attention of the Nobility, Gentry, &c., to the INTERIOR VIEW of the CONSERVATORY as above represented, which is now
ERECTED for EXHIBITION as a SPECIMEN of his ABILITY to DESIGN and BUILD such STRUCTURES;
and which on inspection he flatters himself will be found to combine
NOVEL and BEAUTIFUL OUTLINE, CHASTENESS and ELEGANCE in DETAIL, with STRENGTH and LIGHTNESS of CONSTRUCTION.
An External View of which recently appeared in the *Gardeners' Chronicle.*

***** THIS CONSERVATORY is for SALE.**

H. ORMSON *having a most complete Set of Steam Power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.*

ORCHARD HOUSES on Mr. RIVERS'S PLAN,

Fixed on Cast Iron Posts requiring no Brickwork. These houses will be found cheaper than those advertised by any other Builder. The prices given will include Cast Iron Posts and Fixing.

For ORMSON'S PATENT JOINTLESS TUBULAR BOILERS, see former Advertisements in the *Gardeners' Chronicle.*

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, HORTICULTURAL BUILDER TO HER MAJESTY,

AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

Garden Engines and Syringes.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

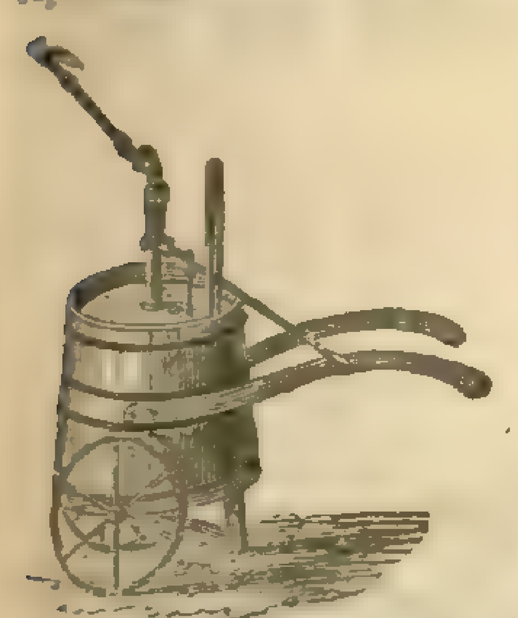


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

15 gallons .. £5 12 6 | 28 gallons .. £7 2 0

Fig. 599. Ditto GALVANIZED IRON TUB.

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15 0	£3 5 0	£3 15 0	£5 0 0	£5 18 0

Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. £1 8 0 each.
No. 2. Ditto ditto 1 2 6 „
Telescope Branch Pipe for ditto .. 0 10 0 „

Fig. 619. Large GARDEN SYRINGE, with one rose and jet .. .. 11s. 6d. each
„ 620. Middle Ditto ditto 10 3 „
„ 621. Small Ditto ditto 9 0 „
„ 622. LADIES GARDEN SYRINGE, with do. 7 6 „

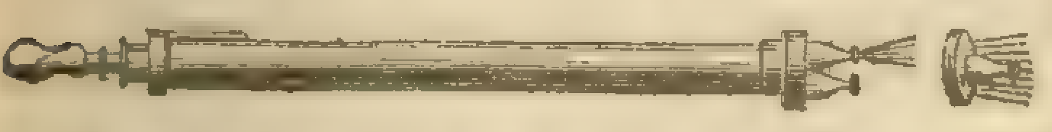


Fig. 623. READ'S SYRINGE, with two roses and one jet, 17s. 6d
„ 624. READ'S SYRINGE, with one rose and jet, 15 0
„ 625. Improved ditto ditto large 14 0

Garden Engines and Syringes of J. TYLOR & SONS' manufacture kept in stock by Ironmongers and Seedsmen in every part of the United Kingdom.

J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

JOHN WARNER AND SONS
BELL and BRASS FOUNDERS to HER MAJESTY, HYDRAULIC ENGINEERS, BRAZIERS, &c, 8, Crescent, Cripplegate, London, E.C.

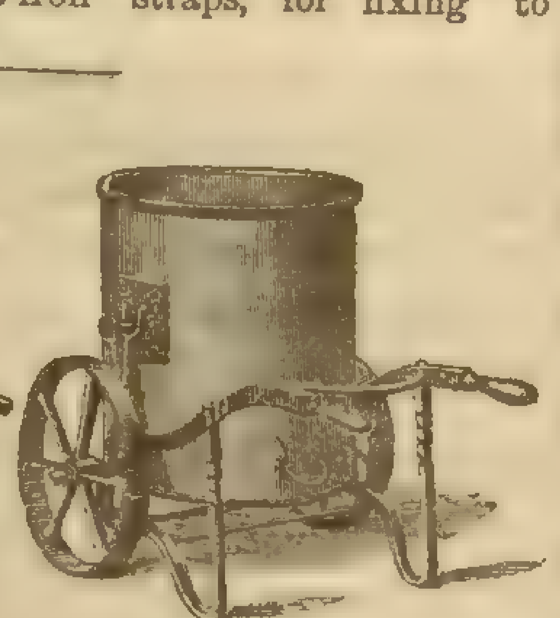
WARNER'S IMPROVED LIQUID MANURE, or GENERAL PORTABLE PUMP.

No. 42.

This Pump is fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

	£ s. d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2 15 0
If fitted with Barrel of Planished Copper	3 4 0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2 9 0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires, in either 10, 12, or 15 feet lengths .. per foot	0 2 5

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2l. 5s.



No. 554½.

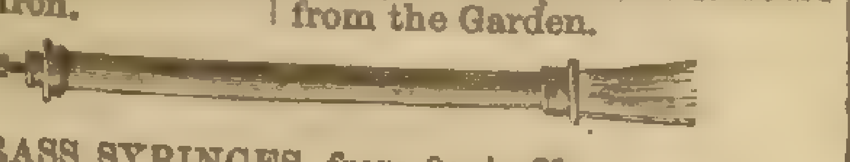
GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended for durability and low price, viz. :—

10 Gallons ..	£2 15 0
16 „ ..	3 15 0
24 „ ..	5 0 0

Larger sizes may be had in either Wood or Iron.

No. 579.

WARNER'S SWING WATER BARROW, 35 gallons, 2l. 10s.; 20 gallons, 2l., is intended for all large establishments where much watering is done by the Watering Pot. By its use the Gardener will save much time and labour, particularly where the Tank, Pond, or Pump is at a distance from the Garden.



BRASS SYRINGES, from 9s. to 21s.

SPAREY'S PATENT FUMIGATOR for the Destruction of Mildew, Red Spider, &c., 25s.

May be obtained of any Ironmonger or Plumber in Town or Country, at the above Prices, or of the Patentees and Manufacturers,

JOHN WARNER & SONS, 8, Crescent, Cripplegate, London, E.C.
Engravings sent on application.

PROTECTED BY THE CUTLERS COMPANY
CORPORATE MARK.

JOSEPH HAYWOOD AND CO.,

MANUFACTURERS OF PRUNING and BUDDING KNIVES, SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

BOYD'S "AQUARIUS," comprising Watering Pot, Shower Bath, Flower Vase, and Water Jug in one, by merely shifting the nozzle. This elegant Vase, when not in use for any of the above-named purposes, will be found a useful ornament, whether for the Mantel, the Boudoir, the Sideboard, or the Conservatory. It is japanned a rich malachite colour, and needs only to be seen to be appreciated for its elegance, and the variety of uses to which it can be applied. It is lighter than the ordinary water pots, and not liable to slop its contents; it is without the old fashioned and objectionable spout; can never choke or become clogged; and the handle is of that peculiar self-acting formation, that no strain or exertion is necessary to reverse its contents.

It is to be seen at Mr. BOYD'S Stand, Class 9; also at the Stand of Messrs. KNIGHT, MERRY & Co., Birmingham Court, at the International Exhibition; and to be had of all Ironmongers, Nursery and Seedsmen, at all Bazaars and Fancy Repositories, and of the sole licencees—

Messrs. KNIGHT, MERRY & Co., of Birmingham, and 14, Gough Square, Fleet Street, London, E.C., by whom alone the Trade is supplied.

BLACK KERRY CATTLE.—Select animals of this valuable and small breed can be delivered in Cork by RICHARD G. CAMPION, Esq., Holly Hill, Rathcormac, who always holds a large stock of the same.

Farm.

WANTED to RENT, by a first-class Tenant, a good FARM of not less than 400 acres in extent in the south-west of England near a Railway.

Particulars to be addressed to FARM, care of Messrs. Dawson & Sons, 74, Cannon Street, City, London, E.C.

TO BE LET, with Immediate Possession, a SEED, FLORIST, and FRUITERER'S BUSINESS, well situated on the Great Western Road, 4 miles from London.

Apply to J. TROTMAN, Nurseryman, Hounslow.

To Florists, Nurserymen, and Others.

TO BE LET, on the Mildmay Park Estate, a large PLOT of GROUND well suited for the above, with good Residence, Gateway Entrance, &c.

For particulars apply to Mr. CHAPPELL, Auctioneer, &c., 167, City Road, E.C.

To Gardeners and Florists.

TO BE SOLD, a BUSINESS within three miles of London, in a good and improving neighbourhood, doing an excellent out-door business; House and Grounds on Lease. Satisfactory reasons given for leaving. Any person possessing 150l. would meet with a good opportunity.

Apply to Mr. JACOBSON, 38, Walbrook, City, E.C., from 12 to 4 o'clock.

Eligible Opening for a Seedsman and Fruiterer.

TO BE LET, for such term of years as may be agreed on. These commodious PREMISES, lying on the North side of South Street, St. Andrews, consisting of Shop, Back-shop, and Seed-loft, with Garden and Greenhouses behind the same, belonging to, and presently occupied by, Mr. Charles Howie, Nursery and Seedsman.

The stock in trade and good will of the business carried on in the premises will also be disposed of to a suitable tenant. The stock is well selected and in good condition, and the business has been profitably carried on for a number of years. An eligible party will find the present a favourable opportunity for entering on an established and highly respectable Business.

A Lease of the Dwelling House above the premises, containing six apartments, may also be had if desired.

For further particulars application may be made to STUART GRACE, Writer, St. Andrews, N. B., by whom offers will be received till the 30th inst.—St. Andrews, May 17.

Sales by Auction.

Importation of Orchids from the East Indies,
IN THE FINEST POSSIBLE CONDITION.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY, May 22, at half-past 12 o'Clock precisely, an Importation of Rare and Valuable ORCHIDS, comprising

Vanda Batemani	Cypripedium species nova
„ violacea	Dendrobium taurinum
Phalænopsis amabilis	Aerides quinquevulnerum
„ rosea	„ Warneri
„ Schilleriana	„ rubrum
Saccolabium species nova	&c., &c.

On view the Morning of Sale, and Catalogues had.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, May 20, at 12 o'Clock precisely, a choice Assortment of POULTRY and PIGEONS, consisting of Cochins, Game Bantams, Dorkings, Game, Spanish, Rabbits, Brahmas, Polands; Ducks; Tumblers, Baldheads, Owls, Carriers, Dragons, Archangels, Turbits, Magpies, Fantails, Pouters, Runts, Kites, Beards, &c., from the Rev. G. Gilbert, Messrs. Edge, Feltham, and other well-known Fanciers.

On view the Morning of Sale; and Catalogues had.

Important Sale of Bedding Plants, Bulbs, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, May 21, at Half-past 12 o'Clock precisely, a fine assortment of choice BEDDING PLANTS, consisting of Geraniums, Verbenas, Calceolarias, PETUNIAS (including 2000 plants of MADAME FERGUSON, a new and beautiful striped variety), Cupheas, Alyssums, Heliotropes, Pentstemons, Cinerarias, Fuchsias, Lobelias, Tropæolums, Gazanias, Ageratums, Pinks, Pelargoniums, &c.; also 2000 fine bulbs of 36 different varieties of GLADIOLI, consisting of all the most approved sorts.

On view the Morning of Sale, and Catalogues had.

Mile End Nursery.
TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Mile End Nursery, Bow Road, Middlesex, E., on WEDNESDAY, May 21, at 12 o'Clock, about 10,000 BEDDING and other GREENHOUSE PLANTS, remarkably well grown, consisting of Show and Scarlet Geraniums, Fuchsias, Verbenas, Heliotropes, Calceolarias, Petunias, Lobelias, &c.; choice CLIMBING PLANTS, including Cobœa scandens, Eccremocarpus, Tropæolum Triomphe d'Iris and Canariensis, Lophospermum, Maurandya, &c. May be viewed prior to the Sale.

Catalogues may be had on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, N.E.

Homerton Nursery.
10,000 BEDDING AND OTHER PLANTS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. Fry to SELL by AUCTION, on the Premises, Homerton Nursery, near the Hackney Railway Station, on the North London line, on THURSDAY, May 22, at 12 o'Clock, 10,000 BEDDING and other PLANTS, consisting of Show, Fancy, French and Scarlet Geraniums, Verbenas, Fuchsias, Heliotropes, Calceolarias, Gazanias, Lobelias, Ageratums, and all the most approved and ornamental kinds in cultivation. The stock is clean and well grown, and will be offered in large and small lots to suit all purchasers.

May be viewed prior to the Sale. Catalogues may be had on the Premises; and of the Auctioneers, American Nursery, Leytonstone, Essex. N.E.

Homerton Nursery.
TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by Mr. Fry, to SELL by AUCTION, on the Premises, Homerton Nursery, near the Hackney Railway Station, on the North London line, on THURSDAY, May 22, at 12 o'Clock, 10,000 BEDDING and other PLANTS, consisting of fine Show, Fancy, French and Scarlet Geraniums, Verbenas, Fuchsias, Heliotropes, Calceolarias, Lobelias, Ageratums, Alyssum, Cobœas, Lophospermum, Maurandyas, Eccremocarpus, and many other useful and approved Ornamental kinds. The stock is clean and remarkably well grown, and will be offered in large and small lots to suit all purchasers.

May be viewed prior to the Sale. Catalogues may be had on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, Essex.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Bartholomew Lane, E.C., on FRIDAY, May 23, at 12 o'Clock, a choice collection of GREENHOUSE PLANTS, consisting of Azalea Indica, Ericas, Acacias, Geraniums, Calceolarias, and other plants in bloom; fine Climbing Roses, Rhododendrons, Kalmias, and Herbaceous Plants; with a selected assortment of Ornamental Plants for Bedding; Verbenas, Fuchsias, Dahlias, &c.

On view the Morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nursery, Leytonstone.

Vauxhall Nursery, late Chandler's.
IMPORTANT SALE. TO NOBLEMEN, GENTLEMEN, FLORISTS, AND OTHERS.

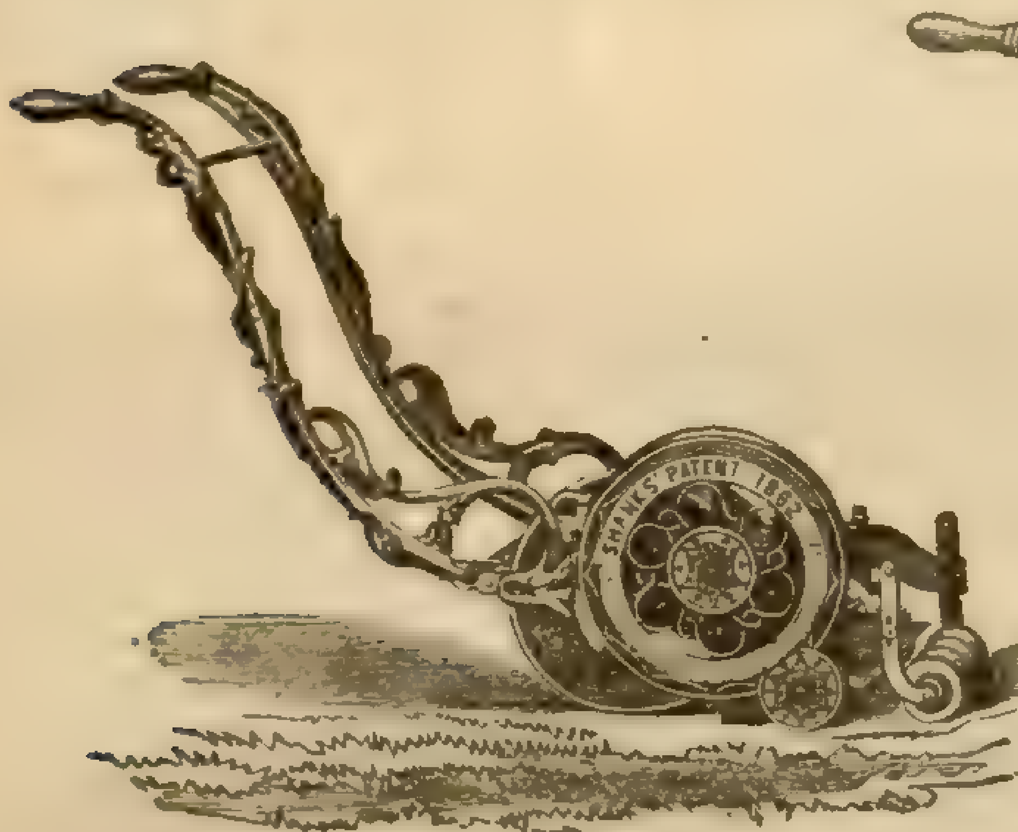
MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Milne & Co., to submit to an unreserved SALE by AUCTION on the Premises, Vauxhall Nursery, Wandsworth Road, London, S., on THURSDAY, FRIDAY, and SATURDAY, May 29, 30, and 31, at 11 o'Clock, in consequence of the Ground being required for Building Purposes, the whole of the valuable GREENHOUSE and STOVE PLANTS, including all the magnificent specimen CAMELLIAS which have rendered the Establishment famous for so many years, and which are well deserving the attention of Gentlemen requiring specimens for furnishing their Conservatories, being handsome and symmetrical in form, and perfectly safe to remove; very fine Azalea Indica suitable for exhibition, as well as half specimens and smaller plants fit for nurserymen; choice Ericas, Epacris, Boronias, Eriostemon, Acacia, Aphelexis, Cacti, Correa, Cyclamen, Daphne, Diosma, Ficus, Ardisia, Begonia, Achimenes, Amaryllis, Aphelandra, Croton, Allamandas, Dipladenias, &c., Lycopods, Ferns, Camellia Stocks, several thousand Bedding Plants of the usual assortment, together with seven Greenhouses, 14 ranges of Pits, Boxes, several hundred feet of 3 and 4 inch hot-water Piping, Conical and Saddle Boilers. Two nests of Seed Drawers and other Shop Fittings, Barrows, Garden Engines, Implements and other effects.

May be viewed prior to the Sale. Catalogues may be had on the Premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

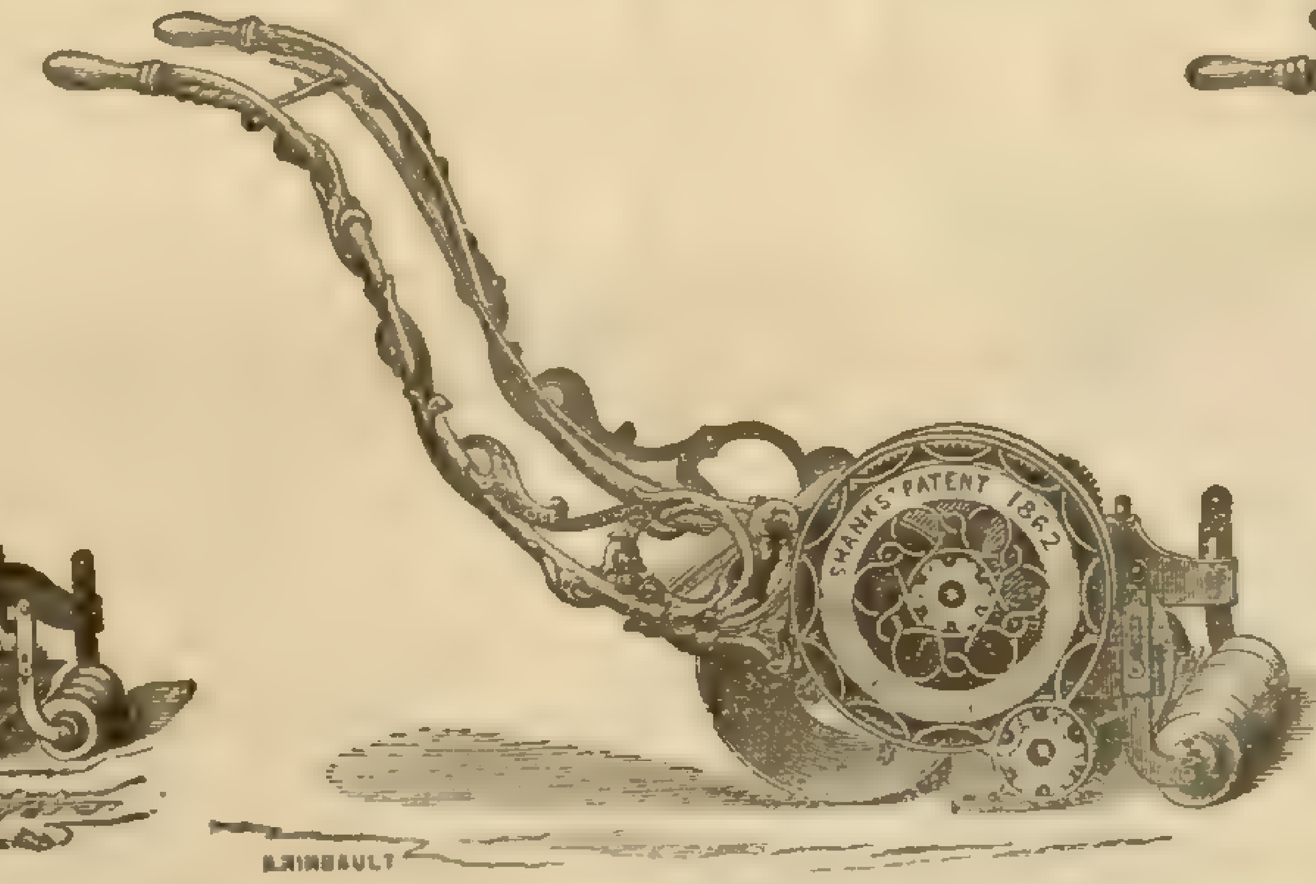
SHANKS' NEW IMPROVED PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

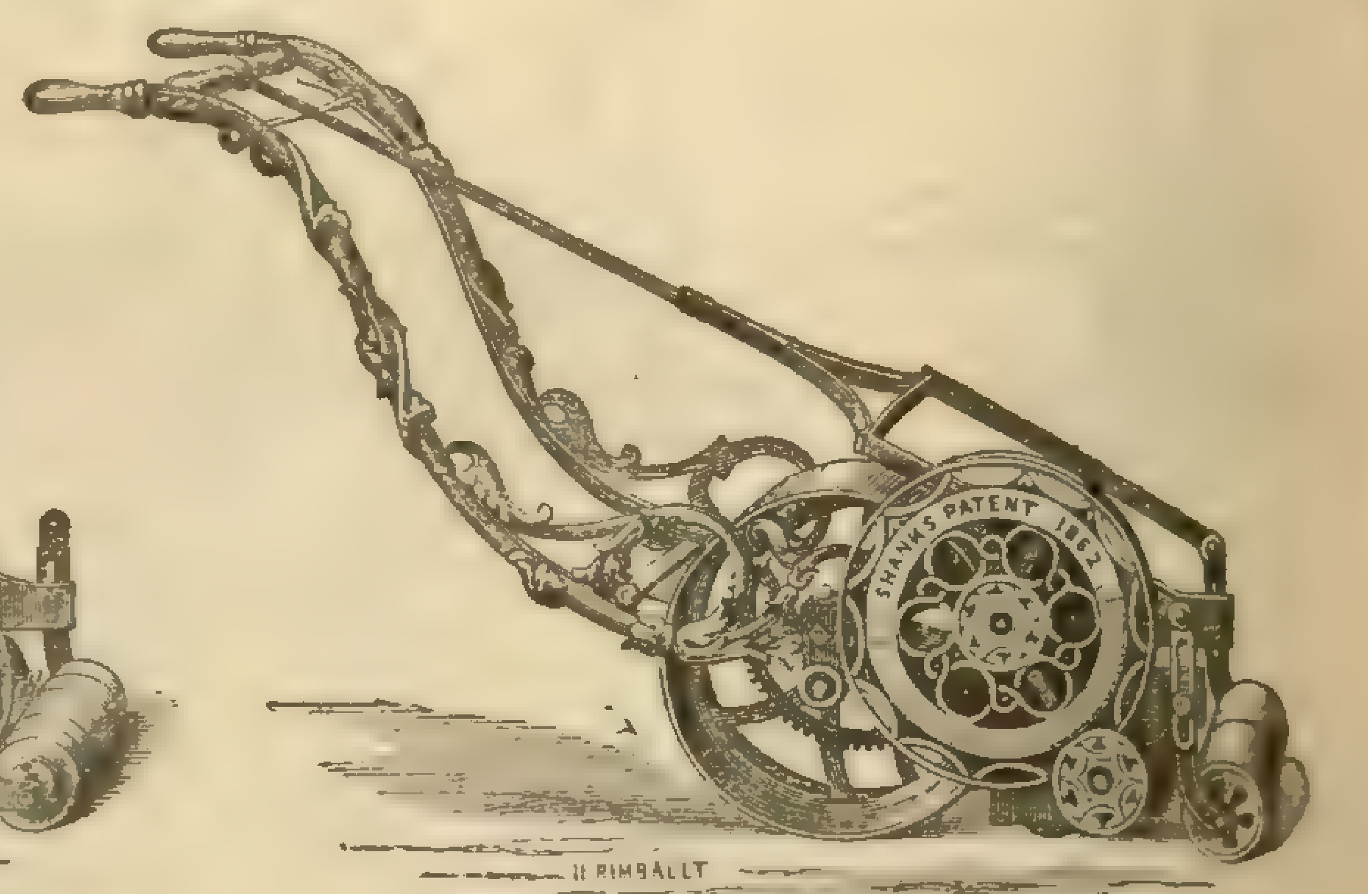
WITH SILENT MOTION IF SPECIALLY DESIRED.



12-INCH, or LADY'S MACHINE.



16-INCH to 14-INCH MACHINE.



LARGE HAND MACHINE.

J. B. BROWN AND CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effects of the improvements of previous years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season.

SHANKS' NEW IMPROVED PATENT HAND MACHINE for 1862.

Messrs. Shanks have just brought out for this season an entirely new Machine, which combines, in addition to the improvements of last year's Machine, other improvements of importance, with the most tasteful design, which is duly protected by Registration. The Patentees have been particularly careful in observing that all the parts possess sufficient strength and firmness to enable them to stand satisfactorily the tear and wear of out-door work, and the rather rough handling these Machines are sometimes subject to from the labourer unskilled in machinery. J. B. Brown & Co. are gratified in being able to offer to the Public a Machine, which is not only a graceful ornament to the Flower Garden, but the most perfect and the most easily worked Lawn Mower that has ever been in use. The Cutter (the most important part of the Machine) is this season still further strengthened. The Bearings, and everything tending to increase friction, and consequently the draught, are carefully constructed to reduce the friction to the smallest possible amount. The Machines are fitted with the same care and precision as the Horse and Pony sizes, and like them, possess the same advantages of ability to Mow on uneven Lawns without injury to the Turf, of having loose Rollers for ease in turning, of having Wheels properly guarded, and so placed as to give an equal balance to either side of the Machine. The annoyance which is often given in other Lawn Mowing Machines, by the Bearings of the Cutter getting loose, and the latter wearing down on the plate, is also obviated in the new Machine. No change of Rollers is necessary in Mowing a Verge or Close to a Flower Bed.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0		No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s*.; for Nos. 3 and 4 Machines, 30*s*.; Box, with complete Set of Tools, 10*s*.; Silent Movement, 20*s*.; Boots for Horses' Feet, 24*s*. per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Width of Cutter.	Width of Cutter.
No. 5.—30-inch Machine, 15*l*. 15*s*., *Drawn by a Pony.*	No. 6.—28-inch Machine, 14*l*. 10*s*., *Drawn by a Pony.*	No. 7.—25-inch Machine, 12*l*. 10*s*., *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s*.; for No. 7 Machine, 25*s*.; Box, with complete Set of Tools, 7*s*. 6*d*.; Silent Movement, 12*s*. 6*d*.; Boots for Pony, 21*s*.; Donkey, 16*s*. per set.

PRICES.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man*
No. 9.—22-inch Machine	8 7 6		No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*			

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s*.; Box, with complete Set of Tools, 5*s*.; Silent Movement, 7*s*. 6*d*. extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Messrs. Shanks have also brought out this season a new SMALL MACHINE, of the same graceful model as their other Hand Machine, which is specially intended to be used by Ladies or Gentlemen for recreation or amusement in the Flower Garden, and for Small Gardens where no regular Gardener is kept. This elegant and neat Machine has three great recommendations, viz.:—it is very cheap, very light, and very easily worked. Not the least difficulty or trouble need be anticipated in the management or working of this Machine, while the work executed is not only vastly superior to the Scythe, but a great deal sooner accomplished. No person having a Lawn, however small, should be without one of these useful Machines.

PRICES, including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 16.—16-inch Machine ...	£6 5 0	*Easily worked by a Stout Lad.*	No. 18.—12-inch Machine	£5 5 0	*Easily worked by a Lady.*
No. 17.—14-inch Machine ...	£5 15 0				
Silent Movement, 7*s*. 6*d*. extra.			Silent Movement, 4*s*. extra.		

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

*** *The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

SOLE AGENTS FOR LONDON:

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 21.—1862.] SATURDAY, MAY 24. {Price Fivepence. Stamped Edition, 6d.

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ROYAL HORTICULTURAL SOCIETY.—OPENING of AMERICAN SHOW, FRIDAY NEXT, May 30. Admission Half-a-Crown. Bands of 1st Life Guards and Royal Artillery commence at 3 o'Clock.

Visitors can pass under cover from the Exhibition or Garden Entrances to the Show.

HORTICULTURAL GARDEN, SOUTH KENSINGTON. Open at 9 o'clock.

Admission during next week:—MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, One Shilling.

FRIDAY (AMERICAN SHOW), Half-a-Crown.

SATURDAY (AMERICAN SHOW), Five Shillings.

Bands daily.

American Plants.

ROYAL HORTICULTURAL SOCIETY.—FRIDAY NEXT and following days.

THE IMPLEMENT COMMITTEE of the ROYAL HORTICULTURAL SOCIETY will hold an EXHIBITION of the following Articles at the Second Great Show, WEDNESDAY, June 11, viz.:—

Heating Apparatus, Improvements in Ventilation, &c.

Garden Machines, such as Mowing, Rolling, Transplanting, Fumigating, &c.

Improvements in Garden Tools and Cutlery, Garden Seats, &c.

Garden Ornaments in Wire Work, Trellises, Suspended Baskets, &c.

Garden Pottery, Conservatory Tubs, Garden Tallies and Labels, Tiles and Ornaments for Garden Edgings, &c.

Implements for Watering, &c. Protecting and Shading contrivances. Plant Guards and Supports. Decorations for Conservatories, Ornamental Flooring, &c.

Philosophical Instruments: Hygrometers, Thermometers, &c.

Bulky articles can only be shown in Model, and no Model may exceed 4 feet by 3 feet.

Applications for space must be sent in on or before May 31, to Mr. EYLES, the Garden Superintendent.

ROYAL BOTANIC SOCIETY, REGENT'S PARK, N.W.

The FIRST EXHIBITION of PLANTS, FLOWERS, and FRUIT will take place on WEDNESDAY NEXT, May 28.

Tickets to be had at the Gardens only, by Vouchers from Fellows or Members of the Society, price 5s.; or on the Exhibition day, 7s. 6d. each. The Gates open at 2 o'clock.

The Exhibition of AMERICAN PLANTS, MONDAY, June 9.

GRAND HORTICULTURAL FETE and ROSE SHOW in connection with the Exhibition of the NORTHAMPTONSHIRE AGRICULTURAL SOCIETY in BURGHLEY PARK, STAMFORD, on THURSDAY, July 17.

The Premiums offered amount to 200l., and are open to all England.

The Schedule, with Rules, &c., may be had upon application to Messrs. LAXTON & HEWITT, Hon. Secs., Stamford.

LEICESTER and LEICESTERSHIRE FLORAL and HORTICULTURAL SOCIETY.

President:—The Right Hon. Earl HOWE.

The GREAT SUMMER EXHIBITION of the above Society for PLANTS, FLOWERS, FRUITS, and VEGETABLES will be held on the Leicester Race Course on TUESDAY and WEDNESDAY, June 24 and 25.

Additional Prizes will be given for CUT ROSES grown by Amateurs, Gentlemen's Gardeners, and Nurserymen, open to all England.

Prospectuses may be had of the Hon. Secretary, 37, Market Place, Leicester.

By order of the Committee. WM. PENN COX, Hon. Sec.

THE BIRMINGHAM ROSE SHOW and EXHIBITION of HORTICULTURAL IMPLEMENTS and GARDEN ORNAMENTS (Open to the United Kingdom) will be held in the Town Hall, Birmingham, on TUESDAY and WEDNESDAY, July 1 and 2.

Entries close for the Implements and Ornaments on June 18, and for Roses on June 25.

Prize Lists and Regulations may be had on application to the Hon. Secs., at the *Midland Counties Herald* Office, Birmingham.

TUNBRIDGE WELLS HORTICULTURAL SOCIETY.—GRAND FLOWER SHOW and MUSICAL PROMENADE in the grounds adjoining the Calverly Park Hotel, will take place (under especial patronage) on FRIDAY, July 4. Prizes open to all England.

The full Band of the Coldstream Guards will be in attendance.

Schedules of Prizes may be obtained of the Secretary, Mr. E. F. LOOF, 8, Parade, Tunbridge Wells.

Notice.

THE AMERICAN PLANTS at Knap Hill are just now in great beauty, and may be seen daily. The Knap Hill Nursery is readily reached by Train from Waterloo to Woking Station, where capital Conveyances may be depended on.

WATERER & GODFREY, Knap Hill Nursery, near Woking, Surrey, S.—May 24.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

Cerastium Biebersteinii, 9s. and 12s. per doz.

JAMES CARTER AND CO., SEEDSMEN and NURSERYMEN, 237 and 238, High Holborn, W.C.

The Greatest Novelty of the Season.

CARTER'S "METEOR," new crimson variegated foliaged FUCHSIA, Post Free for 3s.

JAMES CARTER & Co., Seedsmen and Nurserymen, 237 and 238, High Holborn, W.C.

BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.

Choice Calceolaria, per pkt. 1s. | Choice Cineraria, per pkt. 1s.
,, Primula ,, .. 1s. | ,, Picotee ,, .. 1s.
,, Carnation ,, .. 1s. | ,, Pelargonium ,, .. 1s.

ILLUSTRATED GUIDE to the FLOWER GARDEN, 2s. 6d.

BUTLER AND McCULLOCH'S SELECT LIST of BEDDING PLANTS may be had free and post paid upon application.

BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, W.C.

New Plants.

AMBROISE VERSCHAFFELT'S CATALOGUE of NOVELTIES is now ready, and can be obtained free, by writing to

AMBROISE VERSCHAFFELT, Nurseryman, Ghent, Belgium.

JAMES BURLEY'S SPRING CATALOGUE of new shrubby CALCEOLARIAS, PELARGONIUMS, new ROSES, and BEDDING PLANTS is now ready, and will be forwarded post free on application.

Nursery, Limpsfield, Surrey.

New Fuchsias and Verbenas of 1861.

B. W. KNIGHT, FLORIST, 67, High Street, Battle, Sussex, is now sending out the NEW FUCHSIAS of 1861, at 6s. per dozen; the NEW VERBENAS of 1861, at 4s. per dozen, securely packed in tin box, post free.

CATALOGUES sent on application.

Dahlias.

JAMES FAIRHEAD AND SON beg to state that their CATALOGUE of DAHLIAS is now ready, post free on application, offering all the leading established varieties, healthy Plants, and guaranteed true to their kinds, 3s. 6d. and 9s. per dozen.

7, Borough Market, London, S E.

SUPERB HOLLYHOCKS.—Good Plants of named sorts in pots, of most of the popular kinds, can still be had at 12s., 18s., and 24s. per dozen.

WILLIAM PERRY, Sawbridgeworth, Herts.

Azalea indica.

J. IVERY AND SON beg to inform their Patrons and the Public that their NEW PRICED and DESCRIPTIVE CATALOGUE of the above is now published, and will be forwarded post free on application.

Dorking, Surrey.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Bedding Plants, cheap and good.

DILLISTONE AND CO., Sturmer and Woodlands Nurseries.

See Advertisements in this Paper of the last month.

CHEAP BEDDING PLANTS.—One hundred Strong Plants (in pots) of all the leading kinds, including GERANIUMS, VERBENAS, CALCEOLARIAS, GAZANIAS, &c., for 17s. 6d.

Post Office Orders payable at Castle Hedingham, in favour of W. DILLISTONE, Munro Nursery, Sible Hedingham, Halstead, Essex.

WM. PAUL'S NURSERIES open to the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London. Every garden requisite, from the commonest to the choicest, at reasonable prices.

CATALOGUES free by Post.

Nurseries and Seed Warehouse, Waltham Cross, N.

ROYAL HORTICULTURAL SOCIETY'S EXHIBITION of GOURDS.—Ten of the finest varieties, 20 plants in 48-sized pots, 1l. Post-office Order payable at Hendon.

EDWARD SHENTON, Hendon Park Nurseries, N.W.

BERBERIS JAPONICA.—This fine hardiest of all hardy plants has no equal for planting in shady situations, game covers, &c. Its fruit is greedily devoured by Pheasants, and its magnificent foliage forms an under cover of surpassing beauty.

The plants can be supplied by CHARLES NOBLE, Bagshot.

CLERODENDRON THOMSONÆ.—At the Royal Horticultural Society's Grand Show on the 21st, we were awarded the First Prize for this very beautiful new climber. It is figured and fully described in Curtis's "Botanical Magazine" for this month. Healthy young plants 7s. 6d. each; stronger 10s. 6d. each.

THOMAS JACKSON & SON, Nurserymen, &c., Kingston, S.W.

Good Seeds, Carriage Free.

SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

J. IVERY AND SON'S Collection of New AZALEAS is now in BLOOM, and may be seen (Gratis) at their Dorking Nursery.

Royal Botanic Gardens, Regent's Park.

JOHN WATERER has the pleasure to announce that his ANNUAL DISPLAY of HARDY SCARLET and other RHODODENDRONS, AZALEAS, &c, is now on view at the above Gardens; the Plants are now in fine bloom and will continue in perfection throughout the month of June.

Orders of admission are granted by Members of the Botanic Society, or by applying to the Advertiser at the above address.

The Plants at the Nursery are also in full bloom.

American Nursery, Bagshot, Surrey, near Sunningdale Station, South Western Railway.

TWELVE of the Finest NEW PERPETUAL ROSES (sorts that have not yet flowered in English Gardens) for Two Guineas.

RICHARD SMITH, Nurseryman, Worcester.

New Roses of 1862.

PAUL AND SON have now ready their usual fine Plants of the finest Novelties of the season. DESCRIPTIVE LIST on application.

"Old" Cheshunt Nurseries, Herts.

Dwarf Roses in Pots for Bedding.

WM. WOOD AND SON are now daily sending out Hundreds of ROSES in Pots for Bedding. Early orders are respectfully solicited.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

WILLIAM HUSSEY begs to offer GOLDEN CHAIN GERANIUMS, fine plants, at 35s. per 100; also FUCHSIAS, strong healthy plants, at 20s per 100; and PELARGONIUMS, all the leading sorts, at 50s. per 100.

Horticultural Gardens, Norwich.

Window Plants.

WOOD AND INGRAM have to offer to the Trade a quantity of very fine Show, Spotted and Fancy PELARGONIUMS, of leading varieties, in 4 and 5-inch pots, just coming into bloom, at from 4s. to 6s. per dozen. FUCHSIAS at the same rate.

Nurseries, Huntingdon.

New Delphinium "Beauty."

J. AND J. FRASER, Lea Bridge Road Nurseries, N.E., have much pleasure in announcing that they are now prepared to send out plants of the above. It was examined by the Floral Committee of the Royal Horticultural Society, July 12, 1861, and was awarded a Label of Commendation.

Description and Price on application.

Agricultural Seeds.

GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.

WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

White Swede.

JAMES FAIRHEAD AND SON, 7, Borough Market, S.E., offer a selected Stock of the above, crop 1861.

Price on application.

SHARPE'S IMPROVED LARGE SWEDE.—For price of this and other Agricultural Seeds saved by CHARLES SHARPE & Co. from selected bulbs, see their Wholesale FARM SEED LIST, sent free on application.

Rape Seed for Sowing.

CHARLES SHARPE AND CO., SEED MERCHANTS, Sleaford, can offer the above of fine quality. Sample and price to the Trade on application.

NEW TURNIP and MANGEL SEEDS, from selected bulbs, first class stocks, sold at moderate prices, by

FAIRHEAD & SON, Seed Growers, Lewisham; and 7, Borough Market, S.E.

Stones or Sprotborough Cabbage Seed.

JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.

The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.

Price 3s. per lb., or 16l. per cwt.

DIOSCOREA BATATAS (or CHINESE YAM), 2s 6d. per doz., 15s. per 100. Larger tubers, 3s. 6d per doz.

JOHN CATTELL, Westerham, Kent.

Dioscorea Batatas, or Chinese Potato.

J. IVERY AND SON beg to inform their Patrons that this is the most favourable month for planting this useful Vegetable. Strong sets are now ready at 1s. per dozen, or 7s. 6d. per 100; likewise whole Tubers, from 2s. 6d. to 6s. per dozen.

Dorking Nursery.

TAN GRATIS in the immediate neighbourhood of Covent Garden Market.

Apply to ESSEX & SONS, 28, Stanhope Street, Clare Market, W.C.

New Roses, &c.

WM. PAUL'S CATALOGUE of NEW ROSES and SPRING PLANTS generally is now ready. Free by post on application.

BEAUTY OF WALTHAM, H.P.

This English raised seedling Rose has now received the highest awards ever given by the Royal Horticultural and Royal Botanic Societies. The flowers are large and full, colour brilliant cerise, the petals exquisitely curved in the way of Madame Charles Crapelet; the growth is vigorous, the foliage magnificent, and the plant as hardy as the Dog Rose. Plants 5s. each, and orders executed in strict rotation as received.

HOLLYHOCKS.

A fine stock of all the best named sorts, 9s. to 24s. the dozen. All are raised from cuttings. None grafted.

Waltham Cross, N.

NEW TEA-SCENTED ROSE for 1862, GLOIRE DE BORDEAUX.—The above, a Seedling from the well known favourite Tea Rose, Gloire de Dijon, was raised at Lyons, and is represented as being unquestionably the finest Tea-scented Rose of the season.

Wm. Wood & Son beg to intimate that they possess a very large Stock of the above in extra strong plants, which they are now sending out at 5s. each.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

B. WITHAM'S SPRING CATALOGUE of ROSES, BEDDING PLANTS, &c., is now ready, and may be had, post paid, on application.

A large Stock of upwards of 200 sorts of the best and newest ROSES grown, fine, strong, and healthy plants in pots, from 9s. to 18s. per dozen; also an extensive stock of all kinds of BEDDING PLANTS from 3s. to 6s. per dozen, now on sale, at

Clough Nursery, Mottram, near Manchester.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.

For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.

Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.

The Royal Nursery, Bagshot, Surrey.

Variegated Geraniums.

JOHN SAMPSON begs to offer good plants of leading varieties, 2s. to 3s. per dozen.

A good assortment of SCARLETS and other BEDDING PLANTS equally cheap.

FUCHSIAS of 1861, 4s.; older varieties, 3s. per dozen.
VERBENAS, Scarlet, White, and Purple, 15s. per 100.
First-class PELARGONIUMS, 6s. per dozen.

Pilsley Nurseries, Clay Cross.

SCARLET GERANIUM VICTOR EMMANUEL.—This is the finest variety ever introduced either as a Bedder or Pot Plant. It is a medium grower, of compact habit, and has dazzling orange scarlet flowers, of the finest form, borne in immense trusses, clear above the foliage: the centres of which have the peculiar merit of remaining clean and fresh till the outer flowers have expanded, rendering them thus complete balls of scarlet. It was submitted for trial to the Royal Horticultural Society last season, and by them received a most favourable report. See Proceedings, Vol. ii., No. 3. Strong plants, 12s. per dozen.

Geo. Clarke, Nursery, Streatham Place, Brixton Hill, near London, S.

Bedding Plants at 2s. 6d. per Dozen.

J. SCOTT'S well-known CATALOGUE of the above is now ready, and will be sent to all applicants on receipt of six postage stamps, which will be returned to all purchasers above 10s.

It contains a mass of Cultural and other information about Flowers and Flower Planting, Ribbons, Tessellated and Mosaic work, with Descriptive Lists of all the most ornamental Flower Garden Plants.

Mr. Beaton, in the *Journal of Horticulture*, April 23, 1861, p. 58, says:—"But the best work on making Ribbon borders . . . . is the Bedding Plant Catalogue of Mr. Scott, of Merriott Nurseries; and besides, the Catalogue is the best arranged for young beginners of all that I have seen."

J. Scott, Merriott, Crewkerne, Somerset.

Verbena Fireball.

MESSRS. J. and C. LEE having thoroughly proved VERBENA FIREBALL last summer, can recommend it as one of the best, if not the best, and most useful for bedding purposes, combining, as it does, the intense scarlet and compact truss of Firefly with the robust and free-flowering habit of Purple King.

To be sent out in May, price 12s. per dozen.

Nursery and Seed Establishment, Hammersmith, London, W.

Verbena, "Lady Victoria Scott."

ROBERT PARKER has much pleasure in offering this beautiful VERBENA, which has proved to be the most effective and useful bedding variety known. During the past season upwards of 5000 plants were grown in the gardens at Dalkeith Palace, Edinburgh, grouped with the leading kinds of bedding plants, and in effect and splendour they far surpassed the whole of the numerous plants by which they were surrounded. Colour of flowers bright crimson; trusses, medium size, borne in the greatest profusion all summer and autumn; habit of plant very compact and vigorous, with good foliage.

*** For Testimonials and further particulars see *Gardeners' Chronicle* of May 3.

Plants, 1s. 6d. each. 12s. per doz. 50s. per 100.

GERANIUM, PRINCE OF WALES.—Orange scarlet, trusses very large and globular, borne on strong foot stalks well above the foliage, very abundant bloomer, and continues in perfection during the whole season; habit vigorous; leaves medium size, with dark zone. For large beds, lines in ribbon-borders, and vases, this variety is one of the most useful and effective yet offered for sale.

Plants, 1s. 6d. each. 12s. per doz. 75s. per 100.

CHOICE FLOWER SEEDS.—The following, of which descriptions will be found in Catalogue, are specially recommended:—

Per packet—	s.	d.	Per packet—	s.	d.
Calceolaria, herbaceous ..	2	6	Primula sinensis dentiflora	2	0
Cineraria cruenta ..	2	6	Primula sinensis albiflora	2	0
„ maritima	0	6	„ „ dentiflora kermesina splendens ..	2	6
Erianthus Ravennæ ..	1	0	Verbena venosa	0	6
Lobelia erinus speciosa	1	0			
„ „ major	1	6			

A PRICED and DESCRIPTIVE CATALOGUE of Vegetable, Agricultural, and Flower Seeds, forwarded post free to all applicants.

Exotic Nursery, Tooting, Surrey, S.

KITCHEN GARDEN SEEDS,

FLOWER SEEDS.

In Collections including all the new and approved kinds, or separate to order.

Detail CATALOGUES post free.

Royal Agricultural Society of England. Appointed Ap. 1841. Thos. Gibbs & Co. Corner of Half-Moon St. Piccadilly, London. The Seedsmen.

AGRICULTURAL SEEDS,
GRASS SEEDS,
FARM SEEDS,
of all descriptions.

Thomas Gibbs

CORNER OF HALF-MOON St.
PICCADILLY, LONDON, W.

GOOD TURNIP SEEDS CARRIAGE FREE

AT MARKET PRICES.

Seedsmen by Appointment. Sutton and Sons

SUTTON & SONS,

SEEDSMEN TO THE QUEEN,

CAN SUPPLY EVERY KIND OF

FARM and GARDEN SEEDS,

OF GENUINE AND SUPERIOR QUALITY.

Farmers and others residing in the most remote parts of the kingdom can procure good Seeds at very moderate prices from this Establishment CARRIAGE FREE.

Seeds for present Sowing.

CHAMPION and other SWEDES	TURNIPS, of sorts	GRASS SEEDS of every kind	FLOWER SEEDS
MANGEL WURZEL	GARDEN SEEDS	MUSTARD SEED	RAPE SEED, &c.

Sutton & Sons have for many years devoted especial attention to the improvement of SWEDISH and other TURNIPS, sowing seed exclusively from selected stocks, and they respectfully invite inspection of the Coloured Drawings of their leading kinds, taken from Roots to which distinguished Prizes were awarded, which are arranged by the Western Entrance to the Crystal Palace, Sydenham, near the Handel Festival Orchestra; as also to the Collection of Dried Specimens of GRASSES at their Stand (in Class 3), International Exhibition, South Kensington.

For DESCRIPTIVE PRICED LISTS Post Free apply to

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

FARM SEEDS, at fair Market Prices.

Royal South Hants Seed Establishment. By Appointment.

PAGE & TOOGOOD

Having had the honour of supplying the ROYAL FARMS at OSBORNE for the last eight or ten years, the GOVERNMENT REFORMATORY, PARKHURST, and many of the principal Agriculturists in the kingdom, will be sufficient guarantee that their SEEDS are of SUPERIOR QUALITY, and their prices are as low—or lower—than any respectable house in the Trade.

At the Botley Club, the Prize for the best Ten Acres Swedes was awarded
PAGE'S IMPROVED (grown by John Crosskey, Esq.)

Heaviest weight of Mangel, per acre, 61 tons 2 cwt.
PAGE'S IMPROVED ORANGE GLOBE (grown by Stewart Macnaghten, Esq.).

Mangel, sown July 7, Weight and Shape,
PAGE'S IMPROVED RED GLOBE (grown by W. Warner, Esq.).

Mangel, 50 tons per acre,
PAGE'S IMPERIAL ORANGE GLOBE (grown by W. Dickinson, Esq.).

Carrots, 35 tons per acre,
PAGE'S IMPORTED WHITE BELGIAN (grown by R. Trench, Esq.)

Six Prize Swedes, for heaviest Weight,
PAGE'S IMPROVED (grown by W. C. Humphries, Esq.)

Vales of Avon and Stour (Farmers' Club).

Vales of Avon, Prize for best 5 acres Mangel.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Salway)
Second best.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. H. Bone).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Baker).
Best 2 acres ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Jas. Salway).
Second ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by General Robertson).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Bone).

PRESENT PRICES (Rail Carriage Free to all parts of England):—

Per lb.—	s.	d.	Per lb.—	s.	d.	Per lb.—	s.	d.
SKIRVING'S SWEDE	0	8	SCOTCH or BULLOCK	0	8	NEW OSBORNE MANGEL.	0	6
PAGE'S IMPROVED HARDY ..	1	0	POMERANIAN WHITE GLOBE	0	8	YELLOW GLOBE	[illegible]	[illegible]
FIELDER'S do WHITE	0	9	EARLY GREEN GLOBE ..	0	8	PAGE'S IMPERIAL ORANGE GLOBE*	0	[illegible]
SUTTON'S CHAMPION	1	0	„ WHITE TANKARD ..	0	8	RED GLOBE	[illegible]	[illegible]
ASHCROFT	0	9	PAGE'S IMPROVED PURPLE do.	1	0	ELVETHAM LONG RED ..	0	6
GREENTOP	0	8	GREEN ditto	0	8	LONG RED	[illegible]	8
SUSSEX or JEFFERY'S ..	0	9	YELLOW TANKARD	0	9	LONG YELLOW	1	3
TANKARD	0	9	FIELDER'S HARDY GREEN ROUND	0	6	WHITE BELGIAN CARROT ..	2	6
RED ROUND TURNIP	0	8	EARLY SIX WEEKS	0	6	CATTLE CABBAGE	1	[illegible]
PAGE'S IMPROVED RED GLOBE	0	9	KOHL RABI	3	6	CATTLE PARSNIP	0	4
						DWARF ESSEX RAPE	[illegible]	[illegible]

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club, and yielded 61 tons 2 cwt. per acre.

NEW ALSIKE CLOVER, 1s. 3d. per lb.; BUCKWHEAT, MUSTARD, LINSEED, TARES, and SAINFOIN. Fine PERMANENT PASTURE GRASS, ITALIAN RYE GRASS, CLOVER, &c., at lowest Market Prices.

Special Contracts for Large Quantities.

OXFORD STREET, AND ABOVE BAR, SOUTHAMPTON.

Notice.

B. S. WILLIAMS begs to intimate that he is prepared to supply nice Plants of his New and beautiful AZALEA ELEGANTISSIMA, exhibited at the Royal Horticultural Society's Meeting, May 21, and was awarded a Label of Commendation.

Flowers pale white, finely striped with light salmon red, [illegible] habit, excellent form and substance, and a very free [illegible]. Price 10s. 6d. each; extra size, 15s. to 21s. each.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Choice Seeds.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give the greatest satisfaction.

PRIMULA, per packet, 2s. and 3s. 6d. each.
CALCEOLARIA, per packet, 1s. 6d., 2s. 6d., and 3s. 6d. each.
CINERARIA, per packet, 1s. 6d. and 2s. 6d. each.

For numerous Testimonials see SEED CATALOGUE, post free on application.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

For a valuable selection of New and Rare Plants, see B. S. W.'s Advertisement in the *Gardeners' Chronicle*, May 10.

The Favourite Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Stachys lanata.

B. S. WILLIAMS, Paradise Nursery, Holloway, N., has great pleasure in offering another fine plant for Edging or Ribbon borders. This is not a new plant, but one that is little known, and will without doubt rank among the finest plants for the above decorative purposes. The foliage is quite distinct, being the colour of Cerastium tomentosum, but much larger; leaves five inches long by one inch broad, and of a fine thick woolly texture, which, when the sun shines upon it, gives it a beautiful white frosty appearance. In growth it is from six to nine inches high, and very compact, forming a fine contrast when planted with yellow Calceolaria, Scarlet Geraniums, or any other plants of similar character. Having been used as a decorative plant for several years by the party from whom the stock has been purchased, was very much admired. This also makes a beautiful ornament for rockwork. Price per doz., 4s.; per 100, 25s.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

PLANTS of the NEW ZINNIAS.

ZINNIA MEXICANA.—A dwarf spreading bright yellow, with stripe of rich orange down each petal; a first-rate bedding plant. Strong in pots, 5s. per dozen.

ZINNIA ELEGANS PLENO.—Seedlings from a magnificent collection of extraordinary double flowers; mixed in a large variety of the richest colours. Strong in pots, 3s. 6d. per dozen; 25s. per 100.

A large stock of the finest BEDDING PLANTS, stout, vigorous, and strong, most of which will commence flowering immediately.

CATALOGUES on application.

STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

RHODODENDRONS, SMALL,
FOR THE TRADE ONLY.

				Per 1000.
[illegible]	Rhododendron ponticum,	3 yrs. Seedling	..	12s. 6d.
100,000	ditto ditto	4 yrs, ditto	.. ..	15s.
20,000	ditto ditto	3 yrs. & 1 yr.	transpltd.	25s.
100,000	ditto ditto	2 yrs. & 2 yrs.	ditto	30s.

Unknown correspondents will save time by sending Post Office Orders, or a respectable reference in the Trade, with their orders. Five per cent. allowed for cash sent with the order. 100 of each can be sent as samples if required.

Address, JAMES SMITH, Darley Dale Nurseries, near Matlock.

LITHOSPERMUM FRUTICOSUM
is the neatest and prettiest little
HARDY EVERGREEN HERBACEOUS PLANT
that can be desired. Its slender branches are thickly covered with small dark green leaves, forming a perfect carpet, which is studded with

THE LOVELIEST BLUE FLOWERS,

nearly half an inch in diameter, from May till September. If wintered in a cold greenhouse it flowers abundantly in February and March.

Messrs. J. & C. LEE are now prepared to offer this "LITTLE GEM," at 2s. 6d. each; larger plants, 5s. each.

Nursery and Seed Establishment, Hammersmith, London, W.

PRIZE PHLOXES. | PRIZE GLADIOLUS.
PRIZE CHRYSANTHEMUMS.

JOHN CATTELL'S Collections of the above obtained the following Prizes at the London Exhibitions during the past season:—

PHLOXES.

First Prize, for the best 12 grown in pots, at the Royal Horticultural Society's September Exhibition at South Kensington Gardens.

CHRYSANTHEMUMS.

First Prize, for the best 24 Cut Blooms, at the Royal Horticultural Society's Grand Fruit and Chrysanthemum Show, held at South Kensington Gardens.

First Prize, for the best 24 Cut Blooms, at the Stoke Newington Chrysanthemum Exhibition.

First Prize, for the best 24 Cut Blooms, at the Crystal Palace Chrysanthemum Exhibition.

J. C.'s collections include every variety of note, and he now offers them at the low prices named below, the selection being left to himself.

PHLOXES, 6s., 9s., and 12s. per dozen.
CHRYSANTHEMUMS, 6s. per dozen.
GLADIOLUS, 6s., 9s., 12s., and 18s. per dozen bulbs

CATALOGUES are now ready, and will be forwarded post paid on application.

Strong plants of the Chrysanthemums and Phloxes are now ready.

Nursery and Seed Establishment, Westerham, Kent.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

New Plant Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce the publication of their NEW SPRING CATALOGUE of BEDDING and other ORNAMENTAL PLANTS on May 1, including descriptions of the undermentioned POMPON DAHLIAS, &c.

Angel of Peace	Little Mary
Annie	Little Prince
Butterfly	Little Valentine
Fairy Nymph	Pearl of Lilliputs
Goldlight	Silver Pheasant
Jeannette	Star
Little Darling	Tom Tit
Little Dorrit	and others.

BANKS'S NEW FUCHSIAS.
WILLS'S NEW VERBENAS.
FERN-LEAVED PRIMULAS, white and red fringed.
BEDDING TROPÆOLUMS—elegans coccinea, Model, Constellation, and Beauty of Oulton Park.
PETUNIA MAGNIFICENS.
GLOXINIAS—Brilliant, Leviathan, Bird of Paradise, and Most Beautiful; these four are very large, new in colour, and distinct.
AUCUBA HIMALAICA, the finest habited plant of all the new Aucubas.
GERANIUMS of the Zonale section—Magenta, new colour; Woodwardiana, best formed large petal-flowered; Baron Ricasoli, without exception the best bedding or Vase Geranium of any at present known.
GERANIUMS, MINIMUM Section, Harry Hieover.
,, NOSEGAY ,, Pink Pearl.
,, VARIEGATED ,, Sunset, Gold Leaf, Mrs. Milford, the Countess, Gold Pheasant, Little Beauty, &c.

Wellington Nursery, St. John's Wood, London, N.W.

Bedding Plants, Bedding Plants—Surplus Stock.

MARSH AND PERKINS have great pleasure in offering the following, all very strong and well established Plants:—

	Per doz.—s.	d.
GERANIUMS, Scarlet and Horse shoe Leaf, autumn-struck plants	2	0
GERANIUMS, Variegated.—Flower of the Day, Osborne's Brilliant, Mangles' Pink, Perfection, and Shottesham Pet .. .. Autumn struck plants	2	0
VERBENAS Evening Star, Purple King, and Defiance	2	0
SALVIA patens, Blue	2	0
,, fulgens, Scarlet	2	0
HELIOTROPES	2	0
CUPHEA strigulosa sanguinea	2	0
GAZANIA splendens	2	0
DAHLIAS.—Choice Show and Fancy varieties	2	0

N.B. Baskets charged cost price. The plants turned out of pots, tied up, and packed securely.

Terms cash. The usual discount to the Trade.

42, Drapery, Northampton.

The Finest Bedding Plants in Cultivation.
EXTRA FINE STOCK.

JOHN KEYNES has 30,000 of the Finest PLANTS for BEDDING OUT now ready at 16s. per hundred (or 2s. 6d. per dozen if taken singly), consisting of the following varieties:—

Scarlet Geraniums	Ageratums and Heliotropes
Ivy-leaf ditto	Nierembergias and Alyssums
Aurea floribunda Calceolaria	Lobelia speciosa and Cupheas
Amplexicaulis ditto	Gazania splendens
Rugosa ditto	Cerastium tomentosum
Purple Bedding Petunia	Lantana delicatissima
Purple Verbenas	British Flag Geranium
White ditto	4s. per dozen.
Scarlet ditto	

Variegated Geranium, consisting of Bijou, Attraction, Countess of Warwick, Flower of the Day, Emperor, Golden Chain, and Cloth of Gold, 6s., 9s., and 12s. per dozen. All in the finest order.

NEW ROSES and DAHLIAS also ready.
Castle Street Nursery, Salisbury.

New Dahlias.

JOHN KEYNES, F.R.H.S., Castle Street Nurseries, Salisbury, will be prepared to send out the following first-class New and approved DAHLIAS the first week of May.

J. KEYNES considers them quite equal to any he has had the honour to offer:—

	s.	d.
Black Prince (Keynes'), dark mulberry	7	6
Countess Portsmouth (Rawling's), cream-tipped cherry	10	6
Donald Beaton (Dodd's), dark maroon	10	6
Empress of India (Rawling's), very dark	10	6
Goldfinder (Keynes'), yellow tipped deep orange ..	10	6
Imperial (Keynes'), deep bright plum	10	6
John Harrison (Harrison's), light scarlet, red	10	6
Lady Eleno (Dodd's), light salmon	7	6
Maria Carter (Keynes'), white edged deep carmine ..	10	6
Minnie Dodds (Dodd's), dove colour	10	6
Oscar (Addo's), light scarlet	10	6
Sir J. Outram (Rawling's), dark velvet	7	6
Maid of Bath (Hooper's), white tipped purple	10	6
FANCY FLOWERS.		
Blondin (Dodd's), crimson tipped white	10	6
Goldfinch (Keynes'), cream striped pink	10	6
Mrs. Crisp (Keynes'), purple tipped white	10	6
Reliance (Rawling's), maroon striped white and purple	10	6

These flowers have been exhibited, and taken many First Class Certificates, and shown in the winning Stands which took 19 First Prizes at the Great Exhibitions of the Royal Horticultural Society, Crystal Palace, &c.

CATALOGUES, with instructions for their growth, will be sent on application.

Salisbury.—May 24.

Petunia Inimitabilis, Eliza Mathieu.

GEO. SMITH has much pleasure in offering this most extraordinary and beautiful PETUNIA, which received a First-class Certificate at the Grand Horticultural Fête, Kensington Gardens, on Wednesday, May 21. It is twice the size of that well known and fine variety, Inimitabilis flore pleno. It is more distinct and constant, with mauve coloured ground, edged with one-third pure white, and equally as double also, and as fine in shape as a good Camellia. Now ready, in strong plants, at 2s. each or 18s. per dozen.

Tollington Nursery, Hornsey Road, Islington, N.

SPECIAL OFFER to AMATEURS, EXHIBITORS, &c.—All the best NEW VERBENAS of 1861 for all purposes, in 48 varieties, for 10s., strong Plants, package included; also 25 of the very best NEW FUCHSIAS of 1861 for 12s.; also 12 First-rate DOUBLE PETUNIAS for 6s.; also 12 First-rate DAHLIAS for 5s.

WM. KNIGHT can with confidence recommend the above plants, having Exhibited them at Brighton and other places last season, open to all England, and gained First Prize in every instance. Price to the Trade by the 100 or 1000.

Floral Nursery, Hailsham, near Hurst Green, Sussex.

CYPRIPEDIUM INSIGNIS MAULII.—In the first week of JUNE next will be distributed to a full List of Subscribers of 3 Guineas this fine variety of Cypripedium. After that time the price will be 5 Guineas to Non-Subscribers. It is figured and described in the "Floral Magazine," and a Coloured Figure will be forwarded for inspection per Post to Cultivators of Orchids and intending Subscribers on application.

WM. MAULE & Sons, The Nurseries, Bristol.

Palms and other Stove Plants.

TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual size.

A CATALOGUE, giving the height of each plant, will be sent, post free, on application to MRS. LE CREPS, Château du Mesnil de Mathieu, near Caen, Department of Calvados, France, where the plants may be viewed.

SMITH'S WORCESTERSHIRE SWEDE, the handsomest, most profitable, and best in cultivation. 1s. per lb.
SKIRVING'S IMPROVED SWEDE, saved from selected roots, 8d. per lb.
ORANGE GLOBE MANGEL WURZEL, the best for all kinds of soil, a very superior stock, 8d. per lb.
All other kinds of SWEDE and MANGEL, 8d. per lb. Cheaper by the bushel or cwt.

RICHARD SMITH, Seed Merchant, Worcester.

Skirving's King of the Swedes.

WILLIAM SKIRVING, Queen Square, Liverpool, begs to acquaint the Farmers of the United Kingdom that he has fixed the price of his new variety of Swede TURNIP at 1s. 3d. per lb., bags included.

W. S. can with perfect confidence recommend this variety of Swede as by far the best now in cultivation, in every respect. This assertion is made after several years' experiments with every sort of Swede now grown.

Seed of this variety being now offered for the first time to the Public, can be had only from W. S. direct.

Matchless Swede.

JOHN KEYNES has again secured a fine Stock of this splendid TURNIP, which for hardiness, beauty, quality, and crop, cannot be surpassed. The advantage of sowing from Seed grown in the Lothians, pure and unadulterated, has been appreciated by all who have favoured J. Keynes with their confidence. Two pounds of pure Turnip Seed will go as far as three that has been mixed with Old Seeds. The price of this matchless Purple-top East Lothian Swede, superseding all others, is 9d. per lb.

J. KEYNES, in answer to many inquiries, begs to state he will not be undersold by any party, for any description of Turnip or Mangel, the selection of which is of unquestionable superiority.

Salisbury.—May 24.

REIGATE SILVER SAND, best quality, 12s. per Ton or 1s. 3d. per Bushel, at Swan Place; delivered five miles, or to any London Wharf or Railway, 16s. per Ton, or 1s. 6d. per Bushel. Kentish and Hampshire PEATS, YELLOW LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE from Kingston. An inspection invited.—J. KENNARD, Purveyor to Her Majesty, Swan Place, Old Kent Road, London, S.E.

International Exhibition.

FERNS, BEGONIAS, &c., are growing in COCOA-NUT REFUSE at the bottom of a case (with Cocoa-nuts on the top outside) in the centre of the Eastern Annexe.

Refuse delivered in London at 1s. 6d. per bag, containing 3 bushels. Large quantities on lower terms, on application to the Patent Cocoa Fibre Co., Kingston-on-Thames, S.W.

Postage stamps or Post-office Orders payable to J. BARSHAM & Co.

WIRE-WORK for the Garden, the Greenhouse, and the Conservatory. An Illustrated Catalogue, containing upwards of 90 Engravings, Post-free. WIRE NETTING, 2 feet high, 5d. per yard. GARDEN SYRINGES, 6s. each.

WILLIAM H. HONEY, Manufacturer, 263, Regent Street, near Oxford Street Circus, W.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W.

ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.

Manufactory: Stoke-upon-Trent.—May 24.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

PHOSPHO GUANO.

PETER LAWSON & SON, GENERAL CONTRACTORS,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. VOELCKER, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.
(Signed) "AUGUSTUS VOELCKER."

Opinion of Dr. ANDERSON, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.
(Signed) "THOMAS ANDERSON."

Opinion of Dr. STEVENSON MACADAM, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for the Root Crops.
(Signed) "STEVENSON MACADAM."

Opinion of Dr. HODGES, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.
(Signed) "JOHN F. HODGES."

Opinion of Dr. APJOHN, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows or Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l.* 9*s.* 8*d.* per ton.
(Signed) "JAMES APJOHN."

Price, Free on Rail, £12 5s. per Ton, Bags included.

*** *None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

PETER LAWSON & SON, 27, GREAT GEORGE STREET, WESTMINSTER, LONDON, S.W.

THE SILENT GEAR OF SAMUELSON'S LAWN MOWING MACHINES IS NOT LIABLE TO DERANGEMENT.

SAMUELSON'S SILENT, SELF-CLEANING, LAWN MOWERS,

WITH MANWARING'S PATENT NOISELESS GEAR, AND BOYD'S PATENT SELF-CLEANING BRUSH.

THESE STANDARD MACHINES ARE CONSTRUCTED WITH A SIMPLE AND DURABLE SILENT DRIVING GEAR.

PRICES, including Packing Case, and Carriage paid to any Railway Station in the Kingdom:—

		Boyd's & Manwaring's Patent.	Manwaring's Silent Gear only.
MANUAL POWER	12 inches wide	£5 0 0	£4 12 0
	16 "	7 0 0	6 10 0
	19 "	7 10 0	7 0 0
	22 "	8 10 0	8 0 0
PONY POWER	22 inches wide	£9 5 0	£8 15 0
	25 "	12 0 0	11 10 0
	30 "	15 15 0	14 14 0

TESTIMONIAL.

Donnington, Chichester, March 5.

SIR,—In reply to your letter of the 25th ult. respecting the Lawn Mower I had from you last year, I am pleased to give it my most decided approval; for although I have had one in use for the last 15 years, I have never had one that did its work as well as this, or which was so little liable to get out of order. I consider the cleaning and sharpening apparatus a very great improvement. I have a piece of lawn which in the days of the Scythe always took up two men's time for three days to roll, mow, and sweep; they can now with ease go over this ground with your Machine in a little over two hours, and leave it well finished, so that in fact these Machines soon pay for themselves in labour only, to say nothing of the many other advantages derived from them.—Yours faithfully,
W. J. HUMPLING.

Orders direct or through Dealers will be executed according to priority of receipt. May be obtained at the WORKS, Banbury; at Mr. SAMUELSON'S Warehouses, 12, Parliament Street, Essex Bridge, Dublin; Newcastle; Stockton; York; Shrewsbury; and Bristol. Also of all Ironmongers and Seedsmen, and at

MR. SAMUELSON'S WAREHOUSE, 76, CANNON STREET WEST, LONDON, E.C.

Garden Engines and Syringes.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

15 gallons .. £5 12 6 | 28 gallons .. £7 2 0

Fig. 599. Ditto GALVANIZED IRON TUB.

[illegible] gallons	12 gallons	16 gallons	24 gallons	30 gallons
£[illegible] 15 0	£3 5 0	£3 15 0	£5 0 0	£5 18 0

Fig. 618. No. I. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. £1 8 0 each.
No. 2. Ditto ditto 1 2 6 ,,
Telescope Branch Pipe for ditto .. 0 10 0 ,,

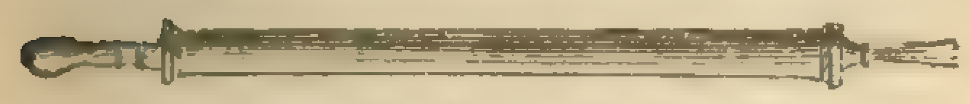

Fig. 619. Large GARDEN SYRINGE, with one rose and jet .. .. 11s. 6d. each
,, 620. Middle Ditto ditto 10 3 ,,
,, 621. Small Ditto ditto 9 0 ,,
,, 622. LADIES GARDEN SYRINGE, with do. 7 6 ,,

Fig. 623. READ'S SYRINGE, with two roses and one jet, 17s. 6d
,, 624. READ'S SYRINGE, with one rose and jet, 15 0
,, 625 Improved ditto ditto large 14 0

Garden Engines and Syringes of J. TYLOR & SONS' manufacture kept in stock by Ironmongers and Seedsmen in every part of the United Kingdom.

J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

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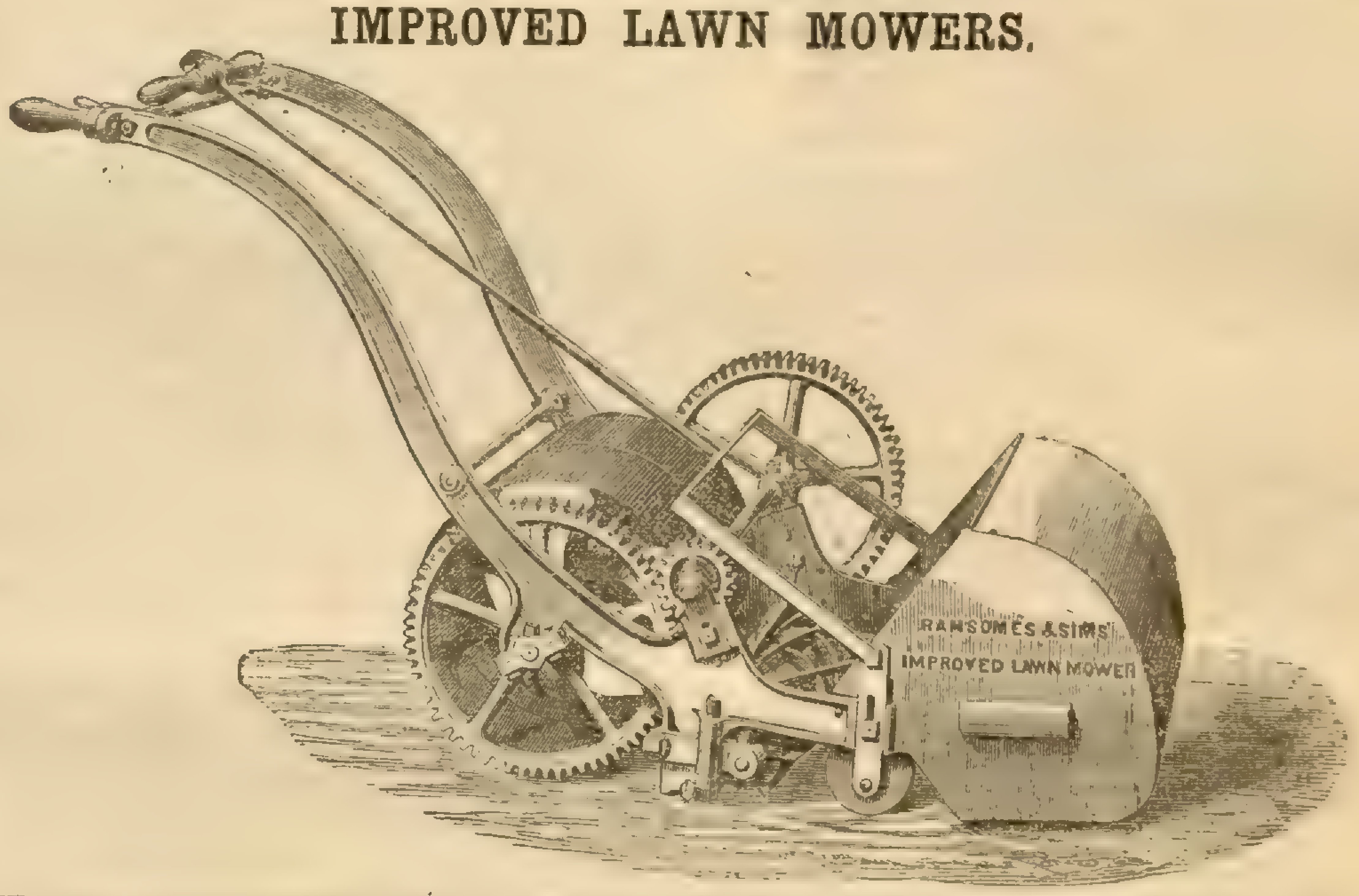
MANUFACTURERS OF
IMPROVED LAWN MOWERS.



THESE LAWN MOWERS contain important improvements, rendering them efficient and perfect. They are made from new patterns designed so as to combine strength and lightness with simplicity of arrangement. They are light handy Machines, almost noiseless in work, and so easy to manage that persons unaccustomed to Mowing can cut Grass without any difficulty.

Price:—14-inch, £6 10s.; 16-inch, £7; 18-inch, £7 10s.; 20-inch, £8.

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THE HYDROPULT,
A PORTABLE FIRE ANNIHILATOR AND GARDEN ENGINE.
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It is a simple, effective, and convenient Apparatus for throwing Water by hand. It weighs but 8 lbs., will throw 7 or 8 gallons of water per minute 50 feet, when worked by the power of one man, is easily worked, and very strong and durable.

PRICE TWO GUINEAS.

IT IS INVALUABLE FOR

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PROTECTING A ROOF FROM TAKING FIRE
WASHING WINDOWS
WETTING SIDEWALKS
SPRINKLING STREETS
WASHING CARRIAGES
DRAINING CELLARS
CLEANING CISTERNS
EMPTYING WATER FROM BOATS
SPRINKLING STOCK ON RAILWAY TRAINS
WASHING CARS
WATERING GARDENS
CLEANSING TREES FROM INSECTS
APPLYING WHALE OIL AND SOAP SOLUTIONS
DRESSING WITH LIQUID MANURE
SPRINKLING PLANTS
EMPTYING AND FILLING BARRELS FOR USE IN A BREWERY
WASHING DECKS
BALING BOATS
WETTING SAILS
A SPRAY BATH, &c.

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The Hydropult is the most efficient Fire Engine in the world, because the most available.

*** It has been recommended as an efficient and useful Fire Engine by the principal Fire Insurance Companies of Great Britain. Its utility as a Garden Engine is universally acknowledged.

THOMAS RIVERS, Esq., the eminent Florist and Nurseryman, says:—"The Hydropult is admirably adapted for Nurseries, and will be found invaluable for Watering and Syringing Plants and Trees in pots."

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Unprincipled parties are infringing the Hydropult Patent. This is to notify to the Public that the said Pirates and all persons using or vending their article will be prosecuted. No Hydropults genuine, whether contained in a bucket or otherwise, unless they have the Trade Label affixed as follows:—"The Hydropult, a Portable Fire Annihilator and Garden Engine, GRIFFITHS & BROWETT, Manufacturers, Birmingham; CHARLES P. BUTTON, General Agent. Vose's Patent."

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CHARLES P. BUTTON, MANAGER.

HYDROPULT COMPANY, 27, LEADENHALL STREET, LONDON, E.C.

ROYAL HORTICULTURAL SOCIETY.

THE FIRST GREAT EXHIBITION, MAY 21, 1862.

AWARDS OF THE JUDGES.

Class 1.—15 STOVE and GREENHOUSE PLANTS. (Open.)
1st Prize to Mr. J. May, Gr. to J. Spode, Esq., Hawkesyard Park, Rugeley, 20*l*.
2d, Mr. B. Peed, Gr. to Mrs. Tredwell, Lower Norwood, 15*l*.
3d, Mr. T. Whitebread, Gr. to H. Colyer, Esq., Dartford, 10*l*.
4th, Mr. R. Baxendine, Gr. to W. H. Smallpiece, Esq., Guildford, 5*l*.

Class 2.—12 STOVE and GREENHOUSE PLANTS. (Nurserymen.)
1st, Messrs. J. & J. Fraser, Nurserymen, Lea Bridge Road, 10*l*.
2d, Messrs. T. Jackson & Son, Nurserymen, Kingston, 7*l*.
3d, Mr. O. Rhodes, Nurseryman, Sydenham Park, 5*l*.
4th, Mr. W. Cutbush, Nurseryman, Barnet, 3*l*.
Extra, Messrs. J & C. Lee, Nurserymen, Hammersmith, 2*l*.

Class 3.—9 STOVE and GREENHOUSE PLANTS. (Amateurs.)
Equal 1st, Mr. H. Chilman, Gr. to Mrs. Smith, Ashtead House, near Epsom, 9*l*.
Equal 1st, Mr J. Green, Gr. to Sir E. Antrobus, Bart., Lower Cheam, 9*l*.
2d, Mr. S. M. Carson, Gr. to J. C. Sim, Esq., Nonsuch Park, Cheam, 7*l*.
Equal 3d, Mr. James May, Gr. to H. Nicholls, Esq., Grove House, Manchester, 5*l*.
Equal 3d, Mr. W. Kaile, Gr. to the Earl of Lovelace, Ripley, Surrey, 5*l*.
4th, Mr. James Tegg, Gr. to Baron Hambro, Roehampton, 3*l*.
Extra, Mr. Josh. Wheeler, Gr. to J. Phillpott, Esq., Stamford Hill, 2*l*.

Class 4.—6 STOVE and GREENHOUSE PLANTS. (Amateurs.)
1st, Mr. A. Ingram, Gr. to J. J. Blandy, Esq., Highgrove, Reading, 6*l*.
2d, Mr. T. Page, Gr. to W. Leaf, Esq., Park Hill, Streatham. 4*l*
3d, Mr. C. Penny, Gr. to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, 3*l*.

Class 5.—20 ORCHIDS, exotic species. (Amateurs).
1st, Mr. G. Baker, Gr. to A. Basset, Esq., Stamford Hill, N., 20*l*.
2d, Mr. W. Milford, Gr. to E. McMorland, Esq., Haverstock Hill, 15*l*.
3d, Mr. B. Peed, Gr. to Mrs. Tredwell, Lower Norwood, 10*l*.

Class 6.—12 ORCHIDS, exotic species. (Nurserymen).
1st, Messrs. Veitch & Son, Royal Exotic Nursery, Chelsea, 10*l*.
2d, Mr. B. S. Williams, Paradise Nursery, Holloway, 7*l*.
d, Mr. S. Woolley, Cheshunt, Herts, 5*l*.

Class 7.—10 ORCHIDS, exotic species. (Amateurs).
st, Mr. C. Penny, Gr. to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, 10*l*.
d, Mr. F. Page, Gr. to W. Leaf, Esq., Streatham, 7*l*.

Class 8.—6 ORCHIDS, exotic species. (Amateurs).
1st, Mr. John Green, Gr. to Sir E. Antrobus, Bart., Lower Cheam, 6*l*.
2d, Mr. W. Lakeman, Gr. to J. Campbell, Esq., Grove House, Hendon, 4*l*.
3d, Mr. H. Chilman, Gr. to Mrs. Smith, Ashtead House, near Epsom, 3*l*.

Class 9.—SINGLE SPECIMEN of any EXOTIC ORCHID. Prizes withheld.

Class 10.—9 GREENHOUSE AZALEAS, distinct kinds. (Amateurs).
qual 1st, Mr. S. M. Carson, Gr. to J. C. Sim, Esq., Nonsuch Park, Cheam, 12*l*.
Equal 1st, Mr. John Green, Gr. to Sir E. Antrobus, Bart, Lower Cheam, 12*l*.
2d, Mr. Thos. Page, Gr. to W. Leaf, Esq., Park Hill, Streatham, 9*l*.
3d, Mr. W. Kaile, Gr. to the Earl of Lovelace, Ripley, Surrey, 7*l*.
Extra, Mr. B. Peed, Gr. to Mrs. Tredwell, Lower Norwood, 2*l*.

Class 11.—9 GREENHOUSE AZALEAS, distinct kinds. (Nurserymen.)
1st, Mr. C. Turner, Royal Nurseries, Slough, 9*l*.
2d, Messrs. Veitch & Son, Royal Exotic Nursery, Chelsea, 7*l*.
3d, Messrs. J. & J. Fraser, Nurserymen, Lea Bridge Road, 5*l*.
4th, Mr. W. Cutbush, Nurseryman, Barnet, Herts, 3*l*.
Extra, Mr. Gaines, Nurseryman, Surrey Lane, Battersea, 1*l*. 10*s*.

Class 12.—6 GREENHOUSE AZALEAS, distinct kinds. (Amateurs.)
1st, Mr. C. Penny, Gr. to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, 6*l*.
2d, Mr. A. Ingram, Gr. to J. J. Blandy, Esq., High Grove, Reading, 4*l*.
3d, Mr. H. Chilman, Gr. to Mrs. Smith, Ashtead House, near Epsom, 3*l*.
4th, Mr. B. Peed, Gr. to Mrs. Tredwell, Lower Norwood, 2*l*.

Class 13.—6 RHODODENDRONS, distinct kinds. (Open.)
1st, Mr. C. Noble, Nurseryman, Bagshot, Surrey, 4*l*.
2d, Mr. J. Standish, Nurseryman, Ascot and Bagshot, 3*l*.

Class 14.—RHODODENDRON, single Specimen Sikkim or Bhotan.
1st and 2d, withheld.
3d, Mr. A. Bousie, Stoke Park, Slough, 1*l*.

Class 15.—6 ROSES in POTS, distinct kinds. (Amateurs.)
1st, Mr. Thomas Terry, Gr. to C. W. G. Puller, Esq., Youngbury, near Ware, 6*l*.

Class 16 —12 ROSES in pots, distinct kinds. (Nurserymen.)
1st, Messrs. H. Lane & Son, Nurserymen, Great Berkhampstead, 10*l*.
2d, Mr. Wm. Paul, Cheshunt Nurseries, Waltham Cross, 7*l*.
3d, Mr. E. P. Francis, Nurseryman, Hertford, 5*l*.

Class 17.—6 CAPE HEATHS, distinct kinds. (Open.)
1st, Mr. B. Peed, Gr. to Mrs. Tredwell, St. John's Lodge, Lower Norwood, 5*l*.
2d, Mr. W. May, Gr. to J. Spode, Esq., Hawkesyard Park, Rugeley, 3*l*.
3d, Mr. Thos. Page, Gr. to W. Leaf, Esq., Park Hill, Streatham, 2*l*.
Extra, Messrs. T. Jackson & Son, Nurserymen, Kingston, S. W., 1*l*. 10*s*.

Class 18.—9 PELARGONIUMS, distinct kinds. (Amateurs.)
1st, Mr. Thos. Bailey, Gr. to T. T. Drake, Esq., Shardeloes, Amersham, 8*l*.
2d, Mr. W. Nye, Gr. to Miss Foster, Clewer Manor, Windsor, 6*l*.
3d, Mr. J. Shrimpton, Gardener, Putney Heath, 4*l*.
4th, Mr. J. Weir, Gr. to Mrs. Hodgson, The Elms, Hampstead, 2*l*.

Class 19.—12 PELARGONIUMS, distinct kinds. (Nurserymen .
1st, Mr. C. Turner, Royal Nurseries, Slough, 8*l*.
2d, Messrs. Dobson & Sons, Nurserymen, Isleworth, 6*l*.
3d, Messrs. J. & J, Fraser, Nurserymen, Lea Bridge Road, 4*l*.

Class 20.—6 PELARGONIUMS, Fancies, distinct kinds. (Open.)
1st, Mr. T. Bailey, Gr. to T. T. Drake, Esq., Shardeloes, Amersham, 5*l*.
2d, Mr. C. Turner, Royal Nurseries, Slough, 4*l*.
3d, Messrs J. & J. Fraser, Nurserymen, Lea Bridge Road, 3*l*.
Extra, Messrs. Dobson & Sons, Nurserymen, Isleworth, 1*l*. 10*s*.
Extra, Mr. J. Weir, Gr. to Mrs. Hodgson, The Elms, Hampstead, 1*l*. 10*s*.

Class 21.—6 CINERARIAS, distinct kinds. (Open.)
1st, Messrs. J. Dobson & Son, Nurserymen, Isleworth, 3*l*.

Class 22.—NEW or RARE TENDER PLANTS in FLOWER. (Open.)
1st, Messrs. Veitch & Son, Nurserymen, Chelsea, Sarmienta repens, Silver Knightian Medal
1st, Messrs. Jackson & Son, Nurserymen, Kingston, Clerodendron Thomsonæ, Silver Knightian Medal
2d, Messrs. H. Low & Son, Nurserymen, Clapton, Dendrobium salaccense, Silver Banksian Medal
2nd, Messrs. Veitch & Son, Nurserymen, Chelsea, Lælia Schilleriana, Silver Banksian Medal
3d, Messrs. Veitch & Son, Nurserymen, Chelsea, Stenogaster multiflora, Bronze Medal
3d, Messrs. Veitch & Son, Nurserymen, Chelsea, Calceolaria sp. Chili, Bronze Medal

Class 23.—NEW or RARE TENDER PLANTS NOT in FLOWER. (Open.)
1st, Messrs. Veitch & Son, Nurserymen, Chelsea, Sphærogyne latifolia, Silver Knightian Medal
1st, Mr. Wm. Bull, Nurseryman, Chelsea, Cibotium princeps, Silver Knightian Medal
2d, Messrs. Veitch & Son, Nurserymen, Chelsea, Musa vittata, Silver Banksian Medal
2d, Messrs. J. & C. Lee, Nurserymen, Hammersmith, Musa vittata, Silver Banksian Medal
2d, Messrs. H. Low & Co., Nurserymen, Clapton, Musa vittata, Silver Banksian Medal
2d, Messrs. Jackson & Lane, Nurserymen, Kingston, Musa vittata, Siver Banksian Medal
2d, Mr. Wm. Bull, Nurseryman, Chelsea, Musa vittata, Silver Banksian Medal
2d, Messrs. Veitch & Son, Nurserymen, Chelsea, Ficus Cooperi, Silver Banksian Medal
3d, Mr. Wm. Bull, Nurseryman, Chelsea, Serissa fœtida variegata, Bronze Medal
3d, Mr. Cole, Nurseryman, Manchester, Pteris sp., Bronze Medal

Class 24.—NEW or RARE HARDY ORNAMENTAL PLANTS (Open.)
1st, Messrs. Veitch & Son, Nurserymen, Chelsea, Thujopsis lætevirens, Silver Knightian Medal
1st, Messrs. Veitch & Son, Nurserymen, Chelsea, Ourisia sp. Chili, Silver Knightian Medal
2d, Messrs. Veitch & Son, Nurserymen, Chelsea, Dammara sp. Japan, Silver Banksian Medal
2d, Mr. J. Standish, Nurseryman, Bagshot, Polystichum concavum, Silver Banksian Medal
3d, Messrs. Veitch & Son, Nurserymen, Chelsea, Biota sp. (pendulous), Bronze Medal
3d, Mr. J. Standish, Nurseryman, Bagshot, Aucuba sp. Japan, Bronze Medal
3d, Mr. J. Standish, Nurseryman, Bagshot, Osmanthus ilicifolius variegatus aureus, Bronze Medal
3d, Messrs, Veitch & Son, Nurserymen, Chelsea, Planera acuminata, Bronze Medal.

Class 25.—NEWLY-INTRODUCED PLANTS, 1859-61. (Open).
Messrs. Veitch & Son, Chelsea, Alocasia metallica, 1st Certificate
Messrs. Veitch & Son, Chelsea, Alocasia macrorhiza variegata, 2d Certificate
Messrs. Veitch & Son, Chelsea, Caladium Veitchii, 3d Certificate
Messrs. Veitch & Son, Chelsea, Eriocnema marmorata, 4th Certificate
Messrs. Carter & Co., Sydenham, Coleus Verschaffelti, 5th Certificate
Messrs. Veitch & Son, Chelsea, Stenogaster concinna, 6th Certificate

Class 26.—SEEDLING FLORISTS' FLOWERS and GARDEN HYBRIDS. (Open.)

First Class Certificates.

Mr. W. Nye, Gr. to Miss Foster, Clewer Manor, Pelargonium Conflagration
Mr. W Nye, Gr. to Miss Foster, Clewer Manor, Pelargonium Improvement
Mr. W. Nye, Gr. to Miss Foster, Clewer Manor, Pelargonium Belle of the Ball
Mr. G. Smith, Holloway, Petunia Eliza Mathieu
Mr. Standish, Bagshot, Rhododendron Striatum formosum
Mr. Williams, Holloway, Pelargonium (Zonale) Conqueror of Europe
Mr. G. W. Hoyle, Reading, Pelargonium Royal Albert
Mr. W. Paul, Waltham Cross, Pelargonium (scarlet) Waltham Pet
Messrs. Downie, Laird & Laing, Sydenham and Edinburgh, Fancy Pansy, Aurea marginata

Second Class Certificates.

Mr. W. Bull, Chelsea, Petunia Emma
Mr. W. Bull, Chelsea, Petunia Ruby
Mr. Standish, Bagshot, Rhododendron Suwaroff
Messrs. Veitch & Son, Chelsea, Rhododendron Lady Bowring
Messrs. Veitch & Son, Chelsea, Rhododendron Ochroleucum
Mr. C. Turner, Slough, Pelargonium (Zonale) Nesfield
Mr. Harland, Gr. to J. Bedwell, Esq., Hatfield, Begonia mutabilis

Commended.

Mr. B. S. Williams, Holloway, Azalea elegantissima
Messrs. Veitch & Son, Chelsea, Rhododendron Lady Lopez

Class 27.—STANDS of 24 TULIPS. (Open.)
1st, Mr. N. Norman. 98, Crescent Road, Plumstead, 2*l*.
2d, Mr. C. Turner, Royal Nurseries, Slough, 1*l*. 10*s*.

Class 28.—GROUP of PLANTS, decorating Conservatory. (Open.)
1st, Mr. C. Turner, Royal Nurseries, Slough, 10*l*.
2d, Mr. S. F. Videon, Nurseryman, Clarendon Nursery, Maida Hill, 6*l*.
3d, Messrs. F. & A. Smith, Nurserymen, Dulwich, 4*l*.

Class 29.—MISCELLANEOUS. (Open.)
1st, Mr. W. Bull, King's Road, Chelsea, for Large Collection of Specimen New and Rare Plants, 2*l*.
2d, Mr. B. S. Williams. Paradise Nursery, Holloway, for Collections of Anæctochilus, New and Rare Plants, and Hardy Variegated Plants, 1*l*. 10*s*.
3d, Mr. C. Hutt, Gr. to Miss Burdett Coutts, Holly Lodge, Highgate, for Collection of Variegated Plants, 1*l*.
4th, Messrs. J. & C. Lee, Vineyard Nursery, Hammersmith, for Cordyline indivisa, 10*s*.
Extra, Mr. H. Lavey, Gr. to E. A. Degrave, Esq., Fetcham, Surrey, for Collection of British Ferns, 5*s*.
Extra, Mr. J. Sutton, Versailles Nursery, Hammersmith, for Collection of 50 Hardy Variegated Plants, 5*s*.
Extra, Mr. J. Standish, Royal Nurseries, Ascot and Bagshot, for Collections of Rhododendrons, Hardy Japanese Plants, Ingram's Hardy Prolific Muscat Grape in Pot, 5*s*.
Extra, Messrs. H. Lane & Son, Nurserymen, Great Berkhampstead, for 1 Standard Rose and 2 Boxes of Cut Roses, 5*s*.
Extra, Mr. William Paul, Cheshunt Nurseries, Waltham Cross, for Cut Roses, 5*s*.

IMPLEMENT SHOW, MAY 21, 1862.

AWARDS OF THE JUDGES.

Class A.—HEATING APPARATUS, IMPROVEMENTS IN VENTILATION, &c.
James Cranston, 1, Temple Row West, Birmingham, Model of a Patented Conservatory, Commended, with the addition that there seemed to be room for improvement in the ventilation
Henry Ormson, Stanley Bridge, Chelsea, Six Feet Boiler, Commended
J. Weeks & Co., King's Road, Chelsea, Improved doors and panels for Boilers, Commended
J Weeks & Co., King's Road, Chelsea, Improved Pedestal for heating Halls and Conservatories, &c., Commended

Class B.—GARDEN MACHINES, such as Mowing, Rolling, Transplanting, Fumigating, Fumigating Machines, &c.
Amies & Bamford, Queen St. Iron Works, Peterborough, New Patent Water Ballasting adjustable Garden Rollers. Commended.
Thos. Green, 2, Victoria Street, Holborn Hill, Patent Lawn Mowing Machine. Highly Commended.
J. B. Brown & Co., 18, Cannon Street, West, Patent Lawn Mowing Machine. Commended.
Kennard & Son, 18 & 19, Fishamble Street, Dublin, Mowing Machines. Commended.

Class D.—GARDEN ORNAMENTS in WIRE WORK, TRELLISES, SUSPENDED BASKETS, &c.
J. Banks, 2 A, Brunswick Street, Liverpool, Galvanised Pendent Flower Baskets. Commended.
J. B. Brown & Co., 18, Cannon Street, City, Cast Iron Medici Vases. Commended.

LADY DOROTHY NEVILL'S SPECIAL PRIZES.

1st Prize, Misses Marsh, Ambassador Court, St. James's Palace
2d, Mrs J. H. Lermitte, Knightons, Finchley
Highly Commended, Mr. Samuel Foster, House Steward to the Marquis of Lansdowne, Lansdowne House
Highly Commended, Mrs. Robt. F. Veitch, Nursery, Exeter.

Exhibition of Rhododendrons.

JAMES VEITCH, JUN., begs to announce that he has a beautiful Collection of HARDY RHODODENDRONS arranged under Canvas, NOW IN FINE FLOWER, to an inspection of which he invites all lovers of this beautiful class of Plants.
Royal Exotic Nursery, Chelsea, S.W.—May 24.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe. Also to their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which for want of space there, is erected at the Crystal Palace, Sydenham.
Royal Berkshire Seed Establishment, Reading.

The Gardeners' Chronicle.

SATURDAY, MAY 24, 1862.

MEETING FOR THE ENSUING WEEK.

WEDNESDAY, May 28—Royal Botanic .. .. .. 2 P.M.

THE Foreign gentlemen who crowd the International Exhibition must have been highly gratified by the HORTICULTURAL DISPLAY OF WEDNESDAY last. They had an opportunity of witnessing in perfection the magnificence of our culture and the charms of our climate. They saw from a point of view so near that misapprehension was impossible, the immense advantages of an insular position. No one could doubt that so gorgeous a scene was only rendered possible by a May atmosphere, of which it was difficult to say whether rain or sunshine, cold or warmth, heavy clouds or a serene sky were the characteristics. This at least they must have learned—that there is no exaggeration in the pictures so often painted of English gardening and English weather.

Beneath two enormous ill-constructed tents there stood a Paradise of flowers. On the one hand were thickets of Chinese Azaleas, Roses, (wonderful things), and all manner of Exotics, beds of Orchids, and endless varieties from Japan. On the other was a wilderness of Azaleas and Rhododendrons, just beginning to foreshadow the splendid scene that another week will produce. WATERER & GODFREY were the purveyors of the last; the most distinguished of our cultivators supplied the first. Their names are recorded in another column, along with ample details horticultural; on us rests the simple duty of pointing out a few only of the admirable features of this assemblage.

In the first place we have to report that the old Chiswick plan of exhibiting on stages or tables was to a great extent abandoned in favour of turf banks and sunken walks; and it must be owned that the effect was more satisfactory. From the entrances of the tents the eye wandered over every part of the display, lying as it were at the feet of the spectator. In the midst the visitor was placed in an amphitheatre, where nothing could be seen except superb banks of shrubs resplendent with scarlet and crimson and gold, relieved by the more sober colours of an endless variety of charming foliage. Nor was it merely the general effect that called forth the admiration of spectators; they found that each particular plant could be scrutinised as readily as if in a conservatory; and this, to critics, must have been highly satisfactory.

As to novelties the number of them was most extraordinary, chiefly from STANDISH and VEITCH, who produced the choicest of their Japanese acquisitions—new Conifers, Aucubas, and other Evergreens, new Bamboos, and new variegated plants. These however have been so recently imported, that it is scarcely possible at present to form a just opinion of their real merits. No doubt however can exist as to their general value, if, as seems certain, they will bear our cold and variable climate. Perhaps it would be as well, in another year, to offer special prizes for the best grown specimens of these plants; all which exhibit signs of imperfect health or which are insufficiently grown being excluded from the class.

Of new flowering plants there were few. The two most important were *Ourisia coccinea*, a charming little hardy herbaceous plant with the scarlet pendulous flowers of a Pentstemon, and *Sarmienta repens*, a trailer, with vermilion coloured flowers and good fleshy leaves, admirably adapted to basket gardening in a greenhouse. An *Anguloa* supposed to be new, was a spotted variety of *A. uniflora*, and a pygmy *Cœlogyne* seemed to differ in nothing of importance from *C. fimbriata*. Among florist flowers we also remarked a *Petunia* from FERGUSON of Stowe, with good creamy white flowers marked by a star of five well defined violet streaks—very pretty.

It will be remembered that Lady DOROTHY NEVILL offered prizes on this occasion for the best groups of flowers arranged for the decoration of a drawing room. The race came off in the Conservatory, and must we imagine have been warmly contested, if we were to judge by the throngs of ladies who rendered approach to the tables almost impossible except by themselves. The only peep we succeeded in getting told us that a great deal of pure taste was exhibited by the competitors, and that exceedingly pretty results were obtained; but, as for particulars, they must be sought in the criticism of our fair drawing room correspondent, given in another column.

There was a similar, but much larger, competition among nurserymen in one of the arcades; prizes having been offered for the finest groups of flowers arranged in masses for the decoration of vestibules, landing places, or wherever large quantities of plants are demanded. These excited great interest, and formed one of the more striking features of this unrivalled Exhibition. The winner of the first prize was Mr. TURNER, Royal Nursery, Slough.

We understand that about 10,000 paying visitors were present.

UNDER the various names of BOTTOM HEAT, EARTH HEAT, GEOTHERMAL CULTIVATION, and others, the public attention has for many years been directed to a most important question. It is nothing less than determining the effect upon vegetation of raising the temperature of the soil above its natural condition in order to maintain in health plants that are natives of climates warmer than our own. Our ancestors employed fermenting tan or stable litter for the purpose; but they seem to have considered it unnecessary except when applied to such plants as the Pine Apple or other inhabitants of the tropics. Greenhouse and Conservatory plants received no such assistance; and as for out-of-door field crops, the man who talked of warming the soil by the acre would have been placed on a level with the philosopher who tried to extract sunbeams out of Cucumbers. We have lived however to see even the last problem solved satisfactorily, and we confidently anticipate a time when cultivators will be more anxious about the warmth of soil than the warmth of air. Mere drainage has raised the temperature of thousands of acres; and other means, in addition, are sure to be applied to gardens, as soon as the public mind shall have been properly prepared.

For ourselves we look forward undoubtingly to the time when such plants as the Orange and Myrtle will have no better covering in winter than straw sheds, instead of costly houses of glass and masonry; when every Vine border and Peach border, and most Plum and Pear borders will be artificially heated; when Tomatoes and Capsicums will be rescued from the chilly earth in which they struggle for existence in these northern latitudes; and when Pomegranates and Oleanders will give a richness of colour to autumn gardens even more varied and brilliant than that of Rhododendrons and Azaleas in the spring. The late Sir AUGUSTUS FOSTER used to insist upon the possibility of ripening Oranges here, in the open air, as well as at Genoa, but as he was unacquainted with the immense importance of earth heat, and trusted only to rough winter covering, his proposals came to nothing.

Our readers have not forgotten M. NAUDIN'S articles on this subject, translations of which appeared in the *Gardeners' Chronicle* in the year 1861. Experiments in the same direction have now been made by Capt. TREVOR CLARKE, and extremely interesting they are. In a paper just published in the Proceedings of the Royal Horticultural Society, that gentleman gives the result of an attempt at cultivating tender plants unsheltered in the open ground, by the mere aid of warmed earth. The whole communication deserves and we doubt not will receive the careful consideration of intelligent cultivators. We can only give a brief epitome of its contents.

A trench was formed 7 yards long by 3 yards wide, and we suppose about 2 feet deep. This was lined with rough brickwork, floored with ordinary slates and warmed to 75° by a single 3-inch pipe conveying hot-water from a very small boiler. The cistern was an old nine gallon liquor cask. In this pit or trench a very great variety of stove plants was plunged towards the end of May, and occasionally in June and July; among which were Begonias, Cannas, Hedychiums, Convolvulaceans (a happy expression), Ficus elastica, Bromeliads, Cape bulbs, and many others. During the summer most of these things behaved admirably. "The first observation worthy of remark was that they appeared to receive no check from planting out; their roots, doubtless, taking at once to the warm earth, and they began at once 'to grow away,' while the bedding plants in the garden were still in the chilled and inactive state which they generally assume for the first weary week or two after turning out. Two or three Cannas, including the curious C. flaccida, with Hedychium coronarium, were placed so as to hide my rude cistern, which they soon did most effectually. The Hedychium flowered well, upon such shoots as had been made previously, in the stove. It then, together with the Cannas, made a huge thicket of shoots. The Cannas neither flowered earlier nor more plentifully than others in the open ground without heat, but made a much more luxuriant growth. The same remark applies to Begonia Fuchsioides, insignis, and others of the same habit. Martiana flowered plentifully, and was one of the most beautiful and successful subjects I had. Philodendron pinnatum rambled along the ground, throwing up its leaves to the light through the foliage of other plants. Maranta zebrina started slowly, but made a strong growth as the season advanced, with well coloured leaves. The large red or purple-stemmed Palma Christi produced a very grand effect. This, and the taller Solanums, were deprived of their laterals as fast as they were produced. The effect of this was to run them up very tall, while the leaves increased in size enormously. They were perfectly gigantic. Sugar-canes took to the ground at once, growing strongly through the whole season. The old canes formed six or seven new joints, while several fine suckers started and grew to about a man's height." Selaginella throve and increased in a shady corner, as did several masses of stove and greenhouse Ferns. One of the golden sorts became very luxuriant and handsome. A Bletia, one of Botteri's Orizaba plants, was taken up in the autumn, and found to have formed a good tuber, double the size of the old one, from which it took its rise. Vallota purpurea did well, from the first, soon threw up a strong scape, and flowered in faultless beauty. Blandfordia grew well, but did not flower. A mass of Eucomis flowered from every bulb, and was rather ornamental, in its odd way. Double Zinnias grew larger, and flowered far better than any I saw about London. A crossbred Geranium of the race of echinatum was full of flower and extremely pretty. Æchmea fulgens made two fine suckers. They are now in blossom with dark healthy foliage in my stove. Pitcairnia latifolia throve in a remarkable manner, completely beating a fellow-plant to it, which was kept under glass."

Winter, however, came at last, and what attended it is most instructive. "As I did not, in this instance, propose to attempt any kind of housing for the winter, things took their course; one or two, which I wished to make sure of, were taken up, and the rest left to their fate. The first Dahlia frost destroyed, more or less, the tenderer sorts, and the sharper weather in November cut them to the ground; one or two bulbs and dwarf-growing things having been protected in anticipation. At this time there was no destruction of vitality from the collar downwards, the heat having entirely kept the soil from freezing. The whole bed was then covered, 6 or 7 inches deep, with dry leaves, for the winter. At the latter end of February in the present year, I had the covering removed, and made a short examination of the bed. I found the plants coming up in all directions, blanched of course by the leaves which had become wet by rains, and even perhaps heated slightly. From this cause the Chamærops, Blandfordia and some evergreen bulbs had lost their foliage, but were alive and preparing for fresh growth, and the little axillary bulbs of Begonia Martiana and discolor were coming up in numbers around the old plants."

The general conclusions arrived at are given thus by the author:—

"I have endeavoured to give a truthful and unvarnished account of a very rough experiment. It is poor in results, but the experience of one season can do but little to elucidate a principle the probable developments of which are almost infinite.

The huge and rapid growth of many of the finest tropical plants, overpowering others of slighter constitution, by their shade and the exhausting action of their roots, will set bounds to the growing of any great number or variety of plants in the small spaces that considerations of economy would allow us to heat artificially. A profusion of water was required at all times. A great drawback was the destructive effect of strong winds upon the foliage, and the perpetual 'struggle for existence' going on among so many plants of differing constitution, habit, and strength. In the hope that some of my brother horticulturists may take up the subject during the coming season, I may venture upon a few hints and suggestions, derived from my own experience. A brick partition down the centre of the bed in the direction of its length, would enable us to isolate the strong growing sorts in loamy soil in the background, while the front strip, or partition, might be filled with compost suitable to the more delicately rooting herbaceous subjects. This again might be subdivided roughly by a slate or two, so as still further to vary the characters of the soil, as, for instance, where the use of peat might be specially indicated. There would be no difficulty or complication in such an arrangement. The top of the main partition should be just flush with the surface of the soil, so as to be hidden, for appearance sake, with a little sprinkling of earth. The heating power of a 3-inch pipe, applied as described, proved amply sufficient; and I have no doubt but that any length of border might be effectually heated in the same way, provided that the width and depth of the mass of soil were the same.

"As fresh and likely subjects for trial, I may suggest tender annuals, such as the beautiful painted Amaranths, tricolor and bicolor, with the common Cockscomb and the rarer sorts of Impatiens; Ipomœa Nil and Hederacea, with their handsome derivatives now to be had in variety at the shops, to say nothing of the hopes of seeing the exquisite Quamoclit in its true character. Every Convolvulacean should be tried. Of the annuals, some to be sown where they are to remain, and others raised first under glass. The perennial sorts to be first grown, at least for one season, in large pots, under glass also. Ipomœa ficifolia, omitted in my report, succeeded perfectly thus, and the same treatment would apply to Phaseolus Caracalla, a plant well worthy of trial. I can recommend no other Phaseolus or Dolichos, unless perhaps D. lignosus. Bougainvillæa will suggest itself, with Passiflora and Tacsonia. Aralia papyrifera, Mandevillea, Schubertia, with Lapageria, and other Alstrœmerian forms, all likely; Stephanotis, Allamanda, Dipladenia, Echites, more uncertain, but how amply they would repay if successful. Campylobotrys, Clerodendron, Citrus (plunged), Curcuma, Dioscorea discolor, Gardenia, Gloriosa, Papyrus, Pergularia, all nearly certain. A trial of Cyanophyllum will be indispensable, with summer flowering Melastomods and the new variegated Cyperus.

"I may here call attention to the evident suitability of the treatment to Cucurbitaceæ of all kinds as a cheap and effectual way of producing a collection for exhibition this year. By setting apart a bed for the express purpose, and restricting each plant to one runner, a great number of sorts might be grown. The plants to be grown in rows on each side of the bed, and the Vines trained away from it either up poles or trellised. Lastly, I am of opinion that an important use might be made of this principle, by plunging large stove Arboreous and other plants in their pots during the summer. They would be thus induced to make shorter but still healthy growths, and so kept within bounds as house plants."

Our readers will doubtless agree with us in thinking that Captain CLARKE deserves the warmest thanks of all garden lovers for the capital manner in which he has thus conducted the first serious attempt that has been made among us in growing tender plants in the open air by the aid of earth heat alone. May his mantle be divided into many pieces, and placed on the shoulders of many followers.

—— *The Birmingham Rose Show.*—The programme of this exhibition, which may be referred to among the advertisements of our present Number, offers such liberal prizes both to nurserymen and amateurs as must induce a large competition of Rose-growers; and the time fixed, July 1, will be very opportune for the display of a flower which promises to bloom this season in more than ordinary abundance and beauty. The addition of horticultural tools and ornaments will much enhance the interest of the show, and the combination will render it worthy of a visit from all who have a regard for the garden, be their taste floral or vegetarian. Here they will see not only the best Roses but the best implements to be used in their culture, and in the general management and adornment of a garden, from the spade wherewith the soil is dug, to the easy and graceful chair whereon we sit in the summer-tide to enjoy the fair realisation of all our labours and our hopes.

THE INTERNATIONAL EXHIBITION.

IF we may judge from the display in the open court of the eastern annexe, we may conclude that the form of Hot-water Boiler most popular at the present time is the Tubular, and of this the variety with the tubes vertical is that most in request. Very little else indeed in the way of horticultural boilers is exhibited, besides tubular ones. Taking them *seriatim*, they are as follows:—

2119. Mr. Gray, Danvers Street, Chelsea. This is called "Gray's Oval Tubular Boiler." It consists of a double row of upright cylindrical pipes fitted into a hollow frame or water space with sockets at top and bottom, and standing over a concave cradle-like furnace, the bars of which consist of horizontal water pipes. The upright form of boiler is usually made on a circular plan, but the oval form given to Mr. Gray's variety of it is said to be preferable in consequence of its bringing the tubes in closer contact with the fire. The usual form of a furnace being a parallelogram rather than a square, it seems feasible that the boilers on the oval plan should bring the tubes more completely within range of the burning fuel, and this being so, the change though a slight one is no doubt an improvement. Mr. Gray also exhibits "Beck's Patent Hot-water Valve," which is said to be less liable than others to get set, or out of working order.

2151. Mr. Messenger, Loughborough, exhibits a "Patent Triangular Tubular Boiler," which is composed of triangular instead of cylindrical tubes, placed horizontally and terminating at each end in free water spaces. The pipes are arranged so as to form both sides and top and bottom of the furnace, those above the fire being most numerous, and those beneath forming the furnace bars and the return pipes. This is set in an arch of brickwork. It is probably an effective boiler of the horizontal tubular class.

2160. Mr. Ormson, Stanley Bridge, Chelsea. Mr. Ormson's is called a "Patent Jointless Tubular Boiler," and consists of a single tier of vertical cylindrical tubes, connected by water spaces at top and bottom, "all cast in one piece." Both large and small sizes are shown. The merit claimed for this contrivance is that there is not a joint exposed to the action of the fire. Practically we do not know that there is much advantage in this, inasmuch as we do not often hear of the jointed boilers giving way or leaking from exposure of this kind, but there is no doubt, irrespective of this question, that the boiler is a good one, as all those of vertical tubular construction must be.

2191. Messrs. Taylor & Sons, Kensal Green, have two exhibitions of this character. One, a "Tubular Horizontal Boiler," consists of long but small cylindrical tubes, arranged in a single series at the sides, and in a double series at the top. The numerous small pipes, together with their length and the consequent capacity of the furnace, would no doubt render this both powerful and rapid in its action. The other, a "Double-chamber Corrugated Boiler," resembles a deep saddle boiler with corrugated sides, and with a return chamber through the upper part. It is a modification of the well-known saddle-boiler, which after all is probably the simplest and best of the forms of what may be called simple or solid boilers, in contradistinction to those compound ones which are formed of a number of small tubes.

2201. Messrs. Weeks and Co., King's Road, Chelsea. "Tubular Upright Boilers" are shown by this firm, to whom we believe is due the merit of introducing or at least familiarising the tubular forms of hot-water boiler now so much used. Those exhibited on this occasion are of two sizes, namely large ones formed of a double tier of pipes, and smaller ones made of a single tier. They consist, like Mr. Gray's, of a hollow frame or water space, with sockets at top and bottom, and between these are vertical tubes, put together on a circular plan. There can be no doubt that these vertical tubular boilers in the conical form in which they are now made, and which admits of the flame and heated gases emitted from the fuel playing up freely amongst the parts in the direction they naturally take, are preferable to those of horizontal construction, where the direction of the flame is at right angles to that of the tubes to be heated, unless indeed it be drawn aside by a strong lateral draught. To some such cause as this may no doubt be attributed the remarkable efficiency of boilers of this class, and their consequent ascendancy in the present exhibition.

Various arrangements of hot-water pipes in stacks for warming conservatories, halls, churches, and other buildings, some plain and others ornamented, are shown by Mr. Gray, Mr. Ormson, and Mr. Weeks.

Home Correspondence.

Magnolias.—I cannot agree with your correspondent, Mr. Duncan, as to the Magnolia conspicua; every twig of my tree was unscathed by the winter of 1860, whilst the Magnolia grandiflora on the same wall some 30 feet high was killed to within a few feet of the ground. Magnolia conspicua I look upon as a most valuable acquisition, being amongst the earliest flowering shrubs that herald in the spring. My specimen this year might have been seen when in full bloom at a distance of nearly half a mile; but it is fair I should state that after having been in beauty about a fortnight a killing frost which destroyed the same night the early flowering Rhododendrons browned the remaining blossoms on my tree. I have Magnolia Soulangeana, a standard with nearly as many blossoms had I patience to count them as the conspicua; but I do not think it is equal in beauty or effect; besides it comes at a time when we have no lack of choice flowering shrubs elsewhere. Magnolia Thomsoniana, tripetala, acuminata, and purpurea planted as standards 18 years ago, thrive well with me in this eastern county, and are perfectly hardy; they have the merit of growing either in peat or loam. The whole tribe are beautiful in bloom or foliage, and repay one a hundred-fold for planting. Those who have been favoured with the sight of the Dean of Winchester's garden at Bishopstoke must feel the truth of this observation. On visiting Messrs. Waterer's gardens some years ago I was struck with the noble specimen of Magnolia Soulangeana your correspondent speaks of. I secured at the same time a plant of Magnolia purpurea of a much richer purple bloom than the one usually met with, but I have forgotten the name given to this variety. *Richard Ward, Salhouse Hall, Norwich.*

Roses.—I inclose you a specimen of a standard Rose which blossomed last autumn as it is flowering now. The petals are perfectly green on every Rose. Can you inform me whether I can by any means induce it to bloom pink again. The name is Marquis Balbiano and it is of the Bourbon class. *M. L.* [The plant seems to have lost the power of producing its proper flowers, and runs irresistibly to leaf. Starve it.]

The Drawing-room Flowers at South Kensington.—Since you take so much interest in flower decorations, I must try and give you a short account of the exhibition which I have to-day seen at the Royal Horticultural Gardens, Kensington. Last year you will remember the prizes were given for groups for the dinner table; this year they were for the drawing-room, and consequently of rather a different style. They were shown in a variety of ways; there were wicker-work tables, glass baskets, fancy glass ornaments of many shapes and sizes, besides two or three masses of flowers, closely packed and elaborately arranged, with the spaces all stuffed so full of Moss that it was impossible to say what the stands were made of; they may have been glass, bronze, wicker-work, or wire for all I know, no portion of the support being allowed to be visible; for my own part I think they were glued together. Fortunately there were but two or three of this style, which I had hoped had perished with last year. I wish you could have seen one peculiar looking vase, rather quaint in its way; its form was that of a slender urn, made of clear white glass, with funny little projections coming out of its body, into which single flowers were stuck, each surrounded by a piece of variegated Grass, tied in a bow, so that the whole formed an even row of little bows all around the vase, while a small bouquet finished it off at the top; I am not sure, however, that I have described it quite correctly, for there was such a crowd of persons round the table it was almost impossible to get a good view. Of all the baskets, and indeed of all the exhibition the one I liked best was a white glass basket, of a very pretty flattish form, dressed with Lilies of the Valley, white Lilac, and white Narcissus, relieved by the introduction of a few Fern leaves and some Moss, while a Lycopodium crept partly round the handle. There was nothing but green and white, most tastefully arranged, and the effect was charming. I tried in vain to see if it had gained a prize, but alas I could see nothing that gave me any information on that most interesting point. Several other glass baskets were more or less pretty, but none came up to the one described. I remarked how very prevalent the use of the Adiantum has become; almost every vase had some; and though, when skilfully introduced, there is nothing to compare with it, still in some cases I thought it looked out of place, and quite failed in producing the desired effect. Another vase struck me as remarkably pretty; that also was of white glass (but I think opaque) mounted on a gilt foot, either hung with little gold chains or ornamented with light fret-work, which gave it that appearance; I am not sure there were not three small vases forming one on the same stand; in this the flowers were nicely arranged and the general effect pleasing. In conclusion, let me mention several small elegant clear white glass ornaments, some with branches, and some without; their chief charm consists in looking bright and taking very few flowers and very little trouble to arrange; singly, or on the exhibition table, they looked insignificant, but I dare say away from the collection and placed on side tables in a fashionable drawing-room they would be very ornamental. *Your Drawing-room Correspondent.*

Platanus orientalis acerifolia.—Of this species (?) Miller (Gardener's Dictionary, 1731), quoted in "Natural History Review," April 1862, p. 168; says:—"Although by some supposed to be a distinct species from either P. orientalis or P. occidentalis, it is no

more than a seminal variety of the first; for I have had many plants that came up from seeds of the first sort which ripened in the Physick Garden (Chelsea), which do most of them degenerate to this third sort; which, in the manner of its leaves, seems to be different from either, and might reasonably be supposed a distinct kind by those who have not traced its original." *Anon.*

Societies.

Royal Horticultural: *May* 21 (*First Great Flower Show*).—This in all respects wonderful exhibition, some features of which are touched upon in another column, was held under a tent, covering an area of 200 feet in length and 130 feet in width, in the lower part of the garden, close to the International Exhibition, where there will also soon be a grand Rhododendron show, furnished by Messrs. Waterer & Godfrey of Knap Hill. On this occasion the plants were arranged on grassy terraces, surrounding and interspersed with gravel walks, from which the display could be inspected with convenience and comfort.

As regards great collections of stove and greenhouse plants, the best came from Mr. May, gr. to J. Spode, Esq, Hawkesyard Park, Staffordshire. Though they had travelled a distance of upwards of 100 miles on the morning of the show day, they looked as fresh and beautiful as if they had just been lifted out of the nearest conservatory. They consisted of large plants of Azalea Criterion and Stanleyana, Gompholobium polymorphum grandiflorum, trained in the form of a bush and extremely well flowered; a huge Hederoma tulipiferum, loaded with carnation striped white and rich brown blossoms; an excellent plant of Pimelea Hendersoni, Epacris miniata grandiflora, Chorozema Henchmanni and varium nanum, an Everlasting or two, Ixora coccinea, Eriostemon pulchellum and neriifolium, and Boronia serrulata. Slightly inferior to these was a group contributed by Mr. Whitebread, gr. to H. Colyer, Esq., of Dartford. It contained one of the best specimens of Erica elegans perhaps ever seen, pyramidal in shape, and externally loaded with blossoms; also Pimelea spectabilis, a white Azalea, and A. variegata, the last a wonderfully large specimen finely bloomed, but by no means handsome in shape; Ixora coccinea, Eriostemons of different kinds; Erica Cavendishii, Clerodendron splendens, Polygala Dalmaisiana and Epacris miniata. From Mr. Peed gr. to Mrs. Tredwell, St. John's Lodge, Norwood, came beautiful specimens of Allamanda grandiflora, covered with clear pale yellow flowers; Ixora coccinea, the Box-leaved Eriostemon, a handsome Chorozema cordatum splendens, Azalea Criterion, Pimelea spectabilis, Erica depressa, the lilac blossomed Heath-leaved Tetratheca, and Pimelea Hendersoni. Mr. Baxendine, gr. to H. H. Smallpiece, Esq., Guildford, also sent a group of 15 tolerably well grown plants, consisting of nearly the same kinds as those just named.

In the nurserymen's class of 12 Stove and Greenhouse Plants, collections came from Messrs. Fraser, Jackson, Lee, Cutbush, and Rhodes. Among these were good examples of Epacrises, Polygalas, Azaleas, Everlastings, Pimeleas. Boronias, Ixoras and Heaths; we also noticed among Messrs. Jackson's plants a fine specimen of Imatophyllum miniatum.

Groups of nine Stove and Greenhouse Plants were numerous, no fewer than seven competitors exhibiting in this class. Mr. Green, gr. to Sir E. Antrobus, Bt., Cheam, had a very fine Azalea Variegata, Polygala Dalmaisiana, Franciscea eximia, the Box leaved Eriostemon, Erica depressa, Hederoma macrostegia, Pimelea Hendersoni, and a very fine Rhododendron formosum, quite a sheet of snowy blossoms. From Mr. Chilman, gr. to Mrs. Smith, Ashstead, Epsom, came another fine collection, consisting of Pimelea Hendersoni, Acrophyllum venustum, in fine condition; Boronia Drummondi, covered with rosy star-shaped flowers; Franciscea confertifolia; Aphelexis macrantha and its rose coloured variety; the yellow Heaths, Erica Cavendishii and depressa; and Polygala Dalmaisiana. Mr. Carson, gr. to J. C. Sim, Esq., Nonesuch Park, Cheam; Mr. Kaile, gr. to Lord Lovelace, Ripley; Mr. Tegg, gr. to Baron Hambro, Roehampton, and Mr. Wheeler, gr. to J. Phillpotts, Esq., Stamford Hill, also showed in this class. In these groups were fine plants of Eriostemons, Polygalas, Pimelea spectabilis and Hendersoni; Stephanotis floribunda, the blue Leschenaultia, Everlastings of different sorts; Azaleas, Franciscea confertifolia, Boronia Drummondi, and Ixora javanica and coccinea.

Collections of Six Stove and Greenhouse Plants were shown by Mr. Brush, gr. to J. Tritton, Esq., Bloomfield Hall, Norwood; Mr. Ingram, gr, to J. J. Blandy, Esq., Highgrove, Reading; Mr. Page, gr. to W. Leaf, Esq., Park Hill, Streatham; and Mr. Penny, gr. to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park; and Mr. May, Manchester. In these collections were good plants of Eriostemon buxifolium, Erica elegans, Cavendishii, depressa, and ventricosa coccinea minor; Franciscea confertifolia, Rhynchospermum jasminoides, the yellow flowered Labichæa diversifolia, Hederoma tulipiferum, Aphelexis macrantha purpurea, Chorozema Lawrenceanum, Leschenaultia formosa, Tetratheca ericifolia, Dracophyllum gracile, and different varieties of Azalea.

Of Orchids there was a good display. The best collection of 20 came from Mr. Baker, gr. to A. Basset, Esq., Stamford Hill. It contained a handsome dark variety of Cypripedium barbatum, a large flowered variety of Dendrobium macrophyllum, the charming D. Devonianum, Cattleya citrina, with six canary coloured blossoms on it, all fully expanded; C. Mossiæ, the dark orange red Saccolabium curvifolium, the Fox-brush Aerides, the lovely Lælia purpurata, Anguloa Clowesi, two good specimens of Lælia cinnabarina, one of which had nine spikes of flowers on it. The white Butterfly plant (Phalænopsis grandiflora), Vanda tricolor and suavis, the bright yellow Oncidium ampliatum, and Aerides virens. Mr. Milford, gr. to E. McMorland, Esq., sent one or two striking varieties of Cattleya Mossiæ in good condition; Cypripedium villosum, with five polished large yellowish brown blossoms on it; Vanda suavis, the singular long-tailed Cypripedium caudatum, the prettily spotted little Odontoglossum nævium, Cypripedium hirsutissimum, Cattleya amethystina, a beautifully flowered specimen of Lælia Brysiana, a kind very much like purpurata, a good plant of which accompanied it; Dendrobium primulinum; Aerides Warneri, and other varieties of that useful genus; Phalænopsis grandiflora, Vanda suavis and tricolor; and one of the better sorts of Lady's Slipper. From Mr. Peed came Acanthophippium bicolor, Lycaste Harrisoniæ, Cypripedium barbatum superbum, Phalænopsis grandiflora, Cattleya Skinneri, C. Mossiæ, Phaius Wallichii, Calanthe veratrifolia, Vanda insignis, and Lælia purpurata.

In the Nurseryman's Class Messrs. Veitch sent fine plants of Dendrobium Farmeri, Cypripedium barbatum superbum, Cattleya intermedia, the Fielding Fox-brush Aerides, also A. virens, Saccolabium retusum, with six spikes of flowers on it; the large blossomed White Butterfly Plant; Lælia purpurata, with four flowers; Cypripedium villosum, Cattleya Skinneri, Vanda suavis, and Saccolabium guttatum, the last bearing no fewer than 11 spikes of blossoms. Mr. Williams, of Holloway, sent Trichopilia coccinea and suavis, Aerides Fieldingi, and others of that genus; Vanda insignis and tricolor, a very dark and handsome variety of Cypripedium barbatum; the large variety of Oncidium ampliatum, a well flowered plant of Calanthe Masuca, the yellow Dendrobium aggregatum, Saccolabium retusum, and Phalænopsis grandiflora. Mr. Woolley, Cheshunt, sent Cypripedium villosum, and other fine varieties of Lady's Slipper; Dendrobium densiflorum, Oncidium filipes and flexuosum, Cattleya intermedia, Vanda insignis, and Dendrobium fimbriatum.

In the class of ten Orchids the principal competitor was Mr. Penny, who contributed among others good plants of Trichopilia tortilis, Lælia purpurata, Cypripedium villosum, Calanthe veratrifolia, and an Oncidium.

Groups of Six Orchids were exhibited by Messrs. Green, Chilman, May, Lakeman, and Page. In these we observed good plants of the different kinds of Aerides, Lælia purpurata, White Butterfly plant, Lady's Slippers, the yellow Anguloa Clowesi, Vanda tricolor, insignis and suavis; Epidendrum crassifolium, Cattleya Mossiæ and other varieties, Saccolabium guttatum, Oncidium ampliatum majus and Sphacelatum, and one or two Dendrobiums.

For the Bishop of Winchester's prize of 5*l.* and 3*l.* for the best and second best Specimen Orchid, one or two competitors came forward; but the plants furnished not being considered sufficiently good, the prizes were withheld.

Azaleas were contributed in great quantities, and, as is usual in May, made a great display. Never have we seen finer plants than were brought together on this occasion by Mr. Turner of Slough, and a second collection from Messrs. Veitch, though smaller plants, was also all that could be wished in the way of fine growth and bloom. Mr. Turner's kinds were Murryana, Iveryana, Præstantissima, Criterion, Chelsoni, the double kind called Glory of Sunning Hill, Extrani, alba magna and Juliana—all enormous plants, and literally loaded with bloom. From Messrs. Veitch came Empress Eugénie, Fentoni, a small flowered vivid orange scarlet; Broughtoni, Magnificent, a good white; Rosea superba, and triumphant. Messrs. Fraser, Cutbush, Gaines, and Rhodes also showed good groups, in which were well-flowered examples of variegata, violacea superba, carnea, Roi Leopold, Optima, Mrs. Fry, a bright rosy purple sort; Exquisite, Sir Charles Napier, Symmetry, Coronata, and Rosy Circle.

Among exhibitions of Azaleas from amateurs were collections from Messrs. Green, Carson, Kaile, Peed, and Page. In these we observed fine specimens of Glory of Sunning Hill, Gledstanesi, Murryana, Iveryana, Broughtoni, Carminata, Delicata, Beauty of Reigate, Præstantissima, the bright yellow sinensis, Coronata, Variegata, Symmetry, Perryana, Sir Charles Napier, Speciosissima, Exquisite, Criterion, Barclayana, maculata, and Fielder's White. Mr. Ivery of Dorking furnished a collection of tall standards, in which were Iveryana, white nicely flaked with pink; Adolphe, semi-double rose; Duchesse Adelaide de Nassau, a fine showy kind; Criterion, Coronata, Duc de Nassau, large vivid rose; Roi Leopold, and Perfecta elegans, orange scarlet.

Groups of Six Azaleas came from Messrs. Brush, Chilman, Ingram, Peed, Penny, and Wheeler. In these, however, we did not find anything different from kinds just recorded. A beautiful seedling Azalea, named Elegantissima, white striped with pink, from Mr. Williams, is, however, a good addition to the class to which it belongs.

Of Rhododendrons in pots there was a nice display from Messrs. Standish, Noble, and Young. In the first group, from Mr. Standish, the more remarkable kinds were Floribundum, violet-shaded crimson, and a most profuse bloomer; Dragon's Blood, a rich red kind; elegans, pink shaded rose; Chancellor, a large light flowered sort with a yellow blotch in the upper petals; Stellatum; Star of England; Ruth, a good light variety; Hesus, a bright crimson sort; Sambo, deep claret; Madame Titiens, rose; Dr. Hogg, rose, large and showy; and Prince Arthur, the last a dark rich Mulberry kind. From Mr. Noble came Aclandianum, spotted rose; Lord Palmerston, crimson, a free flowerer, producing large and fine trusses; Lord Granville, and Duke of Cambridge, two other beautiful bright crimson kinds; Lady Palmerston, lilac, stained in the upper petals with greenish yellow, and prettily spotted; and Floretta, a small crimson variety with whitish throat; Mr. Young's plants were chiefly lilac shaded, hardy looking varieties of Catawbiense. From Messrs. Waterer and Godfrey were some boxfuls of seedling Rhododendrons in a cut state; of these however, we hope to give some account hereafter. Among specimen Rhododendrons contributed by various growers, was a tall straw-coloured sort grown in the shape of a pyramid and very effective; we also observed well flowered plants of Formosum and Edgeworthi. Striatum formosum, from Mr. Standish, was conspicuous; and from Messrs. Veitch came Lady Bowring, Ochroleucum, and Lady Lopez, all handsome sorts.

Roses in pots contributed by Messrs. Lane were magnificent, many of them being tall and loaded with flowers. Among them were charming examples of Lamarque, Jules Margottin, Souvenir d'un Ami, at least 7 feet in height and finely flowered; Charles Lawson, an excellent Rose for pot culture, being very large and double; Paul Perras, Duchess of Sutherland, Chénédolé, Coupe d'Hébé, Comtesse Mole, and Louise Peronny. Mr. William Paul and Mr. Francis also contributed groups, in which were well-bloomed specimens of Baronne Prevost, Souvenir d'Elise, Vardon, a good light kind; Charles Duval, Lord Raglan, dark and rich in colour; the yellow Vicomtesse Decazes, Anbernon, Madame Willermoz, Gloire de Dijon, Madame Hector Jaquin and others, the names of which have just been given. From Messrs. Paul & Son came a collection of small plants well flowered and much admired, and there were also some beautiful boxfuls of Cut Roses. Of the new Rose President we observed some well bloomed plants from Mr. Wm. Paul, and there were also one or two other new Roses which we hope to see hereafter in better condition when the season is further advanced. Mr. Terry, gr. to C. W. G. Puller, Youngsbury, Herts, showed a well flowered group in the Amateur's Class, in which he was the only exhibitor.

Cape Heaths, though not very plentiful, were well grown and flowered. Groups of them were shown by Messrs. Green, Chilman, Baxendine, Jackson, May, Peed & Page. Among varieties we did not observe anything new, with perhaps the exception of Queen Victoria, a handsome variety of the aristata breed. Among other kinds were good bushes of Cavendishi and depressa, tortiliflora, florida, mirabilis, ventricosa coccinea minor, Alberti, vestita rosea, and different varieties of tricolor.

Of Pelargoniums there was a good display; the plants were for the most part well grown, and the quality of the bloom fair for the season. Mr. Turner had excellent plants, and Messrs. Dobson and Fraser also showed good collections. Among the varieties shown were Sir Colin Campbell, Fairest of the Fair, Prince of Wales, Symmetry, Viola, Madame Furtado, Sunset, Vestal, Roseum, Rose Celestial, Leviathan, Aurelia, Fair Helen, Etna, Amy, The Bride, Desdemona, Sanspareil, Osiris, and Mr. Marnock. In the Amateurs' class, Mr. Bailey, gr. to T. T. Drake, Esq., Shardeloes, showed dwarf well flowered specimens, and Messrs. Nye, Shrimpton, and Weir also showed good collections, in which were plants of Osiris, Lady Canning, Ariel, Nonesuch, Etna, Desdemona, Mr. Marnock, Sir C. Campbell, Sanspareil, Prince of Wales, Flora, Fairest of the Fair, Rose Celestial, Conspicuum, Saracen, Peacock, Candidate.

Fancy Pelargoniums were shown in good condition by Messrs. Turner, Dobson and Fraser, Bailey and Weir. In these groups were Celestial, Acme, Clara Novello, Lady of the Lake, Madame Sontag, Negro, Decision, Rosabel, Delicatum, Attraction, Queen of Roses, Perfection, Evening Star, Lady of Lyons, Modestum, and Madame Rougière. Of Seedling Pelargoniums several promising kinds were exhibited; but as they will be in better condition next month, we defer all critical remarks till then. The best were Conflagration, Improvement, and Belle of the Ball, from Mr. Nye; Conqueror of Europe (Zonale), from Mr. Williams; Nesfield (Zonale), from Mr. Turner; Waltham Pet from Mr. Wm. Paul, and Royal Albert from Mr. Hoyle. From Mr. Elphinstone, Nurseryman, Norwich, came a white-flowered horseshoe sort, and a dark kind belonging to the Nosegay breed, both of which are said to stand forcing well.

Cinerarias were shown, but with the exception of a group from Messrs. Dobson they were not in good condition.

Of Calceolarias there were one or two collections of

half shrubby kinds from Messrs. Burley and others. With the exception however of Magenta, Queen of Oude, King of Sardinia, General Havelock, Primrose, Perfection, Augustifolia superb, Victor Emmanuel, Emperor, and one or two other well known kinds, we did not notice anything very good or striking. From Messrs. Veitch however was a clear yellow kind from the Chilian Andes, which may prove useful as a breeder.

Among Petunias, Madame Ferguson was conspicuous, a tall plant of it being shown, and although with hundreds of blossoms on it, not one evinced the least disposition to sport; on the contrary the five bright violet stripes radiating from the centre to the edge on a pure white ground exhibited in every case the greatest possible regularity and distinctness. From Mr. Smith of Hornsey also came a pretty variety named Eliza Mathieu, and Emma and Ruby from Mr. Bull were likewise promising kinds.

Among plants remarkable for the singularity or beauty of their leaves there were some fine things from Messrs. Veitch; Caladiums especially were good; the singular looking C. Veitchii being apparently the greatest favourite with the crowd; there were also some noble examples of the variegated Alocasia macrorhiza, and of A. metallica, whose great bronzy dish-like leaves were the admiration of everybody. These were shown in handsome porcelain vases. Of these kinds of plants Mr. Bull had likewise a good collection, in which were Palms, variegated Yuccas, Aloes, Cyanophyllums, Rhopalas, Grevilleas, Cordylines, Ferns of large size, variegated Cyperus, and Begonias. From Messrs. Lee also came an interesting group, in which Cordylines were conspicuous; also Caladium argyritis, Oreopanax peltatum, and the reddish brown-leaved Coleus Verschaffelti. From Messrs. Carter also came fine foliaged plants, among which was a quantity of small plants of their reddish brown leaved Fuchsia Meteor. Mr. Williams likewise showed good examples of Ferns and of most of the more select handsome-leaved plants of other kinds, together with groups of variegated Orchids and Lycopods, also a nice plant of Sonerila alba under a bell glass.

Of new or rare tender plants in flower Messrs. Veitch sent Sarmienta repens, a scarlet-flowered small-leaved plant suitable apparently for baskets or rockwork under glass; Lælia Schilleriana, and Stenogaster multiflora, a larger-flowered kind than S. concinna, and equally free flowering. From Messrs. Jackson, of Kingston, came Clerodendron Thomsonæ, a climbing plant with scarlet and white inflorescence, but not sufficiently in bloom to enable us to form any correct idea of its real merits. Dendrobium Salaccense, a weakly plant, apparently lately imported, and, as a matter of course, imperfectly in bloom was furnished by Messrs. Low. A spotted cream-coloured Anguloa, a variety of uniflora, came from Mr. Williams; and Messrs. Low sent a panful of a little dwarf Cœlogyne in the way of fimbriata.

Of new or rare tender plants not in flower Messrs. Veitch contributed Sphærogyne latifolia, a handsome-leaved plant in the way of Cyanophyllum magnificum; Musa vittata; a stately Plantain, with large leaves variegated with white; and Ficus Cooperi, a greenhouse plant with large dark green glossy foliage veined with red. Mr. Bull had Cibotium princeps; Serissa fœtida marginata, a neat little shrub with small green leaves narrowly bordered with white; and Musa vittata. The last named plant was also shown by Messrs. Low, Lee, Jackson, and others. Among New Ferns, of which several were shown, was one from Mr. Cole, nurseryman, Manchester belonging to the variegated class; as regards position it seemed to be intermediate between argyræa and tricolor; it is apparently a free grower; but, as shown, the variegation was scarcely sufficiently attractive.

Of new or rare hardy ornamental plants, Messrs. Veitch furnished Thujopsis lætevirens, recently described in our columns; Ourisia coccinea, from the Chilian Andes, a herbaceous plant with drooping tubular scarlet blossoms supported on slender stalks rising from amongst compact growing tufts of Primula-like leaves; a Japanese Dammara; a pendulous growing Biota and Planera acuminata, noticed fully at page 428. From Mr. Standish came Polystichum concavum, a handsome Fern with large spreading leaves; a new variegated Japanese Aucuba, and the gold variegated variety of Osmanthus ilicifolius.

In addition to subjects just alluded to, Mr. Standish had also a nice group of plants, chiefly Japanese, among which were Retinospora pisifera aurea, a variegated Cerasus, Eurya latifolia variegata, a new Privet with round stiff coriaceous leaves; Thujopsis Keteleeri variegata, Microlepia scabra, and other Ferns; Ilex Fortuni, a variegated variety of the Green Tea plant; a Berberis, with large handsome foliage; Juniperus japonica, a variegated Eleagnus, and other plants of great interest.

A somewhat similar but even larger collection of Japanese plants was likewise furnished by Messrs. Veitch, who contributed among other things Abies firma, Pinus densiflora, Sciadopitys verticillata, variegated Thujopsis dolabrata, Retinospora obtusa argentea, R. lycopodioides, Thuja falcata, Juniperus rigida, a variegated Podocarpus, the singular dwarf Thuja pygmæa, Abies Alcoquiana, the new Japanese Aucuba, variegated varieties of Osmanthus, Eurya, Euonymus and Cape Jasmine, a gold striped Carex, variegated Camellia, new variegated Farfugium very different from grande, Ficus, Privet, Bamboo, and Hemerocallis; together with valuable Ferns and other plants lately introduced from Japan by Mr. J. G. Veitch.

Accompanying these were also various specimens of Japanese woods, including the large and beautiful plank of Planera acuminata, alluded to at p. 428.

Among Miscellaneous subjects were two plant cases on Miss Maling's plan from Mr. Pickering, tastefully filled with choice Ferns, Orchids, and other plants by Mr. Bull. From Mr. Daniels was a large vaseful of Bougainvillæa speciosa, which is stated to be blooming again at Swyncombe as beautifully this year as last. Of Tulips and one or two other florist flowers there were good stands of cut blooms, and Messrs. Downie, Laird, and Laing had a pretty fancy Pansy named Aurea marginata.

As regards Lady Dorothy Nevill's prizes offered for groups of flowers arranged for the decoration of a drawing room, the first award was again carried off by the Misses Marsh of the Lord Chamberlain's offices, St. James's Palace, the design this time being flat glass baskets filled with Fern leaves, Lilies of the Valley and Rose buds, tastefully and beautifully arranged. The second prize was won by Mrs. James Henry Lermitte of Finchley, who contributed a very tasteful design ornamented with chains and set on a marble pedestal supporting Cornucopia-like vases filled with Pelargoniums, Roses, Fern leaves, Lily of the Valley, and other flowers of that description.

Two other sets of designs for table decoration, one furnished by Mr. Foster, the Marquess of Lansdowne's House Steward, the other by Mrs. R. F. Veitch of Exeter, were commended. For particulars respecting these and others however, we must refer to a letter in another column by a "Drawing-room Correspondent." One thing seemed evident, viz., that simplicity of design, tastefulness of arrangement and materials found more favour, as indeed they should have done, than gaudy displays.

The competition among Nurserymen for prizes offered for the best groups of flowers arranged in masses for the decoration of the conservatory excited considerable interest. The first prize in this department was carried off by Mr. Turner, of Slough, who furnished a sloping bank of ordinary greenhouse and fine foliaged plants edged with variegated Geranium and Lycopod. Mr. Videon, Maida Hill, also showed a good sloping bank of flowers, as did likewise Messrs. Smith, of Dulwich. A group from Mr. Bull, set flat on the ground and traversed by little gravel walks, was by no means unattractive. Other collections also placed flat on the ground, from Messrs. Veitch and Mr. Young, gr. to R. Barclay, Esq., also showed taste and neatness of arrangement. Altogether these collectively formed no unimportant portion of the Show.

Of the implement show held on this occasion particulars are given in our advertising columns, where are also recorded opinions of the sub-committee appointed to examine the exhibitions on the different subjects submitted to its judgment.

Notices of Books.

The *Botanical Magazine* for May contains the following figures:—*Rhododendron arboreum*, v. *limbatum*, a variety raised from seeds obtained from Sikkim, and having the limb of the corolla rose-coloured, and the throat and inner part of the tube whitish. It is recommended for its early free-blooming habit, and at Kew was flowered in a cool conservatory.—*Limatodes rosea*, a lovely Orchid, the charming delicate rose-coloured flowers of which are certainly not flattered in the picture before us. The adaptability of this plant for cultivation as a winter decorative object, has been already pointed out at p. 22, to which place we may refer.—*Clerodendron Thomsonæ*, a very remarkable twining species of slender habit, introduced to the Botanic Garden at Edinburgh, from Old Calabar. It is a stove climber of moderate extent, quite smooth, with opposite oblong-ovate acute leaves, and lax dichotomous panicled cymes of flowers, of which the calyx is large, white, inflated and five-angled, and from this protrudes a deep scarlet corolla. "The contrast of colour presented by its large white calyx and crimson corolla renders it a desirable plant for cultivation."—*Hæmanthus cinnabarinus*, a bulbous plant from West Tropical Africa, having a few oval-oblong acute leaves, and cinnabar red flowers; it is much like H. multiflorus except that in the latter the scape springs up laterally outside the leaves, but in the present plant it forms the axis or centre of the plant with the leaves surrounding it.—*Heliconia metallica*, a graceful stove plant, from Santa Martha, 6 to 8 feet high and resembling a slender Musa; the leaves oblong acuminate, a foot and a half or two feet long, velvety green above, and metallic purple beneath, the flowers handsome in an upright spike, scarlet tipped with greenish white.

The *Florist* and *Pomologist* has figures of two of the new race of Pompon Dahlias called Star and Little Dorrit, and of a fine looking Cherry of the Duke race, called Nouvelle Royale, and described as a first-rate sort, ripening at the end of July and continuing in use till the middle or end of August. Among the communications are some sensible remarks by Mr. Standish, on Bottom-heat, or the application of artificial heat to the roots of fruit trees, such as Grapes, Peaches, &c. Writing about Grapes, Mr. Thompson, of Dalkeith, in reference to a remark of Mr. Tillery's in a former number, to the effect that he had tasted no Grapes ripened in January or February comparable in flavour to well kept Muscats, West's St. Peters, Tripolis, and Lady Downe's Seedlings, proposes to send newly ripened Black Hamburghs to any of the January or February meetings of the Royal Horticultural Society's Fruit Committee, to test against the best old black kept Grapes Mr. Tillery can bring out. The Committee to decide what are best as to flavour. This is putting the question of new versus old Grapes to a practical test. Mr. Coleman, of Eastnor Castle, writing of the hardiness of Californian and Japanese trees, confirms the hardiness of the latter. Out of 30 Japanese shrubs and Conifers, he has but one loss to record from the late severe winter, namely Ligustrum japonicum, which, planted below the level of the lake, was killed. This result, he thinks, must be highly satisfactory to lovers of hardy trees, at a time when, regardless of expense, so many gems promising to surpass all we have yet seen in the way of Conifers, are being introduced from that country. Mr. Meredith, of Garston, has also an article on the cultivation of the Grape Vine.

The last issue of *Gossip of the Garden* is a good deal occupied with the Tulip controversy, on which there are long papers by Dr. Hardy and Dr. Horner. Mr. Cranston has some notes on New Roses, in which he says that of 40 varieties introduced during the autumn of 1860 the following nine may be taken as the cream, according to his experience at Hereford:—*Teas:* La Boule d'Or; *Bourbons:* Catherine Guillot; *H. Perpetuals:* Duc de Cazes, Gen. Washington, Jean Bart, John Waterer, Madame Furtado, Madame Melanie, and Princesse Mathilde. All these he regards as first-rate varieties, as will be manifest, he observes, at the forthcoming Rose shows. There is also an account of the best and newest Hyacinths grown round the metropolis.

Garden Memoranda.

Biddulph Grange, the Residence of James Bateman, Esq.—It is now nearly six years since a lengthened description of the gardens at Biddulph Grange appeared in these columns; and since that time a very large amount of additional ground has been enclosed and arranged, including many novel and striking features. The death of Mr. Bateman, sen., has enabled his son to dismantle the old hall at Knypersley, which had become spoiled, as a place of residence, by the proximity of large iron works and coal pits, and to remove numbers of its architectural and other ornaments to Biddulph Grange, though the kitchen gardens and fruit houses at Knypersley are still retained, and still continue to supply the family at the Grange. The acquisition of additional land, too, has, in some instances, led to other alterations. And, as the whole place forms one of the most remarkable examples of artistic and practical gardening in the country, with respect especially to the arrangement and cultivation of hardy plants and to garden decoration, it has been thought that an extension of the previous account, to embrace the more recent changes, would be interesting to both the amateur and the professional reader.

In order to give the necessary distinctness and significance to this description, however, and to convey some more definite idea of a design which, after all, neither words nor plan can accurately portray, an engraving of the principal part of the grounds is annexed. The smallness of the scale of this plan is of course fatal to anything like perfect clearness. And no representation could do any sort of justice to the wonderful variety of surface which these gardens present. But by carefully following the lines indicated on the woodcut some sort of order will be elicited from the apparent confusion of parts, and the descriptions of 1856, as well as those which are now to be given, will become much more intelligible and real.

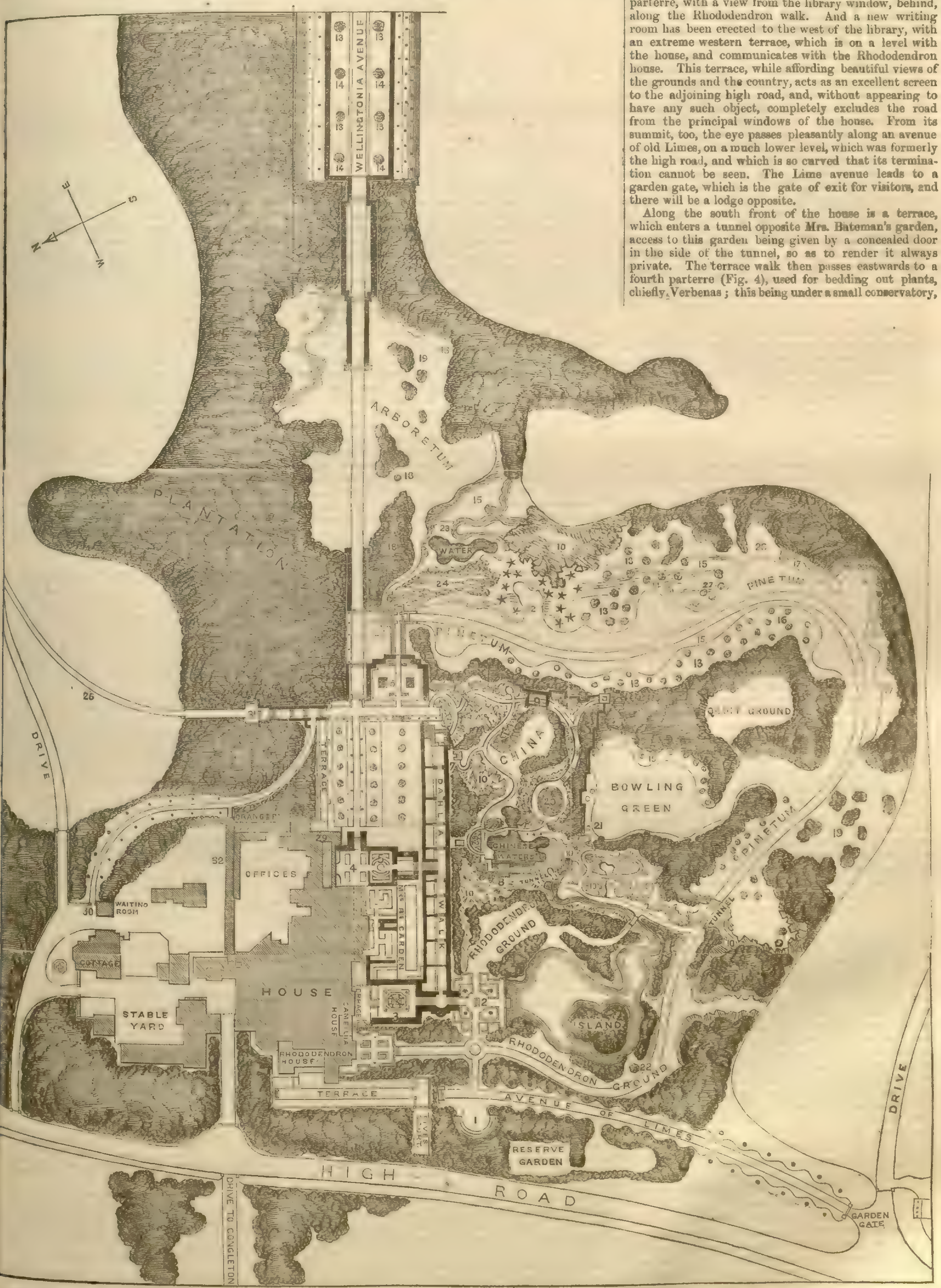
To proceed first, then, with a general notice of the plan, the figures of reference upon it will require explanation. The bottom of the plan, as will be seen, is nearly west. Hence the house is entered from the north side under an archway, which forms an introduction to a court, the stable yard and offices lying to the north, the house offices being in a separate court farther east. The back entrance, and the mode by which the public are admitted to the gardens (30), are past the gardener's cottage and the waiting room to the north. The chief entertaining rooms of the house are to the south, except two dining rooms, one of which faces the north, and a new and larger one to the east, both looking into an ornamental court near the centre of the house, that is not shown on the plan. The billiard-room also is lighted from the west by communication with the Rhododendron house, which is attached to its western side, with only a glass division.

The details of the several departments will be hereafter given. Fig. 1 refers to a semicircular bank, in raised stages or steps of earth, and called "the Rainbow;" the different steps or platforms being planted with a row of strong-coloured Rhododendrons or Azaleas. The sorts are not yet sufficiently selected; but it is intended to have the colours all harmonising, and to have such kinds as will all bloom at the same

period. Fig. 2 is a small Italian parterre surrounded with stone balustrade, having clipped Yew borders, and four Araucarias in the centres of the four compartments. Another parterre is at Fig. 3, and is arranged in a kind of mosaic pattern, with Box edgings and coloured sands. A glance at the flights of steps shown on the plan will exhibit the great difference of level between these parts, the ground descending rapidly towards the south. To the north of Figs. 2 and 3 is the morning room of the house, with the window in the line of the steps, and looking across the water to the Rhododendron ground.

Westwards from Fig. 3 is another new terrace parterre, with a view from the library window, behind, along the Rhododendron walk. And a new writing room has been erected to the west of the library, with an extreme western terrace, which is on a level with the house, and communicates with the Rhododendron house. This terrace, while affording beautiful views of the grounds and the country, acts as an excellent screen to the adjoining high road, and, without appearing to have any such object, completely excludes the road from the principal windows of the house. From its summit, too, the eye passes pleasantly along an avenue of old Limes, on a much lower level, which was formerly the high road, and which is so carved that its termination cannot be seen. The Lime avenue leads to a garden gate, which is the gate of exit for visitors, and there will be a lodge opposite.

Along the south front of the house is a terrace, which enters a tunnel opposite Mrs. Bateman's garden, access to this garden being given by a concealed door in the side of the tunnel, so as to render it always private. The terrace walk then passes eastwards to a fourth parterre (Fig. 4), used for bedding out plants, chiefly Verbenas; this being under a small conservatory,



on the level of the chamber floor of the house (Fig. 29) and also under Mrs. Bateman's boudoir, which is over the tunnel, and looks to the east, up the long walk through the Wellingtonia Avenue. To the south, again, there is a small Rose garden (Fig. 5), entered through a Rose arch, and surrounded by Yew hedges, these being denoted by thick black lines, as in other cases, and being clipped to various forms and heights, according to their object. Passing out of the tunnel to the east, the ground rises rapidly in the direction of the Wellingtonia Avenue, and is broken by several flights of

steps. But after leaving the Wellingtonia Avenue, which is stopped by a very large and handsome vase, this walk ascends a hill so abruptly, through a mass of old plantation, that being covered with the yellow sandstone of the district, and terminated by a rocky knoll through which there is a winding invisible tunnel, the walk presents the appearance of a large obelisk, backed by a dark hill, and has a most curious and startling effect. Between Figs. 4 and 6 is an ornamental Cherry orchard, the trees being planted on little mounds, surrounded and supported with closely clipped Cotoneaster, and turned into a pretty pendent bell-shape, the intermediate spaces being Grass. There are little terrace banks, also, by the sides of the walk, which are similarly clothed with Cotoneaster. And beneath the high terrace on the north, which is on the level of the chamber floor of the house, is a border for choice herbaceous plants. The view towards 31, which is a fine Roman tripod, is up a long series of steps, confined with evergreens on both sides, the tripod standing out against the sky, and the walk beyond (25) is a return walk from the wood, after passing to the top of the walk behind the Wellingtonia Avenue.

Proceeding to the south, and turning abruptly through a Beech hedge to the east, we enter the Egyptian Court, Fig. 6, shut in by Yew hedges, and decorated with stone sphinxes. There are obelisks of Yew in the centre, and a Yew pyramid over the tunnel to the east, which last is entered through a fine Egyptian doorway. This tunnel leads to a somewhat darkened apartment, with cavern views, &c., and there are other adjoining rooms adapted for rural fêtes. The whole opens out, through a porch in the style of an old Cheshire black and white timbered cottage, towards the Pinetum, which pursues its way, on either side of a curved walk, through irregular mounds clothed with Conifers, to a tunnel which separates it from the Rhododendron ground.

By another route from the terrace to the west of the Egyptian Court, a singular and most characteristic Chinese scene is approached, through an admirable root garden. In this Chinese department, all the elements of a genuine Chinese garden, and much of its peculiar vegetation, are collected. And this will be described, with an enlarged separate illustration, at a future period. At 7 is an elevated tower on high rocks. A Chinese temple and terrace occur at 8. Some ruins, and parts of a supposed Chinese wall, which also extend as far as the tower, are shown at 9. Elevated rockwork is represented in several parts by Fig. 10. The plot marked 20 is devoted to Moutan Pœonies.

From 8 there is a winding cavernous sort of tunnel, opening out into a rocky ravine, through which a stream also flows from the Chinese waters. This ravine (11) was formerly used mostly for Sikkim and Bhotan Rhododendrons, which have been removed to a conservatory adjoining the house; and the spot is now most appropriately occupied by Ferns, mingled with Rhododendrons and other evergreens; sedgy plants occupying the marshy parts, and the margins of the stream. The paths in this ravine wind about over rocks in the most varied and natural manner, and communicate ultimately with the Rhododendron ground near the tunnel.

In the Pinetum Fig. 12 points to a group of Araucarias in admirable health, the banks on which they grow being carpeted with heather. Another group of Deodars (13) is similarly placed; but the figure (13) likewise refers to alternate Deodars and Wellingtonias (14) in what is called the Wellingtonia avenue, of which a plan and section are yet to be given. 15 and 16 are groups of Pines (principally Austrian Pine and Pinus excelsa) on heather; though there are also groups of Firs and Cedars represented by the same figure. A cluster of Pinus Cembra is placed at 27. A great variety of Oaks is collected about 17, and backed by evergreens. At 18 there are masses of Maples and other plants, such as Liquidambar, having rich autumn-tinted foliage. Groups of various kinds of Cratægus are scattered about at 19. At 21, which is a very sheltered nook, the hardiest of the Mexican Pines are distributed. An old Ash tree, at 22, has an awning, in the shape of a large umbrella, attached to its stem. Various sedgy plants, and jungles of Rubus leucodermis, Osmunda and Pampas Grass, surround the small pool of water in the Arboretum, and are denoted by Fig. 23. Elevated masses of evergreens are placed at 24, and masses of double Furze at 26. Around 28 is a bank of evergreens, to cover the buildings there. And 32 is a geological gallery, so contrived that the public may be allowed to pass through it on special occasions, without entering the house. *E. K.*

(*To be Continued.*)

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—As recommended last week pay great attention to plants for autumn and early winter decoration. Let them have plenty of pot-room, good rich compost to grow in, a moist atmosphere, and plenty of space for perfect development, regulating the temperature according to the nature of the plant, and they will make rapid progress. Mealy bug and thrips will require to be looked after; the utmost diligence must be used to keep these in check. If among stove plants there are any sickly or badly rooted specimens they should be frequently examined for red spider; otherwise they will become a nursery for that pest, and from them it will soon spread to adjoining plants. See that young growing stock is not allowed to suffer for want of pot room; attend carefully to watering, giving manure-water to all plants in free growth that require it. Gardenias and other things that have been in the conservatory while in bloom should be replaced in heat as soon as their beauty is over, in order to allow time for getting their growth ripened. Orchids in a growing state will require encouragement. Shading must be promptly attended to during this bright weather. Allow, however, as much light as they will bear without injury, using a very light screen, and that only when absolutely necessary. Keep them clear of insects and dust by frequent syringings or spongings.

FORCING DEPARTMENT.

Pineries.—Such varieties as are at all liable to spoil at the bottom before the upper pips are coloured should now be kept as dry as possible immediately they show the least signs of colouring, keeping the atmosphere also as dry as can be done without injury to the rest of the stock.

Vineries.—Where early Grapes are ripe, the fermenting material which has been kept on the border till this time may be removed; as the roots are frequently found close to the surface, however, after the litter is removed, spread a little rotten dung and loam over the border, to preserve them from the sun. If the Vines are at all exhausted, either from the poorness of the border or over-cropping, two or three good soakings of rich manure water should be given after the Grapes are cut; this will be of great benefit to the Vines, and if care is taken to preserve the leaves green and healthy for as long a time afterwards as can be done without infringing on the rest they ought to have, they will have time to form a fresh stock of roots, and to prepare themselves for another season's work. Vines to be fruited in pots are useful auxiliaries where new houses have been planted, and the permanent Vines are not yet in a bearing state; they are likewise a source of enjoyment to a numerous class of amateurs. Those therefore intending to grow plants for next season's fruiting should now select the strongest struck from the present year's eyes, and pot them at once into their fruiting-pots, which need not be more than 12 inches wide; or, some of last season's plants may be potted for the same purpose. Use rotten turf alone, and trust to watering with liquid manure, for giving them the necessary stimulus; they should be trained close to the glass, and stopped when they have attained the desired length.

Melons.—Early fruit will be swelling, and if trained to trellis-work, they should be carefully suspended, either on a piece of thin board, or in a small net. Pay especial care to preserve the foliage healthy, and encourage at this stage a fresh growth, in order that immediately after the first crop is cut a successional one may be advancing to supply its place. This can more effectually be done in houses than in frames. The heat, both bottom and top, must be kept steadily up, in order that no check may prevent the gradual progression of the fruit. Pay the same attention to later crops, for a few days' neglect is often the cause of failure. Use pigeon dung or weak guano-water occasionally. Now is a good time to make a sowing for the autumn crop, for which one of the best is Fleming's hybrid Dampsha.

Cucumbers.—Encourage young plants with a moist growing atmosphere, so as to get them into active growth quickly; but plants that are fairly established should be kept cooler, admitting air on every favourable opportunity, in order to secure short-jointed fruitful wood.

Figs.—Trees that have been kept dry while ripening the first crop, and are now cleared, should be well watered at the root, and if there is any appearance of red spider, the leaves should be thoroughly washed with the engine.

FLOWER GARDEN AND SHRUBBERIES.

In this department the next few weeks will be devoted to filling up beds and clumps intended for summer and autumn display; and now that a decided change has taken place in the weather, every exertion should be made to get planting out completed with all possible dispatch; premising that plants intended for each bed have been previously determined, and hardened off, no great difficulty will be met with. Some allowance must, however, be made in regard to the time when it is wished to have the principal display; if early, the plants will require planting thicker, and need not be stopped; if not before a later period in the summer, somewhat thinner; the flower-buds should be pinched off as they appear, till the plants have filled the beds. Two objects are principally held in view in arranging the planting; one is to produce a striking effect by employing plants only of decided colour, principally red, blue, and yellow, using white for separating the different divisions. When the colours are well contrasted, this plan is very effective, particularly when viewed from a distance, and is well adapted for situations where the beds are not numerous, and where there is a considerable breadth of either Grass or gravel to overpower. In single beds or in a mixed flower garden however a deal may be accomplished by using a decided colour for the centre, and surrounding it with plants of the same kind, but of less brilliancy, which should gradually diminish from the centre as a point to the sides. This, with well contrasted edgings, particularly for the larger beds, will be found more generally pleasing than where masses of one colour only are employed. Select a shady border, and give it a good dressing of rotten dung or leaf soil, slightly forked in, for planting with the runners of the different kinds of Violets for forcing; the Neapolitan is the best for frames or pots, and the runners will now be found in proper state for removing; plant them 8 or 10 inches apart; water them abundantly in dry weather, and pinch off the runners as they appear; if the soil is rich and open, they will grow into stout bushy plants by the autumn, and may then either be potted or planted into pits for forcing.

HARDY FRUIT AND KITCHEN GARDEN.

The present is a most critical time for fruit trees; those against walls require to be constantly looked over, not only to perform the necessary disbudding, &c., but to keep down different aphides, which, if allowed to get the upper hand at this season, would irretrievably ruin them. The nights are still comparatively cold, and therefore washings with the engine should be done early enough for the leaves to become dry before evening, or mildew may intervene. If the engine prove insufficient to eradicate these pests, tobacco water and soapsuds should be occasionally applied. In disbudding, it will be better to pinch out the shoots not wanted, leaving two or three joints, and as many leaves, than to take them close off the parent branch. In many kinds of fruit trees, such will form useful spurs, and where they are likely to cause a crowded state of the wood, they can (during the summer) be cut clean out with the knife; this, however, will rarely occur if the tree has previously been well managed. Strong gross shoots should be stopped, to throw the sap into the weaker ones; and this should be again repeated on the lateral shoots, to produce a uniformity of growth, and a well-balanced tree. Constant watching through the summer months will be requisite to effect this, if a disposition to grossness prevails; and root pruning in the autumn should always form a part of the practice in bringing too vigorous growing trees into a bearing state.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending May 21, 1862, as observed at the Horticultural Garden

May.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind	Rain.
Thurs. 15	17	29.889	29.756	60	46	53.0	55	53½	S.W.	.46
Friday 16	18	29.908	29.813	67	40	53.5	54	53	S.W.	.00
Satur 17	19	30.100	30.045	76	41	58 5	55	53	S.W.	.00
Sunday 18	20	30.113	30.009	80	42	61.0	56	54	N W.	00
Mon. 19	21	30.052	29.884	80	40	60.0	58	55	S.W.	00
Tues. 20	☾	29.767	29.613	70	41	55.5	58	55	S W.	.00
Wed. 21	23	29.646	29.531	63	35	49.0	57	55	W.	.18
Average		29.925	29.807	70.8	40.7	55.7	56.1	54 1		.64

May 15—Densely overcast, drizzly; heavy and constant rain; damp and cold.
— 16—Hazy and damp; overcast; fine at night.
— 17—Fine; very fine; densely overcast.
— 18—Very fine throughout.
— 19—Foggy; very fine; hot; fine throughout.
— 20—Fine; overcast; partially overcast and very fine; cool at night.
— 21—Densely clouded; heavy rain and brisk wind; showery, cold at night.

Mean temperature of the week ½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending May 31, 1862.

May.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 25 .	66.5	44 5	55 5	15	0.64 in	3	10	3	2	1	11	5	1
Mon. 26 ..	66.9	43.3	55.1	16	0.48	2	10	4	1	3	11	3	2
Tues. 27 ..	68.4	45.2	51 8	20	0.63	2	10	5	2	2	10	2	3
Wed. 28 ..	67.2	44 7	55.9	14	0.97	—	10	8	1	5	6	4	2
Thurs. 29 ..	66.3	44.5	55.4	13	0.97	3	12	5	2	6	5	4	1
Friday 30 ..	67.8	44.8	56 3	14	0.34	3	8	[illegible]	—	3	8	4	4
Satur. 31 ..	69.0	45.4	57.2	14	0.48	2	8	6	1	5	8	4	3

The highest temperature during the above period occurred on the 28th, 1847—therm. 91 deg.; and the lowest on the 31st, 1857—therm. 32 deg.

Notices to Correspondents.

Ferns: *X.* Asplenium bulbiferum and Platyloma falcatum are hardy greenhouse species. The Blechnum is a stove plant, scarcely succeeding in a greenhouse. There are no such Lastreas as those you mention, and you must send specimens of them to enable us to help you.

Names of Fruits: *J J R.* Your Apple with a large hollow eye, smooth skin, orange yellow with blush of red, is not known. Being a good keeper, it may prove to be a useful kitchen Apple.||

Names of Plants: *G.* 1. Pernettya mucronata; 2. Pyrus intermedia—*H B.* Anagyris indica, alias Piptanthus nepalensis.—*T F.* Seems to be Dendrobium macrophyllum.—*J D Mitchell.* 1, Cytisus Laburnum; 2, C. Adami; 3, C. purpureus. This is a very curious but perfectly well-known instance of sporting. Its history will be found in our former volumes, where it has been discussed over and over again.—*A C.* Some Seaweed.—*J S C.* Berberis cretica.—*S H.* Berberis cretica, Berberis ilicifolia, and some Spartium, the specimen of which is not good enough to be identified.—*N Burges*: Salix aquatica.

Roses: *J C L.* Your Rose leaves are infested with the common white mildew, the only known remedy for which is flowers of sulphur, not ground sulphur. Your sulphur is, however, quite right, as appears from a microscopic examination of what is left on the leaves; we would therefore recommend you to persevere in its use. *M. J. B.*

Tents: *Hillingdon.* Mr. Edgington had nothing to do with the construction of the new tents at South Kensington. He merely furnished the covered ways. The tents themselves are the production of a person named Orchard.

Misc.: *H W C.* Messrs. Loddiges Nursery no longer exists. Its site is covered by houses.—*G Turner.* We are unable to name a midland locality for Botrychium Lunaria. Our own specimens are from St. Andrew's Links in Fife. The seed you ask for may be had of the principal seedsmen unless they are sold out.

THE LONDON MANURE COMPANY
(Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. Macadam, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—

	£	s.
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6	6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES ..	5	5
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8	0

These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.
BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.
Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures.'
Extract of Opinion from Dr. Voelcker, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a percentage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to
John Fowler, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

WHY NOT PRESERVE YOUR HAY?
Benjamin Edgington, Rick Cloth, Marquee, and Tent Manufacturer, 2, Duke Street, London Bridge, S.E.
SECOND-HAND MARQUEES, TENTS, and RICK CLOTHS, at greatly reduced prices.
An Illustrated Catalogue sent free by post.
B. E. supplied the Flags and Awnings at the Great Exhibition; also the Transparent Awning under the Western Dome
Address Benjamin Edgington, 2, Duke Street, Southwark, S.E.
[No other Establishment.]

HENRY J. MORTON AND CO.,
2, Basinghall Buildings, Leeds.
Galvanised Iron Water Cistern
for Cottage Houses, &c., to contain 50 gallons, 26s.; 80 gallons, 31s. each; and 140 gallons, 37s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.
Galvanised Iron Pumps
for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.
Galvanised Iron Swing Water Barrows
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35s. 0d. each.

Oil Paint no longer Necessary.
HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which Hill & Smith will forward on application.
Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.
Apply to Hill & Smith, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

Grass Mowing Machines.
BURGESS AND KEY'S GRASS MOWING MACHINES are constructed to cut the heaviest crops of Grass, both the wheels being geared, and sufficient weight in the machine to give grip on the ground. As there is every prospect of the Grass being heavy this season, B. & K. draw special attention to the following Extract from the Report of the Engineer of the Royal Agricultural Society of the trial of Mowers at Leeds: "but there is reason to fear that the Machine [Wood's] would be too light for heavy crops."
"Burgess & Key's was strong, well made, and suitable for the cutting of heavy crops."
Price of Burgess & Key's Mower, 25l. Combined Reaper and Mower, 30l.
Burgess & Key, 95, Newgate Street, London, E.C.

JOSEPH HAYWOOD AND CO.,
Manufacturers of
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kinds of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield.

JOHN WARNER AND SONS,
Bell and Brass Founders to Her Majesty,
Hydraulic Engineers, Braziers, &c.,
8, Crescent, Cripplegate, London, E.C.

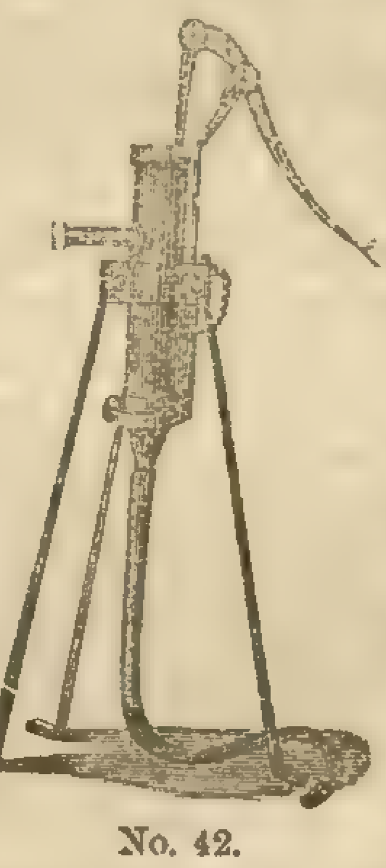
No. 35.

WARNER'S PATENT CAST-IRON PUMP, for raising Water from Wells not exceeding 25 feet in depth.

Diameter of Barrel.	Height.		£	s.	d.
2½ in. short	1 ft. 7 in.	Fitted for lead,	1	1	0
2½ ,, long	3 ,, 3 ,,	gutta percha	1	10	0
3 ,, ditto	3 ,, 6 ,,	or cast iron	2	4	0
3½ ,, ditto	3 ,, 6 ,,	flanged pipe	2	9	0
4 ,, ditto	3 ,, 6 ,,	as required.	2	18	0
2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing			2	0	0
2½ ,, long ditto ditto ditto			2	14	0

This Pump is fitted with J. W. & Sons' Patent Vibrating Standard, Improved Revolving Cap, Metal Bucket, and Brass Suction Valve. By means of the Revolving Cap the handle can be shifted to the right or left hand, or opposite the nose, as desired.

WARNER'S IMPROVED LIQUID MANURE or GENERAL PORTABLE PUMP.


No. 42.

This Pump is fitted with Warner's Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

	£	s.	d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2	15	0
If fitted with Barrel of Planished Copper	3	4	0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2	9	0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires, in either 10, 12, or 15 feet lengths .. per foot	0	2	5

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2l. 5s.
Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.
J. W. & Sons' Illustrated Catalogue forwarded post free on application.
The above may be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, John Warner & Sons, 8, Crescent, Cripplegate, London, E.C.

Land Drainage.
WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.
Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.
No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.
Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.
Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.
Applications to be made to William Clifford, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To Landowners, the Clergy, Estate Agents, Surveyors, &c. in England and Wales and in Scotland.
The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

MONEY to LEND to Farmers of responsibility, upon personal securities, stock, &c., in sums from 200l. to 1000l., for long or short periods, from 5 per cent.
Apply by letter to Mr. Goodall, 12, Beaufort Buildings, Strand, London, W.C.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. Humbert, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

MR. JAMES BLACK, formerly Factor for Sir Norman Macdonald Lockhart of Cornwarth, Mr. Gordon of Ellow, and Mr. Cunningham of Larnshaw, has been induced to commence business in London as a LAND AGENT, VALUER, and DRAINAGE ENGINEER, and trusts from his large and varied practical experience to merit the patronage and support of Landed Proprietors and the public in general.
20, Great George Street, Westminster, S.W.

THE SPARKENHOE FARMERS' CLUB will hold their GREAT ANNUAL MEETING on the Race Course at Leicester, in conjunction with the Autumn Show of the Leicester and Leicestershire Floral and Horticultural Society, on SEPTEMBER 2, 3, and 4, under the patronage of the Mayor and Corporation.
President.—The Right Hon. Lord John Manners, M.P.
Supported by the Nobility, Clergy, and Gentry.
Lady Patroness.—The Countess Howe.
Prizes about 1100l. in value will be awarded, including the following:—

	£	s.	d.
Steam Cultivation	£70	0	0
Implements, Ploughing, &c.	80	0	0
Best Fat Beast	35	0	0
Best Store Beast	30	0	0
Best Long-woolled Sheep	15	0	0
Best Short-woolled Sheep	15	0	0
Best Entry of Pigs	18	0	0
Best Nag Horse	25	0	0
Best Cart Horse	25	0	0
Poultry, Rabbits, &c.	70	0	0
Cheese, Corn, Wool, and Roots	130	0	0
Fruits, Flowers, Plants, and Vegetables ..	160	0	0

Prize Lists and further particulars may be had on application, and all Certificates of Entry must be returned to me on or before August 7.
Thomas Davenport, Secretary and Collector.
Ashby-de-la-Zouch, May 10.

YORKSHIRE AGRICULTURAL SOCIETY.—
GREAT SHOW AT YORK.
AUGUST 6, 7, and 8. For Prize Sheets apply to
John Hannam, Secretary.
Kirk Deighton, Wetherby, May 17.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.
A LECTURE, by Dr. Voelcker, on the MANURIAL PROPERTIES of TOWN SEWAGE, will be delivered to the Members, at the Society's House, 12, Hanover Square, London, W., at half-past 12, on WEDNESDAY, May 28.
By order of the Council,
H. Hall Dare, Secretary.

The Agricultural Gazette.

SATURDAY, MAY 24, 1862.

MEETING FOR THE ENSUING WEEK.
Wednesday, May 28—Agri. Society of England .. Noon

It will be seen by an advertisement in another column that the Society for promoting female emigration to British Columbia is at work. On the 5th of June the Tynemouth, a first-class screw steam ship, sails for Vancouver. By that opportunity 60 young women, all selected with the greatest care and highly recommended, will proceed to the colony.

Miss Rye, a lady who takes the greatest interest in the movement, is anxious that it should be known in the agricultural world how great is the necessity in these colonies for young women acquainted with such rural matters as making butter and cheese, the management of cows, poultry, &c. She thinks if respectable farmers would assist in receiving young girls of from 14 to 16 years of age as apprentices or on philanthropic grounds, say for 12 months to two years, many good girls of excellent character, and especially orphans, might be provided either through her or by the governors of asylums, and thus be trained for colonial work, eventually to become useful wives to the emigrants who have advanced far enough in agricultural prosperity to desire partners. We should much like to hear from our correspondents what possibility there is of such a plan meeting with favour.

A good deal of light is thrown on the subject of town sewage, so far as the possibility of turning it to agricultural account is concerned, by the ordinary experience of the farmer.

1. It is the experience of the farmer that manure is just food *minus* growth, and that it is rich or poor according to the nutritiveness of the food and the meagreness of the growth. He knows that the manure from store-fed growing stock is less fertilising and powerful than that from well-fed fatting beasts. Now Man is one of the best fed of the "domestic animals," and the inference seems unavoidable.

2. Although it is certainly true that we have nothing in ordinary agriculture corresponding to the

immense quantities of fertilising matters which are thus poured over the sewage meadows of Edinburgh and Carlisle—nothing corresponding to the 300 animals in the one case, 200 animals in the other, averaging probably 20 or 25 lbs. a quarter, whose waste is in these two instances applied per acre; yet it is undoubtedly the experience of the farmer that an increasing intensity of manuring *is* the rule, and is found profitable. Of that our columns have for several past weeks given ample evidence.

Mr. Hudson, of Castleacre, on his 800 acres of arable land, must use 40 tons of guano, 4 tons of nitrate of soda, and 25 tons of superphosphate and lime per annum, costing close on 20*s*. an acre over the whole of his farm. And besides this he consumes immense quantities of purchased cattle food, which goes to enrich the farmyard dung.——Mr. Howard, of Biddenham, Bedford, consumes 1000*l*. worth of cake and other cattle foods per annum, and thus enriches the manure of the stock on a farm of 300 acres of arable land and 120 acres of pasture.——Mr. Paget, M.P., of Ruddington Grange, Nottingham, consumes 30 tons of cake and 200 quarters of corn, costing probably upwards of 500*l*. or even 600*l*., on 150 acres of arable land and 180 acres of pasture.——Mr. Melvin, of Bonnington, Ratho, on a farm of 600 to 700 acres, spends 1000*l* on artificial and purchased manures.——Mr. Campbell, of Buscott Park, Lechlade, has found it profitable, after drainage, to apply 1½ cwt. of Peruvian guano, 3 cwt. of superphosphate of lime, 1 cwt. of nitrate of soda, 15 bushels of bone-dust, and 1 cwt. of common salt per acre over his permanent pastures, and thereafter to feed sheep, five to eight of the large Lincoln sheep per acre, giving them cake in addition daily on the Grass. This treatment has been adopted with great success over more than 1000 acres of permanent Grass. —— On an East Lothian farm of about 300 acres of arable land known to us, 18 tons of Peruvian guano, 12 tons of bones and superphosphate, 6 tons of nitrate of soda, 3 tons of Rape dust, and 3 tons of common salt are used, costing close on 400*l*. per annum.——On a farm of 280 acres of arable and 400 acres of pasture near Tavistock, Mr. Horswell applies 3 to 5 cwt. of Peruvian guano per acre to about 50 acres of Swedes and Mangels, consuming also with feeding cattle about 60 acres of Barley and Oats, about 25 tons of oilcake, and 20 tons of bran per annum. The expenditure here must be 700*l*. in cattle food, and 150*l*. in artificial manures, on 280 acres of plough land.

These then are ample illustrations of the fact that enormous quantities of fertilising matters are now commonly applied in English agriculture to the soil—that the soil is indeed being considered just as a machine through which we put as much of the raw material of farm produce as by means of certain crops it will profitably convert—and that therefore there is nothing in ordinary agriculture to forbid the possibility of even the extraordinary supplies of fertilising matter which town sewers now for the most part send to waste, being profitably used on a comparatively small extent of land.

3. It is the farmer's experience, moreover, that manure is more effective in the liquid than the solid form. If any one wants proof of that let him read Mr. Ruston's capital paper on the water-drill in the 20th volume of the English Agricultural Society's Journal. Four to ten tons per acre of Mangel Wurzel, 30 to 40 per cent. of Coleseed, a greatly increased produce of Oats per acre, is obtained by the simple expedient of "flushing" in the manure that is applied at seed time with 3 or 4 hundred gallons of water to the acre. — Another illustration of the advantage of putting manure in with water is seen in the superior efficiency which artificial manures exhibit in Scotland and the wetter climates of the Island generally, as compared with their effect in the south-eastern drier counties.—A third illustration of the same truth is found in the experience of the manure manufacturer and merchant, that a dry season is fatal to his trade. As a general rule farmers do not buy these things until they are prepared to use them. And they know that it is useless to apply them in a dry state of the land and of the weather. The consequence is, we are informed, that nobody in the country uses the electric telegraph more than the agriculturist or his agent the local manure dealer, on any change of weather, as from a drought to rain, at this time of the year. The Thameside manufacturer is thus urged to the utmost, and superphosphates are sent off at the rate of hundreds of tons a day during the first wet week in April, May, or June, after a period of drought. It is undoubtedly also true that an extremely wet season is also injurious to the manure trade, but that is owing, not to such weather being injurious to the action of the manures (the contrary is the case), but to its hindrance of the work of preparation of land for the crops to which such manures are applied during this and the following month.

4. It is however the farmer's experience as a general rule that liquid manure is "more plague than profit." That this arises perhaps as much from his keen sense of its being a plague as from any well ascertained experience of its not being profitable may be admitted, for undoubtedly the use of the water cart enforced by the tanks being full at times when it is inconvenient to take the horses from other work—enforced too at times when it is often unadvisable to apply manure at all; and indeed the use of the water cart at all—a new machine and new process altogether, hitherto unknown to ordinary agricultural routine—is felt to be a plague. Nevertheless, the profitableness of the process, considering the extremely diluted nature of the manure and the labour, of its conveyance in this way, is often doubtful. The fact is, water should be the carrier of the manure, not merely the thing carried. And the prejudice (shall we call it), which leads the farmer to condemn the practice of carrying it to the land directly as a manure as a regular part of farm management all through the year, will yield when the labour of it disappears and its fertilising influences are obtained under the system by which a dilute liquid manure is its own carrier in large quantities to the land over which it is proposed to take it.

5. But then it is the farmer's experience that tillage operations are necessary during the growth of many of our crops—that a dry, or comparatively dry condition of the land is necessary during the ripening of seed—that land cannot be tilled and seed cannot be ripened except the soil be comparatively dry. This then shuts out from the possibility of benefiting by these large liquid applications of manure a very large number of crops. Whether grain crops will benefit by such dressings during the grassy stage of their growth has yet to be satisfactorily proved. At any rate land cultivated for grain crops cannot be that constant scene of sewage operations throughout the year which land must be that is to take the constant supply of sewage yielded by towns throughout the year. And indeed this truth almost entirely shuts us up to the use of the Grasses as the only plants to be cultivated under the influence of liquid and sewage manures applied in large quantities. There are among the Grasses particular species which are endowed with extraordinary powers of growth, and consequently of absorbing food. What we want is a plant which shall have in its natural constitution, as exhibited in our climate, a power of growth corresponding to the quantity of food which in sewage manure is applied to the land.

A good deal of evidence has been taken before the committee of the House of Commons now sitting on this subject as to the power of soils to store away the fertilising ingredients of the manure for future use. And so far as regards its application during the winter season, when the weather checks the growth of Grass, a conservating power of the kind is no doubt useful.

But during the summer, the time of growth, what we want is not a soil to lay up these fertilising matters as supplies against a time of use. The summer *is* the time of use. And what we want is a plant which shall be capable of using the material as it arrives. For this reason too the manure as it reaches the plant must be capable of giving out its fertilising matter for its use at once.

That of it which is capable of feeding the plant must be in a condition prompting it to leave the water holding it in solution on the very slightest invitation, and indeed to leave it without any invitation at all. For we believe that the maximum produce of Grass is obtained when the air immediately above the flowing water is capable of feeding the leaves beneath which it flows, at the same time that the water is feeding the roots. In Italian Rye-grass we have a plant exactly of the kind required, so also in many other Grasses; for the Craigentinny meadows, which yield such extraordinary produce of Grass, contain little if any of the Italian Rye-grass. It is in these Grasses then and not in the soil that we are to find the true machine for extracting the food which sewage yields. The mischief which it does and the nuisance which it is must be reduced to a minimum by turning it to use in this way in districts where the population is at a minimum.

The facts and arguments thus addressed to the reader must lead him, we think, to the conclusion that the sewage of great towns like London should be taken many miles away to where sandy slopes exist, over which it may be poured, and through which it will filtrate easily, and by means of which, or rather of the Grasses which may thus be grown upon them, or rather of the cows which may be fed upon the Grasses, the filthy stream may "by cleanly manipulation" be converted into milk.

Whoever enters into the discussion of the important question of the pedigree of plants should not fail to take advantage of a visit to the International Exhibition, if only to examine the fine display made by Hallett's Pedigree Wheat. In this trophy—for the exhibition of the parent ears with their gradual improvement both in length of ear and size and weight of grain is well worthy the name—the reason is assisted by the sight to estimate the great value of breeding by selection, not only in the animal but in the vegetable kingdom.

We have before shown that our improved garden esculents have been derived from wild and comparatively insignificant plants—need we mention the Beet, Turnip, Cabbage, Parsnip, Celery, and Asparagus as examples. Of these then the careful cultivator has procured different sorts, of which each country has its own, and our Horticultural and kindred Societies do good service by an international distribution of seeds from all nations, and when once a new desired quality has been detected, it is not only lauded in the public prints, but the cultivator of its seed is careful to tell us how painstaking he has been in its growth, and in fact that his seed is from a *selected* stock.

To bring this down to the level of every day experience, who among seedsmen does not profess to offer the seed of Swedes and Turnips from *selected bulbs?* and though it is quite true that the practice is not so universal as is the profession of it, yet the general assumption of its being so on the part of seed growers and sellers is an admission that it would be for the advantage of the buyer of seeds were the roots from which such seeds are to be grown carefully selected. And on the other hand let the observant agriculturist take a journey on any of our great lines of railway, and he will be struck with the many patches of bright yellow flowers, which he will not fail to notice on either hand. In nine cases out of ten these are fields or portions of fields of Turnips, either the Swedish or common kinds, which from the abundance of keep it has been thought would be more profitable to seed than to eat off, especially as they have so rapidly grown out of the way. Are these patches of selected bulbs? we happen to know from a more than ordinarily careful examination that not one *per cent.* of seeding patches are from selected roots; but they are seeded just as they grew, and we do not know of a single instance where in such seeding the objectionable roots have been removed; but we do know of plenty of cases where the worst part of a field has been saved for seed, doubtless as the most profitable way of dealing with it under the circumstances wrought out by the spring of 1862.

Of course this will all come into the market, and too much of it under a stereotyped declaration of "from selected bulbs." That all the seed grown in 1862 will be sown in 1863 is simply impossible; but no matter, it will find a market somehow, some time.

With such facts as these before us, who can wonder that any plant should become degenerate? Let some of the seed of this year be watched, and we will answer for its evil results, and if these be facts it then behoves the farmer to look well to pedigree in the matter of his seed.

But even here his forethought must not end, for however select the parent may be, there is still something in "bringing up;" for however good the sort of Turnip we shall not grow its seed in perfection by selection merely, but we should *transplant* well chosen roots, and so put them in a new scene away from subjects which might contaminate them. This is indeed to bring them up in a *good school*, for which their seed will amply repay the trouble and expense.

INTERNATIONAL EXHIBITION.

Agricultural Department.

The great distinction between 1862 and 1851 in this department lies in the illustrations given of the success of steam cultivation which has been achieved during the interval. Mr. John Fowler's stand is a most capital

advertisement to the nations of the perfection to which his method of applying steam power for this purpose has attained; and Mr. Howard's stand close by gives ample illustration of the other methods by which a similar end is attained. Mr. Smith, of Woolston, true to his principle of exhibiting his plans only where they can be seen under ordinary trial, does not show here. Woolston, however, is but about an hour or two away, and any one desiring to study both the leading plans should pay a visit there. Mr Steevens and Mr. Hayes have the one a plough and the other a windlass, which must be described when we reach them in the course of our tour.

So also must Mr. Howard's new arrangement for making the pull in the tight rope regulate the paying out of the slack so as to avoid both the waste of power and the wear of the windlass with which his former plan was charged.

Mr. Fowler exhibits his well-known balance plough and his newly constructed balance cultivator—also one of his first-rate (as to power) engines, anchorage, &c. The cultivator is a 7-tined tool at both ends, taking a width of 6 feet at once. There is a novelty in the way of guidance, enabling the alteration of the direction of the wheels without the longitudinal axis of the tool itself being also turned askew, which under the ordinary system it is. And another novelty exists in the lower cheeks of the clip drum being all fixed on a rim or collar which is screwed on to the barrel carrying the other upper set of cheeks—so that the position of the lower set with reference to the upper may be altered at once and altogether. The whole may be dropped or raised so as to increase or diminish the width of the groove which holds the rope.

At this stand Professor Rauh, of the Agricultural College of Hohenheim, exhibits some extremely interesting models of ploughs of all ages and all countries, showing how the existing form is the result of descent from two origins, in the one of which a stirring tooth and in the other a paring edge was employed.

We now resume our walk around the stands:—

Near Mr. Fowler's stand there is a model of the guide-way system of steam cultivation, which Mr. Halkett has now so far improved and cheapened as to induce a reasonable hope that it may be available for the purpose of colonial agriculture, or for cultivation wherever land is open, level, and cheap, labour scarce and dear, and produce valuable.

The following statement, with which we have been favoured by Mr. Halkett, states the efficiency of the power which he professes to apply under the circumstances in which he places it.

* * * "A Bray's traction engine weighing 13 tons, with her steam at the usual working pressure of 120 lbs. per square inch, exerted a draught power on a spring dynamometer of 4 tons 300 lbs., or upwards of 9200 lbs., the speed of the carriage at the time being 2.3 miles. At 300 lbs. for the average draught of a 2-horse plough upon land of average quality, this result is equal to an application of 30 ploughs at once. And as the speed was more than that of horses (when they plough 1 acre a day), and the engine could plough 12 hours instead of seven working hours as horses do, I should with each plough perform 2 acres a day or 60 acres with the whole of the ploughs. If it is rigorously calculated, allowing two hours out of the 12 for shifting at the headlands and 30 lbs draught for the friction due to each ton weight of the girders and implements on the rail (which is a large amount to allow for the friction) it amounts to 63 acres ploughed in the day. But traction engines may be even much increased in power, heavier ones than this one are being turned out; in fact 20 ton engines are now advertised to be made in the north.

"My principle is to go slow (slower than the Bray's Engine I have quoted) and to perform a large acreage by doing a great breadth at once. I apportion the gearing of my machinery, so as to employ only one-fifth of the power in moving the engine, leaving four-fifths for ploughing.

"I had already stated before my experiment was made that the draught would be found equal to 4 tons, and I had my dynamometer made to stand double, namely 8 tons pull, before it would break, and the following is the simple calculation by which I arrived at that expectation.

"Bray's engine has taken 35 tons from Penn's Shipbuilding Yard; this, together with trucks, weighed 40 tons, and by the Secretary of Bray's Engine Company I am told, with chains and other things, amounted in all to 42 tons. And this heavy load was taken up a rise of 1 in 17 This weight was on very few wheels, because it was not divisible as goods are, but in one piece; in fact it was the intermediate shaft of the 'Warrior,' and the friction on the road due to small diameter wheels and to their sinking in the road, as I am told by the foreman of the Company that they did to some extent, would make the draught more rather than less than that of usual heavy waggons. Now Telford averaged the draught of waggons at 1-30th the load, or about 70 lbs. draught on a spring to every ton of weight of waggon and load added together, but this may be increased by bad roads and bad appliances to 100 lbs. per ton. Suppose I first take the estimate of 70 lbs. friction per ton for my calculation: I have a draught on a spring of 42 times 70 lbs. on a level road or 2940 lbs.; to this there is to be added the strain due to taking the weight up the incline of 1 in 17 or the 17th part of 42 tons, namely 5534 lbs. which two sums added together make 8474 lbs., or nearly 3 tons 8 cwt. On the other hand, suppose I take 100 lbs. for the friction of each ton on a level road, I have to add 42 times 100 lbs or 4200 lbs. to the before-mentioned figures 5534 lbs., making a whole draught equal to 9734 lbs., or more than 4 tons 3 cwt.

"Thus I arrived at the estimate that the draught power on a spring by the Bray's engine was somewhere between 3 8 tons and 4.3 tons; in other words (at 300 lbs. per 2 horse plough) somewhere between 28 and 32 ploughs. And I did find it, according to my own experiment, rather more than 4.1 tons or a draught equal to 30 ploughs.

"In my experiments published in the paper read before the Society of Arts, made with my former machinery (where the engines travelled with the implements upon the rails) and where the machinery was not apportioned to perform such heavy work as this traction engine, the draught upon a dynamometer was found to be not quite 2 tons, and the number of ploughs which it drew through the ground was 12 ploughs cutting furrow 5 in by 10 in., and one subsoil plough, in all equal to perhaps 14 ploughs—a result agreeing with my present assertion; for the double of my former experiment (which was less than 2 tons) would be 28 ploughs."

The following table, which was filled up for me at the factory of the Bray's Traction Engine Company by the managing engineer, as a guarantee of the capabilities of their engines, answers some of the points which are generally mooted by a spectator of my model:—

Weight of Engine.	Price.	Construction.	Power that it would *work up to.*	Working pressure of Steam in Boiler.	Speed of Travelling.
Very large one, 15 tons.	From 1200*l.* to 1500*l.* *	Two 9 inch cylinders.	60 H.P.	120 lbs. per square inch.	Two speeds, 2½ miles and 5 miles per hour.

* Depending upon the amount of extra machinery required, such as winches, cranes, &c., applied to the engine for hoisting by the steam power, which at the time I saw them the engine wanted for one of the dockyards was to be supplied with.

Mr. Halkett now has his framework drawing ploughs and other tools extending over a width of at least 100 feet at a stretch, and the cost of the permanent guideway is proportionately diminished per acre.

2090. Messrs. Carson & Toone, of Warminster exhibit a powerful 3-bladed chaffcutter—a double lever cheese press, price 2*l.* 15*s.*—a set of horse gear for one or two horses, price 12*l.* 12*s.*, and a very good 5-tined 3 guinea horsehoe. They also show Moody's conical Turnip cutter, in which the root leaves the box in strips, in fact almost pulped. This was one of the earliest forms of Turnip cutter used for the purpose to which pulpers are now better applied.

2092. Messrs. Childs & Owen, of 481, New Oxford Street, show a mahogany winnowing machine, in a high state of polish. The riddles and box which holds them are moved bodily to and fro, the blast comes up between them and through them, and blows the chaff out, the dust and small seeds fall through and to the ground. The good grain passes over the same riddle below the fans and drops in an even stream over the width of this machine behind it, and it is there acted on by the indraught of the fan, which lifts the light grain and carries this with it into an inner box, whence it may be emptied at will on one side. It is a miller's machine rather than a farmer's.

2093. Mr. C. Clay, of Wakefield, shows his cultivator, of which an increasing number are coming into use. It is a five-tined tool, with means of lifting the teeth out of the ground, and of adjusting either end or side of the framework to the depth at which it is desired to stir the ground. Mr. Clay also exhibits a three-tined horse-hoe, adapted for either paring or stirring the ground, according to the form of the tine.

2094. Messrs. Clayton & Shuttleworth, of Lincoln, show one of the most costly and valuable stands of machinery in this department. In no department of the Exhibition have exhibitors gone to greater cost to make an attractive show than in the agricultural. Messrs. Barrett & Exall, Clayton and Shuttleworth, Garrett, Hornsby, Howard, Fowler, Ransomes, and others may be named in illustration of this. The stand of Messrs. Clayton & Shuttleworth includes a single blast small threshing machine, with blower for lifting the grain up to the separator. Another larger in which the grain is subjected to a second winnowing and passed through a separator; a third, in which the blower, separator, humeller, &c., are all brought into one, and the grain turned out fit for market. They are workable by 4 or 5, 7 or 8, and 8-horse power engines respectively. The engines exhibited at this stand include two of 4-horse power, and others of 6, 8, and 10, all moveable. There is also a fixed 8-horse power engine and a fixed 4-horse power engine, in which all the parts are bedded on a iron slab, and everything is thus rigidly fitted together. The other machinery shown here includes a saw-table, pair of millstones, &c.

2095. Messrs. Coleman, of Chelmsford, show Hanson's well-known potato digger, with its revolving fork; and their still better known cultivator—a roller too, with rings of iron having a corrugated rim.

2096. Mr. Comins, of South Molton, shows zig zag harrows, horse-hoes, a paring plough, and a set of rollers in which two axles set in a frame carry discs which are kept clean by one another, each set "picking the teeth" of the other.

2097. Mr. J. Cornes of Burbridge shows his well known chaff cutter of various sizes, also cheese press, &c.

2098. Mr. J. Coultas, of Grantham, shows several corn and manure drills, with foresteerage, a horse hoe, &c.

POTATO SHOWING.

Having received several letters respecting the varieties of Potatoes I would recommend to compete for the prizes offered by the Royal Horticultural Society, I think it my duty before doing so to offer a few remarks on Potato showing, in order that if possible we may ascertain how Potatoes are to be judged. For it is a well known fact that very large coarse hollow-eyed Potatoes are frequently placed A 1 at our local shows, when indeed they are not worthy of a prize, and should be entirely discarded from commendation If we are to arrive at perfection in the shape of a Potato, it must be borne in mind that the tuber should be entirely even, and free from hollow eyes, warts, crooks, or scabs.

In raising new varieties the following points should particularly be borne in mind, and none but kinds approaching the merits described below should be offered to the public, viz., a Potato should be moderate in size regular in shape, that is free from deep eyes, warts, and crooks When boiled it should be dry, firm, and agreeable to the taste; other qualities should be earliness, productiveness, short haulm, freedom from disease, and long keeping. A large Potato is frequently hollow, and cannot be conveniently cooked, and it is also liable to be badly boiled; a warty or deep eyed one suffers waste in peeling, a bursting one in boiling water sustains loss, a firm and dry one is mealy; an early ripening one is less liable to be attacked by disease. Productiveness is requisite to make the crops profitable. Short haulmed varieties can be planted closer together than long haulmed. Freedom from disease is the point we wish to acquire, and can certainly only be obtained by peculiar methods of cultivation, and lastly a good keeping variety that retains its flavour, is indispensible for the sake of affording supplies up to Midsummer. These few suggestions I would recommend to the notice of raisers of new Potatoes, in order that we may the sooner arrive at some standard of perfection. But at an exhibition we have the tubers only for our guide. From these alone we can know but little of the merits of productiveness, haulm, &c, but if they have an even surface, and one free from sunken eyes, warts, &c., even should the tubers not be large, they should in all cases be placed before such Potatoes as the Ox Noble, or other similar large hollow eyed coarse kinds. I have frequently however, seen such Potatoes awarded prizes, and even by good gardeners. I might even go further and state that I have seen several dishes of Potatoes shown and awarded prizes with three or more diseased tubers in a dish. I look upon this forthcoming root show as one of the most important and interesting exhibitions that could possibly have been suggested, and I trust that the judges will lay down a standard for the guidance of all vegetable exhibitors, not only in regard to Potatoes, but Carrots, &c. Let us have quality before size, and then it will be found that we shall soon attain both. It is certainly curious to notice the difference of opinion existing about the judgment of roots through not having a standard laid down to be adhered to; for instance, it is well known to most agriculturists that for years past Osberton has been a noted place for the cultivation of large Carrots, which have been so successfully exhibited for several years. During the present season those grown here by Mr. R. Woods, the farm manager, were exhibited at Birmingham and the Crystal Palace, where they obtained a prize for white at the first named place, and first, second, and third in the white class; but the Carrots that obtained the prize at Birmingham were placed third at the Palace. Now, having seen the whole of the Carrots that took prizes from here, I agree with Mr. Woods that the best were placed last, but this was not the only error that took place at the Palace, and my object in mentioning the matter is to ascertain before the day of exhibition at Kensington, whether size with its weightiness is to be placed before quality. When special prizes are offered for size and weight no one of course would for a moment object. It is well known that the same sorts of Potatoe have different names in almost every county; hence, owing to these local names, the varieties I would recommend may be difficult to meet with, but I would suggest on pain of disqualification that every dish of Potatoes should appear with the name known to the exhibitor, and likewise that the description of the soil grown in be given. This will afford those interested an opportunity of comparing and testing varieties, the soil most favourable for a change of seed (one of the principal remedies for the disease), and many other excellent things I can see looming in the distance. The following varieties are fine Potatoes for exhibition, although there are others quite equal to them; but as variety of colour in a collection combined with quality should have the preference before sorts all of a colour, I have selected this list from 132 so-called varieties grown by me at Perdiswell Hall, in Worcester

Kidneys: *Alstone*—This is termed by many Cheltenham Pet. The size this Potato attains is really astonishing, it is quite distinct and excellent for exhibition, the skin is thin and white, with a very good eye for a large Potato, an enormous cropper, and keeps well until very late in the season; it is however liable to be attacked by disease. To those who wish for a large showy Potato I would recommend this sort.

Lapstone, alias *Haigh's Seedling*, and *Leeds Kidney*.—This was raised at Leeds and belongs to the class termed second early; it is a distinct Kidney, and often resembles in shape a shoemaker's lapstone. It has a smooth skin, and shallow eye, with a slight tinge of pink at one end; it is an excellent cropper, full size, and in flavour second to no other Kidney, but like the one above it is liable to disease.

Walnut-leaved Kidney.—A very excellent early sort, with foliage similar in shape to that of a Walnut. This Potato was formerly extensively grown in Somersetshire, it is full sized, eye well up, a good cropper, and generally escapes disease.

Bond's Kidney, alias *Early Stockton*, is a valuable early variety, with short haulm and curly foliage; it is an excellent cropper, tubers full size, good shape and even eye. This should not be grown where the soil becomes very warm, as it is liable to become scabby.

Purple Ashleaf.—Very large and an enormous cropper, smooth eye and skin, a fine showy Potato. This is a great favourite amongst Cottagers in Worcestershire, its only fault is waxiness, and boiling rather yellow.

Red Ashleaf.—This is much better flavoured than the foregoing; tubers large, good eye, and keeps well. Looks well when exhibited in a collection, on account of its colour.

Fluke.—This requires no comment; it is easily distinguished by the haulm being dark green, and distinct in colour; tubers firm and good. For exhibition I would, however, give the preference to a kind called Dean's Seedling a sort of Fluke.

Of *Ashleaf White* varieties, the best are Brockley Kidney and Brighton, both excellent sorts.

Webber's Kidney.—This has a very clear, smooth skin; the one end is large, and tapers gradually off to a point. It is an early variety, with an excellent even eye, good cropper, and free from disease: altogether a fine variety.

Alma.—This a cross between an Ashleaf and Lapstone, raised in Worcestershire; it partakes of the earliness of the former and productiveness of the latter, and it is a full-sized Kidney with an even eye, good flavour, and short haulm. I have exhibited this very successfully.

The following are also good kinds for exhibition, viz.:—

American Wonder.—Full size, heavy cropper, &c.

Early Surprise.

Matchless (Daws).

Prolific.—First fruit sent out in 1857.

Midsummer Kidney.

Lemon and *Golden Kidney*, and *Pheasant Eye*, a large handsome variety for exhibition. *Edward Bennett, Osberton Hall, Worksop, Notts.*

PIG BREEDING AND FEEDING.

[We gave the other day a report on this subject of a lecture by Mr. Stearn. We now report a lecture on the same subject delivered to the members of the Worcestershire Agricultural Society, by Mr. Baldwyn, of Bredon House, near Birmingham.]

Mr. Baldwyn said: In 1845 he entered upon a farm at Kingsnorton. In 1846 he purchased two gilts and a boar, of the Tamworth breed, from his cousin, Mr. T. Baldwyn, of Barnt Green, who was famed for his breed of Tamworths; and although he (the lecturer) began breeding with three pigs in 1846, in 1851 he sold 1000*l.* worth of store and fat pigs within one year; and in the years 1852, 1853, 1854, and 1855, he sold about 1000*l.*

worth each year. The idea of feeding such numbers of pigs was first conceived by him at a county meeting at Worcester, in 1849, after free trade had come into full operation. The meeting was called to take into consideration the state of agriculture, and to petition Government to pass another Act for its protection. At that meeting he, believing it impossible to return to protection, moved an amendment to the effect that, as the tax upon malt was a burden upon the British farmer, it should be repealed. Mr. Curtler was the principal speaker in favour of protection, and, during his address, produced many samples of foreign produce at amazingly low prices. Among them was a good sample of Egyptian beans at 9*s.* or 9*s.* 6*d.* per bag; Indian corn at the same price, and Dantzic Wheat also very low. Mr. Curtler then exclaimed: "Gentlemen, can you grow them at these prices?" He being a consistent freetrader, looked on the bright side of the question, and began to ask himself how he might turn the low price of corn to good account. It struck him that as he had a great many store pigs, he would feed them instead of selling them as stores. He accordingly bought a large quantity of Indian corn at from 9*s.* to 9*s.* 6*d.* per bag, to begin with; and within two years and a quarter from that time he bred, fed, and sold 2000*l.* worth of pigs, and cleared, after paying all expenses, 500*l.*, besides making a vast amount of manure, which he considered far better than guano, because more durable. During the greater part of these two years and a quarter, Indian corn, Egyptian beans, and feeding Barley ranged from 9*s.* to 12*s.* 6*d.* per bag of ten score, and he sold his fat pigs at from 7*s.* 6*d.* to 8*s.* 9*d.* per score. The plan which he adopted in breeding was to put the sows to the boar in November, and pick the breeders principally from the earliest pigs. When he had got his stock up to about 40 breeding sows, in picking the breeders he used to pick them several times over, as it frequently happened that those which looked the best and prettiest when young altered considerably when they got three, four, or five months old. The rule was to pick long-growing pigs, and those that were straight and thick through the shoulder and heart; and experience had convinced him that his method of choosing was a correct one. There need be no greater proof of that than the number of medals and prizes he had obtained. He always kept to the Tamworth breeds, generally purchasing the boars, but breeding the sows. If he found the pigs getting too fine he purchased a good strong boar, and if the animal exhibited tendencies the other way he picked a boar of good small bone, but was always particular to pick a boar that was thick through the shoulder and heart, and a straight-growing pig of the same colour and breed. By carefully following this plan he got the breed so good that it was a rare occurrence to see even a middling pig in all the flock, though he bred from 250 to 300 each year. His plan of keeping was as follows: As soon as the sows littered they were kept on kibbled Oats, scalded, with raw Swedes or Cabbage; and when the pigs got to the age of three weeks or a month he turned the sows out from them for a short time every day, and gave the pigs a few Peas or a little Indian Corn while the sow was away. When the weather was fine and warm the pigs went out with the mother into a Grassy field for a short time. He found that young pigs, from the age of three weeks, required dirt or grit, and therefore, if the weather was bad and they could not be turned out, it was necessary to put some grit into the stye. This was very important, as he believed it was quite necessary for the proper digestion of their food. He had had young pigs looking very bad and drooping, but when turned out, that they might get earth, they soon became all right again. In fact, it was absolutely necessary, during the whole life of a pig, to allow it an opportunity of getting grit or dirt, or it would not thrive well. At seven or eight weeks old all the pigs he did not require for breeding he had out, and began to wean them a fortnight afterwards. He then turned them out into a Grass field, with a hovel for them to run into, and allowed each pig a quart per day of Peas, Egyptian Beans, or Indian corn. English Beans did not answer for young pigs, being too heating. He gave them one pint of the corn in the morning, and the other in the evening, with regularity as to time and quantity, and found it better to give it to them on the Grass, in a clean place each time, than in a trough, as it prevented quarrelling, and each pig got his share. With this quart of corn per day, and what Grass they got during the seven months of the year, with nothing but water to drink, the pigs would, on an average, make 5 lbs. of pork each per week. After eight months, he allowed an extra half-pint of corn per day. At the present price of corn the allowance would cost about 1*s.* per week for each pig; Grass, 2*d.*; attention of man, 10*d.*; total cost, 1*s.* 3*d.*, leaving a profit of 1*s.* per week on each pig when pork was at 6*d.* per lb., it was now 7*d.* One man attended well to from 200 to 300 pigs; he was an Irishman, for few Englishmen liked the job sufficiently well to take an interest in the pigs, and carelessness on the part of the man materially decreased the profit. He kept the store sows when in pig the same as the other stores. They ran about in a field till a fortnight before pigging, when he placed them in a covered shed, so constructed as to admit as much sun as possible. Young pigs kept in the manner described were always nearly fat enough for porkers, and did not require more than two or three weeks' feeding on meal. It was time enough to begin to feed pigs for bacon at 8 or 10 months old. Good breeding sows he allowed to have two farrows, and sometimes three, but never more, and then fed them for bacon, supplying their places with young sows. In selling store pigs, he charged a certain price per lb., allowed the purchaser to pick the pigs from the field, which plan always gave satisfaction, and secured a return of custom. It was desirable in breeding animals to have as little bone as possible in proportion to flesh. He had tested a cut sow of his breed, about 30 months old, which weighed 32 score, and the whole of the bones, after the flesh had been boiled from them, only weighed 21 lbs., so that for every pound of bone there were 32 lbs. of meat, which he believed to be a fair average of his breed. As a rule he preferred the Indian corn. He considered it always to be more profitable to feed upon good food than upon inferior. As a rule pigs would thrive better for being turned out once a day, except in wet weather, and they would also be healthier, more active, have a cleaner appearance, would possess a great advantage in the showyard over heavy ungainly pigs, which could not move about to show themselves. One of the greatest pleasures which his breeding afforded him was to see the number of labouring men who came to buy from him, and he hoped to see the time when every labouring man would have a good pig in his stye.

The Chairman, who proposed a vote of thanks to Mr. Baldwyn, said with respect to the utility of pigs having access to earth or grit, he had read the opinion of men of eminence, who actually said that farmers did wrong in scraping the dirt off Swede Turnips—(Mr. Baldwyn: That's my belief)—before giving them to cattle. This was a problem which ought to be worked out, and was one which he wished to impress upon their attention. He remembered once having a pig taken very ill; and being told there was no remedy, for that if the pig was disposed to die, die it would, he inquired of a cottager what he had better do, when the man instantly said, "Throw some cinders into the stye, and that will cure him." The cinders were thrown into the stye, and the animal recovered. This anecdote showed that the idea of giving dirt and grit to pigs was not new, and that it was, at all events, one which experience had shown to be of great value.

In answer to Mr. Wood, the lecturer said that his pigs had nothing but water to drink. They had Grass to eat, and a pit of water to go to when they chose.

Mr. Woodward: If there happened to be a hot summer, and no Grass, how should you manage then?

Mr. Baldwyn: If I was short of Grass I should give them Cabbage, Clover, and Vetches.

ON COOKING FOOD FOR CATTLE.

HAVING been prevented attending the discussion in Hanover Square on the question of the expediency or otherwise of cooking food for cattle, introduced by Mr. Frere the Editor of our Journal, my information as to what passed on the occasion is derived exclusively from the Report in the *Agricultural Gazette* of May 3.

With this explanation, I do not collect that Mr. Frere made any observation bearing on the question before the meeting, with the exception that "there were probably hardly sufficient facts before them to judge with accuracy on this question, certainly there would be very little good in saving 20*l.* a year by the use of cooked food if it cost 10*l.* for labour, and 10*l.* for fuel." I do not perceive from the report, the statements or opinions on which this proposition was founded; but it will no doubt meet with the general concurrence of feeders.

Notwithstanding the remark of Professor Simonds, that in all these matters we are disposed to deal too much with Chemistry, and not sufficiently with Physiology, I think it much to be regretted that our Chemical Professor was not present on this occasion, as there are many considerations bearing on the subject of the feeding of animals to which his attention has been much directed.

Professor Simonds appears to have remarked that assuming a gain from an accumulation of a large quantity of flesh in a short space of time, "he was inclined to think that it arose from the facility it (the cooking) gave for the digestion of the food by anticipating a part of the process which it underwent from the action of the gastric juice." That is precisely the ground on which I was led, many years ago, to adopt the cooking system to the limited extent to which I employ it, and to which I have adhered till the present time from my conviction of the economy of it. The Professor, somewhat inconsistently as it appears to me, at a subsequent part of his observations remarks: "The question was whether in giving an animal cooked food, especially a ruminant animal, they did not, to a considerable extent, supersede mastication; if so, they would supersede insalivation, and thus interfere with one of the first processes of nature, and do harm." I believe the first proposition of the Professor to be the true one. Every demand upon the exercise of the natural powers of an animal is a cause of waste of its substance to a greater or less degree, and I cannot see the economy of giving an animal its requisite food in a crude, harsh state, which demands an increased secretion of its saliva to pass it into its stomach. I have heard a thirsty man recommended to chew a hard biscuit, to increase the flow of saliva, but I do not bear in mind any medical authority for prescribing hard, rough food to the dispeptic patient.

Mr. Lawes made a sensible remark, in reference to particular experiments, that in making such, persons ought to attend more to average results than to those arising from such experiments. Had I been present at this discussion, I should thus have enlarged on that text. I have for 15 years fatted from 20 to 24 bullocks and 24 pigs in boxes, that vile, abominable, offensive system, according to your old correspondent the Rev. Mr. Wilkins. My plan of feeding has been to give a morning feed, comprising about 30 lbs. of Turnips sliced as thinly as possible, until I got pulping introduced, and then pulped, and very thoroughly mixed with chaff as much as the animals would eat up clean. At midday the allowance of cake, commencing with 2 lb. per head, and gradually increased up to 6 lb. per head, has been made into a soup with water by steam, and poured, while boiling, over chaff in a slate cistern, layer by layer, until this was well mixed and filled; when full, it contains a feed for 24 bullocks. After this has been covered down an hour, the soup has been absorbed, and the chaff has become soft and mellow; and, as I believe, saves the animal the exertion of secreting an extra quantity of saliva to bring about the same result. The morning feed of pulped roots and chaff is repeated in the evening. I have adhered to this system because I have had every reason to be satisfied with the results. I have fattened upwards of 300 bullocks. I never lost one from first to last; they have enjoyed, I may almost say, invariable health, for veterinary attendance, and medicine occasionally, would not amount to 6*d.* per head during the period I have mentioned. As respects quality, referred to in the description, I perhaps need only say that the same butchers, from a distance, make their appearance at the farm buildings about the same time every spring, from whom I have never heard any complaint of the meat having disappeared, either in the pot or on the spit.

The pigs have been fattened on Carrots, steamed, with an addition of meal after the first month, gradually increased from 2 lbs. to 6 lbs. per head. The apparatus we use is Nicholson's (now Amies & Barford), consisting of a boiler in the centre, a galvanised iron vessel on the left hand side in which the roots are steamed, and another on the right hand side in which the cake is converted into soup, and which is contiguous to the slate tank. Adverting to Mr. Frere's proposition in reference to extra cost of attendance and fuel, the case practically stands thus in our case. The attendance of one man and a boy would be necessary to prepare the roots, incorporate them with the chaff, feed, litter, and clean the stock of pigs and bullocks, whether the food was cooked or not. They perform the entire work, the chaff only being prepared for them. The cooking amounts to little more than lighting the fire in the steaming apparatus. Then as to the cost of fuel, we find the expenditure to consist of 5 lbs. of coal per diem on an average, or from 50*s.* to 60*s.* per annum for 46 animals.

There are other advantages of the cooking process to which I might refer. One I referred to in my "Handy Book for Young Farmers," viz. the improvement in the hay and straw which may have been damaged, and badly saved in critical seasons. The boiling soup entirely destroys the mouldy fungus growth formed in damp seasons, and renders very foul matted hay perfectly sweet. Again, we generally use a good deal of Rape-cake in fattening the bullocks. More or less Mustard seed is invariably found in that cake, which is the main objection to the use of it; the deleterious qualities of that cake, arising from that cause, are entirely destroyed when exposed to the temperature of the soup, 212° Fahrenheit, by a chemical process thoroughly explained by Dr. Voelcker, and which I have communicated to the *Agricultural Gazette* on a former occasion. *Charles Lawrence, Cirencester, May* 13.

THE PRESENT APPEARANCE OF THE CROPS.

[THE following reports have been sent to us for publication from the several localities named:—]

BERKS: *Hungerford.*—The Wheat on the good land is looking very well, and the only fear is it may become weak in the straw, and lodge before the time for reaping. There is a good deal of thin Wheat, and looking sickly or a yellow colour from too much rain, but sun would do a great deal to recover it where there is a plant. The Barley is beginning to show signs of wireworm, particularly the early planted; that put in at the middle of April is doing the best. The Oats never looked better. Very few Beans and Peas planted. The former is looking very well. *Thos. Owen, Clapton, Hungerford.*

DEVONSHIRE: *Dartmouth.*—Let me first describe our locality and soil. This part of the south of Devon comprised within the limits of the Dart and Tamar, east and west, and from 10 to 12 miles north and south, is called the South Hams. The rocks are slate of variable texture and hardness. The soil reposing on them is neither deep nor stiff, but generally friable. It is this special district upon which I report. The Wheat is uniformly looking promising, healthy, and vigorous. The Barley although late sown is in the same condition. Oats were put in later than is usual and are hopeful. The pastures are luxuriant with a good prospect of hay. The setting of Mangel Wurzel is busily engaging the farmers—in some cases where the sowing was completed they are sprouting healthily. Wherever there is a patch of sandstone lying on the slate or even contiguous, on these outliers the soil is admirable for all purposes. *Charles Hayward, The Grange, Dartmouth.*

GLOUCESTERSHIRE: *Berkeley.*—The Wheat crop in many fields is thin of plant and looking very sickly, in other fields very

promising. Beans and Peas are looking well, and the same may be said of Barley and Oats where they have made their appearance above ground, but owing to the wet weather Barley sowing is but just finished. It is hard to say what the Wheat crop may be, but at present many fields on cold land look as if they never could recover so as to be a full crop *John Cobbam, Whitfield, Berkeley.* —— *Gloucester.*—The Wheat crop is at present very variable, many fields being thin. Beans and Peas good. Barley not much grown in this district. Seeds, Grass, and fruit at present very promising. *Anthony Bubb, Witcombe Court, Gloucester.*

Kent: *Sandwich.*—Although the Wheat plant is sufficiently thick on the ground, yet there are too many withered and yellow leaves, from red rust, to make me think it promises well for a full crop. All other grain crops have at present a very promising appearance. *J. Henderson, The Shrubbery.*

Northumberland: *Coldstream.*—I have to inform you that both winter and spring Wheat in this neighbourhood look well and are quite forward enough. Oats and Barley were not sown till April in consequence of the rain in March. Notwithstanding the late seed time they look remarkably well and are growing rapidly. *John Laing, Coldstream.*

Sussex: *Brighton.* — On the dry soils in this neighbourhood the Wheat is generally looking well, but it has grown so rapidly (owing to the great quantity of rain), that should we have much wet in June, a considerable portion will inevitably be laid. On the poor clays in the weald the Wheat looks yellow and sickly, the farmers on this description of soil have had two bad seasons, and I am afraid the prospect for the next is not much better. Oats are good on dry soils, and Barley, which was sown very late, is looking well, and grows rapidly. *William Rigden, Hove, Brighton.*

Home Correspondence.

Beetroot Distillation.—As a member of the Royal Agricultural Society I take the liberty of sending you a short report of the fifth year's progress in the distillation of roots on my farm, before giving them to the stock; after extracting about 15 gallons of pure spirit from a ton of Silesian Beet, I find both my sheep and cattle fatten more readily than on the same roots in the raw state. Many farmers would think them more digestible with the spirit left in them, but there is none in a raw Mangel or Beetroot; the process of distilling does in fact provide a little after such extraction; being thus cooked and a large portion of water found in all roots steamed out, they are more portable and easier devoured, which I think accounts for their doing better. As a further stimulus to the agriculturists I have the spirit made into brandy as in France, and imported here, for which we pay the foreigners many millions that our own bare fallows might produce; the brandy is now very superior to what I first made, and pronounced by judges as better than much of the French, at about half the price, minus the duty of 10s. per gallon now paid on both, and for purity not to be surpassed, being free from results experienced in the use of British brandy, distilled as it is from corn. I have therefore stores to dispose of it at 61, King William Street, London Bridge, at 18s. per gallon pale or brown, in not less quantities than 2 gal. jars, or one dozen case 3s. each. Having a good foreign connection as an adjunct, I import other brandies and wines of the best brands and finest vintages, which I can supply at a less price than generally charged by the trade, on being favoured with an order to F. Weekes & Co., at the above address. Being the first agriculturist who has ever made brandy in this country from the produce of his farm, and having been at much cost to perfect it, I trust you will favour me with your support and test the brandy and wines, which you will find on trial to merit your recommendation, and I shall be happy to give any further information you may desire. *Fred. Weekes, Bolney, Sussex.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

A numerously attended meeting of this Society took place on Wednesday last at their Rooms in Hanover Square, Raymond Barker, Esq., in the chair.

After the transaction of the usual business of the association.

Algeria.—Mr. Caird, M.P., proceeded to give the Society some description of the present condition of this French colony. He said:—

The observations he was about to submit to the meeting arose out of a visit he had paid to Algeria for the purpose of ascertaining whether that colony possessed facilities for the growth of Cotton. That, however, was not of special interest to this Society, and he should not therefore dwell upon it further than to say that every advantage appeared to be offered by the soil and climate of that part of Africa for the cultivation of long staple Cotton. The question of Cotton cultivation seemed to be generally one rather of labour than of anything else, but in Algeria it was a question both of labour and water; these being supplied, the production was very abundant. Algeria extended about 600 miles along the southern shore of the Mediterranean, the distance from Marseilles to Algiers, the capital, being 470 miles. The land capable of cultivation was situate between latitudes 34° and 47°; a few degrees further north than the lower part of the plain of the Nile in Egypt, and about the same as that of Georgia and Carolina, in South America. That great tract of country 2000 years ago was the granary of Rome, and Roman remains were found there now. He would not go into the history of the changes which had taken place in Algeria from the time of the Roman occupation to the present; suffice it to say that it was conquered by the Saracens, from them it was taken by the Spaniards, and afterwards by the Turkish Government. In 1816, as was well known, Lord Exmouth bombarded Algiers; and in 1830 it was captured by the French, who had since occupied it. The entire population numbered 3,000,000, of whom 250,000 were Europeans, and 2,750,000 natives. There had been a considerable increase in the population within the last five years, viz: no less than 470,000 natives and 330,000 Europeans, which showed a great advance of prosperity under the French rule. A very large proportion of the French population was of a military character, and among other portions of the Europeans the Spaniards formed an excellent class of labourers, especially on farms and roads. In fact they seemed to be the only skilled labourers in an agricultural point of view. On the borders of Morocco there were the Moroccans, a very fine stalwart race of men, excellent labourers, but deficient in skill. After reading a description of the ancient inhabitants in Sallust's account of the Jugurthine war, Mr. Caird observed that the present race of inhabitants and the aspect of the country, bore considerable resemblance to the accounts given by Sallust in that work. The Europeans had found the place very unhealthy; but no doubt drainage and the extension of agricultural enterprise would alter that. Already on the great plain of Metidijah, extending to the south of Algiers, a most beneficial change had taken place in that respect. Fifteen years ago that seemed to be the grave of the French soldiers, now it was one of the best parts of the colony, being covered with Vineyards, Orange Groves, and an immense breadth of corn. A large portion of the inhabitants were Jews, who had been long settled in the country, who formed the bankers and merchants of the community, and who were undoubtedly the chief money makers in that country. The land capable of cultivation was the district within a comparatively short distance of the seabord, and the climate presented very few features of variety. The mean temperature was 70° Fahr., and it increased from January till September. He might mention also that at particular periods of the year that very deadly wind called the sirocco blew, and if it happened to come on before the corn was harvested, material damage was done. The winter temperature ranged from 55° to 65°, and during the winter the corn harvest took place, both with respect to Wheat and Barley. Wheat, Barley, and Oats, were all planted in October and November, and reaped in March, April, and the beginning of May. There was a second crop planted after the corn was harvested, and this was gathered in September or October. That principally consisted of oil seed of all descriptions, and Indian Corn, but except in those cases where there was an artificial supply of water by irrigation, the summer cultivation had not been very successfully carried on by the French colonists. A great many Swiss and German colonists had also begun to show themselves in the country, spreading about in the corn growing districts between Philippeville and Constantine, the land being offered on the same terms to all the colonists at the rate of about 20s. an acre in fee, such land being suitable for growing corn. The cultivable land amounted to about 34,000,000 acres, which was more than the total extent of cultivated land in England, and of this 5,000,000 acres are cultivated, 10,000,000 are in pasture, and 12,000,000 are covered with dwarf Palms and undergrowth. In 1861 no less than 2,000,000 acres were under Barley, which was an immense breadth, and this would at once be seen if the meeting reflected that the whole of the land under Barley here was only estimated at 1,000,000 acres. With regard to the vegetable crops they were very abundant, and coming as they did early in April, a considerable trade had lately sprung up with the capitals of France and England, for supplying early spring vegetables; olive oil was also exported in large quantities, and an article called vegetable hair, obtained from the dwarf Palm, was much used for stuffing beds, chairs, cushions, &c. He might also mention that Tobacco, none of which was exported in 1840, was exported last year to an amount which realised 5,500,000fr. As many as 13,500 acres were covered with Vineyards, and the exportation of their produce brought in about 2,000,000fr. per annum. With regard to cattle and sheep, it had been calculated that there were a million of cattle and about 10,000,000 sheep in Algeria; in fact, the French Government looked to the sheep there as the most profitable staple, and considered that country the Australia of France. He had an opportunity of inspecting a very large sheep farm there, in which he found that three shepherds managed 1400 sheep, all of which were extremely healthy, and the ewes had given forth an increase of one per head for the season. The sheep never required to have artificial food, the only special feature attaching to them being that in the very hot months, June and July, they were obliged to be housed. At Oran he found the soil of a red and very fertile character—something like the soil of Provence, which he had visited just previously to crossing to Algeria. In the neighbourhood of that place there were large fields of Wheat, Barley, and Potatoes, together with vineyards, Olives, and Figs in great abundance. He found the price of land when cleared of the dwarf Palm, which overspreads it in a state of nature, to be about 3*l.* an acre. Proceeding from the neighbourhood of Oran across to the bay of Arjeu he came to a French settlement called Sig, a place which afforded great scope for the intelligent French agriculturists, who embarked their capital in the cultivation of the soil there. He found immense fields of corn growing there, and also that the inhabitants had begun to plant vineyards, and to make experiments in Cotton cultivation that had proved most successful. At Mostagenema—a beautiful city overlooking the sea—there were 20,000 inhabitants. The country was extremely fertile and capable of great improvement. Great attention was paid in that district to the improvement of the breed of horses, and the best stallions and mares from Syria were imported for that purpose, the object of the French Government being to mount their cavalry upon horses of the best Arab breed. These horses were imported at the rate of about 40*l.*, but the mares fetched as much as from 80*l.* to 100*l.* each. The soil at Mostagenema was red and dark, covered with Fig trees, and very suitable for the cultivation of Beetroot sugar. He there met with a gentleman from Jersey, named Brown, who took him over a farm of about 60 acres, most beautifully cultivated, and in point of fact more like a garden than anything else. He stated that he never saw anything more productive, and the Jersey farmer told him there were no taxes on any kind of produce except Tobacco, and that he considered the climate and soil to be the finest in the world. The Mulberry might easily be cultivated there, and there would be no difficulty in producing the finest silks if they had properly skilled labourers. The soil of this part was a sandy loam, and the proprietor had sunk a well 24 feet deep at a cost of 140*l.*, which with 1-horse power enabled him to water the whole farm at the rate of 7 or 8 acres per day. He grew two crops of Potatoes in the year, and in one meadow there was a beautiful crop of Lucerne, which looked like a small plot in a garden, and which he watered every six days, cutting it ten times a-year. He said it was so productive that he was enabled to keep two horses on the produce of a small spot about 9 yards square daily. He also found his Vineyards very productive, and at a cost of 5*l.* per acre he could plant a Vineyard which at the second year would begin to pay, and the third year would yield a profit of 8*l.* per acre. The wine produced was very similar to the red wine of Provence, and the French looked forward to Algeria as a country which afforded great promise of an increase in the growth of the Vine. The hon. member also mentioned a farm cultivated by General D'Armagnac, who observed that after the corn crop was removed he grew a crop of Sessima, which produced a very valuable kind of oil in India, but which could not be exported from so distant a part to this country on account of its so soon turning rancid. General D'Armagnac also informed him that having tried the cultivation of the Castor oil plant on a small scale he found it very profitable. The general, who had been 15 years in Egypt, stated that many parts of Algeria resembled the plains that were watered by the Nile, except that in consequence of the inundations the soil of the latter was more sandy. For two days he had passed along the banks of the Scheliffe, the principal river in Algeria, and which watered a considerable extent of country. He found the soil deep and heavy, and in consequence of the numerous showers which fell about that time, it was so sticky that it was almost impossible for him to travel. At a place called Millianah, some Arabs had land under cultivation, and other portions of land were under the cultivation of French farmers. The whole plain, which was naturally very fertile, was bounded by mountains from 2000 to 4000 feet in height, while in the distance was to be seen the elevated range of the Atlas, 7000 feet high; the top of which, at that time, was covered with patches of snow. The town of Millianah was situated on a bluff, an extraordinarily strong position, and one of those which gave the French great trouble to master. From Millianah the roads were as good as any in England. At a distance of four hours from thence was the plain of Mitidijah, where there was formerly the convict settlement of Bourkella, a place so unhealthy that it was said to have had three entire populations within 20 years. He might mention that in going through this plain the contrast was well shown between the French cultivators of the soil and the natives for he very often saw heavily laden carts drawn by four or five horses, in the one instance, and in the other the Arab with his donkey and about ½ cwt. of vegetables in the panniers. The plain of Mitidijah was about 56 miles long and 12 broad, and was estimated to contain about 500,000 acres. It was only a few miles from Algiers, and was one of the richest plains in the country. At Blidah there were immense plantations of Orange trees and Vines, as well as immense fields of corn. Algiers itself contained a population of 100,000 persons, and had now become the resort of many European families, who had been attracted there by the benefit which the climate afforded to people affected with pulmonary complaints. The French had often been very much blamed for their management of this colony, but from what he had seen himself he thought that blame was very much misplaced. It must be remembered that Algeria was not a colony, but a conquered country. Little more than 10 years had elapsed since it had been reduced to that state, and notwithstanding this, large public works in the shape of roads, bridges, and harbours had been constructed. Its towns had been greatly improved. A system of railway communication was being carried out, and he believed that in future times Algeria would become the granary of France, as in former times it had been the granary of Rome. They were all acquainted with the struggle which took place between Abd-el Kader and the French, and they might remember that in the year 1841 Abd-el-Kader boasted that the French only occupied the soil that was covered by the feet of their soldiers, but in 1861 parts, formerly insecure with respect to life and property, were as safe as any cultivated country in Europe, while the administration had been such as to leave everything to individual enterprise, permitting individuals to carry out their own schemes unfettered by the legislation of the State. With regard to the military expenditure of France it would be unfair to charge those military expenses upon the colony, because, as a matter of policy, the French would always keep up the same army, consequently their troops must be supported somewhere, and they might as well be stationed in Algeria as at any other place. On the whole he could not but confess that the progress of civilisation in that wild and savage territory had been most marvellous during its occupation by the French, and he thought it a matter of gratification that 600 miles of the shores of the Mediterranean had been rescued from the rule of barbarians and placed within the reach of every enterprising man from any country who chose to avail himself of its advantages.

Some discussion took place, in which Mr. Frere, Mr. Day, and other gentlemen took part, and a cordial vote of thanks to Mr. Caird for his very able description of Algeria was given.

A vote of thanks to the Chairman concluded the proceedings.

The General Half-yearly Meeting took place on Thursday last at the Society's Rooms, Hanover Square. The meeting was very numerously attended.

Among the noblemen and gentlemen present were Lord Portman, Lord Tredegar, Lord Berners, Lord Egmont, Earl Cathcart, Sir J. Maxwell, Bart.; Mr. Dent, M.P.; Mr. B. Stanhope, M.P.; Mr. Holland, M.P.; Mr. Fisher Hobbs, Mr. Du Pré, M.P.; Sir W. Miles, M.P.; Mr. Beale Browne, Mr. Rigden, Mr. Owen Wallis, Colonel Lloyd Watkins, M.P.; Mr. Millward, Mr. Raymond Barker, Mr. Ramsay, Mr. Druce, &c., &c.

The Rt. Hon. Lord Portman presided.

Election of Officers.—The first business of the meeting was the election of Council for the ensuing year, and the voting papers having been handed in, Messrs. Thurnell, Sydney, and Corbett were appointed Scrutineers, and gentlemen retired to examine the votes.

Lord Feversham informed the meeting that Viscount Eversleigh having expressed his willingness to undertake the duties of President of the Association for 1863, the Council had come unanimously to the conclusion of recommending that nobleman to the meeting as a proper person to fill the important office of President for next year. He had therefore great pleasure in proposing that the Right Hon. Viscount Eversleigh be elected President of the Royal Agricultural Association for the year 1863. Lord Eversleigh was well known to them all, having filled the office of Speaker to the House of Commons for nearly 20 years to the perfect satisfaction of all parties. Since his elevation to the peerage the noble Viscount had devoted himself very much to agricultural pursuits, and was in every way qualified to fill the high office of President of the Association.

Sir W. Miles, M.P., in seconding the nomination of the noble lord, bore testimony to the admirable manner in which he had presided over an assembly of such dignity and importance as the House of Commons.

The resolution was carried by acclamation.

On the motion of Sir J. Maxwell, seconded by Mr. Clayden, the Trustees of the Association were re-elected.

Mr. Hersey then moved, and Mr. Du Pré, M.P., seconded, the re-election of the Vice-Presidents, which was agreed to unanimously.

The Secretary then proceeded to read the following

REPORT OF THE COUNCIL.

Since the last general meeting in December, the Council have had to deplore the loss of their President, his Royal Highness the Prince Consort; and, in order to mark their sense of this calamity, they thought it right to present, through the Secretary of State for the Home Department, an address of condolence to her Majesty the Queen, who has been graciously pleased to accept the same, and to present the Society with a portrait of his Royal Highness, for which the humble and grateful acknowledgments of the Council have been tendered through the President.

The Council have thought it a fitting mark of respect to the memory of their late President to contribute the sum of 100*l*. towards the National Memorial Fund, now in collection, in testimony of the invaluable services rendered by his Royal Highness to the cause of agriculture.

The place named in the last half-yearly report as fixed for the country meeting, to be held in accordance with the provisions of the Royal Charter, has been changed from Windsor to Richmond, in Surrey, and will be held on Saturday, 5th July, at 12 o'clock.

During the past five months 3 governors and 51 members have died; and the names of 102 members have been removed from the list by retirement, or otherwise; while 4 governors and 259 members have been elected, so that the Society now consists of—

83 Life Governors
97 Annual Governors
1151 Life Members
3475 Annual Members
17 Honorary Members

Making a total of 4823, being an increase of 108 names on the list.

The Council have elected the Right Hon. Lord Portman President of the Society; Mr. Fisher Hobbs, a Vice President, in the room of the late Earl of Yarborough; and the Right Hon. the Earl of Stradbroke, a Member of Council, in the room of the Earl of Powis, elected a Trustee.

The half yearly statement of accounts, to the 31st December, 1861, **has been examined and approved by the auditors and accountants of the Society. The funded capital stands at 17,488*l*. 17*s*. 10*d*. stock in the New Three per Cents.; and the current cash balance in the hands of the bankers on the 1st** instant was 4298*l*. 19*s*.

Papers have been read, at the weekly meetings, of much interest to the agricultural community—First, on the Agriculture of Russia, communicated by the Imperial Society of Agriculture of Moscow; second, on Cattle Condiments, by Mr. Beale Browne; third, on Steam Boiler Explosions, by Mr. Holland, M.P.; fourth, on the Growth of Mangel Wurzel; fifth, on Preparing, Mixing, and Cooking Food for Cattle, by Mr. Frere; and sixth, on the Present State of Agriculture in Algeria, by Mr. Caird, M.P. A lecture has been delivered by Professor Voelcker on Milk.

The dissemination of the information thus given, by means of the public press, has been attended with much benefit.

Professor Simonds' Report on Rot in Sheep has been published in the form of a pamphlet, and may now be purchased **of Mr. Murray. It will be inserted in the next number of the "Journal."**

The space applied for by the exhibitors of implements having much exceeded the area allotted to that department, it has been found necessary to exclude many articles which have of late years been exhibited in the Society's show-yard, but which had no immediate connection with the purposes of agriculture.

The number of stock entered for competition in almost every class in which prizes have been offered leads the Council to anticipate a very important show.

It has been determined to erect strong weather-proof horse-boxes for all the entire horses, in a distinct portion of the yard, where, at stated periods, they will be led out for exhibition.

The arrangements for giving the Metropolitan Meeting an International character have been much advanced by the assistance received from her Majesty's Secretary of State for Foreign Affairs, in communicating with the Ministers of Agriculture in foreign countries; and the Council cannot do less than recognise in this public manner his Lordship's cordial co-operation with the objects of the Society.

In compliance with the very generally expressed wish of the members, the Council have directed a programme of the arrangements connected with the Meeting at Battersea Park to be forwarded to every member of the Society, who will thus be duly informed of the subjects of interest during the Show.

The collection of wool exhibited by the Society in Class IV. in the International Exhibition will be found to contain specimen fleeces of nearly all the breeds of sheep and their crosses in the United Kingdom, while the various uses to which they are applied by the manufacturer are exemplified in smaller cases. The Council have to thank numerous contributors for the liberal support and assistance received in making this collection.

The Council have decided, subject to the usual conditions, to hold the Society's Country Meeting next year at Worcester.

By order of the Council.

H. HALL DARE, Secretary.

The balance sheet stated that the total receipts during the last year, including a balance in hand on the 1st of Jan. 1861, of 1278*l*. 12*s*. 7*d*., amounted to 20,437*l*. 7*s*. 7*d*., and that the total expenditure, including 9007*l*. 12*s*. 10*d*. for the stock and implement prizes, and general expenses of the show at Leeds, amounted to 18,602*l*. 12*s*. 6*d*., leaving a balance in hand on the 31st of December 1861, of 1834*l*. 15*s*. 1*d*. A half yearly balance sheet from July to December last, was also appended.

Lord BERNERS expressed a hope that not only would the substance of the financial report be deemed satisfactory by the members, but also that they would approve of the manner in which it had been placed before them. He begged to propose a vote of thanks to Messrs. Astbury and Corbett, the Auditors.

Lord TREDEGAR seconded the motion, which was carried unanimously.

Colonel HIGGINS suggested that the report of the Council, as well as the financial statement should be circulated among the members at least a week before the half-yearly meeting.

After some conversation in which the noble Chairman, Colonel Hood, Mr. Barker, Mr. Duckham, Mr. Orlebeare, Mr. **Jonathan Peel, Mr. John Hobbs, Sir J. Maxwell, and other** gentlemen took part,

The CHAIRMAN gave an assurance that the Council would take the matter into their consideration with a view of meeting the wish of the members.

ELECTION OF COUNCIL. — **The Scrutineers of the Voting Papers presented their Report, which declared the following Members to be elected the Council for the year ensuing:—**

Amos, Charles Edward; Greenfield House, Sutton, Surrey.
Barthropp, Nathaniel George; Cretingham Rookery, Wickham Market, Suffolk.
Cavendish, Hon. William, M.P.; Latimer, Chesham, Bucks.
Cotton, Hon. Col.; Cherry Hill, Malpas, Cheshire.
Druce, Joseph; Eynsham, Oxford.
Exall, William; Reading, Berkshire.
Gibbs, B. T. Brandreth; Halfmoon Street, Piccadilly, London.
Holland, Edward, M.P.; Dumbleton Hall, Evesham, Worcestershire.
Hoskyns, Chandos Wren; Harewood, Ross, Herefordshire.
Hutton, William; Gate Burton, Gainsboro', Lincolnshire.
Jonas, Samuel; Chrishall Grange, Saffron Walden, Essex.
Kerrison, Sir Edward, Bart., M.P.; Brome Hall, Scole, Norfolk.
Lawes, John Bennet; Rothamsted, St. Albans, Herts.
Lawrence, Charles; Cirencester, Gloucestershire.
Leigh, Lord; Stoneleigh Abbey, Warwickshire.
Macdonald, Sir Archibald K., Bart.; Woolmer Lodge, Liphook, [Hants.
Randell, Charles; Chadbury, Evesham, Worcestershire.
Sanday, William; Holmepierrepont, Notts.
Shuttleworth, Joseph; Melville Street, Lincoln.
Arkwright, John, Esq.; Leominster.
Smith, Robert; Emmett's Grange, Southmolton, Devon.
Towneley, Lieut.-Col. Charles; Towneley Park, Blackburn, Lancashire.
Tredegar, Lord; Tredegar, Newport, Monmouthshire.
Webb, Jonas; Babraham, Cambridge.
Wells, William; Redleaf, Penshurst, Kent.

A vote of thanks was then unanimously accorded to the Chairman for the able manner in which he had presided at the meetings and conducted the proceedings.

The CHAIRMAN, in returning thanks, expressed the deep regret of the whole Society at the loss they had sustained in the death of their President, his late Royal Highness the Prince Consort, whose office as their President he (Lord Portman) so unworthily filled. His lordship also assured the meeting that no efforts should be wanting to make the forthcoming show in Battersea Park not only worthy of the Society, but of the agriculture of the country at large.

The proceedings then terminated.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE,

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Thursday, May 22, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	16	29.88	52	51	N.W.	2	8	54	47	57	46	0.29	54½	54
Saturday ..	17	30.16	60	55	N.W.	1	2	65	42	86	38	..	54½	52½
Sunday ..	18	30.17	66	62	N.E.	1	1	73	43	96	39	..	56½	54½
Monday ..	19	30.08	68	63	N.	1	2	78	45	103	42	..	58½	55
Tuesday ..	20	29.79	60	58	S.W.	2	2	78	46	95	44	..	60	55½
Wednesday.	21	29.58	52	48	S.W.	2	3	68	45	82	43	..	59	56
Thursday ..	22	29.74	50	47	S.W.	3	2	62	39	79	36	0.23	57	56

Calendar of Operations.

MAY.

MIDLOTHIAN FARM: *May* 19.—**The sowing of Swedish Turnip is now** occupying the chief attention. The soil works badly, and although repeated grubbings reduce the surface to a fine state, beneath it is still stiff and tough. In most fields a plough furrow requires to be given, which so soon as turned up must at once be set upon with harrows, common and Norwegian. While no roller is permitted to go over it, by this means a sufficient depth of mould can be had on the stiff tenacious soils which were so thoroughly agglutinated with the heavy rains in March and in the beginning of May. Potatoes were only completed planting few days ago. The usual breadth has been put in. The prospect of the heavy land crop is not favourable from the baked state of the soil. The shearing of the sheep stock is now in progress, with the prospect of a good fleece. The stock is in excellent condition and Grass is plentiful, **while Grasses for hay are coming up fast. Cattle** have been selling at reduced rates until lately, when they fetch **more money, and are sought after both for Grass and for fat markets, while all sorts of fat sheep are in great demand, being scarce. Turnips are now exhausted,** and Potatoes not to be had. The stock of old grain is light, and straw scarce.

Notices to Correspondents.

GOUT WEED: *A M S, Marse.* **Can any one give his experience** of the extirpation of this weed from pastures. It is generally a hedgerow plant.

RABBITS: *B O* **asks if it is a common thing for rabbits to live** to the age of 10 years?

SUGAR CANE: *A* 17 *Years' Subscriber* asks if any of our subscribers can inform him whether the agricultural machine makers have ever invented a machine for making Sugar cane holes? One worked by steam or other motive power, whereby a large proportion of manual labour might be done away with, would be a great boon to himself and other **distressed West India proprietors.**

Genuine Roll Tobacco Cloth.

Warranted equal in Strength to Tobacco.

JOSEPH BAKER, 10, Gough Square, Fleet Street, E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1s. 1d. per lb.; over 10 lbs., 1s. Post-office Orders payable Fleet Street.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

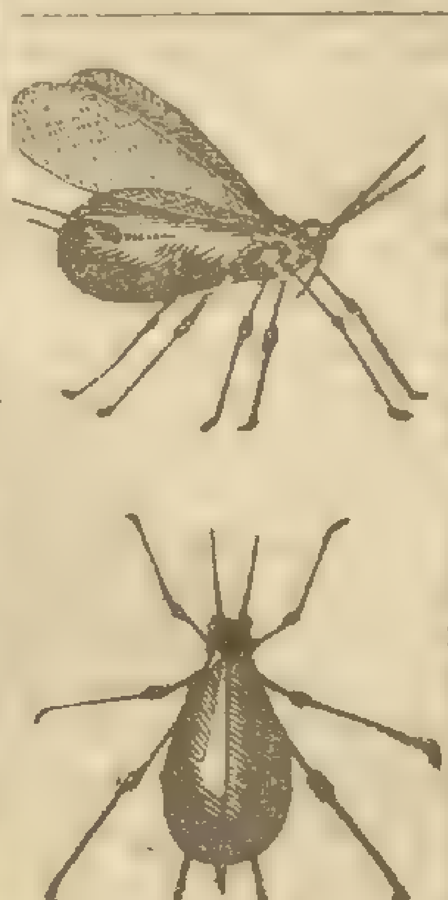
PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. **Extra Strong, 8*s*. per Gallon, sufficient to make four fit for use. Jars and Barrels** charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3*s*. per Gallon (or 9*d*. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

NEAL'S PATENT APHIS PASTILS, **One Shilling and Two Shillings per packet,** are now acknowledged by all disinterested persons to be the only cheap and effectual way of smoking a Greenhouse; they destroy all insects, and cannot injure the foliage unless they are damp. Testimonials from Florists and Scientific men of the highest standing may be had on application.


Magnified Aphides.

NEAL'S PLANT SOAP

is a perfectly new preparation, free from all smell, little more than half the price of the ordinary compounds, **is not injurious, but on the contrary** useful to the health of the Plant; destroys Red Spider, Mealy Bug, American Blight, Mildew, Scale, Thrip, Green Fly, and all other Insect Pests, and is only 1*s*. a packet of four cakes. May be obtained of all principal Seedsmen.

Patentee:
J. NEAL, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1*s*., 3*s*., and 10*s*. 6*d*. each.

Wholesale by
PRICE'S PATENT CANDLE CO., Limited.

Upwards of 2000 Cases have been reported as Cured by

JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at **1*s* 6*d*., 2*s*. 6*d*.,** and 5*s*. each. A 1*s*. 6*d*. bottle will make 12 **gallons fit for use.**

AGENTS:—

Messrs. Wood & Ingram, Huntingdon
,, **Wood & Sons, Maresfield, near Uckfield**
,, **J. & J. Fraser, Lea Bridge Road, London, N.E.**
,, **Grayson & Co. Bury St. Edmunds**
,, **Wm. Urquhart & Son, Dundee**
,, Dicksons & Co., Waterloo Place, Edinburgh
,, Minier, Nash & Nash, 60, Strand, London
,, Hurst & McMullen, 6, Leadenhall Street, London
,, **Fisher & Holmes, Handsworth, Sheffield**
,, Finney & Co., Gateshead
,, **Stuart & Mein, Kelso**
,, **Martin & Son, Hull**
,, F. & A. Smith, Dulwich, London
Mr. John Harrison, Darlington
,, **Richard Smith, Worcester**
Seed Warehouse, 10 and 11, Exchange Street, Norwich

KEATING'S PERSIAN INSECT DESTROYING POWDER.

Fleas in Dogs, Poultry, &c., are instantly destroyed, as also Bugs, Beetles, and every other Insect, by this Powder, which is perfectly harmless to animal life; Sportsmen particularly will, therefore, find it invaluable.

Sold in Packets, 1*s*., 2*s*. 6*d*., and 4*s*. 6*d*. each, or post free for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address.

E. T. ARCHER'S "FRIGI DOMO."—Patronised **by her Majesty the Queen,** the Duke of Northumberland **for Syon House, his Grace** the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, **Sir Joseph Paxton** for the Crystal Palace, Royal Zoological **Society, late Mrs. Lawrence** of Ealing Park, &c.

PROTECTION from the COLD WINDS & MORNING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair **and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature.** It is adapted for **all horticultural and floricultural** purposes, for preserving **Fruits and Flowers from the scorching rays** of the sun, from **wind, from attacks of insects, and from morning** frosts. To be **had in any required lengths.**

Two yards wide .. .. 1*s*. 6*d*. per yard run.
Four yards wide .. .. 3*s*. per yard.
An improved make, 3 yards wide, 2*s*. 6*d*. per yard run.

Also "Frigi Domo" Netting, 2 yards wide, 1*s*. 4*d*. per yard run.

ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen **and Seedsmen throughout the kingdom.**

"It is much cheaper than Mats as a covering."

DEANE & COMPANY'S
HORTICULTURAL TOOLS.

DEANE'S MOWING MACHINES, with Boyd's Patented Improvements, 5*l.*, 7*l.*, 7*l.* 10*s.*, 8*l.* 10*s.*
GARDEN ENGINES, Galvanised Iron. Prices 55*s.*, 65*s.*, 78*s.*, 90*s.*, 100*s.*, 110*s.*
GARDEN ENGINES, Wood, 90*s.*, 110*s.*, 138*s.*
FLOWER STANDS, 4*s.* 6*d.* each.
CAST-IRON ORNAMENTAL FLOWER STANDS to hold Seven Vases, 27*s.*
GREEN'S PATENT MOWING MACHINES.
GREENHOUSE SYRINGES, 8*s.*, 10*s.*, 18*s.* 6*d.*
GARDEN ROLLERS, 1*l.* 14*s.* 6*d.*, 2*l.*, 2*l.* 12*s.*, 3*l.* 3*s.*, 3*l.* 18*s.*, 4*l.* 13*s.*, 5*l.* 12*s.*, 7*l.* 10*s.*
GARDEN STOOLS, 4*s.* 6*d.*
GARDEN SEATS, from 25*s.*
BOYD'S SELF-ADJUSTING SCYTHE, 10*s.* 6*d.*
WIRE WORK, 18 in., 4*d.* per yard run.

Every Implement for Garden use on the lowest terms.

DEANE'S NEW ILLUSTRATED HORTICULTURAL LIST
POST FREE ON APPLICATION.

DEANE'S, Opening to the MONUMENT, LONDON BRIDGE, E.C.

ST. PANCRAS IRON WORKS COMPANY,
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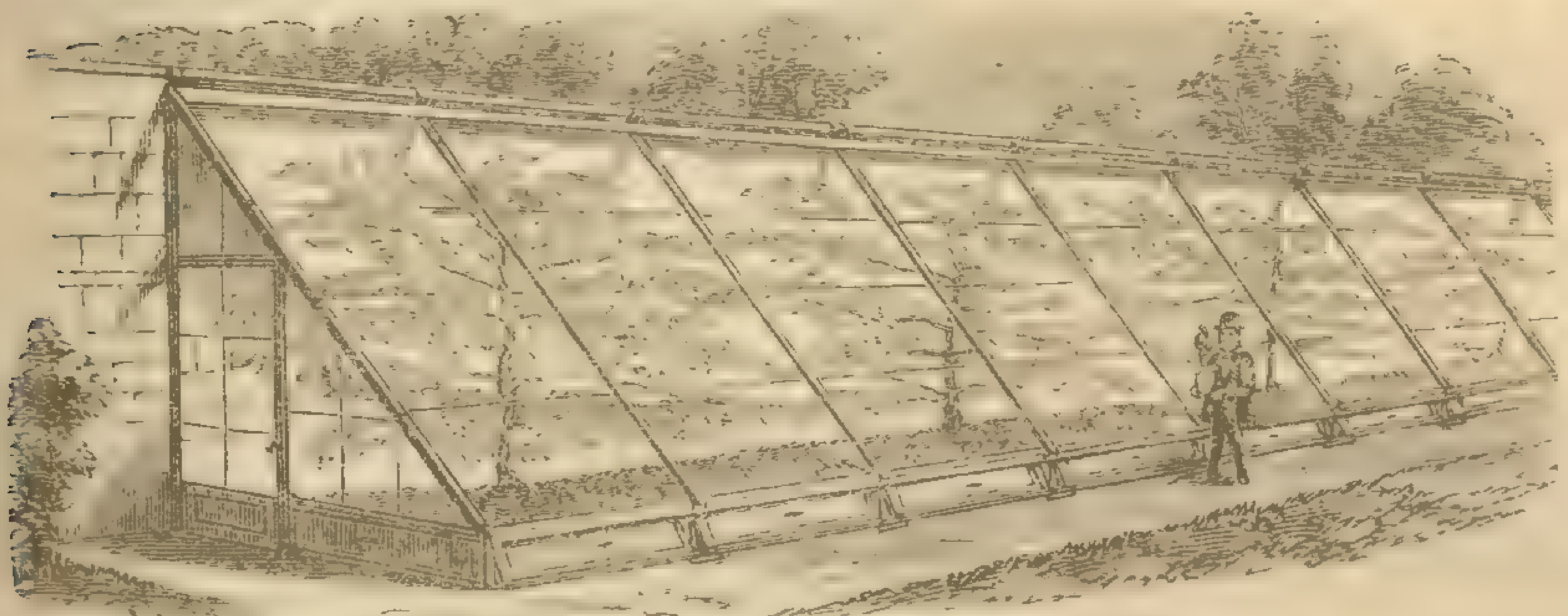
BY ROYAL LETTERS PATENT.



SCOTT'S GLASS WALLS,

Designed to meet the suggestions of James Scott, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

CONSERVATORIES	PINE and MELON PITS	BALCONIES	GATES
GREENHOUSES	VASES	IRON SASHES	TANKS
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Every description of IRONWORK. *Lists Free.*

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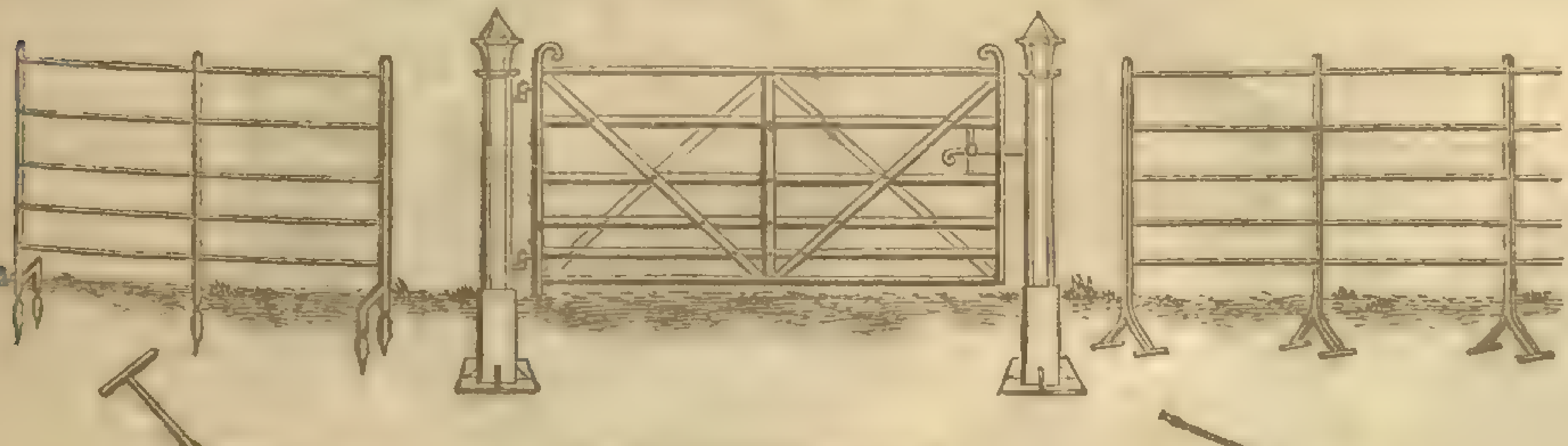
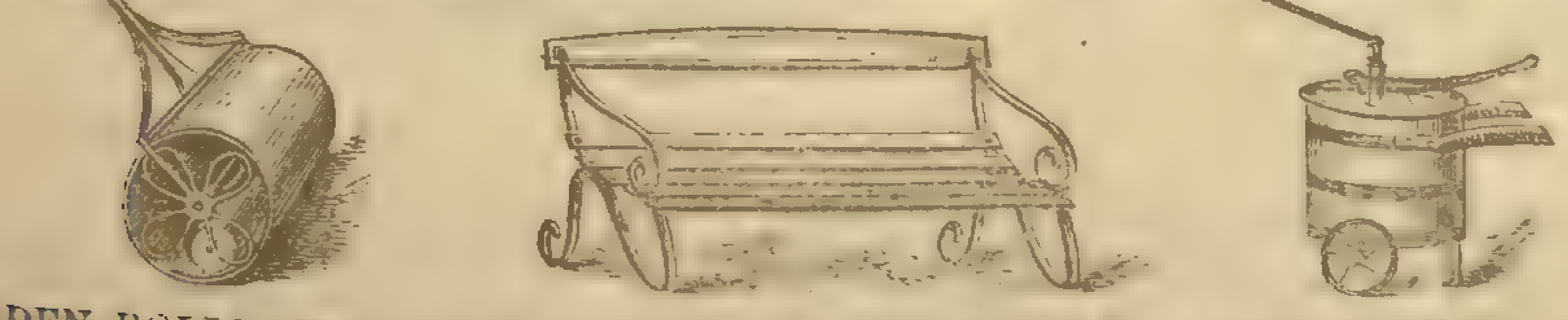
COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,
MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.
PARK ENTRANCE GATES, AND RAILING OF CAST AND WROUGHT IRON COMBINED,
IN VARIOUS STYLES.





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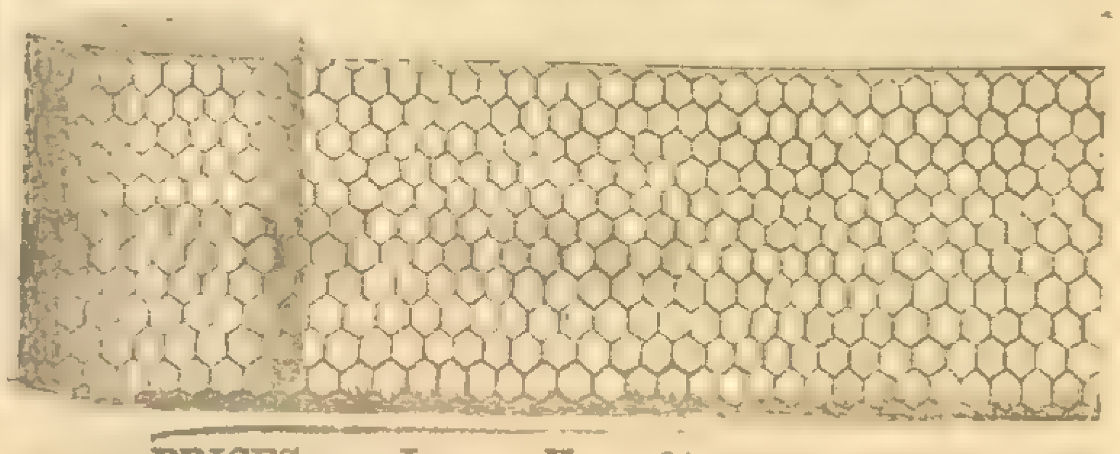
WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes.
VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.
The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.
Illustrated CATALOGUES and DRAWINGS free on application to
COTTAM & CO., ENGINEERS and IRON FOUNDERS,
2, WINSLEY STREET (Opposite the Pantheon), OXFORD STREET, LONDON, W.

NEW IMPROVED PREMIUM WIRE NETTING.
Great Improvement with Reduced Price.



PRICES per Lineal Yard 24 inches high.

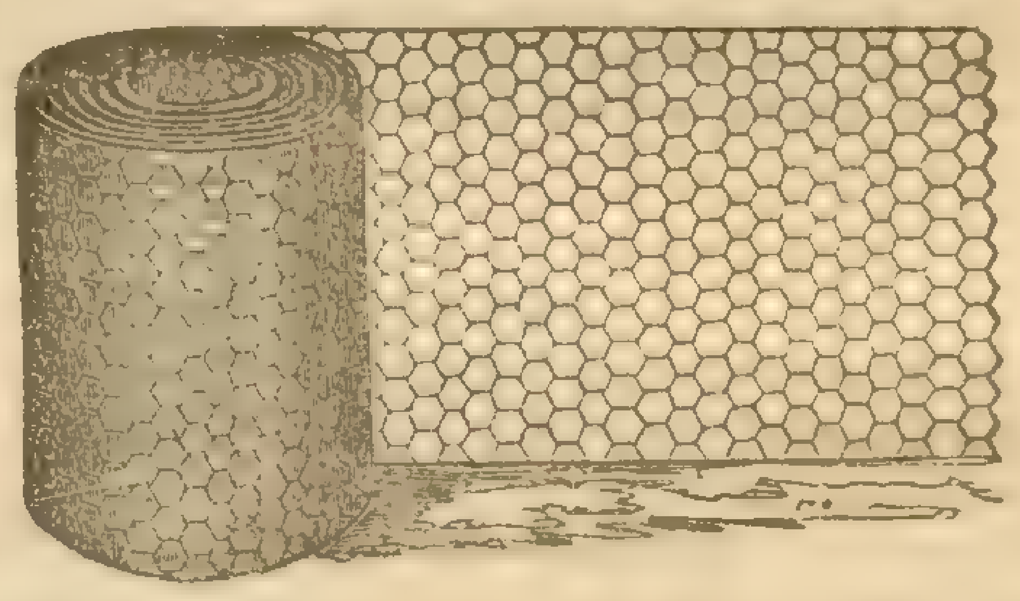
Size of Mesh	Mostly used for	Light.		Medium		Strong		Extra Strong.	
		Jap	Gal.	Jap	Gal	Jap	Gal	Jap	Gal.
2¼ in.	Poultry ..	3*d.*	4*d.*	3¾*d.*	5*d*	4½*d.*	6*d.*	5¼*d.*	7*d.*
2 in.	Poultry ..	3½*d.*	4¼*d.*	4*d.*	5*d*	5*d.*	6½*d.*	6½*d.*	8*d.*
1⅝ in.	Small Rabbits	4*d.*	4¾*d.*	4¾*d.*	6*d.*	5½*d.*	7*d*	7*d.*	9*d*
1½ in.	Smallest Rabbits	5*d.*	6*d.*	5¾*d.*	7*d.*	7*d.*	9*d.*	9*d.*	11*d*

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

*** Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.

J. B. Brown & Co., 18, Cannon Street, City, London, E C.

BARNARD, BISHOP, and BARNARDS,
Norwich.
FURTHER REDUCTION in the PRICE of WIRE NETTING.—April, 1861.



Barnard, Bishop, & Barnards beg to inform their friends and the public that they have made a further reduction in the prices of Machine-made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch mesh, 24 inches wide..	No. 19	.. 4½*d.*	.. 3½*d.*
2-inch " " " ..	" 18	.. 5	.. 4
2-inch " " " ..	" 17	.. 6½	.. 5
2-inch " " " ..	" 16	.. 8	.. 6½
1⅝-inch " " " ..	" 19	.. 4¾	.. 4
1⅝-inch " " " ..	" 18	.. 6	.. 4¾
1⅝-inch " " " ..	" 17	.. 7	.. 5½
1⅝-inch " " " ..	" 16	.. 9	.. 7

All the above kinds can be made any width (under 6 feet), at proportionate prices.

Strong Galvanised Poultry Netting, 7½*d.* per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11*d.* per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.

Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.

Five wires, 3 feet 6 inches high, pronged Standards, 8 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10*d.* per yard.

The same with Galvanised Wire Rope, 1*s.* per yard.

Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.

*** Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

Paxton Works, Sheffield, Established 1738.

SAYNOR and COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.

Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an article superior in quality to anything we have hitherto been able to offer in PRUNING, BUDDING, and GRAFTING KNIVES, VINE and PRUNING SCISSORS, GARDEN SHEARS, &c., owing to their being tempered under an entirely new process, which renders the blade tough and not liable to break, and also gives the edge a lasting keenness which we can warrant them to retain for at least double the time they would under the old method of tempering, thus facilitating the work and saving the time usually lost by having constantly to renew the edge by sharpening, consequently making them more durable in wear and better adapted for all kinds of work, every blade being guaranteed of the same temper.

Caution. None are genuine except marked Saynor, or Saynor, Maker. Other marks would cause the purchaser disappointment.

GREEN'S

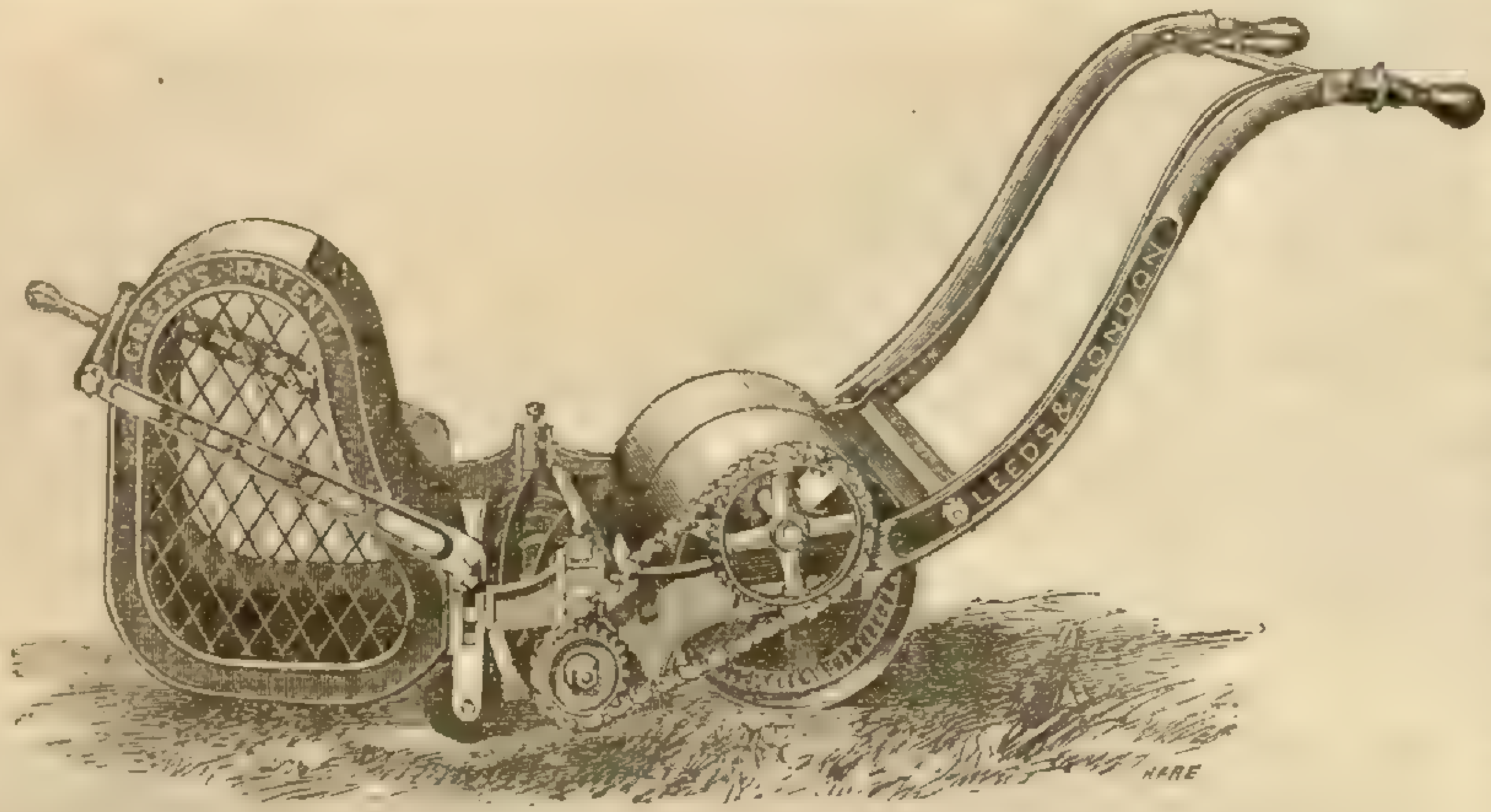
LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THOMAS GREEN can with confidence state that he has succeeded in bringing forward for the ensuing season a Machine which is so novel in its character that any person, however unskilled, is enabled to use it with confidence and ease; and by its thoroughly mechanical construction is pronounced by practical men to be the *ne plus ultra* of perfection. Every improvement that has suggested itself from past experience has been put to practical test, and the results are that the Machines for which Her Majesty's Royal Letters Patent *have recently been obtained* are immeasurably superior to anything of the kind ever brought before the Public. They combine all that efficiency and simplicity can express, and are calculated



to keep Lawns in the highest state of perfection, which cannot be equalled by any other means. They are adapted both in size and price to the very smallest plots, as well as Lawns acres in extent. Since their introduction the sale of these Machines has more than doubled each succeeding year, and has now attained *the largest sale of any Machine "extant;"* have proved to be the best, having carried off *every Prize* that has been given in all cases of competition. They are made from the best materials, and of superior workmanship; are delivered *Carriage Free* to all the principal Railway Stations and Shipping Ports in England; *are warranted to give satisfaction*, and if not approved can be at once returned, if sent carriage free to Leeds.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0	£8 15 0
To Cut 20 inches	8 0 0	9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0	£ 9 17 6
To Cut 24 inches	9 0 0	10 7 6

To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0	£21 10 0
To Cut 36 inches	23 0 0	24 16 0
To Cut 42 inches	26 0 0	28 2 0
To Cut 48 inches	29 0 0	31 8 0

Leather Boots for Horse, per set, £1 4*s.*

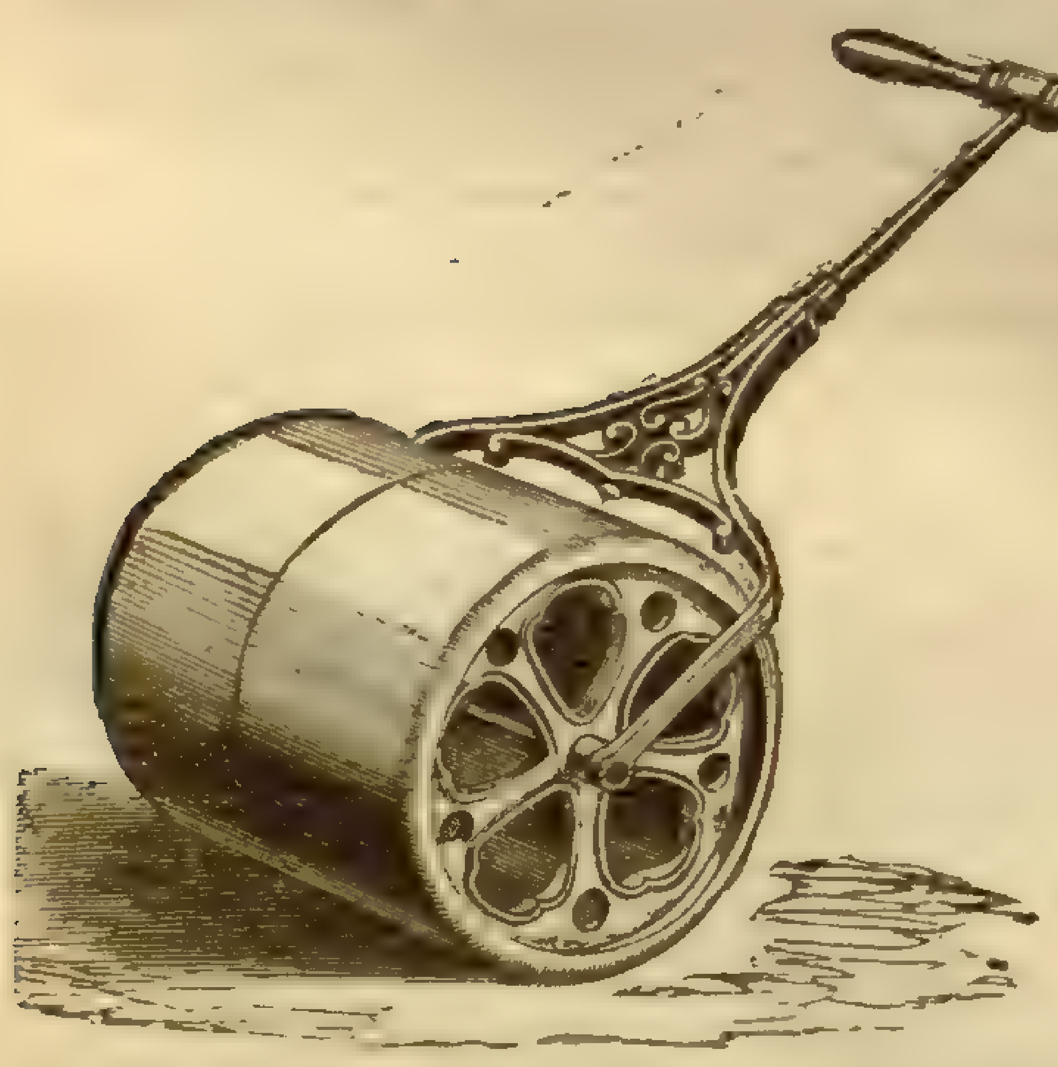
Donkey and Pony Machines, including Box of Requisites & Traces.

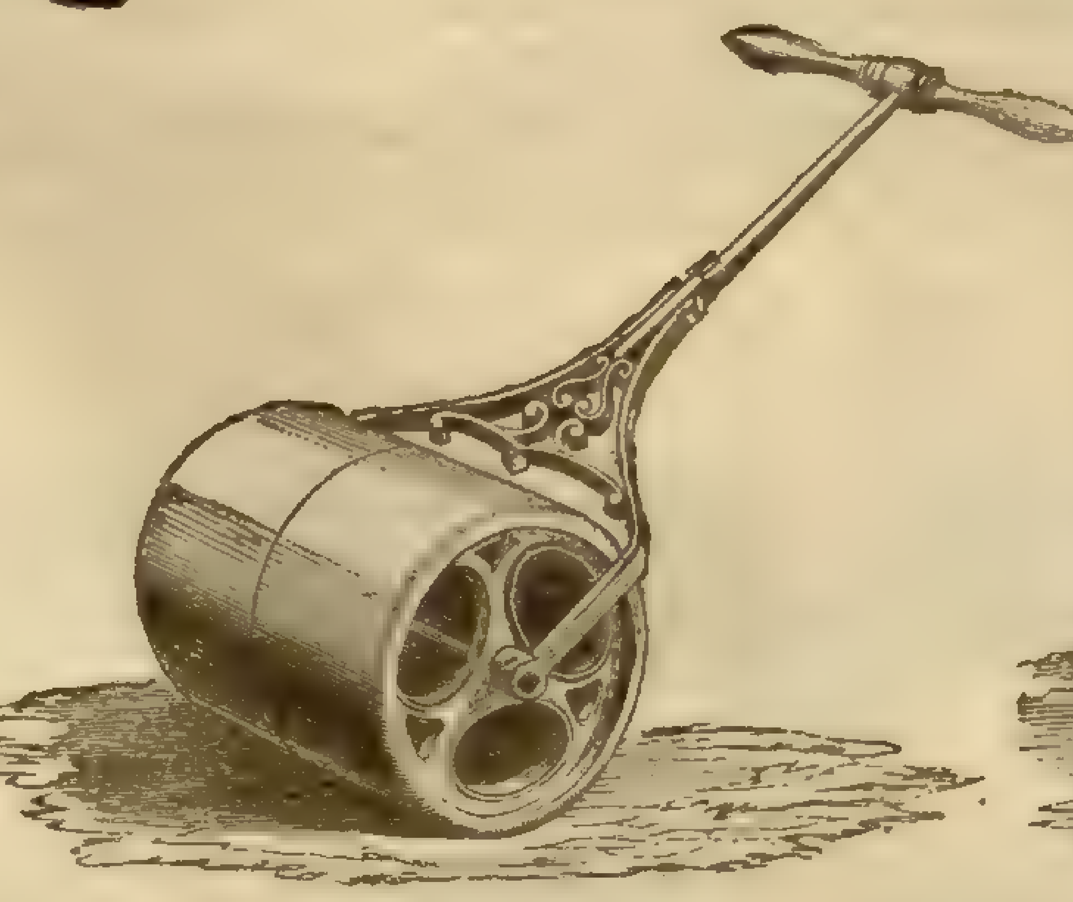
	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0	£12 10 0
To Cut 26 inches	12 10 0	13 12 0
To Cut 30 inches	16 14 0	18 0 0

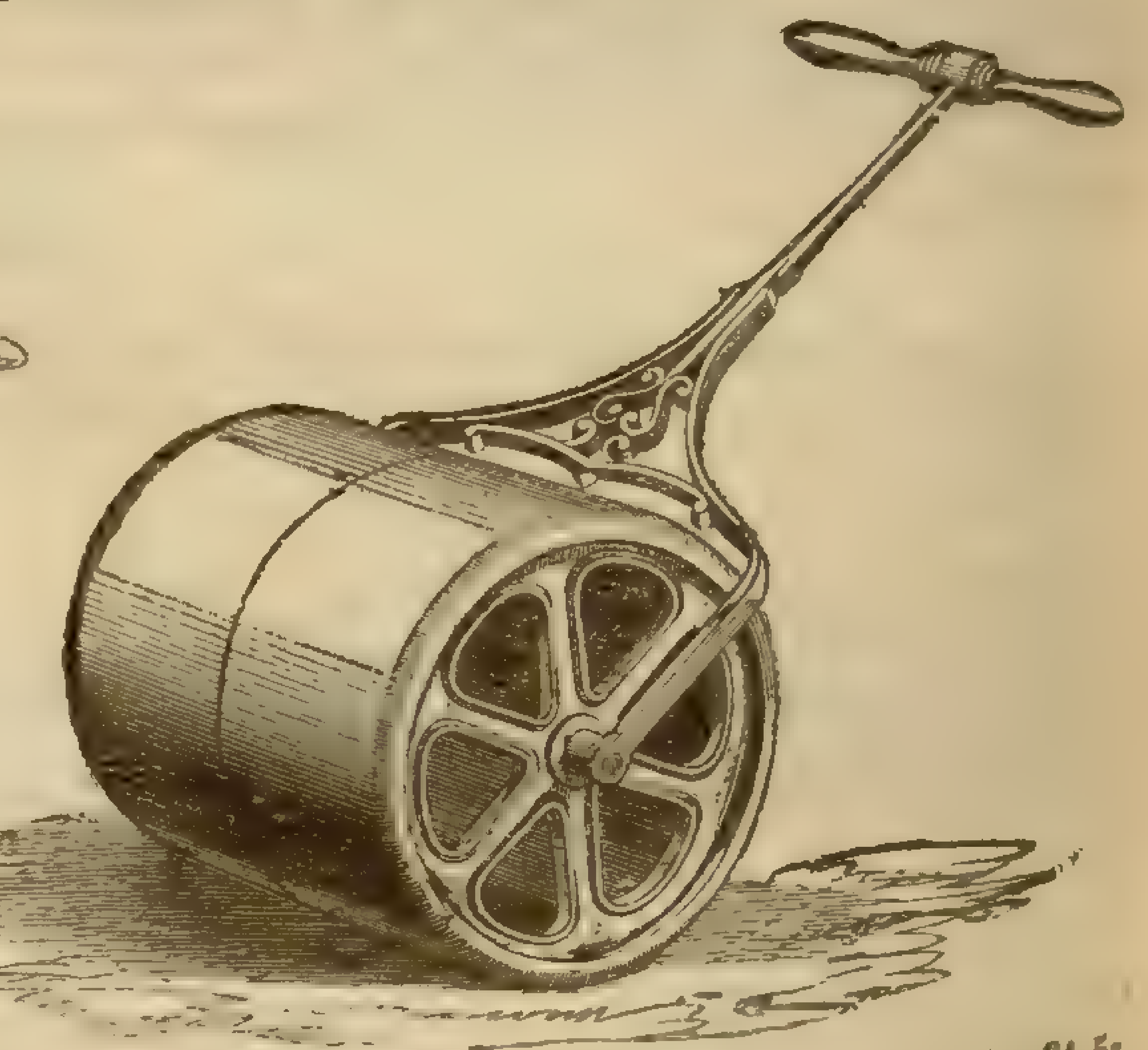
Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.







Diameter 20 inches, length, 22 inches....Price £3 5*s.* | Diameter 16 inches, length, 17 inches....Price £2 10*s.* | Diameter 24 inches, length, 26 inches....Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is *strikingly apparent when compared with any other Garden Roller yet brought out.* They are made in two parts, and are free to revolve on the axis, affording greater facility for turning, and the outer edges are rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green or Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

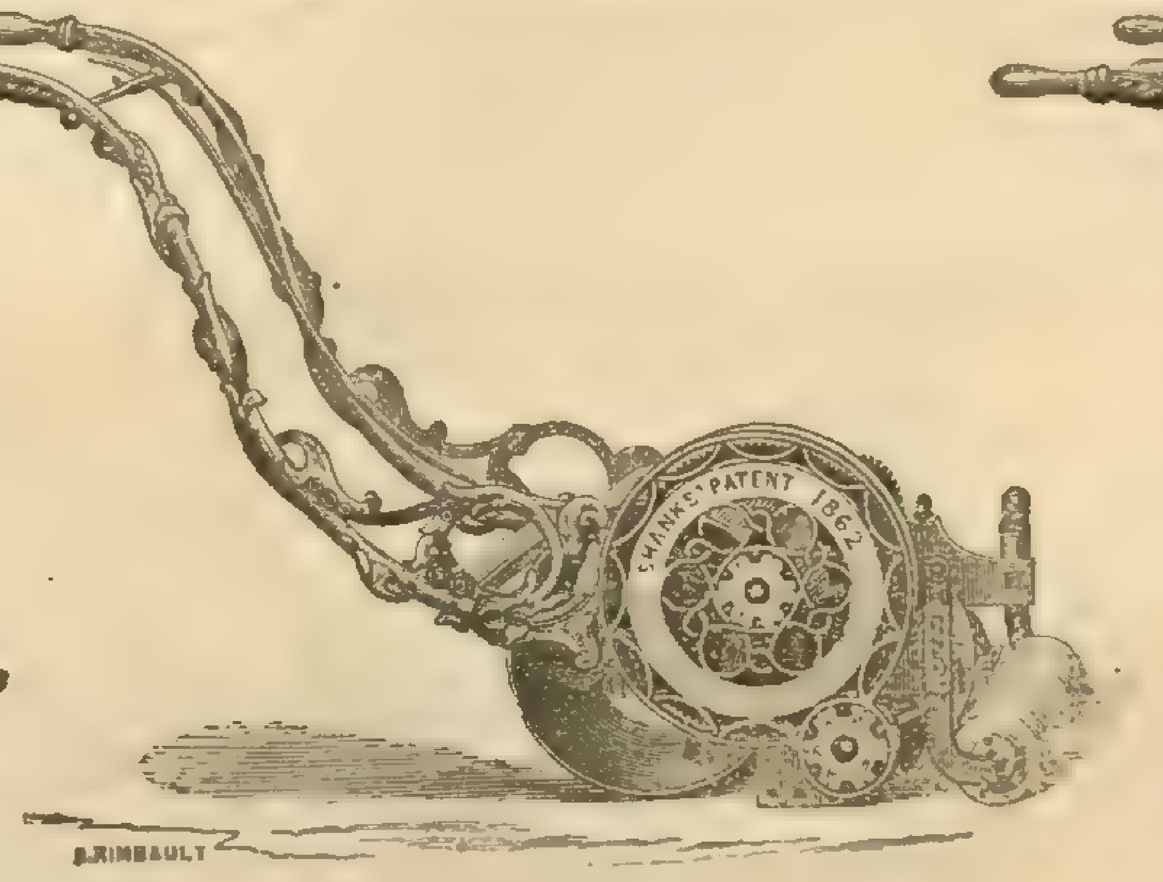
T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

SHANKS' NEW IMPROVED PATENT

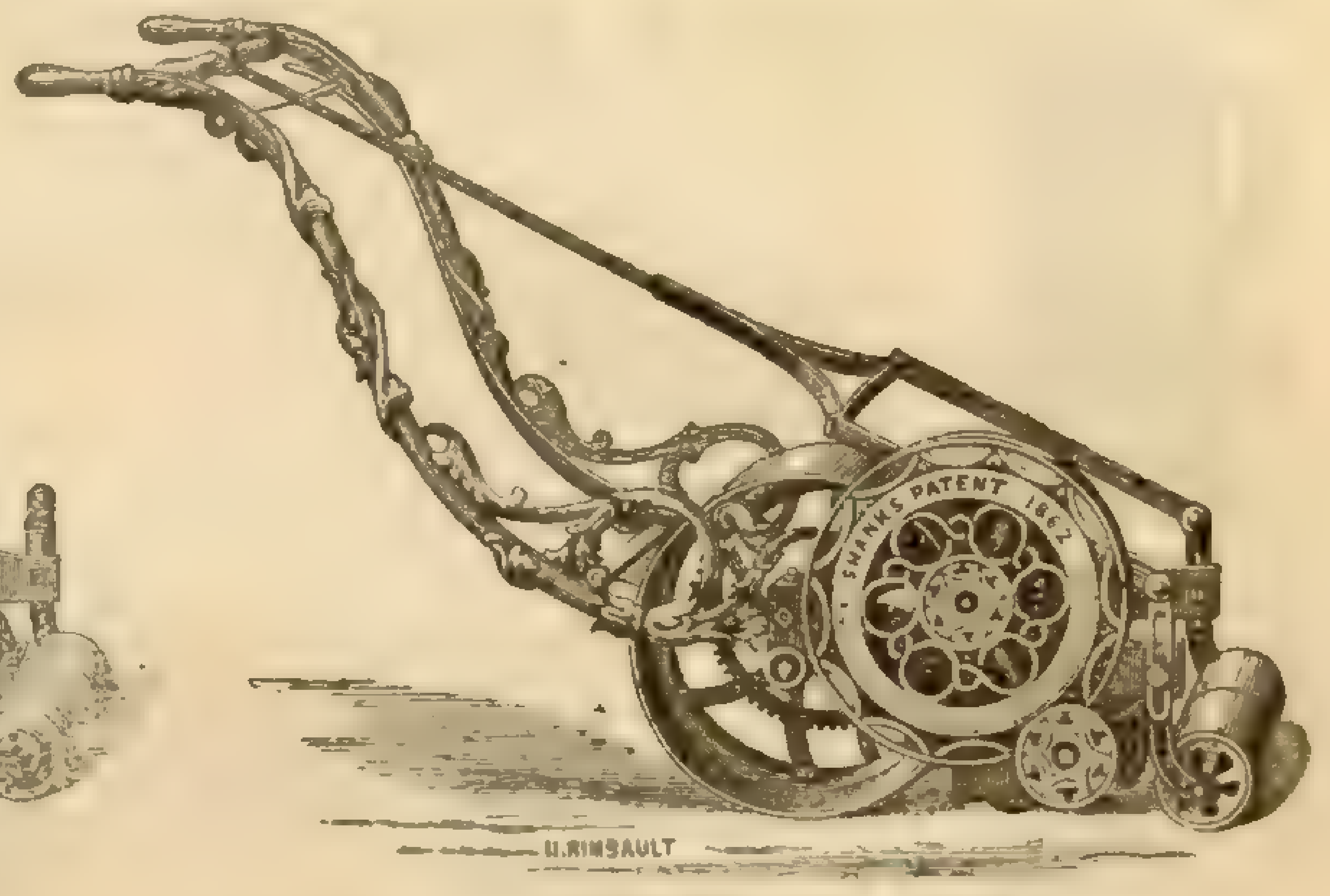
LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

WITH SILENT MOTION IF SPECIALLY DESIRED.

12-INCH, or LADY'S MACHINE.



16-INCH to 14-INCH MACHINE.



LARGE HAND MACHINE.

J. B. BROWN AND CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effects of the improvements of previous years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season.

SHANKS' NEW IMPROVED PATENT HAND MACHINE for 1862.

Messrs. SHANKS have just brought out for this season an entirely new Machine, which combines, in addition to the improvements of last year's Machine, other improvements of importance, with the most tasteful design, which is duly protected by Registration. The Patentees have been particularly careful in observing that all the parts possess sufficient strength and firmness to enable them to stand satisfactorily the tear and wear of out-door work, and the rather rough handling these Machines are sometimes subject to from the labourer unskilled in machinery. J. B. BROWN & Co. are gratified in being able to offer to the Public a Machine, which is not only a graceful ornament to the Flower Garden, but the most perfect and the most easily worked Lawn Mower that has ever been in use. The Cutter (the most important part of the Machine) is this season still further strengthened. The Bearings, and everything tending to increase friction, and consequently the draught, are carefully constructed to reduce the friction to the smallest possible amount. The Machines are fitted with the same care and precision as the Horse and Pony sizes, and like them, possess the same advantages of ability to Mow on uneven Lawns without injury to the Turf, of having loose Rollers for ease in turning, of having Wheels properly guarded, and so placed as to give an equal balance to either side of the Machine. The annoyance which is often given in other Lawn Mowing Machines, by the Bearings of the Cutter getting loose, and the latter wearing down on the plate, is also obviated in the new Machine. No change of Rollers is necessary in Mowing a Verge or Close to a Flower Bed.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0		No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.	Width of Cutter.	Width of Cutter.
No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.*	No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.*	No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

PRICES.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man*
No. 9.—22-inch Machine	8 7 6		No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*			

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Messrs. SHANKS have also brought out this season a new SMALL MACHINE, of the same graceful model as their other Hand Machine, which is specially intended to be used by Ladies or Gentlemen for recreation or amusement in the Flower Garden, and for Small Gardens where no regular Gardener is kept. This elegant and neat Machine has three great recommendations, viz.:—it is very cheap, very light, and very easily worked. Not the least difficulty or trouble need be anticipated in the management or working of this Machine, while the work executed is not only vastly superior to the Scythe, but a great deal sooner accomplished. No person having a Lawn, however small, should be without one of these useful Machines.

PRICES, including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 16.—16-inch Machine ...	£6 5 0	*Easily worked by a Stout Lad.*	No. 18.—12-inch Machine	£5 5 0	*Easily worked by a Lady.*
No. 17.—14-inch Machine ...	£5 15 0				
Silent Movement, 7*s.* 6*d.* extra.			Silent Movement, 4*s.* extra.		

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

☞ Shanks' Machines were COMMENDED by the Judges at the Exhibition of the Royal Horticultural Society, Wednesday, May 21.

*** *The Machines are warranted to give ample satisfaction, and if not approved of they may be at once returned.*

SOLE AGENTS FOR LONDON:

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

Card.

SAMUEL N. McGERROW,
General Horticultural Builder,
Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

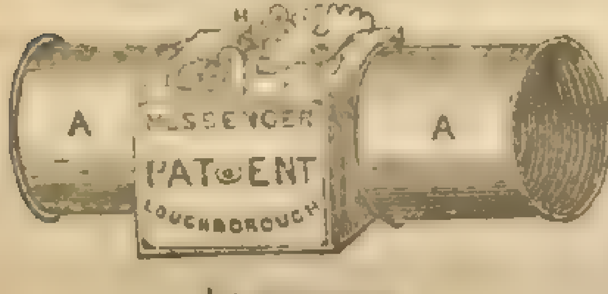
RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the Patentee's Warehouse, 155, Cheapside, London, E C.
Price complete from 3l. 10s.
Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

West of England, Ireland, and Wales.

VINCENT SKINNER (late Partner with J. Weeks & Co.), erects CONSERVATORIES, HOTHOUSES, and HOT-WATER APPARATUS.

His improved Pipe Boilers, which give such universal satisfaction for Warming Churches and Hothouses, will heat from 100 to 2000 feet of Pipe.
Plans and Estimates on application to V. Skinner, Bridewell Street, Bristol.



Elevation.

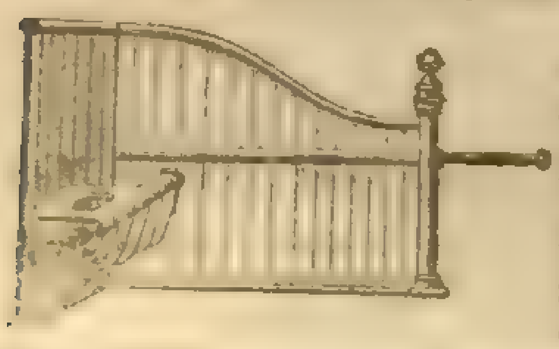
Section.

T. G. MESSENGER, Horticultural Builder and Engineer, Loughborough, has recently patented a Valve which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under.
Two inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s.
A liberal discount to the Trade.

JAMES WATTS and CO., Hothouse Builders and Hotwater Apparatus Manufacturers, near the Green Man, Old Kent Road, London, S.E.

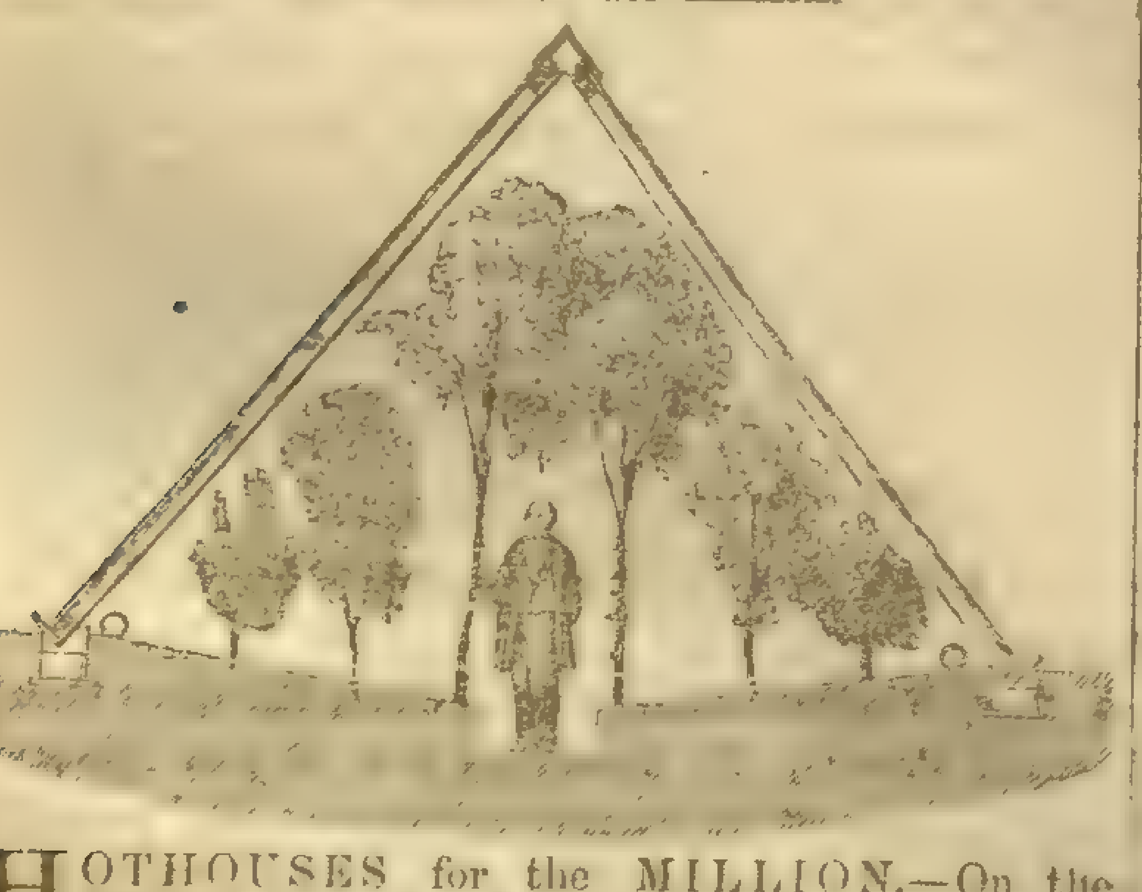
200 CUCUMBER and MELON BOXES and LIGHTS, and from 400 to 500 LIGHTS for PITS of all SIZES kept in STOCK.
Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.
References to the Nobility, Gentry, and Trade in most of the counties in England.

MUSGRAVE'S PATENT STABLE FITTINGS and HARMLESS LOOSE BOXES, PATENT IRON COW HOUSE FITTINGS, and IRON PIGGERIES.



These inventions are recommended as possessing numerous advantages not to be found in anything hitherto made. At the late Meeting of the Royal Agricultural Society at Leeds, Musgrave Brothers received a Silver Medal, and two Awards of "Highly Commended," being the only Prizes conferred on any competitor in this class.
Particulars sent on application to the Inventors and Makers, Musgrave Brothers, Ann Street Iron Works, Belfast.

Hothouses for the Million.



HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to any Railway Station round London.
Illustrated Circulars, with Lists of Prices, can be had on prepaid application to Samuel Hereman, 7, Pall Mall East, London.

E. DENCH'S Horticultural Works, 152, King's Road, Chelsea, S W. Manufacturer of every description of HORTICULTURAL BUILDINGS either in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without.
HOT WATER APPARATUS Manufacturer.

Horticultural Buildings and Heating by Hot Water.

BURY and POLLARD, Park Iron Works, New Park Street, Southwark, S.E., Manufacturers of every description of Buildings for Horticultural Purposes, with their Improved CONICAL BOILER for heating the same, are prepared to undertake works of any magnitude, and refer among others to the celebrated range of Forcing Houses at Her Majesty's Gardens, Frogmore, and at Sir Robert Peel's, Drayton Manor, constructed under the superintendence of their Manager, Mr. John Jones.
Further information forwarded on application.

Horticultural Works and Hot-Water Apparatus Manufactory,
Kensal Green, Harrow Road, London, W.

JOHN TAYLOR and SON beg to call the attention of the nobility and gentry to the very superior manner in which they ERECT all kinds of CONSERVATORIES, VINERIES, GREENHOUSES, &c., combining every improvement with elegance of design and durability of materials and workmanship.
Their VENTILATING APPARATUS for the Fronts and Roofs of Houses has given the highest satisfaction. Churches, Chapels, Schools, Entrance Halls, Public Buildings, &c, heated with Hot-Water Apparatus in a most economical and efficient manner.
J. T. & Son have great pleasure in referring to numbers of the nobility and gentry by whom they are extensively engaged.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, Tubular, and Elliptic, from 21s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 12s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at
Mr. Lynch White's, Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

BURROW'S LANDSCAPE GLASSES, for the Field, the Opera, and the Sea, 3½ and 6 guineas.
BURROW'S TARGET TELESCOPE for the Long Ranges, 25s and 30s., free by post.
BURROW'S NEW POCKET BAROMETER, for Travelling, 4 guineas.
Full particulars on application to W. & J. Burrow, Great Malvern.
*** International Exhibition, Class 13, North Gallery.—A SHOW CASE, and Agent in attendance.
London: B. Arnold, 72, Baker Street, W.; and Wales & McCulloch, 56, Cheapside, E.C.

SHAW'S TIFFANY.—Protect the Bloom of your Wall Trees in time with the best and cheapest of all materials—SHAW'S TIFFANY.
Apply to John Shaw & Co., the Manufacturers, for Samples and Prices, 29, Oxford Street, Manchester.

Important to Seedsmen and Nurserymen.
Sacks and Bags.

JAMES T. ANDERSON, Sack and Bag Maker, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), continues to supply SEED BAGS at the following low prices:—

2 Bushel Bags..3s. 9d. per doz.	½ Bushel Bags..4s. 9d. per 2 z.
1 Bushel Bags..6s. 3d. „	Peck Bags ....3s. 6d.

Coarser Bags much cheaper.
Bushel Grass Bags at 1s. each | 4 Bushel Sacks at 1s. each.
All orders promptly executed.

International Exhibition, Class IX. (Eastern Annexe).
BEE-HIVES.—Prize Medal awarded to G. N. & Sons for Bee-Hives and Honey, at the Paris Exposition of 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by George Neighbour & Sons, with all the recent improvements, three glasses, and thermometer, price 35s., securely packed for the country.
This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.
Early applications addressed to Geo. Neighbour & Sons, 127, High Holborn, W C, or 149, Regent Street, London, W., will receive prompt attention.
Their newly-arranged Catalogue of other Improved Hives, with drawings and prices, sent on receipt of two stamps.
Agents:—Liverpool .. James Cuthbert, 12, Clayton Street
„ Manchester . J. Wilson, 56, King Street.
„ Birmingham J. H. Cottrell 15, Bull Ring.
„ Dublin .. Edmondson, Brothers, 10, Dame Street.
„ Glasgow .. Austin & M'Aslan, 168, Trongate.

TWO HUNDRED SETS
of
STEAM PLOUGHING and CULTIVATING APPARATUS
have now been sent out by
JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD.
Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.
Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

CARSON'S
ORIGINAL ANTI-CORROSION PAINT.

White ... Light Stone ... Drab or Portland Do Bath Do... Cream Color ...	30s. per cwt.	Bright Red ... Dark Do. (or Brick Color) Light & Dark Chocolate Black ...	26s. per cwt.
Lead Color ... Light and Dark Oak	26s. „	Bright Green ... Deep Green ... Blue (for Carts & Waggons)	41s. „

PATRONISED BY

THE BRITISH GOVERNMENT	THE LAMENTED PRINCE CONSORT	RAILWAY AND CANAL COMPANIES
THE RUSSIAN GOVERNMENT	MOST OF THE NOBILITY & GENTRY	COLLIERIES, IRON MASTERS, &c.

It is extensively used at home and abroad for all kinds of
OUT-DOOR WORK,
and has been proved, after a practical test of 70 years, to surpass any other Paint. It is applicable to Wooden Houses, Farm and other Out-Buildings, Park Fencing, Gates, &c.; also Iron Roofing, Bridges, Hurdling, and every description of Iron Work, while for
PUBLIC EDIFICES, MANSIONS, VILLA RESIDENCES,
and every kind of Brick, Stone, Compo, &c., it is unrivalled, presenting the appearance of fine cut stone.
It is undoubtedly the only Paint that will stand on
CONSERVATORIES, GREENHOUSES, FRAMES, &c.,
and is in consequence largely used by the Nobility and Gentry, also many eminent Horticulturists, for such purposes. The Anti-Corrosion is Lower in Price, and lasts twice as long as the Best White Lead; at the same time is economical in application, as
ANY PERSON CAN LAY IT ON.
The Anti-Corrosion is a Powder, and will keep any length of time.
Carriage paid upon quantities of not less than 5 cwt. to any station in England and Wales, or by Water to any Port in the United Kingdom, where there is direct communication from London, as Leith, Dublin, Belfast, Glasgow, Aberdeen, &c.
Casks not returnable, a uniform rate of 1s. being charged for all sizes up to 5 cwt., which are free.
OIL, TURPENTINE, AND BRUSHES.
Patterns, Cards, and Testimonials sent upon application to
WALTER CARSON & SONS (Successors to the Inventors),
9, GREAT WINCHESTER STREET (Near the Royal Exchange, London, E.C.).
No Agents throughout the United Kingdom.

Horticultural Valuer.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), begs to offer his services as above. [illegible], Priory Road, Wandsworth Road, S.

TANNED NETTING for the Protection of Fruit Trees, at 1*d.* per square yard; 200 yards, 14*s.*; 500 yards, [illegible]; 1000 yards, 50*s.* Cotton Netting, Tiffany, Scrim Canvas [illegible] Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c. [illegible] particular, JOHN EDGINGTON & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

TANNED NETTING at Reduced Prices.—200 square yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Scrim Canvas for Wall Fruit, Greenhouse Shades, and Tulip Covers.

Address in full, FREDERICK EDGINGTON, Marquee, Flag, and Banner Manufacturer, Thomas Street, Old Kent Road, London, S.E.

TANNED GARDEN NETTING for preserving Seed Beds, Fruits, Strawberries, from frost, blight, birds, &c., and as a Fence for fowls, &c. 1 yard wide, 1½*d.*; 2 yards, 3*d.*; 3 yards, 4½*d.*; and 4 yards, 6*d.* per yard, in any quantity, may be had at CHAS. WRIGHT'S, 376, Strand, W.C.

GREENHOUSE and FLOWER-POT STICKS VARNISHED:—1 foot, 3*d.*; 1½, 4*d.*; 2, 5*d.*; 2½, 7*d.*; 3, 10*d.*; 4, 1*s.* 6*d.* per dozen. DAHLIA STICKS VARNISHED, per dozen:—3 feet, 1*s.* 6*d.*; 4, 2*s.* 3*d.*; 5, 3*s.*; 6, 3*s.* 6*d.* An allowance to Nurserymen.

NETTING for Fruit Trees, Seed Beds, Ripe Strawberries, &c. TANNED NETTING for protecting the above from frost, blight, birds, &c., 2 yards wide, 3*d.* per yard, or 100 yards, 20*s.*; 4 yards wide, 6*d.* per yard, or 50 yards, 20*s.* NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 5*d.* per yard; 4 yards wide, 10*d.* per yard; 6 yards wide, 1*s.* 3*d.* per yard; ¾-inch mesh 4 yards wide, 1*s.* 4*d.* per yard.

Can be had in any quantity of EATON & DELLER, 6 and 7, Crooked Lane, London Bridge, E.C.

BRITAIN'S PATENT GARDEN NETTING will be found superior to every other article for the protection of Fruit Trees from frost, birds, &c.; whilst rendering this service [illegible] and air are not impeded. It is also a beautiful Shading for Hothouses, and is cheaper, being more durable than any kind of Tiffany, or other material in use. NETTINGS, No. 1, [illegible], No. 2, 18*s.* 9*d.*; and No. 3, 22*s.* 6*d.* per piece, or 4*d.*, 5*d.*, and 6*d.* per square yard. Pieces, 30 yards long, 55 inches wide. GARDEN MATS, highly recommended, 50 by 70 inches, [illegible] each.

Agents: ROBT. HEINEKEY & Co., 20, Harp Lane, Tower Street, London, E.C.

Glass for Greenhouses.

JAMES PHILLIPS AND CO. beg to submit their prices as follows:—

ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 280 feet, 2¼*d.* and 2½*d.* per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each Package included.

Sizes				3rds.	4ths.
12 by 9,	13 by 9,	14 by 9,	15 by 9	14*s.* 0*d.*	12*s.* 6*d.*
12 ,, 10,	13 ,, 10,	14 ,, 10,	15 ,, 10		
13 ,, 11,	14 ,, 11,	15 ,, 11,	16 ,, 11	16*s.* 0*d.* per 100 feet.	13*s.* 6*d.*
14 ,, 12,	15 ,, 12,	16 ,, 12,	17 ,, 12		
18 ,, 12,	19 ,, 12,	20 ,, 12,	16 ,, 13		
17 ,, 13,	18 ,, 13,	19 ,, 13,	20 ,, 13		
16 ,, 14,	17 ,, 14,	18 ,, 14,	20 ,, 14		

Various other sizes.

GLASS FOR ORCHARD HOUSES,
As supplied by us to Mr. Rivers.

Sizes		16 oz.	21 oz.
20 in. by 12 in. / 20 in. by 13 in. / 20 in. by 14 in. / 20 in. by 15 in.	Common	13*s.* 6*d.*	£0 18*s.*
	Superior do.	16 0	1 3
	English Glass	18 0	1 9

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11*s.* 6*d.*
8 ,, 6	8½ ,, 6¾	9 ,, 7	9½ ,, 7½	
		10 ,, 8	10½ ,, 8½	12 6

Boxes 2*s.* each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.

16 oz. 4ths, 1¾*d.*, 2*d.*, and 2½*d.* 21 oz. 2¾*d.*, 3*d.*, and 3½*d.*
,, 3ds, 2*d.*, 2½*d.*, and 3*d.* ,, 3*d.*, 3½*d.*, and 4*d.*

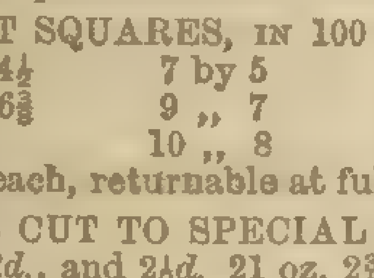
London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, London, E.C.

THOMAS MILLINGTON,
87, Bishopsgate Street Without, E.C.
HORTICULTURAL GOODS.



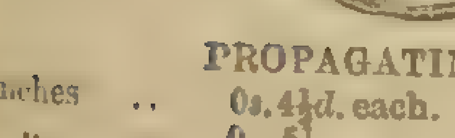
PROPAGATING GLASSES.

3 inches ..	0*s.* 4½*d.* each.	12 inches ..	1*s.* 9*d.* each.
4 ,, ..	0 5½ ,,	13 ,, ..	2 0 ,,
5 ,, ..	0 6½ ,,	14 ,, ..	2 6 ,,
6 ,, ..	0 8 ,,	15 ,, ..	3 0 ,,
7 ,, ..	0 10 ,,	16 ,, ..	3 6 ,,
8 ,, ..	1 0 ,,	17 ,, ..	4 0 ,,
9 ,, ..	1 2 ,,	18 ,, ..	5 0 ,,
10 ,, ..	1 4 ,,	19 ,, ..	6 0 ,,
11 ,, ..	1 6 ,,	20 ,, ..	7 0 ,,

HAND GLASSES.

12 inches ..	6*s.* 0*d.* each	18 inches ..	9*s.* 0*d.* each
14 ,, ..	7 0 ,,	20 ,, ..	10 0 ,,
16 ,, ..	8 0 ,,	24 ,, ..	12 0 ,,

If open top, 1*s.* extra.



CUCUMBER GLASSES.
From 12 inches long and upwards, 1*d.* per running inch.

ROLLING PINS.
From 12 inches long, 1½*d.* per running inch.

Improved ANTI-CORROSION and other PAINTS.
GAS and LAMP GLASSES, GLOBES, &c.
CHIMNIES of every description.
Not accountable for Breakage.

CHEAP CHAFF CUTTERS, OAT BRUISERS, MANGLES, LATHES, &c.
S. SMITH, 204, High Holborn, London, W.C.
All kinds of Machines repaired.

BROWN'S FLORAL SHADING,
Sold by all Nurserymen and Seedsmen, in pieces.

No. 1, 20 yards long, 38 inches wide	4*s.*	6*d.*
No. 2, ditto ditto	4	9
No. 3, extra stout, 18 yards long, 39 inches wide	7	6

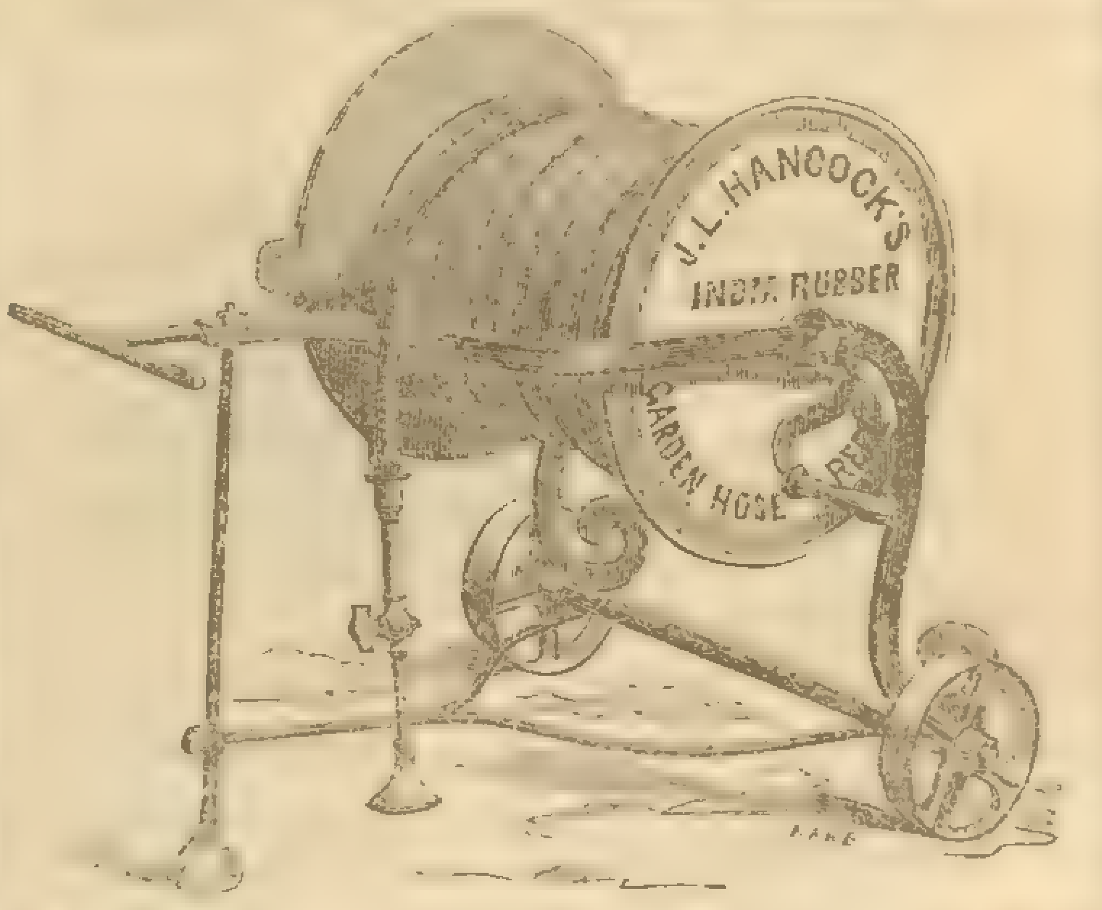
Owing to the scarcity and high prices of Cotton, an advance of 6*d.* per piece in this material has been made.

C. B. wishes to state that all his Shading is stamped thus:—BROWN'S Floral Shading, No. 1, 2, or 3, it having come to his knowledge that there is an unstamped article being sold as his manufacture.

CHARLES BROWN, Greenheys, Manchester.

International Exhibition, May 1862.

No. 1079. CLASS 4. EASTERN ANNEXE.



JAMES LYNE HANCOCK'S
GARDEN WATERING HOSE and HOSE REEL.
VULCANISED INDIA-RUBBER HOSE PIPES, with Union Joints for attaching to Cisterns or Water Mains.
Price per foot:—

Size.	½-inch	⅝-inch	¾ inch	PRICE OF BRASS FITTINGS.
Slight ..	0*s.* 6*d.*	0*s.* 7*d.*	0*s.* 8*d.*	Branch, 12-inch long, with Stop
Medium ..	0 9	0 10	0 11	Cock, Rose, and Jet, 4*s.* each
Stout ..	0 11	1 1	1 2	Spring Spreader, 3*s.* each
For Mains	1 2	1 4	1 5	½-inch Union Joint, 3*s.* each

BRASS BENDS for Watering Plants in Greenhouses. These fit the usual Brass Branches.

For larger sizes and prices of Hose and Brass Fittings, see J. L. HANCOCK'S Mechanical List.

The Hose Reel is a Simple Machine for readily Winding up and Wheeling away the Hose Pipes when out of use.

Vulcanised India-Rubber Works, Goswell Mews, and 266, Goswell Street, London, E.C.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype trays, &c., manufactured by the Gutta Percha Company and sold by their wholesale dealers in town or country.

The GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C.

HANDSOME BRASS and IRON BEDSTEADS.—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for home use and for tropical climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.

HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

Prize Medal, Paris Exhibition 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose.

M., B., & Co.'s new and delicious Perfumes the Fairy Bouquet and the Oxford and Cambridge Bouquet, in bottles 2*s.*, 3*s.* 6*d.*, and 5*s.* METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box.

Sole Establishment, 130B and 131, Oxford Street, 2d and 3d doors West from Holles Street, London, W.

TO BE SOLD, Two DWARF ZEBU COWS or GUYNIE CATTLE from Cawnpore.
Apply to Capt. SERGENT, Grove Road, Wallasey, Cheshire.

BLACK KERRY CATTLE.—Select animals of this valuable and small breed can be delivered in Cork by RICHARD G. CAMPION, Esq., Holly Hill, Rathcormac, who always holds a large stock of the same.

To Florists, Nurserymen, and Others.

TO BE LET, on the Mildmay Park Estate, a large PLOT of GROUND well suited for the above, with good Residence, Gateway Entrance, &c.

For particulars apply to Mr. CHAPPELL, Auctioneer, &c., 167 City Road, E.C.

Mansfield.—To Seedsmen, Gardeners, and Others.

TO BE SOLD, by Private Contract, the BUSINESS in Mansfield recently carried on by Mr. Search, Seedsman. The Shop Fixtures to be taken at a valuation; and also an excellent and profitable Garden, containing about 2½ Acres, in a most thriving condition, well stocked with Fruit Trees.

For further particulars apply to Mr. COOPE, Solicitor, Nottingham; Mr. J. HARRIS, Official Assignee; and of POTT & NEALE, Auctioneers, Nottingham.

Eligible Opening for a Seedsman and Fruiterer.

TO BE LET, for such term of years as may be agreed on. These commodious PREMISES, lying on the North side of South Street, St. Andrews, consisting of Shop, Back-shop, and Seed-loft, with Garden and Greenhouses behind the same, belonging to, and presently occupied by, Mr. Charles Howie, Nursery and Seedsman.

The stock in trade and good will of the business carried on in the premises will also be disposed of to a suitable tenant. The stock is well selected and in good condition, and the business has been profitably carried on for a number of years. An eligible party will find the present a favourable opportunity for entering on an established and highly respectable Business.

A Lease of the Dwelling House above the premises, containing six apartments, may also be had if desired.

For further particulars application may be made to STUART GRACE, Writer, St. Andrews, N. B., by whom offers will be received till the 30th inst.—St. Andrews, May 24.

Sales by Auction.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Bartholomew Lane, E.C., on FRIDAY, May 23, at 12 o'Clock, a choice collection of GREENHOUSE PLANTS, consisting of Azalea Indica, Ericas, Acacias, Geraniums, Calceolarias, and other plants in bloom; fine Climbing Roses, Rhododendrons, Kalmias, and Herbaceous Plants; with a selected assortment of Ornamental Plants for Bedding; Verbenas, Fuchsias, Dahlias, &c.

On view the Morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nursery, Leytonstone.

Vauxhall Nursery, late Chandler's.

IMPORTANT SALE. TO NOBLEMEN, GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS have received instructions from Messrs. Milne & Co., to submit to an unreserved SALE by AUCTION on the Premises, Vauxhall Nursery, Wandsworth Road, London, S., on THURSDAY, FRIDAY, and SATURDAY, May 29, 30, and 31, at 11 o'Clock, in consequence of the Ground being required for Building Purposes, the whole of the valuable GREENHOUSE and STOVE PLANTS, including all the magnificent specimen CAMELLIAS which have rendered the Establishment famous for so many years, and which are well deserving the attention of Gentlemen requiring specimens for furnishing their Conservatories, being handsome and symmetrical in form, and perfectly safe to remove; very fine Azalea Indica suitable for exhibition, as well as half specimens and smaller plants fit for nurserymen; choice Ericas, Epacris, Boronias, Eriostemon, Acacia, Aphelexis, Cacti, Correa, Cyclamen, Daphne, Diosma, Ficus, Ardisia, Begonia, Achimenes, Amaryllis, Aphelandra, Croton, Allamandas, Dipladenias, &c., Lycopods, Ferns, Camellia Stocks, several thousand Bedding Plants of the usual assortment, together with seven Greenhouses, 14 ranges of Pits, Boxes, several hundred feet of 3 and 4 inch hot-water Piping, Conical and Saddle Boilers. Two nests of Seed Drawers and other Shop Fittings, Barrows, Garden Engines, Implements and other effects.

May be viewed prior to the Sale. Catalogues may be had on the Premises, of the principal Seedsmen in London, and of the Auctioneers, American Nursery, Leytonstone, Essex.

To Gentlemen, Florists, and others.

SELECT STOCK OF ABOUT 10,000 BEDDING AND OTHER PLANTS.

MR. FRANK LEWIS will SELL by AUCTION, on the Premises, Pike's Nursery, Meeting House Row, Winchmore Hill, on WEDNESDAY, May 28, at 11 for 12 o'Clock precisely, about 10,000 BEDDING and other choice PLANTS, including Ericas, Epacris, Azaleas, Roses; Show, Fancy, Scarlet, and Variegated Geraniums; Chrysanthemums, Pentstemons, Petunias, Fuchsias, 500 Vines, and numerous others; also a quantity of all kinds of Garden Seeds, &c.

May be viewed the day prior to Sale, and Catalogues had on the Premises; of Messrs. LUCAS & SHOWLER, Solicitors, 1, Trinity Place, Charing Cross, S.W.; of Messrs. HARRISON & LEWIS, Solicitors, 6, Old Jewry, E.C.; and of the Auctioneer, 36, Coleman Street.

Winchmore Hill.—Leasehold Cottages and Nursery Ground.

MR. FRANK LEWIS will SELL by AUCTION, at the Mart, on FRIDAY, June 13, at 12 for 1 o'Clock, FOUR LEASEHOLD COTTAGES and about 2 Acres of LAND used as a Nursery Ground, with Greenhouses, Forcing Pits, Outhouses, &c., situated in Meeting House Row, Winchmore Hill; the whole held for an unexpired term of 28 years, at a rental of 45*l.* per annum.

May be viewed, and particulars had at the Mart; of Messrs. LUCAS & SHOWLER, Solicitors, 1, Trinity Place, Charing Cross, S.W.; of Messrs. HARRISON & LEWIS, Solicitors, 6, Old Jewry, E.C.; and of the Auctioneer, 36, Coleman Street.

IMPORTANT SALE OF THE REMAINDER OF

Jonas Webb's Renowned Flock of Pure Southdowns,

AT BABRAHAM, CAMBRIDGE.

MESSRS. H. STRAFFORD & J. CARTER JONAS (who are jointly concerned on this occasion) have been honoured with Instructions from Mr. Jonas Webb, to SELL by AUCTION, without reserve, on WEDNESDAY, June 18 (the week previous to the Meeting of the Royal Agricultural Society of England), at Babraham, near Cambridge, the entire remainder of this celebrated Flock of Pure SOUTHDOWNS, being the Lambs from the Flock which was sold last year, and comprising about 150 YEARLING RAMS, and 300 YEARLING EWES, all bred by Mr. Webb, from his favourite animals, and more particularly by the Canterbury Prize Rams. In inviting the attention of Agriculturists and Southdown Breeders to this important event, the Auctioneers feel that the world-wide fame of the Babraham Flock renders it unnecessary to say more than to refer to the result of last year's sale, as a proof of the high esteem in which this Flock is still held, not only in England, but throughout America, Australia, Canada, France, Germany, and all parts of the Continent, and to remark that this sale offers to the public the last possible opportunity of purchasing pure Southdowns of Mr. Jonas Webb, as he has determined not to breed another Sheep for letting or sale.

Catalogues may be obtained of Mr. STRAFFORD, 13, Euston Square, London; and of Mr. J. CARTER JONAS, Cambridge.

HOT-WATER PIPES

DELIVERED TO ANY STATION IN ENGLAND.

J. JONES

BEGS to state that he can now supply HOT-WATER PIPES and FITTINGS delivered Carriage Paid to any Railway Station in England, and that he has made very advantageous arrangements for delivery at the following Stations; and parties availing themselves of this offer will in many cases get their Pipes at a Country Station at a less price than would be charged in London.

Alfreton
Accrington
Ashbourne
Adlington
Ashby-de-la-Zouch
Atherstone

Bradford (Yorks.)
Burton
Burnley
Bolton
Bingham
Bulwell
Beverley
Bury
Bedale
Barnsley
Barton
Birkenhead

Chesterfield
Chester
Chorley
Chelford
Crewe
Cheadle
Congleton
Colwich

Derby
Dewsbury
Doncaster
Driffield
Droitwich
Dudley

Edgebaston
Eckington

Farnworth

Gainsborough
Grantham

Halifax
Harrogate

Ilkeston

Kirkham
Knapton
Knaresborough

Lancaster
Leeds
Liverpool
Loughborough
Leek
Lichfield
Leamington
Leicester
Lincoln

Macclesfield
Malton
Manchester
Mansfield
Market Harboro'
Marton

Nottingham
Normanton
Northallerton
Northampton

Oakham
Oldbury
Oldham
Ormskirk
Oswestry
Oundle

Preston
Pontefract
Peterborough
Penkridge

Retford
Richmond (Yorks.)
Rotherham
Rochdale
Rugeley
Rugby
Redditch

Shrewsbury
Stafford
Stourbridge
Salford
St. Helen's
Settle
Skipton
Stamford
Sleaford
Scarborough
Selby
Sheffield

Tamworth
Thirsk
Tipton
Trentham
Thrapston

Uttoxeter
Ullesthorpe

Worcester
Wolverhampton
Wellington (Salop)
Wrexham
Warrington
Wigan
Wakefield
Worksop
Wellingboro'

York

Also to any Station in Derbyshire, Shropshire, Warwickshire, Cheshire, Lancashire, Yorkshire, Leicestershire, Worcestershire, Lincolnshire, and Staffordshire.

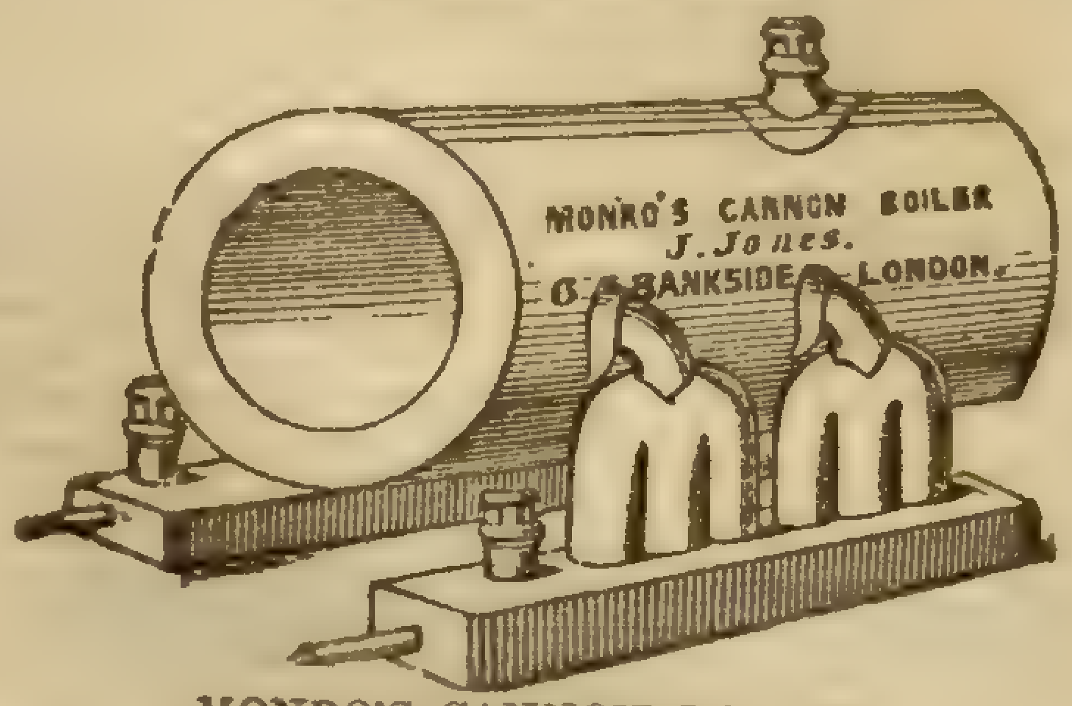
J. JONES will be happy to forward his ILLUSTRATED CATALOGUE of HOT-WATER PIPES, BOILERS, and FITTINGS, and PRICES for the same delivered Free to any Station; but parties requiring prices must state the quantities of Pipes, &c., required, and the Station to which they are to be delivered.

J. JONES,
IRON MERCHANT AND HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

24-inch Wrought Iron	£6 10 0
30-inch "	7 10 0
36-inch "	8 10 0
48-inch "	12 0 0
60-inch "	20 0 0
72-inch "	25 0 0



MONRO'S CANNON BOILER.

These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by J. JONES, 6, Bankside, Southwark, London, S.E.

Prices for HOT-WATER PIPES, ELBOWS, TEES, SYPHONS, VALVES, TROUGH PIPES, ORNAMENTAL COIL CASES, BECK'S PATENT VALVES, &c.; or ESTIMATES for HOT-WATER APPARATUS, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON, SADDLE, or CYLINDER BOILERS, will be sent, with an ILLUSTRATED CATALOGUE, free on application.

J. JONES,
HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, LONDON, S.E.

Editorial Communications should be addressed to "The Editor," Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, in the Parish of St. Pancras, in the Co. of Middlesex, and FREDERICK MULLETT EVANS, of No 11, Bouverie St., in the Precinct of Whitefriars, City of London, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St Paul's, Covent Garden, in the said Co.—SATURDAY, May 24, 1862.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 22.—1862.] SATURDAY, MAY 31. Price Fivepence. Stamped Edition, 6d.

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ROYAL HORTICULTURAL GARDEN, South Kensington.
Admission during June:—MONDAYS, TUESDAYS, WEDNESDAYS (except 11th), and THURSDAYS, (except 26th), One Shilling. FRIDAYS, Half-a-Crown. SATURDAYS, Five Shillings. Bands daily.
WEDNESDAY, 11th, SECOND GREAT SHOW, 7s. 6d., or by Tickets previously purchased, Five Shillings.
Next Election of Fellows, June 6.

ROYAL HORTICULTURAL SOCIETY.—AMERICAN PLANTS during the month of June.
June 11.—SECOND GREAT SHOW.
June 26.—ROSE SHOW.
July 2.—THIRD GREAT SHOW.
** During the Season the Inauguration of the Memorial of the Exhibition of 1851 is expected to take place.
Sept. 10.—AUTUMN SHOW.
October 8, 9, and 10.—INTERNATIONAL FRUIT, VEGETABLE, ROOT, CEREAL, and GOURD SHOW.
Bands will play daily from May to October.

ROYAL BOTANIC SOCIETY, Regents Park, N.W.
The EXHIBITION of the AMERICAN PLANTS will take place on MONDAY, June 9. Tickets to be obtained at the Gardens only, by vouchers from Fellows or Members of the Society, price 5s., or on the Exhibition day, 7s. 6d. each.
The Bands at 2 o'clock.
The next GENERAL EXHIBITION of PLANTS, FLOWERS, and FRUIT, will take place on WEDNESDAY, June 18.

LEICESTER and LEICESTERSHIRE FLORAL and HORTICULTURAL SOCIETY.
President:—The Right Hon. Earl Howe.
The GREAT SUMMER EXHIBITION of the above Society for PLANTS, FLOWERS, FRUITS, and VEGETABLES will be held on the Leicester Race Course on TUESDAY and WEDNESDAY, June 24 and 25.
Additional Prizes will be given for CUT ROSES grown by Amateurs, Gentlemen's Gardeners, and Nurserymen, open to all England.
Prospectuses may be had of the Hon. Secretary, 37, Market Place, Leicester.
By order of the Committee. Wm. Penn Cox, Hon. Sec.

GLASGOW and WEST of SCOTLAND HORTICULTURAL SOCIETY.
The GRAND MIDSUMMER EXHIBITION and SCOTTISH PANSY SHOW will take place on WEDNESDAY next, June 11, in the City Hall, Glasgow, when, among other valuable prizes, a solid silver Claret Jug, value 25l., will be presented for the best Collection of Stove and Greenhouse Plants exhibited, of not less than 60 and not more than 80 plants.
Schedules of Prizes and other particulars will be had on application.
Hugh Campbell, Secretary, 80, Argyle Street, Glasgow.

GARDENERS' BENEVOLENT INSTITUTION.—The VOTES of Subscribers are respectfully solicited for the aged (84 years) and totally blind Candidate, JAMES WALLACE, of Sidcup, Kent.

GEORGE BAKER respectfully invites an inspection of his extensive collection of RHODODENDRONS, AZALEAS, and other AMERICAN PLANTS, which are now fast coming into bloom.
The Nursery is one mile from Sunningdale Station, South Western Railway.
American Nursery, Bagshot, Surrey.

Royal Botanic Gardens, Regent's Park.
JOHN WATERER has the pleasure to announce that his ANNUAL DISPLAY of HARDY SCARLET and other RHODODENDRONS, AZALEAS, &c, is now on view at the above Gardens; the Plants are now in fine bloom and will continue in perfection throughout the month of June.
Orders of admission are granted by Members of the Botanic Society, or by applying to the Advertiser at the above address.
The Plants at the Nursery are also in full bloom.
American Nursery, Bagshot, Surrey, near Sunningdale Station, South Western Railway.

WM. PAUL'S NURSERIES open to the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London. Every garden requisite, from the commonest to the choicest, at reasonable prices.
CATALOGUES free by post.
Nurseries and Seed Warehouse, Waltham Cross, N.

JUST ARRIVED, ORANGE TREES full of Bloom and Fruit, 2s. 6d., 3s. 6d., and 6s. each.
R. Green, 154, Kingsland Road, N.E., 55 doors from Shoreditch Church.

JAMES CARTER and CO., Seed Merchants and Nurserymen, 237 and 238, High Holborn, London, W.C.

Cerastium Biebersteinii, 9s. and 12s. per doz.
JAMES CARTER and CO., Seedsmen and Nurserymen, 237 and 238, High Holborn, W.C.

The Greatest Novelty of the Season.
CARTER'S "METEOR," new crimson variegated foliaged FUCHSIA, Post Free for 8s.
James Carter & Co., Seedsmen and Nurserymen, 237 and 238, High Holborn, W.C.

BUTLER and McCULLOCH'S SELECT LIST of BEDDING PLANTS may be had free and post paid upon application.
Butler & McCulloch, Seed Merchants, Covent Garden Market, W.C.

BARR and SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

Choice Calceolaria, per pkt. 1s.	Choice Cineraria, per pkt. 1s.
" Primula " .. 1s.	" Picotee " .. 1s.
" Carnation " .. 1s.	" Pelargonium " .. 1s.

ILLUSTRATED GUIDE to the FLOWER GARDEN, 2s. 6d.

TWELVE of the Finest NEW PERPETUAL ROSES (sorts that have not yet flowered in English Gardens) for Two Guineas.
Richard Smith, Nurseryman, Worcester.

New Roses of 1862.
PAUL and SON have now ready their usual fine Plants of the finest Novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

Dwarf Roses in Pots for Bedding.
WM. WOOD and SON are now daily sending out Hundreds of ROSES in Pots for Bedding. Early orders are respectfully solicited.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

J. IVERY and SON'S Collection of New AZALEAS is now in BLOOM, and may be seen (Gratis) at their Dorking Nursery.

Azalea indica.
J. IVERY and SON beg to inform their Patrons and the Public that their NEW PRICED and DESCRIPTIVE CATALOGUE of the above is now published, and will be forwarded post free on application.
Dorking, Surrey.

Fuchsia Meteor, Carter's.
F. and A. SMITH have strong plants of the above fine foliaged FUCHSIA to offer, with most of the new varieties of the season.
Special prices for quantities of Meteor.
Dulwich, Surrey, S.

Splendid Seedling Gloxinias.
F. and A. SMITH'S beautiful collection of the above are now in bloom; strong flowering Plants may still be had. For Prices and Descriptions see CATALOGUE, which will be forwarded on application. Where a dozen or more are taken, a reduction will be made.
Dulwich, Surrey, S.

Cineraria and Calceolaria Seed,
F. and A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size, and habit; numerous testimonials have been received of its excellence. In packets, 1s., 1s. 6d., and 2s. 6d., free by post.
Dulwich, Surrey, S.

Coleus Verschaffelti.
F. and A. SMITH now offer strong plants of the above fine Ornamental Foliaged Plant; it has proved the hardiest of the race, and will be an effective and pleasing object for edging of beds or for contrasting with other coloured foliage in mixed borders. For description, see CATALOGUE, which may be had on application.
9s. per doz, lower rates for large quantities.
Dulwich, Surrey, S.

New Chrysanthemums, Hardy Variegated Plants, &c.
JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.
Versailles Nursery, William Street, near Hammersmith Turnpike, W.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize Plants, 1s., 1s. 6d., and 2s. 6d. per packet. Reference given. Stamps taken.
G. Knights, Whitton, Ipswich.

CHEAP BEDDING PLANTS.—One hundred Strong Plants (in pots) of all the leading kinds, including GERANIUMS, VERBENAS, CALCEOLARIAS, GAZANIAS, &c., for 17s. 6d.
Post Office Orders payable at Castle Hedingham, in favour of W. Dillistone, Munro Nursery, Sible Hedingham, Halstead, Essex.

Dahlias.
JAMES FAIRHEAD and SON beg to state that their CATALOGUE of DAHLIAS is now ready, post free on application, offering all the leading established varieties, healthy Plants, and guaranteed true to their kinds, 3s. 6d. and 9s. per dozen.
7, Borough Market, London, S.E.

Good Seeds, Carriage Free.
SUTTON and SONS, Seed Growers and Merchants, Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds.
GEORGE GIBBS and CO., Seedsmen, 26, Down Street, Piccadilly, London, W.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
William Morton, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

White Swede.
JAMES FAIRHEAD and SON, 7, Borough Market, S.E., offer a selected Stock of the above, crop 1861.
Price on application.

SHARPE'S IMPROVED LARGE SWEDE.—For price of this and other Agricultural Seeds saved by Charles Sharpe & Co. from selected bulbs, see their Wholesale FARM SEED LIST, sent free on application.

A FEW Bushels of FOSTERTON'S HYBRID YELLOW TURNIP SEED, grown from Selected large Bulbs, 1861. Price 10d. per lb.
William Morton, Old Market Place, Ripon.

Rape Seed for Sowing.
CHARLES SHARPE and CO., Seed Merchants, Sleaford, can offer the above of fine quality.
Sample and price to the Trade on application.

NEW TURNIP and MANGEL SEEDS, from selected bulbs, first class stocks, sold at moderate prices, by
Fairhead & Son, Seed Growers, Lewisham; and 7, Borough Market, S.E.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, Nurseryman and Seedsman, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 8s. per lb., or 16l. per cwt.

SPECIAL OFFERS will be made to the Trade and large purchasers of Golden Chain, Bijou, Flower of the Day, Countess of Warwick, Mrs. Lennox, Perfection, Silver Queen, and St. Clair, VARIEGATED GERANIUMS. Also of DAHLIAS, New Shrubby CALCEOLARIAS, AGATHÆA CŒLESTIS VARIEGATA, FUCHSIAS, PELARGONIUMS, &c.
Apply to Edward Taylor, Florist, Malton, Yorkshire.

New Plants.
AMBROISE VERSCHAFFELT'S CATALOGUE of NOVELTIES is now ready, and can be obtained free, by writing to
Ambroise Verschaffelt, Nurseryman, Ghent, Belgium.

JAMES BURLEY'S SPRING CATALOGUE of new shrubby CALCEOLARIAS, PELARGONIUMS, new ROSES, and BEDDING PLANTS is now ready, and will be forwarded post free on application.
Nursery, Limpsfield, Surrey.

Scarlet Tom Thumb Geraniums.
ALEXANDER LAING has yet to offer a surplus stock of the above, strong Autumn-struck plants, turned out of the pots, and packed with a nice ball, at 16s. per 100. Also TRENTHAM YELLOW and YELLOW PRINCE of ORANGE CALCEOLARIAS, 16s. per 100.
Nurseries, Beverley, York.

Window Plants.
WOOD and INGRAM have to offer to the Trade a quantity of very fine Show, Spotted and Fancy PELARGONIUMS, of leading varieties, in 4 and 5-inch pots, just coming into bloom, at from 4s. to 6s. per dozen. FUCHSIAS at the same rate.
Nurseries, Huntingdon.

Gunnera scabra Seed, 1s. per packet.
BARR and SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.
The GUNNERA SCABRA (a highly ornamental foliage plant for Lawns and other conspicuous places) is described by Darwin as producing leaves 8 feet in diameter. Last year at the Kew Gardens there was a plant with leaves 4 ft. long, and nearly the same in diameter. See *Gardeners' Chronicle*, March 29, page 285.
Barr & Sugden, 12, King Street, Covent Garden (opposite the Garrick Club), W.C.

The best Hardy Variegated Edging Plant.
WM. HOADE begs to offer plants of ARABIS VARIEGATA, strong, package included, 2s. 6d. per doz., cheaper by the 100. All orders must be accompanied by a remittance.
Castle Nursery, Brox, Chertsey.

CLERODENDRON THOMSONÆ.—At the Royal Horticultural Society's Grand Show on the 21st, we were awarded the First Prize for this very beautiful new climber. It is figured and fully described in Curtis's "Botanical Magazine" for this month. Healthy young plants 7s. 6d. each; stronger, 10s. 6d. each.
Thomas Jackson & Son, Nurserymen, &c., Kingston, S.W.

To Gardeners and Florists.
FOR SALE, about 3 Tons Weight of CBARR, suitable for tying up Fruit, Flowers, Vegetables, &c., 20s. per cwt. About 6 Tons Weight of TOBACCO DUST MANURE, for destroying Insects, &c., 20l. per Ton.
Apply to Mr. John Stokes, Wholesale Hardwareman, 39, Kent Street, Borough, London, S.E.

NEWSPAPER ... PENNY

Notice.

B. S. WILLIAMS begs to intimate that he is prepared to supply nice Plants of his New and beautiful AZALEA ELEGANTISSIMA, exhibited at the Royal Horticultural Society's Meeting, May 21, and which was awarded a Label of Commendation.

Flowers pure white, finely striped with light salmon red, splendid habit, excellent form and substance, and a very free bloomer. Price 10*s.* 6*d.* each; extra size, 15*s.* to 21*s.* each.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Choice Seeds.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the under-mentioned Seeds, which cannot fail to give the greatest satisfaction.

PRIMULA, per packet, 2*s.* and 3*s.* 6*d.* each.
CALCEOLARIA, per packet, 1*s.* 6*d.*, 2*s.* 6*d.*, and 3*s.* 6*d.* each.
CINERARIA, per packet, 1*s.* 6*d.* and 2*s.* 6*d.* each.

For numerous Testimonials see SEED CATALOGUE, post free on application.

Stachys lanata.

B. S. WILLIAMS, Paradise Nursery, Holloway, N., **has great pleasure in offering another fine plant for Edging or Ribbon borders. This is not a new plant, but one** that is little known, and will without doubt rank among the finest plants for the above decorative purposes. The foliage is quite distinct, being the colour of Cerastium tomentosum, but much larger; leaves five inches long by one inch broad, and of a fine thick woolly texture, which, when the sun shines upon it, gives it a beautiful white frosty appearance. In growth it is from six to nine inches high, and very compact, forming a fine contrast when planted with yellow Calceolaria, Scarlet Geraniums, or any other plants of similar character. Having been used as a decorative plant for several years by the party from whom the stock has been purchased, was very much admired. This also makes a beautiful ornament for rockwork. Price per doz., 4*s.*; per 100, 25*s.*

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

For a valuable selection of New and Rare Plants, see B. S. W.'s Advertisement in the *Gardeners' Chronicle*, May 10.

The Favourite Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New and Beautiful Plants.

F. AND A. SMITH have much pleasure in intimating that they are now prepared to send out the following NEW PLANTS, of which they possess the entire stock. Early orders are solicited, which will be executed in strict rotation as received:—

FUCHSIAS.

COLOSSUS.—This is a variety of magnificent proportions, very large and double. 7*s.* 6*d.* each.
ENSIGN.—Distinct and beautiful. Fine for exhibition purposes. 5*s.* each.
GLADIATOR.—Very large and double. 5*s.* each.
LADY BLANCHE.—White corolla; distinct and fine. 5*s.* each.
HUMBOLDT.—Large and fine for exhibition. 5*s.* each.
QUEEN of SUMMER.—Very fine and distinct. 5*s.* each.
RIFLEMAN.—Large double variety. 5*s.* each.
The seven varieties for 30*s.*

PETUNIAS.

PRIME MINISTER.—A very fine bright double crimson flower, very large and fragrant. 3*s.* 6*d.* each.
ROSE of ENGLAND.—One of the finest yet offered for bedding purposes; bright rose, with clear white throat. 3*s.* 6*d.* each.
EMERALD.—Bright rosy purple, with a margin of bright green. 3*s.* 6*d.* each.
MRS. SMITH.—Very distinct pure white, blotched and striped violet. 3*s.* 6*d.* each.
CLARA.—White, striped and shaded with bright rose. 3*s.* 6*d.* each.
GAIETY.—Rosy purple, striped and blotched white. 3*s.* 6*d.* each.
The set of six for 18*s.*

Golden variegated GERANIUM, "Goldfinch," 3*s.* 6*d.* each.
ZONALE GERANIUM, "Beauty of Dulwich," 3*s.* 6*d.* each.

For full descriptions of the above see F. & A. SMITH'S CATALOGUE of NEW and RARE PLANTS, which will be sent post free on application.

The Nurseries, Dulwich, London.—May 31.

JEAN VERSCHAFFELT'S NURSERY, Ghent, Belgium.

J. V. begs respectfully to announce that he intends sending out for the first time, on and after the 1st of September next, the following striking Novelties, viz.:—

1. CAMELLIA QUERCIFOLIA (J. VERSCH.).—The most curious and interesting Camellia known, as regards its leaves, which are Oak like; the flower being much the same as the universal favourite C. fimbriata alba. The plant is very showy, a good setter and very free bloomer. Prices are fixed as follows:—

Nice plants, 1 to 1½ feet high, 21*s.* each.
Do. do. with buds, 31*s.* „
A few extra sized plants at 42*s.* „

2. RHODODENDRON SOUVENIR DE JEAN BYLS (J. VERSCH.)—This is the last and also the finest seedling raised by Messrs. Byls, Ghent, from whom J. V. purchased the entire stock. It is perfectly hardy, having stood out the winter of 1860—1861, without losing a bud. It has very fine foliage, and the flowers are in large close bouquets, of a fine rose colour, with a fine blotch of bright yellow on the upper lobe. Altogether one of the best known kinds, very free and very late bloomer.

Good plants .. .. 21*s.*
Stronger plants .. .. 31*s.*
A few extra sized plants 42*s.*

The plants will be sent out, as far as possible, with buds. A carefully coloured plate will be sent to each subscriber. One plant over to the Trade for every three taken.

The Subscription List is now open, and early orders are solicited, as they will be sent in strict rotation.

All letters to be addressed to JEAN VERSCHAFFELT, Nurseryman, 43, Rue de la Caverne, Ghent, Belgium.

☞ A reference required from unknown correspondents.

CYPRIPEDIUM INSIGNIS MAULII.—In the first week of JUNE next will be distributed to a full List of Subscribers of 3 Guineas this fine variety of Cypripedium. After that time the price will be 5 Guineas to Non-Subscribers. It is figured and described in the "Floral Magazine," and a Coloured Figure will be forwarded for inspection per Post to Cultivators of Orchids and intending Subscribers on application.

WM. MAULE & SONS, The Nurseries, Bristol.

STAFFORD'S GEM DAHLIA (1861).—Crimson, tipped gold, one of the most beautiful and distinct Dahlias ever sent out. Won First Prizes for Fancies at Eight Shows round Manchester and near Leeds; the Prize for best Dahlia in the room, was one of three more particularly described in *Chronicle*, at National Show; and large additional quantities have been sold to TURNER, KEYNES, and other leading growers this season. 1*s.* each; 12 for 6*s.* Usual discount to Trade.

All the best new Soft-wooded Plants, Ornamental Stove Plants, &c., LISTS of which may be had.

Nurseries: Hyde, Manchester.

Petunia Inimitabilis, Eliza Mathieu.

GEO. SMITH has much pleasure in offering this most extraordinary and beautiful PETUNIA, which received a First-class Certificate at the Grand Horticultural Fête, Kensington Gardens, on Wednesday, May 21. It is twice the size of that well known and fine variety, Inimitabilis flore pleno. It is more distinct and constant, with mauve coloured ground, edged with one-third pure white, and equally as double also, and as fine in shape as a good Camellia. Now ready, in strong plants, at 2*s.* each or 18*s.* per dozen.

Tollington Nursery, Hornsey Road, Islington, N.

Palms and other Stove Plants.

TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual size.

A CATALOGUE, giving the height of each plant, will be sent, post free, on application to Mrs. LE CREPS, Château du Mesnil de Mathieu, near Caen, Department of Calvados, France, where the plants may be viewed.

GOOD TURNIP SEEDS CARRIAGE FREE

AT MARKET PRICES.

SUTTON & SONS,

SEEDSMEN TO THE QUEEN,

CAN SUPPLY EVERY KIND OF

FARM and GARDEN SEEDS,

OF GENUINE AND SUPERIOR QUALITY.

Farmers and others residing in the most remote parts of the kingdom can procure good Seeds at very moderate prices from this Establishment CARRIAGE FREE.

Seeds for present Sowing.

CHAMPION and other SWEDES	TURNIPS, of sorts	GRASS SEEDS of every kind	FLOWER SEEDS
MANGEL WURZEL	GARDEN SEEDS	MUSTARD SEED	RAPE SEED, &c.

SUTTON & SONS have for many years devoted especial attention to the improvement of SWEDISH and other TURNIPS, sowing seed exclusively from selected stocks, and they respectfully invite inspection of the Coloured Drawings of their leading kinds, taken from Roots to which distinguished Prizes were awarded, which are arranged by the Western Entrance to the Crystal Palace, Sydenham, near the Handel Festival Orchestra; as also to the Collection of Dried Specimens of GRASSES at their Stand (in Class 3), International Exhibition, South Kensington.

For DESCRIPTIVE PRICED LISTS Post Free apply to

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

FARM SEEDS, at fair Market Prices.

PAGE & TOOGOOD

Having had the honour of supplying the ROYAL FARMS at OSBORNE for the last eight or ten years, the GOVERNMENT REFORMATORY, PARKHURST, and many of the principal Agriculturists in the kingdom, will be sufficient guarantee that their SEEDS are of SUPERIOR QUALITY, and their prices are as low—or lower—than any respectable house in the Trade.

At the Botley Club, the Prize for the best Ten Acres Swedes was awarded
PAGE'S IMPROVED (grown by John Crosskey, Esq.)

Heaviest weight of Mangel, per acre, 61 tons 2 cwt.
PAGE'S IMPROVED ORANGE GLOBE (grown by Stewart Macnaghten, Esq.).

Mangel, sown July 7, Weight and Shape,
PAGE'S IMPROVED RED GLOBE (grown by W. Warner, Esq.).

Mangel, 50 tons per acre,
PAGE'S IMPERIAL ORANGE GLOBE (grown by W. Dickinson, Esq.).

Carrots, 35 tons per acre,
PAGE'S IMPORTED WHITE BELGIAN (grown by E. Trench, Esq.)

Six Prize Swedes, for heaviest Weight,
PAGE'S IMPROVED (grown by W. C. Humphries, Esq.)

Vales of Avon and Stour (Farmers' Club).

Vales of Avon, Prize for best 5 acres Mangel.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Salway
Second best.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. H. Bone).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Baker).
Best 2 acres ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Jas. Salway).
Second ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by General Robertson).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Bone).

PRESENT PRICES (Rail Carriage Free to all parts of England):—

	Per lb.—s.	d.
SKIRVING'S SWEDE	0	8
PAGE'S IMPROVED HARDY ..	1	0
FIELDER'S do. WHITE	0	9
SUTTON'S CHAMPION	1	0
ASHCROFT	0	9
GREENTOP	0	8
SUSSEX or JEFFERY'S ..	0	9
TANKARD	0	9
RED ROUND TURNIP	0	8
PAGE'S IMPROVED RED GLOBE	0	9

	Per lb.—s.	d.
SCOTCH or BULLOCK	0	8
POMERANIAN WHITE GLOBE	0	8
EARLY GREEN GLOBE ..	0	8
„ WHITE TANKARD ..	0	8
PAGE'S IMPROVED PURPLE do.	1	0
GREEN ditto	0	8
YELLOW TANKARD	0	9
FIELDER'S HARDY GREEN ROUND	0	6
EARLY SIX WEEKS	0	6
KOHL RABI	3	6

	Per lb.—s.	d.
NEW OSBORNE MANGEL.	0	6
YELLOW GLOBE	0	8
PAGE'S IMPERIAL ORANGE GLOBE*	0	7
RED GLOBE	0	8
ELVETHAM LONG RED ..	0	6
LONG RED	0	8
LONG YELLOW	1	3
WHITE BELGIAN CARROT ..	2	6
CATTLE CABBAGE	1	0
CATTLE PARSNIP	0	4
DWARF ESSEX RAPE		

* **Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club, and yielded 61 tons 2 cwt. per acre.**

NEW ALSIKE CLOVER, 1*s.* 3*d.* per lb.; BUCKWHEAT, MUSTARD, LINSEED, TARES, and SAINFOIN. Fine PERMANENT PASTURE GRASS, ITALIAN RYE GRASS, CLOVER, &c., at lowest Market Prices.

Special Contracts for Large Quantities.

OXFORD STREET, AND ABOVE BAR, SOUTHAMPTON.

NEW TEA-SCENTED ROSE for 1862, GLOIRE DE BORDEAUX.—The above, a Seedling from the well known favourite Tea Rose, Gloire de Dijon, was raised at Lyons, and is represented as being unquestionably the finest Tea-scented Rose of the season.

WM. WOOD & SON beg to intimate that they possess a very large Stock of the above in extra strong plants, which they are now sending out at 5*s*. each.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

B. WITHAM'S SPRING CATALOGUE of ROSES, BEDDING PLANTS, &c., is now ready, and may be had, post paid, on application.

A large Stock of upwards of 200 sorts of the best and newest ROSES grown, fine, strong, and healthy plants in pots, from 9*s*. to 18*s*. per dozen; also an extensive stock of all kinds of BEDDING PLANTS from 3*s*. to 6*s*. per dozen, now on sale, at

Clough Nursery, Mottram, near Manchester.

Hardy Japanese Plants, New Roses, &c.

JOHN STANDISH has great pleasure in submitting the above to the consideration of his friends and the public in general, far exceeding in interest any that he has ever had the opportunity of sending out at any one time.

For a DESCRIPTIVE LIST of NEW FERNS, HARDY JAPANESE PLANTS, NEW ROSES, &c., see *Gardeners' Chronicle* for the first Saturday in every month.

Besides the above J. S. has a fine stock of CONIFEROUS PLANTS, HARDY SHRUBS and TREES, and a very large stock of VINES, which he can offer at reasonable prices, CATALOGUES of which will be shortly ready for distribution.

The Royal Nursery, Bagshot, Surrey.

Bedding Plants at 2s. 6d. per Dozen.

J. SCOTT'S well-known CATALOGUE of the above is now ready, and will be sent to all applicants on receipt of six postage stamps, which will be returned to all purchasers above 10*s*.

It contains a mass of Cultural and other information about Flowers and Flower Planting, Ribbons, Tessellated and Mosaic work, with Descriptive Lists of all the most ornamental Flower Garden Plants.

Mr. Beaton, in the *Journal of Horticulture*, April 23, 1861, p. 58, says:—"But the best work on making Ribbon borders . . . . is the Bedding Plant Catalogue of Mr. Scott, of Merriott Nurseries; and besides, the Catalogue is the best arranged for young beginners of all that I have seen."

J. SCOTT, Merriott, Crewkerne, Somerset.

BEDDING GERANIUMS, 2*s*. 6*d*. per dozen.

Scarlet Zonale	Golden Silver Variegated
Little David	Golden Chain
Tom Thumb	Golden Circle
Indispensable	Alma
Lady Middleton	Anna
Beauté de Meldosse	Hendersoni
Lady Downes	Perfection
Bishopstowe Scarlet	Beauty
Scarlet Perfection	Shottisham Pet
Lady of Loretto	St. Clair
Pink Tom Thumb	Bijou
Countess of Bective	Countess of Warwick
Purple Nosegay	Flower of Day
Pink Nosegay	Julia
Model Nosegay	Brilliant
Imperial Crimson	Silver Queen
Baron Hugel	Crystal Palace Scarlet

E. T. ATHERTON offers the above in good strong Plants, most of them autumn-struck, at 2*s*. 6*d*. per dozen, for cash.

☞ This Stock is one of the largest and finest in the Trade.

Chatteris, May 31.

New Plant Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce the publication of their NEW SPRING CATALOGUE of BEDDING and other ORNAMENTAL PLANTS on May 1, including descriptions of the undermentioned POMPON DAHLIAS, &c.

Angel of Peace	Little Mary
Annie	Little Prince
Butterfly	Little Valentine
Fairy Nymph	Pearl of Lilliputs
Goldlight	Silver Pheasant
Jeannette	Star
Little Darling	Tom Tit
Little Dorrit	and others.

BANKS'S NEW FUCHSIAS.
WILLS'S NEW VERBENAS.
FERN-LEAVED PRIMULAS, white and red fringed.
BEDDING TROPÆOLUMS—elegans coccinea, Model, Constellation, and Beauty of Oulton Park.
PETUNIA MAGNIFICENS.
GLOXINIAS—Brilliant, Leviathan, Bird of Paradise, and Most Beautiful; these four are very large, new in colour, and distinct.
AUCUBA HIMALAICA, the finest habited plant of all the new Aucubas.
GERANIUMS of the Zonale section—Magenta, new colour; Woodwardiana, best formed large petal-flowered; Baron Ricasoli, without exception the best bedding or Vase Geranium of any at present known.

GERANIUMS, MINIMUM Section, Harry Hieover.
" NOSEGAY " Pink Pearl.
" VARIEGATED " Sunset, Gold Leaf, Mrs. Milford, The Countess, Gold Pheasant, Little Beauty, &c.

Wellington Nursery, St. John's Wood, London, N.W.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices

---

SMITH'S WORCESTERSHIRE SWEDE, the handsomest, most profitable, and best in cultivation, 1*s*. per lb.
SKIRVING'S IMPROVED SWEDE, saved from selected roots, 8*d*. per lb.
ORANGE GLOBE MANGEL WURZEL, the best for all kinds of soil, a very superior stock, 8*d*. per lb.
All other kinds of SWEDE and MANGEL, 8*d*. per lb. Cheaper by the bushel or cwt.

RICHARD SMITH, Seed Merchant, Worcester.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,
And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

Calceolaria, Cineraria, and Primula.

BUTLER AND McCULLOCH respectfully beg to offer the following Seeds, saved from Collections containing only the Choicest strains:—

CALCEOLARIA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
CINERARIA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
PRIMULA SINENSIS FIMBRIATA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.

BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

CHARLES NOBLE begs to annex the name of the RHODODENDRONS which obtained the First Prize at the Royal Horticultural Gardens, May 21.

Lord Palmerston	Duke of Cambridge
Lady Palmerston	Floretta
Lord Granville	Princess Hortense

He also obtained the First Prize at the Grand Opening Show at South Kensington in 1861.

Bagshot.

SCARLET GERANIUM VICTOR EMMANUEL.—This is the finest variety ever introduced either as a Bedder or Pot Plant. It is a medium grower, of compact habit, and has dazzling orange scarlet flowers, of the finest form, borne in immense trusses, clear above the foliage; the centres of which have the peculiar merit of remaining clean and fresh till the outer flowers have expanded, rendering them thus complete balls of scarlet. It was submitted for trial to the Royal Horticultural Society last season, and by them received a most favourable report. See Proceedings, Vol. ii., No. 3. Strong plants, 12*s*. per dozen.

GEO. CLARKE, Nursery, Streatham Place, Brixton Hill, near London, S.

Cheap Bedding Plants, 2s. 6d. per doz.; 16s. per 100.

W. H. CAPARN AND SON have a large Stock of the leading varieties of the above, including SCARLET GERANIUMS, which they can furnish in strong Autumn-struck plants, bushy, and well established. A large lot of strong CALCEOLARIAS to be disposed of very cheap. Plants given to compensate for carriage.

King's Road Nursery, Newark, Notts.

TAN GRATIS in the immediate neighbourhood of Covent Garden Market.
Apply to ESSEX & SONS, 28, Stanhope Street, Clare Market, W.C.

REIGATE SILVER SAND, best quality, 12*s*. per Ton or 1*s*. 3*d*. per Bushel, at Swan Place; delivered five miles, or to any London Wharf or Railway, 16*s*. per Ton, or 1*s*. 6*d*. per Bushel. Kentish and Hampshire PEATS, YELLOW LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE from Kingston. An inspection invited.—J. KENNARD, Purveyor to Her Majesty, Swan Place, Old Kent Road, London, S.E.

Bog Loam.

FOR SALE, a large quantity of very excellent PEAT LOAM. Three years since it was dug from the Bog. It is a rich black light peat and will admit of its own bulk of any clean sharp Sand being added; when so mixed American plants thrive admirably in it. Price 2*s*. 6*d*. per yard. Put on the Rail at Headcorn Station, S.E.R.

Apply to Mr. EWING, Frittendon House, Staplehurst, Kent.

International Exhibition.

FERNS, BEGONIAS, &c., are growing in COCOA-NUT REFUSE at the bottom of a case (with Cocoa-nuts on the top outside) in the centre of the Eastern Annexe.

Refuse delivered in London at 1*s*. 6*d*. per bag, containing 3 bushels. Large quantities on lower terms, on application to the Patent Cocoa Fibre Co., Kingston-on-Thames, S.W.

Postage stamps or Post-office Orders payable to J. BARSHAM & Co.

PHOSPHO GUANO.

PETER LAWSON & SON, GENERAL CONTRACTORS,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. VOELCKER, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.

(Signed) "AUGUSTUS VOELCKER."

Opinion of Dr. ANDERSON, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.

(Signed) "THOMAS ANDERSON."

Opinion of Dr. STEVENSON MACADAM, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for the Root Crops.

(Signed) "STEVENSON MACADAM."

Opinion of Dr. HODGES, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.

(Signed) "JOHN F. HODGES."

Opinion of Dr. APJOHN, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows or Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l*. 9*s*. 8*d*. per ton.

(Signed) "JAMES APJOHN."

Price, Free on Rail, £12 5s. per Ton, Bags included.

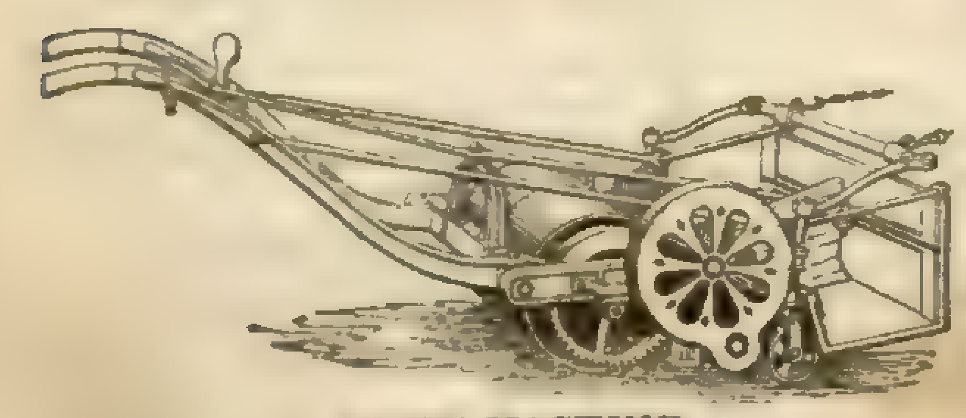
*** *None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

PETER LAWSON & SON, 27, GREAT GEORGE STREET, WESTMINSTER, LONDON, S.W.

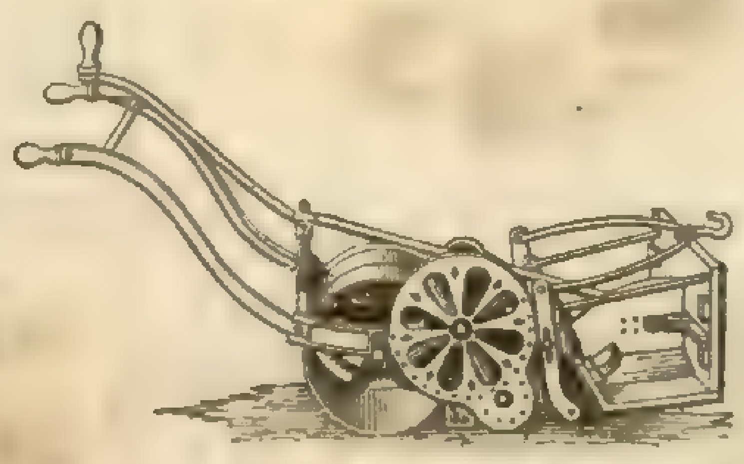
SHANKS' NEW IMPROVED PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

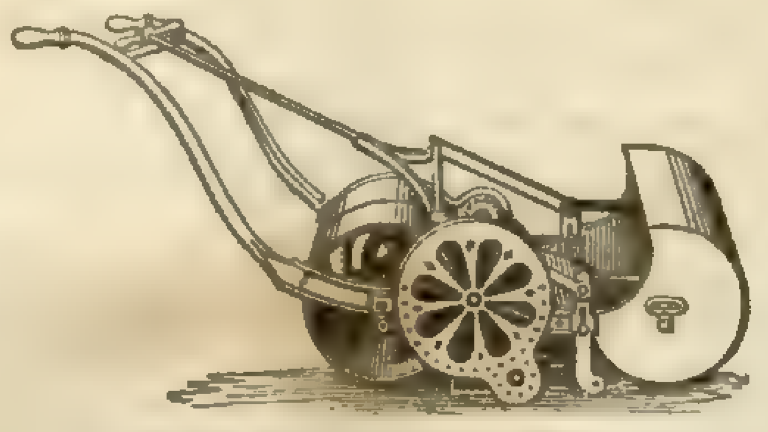
WITH SILENT MOTION IF SPECIALLY DESIRED.



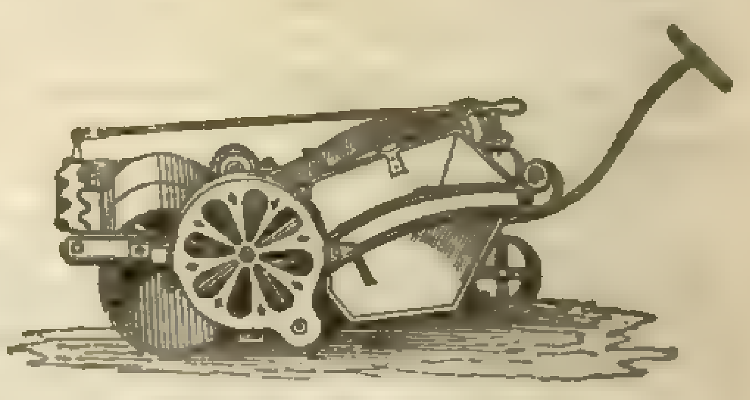
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

THE SHANKS' NEW PATENT MACHINE for 1862 Mows the Grass Wet or Dry, on Lawns uneven or otherwise, in a much neater manner than the Scythe, and at half the expense. These celebrated Machines have established their deserved reputation not only in every part of the United Kingdom, but throughout Europe, and also in India, Australia, America, and other countries. Among the numerous distinguished and well-known patrons to whom the celebrated Shanks' Lawn Mower has been furnished, may be mentioned:—

HER MOST GRACIOUS MAJESTY THE QUEEN, for the Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral.
His Majesty The Emperor of the French
His Royal Highness The Prince of Prussia
His Excellency The Lord Lieutenant of Ireland
His Excellency The Belgian Minister
The Right Hon. Lord Palmerston
His Grace the Duke of Bedford
His Grace the Duke of Newcastle
His Grace the Duke of Marlborough
His Grace the Duke of Rutland
His Grace the Duke of Sutherland
His Grace the Duke of Buccleuch
His Grace the Duke of Devonshire
His Grace the Duke of Leinster
His Grace the Duke of Athole
His Grace the Duke of Norfolk
His Grace the Duke of Hamilton & Brandon
His Grace the Duke of Argyll
His Grace the Duke of Northumberland
His Grace the Duke of Roxburgh
His Grace the Duke of Wellington
HisGrace the Duke of Buckingham & Chandos
His Grace the Archbishop of York
The Most Hon. the Marquis of Winchester
The Most Hon. the Marquis of Exeter
The Most Hon. the Marquis of Breadalbane
The Most Hon. the Marquis of Westminster
The Most Hon. the Marquis of Lansdowne
The Most Hon. the Marquis of Stafford
The Most Hon. the Marquis of Kildare
The Most Hon. the Marquis of Abercorn
The Most Hon. the Marquis of Londonderry
The Most Hon. the Marquis of Ailsa
The Most Hon. the Marquis of Tweeddale
The Most Hon. the Marquis of Aylesbury
The Right Hon. the Earl of Leicester
The Right Hon. the Earl of Camperdown
The Right Hon. the Earl of Shannon
The Right Hon. the Earl of Abergavenny
The Right Hon. the Earl of Morley
The Right Hon. the Earl of Durham
The Right Hon. the Earl of Lauderdale
The Right Hon. the Earl of Home
The Right Hon. the Earl of Harrington
The Right Hon. the Earl of Carnarvon
The Right Hon. the Earl of Northesk
The Right Hon. the Earl of Glasgow
The Right Hon. the Earl of Stamford and Warrington
The Right Hon. the Earl of Aberdeen
The Right Hon. the Earl of Aberdour
The Right Hon. the Earl of Ashburnham
The Right Hon. the Earl of Haddington
The Right Hon. the Earl of Cawdor
The Right Hon. the Earl of Denbigh
The Right Hon. the Earl of Galloway
The Right Hon. the Earl of Hopetoun
The Right Hon. the Earl of Mansfield
The Right Hon. the Earl of Milltown
The Right Hon. the Earl of Selkirk
The Right Hon. the Earl of Winchelsea
The Right Hon. the Earl of Zetland
The Right Hon. the Earl of Minto
The Right Hon. the Earl of Kintore
The Right Hon. the Earl of Seafield
The Right Hon. the Earl of Southesk
The Right Hon. the Earl of Kinnoul
The Right Hon. the Earl of Airlie
The Right Hon. the Earl of Bessborough
The Right Hon. the Earl of Brownlow
The Right Hon. the Earl of Howe
The Right Hon. the Earl of Lindsey
The Right Hon. the Earl of Rothes
The Right Hon. the Earl of Ranfurly
The Right Hon. the Earl of Shrewsbury and Talbot
The Right Hon. the Earl of Strathmore
The Right Hon. the Earl of Rosslyn
The Right Hon. the Earl of Harrowby
The Right Hon. the Earl of Westmoreland
The Right Hon. Earl Spencer
The Right Hon. Earl Fortescue
The Right Hon. Earl Vane
The Right Hon. the Countess of Stair
The Right Hon. Viscount Seaham
The Right Hon. Viscountess Castlereagh
The Right Hon. Viscount Duncan
The Right Hon. Viscount Eversley
The Right Rev. the Lord Bishop of Durham
The Right Rev. the Lord Bishop of Ripon
The Right Rev. the Lord Bishop of Killaloe
The Right Hon. Lord Bagot
The Right Hon. Lord Monck
The Right Hon. Lord Hatherton
The Right Hon. Lord Kinnaird
The Right Hon. Lord Lovat
The Right Hon. Lord Rollo
The Right Hon. Lord Braybrooke
The Right Hon. Lord Blantyre
The Right Hon. Lord Berwick
The Right Hon. Lord Halliburton
The Right Hon. Lord Churchill
The Right Hon. Lord Osculston
The Right Hon. Lord Portman
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The Right Hon. Lord Willoughby de Broke
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The Right Hon. Lord Elibank
The Right Hon. Lord Inchiquin
The Right Hon. Lord Panmure
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Hon. and Rev. C. A. Harris
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Sir A. C. Gibson Maitland, Bart.
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Sir William Middleton, Bart.
Sir James Matheson, Bart.
Sir William Codrington, Bart.
Sir John Lowther, Bart.
Sir William Gordon Cumming, Bart.
Sir G. H. Scott Douglas, Bart.
Sir Edward Dering, Bart.
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Sir James Ferguson, Bart.
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Sir Wm. Ross Mahon, Bart.
Sir J. H. Maxwell, Bart.
Sir Robert Peel, Bart.
Sir Wm. Gibson Craig, Bart.
Sir J. Richardson, Bart.
Sir Peter Murray Thriepland, Bart.
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Sir Graham Montgomery, Bart.
Sir John Maxwell, Bart.
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Sir Hedgworth Williamson, Bart.
Sir John Warrender, Bart.
Sir Hugh Dalrymple, Bart.
Sir Adam Hay, Bart.
Sir Ralph Abercromby, Bart.
Sir John Watson Gordon, Bart.
Sir John Kirkland, Bart.
Sir David Cunnynghame, Bart.
Sir Charles Wake, Bart.
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Sir Edward Colebrooke, Bart.
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Sir Archibald Macdonald, Bart.
Sir Edward Walker, Bart.
Sir James Duke, Bart., M.P.
Sir Glynn Welby Gregory, Bart.
Baron Meyer Rothschild
Mr. Alderman Mechi, Tiptree Hall
Professor Owen, Sheen Lodge, Richmond Park, Surrey
Col. Davidson, Resident at Hyderabad, India
John Spencer, Esq., Bowood
Michael Thomas Bass, Esq., M.P.
W. L. Lindsay, Esq., M.P.
M. Digby Wyatt, Esq.
J. Gurney Barclay, Esq.

Besides numbers of other well known and distinguished persons both in this country and abroad.

The first practical Gardeners of the day, who have devoted their attention to examining all the different Lawn Mowers offered, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in this Machine which is not of *real practical worth;* and this important consideration is apparently set aside by most makers, whose struggles seem to be *more for what is novel and attractive than for sterling merit.* The important Improvements introduced into the Shanks' Patent Lawn Mower last season have undergone a thorough practical test, and satisfied the most sanguine expectations. Still further improvements have been introduced into the Machine this season, the effect of which still further establishes the high character it has already gained as the most *complete, the cheapest, and most durable* Lawn Mowing Machine. The style in which the work is executed cannot be surpassed—being very much neater than the Scythe, while at half the expense—and it is *quite immaterial whether the Lawn be level or otherwise, or whether the Grass be wet or dry.*

PRICES.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Width of Cutter.	Price	
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0	*Drawn by a Horse.*
No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Width of Cutter.
No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Width of Cutter.	Price	
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*
No. 9.—22-inch Machine	8 7 6	*Easily Worked by Two Men.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*
No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man.*
No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Width of Cutter.	Price	
No. 16.—16-inch Machine	£6 5 0	*Easily worked by a Stout Lad.*
No. 17.—14-inch Machine	£5 15 0	*Easily worked by a Stout Lad.*
No. 18.—12-inch Machine	£5 5 0	*Easily worked by a Lady.*

Silent Movement, 7*s.* 6*d.* extra. (Nos. 16 and 17)
Silent Movement, 4*s.* extra. (No. 18)

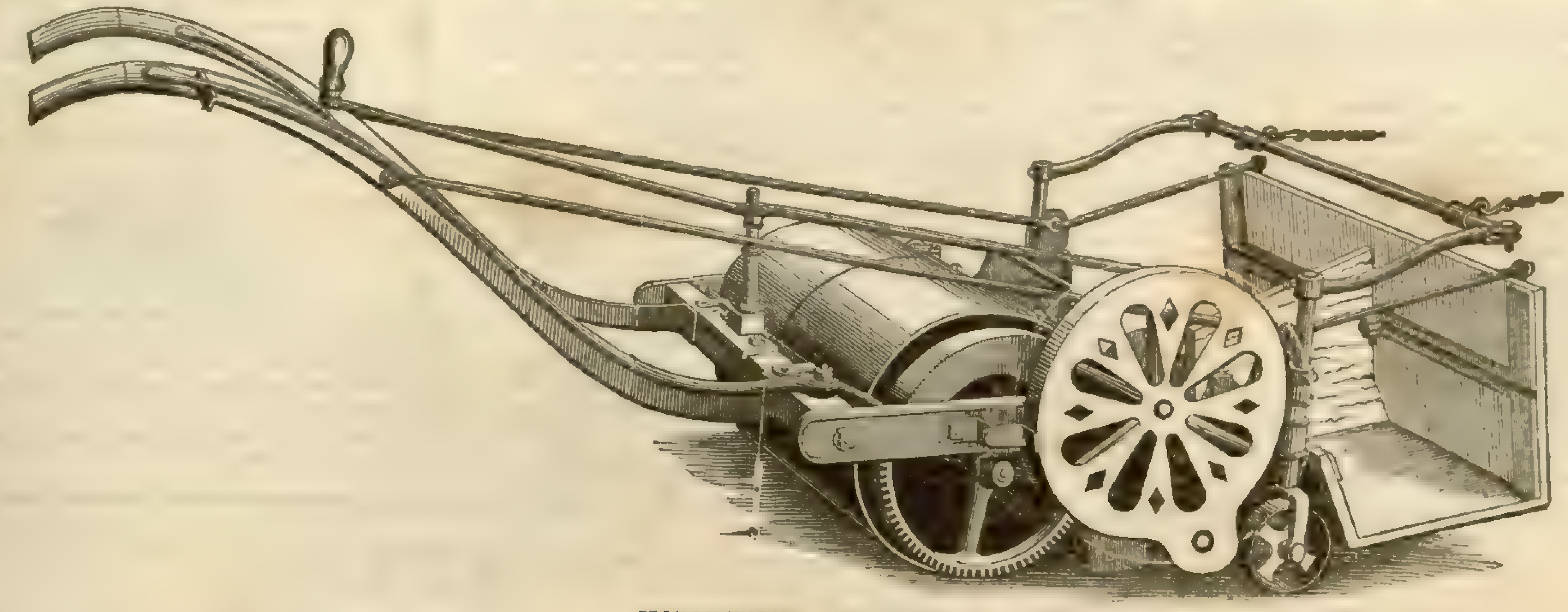
*** *The Machines are warranted to give ample satisfaction, and if not approved of may be at once returned.*

SOLE AGENTS FOR LONDON: J. B. BROWN & CO., 18, CANNON STREET, CITY, E.C.

SHANKS' NEW IMPROVED PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862.

WITH SILENT MOTION IF SPECIALLY DESIRED.



HORSE-POWER MACHINE.

SHANKS' MOWING and ROLLING MACHINE is in successful operation in Her Majesty's Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of the Emperor of the French; in the grounds of His Royal Highness the Prince of Prussia; and in many other places throughout the Continent, as well as in the United States, British America, India, Australia, and other parts abroad. It is also used in most of the Gardens of the principal Nobility and chief Landed Proprietors in the Kingdom, *and everywhere its merits have been fully proved and its success established.*

TESTIMONIALS.

From Mr. GEORGE EYLES, *late Chief Superintendent of the Grounds and entire Horticultural Department of the Crystal Palace, Sydenham, and now Superintendent of the Royal Horticultural Society's New Gardens, Kensington Gore, and the Gardens, Chiswick—in favour of Shank's Patent Lawn Mower—(the 30-inch Horse-power Machine used on the Lawns of the Crystal Palace).*

Crystal Palace, December 20, 1859.

I have much pleasure in bearing testimony to the excellence of the 30-inch Shanks' Patent Lawn Mowing Machine you sent us. We have had it in use almost daily up to the end of the mowing season, and it has always performed its work in the most satisfactory manner, and has never been once out of repair. The contrivance for emptying the Grass-box is a great acquisition, and effects a considerable saving of time.

Mr. J. SMITH, *Royal Gardens, Kew*, July 26, 1861.

I herewith send you a check in payment for the Shanks' Mowing Machine (a 42-inch Horse Machine), lately supplied to this Garden. The Machine gives perfect satisfaction, and is in daily use nine hours a day. * * * Our old Shanks's Machine (a 42-inch Horse Machine, supplied 14 years ago to Kew Gardens), has all along worked well, and it does not mind wet and long Grass. It is astonishing the amount of work it has done, and has given us complete satisfaction.

Mr. ANDREW TOWARD, *Royal Gardens, Osborne, Isle of Wight.*

It gives me much pleasure to add my testimony to the utility of your Grass Cutting Machine, which has been in constant use here for two seasons, and has given great satisfaction, in doing its work both quick and well.

Mr. GEORGE WYNESS, *Buckingham Palace Gardens.*

We have had one of your 42-inch Grass Cutting and Rolling Machines in constant use (wet and dry), during the past summer, and I have much pleasure in saying it has given the most perfect satisfaction with respect to the expeditious and effective manner in which it has performed its work. I can confidently recommend its use to every one who has any extent of lawn to keep in order, as it is a great saving of manual labour, and does its work in a much neater manner than the scythe.

Mr. THOMAS INGRAM, *Royal Gardens, Frogmore, Windsor.*

The Mowing Machine you sent here has given the greatest satisfaction, and is a great saving of labour.

JOHN SPENCER, Esq., *Factor to the* Most Hon. the MARQUIS of LANSDOWNE, *Bowood, Wilts.*

August 19, 1861.

The Shanks' Horse Machine you sent me is now doing its work quite as well as it did in 1847, (14 years ago) and this is saying all that can be said of its great value and durability, for within the time named it has cut annually from 40 to 50 acres of Grass 5 times over, and frequently the Grass has been long and difficult to get over. I have no doubt that good as your earlier machines were, those you now turn out are superior in many respects, and next spring I shall take a 42-inch one for myself, and shall feel great pleasure in recommending your really valuable machine whenever I have the opportunity.

Mr. G. FLEMING, *Chief Gardener to* His Grace the DUKE of SUTHERLAND, *Trentham.*

It is with much satisfaction I give my testimony in favour of your admirable Machines for Cutting and Rolling Grass. There are two of them in almost daily use in these grounds during summer, by which a great saving in labour is effected, and an improved state of the turf. I believe there is a general impression that the Machines only work well when the Grass is dry. I find that they work equally well when the Grass is wet.

Mr. HARLEY, *Gardener to* THOMAS CHAMBERLYNE, Esq. *Cranberry Park, near Winchester.*

The Gardens, Cranberry Park, July 5, 1859.

I am happy to be able to add my testimony to the high merits of the Shanks' 30-inch New Horse Lawn Mowing Machine which you sent me. I have put it to work in its trials on rough and uneven ground which had only been once mown this year with a Scythe. It surpassed all my expectations, as it likewise did my employer and other gentlemen who witnessed its working. When taken on the lawn, where it had a better chance of showing its power, nothing could possibly excel it; after cutting, and the Grass being removed, the lawn never before looked half so well as it did then. I am quite sure that I shall be able to pay the expense of the Machine this year in the labor saved from the use of the scythe—and not only that, but it leaves the turf in such fine condition. My opinion is that no one should be without Shanks' Machine, as I believe it to be, without exception, the best I ever saw worked. The self-acting apparatus for delivering the Grass is the most complete thing brought out in any Mowing Machine invention.

Mr. W. ELLIOTT, *Chief Gardener to* The Right Hon. the MARQUIS of STAFFORD, *Lilleshall, Salop.*

Your Grass Cutting and Rolling Machine continues to give great satisfaction. For quickness and economy of labour I am certain there is nothing to equal it. Turf operated upon by it has a much finer appearance than when done by the scythe.

Mr. SHEARER, *Gardener to the* MARQUIS of TWEEDDALE, *Yester Garden.*

Allow me to congratulate you on the success of your improved Grass Cutting Machine, which we got the other day from you, especially the delivering part. It is a mechanical triumph, and acts far beyond my expectation, and it performs all you say in your prospectus. We can now go on the whole day without stopping, except to oil the parts that require it. *The men are quite in love with it*—a good proof of its utility.

Mr. JAMES MITCHELL, *Gardener* to His Grace the DUKE of SUTHERLAND, *Dunrobin Castle, Sutherlandshire.*

I am happy to say that the new Mowing Machine got from you last Spring, turned out most satisfactory. It is a great improvement on the old make, particularly as regards the Delivering apparatus, which is an admirable contrivance, and effects a great saving of time. Altogether it did its work well.

Mr. MACKIE, *Gardener to* His Grace the DUKE of ATHOLE, *The Gardens, Dunkeld.*

After repeated trials with our Grass Cutting Machine, as now fitted up with your delivering apparatus, I have much pleasure in saying that I now consider your Machines complete. We can now do as much work in six hours as we used to do in ten hours with the old plan of stopping to empty the Grass-box, and with far greater ease both to man and horse.

Mr. JOHN RICHARDSON, *Gardener to* JOSEPH PEASE Esq., *Southend Gardens, near Darlington.*

Your Lawn Mowing Machine is the best of any I have yet used, doing the work speedily and well. The Delivering Apparatus is a decided improvement, and the best recommendation it can have is its own simplicity.

Mr. J. KIDD, *Gardener to* The Right Hon. the EARL of AIRLIE, *Cortachy Castle, Forfarshire.*

After the season's trial of your new and improved Mowing and Rolling Machine, I feel highly satisfied with the manner it does the work in every way; and as regards the apparatus for emptying the Grass-box, I consider it a very great saving, both of time and labour, as the Machine does not require to be stopped to have the Grass-box emptied. Before I got this Machine nearly half the time was taken up to stop to have the Grass-box emptied. There is another improvement which was not on my last Machine, viz., the arrangement of the Cutters either to cut long or short Grass; it is now so simple that any of my men can alter it in five minutes.

Mr. THOMAS SMITH, *Gardener to* The Most Noble the MARQUIS of LONDONDERRY, *Mount Stuart Gardens, Ireland.*

I have much pleasure in stating that your 42-inch Mowing Machine, which has been in use during the past season, has given entire satisfaction. The Grass being delivered while the horse goes along is a great acquisition.

Mr. JAS. MOIR, *Gardener to* The Right Hon. LORD LOVAT, *Beaufort Castle, Beauly.*

I am happy to have it in my power to add my testimony to the utility of your Improved Grass-Cutting Machines. The Delivering Apparatus works admirably, and is a great saving of time. I think no one having a Lawn to keep should be without a Mowing Machine with your Improvements.

JOHN GRANT, Esq., *of Kilgraston, Perthshire.*

If you think proper you may add my testimony to the excellent working of your Mowing Machines. I keep a lawn and verges in complete order with mine, the whole being mown and the Grass carried away in three hours, which I think could not be effected under two days' labour of 10 men in the ordinary manner: a man, a boy, and a horse doing the work with the Mowing Machine.

Sir JOHN H. MAXWELL, Bart., *of Springell, Ecclefechan, N.B.*

Several gentlemen in this quarter who have seen the Machine working approve of it highly, and regret having already provided themselves with one from another maker.

R. K. GOODE, Esq., *of Heather Hall, Ashby-de-la-Zouch.*

The Machine does its work far better than can be done with the scythe, and at half the expense.

The Hon. M. F. T. BERKELEY, *Berkeley Castle.*

I have found your Mowing Machine answer perfectly. It does its work well, cutting closer and more evenly than the scythe; collects and delivers the Grass, thereby saving much time and labour.

Sir JOHN BURGOYNE, Bart., *Sutton Park, St. Neo's.*

The Lawn Mower (a No. 9 22-inch Hand Machine with Patent Delivering Apparatus), has arrived quite safe, and answers admirably, and mows better and in less time than it is possible for two men to do.

Mr. ELIJAH DEAN, *Gr. to* The Right Hon. the EARL of HARROWBY, *Sandon Hall, Staffordshire.*

I shall not fail to recommend your Shanks's Mowing Machine (a 30-inch, No. 4). In fact I have had two or three parties to look at it who have had Shanks's Machines already, and they pronounced this much superior in many respects, doing its work both easier for the horse and man. We work it four days per week, and it makes first-rate work; and when we did the work with the scythes we had six or seven men regularly every morning, and nearly the whole of the day, and then we could not get over it once in a fortnight.

Mr. WILLIAM DAVIDSON, *Landscape Gardener, 22, Clifton Villas, Maida Hill, London.*

The Mowing Machine you sent to Mr. Mitchell, Enderby, does its work beautifully.

Mr. W. FORD, *Steward to* W. AMHURST, *Esq., Diddlington Park, Brandon, Norfolk.*

I beg to forward your cheque, and to assure you that the Mowing Machine gives very great satisfaction.

Mr. HENRY DAVIS, *Gardener to* J. H. HULBERT, Esq., *Broomfield, Great Stanmore.*

The Mowing Machine you sent us does its work very well, and it is in consequence of its giving such satisfaction that I have to order another one of the same for C. R. Rackstrow, Esq., of The Limes.

THOMAS PRICKETT, Esq., *The Avenue, Bridlington.*

I have pleasure in enclosing you a cheque for the Lawn Mowing Machine, which works to my entire satisfaction.

The Rev. W. AMOS, *Braceboro' Rectory, Stamford.*

The Rev. W. Amos begs to enclose the cheque due to Messrs. Brown & Co., and to say that the Machine gives great satisfaction.

Mr. THOMAS CAMPBELL, *Gardener to the* Rev. F. HOPWOOD, *Winwick Hall, near Warrington.*

I am happy to state that the Mowing Machines (25-inch pony and 16-inch hand) answer admirably.

HENRY J. B. HANCOCK, Esq., *Birchfield, Isle of Wight.*

I have to acknowledge the receipt of the Wire Netting and Mowing Machine, both of which afford us much satisfaction. The Mowing Machine works admirably.

The Rev. J. E. NEWELL, Rector, *Bromley, Kent.*

I enclose a cheque for our Shanks' Mowing Machine, the action of which continues to be very satisfactory. My gardener says he gets on as well by himself as he did before with the aid of a boy and a donkey.

J. B. FLETCHER, Esq., *Busted Lodge, Bognor.*

I have used the machine, and like it very much. It has done its work in a very satisfactory manner.

H. T. WELCH, Esq., *Lech Hall, Thirkly, Lonsdale, Westmoreland.*

I forward you a cheque for the amount of your account. I am quite delighted with the Machine. I consider it a most perfect instrument.

Monsieur MANIEZ, *St. Pierre-les-Calais, France, May* 28, 1862.

Je suis très satisfait de la Machine. Je l'ai essayée et elle fonctionne parfaitement bien.

TRANSLATION.

I am very well pleased with the Mowing Machine. I have tried it, and it works perfectly.

SOLE AGENTS FOR LONDON: J. B. BROWN & CO., 18, CANNON STREET, CITY, E.C.

PLANTS of the NEW ZINNIAS.

ZINNIA MEXICANA.—A dwarf spreading bright yellow, with stripe of rich orange down each petal; a first-rate bedding plant. Strong in pots, 5s. per dozen.

ZINNIA ELEGANS PLENO.—Seedlings from a magnificent collection of extraordinary double flowers; mixed in a large variety of the richest colours. Strong in pots, 3s. 6d. per dozen; 25s. per 100.

A large stock of the finest BEDDING PLANTS, stout, vigorous, and strong, most of which will commence flowering immediately.

CATALOGUES on application.

STEPHEN BROWN, Seed and Nursery Establishment, Sudbury, Suffolk.

ROBERT PARKER begs to offer strong healthy plants of the following, all of which will prove desirable acquisitions to the most select collections:—

CENTAUREA RAGUSINA	2s.	6d.
COLEUS VERSCHAFFELTI	1	0
FUCHSIA COMET	1	6
,, MINNIE BANKS	1	6
,, WHITE LADY	1	6
GERANIUM PRINCE of WALES, each, 1s. 6d.; per dozen, 12s.; per 100	75	0
VERBENA LADY VICTORIA SCOTT, each, 1s. 6d.; per dozen, 12s.; per 100	50	0

Exotic Nursery, Tooting, Surrey, S.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe. Also to their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which for want of space there is erected at the Crystal Palace, Sydenham.

Royal Berkshire Seed Establishment, Reading.

MRS. CONWAY offers the following Novelties, which she can most confidently recommend, both for excellence of habit and for beauty of form and colour.

CALCEOLARIA ALBA MULTIFLORA.—A good dwarf variety, very suitable for bedding, 2s. 6d. each; 24s. per doz.

CALCEOLARIA CRIMSON PERFECTION.—An improvement on Crimson King, of a fine shrubby habit, adapted for bedding and for pot culture, 2s. 6d. each; 24s. per doz.

GERANIUM CRIMSON NOSEGAY.—An admirable variety for bedding and for ribbon planting, 2s. 6d. each; 24s. per doz.

VERBENA ROYAL BLUE.—A very rich-coloured variety; a fine bedder, and excellent for ribbon work, 3s. 6d. each; 30s. per doz.

Earl's Court Nursery, Old Brompton, W.—May 31.

CERTIFICATE of MERIT, PETUNIA EMMA (Royal Horticultural Society's Show, May 24, 1862.)

CERTIFICATE of MERIT, PETUNIA DAZZLE. (Royal Horticultural Society's Show, May 24, 1862.)

CERTIFICATE of MERIT, PETUNIA RUBY. (Royal Botanic Society's Show, May 28, 1862).

The above, with 20 other First-class New and Distinct varieties, 3s. 6d. each.

WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, S.W.

IRISH FERN (Trichomanes speciosum). The best specimen in England, a dense mass 3 feet 3 inches by 2 feet 4 inches, in the finest possible condition; was awarded a Silver Medal last Wednesday at the Royal Botanic Society's Show. Price 20 guineas.

WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea.

ROYAL BOTANIC SOCIETY.

THE FIRST EXHIBITION of PLANTS, FLOWERS, and FRUIT, MAY 28, 1862.

AWARDS OF THE JUDGES.

EXTRA GOLD MEDAL.

To Mr. W. May, Gr. to J. Spode, Esq., Hawkesyard Park, Rugeley, Staffordshire, for 16 Stove and Greenhouse Plants
To Mr. W. Milford, Gr. to E. McMorland, Esq., 59, Adelaide Road, Haverstock Hill, for 20 Exotic Orchids

LARGE GOLD MEDAL.

To Mr. T. Whitebread, Gr. to H. Colyer, Esq., Dartford, Kent, for 16 Stove and Greenhouse Plants
To Mr. G. Baker, Gr. to A. Bassett, Esq., Stamford Hill, for 20 Exotic Orchids

MEDIUM GOLD MEDAL.

To Mr. B. Peed, Gr. to Mrs. Tredwell, St. John's Lodge, Norwood, for 16 Stove and Greenhouse Plants
To Messrs. J. & J. Fraser, Nurserymen, Leyton, Essex, for 12 Stove and Greenhouse Plants
To Mr. H. Chilman, Gr. to Mrs. Smith, Ashtead House, Epsom, for 10 Stove and Greenhouse Plants
To Messrs. H. Lane & Son, Nurserymen, Great Berkhampstead, Herts, for 10 Roses in Pots
To Mr. C. Penny, Gr. to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, for 20 Exotic Orchids
To Mr. T. Page, Gr. to W. Leaf, Esq., for 12 Exotic Orchids
To Mr. C. Turner, Nurseryman, Slough, Bucks, for 10 Greenhouse Azaleas
To Mr. S. M. Carson, Gr. to J. C. Sim, Esq., for 8 Greenhouse Plants

GOLD MEDAL.

To Messrs. T. Jackson & Son, Nurserymen, Kingston, Surrey, for 12 Stove and Greenhouse Plants
To Mr. J. Green, Gr. to Sir E. Antrobus, Bart., M.P., Cheam, Surrey, for 10 Stove and Greenhouse Plants
To Messrs. T. Jackson, for 10 Cape Heaths
To Mr. B. Peed, Gr. to Mrs. Tredwell, for 8 Cape Heaths
To Mr. W. Paul, Nurseryman, Waltham Cross, for 10 Roses in Pots
To Mr. B. S. Williams, Nurseryman, Holloway, for 10 Exotic Orchids
To Mr. B. Peed, Gr. to Mrs. Tredwell, for 12 Exotic Orchids
To Messrs. H. Lane & Sons, for 10 Greenhouse Azaleas
To Mr. T. Page, Gr. to W. Leaf, Esq., for 8 Greenhouse Azaleas
To Mr. C. Turner, for 12 Pelargoniums
To Mr. W. Nye, Gr., Clewer Manor, Berks, for 10 Pelargoniums

LARGE SILVER GILT MEDAL.

To Mr. W. Cutbush, Nurseryman, Barnet, Herts, for 12 Stove and Greenhouse Plants
To Mr. S. M. Carson, Gr. to J. C. Sim, Esq., Nonsuch Park, Cheam, Surrey, for 10 Stove and Greenhouse Plants
To Mr. T. Page, Gr. to W. Leaf, Esq., Park Hill, Streatham, for 6 Stove and Greenhouse Plants
To Mr. C. Hutt, Gr. to Miss Burdett Coutts, Holly Lodge, Highgate, for 10 Stove, Greenhouse and Fine-foliaged Plants
To Mr. O. Rhodes, Nurseryman, Sydenham Park, Kent, for 10 Cape Heaths
To Mr. T. Page, Gr. to W. Leaf, Esq., for 8 Cape Heaths
To Mr. T. Terry, Gr. to C. W. J. Puller, Esq., Youngsbury, Ware, Herts, for 6 Roses in Pots
To Mr. S. Woolley, Nurseryman, Cheshunt, Herts, for 10 Exotic Orchids
To Mr. H. Chilman, Gr. to Mrs. Smith, for 12 Exotic Orchids
To Mr. J. Green, Gr. to Sir E. Antrobus, Bart., for 6 Exotic Orchids
To Messrs. J. & J. Fraser, for 10 Greenhouse Azaleas
To Mr. J. Cross, Gr. to Sir F. H. Goldsmid, Bart., M.P., Regent's Park, for 8 Greenhouse Azaleas
To Mr. C. Turner, for 6 Greenhouse Azaleas
To Messrs. J. Dobson & Sons, Nurserymen, Isleworth, for 12 Pelargoniums
To Mr. J. Shrimpton, Gr., Putney Heath, for 10 Pelargoniums

LARGE SILVER MEDAL.

To Mr. J. Tegg, Gr. to Baron Hambro, Roehampton, Surrey, for 6 Stove and Greenhouse Plants
To Mr. W. May, Gr. to J. Spode, Esq., for 6 Cape Heaths
To Mr. W. Wiggins, Gr. to W. Beck, Esq., Isleworth, for 6 Exotic Orchids
To Messrs. H. Lane & Son, for 6 Greenhouse Azaleas
To Mr. C. Turner, for 6 Fancy Pelargoniums
To Mr. Weir, Gr. to Mrs. Hodgson, for 6 Fancy Pelargoniums
To Mr. Bousie, Gr. to Lord Taunton, Stoke Park, Slough, for 6 Fancy Pelargoniums

SILVER GILT MEDAL.

To Mr. O. Rhodes, Nurseryman, for 12 Stove and Greenhouse Plants
To Mr. W. Kaile, Gr. to Earl Lovelace, East Horsley Towers, Ripley, Surrey, for 10 Stove and Greenhouse Plants
To Mr. J. Wheeler, Gr. to J. Phillpott, Esq., Stamford Hill, for 6 Stove and Greenhouse Plants
To Messrs. J. & C. Lee, Nurseryman, Hammersmith, for 10 Stove, Greenhouse, and Fine-foliaged Plants
To Mr. R. Baxindine, Gr. to H. Smallpiece, Esq., Millmead House, Guildford, Surrey, for 8 Cape Heaths
To Mr. J. Wheeler, Gr. to J. Phillpott, Esq., for 6 Cape Heaths
To Mr. W. Lakeman, Gr. to J. Campbell, Esq., for 6 Exotic Orchids
To Messrs. J. Ivery & Son, Nurserymen, Dorking and Reigate, for 10 Greenhouse Azaleas
To Mr. J. Green, Gr. to Sir J. Antrobus, Bart., for 8 Greenhouse Azaleas
To Mr. H. Chilman, Gr. to Mr. Smith, for 6 Greenhouse Azaleas
To Messrs. J. & J. Fraser, for 12 Pelargoniums
To Mr. J. Weir, Gr. to Mr. Hodgson, The Elms, Hampstead, for 10 Pelargoniums
To Messrs. J. & J. Fraser, for 6 Fancy Pelargoniums
To Mr. J. Holland, Gr. to B. W. Peake, Esq., Spring Grove, Hounslow, for 6 Fancy Pelargoniums

SILVER MEDAL.

To Mr. R. Baxindine, Gr. to H. Smallpiece, Esq., Millmead House, Guildford, Surrey, for 10 Stove and Greenhouse Plants
To Mr. W. Lakeman, Gr. to J. Campbell, Esq., Grove House, Hendon, for 10 Stove, Greenhouse, and Fine foliaged Plants
To Mr. H. Chilman, Gr. to Mrs. Smith, for 6 Cape Heaths
To Mr. J. Wheeler, Gr. to J. Phillpotts, Esq., for 6 Exotic Orchids
To Mr. J. Wheeler, for 6 Greenhouse Azaleas
To Messrs. J. Ivery & Son, for 6 Greenhouse Azaleas
To Messrs. J. Dobson, for 6 Cinerarias
To Mr. J. Burley, Nurseryman, Limpsfield, Surrey, for 12 Pelargoniums
To Messrs. J. Dobson, for 6 Fancy Pelargoniums
To Mr. T. Todman, Gr. to R. Henderson, Esq, Clapham Common, for 6 Fancy Pelargoniums
To Mr. W. Paul, for 6 Boxes of Roses
To Mr. W. Paul, for Collections of Roses in Pots
To Mr. B. S. Williams, for Collections of New and Rare Plants

SMALL SILVER MEDAL.

To Messrs. J. & J. Fraser, for 10 Stove, Greenhouse, and Fine-foliaged Plants
To Mr. B. Peed, Gr. to Mrs. Tredwell, for 8 Greenhouse Azaleas
To Mr. C. Penny, Gr. to H. H. Gibbs, Esq., for 8 Greenhouse Azaleas
To Mr. J. James, Gr. to W. F. Watson, Esq., Isleworth, for 6 Fancy Pelargoniums
To Messrs. Downie, Laird, & Laing, Nurserymen, Stanstead Park, for 36 Pansies
To Mr. J. James, Gr. to W. F. Watson, Esq., for 24 Pansies
To Mr. W. Bull, Nurseryman, Chelsea, for Trichomanes speciosum
To Mr. W. Bull, for 12 New and Rare Plants
To Messrs. H. Lane & Son, for 6 boxes of Roses
To Mr. B. S. Williams, for 70 Hardy Variegated Plants
To Mr. Harbott, Gr. to E. Burfett, Esq., Stratford, for 6 Anæctochilus
To Messrs. J. Ivery & Son, for 24 Hardy Ferns

BRONZE MEDAL.

To Mr. W. Cutbush, Nurseryman, for 10 Greenhouse Plants
To Mr. W. Bragg, Nurseryman, Slough, Bucks, for 36 Pansies
To Mr. J. Noble, Nurseryman, Bagshot, for 10 Rhododendrons
To Messrs. J. Veitch & Son, Nurserymen, Chelsea, for Caladium Veitchii
To Mr. W. Bull, for 6 Rare Palms
To Mr. J. Burley, for 6 Shrubby Calceolarias
To Messrs. J. Veitch, for Alocasia macrorhiza variegata

CERTIFICATE.

To Messrs. H. Lane & Son, Berkhamstead, 6 Standard Azaleas
To Messrs. Dobson & Son, for 24 cut Verbenas
To Mr. James, Gr. to W. F. Watson, Esq., 12 Pansies in Pots
To Mr. James Veitch, for Alocasia metallica
To Mr. James Veitch, for Musa vittata

CERTIFICATE.

To Mr. James Veitch, for Eriocnema marmorata
To Mr. W. Bull, for 2 Patent Indoor Plant Cases
To Mr. W. Bull, for 12 New and Rare Ornamental Plants
To Mr. E. Shenton, Hendon Park Nurseries, for 36 cut Pansies

FIRST CLASS CERTIFICATE OF MERIT.

To Mr. Wm. Bull, Nurseryman, King's Road, Chelsea, for Cibotium princeps
To Mr. Wm. Bull, for Musa vittata
To Mr. B. S. Williams, Nurseryman, Holloway, for Cibotium princeps
To Mr. John Standish, Nurseryman, Bagshot, for Rhododendron Standish's Perfection
To Mr. John Standish, for Rhododendron punctatum rubrum
To Mr. John Standish, for Retinospora pisifera aurea
To Mr. John Standish, for Polystichum concavum
To Mr. John Standish, for Lomaria oblongata
To Messrs. John & Charles Lee, Nurserymen, Hammersmith, for Musa vittata
To Messrs. John & Charles Lee, for Cibotium princeps
To Messrs. Veitch & Son, Nurserymen, Chelsea, for Sarmienta repens
To Messrs. Veitch & Son, for Sphærogyne latifolia
To Messrs. Veitch & Son, for Musa vittata
To Mr. Nye, Clewer Manor, Berks, for Seedling Geranium, Belle of the Ball
To Mr. Nye, for Seedling Geranium, Royalty
To Mr. Nye, for Seedling Geranium, Conflagration
To Messrs. J. & J. Fraser, Nurserymen, Leyton, Essex, for Seedling Geranium International
To Mr. C. Turner, Nurseryman, Slough, Bucks, for Seedling Geranium, Lilly Franklin.
To Mr. Wiggins, Gr. to W. Beck, Esq., Wotton Cottage, Isleworth, Seedling Geranium, Splendens
To Mr. Wiggins, Gr. to W. Beck, Esq., Wotton Cottage, Isleworth, for Seedling Geranium, Nymph
To Mr. Wiggins, Gr. to W. Beck, Esq., Wotton Cottage, Isleworth, for Seedling Geranium, Ardens
To Mr. Wiggins, Gr. to W. Beck, Esq, Wotton Cottage, Isleworth, for Seedling Geranium, Esperance
To G. W. Hoyle, Esq., Reading, for Seedling Geranium, Royal Albert
To Mr. Holland, Gr. to B. W. Peake, Esq., Spring Grove, Isleworth, for Seedling Petunia, Flower of the Day
To Mr. W. Bull, Chelsea, for Petunia Ruby

SECOND CLASS CERTIFICATE OF MERIT.

To Mr. W. Bull, Nurseryman, for Yucca Stokesii
To Mr. W. Bull, Nurseryman, for Oreopanax dactylifolium
To Mr. W. Bull, Nurseryman, for Dracæna Gheisbreghtii
To Mr. W. Bull, Nurseryman, for Lomatia elegantissima
To Mr. John Standish, Bagshot, for Osmanthus ilicifolius variegatus
To Mr. John Standish, Bagshot, for Osmanthus ilicifolius
To Mr. John Standish, Bagshot, for Eurya angustifolia
To Mr. John Standish, Bagshot, for Aucuba japonica limbata
To Mr. John Standish, Bagshot, for Cerasus sp.
To Mr. Low, Nurseryman, Clapton, for Cœlogyne Schilleriana
To Mr. R. Parker, Nurseryman, Tooting, for Trichopilia sp.
To Messrs. Veitch & Son, for Ficus Cooperii
To Messrs. Veitch & Son, for Euonymus radicans variegata
To Messrs. E. G. Henderson, Wellington Nursery, for Aralia heteromorpha
To Mr. John Standish, Bagshot, for Aucuba sp.
To Mr. W. Paul, Nurseryman, Waltham Cross, for Seedling Scarlet Geranium Waltham Pet
To Mr. Nye, Clewer Manor, for Seedling Geranium Improvement
To Messrs. Dobson & Son, Nurserymen, Isleworth, for Seedling Geranium Stella
To Mr. Wiggins, Isleworth, for Seedling Geranium Oriana
To Mr. Wiggins, Isleworth, for Seedling Geranium Regina formosa
To G. W. Hoyle, Esq., for Seedling Geranium Miss Faithfull

THIRD CLASS CERTIFICATES OF MERIT.

To Mr. W. Bull, for Yucca alba spica
To Mr. W. Bull, for Serissa fœtida marginata
To Mr. B. S. Williams, for Polystichum ordinatum
To Mr. John Standish, for Microlepia scabra
To Mr. John Standish, for Asplenium dissimile
To Mr. John Standish, for Elæagnus japonicus variegatus
To Mr. John Standish, for Lonicera sp.
To Messrs. Jas. Veitch & Son, for Caladium Kochii
To Messrs. Jas. Veitch & Son, for Stenogaster multiflora
To Messrs. Jas. Veitch & Son, for Lomaria crenulata

SPECIAL PRIZES for the best Three GROUPS of FRUIT and FLOWERS for the DECORATION of the DINNER TABLE are offered by Sir C. WENTWORTH DILKE, Bart., Vice-President of the Royal Horticultural Society, to be awarded at the Second Great Exhibition, Wednesday, June 11. First Prize, Gold Knightian Medal, or 10*l.*; Second Prize, Gold Banksian Medal, or 7*l.*; Third Prize, Society's Large Silver Medal, or 3*l.*

NOTE.—Beautiful arrangement will be the test of merit in this Exhibition; valuable Flowers or Fruits are therefore not demanded.

Each set must consist of Three Groups, and may be either one of Flowers and two of Fruit, or two of Flowers and one of Fruit, or Fruit and Flowers mixed in all three.

They may be shown either in épergnes, glass or china dishes, wicker or wire work, or in any other way most to the taste of the Exhibitor.

Ladies are invited to join in the competition.

The Prizes will be awarded by a Jury of Ladies.

A PRIZE of 5*l.* is offered by one of the Fellows of the Royal Horticultural Society for the 12 best STANDARD PLANTS for the DECORATION of the DINNER TABLE, to be awarded at the Show of Autumn Flowers, on September 10.

The Plants must be ornamental, either for their foliage, flowers, or fruit, and must be grown in pots not exceeding 6 inches in diameter; the foliage, flowers, and fruit must not be less than 20 inches nor more than 24 inches clear from the bottom of the pot.

Elegance of form, slenderness of stem, and variety of colour, will be the tests of excellence.

The groups will be received as late as 10 o'clock, A.M., PROVIDED SPACE SHALL HAVE BEEN SECURED FOR THEM THE DAY BEFORE. Letters to be addressed to Mr. G. EYLES, Royal Horticultural Society's Garden, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY. AUTUMN SHOW, SEPTEMBER 10, 1862.—An Additional Prize of 10*l.* will be given for the Best Specimen of a CONSERVATORY TUB. There is no restriction as to material, size, form, or design. It may be of wood, slate, stone, pottery ware, Terra Cotta, or any other substance. It may be in one piece or in many, fastened or bound together. Fitness for its purpose, elegance of design, superiority of workmanship, and cheapness, will be the test of merit.

ROYAL HORTICULTURAL SOCIETY. Special PRIZES for the March Show in 1863.
10*l.* for the Three Best CAMELLIAS.
3*l.* for the Three Best TREE MIGNONETTES.

THE IMPLEMENT COMMITTEE of the ROYAL HORTICULTURAL SOCIETY will hold an EXHIBITION of the following Articles at the Second Great Show, WEDNESDAY, June 11, viz.:—

Heating Apparatus, Improvements in Ventilation, &c.

Garden Machines, such as Mowing, Rolling, Transplanting, Fumigating, &c.

Improvements in Garden Tools and Cutlery, Garden Seats, &c.

Garden Ornaments in Wire Work, Trellises, Suspended Baskets, &c.

Garden Pottery, Conservatory Tubs, Garden Tallies and Labels, Tiles and Ornaments for Garden Edgings, &c.

Implements for Watering, &c. Protecting and Shading contrivances. Plant Guards and Supports. Decorations for Conservatories, Ornamental Flooring, &c.

Philosophical Instruments: Hygrometers, Thermometers, &c.

Bulky articles can only be shown in Model, and no Model may exceed 4 feet by 8 feet.

Applications for space must be sent in on or before May 31, to Mr. EYLES, the Garden Superintendent.

The Gardeners' Chronicle.

SATURDAY, MAY 31, 1862.

MEETINGS FOR THE ENSUING WEEK.

THURSDAY, June 5	—Linnean	8 P.M.
FRIDAY, — 6	Royal Horticultural (General Meeting) at S. Kensington	2 P.M.

SEVERAL curious conditions of PEACH LEAVES from stoves and orchard-houses have been communicated to us this season, and we have had an opportunity of examining two cases ourselves under circumstances which were instructive. In one instance two affections were present at the same time, but whether absolutely contemporaneous in their origin we have no means of determining. We will take the two simplest cases first, which were those that came under our own notice, and they are the more worthy of attention because their history was sufficiently evident. Both occurred in houses where the trees were elsewhere in the highest degree of health and luxuriance, and where the injury was confined to a spot perfectly calculated for its production.

The first case was almost exactly similar to those reported respecting Plum and Cherry trees in this Journal, 1849, p. 595. The leaves which had nearly arrived at their full growth were pierced with variously-sized holes, the edges of which were well defined, and the general condition of the rest of the leaf not in the least degree affected. As the leaves of other trees in the same house were perfectly sound, and those on the affected tree were sound, except in one spot immediately under a moveable light, it was quite clear that cold air had been admitted when the leaves were covered with variously-sized spots of water, the delicate subjacent tissues being in consequence destroyed. It is a well-known fact, that a sharp current of air coming suddenly upon leaves after syringing where they have been artificially forced will often produce such effects, a curious case of which was pointed to us in the Mangosteen-house at Sion some years since.

On going into another Peach-house, the gardener remarked that his plants were very healthy, but that one had suffered very much from insects, which he had not however been able to detect. The injury consisted of multitudes of minute holes parallel to the midrib or between the main nerves, so as to make the leaf look like a sieve, or where the holes had been most numerous, the whole or the basal part of the lamina of the leaf had fallen away, leaving nothing but the midrib ragged with portions of the lateral nerves. The first impression was that some species of weevil had got admission into the house, but a closer investigation proved that the case was much like the last, only the majority of the holes were scarcely more than punctures, the dead membrane still partially filling up a good many, and therefore indicating that the perforations had originated in a lighter syringing than in the first instance, more like bedewing than ordinary sprinkling. It is clear too that it arose at a time when the margin of the leaves was so curled as not to allow the little drop to rest upon them. Here too there was a moveable light as in the former case, the other parts of the tree out of its immediate range being unaffected. The more delicate portions of the leaf alone were attacked, so that even where the mischief was greatest a portion of the nerves and the contiguous tissue was untouched.

In a third case matters were more complicated. Not only were there dead spots leaving apertures the margin of which was well defined, while the rest of the leaf seemed to have recovered, but there was in addition a second more fatal affection, consisting of discoloured dead blotches in various parts of the leaves, affecting the nerves as well as the lamina, and resulting in the fall of the entire leaf. As the case seemed interesting, we proposed some queries to the person by whom the case was reported, which seem to throw some light upon the matter. That the first mentioned spots were due to some chill on the leaves when covered with spots of water, whether from actual admission of a draught of cold air, from radiation, or sudden evaporation after long contact, it is impossible to say. The other point was not so easily settled. It appeared that the roots of those trees which were planted in the border, where they joined the flue were partly dead, and consequently further protection was suggested; but as the trees in the inner border were subsequently affected in a similar way, though their roots were sound, that theory was abandoned. It was next remembered that all the trees in the house, as also the Vines in an adjacent house, had been irrigated with a half-and-half mixture of water and cow urine, a rather questionable proceeding; but as this was done some time before, and had clearly not affected the health when the spotting and consequent perforation took place, the treatment had in all probability nothing to do with the blotches. The Vines moreover remained in a state of perfect health. It appears, however, on inquiry, that the Peach house is nearer to the stove than the Vines, and that there is no awning; the temperature, in consequence, is considerably higher than in the Grape house, and we have therefore little doubt that the evil has arisen from the air becoming so dry that the tender tissues of the leaves, where weakest, were withered up, and their vitality so much lowered that they ultimately fell. The case in question occurred in Northumberland, where the external cold, in conjunction with radiation during the ungenial weather a short time back, might be intense enough to cause considerable dryness in the house; and we are the rather inclined to think this was the case, because we have a case from Scotland, in which the injury was still more extensive; not, indeed, confined as in that just reported to detached patches, but affecting the greater part of the leaf, and especially the more tender portions, so as to make a curious indented pattern, the portion least affected resembling somewhat in outline the jagged leaves described above in the second case. We can conceive no other solution of the very singular appearance presented by the leaves, as there is no reason to suppose that any burning sulphur had been used in the house, the only agent we know of which employed in an overdose could produce such an effect. It is certain that this is capable of doing so in young Pear leaves, but in the present instance, taken in conjunction with that from Northumberland, though it is probable that the temperature of the house was lower, as it is merely an orchard house, we have little doubt that the evil arose in the manner we have stated. Without an opportunity of personal inspection, opinions in such cases must be taken for no more than they are worth. One thing however is quite clear, that cultivators very frequently do not pay sufficient attention to the hygrometric condition of their houses. They keep up too high a temperature at night, and have no awning to reduce the difference between the external and internal temperature, and in consequence there is so dry an atmosphere in their houses that it is impossible that vegetation can be healthy. *M. J. B.*

—THE public has latterly been presented with a very unfavourable picture of the condition of the soldiers quartered at Aldershott, the authority being nothing less than an official report to the Secretary of State. Captain Jackson, R.A., by whom this report was drawn up after an inquiry instituted on the spot, affirms without hesitation, that the necessity for founding a Soldier's Home at Aldershott is "imperative and urgent;" and he recommends that such an institution should be forthwith established between the principal barracks and the village of Aldershott, so as to "intercept the communication between the camp and the haunts of vice" into which the men are allured out of it. The evils, which too clearly exist, seem to have arisen from the sheer want of some agreeable and profitable occupation—not too strait-laced—in which the large amount of leisure time at the disposal of the men could be spent. It has been calculated that about two-thirds of those who are quartered at this camp have, on an average, five hours of leisure in the day available for good or evil; and when out of camp this time is too often spent in publichouses and beerhouses, the character of which may scarcely be mentioned, so demoralising is their tendency. The report speaks very strongly on this point, and notwithstanding the indignation meetings held by some of the inhabitants of the district who felt themselves aggrieved by its sweeping tone, the facts are in the main admitted.

Captain Jackson's remedy for this state of things is the establishment of a Soldier's Home, or Homes, which are to combine such accommodation as billiard-tables, bagatelle-tables, chess-rooms, draught-rooms, music-hall, bowling-green, skittle-ground, &c., with a museum, good writing and reading rooms, and necessary refreshment rooms. The Home is to be large enough to accommodate 1000 men at a time, and the hall for musical and other entertainments to be capable of holding twice that number.

By all means let the soldiers have their Homes. The public won't grudge them the advantages these are to offer. But why not give them gardens also? No more agreeable, or healthful, or profitable employment for their hours now daily wasted or worse than wasted could be found, than would be afforded by the cultivation of a camp garden, the very produce of which would be conducive to healthfulness, even if the exercise were not, as it is, of so invigorating a character. This is one remedy for the soldier's demoralization. With a garden to resort to, and in which articles of utility as well as little luxuries might be raised, there need be no idlers about the camp, nor in its vicious precincts. Most men are so fond of gardening that the establishment of gardens such as these would require no premium or recommendation to make it acceptable. True the locality of Aldershott is naturally not a very fertile one, but the elements of fertility, convertible with little or no difficulty, are at hand in the sewage of the camp, and it is no mere fancy when we write, that by its aid, the wilderness might be converted into a fruitful field, and hundreds of acres might in a little time be made to yield up their produce to improve the soldier's fare.

And if Camp gardens, why not Barrack gardens? The advantages would be similar in the two cases. Pleasant occupation would result in profitable produce, and both physically and morally the soldier would be benefited.

In the French camps the soldiers have their gardens, and from time to time we meet in the public journals with mention of their progress, and of the advantages derived. Why should not such advantages be afforded to our English soldiers, though it may be that in granting them we are taking a lesson from our neighbours? It is not the first we have to thank them for. What say their own writers of the gardening operations carried on at the camp at Chalons for example? We read—

"An acquaintance with the nature and culture of the most useful kitchen garden plants will henceforth be gained by our soldiers in their camps; and this knowledge will certainly exercise a great influence on the progress of the most useful branches of horticulture, and in improving the diet of our rural population, as well as that of the inhabitants of towns."

Let our soldiers too have camp gardens and barrack gardens, and let our half-occupied soldiery have every facility to change the listless inaction which oppresses them and renders them an easy prey to vicious allurements, for the active and healthful occupation of rearing vegetables for their own use and that of their comrades. Let the camp refuse be deodorised and distributed over the barren soil, till "the desert shall rejoice and blossom as the Rose." Let the men be instructed and led into this pleasant field of action, and

it will soon be found that the victories of the spade are not less momentous than those of the sword.

—— The motto of the horticulturist is "Onwards;" and among the objects of his solicitude, even the INDIAN AZALEA, one of the aristocracy of the floral world, must keep pace with the times, and conform to the rule which this motto suggests, if it is to maintain its position. That position is doubtless a high one; for of the flowers which have won their way to popular favour there are none, perhaps, which are capable of producing so bewitching an effect upon the beholder as the Azaleas with their lovely hues, spread out in rich profusion, as may be seen at any of the early summer exhibitions, where they always form the leading feature.

The past season or two, as well as the present, have witnessed some very satisfactory advances both in the quality and character of this superb flower. This last year we had as a novelty a variety called Kinghornii, which shows a very near approach to perfection in respect to the form as well as to the substance and smoothness of its flowers, which high qualities it presents along with the additional recommendation of a very pleasant-looking rosy colour. Then from the same stud—Mr. Kinghorn's nursery—we have lately had another named Mars, which, to a more than average amount of general excellence, adds the richest and brightest of those light reds approaching scarlet which has as yet been obtained in this family. So much for past seasons.

The spring, which is now just merging into summer, has presented us with some advances in another direction. Probably, all points considered, the most perfect and meritorious of the novelties it has introduced to us is that called Duc d'Aremberg, a variety of Belgian origin, shown by Messrs. Smith, and of which some very small examples only have as yet been seen. We may picture this variety as being one of the most perfect in form of those delicate-looking salmon pinks, bordered with white, of which we have examples in the old variegata and the new President Claeys, but the bordering is here remarkably broad and distinct, there is superadded some unusual spotting which much increases the charm of the flower, and there are also occasional carmine stripes. The spotting in this fine and novel variety occurs at the base of the upper segments just beneath the sinus, and is of a deep rose red. Inferior doubtless to this in point of form, but yet a most striking novelty in respect to colour, is another Belgian variety, with semi-double flowers, called Souvenir du Prince Albert, which was produced by Mr. J. Verschaffelt at the very last meeting of the Floral Committee. The ground colour of this entirely novel flower is a deep bright rosy red, almost crimson, and this is edged by a broad margin of pure white, the contrast between the two colours being very striking and much more marked than in any other variety yet raised, so that we may say of this *souvenir* of a good man, that it will also be a charming plant either for the exhibition table or the home stage. One other move in the right direction—albeit in a direction different from either of the preceding, we have observed in a variety named Rifleman, shown by Mr. Ivery. In this last the colour is white with stripes of bright carmine occurring here and there, and the flowers are semi-double, the semi-duplication being produced not by a tuft of crumpled segments formed of petaloid stamens within the proper corolla, as is the usual condition of the so-called double Azaleas, but by the presence of a second row of broad flat smooth segments like those of the outer or normal corolla. It does not require any very deep discernment to see that a race of double flowers formed on the plan indicated in the blossom of this variety would be very much superior to those in which the inner segments were small and crumpled after the now usual model. Thus it is, we think, evident, that the Indian Azalea, having reached a very high position, is still working its way not only in the direction of desirable novelty, but also towards perfection.

While writing of Azaleas we cannot forbear expressing surprise that two little gems of this family brought from China by Mr. Fortune and named respectively *A. obtusa* and *A. amœna*, are not more commonly cultivated. The latter, indeed, being the most recently introduced of the two, does now and then make its way into our flower shows, but the former is very seldom seen at all. It is not however as exhibition plants that we allude to them here, but as small flowering shrubs for conservatories, and as little bushes for drawing-room flower-baskets, for which situations they have few rivals, their habit being so neat and compact, their bloom so profuse, and their colours so rich and effective. These two plants are quite distinct from the varieties of *Azalea indica*, though associating with them in habit and cultivation.

—— Some weeks back we received a letter complaining of mischief caused by the use of GISHURST COMPOUND. A similar statement was made to a Correspondent, who was curious enough to examine the case on the spot. The following is his report:—

"A friend wrote me that his Vines were weakened and nearly destroyed by being painted with Gishurst. I happened to be with him last Saturday and saw that his gardener had then even not removed the winter covers (3 feet of straw) from his Vine borders. I wrote him that *all* my bearing Vines after being pruned in January were dressed with Gishurst, 1 lb. to the gallon, and that they never broke more vigorously or healthy. The surface roots of *his* Vines were all rotten from having had no sun for six months."

So much for what is called evidence against Gishurst.

THE INTERNATIONAL EXHIBITION.

THE lawn-mowing machines exhibited are rather numerous, and present some novelty of construction, which it may be interesting to notice, since these implements may now be said to have taken a place amongst the necessities of gardeners. We can only note however what *appear* to be their merits, in consequence of their being exhibited at rest. With the extensive lawns of the Royal Horticultural Society so near at hand, it would not, one would think, be difficult to have them exhibited in action, and it would be well if the Society's Implement Committee would again submit the whole series, with their recent modifications, to a public competitive examination. The first we find mentioned is—

2084. Mr. James Boyd, Lewisham. This is called a "Patent Brush Lawn-mower, self-cleaning and self-sharpening." It differs principally from other machines in having a horizontal brush so fixed that the cutters are brought in contact with it at each revolution. The same feature occurs in Samuelson's machine.

2113. J. Ferrabee & Co., Stroud, and High Holborn. It appears that more than a quarter of a century ago, mowing machines were introduced by Messrs. Ferrabee, "under whose auspices Budding matured the invention and obtained the original patent," which latter became their property, and for many years they were the sole manufacturers. The experience thus gained has enabled them to introduce from time to time various improvements, among which they call attention to one of recent application, in the use of an iron frame made in one piece, "to carry the cutting parts, wheels, and adjustments," by which arrangement the cylinder and fixed blade are maintained parallel to each other under all circumstances, and greater stability is secured. Another of their improvements consists in arrangements by which the Grass box may be readily emptied without the attendant having to move from the handles. The prices of these machines vary from 4*l*. 10*s*. for the "handy lawn-mower" for ladies, up to 20*l*. for 36-inch ones.

2122. Mr. T. Green, Leeds, and Victoria Street, Holborn. Mr. Green's machines are well known, and have been well tested; they stand, moreover, very high in public favour. Green's "Patent Silens Messor," or Noiseless Mower, which is the principal form now shown and advertised, has been contrived to avoid the clatter which is certainly objectionable in the working of ordinary machines. In this, the motion of the cylinder carrying the cutters is produced by means of an endless revolving chain, instead of by agency of cog-wheels as was formerly the case. The noise has indeed been got rid of by this contrivance; but we are not sure that it has not been at the expense of strength, and that the machine may not in consequence be more liable to get out of order, inasmuch as the comparatively slender chain has to bear the working force formerly sustained by the much stronger cog-wheels. As to other points, the fact that Green's machines have carried off all the leading prizes wherever they have been put in competition with others, speaks for itself. They are shown of various sizes, the prices ranging from 3*l*. 10*s*. for a 10-inch machine "suitable for a lady," to 31*l*. 8*s*. for a 48-inch horse machine.

2141. T. Kennan & Sons, Dublin. This firm exhibits "Lawn Mowers with registered tilt gear," which appear to possess some points of improvement, especially in the mode of delivering the cut Grass, and in the increased number of cutting blades. For the former purpose the machine is provided with two boxes, one in front and one behind between the handles. The Grass is first caught in the smaller box in front, which is hung by two pivots, and by a simple contrivance is lifted when full, and its contents deposited in the larger and hinder box. The latter when filled can be emptied by turning it over, leaving the Grass in large heaps on the part which has been cut, or it may be lifted out and at once emptied into a wheel-barrow or cart if preferred. In this way the stoppages to get rid of the Grass are either avoided or reduced to a minimum. It is found that the back box balances the machines so nicely that large ones can be turned round as readily as small ones. The object of increasing the number of the cutting knives is to reduce the speed at which it is necessary the cylinder should revolve, and the effect of this is that not only is the clatter very much lessened, but there is—so it is held—a great diminution in the force required to work the machine. It is said also to prevent clogging, and also the possibility of ribbing the surface, even in the most mossy sward. As far as one can form an opinion without an actual trial, these seem to be real improvements. Other improvements claimed consist in certain self-acting clutches, and in the machines being readily released from action by aid of a single trigger placed on one side; and also in the improved arrangements for adjusting the spiral cutters with reference to the fixed knife, and the front rollers which regulate the height at which the Grass is cut. The prices are stated to be the same as those of former machines, with the addition for the tilt gear of 30*s*. for 18-inch machines, and 42*s*. for the larger ones.

2164. Pickslay, Sims, & Co., Leigh, near Manchester, exhibit some "Mowing Machines," among other implements.

2178. Mr. B. Samuelson, Banbury, and Cannon Street West. The "Lawn Mowing Machines" exhibited by Mr. Samuelson are furnished with two patented appliances, Mainwaring's silent wheels, and Boyd's self-cleaning apparatus, the latter consisting of the horizontally fixed brush already described. Their price varies according to size, from 5*l*. to 15*l*. 15*s*.

2182. A. Shanks & Son, Arbroath (London Agents, Brown & Co., Cannon Street) produce a "New Patent Lawn-mowing Machine" for 1862, and also a "New Hand Machine," these being fitted with silent movements if desired. The machines of Messrs. Shanks & Son have long been favourably known, and are very extensively employed. Those they are introducing this season are of a new and ornamented design, and are improved, they say, by strengthening the cutters, and by the reduction of friction in the bearings, so as to facilitate their working. Various sizes are exhibited, the prices varying from 5*l*. 5*s*. to 28*l*.

GARDEN DECORATION.

THE accompanying chromolithograph represents two other FRIEZES, executed in the Garden of the Royal Horticultural Society at South Kensington, from Mr. Nesfield's designs. The description given at p. 380 applies equally to these. We recommend them to the notice of the "Professor of Landscape Gardening," who has been perpetrating some astonishing performances in Salop.

THE GENUS CŒLOGYNE.

THIS genus has an interest peculiarly its own, including as it does some of the most beautiful and graceful of the Orchids; all its species have the advantage of a compact, luxuriant habit, with the exception of a section perhaps better known by the generic name Pleione, all the species of which are dwarf and deciduous.

The majority of Cœlogynes are found at elevations varying from 4 to 10,000 feet, amongst the hills of Nepaul and the Himalayas, and in the islands of the Indian Ocean. Pleiones are entirely Alpine. They are generally found on trees in shady situations, or on rocks near waterfalls in valleys.

I find that, generally speaking, the greater the elevation the more cold and dryness Orchids require during their resting season, and in no genus is this fact more remarkable than in Cœlogyne, a few of the species demanding almost constant excitement, others long rest.

During their season of growth they all like plenty of heat and moisture, and the secret of successful cultivation is in reducing both gradually from the time the season's growth is completed until the buds begin to swell, when by removing the plants into more heat and moisture the flower spike will be rapidly developed, to be succeeded by young leaves and bulbs.

For species which are best grown in pots nothing is better than turfy peat, potsherds, and charcoal, with plenty of moisture during the growing season, both overhead and at the root, but not in such quantities as to sodden the soil; no Orchid can succeed under the latter treatment, and in fact I like to see them get occasionally nearly dry; like other plants they appear to like it.

As regards temperature during the growing season they are rather accommodating. I do not know how low the thermometer might fall to suit them, for here they get the same warmth as others, and as the growing season happens to be spring and summer they get enough of it, but undoubtedly a few, such as C. cristata and the various species forming the division Pleione, are best grown in a warm corner of the greenhouse. After growth is fully matured, water and heat should be gradually withheld, and the plants exposed to light; they may then be placed on a shelf in a greenhouse until the buds at the base of the bulbs begin to show that more heat would be desirable.

In potting Cœlogynes, at least the evergreen kinds, they should be much elevated above the rim of the pot, which should be quite two-thirds filled with drainage, both to allow sufficient escape for superfluous moisture, and to show the beauty of the flower-spikes, which are generally drooping.

Of this genus, a somewhat extensive one, there being upwards of forty described species, all interesting, though not all showy, the best I have yet met with are:—

C. pandurata, found on trees in shady places overhanging water in Borneo; a fine-foliaged plant, bearing a large spike of green flowers; lip nearly black, contrasting well with the other colours. This species requires but little rest, a circumstance explained by its native habitat.

C. asperata, also from Borneo, and probably better known as C. Lowii, is another fine growing plant, with shorter and more dense spikes of bloom than the last; the flowers are large, pale cream colour, except the lip, which is chocolate brown. It flowers in early summer at about the same period as C. pandurata, and is better rested in the same house where grown.

C. speciosa, a very useful species on account of the large size of the flowers individually, and its habit of constantly flowering immediately the bulb is perfected; in colour the flowers are tawny with a very dark brown

lip; they are seen to best advantage when grown in a basket with peat, sphagnum, and potsherds; it requires a strong moist heat and little rest; it is found wild on trees in the woods of Java.

C. flaccida is a very pretty winter or early spring flowering plant with long drooping racemes produced from the base of the bulb; the flowers are rather small, white, with the lip veined with crimson and yellow; it will succeed well on a block with a little Moss, but grows stronger in a pot in peat—in the latter case, however, it is not seen to the best advantage. It is a native of Nepal, and requires a good rest after growth is mature.

C. cristata, one of the most beautiful Orchids, having large flowers of the purest white, with yellow in the centre of the lip. It is found in Nepal and Sikkim at an elevation of from 5 to 8,000 feet, and is much stronger if grown in less heat than any of the preceding. Pot culture suits it best, and it should have a long rest.

C. Gardneriana, a fine species from Nepal and Khasia, where it is found in woods; flowers in long drooping spikes, pure white with just a touch of yellow on the lip.

There are several more evergreen species well worthy of cultivation, but they are extremely rare in collections; perhaps the best of them are C. ochracea, ocellata, Cumingii, elata, fuliginosa, and plantaginea, all worth growing.

The deciduous species form a very distinct division, losing their leaves before they begin to flower; they should be potted lower than the evergreen kinds, and a cooler house suits them better, with a good rest on a light shelf of a greenhouse. The best are C. maculata, pure white, lip marked with yellow and crimson; C. lagenaria, rose colour, lip white, yellow and crimson; C. præcox var. Wallichiana, flowers large, rich rose, with yellow and white in the centre. They are found wild on the Indian Alps, on the trunks and branches of trees among Moss, as far as 30° N. at about 7000 feet elevation. *L. W. J.*

COMPANIONS OF THE SIKKIM AND BHOTAN RHODODENDRONS.

(*Continued from p.* 453).

Bejarias. — As these beautiful plants may be regarded as the natural "equivalents" of the Rhododendrons in the Chilian and Peruvian Andes (where no true Rhododendron has yet been found), I thought it might be well to try whether they would succeed under the same artificial treatment. I therefore placed two species—B. coarctata and B. æstuans—in a shady border at the foot of R. Dalhousianum, in which situation they both have grown most vigorously, and one, B. coarctata, has already flowered. There are many other fine Bejarias, and if they be found to succeed under such conditions as those I have just indicated, a great point will have been gained.

Lapageria rosea.—This flourishes exceedingly and flowers finely turned out in a damp border against the northern, and consequently the darkest, side of the house. It is the finest of our creepers, and doubly valuable because it blossoms during the winter months.

Philesia buxifolia.—Of this I have had many plants, and tried them both in and out of doors, but despite all my attention they would not thrive. At last it occurred to me that as the Lapageria and Philesia come from the same country, are found in the same situations, and belong to the same natural order, the treatment that succeeded with the one might be equally welcome to the other. Philesia was turned out accordingly, and small as was my plant it speedily pushed forth stolones, one of which came up at the distance of fully 2 feet from the old stem! This travelling habit goes far to explain the ill-success that too frequently attends its cultivation in a pot. Unfortunately its underground stolones are peculiarly obnoxious to the attacks of the wireworm; a pest that can hardly be altogether extirpated from a peat border.

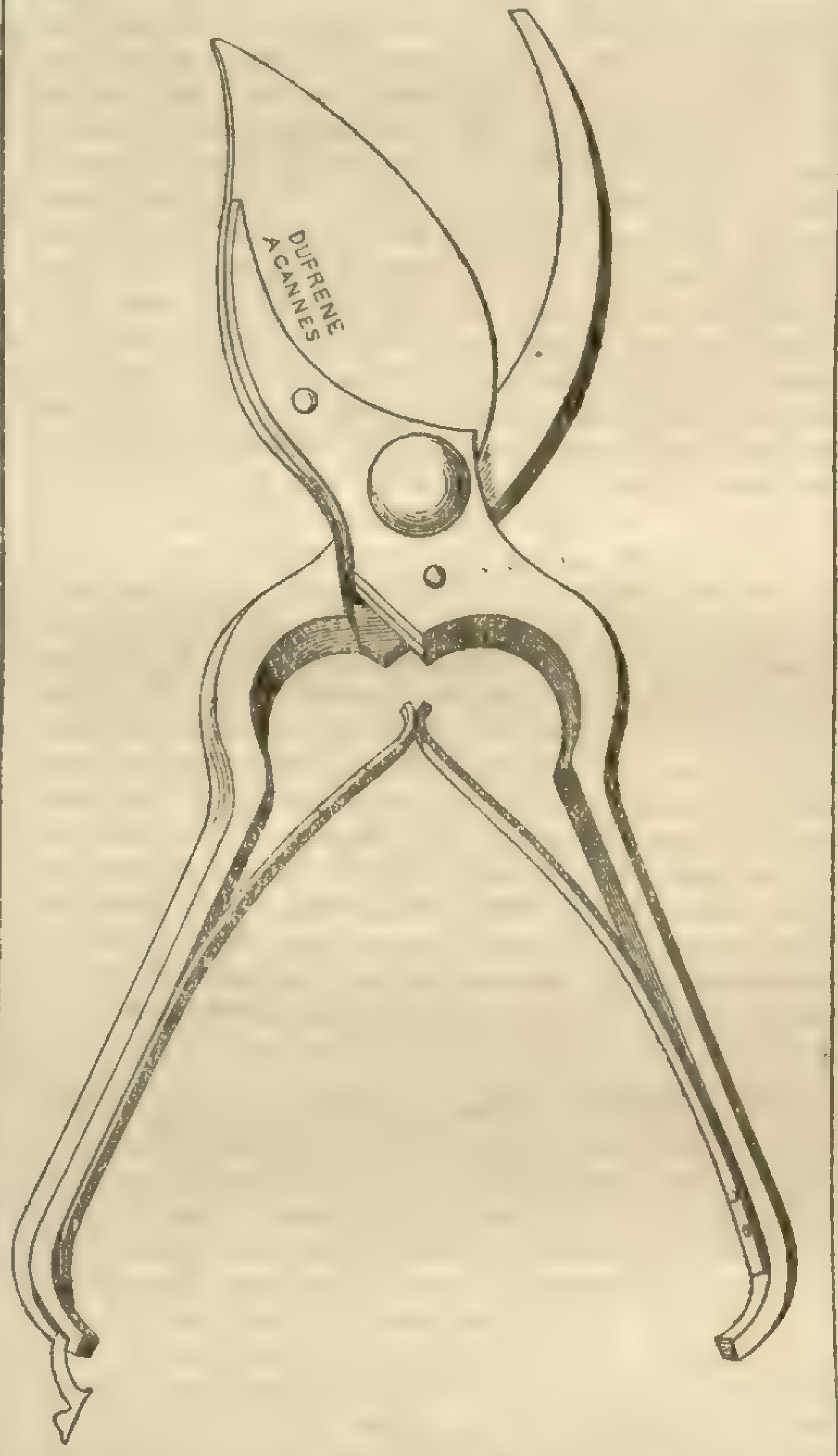
Mitchella repens.—A plant of this which my son brought me from N. America is quite at home under the dense shadow of Rhododendron Aucklandi. It is an exceedingly interesting little thing, spreading closely over the ground, and producing freely its pretty white flowers, quickly succeeded by tiny red fruit.

Alsophila australis.—I mentioned incidentally that on one side of the Rhododendron-house was a billiard-room, for which I was of course anxious to secure all the light I could; but on the other hand I was desirous for the sake of effect in the conservatory, to have the loftiest plants I could get. I almost despaired of reconciling these apparently antagonistic conditions, when I fortunately found in November last, at Mr. Veitch's nursery, a large importation of tree Ferns arrived most opportunely from Australia, out of which I selected a plant of the Alsophila, with a trunk about 10 feet high, from the summit of which some of its noble fronds were already beginning to protrude. In this stately plant I at once found the solution of my difficulty, for the fronds, borne aloft, supply the requisite foliage, and yet at the same time no light is intercepted by the stem. *J. B., Biddulph Grange.*

Home Correspondence.

Blossom Shedding.—Having seen notices in your paper of Peach blossoms falling, I beg to add one more case to those already recorded. A Peach and an Apricot tree, both in the open air, were full of blossom, and afterwards equally profusely covered with "set" fruit. Both were well protected by coping boards and woollen netting from frost, which however only occurred on three or four nights subsequent to the appearance of the blossom, and which by no means appeared to injure the trees; yet almost all the fruit has now fallen, being about $\frac{1}{4}$ to $\frac{1}{2}$ an inch in length, leaving scarcely a score on each tree to come to perfection. In common with your other correspondents, I should be glad to know the cause and mode of preventing this catastrophe in future. Could it have been in consequence of the great quantity of rain that has lately fallen? One night, May 8th, I registered nearly 2 inches. I did not however examine the tree after that particular occurrence. *Warwickshire.*

Pruning Scissors.—I send you a drawing of a pair of pruning scissors of great simplicity and power; the principal use is the pruning of the Vines and of the hard branches of the Acacia Farnesiana and Rose bushes grown for the perfumers. The drawing is half the size of



the instrument in ordinary use. It is made of iron except the steel knife, which is screwed on, and when required to be sharpened or repaired is unscrewed. These scissors, though not so neat as those made at Sheffield, are more simple and far more effective. *Dodman, Cannes.*

Tubs.—I cannot regard either of the patterns of plant tubs which you have engraved as being very suitable or tasteful. The first is scarcely an alteration of many in use for years past, except in the introduction of the ornament (not very happily chosen) in the centre of the panel, while in the cylindrical tub there is a want of fitness for the object in view. Twelve months back I superintended some work in the Nine Elms Cement (Portland) by a Liverpool firm, which has turned out so satisfactory, that I almost think if the same amount of intelligence was set to work upon it in an horticultural point of view it might be turned to a useful end. The great drawback, however, in the use of cement is the impossibility of obtaining strength except at the price of a cumbersome and unwieldy production. I think, from experiments which have been tested, it is possible so to combine strengthening materials, either with cement or terra-cotta, as to produce the side of a tub, say three feet square, which, while it shall possess sufficient strength, shall not be thicker ($\frac{3}{4}$ to 1 inch thick) than it would be requisite to use slate for the same purpose; and that, too, at a cost which shall not be more, if so much, as slate, while the material will have the advantage of the porosity so much to be desired for horticultural purposes. The great requisites for plant boxes will be first strength, second lightness, third fitness, and fourth durability. These attained we may next direct our attention to form and ornamentation. In point of form no doubt an inverted cone must be the leading principle, for whether a tub be square, circular, octagon, or any other shape, it must be slightly wider at the top than at the bottom, so as to allow of the ball of earth being raised and examined with ease and facility. For convenience of shifting and examination the moveable bottom of the "West Kent Pot" must be adopted. It is preferable to moveable sides and much less costly. With regard to ornamentation I see no reason why the forms should not be as varied as the different styles of architecture, or as the manufacturers find it profitable to make the tubs. Thus in contiguity to a mansion upon terraces, or in architectural conservatories, unity of expression may be kept up, and in situations where variety is desirable, as for example and exhibition in the garden of the Horticultural Society at South Kensington, a full collection could be had and could be so grouped as to form an interesting exhibition of themselves. As a principle in designing, all sharp and projecting points and angles should be avoided, as should also any recesses likely to harbour dust or filth of any kind. Gardeners, and more especially their labourers, are not the most handy fellows for a "China shop," and therefore I think provision should be made accordingly, and strength and suitability for the purpose intended must not be sacrificed to mere ornamentation. For garden uses I think it would be well if designers would give up a little of their conventionalism. Nature supplies thousands of beautiful forms for decoration, and it is a pity to use those which approach, but do not carry out Nature's precepts. For example, the tub at page 430, though an immense improvement upon that recommended by "Jael," would still be better if a little more "nature" was thrown into it. It is a combination of leaves which some may take for Acanthus, others for Scolopendrium vulgare. They cannot be identified as either, but I may say if a leaf of Acanthus or a frond of Scolopendrium was avowed as the object of the designer the design would not suffer in consequence. Let any one apply a nice frond of Scolopendrium to the same design, and they will not find it deteriorated by a "touch of nature." *A Celt, May* 13.

Wellingtonia.—I have been rather surprised at finding in the Supplement to Gordon's Pinetum the following observation:—"Wellingtonia, Lindley, the Mammoth tree .... "The genus Wellingtonia is considered by most systematic botanists as untenable, it not being sufficiently distinct from Professor Endlicher's genus Sequoia; &c...... It is much to be regretted that any sinister motives should ever interfere with botanical science, so as to drive botany from its high position to occupy the low footstool of flattery." P. 106. The best answer that can be given to this uncalled for remark, will be to state the circumstances of the choice of name as they arose; in your office in Regent Street, late I think, in the autumn of 1852. It was not long after the Duke of Wellington's funeral, and I found you examining some Cones from North-west America, which you told me could not be arranged in any known genus of Conifers; and for which, as they belonged to a new and most remarkable tree, of noble character, and dimensions beyond any hitherto discovered species in the vegetable world, you wished to find a suitable and permanent generic name. The Duke's death and fame were then uppermost in all people's thoughts; and struck by your description, I asked you, "Is there a genus Wellingtonia? if not, why not give it that name? Napoleon Bonaparte has two genera named after him (N. imperialis and B. juncea), while if the Duke's name has been tacked on to a Rose or a Picotee, or other florist's variety, it is all the honour that botany has shown him." You assented at once, and, I believe, published the Mammoth Tree in the next *Gardeners' Chronicle*, as Wellingtonia gigantea: and it has maintained its position with the public. I am at a loss to see what "sinister motive" was here to prompt the adoption of a name which has been universally well received as fit and appropriate: or that the charge of "flattery" is applicable to a not unusual, and certainly disinterested commemoration of the name of a great man already passed away. Flattery to the dead is, at least, gratuitous. That very fact was even then, to my mind, an inducement to the choice, as it could not spring from adulation. In a word, the specimen was before you, examination made, and character discovered; a name wanted, and sought for. Not till then was that of Wellington, suggested by the death of a personage already beyond the reach of flattery, found eminently applicable, and then given to the public in a scientific journal, and by the public was it immediately and readily accepted. *I.* [The character of this book is well illustrated by the instance selected by our noble correspondent.]

Rose Information.—Rose-loving readers will be glad to possess the following information, and may depend upon its correctness. As vigour of growth and fine foliage, in other words, constitution and healthy lungs, are of the greatest importance, I am happy to say that the plants of 1862 answer, as to these two points, admirably to the French description. The foliage of them all is so good that it is almost invidious to select, but after careful review, the premiership lies between Beauty of Waltham and Alphonse Damaizin. I never saw better foliage and growth, as pot plants, than these two sorts. The following are also extra fine as to these two points:—Pourpre d'Orleans, L'Eblouissante, Duc de Rohan, Souvenir de Comte Cavour (Margottin), two plants, Prince Camille de Rohan, Robert Fortune, Maurice Bernardin, Emile Dulac, M. Charles Wood, M. Clemence Joigneaux, Notre Dame de Fourvières, Alexandre Dumas, three plants; Comtesse de Séguier, three plants; Madame Bontin, Gloire de Chatillon. Let us now pause to make an observation or two. These are really all noble plants; owing to their forming buds so early, the three Séguiers, which have bloomed, and M. Bontin and Gloire de Chatillon, which

have buds formed, are not so tall as the others, but very good and well foliaged. The Séguiers (four blooms, two yet to come) have been very satisfactory. The colour on opening is rich, lustrous red; after a day or so it is rich rose, and finally (being very thick petalled) it dies well about the sixth day, as a reddish rose prettily blue veined, or, as the French describe, red tinted with violet. Its first colour is best, but it is good in all three stages. It had a little flower pot over it for protection during the heavy rains. It is the thickest petalled pot rose I ever saw. The petals are smooth at the edges, and the form is good. Its fulness I cannot yet speak of. Madame Bontin has a very clear rich cherry coloured bud. Gloire de Chatillon is in bud and foliage M. Masson all over, but a better grower. The frosts have touched her two buds, and I have pulled them off. In the centre of these Roses is Triomphe d'Amiens, and I never saw a nobler ring of pot Roses planted out May 1st. I have also in another place a very nice lot of novelties, that had not previously to coming here been forced quite so much: but they are firm in wood and good in foliage. M. Julie Daran, M. Ernest Dreol, Jean Baptiste Guillot, Professor Koch, Richard Smith, and Archevêque de Paris. These are really very nice plants, and are planted out in my Rosery to face out, as best they can, the south-west wind. On a review of these novelties I am much pleased thus far. If we can get good straw we are sure of good corn, for the quality of the corn is according to the quality of the straw. This does not hold good always as to Roses; for Col. de Rougemont is a grand Rose of miserable growth and wretchedly curled foliage. The wood is bad, because the lungs are bad. We see, then, how necessary it is to look to foliage as denoting in some measure a good constitution, subject of course to exceptions arising from China blood. There are Roses of strong China blood, that grow well and are good in foliage, but yet are nevertheless tender. In conclusion, Alexandre Dumas won the 1st prize and silver medal, as a seedling, at Paris; and Comtesse de Séguier won the 2d prize and silver medal. Her colour and thick petal, no doubt, put her over some of her competitors. Thickness of petals, alias endurance, has hitherto been too much overlooked. *W. F. Radclyffe.*

Grapes.—How can I restore the bloom on my Grapes? I began to cut from my first house a month ago. The fruit had become very sticky and gummy, from, it was supposed, an accident having happened to the boiler a few weeks previous to their ripening; the fruit is good tasted, but does not look well on the table, as it is necessary to have it washed. *L.* [You cannot restore the bloom. But perhaps you might imitate it by a dexterous use of arrowroot.]

Peach Leaves.—Inclosed are three Peach leaves, showing the condition in which they now are. The trees I may mention are healthy, although little or no fruit has set on them. All the trees in the house did not suffer. Some escaped although standing close beside those affected. The house is span roofed, erected last autumn. The situation rather low and damp, although the land all round has been carefully drained. The climate is mild, but spring frosts are often severe and injurious. This year little damage has been done by frost. *South of Scotland.* [This case is alluded to in a leading article in another column.]

Douglas Fir.—I have seen your report respecting this Fir, and as a practical horticulturist consider your hint to send a collector of seed to its native forest a matter worth supporting. I have myself planted it, and have noticed its fast growth, and I know that it is well adapted either for timber or ornament. Whoever therefore will go and send home a quantity of good seed, describing at the same time fully all that may be seen respecting the tree, will do much good, for I am sure the Douglas Fir should be most extensively cultivated in this country. If therefore the view which I entertain is taken up by horticulturists, Fellows of the Society, and people generally, we should have no difficulty in carrying it out by subscription of 1*l.* each subscriber. The whole matter might safely be left in the Horticultural Society's hands, and I offer myself to go without any remuneration beyond travelling expenses. *Joseph Newton, F.R.H.S.,* 30, *Eastbourne Terrace, Hyde Park.*

Societies.

CRYSTAL PALACE: *May* 24 (*First Show of Flowers and Fruit*).—As far as plants were concerned, this exhibition was almost wholly a repetition of that held at South Kensington on the 21st inst., and fully reported in our columns of last week. A few words as regards arrangement and such plants as were not present on that occasion will therefore be all that is now required. Large collections of mixed stove and greenhouse plants, set up in the form of two steep semicircular banks, surmounted by groups of statuary, and supported by vases filled with flowers, occupied the garden end of the centre transept, whose sides were also richly decorated with long lines of flowering plants. Each corner at the intersection of the nave and transept was literally a blaze of Azaleas, and along the two sides of the nave itself, from the crystal fountain nearly to the end of the building, were charming banks of stove and greenhouse plants, Cape Heaths, Orchids, Roses, Pelargoniums, and plants remarkable for the beauty of their foliage. Of the last we noticed a large and fine collection from Leigh Park, Havant, shown by Mr. Young, who is now gardener there. The same exhibitor had also a small group of Orchids, which as a whole were again produced in admirable condition. Azaleas, too, had lost none of that brilliancy of colour which was their special characteristic at South Kensington; their only fault, if we may so speak, is want of variety; as shown at present there are too many reds, and we are sure that groups of these plants, conspicuous and striking as they now are, would be greatly improved in appearance by the introduction of a few yellow, white, or striped kinds. The same remark also applies in some measure to Pelargoniums and Roses, which are too much confined to different shades of one colour. Fruit, as a matter of course, was scarce. One or two good Queen Pine Apples were furnished by Mr. Barnes, of Bicton, and Mr. Bailey and Mr. Drewill showed good specimens of Cayennes. Of Black Hamburgh Grapes considerably the best came from Mr. Henderson, gr. to the Duke of Sutherland, at Trentham; but good fruit of the same variety was also shown by Mr. Henderson, Coleorton Hall; and Mr. Frost, gr. to E. L. Betts, Esq. Of White Grapes, which were chiefly confined to Royal Muscadine, fairly ripened bunches were contributed by Mr. Clements, of East Barnet; Mr. Frogley, Hoddesdon; Mr. Standish, and Mr. Bailey. Muscats, though well grown, were not ripe. Of Peaches (Royal George), dishes of good fruit were shown by Mr. Baker, gr. to J. Harrison, Esq., Belgrave, Leicester, and Mr. Henderson, of Trentham; and the latter and Mr. Peacock, gr. at Stockwood Park, Beds, also had good examples of Violette Hâtive Nectarines. Among the best Melons was Trentham Hybrid, from Mr. Henderson; and Mr. Barnes had a good scarlet-fleshed kind. Very good Figs of the Brown Turkey kind came from Mr. Cross, gr. to Lord Ashburton, and Mr. Pottle, gr. to B. D. Colvin, Esq. Of Strawberries, by far the finest were dishes of British Queen, Sir C. Napier, and Admiral Dundas, from Mr. Smith of Twickenham. These were large in size and beautiful in colour. There were also some good specimens in pots. Excellent Cherries, consisting of Black Circassian and Elton, were shown from Trentham by Mr. Henderson, and we also noticed some Citrons and a good bunch of Bananas. The last was shown by Mr. Young of Leigh Park. J. Luscombe, Esq., Combe Royal, near Kingsbridge, sent a dish of Limes from a south wall, where they had had only occasionally slight protection. Though unripe they were highly interesting as illustrations of the mildness of the climate of that part of Devonshire.

ROYAL BOTANIC: *May* 28 (*First Great Flower Show*).—This was another large exhibition at which most of the plants shown at South Kensington were reproduced. Stove and Greenhouse plants were furnished in admirable condition, as were also Orchids, which appeared even better in bloom than they were on the 21st inst., forming a beautiful bank of rich and varied colours. Mr. M'Morland's plants especially were particularly fine, the Odontoglossums, Cypripediums, Vandas, Cattleyas, Lælias, especially the clear white and purple Brysiana, together with Oncids of different kinds, being in excellent condition both as regards growth and bloom. From Mr. Baker came the charming Dendrobium Devonianum, D. macrophyllum, Aerides Lobbii, Saccolabium retusum, with Vanda suavis, and a tricolor, all in fine flower. Mr. Williams sent a beautiful group, in which was an exceedingly well-bloomed plant of Cypripedium barbatum nigrum. The Vandas, Cattleyas, and Calanthes in this collection were also all that could be desired. Mr. Page and Mr. Green likewise contributed good groups, in which were Dendrobium formosum giganteum, with large white blossoms stained with yellow; Cypripedium javanicum, and a very finely blossomed Oncidium ampliatum majus, together with O. sphacelatum, Dendrobium densiflorum, the yellow Anguloa Clowesii, and white Butterfly plant.

Azaleas were still well in bloom; among Mr. Turner's admirable plants was one of Gledstanesi with nearly every blossom flaked with red, producing a charming contrast. From Messrs. Ivery also came some beautiful kinds, conspicuous among which were Etoile de Gand, a beautiful variety with salmon coloured centre, broadly edged with white; Baron de Pret, Criterion, and Beauty of Europe, the last rich in colour and profuse in bloom. From Messrs. Lane came some pretty standards of Variegata.

Among Rhododendrons from Mr. Noble, to whom a 1st prize was awarded at South Kensington for a fine collection, came a new white sort named Snowflake; also Zenobia, rosy violet, with dark top petals; Autocrat, large deep rose; Euphemia, blush, suffused with yellow and pink; Princesse Hortense, delicate pink flushed with rose and blotched with yellow; and Monitor, brilliant crimson. Mr. Standish had also one or two good new kinds.

Roses in pots were again magnificent; excellent groups of them were shown by Mr. Lane and Mr. Wm. Paul. There were also well-grown plants from Mr. Terry and others. As regards varieties, General Jacqueminot had unusually large flowers and rich in colour; Coupe d'Hébé was also very fine, as were likewise Charles Lawson, Jules Margottin, and Chenêdolé. In a collection of smaller plants in pots were good examples of President, Madame Willermoz, and Senateur Vaisse, the last one of the largest and most brilliant of Roses. Boxes of cut blooms came from Mr. William Paul and Mr. Lane, and seldom have Roses been shown better than these were at this season of the year. The sorts were well contrasted as to colour, and there was a freshness and beauty about them which was quite remarkable.

Cape Heaths were very full of flower, as indeed they are reported to be every where this season. Finely grown examples of the usual varieties were plentiful, but we did not observe anything new.

Pelargoniums made a fine display. Mr. Turner, who stood 1st, had beautiful plants of Picnic, a rose-coloured kind with large black blotches on all the petals; Etna, scarlet with black top; Sunset, another brilliantly coloured sort; Leviathan, purple, with dark top; Peacock, in the way of Picnic, but lighter; and Lord Clyde, orange scarlet with black top. From Mr. Dobson came Wm. Bull, a variety deficient in good quality, but one which must be a favourite generally on account of its fine trusses of fiery rose coloured blossoms spotted on all the petals with black; a good companion to it was Sanspareil, a well-grown plant of which was shown by Mr. Dobson, together with Blink Bonny, the last a brilliant rose kind with dark top. From Messrs. Fraser came Osiris, scarlet and black, good, among spotted sorts; and Viola, lilac with dark top. Black Diamond and Sparkler from Mr. Burley, also appeared to be useful spotted varieties. In the Amateur's Class, Mr. Nye sent dwarf well-grown plants finely in bloom. From Mr. Shrimpton came Empress Eugenie, a pretty light sort, full of bloom, together with others equally well managed. Of Fancy varieties, Mr. Turner had among others Arabella Goddard, a lively rose with a white eye; Mr. Bousie, Stoke Park, sent Carminatum, dark rose and white, in beautiful condition; Messrs. Fraser, Delicatum, still a valuable free-blooming light kind; and Messrs. Dobson, Holland, and others also contributed good collections. Of Seedling Pelargoniums, of which several were shown, the best seemed to be Improvement (Turner), Royal Albert (Hoyle), Eurydice (Beck), Oriana (Beck), Charles the First (Foster), and Splendens (Beck). Among bedding sorts, Mrs. Pollock and Sunset, from Messrs. E. G. Henderson, and a pale greenish yellow with reddish horseshoe, from Mr. Holland, seemed good sorts for that purpose.

In collections of Calceolarias the most striking sorts were Angustifolia, superb, clear yellow; and Gen. Havelock, rich crimson. These are shrubby sorts and were shown by Mr. Burley. Lord Elgin, from Mr. James, large crimson and buff, is also a good and showy variety.

New plants almost wholly consisted of kinds previously shown; Messrs. Veitch again sent beautiful examples of Eriocnema marmorea, Campylobotrys refulgens, Sphærogyne latifolia, variegated Musa, Alocasia macrorhiza, and Caladium Veitchii, all remarkable for the beauty of their leaves; also the scarlet Sarmienta repens, better in flower than it was at South Kensington; and Stenogastra multiflora.

Messrs. Williams, Lee, Hutt, and others, showed fine foliaged plants, among which were some large and striking specimens of Cordyline indivisa, Palms, Yuccas, Rhopalas, and Ferns.

We may add that Mr. John Waterer's exhibition of American plants formed an important addition to the attractions of the day. Many of the largest specimens are now in full beauty, and, although numbers of the more brilliant coloured sorts are yet unexpanded, still at present there is enough of floral beauty to make a charming display. We understand that Mr. Waterer's large collection at Bagshot is also in full flower, and that it is well worth inspection.

Notices of Books.

Mountaineering in 1861. By J. Tyndall, F.R.S. (Longman & Co.)

At no time has the passion for mountaineering been so keen as at present; the Alpine Club flourishes and increases, and wherever a mountain is to be found, be sure some adventurous Englishman has attempted to scale it; while, to judge from the many books annually published and republished on the subject, it would appear that the reading public are not yet satiated with the recital of difficult ascents, and hair-breadth escapes. Pre-eminent among the venturesome members of the Club stands Prof. Tyndall, and those who have read his "Glaciers of the Alps" will meet him again with pleasure, only regretting that his present volume is so brief. Possibly this was unavoidable, since it is the record of but one season's excursion; and we should therefore have passed over this little book with a few sentences, did we not feel that the author is something more than a mere climber. It is true that his motto is "Excelsior," and that he yields to none in the cool daring with which he surmounts difficulties, nor in the pride of being the first to scale some hitherto unattained peak; but behind and beyond this there is much more. The keen delight in the beauties of nature, and the quick observation of the varied phenomena that are presented amid the mountains, are in his case heightened and sharpened by a familiarity with the laws which govern these phenomena; and into these he gives us perpetual glimpses; every day sights and sounds are with him the key to unravel mysteries, and at every turn we meet with something startling and

suggestive. Thus, mountaineers have frequently described their feelings on passing a night on bare rock, but who before sought to point out the reason for the intense cold experienced by the sleeper?

"I lay with my face turned towards the moon until it became so chilled that I was forced to protect it by a light handkerchief. The power of blinding the eyes is ascribed to the moon-beams, but the real mischief is that produced by radiation from the eyes into clear space, and the inflammation consequent upon the chill. As the cold increased I was fain to squeeze myself more and more underneath my ledge so as to lessen the space of sky against which my body could radiate."

And thus it is throughout the book; common objects are touched with the philosopher's wand, and are forthwith transmuted to gold; and new ideas break upon us, suggesting trains of thought far away from that which originally started them.

The chief expedition of the year was the ascent of the Weisshorn "perhaps the most splendid object in the Alps." Very impracticable looks its sharply defined cone in the frontispiece to Professor Tyndall's book, and very difficult and arduous he and his faithful companion Benen found the ascent; for it involved ten hours of hard climbing, following a sleepless night upon the rocks. One shudders to think what might be the result of a sprained ancle or broken leg on one of these perilous heights, where every limb and muscle is needed to bring the climber safely down again; happily, (no mis-adventure or accident occurred to mar the success of the expedition on this occasion, and Professor Tyndall may claim to have confuted the assertion of Baron von Berlepsch, that "if the ascent of the Weisshorn should ever be possible, the chamois hunter (Troger) would be first on the top."

We have heard regret expressed that no description of the view from the summit is given; and the author has anticipated this objection, and pleaded guilty to the omission; but, if he had given us a list of the different summits visible, wherein should we have been the wiser? Moreover, how impossible it is to convey to another our impression of a view; nay, even to realize it to our own mind afterward; many, we suspect, if they had the courage, would confess with Dr. Tyndall, "I remember the picture, but cannot analyse its parts."

Next in difficulty, and perhaps even exceeding it, comes the ascent of the Old Weissthor: this indeed was not without its dangers, one of the chief of which is worthy of quotation, as showing that there are other perils as formidable as the crevasses and avalanches which figure so conspicuously in narratives of Alpine travel. "I thought that we had here a suitable roadway up the couloir, but I had not time to convert the thought into a suggestion, before a crash occurred in the upper regions. I looked aloft, and right over the snow-brow which here closed the view, I perceived a large brown boulder in the air, while a roar of unseen stones showed that the visible projectile was merely the first shot of a general cannonade. They appeared pouring straight down upon us, the sides of the couloir preventing them from squandering their force in any other direction. 'Schnell!' shouted the man behind me, and there is a ring in the word, when sharply uttered in the Alps, that almost lifts a man off his feet. I sprang forward, but urged by a sterner impulse the man behind sprang right on to me. We cleared the furrow exactly as the first stone flew by, and once in safety we could calmly admire the wild energy with which the rattling boulders sped along." In a short time, however, it became necessary "to recross the avalanche channel, which was here very deep. Benen hewed a gap at the top of its flanking wall, and stooping over scooped steps out of the vertical face of indurated snow. He then made a deep hole in which he anchored his left arm, let himself thus partly down, and with his right pushed the steps to the bottom. While this was going on, small stones were continually flying down the gully. Benen reached the floor and I followed. Our companion was still clinging to the snow wall, when a horrible clatter was heard overhead. It was another stone avalanche, which there was hardly a hope of escaping. Happily a rock was here firmly stuck in the bed of the gully, and I chanced to be beside it when the first huge missile appeared. This was the delinquent which had set the others loose. I was directly in the line of fire, but ducking behind the boulder I let the projectile shoot over my head. Behind it came a shoal of smaller fry, each of them, however, quite competent to crack a human life. Benen shouted 'quick!' and never before had I seen his axe so promptly wielded. You must remember that while this infernal cannonade was being executed, we hung upon a slope of snow which had been pressed and polished to ice by the descending stones; and so steep that a single slip would have converted us into an avalanche also. Without steps of some kind we dared not set foot on the slope, and these had to be cut while the stone shower was in the act of falling on us. Mere scratches in the ice, however, were all the axe could accomplish, and on these we steadied ourselves with the energy of desperate men. Benen was first, and I followed him, while the stones flew thick beside and between us. Once an ugly lump made right at me; I might perhaps have dodged it, but Benen saw it coming, turned, caught it on the handle of his axe as a cricketer catches a ball, and thus deflected it from me. The labour of his axe was here for a time divided between the projectiles and the ice, while at every pause in the volley 'he cut a step and sprang forward.' Had the peril been less it would have been amusing to see our contortions as we fenced with our swarming foes. A final jump landed us on an embankment, out of the direct line of fire which raked the gully, and we thus escaped a danger new in this form and extremely exciting to us all."

In conclusion we assure our readers that this little volume will give them an hour or two of pleasant reading; especially if they are gifted with a share of the enthusiasm and buoyancy of spirit, so eminently characteristic of its author.

Part XIV. of the *Illustrated Bouquet*, recently issued, opens with a folding plate of the glorious *Bougainvillæa speciosa*, drawn by Miss Sowerby, from specimens grown in Mr. Keene's garden near Henley.—There is also a good figure of *Aucuba himalaica*, a fine hardy evergreen shrub found by Dr. Hooker in the Sikkim Himalaya, remarkable, as compared with what *Aucuba japonica* would be if its leaves were green (as they are in plants recently imported from Japan), by its taller and more robust habit, its larger, longer, and more uniformly attenuated leaves, and the more prominent gland-tipped teeth of the margins. It is particularly recommended for planting in flower-garden shrubberies, and also in situations partially shaded by trees. The plant has green stems, flat oblong ovate glossy dark green leaves, 6 to 9 inches long, and thyrsoid panicles of pinkish flowers succeeded by bunches of bright orange-coloured oblong berries.—*Allamanda violacea*, a fine Brazilian stove shrub, drawn from specimens flowered in the garden of Joseph Pease, Esq., of Darlington. This plant, which had appeared to be rather tardy in producing its flowers, differs from all the other known species of Allamanda, in having the blossoms purple instead of yellow. A comparison of specimens leaves no doubt that the garden plant, which it had been suggested might be A. puberula, is really the *A. violacea* found and described by Gardner as having large flowers "not unlike in colour those of Gloxinia speciosa." They scarcely correspond in tint with this description, but they prove to be handsome notwithstanding, and of a deep reddish violet, deeper towards the base of the limb. These flowers grow from four to six together in cymose clusters, situated towards the ends of the shoots. In the true plant the leaves are furnished with scattered appressed hairs.—The remaining plate is devoted to some new varieties of those French Pelargoniums, as they are called, which have sprung mainly from diadematum, and in which brilliancy and variety of colour seem to be doing as much to relieve the sameness of the "regulation" flowers, as the fancy Pansies adverted to a short time since are likely to do for the "show" Pansies. Here a beautiful blush variety with pencilled upper petals is called Silver Star; another of orange red, pencilled and shaded in the upper part, and edged with white on the sides of the petals, is Coquette du Plessis; Madame Leroy is a bold-looking shaded violet red, with light edges and a bluish cast here and there evident; and Madame Lemoine is a carmine crimson variously shaded and streaked, with the very frequent white margins towards the base of the petal. Some of the brightest of this class of Pelargoniums are invaluable as ornamental greenhouse plants.

Essays on Scientific and other Subjects contributed to the Edinburgh and Quarterly Reviews. By Sir Henry Holland, Bart., M.D. Longmans. 8vo. Pp. 499.

The preface tells us that "the essays collected in this volume were written in great part during journeys or voyages which I have been accustomed to make in the autumn of every year, under the conviction, justified by experience, that in no other way could I equally maintain health amid the labours of a London professional life."

The subjects of the essays are:—The Progress and Spirit of Physical Science—Life and Organisation—Human Longevity—Roman History: Julius Cæsar—Physical Geography of the Sea: Atlantic Ocean—The Mediterranean Sea—Meteors and Aerolites—Humboldt's Cosmos: Sidereal Astronomy—Australia: Coral Reefs—Life of Dalton: Atomic Theory—Modern Chemistry—The Natural History of Man.

As may be inferred from the position of the writer, all these essays are interesting and instructive, but the utility of their publication in a separate form is much diminished by the want of an index.

In the second and last essays, viz. those on Life and Organisation and the Natural History of Man, Sir Henry Holland touches on the vexed questions concerning the existence of a separate vital principle, the transmutation of species, and the unity of the human race. The last subject however is dealt with much more elaborately and satisfactorily than the other two, and we do not know where the reasons for believing that the human race is really descended from a single pair are more clearly and concisely given.

We have before us the following new books or new editions.——*Grisebach's Flora of the W. India Islands*, Part V. (Lovell Reeve); this passes Conifers, and enters upon Endogens.——*A Manual of Botanic Terms.* By M. C. Cooke (Hardwicke).——*London and its Environs, a practical Guide to the Metropolis and its Vicinity* (A. & C. Black; a well timed production, full of useful information and illustrated by good maps.——*The Capital of Italy, and How to Get it*; By W. R. Ballard, a pamphlet (Ridgway) The plan is to build a new Italian Metropolis.——*The Uses of Animals to Man.* By Dr. Lankester, (Hardwicke); an 8vo. volume of 380 pages, treating in the form of Lectures of a very great variety of subjects, *but without an Index!!* so that we are unable to say whether any account is given of the new kinds of silkworm (for example), now exciting so much attention in Europe; we can only remark that such search as a short life can afford has been unsuccessful.——*Routledge's Illustrated Natural History*, parts 38 and 39, entirely occupied by Fishes, capitally illustrated).——*Elements of Plane Trigonometry.* By the Rev. John Hunter, forming a part of Gleig's School Series (Longmans).

TRADE LISTS RECEIVED.—James Veitch, jun.'s Catalogue of New and Beautiful Plants for 1862.——Ambroise Verschaffelt, Novelties of 1862, deliverable since May, Rue du Chaume, Ghent.

Garden Memoranda.

MESSRS. VEITCH'S ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA.—Never has this establishment, interesting as it always is, presented so many features of special attraction as it does at the present time. To the magnificent Ferns and fine foliaged plants that occupy that portion of the show house which faces the road has been added just sufficient floral beauty to light up and give life to that department, while the conservatory in the rear is filled with long lines of specimen Azaleas. The latter are now in full flower, and intermixed with and backed up as they are by plants remarkable for the beauty of their leaves, the display is, as might be expected, highly effective. From a ridge and furrow roofed conservatory furnished with Camellias and great tree Ferns with tall black grotesque stems surmounted by noble heads of beautiful foliage, we pass into a unique and, for its size, highly interesting Rhododendron garden, neatly roofed with tiffany. This covers an area of some 5000 square feet, neatly laid out in beds filled with dwarf and standard Rhododendrons of all shades of colour, from white to brilliant crimson, set off with suitably placed vases filled with Yucca recurva. Among high coloured Rhododendrons by far the most vivid was Blandyanum; Marian, a dwarf compact free flowering kind, made a good light bed; and of other sorts one of the most distinct was ochroleucum, a cream-coloured kind flushed with pale green. In addition to these there were also Lady Lopes, Miss Buller, and other fine seedlings of Mr. Veitch's, sen., raising at Exeter.

In the middle of this garden, through which the central walk passes, is a large vase filled with Japanese plants lately sent home by Mr. J. G. Veitch. The outer row consisted of Euonymus radicans variegatus, a good plant of which also occupied the centre, and the intermediate space was filled with young plants of Retinospora obtusa, R. pisifera, Thujopsis dolabrata, and similar rare Conifers. Round the base were arranged Chilian and Japanese Ferns.

In the latter class of plants, both tender and hardy, this nursery is particularly rich; among tree kinds were some fine specimens of Cyatheas, more especially of C. dealbata, the New Zealand Silver Tree Fern; Alsophila Macarthuri, also a noble kind, was conspicuous, and there were many others of great size and beauty. In the stove Fernery were several examples of Lygodium scandens trained on trellises, on which they had a good effect; associated with them were also among others Cibotium princeps, Gymnogramma Laucheana, and a pretty variety of Microlepia hirsuta. In baskets suspended from the roof were Asplenium obtusilobum and Drynaria musifolia, both suitable sorts for that description of decoration. The greenhouse Fernery contained the gold and silver Adiantums, of which some account was given lately. Pteris argyræa, the variegated variety of Pteris cretica, Lomaria nuda, discolor and gibba, the last perhaps the only plant of the kind in the country; a fine mass under a bell glass of the Killarney Fern, also Trichomanes reniforme, and one or two New Zealand and Japanese sorts.

With the hardy Fernery all lovers of tasteful arrangement must be charmed; it is roofed with glass covered during summer with tiffany, but not artificially heated. The sides consist of irregular masses of vitrified brick held together with Roman cement, and so completely covered with luxuriant Moss and Fern leaves as to be wholly hid from view, except here and there where the rock, bared as it were by Nature, is allowed to crop out unfurnished with vegetation. A winding walk, surfaced with white gravel, surrounds a bold central mass of rockwork also covered with Moss and luxuriant Ferns, and at one end is a little waterfall trickling into a basin below, in which is flowering Aponogeton distachyon, overshadowed by a noble specimen of the Royal Fern (Osmunda regalis). Among different sorts of Scolopendrium, Athyrium, Polystichum, Lastrea, and Asplenium, we noticed here Todea australis, Onoclea sensibilis, Lomaria Magellanica and Woodwardia orientalis, the last a fine specimen of a highly interesting kind. A few other plants, such as Foxgloves and Farfugium

grande, have also been introduced with good effect, associating as they do admirably with the peculiarly lively green of the Ferns, which seem to grow with astonishing vigour, rendering this one of the most delightful features of this admirable establishment.

Of Orchids there is a large and magnificent collection, four long houses being wholly filled with them. Many fine kinds consisting of Saccolabiums, Cattleyas, Lælias, Cypripediums, and others were in bloom, ample reference to which will be found in reports of our great exhibitions which have taken place during the last fortnight.

In stoves were some very fine variegated and other fine foliaged plants, among which the most striking were Caladium Veitchii, a singular-looking plant with sagittate leaves; Alocasia metallica, A. macrorhiza variegata, and A. zebrina, the last a fine kind from the Philippines, with large green arrow-shaped leaves, supported on long stalks beautifully marbled and mottled with dark green upon a yellow ground. To handsome leaved plants this is a decided acquisition. Ficus Cooperi is also a plant well worth growing on account of its fine foliage. A red variety of Amaranthus melancholicus likewise promises to prove a valuable bedding plant. It has striking blood red leaves, much more effective than Perilla nankinensis, to which it will form a good companion.

In New Holland houses many fine plants are in bloom, and in what are termed intermediate houses are many beautiful examples of variegated Begonias and Gloxinias; the last are chiefly seedlings, both upright flowering and ordinary kinds; among the former Constance was conspicuous for its large size and rich deep mauve colour; some of the pink and white sorts are also very handsome.

In the water house or Aquarium were many fine specimens of Pitcher plants, among which was Nepenthes Dominiana, a hybrid raised by Mr. Dominy of Exeter, between N. Rafflesiana and an imported unnamed species with pale green pitchers. The hybrid most resembles the first-named kind, from which it differs chiefly in its greater richness of spotting and marking of the pitchers.

Of new Japanese plants, for which we are indebted to the energy and enterprise of Mr. J. G. Veitch, we have given ample descriptions on former occasions. We may, however, state that a room is being fitted up as a Japanese Museum, in which are to be arranged various curiosities brought home by Mr. Veitch, not only in the shape of model cottages and machinery, but also flower-pots, vases—the latter chiefly blue and white, but some of a peculiar shade of purple with external ornamentation in alto relief, different sorts of wood, shells and minerals. The walls are also to be decorated with paintings of remarkable Japanese plants; so that when complete this will be a really interesting department well worth inspection.

A large ridge and furrow roofed house was wholly devoted to the growth of young Vines in pots, and a house of corresponding dimensions was filled with monster specimens of Ferns, chiefly Gleichenias.

Standard Bays and Laurustinus here and there line the sides of the main walk, which, like the rest of the nursery, is scrupulously clean; hardy Azaleas are just coming into bloom, which, in addition to the Rhododendron exhibition above alluded to, render a visit to this establishment just now more than usually interesting.

Miscellaneous.

Spring Gardening.—In order to have beds gay during March, April, and May, it is necessary that ground should be set apart for the cultivation of such spring flowering plants as are intended to decorate them at that season. A number of such things as Daisies, Arabis, Alyssum, Aubrietias and other plants should be planted in a piece of ground, in the kitchen garden or elsewhere. As to plants suitable for flowering in March, and which require peculiar treatment, the Hepatica has been found to be most serviceable, provided a double set of plants is kept in the reserve garden, as they should be, to remove into the flower beds every second year. As to colour they are white, red, and blue; these are indispensable for spring work. As associates of the Hepatica various coloured Crocuses may be put into the same bed. If planted deep they need not be disturbed by the introduction of summer blooming plants. Then there is the Erythronium Dens canis, which may be treated in the same way as the Crocus, and if it thus managed will not fail to please, as it is very showy in the form of a mass. For early decoration we have also those beautiful spring flowering plants the Scillas, but their season of flowering not being long they are not so suitable for bedding as some other plants, nevertheless their great beauty makes them desirable, more especially for borders. We now come to the more lasting flowering plants for April, such as Crocuses, &c. Nor must we omit from the list such early Tulips as the Rubrorum, Tournesol, Gesneriana, and La Candeur; there are also others of more or less beauty. There are too Hyacinths, Narcissus, Anemones, Ranunculuses, all of which are suitable for massing, and which, if procured and planted about the first week in November, will be extremely beautiful in April and May. For large beds nothing is more suitable than the Wallflower; although singly inattractive, yet when planted by hundreds its perfume is most agreeable, and its colour makes it useful among its gayer neighbours. If sown in June, pricked out, and kept in the reserve garden, as recommended for Arabis, &c., it will flower in April and May.

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Early New Holland and other greenhouse plants will soon be getting past their best, and some foresight and care will be necessary to avoid being short of specimens in bloom with which to supply their places. Many things in the stove (as Allamandas, Clerodendrons, Achimenes, Gloxinias, &c.) should now be in a forward state, but these must be carefully prepared for removal to the cooler and drier atmosphere of the conservatory, otherwise there will be great risk of injury. Where circumstances will admit, plants that have been grown in a warm moist atmosphere should be removed to an intermediate house about a fortnight previous to their being taken to the conservatory and gradually inured to a free circulation of air. By attention to this and placing the plants in the warmest corners in the conservatory, Clerodendrons and Allamandas will continue growing slowly and blooming for some three months, whereas if this is neglected, their beauty may be very short-lived. Aim at maintaining an even temperature in the conservatory after removing plants thence that have been grown in the stove, and avoid allowing the atmosphere to become very warm on bright sunny days. Also see that every plant is perfectly clean before placing it in this house, and that the creepers, &c., are not infested with insects. Young stock in pits will now be making rapid growth, and must be carefully attended to as to watering, stopping and training. Examine Heaths frequently for mildew, and apply sulphur the moment it is perceived, some of the soft-foliaged varieties being very liable to be attacked by this pest at this season.

FORCING DEPARTMENT.

PINERY.—Where the quality of the fruit is of great importance, care must be observed to have the soil in a healthy rather dry state during the period of ripening, for as there is no reasonable hope of obtaining high-flavoured fruit from plants growing in pots, the trouble necessary to collect and place together those approaching ripeness, so as to be able to afford them a rather dry atmosphere, and avoid touching them with the syringe after they begin to colour, will be well repaid. Suckers that are not very strong will be benefited by being left on the stools for a month after the fruit is cut, but this will seldom be necessary in the case of healthy vigorous plants. Any neglect in the way of watering and maintaining a moist atmosphere in the case of succession stock may lead to its fruiting prematurely, therefore let there be no lack of attention at present. Plants swelling their fruit should be encouraged with plenty of liquid manure and a moist high temperature, shutting up early in the afternoon after syringing.

VINERIES.—If spider makes its appearance on the foliage after fruit has commenced colouring no time should be lost in coating the hot-water pipes with sulphur. The sulphur should be mixed in water with about equal quantities of lime and soot, and applied with a brush. The lime serves to prevent the sulphur from being washed or rubbed off, and the soot helps to prevent any disagreeable appearance. The temperature of late houses where the fruit is now showing must not be allowed to fall too low at night if good-sized bunches are expected, and where Muscats are grown for a late supply there will be but little chance of securing a good crop of these unless a temperature of 70° is maintained. Attend carefully to young Vines recently planted, keeping the borders in a healthy state, maintaining a moist atmosphere, and shading if necessary until the Vines get a fair start. Proceed diligently with thinning the berries, immediately they are ready, for they progress rapidly at this season; stop all the laterals in time, and allow no confusion.

MELONS.—Where the fruit is swelling the soil should be kept in a properly moist state, and every means should be used to preserve the foliage in perfect health, as there is no possibility of obtaining good flavoured fruit unless the leaves are kept in health. Keep the Vines thin, and prevent their being encumbered with useless laterals, and remove any decaying leaves at once, as these when left only serve as a harbour for insects. There is yet plenty of time to secure a good crop in dung beds, and if any of the frames which have been used for getting up bedding-out plants can be spared for this purpose the plants should be got out at once.

FLOWER GARDEN AND SHRUBBERIES.

If we should have a continuance of bright weather examine recently transplanted shrubs, especially on gravelly soils, frequently to see that they are not suffering from want of water. Give a liberal soaking where necessary and stir and mulch the surface afterwards. The half-hardy plants now consigned to their summer places after many months' shelter under glass and much attention and care, must be duly attended to with water until they lay hold of the soil, and with the present favourable weather and proper attention they will speedily cover the beds and will repay all the trouble that has been bestowed upon them, but every effort must be used to prevent their sustaining any check, for if allowed to get into an unhealthy state at present there will be much difficulty in getting them into free growth without much loss of time. Spare hand-glasses should now be used for the propagation of favourite spring blooming plants, as Pansies, Phloxes, &c. These do best on a shady border.

HARDY FRUIT AND KITCHEN GARDEN.

Strawberries may soon require attention. After thoroughly cleaning the beds a thorough soaking of water should be given, and if manure-water from the stable-tank can be given when the ground has been well saturated with clear water, it will assist in securing large fruit. The beds should be mulched as soon after watering as convenient, in order to prevent evaporation and the fruit from being soiled. Where clean straw cannot be afforded, fresh litter from the stable-yard will form a very good substitute. Attend to putting in succession crops of Peas, Beans, Turnips, Spinach, &c., and secure an unceasing supply of Lettuce and other salads by sowing frequently. Where ground can be spared and labour is scarce, Lettuce should be sown at this season where they are to stand, sowing in lines about a foot apart and thinning out the plants when strong enough to proper distances in the lines. This is some saving of labour and avoids checking the plants by removal. Do not allow Cauliflower plants to suffer through dryness at the root; an occasional soaking of manure water will be useful to these and Cabbages. Use the hoe among growing crops and get weeds destroyed wherever they make their appearance. Get manure wheeled upon quarters where it will soon be wanted, and see that there is a good supply being prepared for the Celery crop, for without plenty of old rich manure large crop Celery can hardly be obtained.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending May 28, 1862, as observed at the Horticultural Garden

May.	Moon's Age.	Barometer.		Temperature: Of the Air.			Of the Earth		Wind	Rain.
		Max.	Min	Max.	Min.	Mean	1 foot deep.	2 feet deep		
Thurs. 22	24	29.748	29.492	65	47	56.0	56½	55	W	.02
Friday 23	25	29.756	29.735	66	47	56.5	56½	55	S.W.	.04
Satur 24	26	29.926	29.895	69	40	54.5	57	55	S.W.	.00
Sunday 25	27	30.047	29.924	67	33	50.0	57	55	N.W.	.00
Mon. 26	28	30.110	30.005	72	48	60.0	57¼	55	S.W.	.01
Tues. 27	29	29.903	29.830	66	52	59.0	57½	55½	S.W.	.09
Wed. 28	●	29.860	29.831	72	52	62.0	57½	55½	S.W.	.01
Average		29.907	29.816	68.1	45.5	56.8	57.1	55.1		.17

May 22—Fine; brisk wind; fine; overcast; slight rain.
— 23—Densely overcast; cloudy; overcast; rain.
— 24—Overcast; ditto and fine; overcast.
— 25—Fine; very fine; change of wind from S.W. to N.W.; nearly freezing at night
— 26—Very fine throughout.
— 27—Rain; overcast and showery; slight rain at night.
— 28—Overcast; cloudy; fine; slight shower at night.
Mean temperature of the week 1 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending June 7, 1862.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds: N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 1 ..	67.8	44.5	56.2	13	0.27 in.	1	10	3	—	5	11	3	3
Mon. 2 ..	67.7	45.0	56.4	16	0.87	1	4	3	4	3	9	6	5
Tues. 3 ..	68.9	44.6	56.6	16	0.91	1	4	5	1	5	12	3	5
Wed. 4 ..	68.8	45.0	56.9	14	0.76	2	5	2	2	4	10	7	4
Thurs. 5 ..	70.7	46.8	58.8	20	0.64	2	7	2	1	5	9	7	3
Friday 6 ..	69.3	47.9	58.6	18	0.28	5	7	2	2	4	9	4	3
Satur. 7 ..	68.7	47.3	58.0	13	0.53	3	9	0	4	3	10	3	4

The highest temperature during the above period occurred on the 7th, 1846—therm. 90 deg.; and the lowest on the 1st and 5th, 1856—therm. 33 deg.

Notices to Correspondents.

DIELYTRA SPECTABILIS: *Vau.* If you wish to have this in perfection grow it in the shade. It does well at the foot of a north wall.

FORGET-ME-NOTS: *C W.* We cannot explain the reason why your blues have become white. It would be best to extirpate what you have, and to obtain a fresh supply of the large blue from the ditches in your neighbourhood.

GRAVEL WALKS: *C E F.* 1, Remake your walks at any dry season; 2, For the foundation use rough gravel or builder's rubbish, or any similar material; let this lie on a concave bottom; 3, For the top any good *binding* gravel will do; 4, We are unacquainted with "Canterbury Gravel;" 5, Hot salt and water will kill weeds, but you must keep it off the Grass edging. Can any correspondent favour us with information about Canterbury gravel?

NAMES OF PLANTS: *W B P.* Amelanchier ovalis and Magnolia cordata, the Yellow Cucumber tree of the United States.—*C H W.* Chionanthus retusus, a Chinese plant, introduced by Mr. Standish.—*Juvenis.* 1. Probably Veronica officinalis; 2. Geranium Robertianum; 3. Ajuga reptans; 4. Ranunculus arvensis. We have received in the course of our lives many bad specimens, but none so wretchedly preserved as these.—*Rusticus.* Erodium cicutarium.—*Hastings.* Orchis Morio.—*G H A.* Not the American weed but the native Potamogeton densum. The only remedy we can suggest is that of dragging the lake repeatedly, beginning now, at intervals of a fortnight. A single dragging will do no good.

PASSIFLORA QUADRANGULARIS: *W G.* The pulp in the inside of the fruit is pleasant and harmless. The rind is uneatable.

WAX FLOWERS: *Agnes.* There are plenty in the International Exhibition, but they are *too much like wax.* An exception is however to be found in the Eastern Annexe, where a bank of wild flowers is represented so wonderfully well that even the eye of an experienced critic is likely to be deceived.

WINTERS: *C P.* Chiswick and Turnham Green are the same place in the returns. There is a very full account of the great frost of 1838 in the Transactions of the Horticultural Society. Other evidences may be found in Loudon's "Gardener's Magazine."

WOODSTAIN: *Thun* will be obliged by some of our correspondents informing him what the stain is used by the Swiss peasants to darken the soft wood of which they carve boxes, cups, figures, &c.? He adds that the articles appear to be immersed in the colouring matter.

MISC: *J T.* The Illustrated Exhibition Catalogue.

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AUGUST 6, 7, and 8. For Prize Sheets apply to
John Hannam, Secretary.
Kirk Deighton, Wetherby, May 31.

The Agricultural Gazette.

SATURDAY, MAY 31, 1862.

MEETINGS FOR THE ENSUING WEEK.

Monday,	June	2—London Farmers' Club ..	.. 6 P.M.
Wednesday,	—	4—Agri. Society of England	.. Noon

The chief agricultural event of the week has been the meeting of the Bath and West of England Agricultural Society at Wells, which is reported in another page.

The Agricultural Benevolent Association dined together on Wednesday evening, under the presidency of the Duke of Richmond. A short account of the proceedings is given in another column.

At the meeting of the Smithfield Club last week it was resolved, after considerable discussion, that at the next exhibition in December all stock be on the ground on the Friday, the prizes being awarded on Saturday, and that the show be opened to the public on Monday at 5*s.* each. Mr. Corbet also carried his resolutions that in future any member of the Club, who has duly served his three years as steward of the yard, shall not be eligible for re-appointment within the next 10 years, and that both the nomination and election of the new stewards be in the business of the general meeting, no retiring steward having the especial right of nominating his successor.

The Short-horn breeders of England have every reason to be satisfied with the Poissy show—not that their herds were by any means well represented, but that no show in France has yet so thoroughly established the utility of the Durham breed as the last. Not only was every intelligent spectator convinced of the valuable results which had followed the introduction of foreign blood, but it was plain to them a continued importation is as essential to the maintenance of the results, as the original importation was to their inauguration.

The trade has now arisen to considerable dimensions. The managers of the Government Dairy Establishments of Pin (Orne), and du Camp (Mayenne) were amongst the first to try the milking properties of the breed. After this, private enterprise commenced a spirited competition for pedigree Short-horn cattle, the honour of the initiative belonging to M. le Marquis de Torcy (Orne) and M. de Behague (Loiret). These gentlemen, however, were neither of them well placed to give much of a lead to public opinion, for one resided in a very backward neighbourhood, where the farmers had neither spirit nor money to follow a good example, and the other was placed in the vicinity of an indigenous breed, whose esteemed character rendered any effort to displace it most unpopular. In the departments Mayenne and Maine-et-Loire lying west of the great Oolitic basin of Paris, and composed generally of old red sandstone and granite rocks, this breed has made more way. Whether it has done so because the farming is better, and the root crop is more attended to, or whether the improvement in culture has been the consequence of its introduction, it is difficult to say; it is sufficient to remark that these departments have lately made great progress, and that the Durham cattle have well nigh driven out the Mancelle, a local breed, or absorbed it, and are now to be found as much at home in the homesteads of the mere farmers as they are in some of the most thrifty parts of England.

It must not be forgotten that the result is much owing to the enterprise of Mr. Jamet, who, aided by the manager of La Vacherie du Camp, and by M. de Falloux, a landed proprietor of considerable repute, and a successful exhibitor at Poissy, has maintained quite a crusade in favour of the Durham. Following this example the proprietors of Anjou emulated each other, attended our sales, and carried back some of our finest types with which to found the true stock so well represented at Poissy. Attention has been already called in our report of Poissy to the Herd Book of France with its 1500 entries, and of the 143 established breeders; but we have yet to speak of the care exercised by these gentlemen in maintaining the purity of their standard. No animal is admitted to a place amongst the upper ten thousand, save such as can show a descent on both sides from pure bred stock; both parents must be unexceptionable in their descent, or there is no admission amongst the privileged order for their progeny. This rule was strictly enforced at Poissy, for the jury displaced several aspirants to the peerage because they lacked, on the dam's side, a proof of nobility, and gave them rank amongst a lower, but very large class designated *Croisements divers.* This care is even carried further by the Emperor, who has directed that in future no Short-horn shall be purchased for the Imperial farms whose pedigree cannot be traced on both sides to the second volume of the English Herd Book.

All this precision, proving the intense interest which is taken by our neighbours in the race, must if correctly interpreted be to the English breeder the source of the greatest satisfaction. Those who have returned from Poissy to tell their neighbours that the French are now so much masters of their business as to need no further tuition from us, may be correct; but those who add to this assertion that the perfection of the pure breed of Short-horns established across the Channel renders unnecessary any further importation of foreign blood, and therefore henceforth closes our trade in that quarter, must have used their eyes to little purpose, or reasoned negligently upon the facts placed before them.

We know very well in England that no breed of sheep or cattle reaches the same development in the situations to which it is foreign as it does in those natural to it. We know that great mistakes are made in removing stock from one county to another where the circumstances of life differ, or from one side of the island to the other, where the conditions of climate are various. No Short-horn breeder is unacquainted with the fact that certain parts of Yorkshire are better adapted to the Short-horn than others, and that he is seen in richer bloom in his home pasture than he is any where else. It is for this reason that most prudent men when they want new blood like to go north for it. Now theoretically, if these observations have any force as regards England, they must have much more when applied to France; and in fact we find they have. The English exhibited nothing very wonderful at Poissy, but yet the contrast was unfavourable to the French pure Durham. The latter wanted that development which characterised our own. There was nothing, for instance, at 3 years of age which could compare with Mr. Crisp's ox, or, unsatisfactory as he might be as the only representative in the steer class, with Mr. Holland's steer. We entertain the belief that many many years must pass before the Shorthorn becomes so naturalised in France, should this ever occur, as to render the breeders there independent of a recourse to our herds. Were these gentlemen less particular than they are, ordinary development might suit them; but, being so particular, nothing short of absolute perfection will please them, and to obtain this point they must continually return to us for new blood to counteract some certain effects of climate and soil disadvantageous to the growth of the imported breed.

Although the French were unmistakeably proud of having accomplished so vast a stride in so short a time, and of having arrived at such proficiency in the use of the weapons we placed in their hands, we met no breeder skilful in his art who was not ready to acknowledge, if judiciously questioned, that a pretty frequent accession of English blood was requisite to preserve the French Durham from degenerating.

While, however, this enthusiastic attention to his art tends to make the French breeder a constant and large purchaser at our pedigree sales, it must be remembered that he comes as a discerning purchaser, and that if his custom is to be retained special attention must be here given to preserve the high character of the attraction which draws him. *R.*

The question of a correspondent enables us to add another to the somewhat broken series of

descriptive articles which have from time to time appeared in our columns on Farm Weeds:—

The plant forwarded by "G. H. B." is the *Colchicum autumnale*—The Meadow Saffron. It sends up a succession of lilac-coloured, Crocus-like flowers in September and October, after the fading of which nothing more is seen of the plant until the following spring, when its broad leaves begin to peer above the ground on the first advent of warmth. The specimen now before us is upwards of a foot in length from the tip of the leaves, which are an inch broad, to its insertion in the soil. It is at present, too, in seed, which will soon be ripe, and it may be well to state that one of the specimens under review afforded as many as 126 seeds.

As regards its poisonous qualities it may be sufficient to mention that the seeds and root (*corm*) are used for powerful medicines known as "extracts of Colchicum," employed as remedies in gout, and are extremely dangerous unless constantly watched in their administration by a careful and skilled physician.

Its effects upon cattle may be gathered from the following report which we were called upon to make upon this plant as long ago as 1844.

"The flowers of the Colchicum have not generally been considered by writers on the subject to be so poisonous to cattle as the leaves, but we cannot help thinking that this must arise from the paucity of the mass in the flower as compared with the leaves, for cattle frequently reject the eaves, which occur in large bunches in the months of May and June; whilst the flower that preceded each bunch of leaves is comparatively small, and is perhaps unnoticed by animals in the thick aftermath in which they appear. However, where the flowers are very thick, it is highly dangerous to allow cattle to graze upon the field, as it is only a few days since that a farmer at Eyeford, near Stow-on-the-Wold, Gloucestershire, had *ten calves killed by eating of the flowers* of the Colchicum, and two or three years since three cows were destroyed by this plant in flower in the same neighbourhood; whilst we frequently hear of many accidents to cattle in the spring from eating the leaves, although it is sometimes refused by them, on account perhaps of its bitter and nauseous taste; and there is no doubt but that accidents would be still more frequent were it not that many farmers keep their cattle from the meadows in which it occurs in any quantity during the spring and autumn months."

We may further remark that our experience leads to the inference that cattle used to the district are not so liable to eat the Colchicum as strange beasts from a district where the plant does not grow; at the same time this is quite uncertain, and it therefore follows that meadows in which it occurs abundantly, as it does in some parts of the Cotteswolds, are greatly injured by its presence, for the pasture is no doubt sometimes dangerous, and if made into hay, though the effects are partly dissipated by drying, these leaves are useless, if not poisonous.

There can be no doubt then from the circumstances detailed, as well as from the fact that this large leaved plant, even if innocuous, must occupy much space, that Colchicum should if possible be eradicated from the pasture. The means to this end are—never to let the plant seed, or indeed mature a single leaf.

The specimens before us, it appears, are "from a bank in low grazing ground;" let the plants then immediately be pulled or levelled with the scythe, and in either case burn when sufficiently dry, lest some of the seeds should ripen and perpetuate the pest. In the following spring attack them earlier, and cut them once or twice if necessary, after which depasture thickly with horses, as the hoofs of these animals will keep down the leaves of the old plants, and prevent any seedlings from making progress.

This plan will effectually lessen the pest, even if it does not cure it the first year; but two seasons of this treatment will be required, a circumstance not to be regretted, as the pasture will assuredly be highly benefited, not only by the destruction of a poisonous plant, but by the advantage of well treading and close cropping to a grazing field. *J. B.*

THE GREAT INTERNATIONAL EXHIBITION.

The Agricultural Department.

We interrupt the somewhat tedious journey which is being reported from week to week of visits in succession to the stands of the implement makers, and take a stroll through the articles shown in Class 3:—*Substances used for Food.*

There are here 39 exhibitors of agricultural produce, and though we miss such a noble illustration of the subject as was given in 1851 by Messrs. Lawson—and though 10 of the exhibitors are meal men, and only show samples of flour and groats, &c., while five others show Hops only, and four exhibit cattle foods, yet the 20 who remain give a very fair illustration of the quality of our seed crops.

Messrs. Henri, Paling, Simpson, and Thorley show cattle foods and their ingredients. Thorley's food appears to be composed of the Locust pod, Maize, Linseed, Egyptian Bean, Oatmeal, salt, and sundry aromatic spices — and as to even the hard and indigestible Bean out of the Locust pod *means have been discovered!* so we are informed, for reducing them to a powder, which, well flavoured with the condiment, is sold as a feeding meal. At Messrs. Henri's stand a still more elaborate display is given of the drugs which are added to the various meals of which the mixture is compounded.—Of the seedsmen showing in this class we may enumerate Messrs. Carter, of Holborn, who show a case of fancifully arranged flowers, drawings of roots, and a framework containing all manner of garden and farm seeds in cells, showing about 2 square inches of surface apiece.—Messrs. Raynbird & Co., of Basingstoke, show a smaller case, whose cells, arranged geometrically, exhibit much larger surfaces of Clover and Grass seeds, Turnip seed, Wheat, Oats, Barley, Beans, Peas, Sainfoin, Tares, Rye, Buckwheat. There are also samples of corn in the ear, and in particular remarkably fine specimens of Chevalier Barley and the Canadian Oat.

Messrs. Sutton & Son, of Reading, exhibit a large case extremely well arranged, showing on both vertical and horizontal surfaces very fine and pure samples of Grasses and other plants both in seed and ear, and a collection of seeds and cones of the coniferous tribe.

Messrs. Wrench & Sons, of London Bridge, illustrate the corn trade of London by large samples covering more than a square foot of surface each, and thus affording ample means of forming a good judgment. They are shown under glass, as in other cases, and comprise very fine samples of all the common Wheats, Barleys, and Oats of the London market. The samples are no doubt the best which could be found on the occasion of their selection, and as affording a fair illustration of what is actually to be bought in quantity at Mark Lane, they are of greater value commercially than the smaller and more carefully selected samples which other stands contain.

The finest Wheat shown at any of the stands, and the finest that we have seen in the building, is the exquisitely beautiful sample of "Wheat from California," shown by Mr. W. E. Chambers of Mark Lane, at stand 708, of a pure cream colour, every grain like its neighbour, a short small thin-skinned full-bodied berry, with no stain of deeper tinge on any part of its surface, and weighing 68 lbs. a bushel—this specimen may be taken as an example of what Wheat ought to be. In the same case are specimens of a good six-rowed Barley in ear.

If Mr. Chambers shows one of the maxima of the Wheat plant within the building—that namely which concerns quality of grain, Mr. Hallett, of Brighton, shows the other, of still greater importance to the farmer, that which concerns quantity of grain. We have at his stand in the Eastern Annexe, where all these things are arranged, a very wonderful collection of ears from 6 to 8 inches long, illustrating the results which he has attained by the *cultivation* of his "pedigree" Wheat. A similar show is arranged around the food "trophy," in the nave of the building, where Hallett's Pedigree Wheat is advertised in three languages, in letters 7 or 8 inches long, formed of the ears of the Wheat whose merits are thus emblazoned.

At 712, Mr. Fordham, of Snelsmore Hill, Newbury, shows four or five bags, each holding about a bushel, and crowned with bell-glasses, of Wheat, Beans, and Oats, very good samples. The same may be said of the samples shown by Mr. Stevens, of Collyweston, Northamptonshire. Close by, Mr. Strange, of Banbury, shows Wheat and Beans, and especially some remarkable stems of the latter covered with a profusion of pods. Mr. Webb, of Calcot, Reading, shows his produce in the form of a quantity of the coarse Mummy Wheat and very fine Cobnuts and Filberts. Messrs. Wright of Essex show samples of the common Grass seeds in a lot of oval boxes—with samples by their sides.

Among the more useful commercial illustrations of this class must be enumerated specimens of compressed hay and straw, weighing nearly 10 cwt. per cubic yard.

As an *agricultural* collection the whole is interesting for the illustrations in the grain which our cereal and other grain crops and indeed all our agricultural plants receive, and also for the wonderful maxima of the show—the quality of Mr. Chambers' Wheat, and the magnificent ears shown by Mr. Hallett. The purity of the samples of Grass seed and other seeds exhibited at almost all the stands is also to be commended.

The class is deficient in that no specimens are shown of our roots and tubers. Fresh sausages and fresh mutton are shown under glass in vessels no doubt sealed against the access of air. And roots and tubers might easily have been similarly shown so as to retain their freshness.

There is also a want (which will, we hope, be made up at the October meeting of the Horticultural Society) of specimens of our grain crops in the ear and straw by which sorts may be better identified than they can be by specimens of grain.

Close by, in a set of large pigeon-holes against the wall of the building, stands the collection of wool, exhibited by the Royal Agricultural Society of England which is a very useful illustration of great commercial value. The long wools and short wools of the county will be very fully illustrated on this stand, and when it is completed we shall give a full account of it.

THE PRESENT APPEARANCE OF THE CROPS.

[The following reports are dated variously from May 20 to May 27.]

Ayrshire.—The autumn sown Wheats generally look well and comparatively in an advanced stage. The spring sown scarcely so forward and vigorous as might have been looked for, which may partly be owing to the very wet weather we have lately had, and subsequently to the spring frosts. Oats look well on early dry lands in good order, but weakly, and very much destroyed by grub worm on clay soils generally, or where they have been sown on Clover lea, large patches of 5 to 20 acres having been resown. Beans have brairded very evenly, and so far have received no check, which gives them a fine appearance. Potatoes (early planted) are being hoed for the first time, and look healthy so far, but owing to the very sudden changes from very wet weather to fine dry weather, labour has been much retarded on heavy clay soils, so much so that some farmers have almost given up the idea of planting Potatoes, and sowing Mangel and Carrots, whereas such weather has been everything that could be desired towards the preparing of light soils for sowing seeds, and which are now brairding rapidly. The Rye-grass looks well, and promises above an average crop of hay. Pastures on light land are very good, and have not afforded such early grazing for many years back. I should say over all this district, the general present appearance of everything in the fields is favourable, and above average for the last 10 years. *A. Longmuir.* —— *Lagg by Ayr.* — Wheat: Generally strong and healthy. Oats: Promising, but in many places, especially in the inland districts, much thinned from the ravages of the grub. Beans appear healthy and promising. Barley, Bere, Peas, &c.: none grown in this neighbourhood. Generally speaking Cereals look well in this county. We have had one of the finest springs enjoyed in this county for many years, which has been favourable not only to the growth of crops, &c., but also for the increase of grubs, slugs, &c., which are very numerous, and have done considerable damage in many places. *And. W. Ralston.*

Bedfordshire: *Biddenham.* The Wheat plant generally is looking very well, particularly upon the good deep soils; the exceptions are upon sharp gravels, where it lost plant in the winter, and upon imperfectly drained clays. We cannot speak so favourably of the Barley. The season has been too wet even for warm soils, so that as on much of our clay land it is looking but very middling. Beans are looking very well, but dry weather is required for hoeing them; in fact we require warm dry weather for everything. Where the Turnip fallows are foul sowing must be thrown late. We hear good accounts of the Mangel plant. *Charles Howard.*

Berks: *Lechlade.*—Towards the latter part of the late wet and ungenial weather which we had in this district, the Wheat on cold, clay, and other poor soils began to assume the dreaded unhealthy yellow tinge, the harbinger of hungry ears and meagre returns, but the last few dry and warm days have made a very observable change for the better. On naturally dry and well conditioned soils it presents a very healthy and vigorous appearance, and everywhere there is plenty of plant on the ground. It is in a forward stage for the season, and taken as a whole up to this date we may report it as very satisfactory, and with a favourable summer, promises fair for an abundant harvest. We have under notice 4 acres of Hallett's Pedigree Wheat, growing on a stiff retentive clay, but drained 4 feet deep at 10 feet apart. The grain was planted by hand, dibbled 9 inches from row to row, and the same distance from plant, to plant with one grain only in a hole. In two or three places where the birds or slugs had destroyed the seed the plant is rather thin, but everywhere else the single grain has tillered out to cover the whole space and sending up stems luxuriant and strong, it gives promise of an abundant crop, and if opportunity offers we shall further report its progress. Spring corn, Oats and Barley is very backward, several patches of the latter we have seen sown during the last week. The weather however is now extremely favourable, and they will make rapid progress where got in well. Some fields sown about the middle of last month look very well. Winter Beans generally look well and are now in bloom. Spring-sown Beans are backward, and several fields we have seen do not look very brilliant, but the late delightful change in the weather it is hoped will soon improve their appearance. *W. J. Moscrop, Buscot Park Farm, May* 20.

Berwickshire: *Humehall, Berwick.*—The Wheat and other grain crops are very healthy, but late at present. They are growing very fast. *George Logan.*——*Rumbleton, Greenlaw.*—The Wheat crops in this neighbourhood are looking very well, with the exception of a field or two, winter sown, which is thin in the ground. Barley and Oats are also looking well, with no appearance of grub. Considering the late seed time, we have every reason to be satisfied with our prospects. Owing to the wet weather of late Turnip sowing is little more than commenced, the land working very unkindly, particularly so where it had been turned up in a damp state. *John Nisbet.*

Bucks.—Wheat crops are generally good and forward, an occasional piece has lost plant, but the instances are rare. Barley was late sown, and on some land it looks rather yellow. Oats also very late sown, but they look well, considering how short a time they have been in the soil. Beans are remarkably promising. Peas are not much grown, but the few pieces that I see are looking as well as they can look. We have not had so much Grass in May for 10 years. Some heavy rains 10 days or a fortnight ago flooded our meadows along the valley of the Ouse, and spoilt the Grass laid for hay. Owing to the wet weather in March, our fallows are very green. *W. G. Duncan, Bradwell, Stony Stratford.*

Cambridgeshire: *Isle of Ely.*—The Wheat plant is partially thinned by wireworm, but is nevertheless a good average crop. Fine weather to stiffen the plant would doubtless be advantageous, as it has been growing rapidly lately, and requires to lose a little flag, on the straw-producing soils especially, if it is to stand well up to the time of harvesting it. Oats: A very various crop where uninjured by wireworm, and where put in with the water drill and artificial manure, as fine a crop as could be desired. But we regret to say the wireworm has in very many instances seriously injured the crop. Some have been re-sown, others might be. Barley: But little grown, the few fields we see are looking remarkably well. Beans and Peas: Both these crops are very promising, and up to the present time have sustained no injury whatever, but their time of trial has yet to come.

Potatoes: These come strong and look healthy. Mangels: This crop is just beginning to show itself; we hear some complaints of wireworm already. *Alfred S. Ruston.*

CAERNARVONSHIRE: *Llandudno.*—The Wheat crops in this locality look well, as also the crops generally. We are much later than you, but on the whole the crops are considered good by the farmers. *W. N. Chapman.*

CHESHIRE.—The grain crops as usual vary considerably according to the soil, management, and other circumstances; upon the best soils the autumnal sown Wheats are strong and healthy and give promise of full crops, but those on the poor clays (more especially if undrained) are thin on the ground and have a weak sickly appearance, and nothing short of a fine summer, that is to say warm weather with occasional showers, can restore them to a healthy and productive condition; the same remark may also apply to Oats and other spring crops. The wet weather in April retarded the spring work so much, that many acres of Oats and Barley were not sown before the middle of May, and late sown crops are seldom very productive. The fine weather in February, and the condition of the land being good at that time, the growers of early Potatoes were induced to plant very extensively, and upon any well sheltered land where they escaped frost they will be early and productive, but on damp soils many sets rotted in the ground and some were severely injured by frost: many acres have only recently been planted, and although not so early, will most likely prove the best crops. Pastures are good. *William Palin, Tarvin.*

CORNWALL: *Tregoose, Frock.*—The Wheats are looking remarkably well. Barley and Oats were sown later than usual, in consequence of the rains, but came up quickly, and are now looking well. The showers which we have had lately have been very beneficial. *Jno. Magor.*——*Grampound.*—The Wheats in general are looking well, though in some instances rather thin. Barley, owing to the rain, was tilled late, but the growth has been rapid, and it has received very little check. The early sown Oats are making great progress. The general appearance of the fields, orchards, and gardens was never more promising. *Wm. Trethewy.*

CUMBERLAND: *Lothian Gill, Carlisle.*—The Wheat crop in this neighbourhood promises no more than an average; some fields are as promising as can be desired, but some have suffered from wireworm or other causes so much as to leave a plant so thin as to reduce the prospects of the whole as to bulk. The crops of Barley and Oats look as well as could be wished, and the weather is highly favourable. *W. E. James, May 21.*

DEVONSHIRE: *Southpetherwyn, Launceston.*—The Wheat plant is most promising, and should the season prove favourable an early and abundant harvest of Wheat may reasonably be expected. The unusual quantity of rain that fell in March and April greatly retarded the spring tillage (on clay soils especially), and had a most disastrous effect, the land working badly, and the Barley sown so very late that it would be premature to say any more than that at present it is looking under such circumstances as well as can be expected, for the dry good Barley lands I never saw a better prospect. The Oat crop is generally speaking looking well. You are aware neither Peas nor Beans are grown here to any extent. *John Wills.*——*Stancombe, Kingsbridge.*—Wheat is looking remarkably fine in this neighbourhood, and promises an early harvest, say the first week in August. Barley is also looking well but late, from the seed time being so delayed by the rains. *Samuel Cornish.*——*North Milton, Sea Down, near Exeter.*—The Wheat plant in this neighbourhood is better than it has been for three years past. I may say very good, but the breadth sown is less than usual. Oat and Barley sowing has been late, owing to the season being very wet, but it is looking well according to the time it has been sown. Weather for two or three weeks past has been all that could be desired. I see no reason to fear at present but that our crops may be good. *J. Horswell.*

DORSET: *Granville, Blandford.*—Wheat on dry sound chalk soils is pretty good, somewhat an average crop, while on heavy clays and sandy soils it is considerably below average from present appearance. Some fields are very thin and blanky, but the more general complaint is that it is pale and sickly, and weak and stunted. The Barley and Oats, on sound lands, look pretty well, but little more can be said of them at present, as they are so very late. Hay will be a fair crop, but not so heavy as anticipated three weeks ago. I put on 12 mowers yesterday. *W. Dick.*

EAST LOTHIAN.—Winter Wheat does not promise to exceed an average crop. On dry loams it is certainly vigorous and healthy, but on stiff soils it has rather a yellow colour, while a considerable portion of it, particularly after Beans, is very thin on the ground, while a number of fields have been ploughed up altogether and resown with Barley. Spring Wheat is more uniformly good, and it occupies a full breadth. The frequent rains and high temperature have been much in favour of the Beans. Barley and Oats, which have all a thick and healthy braird. When these crops were sown the soil generally was wet below, and they will continue to require both moisture and heat for a satisfactory result. The hay crop is remarkably fine, and will probably be much above an average in weight. Pastures are most luxuriant. *May 21.*——*Ferrygate.*—On all heavy soils the appearance of the Wheat crop is indifferent, on light soils good; especially where it has been land pressed in lieu of drilled, and nitrate of soda and guano applied. Trumper's Wheat now measures 24 inches in height from the ground to the point of the flag leaf. Barley and Oats in clay land have come up irregularly, but there is at present very growing weather, with thermometer 65° in the shade, and they may recover. *W. Sadler.*

ESSEX: *Romford.*—The Wheat crop strong and good plant, and forward for the season, but now looking rather yellow from the late excessive rains. Barley good, Oats good, Beans and Peas good. *Collinson Hall, Sen., Princes Gate Farm, May 20.*

FIFESHIRE: *Pilmuir, Leven.*—Autumn Wheat on light and medium soils very promising, but somewhat thin of plant on heavy land. Spring sown Wheat a full plant and healthy. Much of the Oats and Barley being late sown are backward, and suffering from the damp state of the soil. *R. Russell.*——*Lambietham by St. Andrew's.*—Wheat is of the usual breadth and well planted, but looks sickly by too much rain. Barley looks well, Oats look well, where not destroyed by grub. *John Morton.*

FORFARSHIRE: *Mains of Kelly, Arbroath.*—Wheat: Although from a general absence of frost during winter and spring, autumn sown Wheat is well planted, early and of good bulk, yet its colour having a tendency to yellow green, indicates that it it is less or more, according to soil, suffering from excess of moisture, and necessarily from too low a temperature at the roots. Had the temperature been proportionably bad above it would doubtless have been worse: as it is, with dry warm weather, it may prove a full crop. Spring Wheat very various, upon dry soils looking fair with plenty of plants, but upon heavy damp soils (yet Wheat soils proper) its general appearance is not promising. Oats; Few were seeded till beginning of 2d week of April, consequently are late compared with autumn Wheat, except on dry soils, and even on these occasionally grub has thinned out the plants, and causes them to hang back and look sickly; still it is impossible at so early a stage of their growth to say they may not be a full average crop. Barley: As a general rule there has been excess of moisture for this cereal; the early sown has not advanced for the period it has been in the ground, and a large breadth is only now breaking cover, of which nothing can as yet be predicted: but it was generally sown in a better temperature and more kindly seed bed than the former—important to all seeds, and in a high degree necessary for the proper culture of Barley. Beans look well, and Grasses to excess beyond precedent. *A. Bowie.*——*Ferryden Farm, Montrose.*—From the excessively wet winter and early spring, the Wheat crop had suffered a good deal, but within the last month, under most favourable weather, it has picked up amazingly, and most of it now looks like a crop. Barley, Oats, and Beans are all strong and thick in the plant and looking remarkably well. *A. Bell.*

GALLOWAY: *Auchneal, Stranraer.*—The Wheat and other plants, with a few exceptions, look well this season, but very much depends as to the result (in this moist climate) on the weather between the harvest. *A. H. M'Clean, May 21.*

GLOUCESTERSHIRE: *Chippenham.*—The winter Wheat in this neighbourhood is fast recovering from the effects of the excessive rain which fell in March and April, and caused a yellow colour. Its present appearance promises an average crop with early harvest. The spring Wheat and other corn (in great part) was sown much later than usual, and the Turnip land being much trodden with the sheep in wet weather late in the spring, has worked unkindly, and required much labour. Still with the late fine showers the corn has come up quick with a strong blade, but the effects of wireworm visible in some places. Altogether the general appearance of the spring grain crops is better than expected. With plenty of early Grass succeeding the fine crop of last year's roots, the live stock are well off. *Stiles Rich, Didmarton.*——*Cirencester.*—As respects my own crop, I have nothing to complain of, except the too luxuriant growth of the Wheat—it is too forward, splendid in colour, and it will certainly be in ear the first week in June, if not before—that is, the autumn sown. I have just finished sowing Mangels, a month later than usual, in consequence of the wet spring upon unusually deep autumn tillage by steam power. I came down from London yesterday, and I observed a large proportion of yellow, sickly looking Wheat on both sides the railway. *Charles Laurence.*

HAMPSHIRE: *Bursledon, Southampton.*—The Wheat crop is various; on the cold soils indifferent, on dry land promising; on the whole an average crop may be expected. The harvest also may be with fine weather rather before the average period. Oats are very good where early sown, but a large portion of the crop having been sown late cannot be so well depended upon, although it has come up quickly. Barley is generally very late, and must, therefore, be pronounced as unlikely to yield an average crop of malting quality.—Peas and Beans are looking well at present, but it is too early to anticipate the crop. The planting of Potatoes has been much delayed, and the prospect for a crop diminished thereby. Crops of Grass both for feeding and for hay abundant. *Joseph Blundell.*——*Hatch Warren, Basingstoke.*—The Wheat crop in this neighbourhood is various, the early sown, generally speaking, looking well, that sown after Turnips or Pulse crops looking yellow and peaked in many places, has suffered from wireworm, and will be short of an average; more than an average breadth sown. The summer corn also varies; great deal of it late sown owing to the wet weather; much of it suffering from wireworm, some fields almost cleared. The Grass crop generally good, with the exception of some of the Sainfoin, which has suffered from the wet weather in March and April. The fallows are very foul and tillage very much behind, which is likely to be injurious to the root crop. *F. Budd.*——*Hursley Park, Winchester.*—I have had a good look over the crops of corn in this locality, and have great pleasure in stating that the Wheat is quite as well if not better than I have ever seen it, it is forward, and the land too is very well planted, Barley is a little backward, and has suffered from wireworm, but is now recovering fast. Oats are looking very well and are growing luxuriantly. Beans are looking as well as I could wish to see them. The Peas generally are pretty good, but only a small quantity is planted. *James Charles.*

HEREFORDSHIRE: *Brinsop Court, Hereford.*—The genial weather has given a great impetus to the growing crops in this neighbourhood. The Michaelmas-planted Wheats generally look well; the same may be said of the spring sown, but owing to the month of March being so wet the latter operation and Barley planting were retarded, and the injurious effects of the cold and wet are visible on many fields, and must I think tell at harvest time. Peas look well, and Oats planted in February very promising. We shall have a heavy crop of hay. The cider fruit is a good deal blighted, but still I think there will be an average crop. *P. Norman Edwards.*

HERTS: *Highdown, Hitchin.*—I think I must say that all the grain crops in our neighbourhood are very promising. The Wheat is, I think, everywhere good; on light soils it is certainly looking better than usual, the season having been particularly favourable for them. The Barley is also good; in a few places complaint is being made that the wire-worm is more than usually busy, and on some wet soils the Barley is looking rather yellow and sickly, but nevertheless we may safely expect a full average. The Oats are I think generally good. The Beans have grown rapidly and are just showing the flower-buds. Winter Beans are blooming freely. *Joseph Pollard.*

KENT: *Martin near Dover.*—The Wheat in our neighbourhood generally speaking looks very well, though there is here and there a bad piece. The spring corn also I consider very good; and though some of it is late, the rains of last week have brought it on nicely. Beans and Peas look very promising. *M. Sandford.*

LANCASHIRE: *Garstang.*—The Wheat plant looks very well and promising; it did a few weeks back look rather yellow, and seemed to be starved, however it has now recovered, and a good breadth is sown. Oats have been very much troubled with the grub, so much so that some farmers have ploughed up again, and others have sown afresh, but generally they are now looking well, the fine growing weather that we have had of late has pleased them, perhaps more so than the Wheat. Barley we have no great breadth, however, but it seems to be coming nicely and looks nicely. Beans also look well. Potatoes, of which we have an extraordinary breadth planted, are coming very well, but I shall be able to give you a better report in a short time, as the late crops are not sufficiently above ground to be able to state any particulars. Grass, I with many others, do not ever remember so much at this time; we had never last summer so much at any time in the pastures, and meadows are very promising, if the weather should continue to be suitable, but they are now so full that we scarcely need fear. Gooseberries will be few, the caterpillar making sad havoc. Apple trees do not look very promising, a great deal of bloom having fallen off. *R. Robinson.*——*Wigan.*—It must be understood that I describe the southern portion of North Lancashire. The Wheat crops do not now promise to be an average; a great many fields sown after Potatoes or Swedes have been entirely or partially resown with Oats or Barley, and others are too thin to fill up and make an average crop. There are some very promising where sown early, and unusually thick; the excessive wet last autumn caused much Wheat to be sown when the land was in bad condition, and is now telling a sad tale. Beans, Oats, and Barley, with few exceptions, are good, and considering the late spring seeding, are forward, and above the average of the last few years. Potatoes are again extensively set, and though not so early as could have been wished, are coming up regularly. Grass is abundant, and the price of store cattle has reached a figure which will leave little if any profit for summer grazing. This district is suffering very much from the cotton mills being stopped, and it is sad to see in how many cases the rich masters neglect to provide necessary comforts for the hands they employed, and thus drive them to beg in the rural districts, and through the newspapers seek aid in other parts of England—a miserable example for the wealthy of Lancashire to set forth. *Francis Twining, Parbold Hall, near Wigan.*

LINCOLNSHIRE: *Panton, Wragby.*—Wheat: rather thin in the plant, but looking very well. Oats: looking very well, considering the late time of sowing. Barley: looking well. Beans: rather thin, but healthy. *R. Dudding.*

MID-LOTHIAN: *Ratho.*—In this neighbourhood the young Wheat is unequal. The early portion has lost colour, and looks less vigorous, with a yellowish tinge, perhaps derived from the frost which prevailed a week ago. The later Wheat has a deeper, darker colour, and is not as yet checked. The whole crop is not so promising as could be wished. Barley generally is very promising, more so than the Oats, which in many fields look faint, with some symptoms of being affected with grub or wireworm. Beans are vigorous and healthy. Grass good, and pastures very full.

MONMOUTHSHIRE: *Llansantffraid, Abergavenny.*—The sunshine of the first fortnight of May improved the Wheat in this neighbourhood so much that there is now every appearance of a good crop, better certainly than there has been for the last two years. I cannot venture an opinion as to the general crop of Barley, for the abundant root crop has caused the Barley sowing to be so unusually late, that in some places it is not even now finished. Some of the early sown Barley in this immediate neighbourhood does not promise well. *Edmund Herbert.*

NORFOLK: *Browick, Wymondham, May 21.*—The past dry summer and autumn, combined with a very fine spring, promise to produce one of the bulkiest crops on record. The Wheat crop is, with a few exceptions, a full plant, with the usual quantity of acres sown, as we adhere to the four-course system. The early sown looks very strong and healthy. I enclose a specimen of the Browick Wheat, and I have several acres like it. The later sown also looks well, but I fear it will suffer from over luxuriance. The Barleys are looking well, both the early and late sown, and promise to produce a large quantity of straw. Oats are but little grown here. Peas and Beans promise well, and are very forward. I have seen several fields of Peas in full bloom; the young layers are making rapid progress, but there is a great want of plant in many of them. The young Beet are showing in rows, and promise to come to the hoe in good time. We continue to have very fine growing showers here, which, accompanied with an almost midsummer sun, must force all vegetables very rapidly to maturity, and verify the old adage that May should come in with a Rye ear and go out with a Wheat ear. I shall have some very near if not quite in ear by the last day of May, which with fair weather must come early to harvest; but we have a large quantity of later sown here, which now looks full a month behind the Wheats I allude to. *Robert Banham.*——*Plumstead House, Norwich.* In this neighbourhood we have the prospect of an early and abundant crop of Wheat. The only exception to this pleasant picture is some of the late sown Wheats. The lea ground could not be ploughed, in consequence of the long autumnal drought, and was never properly consolidated afterwards. The extent of thin Wheat may be about one-tenth of the whole in this locality (Blofield Hundred); but on some of the light and hollow lands of West Norfolk, and by the seacoast to the north and east of the county, fully half the Wheats are a poor and thin plant. But even these have wonderfully improved within the last month. All spring grain is looking well. The wet and cold March did not do much harm, as the tillage and sowing were both so forward. A very large breadth of Wheat has been planted, and a fair extent of Barley; hardly any Oats, and quite an average acreage of Beans and Peas, and these latter have a most luxuriant appearance. All the Mangels have been planted in a fine order, and the Turnip fallows are in a clean and forward state. A few very early Swedes are already sown, but the general planting here does not begin before June. Hay also promises well, and keep is abundant; in fact we have not had so suitable a spring and winter for Norfolk for many years. *Clare Sewell Read.*——*Castleacre Lodge, Brandon.* I have only time to say that our crops are looking well in this district. *John Hudson.*

NORTHUMBERLAND: *Anick Grange, Hexham.*—I never saw the Tyneside looking so well since I knew it. Wheat and Oats are remarkably healthy and luxuriant. Barley is rather more backward. Grass is abundant, and all we now require is warm weather. *Thos. P. Dods.*——The autumn-sown Wheat in this district (Morpeth) on drained land has seldom presented a more satisfactory appearance at this season of the year, having tillered to such an extent in many cases that it is feared a liability to lodge will be produced. On undrained land the excess of rain has caused it to appear somewhat sickly, but the fine weather at present will undoubtedly cause it to recover its former luxuriance. Spring Wheat was very scantily sown about here, owing to the lateness of the season, and with the exception of April Wheat it is to be feared that much will never ripen, otherwise we anticipate an early harvest. Barley has come away very regularly, despite the difficulty of reducing the soil (a clayey loam) to a proper tilth for a seed-bed; and should we have a fine summer there is every prospect of a heavy crop, especially as it follows an unusually heavy crop of Turnips, chiefly eaten on by sheep. Oats, notwithstanding that they were fully a month behind the usual period of seed-time, present a luxuriant growth, though we hear of grave complaints of grub on spots where drainage may be imperfect. Beans are fully an average for the season, though their seed-time was also delayed considerably, therefore we can scarcely calculate on a full breadth having been sown. Old pastures are full of Grass, but much of the Clover has disappeared from the new. *Jacob Wilson, Manor House, Woodhouse, Morpeth.*

OXFORDSHIRE: *Shirburn Castle.*—The appearance of the grain crops in this neighbourhood is as under. Wheat, where the land is naturally dry or well drained, good and forward for the season; where the land is heavy and undrained, or only partially drained, it is suffering from the long continuance of wet weather, and does not promise well. Oats sown early only dry land look well, but a great deal was put in very late and in bad order. It must be a particularly favourable summer to bring them to an average yield. Barley: the early sown keeps its colour, and is very promising, but the greater part has been put in late, and though it came up equally and well, looks sickly, and is suffering much from the wet state of the land. I hope it may soon change, but the appearance at present is unfavourable. Although we have had some fine dry and warm days, the appearance of all the white straw crops has changed for the worse within these 10 days. Beans: A few fields of winter Beans look well, but most of the spring Beans are thinly planted and bad. *John Watson.*——*Kirtlington.*—Wheat: looking well, but wants warm and dry weather. Barley: uneven, owing to so much wet and cold. Oats: very good. Peas: good. Winter Beans: very good. The crops in the neighbourhood are much the same, but the Wheats on the stronger and colder land are not looking so well. The fallows are very foul, owing to so much rain, and the root crops will be late. *F. J. Dashwood, Northbrook Farm, Oxford.*

ROXBURGHSHIRE: *Jedburgh.*—Wheat, so far as it has come up,

looks well; Oats and Barley have brairded well, and have a healthy look; Beans that were got into the ground in February have come up healthy and look well; Grass was never more abundant than it is at the present time; the working of land for Potatoes has been very much retarded owing to the wet weather we have had of late, and on the same account Turnip sowing has been very much kept back. *Wm. Herriot. Easter Ulston, May 20.*

Salop: *Crofton, Bromfield.*—I think the appearance of the Wheat crop very promising, there are a few fields damaged by the slug that have been patched. Upon the whole it is better than we have had for some time. The Barley planting was late, it has come up strong and shows well for a crop. *Edward Bowen.*

Somersetshire: *Bridgewater.*—The Wheat in the best farmed and dry lands is a good plant and is looking well, but not so luxuriant as I have seen it in years previous, but in the bad farmed and wet lands it is looking very sickly and bad. Beans are looking well, but as regards Oats and Barley, it has been sown so late this spring, owing to the very wet month of April, that it is very young indeed, and a great deal not yet up. We are now wanting rain badly, else much of the latest-sown Barley will not sprout. *Ed. Corner, Woodlands, Holford.*——*Dulverton.*—The Wheat is looking remarkably well, in general the plant very strong. As to Barley and Oats, although put in late, they come away well together, and for the present are looking very promising. *W. Lyddart, Edbrook House.*

Suffolk: *Covehithe, Wangford.*—In the district of the East Coast upon the light soils (and I mean anything short of best mixed soils) the Wheat crop is very poor indeed, with hardly an exception. Although the plant was not thin in the winter and spring it never tillered and made up as usual, and must, without exception, be a very poor crop. Barley, which was upon such soils put in late, looks well, and I can see no reason to doubt will be a good average crop. Peas generally look poorly; layers very bad, such of them as have been fed have been but little use and are very weak, which is a bad prospect for next year's crop of Wheat. Fallows generally in a forward state from the autumnal cultivation they received. Upon the heavy land in this district the Wheats look remarkably well up to the present—better than I ever saw them before in my life after such a wet seeding and wet April; the present crop is the only one I ever recollect standing so much wet and looking so well, at the same time I cannot help saying I never recollect a good casting crop of Wheat off heavy land after such a wet spring; it may be different this year to all past experience. The Barley was upon the heavy land some of it put in early, and if the weather is not too trying it will be the best crop and quality without doubt, but there has been altogether too much wet for both early and late sown, except upon the very best land (which require a check) ever to be a good crop. The Beans are looking well, especially the winter description, though complaints are being heard the last few days from persons examining closely. There has been abundance of feed upon the pastures of every description; the crop of lambs is a short one, almost without exception. *G. Goodwyn.*

Surrey.—As far as my observation goes, the Wheat looks as well or better than it generally does at this period of the year, and it is certainly very forward. The spring crops though sown very late, (not before middle of April), look very well and are growing fast with a healthy promise. Mangels where got in before the late rains are over grown, and I don't think I have ever known this seed to germinate so quickly. Grass is luxuriant on all well drained land, but on cold soils it is perished and will not come to much. *W. Murrard, Kinnersley Manor, Reigate.*——*Carshalton.*—Wheat every appearance of a good crop. Barley good, Oats late but very healthy, Peas look well. *J. Arnot, Little Woodcote.*

Sussex: *Midhurst.*—The Wheat crop in this neighbourhood varies very much; when sown early on medium well drained soils, it looks well, the wet poor clays and poor thin sands are bad, and so is much of the late sown. This latter had not time to tiller before the wet weather set in; it left the ground and spindled up, and will be a poor crop. Most spring corn is too irregular to say much about it. Some of the early sown Barley looks very well, some has suffered from wireworm and some is not yet up. The same may be said of Oats. Beans and Peas are very uneven, some of the early sown are looking very well—I think I never saw them look better, some are very bad. It has been one of the worst spring corn seasons on heavy soils in record. Very little was done for 6 or 7 weeks from the last days of February. The Turnip fallows are very backward. I hear to-day of their having commenced cutting Grass for hay 2 or 3 miles from here. *James Eames, Linch.*

Warwickshire: *Kenilworth, May 20.*—I consider the present appearance of the Wheat to indicate an average crop, though it is in some instances considerably damaged by excess of wet. The long-continued wet very much retarded the Barley sowing, and in many instances the Oat sowing also, consequently the probabilities are much against either crop being an average one either in quantity or quality. Beans and Peas present an average appearance. The Turnip fallows are in a very backward state. *J. H. Burbery, The Chase.* ——*Stratford-on-Avon.*—There is a large breadth of Wheat sown in this district; some fields on the best land look well and promise a good crop, but the greater proportion both upon wet and light soils are very indifferent and must cut up thin under any circumstances. The quantity of Barley sown is smaller than usual; some is looking well upon the best Barley land in condition, but upon the strong soils the land is much set and is getting of a whitish yellow colour, and I think must be a short crop. Beans look well generally and promise a good crop. Peas look well upon light soils, but indifferent on the strong. *William Gibbs, Alveston Hill.*

Wilts: *Chippenham.*—With regard to the appearance of my Wheat and other grain crops in this neighbourhood, I can only say that until the last few warm days the Wheat was very yellow in the majority of lands; it has brightened up considerably, but this neighbourhood is not famous for its management of arable land. Barley sowing was backward, and is not finished. What Beans I have seen look very well. To-day is cold and looks rainy (a great deal of wind), and the rain will do our land a great deal of harm if it comes now. I cannot give any reason for corn hereabouts looking bad, but that it is strictly a dairy county. I farm Norfolk fashion, and my Wheat, on a very strong Clover lea and well mucked (not artificialled), is such a plant as was never seen. You gentlemen Editors must stir up the farmers more, and get us better hands at arable work; I mean in all districts. *H. B. Caldwell, Lackham House.*——*Swindon.*—The Wheat plant generally is thin, and on the heavy wet lands looking very sickly and unpromising; on the hills it is better, although much of it is very thin and spiral, more especially after Beans, Peas, and Clover, and in some instances has been either replanted or ploughed up. Beans and Peas planted during the first dry weather are looking pretty well, Oats sickly. The excessive wet season has prevented the early roots being planted in proper time. Both field and meadow Grass is promising and early. *T. H. Redman, Overtown.*——*Norman Coast Farm, Salisbury.*—In Hampshire the Wheat is generally thin, and does not appear at present to be an average yield, and not so forward as it promised to be several weeks ago. The Oats in general look very well, a good plant and healthy. Barley generally thin and sickly looking, and very much destroyed by wire worm, both the early and late sown, and wants warm weather very much. What I have seen of Wilts, I think the Wheat looks better and more regular in plant. Oats very promising, but the Barley sickly and destroyed by wire worm. The Beans and Peas everywhere look well, but I think we must have a late harvest even if we have a fine season; so much wet weather kept the sowing so late, that large quantities have been sown so late as last week. Young Grass is very good and earlier than I ever remember seeing it. *S. Smith.*

Worcestershire: *Vale of Evesham, The Elms, near Pershore.* I have mislaid your note, but in answer to your questions I beg to say that the Wheat on the best soils is looking remarkably well, but on the poor soils it is looking miserably bad. Barley comes up very yellow and unhealthy in appearance. The Beans, Oats, Vetches, Clover, and Grass crops are universally good. Pears, Apples, and Plums that promised so grandly a fortnight back are now very much injured by the caterpillars and green aphis. Potatoes, especially the early varieties, are coming up weakly and irregular. The cold wet season has undoubtedly injured them very much, and in some instances the floods have entirely destroyed them. The Mangels are being put in very late. *Henry Hudson.*

Yorkshire: *Pontefract.*—The growing crops of all kinds look remarkably well, and promise an abundant crop at present, but what it may be at harvest I cannot tell. The weather is fine, and Wheat will shoot soon if the weather continues. *Thos. Taylor, Durrington.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

The Weekly Council Meeting of the Society took place on Wednesday last at the Rooms, Hanover Square, Lord Walsingham in the chair. Among the gentlemen present were Sir J. Johnstone, Mr. Dent, M.P.; Sir E. Kerrison, M.P.; Professor Voelcker, Mr. Frere, Mr. Raymond Barker, Mr. Blackburn, &c. Several new Members were proposed and elected, after which Dr. Voelcker proceeded to give a lecture upon the properties of

Town Sewage as a Manure.—The learned Professor commenced by observing that—

It was calculated that nearly 200 million tons of liquid passed through London sewers, which of course contained a large quantity of excrementitious matter, and Mr. Lawes, in an able paper published sometime ago, had made an accurate calculation as to the amount of fertilizing matter in the London sewage. Mr. Lawes estimated that the total amount of the excrementitious matter produced by each individual was about 46 lbs. per annum when deprived of all moisture. In that 46 lbs. of absolutely dry matter there was as much as 35 lbs. of organic substances and 11 lbs. of mineral matter. The principal if not the sole fertilizing matter in the organic substances was the nitrogen, which existed in the sewage, partly as ammonia or ammoniacal salt, chiefly carbonate of ammonia, and to a minor extent in the shape of organic matter in a state of incipient decomposition. The principal valuable matter in the incombustible portion of the sewage was phosphoric acid, phosphate of lime and potash, but by far the most valuable was nitrogen.

According to Mr. Lawes's calculations the amount of nitrogen in the London sewage was 8,859¾ tons, which corresponded to 10,758¼ tons of ammonia. The total amount of excrementitious matter was 51,286¾ tons when entirely free from the water, perfectly dry. They thus arrived at a theoretical notion of the value of the sewage of towns, and likewise the average composition of London sewage, but in addition to this they had the advantages of various analyses that had been made, many of which had been published in Dr. Hoffman's and Mr. Witt's reports to the Government, while others were given in Mr. Mechi's pamphlet on the sewage of towns. The most recent analysis however had been made by Dr. Letheby for the City of London, by which it appeared that there was during the day time 94 grains of solid matter per imperial gallon in the sewers, and 79 in the night, giving an average for the day and night together of 86 grains. Taking 24 of the analyses, he found that 15 yielded an average of 66, and the other 9 of 123 grains of solid matter per imperial gallon.

Considering the character of the larger quantity of solid matter which occurred on stormy and rainy days, and bearing in mind that the extra quantity of solid matter was mainly due to the washings of the streets, and consisted principally of useless earthy and suspended organic matter which was not calculated to add to the true fertilising properties (which raised the general average of solid matter in sewage and conveyed the idea that town sewage was stronger than it is), he was inclined to believe that 70 grains was a much more correct average of solid matter in town sewage, and that agreed as well with the actual analysis he had made as with Dr. Wrightson's analysis of the sewage of Birmingham. On the whole it might be taken that town sewage contained on an average one part of solid matter in 1000 parts. What then was the character of that solid matter? Messrs. Hoffman & Witt's estimate gave 102 grains per gallon, of which 6.7 was nitrogen, 1.8 phosphoric acid, 1 potash, and 30.7 organic matter; those substances alone being valuable in an agricultural point of view, the rest consisting of worthless matter. Taking the price of those ingredients into consideration, M. Hoffman estimated that the fertilising matter of sewage was worth about 2*d.* per ton, or 17*s.* 7*d.* per 100 tons. And taking the fertilising property in the London sewage at the estimate of 90 grains of solid matter per imperial gallon, though that was a high average, the sewage of London would be worth 3796*l.* per diem, or 1,385,540*l.* per annum. He must, however, draw their attention to the fact that the calculation of the value of sewage was always made by a comparison with Peruvian guano, which was taken at 11*l.* per ton. If they left out of consideration altogether the amount of water present in sewage, which was exceedingly large, it was hardly fair to compare the dry matter of sewage, of which one-third only was valuable, the other two-thirds being worthless for fertilising purposes, with a material like guano, which contained scarcely any worthless matter at all. Considerable deduction ought to be made for the useless matter in sewage, and that point had been entirely overlooked in making calculations of the value of town sewage. In the calculation above given the value of the ammonia was calculated at 56*l.* per ton; phosphate of lime, 7*l.* per ton; and potash, 31*l.* per ton. In sewage 6-7ths of the valuable matter existed in solution, and only 1-7th in a suspended state; 100 tons of sewage according to Hoffman contained 15*s.* 4¼*d.* worth in solution, and 2*s.* 2½*d.* worth in the shape of suspended matter, and according to the same chemist the total solid matter when entirely separated from the water would have a money value of 6*l.* 0*s.* 8*d.* per ton, taking guano at 11*l.* per ton. Assuming the average given by him (Dr. Voelcker) to be correct, as he believed it to be, he found that a ton of the solid matter of London sewage was worth for its ammonia 4*l.* 1*s.* 6*d.*, at 6*d.* per lb.; for its potash 17*s.*, at 3*d.* per lb.; and for its phosphoric acid 3*s.* 2*d.*, at 2*d.* per lb. By this calculation a ton of London sewage would be worth for its fertilising properties 1½*d.*, or not quite 2*d.* per 1000 gallons. They must however observe that it would be very fallacious to draw the conclusion that because the fertilising materials in a ton of sewage were worth that amount, that its value as a manure to the farmer must be estimated at that price in the same way as guano was when sold at 11*l.* a ton. They must consider the bulk in each case and the worthless matter in sewage. In guano they had a portable and highly condensed manure, which they would apply where wanted, and which enabled them to manure a small portion of the soil only, and thus to provide abundance of available food at an early stage of the growth of plants when such food was most required. But 3 cwt or 4 cwt. of guano or superphosphate per acre if mixed intimately with 18 inches of soil, supposing it were possible to do so, would not much benefit our root crops. It was in the earliest stages of their growth that plants were most benefited by readily available food, for when once the roots with their numerous fibres were fairly established in the soil, the apparatus for taking in on all sides plant food was formed, and the amount of valuable plant food that existed in the soil was amply sufficient when once the plants were firmly imbedded to promote their luxuriant growth. They could not, taking the whole bulk of the soil into consideration, alter its composition by any amount of manure, nor could they deteriorate, chemically speaking, land by the most exhaustive crops. In reality, they only manured a small portion of the soil, and in ordinary farm practice kept the fertilising matter, whether consciously or unconsciously, as near to the surface as possible. In a great measure the value of manure depended quite as much upon the facility with which they could apply the valuable fertilising matters when and where they were wanted, rather than upon the actual amount of the fertilising constituents, such as ammonia, phosphoric acid, &c. When they could apply them in such a state that they could be reached at once by certain crops like our root crops, which required in their infancy plenty of prepared food they brought the young crop, so to say, over a critical period, and threw the more developed plants on the natural resources of the soil; consequently manures like superphosphate or guano are of much greater use than those which though otherwise rich in plant food, did not contain a sufficient quantity of it in a prepared state to meet the requirements of a young plant such as a Turnip or Mangel. When once fairly established by the use of superphosphate or guano the crop would afterwards find plenty of food in most soils for development. In order, then, to realise that advantage they must have the fertilisers completely under control, and be able to apply them when and where they were required. With condensed manures they could do that, and also in a minor degree with farm-yard manure, but they could only do it much more remotely with sewage. It was not because 3 cwt. or 4 cwt. of superphosphate or guano contained more fertilising elements than 15 or 20 tons of farm-yard manure that they obtained better results from it, but because in point of fact it was applied in a manner which went directly to increase the growth of the plant, whereas the more bulky farm-yard manure was applied to a large portion of the soil which did not require it. Of course on sandy or hungry soils, where the whole of the plant food had to be supplied, bulky manures as well as town sewage could be very advantageously applied for the general enrichment of the soil. The learned professor then proceeded at great length to examine the question of the application of manures to land, especially with reference to the desirability of applying town sewage; the general conclusion at which he arrived being that although it might be very desirable for Grass crops, it was next to useless for arable land or green crops, such as Turnips or Mangels, or even for market garden produce. They found that in the instance of farm-yard manure they had to apply a much larger quantity to land than in the case of highly condensed manures, and for the same reason they must apply a still larger quantity of a liquid, which, like sewage, contained but little fertilising matter, and which must be put on a portion of the soil where it was not wanted. In sewage, therefore, the fertilising elements had a totally different money value to good farmyard manure. In short they could not calculate the value of any fertiliser by the price at which they could buy its constituents separately, but by the value of the extra produce which they could realise through their employment. They must not, in effect, calculate the value of what they put into the land, but what they got out of it through the agency of the fertiliser over and above the natural produce. The value of sewage could only be ascertained experimentally on the field. Present experience went to show that, according to the soil and other conditions, the town sewage of Edinburgh, which was rather more condensed than that of London, was worth only from ½*d.* to 1½*d.* per ton. In applying sewage it was better to allow the suspended matters to deposit and use only the clear liquid. As he had said before the only crops to which they could apply sewage to advantage were Grass crops, and then it must be applied in great quantities and at the particular time that it was required. It should be applied if possible by gravitation and open irrigation, for no soil had the power of laying up in its body the greater part of the soluble fertilising constituents. On poor sandy soils the excrementitious matters of sewage were of great utility; but in reference to good clay soils water was the most valuable portion of the sewage, the fertilising matters of sewage being in that case of little or no importance, in fact hardly worth calculating, whereas on light poor sandy soils the value of sewage rose or sank with the amount of fertilising matters that were applied to the land.

An interesting discussion took place on the conclusion of the Lecture.

In reply to Sir J. Johnstone,

Dr. Voelcker stated that so far from sewage being a great fertilizer of vegetable gardens it certainly would not pay for the machinery and pipes necessary to bring it even from a short distance and spread it on the ground. Sir J. Johnstone had instanced the case of some ground attached to a lunatic asylum with which he was connected on which the sewage of the establishment had been placed by such means, and the Hon. Baronet stated that the gardener had fancied that the vegetables were finer, but Professor Voelker said the advantage derived must have been more fanciful than real, and he doubted whether as far as the economy of the establishment was concerned it would not be more profitable to let it all run to waste. In reply to other questions the learned Professor stated that anything that was grown very quickly was inferior in quality to the same kind of thing that was grown more slowly. Quickly grown Grass for instance was far more crude than that which was grown slowly, extreme rapidity of growth being always attended by inferiority of quality; but of course it was quite another thing whether it was not more profitable to producers to have the large increase in quantity, although it was attended by some degree of inferiority.

Lord Walsingham moved a vote of thanks to Dr. Voelcker, for the very able and interesting lecture he had given, which treated of subjects of great importance to agriculturists, and had certainly been the means of conveying much additional information to his mind as to the real value of town sewage, of which so much had been said. Such matters as these could not to be too closely investigated, because mistakes relative to the value of different descriptions of manure as applicable to different descriptions of land could not but be fraught with the most disastrous consequences to farmers, and he considered that the Association was under a deep obligation to the

learned Professor for the care with which he had investigated this important subject.

The vote of thanks was seconded by Mr. Raymond Barker, and most cordially agreed to. The proceedings then terminated.

GREAT MEETING AT WELLS.

THE BATH AND WEST OF ENGLAND SOCIETY, who are in the field rather earlier than usual, in order that their proceedings may not in any way clash with those of the National Society at Battersea, are this year holding their meeting at Wells, one of those pleasant self-contained little cities which continue to present a picture of the still life of the middle ages; where the printing press is almost as dilatory as when it was first set up by Caxton at Westminster; and where everything appears to be a full century later than in other parts of the busy and beautiful county of Somerset. Wells, however, is the centre of that great dairy district, which takes its name from the magnificent cliffs of Cheddar, and which imparts to the world that famous article of food known as Cheddar cheese. The district therefore presents many special peculiarities deserving the attention of inquiring agriculturists; and as the motto of the Society is "Work and learn," they have acted well and advisedly in paying Wells a visit; though we fear from the indications up to the time we are now writing that the meeting will be less successful in a monetary point of view than either of its immediate predecessors.

The meeting can at any rate boast of a commodious and otherwise well-selected Show-yard; for it lies high without presenting steep gradients in the enclosure or the approaches to it; and the distant landscape is not only one of indescribable beauty and loveliness, but embraces, among other prominent objects, the far-famed tower of Glastonbury, and in the immediate foreground the venerable and historical fabric of the Cathedral Church of the diocese. In the city there are very few extraneous decorations, as the authorities considered that the charm of antiquity and architectural beauty would be dissipated by any attempt to bedizen it with flags and banners; but the landlord at the principal hotel, at which the Council and the staff of the Society are staying, is so impressed with the importance of the event that he has hoisted the motto, "The triumph of the 19th century."

As usual the show yard was partly opened on Monday, but the attraction was principally confined to the Exhibition of the Arts Department, which though highly interesting and meritorious in a local point of view, demands no special notice in these columns. On Tuesday the yard was enlivened by the busy hum and whirr of the engines and machinery in motion. On Wednesday the stock and poultry departments were thrown open to visitors, and the exhibition of implements at work in the field took place. On Thursday the attractions of the week were at their height, the annual meeting and banquet being held; and on Friday the proceedings wind up with a great popular day, when the public are admitted at one shilling each.

THE STOCK DEPARTMENT.—The show of stock, though not so large as on several previous occasions, is a very good one, more especially in the Short-horn and Hereford classes, which are extremely well represented. Of cattle, there are 101 head; sheep, 198; horses, 62; pigs, 58; total, 419; which have been contributed by 114 exhibitors, of whom 29 are resident in East Somerset, 20 in West Somerset, 12 in North Devon, two in South Devon, two in Cornwall, 12 in Gloucestershire, 12 in Wilts, one in Hants, 15 in Dorset, and nine in other counties.

The following is the Prize List, which commences as usual with the honours of the local breed:—

DEVONS.

Judges.—Mr. Sampson Tresawna, Lamellyn, Probus, Cornwall; Mr. John Buckley, Normanton Hall, Loughborough.

Class 1. Bulls above three years.—1st prize, Mr. Walter Farthing, Bridgwater; 2d, Mr. Samuel P. Newberry, Honiton.

Class 2. Bulls not exceeding three years.—1st prize, Mr. Walter Farthing, Bridgwater; 2d, Mr. John Bodley, Crediton.

Class 3. Bulls not exceeding two years.—1st and 2d prizes, Mr. Walter Farthing, Bridgwater; 3d, Mr. John Jackman, Cornwall.

Class 4. Cows in calf or in milk.—1st prize, Mr. John A. Smith, Dorchester; 2d, Mr. Walter Farthing, Bridgwater; 3d, Mr. John A. Smith, Dorchester.

Class 5. Heifers in calf or in milk, not exceeding three years. —1st prize, Mr. William Paull, Dorchester; 2d, Mr. Charles F. Perkins, The Grange, Kingston Taunton; 3d, Mr. William Paull, Piddletown.

Class 6. Heifers not exceeding two years.—1st prize, Mr. C. F. Perkins, Taunton; 2d, Mr. Walter Farthing, Bridgwater; 3d, Mr. C. F. Perkins, Kingston.

SHORT-HORNS.

Judges.—Mr. Richard Dudding, Panton, Wragby, Lincoln; Mr. James Tremaine, Trevarthin, Cornwall.

Class 7. Bulls above three years.—1st prize, Mr. Charles H. Abbot, Bristol; 2d, Mr. William Hewer, Wilts. Commended, Mr. Wm. Hewer, Highworth.

Class 8. Bulls not exceeding three years.—1st prize, Mr. Richard Stratton, Bristol; 2d, Mr. John Lane, Gloucester.

Class 9. Bulls not exceeding two years.—1st prize, Mr. Charles H. Abbot, Bristol; 2d and 3d, Mr. W. Hewer, Wilts.

Class 10. Cows in Calf or in Milk.—1st prize, Mr. George Kitching, Wells.

Class 11. Heifers in calf or in milk.—1st prize, Mr. John Lane, Cirencester; 2d, Mr. R. Stratton, Bristol; 3d, Mr. Wm. Hewer, Wilts. Commended, Edward Holland, Esq., M.P., Gloucester, and Mr. Wm. Hewer, Highworth.

Class 12. Heifers not exceeding two years.—1st prize, Edward Holland, Esq., M.P., Evesham; 2d, Mr. William Butler, Chippenham; 3d, Mr. R. Stratton, Bristol. Commended, Mr. William Butlen, Chippenham.

HEREFORDS.

Class 13. Bulls above three years.—1st prize, Mr. Caleb Loader, Wincanton; 2d, Mr. William Taylor, Ledbury. Commended, Mr. William Woolly, Bath.

Class 14. Bulls not exceeding three years.—1st prize, Mr. William Perry, Leominster; 2d, Mr. Thomas Edwards, Leominster. Commended, Mr. William Taylor, Ledbury.

Class 15. Bulls not exceeding two years.—1st prize, Mr. William Taylor, Ledbury; 2d, Mr. Thomas Duckham, Ross; 3d, Mr. Levi Groves, Dorchester. Highly commended, Mr. Thomas Thomas, St. Hilary, Glamorganshire; commended, Mr. J. M. Read, Cheltenham.

Class 16. Cows in calf or in milk.—1st prize, Mr. Henry Coate, Dorset; 2d, Mr. John Naylor, Montgomery; 3d, Mr. Henry Coate, Sherborne. Commended, Mr. Thomas Edwards, Leominster

Class 17. Heifers in Calf or in Milk, not exceeding three years.—1st prize, Mr. James Marsh Read, Cheltenham; 2d, Mr. John Naylor, Montgomery.

Class 18. Heifers not exceeding two years.—1st prize, Mr. Thomas Thomas, Glamorganshire; 2d, Mr. Robert Fookes, Dorset.

Class 19. Three Cows for dairy purposes.—None of sufficient merit.

SHEEP.—LONGWOOLS.

Judges.—Mr. Richard Dudding, Panton, Wragby, Lincoln; Mr. James Tremaine, Trevarthin, Cornwall.

LEICESTERS.

Class 20. Yearling Rams.—1st and 2d prizes, Mr. Joseph Gould, Exeter.

Class 21. Rams of any other age.—1st prize, James Wentworth Buller, Esq., M.P., Crediton: 2d, Mr. Joseph Gould, Exeter.

Class 22. Pens of five Two-teeth Ewes.—1st prize, Mr. Joseph Gould, Exeter; 2d, Mr. James B. Corner, Wellington.

LONG-WOOLLED (not qualified to compete as Leicester or Cotswold).

Class 23. Yearling Rams.—1st and 2d prizes, Mr. George K. Radmore, Devon.

Class 24. Rams of any other age.—1st prize, Mr. G. K. Radmore, Thorverton; 2d, Mr. Samuel Kingdon, Thorverton.

Class 25. Pens of five Two-teeth Ewes.—None of sufficient merit.

COTSWOLD.

Class 26. Yearling Rams.—1st prize, Mr. John Gillett, Fawler, Oxford; 2d, Mr. Edward Handy, Cheltenham.

Class 27. Rams of any other age.—1st and 2d prizes, Mr. W. Garne, Gloucester.

Class 28. Pens of five Two-teeth Ewes.—1st prize, Mr. John King Tombs, Gloucester; 2d, Mr. T. Beale Brown, Gloucester.

SHORTWOOLS.

Judges.—Mr. W. Humphrey, Oak Ashe, Chaddleworth, Wantage; Mr. Joshua Whittaker, Bratton, Salisbury.

SOUTHDOWNS.

Class 29. Yearling Rams.—1st and 2d prizes, Sir R. G. Throckmorton, Bart., Berks. Highly commended, R. N. Grenville, Esq. Commended, J. Wood, Dorchester; R. N. Grenville, Esq. (three rams), and Mr. H. Fookes, Blandford (two rams).

Class 30. Rams of any other age.—1st prize, Mr. James Harding, Dorset; 2d, Mr. H. Fookes, Blandford. Commended, Mr. G. J. Wood, Athelhampton, Dorchester; Mr. J. Harding, Puddleston, and R. N. Grenville, Esq., Glastonbury.

Class 31. Pens of five Two-teeth Ewes.—1st prize. Sir R. G. Throckmorton, Bart., Faringdon; 2d, R. N. Grenville, Esq., Glastonbury. Commended, Mr. J. Harding, Dorset.

ALL OTHER DOWNS (not qualified to compete as Southdowns).

Class 32. Yearling Rams.—1st prize, Mr. J. Moore, Wilts; 2d, Mr. J. R. Neate, Hampshire. Commended, Mr. J. Moore, Pewsey.

Class 33. Pens of five Two-teeth Ewes.—1st prize, Mr. J. Moore, Wilts.

Class 34. Pens of five Two-teeth Ewes.—1st prize, Mr. J. R. Neate, Hampshire.

SOMERSET AND DORSET HORNS.

Class 35. Yearling Rams.—1st prize, Mr. F. Bond, Ilminster; 2d, Mr. W. Paull, Dorchester. Commended, Mr. T. Danger, Bridgwater.

Class 36. Rams of any other age.—1st prize, Mr. T. Danger, Bridgwater; 2d, Mr. W. Paull, Dorchester.

Class 37. Pens of five Two-teeth Ewes.—1st prize, Mr. T. Danger, Bridgwater; 2d, Mr. Fred. Bond, Ilminster. Highly commended, Mr. C. F. Perkins, Taunton.

HORSES.

Judges.—Mr. W. C. Spooner, Eling, Southampton; Mr. Geo. Badham, Bulmereye, Sudbury.

Class 40, 1st prize, Mr. H. Hitchcock, Heytesbury; 2d, Mr. W. Thorn, Glastonbury.

FOR AGRICULTURAL PURPOSES.

Class 41. Colts foaled in 1860.—1st prize, Mr. R. Jacob, Glastonbury; 2d, Mr. J. Shepherd, Brdgwater. Commended, Mr. G. Elliott, Plymouth.

Class 42. Fillies foaled in 1860.—1st prize, Mr. Cozens, Shepton Mallett; 2d, Mr. J. Keen, Wells.

Class 43. Colts or Fillies foaled in 1861.—1st prize, Mr. W. Dewe, Cirencester; 2d, Mr. R. Jacob, Glastonbury. Commended, Mr. W. Thorn, Glastonbury.

Class 44. Mares and Foal or in Foal, for hacks or hunters.—1st prize, Mr. C. Franklin, Taunton; 2d, Mr. G. Champeney, Wells. Highly commended, Mr. C. Champeney, Theab.

Class 45. Fillies foaled in 1859.—1st prize, Mr. R. Passmore, Barnstaple; 2d, Mr. W. Gapper, Taunton.

Class 46. Colts or Geldings foaled in 1859.—1st prize, Mr. S. Pennington, Wells; 2d, Mr. F. Crang, Bath. Highly commended, Mr. R. Jacob, Glastonbury; commended, Mr. B. B. Leach, Yeovil.

Class 47. Colts or Fillies foaled in 1860.—1st prize, Mr. R. E. Sidney Salmon, Wells; 2d, Mr. W. Hewer, Wilts. Highly commended, Mr. J. J. Newman; commended, Mr. I. Phillips, Shepton Mallet.

Class 48. Colts or Fillies foaled in 1861.—1st prize, Mr. R. Passmore, Barnstaple; 2d, Mr. J. Adney, Cullompton. Highly commended, Mr. B. Wake, Wells.

Class 49. Mares or Geldings for Hacks or Hunters.—1st prize, Mr. J. F. Kitching, Wells; 2d, Mr. R. Passmore, Barnstaple.

PONIES.

Class 50. Mare Ponies not exceeding 13 hands high.—1st prize, B. Fry, Esq., Cheddar; 2d, Mr. T. B. Brown, Andoversford.

Class 51. Stallion Ponies not exceeding 14 hands high.—1st prize, R. N. Grenville, Esq., Glastonbury.

PIGS.—LARGE BREED.

Judges.—Mr. Wm. Humphrey, Oakashe, Chaddleworth, Wantage, and Mr. Joshua Whittaker, Bratton, Salisbury.

Class 52. Boars not exceeding two years.—1st prize, Rev. H. G. Bailey, Swindon; 2d, Mr. J. Woodcock, Salisbury.

Class 53. Boars not exceeding one year.—1st prize, Mr. W. Hewer, Wilts; 2d, Mr. W. Yells, jun., Highworth. Highly commended, Sir R. G. Throckmorton, Bart., Berks. Commended, Mr. J. K. Tombs, Gloucester.

Class 54. Breeding Sows.—1st prize, Mr. W. Hewer, Wilts; 2d, Sir R. G. Throckmorton, Bart., Berks. Highly commended, Mr. W. Hewer, Highworth, and Rev. H. G. Bailey, Swindon.

Class 55. Breeding Sows not exceeding nine months.—1st prize, Mr. W. Yells, jun., Wilts; 2d, Mr. W. Hewer, Highworth. Highly commended, Rev. H. G. Bailey, Swindon.

SMALL BREEDS.

Class 56. Boars not exceeding two years.—1st prize, Mr. J. Partridge, jun., Devon; 2d, Mr. J. A. Smith, Dorchester.

Class 57. Boars not exceeding one year.—1st prize. Mr. R. Fookes, Blandford; 2d, Mr. J. Adney, Devon. Highly commended, Mr. R. Cozen, Shepton Mallet.

Class 58. Breeding Sows.—1st prize, Mr. E. Coles, Yeovil; 2d, Mr. J. A. Smith, Dorchester. Highly commended, Mr. C. Franklin, Taunton; commended, Mr. E. Coles, Yeovil.

Class 59. Breeding Sows not exceeding nine months.—1st prize, Mr. E. Coles, Yeovil; 2d, Mr. J. B. Corner, Wellington.

EXTRA STOCK.—SHEEP.

Mr. F. Bond, Ilminster.

HORSES.

Mr. W. Taylor, Bristol (one entire horse and two mares).

CHEESE.

Judges.—Mr. John Allen, Shepton Mallett, Somerset; and Mr. John Whitehead, Baltonsborough, Somerset.

Class. 60. Three Cheeses, not less than 80 lbs. each.—1st prize, Mr. J. Hoddinott, Shepton Mallett; 2d, Mr. R. Davis, Blandford.

Class 61. Three Cheeses, of not less than 25 lbs. and not exceeding 80 lbs. each.—1st prize, Mr. R. Davis, Blandford; 2d, Mr. Cox, Frome.

Class 62. Three Truckles, not exceeding 16 lbs. each.—1st prize, Mr. R. Davis, Blandford; 2d, Mr. J. Mullins, Somerset.

The Devons, considering they were so near their native home, were neither well nor numerously represented. It is true there were some nice symmetrical animals, but as a rule they ran too small to gain a reputation beyond their native county. The first prize in Class 1, (bulls above three years) was taken by Mr. Walter Farthing's Perfection, a four year old animal bred by Mr. Bodley; but the competition was by no means severe, as there were very few entries. In Class 2 (three years old), the first prize was awarded to Mr. Farthing, and the second to Mr. Bodley for two very nice animals. In Class 3 (young bulls), Mr. Walter Farthing took the first and second prizes; his animals having the advantage of size over their competitors. Class 4 (cows in calf) comprised several good lots, especially the first prize belonging to Mr. J. A. Smith, of Bradfield, Peverell, which was a straight and level animal, with a refined head and other good points about her. The Yearling class was remarkable for the smallness of the animals comprised in it.

The Short-horns were not only in good force, but there were some remarkably good bulls and cows among them. Class 7 (old bulls), comprising eight entries, was throughout remarkable for the best qualities of this fine and stately breed. The 1st prize was awarded to a splendid animal belonging to Mr. C. H. Abbot, of Long Ashton. In Class 8 (three years old), the 1st prize was taken by a beautiful animal, white in colour, with remarkably well developed hind quarters, and as nearly as possible perfect symmetry. Class 9 (young bulls), was not in any way remarkable. In Class 10 (cows in calf), the competition was very restricted; but Class 11 (heifers in calf), seven entries, was generally commended by the Judges, and the prizes were severally awarded to Mr. Lane, Mr. R. Stratton, and Mr. W. Hewer, whilst two excellent heifers belonging to Mr. Holland, M.P., and Mr. Wm. Hewer were especially commended.

The Herefords, as a class, were equal to any that have been shown at the West of England meetings, nor is this surprising, when it is borne in mind that they are suited to the requirements of the Wells district. Class 13, containing five entries, comprised several first-rate old bulls, which were fully entitled to the highest approbation. In Class 14 there were only three entries, three years old, but they were of such excellence that two prizes and one high commendation were awarded. Class 15, for young bulls, comprising ten entries, was generally good, and the first prize animal, belonging to Mr. Wm. Taylor, Showle Court, Ledbury, was a remarkably fine specimen. Class 16 (cows in calf) was not deficient in merit; but the first prize animal, belonging to Mr. H. Coate, of Sherborne, had a certain lumpiness about the hind quarters which rather detracted from its good qualities. In Classes 17 and 18 there was nothing especially calling for observation.

In the Sheep classes there was not the amount of competition we should have expected at such a comparatively short distance from the counties of Wilts and Dorset; but Mr. Danger, of Huntstile, had some remarkably fine rams of the improved Somerset Horn breed; whilst Sir R. Throckmorton, Mr. N. Grenville (High Sheriff of Somerset), and Mr. James Harding took the chief prizes for South Downs.

Among the Horses were some excellent hacks and hunters, chiefly bred in Somerset; but the agricultural horses were not good, and not a single cart stallion was shown. Several animals were disqualified on account of hereditary taints and other imperfections, and in particular, one elegant little pony, which was the admiration of every one in the yard, was shut out from a prize because its age was not correctly represented.

The Pigs were a middling class, but there were some good specimens of the Essex breed, and also some capital breeding sows.

THE IMPLEMENT DEPARTMENT.—The great strength of the Show lay in the implement department, which notwithstanding all the supposed drawbacks to success, was one of the very best exhibitions the Society has yet had. The machines in motion occupied 26 compartments as against 18 at Truro in 1861, and 22 at Dorchester in 1860; and as an index to the comparative extent and importance of the general collection, it may be mentioned that there are 2057 feet run of shedding, as against 1539 only at Truro.

Most of the leading houses, and a large number of local firms, were represented by their leading implements; but at a time when this subject is brought so prominently before the attention of the agricultural world by means of the International Exhibition, it will suffice if, instead of giving a detailed account of the department, we subjoin a few returns, rather in the form of an index than a general description.

Steam Ploughs and Cultivators were exhibited by Mr. Fowler, Messrs. Howard and Bedford, Messrs. Brown & May (who also represented Mr. Smith of Woolstone), Mr. Clay and Mr. Tasker.

Traction Engines were shown by Messrs. Roby & Co. of Lincoln, and Messrs. Aveling and Parker of Rochester, and it may be mentioned in passing that the engine of the latter firm travelled all the way from Kent to Somerset with its own steam, performing the distance in less than 48 hours including stoppages, and consuming about 2½ tons of coke on its journey.

Of Steam-engines there was a remarkable and unprecedented array, including six of Clayton and Shuttleworth's manufacture (though only three were shown on their own stand): a splendidly finished double cylinder engine, shown by Tuxford & Son; three by Cambridge, of Bristol; three by Brown & May; two by Parsons, and one each by the following firms:—Ransome & Sims; Gibbons; Barrett, Exall & Co.; Garrett & Son, Nalder & Co., Maggs & Co., Hornsby & Sons, Turner, Ashby & Co., Cockey, Bradford, and Huxham. There was also a fixed engine shown by Page, of Chard.

Of Threshing and Winnowing Machines, the exhibitors were Clayton & Co., Tuxford & Son, Barrett, Exall, & Co., Picksley & Co., Garrett & Co., Roby & Co., Nalder & Co., Ashby & Co., P. & P. H. Gibbons, Cambridge; Maggs & Hindley, Turner's, of Ipswich; Hornsby & Co., Humphries, Cockey, Holmes & Son, and Wallis & Co.

Ploughs, in all their varieties, were shown by the well-known firms of the Howards, Hornsby, Ransomes & Sims, Bickford, Hancock, Eddy, Carson, Tasker, Maggs & Co., and Snowden.

Hay tedders were represented by specimens of the well-known manufactures of Howards, Ashby & Co., Nicholson, &c. Mowers, either single or combined with reapers, by Burgess & Key, Cuthbert (Hussey's), Crauston (Woods'), Burrows & Page, Croskill, and Hellard. Drills by Garret & Son, Hornsby, Coultas, Tasker & Son, &c. Horse Rakes by Ransome & Sims, the Howards, Ashby & Co., Barrett, Exall & Co., Page, Nicholson, Rowsell & Sons, and W. Sawney. Harrows by the Howards, Ashby, Cambridge, &c.

To pursue the subject, however, would involve a complete analysis of the catalogue, for which we have not space at our disposal; neither, indeed, is it necessary, as there was nothing calling for special remark, if we except the large and important collection of cheese-making apparatus, of which the principal exhibitors were Cockey, Brown, and May; Cornes, of Cheshire; Day; Woodland; Maggs & Co; Carson & Son; Wilkins & Son, &c.

Of the performances of the implements in the field which were not over when our parcel was despatched, we reserve a detailed account until next week, when we shall be in a position to do more adequate justice to the subject.

POULTRY SHOW.—In the poultry department there were upwards of 300 pens, and some good birds, especially of the Spanish, Dorking, and Cochin China breeds, were shown.

THE ANNUAL MEETING took place on Thursday, in the Council Tent, at 1 o'clock, under the chairmanship of T. D. Acland, Esq., president of the year, a gentleman who not only formerly represented the county in parliament, but is well known as a most energetic supporter of the Society, and one of the most active promoters of the education movement in the West of England. The business of the meeting was chiefly of a routine character, but the report of the Council furnishes good proof that during the past year the Society has paid full attention to several important subjects of great interest to the agricultural world.

AGRICULTURAL BENEVOLENT: The Anniversary festival of this institution, which was established in 1860 for the relief of farmers, their widows and orphans, was celebrated yesterday evening at the London Tavern, Bishopsgate Street; the Duke of Richmond presiding. About 150 of the friends and supporters of the charity assembled upon the occasion; and amongst those present were Colonel A. N. Hood, Messrs. Alderman Mechi, C. Wren Hoskyns, F. Hobbs, R. Garrett, S. Sidney, J. Druce, &c.

The CHAIRMAN, in proposing "Prosperity to the Agricultural Benevolent Institution," observed that it was sufficient for him to state that the object of the Society was to provide pensions to bonâ fide farmers, their widows and unmarried orphan daughters, and to maintain and educate the orphan children of farmers, to insure the toast meeting with the reception which such an institution must at all times command. Speaking as he did to practical farmers, to men who had passed the greater part of their lives in the pursuit of agriculture, it would seem almost presumptuous as it would be unnecessary for him to dilate at any great length upon the necessity which existed for an institution of this character, and he could only express his surprise that in a country so eminently agricultural as Great Britain an institution for the relief of farmers in distress should not have been established till the year 1860. It was also a matter of astonishment that the establishment of such an institution was mainly owing to the exertions of a gentleman who however zealous he had shown himself in the cause of agriculture had spent the earlier portion of his life in the pursuit of commerce. He need hardly remind his hearers of the many vicissitudes which this branch of science, for a science it had become, was liable to. He need hardly tell them of the losses which might come suddenly upon the best farmer, and reduce him from comparative affluence to comparative poverty. Seasons of unparalleled severity might come upon them when they were least ready and fitted to receive them. They might buy the most expensive instruments, they might procure the most highly-bred cart-horses, and they might have their work done by steam, but all the most approved appliances within their reach would not avail at all times and in all seasons. Therefore he said that such an institution as the present must be a blessing to the whole agricultural community. And when he spoke of the agricultural community of this country, he could not forget that the agricultural class had been at all times one of the most respectable classes in this great empire, and one of the strongest and firmest links in the chain of society, of which this country was so remarkable a specimen. If it were possible that they could blot out the agricultural class the empire would sink into nothingness, and he believed there were few who would deny that this Society was a blessing to the country. To the few who might think that there was no necessity for such a society he need only point to the fact that there were no less than 60 applicants for pensions at the January election this year. Since the institution was founded, in 1860, they had had upwards of 2000 subscribers upon their list, and the Society possessed at this time an amount of 2000*l.* in Consols and 3000*l.* in the Three per Cents., making in all a fund of 5000*l.*

The SECRETARY (Mr. Chas. Shaw) announced subscriptions to the amount of 2665*l.*

Colonel HOOD proposed "The Health of his Grace the Duke of Richmond, President of the Society," to which

The CHAIRMAN briefly responded.

Amongst the remaining toasts were—"The Royal Agricultural Societies of England, Ireland, and Scotland," and "Success to Arts, Manufactures, and Commerce."

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Thursday, May 29, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	23	29.74	57	55	S.W.	4	7	64	48	76	48	0.01	57	55
Saturday ..	24	29.95	59	54	S.W.	2	4	67	51	77	49	0.04	57	55
Sunday ..	25	30.11	58	51	W.	2	3	68	45	83	41	..	57½	55
Monday ..	26	30.16	58	53	W.	2	4	66	38	84	35	..	58	55½
Tuesday ..	27	29.92	57	55	S.W.	2	6	68	52	84	52	0.06	59	56
Wednesday.	28	29.90	60	57	S.W.	2	6	63	54	72	53	0.01	58½	56
Thursday ..	29	29.88	63	60	S.W.	2	4	71	55	84	55	0.02	59	56

Calendar of Operations.

MAY.

NORTH LINCOLNSHIRE: *May* 26.—The last six weeks has been remarkably favourable for getting on with field operations, presenting a marked difference to the month of March and beginning of April, in consequence of which we have been enabled to get from a state of extreme backwardness to be pretty forward with our work. We only sowed about 4 acres of Mangels this year; this root is going out of fashion in this county. Upon our Turnip growing soils, when we wish to consume the great bulk of the roots upon the land the latter is more valuable. We put our Mangels in on the 15th inst., and started to sow Swedes on the 21st, and shall continue (weather permitting) until the whole of both Swedes and whites are finished, which we hope to have done by the last week in June. Our mode of putting Turnips in is to lay the manure on at the time of sowing, sow on the ridge with a two-rowed liquid drill, using Lawes's superphosphate at the rate of 3 cwt. per acre for Mangel, 2½ for Swedes, and 2 for white Turnips, three ploughs doing 7 acres per day. *Steam.*—The cultivator has been going ever since the 8th of April, effectively preparing the land with a depth of soil far surpassing anything horse-power could do; the latter had only to harrow and roll, which is considerably the lightest work. Wheat upon good soils is looking well and very forward, but upon poor clay soils will only be a moderate crop. Spring corn doing pretty well. *Cattle.*—Pastures are good. In consequence of cattle getting out in good time they are forward in condition, and many will soon be fit for the butcher. This week we shear our sheep. *S.*

Notices to Correspondents.

TOLL BARS: *G Murray.* We are not learned in the law; but it is plain that the spirit of the Act, and of decisions under it, is against the charges you name, viz., for carting the tops of trees (not timber) from one part of a farm to the other, and for the farmer riding his pony from one part of the farm to the other.

Advertisement.

To the Editor of the Agricultural Gazette.

SIR,—Besides showing my Farm you know that I am always ready to give all the information I can. Here are some extracts from a letter that I have received this morning from a gentleman who is a total stranger to me.

"In 1860 I hired a set of your Tackle to work 22 acres over twice. It made a first rate job of it.

"In 1861 I hired it to do 120 acres once over. It made a very good job.

"This year I thought I would try again, but as the gentleman whose implement I had hired had discontinued working by contract, I was obliged to look out for another. This I found in a man who had purchased a set of Fowlers' small tackle. We started on a 20-acre field with Fowlers' grubber, with which we could not get on very well. We then tried Howard's tool or grubber, or whatever else they may call it. After repeated trials we were obliged to throw it on one side without going a round of the field. We then fetched SMITH'S No. 3, and finished the field without a stoppage or hindrance of any kind, so that I think it is a very fair trial, and with which I am perfectly satisfied. What I state here are plain facts, and I shall be pleased to show the work to any gentleman who would like to see it."

These plain facts I lay before my brother farmers, for them to judge for themselves.—I am, Sir, your obedient servant,

WILLIAM SMITH.

Woolston, Bletchley Station, Bucks, May 29.

Upwards of 2000 Cases have been reported as Cured by

JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* each. A 1*s.* 6*d.* bottle will make 12 gallons fit for use.

Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Genuine Roll Tobacco Cloth.

Warranted equal in Strength to Tobacco.

JOSEPH BAKER, 10, Gough Square, Fleet Street, E.C., having dealt upwards of 20 years in the above, can recommend it as the best article for destroying the Fly. 1*s.* 4*d.* and 1*s.* 1*d.* per 1 b.; over 10 lbs., 1*s.* P. O. Orders payable Fleet Street.

Magnified Aphides.

NEAL'S PATENT APHIS PASTILS, One Shilling and Two Shillings per packet, are now acknowledged by all disinterested persons to be the only cheap and effectual way of smoking a Greenhouse: they destroy all insects, and cannot injure the foliage unless they are damp. Testimonials from Florists and Scientific men of the highest standing may be had on application.

NEAL'S PLANT SOAP

is a perfectly new preparation, free from all smell, little more than half the price of the ordinary compounds, is not injurious, but on the contrary useful to the health of the Plant; destroys Red Spider, Mealy Bug, American Blight, Mildew, Scale, Thrip, Green Fly, and all other Insect Pests, and is only 1*s.* a packet of four cakes. May be obtained of all principal Seedsmen.

Patentee:

J. NEAL, Edward Street, Birmingham.

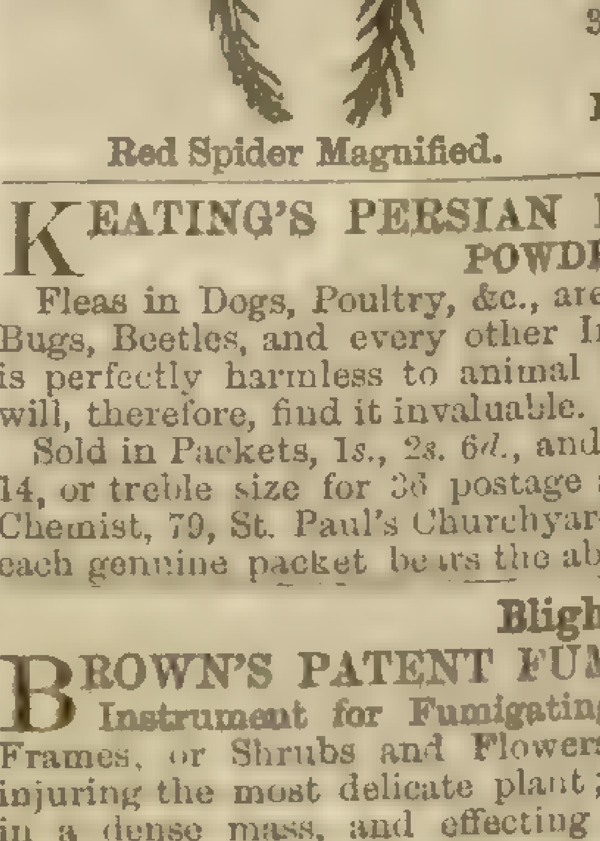
Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3*s.* per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3*s.* per Gallon (or 9*d.* fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.



Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* each.

Wholesale by

PRICE'S PATENT CANDLE CO., Limited.

KEATING'S PERSIAN INSECT DESTROYING POWDER.

Fleas in Dogs, Poultry, &c., are instantly destroyed, as also Bugs, Beetles, and every other Insect, by this Powder, which is perfectly harmless to animal life; Sportsmen particularly will, therefore, find it invaluable.

Sold in Packets, 1*s.*, 2*s.* 6*d.*, and 4*s.* 6*d.* each, or post free for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E C. Take notice each genuine packet bears the above name and address.

Blight.

BROWN'S PATENT FUMIGATOR.—A Portable Instrument for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers in the open air, without injuring the most delicate plant; delivering the smoke cold, in a dense mass, and effecting a great saving of Tobacco. Price 10*s.* and upwards.

Manufactured and supplied to the Trade by Messrs. BARBER & GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

WHY NOT PRESERVE YOUR HAY? Benjamin Edgington, Rick Cloth, Marquee, and Tent Manufacturer, 2, Duke Street, London Bridge, S.E.

SECOND-HAND MARQUEES, TENTS, and RICK CLOTHS, at greatly reduced prices.

An Illustrated Catalogue sent free by post.

B. E. supplied the Flags and Awnings at the Great Exhibition; also the Transparent Awning under the Western Dome.

Address Benjamin Edgington, 2, Duke Street, Southwark, S.E.

No other Establishment.]

JOSEPH HAYWOOD AND CO.,

Manufacturers of

PRUNING and BUDDING KNIVES,

SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.

£2 2s.

An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.

One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.

It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.

It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.

No establishment, either private, commercial, or manufacturing, should be without one.

6 feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12s. Longer lengths of Suction at 1s. 6d. per foot.

May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,

John Warner & Sons, 6, Crescent, Cripplegate, London, E.C.

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200 CUCUMBER and MELON BOXES and LIGHTS, and from 400 to 500 LIGHTS for PITS of all SIZES kept in STOCK.

Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.

References to the Nobility, Gentry, and Trade in most of the counties in England.

James Watts & Co., Hothouse Builders and Hot-Water Apparatus Manufacturers, near the Green Man, Old Kent Road, London. S.E.

Lawn Mowers.

HORTICULTURAL TOOLS, the largest Stock in London; also elegant Garden Seats, Chairs, Tables, Flower Stands, Trainers, Engines, Wheelbarrows (Iron or Wood), Waterpots, Lawn Mowers (every make), Boyd's Celebrated self-adjusting Scythe, and every description of Agricultural Machinery, at

Dray, Taylor, & Company's (late Wm. Dray & Co.), (the well-known Agricultural and Horticultural Engineers), New Central Depot, 4, Adelaide Place, London Bridge, S.E.

Removed from Swan Lane.

Their New Horticultural List forwarded on application.

WHITE GARDEN EDGING TILES, plain and scalloped pattern, STRAWBERRY TILES, &c.

Apply to Mr. E. Hooper, Manufacturer, Southampton, or to Mr. J. Downey (London Agent), Victoria Wharf, Nine Elms, S.

International Exhibition, Class IX. (Eastern Annexe).

BEE-HIVES.—Prize Medal awarded to G. N. & Sons, for Bee-Hives and Honey, at the Paris Exposition of 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by George Neighbour & Sons, with all the recent improvements, three glasses, and thermometer, price 35s., securely packed for the country.

This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

Early applications addressed to Geo. Neighbour & Sons, 127, High Holborn, W.C., or 149, Regent Street, London, W., will receive prompt attention.

Their newly-arranged Catalogue of other Improved Hives, with drawings and prices, sent on receipt of two stamps.

Agents:—Liverpool .. James Cuthbert, 12, Clayton Street.
" Manchester . J. Wilson, 50, King Street.
" Birmingham J. H. Cottrell, 15, Bull Ring.
" Dublin .. Edmondson, Brothers, 10, Dame Street.
" Glasgow .. Austin & M'Aslan, 168, Trongate.

SHAW'S TIFFANY.—The lightest, cheapest, and most durable of all materials for Shading Conservatories and Hot-houses is SHAW'S TIFFANY. As a protection from cold winds and scorching heat, nothing equal to SHAW'S TIFFANY. For effectually preserving Fruits and Seeds from the Attack of Birds, Wasps and Insects, use SHAW'S TIFFANY.

Sold by all Nurserymen and Seedsmen. Samples and Prices on application.

J. Shaw & Co., Oxford Street, Manchester.

WIRE-WORK for the Garden, the Greenhouse, and the Conservatory. An Illustrated Catalogue, containing upwards of 90 Engravings, Post-free. WIRE NETTING, 2 feet high, 5d. per yard. GARDEN SYRINGES, 6s. each.

William H. Honey, Manufacturer, 263, Regent Street, near Oxford Street Circus, W.

DUNN'S GARDENER'S PENCILS, Price 1s., will refill for 6d.

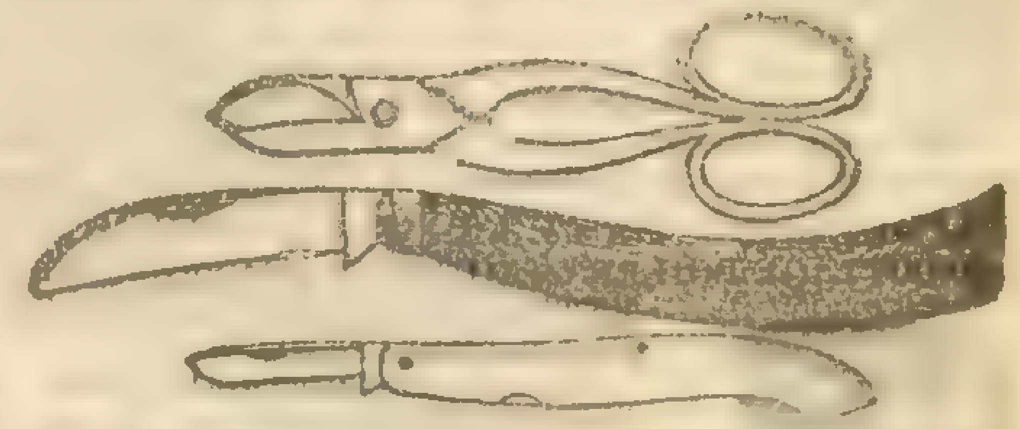
DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.

Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.

These pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.

N.B.—A liberal allowance to the Trade.

Paxton Works, Sheffield, Established 1738.



SAYNOR and COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.

Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an article superior in quality to anything we have hitherto been able to offer in PRUNING, BUDDING, and GRAFTING KNIVES, VINE and PRUNING SCISSORS, GARDEN SHEARS, &c., owing to their being tempered under an entirely new process, which renders the blade tough and not liable to break, and also gives the edge a lasting keenness which we can warrant them to retain for at least double the time they would under the old method of tempering, thus facilitating the work and saving the time usually lost by having constantly to renew the edge by sharpening, consequently making them more durable in wear and better adapted for all kinds of work, every blade being guaranteed of the same temper.

Caution. None are genuine except marked Saynor, or Saynor, Maker. Other marks would cause the purchaser disappointment.

THE HYDROPULT,

A PORTABLE FIRE ANNIHILATOR AND GARDEN ENGINE.

SECURED BY ROYAL LETTERS PATENT.

It is a simple, effective, and convenient Apparatus for throwing Water by hand. It weighs but 8 lbs., will throw 7 or 8 gallons of water per minute 50 feet, when worked by the power of one man, is easily worked, and very strong and durable.

PRICE TWO GUINEAS.

IT IS INVALUABLE FOR

EXTINGUISHING A FIRE JUST COMMENCED	WASHING CARS
PROTECTING A ROOF FROM TAKING FIRE	WATERING GARDENS
WASHING WINDOWS	CLEANSING TREES FROM INSECTS
WETTING SIDEWALKS	APPLYING WHALE OIL AND SOAP SOLUTIONS
SPRINKLING STREETS	DRESSING WITH LIQUID MANURE
WASHING CARRIAGES	SPRINKLING PLANTS
DRAINING CELLARS	EMPTYING AND FILLING BARRELS
CLEANING CISTERNS	FOR USE IN A BREWERY
EMPTYING WATER FROM BOATS	WASHING DECKS
SPRINKLING STOCK ON RAILWAY TRAINS	BALING BOATS
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	A SPRAY BATH, &c.

FIRE! FIRE! FIRE!

The Hydropult is the most efficient Fire Engine in the world, because the most available.

_ It has been recommended as an efficient and useful Fire Engine by the principal Fire Insurance Companies of Great Britain. Its utility as a Garden Engine is universally acknowledged.

Thomas Rivers, Esq., the eminent Florist and Nurseryman, says:—"The Hydropult is admirably adapted for Nurseries, and will be found invaluable for Watering and Syringing Plants and Trees in pots."

Shirley Hibberd, Esq., says:—"Having a Hydropult in use, we can say that it will soon pay for its cost in a Garden, besides being always at hand in case of an emergency of any kind which may require an immediate removal or discharge of water."

CAUTION.

Unprincipled parties are infringing the Hydropult Patent. This is to notify to the Public that the said Pirates and all persons using or vending their article will be prosecuted. No Hydropults genuine, whether contained in a bucket or otherwise, unless they have the Trade Label affixed as follows:—"The Hydropult, a Portable Fire Annihilator and Garden Engine, Griffiths & Browett, Manufacturers, Birmingham; Charles P. Button, General Agent. Vose's Patent."

Prospectus, with Testimonials, sent Free on Application.

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HYDROPULT COMPANY, 27, LEADENHALL STREET, LONDON, E.C.

Hothouses for the Million.

INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17*l.* SPAN ROOFS, 30 feet in length, for 33*l.*; and all other dimensions at equally low prices. Delivered free to Railway Station round London.

Illustrated Circulars with Lists of Prices, can be had on prepaid application to S. HEREMAN, 7, Pall Mall East, London.

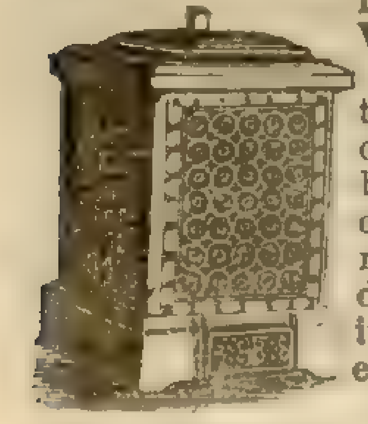
RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

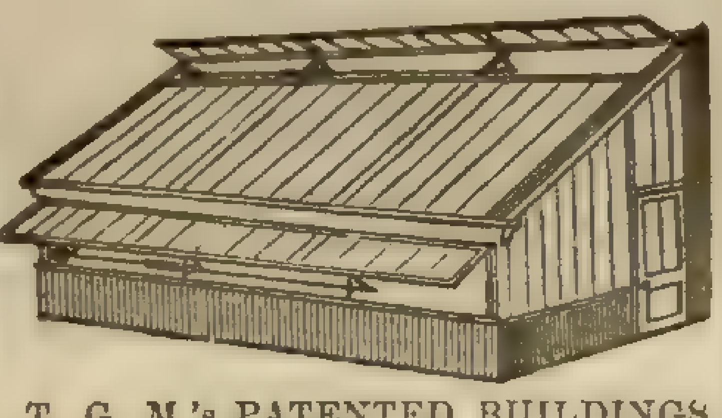


It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large Apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.

Particulars and prices post free on application to MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough.



T. G. M.'s PATENTED BUILDINGS combine all the modern improvements, are well made of best seasoned red Deal, most effectually ventilated by means of his unequalled Apparatus, can be made either plain (and which are at the same time elegant in appearance), or of the most elaborate design. They can be fixed as permanent buildings, or made to be portable.

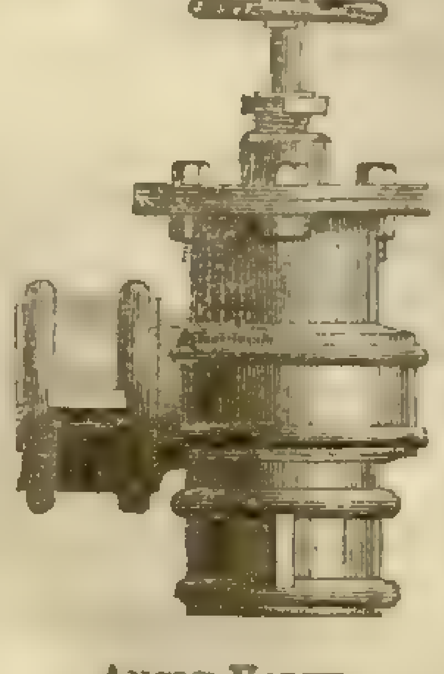
T. G. M.'s HEATING APPARATUS continues to give the greatest satisfaction for its heating qualities and small consumption of fuel.

ILLUSTRATED CATALOGUES of the above, Glazing without Putty, Garden Engines, &c., sent upon application.

Horticultural Works, Danvers Street, Chelsea, S.W.

BECK'S PATENT
HOT WATER VALVE.

HORIZONTAL VALVE.
2" 18*s.* 6*d.*; 3" 25*s.*; 4" 30*s.*



ANGLE VALVE.
2" 17*s.*; 3" 23*s.*; 4" 28*s.*

JAMES GRAY, Sole Agent, begs to call attention to this most simple and perfect Valve ever invented. It is perfectly water-tight, and is never liable to get out of order, or to get fixed by standing.

To ARCHITECTS, ENGINEERS, GARDENERS, & OTHERS.—BECK'S Patent Valve has been submitted to several of the most scientific men of the day, and has invariably met with unqualified approval. A liberal Discount to the Trade.

CONSERVATORIES, GREENHOUSES, VINERIES, and every description of HOTHOUSE erected on the most improved principles, and of best materials, at the lowest possible price consistent with good workmanship.

Heating by Hot Water in all its branches. Boilers of every approved description, Tubular, Saddle, Conical, &c.

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HOT-WATER APPARATUS.

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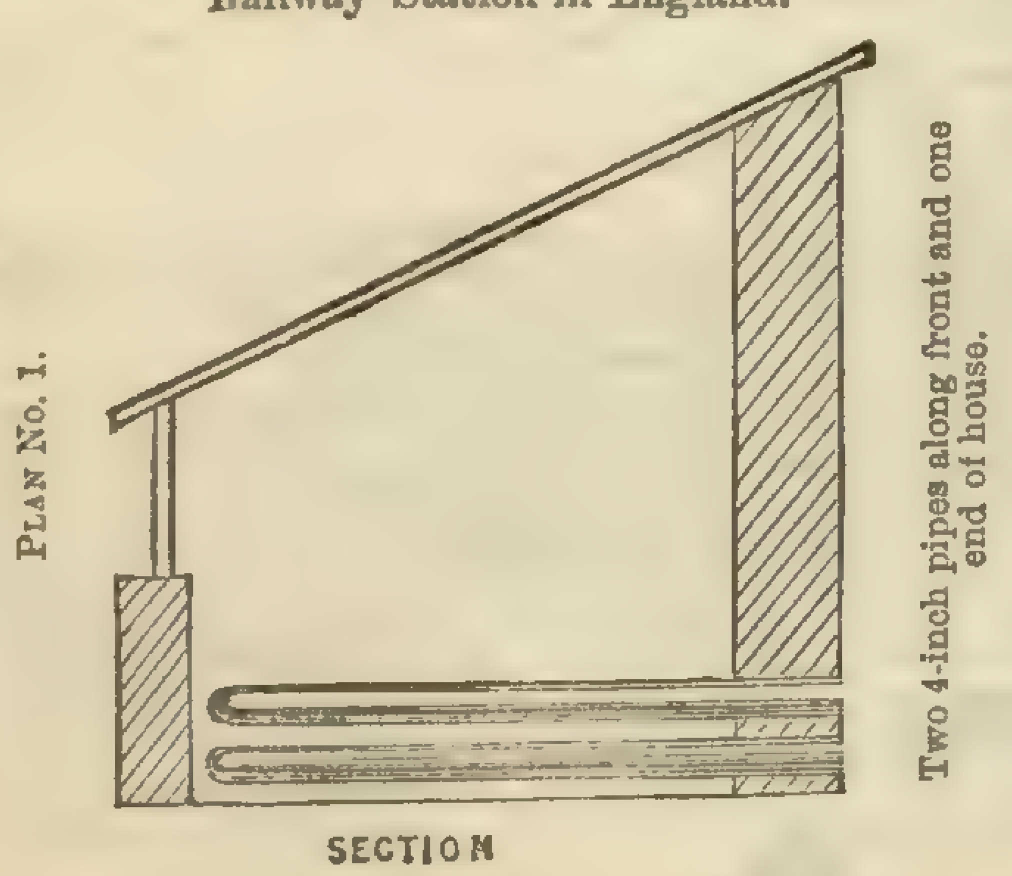
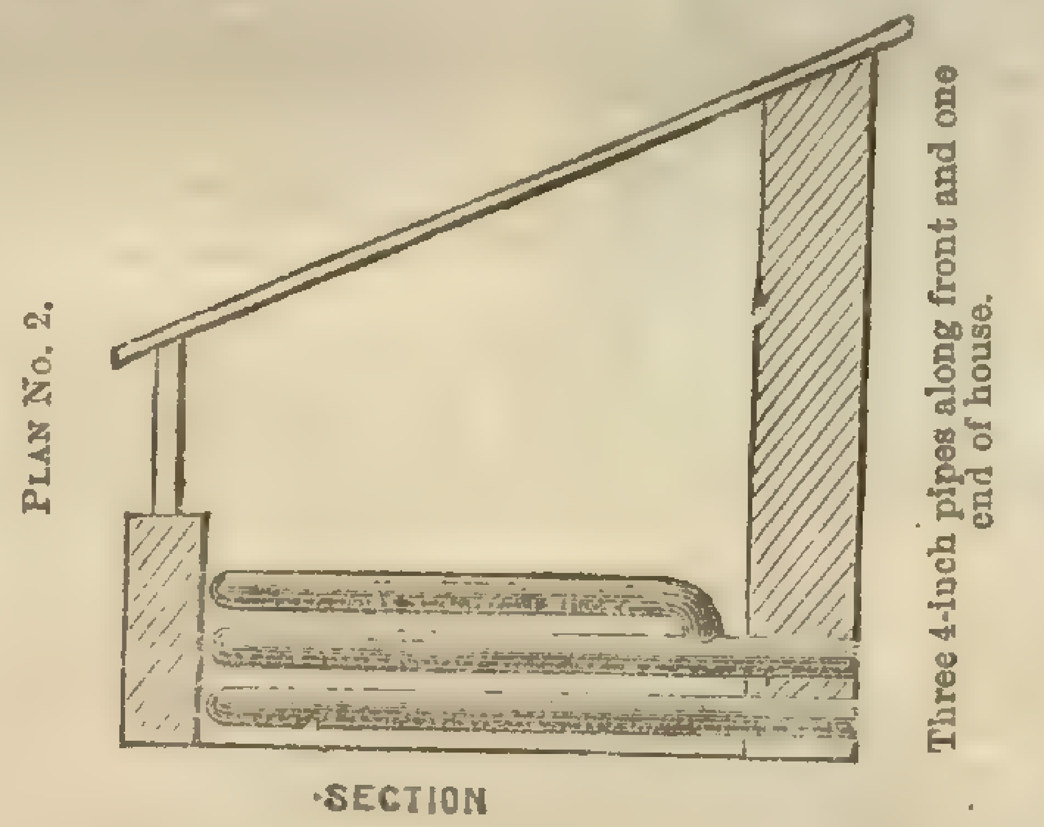
BEGS TO OFFER A COMPLETE

Hot-Water Apparatus for Houses

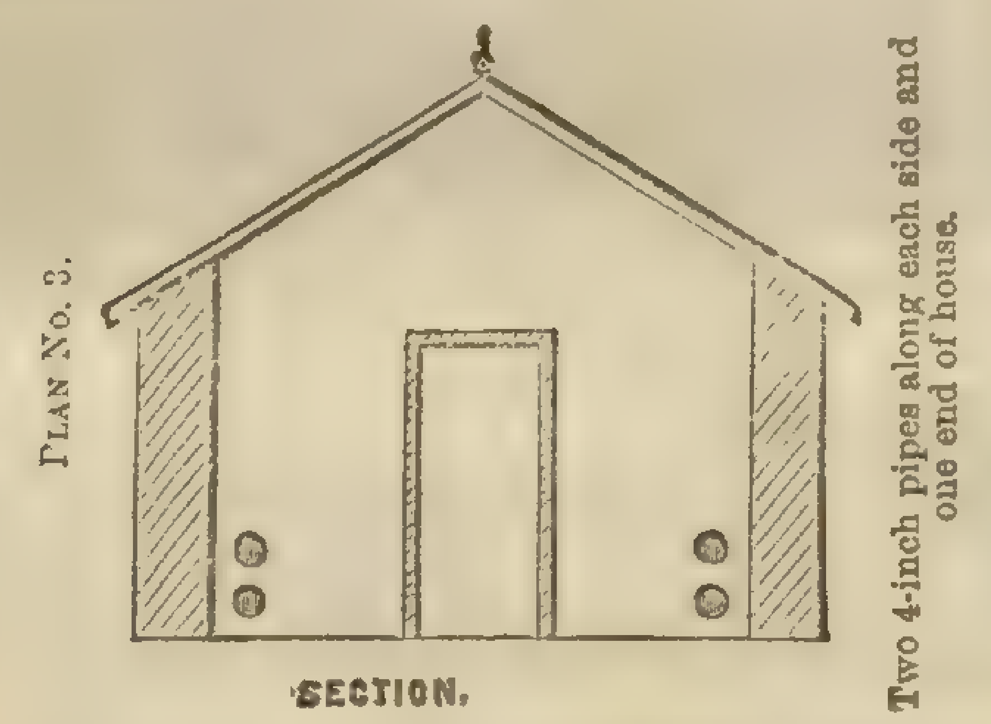
according to the following Plans, delivered Free to any Railway Station in England.



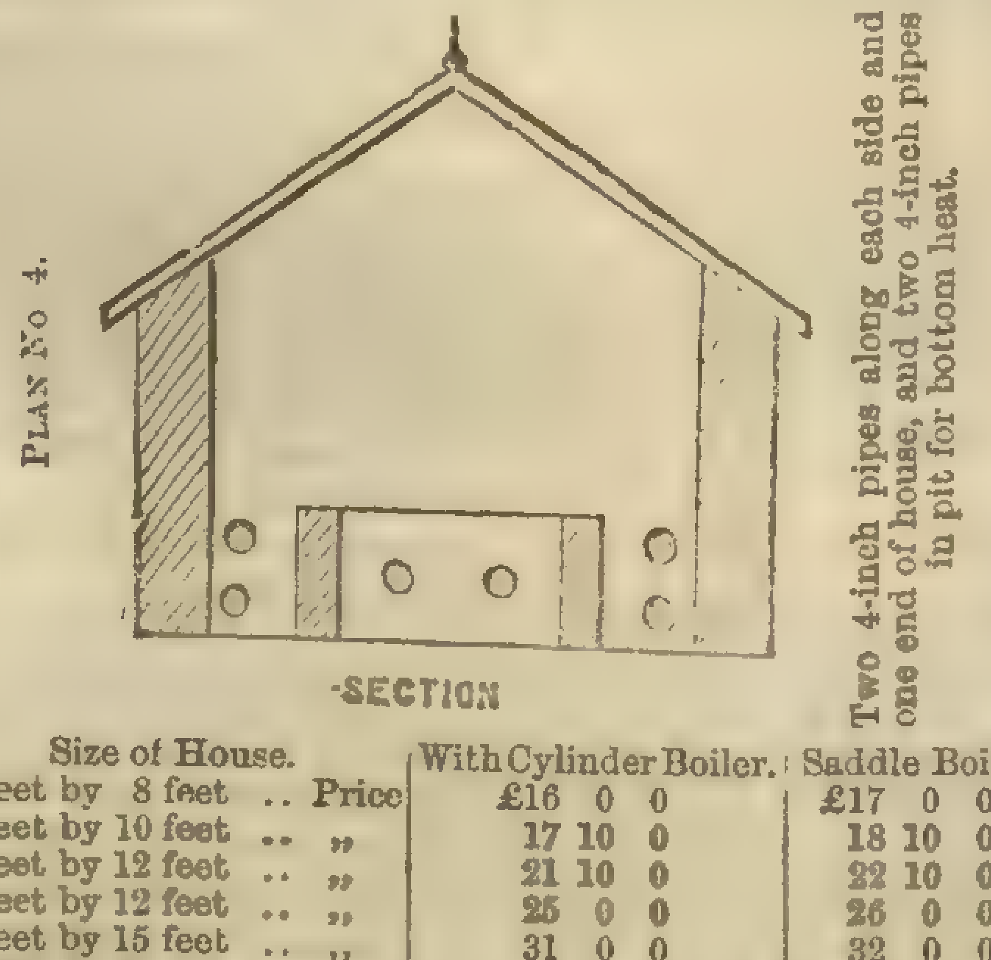
Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£8 0 0	£8 12 6
20 feet by 10 feet ..	„	8 10 0	9 0 0
25 feet by 12 feet ..	„	10 0 0	10 10 0
30 feet by 12 feet ..	„	11 10 0	12 0 0
40 feet by 15 feet ..	„	16 10 0	17 0 0
50 feet by 15 feet ..	„	18 10 0	20 0 0



Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£11 10 0	£12 0 0
20 feet by 10 feet ..	„	12 10 0	13 0 0
25 feet by 12 feet ..	„	14 10 0	15 0 0
30 feet by 12 feet ..	„	16 10 0	17 0 0
40 feet by 15 feet ..	„	22 0 0	23 0 0
50 feet by 15 feet ..	„	24 10 0	26 0 0



Size of House.		With Cylinder Boiler.	Saddle Boiler
16 feet by 8 feet ..	Price	£12 10 0	£13 0 0
20 feet by 10 feet ..	„	13 10 0	14 0 0
25 feet by 12 feet ..	„	16 10 0	17 0 0
30 feet by 12 feet ..	„	19 0 0	20 0 0
40 feet by 15 feet ..	„	24 10 0	25 10 0
50 feet by 15 feet ..	„	27 0 0	28 10 0



Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£16 0 0	£17 0 0
20 feet by 10 feet ..	„	17 10 0	18 10 0
25 feet by 12 feet ..	„	21 10 0	22 10 0
30 feet by 12 feet ..	„	25 0 0	26 0 0
40 feet by 15 feet ..	„	31 0 0	32 0 0
50 feet by 15 feet ..	„	33 10 0	35 0 0

The above prices include Boiler, strong Furnace-doors, Bars, Plate, Soot-doors, Damper, and Supply Cistern-pipes of 4-inch diameter, Elbows, &c.; all of the best quality.

Delivered free to any Railway Station in England. Terms: Nett Cash.

Estimates will be sent for the work fixed complete, or further particulars on application to

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Card.

SAMUEL N. McGERROW, GENERAL HORTICULTURAL BUILDER, Knotty Ash, near Liverpool.

Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

E. DENCH'S HORTICULTURAL WORKS, 152, King's Road, Chelsea, S.W., Manufacturer of every description of HORTICULTURAL BUILDINGS either in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without. HOT WATER APPARATUS Manufacturer.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, TUBULAR, and Elliptic, from 24*s.* each. Improved Boilers and Iron Stands to use without brickwork, 50*s.* each. Valves from 12*s.* 6*d.* each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. LYNCH WHITE'S, Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

Horticultural Buildings and Heating by Hot Water.

BURY AND POLLARD, PARK IRON WORKS, New Park Street, Southwark, S.E., Manufacturers of every description of Buildings for Horticultural Purposes, with their Improved CONICAL BOILER for heating the same, are prepared to undertake works of any magnitude, and refer among others to the celebrated range of Forcing Houses at Her Majesty's Gardens, Frogmore, and at Sir Robert Peel's, Drayton Manor, constructed under the superintendence of their Manager, Mr. JOHN JONES.

Further information forwarded on application.

Horticultural Works and Hot-Water Apparatus Manufactory,

Kensal Green, Harrow Road, London, W.

JOHN TAYLOR AND SON beg to call the attention of the nobility and gentry to the very superior manner in which they ERECT all kinds of CONSERVATORIES, VINERIES, GREENHOUSES, &c., combining every improvement with elegance of design and durability of materials and workmanship.

Their VENTILATING APPARATUS for the Fronts and Roofs of Houses has given the highest satisfaction. Churches, Chapels, Schools, Entrance Halls, Public Buildings, &c., heated with Hot-Water Apparatus in a most economical and efficient manner.

J. T. & SON have great pleasure in referring to numbers of the nobility and gentry by whom they are extensively engaged.

Greenhouses, Orchard-houses, and Conservatories.

H. FREEMAN'S HORTICULTURAL WORKS, Triangle, Hackney, London, N.E.: established 20 years. Good substantially-made GREENHOUSES, glazed, ready for fixing, 42 feet by 13 feet, 50*l.*; 21 by 13, 28*l.*; 12½ by 10, 15*l.* ORCHARD-HOUSES 10 per cent. cheaper. A large assortment kept. Estimates given for heating, or any branch in iron or wood.

Garden Engines and Syringes.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

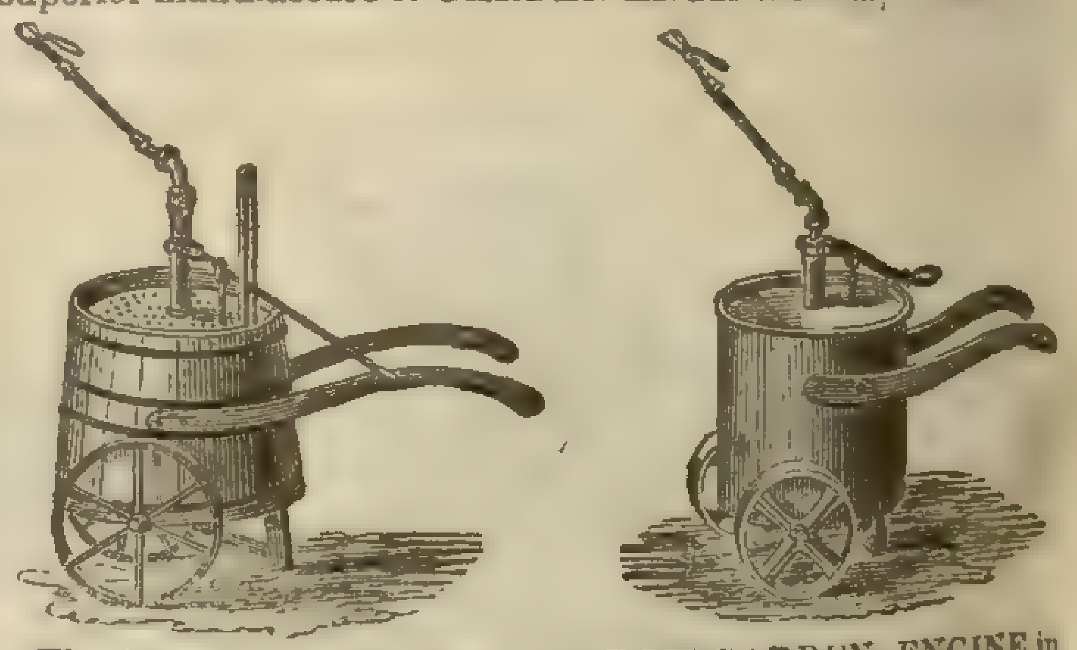


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

15 gallons .. £5 12 6 | 28 gallons .. £7 2 0

Fig. 599. Ditto GALVANIZED IRON TUB.

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15 0	£3 5 0	£3 15 0	£5 0 0	£5 18 0

Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. £1 8 0 each.
No. 2. Ditto ditto 1 2 6 „
Telescope Branch Pipe for ditto .. 0 10 0 „

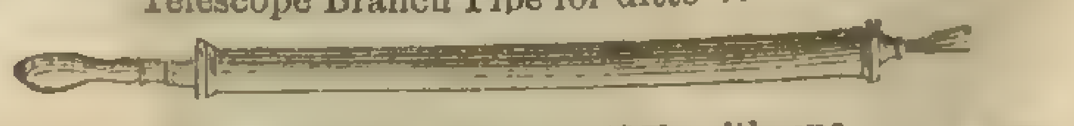


Fig. 619. Large GARDEN SYRINGE, with one rose and jet .. .. .. 11*s.* 6*d.* each
„ 620. Middle Ditto ditto 10 3 „
„ 621. Small Ditto ditto 9 0 „
„ 622. LADIES GARDEN SYRINGE, with do. 7 6 „

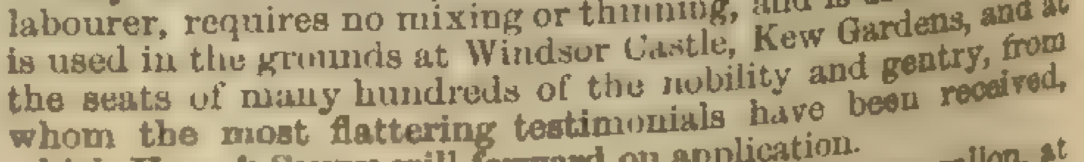


Fig. 623. READ'S SYRINGE, with two roses and one jet, 17*s.* 6*d.*
„ 624. READ'S SYRINGE, with one rose and jet, 15 0
„ 625. Improved ditto ditto large 14 0

Garden Engines and Syringes of J. TYLOR & SONS' manufacture kept in stock by Ironmongers and Seedsmen in every part of the United Kingdom.

J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon at the Manufactory, or 1*s.* 8*d.* per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

SAMUELSON'S
IMPROVED DOUBLE-ACTION HAYMAKING MACHINES,

REMARKABLE FOR THEIR SIMPLICITY, DURABILITY, AND EFFICIENCY. PRICE £13 13s. DELIVERED AT ANY RAILWAY STATION.

Many hundred Testimonials have been received from purchasers, of which the following is a specimen :—

Copgrove, near Boroughbridge, May 7, 1862.

Sir,—The Haymaker supplied to me last season worked to my entire satisfaction. Its effective spreading and light turning, together with its simple construction and non-liability to choke or derangement, are points in its favour that recommend themselves to all parties having any quantity of Hay to secure.

Yours respectfully (Signed) THOMAS INGLEDEW.

SAMUELSON & CO., BRITANNIA WORKS, BANBURY; 76, CANNON STREET WEST, LONDON;
12, PARLIAMENT STREET, DUBLIN; and at SHREWSBURY, YORK, STOCKTON, NEWCASTLE-ON-TYNE;
and of all respectable IMPLEMENT DEALERS and IRONMONGERS.

INTERNATIONAL EXHIBITION.
CLASS 9, OPEN COURT, EASTERN ANNEXE.

H. ORMSON

Most respectfully begs to call the attention of the Nobility, Gentry, &c., to the CONSERVATORY as above represented, which is now
ERECTED for EXHIBITION as a SPECIMEN of his ABILITY to DESIGN and BUILD such STRUCTURES ;
and which on inspection he flatters himself will be found to combine
NOVEL and BEAUTIFUL OUTLINE, CHASTENESS and ELEGANCE in DETAIL, with STRENGTH and LIGHTNESS of CONSTRUCTION.
The interior enrichment will also be found very beautiful, a View of which has appeared in the *Gardeners' Chronicle.*

***** THIS CONSERVATORY is for SALE.**

H. ORMSON *having a most complete Set of Steam Power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.*

ORCHARD HOUSES on Mr. RIVERS'S PLAN,

Fixed on Cast Iron Posts requiring no Brickwork. These houses will be found cheaper than those advertised by any other Builder. The prices given will include Cast Iron Posts and Fixing.

For ORMSON'S PATENT JOINTLESS TUBULAR BOILERS, see former Advertisements in the *Gardeners' Chronicle.*

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, HORTICULTURAL BUILDER TO HER MAJESTY,
AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,
STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

Glass for Garden Purposes.

JAMES PHILLIPS AND CO., 180, Bishopsgate Street Without, E.C., beg to hand their prices for

PROPAGATING GLASSES.

	Each—s.	d.		Each—s.	d.
2 inches diameter ..	0	3½	12 inches diameter ..	1	9
3 ,, ,, ..	0	4½	13 ,, ,, ..	2	0
4 ,, ,, ..	0	5½	14 ,, ,, ..	2	6
5 ,, ,, ..	0	6½	15 ,, ,, ..	3	0
6 ,, ,, ..	0	8	16 ,, ,, ..	3	6
7 ,, ,, ..	0	10	17 ,, ,, ..	4	0
8 ,, ,, ..	1	0	18 ,, ,, ..	5	0
9 ,, ,, ..	1	2	19 ,, ,, ..	6	0
10 ,, ,, ..	1	4	19 ,, ,, ..	6	0
11 ,, ,, ..	1	6	20 ,, ,, ..	7	0

HAND FRAMES.

	Each—s.	d.		Each—s.	d.
12 inches	6	0	18 inches	9	0
14 ,, ...	7	0	20 ,, ...	10	0
16 ,, ...	8	0	24 ,, ...	12	0

Painted and Glazed with 16 oz. Sheet Glass.
If Open at Top, 1s. extra.

CUCUMBER GLASSES.

24 inches long ..	2s.	0d.	16 inches long ..	1s.	4d.
22 ,, ,, ..	1	10	14 ,, ,, ..	1	2
20 ,, ,, ..	1	8	12 ,, ,, ..	1	0
18 ,, ,, ..	1	6	Made to any length.		

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, and every description of Glass for Horticultural purposes.

Glass.

THOMAS MILLINGTON, HORTICULTURAL WAREHOUSE, 87, Bishopsgate Street Without, London, E.C.
ESTABLISHED 1750.
NEW REDUCED TARIFF.

SMALL SHEET SQUARES.

Best. 2nds. 3rds. 4ths. } Per 100 feet
20s. 16s. 12s. 6d. 11s.

6 in. by 4 in.	9½ in. by 7½ in.	14 in. by 10 in.
6½ in. by 4½ in.	10 in. by 8 in.	15 in. by 10 in.
7 in. by 5 in.	11 in. by 9 in.	12 in. by 11 in.
7½ in. by 5½ in.	12 in. by 9 in.	13 in. by 11 in.
8 in. by 6 in.	13 in. by 9 in.	13½ in. by 11½ in.
8½ in. by 6½ in.	12 in. by 10 in.	
9 in. by 7 in.	13 in. by 10 in.	

Best. 2nds. 3rds. 4ths. } Per 100 feet
23s. 18s. 6d. 14s. 6d. 12s. 8d.

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 in. by 11 in.	17 in. by 12 in.	22 in. by 15 in.
17 in. by 11 in.	18 in. by 12 in.	24 in. by 15 in.
18 in. by 11 in.	22 in. by 12 in.	20 in. by 16 in.
13 in. by 12 in.	17 in. by 13 in.	20 in. by 17 in.
14 in. by 12 in.	23 in. by 13 in.	20 in. by 18 in.
15 in. by 12 in.	22 in. by 14 in.	

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers & others.

	Best.	2nds.	3rds.	4ths.	
16 oz.	22s. 0d.	18s.	15s. 0d.	12s. 6d.	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

0 in. by 12 in. | 20 in. by 13 in. | 20 in. by 14 in. | 20 in. by 15 in.

GLASS, cut according to size not on the List.
16 oz. 4ths. 1¾d. 2d. and 2½d. per foot.
,, 3rds. 2¼d. 2½d. and 3d. ,,
21 oz. 4ths. 2¾d. 3d. and 3½d. per foot.
,, 3rds. 3½d. 4d. and 4½d. ,,

Various thicknesses of Sheet Glass to the foot.

15 oz. 26 oz.
21 oz. 32 oz.

Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.
Genuine White Lead, 32s. p. cwt | Linseed Oil Putty, 8s. per cwt.
Anticorrosion Paint, 34s. ,, | Patent Dryers, 28s. to 42s. ,,
CRYSTAL GLASS SHADES. EBONY and GILT STANDS.
HARTLEY'S IMPROVED PATENT ROUGH PLATE.
Not accountable for Breakage.
SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

TO BE SOLD, a compact lot of GLASS, comprising Span-roof and Lean-to Pits, &c. in good condition, with Hot-water Apparatus complete.
For particulars, apply to A. R., 47, Baker Street, W.

Grass Mowing Machines.

BURGESS AND KEY'S GRASS MOWING MACHINES are constructed to cut the heaviest crops of Grass, both the wheels being geared, and sufficient weight in the machine to give grip on the ground. As there is every prospect of the Grass being heavy this season, B. & K. draw special attention to the following Extract from the Report of the Engineer of the Royal Agricultural Society of the trial of Mowers at Leeds: "but there is reason to fear that the Machine [WOOD'S] would be too light for heavy crops."

"BURGESS & KEY'S was strong, well made, and suitable for the cutting of heavy crops."

Price of BURGESS & KEY'S Mower, 25l. Combined Reaper and Mower, 30l.

BURGESS & KEY, 95, Newgate Street, London, E.C.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.—May 31.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

TANNED NETTING for the Protection of Fruit Trees, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Cotton Netting, Tiffany, Scrim Canvas for Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c.

Be particular, JOHN EDGINGTON & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

TANNED NETTING at Reduced Prices.—200 square yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvas for Wall Fruit, Greenhouse Shades, and Tulip Covers.

Address in full, FREDERICK EDGINGTON, Marquee, Flag, and Banner Manufacturer, Thomas Street, Old Kent Road, London, S.E.

TANNED GARDEN NETTING for preserving Seed Beds, Fruits, Strawberries, from frost, blight, birds, &c., and as a Fence for fowls, &c. 1 yard wide, 1½d.; 2 yards, 3d.; 3 yards, 4½d.; and 4 yards, 6d. per yard, in any quantity, may be had at CHAS. WRIGHT'S, 376, Strand, W.C.

GREENHOUSE and FLOWER-POT STICKS VARNISHED:—1 foot, 3d.; 1½, 4d.; 2, 5d.; 2½, 7d.; 3, 10d.; 4, 1s. 6d. per dozen. DAHLIA STICKS VARNISHED, per dozen:—3 feet, 1s. 6d.; 4, 2s. 3d.; 5, 3s.; 6, 3s. 6d. An allowance to Nurserymen.

NETTING for Fruit Trees, Seed Beds, Ripe Strawberries, &c. TANNED NETTING for protecting the above from frost, blight, birds, &c., 2 yards wide, 3d. per yard, or 100 yards, 20s.; 4 yards wide, 6d. per yard, or 50 yards, 20s. NEW TANNED NETTING, suited for any of the above purposes, or as a Fence for Fowls, 2 yards wide, 5d. per yard; 4 yards wide, 10d. per yard; 6 yards wide, 1s. 3d. per yard; ¾-inch mesh 4 yards wide, 1s. 4d. per yard.

Can be had in any quantity of EATON & DELLER, 6 and 7, Crooked Lane, London Bridge, E.C.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the COLD WINDS & MORNING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. 1s. 6d. per yard run.
Four yards wide .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.

Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.

ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

Patronised by H.R.H. the late Prince Consort.

GREENING AND CO.'S IRON WIRE FENCES, manufactured by Patent Machinery, possess the following advantages:—

1st. Are easily fixed by unskilled labourers.
2nd. Require few and inexpensive supports.
3rd. Are ornamental in appearance.
4th. Have increased strength from their peculiar construction.
5th. Are but half the price of similar hand-made Fences.

Upwards of 40 varieties are made, the principal ones being:—

No. 1 A variety.—Cattle and Sheep Fence, 3ft. 9in. high, 1s. per yard.
No. 7 B variety.—Sheep folding Fence, 3ft. high, 9d. per yard.
No. 4. variety.—Hare and Rabbit-proof Fence.
No. 11. variety.—Poultry and Chicken-proof Fence.
No. 16. variety.—Italian pattern Garden Fence.
No. 20. variety.—An admirable substitute for the old-fashioned wire netting.

G. & Co. will be happy to forward, without charge, an explanatory Circular of the principal varieties. Their enlarged Catalogue of Fences and Gates post free on receipt of three stamps.

Address GREENING & COMPANY, Victoria Works, Oxford Street, Manchester.

Prices Reduced.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.

WIRE STRAND CABLE FENCING

(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1s. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.

Galvanised, 24 ins. wide, 2-inch mesh, 4d., 4½d., and 6½d. per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 2¾d., 3¾d., and 5½d. per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.

Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co., 2, Basinghall Buildings, Leeds.

Horticultural Valuer.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), begs to offer his services as above. 28, Priory Road, Wandsworth Road, S.

ROYAL HORTICULTURAL SOCIETY'S GARDEN. — Fellows and others requiring the COLOURED PATTERNS and DESIGNS for EMBROIDERY, as published in the *Gardeners' Chronicle*—the same as those seen at the Garden—may have them carried out by JOHN GRIBBIN, who under Mr. Nesfield executed the Embroidery and Parterres in question.—30, Eastbourne Terrace, Paddington, W.

Important to Seedsmen and Nurserymen.

SACKS AND BAGS.

JAMES T. ANDERSON, SACK and BAG MAKER, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), continues to supply SEED BAGS at the following low prices:—

2 Bushel Bags..8s. 9d. per doz. | ½ Bushel Bags..4s. 9d. per doz.
1 Bushel Bags..6s. 3d. ,, | Peck Bags ....3s. 6d.

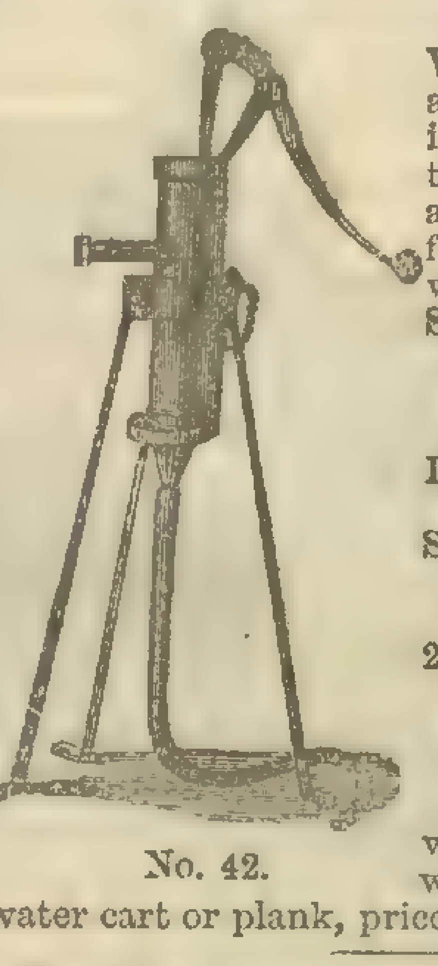
Coarser Bags much cheaper.

Bushel Grass Bags at 1s. each | 4 Bushel Sacks at 1s. each.

All orders promptly executed.

JOHN WARNER AND SONS, BELL and BRASS FOUNDERS to HER MAJESTY, HYDRAULIC ENGINEERS, BRAZIERS, &c., 8, Crescent, Cripplegate, London, E.C.

WARNER'S IMPROVED LIQUID MANURE, or GENERAL PORTABLE PUMP.

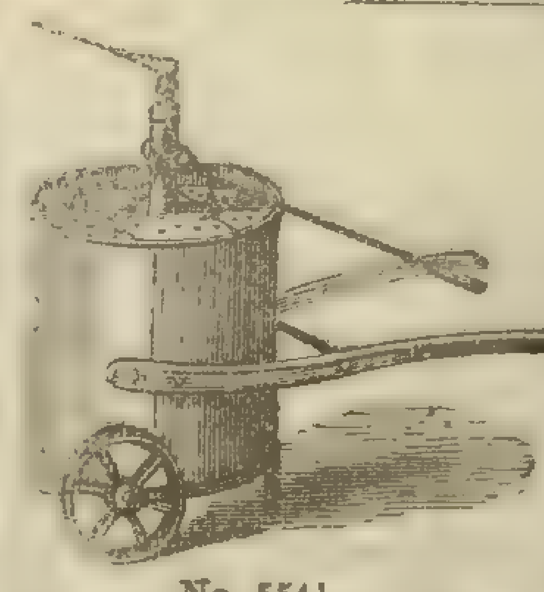


No. 42.

This Pump is fitted with WARNER'S Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

	£	s.	d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2	15	0
If fitted with Barrel of Planished Copper	3	4	0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2	9	0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires in either 10, 12, or 15 feet lengths .. per foot	0	2	[illegible]

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2l. 5s.



No. 554½.

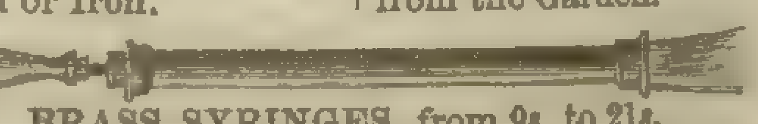
No. 579.

GALVANISED IRON TUB GARDEN ENGINE, with WARNER'S Registered Spreader, is strongly recommended for durability and low price, viz.:—

10 Gallons ..	£2	15	0
16 ,, ..	3	15	0
24 ,, ..	5	0	0

Larger sizes may be had in either Wood or Iron.

WARNER'S SWING WATER BARROW, [illegible] gallons, 2l. 10s.; 20 gallons, 2l [illegible] is intended for all large establishments where much watering is done by the Watering Pot. By its use the Gardener will save much time and labour, particularly where the Tank, Pond, or Pump is at a distance from the Garden.



BRASS SYRINGES, from 9s. to 21s.

SPAREY'S PATENT FUMIGATOR for the Destruction of Mildew, Red Spider, &c., 25s.

May be obtained of any Ironmonger or Plumber in Town or Country, at the above Prices, or of the Patentees and Manufacturers,

JOHN WARNER & SONS, 8, Crescent, Cripplegate, London, E.C.
Engravings sent on application.

BURROW'S LANDSCAPE GLASSES, for the Field, the Opera, and the Sea, 3½ and 6 guineas.

BURROW'S TARGET TELESCOPE for the Long Ranges, 25s. and 30s., free by post.

BURROW'S NEW POCKET BAROMETER, for Travelling, 4 guineas.

Full particulars on application to W. & J. BURROW, Great Malvern.

*** International Exhibition, Class 13, North Gallery.—A SHOW CASE, and Agent in attendance.

London: B. ARNOLD, 72, Baker Street, W.; and WALES & McCULLOCH, 56, Cheapside, E.C.

UNRIVALLED LOCK STITCH SEWING MACHINES, Manufactured by the WHEELER & WILSON MANUFACTURING COMPANY, with recent improvements and additions, Crystal Cloth Presser, Binder, Corder, Hemmer, &c. Universally preferred above all others for Stitching, Hemming, Felling, Binding, Cording, Gathering, Embroidering, and every other description of household or manufacturing work. Is simple, durable, and elegant; makes 500 to 2000 Stitches a minute which will not ravel, and proficiency is readily acquired. Instruction gratis to every purchaser. In writing for an Illustrated Prospectus, which will be forwarded post free, please to state where this Advertisement has been seen.

Office and Sale Room, 139, Regent Street, London, W.
Manufacturers of FOOT'S PATENT UMBRELLA STAND.

METCALFE, BINGLEY, AND CO.'S NEW PATTERN TOOTH BRUSHES, Penetrating Unbleached Hair Brushes, genuine Smyrna Sponges, and every description of Brush and Comb and Perfumery for the toilet. METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box.

THE FAIRY BOUQUET.—This delicious perfume was originally discovered by one of Titania's principal attendants. It is made from wild flowers, culled by fairy hands from "the bank whereon the wild Thyme grows." The authenticity of the recipe is vouched for with the same degree of certainty as is the existence of Titania herself. It is now prepared solely by METCALFE, BINGLEY, & Co., Perfumers, &c., 130 B and 131, Oxford Street, London, W.—In bottles, 2s., 3s. 6d., and 5s. each.

International Exhibition.

FLORA'S FOUNTAIN.

BREIDENBACH, of New Bond Street, requests Visitors to the Exhibition to test his Wood Violet and other Perfumery.

The most beautiful preparations for the Toilet, Perfumery, &c., at the Warehouses of

H. BREIDENBACH,

157B, New Bond Street, London, W.

*** Samples for Sale at the International Bazaar.

SAUCE.—LEA AND PERRINS beg to caution the Public against Spurious Imitations of their world-renowned

WORCESTERSHIRE SAUCE.

Purchasers should

ASK FOR LEA & PERRINS' SAUCE,

Pronounced by Connoisseurs to be

"THE ONLY GOOD SAUCE."

*** Sold Wholesale and for Export, by the Proprietors, Worcester; Messrs. CROSSE & BLACKWELL, Messrs. BARCLAY & Sons, London, &c., &c., and by Grocers and Oilmen universally.

COLLARS, Paper and Cloth (Reversible), 6d. per dozen or 6s. per gross, post free.

Patentee, ARTHUR GRANGER, 308, High Holborn, London, W.C. Some Job Collars at half price.

THE BEST SHOW of IRON BEDSTEADS in the KINGDOM is WILLIAM S. BURTON'S.—He has FOUR LARGE ROOMS devoted to the exclusive show of Iron and Brass Bedsteads and Children's Cots, with appropriate Bedding and Bed Hangings. Portable Folding Bedsteads, from 11s.; Patent Iron Bedsteads, fitted with dovetail joints and patent sacking from 14s. 6d.; and Cots, from 15s. 6d. each; handsome Ornamental Iron and Brass Bedsteads, in great variety from 2l. 13s. 6d. to 20l.

THE PERFECT SUBSTITUTE for SILVER.—The REAL NICKEL SILVER, introduced more than 20 years ago by WILLIAM S. BURTON, when PLATED by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver. A small useful set, guaranteed of first quality for finish and durability, as follows:—

	Fiddle or Old Silver Pattern.			Thread or Brunswick Pattern.			Lily Pattern.			King's or Military Pattern.		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
12 Table Forks	1	13	0	2	4	0	2	10	0	2	15	0
12 Table Spoons	1	13	0	2	4	0	2	10	0	2	15	0
12 Dessert Forks	1	4	0	1	12	0	1	15	0	1	17	0
12 Dessert Spoons ..	1	4	0	1	12	0	1	15	0	1	17	0
12 Tea Spoons	0	16	0	1	2	0	1	5	0	1	7	0
6 Egg Spoons, gilt bowls..	0	10	0	0	13	6	0	15	0	0	15	0
2 Sauce Ladles	0	6	0	0	8	0	0	9	0	0	9	6
1 Gravy Spoon	0	6	6	0	10	0	0	11	0	0	12	0
2 Salt Spoons, gilt bowls..	0	3	4	0	4	6	0	5	0	0	5	0
1 Mustard Spoon, gilt bowl	0	1	8	0	2	3	0	2	6	0	2	6
1 Pair of Sugar Tongs ..	0	2	6	0	3	6	0	4	0	0	4	6
1 Pair of Fish Carvers ..	1	4	0	1	7	6	1	10	0	1	12	0
1 Butter Knife	0	2	6	0	5	6	0	6	0	0	7	0
1 Soup Ladle	0	10	0	0	17	0	0	17	0	1	0	0
1 Sugar Sifter	0	3	3	0	4	6	0	5	0	0	5	6
Total	9	19	9	13	10	3	14	19	6	16	4	0

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Ivory Handles.	Table Knives, per dozen.		Dessert Knives, per dozen.		Carvers, per pair.	
3½-inch ivory handles..	12s.	6d	10s.	0d	4s.	3d
3½-inch fine ivory handles	15	0	11	6	4	3
4-inch ivory balance handles	18	0	14	0	4	6
4-inch fine ivory handles	24	0	17	0	7	3
4-inch finest African ivory handles ..	32	0	26	0	11	0
Ditto, with silver ferrules	40	0	33	0	12	6
Ditto, carved handles, silver ferules ..	50	0	43	0	17	6
Nickel electro-silver handles, any pattern	25	0	19	0	7	6
Silver handles of any pattern	84	0	54	0	21	0
Bone and Horn Handles.—Knives and Forks per dozen.						
White bone handles	11s.	0d	8s.	6d	2s.	6d
Ditto balance handles	21	0	17	0	4	6
Black horn, rimmed shoulders	12	0	9	0	3	0
Ditto very strong riveted handles	17	0	14	0	4	0

The largest stock in existence of Plated Dessert Knives and Forks, in cases and otherwise, and of the new Plated Fish Carvers.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 500 Illustrations of his illimited Stock of Sterling Silver and Electro Plate, Nickel Silver, and Britannia Metal Goods, Dish Covers, Hot Water Dishes, Stoves, Fenders, Marble Chimneypieces, Kitchen Ranges, Lamps, Gaseliers, Tea Trays, Urns and Kettles, Clocks, Table Cutlery, Baths, Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Room, Cabinet Furniture, &c., with Lists of Prices, and Plans of the 20 large Show Rooms, at 39, Oxford Street, W.; 1, 1A, 2, 3 and 4, Newman Street; 4, 5, and 6, Perry's Place; and 1, Newman's Mews, London, W.C.

TWO or THREE of PARR'S LIFE PILLS, taken no matter at what period of the day, will remove the apathetic feeling which often oppresses both mind and body, and, giving the ascendancy to a cheerful spirit over dark and desponding anticipations, will make the heart sit lightly on its throne, and, in short, induce us to feel "jolly."

Parr's Life Pills may be obtained of any Medicine Vendor, in boxes, 1s. 1½d., 2s. 9d., and in Family Packets, 11s. each.

DINNEFORD'S PURE FLUID MAGNESIA has been during 25 years emphatically sanctioned by the medical profession, and universally accepted by the public, as the best remedy for acidity of the stomach, heartburn, headache, gout, and indigestion, and as a mild aperient for delicate constitutions, more especially for ladies and children.—It is prepared in a state of perfect purity and uniform strength only by DINNEFORD & Co., 172, New Bond Street, London, and sold by all respectable Chemists throughout the world.

FOWLER'S

STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

TWO HUNDRED SETS

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STEAM PLOUGHING and CULTIVATING APPARATUS

HAVE NOW BEEN SENT OUT BY

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD.

Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

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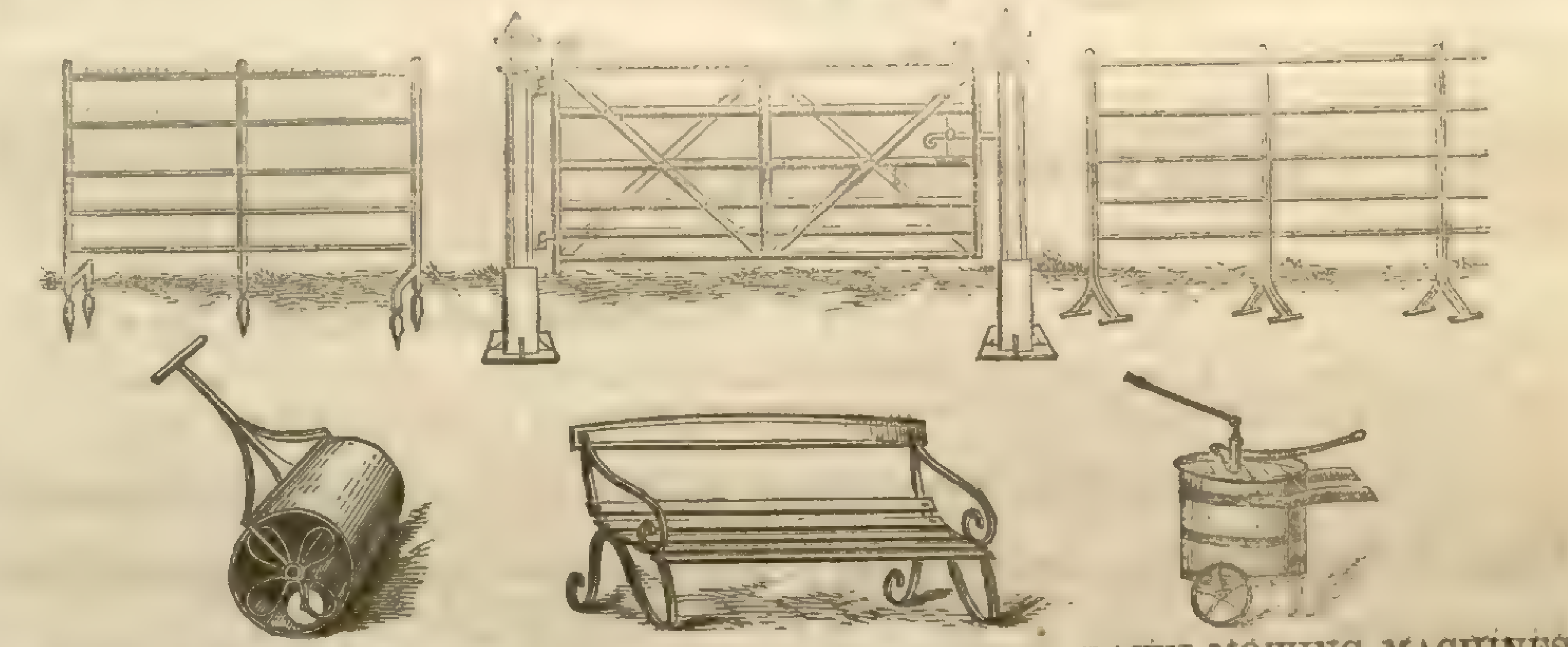
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, AND RAILING OF CAST AND WROUGHT IRON COMBINED,

IN VARIOUS STYLES.



IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES.

WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes.

VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.

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HANDSOME BRASS and IRON BEDSTEADS.—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for home use and for tropical climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.

HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

WHITE and SOUND TEETH are indispensable to personal attraction, and to health and longevity, by the proper mastication of food. ROWLANDS' ODONTO, or Pearl Dentifrice, compounded of Oriental ingredients, is of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in giving a delicate fragrance to the Breath. It eradicates Tartar from the Teeth, removes spots of incipient decay, and polishes and preserves the enamel, to which it imparts a pearl-like whiteness. Price 2s. 9d. per box.

Sold at 20, Hatton Garden, E.C.; and by Chemists and Perfumers. Ask for "ROWLANDS' Odonto."

BLACK KERRY CATTLE.—Select animals of this valuable and small breed can be delivered in Cork by RICHARD G. CAMPION, Esq., Holly Hill, Rathcormac, who always holds a large stock of the same.

To Florists, Nurserymen, and Others.

TO BE LET, on the Mildmay Park Estate, a large PLOT of GROUND well suited for the above, with good Residence, Gateway Entrance, &c.

For particulars apply to Mr. CHAPPELL, Auctioneer, &c., 167, City Road, E.C.

Mansfield.—To Seedsmen, Gardeners, and Others.

TO BE SOLD, by Private Contract, the BUSINESS in Mansfield recently carried on by Mr. Search, Seedsman. The Shop Fixtures to be taken at a valuation; and also an excellent and profitable Garden, containing about 2½ Acres, in a most thriving condition, well stocked with Fruit Trees.

For further particulars apply to Mr. COOPE, Solicitor, Nottingham; Mr. J. HARRIS, Official Assignee; and of POTT & NEALE, Auctioneers, Nottingham.

Sales by Auction.

7000 Bedding and other Plants.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Mile End Nursery, Bow Road, Middlesex, E. (near the Bow Railway Station, on the North London Line), on THURSDAY, June 5, at 12 o'Clock, 7000 BEDDING PLANTS of the usual ornamental varieties, with a fine collection of GREENHOUSE PLANTS in bloom.

May be viewed prior to the Sale. Catalogues had on the Premises; and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION at the Mart, Bartholomew Lane, E.C., on FRIDAY, June 6, at 12 o'Clock, fine Show, French, and Scarlet GERANIUMS, ERICAS, CALCEOLARIAS, FUCHSIAS, and other Plants in bloom, &c., Dwarf and Climbing ROSES in Pots, RHODODENDRONS, KALMIAS, &c., with a selected assortment of ORNAMENTAL PLANTS for Bedding.

On View the Morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone.

Imported and Established Orchids, Ferns, Stove Plants, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, June 7, at half-past 12 o'Clock precisely, an Importation of ORCHIDS from India, consisting of choice Dendrobiums, Aerides, Cypripediums, Cymbidiums, &c.; some Rare FERNS, a small Collection of Established ORCHIDS, also about 200 Choice STOVE and GREENHOUSE PLANTS, the property of a gentleman, consisting of Begonias, Caladiums, Ferns, &c.

May be viewed on the Morning of Sale; and Catalogues had

GREEN'S

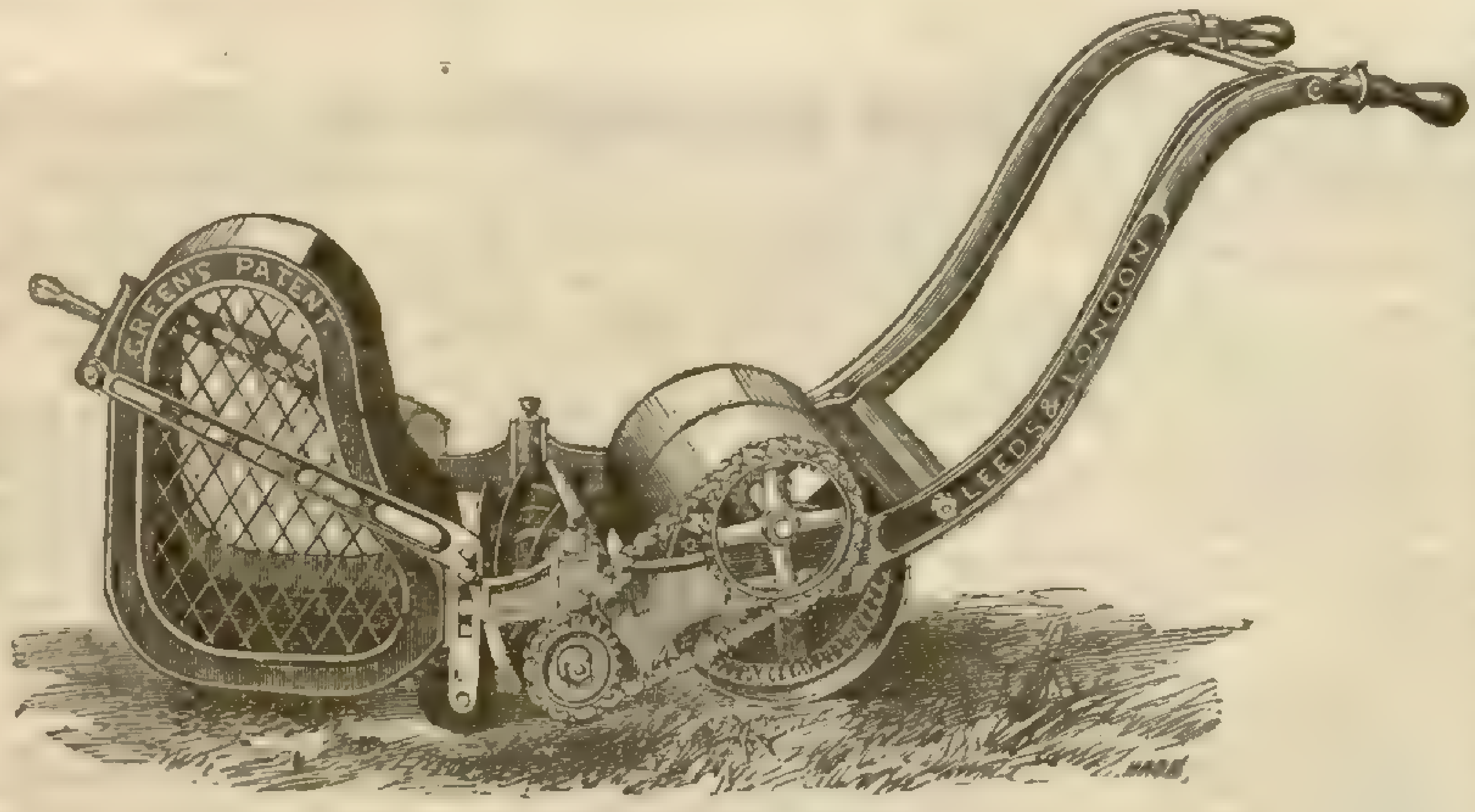
LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THOMAS GREEN can with confidence state that he has succeeded in bringing forward for the ensuing season a Machine which is so novel in its character that any person, however unskilled, is enabled to use it with confidence and ease; and by its thoroughly mechanical construction is pronounced by practical men to be the *ne plus ultra* of perfection. Every improvement that has suggested itself from past experience has been put to practical test, and the results are that the Machines for which Her Majesty's Royal Letters Patent *have recently been obtained* are immeasurably superior to anything of the kind ever brought before the Public. They combine all that efficiency and simplicity can express, and are calculated



to keep Lawns in the highest state of perfection, which cannot be equalled by any other means. They are adapted both in size and price to the very smallest plots, as well as Lawns acres in extent. Since their introduction the sale of these Machines has more than doubled each succeeding year, and has now attained *the largest sale of any Machine "extant;"* have proved to be the best, having carried off *every Prize* that has been given in all cases of competition. They are made from the best materials, and of superior workmanship; are delivered *Carriage Free* to all the principal Railway Stations and Shipping Ports in England; *are warranted to give satisfaction*, and if not approved can be at once returned, if sent carriage free to Leeds.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0	£8 15 0
To Cut 20 inches	8 0 0	9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0	£9 17 6
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To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

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To Cut 30 inches	£20 0 0	£21 10 0
To Cut 36 inches	23 0 0	24 16 0
To Cut 42 inches	26 0 0	28 2 0
To Cut 48 inches	29 0 0	31 8 0

Leather Boots for Horse, per set, £1 4*s.*

Donkey and Pony Machines, including Box of Requisites & Traces.

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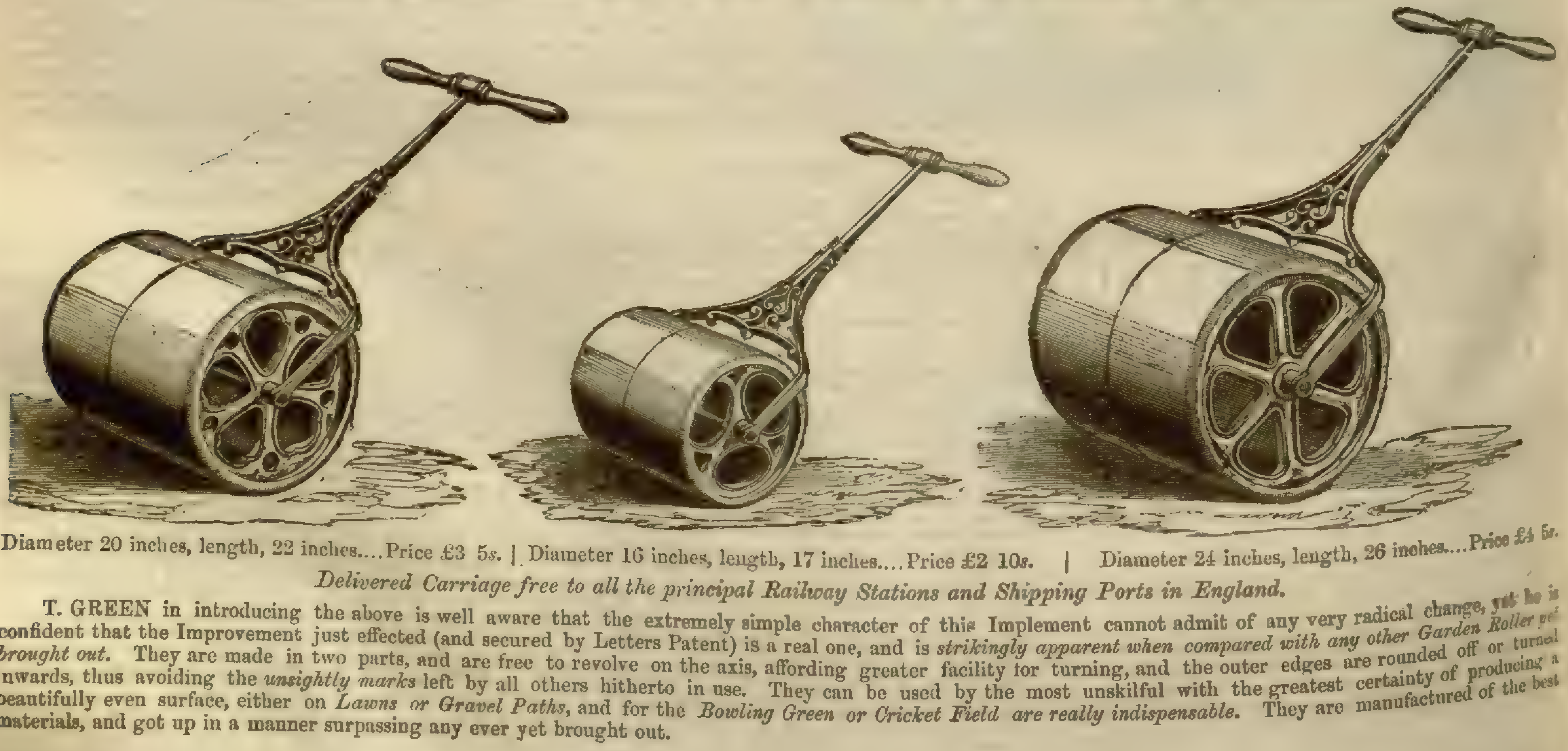
To Cut 24 inches	£11 10 0	£12 10 0
To Cut 26 inches	12 10 0	13 12 0
To Cut 30 inches	16 14 0	18 0 0

Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length, 22 inches....Price £3 5*s.* | Diameter 16 inches, length, 17 inches....Price £2 10*s.* | Diameter 24 inches, length, 26 inches....Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is *strikingly apparent when compared with any other Garden Roller yet brought out.* They are made in two parts, and are free to revolve on the axis, affording greater facility for turning, and the outer edges are rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green or Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, in the Parish of St. Pancras, in the Co. of Middlesex, and FREDERICK MULLETT EVANS, of No. 11, Bouverie St., in the Precinct of Whitefriars, City of London, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St Paul's, Covent Garden, in the said Co.—SATURDAY, May 31, 1862.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 23.—1862.] SATURDAY, JUNE 7. Price Fivepence. STAMPED EDITION, 6d.

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HORTICULTURAL GREAT SHOW, WEDNESDAY, June 11. The Gardens will not be open till One o'Clock.

ROYAL HORTICULTURAL SOCIETY'S GREAT SHOW, JUNE 11. The Garden will be open at One o'Clock. Visitors cannot be admitted, either from the Exhibition to the Garden, or to the Exhibition through the Garden, before that hour.

ROYAL HORTICULTURAL SOCIETY'S GREAT SHOW, WEDNESDAY, June 11, at South Kensington. Open at One o'Clock. Bands of the 1st Life Guards, Royal Engineers, and another regiment, commence at Two o'Clock. Admission 7s. 6d. each, or by Tickets previously purchased, 5s. each, at the Garden, and of the principal Librarians, Music-sellers, &c. Visitors can pass under cover from the Exhibition or Garden Entrances to the Show.

EXHIBITION of HORTICULTURAL IMPLEMENTS, GARDEN POTTERY, &c., at the ROYAL HORTICULTURAL SOCIETY'S GREAT SHOW, WEDNESDAY, June 11.

ROYAL HORTICULTURAL SOCIETY.—NOTICE.—The Council have fixed the WEDNESDAY between Epsom and Ascot Races, to be the guiding day for their Great Shows in 1863. One of these will be held on that day, and others on WEDNESDAYS, not nearer it than 14 days.
ANDREW MURRAY,
South Kensington, June 6. Assistant Secretary.

ROYAL BOTANIC SOCIETY, REGENT'S PARK, N.W.
The EXHIBITION of the AMERICAN PLANTS will take place on MONDAY next, June 9. Tickets to be obtained at the Gardens only, by vouchers from Fellows or Members of the Society, price 5s., or on the Exhibition day, 7s. 6d. each.
The Bands at 2 o'clock.
The next GENERAL EXHIBITION of PLANTS, FLOWERS, and FRUIT, will take place on WEDNESDAY, June 18.

TUNBRIDGE WELLS HORTICULTURAL SOCIETY.—GRAND FLOWER SHOW and MUSICAL PROMENADE in the grounds adjoining the Calverly Park Hotel, will take place (under especial patronage) on FRIDAY, July 4. Prizes open to all England.
The full Band of the Coldstream Guards will be in attendance.
Schedules of Prizes may be obtained of the Secretary,
Mr. E. F. LOOF, 8, Parade, Tunbridge Wells.

GRAND HORTICULTURAL FETE and ROSE SHOW in connection with the Exhibition of the NORTHAMPTONSHIRE AGRICULTURAL SOCIETY in BURGHLEY PARK, STAMFORD, on THURSDAY, July 17.
The Premiums offered amount to 200l., and are open to all England.
The Schedule, with Rules, &c., may be had upon application to Messrs. LAXTON & HEWITT, Hon. Secs., Stamford.

THE BIRMINGHAM ROSE SHOW and EXHIBITION of HORTICULTURAL IMPLEMENTS and GARDEN ORNAMENTS (Open to the United Kingdom), will be held in the Town Hall, Birmingham, on TUESDAY and WEDNESDAY, July 1 and 2.
Entries close for the Implements and Ornaments on June 18, and for Roses on June 25.
Prize Lists and Regulations may be had on application to the Hon. Secretaries, at the *Midland Counties Herald* Office, Birmingham.

Royal Botanic Gardens, Regent's Park.
JOHN WATERER has the pleasure to announce that his ANNUAL DISPLAY of HARDY SCARLET and other RHODODENDRONS, AZALEAS, &c, is now on view at the above Gardens; the Plants are now in fine bloom and will continue in perfection throughout the month of June.
Orders of admission are granted by Members of the Botanic Society, or by applying to the Advertiser at the above address.
The Plants at the Nursery are also in full bloom.
American Nursery, Bagshot, Surrey, near Sunningdale Station, South Western Railway.

WM. PAUL'S NURSERIES open to the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London. Every garden requisite, from the commonest to the choicest, at reasonable prices.
CATALOGUES free by post.
Nurseries and Seed Warehouse, Waltham Cross, N.

To Gardeners and Florists.
FOR SALE, about 3 Tons Weight of BARK, suitable for tying up Fruit, Flowers, Vegetables, &c., 20s. per cwt. About 6 Tons Weight of TOBACCO DUST MANURE for destroying Insects, &c., 20l. per Ton.
Apply to Mr. JOHN STOKES, Wholesale Hardwareman, 49, Kent Street, Borough, London, S.E.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

Calceolaria, Cineraria, and Primula.
BUTLER AND McCULLOCH respectfully beg to offer the following Seeds, saved from Collections containing only the Choicest strains:—
CALCEOLARIA, 1s., 1s. 6d., and 2s. 6d. per packet.
CINERARIA, 1s., 1s. 6d., and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, 1s., 1s. 6d., and 2s. 6d. per packet.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.

Choice Calceolaria, per pkt. 1s.	Choice Cineraria, per pkt. 1s.
,, Primula ,, .. 1s.	,, Picotee ,, .. 1s.
,, Carnation ,, .. 1s.	,, Pelargonium ,, .. 1s.

ILLUSTRATED GUIDE to the FLOWER GARDEN, 2s. 6d.

TWELVE of the Finest NEW PERPETUAL ROSES (sorts that have not yet flowered in English Gardens) for Two Guineas.
RICHARD SMITH, Nurseryman, Worcester.

New Roses of 1862.
PAUL AND SON have now ready their usual fine Plants of the finest Novelties of the season. DESCRIPTIVE LIST on application.
"Old" Cheshunt Nurseries, Herts.

Dwarf Roses in Pots for Bedding.
WM. WOOD AND SON are now daily sending out Hundreds of ROSES in Pots for Bedding. Early orders are respectfully solicited.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

JAMES BURLEY'S SPRING CATALOGUE of new shrubby CALCEOLARIAS, PELARGONIUMS, new ROSES, and BEDDING PLANTS is now ready, and will be forwarded post free on application.
Nursery, Limpsfield, Surrey.

New Chrysanthemums, Hardy Variegated Plants, &c.
JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.
Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Pæonies, Iris, and Pyrethrums.
JOHN SALTER'S extensive Collections of these splendid flowers are NOW in BLOOM, and may be seen every day except Sunday.
Versailles Nursery, William Street, near Hammersmith Turnpike, W.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize plants, 1s., 1s. 6d., and 2s. 6d. per packet. Reference given. Stamps taken.
G. KNIGHTS, Whitton, Ipswich.

CHEAP BEDDING PLANTS.—One hundred Strong Plants (in pots) of all the leading kinds, including GERANIUMS, VERBENAS, CALCEOLARIAS, GAZANIAS, &c., for 17s. 6d.
Post Office Orders payable at Castle Hedingham, in favour of W. DILLISTONE, Munro Nursery, Sible Hedingham, Halstead, Essex.

J. IVERY AND SON'S Collection of New AZALEAS is NOW in BLOOM, and may be seen (Gratis) at their Dorking Nursery.

Azalea indica.
J. IVERY AND SON beg to inform their Patrons and the Public that their NEW PRICED and DESCRIPTIVE CATALOGUE of the above is now published, and will be forwarded post free on application.
Dorking, Surrey.

AZALEA INDICA, now in full bloom; a quantity of large and small specimens of all the best sorts, at H. LANE & SON'S Nurseries, Great Berkhampstead, Herts.

Vines in Pots.
H. LANE AND SON have to offer a large quantity of strong VINES in POTS, well set with Fruit, many of them with two to seven bunches.
Also a fine lot of Dwarf ROSES in POTS, suitable for immediate bedding. All orders shall have prompt attention.
The Nurseries, Great Berkhampstead, Herts.

Vines from Eyes.
WANTED, 60 MUSCAT of ALEXANDRIA and about 80 BLACK HAMBURGH VINES. They must be from Eyes and good strong Canes three years old.
Please state where to be seen and the lowest cash price to F. C. B., 19, Harp Lane, Tower Street, City, E.C.

TO BE SOLD, Cheap, 60 FRUITING and 30 Large SUCCESSION PINE PLANTS, clean and healthy. 2s. 6d. to 6s. each.
JOHN FLINTHAM, Nurseryman, Rotherham, Yorkshire.

ORDER EARLY.—GEORGE GLENNY, Jun. (41, Church Street, Chelsea, S. W.), has a few packets of his SELECT ANNUALS left (for immediate Sowing) at 2s. 6d.; or Twelve BIENNIALS and PERENNIALS (for sowing this year to bloom next), 2s. 6d. Also choice CALCEOLARIA, CINERARIA, and PRIMULA, in 1s., 2s., and 3s. packets. SEED LIST for one stamp.

Good Seeds, Carriage Free.
SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

The Swede that never Mildews.
SUTTON'S CHAMPION SWEDE, the heaviest and most certain cropper—quite hardy. Fresh seed, 1s. per lb., or cheaper by the bushel (carriage free).
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

Rape Seed for Sowing.
CHARLES SHARPE AND CO., SEED MERCHANTS, Sleaford, can offer the above of fine quality.
Sample and price to the Trade on application.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3s. per lb., or 16l. per cwt.

Agricultural Seeds.
GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

Fuchsia Meteor, Carter's.
F. AND A. SMITH have strong plants of the above fine foliaged FUCHSIA to offer, with most of the new varieties of the season.
Special prices for quantities of Meteor.
Dulwich, Surrey, S.

Splendid Seedling Gloxinias.
F. AND A. SMITH'S beautiful collection of the above are NOW in BLOOM; strong flowering Plants may still be had. For Prices and Descriptions see CATALOGUE, which will be forwarded on application. Where a dozen or more are taken, a reduction will be made.
Dulwich, Surrey, S.

Cineraria and Calceolaria Seed,
F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size, and habit; numerous testimonials have been received of its excellence. In packets, 1s., 1s. 6d., and 2s. 6d., free by post.
Dulwich, Surrey, S.

Coleus Verschaffelti.
F. AND A. SMITH now offer strong plants of the above fine Ornamental Foliaged Plant; it has proved the hardiest of the race, and will be an effective and pleasing object for edging of beds or for contrasting with other coloured foliage in mixed borders. For description, see CATALOGUE, which may be had on application.
9s. per doz., lower rates for large quantities.
Dulwich, Surrey, S.

The best Hardy Variegated Edging Plant.
WM. HOADE begs to offer plants of ARABIS VARIEGATA, strong, package included, 2s. 6d. per doz., cheaper by the 100. All orders must be accompanied by a remittance.
Castle Nursery, Brox, Chertsey.

CHARLES NOBLE begs to annex the names of the RHODODENDRONS which obtained the First Prize at the Royal Horticultural Gardens, May 21.

Lord Palmerston	Duke of Cambridge
Lady Palmerston	Floretta
Lord Granville	Princess Hortense

He also obtained the First Prize at the Grand Opening Show at South Kensington in 1861.
Bagshot.

Gunnera scabra Seed, 1s. per packet.
BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.
The GUNNERA SCABRA (a highly ornamental foliaged plant for Lawns and other conspicuous places) is described by Darwin as producing leaves 8 feet in diameter. Last year at the Kew Gardens there was a plant with leaves 4 ft. long, and nearly the same in diameter. See *Gardeners' Chronicle*, March 29, page 285.
BARR & SUGDEN, 12, King Street, Covent Garden (opposite the Garrick Club), W.C.

CLERODENDRON THOMSONÆ.—At the Royal Horticultural Society's Grand Show on May 21, we were awarded the First Prize for this very beautiful new climber. It is figured and fully described in Curtis's "Botanical Magazine" for last month. Healthy young plants 7s. 6d. each; stronger, 10s. 6d. each.
THOMAS JACKSON & SON, Nurserymen, &c., Kingston, S.W.

Scarlet Tom Thumb Geraniums.
ALEXANDER LAING has yet to offer a surplus stock of the above, strong Autumn-struck plants, turned out of the pots, and packed with a nice ball, at 16s. per 100. Also TRENTHAM YELLOW and YELLOW PRINCE of ORANGE CALCEOLARIAS, 16s. per 100.
Nurseries, Beverley, York.

GLENNY'S IMPROVED BALSAMS. — A few packets left. 6 classes, 37 stamps; mixed, 13.
MOWING MACHINES and IMPLEMENTS selected with care from the best stocks.
G. GLENNY, Horticultural Agent, Fulham, S.W.

NEW PLANTS FOR 1862.

JAMES CARTER & CO.,

237, 238, & 261, HIGH HOLBORN, W.C., and CRYSTAL PALACE NURSERY,
PERRY HILL, SYDENHAM, S.,

CAN NOW SUPPLY THE FOLLOWING IN GOOD STRONG PLANTS TO BLOOM THIS SEASON:—

ANTIRRHINUMS, 12*s.* per dozen.

CHRYSANTHEMUMS, both Pompone and Large-flowered, 21*s.* per dozen.

FUCHSIA, CARTER'S METEOR (see Illustration in our Plant Guide and in Floral Magazine for July). A quite new and very beautiful ornamental foliaged variety, and a most desirable acquisition. Leaves of a rich golden yellow, variegated with bronze, ends of the young shoots rich crimson; will most likely prove a first-class foliaged plant for bedding purposes, vying in brillancy with some of the highly coloured Amaranthus. A Certificate of Merit was awarded to it at the Spring Meeting of the Royal Botanic Society of London, April 23. Price, each 3*s.* 6*d.*; price per doz. for bedding on application.

FUCHSIAS, including the finest varieties raised by Banks, Cornellissen and other raisers, 30*s.* per dozen.

PELARGONIUMS.—Show, Fancy and Spotted varieties, most of which have received Certificates of Merit from the Floral Committee, 50*s.* per dozen.

LOBELIA SPECIOSA KERMESINA, one of the prettiest Lobelias ever offered for garden decoration. Flowers purplish scarlet, produced in myriads throughout the summer; grows in tufts about six inches in height, will form a very desirable companion plant to Lobelia speciosa, Cerastium, &c. Was universally admired by all who (saw it at our Seed Farms last summer, 9*s.* per dozen.

PETUNIAS, 18*s.* per dozen.

VERBENAS, including Foxhunter and Sheppard's Ariosto, 21*s.* per dozen.

Older plants of proved merit, 6*s.* per dozen.

GERANIUMS Cloth of Gold and Golden Fleece, 9*s.* per dozen.

POMPONE DAHLIAS, 6*s.* to 9*s.* per dozen.

BEGONIAS, fine selection, 12*s.* per dozen.

GLOXINIAS, fine selection, covered with flower buds, 12*s.* to 24*s.* per dozen.

MESEMBRYANTHEMUMS, a very fine selection, for prices of which and description see our

DRAWING ROOM PLANT GUIDE,

The most complete published, post free on receipt of six stamps (Gratis to Customers).

GOOD TURNIP SEEDS CARRIAGE FREE

AT MARKET PRICES.

SUTTON & SONS,

SEEDSMEN TO THE QUEEN,

CAN SUPPLY EVERY KIND OF

FARM and GARDEN SEEDS,

OF GENUINE AND SUPERIOR QUALITY.

Farmers and others residing in the most remote parts of the kingdom can procure good Seeds at very moderate prices from this Establishment Carriage Free.

Seeds for present Sowing.

CHAMPION and other SWEDES	TURNIPS, of sorts	GRASS SEEDS of every kind	FLOWER SEEDS
MANGEL WURZEL	GARDEN SEEDS	MUSTARD SEED	RAPE SEED, &c.

Sutton & Sons have for many years devoted especial attention to the improvement of SWEDISH and other TURNIPS, sowing seed exclusively from selected stocks, and they respectfully invite inspection of the Coloured Drawings of their leading kinds, taken from Roots to which distinguished Prizes were awarded, which are arranged by the Western Entrance to the Crystal Palace, Sydenham, near the Handel Festival Orchestra; as also to the Collection of Dried Specimens of GRASSES at their Stand (in Class 3), International Exhibition, South Kensington.

For DESCRIPTIVE PRICED LISTS Post Free apply to

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

CYPRIPEDIUM INSIGNIS MAULII.—In the first week of JUNE will be distributed to a full List of Subscribers of 3 Guineas this fine variety of Cypripedium. After that time the price will be 5 Guineas to Non-Subscribers. It is figured and described in the "Floral Magazine," and a Coloured Figure will be forwarded for inspection per Post to Cultivators of Orchids and intending Subscribers on application.

Wm. Maule & Sons, The Nurseries, Bristol.

Palms and other Stove Plants.

TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual size.

A CATALOGUE, giving the height of each plant, will be sent, post free, on application to Mrs. Le Creps, Château du Mesnil de Mathieu, near Caen, Department of Calvados, France, where the plants may be viewed.

TAN GRATIS in the immediate neighbourhood of Covent Garden Market.

Apply to Essex & Sons, 28, Stanhope Street, Clare Market, W.C.

International Exhibition.

FERNS, BEGONIAS, &c., are growing in COCOA-NUT REFUSE at the bottom of a case (with Cocoa-nuts on the top outside) in the centre of the Eastern Annexe.

Refuse delivered in London at 1*s.* 6*d.* per bag, containing 3 bushels. Large quantities on lower terms, on application to the Patent Cocoa Fibre Co., Kingston-on-Thames, S.W.

Postage stamps or Post-office Orders payable to J. Barsham & Co.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3*s.* per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3*s.* per Gallon (or 9*d.* fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

Page & Toogood, Royal South Hants Seed Establishment Southampton.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* each.

Wholesale by
Price's Patent Candle Co., Limited.

PHOSPHO GUANO.

PETER LAWSON & SON, General Contractors,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. Voelcker, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.
(Signed) "Augustus Voelcker."

Opinion of Dr. Anderson, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.
(Signed) "Thomas Anderson."

Opinion of Dr. Stevenson Macadam, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for the Root Crops.
(Signed) "Stevenson Macadam."

Opinion of Dr. Hodges, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.
(Signed) "John F. Hodges."

Opinion of Dr. Apjohn, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows or Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l.* 9*s.* 8*d.* per ton.
(Signed) "James Apjohn."

Price, Free on Rail, £12 5s. per Ton, Bags included.

*** *None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

PETER LAWSON & SON, 27, GREAT GEORGE STREET, WESTMINSTER, LONDON, S.W.

Upwards of 2000 Cases have been reported as Cured by
JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s. 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.
Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Magnified Aphides.

NEAL'S PATENT APHIS PASTILS, One Shilling and Two Shillings per packet, are now acknowledged by all disinterested persons to be the only cheap and effectual way of smoking a Greenhouse: they destroy all insects, and cannot injure the foliage unless they are damp. Testimonials from Florists and Scientific men of the highest standing may be had on application.

NEAL'S PLANT SOAP
is a perfectly new preparation, free from all smell, little more than half the price of the ordinary compounds, is not injurious, but on the contrary useful to the health of the Plant; destroys Red Spider, Mealy Bug, American Blight, Mildew, Scale, Thrip, Green Fly, and all other Insect Pests, and is only 1s. a packet of four cakes. May be obtained of all principal Seedsmen.

Patentee:
J. NEAL, Edward Street, Birmingham.

A BOON to TURNIP GROWERS.—The best and only way to secure a Turnip Crop from the Ravages of the Fly. Thirty years' experience and never once failed. Full particulars will be sent on receipt of 2s. 6d. postage stamps.
Address A. FAITHFUL, near Eastbourne, Sussex.

KEATING'S PERSIAN INSECT DESTROYING POWDER.
Fleas in Dogs, Poultry, &c., are instantly destroyed, as also Bugs, Beetles, and every other Insect, by this Powder, which is perfectly harmless to animal life; Sportsmen particularly, will, therefore, find it invaluable.
Sold in Packets, 1s., 2s. 6d., and 4s. 6d. each, or post free for 14, or treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address.

Blight.
BROWN'S PATENT FUMIGATOR. — A Portable Instrument for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers in the open air, without injuring the most delicate plant; delivering the smoke cold, in a dense mass, and effecting a great saving of Tobacco. Price 10s. and upwards.
Manufactured and supplied to the Trade by Messrs. BARBER & GROOM, London; and may be had of all Ironmongers, Seedsmen, and Florists.

Grass Mowing Machines.
BURGESS AND KEY'S GRASS MOWING MACHINES are constructed to cut the heaviest crops of Grass, both the wheels being geared, and sufficient weight in the machine to give grip on the ground. As there is every prospect of the Grass being heavy this season, B. & K. draw special attention to the following Extract from the Report of the Engineer of the Royal Agricultural Society of the trial of Mowers at Leeds: "but there is reason to fear that the Machine [WOOD'S] would be too light for heavy crops."
"BURGESS & KEY'S was strong, well made, and suitable for the cutting of heavy crops."
Price of BURGESS & KEY'S Mower, 25l. Combined Reaper and Mower, 30l.
BURGESS & KEY, 95, Newgate Street, London, E.C.

Garden Engines and Syringes.
J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

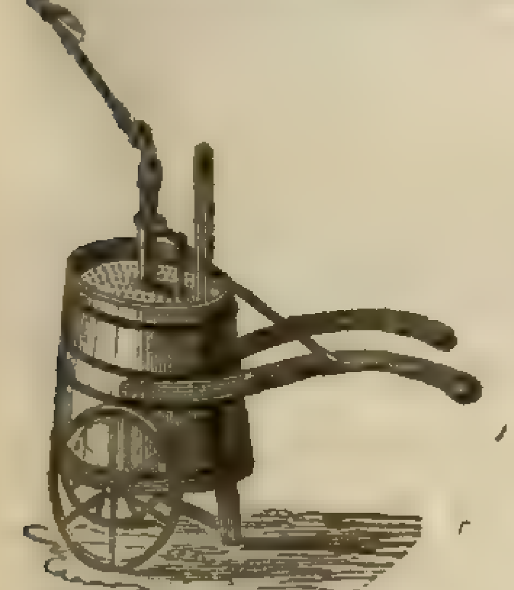


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.
15 gallons .. £5 12 6 | 28 gallons .. £7 2 0
Fig. 599. Ditto GALVANIZED IRON TUB.

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15 0	£3 5 0	£3 15 0	£5 0 0	£5 18 0

Fig. 618. No. I. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. £1 8 0 each.
No. 2. Ditto ditto 1 2 6 „
Telescope Branch Pipe for ditto .. 0 10 0 „

Fig. 619. Large GARDEN SYRINGE, with one rose and jet .. .. 11s. 6d. each
„ 620. Middle Ditto ditto 10 3 „
„ 621. Small Ditto ditto 9 0 „
„ 622. LADIES GARDEN SYRINGE, with do. 7 6 „

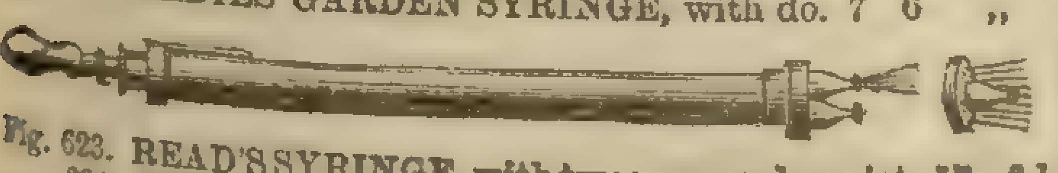
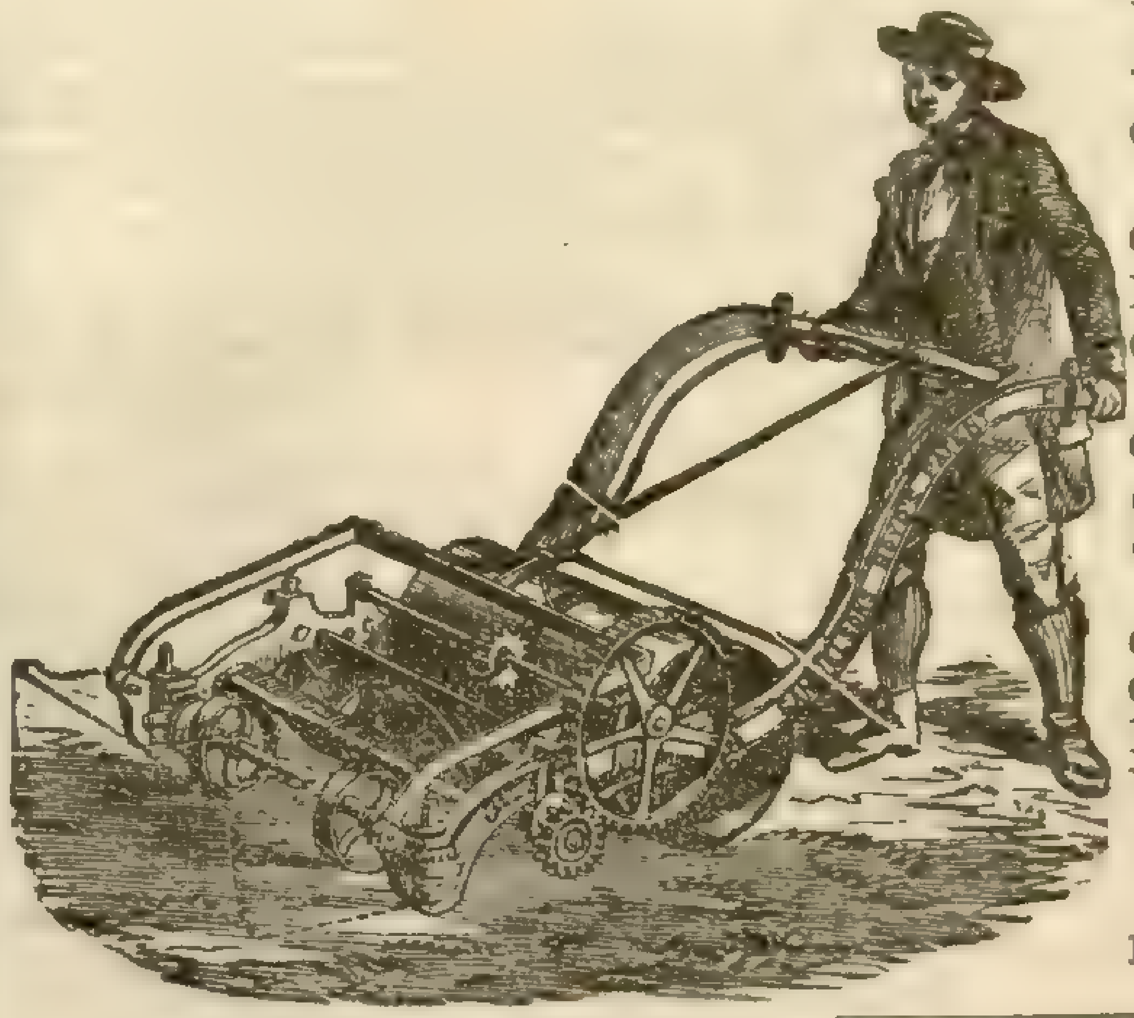


Fig. 623. READ'S SYRINGE, with two roses and one jet, 17s. 6d
„ 624. READ'S SYRINGE, with one rose and jet, 15 0
„ 625. Improved ditto ditto large 14 0
Garden Engines and Syringes of J. TYLOR & SONS' manufacture kept in stock by Ironmongers and Seedsmen in every part of the United Kingdom.
J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

DEANE & COMPANY'S
HORTICULTURAL TOOLS.



DEANE'S MOWING MACHINES, with Boyd's Patented Improvements, 5l., 7l., 7l. 10s., 8l. 10s.
GARDEN ENGINES, Galvanised Iron. Prices 55s., 65s., 78s., 90s., 100s., 110s.
GARDEN ENGINES, Wood, 90s., 110s., 138s.
FLOWER STANDS, 4s. 6d. each.
CAST-IRON ORNAMENTAL FLOWER STANDS to hold Seven Vases, 27s.
GREEN'S PATENT MOWING MACHINES.
GREENHOUSE SYRINGES, 8s., 10s., 18s. 6d.
GARDEN ROLLERS, 1l. 14s. 6d., 2l., 2l. 12s., 3l. 3s., 3l. 18s., 4l. 13s., 5l. 12s., 7l. 10s.
GARDEN STOOLS, 4s. 6d.
GARDEN SEATS, from 25s.
BOYD'S SELF-ADJUSTING SCYTHE, 10s. 6d.
WIRE WORK, 18 in., 4d. per yard run.

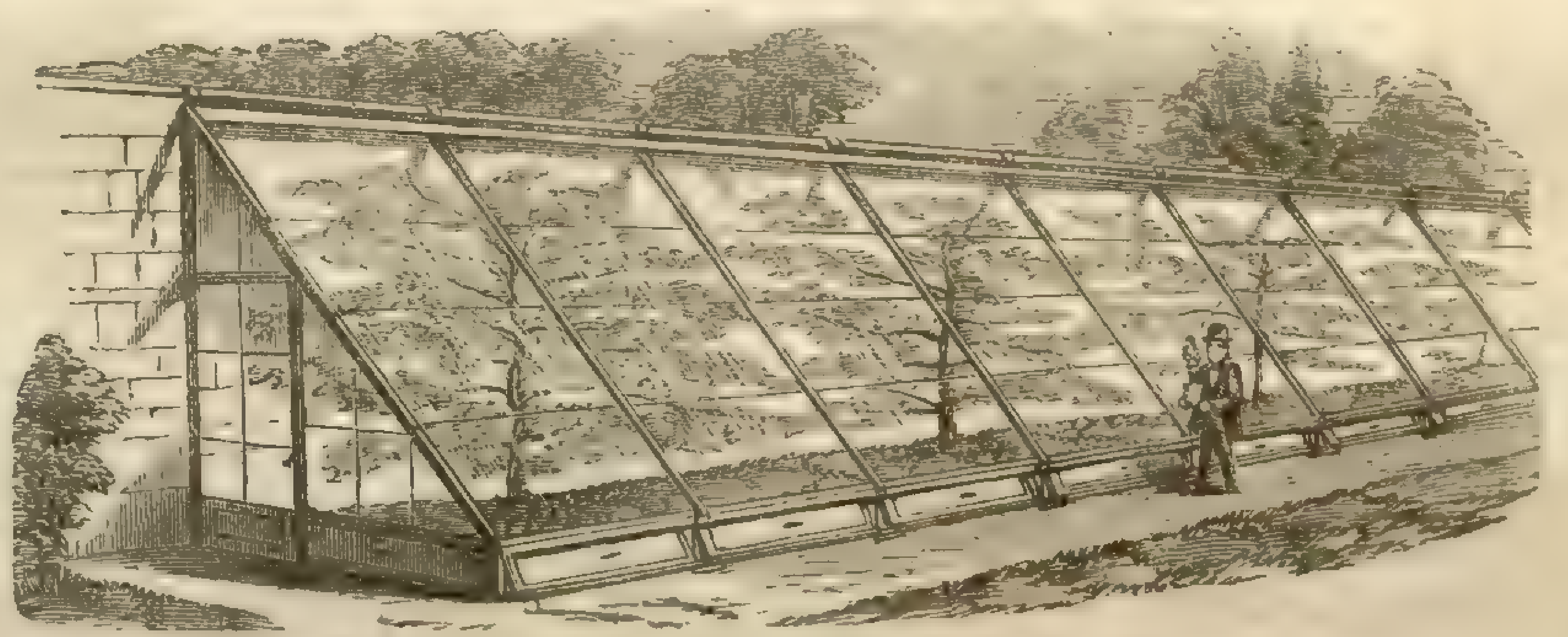
Every Implement for Garden use on the lowest terms.

DEANE'S NEW ILLUSTRATED HORTICULTURAL LIST
POST FREE ON APPLICATION.

DEANE'S, OPENING TO THE MONUMENT, LONDON BRIDGE, E.C.

ST. PANCRAS IRON WORKS COMPANY,
OLD ST. PANCRAS ROAD, LONDON, N.W.

BY ROYAL LETTERS PATENT.



SCOTT'S GLASS WALLS,

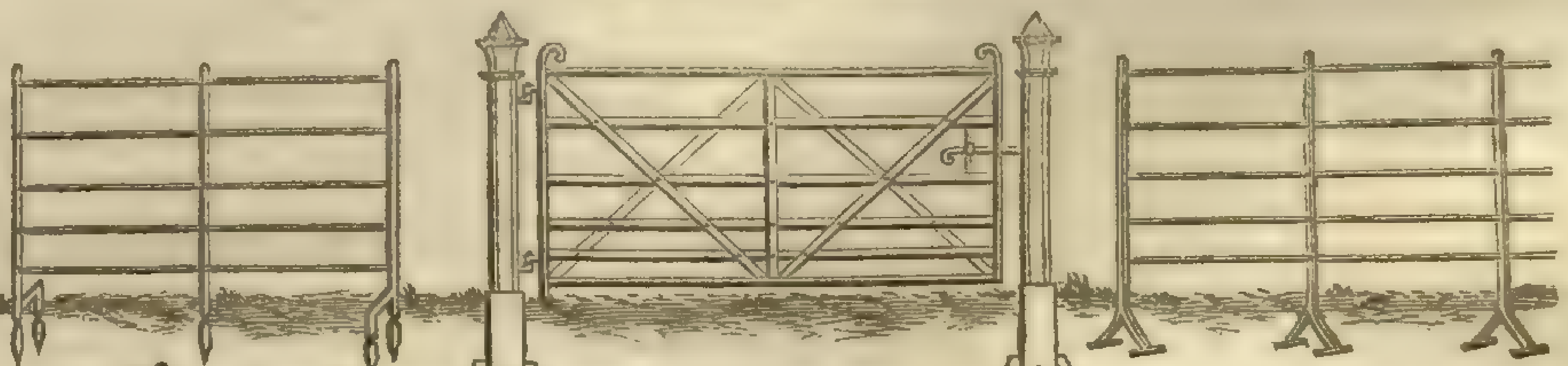
Designed to meet the suggestions of JAMES SCOTT, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

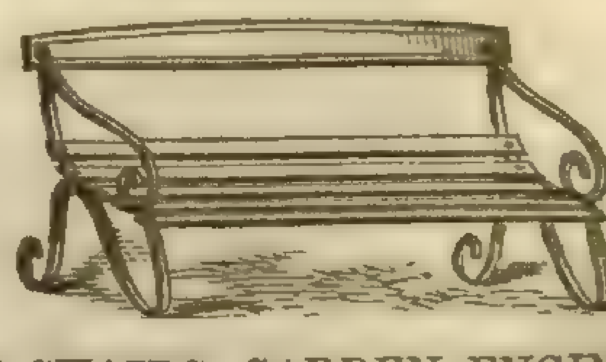
CONSERVATORIES	PINE and MELON PITS	BALCONIES	GATES
GREENHOUSES	VASES	IRON SASHES	TANKS
HOTHOUSES	VERANDAHS	IRON HURDLES	HOT-WATER WORK.

PATENT WROUGHT-IRON STABLE FITTINGS AND ENAMELLED MANGERS.
Every description of IRONWORK. *Lists Free.*

ST. PANCRAS IRON WORK COMPANY, OLD ST. PANCRAS ROAD, LONDON, N.W.

COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,
MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.
PARK ENTRANCE GATES, AND RAILING OF CAST AND WROUGHT IRON COMBINED,
IN VARIOUS STYLES





IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes.
VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.
The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.
Illustrated CATALOGUES and DRAWINGS free on application to
COTTAM & CO., ENGINEERS AND IRON FOUNDERS,
2, WINSLEY STREET (OPPOSITE THE PANTHEON), OXFORD STREET, LONDON, W.

New Plant Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce the publication of their NEW SPRING CATALOGUE of BEDDING and other ORNAMENTAL PLANTS, including descriptions of the undermentioned POMPON DAHLIAS, &c.

Angel of Peace	Little Mary
Annie	Little Prince
Butterfly	Little Valentine
Fairy Nymph	Pearl of Lilliputs
Goldlight	Silver Pheasant
Jeannette	Star
Little Darling	Tom Tit
Little Dorrit	and others.

BANKS'S NEW FUCHSIAS.
WILLS'S NEW VERBENAS.
FERN-LEAVED PRIMULAS, white and red fringed.
BEDDING TROPÆOLUMS—elegans coccinea, Model, Constellation, and Beauty of Oulton Park.
PETUNIA MAGNIFICENS.
GLOXINIAS—Brilliant, Leviathan, Bird of Paradise, and Most Beautiful; these four are very large, new in colour, and distinct.
AUCUBA HIMALAICA, the finest habited plant of all the new Aucubas.
GERANIUMS of the Zonale section—Magenta, new colour; Woodwardiana, best formed large petal-flowered; Baron Ricasoli, without exception the best bedding or Vase Geranium of any at present known.
GERANIUMS, MINIMUM Section, Harry Hieover.
" NOSEGAY " Pink Pearl.
" VARIEGATED " Sunset, Gold Leaf, Mrs. Milford, The Countess, Gold Pheasant, Little Beauty, &c.

Wellington Nursery, St John's Wood, London, N.W.

Bedding Plants at 2s. 6d. per Dozen.

J. SCOTT'S well-known CATALOGUE of the above is now ready, and will be sent to all applicants on receipt of six postage stamps, which will be returned to all purchasers above 10s.

It contains a mass of Cultural and other information about Flowers and Flower Planting, Ribbons, Tessellated and Mosaic work, with Descriptive Lists of all the most ornamental Flower Garden Plants.

Mr. Beaton, in the *Journal of Horticulture*, April 23, 1861, p. 58, says:—"But the best work on making Ribbon borders . . . . is the Bedding Plant Catalogue of Mr. Scott, of Merriott Nurseries; and besides, the Catalogue is the best arranged for young beginners of all that I have seen."

J. SCOTT, Merriott, Crewkerne, Somerset.

Bedding Plants, Bedding Plants—Surplus Stock.

MARSH AND PERKINS have great pleasure in offering the following, all very strong and well established Plants:—

	Per doz.—s.	d.
GERANIUMS, Scarlet and Horse-shoe Leaf, autumn-struck plants	2	0
GERANIUMS, Variegated.—Flower of the Day, Osborne's Brilliant, Mangles' Pink, Perfection, and Shottesham Pet .. .. Autumn-struck plants	2	0
VERBENAS, Evening Star, Purple King, and Defiance	2	0
SALVIA PATENS, Blue	2	0
" FULGENS, Scarlet	2	0
HELIOTROPES	2	0
CUPHEA STRIGULOSA SANGUINEA	2	0
GAZANIA SPLENDENS	2	0
DAHLIAS.—Choice Show and Fancy varieties	2	0

N.B. Baskets charged cost price. The plants turned out of pots, tied up, and packed securely.

Terms cash. The usual discount to the Trade.

42, Drapery, Northampton.

FARM SEEDS, at fair Market Prices.

PAGE & TOOGOOD

Having had the honour of supplying the ROYAL FARMS at OSBORNE for the last eight or ten years, the GOVERNMENT REFORMATORY, PARKHURST, and many of the principal Agriculturists in the kingdom, will be sufficient guarantee that their SEEDS are of SUPERIOR QUALITY, and their prices are as low—or lower—than any respectable house in the Trade.

At the Botley Club, the Prize for the best Ten Acres Swedes was awarded
PAGE'S IMPROVED (grown by John Crosskey, Esq.)

Heaviest weight of Mangel, per acre, 61 tons 2 cwt.
PAGE'S IMPROVED ORANGE GLOBE (grown by Stewart Macnaghten, Esq.).

Mangel, sown July 7, Weight and Shape,
PAGE'S IMPROVED RED GLOBE (grown by W. Warner, Esq.).

Mangel, 50 tons per acre,
PAGE'S IMPERIAL ORANGE GLOBE (grown by W. Dickinson, Esq.).

Carrots, 35 tons per acre,
PAGE'S IMPORTED WHITE BELGIAN (grown by R. Trench, Esq.)

Six Prize Swedes, for heaviest Weight,
PAGE'S IMPROVED (grown by W. C. Humphries, Esq.)

Vales of Avon and Stour (Farmers' Club).

Vales of Avon, Prize for best 5 acres Mangel.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Salway).
Second best.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. H. Bone).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Baker).
Best 2 acres ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Jas. Salway).
Second ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by General Robertson).
Third ditto.—PAGE'S IMPERIAL ORANGE GLOBE (grown by Mr. Bone).

PRESENT PRICES (Rail Carriage Free to all parts of England):—

	Per lb.—s.	d.
SKIRVING'S SWEDE	0	8
PAGE'S IMPROVED HARDY ..	1	0
FIELDER'S do. WHITE	0	9
SUTTON'S CHAMPION	1	0
ASHCROFT	0	9
GREENTOP	0	8
SUSSEX or JEFFERY'S ..	0	9
TANKARD	0	9
RED ROUND TURNIP	0	8
PAGE'S IMPROVED RED GLOBE	0	9

	Per lb.—s.	d.
SCOTCH or BULLOCK	0	8
POMERANIAN WHITE GLOBE	0	8
EARLY GREEN GLOBE ..	0	8
" WHITE TANKARD ..	0	8
PAGE'S IMPROVED PURPLE do.	1	0
GREEN ditto	0	8
YELLOW TANKARD	0	9
FIELDER'S HARDY GREEN ROUND	0	6
EARLY SIX WEEKS	0	6
KOHL RABI	3	6

	Per lb.—s.	d.
NEW OSBORNE MANGEL.		
YELLOW GLOBE	0	6
PAGE'S IMPERIAL ORANGE GLOBE*	0	8
RED GLOBE	0	7
ELVETHAM LONG RED ..	0	8
LONG RED	0	6
LONG YELLOW	0	8
WHITE BELGIAN CARROT ..	1	3
CATTLE CABBAGE	2	6
CATTLE PARSNIP	1	0
DWARF ESSEX RAPE	0	4

* Bulbs of this variety have acquired the enormous weight of 44 lbs., as shown at Smithfield Club, and yielded 61 tons 2 cwt. per acre.

NEW ALSIKE CLOVER, 1s. 3d. per lb.; BUCKWHEAT, MUSTARD, LINSEED, TARES, and SAINFOIN. Fine PERMANENT PASTURE GRASS, ITALIAN RYE GRASS, CLOVER, &c., at lowest Market Prices.

Special Contracts for Large Quantities.

OXFORD STREET, AND ABOVE BAR, SOUTHAMPTON.

NEW AND BEAUTIFUL PLANTS.

MESSRS. VEITCH & SON

Have much pleasure in again drawing attention to their LIST of NOVELTIES for the present season, full and detailed descriptions of which appeared in their Advertisement in the *Gardeners' Chronicle* of May 17, and also in their CATALOGUE of NEW and BEAUTIFUL PLANTS, which latter will be forwarded post free upon application.

NEW JAPANESE AND OTHER HARDY PLANTS.

	£	s.	d.
ABIES FIRMA .. .. each	2	2	0
AMARANTHUS MELANCHOLICUS var. RUBER each, 2s. 6d.; per doz.	1	4	0
EUONYMUS RADICANS foliis variegatis .. each	0	10	6
LIBOCEDRUS TETRAGONA, each, 1l. 1s., 2l. 2s., and	3	3	0
MIMULUS CUPREUS .. each, 3s. 6d.; per doz.	1	10	0
OURISIA COCCINEA .. .. each	0	5	0

	£	s.	d.
RETINOSPORA LYCOPODIOIDES (?) .. .. each	1	1	0
" OBTUSA .. each 10s. 6d., per doz.	5	5	0
" PISIFERA " 10s. 6d., "	5	5	0
SCIADOPITYS VERTICILLATA, 1-year old Seedling Plants in Pots .. .. each 10s. 6d., per doz.	5	5	0
A few Imported Plants, 12 to 15 inches, price on application.			

	£	s.	d.
PINUS DENSIFLORA .. each, 7s. 6d.; per doz.	3	0	0
" KORAIENSIS .. .. each	0	10	6
THUJA PYGMÆA .. .. each	1	1	0
" (BIOTA) FALCATA .. .. .. "	0	10	6
THUJOPSIS DOLABRATA .. each 1l. 1s. to	3	3	0
" " VARIEGATA .. each	3	3	0

NEW STOVE and GREENHOUSE PLANTS.

	£	s.	d.
ALOCASIA MACRORHIZA VARIEGATA .. each	1	11	6
CALADIUM VEITCHI .. .. "	3	3	0
FICUS COOPERI .. .. "	0	10	6

	£	s.	d.
NEPENTHES DOMINIANA .. .. .. each	1	11	6
RHODODENDRON PRINCESS ALICE .. "	1	1	0
" SESTERIANUM .. .. "	1	1	0

	£	s.	d.
SCHISMATOGLOTTIS VARIEGATA .. .. each	1	1	0
STENOGASTRA CONCINNA .. .. .. "	0	7	6

SPHÆROGYNE LATIFOLIA, fine foliage | ALOCASIA ZEBRINA, fine foliage.

TWELVE NEW and BEAUTIFUL FERNS, introduced by Messrs. V. & Son from Japan, Chili, and Borneo.

	£	s.	d.
ACROPHORUS AFFINIS .. .. each	0	7	6
ADIANTUM CHILENSE .. .. "	0	10	6
" SCABRUM .. .. "	0	10	6
" SULPHUREUM .. .. "	0	10	6

	£	s.	d.
CHEILANTHES MYSURENSIS .. .. each	0	7	6
LASTRÆA OPACA .. .. "	0	10	6
LOMARIA CRENULATA .. .. "	0	7	6
MICROLEPIA STRIGOSA .. .. .. "	0	7	6

	£	s.	d.
POLYSTICHUM FLEXUM .. .. .. each	0	7	6
" SETOSUM .. .. .. "	0	10	6
WOODSIA POLYSTICHOIDES var. VEITCHI "	0	10	6
WOODWARDIA ORIENTALIS .. .. .. "	1	1	0

NEW and RARE ORCHIDACEOUS PLANTS.

	£	s.	d.
CATTLEYA DOMINIANA .. .. each ..	1	11	6
CYPRIPEDIUM SP. N. .. .. " 10l. 10s. to	15	15	0

	£	s.	d.
DENDROBIUM TAURINUM .. each 10l. 10s. to	15	15	0
PHALÆNOPSIS SCHILLERIANA " ..	10	10	0

	£	s.	d.
VANDA BATEMANNI .. .. each 7l. 7s. to	10	10	0

PLANTS ARE NOW READY FOR DELIVERY.

ROYAL EXOTIC NURSERIES, EXETER and CHELSEA.—June 7.

Notice.

B. S. WILLIAMS begs to intimate that he is prepared to supply nice Plants of his New and beautiful AZALEA ELEGANTISSIMA, exhibited at the Royal Horticultural Society's Meeting, May 21, and which was awarded a Label of Commendation.

Flowers pure white, finely striped with light salmon red or pink, splendid habit, excellent form and substance, and a free bloomer.

Extract from the *Gardeners' Chronicle* in their report of the Royal Horticultural Society's Meeting, May 21. "A beautiful seedling Azalea called Elegantissima, white striped with pink, came from Mr. Williams, a good addition to the class to which it belongs." Price 10*s*. 6*d*. each; extra size, 15*s*. to 21*s*. each.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Tussilago farfara variegata.

B. S. WILLIAMS has great pleasure in submitting to his friends and the Public generally strong Plants of the above for Edging or Ribbon Borders, being of very compact habit, and the foliage beautifully variegated; ground colour light green, deeply margined with creamy white and slightly edged with red, especially the young foliage. Grows from 4 to 6 inches high, with leaves 4 inches across and perfectly hardy; this is also a beautiful plant for rockwork. For the above purposes this has proved one of the finest variegated plants in cultivation.

Price each, 9*d*. | Per dozen, 6*s*.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Choice Seeds.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the under-mentioned Seeds, which cannot fail to give the greatest satisfaction.

PRIMULA, per packet, 2*s*. and 3*s*. 6*d*. each.
CALCEOLARIA, per packet, 1*s*. 6*d*., 2*s*. 6*d*., and 3*s*. 6*d*. each.
CINERARIA, per packet, 1*s*. 6*d*. and 2*s*. 6*d*. each.

For numerous Testimonials see SEED CATALOGUE, post free on application.

Stachys lanata.

B. S. WILLIAMS, Paradise Nursery, Holloway, N., has great pleasure in offering another fine plant for Edging or Ribbon borders. This is not a new plant, but one that is little known, and will without doubt rank among the finest plants for the above decorative purposes. The foliage is quite distinct, being the colour of Cerastium tomentosum, but much larger; leaves five inches long by one inch broad, and of a fine thick woolly texture, which, when the sun shines upon it, gives it a beautiful white frosty appearance. In growth it is from six to nine inches high, and very compact, forming a fine contrast when planted with yellow Calceolaria, Scarlet Geraniums, or any other plants of similar character. Having been used as a decorative plant for several years by the party from whom the stock has been purchased, was very much admired. This also makes a beautiful ornament for rockwork. Price per doz., 4*s*.; per 100, 25*s*.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

For a valuable selection of New and Rare Plants, see B. S. W.'s Advertisement in the *Gardeners' Chronicle*, May 10.

The Favourite Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Stanstead Park Nursery, Forest Hill, S.E. and Edinburgh.

DOWNIE, LAIRD, AND LAING have much pleasure in offering the following very select Seeds, saved from their choice collections.

ANTIRRHINUM, 6*d*. and 1*s*. per packet.
CALCEOLARIA, 1*s*. and 2*s*. 6*d*. per packet.
CINERARIA, 1*s*. and 2*s*. 6*d*. per packet.
HOLLYHOCK, 1*s*., 2*s*. 6*d*. and 5*s*. per packet.
PANSY, 1*s*. and 2*s*. 6*d*. per packet.
PRIMULA SINENSIS FIMBRIATA, 1*s*. and 2*s*. 6*d*. per packet.
PRIMULA SINENSIS KERMESINA SPLENDENS, 1*s*. 6*d*. and 2*s*. 6*d*. per packet.

New Dahlias.

JOHN KEYNES, F.R.H.S., Castle Street Nurseries, Salisbury, will be prepared to send out the following first-class New and approved DAHLIAS the first week of May.

J. KEYNES considers them quite equal to any he has had the honour to offer:—

	s.	d.
Black Prince (Keynes'), dark mulberry	7	6
Countess Portsmouth (Rawling's), cream-tipped cherry	10	6
Donald Beaton (Dodd's), dark maroon	10	6
Empress of India (Rawling's), very dark	10	6
Goldfinder (Keynes'), yellow tipped deep orange	10	6
Imperial (Keynes'), deep bright plum	10	6
John Harrison (Harrison's), light scarlet, red	10	6
Lady Elcho (Dodd's), light salmon	7	6
Maria Carter (Keynes'), white edged deep carmine	10	6
Minnie Dodds (Dodd's), dove colour	10	6
Oscar (Adde's), light scarlet	10	6
Sir J. Outram (Rawling's), dark velvet	7	6
Maid of Bath (Hooper's), white tipped purple	10	6
FANCY FLOWERS.		
Blondin (Dodd's), crimson tipped white	10	6
Goldfinch (Keynes'), cream striped pink	10	6
Mrs. Crisp (Keynes'), purple tipped white	10	6
Reliance (Rawling's), maroon striped white and purple	10	6

These flowers have been exhibited, and taken many First Class Certificates, and shown in the winning Stands which took 19 First Prizes at the Great Exhibitions of the Royal Horticultural Society, Crystal Palace, &c.

CATALOGUES, with instructions for their growth, will be sent on application.

Salisbury.—June 7.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe. Also to their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which for want of space there is erected at the Crystal Palace, Sydenham.

Royal Berkshire Seed Establishment, Reading.

Two Hundred and Fifty Guineas in Ten Prizes.

SEEDSMEN BY APPOINTMENT. Sutton and Sons

FOR FIVE YEARS SUCCESSIVELY HIS LATE ROYAL HIGHNESS THE PRINCE CONSORT'S PRIZE CUPS HAVE BEEN AWARDED TO

SUTTON'S CHAMPION SWEDES at the Royal East Berks and South Bucks Agricultural Societies.

New Seed now ready, 1*s*. per lb., or cheaper by the bushel, carriage free.

Royal Berkshire Seed Establishment, Reading.

J. C. WHEELER AND SON, Glo'ster.

WHEELER'S ORANGE GLOBE MANGEL, WHEELER'S IMPERIAL SWEDE, GRASS SEEDS for PERMANENT PASTURE, GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices

SMITH'S WORCESTERSHIRE SWEDE, the handsomest, most profitable, and best in cultivation. 1*s*. per lb.
SKIRVING'S IMPROVED SWEDE, saved from selected roots, 8*d*. per lb.
ORANGE GLOBE MANGEL WURZEL, the best for all kinds of soil, a very superior stock, 8*d*. per lb.
All other kinds of SWEDE and MANGEL, 8*d*. per lb. Cheaper by the bushel or cwt.

RICHARD SMITH, Seed Merchant, Worcester.

ROBERT PARKER begs to offer strong healthy plants of the following, all of which will prove desirable acquisitions to the most select collections:—

		s.	d.
CENTAUREA RAGUSINA	Each	2*s*.	6*d*.
COLEUS VERSCHAFFELTI	,,	1	0
FUCHSIA COMET	,,	1	6
,, MINNIE BANKS	,,	1	6
,, WHITE LADY	,,	1	6
GERANIUM PRINCE of WALES, each, 1*s*. 6*d*.; per dozen, 12*s*.; per 100		75	0
VERBENA LADY VICTORIA SCOTT, each, 1*s*. 6*d*.; per dozen, 12*s*.; per 100		50	0

Exotic Nursery, Tooting, Surrey, S.

Choice Seeds for Present Sowing.

ROBERT PARKER begs to offer the following, all of which are warranted to be new and genuine, and the finest qualities of their respective kinds.

Per Pkt.—	s.	d.
CALCEOLARIA Herbaceous, finest mixed	2	6
CINERARIA, finest mixed	2	6
CLIANTHUS DAMPIERII	2	6
DIANTHUS HEDDEWIGII, and vars., finest mixed, 6*d*. &	1	0
HOLLYHOCK, finest mixed	0	6
HUMEA ELEGANS	0	6
PANSY, finest mixed	1	0
PRIMULA SINENSIS DENTIFLORA	2	0
,, ,, ,, ALBIFLORA	2	0
,, ,, ,, KERMESINA SPLENDENS	2	6
STOCK, Scarlet, Intermediate	0	6
,, White ,,	1	0
SWEET WILLIAM, Auricula-flowered, finest mixed	0	6

A Priced and Descriptive CATALOGUE of SEEDS will be forwarded post free on application.

Exotic Nursery, Tooting, Surrey, S.

Calceolaria, ex. ex.

STEPHEN BROWN'S Seed of the above is of the same extra quality as in past years, saved expressly for him by a private grower for many years renowned for his first-rate Calceolarias. It has annually given the most unqualified satisfaction, and procured numerous prizes. The flowers are splendid in colour, richly spotted, of excellent form, large, and of endless variety. Packets, 2*s*. and 1*s*.

CALCEOLARIA NANA GRANDIFLORA PRÆCOX.—Very beautiful, from the Continent, exceedingly dwarf, and covered with a profusion of large and bright flowers, of great variety. Packets, 2*s*.

PRIMULA FIMBRIATA, ex. ex.—Finest mixed dark varieties, purple, carmine, rose, &c. Packets, 2*s*. and 1*s*.

FIMBRIATA STRIATA.—Very choice white, with many of the flowers beautifully striped with bright red, extra. Packets, 1*s*. 6*d*.

FIMBRIATA ERECTA SUPERBA.—Of more erect habit, received from the Continent, and represented as splendid, quite distinct, and constant. Packets, 2*s*. 6*d*.

SEED of first-class FLORIST FLOWERS, English and Continental, comprising Geranium, Hollyhock, Carnation, Picotee, Pansy, Cineraria, Polyanthus (superbly laced), Verbena, Antirrhinum, Gladiolus, Pentstemon, &c., all saved from the finest collections.

The SEED CATALOGUE free on application.

STEPHEN BROWN, Seed Grower and Importer, Sudbury, Suffolk.

SPECIAL PRIZES.—HORTICULTURAL SOCIETY.—SPECIAL PRIZES for the best Three Groups of FRUITS and FLOWERS for the DECORATION of the DINNER TABLE are offered by a Vice-President of the Society, to be awarded at the Second Great Exhibition, WEDNESDAY, June 11. First Prize, Gold Knightian Medal, or 10*l*.; Second Prize, Gold Banksian Medal, or 7*l*.; Third Prize, Society's Large Silver Medal, or 3*l*.

NOTE.—Beautiful arrangement will be the test of merit in this Exhibition; valuable Flowers or Fruits are therefore not demanded.

Each set must consist of Three Groups, and may be either one of Flowers and two of Fruit, or two of Flowers and one of Fruit, or Fruit and Flowers mixed in all three.

They may be shown either in épergnes, glass or china dishes, wicker or wire work, or in any other way most to the taste of the Exhibitor.

It is not necessary that the articles exhibited should be grown by the Exhibitor.

Ladies are invited to join in the competition.

The Prizes will be awarded by a Jury of Ladies.

The Groups will be received as late as 10 o'Clock A.M., on the 11th, *provided space shall have been secured for them the day before*. Letters to be addressed to Mr. G. EYLES, Horticultural Garden, Kensington Gore, W.

ROYAL HORTICULTURAL SOCIETY. FLORAL COMMITTEE.

The next MEETING of this Committee for the Exhibition of NEW PLANTS and SEEDLINGS will be held in conjunction with the Second Great Show of the Season, which will take place in the Gardens of the Society on June 11. The above subjects will form Classes 25, 26, 27, and 29 of the Schedule for that day; and Sub-committees will be appointed to adjudicate upon them.

Class 25 is for New or Rare Tender Plants in flower.
Class 26 is for New or Rare Tender Plants not in flower.
Class 27 is for New or Rare Hardy Ornamental Plants.
Class 29 is for Seedling Florist's Flowers, and Garden Hybrids of all kinds.

The subjects exhibited in the above Classes must be in the Gardens by Half-past Eight o'clock on the morning of June 11, in accordance with the regulations. They may be entered without previous notice; but a detailed statement of their names, IN WRITING, accompanied by the Exhibitor's address, must be handed in BEFORE NINE O'CLOCK.

Any person may exhibit.

Seedling Flowers exhibited as novelties MUST BE NAMED.

THOMAS MOORE, Secretary to the Committee.

LEICESTER and LEICESTERSHIRE FLORAL and HORTICULTURAL SOCIETY.

President:—The Right Hon. Earl HOWE.

The GREAT SUMMER EXHIBITION of the above Society for PLANTS, FLOWERS, FRUITS, and VEGETABLES will be held on the Leicester Race Course on TUESDAY and WEDNESDAY, June 24 and 25.

Additional Prizes will be given for CUT ROSES grown by Amateurs, Gentlemen's Gardeners, and Nurserymen, open to all England.

Prospectuses may be had of the Hon. Secretary, 37, Market Place, Leicester.

By order of the Committee. WM. PENN COX, Hon. Sec.

ROYAL OXFORDSHIRE HORTICULTURAL SOCIETY.

Patron: H.R.H. THE PRINCE OF WALES.

The SUMMER EXHIBITION of the above Society will be holden in the Gardens of Worcester College, Oxford, on WEDNESDAY, July 2, when, in addition to the Prizes confined to Members, the following are offered, open to all England, entrance free:—

A.—STOVE or GREENHOUSE PLANTS (not Orchids, Fuchsias, or Geraniums), 9 varieties: First prize, 10*l*.; second ditto, 8*l*.; third ditto, 7*l*.

B.—CAPE HEATHS, 6 varieties: First prize, 5*l*.; second ditto, 4*l*.

C.—GERANIUMS (not Fancies), in 8-inch pots, 12 varieties: First prize, 6*l*.; second ditto, 4*l*.

D.—GERANIUMS (Fancies), in 8-inch pots, 12 varieties: First Prize, 5*l*.; second ditto, 1*l*.

No person will be allowed to take more than one Prize in each class.

Notice of intention to exhibit must be given, by post, on or before Monday, June 23.

By permission of the Commanding Officers, the Bands of the Scots Fusilier Guards and of the Second Oxon Rifle V.C. will play alternately during the afternoon. Further particulars may be had of W. R. HOBBS, Acting Secretary.

23, St. Giles's Street, Oxford, June 7.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The NINETEENTH ANNIVERSARY FESTIVAL will take place at the London Tavern, Bishopsgate Street, on THURSDAY, June 26, Sir ARTHUR BULLER, M.P., in the chair; supported by the Sheriffs of London and Middlesex.

Tickets, 21*s*. each, may be procured of the Secretary, Stewards, and at the Tavern. The Gallery will be open for the admission of Ladies (Tickets 3*s*. 6*d*. each), for whom refreshments will be provided. Dinner to be upon table at 6 o'clock precisely. EDWARD ROGER CUTLER, Secretary.

14, Tavistock Row, Covent Garden.

The Gardeners' Chronicle.

SATURDAY, JUNE 7, 1862.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, June 11 { Royal Horticultural (Second Great Show) at South Kensington .. 1 P.M.
Royal Horticultural (Fruit and Floral Committees) at S. Kensington Noon

WHOEVER would give a useful account of any part of the wonderful multitude of objects collected in the INTERNATIONAL EXHIBITION must submit to the necessity of long and careful study and repeated examination. Newspaper articles dashed off at a moment's notice do insufficient justice to Exhibitors, however much the talent employed in preparing them may win the admiration of a reader. Neither could any satisfactory comparison be drawn between the things exhibited until all was approaching completion; an event that has only now occurred. For these reasons we have hitherto refrained from touching upon

matters belonging to the business of the *Gardeners' Chronicle*, except in a few special instances. The Vegetable Kingdom, its produce, and its resources alone concern ourselves. We have to deal with the productions peculiar to various parts of the globe; the indications they afford of soil and climate; and the prospect they hold out either to ourselves as introducers, or to adventurous emigrants as producers, or to trade and commerce as consumers. Raw materials must therefore be the main subject of examination; or tools, machines, and other artificial contrivances which promise to be useful among cultivators. These are to be sought, not among the refinements of European luxury, but amidst the vast display that has been furnished by distant countries, among which the colonies of Great Britain stand proudly in the foremost rank. The vast resources of these frontiers of civilisation were but dimly shown in 1851; they now rise erect in their true and magnificent proportions. Until the present assemblage was formed no one could have entertained a correct notion of the enormous wealth of the countries which acknowledge the sovereignty of the QUEEN OF ENGLAND; henceforward no political destroyer can dispute it. The evidence lies before the eyes of the nation, and can never in our time be forgotten. The language held by a few persons concerning the British Colonies, and the ignorant assertion that they are not worth their cost, are unmistakeably and peremptorily contradicted by facts that all may now investigate. Look at Jamaica, for example, an island that in 1851 seemed incapable of displaying anything better than a few artificial flowers, and a wretched Daguerreotype; a colony utterly ruined, as we have been assured, over and over again; she is now spread over some hundred feet of space, and exhibits in perfection every raw material to which a West Indian insular climate is suited,—timber—fibres—cotton—minerals—coffee—cacao—ginger—starches—to say nothing of sugar, rum, and liqueurs.

We believe we are correct in stating that no one thing in the Exhibition so much excites the admiration of foreign visitors as the display in the British Colonies, valuable as is that of some dependencies of the continental powers, especially of Algeria.

Let the intelligent visitor cast his eyes around him. Where will he find any timber to compare with that of Canada, Natal, and the Australasian colonies? Let the farmer look for corn, and he stands astonished before that of the last mentioned countries. If he seeks for wool it meets his eye in matchless perfection in the same part of the building. There is we believe no cotton exhibited equal to that of Queensland, New South Wales, and Natal. Australian wines in abundance and of great excellence threaten to rival the best growths of France, Portugal, and Spain. We say nothing of mineral wealth, which is beyond our limits. It is for others to report on gold-fields, one of which (Victoria) has yielded more than one hundred and four million pounds sterling, or on our vast coal-fields, or on the copper, tin, iron, and other valuable metals with which colonial soils are found to teem.

What we propose to deal with more especially are timber, textile, and similar materials, fruits, and other esculents, wine and Tobacco, staples of the first necessity to man. Corn finds its place on the agricultural side along with such other matters as are beyond the province of Horticulture. Next Saturday will enable us to commence a detailed report upon all these subjects. In the meanwhile we trust that every gardener, every farmer, every worker in linen or wool, every intending emigrant, every engineer, every agricultural labourer who can bear the small cost of visiting the International Exhibition, or whose friends can assist him, will seriously look at the all-important facts now spread before him from the British colonies, and which he may never again have the chance of seeing.

THE glass houses employed for horticultural purposes have been so commonly constructed with plane or curvilinear roofs, having one uniform slope, and supported by upright sides of bricks or glass, or both, that one's eye does not readily become reconciled to any new form which may be brought within its range, even though the new form may be evidently adapted for the purpose intended. The curvilinear roof itself must have been received as an innovation; and the ridge and furrow form, which has here and there taken the place of the more usual and familiar even slope, as well as the hedges of Yew or Hornbeam, which have to some extent varied the aspect of the supporting parts, have no doubt in their turn given rise to similar feelings. But all these, though they have modified, have not radically changed the forms of construction with which we had become so thoroughly familiarised. Not even domes, either separately or combined with plane or curvilinear slopes or ridges of varied angles, have been found to present us with anything more unfamiliar than the mere details of design, sometimes elegant and well fitted for cultural purposes, and sometimes utterly wanting in both these desirable qualities.

Mr. CRANSTON, of Birmingham, in a profusely illustrated pamphlet* recently published, has, however, presented us with some rather startling innovations upon the time-honoured slopes and curves just alluded to. He has introduced to us various forms of greenhouses and hothouses in which there are no upright sides, but the building is made up, as in the glazed roofs of ship-builders' yards, of a series of short slopes commencing at the ground surface, each one falling inwards successively until—if it be a span roof—it meets with an opposing slope at the top or ridge to form either a rounded or a pointed arch. These short slopes each start from what is called a "radial rib," though it is not very evident why this name should have been given to it. It is, in fact, a strip of timber running lengthways the building, and perforated so as to serve the double purpose of a ventilator and a support to the slope which comes next in succession above it. A section of a moderate-sized span house presents about four of these short slopes on each side, meeting in the ridge, and consequently has on each side three of the ventilating "radial" ribs. Other houses of smaller size and lean-to form are made up of three, or sometimes of two only, of these slopes placed against a wall; and larger span-roofed structures are represented with roofs of 10 or 12 of these slopes on each side, arranged either on a plane or arched general plan, so that the principle evidently admits of considerable variety as regards the outline and character of the building to which it is applied.

Mr. CRANSTON's notion of what a garden glass house should be may be gathered from this passage of his pamphlet:—"A house almost entirely of glass, rising in a curvilinear shape directly out of a green lawn, with no horizontal patch of brickwork under it, red and monotonous; no heavy timbers or framing large and strong, to make up for immatured design or bad construction; no flaps or shutters gaping outwards to form holes for rain and wind, is a building the beauty of which must be seen to be understood." Something of this sort, more or less modified in size and style, seems to be the prevailing character of the buildings which the inventor of this plan of construction proposes to introduce.

Let us now see what are pointed out as the peculiar features of the plan itself. First, "there is an entire absence of framed joiner's work, such as sashes and lights, either sliding or fixed, with all morticing and tenoning or other expensive workmanship. Then "the roofs of the houses instead of being even-surfaced, are curved or arched by a divisional arrangement of the glass into horizontal sections, each compartment being fixed at a different angle, so that curvilinear roofs of any contour are produced, and this with the use of straight, instead of bent glass." The compartments just referred to consist of "rafters filled with glass, each 3½ feet long," and separated "by what have been called to distinguish them clearly 'radial ribs' fixed edgeways, and running lengthways of the building, under the lower ends of the bottom rafters, and between the top and bottom ends of all the others: each 'radial rib' in all cases, irrespective of the shape and size of the building in which it is, or any other consideration whatever, being perforated for ventilation, by small openings close to each other, from end to end, and having a valvular apparatus on the inside of it for properly regulating the ingress and egress of air. To the bottom edge of each 'radial' rib the upper ends of the rafters are secured, and upon the top side of it the feet of the rafters rest. The external aspect of a roof so framed presents to the eye a series of planes fitted with glass divided vertically by small wood rafters, and horizontally by the 'radial' ribs, also of wood, so fixed as to make the top of one plane recede a few inches that the lower end of the plane immediately above it might project and overhang. The 'radial' ribs are themselves fixed to other timbers put together in the shape necessary to receive them, and which act as principals, spanning the house internally at intervals of about 8 feet."

Glass is better than wood or bricks for horticultural buildings, argues Mr. CRANSTON, therefore glass "cannot be too liberally used, always bearing in mind that buildings so constructed must be efficiently ventilated." He would consequently dispense with such cumbrous things as wall plates and heavy wood rafters (the "rafters" to which allusion has been made in the foregoing quotations being rather of the nature of stout sash-bars), and then by means of the "radial" ribs, which run from one end of the house to the other, and are full of small perforations, he would provide the "efficient" ventilation to which he alludes. The perforations, which are each "2 or 3 inches long and, about half the width," are fitted on the inside with simple appliances for closing them at will, and they stand in rows parallel with the ground, and 3 or 4 feet from each other according to the length of the glass used: five "perforations" being (according to the figures) allotted to the width of each plane, which though nowhere stated may be taken at about a foot. With every increase of width or height, necessitating the introduction of another of these short planes, the ventilation becomes increased, each additional plane causing the introduction of another of the perforated "radial ribs."

According to the data Mr. CRANSTON furnishes, houses of 15 feet in width have four "radial" ribs on each side, while those of 20 feet have five, and those of 25 feet six on each side. Will this afford "efficient" ventilation? Perforations of 3 inches long and half the width, the largest we find alluded to, would we presume be equal to a continuous opening of about an inch in breadth. For a span-roofed house 20 feet wide the openings would therefore equal a continuous longitudinal aperture of about 10 inches wide, which might be lessened by closing any portion of it, but which could not be exceeded. This would admit of modifications to suit the requirements of forcing houses during the earlier parts of the season, but unless the effect of placing the openings in this peculiar manner is different from that of more familiar methods, there does not appear to us to be sufficient provision either for hot weather in the case of forcing houses, or for ordinary mild weather in the case of structures devoted to greenhouse plants, and others of a comparatively hardy character. Otherwise the plan, especially as regards the principle of the ventilation, would have much of the advantage without the disadvantage attendent upon the old-fashioned open-lap small-pane system of glazing, under which there was at least much less risk of stifling the plants than there is under the more modern system of plate-glass panes and close laps.

"The efficiency of the perforated ribs" for the purposes of ventilation, of which Mr. CRANSTON himself seems to have no doubt, is, he states, "in a great measure owing to the horizontal and projecting positions they occupy in the roofs," or as we should prefer to say to their standing edgeways or vertically, and to their having horizontal openings. By this means "the air as it travels over the ground, meets the side of the house, and is at once turned from its straight course along one or other of the glass surfaces, to be caught by the overhanging pierced pieces, and conveyed through the openings in them into the building. If the openings were vertical instead of horizontal, this action could not go on in so perfect a manner." Again he says:—"It is erroneous to suppose houses can be well ventilated by large openings of any kind, be they in the roofs or sides, for the end to be attained is a percolation rather than a rushing of air through all the interior." This is quite true so far; but nevertheless, as one of the main objects of ventilation, as far as it concerns horticultural buildings, is to prevent overheating, which is exceedingly liable to occur either through a sudden burst or a more continuous beaming of the sun's rays, and at almost any season except the dreary winter, we cannot but feel some misgivings as to the adequacy of the provision which has been made to meet such an emergency.

It would appear that something of the same plan of construction, at least so far as regards the fixing of the glass surface at different angles, had been practised by Mr. NIVEN, of Dublin, before the date of Mr. CRANSTON's patent. The 'radial rib' system of ventilation appears, however, to be entirely CRANSTON's own, and we have already intimated what appear to be its probable shortcomings. As to cost, we learn from Mr. CRANSTON that he is now fitting up a house in the West of England 500 feet long and 30 feet wide, the cost

* *An Account, with Illustrative Sketches, of Cranston's Patented Buildings as applied to Horticulture.* By J. CRANSTON, Architect, 1, Temple Row West, Birmingham.

of which, including everything, is to be something over 30s. a lineal foot, the exact estimate being 790*l.*

A model of a Cranston House is, or was, exhibited in the Garden of the Royal Horticultural Society, South Kensington.

OUT-DOOR GARDENING AT CANNES.

VILLA VICTORIA, THE RESIDENCE OF T. R. WOOLFIELD, ESQ.—The beautiful climate and position of Cannes admits of gardening being carried out in a very different style from that of our own English temperature, for instead of having innumerable stoves and greenhouses, a great number of the most beautiful plants are cultivated in the open air, and therefore develope their natural habits to far better advantage than when pinched up in the limited space of glass-houses; although this garden is but on a limited scale it is sufficient to show what the climate will admit of being done. It is situated in one of the most charming spots that could have been chosen on the west side of Cannes (near Lord Brougham's villa), facing full south, and commanding an uninterrupted view of the sea and the fine range of the Esterelles. The garden slopes a little towards the sea, and is exposed to the full burning sun. I will therefore try to show what plants I have found to answer best in such a dry atmosphere, where the thermometer rises in the sun during some of the summer months from 120° to 130° Fahr., and last summer about eight months passed without a drop of rain and with scarcely a cloudy day, I may say indeed that we have been twelve months without rain enough to penetrate the earth, and yet in spite of all this the plants flourish and flower abundantly.

January.—It is January, and the first thing that must be noticed is Tacsonia ignea, a larger and handsomer variety than manicata; the colour of the flowers is a brighter scarlet, and the plant is a much more profuse flowerer than manicata. Having grown the two together I must decidedly give the preference to ignea. We have at this present time several plants of it in full flower; one in particular (the mother plant) has been in bloom since last August, never ceasing, and it is now apparently as full of buds as ever. It is planted against a wall 10 feet high facing the south, and covers about 40 feet in length, and is generally studded thickly with large brilliant flowers.

On the same wall is Ipomœa Leari, covering about 60 feet in length, and growing most luxuriantly; it flowers abundantly, and with very large blossoms, from May to December, forming one mass of blue.

A plant of Passiflora, Comte de Nesselrode, by the side of the two just mentioned, makes but little show, although very good, and grows and flowers well. After these on the same wall come Bignonia australis and Manglesi, just coming into flower. Passiflora edulis and cærulea are too common to dwell upon, but Imperatrice Eugenie, a rather new variety, is well deserving a place in any garden; it does exceedingly well here, as does also Decaisneana, although rather tender.

The next thing that follows, being close at hand, is a fine specimen of the noble Acacia Cunninghami, covered with flower buds, which in a short time will be very grand.

Having thus commenced a notice of the family of Acacias, I must mention others that strike my attention. Albicans or cultriformis above all forming magnificent shrubs, covered entirely with flowers in February and March; dealbata is another at this moment full in flower, a very beautiful tree; Myriobotrya also is a very desirable one; although the flowers are small, yet it forms a beautiful and graceful tree in a very short time; for that reason we have many of them, and they never scarcely cease flowering. Trinervis is just coming into flower and makes a fine and showy tree; lophantha likewise makes a handsome tree in the space of three or four years, but it does not last long in perfection, and is attacked very soon with white scale; paradoxa and armata are two very desirable kinds, flowering also in the month of March. In fact it is useless to mention so many of them, as they are too numerous, and all grow and flower remarkably well, making fine trees and shrubs of great beauty; one however omitted beats all for elegance, viz., longissima glauca, of which we have three trees, standing about 20 feet high, with leaves a foot long, drooping in a most graceful manner, and forming a very prominent feature of the garden, so far as the beauty of the tree itself is concerned, but its flowers are insignificant. The different species of Eucalyptus and Grevillea robusta are also plants that promise to become forest trees, insomuch that it is proposed making an avenue of them alternately in a new garden about to be formed, their rapid growth and noble appearance being greatly in their favour for that purpose. Another tree that stands high in favour for the same use is a species of Phytolacca; it is of very rapid growth, making a tree of 20 feet high in the short space of three or four years, and only loses its foliage for about six weeks in February and March; its leaves resemble those of the Ficus elastica, but are of a much paler green and not quite so large. Wigandia caracasana is also a noble plant, and of very quick growth, making from 4 to 5 feet in one season. Aralia papyrifera stands out likewise in a rather sheltered position, a noble plant when seen in the open air. Cassia tomentosa is good for winter flowering; it is full in bloom now and will last till March. The other species do also very well, but most of them flower early in the autumn. Habrothamnus fascicularis and Cestrum roseum succeed admirably and flower all winter freely. We are intending next season to make beds of them; also of Cestrum aurantiacum, which is very handsome while in flower in November and December, but does not continue so long in bloom as the red kinds. Habrothamnus cyaneus is a beautiful plant, and distinct from any other of its family both in habit of growth and colour of flower, the latter being of a fine dark blue, produced in compact pendent bunches of great size; the flowers are of a long tubular form, and bloom in December and May, but not so freely as the other species; like the rest of its family, however, it makes gigantic shrubs, as do also the Abutilons venosum giganteum and Duc de Malakoff, the latter becoming complete trees, while the former partakes more of a shrubby character: both are, however, very ornamental. These also flower during winter. Acacia horrida is a plant that ought to have been mentioned with the rest, but it is deciduous, and, unfortunately, flowers in the month of July when all are away. It is majestic looking, even in the winter months when stripped of its leaves. We have but one fine specimen of it, about 12 feet high, which it has attained in five years; the beauty of it during winter consists in its enormous spines, which are now from 6 to 8 inches long, increasing up to the present time in length and size in every successive year's growth. Amongst the dwarfer kinds of shrubs, for the whole of the winter flowering, are the Veronicas, the most useful of all other plants for cut flowers, Andersoni being very desirable on account of its colour and large flower spikes; but variegata rosea beats them all, resembling very much the spikes of Saccolabium retusum, and it flowers most profusely. A lilac variety of it is not less desirable, blooming also in the winter months, and the flower-spikes are a little longer, but not produced in quite so great abundance. Lindleyana is another very distinct kind, its spikes of white flowers contrasting well with those of the others; apparently it has no particular season of flowering but cannot bear drought. Chorozema varium, ilicifolium and rotundifolium are charming plants, flowering in February and March; they are excellent for mixed borders or beds; ilicifolium is the one we use most, having a line alternately with Roses the whole length of the terrace. Correas are quite at home here, and flower freely during winter; the best variety is cardinalis. Kennedyas also do exceedingly well upon low walls, and flower from January to April; the two best are decidedly ovata alba and Comptoniana, which are now beginning to blossom. The False Pepper must not be unnoticed, it is a useful evergreen tree, growing in a graceful form, and useful for cutting to intermix with flowers, for large loose bouquets, a capital substitute for Ferns, especially for the under part of the bouquet where the leaves hang so light and graceful round the base. Fabiana imbricata i another of the favourite plants here, attaining to a great size, and flowering freely in April in every branch. Melianthus major grows and flowers luxuriantly, producing a noble effect. Poinciana Gilliesii, so rarely seen in England, is quite at home in this climate, blooming freely, but unfortunately in the summer months. Templetonia retusa, so little cultivated in England, does very well here, and flowers in early spring. Swainsona Greyana, Osborni, rosea, and purpurea bloom well here, particularly the first mentioned. Solanum pseudo-capsicum makes a good variety in a mixed bed for winter decoration, ripening its fruit at this season. Eupatorium is also now beautifully in flower. Lilium tigrinum has just finished its flowering season; it has been very showy for some time, the flowers arriving at a great size.

Lotus jacobæus is a pretty little plant for the front of beds; flowers almost incessantly, and from its uncommon colour it makes a nice variety. Melaleucas are plants that this climate suits remarkably well, not fearing the drought of summer. Laurus indica is a very fine evergreen. The Buddleas, Pittosporum, Viburnums, and many other New Holland shrubs, are also worthy of notice, but too numerous to name. I must not omit mentioning, however, that Roses here in November, December, up to the present time resemble very much the May flowering. Having been pruned the end of September and beginning of October, they pushed with great vigour and bloomed freely. A great advantage of their flowering at this season is, that the flowers remain much longer in perfection than in May, when the sun is so hot that no sooner are the flowers open than they fall. One kind in particular has been most admirable all the winter to the present time—Chromatella, a fine Tea Rose of robust habit, making as much as 12 feet of growth in two months; the colour is of a pale clear yellow; it is very double and large, the generality of the blooms when expanded measuring from 5 to 7 inches in diameter.

Leaving the upper garden we pass through a grove of magnificent Orange trees to the lower department, thence to the kitchen garden, where may be found amongst other vegetables, Peas in full bearing since Christmas, not to be surpassed in the month of May, and Kidney Beans with merely the protection of glass for the night without any artificial heat whatever.

February.—The month of January did not pass away without showing some signs of winter, for we had on a few nights 3° of frost, but as everything was almost suffering from want of water little damage was done. Before however I say anything more as to the season, I will just name a few other plants of merit. The Castor-oil plant arrives at perfection in this climate; but a variety called Ricinus sanguineus (so much used in Paris of late as an ornamental foliaged plant) is preferable for appearance, the colour of its leaves and fruit being much more showy. Eriobotrya japonica, or Japan Medlar, deserves well to be included in this list, growing as it does here very luxuriantly, making fine evergreen trees with handsome foliage, and flowering very freely in the month of December.

Sparmannia africana, a very old greenhouse plant, stands well out-doors and flowers freely at this season, continuing for a long time; it is a very ornamental plant and grows to an enormous size when planted in a north aspect, the sun apparently being too much for it in a south one.

Among soft-wooded plants I must mention Salvias, the best of which is eriocalyx; it is the most striking of them all, and as I have never seen it in England, it may be of interest to others to hear of its good qualities. It commences flowering in October, and continues to January. The flowers are produced on branching spikes of considerable length, but before the blossoms appear the spikes are covered with pale lilac flossy tufts, which turn out to be the calyx, for very soon one perceives here white flowers pushing themselves out from among these flossy tufts, producing a charming effect. Another that strikes one to be worthy of notice is involucrata, blooming rather earlier in the autumn and producing spikes of flowers of a beautiful rose colour, beginning with a few flowers on each spike and continuing to flower on the same spike for a considerable time. Another one that resembles it very much is princeps or regia, but of a much more gigantic habit, and flowering in January (this was a little touched by the frost), with spikes of great length and beauty. This kind forms more of a shrub than a soft-wooded plant, but is rather tender. The best of all for a mass of flower at this season is however gesneræflora, being now in a blaze of flower, and has been for some time past; it appears to be the hardiest of them all. It makes a very gorgeous bed, and continues flowering for about four months from January to March.

The Lantanas must not go unnoticed, for they form a great feature of the garden in the months of October, November, and December, growing and blooming very freely. Stevia salicifolia is also full of flower at this time; being a pure white flower it comes in order for cutting and makes also a nice show in the garden, particularly when beside the Salvia gesneræflora. Polygalas again are first-class plants when cultivated in the open air, forming compact round shrubs of unequalled beauty; the best are grandiflora, now in bloom, a very fine large flower and of robust habit (I have seen it grown in England); myrtifolia, Dalmaisiana, and oppositifolia, which flower in March and September.

March.—The Spiræas are just come in to cheer up the garden; the Pyrus japonica, and the Chorozemas that I spoke of before are now in great beauty; nothing could look more lively than to see these bright flowers appearing among many other plants, and the Kennedyas, equally the same, have burst forth their flowers in abundance, telling us that it is high time they should quit their winterly appearance and put forth that of early spring.

Acacia albicans can now come in the list of flowering shrubs, for it is now covered with bright yellow balls. Trinervis also is now come on, another excellent kind, although it has something of a common appearance, caused no doubt from seeing it in almost every garden, but makes a fine noble tree. Paradoxa and armata are likewise now in full flower, and above all the new one, Cunninghami, really of majestic beauty, from its large leaves, and its large balls of flowers. I think it beats them all, although Drummondi, which is also now in bloom, is a charming little thing, and keeps to a dwarf habit. Correas are now in beauty, also excellent plants for this climate. Raphiolepis indica is another plant of great merit as an evergreen shrub, and in full flower at this season. Another plant that I had almost forgotten to mention, though it blooms in the month of June, is Escallonia floribunda, producing spikes of flowers on every branch of great size, and of pure white; macrantha is in flower now. The German and Ten-week Stocks are also very gay but not yet come to perfection, and the Gazania rigens will soon be in a mass of flower. But the passion of all the Cannes visitors are the Anemones, which are now in full bloom. I am speaking now of the wild ones as well as those cultivated, for nothing could surpass the beauty of the fields now, completely covered with all colours, and many very fine kinds. One in particular I have taken into cultivation, quite a distinct species, and one I never saw in England.

April.—The Orange trees above all are beginning to look grand, being literally covered with open flowers and prominent buds for succession; the harvest for them is just begun, and will last about a month, in which time they will be entirely stripped of all their flowers, which are employed by the perfumers. The Spiræas are now in great beauty, and the Fabiana imbricata, a very handsome large shrub completely covered with flowers, resembling more than anything else I can imagine large shrubs covered with snow, and for a contrast of color the Ceanothus accompanies it. The

Acacias continue to keep in flower although their season is past, but trinervis, Cunninghami, Drummondi, paradoxa and armata are still looking fresh and nice.

The Gazania rigens is now in perfection, and is generally planted to serve as a broad border. It seems to delight in this clear sky and continued shining sun, for it has only the proper time for repose from the setting to the rising of the sun, which goes on with scarcely the appearance of a cloud day after day and week after week, and no rain to moisten and refresh the earth. Salvia gesneræflora continues still to flower, and the Ten-week Stocks are now in great beauty, admirable plants for this climate, and early blooming. The Bignonia Manglesi and australis were very fine last month, but I forgot to mention them, and remain pretty good.

The Tacsonia ignea continues to improve and increase its flowers every day. The Mesembryanthemums are another family of plants that delight in this sunny spot, for they are now in a profusion of flower, one in particular (I am not sure of its name), but suppose it to be one of the New Holland species. Its flowers are of a lovely pink, about 6 inches in diameter, a most charming plant for rocks and high borders, or even dry sloping walls; by being planted at the top I have seen them come down as much as 10 or 12 feet, covering entirely the wall from top to bottom. There are many species worthy of notice, but none so majestic and showy as the one mentioned. There is another of the same kind which has creamy white flowers, very good to mix with the pink ones. Aralia papyrifera having been cut back during the winter by frost has well recovered, and has already produced leaves of gigantic dimensions, and not the slightest mark remains of its sufferings. Melianthus major is now in its beauty, having flower spikes from 2 to 3 feet long, standing from 7 to 8 feet high; one of the best of plants for ornamental foliage. The Arundo Donax variegata is also just making its appearance among the shrubs with great strength and beauty.

The Pelargoniums (show varieties) are fast coming into bloom, looking more like large shrubs than florist plants, with their vigorous growth and hard wood, and enormous trusses of flowers. The zonale kinds are beginning to make a show. I think them almost superior to the others. In the first place they are hardier, and give a greater profusion of flowers, which almost cover their leaves; these, too, grow to an immense size if allowed to grow almost natural and without cutting year after year, so that as soon as the weather assumes an air of spring they are ready to burst forth their flowers in great profusion, and continue till the weather gets too hot and they have so exhausted themselves that they can no longer go on; when during the summer months they take their rest, and are prepared to flower as soon as the autumn rains fall. They generally produce flowers through the winter months, especially when placed in a south aspect without a current of air.

May.—Now it may fairly be said that summer is set in in earnest with flowers in great profusion. Verbenas deserve a few words of praise; they have been in fine flower for a month. All the larger beds and borders containing different flowering shrubs, Roses, and Geraniums are raised about 9 inches above the walks, edged with rustic stones inclining a little inwards; at the top of which, a short distance from the stones, are planted the Verbenas round every bed, either mixed or in patches of distinct colours, covering entirely the stone border down to the walk, and running about 18 inches inwards; these are all now one blaze of flower quite dazzling to the eye, and the Pelargoniums since last month have become also one mass of flower of almost all shades and colour ("tout-à-fait éclatant," as the French say). Many of the Roses have been for a long time in flower, such as some of the Bengals, Teas, Bourbons, Banksias, [and Noisettes, Gloire de Rosaméne among the very first. But now comes the mass of all classes in majestic grandeur, so fresh, so vigorous, with flowers so large, and in such numbers—Jules Margottin, General Jacqueminot, Lord Raglan, Géant des Batailles, Safrano, Jenny Schmidt, La Reine, Triomphe de l'Exposition, Souvenir de Malmaison, Chromatelle, appearing among the first and most prominent of the general flowering, the two latter producing flowers from 6 to 7 inches in diameter. It is needless to dwell on names; but one of the most useful I find here is Cramoisie supérieure, almost always in flower, and of a very beautiful velvety crimson.

As much might be said about Petunias as Verbenas, for this is certainly just the climate for them, they having been for more than two months in great beauty; as is the case with almost all other plants, they grow very freely, and produce flowers of great size with colours clear and brilliant; the double varieties are also very good, and do well, but do not produce such an effect as the single ones.

The Tacsonia ignea is now in perfection, I should think, studded thickly with its brilliant large flowers and full of buds for a succession apparently enough to last for months, but I am afraid the sun will soon tell upon it, and it will not be 'able to finish the work it has begun. The Ipomœa Leari (a welcome fellow) is just beginning to show himself again, and is already thinly studded with flowers, and will soon be a perfect picture. The yellow Jasmins, which have been so gay, such as revolutum, officinale, nepalense and Wallichianum, are still looking well and full of flowers. Carnations and Picotees very soon will make a fine show, many already being open; these plants rejoice in this dry climate, and come certainly to perfection. Heliotropes have well recovered from the effects of winter, and are again in full flower. The Pittosporums are also at this time in bloom, and the Swainsonas too: especially Greyana, being the earliest. Amongst the few annuals that we cultivate and that are worthy of notice—but after all they are of little value in a climate like this—Linum grandiflorum rubrum is certainly the queen, especially where there is nothing but sunshine; it often stands till the second year and blooms again in early spring. Œnothera bistorta Veitchiana is also a lovely little thing and would do well for the ribbon gardens; it flowers very early when sown in autumn. Erysimum Peroffskianum also blooms very early and makes a fine show, but has something of a very common appearance. Eucharidium grandiflorum, Lobelia formosa, and Viscaria oculata sown last autumn are now in full bloom; many others might be named that do well—in fact I think almost all annuals, but they give too much trouble, and have a very meagre appearance when other fine plants, especially of the hard-wooded nature, do so well. The Japan Medlars that I mentioned before are now ripe; they are one of the first of fruits, with Cherries and Strawberries, which appear now plentifully in the market. This I think will show, according to my own observation, about six weeks' difference between this climate and that of England in almost everything.

I ought to have mentioned in the first of these papers that the great object here was to grow those things that flower in autumn, winter, and spring, from October to May, when Cannes is full of strangers.

While writing the last paper we have had a good downfall of rain, which has refreshed everything, but we have never had enough to penetrate the earth so as to withstand the excessive drought of summer, since last winter twelvemonths.

Plumbago capensis is just producing its lovely blue flowers, also Larpenti, but the latter blooms later. Every day however seems to add to its beauty. I think I may fairly say that scarcely a branch on the whole plant is without flowers. In short the whole garden now resembles (from the abundance of flowers) a thickly arranged exhibition. No idea can be formed of the picture without personal inspection. *John Taylor, May* 20.

CIDER PRESSINGS,

A MANURE FOR FRUIT TREES.

By M. Frère Henry, of Rennes. From the *Abeille Pomologique.*

The writer had observed the two following facts. For 15 years he remarked that Apple trees, the lower part of whose stems was covered with cider pressings, spreading out from a large adjoining heap of that material, made double and treble the growth of trees that were not so circumstanced.

More recently between old and extremely exhausted Willow stools, there was spread about 9 inches thick of old marc, or cider pressings. In the same year of the application this produced an extraordinary effect. Those Willow stools which for many years had produced only weak twigs, scarcely worth the expense of cutting, pushed with great vigour, and have since continued to do so. In consequence of these observations he determined on turning to account, as manure for fruit trees, an enormous heap of marc which blocked up the way. He asked the opinion of some fruit growers; but they said the marc would burn the roots. However, in the beginning of February, observing that the pips were beginning to germinate all over the surface of the heap, he concluded that if the radicles of the embryo were not burned it was not likely the older roots would be injured, and did not hesitate to apply the manure to 400 Apple and Pear trees in the following manner:—

In February, 1859, he removed the soil from around trees, trained as pyramids and as vases, to the distance of a radius of 21 inches, and as deep as the principal upper roots. He then put to each tree three or four forkfuls of marc, pressing it with the fork, and treading it down with the foot, covering it slightly with a portion of the removed soil, the remainder of which was spread on the borders. As marc is very retentive of moisture, and at the same time a good conductor of heat, which was excessive in 1859, numerous roots were speedily formed in its slowly decomposing substance. "Even this year," says Mr. Henry, "although rather colder than usual, the effects of the impulse given as above to vegetation is remarkably apparent. The stems of the fruit trees have become clear of Lichens and Moss; and latent buds, from the abundant flow of sap, were readily developed on making an incision where branches were wanted to be called into existence. Bad growers, such as the Mouillebouche and Bezi de Caissoy Pears, were thus made to present a regular vegetation.

"But a fact to which I would wish more particularly to draw attention is, that some delicate varieties of which the fruit is apt to crack, for example, the Beurré d'Aremberg [or what we call the Glou Morceau], Doyenné Roux, Beurré Gris, &c., now produce fruit perfectly smooth and sound.

"In conclusion, I am justified, from my own experience, in saying that I can confidently recommend the use of the marc of Apples as a manure for fruit trees, and thus turn to good account a substance which many allow to go to waste, not even taking the trouble to mix it with the dung in the manure heaps.

"Before using the marc it would probably be advisable to throw it up in a large heap so as to induce fermentation in order to disengage certain acid or other principles; and then apply it to the trees when the germination of the pips takes place, that is, in the month of February. Fruit trees in gardens and doubtless also those in fields treated as above detailed would repay the labour a hundredfold."

[We think it would not be safe to apply cider marc to trees without its being previously fermented. Perhaps some one residing in a cider county will afford information on this point. Applied in the right state it is no doubt valuable manure; but otherwise it may prove highly injurious. If the fermenting juice get at the roots it may kill the trees, as that of some other vegetable substances will do. We know an instance of Grass mowings having been deposited between two rows of Apple trees, but not very near their stems; a strong fermentation took place, as is usual when Grass mowings are put together in any considerable quantity. Rain fell and washed the fermenting juices down to the roots, and the consequence was that the trees on both sides of the fermenting Grass ridge were killed. The wood of their roots, even of those farthest from the fermenting substance, exhibited a blue stain throughout, showing that the deleterious principle had pervaded the whole of the circulating medium.]

Indoor Gardening.

There is a very pretty and pleasant means of having an indoor garden, which does not seem to be at all commonly tried. It is to have a wide and deepish box fitted with a layer of charcoal, covered with Moss and light peaty soil mixed with sand, forming a smooth bed. This bed should be made to rise a little in the middle, and should be allowed to settle for some days after a slight watering. It should then be filled up with soil, if it has sunk at all. The box being thus prepared, we have to plant in it a number of English flowering plants: wild pink Geranium does remarkably well, and makes not only a charming leafy bed during most of the year, but also gives a very great abundance of its pretty blossoms. Wood Sorrel grows delightfully, so do the wild Strawberries, the Saxifrages, British Mosses, smaller Ferns, &c., and the lovely wild Convolvulus, which carpets all our dry road-sides in summer, haunting generally much the same sunny spots in which in spring we find the sweet pink wild Violet. This plant has a striking family likeness, to say the least, to one of the Convolvuli with a newly invented name, recommended for hanging baskets; and though the seed may or may not be worth a shilling a packet, the wild flower like it is extremely pretty, and has a compact unstraggly growth when grown in sandy soil that does make it really a treasure in such a plant case.

Sweet Woodruffe and Lilies of the Valley have the disadvantage of looking brown and dry after the early spring; if they are used I think they should be in pots; but there are quantities of delightful little flowers which, like my favourite Scillas, die down out of sight when done with; and the many small growing creeping and climbing things, if they keep their green, are always very pretty. Some kinds of Periwinkle, thus, would do very nicely, and might train up the sides, as might a small-leaved Ivy. I have a box of this kind which answers very well; it is, in fact, a cold glass case, only as I keep the glasses chiefly out, it is for practical uses much the same as a box. These boxes give a very easily managed little scrap of garden, being now and then watered and kept in a sunny window; and when one is able to collect flowers oneself in country walks from the dells and lanes, I really think these things become greater pets than all our finer flowers.

The Linaria Cymbalaria, quantities of wild Campanulas, the pretty little Speedwell, wild Crocuses and Snowdrops, wood Anemones, quantities of Ferns, the beautiful green Mosses, all these come to mind directly, and from Heaths and Harebells to Forget-me-nots and moisture-loving Ferns we have such varieties to gather in all our walks.

The bulbs are particularly good because of their dying down, but some others are equally precious, because of their being evergreen; and by a little care in keeping the drier flowers together, or those that like more moisture, we can always have the loveliest wild-flower bed.

Where we have some little evergreens at the corners we do not so much want climbers, but I think perhaps the very prettiest plan is that of a sort of trellis made either of crossed sticks or of threads of silk cord, up and over which the luxuriant wild flowers twine. Violets in such cases do exquisitely in the country, but I cannot manage to make them grow in London. The things that grow strikingly well are always best to have, and so I find that by planting a good many one soon discovers which will suit one best. At the present season my wild flowers are watered daily with a rose, but the watering-pot is held low so as not unnecessarily to wet the upper leaves and knock off the flowers. *E. A. M.*

Home Correspondence.

Magnolias.—I have this week had an opportunity of visiting the famous American Nurseries at Knap Hill, in which there are now many admirable specimens of

this magnificent genus finely in flower. Auriculata is 45 feet in height, and the width of its branches is 35 feet. The stem near the ground is 10 feet in circumference; it divides into eight limbs, some of which are 3 feet in circumference. This is a noble specimen, its large pale green, fine textured, and peculiarly shaped foliage lobed and lengthened to the point; and supplemented, too, as the young shoots now are, with large milkish white agreeably odoured flowers, produces a fine effect on the landscape, contrasting well with the rare and unique specimens of fine trees in its immediate locality, and all about is carpeted with the choicest kinds of Azaleas and Rhododendrons, whose flowers of all hues are now of the most enlivening and glorious character. Tripetala is 30 feet in height, and the circumference of its branches is 60 feet—its immense pale green new born foliage has now a noble appearance, and its large white flaccid-petaled flowers, produced from the extremities of last year's shoots, have, as Loudon describes them, a languid and luxurious effect. Gracilis: there are some standards of this species which have a very nice effect, 9 feet in height, abundant in flowers, which are of a somewhat smaller character than its prototype, the purpurea; its leaves too are considerably narrower. Glauca and glauca sempervirens, of which there are many fine specimens 16 feet in height, on clear stems more than 11 inches in diameter, and having nicely formed heads, are now covered with ample foliage and embryo flowers, which will continue to expand during the summer and autumn months. Acuminata in many noble specimens 30 feet in height, on straight stems 10 inches in diameter, and having the spread of their branches fully 60 feet in circumference, which are now covered with superb foliage and beautiful flowers. Loudon states that "the plants are in some nurseries grown in the free soil, but it is always preferable to raise them in pots; because in that case they are not checked by transplanting, and at least a year is gained in their growth." Here I believe a very different system prevails, and there are many of these large trees fully 20 feet in height, that would move with perfect safety, from the constant practice of moving and root pruning that is constantly applied to almost every plant for sale in these extended grounds, with the best effects, as can be readily seen in the splendid exhibition of American plants which now graces the garden of the Royal Horticultural Society at South Kensington. Conspicua Soulangeana still retains some lingering blossoms, whilst those on the parent plant had perished many weeks since from the baneful influence of spring frosts.

Leaf Eating Caterpillars (p. 430).—The eggs of moths from which the leaf-eating caterpillars in your orchard-house have been hatched are deposited near the tips of the last year's shoots, and the young grubs crawl instinctively to the fresh shoot, and from their very minute size are able to penetrate into the yet unfolded leaves. Sometimes the eggs are deposited singly, but at other times in patches, and are then concealed with a layer of a gummy secretion. *W.*

Insect Plagues (p. 453).—We would advise you to set traps for the woodlice, &c., which overrun your garden, coming from your neighbour's wood yard. Slices of Potato or other vegetables should be sunk a little below the surface of the earth in out of the way corners or other places most frequented by them. As soon as the vegetables begin to decay they become a bonne-bouche to the insects, which may be destroyed by pouring boiling water over them. *W.*

Rose Triomphe d'Amiens.—Among others, I bought this Rose last summer, and from one plant budded some ten or twelve Standards, all of which "took" and are now blooming; much to my surprise, those that have opened are as like General Jacqueminot "as two peas," and this reminds me of a remark made by others, that Triomphe d'Amiens was a veritable Jacqueminot. I shall therefore feel obliged by any of your correspondents informing me whether Amiens is constant in the beautiful stripes and splashes of maroon as seen at the shows last year, or whether that much desired condition is sportive. If sportive, I may have got Amiens; if constant, I have it not. *Rosæ.*

Mulberries.—Can you give me any information on the subject of the blossoming of the Mulberry? I have two trees about 25 years old which, until the last three years, have borne fine crops of fruit. About three years ago one or two branches on one of the trees produced flowers resembling catkins and no fruit, and now both trees are covered with them and there are very few fruit blossoms. Is this usual, or is it to be expected to continue, and could anything be done to check its reoccurrence? There is a large old tree in a garden near which bears good fruit, and has none of the catkins or false blossoms. *Charles Berrill, Bedford.* [This is a case of a tree having taken to bear male flowers only. We should be very glad to learn from our correspondents, if they know of any similar instance.]

Cyperus alternifolius.—In a recent issue of your Paper a correspondent suggests the Cyperus Papyrus, *alias* Papyrus antiquorum, as a suitable subject for outdoor cultivation. I have never grown this species, but a few years ago I was induced to make a trial of the C. alternifolius, a Madagascar species, and therefore less tender. So far as I can recollect the plant grew tolerably well, though much less freely than when under glass, and judging from this single experiment it appears very problematical whether a more decidedly tropical species would have any chance of success. *W. T., Ipswich.*

Gishurst Compound.—I have yet to learn that either Gishurst Compound or covering Vine borders during winter does any injury to Vines. I wash mine with the Compound and cover my border with leaves; the Vines are healthy and the Grapes good and well coloured. The leaves were removed last week; the roots were penetrating through to the leaves in all directions. *J. D., June 2.*

Selaginella (Lycopodium) denticulata.—It ought to be generally known that this is perfectly hardy. We have a plant which has stood on an eastern aspect on our hardy Fernery two years perfectly uninjured, and it is now growing away as freely as if it was in a tropical stove. *J. Rust, Broom House, Fulham.*

Philesia buxifolia.—One of your Correspondents states that he has been successful in growing this; perhaps he will further indulge your readers with some information how to flower it. I have treated it in the same way as Lapageria; my plant is most luxuriant, but gives no promise of flowering. *R. H., F.H.S.*

Foreign Correspondence.

Cannes.—When I came here in the autumn of 1860, I was so struck by the effect of the climate, and the novelty of seeing so many of our choice greenhouse and even stove plants growing in full luxuriance as trees, that I (being one of your old Correspondents) began to make some notes for the *Gardeners' Chronicle*, and I had the great advantage of living near to the beautiful villa (Victoria) of Mr. Woolfield, whose garden, with one exception, is the only one here which is well kept, and is fully supplied from London and Paris nurseries with all that is handsome and likely to prosper without the shelter of a greenhouse or stove; and moreover, his gardener (Mr. Taylor) was educated at Shrublands and then graduated at the nursery of Messrs. Veitch (London), and before coming to Mr. Woolfield passed I believe two years at Nice, so that in fact he may be considered as having great experience in ordinary plant growing and garden decoration, and, what is of essential importance, a knowledge of the conditions in plant culture rendered necessary by the peculiarities of the climate. Whilst I was making my notes I observed that in a great degree I was anticipated by your Nice Correspondent, and so determined not to trouble you; as, however, the climate of Cannes in some respects is more favourable than that of Nice, especially as there is far less frost, I propose sending to you from time to time a few observations on the plants grown here, the treatment of the Oranges, Grapes, &c. In the mean time Mr. Taylor has been so kind as to give me a paper (see p. 523) on out-door gardening at Cannes, which may be interesting to your readers as showing the effect of climate on a class of plants which require a different treatment in England.

My letter was begun at the end of March, when there was a blaze of bloom; the Almonds and other fruit trees were out of flower. Lord Brougham's great Almond tree (said to be the largest in Provence) had shed its pure white flowers (it is a white variety), the meadows were full of wild Narcissus, and the roads lined by excursionists bringing home sheaves of wild Anemonies of every variety of colour, huge nosegays of the large red Tulip (Oculus-solis), and handfuls of the little pink and white one-feathered Hyacinths, some of the early flowering orchidaceous plants, various Orobanches, &c. I am particularly desirous of apologising for Mr. Taylor's paper not reaching you earlier, but some error in the book post department was the cause of this. It is but justice to Cannes that the picture of a southern spring should have reached your readers whilst they were shivering under your northern climate. He has since added some further remarks, bringing his statement down to the present time.

Mr. Woolfield's garden, which by his kindness is accessible on application to all the visitors at Cannes, has no pretensions to being a botanical collection, he merely cultivating what may be considered most beautiful, and so managing it as to produce a succession of flowers and blooming shrubs at all seasons. However, near Antibes, half way between here and Nice, there is a garden on a large scale, the proprietor of which, Mons. Thuret, is a botanist, and has a very curious and extensive collection of plants, and he is specially occupying himself with experimenting on such plants from Australia and South Africa as are suitable to this climate; he already has Eucalypti, which have grown in four years into trees; Banksias, Casuarinas, Acacias, &c., growing like large underwood, and which bid fair, some at least, to be forest trees. I propose, if you make room for me, to devote another letter or even two to a description of this collection; I shall say nothing about the nonsense written and talked in France and elsewhere about *acclimatisation*, though experiments as to what plants grown in one country may be grown in another where the climates are alike or nearly alike (which is the true acclimation), will always be interesting and indeed afford many profitable suggestions to cultivators. I shall be much obliged by any hints from your Correspondents on this subject; we have already had contributions from yourself and Glasnevin in the way of Australian seeds, most of which are already above ground. *Dodman.*

Societies.

Royal Horticultural: *May* 28.—Judge Des Barres in the Chair. The following candidates were elected, viz.:—

W. Adye, Esq.; R. V. Ambler, Esq.; Mrs. C. E. Austin, Mrs. C. P. Bartley, Mrs. J. Barber, J. Beddoe, Esq.; R. Catton, Esq.; T. B. Chester, Esq.; The Earl of Dalkeith, M.P.; W. De la More, Esq.; R. Dew, Esq.; Mrs. C. Foulger, Mrs. R. Henderson, Mrs. Hollond, Sir Fitzroy Kelly, M.P.; Major-General G. H. Lockwood, Mrs. Mangles, W. Moore, Esq.; J. Moses, Esq.; R. Mostyn, Esq.; F. Noel Mundy, Esq.; Miss Nicoll, Sir James Outram, Bart., G.C.B; J. W. Pease, Esq.; E. Sampson, Esq.; The Lord Henry Montagu Douglas Scott, Mrs. Stewart, A. Watson, Esq.; The Earl of Wicklow, Baron Wilde, and G. B. Woolley, Esq.

Exhibition of American Plants.—Messrs. Waterer & Godfrey's magnificent exhibition of Rhododendrons, Azaleas, and Kalmias, held in the Society's new garden at South Kensington, is now in beautiful condition, and it is expected that the display will last equally good for at least a few days yet to come. Most of the high-coloured Rhododendrons are in full beauty, and intermixed with and well contrasted as they are with others of light colours, the effect produced is extremely striking, especially when viewed from a raised platform which has been erected at one end of the tent, and from which the whole mass of bloom can be looked down upon, and seen at one glance. When we state that upwards of 100 yards in length and 50 yards in width have been wholly devoted to these gay flowering shrubs, some idea of the grandeur of the display may be conceived. The whole has been thrown into borders and beds of tasteful forms by suitable gravel walks, neatly edged with turf, and in the centre and wherever else room could be found on the gravel, turf mounds have been raised, on which have been placed noble standard and other Rhododendrons, most of which are of great age and size; thus situated they break the sameness which would otherwise to some extent prevail, and have a very imposing appearance. Among high-coloured Rhododendrons the gem of the exhibition is decidedly Barclayanum, a magnificent bush of which occupies a central position, facing the entrance; this is loaded with great trusses of flowers, whose glowing colour renders them conspicuous from all parts of the exhibition. Next in rank both as regards size and brilliancy is Brayanum, one of the very best of high coloured sorts; Atrosanguineum is also a good kind; as are likewise Archimedes, Blandyanum, Titian, Ornatum, Vandyck, Roseum grandiflorum, and various high coloured seedlings not yet named. Everestianum is still one of the best lilac varieties with greenish white eye, and among whites album elegans stands pre-eminent, being a good late and free bloomer. The best of all whites is however Purity, a new kind, which when better known cannot fail to be a favourite; it is a good trusser, and the flowers individually are of excellent shape. In Beauty of Surrey we have a useful addition to bright orange crimson kinds; it has a black blotch in the upper petals, setting off the truss, which is good, to excellent advantage. Elfrida is another distinct looking sort, with rosy salmon-spotted flowers in the way of Lady Eleanor Cathcart. Of the striped crimson and white class Bylsianum and Alarm stand at the head; both kinds have beautiful richly coloured blossoms with a stripe of white up the centre of each petal. Prince Albert, a chocolate coloured kind, though not showy will be found useful for the sake of variety, and Nero and Lord John Russell are also good dark varieties; of the roseum elegans breed Onslowianum is a valuable variety, and of bright rose sorts with pale centre none beats Concessum, and Curreanum is remarkable for the size and beauty of its individual blossoms as well as for its fine trusses. Of other varieties there is no want of examples of every tint and shade; but of sorts at present in flower those just named are the most striking. As regards Azaleas little can be said, as they do not come true to colour under canvas. Among them are, however, one very remarkable and many good yellows, which serve to relieve and vary the scarlet, purple, and rosy hues of the Rhododendrons.

Of broad leaved Kalmia some huge bushes are just coming into bloom. Altogether the display is one of most extraordinary beauty.

Linnean: *April* 17.—G. Bentham, Esq., President, in the chair. The following communications were read:—1. Notes on the Exogenous Flora of the Anamalley Mountains in Southern India, with descriptions of new species, and a catalogue of the Ferns," by Captain R. H. Beddome, Assistant Conservator of Forests. Communicated by Dr. Thomson.—2. "On African Anonaceæ," by G. Bentham, Esq. Though evidently numerous in tropical Africa, the Anonaceæ were stated to be the least known of the plants of that continent, being generally trees or woody climbers, bearing but few flowers, and these little attractive to the eye, so that the specimens gathered by collectors are mostly few and imperfect. The paper, which was accompanied by drawings of several species, consisted of a synopsis of the African species contained in the Kew herbaria, with an enumeration of the few published species the author had been able to identify. The Anonaceæ, it was remarked, have, with few exceptions, a very limited geographical range, and this was attributed to their being usually trees of slow

growth and tardy maturity, bearing comparatively few flowers, with indehiscent fruits but little attractive to birds and not endowed with any peculiar means of dispersion. These causes give to the majority of the species but little chance in the general struggle for existence. Of the 35 African species known, all were stated to be confined to that continent, with the exception of the American Anona palustris, which appears to be really native in the swamps of the western tropical coasts. None are as yet known to extend across from the west to the east, excepting Anona senegalensis, a species very closely allied to several American ones, and described as covering immense tracts of country in the greatest abundance. Several of the African Anonaceæ have edible fruits. This quality is particularly attributed by collectors to the Anonas, to Popowia Kirkii, and to most of the Uvarias. Many are aromatic, which is especially noted of the Xylopia æthiopica or Malaghetta Pepper, and Monodora myristica or Calabash Nutmeg. The wood of the arboreous species was said to be hard and good. Of the climbing species, which bear in Asia so large a proportion to the whole, there are but few in Africa. A new species of Artabotrys called brachypetala, from Tété on the Zambesi, was said to bear pleasant-eating fruit. Another new species, the Popowia Kirkii already mentioned, found by Dr. Kirk on the Zambesi at the foot of Moramballa and opposite Senna, was also reported to have pleasant edible fruit. In Oxymitra patens, also new, both Mr. Bentham and Mr. Fitch had found a vertical septum separating the ovules and seeds, an anomaly not observed in other Anonaceæ.—3. "On the structure of the Mantle in Testacella," by Lovell Reeve, Esq.—4. "On the spiral markings of the Flocci in the genus Trichia," by the Rev. M. J. Berkeley.

May 1.—G. Bentham, Esq., President in the chair. E. Romilly, Esq., was elected a Fellow; Mr. E. Gerrard, an Associate; and Dr. D. F. Eschricht, Dr. M. H. Lacaze-Duthiers, and Dr. Hermann Schlegel, Foreign members of the Society. The following papers were read:—1. "On the abnormal habits of some females of the genus Orgyia," by H. T. Stainton, Esq.—2. "Florula Mallica," by M. P. Edgeworth, Esq. This paper embodied the result of the author's botanical observations in the Multan division of the Punjab, where the Malli resided in the time of Alexander. The irrigated portion of the district (described as a region of botanic geography osculating between that of the north-west of India, and that of Sind and Arabia) was stated to produce fine crops of cereals, sugar-cane, and indigo, particularly on the Chenab; also extensive groves of the Date Palm, which was introduced by the Arabs in the 7th or 8th century. It is well wooded, principally with Acacia arabica and Lebbek, the former of enormous size and height, Dalbergia, &c. The climate is excessive, varying from 120° in the shade to 20°; and during winter the temperature falls to the freezing point every night that is clear. There are frequent showers during that season. Hail occasionally falls, principally in March or April. In May the hot winds commence; they blow from the S. instead of N. or N.W., as is the case in Hindostan; these winds continue more or less during the whole summer. The east wind is rare, but in some years heavy rain accompanies that wind, as in the N.W. provinces. On such occasions the "bār," a slightly elevated desert tract, is clothed with verdure, but this cannot be depended on, as for several years in succession there may be no rainfall at that season. Water plants are extraordinarily rare, so much so that the natives at Multan are unable to clarify their molasses from the want of the "jhanjh," or Hydrilla, and other Naiades which are used for the purpose of "claying" in other parts of India. The whole Phænogamic flora of this district numbers but 334 species, exclusive of 111 which are known only in cultivation. The Cryptogamic flora, exclusive of Fungi, numbers only four species, a Marsilea, an Equisetum, Adiantum Capillus-veneris, and a Phascum. There are a few Fungi, two of them edible; one resembling a Morel, called Khumba, found in profusion in the Rechnab desert, which is much liked by the natives, and such of the writer's European friends as had tasted it; the other subterraneous, found in cultivated land near Multan, and called Boenphal or Earth-fruit, which Mr. Edgeworth had tasted but did not like. Brassica Eruca was stated to be much cultivated for its oil. Of Raphanus sativus the siliques are boiled as a pot-herb. The ripe fruits of Capparis spinosa were described as separating and curling up in three or four segments like a Martagon Lily, showing the seeds immersed in crimson pulp. The fruit is pickled by the natives, and the buds preserved by Mr. Edgeworth in the European style, proved to be first-rate. Tamarix orientalis is generally covered with salt, so much so that poor people dip it in water to season their bread. The wood when burned is most offensive and stercoraceous; it grows with great rapidity; trees of six or seven years' growth have been measured 5 feet in girth, and they fall down of old age in 20 years. Lactuca sativa is cultivated for its seeds, which are used as a medicine; of Ceropegia tuberosa both the tubers and leaves are eaten as a vegetable; and Boucerosia edulis is also eaten. The villagers go out in great numbers into the desert to collect the fruits of Salvadora oleoides, which is called Pītū, and much eaten; the leaves of Salvadora indica are also eaten as a salad. Boerhaavia elegans is much eaten in the desert. Citrullus fistulosus is much cultivated under the names of tinda, albinda, and dilpasand (beloved to the heart), and is eaten cooked as a gourd. This latter was, though different, described as coming nearest to the Water Melon.

Botanical of Edinburgh: *April* 10.—The President in the chair. The following communications were read:—I. "*The Ahtoor Ghaut and the Ascent to the Shevaroy Hills from Madras.*" By Dr. Alex. Hunter.—II. "*On the Institution of Government Gardens at Travancore, Southern India.*" By J. B. Maltby, Esq., President, Travancore. His Highness the Rajah of Travancore having liberally sanctioned the application of large sums towards the establishment of a public garden or gardens for the introduction into his kingdom of useful and ornamental plants, I proceed to state the manner in which I think that the object sought may be best advanced. The site selected for the principal garden is at Peermade, or rather at a new station named Maryville, a place which appears to be admirably suited for the purpose. It is at an elevation of about 3300 feet above the sea, and enjoys a temperate climate. It is on the line of the high road about to be constructed between Alleppy and Madura. There is every reason to hope that it is free from malaria, being exposed to the influence of the sea breeze; and experience up to the present time bears out this expectation. The ground is undulating and the soil varied; forests and Grass plains alternate with one another. The thermometer (December) falls to 58 in the morning and rises to 73 under shelter at 2 P.M. The rainfall is not accurately known, but is probably about 100 to 125 inches. But the advantage of the site will be more apparent if the objects which chiefly call for attention at the present time are considered. These are—1. Cinchona; 2, Tea; 3, Coffee; 4, Cotton; 5, Vanilla. The Cinchona is of so much importance, that the garden may be viewed as formed to aid in the introduction into the mountainous country of Travancore of this invaluable tree, and the other objects may be considered as subordinate to this.—III. "*On the Cultivation of Cotton in Mysore.*" By C. B. Saunders, Esq. When the subject of an increased supply of Cotton became one of more than usual importance, I made many inquiries regarding the cultivation of Cotton in Mysore, and learnt not only that several of the talooks in the northern parts of Mysore still continue to produce considerable quantities of indigenous Cotton, but that the New Orleans plant, when tried on a former occasion, by order of the late Commissioner, had produced a very superior staple, specially commended by the jury of the Great Exhibition of 1851. I also ascertained that the experiment of cultivating it had been abandoned solely because when the native gin was ascertained to be unequal to the task of cleaning New Orleans Cotton, Sir M. Cubbon found that it would not pay Government to maintain an establishment for purchasing and cleaning the quantity then produced. The Mysore Government, on the occasion referred to, monopolised the crop obtained from the New Orleans seed at a fixed rate, and itself became the exporter or sole agent. Bearing in mind the necessity for holding out every fair inducement to the Ryots to cultivate more extensively the superior plant, without deviating from the instructions of Government, which prohibit all direct interference with the cultivation or sale of Cotton, I felt that the practice formerly pursued was inadmissible. But, having ascertained beyond a doubt that certain large belts of land in the northern and central talooks were highly favourable to the Cotton plant, I decided upon at once initiating indirect means of assistance, which I have every hope will encourage the cultivators of Mysore, and will, by stimulating them to increased exertions, lead to the production, in 1862-63, of a Cotton crop of superior quality in many parts of the province. I have, in the first place, made arrangements for obtaining from Dharwar a large supply of the best seed of the New Orleans plant, which will be sold to the ryots at cost price. Secondly, I have, through the superintendents of districts, notified to the ryots of Cotton-growing talooks, that any waste land taken up for the cultivation of New Orleans or Egyptian plants will be given on half assessment for five years, and that gins will be provided for cleaning the same at a fixed rate per candy in one or more of the principal places in each talook. Thirdly, as it has been found that the great drawback to the cultivation in Mysore of the New Orleans, or other foreign plant, is the difficulty of cleaning it with the rough native machinery of this country, I have secured, as a temporary measure, for the construction of saw gins, the services of a Mr. W. Davis, who was for many years employed by a Bombay house as an agent for purchasing cotton, &c., in the Dharwar country.—IV. "*On some of the Fibrous Plants of Madras.*" By Dr. Hunter. At a meeting of the Agri-Horticultural Society of Madras, on 15th January, 1862, Dr. Hunter laid on the table samples of the cleaned fibres of the Sanseviera cylindrica, introduced into the Society's garden by Sir Charles Trevelyan, from cuttings furnished by Sir William Hooker, which are thriving well in Madras; also fibres of the Sanseviera zeylanica, and cleaned fibres of the Manilla Plantain, Musa textilis, introduced by Lord Harris and Colonel Balfour. These all come under the class of Nars or coarse fibres for cordage and carpet-making. They are all very clean and fit for taking dyes, possess considerable strength and gloss, but the Manilla Plantain does not yield the silky-looking fibre that is produced by the garden Plantain, Musa Paradisaica of India. This fibre is now coming into use for making carriage braid, and hearth rugs, and is nearly as glossy as silk when it is properly cleaned. Mr. Whytock, of Edinburgh, imports it largely for these manufactures from Bengal. Samples of the Madras Plantain fibre are being carefully prepared for the London Exhibition. Dr. Hunter also laid on the table the cleaned fibres of the Yercum bark, Calotropis gigantea, or Bowstring Hemp of India—one of the strongest fibres known. It possesses most of the qualities of flax, and can be worked with the same machinery, as the fibre splits to almost any degree of fineness with the hackle, and bears dressing and beating well. For many years this fibre was employed by the wealthy natives for making strong cloths, cambrics, and lawns worn by the Rajahs, and it is still employed for making fishing lines, nets, gins, bow strings, and tiger-traps, on account of its strength. It does not rot readily in water, as the resinous milky juice of the plant seems to preserve it. The silk cotton from the pod of the same plant was also exhibited. This is also becoming an article of export from India, for the manufacture of a light substitute for flannel; it has been employed by Messrs Thresher & Glennie, of London, for this and other manufactures. It works well with either silk or cotton, and is known now in commerce as Mudar silk cotton.—V. "*On the Cultivation of Cinchona in Java.*" By Alex. Fraser, Esq., Consul at Batavia. The cultivation of the Cinchona plant in Java is still in a state of experiment, and requires scientific management. The conduct of the experiment has been entrusted to the care of Dr. D. F. Junghuhn. Dr. Junghuhn is assisted in the management by Dr. J. E. de Vry, a chemist of some eminence, whose special duty it is to apply chemical tests from time to time to the barks of the Cinchona to ascertain their intrinsic value. To these officials is attached the following staff of overseers and labourers, whose duties, as well as those of Dr. Junghuhn, the superintendent, are laid down in a printed memorandum of instructions. The whole present permanent annual outlay may be stated as follows:—Salary of superintendent, 1250*l.*; salary of chemical assistant, 1000*l.*; allowances for house-rent, 200*l.*; European overseers, 725*l.*; native overseers and labourers, 81*l.* On the 31st December, 1860, the state of the Cinchona Plantations was as follows:—Cinchona Calisaya—Seeds in germination, 264; young plants in the beddings and germinating sheds, 5510; plants and trees planted out, 1806. C. lucumæfolia—Seeds in stock, 700,000; do. in germination, 533,396; young plants in the beddings, 349,700; plants and trees planted out, 56,686. C. succirubra (red Cinchona)—Young plants in the nursery shed, 13; do. planted out, 14. C. lancifolia (yellow Cinchona)—Young plants in the nursery shed, 38; do. planted out, 42. Besides the above, there was then a supply in the nurseries of 1030 live cuttings of Calisaya, 8 do. of succirubra, 28 do. lancifolia, 10 do. lanceolata. The extreme height attained by the trees at the same period (31st Dec. 1860) was—C. Calisaya, 15 feet 8 inches English measurement; C. lucumæfolia, 25 feet 6 inches; C. succirubra, 8 feet 8 inches; C. lancifolia, 15 feet 2 inches; C. lanceolata, 13 feet. The ultimate success of the Cinchona experiment would seem mainly to depend upon the question (which time only will solve) whether a sufficient supply of seed shall continue to be obtained from the Calisaya and succirubra. The *other* sorts contain less quinine, and it is specially maintained that the lucumæfolia is a species producing very little quinine. Mr. John Dawson, Alloa, sent specimens of a beetle (Rhagium bifasciatum), the larvæ of which are destroying the Scotch Fir trees in various parts of the country. Mr. Dawson also sent a specimen of a diseased state of Silver Fir, accompanied by the following note:—"A piece of bark of Silver Fir, infested by some sort of insect or fungus. The disease may be common enough, but it is new here, and has made a good deal of noise in the quarter. A great many trees (Silver Firs alone) are affected by it, and their growth injured or destroyed. Cutting down and burning the trees are the remedial means employed." Mr. W. R. M'Nab, who had examined the specimen, reported it to be a species of Coccus, and allied to Coccus fagi. The insect is of a dark red colour, oval in shape, and very small. When the contents of its body are squeezed out, a red molecular fluid appears to fill up the body cavity, which in a few minutes assumes a green colour when exposed to the air. Mr. William Gorrie exhibited a flower and foliage of Rhododendron Nuttalli, from the greenhouse of Messrs. P. Lawson & Sons, Golden Acre. The plant, which is at present in full flower, is about 8 feet high, and bears three umbellate heads, each composed of eight flowers, which measure 5 inches in width by about 5 in depth. Dr. Macgowan exhibited and presented to the Museum a Japanese broom made of Bamboo and the fibres of Chamærops Fortuni.

Notices of Books.

The Orchard House, by T. Rivers (Longmans), has reached a *tenth edition!* a circumstance unprecedented in Garden Literature. This edition is said with perfect

truth to be "enlarged and improved." About six-and-twenty pages of fresh matter appear, and all the useful suggestions as to management which late experience has suggested will be found in their proper places. We select what is said about Orange houses and forcing with root heat, because of its relation to the remarks made last week in a Leading Article:—

"*How to form an Orange Grove.*—There appears something bordering on romance when one talks of an Orange grove in England, yet it is quite feasible. One day, ere long, Orange groves under glass, giving fruit and flowers and a perfumed promenade, more agreeable than the dusty surface of the ground under a plantation of Orange trees in the countries where they are cultivated for their fruit, will be common enough in England, when the method of making one is pointed out. There are two modes of forming a plantation of Orange trees under glass: one is simply to keep the temperature in winter from sinking below 30°; this may be done by having, in a large span-roofed house 24 feet wide, two 4-inch hot-water pipes all round the house. In a house of this size, and thus heated, a central path 4 feet wide or more should be formed, and the border on each side planted with Tangerin, St. Michael's, and any other kind of Orange that is not too robust and vigorous in its habit. Citrons, Lemons, and Shaddocks should not be mixed with Oranges in planting, but have a portion of the house devoted to them, or they will soon shade the more humble growing kinds. Tangerin, St. Michael's, or other kinds of Oranges of moderate growth, may be planted about 5 feet apart, and the borders in which they are planted, if not loamy or clayey, but light and sandy (for the Orange likes a stiff soil when growing *au naturel*), should have a dressing of stiff yellowish loam and rotten manure, two-thirds of the former to one of the latter, and 6 inches thick; this should be forked over and mixed with the soil to 18 inches in depth, and you will then have a border in which Orange trees will grow freely and bear abundantly.

"A large span-roofed house 100 feet long and 24 feet wide would form a grove large enough for a most enjoyable promenade. An amateur living near Clapham, Surrey, has recently built three houses of this size, one of which will most probably be formed into the first Orange Grove ever seen near London. There is another mode of forming an Orange grove under glass, more expensive and luxurious, by adopting 'geothermal culture,' and heating the borders as well as the air of the house. A house 24 feet wide under this system would require four 4-inch hot-water pipes under each border (with rubble 4 inches deep over them), placed about 2 feet under the surface; with a path in the centre of the house 5 feet wide, each border may be from 9 to 10 feet wide; the pipes about 2 feet apart; besides these there must be two 4 inch hot-water pipes to heat the air of the house in the ripening season. In a house thus heated those delicious (when first gathered) Maltese blood Oranges may be grown, and the Pernambuco and other tropical varieties of the genus Citrus. Tangerin and St. Michael's Orange trees planted in these warm borders would ripen their fruit very early, and it would be more sugary and rich. There seems, indeed, no end to what can be done by Englishmen with the aid of artificial heat and glass. What a beautiful Vineyard under glass could be formed by such heated borders as I have described above; and how charming 'to make a promenade,' as our neighbours say, in such a place. The Tangerin Orange is an abundant bearer when cultivated under favourable circumstances. A correspondent has recently informed me that a tree in his garden at Alexandria, Egypt, not more than 6 feet high, has often given him a crop of 500 fruit."

"*Forcing with Root Heat.*—The most efficient method of forcing Peaches and Nectarines and also Grapes in pots, is to give them root-heat, forming a hot-air chamber by enclosing two 4-inch hot-water pipes between two 4-inch brick walls, and then placing bars, either of iron or wood, across from wall to wall: on these should be placed slates; the heat from the hot-water pipes thus enclosed, will give a surface constantly heated; on this flooring of slates the pots should be placed, not plunged in any material, for if so, the air of the house will not be heated sufficiently. So favourable is this root-heat to the growth of trees in pots, that I have found Vines in pots placed on the brickwork over a boiler, with a surface heated to 130°, make shoots 20 feet in length, and bear very fine fruit. In a house 12 or 14 feet wide, with two 4-inch pipes going round it, the path should be in the centre, and a bed or hot-air chamber, 5 to 6 feet wide, on each side; the pipes should be near the ground, but not resting on it, and the brickwork may be from 20 to 24 inches in height. This method will answer well for moderate forcing, so as to have Peaches ripe in June, but if early forcing is practised there should be two 4-inch hot-water pipes above the hot-air chamber, so as to fill the house with warm air. This extra heat may however be dispensed with, if a house is double glazed, which, as compared with a house single glazed or heated with the same apparatus, will give an increase of from 10° to 12° of heat: for example, a house heated with two 4-inch pipes round it in cold weather in spring, may, with a single roof of glass, have a temperature of 60°, but with a double roof, and with the same heating force, it would have a temperature of 72°. This is an enormous gain, and the construction of such roofs for early forcing will ere long be very general.

"I am indebted to Thomas Bewley, Esq., of Blackrock Park, near Dublin, for the following description of one of his double-roofed houses.

"'The roof only is double; the inner glass, common 21-ounce; the outer, thick rough plate: the inner is glazed, and as usual, fixed; the outer is all in separate sashes, which rest on the rafters from centre to centre, and hold by a neat screw at bottom: thus any one can be taken off at any time, and the surface of the glass cleaned. The space between the outer and inner glass is from 4 to 5 inches, and in this space is motionless air, which acts as a blanket. The only heating to this house is a pair of 4-inch hot-water pipes running round it, a good deal covered up with rock-work."

"'If such a house were glazed in the usual way, I do not think I could do more than exclude frost during severe cold; whereas now I can easily maintain 46° in very severe frost, and 48° to 54° in cold weather. The house is for stove plants, with merely the heating power of a common greenhouse; and, unless the weather be unusually dull and cool, no fire is required from May till October. During the remainder of the year not more than one-half the usual heating power is required—and this is a house for tropical Ferns. I think the annual saving in firing and attendance is fully equal to 20 or 25 per cent.; against this, we have the double cost for a roof and increased painting and breakage; but, on the other hand, we should take into account the extraordinary health and vigorous growth of the plants, and consequently their increased value.'"

BOOKS RECEIVED.—*Smith's Dictionary of the Bible*, Part 7 (Murray). Among the articles those on Groves, the Hippopotamus, Hair, Handicraft, are especially interesting to the general reader.——*Miquel: Sumatra, seine pflanzenwelt und deren erzeugnisse* (Williams and Norgate), a practical description of the Agriculture and Vegetable Physiognomy of Sumatra, with a systematical enumeration of its Flora, and characters of unpublished species.——*Walpers, Annales Bot. Syst.*, Vol. VI. fasc. 2 (Williams and Norgate), now published under the direction of Dr. Carl Mueller, is principally occupied by a systematical and critical account of Orchids by Prof. Reichenbach, Jun. The learned author is now of opinion that the genera of the order are too numerous, a view that we rejoice to find him taking; but when he reduces Cattleya to Epidendrum, and Oberonia to Malaxis, we must hesitate before we follow him.——*Hardwicke's Shilling Handy Book of London* (square 24mo, Hardwicke) with a neat map and views of places.——*Where shall we go? A Guide to the Watering Places of England, Scotland, and Ireland* (square 12mo, Black) is a neat volume illustrated with views of scenery, and full of useful information. It is, however, a great defect in this and similar Guides not to point out to the traveller the true character of the hotels enumerated, so as to give him a chance of not being victimised.——*Sowerby's British Wild Flowers*, Part XIV.

Garden Memoranda.

BIDDULPH GRANGE, THE RESIDENCE OF JAMES BATEMAN, ESQ. (*continued from p.* 480).—Not to travel again over ground so fully described in 1856, the present notice will be almost entirely confined to changes made subsequently to that period. And the first point that naturally occurs is the new approach which has been made from the Congleton road. Congleton being the nearest and most important railway station accessible from the place, the readiest and most convenient mode of getting to it became an obvious desideratum. Formerly, it was necessary to pass round a very considerable angle, by the church, in order to get to the house, which last, as will have been apparent from the plan, stands close to a high road. Now, however, the property is entered from a point much nearer Congleton, and the drive, avoiding the long detour by the church, crosses the high road close to the house, and enters at once into the house court. Advantage is taken of a peculiar turn in the main road, at the entrance, to give the drive the appearance of being the principal and most natural route; thus making the outer road look the subordinate one; and this is always a happy circumstance in the arrangement of an approach. Opposite the lodge (which was designed by Mr. Cooke), and on the further side of the high road, a large recess has been arranged, and in the shadow of some trees an ornamental stone wall with seats and a granite drinking fountain has been considerately placed, and conveys at once a kindly and hospitable impression. From a bank near the lodge, too, the little stream which supplies the other fountain gurgles from amidst a mass of trees and evergreens into a stone basin, from which it is again continually trickling away; thus refreshing the visitor with its coolness and music the moment the gates are passed.

Partly from the necessities of the case, and partly by contrivance to screen off the public roads and other unpleasing objects, the carriage drive passes between sloping banks, of varied outline, planted with great numbers of large Hollies, Yews, and various forest trees; with occasional openings to park-like ground, and to distant landscape. Practically speaking, the road is in a cutting, though with a very natural and by no means cramped appearance, throughout. Near the entrance, and in the shadow of some older trees Cryptomerias have been liberally planted; and numerous Pines and Firs are scattered along the banks. As the road brings us within sight of the house, varied mounds of earth, evergreens of considerable size, and an admixture of tall trees, all of which have been planted here lately, and did not exist in this part before, completely shut out the cross road and the village, and leave only the higher part of the house, with a Belvedere and other towers visible; so that the road which runs so near the house is traversed with a suddenness and an unexpectedness which renders it scarcely visible.

About the house itself, very extensive alterations have been made since the earlier account was published. The entrance corridor and the romantic little Fern-garden then mentioned have disappeared; or rather, the corridor has been transformed, and the rock-garden has given place to a noble new dining room, fitted up with pitch pine, and, like the old dining room, looking into a small open court, treated architecturally, having on its eastern and northern sides a colonnade, paved with coloured tiles. The centre of the court, which is oblong, and has a small border for Periwinkles, Hellebores, and climbers on the two sides next the house, is surrounded by a gravel path, within which, in a Grecian pattern, the form of which is defined by iron divisions or kerbs, is a pretty running margin, about 2 feet wide, of red and white sand, the middle space being occupied by a bed of earth filled with Skimmia japonica, a few specimens of Retinospora, Thuja aurea, and a variegated Thuja down the centre. The border and the walk are edged with a strong stone kerb. The Skimmia is found to be almost the only plant which will succeed in such a confined court with so much shade, and will doubtless, when it covers the ground, be very ornamental, especially during the winter months, when it is covered with its red berries. It is found, also, that the iron kerbs and the sanded borders have the effect of completely deterring slugs, which are often so destructive to the Skimmia, from approaching this centre bed.

Along the north side of the court just referred to, and behind the colonnade, is a passage which at once gives the servants a separate way to the entrance door of the house, allows of the new dining-room being served without traversing any of the better corridors, and communicates, by a branch to the north, with the geological gallery, so that the family can get to this gallery from the main part of the house, under cover.

As already mentioned, arrangements are made by which the public can be allowed to pass through the geological gallery on any particular occasion. It is kept on the level of the first floor of the house, and is approached by several flights of steps; thus allowing access to the office court by an archway beneath it, and also giving room there for many little sheds and garden conveniences. The geological gallery, which is upwards of 100 feet long, is lined with stone and lighted from the roof. It is heated by hot water, the iron tubes for carrying which are made in the form of plinths, or, as in other portions of the house, skirting boards, and are let into the walls so as to produce no more than the ordinary projection. On a platform as you ascend into this gallery, there are recesses on either side, the one containing some choice Roman antiquities, a few of which are also affixed to the walls, and the other filled with a collection of antiquities from Central America. There is an interesting little window in one of these recesses, the tracery of which is composed of old red sandstone in a pleasing kind of mosaic pattern, and which was obtained from India. Other treasures, on which it is impossible now to linger, are scattered about profusely, and have each a history of their own. Advancing into the gallery, it will be found treated in a way that is quite unique, and is singularly illustrative of the great geological facts of the globe. On the one side, at about 3 feet from the ground, a series of specimens, showing the earth's formation, and exhibiting all the various strata in their natural succession, are let into the wall, in a layer about 18 inches wide; and above this are arranged the animal and vegetable fossils that the respective strata yield. Many rare and elegant examples are here brought together, and as the once-living organisms are placed exactly above the strata from which their remains were taken, the series constitutes at once the most simple and complete lesson in practical geology which could be imagined. The whole is distributed into "days," supposed to correspond with the six (so-called) "days" of the Mosaic cosmogony beginning with the granites, and passing into the slates, the limestones, the old red sandstones, the coal formations, &c., with such animal and vegetable remains as occur in each. On the other side of the gallery the walls are covered with geological maps and sections, and between a set of seats provided for the accommodation of those who wish to make the matter a study, is a series of tables, on which various remarkable geological specimens, including a model of the largest gold nugget that has ever been discovered, are arranged; thus rendering the general effect artistic as well as instructive.

From the east end of the geological gallery there is a communication towards the south with a narrow Orangery, in which young Orange trees are planted out at regular intervals, and which further answers for storing bedding, and other small plants. Against one wall of this house there have recently been placed

brackets for supporting pots filled with Thibaudias and similar plants, which, being naturally trailers, require to be elevated in order that their peculiar habits and flowers may be properly exhibited; a practice that is well deserving of imitation, and that indicates the discrimination evinced throughout these gardens in selecting proper situations for plants. Passing through Mr. R. Bateman's studio, a corridor conservatory, devoted chiefly to tender fruits, such as Eugenias, is entered, and afterwards, in one direction, the main first-floor passage of the house is reached, and, in the opposite direction, exit is given to the raised terrace on the same level, from which the greater part of the grounds is seen.

The contents of the Rhododendron house, at the western end of the pile, have lately been described by Mr. Bateman. This is a handsome structure, on a level with the billiard room, from which it is only separated by a plate glass division; both being several steps lower than the principal floor of the house, and both being seen from the entrance corridor, from which, and from another corridor in the opposite direction, they can both be entered. The arrangement is very convenient, and the appearance imposing. And a door on the west side of the Rhododendron house leads on to the new western terrace, which is on the same level, and which will be finished by a raised platform at the southern end. The view peculiar to this platform is that along the Lime avenue, planted with a scolloped fringe of Box, but it also yields an ample prospect of the country to the west, and of the general grounds.

The next separate view from the south front of the house is from the library window, across a parterre which is now being remodelled, to the Rhododendron ground. And another entirely distinct view is obtained from the morning room window, over the parterres numbered 3 and 2. This is by far the best point in the house for seeing the grounds, as the eye travels over an appropriate foreground to the small lake below, and there is a vista beyond into the adjoining pastures. From this point, indeed, the irregular form of the water, the grouping on the island, the masses of Rhododendrons and Azaleas around, and the fine bold plantations of evergreens with which it is all flanked on both sides, are extremely telling. An entirely different scene is presented from Mrs. Bateman's boudoir, which is over the tunnel in the long terrace walk, and looks eastward, exactly in the line of the Wellingtonia avenue. The great straight walk is at least half a mile long in this direction, with a rapid ascent to the extreme end, where the rock that terminates it is surmounted by a flag-pole.

Mrs. Bateman's garden, to the south of the tunnel that passes under part of the house, and entered by a secret door in this, is laid out in tolerably broad walks, with stone edgings, and beds four or five feet wide, the centre of which can easily be reached. It is admirably placed for privacy, and affords every sort of facility for lady gardening. It was originally devoted to bulbs, because these are seldom fit to be seen after their flowers have perished, and this department is not visible from the rest of the grounds. To the bulbs, however, are now added choice herbaceous plants, and any other rare things which individual fancy may select.

The tunnel between the house terrace and the parterre numbered 4 has been a good deal lengthened by the enlargements of the house, and is still lined with peeled Larch, the bars being disposed diagonally on either side of the rafters, like the bones of a fish's body. The choice of wood for this purpose is particularly happy; for stone or brick would have a cold uncomfortable appearance in a tunnel of this length, and would never seem to be dry, however dry it might actually be made. Festoons of the sweet scented Clematis line the walk from the tunnel to the cross terrace, through the little Cherry orchard. And there is a stone archway, crowned by a bold eagle in carved stone, at the commencement of the steps leading up to the tripod at 31.

What is called the Dahlia walk on the plan is parallel with the upper or house terrace, with which it is connected at several points, and ends in a shelter house or tower. It consists of a long series of small ascents, of two steps each, the borders having a thick edging of stone. At the back of each border is a clipped Yew hedge, in a series of steps corresponding with the rises in the walk, with lower cross hedges opposite each set of steps. The divisions thus formed are filled with Dahlias, in the proper season, each space being appropriated either to plants of one kind and colour, or to a varied intermingling of these at pleasure. The walk is so placed that it can be avoided altogether when the Dahlias are out of flower, while, even at that period, the cross hedges prevent the bare ground from becoming conspicuous or unsightly. And this is another of the many instances in which ingenious contrivance is adopted for accomplishing special gardening objects. *E. K.*

(To be Continued.)

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Nothing should be brought here after this time but what is well grown and bloomed, nor should any plants be allowed to remain that are at all shabby; for it is bad management to occupy glass houses with plants of inferior interest to such as may be expected soon to be plentiful out of doors. It is not desirable, however, to crowd the house with flowering plants; the aim should rather be to have a moderate number of handsome specimens effectively arranged, which will yield more real interest and pleasure than a greater amount of floral display from plants of no individual merit. A thin arrangement will also be advisable on account of the permanent occupants of the beds or borders, which at this season should be allowed plenty of space, in order to secure strong and well ripened wood, without which they need not be expected to bloom finely. Use every means to keep down insects. Give clear weak manure-water to young growing specimens, and repot any that are intended to have another shift this season, so as to have the pots well filled with roots before winter. Maintain a moist growing atmosphere, and syringe vigorously any plant at all infested with red spider. Encourage backward plants of Orchids with plenty of heat and moisture while that can be done safely. See that plants on blocks and in baskets are properly supplied with moisture at the root; to prevent any mistake in this matter, carefully examine every plant at least once a week, and immerse any found to be dry in tepid water until the material about the roots shall have become well soaked. Syringe lightly morning and evening, and sprinkle floors, &c., in order to keep the atmosphere thoroughly moist.

FORCING DEPARTMENT.

Pinery.—Attend carefully to growing stock, keeping the bottom-heat regular and the atmosphere warm and moist, and use every means to secure rapid vigorous growth. This will not be obtained, however, unless all is right at the root; therefore attend well to watering, and never allow any of the plants to become pot-bound. Give air moderately to young stock, and shut up early in the afternoon, giving the plants a gentle syringing, and the house a good steaming by wetting every available surface. Continue to pot a few suckers as they can be obtained of sufficient strength, and do not allow too many to be produced by one plant, as they weaken each other. Indeed never allow a sucker to grow to any size that is not likely to be wanted for stock, and, unless in the case of any scarce sort, never more than two on a plant. Plants growing in beds of soil must be very carefully attended to with water, giving enough at each application to moisten the whole mass of soil; for unless this is attended to, the bottom of the bed will sometimes get quite dry, while the surface is moist.

Vineries.—The inside borders of houses intended to furnish a late supply of Grapes should be well soaked with manure water as soon as convenient, so as to allow of their afterwards becoming dry, for damp would be most injurious, and anything likely to cause it should be avoided. Muscats beginning to ripen should be assisted with fire heat, for it is hardly possible to ripen these properly at any season without artificial heat; and those for late use should be pushed on, so as to get them right by the end of next month at the latest.

Figs.—The second crop on the earliest trees will in some places be fast advancing towards maturity; as soon as the fruit begins to ripen the atmosphere should be kept dry and rather cool, giving air freely every fine day, and using a little fire on wet cloudy days, to prevent damp and to allow of a gentle circulation of air. Use every care to keep the foliage clean and healthy, and clear of insects, and do not crowd the young shoots.

Melons.—Plants on which the fruit is ripening should be kept dry at the root, and freely exposed to air on fine days, avoiding moisture in the atmosphere as far as can be done without injury to the other plants. Do not allow the bottom heat to decline where the fruit is setting, which is a frequent cause of the young fruit dropping off. Keep a watchful eye on the foliage, and guard against red spider, which, if once allowed to establish itself, can hardly be removed without greatly injuring the tender foliage.

FLOWER GARDEN AND SHRUBBERIES.

The weather during the last eight or ten days has been very favourable for newly planted out stock, and well prepared plants will be rooting freely; pegging down and staking will therefore soon be necessary. Remove suckers as they appear from Roses and clear the stems of wild shoots. Strong shoots of Chrysanthemums may soon be layered to produce dwarf compact bushes. Carnations and Picotees will soon be in bloom; let plants in pots be moved under an awning like that used for Tulips. Here they may be arranged on a raised platform or not according to taste. Picotees may be grouped on one side and Carnations on the other, taking care that the tallest plants are behind, and at the same time contrasting the colours as much as possible. Pipings may be put in on a gentle hot-bed. All seedlings should be marked, noticing their various properties as to form, colour, and substance. If any bedding plants are yet out of the ground, turn them out with as little disturbance of the roots as possible. Sometimes, however, older kinds will be found root-bound, and in that case the compact mass should be broken a little so as to disengage the entangled roots and give them a new direction. The neglect of this simple rule often prevents a plant flourishing, for the close and matted ball of roots will throw off any wet which comes upon it, and the consequence will be that the plant will not grow. Press each plant firmly into the soil and give it a good watering. This leads us to observe that both the beds and the pots should be in a rather dry state when this work is attended to, as nothing is worse than working in mud, or clay, or anything approaching to them. When the soil is a little moist without sticking to the fingers, it is in a state fit for any gardening operations. Water applied then will run through, and benefit the roots of the plants without saturating the material in which they grow. Watering afterwards must be performed with discretion. The roots will extend themselves far more rapidly in a dryish warm substance than in one made crude and cold by over watering. A good rain will be of great benefit, and so long as the plants do not suffer from drought it will be best to wait for the friendly irrigation of the clouds.

HARDY FRUIT AND KITCHEN GARDEN.

Continue to watch wall trees carefully; disbud by degrees and keep them clear of insects. Endive may be planted. High manuring is necessary to have it in perfection. Keep succession beds of Horn Carrots duly thinned. Let a good breadth of ground be prepared for Spinach; trench it thoroughly and let it be well manured. Continue getting out Broccoli and Cauliflowers. A Mushroom bed may now be made; throw the dung together to ferment for a few days; when half dry, mix one-third of loamy soil with it to keep in check any further fermentation, and tread or beat hard while making the bed, forming the spawn holes immediately it is finished to assist in keeping down the heat. Strawberry runners may soon be procured. Those who cannot spare ground for a new plantation may prick them out in prepared beds about 6 inches apart, and remove them with balls in October. Ground intended to be cropped with Onions, should be heavily manured, and dug at least 18 inches deep in autumn. The main crop should have been sown in March; but a small breadth, for spring and early summer use, may be sown the second week in August. Choose a dry day for putting in the seed. Mark out 4 feet beds, with 1 foot alleys between, and work the surface soil until it will pass freely through the teeth of an ordinary iron rake; then draw drills about an inch deep, 6 inches from each side, and 9 inches apart, in which sow the seeds regularly, and cover with light porous soil.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending June 4, 1862, as observed at the Horticultural Garden

May and June.	Moon's Age.	Barometer.		Temperature					Wind	Rain.
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep		
Thurs. 29	1	29.872	29.624	73	54	63.5	57½	55½	S.	.00
Friday 30	2	29.672	29.418	68	52	60.0	60.0	56	S.E.	.15
Satur. 31	3	29.938	29.825	76	43	59.5	59½	56½	W.	.02
Sunday 1	4	29.993	29.870	76	40	58.0	59½	56½	N E	.00
Mon. 2	5	30.030	29.977	79	52	65.5	60	57	S.W	.00
Tues. 3	6	30.095	29.092	69	41	55.0	62	58	S.W	.02
Wed. 4	7	30.153	29.941	72	44	58.0	61	58	S.W	.00
Average		29.964	29.678	73.3	46.5	59.9	58.3	56.7		.19

May 29—Densely overcast; cloudy and fine; overcast.
— 30—Hazy; overcast; rain; cloudy; rain at night.
— 31—Densely overcast, cloudy and mild; fine.
June 1—Very fine throughout; cool at night.
— 2—Very fine, with warm south-west wind.
— 3—Fine with light clouds; showers; very dry air; cool at night.
— 4—Clear; fine, very dry; very fine.
Mean temperature of the week 3.9-10th deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending June 14, 1862.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 8 ..	70.0	47.4	58.7	14	0.45 in.	4	8	1	—	3	14	4	2
Mon. 9..	70.0	49.2	59.6	18	1.48	1	7	3	2	3	14	3	3
Tues. 10..	71.2	47.7	59.4	16	0.95	1	9	2	2	3	8	7	4
Wed. 11..	71.8	48.4	60.1	11	0.47	1	6	3	3	4	9	10	—
Thurs. 12..	71.2	49.5	60.3	16	0.78	—	7	3	1	6	13	3	3
Friday 13..	72.0	48.8	60.4	16	0.56	1	5	6	1	2	11	8	2
Satur. 14..	72.8	48.7	60.7	15	0.36	1	3	6	1	6	10	8	1

The highest temperature during the above period occurred on the 7th, 1846—therm. 90 deg.; and the lowest on the 14th, 1860—therm. 34 deg.

Notices to Correspondents.

Books: *S.* For hardy Vines, take Hoare on the Vine; for tender ones, Sandars on the same subject. In Thompson's Gardeners' Assistant you will find full information upon this and all other parts of fruit gardening.

Insects: *O O R.* Your worm-like insect is a species of thread worm (Filaria sp.) A statement of its habits would have afforded a clue to its more precise identification.—*Col.* Your insects belong to the diamond beetle group of Weevils, Polydruzus argentatus.—*J G.* The little snake millepedes which you state have eaten out the inside of the Carrot and Parsnip seeds, and caused a failure of your crops, are the Iulus pulchellus. They may be captured in great numbers by fastening slices of Potatoes on bits of wood and burying them in the ground.

Names of Plants: *A Gibb.* The plant from Queensland belongs to the genus Leptorhynchus, and appears to be undescribed. We cannot attach any value to it as an ornamental plant.—*J W.* Oncidium viperinum, as far as we can judge from a single flower.—*Joachim.* Aerides crispum.—*W H B.* Merely a garden variegated state of Aquilegia vulgaris.—*C J D.* 2, Ceanothus papillosus.—*S H.* 1, Caragana arborescens; 2, Coronilla Emerus; 3, Looks like a drawn up specimen of Cytisus Weldeni; 4, Mespilus grandiflora.—*G.* One of the forms of Pyrus intermedia, very near Pyrus scandica, but less glaucous beneath the leaves. You may surely obtain the two others you name upon application to Mr. Osborne, Nurseryman, Fulham; or, failing him, we will send you grafts next spring if you remind us.—*W T.* We cannot match the leaves. Is it not a Sollya? It is not a Campylanthera, but may be something allied to Pronaya elegans.

Rose Mould: *J C L.* The mould which is attacking your Roses is undoubtedly the young state of Erysiphe pannosa, known under the name of Oidium leucoconium. Persevere, therefore, with the sulphur. *M. J. B.*

THE LONDON MANURE COMPANY
(Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

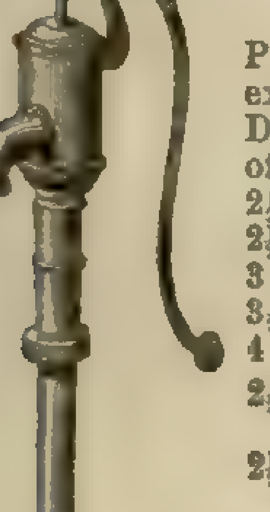
IN compliance with orders just received from the Peruvian Government, our price for GUANO has been advanced This Evening to 13l. per ton, for 30 tons and upwards, 14l. 5s. for one ton up to 30 tons.
Anty. Gibbs & Sons,
15, Bishopsgate Street Within, London, E.C., June 3.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. Macadam, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0
These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.
BURNARD, LACK and CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.
Extract of Opinion from Mr. Way, January 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures.'
Extract of Opinion from Dr. Voelcker, January 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

JOHN WARNER AND SONS,
Bell and Brass Founders to Her Majesty,
Hydraulic Engineers, Braziers, &c.,
8, Crescent, Cripplegate, London, E.C.

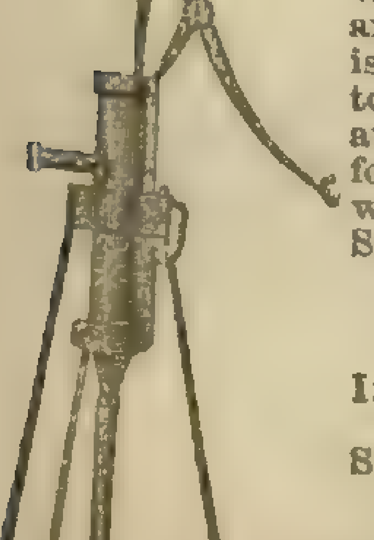

No. 35.

WARNER'S PATENT CAST-IRON PUMP, for raising Water from Wells not exceeding 25 feet in depth.

Diameter of Barrel.	Height.		£ s. d.
2½ in. short	1 ft. 7 in.	Fitted for lead,	1 1 0
2½ ,, long	3 ,, 3 ,,	gutta percha	1 10 0
3 ,, ditto	3 ,, 6 ,,	or cast iron	2 4 0
3½ ,, ditto	3 ,, 6 ,,	flanged pipe	2 9 0
4 ,, ditto	3 ,, 6 ,,	as required.	2 18 0

2½ ,, short, with 15 feet of Lead Pipe attached, ready for fixing 2 0 0
2½ ,, long ditto ditto ditto 2 14 0
This Pump is fitted with J. W. & Sons' Patent Vibrating Standard, Improved Revolving Cap, Metal Bucket, and Brass Suction Valve. By means of the Revolving Cap the handle can be shifted to the right or left hand, or opposite the nose, as desired.

WARNER'S IMPROVED LIQUID MANURE or GENERAL PORTABLE PUMP.


No. 42.

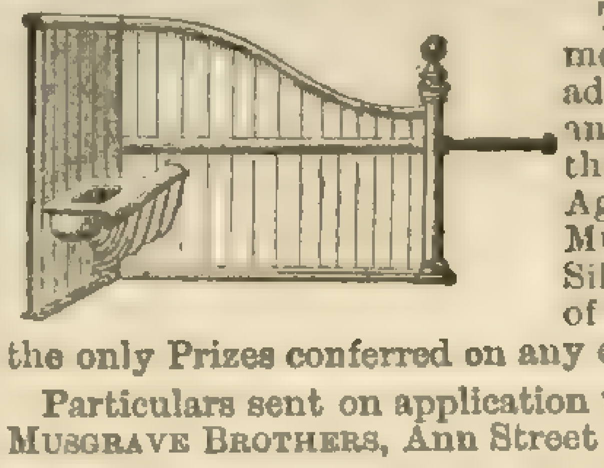
This Pump is fitted with Warner's Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

	£ s. d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2 15 0
If fitted with Barrel of Planished Copper	3 4 0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2 9 0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires in either 10, 12, or 15 feet lengths .. per foot	0 2 5

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2l. 5s.
Every description of Machinery for Raising Water, by means of Wheels, Rams, Deep Well Pumps, &c.; also Fire and Garden Engines, &c.
J. W. & Sons' Illustrated Catalogue forwarded post free on application.
The above may be obtained of any Ironmonger or Plumber in Town or Country, or of the Patentees and Manufacturers, John Warner & Sons, 8, Crescent, Cripplegate, London, E.C

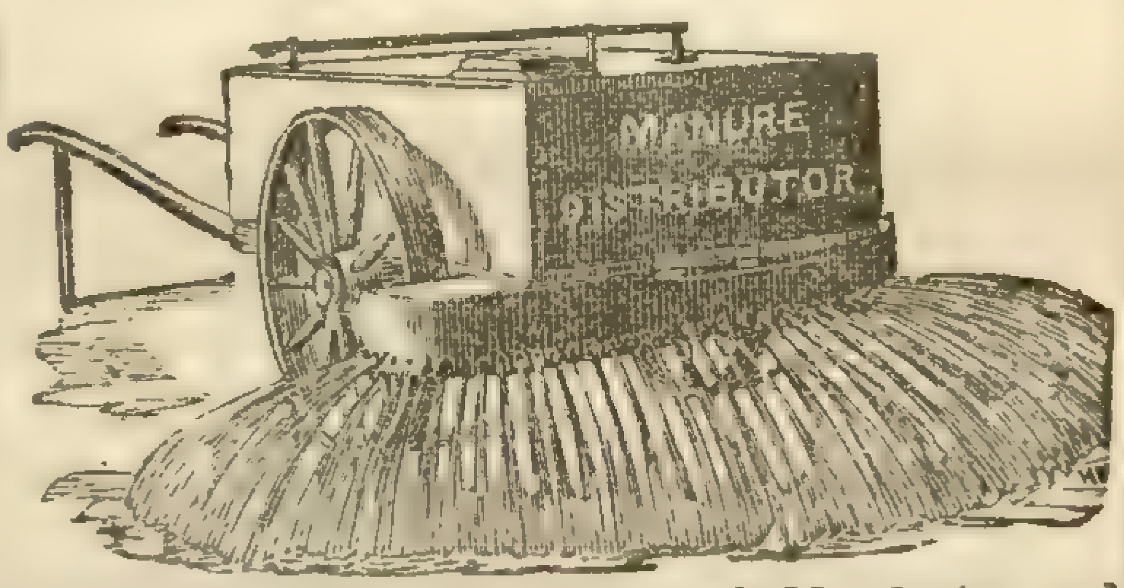
Advertisement.
To the Editor of the Agricultural Gazette.
Sir,—Besides showing my Farm you know that I am always ready to give all the information I can. Here are some extracts from a letter that I have received this morning from a gentleman who is a total stranger to me.
"In 1860 I hired a set of your Tackle to work 22 acres over twice. It made a first rate job of it.
"In 1861 I hired it to do 120 acres once over. It made a very good job.
"This year I thought I would try again, but as the gentleman whose implement I had hired had discontinued working by contract, I was obliged to look out for another. This I found in a man who had purchased a set of Fowlers' small tackle. We started on a 20-acre field with Fowlers' grubber, with which we could not get on very well. We then tried Howard's tool or grubber, or whatever else they may call it. After repeated trials we were obliged to throw it on one side without going a round of the field. We then fetched Smith's No. 3, and finished the field without a stoppage or hindrance of any kind, so that I think it is a very fair trial, and with which I am perfectly satisfied. What I state here are plain facts, and I shall be pleased to show the work to any gentleman who would like to see it."
These plain facts I lay before my brother farmers, for them to judge for themselves.—I am, Sir, your obedient servant,
William Smith.
Woolston, Bletchley Station, Bucks, May 29.

MUSGRAVE'S PATENT STABLE FITTINGS and HARMLESS LOOSE BOXES, PATENT IRON COW HOUSE FITTINGS, and IRON PIGGERIES.



These inventions are recommended as possessing numerous advantages not to be found in anything hitherto made. At the late Meeting of the Royal Agricultural Society at Leeds, Musgrave Brothers received a Silver Medal, and two Awards of "Highly Commended," being the only Prizes conferred on any competitor in this class.
Particulars sent on application to the Inventors and Makers, Musgrave Brothers, Ann Street Iron Works, Belfast.

Liquid Manure Distributor.



THE JUDGES of the Liverpool, Manchester, and Staffordshire Agricultural Shows, 1861, have each awarded the First Prize to I. James, Tivoli Works, Cheltenham, for his LIQUID MANURE DISTRIBUTOR, making a total of 17 Prizes. It is also well adapted for Watering Streets, supplying the Steam Plough, Irrigating, or for a Fire Engine. Also his last great improvement in WASHING MACHINES, which have been awarded several First Prizes, and will wash 20 Shirts in 20 minutes.

MR. JAMES BLACK, formerly Factor for Sir Norman Macdonald Lockhart of Cornwarth, Mr. Gordon of Ellow, and Mr. Cunningham of Larnshaw, has been induced to commence business in London as a LAND AGENT, VALUER, and DRAINAGE ENGINEER, and trusts from his large and varied practical experience to merit the patronage and support of Landed Proprietors and the public in general.
20, Great George Street, Westminster, S.W.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To Landowners, the Clergy, Estate Agents, Surveyors, &c. in England and Wales and in Scotland.
The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

Land Drainage.
WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.
Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.
No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.
Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.
Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.
Applications to be made to William Clifford, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

Land Drainage.
MR. JAMES SANDERSON, Land Valuer and Drainage Engineer, has always in his employment a large and efficient staff of DRAINERS, and undertakes by Contract or Commission the drainage of any extent of land.
Parties who wish land drained so soon as the hay harvest is over, will please to communicate early with Mr. Sanderson, 15, Manchester Buildings, Cannon Row, Westminster

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. Humbert, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

MONEY to LEND to Farmers of responsibility, upon personal securities, stock, &c., in sums from 200l. to 1000l., for long or short periods, from 5 per cent.
Apply by letter to Mr. Goodall, 12, Beaufort Buildings, Strand, London, W.C.

THE SPARKENHOE FARMERS' CLUB will hold their GREAT ANNUAL MEETING on the Race Course at Leicester, in conjunction with the Autumn Show of the Leicester and Leicestershire Floral and Horticultural Society, on SEPTEMBER 2, 3, and 4, under the patronage of the Mayor and Corporation.
President.—The Right Hon. Lord John Manners, M.P.
Supported by the Nobility, Clergy, and Gentry.
Lady Patroness.—The Countess Howe.
Prizes about 1100l. in value will be awarded, including the following:—

Steam Cultivation	£70	0	0
Implements, Ploughing, &c.	80	0	0
Best Fat Beast	35	0	0
Best Store Beast	30	0	0
Best Long-woolled Sheep	15	0	0
Best Short-woolled Sheep	15	0	0
Best Entry of Pigs	13	0	0
Best Nag Horse	25	0	0
Best Cart Horse	25	0	0
Poultry, Rabbits, &c.	70	0	0
Cheese, Corn, Wool, and Roots	130	0	0
Fruits, Flowers, Plants, and Vegetables ..	160	0	0

Prize Lists and further particulars may be had on application, and all Certificates of Entry must be returned to me on or before August 7.
Thomas Davenport, Secretary and Collector.
Ashby-de-la-Zouch, June 7.

YORKSHIRE AGRICULTURAL SOCIETY.—
GREAT SHOW AT YORK.
AUGUST 6, 7, and 8. For Prize Sheets apply to
John Hannam, Secretary.
Kirk Deighton, Wetherby, June 7.

ROYAL AGRICULTURAL COLLEGE CLUB.—
The ANNUAL DINNER will take place at the Cremorne Hotel, Chelsea, S.W., on THURSDAY, June 26, at 6 o'clock.
Each Member can introduce a friend. Tickets to be obtained of John Coleman, Esq.
Royal Agricultural College, Cirencester.

The Agricultural Gazette.

SATURDAY, JUNE 7, 1862.

—— At the half-yearly meeting of the Highland Society held on Wednesday, 70 new members were elected. The prospects of the Scottish division of the great show at Battersea were declared—26 entries in the Polled Angus breed, 21 Galloways, 24 Kyloes, 63 Ayrshires, among cattle—27 horses—87 head of Blackfaced and 44 head of Cheviot sheep make up the Northern complement of the exhibition.

By much the most important part of the business before the meeting, however, related to the proposed endowment of the Chair of Agriculture in the University of Edinburgh. It had been remitted to the directors of the Society to communicate with the University Commissioners in order to an endowment of that Chair in some correspondence with its national importance. The discussion of the subject with this body has however led to nothing, a mutual endowment from the funds at the disposal of the two bodies respectively having been declined by the latter.

The expiry with this year of the powers possessed by the University Commission appears to have been the only reason inducing the directors of the Society to take any immediate steps in the matter. The conduct of the Commissioners in largely subsidising a Chair of Sanscrit, which cannot compare in importance with the Chair of Agriculture, and in adding to the endowment of the Chair of Civil History, connected with which no lectures have for several years been given, while they refuse all assistance to the Chair of Agriculture, which is of great national importance, and of especial importance in Scotland, where there is a special agricultural reputation to be maintained, is inexplicable. But it is plain from more than one announcement at the meeting last Wednesday, as well as from the report of the Directors itself, that the Highland Society no less than the University Commission are to blame in the matter. It seems to us impossible to avoid the conclusion that the subject hitherto has been discussed on personal grounds almost exclusively; and that personal motives and

antipathies have been allowed an influence which in the discussion of a question of such great public importance they ought never to have possessed.

—— On Wednesday, the 18th of June, Mr. JONAS WEBB will dispose of the remainder of the Babraham Southdown flock; and to the crowd of English farmers who will for this, the last of his annual gatherings, then crowd around him, there will doubtless this year be added an unusual number of the French and German agriculturists who are attracted to our shores by the International Exhibition and the Battersea meeting. They will witness the final dispersion of the most celebrated flock of sheep of the present century; and from the prices reached they will doubtless learn the estimation in which individual quality combined with good pedigree is held by English breeders.

The demand for long and lustre wools cannot depreciate the value of the short-woolled pure bred Southdown sheep so long as over all the south of England our chalk soils are devoted almost exclusively to the cultivation of Blackfaced breeds. It is to the flocks of those who have for 30 or 40 years assiduously cultivated those special points in the Southdown sheep which constitute the type of merit, that the breeders of Blackfaced sheep must always come for the maintenance and improvement of their quality. There cannot therefore be a doubt that the last opportunity of securing the results of such unequalled ability and perseverance as Mr. WEBB has all his life devoted to this pursuit will be eagerly seized.

The list for sale on Wednesday, June 18, includes 150 shearling rams and 58 lots of ewes, being the lambs bred from the flock which was sold last year.

WE attempted to show last week that the Short-horn breeder should derive great encouragement from the results of the Poissy show; that instead of being afraid that he has lost a customer he may rest assured, provided he maintains the character of his wares, that he has only created a customer, whose wants will increase in proportion as they are supplied. The cases, in fact, of the implement manufacturer and the Short-horn breeder are quite reversed, for, whereas in the former, our neighbours, obtaining one pattern can set about pretty successfully to construct an indefinite number of threshing machines or HOWARD's ploughs, no amount of assiduity on the part of the latter will enable him, without fresh infusions of blood from our shores, to maintain the character of the Durham breed he seeks to naturalise. Iron and wood are not very dependent on conditions of life, but cattle are, and it is this dependence, this leaning of the Durham upon the conditions amidst which he grew up in his native pastures, which constitutes the hope of the Short-horn breeder, and should lead him to renewed efforts to improve the position he now holds.

It has been stated that this breed has only recently made way across the Channel; that it has met with with the same obstacles which opposed its progress in England; but that when these are overcome, and certain ameliorations now in progress are completed, a splendid field will be open. In proportion as isolated districts have been opened up by the construction of good macadamised roads, and iron ways in Britain, has the Short-horn advanced, to the confusion of the local breeds, overthrowing or absorbing the weak, and dictating terms of tenure to the more powerful. So it will be in France. What changes will not be effected by such lines as those from Lyons to Avignon, from Bordeaux to Cette, and the Grand Central line with its branches? Since 1815 80,000 miles of roads have been opened; 10,000 miles of railway have been completed or are now in progress; canals have been made, rivers have been rendered navigable, ports and docks have been constructed. For such purposes within the last 26 years 40,000,000*l.* sterling have been expended, but there must yet be four times this sum paid out to give our neighbours the advantages we possess. Suffice it to say, however, that the French are quite alive to this necessity. Napoleon is quite aware of the fact that the construction of roads and the equalisation of prices are no mean agents in staving off political crises. The more this road-making proceeds in the Northern and North-western districts, the wider will be the field opened to the Short-horn. In England this breed has had to contend with local pride. The stranger has not at once found favour. He has had to fight his way to the top of the prize lists. In the South and West the Devon and Hereford hold their own against him; and in the Midland districts natives are unwilling to lower their long horns in token of submission; while the canny folk of Scotland would like to rob the Durham of any supposed triumph by maintaining that the best blood which runs in his veins flows from pastures in higher latitudes than Carlisle. With us the Short-horn will only flourish under certain conditions. It is too aristocratic to put up with low farming. In France the same *hauteur* must be expected, and good farming must either have preceded him, or must be one of the prospective conditions upon which he will agree to remain in any district.

With these restrictions there is about a fourth of France upon which the Short-horn may implant his lordly hoof, and exist if so desired without admixture of baser blood. Take the map of France, strike a right line through Paris, one end of which shall rest upon La Rochelle, at the mouth of the Charente, the other on the sources of the Oise on the Belgian frontier, and we shall enclose a sort of peninsula which contains, with Bretagne as its point, La Vendée, Flandre, Picardie, Normandie, Maine, Anjou, and the Isle of France, within their boundaries. According to the new territorial division, there are 21 departments. The hard granite and silurian rocks which have wrestled with and defeated the waves that for centuries have thundered against the western coast, now stand out from Brest to Cape Finisterre, to protect plains of tertiary age and great fertility. As to temperature, there is not any great dissimilarity, for we find that the isothermal line, which represents an average temperature of 50°, runs in a deflected course from Holyhead to Norwich, while that which represents only 1° in advance bisects Paris. This division of the country is the natural home of three great bovine families, the Norman, the Breton, and the Flanders. The home of the first, enclosed by a line from St. Malo, Alençon, crossing the valley of the Seine, and extending to the north coast, a little above Dieppe, possesses a great variety of soil, formed of the decay of the primary, secondary, and tertiary rocks; the Breton, confined to the sparse pastures of a granitic and schistose district, is specially adapted to it; while the Flanders has been moulded by the influence of a rich alluvium. All three of these, both pure and mixed, have extended from their original domains; but still there is plenty of room, as the English average of one head to 7½ acres is far from being reached generally, though in Bretagne the little cattle swarm upon the mountains at the rate of one head per 5 acres. In all probability, however, the value of the Short-horn will be seen here not so much, if preserved in its purity, as it will be if crossed with these indigenous breeds, particularly the Breton, and the Norman, or Cotentin. This is of course a question which must be decided by experience. There is little prospect of the Durham displacing the Breton. The mountain pastures would never clothe that great frame; but in some parts and in higher elevations it is possible that pure herds might be nurtured for the purpose of counteracting the tendency of the residents on lower levels to degenerate. But allowing that this tendency will be always most safely and expeditiously counteracted by the importation of new blood from England, it will be seen that while the Short-horn may spread as a pure breed over a large space of country, it will be most useful in ameliorating other breeds.

It was easy to perceive at Poissy that if time were given, excellent results might be obtained with the Norman, by a long course of discriminating selection. This breed possesses capital properties, and might do well without admixture of better blood. But men usually will not take a circuitous path to a point, when they can reach it by a short cut. One cross between the Norman and the Short-horn produces a better animal than a lengthened process of selection, and two crosses exalts a standard which can only be reached by the pure Norman in exceptional cases. These cross-breeds were, in fact, the strength of the show. It is true that the prize of honour on the French side rests with the pure French Durham, but it must be remembered that the six large money prizes for early maturity were awarded, save in one instance, *to the results of a first cross of the Durham with the native breeds*—namely, the Durham-Manceau, the Durham-Breton, the Durham-Norman, and the Durham-Garonaise. What may be done by a first-cross in the reduction of a leviathan native skeleton to a more comely appearance may be seen by the following measurements:—

	A Norman pure.	Durham Norman.
Height to shoulder ..	5 ft. 7 in. ..	.. 5 ft. 9 in.
Length to shoulder	5 ft. 11 in. ..	.. 4 ft. 10 in.
Length to horns ..	8 ft. 6 in. ..	.. 6 ft. 9 in.
Girth	9 ft. 1 in. ..	.. 8 ft. 6 in.
Measure below knee	0 ft. 11 in. ..	.. 0 ft 7½ in.
Weight	216 stones. ..	.. 150 stones.
Age	7 years 2 months. ..	4 years.

There was a mellowness about the touch of the cross-bred animal which no amount of feeding could possibly give to the other. The Bretons were surprisingly improved by the alliance of the Durhams; and, while their milking properties do not suffer in the process of transformation, their fattening properties are much increased, and they are likely to prove, so moulded, a very valuable addition to our own mountain breed. The Flanders cow, whose ample udder distils rich streams of milk, will probably not give place to the Short-horn; but while that breed, together with the Norman cow, supplies the Paris market with milk, it is probable that the help of the Short-horn will be obtained to increase the quantity of meat produced by the male division.

We have on a former occasion stated reasons for believing that the Short-horn will not escape degeneracy in France, unless maintained by frequent importations of blood from England. We have now given some reasons which induce us to think that the Short-horn will be more valuable to form crosses than to exist alone; and we have further shown that in either case a very wide field is open to this breed, and a highly important market to the English herdsmen. The Hereford and Devon breeders may be excused if they question the success of the Poissy meeting, but the Short-horn men must be especially blind to their own interests if they undervalue it. *R.*

AN ENGLISHMAN'S VIEW OF SCOTCH FARMING.

WE so frequently hear the farming of Scotland spoken of as being superior to that of England, and the rents that Scotch farmers pay as so much higher, that I was glad of the opportunity a recent visit to Scotland gave me to observe for myself how far this is the case; for I must confess to sharing the English prejudice against Scotch practice as seen in England, and could not understand how farmers could afford to pay higher rents in Scotland, seeing that the advantage of better climate and markets lay with England; but since my inspection of Scotland I must admit that there is much truth in what is said of its farming, for I found it more uniformly good, and the rents, after every allowance for lesser parochial charges, decidedly higher than in England. My first impression on seeing Scotland was that most of its cultivated land must have been newly inclosed, and farmers were benefiting by modern buildings, large open fields, and straight fences; for I saw they have little to contend with from old buildings, or the waste from useless hedges, hedge-row timber, and irregular inclosures. The houses are better suited to a higher class of capitalists than are usually found on similar holdings in England, and the homesteads are more commodious, better arranged, and with larger amount of accommodation for stock, and are altogether more suited for what is called high farming. Few farms over 200 acres of ploughed land are without steam or water power and fixed machinery for threshing, &c., or are without lodging for the labourers employed on the farm; and the practice of giving more cottages for families with the farms is increasing. I could see greater activity in the horses and labourers, and more system in the management, much of which I attribute to the greater command of labour the farmers have in their own resident labourers. On referring to my note book I see that farms are customarily let on leases of 19 or 21 years, without a break in the period, and fresh terms are generally made on every renewal, when the re-letting becomes a matter of fresh bargaining. I was shown a farm 11 miles from a large market, where much of the produce comes to England, which had been relet last year at 5*l.* per Scotch acre, the former rent having been 45*s.* The adjoining farm of 350 acres is let at 38*s.*, having been taken for 19 years, in a period of great agricultural depression, and when much out of order and wanting draining. The new tenant commenced with tile draining the whole at a cost of 8*l.* an acre, and when telling me of this large outlay in improvement spoke of it as having answered, and appeared to think it a matter of course that his landlord should take advantage of the improved value of the farm to raise the rent when his lease should be out. From this it will be seen that the break of tenure on the expiration of the lease is considered to terminate the former bargain, and periodically brings a re-arrangement, often leading to a wholesome change of occupancy, an increase of rent and a fresh start in improvement. The landowner taking advantage of the improvement since the last letting to benefit his income, and the tenant of his fresh interest in the farm to commence new improvements, the advantage of which is so long secured him. I may be told by English farmers that such a practice can answer only with landowners and must be injurious to tenant farmers; but surely it will be seen, were this

so, that agriculture would soon cease to flourish. The prosperity of tenants and landowners must ever be bound up together; and that this is so, and the system works well, is seen in the superior condition of Scotch farms, and the higher rents they command. I do not mean to infer from this that we have not as good farming in England as any I saw in Scotland; I should be wrong in doing so, for I saw little in the practice in Scotland that the higher class of English farmers would copy; but I must admit that the general practice in Scotland is more uniformly good, and one sees far less bad farming there than in England.

If I have done justice to my subject, many of your readers, knowing the prejudices of English landowners in favour of annual tenancies, small enclosures, broad hedges, and hedgerow timber, and against giving farmers cottages for their labourers, and how often English farms are badly provided with buildings, will see sufficient in all this for the more uniformly good farming of Scotland and the higher rents the tenants afford to pay. No doubt much of the mischief in England arises from the old feudal feeling still existing against giving tenant farmers the independence of long leases, and to the law of settlement, which made cottages a bugbear to landowners from the fear of bringing more paupers on the parish. But I trust this is wearing out, and that landowners are learning their farms cannot be well cultivated without a command of home labour, and farmers are getting alive to the advantages of having their principal labourers resident on their farms. But long leases are still wanted to bring improving tenants. Without their security farmers will not invest capital in improvements and high farming, the returns from which are only reaped in a course of years. Nor will they feel the call upon them for improvements which the certainty of long possession and fixed tenure makes. As annual tenants farmers will look to the return of the year to repay them for the year's expenditure; and while this is so land will have its fertility only partially developed, and both landowners and tenants must be contented with only partial returns. *Hewitt Davis, May* 31.

THE CEREALS IN THE INTERNATIONAL EXHIBITION.

At the banquet of the Bath and West of England Society, held on Thursday last at Wells, Lord Portman, in reply to the toast of his health as "President of the Royal Agricultural Society," thus referred to the show of Cereals in the International Exhibition:—

It has been my duty to serve as one of the jurors in the present International Exhibition, and in the course of that duty I have had to form an opinion on the agricultural products of the world. First, we had to begin with the British exhibitors, and I must say to my sorrow that I have no doubt the jury will report that the cereal and leguminous specimens sent to the International Show by the British producers are neither well shown nor good in quality. I ask why is that? It is because, not only in this Society but in the Royal Society likewise, we have for so many years devoted our attention so completely to the breed of animals and the improvement of implements that we have neglected the cereals, not on our farms but for exhibition; and I fully believe that when the farmers come to the International Exhibition and see how badly the British farmers show themselves, and how remarkably all other countries show themselves in this respect, they will think that we in our several districts and societies ought to resume or re-establish prizes for cereal exhibitions as well as for stock and implements. Let me tell you that the finest exhibition of Oats is from Nova Scotia, and the finest sample of Wheat is from Australia, weighing 68 lbs. 7 or 8 oz. to the bushel, admirably exhibited and well prepared for the miller. The best flour exhibited, in spite of the French notion that D'Arbly flour is the best in the world, comes from Australia. It is well manufactured from the most beautiful corn. I say then go to Nova Scotia and get a good cargo of Oats for seed. It is however, I admit, of little use to go for our Wheat to Australia, because so much of the excellence of its production depends on the climate of that country. I do not think we could get such Wheat in this country. The Australians took their seed from us, and by the aid of their climate have produced this most excellent Wheat. The Zollverein is another part of the Exhibition which will be interesting to farmers. The Zollverein includes various parts of Germany, and the exhibition of corn in that department is very good. The exhibition from Hungary in the Austrian department is also remarkably good, and I fully expect that when my friend Mr. Jonathan Gray sees the exhibition he will be convinced that it is necessary to have some similar exhibition in connection with this (the Bath and West of England Society, in order to promote the growth of cereals. As far back as the Oxford meeting the Royal Society tried the experiment of showing cereals, but the exhibition failed for want of management, and I trust the West of England Society will take the matter up. Hops, I know, are not grown in this district, but the exhibition of this production is exceedingly instructive. Nothing can be more beautiful than the exhibition of Bavarian Hops, and a large Hop merchant has said that he shall try to get Nos. 1 and 2 for the brewing of beer, and he would recommend any friend who brews stout to obtain No. 3, which is a little darker in colour. I think that if we, as a society, turn some attention to the growth of Cereals and of Peas and Beans, which grew well in East Somerset, we shall obtain a very instructive and interesting exhibition. I noticed in the International Exhibition some most beautiful specimens of Beans and Peas from Brazil, probably better than the whole world could show. Thirty gradations of these productions are shown. The Brazilians have given me a few specimens as seed. I have sown them in my garden, and I hope I shall be able to tell you of the result at our next annual meeting.

THE EXHAUSTION OF SOILS.

By J. B. Lawes, F.R.S., F.C.S.; and Dr. J. H. Gilbert, F.R.S., F.C.S.

[*Manchester, Sept.* 9, 1861, *Section B.*]

The question of the exhaustion of soils is one of peculiar interest at the present time, not only on account of the great attention now paid to the waste of manuring matters by the discharge of the sewage of towns into our rivers, but also from the fact that Baron Liebig has recently urged that our soils are suffering progressive exhaustion from this cause, and predicted certain, though it may be distant, ruin to the nation if our present modes of procedure be persevered in.

The question is one of chemical facts, and the authors had intended to treat it much more comprehensively than they were able to do on the present occasion. They proposed, by way of illustration, to bring forward one special case of progressive exhaustion, occurring in the course of their own investigations, and then to contrast the conditions of that result with those of ordinary agriculture.

They had grown Wheat for 18 years consecutively on the same land; respectively, without manure, with farm-yard manure, and with different constituents of manure; and they had determined the amounts of the different mineral constituents taken off in the crop from the respective plots. Numerous tables of the results were exhibited. The variations in the composition of the ash, of both grain and straw, dependent on variations of season, and consequent character of development and maturity, were first pointed out. The general result was, that with an unfavourable season, there was a slight though appreciable decrease in the percentage of lime and potass, and increase in that of magnesia; and again, an increase in the percentage of phosphoric acid and silica; and especially in the case of the straw-ash, a decrease in that of sulphuric acid. Turning to the bearing of the results on the main subject of inquiry, it appeared that when ammonia-salts were used alone year after year on the same land, the composition of the ash, both of grain and of straw, showed an appreciable decline in the amount of phosphoric acid, and that of the straw, a considerable reduction in the per-centage of silica.

When ammonia-salts alone were used, the amount of mineral constituents in the crop of a given area of land was very much increased; much more so than when a liberal supply of mineral constituents alone was used. But, in neither of these cases was there anything like the amount of mineral constituents obtained in the crop, that there was when the ammonia-salts and mineral manures were used together, or when farm-yard manure was employed. The greatest deficiency indicated was in the silica and the phosphoric acid; and next in order came potass and magnesia. The exhaustion here apparent was, however, not to be wondered at, when it is considered that, in these experiments, in which both corn and straw were annually removed without the usual periodical return of farm-yard manure, there had been on the average annually taken from the land by the use of ammonia-salts, about twice as much phosphoric acid, about 5 times as much potass, and about 25 times as much silica, as would be removed under a system of ordinary rotation with home manuring, and selling only corn and meat; in fact, in 16 years there had been taken from the land as much phosphoric acid as would require 32 years, as much potass as would require 82 years, and as much silica as would require 400 years of such ordinary practice to remove.

Again, the authors estimated that in the experiments of the Rev. Mr. Smith, of Lois Weedon, on the growth of Wheat year after year on the same land, without manure, there had been an annual extraction from each acre of land of about $3\frac{1}{2}$ times as much phosphoric acid, about 7 times as much potass, and about 37 times as much silica, as there would be in the ordinary course of practice; yet, after some 15 years the crops at Lois Weedon were said to be not at all failing.

The authors did not recommend such exhaustive practice as that quoted either from their own, or the Rev. Mr. Smith's experiments. But the instances given showed the capabilities of certain soils; and in one case the conditions under which the point of comparative exhaustion had been reached. It was, of course, impossible to state the limits of the capability of soils generally, so infinitely varied was their composition; but it would be useful to give an illustration on this point. Reckoning the soil to be 1 foot deep it was estimated that it would require of ordinary rotation with home manuring and selling only corn and meat, about 1000 years to exhaust as much phosphoric acid, about 2000 years to exhaust as much potass, and about 6000 years to exhaust as much silica, as, according to the average results of 42 analyses,* relating to 14 soils of very various descriptions, had been found to be soluble in dilute hydrochloric acid. Many soils had, doubtless, a composition inferior to that here supposed. In a large proportion, however, the amounts of the above constituents assumed to be soluble in dilute hydrochloric acid would probably be available for plants long before the expiration of the periods mentioned; whilst in a large proportion there would still be further stores eventually available within a greater or a less depth from the surface.

But the exhaustion of mineral constituents by the sale of corn and meat alone is in reality not so great in the ordinary practice of this country, as has been assumed for the purpose of the above illustrations. Where there is no purchase of cattle food, or of artificial or town manures, the sales of corn and meat would on the average be much less than were taken in the author's estimates; and where such materials were purchased, with any degree of judgment in the selection, there would always be much more phosphoric acid (otherwise the most easily exhausted constituent), so brought upon the land, than would be obtained from it in the increase of produce yielded; in fact, under such conditions, in many soils potass was more likely to become deficent. Again, by no means the whole of the mineral constituents sent from the farm in the form of corn and meat will reach the sewers of our towns, and thence our rivers; a not inconsiderable portion finding its way back to the land in some form, in addition to which, imported corn, meat, and other materials, will contribute something to the restoration of our own cultivated land. It is at the same time certain, that so much of the refuse matters of our towns as becomes diluted with water in the degree recognised under the present sewerage system will be applicable as manure, on the large scale, only to succulent crops, and especially to Grass-land; and, so far as this is the case, they will, of course, not directly contribute to the restoration to the land under tillage, of the mineral constituents sent from it in its produce of corn and meat. When other descriptions of produce than corn and meat, such as roots, hay, or straw, are largely sold, compensation is generally made by the return to the land of stable, or town manures of some kind. If this be not done the loss of mineral constituents may indeed be very considerable.

In conclusion, whilst the authors insisted upon the importance of applying to agricultural purposes as much as possible of the valuable manuring matters of our towns, they at the same time believed that modern practices, taken as a whole, did not tend to exhaustion in anything like the degree that had been supposed by some.

Home Correspondence.

Steam Cultivation.—I have some facts that I can give in support of W. S. Guildford's letter, to whom I beg to tender my best thanks. The following is a letter addressed by me, May 9 inst., to the Editor of the *North British Agriculturist*, and published in that paper, May 14 inst.:—

"Sir,—In your article on the International Exhibition I read these words—'We miss Mr. Smith of Woolston from the Exhibition; should an honorary distinction be bestowed by the jurors for the best application of steam power to the cultivation of the soil this pioneer will be thrown out of competition from not being an exhibitor.' Now I should like to know what jurors there are who can judge steam cultivating apparatus closely packed in the Exhibition, and if an honorary distinction is given, what commendation it can carry with it?

"If I could have entered and sent my farm it should have gone. The evidence on that jurors might have judged, and their judgment might have had authority. Take for instance my heavy land Barley field, cultivated and drilled at one operation at a cost of 6*s.* 2*d.* per acre; the Barley is now up in prime style, waving its fine broad flag; more masterly work I never saw: the rows are as straight as lines, well connected with the headland rows, which had been drilled first; short pikes as well as crooked fences were done with the greatest ease.

"Now let us compare this with horse culture. I devoted the greater part of yesterday to the examining of all the best planted fields of heavy-land Barley in this neighbourhood. One like my own after roots fed on the land. It had been ploughed in that fine month February, and was drilled in an eyeable surface, and under surface raw caused by the late rains. The Barley is up and looks well, the cost was 15*s.* per acre. The next after dead fallow was drilled at the same time as the preceding one, and is well up, yet the under surface was cold; the cost must have been at least 3*l.* per acre. The next, under one of the best farmers in the county, after Beans, hand forked, and ploughed twice in the autumn, in which state it lay high and dry through the winter. It was hand forked again this spring, and drilled Barley on the same day that I cultivated and drilled mine. Its cost must have been at least 45*s.* per acre. Now, how about the produce; the lands are all alike in character, except that mine is the most hilly and uneven, and therefore the heaviest working of the lot. The produce from mine will be from one to two guineas per acre more than from either of them. In this I am supported by my last four years' practice, and I shall be willing to leave it in this case to the threshing machine to test it. This shows that the cost of horse culture is at least 1*l.* per acre in excess of my system, and that the produce is upon my system 2*l.* per acre in excess of horse culture, which gives together an advantage of 3*l.* per acre to my system. Thus on my 10 acres of heavy land Barley I clear 30*l.* in one and a half days, the time occupied in cultivating and drilling it.

Jurors at an exhibition cannot get such facts by a mere inspection, and that is all they can do, yet I can multiply them by walking from field to field all over my farm.

I shall send my tackle to the R. A. Society's show to be

* The accuracy of some of these analyses is, however, admittedly open to question. See Report by Magnus, Ann. d. Landwirthschaft, xiv. 2.

worked publicly, where the farmers themselves will be best able to judge them. *William Smith.*

This gives a comparison of that field of heavy land Barley referred to by W. S. Guildford, with horse-cultivated land of the same quality. I am now able to tell you that my estimates are already supported by the appearance of the crops, and that the eye of every practical farmer would be able to judge them as well as I can. Mine remains a fine deep green, while all the others are yellow; this tells you and every practical farmer enough. *William Smith, Woolston, May 20.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

In consequence of the monthly meeting of the Council being held a day later than usual in the week, the official report has not reached us.

THE WELLS MEETING.

THE BATH AND WEST OF ENGLAND SOCIETY'S MEETING was brought to a close on Friday last. As a show, more especially under the exceptional circumstances of the year, it has proved a greater success than many were disposed to anticipate; and the falling off in the receipts, as compared with those at Truro, though amounting to 600*l.* and upwards, was probably as much owing to the very unfavourable weather on Tuesday and Friday, as to the fact that though the city of Wells is accommodated by two branch lines of railway, it is by no means easy of access. In some respects the Wells Meeting of the West of England Society has been a counterpart of the Canterbury Meeting of the Royal: it has, however, presented this notable difference, that whilst at Canterbury the show of implements was a decided failure, at Wells it has been a grand and unquestionable success. This is the more remarkable, inasmuch as it might naturally have been supposed that the thoughts and energies of the leading implement makers would be engrossed by the International Exhibition at South Kensington and the approaching Meeting of the Royal Agricultural Society at Battersea. So popular, however, is the Society among a certain class of exhibitors, on account of the abolition of the prize system, and so advantageous in a commercial point of view do the great houses consider it to be represented at the West of England Meetings, that in the more important classes of implements the show at Wells have undoubtedly been the best the Society has ever had.

The working of implements in the field commenced on Tuesday with HORSE PLOUGHS, of which there were 10 entries, and it was continued on Wednesday, with evident satisfaction to an unusually large number of spectators. Howards' plough did admirable work and was much commended, but Hornsby & Co., Ransome & Sims, and other makers were by no means deserted by the public, and if the new comer Hancock, with his clever paring plough, had been more discreetly represented, he would have no doubt stood higher in the estimation of a considerable section of the visitors. Farmers are essentially practical men, and will at any time rather trust their eyes than their ears.

The hay-tedders, though numerously represented, were not set to work, as the weather rendered it next to impossible: this was a matter of regret with many, as a good deal of interest was excited with reference to Howard's double action machine, which was brought out at the Leeds meeting of the Royal (where it took the first prize), and which in reality was one of the principal novelties at the Wells show.

The exhibitors of mowers and reapers were Picksley & Sims, Burgess & Key, Cranston (Wood's), Cuthbert (Hussey's), and Hellard, of Taunton. In the field they did good work, though Cranston's (Wood) was decidedly the most admired for its lightness, and Burgess & Key's machine carried off the palm for heavy work. Picksley & Sims' mower had unfortunately two of its pins broken, and was therefore unable to show its merits.

The steam ploughing, undoubtedly the most attractive feature of the meeting, took place in a field of 10 acres, a plot of land which, though large enough to show the different systems in operation, was not sufficiently extensive to afford a proper and decisive test of their relative efficiency and economy in working. Leaving the question of first cost out of consideration, there is no doubt that the unanimous verdict of approval would be awarded in favour of Fowler's large and small ploughs, his cultivator and digger, which have on various occasions been described in these columns, and which at Wells produced work which was equally the theme of admiration and astonishment. Howard's windlass was also universally applauded; but from the fact that the representative of the Bedford house seemed rather disposed to rely on their three-furrow balance plough (which did first-rate work in the presence of many difficulties) than on their usual cultivator, a report was currently circulated in the field that Mr. Fowler disputes the legal right of Messrs. Howard to an invention or adaptation which he claims as his own. The "Woolstone system" (Smith's), was represented by Cambridge of Bristol, and Brown and May of Devizes; and many of the most practical farmers in the county looked with a very favourable eye on what they termed the tenant farmers implement.

For the shoeing prizes, first started at Dorchester, and since kept up by the liberality of Mr. Miles of Exeter, there were nine competitors, and the work done was of a very high order of excellence: the first prize being awarded to F. Cape, of Ilminster, the father of the smith who carried off the first prize at Truro, but who on the present occasion was only adjudged a high commendation. As a proof of the general benefit likely to result from the institution of these prizes it may be mentioned that there were competitors from Cornwall, Devon, Dorset, and Somerset, and there is some talk of the trials taking place next year, at portable forges in the show yard, where the work may be witnessed by all who take an interest in it.

The prizes specially offered for dairy cows, and intended as a compliment to the Cheddar district, were very poorly responded to; and the prizes for cheese were divided between the counties of Somerset and Dorset, the successful makers in both cases pursuing the same "Cheddar" system.

At the Annual Meeting of the Society held on Thursday, under the presidency of Mr. Acland, the Marquis of Bath was elected president for the ensuing year; Lord W. Powlett, Mr. J. W. Buller, M.P.; Mr. T. D. Acland, D.C.L.; Mr. J. Walrond, and Mr. E. S. Drewe, were elected vice-presidents; and Dr. Brent and Mr. J. W. Sillifant were elected members of Council to supply the place of retiring members.

THE BANQUET took place on Thursday evening, under the presidency of T. D. Acland, Esq. (president of the year), who was supported (as Lord Portman phrased it) "by the county of Somerset in the persons of its representatives: the high sheriff as representing the civil power, the Bishop of the diocese as representing the ecclesiastical power, and the lord-lieutenant (Lord Portman) as representing the military power." There were also present the Dean of Wells, the Hon. W. W. Addington, the Right Hon. Sir W. G. Hayter, M.P., Sir M. Lopes, M.P., Sir E. Baker, Sir K. Williams, Sir J. Kennaway, Sir J. Duckworth, and an unusually large number of Devonshire members of the Society, anxious to testify their respect for one of the most self-denying and zealous workers in the West of England.

For the speeches we have no space, more especially as the remarks by Lord Portman upon the show of Cereals in the International Exhibition will be found in another part of our columns, but the following observations by the President (Mr. Acland) in responding to his health, possess considerable interest as showing the progressive steps by which he has become so prominently identified with the revival and progress of the Society. He (Mr. Acland) had the deepest conviction that the farmers of England should have two things: First, they should have a good general education—and the less there was of farming in it the better—they should have as good as they could possibly afford, not depending on charity; but, on the other hand, they might reasonably, like all other classes, avail themselves of the charity of their ancestors, in the form of noble educational institutions. Secondly, the farmer wanted a line well marked out at home for keeping up his studies and habits of inquiry. The object to be obtained was to qualify him to be an intelligent man, and not a mere mechanical drudge. His friend had referred to the motto "Work, and Learn." Well, whatever share he had had in bringing about what they had that day seen was due to this fact, that about fourteen years ago he was turned out of Parliament for voting against Free-trade; and when he was in conversation with Philip Pusey afterwards, he told him that if he could render the farmer service by assisting him to solve the problem then before him, he (Mr. Acland) was bound to do it. At that time he knew nothing of farming, but it was then that he began to understand what "Work and Learn" meant, and he endeavoured to work it out in this Society. He assured them that there was nothing for a member of the Council but hard work, and the honest satisfaction of having performed an important public duty. They had been twelve years hard at it, and he was proud to say that the problem had been worked out. He stated that the Bath and West of England Society had even been able to supply a hint to the Royal Agricultural Society itself, and he was sure that if the hint were improved upon by the Royal Society, the Bath and West of England Society would be glad to receive it back again and act on it. They had just altered the rules, making the subscriptions to the Society 20*s.* instead of 10*s.*, and giving an additional free admission to the Exhibition for every additional 1*l.* subscribed. [The High Sheriff: How about the Journal, which we owe to you?] It was not for him to speak of the Journal. The able Editor of it was present; but he would say that the conduct of the Journal was now marked by great intelligence and untiring industry, and that it was never better managed than it is at present.

To make the latter passages of this speech intelligible to the general reader, it should be added that for eight years Mr. Acland discharged the onerous duties of Editor of the Society's Journal, enriching its pages during that time with many papers of great value and importance, several of which have been reprinted in a separate form. Mr. Acland was also the author of the Prize Essay on the Farming of Somersetshire, which appeared in the Journal of the Royal Agricultural Society, vol. xi. His election to the office of President of the West of England Society was a well-merited mark of respect and gratitude for his long and arduous services in its behalf, and it is satisfactory to know that as a Vice-President he is entitled to take part in the proceedings and deliberations of the council or executive body.

AYRSHIRE.—A meeting of the Directors was held last week, to receive the report of the judges on the working of the steam plough and grubber, and consider what steps should be taken in regard to cultivation by steam in the county. Mr. Bell of Enterkine was called to the chair.

The Secretary commenced by reading the Report on the Trial of Fowler's Steam Cultivating Machinery.

The judges of implements at Ayr Show on the 29th April, were requested by the Committee of Management to attend the trial of Fowler's steam plough on the two following days, and they had much pleasure in doing so. After the full reports on steam cultivation which have already been given to the public, the judges do not think it necessary to enter into details in reporting to the Directors of the Ayrshire Association upon Mr. Fowler's performance.

The field selected for trial is on the Home Farm of Craigie. Part of the soil is a light loam, but most of it is a very tenacious clay. The field was under a Wheat crop last year, and with the exception of a small part which was ploughed with horses in winter, the surface remained undisturbed after the removal of last year's crop. In these circumstances, there could be no seasonable operations. The soil was not in a proper state for grubbing, and the season was too far advanced for a first heavy ploughing, or for the so-called digging operation. But there was enough to show what Mr. Fowler's machinery could do, and if the condition of the soil, naturally stiff and battered by the rains of winter, made the work somewhat severe, the trial was for that reason the more satisfactory.

The first work done was with the four furrow balance plough. The size of the furrows was 10 inches by 7, and they were rectangular in form. They were well turned where the soil was light, and would have made a good seed-bed; but on some parts of the stiffest clay they were set on edge. The rate of speed was 6 acres, 1 rood, and 20 poles, in 10 hours. When the ploughing was resumed on Thursday on the other side of the field, the furrow slices were laid in a very compact and regular manner.

The grubber was worked for an hour on Wednesday, but the soil had been too long consolidated, and was moreover, in a scarcely dry enough state for breaking up with this powerful implement.

The next operation was "digging," or trench ploughing. This is done with the balance plough, fitted with short mouldboards. It seems a most efficient mode of preparatory tillage in autumn, or in favourable times during winter, for green crop land.

The judges can give a most unqualified approval of Mr. Fowler's engine and motive power in general. The whole seems to be completely under the control of the engineman, and altogether little further remains to be desired than reduction of price. The price of a 12-horse set of ploughing and cultivating apparatus, such as was in operation at Craigie, is 825*l.* A 10-horse set is 780*l.* It is not improbable that the plough may be improved, although it may seem difficult to suggest improvements. With longer and wider experience they will be worked out. The majority of Scotch farmers would prefer to have the share and breast of the plough of malleable iron. This would add a little to the first cost, but it would admit of a worn or broken share being repaired at the nearest smithy, and the plough could be set to make a crested or rectangular seed-furrow, according to the desire of the farmer.

The following estimate may be given as an approximation to the cost of steam ploughing in the West of Scotland:—

	Cost per day.		
Engineman	£0	5	0
Ploughman	0	3	0
Anchor man	0	2	0
Two porter boys..	0	2	6
Cartage of water..	0	4	0
Oil and cotton waste	0	1	0
Coal, 10 cwt.	0	5	0
Interest on purchase money, 825*l.*, at 5 per cent. per annum, and tear and wear at 12½ per cent., 144*l.* 7*s.* 6*d.*, divided among, say, 120 working days, which gives as interest and depreciation per day	1	4	0
Total cost per day	£2	6	6

With the rate of ploughing at Craigie—6 acres, 1 rood, and 20 poles per day—the cost is thus 7*s.* 3½*d.* per acre, which is equivalent to 9*s.* 1½*d.* per Scotch acre. If the machinery be used on more than 120 days, or if the engine be employed at other work when it is not required for tillage, the cost of each working day will be reduced. But in the meantime it does not appear that a lower rate can be safely calculated upon.

In alluding to the question of cost, the judges may perhaps be allowed to say that it is not in the direction of reduced expenditure that the farmer should look for benefit from steam cultivation. The outlay may—nay, probably will—be as great as before; but if deep and thorough steam tillage be followed by increased efficiency of drainage and more valuable crops, it may prove a great boon, not only to the farmer, but to the whole community.

In concluding these few remarks the judges beg leave to recommend the directors of the Ayrshire Association to award their gold medal to Mr. Fowler, in acknowledgment of his ingenious and persevering, and at length successful, attempt to apply steam power to the cultivation of the soil. *James Stirling, Robert Wilson, Bryce Wright, David Gairdner, John Struthers, Robert Guthrie, James Drennan.*

Ayr, May 5, 1862.

Mr. M'MURTRIE also read the following letter, which he had received from Mr. Gairdner, Commissioner to Lord Eglinton:—

"Auchans House, May 3, 1862.

"DEAR SIR,—As I shall not be able to attend the meeting on Tuesday, I trust that the Directors of the Agricultural Association may be induced to take a step in advance, in the promotion of the steam plough and grubber, which I think greatly calculated to promote the economical cultivation of land. As many people are apt to take a superficial view of this improvement, I shall take the liberty of pointing out what appears to me, erroneously perhaps, the real advantage of this and similar machines being applied to farming. I shall exemplify my views by contrasting a farm under an eight shift rotation, prior to tile draining, and the same farm, under a six shift rotation, under our improved system. Let us suppose the farm to be 180 acres:—

1st EIGHT SHIFT ROTATION.

A farmer then ploughed
25 acres from pasture,
25 acres from stubble,
—
50
130 acres in hay and pasture,
—
180

This rotation could be accomplished with one ploughman and a pair of horses.

2d. SIX SHIFT TOTATION.

A tenant of the same farm has now under the plough
30 acres from pasture,
30 acres for green crop,
30 acres after green crop.
—
90
90 in hay and pasture.

"The tenant's ploughing is now much more than doubled, as 30 acres of green crop require three or four ploughings. My impression is, that were one or two steam ploughs introduced into the county they would have ample work, and a fair return for the money invested, while the relief of expense to the tenant would be very great. Let us suppose that the steam plough on the above farm encountered the following part of the labour:—

30 acres ploughed from pasture.
30 acres grubbed before winter.
30 acres ploughed up for green crop.
—
90

"The tenant would thus, I think, be able to encounter, with one pair of horses, the cross ploughing and drilling of his green crop, the cartage of all the manure, and the harrowing of his white crop; in other words, he would at least save the difference between the expense of the charge for the steam plough and the annual expense of an extra ploughman and pair of horses. This is no doubt an important saving; but it is only a small part of the saving, as the green crop husbandry is only profitable when you can apply your roots and fodder to the feeding of stock for market, and the relief of the keep of a pair of horses would thus very much add to the marketable produce of the farm by enabling the tenant to increase his winter stock. I understand that the steam plough can finish 6 acres per day at a cost of 6s. per acre; but calling it 7s., the above 90 acres would be ploughed and grubbed for 31l. 10s., from which we must deduct the wages of a second ploughman, while we have also to carry to the profit of the farm the feeding of an extra pair of horses.

"I really think that the landed gentlemen of this county ought to assist largely in the promotion of the steam plough, and while it would be best and most successfully managed by the tenantry, I do not doubt that many of them would take shares in the undertaking. I am informed that it will cost about 800l., and it is only prudent that we should ascertain the probable return or risk of loss to those who advance the money. The following figures may be quite erroneous, but if they are at all correct, I think the opinion of the Association would go far to induce the public to encounter the risk. I presume that the machine could overtake at least four days per week between September and May, or say 150 days, at 40s. per day on an average, or in all £300 0 0

From which deduct 60 per cent. for enginemen and others 180 0 0

Leaves to pay a dividend of 15 per cent. .. £120 0 0

"If the meeting on Tuesday appoint a committee to report fully as to the merits of this improvement, I for one shall be most happy to recommend it to all those with whom I am connected, and also to take some interest in the speculation, unless the committee can start some objections of which I am not yet aware. If you think it prudent to read this letter to the meeting, you are at liberty to do so.

"Yours, very truly, C. D. Gairdner."

"John M'Murtrie, Esq., Writer, Ayr."

The Chairman said there could be but one opinion with regard to the steam plough. After the trial of last week there could be no presumption in drawing the inference that it will prove to be a most useful implement in agriculture. It would be unanimously agreed that they were much obliged to Mr. Fowler for the manner in which he had conducted the operations, and for his obligingness and anxiety to do his best. He never yet saw an instrument for the first time in which he saw so much to augur well. He concurred in a great deal stated by Mr. Gairdner in his letter, although he did not exactly follow his figures. It would be very desirable not to allow the matter to drop, but let them, if possible, have the benefit of the steam plough. He left it to those more practical than himself to determine the mode to be adopted.

Mr. Tennant, of Creoch, said he had been unfortunate in seeing the steam plough tried at Dumfries, where it was a failure, and gave him a prejudice against it. He had gone to see this trial with that prejudice in his mind; but he was not long in the field till his opinion was entirely changed. When the grubber started, however, that settled him. The depth to which the ground was stirred surprised him. For his part, he considered that a double depth of soil was as good as a double extent of service. He had himself had 16 horses on a farm of 200 acres, and the expense was enormous, while the subsoil was never turned up in the way it could be done with the steam plough.

Mr. Baird of Cambusdoon, thought that in making out their calculation of cost per acre, the judges had erred in only taking the men's wages for the days the engine would work; but he supposed the wages must go on through the whole year, as they would need skilled workmen to do their work. That would increase the cost per acre to 11s. or 12s.

Mr. Tennant.—It is worth that.

Mr. Hunter, Dalmellington, said, unless some of the large landed proprietors took one of these ploughs, and let it out to their tenants, he did not see that it could be worked at all except by a company. There was no one farmer that was fit to employ it.

Mr. Baird said, Mr. Bone of Greenan had just mentioned to him that he was authorised by a party to state that he was willing to purchase the plough, and work it, and lend it out to the best advantage, provided the half of the expense was subscribed.

The Chairman said his opinion was that this was the only practical method of testing the plough; but he thought a smaller sum than the half might do as a bonus from the Association. Perhaps they might get a better offer.

Mr. J. D. Boswell said he thought it would be better for the Society to give a premium to the first party who introduced a steam plough. As they had made some money by the trial that might be devoted to this purpose, but he did not think they could take any of the Society's ordinary funds, subscribed for an entirely different purpose, for this object.

The Secretary said that, with the profits at Craigie, and what they would save by not sending the machine out of the county, the Society could afford to give 60l. or 70l.

Captain Campbell of Craigie said the question at present was not whether the plough would pay, but how it was to be got in the county for an experiment. He thought what Mr. Bone proposed was the only feasible plan. He proposed that the Association give all that they had made, and nothing more, and then see what they could get by subscriptions from the proprietors. He had no doubt they would get all they required. He himself would be happy to subscribe, and he had no doubt others would do so.

The Chairman proposed that, in addition to the surplus from the trial, they should recommend the Association to vote 50l. The rest, he thought, would be made up by subscription.

Mr. Bone said the amount that would be needed would be 442l. 10s.

The Chairman's proposal was agreed to, and a committee appointed to obtain subscriptions and make the necessary arrangements.

The sum of 42l. was subscribed by six gentlemen in the meeting.

Farmers' Clubs.

London: *The Capital of British Agriculture—its Application and Remuneration.*—On Monday last Mr. Alderman Mechi read a paper on this subject, which we hope to give more fully on another occasion. He said:

Were I to judge my subject by the members of the "London Central Farmers' Club," I should have no difficulty in arriving at a pleasant conclusion, for they represent the sunny side of agriculture—its Belgravia and Tyburnia—and there is scarcely one among them who could not in his own practice illustrate the necessity for, and profit of, a high and intelligent system of farming. They know full well the advantages of drainage, marling, liming or chalking; steam power for cultivation and other purposes; the use and consumption of much artificial manure, and purchased food, and they know that it is useless to have abundant and well-bred stock on heavy land, unless their landlord provide ample shelter for them; all these matters demand ample capital. But all England is not, I am sorry to say, a Belgravia or a Tyburnia; so, as an impartial examiner, dealing with Great Britain as a whole, I must take you with me into less favoured districts; I mean the agricultural St. Giles's and Whitechapel. So far as statistics and an extensive enquiry and observation enable me to judge, I come to the regretful conclusion that middling and bad farming are the rule, and high, good farming the exception. I consider it, therefore, a public and useful duty to endeavour to stimulate, by this evening's examination, a warmer feeling of progress, both on the part of landlord and tenant, for the full development of agricultural excellence can only be effected by their mutual concurrence. Our investigation this evening is justified by the smallness of our food productions. But for foreign imports, large masses of our population would be starved or must emigrate. Last year our wants were indeed great. I see, by the statistical returns of 1861, that our imported consumable articles for ourselves and for our animals reached the enormous total of seventy-six millions sterling! Of this the greater part was for human food, that ought to have been and might be produced from our own soil. In the extensive enquiries I have made on Farm Capital, nothing can be more wide and discrepant than the answers I obtain; they vary from over 20l. per acre to 2l. 10s. Sensible accurate calculators, occupying friable arable stock farms, that require neither drainage, chalking, nor other heavy expenses necessary on the stiff clays, seem quite surprised when I mention the two extremes that I have quoted. But when I tell them that I am dealing with the whole map of Great Britain; that nearly two-thirds of it is Grass land, much of it very poor, unimproved, and exhausted; and that our acreable estimate must include, as landlord's measure, roads, waste, green lanes, great trees and fences, game farms, &c.; the most intelligent farmers come to a very approximate conclusion, and agree with me that something about 4l. per acre is the full average of the British farmer's capital. Mr. Lavergne's estimate of rent is—England, 24s.; lowlands of Scotland and Wales, 12s.; highlands of Scotland, 1s.; three-fourths of Ireland, 16s.; north-west of Ireland, 6s. 6d.; general average of the United Kingdom, 16s. Mr. Lavergne estimates the produce per acre as follows:—England, 3l. 7s.; lowlands of Scotland, Ireland, and Wales, 1l. 19s.; highlands of Scotland, 8s. 4d. He estimates the farmer's capital in England proper (not Great Britain) at 3l. 7s. per acre, or not quite three rents. The farmer's profit he estimates at half the rent. My estimate of English produce is 3l. 12s. per acre, leaving out Ireland, Scotland, and Wales, which must produce considerably less. Spackman has, according to my calculations, over-rated our farm capital by at least 300,000,000l. He makes it 500,000,000l., or about 10l. per acre, (see the synoptical table at the end of his work); whilst I estimate it at less than 4l. per acre, or under 200,000,000l. I think his estimate of the landlord's capital of the United Kingdom tolerably correct, say 1,500,000,000l., or rather more than six times the amount of what I estimate to be the tenant's capital. People who wish to succeed by farming must understand it as a business, personally or by a dependable deputy. The following is the needful application of capital by landlords of heavy lands:—Drainage 6l.; covered yards and farm buildings, 7l.; farmhouse, 3l.; improved roads, 1l.; irrigation with town sewage, 1l. to 8l. per acre. A considerable sum per acre must be expended by somebody, either landlord or tenant, in steam-power, barn machinery, mill-stones, &c., and in liming or chalking. In the first place those who are intended purchasers or hirers of land must fit their purchase or hiring to the improved modern estimate of requirements. I will give you an instance: an acquaintance of mine purchased a nice but neglected estate of 4000 acres, for about 140,000l. He has expended some 50,000l. or 60,000l. in drainage and other necessary improvements, and his rent is more than proportionately improved. Now he might have purchased 6000 acres with the money, and thus perhaps have left nothing for improvements. See how such operations affect the welfare of the country at large, by circulating for the benefit of all large sums in industrial occupations, and thus creating additional customers for our agricultural produce. An active and clever land agent tells me, that by improving the residences and buildings, trimming the fences, cutting down superfluous timber, draining the land, granting leases with liberal covenants, without annoyance from an excess of game, he is overwhelmed by applications for farms from substantial tenants, at improved rents, representing from 8 to 12 per cent. on the money so laid out in improvements.

Farm Memoranda.

South Hants Farm: *Report to the end of May.*—Gloomy and dark weather has prevailed during the latter part of the month, and although there has not been much heavy rain, yet the absence of sun has retarded the progress of the corn crops, which, although promising an average produce, are not likely to be so early for the harvest as indicated at the beginning of the month. The horse labour of the farm has received little or no interruption since our last report, but horse-labour may be said to be generally very much in arrear, particularly upon those farms cultivated upon the four-course system; and where no autumn cultivation was effected, it will be very difficult in a season like the present to properly cultivate one-fourth of the arable land for roots, and put the seed into the ground in proper time, and in good condition, by the aid of spring and summer tillage only.

Our earliest crop of Hop Clover and Italian Rye-grass was cut for hay on the 19th of the month, and carted to rick in first-rate condition on the 26th; although the weather was difficult the first few days, yet being remarkably fine from the 24th to the 26th we were enabled to get up the hay by six days' making; it could not, however, have been done except by tedding and constant turning, and herein lies the advantage of the hay-making machine; many, however, object to their use in the making of field hay, stating that too much of the leaf is lost by the process, and consider that it is best to allow the hay to remain in swathe, being turned over occasionally until dry and fit to carry; this, however, is the old-fashioned plan, and in our changeable climate it is bad policy because it takes three or four days longer in making, and adds greatly to the risk of damage by rain. We therefore advocate that the plan as usually adopted for the making of pasture hay, should be applied to that of field hay also, for although hand labour sufficient could not be obtained if the plan was in general practice, yet by the aid of tedding machines, any amount of work can be accomplished in a very short period. We hold the opinion also that not only is there less risk as regards the weather, but the hay is better made also, with less loss of the leaf of the Grasses; the hay being constantly moved dries more regularly, and the leaf does not become so crisp and brittle as when so long exposed to the sun under the ordinary plan of occasionally turning, &c., as above alluded to.

The advantages of cutting Grass for hay whilst young and growing are very great, particularly for fatting sheep and lambs; we hold that by early cutting, 1 cwt. of hay often contains as much nutritious matter as $1\frac{1}{2}$ cwt. of hay when it is cut late; this is a very important matter, because with small animals, particularly lambs, as they cannot eat but a very moderate quantity, it should contain the greatest possible amount of nutrition. The hay we have alluded to above is intended for sheep and lambs next winter; we have, however, another very strong reason for early cutting and clearing the land, for we have been enabled to lay out the dung, plough and work the land, and have drilled it with Mangel during the week, and we reckon that we shall obtain at least 8 tons of Mangel per acre more than we should, had the crop of Grass occupied the land a week longer.

The Potato crop is now coming forward, the men are busily engaged in hand-hoeing, the horse hoe however going first between the rows in some of our sandy loam soils the Couch-grass makes some show, but we take care that women go before the horse-hoe and take it up, it being easily seen before the land is disturbed by tillage. The Potatoes planted by hand on the stitches are much more luxuriant than those planted under the furrow and ploughed down in the usual manner; they also vegetated and appeared above ground quite a week sooner. The stock, with the exception of dairy cows, are being fed upon Clover cut and served to them, the yearling heifers and steers however have Grass, the produce of the borders of fields and sides of hedges supplied to them, which they eat readily and do well upon; indeed whilst young they like it better than Clover. This method of using the border Grass answers two purposes, that of food for cattle, pigs, &c., and it also serves to prevent the various weeds formed amongst it from going to seed and fouling the adjoining land, and where the hedges are kept clipped it is necessary to have the borders cleared; this is however often done by cutting and burning the turf, and is no doubt a good plan, we however prefer to cut the Grass. As our soil is loamy, there is a large produce of nutritious food. Our pastures are much infested with the Buttercup, which is very pernicious to dairy cows, and affects the quality of the butter injuriously, it being of a very hot and acrid taste; we therefore run the scythe over our pastures, taking off the flowers when at full head; after doing this we find the cattle eat the Grass much better, and after being cut down once they do not appear again in sufficient numbers to injure the feed. *J. B.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Thursday, June 5, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0-6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	30	29.49	59	58	E.	2	7	74	57	92	56	0.13	60½	56½
Saturday ..	31	29.91	57	53	N.W.	2	6	67	53	71	51	0.18	60	57
Sunday ..	1	30.06	63	60	N.E.	2	4	71	45	83	41	..	60	57
Monday ..	2	30.07	60	57	S.E.	2	1	72	41	95	38	..	60	57
Tuesday ..	3	30.06	59	54	S.W.	2	5	76	53	98	51	..	61	57½
Wednesday.	4	30.20	56	53	S.W.	2	2	67	48	72	44	0.07	60½	57½
Thursday ..	5	29.83	57	54	S.	1	6	72	48	92	45	..	61	58

Miscellaneous.

The Alliance between Agriculture and Chemistry.—To keep up the fertility of his fields, the cultivator of the soil has to make himself acquainted with its general composition, as well as with the nature both of the particular substances which he is annually extracting from it, and of those with which he must supply the loss. For each of these purposes the aid of chemistry becomes indispensable to the farmer. Davy's excellent work on agricultural chemistry first called the attention of the more intelligent British farmers to the value of chemistry in the improvement of their art, but it is only within the last twenty years that the attention of agriculturists has been generally directed to the subject, more particularly by the works of Liebig and Boussingault. The nature of manures once clearly defined, almost every agricultural improvement at which practice had arrived by slow degrees, receives a satisfactory explanation, whilst a variety of improved applications necessarily suggested themselves. The principles of fallowing and of the rotation of crops, and the theory of soil-burning, are no longer mysteries; the action of lime, of wood ashes, and of bones is now perfectly intelligible. In this country too high a value cannot be set upon the discovery of new sources of material convertible by the farmer into human food. Chemistry has put us in possession of the excreted wealth which centuries had accumulated in the islands of the Pacific; and if the means which it has suggested for preventing the enormous waste of valuable matter perpetually and irrevocably swept away by the Thames and others of our large rivers, have not as yet been perfectly successful, it has enabled us to substitute for natural manure, artificial products, for the components of which the refuse of every trade and manufacture is now carefully sifted. Perhaps there is no more striking illustration of the value of the aid which agriculture has derived from her new ally, than the success which of late has attended the search for mineral manures. This search, directed by the philosophical interpretation of a few isolated facts, has been rewarded by the discovery of considerable quantities of phosphate of lime in various parts of England; thus realising the prophetic anticipation of Liebig, that "in the remains of an extinct animal world, England is to find the means of increasing her wealth in agricultural produce, as she has already found the great support of her manufacturing industry in fossil fuel, the preserved matter of primeval forests, the remains of a vegetal world." *Dr. Hoffmann.*

Calendar of Operations.

MAY.

BERKSHIRE.—In this district north of Newbury we have about the usual breadth of Wheat, the four-course being the rule. In viewing many acres for miles within the last week, I find the early sown Lammas looks well, and promises early to be ready for the industrious reapers; much of the backward planted and spring sown does not promise well, being thin and weak in places. Oats look remarkably well in places, in many grounds luxuriant. Barley has come up well; the only drawback to our crops is that of a violent storm [on May 12], which completely deluged the land for miles; in low or flat places it was some days before the water disappeared; the Mangel sown before that time became bound and could not vegetate, and this has occasioned many blanks. Beans from the same cause are not so even a crop; notwithstanding they bloom well. Peas this season have been much planted and came up well, but like the above suffered from the storm. Potatoes injured in the like way. The Grass lands everywhere promise abundance; in a week or two fine weather this necessary forage will be stored in large quantities, more than usual. Swede lands are being prepared, some few have been drilled. I yesterday gathered an ear of Wheat from a 20 acre piece, the best and freest from weed in the district. *Thomas Fordham.*

BERWICKSHIRE MERSE FARM, *June* 2.—After a heavy rain on the 1st of May we had hot sun, drying winds, and occasional showers. These 10 days have been close with heavy showers, which would have driven us out of the field in an ordinary season; but work is so far back we cannot stop for a trifle. The rainfall amounts to 3 inches, and with a high temperature vegetation continues uncommonly vigorous. The only frost we have had this spring occurred on the morning of the 14th, when an exposed thermometer fell below 24°; yet fruit blossoms and flowering shrubs have escaped uninjured, while on the 11th of May last year everything was destroyed under a temperature 5° lower. Wheat grows apace, and is well planted, except some pieces (after Beans) cut up by slugs. Owing to the lateness of the season very few Beans are to be seen. Spring corn has been thinned in places by grub and wire worn, but looks as if it would soon outgrown further damage. May-sown Barley came away surprisingly, but is beginning to tell of the poaching of sheep during so wet a spring. The worst thing is that the corn fields ought to be weeded now, and there is no time yet. We never saw Couch-grass grow so lustily. Having had a full month of growth before seed time, it was ready to smother the young Oat plant; and we fear next year's fallows will be in no better plight than those of the present season. All but light soils have turned up raw and unkindly, and probably those will think themselves well off who have half their Swede break sown by this time. The seed is brairding finely, but the attendant flea is on the alert. This month will be a busy one, and work will probably be prolonged into July. Potatoes have been planted extensively up to the middle of the month, and the first are just appearing. Mangel is abundant by general consent. Grass is very rough, and we have fat heifers doing well on it, with an allowance of cake. Hoggs have left good fleeces of fine quality, and part of them are away to the fat market. Ewes have had plenty of milk all along, yet lambs have been but so-so. There was considerable loss among them when young, yet the numbers may still amount to an average crop. Stackyards are cleaned out now, save an occasional stack of horse corn, and that would be safer in granary. Yesterday and to-day have been warm and sunny, and whatever may be the result of so late a seed time, certainly everything grows at the double. *J. T.*

DURHAM: *Hallgarth Street.*—At present the Wheat plant is looking remarkably well. Also Barley and Oats look well. This month has brought the crops on very fast. *George Bell.*

GLOUCESTERSHIRE: *Cirencester.*—The Wheat is generally a good plant, but the colour is rather pale, and in many cases the leaves present a rusty appearance that is not satisfactory. Still on the whole the prospect on the light land is fair, and with a fine season there is no reason why we should not have an average yield. On heavier and colder soils the report is not so favourable. The Wheat is yellow and spindled, and looks starved. I fear no after weather can quite recover it, so as to produce a full crop. Barley has suffered from wireworm, but is rapidly improving. Oats look healthy. Very few Beans have been planted. Peas on dry land look well. *J. Coleman.*

KENT.—The grain crop in this neighbourhood, like the soil and cultivation, is very varied, especially autumn sown Wheat. On strong land tolerably dry the Wheat plant is very promising; on wet lands below hill it generally looks thin, and the plant had until the middle of May assumed a yellow hue, an evidence of super-abundant moisture, but now the colour improves and the crops look healthy and promising. On light land, in the absence of winter frost, wire-worm has been at work, and done much mischief. To remedy this, the practice is to top dress, instead of drilling in more seed. Where that has been done, it is evident that blight has touched it, but not materially as yet. As a whole, the Wheat crop in this neighbourhood is in breadth over, and in promise, a full average by the acre. Barley, well planted and promising, rather backward, breadth under average, the open winter allowing Wheat sowing to proceed as the sheep cleared the ground, thus encroaching on the Barley break. Oats, early sown, looking yellow and stinted; that sown in April very promising. From present appearances a full average yield of grain may be predicted, although not very forward; very little Wheat earing in May. Hay crops very heavy, cutting commenced; pasture Grass abundant and stock thriving uncommonly. Farm labour behind and fallows exceedingly foul. *A L.*

PERTHSHIRE: *Lower Strathearn.*—Wheat under an average as regards appearance at this season of the year, on clay soils looking rather sickly owing to continued wet weather, but have been improving during the last 10 days. A number of fields after Beans have been ploughed up. Barley: little of it brairded and some yet to sow. Oats: some well brairded fields, a great many very much hurt with slug, and some fields ploughed up. Beans have a fresh appearance, but not far advanced. Tares much eaten with slug. *Elliothead, May* 24.

SUFFOLK: *Framlingham, May* 28.—On good deep-soiled heavy lands the Wheats are looking uncommonly well, but on the poor heavy, the inferior light, and even the mixed soils they are thin, weak, and starving, presenting a most unpromising appearance. Barley looking wretchedly in the extreme on the heavy and very moderately on the light soils. Beans, which had been looking very badly, are a good deal improved. Clover-leas wretched everywhere. The hay crop promises to be heavy; the fly in some cases playing sad tricks with the Mangel, Early Swedes, and even young Clovers. The lamb crop a very short one. *Goodwyn Goodwyn.*

WILTSHIRE: *Handley, near Salisbury.*—I scarcely know what to say of the growing Wheat crop; the old saying, and I have no doubt generally a true one, is that a dry March month is the thing for Wheat; however, this year it was a very wet one, and April also. I consider it varies much in appearance at present. The greater part is looking well; some of the early sown is, I fancy, too thick, and promises too much straw, whilst other pieces are thin, and have not tillered out. I passed through some part of Wilts and Somerset yesterday, and noticed several fields of Wheat, which I thought thin on the land and weak, having grown too fast; other pieces were looking yellow, the soil has so much to do with it this wet season, and good drainage. It is as yet rather early days with much of the Barley and Oat crops, as they were sown so late; I fancy in many instances the Barley is very thick, and if rather less seed had been used it would have been better this season. We want fine weather to get the Turnip land in order for sowing; it is in a sad mess; in fact there has been no chance of cleaning it, the weather has been so very wet. *W. W. Perks.*

Notices to Correspondents.

POTATOES: *H.B.* says there was an account in a newspaper some months ago of the results of planting Potatoes with a Bean and a Pea in each. If any Correspondent of the *Gardeners' Chronicle* observed it and would kindly mention when and where it appeared it would be a favour to *H. B.*

Horticultural Valuer.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), begs to offer his services as above. 28, Priory Road, Wandsworth Road, S.

WIRE-WORK for the Garden, the Greenhouse, and the Conservatory. An Illustrated Catalogue, containing upwards of 90 Engravings, Post-free. WIRE NETTING, 2 feet high, 5*d.* per yard. GARDEN SYRINGES, 6*s.* each.
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PATENT GUTTA PERCHA SOLES.—
IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—
"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."
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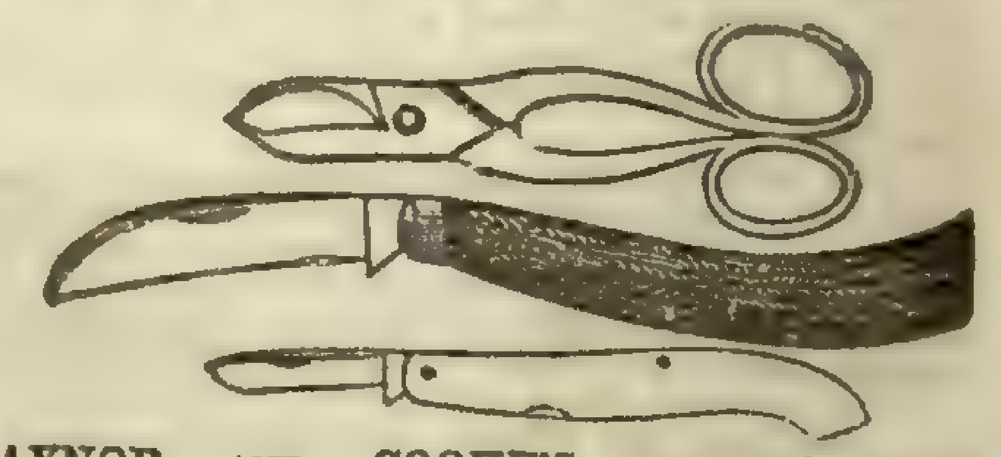


SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.
Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

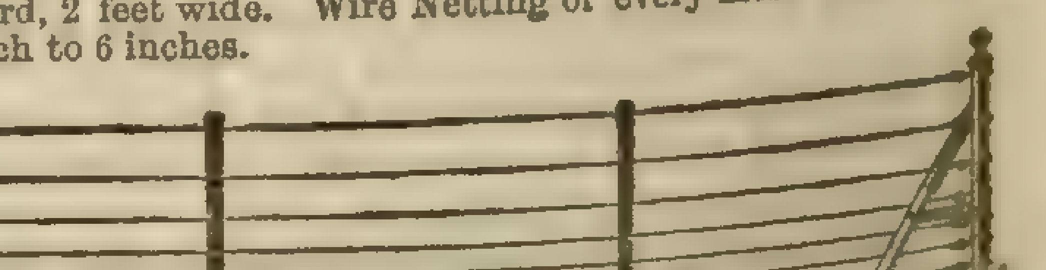
WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an article superior in quality to anything we have hitherto been able to offer in PRUNING, BUDDING, and GRAFTING KNIVES, VINE and PRUNING SCISSORS, GARDEN SHEARS, &c., owing to their being tempered under an entirely new process, which renders the blade tough and not liable to break, and also gives the edge a lasting keenness which we can warrant them to retain for at least double the time they would under the old method of tempering, thus facilitating the work and saving the time usually lost by having constantly to renew the edge by sharpening, consequently making them more durable in wear and better adapted for all kinds of work, every blade being guaranteed of the same temper.
CAUTION. None are genuine except marked SAYNOR, or SAYNOR, Maker. Other marks would cause the purchaser disappointment.

BARNARD, BISHOP, AND BARNARDS, Norwich.
FURTHER REDUCTION in the PRICE of WIRE NETTING.—APRIL, 1861.

BARNARD, BISHOP, & BARNARDS beg to inform their friends and the public that they have made a further reduction in the prices of Machine-made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch mesh, 24 inches wide..	No. 19	.. 4¼*d.*	.. 3¼*d.*
2-inch " " " ..	" 18	.. 5	.. 4
2-inch " " " ..	" 17	.. 6½	.. 5
2-inch " " " ..	" 16	.. 8	.. 6½
1⅝-inch " " " ..	" 19	.. 4¾	.. 4
1⅝-inch " " " ..	" 18	.. 6	.. 4¾
1⅝-inch " " " ..	" 17	.. 7	.. 5½
1⅝-inch " " " ..	" 16	.. 9	.. 7

All the above kinds can be made any width (under 6 feet) at proportionate prices.
Strong Galvanised Poultry Netting, 7½*d.* per yard, 3 feet wide: Galvanised Sparrow-proof Netting for Pheasantries, 11*d.* per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.



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Five wires, 3 feet 6 inches high, pronged Standards, 3 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10*d.* per yard.
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REMARKABLE FOR THEIR SIMPLICITY, DURABILITY, AND EFFICIENCY. PRICE £13 13s. DELIVERED AT ANY RAILWAY STATION.

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Yours respectfully (Signed) THOMAS INGLEDEW.

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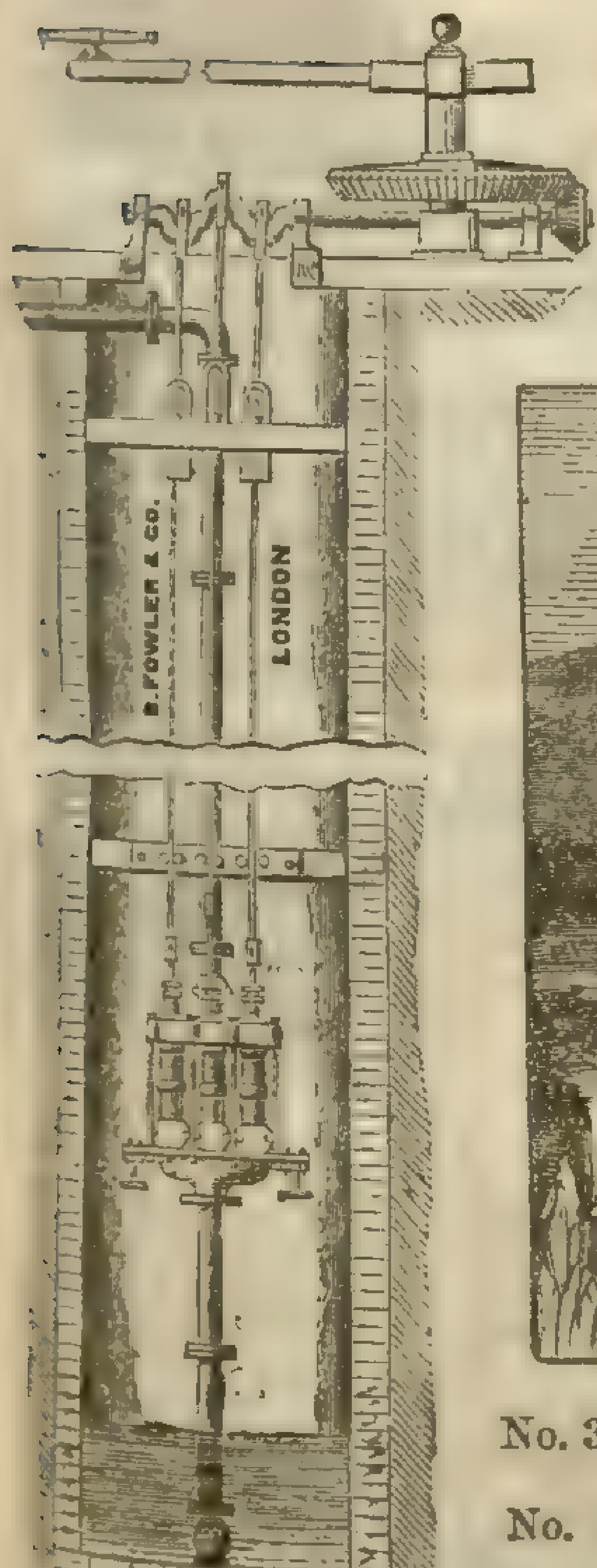
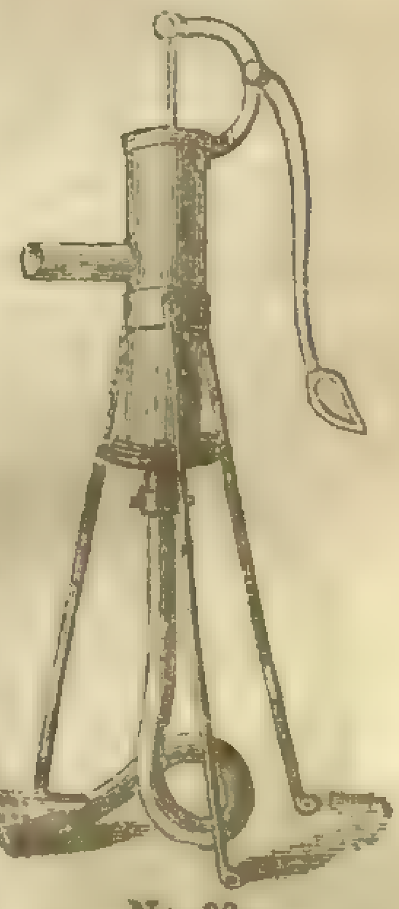


No. 37.

THE accompanying Sketches show some useful forms of apparatus in general demand for Raising and Forcing Water or Liquid Manure. The Landscape Sketch shows the adaptation of Fowler's Improved Hydraulic Rams for the supply of Mansions, Farms, &c. A large number of these simple Self-acting Machines are in use, giving great satisfaction. Their adoption is not confined to positions as shown below, as they are suited to any situation where a few feet fall can be obtained from a spring, brook, or stream; they will force to an elevation equal to ten or more times the number of feet of fall, and to any distance.

No. 4.



No. 38.

No. 37. FOWLER'S Improved Simple HORSE GEAR for raising water from deep wells with double or treble pumps. B. F. & Co. also make and fix Deep Well Pumps of all descriptions for hand power.

No. 4. FOWLER'S CAST IRON BORED PUMPS of all sizes, with improved brass valves for Garden and Farm use, from 1*l.* 5*s.* each.

No. 38. FOWLER'S Galvanized Portable LIQUID MANURE PUMPS, with flexible suction hose. Price with 10 feet of pipe and strainer, 4*l.* 5*s.*

No. 138. FOWLER'S Improved DOUBLE ACTION FORCE PUMP in frame. These excellent pumps are largely used and much approved.

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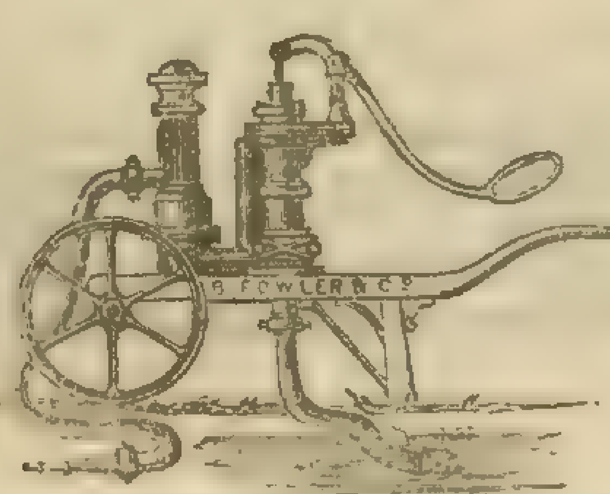
No. 49.



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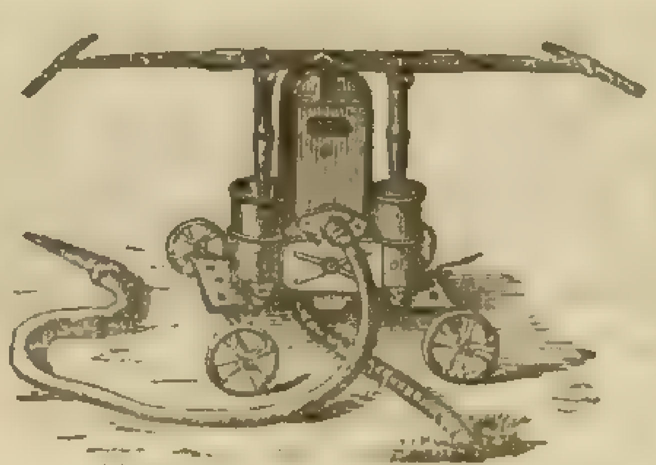

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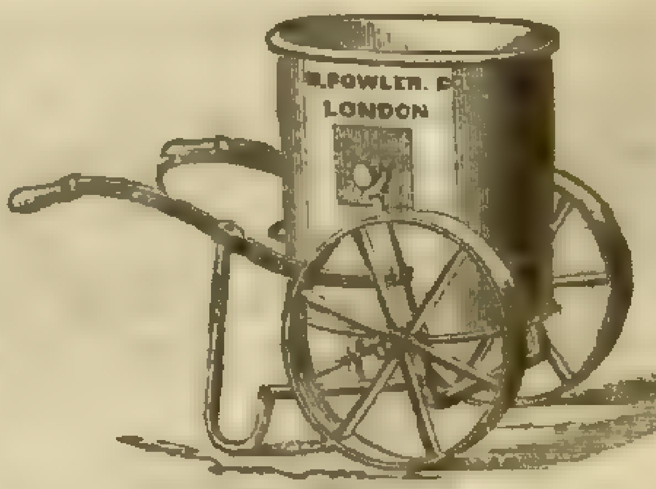

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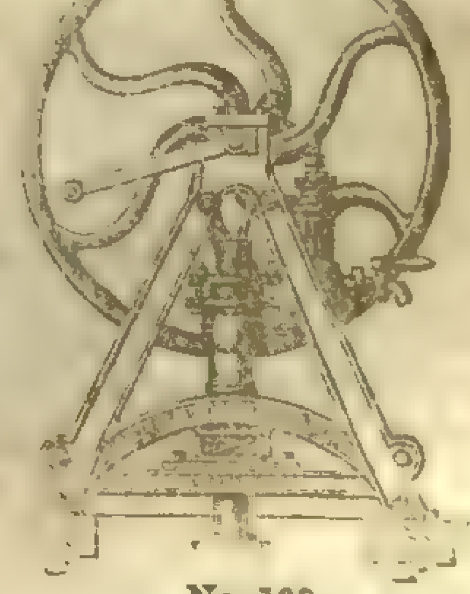

No. 138.

FURTHER PARTICULARS, ESTIMATES, AND ILLUSTRATED PRICE LISTS ON APPLICATION.

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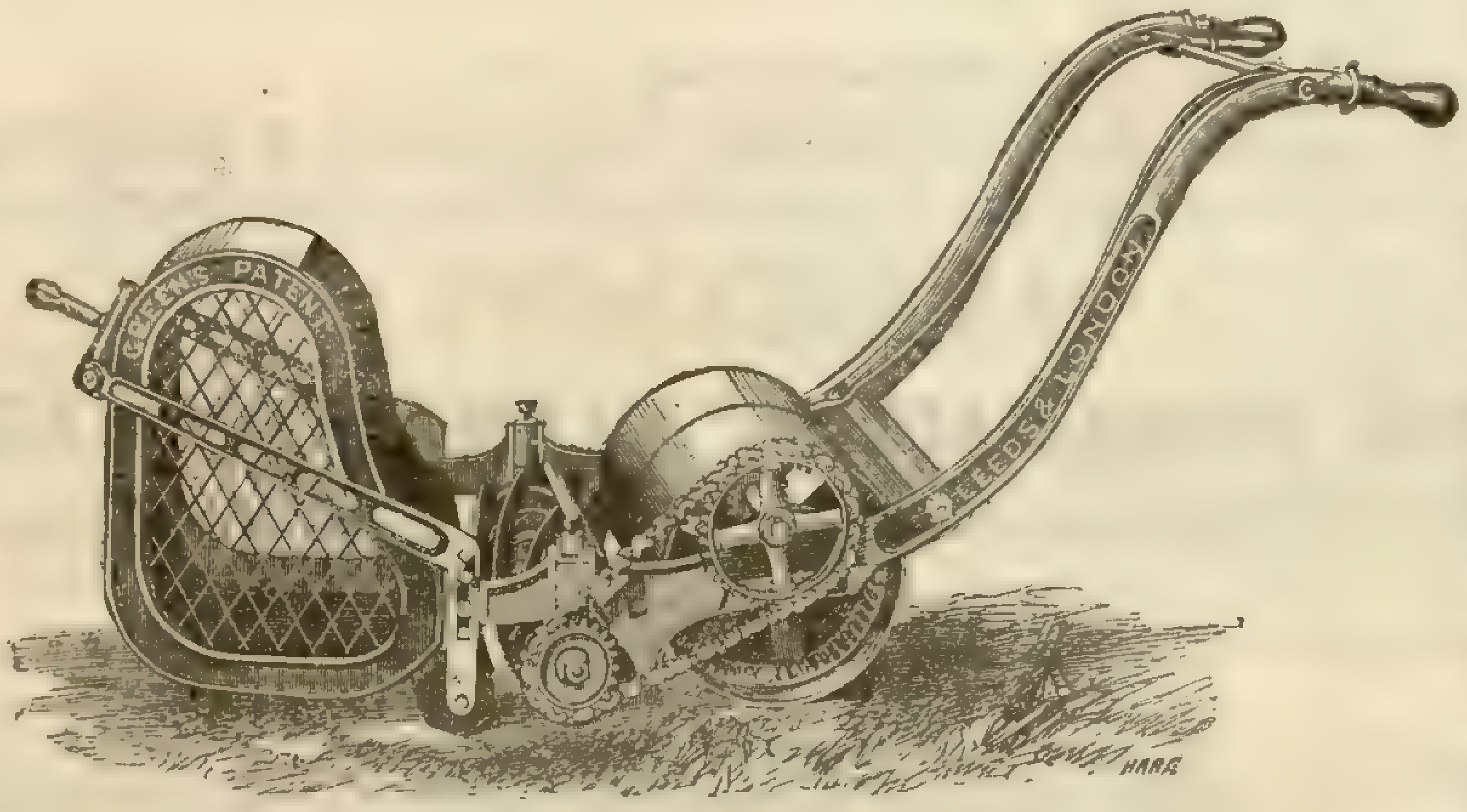
LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THOMAS GREEN can with confidence state that he has succeeded in bringing forward for the ensuing season a Machine which is so novel in its character that any person, however unskilled, is enabled to use it with confidence and ease; and by its thoroughly mechanical construction is pronounced by practical men to be the *ne plus ultra* of perfection. Every improvement that has suggested itself from past experience has been put to practical test, and the results are that the Machines for which Her Majesty's Royal Letters Patent *have recently been obtained* are immeasurably superior to anything of the kind ever brought before the Public. They combine all that efficiency and simplicity can express, and are calculated



to keep Lawns in the highest state of perfection, which cannot be equalled by any other means. They are adapted both in size and price to the very smallest plots, as well as Lawns acres in extent. Since their introduction the sale of these Machines has more than doubled each succeeding year, and has now attained *the largest sale of any Machine "extant;"* have proved to be the best, having carried off *every Prize* that has been given in all cases of competition. They are made from the best materials, and of superior workmanship; are delivered *Carriage Free* to all the principal Railway Stations and Shipping Ports in England; *are warranted to give satisfaction*, and if not approved can be at once returned, if sent carriage free to Leeds.

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To Cut 42 inches	26 0 0 ...	28 2 0
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Leather Boots for Horse, per set, £1 4*s*.

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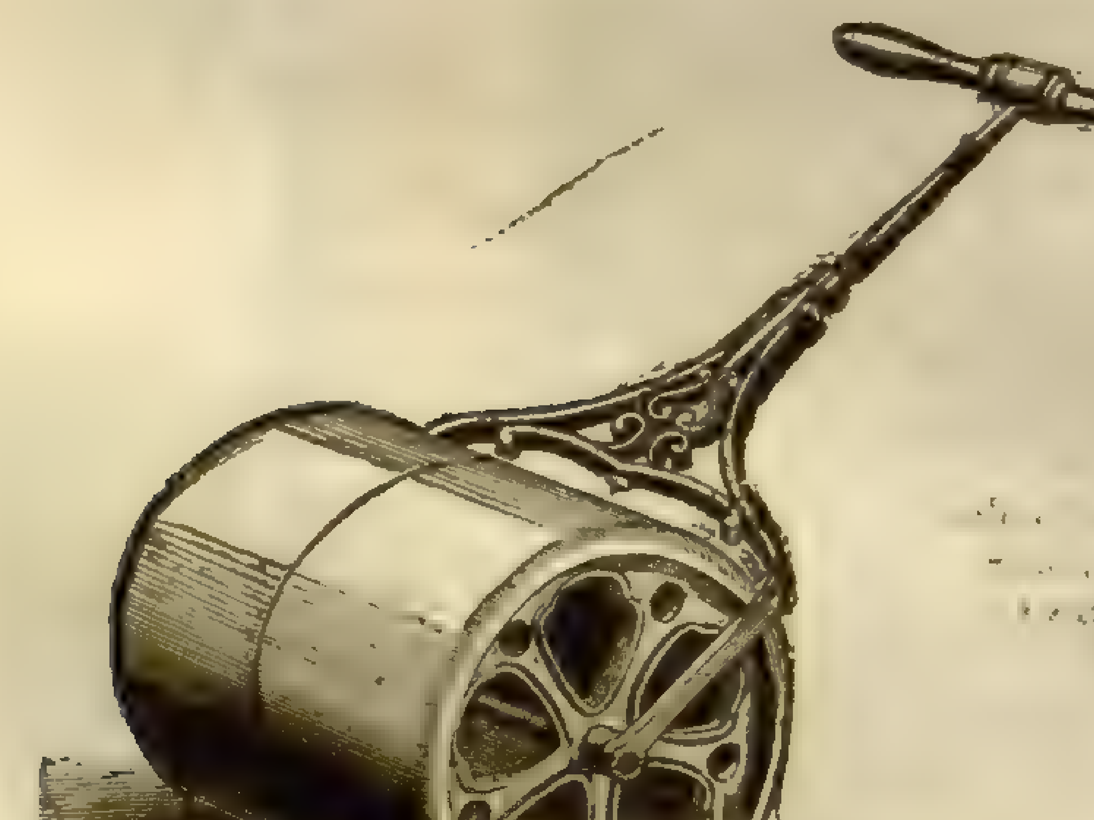

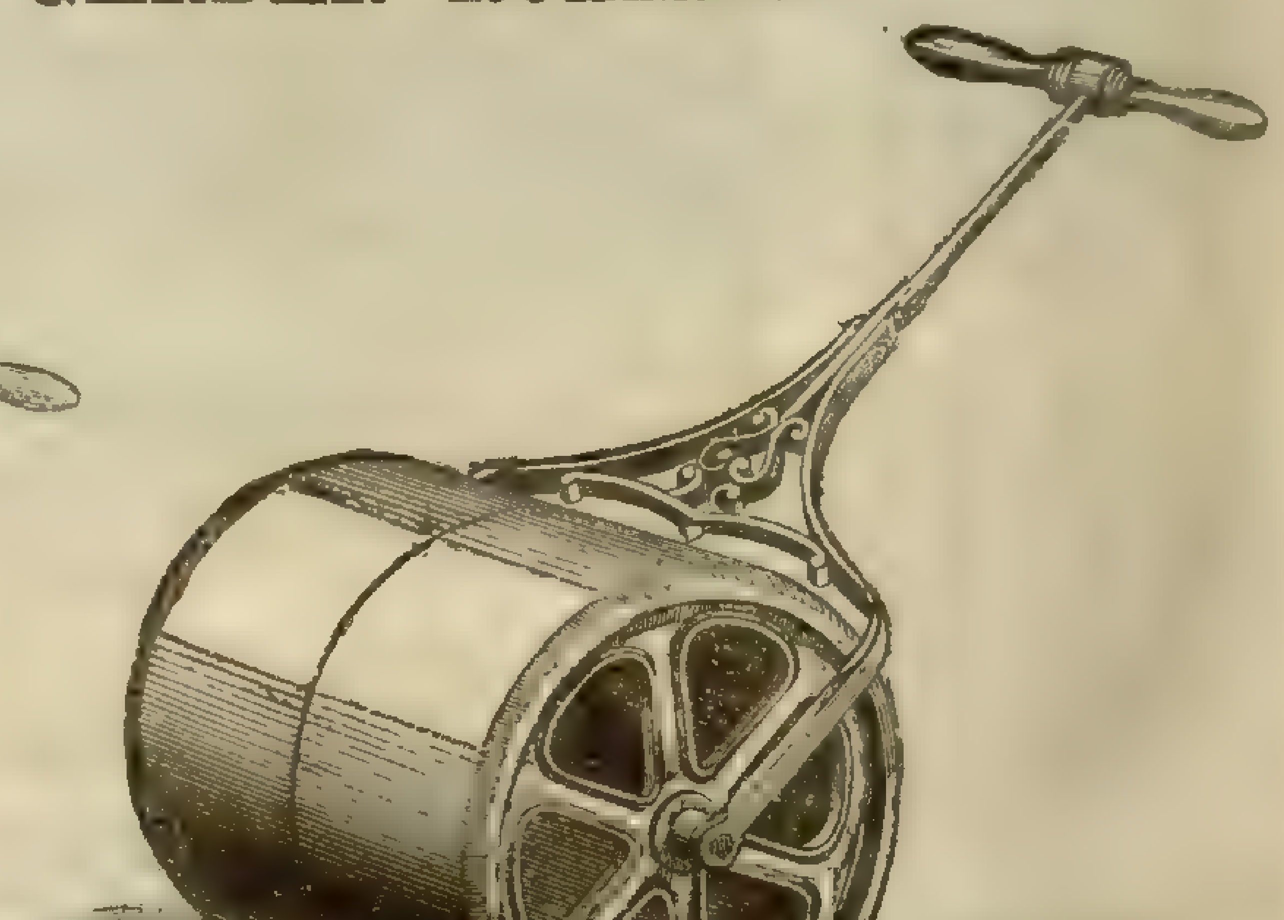

Diameter 20 inches, length, 22 inches....Price £3 5*s*. | Diameter 16 inches, length, 17 inches....Price £2 10*s*. | Diameter 24 inches, length, 26 inches....Price £4 5*s*.

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The superiority of these Machines is now fully established, and they have acquired a reputation and standing of the very highest character, as the following list of distinguished Patrons will fully guarantee.

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The Most Hon. the Marquis of Westminster
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The Right Hon. the Earl of Ducie, 30, Princes Gate
The Right Hon. the Earl of Stanhope, Chevening
The Right Hon. the Earl of Chichester, Stanmer, Lewes
The Right Hon. the Earl of Eldon, Croydon
The Right Hon. the Earl de Grey and Ripon, Studley Royal
The Right Hon. the Earl of Effingham, Brackley
The Right Hon. the Earl of Harewood
The Right Hon. the Earl of Leicester
The Right Hon. the Earl of Stamford and Warrington
The Right Hon. the Earl of Scarborough
The Right Hon. the Earl of Stair, Oxenford Castle, Edinburgh
The Right Hon. the Earl of Brownlow, Ashridge Park
The Right Hon. the Earl Spencer, Althorpe Park, Northampton
The Right Hon. the Earl of Ellesmere, Cobham House
The Right Hon. the Earl of Howarth, Howarth Castle, Louth, in Dublin
The Right Hon. the Earl of Darnley, Cobham Hall, Gravesend
The Right Hon. the Earl of Airlie, Holly Lodge, Camden Hill, Kensington
The Right Hon. Count Kennisdal, Château de Rignière
The Right Hon. Count Donnemarsh, Neuderk, Silesia
The Right Hon. Count Bernstoff, Wedendorff
The Right Hon. the Countess of Harewood
The Right Hon. Countess Dellormorella, 31, Eaton Square
The Right Hon. the Countess Dowager of Jersey, Middleton Park
The Right Hon. Viscount Falmouth, Tregothnan, Probus, Cornwall
The Right Hon. Viscount Campden
The Right Hon. Viscount Eversley, Heckfield Place, Winchfield
The Right Hon. Viscount Sydney, Frognall, Kent
The Right Hon. Viscount Lomerton, 64, Rutland Gate
The Right Hon. Viscountess Downe, Balderby Park
The Right Rev. the Lord Bishop of Rochester, Danbury, Chelmsford
The Right Rev. the Lord Bishop of Kilmore, Cavan
The Right Hon. Lord Chas. Fitzroy, Elm Lodge, Hampton
The Right Hon. Lord Stourton, Knaresboro'
The Right Hon. Lord Sondes, Elmham Hall, Norfolk
The Right Hon. Lord Scarsdale, Kiddleston, Derbyshire
The Right Hon. Lord Ashburton, the Grange, Alredford
The Right Hon. Lord Bridport
The Right Hon. Lord Bolton, Bolton Hall, Bedale
The Right Hon. Lord Ross, London
The Right Hon. Lord Clarence Paget, Anglesea
The Right Hon. Lord Portman, Bryanston, Blandford
The Right Hon. Lord Forester, Willey Park, Broseley, Salop
The Right Hon. Lord Cremorne, Dundalk, Ireland
The Right Hon. Lord Broughton, G.C.B.
The Right Hon. Lord Cork, Marston House, Frome
The Right Hon. Lord Overstone, Overstone Park, Northampton
The Right Hon. Lord Belper, Kingston Hall, Derby
The Right Hon. Lord Bagot, Blithfield House, Rugeley
The Right Hon. Lord Leigh, L.L., Warwickshire
The Right Hon. Lord Wenlock, Escrick Park, York
The Right Hon. Lord Ashtown
The Right Hon. Lord John Scott
The Right Hon. Lord Suffield, Gunton Park, North Walsham
The Right Hon. Lord Heytesbury, Warminster
The Right Hon. Lord George Cavendish, Ashfield Hall
The Right Hon. Lord Braybrooke, Audley End, Saffron Walden
The Right Hon. Lord Braybrooke, Haden House, Royston
The Right Hon. Lord A. Hervey, Bristol House, Wimbledon Common
The Right Hon. Lord Ravensworth, Ravensworth House, Fulham Green
The Right Hon. Lord Leconfield, Petworth Park
The Right Hon. Lord Broughton, 4, Berkeley Square
The Right Hon. Lord Chesham, Latimer, near Chenies
The Right Hon. Lord Heytesbury, Heytesbury, Bath
Lady Milner, Aldwark Hall
Lady Fairbairn, Woodsley House
Lady Harland, Wherstead Park, near Ipswich
Lady Webster, Roehampton
The Ladies Wentworth Fitzwilliam, Harrowden House, Wellingborough
Lady Collier, Wickham
Lady Eardley, Bedwell Park, Herts
Lady Buxton, Upton Park, Westham, Essex
The Right Hon. J. Stuart Wortley, Upper Shean House, Mortlake
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The Right Hon. Sir D. Dundas, Stirling Park
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The Hon. H. Bligh, The Hall, Rotherfield, Sussex
The Hon. Mr. King, Woburn Park, Chertsey
The Hon. Lady Howard
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Sir E. M. Elton, Bart., Honiton
Sir Wilfred Lawson, Brayston, Carlisle
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Sir John Selwyn, Down Hall, Harlow, Essex
Sir Thomas Wills, Hill House, Windsor
Sir Fred. Roe, 96, Piccadilly
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Sir J. Nelthorpe, Scawley Hall, Briggs
Sir Wm. Codrington, Bart., Dodington
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Sir Robert Sheffield
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Sir Charles Watson, Wheateley Park, Cambridge
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Sir M. Shaw Stewart, Bart., 42, Belgrave Square.
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Sir A. A. Hood, St. Andries, Bridgewater
Baron James de Rothschild, Paris
Baron de Biel, Hamburgh
Baron de Mattsakr, Vollrahtsruhe, Teteron
General Blanshard, Globe House, Hampton
General Reeve, Leadenham House
Lieut-General Higginson, The Croft, Marlow, Bucks
Colonel Jackson, Ross
Colonel Brise, Braintree
Colonel Loyd Lindsay, Wantage
Colonel Passy, Cheltenham
Colonel Browne, Heathfield House
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Colonel Carmichael, C.B., Stone Court, near Berkeley
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Colonel Hill, Oatlands, Castleknock, Ireland
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Colonel Gossell, Mecktam, near Dorking
Colonel Gould, Hormead Bury, Buntingford
Lt.-Colonel Montresor, Denne Hill, near Canterbury
Lt.-Colonel Bower, Droxford
Lt.-Colonel Sale, St. Leonard's, Penge
Major The Hon. C. Keith Falconer, Horsham
Admiral Evans, Bulkley House, Englefield Green, Surrey
Admiral Warren, Calne
Vice. Admiral Hughes D'Aeth, Knowlton Court, Sandwich
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Ormsby Gore, Esq., M.P., The Mount, Oswestry, Shropshire
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THE ROYAL HORTICULTURAL SOCIETY'S GARDENS, SOUTH KENSINGTON.
THE ROYAL BOTANICAL GARDENS, REGENT'S PARK.
THE CRYSTAL PALACE COMPANY'S GARDENS, SYDENHAM.
THE KENSINGTON PALACE GARDENS.
THE HYDE PARK GARDENS.
And in most of the principal Squares in the Metropolis.

Although the Patentee has only been a manufacturer of Lawn Mowers during the last 7 years, he has pleasure in stating that 12,000 Machines have been sold, and that 50 Machines are now sent off daily, thereby indicating the superiority of Green's Lawn Mowers, the increased sale of which may be readily understood when it is acknowledged that in every case of competition they have been declared the best and have carried off every prize.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Greenhouses, Orchard-houses, and Conservatories.

H. FREEMAN'S HORTICULTURAL WORKS, Triangle, Hackney, London, N.E.: established 20 years. Good substantially-made GREENHOUSES, glazed, ready for fixing, 42 feet by 13 feet, 50*l.*; 21 by 13, 28*l.*; 12½ by 10, 15*l.* ORCHARD-HOUSES 10 per cent. cheaper. A large assortment kept. Estimates given for heating, or any branch in iron or wood.

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VINCENT SKINNER (*late Partner with* J. WEEKS & Co.), erects CONSERVATORIES, HOTHOUSES, and HOT-WATER APPARATUS. His improved Pipe Boilers, which give such universal satisfaction for Warming Churches and Hothouses, will heat from 100 to 2000 feet of Pipe.

Plans and Estimates on application to V. SKINNER, Bridewell Street, Bristol.

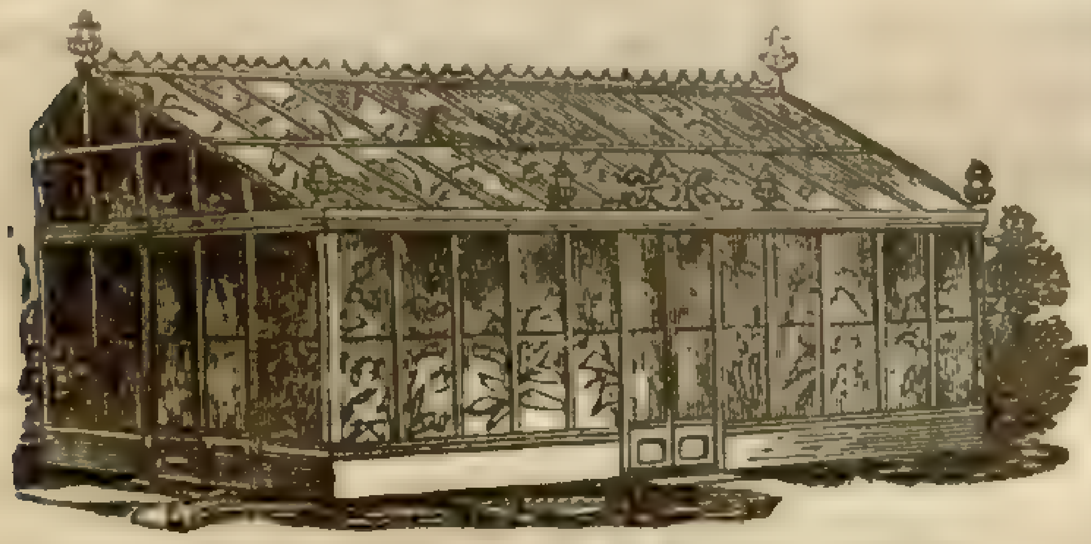
RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

JAMES WATTS AND CO., HOTHOUSE BUILDERS and HOTWATER APPARATUS MANUFACTURERS, near the Green Man, Old Kent Road, London, S.E.



200 CUCUMBER and MELON BOXES and LIGHTS, and from 400 to 500 LIGHTS for PITS of all SIZES kept in STOCK.

Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.

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JOHN TAYLOR & SONS,

HORTICULTURAL BUILDERS AND ENGINEERS,

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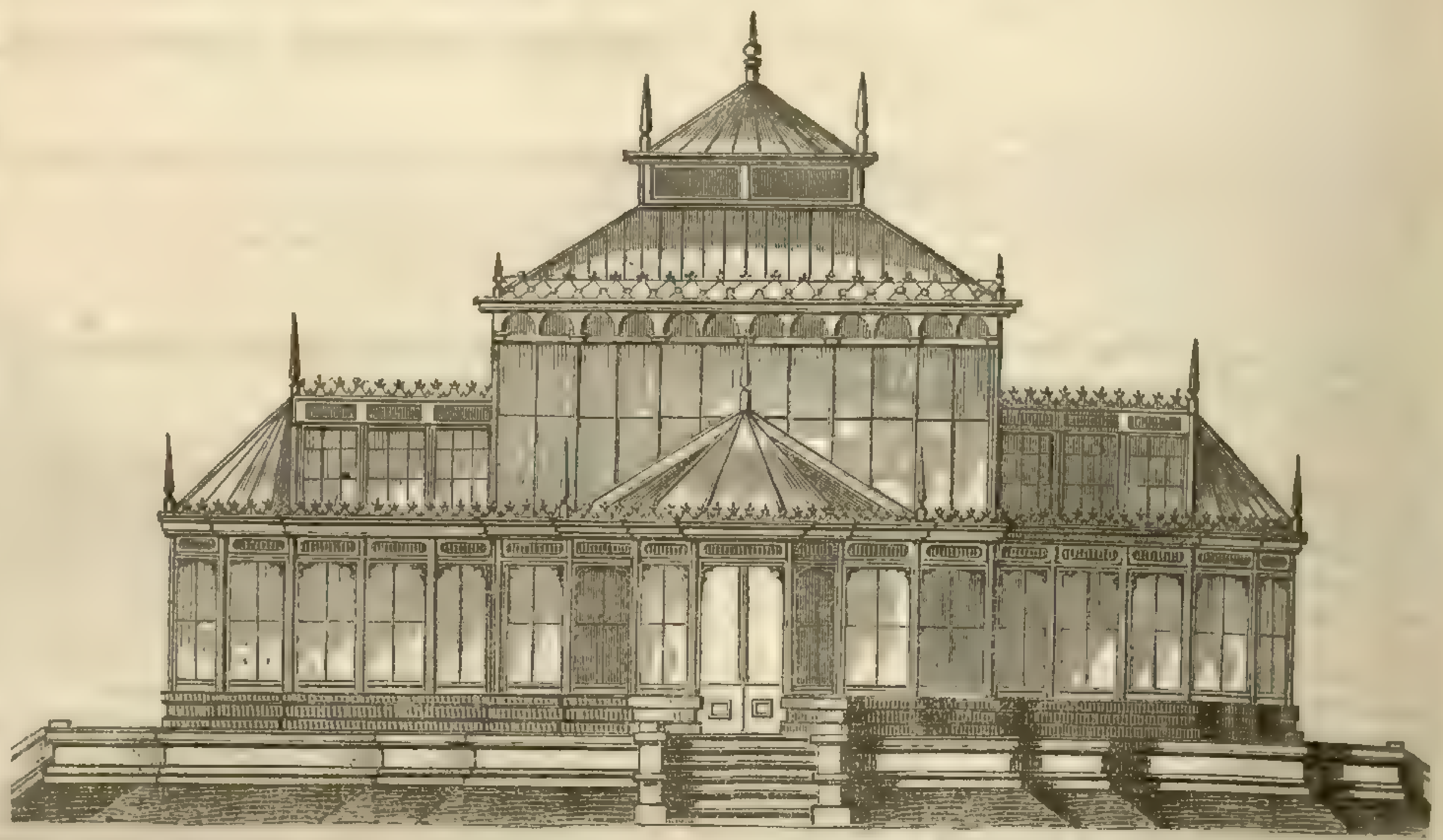

J. TAYLOR AND SONS call the attention of the Nobility and Gentry to the very superior manner in which they erect CONSERVATORIES, VINERIES, FORCING, FRUIT, and PLANT HOUSES of every description, combining the most modern improvements with elegance of design and durability of materials and workmanship.

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Our system of HEATING APPARATUS for Churches, Public Buildings, Mansions, Schools, Offices, Baths, Horticultural Buildings, &c., is particularly worthy of notice, having for many years devoted especial attention to this branch. The great variety of work which has passed through our hands has gained us such experience in the mechanical details as to insure success and entire satisfaction in any undertaking entrusted to our care.

The superiority of our DOUBLE-CHAMBER CORRUGATED and HORIZONTAL TUBULAR BOILERS has caused them to be acknowledged as the best now in use, being both powerful and rapid in action.

See CONSERVATORY, BOILERS, &c., exhibited at the International Exhibition, Class 9 (2191,) Open Court, Eastern Annexe.

HOTHOUSES FOR THE MILLION

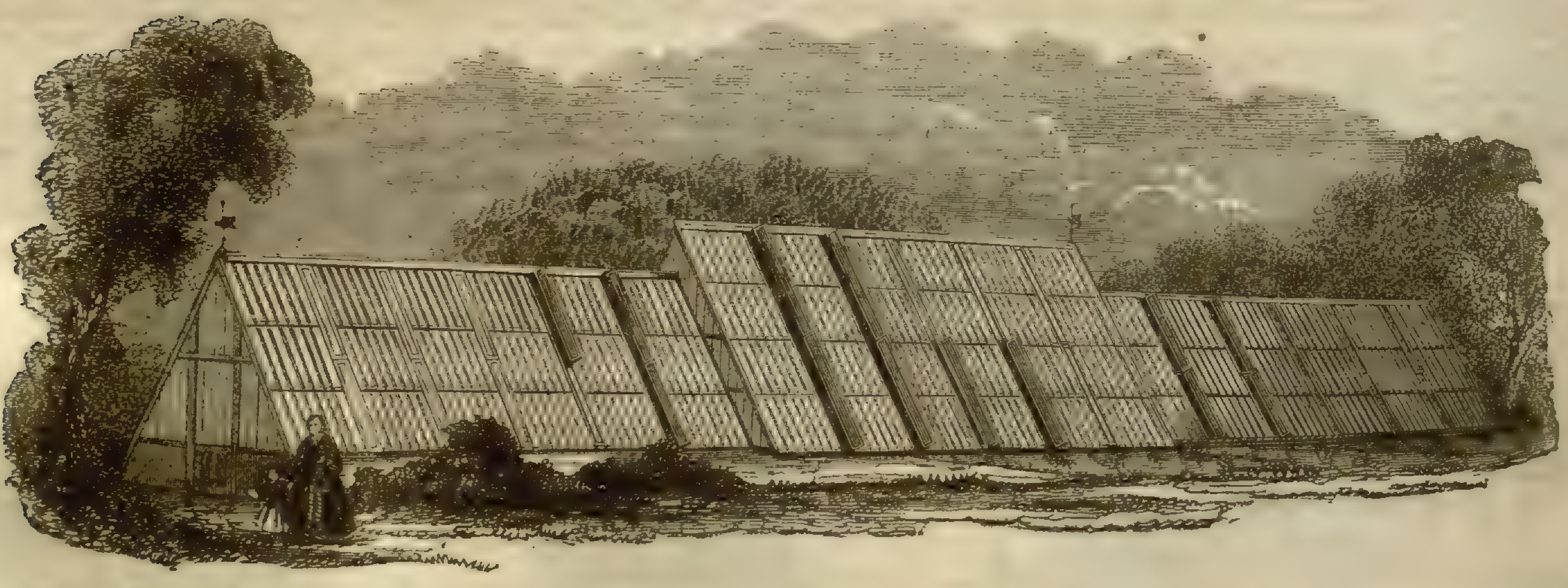
(INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE),

ON THE PRINCIPLE INVENTED AND PATENTED BY

SIR JOSEPH PAXTON, M.P.

COMBINING SIMPLICITY, CHEAPNESS, EXCELLENCE, AND DURABILITY,

BEING CAPABLE OF FULFILLING IN THE MOST PERFECT MANNER ALL THE REQUIREMENTS OF HORTICULTURE.



The Cash Prices of Lean-to Houses complete are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£12 0 0	£16 0 0	£21 0 0	£28 10 0	£34 5 0
31 3 in length	16 10 0	21 2 6	26 10 0	37 12 0	45 16 0
41 11 in length	20 18 0	26 18 6	33 7 6	46 14 0	57 7 0
52 7 in length	25 12 6	32 15 0	40 5 0	55 16 0	68 18 0
63 3 in length	30 6 0	38 10 0	47 2 6	64 18 0	80 10 0
73 11 in length	34 12 6	43 15 0	53 7 6	74 0 0	92 0 0
84 7 in length	39 6 0	49 11 6	60 5 0	83 2 0	103 11 0
95 3 in length	43 19 0	55 10 0	67 2 6	92 5 0	115 2 0
105 11 in length	48 17 6	60 12 6	73 10 0	101 10 0	126 13 0

The Cash Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are sa follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£24 0 0	£32 0 0	£42 0 0	£57 0 0	£68 12 0
31 3 in length	38 0 0	42 5 0	53 0 0	75 4 0	91 10 0
41 11 in length	41 16 0	53 17 0	66 15 0	93 8 0	114 14 0
52 7 in length	51 5 0	65 10 0	80 10 0	111 12 0	137 10 0
63 3 in length	60 12 0	77 0 0	94 5 0	129 16 0	161 0 0
73 11 in length	69 5 0	87 10 0	106 15 0	148 0 0	184 0 0
84 7 in length	78 12 0	99 3 0	120 10 0	166 4 0	207 2 0
95 3 in length	87 18 0	111 0 0	134 5 0	184 10 0	230 4 0
105 11 in length	97 15 0	121 5 0	147 0 0	203 0 0	253 6 0

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

The above prices do not include package, railway freight, heating apparatus, or erection.

Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

SAMUEL HEREMAN, 7, PALL MALL EAST, LONDON, S.W.

HOT-WATER APPARATUS.

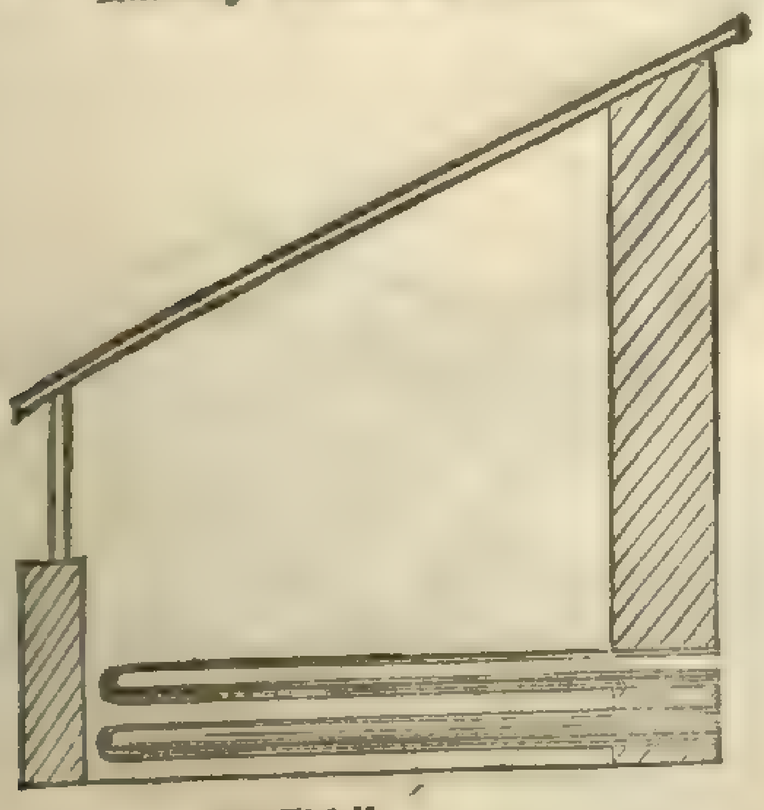
J. JONES

BEGS TO OFFER A COMPLETE

Hot-Water Apparatus for Houses

according to the following Plans, delivered Free to any Railway Station in England.

PLAN No. 1.

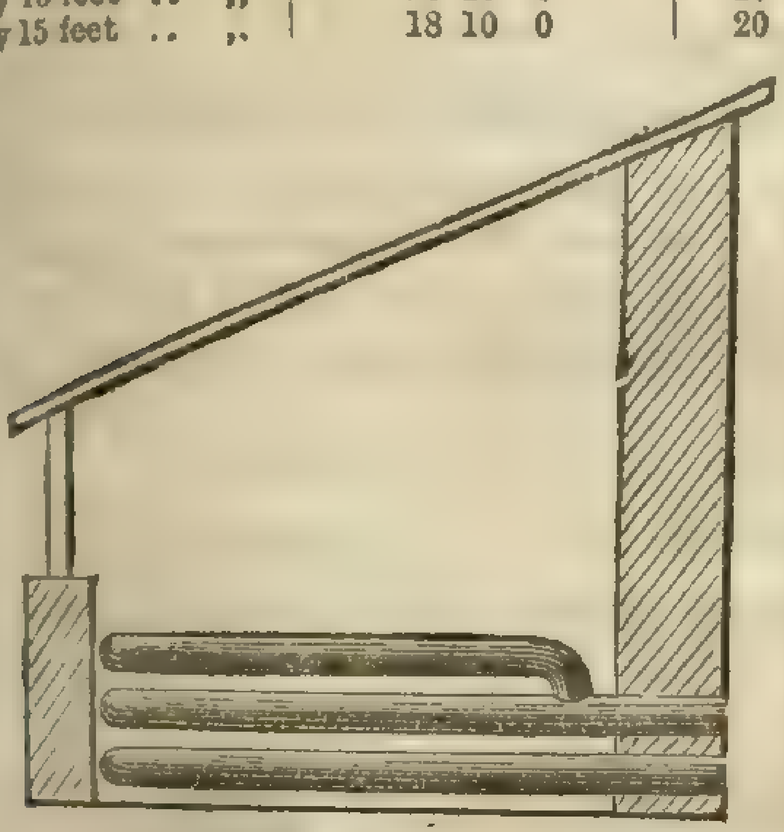


SECTION

Two 4-inch pipes along front and one end of house.

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£8 0 0	£8 12 6
20 feet by 10 feet ..	,,	8 10 0	9 0 0
25 feet by 12 feet ..	,,	10 0 0	10 10 0
30 feet by 12 feet ..	,,	11 10 0	12 0 0
40 feet by 15 feet ..	,,	16 10 0	17 0 0
50 feet by 15 feet ..	,,	18 10 0	20 0 0

PLAN No. 2.

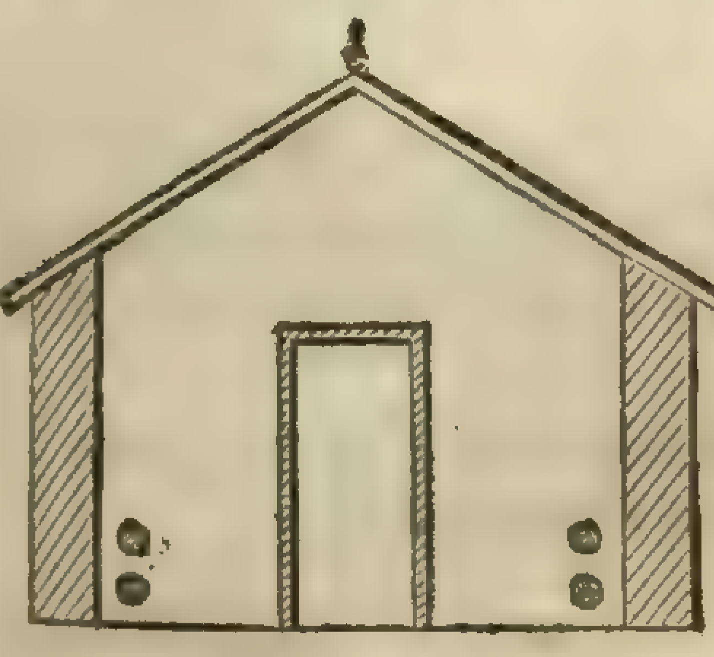


SECTION

Three 4-inch pipes along front and one end of house.

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£11 10 0	£12 0 0
20 feet by 10 feet ..	,,	12 10 0	13 0 0
25 feet by 12 feet ..	,,	14 10 0	15 0 0
30 feet by 12 feet ..	,,	16 10 0	17 0 0
40 feet by 15 feet ..	,,	22 0 0	23 0 0
50 feet by 15 feet ..	,,	24 10 0	26 0 0

PLAN No. 3.

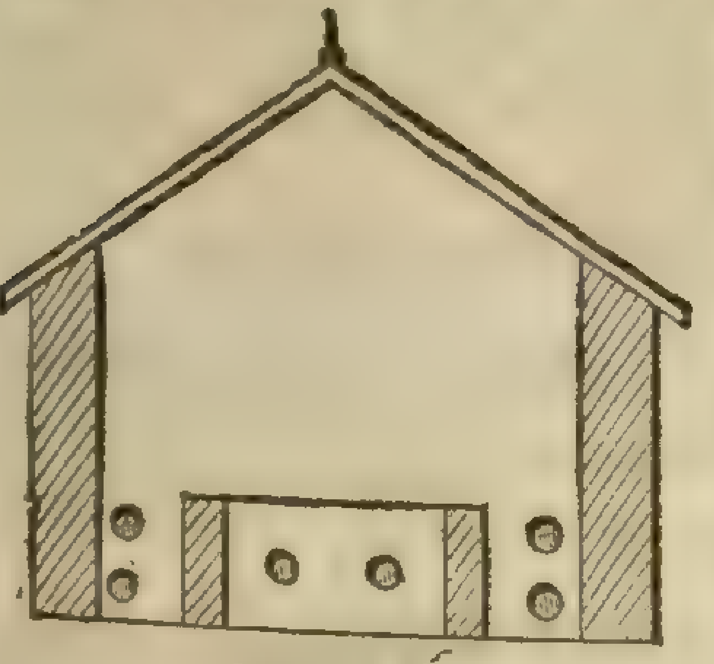


SECTION.

Two 4-inch pipes along each side and one end of house.

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£12 10 0	£13 0 0
20 feet by 10 feet ..	,,	13 10 0	14 0 0
25 feet by 12 feet ..	,,	16 10 0	17 0 0
30 feet by 12 feet ..	,,	19 0 0	20 0 0
40 feet by 15 feet ..	,,	24 10 0	25 10 0
50 feet by 15 feet ..	,,	27 0 0	28 10 0

PLAN No. 4.



SECTION

Two 4-inch pipes along each side and one end of house, and two 4-inch pipes in pit for bottom heat.

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£16 0 0	£17 0 0
20 feet by 10 feet ..	,,	17 10 0	18 10 0
25 feet by 12 feet ..	,,	21 10 0	22 10 0
30 feet by 12 feet ..	,,	25 0 0	26 0 0
40 feet by 15 feet ..	,,	31 0 0	32 0 0
50 feet by 15 feet ..	,,	33 10 0	35 0 0

The above prices include Boiler, strong Furnace-doors, Bars, Plate, Soot-doors, Damper, and Supply Cistern-pipes of 4-inch diameter, Elbows, &c.; all of the best quality.

Delivered free to any Railway Station in England. Terms: Nett Cash.

Estimates will be sent for the work fixed complete, or further particulars on application to

J. JONES, Hot-Water Apparatus Manufacturer, 6, Bankside, London, S.E.

Card.

SAMUEL N. McGERROW, GENERAL HORTICULTURAL BUILDER, Knotty Ash, near Liverpool.

Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

E. DENCH'S HORTICULTURAL WORKS, 152, King's Road, Chelsea, S.W., Manufacturer of every description of HORTICULTURAL BUILDINGS either in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without.

HOT WATER APPARATUS Manufacturer.

KENT'S PATENT WEATHERPROOF GLAZING. —GREENHOUSES on hand or to order with best materials and workmanship.

Apply to A. KENT, Horticultural Builder, Chichester; or at Works, to Mr. PITMAN, 30, Lower Church Street, Chelsea, S.W.

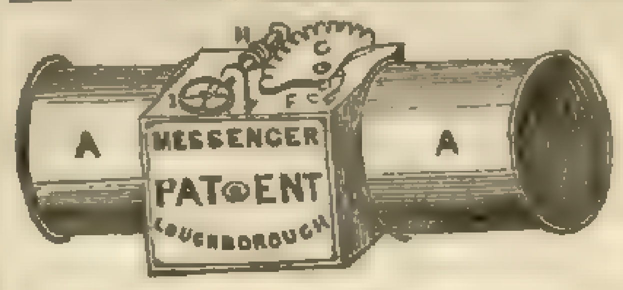
HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, TUBULAR, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 12s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. LYNCH WHITE'S, Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

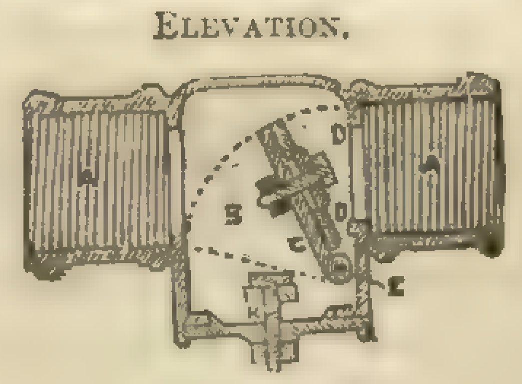
Horticultural Buildings and Heating by Hot Water.

BURY AND POLLARD, PARK IRON WORKS, New Park Street, Southwark, S.E., Manufacturers of every description of Buildings for Horticultural Purposes, with their Improved CONICAL BOILER for heating the same, are prepared to undertake works of any magnitude, and refer among others to the celebrated range of Forcing Houses at Her Majesty's Gardens, Frogmore, and at Sir Robert Peel's, Drayton Manor, constructed under the superintendence of their Manager, Mr. JOHN JONES.

Further information forwarded on application.



ELEVATION.



SECTION.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough, has recently patented a Valve which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under.

Two-inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s.

A liberal discount to the Trade.

HENRY J. MORTON AND CO., 2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern

for Cottage Houses, &c., to contain 50 gallons, 26s.; 80 gallons, 31s. each; and 140 gallons, 37s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

Galvanised Iron Pumps

for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.

Galvanised Iron Swing Water Barrows

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35s. 0d. each.

JOSEPH HAYWOOD AND CO.,

MANUFACTURERS OF

PRUNING and BUDDING KNIVES,

SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

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NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by GEORGE NEIGHBOUR & SONS, with all the recent improvements, three glasses, and thermometer, price 35s., securely packed for the country.

This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

Early applications addressed to GEO. NEIGHBOUR & SONS, 127, High Holborn, W.C., or 149, Regent Street, London, W., will receive prompt attention.

Their newly-arranged Catalogue of other Improved Hives, with drawings and prices, sent on receipt of two stamps.

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BLACK KERRY CATTLE.—Select animals of this valuable and small breed can be delivered in Cork by RICHARD G. CAMPION, Esq., Holly Hill, Rathcormac, who always holds a large stock of the same.

NURSERY in full Trade, with extensive Vineries producing a Ton of Grapes per annum; Show and Propagating Houses. 100 miles from town, on a rail and canal. Valuation about 500l. to 600l.

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TO BE LET, by Tender, for 21 years from Michaelmas next, PARK FARM, Lower Beeding, Sussex, a Stock, Corn, and Orchard Farm, containing 70 Acres Wood, 130 Acres Pasture and Meadow, 300 Acres Arable, and 90 Acres Orchard. There are several Cottages and an old Farm house. The owner will build a suitable house for a tenant; the Farm buildings are good. Horsham, an excellent market, is 5 miles off; the West Grinstead Railway Station only 2. The situation is particularly pleasant and healthy.

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TO BE LET or SOLD, a capital GRASS FARM, in the best part of the county of Middlesex, close to a first-class Railway Station, and 10 miles from London, consisting of 190 Acres of very superior Meadow and Pasture Land, in a good state of cultivation, admirably adapted for the rearing and fatting of prize stock, and having an excellent Family Residence with large Garden attached, and extensive and commodious Farm Buildings. If sold, two-thirds of the purchase money may remain on mortgage.

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TO BE LET, 35 miles from London and 4 from the Great Western Railway, a good substantial and commodious COTTAGE or FARM-HOUSE, well adapted for a family, in excellent repair, possessing all necessary offices, with 320 acres of good Shooting included, at a very moderate rent. Can be entered upon immediately. The owner being a Farmer an opportunity would be afforded to any gentleman or lady desirous to have a Son or Sons educated in Practical Farming.

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Stoke Newington.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed by H. R. Beal, Esq., who is leaving the neighbourhood, to SELL by AUCTION, on the premises, The Cedars, Woodberry Down, near the Manor House, Stoke Newington, on SATURDAY, June 14, at 1 o'Clock, the whole of the STOVE, GREENHOUSE, and BEDDING PLANTS; also 4 One and Two-light Boxes, Rustic Flower Baskets, capital Iron Roller, Garden Engine, Flower Frames, Implements, and other effects.

May be viewed two days prior and Morning of Sale. Catalogues may be had at the Manor House, Stoke Newington; at the principal Seed Shops in London; and of the Auctioneers and Valuers, American Nurseries, Leytonstone, Essex, N.E.

Winding-up Sale for the Season.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, Bartholomew Lane, E.C., on FRIDAY, June 13, at 12 o'Clock, a Choice Collection of GREENHOUSE PLANTS, including fine Show, Fancy and Scarlet Geraniums, Calceolarias, and other Plants in Bloom, Verbenas, Fuchsias, Dahlias, Dwarf and Climbing Roses in Pots; with an assortment of Ornamental Plants for Bedding.

On view the Morning of Sale. Catalogues may be had at the Mart, and of the Auctioneers, American Nursery, Leytonstone, Essex, N.E.

Watts's Nursery, Stoke Newington.

VALUABLE INVESTMENT.

MR. ROBERT BOYCE has been favoured with instructions from the executrix of the late Mr. Watts to SELL by AUCTION at the Mart, opposite the Bank of England, on MONDAY, June 9, at 12 o'Clock, the valuable LEASE of the Property known as WATTS'S NURSERY, in the High Road, Stoke Newington, held for an unexpired term of 39 years, at the nominal Ground Rent of 10l. per annum, and producing for the next 20 years a net income of 44l. per annum.

Particulars, with conditions, may be had of T. ANGELL, Esq., Solicitor, King Street, Guildhall, E.C.; at the Mart; and at the Auctioneer's Offices, 47, High Street, Hoxton, N.

Valuable Hothouse, Stove, and Greenhouse Plants.

MR. BRANCH will SELL on FRIDAY, June 13, at the Hanover Rooms, Liverpool, at 3 o'Clock, a Collection of Fine HOTHOUSE, GREENHOUSE, and STOVE PLANTS, of various descriptions, and in fine healthy condition, removed from Bronte House, Everton, for th convenience of Sale.

To be viewed on the Morning of the day of Sale, from 10 o'Clock to the time of Sale, when Catalogues may be had.

Winchmore Hill.—Leasehold Cottages and Nursery Ground.

MR. FRANK LEWIS will SELL by AUCTION, at the Mart, on FRIDAY, June 13, at 12 for 1 o'Clock, FOUR LEASEHOLD COTTAGES and about 3 Acres of LAND used as a Nursery Ground, with Greenhouses, Forcing Pits, Outhouses, &c., situated in Meeting House Row, Winchmore Hill; the whole held for an unexpired term of 28 years, at a rental of 45l. per annum.

May be viewed, and particulars had at the Mart; of Messrs. LUCAS & SHOWLER, Solicitors, 1, Trinity Place, Charing Cross, S.W.; of Messrs. HARRISON & LEWIS, Solicitors, 6, Old Jewry, E.C.; and of the Auctioneer, 36, Coleman Street.

IMPORTANT SALE OF THE REMAINDER OF

Jonas Webb's Renowned Flock of Pure Southdowns,

AT BABRAHAM, CAMBRIDGE.

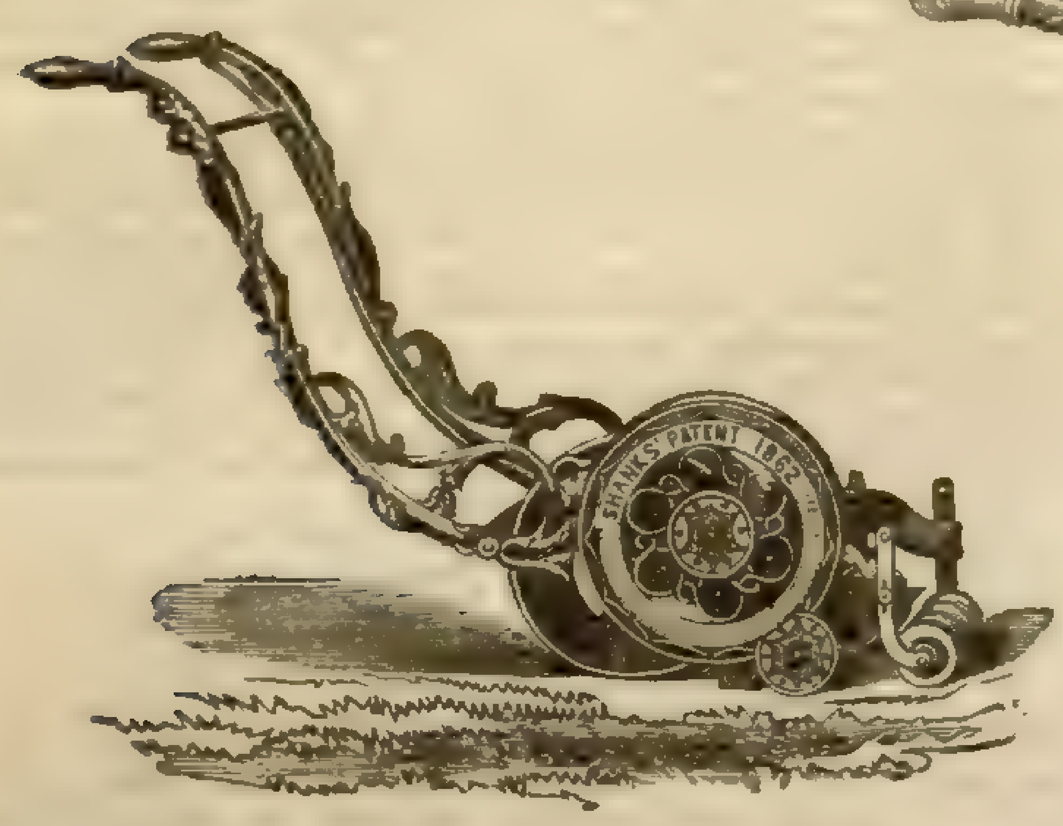
MESSRS. H. STRAFFORD & J. CARTER JONAS (who are jointly concerned on this occasion) have been honoured with Instructions from Mr. Jonas Webb, to SELL by AUCTION, without reserve, on WEDNESDAY, June 18 (the week previous to the Meeting of the Royal Agricultural Society of England), at Babraham, near Cambridge, the entire remainder of this celebrated Flock of Pure SOUTHDOWNS, being the Lambs from the Flock which was sold last year, and comprising about 150 YEARLING RAMS, and 300 YEARLING EWES, all bred by Mr. Webb, from his favourite animals, and more particularly by the Canterbury Prize Rams. In inviting the attention of Agriculturists and Southdown Breeders to this important event, the Auctioneers feel that the world-wide fame of the Babraham Flock renders it unnecessary to say more than to refer to the result of last year's sale, as a proof of the high esteem in which this Flock is still held, not only in England, but throughout America, Australia, Canada, France, Germany, and all parts of the Continent, and to remark that this sale offers to the public the last possible opportunity of purchasing pure Southdowns of Mr. Jonas Webb, as he has determined not to breed another Sheep for letting or sale.

Catalogues may be obtained of Mr. STRAFFORD, 13, Euston Square, London; and of Mr. J. CARTER JONAS, Cambridge.

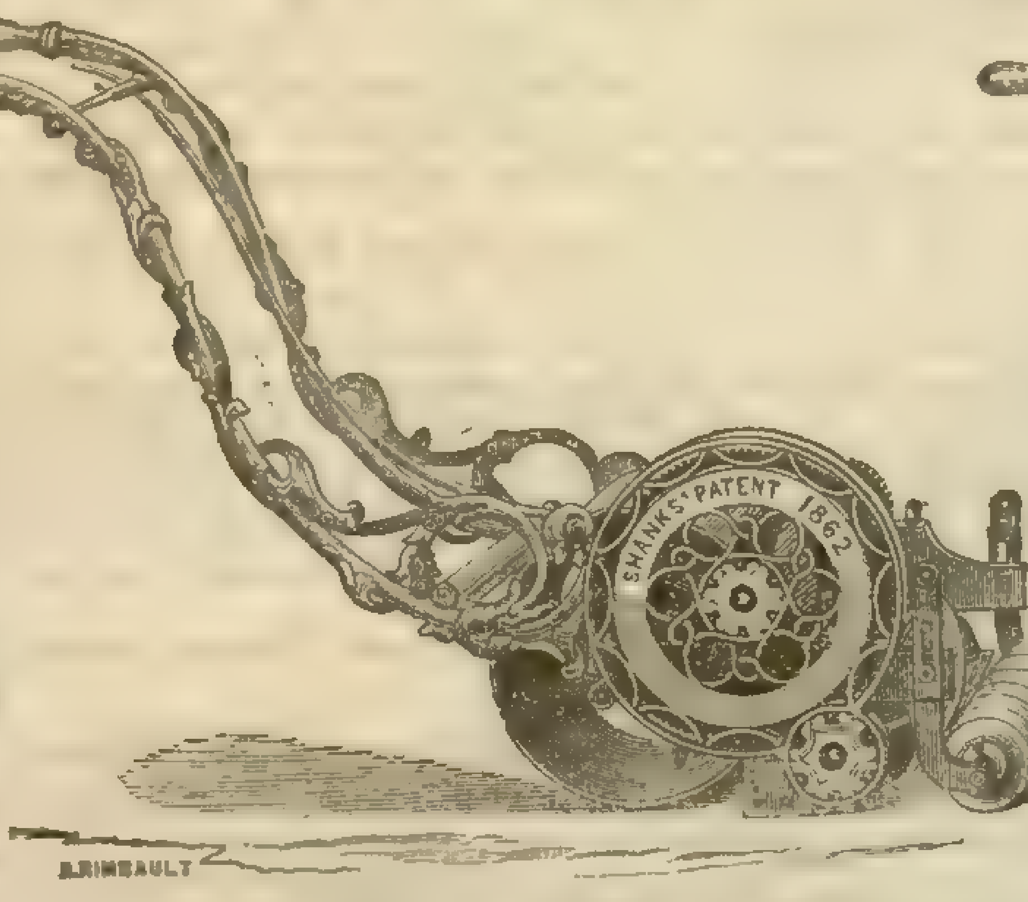
SHANKS' NEW IMPROVED PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

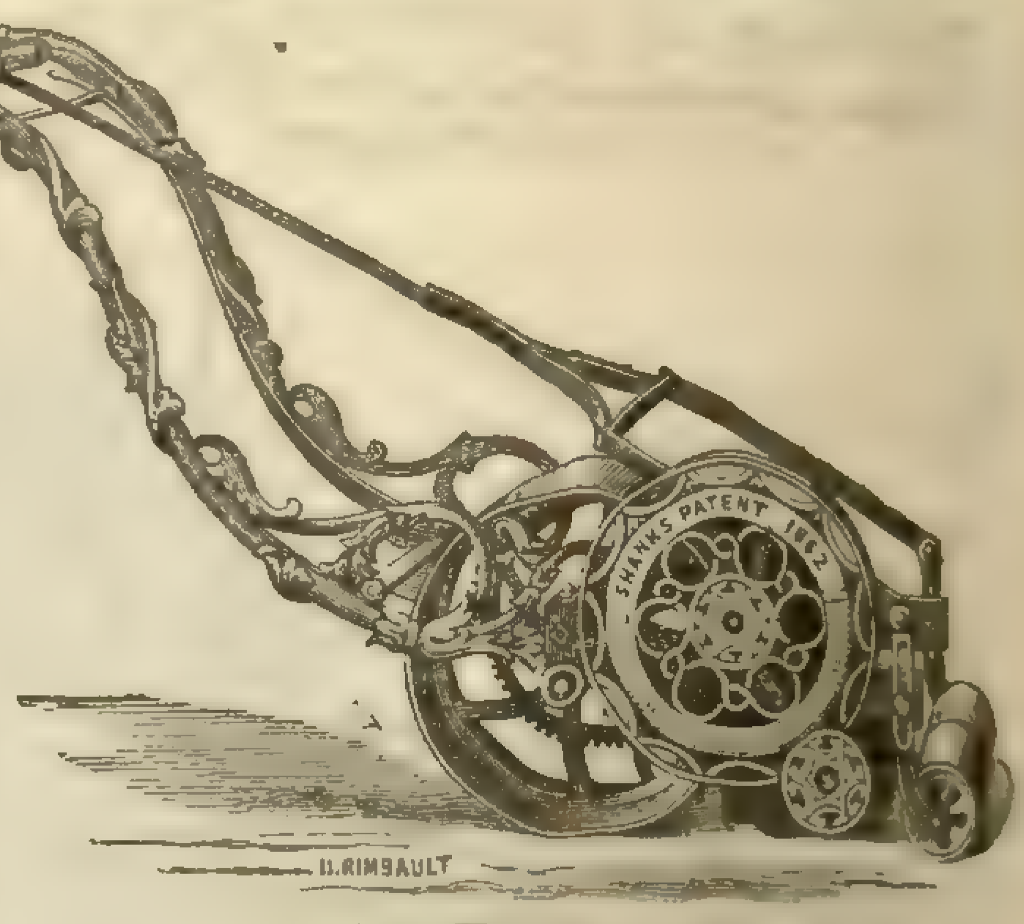
WITH SILENT MOTION IF SPECIALLY DESIRED.



12-INCH, or LADY'S MACHINE.



16-INCH to 14-INCH MACHINE.



LARGE HAND MACHINE.

J. B. BROWN AND CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effects of the improvements of previous years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season.

SHANKS' NEW IMPROVED PATENT HAND MACHINE for 1862.

Messrs. SHANKS have just brought out for this season an entirely new Machine, which combines, in addition to the improvements of last year's Machine, other improvements of importance, with the most tasteful design, which is duly protected by Registration. The Patentees have been particularly careful in observing that all the parts possess sufficient strength and firmness to enable them to stand satisfactorily the tear and wear of out-door work, and the rather rough handling these Machines are sometimes subject to from the labourer unskilled in machinery. J. B. BROWN & Co. are gratified in being able to offer to the Public a Machine, which is not only a graceful ornament to the Flower Garden, but the most perfect and the most easily worked Lawn Mower that has ever been in use. The Cutter (the most important part of the Machine) is this season still further strengthened. The Bearings, and everything tending to increase friction, and consequently the draught, are carefully constructed to reduce the friction to the smallest possible amount. The Machines are fitted with the same care and precision as the Horse and Pony sizes, and like them, possess the same advantages of ability to Mow on uneven Lawns without injury to the Turf, of having loose Rollers for ease in turning, of having Wheels properly guarded, and so placed as to give an equal balance to either side of the Machine. The annoyance which is often given in other Lawn Mowing Machines, by the Bearings of the Cutter getting loose, and the latter wearing down on the plate, is also obviated in the new Machine. No change of Rollers is necessary in Mowing a Verge or Close to a Flower Bed.

PRICES.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0		No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | Width of Cutter. No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man.*
No. 9.—22-inch Machine	8 7 6		No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*			

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Messrs. SHANKS have also brought out this season a new SMALL MACHINE, of the same graceful model as their other Hand Machine, which is specially intended to be used by Ladies or Gentlemen for recreation or amusement in the Flower Garden, and for Small Gardens where no regular Gardener is kept. This elegant and neat Machine has three great recommendations, viz.:—it is very cheap, very light, and very easily worked. Not the least difficulty or trouble need be anticipated in the management or working of this Machine, while the work executed is not only vastly superior to the Scythe, but a great deal sooner accomplished. No person having a Lawn, however small, should be without one of these useful Machines.

PRICES, including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

Width of Cutter.			Width of Cutter.		
No. 16.—16-inch Machine	£6 5 0	*Easily worked by a Stout Lad.*	No. 18.—12-inch Machine	£5 5 0	*Easily worked by a Lady.*
No. 17.—14-inch Machine	£5 15 0				
Silent Movement, 7*s.* 6*d.* extra.			Silent Movement, 4*s.* extra.		

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

☞ Shanks' Machines were COMMENDED by the Judges at the Exhibition of the Royal Horticultural Society, Wednesday, May 21.

*** *The Machines are warranted to give ample satisfaction, and if not approved of may be at once returned.*

SOLE AGENTS FOR LONDON: J. B. BROWN & CO., 18, CANNON STREET, CITY, E.C.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, in the Parish of St. Pancras, in the Co. of Middlesex, and FREDERICK MULLETT EVANS, of No. 11, Bouverie St., in the Precinct of Whitefriars, City of London, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St Paul's, Covent Garden, in the said Co.—SATURDAY, June 7, 1862.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 24.—1862.] SATURDAY, JUNE 14. {Price Fivepence. STAMPED EDITION, 6d

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ROYAL HORTICULTURAL GARDEN.—Admission to Garden only during June: Thursday, 26th, Rose Show, 2s. 6d.; Mondays, Tuesdays, Wednesdays, Thursdays, 1s.; Fridays, 2s. 6d.; Saturdays, 5s.—To the Garden and International Exhibition: Mondays, Tuesdays, Wednesdays, and Thursdays, 1s. 6d.; Fridays, 5s.; Saturdays, 10s.

MUSICAL ARRANGEMENTS of the ROYAL HORTICULTURAL SOCIETY for the Week ending June 21. Bands commencing each day at 4 o'clock. June 14, Saturday, Royal Artillery, Double Bands, Vocal and Instrumental. June 16, Monday, Police, B. Division. June 18, Wednesday, Royal Marines (Woolwich). June 19, Thursday, Royal Engineers. June 20, Friday, Royal Artillery. June 21, Saturday, Second (Queen's Royals), and Royal Marines.

A PRIZE of 5l. is offered by one of the Fellows of the Royal Horticultural Society for the 12 best STANDARD PLANTS for the DECORATION of the DINNER TABLE, to be awarded at the Show of Autumn Flowers, on September 10.

The Plants must be ornamental, either for their foliage, flowers, or fruit, and must be grown in pots not exceeding 6 inches in diameter; the foliage, flowers, and fruit must not be less than 20 inches nor more than 24 inches clear from the bottom of the pot.

Elegance of form, slenderness of stem, and variety of colour, will be the tests of excellence.

The groups will be received as late as 10 o'clock, A.M., PROVIDED SPACE SHALL HAVE BEEN SECURED FOR THEM THE DAY BEFORE. Letters to be addressed to Mr. G. EYLES, Royal Horticultural Society's Garden, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY. AUTUMN SHOW, SEPTEMBER 10, 1862.—An Additional Prize of 10l. will be given for the Best Specimen of a CONSERVATORY TUB. There is no restriction as to material, size, form, or design. It may be of wood, slate, stone, pottery ware, Terra Cotta, or any other substance. It may be in one piece or in many, fastened or bound together. Fitness for its purpose, elegance of design, superiority of workmanship, and cheapness, will be the test of merit.

ROYAL HORTICULTURAL SOCIETY.
Special PRIZES for the March Show in 1863.
10l. for the Three Best CAMELLIAS.
3l. for the Three Best TREE MIGNONETTES.

ROYAL HORTICULTURAL SOCIETY'S ROSE SHOW, June 26.
In connection with this Show, the promoters of the "National Rose Show" will hold their FOURTH GRAND NATIONAL ROSE SHOW. Doors Open at One o'clock. Bands commence at Three o'clock. Tickets, 2s. 6d. each.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK, N.W.
The SECOND EXHIBITION of PLANTS, FLOWERS, and FRUIT will take place on WEDNESDAY next, June 18.
Tickets to be obtained at the Gardens only, price 5s., or on the Exhibition days, 7s. 6d. each.
The Bands will play from 2 to 7 o'clock.

THE BIRMINGHAM ROSE SHOW and EXHIBITION of HORTICULTURAL IMPLEMENTS and GARDEN ORNAMENTS (Open to the United Kingdom), will be held in the Town Hall, Birmingham, on TUESDAY and WEDNESDAY, July 1 and 2. Entries close for the Implements and Ornaments on June 18, and for Roses on June 25.
Prize Lists and Regulations may be had on application to the Hon. Secretaries, at the *Midland Counties Herald* Office, Birmingham.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The NINETEENTH ANNIVERSARY FESTIVAL will take place at the London Tavern, Bishopsgate Street, on THURSDAY, June 26, Sir ARTHUR BULLER, M.P., in the chair; supported by the Sheriffs of London and Middlesex.
Tickets, 21s. each, may be procured of the Secretary, Stewards, and at the Tavern. The Gallery will be open for the admission of Ladies (Tickets 3s. 6d. each), for whom refreshments will be provided. Dinner to be upon table at 6 o'clock precisely. EDWARD ROGER CUTLER, Secretary.
14, Tavistock Row, Covent Garden.

GARDENERS' BENEVOLENT INSTITUTION.—The VOTES of Subscribers are respectfully Solicited for the Aged (84 years) and totally Blind Candidate JAMES WALLACE, of Sidcup, Kent.

Royal Botanic Gardens, Regent's Park.
JOHN WATERER has the pleasure to announce that his ANNUAL DISPLAY of HARDY SCARLET and other RHODODENDRONS, AZALEAS, &c, is now on view at the above Gardens; the Plants are now in fine bloom and will continue in perfection throughout the month of June.
Orders of admission are granted by Members of the Botanic Society, or by applying to the Advertiser at the above address.
The Plants at the Nursery are also in full bloom.
American Nursery, Bagshot, Surrey, near Sunningdale Station, South Western Railway.

JAMES CARTER AND CO.,
SEED MERCHANTS and NURSERYMEN,
237 and 238, High Holborn, London, W.C.

TWELVE of the Finest NEW PERPETUAL ROSES (sorts that have not yet flowered in English Gardens) for Two Guineas.
RICHARD SMITH, Nurseryman, Worcester.

Roses.
PAUL AND SONS' COLLECTION of ROSES will be in fine bloom throughout June and July. The Nurseries are reached in one hour by trains from Bishopsgate to Cheshunt Station, leaving London at 9.30 a.m., 12.46, 2.30, 3.30, 5.10, 6.10 p.m.
Old Cheshunt Nurseries, Herts, N.

WM. PAUL'S ROSES and HARDY ORNAMENTAL TREES are now in full beauty. Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.
Nurseries and Seed Warehouse, Waltham Cross, N.

All the Best New Roses of 1862.
BY PLANTING THE ABOVE IMMEDIATELY A SEASON WILL BE GAINED.
WM. WOOD AND SON have to offer fine strong healthy Plants in Pots, now ready for immediate planting. Early orders will secure the best specimens.
DESCRIPTIVE CATALOGUES on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Roses.
EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

J. IVERY AND SON'S Collection of New AZALEAS is NOW in BLOOM, and may be seen (Gratis) at their Dorking Nursery.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize plants, 1s., 1s. 6d., and 2s. 6d. per packet. Reference given. Stamps taken.
G. KNIGHTS, Whitton, Ipswich.

New Verbenas, Fuchsias, &c., of 1862.
W. DILLISTONE can now supply the above in good Plants, at low prices. Lists upon application.
Munro Nursery, Sible Hedingham, Halstead, Essex.

BEDDING PLANTS.—100 Dozen fine Autumn-struck VARIEGATED GERANIUMS, consisting of Bijou, Alma, Perfection, Lady Plymouth, &c. Also a large surplus stock of Scarlet and other Geraniums, Dahlias, Verbenas, &c.
Price on application to F. PARKER, Florist, Elder Lane, Lower Norwood, Surrey, S.

BARR AND SUGDEN, SEED MERCHANTS,
12, King Street, Covent Garden, W.C.

Choice Calceolaria, per pkt.	1s.	Choice Cineraria, per pkt.	1s.
„ Primula „	1s.	„ Picotee „	1s.
„ Carnation „	1s.	„ Pelargonium „	1s.

ILLUSTRATED GUIDE to the FLOWER GARDEN, 2s. 6d.

Gunnera scabra Seed, 1s. per packet.
BARR AND SUGDEN, SEED MERCHANTS,
12, King Street, Covent Garden, W.C.
The GUNNERA SCABRA (a highly ornamental foliaged plant for Lawns and other conspicuous places) is described by Darwin as producing leaves 8 feet in diameter. Last year at the Kew Gardens there was a plant with leaves 4 ft. long, and nearly the same in diameter. See *Gardeners' Chronicle*, March 29, page 285.
BARR & SUGDEN, 12, King Street, Covent Garden (opposite the Garrick Club), W.C.

Calceolaria, Cineraria, and Primula.
BUTLER AND McCULLOCH respectfully beg to offer the following Seeds, saved from Collections containing only the Choicest strains:—
CALCEOLARIA, 1s., 1s. 6d., and 2s. 6d. per packet.
CINERARIA, 1s., 1s. 6d., and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, 1s., 1s. 6d., and 2s. 6d. per packet.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

CHARLES NOBLE begs to annex the names of the RHODODENDRONS which obtained the First Prize at the Royal Horticultural Gardens, May 21.

Lord Palmerston	Duke of Cambridge
Lady Palmerston	Floretta
Lord Granville	Princess Hortense

He also obtained the First Prize at the Grand Opening Show at South Kensington in 1861.
Bagshot.

CLERODENDRON THOMSONÆ.—At the Royal Horticultural Society's Grand Show on May 21, we were awarded the First Prize for this very beautiful new climber. It is figured and fully described in Curtis's "Botanical Magazine" for last month. Healthy young plants, 7s. 6d. each; stronger, 10s. 6d. each.
THOMAS JACKSON & SON, Nurserymen, &c., Kingston, S.W.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.
Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.
Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

Good Seeds, Carriage Free.
SUTTON AND SONS
SEED GROWERS and MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

The Swede that never Mildews.
SUTTON'S CHAMPION SWEDE, the heaviest and most certain cropper—quite hardy. Fresh seed, 1s. per lb., or cheaper by the bushel (carriage free).
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place Ripon. Originally established 1800.

SMITH'S WORCESTERSHIRE SWEDE, the handsomest, most profitable, and best in cultivation. 1s. per lb.
SKIRVING'S IMPROVED SWEDE, saved from selected roots, 8d. per lb.
ORANGE GLOBE MANGEL WURZEL, the best for all kinds of soil, a very superior stock, 8d. per lb.
All other kinds of SWEDE and MANGEL, 8d. per lb. Cheaper by the bushel or cwt.
RICHARD SMITH, Seed Merchant, Worcester.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3s. per lb., or 16l. per cwt.

Agricultural Seeds.
GEORGE GIBBS AND CO.,
SEEDSMEN,
26, Down Street, Piccadilly, London, W.

Azaleas and Camellias.
F. AND A. SMITH beg to call attention to their fine and large Stock of healthy Plants of the above. They are of various sizes and in excellent health, at moderate prices. CATALOGUES on application.
Dulwich, Surrey, S.

New Chrysanthemums.
F. AND A. SMITH have now fine Plants to offer of all the new and older varieties of the above at moderate prices. CATALOGUES on application.
Dulwich, Surrey, S.

New Chrysanthemums, Hardy Variegated Plants, &c.
JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.
Versailles Nursery, William Street, near Hammersmith Turnpike, W.

New Delphinium, "Beauty."
J. AND J. FRASER, of the Lea Bridge Road Nurseries, N.E., have much pleasure in announcing that they are now prepared to send out plants of the above.
It was examined by the Floral Committee of the Royal Horticultural Society July 12, 1860, and was awarded a Label of Commendation.
Description and price on application.

Choice Seeds.
B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give the greatest satisfaction.
PRIMULA, per packet, 2s. and 3s. 6d. each.
CALCEOLARIA, per packet, 1s. 6d., 2s. 6d., and 3s. 6d. each.
CINERARIA, per packet, 1s. 6d. and 2s. 6d. each.
For numerous Testimonials see SEED CATALOGUE, post free on application.

CYPRIPEDIUM INSIGNIS MAULII.—In the first week of JUNE will be distributed to a full List of Subscribers of 3 Guineas this fine variety of Cypripedium. After that time the price will be 5 Guineas to Non-Subscribers. It is figured and described in the "Floral Magazine," and a Coloured Figure will be forwarded for inspection per Post to Cultivators of Orchids and intending Subscribers on application.
WM. MAULE & Sons, The Nurseries, Bristol.

To Gardeners and Florists.
FOR SALE, about 3 Tons Weight of BARK, suitable for tying up Fruit, Flowers, Vegetables, &c., 20s. per cwt. About 6 Tons Weight of TOBACCO DUST MANURE for destroying Insects, &c., 20l. per Ton.
Apply to Mr. JOHN STOKES, Wholesale Hardwareman, 49, Kent Street, Borough, London, S.E.

Palms and other Stove Plants.
TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual size.
A CATALOGUE, giving the height of each plant, will be sent, post free, on application to Mrs. LE CREPS, Château du Mesnil de Mathieu, near Caen, Department of Calvados, France, where the plants may be viewed.

To Gardeners and Florists.
WANTED, for the Decorations at the GRAND EXHIBITION of BIRDS at the Great Globe, Leicester Square, commencing MONDAY, June 23, a quantity of every description of FLOWERS, SHRUBS, EVERGREENS, &c.—Application to be made to Mr. DUNCALF, Secretary, Great Globe, not later than Tuesday next.

Notice.

B. S. WILLIAMS begs to intimate that he is prepared to supply nice Plants of his New and beautiful AZALEA ELEGANTISSIMA, exhibited at the Royal Horticultural Society's Meeting, May 21, and which was awarded a Label of Commendation.

Flowers pure white, finely striped with light salmon red or pink, splendid habit, excellent form and substance, and a free bloomer.

Extract from the *Gardeners' Chronicle* in their report of the Royal Horticultural Society's Meeting, May 21. "A beautiful seedling Azalea called Elegantissima, white striped with pink, came from Mr. Williams, a good addition to the class to which it belongs." Price 10*s.* 6*d.* each; extra size, 15*s.* to 21*s.* each.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Stachys lanata.

B. S. WILLIAMS, Paradise Nursery, Holloway, N., has great pleasure in offering another fine plant for Edging or Ribbon borders. This is not a new plant, but one that is little known, and will without doubt rank among the finest plants for the above decorative purposes. The foliage is quite distinct, being the colour of Cerastium tomentosum, but much larger; leaves five inches long by one inch broad, and of a fine thick woolly texture, which, when the sun shines upon it, gives it a beautiful white frosty appearance. In growth it is from six to nine inches high, and very compact, forming a fine contrast when planted with yellow Calceolaria, Scarlet Geraniums, or any other plants of similar character. Having been used as a decorative plant for several years by the party from whom the stock has been purchased, it was very much admired. This also makes a beautiful ornament for rockwork. Price per doz., 4*s.*; per 100, 25*s.*

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

For a valuable selection of New and Rare Plants, see B. S. W.'s Advertisement in the *Gardeners' Chronicle*, May 10.

The Favourite Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Choice Seeds for Present Sowing.

ROBERT PARKER begs to offer the following, all of which are warranted to be new and genuine, and the finest qualities of their respective kinds.

	Per Pkt.—*s.*	*d.*
CALCEOLARIA Herbaceous, finest mixed	2	6
CINERARIA, finest mixed	2	6
CLIANTHUS DAMPIERII	2	6
DIANTHUS HEDDEWIGII, and vars., finest mixed, 6*d.* &	1	0
HOLLYHOCK, finest mixed	0	6
HUMEA ELEGANS	0	6
PANSY, finest mixed	1	0
PRIMULA SINENSIS DENTIFLORA	2	0
,, ,, ,, ALBIFLORA	2	0
,, ,, ,, KERMESINA SPLENDENS ..	2	6
STOCK, Scarlet, Intermediate	0	6
,, White ,, ...	1	0
SWEET WILLIAM, Auricula-flowered, finest mixed ..	0	6

A Priced and Descriptive CATALOGUE of SEEDS will be forwarded post free on application.

Exotic Nursery, Tooting, Surrey, S.

Two Hundred and Fifty Guineas in Ten Prizes.

FOR FIVE YEARS SUCCESSIVELY HIS LATE ROYAL HIGHNESS THE PRINCE CONSORT'S PRIZE CUPS HAVE BEEN AWARDED TO

SUTTON'S CHAMPION SWEDES at the Royal East Berks and South Bucks Agricultural Societies.

New Seed now ready, 1*s.* per lb., or cheaper by the bushel, carriage free.

Royal Berkshire Seed Establishment, Reading.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe. Also to their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which for want of space there is erected at the Crystal Palace, Sydenham.

Royal Berkshire Seed Establishment, Reading.

WHEELER'S ORANGE GLOBE MANGEL, WHEELER'S IMPERIAL SWEDE, GRASS SEEDS for PERMANENT PASTURE, GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

New South Wales—Collections of Ferns.

M. GUILFOYLE begs to announce that he has made arrangements to execute Orders for Europe of COLLECTIONS of FERNS, selected from all the Australian Colonies and New Zealand by his Correspondents there, and also from the South Sea Islands, supplied by competent Collectors in New Caledonia, the New Hebrides, &c. Due care will be taken that none but well established plants in pots are sent out from his Nursery, and for such he has fixed the price of each case, containing at least 25 species of Australasian Ferns in duplicate, at 16*l.*, (freight and case included), shipped by him for London to order. The Island Ferns, among which a constant succession of novelties may be expected for years to come, will be separately charged for, at prices extremely moderate.

M. GUILFOYLE will also be happy to execute Orders for Seeds, Bulbs, and Living Plants of all kinds from the Islands of the S. W. Pacific, especially including Orchids, Pines, &c.

Orders with remittances to be addressed to M. GUILFOYLE, Exotic Nursery, Double Bay, Sydney, N. S. Wales.

TAN GRATIS in the immediate neighbourhood of Covent Garden Market.

Apply to ESSEX & SONS, 28, Stanhope Street, Clare Market, W.C.

Cineraria Seed.

SAVED FROM THE CHOICEST NEW SORTS.

LUCOMBE, PINCE AND CO. have now ready for sending out Seeds of their very superior CINERARIAS, which have been carefully saved from fine flowers of the best prize varieties.

Their Cinerarias have for many years past given great satisfaction, and they can with confidence recommend the Seed of this present season's saving as being vastly superior to any previously sent out by them.

The present is an excellent time for sowing, and their Stock to its select quality being limited, early orders are respectfully solicited.

Packets, sealed and warranted, Post-free, 2*s.* 6*d.* each.

Exeter Nursery, Exeter.

ROBERT PARKER begs to offer strong healthy plants of the following, all of which will prove desirable acquisitions to the most select collections:—

		s.	*d.*
CENTAUREA RAGUSINA	Each	2*s.*	6*d.*
COLEUS VERSCHAFFELTI	,,	1	0
FUCHSIA COMET	,,	1	6
,, MINNIE BANKS	,,	1	6
,, WHITE LADY	,,	1	6
GERANIUM PRINCE of WALES, each, 1*s.* 6*d.*; per dozen, 12*s.*; per 100		75	0
VERBENA LADY VICTORIA SCOTT, each, 1*s.* 6*d.*; per dozen, 12*s.*; per 100		50	0

Exotic Nursery, Tooting, Surrey, S.

Stanstead Park Nursery, Forest Hill, S.E. and Edinburgh.

DOWNIE, LAIRD, AND LAING have much pleasure in offering the following very select Seeds, saved from their choice collections.

ANTIRRHINUM, 6*d.* and 1*s.* per packet.
CALCEOLARIA, 1*s.* and 2*s.* 6*d.* per packet.
CINERARIA, 1*s.* and 2*s.* 6*d.* per packet.
HOLLYHOCK, 1*s.*, 2*s.* 6*d.* and 5*s.* per packet.
PANSY, 1*s.* and 2*s.* 6*d.* per packet.
PRIMULA SINENSIS FIMBRIATA, 1*s.* and 2*s.* 6*d.* per packet.
PRIMULA SINENSIS KERMESINA SPLENDENS, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

New Plant Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce the publication of their NEW SPRING CATALOGUE of BEDDING and other ORNAMENTAL PLANTS, including descriptions of the undermentioned POMPON DAHLIAS, &c.

Angel of Peace	Little Mary
Annie	Little Prince
Butterfly	Little Valentine
Fairy Nymph	Pearl of Lilliputs
Goldlight	Silver Pheasant
Jeannette	Star
Little Darling	Tom Tit
Little Dorrit	and others.

BANKS'S NEW FUCHSIAS.
WILLS'S NEW VERBENAS.
FERN-LEAVED PRIMULAS, white and red fringed.
BEDDING TROPÆOLUMS—elegans coccinea, Model, Constellation, and Beauty of Oulton Park.
PETUNIA MAGNIFICENS.
GLOXINIAS—Brilliant, Leviathan, Bird of Paradise, and Most Beautiful; these four are very large, new in colour, and distinct.
AUCUBA HIMALAICA, the finest habited plant of all the new Aucubas.
GERANIUMS of the Zonale section—Magenta, new colour; Woodwardiana, best formed large petal-flowered; Baron Ricasoli, without exception the best bedding or Vase Geranium of any at present known.
GERANIUMS, MINIMUM Section, Harry Hieover.
,, NOSEGAY ,, Pink Pearl.
,, VARIEGATED ,, Sunset, Gold Leaf, Mrs Milford, The Countess, Gold Pheasant, Little Beauty, &c.

Wellington Nursery, St. John's Wood, London, N.W.

PHOSPHO GUANO.

PETER LAWSON & SON, GENERAL CONTRACTORS,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. VOELCKER, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.

(Signed) "AUGUSTUS VOELCKER."

Opinion of Dr. ANDERSON, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.

(Signed) "THOMAS ANDERSON."

Opinion of Dr. STEVENSON MACADAM, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for the Root Crops.

(Signed) "STEVENSON MACADAM."

Opinion of Dr. HODGES, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.

(Signed) "JOHN F. HODGES."

Opinion of Dr. APJOHN, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows or Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l.* 9*s.* 8*d.* per ton.

(Signed) "JAMES APJOHN."

Price, Free on Rail, £12 5s. per Ton, Bags included.

**** None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

PETER LAWSON & SON, 27, GREAT GEORGE STREET, WESTMINSTER, LONDON, S.W.

Calceolaria, ex. ex.

STEPHEN BROWN'S Seed of the above is of the same extra quality as in past years, saved expressly for him by a private grower for many years renowned for his first-rate Calceolarias. It has annually given the most unqualified satisfaction, and procured numerous prizes. The flowers are splendid in colour, richly spotted, of excellent form, large, and an endless variety. Packets, 2s. and 1s.

CALCEOLARIA NANA GRANDIFLORA PRÆCOX.—Very beautiful, from the Continent, exceedingly dwarf, and covered with a profusion of large and bright flowers, of great variety. Packets, 2s.

PRIMULA FIMBRIATA, ex. ex.—Finest mixed dark varieties, purple, carmine, rose, &c. Packets, 2s. and 1s.

FIMBRIATA STRIATA.—Very choice white, with many of the flowers beautifully striped with bright red, extra. Packets, 1s. 6d.

FIMBRIATA ERECTA SUPERBA.—Of more erect habit, received from the Continent, and represented as splendid, quite distinct, and constant. Packets, 2s. 6d.

SEED of first-class FLORIST FLOWERS, English and Continental, comprising Geranium, Hollyhock, Carnation, Picotee, Pansy, Cineraria, Polyanthus (superbly laced), Verbena, Antirrhinum, Gladiolus, Pentstemon, &c., all saved from the finest collections.

The SEED CATALOGUE free on application.

STEPHEN BROWN, Seed Grower and Importer, Sudbury, Suffolk.

New Verbenas of 1862.

EDWARD TAYLOR, FLORIST, Malton, Yorkshire, begs to offer the New Varieties of the above sent out by Messrs. Henderson, Smith, Perry, Lee, &c., and including those Splendid Varieties—Lady Victoria Scott, Fox-hunter, Ariosto, Improved Quelchin, &c., at 6s. per dozen, or 48 New Varieties for 20s., package included. The above are nice, healthy, well-rooted plants, and will be packed carefully, so as to travel safely to any distance. Verbena Lady Victoria Scott can be had by the dozen.

E. T. can also offer some of the best varieties of 1861 at 3s. per dozen. Golden Chain Geranium, good plants, 30s. per 100; Bijou, Silver Queen, St. Clair, Dandy, Mountain of Snow, Mrs. Lennox, Countess of Warwick, and Perfection, 4s. per dozen or 30s. per 100.

Post Office orders payable at New Malton.

CATALOGUES gratis on application.

GOLD and SILVER FISH, 100,000; 4s. to 9s. per dozen, 2l. per 100, 18l. per 1000. The largest stock in the trade of British and Foreign FERNS, 3s. to 12s. per dozen, Budgerigars, 20s. per pair, Grey Parrots, 20s. each, and all kinds of Foreign Birds, Fern Cases, Aquariums, Cages and Aviaries of every description.

R. GREEN, 154, Kingsland Road, N.E., and Bedford Conservatories, Covent Garden Market, W.C., entrance in the Grand Row only.

REIGATE SILVER SAND, best quality, 12s. per Ton or 1s. 3d. per Bushel, at Swan Place; delivered five miles, or to any London Wharf or Railway, 16s. per Ton, or 1s. 6d. per Bushel. Kentish and Hampshire PEATS, YELLOW LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE from Kingston.—J. KENNARD, Purveyor to Her Majesty, Swan Place, Old Kent Road, London, S.E.

International Exhibition.

FERNS, BEGONIAS, &c., are growing in COCOA-NUT REFUSE at the bottom of a case (with Cocoa-nuts on the top outside) in the centre of the Eastern Annexe.

Refuse delivered in London at 1s. 6d. per bag, containing 3 bushels. Large quantities on lower terms, on application to the Patent Cocoa Fibre Co., Kingston-on-Thames, S.W.

Postage stamps or Post-office Orders payable to J. BARSHAM & Co.

Upwards of 2000 Cases have been reported as Cured by JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s. 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.

Seed Warehouse, 10 and 11, Exchange Street, Norwich.

A BOON to TURNIP GROWERS.—The best and only way to secure a Turnip Crop from the Ravages of the Fly. Thirty years' experience and never once failed. Full particulars will be sent on receipt of 2s. 6d. postage stamps.

Address A. FAITHFUL, near Eastbourne, Sussex.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by

PRICE'S PATENT CANDLE CO., Limited.

NEAL'S PATENT APHIS PASTILS, One Shilling and Two Shillings per packet, are now acknowledged by all disinterested persons to be the only cheap and effectual way of smoking a Greenhouse: they destroy all insects, and cannot injure the foliage unless they are damp. Testimonials from Florists and Scientific men of the highest standing may be had on application.

NEAL'S PLANT SOAP

is a perfectly new preparation, free from all smell, little more than half the price of the ordinary compounds, is not injurious, but on the contrary useful to the health of the Plant; destroys Red Spider, Mealy Bug, American Blight, Mildew, Scale, Thrip, Green Fly, and all other Insect Pests, and is only 1s. a packet of four cakes. May be obtained of all principal Seedsmen.

Magnified Aphides.

Patentee:

J. NEAL, Edward Street, Birmingham.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra Strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

Garden Engines and Syringes.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

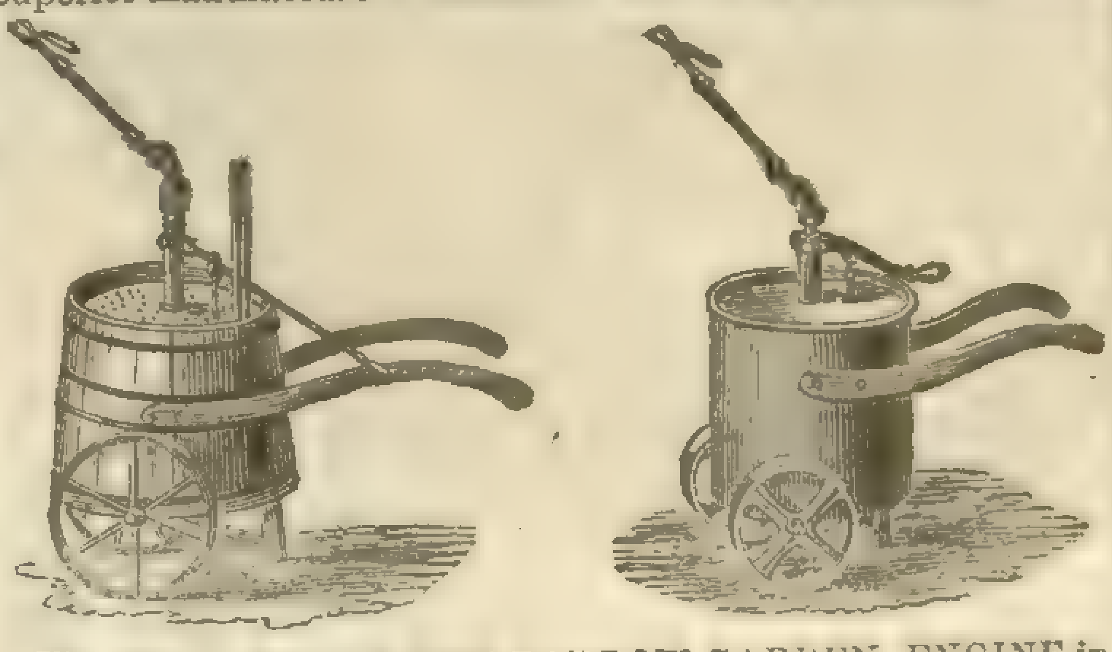


Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

15 gallons .. £5 12 6 | 28 gallons .. £7 2 0

Fig. 599. Ditto GALVANIZED IRON TUB.

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15 0	£3 5 0	£3 15 0	£5 0 0	£5 18 0

Fig. 618. No. I. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. £1 8 0 each.
No. 2. Ditto ditto 1 2 6 „
Telescope Branch Pipe for ditto .. 0 10 0 „

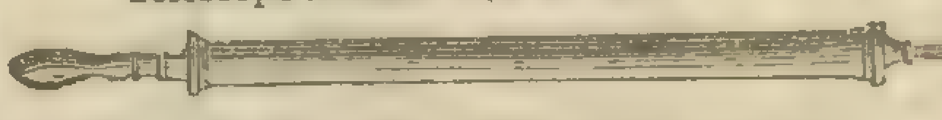


Fig. 619. Large GARDEN SYRINGE, with one rose and jet .. .. 11s. 6d. each
„ 620. Middle Ditto ditto 10 3 „
„ 621. Small Ditto ditto 9 0 „
„ 622. LADIES GARDEN SYRINGE, with do. 7 6 „

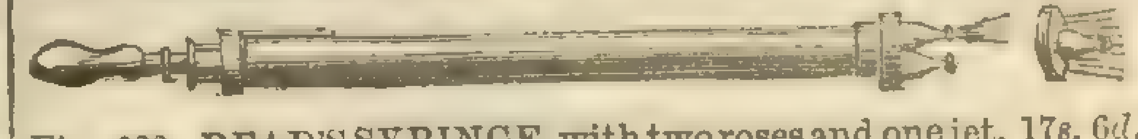


Fig. 623. READ'S SYRINGE, with two roses and one jet, 17s. 6d.
„ 624. READ'S SYRINGE, with one rose and jet, 15 0
„ 625. Improved ditto ditto large 14 0

Garden Engines and Syringes of J. TYLOR & SONS' manufacture kept in stock by Ironmongers and Seedsmen in every part of the United Kingdom.

J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

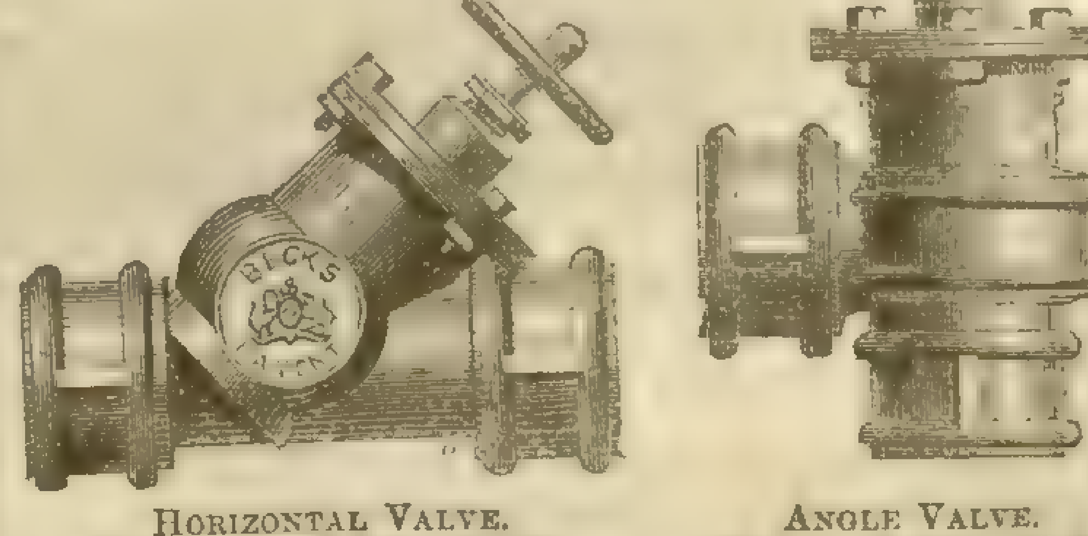
Horticultural Buildings and Heating by Hot Water.

BURY AND POLLARD, PARK IRON WORKS, New Park Street, Southwark, S.E., Manufacturers of every description of Buildings for Horticultural Purposes, with their Improved CONICAL BOILER for heating the same, are prepared to undertake works of any magnitude, and refer among others to the celebrated range of Forcing Houses at Her Majesty's Gardens, Frogmore, and at Sir Robert Peel's, Drayton Manor, constructed under the superintendence of their Manager, Mr. JOHN JONES.

Further information forwarded on application.

Horticultural Works, Danvers Street, Chelsea, S.W

BECK'S PATENT
HOT WATER VALVE.



HORIZONTAL VALVE. 2" 18s. 6d.; 3" 25s.; 4" 30s. ANGLE VALVE. 2" 17s.; 3" 23s.; 4" 28s.

JAMES GRAY, Sole Agent, begs to call attention to this most simple and perfect Valve ever invented. It is perfectly water-tight, and is never liable to get out of order, or to get fixed by standing.

TO ARCHITECTS, ENGINEERS, GARDENERS, & OTHERS.—BECK'S Patent Valve has been submitted to several of the most scientific men of the day, and has invariably met with unqualified approval. A liberal Discount to the Trade.

CONSERVATORIES, GREENHOUSES, VINERIES, and every description of HOTHOUSE erected on the most improved principles, and of best materials, at the lowest possible price consistent with good workmanship.

Heating by Hot Water in all its branches. Boilers of every approved description, Tubular, Saddle, Conical, &c.

JAMES GRAY, Horticultural Works, Danvers Street, Paulton's Square, King's Road, Chelsea, S.W

Card.

SAMUEL N. McGERROW, GENERAL HORTICULTURAL BUILDER, Knotty Ash, near Liverpool.

Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

E. DENCH'S HORTICULTURAL WORKS, 152, King's Road, Chelsea, S.W., Manufacturer of every description of HORTICULTURAL BUILDINGS either in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without.

HOT WATER APPARATUS Manufacturer.

KENT'S PATENT WEATHERPROOF GLAZING.—GREENHOUSES on hand or to order with best materials and workmanship.

Apply to A. KENT, Horticultural Builder, Chichester; or at Works, to Mr. PITMAN, 30, Lower Church Street, Chelsea, S.W.

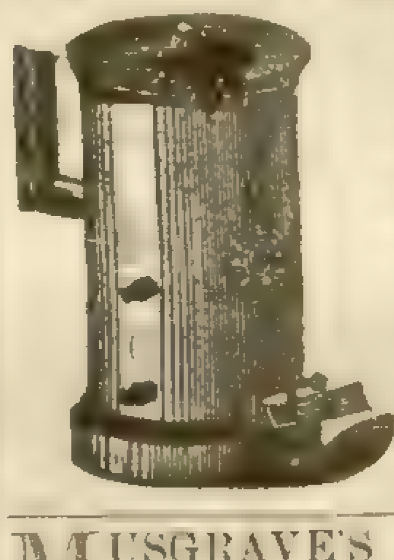
Greenhouses, Orchard-houses, and Conservatories.

H. FREEMAN'S HORTICULTURAL WORKS, Triangle, Hackney, London, N.E.: established 20 years. Good substantially-made GREENHOUSES, glazed, ready for fixing, 42 feet by 13 feet, 50l.; 21 by 13, 28l.; 12½ by 10, 15l. ORCHARD-HOUSES 10 per cent. cheaper. A large assortment kept. Estimates given for heating, or any branch in iron or wood.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, TUBULAR, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 12s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. LYNCH WHITE's, Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3l. 10s.

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of warming a large Apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.

Particulars and prices post free on application to MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

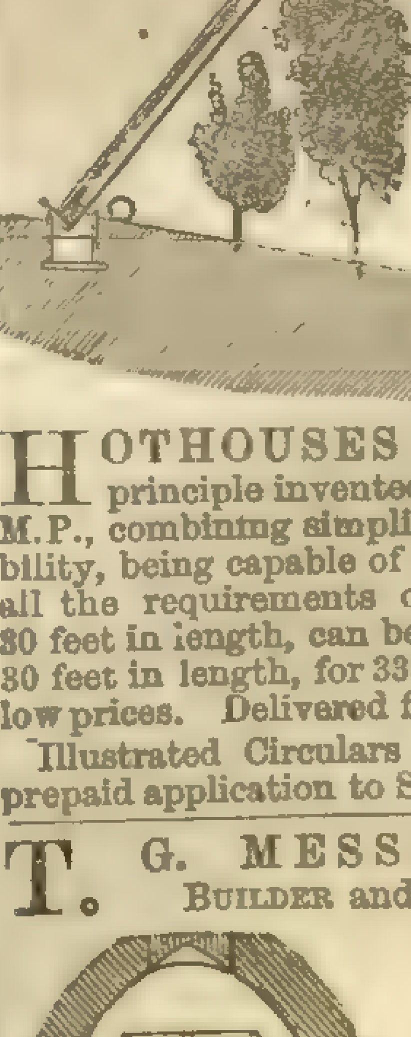
Hothouses for the Million.

INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 20 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.

Illustrated Circulars with Lists of Prices, can be had on prepaid application to S. HEREMAN, 7, Pall Mall East, London.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough.



T. G. M.'s PATENTED BUILDINGS combine all the modern improvements, are well made of best seasoned red Deal, most effectually ventilated by means of his unequalled Apparatus, can be made either plain (and which are at the same time elegant in appearance), or of the most elaborate design. They can be fixed as permanent buildings, or made to be portable.

T. G. M.'s HEATING APPARATUS continues to give the greatest satisfaction for its heating qualities and small consumption of fuel.

ILLUSTRATED CATALOGUES of the above, Glazing without Putty, Garden Engines, &c., sent upon application.

INTERNATIONAL EXHIBITION.

CLASS 9, OPEN COURT, EASTERN ANNEXE.

H. ORMSON

Most respectfully begs to call the attention of the Nobility, Gentry, &c., to the INTERIOR VIEW of the CONSERVATORY as above represented, which is now **ERECTED for EXHIBITION as a SPECIMEN of his ABILITY to DESIGN and BUILD such STRUCTURES;**

and which on inspection he flatters himself will be found to combine

NOVEL and BEAUTIFUL OUTLINE, CHASTENESS and ELEGANCE in DETAIL, with STRENGTH and LIGHTNESS of CONSTRUCTION.

An External View of which recently appeared in the *Gardeners' Chronicle.*

***** THIS CONSERVATORY is for SALE.**

H. Ormson *having a most complete Set of Steam Power Machinery, is in a position to execute orders with the greatest despatch, and at considerably reduced prices.*

ORCHARD HOUSES on Mr. RIVERS'S PLAN,

Fixed on Cast Iron Posts requiring no Brickwork. These houses will be found cheaper than those advertised by any other Builder. The prices given will include Cast Iron Posts and Fixing.

For Ormson's PATENT JOINTLESS TUBULAR BOILERS, see former Advertisements in the *Gardeners' Chronicle.*

IRON and WOOD CONSERVATORIES of the most chaste and elaborate design; VINERIES, PINERIES, PEACH HOUSES, FORCING HOUSES, GLASS CASES for WALL TREES, PITS, &c., designed and built, combining all the latest improvements, so as to answer their intended purposes without risk of disappointment.

Plans, Specifications, and Estimates on application.

HENRY ORMSON, Horticultural Builder to Her Majesty,

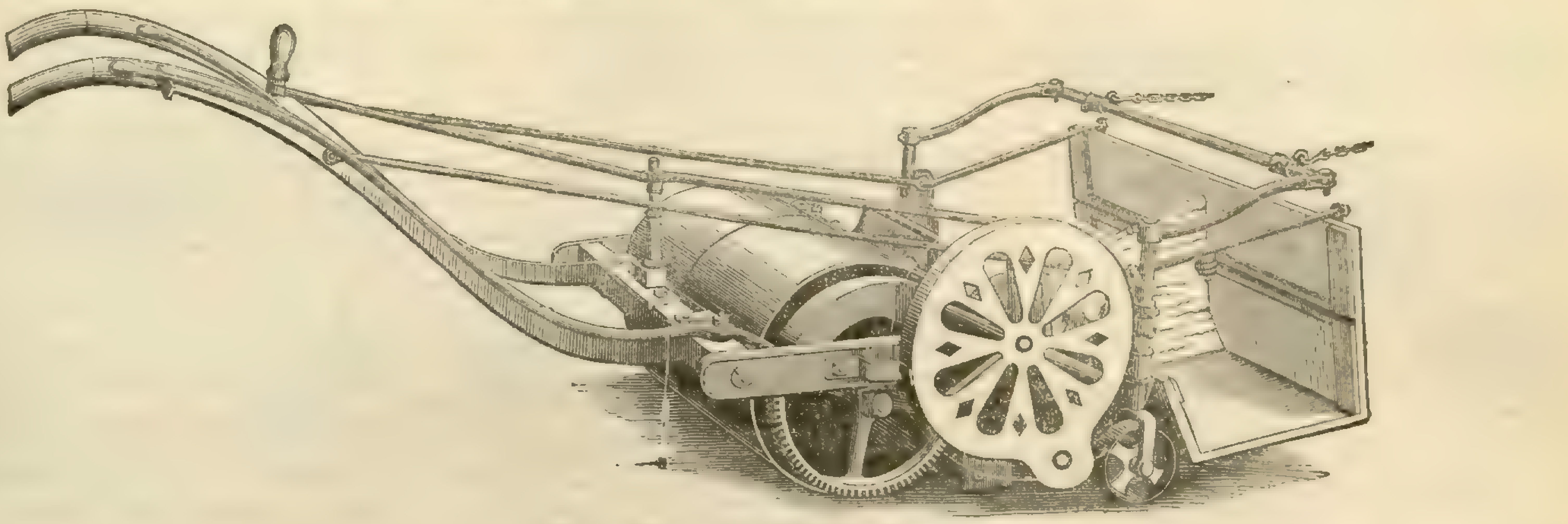
AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

SHANKS' NEW IMPROVED PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

WITH SILENT MOTION IF SPECIALLY DESIRED.



HORSE-POWER MACHINE.

J. B. BROWN AND CO. in introducing Shanks' NEW PATENT LAWN MOWERS for this season, do so with that confidence in their merits and superiority which the eminently successful result of the long and continued efforts of the Patentees to improve fully entitle them to have. The effects of the improvements of previous years have been so much appreciated by the practical Gardener that a very large and steady increase in the number of Machines sold has every year taken place, every one of which, so far as known, has given the greatest satisfaction. Further important improvements have been introduced into the Machines for this season.

The peculiar advantages of Shanks' celebrated HORSE MACHINE may be thus described:—

1. The Cutter is so constructed that in Mowing the closest and finest Turf there is not the smallest appearance of ribbing.

2. The Drums are loose on the Shaft, and are made SELF-ACTING, so that in turning the Machine will Mow as well as when going in a straight line.

3. From the position of the Front Pulleys or Rollers the Machine will Mow on the most uneven Lawn, and the Plate at the same time is PREVENTED FROM INJURING THE TURF.

4. No Machine can turn quicker or more easily than this Machine. The two Front Pulleys swivel, and the Drums on the Shaft are loose, and yet kept in gear by Patent Spiral Springs, so that the Machine will turn into the most intricate windings of the Flower Garden, amongst Trees or Flower Beds, with perfect ease, and WITHOUT THE SMALLEST CHANCE OF INJURING THE SHRUBS OR FLOWERS.

5. The Wheels are all protected by Guards, which entirely prevent any particles of Cut Grass, or Shrubs, Flowers, &c., from getting into contact with the teeth. A Scraper is introduced to keep the Rollers clear of small stones or rubbish in crossing Gravel Walks, &c. The whole Machine is nicely balanced as regards equality of weight in the front and back, and consequently is exceedingly STEADY IN WORKING. The Cutter works in Brass Bearings, and is now made so very strong that breakage is hardly possible. The Handles or Shafts are made of Malleable Iron, being thus much neater and very much more durable than the usual Cast-iron ones.

6. One of the most valuable of the Patent Improvements the Patentees have effected in their Machine is in the method of emptying the Grass Box. The want of a speedy and efficient method for this purpose has been much felt for many years past. In the Spring more especially, when the Grass springs up rapidly, nothing is more annoying in working a Mowing Machine than the stopping and almost constant travel from the handles to the box, and *vice versâ*, for the purpose of emptying the Grass. A great deal of time is thus lost, independent of the hard work to the man, not only in walking some hundreds of times the length of the Machine in a day, but more especially in the stooping posture which he has so often to endure. Many a Gardener can testify to this. This great want in all Mowing Machines, whether past or present, is completely obviated in Shanks' New Patent Mowing, Rolling, Collecting, and Delivering Machine for 1862. The improvement consists in the introduction of a simple and efficient Apparatus for emptying the Box without the man being under the necessity of either leaving the handles or stopping the Machine. So effective and complete is this valuable improvement, that the box, if it were possible to fill it, could be emptied at the rate of sixty times a minute, without any undue strain being put on the apparatus. The immense advantages of this invention must be at once apparent to the practical Gardener. It will enable the Machine to do at least a third more work, while the labour and annoyance in working it, as compared with ordinary Machines, is three-fourths lessened. If a Lawn, which formerly took a Machine nine hours to Mow, can now be done in six hours, with three-fourths less labour to the man who works the Machine, nothing further is necessary to establish the utility and worth of the invention.

One of the most important considerations in making a Machine fit to be put into the hand of a labourer, to work without any difficulty, is simplicity of construction and arrangement, combined with strength and durability of the whole working parts, and the Patentees have much pleasure in intimating that their efforts to attain this end have been completely successful. The Improved Machines for Horse and Pony Power, combining with these advantages the additional one of Delivering the Grass without stopping the Machine, make it peculiarly fit for all the purposes of Mowing, whether for Grass Walks, the Flower Garden, or the open Lawn. The style in which the work is executed cannot be surpassed—*and it is quite immaterial whether the Lawn be level or otherwise, or whether the Grass be wet or dry.*

PRICES.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Width of Cutter.			Width of Cutter.		
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0	*Drawn by a Horse.*	No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

No. 5.—30-inch Machine (Width of Cutter), 15*l.* 15*s.*, *Drawn by a Pony.* | No. 6.—28-inch Machine (Width of Cutter), 14*l.* 10*s.*, *Drawn by a Pony.* | No. 7.—25-inch Machine (Width of Cutter), 12*l.* 10*s.*, *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Width of Cutter.			Width of Cutter.		
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man.*
No. 9.—22-inch Machine	8 7 6	*Easily Worked by Two Men.*	No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*			

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Width of Cutter.			Width of Cutter.		
No. 16.—16-inch Machine ...	£6 5 0	*Easily worked by a Stout Lad.*	No. 18.—12-inch Machine	£5 5 0	*Easily worked by a Lady.*
No. 17.—14-inch Machine ...	£5 15 0	*Easily worked by a Stout Lad.*			
Silent Movement, 7*s.* 6*d.* extra.			Silent Movement, 4*s.* extra.		

The first practical Gardeners of the day, who have devoted their attention in examining all the different Lawn Mowers, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in the Machine which is not of *real practical worth.*

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of His Majesty the Emperor of the French, His Royal Highness the Prince of Prussia, His Excellency the Belgian Minister, The Right Hon. Lord Palmerston, His Grace the Duke of Bedford, His Grace the Duke of Sutherland, His Grace the Duke of Buccleuch, and most of the principal Nobility and Gentry in the kingdom. These celebrated machines are also in operation in many of the Botanic, and in many hundreds of other gardens in the kingdom, as well as in almost every Country throughout the World, *where their merits have been fully proved, and their success established.*

SOLE AGENTS FOR LONDON: J. B. BROWN & CO., 18, CANNON STREET, CITY, E.C.

ROYAL HORTICULTURAL SOCIETY.

THE SECOND GREAT EXHIBITION, JUNE 11, 1862.

AWARDS OF THE JUDGES.

Class 1.—15 STOVE and GREENHOUSE PLANTS. (Open.)
1st Prize, Mr. Whitbread, Dartford, Kent, 20l.
2d, Mr. W. May, Gr. to J. Spode, Esq., Rugeley, 15l.
3d, Mr. B. Peed, Gr. to Mrs. Tredwell, Lower Norwood, 10l.
4th, Mr. R. Baxendine, Gr. to W. A. Smallpiece, Esq., Guildford, 5l.

Class 2.—12 STOVE and GREENHOUSE PLANTS. (Nurserymen.)
1st, Messrs. J. & J. Fraser, Lea Bridge Road, 10l.
2d, Mr. O. Rhodes, Sydenham Park, 7l.
3d, Mr. Wm. Cutbush, Barnet, 5l.
4th. Messrs. Jackson & Son, Kingston-on-Thames, 3l.

Class 3.—9 STOVE and GREENHOUSE PLANTS. (Amateurs.)
1st, Mr. H. Chilman, Gr. to Mrs. Smith, Ashtead House, Epsom, 9l.
2d, Mr. J. Green, Gr. to Sir E. Antrobus, Bart., Lower Cheam, 7l.
3d, Mr. W. Kaile, Gr. to the Earl of Lovelace, Ripley, 5l.

Class 4.—6 STOVE and GREENHOUSE PLANTS. (Amateurs.)
Equal 1st, Mr. A. Ingram, Gr. to J. J. Blandy, Esq. Reading, 6l.
Equal 1st, Mr. T. Page, Gr. to W. Leaf, Esq., Streatham, 6l.
2d, Mr. J. Tegg, Gr. to Baron Hambro, Roehampton, 4l.
3d, Mr. J. W. Wheeler, Gr. to J. Phillpott, Esq., Stamford Hill, 3l.

Class 5.—10 FINE FOLIAGED and VARIEGATED PLANTS. (Open.)
1st, Mr. Hugh Hamilton, Arle Court Gardens, Cheltenham, 7l.
2d, Mr. J. Smith, Gr. to the Duke of Northumberland, Syon House, Brentford, 5l.
3d, Mr. C. Hutt, Gr. to Miss Burdett Coutts, Highgate, 4l.
4th, Messrs. Jackson & Son, Nurserymen, Kingston-on-Thames, 3l.

Class 6.—20 ORCHIDS, Exotic Species. (Amateurs.)
1st, Mr. George Baker, Gr. to A. Bassett, Esq. Stamford Hill, 20l.
2d, Mr. Milford, Gr. to E. McMorland, Esq., Haverstock Hill, 15l.
3d, Mr. B. Peed, Gr. to Mrs. Tredwell, Lower Norwood, 10l.

Class 7.—12 ORCHIDS, Exotic Species. (Nurserymen.)
1st, Messrs. Veitch & Son, Exeter and Chelsea, 10l.
2d, Mr. B. S. Williams, Holloway, 7l.
3d, Mr. S. Wooley, Cheshunt, 5l.

Class 8.—10 ORCHIDS. Exotic Species. (Amateurs).
1st, Mr. C. Penny, Gr. to H. H. Gibbs, Esq., Regent's Park, 10l.
2d, Mr. T. Page, Gr. to W. Leaf, Esq., Streatham, 7l.

Class 9.—6 ORCHIDS, Exotic Species. (Amateurs.)
1st, Mr. J. Wiggins, Gr. to W. Beck, Esq., Isleworth, 6l.
2d. Mr. John Green, Gr. to Sir E. Antrobus, Bart., Lower Cheam, 4l.
3d, Mr. H. Chilman, Gr. to Mrs. Smith, Ashtead House, Epsom, 3l.
Extra, Mr. W. Lakeman, Gr. to J. Campbell, Esq., Hendon, 2l.

ORCHIDS, SINGLE SPECIMEN of any EXOTIC ORCHID. Prizes offered by the Lord Bishop of Winchester in Schedule for May 21, 1862.
1st, Mr. J. Sherratt, J. Bateman, Esq., Knipersley Hall, near Congleton, 5l.

Class 10.—9 GREENHOUSE AZALEAS, distinct kinds. (Amateurs).
1st, Mr. T. Whitbread, Dartford, 9l.
Equal 2d, Mr. May, Gr. to J. Spode, Esq., Rugeley, Staffordshire, 7l.
Equal 2d, Mr. T. Page, Gr. to W. Leaf, Esq., Streatham, Surrey, 7l.
3d, Mr. W. Kaile, Gr. to the Earl of Lovelace, Ripley, Surrey, 5l.

Class 11.—9 GREENHOUSE AZALEAS, distinct kinds. (Nurserymen.)
1st, Mr. C. Turner, Royal Nurseries, Slough, 7l.
2d, Messrs. Veitch & Son, Chelsea and Exeter, 5l.
3d, Messrs. Ivery & Son, Dorking and Reigate, 4l.

Class 12.—6 AZALEAS. New kinds sent out since 1857. (Open.)
1st, Mr. C. Turner, Royal Nurseries, Slough, 4l.
2d, Messrs. Ivery & Son, Nurserymen, Dorking and Reigate, 3l.

Class 13.—12 ROSES in POTS, distinct kinds. (Nurserymen.)
1st, Messrs. Lane & Son, Great Berkhampstead, 10l.
2d, Mr. Wm. Paul, Waltham Cross, 7l.

Class 14.—6 ROSES in POTS, distinct kinds. (Amateurs.)
1st, Mr. T. Terry, Gr. to C. W. G. Puller, Esq., Youngsbury, near Ware, Herts, 6l.

Class 15.—6 DRACÆNAS and CORDYLINES. (Open.)
1st, Messrs. Veitch & Son, Nurserymen, Exeter and Chelsea, 3l.
2d, Messrs. Jackson & Son, Nurserymen, Kingston, Surrey, 2l.
Equal 3d, Mr. E. Hutt, Gr. to Miss Burdett Coutts, Highgate, 1l.
Equal 3d, Mr. Wm. Bull, Nurseryman, King's Road, Chelsea, 1l.

Class 16.—6 CAPE HEATHS. (Open.)
1st, Mr. B. Peed, Gr. to Mrs. Tredwell, Lower Norwood, 5l.
2d, Mr. T. Page, Gr. to W. Leaf, Esq., Streatham, 3l.
3d, Mr. W. Chilman, Gr. to Mrs. Smith, Ashtead House, Epsom, 2l.
Extra 3d, Mr. J. Wheeler, Gr. to J. Phillpott, Esq., Stamford Hill, 1l. 10s.
Extra 3d, Mr. J. Green, Gr. to Sir E. Antrobus, Bart., Lower Cheam, 1l. 10s.

Class 17.—9 PELARGONIUMS, distinct kinds. (Amateurs.)
1st, Mr. T. Bailey, Gr. to T. T. Drake, Esq., Shardeloes, Amersham, 8l.
2d and 3d, Withheld
4th, Mr. J. Weir, Gr. to Mrs. Hodgson, Hampstead, 2l.

Class 18.—12 PELARGONIUMS, distinct kinds. (Nurserymen.)
1st, Mr. C. Turner, Royal Nurseries, Slough, 8l.
2d, Messrs. Dobson & Sons, Isleworth, 6l.
3d, Messrs. J. & J. Fraser, Lea Bridge Road, 4l.
4th, Mr. James Burley, Limpsfield, Surrey, 2l.

Class 19.—6 PELARGONIUMS, FANCIES, distinct kinds. (Open.)
1st, Mr. C. Turner, Royal Nurseries, Slough, 5l.
2d, Messrs. Dobson & Sons, Woodlands Nursery, Isleworth, 4l.
3d, Mr. T. Bailey, Gr. to T. T. Drake, Esq., Shardeloes, Amersham, 3l.
Extra 3d, Messrs. J. & J. Fraser, Lea Bridge Road Nurseries, 2l.
Extra 3d, Mr. J. Weir, Gr. to Mrs. Hodgson, Hampstead, 1l.

Class 20.—9 PELARGONIUMS, Spotted or French, distinct. (Open.)
1st, Mr. C. Turner, Royal Nurseries, Slough, 4l.
2d, Messrs. Dobson & Sons, Woodlands Nurseries, Isleworth, 3l.
3d, Messrs. J. & J. Fraser, Lea Bridge Road Nurseries, 2l.

Class 21.—6 CALCEOLARIAS in POTS. (Open.)
1st, Mr. A. Bousie, Gr. to Lord Taunton, Stoke Park, Slough, 3l.
2d, Mr. J. Burley, Nurseryman, Limpsfield, Surrey, 2l.

Class 22.—12 EXOTIC FERNS, distinct kinds. (Open.)
1st, Mr. B. S. Williams, Nurseryman, Holloway, 5l.
2d, Mr. H. Lavey, Gr. to E. A. de Grave, Esq., Fetcham, 4l.

Class 23.—6 ANÆCTOCHILES, or other variegated Orchids. (Open.)
1st, Mr. J. Harbott, Gr. to E. Barford, Esq., Stratford, 3l.
2d, Messrs. Veitch & Son, Exeter and Chelsea, 2l.
3d, Mr. B. S. Williams, Nurseryman, Holloway, 1l.
Extra, Mr. A. Ingram, Gr. to J. J. Blandy, Esq., Highgrove, Reading, 10s.

Class 24.—3 TROPÆOLUMS, trained on Trellises, distinct. (Open.)
No Exhibitors

Class 25.—NEW or RARE TENDER PLANTS in FLOWER. (Open.)
1st, J. Bateman, Esq., Dendrobium Falconeri, Silver Knightian Medal
2d, Mr. J. Davis, Crinum sp., Silver Banksian Medal
3d, Messrs. Veitch & Son, Nolana lanceolata, Bronze Medal
4th, Messrs. Veitch & Son, Oxalis Valdiviana, Bronze Medal

Class 26.—NEW or RARE TENDER PLANTS not in FLOWER. (Open.)
1st, Messrs. Veitch & Son, Exeter and Chelsea, Alocasia zebrina, Silver Knightian Medal
2d, Messrs. Veitch & Son, Dryopteris sp., Silver Banksian Medal
3d, Mr. Bull, Oreopanax dactylifolium, Bronze Medal

Class 27.—NEW or RARE HARDY ORNAMENTAL PLANTS. (Open.)
1st, Messrs. Veitch & Son, Exeter and Chelsea, Retinospora sp., Silver Knightian Medal
2d, Messrs. Veitch & Son, Retinospora squarrosa, Silver Banksian Medal
3d, Messrs. Osborn & Son, Osmunda regalis cristata, Silver Banksian Medal
4th, Messrs. Veitch & Son, Ligustrum japonicum aureo variegatum, Bronze Medal

Class 28.—NEWLY INTRODUCED PLANTS, 1859-61. (Open.)
Messrs. Veitch & Son, Exeter and Chelsea, Leptopteris superba, 1st Class Certificate
Mr. Bull, Pteris cretica albo-lineata, 2d Class Certificate
Messrs. Veitch & Son, Pteris cretica albo-lineata, 2d Class Certificate
Messrs. Veitch & Son, Phyllagathis rotundifolia, 3d Class Certificate
Mr. W. Bull, Cyperus alternifolius variegatus, 4th Class Certificate
Messrs. Veitch & Son, Mimulus cupreus, 5th Class Certificate
Messrs. Veitch & Son, Gleichenia pubescens, 6th Class Certificate

Class 29.—SEEDLING FLORISTS' FLOWERS and GARDEN HYBRIDS.

First Class Certificates.
Messrs. Perkins & Son, Verbena Lord Leigh
Mr. Nye, Clewer Manor, Pelargonium Royalty
G. W. Hoyle, Esq., Reading, Pelargonium Colossus
G. W. Hoyle, Esq., Reading, Pelargonium Lord Palmerston
Mr. Nye, Clewer Manor, Pelargonium Merrimac
Mr. Nye, Clewer Manor, Pelargonium Illuminata
Mr. Wiggins, Gr. to W. Beck, Esq., Pelargonium Ardens
Mr. Wiggins, Gr. to W. Beck, Esq., Pelargonium Bellatric
Mr. Wiggins, Gr. to W. Beck, Esq., Pelargonium Oriana
Mr. Wiggins, Gr. to W. Beck, Esq., Pelargonium Canopus
Mr. Wiggins, Gr. to W. Beck, Esq., Pelargonium Eurydice
Mr. Wiggins, Gr. to W. Beck, Esq., Pelargonium Regina
Messrs. Veitch & Son, Aerides hybrida
Messrs. Veitch & Son, Goodyera Dominiana
Messrs. Veitch & Son, Nepenthes Dominiana

Second Class Certificates.
Mr. C. Turner, Fancy Pelargonium Miss in her Teens
Mr. Nye, Clewer Manor, Pelargonium Landseer
Mr. Nye, Clewer Manor, Pelargonium Censor
Mr. Nye, Clewer Manor, Pelargonium Monitor
Mr. Wiggins, Gr. to W. Beck, Esq., Pelargonium Butterfly
Mr. Wiggins, Gr. to W. Beck, Esq., Pelargonium Esperance
Mr. Wiggins, Gr. to W. Beck, Esq., Pelargonium Nymph
Mr. Wiggins, Gr. to W. Beck, Esq., Pelargonium Caliban
Mr. Wiggins, Gr. to W. Beck, Esq., Pelargonium Cynosure

Commended.
Messrs. Downie, Laird, & Laing, Delphinium bicolor grandiflorum

Class 30.—WARDIAN CASE, arranged for the Drawing Room.
1st, Messrs. Veitch & Son, Nurserymen, Exeter and Chelsea, 4l.
2d, Messrs. Veitch & Son, 3l.
3d, Mr. W. Bull, Chelsea, 2l.
Extra, Mr. W. Bull, 1l.

Class 31.—MISCELLANEOUS. (Open.)
1st, Messrs. Veitch & Son, Exeter and Chelsea, Large Mixed Group of Plants, 2l.
2d, Mr. W. Paul, Cheshunt, 8 Boxes Cut Roses, 1l. 10s.
2d, Mr. W. Bull, Chelsea, Collection of New and Rare Plants, 1l. 10s.
3d, Messrs. Ivery & Son, Dorking and Reigate, 24 Hardy Ferns, 1l.
3d, C. Dorrien, Esq., Chichester, Cheirostemon Platanoides, 1l.
3d, Mr. C. Turner, Slough, Cut Roses, 1l.
3d, Mr. C. Turner, 1l.
3d, Mr. C. Noble, Bagshot, Collection of Rhododendrons, 1l.
3d, Messrs. Paul & Son, Cheshunt, 1l.
4th, Mr. Pfersdorff, Kensal New Town, Collection of Succulent Plants, 10s.
4th, Miss Rubergull, Old Brompton, Anatomised Leaves, 10s.
4th, Mr. N. Norman, Plumstead, 24 Varieties Pinks, 10s.

Class 32.—COLLECTION of CUT RHODODENDRONS. (Open.)
1st, Mr. J. Standish, Ascot and Bagshot, 2l.

Mr. Dilke's Special Prizes.

THREE GROUPS of FRUITS and FLOWERS for the DINNER TABLE.
1st, Mr. Thomson, 17, Royal Crescent, Notting Hill, 10l.
2d, H. Pickering, 42, Princes Gate, 7l.
3d, Mrs. W. Fawcett, 11, Westbourne Street, Hyde Park, 3l.
Mr. A. Salter, William Street, Hammersmith, Commended.
The Misses Veitch, King's Road, Chelsea, Commended.
Mrs. J. H. Lermitte, Knightons, Finchley, Commended.

FRUIT.

Class A.—PINE APPLE, the best Cayenne.
1st, Withheld
2d, Mr. T. Bailey, Gr. to T. T. Drake, Esq., Amersham, 2l.

Class B.—PINE APPLE, any other variety.
1st, Mr. J. Floud, Gr. to R. Fothergill, Esq., Aberdare, 3l.
2d, Mr. J. Barnes, Budleigh Salterton, Devonshire, 2l.
3d, Mr. Speed, Gr. to Sir E. Walker, Burry Hill, Maresfield, 1l.

Class C.—GRAPES, BLACK, 3 Bunches.
1st, Mr. A. Henderson, Trentham Gardens, 3l.
2d, Mr. D. Clement, Chase Side, East Barnet, 2l.
3d, Mr. G. Wortley, Gr. to the Hon. P. Cary, Norwood, 1l.

Class D.—GRAPES, WHITE MUSCAT, 3 Bunches.
1st, Mr. J. Horwood, Gr. to H. Turnbull, Esq., Bromley, 3l.
2d, Mr. J. Standish, Ascot and Bagshot, 2l.
3d, Mr. J. Embrey, Gr. to A. Moss, Esq., Chadwell Heath, 1l.

Class E.—GRAPES, WHITE, any other Class, 3 Bunches.
1st, Mr. G. Wortley, Gr. to Hon. P. Cary, Norwood, 3l.
2d, Mr. C. W. Alderson, South Lambeth, 2l.
3d, Mr. T. Edwards, Gr. to Lady Langdale, Kington, Hereford, 1l.

Class F.—PEACHES, 6 Fruit.
1st, Mr. A. Henderson, Trentham Gardens, 3l.
Mr. T. W. Durrant, Gr. to Hon. Col. Duncombe, St. Neots, 2l.
Mr. Boston, Gr. to J. Ryland, Esq., Longford Hall, near Manchester, 1l.

Class G.—NECTARINES, 6 Fruit.
1st, Mr. M. C. Allen, Gr. to J. B. Glegg, Esq., Cheshire, 3l.
2d, Mr. A. Henderson, Trentham Gardens, 2l.
3d, Mr. Gardiner, Stratford-on-Avon, 1l.

Class H.—CHERRIES, 50 Fruit.
1st, Mr. A. Henderson, Trentham Gardens, 2l.
2d, Mr. J. Fleming, Clevedon, 1l.

Class I.—STRAWBERRIES, Single Dish.
1st, Mr. R. Smith, Twickenham, 1l. 10s.
2d, Mr. J. Widdowson, Chorleywood House, 1l.
3d, Mr. F. W. Park, Gr. to G. H. Vernon, Esq., Retford, 10s.

Class J.—STRAWBERRIES, 3 dishes.
1st, Mr. R. Smith, Richmond Road, Twickenham, 2l. 10s.
2d, Mr. J. Widdowson, Chorleywood House, 2l.

Class K.—MELONS, Green-fleshed.
1st, Mr. J. Meredith, Vine Cottage, Garston, 1l. 10s.
2d, Mr. M. C. Lillon, Gr. to — Cater, Esq., West Lodge, Barnet, 1l.

Class L.—MELONS, Scarlet-fleshed.
1st, Mr. W. Kaile, Gr. to the Earl of Lovelace, Ripley, 1l. 10s.
2d, Mr. J. Meredith, Vine Cottage, Garston, 1l.

Class M.—VINES in POTS, 2 plants.
1st, Mr. J. Smith, Gr. to the Duke of Northumberland, Syon Gardens, Brentford, 4l.
2d, Mr. C. Hutt, Gr. to Miss Burdett Coutts, Highgate, 3l.

Class N.—MISCELLANEOUS.
1st, Mr. J. Standish, Dish of Prolific Muscat Grapes, 2l.
2d, Mr. T. Lunt, Greenock, N.B., Dish of Apricots, 1l. 10s.
Equal 2d, Dr. Trouncer, Dish of Black Hamburgh Grapes, 1l. 10s.
Do., Mr. A. Henderson, Dish of White Cherries, 1l. 10s.
3d, Mr. C. Ross, Newbury, Dish of Figs, 15s.
Do., Mr. R. Smith, Twickenham, 6 Pots of Strawberries, 15s.
Do., Mr. W. Kaile, Ripley, 3 Pots of Raspberries, 15s.

IMPLEMENT SHOW, JUNE 11, 1862.

AWARDS OF THE JUDGES.

Class A.—HEATING APPARATUS, IMPROVEMENTS in VENTILATION, &c.
1. Model of a Patented Conservatory, Mr. Cranston, Birmingham
2. A Six-foot Boiler, Mr. Ormson, Chelsea
3. A Hot-air Ventilator, Mr. Thompson, Dalkeith
4. Doors and Panels for Boilers, Pedestal for Heating Halls, &c., Messrs. Weeks, Chelsea

Class B.—GARDEN MACHINES, such as Mowing, Rolling, Transplanting, Fumigating Machines, &c.
1. Water Ballasting Adjustible Garden Rollers, Messrs. Amies & Barford, Peterborough
2. Lawn Mowing Machines, Messrs. Brown & Co., Cannon Street

Class B.—GARDEN MACHINES, &c.
3. Mowing Machines (Highly Commended), Mr. Green, Holborn Hill
4. Mowing Machines, Messrs. Kennard, Dublin

Class C.—IMPROVEMENTS in GARDEN TOOLS and CUTLERY, GARDEN SEATS, &c.
1. Fruit and Flower Gatherers, Messrs. Barr & Sugden, Covent Garden

Class D.—GARDEN ORNAMENTS in WIRE WORK, TRELLISES, SUSPENDED BASKETS, &c.
1. Collection of Vases, &c., Messrs. J. B. Brown & Co., Cannon Street
2. Collection of Garden Ornaments, Mr. J. Jones, 6, Bankside
3. Galvanised Flower Baskets, Mr. Banks, Liverpool

Class E.—GARDEN POTTERY, CONSERVATORY TUBS, GARDEN TALLIES and LABELS, TILES and ORNAMENTS for GARDEN EDGINGS, &c.
1. Garden Sticks and Labels, Mr. F. A. Haage, Erfurt, Prussia
3. Large Garden Pots, Mr. Phillips, Weston-super-Mare

Class F.—IMPROVEMENTS for WATERING, &c., PROTECTING and SHADING CONTRIVANCES, PLANT GUARDS and SUPPORTS, DECORATIONS for CONSERVATORIES, ORNAMENTAL FLOORING, &c.
1. Flower Pot Covers, Messrs. Barr & Sugden, Covent Garden
2. Watering Engines, Mr. Read, Regent's Circus, Piccadilly
3. Tree Guards, Mr. Banks, Liverpool
4. Water Barrows, Mr. Nixey, Slough

Class G.—PHILOSOPHICAL INSTRUMENTS: Hygrometers, Thermometers, &c.

LEICESTER and LEICESTERSHIRE FLORAL and HORTICULTURAL SOCIETY.
President :—The Right Hon. Earl Howe.
The GREAT SUMMER EXHIBITION of the above Society for PLANTS, FLOWERS, FRUITS, and VEGETABLES will be held on the Leicester Race Course on TUESDAY and WEDNESDAY, June 24 and 25.
Additional Prizes will be given for CUT ROSES grown by Amateurs, Gentlemen's Gardeners, and Nurserymen, open to all England.
Prospectuses may be had of the Hon. Secretary, 37, Market Place, Leicester.
By order of the Committee. Wm. Penn Cox, Hon. Sec.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL SOCIETY.
The NINTH ANNUAL SUMMER EXHIBITION of PLANTS, FRUITS, and CUT FLOWERS will be held at the Royal Pavilion on WEDNESDAY and THURSDAY, June 25 and 26, on the same grand scale as former years.
Prizes to the amount of 280 Guineas offered, including a 15*l.* Prize for the best Collection of 10 Stove and Greenhouse Plants.
Schedules of Prizes can be obtained of the Secretary, 96, St. James Street; or of E. Spary, Queen's Graperies, General Superintendent of the Exhibition.

Conveyance of Plants, &c.

Through the liberality of the Directors of the South Coast Railway, the Committee have the pleasure to announce to Exhibitors, that Plants, &c., for Exhibition will be conveyed to Brighton from all Stations and back whence they came Free of Charge.
The Plants, &c., from London must be delivered at Bricklayers' Arms Station, Willow Walk, Bermondsey, not later than 8 p.m. on the day preceding the Show, to be delivered to the Exhibitors early on the following morning at the Brighton Station.
Where Plants are loaded in the owners' vans and carriages, trucks will be required; of which notice should be given to the Superintendent at London Bridge or Bricklayers' Arms, at least 24 hours before, to prevent disappointment.
No van for transit on a carriage truck must be loaded more than 9 feet from the ground.
Vans will be in readiness at the Brighton Station on the morning of the Show to convey Plants, &c., to the Pavilion.
N.B.—Exhibitors accompanying from London Bridge or Victoria must have them booked previous to their departure for Brighton. By Order of the Committee,
Brighton, June 14. Edward Carpenter, Secretary.

The Gardeners' Chronicle.

SATURDAY, JUNE 14, 1862.

MEETINGS FOR THE ENSUING WEEK.

Wednesday,	June 18	—Royal Botanic	2 p.m.
Thursday,	— 19	—Linnean	8 p.m.
Friday,	— 20	Royal Horticultural (General Meeting) at S. Kensington	2 p.m.

The June Exhibition of the R. Horticultural Society came off on Wednesday with the most complete success, in spite of angry clouds now and then melting into tears. We who witnessed the first small beginning of these shows at Chiswick, when it was thought doubtful whether a little iron tent a hundred feet long could be filled, and the superb displays with which the career of that agreeable resort was closed, feel justified in saying that as a whole the exhibition of last Wednesday was unsurpassed. Even in Orchids, of which the old Horticultural Garden was the generous nurse, Chiswick was this time, if not beaten, completely equalled. We doubt indeed whether anything so beautiful as was the display in Captain Fowke's graceful conservatory at Kensington Gore had ever before been seen, until it became crowded to excess by visitors.

This time the show was wholly under the arcades, the great tent that had been provided in the antegarden having fallen some days before. The fitness however of those covered ways for the purpose of exhibition was by no means settled on the present occasion, no time having been available for putting them in proper order, and the bad weather having rendered it necessary to close them in with heavy canvas. The consequence was that when the arcades were first entered their interior seemed dark, an impression which ceased as soon as the eye had become a little accustomed to the diminished light; and we think it probable that some means may be found hereafter to obviate this inconvenience, if inconvenience it was.

In one or two respects the outdoor attractions were not so great as was anticipated. Of the grand French fountains sent into the Garden from the International Exhibition building, one from Barbazete was unable to go, because according to the workmen (still employed upon it!) it was not yet ready. The other, let us add, put up by M. Durenne, played its part quite satisfactorily. What was of more importance, the superb display of Rhododendrons and Azaleas by Messrs. Waterer & Godfrey, to which we referred last week, was partially closed. In the gale of yesterday week one half of the huge tent under which the noble plants were shown began to give way, and to threaten the destruction of the other half. Fortunately Captain Maynard, R.N.R., a very skilful naval officer, was at hand in the International Exhibition, and with a party of his sailors speedily hauled down the tottering roof, without injury to the plants. The sun however of Saturday destroyed the blossoms of the unroofed part. Fortunately the other half of the tent resisted the gale, and continued to present to the visitors, in perfection, the marvellous beauties of the Knaphill Nursery.

The details of the exhibition of plants are amply described in another column. We confine ourselves to a few special remarks. The greatest novelty was a basket of flowers of the curious Mexican "Handplant," so called because its great green cup-shaped flowers produce from their middle what seems to be a gory arm and hand, out of the palm of which protrudes a crimson stiletto. These were the blossoms of *Cheirostemon platanoides*, a half hardy tree resembling a Plane, which had flowered for the first time in England, if not in Europe, with Mr. Charles Dorrien, of Ashdean, near Chichester. The finest specimen of plants very difficult to grow well was *Chysis Limminghi*, from Mr. Williams, of Paradise Nursery; all who have attempted the management of this beautiful Orchid are aware of what small matters impede its growth, and how easily its waxy delicate flowers are injured; even a drop of water changing their tender tints to the livery of death; on this occasion a large plant was free from blemish in every part. Second only to this was a very finely flowered *Dendrobium Falconeri* from J. Bateman, Esq., the merit of which was such that the Lord Bishop of Winchester crowned it with one of his own medals unawarded at the May Exhibition. A half hardy terrestrial Orchid, from Mr. Williams, also deserved very high commendation as an example of capital management; this was the *Orchis foliosa*, to which we have on more than one occasion directed attention, as a sufficient proof that our hardy Orchises and Ophryses might be grown well if gardeners would set about the matter in earnest.

As usual the really valuable novelties among hardy trees and shrubs were Japanese, contributed by Messrs. Standish, of Bagshot, and Veitch, of the King's Road. That which struck us most, because of its very unusual beauty as a variegated plant, was a Honeysuckle with small thin green leaves, every vein of which was of a pale golden yellow, without any tendency to the blotching which spoils so many of the variegated herd; this came from Bagshot.

The contest for Sir Wentworth Dilke's prizes for flowers and fruit arranged for a dinner table was as hot as a race for the Derby. No fewer than 45 entries were made, and the ladies were as much excited about the result as if they had been running horses. The table, between 200 and 300 feet long, was nearly inaccessible to gentlemen, and the scene, viewed from a distance outside the arcade, resembled nothing so much as a swarm of gaily dressed bees, struggling to get into a huge hive. Who won, who lost, who were nowhere, we cannot pretend to say. It is to our fair Drawing-room Correspondent's letter that we must refer the anxious reader.

Of fruit there was little, and that in the state which was to be expected after such a spring as Time has just left behind. Trentham however as usual sustained its reputation with Black Hamburgh Grapes and Cherries; and a new Grape from Mr. Standish, called the Prolific Muscat, was a real novelty. The colour is deep black, the bunch long, close, and slender, and the berries narrowly oval; of its quality, not having tasted them, we can say nothing, but we hear it much commended. Be that as it may, there is no doubt that it is a most useful sort where several kinds of Grapes can be cultivated.

The visitor to the International Exhibition who shall seek for Timber will see on his right in the distance, as soon as he enters the Eastern Dome, a noble pile reaching nearly to the roof of the transept. When he approaches the pile, he will find that its base is surrounded by most admirable examples of what Canada can produce; for he is within our great North East American Colony, the pride of England, the envy of the United States. There is not such another display from the New World; and when we consider how near is Canada to our own shores, the rapidity of intercommunication between us, and the enormous wealth which this "trophy" represents, it is difficult to avoid feelings of something like triumph at such a demonstration of British power. And yet there are those who would pull the trophy down, because forsooth it is thought to stand in the way of a painted window. We have not, however, sunk to such effeminacy as to prefer tinsel to iron, or to sacrifice the interests of millions to degenerate taste. For ourselves, we own that we admire the work of the Almighty, even in the rude form of timber, very much more than any combination of blue, red, and yellow glass in a cathedral window. And so does the intelligent part of the public.

To planters in this country the exhibition of timber in Canada is particularly interesting, because not a tree is represented in it with which we are unfamiliar. We can grow them all on our own estates if we think it worth while; and, given time enough, we can grow them as well. More especially does it concern those who already possess old specimens of Canadian trees to study here the evidence of what they may come to. Take for example Black Walnut, which grows magnificently even near London. There is one specimen (No. 53) which is 4 feet 7 inches in diameter, exclusive of its bark. Such timber can be had in Quebec for 71*l.* per 1000 feet cube. The specimen to which we now refer must be about 400 years old.

N. American Elms thrive perfectly with us. They are however we believe exclusively *Ulmus americana and fulva* that have been introduced. We now see that another kind, called the Rock Elm, or *Ulmus racemosa*, is superior to them and to our own; the wood being finer in the grain and less brittle. Of this there is a specimen, about 2 feet 8 inches in diameter.

Weymouth Pines are among the commonest of our hardy Conifers. They yield the "Pinewood" of carpenters. Little however do our foresters know of the huge specimens that swarm in Canada. "Average height, 140 to 160 feet; average diameter, 3 to 4 feet; but common near Lake Erie 5 to 6 feet in diameter and 200 feet high; or even in some cases 22 feet in circumference, 220 feet high, bare of branches for 120 feet to the first limb." Such monsters are, however, too big to exhibit, and Canada modestly limits herself to about 2 feet 10 in. or 3 feet in diameter.

Then there is *Pinus resinosa*, or the Red Pine, which dislikes our eastern climate, 3 feet 6 in. in diameter, which is about twice its usual size. But there is no encouragement to plant it here.

The Ash of Canada (*Fraxinus americana*), famous for its toughness and strength, invaluable for the handles of axes and other implements, is displayed in its small forms as well as in the giant proportions that it assumes when full grown. One round, with 305 circles of annual growth, is 2 feet 10 inches in diameter, an admirable example of timber.

There is Oak too, black (*Quercus tinctoria*), red (*Q. rubra*), and white (*Q. alba*), the latter little inferior to British heart of Oak, and not far off 4 feet in diameter. This tree, as much at home with us as with Canadians, is said to be sometimes 21 feet round! in Western Canada.

Then we have Occidental Plane, or Button Wood, 4 feet through; Tulip tree or White Wood, 3½ feet, and Basswood or American Lime, more than 2 feet, all excellent for cabinet and joiners' work, though unfit to bear exposure to weather.

Add to these the numerous specimens of the fair growth of American Chesnut, Hickories, Maples, Beech, Birch, Hornbeam, Hemlock Spruce, Tamarac or American Larch, and he who would thoroughly understand the nature of Canadian timber has a field of serious study hitherto unexampled: how serious, in a mercantile point of view, may be gathered from the fact that "Canada exports annually about 30,000,000 cubic feet of timber in the rough state, and about 400,000,000 feet, board measure, of sawn timber. The revenue derived by the Province, during 1860, for timber cut in the forests, amounted to about 500,000 dollars." It appears that of the 60 or 70 varieties of woods in its forests, there are usually only five or six kinds which go to make up these exports so vast in quantity; the remaining fifty or sixty timber trees are left to perish or are burned as a nuisance, to get them out of the way. The Commissioners truly observe that by showing, in the markets of the world, that it has these valuable woods, and can furnish them at unprecedentedly low prices, it will secure additional purchasers, a result that the capital display in the Exhibition building is admirably calculated to secure. The Commissioners from the Colony state that in extent, and in the variety and value of its woods, the great forests of deciduous trees of North America surpass all others; the most remarkable of this great mixed forest being that growing in the valley of the St. Lawrence. The western coasts, in high latitudes, furnish only or chiefly the Coniferæ. High summer temperature and abundant summer rains, are, unquestionably, the conditions necessary to produce the deciduous forest trees. Western coasts

in high latitudes have the necessary moisture, but not the high summer temperature; Western prairies, east of the Mississippi, and the vast deserts west of it, have summer heat but not moisture; hence the absence of all trees in the one region, and of the deciduous trees in the other. In this country we have probably all the conditions, except time, under which the Canadian timber has been produced.

All the hardy trees belonging to the Canadian Exhibition are capitally shown, by the production of both "rounds" or transverse sections and planks, so that the grain may be examined in each direction; and we only do justice to the Canadian Commissioners when we point out the skill of their arrangements; not forgetting their excellent Catalogue, which has afforded us some part of the information now laid before our readers.

In the other North American colonies the timber exhibited is merely in the form of hand specimens, if produced at all. That of Vancouver and British Columbia is still at sea, with the exception of a few examples from the former, among which will be found the unsurpassable Douglas Fir, to which we have lately drawn attention on several occasions, and the Cypress of the settlers, a beautiful white wood produced, we believe, by *Thuja gigantea* (*Libocedrus decurrens*).

—— A new London Flora, by Mr. A. Irvine, is announced as being in contemplation. It is intended to comprehend the Phænogamous vegetation of the four metropolitan counties, Middlesex, Surrey, Kent, and Essex, with such parts of Sussex, Hants, Berks, Bucks, Oxon, and Herts as are dovetailed with them. Mr. Irvine issued a similar work on a smaller scale, and with the same title, upwards of 20 years ago, and this has been long out of print. The co-operation of all who take interest in local botany is now sought, so as to make the new work as completely as possible a guide to the botany of the environs of London; and it is intended to append to the metropolitan plants brief notices of the other British species, so as to make the book a *catalogue raisonné* of the London Flora, and also of the native Phænogamous productions of Great Britain. Mr. Irvine's address is 28, Upper Manor Street, Chelsea.

—— We understand that Sir Joseph Paxton is about to construct at Passy, near Paris, for the Emperor of the French, a new Crystal Palace of such dimensions that ours at Sydenham would shrink into insignificance if placed beside it.

New Plants.

246. Dendrobium pictum.

D. (Pedilonum) *pictum*; caulibus subclavatis, foliis ovalibus acutissimis, pedunculis bifloris, sepalis ovatis acutis, petalis oblongis obtusis, labello obovato integerrimo supra basin libero excavato paulo apicem versus appendiculâ ovatâ obtusâ aucto, mento oblongo apice subincurvo antice versus medium leviter tumido.

A very pretty species brought from Borneo by Mr. Hugh Lowe, jun., and lately in flower in the Clapton Nursery. It is nearly allied to Dendrobium auroroseum, and others of the Pedilonum section, from all which it is distinguished not only by the foregoing technical characters, but by the colour of the flowers. The sepals are pale rose colour; the petals and lip are white richly painted with deep crimson veins, which only lose themselves on the extreme edge. A strong specimen must be charming

Indoor Gardening.

I find that my plants now begin to make some good progress; Lycaste Skinneri is making healthy new pseudo-bulbs, the leaves giving really quite an oriental look to the plant case in which it grows. Lygodium scandens is putting up long shoots all round, of its pretty Fern-leaved sprays. The Cissus in one corner is growing really rampant. Pteris tricolor has had to be repotted, having rooted down quite deeply into the sand and fibre upon which it stood, and my Ferns in general are looking very green.

The Azaleas I absolutely begin to get tired of seeing so long the same. In the *Gardeners' Chronicle* in May I mentioned having just received from Mr. Veitch one of his beautiful little standard trees of Azalea variegata. It had a short straight stem and a perfectly even spreading head of blossom; it came to me in full blossom on the 25th of April, and to-day, while I am writing, on May 31, it is still too good for me to put it by. Talking of it yesterday, I carelessly pulled off a blossom which I was pointing out as having lasted during all this time: it was of a darker colour than the other flowers, which attracted first my attention to it, and at last I got interested in seeing how it lasted. I think indoor gardeners should remember this Azalea, for it really is a great thing at this time of year to have a plant continue six weeks in real beauty. It was in a plant case, but the upper glass was kept off all day, and the plant was never watered over head, being left entirely to refresh its flowers in the dewy air at night, when the case was nearly closed.

In spite of all precautions, however, large leaves will get dusty. My Orchid, for instance, requires frequent sponging.

Amongst my plants just now, I have two great acquisitions, one is a very pale and beautiful pink Gloxinia, looking like the purest snow, with a bright but shaded edge of the very loveliest pink. I never saw so unsubstantial a flower—one expects each minute that it will melt into thin air; the bells are very large and upright, at each dent in the flower the colour seems as if it had run together, and made a darker dent—and then from that it goes clouding along the edge till anything so exquisite I really never saw. It is full of blossom, and any one who saw it would forgive me for being a little enthusiastic in my admiration of it. These Gloxinias too deserve especial notice by window gardeners generally, for if the roots are kept moist and they are not allowed to be in too dry an atmosphere they last very long, and go on opening buds in a long succession. My beautiful plant at present is at the warmest end of a plant case, but I have also had them growing without heat, and indeed at present I have several coming on from tubers kept in a pot of sand all winter, and started afterwards in a warmish corner. My other acquisition is what one might call a *rouge plant*, for I am informed that ladies are suspected of rubbing their faces with its beautiful coral berries! They crush up like snow berries and make a pretty pink colour! The plant is Rivina humilis, and it has dark green leaves and long graceful spikes of very small white flowers mixed with other spikes covered with those berries. I placed it between the Climbing Fern and Passion Flower at the warmer end of my plant case, and I was quite surprised to see how the berries lighted it up. They seem to me to be likely to last well, and it would be a most useful plant to have, as it is for so many months each year gay with its pretty tapering spikes of berries. These plants were very pretty in the depth of winter, and their minute dots of excessively bright red are wonderfully telling in stands that contain much green. *E. A. M.*

THE INTERNATIONAL EXHIBITION.

We resume our brief record of the horticultural matters exhibited in Class IX:—

2077. Barnard, Bishop & Barnards, Norwich, exhibit several useful forms of Garden Seats, with the seats of elastic spiral wire. They consist principally of folding stools, single, double, or triple, and of chairs formed with wire backs and with or without elbows; and are made either with the frame japanned and the seat and back galvanised, or wholly galvanised, or in some instances wholly japanned, the galvanised forms being the most expensive. They form light, neat, and durable as well as easy seats, and are readily portable, the cost being for the single seat chairs without elbows from about 8*s.* to 12*s.* each; for the stools from 4*s.* 6*d.* upwards.

2084. J. Boyd, Lewisham. Besides mowing machines already noticed, Mr. Boyd exhibits Shaft Rollers, that is garden rollers fitted with two side handles like the mowing machines, instead of the usual single T piece handle. This arrangement is said to give greater power over the implements. They have also Tubular Scythe handles, which are light, and provided with means for readily adjusting the blade for use. What they call an "Aquarius," and which is said to form a flower vase or water jug, and by the addition of a nozzle a watering pot or shower bath, consists of an upright vase having a nearly globular body, a short foot, a rather long narrow neck to which a nozzle with rose may be affixed, and on one side a handle curving round the body of the vase from the base of the neck to the foot. Viewed simply as a watering pot, this does not appear to have any advantage over the forms in common use, but it is a more elegant looking utensil for use in a small fancy conservatory.

2106. J. Dore, 17, Exmouth Street, Clerkenwell, exhibits an ingenious Garden Watering, Rolling and Syringing Machine. It may be described as a square shaped metal water-barrow delivering a shower of water from a perforated pipe in front, and on the lower side fitting over a cylinder which serves as a roller, and furnishes the means of locomotion. Above it is fitted with a small hand pump, and this is furnished with a registered water spreader. It thus combines a garden engine with a watering cart and roller. The price for a machine to hold 20 gallons, is 6*l.*; or for one to hold 25 gallons, 6*l.* 10*s.*

2122. T. Green, Leeds, and Victoria Street, Holborn, besides mowing machines, has a new Patent Roller, in which the cylinder consists of two parts which are free to revolve separately on the axis, thus affording greater facility for turning. The outer edges are also slightly rounded off, so that unsightly marks are avoided. These are no doubt advantages.

2125. J. Haywood, Jun., Derby, exhibits in iron-work imitation wicker baskets for rustic gardens, and some varieties of iron chairs and garden seats, in imitation of rustic work, one of which, which appeared to us in very good taste, was made to resemble Oak branches, and was ornamented with Oak foliage and acorns. Besides these there were different examples of cast-iron vases and tazzas, both fluted and figured, and along with them pedestals painted to resemble polished granite. As ornaments for terrace gardens, of a durable character, they may be recommended.

2135. Hunt & Pickering, Leicester, have produced some useful and elegant garden adjuncts, which they call the Leicester Garden Seat and Table. The seats, which are made of lengths varying from 4 to 6 feet, are both light and strong, having the ends and supports of wrought iron and the back and seat-bars of wood, some painted and varnished, some varnished Oak. They are made with or without elbows and footboards, and vary in price from 18*s.* to 35*s.* without arm rests, and from 21*s.* 6*d.* to 38*s.* 6*d.* with arm rests, according to size, material, and finish. The Table, which is octagonal, is composed of a number of wooden bars fixed on a wrought iron frame which is mounted on a turned wood pillar, supported by an iron tripod having scroll feet, and is just the thing for a summer house or garden. It costs 1*l.* 5*s.*

2139. T. Kay, Holbeck Moor, Leeds, Garden Pots with stands. These are very well made, and of elegant form, slightly ornamented; they stand on a bottom rim, which is notched away at intervals to permit the escape of water, and consequently they require to be used with feeders or to be set on some flat solid surface. Other forms for Orchid culture are pierced with holes at the sides.

2144. C. Lee, Warwick Crescent, Kensington. A light but firm Water Barrow, consisting of a barrel, fixed on a two-wheel wooden frame. The barrel is provided with a square hopper mouth, and finished with a hose. Mr. Lee also exhibits a runner for box barrows, and a greenhouse flap ventilator, moved and kept open by a convenient handle and rack.

2159. W. G. Nixey, Soho Square. Cast-iron Garden Labels after Kestell's Patent. These labels, which are very distinctly legible and we believe durable, are of various sizes, from small 2—3-inch ones suitable for pots, to large 4—6-inch ones suitable for out-door plants and trees. The stalk is straight or slightly bent. Some are furnished with eyes for suspending. The name is printed on paper or card board, and placed in close contact with the glazed front, the space being then entirely filled up so that there is no vacuum. Another set of "enamelled garden labels," from Mr. Smith, of St. John's Square, are catalogued (2184), but we have not yet found them.

2160. H. Ormson, Chelsea. Besides the conservatory and boilers already noticed, Mr. Ormson exhibits a Ventilator intended to be used in connection with a heating apparatus. It consists of a rectangular shaft or pillar with a hollow centre covered by a grating, the sides being double so as to form a cavity for hot water. The opening is connected with the external atmosphere by means of a horizontal channel underground, so that the fresh air is in reality made to enter the house through a heated shaft. Various forms of valves are also shown.

2164. Picksley, Sims & Co., Leigh, near Manchester. An elegant cast-iron Garden Seat for three or four persons, the frame and back representing Fern fronds, the seat of mahogany bars. The price is 2*l.* 2*s.*

2169. R. Read, Regent's Circus. The name of Read has always had a high reputation in connection with syringes, garden engines, &c., and is well represented by these articles in the present exhibition.

2197. H. Tyler & Co., Upper Whitecross Street, exhibit a variety of Oak and iron Water Barrows, Pumps, Syringes, Fountain Jets, &c.

2200. J. Warner & Sons, Cripplegate, exhibit Garden Engines of oak and iron, Swing metal Water Barrows, Fumigating Bellows, Spary's Fumigator and Mildew Annihilators, various forms of Garden Syringes and Hand Pumps, Fountain Designs, &c. The syringes and engines are provided with nozzles of various character, throwing the water in a single jet or in a shower, or by means of a registered spreader dispersing it in fine spray. These spreaders are attached to the jet nozzles, and by means of a thumb plate may be elevated or depressed so as to be brought into action or otherwise; they are very good contrivances for dispersing the water.

2204. R. Willison, Alloa, shows a model of a Ventilator for greenhouses or vineries. The model, which is not explained, represents two tiers of hot-water pipes, the upper of which is covered by a metal sheath or casing pierced with holes, the sheath of course enclosing a cavity around the pipe. A short length joined to this at right angles no doubt represents the means of communicating with the external air, and in this is fixed a stop valve below its junction with the upper pierced pipe. The fresh air may be supposed to enter by the short pipe above alluded to and to pass into the cavity between the upper pipe and its casing, where it must become heated, and thence through the perforations into the house.

Home Correspondence.

Vine Borders and Guano.—In your Paper of the 19th of April last, Mr. Lee of Combermere asks if guano is a fit manure for Vine borders? I say yes, as I have applied it to them for many years both in a liquid and dry state, which I always make a practice of doing when rain is falling or directly after, and I have always derived the most satisfactory results from the application. I took charge of the Gardens at Combermere in July 1856, when I found the Grapes there

miserably small and the Vines covered with red spider. Early in the spring of 1857, 58, 59, and 60 I gave each of the borders a liberal dressing of guano strewed on with the hand, and had them slightly forked over at once. When leaving Combermere on the 29th of August last the Vines were in the most vigorous state of health, having made remarkably fine wood and foliage last summer, and Mr. Lee informed me that he cut bunches 2lb. weight each, which I consider very good from Vines that have been planted some 25 years or more, especially when it is considered that the borders are partially surrounded with a bed of cold, wet retentive clay. Hearing that they were doing badly this season I went over to Combermere to examine them, and I will now confine my remarks more particularly to two of the Vineries. The state in which I found the borders was as follows:—The first, an early Vinery, the fruit in which was ripe in April 1861, had the border covered last winter with fermenting material, being covered on the top with felt to throw off rain and snow. I found plenty of roots, all of which were looking healthy. The border of the other Vinery (a late one) was covered with leaves and stable litter, which of course did not throw off wet. On examining that border I could not find a live root within several inches of the surface. Each of the above borders had the same quantity of guano applied to it and on the same day, yet Mr. Lee thinks that the roots of the last named border were injured by guano. If any of your correspondents will be kind enough to state what had been the result of their using guano to their Vines, or what might have caused destruction to the roots in the one border and not in the other, I shall take it as a favour. *P. A. Cope, The Gardens, Hillsborough Castle, Down, Ireland, June* 9.

Protecting Wall Trees.—In a few lines which I addressed to you on this subject, which appeared in your Paper of the 1st April, I mentioned an experiment I then had in progress, respecting the protecting of wall trees, by rearing up over them the lights from the roof of an old greenhouse. Having removed these lights in the middle of last month, I am now enabled to report that the experiment has succeeded beyond my expectations; the trees which were protected have set large crops of fruit, while others, on the same wall, not protected, have almost entirely failed, the failure being caused, no doubt, by the four successive nights of frost in the month of April, when we had the thermometer at 21° and 25°, while the trees were in full bloom. I do not know that there is any novelty in the idea, but any one wishing to protect a Peach wall, may, I think, effectually do so, by covering the top with a stone coping, projecting 4 inches over the trees, and rearing up against it a series of glazed lights shoulder to shoulder, raised upon legs sufficiently long to enable the frames of the lights to rest upon the upper edge of the coping. The protection thus afforded is nearly equal, and in some respects preferable, to that of an orchard house, at a mere fraction of the expense. *John Cocks, Gardener, Clapham Park, June* 9.

Barley born of Oats.—Through Mr. Foster of Huntingdon in July 1858, I forwarded to you an ear of Barley grown from Oats, enclosing at the same time full particulars of the process by which this result was obtained. In your reply to his letter you seemed to doubt it. At Mr. F's. request I forward you some kernels of the same description as that sent to you, at least grown from that seed, which has been sown on various soils since, and it remains Barley still, without showing any inclination to return to Oats. Would you be kind enough to explain the meaning of a sentence in your letter to Mr. F.—"It tells the morphological meaning of the palio remarkably well." *John Ekins, Bluntisham, near St. Ives.* [This case is mentioned at p. 670 of the *Gardeners' Chronicle*, 1858. In what we then said we have nothing to change. Mr. Ekins sends us very good Barley; but where is the PROOF that it has descended from a parent born of Oats? He must forgive us for incredulity. We do not find in any remark of ours such a sentence as that quoted.]

Mulberries.—There is an old Mulberry tree on the house at Baynton, only one branch of which has ever borne fruit within my recollection. I have very little doubt that it is a similar case to the one mentioned this week in your Paper, for I believe that I have seen male flowers on the other branches. *C. W. Strickland.*

Rhododendron Edgworthi.—What peculiar management does this Rhododendron require to make it perfect its flowers? I had a very healthy plant of it for three or four years in a cool greenhouse, which every year formed flower buds, that appeared perfectly right until about March, after which they dried up and fell off. Thinking that it wanted greater heat, I gave it to my brother's gardener to put into a warm conservatory, but exactly the same thing has happened there to it this year. All the time in both houses it has continued to grow apparently most healthily. I should be very glad to be told what treatment it requires to make it flower, because the plant itself is not particularly ornamental, though its magnificent sweet-scented flowers are extremely so. *C. W. Strickland.*

The Ladies' Contest at South Kensington.—Never did I feel that a rapid progress is going on around us more than to-day when gazing at the table decorations in the Royal Horticultural Gardens, South Kensington. This particular branch of exhibition appears most popular, to judge from the increased space occupied by the groups. Last year the judges could have had but little trouble in awarding the prizes, the majority of the things exhibited being poor samples of taste; whilst this year the bad ones are the exception and the graceful ones the rule. The manner of exhibition is also as much improved as the things exhibited: now there is a very long table covered with a white cloth, divided into different spaces, allowing each group to be seen distinctly by itself, instead of being huddled together, two or three sets deep, as they were last June. First and foremost in my recollection is a group of three clear white glass baskets with twisted handles, bearing the name of Pickering, the centre one containing Grapes, green leaves with a small bunch hanging most naturally from the centre of the handle, on one side a basket of red Roses and a red Cactus relieved by Fern leaves, and on the other a basket of Water Lilies and a lilac Orchid—a lovely trio, but it is difficult to say how they would look surrounded by the crowd of things always on a dinner table; for a drawing-room they were perfect. By way of contrast I must describe another group (No. 6), of a totally different kind; formed of three clear white glass rods supporting a vase of flowers at the top, with a looking-glass flooring, decorated all round its edges with Water Lilies; leaning against one of the rods was a tall Foxglove, looking quite at home and admiring itself in the mirror at its feet, and creeping up another rod was the common Cat's-tail Grass, whilst here and there appeared Strawberries in blossom and fruit; the charm of the arrangement was the natural manner in which each thing seemed to find its proper place, without having a studied look. Another of the best groups was composed principally of delicate and choice Fern leaves, exhibited by the Misses Veitch; each leaf stood out by itself, only a few flowers being introduced to enliven it; the little glass at the top of the centre piece was perfect, merely two or three sprays bearing small bunches of green and red berries, which gave a lightness and finish to the whole; it would have been quite complete had the same idea of colour been repeated on the top of the two side pieces, and had the rim of the basement on the cloth been artfully concealed. Running the eye down the whole length of the table, my eye was arrested by a group much greener than its neighbour, and upon examining it I found it bore the name of Salter; the flowers consisted of dark blue Larkspur and white Iris, with Fern leaves in one piece, and Roses and green leaves in the other, while the basements were decorated entirely with Moss and variegated leaves of different sizes and shapes. This produced an extremely good effect; the centre piece was a kind of glass archway carrying a lovely bouquet on the top; its blemish was a small silver urn immediately under the arch, which looked like an intruder, and I longed to turn it out. No. 32 was of rather a different nature, the form was similar to the usual tall glass pieces, namely, flowers at the top of a pedestal and flowers or fruit at the base; but in this instance the framework was composed of gilt wire; it looked light and graceful, and the wreaths of pink Kalmias by which they were ornamented were remarkably pretty. There was also a very choice group exhibited by Mrs. Thompson, of Notting Hill, consisting of three pieces, in form like Mr. March's of last year, but improved by having the glass rods twisted. The centre piece contained Phalænopsis and a few other exquisite flowers, with some Ferns, whilst Cissus discolor twined round the supporting rod; on one side the prevailing colours were yellow and lilac, and on the other side Gloxinias were grouped together so as to produce a charming effect. Several handsome silver groups were placed, the best of which was exhibited by Mr. Lucking; the stiffness and formality of little plates of fruit being arranged around a centre being entirely done away with, by the introduction of some cleverly managed Caladium leaves on stalks of different lengths. Besides these, large masses of Fern leaves and flowers were mingled with the silver ornaments. No. 1 consisted of a complete dessert service of pure white porcelain, which material suited the fruit and looked remarkably well, but the flowers in baskets looked stiff and ungraceful. There were two or three specimens of table decoration, to which I cannot at present feel quite reconciled; they looked too much like small flower gardens lifted into a large long silver dish. One with fruit introduced amongst a bed of Roses was the best, but they were not to be compared for grace to some of their neighbours; for instance take Mrs. Fawcett's tall ground glass vases filled with lovely lilac Orchids and white African Lilies, the centre piece having ground glass shells round the bottom, out of and around which appeared bunches of Grapes very capitally managed and forming a lovely group. Although this epistle is nearly as long as the table of flowers itself, I must describe one more group. Three very tall opaque white glass vases, filled with well arranged flowers and Ribbon Grass, were supported by heavy angular feet, over which hung large bunches of Grapes at regular distances; this group was undoubtedly striking, but I leave it to others to decide whether or not it was in good taste. As there was so much to admire, I must spare the few ugly ones the annoyance of being shown up, trusting that when they looked at their more successful rivals, they felt how far their display was below that standard of simple elegance which the competition at South Kensington has already raised with so much success. *Your Drawing-room Correspondent.*

Lawn Mowing Machines.—In your Paper of last Saturday, I find that these are reported on, and that the principal points which characterise each maker's machines are discussed. I have to thank you for your acknowledgment of the superiority of my inventions; but at the same time allow me to correct an error into which you have fallen, viz, "that the noise hitherto existing in the Lawn Mower having been got rid of by means of a chain which works or drives the machine, may be at the expense of strength and the implement rendered more liable to get out of order." I beg to say that the chain now used to drive the cylinder, or cutters, is of an entirely new construction; and having fairly tested its superiority, I have taken out a separate patent for it, being certain that it greatly supersedes the best traverse chain hitherto used. It is much stronger, as will be readily seen on examination, and it is further relieved from undue strain and consequent wear and tear by the introduction of internal gearing. By means of this arrangement the machine works exceedingly smooth; there is little friction and consequently little liability to get out of order. I also notice a remark as to the number of "knives or cutters." I would state that my machines possess more than any others, and in consequence of this they leave the surface of the lawn perfectly even, no matter how thick or mossy it may be. *Thomas Green, Leeds.*

Societies.

ROYAL HORTICULTURAL: *June* 11 (*Second Great Show*).—This magnificent exhibition, to which allusion is made in another column, was held in the Society's new conservatory and adjoining arcades, the recent high winds having rendered the great tent, under which the exhibition in May took place, wholly useless for the purpose. Half of the canvas which covered Messrs. Waterer & Godfrey's fine show of American plants has also been taken down, fully exposing to the weather the fine display which was deservedly the admiration of all who saw it. In the conservatory and arcades the immense crowd of fine plants produced on this occasion could be inspected with comfort, and visitors were secure from the heavy showers of rain which fell at intervals during the afternoon; the exhibition, however, though equally fine, not being seen *en masse* was less striking at a first glance than on the former occasion when it was held under canvas.

Stove and Greenhouse Plants were numerous and finely in bloom, and to these let us now direct attention. Among large collections the best was that furnished by Mr. Whitbread, gr. to H. Collyer, Esq., of Dartford. It contained beautiful bushes of Polygala acuminata and Dalmaisiana, Vinca alba, Clerodendron splendens, various Aphelexis, Erica depressa and Cavendishi, Azalea Gledstanesi and optima, Pleroma elegans, with beautiful purple blossoms each as large as a five-shilling piece; Stephanotis floribunda and Allamanda cathartica and grandiflora, Rondeletia speciosa, and Ixora javanica. Little if anything inferior to these was a collection from Mr. May, gr. to J. Spode, Esq., Hawkesyard, Staffordshire. In this was one of the best examples of Erica depressa perhaps ever seen; it was upwards of 3 feet in height and as much through the branches, hanging down in such luxuriant profusion as to completely hide the pot in which the plant was grown, and it was beautifully in bloom; associated with it were Azalea Gledstanesi and Perryana, the last still one of the best bright red sorts; Dracophyllum gracile, whose compact spikes of white blossoms are very suitable for bouquets; the orange-flowered Ixora crocata, Eriostemon buxifolium, an Everlasting or two, Allamanda cathartica, a large Epacris, Phænocoma proliferum, tolerably well flowered; the Cavendish Heath, Ixora coccinea, and Pimelea Hendersoni. From Mr. Peed came among other things a fine plant of the rosy lilac Phlox-like Leptodactylon californicum, a neat Pimelea spectabilis, two well flowered Allamandas, and various Polygalas, Epacrises, and Heaths. Mr. Baxendine contributed a fine Stephanotis floribunda, Aphelexis humilis rosea, Hoya Paxtoni, well bloomed, but too stiffly tied up, and a good specimen of the white blossomed glossy leaved Rhynchospermum jasminoides.

Groups of 12 Stove and Greenhouse Plants came from Messrs. Fraser, Rhodes, Cutbush, and Jackson. In these were good specimens of Ixoras, Beauty of Reigate and other Azaleas, Phænocoma proliferum, Allamandas, Eriostemons, Pimeleas, Cape Heaths, the best of which was ventricosa magnifica, a handsome rose-blossomed variety; blue Leschenaultia, Rhynchospermum jasminoides, Mussænda frondosa, a plant with white floral bracts, more showy than the flowers, which, though bright yellow, are small, and make little display; and one or two Polygalas.

Collections of 9 Stove and Greenhouse Plants were numerous. The best came from Mr. Chilman, who had finely flowered examples of Erica depressa and Cavendishi; Acrophyllum venosum, with numerous feathery spikes of white blossoms; Franciscea confertiflora, quite a mass of floral beauty; Polygalas, Everlastings, Dracophyllum gracile, and Pimelea Hendersoni. A second group, from Mr. Green, Gr. to Sir E. Antrobus, Bart., contained Azalea Iveryana and others, still in good bloom; Pleroma elegans, always a showy plant at this season of the year; Heaths, Allamandas, and Genetylis macrostegia. Mr. Kaile, Gr. to Lord Lovelace, sent among others well bloomed plants

of Rhynchospermum jasminoides, and Acrophyllum venosum.

Among groups of 6 Stove and Greenhouse Plants considerably the best came from Mr. Ingram, gr. to J. J. Blandy, Esq., of Reading. This consisted of finely blossomed plants of Everlastings, Statice brassicæfolia, Rhynchospermum jasminoides, Leschenaultia formosa, Pimelea mirabilis, and a good Cavendish Heath. In other collections of 6 which came from Messrs. Page, Tegg, and Wheeler, were well managed examples of Hedaroma tulipiferum, Everlastings, Dracophyllums, Heaths, Pimeleas, Allamandas, Stephanotis, Statice Holfordi, Pleroma elegans, Azaleas, Acrophyllums, and the white Epacris pulchella.

Of plants remarkable for the beauty of their foliage, some magnificent groups were produced. Among these the best came from Mr. Hamilton, of Cheltenham, who furnished glorious specimens of Pandanus javanicus variegatus, and P. graminifolius; Caladiums, among which the most conspicuous were Metallicum, Chantini, and Wighti; Croton pictum, Pilocarpus palmatus, with large deeply-divided shining green leaves; Theophrasta imperialis, a stately plant with ample foliage, and Cycas revoluta. Mr. Smith, gr. to the Duke of Northumberland, at Syon, sent fine specimens of Crotons, Caladiums, Calathea zebrina, a Canna or two, Palms of different kinds, among which the most striking was Latania borbonica, and Aspidistra lurida variegata. A fine group also came from Mr. Hutt, gr. to Miss Burdett Coutts, in which were well grown Crotons, Palms, Pandani, Tree Ferns, Cissus discolor, the singular white blotched leaved Dieffenbachia picta, Farfugium grande, and Maranta zebrina. From Messrs. Jackson, of Kingston, came the new variegated Musa, Monstera deliciosum, Dasyliriums, Cycas, Pandanus, Palms, and the large white and green leaved Caladium macrorhizum.

Of plants chiefly variegated, Messrs. Veitch, of Exeter and Chelsea, had a wonderfully fine collection, in which were Caladium Veitchi, with large singular looking leaves; Alocasia metallica and macrorhiza, the last in beautiful condition; Ferns of different sorts, Pitcher plants, Cordylines, the rich reddish brown Coleus Verschaffelti, Ficus Cooperi, Sphærogyne latifolia, and one or two flowering plants, among which was the scarlet Sarmienta repens.

Of Cordylines and Dracænas, collections were shown by Messrs. Veitch, of Exeter and Chelsea, and by Messrs. Jackson, of Kingston. Among the Dracænas were good plants of Draco, umbraculifera, Veitchi, indivisa, erythrorachis, marginata, ferrea, and Rumphii; and among Cordylines the most conspicuous were indivisa and australis, excellent plants of both which were present.

From Mr. Williams, of Holloway, came a magnificent collection of Ferns, among which were unusually fine bushes of Gleichenias, Pteris scaberula, and the variegated variety of P. cretica; Thamnopteris nidus, Platycerium grande, Cyathea elegans, and Cheilanthes elegans, all well grown and in beautiful condition. Mr. Ivery, of Dorking, sent a small group of British Ferns; and from Mr. Bull, of King's Road, Chelsea, came quite a caseful of the Irish Fern (Trichomanes speciosum).

Orchids formed a charming bank on one side of the Conservatory. Of large collections the best came from Messrs. Veitch, of Exeter and Chelsea, who furnished beautiful plants of the different kinds of Aerides, Saccolabium Blumei, with five fine spikes of bloom; Lady's Slippers of various sorts, loaded with flowers; Dendrobium densiflorum, a mass of golden yellow blossoms; a fine specimen of White Butterfly plant, beautifully in bloom; the handsome Lælia purpurata, Vanda suavis, and the stately Vanda Batemanni, the whole forming an effective and striking exhibition. From Mr. Williams of Holloway also came an excellent group, in which the most conspicuous plant was perhaps Orchis foliosa, a North American terrestrial kind, bearing multitudes of conical spikes of deep purplish lilac blossoms; associated with this were also Anguloa Clowesi, with four bright yellow Tulip-like flowers on it; a fine Cattleya Mossiæ, charmingly in bloom; the yellow Dendrobium chrysotoxum, Chysis Limminghi, well-flowered and by no means unhandsome; different kinds of Aerides; Cypripedium barbatum nigrum, a rich dark variety; Vanda suavis and insignis, and a well-bloomed Lælia purpurata. Mr. Woolley, of Cheshunt, also had a small but good collection.

Among groups of 20 Orchids the best came from Mr. Baker, gr. to A. Bassett, Esq., of Stamford Hill. It contained Anguloa Clowesi, Aerides Lobbii, and other varieties of that useful genus; Phalænopsis grandiflora, a good Cattleya Mossiæ, the orange-blossomed Saccolabium curvifolium, S. guttatum with five spikes of flowers; Cypripedium barbatum grandiflorum, and other kinds very nicely in bloom; Vanda suavis and teres, a fine Oncidium ampliatum majus, the White Butterfly plant, and Lælia cinnabarina and purpurata. Another fine collection came from Mr. Milford, gr. to E. M'Morland, Esq., of Haverstock Hill. This consisted of Cattleya Mossiæ, some beautiful specimens of Lady's Slipper, among which the most remarkable was perhaps villosum, on which there were five fully expanded blossoms; various finely flowered Aerides, Lælia purpurata, Saccolabium guttatum, a well flowered and a most beautiful variety of it called argenteum; Calanthe Masuca in fine condition; Phalænopsis grandiflora, and the deep purple blossomed Cattleya superba. From Mr. Peed also came a collection of 20 small plants.

From Mr. Page, gr. to W. Leaf, Esq., of Streatham, came a good group of 10 plants, among which were Trichopilia tortilis, Dendrobium formosum giganteum, two well-bloomed examples of Lady's Slipper, the Fielding Foxbrush Aerides, Dendrobium densiflorum, a very fine Lælia purpurata, Calanthe veratrifolia, and Dendrobium densiflorum. From Mr. Penny, gr. to H. H. Gibbs, Esq., Regent's Park, who also showed in this class, came the white, orange-stained Dendrobium formosum, Oncidium Lanceanum, Phalænopsis grandiflora, one of the best varieties of Bearded Lady's Slipper, Aerides affine rubrum, Cattleya Mossiæ, and a very fine white Calanthe.

Among groups of six Orchids, the best was furnished by Mr. Wiggins, gr. to W. Beck, Esq., of Isleworth, who contributed good plants of Saccolabium præmorsum and guttatum, Aerides crispum, odoratum and Larpentæ, and a White Butterfly plant. From Mr. Green, gr. to Sir E. Antrobus, Bart., came Anguloa Clowesi, Lælia purpurata, Dendrobium densiflorum, finely blossomed plants of Oncidium ampliatum majus and sphacelatum, and Phalænopsis grandiflora. Groups of six plants were also shown by Mr. Lakeman, Mr. Chilman, and Mr. Wheeler.

J. Bateman, Esq., of Biddulph Grange, showed an example of the charming Dendrobium Falconeri, to which allusion is made in another column.

Of variegated Orchids, Messrs. Veitch had a nice collection, in which were beautiful examples of Physurus querceticola, Anæctochilus Lowii, and xanthophyllus; Goodyera Veitchi, and a variegated leaved Bolbophyllum. From Mr. Williams came Anæctochilus Lobbii, Lowii, xanthophyllus, pictus, and intermedius, and Phalænopsis Schilleriana. Mr. Ingram, gr. to J. J. Blandy, Esq., also had some beautiful little plants, as had also E. Barford, Esq., of Stratford. Among these one of the handsomest was Anæctochilus cordatus, the leaves of which are beautifully veined with gold.

Azaleas were again produced in tolerable abundance, but on this occasion they were not nearly so fully in bloom as they were on the 21st ult. The best came from Mr. Turner of Slough, who had Illustris nova, Chelsoni, Sir C. Napier, lateritia, Criterion, Stanleyana, Petuniæflora, a fine kind; Gledstanesi, Gem, and Symmetry. Messrs. Veitch had among other good specimens well-bloomed examples of Magnificent, Juliana, Coronata, Iveryana, Holfordi, Perryana and Apollo.

The best group of 9 Azaleas in the Amateur's class came from Mr. Whitbread, gr. to H. Collyer, Esq. It contained among others good specimens of Striata formosissima, Juliana, Reine des Belges, Extrani, Constantia, Chelsoni, and Gledstanesi. From Mr. May and Mr. Peed came the double sort called Glory of Sunning Hill, Juliana and a well-bloomed Iveryana. Messrs. Page and Kaile had Symmetry, Gledstanesi, refulgens, Beauty of Europe and Perfecta elegans.

Of new Azaleas, Mr. Turner had Comte de Hainault, a fine large rose, spotted in the upper petals; President Clayes; Etoile de Gand, the best of the salmon-centred kinds, edged with white; Kinghornii, bright rose with a crimson eye, good in substance and shape; Chameleon, white flaked with red; and Magnet. From Messrs. Ivery came Flower of the Day, Harlequin, Leopold I. a large semidouble rose, variegata superba, and other sorts of which descriptions have already been given.

The season for Roses in pots is evidently on the wane; nevertheless both Mr. Wm. Paul and Mr. Lane showed good groups in which were well bloomed specimens of most of the best kinds for pot culture. Among these Chénédolé, Chas. Lawson, Coupe d'Hébé, General Jacqueminot, Jules Margottin, Paul Perras, Paul Ricaut, La Reine and Baronne Prevost stand conspicuous. Mr. Terry also showed a good group in the Amateur's Class. Cut Roses in beautiful condition came from Messrs. Paul & Son, Mr. Turner, Mr. Wm. Paul, and others. Among them the most striking blooms were Madame Furtado, Senateur Vaisse, General Jacqueminot, Eugène Appert, Jules Margottin, Comtesse de Chabrillant, and Beauty of Waltham, the last a really excellent new Rose in the way of General Jacqueminot, and one which is said to be very hardy, standing the winter well when other sorts have failed. This was furnished by Mr. Wm. Paul. The Rev. W. H. Radclyffe also contributed nice boxes of cut blooms.

Cape Heaths were not numerous, and among them there was nothing either new or remarkable.

Of Pelargoniums there was a most beautiful display, the plants not only being numerous but unusually well bloomed. The best group came from Mr. Turner, of Slough, who contributed Lady Canning, Fairest of the Fair, Lord Clyde, Viola, Leviathan, Desdemona, Bacchus, Prince of Prussia, Etna, Rose Celestial, Sir C. Campbell, and Candidate.

From Messrs. Dobson came Viola, Etna, Sanspareil, Mrs. Foster, Fairest of the Fair, Governor General, Sir C. Campbell, Carlos, Fair Helen, Leviathan, Eclipse, and Blink Bonny.

Messrs. Fraser sent good plants of Carlos, Flora, and Candidate. In the Amateur's Class Mr. Bailey, Shardeloes, had Sanspareil, Glow-worm, Bianca, Viola, Duke of Cambridge, Carlos, Lord Clyde, Rosa Bonheur, and Desdemona.

Of Fancy Pelargoniums, Mr. Turner had good examples of Crimson Pet, Modestum, Evening Star, Claudianum, Delicatum, Acme. From Messrs. Dobson came Cassandra, Acme, Sarah Turner, Cloth of Silver, Celestial, and Beadsman. Mr. Bailey and Mr. Weir also showed well-grown collections.

Of Spotted Pelargoniums Mr. Turner furnished beautiful examples of Osiris (a fine kind), Mr. Marnock, Conspicuum, Guillaume Severyns, Bertie, Bracelet, Beadsman, and Rembrandt, all very fine varieties of this deservedly favourite class. Wm. Bull from Mr. Dobson is also a good kind, as are also Macbeth, Sanspareil, Distinction, Scaramouch, Madame Furtado, Peacock, and Mr. Hoyle.

Of Seedling Pelargoniums a great many were shown, among which a few of the best were apparently Queen of Whites, a purple-topped sort; Startler, crimson with black top; Eurydice, white with cherry top; Agamemnon, an improvement on Monarch; Belle of the Ball, Illuminator, Landseer, and Royalty. Mr. E. G. Henderson had some kinds with beautifully variegated foliage, and we noticed a good scarlet with a white eye, from Mr. Macintosh, of Hammersmith.

Calceolarias in the shape of two groups came from Mr. Bousie and Mr. Burley. Among sorts, the best were Lily, Dewdrop, Monitor, Dr. Livingstone, King of Prussia, Prince of Wales, Doret, and Angustifolia superba.

Mr. Tyso, of Wallingford, exhibited a collection of 100 Ranunculuses, among which were fine specimens of Commodore Napier, Melancthon, Serena, Festus, Tasso, Naxara, Herald, Eva, Kilgour's Princess, also a dark purple seedling named Vigilantius, and a reddish brown mottled seedling, called Magenta.

Rhododendrons in a cut state came from Mr. Standish, Mr. Noble, and others. Two of the best were Concessum and Morning Star; the first a beautiful kind noticed by us on former occasions, the last a delicate pink with a yellow blotch on the upper petals, the two colours contrasting well together. Fragrans, a kind not unlike a Ghent Azalea, and by no means new, was also greatly admired.

New Plants chiefly consisted of sets of Japanese productions, furnished by Messrs. Veitch and Standish. Many of those from the former were shown in blue and white vases of highly ornamental character, imported direct from Yeddo. Of the plants themselves we have little to add to former descriptions. Some red-leaved Maples attracted considerable attention, and certainly if they keep their colours as well planted out as in pots they will prove valuable acquisitions. A new Honeysuckle, too, had leaves nearly as handsome as those of an Anæctochilus.

Of new fine foliaged plants the most striking were Alocasia zebrina, a plant with beautifully marbled stems and handsome leaves, a variegated Japanese Rhapis, Schismatoglottis variegatis, a Dryopteris with coriaceous deeply cut foliage, and Phyllagathis rotundifolia, all from Messrs. Veitch. From Mr. Williams came Pollea purpurea, and Cyperus alternifolius albo-variegatus. From Mr. Bull also came a fine collection of comparatively new plants, remarkable for the beauty of their foliage, most of which have been fully noticed in former reports. Messrs. Veitch also showed a hybrid Nepenthes in the way of Rafflesiana, the first ever raised we believe in any country.

New Plants in Bloom, in addition to the "Hand Plant" mentioned in another column, consisted of a very fine Nolana called lanceolata, with flowers like Nemophila insignis, but four or five times as large; Ourisia coccinea, exhibited on the 21st ult., a hybrid Aerides raised between Fieldingi and affine rubrum, Goodyera Dominiana, a cross between discolor and Anæctochilus Lowii, Oxalis Valdiviana, a hardy yellow sort; Stenogaster speciosum, Cattleya Dominiana, a beautiful delicate pink hybrid sort, with a lip not unlike that of Lælia majalis; and Mimulus cupreus, a dwarf profuse blooming orange scarlet kind, which looks as if it would be invaluable for outdoor decoration. These came from Messrs. Veitch. Mr. Davis showed a Crinum with handsome red and white striped flowers, and there were also one or two novelties from Mr. Bull.

Fruit was not plentiful. Of Pine Apples, six fine Queens, one of which weighed 5 lbs. 2 oz., came from Mr. Floud, gr. to R. Fothergill, Esq., of Aberdare; and Mr. Barnes, of Bicton, also showed four good Queens. A Providence and Prickly Cayenne came from Mr. Bailey, Shardeloes.

Of Grapes, fine examples of Black Hamburgh, large both in bunch and berry, and covered with bloom, came from Mr. Henderson, gr. to the Duke of Sutherland at Trentham. Black Hamburghs in good condition were also shown by Mr. Clements, of East Barnet; and Mr. Wortley also had good specimens of the same variety. Muscats were wholly unripe. The best of them came from Mr. Horwood, of Bromley; tolerably perfect bunches of Royal Muscadine were shown by Mr. Durrant, of Warsley; Mr. Widdowson had good examples of Sweetwater. Of Grapes in pots good exhibitions were furnished by Mr. Smith, gr. to the Duke of Northumberland at Syon, and Mr. Alderson and Mr. Hutt also showed good examples of this description of Grape culture. From Mr. Standish came Ingram's Prolific Muscat, a promising black Grape. Dr. Trouncer showed small bunches finely ripened and covered with bloom, from a glass structure on the top of a house in Mount Street, Berkeley Square. As an illustration of town gardening they were extremely interesting, showing as they did what may be accomplished by skill and perseverance, even under the smoky atmosphere of London.

Of Nectarines the best came from Mr. Allen, gr. to

J. B. Glegg, Esq., Congleton, and good fruit of this kind was also shown by Mr. Henderson and Mr. Gairdener.

Peaches of the Royal George sort were sent in beautiful condition by Mr. Henderson; Mr. Durrant and Mr. Boston also exhibited good Peaches, among which were good fruit of Noblesse.

Cherries: Black Circassian, large and fine, came from Mr. Henderson, and we also noticed some May Dukes, from Mr. Fleming of Cliveden.

Strawberries were good, especially dishes of Sir Charles Napier, British Queen, and Empress Eugenie from Mr. Smith of Twickenham. Mr. Widdowson furnished good fruit of Sir Harry, Sir Chas. Napier, and Crimson Queen. From Mr. Park, Retford, came British Queen, in good condition. Other sorts consisted of Nimrod, Keens' Seedling, Goliath, Trollope's Victoria, and a seedling from Mr. Ingram of Frogmore, named Blackbird, a promising looking fruit.

Raspberries in pots were shown by Mr. Kaile, gr. to Lord Lovelace. They were the white and red Antwerp, and were well fruited, though the berries individually were not large.

Figs were contributed by Messrs. Cross, Ross, and Tillyard. The sorts were Brown Turkey, and Marseilles.

Of Apricots only one dish was shown, the fruit in which, though small and deficient in colour, appeared to be ripe. It came from Mr. Lunt of Greenock.

Of Melons, the best came from Mr. Meredith; the sort was a hybrid Cashmere, a thin-skinned, fine sort for this time of year. A good-netted, green-fleshed sort, came from Mr. Maclaren. Of hybrid Scarlets, the best came from Mr. Kaile; Gem, from Mr. Meredith, being second.

Limes from an open wall, near Kingsbridge, Devon, were again shown by J. Luscombe, Esq.

Concerning the contrivances for table decoration which competed for Sir Wentworth Dilke's prizes, ample criticism will be found in the letter of our "Drawing-room Correspondent" in another column. We may, however, mention that some extremely pretty plant cases for the ornamentation of the drawing-room were shown on this occasion by Messrs. Veitch, who had fitted them up with unusual skill and taste. One made of wood and glass, and span roofed, obtained the first prize; and a second prize was awarded to the same nurserymen for another oval shaped case constructed of iron and glass. Both contained rockwork covered with Moss in the most natural way possible, from among which grew Ferns, Caladiums, and other fine leaved plants, intermixed with such flowering plants as Gloxinias, and things of that description, the whole forming as it were quite a little landscape in miniature. From Mr. Bull also came a smaller rectangular case which was likewise very neatly planted; in short, improvement in matters of this kind was everywhere evident on Wednesday last.

The exhibition of Implements was more complete than on the occasion of the May show, but was still nothing like so full as might have been expected. There was also some confusion, which it would be as well to avoid in future, arising from the mixing up of articles shown previously with those now exhibited for competition; moreover, owing to displacement by the wind or some other cause the labelling was less perfect than it might have been.

The exhibitions in Class A, consisting of Boilers and Ventilating contrivances, were sent in by Messrs. Weeks & Co., Chelsea; Mr. Ormson, Chelsea; Mr. Jones, Bankside; Mr. Cranston, Birmingham; and Mr. Thomson, Dalkeith. Mr. Weeks exhibited a Tubular boiler of large size; an example of ornamental Pedestal of hot-water pipes, which was commended; and some improved Furnace doors, also commended, which were suspended from the top by means of a curved rim, on a cylindrical horizontal bar along which they were made to slide. Mr. Ormson again exhibited his Jointless Tubular Boiler, which was Commended; together with Improved Furnace doors, which differed from Mr. Weeks's in moving along the bar by means of rollers instead of sliding; and an Improved Valve, which opens by withdrawing a flat plate into a side box, by means of a spiral screw and winch. Mr. Jones exhibited samples of various sizes of Monro's Cannon Boiler, which consists of a long tube supported on curved arms; also various forms of valves; a cylinder coil case of open iron work for hot-water pipes; and a Portable Boiler to be used without fixing, and resembling an upright iron stove. Mr. Cranston's model of his patent buildings, which have been already fully noticed in our columns (p. 522), was commended; as also was a Hot-air Ventilator from Mr. Thomson, Dalkeith. This was the same contrivance as that shown by Mr. Willison of Alloa, in the International Exhibition, and was now accompanied by the following information. The principle was invented by Mr. Thomson, and had been tested by him during the past winter with most satisfactory results, having been adopted in the Vinery from which Mr. Thomson cut on the 1st of January last, the finely-coloured and highly flavoured Grapes which have been the subject of discussion during the past spring. The object of this ventilator is to furnish a constant supply of fresh air, warmed before allowing it to disperse amongst the tender foliage of the plants. It consists of a light copper or iron sheathing fixed over the front row of heating pipes, a space being left between the heating pipe and the sheath, and this space communicating with the outside by a pipe proportioned to the size of the sheath and fitted inside the house with a regulating valve. This pipe, which at the mouth is provided with a grating, is fitted to the bottom of the sheath, and the cold air thus introduced below, in passing over the heated surface, becomes warmed to the medium temperature of the house, into which it escapes from the upper side through a series of small holes. The principle is no doubt a good one, and the mode of applying it, which we observe is to be patented, seems unexceptionable, though something of the same kinds and perhaps simpler, was described in the Journal of the Horticultural Society (i. 114) some years ago.

In Class B., which included Mowing and Rolling Machines, &c., the exhibitors were Mr. Green, Victoria Street, Holborn Hill; Messrs. Kennard & Sons, Dublin; Messrs. Brown & Co., Cannon Street West (agents for Shanks & Co.); Messrs. Ferrabee & Co., High Holborn; and Messrs. Ransomes & Sims, Ipswich, all of whom exhibited mowing machines. We have so recently (p. 500) noticed the machines of these firms, with the exception of that of the last named, which did not present anything for particular remark, that we need not here do more than record that Green's machines were highly commended, and Kennard's & Brown's were commended. For ease and facility of working, Green's machines evidently stand first in public favour. In this class Messrs. Amies & Barford, Peterborough, exhibited the Kensington Garden Roller, which was commended. This, which is described as a "water ballasting adjustable roller," consisted of a wrought-iron cylinder closed up at the ends so as to be water-tight, and provided with a screw brass plug easily removable, so that it can be charged with water, or emptied in a few minutes. The plan affords a ready means of increasing or diminishing the weight of the implement, and to this extent may be regarded as an improvement.

In Class C, devoted to improvements in Garden Tools, Garden Seats, &c., Gmelin's Patent Fruit and Flower Gatherers, exhibited by Messrs. Barr & Sugden, King Street, Covent Garden, were commended. By means of the flower gatherer, which has a long handle, and both cuts and holds at the same time, the flowers can be readily gathered from the interior of a parterre or the shelves of a greenhouse; while the fruit gatherers in one form have a small net bag attached to catch the fruits as detached from the tree, and in another consist of two discs of india-rubber, by which the fruit is held firmly as taken from the tree. They are all very useful contrivances for amateurs. We observed several articles in this class to which the commendation label was attached, but which do not appear either in the official list of awards at the present exhibition, or in that advertised for the May show. One of them was called the Leicester Garden Seat, and was a very convenient one for garden purposes, consisting of flat iron supports and a wooden barred seat and back rail; some were painted green with white lines, and some were plain Oak varnished; the latter, 4 feet 6 inches long, and priced 25s., were those specially commended. Seats of this character were shown by Messrs. Brown & Co., 18, Cannon Street, and Messrs. Hunt & Pickering, Leicester, the latter of whom had also a Table to match the green seats, which was marked as being commended. Another seat came from Messrs. Picksley, Sims & Co.; this had an iron frame, the back being of a Fern pattern, and the seat formed of bars of wood; its price was 2*l.* 2*s.* Mr. Jones, Bankside, sent an iron chair with circular seat, and ornamented back, which, painted white and gold, was priced 35*s*.

Garden ornaments in the shape of wire work, trellises, suspended baskets, vases, &c., were exhibited by Mr. Banks, Liverpool; Messrs. Barr & Sugden, Covent Garden; Mr. Reynolds, Compton Street, Soho; and Mr. Jones, Bankside. The Commendations were awarded to Mr. Banks, for Galvanised flower baskets—pendent baskets of elegant form with double wire sides, suspended from a spiral scroll stem, which stands 6 feet high, and is intended for lawns; the stem is fixed firmly by a three-pronged foot. To Mr. Jones, for a collection of Garden Ornaments, chiefly consisting of iron vases, such as Medici Vases, Tazza Vases, Fern Vases with snake handles, &c., with or without pedestals. These, painted stone colour, are very suitable for garden decoration, and vary in price from 1*l.* to 3*l.* 15*s.*, the pedestals from 6*s.* to 30*s.* According to the prize sheet Messrs. Brown & Co., Cannon Street, were also Commended for a collection of Vases. Mr. Banks had moreover some Galvanised Pegs for Verbenas and similar plants, and some pretty wire work flower baskets and stands; Mr. Jones sent a stiff looking cast-iron flower-stand, forming a pyramid; Mr. Reynolds had various hanging baskets, flower-stands, and archway trellises; all of wire-work, and some very elegant wire flower baskets were shown by Messrs. Barr & Sugden.

Among Pottery, Tubs, Labels, &c., forming Class E, were some remarkably cheap wood flower sticks and labels of various sizes from Mr. Haage, Erfurt, exhibited by the agents, Messrs. Betham & Blacketh; these were commended. Messrs. Barr & Sugden showed different patterns of zinc labels; as well as some flower-pots, which were good imitations of rough wood with the bark, and were commended. Mr. Phillips, Weston-super-Mare, received a commendation for some excellent samples of garden pots, having a neat ornamented rim.

In Class F, for Watering Implements, Plant-Guards, Conservatory decorations, &c., were some Metal Garden Engines of excellent workmanship from the well-known firm of Read, Regent Circus, which, as well as his Syringes and Hand Pumps, were commended generally. Some wood Water-barrows, also commended, from Mr. Nixey, Slough, were exceedingly well adapted for their object; they were oval tubs, supported by strong flat-shaped iron stays, depressed at the apex to receive the pivot, and having a stout frame and a pair of high wheels. In one form, an ordinary water-tub, the tub itself was open-topped and swung free; and in another, forming a watering barrow, the tub was fixed and closed in at top, and was furnished with a pierced horizontal delivery pipe. Another Commended article was a Tree-guard, shown by Mr. Banks, of Liverpool. The guard consists of four sloping "uprights," meeting at top in a band which fits round the tree trunk, and having pronged feet, the uprights being connected by several flat iron bands. The sizes exhibited were about 5 feet high, costing 14*s.*, and 7 to 8 feet high, costing 17*s.* 6*d.* Finally, to exhaust the prize list, Messrs. Barr and Sugden showed some extremely useful Covers for flower-pots, which gained a Commendation. These covers, which are formed of stout glazed paper, and of two or three useful sizes, are made of different colours, either plain or medallion figured, and are ornamented by a neat gilt rim or border. For dinner-tables, and for various temporary decorative purposes, they seem likely to become very useful; the price of the middle size is 12*s.* per dozen. Samples of Garden Netting were exhibited by Mr. Cullingford, and we observed one of Boyd's Patent Rollers, but could find no intimation as to who was the exhibitor.

Notices of Books.

Babington's Manual of British Botany. **Fifth Edition Van Voorst.**

It is evident that Professor Babington has taken much pains with this edition of his useful work. The synopsis of the natural orders is redrawn up on the principle of the analytical keys of the French school, and throughout the work he has replaced Anglicised Latin words by English ones. We, however, confess to doubts as to the utility of such new words as *Stobole* for certain creeping underground stems, or *stripes* for vittæ.

As to species, the great bone of contention among modern botanists, there are a few changes which indicate pretty clearly on what slippery ground the learned author perseveres in standing. He now knows seven Fumarias instead of five, and his 41 Brambles have glided into 45; on the other hand, he has thrown out of his way a Willow and a Hieracium. Since all that concerns this question is necessarily matter of mere opinion, not of fact, we have no right to blame those who differ from ourselves; we only presume to retain our own, which is entirely opposed to the fine-drawn distinctions of many young and a few old men. As to discussing the point it is useless; there is no dispute about facts; if one plant really has its leaves green, and another grey, on the under side, that is no longer an open question: the real point at issue is the value of the difference, which, like taste, belongs to the region of opinion.

There is no doubt that the work is well calculated for a number of our local botanists who delight in puzzling over what are called critical species, a very harmless intellectual exercise.

Garden Memoranda.

DOWNTON CASTLE.—It may not be uninteresting to know something about Downton Castle and Park, the seat of the late Andrew Knight, Esq., once the president of the Royal Horticultural Society. The Castle is situated in the north-east corner of Herefordshire, six miles west from Ludlow. The park is approached by a fine Gothic lodge, close to a bridge which crosses a very deep ravine containing a rushing stream, the banks of which are clothed with fine Oak trees and luxuriant evergreens, and among the rocks many varieties of Ferns seem to be quite at home. After crossing this the visitor arrives at a fine carriage-drive, and is at once struck with the effect of the fine timber which skirts it, particularly a majestic Oak, which for symmetry and size can rarely be equalled. Approaching nearer the dressed part of the grounds, belts of Rhododendrons are met with, and Berberis aquifolium planted in large patches may be seen. These again are well backed up with Portugal Laurels, which here seem quite at home. Behind are clumps of Spruce Fir mingled with Oak and Beech trees, which fill up the back ground, spaces being left where fine plants of Deodar and Wellingtonia are planted, together with many of the best sorts of Pinus and Douglas Fir.

When fairly in sight of the Castle, the approach lies in a straight line. At the north wing of the Castle is the principal entrance; each side of the drive is planted with Golden Yews, and Juniperus alpina and pendula placed alternately, so as to form, as it were, sentinels. Each of these is accompanied by three Irish Yews, placed in an angle about 6 feet apart from the centre plant. The castle is a noble pile of architecture in the style of Edward the 3rd, with eight towers, three of which are entirely new, being recently built by the present proprietor, Andrew Rouse Boughton Knight,

Esq., who in addition to the towers has put the whole castle in thorough repair. On the south front is built a new terrace wall 150 yards in length, with bastions, turrets, loop holes, &c., to correspond with those of the castle; the width of the terrace at each end is 90 feet, and in the centre 66 feet. The length of the south front of the castle is 83 yards, a walk 15 feet wide runs the whole length of the terrace, from which smaller walks branch off to the principal entrance. Near the castle Mr. Nesfield has introduced raised beds with moulded stone edgings about a foot above the Grass. In a line with these are Irish Yews, Yucca gloriosa, and beds of Rhododendron myrtifolium; between the walk and parapet wall are matchless Irish Yews, Standard Portugal Laurels, &c., and in the centre bastion is to be introduced a handsome sun-dial.

At the east end of the terrace walk is a high tower, and at the west end is a very fine Cedar of Lebanon. On the west front is a large basin for a fountain, associated with which are two sunk panels for flowers, with stone edging, and beyond the basin on a raised slope is one of Mr. Nesfield's choicest patterns of embroidery, the principal features in the figures being two griffins, the bodies of which form a volute, divided by different coloured spar and flower beds. From this point is obtained a fine view of a new church built at Mr. Knight's expense, some half a mile distant, through an avenue, the trees being cut for that purpose. Outside the walk in the neighbourhood of this principal panel of embroidery is a dwarf Yew hedge, with Golden Yews placed at the angles and each side of the openings, steps, walk, &c.; these form pyramids higher than the hedge, and the golden tints contrast well with the dark green hue of common Yew. Under the upper south terrace is a lower one of much larger dimensions, the slope going rapidly down to the valley beneath, some 300 feet below the castle. This second terrace is also bounded by a parapet wall, with turrets placed at regular distances apart, but taking a curving outline to suit the position; beneath, on this lower terrace, are clumps of Portugal Laurel, common Yew and Thorns of great size; also immense clumps of Rhododendrons, 17 yards through and 12 feet high, feathered to the Grass and forming beautiful objects; close to these is a fine standard Portugal Laurel with an 8 feet stem, and forming a head 15 feet in diameter; through the valley beneath flows the river Team, forming a pleasing object, especially when viewed from the castle and terraces. The valley as seen from the terrace is about 36 acres, and as level as a bowling green; here the river is crossed by a bridge of three arches; immediately beyond the river rises a range of hills parallel with the terrace and extending more than 7 miles east and west, clothed here and there with fine timber, and dotted with handsome Thorns, the summits of the hills being furnished with clumps of Scotch Fir. Vistas having been recently cut through the densest parts, beautiful views have been opened up of trees and Grass alternately. Turning from this hill towards the north side of the park, the new church comes into view, in the direction of which a great deal of Oak timber has recently been cut down, offering a good opportunity of having open views, and bringing into notice the finest trees for forming groups and single specimens. Mr. Knight himself superintended this part of the work, aided by his steward and gardener. An avenue of suitable size leading from the castle to the church is to be planted with Wellingtonias, which at some future time will doubtless form a fine sight. A conservatory is also to be erected on the east end of the terrace, near the kitchen garden, where the late Mr. Knight carried on his many useful experiments in horticulture; many of the wall trees grafted by his own hand with various kinds on the same stem are still, after 30 years, in a fine vigorous state; only one of the old houses where he grew Pines, however, remains. A fine old Mulberry trained on a south wall, the gardener says, ripens fruit in perfection, and placing a net under it prevents the fruit from falling on the ground. The kitchen garden consists of 4 acres. The walls are covered with well-trained fruit trees, and the fineness of the vegetables grown shows the ground to be of good quality. There are five houses, three Vineries, and two Peach houses, whose contents are a credit to the gardener. Outside the garden wall is a fine range of pits, a house for Cucumbers, and another for French Beans and Strawberries; the whole is heated with hot water. More glass is about to be put up. The state and appearance of Downton, in short, indicate that the spirit of improvement is thoroughly alive here, at least as far as geometric gardening and erection of glasshouses are concerned. *J. N.*, 30, *Eastbourne Terrace.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c. — Let shading be used with caution, especially whenever the weather is in any way dull; for as some plants will soon be ripening their young wood, they want as much light and even moderate sunshine as possible. In the case of Orchids this is especially necessary, in order that the young leaves and pseudo-bulbs may be thoroughly matured. Plants pushed early into growth should be removed forthwith to a cool house, and care taken not to induce them to break again, as a fresh start would interfere with their flowering next year. Dendrobium nobile and others of that class sufficiently advanced should also be moved to a house where they could have a moderate and steady temperature, abundance of air, and little water till their stems are ripe and their flower buds formed. Orchids which are still in a growing state should be placed in the most favourable positions and encouraged by a nice temperature, for ripening and hardening any growths which they may yet make. Afterwards let them be put gradually to rest. Attend to plants for autumn and early winter decoration, such as Japan Lilies, Chrysanthemums, Scarlet Salvias, Tree Carnations, and things of that sort. Give them plenty of pot room, good rich compost, a moist atmosphere, and plenty of space for the proper development of their branches and leaves. Selago distans is a useful plant which should not be forgotten; it flowers freely and requires nothing beyond a cold pit to grow in. Epacrises, winter blooming Heaths, and Cytisus should likewise be cultivated in quantity, for few plants surpass them for winter decoration.

FORCING DEPARTMENT.

PINERY.—Continue to pot a few suckers, as they can be obtained of sufficient strength, and, as recommended last week, do not allow too many on one plant, as they weaken each other. Indeed, no sucker should be allowed to grow to any size that is not likely to be wanted for stock, and unless in the case of any scarce sort, never more than two on a plant. Plants growing in beds of soil must be very carefully attended to with water, giving enough at each application to moisten the whole body of soil; for unless this is attended to the bottom of the bed will sometimes get quite dry, while the surface is moist.

VINERIES.—Muscats, we must repeat, beginning to ripen should be assisted with fire-heat, for it is hardly possible to ripen these properly at any season without artificial heat; and those for late use should be pushed on so as to get them ripe by the end of August, at the latest; for those ripened later in the season are seldom of good quality, and we have always found them to hang better when ripened early in autumn than those that are ripened later in the season.

FLOWER GARDEN AND SHRUBBERIES.

Cuttings of Roses (where they can be obtained) may now be taken, and planted in a close cold frame in a northern aspect. In about a month they will have shown a disposition to strike root, when they may be taken up carefully, potted, and plunged in a slight bottom heat. Treated thus they make nice plants in a short time, and if kept under slight protection during winter will fill their pots with roots and be ready for planting out next May. Pink pipings put in early will soon be ready for transplanting. If the situation ultimately intended for them is vacant, they may indeed be planted there at once; but if occupied at present by something else, let the young Pinks be planted 4 inches apart on reserved beds in an open situation, the soil of which should consist chiefly of light loam, to which may be added some charcoal-dust or charred refuse. The rotten manure from an old Mushroom bed answers very well for Pinks, as it encourages a mass of fibres, and produces a healthy but not over gross development of top. As regards bedding plants some memoranda respecting their arrangement next season should be made as soon as they come well into bloom. Of the flower garden a rough plan should be made, the beds on which should be numbered and correspond with an accompanying list of plants with which it may be intended to fill them, and along with this should be the quantity required for each bed. In this way accurate information is at once obtained of the quantity of plants which must be propagated by cuttings, and both by these and seed in spring. Disappointment is thus prevented on the one hand, and waste of time and labour on the other. Whilst half hardy plants are in full beauty, a tasteful eye will easily discover the weak and improvable points, and by closely observing the more satisfactory part, will readily perceive the most desirable future arrangement.

HARDY FRUIT AND KITCHEN GARDEN.

The important operation of disbudding wall trees is one to which particular attention must now be paid. In carrying out this operation care must be taken to avoid an indiscriminate application of the principle; for example, Peaches and Nectarines when finally disbudded will require to have every shoot removed which is not required for the following year's fruiting. Apricots and Plums, on the contrary, being much disposed to bear on short spurs will only require to be deprived of their foreright and gross shoots, leaving the rest to grow until they become somewhat firm, when they should be shortened to about an inch from the main stems, taking care of course to retain a sufficient number of young shoots to fill up vacancies and increase the size of the trees. The same rule, with very slight exceptions according to the sorts, will apply to Cherries. Keep insects in check by means of heavy syringings both with tobacco and ordinary water. For mildew dust with flowers of sulphur, just wetting the leaves to make the sulphur adhere to them. Successional sowings of Spinach should be made as soon as those earlier put in appear above ground. Get a good breadth of Lettuce and Endive planted out for autumn supply. Make a further sowing of Turnips. Get a good breadth of Cabbage planted thickly in rich ground for early autumn use.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,

For the Week ending June 11, 1862, as observed at the Horticultural Gardens.

June.	Moon's Age.	Barometer. Max.	Barometer. Min	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep	Of the Earth 2 feet deep	Wind	Rain
Thurs. 5	☽	29 801	29.615	65	50	57.5	61	58	W	.29
Friday 6	9	29.632	29.514	67	55	61.0	61½	58	S W	.08
Satur 7	10	29.781	29.663	71	48	59 5	61½	58	S W.	.44
Sunday 8	11	29 928	29.815	71	36	53.5	61½	58	S W	.00
Mon. 9	12	29.965	29.931	68	34	51.0	60	58½	S W	.13
Tues. 10	13	29.937	29.683	69	44	56.5	60½	58½	S.	.04
Wed. 11	14	29.386	29.322	70	47	58.5	60½	58½	S.	.39
Average .		29.775	29.649	68.7	44.8	56.7	60.2	58.1		.64

June 5—Fine; rain; cloudy; rain.
— 6—Overcast, cloudy and rather boisterous; showers occasionally, very boisterous.
— 7—Fine, but windy; boisterous; very dry air; rain.
— 8—Very fine; boisterous; dry air; very fine; cold at night
— 9—Very fine; heavy shower with thunder; very fine; cold; nearly freezing at night.
— 10—Fine; low dusky white clouds; densely overcast, rain.

The nights, of the 8th and 9th were unusually cold for the season of the year, thermometer almost at freezing, and it is very remarkable that this occurred with a brisk wind blowing for several days from south-west.

Mean temperature of the week 2⅓ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK

During the last 36 years, for the ensuing Week, ending June 21, 1862.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 15 .	73.1	49 1	61.1	15	0.38 in	1	5	7	2	4	8	3	6
Mon. 16..	72.7	49.2	60.9	15	0.46	3	3	8	1	9	7	3	2
Tues. 17..	72.9	48.3	60 6	20	0.80	2	4	4	—	7	9	5	5
Wed. 18..	72.8	50 2	61.5	17	0.30	3	2	4	2	6	6	10	3
Thurs. 19..	71.1	49.3	60.2	19	0.62	2	3	3	2	3	11	6	3
Friday 20..	72.3	49.4	60 9	18	0.46	2	4	2	2	6	11	8	1
Satur. 21..	74.1	51.0	62.5	16	0.68	1	5	4	3	1	17	4	1

The highest temperature during the above period occurred on the 19th, 1846—therm. 93 deg.; and the lowest on the 15th, 1850—therm 30 deg.

Notices to Correspondents.

BOOKS: *C P.* If you read French, take Carrière's *Traité générale des Conifères.* If not, wait till some competent person enters the field. Our opinion of the Supplement to Gordon's Pinetum you will find in our next.

DECORATIVE GARDENING: *J M P.* We do not understand the exact nature of your proposal; but shall be glad of a drawing and further explanation.

GERANIUMS.—We have received from Messrs. Carstair & Sons, of Edinburgh, a very handsome forcing Geranium, which has "sported from Washington." The colour is a rich carmine with a tinge of violet on the three lower petals, and the blossoms are so firm that some were still quite fresh on the fifth day after leaving Edinburgh, although merely kept in damp cotton wool.

INSECTS: *Q H F.* We cannot pretend to advise you without seeing a specimen or drawing of the grub which attacks your Verbenas. Please send one.—*C F.* The inclosed were female Cocci full of myriads of eggs ready to hatch. Your trees will be ruined if you do not pick them off. *W.*

NAMES OF PLANTS: *W G T.* Andromeda axillaris.

ORCHARD HOUSES: *Q E D.* The Damson is a bad stock, though a few coarse sorts may be worked on it. Nectarines on spurs without leaves will fall off before ripening; the trees will thus relieve themselves naturally of superabundant fruit; but it is much better to remove it. We should be satisfied with 30 on a plant. You may turn Apricot plants out-of-doors now; keep them growing in as sunny and dry a place as possible and their wood should ripen, even in the south of Scotland; if not put them back into the orchard house at the end of September, for a month. Plums will take care of themselves. You *may* transplant in November stocks budded in August; but it is better to let them stand *in situ* for a year.

PEACH TREES: *The Countess de M.* The branches and shoots of Peach trees, which you forwarded, have been killed from gumming; but from what cause this has arisen we cannot exactly say. Your gardener attributes the state of the trees to bad ripening of the wood, ungenial soil, and bad pruning. These circumstances, conjointly or separately, may have contributed to the evil. The past season however was not unfavourable to the ripening of the wood—quite the contrary. But the untimely frost in October, 1859, the severe winter which followed, and the ungenial summer of 1860 injured the constitution of Peach, Nectarine, and Apricot trees, so much that whilst some in consequence were killed entirely, others have died off branch after branch by gumming, like the specimens you sent. Your garden is doubtless well drained; but from the gravelly nature of the subsoil we presume the trees are very liable to suffer at times from dryness at the root. That should be *particularly guarded against*; for it is a cause of gumming, and tends to the ultimate ruin of many trees ‖

RHUBARB: *Gilling Castle.* It looks like Buck's; but it had got so much smashed in coming through the post that it is impossible to say with certainty whether it is that variety or not. ‡

VEGETABLE SEEDS: *X—ny.* To print your complaint would be in the highest possible degree unjust. We have never shown any inclination to screen those who impose upon the credulity of the public. But in your case you charge a most respectable house with dishonesty, and in a matter in which it so happens that we know you to be wrong, because we have purchased the very same thing and found the seed perfectly good. It is not fair on the part of gentlemen who don't know how to sow seeds to condemn the seedsmen who supply them.

VINE GROWING: *J H.* The mixture of Vines is right, because they all require the same temperature. The cause of their illness is plain. Their roots are dead or dying, no doubt owing to their having penetrated some bad soil—very likely they have got away from the surface and found their way to wet clay. Examine the roots carefully; get them into good order, and all will be well. The older the Vines the better for the quality of their Grapes.

VINES: *T Hatherly.* Your Vines have been attacked with mildew when the bunches were in a very early stage of growth. The dusting with sulphur through a muslin bag has so far stopped the disease, but the mischief to the present crop is beyond remedy. The skin of the berries, where it appears black, is completely killed; it will expand no more, and the berries will all crack. But you should apply sulphur very liberally in order to prevent the Oidium from attacking the young shoots, only you must not use it in the way you state your predecessor did, who "took a shovelful of fire, put it in the middle of the house, then put a lot of sulphur on it, which killed all the Vines!" Dust on flowers of sulphur *early* next season, to *prevent* what you cannot *cure.* ‖

THE LONDON MANURE COMPANY
(Established 1840,)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

IN compliance with orders just received from the Peruvian Government, our price for GUANO has been advanced This Evening to 13*l.* per ton, for 30 tons and upwards, 14*l.* 5*s.* for one ton up to 30 tons.
Anty. Gibbs & Sons,
15, Bishopsgate Street Within, London, E.C., June 3.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. Macadam, Secretary,
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0
These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.
BURNARD, LACK and CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.
Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures.'
Extract of Opinion from Dr. Voelcker, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

MR. JAMES BLACK, formerly Factor for Sir Norman Macdonald Lockhart of Cornwarth, Mr. Gordon of Ellow, and Mr. Cunningham of Larnshaw, has been induced to commence business in London as a LAND AGENT, VALUER, and DRAINAGE ENGINEER, and trusts from his large and varied practical experience to merit the patronage and support of Landed Proprietors and the public in general.
20, Great George Street, Westminster, S.W.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5*s.* per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. Humbert, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To Landowners, the Clergy, Estate Agents, Surveyors, &c. in England and Wales and in Scotland.
The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

ROYAL AGRICULTURAL COLLEGE CLUB.—The ANNUAL DINNER will take place at the Cremorne Hotel, Chelsea, S.W., on THURSDAY, June 26, at 6 o'clock.
Each Member can introduce a friend. Tickets to be obtained of John Coleman, Esq.
Royal Agricultural College, Cirencester.

ROYAL AGRICULTURAL SOCIETY of ENGLAND—1862.
GREAT AGRICULTURAL SHOW of HORSES, CATTLE, SHEEP, PIGS, and MACHINERY, in BATTERSEA PARK, LONDON, JUNE 23 to JULY 2.
Terms of Admission:—
MONDAY, June 23 .. Machinery Yards .. Half-a-Crown
TUESDAY, „ 24 .. „ .. „
WEDNESDAY „ 25 .. „ .. „
WEDNESDAY „ 25 .. Cattle Yard (day on which the Judges award the Prizes) One Sovereign
N.B. Persons who pay the Half-a-Crown Admission into the Machinery Yard can pass into the Cattle Yard on paying the additional 17*s.* 6*d.*
THURSDAY, June 26 ENTIRE SHOW (Live Stock, Machinery, &c.) } Five Shillings
FRIDAY, June 27 .. „ .. Half-a-Crown
SATURDAY, „ 28 .. „ .. „
MONDAY, „ 30 .. „ .. One Shilling
TUESDAY, July 1 .. „ .. „
WEDNESDAY, „ 2 .. „ .. „
Members Free.
Open each day from 8 in the morning till 8 in the evening, except last day, when the Yard will be closed at 6 o'clock.
On THURSDAY, FRIDAY, and SATURDAY, June 26, 27, and 28, there will be a PUBLIC EXHIBITION of STEAM CULTIVATORS at WORK, from 11 a.m. to 4 p.m., near Farningham Station, in Kent, a distance of 24 miles from the Victoria Terminus of the London, Chatham, and Dover Railway.
By Order of the Council.
H. Hall Dare, Secretary.

The Agricultural Gazette.

SATURDAY, JUNE 14, 1862.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

Wednesday, June 18	Sale at Babraham. Agri. Society of England .. .. .. Noon. Messrs. Blundell and Elliot on Farm Buildings and Cattle Feeding.
Monday, — 23; Tuesday, — 24; Wednesday, — 25	Great Meeting of Agri. Society in Battersea Park. Implement Yard open: admission, 2*s.* 6*d.* Members free.
Wednesday, — 25	Cattle Yard open from 8 a.m., when the Judges commence inspecting the Stock. Admission 1 sovereign. Members free.
Thursday, —	26—Admission 5*s.*
Friday —	27, and Saturday, 28—Admission, 2*s.* 6*d.*
Monday, —	30, Tuesday, July 1, and Wednesday 2—Admission 1*s.*

"In compliance with orders just received from the Peruvian Government, our price for Guano has been advanced this evening to 13*l.* per ton for 30 tons and upwards, 14*l.* 5*s.* for one ton up to 30 tons.
Anty. Gibbs & Sons,
15, Bishopsgate Street Within, London, June 3."

We reproduce this very important advertisement, which was published last week. The Peruvian Government could not more effectually foster the artificial manure manufacture than by the orders which have thus been given. The heavy tax, for it amounts to that on all who have been dependent on Peruvian guano for the growth of their root crops, thus without notice levied on the English agriculturist, has its advantageous aspect. We hear of wealthy Lancashire manufacturers and mill-owners who declare they would gladly bear the brunt of pauperism, and heavy poor's rates, and working at a loss for a couple of years or more, rather than that cotton should at once regain its former price. They look forward to the time when, fostered by these high prices, the Cotton cultivation in India and elsewhere shall be an established and successful undertaking, so that they may never again be left dependent on the ability or will of the Southern planters for their supplies of it. And in like manner we may hope that the Peruvian Government may see it to be their interest to continue the excessive price of guano, even though it be to the present injury of English agriculture—confident of this, that more than any premium of 1000*l.* offered for a substitute, it will promote the efforts of manure makers, and tend to the provision of an adequate supply against the time when Peruvian stores shall have been exhausted.

The present advance may be justified by an unusual demand for the manure as compared with an unusually short supply of it; or it may be justified by the fact beginning to be realised that the supplies are limited and capable of exhaustion. In the one case it will mightily encourage and in the other it will soon necessitate redoubled attention to the utilisation of all the waste materials of fertility which are now to a great extent neglected.

An influential deputation to present a memorial concerning the regulation and purification of the Thames waters had an interview with Secretary Sir George Grey on Tuesday of last week at the Home Office. The memorial stated that the area of the Thames and its tributaries may be computed to contain 6000 square miles, and no systematic provision has as yet been made either for regulating the several branches of the waters in the Thames basin on a common plan, or for deterring the towns on the several parts of it from casting their sewage into the streams.

The unregulated action of floods inflicts damage on many lands adjoining the river, and is injurious to the health of the district. And, whereas a report on the Thames Basin with reference to these several particulars would establish principles applicable to other river systems, improve the water supply of the metropolis, and yield much information of service to the nation at large, the memorialists solicit the Government to issue a commission of inquiry, or to cause full inquiry to be made in such way as they may see fit, into the condition of the Thames and its tributaries (the immediate district of the metropolis being excepted from such inquiry, as already under special jurisdiction); to inquire what defects exist; and to report what remedies can be applied to such defects, having regard generally to all purposes by which the river and its branches, or lands adjoining to them, may be improved; but especially to the purification of the Thames waters for the use of the metropolis and of the towns in the Thames district, as well as the amendment of the population which adjoins them.

On the previous Wednesday the Rev. J. C. Clutterbuck, one of the promoters of the memorial and one of the deputation who presented it, read a paper before the Oxford Farmers' Club, in which the records of rain gauges during the spring months of this year were compared, in order to discover some law by which flood waters may be anticipated and thus possibly provided for. The injuries done to the Thameside meadows by this year's excessive rainfall, render the subject of great local interest, and there are so many other localities in the same predicament, some suffering much more than any on the Thames from excessive waters, that the subject has thus acquired general interest. And it is to be hoped that, with a view both to regulated volume and regulated purity, a commission may issue to inquire as to the possibilities of an improvement which, as regards the Thames, is extremely desirable.

The subject of Farm Capital, which was discussed last week before the London Farmers' Club, being necessarily connected with the whole range of farm practice and experience, gave occasion to the introduction of a good many topics. Town sewage, the preservation of game, excessive holdings, stock taking, relations of landlord and tenant, Scottish practice, leases, &c., were mooted in succession—many of them very properly, others as it seems to us without much relation to the subject on the card.

Town sewage for instance, to which, led by Mr. Mechi, Mr. Bailey Denton and Mr. Sidney both adverted, has very little indeed to do with the question of Farm Capital.

Mr. Coussmaker, of Guildford, very properly spoke of the need, in order to profit, of both landlord and farmer taking no more land than they had sufficient capital for the proper management of.

If landlords would not purchase more land than they were in a position to improve, or tenants take more than they could cultivate in the best manner, the result would be better both for them and for the country. Many a farmer who has just capital enough to cultivate 200 or 300 acres makes the egregious mistake of taking 500 or 600, trusting to good luck or borrowed capital for the result; and we well know what that result too frequently was. Moreover, the possession of adequate capital does not always go hand-in-hand with the knowledge of its best application. Many a man having a considerable amount of capital goes into the pursuit of agriculture without knowing how to set about it; or if he have the requisite knowledge as well as capital, he has many other things to attend to, and hence is obliged to leave much to others. Of course, he did not mean to deny that there were trustworthy agents to be found; but in agriculture, as in other pursuits, if a man wished to succeed, he should look well after his own business.

Mr. Ramsay, of Newcastle, did not believe that the application of capital to farming could possibly overtake the margin between the wants and the supplies of our consumers.

As a practical farmer he must say Mr. Mechi went much further than he could go along with him. This country produced from 18 to 20 million quarters of Wheat, and it imported about 10 million quarters. How they were to increase their Wheat harvest from 18 to 28 millions he really could not understand. He himself grew, he believed, as large crops as almost anyone, but he did not see how he was to make such a per-centage of increase as that. There was not likely to be any want of capital in agriculture for the pur-

poses of improvement; on the contrary, capital overran produce.

Mr. SMITHIES disputed another remark of Mr. RAMSAY'S, that the relation of landlord and tenant being the subject of personal bargain, was not a proper one for discussion before that Club. He said—

He could not concur in that opinion, because, supposing Mr. MECHI to be correct in the information he had laid before the Club with respect to the amount of money employed, the inquiry naturally suggested itself, why so small a sum was employed. And he himself could not help thinking that it was traceable to that question of landlord and tenant, between whom the arrangements were such as must discourage the investment of capital in the land in such proportion as would pay. He thought, therefore, they could not too often bring before the landlords of the country the opinions entertained by the tenants upon that subject. True, it was not necessary to find fault with landlords as to the way in which they let their land, but they might be fairly recommended to adopt a different system, inasmuch as it would be for their advantage to do so. Mr. COUSSMAKER had pointed out the mistake committed both by landlords and tenants—the former in purchasing and the latter in renting more land than their capital justified them in doing, and in that gentleman's remarks he perfectly agreed.

Mr. SIDNEY referred to Mr. MECHI'S views on town sewage, declaring that the original plan by hose and subterranean pipe is everywhere abandoned. He also condemned Mr. MECHI'S recommendation of joint stock companies for agricultural purposes.

He could not help thinking that farming was an art the success of which depends so much upon the individual skill and experience of the farmer that it was one of the very last things that ought to be made the subject of a company's operations.

Mr. BRADSHAW, of Knowle, Guildford, spoke of the great increase in the value of land, which had arisen from many causes besides the increased application of capital.

He knew land in his neighbourhood which, 60 years ago, let at 7*s.* an acre, that was now rented at 35*s.* an acre. And what was the reason of this vast increase in its letting value? It arose from various causes; the chief of which were the augmented power of consumption by the people of this country, and the improvements that had been effected in agriculture. These two causes went hand in hand, and the owner of the land, which was the raw material, of course took advantage of the competition which had ensued from the occupation of his land. Seven years ago there was land near him that let for 13*s.* or 14*s.* an acre; but the improvements which had been introduced within that period had raised it to 40*s.* an acre. The fact was, that that land had wanted improvement, and was now made productive. The landlord would always make the best bargain he could, and so long as a great competition to possess land existed amongst farmers, he would avail himself of the circumstance to the utmost.

Mr. COLEMAN, of Park Farm, Woburn, said that a large portion of the capital employed in the land did not belong to the owners or the occupiers; and a larger sum was often paid for the use of it than should be considering the value of the security. As to the use of town sewage:—

He admitted that farmers could not fairly be expected to bring the sewage to their land; but let a company or the townspeople convey it there, and he ventured to say they would gladly make use of it. No one could doubt that the application of sewage would be beneficial if the inhabitants of towns would get rid of a nuisance to themselves by placing sewage at the farmers' disposal. As to farming profits, though many seemed to regard them as a myth, profits were made, and in some instances were large profits.

Mr. SANDERSON, of Cannon Row, Westminster, referred in succession to the profitableness of the various portions of the capital of the farm:—

The tenant's capital in the land might be divided into three parts—first, that which he invested in stock and crops; secondly, that which he gave his predecessor for the unexpired interest left by him in the soil; and thirdly, what he expended in permanent improvements. Passing over the first as not requiring any observation, he came to the second, namely, the claims of the predecessor. This he regarded as a worthless expenditure of capital. The custom was injurious to British agriculture, as it absorbed at the outset a large portion of the tenant's capital, and crippled him as regarded the carrying out of profitable improvements. He knew that some supposed it to be essential to good farming. No such thing: heavy out-goings were often found in connection with inferior cultivation. He knew large farms in Roxburghshire and Berwickshire which had changed hands without anything of that kind, and the style of farming in those counties was quite equal to the best cultivation in this country. As regarded permanent improvements, he considered it the landlord's place to effect drainage; but where he failed to do so, there was no outlay of the tenant's capital which would prove more profitable to the tenant himself. He had come to the conclusion that drainage yielded 12 per cent. for the outlay. Next to drainage, liming was generally the most profitable expenditure on the part of the tenant. Lime usually yielded good interest the second and third crops, and a profit the fourth crop after it had been applied. With respect to manuring, which might almost be considered a permanent improvement, he thought there was a great deal of misapplied capital. When farmers applied artificial manures to grain crops, there were strong grounds for suspecting that they did not understand as they ought to do the preparation of home-made manures. If green crops were properly managed and cared for, grain crops would take care of themselves. With reference to labour, also, there was much useless expenditure of capital. How often did they see on one farm a pair of horses drawing a plough; while on an adjacent farm, with exactly the same kind of soil, they saw a plough drawn with three or four horses, and a boy to guide them? He was sorry to hear Mr. MECHI introduce works which were now quite obsolete as authorities on this subject.* Mr. MECHI stated the average amount of capital invested at 4*l.* per acre. He (Mr. SANDERSON) had consulted a great many persons on the subject, and arrived at the conclusion that the average was 5*l.* As much as 12*l.* per acre was, in his opinion, required to farm land properly, now that they had steam cultivation, artificial manures, and so many other improvements. He knew many farmers in Scotland who had spent more than that per acre; and he would mention four cases in the counties to which he had alluded—Roxburghshire and Berwickshire. A tenant farmer, who farmed 600 acres, applied in four years 4800 tons of lime; another, who occupied a farm of 500 acres, expended in seven years 2500*l.* on lime, and 3500*l.* on drainage; a third, who occupied about 700 acres, had in five years expended on drains 4040*l.*, upwards of 5000*l.* on lime, and nearly 2000*l.* on stable and artificial manures; a fourth, who farmed 900 acres, in one year only laid out 3500*l.* on lime, and 2520*l.* on drainage. The remuneration of individual farmers was almost problematical, as storms, bad seasons, and other evils might overtake any one; but he believed that in general farmers obtained a very fair remuneration, and that it was usually those farmers who spent the largest amount on the land that got the largest amount of remuneration. He regretted that Mr. Mechi had not once referred to the question of security of tenure, which lay at the foundation of agricultural improvement. Let leases be generally granted, and the doors of agricultural improvement would be thrown wide open, and there would soon be a system of agriculture in this country worthy of an advanced age, and suited to modern requirements.

SUCCESSFUL LAND-MANAGEMENT IN FRANCE.

LE Comte de Gourcy has given in his recent book the details of agricultural improvement by an enterprising proprietor in the departement of the Loire Inférieure, which present good suggestions to British capitalists who have purchased estates in Ireland on speculation, and to those of the native proprietary who possess the pecuniary means of pursuing the system which M. Liazard has introduced with such great results on waste or ill-cultivated land. His system would in many instances remove the pretext for evicting industrious and honest families, which are prevented from progress and success in husbandry by their total want of capital. M. Liazard purchased the property of Tréguel, in 1851, for 160,000 francs. It contained 280 hectares (about 800 acres), of which 65 were under wood and 30 bad pasture, with a handsome new house on the land. Subsequently M. L. added to this tract about 55 hectares, for 31,000 francs. By a recent valuation, the whole has been estimated, without including the value of buildings (estimated at 463,500 francs. In 1851 the lands of Tréguel produced a rental of about 3000 francs. Five *métayers*† who held the ground, cultivated altogether less than 40 hectares, the rest of the land was covered with Broom and Heath (*landes*), with the exception of the 30 hectares of bad Grass; those occupiers were wretchedly poor, three out of the five families dwelt in the court-yard of the chateau.

M. Liazard proposed to them the following conditions of occupation:—Calculate how much you could lay by after the support of your families on an average of years, and I will guarantee you against loss in that respect if you should not derive as much benefit from the new system I mean to introduce.

We shall go to a notary, you shall acknowledge my regret to dispossess you of the farm at Martinmas in any year, if I am dissatisfied with you, on giving you six months previous notice; you shall covenant also to follow my instructions as to the management of the land. I shall reduce the extent of your holding to 25 hectares immediately about your farm buildings, and you shall have with that 5 hectares of meadow land adjacent. We shall divide the produce equally between us, excepting the crops and fodder consumed by the stock on the farm. I shall supply all manures required, in addition to what will be made on the farm, so that you may have the best crops the seasons will permit, and you shall repay half the cost of such extra manure after the first two crops. Three of the métayers rejected these proposals and went elsewhere; the other two remained. The proprietor settled them each in the centre of 25 hectares with 5 of meadow land; he divided each farm into 4 divisions for a regular rotation of crops—1 for Colza transplanted in ground well tilled and manured, 2 for Wheat dressed with artificial manure, 3, half under common Clover, and half Trifolium incarnatum or winter Vetches; transplanted Mangels or Swedish Turnips succeeded the Trifolium incarnatum, and Oats or Buckwheat succeeded the Vetches and the common Clover.* Potatoes, large Cabbages, and Colza, &c., were also planted on this division.

M. Liazard supplied the métayers with as much manure as could be profitably employed, and he made them perform all the labour. They had paid to the former proprietor annually from 1000 to 1100 francs for an extent of 100 hectares, which they held together; and now, at the end of a few years, they pay the enterprising landlord 10 times that amount. They are now living comfortably, have good furniture, and are well clothed, and in short have all the appearance of happiness; their cattle-sheds are full, and all their crops are excellent.

M. Liazard having given these two families 60 hectares, cultivated the rest, *i.e.*, about 175 hectares, gradually increasing the area of culture, draining, and liming very extensively, using "noir animal" soot, wood ashes, guano, refuse of fish from Nantes, &c., with great success.

His own farm stock, which is very large, includes some Ayrshires and Durhams, and his sheep are Southdowns and Southdowns crossed with Merinos. He is acknowledged to be the best agriculturist in his department. M. Liazard having seen that he was deriving great profit from his system of dealing with the two métayers, by giving them instruction, and manures for every sort of crop, was led to rent from one of his neighbours for 10 years two farms; for the first, containing about 80 hectares (three-fourths of which was in a state of nature), he pays 1100 fr. a year; for the second, which contains 27 hectares—all under cultivation—he pays 900 fr. Two métayers, who occupied them at once accepted his conditions, and each having got from him, in the two first years, manures which cost 3600 fr., realised from the crops of the first year more than 2000 fr. net profit (after paying his stipulated proportion of the cost of those manures, and all other charges) and more than double that sum after the second year of his occupancy.

M. Liazard states that to start a metayer (of whom he has nine) with everything needful on a farm of from 20 to 40 hectares, a capital of from 2000 to 3000 fr. is required; the advance for manures amounted for each of the two first years to 1500 fr.; the increased produce of the two first years would be sufficient to pay for the purchase of manure for succeeding years, and in a few years after the first advance, the 3000 fr. would be available for the improvement of a second farm, and so on.

M. Liazard gives an honarary prize annually amongst his métayers, which stimulates them to increased exertion. He has distributed the best seeds in his neighbourhood, all his male animals are gratuitously available to the public, and his example has been useful in improving husbandry in his neighbourhood, for even the small farmers use good ploughs, and are beginning to grow, on a small scale, Turnips, Mangels, Clover, Colza; they till deeper, and often come to look at the improvements, machinery, and stock of M. Liazard. This enterprising gentleman obtained at the last Paris Exhibition the large gold medal, and half a dozen other medals in gold, silver, and bronze, for his stock and farm productions. He is so confident, after an experience of eight years, of the immense advantage of his mode of dealing with his métayers, that he has lately rented about 600 hectares in different parts of Brittany to improve them in the same manner, and also in the hope that this example, presented in various localities, will induce other proprietors to follow his steps.

It is gratifying to learn from M. de Gourcy that other proprietors in the west of France are taking great interest in farming matters. The Princess Bacciochi (who has lately purchased a great tract of wild land near Vannes), and several of the noblesse, had sent many animals to a cattle show, and are conferring substantial services on their respective districts by the good examples they afford in importing seeds and good agricultural implements and machines, and good breeds of cattle, and stimulating the employment of the poor peasantry. *Martin Doyle.*

* The works referred to by Mr. Alderman MECHI were SPACKMAN, M'CULLOCH, PORTER, the 20 Journals of the Royal Agricultural Society, "Morton on Soils," MORTON'S "Encyclopædia of Agriculture," STEPHEN'S "Book of the Farm," BACON on the Agriculture of Norfolk, CAIRD'S Reports, LOW on Scottish Farming, and LEONCE DE LAVERGNE ("Rural Economy of Great Britain and Ireland"). Mr. SANDERSON is, we think, bound to name the works which ought to have been consulted.

† Occupiers, who contract to give the proprietor fixed shares of the farm produce.

* There is no mention of the treatment of the 4th division, which probably was under Grass—or it may be in fallow—not yet exploded in France.

INTERNATIONAL EXHIBITION.

COLONIAL AGRICULTURE.

Corn and wine, "milk and honey," cotton, wool, and flax, and timber—colonial agriculture is a much larger subject than that of Britain only. "Here are lands and seas, spice lands, corn lands, timber lands, overarched by zodiacs and stars—clasped by many sounding seas—wide spaces of the Maker's Building fit for the cradle yet of mighty Nations and their Sciences and Heroisms. Fertile continents still inhabited by wild beasts are mines into which all the distressed populations of Europe might pour themselves and make at once an old world and a new world human." This magniloquent description of her colonies, which Carlisle put into the mouth of the mother country some 10 or 12 years ago, is already becoming superannuated. The mighty nations have since that time actually grown into being—estimated only by population and still more by industry and its fruits, Canada and the Australian colonies may be already so described. These fruits are shown in great profusion and in all their wonderful excellence in the North-east Transept. Gold, and wool, and grain, cotton and wine from Australia; timber, grain, furs, minerals, and agricultural machinery from Canada.

The Catalogues of the New South Wales and Canadian collections are worthy of all praise; the former especially giving an admirable account of the wealth, condition, and resources of the colony. We learn from it that New South Wales has a population of 350,860, of whom 15.39 per cent. are agricultural. The live-stock in the colony at the end of 1860 is stated along with that of the other Australian colonies in the following table:—

"In 1796 the whole of the live stock in the colony, exclusive of goats and pigs, was 57 horses, 227 cattle, and 1,531 sheep; and from this stock have sprung the vast flocks and herds which were feeding on the natural grasses of Australia at the end of 1860, as exhibited in the following table:—

Colony.	Sheep.	Cattle.	Horses.
New South Wales	6,119,163	2,408,586	251,497
Victoria	5,794,127	683,534	69,288
Queensland	3,449,350	432,890	23,504
South Australia	2,824,811	278,265	49,399
Tasmania	1,700,930	83,366	21,034
General Totals ..	19,888,381	3,886,641	314,722

"The returns of agriculture, taken on March 31, 1861, give a total extent of land under cultivation of 260,798 acres. Of this quantity not quite one-half (128,829 acres) was sown with Wheat; nearly one-fifth (51,488 acres) with Maize, or Indian Corn,; another fifth with Barley, Oats, and artificial Grasses for hay and green food for horses and cattle; and the remainder was appropriated to Potatoes, vineyards, and orchards.

"The average production of Wheat is a little over 15 bushels per acre; this is less than the average produce of Tasmania and of Victoria by 3 to 5 bushels, and rather above the average of South Australia. Except in seasons of extreme drought the colony has, on an average, raised rather more than one-half the quantity required for the annual consumption of its inhabitants. In the ten years (1851 to 1860) there have been imported of grain and bread stuff from South America, California, and South Australia, to the annual average value of 370,000*l*. For the whole period a total sum of 3,701,256*l*. has been expended in the importation of bread stuff (including rice) for the support of the population. The production of Wheat in 1860-61 was at the rate of 4½ bushels per head of the population, whereas the consumption per head may be reckoned at 7 to 8 bushels, including the quantity required for seed.

"Maize is grown largely as food for horses, pigs, and poultry. New South Wales and Queensland are the only two of the Australian Colonies which are adapted by climate to the production of this valuable cereal. The average production is rather over 30 bushels per acre.* It is largely exported to Victoria and the other colonies. No less than 559,226 bushels were shipped outwards last year, of the estimated value of 92,450*l*.

"Much attention has of late years been bestowed on the cultivation of the Vine and the manufacture of wine. There were last year in crop 1,583 acres, but 622 acres only were devoted to wine making. The produce was 99,791 gallons of wine and 709 gallons of brandy, or at the rate of about 160 gallons per acre.†

"The wines of Australia are too well known to need any remarks here as to their character, and the samples which have been sent to the Exhibition will speak for themselves."

Of all these commodities samples are shown in the New South Wales collection. Remarkably fine samples of Maize in cob are shown by 12 exhibitors. Wheat is shown by eight exhibitors; a very fine sample by Mr. S. S. Clements, of Bathurst, and three samples shown by Messrs. MacArthur of the harvest of 1861, may be selected from among the others. The Wheat is of two kinds, one large grained, and the other extremely small. Among Messrs. MacArthur's samples is one of very large and fine grain, which weighed in the colony 68 lbs. per bushel.

Cotton and wine are also shown by New South Wales, and especially by Queensland, lying to the north of it. As, however, the samples in the New South Wales collection are, we believe, excelled in quality by those from the hotter climate, so her grain is beaten by that shown from Victoria in the colder climate to the south of it. Queensland, on the other hand, shows samples of a rather coarse Red Wheat. A large case of Wheats, Barleys, and Oats has just been erected in the Victoria collection on which agricultural visitors will look with astonishment. Among the samples of Wheat is one numbered 26, which weighed no less than 69 lbs. 4 oz. in the colony, and which now weighs 68½ lbs. It is a large translucent grain. There are, however, samples of a very fine cream-coloured, small-berried Wheat almost rivalling this weight. A sample of Barley grown by Mr. Grant weighs 58 lbs. 5 oz. per bushel. The Oats, too, are remarkably fine. A long Tartarian Oat weighs no less than 49 lbs. 4 oz. per bushel—a weight which, rarely reached by any variety, is, we should imagine, altogether unparalleled in the case of Tartarian Oats.

The South Australian Colony is also very rich in samples of grain; there is, for instance, a sample of the harvest of 1862, cut in January of this year, which weighed in the colony 68 lbs. 1 oz. per bushel, and 10 or 12 other bushel samples of grain varying from 64 to 67 lbs.

The West Australian Colony exhibits Wheats and Maize, and especially a fine collection of woods, but it is for its wools and its alpaca that it is more especially remarkable. The wools from all the Australian Colonies are, after all, the representatives of its greatest Agricultural wealth. Both here and among the grains the English farmer looks on specimens representing quality which his climate forbids his ever hoping to rival.

* On rich land 70 bushels per acre have not infrequently been grown.

† The average produce of the vineyards of France is computed at 190 gallons per acre.

TOWN SEWAGE.

[Report of experiments on the application of Town Sewage to Grass lands, conducted at Rugby, during the season of 1861, by order of the Royal Sewage Commission.]

At Rugby, the whole of the available sewage of the town is rented by G. H. Walker, Esq., and, after being collected in a large tank erected for the purpose, it is distributed by means of a steam engine, through iron pipes laid down for the supply, to about 470 acres of mixed arable and Grass land, but chiefly the latter; hydrants being fixed at intervals along the lines, for surface distribution, either by hose or open runs. These arrangements being well adapted for the purposes of their inquiry, the Commission have, through the kindness of G. H. Walker and J. A. Campbell, Esqrs., been able to experiment upon about 15 acres of Grass land in the neighbourhood of Rugby, supplied with sewage as above described. It consisted of two fields, one of about 5 and the other of about 10 acres, in each of which a tank of known capacity (holding about 3¼ tons) was fixed, by means of which the amount of sewage applied to any required portion of land could be accurately gauged. From these tanks, too, when full, samples of the sewage were taken at stated intervals, for the determination of its chemical composition.

The practical objects to be attained in the experiments, were:—

1. To ascertain the amount of increase of produce yielded by different quantities of sewage of known composition.
2. To determine the most profitable method of employing the produce; that is, whether it should be employed in the green state or as hay, whether for the production of milk and butter, or of meat; and whether it should be consumed alone or in conjunction with other food.
3. From the knowledge arrived at on the above points, to provide such information as may be taken as the basis of arrangements for the application of the sewage of towns, in the manner most advantageous both to urban and rural interests.

One of the experimental fields, comprising about 5 acres, and the one of 10 acres, being divided into two equal parts, there were three portions of land of about 5 acres each. After careful consideration it was decided that each of these three portions should be supplied with sewage as follows:—

1 acre at the rate of 3000 tons of sewage per annum
1 ,, ,, 6000 ,, ,,
1 ,, ,, 9000 ,, ,,

The remainder to be unsewaged.

The produce of one of the sets of experiments, of 5 acres, was to be given, in the green state, to fattening oxen; that of a corresponding set to be consumed green by milking cows; and that of the third to be made into hay.

The fields were laid out for the purpose in small surface drains, or "runs," by Mr. Bickford, according to the plan described in Vol. XIII. of the Journal of the Royal Agricultural Society of England.

In the 5-acre field, the produce of which was to be devoted to the feeding of oxen, the application of sewage commenced on March 6, 1861 (none having been applied in 1860), and the quantity applied on the respective plots up to the time of the last cutting of the Grass on each, was, upon the whole, pretty nearly at the rate intended, namely, that of 3000, 6000, and 9000 tons per acre per annum.

The 10-acre field had been dressed with undetermined amounts of sewage during February 1861, by the previous tenant, and fed very close by sheep and other stock up to nearly the end of March, and the application of sewage under the direction of the Commission did not commence until April 1. Unfortunately, the amount of sewage obtainable in this field was very much less than that desired; so much so, that the plots on the portion allotted to be cut green for milking cows did not receive the quantity intended, even though, after a few weeks, the application on the portion devoted to hay was entirely abandoned, in the hope of securing enough for the other.

Quantities of Sewage applied, and of Green Produce obtained, per acre, in each of the Two Fields.

The following Table (I) shows the quantities of sewage to be applied per acre, per annum, on the different plots; the quantities required, at these rates, up to the time of the last cutting of the Grass; the quantities actually applied up to the time of the last cutting; the produce of green Grass per acre; and the increase of produce obtained for every 1000 tons of sewage applied.

Table showing the amount of Sewage applied, and of Green Grass obtained, per acre.

	Sewage.	Produce.	
	Quantities actually applied to Date of last Cutting.*	Total Green Grass per Acre.	Increase of Green Grass for each 1000 tons of Sewage applied.*
Five-acre Field—Produce given to Oxen.			
	Tons.	Tns. cwt. qr. lb.	Tns. cwt. qr. lb.
Plot 1 (2 cuttings)	None	9 5 3 7	....
Plot 2 (4 cuttings)	1872	14 16 3 10	2 19 1 7
Plot 3 (4 cuttings)	4788	27 1 0 20	3 14 0 25
Plot 4 (4 cuttings)	6713	32 17 0 11	3 10 0 23
Half of 10-acre Field.—Produce given to Milking Cows.			
Plot 1 (2 cuttings)	None	8 18 0 26	....
Plot 2 (4 cuttings)	1503	15 16 3 11	4 12 0 25
Plot 3 (4 cuttings)	3145	22 15 2 25	4 8 0 26
Plot 4 (4 cuttings)	4678	26 13 3 21	3 16 0 4

The two fields were nearly a mile apart; the 5-acre one was nearly level, and was rented at 3*l*. per acre; the 10-acre one was considerably sloping, and was rented at 5*l*. per acre. When, in addition to these facts, the different previous condition of the two, as already referred to; the different amounts of sewage actually applied up to the time of the last cutting; and the fact that the dates of the cutting on the respective plots differed according to amount of sewage, and the consequent progress of the Grass are taken into consideration, it appears probable that the amounts of produce would under equal circumstances bear a very close relation to the quantity of sewage applied, pretty nearly up to the maximum limit contemplated.

The produce without sewage was, in each field, equal to rather over 2 tons of hay per acre. It was rather the less in the higher rented 10-acre field; doubtless owing to the fact that the Grass had there been fed down so close in March, before commencing the experiment.

Results of the Experiments with Oxen.—Ten Hereford oxen were tied up in a shed; two to be fed on unsewaged Grass, and the remaining eight to receive sewaged Grass, as it was ready to cut, indiscriminately from the 3 acres to which sewage was to be applied respectively at the rate of 3000, 6000, and 9000 tons per acre per annum. The animals had the Grass alone for a period of 16 weeks; namely, from May 27 to September 16. They had then, for a further period of four weeks, in addition to the Grass, 4 lbs. of oilcake per head per day.

The following Table (II.) relates to the period during which the oxen had Grass alone; and it shows the quantities of sewage designed to be applied, and the quantities actually applied to the date of the last cutting on each plot; the average amounts of unsewaged and of sewaged Grass consumed per head daily; the number of weeks the produce of each acre would keep an ox; the number of pounds of increase in live weight the produce of each acre would yield; the value of the increase in live weight so yielded from each acre, at 4*d*. per lb.; and the value of the increase in live weight obtained by the consumption of the amount of increase of produce yielded from 1000 tons of sewage applied.

* In the 5-acre field, in which the fourth cuttings were taken in October and November, the sewage "required" and "actually applied" are calculated up to the actual dates of cutting on each plot. In the 10 acre field, the fourth cuttings were not taken until late in December; but as they consisted of only a few cwts. from each plot, and the growth would be very little during that month, the quantities of sewage are reckoned only up to the end of November.

Table II.—Showing the Results of the Experiments with Oxen when fed on the green Grass alone.

	Without Sewage.	With Sewage.		
	Plot 1.	Plot 2.	Plot 3.	Plot 4.
Tons of sewage to be applied per acre per annum	..	3000	6000	9000
Tons of sewage required to date of last cutting ..	..	1846	4385	6577
Tons of sewage actually applied to date of last cutting	..	1872	4788	6713
Grass consumed per head daily lbs.	90.3	105.5		
Weeks the produce of each acre would keep one ox	32.9	45.0	82.1	99.7
Increase in live-weight that the produce of each acre would yield lbs.	86.7	132.8	242.2	294.0
Value of increase in live-weight from each acre, at 4*d.* per lb. ..	£ s. d. 1 8 11	£ s. d. 2 4 3	£ s. d. 4 0 9	£ s. d. 4 18 0
Value of live increase from the increased produce of 1000 tons sewage	..	0 8 2	0 10 10	0 10 3

The oxen weighed more per head than the experimental cows, yet their daily consumption per head, both of unsewaged and of sewaged Grass, was considerably less. It is quite obvious from the results given in the Table, that Grass of the description in question is not adapted for the fattening of oxen without the addition of other food. Indeed, one of the animals on the sewage Grass weighed 52 lbs. less at the conclusion than at the commencement of the experiment; and the maximum increase of any one was 103 lbs. in the 16 weeks, or at the rate of only 6.4 lbs. per week. And, taking the average of the two and the eight oxen respectively, those upon unsewaged Grass gave only 4 oz., and those upon sewaged Grass only $4\frac{1}{4}$ oz. increase per 100 lbs. live weight per week; whereas, feeding on good fattening food, such oxen should give about 1 lb. increase per 100 lbs. live weight per week. In fact, these very animals did give increase at even a somewhat higher rate than this during the subsequent four weeks, when they had, in addition to the Grass, 4 lbs. of oilcake per head per day. There can be no doubt, therefore, that with a proper allowance of oilcake, or some such food, a very different result would have been obtained. It was, however, desirable that in the first experiment the Grass should be tried alone.

Results of the Experiments with Cows.—Twelve cows were selected by Mr. Campbell from his large herd, and were placed in a house by themselves. Two of these were to be fed upon unsewaged Grass, and the remaining 10 upon sewaged Grass, mown as it was ready, indiscriminately, from the 3 acres, receiving respectively different quantities of sewage. Like the oxen, the cows received Grass alone for a period of 16 weeks, after which they had a similar addition of oilcake for a period of four weeks. The results given in the following Table (III.) relate to the period of 16 weeks, during which the cows were fed on Grass alone.

Table Showing the Results of the Experiments with Cows when fed upon the green Grass alone.

	Without Sewage.	With Sewage.		
	Plot 1.	Plot 2.	Plot 3.	Plot 4.
Tons of sewage actually applied to end of November* ..	..	1503	3145	4678
Grass consumed per head daily lbs.	138.7	125.9		
Average yield of milk per head, daily .. lbs.	25 05	20.53		
Gallons of milk the produce of each acre would yield	350.7	562.3	807.8	947.4
Value of milk from the produce of each acre, at 8*d.* per gallon ..	£ s. d. 11 13 10	£ s. d. 18 14 10	£ s. d. 26 18 7	£ s. d. 31 11 7
Value of milk from the increased produce of 1000 tons sewage ..	..	4 13 10	4 16 11	4 5 0

In order not to complicate the experiments of the first year too much, it was decided to take the produce of the 3 acres of sewaged Grass indiscriminately, as above stated; it is, therefore, for our present purpose, assumed that the milk-yielding quality of the Grass obtained from the land receiving the different quantities of sewage would, weight for weight, be the same.

The results show that the quantity of milk obtained from the produce of each acre of land depended very much upon the quantity of sewage applied. Deducting the value of the milk obtained from the acre of unsewaged Grass, reckoning it at 8d. per gallon, it appears that where the sewage was designed to be applied at the rate of about 3000 tons per acre per annum, the produce from each 1000 tons of sewage actually applied gave an increased amount of milk to the value of 4*l.* 13*s.* 10*d.*; where at the rate of about 6000 tons, of 4*l.* 16*s.* 11*d.*; and where at the rate of about 9000 tons, of 4*l.* 5*s.* *Appendix to 1st Report of Sewage Committee. Paper delivered in by Professor J. T. Way.*

* See note to Table I.

Home Correspondence.

Show Implement Trials.—To be able to decide which particular implement or machine is the best of its class is a great matter. It is however much questioned whether these "show trials," agricultural or horticultural, as they are usually conducted, enable us to arrive safely at the much desired judgment. Almost all the best known and famed makers of agricultural implements (who have had the best opportunities of observing results at the annual gatherings of the Royal Agricultural Society of England) have emphatically protested that these implement trials are nothing less than mere shams and delusions. The marvel is how sensible people can believe them to be otherwise. At an agricultural show trial, for instance, you may find half a dozen machines all mustered,—the long established machine of a trusted maker comes honestly out in its every-day guise, side by side with some machine either quite unknown or having only some useless novelty about it to attract notice; but having been furbished up for the occasion at a cost double its selling price (made indeed a perfect "show machine"), to fight against time — who will wonder, with a trial of say "two minutes 39 seconds," by the judges' chronometers, that your best machine is the worst? So it is, however; and these trials have outtried the patience of almost every one of our first-class implement manufacturers, who now mostly keep aloof from what they have come to look upon as mere shams. To enable these manufacturers to take this position they must, to a certain extent, be supported by public opinion, and the moment we inquire if such is so, do not we find the very sensible explanation that a growing number of intelligent people, believing they are making the best use of their brains and money at the same time, quietly select their required implements or machines from the full-grown practical experience of neighbours, or trust to the respectability of a well-known firm to be well served, rather than they will be led to decide from the hap-hazard and too often absurd conclusion of amateur show judges, relying on their "2 minutes 39 seconds" trial and some half-dozen queries possibly besides, put in hot haste to the half-frightened attendant. Applying these remarks to a subject most interesting to many of the readers of the *Agricultural Gazette*—the trials of lawn mowers, what, may be asked, has ever come out of them? One machine, then another machine has been commended by the implement committees; and only the other day at the Royal Horticultural Society's show, when the largest and best known machine was sent for exhibition only, the implement judges insisted on passing awards on all, and seemingly desirous that all should be satisfied, the General Secretary of the Society put into the hands of each of the exhibitors of machines the award of "Commended," who all seemed equally amused and astonished, and possibly the knowledge of this result of the judges' awards may account for the appearance in the printed report next morning of one of the machines (not the longest or best known) being selected for special commendation. Our object being simply to direct attention to the subject of these so-called trials, we purposely abstain from passing opinions upon any of the machines, but are content to leave these general remarks for such consideration as they appear to deserve. *X.*

Utilisation of Sewage. — The lecture of Prof. Voelcker reported in the *Agricultural Gazette* of May 31, has probably done more than anything hitherto made public to determine the vexed question of the true value of town sewage, and to dissipate many of the flattering illusions entertained upon the subject. He appears clearly to show that town sewage is of little if any value as an application to arable land, or for horticultural purposes: and that where the soil in itself contains the elements of fertility, it has little if any higher value than so much water, and therefore will not remunerate any material outlay in its application. In the case of soils naturally poor and barren, the conditions are altogether different; for here a copious application of town sewage will produce abundant crops of Grass where nothing else will grow of any agricultural value. Now, it is remarkable that London, that great focus of sewage, lies in immediate proximity to some of the poorest soils in the kingdom; such as Bagshot Heath, Wormwood Scrubs, Woking Common, &c., and the inference naturally suggests itself that to raise London sewage from suitable reservoirs, by steam power, to such an elevation as would allow it to be conveyed by pipes along lines of railway, to such hopelessly barren localities, would probably prove a profitable, and perhaps the only profitable, way of employing it. *E. H., Keynham, near Bath.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Monthly Council: *Wednesday, June 4.*—Present: Lord Portman, President, in the chair.

The following new members were elected:—

Aldridge, E., Cippenham Court, Slough
Allison, W. H., Bilby, East Retford
Armstrong, George, Cumberland Mills, Isle of Dogs
Barker, Edward, Ruddington, Notts
Bennett, John E., Bosworth Grange, Rugby
Bennett, Rev. Henry L., Thorpe, Egham
Blenkiron, William, Middle Park, Eltham
Brown, William, Wirswell, Whitchurch, Salop
Burrows, R., Ruddington, Notts
Caffin, Peter, Worth, Sussex
Curtis, C. E., Alton
Clayden, J. C., Littlebury, Saffron Walden
Cadle, John, Much Birch, Ross
Cobb, G. H., Greenwich
Cook, G., 22, Aberdeen Park, Highbury, N.
Clutton, R. G, 9, Whitehall Place, S.W.
Davies, D. Price, Troedybryn, Llandilo
Dissey, Edgar, The Hyde, Ingatestone
Dyer, John, Hook Grange, Titchfield
Everett, F., Shaw Rectory, Newbury
Eden, The Hon. W. G., Doncaster
Franks, F. Westfield, Montrath, Ireland
Freeman, Joshua, Ashford, Staines
Gardner, T. K., Leighton, Ironbridge, Salop
Hampton, G., Findon Park Farm, Worthing
Hayward, F., Needham Market
Hassall, G., Shelford Manse, Ratcliff-on-Trent
Hepburn, Thomas, Clapham Common, S.
Hewson, J. D., Coton Hill, Stafford
Hicks, Francis, Streatham Hill, S.
Hicks, Thomas, Streatham Hill, S.
Hodgson, R., Grove House, Highgate Rise, N.W.
Hogge, W., Thornham Hall, Lynn
Humpidge, T., Great Woodcote Farm, Carshalton
Hutchinson, J., Appleton Lodge, Warrington
Hutchinson, R., Carlowrie, Linlithgowshire, N.B.
Jaques, L., Easby Abbey, Richmond, Yorkshire
Jenkins, J. B., Kingston House, Abingdon
Johnson, C. W., Manor Cottage, Larkhall Rise, Clapham, S.
King, C. A., 98, Piccadilly, W.
Lightfoot, William Barrow, Chester
Longford, Earl of, Packenham, Westmeath, Ireland
Lowe, John, Bridge Farm, Handley, Chester
Miller, G, Barnstaple
Morrisson, W., M.P., Malham Tarn, Skipton
Morrison, Frank, Bristol House, Putney, S.W.
Myott, R, Lower Overton, Congleton
Nicholay, J. A, Cumberland Mills, Isle of Dogs
Noton, John, Edensor, Chesterfield
Page, Bridgewater, West Cliff, Southampton
Ranford, C., 12, Hamilton Terrace, New Cross, S.F.
Ratcliff, R., Hodare Farm, Hartfield, Tunbridge
Rumball, H, The Grove House, Cleckheaton, Leeds
Rudgard, Francis, Bunker's Hill, Lincoln
Squarey, E. P., Odstock, Salisbury
Steward, A. J. R., 13, Belgrave Square, S.W.
Silvester, T. R., St. Alban's
Shirley, T., Pont Farm, Newport, Bishop Stortford
Taylor, W., Addington Lodge, Croydon
Warde, Vice-Admiral C., K.H., Squerryes Court, Westerham
Wells, John, Hampnet, Northleach
Witherington, John, Germany House, Rugby

Finances. The Hon. Colonel Hood presented the report of the Committee, from which it appears that the Secretary's receipts during the past month had been examined by the Committee, and by Messrs. Quilter, Ball, & Co., the Society's accountants, and were found correct. The balance in hands of the bankers on the 31st May amounted to 4643*l.* 8*s.* 6*d.*

The Council then adjourned to Thursday, the 5th instant. Present, Lord Portman, President, in the chair, the Earl of Powis, Lord Leigh, Lord Tredegar, the Hon. Colonel Hood, Hon. W. Cavendish, M.P.; Sir John Johnson, Bart., M.P.; Mr. Barnett, Mr. Dent, M.P., Mr. Exall, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Wren Hoskyns, Mr. Hutton, Mr. Milward, Mr. Pain, Mr. Rigden, Mr. Shuttleworth, Mr. Thompson, M.P., Mr. Wells, and Professor Wilson, the Hon. Nisbet Hamilton, M.P., Mr. Frere, and Professor Simonds.

Stock Judges.—The report of the Committee was received and adopted.

Journal.—

The Essays in Classes IV. and V. (1861), and Class II. (1862), are adjudged not to be worthy of the prizes offered.

In Class III, (1862) the prize of 20*l.* is awarded to the Essay on Steam Power, motto "Ne plus ultra," written by Robert Vallentine, Burcot Lodge, Leighton Buzzard; and the Essay, bearing the motto "The machine that at once employs and instructs the workman," written by Henry Evershed, Gosfield, Halsted, Essex, is commended.

In Class VI. there is no competition.

In Class VIII. the prize of 20*l.* is awarded to the Essay on the Management of a Home Farm, motto "Opinion is private property," written by Thomas Bowick, Stoneleigh Abbey Farm, Kenilworth.

Arrangements for Weekly Councils.—June 18: Messrs. Blundell and Elliott, on the Construction of Farm Buildings, and the Fattening of Stock. July 9: Professor Simonds on Splenic Apoplexy, with collateral reports on the same subject by Professors Voelcker and Buckman.

London Show.—The Earl of Powis presented the report containing suggestions from the weekly meetings of the Committee for perfecting the arrangements connected with the Meeting at Battersea Park on the 23d inst.

On the motion of Mr. Fisher Hobbs, seconded by Mr. Dent, M P., the Council resolved that the Country Meeting in 1864 be held in the district comprising the counties of Cumberland, Durham, Northumberland, and Westmoreland.

Professor Wilson having moved—

That Free Tickets of admission to the Show-Yard be given to the Foreign Commissioners and Jurors attending the International Exhibition,

it was seconded by Mr. Wren Hoskyns, and carried.

unanimously. Mr. Thompson, M.P., moved to add that tickets be also sent to the Foreign Ambassadors and Ministers resident in London, which was seconded by Lord Tredegar, and adopted.

An application having been made by the Contractor for the Show-yard works and buildings in Battersea Park, to be permitted to tender for the works at Worcester next year, a Special Committee was appointed, on the motion of the Hon. Col. Hood, seconded by Mr. Torr, to examine into the best mode of arranging for the works in question.

Sir Wm. Miles, M.P., gave notice that he will propose, at the meeting of the Council, on the 3d of December, the following alterations in the bye-law 32:—

> House list. *b*. The Council shall prepare a list of the 25 Members whom they propose for election or re-election, which shall be printed on paper large enough to admit of additions being made to it; and a copy of this printed list shall be given to any Member who applies for it of the Secretary, either on the day of the General Meeting, or on any of the three days previously (Sundays excepted), between the hours of 10 and 4.

Line 2, after the word "re-election," to insert the words, "at the meeting of the Council on the first Wednesday in May, which list so prepared shall be published immediately in all the Agricultural London papers;" and in line 7 to omit "any of the three days previously," and to insert "or on any day of the week preceding." And in bye-law

> 63. Twice in every year—namely, on the Friday previously to each of the London General Meetings—there shall be an audit of the accounts of the Society at 11 o'clock, when a balance-sheet shall be prepared and reported to the General Meeting, and such balance-sheet published in the ensuing part of the Journal.

The following amendments: line 1, between "Friday" and "previously" to insert the word "week." Line 4, between the words "prepared and," to insert "published immediately in all the agricultural papers." In bye-law—

> 102. The Secretary shall prepare a Report of the proceedings of each Weekly Council, which shall be furnished to the papers as soon as practicable after the conclusion of the Meeting. A *précis* of this Report shall be entered in the Minute Book.

to omit from "The Secretary" to "A *précis*" in line 4. Should these alterations be adopted, to move the following additional Bye-law:—

> Any Member of the Society, who may object to any of the Members proposed to fill the vacancies for the ensuing year by the Council, is at liberty to propose at the General Meeting any other Member to supply such vacancies, provided three days' notice at least be given to the Secretary of such intention; who shall make out two lists of the names of Members so proposed by individuals, together with the names of the Members proposed by the Council, side by side in the said two lists, which two lists shall be placed in some conspicuous place in the Council Room till after the General Meeting.

The Council having requested the President to summon a Special Council to elect Members (proposed in the usual manner) on the 20th June at 12, adjourned to the Weekly Meeting on Wednesday the 11th inst.

Foreign Correspondence.

FARMING IN GERMANY.—Notwithstanding my deficient style and composition, which claim all your indulgence, for you will see that I have lost the practice of writing and thinking in English, I shall try to give you a description of some farms in the south of Germany, from which it will afford me much pleasure to send you occasional reports.

The farm I first am going to describe to you is one of the few large farms we have in this country (the kingdom of Wurtemberg), the most of the land being occupied by the peasantry, who farm their (now) own land and possess generally from 5 to 50 acres and more.

The farm of I—— forms a whole area of about 800 acres in extent, and is bordered partly by woods, partly by the adjoining fields of the villagers, whose fields are separated from those of the farm by "marked stones" only, as we have generally open fields and no fences around them. The farm of I—— is the property of a nobleman's family, whose eldest son is the present tenant, and, including his own share, pays a rent of 834*l*. for about 530 acres imperial, 100 of which are meadows and sheep pastures, and the rest arable land. About 270 acres are in woods, partly Firs, partly Oaks; they are under the superintendence of the farmer, but are not included in the rent. The soil of the farm, formed by the triassic system, is mostly a deep and fertile loam, which hardly requires any thorough draining. About 100 acres of the arable land, where the white or yellow sands of the "Keuper" (which is wanting in England) predominate, are rather poor, and not worth more than 10*l*. to 12*l*. per acre, whilst the better land, occasionally bought in from the neighbouring peasant farmers, costs often from 50*l*. to 80*l*. per acre. Draining is only recurred to on occasional wet spots, and does not amount here to any importance. The tithes and rates, &c., cost about 50*l*., including the repairing and maintenance of a parish road. The roads of the farm are generally in good order, and water is supplied by several pumping and running wells. The premises or farm buildings are very compendious here, and have quite the look of a small village or hamlet; they were erected in the past century, and being not very fit to serve as a model for your modern farm steadings, I abstain from giving you a drawing or nearer description of them. However, they are mostly in good order yet, and serve our purpose pretty well; they form a large square, offering ample space for the accommodation of the dead and live stock of the farm. A little apart from the principal steading is the farmer's house or "Schloss," as it is called here, with its antique turret and adjacent pretty garden; further on is the workmen's cottage, another sheep stable, and some more barns for storing corn and hay. The latter are all housed here, and stacks are only made when the space of the barns should not be sufficient. The servants of the farm, comprising 5 regular ploughmen, as many weekly labourers, 3 shepherds, and 6 female servants (attending to the cattle and the household), are all fed and lodged on the farm at the expense of their employer, a circumstance which in comparison to what I have seen in England is a great "onus" for the German farmer. The ploughmen get wages besides their board, from 6*l*. to 8*l*. per annum; the weekly labourers 1*s*. 8*d*. to 3*s*. 4*d*. per week; and the female servants 4*l*. to 5*l*. per year. With the exception of harvest time, male and female day labourers may be had at leisure from three to four neighbouring villages.

The females get just now from 6*d*. to 8*d*., and the men from 10*d*. to 1*s*. per day, besides 2 pints of cider. Although labour is thus pretty cheap here, B. v. F., who is an intelligent and enterprising farmer, has seen the advantage of using as much as possible of machine work, and consequently he has spent during the past 2 years over 600*l*. for modern and better farm implements, mostly of British make, amongst which I may mention the following: a portable steam threshing machine of 6-horse power, by Messrs. Barret, Exall, and Andrews, Burgess & Key's, and Wood's reaping and mowing machines; Tasker's drill barrow; Garrett's horse hoe, iron harrows, a potato plough, and several other ploughs from Messrs. Howard, some ring rollers, a horse rake and Bentall's root-pulper, &c.; a Coleman and some more ploughs from Messrs. Howard have been ordered for this year. B. v. F. is a great advocate for deep cultivation; and as our ploughmen can hardly be brought to give a 10 or 12-inch furrow, I should not wonder at seeing a steam-plough run through the fields of I—— to the amazement of our incredulous peasants. I have shown to B. v. F. the different systems of steam cultivation, and he was best pleased with Messrs. Howard's new turning plough, which he will order perhaps as soon as he shall have convinced himself of its practicability for his farm by ocular inspections of the former. The present cultivation and carriage of the farm are done by eight horses and seven pairs of oxen, which have to work the whole day. The horses, with the exception of two, are of country breed and rather light, so that for taking a deep furrow four of them are required to draw a plough. Mr. F. intends to replace the light horses and the working oxen by strong horses from Belgium, or perhaps partly by a steam plough. The horses get through the whole of the year nothing but dry fodder, consisting in cut straw and hay or chaff (about 25 quarters), and 1 peck of Oats apiece daily. The oxen were fed during the winter, when they did hardly any work, on cut straw, hay, Beetroots, and Rape cake, which latter is diluted here in water, and thus given to the beasts in a liquid state along with the dry chaff. In former years fattening of oxen was extensively practised here, but the scarcity of the hay crop and the comparatively low prices of butcher's meat at our markets have induced B. v F. to give it up for the present, and to gain more advantage in the breeding of cattle. Amongst the different kinds of breed we have in this country the "Simmenthal," introduced from Switzerland, which is the most esteemed and best paid by our farmers for breeding purposes; therefore a lot of thorough bred Simmenthal heifers and cows, and a good bull were bought and bred on for a length of time by changing occasionally the blood in choosing a new bull or acquiring fresh mothers from Switzerland. A very fine breed of the Simmenthal has been got up this way, and from 15 to 20 young bulls and heifers are sold here annually at prices ranging from 12*l*. to 18*l*. for heifers, and 10*l*. to 25*l*. for bulls between 1 and 3 years old. The present breeding stock consists of one 3-year old bull, 20 cows in milk or in calf, 18 heifers, 8 young bulls, and about 16 calves. The young bulls and part of the heifers will be sold this week by public sale. The calves are reared up with milk for 5 to 6 months, after which time they are completely weaned, and get the same food as the elder stock, viz., cut hay and straw, and sugar Beets pulped with Bentall's root pulper. All cattle is housed here, as generally in this country, through the whole of the year, and more dung and food is saved by this way; but of course the young beasts cannot develop themselves as well as those which are reared on pastures or at least in loose boxes. If the prices for dairy produce were higher in this country a herd of milk cows would be kept and the sweet milk sold to the residence (which is only distant about 10 miles), but the prices of the former ranging only at 4*d*. to 5*d*. per gallon, B. v. F. does not think it a very remunerating business. Better results and more advantages are drawn from the sheep, which, as usually in Germany, are bred here almost exclusively for the sake of their wool; from 500 to 600 head are wintered here every year, and fed in their stalls on hay, straw, and pulped Beetroots. As soon however as the snow is gone and some scanty Grass appears, the sheep are turned out to their pastures again, getting nothing besides, and being folded at night on the arable land through the whole of the spring and summer time till October and November.

The present sheep stock of the farm consists of about 800 heads, viz., about 300 old ewes (having lambed partly in autumn, partly in spring), 200 lambs, and 300 hoggetts and shearling, which latter went off some weeks ago to the hills (of the Suavian Alps) for being pastured there till winter sets in again. The sheep we generally use to breed in this country are of an improved country breed, called here "bastards," being originally a cross of the Merino and the long-woolled and rather coarse country breed. The sheep of this farm are washed and shorn in June, and clip on the average 3 lbs. of pretty fine wool, ranging at prices of from 2*s*. 4*d*. to 2*s*. 6*d*. per lb. Fatting of sheep is scarcely ever carried on here, the prices of mutton being too low, and thus wether hogs are sold in a half fat state to dealers at 1*l*. 10*s*. to 2*l*. per pair. Old ewes being no more fit for breeding are sold at 10*s*. to 12*s*. apiece to the butcher. A small flock of South Down ewes (say about 20 head), and a ram, out of Mr. Webb's blood, were bought last year from a farmer, who did not succeed in their breeding. The ewes get the ram here generally in spring, so that the lambing begins in August or September, but last year the usual lambing season was a complete failure, from what reason I do not know exactly, and thus the rams were put again to the ewes in September and October, so that the most of the lambs fell in January and February. The Southdown ewes bore only some few thorough bred lambs, but the Down ram was put also to some of the German ewes, and thus about 30 to 40 half bred lambs were got, which have all the black points of the male, and will be reserved along with the few pure Southdowns and another lot of German ewes, to get up by and by a flock of nearly thorough bred Down sheep, for in putting always a pure Southdown tup to the former, the features of their German blood will by and by be extinguished, and the breed get as nearly as possible a pure one. Whether this experiment, as I fancy, will succeed or not, remains a problem yet to solve, but at any rate we shall keep up a Southdown flock (by acquiring occasionally fresh and pure blood from England) as this sort of sheep is very suitable for our climate and our pastures, which it clears better and closer than the German sheep. Few words remain to say upon the rest of the live stock, which consists of four or five breeding sows, an English boar, a lot of young pigs and the poultry required for the use of the farm.

Fatting pigs is not carried on here, as it does not pay well enough in this country; and thus the pigs are either sold young or kept for breeding purposes. The English breeds do very well in this country, especially the Berkshire and Yorkshire breeds, though their fecundity is far inferior here, in comparison to that of their home.

Although I fear to have trespassed already too much upon your time and patience, some further remarks will be made on the cultivation and crops of the farm described above, and this I will do in my next. *J. R., I—— Farm, May* 6. [Many thanks.]

Reviews.

Wirral Agricultural Improvement Society: A Selection from the Papers read before the Society. Printed for the use of Members. G. J. Poore, 42, Castle Street, Liverpool.

We have here a capital example. An energetic and well organised local association prints a map of its locality—that tongue of land lying between the Dee and the Mersey at the mouth of both, and with it a description of its agriculture, and a number of the papers read by members at the monthly meetings, one of them on farm buildings adapted to the agriculture of the district, illustrated by plans and isometrical projections. The whole volume is exceedingly interesting and instructive, and an admirable illustration of the unobtrusive intelligence and quiet energy by which in hundreds of country places men most usefully are "serving their generation" without reward. Mr. Burnham, the Honorary Secretary of the Club, to whose labour this useful volume is due, thus prefaces its pages:—

"The 'Wirral Agricultural Improvement Society' was formed in 1849, with the object of promoting the discussion of farming topics.

"The variations of seasons and prices, the introduction of new mechanism, and new manures, of new theories and new practice, cause such differences of opinion even amongst practical men in a limited district, and render mutual aid so advantageous, that meetings for free and friendly discussion have latterly become general among Farmers.

"The following Papers are selected from those read by members at the ordinary Monthly Meetings.

"The 'Essay on Farm Buildings,' by the late Charles Verelst, Esq., architect, was written by him, subsequently to the discussion on the Plans, to the preparation of which he had given great attention. Those members who had the privilege of attending the Society's meetings at the time, and joining him in the

work, will rejoice in their possession of this memorial of their departed friend.

"The other Papers were read by Tenant Farmers in the District, and must be considered as expressing individual opinions, except in the Essay, 'On the State of Farming in Wirral in 1861.' It has been found impossible in the limits of the present pamphlet to include even a summary of the discussion which followed the reading of each of these papers.

"In complying with the wishes of many members and friends of the Society by editing these Papers, the Secretary would bespeak for this small volume of 'Transactions,' the consideration which should be granted freely to compositions not originally intended for publicity, and which, from their nature, can only be supposed to be of special interest to readers who may be resident in the district.

"The Society's discussions are at present held on the first Tuesday in each month, at the Farmers' Club Room, 2, Market Cross, Birkenhead."

We are glad to know that already, even before the publication of this volume, preparations are being made for something similar, probably upon a larger scale, with reference to the valuable papers read before the London Farmers' Club. Mr. Corbet, the able Secretary of this, the central Institution of its class, has been for some time engaged in the preparation of a volume which shall contain a selection of the ablest and most useful papers that have been read before the Club during its career.

The Polled Herd Book, containing Pedigrees of Animals of the Polled Aberdeen, Angus, and Galloway Breeds. Vol. 1. Compiled and arranged by Edward Ravenscroft.

This is the first of a series which will prove as useful to the breeders of certain Scottish districts as Coates' Herd Book has been to the breeders of Shorthorns, and as Davy's Devon Herd Book and Duckham's Hereford Herd Book will doubtless prove in their respective localities. The labour has fallen into able hands, Mr. Ravenscroft being well known through his connection with Messrs. Lawsons for long tried powers and great success in matters needing organisation and arrangement; and the confidence which his name and connection will inspire among Scottish agriculturists is the guarantee of the usefulness and success of his work.

As a specimen of typography and engraving the work is perfect. It forms an exceedingly handsome volume, embellished with lithographs of noteworthy animals; and in the more important point—accuracy of information—the labour taken and the names which are its warranty render it trustworthy.

Report upon the Management of the Sewerage and Irrigation at the Wellington College, Sandhurst. Prepared at the request of the Right Hon. the Earl of Derby, K.G., President of the College (and printed with his Lordship's permission). By W. Menzies, Deputy Surveyor of Windsor Park and Forest. Shaw & Sons, Fetter Lane.

This is a very detailed and explicit account of an exceedingly interesting success in dealing with the sewage of an establishment of 300 persons. The nature of the nuisance, and the imperfect method originally devised for meeting it, are described. The method now in operation was first put in operation by H.R.H. the late Prince Consort at Osborne. The whole water, and everything it carries with it, flows into the bottom of the tank, rises through layers of mould, on open horizontal trays, and so flows away comparatively pure, the mould, and mud, and sludge being cleared out every week or fortnight, and fresh layers of earth being supplied. The use of the water which flows away is thus described:—

"As an experiment, about 30 poles of ground close to the tank were broken up in the winter of 1860-61, and frequently irrigated afterwards. Part was planted with Potatoes, which produced a good crop, though rather watery; part was cropped with vegetables, which grew luxuriantly, and about 20 poles were sown down with Grass.

"We commenced cutting this in April, and cut eight crops off it in the year. The College horses were very fond of it, though of course the quantity given them had to be restricted to prevent scouring. The Grass was ready to cut every three weeks, and was fully a foot long each time. The kitchen garden had received a good dressing of solid manure as well, but the application of the water was attended with very marked results.

"As there is more than can be used on the College land, the tenant of Hannican's Lodge has appropriated the residue, and is proceeding with its application on the same principle.

"The smell is reduced to the smallest amount possible, as the liquid does not come to the open air until it is applied to the open ground, when from the loose nature of the soil it is soon absorbed; and the tank has this year been covered over with thin sheet iron, at a cost of 15*l*.

"The irrigation of the whole 9 acres is now being accomplished.

"It is obvious that had the whole of this subject been better understood at the beginning, a more perfect arrangement might have been made, at probably very little additional cost; but as this scheme has, with the exception of what has been done at Osborne, been, as far as I have been able to learn, the first successful combination of tank and sewage irrigation to large establishments, I may here recapitulate the points that seem to me, on comparing this with plans which I have examined in other places, to be essential to success, considered both in a pecuniary and sanitary light.

"1st. That the whole sewage matter should flow and act by gravity alone, unless some very economical pumping power is applied to the liquid alone.

"2nd. That upward filtration is the only form which will continue to work satisfactorily, and make irrigation safe afterwards.

"3rd. That the filtering beds should be composed of burnt bog earth, although clay or house ashes would also answer.

"4th. That the ground to be treated should be thoroughly drained previously, and deep trenched, if similar to that at the College, and that, if possible, light sandy soil should be operated upon in preference to clay. If clay land is only obtainable, and old Grass land is selected, very close deep drains should be put in, and I would not consider 5 yards too near to one another for those furrow drains.

"5th. That Grass land and kitchen vegetables are the best crops to which to apply the liquid, and that probably dairy stock are the best animals for consuming the Grass, although it is a most valuable assistant for draught horses, or young stock, or for a change for saddle horses; and would also be good for ewes or lambs early in the year, when succulent food is difficult to be obtained. It is proposed to fold sheep over the College play ground, and feed them with this Grass.

"6th. That there should be an abundant supply of soft water, free from any strong mineral ingredient, which can be made available without any great expense being incurred in rendering it so."

Plans and sections accompany the pamphlet, and details of expenditure are added, so that Mr. Menzies has given a complete guide to the operations of any one who may wish to follow his example.

Farm Memoranda.

COLLEGE FARM, CIRENCESTER.—May is always a busy month, and especially so this year, which seems remarkable for sudden and heavy downfalls. On May 7 we had a nearly continuous rain for 24 hours, principally from the east, and the rain-gauge collected over 2 inches. The low-land in the neighbourhood has been sadly flooded, in some instances the spring Corn has had to be re-sown, and the cleaning operations for roots greatly retarded. Fine weather (comparatively) followed, continuing until the night of the 29th, when a violent thunderstorm was succeeded by a steady rain, producing nearly 1½ inch of downfall; the total rainfall for the month being rather over 4 inches.

The principal work has been stirring the fallows, in preparation for roots. Owing to the wet in March the under soil turned up very raw and sticky; and even with steam cultivation, of which we are already finding great benefit, a good deal of patience as well as labour was required in order to produce a fine tilth, and this, added to the frequent delays from rain, has thrown us somewhat behindhand, especially in the case of Mangels, which were not sown until the 17th, and then the land was rough and not at all in proper condition. Wherever this was the case, the Mangels, notwithstanding their being soaked, have germinated slowly, so that the plant will not at first be very even. We use 4 lbs. of Yellow Globe Mangel with 3 cwt. of superphosphate of lime, and a mixture of red and black ashes, drilling partly on the ridges, partly on the flat, at 28 inches. The latter are considerably the forwardest. We find it important to have the surface firm for most root crops, with plenty of fine soil underneath; and the roller, when judiciously used, is a valuable implement in the culture of root crops on moderately light soils.

We have sown 8 acres of early Turnips, planting 4 acres of White Pomeranian and 4 acres of Grey Top Stone, and hope to plant Swedes early in June; earlier than this is not generally desirable, and many people prefer the second week in June to any other time for getting in the main crop.

Barley sowing was finished May 8. The last piece of 11 acres, being hilly, was sown broadcast, 3 bushels per acre, and well worked in with the drags and lighter harrows. We find this plan preferable for a very late crop, as it is more expeditious; we can sow immediately after the plough, and thus secure any moisture that may be in the fresh-turned soil. The plant comes up all over the ground, and thus the surface is more completely covered, and if dry weather should follow less injury results. The crop looks generally pretty well, though by no means so promising as we have often known it. In many instances the leaves have become a little rusty, as though it had been chilled. Warm sunny weather, with occasional showers, would probably put it in place again; though considering the way it has been got in, we do not think a fine sample is likely, should the season be ever so favourable.

Our mixture of artificial Grass seeds has been sown, consisting of 12 lbs. of Red Clover, 4 lbs. of Hop trefoil, and 2 pecks of Italian Rye-grass, sown with a seed barrow and rolled in where it was possible, and in other cases left untouched. The Italian Rye-grass is a most valuable addition to the Clover, nor are we disposed to think it very exhausting, provided we farm liberally and cut it tolerably young. When pastured early sheep are exceedingly fond of it, and it appears to keep them firm and healthy. Should Clover fail—not a very unusual thing—we still have half a crop. The present crop of seeds is heavy, and we shall be cutting very early in June.

The *Steam Cultivator* commenced crossing fallows on April 30, and in 11½ days got over 65 acres, including 5 shifts. This was quite satisfactory work, as the fields were small or at least of very moderate size. The character of the work was most excellent, and the average cost, including a proper charge for wear and tear &c., was from 7*s*. to 7*s*. 6*d*. an acre. After this operation the land was left for a time, then dragged down, and the Coleman's cultivator worked through it. This is a most useful implement for soils of a medium nature, to be used just before drilling the crop, as it cuts up by its broad shares those deep-rooted weeds which, however routed about by the steam cultivator, have still sufficient hold of the ground to defy the common harrow. This is followed by a double line of the ordinary harrows; in some cases lightly rolled and again harrowed, weeds picked off, and drilled. The Coleman will get over 6 acres where we have good length with four horses.

The *Wheat* grows fast and keeps its colour generally very well: it is, however, quite luxuriant enough, and with a continuance of this damp growing weather, there is a danger of its becoming rank, and suffering from mildew. From the strong land the report is not so favourable. The colour is bad, and in many cases the plant has a spindled sickly appearance which even continued fine weather could hardly altogether remove. Our present impression is that the yield cannot be over an average, but it is premature to speculate on this subject. With favourable weather it will be an early harvest. The earlier Wheats will be ready by the 1st of August, if not sooner. Peas are already well out in flower, and giving promise of abundant straw.

Sheep.—Shearing the ewes is now in progress, average 7½ lbs. per fleece. The tegs nearly 9 lbs. The lambs have been weaned and placed on Vetches, which are cut high, so that they feed both from the rack and off the ground. Last year we pursued a similar plan and were very successful, not changing them at all until the Vetches were all consumed, and then on to fold of Clover; but as a rule it is best to give them frequent change on to old seed, Sainfoin, or even to young seeds. Lambs on Vetches require an amount of attention, especially at first, that few shepherds would care to bestow. They want constant feeding, and especially early and late attendance. Owing to the wet cold spring lambs are generally inferior and in some cases flockmasters have experienced very severe losses; we have been on the whole tolerably fortunate, and have within one or two as many lambs as there were ewes turned out to the ram. The lambs have a mixture of crushed Oats and Bran. *John Coleman, Royal Agricultural College, June* 1.

Miscellaneous.

Power to assign a Farm Lease.—Mr. Mewburn evidently regards the restriction on assignment as tending to promote good husbandry, a point on which we take issue. He says:—"The restrictive power is imposed to prevent the deterioration of the farm by the bad or improper cultivation of it, owing to the want of capital; rarely does it arise from any other cause. And is not the public interested in the good cultivation of land? Does the landlord only derive the benefit of it? The converse of the proposition will at once show how much the public are interested in good farming, and how much it is injured or affected by bad. And can you point out any better mode of securing or enforcing the former than by the restrictive power I contend for? I have retired from the profession of the law, in which I practised in Darlington 52 years; and although my practice was very extensive and general, I do not recollect having, in that long period, prepared more than five agricultural leases. A great part of that period was, you will recollect, when corn was at a great price, and cattle of every description also; and, let me add, when there was no dread or apprehension of free trade in corn." It is a striking fact that during the long period of 52 years, a solicitor so eminent and so extensively engaged as Mr. Mewburn should have prepared no more than five agricultural leases. It indicates that the period over which this experience has extended was one in which English husbandry may truly be said to have been in an abnormal condition. All that has passed away, and all interferences or restrictions on the business of agriculture—save such as from past habits are imposed and submitted to by the contracting parties—are gone for ever. Relieved from the impediments of protection, and relying on their own intelligence, farmers of capital demand, and the public interest requires, that the business of husbandry should not be uselessly hampered and obstructed. If restrictions are required to protect the landlord's interest from injury through the tenant's want of capital, the remedy is not to accept a tenant who has not sufficient capital to farm properly. Let the tenant have sufficient, and the landlord may safely

grant a rational and unrestricted lease; but if the tenant has not sufficient capital, all the restrictions ever imagined will not prevent him from reducing the farm to a very low state of productiveness. Our complaint with the management of English estates is, that it deters men of capital from the business of husbandry, rather than attracts them to it. *Economist.*

How to Show Sheep.—At the Trigby meeting in Cornwall, Mr. Pollard said he attended these meetings with a view to pick up information. He should be glad if any gentleman would communicate to him how it was that, if a sheep failed at any particular part, the wool at that part grew faster and longer than at any other part? He wished to know how it was that sheep, shorn since the 1st May, had wool 2 or 3 inches long over defective parts, while on other parts it was only half an inch long. If he could be informed on these points, perhaps by another occasion he might learn how to be a successful competitor.

Calendar of Operations.

JUNE.

West Dorset: *May* 26.—I much fear that a great deal of the Wheat in this neighbourhood is thin, but during the past fortnight it has made rapid growth, and is wonderfully improved in appearance. The late sown Wheats are especially promising. Although the continuance of wet during the month of March precluded the hope of early Barley, the crop is unusually luxuriant. Oats look as well as they can, considering the time when they were sown, but without a favourable season are likely to prove the truth of the old adage:—

"Cuckoo Oats and woodcock Hay
Make a farmer run away."

Peas and Beans look well. I am now hoeing the Mangels; the plant is growing, but a little wet would be beneficial; still I would much rather take the chance of a crop in a dry season than in a very wet one. There is every probability of an abundance of hay. I have seen some secured this day. Vetches have been very heavy; but Trifolium, of which a large quantity is grown hereabouts, has varied considerably. Altogether I think we may conclude that "the present appearance of the crops" is satisfactory. *William J. Pope.*

Wilts: *Swindon.*—The Wheat varies considerably this year. On the best soils it is good, and with dry weather and sunshine promises for an early harvest; on the very stiff clays and wet soils it is very indifferent, having been injured by the excess of rain during the last three months, 11.8 in. having fallen here during March, April, and May. The Barley is looking better than we could expect, considering how it has been planted; with favourable weather it may come to a fair crop, but it is later than usual. Clover and seeds are good, and the grass in general is promising for a fair crop. Mowing commenced in this neighbourhood on the 26th ult., which is a week or ten days earlier than usual. *T. A.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, June 12, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.										Inches.		
Friday ..	6	29.68	58°	54°	S.W.	3	5	62°	53°	72°	52°	0.37	60°	58°
Saturday ..	7	29.71	62	55	S.W.	5	8	67	55	83	53	0.23	60½	58
Sunday ..	8	29.87	60	55	S.W.	3	8	69	50	80	49	..	61	58
Monday ..	9	30.00	58	52	W.	3	4	70	45	84	42	0.06	60½	58
Tuesday ..	10	29.99	59	53	S.W.	2	3	65	42	83	37	0.30	60	58
Wednesday.	11	29.42	58	55	S.W.	8	6	68	50	87	48	0.14	60	58
Thursday ..	12	29.45	54	53	S.W.	3	7	66	51	78	48	0.17	60	58

Notices to Correspondents.

Vetches: *W. H.* The difference between the Spring and the Winter Vetch plants, is one merely of habit and hardiness.

Wheat: *A Gardener.* We do not think the flagging could have caused the condition of the Wheat. It is, however, no new thing for Wheat to be root fallen. So far as our experience goes, however, it is less liable to the disease after Wheat than after any other crop.

Advertisement.

To the Editor of the Agricultural Gazette,

Sir,—Besides showing my Farm you know that I am always ready to give all the information I can. Here are some extracts from a letter that I have received this morning from a gentleman who is a total stranger to me.

"In 1860 I hired a set of your Tackle to work 22 acres over twice. It made a first rate job of it.

"In 1861 I hired it to do 120 acres once over. It made a very good job.

"This year I thought I would try again, but as the gentleman whose implement I had hired had discontinued working by contract, I was obliged to look out for another. This I found in a man who had purchased a set of Fowlers' small tackle. We started on a 20-acre field with Fowlers' grubber, with which we could not get on very well. We then tried Howard's tool or grubber, or whatever else they may call it. After repeated trials we were obliged to throw it on one side without going a round of the field. We then fetched Smith's No. 3, and finished the field without a stoppage or hindrance of any kind, so that I think it is a very fair trial, and with which I am perfectly satisfied. What I state here are plain facts, and I shall be pleased to show the work to any gentleman who would like to see it."

These plain facts I lay before my brother farmers, for them to judge for themselves.—I am, Sir, your obedient servant,

William Smith.

Woolston, Bletchley Station, Bucks, May 29.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to

John Fowler, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

Oil Paint no longer Necessary.

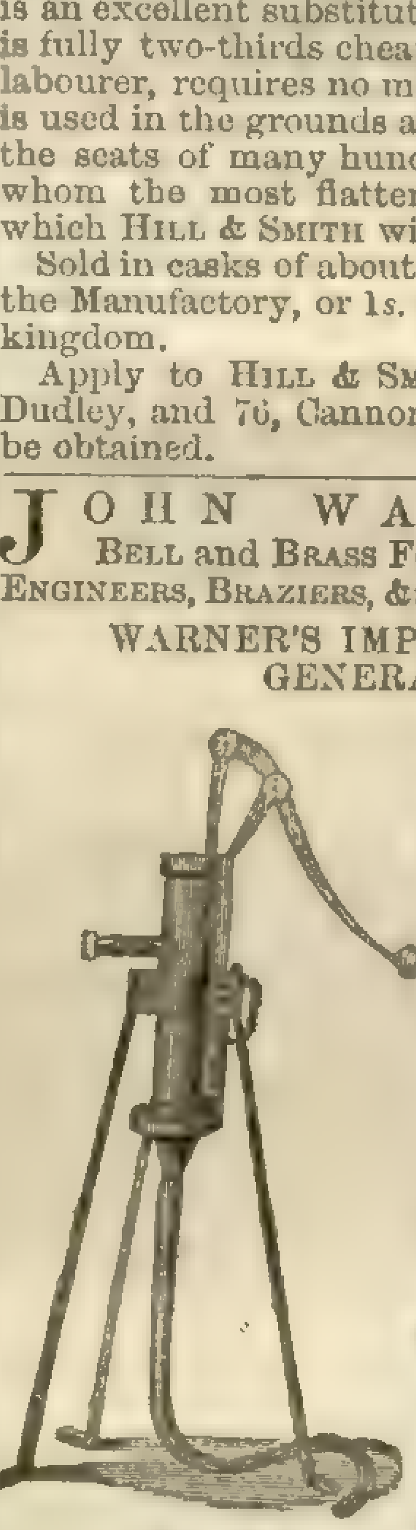
HILL and SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which Hill & Smith will forward on application.

Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon paid to any station in the kingdom.

Apply to Hill & Smith, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

JOHN WARNER AND SONS, Bell and Brass Founders to Her Majesty, Hydraulic Engineers, Braziers, &c., 8, Crescent, Cripplegate, London, E.C.

WARNER'S IMPROVED LIQUID MANURE, or GENERAL PORTABLE PUMP.

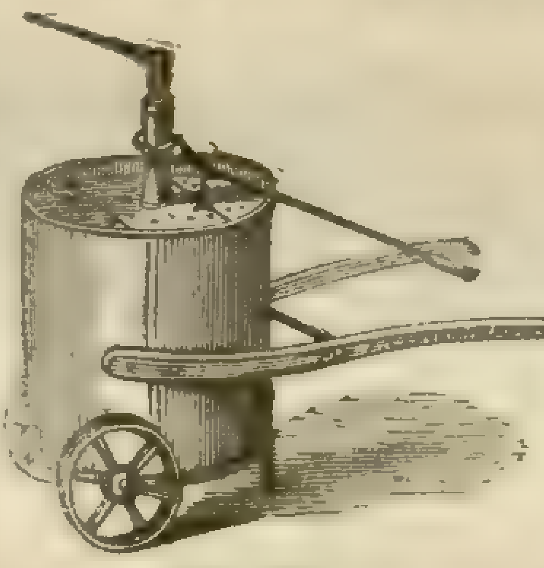


No. 42.

This Pump is fitted with Warner's Patent Bucket and Valve, and cannot clog in action. The Barrel is made of Galvanised Iron, not likely to corrode, and can be raised or lowered at pleasure on the stand, the legs of which fold together, and it may be carried with ease by one man.

	£	s.	d.
Stand and Pump, with screwed Tail Pipe, fitted with strong Brass Union for Suction Pipe	2	15	0
If fitted with Barrel of Planished Copper	3	4	0
Stand and Pump, with plain Tail Pipe, for tying on Suction Pipe	2	9	0
2-inch India Rubber and Canvas Flexible Suction Pipe, on wires, in either 10, 12, or 15 feet lengths .. per foot	0	2	5

No. 43 is a similar Pump to the above, without stand, but with strong wrought-iron straps, for fixing to water cart or plank, price 2*l.* 5*s.*



No. 554½.

GALVANISED IRON TUBGARDEN ENGINE, with Warner's Registered Spreader, is strongly recommended for durability and low price, viz.:—

		£	s.	d.
10 Gallons	..	2	15	0
16 ,,	..	3	15	0
24 ,,	..	5	0	0

Larger sizes may be had in either Wood or Iron.

No. 579.

WARNER'S SWING WATER BARROW, 35 gallons, 2*l.* 10*s.*; 20 gallons, 2*l.* is intended for all large establishments where much watering is done by the Watering Pot. By its use the Gardener will save much time and labour, particularly where the Tank, Pond, or Pump is at a distance from the Garden.

BRASS SYRINGES, from 9*s.* to 21*s.*

SPAREY'S PATENT FUMIGATOR for the Destruction of Mildew, Red Spider, &c., 25*s.*

May be obtained of any Ironmonger or Plumber in Town or Country, at the above Prices, or of the Patentees and Manufacturers,

John Warner & Sons, 8, Crescent, Cripplegate, London, E.C. Engravings sent on application.

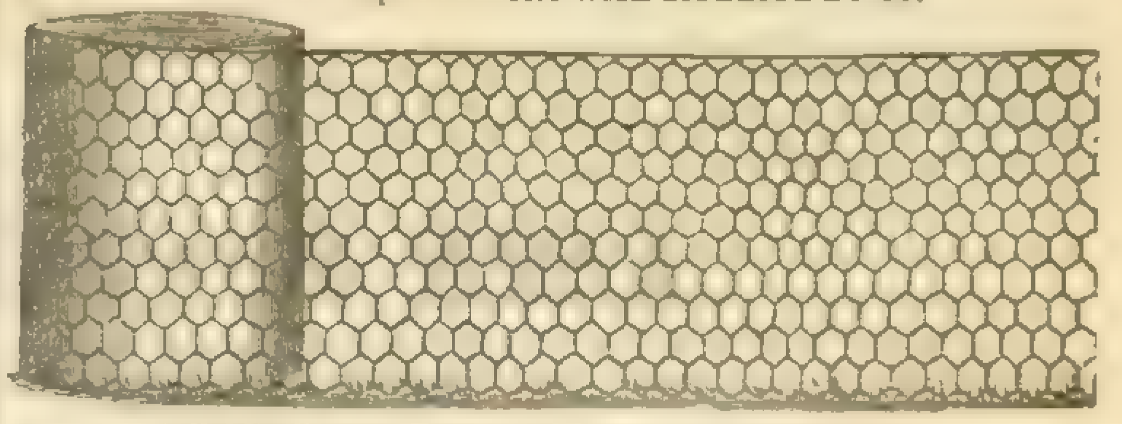
JOHN WARNER AND SONS, Bell and Brass Founders to Her Majesty.

INTERNATIONAL EXHIBITION.

Class 8. Western Annexe.—Pumps, Beer Engines.
Class 9. Eastern Annexe.—Garden Engines, Syringes, &c.
Class 10. Near Eastern Dome.—Water Closets.
Class 31. South East Transept.—A Peal of Eight Bells and Chiming Apparatus.
Class 31. Hardware Court.—Bells, Urns, Lamps, Braziery Goods, Bath, Steam Fittings, Plumbers' Cocks.

Illustrated Catalogues forwarded on application at the Manufactory, 8, Crescent, Cripplegate, London, E.C.

NEW IMPROVED PREMIUM WIRE NETTING.
Great Improvement with Reduced Price.



PRICES PER LINEAL YARD 24 INCHES HIGH.

Size of Mesh	Mostly used for	Light. Jap	Light. Gal.	Medium. Jap	Medium. Gal.	Strong. Jap	Strong. Gal.	Extra Strong. Jap	Extra Strong. Gal.
2¼ in.	Poultry ..	3*d.*	4*d.*	3¾*d.*	5*d.*	4½*d.*	6*d.*	5½*d.*	7*d.*
2 in.	Poultry ..	3½*d.*	4¼*d.*	4*d.*	5*d.*	5*d.*	6½*d.*	6½*d.*	8*d.*
1⅝ in.	Small Rabbits	4*d.*	4¾*d.*	4¾*d.*	6*d.*	5½*d.*	7*d*	7*d.*	9*d.*
1½ in.	Smallest Rabbits	5*d.*	6*d.*	5¾*d.*	7*d.*	7*d.*	9*d.*	9*d.*	11*d.*

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

*** Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.

J. B. Brown & Co., 18, Cannon Street, City, London, E.C.

Patronised by H.R.H. the late Prince Consort.

GREENING and CO.'S IRON WIRE FENCES, manufactured by Patent Machinery, possess the following advantages:—

1st. Are easily fixed by unskilled labourers.
2nd. Require few and inexpensive supports.
3rd. Are ornamental in appearance.
4th. Have increased strength from their peculiar construction.
5th. Are but half the price of similar hand-made Fences.

Upwards of 40 varieties are made, the principal ones being:—

No. 1 A variety.—Cattle and Sheep Fence, 3ft. 9in. high, 1*s.* per yard.
No. 7 B variety.—Sheep folding Fence, 3ft. high, 9*d.* per yard.
No. 4. variety.—Hare and Rabbit-proof Fence.
No. 11. variety.—Poultry and Chicken-proof Fence.
No. 16. variety.—Italian pattern Garden Fence.
No. 20. variety.—An admirable substitute for the old-fashioned wire netting.

G. & Co. will be happy to forward, without charge, an explanatory Circular of the principal varieties. Their enlarged Catalogue of Fences and Gates post free on receipt of three stamps.

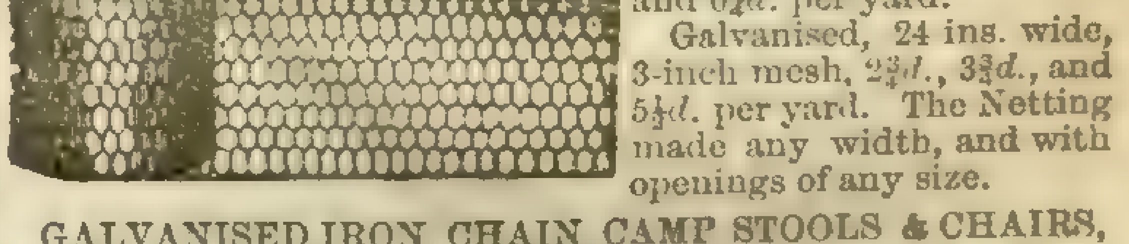
Address Greening & Company, Victoria Works, Oxford Street, Manchester.

Prices Reduced.

H. J. MORTON and CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

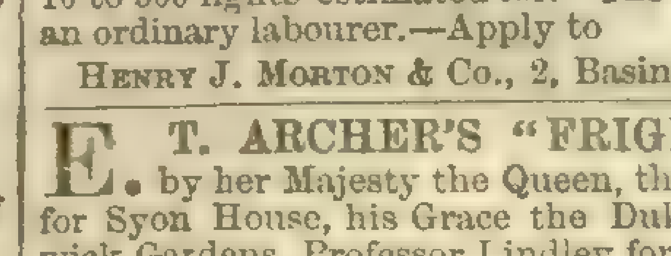
WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1*s.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 4*d.*, 4½*d.*, and 6½*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 2¾*d.*, 3¾*d.*, and 5¼*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

Henry J. Morton & Co., 2, Basinghall Buildings, Leeds.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the COLD WINDS & MORNING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. 1*s.* 6*d.* per yard run.
Four yards wide .. .. 3*s.* per yard.
An improved make, 3 yards wide, 2*s.* 6*d.* per yard run.

Also "Frigi Domo" Netting, 2 yards wide, 1*s.* 4*d.* per yard run.

Elisha Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

GREEN'S

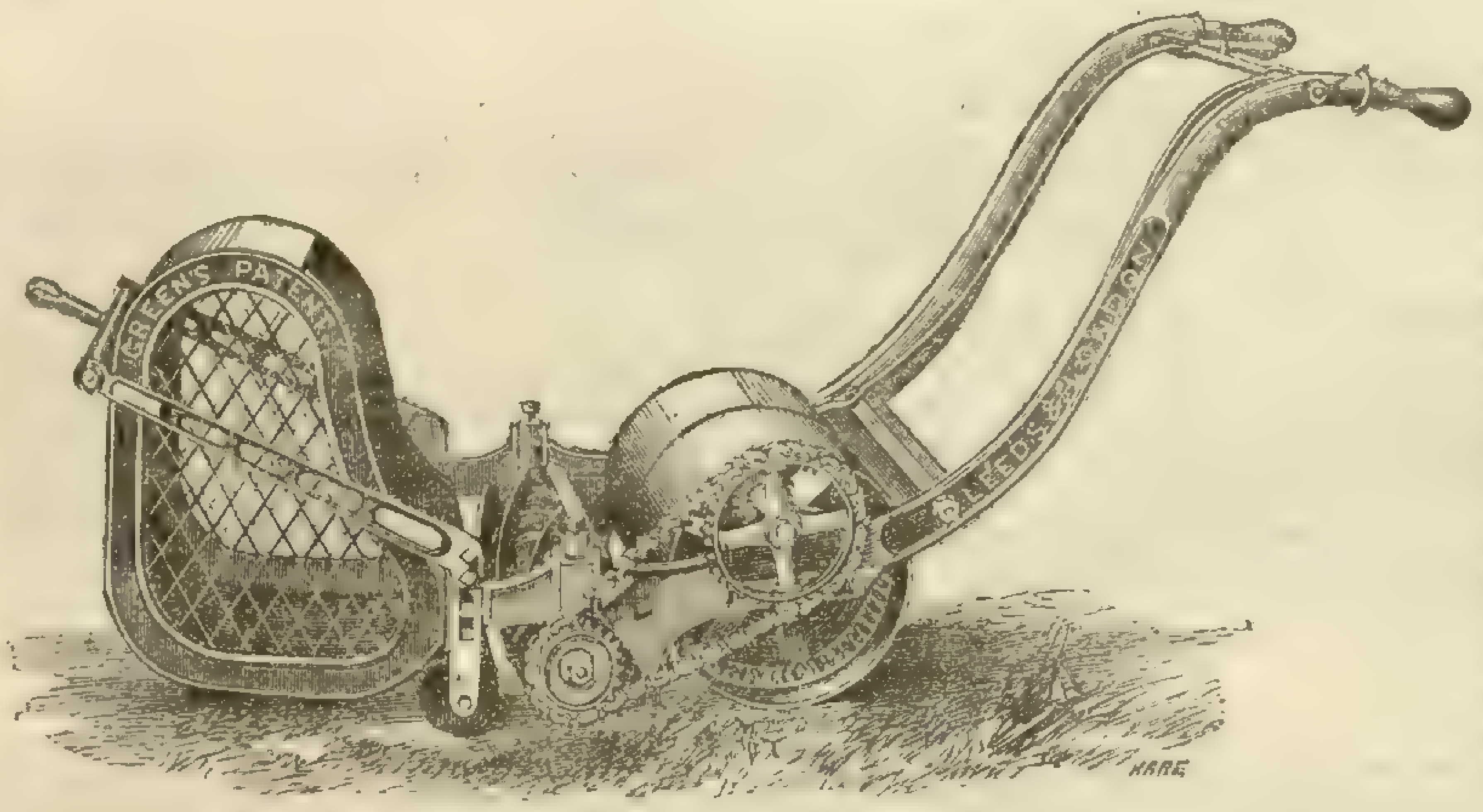
LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THOMAS GREEN can with confidence state that he has succeeded in bringing forward for the ensuing season a Machine which is so novel in its character that any person, however unskilled, is enabled to use it with confidence and ease; and by its thoroughly mechanical construction is pronounced by practical men to be the *ne plus ultra* of perfection. Every improvement that has suggested itself from past experience has been put to practical test, and the results are that the Machines for which Her Majesty's Royal Letters Patent *have recently been obtained* are immeasurably superior to anything of the kind ever brought before the Public. They combine all that efficiency and simplicity can express, and are calculated



to keep Lawns in the highest state of perfection, which cannot be equalled by any other means. They are adapted both in size and price to the very smallest plots, as well as Lawns acres in extent. Since their introduction the sale of these Machines has more than doubled each succeeding year, and has now attained *the largest sale of any Machine "extant;"* have proved to be the best, having carried off *every Prize* that has been given in all cases of competition. They are made from the best materials, and of superior workmanship; are delivered *Carriage Free* to all the principal Railway Stations and Shipping Ports in England; *are warranted to give satisfaction*, and if not approved can be at once returned, if sent carriage free to Leeds.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0	£8 15 0
To Cut 20 inches	8 0 0	9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0	£ 9 17 6
To Cut 24 inches	9 0 0	10 7 6

To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0	£21 10 0
To Cut 36 inches	23 0 0	24 16 0
To Cut 42 inches	26 0 0	28 2 0
To Cut 48 inches	29 0 0	31 8 0

Leather Boots for Horse, per set, £1 4*s.*

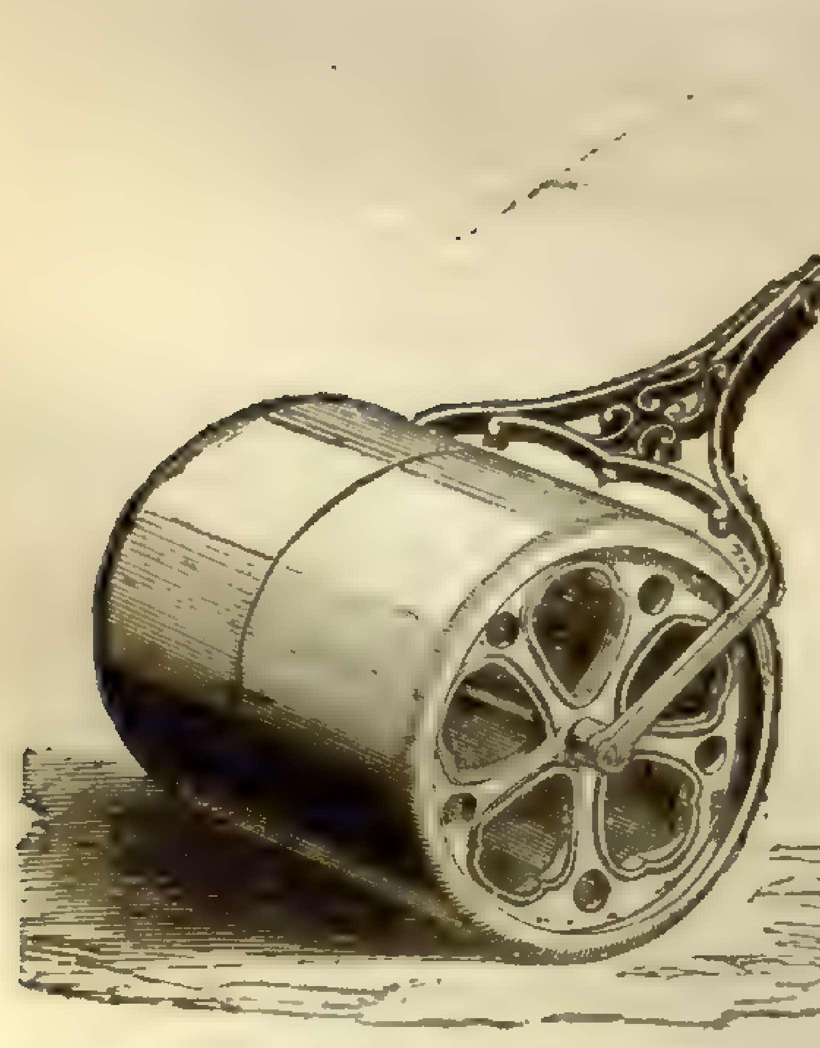
Donkey and Pony Machines, including Box of Requisites & Traces.

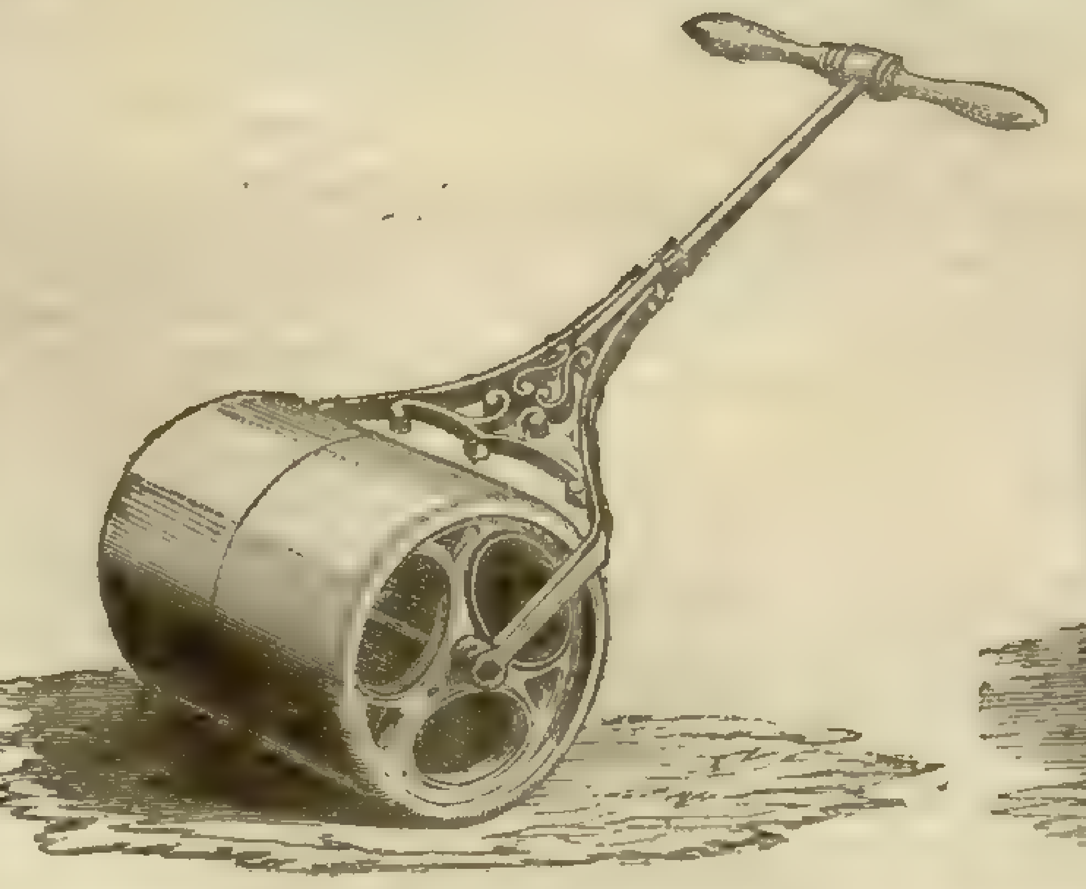
	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0	£12 10 0
To Cut 26 inches	12 10 0	13 12 0
To Cut 30 inches	16 14 0	18 0 0

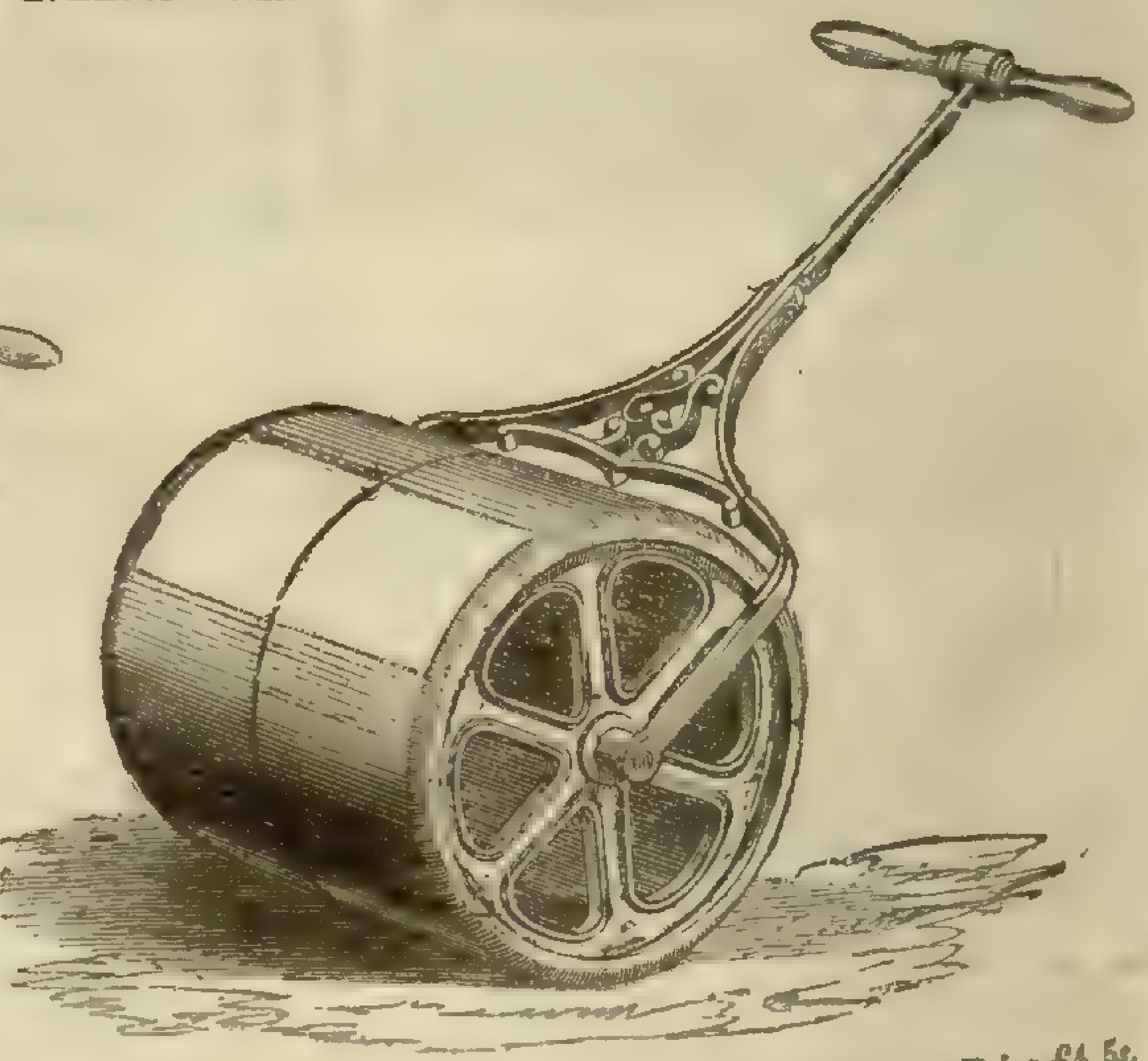
Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.







Diameter 20 inches, length, 22 inches....Price £3 5*s.* | Diameter 16 inches, length, 17 inches....Price £2 10*s.* | Diameter 24 inches, length, 26 inches....Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Glass for Garden Purposes.

JAMES PHILLIPS AND CO., 180, Bishopsgate Street Without, E.C., beg to hand their prices for

PROPAGATING GLASSES.

	Each—s. d.		Each—s. d.
2 inches diameter	0 3½	12 inches diameter	1 9
3 „ „	0 4½	13 „ „	2 0
4 „ „	0 5½	14 „ „	2 6
5 „ „	0 6½	15 „ „	3 0
6 „ „	0 8	16 „ „	3 6
7 „ „	0 10	17 „ „	4 0
8 „ „	1 0	18 „ „	5 0
9 „ „	1 2	19 „ „	6 0
10 „ „	1 4	20 „ „	7 0
11 „ „	1 6		

HAND FRAMES.

	Each—s. d.		Each—s. d.
12 inches	6 0	18 inches	9 0
14 „	7 0	20 „	10 0
16 „	8 0	24 „	12 0

Painted and Glazed with 16 oz. Sheet Glass.
If Open at Top, 1s. extra.

CUCUMBER GLASSES.

24 inches long	2s. 0d.	16 inches long	1s. 4d.
22 „ „	1 10	14 „ „	1 2
20 „ „	1 8	12 „ „	1 0
18 „ „	1 6	Made to any length.	

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, and every description of Glass for Horticultural purposes.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.

Manufactory: Stoke-upon-Trent.—June 14.

Grass Mowing Machines.

BURGESS AND KEY'S GRASS MOWING MACHINES are constructed to cut the heaviest crops of Grass, both the wheels being geared, and sufficient weight in the machine to give grip on the ground. As there is every prospect of the Grass being heavy this season, B. & K. draw special attention to the following Extract from the Report of the Engineer of the Royal Agricultural Society of the trial of Mowers at Leeds: "but there is reason to fear that the Machine [Wood's] would be too light for heavy crops."

"Burgess & Key's was strong, well made, and suitable for the cutting of heavy crops."

Price of Burgess & Key's Mower, 25l. Combined Reaper and Mower, 30l.

Burgess & Key, 95, Newgate Street, London, E.C.

GLASS.

THOMAS MILLINGTON,

HORTICULTURAL GLASS WAREHOUSE,

87, BISHOPSGATE STREET WITHOUT, LONDON, E.C.

ESTABLISHED 1750.

Horticultural Goods.

PROPAGATING GLASSES.

3 inches	0s. 4½d.	each.
4 „	0 5½	„
5 „	0 6½	„
6 „	0 8	„
7 „	0 10	„
8 „	1 0	„
9 „	1 2	„
10 „	1 4	„
11 „	1 6	„
12 „	1 9	„
13 „	2 0	„
14 „	2 6	„
15 „	3 0	„
16 „	3 6	„
17 „	4 0	„
18 „	5 0	„
19 „	6 0	„
20 „	7 0	„

HAND GLASSES.

	Each—s. d.		Each—s. d.
12 in.	6 0	18 in.	9 0
14 „	7 0	20 „	10 0
16 „	8 0	24 „	12 0

If open top, 1s. extra.

CUCUMBER GLASSES.
From 12 inches long and upwards, 1d. per running inch.

ROLLING PINS.
From 12 inches long, 1½d. per running inch.

Improved ANTI-CORROSION and other PAINTS.

GAS and LAMP GLASSES, GLOBES, &c. CHIMNIES of every description.

*** Not accountable for breakage.

Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.

Genuine White Lead, 32s. p. cwt | Linseed Oil Putty, 8s. per cwt.
Anticorrosion Paint, 34s. „ | Patent Dryers, 28s. to 42s. „

CRYSTAL GLASS SHADES. EBONY and GILT STANDS.

HARTLEY'S IMPROVED PATENT ROUGH PLATE.

SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

New Reduced Tariff.

SMALL SHEET SQUARES.

Best. 20s. 2nds. 16s. 3rds. 12s. 6d. 4ths. 11s. } Per 100 feet

6 in. by 4 in.	9½ in. by 7½ in.	14 in. by 10 in.
6½ in. by 4½ in.	10 in. by 8 in.	15 in. by 10 in.
7 in. by 5 in.	11 in. by 9 in.	12 in. by 11 in.
7½ in. by 5½ in.	12 in. by 9 in.	13 in. by 11 in.
8 in. by 6 in.	13 in. by 9 in.	13½ in. by 11½ in.
8½ in. by 6½ in.	12 in. by 10 in.	
9 in. by 7 in.	13 in. by 10 in.	

Best. 23s. 2nds. 18s. 6d. 3rds. 14s. 6d. 4ths. 12s. 8d. } Per 100 feet

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 in. by 11 in.	17 in. by 12 in.	22 in. by 15 in.
17 in. by 11 in.	18 in. by 12 in.	24 in. by 15 in.
18 in. by 11 in.	22 in. by 12 in.	20 in. by 16 in.
13 in. by 12 in.	17 in. by 13 in.	20 in. by 17 in.
14 in. by 12 in.	23 in. by 13 in.	20 in. by 18 in.
15 in. by 12 in.	22 in. by 14 in.	

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers & others.

	Best.	2nds.	3rds.	4ths.	
16 oz.	22s. 0d.	18s.	15s. 0d.	12s. 6d.	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

20 in. by 12 in. | 20 in. by 13 in. | 20 in. by 14 in. | 20 in. by 15 in.

GLASS, cut according to size not on the List.
16 oz. 4ths. 1½d. 2d. and 2½d. per foot.
„ 3rds. 2¼d. 2½d. and 3d. „
21 oz. 4ths. 2¾d. 3d. and 3½d. „
„ 3rds. 3½d. 4d. and 4½d. „

Various thicknesses of Sheet Glass to the foot.

15 oz. 26 oz. 21 oz. 32 oz.

THE SILENT GEAR OF SAMUELSON'S LAWN MOWING MACHINES IS NOT LIABLE TO DERANGEMENT.

SAMUELSON'S SILENT, SELF-CLEANING, LAWN MOWERS,

WITH MANWARING'S PATENT NOISELESS GEAR, AND BOYD'S PATENT SELF-CLEANING BRUSH.

THESE STANDARD MACHINES ARE CONSTRUCTED WITH A SIMPLE AND DURABLE SILENT DRIVING GEAR.

PRICES, including Packing Case, and Carriage paid to any Railway Station in the Kingdom:—

		Boyd's & Manwaring's Patent.	Manwaring's Silent Gear only.
MANUAL POWER	12 inches wide	£5 0 0	£4 12 0
	16 „	7 0 0	6 10 0
	19 „	7 10 0	7 0 0
	22 „	8 10 0	8 0 0

		Boyd's & Manwaring's Patent.	Manwaring's Silent Gear only
PONY POWER	22 inches wide	£9 5 0	£8 15 0
	25 „	12 0 0	11 10 0
	30 „	15 15 0	14 14 0

Testimonial. Donnington, Chichester, March 5.

Sir,—In reply to your letter of the 25th ult. respecting the Lawn Mower I had from you last year, I am pleased to give it my most decided approval; for although I have had one in use for the last 15 years, I have never had one that did its work as well as this, or which was so little liable to get out of order. I consider the cleaning and sharpening apparatus a very great improvement. I have a piece of lawn which in the days of the Scythe always took up two men's time for three days to roll, mow, and sweep; they can now with ease go over this ground with your Machine in a little over two hours, and leave it well finished, so that in fact these Machines soon pay for themselves in labour only, to say nothing of the many other advantages derived from them.—Yours faithfully,

W. J. Humpling.

Orders direct or through Dealers will be executed according to priority of receipt. May be obtained at the Works, Banbury; at Mr. Samuelson's Warehouses, 12, Parliament Street, Essex Bridge, Dublin; Newcastle; Stockton; York; Shrewsbury; and Bristol. Also of all Ironmongers and Seedsmen, and at

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Horticultural Valuer.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), begs to offer his services as above. 28, Priory Road, Wandsworth Road, S.

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MANUFACTURERS OF PRUNING and BUDDING KNIVES, SPORTSMAN'S, and all kinds of POCKET CUTLERY.

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Marquee, Tent, Rick Cloth, Flag, and Tarpaulin Manufacturer,
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No other Establishment.

International Exhibition, Class IX. (Eastern Annexe)

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This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid: its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.

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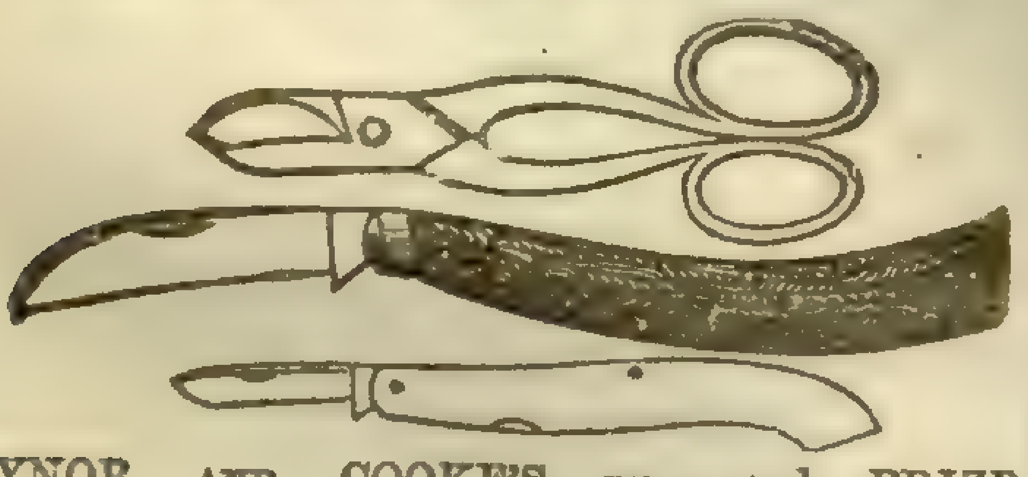

SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c. Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

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CAUTION. None are genuine except marked SAYNOR, or SAYNOR, Maker. Other marks would cause the purchaser disappointment.

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DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.

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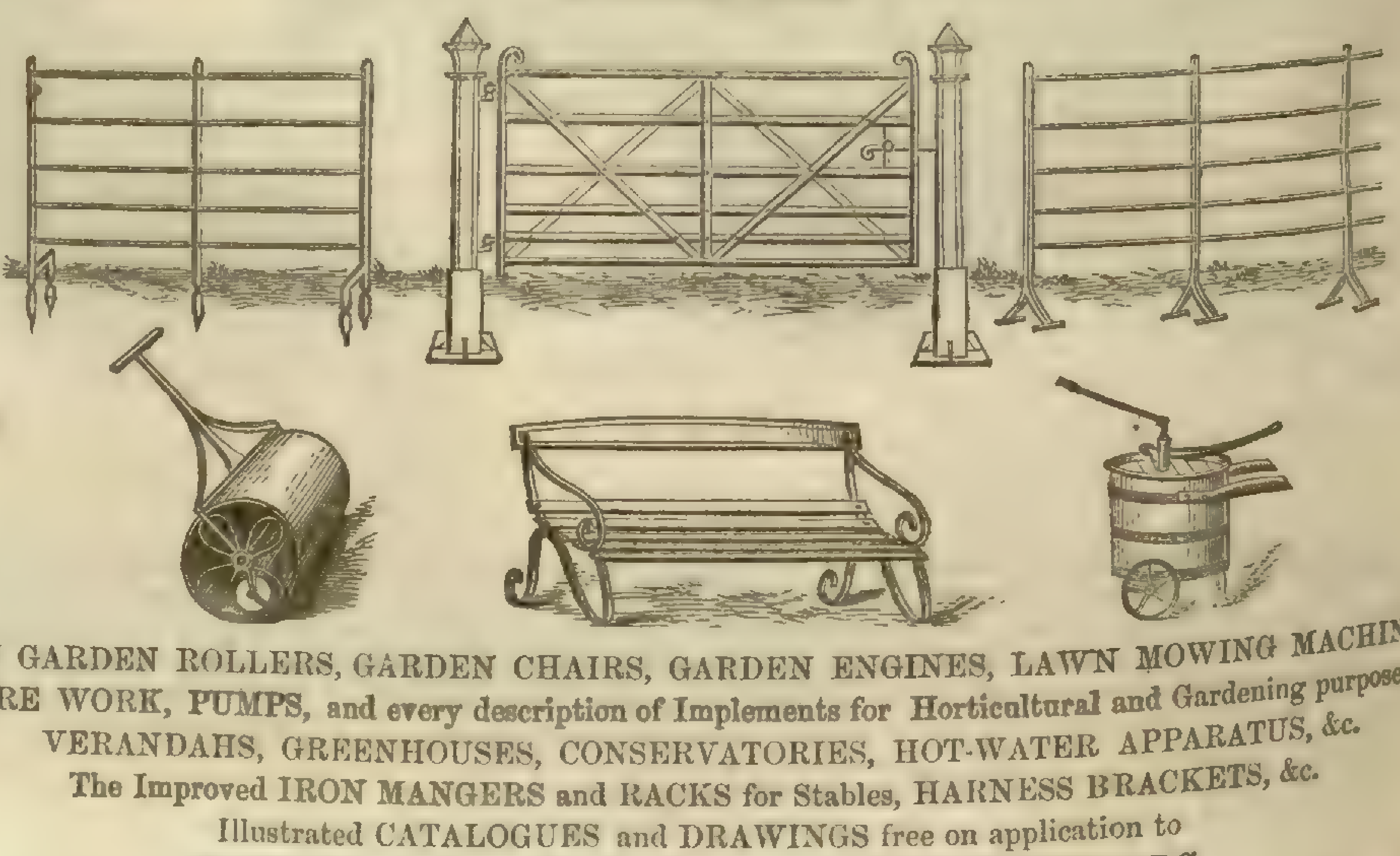

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F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

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3½-inch ivory handles..	12s.	6d	10s.	0d	4s.	3d
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4-inch finest African ivory handles ..	32	0	26	0	11	0
Ditto, with silver ferules	40	0	33	0	12	6
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White bone handles	11s.	0d	8s.	6d	2s.	6d
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Black horn, rimmed shoulders	12	0	9	0	3	0
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The largest stock in existence of Plated Dessert Knives and Forks, in cases and otherwise, and of the new Plated Fish Carvers.

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NORFOLK or SUFFOLK POLLED CATTLE are unsurpassed for Milking properties, and for the quality of their Beef.

Gentlemen wishing to purchase Animals of this profitable and handsome breed, can be supplied on application to THOMAS FILCHER, Elmham, Thetford, Norfolk.

WANTED, in the neighbourhood of London, a SMALL NURSERY, well stocked with Glass.

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Established Orchids and Hardy Ferns.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, June 24, at half past 12 o'Clock precisely, a SMALL COLLECTION of ESTABLISHED ORCHIDS, the property of a gentleman leaving England, comprising choice Vandas, Aerides, Cattleyas, Cypripediums, Dendrobiums, Lælias, Oncidiums, Saccolabiums, &c. Also a large collection of splendid Hardy FERNS, about 12,000, collected by a gentleman in South Wales, consisting of fine masses of Polypodiums, Woodsias, Aspidiums, Cystopteris, Aspleniums, Scolopendriums, Blechnums, Hymenophyllums, Osmundas, &c., all exceedingly healthy and very ornamental.

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Birkenhead

Chesterfield
Chester
Chorley
Chelford
Crewe
Cheadle
Congleton
Colwich

Derby
Dewsbury
Doncaster
Driffield
Droitwich
Dudley

Edgebaston
Eckington

Farnworth

Gainsborough
Grantham

Halifax
Harrogate

Ilkeston

Kirkham
Knapton
Knaresborough

Lancaster
Leeds
Liverpool
Loughborough
Leek
Lichfield
Leamington
Leicester
Lincoln

Macclesfield
Malton
Manchester
Mansfield
Market Harboro'
Marton

Nottingham
Normanton
Northallerton
Northampton

Oakham
Oldbury
Oldham
Ormskirk
Oswestry
Oundle

Preston
Pontefract
Peterborough
Penkridge

Retford
Richmond (Yorks.)
Rotherham
Rochdale
Rugeley
Rugby
Redditch

Shrewsbury
Stafford
Stourbridge
Salford
St. Helen's
Settle
Skipton
Stamford
Sleaford
Scarborough
Selby
Sheffield

Tamworth
Thirsk
Tipton
Trentham
Thrapston

Uttoxeter
Ullesthorpe

Worcester
Wolverhampton
Wellington (Salop)
Wrexham
Warrington
Wigan
Wakefield
Worksop
Wellingboro'

York

Also to any Station in Derbyshire, Shropshire, Warwickshire, Cheshire, Lancashire, Yorkshire, Leicestershire, Worcestershire, Lincolnshire, and Staffordshire.

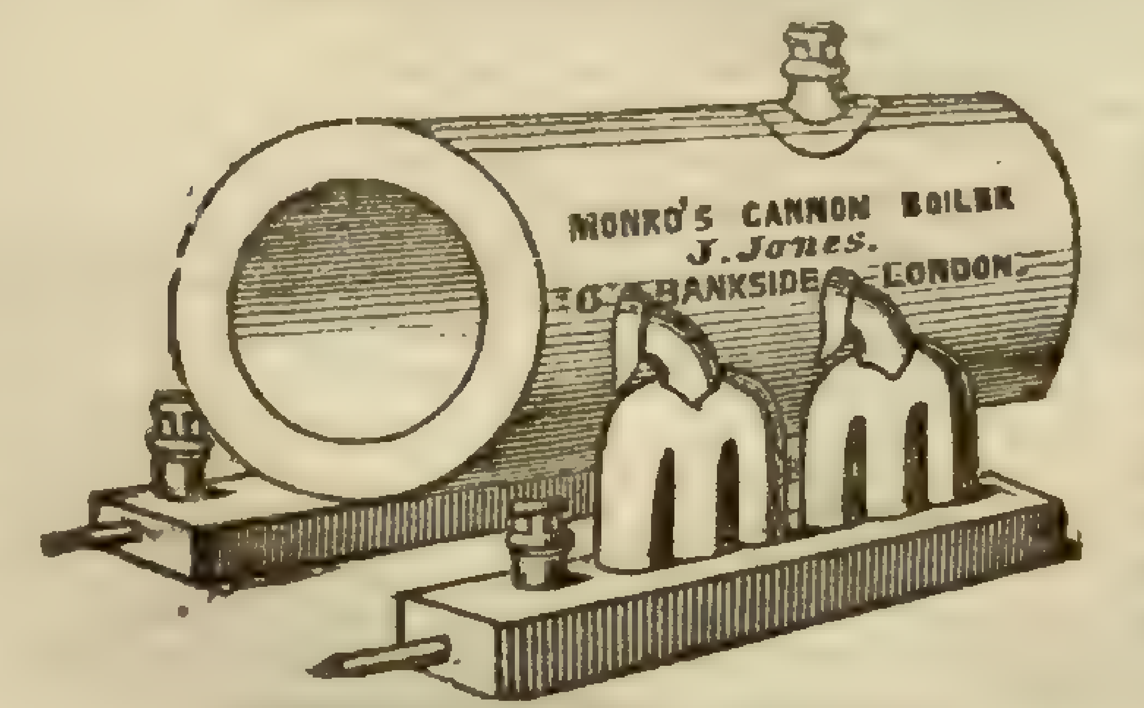
J. Jones will be happy to forward his ILLUSTRATED CATALOGUE of HOT-WATER PIPES, BOILERS, and FITTINGS, and PRICES for the same delivered Free to any Station; but parties requiring prices must state the quantities of Pipes, &c., required, and the Station to which they are to be delivered.

J. JONES,
IRON MERCHANT AND HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

24-inch	Wrought Iron	£6 10 0
30-inch	"	7 10 0
36-inch	"	8 10 0
48-inch	"	12 0 0
60-inch	"	20 0 0
72-inch	"	25 0 0



MONRO'S CANNON BOILER.

These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by J. Jones, 6, Bankside, Southwark, London, S.E.

Prices for HOT-WATER PIPES, ELBOWS, TEES, SYPHONS, VALVES, TROUGH PIPES, ORNAMENTAL COIL CASES, BECK'S PATENT VALVES, &c.; or ESTIMATES for HOT-WATER APPARATUS, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON, SADDLE, or CYLINDER BOILERS, will be sent, with an ILLUSTRATED CATALOGUE, free on application.

J. JONES,
HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, LONDON, S.E.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 25.—1862.] SATURDAY, JUNE 21. {Price Fivepence. STAMPED EDITION, 6d.

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ROYAL HORTICULTURAL SOCIETY'S ROSE SHOW, June 26. Doors open at 1 o'Clock. Bands commence at 3 o'Clock. Admission Half-a-Crown. Visitors can pass under cover to the Show.

ROYAL HORTICULTURAL SOCIETY'S ROSE SHOW, June 26. The Garden will be open at 1 o'Clock. Visitors cannot be admitted either from the Exhibition to the Garden, or to the Exhibition through the Garden, before that hour.

NATIONAL ROSE SHOW, with the HORTICULTURAL SOCIETY'S ROSE SHOW, at South Kensington, THURSDAY next, June 26. Admission, 2*s*. 6*d*.

ROYAL HORTICULTURAL SOCIETY, FLORAL COMMITTEE.

The next MEETING of this Committee for the Exhibition of NEW PLANTS and SEEDLINGS will be held in conjunction with the Rose Show, which will take place in the Gardens of the Society on THURSDAY, June 26. Sub-committees will be appointed to adjudicate on this occasion upon the following subjects:—

New or Rare Plants.

Seedling Florist's Flowers, and Garden Hybrids.

The subjects exhibited must be in the Gardens by half-past 8 o'Clock in the morning in accordance with the regulations. They may be entered without previous notice; but a detailed statement of their names, in WRITING, accompanied by the Exhibitor's address, must be handed in BEFORE NINE O'CLOCK.

Any person may exhibit.

Seedling Flowers exhibited as novelties MUST BE NAMED.

THOMAS MOORE, Secretary to the Committee.

ROYAL BOTANIC SOCIETY, REGENT'S PARK, N.W.

The LAST EXHIBITION this Season of PLANTS, FLOWERS, and FRUIT, will take place on WEDNESDAY, July 9.

Tickets to be obtained at the Gardens only, by Vouchers from Fellows or Members of the Society, price 5*s*., or on the Exhibition days, 7*s*. 6*d*. each.

Bands will play from 2 to 7 o'clock.

THE BIRMINGHAM ROSE SHOW and EXHIBITION of HORTICULTURAL IMPLEMENTS and GARDEN ORNAMENTS (Open to the United Kingdom) will be held in the Town Hall, Birmingham, on TUESDAY and WEDNESDAY, July 1 and 2.

Entries close for Roses, Implements, and Ornaments on WEDNESDAY next, June 25.

Prize Lists and Regulations may be had on application to the Hon. Secs., at the *Midland Counties Herald* Office, Birmingham.

LOUTH FLORAL SOCIETY.—The Committee having determined to hold the next Show on JULY 10 (in conjunction with the Rifle Corps Gala), in the beautiful grounds of the Rev. Wm. Smyth, at Elkington Hall, offer a Prize of a SILVER CUP, value 5*l*., for the best pan of 12 ROSES in trusses, as gathered. Open to all England. Entrance fee, 5*s*.; to Subscribers, 2*s*. 6*d*.

Notice of exhibition must be sent to the Secretary, together with the entrance fee, two clear days before the Show, or the Flowers will not be placed. Other valuable Prizes offered to Subscribers. See Schedule.

Louth, June 21. JAMES FOWLER, Hon. Sec.

THE GRAND HORTICULTURAL FETE and ROSE SHOW of the STAMFORD HORTICULTURAL SOCIETY will be held in Burghley Park, Stamford, on THURSDAY, July 17, in connection with the Northamptonshire Agricultural Society's Annual Exhibition.

The Premiums offered amount to 200*l*., and include 6 Silver Cups.

The Band of the Coldstream Guards will attend, by permission of Colonel Percival.

Entries close on July 7. Schedules, &c., may be obtained on application to Messrs. LAXTON & HEWITT, Hon. Secs., Stamford.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The NINETEENTH ANNIVERSARY FESTIVAL will take place at the London Tavern, Bishopsgate Street, on THURSDAY, June 26, Sir ARTHUR BULLER, M.P., in the chair; supported by the Sheriffs of London and Middlesex.

Tickets, 21*s*. each, may be procured of the Secretary, Stewards, and at the Tavern. The Gallery will be open for the admission of Ladies (Tickets 3*s*. 6*d*. each), for whom refreshments will be provided. Dinner to be upon table at 6 o'clock precisely. EDWARD ROGER CUTLER, Secretary.

14, Tavistock Row, Covent Garden.

ROYAL BOTANIC SOCIETY, REGENT'S PARK.

The Judges pronounce the Collection of PANSIES exhibited by Messrs. DOWNIE, LAIRD, & LAING, to be much the best Collection in the Exhibition; but no Prize was awarded in consequence of their having been entered in a wrong Class.

(Signed) RICHARD STAINS, A. PARSONS, RICHARD ROSER, } Judges.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

WM. PAUL'S ROSES and HARDY ORNAMENTAL TREES are now in full beauty. Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.

Nurseries and Seed Warehouse, Waltham Cross, N.

All the Best New Roses of 1862.

BY PLANTING THE ABOVE IMMEDIATELY A SEASON WILL BE GAINED.

WM. WOOD AND SON have to offer fine strong healthy Plants in Pots, now ready for immediate planting. Early orders will secure the best specimens.

DESCRIPTIVE CATALOGUES on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

ROSES.—The COLLECTION of ROSES at Sawbridgeworth is NOW in FULL BLOOM. Those on the Manetti Rose stock are particularly fine. A long day may be spent among Roses and experimental Fruit Tree culture. Trains to Harlow (the most convenient station, where flys attend) five times daily.

THOS. RIVERS & SON, Nurseries, Sawbridgeworth.

Roses in Bloom.

JOHN CRANSTON begs to announce that his large COLLECTION of ROSES is NOW in FULL BLOOM, and will continue in perfection for some weeks.

Nearly 20,000 plants can be seen growing upon the Manetti Stock, all in the finest health and vigour.

Nurseries, King's Acre, near Hereford.

Rose Nurseries, Hertford.

E. P. FRANCIS'S extensive COLLECTION of ROSES, extending over 50,000, is NOW in FULL BLOOM, and will continue in Bloom during the Summer and Autumn Months. An early inspection is respectfully solicited.

Trains direct to Hertford by the Eastern Counties and Great Northern Lines.

Morning and Evening are the best times for viewing Roses.

J. IVERY AND SON'S Collection of New AZALEAS is NOW in BLOOM, and may be seen (Gratis) at their Dorking Nursery.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize plants, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet. Reference given. Stamps taken.

G. KNIGHTS, Whitton, Ipswich.

New Verbenas, Fuchsias, &c., of 1862.

W. DILLISTONE can now supply the above in good Plants, at low prices. Lists upon application.

Munro Nursery, Sible Hedingham, Halstead, Essex.

Equalled by None.

J. DOBSON AND SONS' splendid Hybridized CALCEOLARIA SEED, in sealed packets, 1*s*. 6*d*., 2*s*. 6*d*., 3*s*. 6*d*., and 5*s*. First Prizes given wherever exhibited.

Woodlands Nursery, Isleworth.

Prize Cineraria Seed.

J. DOBSON AND SONS have carried off the First Prizes every time they have exhibited this season. New Seed, in sealed packets, 1*s*., 2*s*. 6*d*., and 5*s*.

Woodlands Nursery, Isleworth.

New Verbenas of 1862.

B. W. KNIGHT, FLORIST, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4*s*. per dozen, securely packed in tin box, post free.

CATALOGUES of the varieties sent on application.

VARIEGATED GERANIUMS.—100 Dozen fine Autumn-struck Plants, consisting of Bijou, Alma, Perfection, Lady Plymouth, &c.; also a large surplus stock of Scarlet and other Geraniums, Dahlias, Verbenes, Pelargoniums, Fuchsias, &c.

J. PARKER, Florist, Elder Lane, Lower Norwood, Surrey.

Agricultural Seeds.

GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

MESSRS. E. G. HENDERSON AND SON offer Seed of

CALCEOLARA .. .. .. first quality
CINERARIA .. .. .. "
PRIMULA (fimbriated) .. .. "

at 2*s*. 6*d*. and 5*s*. per packet; smaller ones 1*s*. each. All the above are to be seen in bloom at the Nursery in their respective season.

Wellington Nursery, St. John's Wood, London, N.W.

CHARLES NOBLE begs to annex the names of the RHODODENDRONS which obtained the First Prize at the Royal Horticultural Gardens, May 21.

Lord Palmerston	Duke of Cambridge
Lady Palmerston	Floretta
Lord Granville	Princess Hortense

He also obtained the First Prize at the Grand Opening Show at South Kensington in 1861.

Bagshot.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality at Market Prices.

Good Seeds, Carriage Free.

SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

Calceolaria, Cineraria, and Primula.

BUTLER AND McCULLOCH respectfully beg to offer the following Seeds, saved from Collections containing only the Choicest strains:—

CALCEOLARIA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
CINERARIA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
PRIMULA SINENSIS FIMBRIATA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.

BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.

Choice Calceolaria, per pkt. 1*s*.	Choice Cineraria, per pkt. 1*s*.
" Primula " .. 1*s*.	" Picotee " .. 1*s*.
" Carnation " .. 1*s*.	" Pelargonium " .. 1*s*.

ILLUSTRATED GUIDE to the FLOWER GARDEN, 2*s*. 6*d*.

Gunnera scabra Seed, 1s. per packet.

BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.

The GUNNERA SCABRA (a highly ornamental foliaged plant for Lawns and other conspicuous places) is described by Darwin as producing leaves 8 feet in diameter. Last year at the Kew Gardens there was a plant with leaves 4 ft. long, and nearly the same in diameter. See *Gardeners' Chronicle*, March 29, page 285.

BARR & SUGDEN, 12, King Street, Covent Garden (opposite the Garrick Club), W.C.

Catalogue of Fruits gratis on application.

THOMAS RIVERS has a few copies left of his last DESCRIPTIVE CATALOGUE of FRUITS (October, 1861), much at the service of his friends.

Nurseries, Sawbridgeworth.

Pine Plants.

M. ROCHFORD, MARKET GARDENER, Page Green, Tottenham, N., can supply in large quantities, cheap, very fine, strong and clean QUEENS in all sizes. These plants never had scale, and can be warranted free from it.

Vines in Pots.

H. LANE AND SON have to offer a large quantity of strong VINES in POTS, well set with Fruit, many of them with two to seven bunches.

Also a fine lot of Dwarf ROSES in POTS, suitable for immediate bedding. All orders shall have prompt attention.

The Nurseries, Great Berkhampstead, Herts.

WANTED to PURCHASE, Three or more ORANGE TREES in Tubs, not less than 10 feet from the bottom of the tub. No trees of the Seville kind or any producing other than sweet edible fruit need be offered.

Apply, stating lowest price, by letter prepaid, addressed to W. FANE DE SALIS, Esq., Dawley Court, Uxbridge.

Cineraria and Calceolaria Seed.

F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*., free by post.

Dulwich, Surrey, S.

New Chrysanthemums, Hardy Variegated Plants, &c.

JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

New Delphinium, "Beauty."

J. AND J. FRASER, of the Lea Bridge Road Nurseries, N.E., have much pleasure in announcing that they are now prepared to send out plants of the above.

It was examined by the Floral Committee of the Royal Horticultural Society July 12, 1860, and was awarded a Label of Commendation.

Description and price on application.

Palms and other Stove Plants.

TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual size.

A CATALOGUE, giving the height of each plant, will be sent, post free, on application to Mrs. LE CREPS, Château du Mesnil de Mathieu, near Caen, Department of Calvados, France, where the plants may be viewed.

The Swede that never Mildews.

SUTTON'S CHAMPION SWEDE, the heaviest and most certain cropper—quite hardy. Fresh seed, 1*s*. per lb., or cheaper by the bushel (carriage free).

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.

WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

Stones or Sprotborough Cabbage Seed.

JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.

The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.

Price 3*s*. per lb., or 16*l*. per cwt.

Choice Seeds.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the under-mentioned Seeds, which cannot fail to give the greatest satisfaction.

PRIMULA, per packet, 2s. and 3s. 6d. each.
CALCEOLARIA, per packet, 1s. 6d., 2s. 6d., and 3s. 6d. each.
CINERARIA, per packet, 1s. 6d. and 2s. 6d. each.

For numerous Testimonials see SEED CATALOGUE, post free on application.

Notice.

B. S. WILLIAMS begs to intimate that he is prepared to supply nice Plants of his New and beautiful AZALEA ELEGANTISSIMA, exhibited at the Royal Horticultural Society's Meeting, May 21, and which was awarded a Label of Commendation.

Flowers pure white, finely striped with light salmon red or pink, splendid habit, excellent form and substance, and a free bloomer.

Extract from the *Gardeners' Chronicle* in their report of the Royal Horticultural Society's Meeting, May 21. "A beautiful seedling Azalea called Elegantissima, white striped with pink, came from Mr. Williams, a good addition to the class to which it belongs." Price 10s. 6d. each; extra size, 15s. to 21s. each.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Stachys lanata.

B. S. WILLIAMS, Paradise Nursery, Holloway, N., has great pleasure in offering another fine plant for Edging or Ribbon borders. This is not a new plant, but one that is little known, and will without doubt rank among the finest plants for the above decorative purposes. The foliage is quite distinct, being the colour of Cerastium tomentosum, but much larger; leaves five inches long by one inch broad, and of a fine thick woolly texture, which, when the sun shines upon it, gives it a beautiful white frosty appearance. In growth it is from six to nine inches high, and very compact, forming a fine contrast when planted with yellow Calceolaria, Scarlet Geraniums, or any other plants of similar character. Having been used as a decorative plant for several years by the party from whom the stock has been purchased, it was very much admired. This also makes a beautiful ornament for rockwork. Price per doz., 4s.; per 100, 25s.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

For a valuable selection of New and Rare Plants, see B. S. W.'s Advertisement in the *Gardeners' Chronicle*, May 10.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Stanstead Park Nursery, Forest Hill, S.E. and Edinburgh.

DOWNIE, LAIRD, and LAING have much pleasure in offering the following very select Seeds, saved from their choice collections.

ANTIRRHINUM, 6d. and 1s. per packet.
CALCEOLARIA, 1s. and 2s. 6d. per packet.
CINERARIA, 1s. and 2s. 6d. per packet.
HOLLYHOCK, 1s., 2s. 6d. and 5s. per packet.
PANSY, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS KERMESINA SPLENDENS, 1s. 6d. and 2s. 6d. per packet.

Dobson's Splendid Calceolarias.

J. DOBSON and SONS have the pleasure of offering NEW SEED saved from their unequalled collection. We beg to recommend the seed with, if possible, even greater confidence than any hitherto sent out by us. The flowers were new, large, finely-marked and beautiful in shape, and must be the precursor of something very splendid next season. The following Testimonials are among many hundreds, and it is to us a source of gratification to know that the Seed is second to none:—

Extract of Letter from The Gardener *to* N. Macleod, Esq., *Dalvey, near Forres, N.B.*

Messrs. Dobson's Calceolarias are quite a wonder, and elicit the admiration of everybody. It is wonderful to think that from a pinch of seed carefully saved such a variety of beautiful flowers can be produced. Out of 200 plants the inferior flowers are the exception; indeed, the majority of them are model flowers, large and well formed, and vie with each other in the delicacy of their colours and markings. They do Mr. Dobson great credit as a cultivator; and besides it is a great satisfaction to know where we can get seed saved so well worthy the trouble of growing.

From Mr. John Harris, *St. Andrew's Nursery, Bury St. Edmunds, May 24.*

Dear Sir,—Your Calceolarias this year have been the best I have ever seen, and have carried off the prizes all about this way.

From W. Fox, *Gardener, Taplow House, near Maidenhead.*

The Calceolarias from your seed of last year have been splendid, and much admired by all.

From Mr. J. Seale, *Pentre Gardens, near Castle Emlyn, S. Wales.*

Gentlemen,—The Cinerarias and Calceolarias raised from the seed I had from you last year have been the admiration of all who saw them.

From Miss Crawshay, *Caversham Park, Reading.*

Gentlemen,—I found your seed last year superior to any I have hitherto had.

From Messrs. Dickson & Turnbull, *The City Nursery, Brechin, N.B.*

Gentlemen,—The Calceolaria seed you sent us last season was very fine, and the plants have surprised all who have seen them.

In sealed packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. Only one quality sent out, and that the very best, as grown by ourselves.

J. Dobson & Sons, Woodlands Nursery, Isleworth, W.

ROBERT PARKER begs to offer strong healthy plants of the following, all of which will prove desirable acquisitions to the most select collections:—

CENTAUREA RAGUSINA	Each	2s. 6d.
COLEUS VERSCHAFFELTI	"	1 0
FUCHSIA COMET	"	1 6
" MINNIE BANKS	"	1 6
" WHITE LADY	"	1 6
GERANIUM PRINCE of WALES, each, 1s. 6d.; per dozen, 12s.; per 100		75 0
VERBENA LADY VICTORIA SCOTT, each, 1s. 6d.; per dozen, 12s.; per 100		50 0

Exotic Nursery, Tooting, Surrey, S.

Choice Seeds for Present Sowing.

ROBERT PARKER begs to offer the following, all of which are warranted to be new and genuine, and the finest qualities of their respective kinds.

	Per Pkt.—s. d.
CALCEOLARIA, Herbaceous, finest mixed	2 6
CINERARIA, finest mixed	2 6
CLIANTHUS DAMPIERII	2 6
DIANTHUS HEDDEWIGII, and vars., finest mixed, 6d. &	1 0
HOLLYHOCK, finest mixed	0 6
HUMEA ELEGANS	0 6
PANSY, finest mixed	1 0
PRIMULA SINENSIS DENTIFLORA	2 0
" " " ALBIFLORA	2 0
" " " KERMESINA SPLENDENS	2 6
STOCK, Scarlet, Intermediate	0 6
" White	1 0
SWEET WILLIAM, Auricula-flowered, finest mixed	0 6

A Priced and Descriptive CATALOGUE of SEEDS will be forwarded post free on application.

Exotic Nursery, Tooting, Surrey, S.

Battersea Park.
The Royal Agricultural Society's Meeting.

MESSRS. SUTTON and SONS being Exhibitors at the International Exhibition, South Kensington, and also at the Crystal Palace, Sydenham, will not have a Stand at the Show Yard, Battersea Park, but they may be heard of each day at the Stand of Messrs. Barrett, Exall, & Andrewes in the Show Yard.

Royal Berkshire Seed Establishment, Reading.

Two Hundred and Fifty Guineas in Ten Prizes.

For Five Years Successively His late Royal Highness the Prince Consort's Prize Cups have been awarded to

SUTTON'S CHAMPION SWEDES at the Royal East Berks and South Bucks Agricultural Societies.

New Seed now ready, 1s. per lb., or cheaper by the bushel, carriage free.

Royal Berkshire Seed Establishment, Reading.

International Exhibition—Collection of Grasses.

SUTTON and SONS, Seedsmen to the Queen, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe. Also to their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which for want of space there is erected at the Crystal Palace, Sydenham.

Royal Berkshire Seed Establishment, Reading.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. Wheeler & Son, Seed Growers, Gloucester.

New Plant Catalogue.

MESSRS. E. G. HENDERSON and SON respectfully announce the publication of their NEW SPRING CATALOGUE of BEDDING and other ORNAMENTAL PLANTS, including descriptions of the undermentioned POMPON DAHLIAS, &c.

Angel of Peace	Little Mary
Annie	Little Prince
Butterfly	Little Valentine
Fairy Nymph	Pearl of Lilliputs
Goldlight	Silver Pheasant
Jeannette	Star
Little Darling	Tom Tit
Little Dorrit	and others.

BANKS'S NEW FUCHSIAS.
WILLS'S NEW VERBENAS.
FERN-LEAVED PRIMULAS, white and red fringed.
BEDDING TROPÆOLUMS—elegans coccinea, Model, Constellation, and Beauty of Oulton Park.
PETUNIA MAGNIFICENS.
GLOXINIAS—Brilliant, Leviathan, Bird of Paradise, and Most Beautiful; these four are very large, new in colour, and distinct.
AUCUBA HIMALAICA, the finest habited plant of all the new Aucubas.
GERANIUMS of the Zonale section—Magenta, new colour; Woodwardiana, best formed large petal-flowered; Baron Ricasoli, without exception the best bedding or Vase Geranium of any at present known.
GERANIUMS, Minimum Section, Harry Hieover.
" Nosegay " Pink Pearl.
" Variegated " Sunset, Gold Leaf, Mrs Milford, The Countess, Gold Pheasant, Little Beauty, &c.

Wellington Nursery, St John's Wood, London, N.W.

Royal Botanic Gardens, Regent's Park.

JOHN WATERER has the pleasure to announce that his ANNUAL DISPLAY of HARDY SCARLET and other RHODODENDRONS, AZALEAS, &c, is now on view at the above Gardens; the Plants are now in fine bloom and will continue in perfection throughout the month of June.

Orders of admission are granted by Members of the Botanic Society, or by applying to the Advertiser at the above address.

The Plants at the Nursery are also in full bloom.

American Nursery, Bagshot, Surrey, near Sunningdale Station, South Western Railway.

CLERODENDRON THOMSONÆ.—At the Royal Horticultural Society's Grand Show on May 21, we were awarded the First Prize for this very beautiful new climber. It is figured and fully described in Curtis's "Botanical Magazine" for last month. Healthy young plants, 7s. 6d. each; stronger, 10s. 6d. each.

Thomas Jackson & Son, Nurserymen, &c., Kingston, S.W.

Osmunda regalis cristata.

OSBORN and SONS have now the pleasure to offer plants of this unique and beautiful Crested Fern, exhibited by them at the Regent's Park and South Kensington shows, price 21s. each.

They have also a few plants of the PHYSURUS MACULATUS, exhibited by them and figured in the *Botanical Magazine* for May, price 1l. 11s. 6d. each. The usual discount to the Trade.

Fulham Nursery, London, S.W.

Calceolaria, ex. ex.

STEPHEN BROWN'S Seed of the above is of the same extra quality as in past years, saved expressly for him by a private grower for many years renowned for his first-rate Calceolarias. It has annually given the most unqualified satisfaction, and procured numerous prizes. The flowers are splendid in colour, richly spotted, of excellent form, large, and of endless variety. Packets, 2s. and 1s.

CALCEOLARIA NANA GRANDIFLORA PRÆCOX.—Very beautiful, from the Continent, exceedingly dwarf, and covered with a profusion of large and bright flowers, of great variety. Packets, 2s.

PRIMULA FIMBRIATA, ex. ex.—Finest mixed dark varieties, purple, carmine, roso, &c. Packets, 2s. and 1s.

FIMBRIATA STRIATA.—Very choice white, with many of the flowers beautifully striped with bright red, extra. Packets, 1s. 6d.

FIMBRIATA ERECTA SUPERBA.—Of more erect habit, received from the Continent, and represented as splendid, quite distinct, and constant. Packets, 2s. 6d.

SEED of first-class FLORIST FLOWERS, English and Continental, comprising Geranium, Hollyhock, Carnation, Picotee, Pansy, Cineraria, Polyanthus (superbly laced), Verbena, Antirrhinum, Gladiolus, Pentstemon, &c., all saved from the finest collections.

The SEED CATALOGUE free on application.

Stephen Brown, Seed Grower and Importer, Sudbury, Suffolk.

The Bedford Conservatories, Covent Garden Market.

Entrance in the Grand Row only; Reopened by

R. GREEN, with an immense variety of Foreign and British FERNS, all kinds of Greenhouse and Stove Plants, Fern Cases and Aquariums, Gold and Silver Fish, Green Lizards, Tree Frogs, Salamanders, Land and Water Tortoise, and all objects for the Aquarium. A splendid assortment of Foreign Birds and Cages. And at

154, Kingsland Road, N.E.

TAN GRATIS in the immediate neighbourhood of Covent Garden Market.

Apply to Essex & Sons, 28, Stanhope Street, Clare Market, W.C.

International Exhibition.

FERNS, BEGONIAS, &c., are growing in COCOA-NUT REFUSE at the bottom of a case (with Cocoa-nuts on the top outside) in the centre of the Eastern Annexe.

Refuse delivered in London at 1s. 6d. per bag, containing 3 bushels. Large quantities on lower terms, on application to the Patent Cocoa Fibre Co., Kingston-on-Thames, S.W.

Postage stamps or Post-office Orders payable to J. Barsham & Co.

A BOON to TURNIP GROWERS.—The best and only way to secure a Turnip Crop from the Ravages of the Fly. Thirty years' experience and never once failed. Full particulars will be sent on receipt of 2s. 6d. postage stamps.

Address A. Faithful, near Eastbourne, Sussex.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

Page & Toogood, Royal South Hants Seed Establishment, Southampton.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by
Price's Patent Candle Co., Limited.

NEAL'S PATENT APHIS PASTILS, One Shilling and Two Shillings per packet, are now acknowledged by all disinterested persons to be the only cheap and effectual way of smoking a Greenhouse: they destroy all insects, and cannot injure the foliage unless they are damp. Testimonials from Florists and Scientific men of the highest standing may be had on application.

NEAL'S PLANT SOAP is a perfectly new preparation, free from all smell, little more than half the price of the ordinary compounds, is not injurious, but on the contrary useful to the health of the Plant; destroys Red Spider, Mealy Bug, American Blight, Mildew, Scale, Thrip, Green Fly, and all other Insect Pests, and is only 1s. a packet of four cakes. May be obtained of all principal Seedsmen.

Magnified Aphides.

Patentee: J. NEAL, Edward Street, Birmingham.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street, W. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.

Manufactory: Stoke-upon-Trent.—June 21.

WHITE GARDEN EDGING TILES, plain and scalloped pattern, STRAWBERRY TILES, &c., 9s. p. 100. Apply to Mr. E. HOOPER, Manufacturer, Southampton, or to Mr. J. DOWNEY (London Agent), Victoria Wharf, Nine Elms, S.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

Grass Mowing Machines.

BURGESS AND KEY'S GRASS MOWING MACHINES are constructed to cut the heaviest crops of Grass, both the wheels being geared, and sufficient weight in the machine to give grip on the ground. As there is every prospect of the Grass being heavy this season, B. & K. draw special attention to the following Extract from the Report of the Engineer of the Royal Agricultural Society of the trial of Mowers at Leeds: "but there is reason to fear that the Machine WOOD'S] would be too light for heavy crops."

"BURGESS & KEY'S was strong, well made, and suitable for the cutting of heavy crops."

Price of BURGESS & KEY'S Mower, 25l. Combined Reaper and Mower, 30l.

BURGESS & KEY, 95, Newgate Street, London, E.C.

TANNED NETTING for the Protection of Fruit Trees, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Cotton Netting, Tiffany, Scrim Canvas for Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c.

Be particular, JOHN EDGINGTON & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

TANNED NETTING at Reduced Prices.—200 square yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvas for Wall Fruit, Greenhouse Shades, and Tulip Covers.

Address in full, FREDERICK EDGINGTON, Marquee, Flag, and Banner Manufacturer, Thomas Street, Old Kent Road, London, S.E.

TANNED GARDEN NETTING for preserving Seed Beds, Fruits, Strawberries, from frost, blight, birds, &c., and as a Fence for fowls, &c. 1 yard wide, 1½d.; 2 yards, 3d.; 3 yards, 4½d.; and 4 yards, 6d. per yard, in any quantity, may be had at CHAS. WRIGHT'S, 376, Strand, W.C.

GREENHOUSE and FLOWER-POT STICKS VARNISHED:—1 foot, 3d.; 1½, 4d.; 2, 5d.; 2½, 7d.; 3, 10d.; 4, 1s. 6d. per dozen. DAHLIA STICKS VARNISHED, per dozen:—3 feet, 1s. 6d.; 4, 2s. 3d.; 5, 3s.; 6, 3s. 6d. An allowance to Nurserymen.

BRITTAIN'S PATENT GARDEN NETTING will be found superior to every other article for the protection of Fruit Trees from frost, birds, &c.; whilst rendering this service light and air are not impeded. It is also a beautiful Shading for Hothouses, and is cheaper, being more durable than any kind of Tiffany, or other material in use. NETTINGS, No. 1, 15s.; No. 2, 18s. 9d.; and No. 3, 22s. 6d. per piece, or 4d., 5d., and 6d. per square yard. Pieces, 30 yards long, 55 inches wide. GARDEN MATS, highly recommended, 50 by 70 inches, 20d. each.

Agents: ROBT. HEINEKEY & Co., 20, Harp Lane, Tower Street, London, E.C.

Wasps—The Wasps are Coming

HAYTHORN'S HEXAGON and CHISWICK GARDEN NETS are guaranteed to protect all kinds of Fruit from Wasps, Flies, Birds, &c. These Nets are used and recommended by the principal Gardeners.

For testimonials, patterns, and prices, please direct to Mr. HAYTHORN, Nottingham.

SHAW'S TIFFANY.—The lightest, cheapest, and most durable of all materials for Shading Conservatories and Hot-houses is SHAW'S TIFFANY. As a protection from cold winds and scorching heat, nothing equal to SHAW'S TIFFANY. For effectually preserving Fruits and Seeds from the Attack of Birds, Wasps and Insects, use SHAW'S TIFFANY.

Sold by all Nurserymen and Seedsmen. Samples and Prices on application.

J. SHAW & Co., Oxford Street, Manchester.

Glass for Greenhouses.

JAMES PHILLIPS AND CO. beg to submit their prices as follows:—

ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 280 feet, 2¼d. and 2½d. per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each Package included.

				3rds.	4ths.
12 by 9,	13 by 9,	14 by 9,	15 by 9	14s. 0d.	12s. 6d.
12 ,, 10,	13 ,, 10,	14 ,, 10,	15 ,, 10		
13 ,, 11,	14 ,, 11,	15 ,, 11,	16 ,, 11	16s. 0d.	13s. 6d. per 100 feet.
14 ,, 12,	15 ,, 12,	16 ,, 12,	17 ,, 12		
18 ,, 12,	19 ,, 12,	20 ,, 12,	16 ,, 13		
17 ,, 13,	18 ,, 13,	19 ,, 13,	20 ,, 13		
16 ,, 14,	17 ,, 14,	18 ,, 14,	20 ,, 14		

Various other sizes.

GLASS FOR ORCHARD HOUSES, As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.			
20 in. by 13 in.	Common	13s. 6d. ..	£0 18s.
20 in. by 14 in.	Superior do.	16 0 ..	1 3
20 in. by 15 in.	English Glass	18 0 ..	1 9

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11s. 6d.
8 ,, 6	8½ ,, 6⅜	9 ,, 7	9½ ,, 7½	
		10 ,, 8	10½ ,, 8½	12 6

Boxes 2s. each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.

16 oz. 4ths, 1¾d., 2d., and 2½d. 21 oz. 2¾d., 3d, and 3½d.
,, 3ds, 2d., 2½d., and 3d. ,, 3d., 3½d., and 4d.

London Agents for Hartley's Improved Patent Rough Plate. Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, London, E.C.

Glass.

THOMAS MILLINGTON, HORTICULTURAL WAREHOUSE, 87, Bishopsgate Street Without, London, E.C.

ESTABLISHED 1750.

NEW REDUCED TARIFF.

SMALL SHEET SQUARES.

Best. 20s. 2nds. 16s. 3rds. 12s. 6d. 4ths. 11s. Per 100 feet

6 in. by 4 in.	9½ in. by 7½ in.	14 in. by 10 in.
6½ in. by 4½ in.	10 in. by 8 in.	15 in. by 10 in.
7 in. by 5 in.	11 in. by 9 in.	12 in. by 11 in.
7½ in. by 5½ in.	12 in. by 9 in.	13 in. by 11 in.
8 in. by 6 in.	13 in. by 9 in.	13½ in. by 11½ in.
8½ in. by 6½ in.	12 in. by 10 in.	
9 in. by 7 in.	13 in. by 10 in.	

Best. 23s. 2nds. 18s. 6d. 3rds. 14s. 6d. 4ths. 12s. 8d. Per 100 feet

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 in. by 11 in.	17 in. by 12 in.	22 in. by 15 in.
17 in. by 11 in.	18 in. by 12 in.	24 in. by 15 in.
18 in. by 11 in.	22 in. by 12 in.	20 in. by 16 in.
13 in. by 12 in.	17 in. by 13 in.	20 in. by 17 in.
14 in. by 12 in.	23 in. by 13 in.	20 in. by 18 in.
15 in. by 12 in.	22 in. by 14 in.	

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers & others

	Best.	2nds.	3rds.	4ths.	
16 oz.	22s. 0d.	18s.	15s. 0d.	12s. 6d.	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

20 in. by 12 in. | 20 in. by 13 in. | 20 in. by 14 in. | 20 in. by 15 in

GLASS, cut according to size not on the List.
16 oz. 4ths. 1¾d. 2d. and 2½d. per foot.
,, 3rds. 2¼d. 2½d. and 3d. ,,
21 oz. 4ths. 2¾d. 3d. and 3½d. ,,
,, 3rds. 3½d. 4d. and 4½d. ,,

Various thicknesses of Sheet Glass to the foot.

15 oz. 26 oz.
21 oz. 32 oz.

Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.
Genuine White Lead, 32s. p. cwt | Linseed Oil Putty, 8s. per cwt.
Anticorrosion Paint, 84s. ,, | Patent Dryers, 28s. to 42s. ,,

CRYSTAL GLASS SHADES. EBONY and GILT STANDS.
HARTLEY'S IMPROVED PATENT ROUGH PLATE.
_ Not accountable for breakage.
SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

All the First Prizes for Flower and Fruit Decoration.

MESSRS. DOBSON AND PEARCE, 19, St. James's Street, London, W.C., ARTISTS IN GLASS to the Queen, are the sole Manufacturers of MR. MARCH'S DESIGNS for TABLE and DRAWING-ROOM DECORATION, and hold the registered Copyright. The Royal Horticultural Society have awarded the following Prizes:—

For the Glass Epergnes (arranged with Flowers and Fruit), the First Special Prizes for Table Decoration, both in 1861 and 1862.

For the Glass-handled Baskets (arranged with Flowers), the First Special Prize for Drawing-room Decoration, 1862; and the Second Prize for Table Decoration, 1862.

The Epergnes and Baskets are daily on view at 19, St. James's Street, W.C., and at the Glass Court of the Exhibition, dressed with natural flowers.

Prices of the Epergnes, 15s., 18s., and 22s. Prices of the Baskets, 10s., 13s., and 16s. The Trade supplied.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.

THE GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C.

Artificial Stone Works, 371 to 375, Euston Road, N.W

AUSTIN SEELEY, & CO. beg to inform the Public, that they have lately enlarged their Stock of VASES, FIGURES, FOUNTAINS, & other GARDEN ORNAMENTS.

The present Stock comprises:

133 different kinds of Vases, from 9s. to 30l.	15 Baskets, from 1 to 10 feet diameter [&c.
About 200 Fountains, from 10l. to 400l.	17 Flower Boxes for Windows,
52 Statues, Modern and Antique	6 Garden Seats
44 Small Figures and Groups of Children	22 Sun-dial Pillars
	34 Baptismal Fonts, from 3l. to 15l.
70 Figures of Animals & Birds	22 Ornaments for Gate Piers

Having during the last 30 years executed for the Royal Gardens and for the grounds of the principal nobility an immense quantity of such work, they presume that it is needless to warrant its durability; but they are prepared with the most unquestionable references if desired.

TO BE SOLD, CRICKET GROUND ROLLER also a small-sized ROLLER and several GARDEN TOOLS.

To be seen, with terms, at Acre Villa, The Green, Ealing, Middlesex.

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.

£2. 2s.

An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.

One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.

It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.

It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.

No Establishment, either private, commercial, or manufacturing, should be without one.

Six ft. of Flexible Suction, with Union and Suction Rose, &c. extra, 12s. Longer lengths of Suction at 1s. 6d. per foot.

May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,

JOHN WARNER & SONS, 8, Crescent, Cripplegate, London, E.C.

Garden Engines and Syringes.

J. TYLOR AND SONS, Warwick Lane, Newgate Street, London, E.C., beg to call attention to their very superior manufacture of GARDEN ENGINES and SYRINGES.

Fig. 598. J. TYLOR & SONS' BARROW GARDEN ENGINE in best well painted Oak tub, fitted with J. TYLOR & SONS' Improved Brass Pump, Universal Joint, and Registered Spreader, which answers the purpose of the separate rose, fan, and jet.

15 gallons .. £5 12 6 | 28 gallons .. £7 2 0

Fig. 599. Ditto GALVANIZED IRON TUB.

8 gallons	12 gallons	16 gallons	24 gallons	30 gallons
£2 15 0	£3 5 0	£3 15 0	£5 0 0	£5 18 0

Fig. 618. No. 1. REGISTERED SYRINGE, with India-rubber suction tube, one rose and jet .. £1 8 0 each.
No. 2. Ditto ditto 1 2 6 ,,
Telescope Branch Pipe for ditto .. 0 10 0 ,,

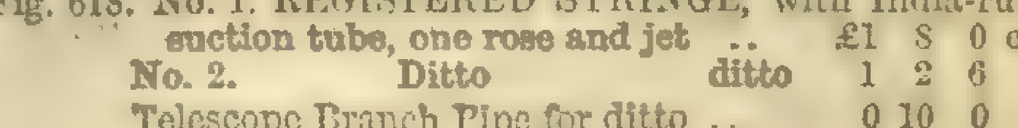


Fig. 619. Large GARDEN SYRINGE, with one rose and jet .. .. 11s. 6d. each
,, 620. Middle Ditto ditto 10 3 ,,
,, 621. Small Ditto ditto 9 0 ,,
,, 622. LADIES GARDEN SYRINGE, with do. 7 6 ,,

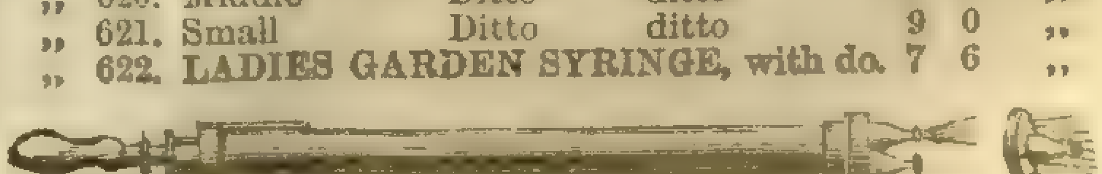


Fig. 623. READ'S SYRINGE, with two roses and one jet, 17s. 6d.
,, 624. READ'S SYRINGE, with one rose and jet, 15 0
,, 625. Improved ditto ditto large 14 0

Garden Engines and Syringes of J. TYLOR & SONS' manufacture kept in stock by Ironmongers and Seedsmen in every part of the United Kingdom.

J. TYLOR & SONS, Manufacturers, Warwick Lane, Newgate Street, London, E.C.

ROYAL HORTICULTURAL SOCIETY.

REMAINING

ARRANGEMENTS FOR THE EXHIBITIONS AND MEETINGS IN 1862,

TO BE HELD AT

THE GARDEN, SOUTH KENSINGTON, W.

June 26, Thursday, Rose Show, and Fruit and Floral Sub-Committee.
July 2, Wednesday. Third Great Show, and Fruit and Floral Sub-Committee.
" 4, Friday. Meeting for Election of Fellows.
" 22, Tuesday. Fruit and Floral Committee.
August 1, Friday. Meeting for Election of Fellows.
" 12, Tuesday. Fruit and Floral Committee.
" 26, Tuesday. Fruit and Floral Committee.
Sept. 5, Friday. Meeting for Election of Fellows.
" 10, Wednesday. Show of Autumn Flowers, and Fruit and Floral Sub-Committee.
" 23, Tuesday. Fruit and Floral Committee.
October 8, Wednesday. Fruit and Floral Sub-Committee.
October 8, 9, & 10. Great International Show of Fruit, Gourds, Roots, Vegetables, and Cereals. The Show of Gourds, Roots, and Cereals to continue until the 18th.
Nov. 7, Friday. Meeting for Election of Fellows.
" 11, Tuesday. Fruit and Floral Committee.
Dec. 9, Tuesday. Fruit and Floral Committe.

*** At some period during the season it is expected that the Memorial of the Exhibition of 1851 will be finished, and probably publicly uncovered.

ELECTION OF FELLOWS.

Gentlemen and Ladies wishing to become Fellows have to be proposed by some one already a Fellow, to whom they are personally known. The subscription is Two Guineas Entrance Fee, and Two Guineas or Four Guineas a year according to the privileges wished.

ADMISSION OF THE PUBLIC.

I. REMAINING HORTICULTURAL EXHIBITIONS.

June 26. Rose Show .. .. 2s. 6d.
Sept. 10. Autumn Flower Show .. .. 2s. 6d.
October 8. Fruit and Vegetable Show .. .. .. 2s. 6d.
" 9. Ditto .. .. 1s. 0d.
October 10. Fruit and Vegetable Show 1s. 0d
" 11-18. Gourds, Roots, and Cereals 1s. 0d

Admission by payment at the door, or by tickets previously purchased.

II. REMAINING GREAT MEETINGS.

July 2. Third Great Meeting | Uncovering of the Memorial of 1851.

Admission by tickets, price 5s. each, purchased previously to the day of the Show. If payment is made at the door, 7s. 6d. will be charged for each admission.

From 31st May to 18th October.

			s.	d.
Sundays		No admission by payment.		
Mondays	(Band)	Gardens alone	1	0
Tuesdays	(Band)	Gardens and Exhibition	1	6
Wednesdays	(Band)	Gardens from Exhibition	0	6
Thursdays	(Band)			
Fridays	(Band)	.. ..	2	6
Saturdays	(Bands)	.. ..	5	0

From 18th October to 31st December.

		s.	d.
Sundays	No admission by payment.		
Mondays	.. ..	0	6
Tuesdays	No admission by payment.		
Wednesdays	.. ..	2	6
Thursdays	No admission by payment.		
Fridays	ditto.		
Saturdays	.. ..	2	6

The Council have the pleasure to announce that Her Majesty's Commissioners for the Exhibition of 1851 have given their consent that until October 18 Visitors may be permitted to use temporary roadway for admission from Kensington Gore leading to the back of the Conservatory. The Council sought this concession in order to abate the confusion which, without it, must be attendant on the number of carriages visiting the International Exhibition of 1862.

ROSE SHOW, THURSDAY, JUNE 26.

Class.	1st	2d	3d	4th
1. 96 Kinds. 3 trusses of each .. .. (Nurserymen)	£7 0s.	£5 0s.	£3 0s.	£2 0s.
2. 48 Kinds. 3 trusses of each .. .. (Nurserymen)	4 0	3 0	2 0	1 0
3. 24 Kinds. 3 trusses of each .. .. (Nurserymen)	2 10	2 0	1 10	1 0
4. 24 Kinds. 1 truss of each .. .. (Nurserymen)	2 0	1 0	0 10	—
5. 48 Kinds. 1 truss of each .. .. .. (Amateurs)	6 0	4 0	3 0	2 0
6. 24 Kinds. 1 truss of each .. .. .. (Amateurs)	4 0	2 0	1 0	0 10
7. 18 Kinds. 1 truss of each .. .. .. (Amateurs)	3 0	1 10	1 0	—
8. 12 Kinds. 1 truss of each .. .. .. (Amateurs)	1 10	1 0	0 10	—
9. 12 Roses, 12 kinds, in Pots not exceeding 13 inches in diameter .. .. (Open)	6 0	4 0	3 0	—
10. 24 Roses, not less than 12 kinds, in Pots not exceeding 8 inches in diameter .. .. .. (Open)	6 0	4 0	3 0	—
11. 20 New Roses, not less than 10 kinds, in Pots not exceeding 8 inches in diameter .. .. (Open)	6 0	4 0	3 0	—
Note.—No variety which has been publicly sold for more than three years to be accounted new.				

Class.	1st £ s.	2d £ s.	3d £ s.	4th £ s.
12. New Roses of 1861 and 1862, single trusses, distinct kinds .. .. (Open)	2 0	1 10	1 0	0 15
13. 12 Trusses of Senateur Vaisse .. .. Open)	1 0	0 15	0 10	—
14. 12 Trusses of any other kind .. .. (Open)	1 0	0 15	0 10	—
15. 18 Tea-scented Roses (single trusses) .. (Open)	3 0	2 0	1 0	—
16. Decorated basket or vase of Roses .. (Open)	3 0	2 0	1 0	—
17. 6 Bouquets of Roses. 6 distinct kinds, 5 trusses to each bouquet, each bouquet to be shown separately, in Hyacinth glasses, or somewhat similar stands	3 0	2 0	1 0	—
18. Single truss of a Hybrid Perpetual Rose, with stem and leaves, to be shown in a Hyacinth glass, or somewhat similar stand	2 0	1 0	—	—
(Prizes offered by Mr. Wilson Saunders, Treasurer.)				

*** The Council have pleasure in announcing that the Rev. S. R. Hole, F.R.H.S., on the part of the Promoters of the Grand National Rose Show, has intimated that the Exhibition of Roses contemplated by the Royal Horticultural Society will render a separate Exhibition on the part of the National Society unnecessary.

THIRD GREAT EXHIBITION, WEDNESDAY, JULY 2.

Class.	1st	2d	3d	4th
1. 15 Stove and Greenhouse Plants .. .. ..(Open)	£20 0s.	£15 0s.	£10 0s.	£5 0s.
2. 12 Stove and Greenhouse Plants .. (Nurserymen)	10 0	7 0	5 0	3 0
3. 9 Stove and Greenhouse Plants .. .. (Amateurs)	9 0	7 0	5 0	3 0
4. 6 Stove and Greenhouse Plants .. .. (Amateurs)	5 0	4 0	3 0	2 0
Note.—Two plants of a genus will be admitted in Classes 1, 2, and 3. Exhibitors can only show in one of the Classes 1, 2, 3, and 4. Orchids and Florists' Flowers are here excluded.				
5. 12 Fine Foliaged and Variegated Plants (Nurserymen)	7 0	5 0	3 0	2 0
6. 10 Fine Foliaged and Variegated Plants .. (Amateurs)	7 0	5 0	3 0	2 0
7. 12 Orchids, exotic species. Distinct kinds (Nurserymen)	10 0	7 0	5 0	3 0
8. 10 Orchids, exotic species. Distinct kinds (Amateurs)	10 0	7 0	5 0	3 0
9. 6 Orchids, exotic species. Distinct kinds (Amateurs)	5 0	4 0	3 0	2 0
10. 9 Greenhouse Azaleas. Distinct kinds .. ..(Open)	7 0	5 0	4 0	2 0
11. 9 Pelargoniums. Distinct kinds .. .. (Amateurs)	7 0	5 0	3 0	2 0
12. 12 Pelargoniums. Distinct kinds .. (Nurserymen)	7 0	5 0	3 0	2 0
13. 6 Pelargoniums. Fancies .. ..(Open)	4 0	3 0	2 0	—
Note.—Plants in Classes 11, 12, and 13 to be grown in Pots 8 inches in diameter.				
14. 6 Spotted, or French kinds of Pelargoniums ..(Open)	3 0	2 0	1 0	—
15. 6 Fuchsias. Distinct kinds .. ..(Open)	5 0	4 0	3 0	—
16. 3 Standard Fuchsias. Distinct kinds .. ..(Open)	3 0	2 0	1 0	—
17. 12 Variegated Begonias. Distinct kinds .. ..(Open)	3 0	2 0	1 0	—
18. 9 Caladiums. Distinct kinds .. .. ..(Open)	5 0	4 0	3 0	—
19. 6 Tree Ferns. Duplicates admitted .. ..(Open)	5 0	4 0	3 0	—
20. 12 Exotic Ferns. Distinct kinds .. (Nurserymen)	4 0	3 0	2 0	—
21. 10 Exotic Ferns. Distinct kinds .. .. (Amateurs)	4 0	3 0	2 0	—
22. 12 British or other hardy Ferns, rare and distinct kinds, in Pots .. ..(Open)	3 0	2 0	1 0	—
23. New or rare tender Plants in flower .. ..(Open)	S. K.	S. B.	B.	
24. New or rare tender Plants not in flower .. ..(Open)	S. K.	S. B.	B.	
25. New or rare hardy Ornamental Plants .. ..(Open)	S. K.	S. B.	B.	
N.B.—Exhibitors may compete for all the Prizes in Classes 23, 24, and 25. Plants exhibited at any Metropolitan Show in a previous season will not be eligible.				
26. Newly-introduced Plants that have received special recognition from the Floral Committee during 1859, 1860, and 1861 .. ..(Open)	Six Certificates in order of merit.			
27. Fern Case arranged for the Drawing-room ..(Open)	3 0	2 0	1 0	—
28. Fresh Water Aquaria. The most effectively arranged (Open)	2 0	1 0	0 10	—
29. Window-boxes filled with Plants .. .. ..(Open)	2 0	1 0	0 10	—
30. Seedling Florists' Flowers and Garden Hybrids .. (Open)	Certificates.			
31. Plants in Pots, arranged in stands for Drawing-room decoration .. ..(Open)	3 0	2 0	1 0	0 10

Class.	1st	2d	3d	4th
32. Three Hanging Baskets of Pendent Plants in flower, the middle basket not to exceed 1 ft. 3 in., the other two not to exceed 9 in. each in diameter. The middle basket may contain mixed sorts, the smaller baskets one sort only	£5 0s.	£2 0s.	—	—
*** The baskets will be suspended for Exhibition with the large one in the centre. (Prizes offered by Mr. Wilson Saunders, Treasurer.)				
33. Miscellaneous .. ..(Open)	2 0	1 10	£1 0s.	£0 10s.
N.B. Nothing can be admitted here which is provided for by any other Class.				

FRUIT. (Open.)

Note.—All the Fruit exhibited at this Show must be of home growth.

Class	1st	2d	3d	4th
A. Collection of Grapes	7 0	4 0	2 0	—
B. Collection of Fruit	6 0	5 0	4 0	3 0
C. Pine Apple. Queens	2 0	1 0	0 10	—
D. Pine Apple. Any other kind	2 0	1 0	0 10	—
E. Grapes. 6 bunches	3 0	2 0	1 0	—
F. Grapes, Black Hamburgh. 3 bunches	2 0	1 0	0 10	—
G. Grapes. Any other Black kind. 3 bunches	2 0	1 0	0 10	—
H Grapes, White Muscat. 3 bunches	2 0	1 0	0 10	—
I. Grapes, Chasselas Musqué. 3 bunches. Regularity of bunch to be a test of merit	2 0	1 0	—	—
J. Grapes. Any other white kind. 3 bunches	2 0	1 0	0 10	—
K. Peaches. 3 dishes of 6 fruit each	3 0	2 0	1 0	—
L. Peaches. 6 fruit	2 0	1 0	0 10	—
M. Nectarines. 3 dishes of 6 fruit each	3 0	2 0	1 0	—
N. Nectarines. 6 fruit	2 0	1 0	0 10	—
O. Strawberries. 4 dishes, distinct kinds	1 5	1 0	0 15	0 10
P. Collection of Strawberries	4 0	3 0	2 0	—
Q. Melons. Green-fleshed	1 10	1 0	—	—
R. Melons. Scarlet-fleshed	1 10	1 0	—	—
Note.—Fruits shown in Classes Q and R must be cut by the Judges.				
S. Vines in Pots. 4 plants	5 0	4 0	3 0	—
T. Miscellaneous. For Fruits not specially mentioned ..	2 0	1 10	1 0	0 10

ORCHARD-HOUSE FRUIT-TREES, IN POTS.

Class	1st	2d	3d	4th
U. 6 Peach and Nectarine	5 0	4 0	3 0	—
V. 6 Plum	4 0	3 0	2 0	—
W. 6 Cherry	4 0	3 0	2 0	—
X. 4 Apricot	3 0	2 0	1 0	—

N.B.—The Fruit on these trees is not required to be ripe.

ROYAL HORTICULTURAL SOCIETY.—*Continued.*

SHOW OF AUTUMN FLOWERS, WEDNESDAY, SEPTEMBER 10.

Class	1st	2d	3d
1. 48 Cut Roses. 3 trusses, distinct kinds .. ..(*Nurserymen*)	£4 0s.	£3 0s.	£2 0s.
2. 24 Cut Roses. 3 trusses, distinct kinds .. .. (*Amateurs*)	4 0	3 0	2 0
3. 24 Cut Roses. Single blooms. Distinct kinds .. ..(*Open*)	2 0	1 0	0 10
4. 6 Roses, in Pots, not more than two of one kind .. ..(*Open*)	3 0	2 0	1 0
5. 12 Hollyhocks, in spikes. Distinct kinds .. .. ..(*Open*)	3 0	2 0	1 0
6. 12 Hollyhocks, single flowers. Distinct kinds .. ..(*Open*)	2 0	1 0	0 15
7. 24 German Asters. "Quilled." Distinct kinds .. ..(*Open*)	2 0	1 0	0 15
8. 24 French Asters. "Tasselled." Distinct kinds ..(*Open*)	2 0	1 0	0 15
9. 24 Gladiolus, cut spikes. Distinct kinds .. .. ..(*Open*)	2 10	1 10	1 0
10. 12 Gladiolus, cut spikes. Brenchleyensis colour. Distinct kinds .. ..(*Open*)	2 0	1 10	1 0
11. 12 Pots of Gladiolus. Distinct kinds. Not more than 3 in each Pot .. ..(*Open*)	3 0	2 0	1 0
12. 24 Phloxes, single trusses. Distinct kinds .. .. ..(*Open*)	2 0	1 0	0 15
13. 12 Dwarf Phloxes. Perennial upright growing kinds, in Pots. Distinct kinds .. ..(*Open*)	£3 0s.	£2 0s.	£1 0s.
14. Phlox. The Dwarfest and best perennial upright growing Plant. (Prize offered by Dr. Lindley) .. .. ..(*Open*)	1 0	—	—
15. 24 Verbenas, 5 trusses of each. Distinct kinds .. ..(*Open*)	1 10	1 0	0 15
16. 48 Dahlia Blooms. Distinct kinds .. .. ..(*Nurserymen*)	5 0	4 0	3 0
17. 24 Dahlia Blooms. Distinct kinds .. .. ..(*Nurserymen*)	3 0	2 0	1 0
18. 18 Dahlia Blooms. Fancies. Distinct kinds ..(*Nurserymen*)	3 0	2 0	1 0
19. 24 Dahlia Blooms. Distinct kinds .. .. .. (*Amateurs*)	5 0	4 0	3 0
20. 12 Dahlia Blooms. Distinct kinds .. .. .. (*Amateurs*)	3 0	2 0	1 0
21. 12 Dahlia Blooms. Fancies. Distinct kinds .. (*Amateurs*)	3 0	2 0	1 0
22. 12 Bouquet Dahlias, in Pots	3 0	2 0	1 0
23. Miscellaneous. For flowers not specified .. .. ..(*Open*)	2 0	1 0	0 10

*** A prize of *5l.* is offered for the most Ornamental Collection of Seven Standard Plants, suitable for the decoration of a dinner table. The Plants to be grown in pots not exceeding the following sizes, viz. :—One 24 pot, two 32 pots, four 48 pots. All 48's would be preferable. The plants may be ornamental either for their foliage, their flowers, or their fruit. Plants having either foliage, flowers, or fruit lower than 21 inches from the outside-bottom of the pot, will be excluded from competition. Elegance of form, slenderness of stem, and variety in colour will be the tests of excellence. Exhibitors are at liberty to screen the pots in any manner they may think appropriate, and the taste displayed in this will be considered in the award. This Prize will be competed for at the Show which is to be held on the 10th September.

GREAT INTERNATIONAL SHOW OF FRUIT, GOURDS, ROOTS, VEGETABLES, AND CEREALS

(OPEN TO ALL THE WORLD), OCTOBER 8, 9, AND 10.

***Gourds, Roots, and Cereals will remain on Exhibition until October* 18.**

Note.—A dish of Apples, Pears, Oranges, Lemons, and the like, 6 fruits of each ; but of Plums, 9 fruits.

FRUITS.

Class	1st	2d	3d
A. Collection of Fruits .. .. (*Fruiterers only*)	£5 0s.	£3 0s.	£ — s.
B. Collection of Fruits. Not more than 2 dishes of any one kind .. .. (*Private growers*)	6 0	4 0	3 0
C. Pine Apple, Queens	2 0	1 10	1 0
D. Pine Apple. Any other kind	2 0	1 10	1 0
E. Grapes, White Muscat. 6 bunches	4 0	3 0	2 0
F. Grapes, White Muscat. 3 bunches	2 10	2 0	1 0
G. Grapes. Any other white kind. 3 bunches	2 10	2 0	1 0
H. Grapes, Black Hambro' 6 bunches	4 0	3 0	2 0
I. Grapes, Black Hambro' 3 bunches	2 10	2 0	1 0
J. Grapes. Any other black kind. 3 bunches	2 10	2 0	1 0
K. Pears, dessert, 12 dishes, distinct kinds	4 0	3 0	2 0
L. Pears, dessert, 6 dishes, distinct kinds	3 0	2 0	1 0
M. Pears, dessert, 3 dishes, ripe fruit, distinct kinds	1 10	1 0	0 10
N. Pears, dessert. Single dish, ripe fruit, any kind	1 0	0 15	0 10
O. Pears, kitchen. Single dish, any kind	1 0	0 15	0 10
P. Pears. Heaviest 5 fruits, dessert	1 0	0 15	0 10
Q. Apples, dessert, 12 dishes, distinct kinds	4 0	3 0	2 0
R. Apples, dessert, 6 dishes, distinct kinds	3 0	2 0	1 0

FRUITS—*Continued.*

Class	1st	2d	3d
S. Apples, dessert, 3 dishes, ripe fruit, distinct kinds	£1 10s.	£1 0s.	£0 10
T. Apples, dessert. Single dish, ripe fruit, any kind	1 0	0 15	0 10
U. Apples, kitchen, 12 dishes, distinct kinds..	4 0	3 0	2 0
V. Apples, kitchen, 6 dishes, distinct kinds	3 0	2 0	1 0
W. Apples, kitchen, 3 dishes, distinct kinds	1 10	1 0	0 10
X. Apples, kitchen. Single dish	1 0	0 15	0 10
Y. Apples, kitchen. Heaviest 5..	1 0	0 15	0 10
Z. Oranges, Lemons, &c., collection of 1 dish of each	3 0	2 0	1 0
AA. Four Orange-trees, bearing fruit. In Pots or boxes	3 0	2 0	1 0
BB. Melons. Single fruit, any kind	1 10	1 0	—
CC. Plums. Single dish, any kind	1 0	0 15	0 10
DD. Strawberries. Single dish	2 0	1 10	1 0
EE. Currants. Single dish..	0 10	—	—
FF. Raspberries. Single dish	0 15	0 10	—
Note.—Fruits specified in the above Classes will be excluded from GG.			
GG. Miscellaneous	2 0	1 10	1 0

GOURDS.

§ I. *Gourds eatable when ripe.*	1st	2d
Class		
I. The finest collection .. .. (*Foreign Growth*)	£3 0s.	£2 0.
II. The finest collection .. .. (*Home Growth*)	3 0	2 0
III. The heaviest single specimen .. .. .. (*Home Growth*)	3 0	2 0
IV. The heaviest single specimen .. .. .. (*Foreign Growth*)	3 0	2 0
(Prizes offered by Dr. Lindley.)		
§ II. *Gourds for Ornament, or merely curious, and never eatable.*		
V. The most extensive collection, without regard to cultivation ..	3 0	2 0
§ III. *Mixed.*		
VI. 6 Ornamental Gourds, whether eatable or not	3 0	2 0
(Prizes offered by Mr. Wilson Saunders.)		

VEGETABLES, GARDEN ROOTS, &c.

I. Potatoes, collection of	3 0	2 0
II. Potatoes, 6 Kinds of Kidneys, 12 tubers of each	1 0	0 15
III. Potatoes, 6 kinds, "Rounds," 12 tubers of each	1 0	0 10
IV. Potatoes, Kidneys, 12 tubers	0 15	0 10
V. Potatoes, any other kind, 12 tubers	0 15	0 10
VI. Onions, 12	0 15	0 10
VII. Carrots, 12	0 15	0 10
VIII. Parsnips, 12	0 15	0 10
IX. Globe Artichokes, 12..	0 15	0 10
X. Parsnip Chervil, 12	0 15	0 10
XI. Beet, 6 roots	0 15	0 10
XII. Turnips, 3 kinds, 6 of each..	1 0	0 10
XIII. Turnips, 6 of one kind	0 15	0 10
XIV. Salsafy, 12 roots	0 15	0 10
XV. Scorzonera, 12 roots	0 15	0 10
XVI. Peas, 1 dish	0 15	0 10
XVII. Brussels Sprouts, 3 plants	0 15	0 10
XVIII. Borecoles, 6 kinds, 2 of each	0 15	0 10
XIX. Broccoli, 6 heads	0 15	0 10
XX. Cabbage, Savoys, 6 heads	0 15	0 10
XXI. Cabbage, any other kind, 6 heads..	0 15	0 10
XXII. Yams, Chinese, 6	0 15	0 10
XXIII. Celery, red, 6 heads	0 15	0 10
XXIV. Celery, white, 6 heads	0 15	0 10
XXV. Endive, 6 heads	0 15	0 10
XXVI. Cardoons, 4 heads	0 15	0 10
XXVII. Mushrooms, dish	0 15	0 10
XXVIII. Miscellaneous	1 0	0 15

N.B. Nothing can be admitted here which is provided for by any other Class.

AGRICULTURAL ROOTS.

Class	
1. Mangel Wurzel, Long Red. 3 roots	Bronze Medal.
2. Mangel Wurzel, Long Yellow. 3 roots	Ditto.
3. Mangel Wurzel, Yellow Globe. 3 roots	Ditto.
4. Mangel Wurzel, Red Globe. 3 roots	Ditto.
5. Beet, White Sugar. 3 roots	Ditto.
6. Carrots, White Belgian. 6 roots	Ditto.
7. Carrots, Altringham. 6 roots	Ditto.
8. Cabbage, Cattle. The largest head of	Ditto.
9. Turnips, Swedes. 6 roots	Ditto.
10. Turnips, Yellow 6 roots	Ditto.
11. Turnips, White. 6 roots	Ditto.
12. Kohl Rabi. 6 roots	Ditto.

CEREALS.

In samples not less than a pint.

Note.—Both ear and sample are specially requested to be sent, but this is not imperative.

Class	
1. General Collection of Wheats from all quarters	Bronze Medal
2. Collection of Wheats from any one quarter	Ditto.
3. ,, ,, from the Baltic	Ditto.
4. ,, ,, from the Black Sea	Ditto.
5. ,, ,, from any part of Russia	Ditto.
6. ,, ,, grown in France	Ditto.
7. ,, ,, grown in Holland	Ditto.
8. ,, ,, grown in Belgium	Ditto.
9. ,, ,, grown in Denmark	Ditto.
10. ,, ,, grown in Sweden or Norway	Ditto.
11. ,, ,, grown in Prussia	Ditto.
12. ,, ,, grown in Austria	Ditto.
13. ,, ,, grown in Bavaria	Ditto.
14. ,, ,, grown in Wurtemberg	Ditto.
15. ,, ,, grown in North Germany	Ditto.
16. ,, ,, grown in Italy	Ditto.
17. ,, ,, grown in Spain	Ditto.
18. ,, ,, grown in Portugal	Ditto.
19. ,, ,, grown in Turkey, Egypt, or Tunis	Ditto.
20. ,, ,, grown in Algeria	Ditto.
21. ,, ,, grown in Southern Africa	Ditto.
22. ,, ,, grown in Lower Canada	Ditto.
23. ,, ,, grown in Upper Canada	Ditto.
24. ,, ,, grown in the Northern States of America ..	Ditto.
25. ,, ,, grown in the Southern States of America ..	Ditto.
26. ,, ,, grown in California	Ditto.
27. ,, ,, grown in Victoria or Vancouver's Island	Ditto.
28. ,, ,, grown in Australia	Ditto.
29. ,, ,, grown in England	Ditto.
30. ,, ,, grown in Scotland	Ditto.
31. ,, ,, grown in Ireland	Ditto.
32. ,, ,, sold in London Market	Ditto.
33. ,, ,, sold in Liverpool Market	Ditto.
34. Sample of White Wheat of any kind	Ditto.
35. Sample of Red Wheat of any kind	Ditto.
36. Collection of Barley from any one quarter	Ditto.
37. General collection of Barley from all quarters	Ditto.
38. Malting Barley	Ditto.
39. Collection of Oats from any one quarter	Ditto.
40. General collection of Oats from all quarters	Ditto.
41. Black Oats	Ditto.
42. White Oats	Ditto.
43. Rye	Ditto.
44. Rice grown in North America	Ditto.
45. Rice grown in South America	Ditto.
46. Rice grown in the East Indies	Ditto.
47. Collection of Rice from all quarters	Ditto.
48. Head of Maize, or Indian Corn, of any kind	Ditto.
49. Collection of different kinds of Maize, in heads, best in quality ..	Ditto.
50. Maize, most numerous in kinds	Ditto.
51. Newly introduced or rare Cereals	Ditto.
52. Cereals of any kind, not included in the above	

MISCELLANEOUS.

A. Collection of Fruits, modelled in Wax	Large Bronze Medal.
B. Collection of Roots, modelled in Wax	Ditto.
C. Collection of Vegetables, modelled in Wax	Ditto.
D. Collection of Ditto, in any other material	Ditto.
E. General Collection, embracing the whole or part of the subjects in the above International Show	Silver Medal

ROYAL BOTANIC SOCIETY.

THE SECOND EXHIBITION of PLANTS, FLOWERS, and FRUIT, JUNE 18.

AWARDS OF THE JUDGES.

£20.—EXTRA GOLD MEDAL.

To Mr. T. Whitebread, Gr. to H. Colyer, Esq., Dartford, Kent, for 16 Stove and Greenhouse Plants
To Mr. G. Baker, Gr. to A. Bassett, Esq., Stamford Hill, for 20 Exotic Orchids

£15.—LARGE GOLD MEDAL.

To Mr. W. May, Gr. to J. Spode, Esq., Hawkesyard Park, Rugeley, Staffordshire, for 16 Stove and Greenhouse Plants
To Mr. W. Milford, Gr. to E. M'Morland, Esq., Adelaide Road, Haverstock Hill, for 20 Exotic Orchids

£10.—MEDIUM GOLD MEDAL.

To Mr. B. Peed, Gr. to Mrs. Tredwell, St. John's Lodge, Norwood, for 16 Stove and Greenhouse Plants
To Messrs. J. & J. Fraser, Nurserymen, Leyton, Essex, for 12 Stove and Greenhouse Plants
To Mr. J. Green, Gr. to Sir E. Antrobus, Bart., Cheam, Surrey, for 10 Stove and Greenhouse Plants
To Mr. B. Peed, Gr. to Mrs. Tredwell, for 20 Exotic Orchids
To Mr. C. Penny, Gr. to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, for 12 Exotic Orchids

£7.—GOLD MEDAL.

To Mr. W. Cutbush, Nurseryman, Barnet, Herts, for 12 Stove and Greenhouse Plants
To Mr. H. Chilman, Gr. to Mrs. Smith, Ashtead House, Epsom, for 10 Stove and Greenhouse Plants
To Mr. B. Peed, Gr. to Mrs. Tredwell, for 8 Cape Heaths
To Mr. O. Rhodes, Nurseryman, Kent, for 10 Cape Heaths
To Mr. B. S. Williams, Nurseryman, Holloway, for 10 Exotic Orchids
To Mr. T. Page, Gr. to W. Leaf, Esq., Park Hill, Streatham, for 12 Exotic Orchids
To Mr. C. Turner, Nurseryman, Slough, Bucks, for 12 Pelargoniums
To Mr. T. Bailey, Gr. to T. T. Drake, Esq., Shardeloes, Amersham, Bucks, for 10 Pelargoniums

£5.—LARGE SILVER GILT MEDAL.

To Mr. R. Baxindine, Gr. to H. Smallpiece, Esq., Millmede House, Guildford, Surrey, for 16 Stove and Greenhouse Plants
To Mr. O. Rhodes, Nurseryman, Sydenham Park, Kent, for 12 Stove and Greenhouse Plants
To Mr. W. Kaile, Gr. to Earl of Lovelace, East Horsley Towers, Ripley, Surrey, for 10 Stove and Greenhouse Plants
To Mr. T. Page, Gr. to W. Leaf, Esq., for 6 Stove and Greenhouse Plants
To Mr. T. Page, Gr. to W. Leaf, Esq., for 8 Cape Heaths
To Messrs. T. Jackson & Son, Nurserymen, Kingston, Surrey, for 10 Cape Heaths
To Mr. C. Turner, Nurseryman, for 6 Greenhouse Azaleas
To Messrs. T. Jackson, for 10 Exotic Orchids
To Mr. H. Chilman, Gr. to Mrs. Smith, for 12 Exotic Orchids
To Mr. J. Wiggins, Gr. to W. Beck, Esq., Worton Cottage, Isleworth, for 6 Exotic Orchids
To Messrs. H. Lane & Son, Nurserymen, Great Berkhampstead, Herts, for 10 Roses in Pots
To Mr. H. Cannell, Gr. to G. Jennings, Esq., Clapham, for 6 Fuchsias
To Messrs. J. Dobson & Son, Nurserymen, Isleworth, for 12 Pelargoniums

£4.—LARGE SILVER MEDAL.

To Mr. J. Wheeler, Gr. to J. Philpott, Esq., Stamford Hill, for 6 Stove and Greenhouse Plants
To Mr. H. Chilman, Gr. to Mrs. Smith, for 6 Cape Heaths
To Mr. J. Smith, Gr. to Duke of Northumberland, Syon House, Isleworth, for 6 Exotic Orchids
To Mr. C. Turner, for 6 Fancy Pelargoniums
To Mr. T. Bailey, Gr. to T. T. Drake, Esq., for 6 Fancy Pelargoniums
To Mr. P. Lamb, Gr. to Miss Thackerwaite, Norwood Green, Southwell, for 6 Fancy Pelargoniums
To Messrs. J. Veitch & Son, Nurserymen, Chelsea, for Collection of Japanese Plants

£3.—SILVER GILT MEDAL.

To Mr. J. Tegg, Gr. to Baron Hambro, Roehampton, Surrey, for 6 Stove and Greenhouse Plants
To Mr. J. Wheeler, Gr. to J. Philpot, Esq., for 6 Cape Heaths
To Mr. R. Baxindine, Gr. to H. Smallpiece, Esq., for 8 Cape Heaths
To Mr. W. May, Gr. to J. Spode, Esq., for 6 Greenhouse Azaleas
To Mr. S. Woolley, Nurseryman, Cheshunt, Herts, for 10 Exotic Orchids
To Mr. J. Green, Gr. to Sir E. Antrobus, Bart., for 6 Exotic Orchids
To Mr. W. Paul, Nurseryman, Waltham Cross, for 50 Cut Roses
To Mr. J. Mitchell, Nurseryman, Pilt Down, Maresfield, Sussex, for 50 Cut Roses
To Mr. J. Morris, Gr. to Miss Crawshay, Caversham Park, Reading, Berks, for 25 Cut Roses
To Mr. J. James, Gr. to W. F. Watson, Esq., Isleworth, for 6 Calceolarias
To Mr. J. Burley, Nurseryman, Limpsfield, Godstone, Surrey, for 6 Calceolarias
To Messrs. J. & J. Fraser, for 12 Pelargoniums
To Messrs. J. & J. Fraser, for 6 Fancy Pelargoniums
To Mr. C. Hutt, Gr. to Miss B. Coutts, Holly Lodge, Highgate, for 6 Foliage Plants
To Mr. B. S. Williams, for 12 Exotic Ferns
To Mr. B. S. Williams, for a Collection of New and Rare Plants
To Mr. Young, Gr. to C. Bailey, Esq., M.P., Aberaman, Aberdare, Glamorgan, for 1 Providence Pine Apple
To Mr. Barnes, Gr. to Lady Rolle, Bicton, Exeter, for 1 Queen Pine Apple
To Mr. M. Henderson, Gr. to Sir H. Beaumont, Bart., Coleorton Hall, Leicestershire, for Dish of Black Hamburgh Grapes
To Mr. Hill, Gr., for West St. Peter's Grapes
To Mr. Hill Gr., for Dish of Muscadine Grapes
To Mr. J. Standish, for Dish of Frontignan Grapes

£3.—SILVER GILT MEDAL.

To Mr. J. Taylor, Gr. to C. A. Hanbury, Esq., Belmont, Barnet, Herts, for 1 Dish of Peaches
To Mr. Allen, Gr. to J. B. Glegg, Esq., Witbington Hall, Congleton, Cheshire, for 1 Dish of Nectarines

£2.—SILVER MEDAL.

To Mr. W. Kaile, Gr. to Earl of Lovelace, for 6 Greenhouse Azaleas
To Mr. W. Lakeman, Gr. to J. Campbell, Esq., Grove House, Hendon, for 6 Exotic Orchids
To Mr. E. P. Francis, Nurseryman, Hertford, for 50 Cut Roses
To J. Hollingsworth, Esq., Maidstone, Kent, for 25 Cut Roses
To Mr. J. Cross, Gr. to Sir F. H. Goldsmid, Bart., St. John's Lodge, Regent's Park, for 6 Fuchsias
To Mr. J. Burley, Nurseryman, for 12 Pelargoniums
To Messrs. J. Dobson, for 6 Fancy Pelargoniums
To Mr. J. Ensom, Gr. to B. Drew, Esq., Streatham, for 6 Fancy Pelargoniums
To Mr. B. S. Williams, Nurseryman, for 6 Foliage Plants
To Mr. C. Hutt, Gr. to Miss B. Coutts, for 6 Exotic Ferns
To Mr. W. Bull, Nurseryman, Chelsea, for a Collection of Rare Plants
To Mr. T. Bailey, Gr. to T. T. Drake, Esq., for 1 Providence Pine Apple
To Mr. H. Bwye, Gr. to — Crawshay, Esq., Cyfarthfa Castle, Merthyr Tydvil, for 1 Queen Pine Apple
To Mr. H. Bwye, for 1 Pine Apple, any kind
To Mr. Miller, Gr. to J. Dixon, Esq., for Black Hamburgh Grapes
To Mr. Jackson, Gr. to W. Tyler, Esq., Texall Hall, for Black Hamburgh Grapes
To Mr. Allport, Gr. to H. Akroyd, Esq., Doddington Park, Cheshire, for Dish of West St. Peter's Grapes
To Mr. T. Bailey, Gr., for Dish of Muscadine Grapes
To Mr. J. Drewett, Gr. to Mrs. Cubitt, Denbies, Dorking, for Dish of Frontignan Grapes
To Mr. J. Drewett, Gr., for 1 Dish of Peaches
To Mr. Hill, Gr., for 1 Dish of Nectarines
To Mr. C. Allen, Gr. to J. B. Glegg, Esq.

£1 5s.—SMALL SILVER MEDAL.

To Messrs. Paul & Son, Nurserymen, Cheshunt, Herts, for 50 Cut Roses
To Mr. T. Terry, Gr. to C. W. J. Puller, Esq., M.P., Youngsbury, Ware, Herts, for 25 Cut Roses
To Mr. C. Turner, for 24 Cut Roses
To Mr. J. James, Gr. to W. F. Watson, Esq., for 6 Fancy Pelargoniums
To Mr. C. Turner, for 24 Pinks
To Mr. E. Shenson, for 36 Pansies
To Mr. J. James, Gr., for 24 Pansies
To Mr. G. Smith, Gr. to Duke of Northumberland, for 6 Foliage Plants
To Mr. H. Lavey, Gr. to E. A. De Graves, Esq., Fetcham, Surrey, for 12 Exotic Ferns
To Miss Clarkson, 40, Avenue Road, for 12 British Ferns
To Mr. C. J. Perry, Castle Bromwich, Birmingham, for 24 Cut Verbenas
To Messrs. J. Veitch, for Wardian Case
To Messrs. E. G. Henderson & Son, St. John's Wood, for 29 Variegated Ivies
To Mr. Speed, Gr. to Sir E. Walker, Mansfield, for 1 Providence Pine Apple
To Mr. North, Gr. to C. Cass, Esq., Ware, Herts, for 1 Queen Pine Apple
To Mr. T. Bailey, Gr., for 1 Pine Apple
To Mr. T. Bailey, Gr., for 1 Green-fleshed Melon
To Mr. Pottle, for 1 Green-fleshed Melon
To Mr. Meredith, Vine Cottage, near Liverpool, for 1 Green-fleshed Melon
To Mr. Euston, Gr., Ware House, Exeter, for 1 Scarlet-fleshed Melon
To Mr. Sawkins, Gr. to Mr. Brassey, Bramfield, Herts, for dish of Black Hamburgh Grapes
To Mr. Sage, Gr., for dish of Black Hamburgh Grapes
To Mr. Hill, Gr. to R. Sneyd, Esq., for dish of Black Hamburgh Grapes
To Mr. Goldsmith, Gr. to Sir F. H. Farquhar, Bart., Polesdon, Dorking, Surrey, for dish of West's St. Peter Grapes
To Mr. Clements, Chase Side, Barnet, for dish of Muscadine Grapes
To Mr. M. Henderson, Gr., for dish of Frontignan Grapes
To Mr. Durrant, Gr. to the Hon. Col. Duncombe, Waresby Park, Huntingdon, for 1 dish of Peaches
To Mr. Dunn, Gr. to Sir W. Smith, Eardiston Hall, Worcestershire, for dish of Nectarines
To Mr. Marcham, Gr., for 1 dish of Black Cherries
To Mr. Euston, Gr., for 1 dish of White Cherries
To Mr. D. Thompson, for dish of Grapes
To Mr. C. Turner, for dish of Seedling Strawberry President
To Mr. M. Henderson, Gr., for 12 lbs. of Grapes
To Mr. Bailey, Gr., for 1 Pine Apple

15s.—BRONZE MEDAL.

To Mr. R. Marcham, Gr. to E. Oates, Esq., Rydorp House, Hanwell, for 25 Cut Roses
To Mr. E. P. Francis, for 24 Cut Roses
To Mr. W. Bragg, Nurseryman, for 24 Pinks
To Messrs. Carstairs & Son, Edinburgh, for 36 Pansies
To Mr. H. Lavey, Gr. to De Graves, Esq., for 12 British Ferns
To Mr. J. Cross, Gr. to Sir F. H. Goldsmid, Bart., for 3 Baskets of Ornamental Plants
To Messrs. J. Dobson, for 24 Cut Verbenas
To Mr. H. Lavey, Gr. to E. A. De Graves, Esq., for 9 Lycopodiums
To Mr. W. Bull, for Wardian Plant Case
To Mr. Good, Gr. to J. Marjoribanks, Esq., Henley-on-Thames, for 1 Green-fleshed Melon
To Mr. T. Bailey, Gr., for 1 Scarlet-fleshed Melon
To Mr. Meredith, for 1 Scarlet-fleshed Melon
To Mr. Euston, Gr., for 1 Dish of Peaches
To Mr. Horwood, for 1 Dish of Nectarines
To Mr. Henderson, Gr., for 1 Dish of Nectarines
To Mr. Bartlett, Gr. to P. Rose, Esq., for Dish of Black Cherries
To Mr. Kaile, Gr., for 2 Dishes of Strawberries
To Mr. Lydiard, Prospect Cottage, Bath, for 2 Dishes of Strawberries
To Mr. Clements, Market Gardener, for 12 lbs. of Grapes.
To Mr. Monro, for 12 lbs. of Grapes

10s.—CERTIFICATE.

To Messrs. Paul & Son, Old Nurseries, Cheshunt, Herts, for 24 Cut Roses
To Mr. J. Wheeler, Gr. to J. Philpot, Esq., Stamford Hill, for 6 Orchids
To Mr. John Wilmer, Springfield Nursery, Sunbury, for 24 Pinks
To Mr. Bragg, Slough, for 36 Pansies
To Messrs. Paul & Son, Old Nurseries, Cheshunt, for Cut Flowers of Herbaceous Plants
To Messrs. E. G. Henderson & Co., Wellington Nursery, for 21 Seedling Calceolarias
To Mr. J. Watson, Nurseryman, Saint Albans, for 4 Calceolarias
To Mr. Bailey, Gr. to T. T. Drake, Esq., Shardeloes, Bucks, for 1 Queen Pine Apple
To Mr. Young, Gr. to C. Bailey, Esq., for 1 Queen Pine Apple
To Mr. Page, Gr. to W. Leaf, Esq., Streatham, for 1 Pine Apple
To Mr. Morris, Gr. to T. White, Esq., Manor House, Essex, for 1 Green-fleshed Melon
To Mr. Kaile, Gr. to Earl Lovelace, for 1 Green-fleshed Melon
To Mr. Tillyard, Gr. to J. Kelk, Esq., The Priory, Stanmore, for 1 Green-fleshed Melon
To Mr. Peed, Gr. to Mrs. Tredwell, St. John's Lodge, Norwood, for 1 Green-fleshed Melon
To Mr. G. Taylor, Gr. to C. A. Hanbury, Esq., Belmont, East Barnet, Dish of Black Hamburgh Grapes
To Mr. Dunn, Gr. to Sir W. Smith, Eardiston, Worcester, Dish of Black Hamburg Grapes
To Mr. Clement, Chase Side, Barnet, for Dish of Black Hamburgh Grapes
To Mr. Alderson, Langley Lane, South Lambeth, for 1 Dish of Muscadine Grapes
To Mr. Henderson, Coleorton Hall, for 1 Dish of Peaches
To Mr. Hill, Keele Hall, for 1 Dish of Peaches
To Mr. W. Kaile, Gr. to Earl Lovelace
To Mr. Tillyard, Gr., Stanmore Priory
To Mr. Wilson, Nurseryman, Warwick, for Dish of Black Cherries

FIRST-CLASS CERTIFICATES OF MERIT.

To Mr. John Standish, Nurseryman, Bagshot, for Acer sp.
To Mr. John Standish, Nurseryman, Bagshot, for Acer sp.
To Mr. John Standish, Nurseryman, Bagshot, for Acer sp.
To Mr. John Standish, Nurseryman, Bagshot, for Euonymus sp. Japan
To Messrs. Jackson for Clerodendron Thomsonæ
To Messrs. Osborn & Son, Nurserymen, Fulham, for Lepanthes calodictyon
To Messrs. Osborn & Son, Nurserymen, Fulham, for Osmunda regalis var. cristata
To Messrs. Veitch & Son, for Dryopteris sp.
To Messrs. Veitch & Son, for Gleichenia pubescens
To Messrs. Veitch & Son, for Alocasia zebrina
To Messrs. Veitch & Son, for Nepenthes Dominiana
To Messrs. Veitch & Son, for Todea superba
To Messrs. Veitch & Son, for Thujopsis lætevirens
To Messrs. Veitch & Son, for Ourisia coccinea
To Messrs. Cutbush, Highgate, for Eucharis elegans
To Mr. Turner, for Pelargonium Princess of Prussia
To Mr. Turner, for Pelargonium Godfrey Turner
To Mr. Turner, for Pelargonium Ellen Beck
To Mr. Nye, Gr., Clewer Manor, Windsor, for Pelargonium Landseer
To Mr. Nye, Gr., Clewer Manor, Windsor, for Pelargonium Royalty
To Mr. Nye, Gr., Clewer Manor, Windsor, for Pelargonium International
To Mr. Nye, Gr., Clewer Manor, Windsor, for Pelargonium Merrimac
To Mr. Nye, Gr., Clewer Manor, Windsor, for Pelargonium Censor
To — Hoyle, Esq., Clewer House, Windsor, for Pelargonium Clio
To Messrs. Dobson & Sons, Isleworth, for Pelargonium Queen of the Whites
To Mr. Wiggins, Gr. to W. Beck, Esq., Isleworth, for Pelargonium Bellatrix
To Mr. Wiggins, Gr. to W. Beck, Esq., Isleworth, for Pelargonium Cynosure
To Mr. Wiggins, Gr. to W. Beck, Esq., Isleworth, for Pelargonium Regina formosa
To Mr. Nye, Gr., Clewer Manor, Windsor, for Pelargonium Monitor
To Mr. Wiggins, for Pelargonium Eurydicé
To Mr. Turner, Slough, for Pink Attraction
To Mr. Turner, Slough, for Pink Device
To Mr. Turner, Slough, for Pink Exquisite
To Mr. Turner, Slough, for Pink Picturata
To Mr. Turner, Slough, for Pink Blondin
To Mr. Nye, Gr., for Pelargonium Illuminator.

SECOND CLASS CERTIFICATES OF MERIT.

To Mr. John Standish, Nurseryman, Bagshot, for Acer sp.
To Mr. John Standish, Nurseryman, Bagshot, for Lilium sp.
To Mr. John Standish, Nurseryman, Bagshot, for Acanthopanax variegata
To Messrs. Jackson, for Canna sp.
To Messrs. Osborn, for Physurus maculatus
To Messrs. Veitch, for Cypripedium Schlehii
To Messrs. Veitch, for Podocarpus sp.
To Mr. Turner, for Pelargonium Mrs. Marnock
To Mr. Turner, for Pelargonium Mrs. Reynolds Hole
To Mr. Turner, for Pelargonium Black Prince
To Mr. Turner, for Pelargonium Miss in her Teens
To Mr. Wiggins, Isleworth, for Pelargonium Calabar (for novelty of colour)
To Mr. Wiggins, for Pelargonium Wallbrook (for novelty of colour)
To Mr. Wiggins, for Pelargonium Fidelia
To Mr. Wiggins, for Pelargonium Vesuvius (for brilliancy of colour)
To Mr. Wiggins, for Pelargonium Fervens
To Mr. Turner, for Pink Lizzie
To Mr. Turner, for Pink Mrs. Maclean

COMMENDATION.

To Mr. Standish, for Pachysandra terminalis
To Mr. Standish, for Salisburia adiantifolia variegata
To Mr. H. Lavey, Gr. to E. A. De Graves, Fetcham, Surrey for Lastrea Filix-mas Bolandia
To Mr. Standish, Nurseryman, Bagshot, for Acer sp.
To Messrs. Veitch, for Planera acuminata

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL SOCIETY.

The NINTH ANNUAL SUMMER EXHIBITION of PLANTS, FRUITS, and CUT FLOWERS will be held at the Royal Pavilion on WEDNESDAY and THURSDAY, June 25 and 26, on the same grand scale as former years.

Prizes to the amount of 280 Guineas offered, including a 15*l.* Prize for the best Collection of 10 Stove and Greenhouse Plants.

Schedules of Prizes can be obtained of the Secretary, 96, St. James Street; or of E. Spary, Queen's Graperies, General Superintendent of the Exhibition.

Conveyance of Plants, &c.

Through the liberality of the Directors of the South Coast Railway, the Committee have the pleasure to announce to Exhibitors, that Plants, &c., for Exhibition will be conveyed to Brighton from all Stations and back whence they came Free of Charge.

The Plants, &c., from London must be delivered at Bricklayers' Arms Station, Willow Walk, Bermondsey, not later than 8 P.M. on the day preceding the Show, to be delivered to the Exhibitors early on the following morning at the Brighton Station.

Where Plants are loaded in the owners' vans and carriages, trucks will be required; of which notice should be given to the Superintendent at London Bridge or Bricklayers' Arms, at least 24 hours before, to prevent disappointment.

No van for transit on a carriage truck must be loaded more than 9 feet from the ground.

Vans will be in readiness at the Brighton Station on the morning of the Show to convey Plants, &c., to the Pavilion.

N.B.—Exhibitors accompanying from London Bridge or Victoria must have them booked previous to their departure for Brighton. By Order of the Committee,

Brighton, June 21. Edward Carpenter, Secretary.

Cineraria Seed.

Saved from the Choicest New Sorts.

LUCOMBE, PINCE and CO. have now ready for sending out Seeds of their very superior CINERARIAS, which have been carefully saved from fine flowers of the best prize varieties.

Their Cinerarias have for many years past given great satisfaction, and they can with confidence recommend the Seed of this present season's saving as being vastly superior to any previously sent out by them.

The present is an excellent time for sowing, and their Stock to its select quality being limited, early orders are respectfully solicited.

Packets, sealed and warranted, Post-free, 2*s.* 6*d.* each.

Exeter Nursery, Exeter.

The Gardeners' Chronicle.

SATURDAY, JUNE 21, 1862.

MEETINGS FOR THE ENSUING WEEK.

Thursday, June 26	Royal Horticultural (Fruit and Floral Committees) at S. Kensington	Noon
	Rose Show at S. Kensington ..	1 P.M.

If the Timber of Canada in the International Exhibition excites the admiration of those who are familiar with the trees that produce it, still more worthy of study, if possible, is that which comes from our southern colonies, on some one or other of which the sun is ever shining. Gigantic timber, and exquisite cabinet wood, all in endless variety, meet us at every step. Demerara, Jamaica, and other West Indian possessions, Tasmania, Victoria, South Australia, Queensland, New South Wales, Western Australia, and New Zealand, Ceylon and the rising South African Colony of Natal, all have hastened to display their forest treasures. One country only, the Cape of Good Hope, with suicidal folly, has proved a recreant at this tournament of Nations.

To Tasmania (no longer Van Demon's Land), let us first direct attention, for here we find the second and improved edition of what attracted so much notice in 1851. On that great occasion, when international rivalry first struggled into life, Tasmania alone represented Australia worthily; and now, when every one of the Antipodean Colonies is present in its best attire, she still comes forward in a manner worthy of her reputation. In our volume for 1851, p. 291, her cabinet woods were fully noticed; she now produces in plenty examples of those invaluable hard timbers that may ultimately prove as rich in great results as the Australian gold fields themselves.

Where European ship builders are to find materials for future wooden navies it is impossible to conjecture unless they look to the Colonies. English Oak is disappearing, Mediterranean Oak is of inferior quality, and as for East Indian Teak its growing scarcity, and the difficulty of procuring it, must of necessity compel merchants to look for other hard wood, having the same valuable qualities, and more easily procurable. From the official reports published by the Government of India it appears that the Attaran Teak forests in six years could not supply quite 6000 full-sized logs, or 1000 logs annually; and in all Pegu the annual average of logs of every sort has not of late exceeded 18,600. Moreover the number of standing trees is diminishing so rapidly that recourse has been had to replanting the forests. (In a report from Dr. Brandis now before us it would seem that not a log was in store at the time when it was drawn up.) Considering that a Teak tree must be between 60 and 70 years old before it is fit for market, and that it must stand where it grew for three years more after having been girdled, it appears certain that there must be for at least 70 years such a growing scarcity of this timber as will render substitutes indispensible.

Nowhere is such a substitute more easily found than in Australia, among the giant *Eucalypti* or Gum trees of the various colonies; not indeed all called by that name, but rejoicing in mysterious titles, the meaning of which has been a puzzle to the uninitiated. Blue Gums, White Gums, Iron Barks, Stringy Barks, Ashes, Mahoganies, Jarrahs, Peppermint trees, Manna trees, Tooarts, Moorels, and many others, are all hard woods from Eucalypti of various species, the quality of which appears to render them important to the ship-builder.

In the Tasmanian Court are capital examples of some of these, and in the Catalogue are scraps of information from Mr. Wm. Archer, a distinguished scientific Tasmanian, which attest their value, not the least part of which consists in their power to resist decay. The timber is arranged as a hollow octagonal tower, surrounded by a tall hoarding, within which visitors can pass. As this should be studied by all who desire to understand what Tasmanian timber is, we condense from the *Hobarton Advertiser* the particulars of its composition. The framework consists of eight spars of Blue Gum, Stringy Bark, White Gum, Silver Wattle, Blackwood, and Sassafras (*Atherosperma*). The sides are formed at the base by eight large planks set on end of Blue Gum and Stringy Bark. The heart of Tasmanian trees is nearly always unsound; therefore in these planks, as in all planks used in the Colony for ship-building, the heart is cut off, and the width of the plank shows the size of the tree—outside of the heart. To show the length which can be obtained for ship timber, planks have been sent home of Blue Gum, measuring 90 ft., and of Stringy Bark, measuring 80ft. in length, of equal width and soundness throughout. Samples of other ship timber form the base of the tower, which consists of five planks (20ft. long) of Blue Gum, Stringy Bark, Blackwood, and Myrtle, the two former being fitted for ship-building, and the two latter for cabinet work. Placed across these are ship's keel-pieces (10ft. long, squared), of Blue Gum and Stringy Bark; over these lie, transversely, joists of Stringy Bark. Of large ship's knees an unlimited supply can be obtained; examples of these are shown in the angles of the tower, along with a large Blue Gum knee, and also a Blue Gum crook, which have been exposed to the open air nearly 10 years, in a ship-yard. In other angles are three very fine ship's knees from Tasman's Peninsula. In the interior are railway sleepers of Blue Gum and Stringy Bark and pieces of White Gum, or Gum-topped Stringy Bark, 12 × 6, 12 feet in length, together with sleepers of Blue Gum and Peppermint, 5 feet to 15 feet long, and in breadth from 6 inches to 24 inches.

In the Garden of the Royal Horticultural Society will be found a longitudinal section of the Swamp Gum from Port Arthur, which serves to show the extraordinary length and size of Tasmanian Timber. The plank from which this section was taken measured 230 feet in length. No available ship could be got to take it to London, whole. The section was consequently divided into 20 feet lengths, and bolted together endways.

The attention of railway engineers in particular is invited by the Tasmanian Commission to these durable woods, which it is believed can be supplied at a price that would render their use much more economical than softer woods. "By the estimate of the late Robert Stephenson, 2,800,000 railway sleepers required renewing (in 1854) every year, out of the 36 millions of sleepers in use in Great Britain. A Blue Gum, or Stringy Bark, or Gum-topped Stringy Bark, or Peppermint wood sleeper, would, under the most trying circumstances, last from 15 to 20 years, and under ordinary or favourable circumstances might last three times that period. The sleepers now in use require renewing, according to Mr. Stephenson, every 12 or 14 years. It is estimated that this quantity requires the wood of 7,000 acres of English forest land annually, whilst better woods are growing in the wild lands of Tasmania as common as weeds." To render the tower a temporary Museum of the more useful Tasmanian Woods, specimens were procured from the oldest public buildings of the colony. The old gaol and the old Court-house of Hobart Town furnished sleepers, door-posts, flooring-joists, boards, window-lintels, and architraves—of Huon Pine, Blue Gum, and Stringy Bark, which are as sound as when built in 40 years ago, and the evidence which they offer of their durability must be taken as incontestible. Nearly all the timber of the old Hobart Town Court-house has been found to be sound, and has been used in the erection of the New Post Office just completed on the same site. "But," says the report, "the builder and the railway engineer may ask, 'will Tasmanian timber resist equally well the atmospheric influences of the open air?' The naval architect will inquire into its behaviour under water. Let the old piles, planks, and posts supply the answer." Some of these old piles, which have been split longitudinally in order to facilitate inspection, have been partly submerged daily, as the tide rose and fell, for periods up to 21 years, whilst forming part of the wharves of Hobart Town. Blue Gum and other planks from the wharf platform will show their power of resistance, for the same period, of copious showers, hot sunshine, dry winds, and heavy traffic. Other material witnesses to the durability of Tasmanian wood have been summoned from a colonial-built vessel, which has been stranded for 14 years, in the shape of planking, timbers, trenails, &c. A Tasmanian schooner built of Blue Gum—the Flying Squirrel, 97 tons—has twice been thrown by the surf above high-water mark—and on being got off did not exhibit the slightest defection in her lines, or a sprung trenail, and has never even required to be pumped since undergoing this severe ordeal. Veteran posts from the earliest fences of the colony, of Peppermint and other woods, which have stood faithful sentinels over the crops and herds of the settlers of the last generation, invite inspection of their almost unimpaired condition.

We suppose that evidence like this will be regarded as conclusive as to the value of the trees of Tasmania, but it is not complete. One of the most important purposes to which timber has now to be applied is lining iron ships; and for that the Australian hardwoods *appear* admirably adapted. But until they have been submitted, by actual experiment, to the effects of shot, no one can say that they really can be so employed. There is no doubt about their strength, and we believe they have great power of resisting dry rot, or other causes of decay; but they may splinter, or they may prove "short," as carpenters say, and either of those qualities would seriously diminish their importance for ships, or materials of war. Let us hope then that in addition to the experiments which have shown the breaking weight of Blue Gum to be 1031 lbs. against 938 lbs., which is that of Teak, and the breaking weight of Swamp Gum and Stringy Bark to be 784 lbs. and 867 lbs. respectively against 569 lbs., the average of several trials with different kinds of Oak, some of the planks now in the building may be placed at the disposal of Government for the purpose of being exposed when backing up iron plates to the action of heavy projectiles. Should they come out of such an ordeal satisfactorily, the resources of every Australian colony will be raised very materially in value.

—— Of Lady Downe's Seedling Grape, which is beginning to be recognised as one of the best late-keeping kinds, some interesting facts have been recently elicited through the observations of Mr. Thomson of Dalkeith. A fine sample of this variety, with plump fresh richly-flavoured berries, was sent by him to South Kensington on the 19th of April last. At the time this was gathered, the Vine which bore it was coming into leaf, as the young shoots on the branch cut with the cluster bore evidence. The Vine had been set apart for experiment, and this had enabled Mr. Thomson to observe the facts alluded to in the following passage from his letter:—"I found that as soon as the buds on the Vine began to swell, so did many of the berries on the bunches that were previously beginning to shrivel a little; but those that were much shrivelled did not swell in the least. Those berries, however, that did receive the sap began to burst their skins and drop sap slightly tinged with the colouring matter of the berry as compared with sap direct from the wood. I found I could stop this swelling and cracking of the berries by making two incisions with the knife right and left in the lateral the bunch hung on; these incisions drew off the sap that was being forced into the berries of the bunch. The sap from the berry as well as a slight tinge of colour, had a slight flavour of the Grape." The bunch exhibited, which was accompanied, as just stated, by a young growing shoot, was in excellent condition, excepting as regards the berries that were cracked by the force of the ascending sap. On the 6th of May another cluster from the same Vine was sent, and in this latter the action of the sap was exhibited in a more marked degree, the skin of every berry being more or less ruptured. It would thus appear, that though excellent up to a certain period, which in the present instance proved to be the month of April, Lady Downe's Grape cannot

be kept hanging later than this, unless the Vine can at the same time be kept in a state of rest. In the instance to which we have been referring, ripe Grapes had been cut from the same house early in the previous August. Those gathered in August were Hamburghs, which variety lasted in cut till Christmas; then followed West's St. Peter's and the Calabrian Raisin, the latter a Grape which Mr. THOMSON thinks will be more appreciated when better known; and finally in the latter end of January there were 200 bunches of Lady Downe's Seedling remaining, which lasted up to May.

—— In reference to the foregoing memoranda, we may also record what appears to be a very good plan of KEEPING GRAPES which Mr. THOMSON has adopted, and which, writing on the 19th of April, he describes thus:—"In February I cut a great many bunches off the Lady Downe's Vine. I left the bunches attached to the branches that bore them, sharpened the points of the branches where they had been detached from the parent stem, and ran them a couple of inches into Mangel Wurzel roots. These I laid on the shelf of the fruit room, and allowed the Grapes to hang over the shelf, and cut them as required. In this way they kept perfectly plump in berry till the last bunch was consumed this month."

—— The STIRLING CASTLE PEACH, a variety raised, as its name indicates, at Stirling Castle, and on two or three occasions exhibited in London, has been lately approved by the Fruit Committee of the Royal Horticultural Society for its earliness, and the facility with which it may be forced. In the forced state it comes very well coloured, and of average size, and is also remarkably well flavoured. It seems to be therefore a useful variety for this particular purpose. Mr. CARMICHAEL, gardener to the Countess of Dunmore, at Dunmore Park, by whom it has been exhibited, states that no other kind known to him sets so freely. The tree nearly fills one house, and bears large crops every season, though forced early. Forcing is generally about the 1st of November, and the tree is generally in full flower about the middle of December. In 1859 the fruit was ripe on May 20th; in 1861, on May 6th; and in the present season on April 23d.

—— A pretty addition quite recently made to the class of plants adapted for planting in small suspended baskets in greenhouses, was shown the other day by the Messrs. VEITCH & SON, in the form of a little Gesnerad called SARMIENTA REPENS, which is in fact just the very thing for this particular object, being slender, of trailing rooting habit, and free-blooming. The little thready stems branch about, and as they grow throw out roots, which strike into the material in which the plant is placed, wherever they come into contact with it, so that the basket may be first covered by the neat fleshy leaves, and the stems then allowed to become pendent. The flowers are very pretty and very freely produced, as well as rather curious in form; they are of a light scarlet, tubular, the tube a good deal inflated about the middle, very much constricted at the base, and moderately so just beneath the limb, which is formed of blunt erect lobes, so that the blossoms individually remind one of those of *Mitraria coccinea*, though the habit of the plant is very different. Hothouse basket plants of appropriate character are plentiful enough, but for greenhouses they are less numerous, and such an addition to their number as this *Sarmienta* will be very welcome.

—— We have to record with regret the death of Mr. GEORGE SPARY, which took place at Hardwicke in Clumber Park on the 12th inst. Mr. SPARY was at one time employed in the Garden of the Royal Horticultural Society at Chiswick; but has for many years past been Forester to the late and present Dukes of Newcastle. He was undoubtedly one of the best men that ever went from Chiswick, and has, from all we have heard and seen, acquitted himself admirably in the situation which he has so long filled at Clumber, and, we believe, to the entire satisfaction of his noble employers. SPARY was the descendant of one of three brothers all eminent as cultivators, and he was himself passionately fond of Gardening, which in his leisure hours he pursued with untiring industry, not only in his own garden but also in those of the many beautiful cottages which form a feature of so much interest in the noble domain of Clumber.

HARDY FRUITS IN THE INTERNATIONAL EXHIBITION.

Now that so many gardeners are turning their attention to Emigration, and so many half-horticultural settlers are leaving our shores for distant Colonies, concerning which they have but imperfect information, it seems desirable to take advantage of the present opportunity to show what sort of fruits are produced in our foreign possessions. Thanks to the skilful manner in which the exhibitions were prepared in many of our Colonies before they were despatched to England, we have a good deal of evidence upon the subject. Some have sent drawings, others specimens preserved in fluid, and others models. Out of these materials a tolerable report may be prepared. We commence with the N. American colonies.

Nova Scotia.—Notwithstanding the severity of the winters in this colony, it appears from a collection of fruits preserved in spirits that Pears do tolerably well, whilst Apples grow to a large size, and that Grapes even ripen in the open air; but we are informed that Vines require to be protected from the intensity of the frost in winter. From the specimens of fruit and vegetables exhibited it is evident that the soil in many parts of Nova Scotia is good. Banchette calculated that of the 9 millions of acres which the province contains two millions are of the very finest quality, three are good, and only the remainder inferior, or bad.

In the Catalogue of the Nova Scotian Department, drawn up by the Board of Provincial Commissioners, it is stated, under the head of Horticultural Productions, &c. that the climate of Nova Scotia is particularly suitable to the growth of the Apple tree; that the crop is generally sure and large. Sorts which in England require a wall or espalier, grow and thrive in the open orchards as standards. Fruit attains an enormous size. A specimen of the Gloria Mundi apple sent to England measured from 15 to 17 inches in circumference. "The amount of Apples raised in 1860 was 186,481 bushels, Annapolis County raising 65,405 bushels."

The varieties preserved in alcohol were the Gloria Mundi, Gilliflower, Ribston Pippin, Seek-no-further, Bishop's Pippin, Golden Pippin, and others.

In the preserved state the specimens of the Gloria Mundi, as nearly as can be ascertained through the jar, are 5 inches in diameter, which corresponds with the size mentioned above. The Ribston Pippins have been well grown. A long cylindrical Apple, which appears to be the Lady's Finger, of Cox, is as much as 5 or 6 inches in length. From an inspection of this part of the exhibition, it is evident that the Apple succeeds well in Nova Scotia.

In the local catalogue to which we have referred, it is stated that "the Pear grows vigorously, is very productive, and sorts such as the Marie Louise, Williams' Bon Chrétien, Louise Bonne of Jersey, Knight's Monarch, and other hardy sorts will do exceedingly well as standards; crop constant." The preserved specimens of the Marie Louise are a good average size, but not so large in proportion as the Apples. This may be owing to the circumstance that the Apple from the time of its blossoming attains its full size in shorter time than the Pear; and as the mean temperature of April in Nova Scotia is 30°, and that of May only 40°, the Pear cannot be in blossom till a month after its usual period in Europe, or probably not before the end of May; consequently its season of growth is shorter than in countries where it acquires the highest perfection.

Hardy sorts of Grapes, we are informed, will do well in the open air in the western counties; and even Black Hamburgh and White Cluster have, during the past year, ripened their fruit without the aid of glass; but with this, and no fire heat, all the best sorts grow most luxuriantly and bear better than in England under the same treatment. Halifax, N. S., is about $6\frac{1}{2}°$ farther south than London, or it is nearly on the same parallel as Bordeaux in the south of France, where Grapes naturally ripen well out of doors, the weather being hot from May to September inclusive; whereas at Halifax there are only two hot months, July and August, the mean temperatures of which are respectively 63° and 70°; the latter would be sufficient for ripening the Grape perfectly provided the berries had previously attained their full size; but for this the heat of May and June is insufficient. Plums and Cherries grow very well. Pear-shaped Quinces are exhibited preserved in spirits, and are of good size. Cranberries are shown preserved in sugar; Blueberries pickled in Vinegar. Of Tomatoes we observed some green, red, and orange preserved in sugar, and green pickled in vinegar; they ripen, it is stated, in the open air. The Squash and Pumpkin attain an enormous size, as much as 170 lbs., and grown by the acre they are said to prove a very profitable crop for cattle. Onions yield large crops, especially in the western counties; some of the specimens preserved in spirits are 17 inches in circumference; equal to the imported Spanish Onions of the shops. Root crops succeed well. Potatoes, according to the catalogue, are not so much affected by the disease as in other countries; 3,284,864 bushels were raised in 1860. All this shows that fruits and vegetables grown in the open air in England will succeed in that colony, with the exception of such as cannot withstand our severest winters.

Indoor Gardening.

I SCARCELY know why it is, but I think as hot weather comes on a window full of plants becomes a little nuisance. Perhaps it is that the pots and boxes deprive us of some air. At the same time perhaps there is no time of year when outside flower boxes, or I might say flower borders, become so extremely welcome.

This, it seems to me, is a remarkably good and common-sense arrangement. The plants thus shade our windows and act as effectually as an outside blind, while they grow themselves, under proper treatment, and when chosen rightly, in a perfectly rampant fashion.

I never can get myself to care for detached plants; narrow lines and edgings, pretty as they are, seem somehow to me so poor and so wanting breadth. Even window boxes to be satisfactory seem to need double rows or treble lines of plants, and then when viewed from outside they are extremely charming. From within the rooms however they seem to me a mere fringe. The box too stands up and arrogates to itself the possession of half a pane of our precious day-light, and what window gardener does not measure that light by inches?

For all windows which do not open absolutely to the ground I think that deep wooden boxes suspended by nails and brackets, and if required supported by even a slight scaffold, will be found most pleasant. I can never cease talking of how pretty these have been made—and of all kinds of gardens they are the easiest managed. Keeping them very neat is the last thing that we need think of; making a bright green tangle is after all the pleasantest way of refreshing London-strained eyes. The common quick-growing flowers are the things to have here. Sweet Peas in pots 7 inches wide, seven or eight seeds being sown in the pot, and the soil well jammed in; Cobœa scandens, growing in 3-inch pots, or in large ones, as is most convenient; Clematis or Passion-flower, Japan Honeysuckles or White Bind-weeds; all these I have had do well. Spice Geraniums and Myrtles for making some good green, Tom Thumb Geraniums, Tropæolums, Stocks, Mignonette and Heliotropes, give both colour and green, and perhaps two places may be reserved to fill with Roses or white Geraniums, Arums, or Japan Lilies, the fortnightly change of which will keep up a varying interest, and alter, with each new change, the style of the whole affair.

A large spreading Fern is most exquisite in the centre if it only will keep green enough; but if the window is a very hot one there are divers difficulties in persuading it so to do. Arums, then Tropæolums and Heliotropes, are the most cool looking things, and those to be trusted most, with of course the never failing Tom Thumb and ivy-leaved pink and white Geranium. The only secret I know of for the good success of these brightest gardens is that of keeping the box foundation thoroughly drenched with water. The delight even of this in itself is great. My own window garden has sometimes been watered outside from steps, or by a syringe; and it is indescribable the charm, on a sunny morning, of opening one's windows on fragrant beds of flowers thus glittering from their shower; and again in the evening, after a sultry day, the very sound of the water as it patters down is refreshing.

The question of size and arrangement must vary in different cases. I never saw one that seemed to me to do better than when the top being level with the window the ends came beyond it 6 inches or so each way, and the width, including the window sill, was about 2 feet 6 inches. It must be remembered that the plants growing over gave an appearance of very much greater size. The window-sill was troublesome. In one case I got over it by training Vine branches down, and this was very pretty; in other cases I found that the blue Lobelia, and I think some Campanulas, and some of the hardier and dark green Lycopodiums, grew down very well to cover in this space. Branches, however, brought round of some well-grown climber make certainly, in this case, the most appropriate frame. A long Rose branch, for instance, or a streamer of Honeysuckle, nailed loosely at each end, some way beyond our sight, would grow very well and blossom all along. The evergreen Honeysuckle for this would be extremely suitable, as it does not harbour insects and is so very sweet, as well as being green and pretty. These sort of boxes ought to be painted bark colour, or to be done with dark oak stain instead.

A clever man-servant of ours used to make all such things capitally, and the prettiest fashion for them is, I think, the roughest.

Perhaps it might be a good plan to make the tracery separate if it were elaborate, like a wrought balcony front covering some old box. The twisted pieces of gnarled and grotesque old trees do best of all for such work, and whether they are nailed upon the box itself so as to form in fact a raised ornamental work, or whether the box is itself a closed lining to a rustic open work, the effect is delightful when the flowers are in.

I have had such boxes resting on the ground, or raised in balconies, and also supported simply by a bracket—at least by spars of wood that made a sort of scaffold, and rested on two stout square rustic posts. Where the latter plan can be used, the posts are themselves easily made the ornaments of the garden, and the trees that climb up them add very greatly to the beauty of the flowers above.

The box may make a shade for the lower window; and if this belongs to a room that signifies, perhaps some means could be used of making the box waterproof by a zinc or some such lining, so as to make the outlet near one of the front corners, that the water may not trickle down upon the glass when the flowers above are drenched, as they must be so often. *E. A. M.*

Home Correspondence.

Eastern Trees—Cedar of Lebanon.—During a tour I have lately made in the East I took the measurements of some of the largest trees (Cedar of Lebanon) that came under my notice, and thinking it may be of

interest to some of your readers, I enclose the account. April 24: we went from Ain Ata to the Cedars and back, a long 8 hours on the snow, which was so deep under the trees that we had great difficulty in measuring some of them, especially those on the steep hillsides. Of the oldest trees we could only make out 9 or at the outside 10.

No. 1. (At 5 feet from the ground) measured	29 feet	8 inches.
No. 2	36 ,,	9 ,,
No. 3	28 ,,	0 ,,
No. 4	38 ,,	10 ,,
No. 5	40 ,,	0 ,,
No. 6	33 ,,	4 ,,
No. 7	22 ,,	0 ,,
No. 8	21 ,,	0 ,,

It was impossible for us to have counted the trees, as the snow was 3 feet deep and soft, and the sides of the plateau very steep. I am quite of opinion that the Cedar and Deodar are the same tree. There is a young tree growing about 50 yards west of the chapel in the middle of the grove, of exactly the same form and habit as a Deodar in the park here—the same graceful drooping habit, the same light silvery green, and having none of the usual rigid horizontal form of the Cedar. The remainder of the younger race of trees vary from 5 to 20 feet in girth; some are as tall and branchless as Poplars, some not 30 feet high, gnarled and stunted. The great Oriental Plane at Damascus at 3 feet from the ground is 40 feet in girth; another in a Court of the Seraglio at Constantinople is rather over 50 feet; if the trees called the Seven Brothers at Buyukdere, on the Bosphorus, are all from one root, and a very careful examination led me to believe this is the case, the girth is quite 70 feet; some of the stems however are much decayed, and it is difficult to make quite a correct measurement. A Cypress planted at the head of a Dervish's tomb at Damascus was 10 feet 6 inches in girth, and a Bay in the same enclosure measured 6 feet 4 inches. The largest Cypress I met with was at Baalbec, 11 feet 6 inches; it was quite flourishing and apparently growing fast. At Aiha near Rasheiy, is an evergreen Oak, consisting of two stems from the same root. One is 21 feet in girth, the other 23 feet, both stems are hollow, but the top is very flourishing and the foliage luxuriant; it is not quite the same as our Ilex, the leaf being larger and more pointed, and the acorns nearly twice the size, in a mossy cup. *J. Ridgway, Fairlawn.*

Yellow Moss Rose.—In Miss Beaufort's (now Lady Strangford, I believe) "Egyptian Sepulchres and Syrian Shrines," the following passage occurs (page 180), when describing a visit to Bet ed deen in Lebanon:—"Every house in the little town had its flower garden of Roses, Lilies, Geraniums, &c. Among them we noticed a splendid double sweet-scented Moss Rose of a fine deep lemon colour, which would make glad the heart of an English gardener." I have always imagined that a yellow Moss Rose was a great desideratum amongst gardeners; it is possible that this lady may have been mistaken as to its being really a Moss Rose, but as she seems to be a close and enthusiastic admirer of Nature in all its forms, it seems to me that the subject is worth inquiring more into, and at the present day access to Syria has become so easy, I cannot help hoping that you will incite some of your numerous correspondents who may happen to be in the way of it, to do so. *Woodcote.* [We regret our inability to throw light on Lady Strangford's description.]

Mowing Machines.—The remarks yon have made on "Green's Mowing Machine" are I think correct. We have had one in use here for these last two seasons, during which time we have been obliged to have several new chains. It has been sent to Leeds this spring to be refitted, but I can observe no difference in the make or strength of the chain, and although fitted with two chains now, they are showing signs of weakness. If Messrs. Green can make a chain sufficiently strong to stand the strain, I think there can be no question as to the superiority of their machines, the friction being so diminished as to lessen labour at least one fourth, to say nothing of the horrid clatter got rid of by doing away with cogs. I ought perhaps to add, that I intend these remarks to apply to the machine of the 1860 pattern, as I see by advertisement that there is now more working gear introduced—a very questionable improvement, adding to the friction. A few minutes' trial of machines is in my opinion productive of more harm than good, and only tends to mislead the public; such things require severe practical tests before deciding on their merits. If your Correspondents would state their experience in the matter of lawn mowers generally, it would be of far more value to intending purchasers than short official trials. *J. Sheppard, Gardener, Woolverstone Park.*

Cranston's Patent Glass Houses.—In speaking of my system of ventilation, through the imperfections of my pen and pencil, you are led into an error which I am sure you will allow me to put right. It is with respect to the openings for air in the "Radical Ribs." In practice these have been from 3 inches in diameter to 9 inches long, and 3 inches wide, all placed 3 inches apart, and therefore give more air space than a continuous slit of an "inch in width." As there need be no limit in reason to the size of these openings for the admission of air, it being easy and convenient to make them from 3 to 6 inches wide, and 9 or 10 inches long, it is clear that the system need not fail on account of the smallness of the perforations in the ventilation plates, however imperfect it might be considered in other respects. A model at the South Kensington Rose Show on the 26th instant, will, however, explain this and other ventilation appliances adopted in the buildings now in course of erection more fully than I can do. *James Cranston.*

Chysis Limminghi.—It is stated in your Paper (see p. 547) that this is a difficult plant to cultivate. With us it grows as freely as C. bractescens. This spring we exhibited a plant of Limminghi with from 40 to 50 flowers expanded on it at one time, and they kept in good condition six weeks. In general the plant is kept too warm; we grow ours in the coldest division of the Orchid-house. The temperature it gets during rest ranges from 50° to 55°, and throughout its growing season from 70° to 75°, with an abundance of water at the roots and overhead, treatment which it appears to like. It will last in good condition in a cool room nearly two months, if kept free from damp. I may add that Vanda cristata has been in bloom here for these last three months. Of 11 flowers produced this spring nine were fully expanded at the same time; they have been coming out ever since March last, generally in pairs, but sometimes solitary. *G. Toll, Gr. to J. A. Turner, Esq., M.P., Pendlebury, Manchester.*

Selaginella (Lycopodium) denticulata.—Let not your readers be too confident of the perfect hardiness of this, asserted by Mr. Rust as well as others. Two successive winters prior to the last I had it taken up and kept in the greenhouse, but persuaded by statements as to its hardiness I left the 18 or 20 patches of it I possessed out of doors in the border of my hardy Fern bed last winter, with this result:—more than half are entirely dead, and the rest wholly useless, not one having put forth more than one or two feeble shoots of two or three inches up to the present time. *X., Windsor.*

Pine Timber.—I was greatly pleased with your paper on the comparative value of several sorts of Pine or Fir timber; I only wish a greater variety had been experimented on. At this place I have charge of a rather large Pinetum, in which there are specimens of good size; for example, Pinus monticola is upwards of 40 feet high; it bears cones freely, as does Douglas Fir. Both ripen, and large numbers of young plants have been raised from their seed. Menziesi we have as tall as monticola, and larger in the trunk. This tree has never shown a single cone, or even a male catkin. Is the quality of the wood of this last-named good? It has one good property, and that is it makes handsome plants from cuttings, which are not to be distinguished from seedlings. The Deodar has also shown cones, but they proved abortive. I may add that the Pinetum is in a narrow valley, about 400 feet above the sea. It appears favourable to the growth of hardy Pines and forest trees generally. *Charles Taylor, Gardener, Culcreuch, Fintry, Glasgow.*

Syringa Emodi.—Some of your readers may be pleased to have their attention directed to this small tree. It is hardy, of a more erect and tree-like habit than the common Lilac. Its leaves are large, of a pale Grass-green colour, something like those of a Rhododendron. The spikes of flowers are large, pinkish-white, and with a richly sweet smell resembling that of the Heliotrope. *S.*

Vine Borders and Guano.—I agree with Mr. Cope that Guano is an excellent manure for Vines if carefully employed, but not as he seems to have used it, viz., "giving a liberal top-dressing, and forking the borders immediately afterwards." That would have the very undesirable effect of bringing the raw guano into contact with the roots, and destroying all which might be near the surface. But, says Mr. Cope, "if it killed the surface roots in the late Vinery borders, why did it not do so in the early one?" No doubt it did. He at the same time states that that border has had heat afforded it during the winter; this would soon cause the lower roots to push fresh fibres to the top of the border; being the warmest, they would naturally bend their course thither. This, I may mention, adds another to the many proofs already on record of the beneficial effects of bottom or root heat, a subject which, in my opinion, all would do well to turn their attention to who are about erecting early forcing houses; for certainly none are complete without it. *G. Smith, Liscard.*

Foreign Correspondence.

Emigrant Prospects in British Columbia.—*New Westminster, April* 3, 1862.—I see a notice in a copy of your Paper last year that you have no reliable account of meteorological observations, either for British Columbia or the smaller colony of Vancouver Island.

I therefore enclose an abstract of meteorological observations taken by the Royal Engineers at New Westminster, in British Columbia, for the year 1861; and a comparison with similar observations at the same place in previous years. Its accuracy can be relied upon. Some of your readers may be interested in information which will enable them to judge how far weather is likely to affect horticultural pursuits in the New Eldorado. Remember there is more humidity and cold at New Westminster, and from thence up to the Cascade Range (strange to say) than there is for some hundreds of miles above, *i.e.* N. of the Cascade mountains. This consideration must not be omitted from your readers' calculations.

During this year, next year, and for two or more years after there will be first-rate chances (I use the expression advisedly) for country people who can rough it to make money at their business in British Columbia. Kid-gloved gentlemen "need not apply." The lumps of truth that came down from Cariboo, a district in British Columbia over 100 miles long at the least, in such quantities last autumn, have convinced the most incredulous of us here at last of the abundance of the gold up the Fraser, and, what is more to the point, has already brought a great influx of miners, and there are, I may almost literally say, no farmers or farms in British Columbia. The field is open. Land to be pre-empted for 160 acres, for a 38*s*. fee, and no present payment for some years. Soil good. Climate most healthy. Market for produce unlimited. Prices at the mines and along the whole route of travel fabulously high, the only great drawback being the price of labour, which each man can bring for himself. So I leave you to judge whether a grower can do so well anywhere else. Depend upon it a good place in British Columbia is one of the best "claims" going. *C.*

Abstract of Meteorological Observations.

Taken at the Royal Engineer Camp, New Westminster, British Columbia, during the year 1861, by order of Colonel R. C. Moody, R.E., Commanding the troops. Latitude 49° 12′ 47″ North. Longitude, 122° 53′ 19″ West.

	In.		
The highest reading of the Barometer, corrected for temperature, was ..	30.565	9.30 A.M.	Feb. 4
The mean height do. do., at 9.30 A.M.	29.943		
Do. do. do., at 3.30 P.M.	29.889		
The lowest do. do., ...	29.272	9.30 A.M.	Dec. 3

	Deg.	
Maximum temperature of Air, in shade, at 9.30 A.M.	74.3	July 9, 1861
Do. do. do. at 3.30 P.M.	84.0	July 9, 1861
Mean temperature of Air, in shade at 9.30 A.M.	48.8	
Do. do. do. at 3.30 P.M.	52.2	
Minimum temperature of Air, in shade at 9.30 A.M.	20.0	Jan. 21
Do. do. do. at 3.30 P.M.	24.0	Dec. 23
Minimum temperature on the Grass ..	10.0	Jan. 21
Greatest amount of Humidity	1.000	
Mean do. do. at 9.30 A.M.	.764	
Do. do. do. at 3.30 P.M.	.854	
Least do. do.	.422	3.30 P.M. July 9

The cistern of the barometer is about 54 feet above the level of the sea. All the observations were made at 9.30 A.M., and 3.30 P.M. daily throughout the year.

There were several frosty nights in April, one on the 20th May, and they recommenced on the 20th October. Thunder and lightning occurred on the 27th May, and 5th, 21st, 22d, and 29th August.

Table showing the depth of rain, the number of days on which it fell, the mean humidity, and mean temperature of the Air at 9.30 A.M., and 3.30 P.M., and the lowest temperature on the Grass in each month.

	Inches.	Days.	Humidity.	Thermometer.		
				9.30 A.M.	3.30 P.M.	Min. on Grass.
January ..	7.190	15	.904	33.2	35.4	10.0
February .	5.485	18	.879	38.2	42.3	22.0
March ..	3.270	12	.788	42.6	47.5	25.0
April ..	5.265	16	.743	48.1	51.4	29.0
May ..	4.575	12	.713	53.6	57.7	31.0
June ..	4.770	15	.733	59.1	64.6	37.0
July ..	0.390	3	.678	64.8	68.9	40.0
August ..	3.180	8	.743	64.0	68.0	38.5
September	1.075	6	.797	59.9	64.4	35.0
October ..	6.145	16	.915	48.8	50.9	25.0
November	11.620	23	.941	39.1	40.6	22,0
December .	7.520	20	.910	34.2	35.2	11.0
Total ..	60.485	164				

Rain fell on 12 days when the wind was S., 5 when S.W., 9 when W., 2 when N.W., 14 when N.E., 64 when E., 26 when S.E., and 32 when calm.

The greatest fall of rain in 24 hours measured 2.150 inches, on the 4th November.

The average fall for every day of the year was 0.166 inch.

The average fall for each wet day was 0.369 inch.

A comparison of this abstract with that for the year 1860 shows that 6.065 inches more rain fell in 1861 than in 1860.

Rain fell on 13 more days	in 1861 than in 1860.
The mean height of barometer .070 less ..	,, ,,
The mean amount of humidity was .008 greater	,, ,,
The mean temperature of the air in shade was 5.1 greater	,, ,,

The absolute limiting nights of frost were nearly at the same date in both years.

In the four winter months, January to March and October to December, 41.230 inches of rain fell in 1861, and 40.586 inches in 1860.

In the remaining months 19.255 inches fell in 1861, and 13.884 in 1860. Of the entire quantity of rain 26 inches fell in January, November, and December, in each year.

The prevailing direction of the wind during rain in both years was E. and S.E.

June was the driest month, and August the warmest in 1860. July was both driest and warmest in 1861.

There was floating ice in the Fraser River opposite New Westminster 7th January, 1861; it increased until 22d January, and disappeared on the 2d February. The navigation to the mouth of the river was not impeded. There was no ice in the Fraser at New Westminster in 1860.

The observations were taken by 2d Corporal P. J. Leech and Lance Corporal J. Conroy, R.E.

R. M. Parsons, Captain R.E.

[These observations enable us to compare the climate of British Columbia with that of places at home, and thus to draw such conclusions as are most important to settlers. We shall compare the climate with that of Chiswick.

It may be remarked in the first place that the barometrical means, 29.910 inches at Chiswick, and 29.916 at New Westminster, differ very little, only .006 inch, notwithstanding the greater quantity of rain and the somewhat higher position of the barometer above the level of the sea at the latter place; therefore considerable intervals of settled weather must prevail. Moreover it appears that the lowest indication in the year

was 29.272 inches; whereas in this country it is often below 29.000 inches. We should presume from this circumstance that in British Columbia the weather is not so boisterous as it is sometimes here.

With regard to temperature, it is stated that it is taken at 9.30 A.M. and 3.30 P.M.; but we have no observations at corresponding hours for comparison. We have the mean temperature deduced from the registered maxima and minima. With this, however, the 9.30 observations taken at New Westminster may be compared; for, in a paper drawn up by Sir David Brewster, from observations of the thermometer taken hourly at Leith Fort for two years, and published in the Edinburgh Philosophical Transactions, it is shown that the mean of the 9 A.M. observations was a fraction of a degree *below* the mean of the 24 hours, whilst that of the 10 A.M. observations was a fraction *above* that mean, which must consequently occur between 9 and 10 A.M. The observations taken as above at 9.30 A.M. at New Westminster may be considered to represent exactly, or at all events exactly enough for all practical purposes, the mean temperature of the locality. We shall adopt them accordingly for comparison with the mean of Chiswick. The following Table exhibits the difference:—

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	Oct.	Nov.	Dec.
	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
New Westminster	33.2	38.2	42.6	48.1	53.6	59.1	64.8	64.0	59.9	48.8	39.1	34.2
Chiswick ..	36.9	38.7	42.0	46 8	53.3	60.3	62.9	61.9	56.8	50.1	42.4	39.3
Difference	—3.7	—0.5	+0.6	+1.3	+0.3	—1.2	+1.9	+2.1	+3.1	—1.3	—3.3	—4.9

The above differences where New Westminster is higher than Chiswick are marked +; lower —.

Mean temperature of the whole year at Chiswick .. .. 49°.3
" " " " at New Westminster 48.8

Difference 0.5

From the above it appears that the mean temperature of Chiswick in Middlesex, and that of New Westminster in British Columbia, are as nearly equal as that of any two places can be, for there is only half a degree of difference.* With regard to the respective months, the climate of British Columbia is colder than Chiswick in January, slightly so in February and June, October, November, and December. But on the other hand it is warmer in the grain-ripening months of July, August, and September, and this is a very important matter. At Truro in Cornwall the mean of the coldest month is not below 40°, but that of the hottest is only 61°.45, instead of nearly 65° as above, a temperature in which Wheat crops attain perfection, and this is the most important point for agriculturists. The somewhat greater cold which prevails in the winter months can do no harm to crops. The extreme lowest cold experienced at New Westminster was only 10° Fahr., and in most winters we have the thermometer much lower than that. *T.*]

Societies.

ROYAL BOTANIC: *June* 18 (*Second Great Show*).—This exhibition was in most respects the same as that held at South Kensington on the 11th inst. Orchids were reproduced in excellent condition, and there was a large and beautiful display of stove and greenhouse plants, among which Pleroma elegans, Stephanotis, Allamandas, and Dipladenias were conspicuous. Roses in pots and Azaleas though still showy were greatly past their best; the comparative loss in that respect was, however, in some measure made up by Pelargoniums, which were never seen finer than on this occasion. Recesses and shady nooks were suitably filled with Ferns and fine-foliaged plants, and there was a tolerably good exhibition of fruit.

Among Orchids, the magnificent specimen of Orchis foliosa, shown to the Royal Horticultural Society by Mr. Williams, was again furnished in equally fine condition, and not less beautiful was an example of the same Orchis shown in a pan by the same excellent cultivator. Of Lælia purpurata there was an excellent specimen from Mr. Page, who also contributed Saccolabium Blumei majus, with three glorious spikes of bloom, the size and beauty of which were such as to excite the wonder and admiration of even some of our best Orchid growers. Phaius Wallichi from Messrs. Jackson, was also a good example of that showy plant, and we likewise observed a well-flowered Dendrobium Devonianum, one of the handsomest of Orchids.

Of Anæctochili, Mr. Williams had a good collection, in which were Lobbii, Lowii, intermedius, and other fine varieties, neatly shown in pots covered with Moss, which shows their richly-veined leaves off to much better advantage than when surfaced with white sand as is sometimes done.

Of Fuchsias, extremely well-grown plants covered with bloom in 11-inch pots were exhibited by Mr. Cannell, gr. to G. Jennings, Esq. The sorts were Little Bo Peep, Catherine Hayes, and Sir Colin Campbell—dark varieties; Rose of Castile, and Pearl of England—light sorts; and Madame Cornelissen, a pretty kind with a white corolla. Another collection of much taller plants, but not nearly so bushy or compact, in 13-inch pots, came from Mr. Cross, Regent's Park.

Among Ferns was a large and fine collection from Mr. Hutt, gr. to Miss Burdett Coutts, consisting of Cibotium Schiedei, Cyathea arborea, Alsophila guianensis, and Dicksonia antarctica. From Mr. Williams also came some magnificent bushes of Gleichenia; and we also noticed one or two handsome new varieties of Ferns from Messrs. Veitch and Mr. Bull.

A collection of different varieties of Ivy was shown by Messrs. E. G. Henderson; among them were one or two prettily variegated sorts, and others with small deeply cut foliage, all of which might be useful for forming window screens, or for other purposes where coarser growing varieties might be unsuitable.

Among Pelargoniums Roseleaf, bright rose, with black spots, was remarkably fine, as were also Sanspareil, a well known spotted sort; Lady Canning, rose with a white eye, and blotched on the top; and Glowworm and Lord Clyde—both high coloured brilliant varieties. Of seedlings there was a great number; among the best were Eurydice, Queen of Whites, Cynosure; and among Fancy sorts Princess of Prussia and Ellen Beck. Among high-coloured sorts approaching scarlet Illuminator stands in the first rank.

Of Cut Roses fine boxes came from Mr. Wm. Paul, Mr. Mitchell, and Mr. Francis. Among newer kinds there were good blooms of Catherine Guillot, Boule d'Or, a yellow Tea; Victor Verdier, Triomphe d'Alençon, President, Beauty of Waltham, Madame Boll, Duc de Magenta, Senateur Vaisse, Madame Furtado, Gloire de Santenay, Madame Auguste Van Geert, a small perpetual striped kind; Duc Decazes, Souvenir d'Elise, Louis XIV., François Lacharme, and Baronne de Wassener, the last a good Moss Rose. From Mr. Turner also came a box of large and fine blooms.

Verbenas in a cut state were shown by Mr. Perry, who furnished Spark, Loveliness, Countess of Bradford, Countess of Aylesford, and Blue Beauty, all kinds with large and fine flowers, having prominent white eyes.

Pinks as large as Picotees were shown by Mr. Turner; and among Pansies were some handsome Fancy varieties from Messrs. Downie, Laird, and Laing. This class of Pansy seems a step in the right direction; though somewhat rough at present, their colours are well varied, rich, and beautiful.

As regards Fruit, Mr. Young, gr. to C. Bailey, Esq., M.P., had a Providence Pine Apple weighing 10 lbs. 13 ozs., and there were two other Providences weighing respectively 9½ lbs. and 8½ lbs. The last, which was excellent of its class, came from Mr. Bailey, gr. at Shardeloes. Among Queen Pines, there were one or two good fruit from Mr. Barnes.

Of Black Hamburgh Grapes, the most perfectly ripened three bunches came from Mr. Henderson, gr. to Sir G. Beaumont, Bart. These were black as Sloes, and beautifully covered with bloom. Larger bunches of Black Hamburgh came from Mr. Hill, gr. to R. Sneyd, Esq., of Keele Hall; but they were somewhat deficient in colour. The same excellent grower also had three beautiful bunches of Black Prince, whose united weights were 9 lbs. From Mr. Allport, gr. at Doddington Hall, Nantwich, came some very fine West's St. Peter's. Beautiful bunches of Black Frontignan were contributed by Mr. Drewitt, gr. at The Denbies, near Dorking; and Mr. Standish of Bagshot showed good examples of Prolific Muscat. Of White Grapes, some good bunches of Muscats were exhibited; but they were for the most part unripe. The earliest among them is the Archerfield variety. A house of this shut up on the 14th Dec., was stated to be eatable in May, whilst one of ordinary Muscats shut up on the 1st of October, and otherwise treated in a similar way has fruit only now fit to cut. Of Buckland Sweetwater fine bunches but unripe were shown by Mr. Hill, and we noticed some good specimens of Muscadine, especially of the sort called Bailey's variety. Of Grizzly Frontignan, Mr. M. Henderson had some good fruit.

Peaches, consisting of Royal George and Bellegarde were furnished by Mr. Taylor, Gr. to C. A. Hanbury, Esq., of Belmont, Mr. Drewitt, Mr. Durrant, Mr. Eustone, Mr. Henderson, and Mr. Hill, all of whom showed large and good fruit for the season. There were also well ripened dishes of Violette Hâtive and Elruge Nectarines from Mr. Allan, gr. to J. B. Glegg, Esq., Mr. M. Henderson, Mr. Dunn, and Mr. Horwood.

Strawberries were not numerous. Among the sorts were Oscar, Alice Maude, Victory of Bath, and a Seedling from Mr. Turner, named President, of whose merits the judges expressed a favourable opinion. It resembles Trollope's Victoria, but is earlier than that variety. The sample shown was stated to have been gathered from the open ground.

Cherries were chiefly May Duke and Elton.

Of Figs and Melons several exhibitions were contributed. Among the latter was a very large green fleshed kind of good quality, the name of which we failed to ascertain. To lovers of large Melons it will, however, prove an acquisition.

Notices of Books.

The Amateur's Rosarium. By the Rev. R. Wodrow Thomson. Edinburgh: Paton & Ritchie; London Hamilton Adams & Co.

As our national emblem the Rose has a just claim to the esteem in which it has always been held in this country, and which was never more largely or more freely bestowed upon it than it is at the present day. It is however the Rose of the florist, not the parent Rose in its first created form, which commands such high admiration. It is in fact the Rose, such as intelligent cultivation has made it, which has been crowned as the regal flower, and which commands the fashionable thousands to do annual homage before it.

This state of things sufficiently indicates that Rose cultivators are numerous, and that Rose cultivation is an art which has to be learned by study and experience, aided by such help as apposite and judicious instructions, oral or written, can supply. In the extended treatises of Rivers and Paul, this help has been afforded on an extensive scale, but a briefer and more convenient guide was wanted, a sort of Handbook of Rose management, and this want the little volume Mr. Thomson has recently put forth seems well calculated to supply, being entirely, as he tells us, the "result of experience," except in those parts which refer to pot culture, and to the rearing of seedlings. This experience it is true has been gained in Scotland, and therefore the instructions may be set down as generally adapted rather for northerns than southerns, but there are so many points of practice which have a general application that we think the book may be very safely recommended to cultivators generally, at least until the promised minimum edition of Mr. W. Paul's Rose Garden makes its appearance.

Those who are just making a start in the Rose fancy are warned by Mr. Thomson neither to depend on their own judgment nor on the descriptions found in trade lists, in making a selection either of varieties or even of the classes of varieties to be grown, because, as he points out, some have a special fitness and others a special unfitness for particular soils and climates. He recommends rather that they should follow the personal opinion of some judicious and skilful Rose grower, as it may be propounded after examination made on the spot into the peculiar features of the locality. In a general way the varieties of the Ayrshire Boursault and Sempervirens race are to be taken for walls with a northern or eastern exposure; the Teas, Noisettes and vigorous hybrid Chinas and Bourbons for walls with a southern or western exposure; and beyond this, for dry soils Teas, for good soils, that is to say deep heavy loams, all good Roses, and for very sandy soils, none.

Then in planting, summer and autumn-flowering Roses should be kept each set by itself, for if mixed up together the one set will spoil the appearance of the other. The right soil is a good heavy loam, and to grow the flowers in perfection manure is required not only in the first formation, but also in the maintenance of the beds; it must be used not only to assist in curing bad soils, but in maintaining good ones in a prolific and healthy condition; and it must be supplied at least every year either in the solid or liquid form, if not in both. Hot-bed manure, night soil, and farmyard drainage are specially to be recommended, but "guano is a manure which in its application to the Rose must be used with the utmost caution. When used imprudently its tendency is to encourage growth in the shoots at the sacrifice of bloom." Tea Roses must have a soil which is light and dry, damp being fatal to them. The pruning of autumn-planted as well as autumn-flowering Roses should be deferred till spring. "Perpetuals, Noisettes, and Tea Roses are so constant in their activity that after late pruning in autumn they are sure to start and suffer injury, and the same rule applies to all of the climbing hybrid Chinese and hybrid Bourbon groups." As to pruning generally, "the great rule is this: let the freedom of your pruning be *inversely* in proportion to the freedom of the Rose's growth. In other words, when a Rose grows vigorously, prune it little; when it grows slenderly, prune it closely. Prune a Gallica too meagrely and it will have shabby blooms; prune a Coupe d'Hébé closely, and the likelihood is that it will have no blooms at all.

A very common cause of annoyance in the culture of Roses is the production of what is known as the green centre. In general this malformation assumes the form of three or four green projections occupying the place of the central petals, but sometimes it becomes so much developed as to take the form of little green shoots. The tendency is generally confined to particular varieties, but not to any particular class of Rose, and Mr. Thomson agrees with those who regard it as generally the result of excessive nutrition, just as the excessive pruning of a naturally vigorous Rose produces a tendency to increase its individual size, and to diminish its tendency to increase its kind—over-pruning resulting in overfeeding the parts that remain, and high feeding inducing sterility. The green centre

in the Rose is in this light regarded as an effort made by the plant to increase its size, and an unwillingness so to speak to perfect the parts of the flowers which are the natural agents for increase. And if the cause be over-feeding, the remedy is obvious. The amount of nourishment must be diminished; the quantity of manure must be lessened, and that which is applied used in a ripe and well-decayed condition; and besides this the roots must be pruned—unmercifully, our authority writes, for, he adds, "hunger will influence an obstinate plant as well as an obstinate person."

Mr. Thomson gives in two very interesting chapters some brief "notes as to the origin of some of the families, and best varieties of the Rose;" and a selection "of some of the finest Roses of particular colours, or for special objects," in which selection the Hybrid Perpetuals hold as usual the foremost position.

Finally, here is a tempting sketch of a Rose tree of the Banksian race, recorded by Deslongchamps as growing at Toulon, "which 20 years ago had the following dimensions:—Its stem at the base was 9 inches in diameter; its branches covered a space containing nearly 140 square yards of surface; and it was computed that at one time it bore about 50,000 blossoms, thus presenting a most gorgeous spectacle." Though the flowers are mere "Bachelor's Buttons" in size and form, such a tree must have formed a very pleasant picture.

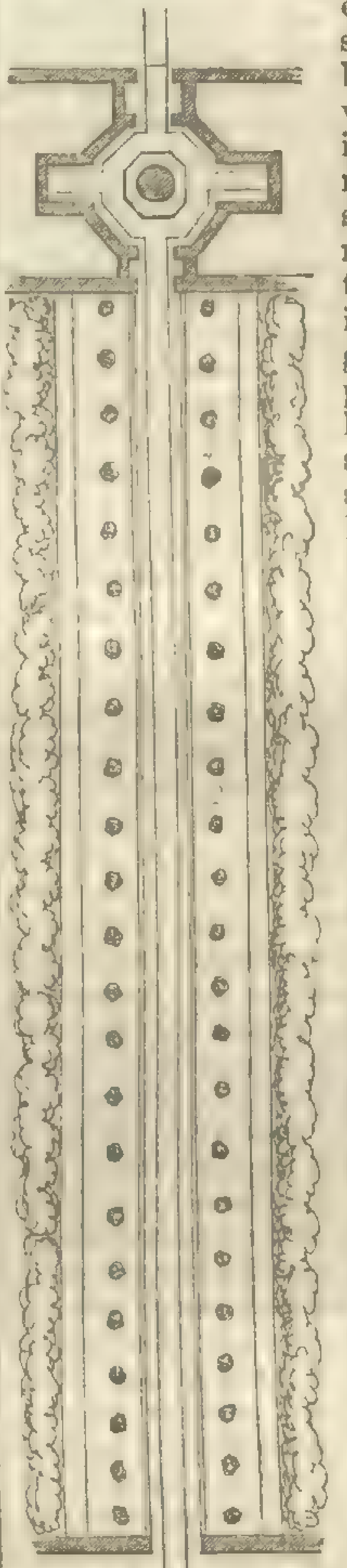
A Supplement to Gordon's Pinetum. Bohn. 8vo. The author of this work has, as we formerly stated, a considerable practical knowledge of Conifers. He can give them readily such names as he supposes belong to them. But as to any other sort of knowledge he has none. We shall, therefore, on the present occasion merely observe that his Supplement is, like the main work, a useful catalogue for gardeners, although full of critical blunders of all sorts, and of ignorant churlishness without example. He therefore that uses it must recollect that it is in no respect trustworthy except as to the trifling garden varieties which are to be found in every trade list; and that his remarks are those of a man notoriously given to incivility. The author's Latin quotations, seeing that he cannot write decent English, and has not an idea of the meaning of what he quotes, are particularly ludicrous. His style of criticism is illustrated by his erudite remark that Alcoquiana is "Botanical pedantry for *a man's* name;" an observation applied to Mr. Rutherford Alcock, H.M.'s Minister Plenipotentiary at the Japanese Court, and one of the most intelligent men in our diplomatic service. But it is useless to say more; the book will go to the waste paper basket as soon as any one of decent scientific attainments shall occupy himself with a rational re-examination of the order of Conifers.

Books Received.—H. G. Reichenbach, *Xenia Orchidacea*, vol. 2, part 1 (Williams & Norgate) with 10 plates partly coloured, and a rich supply of systematical and critical botany.——*Moore's Index Filicum*, parts 17 and 18 (Pamplin) reaches page 360, and terminates in the middle of Elaphoglossum. The very neat illustrations now include 124 genera.——*The Floral Magazine*, No. 26, contains good figures of a variegated horse-shoe Pelargonium called Mrs. Pollock; two sorts of very double Chinese Primroses; a larger variety of Nemophila discoidalis; and a blush Chinese Azalea called Duc d'Aremberg. The following is a bit of useful advice to gardeners:—"The cultivation of the Indian Azaleas is by no means difficult, and their exceedingly free flowering habits render them alike valuable to the exhibitor, who wishes to make a blaze of beauty, or to the private grower, who merely desires them for home decoration. In a conversation we had some little time since with one of the most eminent growers and most successful exhibitors of the flower, he informed us that it was his practice never to place them out of doors, as is generally done, and to keep them growing for at least six months in the year, adding, that as his plants did not cease growing until the end of August, and that they must be removed into the house in October, they would only be, under any circumstances, three or four weeks out of doors. In preference to doing this he throws open the front and sides of his house and allows a free circulation of air; for it oftentimes happens that, when in the open air, they are caught by one of the early autumnal frosts, and although the results of this do not immediately appear, yet the blooms ultimately drop off and thus disappoint the grower's hopes; and, if we are to judge by results, his plan must be the right one, for not only are his plants models of growth, but he invariably holds the first place as an exhibitor."——*Beeton's Universal Dictionary*, lately reviewed in *The Times*, is, we understand, about to be issued in weekly penny numbers, under the title of "Beeton's Penny Dictionary."——*The Cricket Tutor* (Longmans), a volume containing sound practical instructions for the learner of this noble English game. It should be every schoolboy's pocket companion.

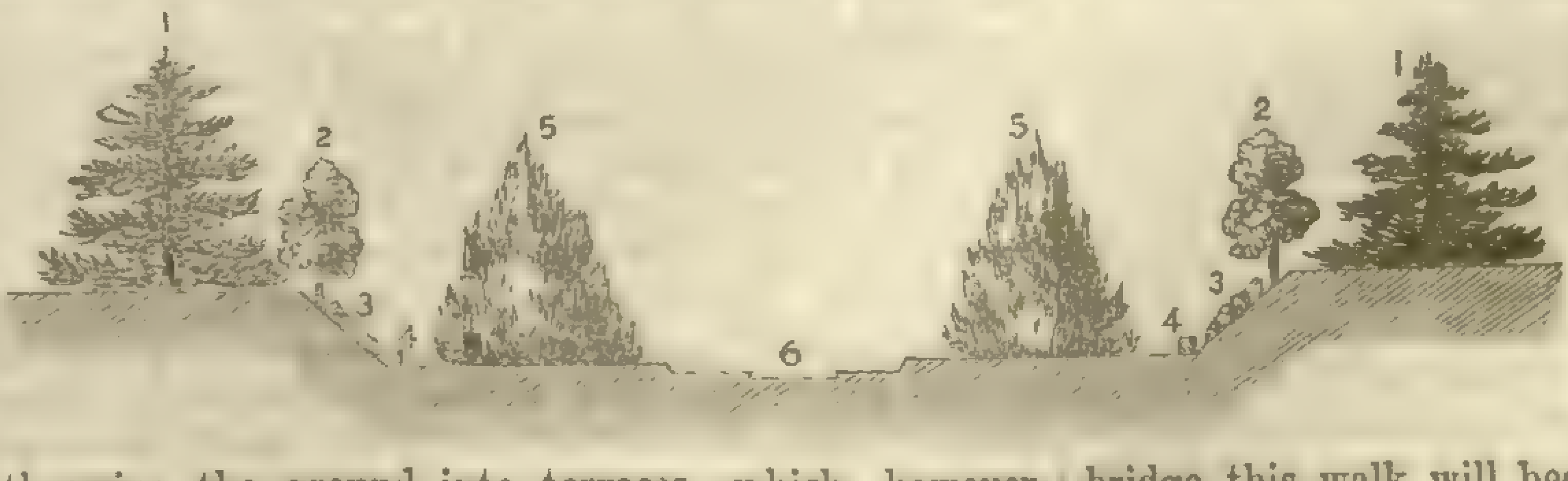
Garden Memoranda.

Biddulph Grange, the Residence of James Bateman, Esq. (*continued from p.* 528).—This place being liberally opened to the public on certain days throughout the summer season, an entrance has been contrived by which they can be admitted at once into the heart of the grounds without going through the house, or passing in front of any of its principal windows. By referring to the plan (p. 479), this entrance, it will be seen, is controlled by the gardener's cottage, near which a commodious waiting room, with all sorts of conveniences, is provided for visitors, who may sometimes have to stay a few minutes till a sufficient number of them is collected to form a party, or till an attendant is ready to accompany them. For those who prefer waiting outside, an ingenious seat is placed beneath the shelter and shade of a handsome American Thorn. The body of the seat surrounds the stem of the tree; but a great deal of additional sitting room is obtained by throwing out four arms, about 4 feet in length, in the form of a cross, with double seats to each division.

Along both sides of the entrance walk is a row of Pinus Cembra, backed by banks of mixed evergreens; and, winding through these, we soon reach the main line of terraces, and turn into the long walk to the east, where, gradually rising by short series of steps, and partly between dwarf clipped hedges, we come to the Arboretum, which is so-called because it is devoted more exclusively to trees and shrubs, and is treated somewhat more boldly and naturally than the rest of the grounds. Here, in particular, will be found groups of trees and plants that produce a marked effect on the landscape in the way of colour, at some period of the year; such as various kinds of Maples, Liquidambar, Thorns, Double Furze, Spiræa callosa (which is beautiful for its early foliage as well as for its subsequent flowers), Heaths, Gaultherias, Periwinkles, and Rubus leucodermis, of which last there is a large jungle, and which is remarkable for its singular white stems. The upright or fastigiate Thorn is rendered very effective among masses of its round headed tribe. Around a little pool in the lower or south-western part of this ground, the most charming tufts of Osmunda, Tussack Grasses, and similar plants are disposed in wild profusion, and near this point is an opening towards the Pinetum, which is so cleverly treated that, whether viewed from the arboretum or from the Pinetum itself, it has a wild picturesqueness of appearance rarely attainable, and yet more rarely attained, in dressed grounds.


ARBORETUM

Leaving the arboretum, and still proceeding eastwards, we continue to rise, by several additional series of steps, and again between clipped Yew hedges of 3 or 4 feet in height, till we reach the Wellingtonia avenue, of which a ground plan is here inserted. This avenue is entered through a low Yew hedge, and is bordered all the way by another dwarf hedge on each side, being terminated by a higher hedge, which surrounds an immense stone vase, and separates the dressed ground from the rougher plantations. The plants in this avenue are alternately Deodars and Wellingtonias, it being intended to remove the former whenever it shall become necessary. Some increased effect is given by



throwing the ground into terraces, which, however, only extend lengthwise, the whole avenue, from end to end, being in one plane. The position being also a very high one, and much exposed, the terrace banks, and the planting behind them to the north, contribute to furnish shelter, while they also serve to isolate the avenue, and render it more striking. The form of these banks will be best explained by the annexed cross section, in which 6 is the centre walk, with Grass that has a slight terrace in it between the walk and the dwarf hedges at 4. The Wellingtonias and Deodars occur at 5, and are on raised circular beds, cut out of the Grass, but this ground may eventually be turfed over. The higher banks at 3 are clothed with the common white-flowered Briar Rose (R. arvensis), which, from its trailing habit, covers the ground perfectly, and forms a dense thicket of a very pleasing character. Behind this a series of red-flowering Chesnuts is shown at 2, and the whole is backed by Austrian Pines (1), which, being very hardy and free-growing, will make an excellent shelter, while their dark colour forms a suitable background to the light green of the Wellingtonias and Deodars.

Quitting the Wellingtonia avenue, the walk, now in a ruder condition and ungravelled, continues to ascend the hill, through woods and thickets left in a state of wild nature; this being the part of the walk that, from the neighbourhood of the house, deceives the eye into the belief of its being an obelisk. And here it may be remarked that such an effect is only the result of consummate art; for if the walk all the way from the house on such a rapid ascent were apparent, the steeper or terminal part of it would at once be seen to be a continuation of the rest. But, by easing the gradient very materially, and breaking it with steps, the portions from the cross-terrace on to which the public first enter, and the upper end of the Wellingtonia avenue are scarcely at all perceived; and hence the eye rests on the sandy walk through the wood as a detached feature, thus completing the illusion. In accomplishing this, too, that part of the walk which is gravelled and within the dressed ground is brought by the breaks which the various sets of steps occasion, into such an easy rake, that violent rains do not disturb its surface, and it presents a series of apparently flat spaces, quite accordant with the straightness and formal treatment of the walk.

At the end of the long obelisk like path, an irregular winding tunnel through a bold rock conducts it at once to a gamekeeper's cottage and the dog kennels, which are entirely concealed by the rocky hill and wood from the house and grounds, and which yet lie completely open to the south. The situation is most happily chosen. Being sheltered from the north, north-east, and north-west, and fully exposed to the south, it is a healthy place for dogs, and an admirable position for rearing pheasants. An irregular passage through the rocks also communicates directly with the keeper's cottage and the tunnel; he can thus pass away through the tunnel into the woods at any time without the possibility of his movements being watched by poachers. And as one end of the tunnel is in view of the house, a series of signals might in some cases be arranged with the keeper, instructing him when and where he would be wanted. Other walks traverse the woods leading to the dog-kennels by a more circuitous but easier route, and also to a new church now in course of erection on Biddulph Moor; and returning again, by a picturesque detour to the north, through a deep wooded valley, enlivened by a rushing stream and waterfall, to the vicinity of the house.

In the village adjoining Biddulph Grange great improvements have lately been made. A little to the north of the house the road has been very much widened out; and in a large recess on the east side, an immense Araucaria, removed from Knypersley, has been planted, and is happily growing. At the back of this there is a public drinking fountain (designed by Mr. Cooke) and an ornamental wall liberally furnished with stone benches; and there is a covered seat on the opposite side of the road. A very compact and complete poultry yard has been fitted up, and the pigeon-house has been placed at the top of a gable-roofed tower, which forms a conspicuous object in the landscape. Many cottages have been renovated; some pretty almshouses erected by subscription to the memory of the late Mr. Bateman; and everything wears an appearance of thoughtful kindness and of careful neatness. At the village inn, too, which has been a good deal renovated, and is near the church, the building forming three sides of a square, there is a large room on the upper floor, adapted for feasts and festivals, or for business gatherings, which is approached by an outside stair, thus producing a convenience, and aiding the picturesque effect.

Part of the Biddulph Hall property, including the ruins of the fine old Hall battered down by Oliver Cromwell, having been recently purchased by Mr. Bateman, he is now engaged in making a path to it from the village and the Grange. And by passing by a tunnel under a public road, and crossing a ravine by a light bridge, this walk will become a peculiarly interesting and varied one. A good deal of the planting by the side of it is already done; and the earthwork is proceeding with a disregard to difficulties, or a judicious arrangement for surmounting them, which is quite refreshing.

As already intimated, the fruit and vegetable departments are entirely conducted at Knypersley, where there is a very complete set of glass-houses, to which Mr. Bateman has now added a handsome orchard house, and some smaller houses for Persian Melons, Figs, Bananas, Orchids, &c. In both Vineries and Peach-houses the trees are all planted inside, and they are kept in an admirable state of health and bearing by profuse top-dressings every winter. The paths are formed of cast-iron trellis, which is merely laid on the border, so that no space is thus lost. And, in the Peach-houses, the path runs along the front of the trellis which carries the trees, so that the beauty of the fruit can be freely seen

by any one passing along the path. This is greatly preferable to the ordinary practice, by which the trees being trained close to the glass, and the fruit necessarily being on the upper side, only a glimpse of the fruit can be obtained here and there through the foliage, or through the glass from the outside. The extreme beauty of a ripening crop of Peaches and Nectarines is thus hidden by the common arrangement of the interior. In all the houses (excepting the orchard-house and the houses for Peaches) hot-water pipes are introduced beneath the borders, and a mild bottom-heat is thus constantly maintained.

The new orchard-house at Knypersley is one of the very best possible examples of its class. It is 182 feet long by 20 feet wide, the roof being in the span form, with a small attic for ventilation. The house stands nearly north and south lengthwise, and the east side is of glass, while there is a wall to the west. There is a narrow border all round it, and a broad bed in the centre, with a walk on either side of the latter. The whole is heated by hot-water, and the ventilation is worked by simple machinery (invented by Mr. Smith, of Hanford, near Trentham), which moves the ventilators simultaneously throughout the entire length of the house. Pear and Apple trees, of pyramidal form, are planted in the centre bed, and a variety of other things are scattered about, and trained against the west wall. Among the rest, it is found to be an excellent place for keeping up a supply of Parsley through the winter months; and Strawberries are largely introduced. Mr. Bateman has likewise brought here a number of the charming Moutan Pæonies, finding that he could not succeed in flowering them satisfactorily, or that their flowers were so fugitive, in the open ground. And some of these flowered splendidly in the orchard-house this May; and, where properly shaded, were more than usually lasting. I had the good fortune to see the lovely P. globosa alba in flower here on the 8th of May; and nothing could be more ravishing or noble than the appearance it then presented. *E. K.*

(*To be Continued.*)

Miscellaneous.

West African Tropical Orchids.—Till the present time, the species of the Order known to exist in the region over which these collections have extended were little known; the colony of Sierra Leone having supplied the greater proportion of the 19 previously described. Those now enumerated inhabit the middle and lower course of the Niger River, the country extending from Lagos to the Cameroons, with several from Fernando Po, where, however, Ansellia africana, the only species before known from that island, was not seen by Mr. Mann. In all I have examined 67 species, of which 48 were previously undescribed. Of those bearing a well-marked resemblance to other portions of the African Flora, the principal part resemble Cape species. These are Polystachya alpina, near P. Ottoniana; Penthea Pumilio, a striking addition to a small Cape genus; Angræcum arcuatum, identical with the plant from Albany; and Cymbidium adenoglossum, which resembles the C. tabulare of Table Mountain. Others must be compared with Eastern Africa: thus, Amphorchis occidentalis is the second species of a genus inhabiting the Isles of France and Bourbon; Corymbis disticha is the same as the plant from the same islands; Calanthe corymbosa is very near C. sylvatica of the Isle of France; Habenaria prælta is undistinguishable from the Bourbon species; and Bolbophyllum lupulinum has all the appearance of B. occultum from the Mauritius and Bourbon, although the structure of the flowers is widely different; finally, there is a new Notiophrys, near N. occulta, from the same islands. To these special resemblances must be added the generic similarity among many species of Bolbophyllum, Polystachya, and Angræcum, in Eastern and Western Africa: the collections containing 14 species of the first, the same number of the third, and 9 of the second. Perhaps the most striking geographical fact consists in the presence of the Asiatic Epipogum nutans at Ambas Bay, a place a little to the north of the embouchure of the Cameroons River. It is worthy of remark in conclusion that there is little resemblance between the species now described and those of Abyssinia; there is no Satyrium, no Peristylus, no Pterygodium; and the species of Habenaria are quite dissimilar. It is only in the case of Eulophia guineensis, the Saccolabium abyssinicum of Achille Richard, that the identity of a West African and Abyssinian plant has been ascertained. *Lindley in Journal of the Linnean Society.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Camellias intended to bloom early, and which have by this time completed their growth, should be gradually exposed to more air and light preparatory to placing them out of doors. Look over Fuchsias, Kalosanthes, and late flowering Pelargoniums, and give them their final staking and tying before they get into bloom. Repot spring struck Chrysanthemums, using for the purpose a mixture of good loam, well rotted dung and sand. Afterwards plunge them in coal-ashes in an open situation, and when they begin to push afresh give frequent waterings with liquid manure. Set them a good distance apart in order that their bottom leaves may be preserved in health. Attention must soon be paid to late growing plants in conservatory borders; for while in active growth they require a good deal of water, and insects are more troublesome than in the case of plants at rest. Give Luculias especially plenty of water at the root, and an occasional supply of clear weak manure-water to old plants that may not be growing freely until they have made sufficient wood to ensure a good display of flower. As has been previously stated, however, manure-water must not be given to young specimens in vigorous health, as in that case it would only induce too gross a growth, a condition in which they seldom flower profusely. In order to secure fine heads of bloom from the Luculia it should be allowed a few weeks of comparative rest, after, say about the middle of next month, keeping the roots rather dry, and exposing the plants as freely to air as can be done without injury to the foliage or the health of their neighbours. Brugmansia sanguinea is also a useful plant for winter and early spring flowering when managed so as to have it pruned and rested about this time. Cinerarias for late flowering should now be growing freely, and should be shifted when necessary, for if they are to form large specimens for flowering late in autumn or early winter, they must not be permitted to sustain any check. Get cuttings of favourite Roses rooted and pushed forward so as to have them sufficiently strong and established to stand the winter.

FORCING DEPARTMENT.

Pineries.—Air should now be given liberally to young stock. The plants should not, however, be exposed to draughts; a moderate circulation should however be secured at night, giving no more during the day than may be necessary to prevent the temperature getting too high. This, with careful attention to the state of the roots, keeping the bottom heat regular, the soil in a nice healthy state as to moisture, and giving a liberal supply of manure water to such plants as are well rooted, will be found much more conducive to growth than too free exposure. Use every means to afford plants swelling their fruit a thoroughly moist atmosphere, sprinkling passages, &c., frequently, and shutting up early, giving a gentle dewing with the syringe, and saturating the atmosphere by sprinkling every available surface; also give plenty of clear strong manure water at the root until the fruit begins to change colour, when the soil should be kept rather dry, which will improve the flavour. Continue to pot a few suckers as they can be obtained of sufficient strength, and do not allow too many to be produced by one plant, as they weaken each other. Indeed never allow a sucker to grow to any size that is not likely to be wanted for stock, and, unless in the case of any scarce sort, never more than two on a plant. Plants growing in beds of soil must be very carefully attended to with water, giving enough at each application to moisten the whole mass of soil; for unless this is attended to, the bottom of the bed will sometimes get quite dry, while the surface is moist.

Vineries. — Attend to former directions as to thinning in houses intended to furnish a late supply, and see that the bunches are severely thinned, and also that the crop left is not too heavy in proportion to the strength of the Vines. Where the fruit is swelling, be careful to maintain a moist state of the atmosphere, and give every possible attention to the roots, keeping the border in a proper state as to moisture, and if watering is found necessary, use good strong manure water. Give abundance of air where the fruit is colouring, and do not allow plants in pots to remain in the house to cause damp, which despite every care in ventilating is apt to settle on the berries and spoil the bloom. Where the fruit is ripe and expected to hang for some time, the atmosphere of the house should be kept as cool as possible; but a little fire-heat will probably be necessary occasionally in order to keep the atmosphere dry during very damp weather.

Peaches and Nectarines.—Expose the ripening crop as much as possible to the sun and admit plenty of air, to give colour and flavour to the fruit. Late houses, where the fruit is swelling, should have an increased day temperature, with plenty of moisture. Thin and tie in the shoots in the last house.

Cherries.—As soon as the crop is gathered, remove the trees to a shady situation and keep them syringed and watered; the pots should be plunged, or the plants taken out and planted in a northern aspect. Those plants in pots intended for forcing next season should not suffer from drought, or from the effect of Cherry-fly.

Figs.—Use every care to keep the foliage healthy, and clear of insects, and do not crowd the young shoots.

Melons.—Plants on which the fruit is ripening should be kept dry at the root, and freely exposed to air on fine days.

FLOWER GARDEN AND SHRUBBERIES.

The late heavy rains will render a complete surface stirring of borders and beds necessary whenever the weather shall have become dry enough for that purpose. Take up spring-flowering bulbs as they get ripe, and thoroughly dry them preparatory to storing them away; the beds which they occupied, if not already stocked, should be refilled with plants from the reserve garden. For autumnal display proceed with propagating the more showy kinds of perennials, as, for instance, double Wallflowers, Rockets, &c. Frequently examine Roses, which must now be kept clear of insects; remove suckers, and keep neatly tied in those supported by poles or trained against walls or trelliswork. When dry weather sets in, shrubbery borders will require hoeing and raking; peg down the lower branches of shrubs near the outsides of borders, in order that they may be induced to well cover the ground. See also that all trees and shrubs recently transplanted are properly secured against high winds, and those that have been staked must be examined often in order to see that the ties are not doing injury by friction or otherwise. Hollyhocks are favourites with most people, but they do not afford cuttings freely. They should therefore be examined often in search of any cuttings which they may afford, as those rooted early will make strong plants for next season. Attend to the tying up of these and Dahlias, and go over the masses of Verbenas, &c., frequently for the purpose of regulating the growth, so as to keep it orderly and neat.

HARDY FRUIT AND KITCHEN GARDEN.

Wall trees should be gone over, thinning and stopping the shoots in order to admit air and light among the fruit and young branches, a practice which will greatly assist the formation of fruit buds for the following season. Old Pear trees in particular, that are unfruitful, should be subjected to this treatment. Keep Peach trees free from green fly by means previously advised, and dust sulphur on shoots affected with mildew. Use the garden engine occasionally in warm weather, to clean the trees and prevent red spider. As ground becomes vacant, put in successional crops of vegetables, varying the rotation according to the nature of the soil. Carrots, Onions, Parsnips, and Beet should now be finally thinned out. Proceed with making trenches for late crops of Celery, a good breadth of Turnips may now be sown, and a few Horn Carrots for drawing young in autumn. Earth up Potatoes, and make frequent sowings of Lettuce, Endive, and Radishes. Continue to sow Peas, Beans; of the former early kinds are preferable after this season to large strong-growing sorts.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,

For the Week ending June 18, 1862, as observed at the Horticultural Garden.

June.	Moon's Age.	Barometer.		Temperature					Wind	Rain.
				Of the Air.			Of the Earth			
		Max.	Min	Max.	Min.	Mean	1 foot deep	2 feet deep		
Thurs. 12	○	29.433	29.137	65	44	54.5	60	58½	S.	[illegible]
Friday 13	16	29.575	29.519	70	43	56.5	59½	58	S.W.	.16
Satur 14	17	29.630	29.541	62	40	51.0	59	58	S.W.	[illegible]
Sunday 15	18	29.778	29.684	68	45	56.5	59	57½	S.W.	[illegible]
Mon. 16	19	29.973	29.918	73	40	56.5	60	57	N.W.	.08
Tues. 17	20	30.103	29.857	71	47	59.0	60½	58	W.	.12
Wed. 18	21	30.015	29.864	65	41	53.0	60	57½	N.	[illegible]
Average		29.786	29.645	67.7	42.8	55.2	59.7	57.8		[illegible]

June 12—Rain throughout the day; rather boisterous at night.
— 13—Cloudy and windy; boisterous; fine at night.
— 14—Light clouds with brisk wind; very heavy shower at noon; clear and cold at night; heavy rain.
— 15—Overcast; showery; overcast at night.
— 16—Overcast, fine with clouds, cold at night, rain.
— 17—Very fine; cloudy, rain at night.
— 18—Fine; showers in afternoon; fine but cold at night.

Mean temperature of the week 5½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK

During the last 36 years, for the ensuing Week, ending June 28, 1862.

June.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 22 ..	73.5	51.8	62.7	15	0.59 in.	—	3	2	1	2	15	9	4
Mon. 23 ..	71.0	53.0	62.0	15	0.44	1	2	4	1	3	16	5	4
Tues. 24 ..	73.7	52.5	63.0	14	0.49	—	3	4	1	2	15	6	2
Wed. 25 ..	72.6	50.0	61.3	19	0.72	—	1	6	2	5	13	6	3
Thurs. 26 ..	73.8	51.1	62.4	18	0.69	1	2	4	2	2	13	9	3
Friday 27 ..	72.2	52.0	62.1	21	0.80	4	2	2	2	3	16	7	—
Satur. 28 ..	73.5	52.0	62.7	15	0.65	3	2	6	1	3	11	5	5

The highest temperature during the above period occurred on the 22d, 1846—therm. 93 deg.; and the lowest on the 23d, 1851—therm. 35 deg.

Notices to Correspondents.

Bedding Plants: *Ignoramus.* For your purpose we would recommend Scarlet Geraniums, Yellow Calceolarias, Mignonette, and Heliotrope. Portulaccas will do, but we fear you have sown them too late to flower well this season.

Books: *A Young Gardener, Dublin.* We have not yet succeeded in ascertaining, but will inquire further.

Dried Fruit: *H M W.* It seems to be some kind of Plum from which the stone has been taken.

Insects: *E R.* We found in your box of dead leaves of different kinds the common greenhouse Thrips, some wingless Aphides, a small female Coccus, and a leaf-mining larva of some kind. *W.*

Names of Plants: *J W.* To name the Koordish Oaks from mere leaves is not an easy task. We will endeavour to do so next week.—*A H.* 1, Gleichenia Cunninghamii; 2, Lycopodium densum; 3, Adiantum assimile

Peach Leaves: *Constant Reader.* Your leaves are infested with a minute Fungus, *Ascomyces deformans.* The only remedy is to pick off all the leaves at once and burn them. But how can you get rid effectually of a Fungus which on one branch produces millions of spores? *M J B.*

Salmon: *G C* asks some correspondent to do him the favour of saying how or from whom directions or information may be obtained with regard to salmon culture. Have any pamphlets or a book been written on the subject?

Vines: *G D.* They ail nothing beyond having some pimples on the leaves caused by a damp, unventilated house.

Window Gardening: *T B.* The size of the box mentioned in our Number of the 7th inst. for growing wild flowers in, is 3 feet by 18 inches, and 5 inches deep. The glass frame which covers it is 18 inches high.

Misc.: *J S.* Send six stamps with your address; the Number shall be sent.

ROYAL AGRICULTURAL COLLEGE CLUB.—The ANNUAL DINNER will take place at the Cremorne Hotel, Chelsea, S.W., on THURSDAY, June 26, at 6 o'clock. Each Member can introduce a friend. Tickets to be obtained of JOHN COLEMAN, Esq.
Royal Agricultural College, Cirencester.

THE SPARKENHOE FARMERS' CLUB will hold their GREAT ANNUAL MEETING on the Race Course at Leicester, in conjunction with the Autumn Show of the Leicester and Leicestershire Floral and Horticultural Society, on SEPTEMBER 2, 3, and 4, under the patronage of the Mayor and Corporation.

President.—The Right Hon. Lord JOHN MANNERS, M.P.
Supported by the Nobility, Clergy, and Gentry.
Lady Patroness.—The Countess HOWE.

Prizes about 1100*l.* in value will be awarded, including the following:—

	£	s.	d.
Steam Cultivation	£70	0	0
Implements, Ploughing, &c.	80	0	0
Best Fat Beast	35	0	0
Best Store Beast	30	0	0
Best Long-woolled Sheep	15	0	0
Best Short-woolled Sheep	15	0	0
Best Entry of Pigs	13	0	0
Best Nag Horse	25	0	0
Best Cart Horse	25	0	0
Poultry, Rabbits, &c.	70	0	0
Cheese, Corn, Wool, and Roots	130	0	0
Fruits, Flowers, Plants, and Vegetables ..	160	0	0

Prize Lists and further particulars may be had on application, and all Certificates of Entry must be returned to me on or before August 7.
THOMAS DAVENPORT, Secretary and Collector.
Ashby-de-la-Zouch, June 21.

ROYAL AGRICULTURAL SOCIETY of ENGLAND—1862.
GREAT AGRICULTURAL SHOW of HORSES, CATTLE, SHEEP, PIGS, and MACHINERY, in BATTERSEA PARK, LONDON, JUNE 23 to JULY 2.

TERMS OF ADMISSION:—

MONDAY,	June 23 ..	MACHINERY YARDS ..	Half-a-Crown
TUESDAY,	„ 24 ..	„ ..	„
WEDNESDAY	„ 25 ..	„ ..	„
WEDNESDAY	„ 25 ..	CATTLE YARD (day on which the Judges award the Prizes)	One Sovereign

N.B. Persons who pay the Half-a-Crown Admission into the Machinery Yard can pass into the Cattle Yard on paying the additional 17*s.* 6*d.*

THURSDAY,	June 26	ENTIRE SHOW (LIVE STOCK, MACHINERY, &c.)	Five Shillings
FRIDAY,	June 27 ..	„ ..	Half-a-Crown
SATURDAY,	„ 28 ..	„ ...	„
MONDAY,	„ 30 ..	„ ..	One Shilling
TUESDAY,	July 1 ..	„ ..	„
WEDNESDAY,	„ 2 ..	„ ..	„

Members Free.

Open each day from 8 in the morning till 8 in the evening, except last day, when the Yard will be closed at 6 o'clock.

On THURSDAY, FRIDAY, and SATURDAY, June 26, 27, and 28, there will be a PUBLIC EXHIBITION of STEAM CULTIVATORS at WORK, from 11 A.M. to 4 P.M., near Farningham Station, in Kent, a distance of 24 miles from the Victoria Terminus of the London, Chatham, and Dover Railway.
By Order of the Council.
H. HALL DARE, Secretary.

The Agricultural Gazette.

SATURDAY, JUNE 21, 1862.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY, June 23 / TUESDAY, — 24 / WEDNESDAY, — 25		Great Meeting of Agri. Society in Battersea Park. Implement Yard open: admission, 2*s.* 6*d.* Members free.
WEDNESDAY, — 25		Cattle Yard open from 8 A.M., when the Judges commence inspecting the Stock. Admission 1 sovereign. Members free.
THURSDAY, — 26 / FRIDAY, — 27 / SATURDAY, — 28		Steam Cultivation at Farningham, Kent.
THURSDAY, — 26		—Admission 5*s.*
FRIDAY — 27, and SATURDAY, 28		—Admission, 2*s.* 6*d.*
MONDAY, — 30, TUESDAY, July 1, and WEDNESDAY 2		—Admission 1*s.*

—— THE show-yard for the Royal Agricultural Society is at length completed and stored with such a display of agricultural implements as has never hitherto been witnessed. The accommodation for cattle and horses, the latter more substantial and complete than has hitherto been supplied, will not be made use of until Tuesday next, when the doors will close upon the finest collection illustrative of the domestic breeds of cattle, sheep, and pigs of all countries that has ever yet been gathered. The yards—an irregularly shaped area at the western end of Battersea Park, will be open, so far as the implements are concerned, on Monday morning. The cattle yards will be open on Wednesday, when the adjudication of prizes will proceed in public. The show will remain open until Wednesday evening in the following week, and if favoured, as on every ground is much to be desired, with good weather, it will doubtless be visited by immense numbers of people.

—— The events of the past week include the last of the Babraham sales—the completion of the preparations for the annual meeting of the English Agricultural Society in Battersea Park—and most important of all a continuance of the wet cold weather which seems likely to characterise the summer of 1862.

English agriculture has at length lost the services of Mr. JONAS WEBB as a flockmaster. During his agricultural career of 36 years he has achieved unparalleled popularity and success. And the final sales by which he has at length disposed of his unrivalled flock must rank as remarkably in the history of the Southdown breed as that of Tortworth does in the records of the Short-horn breed of cattle. The ability which has hitherto been directed to ram breeding is hereafter to be devoted to the breeding of cattle, and it may be expected that Babraham will hereafter be as distinguished for its Short-horns as it has been for its sheep.

The sale last Wednesday attracted a large company of English and foreign agriculturists, and the competition which ensued resulted in large numbers of the flock, at least one-third of the lots, being bought for Spain, Germany, France, Sweden, Russia, and the United States of America.

The Marquis PERALLES of Spain, who is chairman of the Agricultural Jury at the International Exhibition, was a large buyer, especially of the ewes.

The following is a summary of the sale:—

	£	s.	d.		£	s.	d.
148 yearling rams averaged ..	£19	0	0	=	£2811	18	0
289 yearling ewes averaged ..	10	1	3	=	2908	10	0
437 yearling sheep averaged ..	13	1	10	=	£5720	18	0

The summary of last year's sale may be given for comparison sake:—

	£	s.	d.		£	s.	d.
109 yearling rams averaged ..	£24	17	6	=	£2711	2	0
199 yearling ewes averaged ..	11	2	0	=	2209	4	0
308 yearling sheep averaged ..	15	19	6	=	4920	6	0
659 (add) older sheep averaged	9	2	0	=	6006	0	6
967 sheep (1861) averaged ..	11	6	0	=	10,926	6	6
437 sheep (1862) averaged ..	13	1	10	=	5720	8	0
1404 sheep averaged	£11	17	3	=	£16,646	14	6

The highest price reached this year was 140 guineas for a yearling ram (lot 63), bought by Sir T. B. Lennard, Bart. Lots 20 and 28, for Germany and Sweden, fetched 91 and 86 guineas. Lot 62 was bought for Mr. FOLJAMBE, of Osberton, for 94 guineas. Several lots of ewes averaged 14 and 15 guineas each. One lot of five, bought by Mr. FISCHER, reached 20½ guineas.

At the close of the sale hearty cheers were given for Mr. WEBB and his family, and general regret was expressed that a period has at length been put to the genial hospitalities of Babraham, which have extended, as we have said, over no less than 36 consecutive years.

INTERCOURSE between France and England is promotive in certain respects of change. Habits and tastes become assimilated, and as we know one another better prejudices die out, and are buried without mourners. This intercourse not only improves our tempers and draws us together as friends and next neighbours, but shows us how very useful we may be to one another. The benefit is at once moral and pecuniary. Our friends have abundance of wants as well as ourselves. They, too, though more favourably situated beneath the influences of a more genial heaven, recognise the fact that every clime needs the produce of every other clime to fill its horn. Monsieur came as a friend, he has returned as a customer. He was welcome in the first capacity, he is doubly so in the second. For though a dish of tea or a glass of beer is no bad cement to kindly feeling, a nice trade in which both parties are advantaged is perhaps a better one. It often chances that an Englishman away in the wine districts of France for pleasure lets fall an order here or there where an entertainer has had the good sense to uncork a bottle with the right aroma. There are some Frenchmen who have tasted our beef and mutton as guests, and are now come to purchase it as customers. The commerce with France, it seems, is not to all in iron and coal, and steel goods, and machinery, but the yearly account is to be increased by large exportations from the herds and flocks of England. Not that France is destitute of bullocks, or cows, or sheep; by no means, but because certain classes of our improved breeds show a tendency to feed more quickly, and to produce more meat in proportion to bone and uneatable parts than theirs do.

We have already stated the case as regards the lordly Short-horn. It has been seen how he is displacing many of the local breeds for which no longer, in the region of the railway, occasion exists, and is cutting out for himself a fine district in the north-west, with whose bovine aristocracy he may ultimately become allied. We have seen how his alliance may be courted in other portions of that country, and that constantly recruiting his forces from Albion's native vales, he is free to stamp his features upon the horned currency of that kingdom.

This being allowed, let it be further affirmed that what can be done by the Short-horn, can, with certain limitations, be done by the Southdowns. The same difficulties are observed by those whose observation has been enlarged, as to maintaining a pure French breed of Southdowns, as of Short-horns. It is true in both cases that unless a plentiful supply of British blood is constantly imported, the peculiar qualities for which the English Southdown is noted are speedily lost. The breed loses physique, and with it some of the disposition to early maturity, together with length of staple. This fact, elsewhere noticed, was specially observed at Poissy, where the English Southdown, younger by some months than the French, had a clear advantage in size, constitution, weight and wool. This may afford some encouragement to the Southdown breeders, whose market in England, since the demand for lustre wool has set in, is much limited. Indeed it is most encouraging, if viewed in connexion with another fact, also enforced at Poissy, that the Southdown, like the Shorthorn, bids fair to attain more popularity by its crosses with the best native breeds of like character than as a pure breed.

The Merino sheep imported into France by Louis XVI., and from which such immense commercial and industrial results have been obtained, does well for the production of wool; but now that mutton is as much required as wool—since the time in fact that the French found themselves met in the wool market and undersold by our Australian growers, a cross with the Dishley breed has originated the most splendid class of sheep now to be seen upon Gallic pastures. Such success with the Merino has led the French to try a cross of the Merino with the Southdown, which gives a much more compact and productive animal than the Merino, and is much esteemed for its meat. The Mauchamp, a mixed Merino cross, finding a home in the department of Aisne, has some importance across the Channel. Pure, it is narrow, and what we should think devoid of chest development, which is at once indicative of fattening propensity, and of constitution. Crossed with the Leicester there may be great hopes of it, or with the Southdown. Nothing much has as yet been attempted, we believe, in this direction. There are the Chamoise sheep (Loir-et-Cher), a breed moulded upon the model of the English breeds, which took several prizes at the Poissy meeting previous to the last, arriving at maturity at the age of 14 months. But this must be regarded as illustrating our position, because it springs from the chance connection of a Berri ewe with some English ram in years gone by, probably a Down. The Chamoise, established by the energy of one breeder, is now fast gaining ground throughout Central France. This Berri breed, a rather large sheep, with a coarsish staple of moderate length, are, like many of the French sheep, particularly adapted to the sparse pastures of the central volcanic districts where they are found. It is here that the Southdown has been specially employed, and with the best results. The Southdown Berrichons showed remarkably well at Poissy, and are immensely popular. In respect both of mutton and wool the cross has been productive also of the most valuable results. The effect is simply this: those who favour the alliance get a greater weight of wool and mutton from their pastures per acre, bare though they be, than those who do not. We do not know whether any experiments have been tried on the lop-eared Larzacs, or the calf-headed Vendéens, but certain it is that they need crossing or selection. So long as the cross is with an animal nearly allied to themselves in habit, followed up by judicious selection, those peculiarities which adapt the breeds for their appointed districts might be retained, and yet such a change might be wrought in them towards early maturity as would make them of double the value they now are said to be.

It is perhaps needless to say more under this head. At the present time, when long lustre wools are more sought after than the short-staples, the Cotswolds, Lincoln Long-wools, and Leicesters will be most in demand for crossing the French native sheep. This demand is now, we have reason to know, very active. The Cotswold sheep at Poissy fairly astonished our neighbours, and the cross with the Berrichon showed what might be expected from a cultivation of that alliance. The visit of the French to our show at Battersea will quite win their hearts to these, and for low lying districts, and the margins of rivers, to the Lincoln and Romney sheep; but in the long run the Southdown is the sheep for France. It is best adapted of all our varieties both to its climate and herbage. If the Southdown breeders are disposed to gather encouragement from this view, it will be fortunate, since they will perhaps with renewed efforts seek to maintain that purity, size, strength of contour,

which they have been apt of late years to lose in some degree, or to refine away. The field is a large one, and the determination to occupy it will be a wise one. *R.*

THE INTERNATIONAL EXHIBITION.

The Agricultural Department is at length attracting a larger share of the attention which is its due. The visitor is no longer solitary. Around some of the machines he wishes to examine a crowd like-minded stand. There is an entrance to the building through the upper end of the Eastern Annexe, and the thoroughfare thus created brings a good many casual spectators, in addition to those who have come expressly to examine the agricultural machinery. Of the articles exhibited here no complaint was ever made that they did not form a noble illustration of British skill and enterprise. The temporary and unfinished building in which they are located, and the faulty access to it, are the points that have been criticised and blamed. The show illustrative of the machinery in use in the fold for tillage, cultivation, carriage and harvest work—illustrative too of the machinery in use in barns and buildings, for threshing, cutting, and grinding—preparing food for market and for use—is magnificent. There has been nothing to excel it anywhere or any *when;* and there is nothing like it in the building. During the week of the agricultural meeting there will be something more extensive and complete, but nothing finer to be seen at Battersea. Within the building itself there is nothing whatever of its own class to compare with it. And we cannot doubt that, constituted as the International Juries are of the representatives of all countries, and influenced, as apart from this they must be, by the desire to treat the exhibitors of each country on the principles which would guide decisions, viz., fitness to (and merit under) surrounding circumstances, yet English exhibitors will be somewhat amazed when they find that medals have been awarded liberally in foreign sections for implements and machinery which would have barely secured honourable mention here. If there be any rule, roughly directing the proportion of medals to exhibitors for the award of the juries, that proportion ought to be the highest in those departments which excel. One in three may be a fair proportion in certain classes—it may even be a fair proportion in agricultural machinery generally—but the British section of that department is far beyond all others, and the awards for merit there ought to outnumber those, if not in any other class, certainly in any other section of the same class. Whether this is the case remains to be seen.

Meanwhile, that our readers may see how the show of English agricultural machinery is regarded by an intelligent agricultural visitor, who has come fresh to the examination of it during the past week, we give the following remarks from a correspondent:—

"The agricultural section of the International Exhibition is a most triumphant success. Slight drawbacks exist no doubt in the arrangement. But viewing the section in all its bearings, every intelligent mind which looks at it apart from adventitious circumstances must pronounce it an important event in modern agriculture.

"We have come many miles to inspect this branch of the International Exhibition. We came prejudiced against it by the criticisms which we had read. We expected to find a mass of unintelligible "rubbish" stowed away in some out-of-the-way corner which nobody would or could visit. We have paid four separate visits to the section; and although we are acquainted with most modern appliances for cultivating the soil and preparing its products for market, we have not quite finished our survey. We have found little room for complaint with the arrangements. They are not perfect; nor do we think it possible that they could be so. But we would respectfully ask any practical man who comes to the Exhibition, not to find fault, but to find objects of interest and instruction, did he suffer much inconvenience from the much condemned arrangements? We could have wished that all the agricultural implements or machines were exhibited in one court or annexe. So far as we are concerned we should desire to see the ploughs of all countries standing side by side; but so long as our great national agricultural association permits what hypercritical people call imperfect arrangement, and so long as the farmers of England tacitly approve of it, we cannot well conceive why the arrangements of the agricultural department of the International Exhibition should have been so unsparingly commented upon by the press.

"As already remarked, we see no great reason for complaint. The annexe in which the implements of British manufacturers are shown is not an obscure corner. It corresponds in position to the department appropriated to 'Machinery in Motion.' Entering the building by the eastern dome you can reach the agricultural machinery sooner than you can the western dome. Looking at the ground plan of the Exhibition it seems to me difficult to find a better site for the agricultural implements than the one selected, unless the main building were appropriated to the purpose. And we think no one will deny that objects which possess interest alike to all classes should be placed in the most conspicuous position. It is silly to argue that because agriculture is the primary art it should occupy the leading position in a Universal Exhibition. A collection of ploughs and harrows, and spades and shovels, would surely be misplaced in the Great Nave.

"It appears to us that every native of these countries should be proud of this great undertaking; and that instead of finding fault with points of trivial importance we should all aim at placing it in its strength and fulness before our countrymen and the inhabitants of foreign lands. And this observation applies we think to the agricultural section, as much if not more than to any other, and more than to many other sections. For not only are the general arrangements reasonably satisfactory, but the world has never seen so magnificent a collection of farm implements and machinery. Power is economised; correct mechanical principles are illustrated; and mechanical skill is manifested on the stand of every British Exhibitor. The hand of man never produced finer engines than those of Clayton & Shuttleworth, the drills of Garrett, the ploughs of Ransomes, Howard and Hornsby. And taking the section all-in-all, it gives us every assurance that British skill and enterprise is capable of expansion and development to meet the advancing wants of a progressive agriculture."

Of course the names thus given are those which casually occur, and worthy as they are of the first rank they must not be taken as designedly excluding others. Going through the show, we have Aveling, of Rochester, also deserving of notice for a steam-engine; Bamlett, of Middleton, for his reaper—the prize reaper at Leeds; Cuthbert of Bedale, and Kemp & Co. of Stirling, also noteworthy for reapers—besides of course Burgess & Key and Cranston, the latter showing in the American department. Several sheafing reapers are shown. Robinson, of South Australia, shows one with revolving arms, clearing the platform in bunches. Samuelson shows the same. Mr. Bell shows a modification of his reaper, with a sheafer attached. Cranston shows his self-acting rake for clearing the platform in bundles, and McCormack has an ingenious reel or fan, one arm of which, at every revolution, descends upon the platform and clears it.

To return, however, to the more remarkable grand stands. We have already referred to Barrett & Exall, Bentall, Burgess & Key, Busby, Clayton & Shuttleworth, Messrs. Crosskill, the two firms of Beverley, and Cuthbert; also to Fowler and steam ploughing. Messrs. Garrett, of Leiston; Hornby, of Grantham; Howard, of Bedford; and Ransomes & Sims, are all first-class stands, each an agricultural show in itself, provided with engines, threshing machines, sowing machines, ploughs, harrows, horse rakes, ploughs, cultivators for horse and steam power—and all illustrating, by both the substantial character and high polish of their work, the good judgment and skill displayed in their manufacture.

Our Correspondent cannot speak too highly of the machinery exhibited. About the accommodation provided for it we may be allowed to differ from him.

STEAM CULTIVATION.

Having lately read the report of the judges at the meeting of directors of the Ayrshire Agricultural Society, I am induced to offer a few remarks, with a view of assisting in the discussion, and perhaps to remove some of the obscurity which appeared to envelop the meeting; for although the sentiment appeared universal, as to the desirability of adopting the steam plough in the district, no very decided plan was agreed on, and the worthy chairman left it to others "more practical than himself to determine the mode to be adopted." Allow me to say through your valuable Paper that I see no difficulty at all; but that it is to me perfectly clear and intelligible.

In a former letter which you did me the favour to insert, I alluded to the fact of my having been enabled by means of the valuable information I had obtained by reading your columns on this subject to carry out the idea I had long entertained of making my ordinary farm steam-engine assist me in cultivating the soil, as well as threshing, &c. And I would wish to observe that should I in the course of this or any other correspondence differ from the opinions of the most experienced and practical men of the day, I shall do so with the utmost deference to those opinions, and seek to convince only so far as my experience will carry out my views, in this embryo state of steam tillage. For, I am not like the old drainer "who had been draining this 40 years or more, and ought to know 'summut' about it," but on the contrary have but recently engaged in a work which hitherto has been but theory on my part. It will be necessary for me to enter somewhat in detail what I have been doing for some years past, in the shape of preparing the way, for the purpose of showing that it may be easily done by others possessing a fair amount of capital, a desire for progress, and a stedfast determination to abandon all prejudice attached to old customs, and adopt better, if better can be found. And I must mention that I have to thank my landlords for a long lease, with the right of sporting, permission to grub all useless and unprofitable hedgerows, and as a counterpoise an increased rent to pay; but still without a lease improvements of this kind can scarcely be expected.

To be brief, I have grubbed all the fences on the farm with the exception of the ring; and I have 400 acres of arable land, without a hedge to interfere. This desirable consummation having been obtained, the question naturally arose, is not this the right spot for steam? Now came the difficulty. What system am I to adapt; how amid this chaos of machinery—the locomotive or the stationary engine, the plough or the cultivator, the windlass with two or the windlass with four wheels, attached or detached, the driving band or the shafts with joint, the patent bow or the non-turning bow, the single tine or the double tine of the cultivator, &c., &c.—how shall I be able to find out the right and at the same time most economical system? An attempt had been made by a wealthy neighbour to astonish the locality by an application of steam power, a man who had probably never given one hour's serious attention to the subject. Invitations were placarded in the market place for the farmers to attend and witness the operation (Boydell's Traction Engine), when after a few days' abortive attempts the scheme was given up in complete despair, and the ploughing part of the apparatus consigned to repose under the shade of some lofty Elms, near which it remains to this day. I could not say that this experiment made a very favourable impression, and the opinion I then gave, and which I still entertain, was, that any system that absorbed so large an amount of power in propelling the engine, could not fail to be too expensive and complicated for its general adaptation to farming purposes. I observed nothing more for some considerable time beyond witnessing the Messrs. Fowler's system; it was certainly a vast improvement upon the last attempt, but it seemed beyond my reach, and very far from the implement carved out in "Talpa." Still the same large absorption and extravagant waste of power in propulsion. Mr. Mechi speaks of the insult to the powerful monster in being dragged about by horses, but I have yet to learn that the principle of locomotion, as applied to railway travelling and to agricultural purposes, should be the same. But to resume: business having called me into one of the midland counties, I there saw, or believed I saw, huddled and crowded in a busy thoroughfare the identical implement I had so long and ardently desired (Smith's, No. 3).

Now, my esteemed servants the carters and ploughmen of my farm, you who believe and fain would have me believe that nothing ever could or ever would be made to beat the plough; you who have remained in the stable week after week scarcely earning one sixpence, but receiving your full wages, but never volunteering one extra hour's work without letting me know and expecting to be paid; who have gone out day after day, scratching the surface, while I have allowed you plenty of strength and tried to impress on you the importance of deep tillage, till well nigh beaten by your obstinacy—it is my turn now; you have ridden me long enough; to shake you off or alter the system has been my desire, and, at the same time, my difficulty. Here then is a plan at once simple, economical, and easily worked by an ordinary class of farm labourers. My first attempt realised all the conjectures I had formed. My men had never seen or even heard of the cultivating tackle which after closer inspection and inquiry I had purchased, yet we had no difficulty; its first performance was to cross 20 acres of Turnip fallow, which was quickly done and far more effectually than by any plough, and to sum up, I consider it a most useful and valuable appendage to the farm. If, however, to make any progress with the new system of tillage, it is necessary to have different systems to suit and to please the different classes of farmers—one system for the machinery of the clays, and another for soils of a lighter description: let this distinction be broadly and plainly shown by the members and judges of the agricultural shows and societies: for to try and establish a system of machinery in conformity with the old customs and fashions of horse culture is mere child's play, and calculated to impede, if not to retard altogether, the wished-for progress. Surely impediments already exist in sufficient force without adding to the list by antiquated notions and methods that belonged to our forefathers.

In conclusion I would add—do not wait for the landed gentry to purchase implements for hire; it is not likely they will do it, and you would seldom get the tackle when required; neither trust altogether to the Royal Agricultural Society for something to turn up that will suit you, but put your shoulders to the wheel, look abroad, examine well the different methods, and judge for yourselves: be masters of the system by careful and diligent study before you engage in it, and I have perfect confidence in the result. Thus, sir, when the road to steam cultivation will have been made so clear and intelligible, that he who runs may read; the "rush to the cultivators" which you predicted some months ago will begin, and my attempts as a contributor to your columns will have ended. *W. S. Guildford, June 14.*

[We hope not.]

Home Correspondence.

The Thames and its Tributaries.—It is quite time that an inquiry should be made respecting the frequent and unnecessary flooding of the valley of the Thames. The floods may be readily obviated by the removal of every existing impediment to the free course of the surface water in its progress to the sea. There are two parties that are the sole cause of the present stagnation of the waters, viz., the millowners and the Thames Navigation Commissioners. The former are compelled by the latter to keep the river at a certain height, that

the barges may have a good depth of water to float on, in default of which they are subject to heavy damages. The millowners are very little benefited by the use of the water for propelling their machinery, as the outlay is very great to keep the weirs and sluices in good order, and they would be glad to be relieved of the onus of keeping the water pent up as they do. The Navigation Company's affairs are in a low state, owing to the diminished traffic on the river since the opening of the Great Western Railway, and no doubt would be very pleased to give up their interest in the river on some compensation being offered by the landowners. Nothing could be conceived more advantageous to the public interested in the 6000 square miles of land connected as reported with the Thames and its tributaries than the removal of every barrier opposing the free course of the river to the sea. Most of the great channels for the natural and effectual drainage of the country are blocked up by mill dams, and the land owners are perplexed with the difficulty of draining their estates owing to insufficient outfall. Why should the million suffer in health by the frequent inundations, saturating the soil with water, producing a damp and uncongenial atmosphere, causing colds and all the concomitant diseases peculiar to a moistened air as well as hindering farming operations, and depriving the people of food by the wholesale destruction of sheep by rot and other complaints, when all can be avoided by **compensating a few isolated individuals? There are about 20 locks, and as many weirs or mill** dams, between Reading and Teddington, and at each the water is dammed to about the average height of 5 feet, making an almost insurmountable barrier of 100 feet in the 80 miles from Reading to London. The millowners then should be compelled to adopt steam as their motive power instead of water, and the Navigation Company give up their interest on the river. By the removal of the mill wheels, sluices, and lock gates, the water in the Thames would sink considerably—still allowing ample depth of water for all description of pleasure boats—and the land in the valley, which is now nothing more than a swamp and unfit to pasture sheep on, and the Grass frequently spoiled for hay as it is this season—would become the richest pasture and produce the most abundant crops. The stream instead of being muddy and almost stagnant would become clear and quick—suited for salmon, trout, and all the finer descriptions of fish, as it used to be previous to the construction of the present barriers. *R. B.*

A Hint to Implement Makers.—I have never yet met with a really serviceable, useful rake for agricultural purposes, and hope to find some at Battersea. The ordinary hay-making rake, though low-priced, is a dear article; it is like Hodge's razors, made to sell but not to shave—there is no endurance in it. Then the corn rake, with huge curved iron teeth, much too heavy for the slender frames to which they are attached, are beyond the strength of women, into whose hands they are commonly placed behind the Barley carts. These are articles of constant use on every farm, in which, so far as my observation has gone, there has been no improvement within the memory of man. These rakes are superseded to a very limited extent by the horse rakes, which alone have engaged the attention of the manufacturer. *L.*

A Sick Club.—I enclose some information respecting a sick club which is doing much good in this country village. Perhaps you may think it worth while to give it a place in the *Agricultural Gazette*. The tables are valuable, and have much in them to interest those who are engaged in the management of clubs. *W. Hornby.*

ST. MICHAEL'S FRIENDLY SOCIETY.

A friendly society was established, in August, 1839, at St. Michael's-on-Wyre, near Garstang, Lancashire. "The objects of the society are to provide for the mutual relief of its members in sickness, infirmity, or old age, and for a payment at their death." There is nothing new in this. Has not almost every parish in the land witnessed the founding of several such institutions, established professedly for the very same praiseworthy objects? But the lapse of a few years has seen the dissolution of great numbers of them, causing many old and deserving men to be thrown into the parish workhouse, or to have to depend for subsistence upon the charity of their relatives or friends. In order to prevent such a disastrous issue, great pains were taken to have Saint Michael's Friendly Society founded upon secure and equitable principles. The tables of contributions were prepared by a very distinguished actuary, and are graduated according to the ages of the members at the time of their admission. One of the bases on which the society rests, then, is average liability; another is legal enrolment, which protects equally the funds of the society and the interests of the individual members. Its founders, also, being anxious to promote the moral welfare of the members, as well as to secure provision for their relief in sickness and infirmity, made it a rule that "no meeting in any way connected with the society, or any of its branches, shall be held, nor any business transacted, in any place appertaining to a public-house." Thus it was provided that the society should not expose its members to an evil which is the cause of untold misery, pauperism, and crime. The prudence of adopting these measures at the outset will be manifest from the highly satisfactory results to which they have led; for as time rolled on, and advanced age, with its attendant infirmities, began to creep upon the older members, instead of signs (too lamentably frequent) of insolvency and failure making their appearance, a general opinion prevailed about four years ago, that the funds of the society were accumulating at a needlessly rapid rate, and that the sick allowance might safely and ought to be increased. To set this matter at rest, it was resolved at the annual meeting held in June, 1859, that some eminent actuary should be engaged to value the Society's assets and liabilities. Mr. Finlaison, actuary of the National Debt, was selected, who, after a rigorous and minute investigation, certified that the assets were then worth 3,573*l.* 15*s.* 1*d.*, and the liabilities 3,202*l.* 8*s.* 7*d.*, the balance in favour of the society being at that time no less than 371*l.* 6*s.* 6*d.* Of this sum he advised 86*l.* 11*s.* 5*d.* to be reserved for future contingencies, and the remainder, 284*l.* 15*s.* 1*d.*, to be set apart as a bonus. On receiving the actuary's report, a special general meeting was called, at which it was unanimously resolved to carry out Mr. Finlaison's recommendations, viz., to reserve 86*l.* 11*s.* 5*d.* of the society's clear gains for future contingencies, and to set apart 284*l.* 15*s.* 1*d.* for augmenting the sick allowances upon a just and equitable principle.

The following summaries show the society's progress and usefulness during the last six years:—

1.—FINANCIAL SUMMARY.

	Income.			Expenditure.			Balance added to Reserved Fund.		
	£	s.	d.	£	s.	d.	£	s.	d.
1856	160	10	8½	26	18	2	133	12	6½
1857	167	14	0	48	14	0	119	0	0
1858	169	15	2	66	18	7	102	16	7
1859	181	14	5	95	3	7½	86	10	9½
1860	196	14	11	99	0	1	97	14	10
1861	198	15	9	92	10	10	106	4	11
Total ..	£1075	4	11½	£429	5	3½	£645	19	8

Thus it appears that the society's reserved funds, which on the 31st December last amounted to 1856*l.* 18*s.* 2*d.*, have been increased by the sum of 645*l.* 19*s.* 8*d.* during the last six years.

2.—SUMMARY OF SICKNESS, &c.

	Members connected with Society.	Entitled to allowance in sickness.	Admitted.	Died.	Excluded.	Withdrawn.	Sickness experienced.	
							Wks.	Ds.
1856..	169	160	0	0	2	0	54	0
1857..	170	167	3	0	2	0	104	0
1858..	175	168	7	2	2	2	124	1
1859..	185	169	16	1	4	1	127	0
1860..	185	170	7	1	1	0	151	0
1861..	195	183	12	1	0	0	193	0
Total.	214	202	54	5	11	3	753	1

Members are not entitled to allowance in sickness until twelve months have expired from the time of their admission. It being thought desirable to know how far the Society's sickness had deviated from the average experience of friendly societies in England and Wales, the requisite calculations were made, at no small cost of time and labour, the results of which are entered in the following tabulated statement.

3.—SUMMARY.

showing the amount of sickness to which the society *was liable* according to the tables of the actuaries:—

	Mr. Finlaison.		Mr. Neison.		Mr. Ansell.		Mr. Ratcliffe.	
	Weeks	Days	Weeks	Days	Weeks	Days	Weeks	Days
1856 ..	166	3	165	5	151	5	144	2
1857 ..	180	3	171	5	160	3	153	2
1858 ..	184	1	175	3	163	1	156	4
1859 ..	185	2	179	4	169	1	163	0
1860 ..	196	4	194	5	179	2	173	1
1861 ..	204	5	207	2	188	5	185	3
Totals ..	1118	0	1095	0	1012	5	976	0

The average of these results for the six years is 1050 weeks 2 days, and the aggregate of sickness experienced by the society during the same period, as stated above, was only 753 weeks 1 day, being rather more than 28 per cent. below the average. Such has been the experience of Saint Michael's Friendly Society, in which lapse of time has brought additional benefits upon its members in direct proportion to the number of years they have been admitted. It only remains to add that the parish has a small scattered population, whose chief employment is agriculture.

Landlord and Tenant.—Referring to the closing observations of your correspondent, Mr. Newburn, in the last *Gardeners' Chronicle*, permit me to ask how you are to ascertain that an incoming tenant has sufficient capital. In accepting his word, or the assurance of his friends, you are subject to deception, which has been more than once practised upon me, and the land exhausted. *A Confiding Sufferer.*

Grain Samples in the Eastern Annexe of the Exhibition Building.—Will you allow us to make one remark upon your very fair notice of our samples of Wheat, &c., in the Great Exhibition in your Number of May 31, which concludes with these words: "They are of greater value commercially than the smaller and more carefully selected samples which other stands contain." Now having taken great pains in the selection of our samples of Wheat, &c., we challenge any one to show a collection of the same varieties of finer quality. They are all perfectly true in stock, and the Wheats weigh on the average 63½ lbs. to 65½ lbs. per bushel., being about 1 lb. heavier than they were when they came in from the farmer. The Barley weighs 56 lbs. The Oats 47 to 49 lbs. We could of course have made them weigh a pound or two heavier, but that we consider is by no means such a fair criterion of the value of our collection as the weights we mention, at which we could have supplied a bulk of many quarters if required. We did not attach the weight to each sample in consequence, but can do so if necessary or advisable. They have been admired by first-rate judges, both English and foreign. We must at the same time protest against Lord Portman's assertion at the banquet of the Bath and West of England Society, reported in your Number of June 7, where he states, "I must say to my sorrow that I have no doubt the jury will report that the cereals and leguminous specimens sent to the International Exhibition by the British producers are neither well shown nor good in quality." In all courtesy we deny that so far as our cereals are concerned these remarks are justifiable, and that if the jury agree with him we feel that we can with confidence maintain that the jury do not know what good corn and seeds are. *Jacob Wrench & Sons.* [Our report was merely to the effect that the samples shown by Messrs. Wrench were fair commercial samples, representing bulks—not, as in some other cases is obviously the case, "selected," *i.e.*, made perfect by hand.]

English and Scottish Farming.—Mr. Hewitt Davis has lately raised several interesting questions respecting Scotch farming, on which I beg to offer a few remarks. I admit with Mr. Davis the general superiority of Scottish farming, but few persons acquainted with the practical agriculture of England and Scotland will agree with his statement that there is little in Scottish farming which the higher class of English farmers would copy. Apart from the questions raised as to the greater activity of the Scotch labourer and more system in the management of the Scotch farmer, there are doubtless many of the Scotch practices which the English farmers might copy with advantage. The preparation of fallows, and indeed the whole system of Turnip culture, a close system of drainage, the liberal use of lime, so essential to destroy weeds, pulverise the soil, and bring into action dormant plant food; farmyard manure when applied to land in summer, ploughed in the soil so soon as unloaded, and not allowed to waste from exposure to sun and droughts; broad and straight ridges if not furrowless fields; the general style of harvesting grain, and the system of mixed husbandry, as generally practised in Scotland, are one and all, not unworthy of the attention of the English farmer. Moreover, the neatly trimmed and carefully surlopped hedgerows, the absence of intersectional and boundary ditches, and no weeds allowed to seed in the field borders, which characterise the higher class farming of Scotland, are worthy of imitation. But it must also be admitted on the other hand, that the Scottish may profitably copy from the English farmers; haymaking, dairy farming, the economical use of straw and chaff, the management of intermediate crops, the system of consuming Turnips with store sheep, and the execution of drainage, are all more efficiently carried out in England than in Scotland. Mr. Davis is correct as to rents being higher in Scotland, but it ought to be remembered that a farmer requires more capital to take a similar holding in England than in Scotland, for in the latter country the farmer has to pay for no half fallows, dressings and half-dressings, and other unmeaning and often valueless outgoings. These frequently involve an outlay of 4*l.* an acre, which is virtually 5*s.* per acre added to the rental of the English farmer. I cordially agree with Mr. Davis that long leases are still wanted to bring improving tenants. This question indeed cannot be too much discussed, as it can never grow stale so long as the object it seeks is not gained. Nor can the charge of partizanship be advanced against those who advocate long leases, for there is no class of the community which they would not benefit. Were they universally granted, landowners would soon have their incomes doubled, farmers would bring into the field fresh energies, labourers would find ample employment, while the community in general would rejoice in the benefit which would accrue from increased production. *James Sanderson, June* 11.

A reputed Cure for the Potato Disease.—I am glad to be able to answer the query of "H. B.," in your last week's Notices to Correspondents, about turning Potatoes into wet nurses for a crop of Peas. The process is described in the *Gardeners' Chronicle* of September 25, 1852, and it so tickled my fancy that I transcribed it into a collection I was then about forming of such odds and ends. I will merely re-copy my own extract. "The Potato disease, observes Dr. Lindley, has produced a new idea * * *. The last number of the *Comptes Rendus* brings us a thoroughly new project. [Extract from a letter by M. Bayard.] In the property I possess in the North of the Department of the Maine and Loire, the Potatoes of the crop of 1850 were almost all spotted and bad. Before planting in 1851, I cut a *hectolitre* (not quite 3 bushels) into sets; and forced into each set, according to its size, 1, 2, or 3 dry Peas. The sets were planted in ridges. The rest of the ground (about 2½ acres) was set with Potatoes not charged with Peas. In spite of the dryness of the summer, the Peas grew strong and flowered, while the Potato stems pushed vigorously. The latter were neither withered nor diseased, the tubers were all sound, but were small and numerous. They kept perfectly well. A part of the other Potatoes was diseased. A similar trial was made in a kitchen garden, the soil of which was lighter and richer, result the same. The tubers with Peas were preserved from disease, but the others planted in the same soil rapidly indicated signs of ill health. During the growth of the Pea stems and Potato shoots I had some of them pulled up and examined. The early

vegetation of the Pea had carried off from the tuber its excessive humidity, and favoured the development of the Potato. [Ashes act in the same way, but not so rapidly.] Weeds are said to have a similar effect by abstracting the moisture from the Potato; but were this even the case it would at best be a slovenly remedy, for, as Dr. Lindley remarks, there is no lack of weeds in Ireland, yet where is the Potato disease more destructive? One advantage at least seems to attend the plan, that you get a crop of Peas if you lose the crop of Potatoes. On the whole therefore it appears to me highly desirable to make the experiment. It may do good, and can do no harm. I would advise neither the Dwarf nor the Giant Pea, but a variety of medium size and height like the Prussian Blue, or any of similar size. The hole for the Pea may be made with a largish quill. The time of planting is not here stated, but I take for granted, early in spring." Thus far my extract. This is now nearly 10 years ago, and not a syllable for or against the plan have I heard since. If "H. B." makes the experiment, he will confer a public benefit by giving us the result. *Samuel Taylor, Gloucester, June 9.*

The Potato a Barometer relative to the Weather and Poverty of Ireland.—I know not if what has appeared to me a singular and a significant fact has attracted the observation of others of your readers. It is this: that ever since the year 1845, the sudden changes in appearance of the Potato crops during the months of April, May, and June have been sure indications of sudden changes in the weather, from drought to wet, and *vice versâ*. Thus during dry open weather the leaves present the fine green colour indicative of health and vigour, whilst on the near approach of heavy cold rains all the hitherto healthy-looking leaves and shoots, the younger ones more especially, will assume a pale green or yellowish sickly hue, the sure precursor of the fatal blight should damp, foggy, warm weather set in during the month of July; and the extent of the blight is generally in proportion to the density of the atmosphere during the moist, foggy weather just alluded to, increasing in the tubers during the subsequent months, in proportion to the cold damp of the atmosphere, and the wet, heavy state of the land on which the crops grow, or may be pitted or stored in. If I am right in these ideas, founded on no limited experience and observation, I think it furnishes another argument in favour of extensive drainage—yes, even on lands where some ordinary observers would say there existed no need for it. After repeated experiments made every year, during the last 15 especially, the conclusion I have in common with many others arrived at relative to the preservation of the Potato crop is to have the tubers dry, that is to have the land on which they grow as dry as possible, that neither stagnant water or much moisture will remain about the tubers at anytime, but more especially from the time the disease makes its first appearance till the crop is raised and stored; and in storing to have them as dry by all and every means as it is possible without destruction to their vegetative powers to make them. This is no new theory, in Ireland at least, having been long since successfully practised where your English readers will least expect to hear of it—in Connaught. The practice has been adopted there no one can tell how long ago. I saw it practised there over 30 years ago by the poor small farmers, from whom I took the cue, and have saved every winter during my residence there hundreds of tons of the finest Potatoes that would have become in the winter masses of rottenness but for the artificial system of drying, than which nothing can be more simple where house or shed accommodation can be had, and fuel plenty, and to the absence of fuel last winter is due very much of the misery then and ever since felt, and which still prevails in that miserable, because so much neglected province. *Edward Carroll, Kilgreany Lodge, Clonegal.*

Cleaning Grass Land.—Having in the Spring of last year agreed for the mowings of a lawn with which I intended to supper my horses when off heavy work, I was rather disappointed at first cutting, that although the Grass was sweet, Daisies and Dandelions so abounded that it was nauseated by the animals altogether. Before the second cutting I put upon a certain portion a good dose of sulphate of ammonia (about the rate of 3 cwt. per acre), and this season these plants are upon the said piece almost extinct. I have observed also that a late cutting of the Grass should not be made if we would not have weeds of this description to have the upper hand in the following spring. Should any of your Grass-growing readers find a suggestion from these remarks, I shall be gratified. *J. A., Pitcaple.* [As to insects, if you will send them, they shall be reported on.]

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

A MEETING OF THE COUNCIL AND MEMBERS of this Society took place on Wednesday last at their Rooms, Hanover Square, the Earl of Powis in the chair. The usual business of the Association having been transacted, the meeting proceeded to the consideration of the subject of the Construction of Farm Buildings. Mr. J. ELLIOT (of Southampton) in introducing this subject to the meeting, observed

That the chief object to be borne in view was economy with after durability, convenience in arrangement for inspection, and supply of food and attendance with the least amount of labour; creation and preservation of manure, comfort to the animals with facilities for ensuring pure air and water, light and warmth. It must, he thought, be conceded that the vast majority of existing homesteads did not fulfil those conditions. A fixed idea seemed to have taken possession of the minds of agricultural builders of placing buildings on the sides of an open square in which was placed the straw intended for conversion into manure, the effect of which was to have one third of its valuable properties washed out by the rain, and another third carried off by sun and air. Where manure was of little value, time of small account, and inspection of no moment, the arrangements of the old homesteads might be put up with; but they were clearly out of place wherever farming was carried on scientifically, and whenever the great truth was recognised that its profits depended upon small economies throughout. The selection of a site would be the first consideration for the builder of a homestead, and a wrong selection was clearly an irremediable evil, and the choice of site, therefore, deserved the deepest consideration. The first and most material point would be the general healthfulness of the locality, and its capability for drainage. Marshy or boggy ground, or the vicinity of stagnant waters, anything in point of fact, that caused damp heat or moist cold must be carefully avoided, and a sluggish atmosphere equally so. The stiffest breeze brought health, but stagnation in air, land, or water, implied loss of health and loss of profit. If a hill-side could be secured which sloped gently to the south, it would be of advantage, but that must give way to other considerations of more moment. The relative position of the various descriptions of land, the direction of the market town, the roads, and their inclination had all to be taken into account. It by no means followed that the centre of a farm would be the best site either as to draught or distance. For instance, sheep lands received little back from the steading, and the sheep had legs to take them to it; the right centre, therefore, would be midway between the lands from which the produce was brought to the homestead and from which the manure was returned. The existence of a canal or railway-station would require special consideration, the possibility of obtaining water as a motive power equally so. A plentiful supply of good water for the stock was a vital point, and that of soil was not to be neglected; chalk or gravel was best, and clay or springy sand the worst. In balancing the pros and cons, it should be borne in mind that of existing objections some might be remediable, others not so, and these latter, therefore, should be allowed the greater influence in determining the site. The aspect of the projected steading would be the next consideration. The Romans were so impressed with the importance of a good aspect that their writers on farm buildings laid down the most stringent rules for obtaining it. To secure the greatest benefit from the sun, and protection from cold winds, the homestead should be so placed that a north and south line should be the diagonal to its square. There could be no difficulty in determining as another settled principle of universal application that the most ample means of ventilation should be provided, so that the air within the buildings might be always pure and admitted without draught; there was some truth both for man and beast in the old proverb:—

"When the wind comes in at a hole,
Then it's time to think of your soul."

Rotten lungs, broken wind, and damaged sight were some of the more prominent evils which the absence of pure air inevitably induced in men or cattle. Modern chemistry had established the fact that digestion was slow combustion, and food fuel. The bear laid in fat at the approach of winter to keep him warm through its frosts. It was necessary then, as a matter of economy, to keep the stock warm, as conducive to condition. Fatting stock required more warmth and should therefore have more sheltered buildings than growing stock, with whom the development of muscle was of more importance than fat. But the rule of nature was not abuse. Warmth created fat but too much warmth melted it, and this must be guarded against, and the means afforded of regulating heat and cold, otherwise what was right for one season would be wrong for another. It was the same thing with light, its presence was an absolute essential to health, but its excess during the summer months was injurious, and at such times flies tormented the animals to an extent injurious to their condition. Control therefore over the admission of light was indispensable. The question of box-feeding was so important in its bearing upon agriculture, and in its influence on the arrangements of a homestead, that it was necessary to determine this point as a principle before proceeding with any plan. The objections made to box-feeding, when originally introduced, were based chiefly on the injury to the health of the animals by the foul air generated and the filth in which the animals so kept were always immersed. If these objections had been irremediable they were certainly fatal to the system, but the simple remedy devised, to which Mr. Blundell would more especially allude—that of placing a layer of earth about 12 inches thick at the bottom of each box, had the effect of fixing the ammonia and of absorbing the liquid portion of the manure, so that the animals could remain in these boxes without injury to their health and comfort, and the manure thus prepared and stored was very greatly increased in value, while the labour of foddering the animals was very greatly diminished. It was desirable that the arrangements should be especially framed to economise time. To ensure such a result the buildings should be so placed in respect to each other that no ground should be traversed twice without result. The every day work of a farmery was to thrash out the produce from the straw, to convey the latter to the stack for bedding and conversion into manure, which was to be carried out to some convenient spot, preparatory to its return from the fields to produce fresh crops. The distination of the corn, hay, and root stores dictated their position at the head of the steading. The straw and the hay had to be cut into chaff, the roots to be washed and minced or boiled, the corn to be threshed and stored, the conveniences and appliances for these several works must therefore be close to the objects operated on, and of ready access to the feeding trenches. The root stores should be so arranged that carts could back into them. As the corn keeps better in ricks than in barns, the ricks should be placed on each side of a railway, proceeding from the thrashing place. The granary should be partly over the threshing place and partly over an open shed, to allow waggons to back under it to load. The boxes for stock must be placed on each side of the feeding passage, which proceeded direct from the stores in order that the stock might be delivered in the readiest manner to the animals. The passages should have an inclination from the stores, so that the labour of running the loaded truck down to the stock might be equal to that required to return it back when empty. To make this truck travel easier running planks should be fixed in the feeding passages, or a light railway formed by screwing light half round iron or wooden sleepers. This cheap railway should be continued as the chief bulk was brought gradually from the end of the rick yard, first to the stores, and then to the stock; the railway should have a fall from the end of the rick yard throughout its whole extent. This railway would thus bring the corn from the rick to be threshed, carry back the straw to be stacked, and hence supply the feeding boxes as required. By this means the necessity for large barns would be avoided, covered space only needed for a few days store. The question between fixed and locomotive engines was a most important one. There was no doubt that fixed engines worked the best, and with greatest economy, and the point must be decided by the consideration whether there was work enough at the homestead to keep the engine sufficiently employed, or whether from the nature and position of the farm a locomotive could be employed at different parts of it with greater advantage; as a general rule a fixed engine would be the best for a large farm, and a locomotive for a small one. The engine should be placed close to its work, and so placed as to give action to all its working parts, by which fuel and working cost were saved. The fuel ought to be close to the engine-room and accessible to carts, and if sawing by steam was to be done, the carpenter's shop should also be close to it. For similar convenience the waggon and cart shed should be near to the horse boxes, and the implement shed should also be handy. The sheep house should be connected with an open yard and should be little more than an open shed, for no animal suffered more from heat and overcrowding. A bull house and small yard would also be necessary, and the piggeries should consist of breeding boxes, boxes for store pigs and fatting pigs. Pigs being very apt to overlay their young a batten should be placed round the breeding boxes about 9 inches off the wall and the ground. No animal paid better for warmth and attention, and these points were worthy of consideration in his domicile. Having thus considered the general arrangements for the accommodation of the stock, the next point to be attended to was the most desirable and economical mode of construction. In many cases the locality would decide the cheapest materials, and this would also to a certain extent regulate the plan of construction. The corn and hay stores, the engine-room and granary only would require thick walls, whether of stone, brick, or heavy timber. The box system being a multiplication of similar parts, it was advisable to construct them on the simplest form, so that they could be easily put together, easily replaced when damaged, and easily extended. For these purposes the box system afforded great facilities, which he had endeavoured to embody in the design which he now submitted.

Mr. ELLIOTT illustrated his plan by reference to a diagram, the several portions of which he fully explained to the meeting.—Mr. BLUNDELL also showed the adaptability of the plan to the practical purposes of farming, and pointed out the advantages of the use of earth as a bed for the animals, who would lie in greater comfort. He recommended the plan particularly for horses, including race horses, hunters, and carriage horses.—In reply to Mr. Frere, Mr. ELLIOTT said that the average cost of the buildings he had described, exclusive of the farm house, would be about 1700*l.*, supposing them to be roofed with corrugated iron.

A short discussion then took place on the details of the plan, in which Mr. Blackburn, Mr. Exall, and Mr. Calesse took part.

STOCK FEEDING.—MR. BLUNDELL, of Bursledon, Southampton, then read a paper on the most profitable method of fattening bullocks on arable farms.

He observed that although the subject had been made a matter of discussion at various Farmers' Clubs, yet up to the present time there seemed to exist an under current of feeling upon the subject, which induced the belief that bullocks did not pay for fattening, and that were it not for the sake of turning the straw produce of arable farms into good manure it would not answer the purpose. He divided the question into two heads, namely the economy in feeding the animals and the economy in making the manure. Upon the first point the best breed of animals they could keep was the Shorthorn, Hereford, Devon, Scots, and the crosses between pure breeds, and the best age to begin fattening was from 18 to 20 months. The animals themselves should be in a fleshy condition when the fattening process commenced, and with regard to newly purchased animals there should be a probationary stage of some 6 or 8 weeks in order to ascertain whether the animals would be worth the trouble. The kind of food, the quantity to be given, the time of feeding, the state of the food, and the accommodation most likely to insure the health and well doing of the animals, were also important considerations. In reference to the second head—the economy of making manure—Mr. Blundell laid before the meeting a tabular statement showing the result of feeding 37 head of bullocks of different ages during the last three years, which, he added, was extracted from his farming account books. The purchase of 15 oxen and steers had involved an outlay of 220*l.* 15*s.*; that of 8 cows amounted to 102*l.*, and 14 heifers and steers, of an average age of 17 months, cost 171*l.*; making a total of 493*l.* 15*s.* The 15 oxen and steers sold for 408*l.* 10*s.*, 8 cows for 184*l.* 15*s.*, and 14 heifers and steers for 335*l.* 15*s.*; making altogether 929*l.* The 14 oxen and steers being kept on an average of 8 weeks summer feeding in a preparatory state increased in value 7*s.* per week, amounting altogether to 39*l.* 4*s.*; 23 oxen, steers, and cows kept 20 weeks each winter feeding in a fatting state increased in value 10*s.* per week, amounting altogether to 230*l.*, while 14 heifers and steers increased in value in the same period 11*s.* 9*d.* per week, making 164*l.* 6*s.* 6*d.*, and giving a total of 433*l.* 4*s.* 6*d.* The actual increased value of 37 bullocks during 20 weeks each winter feeding was 396*l.* 1*s.*, showing a general average of weekly increased value of 10*s.* 8*d.* each animal. The cost of keeping a bullock in a preparatory state by summer feeding was as follows:—3 lbs. of oil cake per day, or 21 lbs. per week, at 12*l.* per ton, 2*s.* 3*d.*; 80 lbs. of clover per day, at 9*d.* per rod of 120 lbs., 3*s.* 6*d.*; 15 lbs. of litter straw per day, or 140 lbs. per week, at 15*s.* per ton, 11*d.*; attendance per week, 6*d.*; interest on capital and gain. The cost of keeping a bullock in a fatting state by winter feeding was as follows:—4 lbs. of oil-cake meal per day, 3*s.*; 1 lb. of Bean meal per day, at 12*l.* a ton, 9*d.*; 64 lbs. of Mangel per day, or 448 lbs. per week, at 10*s.* per ton, 2*s.*; 20 lbs. of Oat straw fodder per day, or 140 lbs. per week, at 30*s.* per ton, 1*s* 10*d.*; 20 lbs. of straw litter per day, at 15*s.* per ton, 11*d.*; attendance per week, 6*d.*; interest on capital and gain. 3*s.*

On the conclusion of the paper, the CHAIRMAN expressed himself favourable to the plan of farm buildings which had been explained by Mr. Elliott, observing, however, that it was not every situation which would be level enough to admit of massing so many buildings together on a farm, though he admitted it would be possible to adapt them to the inequalities of the ground by arrangements for building in longer lengths and shorter depths. He also expressed himself much gratified by the paper read on the proper feeding of animals, and in conclusion moved a vote of thanks to Mr. Elliott and Mr. Blundell, which was seconded by Mr. Callesse, and carried by acclamation. The proceedings then terminated.

Farm Memoranda.

SOUTH HANTS FARM: *Report to the 14th June.*—The stormy and tempestuous weather now prevailing has a prejudicial influence upon nearly all the agricultural operations peculiar to this period of the year. The

earliest Wheat is fast coming into bloom, and would do so if the weather was propitious, but the boisterous wind which has prevailed during the past week precludes the possibility of the bloom remaining on the ear but a very short time, and in our opinion not long enough to insure a good yield of grain. We find that much of the Wheat has been broken down by the force of the wind, and although it may in case of fine weather succeeding partially rise again, yet it generally prevents the free circulation of sap in the plant, and causes at harvest a deficient yield of corn, and this observation applies to all kinds of grain forward enough to receive damage. We find the earliest Oats broken down as much as the Wheat; in exposed situations along the coast in different parts of England, the corn often suffers from the effects of wind from the south-west, and we have noticed for some years past that where the hedges have been removed there has been less damage to the grain crops than previously, although the hedges were ostensibly left for shelter. We have removed all the hedges upon the South Hants Farm, as well as upon other farms under our superintendence during the last four years, except those required as fences near public highways and for pasture land; we were induced to resort to this sweeping reform in farm management owing to the damage which we had often observed done by high winds on the lee side of the hedges, where the eddy and whipping action of the wind has done great damage, particularly at and near harvest time, whereas in the open part of the fields, where the wind passes over without impediment, we have noticed that little damage has been done; this circumstance, together with the occupation of the land by fences, has decided in our mind the advantages of removing all internal fences upon arable land. After removing the fences, the land may be cultivated in long straight ridges, in preference to the short and costly work consequent upon crooked fences and small enclosures. Under the most favourable form in which fences are presented to us—that of Quickset well trimmed, and like a green wall in appearance—even in that case it occupies land which ought to produce food for both man and beast; and although fences are advocated by stock farmers as a shelter for sheep both in summer and winter, yet it operates badly in some respects, for wherever sheep resort for shelter, whether from the effect of sun or storms, they have an undue quantity of manure which is lost or proves comparatively useless. Our earliest crop of hay having been carted in prime condition on the 26th of May, we have since that time commenced cutting the broad Clover, and a more unpropitious time for the making into hay we never recollect; it is however seldom that an abundant crop of field Grass is made into first-rate hay, as the same weather which produces a heavy crop of Grass if it continues often spoils the hay. Our attention is now turned to the culture of the Potato crop, and interculture by the use of the horse-hoe is continued at every favourable opportunity. The hand-hoeing follows when the weather will permit, but previous to the operation of hilling or earthing up the Potatoes, we sow over the land about 1 lb. of Turnip seed per acre, and the hilling process lifts and buries the Turnip seed on the ridges most effectively. The object of this system is to keep down the weeds, and produce a crop of cattle food; in addition; when the Potato haulm is struck down by the disease (which it has been upon this farm more or less every year since 1845,) the Turnip plants, having before made but slow growth, then make rapid progress, and quite prevent weeds from growing, which they certainly would do upon well manured land, and before we resorted to the plan of sowing Turnips, we have often been obliged to mow the weeds, or hand pull them at great expense, before we could dig the Potato crop. At times when the land has been too wet for hoeing the Potatoes, we have been engaged in planting the Drumhead Cabbage and Kohl Rabi, which we do in the following manner upon land where the hay crop was recently taken. We scarify and remove all Grass roots, &c.; lay out a heavy dressing of box manure in the long fresh state as it comes from the cattle boxes; whilst ploughing the land in 10-inch furrows women follow and put in the manure into every third furrow. Thus the rows of plants will be 30 inches apart, for as fast as the manure is buried by the succeeding furrow a man follows making holes with an iron bar, exactly over the manure at 30 inches apart; the men and women follow, setting the plants which had been grown in an adjoining field. *J. B.*

Reviews.

British Farming, a Description of the Mixed Husbandry of Great Britain. By John Wilson, Farmer at Edington Mains, Berwickshire. A. & C. Black, Edinburgh.

There is a larger number of foreign agriculturists in this country at present than probably there has been at any one time previously. They have come over to see the great meeting at Battersea, to study our agricultural machinery, and our breeds of cattle, sheep and pigs which are there to be exhibited. But it is certain that great numbers of them will inquire further into the practice and details of English Agriculture, as carried on in field and fold and farmery. They will in some measure spread abroad over the island, armed with introductions which will ensure for them the English Agricultural hospitality.

They will need a handbook as a guide—both to districts and to the farm-management of the country generally—a framework on which they may arrange and hang their notes and other aids to memory, on consulting which they may the more easily recover the remembrance of what they have seen and heard. Now the book whose title stands at the head of this notice is just the work which they require, and it is fortunate that its publication has fallen upon a year when such an admirable illustration is to be given of our agriculture, and when so many fresh students of it are to come among us.

Mr. Wilson, himself an experienced practical man, long accustomed too to the instruction of agricultural students, and well known as one of the most intelligent of Scottish agriculturists, has here extended the agricultural papers which he contributed to Messrs. Black's great work, the "Cyclopædia Britannica." And, supplemented as these papers are by whatever of history and description was needed to make a complete and systematic work on British agriculture—they constitute in this volume just the kind of handbook which the student of agriculture needs.

Miscellaneous.

Exhibition of Dogs at the new Agricultural Hall, Islington.—This opens on the week of the Cattle Show under high patronage. The entries are over 1000. The Duke of Beaufort, for instance, has entered a whole pack of foxhounds from Badminton, 40 in number—the first time a pack of hounds has been thus shown to the public. Besides these there are 12 fox terriers, 16 bloodhounds, 15 otter and deerhounds, all of them of note and special character for size, form, staunchness, and fleetness; 35 harriers and beagles, 30 greyhounds (in themselves a show), 100 pointers, 170 setters, retrievers, and spaniels; 68 mastiffs and Newfoundlands, 64 bull dogs and bull terriers, 24 terriers, 22 Italian greyhounds, and to give the whole an international character, as befits the times—50 foreign dogs. To indulge these animals, provision has been made of meat and biscuit to the extent of 3 tons, and of servants to the number of 100. There can be no doubt that the dog show will prove one of the most attractive and popular exhibitions of the season.

Farming in British Columbia.—Were there such a thing as a positive certainty that every miner who would go to Cariboo would be successful, make his pile of 1, 5, 10, or 20,000 dollars, it might be useless with our present population to recommend farming. But there is no such thing as a certainty of making a fortune in gold mines anywhere, whether in Cariboo, Salmon River, California, or Australia. In all gold diggings there are a great many blanks and few prizes; and although we are persuaded that Cariboo is fabulously rich in gold, yet we have no idea that the majority who may go there this year can return with a fortune. We want, then, to impress upon some of our readers that there is one way in which a fortune can be made in British Columbia without breasting the snow on the Bald Hills, or packing Beans and bacon on their back from creek to creek in Cariboo. That way is simply by taking up farms on the road to Cariboo. That way is by raising hay, Oats, Wheat, Barley, Potatoes, Beans, pork, beef and mutton. These are the commodities that can be most easily exchanged for gold. 160 acres of good land anywhere from Bonaparte River to the mouth of Quesnelle will, on the average, prove a far better claim than the average of claims in the mines. Such would be a claim that can be worked every year for the next century, and within the next five years make any industrious man's fortune. There is not a country under the fair face of heaven that now offers such brilliant inducements to the farmer as British Columbia. The climate is healthy and invigorating, the soil fertile and yields abundantly; and a market at starvation prices at every farmer's door. Foreign produce can never compete; or only so long as the domestic supply is inadequate to the demand. At the present moment the supply of farm produce consumed or to be consumed this year in the mines has to be brought from Oregon or California. It has to be carried from 500 to 1000 miles before it is landed in British Columbia, and then it traverses the country from 200 to 400 miles before it reaches the consumer; and, what is still more worthy of notice, before it can be brought into competition with those who may take up a branch anywhere on the road to Cariboo. *Victorian Colonist.*

Calendar of Operations.

JUNE.

Berwickshire Merse Farm: *June* 16.—A fortnight ago we reported that the wet weather was favourable to vegetation, though very much against the main work of the season. Since that it has rained daily, to the depth of 2 inches, keeping our foul fallows in a pitiable state. Little good has been done this weary time, and often we had better been in our bed. From the condition of our strongish land, we can understand how it is that our clay neighbours have scarce made a beginning yet. Every day we have been looking for a chance of getting Swede-sowing completed, but the usual season is long past, and the few that will be put in this week will be a desperate venture. We question whether half of the fallow break is yet sown, and certainly it cannot be all sown with Turnips; Rape must come in largely. The first sowings are much flea bitten, but not exterminated; the fleas, however, are lively, now that it has faired. In default of Couch picking we have got the corn and Grass fields pretty well cleared of Thistles. Pastured Clover suffered a while from excess of moisture, but where the Rye-grass is well topped the bottom is improving. Grass is likely to continue plenty, for lean stock is not to be thought of at the prices; and it is better to hold what fat we have, with the present improvement of markets. Of all the cereals, Oats have as usual agreed best with the rainy weather. Wheat has lost little but the flag, which is much withered. Barley is thin and stunted on poached lands, and bids far to be a short crop like last. Beans are few but growing. Potatoes are vigorous, with some blanks, and we have just got the horse-hoe among them. Between hand-hoeing and fallow cleaning our field-workers are likely to have their hands full. Mixed seeds for hay are a splendid crop, and may be ready for cutting early next month. *J. T.*

Chatteris: *Isle of Ely.*—A multiplicity of duties, many of them onerous, and involving absence from home, have lately claimed our time and attention, and have prevented our report appearing at its proper time. The disaster at the Middle Level Sluice has claimed a large share of anxious attention, and the Middle Level Bill which has just passed the House of Commons has consumed a large amount of time. It is not our intention now to refer at length to the destruction of the Middle Level Sluice, and the evils consequent upon it. The subject has excited great public attention, and has formed a prominent newspaper topic, and has, in many instances, been much more grandiloquently than correctly dealt with by the press. As a member of the Middle Level Committee it would ill become us just now to discuss the question publicly, especially as it will ere long be subjected to a scrutinizing investigation, when facts will be substituted for the pictures which poetry and vivid imaginations have lately so liberally supplied to satisfy the cravings of an excited public. Our Wheats still present the appearance of an average crop. They are not thick upon the ground, but have retained their plant, without tillering as much as is sometimes the case. The flag is dropping unusually early, especially upon the red chaff, white and the nursery varieties, and the drill rows are again being discernible. We observed the first ear above the flag on the 3rd inst., which is about seven days earlier than last year. We may yet find some advantage in the loss of flag and stiffness of stem, especially should we get heavy thunder showers, which are threatening just now, and falling around us. We hope to see but little Wheat laid, as it is very seldom we get either quantity or quality when it falls early. Our Oat crop has in a few cases suffered from the ravages of that destructive little pest, the wireworm,—the most expensive little creature the fen farmer has to feed. Our average injury in this respect is, however, less this year than usual, much less than last year. Where unhurt, the Oat crop is one of the most promising we ever remember to have seen. The early sown Polands are magnificent, especially in some of the gravelly fen lands, where put in with the water drill and superphosphate of lime. We have also two fields of high land, with a gravelly loamy soil, where Mangels were grown last year, which were ploughed with five and six horses 12 inches deep, and sown with this variety of Oats in February without artificial manure which are very fine, and with stems as strong almost as seed. Oats on this soil evidently like deep cultivation. We never grew such fine crops on the same lands before. All our earliest sown are now beginning to show corn, and with favourable weather will be fit to cut some few days before the Wheat, probably from the 20th to the 25th of July. Beans and Peas at present are a good crop, and are blossoming well. A few of the former were broken down by the high winds of last week, but not to a serious extent. These crops are more promising this year than they usually are, but the trying time is yet to come. Mangels are generally a good plant. We sowed them (45 acres), with the water drill and the drop coulters, dropping the manure and seed together in bunches every 14 inches, the rows 27 inches apart. We have horse hoed all twice, some three times, and have hoed between the bunches, and are now singling by hoe, leaving them only to be singled by hand where the hoe leaves more than one plant. We have sown 22 acres with Coleseed, also put in with the water drill. This is to eat off for Wheat. Our horses are now engaged preparing other 95 acres, which we commence sowing on the 23rd, and which is designed for winter eating. We have a good healthy plant on the 22 acres, and unhurt by fly. We commenced mowing Clover on the 9th upon a good average crop. Grass keeping has been very plentiful, but where heavily stocked is not quite so luxuriant as it was. Cattle have done well, as have also sheep. We have just sold 30 little steers, which have been running amongst sheep, and which have paid about 45*s.* to 50*s.* per head for their Grass. *A. S. R., June* 11.

South Northamptonshire.—The past month has been showery, with a prevalence of cold winds and general low temperature throughout. The autumn-sown Wheats on early soils are rapidly coming into ear, and we think present appearances justify the supposition that the crop will be a fair average. The best field of Wheat we have seen this season is on a farm where the six-course rotation of cropping is followed, consequently this Wheat is after a crop of seeds grazed with sheep two years, and which for many soils would be the most profitable system of management. Barley on the free working soils where put in well looks healthy and promising; on the cold bottomed soils where put in under unfavourable circumstances it generally looks yellow and unhealthy. That sown late after Turnips and where the land is in high condition is generally too thick and flaggy, and from the rapidity of its growth is soft in the straw, and should any quantity of rain fall would certainly be lodged. An unusually small breadth of Oats is grown this season; the greater part, being late sown, look stunted and unproductive. Beans where put in early everywhere look well. Peas: a small breadth sown with crop generally looking thin and unpromising. Potatoes not much cultivated, except on the cottagers' allotments, where they everywhere present a favourable appearance. The Mangel has come up well and grown freely; we are now setting ours out; within the last few days they have been suffering from the attacks of the Mangel fly, "Anthomyia betæ;" as soon as the eggs are hatched the maggots eat their way into the interior of the leaf and there feed on the pulpy substance, giving the leaf a scalded appearance and greatly injuring the vital functions of the plant; last year our crop suffered considerably from the same cause. Swede sowing is now being carried on vigorously. We hear frequent complaints of the crops being destroyed by the fly; some we have heard of being eaten off twice, and the land sown the third time. Our first lot were sown on the last day of May; they are now up and look well. From long experience we find the best preventive against the inroads of this insect is to reduce the land to as fine a state as possible, sow immediately after the plough, and use a good quantity of seed. We never sow less than 3 lbs. per acre, at a distance of 26 in. from row to row, and seldom have to sow the second time. Haymaking will be general this week. Seeds are generally a heavy crop on upland meadows, and where the soil is dry the crops are heavy; while on the low-lying flat meadows, from the great quantity of wet, they are thin on the ground. There has been abundance of keep, and the weather being cool, grazing beasts have progressed rapidly; the common complaint, foot and mouth disease, has been very prevalent this season. Fortunately we hear less of that scourge, the lung-disease, than for several years past. Sheep have done well; on most lambs we have noticed an unusual growth of wool, the moist season being probably the cause. Good wethers are making about 6½*d.* per lb., whilst store sheep are making enormous prices. Should the Turnip crop be a

good one, lean sheep will even be dearer in the autumn than they are at the present time. *G. M., June* 11.

WESTER ROSS: *June* 16.—It is now pretty certain that whatever the yield or quality of the grain may be this season, the straw will be no scarce commodity. A season better adapted to bring every plant to its utmost length we could scarcely desire. Wheat, both early and late-sown, has stretched out enormously, and should this growing weather continue, as it is not yet nearly in ear, it will be in danger of being laid greatly too early, and thus materially affect the grain both in quantity and quality. Oats, except when ravaged by grub, or injured by wet, are looking uncommonly well, and promise an unusually heavy crop. Barley, generally speaking, does not look so well as either Wheat or Oats. The season has been too wet, and the soil too stiff and cold, for its making corresponding progress. Indeed the soil of this county, generally, lacks sufficient friability for bringing to maturity an abundant yield of Barley of fine quality, and we are much inclined to suppose that Ross-shire would be wealthier on the whole were none of it sown. This year we have a large breadth of Oats, sown on newly reclaimed land, and top-dressed with nitrate of soda, that looks remarkably well. We have seen as yet no grain in ear except one field of Rye. Hay where closely planted with Clover is an abundant crop, but in many fields, even in the neighbourhood of towns, and where large quantities of town's manure have been applied, the Clover is sadly awanting. Pastures are so abundant, and the price of store cattle consequently so high, that the purchaser of stock, meantime, will be apt, by-and-by, to get over the fingers when disposing of them. Stock of all kinds are thriving amazingly amidst their wealth of Grass. The earlier Potatoes are well advanced, and appear strong and healthy, and the later plantings are being hoed the first time. For a few days, from the amount of rain we have had, nothing has been done in the way of preparing the ground or sowing Turnips. The Swedes are coming away, their pace not being accelerated by redundant wet, and will be fit for the hoe in course of next week; but unfortunately the weeds progress at least equally fast, and seem in no way hindered by any amount of wet. Turnip-sowing with us will be completed towards the end of this week, somewhat earlier than usual. We have given to each acre this year, in addition to 16 loads of dung, 2*l.* worth of artificial manure, and we anticipate an abundant return.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Thursday, June 19, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.										Inches.		
Friday	13	29.52	58°	54°	W.	4	4	62°	51°	71°	48°	0.62	59°	58°
Saturday	14	29.65	55	52	S.W.	2	4	65	47	77	45	0.22	58½	57½
Sunday	15	29.79	60	55	W.	2	4	67	47	81	41	0.04	58½	57
Monday	16	29.97	58	54	N.W.	2	5	68	45	87	42	0.02	59	57
Tuesday	17	30.10	62	57	N.E.	2	3	68	49	92	45	0.01	59½	57
Wednesday	18	29.97	64	51	N.W.	2	4	63	47	84	44	0.18	60	57½
Thursday	19	30.16	57	53	N.W.	2	5	67	46	91	44	..	60	57½

Notices to Correspondents.

LONDON SALESMAN: *W W.* Certainly you can proceed against him at the County Court of the district in which he resides.

PEAS AND POTATOES: *A B.* In answer to an inquiry in our Paper of the 9th inst., as to the results of planting Potatoes with a Pea in, we have received the following paragraph cut out of the *Atlas* newspaper some years ago by a Correspondent, who says he tried the experiment but failed, the Potatoes with the Pea in being as much diseased as those planted in the ordinary way. The whole affair was a foolish whim, and the success described was accidental. "I tried rather a curious experiment with a few Potatoes this season. Some 12 months since I saw a letter from a farmer stating the great success that had attended an experiment the writer had made in the previous season. It consisted in inserting a Pea in each Potato set, and planting the Potato in the usual way. The result, he stated, was a large yield of Peas and a splendid crop of Potatoes; but the most important result was, the entire freedom of the Potatoes so treated from any disease, while all those planted in the usual way in the same field were extensively deteriorated. I was led by this statement to try the experiment on a small scale in my own garden this season. I planted not quite half a peck, only 50 sets in six ranks, cutting a piece out of each, and putting a Pea firmly in. The Peas grew up and flourished well, and last week I dug the Potatoes. They were perfectly free from the slightest taint or speck of disease, and very fine and large; while in the same bed close to them was another lot planted in the old style, nearly half of which were rotten. I leave your readers to draw their own conclusions."

THE LONDON MANURE COMPANY (ESTABLISHED 1840,)

Are now prepared to send out the following MANURES:—

CORN MANURE for AUTUMN SOWING
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.

PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

LAWES'S MANURES.

The Manures manufactured by J. B. LAWES for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—

LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0

These Manures can be obtained of MR. LAWES, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

American and other Cakes at market prices.

Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

REIGATE SILVER SAND, PEAT SOILS, &c., on SALE.

W. SHORT, Landscape Gardener, &c., Red Hill, Reigate, Surrey.

40 to 45 per Cent. of Soluble guaranteed. 1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.

Extract of Opinion from MR. WAY, *January* 23, 1862.

"This material contains in round numbers 44 per cent. (44 p.c.) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."

Extract of Opinion from DR. VOELCKER, *January* 1862.

"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."

The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.

Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

THE NORTH SEA FISH-GUANO COMPANY, LIMITED.

Capital £60,000, in 12,000 Shares of £5 each.

10s. per Share Deposit payable on application, and 10s. per Share on Allotment.

Directors.

Albert Pelly, Esq. (CHAIRMAN), 18, Finch Lane, London, E.C.
John Chalmers Morton, Esq. (Editor of the *Encyclopædia of Agriculture*), Streatley, near Reading.
Isaac Solly, Esq., 9, Great St. Helen's, London, E.C.
Robert Smith, Esq. (Member of the Council of the Royal Agricultural Society of England), Emmett's Grange, South Molton, Devon.
Professor Way, 15, Welbeck Street, London, W.

With power to add to their number.

Bankers—London and County Bank, 21, Lombard Street, London, E. C., and all Country Branches.

Solicitors—Messrs. Benham & Tindell, 18, Essex Street, Strand.

Secretary (pro tem.)—J. Musgrove Norman, Esq.

OFFICES: 36, KING WILLIAM STREET, LONDON BRIDGE, E.C.

This Company is established for the purpose of manufacturing and supplying a Manure of well known and superior quality, at a price which, whilst insuring an unlimited demand, will realise large profits on the Capital invested.

Fish in its natural state, and still more when properly dried, has long been known to be a most valuable fertiliser—the use of the Fish in its former condition is limited by very obvious circumstances, and the dried or prepared Manure has hitherto not been offered to the Agricultural public on a large scale, owing to the impracticability of collecting from any fishing grounds adequate quantities of the fish refuse for its manufacture.

This obstacle has now been entirely removed by the discovery, through the exertions of the Promoters, of localities where almost unlimited quantities of refuse Fish of the best quality can be readily obtained, and under circumstances peculiarly favourable for its economical conversion into dry Manure. The source of this refuse, as the name of the Company denotes, is in the extensive fisheries of the North Sea, where the Directors have succeeded in acquiring privileges and rights amounting virtually to a monopoly.

The market value of manure made from this Fish refuse, as shown by the analysis and opinions subjoined, is certainly not less than 8*l.* per ton, whilst from estimates as to the cost of production, which have been most carefully framed, the Directors are justified in stating that after providing for all probable contingencies, this Manure can be made and delivered in England, from the sources of supply now opened up, at a cost of about 4*l.* per ton.

The Directors have minutely examined the evidence submitted to them by the Promoters (one of whom has spent some months in a personal visit to the fishing grounds), and are satisfied of the correctness of their statements, which are moreover verified by the Norwegian Government returns, by private information in the possession of the Directors, and by official certificates attested by the British consul in Trondbjem, Mr. H. N. Knudtzon.

They have also carefully considered the system proposed for the collection of the Fish refuse and its conversion into Manure, and are convinced of its entire practicability; at the same time they will avail themselves of every assistance which engineering and chemical science can afford, as regards the machinery and processes necessary for the economical production of the Manure in its highest perfection.

The Directors estimate that 20,000*l.* will amply suffice for the profitable working of the Company in the first instance, and they will commence business so soon as in their judgment the necessary Shares shall have been allotted. Beyond the payment of 1*l.* per share, due on application and allotment, no call will be made for the space of three months, and no call will exceed 1*l.* per share, with at least one month's notice thereof.

The Directors have made arrangements with the Promoters for the transfer to the Company of all their rights upon the satisfactory basis, that with the exception of the payment of a sum not exceeding 1000*l.* to cover their preliminary expenses, no remuneration will be made to them otherwise than in Shares. Before, however, any dividend is made upon the Shares so held by the Promoters, all paid up capital shall have first received an absolute preferential interest year by year of 5*l.* per cent.

A sample of the Manure has been manufactured in the laboratory of Professor Way, the late Consulting Chemist to the Royal Agricultural Society, in accordance with the conditions which will regulate the future operations of the Company, and subjoined is the analysis of the same by Professor Voelcker, and the following are opinions as to its worth:—

Moisture	6.07
*Organic Matter and Ammoniacal Salts	64.95
Phosphates of Lime and Magnesia	24.01
Cabonate and Sulphate of Lime	1.52
Alkaline Salts	3.03
Sand	0.42
	100.00
*Containing Nitrogen	9.13
Equal to Ammonia	11.09

(Signed) AUGUSTUS VOELCKER,
Consulting Chemist to the Royal Agricultural Society.
Royal Agricultural College, Cirencester, May 3, 1862.

Professor VOELCKER.—"This is a very valuable fertilizer, for it contains scarcely anything which is not of the highest Agricultural value. It consists in fact almost entirely of phosphates and nitrogenized organic matters, and is very dry and beautifully prepared. The phosphates, I may observe, occur in it in a most minute state of subdivision, and consequently are more valuable in this condition than in the shape of Bone dust, and the nitrogenized matters readily enter into decomposition, and yield a large amount of Ammonia. Cod manure of such a composition I have no hesitation in saying, will be regarded as a boon to British Agriculture, and will unquestionably command an extensive and ready sale, if it be delivered as you propose at a reasonable price."

Professor A. J. BERNAYS.—"A manure of such a composition carries its own recommendation, and needs but little comment by the chemist. Its constituents are in such a condition that they are almost immediately available to the wants of the plant. From its state of division, the manure well deserves its name of 'Fish Guano,' and it will compete successfully with all manures except guano—even with the latter, if it can be bought at such a rate as to balance quantity against quality."

Professor BUCKMAN.—"I find, from its composition, that it is worth 8*l.* per ton, and at this price I should consider it a valuable fertilizer. I have no doubt of the value of the substance and the cheapness with which it can be made."

W. FISHER HOBBS, Esq.—"I am pleased to learn that Professor Voelcker and Mr. Lawes approve highly of the analysis of the Fish Manure. I was for many years in the habit of advantageously using raw fish as manure for root crops when obtainable from our eastern coast, and have discontinued doing so in consequence of the difficulty attending its carriage inland, and from the introduction of more portable artificial manures in the market. Should this Fish Manure contain all the well-known fertilizing properties of raw fish concentrated in a dry and portable state, I consider it will prove a highly beneficial manure to the farmer, as I have no doubt it can be produced at a moderate price, thereby possessing the great desiderata we all need at the present time to check the extravagant rate of Peruvian guano."

J. B. LAWES, Esq.—"A manure made from Dried Fish, containing, according to Professor Voelcker's analysis—64 per cent. of organic matter, 24 of phosphate of lime, and 11 of ammonia—would be a very valuable manure, and would meet with a ready sale in England at about 8*l.* per ton."

Professor STOCKHARDT.—"According to my analysis, I consider this Fish Manure to consist of rather more than one-half of bone, and a little less than one-half of dried nitrogenized matter. The relation of the chief constituents to one another (nitrogen compounds to phosphates), places the manure midway between Bonedust and Peruvian guano. The value, according to its constituents, is two-thirds the price of the best genuine Peruvian guano."

Professor WAY.—"A sample of Fish manure was lately prepared in my laboratory and under my immediate superintendence from the refuse of Cod-fish, this refuse consisting of the head, bones, and fins of the fish from which the flesh and liver had been carefully removed, as practised in the North Sea Fisheries. A portion of the dried and pulverized product was submitted to Dr. Voelcker for analysis, and contains, according to his analysis, 11 per cent. of Ammonia, and 24 per cent. of Phosphates of Lime and Magnesia. My own analysis gives somewhat more Ammonia than that of Dr. Voelcker; but taking his quantities as a basis, I have no hesitation in saying that this Manure would command a ready sale, and that its market value is at least 8*l.* per ton."

Fuller Prospectuses with more detailed information, Copies of Certificates and proofs of the facts submitted, and Forms of Application for Shares, can be had at the Offices of the Company, or will be forwarded on application.

Tenant Farmers' Manure Company.

ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.

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THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.

Chairman—JONAS WEBB, Esq., Babraham, Cambridgeshire.

Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.

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Offices: 109, Fenchurch Street, London, E.C.
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Royal Agricultural Society & International Exhibition.

MUSGRAVE'S PATENT STABLE FITTINGS, COW HOUSE FITTINGS, and IRON PIGGERIES, and

MUSGRAVE'S PATENT SLOW COMBUSTION STOVES are to be seen at the Royal Showyard, Battersea Park, Stand No. 238, and in the Exhibition (No. in Catalogue, 6159).

These inventions differ from any other, are superior in efficiency, strength, and appearance, and less in price. They alone obtained the Medals of the Royal Agricultural Societies of England and Ireland last year

MUSGRAVE BROTHERS, Belfast.

E. WOLFF and SON'S Solid INK PENCILS in Cedar, for GARDEN TALLIES.—These Pencils are the best and cheapest invention ever used for writing on Garden Tallies of all descriptions; the action of the air, rain, &c., not having the slightest effect upon them. The advantages resulting from their use are; firstly, the simplicity of an ordinary lead pencil; secondly, the superiority and portability of a dry pencil over liquid ink or paint; and thirdly, THEIR REASONABLE PRICE, which places them within the reach of all classes. These pencils are also useful for all kinds of writing, memoranda, &c.

Price 3*d*. each; extra thick, 6*d*. each. To be had retail of all Seedsmen, Nurserymen, and Stationers, and wholesale at the Manufactory,

22 & 23, Church Street, Spitalfields, N.E.

PHOSPHO GUANO.

PETER LAWSON & SON, GENERAL CONTRACTORS,

EDINBURGH, LONDON, and HULL,

Beg to intimate that the STOCKS in Warehouse for this Season's supply have just undergone careful Analysis by the following eminent Chemists, whose reports are subjoined:—

Opinion of Prof. VOELCKER, *Consulting Chemist to the Royal Agricultural Society of England, and Professor of Chemistry in the Royal Agricultural College, Cirencester.*

"Having expressed on former occasions a very favourable opinion on the intrinsic value of this fertiliser, and its uses in Agriculture, I can refer you for particulars to my previous reports; and would only observe that the sample analysed for you this year is as concentrated and finely prepared as that which I analysed for you last year. In a Manure of acknowledged highly fertilising character, I need hardly say uniformity in composition and preparation speaks highly in its favour.
(Signed) "AUGUSTUS VOELCKER."

Opinion of Dr. ANDERSON, *Chemist to the Highland and Agricultural Society of Scotland, and Professor of Chemistry in the University of Glasgow.*

"This sample of Phospho-Peruvian Guano is of excellent quality, and the favourable opinion I have expressed regarding it on former occasions remains unchanged.
(Signed) "THOMAS ANDERSON."

Opinion of Dr. STEVENSON MACADAM, *Lecturer on Chemistry, School of Arts, and Surgeons' Hall, Edinburgh.*

"In contrasting the analytical results of the examination of this season's samples with the guaranteed analysis, it will be observed that the fertilising ingredients are much increased in the present lots, and I am confident that the 'Phospho' will continue to uphold its high position as an excellent General Manure, especially for the Root Crops.
(Signed) "STEVENSON MACADAM."

Opinion of Dr. HODGES, *Professor of Agriculture in Queen's College, Belfast, and Chemist to the Chemico-Agricultural Society of Ulster.*

"I have much satisfaction in reporting that your Manure continues to exhibit those excellent qualities to which I have on former occasions directed public attention. I can with confidence recommend it to the farmers of this country as a really valuable fertiliser. During the past year I have received several additional reports as to its successful employment; and I am aware that some of our most extensive Root growers are fully satisfied with their purchases from you last season.
(Signed) "JOHN F. HODGES."

Opinion of Dr. APJOHN, *Chemist to the Royal Agricultural Society of Ireland, and Professor of Chemistry in the University of Dublin.*

"It is scarcely necessary for me to say that the Phospho Guano is a Manure of superior quality. Its unusually large amount of Bi-phosphate of Lime must make it of high value for the growth of Swedes, Mangels, &c., while, in consequence of its richness in ammonia, it may be applied with equal success as a top-dressing to Meadows or Pasture Land, and for the development of every variety of Cereal crops. I find that, calculating with the constants which I am in the habit of employing, its money value is 12*l*. 9*s*. 8*d*. per ton.
(Signed) "JAMES APJOHN."

Price, Free on Rail, £12 5s. per Ton, Bags included.

*** *None but authorised Agents are allowed to sell this Guano. Where no Agents have been appointed, and should any difficulty arise in procuring supplies, orders may be sent direct to*

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GREEN'S

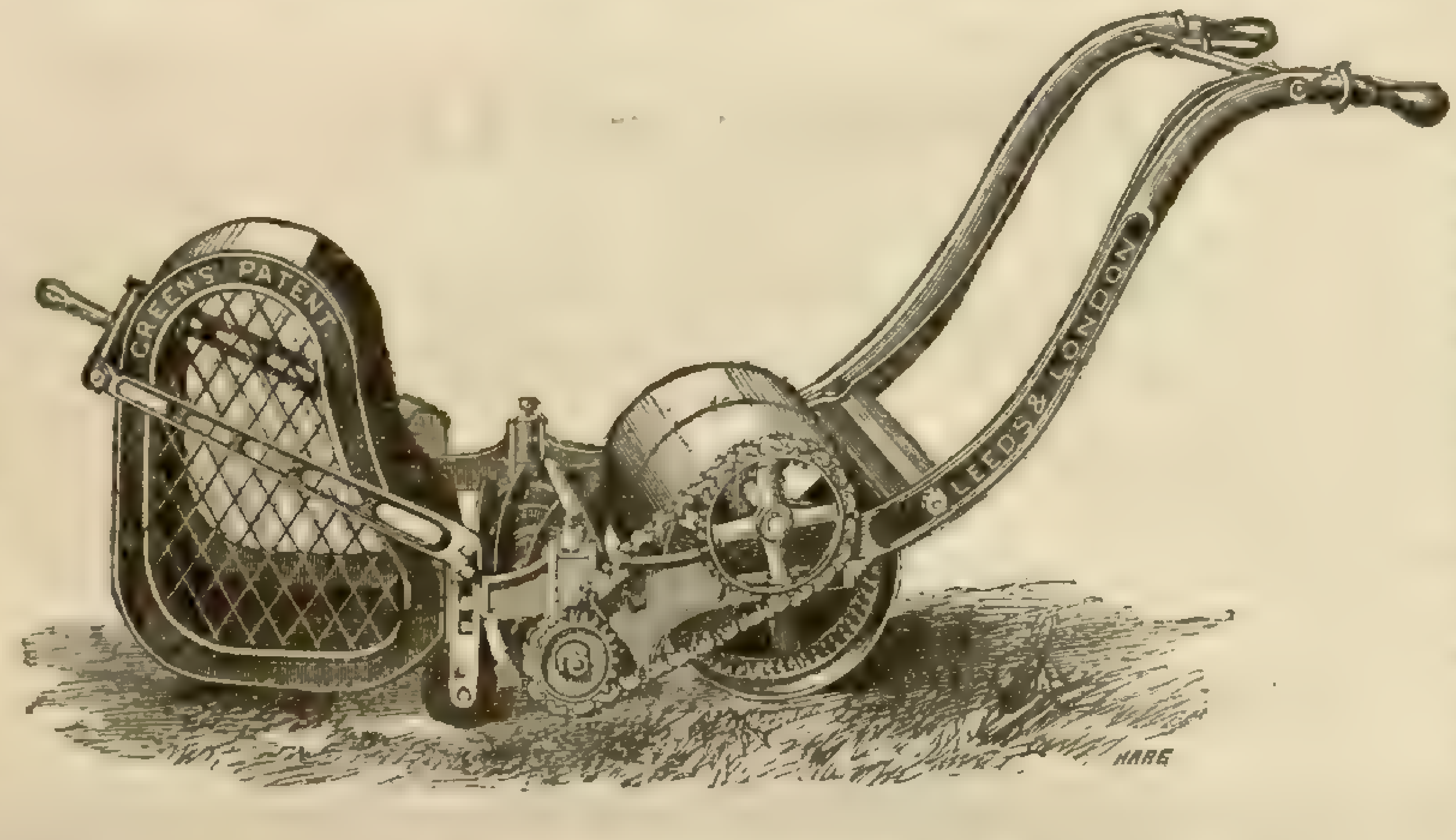
LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THOMAS GREEN can with confidence state that he has succeeded in bringing forward for the ensuing season a Machine which is so novel in its character that any person, however unskilled, is enabled to use it with confidence and ease; and by its thoroughly mechanical construction is pronounced by practical men to be the *ne plus ultra* of perfection. Every improvement that has suggested itself from past experience has been put to practical test, and the results are that the Machines for which Her Majesty's Royal Letters Patent *have recently been obtained* are immeasurably superior to anything of the kind ever brought before the Public. They combine all that efficiency and simplicity can express, and are calculated



to keep Lawns in the highest state of perfection, which cannot be equalled by any other means. They are adapted both in size and price to the very smallest plots, as well as Lawns acres in extent. Since their introduction the sale of these Machines has more than doubled each succeeding year, and has now attained *the largest sale of any Machine "extant;"* have proved to be the best, having carried off *every Prize* that has been given in all cases of competition. They are made from the best materials, and of superior workmanship; are delivered *Carriage Free* to all the principal Railway Stations and Shipping Ports in England; *are warranted to give satisfaction*, and if not approved can be at once returned, if sent carriage free to Leeds.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
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Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0 ...	... £9 17 6
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This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l*. 10*s*. If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

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To Cut 30 inches	£20 0 0 ...	... £21 10 0
To Cut 36 inches	23 0 0 ...	... 24 16 0
To Cut 42 inches	26 0 0 ...	... 28 2 0
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Leather Boots for Horse, per set, £1 4*s*.

Donkey and Pony Machines, including Box of Requisites & Traces.

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To Cut 24 inches	£11 10 0 ...	... £12 10 0
To Cut 26 inches	12 10 0 ...	... 13 12 0
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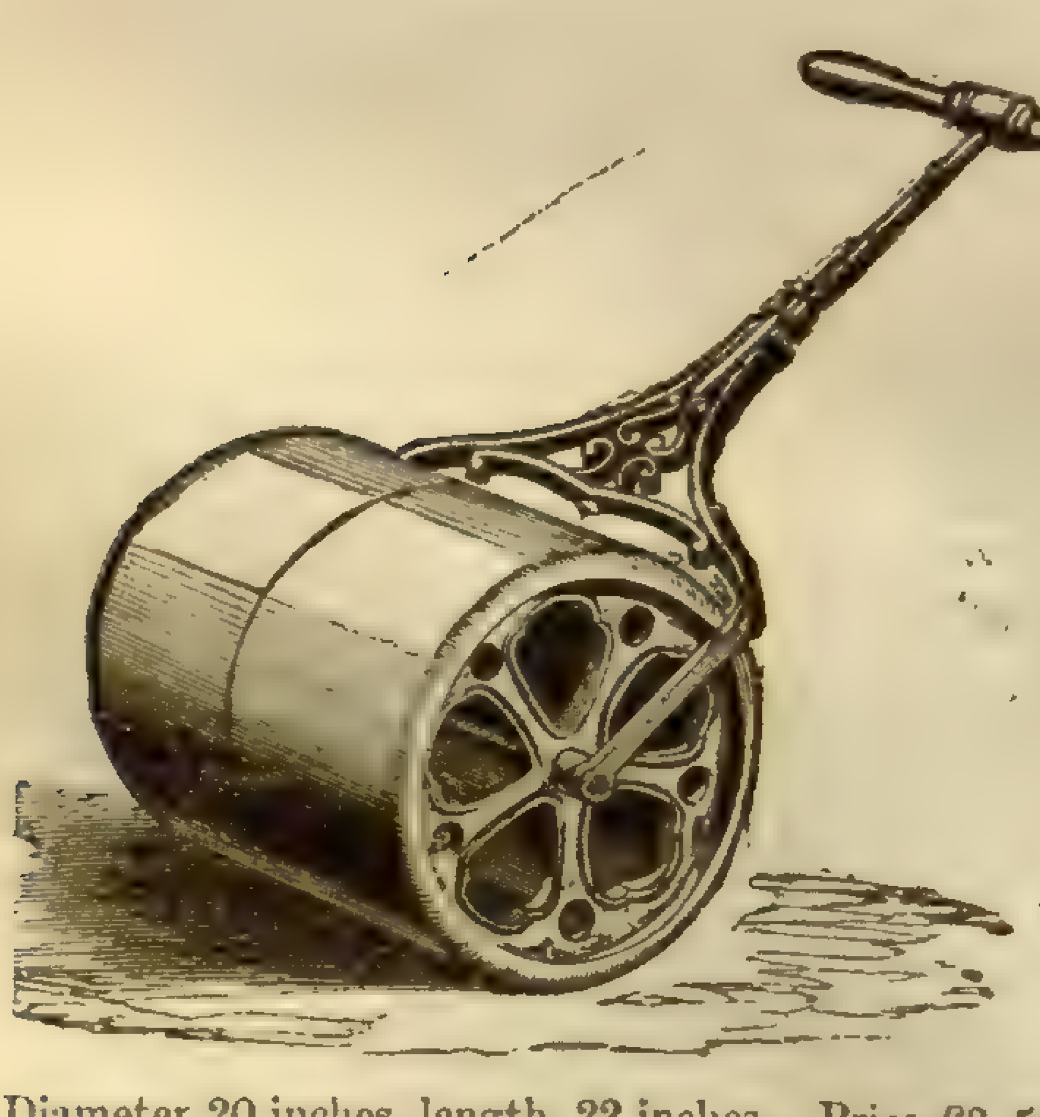
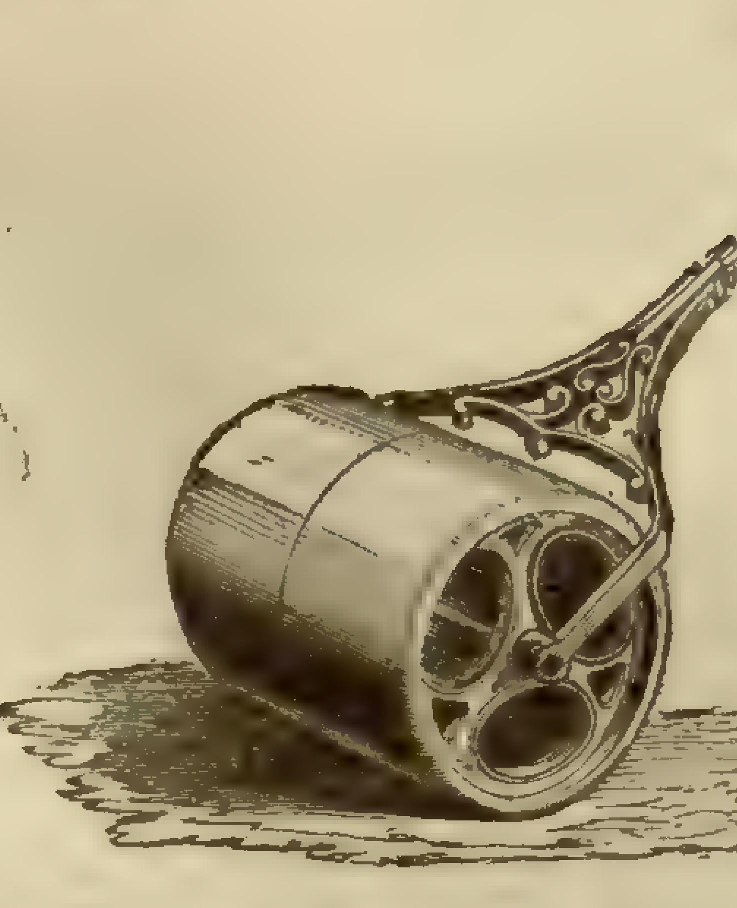
Leather Boots for Donkey, 16*s*.; for Pony, 20*s*.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

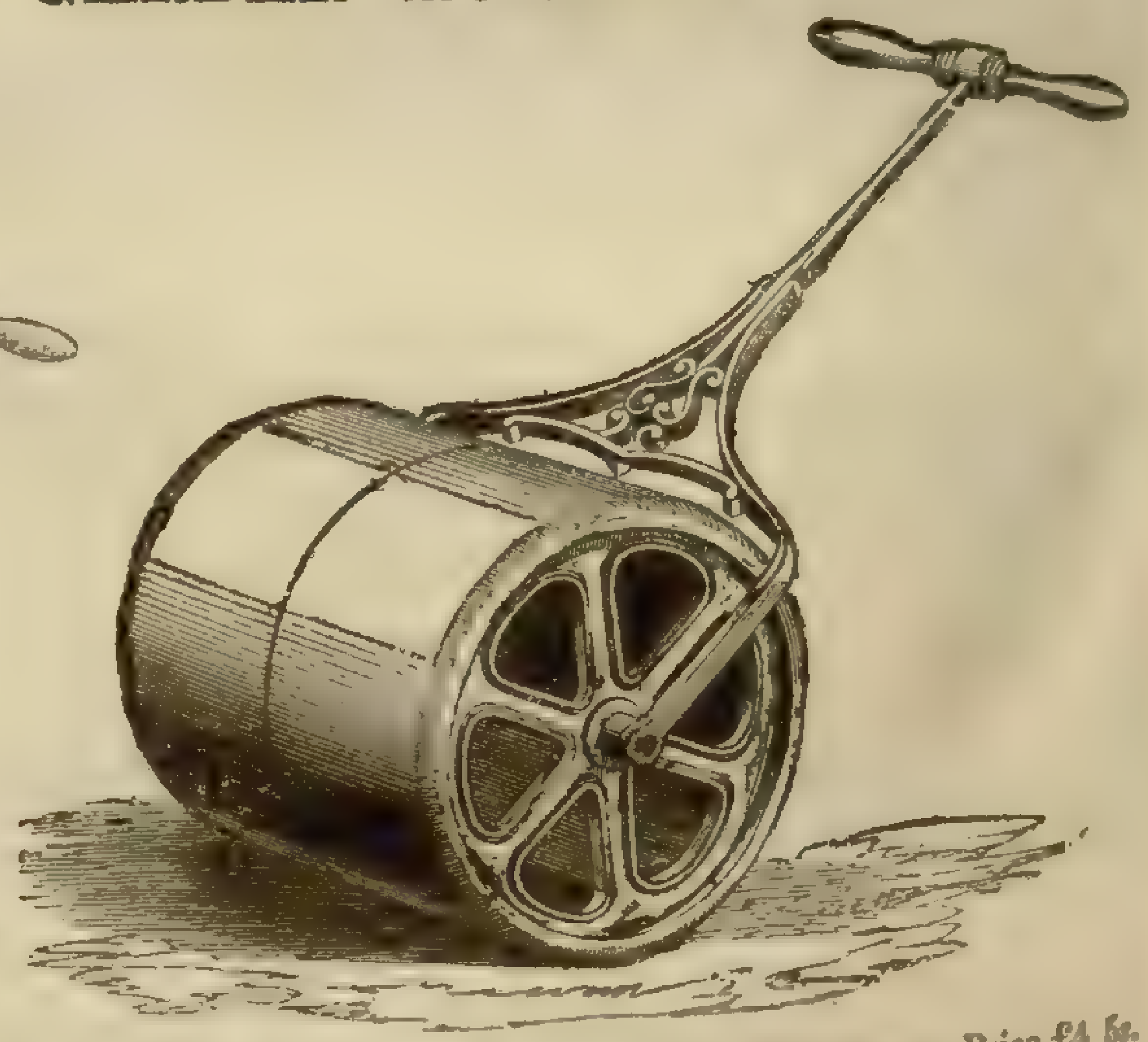
GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length, 22 inches....Price £3 5*s*.



Diameter 16 inches, length, 17 inches....Price £2 10*s*.



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LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

The superiority of these Machines is now fully established, and they have acquired a reputation and standing of the very highest character, as the following list of distinguished Patrons will fully guarantee.

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The Most Hon. the Marquis of Exeter, Burghley House, Stamford
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Baron James de Rothschild, Paris
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Baron de Mattsakr, Vollrahtsruhe, Teteron
General Blanshard, Globe House, Hampton
General Reeve, Leadenham House
Lieut-General Higginson, The Croft, Marlow, Bucks
Colonel Jackson, Ross
Colonel Brise, Braintree
Colonel Loyd Lindsay, Wantage
Colonel Passy, Cheltenham
Colonel Browne, Heathfield House
Colonel Cartwright, Kineton, Banbury
Colonel Carmichael, C.B., Stone Court, near Berkeley
Colonel Clayton, Linden Wood, Lower Tooting
Colonel Greenwood, Brookwood Park, Alresford
Colonel Vandeleur, M.P., Kilrush, Ireland
Colonel Seymour, Park Place, Staines
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Colonel Gossell, Mecktam, near Dorking
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Lt.-Colonel Bower, Droxford
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THE ROYAL BOTANICAL GARDENS, REGENT'S PARK.
THE CRYSTAL PALACE COMPANY'S GARDENS, SYDENHAM.
THE KENSINGTON PALACE GARDENS.
THE HYDE PARK GARDENS.
And in most of the principal Squares in the Metropolis.

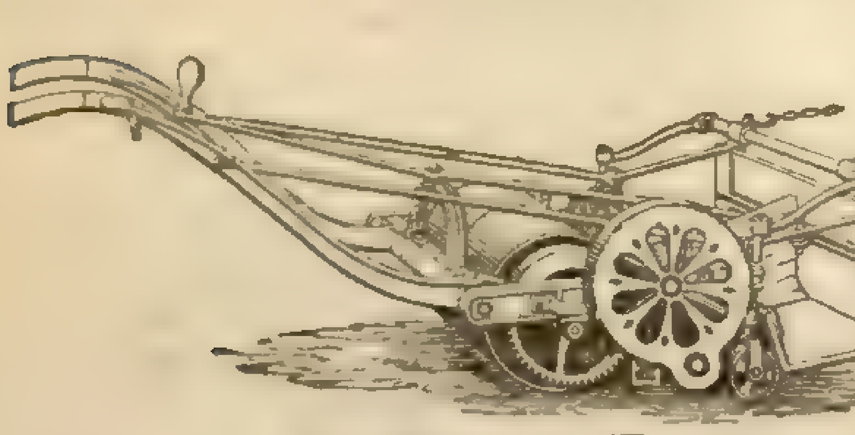
Although the Patentee has only been a manufacturer of Lawn Mowers during the last 7 years, he has pleasure in stating that 12,000 Machines have been sold and that 50 Machines are now sent off daily, thereby indicating the superiority of Green's Lawn Mowers, the increased sale of which may be readily understood when it is acknowledged that in every case of competition they have been declared the best and have carried off every prize.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

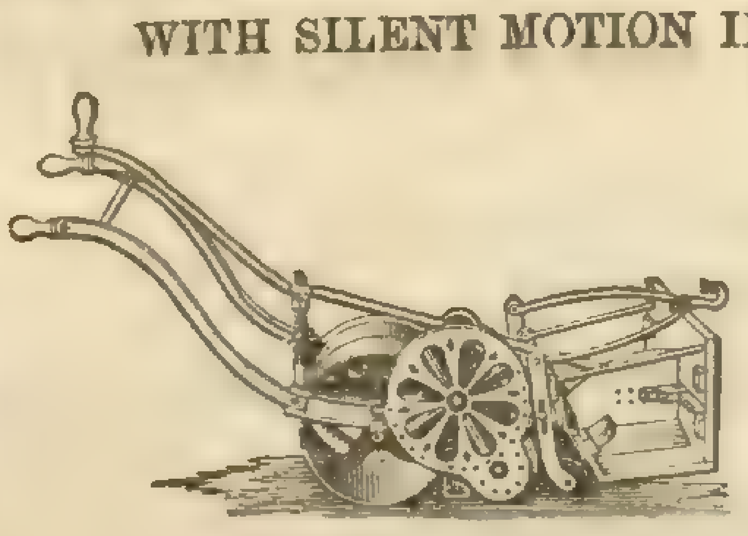
SHANKS' NEW IMPROVED PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

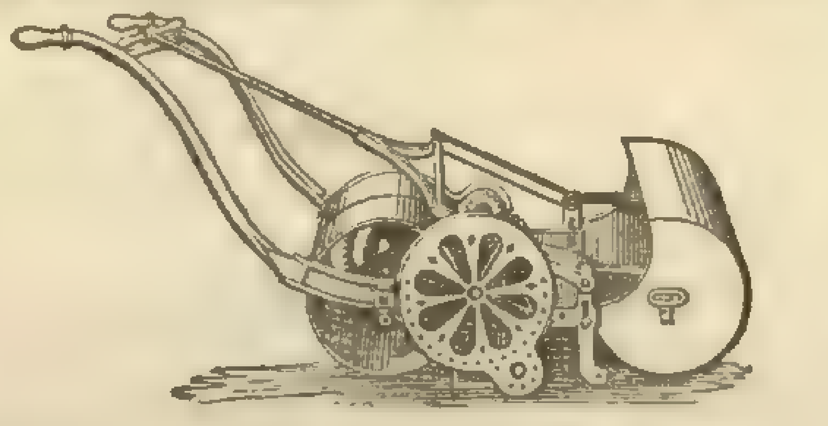
WITH SILENT MOTION IF SPECIALLY DESIRED.



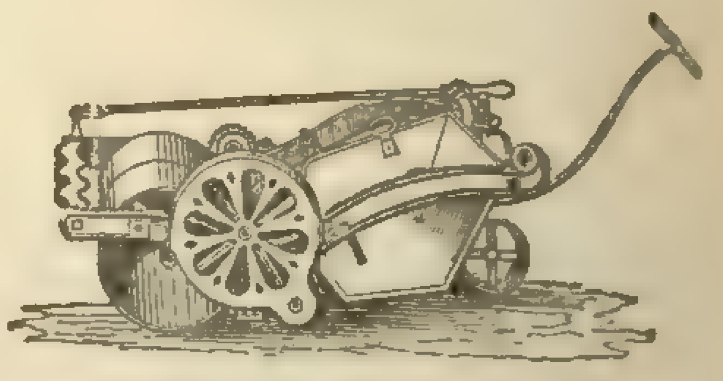
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

THE SHANKS' NEW PATENT MACHINE for 1862 Mows the Grass Wet or Dry, on Lawns uneven or otherwise, in a much neater manner than the Scythe, and at half the expense. These celebrated Machines have established their deserved reputation not only in every part of the United Kingdom, but throughout Europe, and also in India, Australia, America, and other countries. Among the numerous distinguished and well-known patrons to whom the celebrated Shanks' Lawn Mower has been furnished, may be mentioned:—

HER MOST GRACIOUS MAJESTY THE QUEEN, for the Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral.
His Majesty The Emperor of the French
His Royal Highness The Prince of Prussia
His Excellency The Lord Lieutenant of Ireland
His Excellency The Belgian Minister
The Right Hon. Lord Palmerston
His Grace the Duke of Bedford
His Grace the Duke of Newcastle
His Grace the Duke of Marlborough
His Grace the Duke of Rutland
His Grace the Duke of Sutherland
His Grace the Duke of Buccleuch
His Grace the Duke of Devonshire
His Grace the Duke of Leinster
His Grace the Duke of Athole
His Grace the Duke of Norfolk
His Grace the Duke of Hamilton & Brandon
His Grace the Duke of Argyll
His Grace the Duke of Northumberland
His Grace the Duke of Roxburgh
His Grace the Duke of Wellington
HisGrace the Duke of Buckingham & Chandos
His Grace the Archbishop of York
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The Right Hon. the Earl of Rosslyn
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The Right Hon. Earl Fortescue
The Right Hon. Earl Vane
The Right Hon. the Countess of Stair
The Right Hon. Viscount Seaham
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The Right Hon. Viscount Eversley
The Right Rev. the Lord Bishop of Durham
The Right Rev. the Lord Bishop of Ripon
The Right Rev. the Lord Bishop of Killaloe
The Right Hon. Lord Bagot
The Right Hon. Lord Monck
The Right Hon. Lord Hatherton
The Right Hon. Lord Kinnaird
The Right Hon. Lord Lovat
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The Right Hon. Lord Braybrooke
The Right Hon. Lord Blantyre
The Right Hon. Lord Berwick
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The Right Hon. Lord Churchill
The Right Hon. Lord Ossulston
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The Right Hon. Lord Elibank
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The Right Hon. Lord Rokeby
The Right Hon. Lord Rayleigh
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Besides numbers of other well known and distinguished persons both in this country and abroad.

The first practical Gardeners of the day, who have devoted their attention to examining all the different Lawn Mowers offered, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in this Machine which is not of *real practical worth;* and this important consideration is apparently set aside by most makers, whose struggles seem to be *more for what is novel and attractive than for sterling merit.* The important Improvements introduced into the Shanks' Patent Lawn Mower last season have undergone a thorough practical test, and satisfied the most sanguine expectations. Still further improvements have been introduced into the Machine this season, the effect of which still further establishes the high character it has already gained as the most *complete, the cheapest, and most durable* Lawn Mowing Machine. The style in which the work is executed cannot be surpassed—being very much neater than the Scythe, while at half the expense—and it is *quite immaterial whether the Lawn be level or otherwise, or whether the Grass be wet or dry.*

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Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Width of Cutter.	Price		Width of Cutter.	Price	
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Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*;

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Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*;

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Width of Cutter.	Price		Width of Cutter.	Price	
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man.*
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No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*			

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Width of Cutter.	Price		Width of Cutter.	Price	
No. 16.—16-inch Machine	£6 5 0	*Easily worked by a Stout Lad.*	No. 18.—12-inch Machine	£5 5 0	*Easily worked by a Lady.*
No. 17.—14-inch Machine	5 15 0	*Easily worked by a Stout Lad.*			
Silent Movement, 7*s.* 6*d.* extra.			Silent Movement, 4*s.* extra.		

*** *The Machines are warranted to give ample satisfaction, and if not approved of may be at once returned.*

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AND AT

STANDS 139 & 244, ROYAL AGRICULTURAL SOCIETY'S SHOW, BATTERSEA PARK, June 23 to July 2.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

TWO HUNDRED SETS
OF
STEAM PLOUGHING and CULTIVATING APPARATUS
HAVE NOW BEEN SENT OUT BY
JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD.

Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

DEANE & COMPANY'S
HORTICULTURAL TOOLS.

DEANE'S MOWING MACHINES, with Boyd's Patented Improvements, 5*l.*, 7*l.*, 7*l.* 10*s.*, 8*l.* 10*s.*
GARDEN ENGINES, Galvanised Iron. Prices 55*s.*, 65*s.*, 78*s.*, 90*s.*, 100*s.*, 110*s.*
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FLOWER STANDS, 4*s.* 6*d.* each.
CAST-IRON ORNAMENTAL FLOWER STANDS, to hold Seven Vases, 27*s.*
GREEN'S PATENT MOWING MACHINES.
GREENHOUSE SYRINGES, 8*s.*, 10*s.*, 18*s.* 6*d.*
GARDEN ROLLERS, 1*l.* 14*s.* 6*d.*, 2*l.*, 2*l.* 12*s.*, 3*l.* 3*s.*, 3*l.* 18*s.*, 4*l.* 13*s.*, 5*l.* 12*s.*, 7*l.* 10*s.*
GARDEN STOOLS, 4*s.* 6*d.*
GARDEN SEATS, from 25*s.*
BOYD'S SELF-ADJUSTING SCYTHE, 10*s.* 6*d.*
WIRE WORK, 18 in., 4*d.* per yard run.

Every Implement for Garden use on the lowest terms.

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CARSON'S
ORIGINAL ANTI-CORROSION PAINT.

WHITE; LIGHT STONE; DRAB OR PORTLAND DO; BATH DO.; CREAM COLOR	30*s.* per cwt.	BRIGHT RED; DARK DO. (OR BRICK COLOR); LIGHT & DARK CHOCOLATE; BLACK	26*s.* per cwt.
LEAD COLOR; LIGHT AND DARK OAK	26*s.* "	BRIGHT GREEN; DEEP GREEN; BLUE (for Carts & Waggons)	44*s.* "

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THE RUSSIAN GOVERNMENT | MOST OF THE NOBILITY & GENTRY | COLLIERIES, IRON MASTERS, &c.

It is extensively used at home and abroad for all kinds of

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and every kind of BRICK, STONE, COMPO, &c., it is unrivalled, presenting the appearance of fine cut stone.

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Patterns, Cards, and Testimonials sent upon application to

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No Agents throughout the United Kingdom.

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Galvanised Iron Water Cistern
for Cottage Houses, &c., to contain 50 gallons, 26*s.*; 80 gallons, 31*s.* each; and 140 gallons, 37*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

Galvanised Iron Pumps
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Galvanised Iron Swing Water Barrows
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35*s.* 0*d.* each.

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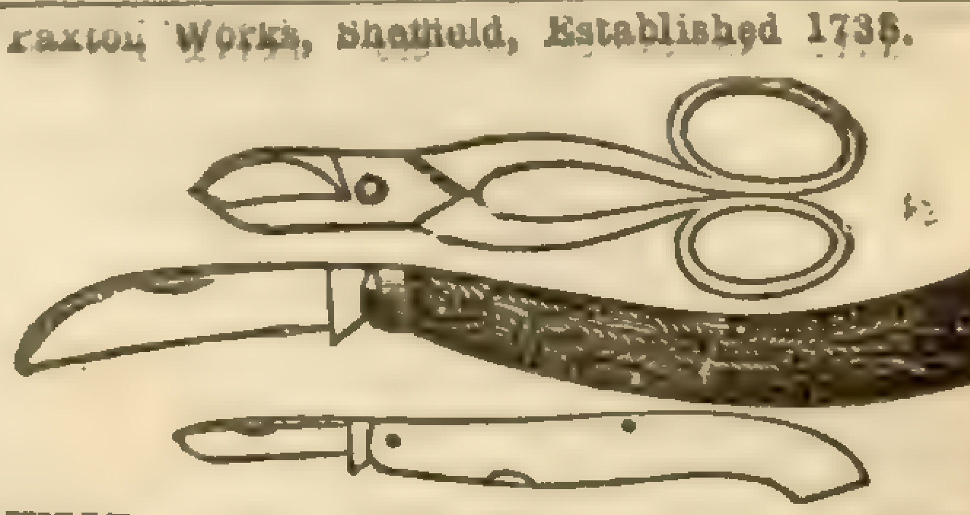

SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c. Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

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CAUTION. None are genuine except marked SAYNOR, or SAYNOR, Maker. Other marks would cause the purchaser disappointment.

WANTED, a COUNTRY HOUSE, FURNISHED, in thorough repair, dry, and upon Sand or Gravel. With or without Shooting. Rent and all expenses not to exceed 100*l.* per annum.
Apply to P. P. C., Post Office, Park Street, London, W.

TO BE LET, for a Term, with immediate possession, in a fashionable Watering Place on the South Coast of Devon, an Old Established NURSERY and FRUIT GARDEN, of about 2 acres, with Greenhouses, &c., attached; suitable to persons of small capital and industrious habits. Stock to be taken at a Valuation. Rent moderate.
Application to be made to Mr. THOMAS CHARMES, Seed Merchant, 204, High Street, Exeter. References required.

BLACK KERRY CATTLE.—Select animals of this valuable and small breed can be delivered in Cork by RICHARD G. CAMPION, Esq., Holly Hill, Rathcormac, who always holds a large stock of the same.

NORFOLK or SUFFOLK POLLED CATTLE are unsurpassed for Milking properties, and for the quality of their Beef.
Gentlemen wishing to purchase Animals of this profitable and handsome breed, can be supplied on application to THOMAS FULCHER, Elmham, Thetford, Norfolk.

Sales by Auction.

Established Orchids and Hardy Ferns.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, June 24, at half past 12 o'Clock precisely, a SMALL COLLECTION of ESTABLISHED ORCHIDS, the property of a gentleman leaving England, comprising choice Vandas, Aerides, Cattleyas, Cypripediums, Dendrobiums, Lælias, Oncidiums, Saccolabiums, &c. Also a large collection of splendid Hardy FERNS, about 12,000, collected by a gentleman in South Wales, consisting of fine masses of Polypodiums, Woodsias, Aspidiums, Cystopteris, Aspleniums, Scolopendriums, Blechnums, Hymenophyllums, Osmundas, &c., all exceedingly healthy and very ornamental.
May be viewed the Morning of Sale and Catalogues had.

MESSRS. LYNE AND SON, AUCTIONEERS, Oddington, near Stow-on-the-Wold, will SELL on FRIDAY, June 27, at 4 o'Clock (the second day of the Royal Agricultural Society), on a piece of Ground near the Battersea West Lodge, 50 COTSWOLD SHEARLING RAMS and a few Older SHEEP, all bred by and the property of T. Beale Brown, Esq., of Salperton Park, Gloucestershire, whose Prize-getting Flock is too well known to require comment.

PRELIMINARY SALES.
Royal Agricultural Show, Battersea Park.

MR. N. BALL will SELL by AUCTION, on THURSDAY, July 3, and MONDAY, July 7, 2000 IRON HURDLES, together with a large quantity of BUILDING MATERIALS.
Catalogues to be had of the Auctioneer, Wandsworth, and at the Offices of Mr. MANNING in the Show Yard, Battersea, and 251, High Holborn, W.C.
N.B. Several PORTABLE COTTAGES, suitable for Shooting and Fishing Boxes, are also for Sale.

Important Sale of First-class Short-horns, at Bushey Grove Farm, near Watford, Herts.

MR. WETHERELL is honoured with instructions from STEWART MARJORIBANKS, Esq., of Bushey Grove, to announce for SALE by AUCTION, on October 1, his entire and very valuable breed of Short-horns, comprising about 80 head of Bulls, Cows, and Heifers, of the choicest and most fashionable blood. Specimens of the stock may be seen in several classes at the forthcoming Royal Show at Battersea. The whole will be sold without reserve, Mr. Marjoribank's state of health being his sole reason for disposing of his splendid herd.
Catalogues are being prepared and may shortly be had, with further particulars, of Mr. WETHERELL, Aldbrough, Darlington; or of Mr. TALLENT, Bushey Grove Farm, Watford.
The Herd may be seen any time, Sunday excepted, on application to Mr. TALLENT, at the Farm.
Aldbrough, Darlington, June 21.

BATTERSEA PARK SHOW.

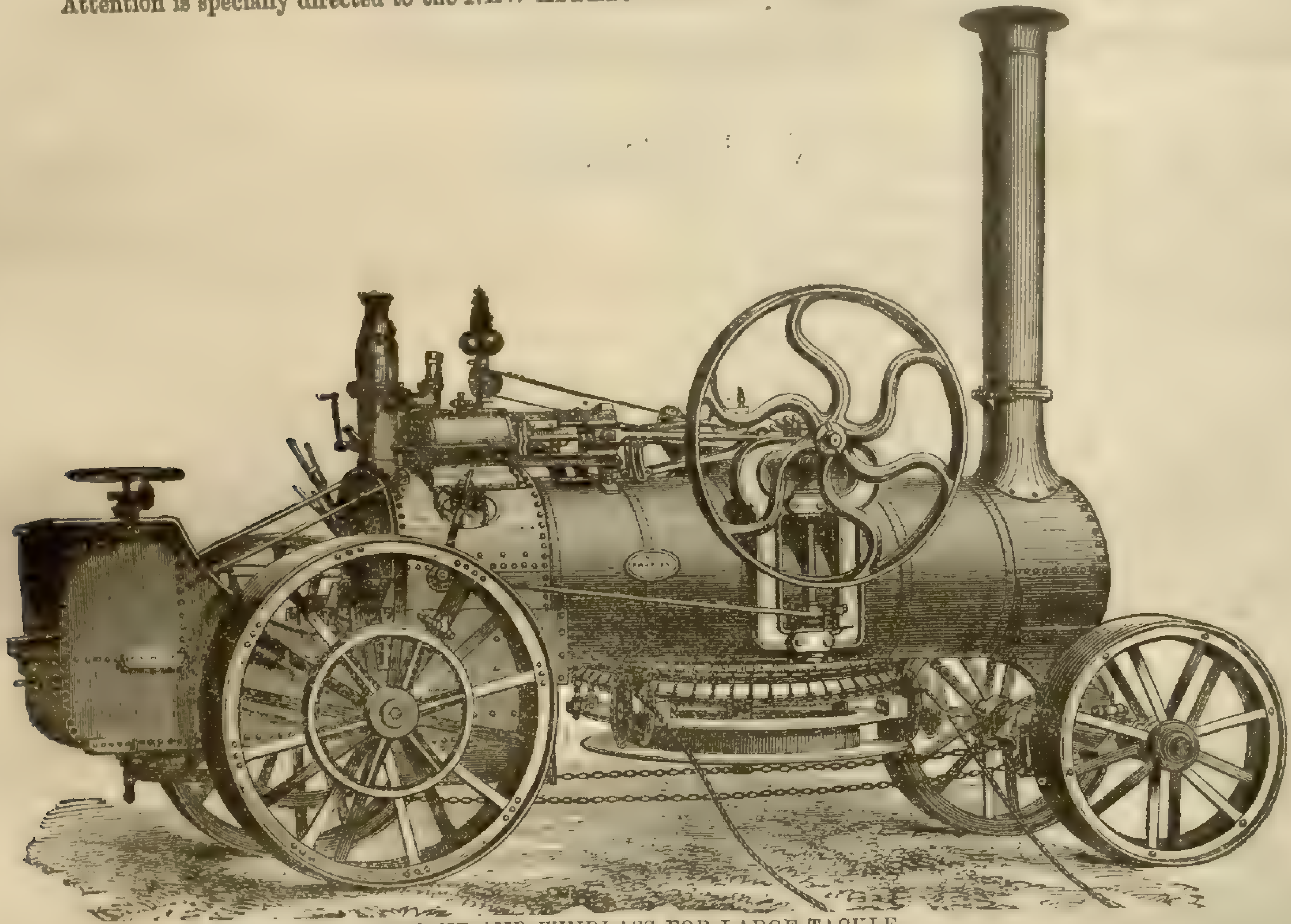
ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

FOWLER'S PATENT STEAM PLOUGHING AND CULTIVATING MACHINERY

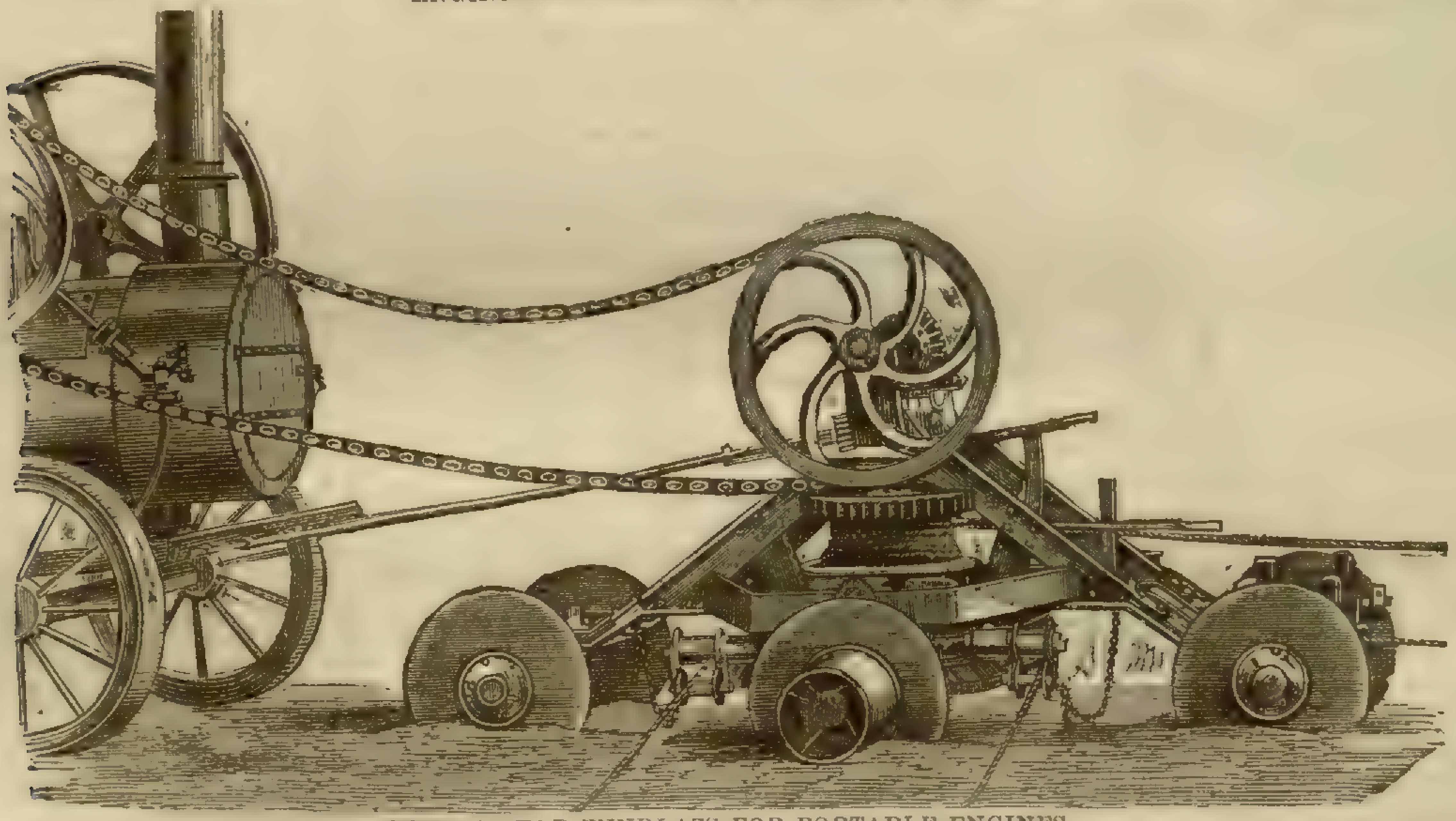
MAY BE SEEN AT WORK ON THE

TRIAL GROUND at FARNINGHAM, KENT, on THURSDAY, FRIDAY, and SATURDAY, JUNE 26, 27, & 28.

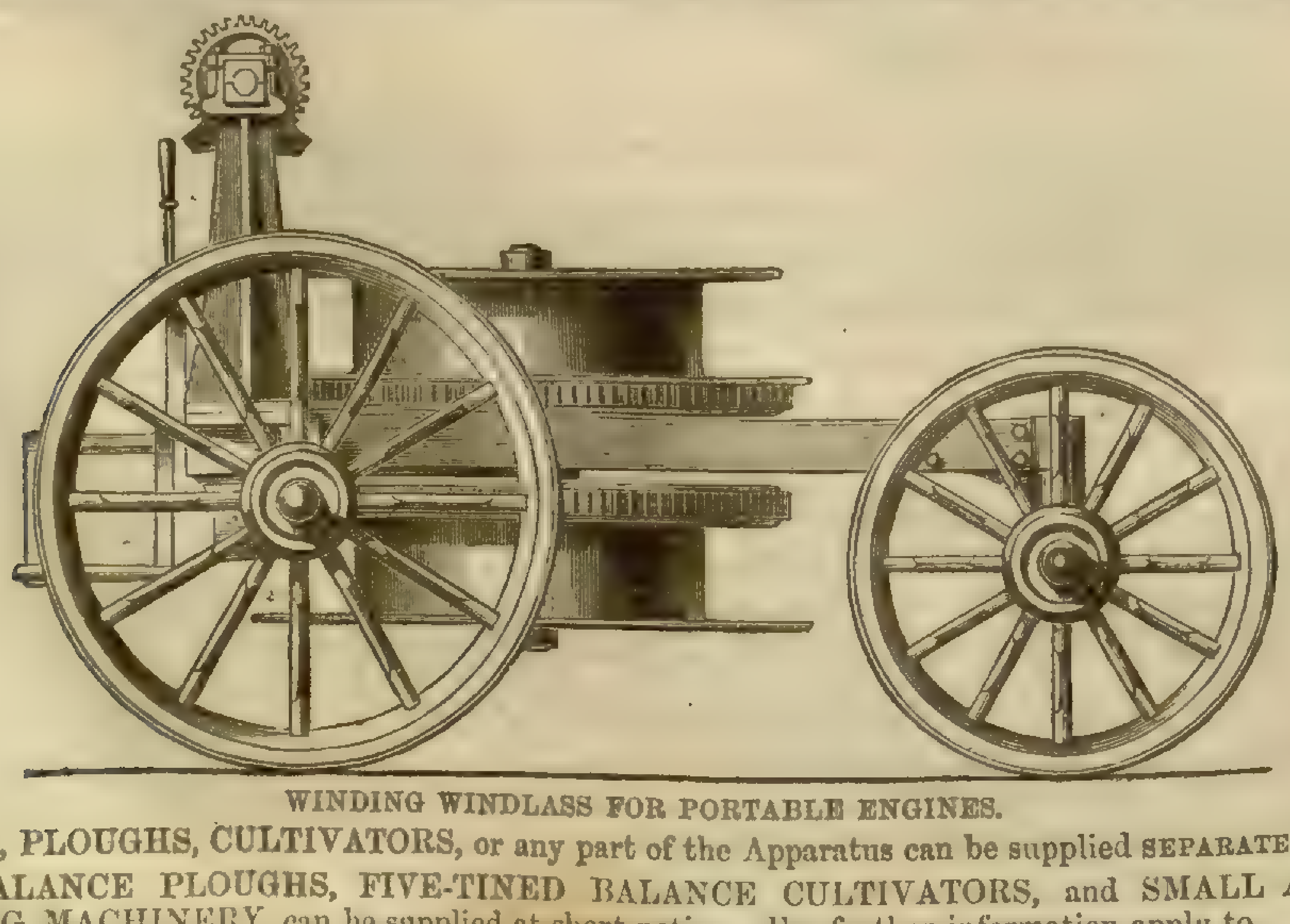
Attention is specially directed to the NEW APPLICATIONS for ORDINARY PORTABLE ENGINES.



ENGINE AND WINDLASS FOR LARGE TACKLE.



DISC ANCHOR WINDLASS FOR PORTABLE ENGINES.



WINDING WINDLASS FOR PORTABLE ENGINES.

ANCHORS, PLOUGHS, CULTIVATORS, or any part of the Apparatus can be supplied SEPARATE if required.

TWO and THREE FURROW BALANCE PLOUGHS, FIVE-TINED BALANCE CULTIVATORS, and SMALL ANCHORS adapted for use with any STATIONARY STEAM-CULTIVATING MACHINERY, can be supplied at short notice. For further information apply to

JOHN FOWLER, STEAM-PLOUGH WORKS, LEEDS, or 28, CORNHILL, LONDON, E.C.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 26.—1862.] SATURDAY, JUNE 28. {Price Fivepence. Stamped Edition, 6*d*.

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HORTICULTURAL GREAT SHOW, WEDNESDAY, July 2. The Garden will not be open till One o'Clock.

ROYAL HORTICULTURAL SOCIETY'S GREAT SHOW, at South Kensington, WEDNESDAY next, July 2. Open at One o'Clock. Bands of Royal Artillery and Royal Marines commence at Two o'Clock. Tickets purchased before the day, 5*s*.; on the day, 7*s*. 6*d*. Visitors can pass under cover to the Show.

GREAT SHOW of ROYAL HORTICULTURAL SOCIETY, July 2. The Garden will be open at One o'Clock. Visitors cannot be admitted either from the Exhibition to the Garden, or to the Exhibition through the Garden, before that hour.

EXHIBITION of HORTICULTURAL IMPLEMENTS, GARDEN POTTERY, &c., at the ROYAL HORTICULTURAL SOCIETY'S GREAT SHOW, WEDNESDAY, July 2.

HORTICULTURAL GARDEN. WEEK ENDING JULY 5.

Monday ..	.. Admission 1*s*. 0*d*.	Open at Nine.
Tuesday	.. Admission 1*s*. 0*d*.	Open at Nine.
Wednesday	.. Admission 7*s*. 6*d*.	Open at One.
Thursday	.. Admission 1*s*. 0*d*.	Open at Nine.
Friday ..	.. Admission 2*s*. 6*d*.	Open at Nine.
Saturday	.. Admission 5*s*. 0*d*.	Open at Nine.

Bands daily at Four—on Wednesday at Two o'Clock.

ROYAL BOTANIC SOCIETY, Regent's Park, N.W.
The LAST EXHIBITION this Season of PLANTS, FLOWERS, and FRUIT, will take place on WEDNESDAY, July 9.
Tickets to be obtained at the Gardens only, by Vouchers from Fellows or Members of the Society, price 5*s*., or on the day of Exhibition, 7*s*. 6*d*. each.
Bands will play from 2 to 7 o'clock.

CRYSTAL PALACE—GREAT ROSE SHOW. SATURDAY next, July 5.
The Palace will be opened at 9 o'clock, and the barriers enclosing the Rose stands will be removed at 12 o'clock precisely.
Full Military and Orchestral Bands throughout the day.
Admission by Season Tickets free, or on payment of Half a Crown.
, By special request, M. Blondin will give a performance on the high rope in the afternoon.

THE GRAND HORTICULTURAL FETE and ROSE SHOW of the STAMFORD HORTICULTURAL SOCIETY will be held in Burghley Park, Stamford, on THURSDAY, July 17, in connection with the Northamptonshire Agricultural Society's Annual Exhibition.
The Premiums offered amount to 200*l*., and include 6 Silver Cups.
The Band of the Coldstream Guards will attend, by permission of Colonel Percival.
Entries close on July 7. Schedules, &c., may be obtained on application to Messrs. Laxton & Hewitt, Hon. Secs., Stamford.

BIRMINGHAM ROSE SHOW.—The FIRST GREAT ANNUAL EXHIBITION of ROSES, HORTICULTURAL TOOLS, and GARDEN ORNAMENTS, will be held in the Town Hall, Birmingham, on TUESDAY and WEDNESDAY Next, July 1 and 2.
The Private View on TUESDAY from 1 o'Clock, (at which hour the doors will be opened) until 6, admission 2*s*. 6*d*.; from 6 until 9 o'Clock, admission 1*s*. On WEDNESDAY, from 9 o'Clock in the morning until 7 in the evening, admission 6*d*.
Mr. Stimpson will preside at the Town Hall Organ on Tuesday and Wednesday, and perform an interesting and appropriate selection of Music, full particulars of which appear in the Programme, to be obtained, together with Subscribers' Tickets, from the Honorary Secretaries.
B. A. Hallam, E. W. Badger, } Hon. Secs.
Herald Office, Birmingham.

GREAT ROSE SHOW at BIRMINGHAM.—The various Railway Companies have made liberal arrangements for CONVEYANCE of PASSENGERS.
For particulars, see Railway Companies' Advertisements and Local Bills.

SLEAFORD FLORAL and HORTICULTURAL SOCIETY.
Under Most Distinguished Patronage.
The FIRST EXHIBITION of PLANTS, FLOWERS, FRUIT and VEGETABLES, will be held in the grounds of Mr. Charles Sharpe, on THURSDAY, July 17.
Schedules of Prizes, and Certificates of Entry, may be obtained on application to
Frank Warwick, Hon. Secretary.
N.B.—Entries close on Monday, July 14, and space will be allowed for those who wish to show pens of Poultry, &c.
By the kind permission of His Grace the Duke of Newcastle, K.G., the Military Band of the Sherwood Rangers will be in attendance, under the direction of Mr. W. Lilly, Band-master.

To Nurserymen and Florists.
THE COUNCIL of the ROYAL HORTICULTURAL SOCIETY having a portion of the ground lately used as an American Garden vacant, are willing to receive offers from Nurserymen and Florists for the Planting for Exhibition of various kinds of Shrubs and Flowers.
Applications for space to be addressed to Mr. Eyles, Royal Horticultural Garden, South Kensington, W.

All the Best New Roses of 1862.
BY PLANTING THE ABOVE IMMEDIATELY A SEASON WILL BE GAINED.
WM. WOOD and SON have to offer fine strong healthy Plants in Pots, now ready for immediate planting. Early orders will secure the best specimens.
DESCRIPTIVE CATALOGUES on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

WM. PAUL'S ROSES and HARDY ORNAMENTAL TREES are now in full beauty. Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.
Nurseries and Seed Warehouse, Waltham Cross, N.

Roses.
PAUL and SON'S COLLECTION of ROSES will be in fine bloom throughout June and July. The Nurseries are reached in one hour by trains from Bishopsgate to Cheshunt Station, leaving London at 9.30 A.M., 12.46, 2.30, 3.30, 5.10, 6.10 P.M.
Old Cheshunt Nurseries, Herts, N.

RICHARD SMITH begs to inform the Public that he has a larger and finer COLLECTION of ROSES this season than he has ever had; but in consequence of their having been already twice pruned this season, they will not be in bloom for exhibition before the middle of July.
As the Stock is so large the prices will be very reasonable.
Nurseries, Worcester.

Roses in Bloom.
JOHN CRANSTON begs to announce that his large COLLECTION of ROSES is NOW in FULL BLOOM, and will continue in perfection for some weeks.
Nearly 20,000 plants can be seen growing upon the Manetti Stock, all in the finest health and vigour.
Nurseries, King's Acre, near Hereford.

ROSES.—The COLLECTION of ROSES at Sawbridgeworth is NOW in FULL BLOOM. Those on the Manetti Rose stock are particularly fine. A long day may be spent among Roses and experimental Fruit Tree culture. Trains to Harlow (the most convenient station, where flys attend) five times daily.
Thos. Rivers & Son, Nurseries, Sawbridgeworth.

Rose Nurseries, Hertford.
E. P. FRANCIS'S extensive COLLECTION of ROSES, extending over 50,000 Dwarfs in the finest state of cultivation on the Manetti Stock, is NOW in FULL BLOOM, and will continue to Flower during the Summer and Autumn Months. An early inspection is solicited.
Trains direct to Hertford by Eastern Counties and Great Northern Lines.
Morning and Evening are best for viewing Roses.

JAMES CARTER and CO., Seed Merchants and Nurserymen, 237 and 238, High Holborn, London, W.C.

Equalled by None.
J. DOBSON and SONS' splendid Hybridized CALCEOLARIA SEED, in sealed packets, 1*s*. 6*d*., 2*s*. 6*d*., 3*s*. 6*d*., and 5*s*. First Prizes given wherever exhibited.
Woodlands Nursery, Isleworth.

Prize Cineraria Seed.
J. DOBSON and SONS have carried off the First Prizes every time they have exhibited this season. New Seed, in sealed packets, 1*s*., 2*s*. 6*d*., and 5*s*.
Woodlands Nursery, Isleworth.

J. IVERY and SON'S Collection of New AZALEAS is NOW in BLOOM, and may be seen (Gratis) at their Dorking Nursery.

New Verbenas of 1862.
B. W. KNIGHT, Florist, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4*s*. per dozen, securely packed in tin box, post free. CATALOGUES of the varieties sent on application.

Pine Suckers.
WANTED, PROVIDENCE, BLACK PRINCE, and PRICKLY CAYENNE SUCKERS. Must be warranted clean and free from scale.
Apply by letter to R. C., Mr. M'Gregor, Seedsman, Merthyr Tydvil.

Catalogue of Fruits gratis on application.
THOMAS RIVERS has a few copies left of his last DESCRIPTIVE CATALOGUE of FRUITS (October, 1861), much at the service of his friends.
Nurseries, Sawbridgeworth.

To Gardeners.
FOR SALE, Cheap, 200 GRAPE VINES, from EYES, in Pots.
Apply to Mr. Preston, Nurseryman, corner of Richmond Road, Barnsbury, N.

Vines in Pots.
H. LANE and SON have to offer a large quantity of strong VINES in POTS, well set with Fruit, many of them with two to seven bunches.
Also a fine lot of Dwarf ROSES in POTS, suitable for immediate bedding. All orders shall have prompt attention.
The Nurseries, Great Berkhampstead, Herts.

Good Seeds, Carriage Free.
SUTTON and SONS, Seed Growers and Merchants, Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds.
GEORGE GIBBS and CO., Seedsmen, 26, Down Street, Piccadilly, London, W.

New Verbenas, Fuchsias, &c., of 1862.
W. DILLISTONE can now supply the above in good Plants, at low prices. Lists upon application.
Munro Nursery, Sible Hedingham, Halstead, Essex.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize plants, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet. Reference given. Stamps taken.
G. Knights, Whitton, Ipswich.

BARR and SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

Choice Calceolaria, per pkt. 1*s*.	Choice Cineraria, per pkt. 1*s*.
„ Primula „ .. 1*s*.	„ Picotee „ .. 1*s*.
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ILLUSTRATED GUIDE to the FLOWER GARDEN, 2*s*. 6*d*.

Gunnera scabra Seed, 1s. per packet.
BARR and SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.
The GUNNERA SCABRA (a highly ornamental foliaged plant for Lawns and other conspicuous places) is described by Darwin as producing leaves 8 feet in diameter. Last year at the Kew Gardens there was a plant with leaves 4 ft. long, and nearly the same in diameter. See *Gardeners' Chronicle*, March 29, page 285.
Barr & Sugden, 12, King Street, Covent Garden (opposite the Garrick Club), W.C.

Calceolaria, Cineraria, and Primula.
BUTLER and McCULLOCH respectfully beg to offer the following Seeds, saved from Collections containing only the Choicest strains:—
CALCEOLARIA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
CINERARIA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
PRIMULA SINENSIS FIMBRIATA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
Butler & M'Culloch, Seed Merchants, Covent Garden Market, London, W.C.

CLERODENDRON THOMSONÆ.—At the Royal Horticultural Society's Grand Show on May 21, we were awarded the First Prize for this very beautiful new climber. It is figured and fully described in Curtis's "Botanical Magazine" for last month. Healthy young plants, 7*s*. 6*d*. each; stronger, 10*s*. 6*d*. each.
Thomas Jackson & Son, Nurserymen, &c., Kingston, S.W.

Cineraria and Calceolaria Seed.
F. and A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*., free by post.
Dulwich, Surrey, S.

New Chrysanthemums, Hardy Variegated Plants, &c.
JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.
Versailles Nursery, William Street, near Hammersmith Turnpike, W.

New Delphinium, "Beauty."
J. and J. FRASER, of the Lea Bridge Road Nurseries, N.E., have much pleasure in announcing that they are now prepared to send out plants of the above.
It was examined by the Floral Committee of the Royal Horticultural Society July 12, 1860, and was awarded a Label of Commendation.
Description and price on application.

FERNS, BRITISH and FOREIGN, some thousands to choose from, 3*s*. to 12*s*. per dozen. Standard Fuchsias, choice variety, 3 to 6 feet high, 1*s*. 6*d*., 2*s*. 6*d*., and 3*s*. 6*d*. each. Greenhouse and Stove Plants, Evergreens, &c. Gold and Silver Fish, 100,000, 4*s*. to 9*s*. per doz., 2*l*. per 100, 18*l*. per 1000. Fresh-water Fish and Animals, Aquatic Plants, Aquariums, and Fern Cases. Grey Parrots, 20*s*. each; Budgrigars, 20*s*. per pair; and all kinds of Foreign Birds and Cages.
R. Green, 154, Kingsland Road, N.E.; and Bedford Conservatories, Covent Garden Market, W.C.

Stand No. 261,
Royal English Agricultural Society's Show,
Battersea Park.
PETER LAWSON and SON, The Queen's Seedsmen, invite attention to their COLLECTION of GRAINS in the STRAW, GRASSES, ROOTS, SEEDS, and rare and new CONIFERÆ.
27, Great George Street, Westminster, S.W.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
William Morton, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, Nurseryman and Seedsman, Pontefract, has the above to offer to the Trade his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3*s*. per lb., or 16*l*. per cwt.

BATTERSEA PARK SHOW.

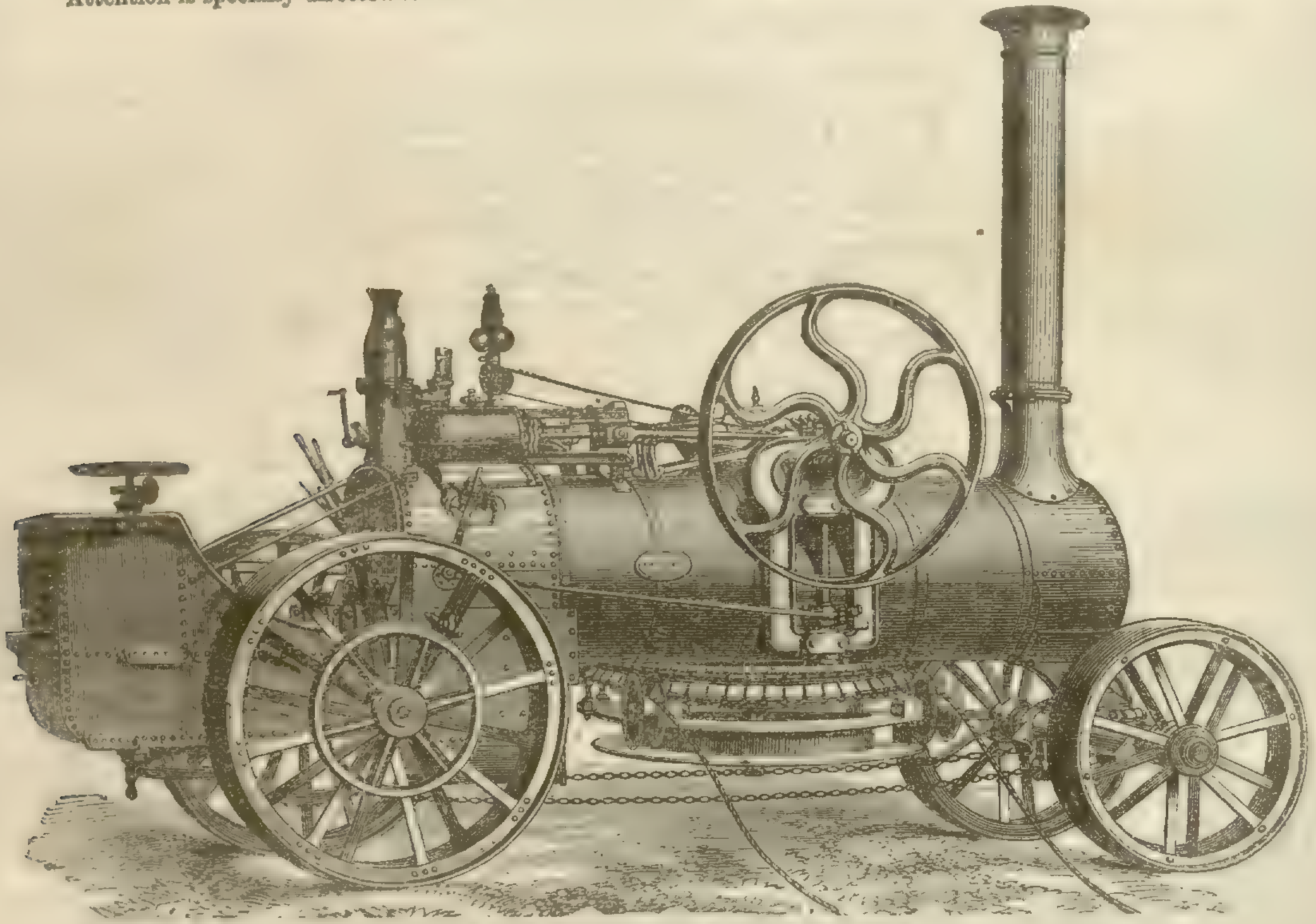
ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

FOWLER'S PATENT STEAM PLOUGHING AND CULTIVATING MACHINERY

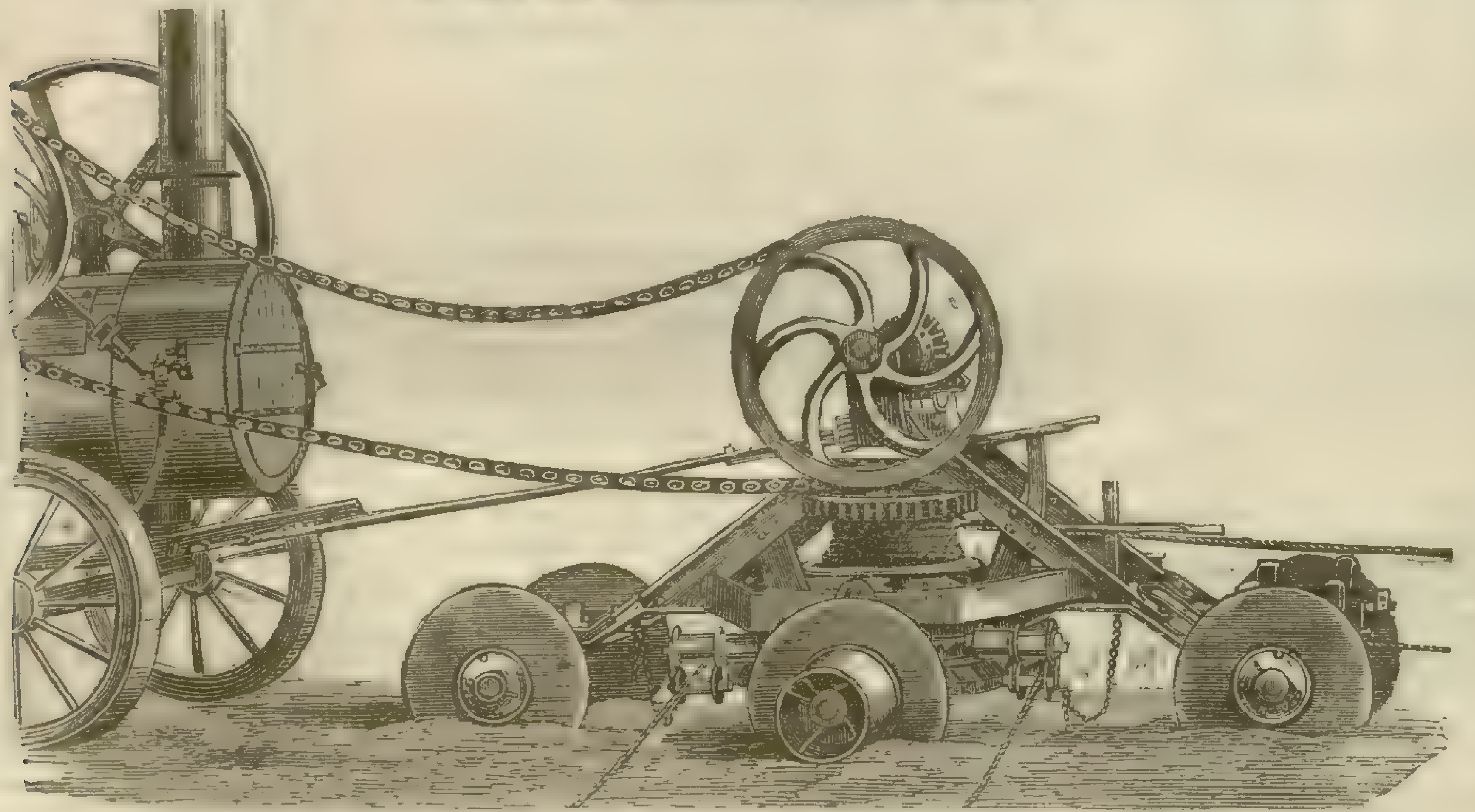
MAY BE SEEN AT WORK ON THE

TRIAL GROUND at FARNINGHAM, KENT, on THURSDAY, FRIDAY, and SATURDAY, JUNE 26, 27, & 28.

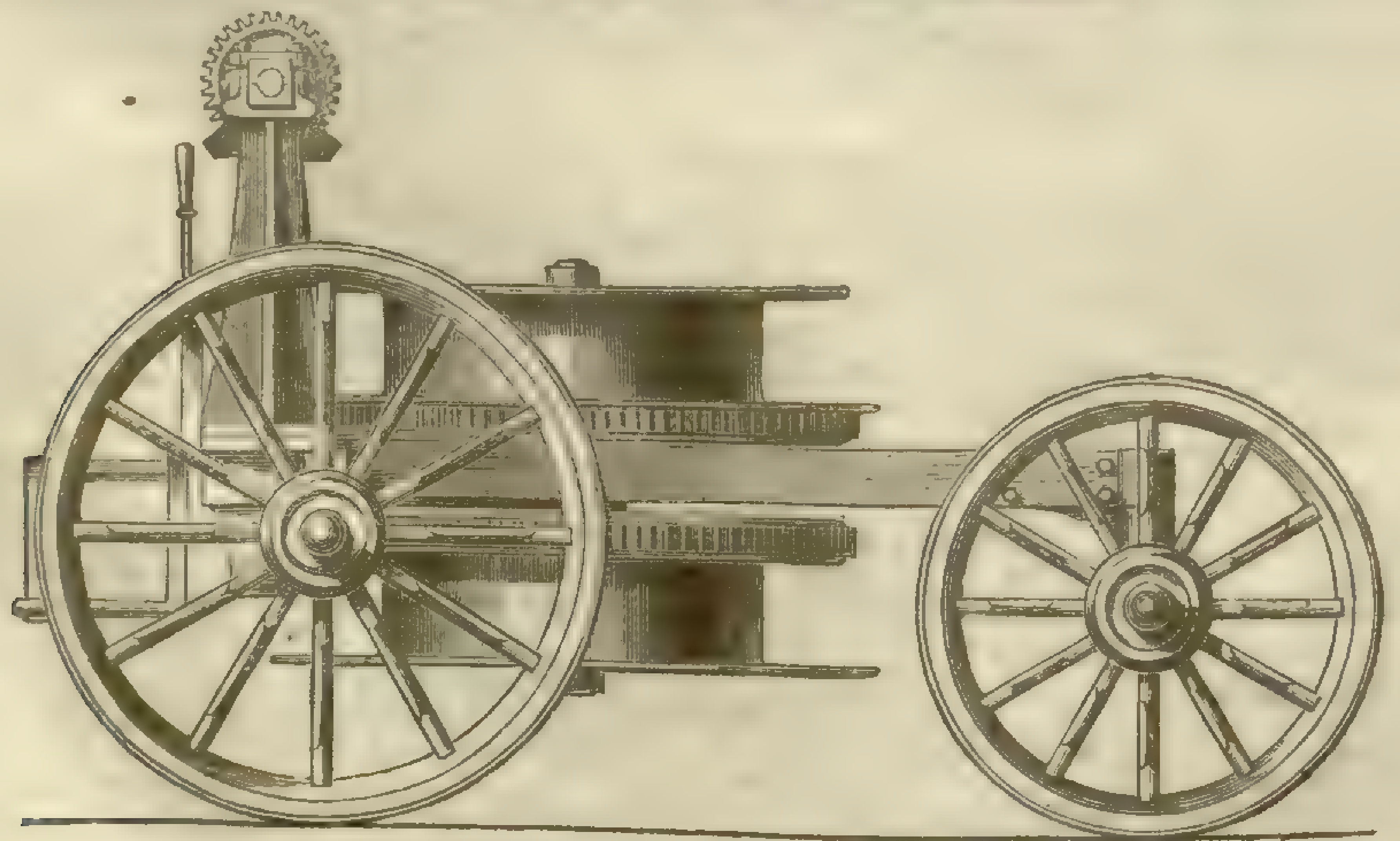
Attention is specially directed to the NEW APPLICATIONS for ORDINARY PORTABLE ENGINES.



ENGINE AND WINDLASS FOR LARGE TACKLE.



DISC ANCHOR WINDLASS FOR PORTABLE ENGINES.



WINDING WINDLASS FOR PORTABLE ENGINES.

ANCHORS, PLOUGHS, CULTIVATORS, or any part of the Apparatus can be supplied SEPARATE if required.

TWO and THREE FURROW BALANCE PLOUGHS, FIVE-TINED BALANCE CULTIVATORS, and SMALL ANCHORS adapted for use with any STATIONARY STEAM-CULTIVATING MACHINERY, can be supplied at short notice. For further information apply to

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GREEN'S

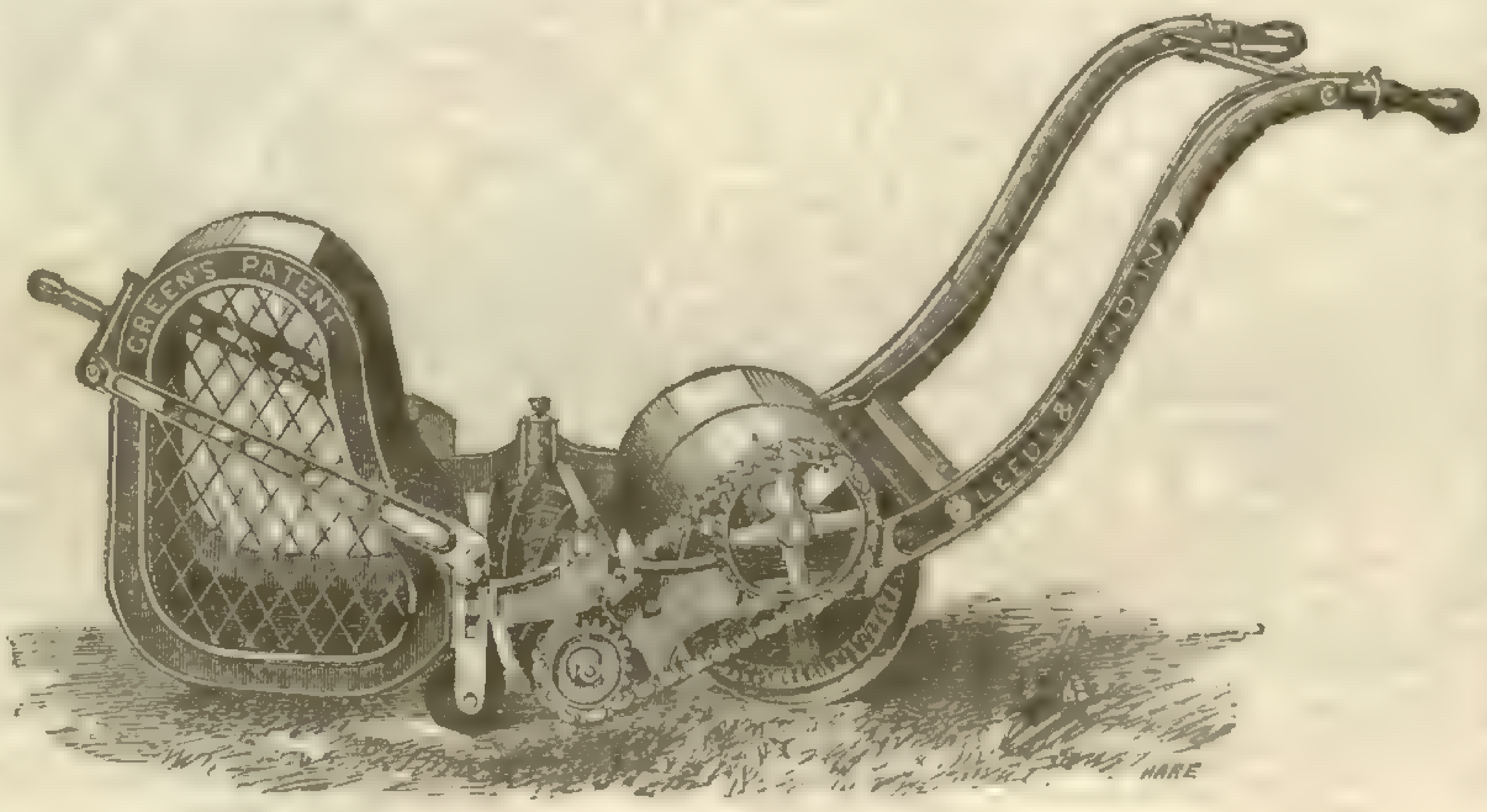
LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THOMAS GREEN can with confidence state that he has succeeded in bringing forward for the ensuing season a Machine which is so novel in its character that any person, however unskilled, is enabled to use it with confidence and ease; and from its thoroughly mechanical construction it is pronounced by practical men to be the *ne plus ultra* of perfection. Every improvement that has suggested itself from past experience has been put to practical test, and the results are that the Machines for which Her Majesty's Royal Letters Patent *have recently been obtained* are immeasurably superior to anything of the kind ever brought before the Public. They combine all that efficiency and simplicity can express, and are calculated



to keep Lawns in the highest state of perfection, which cannot be equalled by any other means. They are adapted both in size and price to the very smallest plots, as well as Lawns acres in extent. Since their introduction the sale of these Machines has more than doubled each succeeding year, and has now attained *the largest sale of any Machine "extant;"* have proved to be the best, having carried off *every Prize* that has been given in all cases of competition. They are made from the best materials, and of superior workmanship; are delivered *Carriage Free* to all the principal Railway Stations and Shipping Ports in England; *are warranted to give satisfaction*, and if not approved can be at once returned, if sent carriage free to Leeds.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0 ...	... £8 15 0
To Cut 20 inches	8 0 0 ...	... 9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0 ...	... £ 9 17 6
To Cut 24 inches	9 0 0 ...	... 10 7 6

To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0 ...	... £21 10 0
To Cut 36 inches	23 0 0 ...	... 24 16 0
To Cut 42 inches	26 0 0 ...	... 28 2 0
To Cut 48 inches	29 0 0 ...	... 31 8 0

Leather Boots for Horse, per set, £1 4*s.*

Donkey and Pony Machines, including Box of Requisites & Traces.

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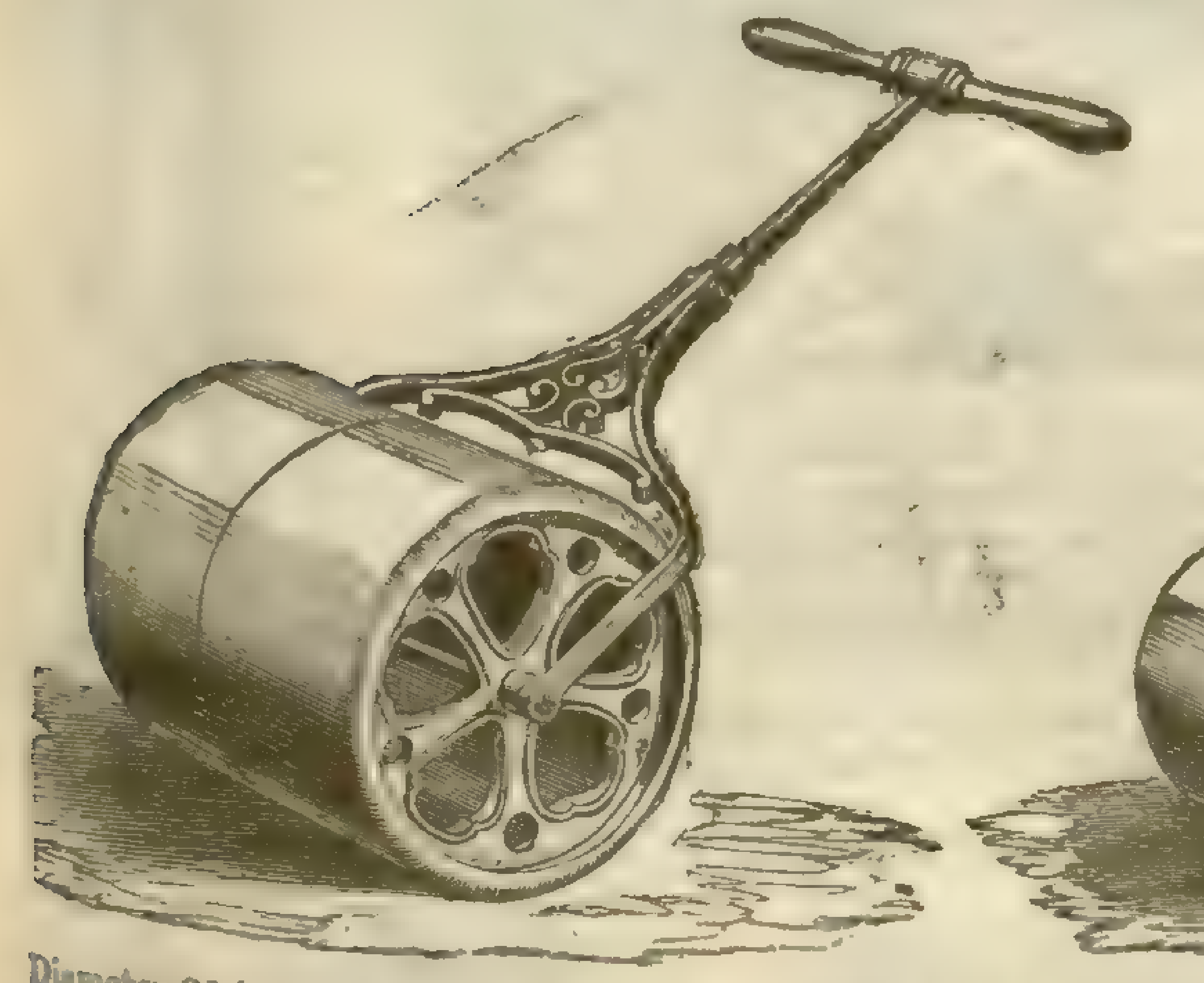
To Cut 24 inches	£11 10 0 ...	... £12 10 0
To Cut 26 inches	12 10 0 ...	... 13 12 0
To Cut 30 inches	16 14 0 ...	... 18 0 0

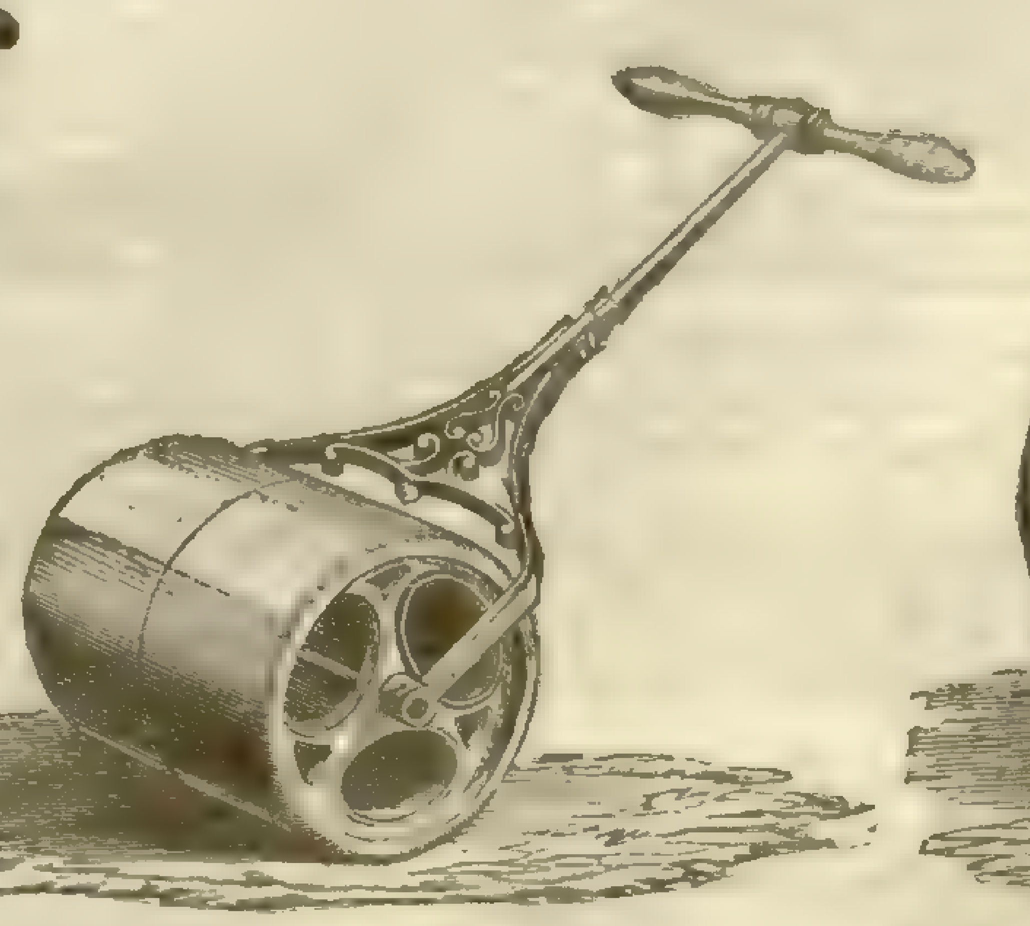
Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

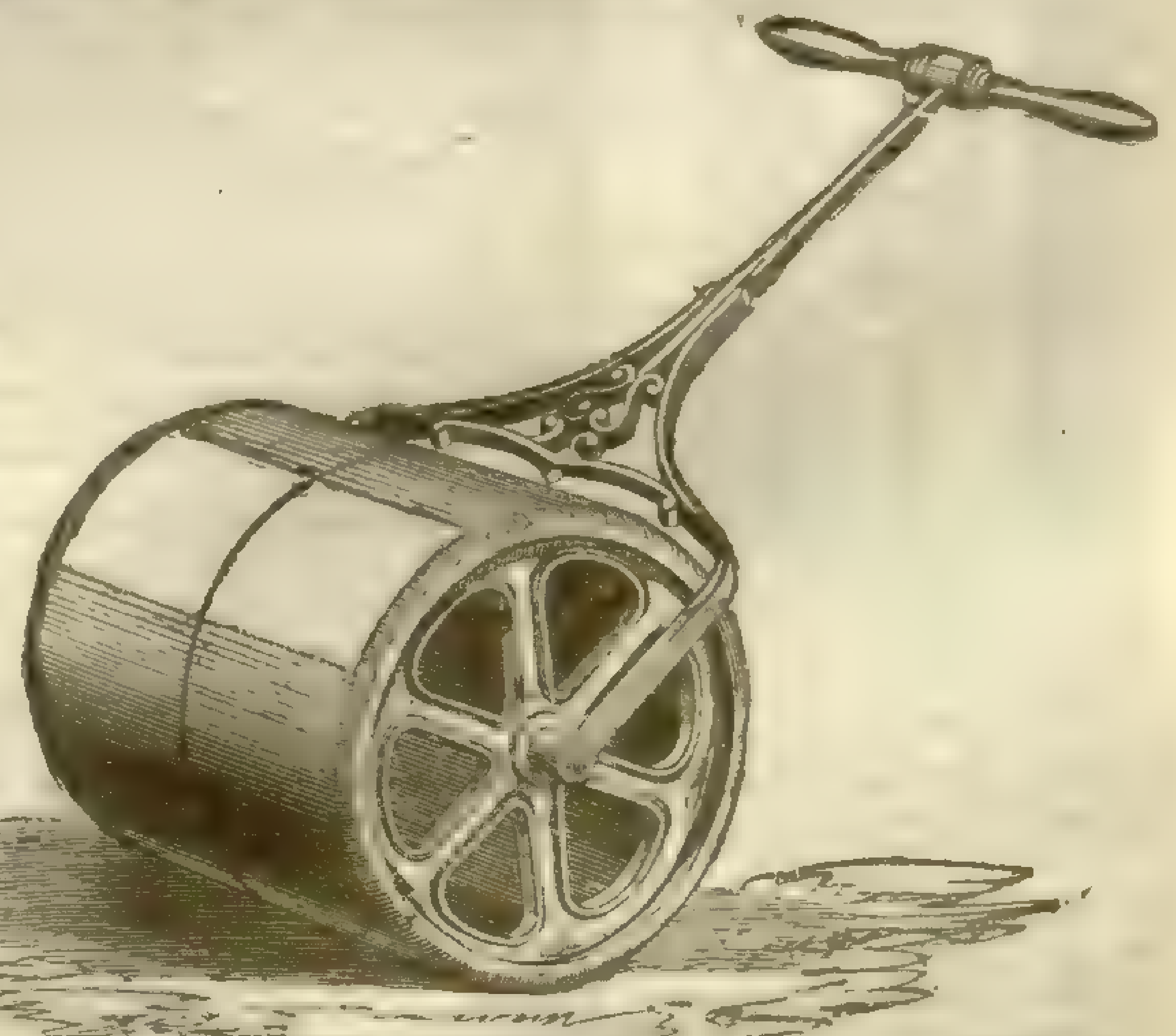
GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length, 22 inches....Price £3 5*s.*



Diameter 16 inches, length, 17 inches....Price £2 10*s.*



Diameter 24 inches, length, 26 inches....Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

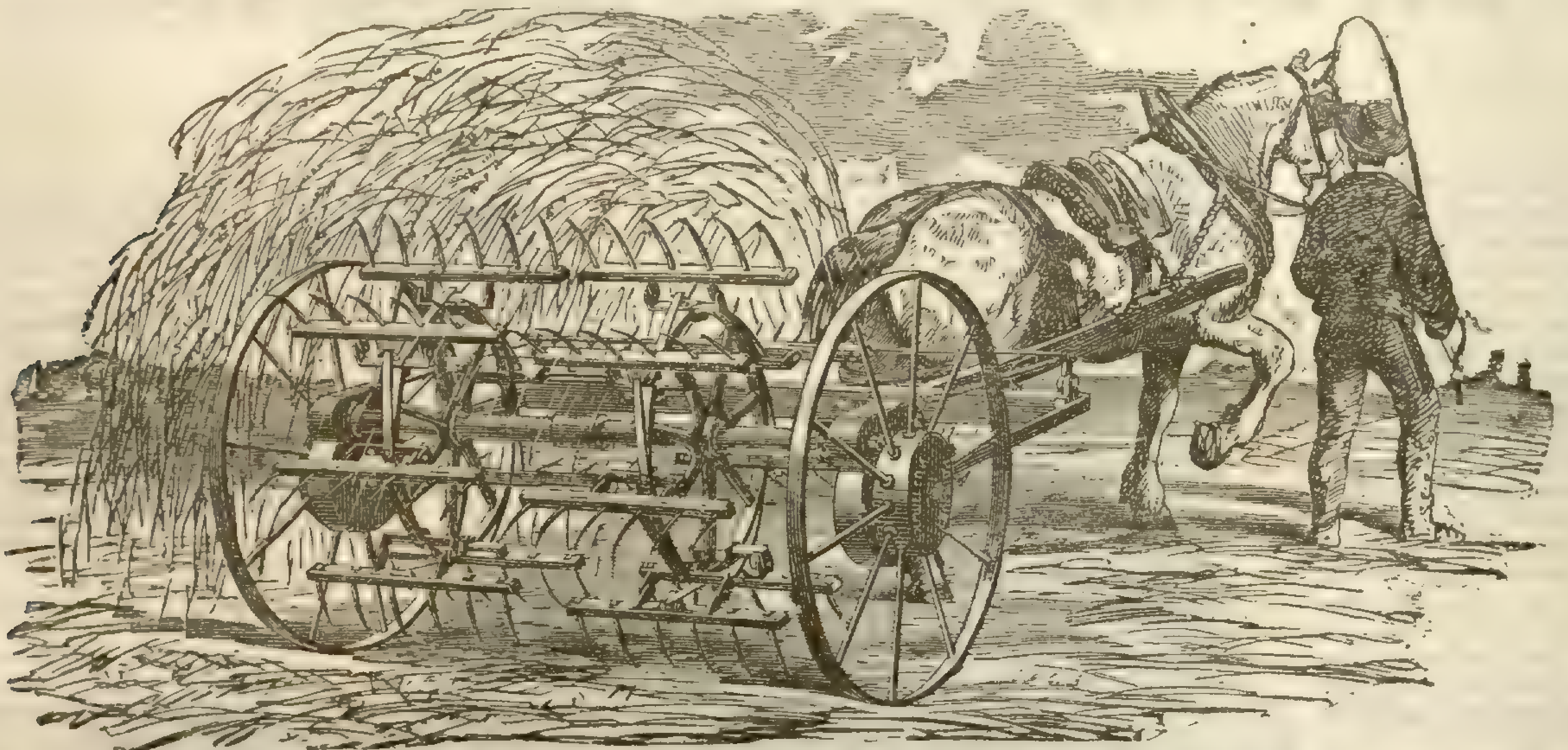
T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

SAMUELSON & CO.—STAND No. 8.

ROYAL AGRICULTURAL SOCIETY'S SHOW, BATTERSEA PARK,

JUNE 23 TO JULY 2.



SAMUELSON AND CO. will exhibit specimens of their PATENT SELF-RAKING REAPERS (R. C. RANSOMES and B. SAMUELSON'S Patents), MOWING MACHINES, DOUBLE-ACTION HAYMAKERS, HORSE RAKES, CORBETT'S AND SAMUELSON'S PULPERS, and all their well-known Food-preparing Implements; SILENT LAWN MOWERS, &c.

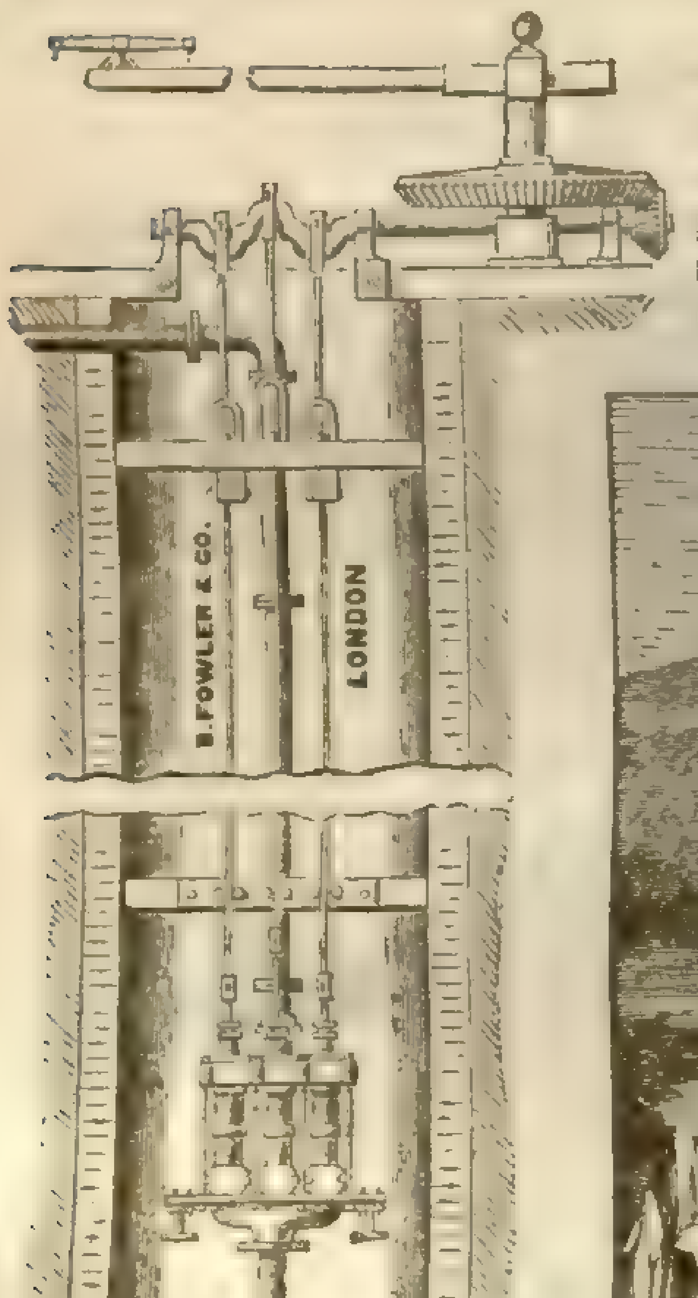
STAND No. 8, ROYAL AGRICULTURAL SOCIETY OF ENGLAND'S SHOW AT BATTERSEA PARK.
WORKS: BANBURY, OXON.

BENJAMIN FOWLER & CO.,

MANUFACTURERS OF PUMPS AND HYDRAULIC MACHINERY,

WHITEFRIARS STREET, FLEET STREET, LONDON, E.C.

THE accompanying Sketches show some useful forms of apparatus in general demand for Raising and Forcing Water or Liquid Manure. The Landscape Sketch shows the adaptation of Fowler's Improved Hydraulic Rams for the supply of Mansions, Farms, &c. A large number of these simple Self-acting Machines are in use, giving great satisfaction. Their adoption is not confined to positions as shown below, as they are suited to any situation where a few feet fall can be obtained from a spring, brook, or stream; they will force to an elevation equal to ten or more times the number of feet of fall, and to any distance.



No. 37.

No. 4.

No. 38.

No. 37. FOWLER'S Improved Simple HORSE GEAR for raising water from deep wells with double or treble pumps B. F. & Co. also make and fix Deep Well Pumps of all descriptions for hand power.

No. 4. FOWLER'S CAST IRON BORED PUMPS of all sizes, with improved brass valves for Garden and Farm use, from 1*l.* 5*s.* each.

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No. 46*a*. FOWLER'S Superior DOUBLE-ACTION PORTABLE FORCE PUMPS and simple FIRE ENGINES for Water or Liquid Manure. Prices, 5*l.* 15*s.*, and 7*l.* 10*s.*

No. 50. FOWLER'S Improved (Holman's Patent) DOUBLE-BARREL PUMPS, FARM FIRE ENGINES, and IRRIGATING PUMPS. Prices, from 12*l.* 10*s.*

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No. 49A. FOWLER'S Improved SWING WATER CARRIERS, holding 24 and 35 gallons. Prices, 42*s.* 6*d.*, and 50*s.*

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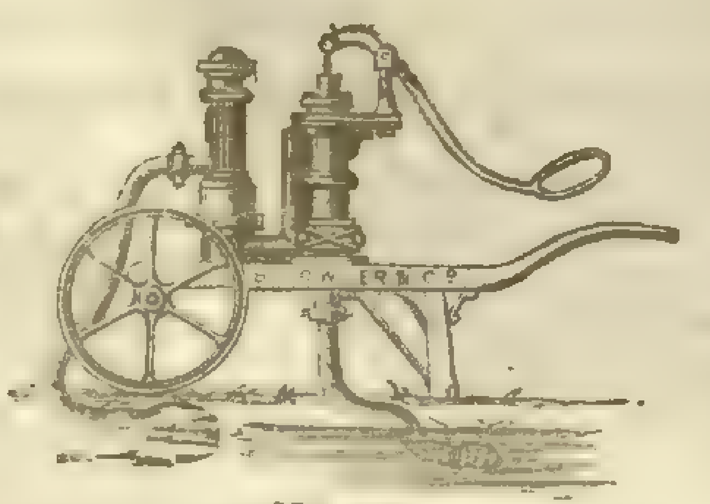
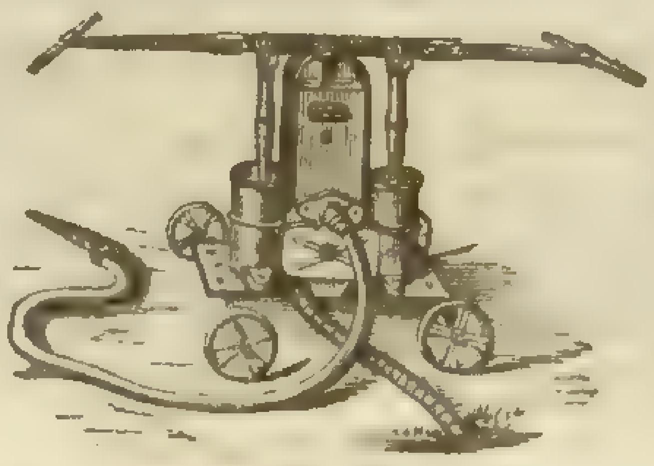


No. 46*a*.



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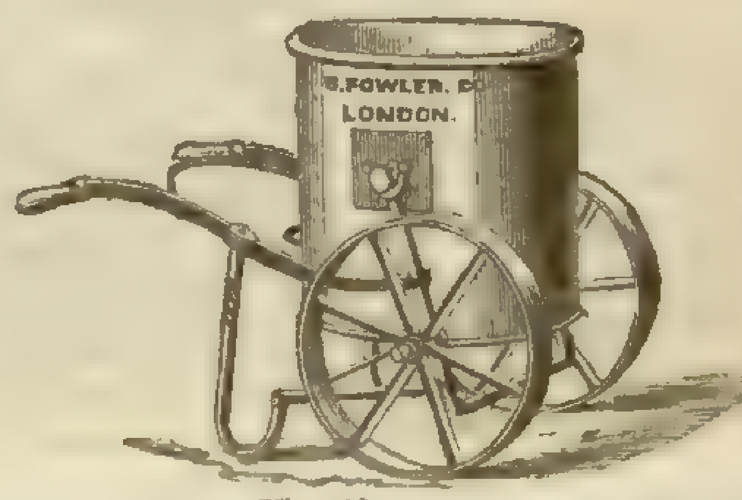
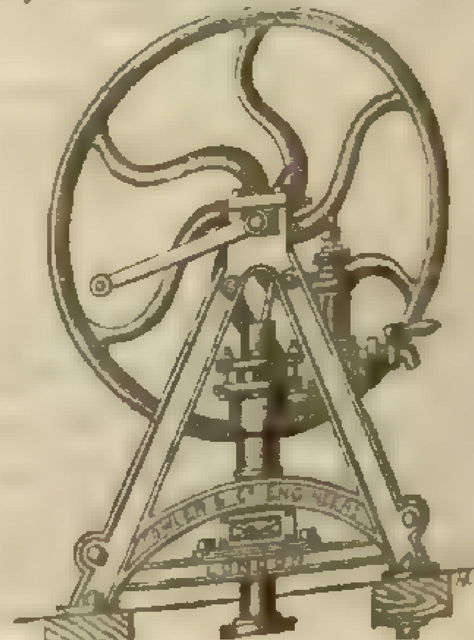


No. 49 A.



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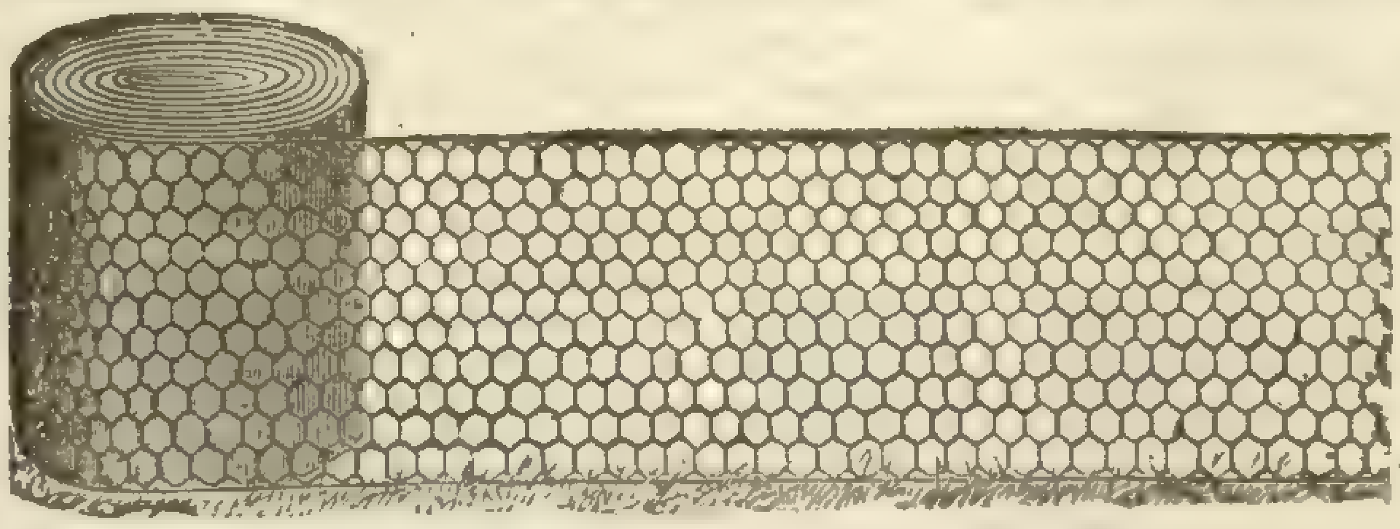
FURTHER PARTICULARS, ESTIMATES, AND ILLUSTRATED PRICE LISTS ON APPLICATION.

NEW IMPROVED PREMIUM WIRE NETTING.

GREAT IMPROVEMENT,



WITH REDUCED PRICE.

PRICES per Lineal Yard, 24 inches high:—

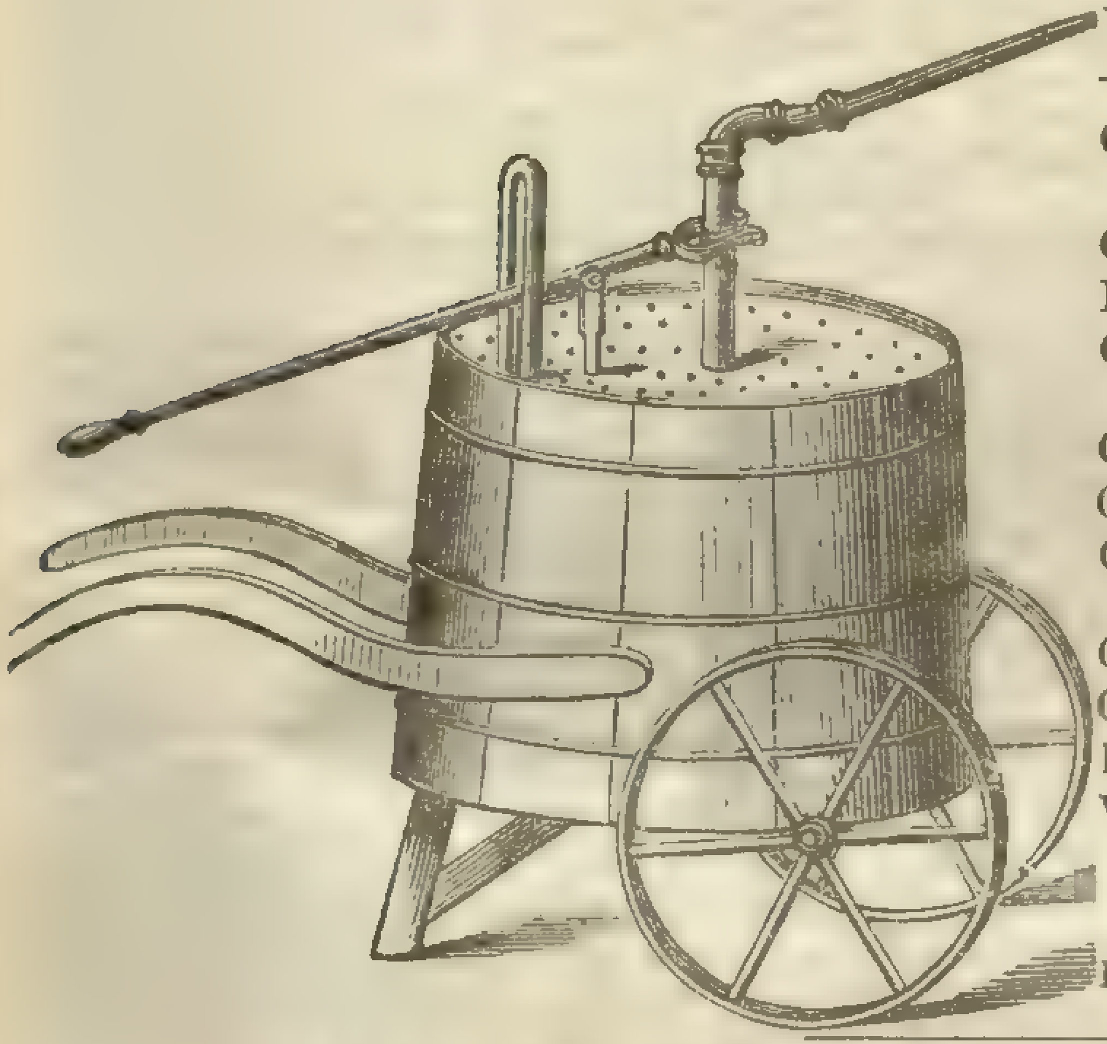
Size of mesh.	Mostly used for	Light. Japanned.	Light. Galvanized.	Medium. Japanned.	Medium. Galvanized.	Strong. Japanned.	Strong. Galvanized.	Extra Strong. Japanned.	Extra Strong. Galvanized.
2¼ inch	Hares, Dogs, Poultry	3*d.*	4*d.*	3¾*d.*	5*d.*	4½*d.*	6*d.*	5½*d.*	7*d.*
2 inch	Game or Poultry Netting	3½*d.*	4¼*d.*	4*d.*	5*d.*	5*d.*	6½*d.*	6½*d.*	8*d.*
1¾ inch	Small Rabbits, Hares, &c.	4*d.*	4¾*d.*	4¾*d.*	6*d.*	5½*d.*	7*d.*	7*d.*	9*d.*
1¼ inch	Smallest Rabbits................	5*d.*	6*d.*	5¾*d.*	7*d.*	7*d.*	9*d.*	9*d.*	11*d.*

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

*** *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.
And at STANDS 139 and 244, ROYAL AGRICULTURAL SOCIETY'S SHOW, BATTERSEA PARK, June 23 to July 2.

DEANE & COMPANY'S
HORTICULTURAL TOOLS.



DEANE'S MOWING MACHINES, with Boyd's Patented Improvements, 5*l.*, 7*l.*, 7*l.* 10*s.*, 8*l.* 10*s.*
GARDEN ENGINES, Galvanised Iron. Prices 55*s.*, 65*s.*, 78*s.*, 90*s.*, 100*s.*, 110*s.*
GARDEN ENGINES, Wood, 90*s.*, 110*s.*, 138*s.*
FLOWER STANDS, 4*s.* 6*d.* each.
CAST-IRON ORNAMENTAL FLOWER STANDS, to hold Seven Vases, 27*s.*
GREEN'S PATENT MOWING MACHINES.
GREENHOUSE SYRINGES, 8*s.*, 10*s.*, 18*s.* 6*d.*
GARDEN ROLLERS, 1*l.* 14*s.* 6*d.*, 2*l.*, 2*l.* 12*s.*, 3*l.* 3*s.*, 3*l.* 18*s.*, 4*l.* 13*s.*, 5*l.* 12*s.*, 7*l.* 10*s.*
GARDEN STOOLS, 4*s.* 6*d.*
GARDEN SEATS, from 25*s.*
BOYD'S SELF-ADJUSTING SCYTHE, 10*s.* 6*d.*
WIRE WORK, 18 in., 4*d.* per yard run.

Every Implement for Garden use on the lowest terms.

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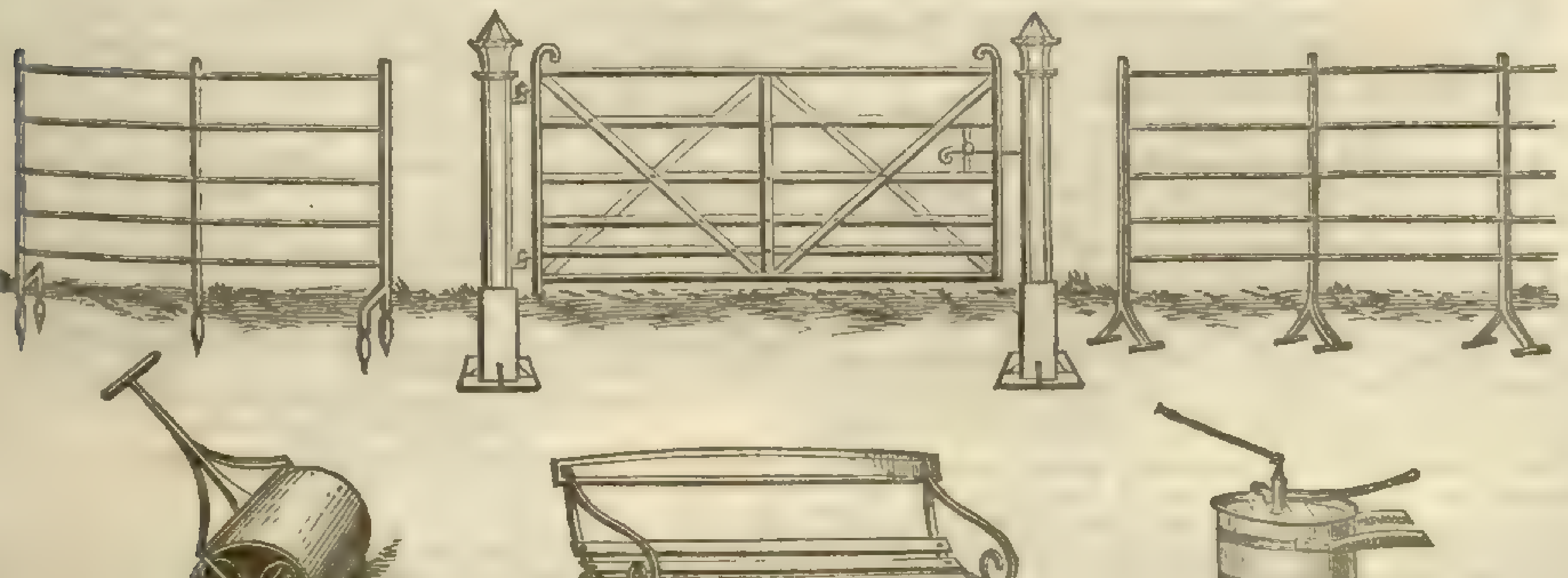
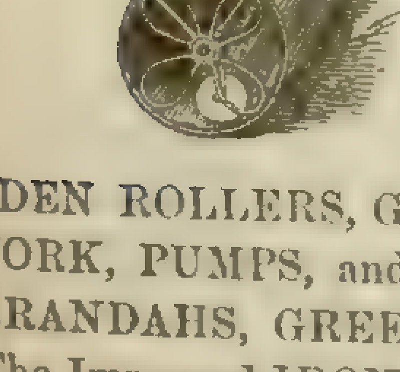
DEANE'S, Opening to the MONUMENT, LONDON BRIDGE, E.C.

COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.
PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.





IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes.
VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.
The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.
Illustrated CATALOGUES and DRAWINGS free on application to

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Royal Agricultural Society & International Exhibition.

MUSGRAVE'S PATENT STABLE FITTINGS, COW HOUSE FITTINGS, and IRON PIGGERIES, and MUSGRAVE'S PATENT SLOW COMBUSTION STOVES are to be seen at the Royal Showyard, Battersea Park, Stand No. 238, and in the Exhibition (No. in Catalogue, 6159).

These inventions differ from any other, are superior in efficiency, strength, and appearance, and less in price. They alone obtained the Medals of the Royal Agricultural Societies of England and Ireland last year.

Musgrave Brothers, Belfast.

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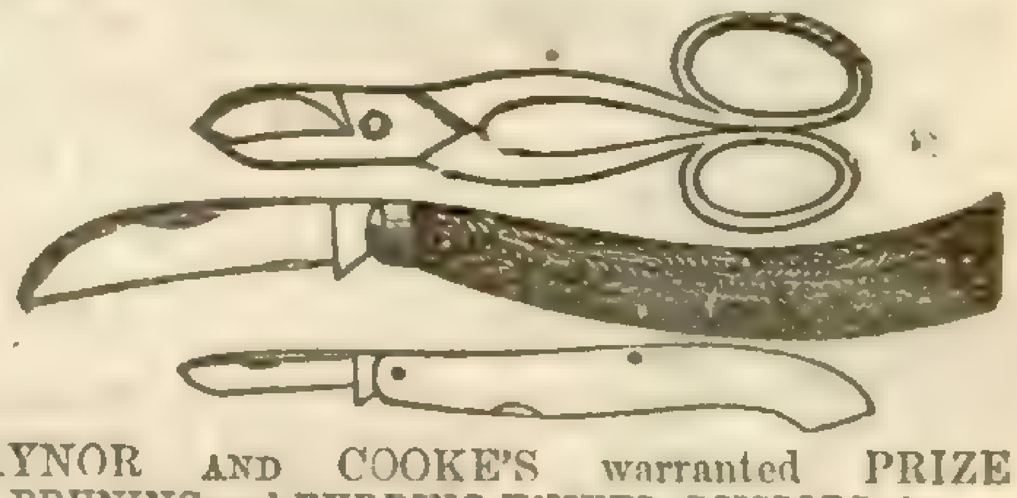


SAYNOR and COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.

Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Important to Gardeners.

WE beg respectfully to inform you that we are now supplying Nurserymen and Seed Merchants with an article superior in quality to anything we have hitherto been able to offer in PRUNING, BUDDING, and GRAFTING KNIVES, VINE and PRUNING SCISSORS, GARDEN SHEARS, &c., owing to their being tempered under an entirely new process, which renders the blade tough and not liable to break, and also gives the edge a lasting keenness which we can warrant them to retain for at least double the time they would under the old method of tempering, thus facilitating the work and saving the time usually lost by having constantly to renew the edge by sharpening, consequently making them more durable in wear and better adapted for all kinds of work, every blade being guaranteed of the same temper.

Caution. None are genuine except marked Saynor, or Saynor, Maker. Other marks would cause the purchaser disappointment.

Patronised by H.R.H. the late Prince Consort.

GREENING and CO.'S IRON WIRE FENCES, manufactured by Patent Machinery, possess the following advantages:—

1st. Are easily fixed by unskilled labourers.
2nd. Require few and inexpensive supports.
3rd. Are ornamental in appearance.
4th. Have increased strength from their peculiar construction.
5th. Are but half the price of similar hand-made Fences.

Upwards of 40 varieties are made, the principal ones being:—

No. 1 a variety.—Cattle and Sheep Fence, 3ft. 9in. high, 1*s.* per yard.
No. 7 b variety.—Sheep folding Fence, 3ft. high, 9*d.* per yard.
No. 4. variety.—Hare and Rabbit-proof Fence.
No. 11. variety.—Poultry and Chicken-proof Fence.
No. 16. variety.—Italian pattern Garden Fence.
No. 20. variety.—An admirable substitute for the old-fashioned wire netting.

G. & Co. will be happy to forward, without charge, an explanatory Circular of the principal varieties. Their enlarged Catalogue of Fences and Gates post free on receipt of three stamps.

Address Greening & Company, Victoria Works, Oxford Street, Manchester.

Prices Reduced.

H. J. MORTON and CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

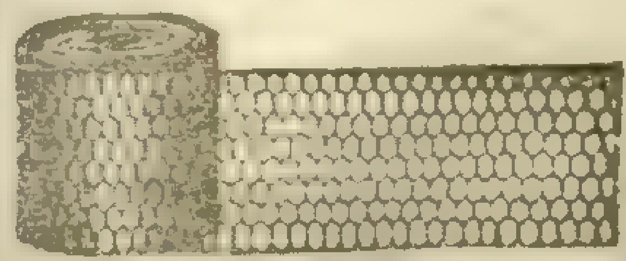
GALVANISED IRON ROOFING for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING

(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1*s.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 4*d.*, 4½*d.*, and 6¾*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 2¾*d.*, 3¾*d.*, and 5½*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

Henry J. Morton & Co., 2, Basinghall Buildings, Leeds.

Magnified Aphide.

NEAL'S PATENT APHIS PASTILS. 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Patentee: J. Neal, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by Price's Patent Candle Co., Limited.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

Page & Toogood, Royal South Hants Seed Establishment, Southampton.

MESSRS. E. G. HENDERSON and SON offer Seed of

CALCEOLARIA .. .. .. first quality
CINERARIA .. .. .. "
PRIMULA (fimbriated).. .. "

at 2s. 6d. and 5s. per packet; smaller ones 1s. each. All the above are to be seen in bloom at the Nursery in their respective season.

Wellington Nursery, St. John's Wood, London, N.W.

CHARLES NOBLE begs to annex the names of the RHODODENDRONS which obtained the First Prize at the Royal Horticultural Gardens, May 21.

Lord Palmerston	Duke of Cambridge
Lady Palmerston	Floretta
Lord Granville	Princess Hortense

He also obtained the First Prize at the Grand Opening Show at South Kensington in 1861.

Bagshot.

Araucaria Rulei; A. Cunninghamii glauca, &c.

SMITH and ADAMSON, Melbourne, will offer for SALE in London, on arrival of the Suffolk and Marco Polo, expected in July, an importation of AUSTRALIAN PLANTS, comprising Araucaria Rulei, A. Cunninghamii, Tree Ferns, &c., full particulars of which will be given in a future advertisement.

Choice Seeds for Present Sowing.

ROBERT PARKER begs to offer the following, all of which are warranted to be new and genuine, and the finest qualities of their respective kinds.

	Per Pkt.—s.	d.
CALCEOLARIA, Herbaceous, finest mixed ..	2	6
CINERARIA, finest mixed ..	2	6
CLIANTHUS DAMPIERII ..	2	6
DIANTHUS HEDDEWIGII, and vars., finest mixed, 6d. &	1	0
HOLLYHOCK, finest mixed ..	0	6
HUMEA ELEGANS ..	0	6
PANSY, finest mixed ..	1	0
PRIMULA SINENSIS DENTIFLORA ..	2	0
" " " ALBIFLORA ..	2	0
" " " KERMESINA SPLENDENS..	2	6
STOCK, Scarlet, Intermediate ..	0	6
" White ..	1	0
SWEET WILLIAM, Auricula-flowered, finest mixed ..	0	6

A Priced and Descriptive CATALOGUE of SEEDS will be forwarded post free on application.

Exotic Nursery, Tooting, Surrey, S.

Stanstead Park Nursery, Forest Hill, S.E., and Edinburgh.

DOWNIE, LAIRD, and LAING have much pleasure in offering the following very select Seeds, saved from their choice collections.

ANTIRRHINUM, 6d. and 1s. per packet.
CALCEOLARIA, 1s. and 2s. 6d. per packet.
CINERARIA, 1s. and 2s. 6d. per packet.
HOLLYHOCK, 1s., 2s. 6d. and 5s. per packet.
PANSY, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS KERMESINA SPLENDENS, 1s. 6d. and 2s. 6d. per packet.

Osmunda regalis cristata.

OSBORN and SONS have now the pleasure to offer plants of this unique and beautiful Crested Fern, exhibited by them at the Regent's Park and South Kensington shows, price 21s. each.

They have also a few plants of the PHYSURUS MACULATUS, exhibited by them and figured in the *Botanical Magazine* for May, price 1l. 11s. 6d. each. The usual discount to the Trade.

Fulham Nursery, London, S.W.

Choice Seeds.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give the greatest satisfaction.

PRIMULA, per packet, 2s. and 3s. 6d. each.
CALCEOLARIA, per packet, 1s. 6d., 2s. 6d., and 3s. 6d. each.
CINERARIA, per packet, 1s. 6d. and 2s. 6d. each.

For numerous Testimonials see SEED CATALOGUE, post free on application.

Notice.

B. S. WILLIAMS begs to intimate that he is prepared to supply nice Plants of his New and beautiful AZALEA ELEGANTISSIMA, exhibited at the Royal Horticultural Society's Meeting, May 21, and which was awarded a Label of Commendation.

Flowers pure white, finely striped with light salmon red or pink, splendid habit, excellent form and substance, and a free bloomer.

Extract from the *Gardeners' Chronicle* in their report of the Royal Horticultural Society's Meeting, May 21. "A beautiful seedling Azalea called Elegantissima, white striped with pink, came from Mr. Williams, a good addition to the class to which it belongs." Price 10s. 6d. each; extra size, 15s. to 21s. each.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

For a valuable selection of New and Rare Plants, see B. S. W.'s Advertisement in the *Gardeners' Chronicle*, May 10.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Battersea Park.
The Royal Agricultural Society's Meeting.

MESSRS. SUTTON and SONS being Exhibitors at the International Exhibition, South Kensington, and also at the Crystal Palace, Sydenham, will not have a Stand at the Show Yard, Battersea Park, but they may be heard of each day at the Stand of Messrs. Barrett, Exall, & Andrewes in the Show Yard.

Royal Berkshire Seed Establishment, Reading.

International Exhibition—Collection of Grasses.

SUTTON and SONS, Seedsmen to the Queen, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe. Also to their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which for want of space there is erected at the Crystal Palace, Sydenham.

Royal Berkshire Seed Establishment, Reading.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. Wheeler & Son, Seed Growers, Gloucester.

Royal Botanic Gardens, Regent's Park.

JOHN WATERER has the pleasure to announce that his ANNUAL DISPLAY of HARDY SCARLET and other RHODODENDRONS, AZALEAS, &c, is now on view at the above Gardens; the Plants are now in fine bloom and will continue in perfection throughout the month of June.

Orders of admission are granted by Members of the Botanic Society, or by applying to the Advertiser at the above address. The Plants at the Nursery are also in full bloom.

American Nursery, Bagshot, Surrey, near Sunningdale Station, South Western Railway.

GERANIUMS — CLOTH of GOLD, GOLDEN FLEECE, and GOLD LEAF.—Strong well-rooted plants of the above at 4s. 6d per dozen, out of Pots, per post paid, package included. In Pots, delivered to any Station on the South Western Rail, at 5s. 6d. per dozen, package included.

All orders will receive prompt and careful attention. From unknown Correspondents Post Office orders or stamps must accompany the order.

Stephen Shilling, North Warnboro' Nursery, near Odiham, Hants.

CATTELL'S EARLY RELIANCE CABBAGE.
CATTELL'S DWARF BARNES CABBAGE.

These two Cabbages have proved themselves for many years past to be the two best Early Spring Cabbages in cultivation. If sown as early as the middle of July, they will not run to seed the following Spring. They may be had as usual in packets containing half-an-ounce of the Reliance, and one ounce of the Dwarf Barnes. Free by post for 12 Penny Stamps for each packet.

John Cattell, Nursery and Seed Establishment, Westerham, Kent.

New Plant Catalogue.

MESSRS. E. G. HENDERSON and SON respectfully announce the publication of their NEW SPRING CATALOGUE of BEDDING and other ORNAMENTAL PLANTS, including descriptions of the undermentioned POMPON DAHLIAS, &c.

Angel of Peace	Little Mary
Annie	Little Prince
Butterfly	Little Valentine
Fairy Nymph	Pearl of Lilliputs
Goldlight	Silver Pheasant
Jeannette	Star
Little Darling	Tom Tit
Little Dorrit	and others.

BANKS'S NEW FUCHSIAS.
WILLS'S NEW VERBENAS.
FERN-LEAVED PRIMULAS, white and red fringed.
BEDDING TROPÆOLUMS—elegans coccinea, Model, Constellation, and Beauty of Oulton Park.
PETUNIA MAGNIFICENS.
GLOXINIAS—Brilliant, Leviathan, Bird of Paradise, and Most Beautiful; these four are very large, new in colour, and distinct.
AUCUBA HIMALAICA, the finest habited plant of all the new Aucubas.
GERANIUMS of the Zonale section—Magenta, new colour; Woodwardiana, best formed large petal-flowered; Baron Ricasoli, without exception the best bedding or Vase Geranium of any at present known.
GERANIUMS, Minimum Section, Harry Hieover.
" Nosegay " Pink Pearl.
" Variegated " Sunset, Gold Leaf, Mrs. Milford, The Countess, Gold Pheasant, Little Beauty, &c.

Wellington Nursery, St John's Wood, London, N.W.

Calceolaria, ex. ex.

STEPHEN BROWN'S Seed of the above is of the same extra quality as in past years, saved expressly for him by a private grower for many years renowned for his first-rate Calceolarias. It has annually given the most unqualified satisfaction, and procured numerous prizes. The flowers are splendid in colour, richly spotted, of excellent form, large, and of endless variety. Packets, 2s. and 1s.

CALCEOLARIA NANA GRANDIFLORA PRÆCOX.—Very beautiful, from the Continent, exceedingly dwarf, and covered with a profusion of large and bright flowers, of great variety. Packets, 2s.

PRIMULA FIMBRIATA, ex. ex.—Finest mixed dark varieties, purple, carmine, rose, &c. Packets, 2s. and 1s.

FIMBRIATA STRIATA.—Very choice white, with many of the flowers beautifully striped with bright red, extra. Packets, 1s. 6d.

FIMBRIATA ERECTA SUPERBA.—Of more erect habit, received from the Continent, and represented as splendid, quite distinct, and constant. Packets, 2s. 6d.

SEED of first-class FLORIST FLOWERS, English and Continental, comprising Geranium, Hollyhock, Carnation, Picotee, Pansy, Cineraria, Polyanthus (superbly laced), Verbena, Antirrhinum, Gladiolus, Pentstemon, &c., all saved from the finest collections.

The SEED CATALOGUE free on application.

Stephen Brown, Seed Grower and Importer, Sudbury, Suffolk.

Caladiums.

GODWIN and PADMAN have pleasure in directing attention to their stock of CALADIUMS, in good plants, viz.:—

Argyrites	1s. 6d.		Houlletti	1s. 6d.	
Belleymei	2	6	Neumanni	1	6
Chantini	1	6	Wighti	3	6

Coleus Verschaffelti, 1s. each; 9s. doz.

Broadfield Nursery, Sheffield; or J. C. Padman, Boston Spa, Tadcaster.

CHRYSANTHEMUMS.—Our stock of these is in good stuff, and comprises amongst them the following:—LARGE-FLOWERED VARIETIES—Aimée Ferrière, Albin, Godereau, Alfred Salter, Arthur Wortley, Beauregard, Bouquet des Fleurs, Caractacus, Cassandra, Constantine, Dr. Maclean, Dragon, Dupont de l'Eure, Eclipse, Fortune's 2-coloured Incurved, Golden Queen of England, Golden Cluster, Goliath, Hermione, Jewess, John Bunyan, Madame Poggi, Marechal Duroc, Mrs. W. Holborn, Poudre d'Or, Prince Albert, Progne, Queen of England, Queen of the Isles, Stafford, The Lady Mayoress, Yellow Perfection, 6s. per doz.; 12s 6d. for the lot.

POMPONE CHRYSANTHEMUMS—6s. per doz.; 33 varieties for 12s. 6d.

VARIEGATED GERANIUMS—50 varieties, from 3s. per doz.

CATALOGUES of above on application to

Godwin & Padman, Broadfield Nursery, Sheffield; or J. C. Padman, Boston Spa, Tadcaster.

Dobson's Splendid Calceolarias.

J. DOBSON and SONS have the pleasure of offering NEW SEED saved from their unequalled collection. We beg to recommend the seed with, if possible, even greater confidence than any hitherto sent out by us. The flowers were new, large, finely-marked and beautiful in shape, and must be the precursor of something very splendid next season. The following Testimonials are among many hundreds, and it is to us a source of gratification to know that the Seed is second to none:—

Extract of Letter from The Gardener *to* N. Macleod, Esq., *Dalvey, near Forres, N.B.*

Messrs. Dobson's Calceolarias are quite a wonder, and elicit the admiration of everybody. It is wonderful to think that from a pinch of seed carefully saved such a variety of beautiful flowers can be produced. Out of 200 plants the inferior flowers are the exception; indeed, the majority of them are model flowers, large and well formed, and vie with each other in the delicacy of their colours and markings. They do Mr. Dobson great credit as a cultivator; and besides it is a great satisfaction to know where we can get seed saved so well worthy the trouble of growing.

From Mr. John Harris, *St. Andrew's Nursery, Bury St. Edmunds, May 24.*

Dear Sir,—Your Calceolarias this year have been the best I have ever seen, and have carried off the prizes all about this way.

From W. Fox, *Gardener, Taplow House, near Maidenhead.*

The Calceolarias from your seed of last year have been splendid, and much admired by all.

From Mr. J. Seale, *Pentre Gardens, near Castle Emlyn, S. Wales.*

Gentlemen,—The Cinerarias and Calceolarias raised from the seed I had from you last year have been the admiration of all who saw them.

From Miss Crawshay, *Caversham Park, Reading.*

Gentlemen,—I found your seed last year superior to any I have hitherto had.

From Messrs. Dickson & Turnbull, *The City Nursery, Brechin, N.B.*

Gentlemen,—The Calceolaria seed you sent us last season was very fine, and the plants have surprised all who have seen them.

In sealed packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. Only one quality sent out, and that the very best, as grown by ourselves.

J. Dobson & Sons, Woodlands Nursery, Isleworth, W.

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botanicus

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botanicus

forked stems. The groups of E. Makepeace, of which one is bleached, and the other has a yellowish stain, though smaller than the others, are without this defect. Those shown by J. Hawe and M. Stevens are admirable in every other respect but that just alluded to.

1134. W. Stevens, 14, Great Russell Street, Bloomsbury. Two cases of wild flowers dried in their natural forms and colours. These are small specimens, of very little interest.

1052. H. Clemence, 55, Upper Stamford Street. This exhibitor displays two portraits, which have a very elegant border formed of flat-pressed Ferns and Lycopods, fastened to the paper. In one case the border consists of two or three small species of Selaginella, in the other it is made up of Adiantum cuneatum.

—— Barsham & Co., Kingston. A glazed plant-case filled with plants growing in the refuse from the Cocoa-nut, which has latterly been attracting some notice as a material for potting, and a substitute for peat, especially suitable for Ferns. The case is planted with Ferns, variegated Begonias, and other plants, which have so far kept in robust health, though by no means favourably placed. Along with this are shown various articles manufactured from the fibres of the husks of the Cocoa-nut, in the separation of which the material in question is obtained. We do not find that this plant-case is catalogued.

1079. J. L. Hancock, 266, Goswell Street. Vulcanised India-rubber hose, and a garden Hose Reel. This latter is a very useful contrivance; indeed when any considerable length of hose is in use some such convenient mode of moving it from place to place is necessary. It consists of an iron frame which travels on a pair of low wheels at the back, and has a cross handle and support in front. At the side are two large flat disks, between which on a revolving axis the hose is wound up by means of a winch handle.

1120. T. Routledge, Eynsham. Samples of the Esparto or Alfa (Lygeum Spartum), partially and wholly converted into writing paper, which appears to be of very good quality. The raw material is said to be procurable in large quantities.

Several kinds of baskets and flower stands appear in this Class, namely:—

1033. R. Adamson, gr., Balcarres. Neat Willow baskets intended for carrying choice flowers and fruits. They are flattish with rounded ends and bottoms, and furnished with cross handles, and are of very neat workmanship.

1057. R. Cosser, 13, Stucley Terrace, Hampstead Road. Fancy baskets and flower stands. The stands consist of basket work enclosing a metal pan to hold the pots, the stem being ornamented with slight irregular branches in the form of rustic work. One of these stands, about 3 feet high, forming a table-like basket, was priced 4*l*. 4*s*. Different forms of smaller stands for one or more pots, range from 6*s*. 6*d*. to 25*s*. They are painted white and gold, the rustic portion being gilt, an operation in very questionable taste. Some of the same kind of baskets suspended by gilt chains, are elegant and well suited for drawing-room conservatories.

1073. R. Giehr, 4, George's Row, City Road. Garden Chair, the back and frame formed of light rods bound together by willow strips, and the seat circular, of interwoven slips of willow. It forms a light and easy seat.

1081. M. H. Heeks, 61, White Lion Street, Pentonville. Fern pots, that is to say, little baskets in the shape of flower pots, for planting Ferns in.

1098. R. Lenton, Exeter. Wicker flower stands about the height of a table, and either light coloured or stained a deep brown. They are of different forms, and each of the receptacles for the flower pots is fitted with a metal pan, so that water may not be spilled. They are intended for in-door use.

1138. T. & J. Toplis, Ashby-de-la-Zouch. Flower stands of basket work.

The undermentioned articles of Class IX. have been ticketed since we searched for them on a former occasion, and are now discoverable:—

2100. T. W. Cross & Co., Leeds. A wooden Garden Engine, of varnished Oak. It appears to be well made, but without any peculiar characteristics.

2158. W. N. Nicholson, Newark. Patent Double-cylinder Garden Roller. The cylinder is made in two parts, beyond which, the chief peculiarity consists in the shortening of the axle-tree, so that the ends are concave, in which latter feature we fail to discover any special advantage.

DEATH OF MR. TWEEDIE.

We learn from the *Weekly Standard* of Buenos Ayres that Mr. John Tweedie died in that city on the 1st of last April in his 87th year. From the notes of the Editor we borrow a few biographical extracts. The deceased was a native of Lanarkshire, and his profession that of a landscape gardener. At an early stage he became foreman in Dalkeith Gardens, and subsequently in the Botanical Garden, Edinburgh. In both these he had opportunities of seeing and acting, under the ablest superintendence. About the close of the last century, a new garden and pleasure grounds were to be formed at Castle Hill, in the vicinity of Ayr, and Tweedie was selected for the purpose. Here he had an arduous struggle with an ungenial soil and bleak climate; but the munificence of the proprietor, and the skill and perseverance of the young gardener, prevailed. His success at Castle Hill next recommended him to the proprietor of the adjoining estate of Sundrum, where he was employed for some seven years in remodelling and extending the garden and pleasure grounds of the venerable and princely mansion. His mission at Sundrum fulfilled, he removed to Blairquhan Castle, the property of the late Sir David Hunter Blair. About six years sufficed to put the garden and pleasure grounds in working order. His next and last appointment in Scotland was that of gardener at Eglinton Castle during the minority of the late Earl. He had now attained the mature age of 50, when most men would have settled down to enjoy the quiet of declining life. But Tweedie had heard of the botanical riches of South America, and felt attracted towards them by some influence that was irresistible. In consequence he abandoned his snug retreat at Eglinton Castle, and in 1825 arrived at Buenos Ayres. During a residence of 37 years he prosecuted his professional avocations, so long as health and strength permitted, with enthusiastic zeal and perseverance. Of his taste as a landscape gardener, Santa Catalina, in the vicinity of this capital, is still a noble monument after all the vicissitudes of a long revolutionary period. Its gorgeous plantations, that in Great Britain would have required centuries of careful cultivation, show the capabilities of our soil and climate. Latterly his attention was chiefly directed to the botanical productions of the Republics of the Plate and of the Empire of Brazil. In quest of these, his peregrinations, at his own risk and cost, extended from Bahia Blanca in the South, to Tucuman in the North, embracing the coasts of the Plate, the Paraná, the Uruguay, the Rio Negro, &c., and that of the Atlantic as far North as Rio Janeiro. With what success he fulfilled this arduous mission, may be seen in the botanical records of the United Kingdom, and inferred from the active correspondence maintained for many years with Bonpland, Sir William Hooker, Dr. Gillies of Mendoza, Dr. Gordon of Cordoba, and other names distinguished in these departments of natural science.

The subject of this notice being the person to whom we are indebted for the origin of the now numerous varieties of Verbena, which add so much to the beauty of our flower gardens and parterres, as well as the introducer of many other valuable plants to British collections, deserves more than a passing notice in a Journal devoted to horticultural and agricultural matters.

The first of the showy Verbenas which appeared after V. chamædrifolia, was raised at the Botanic Garden, Glasnevin, by Mr. Niven, from seeds received from Mr. Tweedie, and named in honour of the latter Verbena Tweediana. Soon after the fine white species, Verbena teucrioides, appeared through the same source. From mixing these species with V. chamædrifolia and V. pulchella, the present breed originated. The very useful and beautiful Franciscea latifolia was flowered from plants raised from seeds sent to Glasnevin by Mr. Tweedie in 1840. Soon after Mandevilla suaveolens appeared, and was named after the British Consul at Buenos Ayres, the Hon. Mr. Mandeville. In 1841 the seeds from which the Pampas Grass was first raised were sent to Glasnevin by Mr. Tweedie, named Aira gigantea. Some beautiful Bignonias were also introduced through Mr. Tweedie; one of the finest is named Bignonia Tweediana. Another beautiful plant from the mountains of Rio Grande, namely, Calliandra Tweedii, *Bentham*, was raised at Glasnevin in 1843, and is now in flower there with many hundreds of its bright scarlet showy flowers. Mr. Tweedie also sent large numbers of Cacti to Britain, some of which have from time to time appeared in periodical works, and others remain still in our collections undescribed.

Journals of some of the principal excursions made by Mr. Tweedie in South Brazil have been published by Sir W. Hooker in the "Journal of Botany" and "Annals of Natural History." Besides, the "Contributions towards a Flora of South America and the Islands of the Pacific," by Hooker and Arnott, published in those works, will show how largely those gentlemen were indebted to Mr. Tweedie for data to work on.

The following extracts from his letters will afford sufficient proof of some of the hardships he had to encounter on his botanising excursions. In one, bearing date July 22, 1840, he writes:—"I have met with more uphill work here than you who live in the midst of civilisation can believe. In the first place I live in a flat monotonous country, where I must go 500 or 600 miles before I meet with either diversity of soil or of elevation, through nothing but a vast plain of Grass and Thistles. In one of my journeys to the Cordilleras of Tucuman, though only 1200 miles, it took us six months constant travelling to accomplish it. Sometimes we made little more than 3 miles a day. This you will say affords good time for collecting. But what is to be collected in those grassy plains?

"In another voyage by water up the Uruguay o little more than 300 miles, it took us six weeks, in consequence of calms and currents. Again, in one up the Parana, I was shipwrecked in a pampiera gale, when midday became as black and dark as if it were midnight, 400 miles up the river." "I next left Buenos Ayres for Patagonia in a small vessel with only five days' provisions on board. During the third night we grounded on a sand bank near Cape St. Antonio, when, with another passenger, I left the ship to try and make our way overland; but after travelling two days we could not find our way out of coarse grassy plains and salt marshes, and had again to return to the vessel on the third day, after being all that time without food or fresh water. After throwing half the cargo overboard, we got off and stood out to sea, only to suffer greater privations, for out of the five days' provisions we had to live nineteen days, when we arrived at Bahia Blanco, where there is only hard brackish water, the partaking of which laid the foundation of a distemper in me I shall never get rid of. I shall only mention another unfortunate voyage to Rio Grande, where I was anxious to be in order to commence botanising at the season I had left three years before, that being one of the finest countries for variety in its vegetation that I have yet seen. We were shipwrecked off Monte Video, where the brigantine was knocked to pieces, and I was saved by clinging to the rigging."

Such mishaps as these did not extinguish the ardour of Mr. Tweedie, who, after he had passed the three score and ten years, undertook a second journey from Buenos Ayres to Patagonia, and was again nearly starved to death. In his account of this journey he mentions being accompanied by a fellow traveller, when they were prevented from prosecuting their journey in consequence of the unusually swollen state of the rivers they had to cross at that period of the year. The stock of provisions became exhausted, and starvation seemed inevitable, when at a great distance across the level plain some dark object became perceptible, which they thought might be some travelling party. On their closer approach they were surprised to find the objects were trees, and a species of Pinus, on the seeds of which they existed until the rivers fell and they became enabled to pursue their journey. Two of the cones of one of these trees were sent to Glasnevin, and the plants raised from them proved to be a slight variety of the Stone Pine, Pinus pinea. Mr. Tweedie states that the trees were low, but spread over a large surface of ground horizontally; and singular enough, the young plants retain the same habit, which seems the only difference between them and the ordinary state of the species.

Indoor Gardening.

It is, I think, nearly time that our indoor plants should turn themselves out at windows. There is nothing like sun and air for ripening new wood, and many window gardeners will have often wondered why the year they bought them their plants blossomed beautifully, and then the next spring perhaps had scarcely a single blossom.

In nine cases out of ten the new wood was never ripened. We see the long green shoots of a Geranium; and these are good or bad just according to how they harden. All goes right enough till the blossoming is over, but after that it is that we come to grief. These green shoots should be shortened to keep the plants something of the shape we wish, and the plants should be then exposed to plenty of air and sunshine.

Geraniums, for instance, blossom on young shoots of the same year; looking at a plant just bought for the window we see at once the mark where the old wood grew to—all the leaves and flowers have newly grown from this. The ruin of half the window plants when it comes to winter is the inability of the young shoots to withstand the frost. How often we see the points all nipped and blackened. If they had been allowed in summer to get hard and barky and then had been cut back to where they were thus hardened, half our winter's difficulty would at once have vanished.

The Geraniums, however, will give more than one set of blossoms. Those just going past should be cut off to where the next sign of a bud appears—at least the one or two joints next the stalk being cut off with the dead flower-stem. Turning out the ball, the old soil that shakes off easily should be thrown away, or if there seems to be scarce anything but roots, a new pot should be taken of rather a larger size, drainage being put in, and as much fresh soil as can be shaken and pressed down gently. The surface soil also should have been loosened and peeled off, and some new mould of course will fill up this place also. Treated in this manner I have sometimes turned out Geraniums in June to a place upon the roof, where between two slopes it was very hot, and where the wind could only throw the pots upon their sides, and after standing there a few weeks they have come back again to my window in the gayest and brightest dress, always however requiring unlimited scrubbing to remove the effects of the London blacks.

I do not know how far the plan is orthodox, but I have often found soap-suds a great thing for pot plants. I have even washed plants often with a flannel and soap (common yellow soap), and my own belief is that few things are better for keeping blight away. [A very just practical observation. *Ed. of G. Chron.*] Soap-suds, also, are an available manure, and thus my own plants often have received amazing benefit from the mere supply of soap-suds following the sort of "lace washes" that people's maids have at home. Arums especially benefit, because the soil is thus freed from insects; but for these sort of things, especially while out of doors out of the way, nothing does better than a spoonful of soot in a small can of water. It is a happy certainty that even the wire-worms hate this, and anything they do hate is a real treat to know of.

The wire-worms are those wretched thread-like creatures which cluster about the collar (the stem where it joins the root) of some tender Fern or petted plant, and gradually eat into it till it seems to decay and die. They are horridly hardy and much enduring. Lime water scarcely prevents them, and they stand cold well. I have tried a top-dressing of Keating's insect powder, and almost flatter myself that it has been of some use; but this year I have not found many pots affected by them, as I have used unusual quantities of sharp sand and Cocoa fibre.

To return, however, to soap suds. We once had a Fig tree, which never would have on it any leaves worth speaking of. This was in the country, and the gardener at last used every week to take it a whole water-cask full of warm soap-suds. After a few months

of this treatment, though growing in common ground, the Fig tree became the most luxuriant that I ever saw, and I have often since seen Rose and other trees restored under the same treatment. Guano, &c., is not by any means useful in the hands of window gardeners. But when one has a fair chance of administering soot and soap-suds to plants in their summer quarters, one can hardly, I think, be too ready to make use of them. *E. A. M.*

Home Correspondence.

Variegated Ferns.—One of the most interesting circumstances in connection with the new variegated Ferns is the way in which they reproduce themselves perfectly true from spores. I have raised each of the three kinds—Pteris argyræa, P. tricolor, and P. cretica albo-lineata—from spores; of the latter more especially several thousands of young plants must have passed through my hands, and yet I never saw the least tendency among them to revert to the original green form of the several species of which they are said to be varieties. At the time when the greatest stock of P. albo-lineata was under my charge there was not a single seedling of the true P. cretica in the place; I am the more confident that not one out of that large number reverted to the green form as I watched narrowly for it, fully anticipating that some, at least, would not come true. Those who have raised the largest number of P. argyræa and P. tricolor tell me that the same thing occurred with those plants—all the seedlings came true. I look upon this circumstance as being the more remarkable from what was told me by M. Warscewicz, when he was in England last year. He said that he had a few years previously received a variegated form of P. cretica, exactly resembling the one now called albo-lineata, from the Levant; he at once attempted to increase it by spores, but all the seedlings were green—there was not one which exhibited a trace of variegation. A friend of mine informs me that he has found P. argyræa to be quite plentiful in its native locality, the ravines in the neighbourhood of Ootacamund, and as common as any of the green Ferns in some places. It must therefore naturally reproduce itself freely from spores. *C. W. C.*

Pattern for Workers in Metal.—In passing through a flower show this morning I was very much struck with the beautiful metallic appearance of the leaves of Alocasia metallica, and the shape seemed to me so very suitable as a pattern for a bronze tray for cards, &c., that I thought it worth while to throw out the suggestion in this way, and if it should meet the eye of any manufacturer of such articles, through the medium of your columns, a good pattern may perhaps come of it. Such a tray might be made of thin copper, pressed into the exact shape of the leaf and nicely bronzed to correspond with the colour of the leaf; and I think an article so beautifully simple and yet so natural would be sure to find favour with the public, at least with those possessing good taste. *Henry Richardson, Cherry Tree Hill, York.*

Insect Mischief.—A brown maggot half an inch long has attacked my Pinus insignis and Benthamiana; it gets into the leaders and young shoots, eats out the pith, and then spins a web and becomes a chrysalis. What can I do with it? all my best leaders are going. The trees are about 6 feet high. In some holes I have found as many as four maggots. *Southams, Devon, June* 18. [We suppose this to be the too well-known Hylurgus piniperda. All that can be done is to remove the parts attacked and *burn* them immediately.]

Salmon.—For the information of your Correspondent "G. C.," who asks for directions about the culture of salmon, I beg to say he will find an interesting article on the subject in the Supplement to the *Illustrated London News* of April 5, 1862, together with sketches of the incubator apparatus, and of the breeding ponds at Stormontfield, near Perth, N.B. *Wm. B. B.*

Lilium giganteum.—I have just flowered this. The height of the stem from top of pot is 7 feet 6 inches, and the circumference of stem at foot is 10 inches, the number of blooms 18. *James Miller, Jun., Greenock.*

Birmingham Rose Show.—I am glad to inform you that the entries for this exhibition are already so numerous as to ensure not only a magnificent display of Roses, but also one of the most interesting collections of horticultural implements and garden ornaments ever brought together. In the former department there will be an abundant display from many of our most famous Rose gardens; and the latter will contain new and beautiful specimens of plate, glass, and porcelain, as used in combination with flowers and fruit; ornamental vases, flower-pots and edgings in earthenware and terra cotta; a large assortment of implements and cutlery, wire work, &c. Specimens are promised from several of the principal manufacturers, not only in Birmingham itself, but in the potteries of Staffordshire and Worcester. Let us therefore trust that the exhibition will receive such support as may establish its permanence and render it an annual gratification to the public, whom it cannot fail to please, and to the horticulturist, whom it cannot fail to instruct. ——.

Dipladenias.—Several gardeners have endeavoured to flower with me the Dipladenia crassinoda and D. Houtteana, but without success. The plants grow well and strong up to a certain point, covering a moderate sized barrel trellis with healthy-looking foliage, but then without red spider attacking the foliage it begins to turn yellow and drop off, leaving little but bare stems with weak shoots breaking out here and there without any attempt at flowering. My plants are in a moist house kept up to 75°, sometimes a little lower, and in the sun higher. They are partially shaded and planted in peat, leaf-mould, loam, and sand, with a little bottom-heat; they are not watered in excess, and why they should have invariably gone off at a period when it might be expected they would show flower I am at a loss to imagine. Will some of your correspondents, therefore, kindly put me into the way of flowering these lovely plants? *Thomas Ingle, M.D., Emsworth.*

Mowing Machines.—I agree with Mr. Sheppard in reference to his opinion of Green's mowing machines. I bought one in 1860, and it has been out of order two or three times since, giving trouble by delaying work, which was badly done, besides adding to the cost by repairs. It is also harder to work than the one I used until 1860, which I purchased of Ferrabee, of Stroud, in 1853, and which worked without trouble or delay for seven years. I bought Green's machines on the report of the judges of the Royal Horticultural Society, and I think that my experience tends to convince me of the comparative worthlessness of trials for show. *Henry Fowler, Woodford.* [We must say our experience of Green's machines is the reverse of our correspondent's.] ——In reference to a notice in one of your late numbers of awards to lawn mowing machines at the Royal Horticultural Society' gardens, we should wish your readers to know that there were no trials, so far as we are aware, of the various machines exhibited. Our Shanks' Patent Lawn Mowing Machines were sent on the first day for exhibition only, and we intimated this to the secretary of the implement committee. We also more than once distinctly refused on the first day of the exhibition to allow our machines to be tried there on that occasion. We would just add that your correspondent "X" in the agricultural portion of your Paper, under the heading of "Show Implement Trials," has already stated facts bearing on the subject; and we quite coincide in the opinions so well expressed in that communication. *J. B. Brown & Co.* 18, *Cannon Street, City, June* 18, 1862. ——As a discussion is going on in your pages relative to the comparative merits of several makers' lawn mowers, it is only fair towards Mr. Shanks' machine to say that I have had one of his 42-inch machines in constant use for 15 years, and that at a trifling cost for repairs it has cut over from 40 to 50 acres of lawn annually in a most satisfactory manner; this will afford evidence of the durability and efficiency of Shanks' first made machines, and should be taken into account in weighing their merits. This year we have a new 42-inch machine by the same maker, which is an improvement as regards managing, cutting, and diminishing the draught, and with some little alteration to the delivery box, seems to comprise all that can be done with these useful machines. *John Spencer, Bowood, Wilts, June* 24.

Vine Borders and Guano.—I have served as gardener and bailiff to a nobleman in Flintshire, and on commencing I found three Vineries, one of which was nearly new, the Vines having been planted only four years; they were really in good condition, the border having been made as well as could be done. In another house the Vines had been taken up the year before, a new border made, and the old plants replanted, but these were in rather a weak state. The third and largest of the three houses I should state had its Vines planted without the least attempt at preparing or making a border for their reception, and I found from inquiries that for years past it had been the wish of the owners to have a crop of something in the growing season on the border. Owing to the spade work therefore the roots were driven down, and I could find none within 18 inches of the surface, I however applied fermenting material, and got the border well filled with roots, after which I gave a liberal dressing of guano, and very slightly pricked the soil over with a fork, breaking the earth quite fine, and I am thoroughly convinced that the guano was of great service, as it caused the roots to ramify more freely, and the Vines to make stronger wood and to produce finer fruit. *John M'Ardell, late Gardener to the late Miss Dalton.*

Archerfield Muscat Grape.—In reference to a statement in your report of the Royal Botanic Society's Show on the 18th inst., allow me to say that the Early Muscat and other sorts here have all been grown in one house, which was shut up on the 14th December. The Early Muscat was quite yellow and ripe in the first week of May, while the other sorts, which are Tynningham Muscat, Bowood Muscat, and the Alexandrian Muscat, are scarcely yet fit for table. A few bunches of the Bowood and Tynningham varieties are changing to yellow where the sun reaches them, but the Alexandrian is yet quite green. The early Muscat ripened at the same time as a house of Black Hamburghs, which was shut up on December 1, and which ranged 5° lower than the Muscat house. *D. Thomson, Archerfield.*

Foreign Correspondence.

BRITISH COLUMBIA: *April* 30, 1862.—The rush to the gold fields has begun. Steamer after steamer comes pouring out 300 to 700 or even 1000 at a time from all parts of the world—more like a miniature Epsom day along the road between Victoria and Esquimalt than anything else. But I miss many of the features of the rush of 1858. More Canadians this time than foreigners. When will John Bull himself show his honest face here in any numbers? What are the strong able men and industrious at home (but out of work) about that they don't come in instead of foreigners from every clime under heaven, without any love for the place and not coming to settle. It is vexing to an Englishman to see it. I am glad to see Canadians coming; they are good settlers. Seen from a distance the new comers, for two miles, blacken the road and look like a string of ants. Our risk is now reduced to the possibility of a failure of provisions for such a host, in this wild country where there are so few cultivators. What a wonderful chance for gardeners who can grow vegetables, or for small farmers who can breed stock!

Societies.

ROYAL HORTICULTURAL: *May* 21.—(*Addendum*).—We understand that amongst the Horticultural Implements shown on this occasion, a model of a portable warming and ventilating apparatus was exhibited by Mr. Newton, 30, Eastbourne Terrace, and that a label of commendation was placed upon the model, though it does not appear amongst the advertised awards. The apparatus it seems is intended for supplying to horticultural structures, dwellings, churches, &c., fresh air heated to any degree of temperature, this air being warmed by means of a hot-water apparatus, and passed into the structure to be warmed by what are called "contracting and expanding openings." In other words, the apartments are to be heated by currents of heated air combined with the use of hot-water, both air and water being heated by a common fire-place which acts as a ventilator and smoke consumer. The principle of the arrangement is stated to be equally applicable to ordinary fire places as to conservatories, public buildings. Not having seen this model, which was it appears removed the day after the show, we can only further state that the apparatus can be viewed in operation at Mr. Newton's residence, and that drawings of it are published in the *Engineer* of June 13.

ROYAL HORTICULTURAL: *June* 26 (*Rose Show*).—Of the main features of this great exhibition of Roses, a further account will be given next week; on this occasion we only take up details.

Among collections of 96, that to which the first prize was awarded was contributed by Mr. Francis of Hertford. It contained among others fine examples of Madame Vidot, Prince Leon, Anna Alexieff, Amandine, Madame Cambacérès, Souvenir d'un Ami, Comtesse Cecile de Chabrillant, Lion des Combats, Baronne Prevost, Duchess of Norfolk, La Reine, Eugène Appert, Madame Boll, Madame Domage, Victor Verdier, Mathurin Regnier, Princesse Clotilde, Wm. Griffiths, Auguste Mouchelet, Souvenir de Leveson Gower, Pauline Lanzezeur, Oriflamme de St. Louis, Paul Dupuy, Gloire de Dijon, Géant des Batailles, Triomphe de l'Exposition, Caroline de Sansal, Senateur Vaisse, Madlle. Alice Leroy, Lord Palmerston, Lord Raglan, Grandissima, Monsieur Montigny, Louis Bonaparte, Felicité, Triomphe des Beaux Arts, Souvenir de Malmaison, Jules Margottin, Madame Knorr, Chas. Lawson, Louis XIV., Madame Rivers, Anna Diesbach, Paul Ricaut, and Madame Hector Jacquin. From Mr. Mitchell, of Piltdown, came beautiful boxfuls in which were the following varieties, viz.:—Victor Verdier, Eliza Sauvage, Lord Raglan, Louise Odier, Alexandrine Bachmeteff, La Ville de St. Denis, Darzins, Gustave Coraux, Comtesse Ouvaroff, Comte de Cavour, Madame Breon, Madame Rivers, M. Hector Jacquin, Duc d'Ossuna, Madame de Lamoricière, Triomphe de Paris, Souvenir de la Malmaison, Pæonia, Souvenir du Comte de Cavour, Louise d'Arsins, François I., Comtesse Cecile de Chabrillant, Alexandre Fontaine, Duc de Magenta, Comte de Paris, Charles Lawson, Lion des Combats, Madame Domage, Senateur Vaisse, Baron de Wassenaer, Leonice Moise, Louise de Savoie, Madame Van Houtte, Jacques Lafitte, Souvenir d'un Ami, Evêque de Nîmes, Madame Vigneron, Duchess of Norfolk, La Reine, Triomphe d'Alençon, Moss Crested, Homère, Pauline Lanzezeur, Orderic Vital, Princesse Mathilde, Vicomtesse Decazes, Catherine Guillot, Duc Decazes, Colonel Cambriels, Lady Georgina Milner, Delamotte, Narcisse, Triomphe des Beaux Arts, Jules Margottin, Madame Vidot, Paul Ricaut, Madame Furtado, Docteur Bretonneau, W. Griffiths, Prairie de Terre Noir, Baronne Prevost, Monsieur Joigneaux, Madame Knorr, General Jacqueminot, Goubault, Géant des Batailles, Buffon, Clement Marot, Ornement des Jardins, Souvenir d'Elise, Gloire de Santenay, Comte de Nanteuil, Madame Schmidt, Noëmi, La Brillant, Comtesse d'Orleans, Gloire de Bordeaux, Anna Alexieff, Devoniensis, Louis XIV., Amabilis, Charles Lefevre, Auguste Vacher, Agatoide, Colonel Rougemont, Madame Boll, Louise Magnan, Coupe d'Hébé, Gloire de Dijon, Robert de Brée, Sombreuil, Parmentier, Madame la Comtesse, Triomphe de Rennes, Archduc Charles, and Madame Damaisis.

Mr. William Paul, who was third, sent very fine specimens of Lælia, Catherine Guillot, Charles Lawson, Common Senateur Vaisse, Bouquet de Flore, Ohl,

Moss, D'Aguesseau, Reine des Violettes, Madame Hardy, Baronne Hardy, Baronne Hallez, Madame Rivers, Louise Odier, Madame Hector Jacquin, Géant des Batailles, Marquise de Foucault, Coupe d'Hébé, Sanchette, French Crimson Moss, Paul Ricaut, Madame Bravy, Paul Perras, Devoniensis, Anna Alexieff, Moss Princess Royal, Triomphe de Rennes, Crested Moss, Triomphe d'Amiens, Madame Zoetmans, President, Madame de Cambacérès, Letitia, Madame Knorr, Charles Duval, Caroline de Sansal, William Griffiths, Chenédolé, Louis XIV., Comte de Paris, Reine Parmentier, Blanchefleur, Madame Furtado, Model of Perfection, Beauty of Waltham, Archimedes, Brilliant (Paul's), Kean, Madlle. Alice Leroy, Louis Philippe, Prince Leon, Bougère, Gloire de Vitry, Madame Le Gras, Comtesse Cecile de Chabrillant, Duchess of Norfolk, Gloire de Santenay, Triomphe d'Alençon, Lamarque, the Moss Rose Baron de Wassenaer, Paul Perras, Julie Mansais, Eugène Appert, Souvenir de Leveson Gower, Madame Domage, Madame Plantier, Victor Verdier, Narcisse, Empress Eugénie, General Jacqueminot (Hybrid Perpetual), Alphonse Karr, Souvenir de Malmaison, Jules Margottin, Madame Audot, General Jacqueminot (Hybrid China) Œillet Parfait (striped French rose), Madame Boll, Souvenir de la Reine d'Angleterre, Madame Masson, Madame Vidot, Baronne Prevost, Triomphe des Beaux Arts, and Mathurin Regnier. From Mr. Keynes, who was placed fourth, came beautiful blooms of John Waterer, Gloire de Santenay, General Jacqueminot, Souvenir de Leveson Gower, Prince Leon, General Castellane, Jules Margottin, Eugène Appert, Comte de Faloux, Lord Raglan, Madame Boll, Evêque de Nimes, Oriflamme de St. Louis, Louis Chaix, Senateur Vaisse, and Madame Pauline Villot, all fine high coloured kinds; also Celine Forestier, a good yellow, Gloire de Dijon, and Souvenir de Malmaison. From Messrs. Paul & Son came Agatoide, Louis XIV., Le Royal Epoux, Madame Domage, Madame Bonnaire, Souvenir de la Reine d'Angleterre, Madame Chas. Crapelet, Sir J. Paxton, Lamarque, Chénédolé, Transon Goubault, in very fine condition; Senateur Vaisse, large and beautiful; Chas. Lawson, Wm. Griffiths, Paul Ricaut, Madame Vidot, Anna Alexieff, Madame Furtado, La Ville de St. Denis, Gloire de Couline, Wm. Jesse, and Lord Clyde. From Mr. Hollamby, Tunbridge Wells, came Gloire de Dijon, Senateur Vaisse, Pius IX., Arthur de Sansal, Comtesse Cecile de Chabrillant, Gen. Jacqueminot, Sophie de Marably, La Reine, Souvenir de Malmaison, Baron de Wassenaer, Madame Knorr, Dr. Bretonneau, Prince Leon, Goubault, Belle Allemande, Sofranot, Coupe d'Hébé, Wm. Griffiths, Louis XIV., Chas. Lawson, Jeanie Deans, Blairii No. 2, Adelaide Bougère, Omar Pasha, and Moss Lanei. Mr. Cranston also showed good blooms of most of the varieties just named.

In the Class of 48 Roses, Mr. Cranston also showed a collection, in which were Mrs. Bosanquet, Cardinal Patrizzi, Lord Raglan, Reine Mathilde, Jules Margottin, Souvenir de Malmaison, Canary, a semi-double bright yellow; Blairii No. 2, Baronne Prevost, very fine blooms of General Jacqueminot, Arthur de Sansal, Victor Verdier, Géant des Batailles, Louis XIV., Pauline Lanzezeur, Unique, Anna Alexieff, Prince Leon, Lion des Combats, Comtesse Cecile de Chabrillant, Madame Darezin, Madame Furtado, Madlle. Appert, Comte Odart, Boule de Nanteuil, Model of Perfection, Paul Ricaut, Gloire de Dijon, Madame Cambacérès, Triomphe de Paris, Cynthia, Senateur Vaisse, remarkably high coloured; Madame Knorr, Louise Odier, Baronne Hallez, Lord John Russell, John Waterer, General Kleber, Oriflamme de St. Louis, Anna Diesbach, Madame Vidot, Souvenir de Leveson Gower, and Leonice Moise, the last a fine dark velvety looking kind.

Of 24 varieties the best came from Mr. Cant, of Colchester, who sent Eugène Appert, Victor Verdier, Wm. Griffiths, General Jacqueminot, Devoniensis, Prince Leon, Comtesse Cecile de Chabrillant, one of the three blooms of which was striped; Paul Ricaut, Louis XIV., Colonel Rougemont, Pauline Lanzezeur, Anna Diesbach, Duke of Cambridge, Madame Vidot, Coupe d'Hébé, Triomphe de Paris, Clement Marot, Baronne Prevost, Mathurin Regnier, Victor Troullard, Souvenir d'un Ami, Jules Margottin, Madame Boll, and Rubens; the last a white Tea Rose. From Mr. Francis came Maurice Bernardin, a new finely-shaded variety, equally high-coloured as Senateur Vaisse or Gloire de Santenay; Madame Knorr, M. Bonnaire, Duchess of Norfolk, Wm. Griffiths, Clara Wendell, Lord Raglan, Comtesse Cecile de Chabrillant, Triomphe des Beaux Arts, Paul Ricaut, Victor Verdier, Mathurin Regnier, Cleosme, Madame Cambacérès, General Jacqueminot, Mrs. Rivers, Anna Alexieff, Jules Margottin, and Louis the Fourteenth. Mr. Keynes contributed Comtesse Cecile de Chabrillant, Victor Verdier, Duchesse d'Orleans, Paul Ricaut, Comte de Nanteuil, François Premier, Prince Leon, Madame Furtado, Gloire de Santenay, Charles Lawson, Jules Margottin, Souvenir de Malmaison, Madame Boll, Evêque de Nimes, Pauline Lanzezeur, La Fontaine, Dr. Bretonneau, Senateur Vaisse, Caroline de Sansals, La Reine, Madame Knorr, Gen. Jacqueminot, Madame Vidot, and Anna Diesbach. From Mr. Turner, of the Royal Nursery, Slough, came Madame Hector Jacquin, Gen. Jacqueminot, Madame Cambacérès, Madame Masson, William Griffiths, Anna Alexieff, Gloire de Dijon, Louis XIV., Baronne Prevost, La Fontaine, Lion des Combats, Narcisse, La Reine, Victor Verdier, Mary Ann, Souvenir de Malmaison, Pius IX., Admiral Gravina, Coupe d'Hébé, Duchess of Orleans, Comtesse Cecile de Chabrillant, Charles Lawson, and Senateur Vaisse. Messrs. Fraser and Mr. Shackel also showed in this class, as did also Mr. Laing of Twickenham, and Mr. Batly of Rugby.

In the Amateur's Class of 48 varieties, the 1st prize was awarded to Mr. J. T. Hedge, Reed Hall, Colchester, who showed fine blooms of Comtesse Cecile de Chabrillant, Madame Vidot, Lord Raglan, Mathurin Regnier, Washington, Pauline Lanzezeur, Queen Victoria, Wm. Griffiths, Gloire de Dijon, General Simpson, Baronne Prevost, Princess Helena, Virginal, Souvenir de la Reine d'Angleterre, Clara Sylvain, Charles Lawson, Aurora, La Ville de St. Denis, Lamarque, Anna Diesbach, Reine Victoria, Madame Masson, Madame Cambacérès,. Mrs. Rivers, Eugène Appert, Louise Magnan, Senateur Vaisse, Coupe d'Hébé, La Fontaine, Caroline de Sansal, General Jacqueminot, Adam, Bizarre Marbrée, La Reine, Letitia, Juno, Prince Regent, Pius IX., Orderic Vital, Jules Margottin, Madame Bravy, Madame Boll, Devoniensis, General Jacqueminot, and Smith's Yellow. A second exhibition of 48 sorts from Mr. Corp, of Salisbury, contained Celine Forestier, Triomphe de Lyons, Madame Knorr, La Reine, Gloire de Dijon, Paul Ricaut, Evêque de Nimes, Comtesse Cecile de Chabrillant, Madame Boll, Louise Peyronny, Gen. Jacqueminot, Madame Vidot, Senateur Vaisse. Mr. Laxton and C. M. Worthington, Esq., showed in this class, as did also Dr. Cooper, of Slough.

In the Class of 24 Varieties, Mr. Hedge again won the 1st prize for a fine collection, in which were Comtesse Cecile de Chabrillant, Mrs. Rivers, Gen. Jacqueminot, Queen Victoria, La Fontaine, Adam, La Ville de St. Denis, Gloire de Dijon, Madame Hardy, Baronne Prevost, Madame Vidot, Jules Margottin, Lord Raglan, Bizarre Marbrée, Letitia, Coupe d'Hébé, Souvenir de la Reine d'Angleterre, Aurora, Paul Ricaut, Reine Victoria, Madame Knorr, Alexandrine Bachmeteff, Juno, and Charles Lawson. A second collection, from the Rev. Canon Fisher, contained among others fine blooms of the following, viz., La Reine, Gloire de Dijon, Persian Yellow, Senateur Vaisse, Virginal, Transon Goubault, Paul Ricaut, Souvenir de Leveson Gower, Jules Margottin, Madame Knorr, Comtesse Cecile de Chabrillant, General Jacqueminot, and La Ville de St. Denis. Mr. Moffat of Dunmow, Mr. Ingles of Colchester, and Mr. Corp of Salisbury, also had good boxes of 24 varieties.

In the class of 12 blooms, Mr. Hedge was first with fine examples of Souvenir de Malmaison, Souvenir de la Reine d' Angleterre, Madame Knorr, Comtesse Cecile de Chabrillant, Wm. Griffiths, Chas. Lawson, Gloire de Dijon, Madame Cambacérès, Mathurin Regnier, Pauline Lanzezeur, Reine Victoria, La Fontaine and Madame Boll. Mr. Corp, Mr. Ingle, Mr. Helyar, and others also showed in this class.

Of 18 varieties Mr. Hedge had the best exhibition, which consisted among others of Comtesse Cecile de Chabrillant, Souvenir d'un Ami, La Ville de St. Denis, Comtesse Mohl, Aurora, Charles Lawson, Senateur Vaisse, Wm. Griffiths, Shakespeare, Madame Vidot, La Fontaine, General Simpson, Pauline Lanzezeur, and Mathurin Regnier. A second collection, from Mr. Stratton, of Marlborough, contained Duc de Magenta, Jules Margottin, Eugène Desgaches, General Castellane, Wm. Griffiths, General Jacqueminot, Coupe d'Hébé, Sombreuil, Lion des Combats, Anna Diesbach, Senateur Vaisse, Caroline de Sansal, Géant des Batailles, Madame Furtado, Paul Ricaut, Mrs. Rivers, and La Reine. A third collection, from Mr. Ingle, contained fine blooms of Madame Chas. Crapelet, and Mr. Corp and others had good examples of kinds, the names of which have been already mentioned.

Of New Roses several were shown, the best among which were John Hopper, rosy purple with bright crimson centre; Model of Perfection, pink, and of good shape; Washington, crimson, a finely formed variety; Catherine Guillot, a beautiful Rose, but sometimes a little hard in the bud; Madame Furtado, large rich rose, fine in form, and very sweet; Marquise de Foucault, salmon, not very double, but fine in outline, and a free flowerer; Madame Standish, peach, good in shape; Alexandre Fontaine, rich crimson; Louise Darzins, pure white, not large, but fine in form; Charles Lefevre, purple, large and showy; Maurice Bernardin, violet, shaded crimson, compact and good; and Gloire de Chatillon, large slate, too flat perhaps, but nevertheless a showy Rose.

Of Roses in small pots there were one or two collections which deservedly attracted considerable attention; for they were well grown and flowered. They were furnished by Messrs. Paul & Son and Mr. Turner of Slough.

Of bouquets of Roses, Mr. Turner sent a large one for table decoration in a rustic vase, and there were one or two others of small dimensions; but with the exception of one lot, which was properly shown in Hyacinth glasses as required, the rest were placed in such ugly stone jars as to render whatever merits they possessed completely lost. Let us hope that some pains may be taken in future to set off exhibitions of this kind to better advantage. A pretty basket of Roses came from Lady Hume Campbell, so contrived that the blooms could be put in phials, an arrangement which had the effect of keeping them fresh and beautiful much longer than they otherwise would be.

Of boxfuls of one kind of Rose, we observed splendid exhibitions of Jules Margottin, Baronne Prevost, Anna Diesbach, Charles Lawson, Madame Boll, Oriflamme de St. Louis, Gen. Jacqueminot, Comtesse Cecile de Chabrillant, Reynolds Hole and Madame Boll.

Of Tea Roses a good boxful came from Mr. Cant, who furnished Madame Joseph Helpin, Reine Victoria, Josephine Malton, Le Boule d'Or, Clara Sylvain, M. Domage, Aurora, Smith's Yellow, Adam, Enfant de Lyon, Madame Willermoz, Gloire de Dijon, Comte de Paris, Souvenir d'un Ami, Sombreuil, Devoniensis, Nina, and Rubens. Mr. Hedge also showed in this class.

Of flowers that came under the consideration of the Floral Committee there were some handsome varieties of Pinks from Mr. Turner, to four or five of which certificates were awarded, and a dwarf yellow Calceolaria, apparently very suitable for bedding purposes, from Messrs. Downie, Laird, and Laing, had a similar award Two pretty varieties of hardy Ferns also came from Mr. Bull and Mr. Parsons of Danesbury. One or two Pelargoniums were also awarded certificates. Fruit consisted of two well-grown Providence Pine Apples from Lord Folkestone, and of Vegetables there was a very fine Pea called Laxton's Early Prolific, with no fewer than ten peas in a pod. This came from Mr. Laxton of Stamford.

Notices of Books.

Life in the Forests of the Far East. By Spenser St. John, F.R.G.S. In 2 vols. Smith, Elder & Co.

Happy Mr. St. John, to have the good fortune to have found a new country to write about! In these days of travel, when every one must give an account of his summer holiday, it is refreshing to meet with some one who has really wandered from the beaten track, and even penetrated to the unknown wilds of Borneo. We therefore opened these volumes with a feeling of pleasurable excitement, hoping that we should now gain some knowledge of an island of which but scanty notices had hitherto reached us; but we must confess to having been somewhat disappointed. There is a great deal of information in the book, and Mr. St. John appears to have been most diligent in observing, and in making notes of all he saw and heard; but these are presented to us in a crude and ill-arranged form, so that we find the narrative difficult to follow, and are conscious at the end that we ought to know a great deal more than we do.

It would seem that Mr. St. John decided on giving to the public the record of certain journeys into the interior, which he made while a resident in Borneo; for which purpose he extracted and revised such portions of his journal as related to these journeys. But while doing this, he forgot that he had at that time been living in the country for many years, and had become familiar with many things which we know nothing about: persons and objects are thus incidentally touched on in a way which leaves them wholly unintelligible; and it is only by close attention, and a careful comparison of the different slight notices scattered through the pages, that we can arrive at anything like a clear conception of the everyday life and manners of the people. Mr. St. John states that it is 14 years since any traveller has recorded his experiences in Borneo. Would it not therefore have been as well if he had given us a preliminary chapter, containing in a condensed form the result of his former experience and observations?

He gives us, it is true, a sketch of each tribe, showing wherein they differ from each other, but in spite of this, we must confess that our perceptions of the distinctions between Dayaks, Kayans, &c., are of the haziest; we do not clearly understand where these tribes live, nor whose rule they own, nor what intercourse they hold with each other; in fact, it is not clear whether they are distinct nations, or as it were, clans owning the same sovereign. No doubt all these points might be made out by careful study; and the reader who already knows something of the East, and especially of Borneo, will find much to interest him, and to repay perusal, but nine-tenths of those who take up the work will, we think, find themselves with a very dim idea of the Borneans at the end. At the same time it is an amusing book, full of anecdotes and observations on natural history, scenery, ethnology, &c. The author twice ascended Kina Balu, 13,698 feet high, according to Belcher; the first time, owing to delay and disappointment of the arrival of a supply of shoes, with bare feet! a hardship under which his companion, Mr. Low, broke down; being compelled (and no wonder) to remain behind when more than half way up; he however, was not inactive, for being a zealous botanist, he contrived to collect plants around his camp, "notwithstanding his feet were suppurating."

The botanical collections indeed appear to have been the most successful part of the expedition; for they were fortunate in securing many new species, especially of the curious family of Pitcher plants, of which Kina Balu is decidedly the head-quarters, in such abundance and variety did they find them. More than 20 species were gathered here by Mr. Low, and the book is enriched by coloured drawings of some of the finest, with Dr. Hooker's descriptions, taken from the Linnean Transactions. The finest of all, with splendid purple pitchers, is named in honour of Sir James Brooke, and its size may be judged of by the following extract:—"The morning, while the men were cooking their rice

as we sat before the tent enjoying our chocolate, observing one of our followers carrying water in a splendid specimen of the Nepenthes Rajah, we desired him to bring it to us, and found that it held exactly four pint bottles. It was 19 inches in circumference. We afterwards saw others apparently much larger, and Mr. Low, while wandering in search of flowers, came upon one in which was a drowned rat."

As in all eastern countries, Bamboos and Palms are invaluable to the Dayaks. "As we approached the country of the Senah tribe the banks became more uniform in appearance, and the Bamboo constantly formed the principal vegetation; these Bamboos are wonderfully useful to the Dayaks, and are turned to many purposes. In height they sometimes exceed 60 feet. During this tour I have seen them used, stretched in lengths, for paths, placed notched for steps up steep ascents, as railings for Rice fields and Yam gardens, as posts for houses; split they form the floors, beaten out they are the walls of many of the dwellings, and neat and pretty they look; cut into lengths, water is carried in them; joined together they form aqueducts that stretch for hundreds of yards; with them the Dayaks can strike a light; and last, not least, they are used to cook rice in; they are hard enough to stand the fire until the food be ready to eat. They are put to numerous other uses, but the above enumeration is sufficient." In another place Mr. St. John describes an ingenious mode of roofing with them:—"Over the landscape were scattered huts, which had the peculiarity of being flat-roofed; the Kians using the Bamboo as the Chinese use their tiles, split in two; the canes are arranged side by side across the whole roof, with their concave sides upwards to catch the rain; then a row placed convex to cover the edges of the others, and prevent the water dropping through. They are quite water-tight, and afforded an excellent hint for travellers where Bamboos abound."

As for Palms, the following proves their value:—"The Nipa Palm is indeed a blessing to the natives; as we have seen, they make a salt from the ashes of the root; they extract a coarse sugar from the stem; they cover in their houses with the leaf; from the last also they manufacture the mat called Rejang, with which they form the walls of their houses, and the best awning in the world for boats, perfectly water tight, and well adapted to keep out the rays of the sun. Their cigars are rolled up in the fine inner leaf; and a native could doubtless tell of a dozen other uses to which it is put."

One great obstacle in the way of travelling in Borneo is the rain, and the consequent sudden rise of the rivers: a dry watercourse being frequently filled with a rushing torrent in an incredibly short time, or a quiet stream converted into a swift and furious river, rendering navigation dangerous, and often delaying the travellers for days until the subsidence of the troubled waters enabled them to proceed; and since the river was often the only practicable road for loaded men through the forests, these sudden and violent storms proved a constant source of delay and difficulty. Another trouble was the necessity of carrying provisions, the natives having but little to spare, and not being always willing to part with what they had. Otherwise they seem to have received them well: attempts at extortion were not unfrequently made, and an occasional demonstration of a refusal to allow them to pass; but a ball sent through a plank by a revolver, and a somewhat ostentatious display of fire-arms, proved sufficient to solve every difficulty, and in no instance was it found necessary to resort to force.

Mr. St. John is very sanguine as to the future prospects of Borneo: "the energy displayed by the Sea Dayaks gives much hope of their advancement in civilisation at a future time, and a few years of quiet and steady government would produce a great change in their condition." This good government has now been tried for many years by Sir James Brooke; and, as is well known, the improvement he has effected is wonderful. The following is an amusing anecdote of the way in which he manages without ruffling their prejudices. "There is but one more known material remnant of Hindu worship in these countries: it is a stone bull, an exact facsimile of those found in India. It is cut from a species of stone said not to be found in Sarawak; the legs and a part of the head have been knocked off. Its history is this: many years ago, on being discovered in the jungle, the Malays and Dayaks removed it to the bank of the river, preparatory to its being conveyed to the town; but before it could be put into a prahu, they say, a tremendous storm of thunder and lightning, wind and rain arose, which lasted 30 days. Fearing that the bull was angry at being disturbed in his forest home, they left him in the mud. When Sir James Brooke heard that this sacred bull was half-buried in the soil, he had it removed to his house. Several of the Dayak tribes sent deputations to him to express their fears of the evil consequences that would be sure to ensue—everything would go wrong, storms would arise, their crops be blighted, and famine would desolate the land. Humouring their prejudices, he answered that they were mistaken, that the bull, on the contrary, would be pleased to be removed from the dirty place in which the Malays had left him, and that now he was kept dry and comfortable they would find he would show no anger. They were satisfied with this reply and departed."

Mr. St. John gives the following high testimony to Sir James Brooke's rule:—"I have watched the gradual development of Sarawak with the greatest interest; I have seen districts once devoted to anarchy restored to prosperity and peace by the simple support of the orderly part of the population by a Government acting with justice, and it is not surprising that all its neighbours appeal to it when their own countrymen are seen to exercise so great an influence in its councils."

Long may this valuable ruler be spared to carry on the noble work he has begun! It is too much to hope that his successor (whoever he be) will equal him; but he has laid the foundation of self-government in Sarawak, and the next Rajah will find his task comparatively easy.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—As has been previously observed see that sickly or badly rooted specimens, if any, are kept free from red spider; also that young stock is not allowed to suffer from want of pot room, and during bright weather attend carefully to watering, giving weak liquid manure to all plants in free growth that are likely to be benefited by it. Such stove plants as may have been removed to this house while in bloom should be replaced in heat as soon as their beauty is over, in order to permit their young wood to get ripened before short days set in. Orchids must be carefully shaded during sunny days, but when the weather is cloudy allow them as much light as they will bear without injury. Keep the foliage clear of insects and dust by frequent syringings or spongings, as may be necessary. Late flowering plants should be grown on in good-sized pots, to embellish plant houses during the autumn months. Get Achimenes and Gloxinias for late flowering potted, and bring forward those showing bloom. Tall greenhouse plants out of doors must be secured from the effects of high winds. Do not crowd them; on the contrary, allow room for each to grow in its natural form. During heavy rains it will prove of advantage to protect the roots of Orange trees and large specimens in general. Common felt is cheap, and will answer for this purpose perfectly.

FORCING DEPARTMENT.

PINERIES.—Air should now be given liberally to young stock. The plants should not, however, be exposed to drying winds by giving back and front air during comparatively cold days like the present, for that would not serve the end in view; but a moderate circulation should be secured whenever the weather is favourable. This, with careful attention to the state of the roots, keeping the bottom heat regular, the soil in a nice healthy state as to moisture, and giving a liberal supply of manure water to such as are well rooted, will be found much more conducive to robust growth than exposing the plants too freely, which would probably check and throw them into fruit prematurely.

VINERIES.—See that bunches for use late in the season are severely thinned, and also that the crop left is not too heavy in proportion to the strength of the Vines. Where the fruit is swelling, be careful to maintain a moist state of the atmosphere, and give every possible attention to the roots, keeping the border in a healthy state as to moisture, and if watering is found necessary, use good strong manure water. Give abundance of air where the fruit is colouring, and do not allow plants in pots to remain in the house to cause damp. Where the fruit is ripe and expected to hang for some time, the atmosphere of the house should be kept as cool as possible; but a little fire heat will probably be necessary occasionally in order to keep the atmosphere dry.

MELONS.—In the case of fruit ripening, a dry airy temperature must be kept up to ensure high flavour. Keep the shoots of succession crops thin, pinching off in time all extraneous growths. In watering great caution is necessary; where the fruit is approaching maturity cover the surface of the bed with flat tiles or slates to prevent evaporation.

FLOWER GARDEN AND SHRUBBERIES.

Trimming, staking, and pegging down must be well followed up at this period where neatness and order are essential. See that sufficiently strong stakes are applied to plants with heavy foliage. Keep Roses as much as possible free from insects, and if time can be spared dead blooms should be removed. The propagation of Carnations, Picotees, Cloves, &c. should not be longer delayed. As cuttings of the young Grass will succeed at this season, a slight hot-bed should be made, on which place a few inches of very sandy compost. Select the weakest Grass for cuttings, and place a hand glass over them. The stronger shoots left will answer for layering. The present is a favourable time for putting in cuttings of all the more showy herbaceous plants, selecting for the purpose the small shoots not furnished with bloom. A north border is a suitable place to strike them, and a hand glass will facilitate their rooting quickly. Pansies for autumn blooming may be treated in the same way.

HARDY FRUIT AND KITCHEN GARDEN.

Attend to previous directions in regard to the thinning and stopping the young shoots of all trained fruit trees, and now make the final thinning of Peaches and Nectarines, of course leaving the heaviest crop on the most vigorous trees and strongest branches. As a general rule, no two fruit should be left together. Plums of the large kinds, as well as the finer sorts of Pears, should also be thinned if the crop is too heavy. Young Peach and Apricot trees, when making over-vigorous leaders, should have the points of the branches shortened, to encourage them to make other shoots less vigorous, and of a fruitful character; this will obviate the necessity of shortening them back at the winter pruning. Strawberries will require attention. Layer the runners intended for pot culture early, as well as those required for making new plantations. All spare runners may be cut away, and keep the plants free from weeds. Thin and stop shoots of Figs as soon as they have made a growth of about 6 inches, and remove all useless growth from out door Vines. Tomatoes must be regularly attended to, keeping the shoots thin and stopping them above a cluster of fruit. One of the most important operations in the kitchen garden is to see that there is a good breadth got in of Brussels Sprouts, Savoys and Broccoli for autumn use. The main plantings, however, to stand through the winter will be better deferred for a few weeks yet; as when put in too early they become gross and are much more liable to suffer from frost. A sowing or two of Peas should be made; the tall late sorts, such as Veitch's Perfection, Ne plus Ultra, and Victoria, are the most economical. Sow Scarlet runners, if not already done, for a main crop; also a good breadth of French Beans. Continue to plant out Lettuces from early sowings and keep up successional crops. Sow also a little Endive and Radishes; the last should be principally the Turnip varieties.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending June 25, 1862, as observed at the Horticultural Gardens

June	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind	Rain.
Thurs. 19	☾	30.083	29.912	66	44	55.0	60	58	S.W.	.06
Friday 20	23	29.896	29.807	61	44	52.5	60½	58	W.	.00
Satur 21	24	29.817	29.651	62	49	55.5	59½	58	S.W.	.00
Sunday 22	25	29.712	29.667	78	41	59.5	59½	57½	N.W.	.06
Mon. 23	26	29.850	29.743	77	42	59.5	59½	57½	N.	.00
Tues. 24	27	29.927	29.905	72	41	56.5	60	58	N.W.	.00
Wed. 25	28	30.126	30.060	68	40	54.0	61	58	N.E.	.00
Average		29.916	29.820	69.1	43.0	56.1	60.0	57.8		0.11

June 19—Partially overcast; fine; cloudy; rain at night.
— 20—Overcast; cloudy; overcast.
— 21—Cloudy; overcast; cold, although south-west wind.
— 22—Fine; cloudy; overcast; cold at night; rain.
— 23—Densely clouded; white and dusky clouds; fine.
— 24—Fine; cloudy and fine throughout; cold at night.
— 25—Fine; clear and fine; cold at night.
Mean temperature of the week 6 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending July 5, 1862.

June and July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 29	74.5	48.8	61.6	9	0.22 in.	3	4	3	1	0	14	6	5
Mon. 30	72.8	49.0	60.9	12	0.80	—	6	4	1	4	11	5	5
Tues. 1	72.1	51.8	62.0	18	1.18	3	5	5	4	4	10	6	4
Wed. 2	73.3	51.9	62.8	12	0.22	2	5	3	—	5	9	9	3
Thurs. 3	74.5	51.3	62.9	15	0.78	—	6	2	1	3	12	8	4
Friday 4	76.0	50.7	63.3	13	0.33	—	2	4	1	8	11	8	2
Satur. 5	77.4	51.0	64.2	15	0.59	1	4	—	4	6	11	9	2

The highest temperature during the above period occurred on the 5th, 1852—therm. 97 deg.; and the lowest on the 30th, 1849—therm. 35 deg.

Notices to Correspondents.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

BOOKS: *W M N P.* The information you seek is to be looked for in many books. Our advice is that you apply to your bookseller for any guides that may be on sale. We have sent one that happens to lie by us to your initials, Post Office, Cheltenham.

COCOA HUSK REFUSE: *G J.* asks for information on this head. A good deal is said just now about its use for plants. "Is there not the same danger in its use as in other semi-decayed vegetable matter? Or may this be safely used in soil for potting?" Doubtless many would be obliged by some statement from those who have tried it.

INSECTS: *G J.* You will find the history of the Gooseberry Caterpillar, with a figure of the *imago*, in the *Gardeners' Chronicle* for 1841, p. 548. It is a four-winged fly, appearing by day.—*A B.* The little grubs which have injured your young Carrot plants are evidently the larvæ of the fly (Psila Rosæ) which at a later period of growth causes the rust in the roots. Gas-tar water is an excellent remedy.—*S C.* Your animal is the Mole Cricket, and if it is as common as you mention we should be greatly obliged for a score of specimens put into weak spirit and forwarded to Prof. Westwood, Museum, Oxford. We can only recommend deep ploughing and hand picking the specimens as they are turned up. *W.*

INCOME TAX: *A Domestic* is liable to Income Tax for the other 50*l.*

NAMES OF PLANTS: *Vetch.* 1, Lastrea Sieboldi; 2, Platyloma falcatum; 3, Cyrtomium falcatum; 4, immature and not recognised.—*Mrs. Clode.* Asplenium Hemionitis.—*T S.* 1, Anagallis arvensis; 2, Helianthemum vulgare; 3, Reseda lutea; 4, Sanicula europæa.—*N E Y.* Gnaphalium arenarium.—*J L C.* The plant you have found near Cromer growing with Silene anglica, about 150 yards from the cliff, on a barren sandy bank, a mile on the Runton Road, is undoubtedly Silene conica.—*T S P.* The Tamarack is the American Larch, of excellent quality for shipbuilding.—*J F.* Erysimum cheiranthoides, a weed whose seed is often mixed with that of E. Peroffskianum by dishonest persons.—*J C L.* Edwardsia microphylla, from Chili.—*Lancastriensis* and *others* will forgive us for not answering their difficult enquiries till next week.—*J L.* Cotoneaster frigida.—*B. M.* 1, Polypodium vulgare; 2, Cystopteris fragilis; 3, Asplenium Trichomanes.—*C E F.* Ordinary Lastrea dilatata.—*A C* 1, Campyloneurum Phyllitidis; 2, Davallia bullata.

PURPLE LABURNUM: *M T, Ayrshire.* The specimen sent is Cytisus purpureus, which every now and then appears *spontaneously*, no one knows how or why, upon a Laburnum called Cytisus Adami. We had hoped that this case would have occupied the attention of Mr. Darwin.

SCISSORS: *Cannes* and *Anon.* Received and much liked.

RAYNBIRD, CALDECOTT, AND BAWTREE, Seed Merchants and Growers, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c , of best quality, at Market Prices.

TAN GRATIS in the immediate neighbourhood of Covent Garden Market.

Apply to Essex & Sons, 28, Stanhope Street, Clare Market, W.C.

Land Drainage.

MR. JAMES SANDERSON, Land Valuer and Drainage Engineer, has always in his employment a large and efficient staff of DRAINERS, and undertakes by Contract or Commission the drainage of any extent of land.

Parties who wish land drained so soon as the hay harvest is over, will please to communicate early with Mr. Sanderson, 15, Manchester Buildings, Cannon Row, Westminster.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. Humbert, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

MR. JAMES BLACK, formerly Factor for Sir Norman Macdonald Lockhart of Cornwarth, Mr. Gordon of Ellow, and Mr. Cunningham of Larnshaw, has been induced to commence business in London as a LAND AGENT, VALUER, and DRAINAGE ENGINEER, and trusts from his large and varied practical experience to merit the patronage and support of Landed Proprietors and the public in general.

20, Great George Street, Westminster, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.

2, Old Palace Yard, Westminster, S.W.

To Landowners, the Clergy, Estate Agents, Surveyors, &c. in England and Wales and in Scotland.

The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

YORKSHIRE AGRICULTURAL SOCIETY. Open to the United Kingdom.

The GREAT ANNUAL SHOW will be held at YORK on AUGUST 6, 7, and 8. The Entry Closes on July 21.

A Member of the Society pays an Annual Subscription of 20s., which entitles him to exhibit an unlimited number of Stock, to view all the Exhibitions, and to receive the Society's Publications Free of Charge.

Non-Members pay 10s. for each Entry of Live Stock, and 1s. for each Entry of Poultry, which must be paid at the time of entry. For Prize Lists and Certificates of Entry apply to

John Hannam, Secretary.

Kirk-Deighton, Wetherby.—June 28.

MANCHESTER and LIVERPOOL AGRICULTURAL SOCIETY.

MEETING at WARRINGTON, SEPTEMBER 9, 10, and 11.

Entries close on August 11. For Prize Lists and Forms apply to T. B. Ryder, Secretary.

67a, Church Street, Liverpool.—June 28.

WARWICKSHIRE AGRICULTURAL SOCIETY.

The WARWICKSHIRE AGRICULTURAL SOCIETY will hold their GREAT ANNUAL EXHIBITION at Aston Park, Birmingham, on SEPTEMBER 17, 18, and 19, when Prizes to the amount of 970l. will be awarded as under:—

	£	s.
Labourers and Servants	£97	0
Ploughmen, Drainers, and Hedge-cutters	43	10
Cattle	257	0
Sheep	188	0
Pigs	28	0
Horses	142	0
Implements	85	0
Steam Cultivation	50	0
Wool	21	0
Cheese	8	0
Fruit and Flowers	50	0

More than half the above Prizes are offered by the Birmingham Local Committee, and are open to all England.

The Entries close on August 1.

Prize Lists, Certificates, and every information may be obtained on application to Mr. John Moore, Secretary, Warwick; or to John B. Lythall, Local Secretary.

Offices, 14, Temple Street, Birmingham.

THE BIRMINGHAM CATTLE and POULTRY SHOW, 1862.

The FOURTEENTH GREAT ANNUAL EXHIBITION of FAT CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, ROOTS, BARLEY, and IMPLEMENTS, will be held in Bingley Hall, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4, when Prizes—Cups or other Articles of Silver Plate, and Gold and Silver Medals—to the amount of 1835l., will be awarded in the following divisions, viz.:—

	£	s.
Fat Cattle	£715	15
Fat Sheep	239	5
Fat Pigs	56	15
Breeding ditto	63	0
Roots	56	14
Barley	10	10
Poultry and Pigeons	682	15

Prize Lists and Certificates of Entry may be obtained from John B. Lythall, Secretary.

Offices, 14, Temple Street, Birmingham.

ROYAL AGRICULTURAL SOCIETY of ENGLAND—1862.

GREAT AGRICULTURAL SHOW of HORSES, CATTLE, SHEEP, PIGS, and MACHINERY, in BATTERSEA PARK, LONDON, JUNE 23 to JULY 2.

Terms of Admission:—

THIS DAY, JUNE 28, ENTIRE SHOW (Live Stock, Machinery, &c.)		Half-a-Crown
MONDAY June 30 ..	„ ..	One Shilling
TUESDAY, July 1 ..	„ ..	„
WEDNESDAY „ 2 ..	„ ..	„

Members Free.

Open each day from 8 in the morning till 8 in the evening, except the last day, when the Yard will be closed at 6 o'clock.

By Order of the Council.

H. Hall Dare, Secretary.

The Agricultural Gazette.

SATURDAY, JUNE 28, 1862.

MEETINGS FOR THE FOLLOWING WEEK.

Monday, June 30 }
Tuesday, July 1 } Great Meeting of Agri. Society at Battersea. Admission 1s.
Wednesday,— 2 }

The first continuous week of fine weather of which the present season can boast has fallen to the lot of the Royal Agricultural Society, and thus its meeting, which cannot fail of being successful, has been agreeable as well as useful. The earlier days of the show were indeed attended by but very few. A smaller number were present on Monday and on the following day than have attended on the opening days of any of the recent meetings of the Society, but that has no doubt been owing to the knowledge of the usual attendants at these meetings that the yard was to remain opened for so much longer than usual, while the unaccustomed "million" beside whom the Society has this year taken up its temporary abode, are probably waiting for the shilling days of the following week; and the Society benefits indirectly if not directly from the comparatively vacant first days of its show by the longer opportunity thus given of making the existence of the Exhibition known among those who are to throng its yards on Monday.

The yards have never before been so attractive. The Implement Catalogue fills 400 pages and describes 5000 agricultural machines; the Catalogue of the Live Stock show fills 150 pages, and enumerates upwards of 2000 animals. There are 250 Short-horns, 100 Herefords, about 70 Devons, 30 Sussex cattle, 14 Long-horns, 27 Norfolks, 11 Welsh, and 9 Irish cattle, 33 from the Channel Islands, 48 of the polled breeds of Scotland, 27 Kyloes, and 70 Ayrshires—a noble show of British breeds. The Horse classes include 280 animals. 73 lots of Leicesters, a score of Lincolns, 92 lots of Cotswolds, 50 Kentish and other Long-woolled sheep, 96 lots of Southdowns, as many Shropshires, about half as many West Country Downs, 60 lots of Oxfordshire Downs, 13 lots of Dorset sheep, and about 100 lots of Blackfaced-Cheviot and other mountain breeds, make up the show of Sheep. There are 200 lots of Pigs exhibited, and there are nearly 200 foreign cattle of various kinds.

Whether as a whole, or taken in detail, the Show is altogether unrivalled. Our own leading breeds have never been better illustrated: those of more local interest have never before been anything like so well represented at any English meeting. And to these we have at Battersea to add all the additional interest of many foreign kinds. The scientific man has here a more striking illustration than has ever before been seen at once of the influence of circumstances upon the form and character and habits of an originally common stock—the practical man has here a larger variety and scope from which to choose the live stock best suited to his own particular circumstances—the mere spectator has a more picturesque variety, a greater quantity, and a larger field. In particular the foreign breeds and their attendants are a most interesting addition to the ordinary attractions of the show yard. We have the Dutch dairy breed, black and white, and large and coarse, but yielding abundance of good milk; and the large Swiss dairy breed, also black and white, or yellow and white, which, with their neck-bells and their attendants, are here one of the leading features of the Show. The French sorts are represented by (*a*) the Normandy, a large coarse particoloured breed, chiefly dark, brindled brown and dun; (*b*) the Flemish, chiefly red, reminding one in form of Short-horn cows, and in colour frequently of Devons, or more exactly of the dark red Gloucester cow; (*c*) the Charolaise, a pure white breed of great beauty and symmetry; (*d*) the Pyrenean, of a light dun or yellow colour; and (*e*) the little black and white breed of Brittany, of which an unusually large number is exhibited.

Few of the classes, however, are well filled, the exception being the Bretons, Dutch, and Swiss. Of the beautiful white Charolaise but three specimens are shown. We add that there are very instructive and good classes of Spanish, French, and Saxony Merino sheep exhibited. Readers must be referred to the particular reports which will be found in our columns during this and following weeks for a more detailed account of the several sections of the Show. It may however be mentioned here as of general public interest that the stock shown by the Hon. Colonel Hood, bred at the Prince Consort's Flemish, Norfolk, and Shaw Farms, Windsor, have achieved their full share of success. It will be seen that the first prize in the old Hereford Bull Class and in the young Devon Bull Class are taken by Maximus and Crown Prince respectively. The former had been shown as a calf at Warwick, where he took the first prize in his class. His dam *Superb* was the winner of the first prize in her class at Salisbury, and was there sold to H. R. H. the Prince Consort. Crown Prince, on the other hand, has also been successful before. He was shown at Leeds and took the first prize in the calf class. The other successes which have attended the stock of H.R.H. the late Prince Consort will be found in our prize list. The stock entered from the Prince Consort's Farm by the Hon. Colonel Hood included 5 Short-horns, 9 Herefords, 4 Devons, 1 Clydesdale horse, and 3 lots of the Windsor breed of pigs.

On Wednesday H.R.H. the Prince of Wales walked round the yards; the Prince Napoleon was also present, and he had paid a visit to the implement yards on the previous Monday.

The attendance, which had been very small the first three days of the week, exceeded 10,000 on Thursday, the first day on which the whole yard was open to the general public at a moderate price.

Among the most interesting meetings of the annual agricultural gala week, is that of the Royal Agricultural College Club. The prospects, progress, and achievements of so useful an institution as the Cirencester College are everywhere of agricultural interest. And it has been in operation for so many years that there is now at every returning anniversary always a sufficient number of former students and others interested in the Institution on personal as well as public grounds to ensure a large and successful gathering.

Such an one took place on Thursday evening, as the report in another column informs us; and under ordinary circumstances we should but have had to reflect the mutual congratulations and good feeling to which these meetings hitherto have given expression. It has, however, this week become known that the present establishment at Cirencester is on the eve of breaking up—that Dr. Aug. Voelcker, who has been its distinguished Professor of Chemistry for thirteen years, and who has conferred upon it his own high scientific reputation, while he has himself acquired the highest reputation in the agricultural world during his connection with it, has sent in his resignation—that Professor Brown, who has been the excellent resident Veterinary Professor since the foundation of the College, has also resigned, and that during the last two years an entire change has gradually passed over that spirit of hearty union and co-operation which while the late Mr. Haygarth was Principal, distinguished his relations with the whole professorial staff. The annual meeting of the College Club has thus failed this year of its accustomed hearty hopefulness, and we do not wonder at the many strong expressions of disappointment and displeasure which have been uttered.

For, unquestionably, it is not merely to shareholders and proprietors that the managers of this great public institution are responsible. The whole agricultural public is interested in its efficient management and consequent utility. It is plain, from the recent course of events at Cirencester, that the present Principal is incurring a very heavy responsibility indeed; and we and every other agriculturist in the country have full right to call him to account. If through his mismanagement an educational establishment, incorporated expressly for the benefit of agriculturists, and which has latterly been growing into most useful efficiency, shall come to fail of the end for which its charter was conferred, there is not a farmer in the country who has not a right to pronounce his condemnation. And it appears to us that this will be in justice all the deeper for the hardihood with which it has been incurred,

Mr. Constable was unknown in the agricultural world before his appointment as Principal of the Royal Agricultural College. No doubt, as every other educated man and still more as every other clergyman—engaged therefore in educational labours by profession—he could claim to speak and act with some authority in educational matters, and he thus possessed a certain fitness for the position to which he had been appointed.

This however was no new or untried office, for which he had to devise a course of action: his predecessor had proved his competency and efficiency by a most useful career. The College was left by him disheartened indeed, and distressed by his loss, but still with all its powers for usefulness in full and active operation; for he knew how to inspirit and harmonise all the agencies engaged within its walls without perpetual interference or personal direction. It was unconsciously that they had been guided by his influence, and his death was thus no breakage as of the mainspring of a machine; it was, on the contrary, the addition of one motive more, that of grateful memory, to others altogether independent of himself which he had always striven to encourage and maintain.

To follow such a man, even were his successor one of equal reputation and experience, must, one would imagine, be simply to walk in the footsteps of a proved success; how much more so, supposing him to be inexperienced and untried! Mr. Constable was cordially welcomed by his colleagues, and to this he owed his early acquaintance with the duties and responsibilities of his office as they had been discharged and borne by Mr. Haygarth. But they have not been undertaken by him in the spirit in which his predecessor undertook them. Distrust upon the one side has created discontent upon the other, and these are a sorry substitute for the friendly relations which they have displaced.

We call attention thus directly to the position of the Agricultural College, in the hope that a remedy may be found which shall not involve the breaking up of the existing establishment. If no method of reconcilement be possible, no true friend of agricultural education can doubt for a single moment whose duty it is to withdraw, whether the men whose services to the institution date from its commencement, or their new and inexperienced leader whom they cannot follow.

GREAT INTERNATIONAL SHOW AT BATTERSEA PARK.

It is international so far as spectators are concerned, for never before have so many foreigners been present at the annual gathering of the English Agricultural Society. It is also international, more than ever previously, as regards the live stock department of the show. We have a very fine illustration of some of the most important breeds of cattle and sheep of the Continent. This part of the yard is, however, not opened to the public until late in the week, and for what of the Battersea Show is visible until then it is not "international" at all.

The unrivalled display of Implements is wholly British—indeed, we might almost say exclusively English. It is English agricultural machinery that is displayed in these miles of shedding,—that is enumerated in these hundreds of pages, for the Catalogue is now a volume of close on 450 pages. Of the 5000 articles exhibited, and the 342 stands at which they are exhibited, not half a dozen are from out of England. We have one Canadian, one American, and a few Scottish and Irish firms, but the great majority of the machinery displayed is the produce of English capital and to a great extent of English ingenuity. In the matter of seeds and plants, Scotland holds her own with a completer equality. There is no stand which excels or ever has excelled that of Messrs. Lawson & Sons for the completeness and excellence of the display of specimens of seed and farm produce—but the machinery by which the land is prepared for them, by which the crops are cultivated and harvested and made fit for market or for food, is for the most part made in England—and made of such excellence as long rivalry and experience and large capital can alone command.

It is worthy of note that while this is the first year in which, owing to the lack of room and opportunity, the Society has dropped its prize system, there is at the same time a more perfect display of agricultural machinery than has ever yet been shown by it. The advantages of a great market attract exhibitors, and the competition among each other is the greatest spur to effort. And if the accident of this year should become the rule of future years, there is we think no reason to doubt, that by the mere opportunity which the Society offers of this great market, and this keen rivalry, it would fully maintain that place as the great promoter of improvement in agricultural machinery which it has hitherto obtained by offering and awarding prizes for merit.

Certainly the display is this year none the worse for the absence of the prizes. There is no prize offered of 500*l.* as heretofore for steam cultivation, but the advance is as great this year as during any previously —and Mr. Smith, of Woolston, who conceived and carried out, now long ago, a very excellent system, and has retained it almost unaltered ever since, is here this year, notwithstanding absence from many recent shows.

There are more than 120 steam engines in the yard—upwards of 100 movable engines—representing altogether more than 1000 horse-power. Running through the list alphabetically, choosing only the more important implements of the farm, there are 60 cake breakers, more than 70 carts and waggons, 180 horse and hand-power chaffcutters, 16 clodcrushers, 80 winnowing and dressing machines, upwards of 100 drills and sowing machines, 40 or 50 cultivators and grubbers, more than 100 harrows, 27 hay tedders, 36 horse gears, more than 60 horse hoes, about 50 horse rakes, about 20 manure distributors, nearly 200 mills and crushing apparatus, 37 mowing machines, more than 200 ploughs, 5 Potato diggers, upwards of 30 reaping machines, 14 exhibitors of steam cultivators, 87 threshing machines, 46 Turnip cutters, as many root pulpers, besides an immense number of smaller implements.

The first stands which attract the notice of the visitor to the yard, are those of Messrs. Gibbs and Messrs. Lawson—shedding 100 yards or more in length, sheltering specimens of the plants and varieties of plants cultivated by the farmer. Magnificent roots of Mangel Wurzel and a very good collection of Wheats and other grain grace the shelves in Mr. Gibbs's stand. A capital suite of specimens of grains and Grasses in the straw, and a large stock of seeds of every useful kind, is shown in Mr. Lawson's stand, which is in fact a complete museum of agricultural plants.—Farther on we come on the rival cattle condiments, the "fattening fact of the age," as Mr. Thorley denominates them.—Mr. Hallett, of Brighton, exhibits specimens of his wonderful Pedigree Wheat close by. There is a possibility of throwing doubts upon the clearest truth; and it is a pity that any doubt should be thrown upon what we believe to be the true history of Mr. Hallett's Wheat; but by showing "one of the two original ears" from which it sprung, at *all* the many stands throughout the country where this extraordinary Wheat is exhibited, it is plain that he is doing the history of his own successful efforts great injustice.

Over the bridge into the yard where the machinery in motion is exhibited at work:—The visitor sees from the top of it an enclosure, of several acres in extent, lined with threshing, barn, and other machinery, driven by 40 or 50 portable steam engines. It is hardly so busy a scene as we have seen at previous meetings, though some of those who exhibit here give a more perfect illustration of the machinery of the farm at work than has ever yet been given by single firms. Messrs. Ransome, for instance, have several moveable steam engines at work, driving threshing machinery and giving motion to mills, chaffcutters, corn and cake-crushers, rotary corn screens, and other implements. Walking round the enclosure, we see at work Appleby's (of King William Street) rotary pump.—Ashby (of Stamford) has a steam engine driving chaffcutters, corn mills, and threshing machines.—Corbett's (of Wellington, Salop) engine working a bark mill, which reduces bark most successfully to a fibrous mass by means of crushing rollers and rubbing corrugated discs kept free and unclogged by a very cleverly devised oscillating stirrer. The same principle is applied to a mill for crushing grain.—Gibbons, of Wantage, show their threshing machine, which took the first prize at the Canterbury meeting, furnished with double blower, Barley awner, &c., and delivering the produce in two qualities.—Mr. Hornsby, of Grantham, shows a number of threshing machines, characterised by great simplicity of construction, fewness of parts, and facility with which motion is given to them. —Aveling's travelling engine (of Rochester) which drags its threshing machine to the rick, drives it there and removes it when it has performed its work, is perpetually travelling round and round within a small enclosure, showing the ease with which it is guided.—Clayton & Shuttleworth show 4 threshing machines in motion, driven by as many of their well-known portable engines.—Ransomes, of Ipswich, show, as we have said, a complete set of barn machinery and implements for preparing food for cattle. Their extremely efficient rotary corn screen attracts a great deal of notice.

Maynard's (of Whittlesea) chaffcutter, whose merits are vouched for by farmers using it, whom you meet with at the stand, is exhibited at work close by. It costs 39*l.*, and is provided with an extra wheel and set of cutters. Driven at 250 evolutions per minute, it cuts up straw into 3-16ths of an inch chaff nearly as fast as an 8 horse-power engine can deliver it from the threshing machine, not more than three or four loads of straw having to be carried away uncut during the day. It is the practice of Hertfordshire and Cambridgeshire farmers to cut and store away a barn full of chaff in this way at a time—enough for six or eight months use of all the stock upon the farm; and a little salt being thrown in among the mass, it improves with age.—Beyond Maynard, Tuxford, f Boston, shows several of his well-known portable engines with upright cylinders, some of them engaged in working a couple of threshing machines.—Barrett, Exall, & Andrews of Reading, show several threshing machines and small portable engines. Garretts show 4 full-sized threshing-machines at work, driven by a number of their 8-horse power engines. Robey of Lincoln also shows threshing machinery and engines.

Picksley, Sims, & Co., of Leigh, Lancashire, show a clever bone mill, in which two horizontal pistons, oscillating alternately in the bottom of a hopper, push the contents of the hopper up against a revolving grater, and so reduce the whole or nearly all to powder. There are a number of very ingenious contrivances for reducing risk of breakage and maintaining the efficiency of the tool. Their chaff-cutter is good for the exceedingly easy way in which its motion may be increased or checked so as to alter the coarseness of the cut; or reversed so as to stop it altogether. Tasker & Sons, of Andover, show threshing machine and engines at work.—Holmes, of Norwich, a threshing machine and saw table. Robey, of Lincoln, a threshing machine. Hayes, of Elton, Hunts, shows his very perfect not expensive straw elevator. Turner, of Ipswich, shows threshing machines at work. Crosskills, of Beverley, a very complete bone-crushing appparatus.—Clayton & Co., of Dorset Square, London, have one of the completest stands in the yard illustrative of machinery for manufacturing bricks. Revolving cylinders pull in the untempered clay, which is then thrust along a passage in the axis of which are revolving arms which crush and knead and pull the clay along, and it is forced through dies for making bricks or tiles as the case may be. A great many forms of the machines are shown, and the whole are well worth examination. Close by is Whitehead's (of Preston) stand, where pipe and tile machines are also exhibited. Weighall, of Pickering, Yorkshire, shows threshing machine and mill at work. Wallis and Haslam show what is we think the solitary horse-worked threshing machine in the yard. Richmond and Chandler, exhibit their well known and perfect chaff-cutter in large numbers in motion. Burrell, of Thetford, shows a threshing machine and engine.—Child's and Owen's grain separators are exceedingly ingenious machines, in which the feeding of the blast as well as the utterance of it is made useful in the cleansing of the grain—the latter drives off the chaff, the former creates another current, which is used in an exceedingly ingenious way to lift the light grain out of the sample. It is the best of all the grain separators for use upon a large scale. Close by stands the Dairy machinery of Cockey of Frome, double bottomed milk vessels and boiler for heating contents, either milk or water, as near to the boiling point as may be desired. Lee & Co. of Leicester show a small 3 horse power locomotive engine working a small threshing machine. Maggs & Hindley, of Bourton, Dorsetshire, show their straw-weaving apparatus; also a chain harrow, in which a combination is effected of cast-iron studs, scattered over a wrought-iron framework, which is said to be extremely effective. Warner & Co. show pumps in operation. Ruston & Procter, of Lincoln, show threshing machines and saw mill. Heywood, of Derby, exhibit 2 threshing machines and small portable engine with upright cylinders. Nalder's threshing machine, of Wantage, and Tye's (Lincoln) mills, a most complete display, complete the circuit of the yard.

In the middle stand gates by J. Bailey, of Uttoxeter, in which the whole framework is on the principle of the parallel ruler, and instead of opening horizontal, is balanced so as easily to be thrown upwards, the bars ultimately touching one another when the whole is thrown together upright. Wright's straw elevator is also shown close by. The whole collection, and especially the stands of Ransome, Clayton, Clayton & Shuttleworth, Hornsby, Garrett, Crosskill, &c., illustrates the enormous capital invested in agricultural machine-making now-a-days, and the great skill and ingenuity which guides its investment.

Steam Cultivators.—The general collection of stands will be described next week; we make a short reference however here to the steam cultivators exhibited. They were shown yesterday, and will be shown to-day again at work at Farningham; and of these trials we shall next week be able to report.

Mr. Fowler exhibits his already perfect apparatus for the purpose, in which a powerful engine traverses one headland, while a moveable anchorage keeps opposite to it on the other, the implement being drawn to and fro between them. He also shows the exceedingly clever method he has adopted for bringing the ordinary farm portable steam-engine to bear on a cultivator. This has been illustrated by an engraving published last week in our advertising columns. The engine by means of a chain drives an anchorage which immediately precedes it, on which there is a clip drum to actuate the draught rope, and so work the cultivator in the usual way between itself and a corresponding moveable anchorage on the other side of the field. There is also a winding drum upon the former anchorage, by which it draws itself and the engine after it along its own headland. The success of Mr. Fowler's apparatus is now unquestionable.

A Nottinghamshire farmer told us the other day that he had just started his cultivator on the light land near Sherwood, and he has managed to get through 2 acres of work per hour for 11 consecutive hours, doing such work as horses could not accomplish.

This is a pretty good illustration of what it will accomplish in favourable circumstances.

Messrs. Howard, of Bedford, show exceedingly ingenious arrangements for applying the 8-horse engine to cultivation. Their cultivator, with its double tines pointed in opposite directions, and each end in turn digging into its work as it is drawn to and fro, has been already referred to. Their balance plough, in which the two opposite frameworks of ploughs are both hinged independently, each lifting the other as it is brought into operation, and the whole furnished with an exceedingly ingenious mode of guidance, is well worthy of examination. The trials made of it have been very successful hitherto. Their pulleys which give out the draught rope to the windlass, and give out the slack rope *from* it, and so perform their work that the latter process is made dependent on the former for its rate, and thus no bagging of the slack rope, and consequent dragging on the ground is possible, are exceedingly ingenious and well devised. We hope to give a full report next week of their operation at Farningham, as well as many reports hereafter of its work on farms.

Mr. Smith's, of Woolston, long tried and well known apparatus for steam cultivation is as it always has been. He has, however, shown an implement for cultivating, drilling, and covering the seed all in one, of whose operation during the past spring a very good account is given. These machines for combining many operations in one are not in general desirable, and a monstrous cultivating combination is shown by Mr. Williams of Berkshire, which is enough to frighten any one who is proposing to employ steam power upon his fallows.

Mr. Collinson Hall, of Romford, has a substitute for the wire rope—a linked chain, in fact, whose separate links (some 2 feet long each) fit not upon a circular but upon a polygonal pulley. The advantage claimed is the impossibility of wear by slipping or by crushing of the rope.

We can only add to the above that the need of publishing the prize lists of the Society's Cattle Show does this week so trench upon our columns that we are unable to give anything like a full report of the implement yard. We return to it however next week, when a detailed account of the steam cultivator trials, as well as of other sections of the Implement Show, will be given.

THE CATTLE YARDS

were open on Wednesday morning to members of the Society, and to others on paying 1l. for admission. The process of judging took place this year for the first time in public. The large numbers of the leading breeds exhibited made it more difficult than usual, and there was often ample time to enable outsiders to make up their minds long before the judges, made cautious by their responsibility, had declared theirs. The process of gradual weeding by which large classes were reduced to a select few, and by which those were placed in the first, second, and third rank, was exceedingly interesting to the large numbers of spectators clustered around every separate body of judges. And especially exciting was it when the prize animals in the different classes of each breed were compared for the award of the Gold Medal as the best of the breed.

HORSES.

If the show of horses at Battersea was not one of the best ever yet held, it was not certainly for want of liberality on the part of the Society, for no less a sum than 840l. was offered as prizes for horses, besides that contributed by the Highland Society. For the former sum no less than 256 animals were entered, whilst for the 141l. of the Highland Society 26 contended.

Although the Show might have in various classes been surpassed by some other previous shows, yet, considered as a whole, and viewed in connection with the excellence of the arrangements, it deserves the palm of superiority over any previous exhibition. The very large space of ground devoted to the purpose was so thoroughly filled that the utmost ingenuity could scarcely have devised any additional accommodation if it had been required. As it was, the mares were rather too far from the horses, although their separation was extremely desirable, and as no open space or ring could be afforded for the former it caused the judges to be inconveniently pressed upon whilst executing their judgments in public. Another year no doubt means will be adopted for preserving a certain space (say of 20 yards) sacred to the functions of the judges, within which the public should be forbidden, for it cannot be desirable that remarks should be overheard by either party.

The Cart-horse classes were not only arranged according to breeds, but separate judges were appointed to the Suffolks. This being the case, we thought that good as the first classes of Suffolk were, they were not so good as might have been expected, and we should certainly give the priority for excellence to the general agricultural class. There were some bays and browns that we thought superior to the chesnut in the old stallion classes. Thus it was that amongst the Suffolk horses, after some animals had been displaced from the first rank by unsoundness or faulty action, the prizes were awarded to some very excellent animals, but scarcely of sufficient merit. It must however be borne in mind, that some of the best stallions in Suffolk have received the Society's first prizes, and are consequently forbidden by the rules from competing again. This assists us in understanding these facts, as well as the further one, that the 2-year old stallions were, taken as a whole, better than the first class. In this class there were certainly some noble animals, that when considered in connection with the splendid 2 year old fillies that were shown, and the equally good 3 year old fillies at home, there being no prizes offered for such animals here, bid fair to sustain the eminence of this valuable breed. The three prize winners in the 2 year old class were, we consider, superior animals to those in the first class.

The female classes of Suffolks were on the whole superior to the males, a fact which speaks well for the breed, as it is only by proper attention to the former that great excellence can be obtained. These classes were submitted more minutely to the scrutiny of the public, who had an opportunity of observing, after these animals had been weeded down, four magnificent mares, between whom the competition was exceedingly severe. A red chestnut took the first honour, but the two next best were dark mares, possessing great symmetry, strength, and activity.

The fillies were also extremely good, and the competition severe. Respecting the first there was little dispute, but the second, as well as the two commended animals, were almost equal in excellence.

In the general agricultural class for Stallions there were sixteen entries, two-thirds of whom were very good animals; the prizes going to Mr. Kemp and Mr. Read, the latter a well-known name as a successful exhibitor. In the two year old there were ten entries belonging mostly to the owners of the previous class; the prize animal belongs to Mr. Begbie and the second to Colonel Pennant, got by the Chesnut All England Prize winner, Nonpareil, between whom and Colonel Pennant's grey Matchless, the competition was strong. The female classes were rather poorly represented, the numbers being much fewer than among the Suffolks. The dray horses were also few in number, although eight prizes were offered. These heavy horses we imagine have greater difficulty than others in passing the double ordeal of the double inspection. There were some very nice ponies, and the entries were rather numerous. The action of some of them that were taken out was very good.

The Clydesdales were shown by themselves for the Highland Society's prizes, and although the entries were by no means numerous, the cost of the journey having weighed in the matter no doubt, there were certainly some splendid horses, and their owners have no reason to fear competition against any of the breeds of England. The prizes were very good, and a bay horse Garibaldi, 4 years old, No. 944, took our fancy not a little. A further notice in these classes will be given next week. The following is the list of the awards:—

HORSES.

To the owner of the best Thorough-bred Stud Horse, having served Mares during the season 1862, which, in the opinion of the Judges, is best calculated to improve and perpetuate the breed of the sound and stout Thorough-bred Horse for General Stud Purposes.—1st, 100l., H. R. Phillips, of Albert Gate, Knightsbridge; 2d, 25l., C. E. Johnstone, of 105, Gloucester Place, Portman Square. Highly Commended: T. Hussey, of Stud Farm, Skirmett, Henley-on-Thames.

Hunter.

Class I.—To the owner of the best Stallion, thorough or half-bred.—1st, 30l., J. Manning, of Orlingbury, Wellingborough, Northamptonshire; 2d, 15l., R. J. Cooper, of Blythburgh Lodge, near Halesworth, Suffolk. Highly Commended: R. Glasscock, of Great Saling, Braintree, Essex

Class II.—To the owner of the best Brood Mare, with foal at foot, or in-foal.—1st, 20l., ; 2d, 10l., Lord Berners, of Keythorp Hall, Leicester.

Class III.—To the owner of the best Gelding, four or five years old.—1st, 20l., R. & J. Russell, of Horton Kirby, Dartford, Kent; 2d, 10l., J. H. Elwes, of 41, Portman Square, London, and Colesbourne, Cheltenham.

Class IV.—To the owner of the best Mare, 4 or 5 years old.—1st, 20l., J. Robinson, of Hutton, Rudly-by-Yarm, Yorkshire.

Carriage.

Class I.—To the owner of the best Stallion.—1st, 20l., G. Holmes, of Newbegin, Beverley, York; 2d, 10l., J. Kitchin, of Dunsdale, Westerham, Kent.

Class II.—To the owner of the best Brood Mare, with foal at foot, or in foal.—1st, 20l., R. J. Cooper, of Blythburgh Lodge, near Halesworth, Suffolk; 2d, 10l., G. Holmes, of Newbegin, Beverley, York.

Roadster.

Class I.—To the owner of the best Stallion.—1st, 20l., W. Johnson, of Billinghay, Sleaford, Lincoln; 2d, 10l., H. Martin, of The Lawns, Downham, near Ely, Cambridgeshire; Highly Commended: D. T. Moss, of 16, Camden Terrace, Leeds, Yorkshire.

Class II.—To the owner of the best Brood Mare, with foal at foot, or in foal.—1st, 20l., J. Peel, of Knowlmere Manor, Clitheroe, Yorkshire; 2d, 10l., H. J. Percy, of Eskrigg, Wigton, Cumberland.

AGRICULTURAL HORSES.

Suffolk.

Class I.—To the owner of the best Stallion, foaled on or before January 1, 1860.—1st, 30l., H. Biddell, of Playford, Ipswich, Suffolk; 2d, 15l., T. Crisp, of Butley Abbey, Wickham Market.

Class II.—To the owner of the best Stallion, foaled in the year 1860.—1st, 20l., H. Giles, jun., of Bull Hill, Great Clacton, Colchester, Essex; 2d, 10l., T. Crisp, of Butley Abbey, Wickham Market, Suffolk; Highly Commended; W. Stearn, of Elmset Hall, Hadleigh, Suffolk.

Class III.—To the owner of the best Mare and Foal.—1st, 20l., W. Thompson, jun., of Rose Cottage, Thorpe, Colchester, Essex; 2d, 10l., S. Wolton, of Newbourn Hall, Woodbridge, Suffolk. Highly Commended: E. G. Hodgson, of Charsfield Hall, Wickham Market.

Class IV.—To the owner of the best Two years old Filly.—1st, 15l., G. Tomline, M.P., of Nacton, Ipswich, Suffolk; 2d, 10l., N. G. Barthropp, of Creetingham Rookery, Wickham Market, Suffolk. Highly Commended: S. Wolton, of Newbourn Hall, Woodbridge, Suffolk.

Agricultural, not qualified to compete as Suffolk.

Class I.—To the owner of the best Stallion, foaled on or before January 1, 1860.—1st, 30l., G. Kempson, of Pegsdon Bottom Farm, Beds, near Hitchin, Herts; 2d, 15l., M. Read, of Beamish Burn, Chester-le-street, Durham.—Highly Commended: J. Brown, of Compton, Newbury, Berks.

Class II.—To the owner of the best Stallion, foaled in the year 1860.—1st, 20l., D. Begbie, of Morden, Mitcham, Surrey; 2d, 10l., The Hon. Col. Pennant, M.P., of Penrhyn Castle, Bangor, Carnarvon.

Class III.—To the owner of the best Mare and Foal.—1st, 20l., J. G. Attwater, of Hallingwood Farm, Cubberley, Cheltenham, Gloucester; 2d, 10l., E. Redding, of Compton Marsh, Faringdon, Berks.

Class IV.—To the owner of the best Two years old Filly.—1st, 15l., E. Phillimore, of 119, High Street, Cheltenham, Gloucestershire; 2d, 10l., The Duke of Richmond, of Goodwood, Chichester, Sussex.

Dray.

Class I.—To the owner of the best Stallion, foaled on or before January 1, 1860.—1st, 30l., J. Foster, of Bingham.

Class II.—To the owner of the best Stallion, foaled in the year 1860.—1st, 20l., W. H. Neale, of Old Eclipse Inn, Mansfield.

Class III.—To the owner of the best Mare and Foal.—1st, 20l., W. Fullard, of Thorney, near Peterborough.

Class IV.—To the owner of the best Filly, foaled in the year 1860.—1st, 15l., J. K. Tombs, of Langford, Lechlade.

Ponies above 12½ and under 14 hands

Class I.—To the owner of the best Stallion.—1st, 15l., W. Blenkiron, of Middle Park, Eltham; 2d, 5l., M. S. Ashwell, of Barrowby, Grantham. Commended: J. Beevor, M.D., of Mill Gate, Newark; J. Massey, of Moston Hall, Chester.

Class II.—To the owner of the best Mare.—1st, 10l., F. C. Matthews, of Driffield; 2d, 5l., F. Branwhite, of Long Melford, Sudbury.

Class III.—To the owner of the best Gelding, 4 or 5 years old.—10l., F. Branwhite, of Long Melford, Sudbury.

Ponies not exceeding 12½ hands.

Class I.—To the owner of the best Stallion.—1st, 15l., T. Baker, of Lynton, Barnstaple.

Class II.—To the owner of the best Mare.—1st, 10l., W. H. Walker, of Wennington, Romford; 2d, 5l. J. J. Stone, of Ashton Villa, Wickham Road, Upper Lewisham Road.

Class III.—To the owner of the best Gelding, 4 or 5 years old.—10l., Lord Braybroke, of Heyden, Royston.

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HORSES.

Clydesdale.

Class I.—To the owner of the best Stallion, foaled before January 1, 1859.—1st, 30l., The Duke of Hamilton and Brandon, of Hamilton Palace, Lanark; 2d, 15l., W. Kerr, of Lochend, Kilburnie; Silver Medal, W. Stirling, M.P., of Kerr. Highly Commended: J. M'Artney, of Muchhart.

Class II.—To the owner of the best Entire Colt, foaled after January 1, 1859.—1st, 20l., R. Mowbray, of Cambus; 2d, 10l., D. Logan, of Netherton; Silver Medal, J. Hendries, of Kirkwood, Coatbridge. Highly Commended: R. Mowbray, of Cambus.

Class III.—To the owner of the best Mare (with foal at foot), foaled before January 1, 1859.—1st, 20l., J. Kerr, of Morton, Mid Calder; 2d, 10l., J. Gray, of Blawart Hill, Yoker; Silver Medal, Colonel Buchanan of Drumpellier House, Coatbridge.

Class IV.—To the owner of the best Mare (in foal), foaled before January 1, 1859.—1st, 16l., W. Stirling, M.P., of Keir, Dunblane; 2d, 8l., The Duke of Hamilton and Brandon, of Hamilton Palace, Lanark. Silver Medal, W. Stirling, M.P., of Keir, Dunblane. Highly Commended: W. Stirling, M.P., of Keir, Dunblane.

Class V.—To the owner of the best Filly; foaled after January 1, 1859.—1st, 10l., R. Findlay, of Easterhill; 2d, 5l., ditto. Silver Medal, J. Hendries, of Kirkwood, Coatbridge. Highly Commended: Allan Pollok, of Ronachan.

CATTLE.

The *Shorthorn Classes* are this year more numerous, and, without any very extraordinarily good specimens, of higher general quality than they have ever been at any previous show. All the bull classes receive the commendation of the judges; 26 old bulls, 27 two-year-olds, no fewer than 42 yearlings, and 43 calves are exhibited; and the comparison of Mr. Wood's white 3 years and 3 months old bull with Mr. Stirling's 2 years and 5 weeks old roan, Mr. Marjoribank's 1½ year old roan, and Mr. Jonas Webb's 10 months old white, which took the first prizes in their classes, created the greatest interest, which culminated when the Gold Medal for the best in these classes was awarded to the calf. The same natural gifts which gave the Babraham flock its reputation are now successfully at work in the establishment of the Babraham herd. Though however the young bull is extraordinarily ripe and well made up for his age, yet the policy of giving such a reward to a necessarily immature animal may be doubted. Judges can rarely with any certainty predict the future of so young a beast.

Most of the leading breeders are represented—the Duke of Devonshire, Lady Pigott, Mr. Langston, Col. Towneley, Messrs. Ambler, Stratton, Jonas Webb, W. Stirling, M.P., Dickenson, Marjoribanks, Douglas, Barnes, Eastwood, Richard Booth, C. Howard, and many others. Captain Gunter sends a single yearling bull, 1 year and 1 day old, which is not distinguished by the judges. The Booth blood is as generally successful this year as that of the Kirkleavington herd was at Leeds. In the female classes especially it carried almost all before it; the first prize for old cows and yearling heifers both going to Mr. Richard Booth and Lady Pigott, and others carrying off prizes with animals descended from the Warlaby herd. We do not go into a particular description of these classes at present—that must be left till next week; it is however certain that many of the awards in the older classes have been questioned, and in particular Lord of the Harem, which stands second in the class of old bulls, should unquestionably have been placed before the white bull exhibited by Mr. Wood, of Stanwick Park, which is placed first.

The following is a list of the awards:—

Short-horned Cattle.

Class I.—To the owner of the best Bull, calved on or before July 1, 1859, above 3 and under 6 years old.—1st, 30l., John Wood, of Stanwick Park, Darlington; 2d, 15l., J. H. Langston, M.P., of Sarsden House, Chipping Norton; 3d, 5l., W. Hosken & Son, of Loggans Mill, Hayle.

CLASS II.—To the owner of the best Bull, calved since July, 1859, above 2 and under 3 years old.—1st, 30*l.*, W. Stirling, M.P., of Keir, Dumblane; 2d, 15*l.*, H. Ambler, of Watkinson Hall, Halifax; 3d, 5*l.*, A. J. Balfour, of Whittingham.

CLASS III.—To the owner of the best Bull, calved since July, 1860, above 1 and under 2 years old.—1st, 25*l.*, S. Majoribanks, of Bushey Grove, Watford; 2d, 15*l.*, Lieut.-Col. Towneley, of Towneley Park, Burnley; 3d, 5*l.*, H. Ambler, of Watkinson Hall, Halifax.

CLASS IV.—To the owner of the best Bull-Calf, above 6 and under 12 months old.—1st, 15*l.*, Jonas Webb, of Babraham; 2d, 10*l.*, T. E. Pawlett, of Beeston, Sandy; 3d, 5*l.*, J. Robinson, of Clifton Pastures, Newport Pagnell.

CLASS V.—To the owner of the best Cow, above 3 years old.—1st, 20*l.*, R. Booth, of Warlaby, Northallerton; 2d, 10*l.*, Lady Pigot, of Branches Park, Newmarket; 3d, 5*l.*, Jonas Webb, of Babraham.

CLASS VI.—To the owner of the best Heifer, in-milk or in-calf, under 3 years old.—1st, 15*l.*, The Duke of Montrose, of Buchanan, Glasgow; 2d, 10*l.*, J. Lane, of Barton Mills, Cirencester; 3d, 5*l.*, Lord Feversham, of Duncombe Park, Helmsley. Highly Commended: J. Douglas, of Athelstaneford Farm, Drem, Haddingtonshire.

CLASS VII.—To the owner of the best Yearling Heifer.—1st, 15*l.*, R. Booth, of Warlaby, Northallerton; 2d, 10*l.*, Lieut.-Col. Towneley, of Towneley Park, Burnley; 3d, 5*l.*, Lord Feversham, of Duncombe Park, Helmsley. Highly Commended: T. Atherton, of Chapel House, Speke, Garston, Lancashire.

CLASS VIII.—To the owner of the best Heifer-Calf, above 6 and under 12 months old.—1st, 15*l.*, J. R. Middleborough, of South Milford; 2d, 10*l.*, J. Douglas, of Athelstaneford Farm, Drem, Haddingtonshire; 3d, 5*l.*, J. Robinson, of Clifton Pastures, Newport Pagnell. Highly Commended: Lady Pigot, of Branches Park, Newmarket.

To the owner of the best Male Animal in the Short-horned Classes.—Gold Medal, Jonas Webb, of Babraham, Cambridge.

To the owner of the best Female Animal in the Short-horned Classes.—Gold Medal, R. Booth, of Warlaby, Northallerton.

The *Hereford and Devon Classes* are both uncommonly well filled. MAXIMUS, bred at H.R.H. the Prince Consort's Flemish Farm, Windsor, received the 1st prize in the class of old bulls. He is unquestionably a very fine animal, though we understand that Hereford breeders are not quite satisfied with the decision in his favour. Mr. Davis, of Boulton Court, Hereford, received the 2d prize for "COURTIER," bred by Mr. Price, which had received many local prizes; it is shown very fat. The 3d prize is taken by Mr. Naylor, of Welshpool, also previously distinguished at local shows. STRATAGEM 3d, shown by Mr. C. Vevers, of Leominster, which was 1st in his class at Truro, is not distinguished here, and deserved a higher rank than it received.

Mr. Baker, of Christchurch, Hants, shows a remarkably poor beast in the older class, which ought not to have been in the Show-yard. "FRILFORD," in the class of yearling Bulls, is another inferior animal in a class which is otherwise an extremely fine one. The Bull Calf Class is a very good one, and receives the commendation of the Judges, as do the Cow, Yearling Heifer and Calf Classes.

In the second class, Young Bulls, the Gold Medal is given to Mr. R. Hill's "MILTON," a 2 years and 10 months old bull of great width in front, falling, however, off behind and of inferior quality. The 2d prize animal is of better quality, and the 3d is Mr. Duckham's 2 years and 1 month old "GARIBALDI," an animal of more even character, excellent quality, and extremely well made everywhere. It has now been sold for 100 guineas.

The cow class in Herefords is uncommonly good; the 1st prize goes to Mr. Coates, of Sherborne, for a very fat and rather lumpy and uneven animal. The cow close by, exhibited by Mr. James, of Blandford, is much superior in evenness and quality, but is passed over, probably for excessive fatness. Mr. Turner's cow No. 307 is also excessively fat. Mr. Read, of Elkston, receives the 1st prize in the heifer class for an exceedingly evenly covered well made beast, perhaps too fat. The yearling heifers are commended as a class, the 1st prize going deservedly to Col. Hood for *Adela*, bred on the Prince Consort's Flemish Farm; she is of remarkably beautiful quality and symmetry. *Princess Alice* standing beside her, from the same herd, also deserved a commendation.

The Calf Class is generally commended, and is exceedingly praiseworthy. The 1st prize goes to one of the beauties of the whole display, *Adeline*, own sister to *Adela*, just named as first in the older class. *Adeline* is exhibited by Mr. Baldwin, of Stratford-on-Avon.

Our notes on the Devons must be postponed till next week. Both the Devons and the Herefords are present in unusual force, and there has probably never been a finer exhibition of these two leading breeds of England.

The following are the awards of the judges in these classes:—

HEREFORD.

CLASS I.—To the owner of the best Bull, calved on or before July, 1859, above 3 and under 6 years old.—1st, 30*l.*, The Hon. Col. Hood, of Cumberland Lodge, Windsor Park; 2d, 15*l.*, T. Davis, of Burlton Court, Hereford; 3d, 5*l.*, J. Naylor, of Leighton Hall, Welshpool, Montgomery.

CLASS II.—To the owner of the best Bull, calved since July 1, 1859, above 2 and under 3 years old.—1st, 30*l.*, R. Hill, of Golding Hall, Shrewsbury; 2d, 15*l.*, R. H. Capper, of the Northgate, Ross; 3d, 5*l.*, T. Duckham, of Baysham Court, Ross.

CLASS III.—To the owner of the best Bull, calved since July 1, 1860, above 1 and under 2 years old.—1st, 25*l.*, J. Taylor, of Stretford Court, Leominster; 2d, 15*l.*, J. Naylor, of Leighton Hall, Welshpool, Montgomery; 3d, 5*l.*, W. Taylor, of Showle Court, Ledbury.

CLASS IV.—To the owner of the best Bull Calf, above 6 and under 12 months old.—1st, 15*l.*, C. Vevers, of Ivington Park, Leominster; 2d, 10*l.*, P. Turner, of The Leen, Pembridge, Leominster; 3d, 5*l.*, W. Tudge, of Adforton, Leintwardine.

CLASS V.—To the owner of the best Cow, above 3 years old.—1st, 20*l.*, H. Coate, of Sherborne, Dorset; 2d, 10*l.*, G. Pitt, of Chadnor Court, Dilwyn, Leominster; 3d, 5*l.*, R. H. Capper, of the Northgate, near Ross.

CLASS VI.—To the owner of the best Heifer, in-milk or in-calf, under 3 years old.—1st, 15*l.*, J. M. Read, of Elkstone, Cheltenham; 2d, 10*l.*, W. Tudge, of Ardforton, Leintwardine; 3d, 5*l.*, H. R. Evans, Jun., of Swanstone Court, Dilwyn, Leominster.

CLASS VII.—To the owner of the best Yearling Heifer.—1st, 15*l.*, The Hon. Col. Hood, of Cumberland Lodge, Windsor Park; 2d, 10*l.*, John Naylor, of Leighton Hall, Welshpool, Montgomery; 3d, 5*l.*, Thomas Thomas, of St. Hilary, Cowbridge, Glamorganshire.

CLASS VIII.—To the owner of the best Heifer Calf, above 6 and under 12 months old.—1st, 15*l.*, J. Baldwin, of Luddington, Stratford-on-Avon, Warwickshire; 2d, 10*l.*, J. M. Read, of Elkstone, Cheltenham, Gloucester; 3d, 5*l.*, W. Perry, of St. Oswalds, Cholstrey, Leominster, Hereford.

To the owner of the best Male Animal in the Hereford Classes.—Gold Medal, Richard Hill, of Golding Hall, Shrewsbury, Salop.

To the owner of the best Female Animal in the Hereford Classes.—Gold Medal, Henry Coate, of Sherborne, Dorset.

DEVON.

CLASS I.—To the owner of the best Bull, calved on or before July 1, 1859, above 3 and under 6 years old.—1st, 30*l.*, James Davy, of Flitton Barton, North Molton, Devon; 2d, 15*l.*, S. P. Newbery, of Scruel Barton, Honiton; 3d, 5*l.*, T. and J. Palmer, of Norton Stoke Clinsland, Callington, Cornwall. Highly Commended: the Hon. Colonel Hood, of Cumberland Lodge, Windsor Park.

CLASS II.—To the owner of the best Bull, calved since July 1, 1859, above 2 and under 3 years old.—1st, 30*l.*, W. Farthing, of Stowey Court, Bridgewater, Somerset; 2d, 15*l.*, J. Bodley, of Stockley, Pomeroy, Crediton; 3d, 5*l.*, W. H. Wodehouse, of Woolmers Park, Hertfordshire.

CLASS III.—To the owner of the best Bull, calved since July 1, 1860, above 1 and under 2 years old.—1st, 25*l.*, the Hon. Col. Hood, of Cumberland Lodge, Windsor Park; 2d, 15*l.*, J. Merson, of Brinsworthy, North Molton, Devon; 3d, 5*l.*, W. Farthing, of Stowey Court, Bridgewater, Somerset.

CLASS IV.—To the owner of the best Bull Calf, above 6 and under 12 months old.—1st, 15*l.*, the Hon. Col. Hood, of Cumberland Lodge, Windsor Park; 2d, 10*l.*, G. Turner, of Beacon Downes, Exeter; 3d, 5*l.* ditto. Highly Commended: W. Farthing, of Stowey Court, Bridgewater, Somerset.

CLASS V.—To the owner of the best Cow, above 3 years old.—1st, 20*l.*, James Davy, of Flitton Barton, North Molton, Devon; 2d, 10*l.*, G. Turner, of Beacon Downes, Exeter; 3d, 5*l.*, J. A. Smith, of Bradford Peverill, Dorchester. Highly Commended: G. Turner, of Beacon Downes, Exeter, Devon.

CLASS VI.—To the owner of the best Heifer, in-milk or in-calf, under 3 years old.—1st, 15*l.*, W. Paull, of Piddletown, Dorchester; 2d, 10*l.*, J. Merson, of Brinsworthy, North Molton, Devon; 3d, 5*l.*, J. Merson, of Brinsworthy, North Molton. Highly Commended: W. Paull, of Piddletown, Dorchester.

CLASS VII.—To the owner of the best Yearling Heifer.—1st, 15*l.*, J. Davy, of Flitton Barton, North Molton; 2d, 10*l.*, J. Davy, of Flitton Barton, North Molton; 3d, 5*l.*, J. Merson, of Brinsworthy, North Molton. Highly Commended: W. Hole, of Hannaford, Barnstaple, Devon.

CLASS VIII.—To the owner of the best Heifer-Calf, above 6 and under 12 months old.—1st, 15*l.*, J. Davy, of Flitton Barton, North Molton; 2d, 10*l.*, Sir A. A. Hood, of St. Audries, Bridgwater, Somerset; 3d, 5*l.*, Sir A. A. Hood, Bridgwater. Highly Commended: G. Turner, of Beacon Downes, Exeter, Devon.

To the owner of the best Male Animal in the Devon Classes.—Gold Medal, J. Davy, of Flitton Barton, North Molton.

To the owner of the best Female Animal in the Devon Classes.—Gold Medal, J. Davy, of Flitton Barton, North Molton, Devon.

We for the present merely give the prize list in the other classes with a single word or two of description. The Sussex and the Norfolk and Suffolk polled breeds are exceedingly well represented. The Channel Island breeds are also present in large numbers. There is a very good show of the Polled Galloway and Angus breeds of Scotland. The Ayrshire—the models of form as a dairy breed, are present in considerable numbers, and very good specimens are exhibited. Some of the decisions in this class have excited considerable discussion. We shall give a detailed notice next week.

The following are the awards:—

SUSSEX.

CLASS I.—To the owner of the best Bull, calved on or before July 1, 1859, under 6 years old.—1st, 15*l.*, W. Botting, of Westmeston Place, Hurstpierpoint, Sussex; 2d, 5*l.*, G. Jenner, of Parsonage House, Udimore, Rye, Sussex.

CLASS II.—To the owner of the best Bull calved since July 1, 1859, and more than 1 year old.—1st, 10*l.*, J and A. Heasman, of Angmering, Arundel, Sussex; 2d, 5*l.*, W. Marshall, of Bolney Place, Cuckfield, Sussex.

CLASS III.—To the owner of the best Cow, above 3 years old.—1st, 10*l.*, Richard Woodman, of Glynde, Lewes; 2d, 5*l.*, Tilden Smith, of Knelle Beckley, Staplehurst. Highly Commended: G. Jenner, of Parsonage House, Udimore, Rye.

CLASS IV.—To the owner of the best Heifer, in-milk or in-calf, under 3 years old.—1st, 10*l.*, J. and A. Heasman, of Angmering, Arundel; 2d, 5*l.*, G. Jenner, of Parsonage House, Udimore, Rye. Highly Commended: G. Jenner, of Parsonage House, Udimore, Rye.

CLASS V.—To the owner of the best Yearling Heifer.—1st, 10*l.*, J. and A. Heasman, of Angmering, Arundel; 2d, 5*l.*, R. Woodman, of Glynde, Lewes. Commended: R. Woodman, of Glynde, Lewes.

LONG-HORNED.

CLASS I.—To the owner of the best Bull, calved on or before July 1, 1859, under 6 years old.—1st, 15*l.*, Lieut.-Colonel Wm. Inge, of Thorpe Constantine, Tamworth, Staffordshire; 2d, 5*l.*, W. T. Cox, of The Hall, Spondon, Derby.

CLASS II.—To the owner of the best Bull, calved since July 1, 1859, and more than 1 year old.—1st, 10*l.*, J. Davis, of Melcombe Horsey, Dorchester, Dorset; 2d, 5*l.*, E. T. Twycross, of Canley, Coventry, Warwickshire.

CLASS III.—To the owner of the best Cow, above 3 years old.—1st, 10*l.*, R. Warner, of Weston Hill, Nuneaton, Warwickshire; 2d, 5*l.*, Lieut.-Col. William Inge, of Thorpe Constantine, Tamworth, Staffordshire. Highly Commended: E. T. Twycross, of Canley, Coventry, Warwickshire.

CLASS IV.—To the owner of the best Heifer, in-milk or in-calf, under 3 years old.—1st, 10*l.*, R. H. Chapman, of Upton, Nuneaton.

CLASS V.—To the owner of the best Yearling Heifer.—1st, 10*l.*, J. H. Burbery, of The Chase, Kenilworth; 2d, 5*l.*, J. H. Burbery, of The Chase, Kenilworth.

NORFOLK AND SUFFOLK POLLED.

CLASS I.—To the owner of the best Bull, calved on or before July 1, 1859, under 6 years old.—1st, 15*l.*, Sir E. Kerrison, Bart., M.P., of Brome Hall, Scole, Suffolk; 2d, 5*l.*, J. Smith, of Crownthorpe, Wymondham. Highly Commended: Lord Sondes, of Elmham Hall, Thetford, Norfolk.

CLASS II.—To the owner of the best Bull, calved since July 1, 1859, and more than 1 year old.—1st, 10*l.*, S. Wolton, of Newbourn Hall, Woodbridge, Suffolk; 2d, 5*l.*, A. W. Crisp, of Chillesford, Wickam Market, Suffolk. Commended: Lord Sondes, of Elmham Hall, Thetford, Norfolk.

CLASS III.—To the owner of the best Cow, above 3 years old.—1st, 10*l.*, Sir E. Kerrison, Bart., M.P., of Brome Hall, Scole; 2d, 5*l.*, Sir W. Jones, Bart., of Craumer Hall, Fakenham, Norfolk. Highly Commended: Lord Sondes, of Elmham Hall, Thetford, Norfolk.

CLASS IV.—To the owner of the best Heifer in-milk or in-calf, under 3 years old.—1st, 10*l.*, Lord Sondes, of Elmham Hall, Thetford, Norfolk; 2d, 5*l.*, Lord Sondes, of Elmham Hall, Thetford, Norfolk. Commended: S. Wolton, of Newbourn Hall, Woodbridge, Suffolk.

CLASS V.—To the owner of the best Yearling Heifer.—1st, 10*l.*, Lord Sondes, of Elmham Hall, Thetford, Norfolk; 2d, 5*l.*, Sir Edward Kerrison, Bart., M.P., of Brome Hall, Scole, Suffolk.

NORTH WALES.

CLASSES I. & II.—No entry.

CLASS III.—To the owner of the best Cow, above 3 years old—1st, 10*l.*, R. H. Harvey, of Harroldstone, Haverfordwest, Pembroke; 2d, 5*l.*, ditto.

CLASSES IV. & V.—No entry.

SOUTH WALES.

CLASS I.—No entry.

CLASS II.—To the owner of the best Bull, calved since July 1, 1859, and more than 1 year old.—1st, 10*l.*, G. Brown, of Talbenny Hall, Haverfordwest, Pembroke.

CLASS III.—To the owner of the best Cow, above 3 years old.—1st, 10*l.*, C. S. Read, of Plumstead House, Norwich, Norfolk; 2d, 5*l.*, ditto.

CLASS IV.—To the owner of the best Heifer, in-milk or in-calf, under 3 years old.—1st, 10*l.*, R. H. Harvey, of Harroldstone, Haverfordwest, Pembroke; 2d, 5*l.*, C. S. Read, of Plumstead House, Norwich.

CLASS V.—To the owner of the best Yearling Heifer.—1st, 10*l.*, C. S. Read, of Plumstead House, Norwich.

IRISH—KERRY.

CLASS I.—To the owner of the best Bull, calved on or before July 1, 1859, under 6 years old.—1st, 15*l.*, J. Borthwick, J.P., of Prospect, Carrickfergus.

CLASS II.—To the owner of the best Bull, calved since July 1, 1859, and more than 1 year old.—1st, 10*l.*, J. Smith, of Moyle, Carlow; 2d, 5*l.*, R. S. Cusack, of Bohomer, St. Doulaghs, Dublin.

CLASS III.—To the owner of the best Cow, above 3 years old.—1st, 10*l.*, R. S. Cusack, of Bohomer, St. Doulaghs; 2d, 5*l.*, J. Borthwick, J.P., of Prospect, Carrickfergus.

CLASS IV.—To the owner of the best Heifer, in-milk or in-calf, under 3 years old.—1st, 10*l.*, R. S. Cusack, of Bohomer, St. Doulaghs; 2d, 5*l.*, J. Smith, of Moyle, Carlow.

CLASS V.—To the owner of the best Yearling Heifer.—1st, 10*l.*, J. Borthwick, J.P., of Prospect, Carrickfergus.

CHANNEL ISLANDS:—JERSEY, COMMONLY CALLED ALDERNEY.

CLASS I.—To the owner of the best Bull, calved on or before July 1, 1859, under 4 years old.—The prize of 10*l.*, D. Smith, of Browning Hill House, Basingstoke. Highly Commended: A. Le Gallais, of La Moie House, Jersey.

CLASS II.—To the owner of the best Bull, calved since July 1, 1859, and more than 1 year old.—The prize of 5*l.*, B. Watts, of Don Street, St. Heliers, Jersey. Highly Commended: J. Dumbrell, of Ditchling, Hurstpierpoint, Sussex. Commended: H. C. Compton, of Manor House, Lyndhurst, Hants.

CLASS III.—To the owner of the best Cow, above 3 years old.—1st, 10*l.*, F. Newsam, J.P., of Stamford Hill, Middlesex; 2d, 6*l.*, J. Allnutt, of Clapham, Surrey; 3d, 4*l.*, A. Le Gallais, of La Moie House, St. Aubins, Jersey. Highly Commended: A. Le Gallais, of La Moie House, St. Aubins, Jersey.

CLASS IV.—To the owner of the best Heifer, in-milk or in-calf, under 3 years old.—1st, 10*l.*, A. Le Gallais, of La Moie House, St. Aubins, Jersey; 2d, 5*l.*, C. Philip Le Cornu, of Beaumont, Jersey. Highly Commended: The Rev. W. Lemprière, of Rosel Manor, St. Heliers, Jersey.

GUERNSEY.

CLASS I.—To the owner of the best Bull calved on or before July 1, 1859, under 4 years old.—The prize of 10*l.*, J. Rougier, of Golden Spurs, St. Peter's Port, Guernsey.

CLASS II.—To the owner of the best Bull, calved since July 1, 1859, and more than 1 year old.—The prize of 5*l.*, E. Beck, of Quevillitte, St. Martin's, Guernsey.

CLASS III.—To the owner of the best Cow, above 3 years old.—1st, 10*l.*, J. Allnutt, of Clapham, Surrey; 2d, 6*l.*, H. De Jersey Le Lachen, of Norgiots, St. Andrews, Guernsey; 3d, 4*l.*, E. Beck, of Quevillitte, St. Martin's, Guernsey.

CLASS IV.—To the owner of the best Heifer, in-milk or in-calf, under 3 years old.—1st, 10*l.*, J. Rougier, of Golden Spurs, St. Peter's Port, Guernsey; 2d, 5*l.*, J. Allnutt, of Clapham, Surrey.

PRIZES GIVEN BY THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

CATTLE.

POLLED (ABERDEEN AND ANGUS).

CLASS I.—To the owner of the best Bull, calved before January 1, 1860.—1st, 20*l.*, T. Lyell, of Shielhill, Kirriemuir, Forfarshire; 2d, 10*l.*, The Earl of Southesk, of Kinnaird Castle, Brechin; Silver Medal, T. Lyell, of Shielhill, Kirriemuir, Forfarshire. Highly Commended: R. Walker, of Hillside House, Portlethen, Aberdeen.

CLASS II.—To the owner of the best Bull, calved after January 1, 1860.—1st, 20*l.*, J. A. Pierson, of The Guynd, Arbroath; 2d, 10*l.*, R. F. O. Farquharson, of Houghton, Alford; Silver Medal, The Earl of Southesk, of Kinnaird Castle, Brechin. Highly Commended: A. Paterson, of Mulben, Blackhillock, Morayshire.

CLASS III.—To the owner of the best Bull, calved after January 1, 1861.—1st, 10*l.*, W. M'Combie, of Tillyfour, Aberdeen; 2d, 5*l.*, T. Leyell, of Shielhill, Kirriemuir, Forfarshire; Silver Medal, The Earl of Southesk, of Kinnaird Castle, Brechin.

CLASS IV.—To the owner of the best Cow of any age.—1st, 10*l.*, W. McCombie, of Tillyfour; 2d, 5*l.*, ditto; Silver Medal, the Earl of Southesk, of Kinnaird Castle, Brechin, Forfar.

CLASS V.—To the owner of the best Heifer, calved after January 1, 1860.—1st, 10*l.*, W. McCombie, of Tillyfour; 2d, 5*l.*, ditto; Silver Medal, the Earl of Southesk, of Kinnaird Castle, Brechin. Highly Commended: R. Walker, of Hillside House, Portlethen.

CLASS VI.—To the owner of the best Heifer, calved after January 1, 1861.—1st, 8*l.*, the Earl of Southesk, of Kinnaird Castle, Brechin; 2d, 4*l.*, A. Paterson, of Mulben, Blackhillock; Silver Medal, A. Pollok, of Lismany, Ballinasloe, Galway.

POLLED (GALLOWAY).

CLASS I.—To the owner of the best Bull, calved before January 1, 1860.—1st, 20*l.*, J. Beattie, of Newbie House, Annan, Dumfries; 2d, 10*l.*, J. Marsland, of Glenae, Dumfries; Silver Medal, J. Graham, of Meikle Culloch, Dalbeattie, Kirkcudbright. Highly Commended: P. Dudgeon, of Cargin, Dumfries.

CLASS II.—To the owner of the best Bull, calved after January 1, 1860.—No entry.

CLASS III.—To the owner of the best Bull, calved after January 1, 1861.—1st, 10*l.*, A. Jardine, of Applegirth, Lockerbie, Dumfries; 2d, 5*l.*, P. Dudgeon, of Cargin, Dumfries.

CLASS IV.—To the owner of the best Cow of any age.—1st, 10*l.*, J. Beattie, of Newbie House, Annan; 2d, 5*l.*, The Duke of

Buccleuch and Queensberry, of Drumlanrig, Thornhill; Silver Medal, The Duke of Buccleuch and Queensberry, of Drumlanrig, Thornhill.

CLASS V.—To the owner of the best Heifer, calved after January 1, 1860.—1st, 10*l.*, J. Graham, of Meikle Culloch, Dalbeattie, Kirkcudbright; 2d, 5*l.*, The Duke of Buccleuch and Queensberry, of Drumlanrig, Thornhill; Silver Medal, The Duke of Buccleuch and Queensberry, of Drumlanrig, Thornhill. Highly Commended: The Duke of Buccleuch and Queensberry, of Drumlanrig, Thornhill, Dumfries.

CLASS VI.—To the owner of the best Heifer, calved after January 1, 1861.—1st, 8*l.*, The Duke of Buccleuch and Queensberry, of Drumlanrig, Thornhill, Dumfries; 2d, 4*l.*, S. Thomson, Blaiket, Crocketford, Kirkcudbright; Silver Medal, P. Dudgeon, of Cargin, Dumfries. Highly Commended: S. Thomson, of Blaiket, Crocketford, Kirkcudbright.

HIGHLAND.

CLASS I.—To the owner of the best Bull, calved before January 1, 1859.—1st, 20*l.*, J. Malcolm, of Poltalloch, Callton-Mor, Lochgilphead; 2d, 10*l.*, A. Pollok, of Ronachan, Clachan, Cantire; Silver Medal, D. Fletcher, of Glenards, Tovermory, Argyll, and Givon's Grove, Leatherhead.

CLASS II.—To the owner of the best Bull, calved after January 1, 1859.—1st, 20*l.*, The Marquis of Breadalbane, of Taymouth Castle, Aberfeldy.

CLASS III.—To the owner of the best Bull, calved after January 1, 1860.—1st, 10*l.*, R. Anderson, of Lochelhi, Kildrummie.

CLASS IV.—To the owner of the best Cow, of any age.—1st, 10*l.*, J. Malcolm, of Poltallock, Callton-Mor, Lochgilphead; 2d, 5*l.*, A. Pollok, of Ronachan, Clachan, Cantire; Silver Medal, P. Beattie, of Dannydeers, Insch. Highly Commended: A. Pollok, of Ronachan, Clachan, Cantire.

CLASS V.—To the owner of the best Heifer, calved after January 1, 1859.—1st, 10*l.*, The Marquis of Breadalbane, of Taymouth Castle; 2d, 5*l.*, The Marquis of Breadalbane, of Taymouth Castle; Silver Medal, A. Pollok, of Ronachan, Clachan, Cantire.

CLASS VI.—To the owner of the best Heifer, calved after January 1, 1860.—1st, 8*l.*, The Marquis of Breadalbane, of Taymouth Castle, Aberfeldy; 2d, 4*l.*, ditto; Silver Medal, J. Malcolm, of Poltalloch, Callton-Mor, Lochgilphead. Highly Commended: ditto.

AYRSHIRE.

CLASS I.—To the owner of the best Bull, calved before January 1, 1860.—1st, 20*l.*, The Duke of Hamilton and Brandon, of Hamilton Palace; 2d, 10*l.*, W. Weir, of Barmulloch, Springburn.

CLASS II.—To the owner of the best Bull, calved after January 1, 1860.—1st, 20*l.*, J. Stewart, of Burnside Cottage, Strathaven; 2d, 10*l.*, the Duke of Atholl, of Dunkeld.

CLASS III.—To the owner of the best Bull, calved after January 1, 1861.—1st, 10*l.*, J. Stewart, of Burnside Cottage, Strathaven; 2d, 5*l.*, A. Oswald, of Auchincruive, Ayr; Silver Medal, J. Stewart, of Burnside Cottage, Strathaven.

CLASS IV.—To the owner of the best Cow, in-milk, of any age.—1st, 10*l.*, The Duke of Athole, of Dunkeld; 2d, 5*l.*, The Duke of Hamilton and Brandon, of Hamilton Palace; Silver Medal, Mrs. Wilson, of Forehouse, Kilbarcham. Highly Commended: The Duke of Athole, of Dunkeld.

CLASS V.—To the owner of the best Cow, in-calf, of any age.—1st, 10*l.*, The Duke of Hamilton and Brandon, of Hamilton Palace; 2d, 5*l.*, The Earl of Strathmore, of Glamis House, Glamis; Silver Medal, The Earl of Strathmore, of Glamis House, Glamis. Highly Commended: Mrs. Wilson, of Forehouse, Kilbarcham.

CLASS VI.—To the owner of the best Heifer, calved after January 1, 1860.—1st, 10*l.*, J. Stewart, of Burnside Cottage, Strathaven; 2d, 5*l.*, A. Oswald, of Auchincruive; Silver Medal, A. Oswald, of Auchincruive. Highly Commended: D. Tweedie, Castle Crawford, Abington.

CLASS VII.—To the owner of the best Heifer, calved after January 1, 1861.—1st, 8*l.*, J. Stewart, of Burnside Cottage, Strathaven; 2d, 4*l.*, ditto; Silver Medal, ditto. Highly Commended: The Duke of Hamilton and Brandon, Hamilton Palace.

Of the Foreign Classes we shall give a full report next week. Remarks on the general character of these classes have been made in a leading article. The following, in the meantime, is the list of awards:—

CATTLE.

CHAROLAISE.

CLASS I.—To the owner of the best Male.—Gold Medal, Comte C. de Bouillé, à Villars, Département de la Nièvre, France.

CLASS II.—To the owner of the best Female.—Gold Medal, Comte C. de Bouillé, à Villars, Département de la Nièvre, France; Grand Gold Medal of Honour, Comte C. de Bouillé.

GARONNAISE.

CLASS I.—To the owner of the best Male.—Gold Medal, H. J. Eluard, à Vert, St. Denis, de Seine-et-Marne.

CLASS II.—To the owner of the best Female.—No entry.

NORMAN.

CLASS I.—To the owner of the best Male—Gold Medal, Giot Parfait, ainé, Chevry, Cossigny, Seine-et-Marne; Bronze Medal, H. J. Eluard, à Vert, St. Denis, de Seine-et-Marne.

CLASS II.—To the owner of the best Female.—Gold Medal, Giot Parfait, ainé, Chevry, Cossigny; Silver Medal, H. J. Eluard, à Vert, St. Denis, Seine-et-Marne; Bronze Medal, Giot Parfait, ainé, Chevry, Cossigny, Seine-et-Marne.

DE SALERS.

CLASS I.—To the owner of the best Male.—No entry.

CLASS II.—To the owner of the best Female.—No entry.

PYRENEAN.

CLASS I.—To the owner of the best Male.—Gold Medal, H. J. Eluard, à Vert, St. Denis, Seine-et-Marne, Bernese Race Pyrenean; Bronze Medal, ditto.

CLASS II.—To the owner of the best Female.—No entry.

BRETON.

CLASS I.—To the owner of the best Male.—Gold Medal, S. C. Baker, Beaufort Street, King's Road, Chelsea; Silver Medal, Giot Parfait, ainé, Chevry, Cossigny, Seine-et-Marne; Bronze Medal, S. A. Madame la Princesse Baciocchi, of Korn-er-houet, Morbihan, France. Highly Commended: Sir A. de Rothschild, Bart., Aston Clinton, Tring.

CLASS II.—To the owner of the best Female.—Gold Medal, Giot Parfait, ainé, Chevry, Cossigny, Seine-et-Marne; Silver Medal, S. A. Madame la Princesse Baciocchi, Korn-et-houet, par Vannes, Morbihan; Bronze Medal, H. J. Eluard, Vert, St. Denis, Seine-et-Marne. Highly Commended: S. A. Madame la Princesse Baciocchi, Korn-er-houét, Morbihan.

OTHER FRENCH BREEDS.

CLASS I. To the owner of the best Male.—Gold Medal, Giot Parfait, ainé, Chevry, Cossigny, Seine-et-Marne.

CLASS II.—To the owner of the best Female.—Gold Medal, Giot Parfait, ainé, Chevry, Cossigny, Seine-et-Marne.

FLEMISH.

CLASS I.—To the owner of the best Male.—Gold Medal, H. Mahieu, Tappelle les Dunkerque (Nord), France.

CLASS II.—To the owner of the best Female.—Medal, H. Mahieu, Tappelle les Dunkerque (Nord), France.

DUTCH.

CLASS I.—To the owner of the best Male.—No entry.

CLASS II.—To the owner of the best Female.—Gold Medal, Giot Parfait, ainé, Chevry, Cossigny (Seine et Marne); Silver Medal, Aarnoud Hendrik van Wickevoort, Crommelin, Berkenrode, near Harlem, Holland.

SWISS BROWN.

CLASS I.—To the owner of the best Male.—Gold Medal, Forstand des Schweizerischen, Bawernvereins, Schwyz; Silver Medal, Brethern Schneider, St. Urbanhof, Gemeinde Sursee, Canton Luzern; Bronze Medal, Heinrich Dolder, Feld Meilen, near Zurich.

CLASS II.—To the owner of the best Female.—Gold Medal, F. C. Mettler, Goldau, Canton Schwyz; Silver Medal, H. Schmid, Gattikon, Gemeinde Thalweil, Canton of Zurich, Switzerland; Bronze Medal, President of the Swiss Agricultural Society, Schwyz. Highly Commended: C. 'Henggeler, Unter Egeri, Canton Zug, President of the Swiss Agricultural Society, Schwyz.

SWISS COLOURED.

CLASS I.—To the owner of the best Male.—Gold Medal, Landwirthschaftliche Gesellsechaft v. Simmenthal und Saanen (J. G. Karlen), Grossrath in Erlenbach, near Thun, Switzerland; Silver Medal, Burry (J.), Lussorf, Commune de Guin, Canton of Fribourg; Bronze Medal, A. Ecoffey, Villars Sousmont, Canton of Fribourg.

CLASS II.—To the owner of the best Female.—Gold Medal, A. Ecoffey, Villars Sousmont, Canton of Fribourg, Switzerland; Silver Medal, J. Fernand de Loyjs, de Treytorrens, Dorigny, près Lausanne, Canton de Vaud, Switzerland; Bronze Medal, J. Fernand de Loyjs, de Treytorrens, Dorigny, près Lausanne, Canton de Vaud, Switzerland. Highly Commended: A. Ecoffey, Villars Sousmont, Canton of Fribourg, Switzerland; Landwirthschaftliche Gesellschaft v. Simmenthal und Saanan (J. G. Karlen), Grossrath in Erlenbach, near Thun, Switzerland.

SPANISH.

CLASS I.—To the owner of the best Male.—No entry.

CLASS II.—To the owner of the best Female.—No entry.

OTHER FOREIGN BREEDS.

CLASS I.—To the owner of the best Male.—No entry.

CLASS II.—To the owner of the best Female.—No entry.

INDIAN OR OTHER NATIVE COLONIAL BREEDS.

CLASS I.—To the owner of the best Male.—No entry.

CLASS II.—To the owner of the best Female.—No entry.

HORSES.

HORSES FOR HEAVY DRAUGHT, OF ANY PURE FOREIGN BREED.

CLASS I.—To the owner of the best Male.—Prizes withheld.

CLASS II.—To the owner of the best Female.—No entry.

AGRICULTURAL HORSES, USED FOR AGRICULTURAL PURPOSES GENERALLY.

CLASS I.—To the owner of the best Male.—Gold Medal, D. Rozé (agriculturist), at Courville, department of Eure and Loir.

CLASS II.—To the owner of the best Female.—No entry.

SHEEP.

FRENCH MERINO.

CLASS I.—To the owner of the best Ram of any age.—Gold Medal, C. Lefebvre, of St. Escobille, departement de Seine et Oise; Silver Medal, G. V. Garnod, of Genouilly, Crisenoy, departement de Seine et Marne; Bronze Medal, A. C. L. Noblet, Château-Renard, arrondissement de Montargis, departement du Loiret. Highly Commended: A. C. L. Noblet, Château-Renard, arrondissement de Montargis, departement du Loiret; R. Bailleau, of Illiers, departement d'Eure et Loir. Commended: G. V. Garnod, of Genouilly, Crisenoy, departement de Seine et Marne. Grand Gold Medal of Honour: C. Lefebvre, of St. Escobille, department de Seine et Oise.

CLASS II.—To the owner of the best Pen of 3 Females.—Gold Medal, A. Gatineau, Farm of Beau Français, Canton of Illiers, department of Eure et Loir; Silver Medal, G. V. Garnod, of Genouilly, Crisenoy, department of Seine et Marne; Bronze Medal, M. R. Bailleau, Illiers, department of Eure et Loir. Highly Commended: G. V. Garnod, of Genouilly, Crisenoy, department of Seine et Marne.

SPANISH MERINO.

CLASS I.—To the owner of the best Ram of any age.—Gold Medal, C. C. Suntheim, of Niedergandern, near Gottingen, in Hanover; Silver Medal, C. C. Suntheim, of Niedergandern, near Gottingen, in Hanover; Bronze Medal, C. C. Suntheim, of Niedergandern, near Gottingen, in Hanover.

CLASS II.—To the owner of the best Pen of 3 Females.—Gold Medal, F. Homeyer, Ranzin, near Mokow, Pomerania; Silver Medal, F. Homeyer, Ranzin, near Mokow, Pomerania; Bronze Medal, C. C. Suntheim, of Niedergandern, near Gottingen, in Hanover.

SAXON MERINO.

CLASS I.—To the owner of the best Ram of any age.—Gold Medal, C. A. Gädegast, Thal, near Oschatz, Saxony; Silver Medal, H. A. Steiger, Leutewitz, and Lothayn, near Meissen; Bronze Medal, withheld; Grand Gold Medal of Honour, C. A. Gädegast, Thal, near Oschatz, Saxony.

CLASS II.—To the owner of the best Pen of 3 Females.—Gold Medal, H. A. Steiger, Leutewitz and Lothayn, near Meissen; Silver Medal, C. A. Gädegast, Thal, near Oschatz, Saxony; Bronze Medal, withheld.

OTHER PURE MERINO, NOT MENTIONED IN THE ABOVE CLASSES.

CLASS I.—To the owner of the best Ram of any age.—Prize withheld.

CLASS II.—To the owner of the best Pen of 3 Females.—No Entry.

LONG-WOOLLED FOREIGN BREEDS.

CLASS I.—To the owner of the best Ram of any age.—Gold Medal, G. Parfait, Ainé, Chevry, Cossigny, Seine et Marne, Soyeuse de Mauchamp.

CLASS II.—To the owner of the best Pen of 3 Females.—No Entry.

SHORT-WOOLLED FOREIGN BREEDS, NOT QUALIFIED FOR THE ABOVE CLASSES.

CLASS I.—To the owner of the best Ram of any age.—Bronze Medal, Acclimatisation Society, 3, Duke Street, Adelphi, W.C.

CLASS II.—To the owner of the best Pen of 3 Females.—Bronze Medal, Acclimatisation Society, 3, Duke Street, Adelphi, W.C.

CROSS-BRED MERINO.

CLASS I.—To the owner of the best Ram of any age.—Gold Medal, G. Parfait, Ainé, Chevry, Cossigny, Seine et Marne; Silver Medal, P. N. Godin, Ainé, Chatillon-sur-Seine (Côte d'Or); Bronze Medal, G. Parfait, Ainé, Chevry, Cossigny, Seine et Marne.

CLASS II.—To the owner of the best Pen of 3 Females.—Gold Medal, P. N. Godin, Ainé, Chatillon-sur-Seine (Côte d'Or); Silver Medal, P. N. Godin, Ainé, Chatillon-sur-Seine (Côte d'Or); Bronze Medal, P. N. Godin, Ainé, Chatillon-sur-Seine (Côte d'Or).

OTHER MIXED BREEDS.

CLASS I.—To the owner of the best Ram of any age.—Prize withheld.

CLASS II.—To the owner of the best Pen of 3 Females.—Prize withheld.

PIGS.

PURE FOREIGN BREEDS.

CLASS I.—To the owner of the best Male.—Silver Medal, H. J. Eluard, Vert St. Denis, near Cesson, Seine-et-Marne.

CLASS II.—To the owner of the best Female.—No Entry.

THE SHEEP.

The show of Sheep fully sustains the high character which British flock owners have long maintained. It presents the largest collection of well-bred and well-shaped and well-woolled sheep which has ever been brought together. We have evidence of the highest skill in every section. There is style, symmetry, and early maturity in the Leicesters. The Lincolns show what enterprising agriculturists can do towards producing an enormous yield of wool and mutton; and the Shropshire and other breeds are still better proofs of the great advantages of applying well-established principles and common sense to the improvement of native breeds.

The marked features of improvement to be seen in the British breeds will prove instructive to foreign agriculturists and sheep breeders, many of whom depend chiefly on sheep farming. As we pass through the various pens, foreigners meet us everywhere, evincing deep interest in the study before them.

As might have been expected, the breeds which came out strongest are the Leicester, Lincoln, Southdowns, and Shropshire. It is impossible that we could do within our limits of to-day anything like justice to the merits of even the prize animals.

Leicesters.—In Shearling Rams Mr. Sanday gets 1st and 3rd prizes; and Mr. Pawlett gets 2nd. The Holme Pierrepont flock will carry back with them laurels which Mr. Sanday will highly prize, and which his enterprise so fully deserves. Though we have always admired the Holme Pierrepont flock, we have never seen some points so well brought out as on this occasion.

In the full grown Ram Class Mr. Sanday wins 1st, 2nd, and 3rd prizes, together with a high commend, and two simple commends. Mr. Creswell also receives a commendation for a stylish ram.

In the Class devoted to Pens of five Shearlings, Mr. Sanday comes in 1st and 2nd; and probably would have got a third if he had another entry. As it is, Mr. Lovel, of Driffield, Yorkshire, stands third, and Colonel Inge's pen is commended.

Of *Lincolns* there is rather a small show. Of yearling rams there are only eight entries. Mr. Marshall, of Branston, Lincolnshire, gets 1st and 2d prizes; and Mr. Mayfield, of Coningsby, 3d. Of aged rams, Mr. Marshall gets 1st prize; Mr. Clarke, of Long Sutton, 2d, and Mr. Mayfield, 3d, out of a good lot of nine.

Mr. Greetham, of Wragby, without competition wins 1st prize with a pen of 5 very good shearling ewes. A very large class indeed represent the spirit as well as the skill of the district from which they come.

The Cotswolds are better represented. Mr. Garne gets 1st prize for his shearling ram; Mr. Handy, 2d; and Mr. Lane, 3d. Mr. Garne is also highly commended for another animal; and Mr. Lane commended.

In the Section Aged Rams, Mr. Lane wins 1st and 2d prizes, and Mr. Handy, 3d.

In the *Southdown* Classes we see the footprints of Jonas Webb. But he is so little missed that we are not disposed to regret much his advent to the Shorthorn ring. Among the Shearlings, Lord Radnor got 1st prize with a ram of his own breeding. Mr. Rigden comes in for 2d and 3d, and a couple of commendations. In the Aged Ram Class Mr. Rigden heads the prize; Lord Walsingham's 2d prize animal following close. His lordship also got the 3d prize, and two high commendations. Mr. Waters, of Eastbourne, Essex, gets both a high and a simple commendation.

Among the pens of five Shearling Southdown Ewes, Sir George Throckmorton gets 1st prize for a lot which might run a close race with the best pen ever raised at Babraham. Lord Walsingham is first; and Lord Radnor 3d. Lord Walsingham is also highly commended; and so is Sir Thomas Barrett.

The breeders of *Shropshire* sheep seem to have been encouraged by the privilege accorded to them by the Council of the Society; for they show a large number of first-class sheep.

In the Shearling Class Mr. Horton carries off the 1st prize with an animal of rare chest and fine quality, which has been hired by a gentleman, from Ireland, for somewhere about 100*l.* Mr. Horton's sheep have already done good service in Ireland; and we wish equal success to "Lord Salop," and to his hirer the gallant Captain. Mr. Mansell, of Adcott, gets 2d prize; and Mr. Matthews, 3d.

In the aged Ram Class, Mr. Horley is again victorious with a capital ram. Mr. Bowen, of Shrewsbury, gets 2d; and Mr. Horton comes in 3d with a fine animal that has rendered good service in Ireland, first with Captain Broughton, and latterly with Mr. Adams.

The Class devoted to pens of five Shearling Ewes contains eight entries. Mr. Crane gets 1st and 2d prizes; and Mr. Mathews, 3d.

The following are the awards in the Sheep Classes:—

SHEEP.

LEICESTER.

CLASS I.—To the owner of the best Shearling Ram.—1st, 20*l.*, W. Sanday, of Holme Pierrepont; 2d, 10*l.*, T. E. Pawlett, of Beeston, Sandy: 3d, 5*l.*, W. Sanday, of Holme Pierrepont. Highly Commended: T. E. Pawlett, of Beeston.

CLASS II.—To the owner of the best Ram of any other age.—1st, 20*l.*, W. Sanday, of Holme Pierrepont; 2d, 10*l.*, ditto; 3d, 5*l.*, ditto. Highly Commended: ditto.

CLASS III.—To the owner of the best Pen of 5 Shearling Ewes, of the same flock.—1st, 20*l.*, W. Sanday, of Holme Pierrepont; 2d, 10*l.*, ditto; 3d, 5*l.*

To the owner of the best Ram in the Leicester Classes.—Gold Medal, W. Sanday, of Holme Pierrepont, Notts.

LINCOLN.

CLASS I.—To the owner of the best Shearling Ram.—1st, 15*l.*, T. B. Marshall, of Branston, Lincolnshire; 2d, 10*l.*, ditto: 3d, 5*l.*, J. Mayfield, of Billinghay Dales, Coningsby.

CLASS II.—To the owner of the best Ram of any other age.—1st, 15*l.*, T. B. Marshall, of Branston; 2d, 10*l.*, J. Clarke, of Old Bank House, Long Sutton; 3d, 5*l.*, J. Mayfield, Billinghay Dales, Coningsby.

CLASS III. To the owner of the best Pen of 5 Shearling Ewes, of the same flock.—1st, 15*l.*, W. Greetham, of Stainfield, Wragby.

COTSWOLD.

CLASS I.—To the owner of the best Shearling Ram.—1st, 15*l.*, W. Garne, of Kilkenny Farm, Bibury, Fairford; 2d, 10*l.*, E. Handy, of Sierford, Cheltenham; 3d, 5*l.*, W. Lane, of Broadfield Farm, Northleach. Highly Commended: W. Garne, Kilkenny Farm, Bibury, Gloucestershire.

CLASS II.—To the owner of the best Ram of any other age—1st, 15*l.*, W. Lane, of Broadfield Farm, Northleach; 2d, 10*l.*, ditto; 3d, 5*l.*, E. Handy, of Sierford, Cheltenham. Highly Commended: R. Garne, of Aldsworth, Northleach.

CLASS III.—To the owner of the best Pen of 5 Shearling Ewes, of the same flock.—1st, 15*l.*, W. Lane, of Broadfield Farm, Northleach; 2d, 10*l.*, J. K. Tombs, of Langford, Lechlade; 3d, 5*l.*, W. Lane, of Broadfield Farm, Northleach. Highly Commended: J. K. Tombs, of Langford, Lechlade.

KENTISH OR ROMNEY MARSH.

CLASS I.—To the owner of the best Shearling Ram.—1st, 15*l.*, F. Murton, of Smeeth, Ashford; 2d, 10*l.*, T. Blake, of Sycamore House, Dymchurch, Folkstone; 3d, 5*l.*, G. Jenner, of Parsonage House, Udimore, Rye.

CLASS II.—To the owner of the best Ram of any other age.—1st, 15*l.*, T. Blake, of Sycamore House, Dymchurch, Folkstone; 2d, 10*l.*, ditto; 3d, 5*l.*, F. Murton, of Smeeth, Ashford, Kent.

CLASS III.—To the owner of the best Pen of five Shearling Ewes, of the same flock.—1st, 15*l.*, F. Murton, of Smeeth,, Ashford; 2d, 10*l.*, Ditto; 3d, 5*l.* G. Jenner, of Parsonage House Udimore, Rye.

LONG-WOOLLED, NOT QUALIFIED TO COMPETE AS LEICESTERS, LINCOLNS, COTSWOLDS, OR KENTISH.

CLASS I.—To the owner of the best Shearling Ram.—1st, 15*l.*, J. Lynn, of Church Farm, Stroxton, Grantham; 2d, 10*l.*, Ditto: 3d, 5*l.*, Ditto. Commended: H. Aylmer, of West Dereham Abbey, Stoke Ferry.

CLASS II.—To the owner of the best Ram of any other age.—1st, 15*l.*, J. Simpson, of Spofforth Park, Wetherby; 2d, 10*l.*, Ditto; 3d, 5*l.*, Ditto.

CLASS III.—To the owner of the best Pen of Five Shearling Ewes of the same flock.—1st, 15*l.*, H. Aylmer, of West Dereham, Abbey, Stoke Ferry; 2d, 10*l.*, J. Simpson, of Spofforth Park, Wetherby; 3d, 5*l.*, J. K. Tombs, of Langford, Lechlade, Gloucestershire.

IRISH—PURE NATIVE LONG-WOOLLED BREEDS.

CLASS I, II, & III.—Prizes withheld.

SOUTH-DOWN.

CLASS I.—To the owner of the best Shearling Ram.—1st, 20*l.*, The Earl of Radnor, of Coleshill House, Highworth; 2d, 10*l.*, W. Rigden, of Hove, Brighton; 3d, 5*l.*, Ditto. Highly Commended, Ditto.

CLASS II.—To the owner of the best Ram of any other age.—1st, 20*l.*, W. Rigden, of Hove, Brighton; 2d, 10*l.*, Lord Walsingham, of Merton Hall, Thetford; 3d, 5*l.*, Ditto. Highly Commended: Ditto.

CLASS III.—To the owner of the best Pen of five Shearling Ewes, of the same flock.—1st, 20*l.*, Sir R. G. Throckmorton, Bart., of Buckland, Farringdon; 2d, 10*l.*, Lord Walsingham, of Merton Hall, Thetford; 3d, 5*l.* The Earl of Radnor, of Coleshill House, Highworth. Highly Commended: Lord Walsingham, of Merton Hall, Thetford; William Rigden, of Hove, Brighton.

SHROPSHIRE.

CLASS I.—To the owner of the best Shearling Ram.—1st, 15*l.*, T. Horton, of Harnage Grange, Shrewsbury; 2d, 10*l.*, T. Mansell, of Adcott Hall, Shrewsbury; 3d, 5*l.*, H. Matthews, of Montford, Shrewsbury. Highly Commended: T. Horley, jun., of The Fosse, near Leamington.

CLASS II.—To the owner of the best Ram of any other age.—1st, 15*l.*, T. Horley, jun., of The Fosse, near Leamington; 2d, 10*l.*, P. W. Bowen, of Shrawardine Castle, Shrewsbury; 3d, 5*l.*, T. Horton, of Harnage Grange, Shrewsbury. Very Highly Commended: Lord Wenlock, of Bourton Cottage, Much Wenlock. Highly Commended: W. O. Foster, of Kinver Hill Farm, Stourbridge; W. G. Preece, Shrewsbury.

CLASS III.—To the owner of the best Pen of 5 Shearling Ewes, of the same flock.—1st, 15*l.*, J. & E. Crane, of Shrawardine, Shrewsbury; 2d, 10*l.*, J. & E. Crane, of Shrawardine, Shrewsbury; 3d, 5*l.*, H. Matthews, of Montford. Highly Commended: T. Horley, jun., of The Fosse, near Leamington.

HAMPSHIRE AND WEST-COUNTRY DOWN.

CLASS I.—To the owner of the best Shearling Ram.—1st, 15*l.*, S. King, of Old Hayward Farm, Hungerford; 2d, 10*l.*, S. King, of Old Hayward Farm, Hungerford; 3d, 5*l.*, J. R. Neate, of Northington Farm, Overton.

CLASS II.—To the owner of the best Ram of any other age.—1st, 15*l.*, W. Humfrey, of Oak Ash, Chaddleworth, Wantage; 2d, 10*l.*, W. Humfrey, of Oak Ash, Chaddleworth, Wantage; 3d, 5*l.*, S. King, of Old Hayward Farm, Hungerford. Highly Commended: W. R. Shittler, of Bishopston, Salisbury; W. B. Canning, of Chisledon, Swindon.

CLASS III.—To the owner of the best Pen of 5 Shearling Ewes of the same flock.—1st, 15*l.*, W. Humfrey, of Oak Ash, Chaddleworth, Wantage; 2d, 10*l.*, W. R. Shittler, of Bishopston, Salisbury; 3d, 5*l.*, W. F. Bennett, of Chilmark, Salisbury. Highly Commended: W. B. Canning, of Chisledon, Swindon.

OXFORDSHIRE DOWN.

CLASS I.—To the owner of the best Shearling Ram,—1st, 15*l.*, C. Gillett, of Cote House, Bampton, Farringdon; 2d, 10*l.*, ditto; 3d, 5*l.*, ditto.

CLASS II.—To the owner of the best Ram of any other age.—1st, 15*l.*, C. Gillett, of Cote House, Bampton, Farringdon; 2d, 10*l.*, The Executors of the late Samuel Treadwell, of Upper Winchendon, Waddesden, near Aylesbury; 3d, 5*l.*, H. Barnett, of Glympton Park, Woodstock.

CLASS III.—To the owner of the best Pen of 5 Shearling Ewes of the same flock.—1st, 15*l.*, C. Gillett, of Cote House, Bampton, Farringdon; 2d, 10*l.*, The Duke of Marlborough, of Blenheim, Woodstock; 3d, 5*l.*, C. Howard, of Biddenham, Beds.

DORSET.

CLASS I.—To the owner of the best Shearling Ram.—1st, 15*l.*, T. Danger, of Huntstile, Bridgewater; 2d, 10*l.*, ditto; 3d, 5*l.*, F. Bond, of Whitelackinton, Ilminster. Commended: W. Paull, of Piddletown, Dorchester.

CLASS II.—To the owner of the best Ram of any other age.—1st, 15*l.*, T. Danger, of Hunstile, Bridgewater; 2d, 10*l.*, ditto; 3d, 5*l.*, W. Paull, of Piddletown. Commended: ditto.

CLASS III.—To the owner of the best Pen of 5 Shearling Ewes of the same flock.—1st, 15*l.*, T. Danger, of Huntstile, Bridgewater; 2d, 10*l.*, ditto; 3d, 5*l.*, F. Bond, of Whitelackington, Ilminster.

MOUNTAIN.

CLASS I.—To the owner of the best Shearling Ram.—1st, 15*l.*, R. Eastwood, of Swinshawe, House, Burnley; 2d, 10*l.*, ditto; 3d, 5*l.*, J. Merson, of Brinsworthy, North Molton. Highly Commended: J. Peel, of Knowlmere Manor, Clitheroe.

CLASS II.—To the owner of the best Ram of any other age.—1st, 15*l.*, J. Peel, of Knowlmere Manor, Clitheroe; 2d, 10*l.*, ditto; 3d. 5*l.*, J. Quartly, of Molland House, South Molton.

CLASS III.—To the owner of the best Pen of 5 Shearling Ewes, of the same flock.—1st, 15*l.*, J. Peel, of Knowlmere Manor, Clitheroe; 2d, 10*l.*, The Hon. Colonel Pennant, M.P., of Penrhyn Castle, Bangor; 3d. 5*l.*, J. Quartly, of Molland House, South Molton. Highly Commended: R. Eastwood, of Swinshawe House, Burnley, Lancaster.

PRIZES GIVEN BY THE HIGHLAND AND AGRICULTURAL SOCIETY OF SCOTLAND.

SHEEP.

BLACK-FACED.

CLASS I.—To the owner of the best Tup, not more than 4-shear.—1st, 10*l.*, G. Sandilands, of North Cumberhead, Lesmahagen; 2d, 5*l.*, J. Drife, of Barr, Sanquhar; Silver Medal, R. Elliott, of Laighwood, Dunkeld. Highly Commended: J. Drife, of Barr, Sanquhar.

CLASS II.—To the owner of the best Shearling Tup.—1st, 10*l.*, J. Drife, of Barr, Sanquhar; 2d, 5*l.*, ditto; Silver Medal, J. Malcolm, of Poltalloch, Calton Mor, Lochgilphead.

CLASS III.—To the owner of the best 5 Ewes, not more than 4-shear.—1st, 8*l.*, A. Pollok, of Ronachan, Clachan, Cantire; 2d, 4*l.*, J. Drife, of Barr, Sanquhar; 3d, Silver Medal, S. Newall, of Eastby, Skipton.

CLASS IV.—To the owner of the best 5 Shearling Ewes.—1st, 8*l.*, J. Drife, of Barr, Sanquhar, Dumfriesshire; 2d, 4*l.*, A. Campbell, Auchindarroch, Lochgilphead; Silver Medal, G. Sandilands, of North Cumberhead, Lesmahagen. Highly Commended: R. Elliott, of Laighwood, Dunkeld.

CHEVIOT.

CLASS I.—To the owner of the best Tup, not more than 4-shear.—1st, 10*l.*, T. Brydon, of Kinnethead, Moffat; 2d, 5*l.*, J. Brydon, of Moodlaw, Langholme; Silver Medal, T. C. Borthwick, of Hopsrig, Langholme, Dumfries. Highly Commended: T. C. Borthwick, of Hopsrig, Langholme.

CLASS II.—To the owner of the best Shearling Tup.—1st, 10*l.*, W. G. Hunter, of Dumfedling, Langholme; 2d, 5*l.*, R. Borland, of Auchincairn, Closeburn, Thornhill; Silver Medal, W. G. Hunter, of Dumfedling, Langholme. Highly Commended: R. Borland, of Auchincairn, Closeburn, Thornhill.

CLASS III.—To the owner of the best 5 Ewes, not more than 4-shear.—1st, 8*l.*, T. C. Borthwick, of Hopsrig, Langholme; 2d, 4*l.*, The Hon. Colonel Pennant, M.P., of Penrhyn Castle, Bangor.

CLASS IV.—To the ower of the best 5 Shearling Ewes.—1st, 8*l.*, R. Borland. of Auchincairn, Closeburn, Thornhill; 2d, 4*l.*, T. C. Borthwick, of Hopsrig, Langholme; Silver Medal, Sir G. Montgomery, Bart., M.P., of Stobo Castle. Highly Commended: T. C. Borthwick, of Hopsrig, Langholme.

PIGS.

There is not a section of this great Show which appears to attract more general interest than that devoted to swine. The various breeds are most fully and creditably represented. The admirers of the small white breeds have ample scope for comparison; and the larger kinds are not inferior. The show of pigs, like all the other departments, forms also the best school which breeders have ever had in which to form a correct judgment of perfection, or by which they may correct a judgment in any degree faulty. On former occasions we ventured to suggest to the Society the propriety of improving on their mode of classification. We are glad to find that an improvement has been effected. We now have Berkshires competing against Berkshires. But the idea should be carried farther than it has been. You may still have different breeds competing in the same class. Thus there are "large breeds of any colour" and "small breeds of any colour." In fact, *size* appears to be the leading classifying feature.

In the first or Large breed Boar Class, the 1st prize is awarded to Mr. Dyson, for a Yorkshire boar, with one or two spots above the tail. The development of his fore ribs is perfect; but he runs away towards the tail. The 2d prize animal, "Garibaldi," has a better hind quarter; ears rather better set; and the lower portion of his limbs is finer. The first prize pig is better marked, and shows at present rather better quality of flesh. This may arise, however, from difference in the amount of service rendered this season.

Mr. Harrison shows a pig in this section whose neck surpasses that of any of the prize animals; and Mr. Hickman has another animal of the drooping ear class, of very good quality, and with remarkably fine hair for an animal of his size and breed.

In the Small Boar Class, Mr. Gavins, of the Fox Inn, near Leeds, gains 1st. prize with "Roger Bacon," one of the most symmetrical pigs we have ever seen. The line of beauty, we may say of perfection, is seen from all points. His fore arms appear a little tender, which no doubt has arisen from the knocking about on the journey he has travelled. The hair is longer and stronger than might have been expected; but the nice art displayed in "setting" it makes you forget all about its length.

The 2d prize in this well-filled class is carried off by Mr. Mangles, of Ripon, Yorkshire, with a well-fleshed boar, half York half Cumberland breed. As you view him behind he does not so well fill the square as the 1st prize pig; he is nevertheless an excellent pig. A curly-haired of Mr. Mangles' is highly and deservedly commended in this class. He is only 9 months old, and when he fills up a little better behind the shoulder, as no doubt he will, he will render good service to his purchaser.

Mr. Wainman, of Yorkshire, shows some capital pigs in this class; and so do Mr. Crisp and others.

In Class 3, "Boars of a Small Black Breed," the 1st prize is awarded to Mr. Sexton, of Whirstead, Ipswich, for an improved Suffolk pig, 14 months old. His neck is very full, and shoulders admirably set. Mr. Crisp, of the Abbey, Suffolk, gains 2d prize, also for an improved Suffolk, with a wide and even back. Mr. Crisp receives a high commend; Mr. Sexton two high commends and a simple commendation in this class.

In Class 4, "Boars of the Berkshire Breed," Sir George Throckmorton wins the 1st prize with a boar of fine quality; Mr. Hewer, of Highworth, Wilts, gets the 2d prize; and the Rev. Mr. Baily, of Swindon, Wilts, is highly commended. We have seen better Berkshires than either of these animals; and although they are excellent pigs, we should like to see this valuable breed better represented.

The fifth Class is a group of medleys. It could not be otherwise. The wonder is that there is not a larger entry of more varied character in a class devoted to "Boars of a breed not eligible for the preceding classes." A middle-sized Yorkshire gets the 1st prize for Mr. Crisp; one of the same class gets second for Mr. Wainman; while a mixed white and black obtains 3d place or a high commend for Mr. Chapman of York.

We now come to the Sow classes. And first of all we have Class 6 or "Breeding Sows of a large Breed of any Colour," in which Mr. Wainman, of Yorkshire, carries off the 1st prize; and in which Mr. Harrison makes a capital 2d, with a good sow and a promising litter. The class is not above the average quality.

Section 7 is devoted to "Breeding Sows of a small white breed." Mr. Wainmain runs 1st with one of his unrivalled small-snouted and fine-boned pigs. The quality is good; the skin clean and healthy; the hair more plenteous than on more delicately reared small pigs.

Mr. Stearn comes in 2d with a Suffolk sow of excellent points; and obtains a commendation for his sow "Princess," with a fine litter of 10 promising young ones. Mr. Wainman's sow "Snow Queen," gains for him a high commendation.

In Class 8 we have the small-sized Black Breeding Sows, of which Mr. Sexton's is pronounced the best; and Mr. Sexton's Improved Suffolk second.

In the next, or 9th Class, we have "Breeding Sows of the Berkshire Breed." Sir R. G. Throckmorton gains first place with a 5 year old sow that has produced good pigs in her time; and seems still in her prime. Mr. Sadler, of Crickdale, Wilts, is 2nd in the ring, with a younger and very well made sow, and the manager of the Royal Agricultural College is most complimented for one of his trio of whitish skinned and well shaped animals. We should be glad if this precedent would meet the eyes of the leading men of the Royal Dublin Society, who on some principle peculiar to themselves exclude the Royal Agricultural School at Glasnevin from competing or obtaining prizes or commendations at the Irish shows.

Class 10 is another medley in which the middle sized Yorkshires have it all to themselves. Mr. Wainman gets 1st and 2nd; and the Rev. Mr. Elmhirst, of Leicestershire, receives two high commendations; and Mr. Eardley, of Chester, another.

In Class 11, we have "Pens of 3 Breeding Sow Pigs of a large breed, of any colour, and of the same litter." There are only three entries. Mr. Wainman gets 1st, and Mr. Hickman of Hull 2d, for an animal said to be improved, but whose snout and other points appear anything but characteristic of an improved pig.

We have then Class 12, "Pens of 3 Breeding Sows of a small white breed, and of the same litter;" in which Lord Wenlock wins 1st and 2d prizes.

We have "Pens of 3 Breeding Sows of a small black breed, and of the same litter," in Class 13. In this Mr. Sexton is 1st, and Mr. Wolton, of Woodbridge, Suffolk, 2d.

The Rev. Mr. Baily is 1st in Class 14, with his Pen of 3 Berkshires; Mr. Druce, of Oxon, being 2d.

And finally we have Class 15: another middle sized Yorkshire again wins 1st and 2d; Mr. Wainman getting the former, and Mr. Gledhill, of Heckmondwike, York, the latter. The following is a detailed prize list:—

PIGS.

CLASS I.—To the owner of the best Boar of a large breed, of any colour.—1st, 10*l.*, J. Dyson, of Adelphi Hotel, Duck Street, Leeds; 2d, 5*l.*, J. Hickman, of West Parade, Spring Bank. Highly Commended: W. B. Wainman, of Carhead, Cross Hills.

CLASS II.—To the owner of the best Boar of a small white breed.—1st, 10*l.*, M. Gavins, of the Fox Inn, Woodhouse Carr; 2d, 5*l.*, G. Mangles, of Givendale, Ripon. Highly Commended: ditto.

CLASS III.—To the owner of the best Boar of a small black breed.—1st, 10*l.*, G. M. Sexton, of Wherstead Hall, Ipswich; 2d, 5*l.*, T. Crisp, of Butley Abbey, Wickham Market. Highly Commended: G. M. Sexton, of Wherstead Hall, Ipswich; T. Crisp, of Butley Abbey, Wickham Market.

CLASS IV.—To the owner of the best Boar of the Berkshire breed.—1st, 10*l.*, Sir R. G. Throckmorton, Bart, of Buckland, Farringdon; 2d, 5*l.*, W. Hewer, of Sevenhampton, Highworth. Highly Commended: Rev. H. G. Bailey, of Swindon.

CLASS V.—To the owner of the best Boar of a breed not eligible for the preceding classes.—1st, 10*l.*, J. Parkinson, of Girlington Cottage, Bradford; 2d, 5*l.*, W. B. Wainman, of Carhead, Cross Hills. Highly Commended: G. Chapman, of Seamer, Scarborough.

CLASS VI.—To the owner of the best Breeding Sow of a large breed, of any colour.—1st, 10*l.*, W. B. Wainman, of Carhead, Cross Hills; 2d, 5*l.*, E. Harrison, of Woodhouse Moor, Leeds.

CLASS VII.—To the owner of the best Breeding Sow of a small white breed.—1st, 10*l.*, W. Bradley Wainman, of Carr Head, Cross Hills; 2d, 5*l.*, S. G. Stearn, of Brandeston, Wickham Market. Highly Commended: W. B. Wainman, of Carhead, Cross Hills; S. G. Stearn, of Brandeston, Wickham Market; W. Hainworth, of Hitchin; G. E. Taylor, of Oatlands

CLASS VIII.—To the owner of the best Breeding Sow of a small black breed.—1st, 10*l.*, G. M. Sexton, of Wherstead Hall, Ipswich; 2d, 5*l.*, ditto. Highly Commended: S. Wolton, of Kesgrave, Woodbridge, Suffolk; G. M. Sexton, of Wherstead Hall, Ipswich.

CLASS IX.—To the owner of the best Breeding Sow of the Berkshire breed.—1st, 10*l.*, Sir R. G. Throckmorton, Bart., of Buckland, Farringdon; 2d, 5*l.*, W. J. Sadler, of Bentham Calcutt, Cricklade. Highly Commended: Royal Agricultural College, Cirencester, Gloucester.

CLASS X.—To the owner of the best Breeding Sow, of a breed not eligible for the preceding classes.—1st, 10*l.*, W. B. Wainman, of Carhead, Cross Hills; 2d, 5*l.*, W. B. Wainman, of

Carhead, Cross Hills. Highly Commended: the Rev. E. Elmhirst, of Shawell Rectory; J. Foster, of Crownest, near Bingley; W. Eardley, of Larkton Hall, Malpas.

CLASS XI.—To the owner of the best Pen of 3 Breeding Sow Pigs of large breed, of any colour, of the same litter, above 4 and under 8 months old.—1st, 10*l.*, W. B. Wainman, of Carhead, Cross Hills; 2d, 5*l.*, J. Hickman, of West Parade, Spring Bank.

CLASS XII.—To the owner of the best Pen of 3 Breeding Sow Pigs of a small white breed, of the same litter, above 4 and under 8 months old.—1st, 10*l.*, Lord Wenlock, of Escrick Park; 2d, 5*l.*, ditto. Highly Commended: W. B. Wainman, of Carhead, Cross Hills; the Hon. Colonel Hood, of Cumberland Lodge, Windsor Park.

CLASS XIII.—To the owner of the best Pen of 3 Breeding Sow Pigs of a small black breed, of the same litter, above 4 and under 8 months old.—1st, 10*l.*, G. M. Sexton, of Wherstead Hall; 2d, 5*l.*, S. Wolton, of Kesgrave, Woodbridge.

CLASS XIV.—To the owner of the best Pen of 3 Breeding Sow Pigs of the Berkshire breed, of the same litter, above 4 and under 8 months old.—1st, 10*l.*, The Rev. H. G. Baily, of Swindon; 2d, 5*l.*, J. Druce, of Eynsham. Highly Commended: W. Hewer, of Sevenhampton, Highworth.

CLASS XV.—To the owner of the best Pen of 3 Breeding Sow Pigs of a breed not eligible for the preceding classes, of the same litter, above 4 and under 8 months old.—1st, 10*l.*, W. B. Wainman, of Carhead, Cross Hills; 2d, 5*l.*, J. Gledhill, of High Street, Heckmondwike. Highly Commended: G. Chapman, of Seamer, Scarborough.

We append the list of Judges by whom these awards have been made:—

Short-horns (Male).—W. Cattle, F. Fowler, W. Tindall

Short-horns (Female).—T. Parkinson, J. Gamble, W. F. Dickenson.

Herefords.—E. L. Franklin, R. Moggridge, S. Bloxsidge.

Devon and Sussex.—R. B. Warren, H. Keary, S. Umbers.

All other Breeds.—A. Denman, R. Smith, J. E. Jones, Colonel Le Couteur, additional Judge of Channel Island Entries.

Thorough-bred Horses and Hunters.—Colonel Cotton, Captain White, Lord Tredegar.

Carriage Horses, Roadsters, and Ponies.—H. Thurnall, R. S. Waters, J. E. Welby.

Agricultural Horses (Suffolk).—E. Green, J. Atkinson, W. C. Spooner.

Other Agricultural Horses.—James Boote, J. Bland, W. Wood.

Leicesters.—G. Leighton, J. Mann, R. Woods.

Lincolns, and other Long-wools.—H. Beevor, L. Borman, R. Nicholson.

Cotswolds.—J. Marriot, R. J. Newton, W. S. Stevens.

Southdowns.—E. Trumper, G. Harding, S. Field.

Shropshire Downs.—G. Cureton, J. Rawlence, H. Ffooks.

Hampshire Downs and Short-wools.—E. Little, E. B. Squarry, J. Blundell.

Judge for Mountain Sheep.—J. Paterson.

Oxfordshire.—E. Ruck, T. Harris, J. W. Thacker.

Pigs.—Major H. S. M'Clintock, J. S. Turner, J. Woolf.

SCOTCH JUDGES.

Polled Cattle.—J. Graham, H. Watson, W. Smith.

Highland Cattle.—R. D. Campbell, J. Macfarlane.

Ayrshire Cattle.—P. G. Barnes, R. Guthrie, — Murdoch.

Clydesdale Horses.—A. Renwick, R. Findlay.

Blackfaced Sheep.—J. Macfarlane, R. Paterson.

Cheviot Sheep.—R. Paterson, W. Aitchison.

FOREIGN JUDGES.

French Cattle.—M. St. Marie, Sir E. Kerrison, Bart.

French Sheep.—M. Le Four, Mr. T. Pope.

French Horses and French Pigs.—Baron Billing, Sir E. Kerrison.

Dutch Cattle.—R. Milward, M. St. Marie.

Swiss Cattle.—M. Gensch, M. Carlen, Sir A. M'Donald.

Saxony Sheep.—Mr. T. Pope, Mr. C. A. Rittner.

VETERINARY INSPECTORS.

Professor Simonds, Professor Spooner; Assistant—R. L. Hunt.

ROYAL AGRICULTURAL COLLEGE CLUB.

The annual dinner of the Agricultural College Club was held on Thursday evening at Cremorne, when about 100 of the present and former students were present. Professor Voelcker occupied the chair, and was supported by E. Holland, Esq., M.P.; the Hon. C. Carnegie, M.P., Professors Brown, Buckman, and Coleman; Messrs. Tanner, Grenfell, J. Wilson, Ruck, &c.

After the usual loyal toasts had been given, Mr. Carnegie, in proposing "Success to the College and E. Holland, Esq.," alluded to the unfortunate differences which at present exist between the Principal and the Professors, which had led to the resignation of Professor Voelcker and the probable resignation of all the other Professors, and also complained of the very inefficient memorial which had been put up in the chancel of the chapel in memory of the valuable services of the late Mr. Haygarth.

Mr. HOLLAND, M.P., in reply said that the strictest investigation would be made in respect to the differences which had taken place in the College, and immediate steps would be taken to re-appoint the committee to carry out the wishes of the students to erect a memorial to Mr. Haygarth.

A great deal of discussion ensued upon the question of the Professors and their position, the general feeling of the meeting was most decidedly manifested in favour of the Professors, who were all loudly cheered and enthusiastically received, some of those who were present expressing it as their decided opinion that it would be fatal to the prosperity of the College to accept the resignation of the Professors. The discussion of this question occupied till about eleven o'clock at night. Among the toasts proposed were "Prosperity to the Club," acknowledged by Mr. Tanner; "Success to the College, and E. Holland, Esq., M.P.," by the Hon. Mr. Carnegie; the health of the Chairman, proposed by Mr. Grenfell; the health of the Hon. Secretary, by Professor Coleman; the Members of the R. A. College and the Old Students, proposed by Professor Brown, responded to by Jacob Wilson, Esq.; the Professors, proposed by Mr. Holland, enthusiastically drunk, and responded to by Professor Buckman; the Visitors, the Royal Agricultural Society of England, and the Highland Agricultural Society of Scotland. The proceedings passed off in the most perfect good humour; the statement of Mr. Holland, M.P., relative to an inquiry meeting, met with the fullest approbation of all present.

THE DOG SHOW.

THIS has been among the most popular exhibitions of the week, commanding indeed much larger numbers of spectators on Wednesday and Thursday at any rate than the Battersea show yard. On Wednesday last 6000 or 7000 visited the new Agricultural Hall at Islington, still in an unfinished state, in whose galleries and wings upwards of 1000 dogs have been exhibited, and probably 10,000 were present on Thursday. This collection is well worthy of the interest it has excited. The dogs are arranged in no fewer than 52 classes, ranging between the noble bloodhound and the toy terrier. Some of these classes are very well filled; pointers, setters, retrievers, and spaniels are among the best.

Among the "Dogs not used for sporting purposes" there is a magnificent collection of mastiff and large bull dogs. There is also a very large collection of different sorts of Terriers, black and tan, white, Scotch, and Skye. The building, not yet completed, in which the show is held, will be a noble hall for agricultural and other shows, and the company who have built it seem likely to have created a very good property. The building, completed and finished will cover $2\frac{3}{4}$ acres of land and has cost 40,000*l.* There is also an acre of surface in the galleries, and the whole will next December be declared a splendid improvement on the cramped and crowded Baker Street Bazaar, in which the Smithfield Club has hitherto held its show. The Dog Show with which it has been inaugurated has owed much of its success to diligent and energetic advertising. The large sheet announcing it was to be seen by country travellers at every station on their journey up to town. The similar announcement of the great international gathering at Battersea has hardly been seen anywhere, and some of the comparative neglect which its show ground at first received may be owing to lack of making it sufficiently well known.

Home Correspondence.

Crops in Essex.—I never saw my crops look better taken as a whole. Even the Oats which, at one time, looked pale, are now green and branching. Taking Essex generally, so far as I have had an opportunity of seeing it, the Wheats promise to be abundant on the heavy lands. Beans, Peas, and Barley luxuriant; Oats the weakest crop. Some of the light lands have lost plant and look thin. It is evidently a heavy land season. Cottage gardens are luxuriant, and Potatoes promise well. Mangel plants well everywhere. Grass is abundant, and there will be a heavy crop of Grass hay. Clovers are various: my own very good. There will be much straw, and thick sowers are rather unfavourably placed, and will suffer some loss from early laid crops. *J. J. Mechi.*

Notices of Books.

A Handy Book of the Chemistry of Soils. By John Scoffern, M.B. London: Bell & Daldy, 186, Fleet Street.

This is a book more directly on the science of chemistry than treatises professedly on agricultural chemistry generally are. It is to the advantage of the reader if he be merely a practical agriculturist that the nomenclature of the science, the apparatus employed in exhibiting its leading facts, and the properties and mutual relations of those elements which the soil contains should be fully discussed as they are in this volume throughout one half of its pages. For those readers on the other hand who already unite some knowledge of chemistry with a knowledge of farm practice the first half of the volume is comparatively unnecessary, and they will be disappointed at finding that but half of the volume is devoted directly to the consideration of those points which arise on the boundary line between chemistry and agriculture. We give the following extract from the section on manures, in which the theory of the superphosphate manufacture is described:—

"The manufacture of superphosphate manure has, for some years, been extensively carried on. The results vary greatly as to quality—not merely as regards a designed mixture of contaminating materials, but also as regards the perfection with which the operation has been conducted.

The composition of pure neutral phosphate is as follows:—

Phosphoric acid	$48\frac{1}{2}$
Lime	$51\frac{1}{2}$
	100

The object of a manufacturer of superphosphate is, or should be, to discover the exact amount of sulphuric acid necessary to convert these proportions into gypsum and biphosphate.

Now, inasmuch as the actual amount of phosphate of lime varies in different sources of this material, it is evident that such variations must be taken cognizance of, before the due amount of sulphuric acid necessary to be employed can be decided upon. Relative to the subject of this determination, a series of elaborate and highly trustworthy experiments have been made by Professor Way, the general result of which is as follows:—

Supposing raw bones to be the basis of superphosphate manufacture, the necessary quantity of sulphuric acid can be inferred by glancing at the following table, representing

The composition of raw bones.

Water, fat, and cartilage, or gelatine	48
Phosphate of lime with small quantities of phosphate of magnesia	46
Carbonate of lime	4
Alkaline chlorides and sulphates	2
	100

Hence 100 lbs. of raw bones require of oil of vitriol (sulphuric aid) to neutralize the carbonate, 4 lbs.; to convert the whole of the phosphate into biphosphate, 25 lbs.=29 lbs., or nearly one-third.

Therefore, remarks Mr. Way, so far as we are in a position to judge, from chemical data, which, in such a case, are paramount, we are using abundance of acid when we employ oil of vitriol to the extent of one-third of the weight of the raw bones, supposing them finely crushed, the acid sufficiently diluted, and the mixture well made.

The above mixture of 100 lbs. of raw bones, and 29 lbs. of oil of vitriol would, after drying up, yield a product having the following composition in 100 parts:—

Moderately dry results of mixing 100 lbs. raw bones with 29 lbs. oil of vitriol.

Moisture	10	
Animal matter (fat).. ..	27	
Hydrated sulphate of lime (gypsum)	39	
Biphosphate of lime (soluble)	24	Equal to 35 parts of bone-earth phosphate rendered soluble.

The animal matter (gelatine) being about 21 per cent, would furnish $1\frac{1}{4}$ lb. of nitrogen, equal to rather more than $1\frac{1}{3}$ lb. of ammonia.

Supposing boiled bones to be the source of superphosphate, the amount of sulphuric acid necessary to be added will vary in accordance with the following table of composition.

The composition of boiled bones.

Moisture	10
Animal matter, etc.	16
Sand (silica)	3
Phosphate of lime	60
Carbonate of lime	11
	100

In this case, the necessary amount of sulphuric acid will be determined by the following considerations:—

100 lb. of boiled bones require, to neutralise the carbonate, 11 lbs.; to convert the whole of the phosphate into biphosphate 33 lbs.=44 lbs., or nearly one-half.

Nevertheless, an exceedingly good product will result from the employment of a less amount of sulphuric acid than the proportion theoretically indicated, as Mr. Way has demonstrated. The following table has been drawn up by this gentleman, for the purpose of showing the results of using 33 lbs. (say one-third) and 44 lbs. respectively of oil of vitriol to 100 lbs. of boiled bones:—

Results, supposing 33 lbs. and 44 lbs. respectively of oil of vitriol to have been used with 100 lbs. of boiled bones:—

	With 33 lbs. oil of vit.	With 44 lbs. oil of vit.
Moisture	10	10
Animal matter	12	11
Sand, &c.	2	2
Hydrated sulphate of lime (gypsum) ..	42	51
Biphosphate of lime	20	26
Neutral insoluble phosphate of lime ..	14	0
	100	100

Superphosphate of lime from coprolites. The coprolites of the crag formation are obtained abundantly and cheaply, and have been extensively employed as a source of phosphoric acid in the manufacture of the superphosphate. They are very hard, and are only attacked with any energy by sulphuric acid after they have been reduced to a fine powder.

The Composition of Coprolites.

Water (of combination) and a little bituminous matter ..	10
Sand clay and oxide of iron	21
Carbonate of lime	10
Phosphate of lime	56
Fluoride of calcium, with a small portion of alkaline sulphates and chlorides	3
	100

To convert the phosphate of lime of Suffolk coprolites entirely into biphosphate:—100 lbs. require oil of vitriol, to neutralise the carbonate, 10 lbs.; for the phosphate 31 lbs.=41 lbs.

The product, when dried up, would have something like the following composition in 100 parts:—

Moisture	10
Hydrated sulphate of lime	49
Biphosphate of lime	25
Sand, clay, &c.	16
	100

As regards the theory of the superphosphate, considered as a manure, the opinion formerly entertained was, that being a soluble body, plants immediately absorbed it. This theory, however, is now universally abandoned, as being incompatible with certain obvious facts. Setting aside the extreme improbability of the vegetable organism being capable of absorbing uninjured, so acrid, not to say corrosive, a mixture as the superphosphate, the prolonged existence of this compound in any soil is an impossibility. In contact with lime, or

its carbonate, alkalis, or their carbonates, it is at once decomposed and neutralised; or the so-called insoluble phosphate is deposited. Neutral phosphate, however, thus generated, is far more soluble than the native material, and herein seems to consist the explanation of what takes place."

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, June 26, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.										Inches.		
Friday ..	20	29.94	67°	61°	N.W.	3	5	67°	51°	88°	47°	0.01	60°	58°
Saturday ..	21	29.87	57	51	W.	3	6	61	50	71	47	..	59	57½
Sunday ..	22	29.80	60	58	N.W.	3	4	65	51	81	48	..	59	57½
Monday ..	23	29.85	57	53	N.W.	3	6	64	53	88	50	..	60	57¼
Tuesday ..	24	29.96	60	57	W.	2	6	71	44	97	40	..		57¼
Wednesday ..	25	30.12	68	64	N.W.	2	4	72	46	91	42	..	60	58
Thursday ..	26	30.10	68	65	N.W.	2	4	71	46	93	42	..	60½	58

Calendar of Operations.

JUNE.

West Sussex; *June* 23.—We are now in the middle of hay making, and have a rather catching time of it. We have had but little sun, and have not been able to get it together so quickly as we could wish, and it will not be so good in quality, but the crop is heavy, and a greater breadth is being cut than usual. I am sorry to say the Wheat now looks anything but promising, so much rain and little sun has made it wiry and sickly looking, the ears are of a small size, and we can hardly expect even a fair crop. Barley too looks bad, the under blades are withered and covered with rust, and will decidedly be a light crop, especially in straw. Oats look better, as rain and want of sunshine does not affect them so much. Beans appear good. Peas are good where the slugs have left them, but they have thinned them in some places very much; some have been ploughed up. Mangels are a good plant, and in many places fit to hoe. Swedes are up and look thick and healthy. Pasture Grass is still abundant, but stock do not do so well upon it as they ought to do, especially sheep, which have been very much affected by foot rot, both ewes and lambs, which has prevented their getting fit for the butcher so early as they ought to have been; and with the wet March that we had, and the present unkindly weather, we shall have to keep perhaps three months longer before we get all cleared off to make room for a new flock. Though our market is well supplied with mutton and lamb, yet there is very little that is really good, and were not the demand good, some of it would hardly sell to the butcher. There is rather more than the usual supply of beef, and the quality is generally good; many have kept back owing to the fall that took place in price in May, and now it is still low, and there is little chance that it will be high for some time, as Grass fed will soon come in. Potatoes look fair at present. Work is well up, and hands seem abundant. *G. S.*

Notices to Correspondents.

Cow-keeping: *A B.* The crops should be Carrots, Cabbage, and Mangel Wurzel—2½ acres of pasture and ¾ of an acre arable should if of ordinary quality be able to keep two cows easily.

Cow Losing her Milk: *J C H.* A lotion of vinegar and water may be tried two or three times a day; also milking three times a day. Failing which, an india-rubber band, sufficiently wide, so as not to gall. *W. C. S.*

Mangel: *E F* reports that his crop is suffering very much from a maggot that is found, not on the leaf but inside, and in 24 hours produces excessive mischief. He asks what it is and how to destroy it. [Let him send up specimens for examination and report.]

Scab: *Bedford.* It is owing to the presence of minute insects called Acari, which burrow under the skin and produce excessive irritation, causing the animal to seek relief by rubbing against any hard object. This friction removes the wool, produces sores, and the animal loses flesh and becomes a miserable object. Powdered sulphur, 4 oz.; fish oil, 12 oz.; oil of turpentine, 2 oz.; white Hellebore, 2 drachms; to be well mixed together and rubbed into the affected parts; or mercurial ointment diluted with four times its weight of lard. *W. C. S.*

THE LONDON MANURE COMPANY (Established 1840)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

Tenant Farmers' Manure Company.
ODAMS'S BLOOD MANURE for CORN.
ODAMS'S BLOOD MANURE for ROOTS.
ODAMS'S SUPERPHOSPHATE of LIME.
Manufactured by
THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY "Limited," consisting of Tenant Farmers, occupying upwards of 30,000 acres of land.
Chairman—Jonas Webb, Esq., Babraham, Cambridgeshire.
Full particulars of these Standard Manures may be obtained at the Offices, or of the local Agents.
C. T. Macadam, Secretary.
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex, N.E.

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0
These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.
BURNARD, LACK and CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.
Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. Voelcker, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

REIGATE SILVER SAND, PEAT SOILS, &c., on SALE. Reduction in Prices for Cash.
W. Short, Landscape Gardener, &c., Red Hill, Reigate, Surrey.

REIGATE SILVER SAND, best quality, 12*s.* per Ton or 1*s.* 3*d.* per Bushel, at Swan Place; delivered five miles, or to any London Wharf or Railway, 16*s.* per Ton, or 1*s.* 6*d.* per Bushel. Kentish and Hampshire PEATS, YELLOW LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE from Kingston.—J. Kennard, Purveyor to Her Majesty, Swan Place, Old Kent Road, London, S.E.

International Exhibition.
FERNS, BEGONIAS, &c., are growing in COCOA-NUT REFUSE at the bottom of a case (with Cocoa-nuts on the top outside) in the centre of the Eastern Annexe.
Refuse delivered in London at 1*s.* 6*d.* per bag, containing 3 bushels. Large quantities on lower terms, on application to the Patent Cocoa Fibre Co., Kingston-on-Thames, S.W.
Postage stamps or Post-office Orders payable to J. Barsham & Co.

Lawn Mowers.
HORTICULTURAL TOOLS, the largest Stock in London; also elegant Garden Seats, Chairs, Tables, Flower Stands, Trainers, Engines, Wheelbarrows (Iron or Wood), Waterpots, Lawn Mowers (every make), Boyd's Celebrated self-adjusting Scythe, and every description of Agricultural Machinery, at
Dray, Taylor, & Company's (late Wm. Dray & Co.), (the well-known Agricultural and Horticultural Engineers), New Central Depot, 4, Adelaide Place, London Bridge, S.E.
Removed from Swan Lane.
Their New Horticultural List forwarded on application.

Advertisement.
To the Editor of the Agricultural Gazette,
Sir,—Besides showing my Farm you know that I am always ready to give all the information I can. Here are some extracts from a letter that I have received this morning from a gentleman who is a total stranger to me.
"In 1860 I hired a set of your Tackle to work 22 acres over twice. It made a first rate job of it.
"In 1861 I hired it to do 120 acres once over. It made a very good job.
"This year I thought I would try again, but as the gentleman whose implement I had hired had discontinued working by contract, I was obliged to look out for another. This I found in a man who had purchased a set of Fowlers' small tackle. We started on a 20-acre field with Fowlers' grubber, with which we could not get on very well. We then tried Howard's tool or grubber, or whatever else they may call it. After repeated trials we were obliged to throw it on one side without going a round of the field. We then fetched Smith's No. 3, and finished the field without a stoppage or hindrance of any kind, so that I think it is a very fair trial, and with which I am perfectly satisfied. What I state here are plain facts, and I shall be pleased to show the work to any gentleman who would like to see it."
These plain facts I lay before my brother farmers, for them to judge for themselves.—I am, Sir, your obedient servant,
William Smith.
Woolston, Bletchley Station, Bucks, May 29.

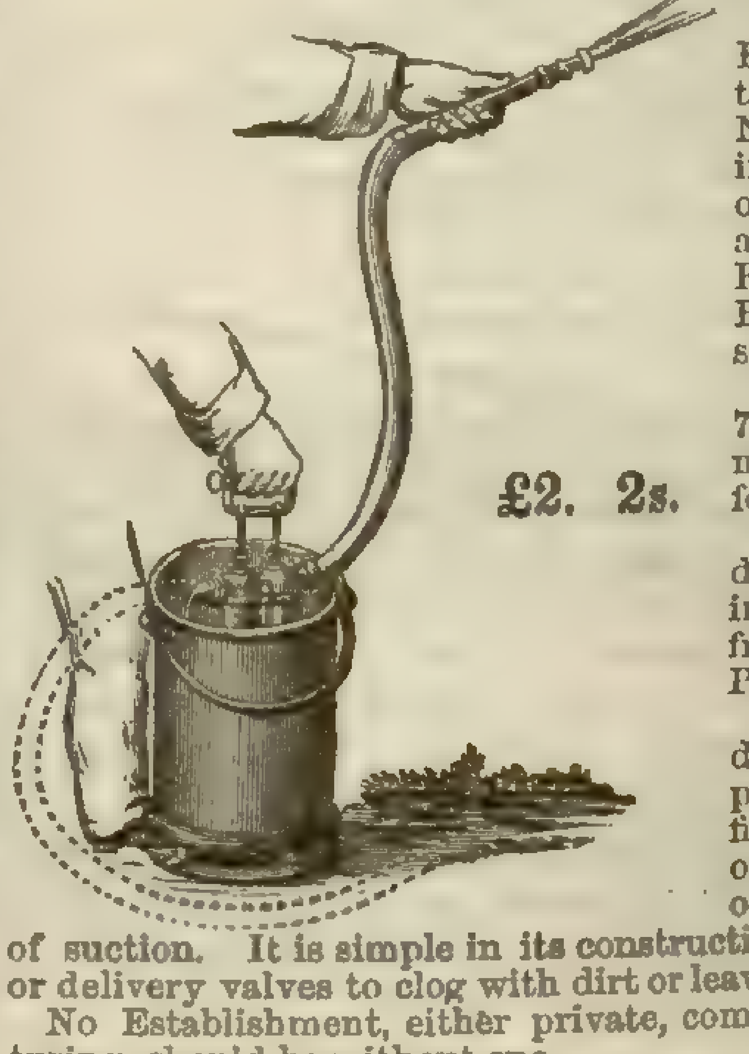
WM. BLAKE'S DESCRIPTIVE and CULTURAL SEED POCKETS, GERMAN SEED ENVELOPES, &c.
Catalogues and Samples on application.
60—70, Howard Street, Glasgow.

WIRE-WORK for the Garden, the Greenhouse, and the Conservatory. An Illustrated Catalogue, containing upwards of 90 Engravings, Post-free. WIRE NETTING, 2 feet high, 5*d.* per yard. GARDEN SYRINGES, 6*s.* each.
William H. Honey, Manufacturer, 263, Regent Street, near Oxford Street Circus, W.

Artificial Stone Works, 371 to 375, Euston Road, N.W.

AUSTIN, SEELEY, & CO. beg to inform the Public, that they have lately enlarged their Stock of VASES, FIGURES, FOUNTAINS, & other GARDEN ORNAMENTS.
The present Stock comprises:
133 different kinds of Vases, from 9*s.* to 30*l.*
About 200 Fountains, from 10*l.* to 400*l.*
52 Statues, Modern and Antique
44 Small Figures and Groups of Children
70 Figures of Animals & Birds
15 Baskets, from 1 to 10 feet diameter [&c.
17 Flower Boxes for Windows,
6 Garden Seats
22 Sun-dial Pillars
34 Baptismal Fonts, from 2*l.* to 15*l.*
22 Ornaments for Gate Piers
Having during the last 30 years executed for the Royal Gardens and for the grounds of the principal nobility an immense quantity of such work, they presume that it is needless to warrant its durability; but they are prepared with the most unquestionable references if desired.

JOSEPH HAYWOOD AND CO.,
Manufacturers of
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kinds of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.

£2. 2*s.*
An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.
One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.
It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.
It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.
No Establishment, either private, commercial, or manufacturing, should be without one.
Six feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12*s.* Longer lengths of Suction at 1*s.* 6*d.* per foot.
May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,
John Warner & Sons, 6, Crescent, Cripplegate, London, E.C.

International Exhibition, Class IX. (Eastern Annexe).
BEE-HIVES.—Prize Medal awarded to G. N. & Sons, for Bee-Hives and Honey, at the Paris Exposition of 1855.

NEIGHBOUR'S IMPROVED COTTAGE BEE-HIVE, as originally introduced by George Neighbour & Sons, with all the recent improvements, three glasses, and thermometer, price 35*s.*, securely packed for the country.
This unique Hive has met with universal commendation, and may be worked with safety, humanity, and profit, by the most timid; its arrangements are so perfect that the Honey may be taken at any time of the gathering season without at all injuring the Bees.
Early applications addressed to Geo. Neighbour & Sons, 127, High Holborn, W.C., or 149, Regent Street, London, W., will receive prompt attention.
Their newly-arranged Catalogue of other Improved Hives, with drawings and prices, sent on receipt of two stamps.
Agents:—Liverpool .. James Cuthbert, 12, Clayton Street.
" Manchester . J. Wilson, 50, King Street.
" Birmingham J. H. Cottrell, 15, Bull Ring.
" Dublin .. Edmondson, Brothers, 10, Dame Street.
" Glasgow .. Austin & M'Aslan, 168, Trongate.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

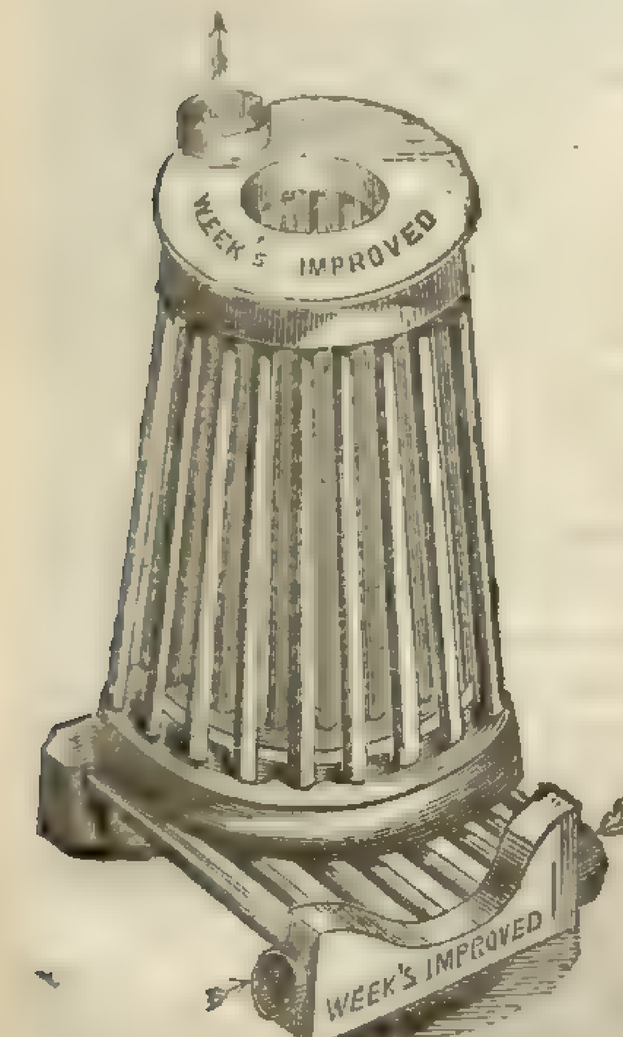
Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

TWO HUNDRED SETS
OF
STEAM PLOUGHING and CULTIVATING APPARATUS
HAVE NOW BEEN SENT OUT BY

JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD.

Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.



JOHN WEEKS AND COMPANY,
HORTICULTURAL BUILDERS
AND
HOT-WATER APPARATUS MANUFACTURERS
TO

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN
THE TOWER OF LONDON
THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN
THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM
And NUMEROUS PUBLIC COMPANIES.

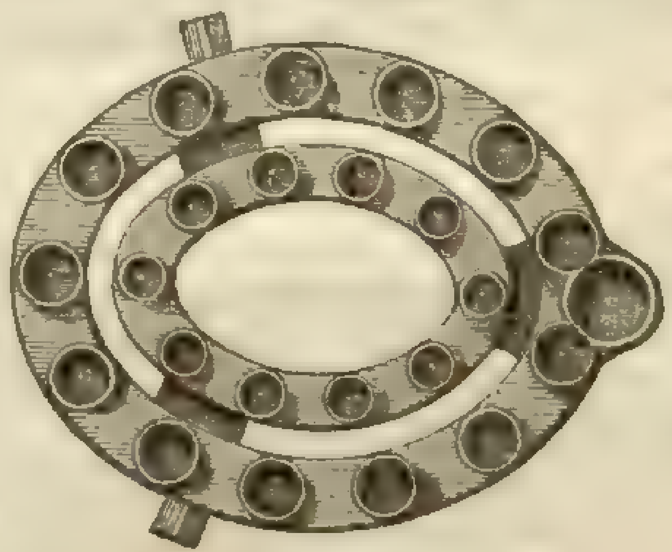
KING'S ROAD, CHELSEA, S.W.

GRAY'S OVAL TUBULAR BOILER.

INTERNATIONAL EXHIBITION,

Class IX., No. 2119.

ELEVATION.


PLAN.

Mr. GRAY begs to call the attention of the Nobility, Gentry, Nurserymen, Gardeners, &c., to his

NEW OVAL TUBULAR BOILER,

acknowledged by practical judges to be a great improvement on every form of Tubular Boiler yet introduced. It has proved itself superior to all other Boilers for quickness of action and economy of Fuel, doing its work with one-third less the amount required by any other.

Extract from Report in Gardeners' Chronicle *of International Exhibition, May* 24, *page* 476.

"The upright form of Boiler is usually made on a circular plan, but the oval form given to Mr. GRAY's variety of it is said to be preferable in consequence of its bringing the tubes in closer contact with the fire. The usual form of a furnace being a parallelogram rather than a square, it seems feasible that the Boilers on the oval plan should bring the tubes more completely within range of the burning fuel; and this being so the change, though a slight one, is no doubt an improvement."

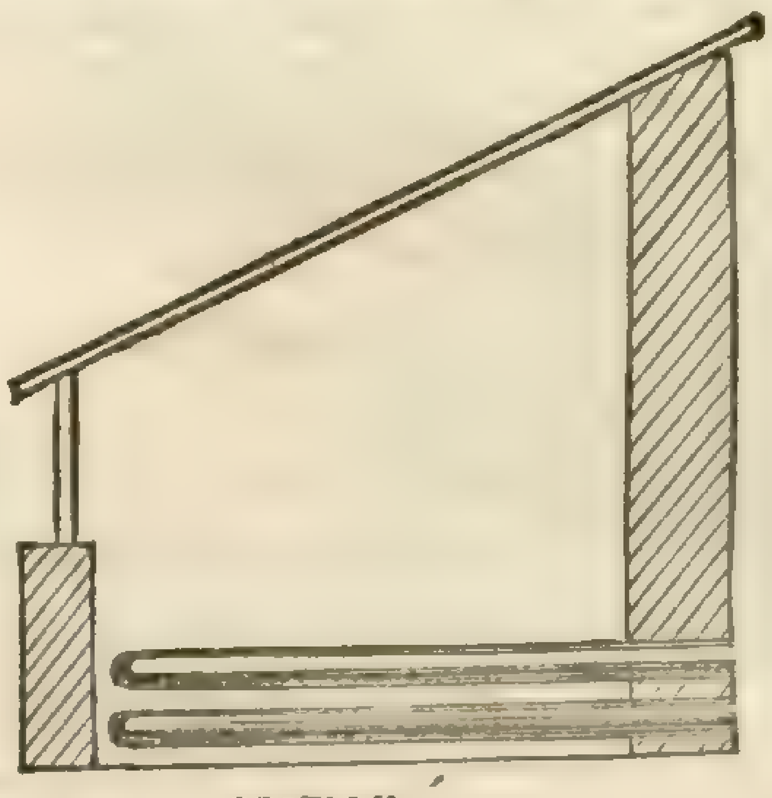
They are made of all sizes, which, with prices, may be had on application.

JAMES GRAY, HORTICULTURAL WORKS,
DANVERS STREET, PAULTON'S SQUARE, KING'S ROAD, CHELSEA, S.W.

HOT-WATER APPARATUS.

J. JONES
BEGS TO OFFER A COMPLETE
Hot-Water Apparatus for Houses
according to the following Plans, delivered Free to any Railway Station in England.

PLAN No. 1.



Two 4-inch pipes along front and one end of house.

SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£8 0 0	£8 12 6
20 feet by 10 feet ..	,,	8 10 0	9 0 0
25 feet by 12 feet ..	,,	10 0 0	10 10 0
30 feet by 12 feet ..	,,	11 10 0	12 0 0
40 feet by 15 feet ..	,,	16 10 0	17 0 0
50 feet by 15 feet ..	,,	18 10 0	20 0 0

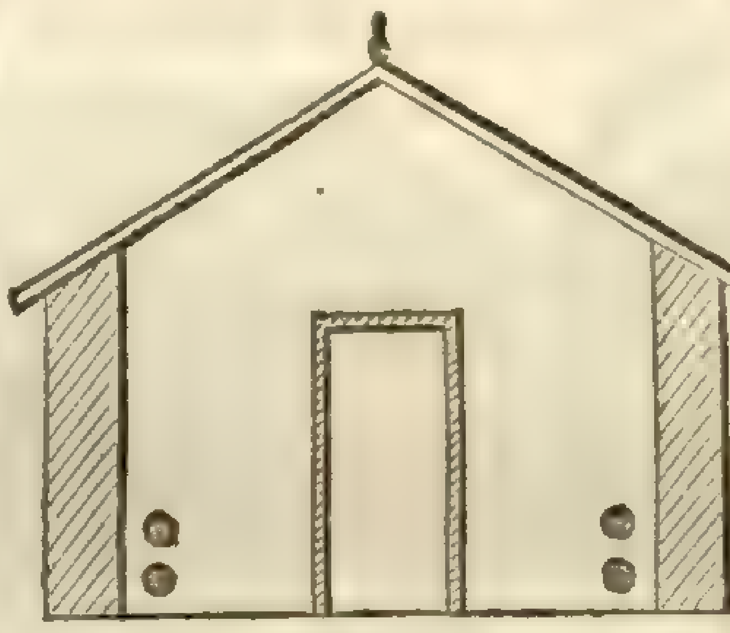
PLAN No. 2.

Three 4-inch pipes along front and one end of house.

SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£11 10 0	£12 0 0
20 feet by 10 feet ..	,,	12 10 0	13 0 0
25 feet by 12 feet ..	,,	14 10 0	15 0 0
30 feet by 12 feet ..	,,	16 10 0	17 0 0
40 feet by 15 feet ..	,,	22 0 0	23 0 0
50 feet by 15 feet ..	,,	24 10 0	26 0 0

PLAN No. 3.

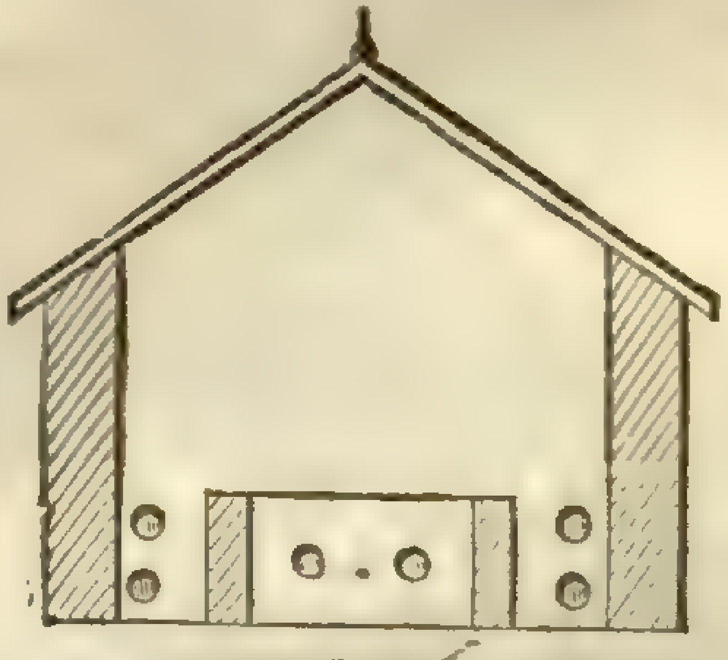


Two 4-inch pipes along each side and one end of house.

SECTION.

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£12 10 0	£13 0 0
20 feet by 10 feet ..	,,	13 10 0	14 0 0
25 feet by 12 feet ..	,,	16 10 0	17 0 0
30 feet by 12 feet ..	,,	19 0 0	20 0 0
40 feet by 15 feet ..	,,	24 10 0	25 10 0
50 feet by 15 feet ..	,,	27 0 0	28 10 0

PLAN No. 4.



Two 4-inch pipes along each side and one end of house, and two 4-inch pipes in pit for bottom heat.

SECTION

Size of House.		With Cylinder Boiler.	Saddle Boiler.
16 feet by 8 feet ..	Price	£16 0 0	£17 0 0
20 feet by 10 feet ..	,,	17 10 0	18 10 0
25 feet by 12 feet ..	,,	21 10 0	22 10 0
30 feet by 12 feet ..	,,	25 0 0	26 0 0
40 feet by 15 feet ..	,,	31 0 0	32 0 0
50 feet by 15 feet ..	,,	33 10 0	35 0 0

The above prices include Boiler, strong Furnace-doors, Bars, Plate, Soot-doors, Damper, and Supply Cistern-pipes of 4-inch diameter, Elbows, &c.; all of the best quality.

Delivered free to any Railway Station in England. Terms: Nett Cash.

Estimates will be sent for the work fixed complete, or further particulars on application to

J. JONES, Hot-Water Apparatus Manufacturer, 6, Bankside, London, S.E.

Card.

SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

E DENCH'S Horticultural Works, 152, King's Road, Chelsea, S.W., Manufacturer of every description of HORTICULTURAL BUILDINGS either in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without.
HOT WATER APPARATUS Manufacturer.

Greenhouses, Orchard-houses, and Conservatories.

H. FREEMAN'S Horticultural Works, Triangle, Hackney, London, N.E.: established 20 years. Good substantially-made GREENHOUSES, glazed, ready for fixing, 42 feet by 13 feet, 50*l.*; 21 by 13, 28*l.*; 12½ by 10, 15*l.* ORCHARD-HOUSES 10 per cent. cheaper. A large assortment kept. Estimates given for heating, or any branch in iron or wood.

Heating.

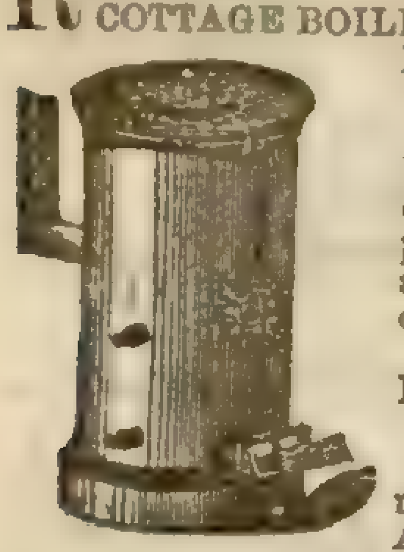
HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.
Apply to Joseph Meredith, Vine Cottage, Garston, near Liverpool.
N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, Tubular, and Elliptic, from 24*s.* each. Improved Boilers and Iron Stands to use without brickwork, 50*s.* each. Valves from 12*s.* 6*d.* each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at
Mr. Lynch White's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

Horticultural Buildings and Heating by Hot Water.

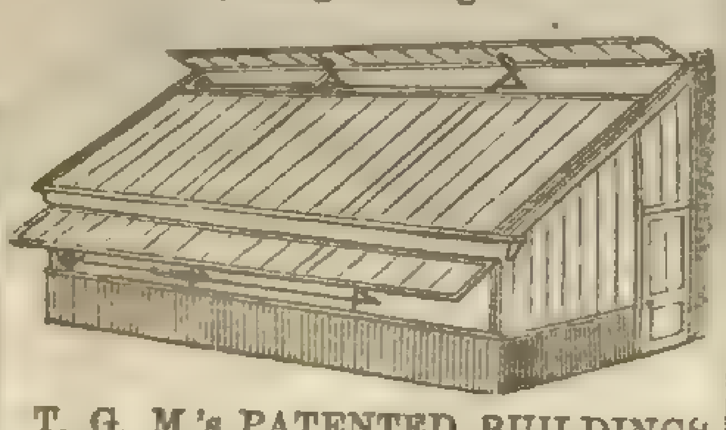
BURY and POLLARD, Park Iron Works, New Park Street, Southwark, S.E., Manufacturers of every description of Buildings for Horticultural Purposes, with their Improved CONICAL BOILER for heating the same, are prepared to undertake works of any magnitude, and refer among others to the celebrated range of Forcing Houses at Her Majesty's Gardens, Frogmore, and at Sir Robert Peel's, Drayton Manor, constructed under the superintendence of their Manager, Mr. John Jones.
Further information forwarded on application.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the
Patentee's Warehouse, 155, Cheapside, London, E.C.
Price complete from 3*l.* 10*s.*
Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

T. G. MESSENGER, Horticultural Builder and Engineer, Loughborough.



T. G. M.'s PATENTED BUILDINGS combine all the modern improvements, are well made of best seasoned red Deal, most effectually ventilated by means of his unequalled Apparatus, can be made either plain (and which are at the same time elegant in appearance), or of the most elaborate design. They can be fixed as permanent buildings, or made to be portable.
T. G. M.'s HEATING APPARATUS continues to give the greatest satisfaction for its heating qualities and small consumption of fuel.
ILLUSTRATED CATALOGUES of the above, Glazing without Putty, Garden Engines, &c., sent upon application.

Hothouses for the Million.
International Exhibition, Class 9, Open Court, Eastern Annexe.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 80 feet in length, can be had for less than 17*l.* SPAN ROOFS, 30 feet in length, for 33*l.*; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.
Illustrated Circulars with Lists of Prices, can be had on prepaid application to S. Hereman, 7, Pall Mall East, London.

KENT'S PATENT WEATHERPROOF GLAZING.—GREENHOUSES on hand or to order with best materials and workmanship.
Apply to A. Kent, Horticultural Builder, Chichester; or at Works, to Mr. Pitman, 30, Lower Church Street, Chelsea, S.W.

MINTON and CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.—June 28.

Garden Border Edging Tiles.

F. and G. ROSHER, Cement, Brick, and Tile Merchants, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.
They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.
N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.
Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.
To be obtained of F. & G. Rosher, at their Premises as above.

THE TENTS at the HORTICULTURAL GARDENS.—At the recent Flower Shows held in the Horticultural Society's Gardens, complaints were loud and frequent of the unsightliness as well as general inefficiency of the Tents, and in consequence they were wisely not used on Wednesday, great damage having been done, especially to the American Plants, only a small portion of which are now to be seen. In order however to remove an erroneous impression which has prevailed from remarks in some public journals, we feel it is but justice to state that none of these Tents have this year been erected by Benjamin Edgington, who for 30 years has been accustomed to supply the Horticultural Society, and during the whole of that period every Tent proved both Wind and Water Proof, and gave general satisfaction to the Society and the Public.—*Court Journal*, June 14, 1862.

WHY NOT PRESERVE YOUR HAY? New and Second-hand RICK CLOTHS, with Poles, &c., complete.

Benjamin Edgington,
Marquee, Tent, Rick Cloth, Flag, and Tarpaulin Manufacturer,
2, Duke Street, London Bridge, Southwark, S.E.
No other Establishment.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to
John Fowler, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

Battersea Show.
STAND 200.
CATTLE INSTRUMENTS, PROBANGS, &c.

READ'S PATENT VETERINARY INJECTING SYRINGES, improved HOLLOW PROBANGS for Relieving Hoven or Choked Bullocks, Calves, Sheep, &c.
READ'S NEW PATENT GARDEN WATERING ENGINES, MACHINES, and SYRINGES, with all the latest Improvements. Manufactured only by the Patentee, Richard Read, Instrument Maker by Appointment to her Majesty, and her Majesty's Hon. Council of India, 35, Regent Circus, Piccadilly, London, W.
*** Drawings post free.

DUNN'S GARDENER'S PENCILS.
Price 1*s.*, will refill for 6*d.*
DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.
Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.
These pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.
N.B.—A liberal allowance to the Trade.

E. WOLFF and SON'S Solid INK PENCILS in Cedar, for GARDEN TALLIES.—These Pencils are the best and cheapest invention ever used for writing on Garden Tallies of all descriptions; the action of the air, rain, &c., not having the slightest effect upon them. The advantages resulting from their use are; firstly, the simplicity of an ordinary lead pencil; secondly, the superiority and portability of a dry pencil over liquid ink or paint; and thirdly, THEIR REASONABLE PRICE, which places them within the reach of all classes. These pencils are also useful for all kinds of writing, memoranda, &c.
Price 3*d.* each; extra thick, 6*d.* each. To be had retail of all Seedsmen, Nurserymen, and Stationers, and wholesale at the Manufactory,
22 & 23, Church Street, Spitalfields, N.E.

Glass for Garden Purposes.

JAMES PHILLIPS and CO., 180, Bishopsgate Street Without, E.C., beg to hand their prices for

PROPAGATING GLASSES.

	Each—*s.*	*d.*		Each—*s.*	*d.*
2 inches diameter ..	0	3½	12 inches diameter ..	1	[illegible]
3 " " ..	0	4½	13 " " ..	2	0
4 " " ..	0	5½	14 " " ..	2	[illegible]
5 " " ..	0	6½	15 " " ..	3	[illegible]
6 " " ..	0	8	16 " " ..	3	[illegible]
7 " " ..	0	10	17 " " ..	4	[illegible]
8 " " ..	1	0	18 " " ..	5	[illegible]
9 " " ..	1	2	19 " " ..	6	[illegible]
10 " " ..	1	4	20 " " ..	7	[illegible]
11 " " ..	1	6			

HAND FRAMES.

	Each—*s.*	*d.*		Each—*s.*	*d.*
12 inches	6	0	18 inches	9	[illegible]
14 "	7	0	20 "	10	[illegible]
16 "	8	0	24 "	12	[illegible]

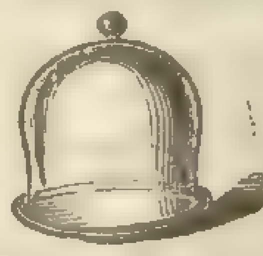
Painted and Glazed with 16 oz. Sheet Glass.
If Open at Top, 1*s.* extra.

CUCUMBER GLASSES.

24 inches long ..	2*s.*	0*d.*	16 inches long ..	1*s.*	4*d.*
22 " " ..	1	10	14 " " ..	1	2
20 " " ..	1	8	12 " " ..	1	0
18 " " ..	1	6	Made to any length.		

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.
Milk Pans, and every description of Glass for Horticultural purposes.

THOMAS MILLINGTON, 87, Bishopsgate Street Without, E.C.
HORTICULTURAL GOODS.



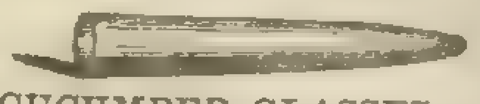
PROPAGATING GLASSES.

3 inches ..	0*s.* 4½*d.* each.		12 inches ..	1*s.* 9*d.* each.	
4 " ..	0 5½	"	13 " ..	2 0	"
5 " ..	0 6½	"	14 " ..	2 6	"
6 " ..	0 8	"	15 " ..	3 0	"
7 " ..	0 10	"	16 " ..	3 6	"
8 " ..	1 0	"	17 " ..	4 0	"
9 " ..	1 2	"	18 " ..	5 0	"
10 " ..	1 4	"	19 " ..	6 6	"
11 " ..	1 6	"	20 " ..	7 0	"

HAND GLASSES.

12 inches ..	6*s.* 0*d.* each		18 inches ..	9*s.* 0*d.* each	
14 " ..	7 0	"	20 " ..	10 0	"
16 " ..	8 0	"	24 " ..	12 0	"

If open top, 1*s.* extra.



CUCUMBER GLASSES.
From 12 inches long and upwards, 1*d.* per running inch.

ROLLING PINS.
From 12 inches long, 1¼*d.* per running inch.

Improved ANTI-CORROSION and other PAINTS.
GAS and LAMP GLASSES, GLOBES, &c.
CHIMNIES of every description.
Not accountable for Breakage.

Oil Paint no longer Necessary.

HILL and SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which Hill & Smith will forward on application.
Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon paid to any station in the kingdom.
Apply to Hill & Smith, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.
PROTECTION from the SCORCHING RAYS of the SUN.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.
Two yards wide .. .. .. 1*s.* 6*d.* per yard run.
Four yards wide .. .. .. 3*s.* per yard.
An improved make, 3 yards wide, 2*s.* 6*d.* per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1*s.* 4*d.* per yard run.
Elisha Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

PATENT GUTTA PERCHA SOLES.—Important to Gardeners.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. Glenny, Esq., the celebrated Florist:—
"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. Glenny."
Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.
The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C.

TANNED NETTING for the Protection of Fruit Trees, at 1d. per square yard; 200 yards, 14s.; 500 yards, 3l.; 1000 yards, 50s. Cotton Netting, Tiffany, Scrim Canvas for Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c.
Be particular, JOHN EDGINGTON & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

TANNED NETTING at Reduced Prices.—200 square yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvas for Wall Fruit, Greenhouse Shades, and Tulip Covers.
Address in full, FREDERICK EDGINGTON, Marquee, Flag, and Banner Manufacturer, Thomas Street, Old Kent Road, London, S.E.

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HAYTHORN'S HEXAGON and CHISWICK GARDEN NETS are guaranteed to protect all kinds of Fruit from Wasps, Flies, Birds, &c. These Nets are used and recommended by the principal Gardeners.
For testimonials, patterns, and prices, please direct to Mr. HAYTHORN, Nottingham.

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Sold by all Nurserymen and Seedsmen. Samples and Prices on application.
J. SHAW & Co., Oxford Street, Manchester.

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BURGESS AND KEY'S GRASS MOWING MACHINES are constructed to cut the heaviest crops of Grass, both the wheels being geared, and sufficient weight in the machine to give grip on the ground. As there is every prospect of the Grass being heavy this season, B. & K. draw special attention to the following Extract from the Report of the Engineer of the Royal Agricultural Society of the trial of Mowers at Leeds: "but there is reason to fear that the Machine [Wood's] would be too light for heavy crops."
"BURGESS & KEY'S was strong, well made, and suitable for the cutting of heavy crops."
Price of BURGESS & KEY'S Mower, 25l. Combined Reaper and Mower, 30l.
BURGESS & KEY, 95, Newgate Street, London, E.C.

GLENFIELD PATENT STARCH, used in the Royal Laundry.—The ladies are respectfully informed that this Starch is exclusively used in the Royal Laundry, and Her Majesty's Laundress says, that although she has tried Wheaten, Rice, and other Powder Starches, she has found none of them equal to the Glenfield, which is the finest Starch she ever used.
WOTHERSPOON & Co., Glasgow and London.

FENDERS, STOVES, FIRE-IRONS, and CHIMNEY-PIECES.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW-ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, CHIMNEY-PIECES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments, 3l. 15s. to 33l. 10s.; Bronzed Fenders, with standards, 7s. to 5l. 12s.; Steel Fenders, 3l. 3s. to 11l.; ditto, with rich ormolu ornaments, from 3l. 3s. to 18l.; Chimney-pieces, from 1l. 8s. to 100l.; Fire-irons, from 2s. 3d. the set to 4l. 4s. The BURTON and all other PATENT STOVES, with radiating hearth-plates.

CUTLERY, WARRANTED.—The most varied assortment of TABLE CUTLERY in the world, all warranted, is on sale at WILLIAM S. BURTON'S, at prices that are remunerative only because of the largeness of the sales.

Ivory Handles.	Table Knives, per dozen.	Dessert Knives, per dozen.	Carvers, per pair.
3½-inch ivory handles	12s. 6d	10s. 0d	4s. 3d
3½-inch fine ivory handles	15 0	11 6	4 3
4-inch ivory balance handles	18 0	14 0	4 6
4-inch fine ivory handles	24 0	17 0	7 3
4-inch finest African ivory handles ..	32 0	26 0	11 0
Ditto, with silver ferules	40 0	33 0	12 6
Ditto, carved handles, silver ferules ..	50 0	43 0	17 6
Nickel electro-silver handles, any pattern	25 0	19 0	7 6
Silver handles of any pattern	84 0	54 0	21 0
Bone and Horn Handles.—Knives and Forks per dozen.			
White bone handles	11s. 0d	8s. 6d	2s. 6d
Ditto balance handles	21 0	17 0	4 6
Black horn, rimmed shoulders	17 0	14 0	4 0
Ditto very strong riveted handles	12 0	9 0	3 0

The largest stock in existence of Plated Dessert Knives and Forks, in cases and otherwise, and of the new Plated Fish Carvers.

CLOCKS, CANDELABRA, BRONZES, and LAMPS.—WILLIAM S. BURTON invites inspection of his Stock of these, displayed in two large Show Rooms. Each article is of guaranteed quality, and some are objects of pure Vertu, the productions of the first manufacturers of Paris, from whom William S. Burton imports them direct.

CLOCKS	from 7s. 6d. to £25 0s.	
CANDELABRA	„ 13s. 6d. to £16 10s.	per pair.
BRONZES	„ 18s. 0d. to £16 16s.	
LAMPS, MODERATEUR	„ 6s. 0d. to £9 0s.	

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 500 Illustrations of his illimited Stock of Sterling Silver and Electro Plate, Nickel Silver, and Britannia Metal Goods, Dish Covers, Hot Water Dishes, Stoves, Fenders, Marble Chimneypieces, Kitchen Ranges, Lamps, Gaseliers, Tea Trays, Urns, and Kettles, Clocks, Table Cutlery, Baths, Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Room, Cabinet Furniture, &c., with Lists of Prices, and Plans of the 20 large Show Rooms, at 39, Oxford Street, W.; 1, 1A, 2, 3 and 4, Newman Street; 4, 5, and 6, Perry's Place; and 1 Newman's Mews, London, W.C.

CHUBB'S PATENT SAFES, the most secure against Fire and Thieves.
CHUBB'S FIRE PROOF STRONG ROOM DOORS;
CHUBB'S PATENT DETECTOR LOCKS and STREET DOOR LATCHES; CHUBB'S CASH and DEED BOXES.
Illustrated Price List gratis and post free.
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BREIDENBACH'S WOOD VIOLET PHILOCOME.
BREIDENBACH'S WOOD VIOLET COLD CREAM.
BREIDENBACH'S WOOD VIOLET MILK for the Complexion
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BREIDENBACH'S LAST NEW PERFUME.
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157B, New Bond Street (facing Redmayne's).

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CHRISTIAN AND RATHBONE.
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Office and Sale Room, 139, Regent Street, London, W.
Manufacturers of FOOT'S PATENT UMBRELLA STAND.
Exhibited at the International Exhibition under the East end of the Picture Gallery and the Great Organ.

METCALFE, BINGLEY, AND CO.'S NEW PATTERN TOOTH BRUSHES, Penetrating Unbleached Hair Brushes, genuine Smyrna Sponges, and every description of Brush and Comb and Perfumery for the toilet. METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box.

THE FAIRY BOUQUET.—This delicious perfume was originally discovered by one of Titania's principal attendants. It is made from wild flowers, culled by fairy hands from "the bank whereon the wild Thyme grows." The authenticity of the recipe is vouched for with the same degree of certainty as is the existence of Titania herself. It is now prepared solely by METCALFE, BINGLEY, & Co., Perfumers, &c., 130 B and 131, Oxford Street, London, W.—In bottles, 2s., 3s. 6d., and 5s. each.

DINNEFORD'S PURE FLUID MAGNESIA has been during 25 years emphatically sanctioned by the medical profession, and universally accepted by the public, as the best remedy for acidity of the stomach, heartburn, headache, gout, and indigestion, and as a mild aperient for delicate constitutions, more especially for ladies and children.—It is prepared in a state of perfect purity and uniform strength only by DINNEFORD & Co., 172, New Bond Street, London, and sold by all respectable Chemists throughout the world.

TO NURSERYMEN possessing CAPITAL.—The Advertiser, having established a good business as NURSERYMAN, FLORIST, &c., in a leading Provincial Town, has recently purchased his Nursery Ground, which he is about to Sell or Let in plots for Building purposes, and is desirous of meeting with a PARTNER possessing a Capital of 500l. at least, to join him in removing his Stock and business to a new Nursery Ground. References given and required.—Apply by Letter only to "ALPHA," Mr. H. P. Gurner's, Estate Agent, 5, Carthusian Street, Charter House Square, London, E.C.

TO BE SOLD, a GARDENER'S and FLORIST'S BUSINESS, together with Lease of Premises, within three miles of the City, in an excellent vicinity. Immediate possession if required.
For particulars, &c., apply to Mr. JACOBSON, 38, Walbrook, City, E.C.

TO BE LET, for a Term, with immediate possession, in a fashionable Watering Place on the South Coast of Devon, an Old Established NURSERY and FRUIT GARDEN, of about 2 acres, with Greenhouses, &c., attached; suitable to persons of small capital and industrious habits. Stock to be taken at a Valuation. Rent moderate.
Application to be made to Mr. THOMAS CHARMES, Seed Merchant, 204, High Street, Exeter. References required.

BLACK KERRY CATTLE.—Select animals of this valuable and small breed can be delivered in Cork by RICHARD G. CAMPION, Esq., Holly Hill, Rathcormac, who always holds a large stock of the same.

NORFOLK or SUFFOLK POLLED CATTLE are unsurpassed for Milking properties, and for the quality of their Beef.
Gentlemen wishing to purchase Animals of this profitable and handsome breed, can be supplied on application to THOMAS FULCHER, Elmham, Thetford, Norfolk.

VERNER'S PRIDE,
A New Story by the Authoress of EAST LYNNE,
IS COMMENCED THIS DAY IN
"ONCE A WEEK."

ONCE A WEEK.
VERNER'S PRIDE, a New Story by the Authoress of EAST LYNNE,
IS COMMENCED IN THIS WEEK'S NUMBER.

Just published, Second Edition, greatly enlarged, of
THE FRUIT MANUAL,
Containing Descriptions and Synonymes of the Fruits and Fruit Trees commonly met with in the Gardens and Orchards of Great Britain, with Selected Lists of the varieties most worthy of Cultivation.
By ROBERT HOGG, LL.D., F.L.S.,
Secretary to the Fruit Committee of the Horticultural Society of London; Author of "The Vegetable Kingdom and its Products;" "British Pomology," and Co-Editor of *The Journal of Horticulture.*
Price 3s. 6d.; post free, 3s. 10d.

Now ready, 400 pages, with 50 Illustrations, price 3s.,
SCIENCE AND PRACTICE OF GARDENING,
In which are Explained and Illustrated the Principles that Regulate all the Operations of Horticulture, including Demonstrations of the Phenomena of the Germination, Growth, Diseases, and Death of Plants. With numerous Wood Engravings.
By GEORGE W. JOHNSON, Esq., F.R.H.S.,
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Now ready, Third Edition, price 5s., A
PRACTICAL TREATISE ON THE CULTURE OF THE VINE,
AS WELL UNDER GLASS AS IN THE OPEN AIR.
By JOHN SANDERS.

London: JOURNAL of HORTICULTURE and COTTAGE GARDENER OFFICE, 162, FLEET STREET.

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Dried Plants, Books, Minerals, Fossils, Shells, &c.
MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, July 1, at half past 12 o'Clock precisely, the Valuable and Extensive HERBARIUM of the late Dr. GEORGE ATKIN, of Hull; also a large number of Collections of DRIED PLANTS, FERNS, and MOSSES, being a further portion of the Stock of Mr. Pamplin. A select Collection of MINERALS FOSSILS, and SHELLS, some good Fishing Tackle, Books, &c.
May be viewed the day prior and morning of Sale and Catalogues had

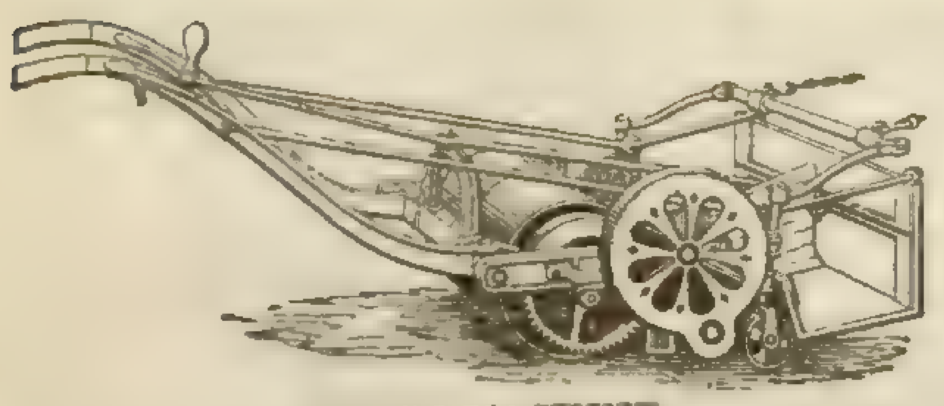
PRELIMINARY SALES.
Royal Agricultural Show, Battersea Park.
MR. N. BALL will SELL by AUCTION, on THURSDAY, July 3, and MONDAY, July 7, 2000 IRON HURDLES, together with a large quantity of BUILDING MATERIALS.
Catalogues to be had of the Auctioneer, Wandsworth, and at the Offices of Mr. MANNING in the Show Yard, Battersea, and 251, High Holborn, W.C.
N.B. Several PORTABLE COTTAGES, suitable for Shooting and Fishing Boxes, are also for Sale.

Shropshire Downs.
MR. JOHN JEFFRYES, of Ormskirk, will SELL by AUCTION, at Parbold Hall, on WEDNESDAY, July 30, at half-past 2, by the direction of Mr. Francis Twining, of Parbold Hall, near Wigan, 15 Superior SHEARLING RAMS, 50 Choice Bred EWES, and 25 THEAVES. The Rams will be sold singly—the Ewes in pens of 5 each. Luncheon at 1.
Parbold Hall is near Wigan and Ormskirk, and a pleasing distance from the Newburgh and Appley Bridge Stations on the Wigan and Southport Railway.

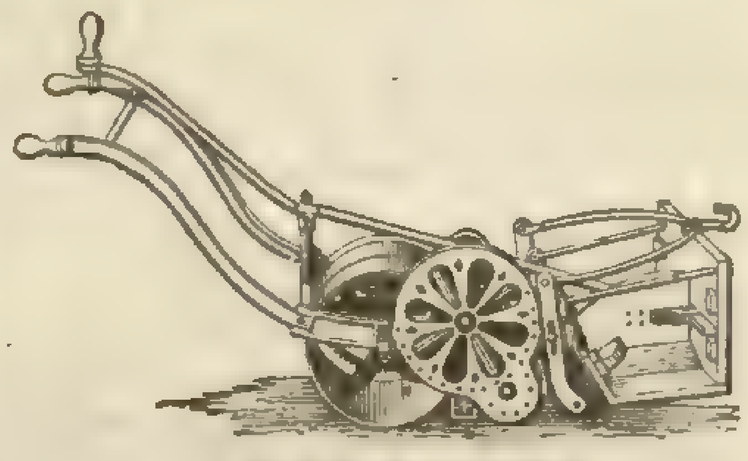
SHANKS' NEW IMPROVED PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

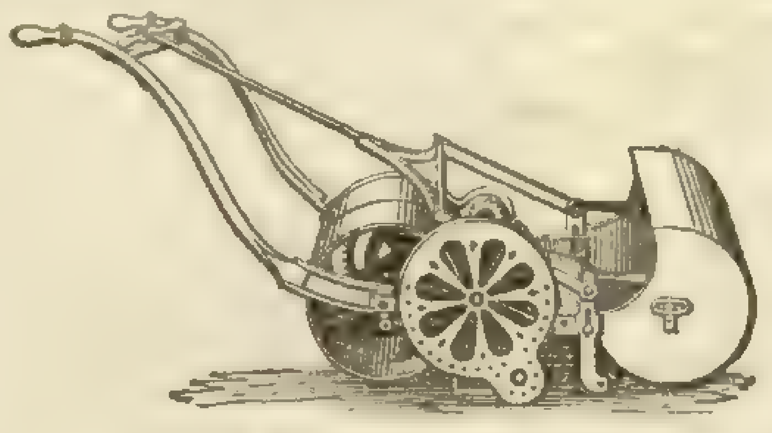
WITH SILENT MOTION IF SPECIALLY DESIRED.



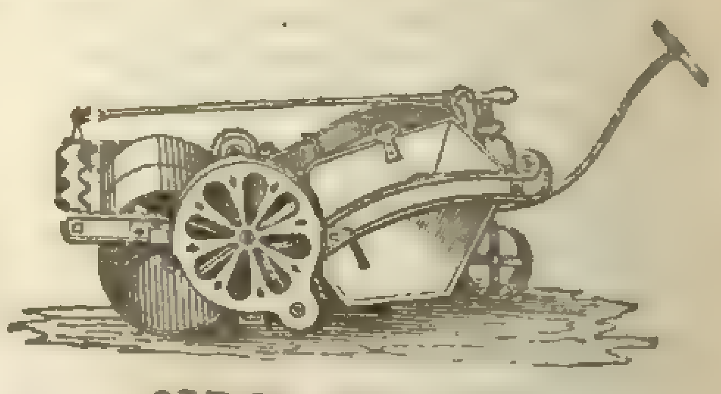
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

THE SHANKS' NEW PATENT MACHINE for 1862 Mows the Grass Wet or Dry, on Lawns uneven or otherwise, in a much neater manner than the Scythe, and at half the expense. These celebrated Machines have established their deserved reputation not only in every part of the United Kingdom, but throughout Europe, and also in India, Australia, America, and other countries. Among the numerous distinguished and well-known patrons to whom the celebrated Shanks' Lawn Mower has been furnished, may be mentioned:—

HER MOST GRACIOUS MAJESTY THE QUEEN, for the Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral.
His Majesty The Emperor of the French
His Royal Highness The Prince of Prussia
His Excellency The Lord Lieutenant of Ireland
His Excellency The Belgian Minister
The Right Hon. Lord Palmerston
His Grace the Duke of Bedford
His Grace the Duke of Newcastle
His Grace the Duke of Marlborough
His Grace the Duke of Rutland
His Grace the Duke of Sutherland
His Grace the Duke of Buccleuch
His Grace the Duke of Devonshire
His Grace the Duke of Leinster
His Grace the Duke of Athole
His Grace the Duke of Norfolk
His Grace the Duke of Hamilton & Brandon
His Grace the Duke of Argyll
His Grace the Duke of Northumberland
His Grace the Duke of Roxburgh
His Grace the Duke of Wellington
His Grace the Duke of Buckingham & Chandos
His Grace the Archbishop of York
The Most Hon. the Marquis of Winchester
The Most Hon. the Marquis of Exeter
The Most Hon. the Marquis of Breadalbane
The Most Hon. the Marquis of Westminster
The Most Hon. the Marquis of Lansdowne
The Most Hon. the Marquis of Stafford
The Most Hon. the Marquis of Kildare
The Most Hon. the Marquis of Abercorn
The Most Hon. the Marquis of Londonderry
The Most Hon. the Marquis of Ailsa
The Most Hon. the Marquis of Tweeddale
The Most Hon. the Marquis of Aylesbury
The Right Hon. the Earl of Leicester
The Right Hon. the Earl of Camperdown
The Right Hon. the Earl of Shannon
The Right Hon. the Earl of Abergavenny
The Right Hon. the Earl of Morley
The Right Hon. the Earl of Durham
The Right Hon. the Earl of Lauderdale
The Right Hon. the Earl of Home
The Right Hon. the Earl of Harrington
The Right Hon. the Earl of Carnarvon
The Right Hon. the Earl of Northesk
The Right Hon. the Earl of Glasgow
The Right Hon. the Earl of Stamford and Warrington
The Right Hon. the Earl of Aberdeen
The Right Hon. the Earl of Aberdour
The Right Hon. the Earl of Ashburnham
The Right Hon. the Earl of Haddington
The Right Hon. the Earl of Cawdor
The Right Hon. the Earl of Denbigh
The Right Hon. the Earl of Galloway
The Right Hon. the Earl of Hopetoun
The Right Hon. the Earl of Mansfield
The Right Hon. the Earl of Milltown
The Right Hon. the Earl of Selkirk
The Right Hon. the Earl of Winchelsea
The Right Hon. the Earl of Zetland
The Right Hon. the Earl of Minto
The Right Hon. the Earl of Kintore
The Right Hon. the Earl of Seafield
The Right Hon. the Earl of Southesk
The Right Hon. the Earl of Kinnoul
The Right Hon. the Earl of Airlie
The Right Hon. the Earl of Bessborough
The Right Hon. the Earl of Brownlow
The Right Hon. the Earl of Howe
The Right Hon. the Earl of Lindsey
The Right Hon. the Earl of Rothes
The Right Hon. the Earl of Ranfurly
The Right Hon. the Earl of Shrewsbury and Talbot
The Right Hon. the Earl of Strathmore
The Right Hon. the Earl of Rosslyn
The Right Hon. the Earl of Harrowby
The Right Hon. the Earl of Westmoreland
The Right Hon. Earl Spencer
The Right Hon. Earl Fortescue
The Right Hon. Earl Vane
The Right Hon. the Countess of Stair
The Right Hon. Viscount Seaham
The Right Hon. Viscountess Castlereagh
The Right Hon. Viscount Duncan
The Right Hon. Viscount Eversley
The Right Rev. the Lord Bishop of Durham
The Right Rev. the Lord Bishop of Ripon
The Right Rev. the Lord Bishop of Killaloe
The Right Hon. Lord Bagot
The Right Hon. Lord Mounck
The Right Hon. Lord Hatherton
The Right Hon. Lord Kinnaird
The Right Hon. Lord Lovat
The Right Hon. Lord Rollo
The Right Hon. Lord Braybrooke
The Right Hon. Lord Blantyre
The Right Hon. Lord Berwick
The Right Hon. Lord Halliburton
The Right Hon. Lord Churchill
The Right Hon. Lord Oseulston
The Right Hon. Lord Portman
The Right Hon. Lord Vernon
The Right Hon. Lord Willoughby de Broke
The Right Hon. Lord Cremorne
The Right Hon. Lord Dalrymple
The Right Hon. Lord Elibank
The Right Hon. Lord Inchiquin
The Right Hon. Lord Panmure
The Right Hon. Lord Rokeby
The Right Hon. Lord Rayleigh
The Right Hon. Lord Binning
The Right Hon. Lord Ashtoun
The Right Hon. Lord Hume
The Right Hon. Lord Stanley
The Right Hon. Lord James Murray
The Right Hon. Lord Berners
The Right Hon. Lord Harris
The Right Hon. Lord Kingsdown
The Right Hon. Lord Rivers
The Right Hon. Lord Taunton
The Right Hon. Lord Oranmore
The Right Hon. Lord Wharncliffe
The Hon. C. L. Butler
The Hon. C. S. Cowper
The Hon. Captain Duncombe
The Hon. Ashley Ponsonby
The Hon. E. Coke
The Hon. Captain Drummond
The Hon. Francis Drummond
The Hon. John Ashley
The Hon. Captain Arbuthnott
The Hon. Sir Edward Butler, Bart.
The Hon. Sydney R. Curzon
The Hon. J. J. Carnegie
The Hon. Wm. Maule
The Hon. Major Murray
The Lord Chief Baron Sir Frederick Pollock
Hon. and Rev. C. A. Harris
Hon. and Rev. W. H. Spencer
Sir A. C. Gibson Maitland, Bart.
Sir John Ogilvy, Bart.
Sir William Scott, Bart.
Sir James Campbell, Bart.
Sir William Heathcote, Bart.
Sir Thomas Moncrieff, Bart.
Sir William Middleton, Bart.
Sir James Matheson, Bart.
Sir William Codrington, Bart.
Sir John Lowther, Bart.
Sir William Gordon Cumming, Bart.
Sir G. H. Scott Douglas, Bart.
Sir Edward Dering, Bart.
Sir John Duntze, Bart.
Sir James Ferguson, Bart.
Sir Robert Gerard, Bart.
Sir James Graham, Bart.
Sir W. W. James, Bart.
Sir Wm. Ross Mahon, Bart.
Sir J. H. Maxwell, Bart.
Sir Robert Peel, Bart.
Sir Wm. Gibson Craig, Bart.
Sir J. Richardson, Bart.
Sir Peter Murray Thriepland, Bart.
Sir David Baird, Bart.
Sir Edward Blackett, Bart.
Sir Graham Montgomery, Bart.
Sir John Maxwell, Bart.
Sir Offley Wakeman, Bart.
Sir Hedgworth Williamson, Bart.
Sir John Warrender, Bart.
Sir Hugh Dalrymple, Bart.
Sir Adam Hay, Bart.
Sir Ralph Abercromby, Bart.
Sir John Watson Gordon, Bart.
Sir John Kirkland, Bart.
Sir David Cunnynghame, Bart.
Sir Charles Wake, Bart.
Sir John M. Burgoyne, Bart.
Sir Edward Colebrooke, Bart.
Sir Philip Duncombe, Bart.
Sir Archibald Macdonald, Bart.
Sir Edward Walker, Bart.
Sir James Duke, Bart., M.P.
Sir Glynn Welby Gregory, Bart.
Baron Meyer Rothschild
Mr. Alderman Mechi, Tiptree Hall
Professor Owen, Sheen Lodge, Richmond Park, Surrey
Col. Davidson, Resident at Hyderabad, India
John Spencer, Esq., Bowood
Michael Thomas Bass, Esq., M.P.
W. L. Lindsay, Esq., M.P.
M. Digby Wyatt, Esq.
J. Gurney Barclay, Esq.

Besides numbers of other well known and distinguished persons both in this country and abroad.

The first practical Gardeners of the day, who have devoted their attention to examining all the different Lawn Mowers offered, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in this Machine which is not of *real practical worth;* and this important consideration is apparently set aside by most makers, whose struggles seem to be *more for what is novel and attractive than for sterling merit.* The important Improvements introduced into the Shanks' Patent Lawn Mower last season have undergone a thorough practical test, and satisfied the most sanguine expectations. Still further improvements have been introduced into the Machine this season, the effect of which still further establishes the high character it has already gained as the most *complete, the cheapest, and most durable* Lawn Mowing Machine. The style in which the work is executed cannot be surpassed—being very much neater than the Scythe, while at half the expense—and it is *quite immaterial whether the Lawn be level or otherwise, or whether the Grass be wet or dry.*

PRICES.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Width of Cutter.			Width of Cutter.		
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*	No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0	*Drawn by a Horse.*	No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*;

Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | Width of Cutter. No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*;

Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Width of Cutter.			Width of Cutter.		
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*	No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man.*
No. 9.—22-inch Machine	8 7 6	*Easily Worked by Two Men.*	No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*			

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Width of Cutter.			Width of Cutter.		
No. 16.—16-inch Machine	£6 5 0	*Easily worked by a Stout Lad.*	No. 18.—12-inch Machine	£5 5 0	*Easily worked by a Lady.*
No. 17.—14-inch Machine	5 15 0	*Easily worked by a Stout Lad.*			
Silent Movement, 7*s.* 6*d.* extra.			Silent Movement, 4*s.* extra.		

*** *The Machines are warranted to give ample satisfaction, and if not approved of may be at once returned.*

SOLE AGENTS FOR LONDON: J. B. BROWN & CO., 18, CANNON STREET, CITY, E.C.

AND AT

STANDS 139 & 244, ROYAL AGRICULTURAL SOCIETY'S SHOW, BATTERSEA PARK, June 23 to July 2.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 27.—1862.] SATURDAY, JULY 5. {Price Fivepence. STAMPED EDITION, 6d.

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HORTICULTURAL GARDEN.
WEEK ENDING JULY 12.

Monday..	..	Admission 1s. 0d.	Open at Nine.
Tuesday	..	Admission 1s. 0d.	Open at Nine.
Wednesday	..	Admission 1s. 0d.	Open at Nine.
Thursday	..	Admission 1s. 0d.	Open at Nine.
Friday ..	..	Admission 10s. (International Fête.)	Open at Ten.
Saturday	..	Admission 5s. 0d.	Open at Nine.

Bands daily.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK, N.W.
The LAST EXHIBITION this Season of PLANTS, FLOWERS, and FRUIT, will take place on WEDNESDAY next, July 9.
Tickets to be obtained at the Gardens only, by Vouchers from Fellows or Members of the Society, price 5s., or on the day of the Exhibition, 7s. 6d. each.
Bands will play from 2 to 7 o'clock.

LOUTH FLORAL SOCIETY. — The Committee having determined to hold the next Show on JULY 10 (in conjunction with the Rifle Corps Gala), in the beautiful grounds of the Rev. Wm Smyth, at Elkington Hall, offer a Prize of a SILVER CUP, value 5l., for the best pan of 12 ROSES in trusses, as gathered. Open to all England. Entrance fee, 5s. ; to Subscribers, 2s. 6d.
Notice of exhibition must be sent to the Secretary, together with the entrance fee, two clear days before the Show, or the flowers will not be placed. Other valuable Prizes offered to subscribers : see Schedule.
Louth, July 5. JAMES FOWLER, Hon. Sec.

THE GRAND HORTICULTURAL FETE and ROSE SHOW of the STAMFORD HORTICULTURAL SOCIETY will be held in Burghley Park, Stamford, on THURSDAY, July 17, in connection with the Northamptonshire Agricultural Society's Annual Exhibition.
The Premiums offered amount to 200l., and include 6 Silver Cups.
The Band of the Coldstream Guards will attend, by permission of Colonel Percival.
Entries close on July 7. Schedules, &c., may be obtained on application to Messrs. LAXTON & HEWITT, Hon. Secs., Stamford.

SLEAFORD FLORAL and HORTICULTURAL SOCIETY.
UNDER MOST DISTINGUISHED PATRONAGE.
The FIRST EXHIBITION of PLANTS, FLOWERS, FRUIT and VEGETABLES, will be held in the grounds of Mr. Charles Sharpe, on THURSDAY, July 17.
Schedules of Prizes, and Certificates of Entry, may be obtained on application to
FRANK WARWICK, Hon. Secretary.
N.B.—Entries close on Monday, July 14, and space will be allowed for those who wish to show pens of Poultry, &c.
By the kind permission of His Grace the Duke of Newcastle, K.G., the Military Band of the Sherwood Rangers will be in attendance, under the direction of Mr. W. Lilly, Band-master.

POSTPONEMENT of the RUGBY HORTICULTURAL and COTTAGE GARDENERS' SOCIETY SHOW. The EXHIBITION will be held at Rugby on FRIDAY, August 29, instead of as before advertised.
By Order of the Committee,
Rugby, July 5. JOHN S. SAVAGE, Hon. Sec.

Notice to Exhibitors.
ROYAL BOTANIC EXHIBITION, JULY 9, 1862.
J. IVERY AND SON offer 3l. for the Best, and 2l. for the Second Best 3 Bunches of BUCKLAND SWEETWATER GRAPE, to be exhibited in accordance with the Rules of the Society.

New Azalea Elegantissima.
B. S. WILLIAMS begs to intimate that he is now prepared to send out strong Plants of the above. It was exhibited at the Royal Horticultural Meeting, May 21, and was awarded a Label of Commendation.
Price 10s. 6d. each, extra size 15s. to 21s. each.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Hurst House Seedling Pine.
B. S. WILLIAMS can supply strong Plants of this choice new PINE at 15s. and 21s. each. A choice Stock of Smooth Cayenne and other Pines.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Pine Suckers.
WANTED, PROVIDENCE, BLACK PRINCE, and PRICKLY CAYENNE SUCKERS. Must be warranted clean and free from scale.
Apply by letter to R. C., Mr. M'Gregor, Seedsman, Merthyr Tydvil.

All the Best New Roses of 1862.
BY PLANTING THE ABOVE IMMEDIATELY A SEASON WILL BE GAINED.
WM. WOOD AND SON have to offer fine strong healthy Plants in Pots, now ready for immediate planting. Early orders will secure the best specimens.
DESCRIPTIVE CATALOGUES on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

WM. PAUL'S ROSES and HARDY ORNAMENTAL TREES are now in full beauty. Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.
Nurseries and Seed Warehouse, Waltham Cross, N.

Roses.
PAUL AND SON'S COLLECTION of ROSES is now in full bloom. The Nurseries are reached in one hour by trains from Bishopsgate to Cheshunt Station, leaving London at 9.30 A.M., 12.46, 2 30, 3.30, 5.10, 6 10 P.M.
Old Cheshunt Nurseries, Herts, N.

RICHARD SMITH begs to inform the Public that he has a larger and finer COLLECTION of ROSES this season than he has ever had; but in consequence of their having been already twice pruned this season, they will not be in bloom for exhibition before the middle of July.
As the Stock is so large the prices will be very reasonable.
Nurseries, Worcester.

Roses in Bloom.
JOHN CRANSTON begs to announce that his large COLLECTION of ROSES is NOW in FULL BLOOM, and will continue in perfection for some weeks.
Nearly 20,000 plants can be seen growing upon the Manetti Stock, all in the finest health and vigour.
Nurseries, King's Acre, near Hereford.

ROSES.—The COLLECTION of ROSES at Sawbridgeworth is NOW in FULL BLOOM. Those on the Manetti Rose stock are particularly fine. A long day may be spent among Roses and experimental Fruit Tree culture. Trains to Harlow (the most convenient station, where flys attend) five times daily.
THOS. RIVERS & SON, Nurseries, Sawbridgeworth.

Roses.
EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

Roses.
H. LANE AND SON, Great Berkhampstead, beg to call the attention of their patrons and the public to their fine COLLECTION of ROSES, NOW in FULL BLOOM. A visit to their Nurseries would amply repay any one for the trouble, as they possess the finest and largest quantity of Araucaria imbricata in Europe, an unrivalled Orchard House, containing a specimen of each sort of Black Grape worthy of cultivation, a splendid collection of Fruit Trees in pots, and a large assortment of Coniferæ, Trees, Shrubs, &c.

BETHAM AND BLACKITH, Cox's Quay, Lower Thames Street, London, E.C., recommend IMPORTERS of DUTCH BULBS, when sending their Orders to Haarlem, to request the Growers to consign the goods to their care in London, by which an early delivery will be secured.—July 5.

BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.

Choice Calceolaria, per pkt. 1s.	Choice Cineraria, per pkt. 1s.
„ Primula „ .. 1s.	„ Picotee „ . 1s.
„ Carnation „ .. 1s.	„ Pelargonium „ .. 1s.

ILLUSTRATED GUIDE to the FLOWER GARDEN, 2s. 0d.

Gunnera scabra Seed, 1s. per packet.
BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.
The GUNNERA SCABRA (a highly ornamental foliaged plant for Lawns and other conspicuous places) is described by Darwin as producing leaves 8 feet in diameter. Last year at the Kew Gardens there was a plant with leaves 4 ft. long, and nearly the same in diameter. See *Gardeners' Chronicle*, March 29, page 285.
BARR & SUGDEN, 12, King Street, Covent Garden (opposite the Garrick Club), W.C.

MESSRS. E. G. HENDERSON AND SON offer Seed of
CALCEOLARIA .. .. .. first quality
CINERARIA .. .. .. „
PRIMULA (fimbriated).. .. „
at 2s. 6d. and 5s. per packet; smaller ones 1s. each. All the above are to be seen in bloom at the Nursery in their respective season.
Wellington Nursery, St. John's Wood, London, N.W.

CHARLES NOBLE begs to annex the names of the RHODODENDRONS which obtained the First Prize at the Royal Horticultural Gardens, May 21.

Lord Palmerston	Duke of Cambridge
Lady Palmerston	Floretta
Lord Granville	Princess Hortense

He also obtained the First Prize at the Grand Opening Show at South Kensington in 1861.
Bagshot.

Araucaria Rulei; A. Cunninghamii glauca, &c.
SMITH AND ADAMSON, Melbourne, will offer for SALE in London, on arrival of the Suffolk and Marco Polo, expected in July, an importation of AUSTRALIAN PLANTS, comprising Araucaria Rulei, A. Cunninghamii, Tree Ferns, &c., full particulars of which will be given in a future advertisement.

Good Seeds, Carriage Free, at Market Prices.
SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

Agricultural Seeds.
GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

New Verbenas of 1862.
B. W. KNIGHT, FLORIST, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4s. per dozen, securely packed in tin box, post free. CATALOGUES of the varieties sent on application.

New Verbenas, Fuchsias, &c., of 1862.
W. DILLISTONE can now supply the above in good Plants, at low prices. Lists upon application.
Munro Nursery, Sible Hedingham, Halstead, Essex.

NEW VERBENAS of 1862.—Very strong healthy plants at 1s. each, or 12 of the finest varieties for 10s. Hamper and package free.
EDWIN COOLING, Mile Ash Nurseries, Derby.

FIRST-CLASS CALCEOLARIA and CINERARIA. 2s. 6d. and 5s per packet.
JAMES CARTER & Co., Seed Merchants and Nurserymen, 237, 238, and 261, High Holborn, W.C.

Calceolaria, Cineraria, and Primula.
BUTLER AND McCULLOCH respectfully beg to offer the following Seeds, saved from Collections containing only the Choicest strains :—
CALCEOLARIA, 1s , 1s. 6d., and 2s. 6d. per packet.
CINERARIA, 1s., 1s. 6d , and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, 1s., 1s. 6d., and 2s. 6d. per packet.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

Cineraria and Calceolaria Seed.
F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1s., 1s. 6d., and 2s. 6d., free by post.
Dulwich, Surrey, S.

New Fuchsias, Verbenas, Petunias, &c., of 1862.
H. WALTON can now supply the above, in healthy Plants, at as low prices as any in the Trade. LISTS on application, enclosing one stamp.
VERBENA FOXHUNTER, 6s. per dozen.
Edgend, Marsden, near Burnley, Lancashire.

Azalea indica.
J. IVERY AND SON beg to inform their Patrons and the Public that their NEW PRICED and DESCRIPTIVE CATALOGUE of the above is now published, and will be forwarded post free on application.
Dorking, Surrey.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize plants, 1s., 1s. 6d., and 2s. 6d. per packet. Reference given. Stamps taken.
G. KNIGHTS, Whitton, Ipswich.

New Chrysanthemums, Hardy Variegated Plants, &c.
JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.
Versailles Nursery, William Street, near Hammersmith Turnpike, W.

New Delphinium, "Beauty."
J. AND J. FRASER, of the Lea Bridge Road Nurseries, N.E., have much pleasure in announcing that they are now prepared to send out plants of the above.
It was examined by the Floral Committee of the Royal Horticultural Society, July 12, 1860, and was awarded a Label of Commendation.
Description and price on application.

Lilium giganteum.
MESSRS. PETER VAN VELSEN AND SONS, of Overveen, near Haarlem, beg to offer strong flowering roots of the above at 7s each, price in Haarlem.
Orders can be sent direct, or to their London Agents, BETHAM & BLACKITH, Cox's Quay, Lower Thames Street, E C.

WANTED, 20 to 50 Thousand strong late WHITE BROCCOLI PLANTS. Send Variety and Price delivered in London, to W. BEAVINGTON, Hounslow, W.

WANTED, 1000 Strong RHUBARB ROOTS, of the strongest growing variety. Price per 100, stating strength, &c., may be addressed to D. A. G., Messrs. Barr & Sugden, Seedsmen, &c , Covent Garden, London, W C.

NEW TURNIP SEEDS from Selected Large Bulbs, Carriage free.
WILLIAM MORTON, Turnip Seed Grower, Old Market Place, Ripon. Originally established 1800.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3s. per lb., or 16l. per cwt.

GARDENERS' CHRONICLE

Choice Seeds.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the under-mentioned Seeds, which cannot fail to give the greatest satisfaction.

PRIMULA, per packet, 2*s.* and 3*s.* 6*d.* each.

CALCEOLARIA, per packet, 1*s.* 6*d.*, 2*s.* 6*d.*, and 3*s.* 6*d.* each.

CINERARIA, per packet, 1*s.* 6*d.* and 2*s.* 6*d.* each.

For numerous Testimonials see SEED CATALOGUE, post free on application.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

CATTELL'S EARLY RELIANCE CABBAGE. CATTELL'S DWARF BARNES CABBAGE.

These two Cabbages have proved themselves for many years past to be the two best Early Spring Cabbages in cultivation. If sown as early as the middle of July, they will not run to seed the following Spring. They may be had as usual in packets containing half an ounce of the Reliance, and one ounce of the Dwarf Barnes. Free by post for 12 Penny Stamps for each packet.

JOHN CATTELL, Nursery and Seed Establishment, Westerham, Kent.

Caladiums.

GODWIN AND PADMAN have pleasure in directing attention to their stock of CALADIUMS, in good plants, viz.:—

	s. d.		s. d.
Argyrites	1 6	Houlletti	1 6
Belleymei	2 6	Neumanni	1 6
Chantini	1 6	Wighti	2 6

Coleus Verschaffelti, 1*s.* each; 9*s.* doz.

Broadfield Nursery, Sheffield; or J. C. PADMAN, Boston Spa, Tadcaster.

CHRYSANTHEMUMS.—Our stock of these is in good stuff, and comprises amongst them the following:—

LARGE-FLOWERED VARIETIES—Aimée Ferrière, Albini, Godereau, Alfred Salter, Arthur Wortley, Beauregard, Bouquet des Fleurs, Caractacus, Cassandra, Constantine, Dr. Maclean, Dragon, Dupont de l'Eure, Eclipse, Fortune's 2-coloured Incurved, Golden Queen of England, Golden Cluster, Goliath, Hermione, Jewess, John Bunyan, Madame Poggi, Marechal Duroc, Mrs. W. Holborn, Poudre d'Or, Prince Albert, Progne, Queen of England, Queen of the Isles, Stafford, The Lady Mayoress, Yellow Perfection, 6*s.* per doz.; 12*s.* 6*d.* for the lot.

POMPONE CHRYSANTHEMUMS—6*s.* per doz.; 33 varieties for 12*s.* 6*d.*

VARIEGATED GERANIUMS—50 varieties, from 3*s.* per doz.

CATALOGUES of above on application to GODWIN & PADMAN, Broadfield Nursery, Sheffield; or J. C. PADMAN, Boston Spa, Tadcaster.

Calceolaria, ex. ex.

STEPHEN BROWN'S Seed of the above is of the same extra quality as in past years, saved expressly for him by a private grower for many years renowned for his first-rate Calceolarias. It has annually given the most unqualified satisfaction, and procured numerous prizes. The flowers are splendid in colour, richly spotted, of excellent form, large, and of endless variety. Packets, 2*s.* and 1*s.*

CALCEOLARIA NANA GRANDIFLORA PRÆCOX.—Very beautiful, from the Continent, exceedingly dwarf, and covered with a profusion of large and bright flowers, of great variety. Packets, 2*s.*

PRIMULA FIMBRIATA, ex. ex.—Finest mixed dark varieties, purple, carmine, rose, &c. Packets, 2*s.* and 1*s.*

FIMBRIATA STRIATA.—Very choice white, with many of the flowers beautifully striped with bright red, extra. Packets, 1*s.* 6*d.*

FIMBRIATA ERECTA SUPERBA.—Of more erect habit, received from the Continent, and represented as splendid, quite distinct, and constant. Packets, 2*s.* 6*d.*

SEED of first-class FLORIST FLOWERS, English and Continental, comprising Geranium, Hollyhock, Carnation, Picotee, Pansy, Cineraria, Polyanthus (superbly laced), Verbena, Antirrhinum, Gladiolus, Pentstemon, &c., all saved from the finest collections.

The SEED CATALOGUE free on application.

STEPHEN BROWN, Seed Grower and Importer, Sudbury, Suffolk.

STELZNER AND MEYER, Ledeberg Nursery, Ghent, Belgium, beg to offer the following plants at the undermentioned low prices:—

Gloxinia (Gesneria) pyramidalis, very beautiful new distinct hybrid, received 1st prize at the last Ghent show, strong plants with many flower buds, 12*s.* 6*d.* to 21*s.*

Ditto, smaller ones, 7*s.* 6*d.*

Cyperus alternifolius fol. var., 10*s.* 6*d.* to 15*s.*

Rhynchosia albo-nitens, beautiful variegated stove Climber, 5*s.*

Bouvardia albida, 3*s.* 6*d.*

Aster coccineus, 3*s.* 6*d.*

Rhododendron hybridum concessum, good plants, 120*s.* per 100.

" " Fleurs de Marie, 100*s.* per 100.

" President Van den Hecke, 300*s.* per 100.

" Elfride, 60*s.* per 50.

" Bylsianum, 120*s.* per 100.

Aspidium Frizelliæ, new, very fine for the open ground, 80*s.* per 100.

Cystopteris obtusa, new, very fine for the open ground, 40*s.* per 100.

Adiantum curvatum, new, very fine for the open ground, 80*s.* per 100.

	Per 100—s. d.		Per 100—s. d.
Pteris tricolor ..	40 0	Gymnogramma lanata ..	40 0
" cretica fol. var.	30 0	" pulverul. argyr.	50 0
Adiantum concinnum ..	40 0	" Laucheana ..	50 0
" macrophyllum	40 0	Notochlæna nivea ..	25 0
Lygodium mexicanum	80 0	" chrysophylla	60 0

All fine young Plants in 2-inch pots.

CHEILANTHES BORSIGIANA; the beautiful Golden Cheilanthes, one of the prettiest Ferns known. Nice young plants ready in August, at 10*s.* 6*d.* each, or 4*l.* per dozen.

A. STELZNER, late Traveller of Mr. Louis Van Houtte's Nursery at Ghent, begs to remember himself kindly to his numerous friends and patrons throughout Great Britain.

Improvement of Grass Lands

BY SOWING GOOD SEEDS OF THE MOST SUITABLE KINDS.

SUTTON'S RENOVATING GRASS SEEDS SHOULD NOW BE SOWN.

These Seeds consist of PERENNIAL CLOVERS and FINE GRASSES for improving the bottom.

Price 9*d.* per lb., or 80*s.* per cwt. Eight or 12 lb. per acre will be sufficient, and will produce a great increase in the produce.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

The Quickest Turnip known.

EARLY SIX WEEKS, or NIMBLE WHITE.

Fine fresh Seed, 9*d.* per lb.; 9*s.* per peck, or 32*s.* per bushel, Carriage Free.

Royal Berkshire Seed Establishment, Reading.

The Best Substitute for Swedes.

THE YELLOW TANKARD TURNIP.—This is sometimes called Tankard Swede, the flesh being yellow, and somewhat similar in feeding properties. If sown now a heavy crop will be ready as soon as Swedes sown a month ago; or it may be sown as a stubble Turnip.

SUTTON & SONS can supply fine fresh Seed at 10*s.* 6*d.* per peck, or 10*d.* per lb., Carriage Free.

Royal Berkshire Seed Establishment, Reading.

THE HEAVIEST CROPPING TURNIP.

The Grey Stone or Mottled Globe.

Excellent for present sowing for winter feed, or for later sowing to stand the winter.

SUTTON AND SONS, SEED GROWERS, Reading, are now harvesting a fine crop of Seed, and can therefore supply this popular sort at the reduced price of 10*s.* per Peck, or 35*s.* per Bushel, Carriage Free.

Royal Berkshire Seed Establishment, Reading.

WHEELER'S ORANGE GLOBE MANGEL, WHEELER'S IMPERIAL SWEDE, GRASS SEEDS for PERMANENT PASTURE, GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

Stanstead Park Nursery, Forest Hill, S.E., and Edinburgh.

DOWNIE, LAIRD, AND LAING have much pleasure in offering the following very select Seeds, saved from their choice collections.

ANTIRRHINUM, 6*d.* and 1*s.* per packet.

CALCEOLARIA, 1*s.* and 2*s.* 6*d.* per packet.

CINERARIA, 1*s.* and 2*s.* 6*d.* per packet.

HOLLYHOCK, 1*s.*, 2*s.* 6*d.* and 5*s.* per packet.

PANSY, 1*s.* and 2*s.* 6*d.* per packet.

PRIMULA SINENSIS FIMBRIATA, 1*s.* and 2*s.* 6*d.* per packet.

PRIMULA SINENSIS KERMESINA SPLENDENS, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

New Plant Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce the publication of their NEW SPRING CATALOGUE of BEDDING and other ORNAMENTAL PLANTS, including descriptions of the under-mentioned POMPON DAHLIAS, &c.

Angel of Peace	Little Mary
Annie	Little Prince
Butterfly	Little Valentine
Fairy Nymph	Pearl of Lilliputs
Goldlight	Silver Pheasant
Jeannette	Star
Little Darling	Tom Tit
Little Dorrit	and others.

BANKS'S NEW FUCHSIAS.

WILLS'S NEW VERBENAS.

FERN-LEAVED PRIMULAS, white and red fringed.

BEDDING TROPÆOLUMS—elegans coccinea, Model, Constellation, and Beauty of Oulton Park.

PETUNIA MAGNIFICENS.

GLOXINIAS—Brilliant, Leviathan, Bird of Paradise, and Most Beautiful; these four are very large, new in colour, and distinct.

AUCUBA HIMALAICA, the finest habited plant of all the new Aucubas.

GERANIUMS of the Zonale section—Magenta, new colour; Woodwardiana, best formed large petal-flowered; Baron Ricasoli, without exception the best bedding or Vase Geranium of any at present known.

GERANIUMS, MINIMUM Section, Harry Hieover.

" NOSEGAY " Pink Pearl.

" VARIEGATED " Sunset, Gold Leaf, Mrs. Milford, The Countess, Gold Pheasant, Little Beauty, &c.

Wellington Nursery, St. John's Wood, London, N.W.

Choice Seeds for Present Sowing.

ROBERT PARKER begs to offer the following, all of which are warranted to be new and genuine, and the finest qualities of their respective kinds. Per Pkt.—

CALCEOLARIA, Herbaceous, finest mixed

CINERARIA, finest mixed .. ..

CLIANTHUS DAMPIERII .. ..

DIANTHUS HEDDEWIGII, and vars., finest mixed, 6*d.* & 1

HOLLYHOCK, finest mixed .. ..

HUMEA ELEGANS 0

PANSY, finest mixed .. .. [illegible] 6

PRIMULA SINENSIS DENTIFLORA 1

" " " ALBIFLORA .. .. ..

" " " KERMESINA SPLENDENS .. 2

STOCK, Scarlet, Intermediate

" White " .. ..

SWEET WILLIAM, Auricula-flowered, finest mixed .. 1

A Priced and Descriptive CATALOGUE of SEEDS will be forwarded post free on application.

Exotic Nursery, Tooting, Surrey, S.

ROBERT PARKER begs to offer good healthy Plants of the following, all of which will prove desirable acquisitions to the most select collections:—

	£ s. d.
ALOCASIA METALLICA .. .. each	1 11 [illegible]
CALADIUM BELLEYMEI	0 3 [illegible]
" WIGHTII	0 3 6
CAMPYLOBOTRIS REFULGENS	0 3 6
CENTAUREA RAGUSINA	0 2 6
CLERODENDRON THOMSONÆ	0 3 6
COLEUS VERSCHAFFELTI	0 1 0
CYCLAMEN PERSICUM RUBRUM	0 2 6
FUCHSIA COMET	0 1 6
" MINNIE BANKS	0 1 6
" WHITE LADY	0 1 6
" UNIVERSAL	0 1 6
" CORNELISSONS, set of 10 double vars. ..	0 3 6
GERANIUM ADMIRATION	1 10 0
" FLAMBEAU	0 2 0
ORCHIS FOLIOSA	0 3 6
RHODODENDRON NUTTALII	0 5 0
STATICE PROFUSA	0 1 6

Exotic Nursery, Tooting, Surrey, S.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality, at Market Prices.

CLERODENDRON THOMSONÆ.—At the Royal Horticultural Society's Grand Show on May 21, we were awarded the First Prize for this very beautiful new climber. It is figured and fully described in Curtis's "Botanical Magazine" for last month. Healthy young plants, 7*s.* 6*d.* each; stronger, 10*s.* 6*d.* each.

THOMAS JACKSON & SON, Nurserymen, &c., Kingston, S.W.

FERNS, BRITISH and FOREIGN.—An immense variety, 3*s.* to 12*s.* per dozen; also large specimens. BEGONIAS and other Foliage Plants; STANDARD FUCHSIAS, several hundreds, 1*s.* 6*d.* to 5*s.* each, and all kinds of Greenhouse and Stove Plants, Evergreens, Climbers, &c.

The finest Collection in London of Foreign Birds and Cages, Budgerigars, 20*s.* per pair; Wire and Rustic Work, Ferns and Aquariums of every description.

R. GREEN, Bedford Conservatories, Covent Garden Market, and 154, Kingsland Road, N.E.

Upwards of 2000 Cases have been reported as Cured by

JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* each. A 1*s.* 6*d.* bottle will make 12 gallons fit for use.

Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1*s.* and 2*s.* per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1*s.* per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. NEAL, Edward Street, Birmingham.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra strong, 3*s.* per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3*s.* per Gallon (or 9*d.* fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* each.

Wholesale by PRICE'S PATENT CANDLE Co., Limited.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

TWO HUNDRED SETS
OF
STEAM PLOUGHING and CULTIVATING APPARATUS
HAVE NOW BEEN SENT OUT BY
JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD.

Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

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CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,
MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.
PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.

IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes.
VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.
The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.
Illustrated CATALOGUES and DRAWINGS free on application to
COTTAM & CO., ENGINEERS and IRON FOUNDERS,
2, WINSLEY STREET (OPPOSITE THE PANTHEON), OXFORD STREET, LONDON, W.

CARSON'S
ORIGINAL ANTI-CORROSION PAINT.

WHITE ... ... / LIGHT STONE ... ... / DRAB OR PORTLAND DO / BATH DO.... ... ... / CREAM COLOR	30s. per cwt.	BRIGHT RED ... ... / DARK DO. (OR BRICK COLOR) / LIGHT & DARK CHOCOLATE / BLACK	26s. per cwt.
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THE BRITISH GOVERNMENT | THE LAMENTED PRINCE CONSORT | RAILWAY AND CANAL COMPANIES
THE RUSSIAN GOVERNMENT | MOST OF THE NOBILITY & GENTRY | COLLIERIES, IRON MASTERS, &c.

It is extensively used at home and abroad for all kinds of

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and is in consequence largely used by the Nobility and Gentry, also many eminent Horticulturists, for such purposes. The ANTI-CORROSION is LOWER IN PRICE, and LASTS TWICE AS LONG as the Best White Lead; at the same time is economical in application, as

ANY PERSON CAN LAY IT ON.

The Anti-Corrosion is a Powder, and will keep any length of time.

Carriage paid upon quantities of not less than 5 cwt. to any station in England and Wales, or by Water to any Port in the United Kingdom, where there is direct communication from London, as Leith, Dublin, Belfast, Glasgow, Aberdeen, &c.

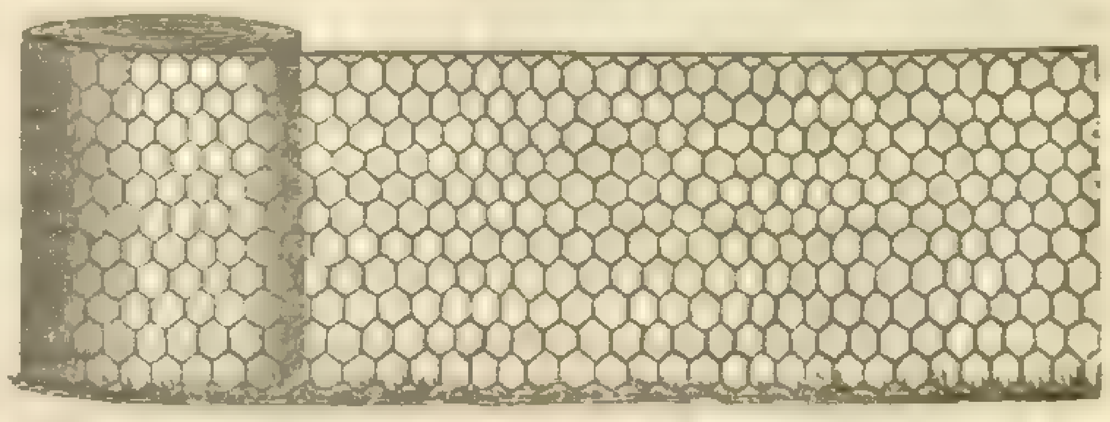
Casks not returnable, a uniform rate of 1s. being charged for all sizes up to 5 cwt., which are free.

OIL, TURPENTINE, AND BRUSHES.

Patterns, Cards, and Testimonials sent upon application to
WALTER CARSON & SONS (SUCCESSORS TO THE INVENTORS),
9, GREAT WINCHESTER STREET (NEAR THE ROYAL EXCHANGE, LONDON, E.C.).

No Agents throughout the United Kingdom.

NEW IMPROVED PREMIUM WIRE NETTING.
Great Improvement with Reduced Price.



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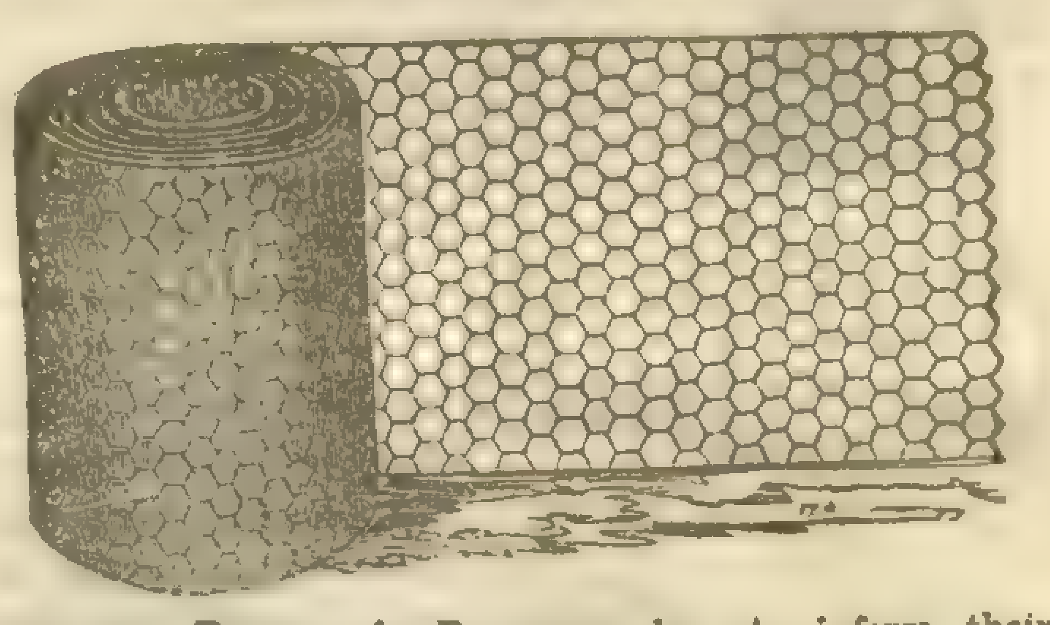
Size of Mesh	Mostly used for	Light. Jap	Light. Gal.	Medium Jap	Medium Gal.	Strong. Jap	Strong. Gal.	Extra Strong. Jap	Extra Strong. Gal.
2¼ in.	Poultry ..	3d.	4d.	3¾d.	5d.	4½d.	6d.	5½d.	7d.
2 in.	Poultry ..	3½d.	4¼d.	4d.	5d.	5d.	6½d.	6½d.	8d.
1⅝ in.	Small Rabbits	4d.	4¾d.	4⅝d.	6d.	5½d.	7d.	7d.	9d.
1½ in.	Smallest Rabbits	5d.	6d.	5¾d.	7d.	7d.	9d.	9d.	11d.

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

*** Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.

J. B. BROWN & Co., 18, Cannon Street, City, London, E.C.

BARNARD, BISHOP, AND BARNARDS, Norwich.
FURTHER REDUCTION in the PRICE of WIRE NETTING.—APRIL, 1861.



BARNARD, BISHOP, & BARNARDS beg to inform their friends and the public that they have made a further reduction in the prices of Machine-made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch mesh, 24 inches wide..	No. 19	.. 4½d.	.. 3½d.
2-inch " " " ..	" 18	.. 5	.. 4
2-inch " " " ..	" 17	.. 6½	.. 5
2-inch " " " ..	" 16	.. 8	.. 6½
1⅝-inch " " " ..	" 19	.. 4¾	.. 4
1⅝-inch " " " ..	" 18	.. 6	.. 4½
1⅝-inch " " " ..	" 17	.. 7	.. 5½
1⅝-inch " " " ..	" 16	.. 9	.. 7

All the above kinds can be made any width (under 6 feet), at proportionate prices.

Strong Galvanised Poultry Netting, 7½d. per yard, 3 feet wide: Galvanised Sparrow-proof Netting for Pheasantries, 11d. per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.

Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.

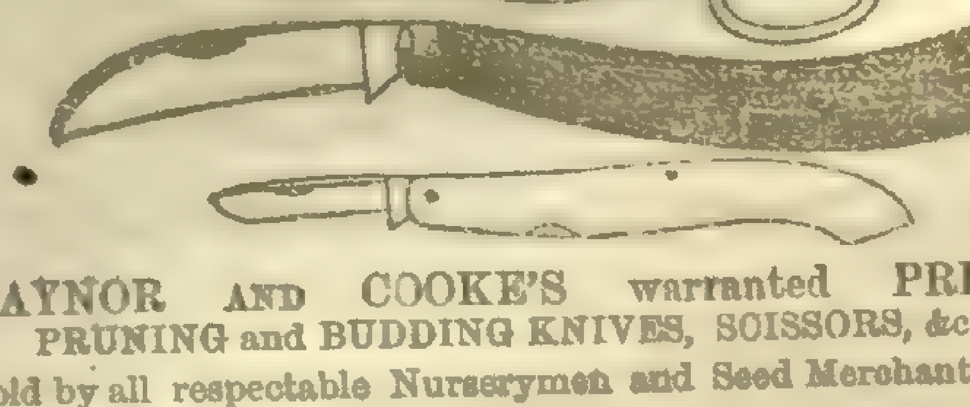
Five wires, 3 feet 6 inches high, pronged Standards, 8 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10d. per yard.

The same with Galvanised Wire Rope, 1s. per yard.

Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.

*** Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

Paxton Works, Sheffield, Established 1738.



SAYNOR AND COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.

Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

E. DENCH'S Horticultural Works, 152, King's Road, Chelsea, S.W., Manufacturer of every description of HORTICULTURAL BUILDINGS either in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without.
HOT WATER APPARATUS Manufacturer.

Heating.

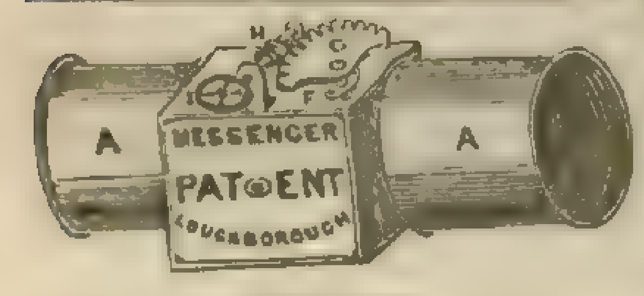
HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.
Apply to Joseph Meredith, Vine Cottage, Garston, near Liverpool:
N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

West of England, Ireland, and Wales.

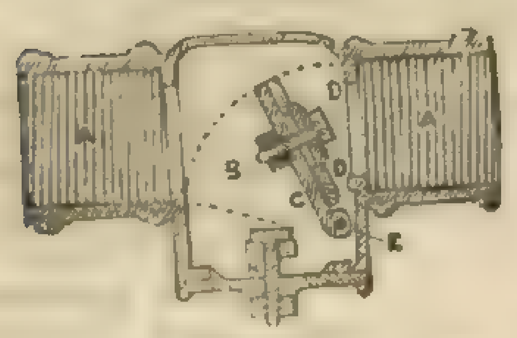
VINCENT SKINNER (*late Partner with* J. Weeks & Co.), erects CONSERVATORIES, HOTHOUSES, and HOT-WATER APPARATUS.
His improved Pipe Boilers, which give such universal satisfaction for Warming Churches and Hothouses, will heat from 100 to 2000 feet of Pipe.
Plans and Estimates on application to V. Skinner, Bridewell Street, Bristol.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the
Patentee's Warehouse, 155, Cheapside, London, E.C.
Price complete from 3*l.* 10*s.*
Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.



Elevation.



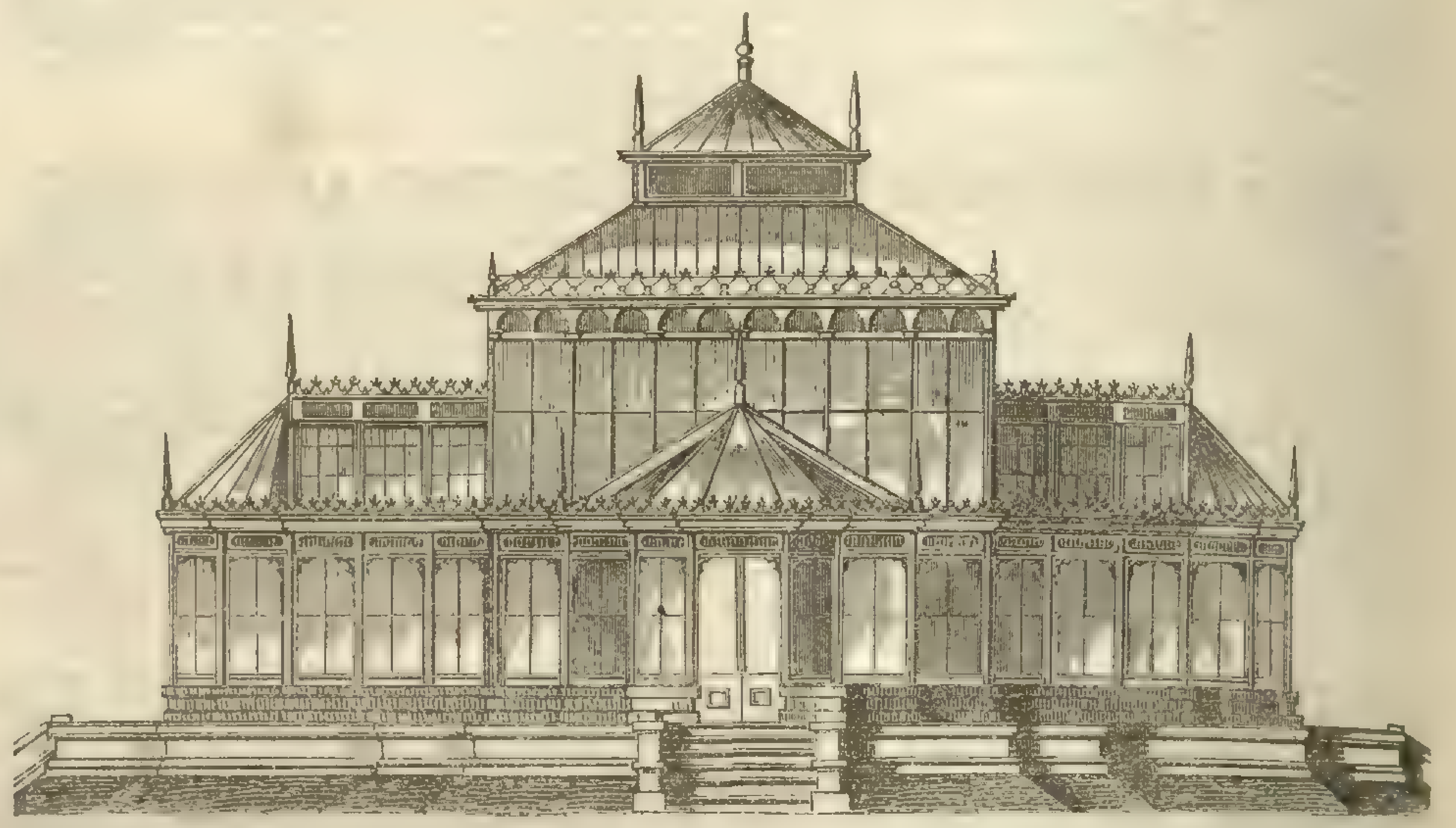
Section.

T. G. MESSENGER, Horticultural Builder and Engineer, Loughborough, has recently patented a Valve which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under.
Two-inch, 17*s.* 6*d.*; 3-inch, 23*s.*; 4-inch, 28*s.*
A liberal discount to the Trade.

JOHN TAYLOR & SONS,

HORTICULTURAL BUILDERS AND ENGINEERS,

HARROW ROAD, LONDON, W.



J. TAYLOR and SONS call the attention of the Nobility and Gentry to the very superior manner in which they erect CONSERVATORIES, VINERIES, FORCING, FRUIT, and PLANT HOUSES of every description, combining the most modern improvements with elegance of design and durability of materials and workmanship.

Our VENTILATING APPARATUS for the Roofs and Fronts of Horticultural Buildings, &c., supersedes any now in use, as being the most simple and effective in its action.

Our system of HEATING APPARATUS for Churches, Public Buildings, Mansions, Schools, Offices, Baths, Horticultural Buildings, &c., is particularly worthy of notice, we having for many years devoted especial attention to this branch. The great variety of work which has passed through our hands has gained us such experience in the mechanical details as to insure success and entire satisfaction in any undertaking entrusted to our care.

The superiority of our DOUBLE-CHAMBER CORRUGATED and HORIZONTAL TUBULAR BOILERS has caused them to be acknowledged as the best now in use, being both powerful and rapid in action.

See CONSERVATORY, BOILERS, &c., exhibited at the International Exhibition, Class 9 (2191), Open Court, Eastern Annexe.

HOTHOUSES FOR THE MILLION

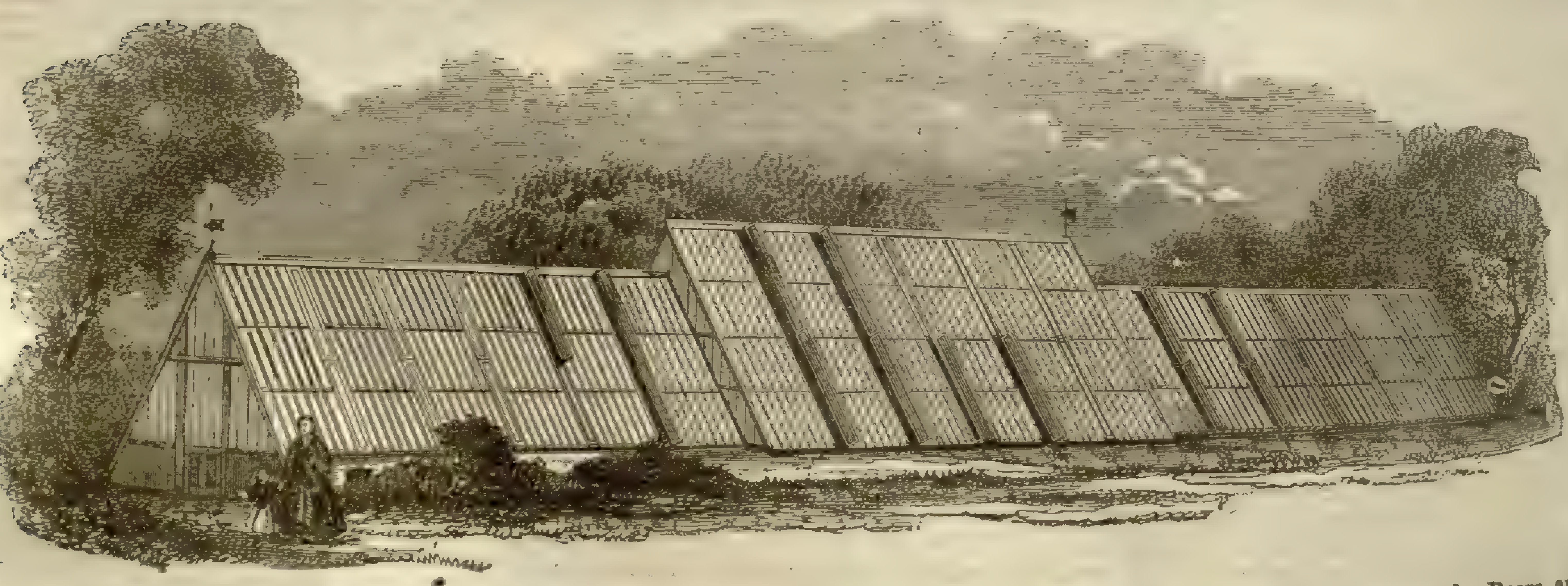
(INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE),

ON THE PRINCIPLE INVENTED AND PATENTED BY

SIR JOSEPH PAXTON, M.P.

COMBINING SIMPLICITY, CHEAPNESS, EXCELLENCE, AND DURABILITY,

BEING CAPABLE OF FULFILLING IN THE MOST PERFECT MANNER ALL THE REQUIREMENTS OF HORTICULTURE.



The Cash Prices of Lean-to Houses complete are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£12 0 0	£16 0 0	£21 0 0	£28 10 0	£34 5 0
31 3 in length	16 10 0	21 2 6	26 10 0	37 12 0	45 16 0
41 11 in length	20 18 0	26 18 6	33 7 6	46 14 0	57 7 0
52 7 in length	25 12 6	32 15 0	40 5 0	55 16 0	68 18 0
63 3 in length	30 6 0	38 10 0	47 2 6	64 18 0	80 10 0
73 11 in length	34 12 6	43 15 0	53 7 6	74 0 0	92 0 0
84 7 in length	39 6 0	49 11 6	60 5 0	83 2 0	103 11 0
95 3 in length	43 19 0	55 10 0	67 2 6	92 5 0	115 2 0
105 11 in length	48 17 6	60 12 6	73 10 0	101 10 0	126 13 0

The Cash Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are as follows:—

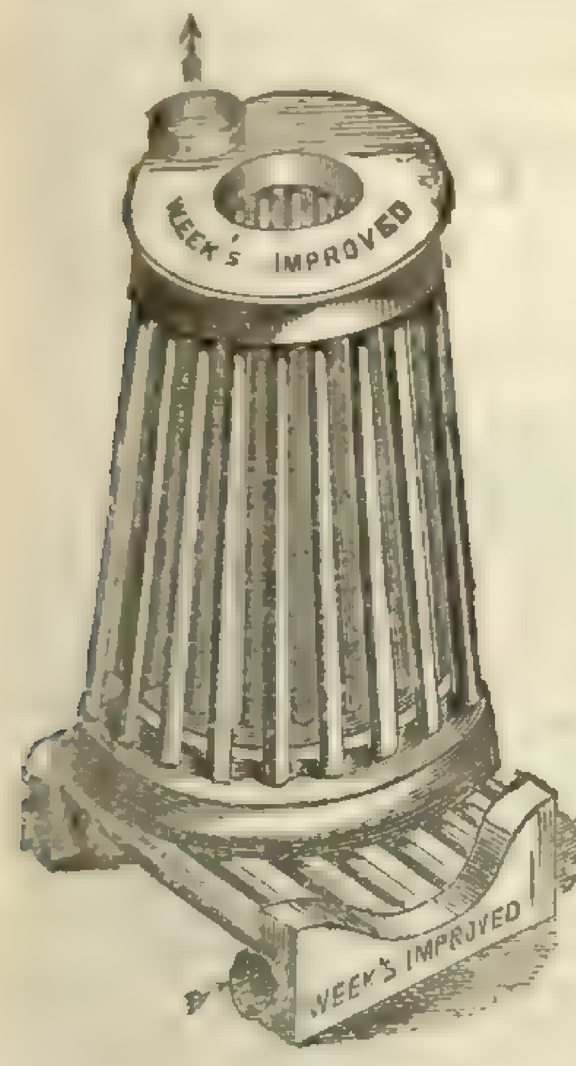
Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£24 0 0	£32 0 0	£42 0 0	£57 0 0	£68 12 0
31 3 in length	38 0 0	42 5 0	53 0 0	75 4 0	91 10 0
41 11 in length	41 16 0	53 17 0	66 15 0	93 8 0	114 14 0
52 7 in length	51 5 0	65 10 0	80 10 0	111 12 0	137 10 0
63 3 in length	60 12 0	77 0 0	94 5 0	129 16 0	161 0 0
73 11 in length	69 5 0	87 10 0	106 15 0	148 0 0	184 0 0
84 7 in length	78 12 0	99 3 0	120 10 0	166 4 0	207 2 0
95 3 in length	87 18 0	111 0 0	134 5 0	184 10 0	230 4 0
105 11 in length	97 15 0	121 5 0	147 0 0	203 0 0	253 6 0

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

The above prices do not include package, railway freight, heating apparatus, or erection.

Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

SAMUEL HEREMAN, 7, PALL MALL EAST, LONDON, S.W.



JOHN WEEKS AND COMPANY,

HORTICULTURAL BUILDERS

AND

HOT-WATER APPARATUS MANUFACTURERS

TO

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN
THE TOWER OF LONDON
THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN
THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM
And NUMEROUS PUBLIC COMPANIES.

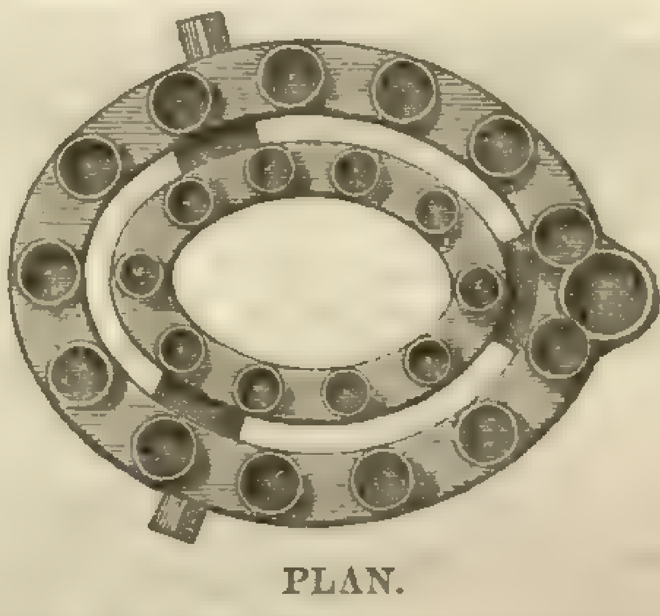
KING'S ROAD, CHELSEA, S.W.

GRAY'S OVAL TUBULAR BOILER.

INTERNATIONAL EXHIBITION,

Class IX., No. 2119.

ELEVATION.



PLAN.

Mr. Gray begs to call the attention of the Nobility, Gentry, Nurserymen, Gardeners, &c., to his

NEW OVAL TUBULAR BOILER,

acknowledged by practical judges to be a great improvement on every form of Tubular Boiler yet introduced. It has proved itself superior to all other Boilers for quickness of action and economy of Fuel, doing its work with one-third less the amount required by any other.

Extract from Report in Gardeners' Chronicle *of International Exhibition, May 24, page* 476.

"The upright form of Boiler is usually made on a circular plan, but the oval form given to Mr. Gray's variety of it is said to be preferable in consequence of its bringing the tubes in closer contact with the fire. The usual form of a furnace being a parallelogram rather than a square, it seems feasible that the Boilers on the oval plan should bring the tubes more completely within range of the burning fuel; and this being so the change, though a slight one, is no doubt an improvement."

They are made of all sizes, which, with prices, may be had on application.

JAMES GRAY, HORTICULTURAL WORKS,
DANVERS STREET, PAULTON'S SQUARE, KING'S ROAD, CHELSEA, S.W.

ST. PANCRAS IRON WORKS COMPANY,

OLD ST. PANCRAS ROAD, LONDON, N.W.

BY ROYAL LETTERS PATENT.

SCOTT'S GLASS WALLS,

Designed to meet the suggestions of James Scott, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

CONSERVATORIES	PINE and MELON PITS	BALCONIES	GATES
GREENHOUSES	VASES	IRON SASHES	TANKS
HOTHOUSES	VERANDAHS	IRON HURDLES	HOT-WATER WORK.

PATENT WROUGHT-IRON STABLE FITTINGS AND ENAMELLED MANGERS.

Every description of IRONWORK. *Lists Free.*

ST. PANCRAS IRON WORK COMPANY, OLD ST. PANCRAS ROAD, LONDON, N.W.

Card.

SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

KENT'S PATENT WEATHERPROOF GLAZING —GREENHOUSES on hand or to order with best materials and workmanship.
Apply to A. Kent, Horticultural Builder, Chichester; or at Works, to Mr. Pitman, 30, Lower Church Street, Chelsea, S.W.

Greenhouses, Orchard-houses, and Conservatories.

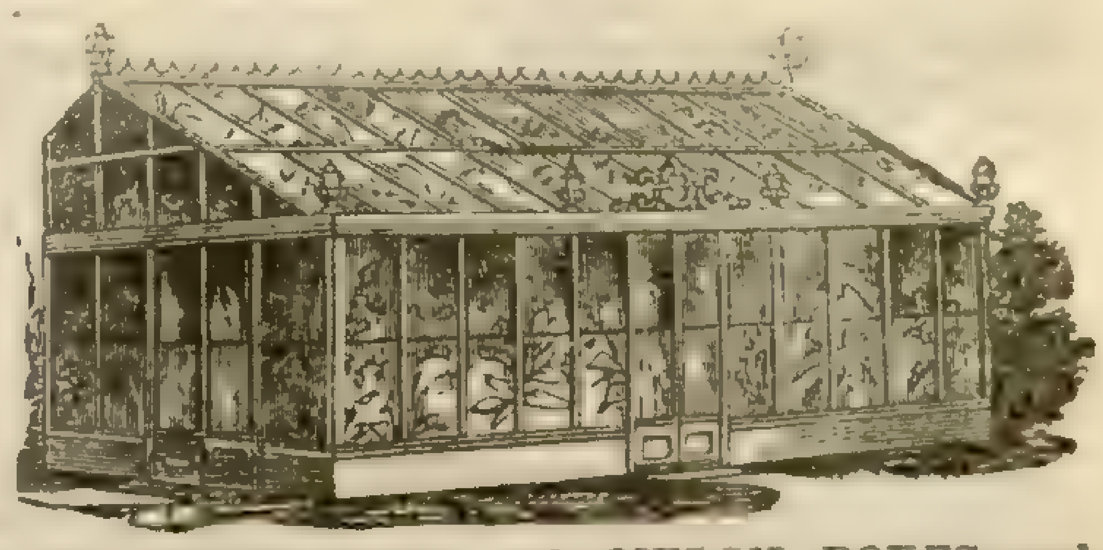
H. FREEMAN'S Horticultural Works, Triangle, Hackney, London, N.E.: established 20 years. Good substantially-made GREENHOUSES, glazed, ready for fixing, 42 feet by 13 feet, 50*l.*; 21 by 13, 28*l.*; 12½ by 10, 15*l.* ORCHARD-HOUSES 10 per cent. cheaper. A large assortment kept. Estimates given for heating, or any branch in iron or wood.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, Tubular, and Elliptic, from 24*s.* each. Improved Boilers and Iron Stands to use without brickwork, 50*s.* each. Valves from 12*s.* 6*d.* each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at
Mr. Lynch White's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

Horticultural Buildings and Heating by Hot Water.

BURY and POLLARD, Park Iron Works, New Park Street, Southwark, S.E., Manufacturers of every description of Buildings for Horticultural Purposes, with their Improved CONICAL BOILER for heating the same, are prepared to undertake works of any magnitude, and refer among others to the celebrated range of Forcing Houses at Her Majesty's Gardens, Frogmore, and at Sir Robert Peel's, Drayton Manor, constructed under the superintendence of their Manager, Mr. John Jones.
Further information forwarded on application.

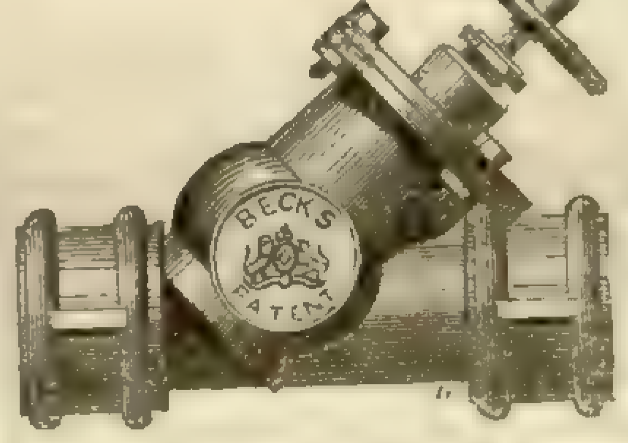
JAMES WATTS and CO., Hothouse Builders and Hotwater Apparatus Manufacturers, near the Green Man, Old Kent Road, London, S.E.



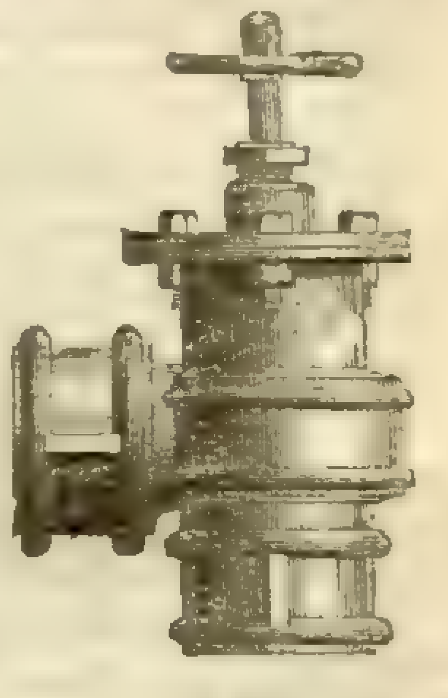
200 CUCUMBER and MELON BOXES and LIGHTS, and from 400 to 500 LIGHTS for PITS of all SIZES kept in STOCK.
Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.
References to the Nobility, Gentry, and Trade in most of the counties in England.

Horticultural Works, Danvers Street, Chelsea, S.W

BECK'S PATENT
HOT WATER VALVE.



Horizontal Valve.
2" 18*s.* 6*d.*; 3" 25*s.*; 4" 30*s.*



Angle Valve.
2" 17*s.*; 3" 23*s.*; 4" 28*s.*

JAMES GRAY, Sole Agent, begs to call attention to this most simple and perfect Valve ever invented. It is perfectly water tight, and is never liable to get out of order, or to get fixed by standing.
To Architects, Engineers, Gardeners, & Others.—Beck's Patent Valve has been submitted to several of the most scientific men of the day, and has invariably met with unqualified approval. A liberal Discount to the Trade.
Conservatories, Greenhouses, Vineries, and every description of Hothouse erected on the most improved principles, and of best materials, at the lowest possible price consistent with good workmanship.
Heating by Hot Water in all its branches. Boilers of every approved description, Tubular, Saddle, Conical, &c.
James Gray, Horticultural Works, Danvers Street, Paulton's Square, King's Road, Chelsea, S.W

JOSEPH SMITH, Horticultural Builder, New Road, Hammersmith, W., has for SALE several GREENHOUSES, viz.:—

	£	s.
Span Roof, 27 feet long by 16 feet 6 inches wide.. ..	47	10
Lean-to, 24 feet long by 12 feet 6 inches wide	34	0
Ditto, 22 feet long by 12 feet wide	23	9
Ditto, 100 feet long by 13 feet wide, glazed with 21-oz. glass	100	0
Second hand, 15 feet long by 7 feet wide	15	0
20 extra stout, 10 feet 6 inches by 4 feet 2 inches, Lights, 21-oz. glass	35	10
Smaller sizes 2¼ inches, thick, 9½*d.* per foot.		
50 6-feet by 4-feet lights, 15*s* each. the lot	37	0

Houses made to order from 1*s.* per sq. foot; if Unglazed, 8*d.*
Pit Lights with 15-oz. Glass, 8*d.* per foot; with 21-oz. Glass, 9*d.* per foot.

FOR SALE, a GREENHOUSE, a Bargain.—28 ft. 9 inches long, 12 feet 3 inches wide, 2 feet 6 inches high in front, with glass and door at both ends, roof half span with improved ventilation, glazed with 21 oz. sheet glass, the front and ends with 15 oz. do. painted three coats of best oil colour. Price 33*l.*
To be seen at John Overall's, Horticultural Builder, 16, Shacklewell Lane, Kingsland, London, N.E.

ROYAL HORTICULTURAL SOCIETY.

THIRD GREAT EXHIBITION of PLANTS, FLOWERS, and FRUIT, JULY 2.

AWARDS OF THE JUDGES.

CLASS 1.—15 STOVE and GREENHOUSE PLANTS. (Open.)

1st Prize, Mr. Thomas Whitbread, Gr. to H. Colyer, Esq., Dartford, 20*l.*
2d, Mr. W. May, Gr. to J. Spode, Esq., Rugeley, 15*l.*
3d, Mr. B. Peed, Gr. to Mrs. Tredwell, Lower Norwood, 10*l.*

CLASS 2.—12 STOVE and GREENHOUSE PLANTS. (Nurserymen.)

1st, Messrs. J. & J. Fraser, Lea Bridge Road, 10*l.*
2d, Mr. O. Rhodes, Sydenham Park, 7*l.*
3d Mr. W. Cutbush, Barnet, 5*l.*

CLASS 3.—9 STOVE and GREENHOUSE PLANTS. (Amateurs.)

1st, Mr. J. Green, Gr. to Sir E. Antrobus, Bart, Cheam, 9*l.*
2d, Mr. H. Chilman, Gr. to Mrs. Smith, Epsom, 7*l.*
3d, Mr. R. Baxendine, Gr. to W. H. Smalipiece, Esq., Guildford, 5*l.*
4th, Mr. W. Kaile, Gr. to Earl of Lovelace, Ripley, 3*l.*

CLASS 4.—6 STOVE and GREENHOUSE PLANTS. (Amateurs.)

1st, Mr. T. Page, Gr. to W. Leaf, Esq , Streatham, 5*l.*
2d, Mr. J. Wheeler, Gr. to J. Philpott, Esq., Stamford Hill, 4*l.*
3d, Mr. J. Tegg, Gr. to Baron Hambro, Roehampton, 3*l.*

CLASS 5.—12 FINE FOLIAGED and VARIEGATED PLANTS. (Nurserymen.)

1st, Messrs. Veitch & Son, Exeter and Chelsea, 7*l.*
2d, Mr. B. S. Williams, Holloway, 5*l.*
3d, Messrs. T. Jackson & Sons, Kingston, 3*l.*
Equal 3d, Messrs. J. & C. Lee, Hammersmith, 3*l.*
4th, Mr. W. Bull, Chelsea, 2*l.*

CLASS 6.—10 FINE FOLIAGED and VARIEGATED PLANTS. (Amateurs).

1st, Mr. J. Smith, Gr. to the Duke of Northumberland, Syon House, 7*l.*
2d, Mr. J. Wheeler, Gr. to J. Phillpott, Esq., Stamford Hill, 5*l.*
3d, Mr. C. Ross, Gr. to C. Eyre, Esq., Welford Park, Newbury, 3*l.*

CLASS 7.—12 ORCHIDS, Exotic Species, distinct kinds. (Nurserymen.)

1st, Messrs. Veitch & Son, Exeter and Chelsea, 10*l.*
2d, Mr. B. S. Williams, Holloway, 7*l.*
3d, Mr. S. Woolley, Cheshunt, Herts, 5*l.*

CLASS 8.—10 ORCHIDS, Exotic Species, distinct kinds. (Amateurs.)

1st, Mr. G. Baker, Gr. to A. Basset, Esq., Stamford Hill, 10*l.*
2d, Mr. W. Milford, Gr. to E. McMorland, Esq., 58, Adelaide Road, Haverstock Hill, 7*l.*
3d, Mr. C. Penny, Gr. to H. H. Gibbs, Esq., Regent's Park, 5*l.*
4th, Mr. B. Peed, Gr. to Mrs. Tredwell, Lower Norwood, 3*l.*

CLASS 9.—6 ORCHIDS, Exotic Species, distinct kinds. (Amateurs.)

1st, Mr. T. Page, Gr. to W. Leaf, Esq., Streatham, 5*l.*
2d, Mr. J. Smith, Gr. to the Duke of Northumberland, Syon House, Brentford, 4*l.*
3d, Mr. J. Green, Gr. to Sir E. Antrobus, Bart., Lower Cheam, 3*l.*
4th, Mr. J. Wheeler, Gr. to J. Phillpott, Esq., Stamford Hill, 2*l.*

CLASS 10.—9 GREENHOUSE AZALEAS, distinct kinds. (Open).
No Competition.

CLASS 11.—9 PELARGONIUMS, distinct kinds. (Amateurs).
No Competition.

CLASS 12.—12 PELARGONIUMS, distinct kinds. (Nurserymen).

1st, Mr. C. Turner, Slough, 7*l.*
2d, Messrs. Dobson & Sons, Isleworth, 5*l.*
3d, Messrs. J. & J. Fraser, Lea Bridge Road, 3*l.*

CLASS 13.—6 PELARGONIUMS, Fancies. (Open).

1st, Messrs. J. & J. Fraser, Nurserymen, Lea Bridge Road, 4*l.*
2d, Mr. C. Turner, Royal Nurseries, Slough, 3*l.*
Equal 2d, Mr. J. Shrimpton, Putney Heath, 3*l.*
3d, Messrs. Dobson & Sons, Nurserymen, Isleworth, 2*l.*

CLASS 14.—6 Spotted or French kinds of PELARGONIUMS. (Open).

1st, Messrs. Dobson & Sons, Nurserymen, Isleworth, 3*l.*
2d, Mr. C. Turner, Royal Nurseries, Slough, 2*l.*

CLASS 15.—6 FUCHSIAS, distinct kinds. (Open.)

1st, Mr. H. Cannell, Gr. to J. Jennings, Esq , Clapham, 5*l.*
2d, Mr. G. Webb, Gr. to H. Walmisley, Esq., Clapham Park, 4*l.*
3d, Mr. E. Gardiner, Gr. to J. Statter, Esq., Clapham New Park, 3*l.*
Equal 3d, Mr. E. Harper, Gr. to J. F. Bennett, Esq., Brixton, S., 3*l.*
Extra, Mr. W. Lovesay, Gr. to J. T. Fry, Esq., Hayes, 1*l.*
Extra, Mr. W. Higgs, Gr. to Mrs. Barchard, Putney Heath, 1*l.*

CLASS 16.—3 STANDARD FUCHSIAS, distinct kinds. (Open.)

1st, Mr. M. Higgs, Gr. to Mrs. Barchard, Putney Heath, 3*l.*
3d, Mr. E. Harper, Gr. to J. F. Bennett, Esq., Brixton, 1*l.*
Equal 3d, Messrs. J. & C. Lee, Vineyard Nursery, Hammersmith, 1*l.*

CLASS 17.—12 VARIEGATED BEGONIAS, distinct kinds. (Open.)

1st, Messrs. Veitch & Son, Exeter and Chelsea, 3*l.*

CLASS 18.—9 CALADIUMS, distinct kinds. (Open.)

1st, Messrs. Veitch & Son, Nurserymen, Exeter and Chelsea, 5*l.*
2d, Messrs. T. Jackson & Sons, Nurserymen, Kingston, 4*l.*
3d, Messrs. J. & C. Lee, Nurserymen, Hammersmith, 3*l.*
Extra, Mr. G. Nicholson, Gr. to S. Majoribanks, Esq., Watford, 2*l.*

CLASS 19.—6 TREE FERNS, duplicates admitted. (Open.)

1st, Messrs. Veitch & Son, Nurserymen, Exeter and Chelsea, 5*l.*

CLASS 20.—12 EXOTIC FERNS, distinct kinds. (Nurserymen.)

1st, Mr. B. S. Williams, Holloway, 4*l.*

CLASS 21.—10 EXOTIC FERNS, distinct kinds. (Amateurs.)

1st, Mr. H. Lavey, Gr. to Ed. De Grave, Esq., Fetcham, Leatherhead, 4*l.*

CLASS 22.—12 BRITISH or other HARDY FERNS, in Pots. (Open.)

1st, Mr. H. Lavey, Gr. to Ed. De Grave, Esq., Leatherhead, 3*l.*
2d, Messrs. Veitch & Son, Exeter and Chelsea, 2*l.*
3d, Messrs. Ivery & Son, Dorking and Reigate, 1*l.*
Extra, Miss Clarkson, 40, Avenue Road, Regent's Park, 10*s.*

CLASS 23.—NEW or RARE TENDER PLANTS in FLOWER. (Open.)

Messrs. Veitch & Son, for Lapageria alba, Silver Knightian Medal
Messrs. Veitch & Son, for Lilium sp., Japan, Silver Knightian Medal
Messrs. Low & Co., for Dendrobium sp., Silver Banksian Medal
Mr. Thompson, for Rhodanthe maculata, Silver Banksian Medal
Mr. Thompson, for Rhodanthe atrosanguineum, Silver Banksian Medal
Mr. R. Warner, for Epidendrum sp., Bronze Medal
Mr. Wendland, for Anthurium Scherzerianum, Bronze Medal
Messrs. Veitch & Son, for Calceolaria suavis, Bronze Medal

CLASS 24.—NEW or RARE TENDER PLANTS not in FLOWER. (Open.)

1st, Messrs. Veitch & Son, for Lomaria gibba, Silver Knightian Medal
2d, Messrs. Veitch & Son, for Dracæna sp., Silver Banksian Medal
3d, Messrs. Veitch & Son, for Adiantum sp., Bronze Medal
Equal 3d, Messrs. Veitch & Son, for Polybotrya apiifolia, Bronze Medal

CLASS 25.—NEW or RARE HARDY ORNAMENTAL PLANTS. (Open.)

Mr. Standish, for Lonicera sp., Silver Knightian Medal
Mr. Standish, for Acer sp., Silver Knightian Medal
Messrs. Veitch & Son, for Quercus sp. evergreen, Silver Banksian Medal
Mr. Standish, for Quercus sp. evergreen, Silver Banksian Medal
Mr. Standish, for Acer sp., Silver Banksian Medal
Mr. Standish, for Acer sp., Silver Banksian Medal
Mr. Standish, for Salisburia sp. Bronze Medal
Mr. Standish, for Acer sp., Bronze Medal
Mr. Standish, for Quercus sp., Bronze Medal

CLASS 26.—NEWLY-INTRODUCED PLANTS, 1859-61. (Open.)

FIRST CLASS CERTIFICATES.

Mr. Wm. Bull, Retinospora obtusa
Mr. Wm. Bull, Dracæna ferrea variegata

SECOND CLASS CERTIFICATES.

Messrs. Veitch & Son, Chamæbatia foliolosa
Messrs. Veitch & Son, Vaccinium rugosum

THIRD CLASS CERTIFICATES.

Mr. Wm. Bull, Chelsea, for Athyrium Filix-fœmina Frizelliæ
Mr. Wm. Bull, Chelsea, for Cupania pindaiba

CLASS 27.—FERN CASE, arranged for the Drawing Room. (Open.)

1st, Messrs. Veitch & Son, Exeter and Chelsea, 3*l.*
2d, Mr. W. Bull, King's Road, Chelsea, 2*l.*
3d, Mr. W. Bull, King's Road, Chelsea, 1*l.*
Extra, Messrs. Veitch & Son, Exeter and Chelsea, 10*s.*

CLASS 28.—FRESH-WATER AQUARIA, effectively arranged. (Open.)

1st, Messrs. Veitch & Son, Exeter and Chelsea, 2*l.*

CLASS 29.—WINDOW BOXES filled with Plants. (Open.)

1st, Messrs. Veitch & Son, Exeter and Chelsea, 2*l.*
2d, Mr. C. Ross, Gr. to C. Eyre, Esq., Welford Park, Newbury, 1*l.*

CLASS 30.—SEEDLING FLORISTS' FLOWERS and GARDEN HYBRIDS. (Open.)

FIRST CLASS CERTIFICATE.

Mr. Hooper, Vine Nursery, Bath, "Seedling Pink."

SECOND CLASS CERTIFICATE.

Mr. Hooper, Vine Nursery, Bath, "Petunia Guido."

CLASS 31.—PLANTS in POTS, in stands for Drawing Room. (Open).

1st, Messrs. Veitch & Son, Exeter and Chelsea, 3*l.*

Prizes offered by Mr. Wilson Saunders, Treasurer.

CLASS 32.—3 HANGING BASKETS of PENDENT PLANTS in FLOWER.
No Competition.

CLASS 33.—MISCELLANEOUS. (Open.)

1st, Mr. C. Leach, Clapham Park, Disa grandiflora, 2*l.*
Equal 1st, Messrs. Veitch & Son, Exeter and Chelsea, Nepenthes, 2*l.*
Equal 1st, Mr. W. Bull, Chelsea, Collection of Plants, 2*l.*
Equal 1st, Messrs. Veitch & Son, Exeter and Chelsea, Groups of Japanese Plants, 2*l.*
2d, Mr. B. S. Williams, Holloway, 6 Varied Orchids, 1*l.* 10*s.*
Equal 2d, Mr. C. Turner, Slough, Collection of Pinks, 1*l.* 10*s.*
Equal 2d, Mr. W. Bull, Chelsea, Specimen of Irish Fern, 1*l.* 10*s.*
Equal 2d, Messrs. Paul & Son, Cheshunt, Cut Roses, 1*l.* 10*s.*
3d, Mr. H. Hardy, Leatherhead, 9 Lycopodiums, 1*l.*
Equal 3d, Mr. H. Hooper, Bath, Collection of 24 Pinks, 1*l.*
Equal 3d, Messrs. Lane & Son, Great Berkhampstead, Wild Flowers, 1*l.*
4th, Mr. W. H. Queen, Rugby, Collection of 24 Cut Verbenas, 10*s.*
Equal 4th, Mr. E. Sikes, 40, Portman Mews, South, Collection of Dried Sea Weeds, 10*s.*
Equal 4th, Mr. H. Hooper, Bath, Collection of 36 Pansies, 10*s.*

FRUIT.

CLASS A.—COLLECTION of GRAPES.

1st, Mr. J. Standish, Nurseryman, Ascot, 7*l.*
2d, Mr. A. Henderson, Trentham Gardens, Staffordshire, 4*l.*

CLASS B.—COLLECTION of FRUIT.

1st, Mr. G. Tillyard, Gr. to J. Kelk, Esq , Stanmore Priory, 6*l.*
2d, Mr. A. Henderson, Trentham Gardens, Staffordshire, 5*l.*

CLASS C.—PINE APPLE, QUEEN'S.

1st, Mr. G. Tillyard, Gr. to J. Kelk, Esq., Stanmore, 2*l.*
2d, Mr. Bwye, Gr. to R. J. Crawshay, Esq., Cyfarthfa Castle, Myrthyr Tydvil, 1*l.*
3d, Mr. J. Young, Gr. to C. Bailey, Esq., Aberdare, 10*s.*

CLASS D.—PINE APPLE, any other kind.

1st, Mr. C. Allen, Gr. to J. B. Glegg, Esq., Congleton, Cheshire, 2*l.*
2d, Mr. R. Ruffett, Gr. to Lord Palmerston, Brockett Hall, Welwyn, 1*l.*

CLASS E.—GRAPES, 6 bunches.
No competition.

CLASS F.—GRAPES, BLACK HAMBURGH, 4 bunches.

1st, Mr. A. Henderson, Trentham Gardens, Staffordshire, 2*l.*
2d, Mr. J. R. Petch, Gr. to R. Barron, Esq., Chesterfield, 1*l.*
3d, Mr. G. Jackson, Gr. to Jas. Tyser, Esq., Gardens, Taxhal Hall, Staffordshire, 10*s.*

CLASS G.—GRAPES, any other Black kind, 8 bunches.

1st, Mr. W. Hill, Gr. to T. Sneyd, Esq., Keele Hall, Staffordshire, 2*l.*
2d, Mr. A. Henderson, Trentham Gardens, Staffordshire, 1*l.*
3d, Mr. G. Brooks, Gr. to J. Lee, Esq., Dillington, Somerset, 10*s.*

CLASS H.—GRAPES, WHITE MUSCAT, 3 bunches.

1st, Mr. J. Beck, Tedworth Gardens, Marlborough, 2*l.*
2d, Mr. J. Horwood, Gr. to G. H. Turnbull, Esq., Bromley, 1*l.*
3d, Mr. J. Standish, Ascot, 10*s.*

CLASS I.—GRAPES, CHASSELAS MUSQUE, 3 bunches.

1st, Mr. J. Standish, Ascot, 2*l.*
2d, Mr. C. Allen, Gr. to J. B. Glegg, Esq., Congleton, 1*l.*

CLASS J. GRAPES, WHITE except Muscat or Chasselas Musqué.

1st, Mr. J. Mould, Bushey Heath, Watford, 2*l.*
2d, Mr. J. Weddowson, Gr. to C. A. Barnes, Esq., Chorley Wood House, Herts. 1*l.*

CLASS K. PEACHES, 3 dishes of 6 fruit each.

1st, Mr. T. Rabone, Gr. to C. M. Campbell, Esq., Stoke-upon-Trent, 3*l.*
2d, Mr. W. Maclellan, Gr. to J. W. Cator, Esq., East Barnet, 2*l.*

CLASS L. PEACHES, 6 fruit.

1st, Mr. S. Snow, Gr. to Countess Cowper, Wrest Park, Silsoe. Bedfordshire, 2*l.*
2d, Mr. A. Sanders, Gr. to Sir H. Meux, Bt., Theobalds, Cheshunt, 1*l.*
3d, Mr. T. W. Durrent. Gr. to Hon. Col. Duncombe, Waresby Park, St. Neots, 10*s.*
Equal 3d, Mr. J. Collinson, Gr. to the Marquis of Westminster, Eaton Hall, Cheshire, 10*s.*

CLASS M. NECTARINES, 3 dishes of 6 fruit each.

2d, Mr. J. Tegg, Gr. to Baron Hambro, Roehampton, 2*l.*

CLASS N. NECTARINES, 6 fruit.

1st, Mr. F. Rutland, Gr. to Capt Peploe, Garnston Castle Hereford, 2*l.*
2d. Mr. J. Horwood, Gr. to G. H. Turnball, Esq., Bromley Kent, 1*l.*
3d, Mr. C. Allen, Gr. to J. B. Glegg, Esq. Congleton, Cheshire, 10*s.*

CLASS O.—STRAWBERRIES, 4 dishes, distinct kinds.

1st, Mr. C. Turner, Slough, 1*l.* 5*s.*
2d, Mr. P. Lydiard, Prospect Cottage, Batheaston, 1*l.*
3d, Mr. W. Kaile, Gr. to Earl Lovelace, Ripley, Surrey, 15*s.*

CLASS P.—Collection of STRAWBERRIES.

1st, Mr. J. Widdowson, Gr. to C. A. Barnes, Esq., Chorley Wood House, Herts, 4*l.*
Equal 1st, Mr. C. Turner, Royal Nurseries, Slough, 4*l.*
3d, Mr. P. Lydiard, Prospect Cottage, Batheaston, 2*l.*

CLASS Q.—MELONS, Green-fleshed.

1st, Mr. W. Kaile, Gr. to Earl of Lovelace, Ripley, 1*l.* 10*s.*
2d, Mr. W. Maclellan, Gr. to J. W. Cator, Esq., Barnet, 1*l.*
Equal 2d, Mr. J. Meredith, Vine Cottage, Garston, 1*l.*
Equal 2d, Mr. J. Tegg, Gr. to Baron Hambro, Roehampton, 1*l.*

CLASS R.—MELONS, Scarlet-fleshed.

1st, Mr. J. Weir, Gr. to Mrs. Hodgson, Hampstead, 1*l.* 10*s.*
2d, Mr. W. Kaile, Gr. to Earl of Lovelace, Ripley, Surrey, 1*l.*

CLASS S.—VINES in POTS, 4 plants.

1st, Mr. J. Smith, Gr. to Duke of Northumberland, Syon House, 5*l.*
2d, Mr. J. Standish, Nurseryman, Ascot, 4*l.*
3d, Mr. J. M'Pherson, Gr. to E. S. Pole, Esq., Radbourne, 3*l.*

CLASS T.—MISCELLANEOUS. For Fruits not specially mentioned.

1st, Mr. R. Ruffett, Gr, to Lord Palmerston, Welwyn, Herts, for 2 Dishes of Figs, 2*l.*
2d, Mr. J. Standish, Ascot, for 11 Cucumbers, 1*l.* 10*s.*
Equal 2d, Mr. G. Smith, Gr. to H. Littledale, Esq., Liscard Hall, Dish of Forced Tomatoes, 1*l.* 10*s.*
3d, Mr. A. Henderson, Trentham, Dish of Cherries, 1*l.*

CLASS U.—6 PEACH and NECTARINE ORCHARD-HOUSE TREES, in POTS.

1st, Messrs. Lane & Son, Nurserymen, Great Berkhampstead, 5*l.*

CLASS V.—6 PLUM ORCHARD-HOUSE TREES, in POTS.

1st, Messrs. Lane & Son, Great Berkhampstead, 4*l.*

CLASS W.—6 CHERRY ORCHARD-HOUSE TREES, in POTS
No Competition.

CLASS X.—4 APRICOT ORCHARD-HOUSE TREES, in POTS.
No Competition.

Very Choice Primula, Calceolaria, Cineraria, &c., 1s. per Packet, Post free.

SUTTON AND SONS can strongly recommend the following Choice SEEDS, at 1s. per packet each sort :—

PRIMULA SINENSIS FIMBRIATA	PANSY
CALCEOLARIA	PELARGONIUM
CINERARIA	CARNATION
POLYANTHUS	AURICULA

Royal Berkshire Seed Establishment, Reading.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe. Also to their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which for want of space there is erected at the Crystal Palace, Sydenham.

As an instance of success under unfavourable circumstances, Messrs SUTTON *would refer to St. Paul's Churchyard, London, which has recently been laid down to Grass with their Seeds.*

Royal Berkshire Seed Establishment, Reading.

Palms and other Stove Plants.

TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual size.

A CATALOGUE, giving the height of each plant, will be sent, post free, on application to Mrs. LE CREPS, Château du Mesnil de Mathieu, near Caen, Department of Calvados, France, where the plants may be viewed.

Osmunda regalis cristata.

OSBORN AND SONS have now the pleasure to offer plants of this unique and beautiful Crested Fern, exhibited by them at the Regent's Park and South Kensington shows, price 21*s.* each.

They have also a few plants of the PHYSURUS MACULATUS, exhibited by them and figured in the *Botanical Magazine* for May, price 1*l.* 11*s.* 6*d.* each. The usual discount to the Trade.—Fulham Nursery, London, S.W.

GERANIUMS — CLOTH of GOLD, GOLDEN FLEECE, and GOLD LEAF.—Strong well-rooted plants of the above at 4*s.* 6*d* per dozen, out of Pots, per post paid, package included. In Pots, delivered to any Station on the South Western Rail, at 5*s.* 6*d.* per dozen, package included.

All orders will receive prompt and careful attention. From unknown Correspondents Post Office orders or stamps must accompany the order.

S. SHILLING, North Warnboro' Nursery, near Odiham, Hants.

The Gardeners' Chronicle.

SATURDAY, JULY 5, 1862.

MEETING FOR THE ENSUING WEEK.

WEDNESDAY, July 9—Royal Botanic .. .. .. 2 P.M.

ON a recent summer's day, June 26 of the Kalendar, the QUEEN of FLOWERS again held court at Kensington. The *Gazette* issued last week will have shown that it was one of the most august and brilliant assemblages of the season—august in respect to the high personages (including Princes and Princesses, Dukes, Duchesses, Counts, Barons, and a host of other celebrities) directly engaged in the ceremonial; and brilliant in respect to the gay vivacious crowd which assembled to witness it, and to whom this pageant became a veritable Feast of Roses. The day, moreover, was one of the most enjoyable of those of the midsummertide—a QUEEN'S own day in fact, and on that account all the more fitting for such a fête.

Viewed as a Rose Show the scene we advert to was as successful as it was brilliant. The freshest and the finest flowers which the south of England could produce favoured by a few days of more genial weather than that which had of late prevailed, were there in profusion; and if we may judge from the multitude of note books brought into requisition, there were not wanting those who took a deep interest in the flowers, and we may thence infer there will be no lack of Rose growers another season.

Let us hope there may also spring up many new competitors for the honours of the Rose show of 1863. Especially we trust that some of the fair hands on this occasion so busy with their pencils, may occupy themselves another year in arranging a more tasteful series of bouquets of Roses than those which were produced last week, for this class of bouquets was decidedly the least creditable part of the display. The exhibitions under this head were moreover for the most part set up in a manner which offered a manifest indignity to the Royal flower. What an utterly incongruous association, for instance, would be a Rose and a blacking bottle; and if this was not actually perpetrated by some of the exhibitors, there was something very nearly approaching it.

A basket of Rose flowers sent by Lady HUME CAMPBELL deserved special notice for the ingenious plan by which they were kept fresh. The stalk of each flower truss was inserted in a little separate phial of water provided with a stopper of sponge, the phials themselves being hidden by the Moss in which the flowers were arranged. This plan affords a capital hint for setting up groups of cut flowers, not Roses only, for the decoration of drawing-rooms and boudoirs, as it has the advantage of not only keeping them fresh but firm.

Both among old or new varieties the exhibition of the 26th ult. offered unmistakeable evidence that the race of Hybrid Perpetuals is the dominant one, if it be not indeed destined to become almost the exclusive occupant of our Rosariums. The Teas, in fact, were the only race besides them which made any figure in the assemblage. Another observable and notable point, was that the varieties of cupped or globular form, which present the very *beau ideal* of a perfect Rose, are gradually but certainly expelling the flat hard-looking ungainly varieties which were once so numerous. In this respect there has been wrought a vast improvement, which is still going on; and we may look at no distant day to see such varieties as those we have alluded to numbered amongst the things that were, at least so far as regards their use for exhibition purposes. With abundant varieties of the most perfect model, the multitudes of flat hard-eyed, as well as loose flabby varieties, which have hitherto kept a place in collections—for the reason, we suppose, that no Rose however inferior can be otherwise than lovely—may well be dispensed with to the advantage of every one. This view of the matter seems, indeed, to have presented itself to the growers who were exhibitors on this occasion, for the leading sorts of the type we have been referring to somehow or other found their way into almost every collection. Senateur Vaisse, Comtesse de Chabrillant, General Jacqueminot, Gloire de Santenay, and a few other such, were everywhere recurring.

There was not much absolute novelty, and not a very strong display of the new or last year's sorts imported from the Continent. There was, however, one first-class English seedling, raised by Mr. Ward, of Ipswich, and bearing the remarkably unpoetical name of "John Hopper"! This, as being evidently suited to our climate, which its bold vigorous habit well attested, deserves to be extensively known; it was, moreover, an attractive Rose, one of the full close-cupped class, brilliant rose crimson in the centre, and more rosy towards the margin, while the backs of the petals were of a lighter or somewhat lilacy tint; the contrast of colour in the perfect flowers was very pleasing, the brilliant centre being well thrown up by the surrounding tint. The new French sorts which were present did not generally make much figure, though this may have arisen, in part, from their not being yet sufficiently established. Two of them, Maurice Bernardin, a rich purple-shaded crimson, and Duc de Rohan, also a shaded crimson of a rather brighter cast, were, however, shown in a very pretty state, and they are, no doubt, acquisitions, the colours being good and the form quite satisfactory. Many of the new sorts were excessively dull looking, with too much of the dingy, slaty hue of Reine des Violettes; this was particularly apparent in such as Etienne Lecrosnier, Eugène Bourcier, Gloire de Chatillon, &c., which we should fear would never be very telling in our climate.

Probably the most beautiful Rose in the whole exhibition, and certainly one of the most interesting, was a flower of Comtesse de Chabrillant in Mr. CANT'S collection. This flower was thickly and regularly flaked with crimson on the pale rose which is the usual colour of this variety. Something of the same sort was observed in one or two other cases, especially in a pot plant shown by Mr. TURNER, so that this variety seems to have a tendency to become striped. The marking was similar to that which occurs in Triomphe d'Amiens, only there the ground colour is crimson; and this, coupled with the fact of the production of these sportive flowers by the Comtesse, is suggestive that the Triomphe may have originated in a sporting branch. We know that many varieties of Indian Azalea, and of other domesticated flowers, have been obtained in this way, and it is quite possible that this prettily marked form of the Comtesse de Chabrillant might be perpetuated. It is at least worth the trial.

We have already mentioned that the Hybrid Perpetuals, and of these the varieties with cupped and globular flowers, were decidedly predominant. And well they might be, for nothing could be more lovely than the blossoms of such as these wherever they appeared in the form of well-bloomed specimens. The most lovely of all to our eyes were Madame Furtado and Comtesse de Chabrillant, the former of a softly brilliant, the latter of a more delicate but exquisite shade of rose colour, and both of them inexpressively graceful in form. Scarcely inferior to these in point of form, perhap not inferior, were Senateur Vaisse and Gloire de Santenay, which were even more showy from their brilliant crimson hue. Beauty of Waltham was another of the same stamp, with the colour a rosy crimson; and still in the same category come two very delicate beauties, Madame Vidot and Madame Rivers, both perfect in form and of similar yet different tints of blush or flesh colour, the latter being rather the lighter-tinted of the two. These are mentioned as illustrative examples. For such Roses as these we might well dispense with nine-tenths of the varieties in cultivation; and to aid in effecting this object by calling especial attention to them, we should like to see prizes given another season for single blooms of this class, put up in half-dozens and dozens, on neat green stands, in the way Carnation and Picotee blooms are set up—set up in fact so as to bring the individual beauty of form in the flower prominently out.

Among other telling varieties we must still give a high place to General Jacqueminot, the broad smooth petals and high colour of which made it everywhere most attractive and effective. Somewhat in the same style, and also remarkable for its breadth of petal, was Oriflamme de St. Louis. Prince Leon, too, was, as always, good; and here and there a bloom of Louis XIV. was very rich, but the season does not appear to have generally suited it, for many of the blooms were inferior both in development and colour. Madame Pierson, a globular flower of a shaded rose-colour, was attractive, and Reynolds Hole, which is of a pinkish-rose, and of which Mr. STANDISH showed a whole boxful, were as bright and happy-looking as ever.

Tea Roses were not very prominent, but among them were some splendid blooms of the pale yellow Devoniensis, of the creamy white Madame Villermoz, of the pale nankin yellow Gloire de Dijon, the hardiest and most useful of the race, of the salmony blush President, and of Souvenir d'un Ami, whose flowers were of a more rosy blush. These may be said to have formed the cream of the Tea party, as represented on this occasion. Among Bourbons, one could not pass by Catherine Guillot without doing homage to her beauty, which is of the Furtado stamp.

There is one point as respects the arrangements of the show to which we venture to direct the attention of the managers. Roses are very beautiful and lovely, and, display them how you will, they must be attractive; but where box after box follows on yard after yard of flat tabling, the *coup d'œil* very naturally also becomes marked by something of flatness too. At the season of these Rose shows there is not much to be done by introducing pot Roses; and indeed if they could be invited to compete, they would not be very well adapted to remedy this defect. So neither could any competition in the form of bouquets, or baskets, or vases of Roses be depended upon to relieve the flat monotony of the present mode of arrangement. But there surely could be no difficulty in obtaining a few handsome urns or tall elegant vessels of some kind or other, and filling them tastefully with Roses, and then placing these at appropriate points as part of the fitting up of the show. For this purpose the wreath-like branches of some of the common climbing sorts will be strictly appropriate. Suppose the Rose tents at Kensington the other day to have had one such vase, a massive one, placed at each end, and two or three of different forms put down here and there on each of the side tables, what a much finer effect would have been produced looking at it as a whole. But then they must be handsome, not vulgar-looking objects, to bear being placed in such prominent positions. It is a matter to which, with all the other details of the arrangements on his hands, Mr. EYLES could not probably give any attention; but surely some one could be found to whom it might be deputed to carry out such a feature. The suggestion concerns as much the show of autumn flowers as that of Roses, and the little Pompone Dahlias would furnish admirable materials with which to work it out at that season of the year.

WE find that Capt. FOWKE is about to resume that valuable set of experiments on the STRENGTH OF TIMBER, the beginning of which dates from the International Exhibition at Paris in 1855. He proposes to test in the usual scientific manner its elasticity, density, power to bear crushing, and as many more of those other qualities which render timber the most valuable, after food, of all the products of mother earth.

Never before was there such an assemblage of

authenticated timber from all countries as may now be found in the International Exhibition, and we are sure that the countries whence it comes will gladly contribute whatever materials may be required for experiment.

—— Do FERNS HYBRIDISE, or merely sport? The question has never been satisfactorily answered, nor are we in a position to furnish an exact reply, but we may record a fact which has some bearing thereupon. At the grand show which took place in May at South Kensington beneath that unfortunate canvas which has given rise to so many epicurean lamentations, but which Boreas has at last laid low, Mr. COLE of Manchester exhibited a curious and novel form of VARIEGATED PTERIS. Those who are at all familiar with Ferns will not need to be told that besides the ribbon-like *Pteris cretica albo-lineata* (which by the bye is one of the most useful of its race, thriving either in a hot or a cold house), we have two variegated forms of the same genus with compound fronds, the one *P. argyræa*, a green-stalked plant of robust habit and ample size, with the fronds green marked with white; the other *P. tricolor*, red-stalked, dwarfer, and altogether smaller, and variegated with red as well as with white. Mr. COLE's plant is intermediate in size and in colour between these two, and it originated thus:—A quantity of young plants of *P. tricolor* had been raised from spores, and amongst them appeared the plant in question, which as to size and form, and general structure, is so nearly the counterpart of *P. nemoralis*, that for garden purposes it may be conveniently designated *P. nemoralis variegata*. The plant has red stalks like *P. tricolor*, but is too large for it; whilst it is too small for *P. argyræa* and not green stalked. It seems indeed to come nearest of all to an Indian red-stemmed Fern which has been called *P. rubricaulis*, and belongs to that set of which *P. quadriaurita* is the type. Whatever it is, there is no doubt it originated in one of Mr. COLE's seed-pots. Is it a hybrid between *P. argyræa* and *P. tricolor?* Both these sorts are so commonly grown that if such a thing as a hybrid Fern be possible that would seem the most likely explanation, were it not that having regard to the abundance of both kinds which have been raised from spores, we ought by this time instead of one to have had lots of hybrids. This consideration would lead us the rather to regard the new form as a sport similar in character to those endless sports of our British species, which we know can be nothing else but sports from the circumstances under which they occur. Though for all cultural purposes the five forms to which allusion has herein been made are distinct enough, there is no doubt they have a very close affinity, whether they are to be regarded as species or mere varieties of one variable species—a question upon which opinions are not likely to be always in unison.

The fact however that such a plant has been produced, under our own eyes as it were, naturally leads to the inference that many plants we are in the habit of regarding as species, because they come to us from some wild locality, are mere natural sports. In the case of Ferns indeed, such sports, once existent, have generally the property of perpetuating themselves from their spores.

HARDY FRUITS IN THE INTERNATIONAL EXHIBITION.

Canada.—Of the fruits that can be very successfully cultivated in this great country, 114 varieties are well represented by coloured drawings prepared by the "Fruit Growers' Association of Upper Canada." They consist of 35 plates of different sorts of Apples, 32 of Pears, 10 of Plums, 7 of Cherries, 6 of Peaches, 8 of Strawberries, and 16 of Grapes, Currants, Gooseberries, Raspberries, and Quinces. The climate of a country may be known by its fruits. Here they are represented of the natural size and appearance, and judging from such evidence we conclude that the specimens have been grown in an Italian summer; but, on the other hand, the winters are very severe, and such horticultural productions as depend on a mild winter, are out of the question.

Upper Canada is a vast region, extending from near Montreal to at least the western boundary of Lake Superior. It is estimated to contain upwards of 16 millions of acres. The soil is exceedingly fertile. It is so rich that it cannot it is said be exhausted by cropping; yet 30 years ago cultivation was little practised, and Ottawa, destined to be the future capital of Canada, was scarcely known, indeed in 1828 the district of the province in which it is situated contained only 3732 inhabitants.

With regard to climate, we may observe that Upper Canada is about as far south as the middle and north of Italy. Parts of it correspond with the latitudes of Milan, Venice, Genoa, and Nice, so noted for its almost winterless climate. Montreal is not in Upper Canada, but nearly so, and as temperature observations have been kept at it, we may here refer to its climate. It is in lat. 45° 31′, and Venice in lat. 45° 26′, the difference being only between 5 and 6 miles, so that if one were to leave Venice and proceed by a line running due west he would pass close to Montreal. Proceeding still westward he would soon enter Upper Canada, and in his progress would leave Toronto 120 miles to the south of his line, Toronto being nearly as far south as Leghorn, and within a mile of being exactly on the same parallel of latitude as Nice. The mean temperature of the coldest month, January, at Venice, is 35½° Fah.; that of the same month at Montreal is 13°, or as much as 19° below the freezing point. The following shows the mean temperatures of the respective months at these places throughout the year, omitting fractions:—

	Jan.	Feb.	March.	April.	May.	June.	July.	August.	Sept.	October.	Nov.	Dec.
	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
Venice	35	38	46	54	63	70	75	73	66	56	44	[illegible]
Montreal	13	16	27	40	53	65	69	66	58	45	32	18
Difference	22	22	19	14	10	5	6	6	9	11	12	21

From the above will be seen the great difference between the climates of two places equally situated as regards latitude, but on different continents. In western Europe the winters are comparatively mild; on the eastern side of North America they are exceedingly severe; but on the Pacific or western side, as will be understood from the account we gave of the climate of British Columbia, they are moderate, even although situated like that country much farther north than Upper Canada, or at least that very large portion of it to which emigration is directed, and in which such fruits as we see represented in the Canadian Exhibition may be grown. It is doubtless of great importance that emigrants should acquire a good knowledge of the climate of the country to which they intend to proceed, and this is most easily acquired by comparison with that in which they have previously lived, and with which they consequently are the most familiar. We shall, therefore, compare that of Montreal with Chiswick:—

	Jan.	Feb.	March.	April.	May.	June.	July.	August	Sept.	October.	Nov.	Dec.
	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.	Deg.
Mean temperature, Chiswick	36	39	42	47	54	60	63	62	57	50	43	39
Montreal	13	16	27	40	53	65	69	66	58	45	32	18
Difference	23 +	23 +	15 +	7 +	1 +	5 —	6 —	4 —	1 —	5 +	11 +	21 +

Chiswick, higher than Montreal, is marked (+); lower (—).

From the above it appears that at Montreal the most severe month is January; that February is nearly as cold; in March the mean is below the freezing point; April is still cold; May is nearly the same as in England; whilst June, July, and August are considerably warmer; September is nearly the average it maintains in this country; October is cold; and in November severe winter again sets in. As April is colder than our March the season for active growth can only commence in May, and it must end in October; but three months in this interval, namely June, July, and August, are so hot that even the tall kinds of Indian Corn attain perfection, and fruits acquire large size and high colour.

Among the drawings of *Apples* we observed that the Gravenstein is larger than it usually grows in this country. The Northern Spy has as fine an appearance as the specimens we have seen imported from the States. The Golden Reinette is rather smaller than in this country. Duchess of Oldenburg, of Russian origin, is about the size of a Nonsuch. The Alexander is large and darker red than it becomes in England. The Keswick Codlin is a good size and correctly figured, the longitudinal sharp lines which characterize this variety being well represented. The Baldwin attains greater perfection than in our climate. The 20-ounce Apple is very large. It short it is evident that Apples can be very successfully grown in Upper Canada. We did not observe the Reinette du Canada, which, however, most probably did not belong originally to that country, although it now generally bears its name. It is the Bemposta Apple of the Portuguese, and the Mela Janurea of the Ionian Isles.

Of *Pears* there are some well-known sorts; others of the newer Belgian varieties, and several less known with American names; but on the whole all are good specimens. The Williams's Bon Chrétien is figured under the American name of Betlett, and the drawing represents a well-grown fruit of that useful early sort. The Belle Lucrative should be the same as the Fondante d'Automne, but from the drawing it is doubtful. The Doyenné d'Hiver should be the same as the Easter Beurré, but the figure is that of something quite different, although of the Doyenné breed.

Plums.—The Jefferson and Dennison's Superb are known to be good sorts, and they are correctly drawn. The Jefferson is a good average size from a standard.

Cherries.—Specimens of really good sorts are well represented; for example, the Black Tartarian; but, on the other hand, some American kinds of high repute, such as Sparhawk's Honey, a small red sort of Gean, are certainly not worth growing.

Peaches.—That figured under the name of Alberge Yellow, is different from our Yellow Alberge, being larger and more pointed. Late sorts, such as Crawford's Late, appear to attain a larger size and greater perfection than in this country.

Grapes, grown, we presume, in the open air, are well coloured. A variety called Concord is like a well coloured medium-sized bunch of Black Hamburgh. Strawberries, Currants, Gooseberries, and Raspberries, are also well represented; and this part of the Exhibition shows that abundance of fruits can be successfully grown in Upper Canada.

Indoor Gardening.

EVERY one is complaining this year of the quantities of caterpillars which overrun the gardens, and even ascend the balconies and creep into the plant stands. For my own part, I am not sorry for it; for if the plague of caterpillars causes the diminution of the still worse plague of arsenical Wheat and battues of small birds, I think that one year's flowers will be well bestowed. I have been used to places where birds were protected as if they had been game; and for absence of insects and abundant fruit I have known few places luckier. Of course I am not very learned in the matter; but I did imagine that while birds increased by some three or four at a time, the insects arrived by thousands, and it would not be pleasant, as we begin to find, if they got the upper hand. Unless people take the trouble sometimes to inquire, they do not know particularly how the birds round their homes get on, and I think that generally persons who care for such things would do very well to ascertain their gardeners' views about them.

I can positively affirm for most birds that they will not steal seeds as long as they can get insects, and when they really have cleared away all the insects, I think the little workmen deserve to have their pay.

For the caterpillars when they come it is hard to suggest a cure. These things generally have an excessive dislike to oil, and will never creep up a tree which has an oiled band round it, but then unluckily many appear first upon the branches.

A bird that kills a butterfly destroys, I suppose, the prospect of a few thousand. One of the things that seems this year infested is the Canariensis; in some cases I know it has almost spoilt all the pleasure that people have been having in their London balconies; large green caterpillars destroying half the leaves, making the rest unsightly, and threatening to creep on one if one goes too near. The creatures are generally so exactly the same colour as the stalk they hang on, that except by watching closely it is difficult to detect them. I have been told that Walnut leaves and husks boiled in water, and poured upon the plants will disperse them or prevent them, and as Walnut trees always seem very free from insects, this may perhaps answer sometimes. Lime is not for ladies a very easy remedy, as of course it does not look well, whitening the ground as it does; however, in those cases where one tree being affected we fear a migration onwards, I really believe a belt of oiled wool or flannel will prove generally entirely efficacious. I have known this used out-of-doors with good success, as far as the passing from tree to tree is concerned, and some time ago I remember reading of touches of sweet-oil here and there, keeping away insects from Orchids as I found it do from other plants.

To cultivate robin's friendship, and to be civil to blackbirds, and very much so to thrushes, is the best prevention, and I never knew a robin do damage in a greenhouse, unless, indeed, the blossoms might sometimes be torn by wings. Some care, however, must be taken in adding plants to our stands, not to introduce insects to those we have there already. The creatures hang in general underneath the leaves, Canariensis caterpillars especially haunting the stalks and tendrils, and in the early morning they are most active generally.

The hanging baskets ought now to be very pretty. I am very fond of planting Adiantums in them, because the Ferns are so charming seen against the light. Ferns and Achimenes make a most charming mixture; both grow, too, most beautifully in the Cocoa-nut fibre refuse, and as they do not take a great deal of room for roots, they answer admirably for using in this way. I find it is always safest to soak the basket entirely, unless the fronds or stems are growing out below; if it is not possible, the basket can be held

down while it is syringed thoroughly through and through again. The grand danger in managing these wire or wicker baskets is, if they have not a pan to receive the soil, that the inner mass never gets moist. When, however, the basket is made of an enclosed shape, to water it overhead may be quite sufficient. But baskets hung in windows want a good deal of watching.

In plant cases I find that very shallow sieves of even open work, with Moss and Cocoa fibre, and containing Ferns, do not soon get dry. The plants live a good deal on the steamy vapour, and thrive very well.

Some one told me lately of some gutta-percha baskets: if these are made in good shapes I think they will prove most useful, and their dark brown colour would look very well. One of the best materials is also the dark brown lava, which, being so very light, can be hung up so easily. *E. A. M.*

GARDENERS' ROYAL BENEVOLENT INSTITUTION.

THE ANNUAL DINNER in connection with this Institution was celebrated on Thursday the 26th ult. at the London Tavern, under the able Presidency of Sir Arthur Buller, M.P. who was supported by a considerable number of gentlemen, amongst whom were the Rev. J. M. Bellew, R. Wrench, Esq., (Treasurer); — Wodehouse, Esq.; Morgan O'Connell, Esq.; Messrs. Oram, W. S. Barton, C. A. North, W. N. de Matton, R. Marnoch, G. Childs, F. Ledger. Several ladies were in the gallery, adding their usual grace to the festival. The room was superbly decorated with abundance of flowers, and the tables after dinner were laden with fruit, fit honours to the occasion.

The Rev. J. M. Bellew said grace before dinner, and after the cloth had been drawn and grace sung,

The CHAIRMAN gave "The Queen," in most touching terms. He said if it were possible to feel more strongly at one time than another the toast he had mentioned, it would surely be now, when their Sovereign was living, it might be sadly said, in the dark day of sorrow and mental distress. He was quite sure that a mind so well regulated as Her Majesty's would fully appreciate the affection and loyalty which had been so universally tendered to her in her affliction; and he was sure she would derive some consolation in the assurance that there was not one true Englishman's heart in all her wide dominions that did not bleed for her in her suffering, and earnestly invoke blessings on her head, and utter the warmest wishes for a long, glorious, and happy reign.

After the "National Anthem," the CHAIRMAN gave "H.R.H. the Prince of Wales and the rest of the Royal Family," making graceful and delicate allusion to the death of the Prince's lamented father, and to the loss the country had sustained through that calamity. The Queen had lost a most trusted and trustworthy adviser, and the nation one who had done much indeed to forward and encourage every elegant pursuit and every innocent enjoyment. Irreparable would be the loss to which he had referred, were it not that they had the fullest assurance that the son would so far partake of the goodness and virtues of his illustrious father, as to lead them to believe that when his time came to occupy the throne—as, humanly speaking, it must do, they should indeed be fully justified in wishing for him a lengthened and prosperous reign as their future king.

The CHAIRMAN next said that circumstances connected with the previous toasts properly demanded that he should treat them with solemnity; but henceforward, so far as the business of this festival was concerned, he hoped he might say that the business in his hands would be truly *couleur de rose.* In proposing the toast he was about to name, he might say, by way of prefaee, that it would be of no use cultivating flowers unless they had some power to keep them in quiet possession of them; and therefore it was that he thought it right on the present occasion to do due honour to the forces comprehended in that toast—namely, "The Army, Navy, and the Volunteers." The Chairman concluded by adverting to the pleasing circumstance which had been alluded to last year—that of the soldiers cultivating flowers in their spare hours; by terming the Navy the Victoria Regia of the waters of the earth; and by comparing the Volunteers to those wonderful plants which rose in times of dearth and need in certain regions of the world for the relief, the sustenance, and the preservation of man.

Mr. ROBINSON (Hon. Artillery) returned thanks.

The CHAIRMAN next gave "The Bar," some of the members of which profession were present; which was responded to by

Mr. MORGAN O'CONNELL, who gave in most complimentary terms the health of "The Earl of Carlisle, President of the Gardeners' Royal Benevolent Institution;" adding his belief that his Lordship had so conducted the business of his high office as Lord Lieutenant of Ireland, as to be satisfactory to men of even every party.

The CHAIRMAN next rose to propose the toast of the evening,—"Success and prosperity to the Gardeners' Royal Benevolent Institution." To appreciate, he said, thoroughly the progress that had been made within the lastfew years even in the science and practice of gardening in this country, were indeed a task of difficulty. For himself, he must say that, in endeavouring to do so, he could not but feel that it was a great advantage to him, having been abroad for many years; because on his return he remembered well the astonishment he felt at the advancement he found in the practice of which he spoke. Wherever he went, whether to a county, a house, or to a cottage in some country village, there were palpable evidences of progress in the business of gardening. Gardens had sprung up, too, in busy cities, and even many lodging-house windows in dark, dismal, dingy streets, possessed floral decorations which were in other times considered but the fair products of the greenhouse. Fruits, too, which in his time had been deemed but small and insipid, had now become of enormous size and of the most delicious flavour. Indeed, it almost seemed as though Flora and Pomona had again come amongst them, and had again taken into their own hands the culture of the earth. These vast results, as they could bear witness, were the results of the untiring energy, industry, and ingenuity of those hard working classes, the poorer and worn-out members of which it was the object of this very Institution to assist. Whilst those who sought to carry on this excellent work recognised and enjoyed the fruits of their success, they should ever bear in mind, and endeavour to alleviate, illness which might often be the result of the means exercised towards the achievement of that success. In many cases the poor gardener had but little indeed to set aside out of his scant resources towards provision for the infirmities of age. And, in addition to this, they must not forget to what risks he was subject in going from heated atmospheres into cold—say, for instance, from the Pinery or the greenhouse, into, it might be, frost and snow, or rain. He (the Chairman) believed that King Rheumatism had more subjects amongst gardeners than amongst almost any other class of the community. In aid of such sufferers, then, he had on the present occasion to appeal. It was for such that this Institution was founded; and he was proud to add, and rejoiced indeed to say, that in cases where sympathy and help was needed it was administered both with integrity and discretion. Referring to the report which had been placed in his hands, and to which he would beg to call their attention as a very gratifying document, of which even Parliament might be proud, on account of the clear and intelligent figures in its balance-sheet and of its unmistakeable surplus, he would add that, however agreeable it was, more money was yet wanted. It still appealed to the benevolence of the public for support. As it was customary, therefore, on such occasions as this, to embrace any opportunity of indulging in any exuberance of generosity which the circumstances which accompanied the occasion might inspire, lists had been provided, and which would be handed round, in which the names of any gentlemen who so wished it might be recorded. The process of subscribing they would find extremely simple. There was a column on the left for the name of the subscriber; columns next to that on the right for his address, &c.; and further still to the right, columns in which persons so disposed might put down certain figures representing money, for which the officer duly appointed to that business would call in due course. If any gentleman present felt so nervous that he had not the courage to do so at the present moment, he (the Chairman) might reasonably suggest, that a glass or two more of wine, which was said to have an effect on the human eye, might perhaps render his the brighter, and he might thus see more clearly his way to do that which he had the pleasure to suggest. Seriously, however, he could not sit down without adverting to a paragraph in the Report to which he had referred, and which ran as follows:—

"Your Committee notice with pleasure that year by year they continue to receive the patronage of gentlemen interested in horticulture; but at the same time they regret that the class of persons for whose benefit the Society has been specially formed, should respond in such a lukewarm manner. Your Committee find that among the gardening world there are a great many whose names ought to be in the list, and to whom the amount of an annual Subscription would scarcely be felt, and they are sure that many more gentlemen would become donors to the Society were they to see the names of their gardeners on the list of subscribers. The committee earnestly appeal to gardeners holding good situations to support this society; they would then be assisting their poorer brethren, and at the same time laying by for themselves a small provision in the hour of distress and need, if overtaken by misfortunes, to which all are alike exposed." With these remarks he would leave the toast he had already named in their hands. The Chairman sat down amidst loud cheering, and the toast was duly honoured with "three times three."

The Rev. J. M. BELLEW, in humorous and very complimentary terms, then gave the health of their Chairman. Really, in so doing, the speaker said, he was reminded, after the able harangue of his friend Sir Arthur Buller, of the Shakspearian remark that when the well-dressed actor left the stage, one of the "stock company" came on. Gentlemen who were connected with horticultural matters were acquainted with the culture of "stocks;" and as they could not be supported very well without "sticks," he supposed they would receive him as one of those "sticks." After more humorous remarks, coupled with warm eulogiums on the character of the Chairman, whom he said he had the pleasure of knowing as a personal friend for many years, the speaker concluded by proposing the health of the Chairman as a warm supporter of this Institution.

Sir ARTHUR BULLER having briefly returned thanks, proposed the health of their excellent Treasurer, Mr. Wrench, to whom the society was much indebted for having taken the office, and for so well exercising his duties.

Mr. WRENCH having responded in a few words, in which he appealed for further help—especially to the ladies, requesting their influence (as they were so devotedly attached to gardening) at home, amongst those by whom they were surrounded—proposed the health of the Secretary.

The SECRETARY replied, stating that there were 57 pensioners now on the list, on whom they were expending some 800*l.* a-year, and that there were 44 applicants, but the Institution had no more vacancies.

The Rev. J. M. BELLEW having given the toast "Literature and Art," to which Mr. B. WEBSTER and Mr. ALFRED MELLON responded,

The CHAIRMAN announced the subscriptions as 200 guineas, with more money to follow.

Mr. WRENCH then gave "The Seed and Nursery Trades—Parents of the Institution,"—coupling with it the name of

Mr. CHILDS, who returned thanks in brief but expressive terms, and

The toasts of "The Stewards" and "The Ladies" closed the business of the Festival of 1862.

Home Correspondence.

Diseased Pine Apple Plants.—Could any of your correspondents enlighten me under the following circumstances? Two years ago a house of succession Pine plants in all respects healthy and vigorous, received their final shift at the usual time, after which they continued growing, and promised up to the time of starting an unusually fine crop of fruit. The health and size of the plants raised my hopes very high in regard to their produce, but to my chagrin and disappointment I had nothing to repay me for my trouble, or to meet my expectations, but distorted heads which could hardly be termed fruit—mere abortions in fact. These plants had all received precisely the same treatment as others in former years which have produced fine fruit. This the more perplexes me. On turning the plants out of their pots I found the soil (a turfy loam from a sheep pasture) rather too close and retentive, having lain too long in heap before being used, and to this cause I at first attributed the mischief. At the next season's final shift of succession plants the same kind of loam was used, mixed with an equal quantity of fibrous peat, and this time I felt sure of my usual success, but only, when fruiting time came, to meet with the same disappointment. I may remark again that the same care, and indeed rather more than the usual care and attention, have been bestowed on the plants in the case as to watering, atmospheric temperature, bottom-heat, and all other points. The plants are plunged in leaves. Rain water is in all cases used for watering, being pumped from a tank beneath the house. This is always warmed by adding perhaps a third or fourth part from the boiler which heats the house. Would the oxide of iron which is sometimes present in the water from the boiler be likely to cause the mischief? Weak manure had occasionally been used, but its discontinuance had not altered the result. No injury, therefore, could have been received through that. The plants, although vigorous, were not of gross habit, but sturdy and robust. *Dilemma.*

New Eatable Fungus.—Neither in Dr. Badham's interesting work on the "Esculent Fungi of England," nor in the Rev. Mr. Berkeley's papers on the same subject in the *Gardeners' Chronicle*, can I find any mention of a species which is well known and appreciated in many parts of Yorkshire, and which, when a boy, I have frequently gathered and seen used at my home in one of the dales of the county. I allude to what we used to call Flaps, Flats, or Jew's Ears. The dale I refer to is a narrow valley, through which a clear trout stream flows over a bed of mountain limestone. The sides of the valley are intersected at frequent intervals by rivulets or becks as they are called. River and rivulets frequently become torrents after heavy rains, bringing much alluvium and wreck, which are deposited on the banks when the streams resume their former beds. On these spots and on the adjacent woods we used to find the Jew's Ear, and not unfrequently the still more valued Morel. After an unsuccessful day's fishing, when the clear water required a longer line and more skilful throw than I could attain to, I have often filled my basket with Jew's Ears and Morels, and received from the "house mother" on my return to the homestead a gratuity to stimulate further research for the highly prized esculent. The Morels were threaded on strings and hung from the rafters of the kitchen for future use. The Jew's Ears were treated like Mushrooms for ketchup; the product of the former being considered superior to that of the latter in strength and flavour, but inferior to that from the Morel, similarly treated. Occasionally, when a beef steak was being cooked in the frying pan, or sauté as the French cooks call it, the Jew's Ears would be added, yielding a dish fit for a prince, however fastidious his palate. Some years ago, on visiting a tank on the roof of a manufactory in Southwark, used for supplying a steam engine, I found one of the finest specimens of Jew's Ears I had ever seen. It was growing in the trough used for conveying water pumped from the Thames into the reservoir. The end of the trough had become leaky, and a "gunny bag" had been thrust into the end to stop the leaks. The bag had become rotten, and its interstices filled with silt from the muddy water daily pumped in on the rise of the tide. Here was a proper nidus for the Fungus, and the due supply of moisture daily renewed for its growth; the air or water had furnished a sporule, and hence the result. In a small suburban garden in which I amuse myself I have frequently observed after rainy weather on open dung beds used for Ridge Cucumbers and other Cucurbits, and in places where the remains of old hot beds have been thrown, small Jew's Ears or other similar Fungi. I have often attempted to bring these forward by watering them, but without success. This year, having placed some short stable dung mixed with muck droppings in an old packing case, I observed about 10 days ago many young Fungi of the kind I have mentioned. I immediately watered them freely, and the box being nearly tight I have been able to keep the surface constantly moist. I have been rewarded by a considerable crop of Jews' Ears nearly fully developed. I send several specimens. On its first appearance the Fungus is like a small bladder, about the size of a Hazel Nut, of a deep brown colour, and having a minute opening on the surface. This gradually expands, and the lower part of the Fungus unfolds itself, and becomes flattened, with many corrugations of its substance, until at last it assumes the appearance of the human ear, to which it owes its name. The specimens sent have scarcely reached this stage. They are not so flat as they would have been if grown in a more favourable site; the sides are higher and more incurved. It will be seen that it has many qualities in common with the Morel. Its colour and substance are the same (when the Morel is grown in a damp situation), and the odour is not unlike, although not so strong. I have verified my boyish recollections by having part of my crop cooked. One portion was sauté, or tossed with a little butter, pepper, and salt in a pan until the gravy flowed freely, and the substance of the Fungus softened. Thus treated the Jew's Ears were found quite equal to ordinary Mushrooms, but much more tender. A second portion was added to a beef steak with decided success. I think that we may venture to state from these observations that, although ignored by eminent authorities, the Jew's Ear ought to be placed in a prominent place among the esculent Fungi; that it is sufficiently abundant in certain localities to render it worthy of attention as an article of food, and that we may reasonably hope to cultivate it like the common Mushroom. We have ascertained the conditions of its growth. We have found that its sporules are so diffused that the Fungus frequently appears spontaneously when we have prepared a proper nidus. The only link wanting is how to collect these sporules or the mycelium resulting from their vegetation, so that we may render the production of the Fungus certain. Our attempts in this direction would be materially aided if some of our learned mycologists would furnish us with a minute description of this Fungus or its congeners, and of their very obscure mode of reproduction. The subject of the artificial production of eatable Fungi appears to me one worthy of serious attention. Agriculture, and useful as distinguished from orna-

mental horticulture, reduced to their ultimate expression, may be said to be the art of converting muck (animal and vegetable refuse) into food, the ground being merely the medium or vehicle by which the conversion is effected. The value of food to man may be measured by the amount of the flesh-forming constituents (nitrogen and phosphorus) which it contains. If these dicta be well founded, then the Fungi should occupy a high place in horticulture. 1. Because of all vegetables the Fungi are most directly and rapidly obtained from their source. 2. Because of all vegetable products the Fungi are most highly azotised, or in other words most closely resemble flesh in their chemical nature. *I. R. I.* [The Jew's Ears found on river banks by our Correspondent are not the Fungus commonly so called (Exidia Auricula Judæ), which grows on the trunks of trees, and could scarcely be used as food, though it was once employed as medicine, but in all probability Peziza cochleata, which is sometimes gathered in Northamptonshire and sold under the name of Morels. The other Fungus mentioned in his paper is Peziza vesiculosa, which should be eaten with caution, as if grown on very foul manure it may by its flavour betray its origin, as *Coprinus picreus* does most unmistakably. *M. J. B.*]

Beech Timber.—I have been informed that Beech planked and steeped in a pond for eight or ten months, becomes valuable timber. Can any reader of the *Gardeners' Chronicle* give me the benefit of their experience on this subject, or refer me to any quarter whence I can get this information? *C.*

Culture of the Dipladenia.—I noticed in your Paper of the 28th ult. an enquiry concerning the culture of this beautiful plant, and as I have had considerable success in its management, I will at once proceed to describe my treatment, which I am certain, if carefully carried out, will be attended with satisfactory results. Let us commence with the cultivation of a young plant, which we must have in our possession not later than the middle or latter end of February. It must be a healthy one, for when this is so the greater will be our success. At this season (latter end of February) the plant, being, we may conclude, in a 48 or 36-sized pot, must be turned out, the roots carefully loosened, and the loose soil shaken off; it is then ready for repotting into a pot a size larger—say a 24. When finished it must be placed in the plant stove or forcing pit, whichever may be at the disposal of the cultivator, and plunged one-half the depth of the pot in bottom heat. The temperature should not range higher than 65° by night, allowing it to rise 10° by day with sun heat, shutting the house up early in the afternoon and dewing all over with a fine rose on the syringe. Great care must be exercised in watering at the root, not to give too much, for on this success much depends. By the latter end of April the plant will be in active growth and will have filled the pot with roots. It is at this stage that there seems to exist a difference in the systems of plant cultivators. Some would transfer the plant at once into a 12 or a 15-inch pot, or larger, while others would grow the plant on the progressive shift system. I have practised both with every success; nevertheless, as Dipladenias are plants which soon make specimens, I prefer the one-shift system. But it must be remembered that this practice requires double the amount of care in watering, not to give too much until the plant becomes established, by the latter end of April; then we will transfer it into a 12 or 15-inch pot, using in this potting the roughest of the soil, the composition of which I shall speak of hereafter. Now also is the time to arrange your stakes or trellis, whichever method may be desirable. I prefer a conical-shaped trellis made of galvanised wire; it is more durable. When this is done the plant must be returned to the stove, plunging two thirds of the pot in tan or some other material, the heat of which should run about 80°. The temperature of the house may now be increased to 70°; at no time would I advise much higher temperature than this by night, but it may range 10°, 20°, or 30° higher by day, with sun, shading a little during the middle of the day when the sun is bright, shutting up early in the afternoon, syringing and keeping all moist in hot weather. If those directions have been carefully and judiciously carried out, the plant will progress rapidly, making strong growth, which will soon cover the trellis with fine blooming wood, which if all has gone on well, will be in bloom in August and September. Towards autumn the pot must be gradually drawn out of the bottom heat, and placed in such a position that the plant may receive the full rays of the sun. Water, too, must be given in less quantities, in order that the wood may get perfectly ripened previous to commencing another season. The directions for this may with equal success be followed over successive seasons, commencing about the same time with your plant, after having received a good rest, by withholding water and keeping the plant in a temperature of 55° during the winter. If it be desired to have a large specimen it may, after having got into action the second spring, have a larger pot. The cause of the leaves of your correspondent's plants turning yellow and falling off, &c., can easily be accounted for. I think on examination it would be found that the plants do not possess a healthy root action, which may arise from various causes, such as a too high night temperature, the texture of the soil becoming impervious, and injudicious watering. The soil I find the Dipladenia to succeed best in is as follows:—Two parts light turfy loam, two parts turfy peat, one part cowdung two or three years old, one part silver sand; to this I add a good sprinkling of broken sandstone, in pieces about the size of nuts or larger, according to the size of the pots. The loam and peat when broken up should have the finest portion of it taken out with a half-inch riddle, using nothing but the roughest in potting. *J. R.*

Societies.

Royal Horticultural: *July 2 (Third Great Show).*—This in every way grand display of flowers and fruits took place, as on last occasion, in the Society's new conservatory and arcades adjoining it; this time, however, two tents—one at each end of the conservatory—were provided for the accommodation of fruits and new plants. Miscellaneous collections of Stove and Greenhouse Plants were even if possible in better condition than on the 11th ult.; Pelargoniums were equally fine as on that occasion, and there were some magnificent exhibitions of Ferns and plants remarkable for the beauty of their foliage. Prince William of Hesse and other members of the Royal Family inspected the show in the morning before the gates were opened to the public; and though the day was threatening, and even sometimes rained a little, nearly 11,000 visitors were present during the afternoon.

Large groups of Stove and Greenhouse Plants were contributed by Messrs. Whitbread, May and Peed. These consisted of kinds usually shown under this head, most of which were huge bushes loaded with flowers. Allamandas, Stephanotis, and the charming large round purple-blossomed Pleroma elegans received their wonted share of admiration; Ixoras too, of which there were several fine examples of the Willow-leaved sort, were in fine condition, as were also Kalosanthes and Dipladenias. Of Cape Heaths we observed admirable bushes of Parmentieri rosea; Mirbelia Meisneri, an old fashioned Pea-flowered greenhouse plant, might also be seen in some of the collections, all of which were remarkable examples of fine growth and profusion of bloom.

Groups of 12 Stove and Greenhouse Plants came from Messrs. Fraser, Rhodes, and Cutbush. These comprised a handsome variety of Ixora javanica called floribunda, a glowing Kalosanthes named Phœnix, the blue flowered Sollya linearis, one or two specimens of Medinilla magnifica, with great bunches of pink inflorescence, Gompholobium splendens, a handsome, clear, yellow-blossomed kind, and other plants not different from those shown in June last.

Collections of 9 Stove and Greenhouse Plants were tolerably numerous. The best came from Mr. Green; but well-managed groups were also furnished by Messrs. Chilman, Baxendine, and Kaile. These comprised Allamandas, Stephanotis, Polygalas, Everlastings, Pimeleas, Azaleas, and Heaths.

Collections of 6 Stove and Greenhouse Plants came from Messrs. Page, Wheeler, and Tegg; in addition to the kinds just named, they contained good examples of Phænocoma proliferum, the yellow Cavendish Heath, Azaleas and Aphelexis.

Of plants remarkable for the beauty of their foliage very fine collections were contributed by Messrs. Veitch, of Exeter and Chelsea; Mr. Williams, of Paradise Nursery, Holloway; Messrs. Jackson, of Kingston; Messrs. Lee, of Hammersmith; Mr. Bull, King's Road, Chelsea; Mr. Smith, gr. to the Duke of Northumberland at Syon; Mr. Wheeler, Mr. Ross, and Mr. Hutt. These consisted of Palms, Cycads, Crotons, different varieties of Pandanus; Ferns, both tree and other sorts, of great size, Caladiums, Marantas, Cyanophyllums, Cordylines, Alocasia metallica, Theophrasta imperialis, Coleus Verschaffelti, Farfugium grande, and plants of similar description.

Of Caladiums there was a fine bank filling nearly half of one side of the conservatory; but shown by themselves it must be confessed they form a somewhat ineffective display, which might, we think, be improved by a skilful intermixture of flowering plants. Foremost among the sorts was the singular C. Veitchi, and associated with it were fine plants of Chantini, picturatum, Wighti, Belleymei, Houlletti, hastatum, Baraquini, and Argyrites, all handsome leaved kinds. These came from Messrs. Veitch, and Messrs. Lee & Jackson also had good groups, in which, in addition to those just named, was a singular looking slender-leaved sort called Troubetzkoi.

Among variegated-leaved Begonias, of which a fine collection was shown by Messrs. Veitch, the best were B. Marshalli, Count Alfred Limminghe, Leopoldi, and Queen Victoria.

Of Pitcher plants a magnificent collection was exhibited by Messrs. Veitch, in which were Nepenthes sanguinea, with red pitchers of great size, Rafflesiana, lanata, Dominiana, and other sorts, all in the most robust health, and loaded with pitchers.

Orchids were unusually fine, and as they deserved to be, were greatly admired. From Messrs. Veitch came a magnificent collection, in which were Vanda Lowi, with a fine spike of rich reddish brown and buff blossoms, two of which at the base of the spike were yellow; Vanda Batemani; a glorious specimen of Phalænopsis grandiflora; Saccolabium Blumei, with nearly a dozen spikes of bloom on it; Aerides Lindleyi, Lobbi, and Fieldingi, equally fine; a huge bush of Aerides odoratum majus, Cattleya Mossiæ in excellent condition; various fine examples of Lady's Slippers, and Cattleya Aclandiæ. Mr. Williams also had a very fine collection, in which were four beautiful plants of Aerides, Vanda tricolor and insignis one or two of the better kinds of Lady's Slipper, Calanthe masuca, Lælia purpurata, Odontoglossum Warscewiczi, a sort in the way of grande, and the larger variety of Saccolabium guttatum. Mr. Woolley also showed a nice group.

Among collections of 10 Orchids the best came from Mr. Baker, gr. to A. Bassett, Esq., of Stamford Hill. It contained the yellow and white-blossomed Dendrobium formosum, three varieties of Aerides, Saccolabium guttatum and Holfordi, the last with fine spikes of bloom; Phalænopsis grandiflora, Lælia purpurata, Cattleya Leopoldi, and Vanda suavis. From Mr. Milford, gr. to E. McMorland, Esq., came Lælia purpurata, Vanda tricolor, White Butterfly plant, Aerides affine, Cattleya Mossiæ and superba; various Lady's Slippers, Saccolabium guttatum. Mr. Penny, gr. to H. H. Gibbs, Esq., sent a fine Calanthe veratrifolia, Vanda suavis, a large Aerides odoratum, Calanthe masuca, Anguloa Clowesi, Lælia purpurata, Cattleya Leopoldi, Saccolabium guttatum, and two varieties of Lady's Slipper. Mr. Peed showed among other plants Trichopilia tortilis, and Brassia Wrayæ; and from Mr. Chilman came Cattleya crispa and Stanhopea oculata.

Among groups of six Orchids the best came from Mr. Page, gr. to W. Leaf, Esq., who contributed the same excellent Saccolabium Blumei majus, noticed by us on a former occasion, Phalænopsis grandiflora, Dendrobium formosum, Cattleya Mossiæ, Lady's Slippers, and Aerides odoratum, Mr. Smith sent Phaius purpurens, Aerides odoratum majus, Oncidium ampliatum, Saccolabium guttatum, Lady's Slippers, and White Butterfly plant.

From Mr. Green came a very fine Oncidium ampliatum majus, Phalænopsis grandiflora, Cattleya Mossiæ, the straw-coloured Cyrtochilum stellatum, and one of the best varieties of Cypripedium barbatum. Mr. Wheeler sent Miltonia spectabilis, and a good Cattleya Mossiæ.

Anæctochilus intermedius was shown in fine condition by Mr. Williams of Holloway, and we also noticed one or two other well grown variegated Orchids, which came from other growers.

Specimens of Disa grandiflora were again shown in full bloom by C. Leach, Esq., of Clapham, who it will be remembered exhibited flowering examples of the same plant last year. It would therefore appear that the difficulty hitherto experienced in blooming this handsome Orchid has at last been overcome, and that now it may be looked for annually with some degree of certainty on our exhibition tables. Mr. Leach's mode of treating it will be found fully explained at p. 646 of our last year's volume.

Of Ferns, Mr. Williams had a very fine group, consisting of large and beautifully grown plants of Cyathea excelsa, Gleichenia microphylla, dicarpa, dichotoma, and scandens, the last a scarce kind; the broad-leaved Asplenium nidus, the handsome Cheilanthes elegans, Platycerium grande, Pteris scaberula, and the variegated variety of cretica, Dicksonia antarctica, and one of the handsomer kinds of Alsophila. Beautiful groups of Ferns, both hardy and tender, were also contributed by Mr. Lavey, Messrs. Veitch, and Mr. Ivery, and Miss Clarkson, also contributed collections of these interesting plants. In the last named group, we noticed Trichomanes brevisetum and Hymenophyllum Tunbridgense, and a plant case full of the Irish Fern in luxuriant growth, was contributed by Mr. Bull, of King's Road, Chelsea.

Of large Tree Ferns, Messrs. Veitch showed some very fine examples, which were deservedly awarded a first prize.

Of Lycopods, Mr. Lavey sent a collection, in which was a fine example of the pretty little L. apodum, one of the best of bright green compact-growing sorts.

Pelargoniums were numerous and well flowered. The only fault that could be found with them is that they are too much alike. Messrs. Turner, Dobson, Fraser, and Shrimpton, had good collections, in which were well flowered plants of Lady Canning, Fairest of the Fair, Lord Clyde, Viola, Leviathan, Desdemona, Etna, Rose Celestial, Candidate, Mrs. Foster, Carlos, Flora, Glow-worm, Rosa Bonheur, Bianca, Duke of Cambridge, Eclipse, and Prince of Prussia.

Fancy varieties, which were contributed by Messrs. Fraser, Turner, and Dobson, consisted of Modestum, Evening Star, Crimson Pet, Delicatum, Acme, Cassandra, Cloth of Silver, Celestial, Beadsman, and Claudianum.

Spotted varieties were furnished by Messrs. Dobson and Turner. They consisted of Diophantus, Sanspareil, Osiris, Mr. Marnock, Conspicuum, Macbeth, Madame Furtado, Peacock, Mr. Hoyle, Distinction, Bracelet, Bertie, Beadsman, and Guillaume Severyns.

Of Fuchsias an admirably grown collection was shown by Mr. Cannell, of Clapham. It consisted of medium-sized conical plants, every one of which nearly covered their pots with gracefully drooping branches laden with flowers. Than this group nothing in its way could possibly be more perfect, and it received, as it well deserved, universal admiration. Very much larger plants were contributed by Messrs. Webb, Gardiner, Harper, and Higgs; but as regards fine growth they were considerably inferior to those just mentioned. Among the sorts were Venus de Medici, Wiltshire Lass, Rose of Castile, Catherine Hayes, Prince Alfred, and Isa Craig. Three Standard Fuchsias came from Mr.

Higgs; their stems were at least 6 feet in height, and their heads, which were well furnished with bloom, were round and handsome. Grown in this way, so that the blooms can be looked up to, Fuchsias have a handsome appearance. The sorts were Venus de Medici, Prince of Orange, and Rose of Castile. Messrs. Harper & Lee also showed Standards, but not nearly so high as those just named. Among them were British Sailor, Venus de Medici, Rose of Castile, and Tristram Shandy.

First among novelties, which were numerous, stood the *Lilium auratum* of Japan, as far superior to other Lilies as an *eques auratus* to other *equites*—sweet as Lily of the Valley, and braced with golden bands the colour of pale Australian gold. Of this some further account will be given next week. Should it be hardy, of which there can scarcely be a doubt, this will prove a grand acquisition. It is decidedly one of the best new plants that has been introduced for years. It was shown by Messrs. Veitch, who also furnished a white-flowered Lapageria, which will make a suitable companion for rosea, resembling it, as it does, in everything except in colour. The same enterprising firm also had a silvery leaved little pink-flowered Calceolaria, which will doubtless be found useful for purposes of hybridization. From Mr. Warner, of Broomfield, came a pretty little Epidendrum in the way of maculatum, with black spotted narrow pale green sepals and petals, and lilac lip; and a small dull white-coloured Dendrobium from Moulmein, with an orange lip, came from Messrs. Low, of Clapton. Anthurium Schezerianum, a small growing plant with thick leathery leaves and singular looking scarlet inflorescence, was shown from the gardens of the King of Hanover. Mr. Thompson, of Ipswich, had two beautiful deep crimson coloured varieties of Rhodanthe Manglesii.

Of Rare Plants not in flower Messrs. Veitch exhibited Lomaria Gibba, an Australian shrub with handsomely divided Fern-like leaves; a Dracæna with stiff broad dark green foliage, blotched and spotted with a paler shade of the same colour; and a pretty Peruvian Adiantum. From the same firm also came the Parsley-leaved Polybotrya, and other new plants, most of which have been shown on former occasions.

Large collections of Japanese plants were as usual shown by Messrs. Veitch & Standish; three or four of them, chiefly Oaks and Maples, were awarded prizes.

Two handsome Fern cases, both of which were shown on a former occasion, were again reproduced by Messrs. Veitch, who also contributed an aquarium tastefully fitted up with miniature rocks, shells, water plants, and gold fish. Mr. Bull likewise had one or two plant cases, in which the arrangement was all that could possibly be desired in decorations of that kind.

Of Plants in pots in stands for placing in drawing-rooms, Messrs. Veitch showed a set of three made of buff painted wire, in which Fuchsias, Geraniums, and plants of that kind were so neatly placed and altogether so well arranged that the effect was charming.

The same exhibitors also had the best window boxes, which were filled with variegated Geraniums, yellow Calceolaria, and Stocks—a gay and pretty intermixture. Other boxes, shown by Mr. Ross, were evidently planted with taste; their contents, however, being Dracæna terminalis, Gloxinias, Pteris tricolor, and other plants of that description, would, we fear, be found too tender for exposure in windows or balconies.

Miscellaneous subjects consisted of Petunias, Pinks, Cut Roses, Dried Seaweeds, Cucumbers, and Tomatoes.

Of Fruit there was a fair display. Mr. Tillyard, gr. to J. Kelk, Esq., had the best Queen Pine Apple; another nearly equally good came from the garden of C. Crawshay, Esq., Cyfarthfa Castle, and a third was shown by Mr. Young, gr. to C. Bailey, Esq. The best Providence came from Mr. Allen, gr. to J. B. Glegg, Esq., Congleton, Cheshire. Mr. Ruffett had also a good fruit of this variety of Pine.

Among Grapes were some admirable bunches of Black Hamburgh, but as a whole they were deficient in colour. Of this character were three large and fine bunches from Mr. Thomson, gr. at Dalkeith Park; Mr. Henderson, gr. to the Duke of Sutherland, at Trentham, also had three fine bunches which collectively could not weigh less than 11 lbs. Mr. Petch and Mr. Jackson also showed good bunches of Black Hamburgh, as did also Mr. Mould, Mr. M'Pherson, Mr. Miller, and others. Beautiful bunches of Trentham Black were shown by Mr. Henderson, black as Sloes and covered with bloom. Mr. Hill, gr. to R. Sneyd, Esq., sent as usual the best Black Prince, three bunches of which weighed 7¼ lbs.; long tapering bunches of the same variety were also exhibited by Mr. Brooks, Somerset. These were rubbed and otherwise injured from travelling. West's St. Peters came from Mr. Fowler. Muscats were not ripe. The best came from Mr. Beck, Tedworth, and Mr. Horwood and Mr. Standish also showed good bunches. The three bunches from Mr. Horwood weighed together 9¼ lbs.; Mr. Tillyard also had good bunches, but they were unripe. Chasselas Musqué came from Mr. Standish, Mr. Allen, Mr. Widdowson, and Mr. Mould. White Frontignan came from Mr. Standish, and Dutch Sweetwater from Mr. Widdowson.

From Mr. Standish came a collection of Grapes, in which were examples of "Gros Colman," an amber-coloured variety, large both in bunch and berry; Sweetwater, Charlesworth Tokay, Black and White Frontignan, Chasselas Musqué, and Chasselas Negropont, Black Hamburgh, Muscat of Alexandria, Bowood Muscat, and Muscat Blanc de Saumur, the last a small kind, but apparently quite ripe; Longue Noir Durant, a coarse black kind with large oval berries; Citronelle, apparently a good variety with small berries; Ingram's Hardy Prolific Muscat, Royal Muscadine, Duc de Malakoff, a kind something like a Sweetwater; Muscat Troveron, a white kind of considerable promise; Burchardt's Amber Cluster, Gen. Marmora, a white variety; Grizzly and Black Frontignan, Gros Bleu, Chasselas, Napoleon, Golden Hamburgh and Muscat de Scarbelle. From Mr. Henderson, Trentham, came very fine examples of Black Hamburgh, and Golden Hamburgh, Trentham Black, in excellent condition; Victoria Hamburgh, and Chasselas Musqué.

Grapes in pots came from Mr. Smith, gr. to the Duke of Northumberland, at Syon; Mr. M'Pherson, Gr. to E. S. Pole, Esq., Derby; and Mr. Standish, of Bagshot. The sorts were Black Hamburgh, Royal Muscadine, Ingram's Prolific Muscat, and the small stoneless Currant Grape of the shops.

Miscellaneous collections of fruit came from Mr. Tillyard, gr. to J. Kelk, Esq., and Mr. Henderson, gr. to the Duke of Sutherland at Trentham. From the former came two very good Queen Pine Apples, a Providence Pine, good Black Hamburgh and Muscat Grapes, British Queen, Keen's Seedling, Oscar and Bicton Pine Strawberries, Watson's green-fleshed and Strathfieldsaye Melons, Elton and black Circassian Cherries, Violette Hâtive Peaches and Nectarines, large and fine Green Gage Plums, Fastolf Raspberries. Mr. Henderson showed Bigarreau and Black Eagle Cherries, Trentham Black Grapes, Niven's Princess Frederick William of Prussia and May Queen Strawberries, Violette Hâtive Peaches and Nectarines, very good Jefferson and Victoria Plums; Royal George and Magnum Bonum Peaches, Murray Nectarines, beautiful bunches of Black and Golden Hamburgh Grapes, two Montserrat Pine Apples, and Trentham Hybrid green-fleshed and white-fleshed Melons.

The best three dishes of Peaches came from Mr. Rawbone, who showed Royal George, Violette Hâtive, and Grosse Mignonne. From Mr. Allen and Mr. McLellan came Royal George, Grosse Mignonne, Noblesse, and Violette Hâtive. Of single dishes the best came from Mr. Snow, who showed Violette Hâtive; but almost equally fine specimens were contributed by Mr. Gardiner, Stratford-on-Avon. From Mr. Collinson also came good fruit of Royal George. Mr. Horwood, Mr. Ruffett, Mr. Allen, Mr. Durrant, and Mr. Brown, also showed good dishes, chiefly of Royal George, Noblesse, Grosse Mignonne, and Bellegarde.

Of Nectarines good dishes were furnished by Messrs. Allen, Horwood, Collinson, Eustone, Hill, Brown, Tillyard, Tegg, and others. The sorts were Violette Hâtive, Brugnon, Pitmaston, Elruge, and Hunt's Tawny.

Strawberries considering the season were good. From Mr. Turner of Slough came dishes of Adair, Prince of Wales, both Ingram's and Cuthill's varieties, Highland Mary, Hautbois, Richard the 2d, Sir Charles Napier, Admiral Dundas, Keen's Seedling, President, White Carolina, Carolina superba, Wonderful, Myatt's new Early, Black Prince, both Myatt's and Rivers' variety called Eliza, Sir Harry, Princess Royal of England, Frogmore Late Pine, good fruit of Wizard of the North, Oscar, Rifleman, Filbert Pine, British Queen, Victoria, Comte de Paris, Bicton Pine, a white kind; Elton, General Havelock, Prince Arthur, and Nonesuch. In addition to the above collection the same exhibitor also contributed good fruit of Surprise, Oscar, Empress Eugenie, Sir Chas. Napier, and Frogmore Late Pine, for which he received a first prize. Mr. Lydiard, of Bath, who was second, sent Alice Maude, Victory of Bath, Goliath, Eleanor, and Gem of the West. Fine large fruit of Crimson Queen, Oscar, and others, came from Mr. Widdowson; and of Seedlings there were two from Mr. Ingram—one, John Powell, the other Cockscomb—both promising varieties.

Figs consisted of White Ischia and another sort from Mr. Ruffett, Brown Turkey from Mr. Cross, and Lee's Perpetual from Mr. Brown.

Cherries were scarce. The best came from Mr. Henderson and from Mr. Turner, who furnished Elton, Black Circassian, Bigarreau, May Duke, Belle de Choisy, and Black Eagle.

Melons were better than could have been expected, considering the comparatively sunless summer to which we have hitherto been subjected. The best was Scarlet Gem from Mr. Weir, and to the same variety from Mr. Kaile a second prize was also awarded. Among green-fleshed sorts the best was Oscar, from Mr. Kaile; and the next best, Golden Perfection, from Mr. McLellan. Of Bromham Hall and its varieties there were likewise some fine fruit.

Fruit trees in pots came chiefly from the Society's Garden at Chiswick. The only other collection shown was contributed by Messrs. Lane, who had some Plum trees well furnished with half grown fruit. Peaches and Nectarines also came from the same growers.

Linnean: *May* 24 (*Anniversary*).—G. Bentham, Esq., President, in the chair. The Treasurer made a general financial statement, from which it appeared that the balance in favour of the Society on the year's account was 493*l.* 11*s.* 1*d.* The Secretary reported that since the last anniversary the Society had lost by death 2 Honorary Members, 11 Fellows, 3 Foreign Members, and 2 Associates, and 6 Fellows by withdrawal; while 25 Fellows, 3 Foreign Members, and 1 Associate had been elected. At the ballot which ensued, John Ball, Esq.; T. S. Cobbold, Esq., J. B. Hicks, Esq.; John Miers, Esq.; and P. L. Sclater were removed from the Council, and in their place the following were elected:—Beriah Botfield, Esq., M.P.; H. Christy, Esq.; Dr. J. E. Gray, J. Lubbock, Esq.; and Dr. R. C. Alexander Prior. The following officers were then re-elected, namely, G. Bentham, Esq., President; W. W. Saunders, Esq., Treasurer; and G. Busk, Esq., and F. Currey, Esq., Secretaries. Thanks were voted for the President's address and the Secretary's obituary notices.

June 5.—G. Bentham, Esq., President, in the chair. The President nominated T. Bell, Esq.; J. J. Bennett, Esq.; J. D. Hooker, M.D.; and W. W. Saunders, Esq., Vice-Presidents for the year ensuing. The following papers were read:—I. "*On the confervoid filaments and gonidia of Mosses, and on the relation of the gonidia to those of Lichens and certain fresh-water Algæ.*" The term gonidium, it was remarked, which had been applied to the single cell thrown off by the thallus-producing plants, was probably the simplest homologue of the gemmæ of the higher Cryptogamia. Their production was not confined to the Thallophytes, as they might be abundantly traced in the Mosses; but whereas in the Thallophytes they may be produced upon almost any part of the plant, except that especially set apart for gamic reproduction, on the Mosses a particular portion is set apart for their production. It is not however to be understood, that the other portions of the plant cannot produce them, for under peculiar circumstances almost every part of the plants is capable of doing so. If a Moss is examined, particularly in early spring, there will almost invariably be found about its base, just at the junction of the true roots with the ascending axis, if the axes of the different plants do not grow together too closely to permit their development, green branching filaments of indefinite length, the branches frequently interlacing with those of neighbouring plants; these have been called confervoid filaments, and were not formerly recognised as belonging to the Mosses, but were claimed by algologists. The author entered into various details in order to show how these confervoid filaments assist in the reproduction of the parent Moss. Thus, in some cases, the cells of the filaments produce branches, the end cell of which divides into two, and the uppermost division increases considerably in size, and produces a row or whorl of three or four branches, and within those another similar row of smaller branches surrounding, as it were, an imaginary axis, from which by gradual increment in the number of cells, springs the stem of the Moss. In other cases the cells, instead of elongating become broader, and assume the form of a club, eventually producing a gemma or bud, which, however, does not directly develope the ascending axis, but merely bears branches, which latter produce the axis. Besides these methods of increase "any one of the cells detached from the others, is capable of continuing the growth of the filament, in the same manner as each is capable of doing whilst forming part of it by branching and division." Dr. Hicks further stated that the multiplication of cells not only takes place upon "the linear binary form of growth," but that segmentation also proceeds upon a quaternary plan, or its multiples. In some filaments a still more unsuspected change occurs, namely the production of cells of Gleocapsa. The author had frequently seen Gleocapsa polydermatiana and other so-called species, formed in this way from the Moss filaments. The changes already mentioned are all carried out on the plan of 'parietal cell-formation,' but there are some instances in which 'free cell-formation' occurs. In one of these latter described in detail the cells were said to gradually lose their colour with the exception of a few reddish granules; when this change was completed they gained the power of moving about, as do Amœbæ, and after this had continued for a certain time they again assumed the ovoid form and became clothed with very delicate ciliæ in a state of constant vibration. In summing up his rather lengthy paper Dr. Hicks mentions the subjoined as the more prominent points of interest: (*a*), peculiar tendency of the confervoid filaments to grow for any indefinite period and extent in the same form and state, both in and out of water, so that it is not to be wondered at that they should have been considered independent vegetations, an opinion still more excusable when it is remembered that they can reproduce themselves by any one of these cells, which sometimes becoming free and globular gave the appearance of a spore; (*b*), from the confervoid filaments two or three genera with numerous species of Alga have been founded; (*c*) the function and development of the cells separated from the filaments are evidently analogous to those of the gonidia of Lichens and also of many Algæ, and therefore the term gonidia may be rightly applied to them; (*d*) the chorophyll granules are probably small portions of cell contents coloured by chlorophyll; (*e*) the formation of zoospores from these enlarged and segmentary chlorophyll utricles; (*f*) the near connection to the Algæ which the Mosses show in their capability of producing gonidia from any portion of their stem or leaves. These facts show a very curious link existing between the Thallogens and the higher Cryptogamia, and prove that the formation of gonidia by no means ends with the Algæ.—

II. "*Letter from Mr. Gustav Mann to Sir W. J. Hooker, dated Feb. 27, 1862, and giving an account of his ascent of the Cameroons Mountain,*" communicated by Sir W. J. Hooker. The expedition was made by Mr. Mann (who was afterwards joined by Consul Burton and others) in the months of December, 1861, and January and February, 1862, and the letter now read gave a detailed account of the journey from Victoria to the mountains. The district was found to be volcanic, and extensive lava fields were traversed. Two of the highest peaks were named Mount Victoria and Mount Albert, and on the former of these the British flag was planted by Mr. Burton. On Mount Albert the wind was found to have such force as nearly to blow away the travellers, and to be so cold (45½) that their tropical hands became almost useless, so that after half an hour's stay they left the summit "with frozen finger-ends and noses." Mount Albert was said to be without doubt of more recent formation than Mount Victoria, being less clothed with vegetation. Other summits were designated Mount Isabel, Mount Helen, Mount Hooker, &c. In the valleys some beautiful Cyatheas were seen.—III. "*On the Vegetation of the Cameroons,*" by Dr. Hooker. —IV. "*An Enumeration of the Species of Acanthaceæ from the Continent of Africa and the adjacent Islands,*" by T. Anderson, M.D. In this enumeration the classification proposed in Dr. Anderson's monograph of the Cingalese species in Thwaites's Enumeratio Plantarum Zeylaniæ was followed. The principal feature of this arrangement is the subdivision of the order into two great suborders, Ruellideæ and Acanthideæ, distinguished from each other by the character of the æstivation of the corolline lobes; and into a third small but well marked group, separated from the other two by the nature of the calyx, and also by the peculiar placental processes of the seeds. The paper was entirely occupied by technical details of the plants, which were distributed among 42 genera.

June 19.—G. Bentham, President, in the chair. Dr. Hooker exhibited young individuals of Welwitschia mirabilis, showing the early stage of the leaves while still entire, and H. Christy, Esq., exhibited specimens of the Axolotl from Mexico, and of the Proteus anguinus from the caves at Adelsberg. The Rev. W. W. Peete, M.A., was elected a Fellow. The following papers were read:—I. "*Observations on the choice of Food in the Cod and Ling,*" by W. Laughrin, Esq.—II. "*On the specific identity of the described forms of Tenalia,*" by H. F. Blandford, Esq., communicated by Dr. Hooker.—III. "*Notes on the Thysanoura, Part 2,*" by J. Lubbock, Esq.

Notices of Books.

Select Orchidaceous Plants. Part 1. By Robert Warner. Folio. Lovell Reeve.

This new contribution to our knowledge of Orchids will appear in 10 quarterly parts, price 10*s.* 6*d.* each. The author states that "having one of the largest amateur collections of Orchidaceous plants, and being in friendly correspondence with the principal growers throughout the country, he possesses ample opportunities for selecting the most interesting species and varieties for illustration. One object of the work will be to collect and disseminate information as to the best means of growing and flowering Orchidaceous plants. It is consequently intended to devote ample space to the details of cultivation; and the author will gladly avail himself of the assistance of those who are willing to communicate the results of their practice." Mr. Williams, the author of the Orchid Grower's Manual, and one of the most skilful of cultivators, being associated in the undertaking, the public has the best possible guarantee that the foregoing promise will be kept.

The species now figured are 1, Phalænopsis Schilleriana; 2, Cattleya amethystoglossa; 3, Vanda insignis; and 4, Cattleya Warczewiczii delicata. Of the three last noble plants the figures are worthy of Fitch's skilful pencil. For the first we cannot say much as a work of art; nevertheless it gives a good idea of the general appearance of one of the most interesting of the race.

Handbook of Elementary Drawing. By Robert Hale. 4to, pp. 16, with 24 Plates. Longmans.

Mr. Hale announces that the volume before us is "designed chiefly for the use of teachers;" we must, however, take the liberty of saying that he does himself injustice. On the contrary, although most of the gentlemen calling themselves drawing-masters in lady's schools would be wonderfully improved by studying the author's wise sentences, yet it is certain that it is equally if not more suitable to the vast classes which circumstances oblige to teach themselves. One of the most universal feelings of the human mind is the desire to represent pictorially the objects that surround us. The hieroglyphics of the Egyptians, and the very curious native drawings now in British Columbia in the Great Exhibition, show that this feeling is not only coeval with the most remote antiquity, but is strongly implanted in the minds of the most savage nations that inhabit the uttermost ends of the earth. One of the first attempts of the child is to scrawl a house, or some familiar animal; and if the desire dies away it is because the child becomes weary of unsuccessful efforts, and attention takes another direction.

When, therefore, a book meets our eye by the aid of which all may instruct themselves in the principles of correct drawing, it becomes a duty to the public that its merits should be loudly proclaimed. Such a book is that of Mr. Hale, which, although susceptible of improvement in some details, such for example as the form of leaves at the point where they join the stem of a plant, is written and illustrated upon correct principles. Nor is it any small merit that its instructions are as clear as words and outline sketches can make them.

Gardeners are most especially interested in the art of drawing, although so few have any accurate notion of how to proceed. We are therefore glad to announce for their information that they have in Mr. Hale's book a clear, simple, and thoroughly practical guide.

The Plants indigenous to the Colony of Victoria, Vol 1., 4to.——*Fragmenta Phytographiæ Australiæ,* Vol. II., 8vo. By Ferd. Mueller, M.D., F.R.S.

The noble Australian Colony of Victoria is determined to be *nulli secunda* in science as well as in social and commercial development. Of this the works before us are a striking proof; the stronger indeed because they are in every respect the offspring of the Colony. The learned author, lately and most deservedly elevated to the much coveted rank of F.R.S., is Colonial; the printing, the drawing, the lithography, the very binding—all are strictly Colonial; whether the paper is Victorian we know not; if of English manufacture it is the only article we can discover for which the Colony has to thank the mother country.

The first of these works is the commencement of a detailed account in English of all the plants native in Victoria, carefully described as well as defined, and in all cases treated critically. It consists of 242 pages, and 23 plates, and has a carefully made excellent Index. The drawings are equal to the best in Europe, but the lithographic work is less satisfactory; a fault that will doubtless be remedied. The last plate is occupied by the Australian Pelargonium, which deserves to be introduced.

The second is in technical Latin, and is devoted entirely to new or supposed new genera and species. Among the greater matters included in it is a long series of descriptions of Eucalypti or Gum trees, and, what is more important, the announcement that the learned author is preparing a complete illustrated monograph of this invaluable genus, the Teak of Australia.

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Greenhouse plants out of doors will require canvas or tarpaulin drawn over them during heavy rains. Those still remaining in the house must have abundance of air. Whenever room occurs in the plant houses take in a few of the most forward Fuchsias, Japan Lilies, and Gladioli to assist in keeping up the floral display. Brugmansias and other very vigorous growing plants should be frequently assisted with manure water; and as they are liable to get infested with insects, keep the syringe well at work to keep insects under before they get into bloom. In the Orchid house a warm moist atmosphere must be maintained to plants in active progress. Such, however, as have made their growth (known by the pseudobulbs having attained their full size) should have less water and be gradually inured to a lower temperature and a greater degree of dryness. It should, however, be borne in mind that this progression to a state of rest in all plants should be slow, and takes a considerable time to effect. So far as Orchids are concerned, those showing indications of matured growth may be first removed to the cool end of the house for a few weeks, and afterwards placed in quarters where the temperature and atmospheric moisture will not interfere with the slow progress of the plants towards a state of rest. Dendrobiums and others of that class should be grown on till the shoots are of sufficient length. Wash any plants infested with insects with a lather of common brown soap, using a sponge for the purpose; destroy by every means in your power, beetles and other pests to Orchid houses.

FORCING DEPARTMENT.

Figs.—These will be swelling off their second crop; to assist them pinch out the point of each shoot, this will not only assist the present crop, but aid the development of embryo fruit for the first crop next season.

Cucumbers.—In some places these are suffering the present season as they did the last from some kind of disease resembling gum or canker. So virulent is this that not one fruit in ten swells off after the plant is attacked. All the remedies tried have had but little effect in either preventing or arresting its progress.

Peaches and Nectarines.—Go over the trees in the early house as soon as the crop is gathered, and cut away all useless shoots, such as are not required for fruiting next season or for filling up vacant places; when this is done, give a good syringing with the garden engine, and if the borders are dry, and the trees are weakly, a good soaking of manure water would greatly assist them for another season. Give air night and day; and if the weather is warm, the sashes may be removed altogether about the end of the month, which will assist in ripening the fruit. Expose the fruit in succession houses as much as possible to air and light as soon as it begins to ripen, for the purpose of giving better colour and flavour. Keep the atmosphere dry and a little warmer through the day, with air at all times in favourable weather. Water the borders if dry.

FLOWER GARDEN AND SHRUBBERIES.

The recently planted beds will still require watching to get the plants in them fairly on the start. The heavy rains have chilled the ground, and some of the more tender or badly rooted things look sickly. As the grounds and shrubberies are much more frequented by company at this season, pay the more attention in keeping the greatest neatness and order in every part where there are hands to admit of it; flowering shrubs as they go out of bloom should have the dead flowers, &c., removed, and be slightly cut back. For the same reasons remove the seed pods from Rhododendrons, Tree Pæonies, &c.; these little attentions will be followed by an increased growth of the plants, and with the greater certainty of their blooming every season. The propagation of Carnations, Picotees, Cloves, &c., should not be longer delayed. Hedges should be well cut in with the shears, unless when formed of large-leaved plants, as Laurel, Turkey Oak, &c., where the knife only should be employed, as the leaves look bad when clipped with the shears. As a deciduous plant for hedges nothing is better than the Turkey, or hybrid Lucombe Oak, and Taxodium sempervirens will be found a most eligible plant for making evergreen hedges, as it grows quickly, bears the knife well, and has an agreeable appearance. Tulips may now be taken up; allow the skin and roots, after carefully removing the soil, to remain; these can be better taken off when the bulb is dry. Store them away either in cabinets, with the drawers properly numbered, or put them in thin paper, allowing them to dry gradually in an airy shady place.

HARDY FRUIT AND KITCHEN GARDEN.

Our previous directions should be looked over. The nailing and tying in of the current year's wood should be continued. Many fine trees are in a bad state from the uncongenial state of the weather. Pinch out the point of the present year's wood of the Fig before nailing them in. Stop and nail in Vines, and still continue to watch the progress of the green-fly. Asparagus and Seakale making rapid growth will be benefited by a good sprinkling of salt and frequent soakings of liquid manure. To have fine crowns next spring attention to these matters should be paid to them now. We generally sprinkle a little salt along the Celery trenches before earthing them up; it both kills slugs and worms, and accelerates the growth of the plants. Plant out a good supply of Endive and make further sowing. Continue the regular sowing of Lettuce and other salad plants.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending July 2, 1862, as observed at the Horticultural Gardens

June and July.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind	Rain.
Thurs. 26	29	30.048	29.914	73	47	60.0	61	58	W.	.02
Friday 27	●	29.804	29.686	64	39	51.5	61½	58	N.W.	1.00
Satur 28	1	29.914	29.829	67	34	50.5	61	58	S.W.	.07
Sunday 29	2	29 948	29.900	72	50	61.0	60	57½	N.W.	.02
Mon. 30	3	29.923	29.878	71	40	55.5	60	58	N.W.	.00
Tues. 1	4	29 888	29.873	72	54	63.0	60	58	N W.	.00
Wed. 2	5	29.803	29.779	70	43	56.5	60½	58	W.	.01
Average		29.709	29.827	69.8	43.8	56 8	60.5	57.9		.12

June 26—Very fine; cloudy and fine; densely overcast at night.
— 27—Fine; rather cloudy; brisk cold wind; fine at night.
— 28—Fine; cold wind; fine; nearly freezing at night; rain.
— 29—Fine; cloudy; slight showers at night.
— 30—Cloudy; overcast; brisk cold wind; cloudy, cold at night.
July 1—Partially overcast; cloudy and fine.
— 2—Overcast; brisk wind; cloudy; fine; shower; fine, but cold wind; slight showers.

Mean temperature of the week 5½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending July 12, 1862.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 6 .	76.2	51 2	63.7	15	0.45 in	1	1	3	2	5	15	6	3
Mon. 7..	73.6	51.8	62.7	19	0.34	2	2	4	4	5	12	6	1
Tues. 8..	73.8	50.2	62 0	19	0.48	—	2	5	2	2	11	8	6
Wed. 9..	74.0	50 0	62 0	16	0.82	4	—	3	1	3	9	10	7
Thurs. 10..	74.3	51.1	62.7	14	0.48	2	2	2	1	4	12	5	8
Friday 11..	74.8	51.2	63 1	9	1.07	4	—	4	1	5	8	8	6
Satur. 12..	75.5	50.9	63.2	12	1.10	1	2	5	—	5	9	8	6

The highest temperature during the above period occurred on the 12th, 1859—therm. 93 deg.; and the lowest on the 7th, 1860—therm. 36 deg.

Notices to Correspondents.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

Names of Plants: *M J B.* Philadelphus mexicanus, not from Vancouver.—*S R S.* 1, either Aconitum or Delphinium. Leaves should not be sent without flowers; 2, Aubrietia deltoidea; 3, Antennaria margaritifera; 4, Dictamnus Fraxinella; 5, Spiræa filipendula; 6, Polemonium cœruleum.—*Medico.* Some Rumex too incomplete to be determined. It may be R. obtusifolius.—*J Smith.* 1, Poa rigida; 2, a bit of Poa procumbens? Parnell's British Grasses; for price apply tc booksellers.—*Lancastriensis.* It looks like Sipanea dichotoma.—*T S.* 1, Lathyrus pratensis; 2, Galium verum; Barbarea vulgaris; 4, Galeobdolon luteum.—*Ignoramus.* Mints cannot be named by leaves alone. You have not sent the Garden Mint; for the mode of distinguishing these difficult plants we must refer you to any work on English Botany.—*Chepstow.* As the specimens are not numbered, we are without the means of telling you their names.—*J S.* Fluggea Wallichiana, an old plant though not in gardens.—*J D.* 1, Polystichum aculeatum; 2, Lastrea Filix-mas paleacea; 3, Lastrea dilatata, the form called micromera; 4, Not Athyrium Filix-fœmina, but Lastrea Filix-mas incisa.

YORKSHIRE AGRICULTURAL SOCIETY.
Open to the United Kingdom.

The GREAT ANNUAL SHOW will be held at YORK on AUGUST 6, 7, and 8. The Entry Closes on July 21.

A Member of the Society pays an Annual Subscription of [illegible], which entitles him to exhibit an unlimited number of Stock, to view all the Exhibitions, and to receive the Society's Publications Free of Charge.

Non Members pay 10s. for each Entry of Live Stock, and 1s for each Entry of Poultry, which must be paid at the time of entry. For Prize Lists and Certificates of Entry apply to

JOHN HANNAM, Secretary.

Kirk-Deighton, Wetherby.—July 5.

ROYAL AGRICULTURAL SOCIETY of IRELAND.

GREAT NATIONAL CATTLE SHOW, to be held in LIMERICK on AUGUST 6, 7, and 8.

Last day of Entry of Stock, July 14. Implements, July 14.

Prize sheets and forms of entry can be had from the Local Secretary, at his Office, Limerick, or from the Office of the Society, 42, Upper Sackville Street, Dublin.

J. B. THORNHILL.

July 5.

THE SPARKENHOE FARMERS' CLUB will hold their GREAT ANNUAL MEETING on the Race Course at Leicester, in conjunction with the Autumn Show of the Leicester and Leicestershire Floral and Horticultural Society, on SEPTEMBER 2, 3, and 4, under the patronage of the Mayor and Corporation.

President.—The Right Hon. Lord JOHN MANNERS, M.P.
Supported by the Nobility, Clergy, and Gentry.
Lady Patroness.—The Countess HOWE.

Prizes about 1100*l.* in value will be awarded, including the following:—

Steam Cultivation	£70	0	0
Implements, Ploughing, &c.	80	0	0
Best Fat Beast	35	0	0
Best Store Beast	30	0	0
Best Long-woolled Sheep	15	0	0
Best Short-woolled Sheep	15	0	0
Best Entry of Pigs	13	0	0
Best Nag Horse	25	0	0
Best Cart Horse	25	0	0
Poultry, Rabbits, &c.	70	0	0
Cheese, Corn, Wool, and Roots	130	0	0
Fruits, Flowers, Plants, and Vegetables	160	0	0

Prize Lists and further particulars may be had on application, and all Certificates of Entry must be returned to me on or before August 7.

THOMAS DAVENPORT, Secretary and Collector.

Ashby-de-la-Zouch, July 5.

MANCHESTER and LIVERPOOL AGRICULTURAL SOCIETY.

MEETING at WARRINGTON, SEPTEMBER 9, 10, and 11.

Entries close on August 11. For Prize Lists and Forms apply to

T. B. RYDER, Secretary.

57A, Church Street, Liverpool.—July 5.

WARWICKSHIRE AGRICULTURAL SOCIETY.

The WARWICKSHIRE AGRICULTURAL SOCIETY will hold their GREAT ANNUAL EXHIBITION at Aston Park, Birmingham, on SEPTEMBER 17, 18, and 19, when Prizes to the amount of 970*l.* will be awarded as under:—

Labourers and Servants	£97	0
Ploughmen, Drainers, and Hedge-cutters	43	10
Cattle	257	0
Sheep	188	0
Pigs	28	0
Horses	142	0
Implements	85	0
Steam Cultivation	50	0
Wool	21	0
Cheese	8	0
Fruit and Flowers	50	0

More than half the above Prizes are offered by the Birmingham Local Committee, and are open to all England.

The Entries close on August 1.

Prize Lists, Certificates, and every information may be obtained on application to Mr. JOHN MOORE, Secretary, Warwick; or to JOHN B. LYTHALL, Local Secretary.

Offices, 14, Temple Street, Birmingham.

THE BIRMINGHAM CATTLE and POULTRY SHOW, 1862.

The FOURTEENTH GREAT ANNUAL EXHIBITION of FAT CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, ROOTS, BARLEY, and IMPLEMENTS, will be held in Bingley Hall, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4, when Prizes—Cups or other Articles of Silver Plate, and Gold and Silver Medals—to the amount of 1835*l.*, will be awarded in the following divisions, viz.:—

Fat Cattle	£715	15
Fat Sheep	239	5
Fat Pigs	56	15
Breeding ditto	63	0
Roots	56	14
Barley	10	10
Poultry and Pigeons	682	15

Prize Lists and Certificates of Entry may be obtained from

JOHN B. LYTHALL, Secretary.

Offices, 14, Temple Street, Birmingham.

The Agricultural Gazette.

SATURDAY, JULY 5, 1862.

THE "several thousand pounds" which the Battersea meeting has cost the Agricultural Society, are money laid out most strictly in accordance with the aim and purpose for which the Society was instituted. Nothing is more satisfactorily ascertained than that agricultural progress depends infinitely more upon the demand for agricultural produce than upon any little artificial excitement which a prize or an award of any kind can give. But agricultural progress is the end and object of the Agricultural Society, and how could its funds be better invested than in giving an opportunity to our stock breeders and our agricultural machinists of displaying their unrivalled wares before the great body of foreign agriculturists who are now thronging our metropolis? And so far as we have the means of ascertaining, the opportunity thus given at so much cost to the Society, has been seized. Stock has been sold in large numbers at great prices, and a large sale of implements has taken place. Confining ourselves to one leading feature of the show, we understand that of steam-cultivating machinery Mr. FOWLER has already sold at Battersea some 14,000*l.* worth, and that Messrs. HOWARD have disposed of 12 or 14 sets—this being but the beginning of the results in which this show will land them. The meeting cannot fail, we feel sure, of placing the machine makers and the Society on more cordial terms with one another than has lately been the case. A body which sacrifices so liberally of its means for *their* benefit, as being that of English agriculture generally, will command their support. And this great proof of its energy and life which it has thus displayed will strengthen its foundations in the goodwill and co-operation of English agriculturists, where they will lie much more safely and satisfactorily than in having a large balance at their bankers or a large invested property against "a rainy day."

The following are the numbers of the visitors on the several days of the Show and the sums actually received. We understand that the total cost of the meeting exceeds 14,000*l.*, so that there is a considerable deficit to be made good by the Society notwithstanding the large receipts on the last five days:—

	No. of Visitors.	Price of Admission.	Actual Receipts.
		s. d.	£ *s. d.*
Monday, June 23	363	2 6	46 0 0
Tuesday, June 24	806	2 6	102 5 2
Wednesday, June 25	1,146	2 6 and 20*s.*	697 15 5
Thursday, June 26	5,873	5 0	1,467 1 7
Friday, June 27	10,056	2 6	1,261 3 0
Saturday, June 28	8,684	2 6	1,082 4 2
Monday, June 30	28,112	1 0	1,404 15 6
Tuesday, July 1	38,131	1 0	1,911 6 8
Wednesday, July 2	31,217	1 0	1,566 15 7
			9,599 7 1
Catalogues sold (an unprecedented number)			1,050 0 0
Received on entries about			1,500 0 0
Total receipts—about			£12,000 0 0

There can be no doubt that the agricultural machine makers have exerted themselves nobly to make use of the great market which the Society has thus provided for them: and as little is there of the great efforts and success of our stock breeders and flock masters. That the Short-horn breeders have been fully alive to the advantages thus offered them plainly appears from the enormous classes of magnificent animals they have exhibited. How great the advantages within their reach we have endeavoured to show in some further remarks upon the subject in another column.

The Hereford and Devon breeders too have been wide-awake. There never have been finer shows of all our leading breeds, and this is also true of the more strictly local kinds—the Ayrshire, Galloway, and Kyloe; the Sussex, Norfolk, and Channel Islands.

Of Sheep too the display has been magnificent. The Leicesters probably have been equalled formerly, and the Southdowns have been equal to anything that has been seen in former years. But look at the advance here made in public estimation by other classes. The immense display of that lordly sheep the Cotswold, owing probably to the local indignation excited by an imagined slur thrown on them by the Society, has never been surpassed. Carrying wool which is now of the highest market value, the quantity of surface bearing it—unlike that of the Merino disposed in ugly folds and wrinkles, which are defended on the score of increased quantity of fleece—is spread tightly over one of the best formed carcases of which the perseverance and intelligence of our breeders can boast. Both mutton (for quantity) and fleece (for quantity and quality) are unequalled by any other kind; and it is well that the spirit of the Coltswold breeders has been called forth to make such a magnificent display as is here exhibited.

The Shropshires, too, are a splendid show, and of some other breeds reports will be found in other columns.

It is impossible to doubt that a collection so multifarious and so large, and in either view extraordinary as the produce of "a little island in a Northern sea," thus displayed before men of all countries, and fully alive to the importance of improving their own agricultural resources, must prove of immense service to English agriculturists.

IT can be no matter of surprise to anybody that a country lying between the 42d and 51st degrees of north latitude should present conditions of climate as various as those which exist in France. Had that country been perfectly level, so that all places equidistant from the equator should receive the solar rays at the same angle, the soil also being possessed of the same heat-absorbing power, there would be bands of temperature as strictly defined as the parallels of latitude. This, however, is not the case. As that continent rose from the waters of the Atlantic and the Mediterranean, the waves which licked out the Bay of Biscay and the Gulf of Lyons, carried away the softer strata, moulded the water-shed of the country, and commenced a work of denudation, which was to be finished by the rivers. Other geological agencies too, have been at work to elevate or depress certain districts, while elsewhere the crater has been opened, and the country lies buried beneath molten streams of liquid primitive rocks. There it lies tossed and heaved about. Some low lying portions are protected from the inroads of the sea by barriers raised by human hands. Here spreads a vast table land gashed by deep ravines, and anon the mountain chain springs up and bears upon its peaks the curtain of the cloud. The conditions of life thus created, light, heat, and moisture, are as varied as the contorted surface. The elevation of the land above the sea level, the proximity to or remoteness of land from the sea level, the aspect which the surface presents to the sun's course, the position and direction of mountain chains, the nature of the soil, the prevalent winds, the quantity of rain, are all causes of differing forms of animal and vegetable structure. As life in the ocean is governed by depth, so terrestrial life is governed by altitude. The mountain may exhibit from base to summit the representatives of all the vegetable zones, from the Palms of the tropic to the Red Snow Algæ of Polar regions. Here is life for the sea shore, life for the open plain, life for the marsh, life for the fens; here is life for the fertile river deposit, life for chalk down, life for the limestone crag, and life which presents us with luscious fruits from the granite rock in which it can obtain only a precarious root-hold.

This beautiful adaptation is as discernable in animal as in vegetable life. The zones of animal life are defined as sharply, horizontally and vertically, as the floral zones. The tenants of the tropical jungles would die out upon the slopes of the Himalayas, where the bison and buffalo meet with their fullest development, and these, if moved up into the region of flowerless plants, would soon cease to exist. There is a special framework, there are special muscular, vascular, and respiratory systems, there are special organs of digestion, secretion, and reproduction, and these specialities are intended to fit the living thing for its special situation. There are not only the broader distinctions of orders, genera, and species, but even finer differences brought about by an endeavour on the part of the plant or animal to live in conditions under which it has perhaps been accidentally thrown.

Within our own knowledge many species of animals have ceased to exist, and are to be found only in our museums. The wild boar is no longer a tenant of our forests; wolves are extinct; foxes are fast disappearing; it is only by means of a game law that hares and rabbits can be retained, and many species of "vermin" have been totally lost in these islands. They were only tenants at will, occupying the land till we might require it for other purposes. In this country we once possessed many more breeds of horned cattle than we now have; but they, all useful in their own spheres at one time, have given way to that one other source of change not yet mentioned—the degree of cultivation and improvement at which the country has arrived. An improved breed of horses liberated the bullocks from the yoke, and it seems not improbable that the steam-engine will in turn strangely circumscribe the labours of the most nimble of four-footed field steppers. If the characters of a neighbourhood are changed by the penetration of a road, the opening of a market, the drainage of a fen, animal and vegetable life both change too; some forms become extinct, others are modified.

In France at the present time all these changes are going on. Macadamised and iron ways are being constructed; isolated districts are being brought into contact, markets are being established, the surplus from the fertile land is being sent to supply the wants of the inhabitants of sterile regions. Increased population will require increased production, and in its endeavour to increase production many of those conditions now necessary to the maintenance of several breeds of cattle will be abolished, the bovine race will be kept for the production of meat and milk. Look-

ing at the Cotentin, the Mancelle, the Flanders, the little cattle of Bretagne, the Parthenais, the Charolaise, Lorraine, and Comtoise, the Salers, Limousin, and Auvergne, the Garonaise, and Béarnaise breeds, besides the hosts of sub-breeds, there are perhaps but a few of these which will be found to hold their own at the end of fifty-years. We have already spoken of the Cotentin, and the disposition of the N.W. of France.

The north east consists of a tract of land not so rich as the north west. For the most part limestone and chalk crop to the surface. There are 20 departments comprised in this angle, which contain about two and a half millions of horned stock. The mountains of the Vosges, the High and Low Rhine, the High Saône, the Daubs, Jura, Ain, Côte d'Or, Saône-et-Loire and Yonne are those portions of this division over which this bovine population is most thickly spread. The main families are the Charolaise, the Lorraine, and the Comtoise. The Lorraine had no representative at Poissy, and will we think soon have none in France. Of the Comtoise, a cream coloured tribe, there is more hope. They are divided, those of the plain for work, those of the mountain for milk, but the latter having been crossed by the Swiss milkers have nearly lost their character. But the breed for this division is undoubtedly the Charolaise, a fine white mouldable cattle of great docility, and possessed of a remarkable tendency to fatten. The breed receives its name from the old Count of Charolles, who formerly gave his name to the Duchy of Bourgogne. Of all the eastern breeds it is best known in the Paris market, but it owes its development specially to the market of Lyons. It has now extended through the neighbouring counties, such as Nièvre and a part of Berry, and covers as many departments as the Cotentin. A rather exceptional specimen of this breed, 4 years of age, measured from ground to shoulder, 4ft. 6in.; from tail to shoulder, 5ft. 2in.; from tail to horns, 6ft. 8in.; and girthed 8ft. 5in. The breed shows remarkable strength of constitution. Formerly this district sent no fat cattle to Paris, but now it is enabled to send as much as Normandy. One-half the breed is kept for work. but the other half is left at liberty to develope that surprising precocity which will enable it to run close upon the heels of our famous Shorthorn. There were animals at Poissy, in fact, which showed that where persevering care is taken the Charolaise may very nearly approach the cylindrical form of the Durham.

Passing from the east to the centre we observe a sensible diminution with respect to bovine population. Whereas in the north-west we found 4 million of bullocks supported, and in the north-east 2½ millions, in the centre we find, upon an equal area, only 2 millions. One-third of this immense surface remains uncultivated, a wild heath in fact, and two-thirds very miserably cultivated. The formation is mostly of granitic and clay slate, quartz, and gneissic rock. The land sells for about 7*l.* 10*s.* per acre, and the solitary human head per 5 acres is not blessed with the brightest visions of earthly bliss. The poverty of this district is not due altogether to the infertility of the land. Nature seems to have behaved ill to it; but man has behaved worse. The Government has demanded the legal quota of tribute, but has expended nothing, or next to nothing in roads or canals. What use was there in their producing more grain than sufficed for their own wants, since they could transport it to no market. They chose a better plan to produce some commodity that could transport itself over the chains of mountains which shut them out from the foreign market. This locomotive produce possessed two horns in front and a tail behind. The Salers and Limousin breeds of cattle have in fact saved this region from utter ruin. The Salers is a very large gaunt red breed, principally esteemed for milk, and with the Aubrac or Abeyron, a thick-set breed of strong grey colour, will probably yield to the docile and cream-coloured Limousin so well known in Paris. Of the latter, two-thirds find their way there from the pastures of La Vendée and Normandy, whither they go direct from Provence. Nothing is easier than to double or triple the production of meat of the Limousin. To increase irrigation, to take better care of the meadows and pastures, to increase the cultivation of roots, to abolish the working of cows, and to attend to selection, is all that is necessary to such a result. The Limousin are larger than the Charolaise, but in form and character otherwise much resemble them.

The conditions for cattle are not so favourable in the south, as in the other divisions. The varieties are numerous but unequal. The fertile plains of the Agénois produce a fine race, and the valley of the Garonne; but beyond the Béarnaise, which occupies the pasturage of the West Pyrenees, and affords a plenteous supply of milk, there is no breed that need be special, except the Bazadaise, which are especially fitted for some local conditions with which they are doomed to contend. For the rest the Limousin would produce more meat in less time than any of them, and when it becomes necessary to put all the economic forces of the country into work, that locomotive commodity will move south-west as well as north, and make himself as merry in Gironde as in Auvergne.

We are under great temptation to follow this subject up and to attempt to show that the French will serve their own interests by confining their attention to the three or four breeds thus indicated, and leaving the rest to die out when they shall have served their purpose. As we are not writing for the French breeder, but for the English, it is unnecessary to state any reasons for advising our neighbours not to attempt any crossings of the native breeds, because from what we saw at Poissy we are led to believe they are not likely to commit so great an error. Leaving the French to take care of their own interests, for which they are most capable, we come to the practical conclusion for British breeders from all this.

Although native crosses will not afford any decided advantages, the Durham-Charolaise and Durham-Limousin show sufficiently well what results may be obtained by that alliance. It is quite certain that time being allowed, the pure Charolaise and Limousin may be brought to a very high degree of perfection and nearly rival the Short-horn; but there is a question as to whether French breeders, knowing there is a short cut to the same result or a better, by the employment of foreign blood, will be sufficiently national in their feelings to refrain from the use of it.

Should that question be decided in favour of gain, and not merely of pride, let the Short-horn herdsmen look out, for not only the north-west of France, but the whole country is open to them. This is not merely assumption, but arises out of a careful comparison of the results of first crosses with the Durham, with the results obtained with the pure breeds after many years of careful selection. *R.*

THE ROYAL AGRICULTURAL COLLEGE.

I READ with much surprise in a leading article in the *Gazette* of Saturday, June 28, a statement that our College at Cirencester "is on the eve of breaking up." I can assure you you have been imposed on. As one of the original promoters of the College, greatly interested in its progress, and acquainted with the general management of it from its foundation, I am enabled to state, that whether we regard the number of the students during the late session, the quality of them, the applications received for future admission, the satisfaction communicated by many parents to the Principal during the past year, and the progressive improvement in the financial department, the College never stood higher in public estimation than at the present moment; and that it is at least as far removed from "breaking up" as at any former period.

It is therefore more especially lamentable that differences and divisions should have existed between the Principal and the Professors. This is a source of much concern to the noblemen and gentlemen who have subjected themselves to serious pecuniary responsibilities in carrying forward the institution entirely on public grounds; a patriotic example which might well have induced amongst their officers a spirit of mutual forbearance, extinguished all petty jealousies and personal differences, and led to harmonious action in carrying out the object of the promoters.

The want of such consideration is the more vexatious, as my personal knowledge of all the parties enables me to state that every one of them is equally zealous for the success of the Institution; and furthermore, because no one can call in question the qualifications of any one of them in their respective positions.

Entertaining as I do these convictions, and a great respect for all the officers of the College, I much regretted to see, by your report of the meeting of the College Club at Cremorne last week, that a one-sided discussion of these grievances was permitted to proceed in the absence of the Principal, all the professors being present; and that this appears to have been continued after Mr. Holland, one of the Council, had stated "that the strictest investigation would be made in respect to the differences which had taken place in the College."

After such an assurance I must add that the leading article, entirely prejudging the matter, was premature; and my conviction is that it must have been inadvertently admitted into the *Gazette.* Before proceeding to judgment, which should follow, and not precede inquiry, —"hear both sides" is a good old English maxim; and it is a wholesome practice that the publication of reports of cases affecting personal character or conduct, when one side only has been heard, should be deferred until the defence has been completed, and the case is ripe for judgment. It has been remarked by an outsider of these differences that if the article to which I have referred was not contributed by one of the parties to them, the materials must have been; but I am satisfied that neither of the Professors would have been guilty of such a manifest impropriety. *Charles Lawrence, Cirencester, July* 2.

[Our remark was that "*the establishment*" at Cirencester is on the eve of breaking up; and it is difficult to understand how Mr. Lawrence can have misapprehended the statement, because it was carefully hedged to its exact and intended meaning by the further announcement that Dr. Voelcker and Mr. Brown have resigned their Professorships. We much wish it were possible to acknowledge that our information has been at fault, and that, as Mr. Lawrence puts it, we have been imposed upon. But indeed our information was no especial news from privileged or private sources at all—it was the common talk of all the friends of the Royal Agricultural College in the Battersea show-yard. And the "outsider" whose good taste suggests that the leading article was "contributed" by one of the Professors, evidently knows as little of the public feeling which exists upon the subject as he does of the management of the *Agricultural Gazette.*]

GREAT MEETING AT BATTERSEA.

SHORT-HORNS.

IN resuming our report, we allude first to the Short-horns: in Class I there are 26 animals exhibited, and we think on one or two previous occasions this class has shown more merit; it is, however, a good one, and commended as a class by the judges. In looking carefully through this class, however, we were struck with the award of the first and second prizes, for although both were given to really meritorious animals, yet we thought that Mr. Wood's white bull, although level and well grown in other respects, was somewhat narrow and deficient in girth, which together with his plain head and weaker constitution, should have placed him second on the prize list instead of first, and in our opinion No. 20, LORD OF THE HAREM, well deserved the high honour of the first prize; we were especially pleased with the great size, the grandeur of style, and the massive frame which he had attained; it was remarked that he was not quite so level in his flesh as he might have been, but let it be remembered he was not an animal under exhibition at the fat cattle show at Christmas, and the only objection in our opinion that could be taken against him was a question of condition, which should certainly have gone in his favour and secured him the first prize.

Class II. contained 25 animals, many of which were really fine specimens of the short-horned breed, and although we consider the prizes fairly awarded, yet we thought that No. 46, Mr. Stirling's bull, was also entitled to the Gold Medal. This animal was as perfect in form, as rich in colour, and as excellent in quality as any animal of his age ever exhibited at the Society's meetings; the only objection that could be taken against him that we could observe was that the rich roan colour which had so beautifully marked his body had very slightly tinged his nose also.

Class III. Requires no especial notice, except that 42 bulls were shown by 33 exhibitors, and the class was generally commended.

Class IV. This was really a remarkable collection of calves, and contained 42 animals, and when it is considered that they were all under 12 months old it speaks well for the future of the Society that so large a number as 30 competitors were found in this class. In the award of prizes we have nothing to complain of, but when we come to No. 113 and find that it receives the Gold Medal as the best male in all the Short-horned classes, we must give our opinion against it. To our mind the Gold Medal ought to be given to an animal that has attained to something like maturity. In this instance No. 113 is only 10 months and 2 weeks old, and although for his age a first rate-animal, yet there are many chances against his being first in his class another season, as all practical men know how fat calves alter in form and outline in their second and third year, besides which we consider that any bull which receives the Gold Medal ought to have contributed largely towards propagating his breed.

Class V. was composed of 26 animals, and we could not take any exception to the award of prizes, or to the Gold Medal given in this class to the first prize cow, No. 144, and we could but notice in this animal the distinct characteristics of the Booth blood, which displays if it were required the necessity of securing good blood by all those endeavouring to obtain honours at the Society's meetings. In this class we must call attention to the five splendid cows exhibited by Mr. Jonas Webb, for although he only secures a third prize, yet we very much doubt if ever five finer and really more beautiful cows were ever sent to the show by one exhibitor.

SHEEP.

We add to our former report some further notes on some classes of the Sheep:—

HAMPSHIRE AND WEST COUNTRY DOWNS.

Class I. The competition was good, there being 27 sheep exhibited, and we feel assured that the judges

must have had a severe task in selecting the best animals. The 1st prize was given to an extraordinary good sheep, both as regards size and quality.

Class II. Only 8 sheep were shown, but they were of more than average merit, for 5 sheep out of the 8 either received prizes or commendations. It was thought by some parties that the 2d and 3d prizes ought to have been reversed; but upon close examination we found that the 3d prize animal was not fairly shorn behind the shoulders. This circumstance may easily deceive a casual observer.

Class III. This class was generally commended by the judges, and there being 11 pens exhibited shows the interest taken in this really valuable and rising breed of sheep. The 1st prize ewes were splendid specimens of the Hampshire Down breed, both as regards size and quality, the second pen were heavy and deserving stock, the 3d prize was given to a pen of ewes of immense size and weight, but the wool was coarse, and we thought that had they a finer fleece they would have stood higher in the judges' estimation.

DORSETS.

This breed of Sheep, although not shown in large numbers possesses peculiar qualities, that of rearing very early lambs suitable for house lamb and the early London market. The specimens shown were chiefly of the improved or Somerset variety of the breed. In all three classes, including both Rams and Ewes, the first and second prizes were taken by Mr. Thomas Danger, and were certainly very high and well bred animals, and may be considered amongst the horned breeds the same as the Southdowns are in relation to polled black-faced breeds.

MOUNTAIN BREED.

The different varieties of sheep shown under this head, although no doubt they may be all well calculated for the district in which they are reared, could not of course attract so much attention as the superior and recognised breeds of the country, but they each have their value—and in Class I. two breeds were more conspicuous than the rest, and yet totally different, the one being a large long-woolled variety termed "Lonk," the other a small breed called "Exmoors;" the latter seems to have been wonderfully improved of late years, particularly the variety taking the 3d prize, and bred by Mr. Merson; these sheep are very compact in form and make great weights within a small frame. In each of the classes of the Mountain breed, the judges appear to have distributed the prizes amongst several different breeds of sheep, and we think very properly, for it would be bad policy to recommend by the Society's award one breed of sheep to the exclusion of the remaining, when it can be easily proved, that in case the breeds of sheep changed their locality, the one for the other, they may under the influence of a different soil and climate become comparatively useless.

THE HORSES.

To resume our remarks on the Horse Department of the Agricultural Show at Battersea, more extended reflection has strengthened our conviction that the shortcomings of particular parts were immensely outweighed by the completeness and perfection of the whole. Thus although we may justly consider that the thorough-breds as a class as well as the dray horses were somewhat inferior, and the show of hunters considerably below those at Leeds, yet the grand army of agricultural horses, consisting as they did of three great divisions, the Suffolks, the Clydesdales, and the Miscellaneous breeds, were sufficient in themselves to wrest the laurels from every previous show, and materially conduced to the prevailing impression that the Battersea Show of 1862 stands out in bold relief as the most successful in the annals of the Society. To commence our second notice with the Catalogue we find 13 thorough-bred horses competing for the two prizes of the Society, the 100*l.* prize going to the Derby winner of six years ago, Ellington; and the 25*l.* to Marionette, who ran second for the great race on another occasion. We find no fault with the judges' award, seeing they were directed to pick out the horse best calculated to get stout thoroughbreds, that is, good race horses. The prize went to the Derby winner, as last year, there being no winner of the race, the prize went to the horse that beat the Derby winner as a two-year old, and might have beat him in the great race if he had not broken down. If the directions to the judges had simply been to reward the thorough-bred best calculated to get good or weight-carrying hunters, which many persons suppose was really the object, and ought to be the purpose of the Society, their duties would have been clear and well defined; for, as the pedigree of all thorough bred horses is tolerably equal, and as the slowest thorough-bred is fast enough for a hunter, their endeavours would have been to discover a horse deep in the ribs, and with sufficient carcase, with legs strong and flat feet, good and faultless shoulders, loins, hocks, and quarters, and when thus found to give him the prize, although he might never have won a good stake. Another consideration ought to be that he should cover half-bred mares at a moderate price, otherwise "*cui bono?*" If these considerations had ruled, we rather doubt that Ellington would have secured or deserved the prize by reason of his greyhound shape. In other respects we do not join in all the severe censure that has been bestowed on him. His fore legs were good (a very great point), his shoulders would enable the saddle to be carried well, and we can readily forgive a thorough-bred horse having rather a large head, if well placed at the extremity of a good and sufficient neck; then Ellington had good quarters, and was long and low, and besides this if he had not been stout would he have won the Derby? The word stout has many meanings—it may signify large, fat, strong, but although a strong cob may be designated stout, yet this term when applied to the thorough bred refers to powers of endurance; it means a horse that can maintain his speed through a long race and with a good weight. A Derby horse is probably stout, a St. Leger winner is still more certainly so; but the first in a four mile race, with proper competition, is unquestionably a stout horse. Stoutness, therefore, refers rather to what is unseen than to what is visible to the eye. The perfection of the heart, the brain, and the nerves, all conduce to make a stout horse. We must not blame the judges, therefore, if they took this view of the case. The second-prize animal, Marionette, seemed better calculated for getting hunters, and so was Horror and Sir John Barleycorn. The class, however, altogether was by no means so good as that at Leeds, nor were the Hunter Classes, whether stallion or geldings, so excellent. As there is a special prize for thorough-breds it is hardly fair to make half-breds compete with thorough-breds as hunting stallions, the more so as there are some Judges so superstitious in their reverence for Eastern blood that the veriest weed that turned out of a training establishment, and stumbles over the payment, if pure in pedigree is preferable to the weight-carrying steeple-chase winner worth 10 times the amount, but who has a stain in his pedigree. For though three-fourths of his ancesters are pure as Eclipse, yet his strong forelegs and shoulders are due to some maternal ancestor.

In the Hunting Class there were only seven entries, and although the two prizes were open to both thorough-breds and half-breds, both prizes were very properly given to the latter, the first to the British Statesman, a dark bay, five years old horse, possessing great symmetry, strength, and substance, and three-fourths of blood pedigree at least. The horse looked like carrying a good weight across the country; and more than that, if put to mares about as well bred as himself, is calculated to get produce equally valuable; while if put to mares with still more breeding the produce would have substance enough to bring money into the breeder's pockets instead of robbing him, as would be the case with the weeds produced by such mares if put to ordinary thorough-bred horses. Billy Barlow, the second prize winner, was a very promising 3-year old of about the same amount of breeding as the prize horse, this being the grandson of British Yeoman, as Mr. Manning's horse was the grandson. In both the cross-breeding appears to have very well amalgamated.

The *Brood Mares* in the Hunting Class were only four in number, but the two prize animals were both deserving.

The Gelding Class had 14 entries, but the bad and indifferent greatly exceeded the good; amongst which, however, we must willingly place the chestnut prize animal by "Marsyas," and belonging to the Messrs. Russell. With regard to the large coarse second prize horse, we hope he is better than he looks. We observe in the catalogue that although the breeder is unknown the sire of the animal is stated. We also note that the sire of the dam is unknown, a fact we are not surprised at, seeing that the dam herself is unknown. In this class we missed such animals as the grey and the chesnut which delighted the eyes of all beholders at Leeds last year.

In the Hunting Mare Class there were only two shown, one of which was worthy of a prize.

In the Carriage Horse Class I, there were six only shown, the prize going to Mr. Holmes's young brown horse, "Young Pottinger," a fine powerful animal; but whether so truly a carriage horse as the two next numbers, 738 and 739, Speculation and Young Perfect, is a matter of doubt. It is a matter of much importance to keep up the breed of pure Clevelands as much as possible, particularly the short-legged sort, and this can only be done by preserving pure stallions. By all means let them be used as the cart horses of their neighbourhood, so that pure mares should be at hand to cross with thorough bred or well bred stallions, to supply the metropolis with carriage horses.

Of *Carriage Brood Mares* there were only six entered, Mr. Cooper winning the 1st prize with his well bred Yorkshire mare, and Mr. Holmes the 2nd with his fine bay mare Polly.

In the *Roadster* Classes there were 13 stallions and four brood mares. Mr. Johnson, of Lincolnshire, winning the 1st prize with his bay old horse "Merry-legs," with which decision we are better satisfied than with the 2d prize winner, Crocus, a rather coarse-looking animal, but whose action no doubt carried the day. Mr. Peel, with his old brown mare Jessie, won the 1st prize in spite of her 19 summers, beating Mr. Percy's four year old, who won the second honours. It is rather questionable whether mares of 20 years should win prizes as brood mares unless in a special class for *grandmothers*.

With regard to the Pony Classes there were no less than 59 entries for the 10 prizes offered for these little animals. Whether the ponies are not a little overdone is a matter of doubt. We are inclined to think that so many classes and prizes are not desirable, and the Show was by no means improved by the number of half starved Shelties. The breeding of ponies must always be exceptional, depending as it does on the locality of mountains, moors, and forest, where keep is very cheap, and when in such localities it is very requisite to encourage any local breeds, but whether at the late show it was desirable "to go through so much in order to get so little," as Sam Weller said, is a matter of considerable doubt. There are some very good ponies exhibited, and amongst them our old friend "Bobby," now sadly on the wane as compared with his Barnstaple appearance. Amongst the good there were many bad and common place ponies. Prices were asked for some of these animals considerably beyond their value. Amongst those most worthy of note were Mr. Blenkiron's Napoleon, a Welsh dun pony, Mr. Ashwell's Chesnut, who got prizes; and Mr. Moffat, with several others who did not, are worthy of note; and still more Mr. Baker's Exmoor bay pony, and Dr. Beeror's several entries.

We must reserve our remarks on the Suffolks and other cart horses till next week, merely correcting in this place an error in our last, when in alluding to the prize Cart Stallion Nonpareil, he is spoken of as a Chestnut instead of a Bay.

THE IMPLEMENT YARD.

Messrs. Garrett & Son, of Leiston, Suffolk, occupy Shed A., No. 1, with an assortment of first-class agricultural machinery worthy of their name. The corn drills and horse hoe, with which their name is identified—Chambers's manure distributor, which they first brought out, and which is probably the best of its class—many first-class threshing machines and steam engines—also Howard's new steam cultivating apparatus, occupy this stand. In the yard for machinery in motion they have 4 threshing machines and other apparatus in constant work. The whole are worthy of the high standing of a first-class firm, which now has business relations with every European country.

Messrs. Richmond & Chandler, of Salford, show their well-known chaff cutters, Turnip cutters, steaming apparatus, and root washers in which the open cylinder containing the roots is rolled out on quadrant arms as soon as its contents are sufficiently washed. There is here too a bread-kneading machine, in which by a clever arrangement of revolving curved valves the contents of a cylinder are mixed together.

Ruston, Proctor, & Co., of Lincoln, have a very fine show of moveable steam engines, threshing machines, saw benches, and mills.

Mr. Nicholson, of Newark, shows haymakers, rakes, Cambridge and other hand rollers, also small steam engines, oilcake breakers, dressing machine with an ingenious apparatus for lifting the clean corn and filling into sacks.

Mr. Cranstoun, of 58, King William Street, exhibits Wood's mower and reaper, which is, as everybody now knows, a first-class machine.

The Trustees of Mr. Crosskill, Beverley, show their form of Bell's reaper, which took the first prize at Leeds; their clod-crusher and roller, in which every alternate toothed disc is slung with a large and open slot upon the common axis, thus dropping easily on lower places, or rising easily over high pieces, in either case helping to keep the machine unclogged. A great display of first-rate wheels and axles and carts and waggons is made; pumps; farm railway; Archimedian root-washer, in which the roots are thrown out cleaned in a continuous stream by a clever arrangement at the end of the cylinder; bone mills are also shown at this stand. A poor fellow working for this firm had his arm crushed piecemeal and torn out on the first day of the show; he is, strange to say, in a fair way towards recovery, notwithstanding his frightful accident.

Messrs. Howard of Bedford, have a noble display of implements. Their steam cultivator, referred to elsewhere, is, of course, a principal feature. There is a very fine collection of ploughs, showing first-rate workmanship. Good models, and well distributed strength. Among others, the enormous trench "clunch" plough, for bringing clay up to the surface of the peaty soil of the fens; their haymaking machine, one of the best of its class; their horse-rake, also first-rate; their harrows, well known as good.

Mr. Samuelson, of Banbury, shows the Australian self-raking reaper, in which arms revolve guided by a circular bed near their common centre, rising out of the way, and sweeping the platform alternately. Its performance has been satisfactory. Bell's mowing machine, in which the arrangement is perfect for insuring that the mowing blade shall lie flat on the ground whatever may be the relative position of the driving wheels and the swathe. Hay makers, Turnip cutters, pulpers, chaff cutters, mills, chain harrows, churns, are exhibited here.

Kirby & Barrows, of Banbury, show steam engines and threshing machines.

Messrs. Eaton & Son, of Thrapstone, show their patent Turnip thinner or buncher.

J. Tye, of Lincoln, exhibits steam engines and corn mills.

Mr. Clay, of Wakefield, shows his well known cultivator, which is acquiring a large local reputation.

Messrs. A. & E. Crosskill, of Beverley, show rollers, carts, railway, reaping machines, bone mill, &c.

Messrs. Woods & Cocksedge, of Stowmarket, exhibit grinding mills, crushing machines, root pulpers, in which every tooth is fixed separately with a wooden wedge, and may be replaced at a penny apiece.

There is here also a novelty in the shape of a heavy wooden framework on wheels dragging a harrow underneath and behind it, to which an oscillating lateral motion is given by crank motion from the wheels. A drill box is carried in front, so that it may be used as a sowing machine; the same oscillating motion may be used for bunching out Turnips, and hoes behind may grub the intervals at the same time. There is testimony to its efficacy.

Messrs. Young, of Vulcan Foundry, Ayr, show their Carrot and Mangel seed sower and drop drill, which is a very efficient tool, working upon an old and well known principle.

Messrs. Robey, of Lincoln, exhibit first-rate steam engines and threshing machines.

Mr. W. Smith, of Woolston, shows his well known steam cultivating apparatus, of which a report is given elsewhere. It includes also a new implement for cultivating and making a seed bed, depositing and covering the seed, and close by are a sample of Beans in the straw which bear witness to both the natural fertility and good management of the field worked by steam power and planted by this new instrument where they were grown.

Isaac Spight, of Brigg, shows his very excellent horse-hoe, which is probably as perfect a rival of that of Garrett as is to be found in the yard. It has a number of exceedingly well devised adjustments for setting the tool to the work it is desired to do.

Wightman & Dening, of Chard, show the haymaker, cider presses, &c., which their district needs. The cheap haymaker is beaten as to quality and strength by most others in the yard.

Near this stand is that of *Sharp & Bulmer*, of Middlesboro', Yorkshire, in which there is an exceedingly clever brick and tile machine, which pushes the clay with which it is fed by a number of revolving valves through the requisite dies, and provides a space for lubricating the material as it passes, so that it shall not have its edges torn by the die.

Goss & Peene, of Rayne, near Braintree, show root graters.

Holmes & Son, of Norwich, exhibit steam engines, threshing machines, drills, &c.

F. Mason, of Ipswich, show root graters, boilers, chaff engine, and a dressing machine, provided with a well packed Barley awner—also a hand drill or dibble, which is a very cheap and apparently efficient tool.

W. Smith, of Kettering, shows a very cheap and excellent corn horse hoe; 10 rows of Wheat, and 4 rows of Turnips can be managed by it, and it costs 7*l*. 10*s*.

Messrs. Stacey & Son, of Uxbridge, show chaff cutters, oilcake breakers, horse hoes, &c.

Messrs. Tasker & Son, of Andover show ploughs, harrows, steam cultivating apparatus, including windlass, &c., also steam engine, threshing machine, bruising mill, &c. Further on we pass *Whitehead's* (of Preston) tile machine, *Gibbon's* (of Wantage) capital threshing machine, *Hayes & Son's* (of Stanford) carts and waggons, *Marshall & Son's* (of Gainsborough) steam engines, *Robinson & Son's* (of Barton-on-Humber) clod crusher and chain harrow, *Hayes & Son's* (of Oundle) corn mill, straw elevator, and *Major Munn's* horse hoe for grubbing between the rows of Turnips, and revolving brushes for bothering the Turnip-fly, *Williamson & Son's* (of Kendal) turbines, pumps, small steam engines, &c., *Wedlake & Dendy's* (of Hornchurch) compact small threshing machines, hay tedder, clod crusher, &c.

Carson & Toone, of Warminster, show a very simple and good horsehoe, a number of Moody's patent root crusher and pulper, cheese presser, &c.

Mr. Sovereign, of Islington, shows the Canadian cultivator and seed drill, and some other tools.

W. Sawney, of Beverley, shows corn dressers and blowers; the excelsior harrow of J. Seaman, of Worcester, in which a set of zig-zag bars and tines, separated by tubes, are bolted together by three or four bars, and tied tight by nuts and screws, the whole coming to pieces for easy packing by loosening four nuts, and the whole being conversely tightened up in an equally simple manner.

Davey Brothers, of Sheffield, show a number of well-made steam engines.

Messrs. Seaman & Everill, of Worcester, show their harrows just described; also ploughs.

G. Thomason, of 80, Upper Thames Street, London, shows Hussey's reaper, Gardner's Turnip cutter, chaff-cutters, &c.

Mr. J. A. Williams, of Baydon, shows an enormous apparatus, heavy roller in the middle and heavy harrows at either end, to be drawn to and fro by steam-power, and thus produce tilth at once. His connected and yet independent ploughs are also shown in their combined form for steam cultivation. There cannot be a doubt of the superiority of Fowler's rigid combination.

A simple horsehoe is shown close to this by *Mr. Darby*, of Little Waltham, Chelmsford.

Cooke & Co., Lincoln, show a capital collection of well made ploughs.

Mr. Richardson, of Carlisle, shows simple corn dressing machines—not however proportionately cheap.

J. Gray & Co., of Uddingston, show their well made (but over strong and heavy) Scotch ploughs and cultivators. The field grubber has a very easy lift and is no doubt efficient—very strong and heavy.

Messrs. Wallis & Haslam, of Basingstoke, show a large collection of implements, steam engines, threshing machines with spherical bearings to the axis of the drum—thus enabling a twist or uneven position of the frame work without any diminution of the ease of the motion. Seaman's excelsior harrows are shown here—also ploughs and horse hoes.

W. C. Cambridge, of Bristol, shows steam engine, his well known roller, chain harrow, &c.

Messrs. Ferrabee, of Stroud, and 75, Holborn, show a good collection of agricultural machinery, including good horizontal fixed steam engine, grinding mills, chaff cutters, hay tedders, horse gear, spiral chaff cutter, &c.

Messrs. Radcliffe, of Pendlebury, show a number of chaff cutters.

Smith Brothers, of Thrapston, show horse rakes, corn drill, cake and Oat mills; the rakes carry their teeth at the end of strong tubular beams.

J. Stalker, of Penrith, shows a very good and cheap drill, horse hoe, also Potato lifter, ploughs, &c.

J. Armstrong, of the same place, shows also ploughs and horse hoes.

Messrs. Fry, of Bristol, exhibit horse rakes, carts, and corn dressing machines. Their spring balances are cheap and good.

Messrs. Buxton, of New Malton, exhibit powerful disc grinding and crushing mills.

Foster, of Lincoln, shows steam engine and threshing machines of first-class manufacture.

Mr. G. Parsons, of Martock, Somersetshire, shows his patent wheels and axles; the spokes are wrought iron, and the boxes and naves of the wheels are cast on them. Each spoke has an end cast into the nave, and the other end has a box screwed firmly on to receive the felloe. These boxes can be screwed out and so tighten the felloes up against the rim, if they get loose. They are good and cheap.

Mr. W. Pearce, of Poole, shows ploughs with abrupt mould-boards and more taper ones, the former being the Dorset plough.

Messrs. Reeves, of Bratton, exhibit their liquid manure drill, broadcast manure distributor, corn drills, &c. An ingenious thistle paddle, price 18*s*. is shown here.

Messrs. Aveling & Porter, of Rochester, exhibit their locomotive engine, of great power and first rate manufacture.

Near this *Mr. J. Black*, land agent, of 20, Great George Street, Westminster, exhibits a large model of farm buildings.

The Busby Agricultural Implement Company show capital ploughs, combined presser and plough, chain harrows, reapers, and carts. Hannam's (of Burcot) harrow cart is shown here and at many other stands.

Mr. J. Coultas, jun., of Grantham, shows drills in which each disc on the seed barrel has its own portion of the seed box cushioned off to it, so that in sideland work there is no risk of the seed going all to one end of the box and the upper discs running idle. There are also other merits, such as the roominess of the arrangement of the coulters hindering anything like choking. The manure distributor is a good tool, and he shows a good horse hoe.

Hunt & Pickering, of Leicester, exhibit a large stand of machinery, ploughs, harrows, drills, pulper, &c.

Messrs. Mitton, Penny, & Co., of Lincoln, show a corn screen, the wires of which are brought nearer or placed further apart by the whole cylinder being squeezed together or let out as may be desired. Any degree of fineness that is desired is thus obtained.

Messrs. Smith & Taylor, of Ipswich, show cultivators, Seaman's harrows, &c.; and a horse rake, of which a central part may be made to drop below the general level, for use in clearing out the furrows between ridges.

Messrs. Amies & Barford, of Peterborough, show their capital steaming apparatus, clod crushers, water ballasting roller, sack barrow and elevator, drills, pig troughs, &c.

Messrs. Picksley & Sims, of Legh, show chaff cutters, Bean mills, root pulpers, in which the teeth are arranged, not on a cylinder, but on a double cone, the ends being larger than the middle, and the contents of the cutting surface being thus discharged at either end. Bamlett's reaper is shown here.

W. Underhill, of Newport, Salop, shows his centrifugal corn elevator, steam engine, ploughs, &c., and a very good hay tedder.

Ball, of Rothwell, shows his well-known ploughs, very long and taper.

R. Boby, of Bury, shows his patent corn screen—the best oscillating screen that we have.

Messrs. Burgess & Key, of Newgate Street, show their well-known reaper and mower. There are also chaff cutters, Turnip cutters, pumps, and hedge clippers shown at this stand, the last being an adaptation of the reaper invented by Mr. Rowley, of Rawthorne. The cutter may be set at any angle, and thus the surface of the hedge cut at any obliquity to the horizon.

Clayton & Shuttleworth, of Lincoln, our largest manufacturers of moveable steam engines, show a large number of them and of threshing machines, saw benches, &c.

Mr. Fowler, of 28, Cornhill, exhibits all the forms of steam-plough cultivators and cultivating apparatus which he now supplies; there is a report of them given in another column.

Mr. Freer, of Rohley, near Loughborough, shows a large dibbling machine somewhat on the principle of Newbury's, which used to be seen at the original meetings of the English Agricultural Society.

J. Haywood, of Derby, exhibits steam engines, grinding mills, chaff cutters, all of very good manufacture.

Hill & Smith, of Brierly Hill Iron Works, show harrows, rollers, horse hoes, chaff cutters, &c.

Mr. T. R. Hunt, of Earls Colne, shows horse gear, simple one-row drills for hand, and a clever machine for hulling Clover and Trefoil seed.

Messrs. Maggs & Hindley show their straw weaving machine and a block harrow, in which cast iron studs are cast on wrought iron ties.

Page & Co., of Bedford, show a capital lot of ploughs, cultivators, harrows, horse rakes, &c.

Mr. A. Thompson, of Lewes, shows ploughs, drills, combined cart, cask and irrigator.

Messrs. Turner, of Ipswich, besides mills for crushing and grinding, which is one of their specialities, exhibit Dr. Ager's pulverising and forking machine, a drill of cylinders armed with teeth, whose weight forces them into the ground, and the one of which cleans the other.

Messrs. Ashby, of Stamford, show their excellent haymaker, horse rake, chaff cutter, &c.

Barnard, Bishop, & Co., of Norwich, show disc pulpers and Barley hummellers.

Messrs. Barrett, Exall, & Andrewes, of Reading, show chaff cutters, threshing machines—their safety horse gear and steam engines.

Cornes, of Nantwich, exhibits many of his chaff cutters which have so often taken the prizes of the English Agricultural Society.

Coleman & Sons, of Chelmsford, exhibit their cultivator, clod crusher, Hanson's Potato digger, and a set of steam cultivating apparatus, described further on.

C. Burrell, of Thetford, shows Fowler's steam ploughing apparatus and engine, with Boydell's traction wheels attached; also steam engines, threshing machine, and corn mills.

Messrs Cockey & Son, of Frome, show steam engine, steam boiler, Moody's root pulper, &c.

Messrs. Coultas & Son, of Grantham, show corn drill, horse hoe, horse rake, &c.

Messrs. Gower & Son, of Market Drayton, exhibit drills and drill pressers, &c.

Messrs. Hensman, of Woburn, show drills in which motion is given to the barrel from the centre, and the seed box hangs so as to deliver seed at an even rate whether going up or down hill.

Messrs. Hornsby, of Grantham, show a fine collection of ploughs, drills, threshing machines, and steam engines, all displaying first-rate workmanship and manufacture.

Messrs. Mapplebeck & Lowe exhibit chaff-cutters, weighing machines, and tools.

Mr. Bamlett, of Middleton Tyas, exhibits his reaping machine.

Ransomes & Sims, of Ipswich, have a very fine stand of many varieties of plough, many steam engines and threshing machines, oilcake breakers and Bean cutters; a new harrow, in which a series of cross bars carry the short beams which connect them, lengthened out and bent so as each to act as a tooth; they are jointed to a certain extent, so that the whole form a flexible surface fitting to the land where it is variable; and there is this additional advantage, that any hummock which raises one part of the framework only sets the tooth which is to come on it next at an angle the more certain to give it hold. The patent Victoria reaper with revolving arms is shown here. The rotary corn screen is also shown here. Many steam engines and threshing machines are exhibited, and the whole is an admirable collection of agricultural machinery.

STEAM CULTIVATION.

The land at Farningham which had been set apart for the illustration of steam cultivation, was scattered about in detached and often widely separated fields; and there was this additional disadvantage, that most of it was light and much of it was shallow.

Fowler's large 14-horse engine, fully equipped with clip drum and rope, and 4-furrow balance plough, or 7-tined balance cultivator, did admirable work, exceeding $1\frac{1}{2}$ acre per hour with the plough, and amounting to close on 3 acres per hour with the cultivator, both doing much deeper work than the land had ever known before. Nothing can exceed the quiet ease, simplicity, and directness of the process as thus carried on.

His arrangement for working the ordinary 8-horse power threshing engine in steam cultivation, by means of a travelling anchor preceding it and pulling it along, carrying a clip drum by which the plough or cultivator is pulled to and fro, worked most satisfactorily; there was no tillage on any of the fields that exceeded the completeness of that which this apparatus was accomplishing on the light land when we saw it at work.

Howard's 10-horse-power engines, working a stationary windlass and so drawing to and fro his cultivator with 4 tines, and his plough, did very complete and excellent work. His "balance plough" was also in operation. We very much regret to understand that resort is to be

had to legal proceedings, to determine whether or not Mr. Howard's balance plough is an infringement of Mr. Fowler's patent. The discussion will result in the benefit of the lawyers and of no one else.

Mr. Smith of Woolston had his 3-tined grubber at work on heavier land than had fallen to the lot of his rivals, but he was in no way displeased with this, and some really excellent work was done here. A flint embedded in the subsoil was struck and received its mark, and being dug out afterwards showed that it was hit some inches below the pathway of any previous tillage implement to which that field had been subjected. Mr. Smith also showed his combined cultivator and drill at work here.

The only other exhibitor to which this short reference can here allude is Mr. Coleman, of Chelmsford, who showed his engine fitted with a double vertical windlass and arrangement for guiding the rope in winding and unwinding, as well as for giving and reversing the motion of the windlasses; the rope goes loop-fashion to the other end of the field, passing there round a single pulley attached to a snatch block—two cultivators are at work, one from the snatch block to the middle of the field, the other from that point to the engine; each is pulled forward at work towards the engine in its turn, and the other is then being drawn back empty. It results from this that the anchorage for the pulley as well as the further half of the rope needs only to be strong and heavy enough to bear the brunt of the backward pull of the empty cultivator. There are other features which recommend this plan of accomplishing the work of steam cultivation. It was exhibited on rather harder land than some of the other tools, and did very excellent work.

WINTER FEEDING OF SHEEP.

SHROPSHIRE AGAINST LEICESTER.

HAVING observed in your Journal and elsewhere numerous recommendations from practical farmers to feed sheep during the winter in sheds, I resolved last autumn to try the plan. The majority of those who had already practised it appearing to concur in stating that for this purpose Leicesters, Cotswolds, and other white-faced sheep were preferable to Southdowns, Shropshires, and the black-faced breeds in general, I commissioned a well-known skilful Leicestershire agriculturist to buy me a truck-load of lambs last September. I may mention, in passing, that the principal reasons assigned for the preference given to the white-faced over the black-faced breeds for shed feeding are, that the former are stated to bear confinement better, and to be less liable to foot-rot when kept on litter or other heating material. The lambs purchased for me were of the improved Lincoln breed, which are, in fact, Leicesters with a somewhat longer fleece and greater size. They cost 31*s*. 6*d*. per head, and the expenses came to 2*s*. 6*d*. more, so that they cost me 34*s*. each. They were put at first on some excellent seeds, along with my own Shropshire lambs; but even there they did not make the same progress as the latter. I then let a neighbour have 10 of them, selecting them as fairly as possible, to be of equal quality with my own. He put his along with some Shropshire lambs into roomy sheds, admirably adapted to the purpose. A foundation of ashes having been made in order to form a drainage, this was covered over with spent Hops from the Burton breweries. There can scarcely be conceived a drier or more comfortable bed than this, when fresh Hops are added from time to time as those below become dirty. These sheep were fed on Turnips and hay, with an allowance of Oats and Beans, till about the middle of February, when they had cake in addition. Not only were they well fed, but I can testify to their having been judiciously managed throughout.

My hogs were moved from the seeds to Swede Turnips, where they had in addition chaff, malt dust, and rather more than half a pound of Linseed cake per head daily. The Leicesters fared in every respect the same as the hogs of my own Shropshire flock. While, however, these looked thriving from the beginning, the Leicesters seemed so miserable, that, having lost several of them, I took them up into sheds, with the exception of eight of the strongest, which I allowed to remain on the Turnips. Those which died appeared to be affected with chronic diarrhœa, which did not admit of permanent cure, and also swelled under the throat. After being put into a shed with open yard to run into, they were less affected by these complaints; but neither in the sheds nor on the Swedes was it possible to put any flesh upon them. No contrast could be stronger than that presented between their drooping appearance and the healthy, thriving aspect of the Shropshires. Nor was the difference less striking under the hand, the backbone of the Leicesters being as sharp as a knife, and their rib bones proportionally hard, while the Shropshires had the mellow touch indicating good condition. At length, being heartily tired of the white-faced hogs, I put a score of them into a sale, when they averaged 45*s*. each, which, considering what they had consumed, was an unremunerative price for me. I can only hope that during the summer they may thrive better than they did in the winter. I may state, from my knowledge of their weight, that my Shropshire hogs would at the same time have readily averaged 50*s*. per head.

I consider this trial of some importance as establishing beyond question the hardihood of the Shropshire sheep. A colder soil than that of Needwood Forest it is difficult to conceive, being a retentive clay, which, even when drained, as my land is, allows in wet weather a considerable amount of water to run over the surface of the land. The climate, too, is proved to be severe, from our evergreens, even the hardiest, having suffered in the winter of 1860-61 more than in any other district in England. For such a soil and climate the Leicesters and Lincolns, which thrive so admirably on the chalk and limestone formations, are evidently unsuited. Their long open wool sucks up moisture like a sponge, and appears to keep the lower part of their bodies in a continual mud bath. But, even granting that there might be something exceptional about the particular lot which I had, and that others might be more fortunate, the hardihood of the Shropshires is open to no doubt. Owing partly to the difficulty of growing Turnips in the district, and partly to the retentive soil not being adapted for eating them on the land, scarcely any sheep are on Turnips during the winter. Having kept my hogs during the last four winters almost exclusively on Swedes, I can with confidence testify that they have always done remarkably well, even during the wet seasons we have experienced. My loss during the winter months has been far less than the average; in fact, the only loss which has ever been serious has been occasionally that of lambs on a luxuriant pasture shortly before weaning. As the appearances presented on opening them after death denoted apoplexy, arising from too rapid assimilation, which was confirmed by the fact that the victims were, in nearly every case, the finest and most thriving lambs, I have for the last few years adopted the plan of weaning earlier than usual. The remedy has been perfectly effectual.

It is an important fact that it is possible to keep sheep on Turnips during the winter on our cold clay land. When it is drained—and all land which carries sheep must be drained—the consumption of cake along with the crop is a material assistance to the succeeding corn crop, and a permanent addition to the fertility of the land. And of all breeds which I have tried, the Shropshires are the best adapted for this purpose. I may add that my neighbour's sheep, which were kept up from the commencement, did not average quite so high a price as mine. So far as this trial went, therefore, it shows no advantage from feeding in sheds, except that the weaker sheep became more healthy when they had the benefit of the shelter. But I have known equal benefit in this respect derived from taking sheep from a wet, arable field on to a dry pasture when they were supplied with artificial food. *Willoughby Wood, Holly Bank, Burton-on-Trent, in Bell's Messenger.*

Farmers' Clubs.

OVER: *Cheese Making.*—At a recent monthly meeting of this Society, Mr. JOSEPH ASTON, of Brassey Green, read a paper on this subject.

Cheshire had long been celebrated for the production of fine-flavoured cheese, and within a very few years had surpassed in quantity and quality any other county in England. The plans which were adopted by Cheshire dairy-maids for cheese-making during the last century differed materially from those practised at the present time. The process was much more tedious, and attended with considerably more labour; but whether our present expeditious manner of getting through the business was for the better appeared to some a questionable matter. There were at present many different kinds of cheese made in Great Britain; but with the exception of a few Stiltons, made from the cream of two meals to one of milk, the best prices were obtained for those manufactured in the counties of Somerset and Cheshire. After a brief reference to the complexity of the subject, arising from the variety of methods followed by the dairymaids of Cheshire, the lecturer said, as the milking of cows and erection of milk houses had some affinity with the subject in hand, he would take the liberty of briefly adverting to them. It was of some importance in the making of fine flavoured cheese that the dairy stock should be driven quietly into the cow-houses, especially on hot afternoons during the summer months, and after remaining for a short time, be milked quite clean with all convenient speed, and afterwards taken out for pasturing again. No wise object could be accomplished in allowing them to remain one hour previous to milking, as recommended by some writers. If such a practice were adopted where large stocks of cows are kept together, in most farm buildings the animals would become over-heated, and as cool evenings not unfrequently succeed hot days, they would be liable to take cold, and at times inadvertently impure milk would become mixed with good, and the result would be cheese of inferior quality. It was exceedingly desirable, where it could possibly be arranged, to have the milkhouse upon a north aspect. For the convenience of dispensing with making cheese on the Lord's day, he erected a new one about twelvemonths since on the south side of the house, and, notwithstanding that the top was turned with a brick arch and floor about 4 feet beneath the surface of the ground, the thermometer, in hot weather, stood about the same degree of heat as in the old one, which had a north aspect, the floor being upon a level with the remainder of the house. Everything which had a tendency to create a sour and unpleasant smell should be at once removed from the milk-house. Cleanliness in all things should be strictly adhered to in cheese-making, and in the erection of a new homestead he would for certain reasons prefer putting the piggeries on the north-east side of the dairy department. In the milk-house he recommended that good-sized wire windows should be placed, on a level with the pans, with shutters attached for opening or closing as necessity required, and which would admit of a free currency of air. There must be a large casement to open in the glass window to allow the air which became heated with the milk to escape from the top. The superiority of the latter plan over the former chiefly consisted in the facilities they possessed in preventing the hot air from entering in the day time in sultry weather, and shutting out the cold during the frosty nights of November and December. No wise object could possibly be secured in allowing the evening's milk to cool down below a moderate degree, by doing which they incurred unnecessary labour on the following morning before the two meals when put together were sufficiently warm to add to the rennet. He then referred to the kinds of vessels which were most worthy of recommendation, and after quoting Dr. Voelcker's opinion against the use of those which are painted in the inside, he said, "It is of much importance in the making of fine cheeses that the dairymaids should pay strict attention to the state of the weather, as it much affects the milk before turned into curd, and for some time afterwards. When cold winds prevail from the north or east it is not requisite that there should be so free a currency of air through the milk-house as when they are soft, and proceed from the south or west, and the cheese should be kept warm by some means at the time of making, and for some days afterwards. Mr. McAdam, who has published a small work upon the improved plan of making Cheddar cheese, urges the necessity, when the evening's milk on the following morning stands at or below 64 degrees, of adding a portion of sour whey at the time of putting to the rennet; but it is my opinion that an increased degree of temperature in the milk at the time of adding the rennet will create sufficient acid in the whey, which is deemed so indispensable by some scientific farmers for the production of really fine flavoured cheese. However much sour whey might assist in making cheese upon the improved Cheddar plan, I can assure you that improved Cheshire cheese can be made by additional warmth in the milk, as a list of prices from some farmers with whom I am acquainted, who have adopted the method for years past, will abundantly testify. * * * The opinion prevails amongst Cheshire farmers that good cheese cannot be made from milk, the produce of herbage growing upon some kinds of soil. I was once of this faith, but facts have turned up of late years which have rather staggered me in this belief. Things might be said for and against this wide-spread notion, which we shall not now stay to notice; still I am of the opinion that by skill and proper management good saleable cheese can be made anywhere. But those undoubtedly possess great advantages for making rich dairies who have a good portion of old pasture land that is fertile and sound. Dr. Voelcker does not profess to explain the precise mode in which rennet acts upon milk. He only deals with its effects. He also speaks unfavourably of the acidometer — an instrument which I suppose some scientific gentlemen are endeavouring to bring out to test the exact amount of acid which may be in the milk before it becomes coagulated with rennet and afterwards, so that cheese-making may be regulated accordingly. But every skilful person (without the aid of such an instrument) soon discovers when the acid is in excess, and is prompt in adopting measures to arrest its progress, either by hastening on the process in making, adding to a little salt cold water, or whey prepared for the purpose. That is undoubtedly the best way of making cheese which effects the most perfect separation of the whey from the curd without waste to the latter, and produces an article which most resembles in flavour milk in a pure state or taken fresh from the cow.

It will be expected that I should give some kind of description of the process of cheese-making from about the time that annatto and rennet are added to the milk until the dairy is ready for market. I have been a little acquainted with cheese-making for upwards of 25 years, and during that time, 10 or 11 different methods have been tried. We have made cheese upon what are called the cool, moderate, and warm plans—have made with the way pole, the screw, with weights, and no pressure at all. Most of the dairies realised first-rate prices in the London market, and a few fetched but middling rates. The highest price obtained was made in a medium way with regard to heat, and the next warm. When following out the warm plan of cheese-making, we set the milk at from 86° to 92°, according to the state of the weather and quality of milk in the tub. When the rennet and annatto have been added for about 20 minutes, a smaller skimmer is gently moved across the surface to prevent the cream from settling on the top of the milk, and after having reached a proper state of consistency—which may be known by touch and appearance, and which generally takes from 70 to 80 minutes—it is cut cross-ways with a knife for the purpose, turned over, and a little salt spread upon the top. But

we not unfrequently dispense with these preliminaries, and at once proceed to cut it down with a tin breaker, which should be performed throughout with great care and gentleness. After the curd has subsided for a short time, a quantity of whey is dipped off; a small portion, if required, is immediately heated, and returned again at intervals to the tub, when broken down a second time. If the milk from 50 or 60 cows is all run into one tub, it is absolutely necessary that two persons should be engaged at the last time of breaking down—one with the skimmer and hands, and the other with the curd-breaker, and when the operation is performed the curd is allowed to subside for about 10 minutes, then gently drawn to one side, lightly pressed with a semi-circular board, turned over, and the whey taken off according to the old custom in Cheshire. The cheese tub is then set atilt in order that the remaining part may flow on one side, and be laded off with the greater ease and swiftness. The curd on the lowest side of the tub is cut into square pieces, lifted upon the solid mass, and pressed with 28 lbs.; the same is repeated twice, in addition to paring all round the sides; the pressure is then increased to 56 lbs. or 84 lbs. When the curd has got to a proper state of solidity it is salted, lifted into the drainer, and remains there for 70 or 80 minutes, during which time it is cut into pieces at three different times about 6 inches square, and either turned over with the hands, or by two persons with a large cheese cloth, one holding two corners still, and the other two until it is turned over. But the latter is with difficulty performed in large drainers when they are well filled. It is then passed twice through a curd mill; if short of salt, a little more is added, and put into the vats, taking care at the same time to keep the pans warm which are used for the purpose. After having remained on the bench for about one hour, they are taken into an oven made moderately warm (which has been put up for the purpose, and is much more convenient for lifting the cheese in and out than a furnace or boiler), and a small weight put on each cheese. They remain there until the following morning, and then taken out, pricked well round the sides with a thick skewer, turned in the vats, and put in the press; the weight is gradually increased until about 11 o'clock, and the skewering well attended to during that time. They are then taken out, turned again into fresh cloths and vats, and put under a full weight of pressure. I need not trouble you with a description of the turning process in the vats twice a day. Many of you know more about it than I do; suffice it to say that, with but very few exceptions, our cheeses upon this plan become quite dry in the cloths in 66 hours after they are made. When taken from under press, they are ironed round the sides with a hot flat iron, which operation is performed in about five minutes, put into binders, laid upon planks, and turned once a day, rubbing a small quantity of grease over the tops. We have nearly given up spreading salt upon the cheese, considering that such a practice answers no other purpose than making them a little more firm to move about. After having remained upon planks for about 20 or 30 days, according to convenience and the state of the weather, they are gently scraped all over with a sharp knife, greased, and put into fresh binders, and laid upon straw or soft hay on the room floor until ready for market, which has been generally in May, June, and July. This has been the plan, with some slight variations, which we have practised for 10 years past; and for seven years in succession our dairies (with the exception of a few spring cheeses) have averaged upwards of 85s. per cwt., and, although kept to be old, have made once a little over 4 cwt. per cow, and on several occasions $3\frac{3}{4}$ cwt., with but a middling stock, kept at a light expense through the winter. I do not mention these things by way of boast, but to show that the best methods of making Cheshire cheeses are profitable and remunerative to the farmer. Cheese made in this way will be ready for vatting in less than five hours after the milk has been left to coagulate. With regard to the other plan we adopted, the chief variation consisted in setting together at a lower temperature by 8° or 10°, lifting the curd into the drainer for about 30 minutes previous to salting, and using little or no pressure on the day it is made and forenoon following. We have never adopted the practice of weighing salt, considering the quantity used should be regulated according to the state of the curd at the time it is added." After commending Nicholas's liquid annatto (which gives to the cheese a fine bright cowslip colour), Mr. Aston went on to say that moderately warm and properly ventilated rooms were necessary to ripen cheese for an early market, but whether the former had anything to do with improving the flavour was with him a very questionable matter. Cheese intended for keeping became deteriorated by being put into very warm rooms. A dairy with which he was acquainted, and which had fetched a first-rate price for a number of years, was kept cool during the first summer. The story had been circulated by factors for some years that Cheddar cheese was superior to Cheshire, and, anxious to ascertain the truth, he wrote to a most respectable house in London on the subject. The reply he received was to the effect that,—

"Really fine Cheddar had nearly displaced Cheshire at the tables of the best families. Many of the Cheddar and Somerset farmers had greatly improved their makes during the last 10 years, and most of the Cheshire farmers had deteriorated. They had made of Cheshire Cheddar 1s. per cwt. more than Cheshire cheese proper; but really fine Cheddar proper was selling for many more shillings than either. They considered the Cheddar plan a good one for late makes of Cheshire cheese; but whether it would be wise for the makers of the very fine dairies of Cheshire now made to change was a doubtful matter."

He had also consulted many other judges and makers of cheese in various parts of the kingdom, and it seemed a doubtful matter with them all—agents, factors, or retailers—whether a change from the best Cheshire plans of cheese-making would be beneficial to the farmers of this county. The lecturer gave some particulars of the Somerset method of cheese making, and afterwards strongly urged the importance of improving the dairies of Cheshire, and of the dairymaids of the county not allowing the laurels which they had won to be taken from them.

Calendar of Operations.

JULY.

NORTH LINCOLNSHIRE: *June* 30.—We have got to the end of June, and scarcely have had one summer's day; the whole of the month, with few exceptions, has been very cold and ungenial for the season of the year, which for the Wheat plant has been unfavourable. At one time it was thought Wheat would be a very abundant crop, but I am afraid these hopes will not be realised. We have many good crops, but I think the contrary more generally prevails; should the weather be tolerably fine from this time we may expect harvest to commence about the second week in August. Spring corn looks pretty well, but not at all luxuriant; upon the whole we have had a fine Turnip seed time, and brought to the close under favourable circumstances; we finished on the 28th. That pest the Turnip fly has not troubled us much, having only visited us upon two or three days sowing. We commenced sowing Swedes on the 21st inst., and are now in full operation with all hands that usually go to that work. The steam cultivator has been laid aside for a few weeks, to come out about the 10th of next month to break up seed land for Wheat. We think of going through 80 acres before harvest, the remainder we cannot spare from our sheep; it will be ploughed in September and cut. Pastures have gone off a good deal where heavily stocked, though we have had nice rains. Beef and mutton both keep their prices well, the former making nearly 8s. per stone of 14 lbs., the latter 7*d.* per lb. We have just sold 45 good bullocks at the former prices. Wool has been a ready sale at remunerating prices, making from 42s. to 47s. per tod of 28 lbs. A full moiety of this year's clip has been already sold, but we hear this last week that buyers are not so free to purchase. The promising appearance of the Turnip crops, with the present price of mutton and wool, will keep up the price of store sheep. *S.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Thursday, July 3, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	27	29.85	54	49	W.	3	5	70	49	92	45	..	61	$58\frac{1}{2}$
Saturday ..	28	29.91	56	51	N.W.	3	5	64	44	79	41	0.01	$59\frac{1}{2}$	$58\frac{1}{2}$
Sunday ..	29	30.02	61	57	W.	2	6	65	40	77	36	0.01	59	58
Monday ..	30	29.89	57	53	N.W.	2	4	68	54	75	52	0.02*	59	58
Tuesday ..	1	29.93	68	59	W.	4	5	70	50	97	45	..	60	58
Wednesday.	2	29.82	60	58	W.	3	6	70	55	89	53	0.02	60	58
Thursday ..	3	29.91	55	52	S.W.	3	7	69	48	89	45	..	60	58

* Rain during month, 2·53 in.

Notices to Correspondents.

TURNIP SEED: *Dealer in Seeds.* We hear of the ravages of insects—but it is almost impossible to obtain a general and unbiassed report. If any one can speak of the Turnip seed harvest in his own locality, we shall be happy to publish his report.

WIREWORM: *Constant Reader.* You will not destroy them by the application of soda ash to the land. Take a pot full of soil with some of them in it, and experiment with applications of soda ash.

Potato Disease.

To the Editor of the Gardeners' Chronicle.

SIR,—Having manufactured several hundred tons of Flower of Sulphur this and last season, specially prepared for the Vine Disease, and it having been found a most successful remedy it has occurred to us that it might be equally valuable as a remedy against the Potato disease, and we therefore wish to bring it before the notice of the Agricultural public, considering it well worth an extensive trial in the growing crops, which in some places are showing signs of disease. We are prepared to supply it in small quantities for experiment at a moderate price, and as it has been found quite a specific remedy in the Vine disease, we have every reason to believe that it will be equally successful against the Potato disease. The price is 16s. per cwt. delivered free to any Railway Station in London on receipt of Post Office Order for the amount. The smallest cask is 2 cwt., 32s., with printed directions for its application.

Yours respectfully,
GIBBS, BELL, & Co.

Vitriol Works, near
Victoria Docks, London, E.

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CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
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Tenant Farmers' Manure Company.
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The Manures manufactured by J. B. LAWES for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
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These Manures can be obtained of Mr. LAWES, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
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40 to 45 per Cent. of Soluble guaranteed.
1862.
BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.
Extract of Opinion from MR. WAY, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c.) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from DR. VOELCKER, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a percentage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

THE NORTH SEA FISH-GUANO COMPANY
(Limited).
Capital, 60,000*l.*; in 12,000 Shares of 5*l.* each; 10s. per Share Deposit, payable on application, and 10s. per Share on Allotment.
Directors.
ALBERT PELLY, Esq., Chairman, 18, Finch Lane, London, E.C.
John Chalmers Morton, Esq. (Editor of the Encyclopædia of Agriculture), Streatley, near Reading.
Robert Smith, Esq. (Member of the Council of the Royal Agricultural Society of England), Emmett's Grange, South Molton, Devon.
Isaac Solly, Esq., 9, Great St. Helen's, London, E.C.
Professor Way, 15, Welbeck Street, London, W.
With power to add to their number.
Bankers.—London and County Bank, 21, Lombard Street, London, E.C., and all Country Branches.
Solicitors.—Messrs. Benham & Tindell, 18, Essex Street, Strand, W.C.
Secretary pro tem.—J. Musgrove Norman, Esq.
Offices.—36, King William Street, London Bridge, E.C.
Extract from the Money Article in the *Times* of Monday, the 23d inst.:—"This Company propose to establish a complete system for the conversion of refuse fish into dry manure at stations on the North Sea, where annually immense quantities are not only wasted, but prove a cause of annoyance and expense to the fishermen. The market value of the fish manure in England is stated at 8*l.* per ton, and the calculations now put forth are that it can be manufactured and delivered at about 4*l.* per ton. The board of directors comprises persons scientifically acquainted with the question."
Favourable testimonials as to its agricultural value have been given by J. B. Lawes, Esq., William Fisher Hobbs, Esq., Professor Voelcker, Professor A. J. Bernays, Professor Buckman, Professor Stockhardt, and Professor Way.
Prospectuses, with form of application for Shares, can be had at the offices of the Company, or will be forwarded on application.

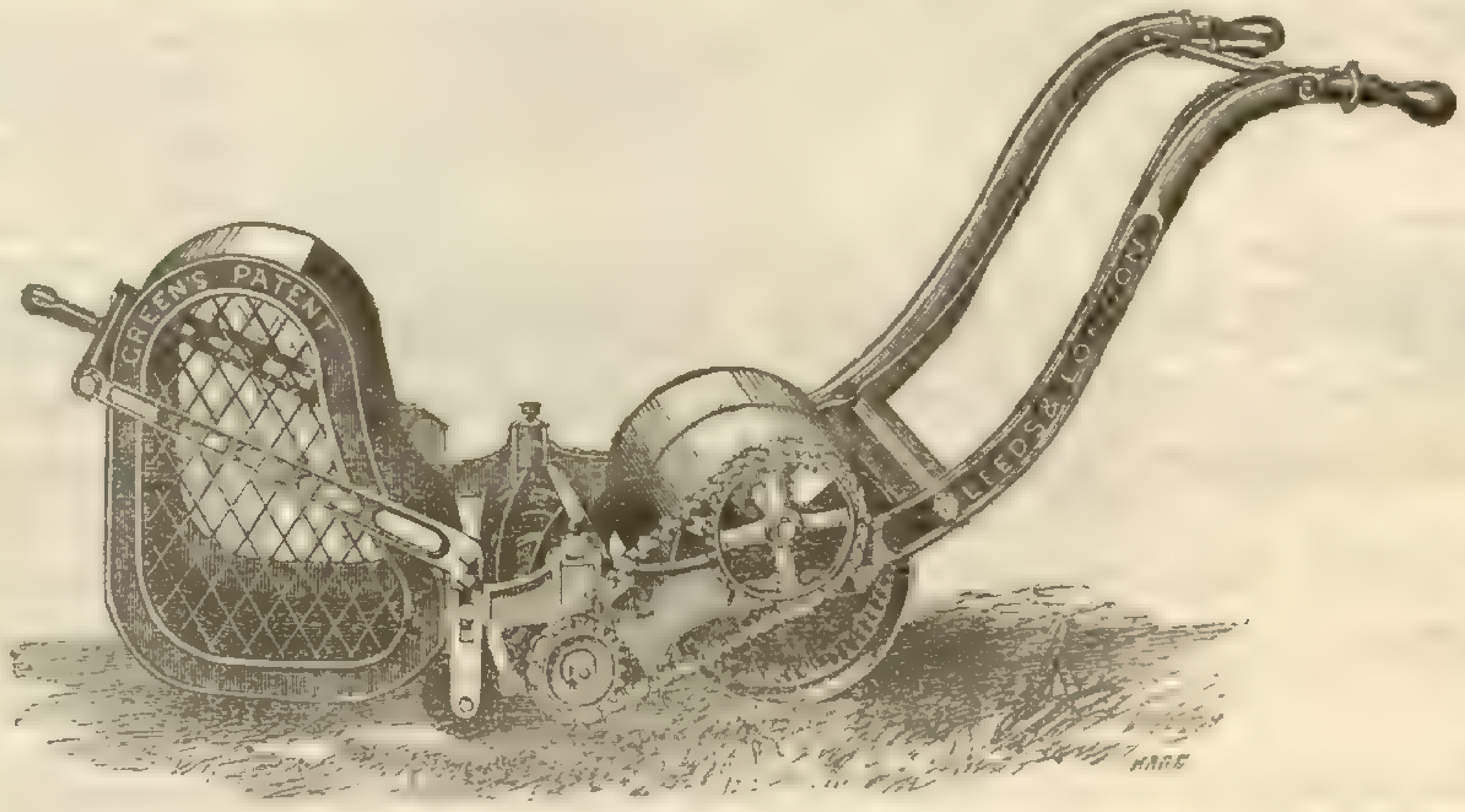
GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.



THOMAS GREEN can with confidence state that he has succeeded in bringing forward for the ensuing season a Machine which is so novel in its character that any person, however unskilled, is enabled to use it with confidence and ease; and from its thoroughly mechanical construction it is pronounced by practical men to be the *ne plus ultra* of perfection. Every improvement that has suggested itself from past experience has been put to practical test, and the results are that the Machines for which Her Majesty's Royal Letters Patent *have recently been obtained* are immeasurably superior to anything of the kind ever brought before the Public. They combine all that efficiency and simplicity can express, and are calculated to keep Lawns in the highest state of perfection, which cannot be equalled by any other means. They are adapted both in size and price to the very smallest plots, as well as Lawns acres in extent. Since their introduction the sale of these Machines has more than doubled each succeeding year, and has now attained *the largest sale of any Machine "extant;"* have proved to be the best, having carried off *every Prize* that has been given in all cases of competition. They are made from the best materials, and of superior workmanship; are delivered *Carriage Free* to all the principal Railway Stations and Shipping Ports in England; *are warranted to give satisfaction*, and if not approved can be at once returned, if sent carriage free to Leeds.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0 ...	... £8 15 0
To Cut 20 inches	8 0 0 ...	... 9 6 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0 ...	... £9 17 6
To Cut 24 inches	9 0 0 ...	... 10 7 6

To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0 ...	... £21 10 0
To Cut 36 inches	23 0 0 ...	... 24 16 0
To Cut 42 inches	26 0 0 ...	... 28 2 0
To Cut 48 inches	29 0 0 ...	... 31 8 0

Leather Boots for Horse, per set, £1 4*s.*

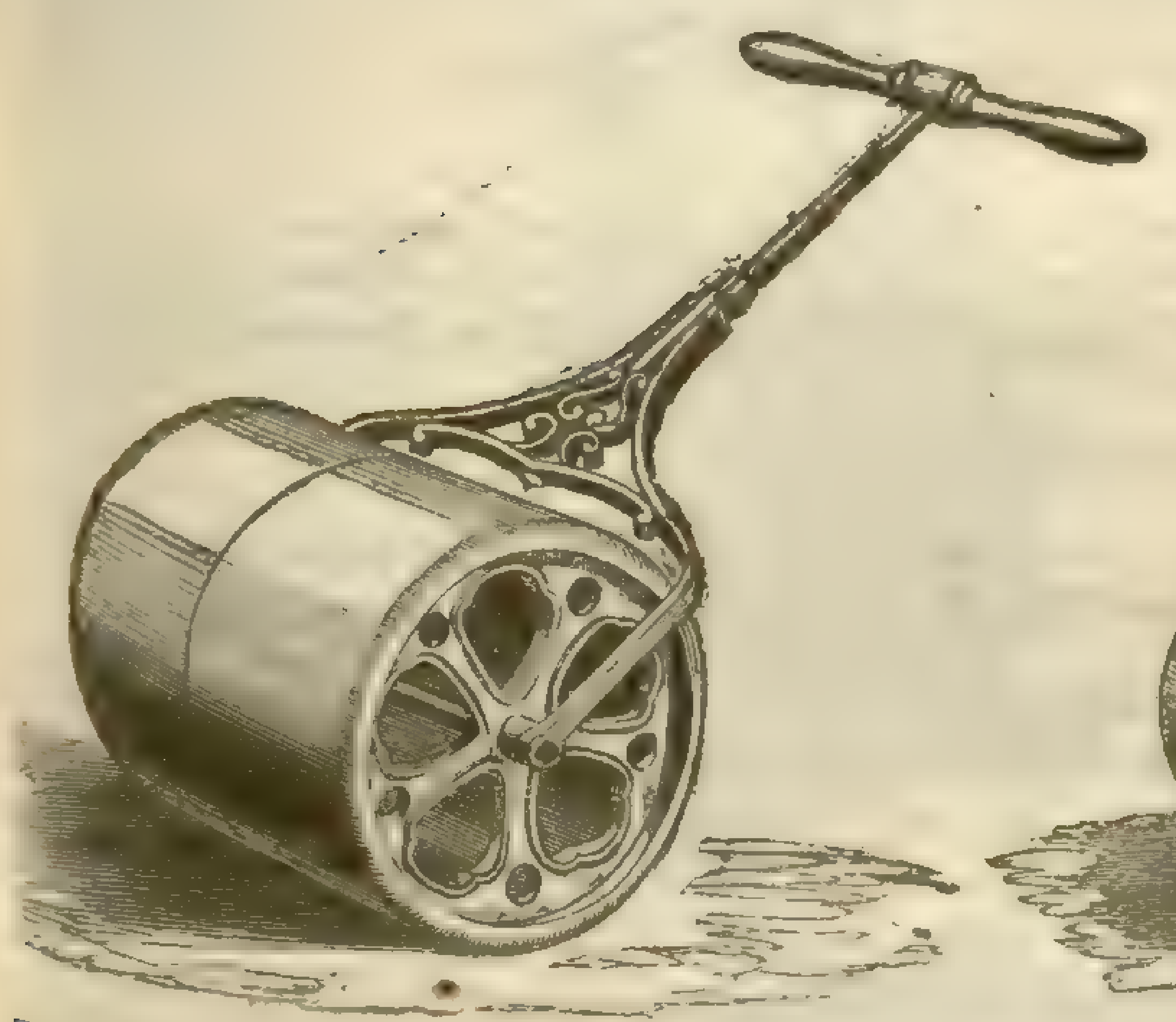
Donkey and Pony Machines, including Box of Requisites & Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0 ...	... £12 10 0
To Cut 26 inches	12 10 0 ...	... 13 12 0
To Cut 30 inches	16 14 0 ...	... 18 0 0

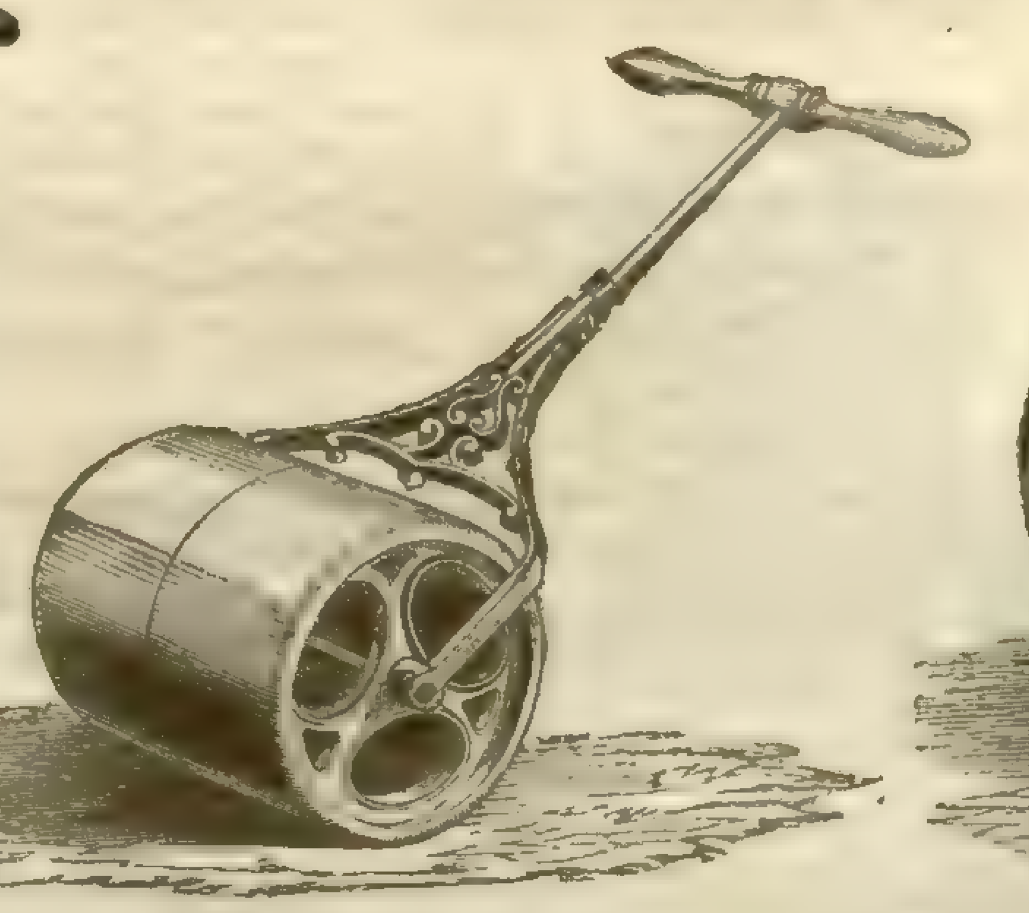
Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

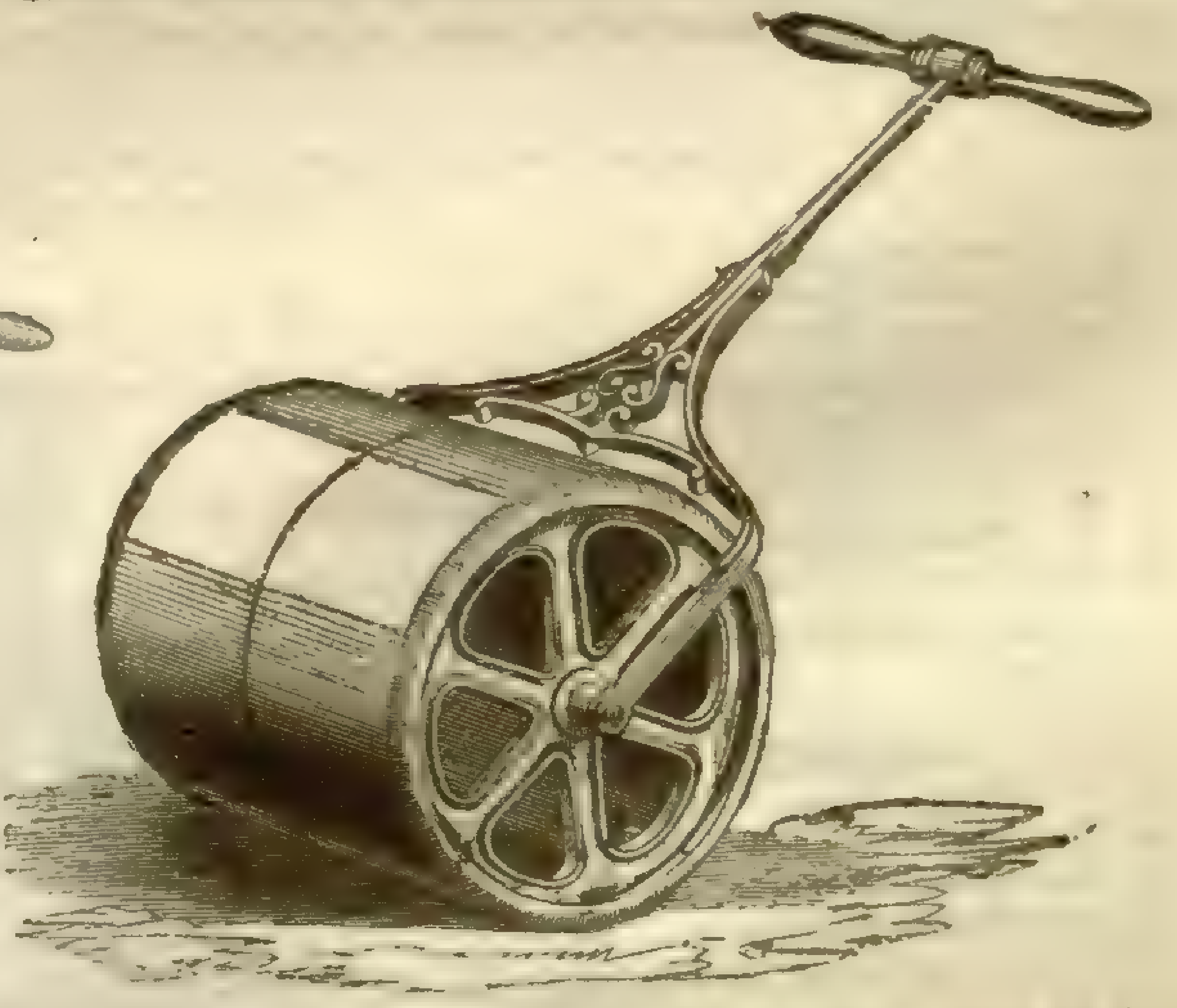
GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length, 22 inches....Price £3 5*s.*



Diameter 16 inches, length, 17 inches....Price £2 10*s.*



Diameter 24 inches, length, 26 inches....Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the SCORCHING RAYS of the SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.

Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.

Elisha Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

BRITTAIN'S PATENT GARDEN NETTING will be found superior to every other article for the protection of Fruit Trees from frost, birds, &c.; whilst rendering this service light and air are not impeded. It is also a beautiful Shading for Hothouses, and is cheaper, being more durable than any kind of Tiffany, or other material in use. NETTINGS, No. 1, 15s.; No. 2, 18s. 9d.; and No. 3, 22s. 6d. per piece, or 4d., 5d., and 6d. per square yard. Pieces, 30 yards long, 55 inches wide. GARDEN MATS, highly recommended, 50 by 70 inches, 20d. each.

Agents: Robt. Heinekey & Co., 20, Harp Lane, Tower Street, London, E.C.

TANNED GARDEN NETTING for preserving Seed Beds, Fruits, Strawberries, from frost, blight, birds, &c., and as a Fence for fowls, &c. 1 yard wide, 1½d.; 2 yards, 3d.; 3 yards, 4½d.; and 4 yards, 6d. per yard, in any quantity, may be had at Chas. Wright's, 376, Strand, W.C.

GREENHOUSE and FLOWER-POT STICKS VARNISHED:—1 foot, 3d.; 1½, 4d.; 2, 5d.; 2½, 7d.; 3, 10d.; 4, 1s. 6d. per dozen. DAHLIA STICKS VARNISHED, per dozen:—3 feet, 1s. 6d.; 4, 2s. 3d.; 5, 3s.; 6, 3s. 6d. An allowance to Nurserymen.

TANNED NETTING for the Protection of Fruit Trees, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Cotton Netting, Tiffany, Scrim Canvas for Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c.

Be particular, John Edgington & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

TANNED NETTING at Reduced Prices.—200 square yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvas for Wall Fruit, Greenhouse Shades and Tulip Covers.

Address in full, Frederick Edgington, Marquee, Flag, and Banner Manufacturer, Thomas Street, Old Kent Road, London, S.E.

Blight.

BROWN'S PATENT FUMIGATOR.—A Portable Instrument for Fumigating Greenhouses, Stoves, and Frames, or Shrubs and Flowers in the open air, without injuring the most delicate plant; delivering the smoke cold in a dense mass, and effecting a great saving of Tobacco. Price 10s. and upwards.

Manufactured and supplied to the Trade by Messrs. Barber & Groom, London; and may be had of all Ironmongers, Seedsmen, and Florists.

SAMUELSON'S LAWN MOWING MACHINES,

WITH MANWARING'S PATENT NOISELESS GEAR, AND BOYD'S PATENT SELF-CLEANING BRUSH. Also,

SAMUELSON'S IMPROVED GARDEN ENGINES, WATER BARROWS, SYRINGES, WIRE NETTING, &c.

CATALOGUES FREE, ON APPLICATION TO BRITANNIA WORKS, BANBURY, OR TO

MR. SAMUELSON'S LONDON WAREHOUSE, 76, CANNON STREET WEST, CITY,

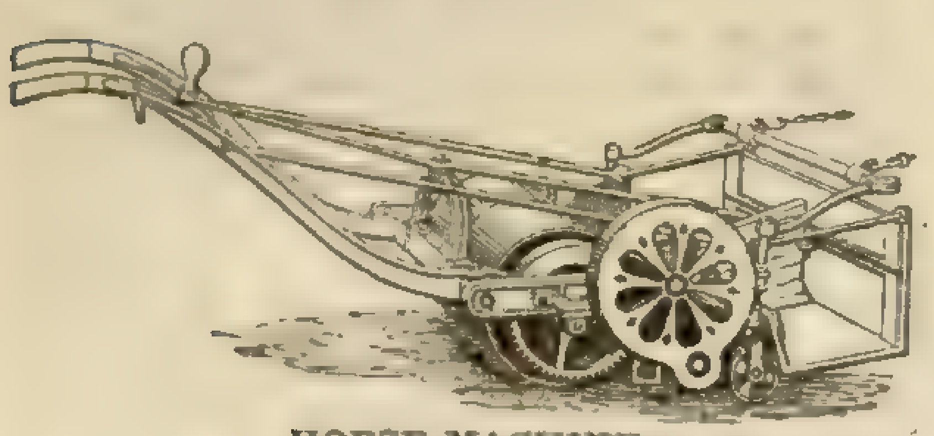
WHERE SAMPLES MAY BE SEEN.

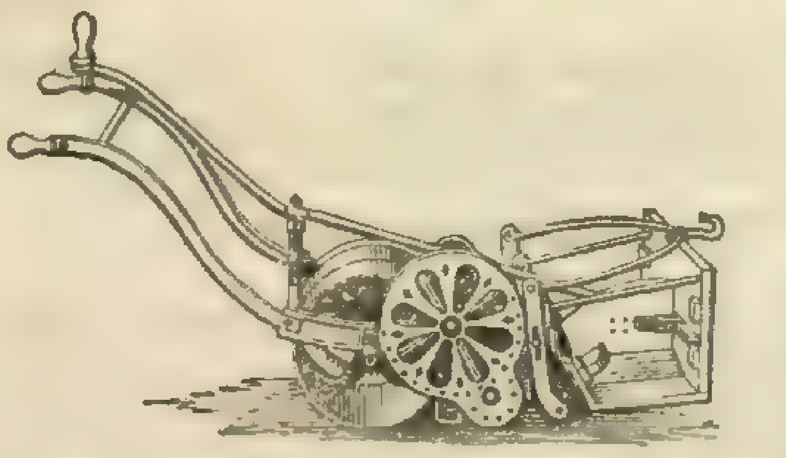
DEPOTS also at SHREWSBURY, YORK, STOCKTON, and NEWCASTLE. Dublin Warehouse: 12, PARLIAMENT STREET, ESSEX BRIDGE.

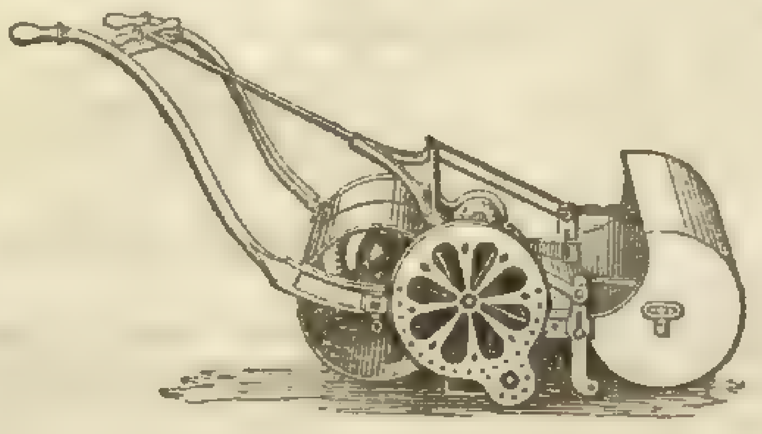
SHANKS' NEW IMPROVED PATENT

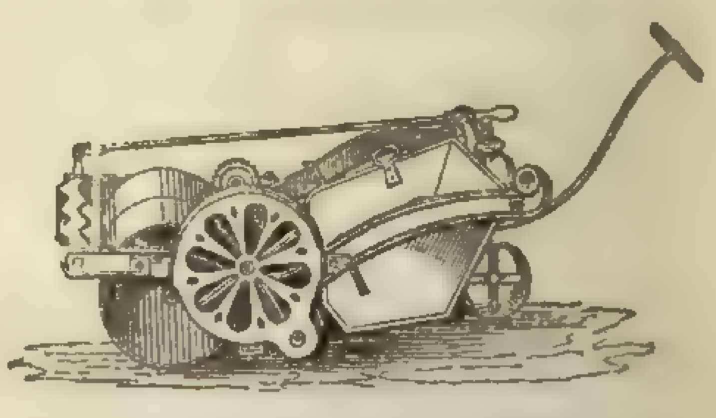
LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

WITH SILENT MOTION IF SPECIALLY DESIRED.


HORSE MACHINE.


PONY MACHINE.


NEW HAND MACHINE.


OLD HAND MACHINE.

SHANKS' NEW PATENT MACHINE MOWS the GRASS WET or DRY, on Lawns uneven or otherwise, in a much neater manner than the Scythe, and at half the expense.

NO PERSON HAVING A LAWN SHOULD BE WITHOUT A MOWING MACHINE.

1st, Because it economises labour. A man will mow as much in three hours with a Machine as he will do in ten hours with a Scythe.

2d, Because the Machine does the work not only more expeditiously, but cleaner and better.

3d, Because the close cutting and simultaneous rolling of the Machine improves the appearance of the turf, and this cannot be done with the Scythe.

4th, Because the Grass may be cut at any time with the Machine, whereas to mow with the Scythe it is necessary to wait for wet or dewy mornings.

5th, Because nothing looks better than a well-kept Lawn; and as it is very difficult to keep the Grass down in early spring in small Gardens, where no regular Gardener is kept, the best of reasons is obtained why a Machine should be used. 1st, Because you are relieved from the annoyance of waiting, and of being often disappointed, by the Gardener finding it impossible to come at the appointed time. 2d, Because with the small Machine any Lady or Gentleman may keep the Lawn in order, and at the same time find pleasant and healthful amusement in doing so.

The first practical Gardeners of the day, who have devoted their attention to examining all the different Lawn Mowers offered, do not hesitate in recommending Shanks' Machine as *the best Mower for general use.* There is nothing in this Machine which is not of *real practical worth;* and this important consideration is apparently set aside by most makers, whose struggles seem to be *more for what is novel and attractive than for sterling merit.*

PRICES.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Width of Cutter.
No. 1.—48-inch Machine ... ... £28 0 0 } *Drawn by a Horse.*
No. 2.—42-inch Machine ... ... 26 0 0 }

Width of Cutter.
No. 3.—36-inch Machine ... ... £22 0 0 *Drawn by a Horse.*
No. 4.—30-inch Machine ... ... 19 0 0 *Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40s.; for Nos. 3 and 4 Machines, 30s.; Box, with complete Set of Tools, 10s.; Silent Movement, 20s.; Boots for Horses' Feet, 24s. per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Width of Cutter.
No. 5.—30-inch Machine, 15*l.* 15s., *Drawn by a Pony.* | Width of Cutter. No. 6.—28-inch Machine, 14*l.* 10s., *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10s., *Drawn by a Donkey*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30s.; for No. 7 Machine, 25s.; Box, with complete Set of Tools, 7s. 6d.; Silent Movement, 12s. 6d.; Boots for Pony, 21s.; Donkey, 16s. per set.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Width of Cutter.
No. 8.—24-inch Machine ... ... £8 17 6 } *Easily Worked by Two Men.*
No. 9.—22-inch Machine ... ... 8 7 6 }
No. 10.—19-inch Machine ... ... 7 12 6 *Ditto by a Man and Boy*

Width of Cutter.
No. 11.—16-inch Machine ... ... £6 17 6 *Easily Worked by a Man.*
No. 12.—13-inch Machine ... ... 6 2 6 *Ditto by a Boy.*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25s.; Box, with complete Set of Tools, 5s.; Silent Movement, 7s. 6d. extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Width of Cutter.
No. 16.—16-inch Machine ... £6 5 0 } *Easily worked by a Stout Lad.*
No. 17.—14-inch Machine ... 5 15 0 }
Silent Movement, 7s. 6d. extra.

Width of Cutter.
No. 18.—12-inch Machine ... ... £5 5 0 *Easily worked by a Lady.*
Silent Movement, 4s. extra.

*** *The Machines are warranted to give ample satisfaction, and if not approved of may be at once returned.*

The Prices, with a small charge for Packing, include Carriage to most of the Railway Stations and Shipping Ports in the Kingdom.

Shanks' Patent Mowing and Rolling Machine is in successful operation in Her Majesty's Royal Gardens at Kew, Windsor, Buckingham Palace, Hampton Court, Osborne, and Balmoral; in the Gardens of the Emperor of the French; in the Grounds of His Royal Highness the Prince of Prussia; in many other places throughout the Continent, as well as in the United States, British America, India, Australia, other parts abroad. It is also used in most of the Gardens of the principal Nobility and chief Landed Proprietors in the kingdom; and *everywhere its merits have been fully proved and its success established.*

SOLE AGENTS FOR LONDON: J. B. BROWN & CO., 18, CANNON STREET, CITY, E.C.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.—July 5.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

Artificial Stone Works, 371 to 375, Euston Road, N.W.

AUSTIN, SEELEY, & CO. beg to inform the Public, that they have lately enlarged their Stock of VASES, FIGURES, FOUNTAINS, & other GARDEN ORNAMENTS.

The present Stock comprises:

133 different kinds of Vases, from 9s. to 30*l*.
About 200 Fountains, from 10*l*. to 400*l*.
53 Statues, Modern and Antique
44 Small Figures and Groups of Children
70 Figures of Animals & Birds
15 Baskets, from 1 to 10 feet diameter [&c.
17 Flower Boxes for Windows,
6 Garden Seats
22 Sun-dial Pillars
34 Baptismal Fonts, from 3*l*. to 15*l*.
22 Ornaments for Gate Piers

Having during the last 30 years executed for the Royal Gardens and for the grounds of the principal nobility an immense quantity of such work, they presume that it is needless to warrant its durability; but they are prepared with the most unquestionable references if desired.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to

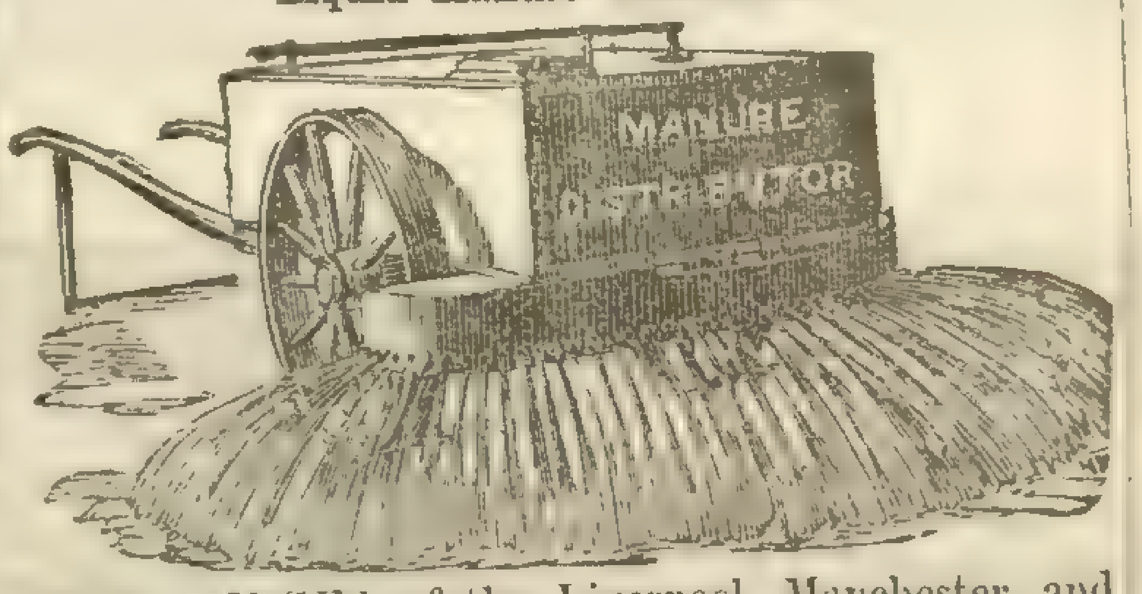
JOHN FOWLER, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

R. READ, Sole Originator and Patentee of ENGINES for GARDENS, SYRINGES for GREENHOUSES, CONSERVATORIES, &c.
35, Regent Circus, London, W.
*** Drawings (with full descriptions) Post Free.

WHY NOT PRESERVE YOUR HAY? New and Second-hand RICK CLOTHS, with Poles, &c., complete.

BENJAMIN EDGINGTON,
Marquee, Tent, Rick Cloth, Flag, and Tarpaulin Manufacturer,
2, Duke Street, London Bridge, Southwark, S.E.
No other Establishment.

Liquid Manure Distributor.



THE JUDGES of the Liverpool, Manchester, and Staffordshire Agricultural Shows, 1861, have each awarded the First Prize to I. JAMES, Tivoli Works, Cheltenham, for his LIQUID MANURE DISTRIBUTOR, making a total of 17 Prizes. It is also well adapted for Watering Streets, supplying the Steam Plough, Irrigating, or for a Fire Engine. Also his last great improvement in WASHING MACHINES, which have been awarded several First Prizes, and will wash 20 Shirts in 20 minutes.

SHAW'S TIFFANY.—The lightest, cheapest, and most durable of all materials for Shading Conservatories and Hot-houses is SHAW'S TIFFANY. As a protection from cold winds and scorching heat, nothing equal to SHAW'S TIFFANY. For effectually preserving Fruits and Seeds from the Attack of Birds, Wasps and Insects, use SHAW'S TIFFANY.

Sold by all Nurserymen and Seedsmen. Samples and Prices on application.

J. SHAW & Co., Oxford Street, Manchester.

PROTECTED BY THE CUTLERS COMPANY — CORPORATE MARK.

JOSEPH HAYWOOD AND CO., MANUFACTURERS OF PRUNING and BUDDING KNIVES, SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.

£2. 2s.

An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.

One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.

It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.

It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.

No Establishment, either private, commercial, or manufacturing, should be without one.

Six feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12s. Longer lengths of Suction at 1s. 6d. per foot.

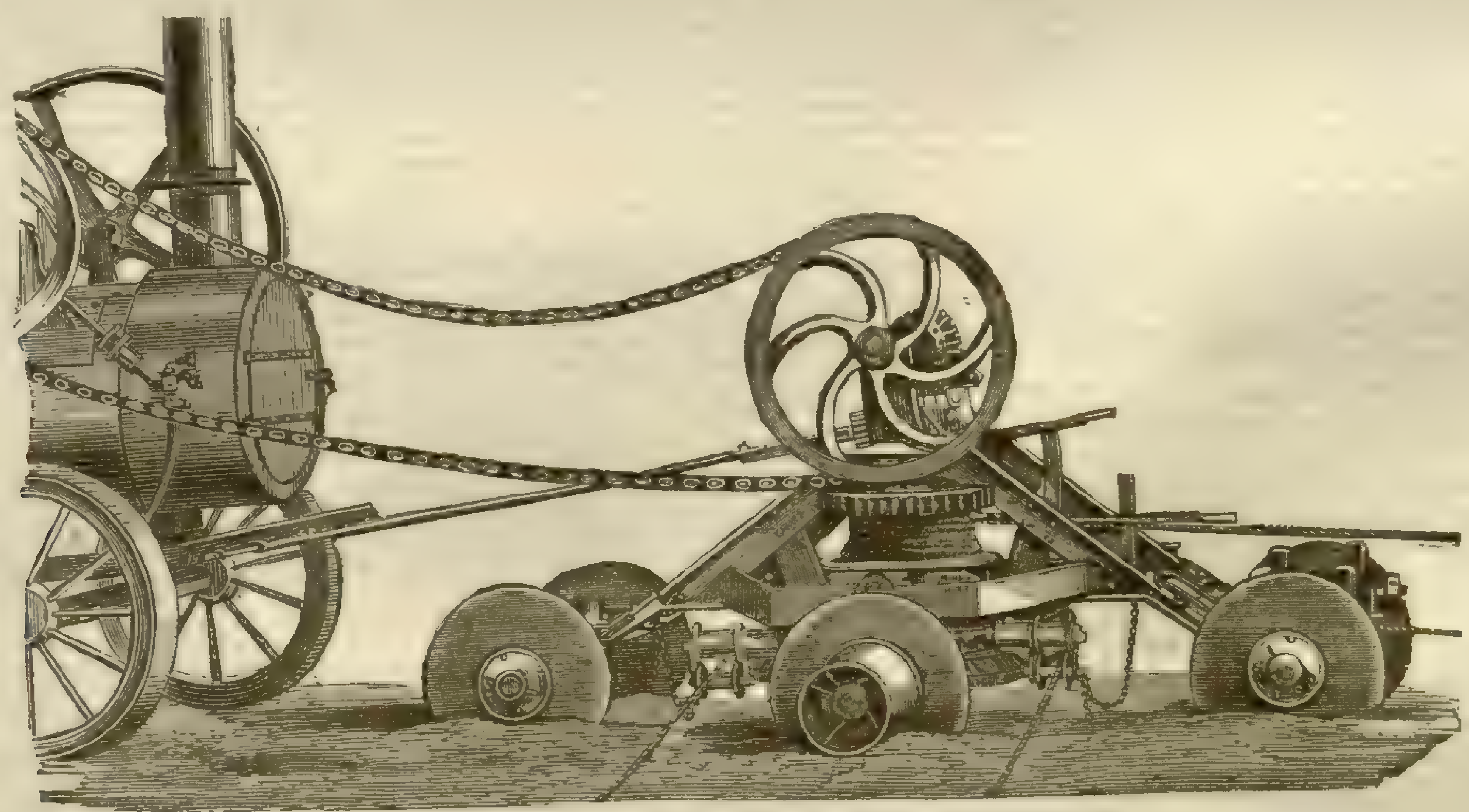
May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,

JOHN WARNER & SONS, 6, Crescent, Cripplegate, London, E.C.

FOWLER'S

PATENT STEAM PLOUGHING AND CULTIVATING MACHINERY.

Attention is specially directed to the NEW APPLICATION for PORTABLE ENGINES, in which the *ordinary Portable, without any alteration,* is worked along the headland of the field, thus using, with an 8-Horse Engine, only £27 worth of Rope (the smallest possible quantity), and gaining all the advantage of a direct pull upon the Implement.



DISC ANCHOR WINDLASS FOR PORTABLE ENGINES.

ANCHORS, PLOUGHS, CULTIVATORS, or any part of the Apparatus can be supplied SEPARATE if required.

TWO and THREE FURROW BALANCE PLOUGHS, FIVE-TINED BALANCE CULTIVATORS, and SMALL ANCHORS adapted for use with any STATIONARY STEAM-CULTIVATING MACHINERY, can be supplied at short notice. For Catalogues and further information apply to

JOHN FOWLER, STEAM-PLOUGH WORKS, LEEDS, or 28, CORNHILL, LONDON, E.C.

Glass for Greenhouses.

JAMES PHILLIPS AND CO. beg to submit their prices as follows:—

ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 280 feet, 2¼d. and 2½d. per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each. Package included.

Sizes	3rds.	4ths.
12 by 9, 13 by 9, 14 by 9, 15 by 9; 12 ,, 10, 13 ,, 10, 14 ,, 10, 15 ,, 10	14s. 0d.	12s. 6d.
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11; 14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12; 18 ,, 12, 19 ,, 12, 20 ,, 12, 16 ,, 13; 17 ,, 13, 18 ,, 13, 19 ,, 13, 20 ,, 13; 16 ,, 14, 17 ,, 14, 18 ,, 14, 20 ,, 14	16s. 0d.	13s. 6d. per 100 feet.

Various other sizes.

GLASS FOR ORCHARD HOUSES,
As supplied by us to Mr. Rivers.

Sizes		16 oz.	21 oz.
20 in. by 12 in.			
20 in. by 13 in.	Common	13s. 6d.	£0 18s.
20 in. by 14 in.	Superior do.	16 0	1 3
20 in. by 15 in.	English Glass	18 0	1 9

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11s. 6d.
8 ,, 6	8½ ,, 6¾	9 ,, 7	9½ ,, 7½	
		10 ,, 8	10½ ,, 8½	12 6

Boxes 2s. each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.
16 oz. 4ths, 1¾d., 2d., and 2¼d. 21 oz. 2¾d., 3d, and 3½d.
,, 3ds, 2d., 2½d., and 3d. ,, 3d., 3½d, and 4d.

London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

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18 ,, by 11 ,,	22 ,, by 12 ,,	20 ,, by 16 ,,
13 ,, by 12 ,,	17 ,, by 13 ,,	20 ,, by 17 ,,
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July 5, 1862.

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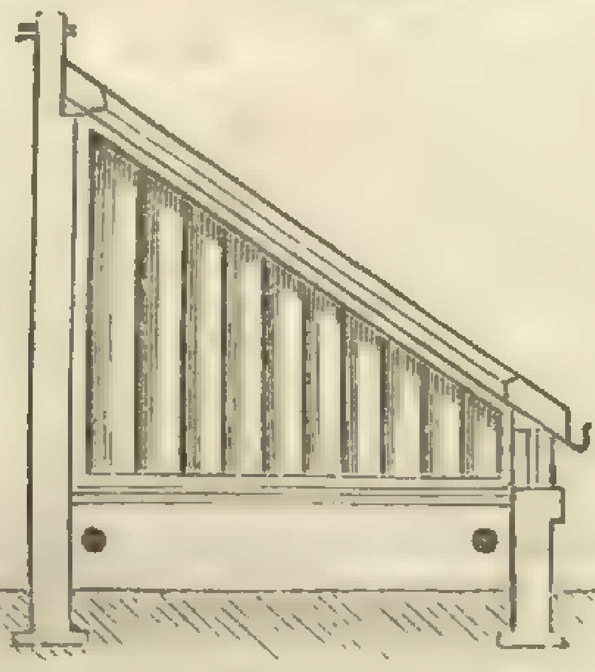

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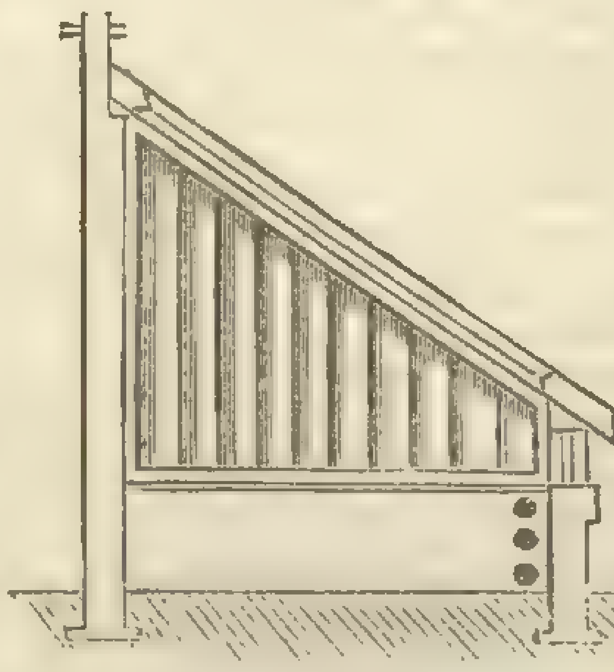

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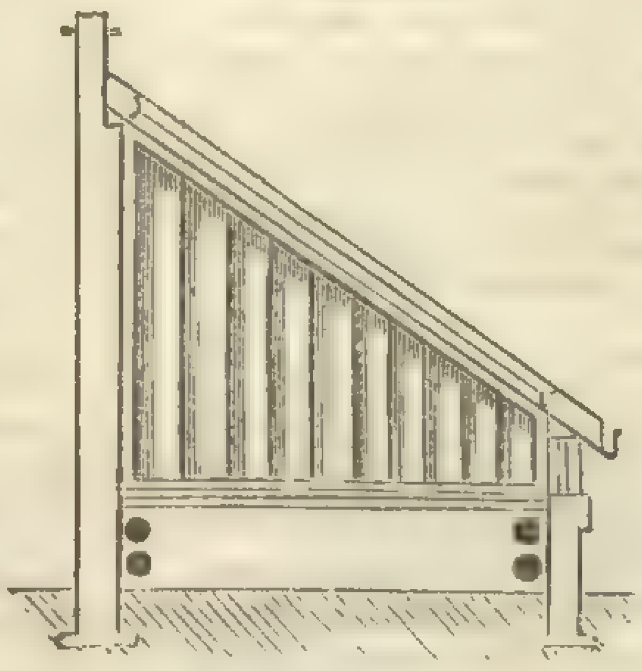

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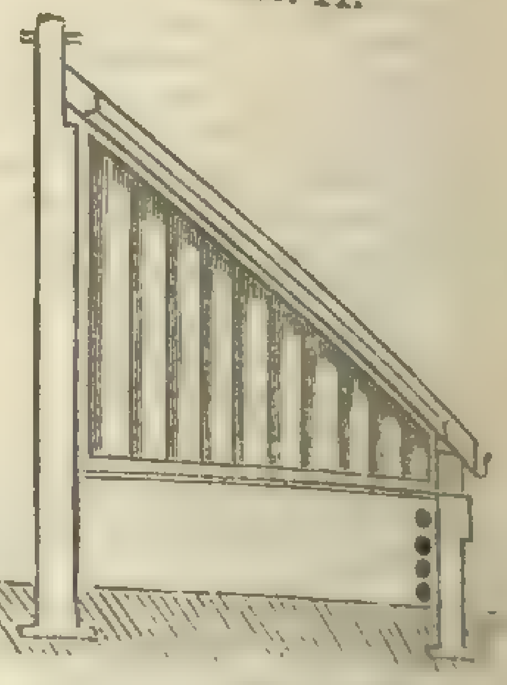

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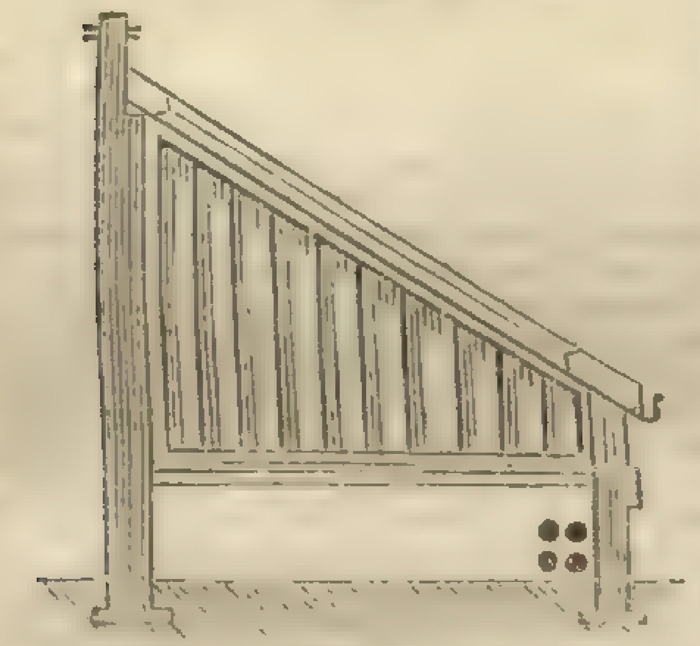

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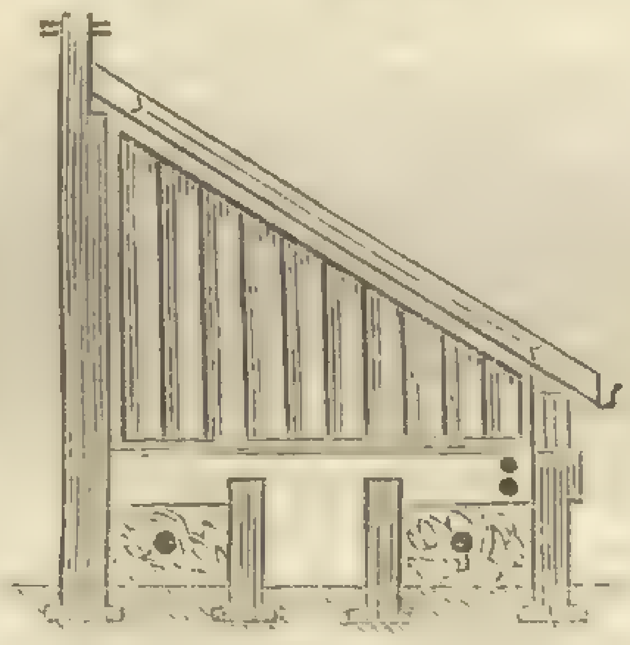

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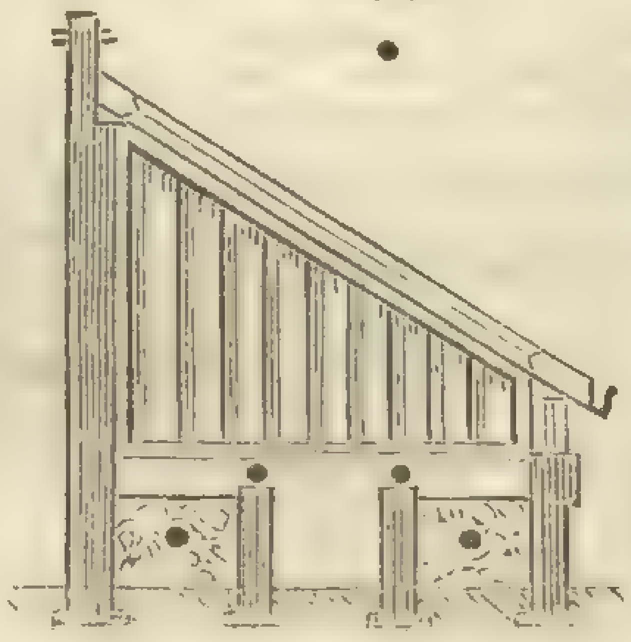

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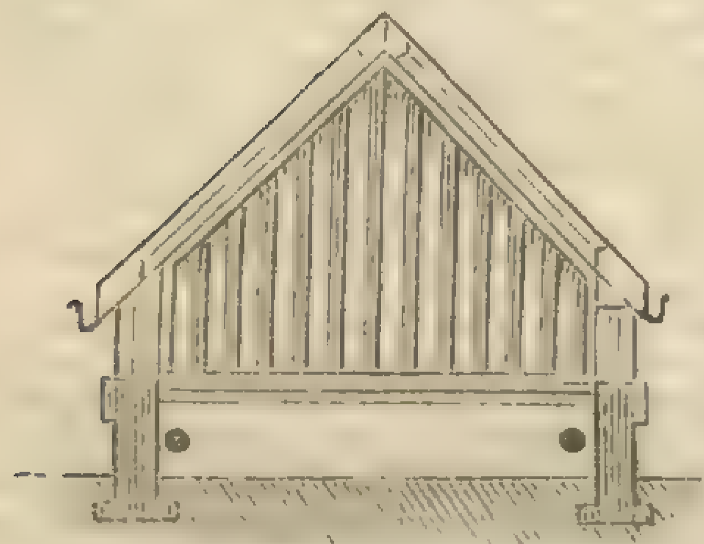

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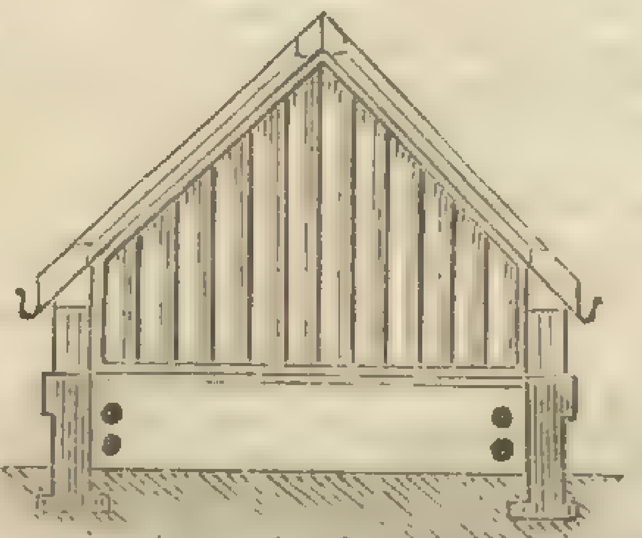

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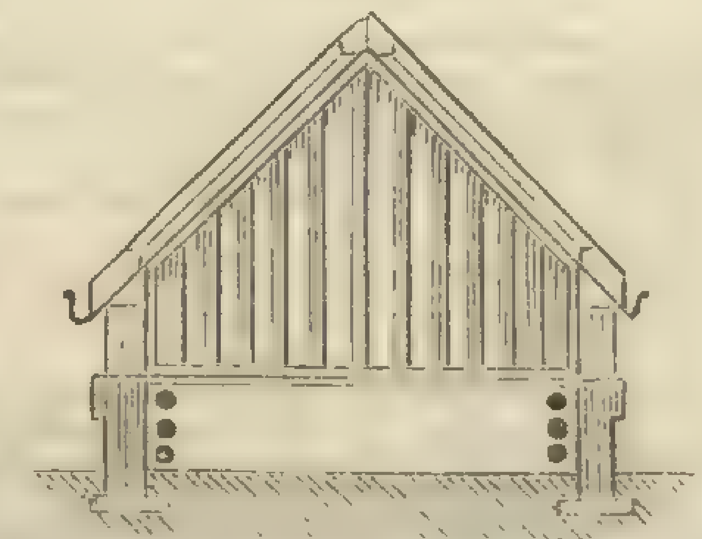

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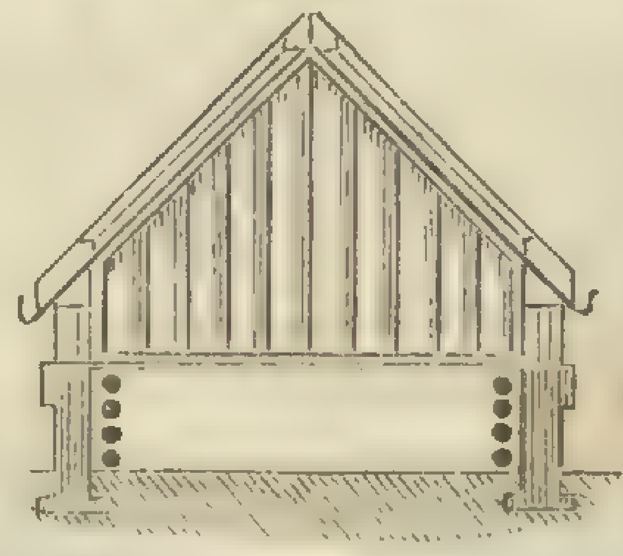

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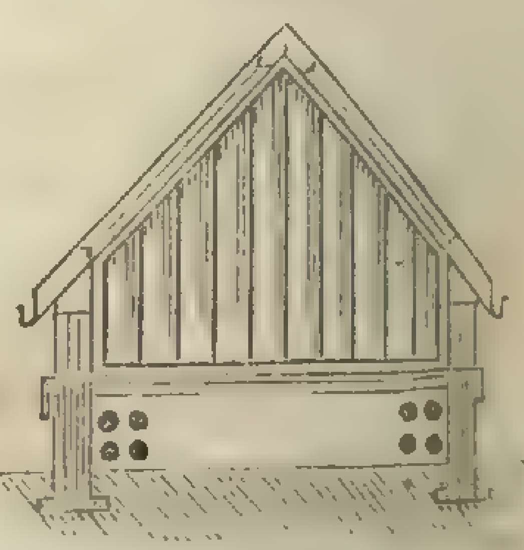

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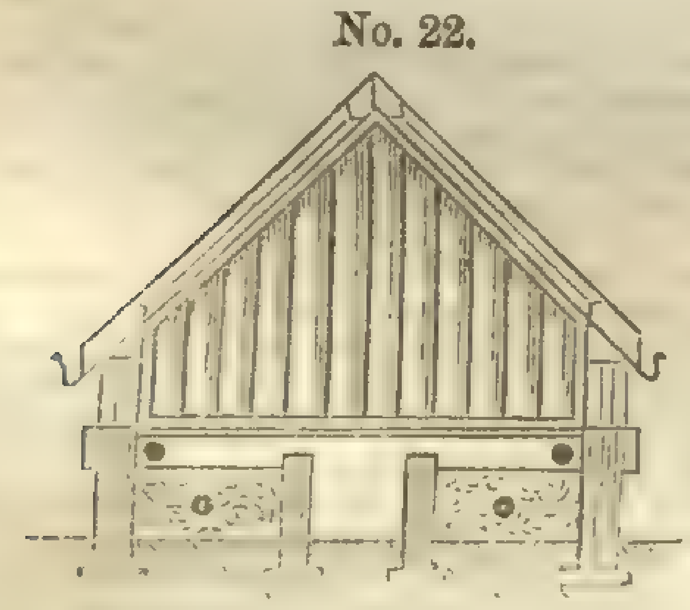

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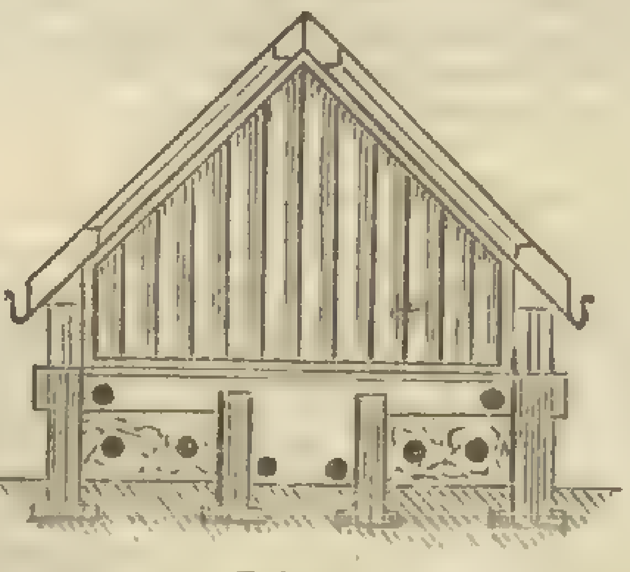

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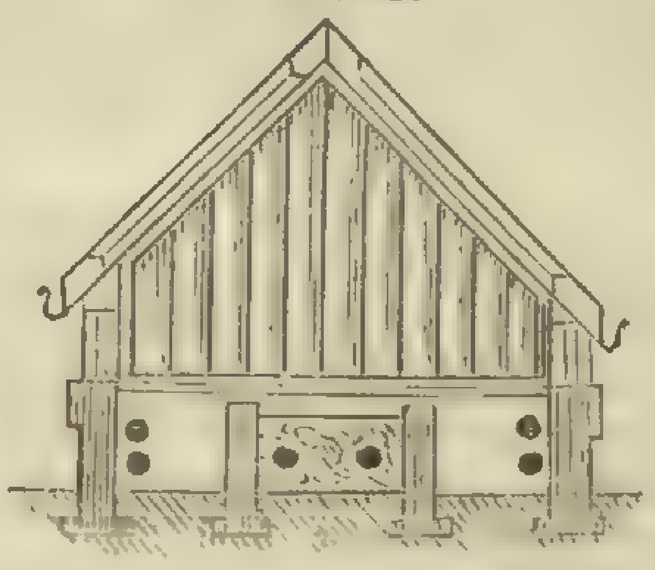

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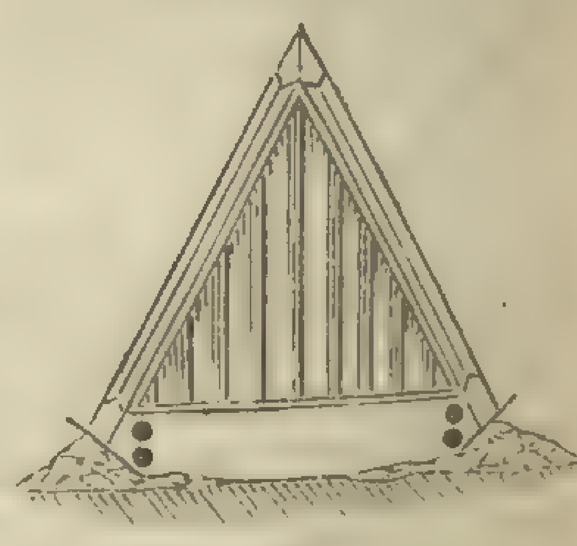

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60 „ 15 „	33 0 0	51 10 0	51 10 0	40 0 0	32 0 0
70 „ 15 „	37 0 0	58 0 0	58 0 0	45 0 0	36 0 0
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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 28.—1862.] SATURDAY, JULY 12. {Price Fivepence. Stamped Edition, 6d.

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NOTICE TO ADVERTISERS. — *Advertisements should reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

ROYAL HORTICULTURAL GARDEN, ADMISSION this DAY, FIVE SHILLINGS. Open at 2 o'clock. Bands of Royal Artillery at 3 o'clock. Performance by National Choral Society at half-past 5 o'clock.

HORTICULTURAL GARDEN.
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Tuesday	..	Admission 1s. 0d.	Open at Nine.
Wednesday	..	Admission 1s. 0d.	Open at Nine.
Thursday	..	Admission 1s. 0d.	Open at Nine.
Friday	..	Admission 2s. 6d.	Open at Nine.
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Bands daily at Four o'clock.

ROYAL HORTICULTURAL SOCIETY.
FRUIT COMMITTEE.
A MEETING of the FRUIT COMMITTEE will be held at the Rooms, South Kensington, on TUESDAY, July 22, for the examination of such FRUITS and VEGETABLES as may then be submitted for judgment; and when besides Certificates of Merit for Seedlings, the following Prizes will be awarded:—

CLASS A.—For the best Dish of Peaches	20s. 10s.
" B.—Ditto ditto Nectarines	20s. 10s.
" C.—Ditto ditto Plums	20s. 10s.
" D.—For the best Collection of the newer varieties of Strawberries	20s. 10s.
" E.—For the best collection of any varieties of Strawberries, one dish of each	20s. 10s.
" F.—For the best collection of Currants, one dish of each	20s. 10s.

All packages and communications must be received at the Rooms by 11 o'Clock on the day of Meeting, and addressed to ROBERT HOGG, LL.D., Secretary of the Committee.

A PRIZE of 5l. is offered by one of the Fellows of the Royal Horticultural Society for the 12 best STANDARD PLANTS for the DECORATION of the DINNER TABLE, to be awarded at the Show of Autumn Flowers, on September 10.

The Plants must be ornamental, either for their foliage, flowers, or fruit, and must be grown in pots not exceeding 6 inches in diameter; the foliage, flowers, and fruit must not be less than 20 inches nor more than 24 inches clear from the bottom of the pot.

Elegance of form, slenderness of stem, and variety of colour, will be the tests of excellence.

The groups will be received as late as 10 o'clock, A.M., PROVIDED SPACE SHALL HAVE BEEN SECURED FOR THEM THE DAY BEFORE. Letters to be addressed to Mr. G. EYLES, Royal Horticultural Society's Garden, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY.
AUTUMN SHOW, SEPTEMBER 10, 1862.—An Additional Prize of 10l. will be given for the Best Specimen of a CONSERVATORY TUB. There is no restriction as to material, size, form, or design. It may be of wood, slate, stone, pottery ware, Terra Cotta, or any other substance. It may be in one piece or in many, fastened or bound together. Fitness for its purpose, elegance of design, superiority of workmanship, and cheapness, will be the test of merit.

Letters to be addressed to Mr. G. EYLES, Garden Superintendent, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY.
Special PRIZES for the March Show in 1863.
10l. for the Three Best CAMELLIAS.
3l for the Three Best TREE MIGNONETTES.

ROYAL HORTICULTURAL SOCIETY.
THIRD GREAT SHOW, JULY 2.
CORRECTIONS.
CLASS 25.
Mr. Standish, Bagshot, Lonicera sp., Silver Knightian Medal
Mr. Standish, Bagshot, Acer sp., Silver Knightian Medal
Messrs. Veitch & Son, Exeter and Chelsea, Quercus sp., Silver Banksian Medal
Mr. Standish, Bagshot, Quercus sp., Silver Banksian Medal
Mr. Standish, Bagshot, Acer sp., Silver Banksian Medal
Mr Standish, Bagshot, Acer sp., Silver Banksian Medal
Mr. Standish, Bagshot, Salisburia sp., Bronze Medal
Messrs. J. Veitch & Son, Exeter and Chelsea, Acer sp., Bronze Medal
Messrs. J. Veitch & Son, Exeter and Chelsea, Quercus sp., Evergreen, Bronze Medal

CLASS 30.
Mr. Hooper, Bath, Seedling Pink, First Class Certificate
Mr. Bull, Chelsea, Petunia Guido, Second Class Certificate

CLASS 33.
Mr. H. Lavey, *not* Mr. H. Hardy, for 9 Lycopodiums
Mr. H. Lavey, *not* Messrs. Lane & Son, for Wild Flowers
Mr. W. H. Treen, *not* Mr. Queen, for Cut Verbenas
Mr. E. Sykes, *not* Mr. Sikes, for Sea Weeds

Roses.
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WM. WOOD & SON'S extensive COLLECTION of ROSES is now coming into BLOOM, and will continue in fine perfection during the Rose season.
N.B. The Nursery is distant three miles from the Uckfield Station of the London and Brighton Railway, where excellent Conveyances await the arrival of every Train.

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Roses.
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Old Cheshunt Nurseries, Herts, N.

RICHARD SMITH begs to inform the Public that he has a larger and finer COLLECTION of ROSES this season than he has ever had; but in consequence of their having been already twice pruned this season, they will not be in bloom for exhibition before the middle of July.
As the Stock is so large the prices will be very reasonable.
Nurseries, Worcester.

Roses in Bloom.
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EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
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Rose Nurseries, Hertford.
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Morning and Evening are best for viewing Roses.

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Hurst House Seedling Pine.
B. S. WILLIAMS can supply strong Plants of this choice new PINE at 15s. and 21s. each. A choice Stock of Smooth Cayenne and other Pines.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Pine Suckers.
WANTED, PROVIDENCE, BLACK PRINCE, and PRICKLY CAYENNE SUCKERS. Must be warranted clean and free from scale.
Apply by letter to R. C., Mr. M'Gregor, Seedsman, Merthyr Tydvil.

Good Seeds, Carriage Free, at Market Prices.
SUTTON AND SONS, SEED GROWERS AND MERCHANTS, Royal Berkshire Seed Establishment, Reading.

JAMES CARTER AND CO., SEED MERCHANTS AND NURSERYMEN, 237 and 238, High Holborn, London, W.C.

To the Seed Trade.
THE ANNUALS, &c., at JAMES CARTER & Co.'s Seed Farms at Dedham and St. Osyth are NOW in FULL BLOOM, and J. C. & Co. will be happy to receive a visit from any of their friends. (Eastern Counties Railway, Ardleigh Station.) Letters of Advice will receive immediate attention.
JAMES CARTER & Co., 237, 238, High Holborn, London, W.C.

CARTER'S FIRST-CLASS SEEDS of
CALCEOLARIA, 2s. 6d. per packet.
" new blotched, 2s. 6d. per packet.
CINERARIA, 2s. 6d. per packet.
PRIMULA, mixed fringed, 1s. per packet.
" dark carmine fringed, 2s. 6d. per packet.
" pure white fringed, 2s. 6d. per packet.
JAMES CARTER & Co., 237 & 238, High Holborn, London, W.C.

New Verbenas of 1862.
B. W. KNIGHT, FLORIST, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4s. per dozen, securely packed in tin box, post free. CATALOGUES of the varieties sent on application.

NEW VERBENAS of 1862.—Very strong healthy plants at 1s. each, or 12 of the finest varieties for 10s. Hamper and package free.
EDWIN COOLING, Mile Ash Nurseries, Derby.

BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.

Choice Calceolaria, per pkt. 1s.	Choice Cineraria, per pkt. 1s.
" Primula " .. 1s.	" Picotee " .. 1s.
" Carnation " .. 1s.	" Pelargonium " .. 1s.

ILLUSTRATED GUIDE to the FLOWER GARDEN, 2s. 6d.

Cineraria and Calceolaria Seed.
F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1s., 1s. 6d., and 2s. 6d., free by post.
Dulwich, Surrey, S.

New Choice Hybridised Calceolaria Seed.
EDWARD TAYLOR, FLORIST, Malton, Yorkshire, will forward Free through the Post packets of the above at 1s., 1s. 6d., and 2s. 6d. each. The above strain is guaranteed to be unsurpassed if equalled by any in the country. All the packets are of the same quality. Postage stamps received in payment. The Trade supplied.

New Fuchsias, Verbenas, Petunias, &c., of 1862.
H. WALTON can now supply the above, in healthy Plants, at as low prices as any in the Trade. LISTS on application, enclosing one stamp.
VERBENA FOXHUNTER, 6s. per dozen.
Edgend, Marsden, near Burnley, Lancashire.

Azalea indica.
J. IVERY AND SON beg to inform their Patrons and the Public that their NEW PRICED and DESCRIPTIVE CATALOGUE of the above is now published and will be forwarded post free on application.
Dorking, Surrey.

FERNS, BRITISH and FOREIGN.—An immense variety, 3s. to 12s. per dozen; also large specimens. BEGONIAS and other Foliage Plants; STANDARD FUCHSIAS, several hundreds, 1s. 6d. to 3s. 6d. each, and all kinds of Greenhouse and Stove Plants, Evergreens, Climbers, &c.
The finest Collection in London of Foreign Birds and Cages; Budgerigars, 20s. per pair.
R. GREEN, Bedford Conservatories, Covent Garden Market, and 154, Kingsland Road, N.E.

New Chrysanthemums, Hardy Variegated Plants, &c.
JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.
Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Campanula rotundifolia alba, var.
W. CHITTY is prepared to send out strong Plants of this beautiful Campanula. 12 Plants were exhibited on Wednesday last at the Royal Botanic Gardens, which were universally admired, and for which a Certificate of Merit was awarded. Well prepared beds planted now would continue blooming until October, and be acquiring strength to bloom with great vigour next season. 12s. per dozen.
Stamford Hill, N.—July 12.

Agricultural Seeds.
GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

PAMPAS GRASS.—Fresh imported Seed of good growing quality, 1s. per packet. Price per oz. to Trade on application.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3s. per lb., or 16l. per cwt.

GARDENERS' CHRONICLE

Calceolaria, Cineraria, and Primula.

BUTLER AND McCULLOCH respectfully beg to offer the following Seeds, saved from Collections containing only the Choicest strains:—

CALCEOLARIA, 1s., 1s. 6d., and 2s. 6d. per packet.
CINERARIA, 1s., 1s. 6d., and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, 1s., 1s. 6d., and 2s. 6d. per packet.

BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

Gunnera scabra Seed, 1s. per packet.

BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.

The GUNNERA SCABRA (a highly ornamental foliaged plant for Lawns and other conspicuous places) is described by Darwin as producing leaves 8 feet in diameter. Last year at the Kew Gardens there was a plant with leaves 4 ft. long, and nearly the same in diameter. See *Gardeners' Chronicle*, March 29, page 285.

BARR & SUGDEN, 12, King Street, Covent Garden (opposite the Garrick Club), W.C.

MESSRS. E. G. HENDERSON AND SON offer Seed of

CALCEOLARIA .. .. .. first quality
CINERARIA .. .. .. ,,
PRIMULA (fimbriated).. .. ,,

at 2s. 6d. and 5s. per packet; smaller ones 1s. each. All the above are to be seen in bloom at the Nursery in their respective season.

Wellington Nursery, St. John's Wood, London, N.W.

CHARLES NOBLE begs to annex the names of the RHODODENDRONS which obtained the First Prize at the Royal Horticultural Gardens, May 21.

Lord Palmerston	Duke of Cambridge
Lady Palmerston	Floretta
Lord Granville	Princess Hortense

He also obtained the First Prize at the Grand Opening Show at South Kensington in 1861.

Bagshot.

Choice Seeds.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give the greatest satisfaction.

PRIMULA, per packet, 2s. and 3s. 6d. each.
CALCEOLARIA, per packet, 1s. 6d., 2s. 6d., and 3s. 6d. each.
CINERARIA, per packet, 1s. 6d. and 2s. 6d. each.

For numerous Testimonials see SEED CATALOGUE, post free on application.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Stanstead Park Nursery, Forest Hill, S.E., and Edinburgh.

DOWNIE, LAIRD, AND LAING have much pleasure in offering the following very select Seeds, saved from their choice collections.

ANTIRRHINUM, 6d. and 1s. per packet.
CALCEOLARIA, 1s. and 2s. 6d. per packet.
CINERARIA, 1s. and 2s. 6d. per packet.
HOLLYHOCK, 1s., 2s. 6d. and 5s. per packet.
PANSY, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS KERMESINA SPLENDENS, 1s. 6d. and 2s. 6d. per packet.

Dobson's Splendid Calceolarias.

J. DOBSON AND SONS have the pleasure of offering NEW SEED saved from their unequalled collection. We beg to recommend the seed with, if possible, even greater confidence than any hitherto sent out by us. The flowers were new, large, finely-marked and beautiful in shape, and must be the precursors of something very splendid next season. The following Testimonials are among many hundreds, and it is to us a source of gratification to know that the Seed is second to none:—

Extract of Letter from THE GARDENER *to* N. MACLEOD, Esq., *Dalvey, near Forres, N.B.*

Messrs. DOBSON'S Calceolarias are quite a wonder, and elicit the admiration of everybody. It is wonderful to think that from a pinch of seed carefully saved such a variety of beautiful flowers can be produced. Out of 200 plants the inferior flowers are the exception; indeed, the majority of them are model flowers, large and well formed, and vie with each other in the delicacy of their colours and markings. They do Mr. DOBSON great credit as a cultivator; and besides it is a great satisfaction to know where we can get seed saved so well worthy the trouble of growing.

From Mr. JOHN HARRIS, *St. Andrew's Nursery, Bury St. Edmunds, May 24.*

Dear Sir,—Your Calceolarias this year have been the best I have ever seen, and have carried off the prizes all about this way.

From W. FOX, *Gardener, Taplow House, near Maidenhead.*

The Calceolarias from your seed of last year have been splendid, and much admired by all.

From Mr. J. SEALE, *Pentre Gardens, near Castle Emlyn, S. Wales.*

Gentlemen.—The Cinerarias and Calceolarias raised from the seed I had from you last year have been the admiration of all who saw them.

From Miss CRAWSHAY, *Caversham Park, Reading.*

Gentlemen,—I found your seed last year superior to any I have hitherto had.

From Messrs. DICKSON & TURNBULL, *The City Nursery, Brechin, N.B.*

Gentlemen,—The Calceolaria seed you sent us last season was very fine, and the plants have surprised all who have seen them.

In sealed packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. Only one quality sent out, and that the very best, as grown by ourselves.

J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

Improvement of Grass Lands

BY SOWING GOOD SEEDS OF THE MOST SUITABLE KINDS.

SUTTON'S RENOVATING GRASS SEEDS SHOULD NOW BE SOWN.

These Seeds consist of PERENNIAL CLOVERS and FINE GRASSES for improving the bottom.

Price 9d. per lb., or 80s. per cwt. Eight or 12 lb. per acre will be sufficient, and will produce a great increase in the produce.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

The Quickest Turnip known.

EARLY SIX WEEKS, or NIMBLE WHITE.

Fine fresh Seed, 9d. per lb.; 9s. per peck, or 32s. per bushel, Carriage Free.

Royal Berkshire Seed Establishment, Reading.

The Best Substitute for Swedes.

THE YELLOW TANKARD TURNIP.—This is sometimes called Tankard Swede, the flesh being yellow, and somewhat similar in feeding properties. If sown now a heavy crop will be ready as soon as Swedes sown a month ago; or it may be sown as a stubble Turnip.

SUTTON & SONS can supply fine fresh Seed at 10s. 6d. per peck, or 10d. per lb., Carriage Free.

Royal Berkshire Seed Establishment, Reading.

THE HEAVIEST CROPPING TURNIP.

The Grey Stone or Mottled Globe.

Excellent for present sowing for winter feed, or for later sowing to stand the winter.

SUTTON AND SONS, SEED GROWERS, Reading, are now harvesting a fine crop of Seed, and can therefore supply this popular sort at the reduced price of 10s. per Peck, or 35s. per Bushel, Carriage Free.

Royal Berkshire Seed Establishment, Reading.

WHEELER'S ORANGE GLOBE MANGEL, WHEELER'S IMPERIAL SWEDE, GRASS SEEDS for PERMANENT PASTURE, GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

Choice Seeds for Present Sowing.

ROBERT PARKER begs to offer the following, all of which are warranted to be new and genuine, and the finest qualities of their respective kinds. Per Pkt.—s. d.

CALCEOLARIA, Herbaceous, finest mixed .. [illegible]
CINERARIA, finest mixed .. .. 2 [illegible]
CLIANTHUS DAMPIERII .. .. 2 [illegible]
DIANTHUS HEDDEWIGII, and vars., finest mixed, 6d. & 1 [illegible]
HOLLYHOCK, finest mixed .. .. [illegible]
HUMEA ELEGANS .. .. 0 [illegible]
PANSY, finest mixed .. .. 0 [illegible]
PRIMULA SINENSIS DENTIFLORA .. .. .. 1 [illegible]
,, ,, ,, ALBIFLORA .. .. .. [illegible]
,, ,, ,, KERMESINA SPLENDENS .. [illegible]
STOCK, Scarlet, Intermediate .. .. [illegible]
,, White ,, ... 0 [illegible]
SWEET WILLIAM, Auricula-flowered, finest mixed .. [illegible]

A Priced and Descriptive CATALOGUE of SEEDS will be forwarded post free on application.

Exotic Nursery, Tooting, Surrey, S.

ROBERT PARKER begs to offer good healthy Plants of the following, all of which will prove desirable acquisitions to the most select collections:—

	£	s.	d.
ALOCASIA METALLICA .. .. each	1	11	6
CALADIUM BELLEYMEI	0	3	6
,, WIGHTII	0	3	6
CAMPYLOBOTRIS REFULGENS	0	3	6
CENTAUREA RAGUSINA	0	2	6
CLERODENDRON THOMSONÆ	0	3	6
COLEUS VERSCHAFFELTI	0	1	6
CYCLAMEN PERSICUM RUBRUM	0	2	6
FUCHSIA COMET	0	1	6
,, MINNIE BANKS	0	1	6
,, WHITE LADY	0	1	[illegible]
,, UNIVERSAL	0	3	6
,, CORNELISSONS, set of 10 double vars. ..	1	10	0
GERANIUM ADMIRATION	0	2	0
,, FLAMBEAU	0	3	6
ORCHIS FOLIOSA	0	5	0
RHODODENDRON NUTTALII	0	1	6
STATICE PROFUSA	0	3	6

Exotic Nursery, Tooting, Surrey, S.

CARTER'S LIST of SEEDS for PRESENT SOWING.

Per packet—	s.	d.
ANTIRRHINUM, choice mixed	0	6
,, new Carnation-striped	0	6
ALYSSUM SAXATILE COMPACTUM, new ..	0	6
AQUILEGIA CARYOPHYLLOIDES	0	6
CAMPANULA PYRAMIDALIS	0	6
CARNATION, extra choice	2	6
CHRYSANTHEMUM, Large Flowered, mixed ..	1	0
,, POMPONE, mixed	1	0
DAHLIA, finest double	1	0
DELPHINIUM GRANDIFLORUM CŒLESTINUM	0	6
,, FORMOSUM	0	3
HEARTSEASE, extra choice	1	0
HOLLYHOCK, prize mixed	1	0
INDIAN PINK, splendid double	0	6
ŒNOTHERA LAMARCKIANA	0	6
PHLOX, new French varieties	1	0
PICOTEE, extra choice	2	6
PELARGONIUM, choice mixed	1	0
,, new French	1	0
PENTSTEMON, fine mixed	0	6
POLYANTHUS, show flowers	1	0
STOCK, BROMPTON, mixed	0	6
,, IMPERIAL, mixed	0	6
SWEET WILLIAM, Hunt's newest	1	0
VERBENA, choice	1	0
WALLFLOWER, Double German, mixed	1	0
COLLECTIONS.		
CARNATION, 12 splendid varieties	3	0
PICOTEES, 12 splendid varieties	3	0
ANTIRRHINUM, 12 splendid varieties	3	0
HOLLYHOCK, 12 splendid varieties	5	0
STOCK, BROMPTON, 12 splendid varieties	2	6
STOCK, IMPERIAL, 10 splendid varieties	2	6
WALLFLOWER, double German, 12 splendid vars.	2	6

JAMES CARTER & CO., 238, High Holborn, W.C.

Lilium giganteum.

MESSRS. PETER VAN VELSEN AND SONS, of Overveen, near Haarlem, beg to offer strong flowering roots of the above at 7s. each, price in Haarlem.

Orders can be sent direct, or to their London Agents, BETHAM & BLACKITH, Cox's Quay, Lower Thames Street, E.C.

NEW AND RARE ORCHIDS

FROM

BRAZIL, THE TENASSERIM PROVINCES, & THE EASTERN ARCHIPELAGO

HUGH LOW & CO.

Have recently received from their Collectors in the above named Countries considerable quantities of NEW and RARE ORCHIDS, to an inspection of which purchasers are respectfully invited. Amongst the known species are comprised—

AERIDES LOBBI
,, Species resembling Æ. SCHRŒDERI
,, QUINQUEVULNERUM
,, SUAVISSIMUM
,, VIRENS SUPERBA, remarkably long flower spike
,, SPECIES, spotted leaves, from Pulo Tinggi, China Sea
BURLINGTONIA FRAGRANS
CALANTHE VESTITA ROSEA
,, ,, LUTEA
CATTLEYA CRISPA SUPERBA
,, or LÆLIA, a fine looking plant
CŒLOGYNE ELEGANS
,, LOWI
,, PANDURATA
,, PARISHI
,, SCHILLERIANA
DENDROBIUM AGGREGATUM MAJUS
,, CHRYSOTOXUM
,, CUCULLATUM GIGANTEUM
,, DALHOUSIANUM

DENDROBIUM EBURNEUM
,, FARMERI ALBA
,, FIMBRIATUM MAJUS
,, FORMOSUM GIGANTEUM
,, MOULMEINENSE
,, PIERARDI MAJUS
,, TORTILE ROSEA
EPIDENDRUM, very fine looking species, flower spike very long
IONOPSIS ROSEA
LIMATODES ROSEA
ONCIDIUM, four species
PHALÆNOPSIS GRANDIFLORA, of all sizes and in large numbers, the best and largest lot ever imported
,, LOWI (*Reichenbach fil.*)
SACCOLABIUM CURVIFOLIUM
,, BLUMEI MAJUS var. DAYI
,, VIOLACEUM
SOPHRONITIS CERNUA
,, GRANDIFLORA, a fine lot of this rare and beautiful plant
VANDA GIGANTEA, very fine plants
,, TRICOLOR

From other sources H. L. & Co. have also a supply of
ANÆCTOCHILUS, in large numbers and many new species
AERIDES CRISPUM
,, LINDLEYANUM
,, MACULOSUM
,, WARNERI
CATTLEYA CITRINA
,, MOSSIÆ, many varieties
DENDROBIUM LITUIFLORUM
,, LOWI
,, PICTUM
,, SALACCENSIS
,, MONILIFORME
,, PAXTONI
ONCIDIUM PAPILIO MAJOR
,, PULCHELLUM
PHALÆNOPSIS AMABILIS
,, ROSEUS
SACCOLABIUM GUTTATUM
,, REIDI
VANDA SUAVIS
,, HOOKERIANA

Prices moderate, as Stock of the majority is large.

AUSTRALIAN and BRAZILIAN TREE FERNS.

CLAPTON NURSERY, LONDON, N.E.

CLERODENDRON THOMSONÆ.—At the Royal Horticultural Society's Grand Show on May 21, we were awarded the First Prize for this very beautiful new climber. It is figured and fully described in Curtis's "Botanical Magazine" for last month. Healthy young plants, 7s. 6d. each; stronger, 10s. 6d. each.
THOMAS JACKSON & SON, Nurserymen, &c., Kingston, S.W.

Palms and other Stove Plants.

TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual size.
A CATALOGUE, giving the height of each plant, will be sent post free, on application to Mrs. LE CREPS, Château du Mesnil ie Mathieu, near Caen, Department of Calvados, France, where the plants may be viewed.

Osmunda regalis cristata.

OSBORN AND SONS have now the pleasure to offer plants of this unique and beautiful Crested Fern, exhibited by them at the Regent's Park and South Kensington shows, price 21s. each.
They have also a few plants of the PHYSURUS MACULATUS, exhibited by them and figured in the *Botanical Magazine* for May, price 1l. 11s. 6d. each. The usual discount to the Trade.—Fulham Nursery, London, S.W.

GERANIUMS—CLOTH of GOLD, GOLDEN FLEECE, and GOLD LEAF.—Strong well-rooted plants of the above at 4s. 6d. per dozen, out of Pots, per post paid, package included. In Pots, delivered to any Station on the South Western Railway, at 5s. 6d. per dozen, package included.
All orders will receive prompt and careful attention. From unknown Correspondents Post Office orders or stamps must accompany the order.
S. SHILLING, North Warnboro' Nursery, near Odiham, Hants.

New Plant Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce the publication of their NEW SPRING CATALOGUE of BEDDING and other ORNAMENTAL PLANTS, including descriptions of the undermentioned POMPON DAHLIAS, &c.

Angel of Peace	Little Mary
Annie	Little Prince
Butterfly	Little Valentine
Fairy Nymph	Pearl of Lilliputs
Goldlight	Silver Pheasant
Jeannette	Star
Little Darling	Tom Tit
Little Dorrit	and others.

BANKS'S NEW FUCHSIAS.
WILLS'S NEW VERBENAS.
FERN-LEAVED PRIMULAS, white and red fringed.
BEDDING TROPÆOLUMS—elegans coccinea, Model, Constellation, and Beauty of Oulton Park.
PETUNIA MAGNIFICENS.
GLOXINIAS—Brilliant, Leviathan, Bird of Paradise, and Most Beautiful; these four are very large, new in colour, and distinct.
AUCUBA HIMALAICA, the finest habited plant of all the new Aucubas.
GERANIUMS of the Zonale section—Magenta, new colour; Woodwardiana, best formed large petal-flowered; Baron Ricasoli, without exception the best bedding or Vase Geranium of any at present known.
GERANIUMS, MINIMUM Section, Harry Hieover.
" NOSEGAY " Pink Pearl.
" VARIEGATED " Sunset, Gold Leaf, Mrs. Milford, The Countess, Gold Pheasant, Little Beauty, &c.
Wellington Nursery, St John's Wood, London, N.W.

Calceolaria, ex. ex.

STEPHEN BROWN'S Seed of the above is of the same extra quality as in past years, saved expressly for him by a private grower for many years renowned for his first-rate Calceolarias. It has annually given the most unqualified satisfaction, and procured numerous prizes. The flowers are splendid in colour, richly spotted, of excellent form, large, and of endless variety. Packets, 2s. and 1s.
CALCEOLARIA NANA GRANDIFLORA PRÆCOX.—Very beautiful, from the Continent, exceedingly dwarf, and covered with a profusion of large and bright flowers, of great variety. Packets, 2s.
PRIMULA FIMBRIATA, ex. ex.—Finest mixed dark varieties, purple, carmine, rose, &c. Packets, 2s. and 1s.
FIMBRIATA STRIATA.—Very choice white, with many of the flowers beautifully striped with bright red, extra. Packets, 1s. 6d.
FIMBRIATA ERECTA SUPERBA.—Of more erect habit, received from the Continent, and represented as splendid, quite distinct, and constant. Packets, 2s. 6d.
SEED of first-class FLORIST FLOWERS, English and Continental, comprising Geranium, Hollyhock, Carnation, Picotee, Pansy, Cineraria, Polyanthus (superbly laced), Verbena, Antirrhinum, Gladiolus, Pentstemon, &c., all saved from the finest collections.
The SEED CATALOGUE free on application.
STEPHEN BROWN, Seed Grower and Importer, Sudbury, Suffolk.

New South Wales—Collections of Ferns.

M. GUILFOYLE begs to announce that he has made arrangements to execute Orders for Europe of COLLECTIONS of FERNS, selected from all the Australian Colonies and New Zealand by his Correspondents there, and also from the South Sea Islands, supplied by competent Collectors in New Caledonia, the New Hebrides, &c. Due care will be taken that none but well established plants in pots are sent out from his Nursery, and for such he has fixed the price of each case, containing at least 25 species of Australasian Ferns in duplicate, at 16l., (freight and case included), shipped by him for London to order. The Island Ferns, among which a constant succession of novelties may be expected for years to come, will be separately charged for, at prices extremely moderate.
M. GUILFOYLE will also be happy to execute Orders for Seeds, Ferns, and Living Plants of all kinds from the Islands of the S. W. Pacific, especially including Orchids, Pines, &c.
Orders with remittances to be addressed to M. GUILFOYLE, Exotic Nursery, Double Bay, Sydney, N. S. Wales.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.
Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.
Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality, at Market Prices.

REIGATE SILVER SAND, best quality, 12s. per Ton or 1s. 3d. per Bushel, at Swan Place; delivered five miles, or to any London Wharf or Railway, 16s. per Ton, or 1s. 6d. per Bushel. Kentish and Hampshire PEATS, YELLOW LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE from Kingston.—J. KENNARD, Purveyor to Her Majesty, Swan Place, Old Kent Road, London, S.E.

Very Choice Primula, Calceolaria Cineraria, &c., 1s. per Packet, Post free.

SUTTON AND SONS can strongly recommend the following Choice SEEDS, at 1s. per packet each sort:—

PRIMULA SINENSIS FIMBRIATA	PANSY
CALCEOLARIA	PELARGONIUM
CINERARIA	CARNATION
POLYANTHUS	AURICULA

Royal Berkshire Seed Establishment, Reading.

THE BEST SORTS of CABBAGE SEEDS, in packets, 6d. each sort, Post Free, sufficient to raise a thousand plants of each.

SUTTON'S IMPERIAL	SUTTON'S DWARF COMBE
EARLY BLENHEIM	SHEPPARD'S EARLY MARROW
CATTELL'S DWARF	CATTELL'S RELIANCE
CHAMPION [BARNES	ATKINS'S MATCHLESS

Nonpareil, Early York, Enfield Market, Wheeler's Imperial, and other old sorts, 3d. per packet; Drumhead Cattle Cabbage, 2s. 6d. per lb.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

CATTELL'S EARLY RELIANCE CABBAGE. CATTELL'S DWARF BARNES CABBAGE.
These two Cabbages have proved themselves for many years past to be the two best Early Spring Cabbages in cultivation. If sown as early as the middle of July, they will not run to seed the following Spring. They may be had as usual in packets containing half-an-ounce of the Reliance, and one ounce of the Dwarf Barnes. Free by post for 12 Penny Stamps for each packet.
JOHN CATTELL, Nursery and Seed Establishment, Westerham, Kent.

New Hardy Ferns.

JAMES BLAKE has much pleasure in offering the following distinct and beautiful HARDY FERNS, discovered by himself, and described by Mr. T. MOORE in the *Gardeners' Chronicle* of May 10, 1862.
LASTREA DILATATA var. RECURVIFOLIA (MOORE).—A neat-looking and distinct variety. The fronds are comparatively of low growth, the pinnæ gracefully recurved, the pinnules are sessile, and decidedly convex on their upper surface. Good plants, 5s. each. Extra strong do., 10s. 6d. each.
LASTREA DILATATA var. ALTA (MOORE).—This is a very beautiful plant of erect, robust habit, growing 4 or 5 feet high. The fronds are distinctly tripinnate, with the pinnules averaging an inch, the larger ones 2 inches long. It is a well marked and desirable acquisition. Strong plants, 5s. each; extra strong ditto, 7s. 6d. each.
LASTREA DILATATA var. IRREGULARE (MOORE'S MSS.).—A distinct and interesting variety. The fronds are of medium size, the pinnæ much attenuated, the pinnules irregularly cut and jagged. Good plants, 7s. 6d. each.
The usual allowance of one plant over will be made to the Trade when three plants of a sort are taken.
Newton Cottage, Pitfodels, near Cutts, Aberdeen.

THE LONDON MANURE COMPANY (ESTABLISHED 1840)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

LAWES'S MANURES.
The Manures manufactured by J. B. LAWES for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—

LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6 6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES ..	5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8 0

These Manures can be obtained of Mr. LAWES, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

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40 to 45 per Cent. of Soluble guaranteed. 1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.
Extract of Opinion from Mr. WAY, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. VOELCKER, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a percentage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.
Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.
Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

Upwards of 2000 Cases have been reported as Cured by

JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s. 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.
Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.
NEAL'S PLANT SOAP, 1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.
Both may be obtained of all principal Seedsmen.
Patentee: J. NEAL, Edward Street, Birmingham.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra strong, 3s. per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.
This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3s. per Gallon (or 9d. fit for use), will be the cheapest. To publish testimonials is unnecessary.
May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,
PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.
This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.
Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.
Wholesale by PRICE'S PATENT CANDLE CO., Limited.

WIRE-WORK for the Garden, the Greenhouse, and the Conservatory. An Illustrated Catalogue, containing upwards of 90 Engravings, Post-free. WIRE NETTING, 2 feet high, 5d. per yard. GARDEN SYRINGES, 6s. each.
WILLIAM H. HONEY, Manufacturer, 263, Regent Street, near Oxford Street Circus, W.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street.
ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.—July 12.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.
They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.
N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.
Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability. Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.
To be obtained of F. & G. ROSHER, at their Premises as above.

DUNN'S GARDENER'S PENCILS.
Price 1s., will refill for 6d.
DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.
Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.
These pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.
N.B.—A liberal allowance to the Trade.

E. WOLFF AND SON'S Solid INK PENCILS in Cedar, for GARDEN TALLIES.—These Pencils are the best and cheapest invention ever used for writing on Garden Tallies of all descriptions; the action of the air, rain, &c., not having the slightest effect upon them. The advantages resulting from their use are; firstly, the simplicity of an ordinary lead pencil; secondly, the superiority and portability of a dry pencil over liquid ink or paint; and thirdly, THEIR REASONABLE PRICE, which places them within the reach of all classes. These pencils are also useful for all kinds of writing, memoranda, &c.
Price 3d. each; extra thick, 6d. each. To be had retail of all Seedsmen, Nurserymen, and Stationers, and wholesale at the Manufactory,
22 & 23, Church Street, Spitalfields, N.E.

SAMUELSON'S LAWN MOWING MACHINES,

WITH MANWARING'S PATENT NOISELESS GEAR, AND BOYD'S PATENT SELF-CLEANING BRUSH. Also,

SAMUELSON'S IMPROVED GARDEN ENGINES, WATER BARROWS, SYRINGES, WIRE NETTING, &c.

CATALOGUES FREE, ON APPLICATION TO BRITANNIA WORKS, BANBURY, OR TO

MR. SAMUELSON'S LONDON WAREHOUSE, 76, CANNON STREET WEST, CITY,

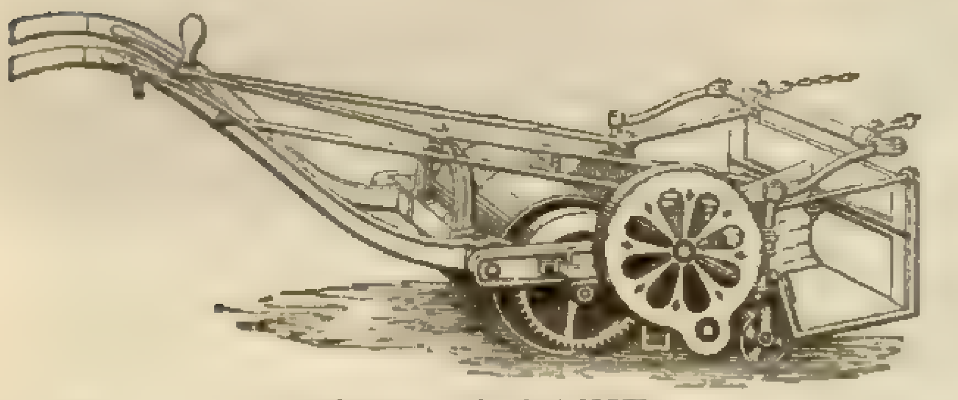
WHERE SAMPLES MAY BE SEEN.

DEPOTS also at SHREWSBURY, YORK, STOCKTON, and NEWCASTLE. Dublin Warehouse: 12, PARLIAMENT STREET, ESSEX BRIDGE.

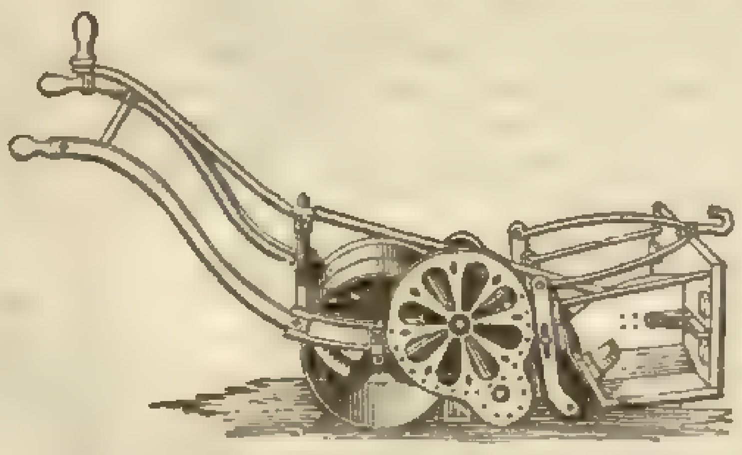
SHANKS' NEW IMPROVED PATENT

LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

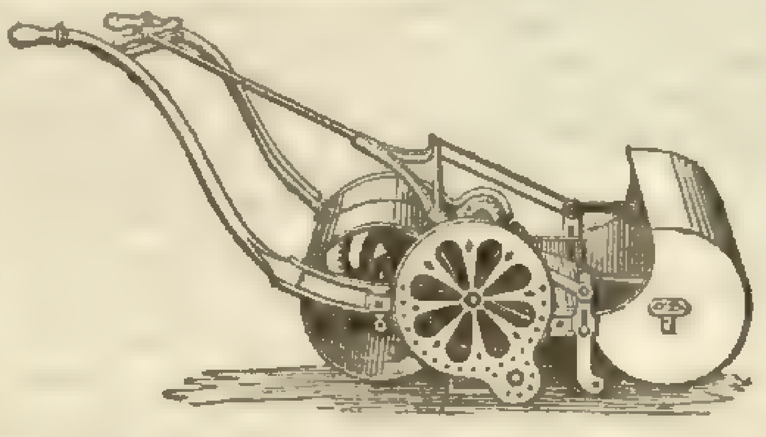
WITH SILENT MOTION IF SPECIALLY DESIRED.



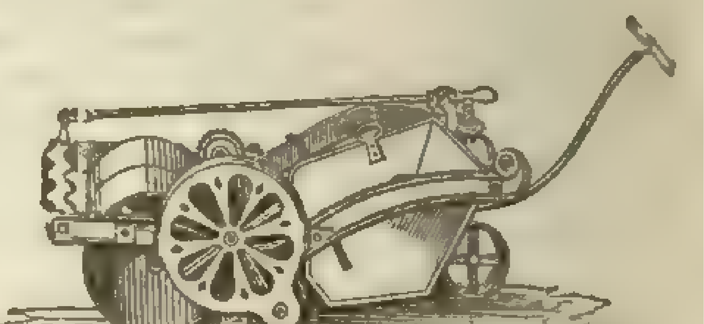
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

PRICES.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Width of Cutter.
No. 1.—48-inch Machine ... ... £28 0 0 } *Drawn by a Horse.*
No. 2.—42-inch Machine ... ... 26 0 0 }

Width of Cutter.
No. 3.—36-inch Machine ... ... £22 0 0 *Drawn by a Horse.*
No. 4.—30-inch Machine ... ... 19 0 0 *Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | Width of Cutter. No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey.*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Width of Cutter.
No. 8.—24-inch Machine ... ... £8 17 6 } *Easily Worked by Two Men.*
No. 9.—22-inch Machine ... ... 8 7 6 }
No. 10.—19-inch Machine ... ... 7 12 6 *Ditto by a Man and Boy*

Width of Cutter.
No. 11.—16-inch Machine ... ... £6 17 6 *Easily Worked by a Man.*
No. 12.—13-inch Machine ... ... 6 2 6 *Ditto by a Boy.*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Width of Cutter.
No. 16.—16-inch Machine ... £6 5 0 } *Easily worked by a Stout Lad.*
No. 17.—14-inch Machine ... 5 15 0 }
Silent Movement, 7*s.* 6*d.* extra.

Width of Cutter.
No. 18.—12-inch Machine ... ... £5 5 0 *Easily worked by a Lady.*
Silent Movement, 4*s.* extra.

*** *The Machines are warranted to give ample satisfaction, and if not approved of may be at once returned.*

The Prices, with a small charge for Packing, include Carriage to most of the Railway Stations and Shipping Ports in the Kingdom.

SOLE AGENTS FOR LONDON: J. B. BROWN & CO., 18, CANNON STREET, CITY, E.C.

ROYAL HORTICULTURAL SOCIETY.

REMAINING

ARRANGEMENTS FOR THE EXHIBITIONS AND MEETINGS IN 1862,

TO BE HELD AT

THE GARDEN, SOUTH KENSINGTON, W.

July 22, Tuesday. Fruit and Floral Committee.
August 1, Friday. Meeting for Election of Fellows.
" 12, Tuesday. Fruit and Floral Committee.
" 26, Tuesday. Fruit and Floral Committee.
Sept. 5, Friday. Meeting for Election of Fellows.
" 10, WEDNESDAY. SHOW OF AUTUMN FLOWERS, and Fruit and Floral Sub-Committee.

Sept. 23, Tuesday. Fruit and Floral Committee.
October 8, Wednesday. Fruit and Floral Sub-Committee.
October 8, 9, & 10. GREAT INTERNATIONAL SHOW OF FRUIT, GOURDS, ROOTS, VEGETABLES, AND CEREALS. The Show of Gourds, Roots, and Cereals to continue until the 18th.

Nov. 7, Friday. Meeting for Election of Fellows.
" 11, Tuesday. Fruit and Floral Committee.
Dec. 9, Tuesday. Fruit and Floral Committee.

*** At some period during the season it is expected that the Memorial of the Exhibition of 1851 will be finished, and probably publicly uncovered.

ELECTION OF FELLOWS.

Gentlemen and Ladies wishing to become Fellows have to be proposed by some one already a Fellow, to whom they are personally known. The subscription is Two Guineas Entrance Fee, and Two Guineas or Four Guineas a year according to the privileges wished.

ADMISSION OF THE PUBLIC.

I. REMAINING HORTICULTURAL EXHIBITIONS.

Sept. 10. AUTUMN FLOWER SHOW .. .. 2*s.* 6*d.* | October 8. FRUIT AND VEGETABLE SHOW .. .. .. 2*s.* 6*d.* | October 9. FRUIT AND VEGETABLE SHOW .. .. 1*s.* 6*d.*
October 10. FRUIT AND VEGETABLE SHOW .. .. 1*s.* 0*d.* | October 11-18. GOURDS, ROOTS, AND CEREALS .. .. 1*s.* 0*d.*

Admission by payment at the door, or by tickets previously purchased.

From 12th July to 18th October.

			s.	d.
Sundays		No admission by payment.		
Mondays	(Band)	Gardens alone	1	0
Tuesdays	(Band)	Gardens and Exhibition	1	6
Wednesdays	(Band)	Gardens from Exhibition	0	6
Thursdays	(Band)			
Fridays	(Band)	.. ..	2	6
Saturdays	(Bands)	.. ..	5	0

From 18th October to 31st December.

		s.	d.
Sundays	No admission by payment.		
Mondays	.. ..	0	6
Tuesdays	No admission by payment.		
Wednesdays	.. ..	2	6
Thursdays	No admission by payment.		
Fridays	ditto.		
Saturdays	.. ..	2	6

The Council have the pleasure to announce that Her Majesty's Commissioners for the Exhibition of 1851 have given their consent that until October 18 Visitors may be permitted to use a temporary roadway for admission from Kensington Gore leading to the back of the Conservatory. The Council sought this concession in order to abate the confusion which, without it, must be attendant on the number of carriages visiting the International Exhibition of 1862.

ROYAL HORTICULTURAL SOCIETY.—*Continued.*

SHOW OF AUTUMN FLOWERS, WEDNESDAY, SEPTEMBER 10.

Class		1st	2d	3d
1.	48 Cut Roses. 3 trusses, distinct kinds .. ..(*Nurserymen*)	£4 0s.	£3 0s.	£2 0s
2.	24 Cut Roses. 3 trusses, distinct kinds .. .. (*Amateurs*)	4 0	3 0	2 0
3.	24 Cut Roses. Single blooms. Distinct kinds .. ..(*Open*)	2 0	1 0	0 10
4.	6 Roses, in Pots, not more than two of one kind .. ..(*Open*)	3 0	2 0	1 0
5.	12 Hollyhocks, in spikes. Distinct kinds .. .. ..(*Open*)	3 0	2 0	1 0
6.	12 Hollyhocks, single flowers. Distinct kinds .. ..(*Open*)	2 0	1 0	0 15
7.	24 German Asters. "Quilled." Distinct kinds .. ..(*Open*)	2 0	1 0	0 15
8.	24 French Asters. "Tasselled." Distinct kinds ..(*Open*)	2 0	1 0	0 15
9.	24 Gladiolus, cut spikes. Distinct kinds .. .. ..(*Open*)	2 10	1 10	1 0
10.	12 Gladiolus, cut spikes. Brenchleyensis colour. Distinct kinds .. ..(*Open*)	2 0	1 10	1 0
11.	12 Pots of Gladiolus. Distinct kinds. Not more than 3 in each Pot .. ..(*Open*)	3 0	2 0	1 0
12	24 Phloxes, single trusses. Distinct kinds .. .. ..(*Open*)	2 0	1 0	0 15
13.	12 Dwarf Phloxes. Perennial upright growing kinds, in Pots. Distinct kinds .. ..(*Open*)	£3 0s.	£2 0s.	£1 0s.
14.	Phlox. The Dwarfest and best perennial upright growing Plant. (Prize offered by Dr. Lindley) .. .. ..(*Open*)	1 0	—	—
15.	24 Verbenas, 5 trusses of each. Distinct kinds .. ..(*Open*)	1 10	1 0	0 15
16.	48 Dahlia Blooms. Distinct kinds .. .. ..(*Nurserymen*)	5 0	4 0	3 0
17.	24 Dahlia Blooms. Distinct kinds .. .. ..(*Nurserymen*)	3 0	2 0	1 0
18.	18 Dahlia Blooms. Fancies. Distinct kinds ..(*Nurserymen*)	3 0	2 0	1 0
19.	24 Dahlia Blooms. Distinct kinds .. .. .. (*Amateurs*)	5 0	4 0	3 0
20.	12 Dahlia Blooms. Distinct kinds .. .. .. (*Amateurs*)	3 0	2 0	1 0
21.	12 Dahlia Blooms. Fancies. Distinct kinds .. (*Amateurs*)	3 0	2 0	1 0
22.	12 Bouquet Dahlias, in Pots	3 0	2 0	1 0
23.	Miscellaneous. For flowers not specified .. .. ..(*Open*)	2 0	1 0	0 10

*** A prize of *5l.* is offered for the most Ornamental Collection of Seven Standard Plants, suitable for the decoration of a dinner table. The Plants to be grown in pots not exceeding the following sizes, viz. :—One 24 pot, two 32 pots, four 48 pots. All 48's would be preferable. The plants may be ornamental either for their foliage, their flowers, or their fruit. Plants having either foliage, flowers, or fruit lower than 21 inches from the outside-bottom of the pot, will be excluded from competition. Elegance of form, slenderness of stem, and variety in colour will be the tests of excellence. Exhibitors are at liberty to screen the pots in any manner they may think appropriate, and the taste displayed in this will be considered in the award. This Prize will be competed for at the Show which is to be held on the 10th September.

GREAT INTERNATIONAL SHOW OF FRUIT, GOURDS, ROOTS, VEGETABLES, AND CEREALS

(OPEN TO ALL THE WORLD), OCTOBER 8, 9, and 10.

Gourds, Roots, and Cereals will remain on Exhibition until October 18.

NOTE.—A dish of Apples, Pears, Oranges, Lemons, and the like, 6 fruits of each ; but of Plums, 9 fruits.

FRUITS.

Class.		1st	2d	3d
A.	Collection of Fruits .. .. (*Fruiterers only*)	£5 0s.	£3 0s.	£ — s.
B.	Collection of Fruits. Not more than 2 dishes of any one kind .. .. (*Private growers*)	6 0	4 0	3 0
C.	Pine Apple, Queens	2 0	1 10	1 0
D.	Pine Apple. Any other kind	2 0	1 10	1 0
E.	Grapes, White Muscat. 6 bunches	4 0	3 0	2 0
F.	Grapes, White Muscat. 3 bunches	2 10	2 0	1 0
G.	Grapes. Any other white kind. 3 bunches	2 10	2 0	1 0
H.	Grapes, Black Hambro' 6 bunches	4 0	3 0	2 0
I.	Grapes, Black Hambro' 3 bunches	2 10	2 0	1 0
J.	Grapes. Any other black kind. 3 bunches	2 10	2 0	1 0
K.	Pears, dessert, 12 dishes, distinct kinds	4 0	3 0	2 0
L.	Pears, dessert, 6 dishes, distinct kinds	3 0	2 0	1 0
M.	Pears, dessert, 3 dishes, ripe fruit, distinct kinds	1 10	1 0	0 10
N.	Pears, dessert. Single dish, ripe fruit, any kind	1 0	0 15	0 10
O.	Pears, kitchen. Single dish, any kind	1 0	0 15	0 10
P.	Pears. Heaviest 5 fruits, dessert	1 0	0 15	0 10
Q.	Apples, dessert, 12 dishes, distinct kinds	4 0	3 0	2 0
R.	Apples, dessert, 6 dishes, distinct kinds	3 0	2 0	1 0

FRUITS—*Continued.*

Class.		1st	2d	3d
S.	Apples, dessert, 3 dishes, ripe fruit, distinct kinds	£1 10s.	£1 0s.	£0 10
T.	Apples, dessert. Single dish, ripe fruit, any kind	1 0	0 15	0 10
U.	Apples, kitchen, 12 dishes, distinct kinds..	4 0	3 0	2 0
V.	Apples, kitchen, 6 dishes, distinct kinds	3 0	2 0	1 0
W.	Apples, kitchen, 3 dishes, distinct kinds	1 10	1 0	0 10
X.	Apples, kitchen. Single dish	1 0	0 15	0 10
Y.	Apples, kitchen. Heaviest 5..	1 0	0 15	0 10
Z.	Oranges, Lemons, &c., collection of 1 dish of each	3 0	2 0	1 0
AA.	Four Orange-trees, bearing fruit. In Pots or boxes	3 0	2 0	1 0
BB.	Melons. Single fruit, any kind	1 10	1 0	—
CC.	Plums. Single dish, any kind	1 0	0 15	0 10
DD.	Strawberries. Single dish	2 0	1 10	1 0
EE.	Currants. Single dish..	0 10	—	—
FF.	Raspberries. Single dish	0 15	0 10	—
	NOTE.—Fruits specified in the above Classes will be excluded from GG.			
GG.	Miscellaneous	2 0	1 10	1 0

GOURDS.

Class	§ I. *Gourds eatable when ripe.*	1st	2d
I.	The finest collection .. .. (*Foreign Growth*)	£3 0s.	£2 0.
II.	The finest collection .. .. (*Home Growth*)	3 0	2 0
III.	The heaviest single specimen .. .. .. (*Home Growth*)	3 0	2 0
IV.	The heaviest single specimen .. .. .. (*Foreign Growth*)	3 0	2 0
	(Prizes offered by Dr. Lindley.)		
	II. *Gourds for Ornament, or merely curious, and never eatable.*		
V.	The most extensive collection, without regard to cultivation ..	3 0	2 0
	§ III. *Mixed.*		
VI.	6 Ornamental Gourds, whether eatable or not	3 0	2 0
	(Prizes offered by Mr. Wilson Saunders.)		

VEGETABLES, GARDEN ROOTS, &c.

		1st	2d
I.	Potatoes, collection of	3 0	2 0
II.	Potatoes, 6 Kinds of Kidneys, 12 tubers of each	1 0	0 15
III.	Potatoes, 6 kinds, "Rounds," 12 tubers of each	1 0	0 10
IV.	Potatoes, Kidneys, 12 tubers	0 15	0 10
V.	Potatoes, any other kind, 12 tubers	0 15	0 10
VI.	Onions, 12	0 15	0 10
VII.	Carrots, 12	0 15	0 10
VIII.	Parsnips, 12	0 15	0 10
IX.	Globe Artichokes, 12..	0 15	0 10
X.	Parsnip Chervil, 12	0 15	0 10
XI.	Beet, 6 roots	0 15	0 10
XII.	Turnips, 3 kinds, 6 of each..	1 0	0 10
XIII.	Turnips, 6 of one kind	0 15	0 10
XIV.	Salsafy, 12 roots	0 15	0 10
XV.	Scorzonera, 12 roots	0 15	0 10
XVI.	Peas, 1 dish	0 15	0 10
XVII.	Brussels Sprouts, 3 plants	0 15	0 10
XVIII.	Borecoles, 6 kinds, 2 of each	0 15	0 10
XIX.	Broccoli, 6 heads	0 15	0 10
XX.	Cabbage, Savoys, 6 heads	0 15	0 10
XXI.	Cabbage, any other kind, 6 heads..	0 15	0 10
XXII.	Yams, Chinese, 6	0 15	0 10
XXIII.	Celery, red, 6 heads	0 15	0 10
XXIV.	Celery, white, 6 heads	0 15	0 10
XXV.	Endive, 6 heads	0 15	0 10
XXVI.	Cardoons, 4 heads	0 15	0 10
XXVII.	Mushrooms, dish	0 15	0 10
XXVIII.	Miscellaneous	1 0	0 15

N.B. Nothing can be admitted here which is provided for by any other Class.

AGRICULTURAL ROOTS.

Class		
1.	Mangel Wurzel, Long Red. 3 roots	Bronze Medal.
2.	Mangel Wurzel, Long Yellow. 3 roots	Ditto.
3.	Mangel Wurzel, Yellow Globe. 3 roots	Ditto.
4.	Mangel Wurzel, Red Globe. 3 roots	Ditto.
5.	Beet, White Sugar. 3 roots	Ditto.
6.	Carrots, White Belgian. 6 roots	Ditto.
7.	Carrots, Altringham. 6 roots	Ditto.
8.	Cabbage, Cattle. The largest head of	Ditto.
9.	Turnips, Swedes. 6 roots..	Ditto.
10.	Turnips, Yellow 6 roots	Ditto.
11.	Turnips, White. 6 roots	Ditto.
12.	Kohl Rabi. 6 roots	Ditto.

CEREALS.

In samples not less than a pint.

NOTE.—Both ear and sample are specially requested to be sent, but this is not imperative.

Class		
1.	General Collection of Wheats from all quarters	Bronze Medal
2.	Collection of Wheats from any one quarter	Ditto.
3.	" " from the Baltic	Ditto.
4.	" " from the Black Sea	Ditto.
5.	" " from any part of Russia	Ditto.
6.	" " grown in France	Ditto.
7.	" " grown in Holland	Ditto.
8.	" " grown in Belgium	Ditto.
9.	" " grown in Denmark	Ditto.
10.	" " grown in Sweden or Norway	Ditto.
11.	" " grown in Prussia	Ditto.
12.	" " grown in Austria	Ditto.
13.	" " grown in Bavaria	Ditto.
14.	" " grown in Wurtemberg	Ditto.
15.	" " grown in North Germany	Ditto.
16.	" " grown in Italy	Ditto.
17.	" " grown in Spain	Ditto.
18.	" " grown in Portugal	Ditto.
19.	" " grown in Turkey, Egypt, or Tunis	Ditto.
20.	" " grown in Algeria	Ditto.
21.	" " grown in Southern Africa	Ditto.
22.	" " grown in Lower Canada	Ditto.
23.	" " grown in Upper Canada	Ditto.
24.	" " grown in the Northern States of America ..	Ditto.
25.	" " grown in the Southern States of America ..	Ditto.
26.	" " grown in California	Ditto.
27.	" " grown in Victoria or Vancouver's Island	Ditto.
28.	" " grown in Australia	Ditto.
29.	" " grown in England	Ditto.
30.	" " grown in Scotland	Ditto.
31.	" " grown in Ireland	Ditto.
32.	" " sold in London Market	Ditto.
33.	" " sold in Liverpool Market	Ditto.
34.	Sample of White Wheat of any kind	Ditto.
35.	Sample of Red Wheat of any kind	Ditto.
36.	Collection of Barley from any one quarter	Ditto.
37.	General collection of Barley from all quarters	Ditto.
38.	Malting Barley	Ditto.
39.	Collection of Oats from any one quarter	Ditto.
40.	General collection of Oats from all quarters	Ditto.
41.	Black Oats	Ditto.
42.	White Oats	Ditto.
43.	Rye	Ditto.
44.	Rice grown in North America	Ditto.
45.	Rice grown in South America	Ditto.
46.	Rice grown in the East Indies	Ditto.
47.	Collection of Rice from all quarters	Ditto.
48.	Head of Maize, or Indian Corn, of any kind	Ditto.
49.	Collection of different kinds of Maize, in heads, best in quality ..	Ditto.
50.	Maize, most numerous in kinds	Ditto.
51.	Newly introduced or rare Cereals	Ditto
52.	Cereals of any kind, not included in the above	

MISCELLANEOUS.

A.	Collection of Fruits, modelled in Wax	Large Bronze Medal.
B.	Collection of Roots, modelled in Wax	Ditto.
C.	Collection of Vegetables, modelled in Wax	Ditto.
D.	Collection of Ditto, in any other material	Ditto.
E.	General Collection, embracing the whole or part of the subjects in the above International Show	Silver Medal.

ROYAL BOTANIC SOCIETY.

THIRD EXHIBITION of PLANTS, FLOWERS, and FRUIT, JULY 9.

AWARDS OF THE JUDGES.

£20.—EXTRA GOLD MEDAL.

To Mr. W. May, Gr. to J. Spode, Esq., Hawkesyard Park, Rugeley, Staffordshire, for 16 Stove and Greenhouse Plants

To Mr. W. Millford, Gr. to E. M'Morland, Esq., Haverstock Hill, for 20 Exotic Orchids

£15.—LARGE GOLD MEDAL.

To Mr. T. Whitebread, Gr. to H. Colyer, Esq., Dartford, Kent, for 16 Stove and Greenhouse Plants

To Mr. G. Baker, Gr. to A. Bassett, Esq., Stamford Hill, for 20 Exotic Orchids

£10.—MEDIUM GOLD MEDAL.

To Mr. B. Peed, Gr. to Mrs. Tredwell, St. John's Lodge, Norwood, for 16 Stove and Greenhouse Plants

To Messrs. J. & J. Fraser, Nurserymen, Leyton, Essex, for 12 Stove and Greenhouse Plants

To Mr. J. Green, Gr. to Sir E. Antrobus, Bart., Cheam, Surrey, for 10 Stove and Greenhouse Plants

To Mr. B. Peed, Gr. to Mrs. Tredwell, for 20 Exotic Orchids

To Mr. C. Penny, Gr. to H. H. Gibbs, Esq., St. Dunstan's, Regent's Park, for 12 Exotic Orchids.

£7.—GOLD MEDAL.

To Mr. W. Cutbush, Nurseryman, Barnet, Herts, for 12 Stove and Greenhouse Plants

To Mr. H. Chilman, Gr. to Mrs. Smith, Ashtead House, Epsom, for 10 Stove and Greenhouse Plants

To Mr. O. Rhodes, Nurseryman, Sydenham Park, Kent, for 10 Cape Heaths

To Mr. B. Peed, Gr. to Mrs. Tredwell, for 8 Cape Heaths

To Mr. B. S. Williams, Nurseryman, Holloway, for 10 Exotic Orchids

To Mr. T. Page, Gr. to W. Leaf, Esq., Park Hill, Streatham, for 12 Exotic Orchids

To Mr. C. Turner, Nurseryman, Slough, Bucks, for 12 Pelargoniums

To Mr. T. Bailey, Gr. to T. T. Drake, Esq., Shardeloes, Amersham, Bucks, for 10 Pelargoniums

To Mr. B. S. Williams, for 10 Foliage Plants

To Mr. W. Lakeman, Gr. to J. Campbell, Esq., Grove House, Hendon, for 10 Foliage Plants

To Mr. T. Dawson, Gr. to Earl Cowper, for Collection of Fruit

£5.—LARGE SILVER GILT MEDAL

To Mr. O. Rhodes, Nurseryman, Sydenham Park, Kent

To Mr. R. Baxindine, Gr. to H. Smallpiece, Esq., Millmeade House, Guildford, Surrey, for 10 Stove and Greenhouse Plants

To Mr. T. Page, Gr. to W. Leaf, Esq., Park Hill, Streatham, for 6 Stove and Greenhouse Plants

To Messrs. T. Jackson & Son, Nurserymen, Kingston, Surrey, for 10 Cape Heaths

To Mr. T. Page, Gr. to W. Leaf, Esq , for 8 Cape Heaths

To Mr. S. Woolley, Nurseryman, Cheshunt, Herts, for 10 Exotic Orchids

To Mr. H. Cannell, Gr. to G. Jennings, Esq., Oak Lodge, Clapham, for 6 Fuchsias

To Messrs. J. Dobson & Sons, Nurserymen, Isleworth., for 12 Pelargoniums

To Mr. W. Wiggins, Gr. to W. Beck, Esq., Worton Cottage, Isleworth, for 10 Pelargoniums

To Messrs. J. Dobson, for 6 Large Pelargoniums

To Mr. T. Duke, Gr. to T. Duckworth, Esq , Finchley, for 6 Scarlet Pelargoniums

To Messrs. T Jackson & Son, for 10 Foliage Plants

To Mr. J. Wheeler, Gr. to J. Phillpott, Esq., for 10 Foliage Plants

To Mr. G. Tillyard, Gr. to J. Kelk, Esq., Stanmore, for Collection of Fruit

To Mr. R. Ruffett, Gr. to Lord Palmerston, Brockett Hall, Herts, for Collection of Fruit

To Mr. W. Hill, Gr. to R. Sneyd, Esq . Keele Hall, Staffordshire, for 3 dishes of Grapes

4*l*.—LARGE SILVER MEDAL.

To Mr. J. Tegg, Gr. to Baron Hambro, Roehampton, Surrey, for 6 Stove and Greenhouse Plants

To Mr. H. Chilman, Gr. to Mrs. Smith, for 6 Cape Heaths

To Messrs. J. & J. Fraser, for 6 Fancy Pelargoniums

To Mr. J. Shrimpton, Gr., Putney Heath, for 6 Fancy Pelargoniums

To Mr. C. Turner, for 6 Pelargoniums of 1860 or 1861

To Mr. C. Allen, Gr. to J B. Glegg, Esq., Withington Hall, Cheshire, for Collection of Fruit

To Mr. T. Young, Gr. to C. Bailey, Esq., M.P., for Collection of 4 Pine Apples

To Mr. A. Sanders, Gr. to Sir H. Meux, Bart., for Vines in Pots

£3.—SILVER GILT MEDAL.

To Mr. W. Kaile, Gr. to Earl Lovelace, East Horsley Towers, Ripley, Surrey, for 10 Stove and Greenhouse Plants

To Mr. J. Wheeler, Gr. to J Phillpott, Esq., Stamford Hill, for 6 Stove and Greenhouse Plants

To Mr. R. Baxendine, Gr. to H. Smallpiece, Esq., for 8 Cape Heaths

To Mr. J. Wheeler, Gr. to J. Phillpott, Esq., for 6 Cape Heaths

To Mr. J. Green, Gr. to Sir E. Antrobus, Bart., for 6 Exotic Orchids

To Mr. B. R. Cant, Nurseryman, Colchester, for 50 Cut Roses

To Mr. E. P. Francis, Nurseryman, Hertford, for 50 Cut Roses

To Mr. J. Morris, Gr. to Miss Crawshay, Caversham Park, Reading, Berks, for 25 Cut Roses

To Mr. E. Garden, Gr. to J. Stutter, Esq., Clapham Park, for 6 Fuchsias

To Messrs. J. & J. Fraser, Nurserymen, for 12 Pelargoniums

To Messrs. J. Dobson & Son, for 6 Fancy Pelargoniums

To Mr. H. Lamb, Gr. to Capt. Cahill, Southall, Middlesex, for 6 Fancy Pelargoniums

To Mr. D. Windsor, Gr. to G. A. Crawley, Esq., Fitzroy Farm, Highgate, for 6 Scarlet Pelargoniums

To Messrs. J. Dobson, for 6 Pelargoniums of 1860 and 1861

To Messrs. J. & C. Lee, Nurserymen, Hammersmith, for 10 Foliage Plants

To Mr. B. S. Williams, for 12 Exotic Ferns

To Mr. T. Bailey, Gr. to T. T. Drake, Esq., for Collection of Pine Apples

To Mr. A. Sanders, Gr. to Sir H. Meux, Bart., Theobald's Park, Herts, for Vines in Pots

To Mr. J. Smith, for Vines in Pots

To Mr. J. Embry, Gr. to A. Moss, Esq , for 3 dishes of Grapes

To Mr. G. Bowman, Gr. to R. Hall, Esq., Loughborough, Liecestershire

£3—SILVER GILT MEDAL.

To Mr. M. Henderson, Gr. to Sir G. H. Beaumont, Bart., Coleorton Hall, Leicestershire, for 12 lbs. of Grapes

To Mr. M. Henderson, Gr. for Black Hamburgh Grapes

To Mr. G. Bowman, Gr. to R. Hall, Esq., for Black Hamburgh Grapes

To Mr. W. Hill, Gr. to R. Sneyd, Esq., for Black Prince Grapes

To Mr. J. Embry, Gr. to A. Moss, Esq., for Muscat Grapes

To Mr. W. Meads, Gr. to R. Currie, Esq., for dish of Grapes

To Mr. J. Monro, Market Gardener, for 4 dishes of Peaches and Nectarines

£2—SILVER MEDAL.

To Mr. J. Wheeler, Gr. to J. Phillpott, Esq., for 6 Exotic Orchids

To Mr. J. Mitchell, Nurseryman, Pilt Down, Maresfield, Sussex, for 50 Cut Roses

To J. Hollingworth, Esq., Maidstone, Kent, for 25 Cut Roses

To Mr. J. Cross, Gr. to Sir F. H. Goldsmid, Bart., Regent's Park, for 6 Fuchsias

To Mr. P. Lamb, Gr. to Miss Thackerwaite, Southall, Middlesex, for 6 Fancy Pelargoniums

To Messrs. J. & J. Fraser, for 6 Pelargoniums of 1860 and 1861

To Mr. T. Bailey, Gr. to T. T. Drake, Esq., for 6 Pelargoniums of 1860 and 1861

To Mr. H. Lavey, Gr. to E. A. De Grave, Esq., Fetcham, Surrey, for 12 Exotic Ferns

To Mr. R. Turnbull, Gr. to Duke of Marlborough, Blenheim, Woodstock, Oxon, for Collection of Fruit

To Mr. W. Barnes, Gr. to Lady Rolle, Bicton, Exeter, for Collection of Pine Apples

To Mr. G. Young, Gr. to W. H. Stone, Esq , for Collection of Pine Apples

To Mr. Robinson, Gr. to R. Benyon, Esq., M.P., Reading, Berks, for 1 Providence Pine Apple

To Mr. J. Williamson, Gr. to Earl Lonsdale, Whitehaven Castle, for Queen Pine Apple

To Mr. T. Bailey, Gr. to T. T. Drake, Esq., for 1 Pine Apple

To Mr. J. Standish, Nurseryman, for Vines in Pots

To Mr. C. Turner, for 21 Dishes of Strawberries

To Mr. Solomon, Market Gardener, for 6 Pine Apples

To Mr. J. Drewett, Gr. to Mrs. Cubitt, Denbies, Dorking, for 3 Dishes of Grapes

To Mr. R. Turnbull, Gr., for 12 lb. of Grapes

To Mr. J. Monro, Market Gardener, Rabley, Barnet, for 12 lb. of Grapes

To Mr. A. M'Kay, Gr. to Duke of Bedford, Woburn Abbey, Beds, for Black Hamburgh Grapes

To Mr. Sawkins, Gr. to J. Brassey, Esq., for Dish of Black Hamburgh Grapes

To Mr. W. Meads, Gr. to R. Currie, Esq., Farnborough, Hants, for Black Prince Grapes

To Mr. M. Henderson, Gr., for Muscat Grapes

To Mr. R. Turnbull, Gr., for Muscat Grapes

To Mr. Marsham, Gr., for Dish of Grapes

To Mr. H. Constantine, Gr., for Dish of Grapes

To Mr. S. Snow, Gr. to Countess Cowper, Brest Park, Silsoe, Beds, for 2 Dishes of Peaches and Nectarines.

£1 5*s*.—SMALL SILVER MEDAL.

To Mr. H. Chilman, Gr. to Mrs. Smith, for 6 Exotic Orchids

To Messrs. Paul and Son, Nurserymen, Cheshunt, Herts, for 50 Cut Roses

To Mr. G. F. Brush, Gr. to J. Tritton, Esq, Bloomfield, Norwood, for 25 Roses

To Mr. B. R. Cant, Nurseryman, for 24 Cut Roses

To Mr. E. Harper, Gr. to J. F. Bennett, Esq., Tulse Hill, Brixton, for 6 Fuchsias

To Mr. H. Lavey, Gr. to E. A. De Grave, Esq., for 6 Scarlet Pelargoniums

To Mr. J. James, Gr. to W. F. Watson, Esq., Isleworth, for 6 Scarlet Pelargoniums

To Mr. Hooper, Nurseryman, Widcombe, Somerset, for 24 Pinks

To Messrs. Downie, Laird, & Laing, Forest Hill, for 36 Pansies

To Mr. J. August, Beddington, for 12 Pinks

To Mr. H. Lavey, Gr. to E. A. De Grave, for 12 British Ferns

To Messrs. Paul & Son, for Collection of Pot Roses

To Mr. J. Standish, for Collection of Japanese Plants

To Mr. C. Turner, for Collection of Carnations and Picotees

To Messrs. J. Veitch & Son, for 3 Wardian Cases

To Messrs. J. Veitch & Son, for Collection of New and Rare Plants

To Mr. R. Parker, Nurseryman, for Collection of New and Rare Plants

To Messrs. J. Ivery & Son, for 40 British Ferns

To Mr. B. S. Williams, for Collection of New and Rare Plants

To Mr. W. Bull, Nurseryman, for Collection of New and Rare Plants

To Messrs. T. Jackson & Son, for Collection of New and Rare Plants

To Mr. N. Norman, Bullfield, for 24 Picotees

To Mr. N. Norman, Bullfield, for 24 Carnations

To Messrs. Henderson & Co., for Collection of Plants

To Mr. G Young, Gr. to W. H. Stone, Esq., Leigh Park, Havant, for Collection of Fruit

To Mr. R. Smith, Gr. to G. N. Walker, Esq., Calderstone House, Liverpool, for Providence Pine

To Mr. E. Robinson, Gr., for Queen Pine Apple

To Mr. G. Tillyard, Gr. to J. Kelk, Esq., for Queen Pine Apple

To Mr. H. Constantine, Gr. to C. Mills, Esq., Hillingdon Court, Uxbridge, for 1 Pine Apple

To Mr. J. Wheeler, Gr. to J. Phillpott, for Green-fleshed Melon

To Mr. Henderson, Gr to S. G. Beaumont, Esq., Colebrook Hall, for a Box of Nectarines

To T. Ingram, Esq., Frogmore Gardens, for Seedling Strawberry John Powell

To Mr. W. Kaiel, for Vines in Pots

To Mr. J. Tegg, Gr. to Baron Hambro, for 1 Green-fleshed Melon

To Mr. W. Mead, Gr. to R. Currie, Esq., Farnboro, Hants, for Black Hamburgh Grapes

To Mr. J. Allport, Gr., for Dish of Black Prince Grapes

To Mr. J. Beck, Gr., for Dish of Muscat Grapes

To Mr. C. Penny, Gr., for Dish of Muscat Grapes

To Mr. M'Pherson, Gr. to S. C. Pole, Esq., Derby, for Dish of Grapes

To Mr. G. Bowman, Gr., for Dish of Grapes

To Mr. G. Bowman, Gr., for Dish of Grapes

To Mr. Tegg, Gr., for 4 Dishes of Peaches and Nectarines

To Mr. E. Mackay, Gr , for 2 Dishes of Peaches and Nectarines

To Mr. J. Horwood, Gr., for 2 Dishes of Peaches and Nectarines

To Mr. T. Bailey, Gr., for 4 Dishes of Strawberries

To Mr. C. Turner, for 4 Dishes of Strawberries

To Mr. T. Bailey, Gr., for Scarlet-fleshe Melon

To Mr. J. Standish for Dish of Muscats

15*s*.—BRONZE MEDAL.

To Mr. C. Turner, Nurseryman, for 24 Cut Roses

To Mr. Hooper, Nurseryman, for 36 Pansies

To Messrs. J. Ivery & Son, Nurserymen, for 12 British Ferns

To Mr. J. C. Perry, for 36 Verbenas

To Mr. W. Bull, for 2 large Plant Cases

To Mr. J. Smith, Nurseryman, for 24 Verbenas

To Messrs. Henderson, for 6 Caladiums

To Mr. F. Bray, Gr. to B. Lousada, Esq., Peak House, Sidmouth, for Queen Pine

To Mr. Y. Young, Gr., for Queen Pine Apple

To Mr. C. Smith, Gr. to A. Anderson, Esq., Norwood, for Queen Pine Apple

To Mr. T. Page, Gr. to W. Leaf, Esq., for 1 Pine Apple

To Mr. J. Lawrence, Gr. to Bishop of Winchester, Farnham Castle, for Green-fleshed Melon

To Mr. H. Sawkins, G. to J. Brassey, Esq., Bramfield, Herts, for Green-fleshed Melon

To Mr. C. H. Mansdon, Gr. to G. Ackers, Esq., Morton Hall, Cheshire, for Scarlet-fleshed Melon

To Mr. H. Sawkins, Gr., for Scarlet-fleshed Melon

To Mr Monroe, Market Gardener, Rabley, for Box of Peaches and Nectarines

To Mr. R. Turnbull, Gr., for 3 dishes of Grapes

To Mr. A. Sanders, Gr. to Sir H. Meux, Bart., for 12 lbs. of Grapes

To Mr. J. Miller, Gr. to J. Dixon, Esq., for 12 lbs. of Grapes

To Mr. W. Hill, Gr. to R. Sneyd, for Dish of Black Hamburgh

To Mr. C. Turner, for Dish of Muscat Grapes

To Mr. T. Bailey, Gr., for Dish of Muscat Grapes

To Mr. J. Horwood, Gr. to G. H. Turnbull, Esq., The Rookery, Down, Kent, for Dish of Muscats

To Mr. J. Shrimpton, Gr., for Dish of Grapes

To Mr. J. Miller, Gr., for Dish of Grapes

To Mr. G. Tillyard, Gr., for Dish of Plums

To Mr. S. Snow, Gr., for Dish of Figs

To Mr. Snow, Gr., for Dish of Black Cherries

To Mr. C. Turner, for Dish of Black Cherries

To Mr. S. Snow, for Dish of White Cherries

To Mr. J. Widdowson, Gr., for Dish of Strawberries

10*s*.—CERTIFICATE.

To Mr. Bull, for New and Rare Plants

To Messrs. Paul & Son, Cheshunt, Herts, for 24 Roses

To Mr. E. P. Francis, Nurseryman, Hertford, for 24 Roses

To Mr. H. Lavey. Gr. to E. A. De Grave, Esq., Fetcham, Surrey, for 9 Lycopods

To Mr. H. Lavey, Gr. to E. A. De Grave, Esq., for a Collection of Wild Flowers

To Mr. Jas. Burley, Nurseryman, Limpsfield, Surrey, for a Collection of Calceolarias

To Mr. Treen, Victoria Nursery, Rugby, for 24 Verbenas

To Messrs. E. G. Henderson, for New and Rare Plants

To Mr. Chitty, Florist, Stamford Hill, for 12 Campanula rotundifolia alba

To Mr. Turnbull, Gr. to the Duke of Marlborough, Blenheim, for 1 Queen Pine Apple

To Mr. Davis, Gr. to Thomas Booker, Esq., Velinder, Cardiff, for 1 Queen Pine Apple

To Mr. Bwye, Gr. to R. Crawshay, Esq., Cyfarthfa Castle, Merthyr Tydvil, for 1 Queen Pine Apple

To Mr. Sanders, Gr. to Sir H. Meux, for 1 Green-fleshed Melon

To Mr. T. Bailey, Gr. to T. T. Drake, Esq., for 1 Green-fleshed Melon

To Mr. R. Ruffett, Gr. to Lord Palmerston, Brockett Hall, for 1 Green-fleshed Melon

To Mr. Frost, Gr. to Lady Grenville, Dropmore, for 1 Green-fleshed Melon

To Mr. W. Kaile, Gr. to Earl Lovelace, for 1 Green-fleshed Melon

To Mr. J. Allport, Gr. to H. Akroyd, Esq., Duddington Park, Cheshire, for 1 Green fleshed Melon

To Mr. J. Standish, Bagshot, for Chasselas Musque Grapes

To Mr. Marcham, Gr. to E. Oates, Esq., Hanwell, 2 dishes of Strawberries

To Mr. W. Young, Gr. to R. Barclay, Esq., Highgate, for 2 Dishes of Raspberries

To Mr. Geo. Thompson. Gr. to Mrs. Dixon, Stanstead Park, Sussex, for 3 Dishes of Strawberries

To Mr. T. Bailey, Amersham, for 12 lbs. of Grapes

To Mr. Miller, Gr. to J. Dixon, Esq., Astle Hall, Cheshire, for 1 Dish of Black Hamburgh

To Mr. Allport, Gr. to H. Akroyd, Esq., Nantwich, for 1 Dish of Muscats

To Mr. Allen, Gr. to J. B. Gregg, Esq., Whittington Hall, Cheshire, for Grapes (New)

Mr. J. Mitchell, Gr. to Lord Wenlock, for 2 Dishes of Peaches and Nectarines

To Mr. Henderson, Coleorton Hall, for 2 Dishes of Peaches and Nectarines

To Mr. J. Munro, Rabley, Barnet, for 2 Dishes of Peaches and Nectarines

To Mr. J. James, Gr. to the Duke of Leinster, Maynooth, Ireland, for 2 Dishes of Peaches and Nectarines

To Mr. Ruffett, Brockett Hall, for 1 Dish of Figs

To Mr. H. Constantine, Hillingboro' Court, Uxbridge, for 1 Dish of Figs

To Mr. Marcham, Hanwell, for 1 Dish of Black Cherries

To Mr. Turner, Slough, for 1 Dish of White Cherries

To Mr. J. Beck, Gr. to Lord Broughton, for 1 Dish of Black Cherries

To Mr. J. Widdowson, Gr. to — Barnes, Esq., Rickmansworth, for 1 Dish of White Cherries

To Mr. Lydiard, Bath, for 4 Dishes of Strawberries

To Mr. Tillyard, for 4 Dishes of Strawberries

To Mr. Muggerton, Gr., for Green-fleshed Melon

FIRST CLASS CERTIFICATES OF MERIT.

To Mr. John Standish, Royal Nursery, Bagshot, for Osmanthus sp

To Messrs. Veitch & Son, Exotic Nurseries, for Saccolabium sp

To Messrs. Veitch & Son, Exotic Nurseries, for Dracæna sp

To Messrs. Veitch & Son, Exotic Nurseries, for Vanda Lowii

To Messrs. Veitch & Son, Exotic Nurseries, for Cattleya hybrida

To Messrs. Veitch & Son, Exotic Nurseries, for Lomaria gibba

To Messrs. Veitch & Son, Exotic Nurseries, for Lapageria alba

To Messrs. Veitch & Son, Exotic Nurseries, for Mutisia decurrens

To Mr. Wm. Thompson, Seedsman, Ipswich, for Rhodanthe atrosanguinea

To Mr. Wm. Thompson, Seedsman, Ipswich, for Rhodanthe maculata

(*Continued on next page.*)

ROYAL BOTANIC SOCIETY'S LIST OF AWARDS

(Continued.)

FIRST CLASS CERTIFICATES OF MERIT.

To Mr. Wm. Thompson, Seedsman, Ipswich, for Rhodanthe maculata alba

To Mr. W Bull, Nurseryman, Chelsea, for Pandanus elegantissimus

To Messrs. Jackson, Nurserymen, Kingston, for Phyllagathis rotundifolia

To Messrs. Perkins & Sons, Nurserymen, Coventry, for Verbena Lord Leigh

To Mr. G. Wyness, Gr., Buckingham Palace, for Fuchsia Novelty. (For decorative purposes.)

To Messrs. Downie Laird & Laing, Nurserymen, Sydenham, for Calceolaria Cloth of Gold

To Mr. Geo. Smith, Florist, Hornsey Road, Holloway, for Fuchsia Sunspareil.

To Mr. Geo. Smith, Florist, Hornsey Road, Holloway, for Fuchsia Dandy

To Mr. W. Holland, Gr. to W. Beck, Esq., Spring Grove, Isleworth, for Geranium Crimson Gem

SECOND CLASS CERTIFICATE OF MERIT.

To Mr. J. Standish, Bagshot, for Salisburia adiantifolia variegata

To Mr. J. Standish, Bagshot, for Niphobolus sp. Japan

To Mr. J. Standish, Bagshot, for Lastrea opaca

To Mr. Wm Bull, Nurseryman, Chelsea, for Gesnera refulgens

To Mr. Wendland, Gr. to the King of Hanover, for Anthurium Scherzerianum

To Mr. Wiggins, Gr. to W. Beck, Esq., Isleworth, for Pelargonium Beauty

To Messrs. J. Veitch & Son, Nurserymen, for Adiantum sp.

COMMENDATION.

To Mr. Wiggins, Gr. to W. Beck, Esq., Isleworth, for Pelargonium Scopas

To Mr Wiggins, Gr. to W. Beck, Esq., Isleworth, for Pelargonium Peep O'Day

THE GRAND HORTICULTURAL FETE and ROSE SHOW of the STAMFORD HORTICULTURAL SOCIETY will be held in Burghley Park, Stamford, on THURSDAY, July 17, in connection with the Northamptonshire Agricultural Society's Annual Exhibition.

The Premiums offered amount to 200*l.*, and include 6 Silver Cups.

The Band of the Coldstream Guards will attend, by permission of Colonel Percival.

Schedules, &c., may be obtained at Stamford on application to Messrs. LAXTON & HEWITT, Hon. Secs.,

The Gardeners' Chronicle.

SATURDAY, JULY 12, 1862.

THE remarks lately made in our columns on the very great value of the DOUGLAS FIR, have led one of the most skilful of our judges of Timber to favour us with the following highly important communication. This Fir wood Mr. WM. WILSON SAUNDERS, F.R.S., of Lloyds, has had many opportunities of examining carefully, and in order to satisfy one of our largest importers, he has made some careful experiments on its strength and flexibility in comparison with other similar woods. The following table with which he has favoured us gives the result, which is in the highest degree satisfactory. Mr. WILSON SAUNDERS has a regular machine for these experiments, and the results can be implicitly depended on.

"Lengths of each of the woods enumerated in the following Table, carefully squared to $1\frac{1}{4}$ inch, were submitted to pressure of weights pendent from the centre, the lengths being supported between standards exactly 6 feet apart. The weight at which each broke and the amount of deflection from the horizontal line at the time of breaking is given in the following Table:—

	lb.	Inches.	
Douglas Fir ..	280	4	Fracture, rough and long
Pitch Pine ..	280	4	Fracture, short and even
Canada Spruce ..	196	4.7	Fracture, short, rough
Red Pine . ..	168	6	Fracture rough
Larch—British .	168	5.2	Fracture, short, even
Deodar from Himalaya	154	3.8	Fracture short

"The specimens experimented on were carefully selected from the best description of wood, and free from all defects. The deflection is in inches and tenths of an inch. Each wood had two trials, and the figures give a mean result."

It will thus be seen that none of the Firs approached in strength either the Douglas Fir or the Pitch Pine, it having required a weight of 280 lbs. to break a small bar of their wood no more than an inch and quarter square. A hundred and sixty-eight pounds broke a piece of British Larch of the same scantling. Moreover between the Douglas Fir and Pitch Pine, whose strength was equal, there was this great difference, that while the latter snapped short under a strain of 280 lb., the Douglas yielded unwillingly with a rough and long rend. Since our last a further example of this tree has arrived at the International Exhibition from British Columbia. It consists of 10 horizontal sections of that tree 309 feet high to which we formerly alluded, and of which a drawing has been suspended in the building. Each section is 18 inches thick and represents the tree at 16 feet distances. They are about to be displayed in the court of British Columbia, and serve to show unmistakeably what a noble tree this is, and how superb an ornament, as well as inexhaustible source of wealth to the two colonies.

SELDOM, if ever, has there been a season in which the growers of PELARGONIUMS have had such important accessions to the ranks of new varieties, as those which have taken place during the present summer. Our metropolitan flower shows have, as it were, swarmed with new forms of this showy and attractive flower, many of them possessing extraordinary merit. No doubt we owe these results in part to the good foundation laid by two eminent raisers, who have but a short time since passed from amongst us, the chief honours of the season having been borne away by the ever-to-be remembered names of BECK and FOSTER; but a considerable number of excellent sorts have also been brought forward by HOYLE, another veteran in the same field of labour, who we may hope may long be spared to delight us with many such novel forms of beauty; and still further contributions have been made by TURNER, DOBSON, BULL, FRASER, and others.

The most remarkable feature, perhaps, to be observed, has been the vast improvement effected in what are called the Spotted varieties, a race which was introduced but a few years ago by the continental growers, and which is remarkable chiefly for the additional deeply-marked spot on each lower petal. The varieties of this character were not originally at all remarkable for possessing the properties in which florists delight. Indeed, these spotted flowers when first they found their way amongst us were decidedly poor, lean, and ill-favoured. The advance which has been made already in flowers like Monitor and Landseer shown by Mr. NYE from the late Mr. FOSTER'S garden, is something marvellous. These show plenitude of size, and with it the still more desirable quality of rotundity, by which the parts become well filled out, besides which they possess the richest colouring, in Monitor of a lighter, in Landseer of a somewhat deeper carmine rose—marked in both with dark well-defined blotches of maroon, Landseer having in addition a dash of crimson veining thrown over its surface. Both these varieties have the colours well set off by a white throat, and both have the upper petals covered by a dark maroon cloud. Caliban, from Mr. BECK'S garden, has perhaps rather more of novelty, though we should say less of quality. On a ground colour of pale blush-lilac, strongly contrasting with the maroon cloud on the upper petals, occurs a large veiny patch of deep purplish crimson, in the midst of which is set a dark maroon spot. There is a striking contrast of colour in this flower which compensates for a little deficiency in other properties. Altogether these are three decided acquisitions to the spotted class.

Gradually there has sprung up in our midst a set of varieties, which may be called Subspotted, the chief peculiarity of which is that the lower petals, wherein, as is well known, the ground colour of the flower is most commonly displayed quite pure, are more or less dashed with deeper coloured veins, as well as marked by a slight spot by no means sufficiently definite to bring them within the spotted class. The new varieties in this subspotted section comprise two which, in our estimation, are the gems of the season, namely, Belle of the Ball and Royalty, both of them Mr. FOSTER'S flowers. These have a very pure white throat, beyond which breaks in quite abruptly the ground colour with its spot and veins. In Belle of the Ball, which reminds one of Perdita and Beauty of Reading, but is many degrees better than either, the colour is a light carmine rose with markings of crimson. In Royalty the ground colour is a more decided rose with deeper crimson markings. These flowers are both full-sized, and have all the desired meritorious features of form and substance, while in respect to colour the intensely dark upper petals, the broad pure white throat, and the richly variegated markings of the lower petals, place them amongst the gayest of the gay. Merrimac, another of the set, and also one of Mr. FOSTER'S flowers, is remarkable for its large size, its ground colour being rose, with the lower petals very much veined, and slightly spotted with maroon-crimson. This also has intensely dark top petals and a white throat, so that the colours are well set off, and in respect to form it ranks amongst the best.

The Purples, or more strictly the Purplish-roses, have been this year replenished by HOYLE'S Lord Palmerston, BECK'S Fidelia, and FOSTER'S Improvement, all of which are good. The first-named, however, is our favourite, and a charming flower it is, standing out thoroughly distinct in colours from the reds and roses which are now the more common shades among the deeper coloured sorts.

Among the Roses there are numerous acquisitions rendered desirable by improved qualities in respect to size, form, or colouring. It is difficult to make a selection out of the large number which has appeared, but we think the preference, taking variety of character into account, may fairly be given to HOYLE'S Royal Albert, BECK'S Regina formosa, and Canopus, and FOSTER'S International. The Royal Albert is a noble flower, one of the largest varieties yet obtained, finely shaped, of a clear and delicate carmine rose below, and having a clouded maroon spot above, not, however, occupying the whole width of the upper petal, but passing off into crimson towards the outside, and bordered by a narrow belt of rose colour, the throat being white. Regina formosa is one of those with the upper half almost wholly dark maroon, bordered, however, by a narrow distinct belt of rose, while the throat is distinctly white, and the lower petals carmine rose, very slightly veined; its form is perfect, and its colour remarkably lively and effective. International is something in the same way, but a trifle larger, and of a different shade of rose, as well as more motley in the slight venation of the under petals. Canopus is exceedingly fine in form, and differs from the foregoing in having on the top petals a small deep maroon spot surrounded by a wide belt of the ground colour. All these have the throat pure white, which adds very much to their beauty. Other fine flowers of this set are HOYLE'S Colossus, HOYLE'S Clio, which is something in the way of International, and BECK'S Cynosure, which is in the style of Canopus, but less decided in the marking. Even these do not by any means exhaust the list of good novelties in the rose-coloured class; but we must stay our hand.

Again, among the Crimson-reds we have some very fine additions. This class has indeed been well worked out in consequence of prizes having been for a series of years offered for varieties with flowers showing the nearest approach to scarlet. As a general rule the crimson-reds have a purplish tinge more or less evident in the throat. Of this set, then, FOSTER'S Illuminator and BECK'S Vesuvius are the brightest, both of first-rate shape, bright carmine scarlet, the former with an almost black clouded blotch passing off to crimson towards the scarlet edge, the latter almost wholly dark with a narrow scarlet belt. Then come FOSTER'S Conflagration and BECK'S Ardens, the first of them crimson, and the darkest of the series, clouded in the same way as Illuminator; the second rather more of a rosy-crimson, but almost wholly clouded on the top petals, as in Vesuvius. BECK'S Fervens is somewhat smaller, but of a very telling bright rosy-crimson, and the blotch is comparatively small, leaving a broad margin of the bright ground colour. BECK'S Bellatrix is another good crimson-rose, with the clouded blotch becoming paler and dashed with crimson towards the outer margin. Probably among these Conflagration, Illuminator, and perhaps Vesuvius possess the highest qualities. We must further confess to a liking for FOSTER'S Souvenir, on account of its lower scarlet petals being veined with crimson, which gives it a distinct character in this group; but it seems to have been passed over by the censors at the exhibitions.

The best of all the Light-flowered sorts which have been shown, is without doubt BECK'S Eurydice, a charming sort with pearly white lower petals, and deep sanguineous crimson upper petals bordered with white shape and every property combining to render it first class. We believe it is not to be sent out this season. BECK'S Esperance is another something in the same way, but not quite equal to it in our opinion; and BECK'S Ophelia again is another of about the same degree of merit as the last, but with the maroon cloud passing off towards the edge to a purplish rather than a crimson tint. BECK'S Nymph is also a pretty variety of this class. BECK'S Oriana again is a very fine light flower of a somewhat different stamp, large and finely-proportioned, with the lower half pinkish blush, and the upper part maroon passing near the edge into orange-red, the extreme margin being a delicate pinkish rose. It corresponds in character with Royal Albert, but is many degrees paler, and therefore would form a very desirable companion flower. Nothing of importance in this light-flowered series has been observed from other raisers.

Finally, of the Whites, what we believe to be a very fine novelty is DOBSON'S Queen of Whites, the ground colour of which is pure, and the marking bold and rich, but it was overlooked in the crowd of seedlings which were huddled together on a high stage at Kensington on the 11th of June, decidedly *the* show of the year for Seedling Pelargoniums, and we missed the opportunity of observing it closely when it subsequently appeared in public.

We may supplement this brief memorandum of the English seedlings exhibited in 1862, by mentioning a very striking newly-imported French variety called Theophraste, which has well formed flowers of a brilliant carmine, and is altogether a very effective decorative sort; and Silver Swan, a lovely pale blush with small pencilled spot on the top petals, is equally desirable. To sum up, the best varieties among the many which have appeared are in our opinion the following, and these we believe will disappoint no one who may grow them, if they prove at all like what they have been this year:—

Of Spotted sorts.—Monitor, Landseer, Caliban.

Of Subspotted sorts.—Belle of the Ball, Royalty, Merrimac.

Of Purples.—Lord Palmerston.

Of Roses.—Royal Albert, Regina formosa, Canopus, International.

Of Crimson-reds.—Conflagration, Illuminator, Vesuvius.

Of Lights.—Eurydice, Oriana.

Of Whites.—Queen of Whites.

We may fortify our own opinion, and strengthen our recommendation of the foregoing new Pelargoniums,

by recording the result of their exhibition at the principal metropolitan shows, which is as follows:—

Monitor.—1st class Certificate, R.B.S; 2d class, R.H.S.
Landseer.—1st class, R.B.S.; 2d class, R.H.S.
Caliban.—2d class, R.H.S.; 2d class, R.B.S.
Belle of the Ball.—1st class, R.H.S.; 1st class, R.B.S.
Royalty.—1st class, R.B.S.; 1st class, R.H.S.
Merrimac.—1st class, R.B.S.; 1st class, R.H.S.
Lord Palmerston.—1st class, R.H.S.
Royal Albert.—1st class, R.H.S.; 1st class, R.B.S.
Regina Formosa.—1st class, R.H.S.; 1st class, R.B.S.
Canopus.—1st class, R.H.S.
International.—1st class, R.B.S.
Conflagration.—1st class, R.H.S.; 1st class, R.B.S.
Illuminator.—1st class, R.H.S.; 1st class, R.B.S.
Vesuvius.—2d class, R.B.S.
Eurydice.—1st class, R.B.S.; 1st class, R.H.S.
Oriana.—1st class, R.H.S.; 2d class, R.B.S.
Queen of Whites.—1st class, R.B.S.

Most of the other varieties we have mentioned are also prize flowers, and in order to show the estimation in which they were held by those who have acted as censors, we subjoin a memorandum of the awards they have received:

Colossus.—1st class, R.H.S.
Ardens.—1st class, R.B.S.; 1st class, R.H.S.
Bellatrix.—1st class, R.B.S.; 1st class, R.H.S.
Esperance.—1st class, R.B.S.; 2d class, R.H.S.
Nymph.—1st class, R.B.S.; 2d class, R.H.S.
Improvement.—1st class, R.H.S.; 2d class, R.B.S.
Fidelia.—2d class, R.B.S.
Clio.—1st class, R.B.S.
Fervens.—2d class, R.B.S.

New Plants.

247. Lilium auratum.

L. caule gracili glabro (unifloro?), foliis angustè lanceolatis basi acutis, flore subdeclinato maximo crateriformi candido odoratissimo, sepalis petalisque multò latioribus lanceolatis acuminatis apice recurvis basi intus villosis superficie spinulosâ et guttulatâ, filamentis basi leviter monadelphis.

If ever a flower merited the name of glorious it is this, which stands far above all other Lilies, whether we regard its size, its sweetness, or its exquisite arrangement of colour. Imagine upon the end of a purple stem no thicker than a ramrod, and not above 2 feet high, a saucer-shaped flower at least 10 inches in diameter, composed of six spreading somewhat crisp parts rolled back at their points, and having an ivory white skin thinly strewn with purple points or studs and oval or roundish prominent purple stains. To this add in the middle of each of the six parts a broad stripe of light satiny yellow losing itself gradually in the ivory skin. Place the flower in a situation where side light is cut off, and no direct light can reach it except from above, when the stripes acquire the appearance of gentle streamlets of living Australian gold, and the reader who has not seen it may form some feeble notion of what it is. Fortunately ten thousand eyes beheld it at South Kensington on the 2d inst, and they can fill up the details of the picture. From this delicious flower there arises the perfume of Orange blossoms sufficient to fill a large room, but so delicate as to respect the weakest nerves.

It is botanically allied to Lilium lancifolium on the one hand, and to the orange red L. Thunbergianum on the other, but it is wholly different from either. Its happy discoverer was Mr. J. G. Veitch, to whom we are obliged for the following short note.

"The Lily, of which the foregoing is a description, was found growing wild on hill sides in the midland provinces of Japan. The flowering season is July and August, during which months it may be commonly seen in situations exposed to the sun. It attains a height of from 1½ to 2 feet, and is remarkable for the great size of its flowers as well as for their fragrance. The roots of this and other Lilies are much sought after by the Japanese for purposes of food. They are boiled and eaten in much the same way as we do Potatoes, and have an agreeable flavour resembling that of a Chesnut. There can be little or no doubt that this Lily will prove perfectly hardy in this country. I have myself known from 14° to 16° of frost to occur in localities in which it is found."

INTERNATIONAL EXHIBITION.

Small Birds.—The subject of our small birds has lately occupied some attention, and those who may wish to pursue inquiry into their habits and economical uses as regards our field and garden cultivation, have now a most unusual opportunity for doing so; and some of your readers may be glad to have their attention directed to it. In the International Exhibition, and under one of the galleries of the French Court, will be found a series of cases, labelled "Specimens d'une collection d'Estomacs d'Oiseaux, demontrant par l'étude des Alimens le rôle utile ou nuisable des divers espèces. Cette collection a été formée depuis 34 ans par M. Florent-Prevost, du Muséum d'Histoire Naturelle." With the "specimens" are some tabulated results of the dissections, entitled "Tableau indicatif du régime alimentaire des Oiseaux," exhibiting, 1st, the order and family of the bird under investigation; 2d, the period of observation, extending generally to each of the 12 months of the year; 3d, a classification of their food into the different sources of its supply, as animals, insects, molluscs, grains, fruits, and green plants. It would occupy far too much space to give even an abstract of these tables. They form a most valuable contribution to natural history science, and one which M. Florent Prevost has most opportunely offered for our inspection.

The disputed question how far the ravages of birds are compensated by their acknowledged utility as the devourers of myriads of insects, and the innumerable seeds of weeds, which would otherwise largely increase the labours of husbandry, is one which as yet can be scarcely said to be sufficiently understood. Much has been advanced in the interests of our small birds; and beyond the question of their utility, there is so much to be said for them as the ornaments and the vocal charmers of our groves, that there is little sympathy with their destroyers; yet it is no less true that we frequently sustain serious injury from their attacks upon our newly sown or ripening grain and fruits. Their indiscriminate destruction has in some instances we have lately seen referred to met with its merited consequences; and the farmer, the forester, and the gardener, have alike sought to woo them back to their native haunts.

At the present time numerous efforts more or less successful are being made to introduce some of the more useful species into our Australian and New Zealand colonies, where they are justly regarded as the best provision of nature for keeping in check the teeming and blighting swarms of insect life; and among them the assistance of our audacious sparrow is much coveted by the colonists. At home, we make them the subject of proscription. We have our sparrow clubs, the members of which compete in the work of extermination; while in some other neighbourhoods this is perhaps still more efficiently done by a direct premium, often paid out of the parochial rates. How far all this is laudable and salutary can only be determined by a careful and discriminating study of the design, habits, and relative values of the several families of the feathered race. It is perhaps possible that in a climate like our own, favourable to their multiplication, and where their natural enemies the birds of prey are carefully kept down, some of the granivorous species might increase too largely upon us. Yet it is to be feared that with an increasing population, the tendency to diminish hedgerows, the reclaiming of waste lands, and other causes, there may be fully as much danger with regard to several of the species on the other side.

A reference to M. Florent Prevost's collection will serve to show, what indeed other ornithologists have already told us, that while a large proportion of our birds are exclusively insect feeders, none of them are exclusively grain feeders. The common sparrow, for instance, appears only to take to grains in the adult state, and brings up its young entirely upon insects and their larvæ: a fact worthy of note to the destroyers of nestlings, by whom two of these are commonly esteemed and paid for as the equivalent of one old bird! The number of insects required to feed a nest of fledglings must indeed be immense, and is a consideration of corresponding importance. Any addition to our knowledge of birds in their relations to ourselves will be valued by the lover of truth; while nothing short of an intelligent and ascertained recognition of their true position in the grand scheme of nature, will enable us to solve the question—whether we ought to regard their depredations (so much of which is avoidable) as an uncompensated loss, to be prevented by their sacrifice; or whether we should not rather estimate the injury we sustain by them, as the natural and appropriate price to be paid for an incalculable benefit? *E. E.*

NOTES ON THE PLANTS OF PERU, No. V.

(*Continued from p. 430.*)

The *Cinchona succirubra* flourishes in the forests around Limon on steep declivities, where there is in general a good depth of decayed vegetable matter resting on a dry subsoil. The latter is in some places a tenacious clay, in others it consists of small stones intermixed with boulders of prodigous size. Here and there, along the banks of the deeper ravines, may also be seen cropping out stratified rocks of a bluish colour, fringed with several kinds of Ferns and Lycopods. On flat or sloping grounds which are kept in a moist state by springs or streams, or subjected to periodical floods, the "Red Bark" does not exist. Sometimes I have seen it growing on the banks of a rivulet, but then the ground on either side was several feet higher than the bed of the stream, so that the soil in such situations was naturally quite as free from wet as that on steep declivities. I have always seen healthy trees of the "Red Bark" growing in situations where the leaves enjoyed the full rays of the sun. I have indeed seen a few young plants of straggling habit growing under dense shade, but those plants were in a blanched unhealthy state, and several of the branchlets, owing to the excessive moistness of the atmosphere in which they were developed, had become mouldy and died. Under thick foliage the plants seemed to struggle between life and death, until they succeeded in penetrating through the lower branches of the neighbouring trees, which, besides being perpetually covered with foliage, are mantled with dripping Ferns and Mosses, and interlaced with Passion flowers, Bignonias and Aroids. The temperature in the forests around Limon ranges from 57° to 80° Fahr. It rarely, however, falls below 58°; and during the dry season, which begins in May and ends in November, it seldoms rises above 75°. The general range is from 59° to 70° Fahr. During the dry season the days are in general fine, with bright sunshine, until about 3 o'clock in the afternoon, when a thick mist descends from the mountains, enveloping the forests for the remaining portion of the day. At early dawn, although the face of the country is in general clear, yet on the banks of the deeper ravines may frequently be seen large chimney-like columns of mist rising slowly upwards from amongst the dark green vegetation; like smoke issuing from an Indian wigwam away among the mountains. I have not as yet been able to ascertain exactly the upper limits of the "Red Bark," but I have found it on slopes more than a league above the scattered village of Limon, which must have been 4000 feet above the level of the sea. The Cascarilleros assert that it descends to the rising ground immediately above Ventanas, which has probably an elevation of not more than 1000 feet. The plant is of compact habit, and has a stem from 40 to 50 feet in height. The trunks of such trees are from 1½ to 2 feet in diameter at the base. According to the statements of the Cascarilleros, which, however, are not always to be relied on, trees are occasionally met with, the trunks of which are from 3½ to 4 feet in diameter. Stems which measure 18 inches in diameter are supposed to be 8 or 10 years old. But on this point the accounts given by the bark collectors cannot be depended upon, as their observations chiefly extend to the thickness and colour of the bark. Trees of the "Red Bark" when under 18 inches in diameter are seldom barked by the Cascarilleros.

The system adopted in collecting the bark is as follows. A party consisting of 6, 8, or 10 men proceeds to the forest, taking with them provisions for 10 or 15 days. The provisions in most instances consist of what is termed "Polvo" or Pease meal, which is eaten dry. On the discovery of one or more trees, the locality is "observed," and the probable yield of bark is likewise "conjectured." In this way they continue to search for a time, until they have found a number of suitable trees, when each returns to his home. After a few days' rest, they again unite, their number on this second occasion being frequently augmented, and carrying with them axes and knives for the purpose of felling and barking the trees. On arrival in the district of the previously discovered trees, a temporary shed is erected about the centre of the locality to serve as a store house for the bark when dry. The men then divide themselves into parties of two or three, each of which proceeds to the nearest tree, which is immediately cut down and divested of its bark. The latter is taken off in strips about a foot long, and 2 inches in breadth. The bark from the trunk and thicker branches is only taken; that from the smaller branches being considered not worth the labour. The Cascarilleros then make it into suitable bundles, which they take to the store shed, where, if the weather be damp or cloudy, a platform of Bamboos about 4 feet high is erected, on which the bark is spread about a foot or so in thickness. Fires are then lighted under the platform, and are kept burning until the bark is perfectly dry. Care must be taken that the flames do not reach the bark, and in order to prevent any accident in this way, a person is constantly in attendance, whose duty also is to add fuel to the fire, and turn the bark occasionally. When the trees are a considerable distance from the store shed, the bark is dried by means of sunheat or fire on the spot, and afterwards carried to the shed.

When the drying process has been completed, the bark is sewn up in hides and taken to the nearest port, which, for the "Red Bark," is Guayaquil. An idea prevails that the Cinchona—owing to the continual destruction of the larger trees—will, ere long, become extinct. But there are several hundreds of young trees still growing in the forests around Limon and San Antonia, from which, in the course of a few years, a considerable quantity of bark may be obtained. In this way a supply may now and then be procured, as many suckers are to be seen growing from the roots of trees formerly felled, which, in due time, will become fit to bark. Unless, however, plantations be formed and attended to, the "Red Bark" must in a great measure cease to become an article of commerce, though it cannot, at least for a considerable length of time, actually become extinct, unless means be taken purposely to exterminate it from amidst the dense lofty forests where it abounds. *Robert Cross, Guayaquil, December* 1861.

THE RIPENING OF FRUITS.

The most evident facts are often disregarded or subsequently controverted even by men of real talent. It is thus that science is encumbered by difficulties which it is very desirable and sometimes easy to dispel. I think I can present to the Academy of Sciences a very striking example.

In 1832, M. de Candolle, in his "Physiologie Végétale," vol. ii., p. 584, states upon the authority of a distinguished chemist, that "we cannot with a solution of iodine find any trace of starch in aqueous fruits, nor even in Pears and Apples, although such a statement has been made." He then proceeds to give a comparative analysis of unripe and ripe fruits by detailing the respective proportions in them of water, sugar, tissue, gum, acids, &c.

I have discovered, however, abundant evidences of starch-granules in Pears and Apples before the period of maturation, and I cited this fact in 1849. (See first and following editions of "Précis de Chimie

Industrielle.") Since then, in an unpublished memoir upon the maturation of fruits, by MM. Decaisne and Fremy, but which the "Traité de Chimie Générale," vol. iv., published in 1855 by MM. Pelouze and Fremy, contains an abstract, we find the following passage:— "When we find starch in very large quantities in certain unripe fruits disappear completely at the period of maturity, it is impossible not to admit that it is this body which, in a modified form . . . . produces the glucose of fruits. . . . Some other neutral matters ought to undergo a similar modification." These conclusions were also admitted by a skilful experimentalist lately, in an interesting memoir, wherein he demonstrated the co-existence of cane-sugar and glucose in several fruits. But how remarkable was it, that whilst he pointed out the abundance of starch which existed in plants, "which makes us suppose that it is the true source of the sugary matters of fruits," the author adds, "however, we cannot discover its presence in unripe fruits, either by the microscope or by a solution of iodine"! Apples and Pears were among the unripe fruits with acid juices upon which experiments had been made. In Banana-fruits alone, the juices of which were known to be neutral, experiments had proved the existence of an abundance of starch before the period of maturation; which starch was replaced by sugar in the ripe fruits.

The presence of amylaceous matter in acid fruits was thus again contested, and under circumstances in which this fact would have been favourable to the conclusions of the author. In order that henceforth there may not be the least doubt raised on this point, I present to the Academy a most evident experimental demonstration, which is of a very simple nature, which allows of our following the different steps of the transformation, not only in distinct species or varieties of fruits, but also in different parts of the same fruit at all periods of its growth till the approach of maturation. The following is the mode of operating:—

A thin vertical slice of each fruit to be tested is taken and immediately plunged into water in order to avoid the action of the air upon the colourable matters it contains, and to remove all those soluble substances from the surface of the section which would absorb iodine. After this washing, a watery solution of iodine, slightly alcoholized, is substituted for the water, and the slices are left under the influence of this solution for one or two hours.

Specimens treated in this manner demonstrate in the most conclusive way the presence of a starch in Apples, Pears, and Quinces which have attained to the quarter or half of their development, by presenting the blue or very deep violet colour which characterises that substance under the action of iodine.

I have observed by the microscope the starch contained in the half-ripe fruit of the Apple, and noticed that the granules were very numerous, and were often grouped together in masses of two or three together, and that each granule distinctly exhibited a hilum.

From two slices taken from nearly ripe Pears, the starch-granules had completely disappeared from the part near to the stalk and from the greater portion of the whole pericarp; but their presence was manifested near the epidermis, especially towards the extremity of the fruit opposite to the stalk, and around the cells which enclose the seeds. I propose to verify next year if this is a general law in the process of maturation; if in the tissues near to the surface the starch disappears sooner than in those parts of the pericarp which are more deeply seated and removed from the direct action of solar light.

Some similar observations which were made upon the nearly ripe fruits of the Quince-tree of Portugal, exhibited the above results in a more evident manner when the yellow colouring matter which is met with in large amount in such fruits had been previously removed by the action of alcohol. When this has been done, the slices should be dried, and then soaked completely in water. Even then, it is not until the slices are plunged into the watery solution of iodine that we may readily observe the last traces of starch remaining in this fruit.

In a communication which I made in 1849 to the Academy, and which is inserted in the 22d volume of our "Memoirs," may be found experimentally verified the fact of the production of amylaceous matter preceding the maximum development of sugar in the stalks and even in the leaves of young plants of the Sugar-cane.

In conclusion, I should observe that however easy it may be to prove the presence and variations in amount of starch in vegetable cells, yet we must be careful, in order to avoid any error, to take into consideration the coloured or colouring substances which may hide the reaction; the nitrogenous matters which, by absorbing iodine, become of a more or less evident orange-yellow colour; and even the foreign matters which, according to the observations of M. Buignet, possess the same property. I will add, lastly, that, to avoid all chance of error, we must also be prepared against the effects of a special property of amylaceous matter itself, when it occurs in very small granules and but feebly clustering, namely that of spontaneously giving off the iodine to which its violet tinge is due. Such is the character of the starch from Cocoa-seeds, which fact has been altogether unnoticed by skilful experimenters, although it exists in the proportion of 10 per cent. in the kernels of the seed.

This special character of the normal starch of Cocoa seeds greatly facilitates the discovery of those amylaceous substances, which are sometimes added in certain preparations of this alimentary substance; for these, under the same conditions, retain strongly, as a general rule, the blue tint produced by the action of iodine. [*M. Payen in Comptes Rendus de l'Académie des Sciences.*] —*Pharmaceutical Journal.*

Indoor Gardening.

If window gardeners wish to strike cuttings without heat so as to make good plants, now is a time when they may do it well.

Carnations and Pinks especially are plants which it is satisfactory to grow indoors. They are at all events kept generally in pots, and thus we do not feel that they are "mere border flowers," and at the same time they are so hardy that we need have little fear of any indoor cold for them. Young plants struck early in the year will blossom in the winter; those that we now put in most likely will by about March or April, and I do not think we can find any much sweeter flowers to have than the old red Cloves, the pure white Clove Carnation "Bride," and the very exquisite pale rose-coloured kind, the colour of which is exactly that of a pink China Rose, without any streaks or markings.

These flowers certainly are amongst the easiest grown when one has just the knack of them. I find that a great many women have the impression that doing anything lightly and gently is the most considerate treatment, and just as they would be careful in working and touching flowers, avoiding displays of strength, so they pot their plants with the same precaution. Carnations grow naturally upon rocks and walls. A crevice full of soil is enough, indeed, for their rooting in; but how has the notion risen that this soil is so shifty? Much more likely it is baked into almost a brick. The roots fix themselves in it, and go on anchoring there; it is not very easy to shake a wild Pink loose; a bit of the wall is not unapt to come with it.

But still I have seen Carnations, and have had them, too, in a pot of most shambly stuff, and I cannot say that they came to much good in it. It is a very different thing to use light soil or to pot lightly. The soil for Carnations may indeed be sand and loam, broken charred turfs from a common, and charcoal dust and lime rubbish crumbled and mixed together; but while the drainage is effective (a handful of broken pots gradually getting smaller, or a zinc cap or oyster shell and a few bits of charcoal covered with moss that has been baked to kill it), no one need the least fear ramming in the soil too hard. I do not think that any in-door gardener ought to use soil that contains manure; it seems to me only to encourage insects, and charcoal probably will supply its place sufficiently. If this were not enough I would merely use something chemical (such as nitrate of soda) in a solution weaker than one would give out of doors.

The striking Carnations has come in some unaccountable way to be thought a mystery. I sometimes suspect it is that people are too attentive in watering, &c., and there is certainly sometimes another cause of failure when a set of cuttings are exposed by neglect to rain, which dropping upon their leaves covers them with black spots.

The cuttings or "pipings" should have about three joints. I mean three knots whence leaves spring, being cut with a sharp knife or dislocated at the third. When it is thus dislocated it comes out like a round knuckle bone—but I am not sure myself but that the clean cut does better and grows quicker.

These cuttings do not need any preparation whatever, no shortening leaves and spoiling their looks for months; they have merely to have their lowest leaves turned back so that they scale off—and to be kept as fresh as it is possible to keep them. They should be taken always on a cool and shady evening—and all the better if the air is damp after a rainy day. The means for striking them are excessively simple. One of the best sets that I ever raised was planted in a very large flower-pot 8 or 9 inches wide. The pot was well drained, the drainage lined with Moss, and then some stiff soil rammed hard for about half way up, so that water would soak away very slowly indeed. A little light powdery turf and loam was added mixed with charcoal, and on the top a layer of pure sand. Water was poured on till it soaked through the whole pot, and then yet more was given to make the sand into mud. The chief object of this extreme wetness is to prevent the necessity of watering overhead, while the young plants are growing.

The cutting pot is then stuck perfectly full of cuttings, an inch apart giving quite sufficient room; the ends slip into the mud in a most satisfactory manner. The pot of cuttings thus prepared must have some kind of shelter; the closer the better for excluding rain; but dry air of all things has also to be avoided, as well as any sunshine.

I have struck quantities in a very small sort of hotbed frame standing on the ground; this however had a wooden floor, and if there is no flooring ashes or stones must be used to keep out insects carefully. The lights were in this case shaded with brown paper, as the place where the frame stood was sunny. The paper of course was stuck on inside, and after a day or two we gave a little air by pushing the glasses down at night a little. After a few weeks they were taken off entirely, except during heavy rains. The plants do not thus want water till they begin to have air.

The same year I had a very large flower-pot, like those that are sometimes used for covering Seakale, and filling this pot up, part of the way with ashes, my cuttings in their pot were put to stand inside it. I took care of course not to let the leaves touch the side of the outer pot. This outer pot stood in a pan of water. It was covered merely with a piece of glass, and in it the cuttings did even better than those that were in the frame. If heavy glass is used, and the pot has a smooth rim, the rain most likely will not get underneath the glass; but in any case a little rim of clay formed underneath the glass prevents its slipping off and also prevents the plague of fearing dripping. Glasses put on this way can be propped up with a stick, when the time comes for airing. When cuttings are grown in the open ground under hand-glasses, it should be on the same principle—a bed of sandy mud—shade at first—air as soon as possible, giving it first at night; and when re-potting time comes a thorough drenching to detach the roots, and planting again in pots with wet mud around them.

The muddy system need extend no farther. During winter the plants require only to be kept from flagging, but no plants more benefit by occasional washings with large camel's hair brushes. Insects are very fond of Pinks of all kinds, but with proper care I do not know any plants more easily kept free of them. Perhaps in this there may be a little secret—that the plants are so delightful that we grudge no care they cost us. *E. A. M.*

Home Correspondence.

Archerfield Muscat Grape.—Grape cultivators feel much interested in this early and fine Muscat Grape, and I am certain would be glad to hear from Mr. Thomson whether it is a seedling raised in this country, or a variety introduced from the continent under another name, or no name, after the manner of the Trentham Black Grape. I mention this, because it is essential that full particulars should as promptly as possible be given of any new variety of fruit likely to be introduced to the public. I am also induced to make a public inquiry of Mr. Thomson, as to the origin of the Archerfield Muscat, because I suspect it to be a Grape with several synonymes, well-known in the southern districts of France, or in the islands of the Grecian Archipelago, and also in Portugal. I say this with due submission, and shall feel rejoiced to hear from Mr. Thomson that the Archerfield Grape has but one name. The Muscat Grape I allude to is described in the Transactions of one or two Pomological Societies in the south of France; also in some of the French catalogues under the names of Smyrna Muscat, Muscat de Patras, Isaker Daisko, and, I think, also as the Syrian Muscat and Muscat Pierore de Puy de Dôme, for like all fine varieties of fruit, its synonymes are numerous. Its fruit is described as follows:—Berries large, oval, golden yellow, slightly breaking (*croquant*) with a delicious perfume. It ripens readily, even in the latitude of Paris, at the same time as the Chasselas de Fontainebleau. This is the great and interesting fact—a Muscat Grape, as large as the Muscat of Alexandria, which will ripen on our walls like the Royal Muscadine, alias Chasselas de Fontainebleau, or in our cool Vineries. If the Archerfield Muscat Grape is a seedling, the raiser is a fortunate man; but if it is the variety described above, evidently an old sort, the wonder is that it was not introduced and brought into notice long, long ago. *Thos. Rivers.*

Selaginella (Lycopodium) denticulata.—Allow me to inform your correspondent "X" (see p. 573) that if he has the true Selaginella denticulata, he need not be afraid to let it remain out-of-doors even north of the Thames. We have it growing in the hardy Fernery here on particularly cold and wet soil; it was planted three years ago, and experienced 28° of frost on Christmas Day, 1861; nevertheless it is perfectly healthy. *Jas. Harland, The Gardens, Bedwall Park, Herts.*

Lawn Mowers.—We feel assured that you will, in justice to our interests in this matter, allow us to observe that, having permitted a correspondence in your columns on the merits of lawn mowers from parties using the machines—any remarks of your own in such a case may have the effect of leading your readers to the conclusion that in giving your own opinion you take the question out of their hands, and assume the position of judge in a cause which you had placed in the hands of a jury of your practical readers. We do think it would have been only fair to have left the question fully to the decision of your practical correspondents—especially as in giving your opinion it may appear as if your object was to support the Implement Committee of the Royal Horticultural Society in the awards which they made, without trials at all of the respective machines. Our own material interests as well as those of Messrs. Shanks, and also the long-established reputation of our friends in connection with lawn mowers, being affected in this matter—we shall trust to your usual courtesy in obliging us

by inserting this letter in your first publication. *J. B. Brown & Co., 18, Cannon Street, City.* [We willingly insert this letter; but have no idea what it means.]——I purchased one of Green's 26-inch mowing machines last April, with, as Mr. Shepherd says (see p. 598), "all the questionable improvements of 1862." I am glad to say that it does its work in a most satisfactory manner. Our lawn is interspersed all over with trees and shrubs, and is not very even; yet the machine is capable of mowing from 4 to 5 acres a day if drawn by a steady, active pony. My experience of lawn mowers is not limited to Green's only; I happen to have one of Ferrabee's 30-inch ones, and I have had many puzzling trials with it, altering screws, wheels, and cutters, yet it used to play some strange pranks on uneven ground or crossing gravel walks—answering the twofold purpose of a paring spade and cultivator. To compare any of the old machines with Green's 1862 pattern, is, in my opinion, as absurd as placing in juxtaposition the old fashioned wooden plough of 60 years back, with one of the prize ploughs exhibited the other day in Battersea Park. *Thomas Conady, Hazelwood Castle, Tadcaster.* ——Being unwilling to make a comparison between the machines in use by different makers, I went to Chiswick to see the trial from which sprung the report of the Horticultural Committee, and after minute inspection of the work done, as well as the construction of the lawn mowers, I left fully satisfied that Mr. Green's could not be found fault with. I therefore reported in favour of Mr. Green's mower to my employer, and in a short time I had a large one at work, which has since then gone over 8 acres of very undulating ground once a fortnight during the summer months, without one penny being expended in repairs or other expense except for oil. This spring I had a small 16-inch hand machine, which is managed by an active man and boy, cutting as much as five scythes, and leaving the lawn as even as a Brussels carpet. It must be rough usage indeed that will put either the above or the pony machine out of order. *R. Lynch, Gardener to the Earl of St. Germans, Port Eliot.*——As several have written to your Paper, finding fault with "Green's lawn mowing machines," it seems but right to state my contrary experience. I purchased a 6*l.* one a year since, because I found a similar one giving great satisfaction in a neighbour's garden. I am perfectly satisfied with mine in every respect. It is all I could wish. *W. D. Fox.*

Food of Nightingales.—I have two young nightingales which entered one of my hothouses about the middle of June. They are now very familiar, and consume so many wireworms and insects of all kinds, that I doubt my ability to continue the supply. Will any of your Correspondents kindly oblige by informing me how to breed meal worms. I am told that it can be done without much trouble, and I am very anxious to provide a stock of winter food for my pets. *H. S.*

Distilled Waters.—In order to keep rose water, elder water, and other distilled waters, should they be corked up in the bottles, or should they remain uncorked? I have been in the habit of tying a piece of paper over the bottles and perforating it with a pin, and the waters kept very well, but I am told that they keep better when corked; others say again that they spoil when kept from the air. *Alpha.*

Orchard Houses.—After three years' experience I am enabled to form a judgment on this much disputed subject. My orchard house is 150 feet long by 20 feet wide, having a central bed and side borders. The trees are in the ground in the centre and in pots at the side. I have an abundant supply of water delivered by hose pipe. My gardener well understands the management. I had all my trees from Mr. Rivers. Now for the results: Pears succeed well, are abundant, fine, and ripen perfectly. Figs flourish: at this time they have more fruit than leaves, and last year a second crop ripened. Apples succeed alike in quantity and size. Here the catalogue ends. Peaches and Nectarines are all in pots. The first year they did well, the second year they failed, and this year three-fourths of them shed the fruit when about the size of a Gooseberry, though they are well cared for both as to manuring and watering. I am convinced now that trees in pots answer only for a year or two. I have not yet tried Peaches and Nectarines in the border. My out-of-door crops are tenfold greater than those in the orchard house. Apricots, too, have wholly failed. I have 16 trees, and the fruit upon them does not number 20 in the whole, and the last two years there was not one upon any of them. Plums do pretty well, but not better than in the open garden. On the whole then my orchard house is not a success. It is invaluable for Pears and Figs; worthless for show fruit. I have omitted the Cherries; they also have failed for two years—those in pots entirely; those in the beds partially. Nor has the failure resulted from want of blossom, for that has been most abundant every year; nor can it be attributed to the season, for the same fruits are plentiful in the open garden. Nevertheless, though disappointed of the anticipated uses of the orchard house for the production of the choicer fruits, it is a valuable adjunct to the garden, as a covered walk in winter capable of much ornament by evergreens or early spring flowers, as a Pear or Fig house, and as an excellent winter protection for Lettuces, Parsley, or small Salads. I, and doubtless others of your readers, would be glad to learn from those who have made the same experiment if their experience coincides with mine. *E. W. Cox, Highwood, Hendon.*

Temperature.—I have often been surprised at the high temperature given in your weekly return from Chiswick, and was still more so on seeing in your Paper the other day that on Sunday, the 22d, the thermometer had reached 78°, and on Monday 77°. Nothing can persuade me that these readings are correct. On Sunday I left London at 1 o'clock for Kingston; at that time a thermometer hung on the S.E. side of a house marked 60°, and when I returned at 6 o'clock it was 61°. In the train several people remarked how cold it was. My friend at Kingston had a large fire in his dining room. I myself felt it cold all day, remarkably so for the season, and if the thermometer had been ever at 70° I should have felt hot, as I was born and bred in a cold northern climate, and when the mercury stands at 78° I am generally broiled. On Monday at mid-day I passed the receiving-house in Hyde Park; the thermometer there facing the Serpentine and exposed to the sun only marked 72°. *Meteorologist.* [When the subject is more investigated than it has hitherto been, it will doubtless be found that very great differences of temperature frequently occur in the same day at places not far distant from one another, as well as at the same place at no great intervals of time. The thermometer in the shade at Chiswick, at 1 P.M., on the 22d and 23d of June was 64° (in London it appears it was 60°), and the extreme maxima on these days were repectively 78° and 77°, being a rise of 13° or 14°, which is not uncommon in June. On the 6th of May of the present year the thermometer at 1 P.M. indicated 72°; but the highest on that day was 84°, being a difference of 12°. The temperature of 84° in the shade in May is remarkable, and the figures of the observation were underlined.]

Water Pipes.—Of all the materials used in the shape of pipes for the conveyance of water, none are entirely free from objection. I wish therefore to call the attention of those who may be interested in the subject to a very useful though simple contrivance, of which I never knew but one instance, and therefore believe it is not generally known. Iron pipes would be altogether unobjectionable, were it not that the water conveyed in them is usually spoiled by rust. An acquaintance of mine, finding this to be the case with the water conveyed to his house in iron pipes, was recommended to take them up and relay them, inserting all along earthenware pipes just small enough to pass inside the iron pipes, the former being driven close up to each other, but without any kind of jointing. He finds this plan quite effectual in preventing the rust from finding its way into the water, and has now had it in use for several years. *H. H.*

Salvia eriocalyx and Hibiscus palustris.—In a letter on outdoor gardening at Cannes, signed "John Taylor," in your Number of the 7th of last June, the writer speaks of Salvia eriocalyx as the best and most striking of all the Salvias growing at that place. I well remember seeing this plant growing in the gardens at Nice in the latter part of October 1856, and I was so struck with its beauty that I had plants of it sent to me in England afterwards. I found however that our summers were not long enough nor bright enough to make it succeed when turned out as a bedding plant in this country. Have any of your correspondents or readers cultivated it with success under glass—and if so what method did they adopt? I would also direct attention to Hibiscus palustris, which I saw growing last year in a small garden in front of the Hôtel de l'Europe at Baden Baden. It had been planted there, I was told, about three years; after flowering in each year it was cut down to the ground, and the root protected during the winter with litter. At the time I saw it in the month of September it was nearly six feet high. The flowers, which were borne chiefly at the top of the plant, were 3 or 4 inches in diameter, of a most lovely shade of pink, with a dark crimson blotch at the bottom of the petals, which contrasted beautifully with the orange-coloured anthers. It is said to be a native of America as far north as Canada. If so, one would suppose it might endure our climate. I have not been able to hear of its cultivation in England, but if it could be made to succeed with us, it would be well worth one of the choicest places in our gardens. *B. I.*

Societies.

ROYAL HORTICULTURAL: *July* 4.—J. C. Whiteman, Esq., in the Chair. The following candidates were elected, viz:—

The Lady Marian Alford; Mrs. Croggan; R. D'Israeli, Esq.; D. C. Maunsell, Esq.; and Mrs. Paul.

ROYAL BOTANIC: *July* 9.—At this, the Society's last exhibition for this season, there was a good display of fruit. Of collections the best was furnished by Mr. Dawson, gr. to Earl Cowper. It contained two well grown Queen Pine Apples, Black Hamburgh and Sweetwater Grapes, Black and White Cherries, Sir Harry and Oscar Strawberries, and large and fine Galande Peaches. From Mr. Tillyard, gr. to J. Kelk, Esq., came a second collection, in which there were three Queen Pines, Black Hamburgh and Muscat of Alexandria Grapes, excellent Green-gage Plums, White Bicton, Sir Harry, Sir Charles Napier and Oscar Strawberries, Elton and Circassian Cherries, a good dish of Raspberries, Peaches and Nectarines, and Watson's and Strathfieldsaye Melons. From Mr. Allen, gr. to J. B. Glegg, Esq., Congleton, came Black and Golden Hamburgh Grapes, the last scarcely ripe; May Duke Cherries, a Melon, Noblesse Peaches and Brugnon Nectarines, and Keen's Seedling Strawberries. Mr. Ruffett, gr. to Lord Palmerston, likewise contributed a collection, in which were very good Galande Peaches, Black Hamburgh and Muscadine Grapes, Admiral Dundas Strawberries, White Ischia and Lee's Perpetual Figs, Raspberries, Mayduke Cherries, and Elruge Nectarines. In a collection from Mr. Young, of Leigh Park, were Queen Pine Apples, Black Humburgh, and White Nice Grapes, the former deficient in colour and the latter unripe; May Duke Cherries, Strawberries, and Peaches and Nectarines. From Mr. Turnbull also came a collection.

Pine Apples were tolerably numerous; but none of them were very remarkable for heavy weight. From Mr. Barnes, of Bicton, came Russian Globe, a round kind seldom shown; Enville, Sugar Loaf, Prickly and Smooth Cayenne, Copper-coloured Montserrat, and Brown Antigua. Mr. Young, gr. to C. Bailey, Esq., M.P., had a Queen weighing 4 lbs. 1 oz.; and the same variety, weighing 3 lbs. 12 oz., was furnished by Mr. North, gr. to C. Cass, Esq.; Mr. Williamson, Mr. Robinson, Mr. Smith, and Mr. Bray also showed good Queens, all of which weighed more than 4 lbs. each. Six good Queens were also exhibited by Mr. Solomons, of Peckham. From Mr. Constantine, Hillingdon, came a Smooth-leaved Cayenne weighing 5 lbs. 3 oz. Mr. Bailey, Shardeloes, and Mr. Robinson sent one or two very good Providences, and from the former also came a Prickly Cayenne and Enville.

Of Grapes considerably the best three dishes came from Mr. Hill, gr. to R. Sneyd, Esq. They consisted of Black Prince, three noble bunches, quite 15 inches in length, well shouldered, and weighing together 8¾ lbs.; Buckland Sweetwater, three bunches of which weighed 6 lbs. 3 oz., and very fine Black Hamburgh. From Mr. Bowman, to whom a second prize was awarded, came Grizzly Frontignan, Black and Golden Hamburgh. Mr. Embry, gr. to A. Moss, Esq., sent very good bunches of Alexandria and Cannon Hall Muscat, and Black Hamburgh, the last badly coloured; and Mr. Drewitt, gr. at The Denbies, near Dorking, had a very good set of three dishes, consisting of Grizzly Frontignan, Black Hamburgh from one-year-old pot Vines, and White Frontignan. The best single dishes of Black Hamburgh came from Mr. Bowman and Mr. Henderson, Coleorton Hall; these were not so remarkable for large size as for fine colour and bloom, which were perfect. Good bunches of the same variety were also furnished by Mr. Hill, Mr. McKay, and Mr. Meads. From Mr. Allport, Doddington Hall, came well grown West's St. Peter's, and Mr. Standish again showed three good bunches of "Gros Colman," a Grape which, if well flavoured, cannot fail to be a favourite. Another new Grape deserving of attention was Cavoush, a white oval-berried variety of which good examples were furnished by Mr. Constantine, who states that it is a free grower, coming in a little later than the Black Hamburgh, and succeeding in nearly the same temperature. Of Muscats some fine bunches were shown; but they were for the most part unripe. The best came from Mr. Embry, Mr. Henderson, and Mr. Standish. Mr. Allport sent apparently the ripest bunches, but they were not so large as some others. Of boxes of 12 lbs., the best came from Mr. Henderson, who showed well coloured Black Hamburgh; Mr. Bailey sent Muscadine, Mr. Turnbull and Mr. Monro Muscats. Vines in pots well furnished with fruit came from Mr. Sanders, Mr. Kaile, Mr. Standish, and others. The sorts were Black and Golden Hamburgh, and Sweetwater. Other sorts of Grapes shown were Trentham Black, Purple Constantia, and Jostling's St. Alban's.

Peaches and Nectarines, large and fine, were shown by Mr. Snow, Mr. Dawson, Mr. Henderson, Mr. Ruffett, Mr. Tegg, Mr. Monro, and others. The Peaches were chiefly Royal George and Galande, and the Nectarines Elruge and Violette Hâtive.

Of Cherries, Mr. Snow showed a very fine dish of Black Eagle, and equally good fruit of the same variety came from Mr. Turner, of the Royal Nursery, Slough. Other varieties exhibited were Reine Hortense, Black Circassian, Elton, and May Duke.

Figs came from Mr. Snow, who showed very fine fruit of the Brown Turkey kind; Lee's Perpetual came from Mr. Constantine, and White Ischia from Mr. Ruffett.

Of Strawberries, Mr. Turner again furnished a collection similar to that which he showed the other day at South Kensington. The same exhibitor also showed fine fruit of Frogmore Late Pine, Rifleman, Oscar, and Sir Chas. Napier. Mr. Widdowson had Sir Harry, British Queen, Sir Chas. Napier, and Admiral Dundas. From Mr. Lydiard came Eleanor, Victory of Bath, Sir Chas. Napier, and Alice Maude. Mr. Tillyard furnished Admiral Dundas, British Queen, Goliath, and Oscar. From Mr. Bailey came good fruit of Wonderful, and of other varieties similar to those just named.

Melons were numerous, and, judging from the many certificates awarded in the Green-fleshed class, they must have been very good. The two best were King's Green-fleshed from Mr. Bailey, and one of a similar breed from Mr. Tegg, of Roehampton, both of

which were evidently of the old Egyptian Green-fleshed breed. It is observable that many of the prize-taking Melons at our great exhibitions are crosses from that excellent variety, which in its true form seems to be almost lost to cultivators. Occasionally one of the Persian, or White-fleshed, varieties comes in first; this breed, however, is so distinct both in appearance and in flavour that it might with propriety form a third class at exhibitions. Another beneficial change might be made by excluding from competition all Melons below a certain weight: for as judges are by the wording of the schedules now bound to give the preference to the best flavoured fruit, leaving out of consideration all other points, we often see prizes awarded to Melons so small and poor in appearance that few gardeners would have the hardihood to exhibit them upon their employer's tables. In Red-fleshed kinds, the Scarlet Gem still holds its superiority in point of flavour generally over other sorts.

Plants were nearly the same as those shown at South Kensington on the 2d inst. Stove and Greenhouse plants, Heaths, Fuchsias, Pelargoniums, and plants remarkable for the beauty of their leaves were reproduced in beautiful condition. Orchids, too, were excellent, especially the collections from Mr. Williams and Mr. Milford, gr. to E. McMorland, Esq. Cut flowers, consisting of Roses, Pinks, Carnations, Picotees, Pansies, and Verbenas, also appeared to afford considerable interest. Of the last a very fine panful, chiefly seedlings, was shown by Mr. Perry, of Birmingham; and Lord Leigh, a brilliant scarlet sort, with a white eye, from Messrs. Perkins, of Coventry, is certainly one of the best of its class. In an interesting collection of New Plants from Messrs. Veitch, of Exeter and Chelsea, was Mutisia decurrens, a handsome orange-blossomed climber from the Chilian Andes, stated to be hardy. Two double Fuchsias came from Mr. George Smith, of Hornsey; and a very good Petunia, named Crimson Gem, was shown by Mr. Holland, of Spring Grove, Isleworth. Of seedling Pelargoniums the best were Beauty, Scopas, and Peep-o'-Day, all from Mr. Beck. Messrs. Downie, Laird & Laing again showed their dwarf yellow Calceolaria named Cloth of Gold. From Messrs. Fraser came a good light Phlox with a crimson eye, called Garibaldi; Calceolaria Earl of Rosslyn, from Mrs. Carstairs, of Edinburgh, is also a good dark half shrubby sort, and we noticed a pretty group of Geraniums with handsome leaves from Messrs. E. G. Henderson, who also showed a flowering plant of Clianthus Dampieri, whose bright crimson flowers, each ornamented with a large black boss, had a singularly interesting appearance.

Entomological: *June* 2. F. Smith, Esq., President, in the Chair.—H. T. Stainton, Esq., was elected a Member of the Council in the place of Dr. Knaggs, resigned. A copy of the beautiful work of Jacquelin du Val on the Coleoptera of Europe, purchased by the Society, was placed on the table. A communication was read from Mr. Barton of Lymington, detailing the sudden covering of the leaves of plants in his garden with fine powder, which he considered might be the eggs or excrement of insects, but which was pronounced by several botanists present to be the pollen of coniferous trees. Professor Westwood exhibited a dry collodion plate, communicated by Mr. Ormerod, on the coating of which, composed of gelatine collodion, nitrate of silver and tannin, considerable devastation had been committed by Blatta orientalis, the action of the jaws being clearly visible in various parts of the plate. Mr. Waterhouse exhibited Scraptia nigricans taken on rotten Oaks, and Trichonyx sulcicollis (fam. Pselaphidæ), both taken in the neighbourhood of London. Mr. W. F. Kirby exhibited a fine moth, Brahmæa Hearseii, from India, and Parnassius Clarius from Asiatic Russia. Mr. Reading exhibited Pentarthrum Huttoni (Wollaston) taken from the wood of a cask made of Birch with Hazel hoops at Plymouth. The President exhibited specimens of a remarkable ant, having a very large globular abdomen, Myrmecocystus mexicanus, Wesm., which secretes a kind of honey sold in the markets of Mexico, and employed in making a pleasant sort of liquor. Professor Westwood gave a detailed account of the various collections of insects and insect-products in the International Exhibition, especially that from Guiana (containing a new species of Paussus); a collection of specimens illustrating the ravages of insects, in the French Department; and the collections of silk formed by Mr. F. Smith in the Indian, and M. Guérin-Meneville in the French Department. A paper by Mr. Newman was read, entitled "Varieties *versus* Hybrids," in reply to Mr. Faraday's paper read at the preceding meeting. Mr. Waterhouse read a paper entitled "Observations upon the Nomenclature adopted in the recently published Catalogue of British Coleoptera," in answer to Dr. Schaum's paper "On the restoration of obsolete names in Entomology," previously read. Mr. Kirby also read a paper containing descriptions of Colias Boothii and Hecla and Cœnonympha Mandane, n. sp. from Polish Ukraine.

Botanical of Edinburgh: *May* 8.—Prof. Balfour in the chair. The following communications were read:—I. "*On the plentiful occurrence of Buxbaumia aphylla (Haller) in Aberdeenshire.*" By W. Sutherland, M.A.—II. "*On the occurrence of Isoetes echinospora (Durieu), in Scotland.* Also by Mr. Sutherland. Although Professor Babington has had under examination specimens of this genus from most of the Scotch localities, all these were found to belong to I. lacustris, with the exception of the few specimens sent by me, and which had been collected in the Loch of Drum; although it is worthy of remark that the commoner species also grows there, and that, too, probably in greater abundance. It differs from I. lacustris in its generally smaller size, more spreading and robust habit, and yellowish green colour.—III. "*On Cuckoo Flowers and the Cuckoo Spit.*" By J. Hardy, Esq., Penmanshiel. In this paper the author stated that the Cuckoo's garland consists of several ingredients. He then gave an account of the various plants called Cuckoo-flowers or Gowk-flowers by different nations. Among these were the following:—Cardamine pratensis, Lychnis Flos-cuculi, L. dioica, Arum maculatum, Endymion nutans, Campanula media, C. rotundifolia, Pinguicula vulgaris, Orchis mascula, Primula veris, Ranunculus bulbosus, Caltha palustris, Oxalis acetosella, Tragopogon pratensis, Anagallis arvensis, Polytrichum commune, Cypripedium Calceolus, Galium Aparine, Rhinanthus Crista-galli, Luzula campestris, and Silene inflata. The Cuckoo-spittle, Gowk's-spittle, Cuckoo's-spittens, Frog-spit, Toad-spit, Snake's-spit, or Wood scar of England and Scotland, is a froth discharged by the young frog-hoppers (Aphrophora spumaria) to defend them from enemies and the overpowering effect of the solar heat. As soon as the little creature comes out of the egg, it hastens to some plant which it touches with the tips of its body, and fastens there a drop of white liquor full of air; it drops a second near the first, then a third, and so on, till it covers itself all over with a scum or froth. These get the name of Gowk's-spittles, because they are at the greatest plenty when the bird gets hoarse, or seems by its voice to have a spittle in its throat.—IV. "*Notice of Adelges Piceæ of Ratzeburg,*" also by J. Hardy, Esq. In a letter to Professor Balfour, Mr. Hardy says—"I see by the report of last meeting of the Botanical Society that a supposed Coccus is infesting the Silver Firs about Alloa. This, I apprehend, will be the Adelges Piceæ of Ratzeburg, specimens of which I enclose, rather more advanced than those seem to have been which were sent by Mr. Dawson, and examined by Mr. W. R. M'Nab. It is closely allied to the species found on the twigs of the Larch, Adelges laricis. It is most hurtful to young trees, by destroying the leading shoots; on the trunks of old trees it will remain for years without visibly impairing their vitality; and one tree will continue infested while a long avenue will remain clean. It probably occurs more or less in every collection of Silver Firs. Mr. Andrew Murray sent me specimens from Kinross-shire several years since, and I had others from Roxburghshire from the late Rev. James Duncan. There is another so like this, on the bark of the Scotch Pine, that I cannot observe any difference in wingless specimens. It is the Adelges corticalis of Haltenbach. It has come from the nurseries on young trees. I have not seen it prove fatal in this vicinity. The Larch Adelges began to excite notice in the country about 1814, as appears from the 13th vol. of the 'Bath Society's Papers.' It is now found on almost every tree, and yet the Larch continues to flourish."—"V. *Notice of an Ash Tree struck by Lightning near Edinburgh.*" By Mr. M'Nab. On Thursday the 1st of May, at 10 P.M., a severe thunderstorm passed over the south side of Edinburgh, damaging a large Ash tree standing on the Grass lawn, half way between the porter's lodge and the dwelling-house at Moredun, 3 miles from Edinburgh, the seat of David Anderson, Esq. The tree seems to have been struck by the electric fluid about 40 feet above the ground, at the point where the stem divided into branches. A portion of the west side of the tree is entirely torn away to the depth of 6 inches and 2 feet broad, proceeding from the top to within 3 feet of the ground, at which point the stem is 10 feet 4 inches in circumference. The portions torn from the tree were thrown to various distances, some as far as 212 feet. One piece, 6 feet long and about 6 inches in diameter, was thrown 180 feet distant. The fragments averaged 120 in number, varying from 6 inches to 8 feet in length, and were scattered more or less all round the tree, the heaviest portions being towards the north; several had their ends stuck deep into the ground. The pieces as they now lie scattered about, all denuded of their bark, have more the appearance of being blown into their present grotesque positions with gunpowder than by a stroke of electricity.—Professor Balfour read a notice from the American Association for the Advancement of Science relative to the "*Polar Plant (Silphium laciniatum).*" Major Benjamin Alvord, of the United States army, says that the radical leaf of the plant presents its faces uniformly to the east or west, the plane of the leaf being north and south, or coinciding with the meridian plane. This is uniformly true of the radical leaf of the Silphium laciniatum, when there are no disturbing causes. In the valleys or lower portions of the rolling prairies, where most sheltered from the winds, this polarity is most accurate, and the plants are seen arranged all parallel to each other. This is true of the radical leaf from 1 to 2 feet in height, before it grows up, as it does in the second year, to the flowering plant. Surgeon De Camp, an officer in the medical department of the army, who accompanied General Kearney's expedition to New Mexico, says:—"I have seen the Polar Plant growing luxuriantly from Fort Towson, near Red River, to Fort Leavenworth, on the Missouri. In the direction of Santa Fé, I have not observed it more than 200 miles from Fort Leavenworth, that being about the point where the rich prairie lands terminate, and what are called 'the plains' commence. In the direction of the south pass of the Rocky Mountains, it is found as far west as the Pawnee villages on the bottoms of the Platte River, a little below Grand Island, say 300 miles from Fort Leavenworth. I have been well acquainted with the peculiarities of the Polar Plant for nearly 32 years, and am perfectly satisfied that while the plant is healthy and of a vigorous growth, the edges of the leaves point northerly and southerly with sufficient accuracy to be of great service to the bewildered traveller." I. A. Lapham states that the large radical leaves of the plant, when growing in tufts or bunches on the dry, open prairies, rise so much above the grassy turf as to form conspicuous objects, and when thus exposed, they generally present their flat surfaces towards the rising and setting sun—thus turning their numerous pointed lobes towards the north and south. Hence it is called the "compass plant," and is useful as a guide across the prairies. Professor Asa Gray, of Cambridge, United States, says, that however the case might be with respect to the plant on the prairies, those growing in the Botanic Garden did not present the edges of their leaves to the north and south, or in any one plane more than another.

Notices of Books.

The Relative Value of Round and Sawn Timber. By James Rait. Blackwood.

This is a book which Foresters will find indispensible. The land steward at Castle Forbes tells his readers that having received charge of 2000 acres of plantation, the age of which ranged from 35 to 60 years, and not having much attended to timber dealing, he was obliged to study the matter systematically. Some of those whom he consulted had not the facility of giving him information; others would not help him, and some appeared to have nothing to give. So he was fain to set about teaching himself, and now, after 12 years' experience, he tells the world what it has cost him no small trouble to learn. Let us add that he tells his story well; not omitting small matters, because they are so small, as some do, but beginning really by the beginning.

In a book so purely technical, and so much occupied by tabular matter, it is not easy to find a passage for quotation. The following bit will however serve two purposes, that of illustrating the author's style, and that of exciting the reader's curiosity.

"Let the means of transport be what it may, the rate of expense must ever be ruled by the weight of the timber; and there are few subjects on which ignorance prevails more generally, or to a greater extent, than on this. The statement to be found in any schoolbook, to the effect that 40 feet rough, or 50 feet hewn timber, is a 'load,' appears to have been quite satisfactory and conclusive to most parties; and when any doubt arose as to a 'load' meaning a ton, it was obviated by the knowledge of the fact that Spruce, Larch, and Scotch Fir readily float in water, and that water weighs about 62½ lb. per cubic foot. A rather curious case illustrative of this general ignorance recently occurred. During the contest relative to the best route for a line of railway, a plain spoken but shrewd and honest timber merchant, from a large town on the east coast of Scotland, was questioned before a Parliamentary Committee regarding the number of cubic feet of Pine or Larch in a ton. His reply was, '24 to 28 feet round timber, when the wood is young.' The opposing counsel rejoined, that the witness's statement was undeserving of notice, as it was well known that it required 40 feet of timber to a ton; besides, if 24 or or even 34 feet were a ton, it could not float in water, which everybody knew that it did. The honest woodman, speaking from experience, reaffirmed the truth of his assertion; and it will be shown in the course of this work whether he or the learned London lawyer was the more learned in this matter."

The Floral Magazine for July contains good figures of the striped *Camellia* called Contessa Lavinia Maggi, *Swainsona violacea* (beautiful), a red-leaved *Fuchsia* called Meteor, and a pair of *Auriculas*.

Part XV. of Sowerby's new work on *British Wild Flowers* contains figures of all our native Willows, Osiers, and Sallows.

Miscellaneous.

Wellingtonias and Californian Trees.—The valley of Murphy's is 2000 feet above the sea, and lies at the foot of those long lateral ridges which connect the broken ranges called the Foot-Hills with the central ridge of the Sierra Nevada. The distance to the Big Trees is 15 miles, with an additional ascent of 2500 feet. Immediately on leaving the village, we entered a close, wooded cañon, down the bottom of which rushed the water of a canal, as if in its natural bed.

It was delightful to drive in the shade of the oaks and pines, with the clear waters of a roaring brook below us—clear water being the rarest sight in these mountains. Gaining the summit of the ridge, we drove for miles over an undulating but rapidly-ascending road, deep in dust and cut into disagreeable ruts by the wheels of emigrant waggons. Huge shafts of fir, arbor-vitæ, and sugar-pine, arose on all sides, and the further we advanced the grander and more dense became the forest. Whenever we obtained an outlook, it revealed to us hills similarly covered: only now and then, in the hollows, were some intervals of open meadow. The ditch, coming from far up in the mountains, still kept beside us, sometimes carved in the steep side of the hill, and sometimes carried across a valley on a wooden framework 100 feet high. The air perceptibly increased in coolness, clearness, and delicious purity. The trees now rose like colossal pillars, from 4 to 8 feet in diameter, and 200 feet in height, without a crook or a flaw of any kind. There was no undergrowth, but the dry soil was hidden under a bed of short, golden Fern, which blazed like fire where the sunshine struck it. * * Our progress, from the ascent, and the deep dust which concealed the ruts, was slow, and would have been tedious, but for the inspiring majesty of the forest. But when four hours had passed, and the sun was near his setting, we began to look out impatiently for some sign of the trees. The Pines and Arbor-vitæ had become so large, that it seemed as if nothing could be larger. As some great red shaft loomed duskily through the shadows, one and then another of us would exclaim: 'There's one!'—only to convince ourselves, as we came nearer, that it was not. * * A thick underwood now appeared, radiant with the loveliest autumnal tints. The sprays of pink, purple, crimson, and pure gold flashed like sprinkles of coloured fire amid the dark-green shadows. * * Suddenly, in front of us, where the gloom was deepest, I saw a huge something behind the other trees, like the magnified shadow of one of them thrown upon a dark-red cloud. While I was straining my eyes, in questioning wonder, the road made a sharp curve. Glancing forward, I beheld two great circular—shot-towers? Not trees, surely!—but yes, by all the Dryads, those are trees! * * Between these two colossi, called The Sentinels, ran our road. In front, a hundred yards further, stood the pleasant white hotel, beside something dark, of nearly the same size. This something is only a piece of the trunk of another tree, which has been felled, leaving its stump as the floor of a circular ball room, 27 feet in diameter. * * To my astonishment they did not appear so very large after all! Large they were, certainly, but nothing remarkable. At first I was puzzled by this phenomenon, but presently remembered that the slender saplings (apparently) behind them were in themselves enormous trees. * * The great Trees, to the number of 90, are scattered through the Pine forest, covering a space about half a mile in length. * * They have all received names, more or less appropriate. Near the house is the "Beauty of the Forest," really a paragon of colossal elegance, though comparatively young. Her age is probably not more than 2000 years. * * We first visited the "Three Graces," then the "Miner's Cabin" and "Uncle Tom's Cabin." The last two are hollowed out at the bottom by Indian fires, which have burned themselves central chimneys far up the trunk. Either of them would give shelter to a family of moderate size. The next group bore the traces of fools. Some love sick blockhead, visiting the grove in company with three ladies, one of whom looked coldly upon his suit, another sang, and another did something else, has fastened upon three of the trees marble tablets, inscribed severally, in letters of gold, "The Marble Heart," (!) "The Nightingale," "The Salem Witch." * * Miss Avonia Jones, an actress, who was there a short time previous, bestowed her own name upon a tree, and likewise had a marble tablet prepared, regardless of expense. Fortunately the tablet happened to reach Murphy's, on its way to the grove, just before the fire, and was destroyed. Fancy one of those grand and awful trees bearing the name of "Avonia Jones"! * * At the top of the glen stands the "Mother of the Forest," 93 feet in circumference, and 325 feet high. Her bark, which has been stripped off to a height of 110 feet, now represents her in the Crystal Palace at Sydenham. * * There is a variety of trees named after various States; also the "Old Maid" and "Old Bachelor," two lonely, leaning, dilapidated figures, and "Pike," a tall, gaunt trunk, not so inappropriately named. The largest of all the living trees is called "Hercules," and is, if I mistake not, 97 feet in circumference. *Taylor's Home and Abroad.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—The keeping up of a gay display in this and similar structures during the next few months will require skilful management. If, however, previous directions have been attended to, plants sufficient to make a good show for a considerable time to come will be getting into a forward state. Balsams and pot annuals must be looked to, and if another shift is necessary let it be given at once; for these and other quick growing plants the compost should be both porous and rich, in order that healthy vigorous growth may be obtained. After the last shift weak clear manure-water may be given rather frequently, especially to Balsams, Cockscombs, and plants of that description. Oleanders showing bloom must be well supplied with water. Stove plants flowering in the conservatory will require attention, especially Achimenes and things of that sort, which should be gone over every day in cloudy weather like the present, carefully picking off decayed flowers, &c. Twiners on the roof, if any, which have done blooming may be thinned out, so as to prevent their shading the house too much, for after this season permanent shade should be avoided, unless the weather should become much brighter than it is at present. Young stock in cold pits intended to flower next season should be exposed as much as possible in order to ripen the wood. All kinds of soil used in potting and shifting should now be laid in without delay, except in cases where it is as yet unfit for storing. Store them up neatly in narrow ridges so as to be safe from wet and yet exposed as much as possible to the action of the air; and as success in plant growing very much depends upon having suitable soil for potting, no trouble or expense that may be necessary to procure this should be spared where well grown specimens are expected. Loam of moderately good quality may be obtained in most neighbourhoods, but good peat is not so easily got; this is absolutely necessary, however, for the growth of choice hard-wooded plants, and should be procured at the proper season so as to have it in a fit state for use at the right time.

FORCING DEPARTMENT.

Pinery.—Still continue to supply fruit swelling with sufficient water at the root and syringe frequently over head; but, as a matter of course, not during bright sunshine unless shading is immediately applied. Young plants should now be growing fast, and will require liberal waterings and in addition to air in large quantities by day the temperature should be high enough to allow them to have a good amount of ventilation by night; during warm weather forced fruits of all description are benefited by free exposure to air.

Vineries.—Previous directions will still apply to houses in which the fruit is gathered. Ripe Grapes requiring to be kept must be shaded during hot sun, in order to prevent their becoming shrivelled. Cannon Hall Muscat, Sweetwater, and Frontignan having tender leaves are the most liable to take harm, either from bad glass or imperfect ventilation, and where either exists the Vines should be watched, as injury done to the foliage now not only affects the present crop but also the succeeding one. Air must be given freely by night as well as by day, and the necessary stopping of lateral growths and thinning of the fruit in the last house must be proceeded with. Keep also a sharp watch for mildew, and apply sulphur to all parts affected the moment they are perceived.

Melons.—These require plenty of air and moisture while the fruit is swelling, and in hot dry weather the sashes may be drawn off altogether through the day with advantage. Keep the plants free from all useless growth; when the fruit approaches maturity less moisture is needed. If woodlice are troublesome place the fruit on bricks over a shallow pan of water.

Cucumbers.—Attention should be given daily to these; linings should be renewed when necessary to maintain a steady bottom heat. Stop and thin the shoots, so that they do not get matted together; top dress with rich soil those that have been some time in bearing; water freely and close the frames early in the afternoon; plant out those sown last month, and sow more towards the end of this month for the winter supply. Keep the plants hardy by giving plenty of air.

FLOWER GARDEN AND SHRUBBERIES.

A complete stirring up of the flower garden beds to break the hard crusty surface caused by the late heavy rains should be made on the first favourable opportunity before the plants get much larger. Proceed with pegging down or tying out growing plants as they advance till they occupy their allotted space, when more freedom may be allowed them; but even then in well arranged flower gardens each bed should be perfectly symmetrical as a whole, although forming only a part of the general design. Remove weeds as they appear, and pay great attention to neatness and order, without which the richest display of flowers looks unsatisfactory. Advantage should be taken during heavy rains to examine the walks, to see the drains are sufficient to carry off the water; and additional drains and grates should be put down where necessary. Leisure hours must soon be employed in putting in cuttings, and when once begun use every possible dispatch with this work until there is a good stock in a fair way for rooting of such things as are known to be difficult to winter except in the shape of well established plants. Keep gravel walks perfectly clean and smooth by weeding, sweeping, and rolling as may be necessary. Keep climbers on walls within due limits.

HARDY FRUIT AND KITCHEN GARDEN.

Birds at this season are troublesome, and it requires netting in abundance to preserve fru it from their ravages. As the fruit is gathered from the earlier Cherries remove the netting, which may serve for protecting later crops. Look over Peaches and Nectarines, and in tying in the young wood see that the fruit is not too thick, allowing a few extra for storing, in the case of Peaches and Nectarines. Nailing in the current year's wood, and stopping such shoots as are not required for fruiting, are the principal things now to be attended to in this department. It may however be advisable to go over such trees as are over-luxuriant, and stop about half the shoots, beginning of course with the strongest, for a general stopping at this time would probably be of little further service than to induce the production of a mass of useless spray, whereas stopping the stronger shoots of those which incline to grossness will divert the sap into the weaker ones, which will be strengthened while the buds on the shoots that have been stopped will become full and plump without starting into growth. Should it be found that the roots after stopping incline to start into growth, it will be advisable as soon as the fruit is gathered to open a trench at a moderate distance from the stem of the tree, cutting the stronger roots. This will be of the greatest service in checking growth, and will probably do more towards securing ripe wood than anything else that could be adopted. Get the Strawberry plantation intended to stand for next season trimmed as soon as convenient, cutting off the runners so as to afford the leaves plenty of room.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending July 9, 1862, as observed at the Horticultural Gardens

July.		Moon's Age.	Barometer.		Temperature					Wind	Rain.
					Of the Air.			Of the Earth			
			Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep		
Thurs.	3	6	29.876	29.795	60	39	49.5	60	57½	W.	[illegible]
Friday	4	☽	29.857	29.780	69	51	60.0	61	57½	S.W	[illegible]
Satur	5	8	29.653	29.543	74	52	63.0	61	57½	S.E.	[illegible]
Sunday	6	9	29.424	29.381	72	53	62.5	61	57½	W.	[illegible]
Mon.	7	10	29.780	29.591	70	49	59.5	61	58	S.W.	[illegible]
Tues.	8	11	30.027	29.939	76	49	62.5	61	58	S.W	[illegible]
Wed.	9	12	29.992	29.833	64	52	58.0	61½	58	W.	[illegible]
Average			29.801	29.694	69.3	49.3	59.3	60.9	57.7		1.06

July 3—Cloudy and fine; fine rain; overcast; cold at night.
— 4—Fine; cloudy and fine throughout.
— 5—Rain; showery; fine.
— 6—Densely clouded; fine; overcast.
7—Cloudy; rain; showery.
— 8—Fine; very fine; cloudy; overcast
— 9—Fine; showers occasionally; rain at night.
Mean temperature of the week 3½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending July 19, 1862.

July.		Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
							N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday	13	75.8	51.8	63.8	13	0.92 in.	—	3	5	—	2	21	4	1
Mon.	14	76.2	51.7	63.9	14	0.64	—	3	3	1	6	12	[illegible]	[illegible]
Tues.	15	76.0	50.4	63.2	19	1.46	1	4	3	—	4	17	6	1
Wed.	16	76.2	50.4	63.3	14	1.60	2	3	4	—	2	17	[illegible]	1
Thurs.	17	76.0	52.1	64.0	12	0.56	2	—	2	2	4	16	[illegible]	[illegible]
Friday	18	74.7	51.2	62.9	18	1.22	—	—	1	—	5	18	[illegible]	4
Satur.	19	72.8	51.2	62.0	21	0.60	2	1	1	1	[illegible]	14	5	2

The highest temperature during the above period occurred on the 14th, 1847—therm. 93½ deg.; and the lowest on the 13th, 1840—therm. 41 deg.

Notices to Correspondents.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

☞ Correspondents are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

Emigration: *J. Smith*. We cannot recommend one Colony in preference to another. You must judge for yourself.

Garden Pencils. We have found the solid ink pencils manufactured by Messrs. Wolff & Son, of 23, Church Street, Spitalfields, the best we have yet seen. There is no getting rid of their marks. If the makers will only continue to produce them of the same quality they should come into universal use.

Names of Plants: We much regret the necessity of once more reminding our friends that we cannot spare time for naming heaps of common things. The limit of the number is four, as has been very often announced.—*W T*. 1, a withered bit of Rhinanthus Crista Galli; 2, Galium verum; 3, Fumaria capreolata; 4, Valeriana officinalis.—*J G*. 1, Sinapis arvensis; 2, a morsel of some Crucifer unnameable; 3, Orchis maculata; 4, Agrimonia Eupatoria.—*Flora*. Hedera Rœgneriana.—*C D*. We do not find the name of Heterocentron roseum in systematic books. It is possibly a mere catalogue name. H. mexicanum has white flowers; and H. macrostachyum, which is much like it, has pink ones.—*Duporth*. Ruscus racemosus, the so-called Alexandrian Laurel.

Panama Railway: *S S T*. You should procure the "Illustrated History of the Panama Railroad," a very curious book published last year by Harper, of New York, and we suppose to be had of American booksellers in London. It gives you a minute account of all things that travellers want to know, and is illustrated abundantly with capital wood engravings.

Queries: I. Can any of the growers of Oaks inform an amateur from what country Quercus Mirbeckii comes—or anything about it?—II. What is the best time of year for gathering Yucca, Aloe, Phormium, and such strong succulent leaves for the sake of their fibre; and whether pressing or crushing is required before steeping the leaf in water?—III. Is the Gladiolus of the New Forest G. segetum, or communis, or what else?—IV. What is the best work on British spiders—with plates, or without?—V. Are not Pyrus intermedia of Southern Europe, and our Sorbus torminalis very nearly allied?—VI. What is known of a new Yucca—argyrophylla? hort.

Representations on Glass: *T S*. We have no idea. Surely the plan is rather childish.

Transplanting Trees: *D M J*. There are various machines, all more or less useful; *e. g.* Sir Henry Stewart's, Mr. Greenwood's, McGlashan's, McNab's, Barron's. There is no Company that we know of which undertakes to move great trees.

Tubing: *A Z*. Vulcanised India-rubber tubing lined with canvas will doubtless answer your purpose. That of 1½ in. or 2 in. in the bore will be found most useful for ordinary garden work.

YORKSHIRE AGRICULTURAL SOCIETY.—
President :—H. S. Thompson, Esq., M.P.
Vice-Presidents :—
The Right Hon. Lord Bolton | George Lane Fox, Esq.
The Right Hon. Earl Cathcart | The Rt. Hon. Lord Wenlock
The Right Hon. Lord Herries | The Rt. Hon. Lord Feversham
The TWENTY-FIFTH ANNUAL SHOW will be held at YORK, on August 6, 7, and 8, when nearly 900*l.* will be offered in Prizes for HORSES, CATTLE, SHEEP, PIGS, POULTRY, WOOL, IMPLEMENTS, &c. For IMPLEMENTS, 250*l.* is offered, including 100*l.* for STEAM PLOUGHS, and 30*l.* for REAPING and MOWING MACHINES.
In addition to the usual Money Prizes, the Society offers 12 Silver Medals, the President offers a Prize of 50*l.*, in addition to a Gold Medal, given by the Council of the Society, for an Essay on Yorkshire Farming; and a Special Prize of 25*l.* for the best Five Years' old Hunter, is offered by the Right Hon. Lord Wenlock.
The ENTRY CLOSES on JULY 21.
For Prize Sheets, apply to J. Wilkinson, Solicitor, Coney Street, York; or to me, John Hannam, Secretary.
Kirk Deighton, Wetherby.

WARWICKSHIRE AGRICULTURAL SOCIETY.
The WARWICKSHIRE AGRICULTURAL SOCIETY will hold their GREAT ANNUAL EXHIBITION of HORSES, CATTLE, SHEEP, PIGS, IMPLEMENTS, WOOL, CHEESE, FRUIT, and FLOWERS, at Aston Park, Birmingham, on SEPTEMBER 17, 18, and 19, when PRIZES to the amount of NINE HUNDRED and SEVENTY POUNDS will be awarded.
More than half this amount is offered by the Birmingham Local Committee, and is Open to all England.
The Entries close on August 1.
Prize Lists and every information may be obtained on application to Mr. John Moore, Secretary, Warwick; or to
John B. Lythall, Local Secretary.
Offices, 14, Temple Street, Birmingham.

ROYAL AGRICULTURAL SOCIETY of IRELAND.
GREAT NATIONAL CATTLE SHOW, to be held in LIMERICK on AUGUST 6, 7, and 8.
Last day of Entry of Stock, July 14. Implements, July 14.
Prize sheets and forms of entry can be had from the Local Secretary, at his Office, Limerick, or from the Office of the Society, 42, Upper Sackville Street, Dublin.
July 12. J. B. Thornhill.

The Agricultural Gazette.

SATURDAY, JULY 12, 1862.

The awards of the jury to whose examination and verdict the Agricultural and Horticultural Implements exhibited in Class IX. at the International Exhibition were submitted will be found in another column—so far as the United Kingdom is concerned. They were published yesterday by Her Majesty's Commissioners at Kensington. We are able to present them as they left the Jury. The Jury divided the exhibitors who are announced in the official award as having been honourably mentioned in common, into two classes, as we have given them, namely, "commended" and "highly commended" respectively.

There can hardly be a more cumbrous or less efficient apparatus than a jury of 15 or 20 men speaking different languages for the performance of such work as was here required of them. Comparatively few were able to attend with regularity—but indeed had there been only four or five instead of a dozen more the work would have been more easily and better done. Unfortunately however the awards for the United Kingdom were made the first, when large attendances were still the rule, and when all the difficulties of examination and discussion were at their maximum. The consequence is that the vote in each successive case must have been taken at meetings when we do not hesitate to say that it was impossible that all the members present could have been adequately informed. Had it been otherwise it is impossible that Messrs. Cuthbert & Co., of Newton-le-Willows, Bedale, should have been merely "honourably mentioned," while Kemp Murray and Nicholson, of Stirling, for a nearly similar and in England a less distinguished reaper, receive a medal. There is hardly one of the men in the "highly commended" class enumerated elsewhere but should have had a medal. Ashby & Co., of Stamford, for their steam apparatus; Ball, of Rothwell, for his ploughs; Burrell, of Thetford, for steam engine and threshing machine; the Busby Implement Company for their ploughs, horse-hoes, and carts; Cambridge, of Bristol, for roller and chain harrow; Carson & Toone for their Turnip cutter or scraper, and cheese presses; Mr. Clay, of Stennard Iron Works, near Wakefield, for a capital cultivator; Mr. Coultas, Jun., for very excellent corn and seed drills; Messrs. A. & E. Crosskill, of Beverley, for carts, railways, and other implements, Messrs. Cuthbert, of Newton-le-Willows, for their first-class manual delivery reapers; and, in fact, nearly all in that list unquestionably should have had medals. Mr. Nicholson, of Newark, has long made one of the best Haymakers of the day, very good horse rakes, &c.; Messrs. Reeves, of Bratton, have made first-class agricultural machines for many years, and they have the credit of introducing a capital implement to English agriculturists, the water drill—they are merely honourably mentioned.

We do not wish to dispute the merit of implements which have received the medal; but we are bound to say that if Mr. Hunter, of Nicholson Street, Edinburgh, receives a medal for his churns and dairy utensils; and Mr. Young, of Ayr, receives a medal for a drop drill on a principle which has been adopted and abandoned years ago at the meetings of the Royal English Agricultural Society; Nicholson of Newark, Ashby of Stamford, Cambridge of Bristol, Ferrabee of Stroud, Page of Bedford, Reeves of Bratton, the St. Pancras Iron Work Company, Mr. Samuelson of Banbury, and others, should not have been excluded. The anomaly appears even greater when we look at the list of those whose implements are merely "commended." Messrs. Amies & Barford, of Peterborough, the manufacturers of our best steaming apparatus, receive a simple commendation. Messrs. Brown & May, of Devizes, first class agricultural machine makers; Hensman, of Woburn, a well-known manufacturer of drills; Humphries, of Pershore, &c., receive simple commendations!

Will any one looking at the awards in the foreign section of Class IX., for which we have not room, say, that if Busby's ploughs, Humphries' threshing machines, Cuthbert's reaper, Hensman's & Coultas' drills, Ferrabee's lawn mower, Brown & May's steam engine, had been shown by France or Belgium, they would not have there stood at the head of the list of merit, and received the very highest award at the disposal of the Jury.

And though probably the Jury were right in considering every country by itself, and awarding to each a certain number of medals in proportion to the number of the exhibitors in each, without pretending to compare one country with another as to the merit of the articles exhibited, yet it does look something like a farce to see our first-class makers and first-class machines put off with simple commendations when obviously inferior machinery receives medals without question elsewhere. Look at the mills shown by Mr. Tye of Lincoln, the machinery of Tasker & Son, Andover; of Picksley, Sims & Co., Legh; of Maggs & Hindley, Bourton; of Hunt & Pickering, Leicester — and compare them with the ploughs, reapers, threshing machines, and steam engines shown by French exhibitors. Messrs. Picksley & Sims, of Legh, seem to us especially to have made good their right to a place in the higher class list—they are the manufacturers of Bamlett's reaper, which is held to be worthy of a medal, and they show a number of first-class machines for chaff cutting, turnip pulping, &c.—it is a blunder that they are merely honourably mentioned. But indeed this "blunder" has been committed, we hesitate not to say, with reference to most of the exhibitors of English Agricultural machinery. If, as we understand to have been the case, the Jury were directed to reward actual merit with a medal—directed moreover to disregard degrees of merit—so that wherever positive excellence existed it was to be thus distinguished—then it is plain that the great majority of our English exhibitors should have been on the upper class list. It is obvious that a very different and much severer rule has been applied to home exhibitors than has guided the awards elsewhere.

As the matter stands, 47 exhibitors are medallists, 58 are honourably mentioned, and about 35 are not named at all. The following is the similar account of the awards in other countries, tabularly arranged.

	Number of Exhibitors.	Medallists.	Honourably mentioned.	Passed by.
United Kingdom	140	47	58	35
Colonies	—	9	5	—
Austria	16	4	9	3
Bavaria	1	0	1	0
Belgium	14	5	6	3
Denmark	3	1	2	0
France	36	11	18	7
Italy	35	6	12	17
Mecklenburg Schwerin	1	0	1	0
Netherlands	10	1	5	4
Norway	7	2	4	1
Prussia	4	1	2	1
Russia	3	0	2	1
Sweden	21	6	12	3
Switzerland	3	1	1	1
United States	14	6	5	3
Wurtemburg	3	1	2	0

The three thousand pounds or thereabouts which the Royal Agricultural Society of England has spent at Battersea ought to add at least three thousand pounds per annum to its income.

The money forthcoming for the maintenance of an Institution is always in proportion to its usefulness and efficiency; and no money can have been spent more strictly in accordance with the most useful objects of this Society than that which it has laid out at Battersea. A grand agricultural fête has been given to all the world, and a market has been opened for farm produce unknown before except to a few travelled and educated foreigners. This has been done at an expenditure of nearly 15,000*l.* The Show-yard (with horse boxes at 4*l.* each) has cost 4500*l.*—the stock prizes and medals have cost about 4000*l.*—the forage bill will be nearly 2000*l.*!—the land for steam ploughing at Farningham has cost 600*l.*—the police have cost 300*l.*—advertising and printing have cost a large sum, and it would have been better policy had they cost much more; and there is the expenditure connected in the replacing the Park exactly as it was received. Altogether about 15,000*l.* have been expended. The receipts as stated last week amount to about 12,000*l.*, and the Society is the loser in the meantime of 3000*l.*, or thereabouts. This it will be able to pay without trenching on its capital, which represents the compositions of its life members, but the balance in hand will be very small. It looks now with well-earned confidence to the great agricultural body for support. Like the Society of Arts we may be sure that the Royal Agricultural Society of England, which so well unites Practice with Science in the many illustrations which it gives of Agriculture as the "Art of all the Sciences," will, now that it has shown itself equal to a great International occasion like the present, take an enormous stride in popularity and consequent prosperity.

We have had the two leading sales of sheep of the season; and the coming week is to see its leading sale of Short-horn cattle.

Mr. Jonas Webb's sale of Southdowns, in which 148 yearling rams averaged 19*l.* has been followed by Mr. Sanday's sale of 72 Leicester rams of all ages, which have averaged 26*l.* 9*s.* 4*d.* Mr. Sanday is retiring, as Mr. Jonas Webb has done, from the business of flockmaster, and Mr. Strafford disposed of a portion of his flock last Wednesday; the remainder will follow in the autumn. Thirty shearlings, 21 two-shears, 13 three-shears, and 8 older sheep were sold for 1905*l.* 15*s.*, making up the average as stated Some of the sheep fetched very high prices, the 3d prize shearling ram at Battersea fetched 40 guineas; No. 33, 3d prize shearling ram at Leeds, and Highly Commended in an older class at Battersea, was bought by Mr. Hall for 68 guineas; No. 33, 1st prize sheep in the older class at Battersea, receiving there the Gold Medal also, was bought by Colonel Inge for no less than 140 guineas. Many other high prices could be named, and Mr. Strafford may be congratulated on the honour of conducting two such great sales in one season to so successful an issue.

On Tuesday next he is to dispose at Chapel House, Speke, near Liverpool, of a herd of Short-horns, the property of Mr. Atherton, which will we venture to predict, in an equally striking manner prove the value placed on pedigree and blood. There are no less than 8 "Gwynnes," a distinguished family of Short-horns; 6 "Cherry Duchesses," which will be among the highest priced on Mr. Strafford's list next Tuesday; 4 "Lady Barringtons," descended from a cow bought at Kirkleavington by Mr. Philipps of Totness—among them being Lady Barrington 6th, which took the 2nd prize in the calf class at Leeds, and was highly commended at Battersea; 3 "Finellas" descended from a first-rate family of Mr. Booth's breeding, and containing Bates and Boothblood in about equal proportion; and 6 "Wild Eyes," descended from a cow, "Wild Eyes 26th," bought at the Kirkleavington sale.

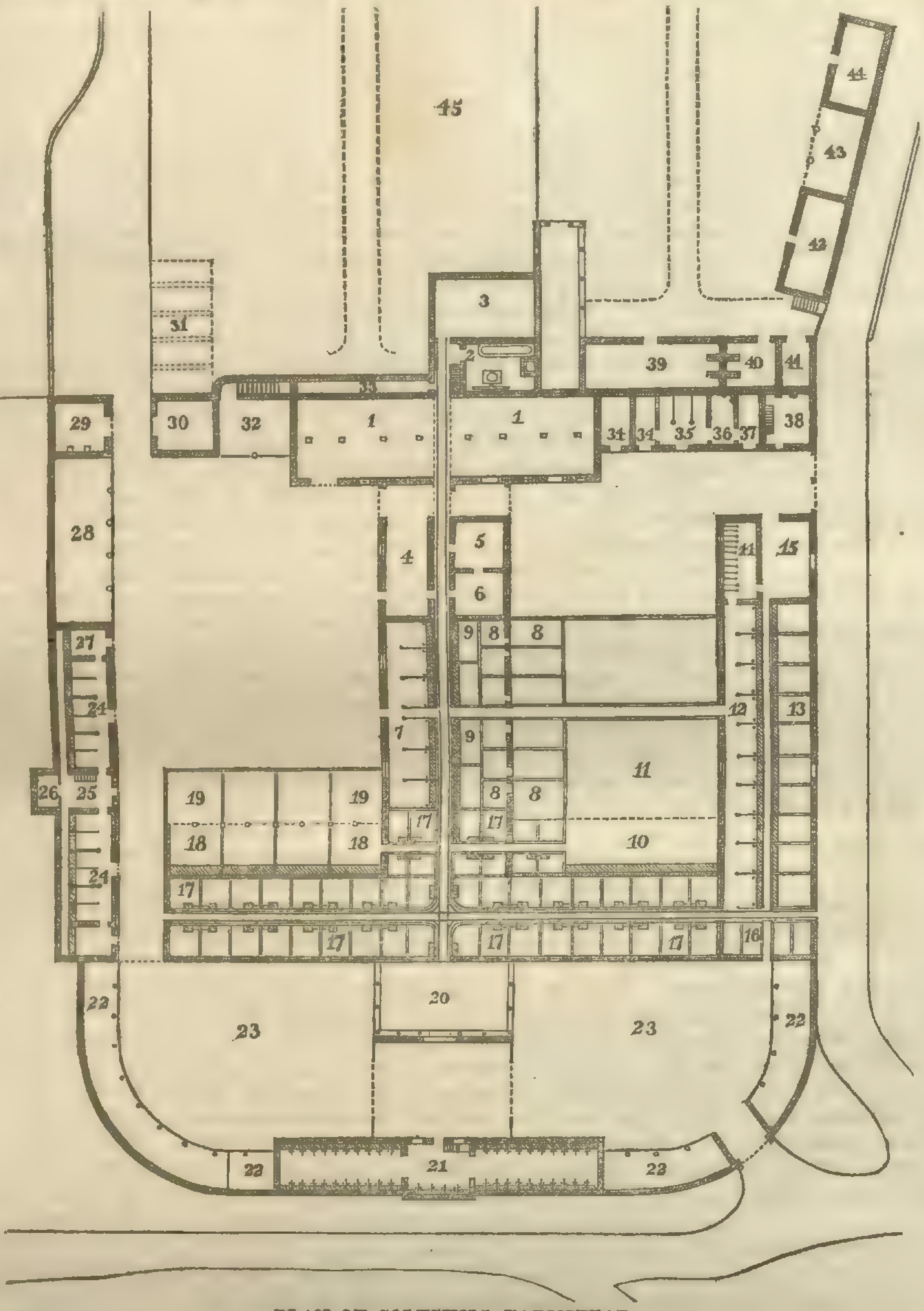
Besides these there are three Grand Duke bulls of prize blood, descended from "Duchess 51st," bought by Mr. Bolden at the Kirkleavington sale—and three other Dukes, the property of Mr. Alexander, descended from Duchess 54th. It will thus be seen that there is both considerable variety and first-rate quality to be offered for sale next Tuesday. How highly some of the strains we have named are valued in the Short-horn world may be illustrated by Mr. Atherton's purchases as well as his sales. We understand that for four "Cherry Duchesses," and a bull calf of the same family, he paid Mr. Bolden 1500 guineas, and that for 13 pure Dukes and Duchesses he has paid no less than 5000*l.* Some of these animals are to be sold next Tuesday, and we doubt not there will be very great competition indeed for the future ownership of them.

FARM BUILDINGS.

THE essential parts of a farmery are, (1) stabling for the farm horses; (2) threshing barns and granary for the storage of grain; (3) shelter for live stock. Besides these there are in all complete buildings, straw barn, house for preparation of food, and cart and implement sheds. It is on the third of the above departments of a farmery that its character will depend. Cattle are kept in yards covered or open, in stalls or in boxes. In all cases the stabling and threshing barns and granaries are somewhat alike, but the provision of accommodation for the cattle and feeding stock very materially varies.

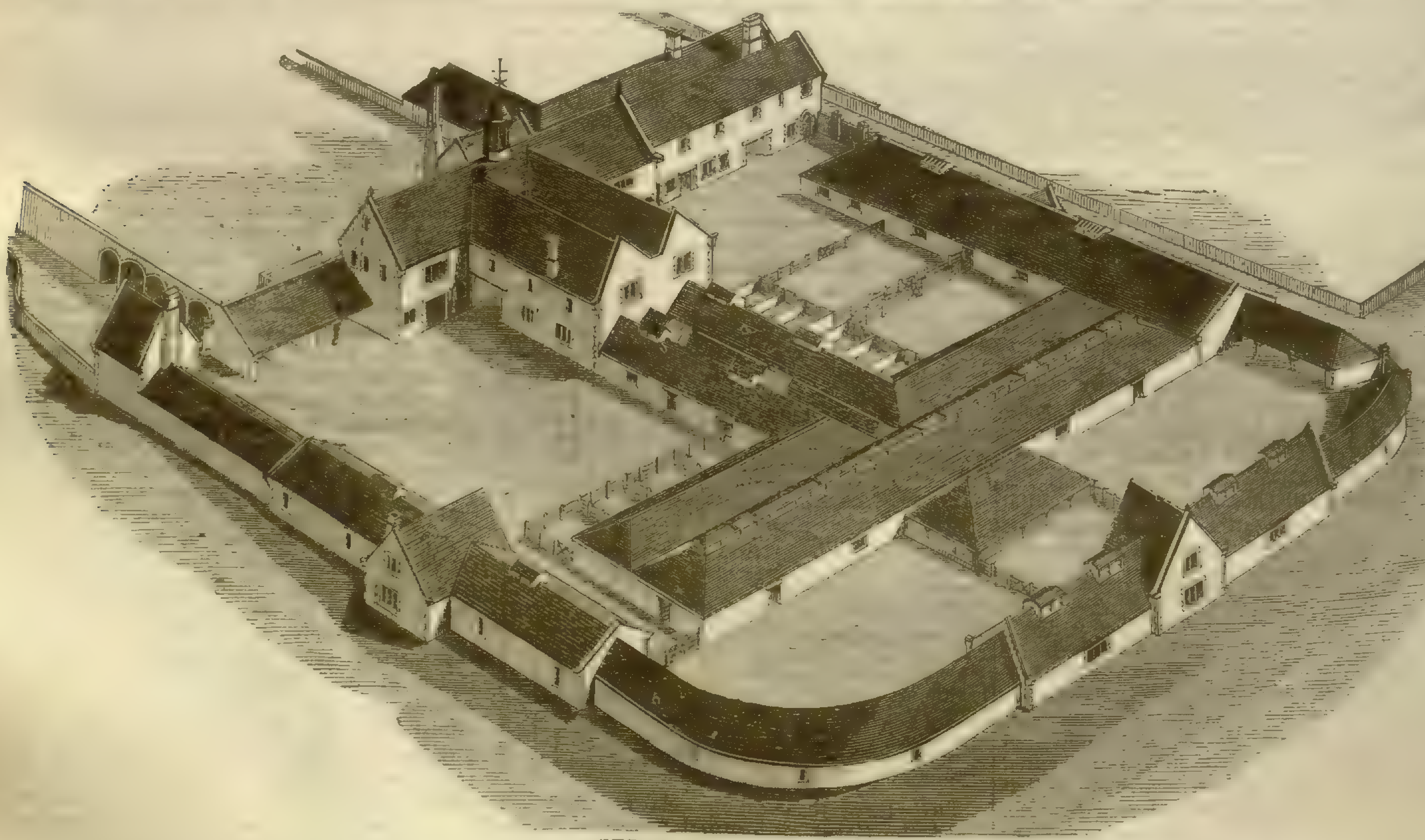
The annexed plan, represented also in perspective, gives the provision made for all the various methods of housing cattle. The buildings at Coleshill, Berkshire, the seat of the Earl of Radnor, are on the largest scale of farmeries, and confessedly in the style fitted for a nobleman's home farm. The execution, space, style and quality of work, and, therefore, the expense, are probably higher than the mere economy of the farm would justify. But for the principles of its arrangement, the skilful connection of the different parts, the clever adaptation of the circumstances of the site, and the perfect adaptation of each part to its purpose, we know of few to equal it. Among its obvious merits are the admirable arrangement of threshing, grinding, and cutting machinery; the accessibility and roominess of the granaries, and their connection with a cartway beneath; the relation of steaming-house and food stores generally with cattle boxes and stalls; the proper mixture of boxes, stalls, and yards—the first for fattening cattle, the second especially for stables (box feeding answering only in the case of animals continually standing on the litter), and the third for younger stock; lastly, the sheep-yards and the sheep feeding house over a sparred and open floor, which seems specially adapted, and we might say *only* adapted to the case of sheep, which carry their bed-clothes continually about them, and do not suffer from so hard a mattress.

The following references to the index figures on the plan will, with the assistance of the perspective drawing, enable the reader fully to understand these buildings:—The barn is shown at 1, 1. 2 and 3 are the engine-house and coal-house—the power is communicated to shafting on the second floor of the barn, from which threshing machinery and machines for winnowing, grinding, bruising, and cake-crushing, are driven.



PLAN OF COLESHILL FARMSTEAD.

From this shafting, too, Turnip cutters on the lower floor of the barn are driven; they are supplied with roots from the stores in 33, close by, which are filled from the rick-yard, which is on a higher level; and from which therefore the grain to be threshed is also easily delivered on to the second floor of the barn. 4 is the chaff-house, and 5, 6, a steaming-house. Over these, and connected with the threshing floor of the barn, is the granary. There is a roofed gangway between the barn and the chaff-house, in which carts may be loaded from the granary: and it should be here mentioned that the second floor over 34, 35, &c., on one side of the barn, is also available as storage for grain. It is plain that hitherto the arrangements are exceedingly convenient. The corn is brought to the machine; its straw, cut into chaff, is stored away close by; its grain, winnowed clean, is also stored away close by, and is easily deliverable into carts. The roots are brought easily to the cutters, close by the power which drives them, and near to the chaff and other food with which they are to be mixed. Cake and corn crushers, close to the power which drives them, and to the store of food which they have to prepare, deliver this prepared food at the very door of the food-house and the steaming house, whence, finally, food and litter are both sent out to the yards, byres, and stalls. These, accordingly, are arranged conveniently around the centre of distribution. A railway takes them down the central building, and, at its end, on either side, to boxes, stalls, and piggeries—7 being fatting stalls; 8, 8, pigsties opening into yards; 9, 9, fatting pigsties or boxes; 10 and 11, a shed and yard for young cattle; 12 and 13, stalls and boxes for cows; 14, a calves' house, and 15, hay-house; 16 are boxes for calves; 17, 17, fatting boxes for cattle; 18 and 19, yards and sheds for young cattle. At 20 there is a covered dung-pit, with tank underneath, where the soiled litter of all the cattle stalls may easily be concentrated; 21, still easily supplied from the food-house by the central gangway, is a house for fatting and other sheep on sparred flooring; 22 and 23 are sheds and yards available for sheep at the lambing season, or for young stock at any season; 24, 24, is the stable; 25 for corn, chaff, and hay-store; 26 for harness; 25 and 26 have bedrooms over them 27 is a loose box; 28, a cart shed, and for implements; 29, kitchen for boys and bed-room over; 30, a house for implements; 31, excavated archways for



THE COLESHILL FARMSTEAD.

waggons; 32, also for waggons and carts, which may be here loaded from the granaries above; 33 is a root-store, already referred to; 34, 35, 36, 37, are provisions for riding horses, harness, and carriage house; 38, shepherd's house and bed-room over: 39, carpenters' shops; 40, office; 41, warehouse; 42, wheelwright's shop; 43, open shed; 44, warehouse. The yard partly enclosed by these last numbers, and by an open shed facing them, is a timber yard and sawyer's shed for the

purposes of the estate; 45 is the rick-yard. An examination of the perspective drawing will show how the buildings lie on the successive steps of a sloping ground; the grain being built on the higher ground, level amongst with the upper floor of the barns, and the general fall of the land being made available both for drainage and for the easy delivery of the food and discharge of the manure.

A careful examination of the whole will discover the fitness of those different parts to each other which are placed near to one another on the plan, as well as the adaptation of the whole to the circumstances of the farm, which is of 800 acres—500 acres Grass, and 300 acres arable. These buildings were designed and erected by E. Moore, Esq., agent to the Earl of Radnor.

Two of the methods of feeding indicated in these buildings—viz., box-feeding for cattle, which is now everywhere adopted, and feeding on sparred floors for sheep, less commonly met with, deserve a further notice. The practice will be described in another month, but it may be added here that the accommodation for it may be much more cheaply provided than is the case in the buildings here illustrated.

The following, for instance, describes a cheap and yet efficient set of cattle-boxes which I used for many years on Whitfield Farm, Gloucestershire:—It was very cheaply erected against an east and west wall about six feet high, which had foundations about two feet deep. The ground was excavated 18 inches. The subsoil is a stiff clay. About 10 feet out from the wall, posts were planted eight feet apart, the top of each being on a level with the top of the wall. These were connected with a set of strong poles from top to top, squared at the ends so as to rest on the uprights; and from the top of each there was also a strong pole reaching across to the wall and acting as a beam for the roofing. These beams supported a number of smaller larch poles parallel to the wall, about one foot apart, and on these was piled ridgewise a lot of faggots, which were thatched over. This was the shed. It was divided into boxes (one in each of the intervals between the poles) thus: From each beam there descended two uprights to the ground, in which they were sunk to a depth of 18 inches. One of these uprights was three feet from the wall, and the other three feet from the main posts; and there was also an upright about three feet from each post, descending from the front beam to the ground. These uprights and posts formed the framework, against which three or four horizontal slips were nailed, dividing the sheds into separate boxes, 10 feet by eight. In one of the front corners, that in which was the post with the two uprights three feet on either side of it, stood the feeding trough, made by nailing from post to upright, and from upright to upright, a set of strips enclosing a triangular space, which was filled to a height of about three feet with coal ashes and then boarded over. This completed the business. The cattle were turned in upon the litter, and in three or four months, if put in fresh, were taken out fat, after having filled the 18-inch pit, and risen about 18 inches above the level of the ground. The whole labour here did not exceed 10*s.* a box. The boxes were open to the south, and furnished a dry lair and good shelter to the cattle, which improved rapidly in condition so housed. *From Mortons "Farmers' Calendar."* *

GREAT MEETING AT BATTERSEA.

It is acknowledged by that portion of the public who take an interest in horses that the Suffolks at the Battersea Meeting formed the most striking portion of the horse show, and so materially conduced to the attraction of the parade in the ring as to justify on this and future meetings the appropriation of a distinct class. At the same time some competition between the different breeds might be well kept up by giving medals to the best cart stallion and best mare in the various classes. If this had been the case, however, we think, although the medal in the female classes might have gone to the Suffolks, that for the best stallion would have fallen to the Clydesdales.

Of the 59 chesnuts shown in the four classes, 17 belonged to the first, or stallions over two years old, the first prize being given to Mr. Biddle for his horse Colonel, a strong, symmetrical, and active horse, with capital action, and better legs than Suffolks have generally. He has improved much since he was shown last year, and lately won the second prize at the Suffolk show, having been beat by the Chester prize-horse Emperor. His colour, a dark chesnut, is rather heterodox in his county, and indeed this is almost the only point against him. He has therefore been sold out of the county for upwards of 200*l.* The second prize horse, The Marquis, belonging to Mr. Crisp, excels in the very point Mr. Biddle's is deficient, viz., the colour, which is a deep red chesnut on both body and legs, with no white about him. Although deep in the ribs he is somewhat flat in the sides, and perhaps from much work shows this defect more than last year. He has good forelegs and good action. The highly commended horse Champion was also Mr. Crisp's, and if this horse's action had been equal to his body he would probably have got the prize, for his carcase, back, and bones were remarkably good. Mr. Crisp's young horse, May Duke, is well worth the commendation he received, and will probably take higher rank at a future show. There was also a dark chesnut, and also No. 780, white legged, both possessing much merit.

The 2-year old Suffolk Class, with 12 entries, we thought possessed greater merit than the last class, particularly the prize and commended animals. No. 789, belonging to Mr. Henry Giles, was a splendid colt, and as free from faults as a colt well could be. No. 792, the 2d prize horse, belonging to Mr. Crisp, was also a very good specimen of a Suffolk colt; his fore legs were good and he knew how to use them well. He very much resembled his sire The Marquis. The highly commended colt, No. 791, was a still finer colt than either, but he did not move so well, and he appeared to be somewhat stiff in the motion of his hind limbs, which were also carried too wide. Mr. Wilson's Nonpareil was also a fine colt, though rather too upright in his joints; and Mr. Nunford's Young Emperor showed very great quality, looked almost like a carriage horse, but wanted somewhat the masculine character in his appearance; whether this is owing to having two strains of the same blood is a matter worthy of reflection. Both Royal Duke and the Emperor were, if possible, too gentle and quiet in their nature.

We think Mr. Jonas Webb's Comet should also have received a commendation likewise, although he has white legs, and though chesnut in colour, not altogether a pure Suffolk in Suffolk eyes; he is a nice active colt nevertheless, and with better legs and feet than Suffolk horses have frequently got.

We come next to the female classes, as they say in the eastern counties, and although the celebrated mare Matchet, though entered, is yet absent, we have remaining some first-rate animals that bid fair to perpetuate the glories of the Suffolk blood. There is, however, no difficulty in weeding out half a dozen inferior animals, and then we have presently remaining some four or five remarkably fine mares—two dark and two light chesnuts, between whom the competition was so strong that the judges not only had some difficulty in deciding, but great difficulty likewise in consequence of the pressure of the public in actually examining them. Sometimes half a dozen people would get between the mares that were being compared together, and the foals would be thereby driven outside the crowd. The palm at length fell to Mr. Thompson's fine red chesnut mare, true in her colour and good in her legs and shape. This mare we find was a prize winner at the Essex Show. Two dark chesnuts came next, both with capital bodies; rather better indeed than the horses in this respect. Between these there was great competition, the 2d prize at length going to Mr. Wolton's "Maggy," by Royal Duke, Mr. Hodgson's "Smart" being highly commended, but losing the prize literally by a "neck," which part in fact was something too short. This mare was by Canterbury Pilgrim, sire of dam being the Royal Duke, and she was the 1st prize mare at the late Suffolk Show. Mr. Thompson's other mare, Dapper, a very good bright chesnut mare, received a commendation, and we think Mr. Clayden's very useful mare was worthy of the same honour.

Class 4, for 2-year-old Fillies, had 13 entries, and right well did they now sustain, and bid fair hereafter to maintain, the honours of the Suffolk breed. It is a very remarkable fact that no less than seven were got by Mr. Barthrop's horse "Hero," the celebrated pupil of Mr. Rarey, who seems, however, to have had the rare merit of imparting his good qualities to his progeny, and not his bad; for whilst we do not hear of his progeny having any vicious tendencies, both the 1st and 2d prize as well as the highly commended fillies owe their parentage to him. This rather supports our idea that the temper or disposition most frequently goes with the mare rather than the horse. It is also very singular that although the sire of these seven fillies, there is only one amongst the 2-year-old colts that owe their origin to him. There is no mistake as to Mr. Tomline's splendid filly being the best of her class; she was certainly a very fine animal—probably the A 1 of the Suffolks. The next three though different in appearance were very similar as to merit, so that there was not much to choose between Mr. Barthrop's dark chesnut, Mr. Wolton's smart filly (highly commended), *heroines* both, and Mr. Ward's very nice even filly. It was no dishonour to the rest of the class to be beaten by such animals as these we have mentioned.

In the general Agricultural Horse Class there were 17 entries, about one-half of whom possessed much merit. Mr. Kempson's prize winner "Young Champion," No. 840, was a fine three-year-old bay horse, although we rather preferred Mr. Matthew Reed's (844) second prize horse, "England's Glory," a true bay middling county horse, of the "Thumper" breed, celebrated for good qualities, but rather too large feet. Mr. Brown's dark grey deserved his high commendation, and Mr. E. Gibbs' dark grey "Samson" was well worthy of the second praise attached to him. Mr. Terry had two very useful horses, and we were somewhat struck with the Duke of Marlborough's Glengarry colt "Culloden," who however, we thought, ought to have been shown in the Dray Horse Class, to which he properly belongs.

In the 2-year old class there were ten entries, the 1st prize being given to Mr. Begbie's compact grey colt, which, however, we thought inferior to the second prize horse, Colonel Pennant's very fine bay colt by Nonpareil, the Carlisle prize horse we believe. Mr. Oram's chesnut colt was commended, and Mr. Terry's two colts were by no means deficient in merit. There was but a poor entry, only seven in the mare and foal class. Of these the prize mare, No. 857, belonging to Mr. Attwater, was much the best—roan in colour; she was powerful, compact, and active. Mr. Redding's brown (860) had the second prize, and Sir R. G. Throckmorton's brown "Smiler" deserved her commendation. The 2-year old class was but indifferently supported with five entries, Mr. Phillimore's Bonny taking the first, and the Duke of Richmond the 2d prize and commendation.

* Routledge, Warne, and Routledge.

THE AWARDS AT KENSINGTON.

MEDALLISTS.

Aveling, J., Rochester, for his agricultural locomotive engine
Bamlett, A. & Co., Middleton Tyas, Yorkshire, for their manual delivery reaper
Barrett, Exall, & Andrewes, Reading, for their threshing machines and steam engines
Bell, Rev. P., for model of his original reaper
Bentall, E. H., Heybridge, Essex, for their cattle food machines, and especially for their root pulpers
Boby, R., Bury St. Edmunds, Suffolk, for his machine for cleaning and separating grain
Bray's Traction Engine Company, for their traction engine
Burgess & Key, Newgate Street, London, for their reaping and mowing machines
Childs & Owen, 481, New Oxford Street, for their grain separators
Clayton, Shuttleworth, & Co., Lincoln and London, for their steam engines and threshing machines
Coleman & Sons, Chelmsford, for their cultivator
Cornes, J., Barbridge Works, Nantwich, for his chaff cutters
Crosskill, W., Trustees of, The Beverley Iron Works, Yorkshire, for their reaping machines, carts, and bone crusher
Fowler, J., Jun., 28, Cornhill, for his steam plough and steam cultivator, and apparatus generally for applying steam power to the cultivation of the land
Garrett & Son, Leiston Works, Suffolk, for their steam engines, threshing machines, and drills
Gray, J., & Co., Uddingston, near Glasgow, for their tillage implements
Green, T., Smithfield Iron Works, Leeds and London, for his lawn mowing machine
Hancock, J. & F & Co., Tipton Green Furnaces, Staffordshire, for their pulverising plough and butter machine
Hereman, S., 7, Pall Mall East, for his glass houses upon Sir J. Paxton's patent
Holmes & Sons, Norwich, for their threshing and sowing machines
Hornsby & Sons, Grantham, for their steam engines, threshing machines, winnowing machines, and ploughs
Howard, J. & F., Bedford, for their ploughs, harrows, rakes, haymaking machines, steam cultivators, and apparatus generally for applying steam power to the cultivation of the land
Hughes & Sons, 29, Mark Lane, for their corn mills
Hunter, P., 64, Nicholson Street, Edinburgh, for his churns and dairy utensils
Kemp, Murray, & Nicholson, Stirling, for their combined reaping and mowing machines
Kennan & Sons, Dublin, for their lawn mowing machines
Musgrave, Brothers, Ann Street, Belfast, for their iron stalls for cattle and horses
Ormson, H., Stanley Bridge, Chelsea, for his conservatory and hot-water tubular boilers
Priest & Woolnough, Kingston-on-Thames, for their turnip, manure, and corn drills
Ransomes & Sims, Ipswich, for their steam engines, threshing machines, corn screen, mills, and ploughs
Richmond & Chandler, Salford, Manchester, for their chaff cutters
Robey & Co., Lincoln, for their traction engines and threshing machines
Ruston, Proctor, & Co., Lincoln, for their moveable steam engine
Sellar, G. & Son, Huntley, Aberdeenshire, for their ploughs
Shanks & Son, 18, Cannon Street, City, for their lawn mowers
Smith, W., Kettering, Northamptonshire, for his horse hoe
Smyth, J. & Sons, Peasenhall, Suffolk, for their drilling and sowing machines
Snowden, W., Gloucester, for his paring ploughs
Taylor, J. & Sons, Kensall Green, London, for their conservatory and tubular boilers
Turner, E. R. & F., Ipswich, for their steam engines, threshing machines, and corn crushers
Tuxford & Sons, Boston, Lincolnshire, for their portable steam engines and threshing machines
Underhill, W. S., Newport, Salop, for his centrifugal corn elevator
Wallis & Haslam, Basingstoke, for their portable threshing machines
Weeks, J. & Co., King's Road, Chelsea, for their boiler for horticultural purposes
Whitehead, J., Preston, for his pipe and tile making machine
Whitmee, J. & Co., for their domestic flour mills
Young, J. & T., Ayr, for their drill for Mangold Wurzel and Turnip seed

HIGHLY COMMENDED.

Ashby, T. W. & Co., Stamford, for their haymaking machine
Ball, W. Rothwell, Northampton, for his cart and ploughs
Barnard, Bishop, & Barnards, Norwich, for their root pulpers and pig troughs
Bell, G., Inchmichael, by Errol, N.B., for his reaping machine
Burrell, C., St. Nicholas Works, Thetford, Norfolk, for his steam engine and threshing machine
Busby Implement Co., Bedale, Yorkshire, for their ploughs, horse hoes, and carts
Cambridge, W. C., Bristol, for his clod crusher and chain harrows
Carson & Toone, Warminster, Wilts, for their Turnip and cheese presses
Clay, C., Stennard Iron Works, Wakefield, Yorkshire, for his cultivator
Coultas, J., Jun., Spittlegate, Grantham, for his corn drills and horse hoes
Crosskill, A. & E., Beverley, for their clod crusher and wheels and axles
Cuthbert, R. & Co., Newton-le-Willows, Bedale, for their reaping machines
Ferrabee, J. & Co., Stroud, Gloucestershire, for their lawn mower (the original of the whole class)
Fry, A. & T., Temple Gate, Bristol, for their cart and American horse rake
Gibbons, P. & H. P., Wantage, Berkshire, for their threshing machine
Hayes, E., for his portable steam engine and windlass for steam ploughing
Haywood, J., Jun., Phœnix Foundry, Derby, for their cast iron vases and chairs
Hill & Smith, Brierley Hill, Staffordshire, for their iron fencing and hurdles
Hunt & Pickering, Leicester, for their corn crusher and oilcake breakers

Maggs & Hindley, Bourton, Dorset, for their straw weaving machine
Marriott, J., Gracechurch Street, for his apiary
Morton, H. J. & Co., Basinghall Buildings, Leeds, for their wire fencing
Nicholson, W. N., Trent Iron Works, Newark, for his Haymaking machine
Page, E. & W., Victoria Iron Works, Bedford, for their ploughs and harrows
Picksley, Sims, & Co., Leigh, near Manchester, for their reaping machine and food preparing implements
Read, R. Regent Circus, for horticultural engines and syringes
Reeves, R. & J., Bratton, Westbury, Wilts, for liquid manure drill
Samuelson, B., Banbury and London, for his self-delivering reaping machine and Turnip cutter
Scott, T., 18, Parliament Street, for his self-regulating drinking trough for cattle
Scott, T., Newcastle, Co. Down, Ireland, for his apparatus for seed separating and cleaning
Steevens, W., 6, Godolphin Road, Hammersmith, for his steam plough
St. Pancras Ironwork Co., Old St. Pancras Road, for their conservatory and glass walls
Taylor, J. & Co., for their traction engine
Tasker & Sons, Andover, for their threshing machine
Warner, J. & Sons, Crescent, Cripplegate, for their garden engines and syringes
Woodbourne, J., Park Iron Works, Kingsley, near Alton, Hampshire, for his Hop picking machine
Woods & Cocksedge, Stowmarket, Suffolk, for their root pulpers

COMMENDED.

Amies & Barford, Peterborough, for their portable steaming apparatus
Boothman, J., Gisburn Coates, near Skipton, for his observatory beehive
Brown & May, North Wilts Foundry, Devizes, for their portable steam engine
Dray, W., & Co., Farningham, Kent, for their reaping machine with drop platform
Drummond, P. R., Perth, for his land cleanser
Hensman, W. & Son, Linslade Works, Leighton Buzzard, Beds., for their corn drills
Humphries, E., Pershore, Worcestershire, for his threshing machine
Hunt, T. & R., Earls Colne, Essex, for their Clover threshing machine
Lipscomb & Co, 233, Strand, for their improved fountain jets
Lovey, E., Ponsnooth, Perran Wharf, Cornwall, for his beehives
Mapplebeck & Lowe, Birmingham, for their drainage tools
Messenger, T. G., Loughborough, for his tubular horticultural boiler
Milford & Sons, Wheel Works, Thorverton, Devon, for carts and waggons
Neighbour, G. & Son, 149, Regent Street, for their beehives
Nixey, W. G., 12, Soho Square, for his garden labels
Samson & Jewell, St. Heliers, Jersey, for their combined paring and breaking cultivator
Thompson, H. A., Lewes, Sussex, for his field gates
Tye, J., Lincoln, for his mills and millstones
Weir, E., 142, High Holborn, for his drainage levels and churns
Wilkinson & Wright, Boston, Lincolnshire, for their stacking and straw carrying machines
Willison, R., Alloa, N.B., for his lift and force pumps

MANAGEMENT OF SWINE.

Formerly large breeders and graziers thought the pig beneath their notice; but I find this is changing, and their eyes are beginning to be opened; still I must say I am often surprised to see what a disgraceful lot of pigs are kept by many of our large agriculturists, as well as by the smaller ones—such as I am sure, if kept to any great extent, would ruin any one, for they eat an enormous quantity of food, and will neither grow nor fatten upon it. But if farmers generally would pay proper attention to the breeding, rearing, and feeding of them, I believe there could be double the meat raised at little more than the present cost; especially by using proper piggeries and feeding troughs. I have studied the management of pigs for the last 20 years, and have found that the better the attention the greater the profit; and if a person wants to make a pig pay, the pig must be kept well when young, and not allowed to run 12 months in almost a starving condition, as many are allowed to do. When I first gained a prize at Framlingham in 1847, it was thought that I could not exceed the quality of the pigs I showed then, but I have improved them many degrees since then. I have some at the present time better than those I exhibited in 1860. In breeding I cross as far distant as possible, occasionally, to strengthen the constitution. I find it not a difficult matter to breed almost exactly what you may wish for by proper selection. There is a marvellous difference in the breed of the pigs termed the White Suffolk—there is as bad a breed of them as can be, and as good a breed as can be. I have fairly tested them by purchasing pigs from different people who considered they had a good stock, and I have been surprised to find the difference in their feeding and their making of flesh. I have put them side by side with mine, and kept them precisely the same, and the prices offered by butchers and dealing men for slaughtering has been one-third more for mine than for those purchased. The grand object is to select a kind that will come to early maturity, for that is where the profit is gained, and the better the kind the less food is required to bring them to that maturity. Now, in choosing the sow and boar of our white Suffolk breed, as much, if not more attention should be given to the boar as to the sow. In selecting, the chief points are—a smallish head, with wide heavy chaps, short snout, broad deep chest, ears rather small and thin with ends sharp, pendulous, pointing a little forward; it should be round in the rib, short in the leg, with small feet, long body, the thigh well dropped close to the hock, shoulders and hams thick, and the neck rising well behind the ears; it should have small bones in proportion to the flesh, be broad in the back, and straight or slightly curved, with the tail small and curled and placed high, and the hair thin, long, fine, and silky. By procuring animals of this description you cannot fail to perpetuate good stock. I have brought two or three specimens, and shall have great pleasure in showing you what I consider a pig ought to be. I do not recommend breeding too young, for it is a means of preventing their growing to the proper size, or acquiring sufficient strength. The proper time for the sow to begin to breed is from 10 to 12 months old; the boar being from 8 to 12 months old. The first farrow of pigs are seldom worth rearing, for they are generally small and puny, and require a great deal of nursing to bring them to maturity. I prefer good sized sows for breeding. The sow I exhibited at Ipswich and at the Royal Agricultural Show at Leeds last summer, has brought up 76 pigs in six farrows, without losing one. Another thing of importance is the construction of piggeries. I must say I have scarcely ever seen one I consider fit to put a pig in. Some are badly ventilated; others are low and damp; nine-tenths of them are too small, except for a fat pig; some are too cold, and with no means of altering them between summer and winter; and a great many of them have the cisterns in them to receive the wash, &c. But the worst of all are those with wood floors, built over a pit. Some I have observed a foot deep, which, of course, must soon get filled up with unwholesome rubbish. In general if there is one corner on the premises worse than another, that is where the pig stye is put, and people almost require marsh boots to get to it. There is no question but that it would be a great boon to the tenant farmer, if landlords would take more interest in providing better buildings for the pigs. It is not the most expensive place that is the best; I consider it decidedly otherwise. But what is required is a simple, economical, well situated, and well planned piggery. Some build expensive brick or stone buildings, which I have proved to be not healthy for pigs. I find a boarded building by far the best. I shall be happy to show you a model of the fenders, like a bracket turned upside down, which, hung upon the wall of the piggery, prevents the sow from crushing the pigs to death in lying down, by which so many pigs are lost. Each pen ought to be at least from 8 to 10 feet square, and the best floor is asphalte. In the cold weather I think the asphalte too cold for very young pigs, therefore I have false lattice floors to lay down on the asphalte, which are taken up once a week, and everything swept from under. Every morning I have the beds attended to and fresh littered, for I find the cleaner the place is kept the better the pigs thrive. The floors are washed down generally once a week, everything runs off, and the asphalte soon dries. A tank should be made just outside to receive the drainage from the pens. The building should be troughed to take off the rain water, to prevent the manure being washed. The pens ought to be so constructed as to close up in cold weather, and to be well ventilated in warm. I will now explain my method of feeding. Many people think I have said too much already upon that subject for my own interest, but never mind. I begin feeding the pigs when a few days old with warm milk, mixed with a little sugar, and some very fine sharps for two or three days (just to induce them to eat), and a little whole Maize out of troughs like one I will show you presently. For the first few weeks after being weaned, I have the boy feed them very often, but give them a very little food at a time, so they will clear the troughs out. In the winter I feed all with warm food, but not in the summer. I give them a great variety of meal, such as Wheat, Maize, Barley, Oats, and whatever is most convenient to mix together. I just wet it with cold water, and then scald it with boiling water, and sprinkle it with salt; between meals I give them whole Maize and Mangel Wurzel, or Swedes cut small; and a little coal occasionally. I allow them plenty of clean water, and there is one thing I am very particular about, not to give them any more food than they will clear up at a time. Pigs that are fatting should be washed and brushed. I am certain the cottagers would find their pigs fatten a great deal faster, if they would wash and brush them, and feed them with warm food instead of all ice food. Store pigs ought to have their liberty as far as convenient, such as to range in large yards in winter, and the run of a piece of pasture in the summer. They should also be fed two or three times a day. Good bred and well fed store pigs will always consume the refuse from the farm and dairy, when a bad bred one will refuse. I have never known mine refuse anything in the way of pig food yet that was offered them, not even the prize animals. Speaking of the pig troughs, I have recommended the Norfolk trough, which is a good one; but not being satisfied with even that, I have given considerable attention to the subject lately, and have designed one which is being manufactured by Messrs. Ransomes and Sims, of Ipswich. They have been tested and inspected by several of the most competent judges, and pronounced perfect. There is no sharp edge left in the front, so a pig with the heaviest chaps can feed out of them with the greatest ease and comfort, as well as those animals that can eat out of a quart mug.

This is the report in the *Ipswich Advertiser* of a lecture delivered some time ago by Mr. Stearn. The following discussion ensued:—

Mr. Wm. Bate said he had not been one of those fortunate men who had made a fortune by rearing and fattening pigs. They had not been particularly profitable to him. He believed that the reasons were that he had not provided proper accommodation for his pigs, and had not been sufficiently particular in his stock.

Mr. H. Wells said he kept 12 breeding sows, but he had not such accommodation for them as Mr. Stearn had. He had not the fender which Mr. Stearn recommended, and he believed he lost from 30 to 40 pigs in a year by the sow lying upon them and crushing them. Pig feeding and fattening, however, like all other agricultural matters, must come to a question of pounds, shillings, and pence; he sold 500 or 600 fat pigs in a year, and it was questionable whether by Mr. Stearn's plans he should make more profit than he did now. He did not like the long, lean pigs; he had had some which he had lost 10s. a-head by. He had, on the other hand, secured a short, broad pig, short of the chap and long of the side, and he found they weighed much better than others. They were well bred, but not so good as Mr. Stearn's He sold them, however, for 20s., and Mr. Stearn would want 5*l*. for his. His own were sufficiently well bred to pay him. Mr. Stearn's model of a piggery would only accommodate three sows and litters, so he should want four such buildings for his 12 sows, which would be an enormous expenditure of money and space. He should at present be afraid to try to carry out Mr. Stearn's plan of a piggery any further than the building perhaps of one such for an experiment. If he found it answered he should be glad to multiply it by 3. He quite agreed that the better a pig was bred and fed the more profitable it was.

Mr. Green had been a pig breeder for the last 20 years, and had paid great attention to them. His favourite stock, however, was the long sort. He paid no attention to the sows' breeding; they took care of themselves, and he seldom lost any. A long pig of 12 weeks old was worth 25*s*. Of course the pigs must be washed and kept clean, and they ought to be fed three times a day. He never sugared them, but he gave them milk. He made 36*l*. of the pigs of one sow in one year. He had a sow at the present time of the long sort, and he would defy all Suffolk and Norfolk to produce one like it.

Mr. T. E. Lombe Taylor had purchased two of Mr. Stearn's sows and one of his boars. They were so fat he thought it hardly possible they could breed well, but he soon had two litters of 9 and 7 respectively, and they were doing wonderfully well. It might be thought that Mr. Stearn's pigs had been very much pampered, but from what he had seen, and from what he had learned from Mr. Stearn's men, that was by no means the case.

Mr. Stearn said, in answer to a question, that he found the black ones, on an average, required one-third more food than white ones. As to Mr. Wells' remark, that he should require four such piggeries as that for 12 sows, he should think it rather strange if a man kept 12 sows, and they all had pigs at the same time. Now, that piggery with only three pens was sufficient for 12 sows to have their litters in, and common sheds and yards would do for the sows to run about in at other times. For himself, if he kept 24 sows he should find that piggery sufficient. Of course, if they kept breeding sows they must have a place to put them in; then why not have a properly constructed place? Nothing would cost less than a piggery like that he was showing them. In the course of conversation Mr Stearn said that such a piggery could be built for 25*l*. if made of Poplar boarding and painted.

The Chairman, Sir E. Kerrison, said he was some time since shooting over some land of a gentleman who cultivated the long pig. He left a few partridges and hares by the side of a hedge for a short time, and when he returned he found two brace of partridges had fallen before the appetite of one of those long hogs, and one of the hares was in the course of digestion. That pig was almost as long as that table, and his ears flapped into two parishes. In his opinion it was best to steer the middle course—between the long and the short pigs.

QUALITY OF HAY.

Three points relative to Grass and hay should be taken into consideration by the owners of horses—viz., the relative value of green or dried Grass and other provender—the difference in value between green and dried food, and the advantages or disadvantages gained by using this class of provender at different periods of its growth, with the mode of preserving it when formed into hay. Without doubt, the flesh-forming principle in hay is very much dearer than in any kind of grain used for feeding purposes, more than trebly so in all leguminous grain. Horses, then, when excessively worked, should have less hay, and more Beans, Peas, Oats, &c., but when they are doing light work, and there being little more consumption of muscle than of the other structures of the body, it is cheaper to use more hay and less corn, because the system does not require, and cannot appropriate so much flesh, forming material, and bulk of provender in the horse is necessary under all circumstances for the healthy performance of the functions of digestion. No class of provender does so much injury to the horse, whether under hard work or otherwise, as bad hay. I do not mean by this long coarse hay only, but hay of the finest growth and best herbage, if saturated with water, put up to green into pikes and stacked in an unfit state. You will remember that 1860 was a very bad hay year; scarcely a tenth of the hay in the northern counties was procured without being exposed to much rain. Many farmers allowed their old land grasses to stand for three or four weeks after being fit for the scythe, waiting for the weather. This destroyed the value of the hay, as feeding material, quite as much as the rain. During last year the effects of this bad hay season were seen on all sides, from the number of thick-winded and broken winded animals, and from the prevalence of diseases of the digestive organs. Three distinct cases of broken wind occurred, under my own observation from feeding for two months on badly won hay, two of the three being so far gone as to be incurable. These three animals were fed on the inferior hay, because they had little work to do—a very common error. Bad hay should never be bought at any price; those who have it would do well to use to as little as possible, and to give that little wet or, if practicable, steam it for cattle food. Many persons believe that if hay, when spoiled to a great extent, be put into the stack with good hay in a greenish state, causing partial fermentation, they get what is commonly called "a sweat," give the hay a nose, and thus improve it very much, flattering themselves they have got good provender, simply because it

has a good smell. This is a mere fallacy. Not only do the feeding properties of the bad hay remain unimproved, but the good hay is spoiled to some extent. Nine out of 10 men will prefer old hay with a beautiful smell, even if mixed with mountain Flax and Hempen, to hay of good growth, as green as the day it was placed in pike, but with little or no smell, whereas the latter is worth four times as much as the former. Hay ought never to be allowed to heat in the stack sufficiently to change its colour; when the hay sweats, or, more properly, ferments, chemical changes take place, much of the flesh-forming or nitrogenised parts are converted into acetic acid and ammonia, agents deleterious to the animal; and that which is not changed by the fermentation process is rendered much less soluble, and, consequently, more difficult to digest. Doubtless, you have seen many cases where hay which has not been over-heated in the stock has rapidly produced diabetes or excessive staling, rendering the animals totally unfit for labour of any kind. As to the relative value of green food, unquestionably Clover is superior to any other, and the second crop more than the first. Next to Clover, we prefer old land Grass, and, lastly, green Tares; but we must remember, in feeding on green food as well as on hay, that to gain the greatest amount of nutriment it must be cut early. Professors Way, Anderson, Voelcker, and others have clearly shown that all Grasses are richest in feeding principles just prior to their flowering, and that, if they are allowed to stand until fully ripe, they lose 50 per cent. of their value for feeding purposes. Every day that the Grasses stand after being in full flower, a rapid chemical change is going on within their circulating tubes, by which the nutritive material is converted into lignin, or woody fibre, a principle almost entirely insoluble, and, consequently, cannot be applied to the system for any useful purpose whatever. The same remarks are applicable to the old land Grasses, perhaps more so, as multitudes of the small farmers cannot be induced to cut early. They will wait until the top Grass is dead ripe to get a little more of the bottom, which is a double loss, the top Grass being only half the value, and the aftermath only worth about half what it would have been, if the top Grass had been cut three weeks earlier. It should also be borne in mind that the nutritive properties of all vegetables are governed to a great extent by the rapidity of their growth; thus when the growth is rapid, the quantity of woody fibre is much less than when of very slow growth. Voelcker states that he obtained as much as 22 per cent. of flesh-forming matter and 5.60 per cent. of ready-formed fat in hay grown on well-irrigated lands, whereas from 5 to 10 per cent. is the *average* of ordinary hay; and although I imagine the sample from which the analysis was taken must have been of quick growth, on rich alluvial soil, early cut, and not allowed to ferment in the stack, yet I know, from long experience in horse feeding, that animals can do more work with much less corn, when fed upon this class of hay, than when living on ordinary short hay, or seed hay, the latter, being, in fact, much inferior in feeding properties than old land hay. I know I am treading on debateable ground when I state that new land hay, if of less value for feeding horses than old land, almost every farmer I have spoken to on the subject has expressed his opinion in favour of new land hay, and up to the year 1854 I agreed with them. That year we bought about 150 tons of new land hay, and, as an experiment, stacked it separately from the old land. Our average for three months with the latter was 9 stones per week for each horse. We then consumed the new land, and continued it for three months, when the average was 11 stones per horse per week. Great care was taken to ascertain that the animals' work was as nearly as equal as possible, and precisely the same quantity of corn was given to each animal when eating seed hay as when living upon old land hay. Nor could I distinguish the slightest difference in condition in the under-ground horses, and at bank three of them were weighed, before and after living on the new land hay, but no important difference could be detected in their weight. Having been always in favour of seed hay up to this time, I was anxious, if possible, to ascertain the cause of this enormous difference, and arrived at the following conclusions:—First, seed hay contains a very much larger proportion of insoluble matter than old land, as evidenced by the great increase in bulk of the fæces of horses when fed upon it; secondly, the large quantity of stubble always mixed with it, which is not only useless matter in itself, but is the means of much waste of good hay by the animal in attempting to separate the hay from the stubble, and the loss of a large proportion of the seeds, which are by far the most nutritious part. Our experience, then, is entirely in favour of old land Grasses as an economical provender; but as an alterative and change of food, I would recommend the occasional use of new land hay on the same principles as I would a variety of mixed diet. At the collieries in this county, little else than seed hay is used, the consumption averaging nearly twelve stones per horse per week; but in all cases the consumption of hay is, to a great extent, governed by the quantity of corn given; but to show what little store is set upon the seeds by some men, I may mention that, at two large establishments, the horsekeeper used to well shake the hay before giving it to the horses, and sell the seeds to cow-keepers by the load, who used to steam them, and, doubtless, gained a good profit from their use, in the shape of new milk, for certainly one hundredweight of the seed-vessels of new land hay would contain more feeding properties than three hundredweight of the hay from which they were taken; and yet these men informed me they had done this for upwards of twelve years, and were excessively annoyed at the loss of so rich a perquisite. The same principles which govern the amount of flesh-forming substances in all kinds of Grasses is also applicable to straw, which is very beautifully illustrated by the fact that the top of the straw, which is least ripe, is nearly threefold more nutritious than the inferior part, which is first ripe. *Mr. Hunting, of South Hetton Collieries, before Newcastle Farmers' Club.*

Home Correspondence.

Australian Wheat.—I herewith enclose you specimens of three varieties of Australian Wheat, grown at Helperthorpe. No. 1 is Australian Wheat I got from a friend; I do not know what part it grew in. It is showing signs of rust in the ear. It was sown Sept. 11, 1861, and the ears were bursting through on May 25, 1862. No. 2 is South Australian Wheat you were kind enough to send me. It seems to be a much earlier Wheat than No. 3. No. 3 is Victoria Wheat I got from you. It promises to do the best of the three. No. 2 and 3 were sown on Oct. 2, 1861, and were bursting into ear; No. 2 on June 1, 1862, and No. 3 on June 11, 1862. It was all sown by hand on summer fallowed land, in rows 9 inches apart, and about 1 inch between each grain in the row. The weather has been most unfavourable for the No. 1 Wheat, and this I presume has caused the disease. The ear I enclose is one of the worst. The change seems too great, and I have no doubt all the Wheats will do better next year. I also enclose you a specimen ear of an English Wheat that I have selected for several years, and grown in a plot. It is not yet (June 18) fully shot, but I daresay I shall have several larger ears than the one I enclose. Its name is "Lovel's Prolific." *Wm. Lovel, Helperthorpe, Malton.*

Grass.—I laid a field of some 8 or 9 acres down 3 years ago with seeds obtained by a dealer in this neighbourhood, of one of the oldest and most respectable houses in the city; in the first year the field was mown some of this Grass made its appearance, though the crop was apparently of the coarsest description. This spring I determined to plough it up and lay down again with fresh seeds, but could not get at the field owing to the wet. I have mown it again, and the whole crop is composed almost exclusively of the enclosed Grass, growing in spots as high as 3 feet, and strong as Reeds. My man states that the same Grass sprung up in a few patches where I had made some dung mixings some eight years ago, and after being cut some four or five years consecutively it also disappeared, and now the ground is covered with fine sweet herbage. Can this be accounted for, and do you advise me to mow the field in question until the Grass disappears? *An Old Subscriber.* [The Grass is Phleum pratense, Catstail or Timothy Grass—it generally has a place in good mixtures of Grass seeds.]

Foreign Correspondence.

German Farming.—The principal crops grown on the farm described in my last letter (see p. 557) are Wheat, Barley, Oats, Beetroot, Potatoes, Mangels, Peas, Tares, Rape or Coleseed, Hops, Red Clover, and Lucerne. As there is no abundance of manure here, and Clover cannot be brought to the same field before the seventh or eighth year, we are obliged so to speak to keep up a regular rotation of crops, which has been till now an 8-course, with the following succession of crops:—1, Roots manured with 15 tons of farm dung; 2, Barley, partly sheep folded and sown with Red Clover; 3, Red Clover for Hay; 4, Wheat; 5, Bare fallow; 6, Rape or Coleseed, dunged with 12 tons of stable dung, and partly with sheep fold. 7, Wheat; 8, Oats.

This latter rotation has been doing very well here, but as B. v. F. intends to grow more roots, we shall have one field more of them, and thus the 8-course has been changed into a 9-course with the following modifications:—

1, Roots (Sugar Beet) manured as above; 2, Oats; 3, Red Clover and Grass seed; 4, Wheat; 5, Bare fallow or partly Rye, Tares, &c., dunged for Rape after being mown off in June or July; 6, Rape or Coleseed; 7, Wheat; 8, Roots (Potatoes and Mangel) dressed with farm dung; 9, Barley (partly sheep folded). As the most of the roots will likely be consumed on the farm, the necessary manure for the third dressing will be easily got, and artificial manure will be used more extensively, if some experiments I made this spring give satisfactory results. The 9 fields bearing the different crops are all level and pretty large, having a size of from 40 to 50 acres imp. They are all under crop just now, excepting the bare fallow for the Coleseed, and if it should interest you I would enter into some details and give you a description of the different crops and their cultivation.

1. The root crops occupy a large area this year, as about 50 acres have been sown with the white Silesian (Sugar) Beet, 5 acres with Mangel Wurzel, and 15 acres with Potatoes. The Sugar Beets, which in their value as food are superior to Mangels and Swedes, are following after Oats and a piece of Clover, which failed. The Oat stubble was ploughed in autumn, and dung carted and spread during winter and the early part of spring. Some time before the sowing the dung was ploughed in 6 inches deep, each plough being followed by a subsoiler, so that the ground was loosened to a depth of 12 to 14 inches. The field so treated was then harrowed, rolled with a ring roller, and after a repeated harrowing the seed (about 15 lb. [!] per acre) was drilled on the flat with Tasker's drill barrow, 18 inches apart. After the sowing, which began here on the 22d of April, the land was rolled again and then left to nature. The first-sown seed is already (second week of May) in braird and will be hoed in a week or so. Singling out and hoeing by hand and horses is done here (3 to 4 times) in nearly the same way as in England, and the whole cost for preparing, sowing, cultivating, and storing an acre of Beets amounts to about 3*l.* 10*s.* to 4*l.* sterling. The average produce of Beet-roots is here about 12 tons per acre; they are pulled, or rather lifted with forks in September and October, and put in large pits, which have to be covered with earth about 2 feet deep. With the exception of a few pits, which have not been covered well enough, the Beet-roots stood the last winter very well; they are all given to cattle and sheep in a pulped state, and the last will be consumed by the end of this month. Some acres of the Sugar Beet, which could not be dunged entirely, were top-dressed with about 4 cwt. (per acre) of artificials, consisting partly of malt combs, partly of superphosphate. The sowing of Sugar Beets was finished the 6th of May. In former years Sugar Beets were sold to a neighbouring sugar manufactory at 10*d.* per cwt. or 16*s.* 8*d.* per ton, and only 2 years ago a contract was made by which the farmer left some 80 to 100 acres to the sugar manufactory, which had to sow, cultivate, lift, and fetch home the Beets, paying 2*l.* 4*s.* per acre, and besides 6 tons of the refuse of the macerated Beet roots, which at 6*s.* 8*d.* per ton, was equivalent altogether to a rent of 4*l.* 4*s.* per acre. If the Beet-root sugar manufactory should pay now 10*s.* more per acre at the same conditions, some 100 acres will be left at its disposal for the next 2 or 3 years. Mangels are treated in the very same way as Sugar Beets, with the sole exception that the former are sown 2 feet apart. Potatoes were set only last week (the 6th to 10th of May), as we wanted all Beets sown first, and as the failures of Clover and sown Wheats protracted the business for some weeks. Potatoes were planted usually in the third furrow, but this year we had them ploughed in ridges 2 feet apart, as by the old way Howard's Potato-lifting plough could not be used very well at harvest time. The Potatoes are in a field which should have had Clover this year, but the latter having failed entirely, the Clover land was ploughed, harrowed, rolled, and the ridges made with the common plough, so that the Potato sets came just in the middle and were covered by the plough coming down the same furrow. As no dung could be spared the Potatoes get none, but the land is in good condition yet, and may, notwithstanding, yield some 6 to 7 tons per acre. Potatoes not being a good crop for sale here they will all be consumed on the farm. The hoeing and storing of Potatoes is nearly the same as that of the Beet-roots, and so I won't detain you any longer with this crop. Tares have only been sown as a substitute for Clover, and are not liked here at all, as they leave the land and the succeeding crops in a very improper state. Peas have been sown broadcast, but only some few acres for the household. Beans are not sure enough here, and do better on heavier soils.

2. Oats take an area of nearly 100 acres this year, as some 50 acres of frosted Wheat had to be ploughed out and supplemented by another crop. The usual crop of Oats, (an early kind weighing 38 to 40 lbs. per bushel), about 40 acres, was sown, (beginning the 19th of March), partly broadcast, partly with Tasker's drill 6 inches apart after Beet-roots and Potatoes. The land, as soon as the latter had cleared the ground this spring, was ploughed, rolled, harrowed, and the seed brought in at the rate of 3 bushels per acre. On several pieces of Oats I made experiments with different artificial manures, but as yet I cannot see much effect, the spring season having been rather dry. On about 50 acres where the Wheat had suffered by some hard frosts in February, Oats were sown broadcast on the defective Wheat plant, and ploughed under along with the latter to a depth of 3 to 4 inches. Oats are all in good braird now, and some occasional showers advanced them very much. A good average crop of Oats is here 56 bushels per acre, but I have no doubt that with the aid of artificials it may be raised to 60 bushels and more.

3. Amongst 50 acres of the Oat crop, red Clover, and on some few acres a mixture of Grass seeds, were sown broadcast for giving a hay crop the next year. This year's Clover was, as already mentioned, a complete failure. The young plants having been injured either by last year's hot summer or by this year's severe frosts, and as unfortunately the most of the Lucerne leas were ploughed last autumn, we feel this event very disagreeably. However, Potatoes, Beetroots, Tares, and sweet Sorghum have been sown as substitutes for the Clover, and thus we must see

how we get on. Red Clover, which generally is sown pure in this country (15 to 20 lbs. per acre) yields in two cuts 2½ to 3 tons of good hay, and Lucerne (which lasts often 10 to 15 years, but here hardly over 4 years) 2 to 2½ tons per acre. As red Clover is so much subject to the inclemencies of the weather, we have sown some 20 acres of Lucerne (or perennial Clover, as it is called here) which is an excellent forage crop, and pretty sure on all soils of limy or chalky consistence.

4. Wheat has been sown last autumn over 120 acres, one field after Clover and another after Cole seed. The Clover lea was ploughed after the second cut of the hay in September, 6 inches deep, and subsoiled to the same depth, after which the land was harrowed and sown in October with Tasker's drilling machines 6 inches apart and about 6 bushels per acre.

The principal kind of Wheat we grow in this country, is quite a peculiar one and figures under the names of Triticum speltum or spelt Wheat (dinkel as we call it). It is rather a hardy sort of Wheat and can be grown 1000 feet over the level of the sea. The corn is finer and less subject to the smut than the ordinary Wheat, for which reason the latter is not grown yet extensively in this country. However, the "dinkel or spelt Wheat," having such a thick shell or chaff, that an average crop of 72 bushels per acre (on this farm), yields only about the half of it in corn, (the other half being chaff or bran), has become of late a very bad article for sale, as large imports of ordinary Wheat and meal from Hungary, have induced our bakers and millers to buy these at lower prices than our spelt Wheats, which besides, have to be freed previously from their shells in peculiar mills. Considering this dangerous competition, we shall be obliged after all to abandon by and by our old sort of Wheat, and to grow more common kinds, such as you have them in England; these latter being far more in demand now.

Here only about 8 acres are sown with ordinary Wheat (Talavera), but this year we shall grow more than 50 acres. Some of the spelt Wheats have been injured rather seriously by some frosts in February, and thus about 50 acres of them had to be removed and substituted by Oats. Wheat after Rape got a double ploughing, and being first sown it is one of our best Wheats, and will probably be in ear this week. For experiment some acres of the Wheat lands were drilled at different widths, one 12 inches, another 18 inches, and a third 2 feet apart, and as much as I can see now, the narrow-sown Wheats, especially those which are 6 inches apart, are the best, then come those with 12 inches apart, and at last the wider sown, which however are full of weeds, though they were hoed several times. This experiment has been a guide for the future, and so we shall sow all our Wheats 6 and 12 inches apart. The seed quantum of 6 to 7 bushels per acre is rather heavy, but our winter and spring frosts being so dangerous we are obliged to sow thick if we want to have a good crop. All the Wheats of this farm have been hand-hoed by females in March at an average cost of 4*s.* per acre, and by some lands which I left unhoed, I see that hoeing of Wheat is very effectual and pays its outlay very well, the vegetation being advanced for several weeks. Wheat will be ripe this year towards the latter end of July, when it will be cut with Burgess and Key's reaper, and after being left on the ground until quite dry it is bound in large sheaves and finally driven home to the barns in large waggons. The threshing of this kind of Wheat is not done so well by Barrett's machine as that of the ordinary kinds, for by the former many ears remain untouched and have to be threshed out finally by the flails, but for the rest we are much satisfied with the threshing machine.

Last autumn we finished threshing in November, but this year, when we shall have a new and better steam engine, we hope to have all threshed out about the end of September. The old engine of 6-horse-power cost 250*l.*, but it was not of good make, and caused the death of a young and intelligent steward, who tried to stop the shy horses which drew the engine from one barn to another, and was crushed to death by being pressed against a wall; however, this accident might have happened with the best engine, as some of the hot steam came over the horses, which consequently got shy and ran away. The prices of spelt Wheat are rather low just now, some 100 cwt. having been sold last week at 7*s.* 8*d.* per cwt., whilst common or unshelled Wheat costs now 10*s.* 10*d.* to 11*s.* per cwt. All corn is sold now by weight, which is very convenient, and facilitates the corn trade uncommonly.

8. Rape or Coleseed is grown here every year on 40 to 50 acres, and would be a very well paying crop if the usual bare fallowing could be dispensed with, for the latter requires much labour; and besides the profit of the Rape crop is reduced to a half, considering that the oil-seed crop occupies the field two years. Of late we have tried to substitute for the bare fallow a crop of Tares, Rye, and Trifolium incarnatum, but the succeeding Rape crop never did so well as after a bare fallow, and thus the most part of the Rape field is bare fallowed as before. After the Wheat stubble is ploughed in before winter, dung is carted, spread, and ploughed under in the months of May and June. Some three or four weeks after the dung has been ploughed under rather shallow, the land is ploughed again as deep as possible (using sometimes the subsoiler), and then previous to the sowing a last grubbing, rolling, and harrowing is given, and the seed is sown in July with a two-row Turnip drill 2 feet apart, and 6 to 7 lbs. of seed being required per acre. The young Coleseed is once hand or horse-hoed, and ridged up in autumn with a bulking plough. The Rape plants can stand hard frosts, but not over 16° of Reaumur, when they will all be ruined by the frost; however this pitch is seldom reached, and last winter only some few plants were injured by the cold. The Rape came into flower this year with the beginning of May, and will be ready for being cut towards the second week of June.

The Coleseed, after being cut with the sickle, is left on the ground till the soil gets a black colour. Then the Rape is carted home to the barns in waggons, covered with cloths (for preventing the falling out of the seed), and finally ridden out by horses or oxen, as Barrett's threshing machine is not fit for threshing out oilseeds, the thick stalks of which clog and finally stop the drum.

On the average of several years Coleseed yields here about 25 bushels per acre, sometimes more, sometimes less, the produce varying from 9 to 36 bushels per acre. The oil seed is mostly sold before harvest time begins, and the farmer gets thus often a nice lot of money in hand, whilst other people who grow no oil seeds have to wait a little longer. Last year's produce was altogether over 350*l.*, the ton of Coleseed ranging from 18*l.* to 19*l.*, and more than 20 tons having been got. This year's produce appears to be less, but the prices of oils have some tendency to rise.

9. Barley succeeds this year exceptionally, a Wheat crop was sown (beginning the 24th of March, and ending the third week of May) with Tasker's drill barrow on the well prepared land, partly 6 inches apart, partly omitting one drill after every two drills of 6 inches width, so that between 4 rows of 6 inches width there were always three rows having a distance of 12 inches. Fully 2½ bushels were sown per acre, and part of the Barley was sheep folded, being in braird. The most of the Barley has a luxuriant growth, and some was already in ear, with the end of May. Barley yields here on the average 36 to 40 bushels per acre, and the whole produce is generally sold at once to a brewer as soon as threshed out in September or October. About 50 acres were sown here with Barley, and the first sown may be ripe for harvesting with the middle of July.

Having passed through the different crops of the rotation in perhaps a little too detailed manner, few words remain for me to say on the cultivation of Hops, &c.

Hops will be grown rather extensively here, as B. v. F. thinks to have by and by a plantation of 20 to 25 acres. Till now only about 12 acres are laid on, some 4 to 5 acres having been trenched and planted with sets only this spring. Trenching of Hop grounds to a depth of 2½ to 3 feet has been done formerly by task work at a cost of from 10*l.* to 20*l.* per acre, according to the quality of the soil, but of late we have come to a cheaper method by using a strong plough, which makes three succeeding double furrows, the earth of the first cut being removed with spades, previous to the second turn of the plough, and so forth. By this way, with the aid of two horses, and some 12 to 15 labourers, we are able to trench plough (good deep land of course) to a depth of 3 feet at an outlay of not more than 5*l.* to 6*l.* per acre.

As soon as the land is in a ready state for planting, the sets are laid out (two for each hole) and planted, 6 feet apart in the square, so that about 1200 Hop plant hills are required for 1 acre. Until of late we have been using for each hill one pole, having a length of 25 to 30 feet, and costing about 2*l.* 10*s.* per hundred, so that the whole expenses of poles for 1 acre amounted to fully 30*l.* This outlay being being rather too expensive, we have adopted a new system, by which for the poles thin wire ropes are substituted, which are arranged vertically over a high frame of oaken posts, and over a set of stronger wire ropes (of about 1 line in thickness), which at the same distance as the Hop hills run horizontally over the two ends of the wooden frame, where they are fixed and tied as tightly as possible. The thinner vertical wire ropes are at first attached to the thicker horizontal ropes, and as soon as the latter have been drawn out as tight as possible the former are tied likewise, and fixed to little posts of 3 to 4 feet in height, which on their top have an incision, and stand out of the ground about 2 feet high, close to each Hop-plant hill. About 5 to 6 acres have been arranged lately in this way; the Hop plants sling themselves beautifully around the wire ropes, and the costs have been reduced to nearly the half in comparison to the former outlay for wooden poles. A still cheaper and simpler system of raising Hops, instead of using poles or wooden frames, has been tried here with success, and will be adopted for the future. As it may be perhaps of some interest for your Hop growers, I shall give you likewise a short description of this new plan. Large poles, such as we use for our telegraph posts, costing here about 1*s.* 4*d.* to 1*s.* 6*d.* apiece, are procured, and each is put upright in the middle of about 16 to 20 Hop plant hills. Previous to the erection of the poles and their fastening in the earth, as many wire ropes as will be required for the surrounding Hop hills are tied round the top of the long pole, and as soon as this is done the wire ropes are drawn tightly and fixed (obliquely) to little posts near each Hop plant hill. The whole looks like a set of masts with their tackle, and though the plants get thus an oblique direction, they grow beautifully and do first-rate. The expenses of this new and ingenious arrangement for poles and wire ropes amount only to about 7*l.* to 8*l.* per acre, and the labour for harvesting and even plucking the Hops at home in the dry, is cheaper and simpler than on any other way. Almost all the Hop grounds have been hand-hoed this spring, and during the latter weeks the ranks, three of which are allowed for each hill, have been cleared from leaves and bines to a height of about 2 to 3 feet above the ground.

All the Hop plants, especially the older ones, look here very well, and if the present wet weather (third week of June) should not continue, a fair crop may be expected. A good average crop of Hops is here about 5 cwt. per acre; but this of course varies very much according to the season, situation, and cultivation of the Hop plant. Last year as many as 10 to 12 cwt. were made per acre in some parts of this district, and the prices were ranging between 6*l.* and 7*l.* per cwt. This year the prices will probably be higher, and 7*l.* per cwt. have already been offered for the coming crop.

The meadows of the farm, about 60 acres, are now ready for mowing, which is done twice, in June and September. In some parts of the country the hay crop has already been secured, but here the mowing was put off for a week or two, as the Cole-seed crop, which was earlier this season for three weeks, wants to be secured before all.

The crop of some orchards and of several avenues with fruit trees, which run through the farm, will be a very rich one this year; and, besides the cider which they furnish for the labourers, some 100*l.* will be got for Pears and Apples, &c., which are sold on the trees by public sale.

The crops in general look all very well as yet, and are fully four weeks in advance in comparison to other years, as the months of February, March, April, and May, were uncommonly warm, and almost without any heavy rains.

The month of June seems to be rather perfidious, for since nearly a fortnight we have nothing but heavy rains (June 23). In a country where the climate (especially in winter) is subject to so many changes, the gross and net produce of a farm vary of course very much, and as I have no exact details on this matter, I confine myself to stating that the net produce of this farm, including the rent, balances between 1000*l.* and 2000*l.* a year. *J. R., I —— Farm.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

AT the meeting of this Society, held on Wednesday last at the Society's Rooms, Hanover Square, the Earl of POWIS presided.

SPLENIC APOPLEXY.—Professor SIMONDS addressed the meeting on the subject of the nature and causes of splenic apoplexy, to which the attention of the Society had been drawn by the outbreak of the disease in Somersetshire.

The attention of the Council had been called to the matter six months ago by Sir W. Miles, and as the Veterinary Inspector of the Society he (Professor Simonds) had received instructions to inquire into the facts, and on his return from the district he prepared a report. Having ascertained sufficient to show that great ignorance existed as to the causes of the malady; and having every reason to believe that it had originated on two particular farms, and that the water in the district was of a peculiar character, he had recommended that a further investigation should be made by Dr. Voelcker, the chemist, and Professor Buckman, the botanical professor in the Royal Agricultural College at Cirencester, both of whom had prepared reports on the subject. The disease designated splenic apoplexy was so called because it was found upon making a post-mortem examination of an animal that the spleen was enormously engorged, and contained a large quantity of blood—that it had undergone considerable enlargement—and that there was some reason to believe that the sudden enlargement of the spleen was the cause of fatality of the affection. But on looking a little deeply into the matter he was rather inclined to regard the sudden engorgement of the blood merely as the effect and not as the cause, and that it was a misnomer altogether to call the disease splenic apoplexy; that it was in reality an affection in which some of the constituents undergo certain changes, these changes in consequence of the disturbed state of the organism thereby produced, rendered the spleen of such an enlarged size. The blood was brought to a standstill in that organ, and hence the large increase in size. If that were the case, the only use of retaining the term "splenic apoplexy" would be for the purpose of distinguishing one blood disease from another. In all parts of the country we were losing a large quantity of cattle and sheep and even pigs from affections which clearly belonged to the blood, in which some of the constituents of the blood were increased in quantity, others diminished, and in particular instances they had undergone chemical changes. There was a disease called "black leg" which prevailed in Yorkshire. It was the pest of many a field there, and the rearer of Short-horned cattle in particular often lost a number of his young animals from that disease. Then there was an affection called "red water," a disease to which cows in some parts of the country were more prone than oxen. That was a disease in which the blood undergoes a peculiar change; in which the colouring matter of the blood leaves the red cells and is evacuated through the medium of the kidneys. There were other cases in which the blood was brought to a sudden standstill, sometimes in one part of the body, sometimes in another. Cases of this kind occurred last year in Wales, and they were truly designated stagnation of the blood. All these instances showed that there were several affections, all of them of a potent character, which primarily manifested themselves in certain changes of the blood, and he believed that "splenic

apoplexy," as it was termed, was one of those affections with regard to blood diseases. The causes which gave rise to them were various. For example, the blood was likely to become contaminated by the inhalation of any noxious material, and there were numerous instances of life having been cut short through the inhalation of noxious vapours. Many persons had supposed that in this disease, which was designated "splenic apoplexy," the changes originally wrought on the blood were due to the inhalation of ordinary malaria. This opinion received some degree of countenance and support from the circumstance that the malady generally showed itself during the summer months in those districts where there was a large quantity of low lying land which was saturated with moisture, and where there was a want of under-drainage, and where consequently from the operation of the sun's rays upon the decayed vegetable matter deleterious gas was given off. But opposed to this view was the case of animals that were taken on certain pastures of a farm, which pastures were like the other pastures, and merely separated from them by ordinary ditches; and it was only on one or two pastures on two farms, consisting of about — acres, that the disease had shown itself, and he could not find that there was any cause in operation to show that malaria had anything to do with the matter. Then, taking a more extended view, and looking at the attacks of the disease in other districts, he found it occurring in winter amongst animals prepared for the butcher, and which had been fed largely on Mangel Wurzel, oilcake, &c., and kept in circumstances favourable to the continuance of health. Another source of mischief to the blood would be that arising from the direct introduction of materials in the shape of food or water detrimental to the making of pure blood. Many diseases of this kind might be traced directly to the food; but on examining the case to which he was referring he could not find anything to justify him in saying that poisonous matter had entered into the organism of the animal; that it had excited a fermentive action on the blood, and consequently led to the fatality of the animal. Professor Buckman having examined the herbage and Grasses in these particular fields had failed to detect any direct poison which had been carried into the organism of the animal. Water entered largely into the composition of the blood. There were no less than 784 parts of water in 1000 parts of blood. Water held in solution a variety of materials and gases, and much detriment might be caused to the blood by this fluid producing certain changes in its character and composition which might be fatal to the life of the animal. In the particular case to which he was referring he found the water in the district strongly impregnated with sulphuretted hydrogen; but he had no reason to suppose, except in the case of one particular field, that the animal could get any water so impregnated, because the disease showed itself in the vale of the river Yeo, where the water was apparently of the purest kind. Nevertheless throughout that district, upon farms where the disease had existed as well as where it had not, he found a lias formation; so that water was strongly impregnated with sulphuretted hydrogen. He would pass from this particular case to another, and show that water, or rather the want of water, might induce this disease. He was consulted two years ago respecting an extensive fatality amongst cattle in Norfolk arising from "splenic apoplexy." It was in the winter months. The animals were being fed on oil cake, roots, hay, &c; and on investigating the matter he was led to the conclusion that the water might be implicated in the production of the malady. On communicating that opinion to the gentlemen to whom the cattle belonged, he received the quaint reply, "You never could have made a greater mistake, for it is my custom never to allow the animals any water at all while they are in the sheds." Now he had no hesitation in expressing his belief that in that particular case it was the want of water that induced the disease. Of course it was opposed to nature altogether. Looking at the large quantity of water existing in the blood, and considering how it would be altered in its fluidity for want of water, it was clear that changes might be wrought in the blood from causes which were the very opposite of each other. An interesting question arose as to how far the spleen was concerned in the production of a morbid state of the blood, and whether we were justified in still looking upon the affection as a disease essentially consisting in the functions of the spleen. The function of the spleen was at present ill understood, and it might be looked upon almost as an enigma in science as to what part that organ plays in the animal system. Some eminent physiologist maintained that it was an organ which had to do with the disintegration of the red corpuscles which became broken up, whilst others contended that in the spleen was to be found a preparer of the red cells of the blood. This showed that the true physiology of the spleen was not understood, but he rather inclined to the opinion that it was an organ which excited a disintegrating process upon the red cells of the blood. It not unfrequently happened that if an animal bore up against the disease longer than ordinary — the duration of the malady not being more than 18 hours — if the animal bore up for 24 hours, a change was wrought in the condition of the blood, and if that blood was given to other animals it produced an effect almost equal to that of prussic acid. He had known it thrown into a yard and eaten by pigs, which died in the course of a few hours. Dogs had been affected in a similar manner. This showed that the malady was a disease of the blood. The duration of the malady was exceedingly short. The animal attacked by it seldom survived more than 24 hours. In the major part of the cases the animal died in 6 or 8 hours. Death might take place in 2 hours after the commencement of the attack, or after the manifestation of ill-health; or its existence might be prolonged for 24 hours, and in that case there was a chance of its recovery. But the disease was generally a fatal one, the per centage being about 95 out of every 100. With regard to the premonitory symptoms he might state that on their first appearance they were not of an alarming character. The animal would simply refuse its food. Its back became arched, it showed a difficulty of progression, a staggering gait, a twitching of the muscles, succeeded by paralysis. It had a dull dispirited look and hung down its head. There was a frothy saliva from the mouth, the breathing became hard and difficult, its pulse was augmented, became tremulous and indistinct. Colic pains came on, there was an infusion into the intestinal canals, griping pains, diarrhœa, blood-coloured evacuations, the urine became discoloured with blood, and the animal fell dead in convulsions. The immediate cause of death was cerebral disturbance. In some cases the animal died frantic, whilst in others it would die in a state of coma. With regard to the treatment of the disease, no practical mode had yet been devised. All blood affections were so exceedingly fatal, and ran their progress so quickly, that nothing could arrest it. Diseases of that kind might sometimes be prevented, and in this matter prevention was the great thing to be looked to. The Professor then read the report which he had drawn up, showing the local characteristics of the district, and detailing the particular circumstances under which the animals had been attacked.

Professor Buckman then stated the result of his examination of the botanical produce of the farm, from which it appeared that the pastures particularly affected were situated in the neighbourhood of a lias district; that the land, which is of a clay character, is of a very poor description; that it has never been broken up within the memory of man; that the natural Grasses grown upon it exhibit all the characteristics of poverty, owing principally to the want of drainage.

Dr Voelcker stated that he had analysed 4 different kinds of water, one of which was sufficiently impregnated with both mineral and organic matter to produce any kind of disease. That water contained 235 grains of solid matter to 1 gallon, composed of various medicinal salts, that must necessarily affect the whole constitution of animals. He did not feel surprised in the least that animals supplied with such water should become subject to serious disease. The water was taken from a pump, and was apparently clear looking water, but it was nevertheless foul. It contained of nitric acid 1 grain to 1 imperial gallon, and 19 grains of organic matter, a large portion of sulphate of soda, sulphate of lime, sulphate of magnesia, and some sulphate of potash. These salts in combination sometimes produced greater medicinal effects than they produced separately. Such medicinal waters were frequently found in Somersetshire. A single tumbler of some of these waters taken in the morning was sufficient to produce a decided medical effect. There was no question that in the lias district there were waters tending to produce disease—whether splenic apoplexy, scouring, or other disease, he was unable to say; but that such water could not be drunk with impunity was perfectly clear. With respect to the water in the yard of the farm it was impregnated with the drainings from the farm and was undesirable for cattle, for organic matters were more or less injurious both to man and beast. The ditch water, and water apparently foul, had been proved to be the purest description of water. The well water from Tintin Hall was a hard water, which he would not recommend to be used permanently. When he received a sample it had no fœtid smell, but when it was corked up it soon developed sulphuretted hydrogen in considerable quantities, arising not so much from organic matter as the reduction of the sulphate of lime and other sulphates. The disease seemed to prevail in the lias districts of Somersetshire.

Professor Buckman.—Not so much on the lias clays as on the land adjoining them.

Dr. Voelcker.—On the tart land prevailing on the lias clay the herbage frequently remained unripe, and in that condition it produced disorders. It would be worth while to examine the herbage on the meadows where the splenic apoplexy occurs, for the purpose of ascertaining whether the unripe condition of the Grasses had anything to do with the disorder. With regard to herbage, there was a remarkable difference between sound pastures and scouring lands. Peats always produced sound herbage; clays which were well drained, and which required to be exposed to the air and well cultivated, and for which the only remedy was the steam-plough, were naturally rich. They were not poor in a sense of deficiency of food; there was plenty of mineral and plant food in the soil, but it was all locked up—so much so that the herbage did not get ripe. There was a great chemical difference between the composition of the perfectly ripe produce of peat, and the unripe pastures from the scouring clays. It would be interesting to ascertain whether a similar difference existed in the pasture of the soils where the splenic apoplexy occurred. It certainly was the fact that on the lias clays the produce did not get ripe, and when consumed produced all manner of disease. It was a curious thing that manuring had an effect the reverse of that which might have been expected. On the scouring land of Central Somersetshire manuring made the evil worse. In a wet summer when the disease might be most expected to appear, it did not appear. In a dry summer, when there was a rapid growth of vegetation, it was most dangerous to put cattle on the land, and it was in a dry summer that the meadows scoured the most.

Colonel Challoner.—It was a question amongst farmers whether the water that cattle drank from a pond into which the drainage of the yard ran, was or was not detrimental to cattle.

Dr. Voelcker.—Many samples of water which looked like the very essence of manure, contained comparatively speaking very little deleterious matter, frequently much less than a brighter water. It was a remarkable fact that some of the clearest and apparently most wholesome water was the most deleterious that could be taken on account of its being impregnated with deleterious substances.

Professor Simonds agreed with Dr Voelcker that the colour of the water was no test of its being deleterious. A great quantity of colouring matter in the farm yard finds its way into the ordinary ponds, and it was an astonishing fact that the cattle drank it with impunity; and although he would not say it was for their benefit, they certainly sought it in preference to harder, clearer, and brighter water.

Lord Walsingham moved a vote of thanks to Professor Simonds, Professor Buckman, and Dr. Voelcker, for their able and instructive lectures.

Col. Challoner seconded the motion, which was carried by acclamation.

The Chairman remarked that when the information given by these gentlemen was published, it could scarcely fail to direct the attention of the owners and occupiers of land in districts resembling those to which reference had been made, as to whether it would not be worth while to adopt the hint which had been thrown out, that they should break up their land not permanently but for a course of tillage, so that whether they continued it arable or converted it into pasture, the present bad grasses should be superseded by a more improved class of grass.

Reviews.

The Journal of Agriculture and the Transactions of the Highland and Agricultural Society of Scotland, July, 1862. W. Blackwood & Sons.

The Number opens with a paper on the finger-and-toe disease in Turnips, by Mr. Barclay, farmer, of Auchlossan, Aberdeenshire. He objects to the theory which accounts for it as the result of insect attacks, and his theory is, that the finger-and-toe disease in Turnips is primarily caused by an inadequate supply of mineral constituents in the soil, as compared with the combustible constituents (more particularly ammonia) supplied by the soil and the atmosphere. From this proposition he deduces—1st, That a soil may contain a supply of minerals sufficient to produce a healthy and even large crop, but that "finger-and-toe" may result from the rapid growth caused by an over-supply of ammonia; and 2d, That to insure a healthy crop, very little ammonia (if any) should be applied. The phenomena of the disease as stated by Mr. Barclay are the following, and they are all consistent with the theory for which he contends, and which has indeed been latterly generally held. "1st, That White-globe Turnips are more liable to the disease than any other variety. As this variety of Turnip grows faster than any other, and as we have seen that a quick growth is the chief predisposing cause of the disease, it follows that, if the theory is correct, White-globes should be the most liable. 2d, Light gravelly soils are more subject to the disease than any other, because they are poorest in minerals; whilst in heavy clays the supply is almost inexhaustible, although weathering, or lime, is necessary to make the minerals available. 3d, From what has been said regarding atmospheric influences, it will be seen that treading of land, by cartage or otherwise, especially when wet, will induce the disease, and that puddled endrigs will be the part of the field most liable to its attacks. 4th, It is also evident that the frequent repetition of Turnip crops will not produce disease, if the soil remain sufficiently rich in mineral constituents, and that, from their deficiency, the first crop of Turnips on poor soil may be attacked. 5th, If a field once show traces of the disease, it naturally follows, from the theory, that, until the minerals deficient are supplied, future crops will continue to be diseased. 6th. The disease prevails more extensively on farms worked on the fifth than on the sixth shift, whether there be in the sixth shift three corn crops or only two. In the case where there are only two grain crops in the rotation, I account for the absence of disease by the longer period (three years in Grass, instead of two) during which the soil has to prepare mineral food by disintegration; but in the case where there are two successive grain crops, the reason appears to be, that the cereals have exhausted the ammonia in the soil, these plants having little power of extracting it from the atmosphere. The soil, after two grain crops, is much poorer in ammonia than after one, and there is thus a less chance of that rapid growth which is the chief indirect cause of the disease;—the combustible and mineral constituents are nearer the relative proportion for producing a healthy growth, although perhaps no great crop. 7th, Lime applied to clay soils one or two years before the Turnip crop, has been found to prevent the disease. The effect of an application of lime is similar to that of weathering. The lime renders the minerals in the soil available for plants, and by its means, a farmer may take from his land, in three or four years, as large a quantity of mineral constituents as, without it, he could do in twice the time. This would be all very well if the supply of minerals in the soil were almost inexhaustible, as they are in some clays; but the more important minerals are naturally so very deficient in our light Aberdeenshire soils, that lime will have little effect after the first application is exhausted—it cannot make available what is not there in any form. As lime requires some time to produce a material effect on the soil, it should evidently be applied a year or two before the Turnip crop. 8th, A very intelligent farmer lately informed me that he had frequently observed that well rotted farmyard manure is, as compared with unrotted, more apt to produce finger-and-toe disease. This is evidently due to the larger amount of ammonia in well rotted dung, and the rapid growth of the young plant caused by it; whilst fresh manure does not begin to take effect till the plant has passed the most critical period of its existence.

Mr. Barclay's paper is followed by one on Thick and Thin Sowing, by "An Old Norfolk Farmer," in which Sir H. Platt (1600), Jethro Tull, a century later, Miller (1723), C. Varlo (1775), Rev. S. Smith and Lois Weedon, and lastly Mr. Hallett, of Brighton, are quoted. The Wages of Agricultural Labourers, M. Trehonnais' Revue Agricole de l'Angleterre, Cattle Feeding and Cattle Breeding, Liquid Manure, Novelties at the Exhibition, Experiments with Coprolites, and a summary of the Proceedings of Agricultural Societies during the past quarter, make up the contents of the Journal of Agriculture, which is above the average merit of the Journal in interest and utility.

The Transactions of the Highland Society include an elaborate reference to the frost of 1860-61, and its effects on shrubs and trees, observed by Mr. R. Hutchinson, of Kirkliston; an exceedingly interesting paper by Mr. Wilson of Edington Mains on the long-woolled sheep of Tweedside, answering the question—are they pure Leicesters, or the result of crossing the Cheviot with the Leicester? and proving that they are descended directly from Bakewell's flock, the difference which they present to the Leicester of Mr. Sanday's stamp being the result of the circumstances of the locality. Dr. Anderson contributes a paper on remarkable cargoes of imported Peruvian guano, in which he shows by a number of recent analyses that Peruvian guano is far from being the manure of uniform composition which it has hitherto been supposed to be. Eight or ten analyses are given of different cargoes; the sand varies from 4½ up to no less than 18 per cent., and the large lumps contained in some of the guanoes contained in two instances no less than 21 and 27 per cent of sand. The ammonia, in like manner, varied from 11 to 17 per cent. To Dr. Anderson's remarks on this important subject we must call attention hereafter.

Calendar of Operations.

JUNE

Northumberland Farm: Seldom has it been our duty to chronicle the month of June as so "unseasonable" as we have found it during the present year; the wet and cold weather with an absence of sun—an essential element of this season of the year—having prevailed to such an extent as to alter the prospects of the farmer to no inconsiderable degree. Wheat, which at the beginning of the month looked forward and satisfactory, has come into ear in a tardy and irregular manner, but should we be favoured with a bright sun during the next and following months, a fair crop may be expected. Spring Wheat must be late, though we need not anticipate a lack of straw. Barley and Oats give an average appearance, though the latter on bare land seem to be suffering from an excess of moisture. We are in the midst of haymaking, and very tiresome the process is, the weather alternating from wind

to rain with a very rare glimmer of sunshine. We are cutting everything with a Burgess & Key's Mower—which for efficiency cannot be surpassed—at the rate of 10 and 12 acres per day. Red Clover has disappeared considerably from the new land hay, owing to the cold and wet spring, but our meadows are unusually heavy. Swedes sown in May came away quickly and presented a good braird, but since then their progress has been very slow, —they are now (31st) being hoed. During the present month, when the weather permitted, Yellows and Whites have been put in, and furtunately during the wet intervals we were able to prepare a black-topped field when it was impossible to proceed with the clays, so that we have sown to a greater extent than we could have anticipated. The Turnips are all sown on the ridge with 25 cart loads of dung and 2 cwt. guano per acre. On the strong lands we keep the horse hoe at work whenever possible, so as to break the "brat," and facilitate the growth of the young plant. We are now preparing a small breadth for Rape. *Cattle.*—Our pastures were never known to be so full of Grass at this season, and of course the most forward of our heifers are finding their way to the butcher at about 7*s.* 9*d.* to 8*s.* per stone. The poor prospect for a Turnip crop is showing its influence on the price of lean stock, which during the past month have met a very dull sale. *Sheep.*—Shearing commenced in the first week of the month, and fair average weights were produced from the hoggets, though among the ewes there were a greater proportion of "cotted" fleeces than usual; the wool has since been sold at 1*s.* 7½*d.* per lb., the proportion being two-thirds of hoggets to one-third of ewes. During the past week the lambs have been weaned and ewes milked; the former are now on second year's Grass and the latter on old pastures. Hoggets and fat lambs are being regularly sold as they become fit for the butcher, the former bringing about 7*d.* per lb. Lean lambs for hoggets are about 2*s.* a head below last year's price, which is undoubtedly due to the lack of Turnips, many of which even in good districts have been sown in wretched condition as regards cleanliness and disintegration of the soil. Pigs and horses are both receiving Clover; the latter are also lying out in old pasture, and only working half days so as to recruit after the exertion of Turnip sowing. The labourers are engaged in Turnip hoeing, haymaking, and such like, at which work we may expect them to be occupied for some time to come. *J. W., June* 31.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, July 10, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ...	4	29.91	61	55	S.W.	2	8	64	46	90	42	0.10	59	58
Saturday ...	5	29.67	65	59	S.E.	2	6	69	51	93	49	0.04	60	58
Sunday ...	6	29.46	61	57	S.W.	3	4	70	54	86	52	0.90	60	58
Monday ...	7	29.66	59	55	S.W.	3	6	71	54	85	48	0.02	61	58
Tuesday ...	8	30.02	63	57	W.	2	8	70	50	88	46	0.18	60½	58
Wednesday.	9	30.04	60	57	S.W.	3	6	75	54	89	52	0.01	62	59
Thursday ..	10	29.79	59	56	S.W.	2	6	66	54	72	50	0.05	61	59

Notices to Correspondents.

ADDRESS: *W S., Guildford.* Will you be good enough to give the Editor your name and address, which he has mislaid.

DRAINAGE LEVEL: *R Thompson.*—Mr. Bailey Denton's A level is a "good and simple drainer's level", (52, Parliament Street, Westminster.)

SCAB IN SHEEP: *W D F.* says that our Correspondent, page 608, will find Bigg's Composition for dipping and dressing Sheep, a much simpler and more efficacious cure for scab than the one we mentioned.

LIME: *R Thompson.*—Waste lime from the tanyard is "worth trying." Whether it is worth the price offered, depends on the value of lime at the kiln. If 5*s.* a cart-load is an old established price, you may safely give it. Use it just as you would lime. Make with it a compost with vegetable mould, and apply it to Clover stubble before ploughing up for Wheat.

MANGEL: *E F.'s* maggot between the skins of Mangel leaves, is an Anthrax, which for the last dozen years or thereabouts has made havoc with Mangel in the north of England—hand picking and high cultivation are the only remedies. *W. D. F.*

MANURE FOR PASTURE: *A Londoner.* In the absence of farm yard or town dung, probably bone dust applied now will be most beneficial to the Grass. If you get some well broken and mix it with some damp mould to heat and rot before applying, it will be more immediately active: 16 bushels an acre are a good dressing.—The Thorn and hedges of it are to be grown just as any other plant is cultivated, by planting in land properly prepared, and taking care that no other plant is growing with it. Clean the hedge, stir the earth about the roots, and cover them up with good compost mould.

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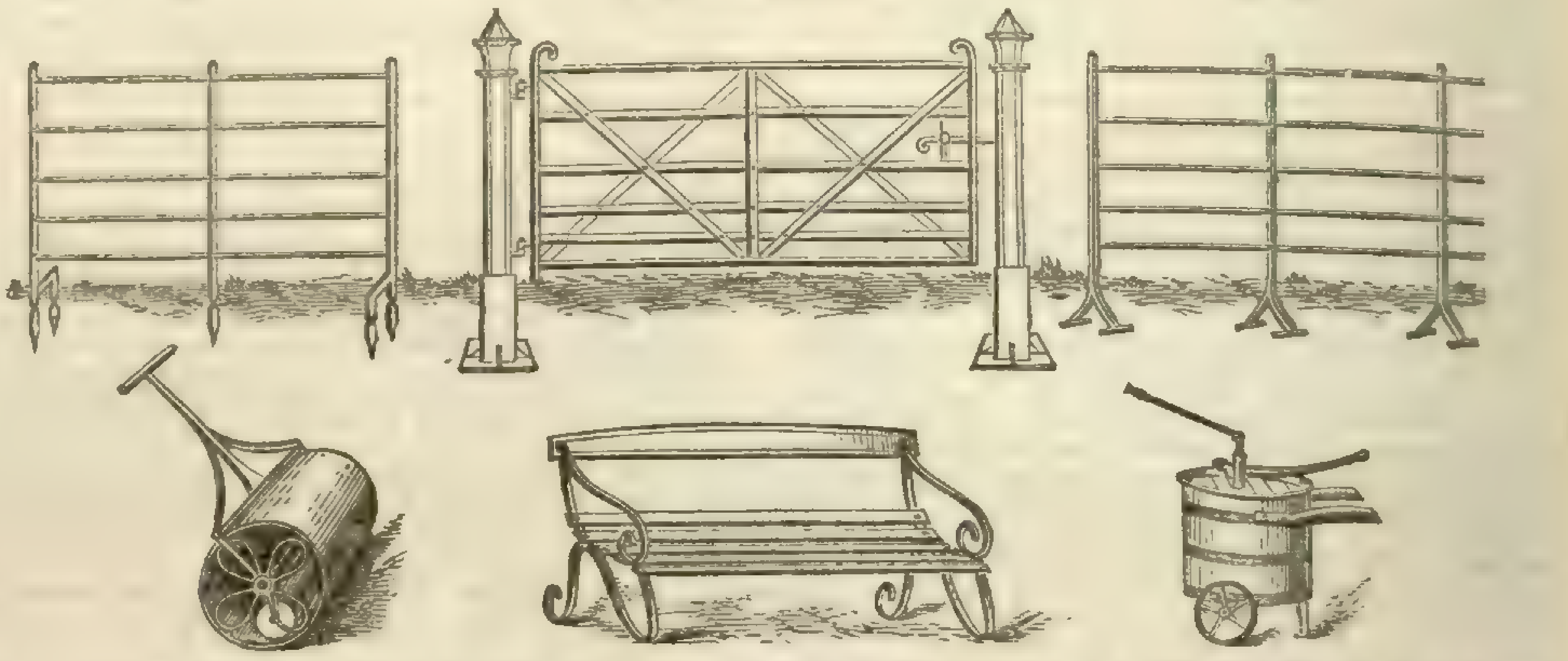

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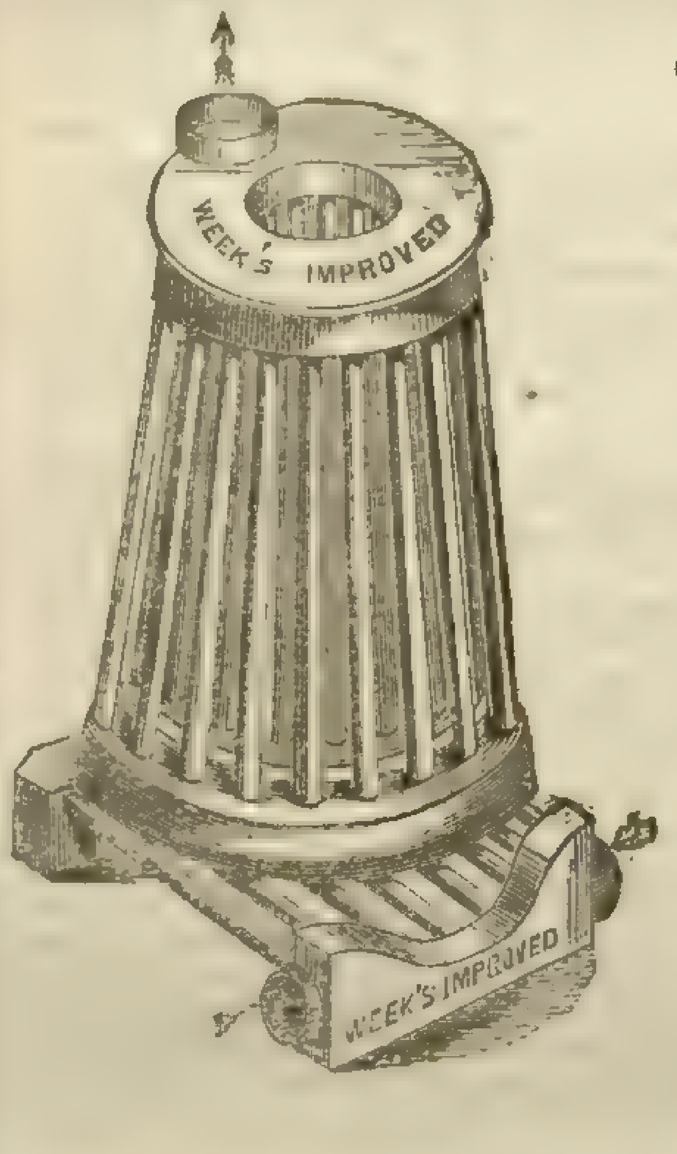

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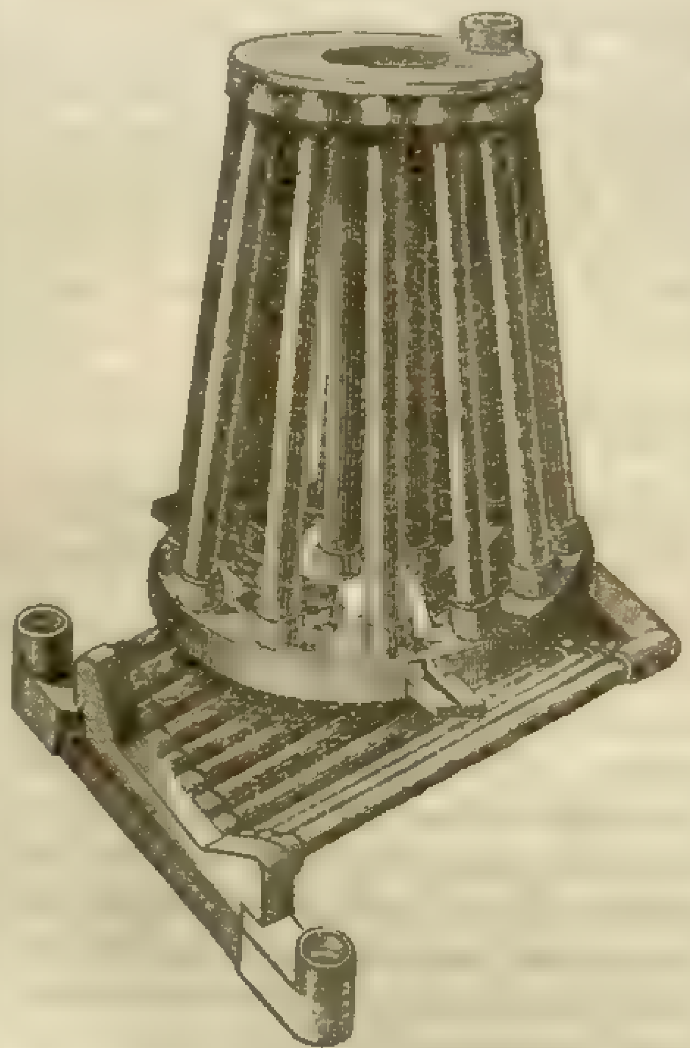

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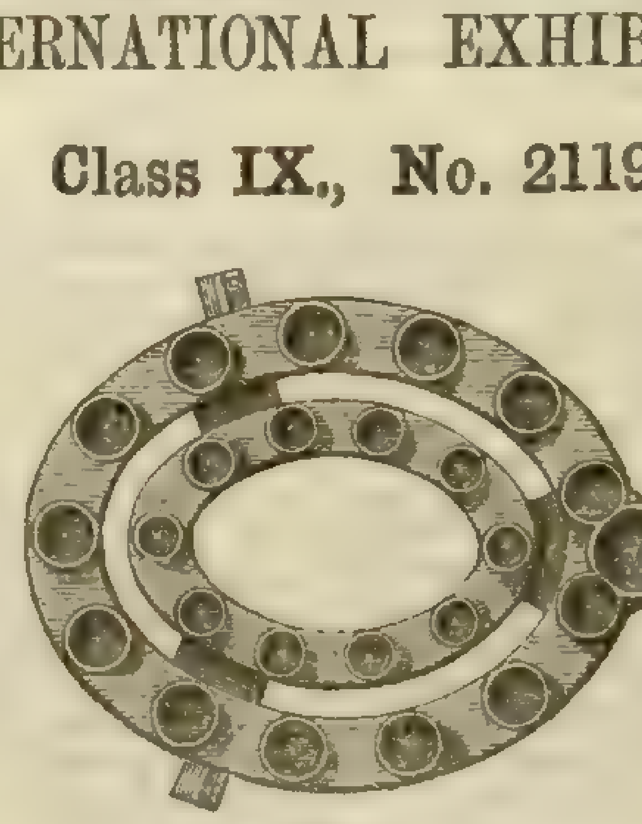

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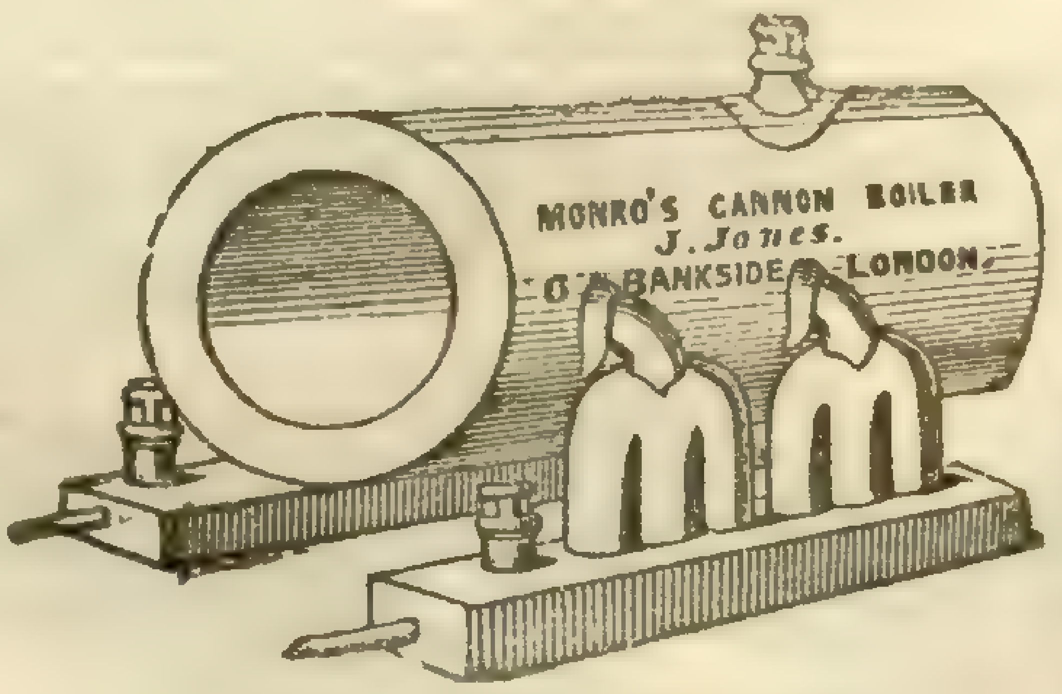

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50 6-feet by 4-feet lights, 15s. each, the lot	37	0

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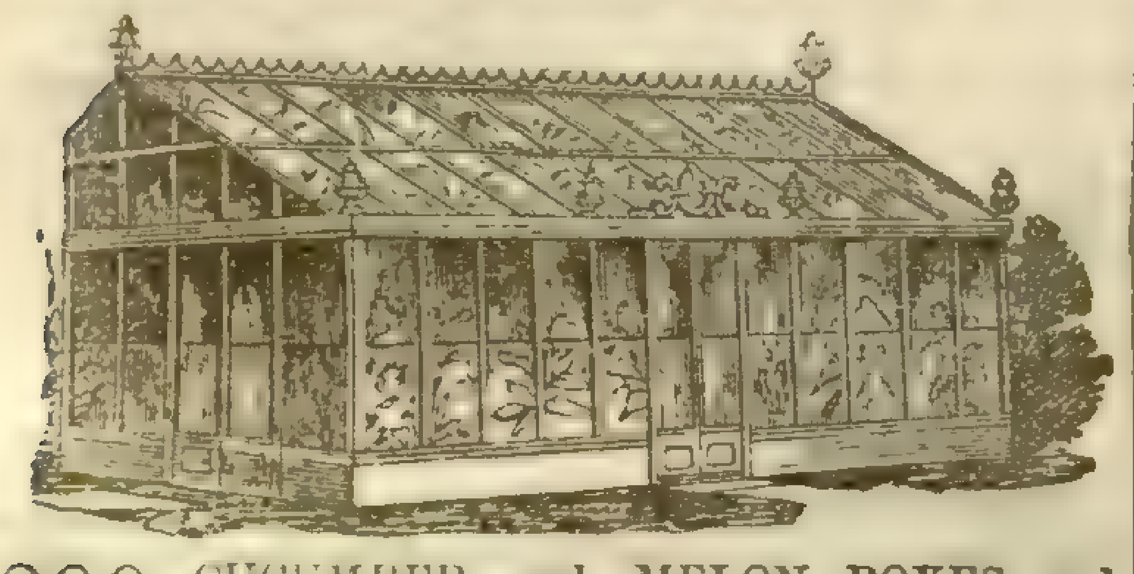


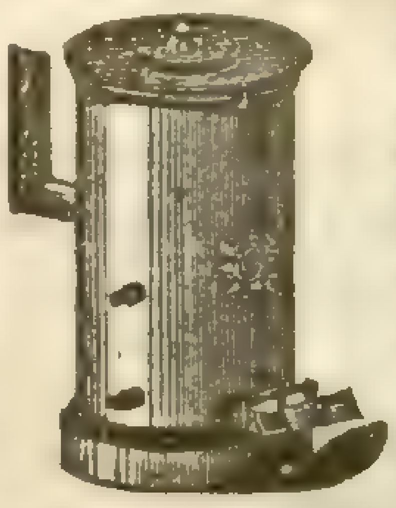
200 CUCUMBER and MELON BOXES and LIGHTS, and from 400 to 500 LIGHTS for PITS of all SIZES kept in STOCK.
Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.
10 dozen strong Zinc HAND GLASSES, Glazed and Painted complete, ready for immediate use, 18, 20, and 22, all shifting tops.
References to the Nobility, Gentry, and Trade in most of the counties in England.

T. G. MESSENGER, Horticultural Builder and Engineer, Loughborough.

T. G. M.'s PATENTED BUILDINGS combine all the modern improvements, are well made of best seasoned red Deal, most effectually ventilated by means of his unequalled Apparatus, can be made either plain (and which are at the same time elegant in appearance), or of the most elaborate design. They can be fixed as permanent buildings, or made to be portable.
T. G. M.'s HEATING APPARATUS continues to give the greatest satisfaction for its heating qualities and small consumption of fuel.
ILLUSTRATED CATALOGUES of the above, Glazing without Putty, Garden Engines, &c., sent upon application.

NOTICE.—The exorbitant price hitherto charged for Horticultural Buildings induces Messrs. Henry Smith & Co. to inform the Nobility and Gentry that upon application they can receive DRAWINGS and ESTIMATES Free for all kinds of HORTICULTURAL BUILDINGS and for HEATING by HOT WATER. Gentlemen wishing to construct their own can be supplied at a low cost.
Working Drawings and Specifications.
Henry Smith & Co., Horticultural Builders and Hot-Water Apparatus Manufacturers, 31, Margaretta Terrace, Oakley Street, Chelsea, S.W.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the
Patentee's Warehouse, 155, Cheapside, London, E.C.
Price complete from 3l. 10s.
Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

Hothouses for the Million.
International Exhibition, Class 9, Open Court, Eastern Annexe.

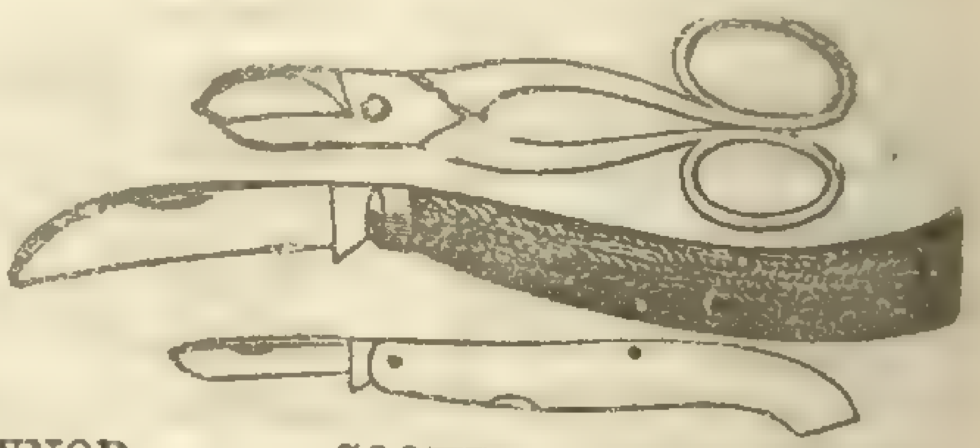
HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.
Illustrated Circulars with Lists of Prices, can be had on prepaid application to S. Hereman, 7, Pall Mall East, London.

JOHN KENSHOLE, Jun., Builder and Contractor, Heavitree, near Exeter, begs to inform the nobility, clergy, and gentry, that he is prepared to execute GREENHOUSES, CONSERVATORIES, VINERIES, &c., with dispatch, and on the most reasonable terms, combined with good seasoned material and workmanship. Estimates and Designs given.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to
John Fowler, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

THE WOOLSTON FARM.—It is the oldest Steam-cultivated Farm in the world, and is open to the inspection of all.
Woolston is four miles from Bletchley Station on the London and North Western Railway.

Paxton Works, Sheffield, Established 1738.



SAYNOR and COOKE'S warranted PRIZE PRUNING and BUDDING KNIVES, SCISSORS, &c.
Sold by all respectable Nurserymen and Seed Merchants in the three Kingdoms.

JOSEPH HAYWOOD and Co., Manufacturers of PRUNING and BUDDING KNIVES, SPORTSMAN'S, and all kinds of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield.

FOWLER'S STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, Orwell Works, Ipswich,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

TWO HUNDRED SETS of

STEAM PLOUGHING and CULTIVATING APPARATUS

have now been sent out by

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD.

Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.
Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

DEANE & COMPANY'S

HORTICULTURAL TOOLS.

DEANE'S MOWING MACHINES, with Boyd's Patented Improvements, 5l., 7l., 7l. 10s., 8l. 10s.
GARDEN ENGINES, Galvanised Iron. Prices 55s., 65s., 78s., 90s., 100s., 110s.
GARDEN ENGINES, Wood, 90s., 110s., 138s.
FLOWER STANDS, 4s. 6d. each.
CAST-IRON ORNAMENTAL FLOWER STANDS, to hold Seven Vases, 27s.
GREEN'S PATENT MOWING MACHINES.
GREENHOUSE SYRINGES, 8s., 10s., 18s. 6d.
GARDEN ROLLERS, 1l. 14s. 6d., 2l., 2l. 12s., 3l. 3s., 3l. 18s., 4l. 13s., 5l. 12s., 7l. 10s.
GARDEN STOOLS, 4s. 6d.
GARDEN SEATS, from 25s.
BOYD'S SELF-ADJUSTING SCYTHE, 10s. 6d.
WIRE WORK, 18 in., 4d. per yard run.

Every Implement for Garden use on the lowest terms.

DEANE'S NEW ILLUSTRATED HORTICULTURAL LIST POST FREE ON APPLICATION.

DEANE'S, Opening to the MONUMENT, LONDON BRIDGE, E.C.

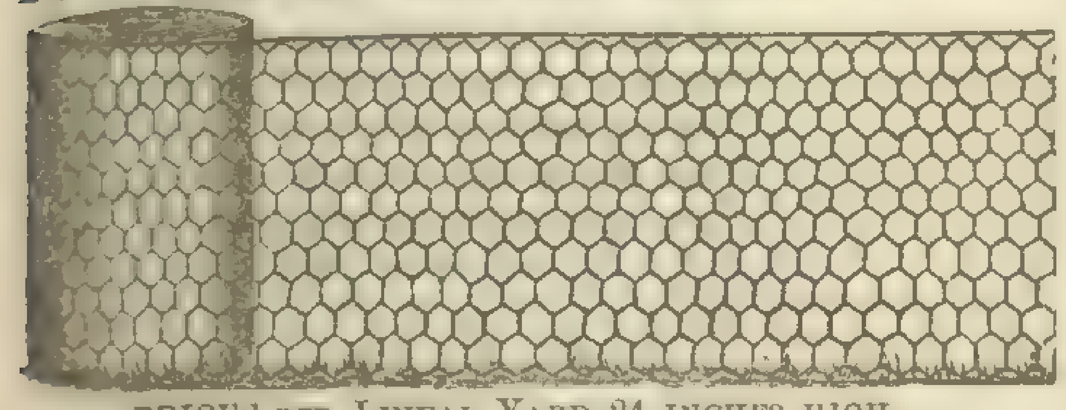
TANNED NETTING at Reduced Prices.—200 square yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Scrim Canvas for Wall Fruit, Greenhouse Shades, and Tulip Covers. Address in full, FREDERICK EDGINGTON, Marquee, Flag, and Rick Cloth Manufacturer, Thomas Street, Old Kent Road, London, S.E.

TANNED NETTING for the Protection of Fruit Trees, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Cotton Netting, Tiffany, Scrim Canvas for Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c. Be particular, JOHN EDGINGTON & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

TANNED GARDEN NETTING for preserving Seed Beds, Fruits, Strawberries, from frost, blight, birds, &c., and as a Fence for fowls, &c. 1 yard wide, 1½d.; 2 yards, 3d.; 3 yards, 4½d.; and 4 yards, 6d. per yard, in any quantity, may be had at CHAS. WRIGHT'S, 376, Strand, W.C.

GREENHOUSE and FLOWER-POT STICKS VARNISHED:—1 foot, 3d.; 1½, 4d.; 2, 5d.; 2½, 7d.; 3, 10d.; 4, 1s. 6d. per dozen. DAHLIA STICKS VARNISHED, per dozen:—3 feet, 1s. 6d.; 4, 2s. 3d.; 5, 3s.; 6, 3s. 6d. An allowance to Nurserymen.

NEW IMPROVED PREMIUM WIRE NETTING.
Great Improvement with Reduced Price.



PRICES PER LINEAL YARD 24 INCHES HIGH.

Size of Mesh.	Mostly used for	Light.		Medium		Strong.		Extra Strong.	
		Jap	Gal.	Jap	Gal.	Jap	Gal	Jap	Gal.
2¼ in.	Poultry ..	3d.	4d.	3¾d.	5d.	4½d.	6d.	5½d.	7d.
2 in.	Poultry ..	3½d.	4¼d.	4d.	5d.	5d.	6½d.	6½d.	8d.
1½ in.	Small Rabbits	4d.	4¾d.	4¾d.	6d.	5½d.	7d	7d.	9d.
1¼ in.	Smallest Rabbits	5d.	6d.	5¾d.	7d.	7d.	9d.	9d.	11d.

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

*** Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.

J. B. BROWN & Co., 18, Cannon Street, City, London, E.C.

Patronised by H.R.H. the late Prince Consort.

GREENING AND CO.'S IRON WIRE FENCES, manufactured by Patent Machinery, possess the following advantages:—

1st. Are easily fixed by unskilled labourers.
2nd. Require few and inexpensive supports.
3rd. Are ornamental in appearance.
4th. Have increased strength from their peculiar construction.
5th. Are but half the price of similar hand-made Fences.

Upwards of 40 varieties are made, the principal ones being:—

No. 1 A variety.—Cattle and Sheep Fence, 3ft. 9in. high, 1s. per yard.
No. 7 B variety.—Sheep folding Fence, 3ft. high, 9d. per yard.
No. 4 variety.—Hare and Rabbit-proof Fence.
No. 11. variety.—Poultry and Chicken-proof Fence.
No. 16. variety.—Italian pattern Garden Fence.
No. 20. variety.—An admirable substitute for the old-fashioned wire netting.

G. & Co. will be happy to forward, without charge, an explanatory Circular of the principal varieties. Their enlarged Catalogue of Fences and Gates post free on receipt of three stamps.

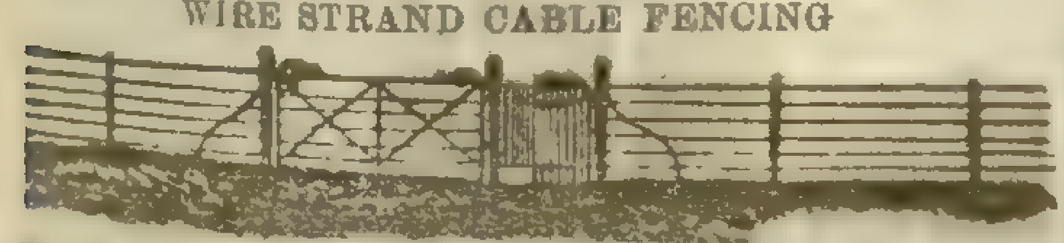
Address GREENING & COMPANY, Victoria Works, Oxford Street, Manchester.

Prices Reduced.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING
for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.

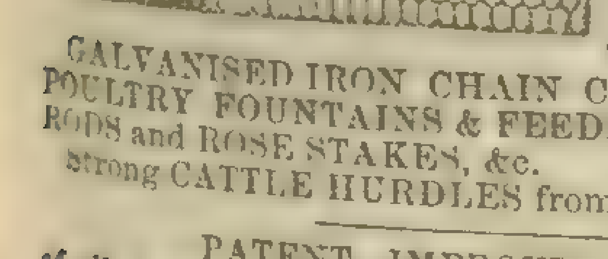
WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1s. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 4d., 4½d., and 6¾d. per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 2¾d., 3¾d., and 5½d. per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.
Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS
of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to
HENRY J. MORTON & Co., 2, Basinghall Buildings, Leeds.

R. READ, Sole Originator and Patentee of ENGINES for GARDENS, SYRINGES for GREENHOUSES, CONSERVATORIES, &c.
35, Regent Circus, London, W.
*** Drawings (with full descriptions) Post Free.

WM. BLAKE'S DESCRIPTIVE and CULTURAL SEED POCKETS, GERMAN SEED ENVELOPES, &c.
Catalogues and Samples on application.
60—70, Howard Street, Glasgow.

Lawn Mowers.

HORTICULTURAL TOOLS, the largest Stock in London; also elegant Garden Seats, Chairs, Tables, Flower Stands, Trainers, Engines, Wheelbarrows (Iron or Wood), Waterpots, Lawn Mowers (every make), Boyd's Celebrated self-adjusting Scythe, and every description of Agricultural Machinery, at

DRAY, TAYLOR, & COMPANY'S (late WM. DRAY & Co.), (the well known Agricultural and Horticultural Engineers), New Central Depot, 4, Adelaide Place, London Bridge, S.E.
Removed from Swan Lane.
Their New Horticultural List forwarded on application.

SHAW'S TIFFANY.—The lightest, cheapest, and most durable of all materials for Shading Conservatories and Hot-houses is SHAW'S TIFFANY. As a protection from cold winds and scorching heat, nothing equal to SHAW'S TIFFANY. For effectually preserving Fruits and Seeds from the Attack of Birds, Wasps and Insects, use SHAW'S TIFFANY.
Sold by all Nurserymen and Seedsmen. Samples and Prices on application.
J. SHAW & Co., Oxford Street, Manchester.

Artificial Stone Works, 371 to 375, Euston Road, N.W.

AUSTIN, SEELEY, & CO. beg to inform the Public, that they have lately enlarged their Stock of

VASES,
FIGURES,
FOUNTAINS, &
other GARDEN
ORNAMENTS.

The present Stock comprises:

133 different kinds of Vases, from 9s. to 30l.	15 Baskets, from 1 to 10 feet diameter [&c.
About 200 Fountains, from 10l. to 400l.	17 Flower Boxes for Windows,
	6 Garden Seats
52 Statues, Modern and Antique	22 Sun dial Pillars
44 Small Figures and Groups of Children	34 Baptismal Fonts, from 2l. to 15l.
70 Figures of Animals & Birds	22 Ornaments for Gate Piers

Having during the last 30 years executed for the Royal Gardens and for the grounds of the principal nobility an immense quantity of such work, they presume that it is needless to warrant its durability; but they are prepared with the most unquestionable references if desired.

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.

£2. 2s.

An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.

One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.

It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.

It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.

No Establishment, either private, commercial, or manufacturing, should be without one.

Six feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12s. Longer lengths of Suction at 1s. 6d. per foot.

May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,
JOHN WARNER & SONS, 6, Crescent, Cripplegate, London, E.C.

WHY NOT PRESERVE YOUR HAY? New and Second-hand RICK CLOTHS, with Poles, &c., complete.

BENJAMIN EDGINGTON,
Marquee, Tent, Rick Cloth, Flag, and Tarpaulin Manufacturer,
2, Duke Street, London Bridge, Southwark, S.E.
No other Establishment.

TO LAND and ESTATE AGENTS. — The Advertiser, who is thoroughly acquainted with the Business and the keeping of Accounts, wishes to enter some Old Established Country Firm as JUNIOR and WORKING PARTNER.
—H., Post Office, Ware.

To Nurserymen and Others,

TO BE LET ON LEASE, a NURSERY GARDEN of Five Acres, well stocked with all sorts of young Trees, comprising most of the New Conifers, &c., Roses, Rhododendrons, Hollies, Spruce and Scotch Firs, Laurels, and a large quantity of Seedlings of all sorts. Rent per acre, 2l. per annum. Stock to be taken at a valuation. Canal carriage adjoining, Railway Station 3 miles, and 20 miles from London. Thirty Acres unplanted may be had if required.

A Four-room HOUSE and GARDEN to be LET with it.

For further particulars apply to Mr. J. C. STEVENS, Horticultural Agent and Auctioneer, 38, King Street, Covent Garden, London, W.C.

TO BE LET OR SOLD, in the best part of the County of Middlesex, close to a first-class Railway Station, and 10 miles from London, a Capital GRASS FARM, consisting of 190 Acres of very superior Meadow and Pasture Land in a good state of cultivation, admirably adapted for the Rearing and Fatting of Prize Stock, and having an excellent Family Residence with large Garden attached, and extensive and commodious Farm Buildings.

For particulars and terms apply to Messrs. CHINNOCK & GALSWORTHY, Land Agents and Surveyors, 11, Waterloo Place, Pall Mall, London, S.W.

Southdown Rams.

FOR SALE, 25 SHEARLING RAMS, the property of the Earl of RADNOR. The Sheep can be seen at any time, and are open to the selection of any person requiring Rams of pure blood, and combining size, constitution, and quality. They are chiefly by Sheep hired of Mr. Jonas Webb.

N.B. The First Prize for Shearlings at Battersea was awarded to the Earl of Radnor, and Third Prize for Theaves.
Coleshill, Highworth, July 12.

Sales by Auction.

Cotswold Rams.—Hatherop, Gloucestershire.

MESSRS. MOORE AND HILL have been desired by Mr. John Tombs to announce that his SALE by AUCTION will take place on TUESDAY, July 15, at 4 o'clock, of about 45 COTSWOLD SHEARLING RAMS, and a few older SHEEP; on which occasion J. T. hopes to be favoured with a numerous company.

Hatherop is 2 miles from Fairford, and 9 from Cirencester, on the Great Western Railway.

Important Sale of Shorthorns. Littlecote, Hungerford.

MR. WM. HILLIER has received instructions to SELL, without reserve, on WEDNESDAY, July 16 (being the day before Hungerford Races), at 12 o'clock, the entire HERD of pure SHORT-HORN CATTLE, the property of F. L. Popham, Esq.

Catalogues may be had of the Farm Bailiff, Littlecote, and of the Auctioneer.—Devizes, July 12.

Blood Stock.

MR. WM. HILLIER has also the honour to announce that he will submit for SALE by AUCTION, on FRIDAY, July 18, on Hungerford Down, (the Second day of the Races), at 12 o'Clock precisely, a lot of BLOOD STOCK, and BROOD MARES, served by "Wild Dayrell," the property of F. L. Popham, Esq.

Cards of description may be had of the Auctioneer, and at the place of Sale.—Devizes, July 12.

Bibury Farm, near Fairford.

MESSRS. LYNE AND SON beg to state that Mr. W. SMITH'S ANNUAL AUCTION SALE of about 50 SHEARLING RAMS, the "COTSWOLD GREYS," will take place on SATURDAY, July 19, at 2 o'Clock.

Shropshire Downs.

MR. JOHN JEFFRYES, of Ormskirk, will SELL by AUCTION, at Parbold Hall, on WEDNESDAY, July 30, at half-past 2, by the direction of Mr. Francis Twining, of Parbold Hall, near Wigan, 15 Superior SHEARLING RAMS, 50 Choice Bred EWES, and 25 THEAVES. The Rams will be sold singly—the Ewes in pens of 5 each. Luncheon at 1.

Parbold Hall is near Wigan and Ormskirk, and a pleasing distance from the Newburgh and Appley Bridge Stations on the Wigan and Southport Railway.

Speke, near Liverpool.

IMPORTANT SALE OF FIRST CLASS SHORTHORNS.

MR. STRAFFORD begs to announce that he has received Instructions from Mr. Atherton to OFFER for SALE by AUCTION, without any reserve, on TUESDAY, July 15, at the Chapel House Farm, Speke, near Liverpool, his very superior HERD of SHORTHORNS consisting of about 50 Head of Bulls, Cows, and Heifers, including some rare specimens of the justly famed Kirklevington blood. Amongst them will be found the famous Cherry and Finella tribes, lately in the possession of Mr. Bolden, of Springfield Hall, some very choice Gwynnes, Lady Barringtons, Wild Eyes, and other well bred animals. The Cows and Heifers are chiefly in-calf to the Duke of Wetherby (17753)—a son of the unrivalled Duchess 77th—and the magnificent Bull Grand Duke 3rd (16182), who will be offered with his two sons Grand Dukes 5th and 7th. Many of the animals are well-known prize-takers, and the whole of them are in good health and condition. The dispersion of this fine herd offers an excellent opportunity to purchasers of first-class blood, and Mr. Strafford begs to assure them that his instructions are to sell the whole without any reserve.

Catalogues, with Pedigrees, may be had of Mr. STRAFFORD, 13, Euston Square, London, N.W.; or of Mr. ATHERTON, Chapel House, Speke, near Liverpool.

Revesby Abbey, near Boston.

EXTENSIVE AND IMPORTANT SALE OF SHORTHORNS.

MR. STRAFFORD is favoured with Instructions from J. Banks Stanhope, Esq., M.P., of Revesby Abbey, Lincolnshire, to announce for SALE by AUCTION, without reserve, on FRIDAY, August 1, being the day after the Lincolnshire Show at Lincoln, his Entire Herd of SHORT-HORNED CATTLE, consisting of about 50 head of PURE-BRED BULLS, COWS, and HEIFERS, descended from the famed herds of Sir C. Knightley, Messrs. Bolden, Tanqueray, and other eminent Breeders, to which have been used the Duke of Bolton (12738), and Seventh Duke of York (17754). Most of the young Stock are by the latter Bull, and the Cows and Heifers are chiefly served by him. Also will be Sold about 30 head of well-bred CATTLE, comprising the blood of Cramer (6907), Dennison (10110), Duke of Bolton (12738), Emperor (14505), Romulus (8506), &c.

Catalogues, with Pedigrees, may be had on application to Mr. GEO. BELL, at the Home Farm, Revesby, near Boston; or of Mr. STRAFFORD, 13, Euston Square, London, N.W.

GREEN'S

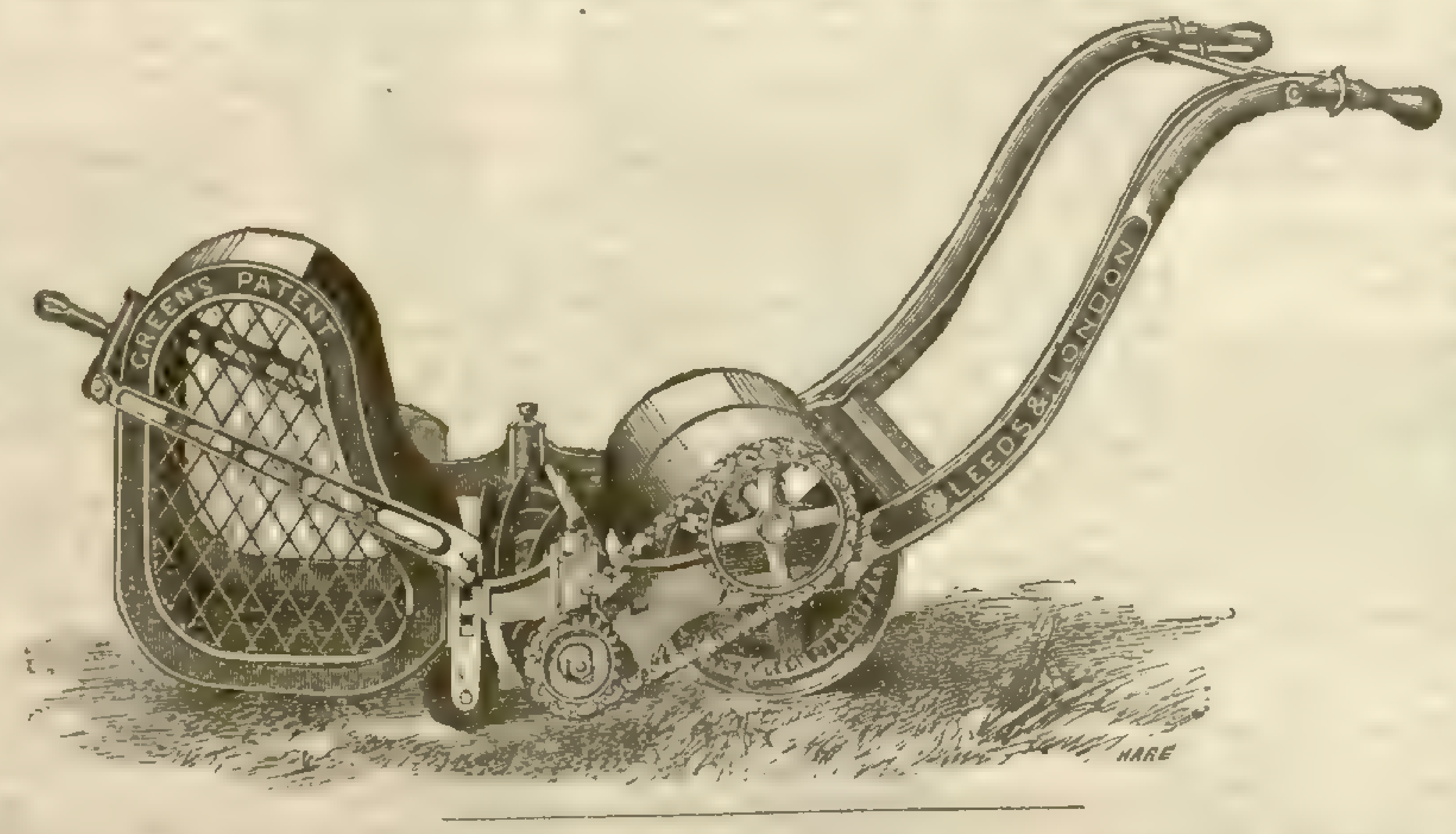
LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THOMAS GREEN can with confidence state that he has succeeded in bringing forward for the ensuing season a Machine which is so novel in its character that any person, however unskilled, is enabled to use it with confidence and ease; and from its thoroughly mechanical construction it is pronounced by practical men to be the *ne plus ultra* of perfection. Every improvement that has suggested itself from past experience has been put to practical test, and the results are that the Machines for which Her Majesty's Royal Letters Patent *have recently been obtained* are immeasurably superior to anything of the kind ever brought before the Public. They combine all that efficiency and simplicity can express, and are calculated



to keep Lawns in the highest state of perfection, which cannot be equalled by any other means. They are adapted both in size and price to the very smallest plots, as well as Lawns acres in extent. Since their introduction the sale of these Machines has more than doubled each succeeding year, and has now attained *the largest sale of any Machine "extant;"* have proved to be the best, having carried off *every Prize* that has been given in all cases of competition. They are made from the best materials, and of superior workmanship; are delivered *Carriage Free* to all the principal Railway Stations and Shipping Ports in England; *are warranted to give satisfaction*, and if not approved can be at once returned, if sent carriage free to Leeds.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0 ...	... £8 15 0
To Cut 20 inches	8 0 0 ...	... 9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0 ...	... £9 17 6
To Cut 24 inches	9 0 0 ...	... 10 7 6

To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0 ...	... £21 10 0
To Cut 36 inches	23 0 0 ...	... 24 16 0
To Cut 42 inches	26 0 0 ...	... 28 2 0
To Cut 48 inches	29 0 0 ...	... 31 8 0

Leather Boots for Horse, per set, £1 4*s.*

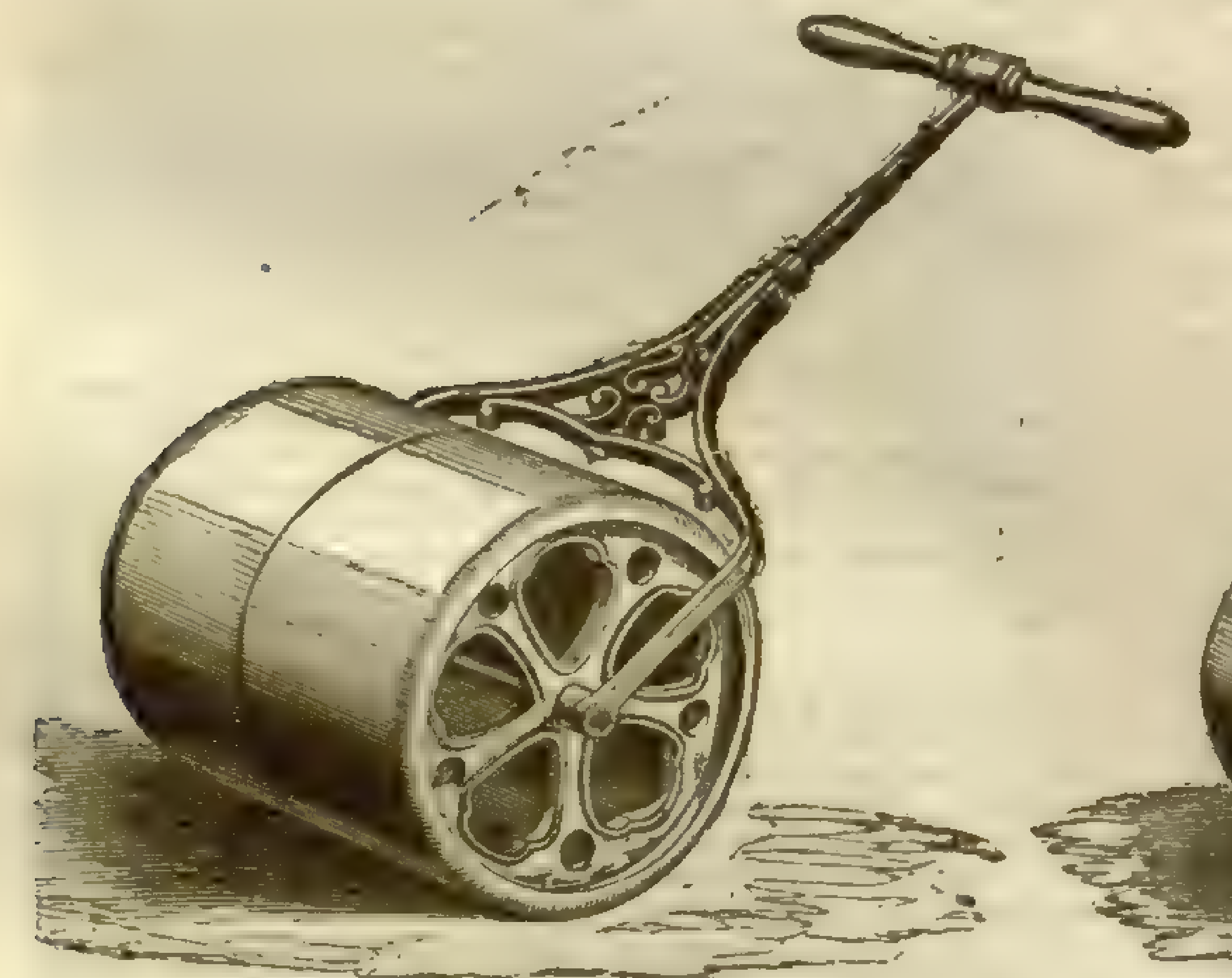
Donkey and Pony Machines, including Box of Requisites & Traces.

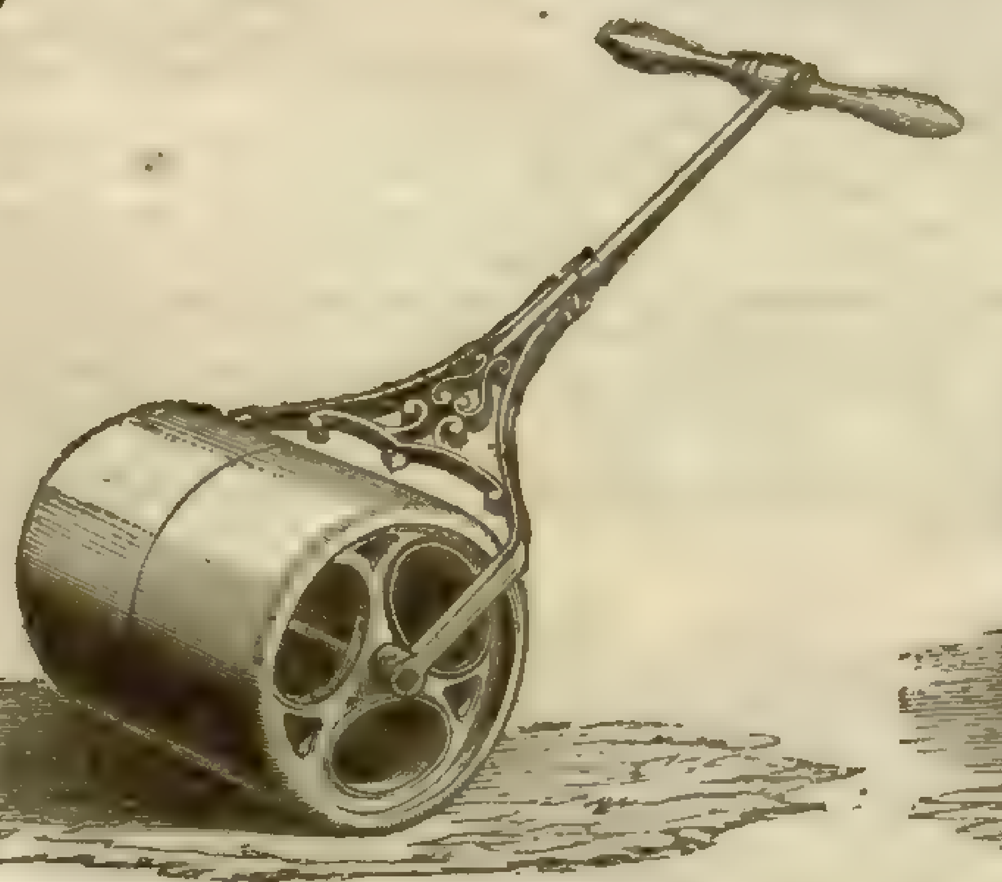
	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0 ...	... £12 10 0
To Cut 26 inches	12 10 0 ...	... 13 12 0
To Cut 30 inches	16 14 0 ...	... 18 0 0

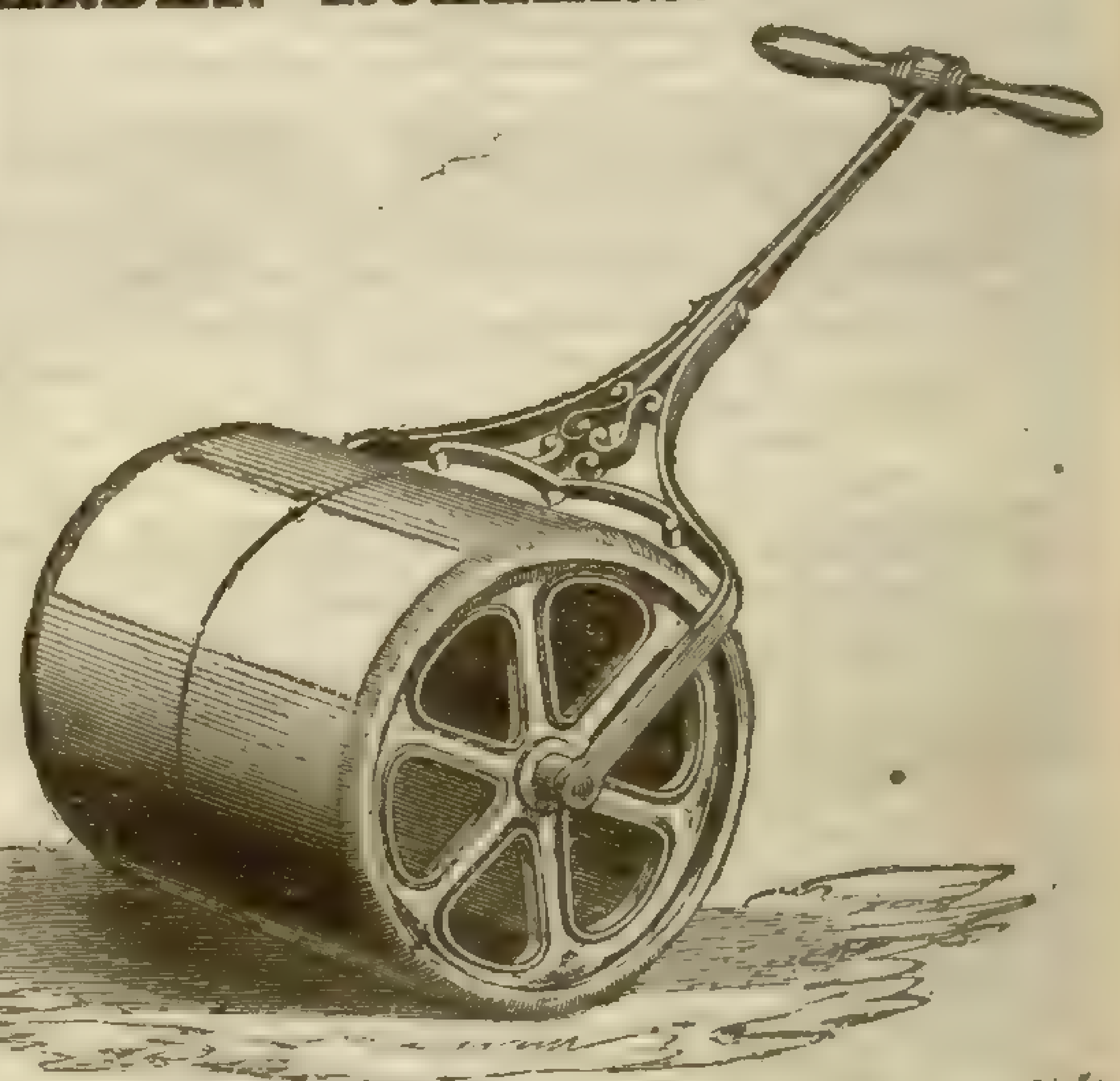
Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.







Diameter 20 inches, length, 22 inches....Price £3 5*s.* | Diameter 16 inches, length, 17 inches....Price £2 10*s.* | Diameter 24 inches, length, 26 inches....Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 29.—1862.] SATURDAY, JULY 19. {Price Fivepence. STAMPED EDITION, 6*d.*

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☞ NOTICE TO ADVERTISERS. — *Advertisements should reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

ROYAL HORTICULTURAL GARDEN, ADMISSION this DAY, FIVE SHILLINGS. Open at 1 o'clock. Bands of Royal Artillery at 4 o'clock.
Next Election of Fellows, August 1.
AUTUMN SHOW, SEPTEMBER 10.

HORTICULTURAL GARDEN.
WEEK ENDING JULY 26.

Monday ..	.. Admission 1*s.* 0*d.*	Open at Nine.
Tuesday	.. Admission 1*s.* 0*d.*	Open at Nine.
Wednesday	.. Admission 1*s.* 0*d.*	Open at Nine.
Thursday	.. Admission 1*s.* 0*d.*	Open at Nine.
Friday ..	.. Admission 2*s.* 6*d.*	Open at Nine.
Saturday	.. Admission 5*s.* 0*d.*	Open at Nine.

Bands daily at Four o'clock.

ROYAL HORTICULTURAL SOCIETY. FLORAL COMMITTEE.
The next MEETING of this Committee for the Exhibition of NEW PLANTS and SEEDLINGS will take place on TUESDAY, July 22, at noon.
The subjects for examination must be at the Meeting Room for entry by 11 A.M.
All persons are at liberty to exhibit.
THOMAS MOORE, Secretary to the Floral Committee.

ROYAL HORTICULTURAL SOCIETY. FRUIT COMMITTEE.
A MEETING of the FRUIT COMMITTEE will be held at the Rooms, South Kensington, on TUESDAY, July 22, for the examination of such FRUITS and VEGETABLES as may then be submitted for judgment; and when besides Certificates of Merit for Seedlings, the following Prizes will be awarded:—
CLASS A.—For the best Dish of Peaches .. .. 20*s.* 10*s.*
„ B.—Ditto ditto Nectarines .. .. .. 20*s.* 10*s.*
„ C.—Ditto ditto Plums .. .. 20*s.* 10*s.*
„ D.—For the best Collection of the newer varieties of Strawberries .. .. .. 20*s.* 10*s.*
„ E.—For the best collection of any varieties of Strawberries, one dish of each .. .. 20*s.* 10*s.*
„ F.—For the best collection of Currants, one dish of each .. .. 20*s.* 10*s.*
All packages and communications must be received at the Rooms by 11 o'Clock on the day of Meeting, and addressed to
ROBERT HOGG, LL.D., Secretary of the Committee.

A PRIZE of 5*l.* is offered by one of the Fellows of the Royal Horticultural Society for the 12 best STANDARD PLANTS for the DECORATION of the DINNER TABLE, to be awarded at the Show of Autumn Flowers, on September 10.
The Plants must be ornamental, either for their foliage, flowers, or fruit, and must be grown in pots not exceeding 6 inches in diameter; the foliage, flowers, and fruit must not be less than 20 inches nor more than 24 inches clear from the bottom of the pot.
Elegance of form, slenderness of stem, and variety of colour, will be the tests of excellence.
The groups will be received as late as 10 o'clock, A.M., PROVIDED SPACE SHALL HAVE BEEN SECURED FOR THEM THE DAY BEFORE. Letters to be addressed to Mr. G. EYLES, Royal Horticultural Society's Garden, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY. AUTUMN SHOW, SEPTEMBER 10, 1862.—An Additional Prize of 10*l.* will be given for the Best Specimen of a CONSERVATORY TUB. There is no restriction as to material, size, form, or design. It may be of wood, slate, stone, pottery ware, Terra Cotta, or any other substance. It may be in one piece or in many, fastened or bound together. Fitness for its purpose, elegance of design, superiority of workmanship, and cheapness, will be the test of merit.
Letters to be addressed to Mr. G. EYLES, Garden Superintendent, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY.
Special PRIZES for the March Show in 1863.
10*l.* for the Three Best CAMELLIAS.
3*l.* for the Three Best TREE MIGNONETTES.

GLOUCESTERSHIRE AGRICULTURAL SOCIETY.—GLOUCESTER MEETING, July 30 and 31.
In connexion with this Society's Meeting, a large FLOWER SHOW will be held, when Prizes to the amount of 122*l.* will be awarded. Amongst others the following Prizes are offered:—
Stove and Greenhouse Plants, 15 varieties, 1st Prize, 15*l.*; 2d, 8*l.*; 3d, 5*l.* Stove and Greenhouse Plants, 10 varieties, 1st Prize, 8*l.*; 2d, 5*l.*; 3d, 3*l.* Ornamental Foliage Plants, 6 varieties, 1st Prize, 5*l.*; 2d, 3*l.*; 3d, 2*l.* Fuchsias, 12 Plants, 1st Prize, 5*l.*; 2d, 3*l.*; 3d, 2*l.*
Schedules and all particulars may be had on application to
Mr. ALFRED C. WHEELER, Hon. Sec., Gloucester.

Open to all England.
THE STOKE NEWINGTON CHRYSANTHEMUM SOCIETY.
The FIFTEENTH ANNUAL EXHIBITION of the above Society will take place on WEDNESDAY and THURSDAY, November 12 and 13, at the Manor Rooms, Stoke Newington, N.
W. T. HOWE, Hon. Sec.
The Bible Office, Shacklewell, N.E.
N.B. A GENERAL MEETING of the Members took place on Feb. 13, to present their Chairman, Mr. E. Sanderson, with a Testimonial, consisting of a magnificent Silver Snuff-box, as a mark of respect.

Roses.
PAUL AND SON'S COLLECTION of ROSES is NOW in FULL BLOOM. The Nurseries are reached in one hour by trains from Bishopsgate to Cheshunt Station, leaving London at 9.30 A.M., 12.46, 2.30, 3.30, 5.10, 6.10 P.M.
Old Cheshunt Nurseries, Herts, N.

Roses.
EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

WM. PAUL'S ROSES and HARDY ORNAMENTAL TREES are now in full beauty. Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.
Nurseries and Seed Warehouse, Waltham Cross, N.

RICHARD SMITH begs to inform the Public that he has a larger and finer COLLECTION of ROSES this season than he has ever had; they are NOW in FULL BLOOM and in the finest condition.
As the Stock is so large the prices will be very reasonable.
Nurseries, Worcester.

Rose Beauty of Waltham.
THE FINEST OF ALL THE NEW ROSES.
WM. PAUL (Son and Successor to the late A. PAUL) has now ready for delivery fine strong plants of this beautiful New Rose, which has received a First Class Certificate from the Royal Horticultural Society of London. Price 5*s.* each.
All the novelties of other raisers at the advertised prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

The New Rose "John Hopper."
ROBERT WARD begs to inform the Public that he will be prepared to send out his SPLENDID SEEDLING ROSE in the Autumn, which has had so much praise accorded to it by the Royal Horticultural Society, and the principal Growers and Connoisseurs in the kingdom.
See *Gardeners' Chronicle*, July 5, page 619; *Journal of Horticulture*, July 1, page 248; *Gossip of the Garden* for July; and *Floral Magazine* for August, in which it will be figured.
A DESCRIPTIVE CIRCULAR may be had on application, and on receipt of 13 postage stamps a beautiful illustration by Andrews.
Ipswich Rosery.

Calceolaria, Cineraria, and Primula.
BUTLER AND McCULLOCH respectfully beg to offer the following Seeds, saved from Collections containing only the Choicest strains:—
CALCEOLARIA, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.* per packet.
CINERARIA, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.* per packet.
PRIMULA SINENSIS FIMBRIATA, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.* per packet.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

MESSRS. E. G. HENDERSON AND SON offer Seed of
CALCEOLARIA .. .. .. first quality
CINERARIA .. .. .. „
PRIMULA (fimbriated).. .. „
at 2*s.* 6*d.* and 5*s.* per packet; smaller ones 1*s.* each. All the above are to be seen in bloom at the Nursery in their respective season.
Wellington Nursery, St. John's Wood, London, N.W.

Calceolaria, Cineraria, and Primula, Extra Fine.
BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.
CALCEOLARIA, 1*s.* and 2*s.* 6*d.* per packet.
PRIMULA, 1*s.* per packet.
CARNATION, 1*s.* and 3*s.* per packet.
GUNNERA SCABRA, 1*s.* per packet.
CINERARIA, 1*s.* per packet.
PICOTEE, 1*s.* and 3*s.* per packet.
PELARGONIUM, Large fl., 1*s.* per packet.
„ Fancy, 1*s.* per packet.

To the Seed Trade.
CALCEOLARIA SEED in Packets, Crop 1862.—The best in England. Price on application.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

Azalea indica.
J. IVERY AND SON beg to inform their Patrons and the Public that their NEW PRICED and DESCRIPTIVE CATALOGUE of the above is now published, and will be forwarded post free on application.
Dorking, Surrey.

CLERODENDRON THOMSONÆ.—At the Royal Horticultural Society's Grand Show on May 21, we were awarded the First Prize for this new beautiful new climber. It is figured and fully described in Curtis's "Botanical Magazine" for last month. Healthy young plants, 7*s.* 6*d.* each; stronger, 10*s.* 6*d.* each.
THOMAS JACKSON & SON, Nurserymen, &c., Kingston, S.W.

Good Seeds, Carriage Free, at Market Prices.
SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

To the Seed Trade.
THE ANNUALS, &c., at JAMES CARTER & Co.'S Seed Farms at Dedham and St. Osyth are NOW in FULL BLOOM, and J. C. & Co. will be happy to receive a visit from any of their friends. (Eastern Counties Railway, Ardleigh Station.) Letters of Advice will receive immediate attention.
JAMES CARTER & Co., 237, 238, High Holborn, London, W.C.

CARTER'S FIRST-CLASS SEEDS of
CALCEOLARIA, 2*s.* 6*d.* per packet.
„ new blotched, 2*s.* 6*d.* per packet.
CINERARIA, 2*s.* 6*d.* per packet.
PRIMULA, mixed fringed, 1*s.* per packet.
„ dark carmine fringed, 2*s.* 6*d.* per packet.
„ pure white fringed, 2*s.* 6*d.* per packet.
JAMES CARTER & Co., 237 & 238, High Holborn, London, W.C.

New Verbenas of 1862.
B. W. KNIGHT, FLORIST, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4*s.* per dozen, securely packed in tin box, post free. CATALOGUES of the varieties sent on application.

NEW VERBENAS of 1862.—Very strong healthy plants at 1*s.* each, or 12 of the finest varieties for 10*s.* Hamper and package free.
EDWIN COOLING, Mile Ash Nurseries, Derby.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize plants, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.* per packet. Reference given. Stamps taken.
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New Fuchsias, Verbenas, Petunias, &c., of 1862.
H. WALTON can now supply the above, in healthy Plants, at as low prices as any in the Trade. LISTS on application, enclosing one stamp.
VERBENA FOXHUNTER, 6*s.* per dozen.
Edgend, Marsden, near Burnley, Lancashire.

New Chrysanthemums, Hardy Variegated Plants, &c.
JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.
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WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

WANTED, a few Strong PINE PLANTS.—Address E. C., Pool, near Camborne, Cornwall.

Palms and other Stove Plants.
TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual si[illegible].
A CATALOGUE, givi[illegible] the height of each plant, will be sent, post free, on appli[illegible]ion to Mrs. LE CREPS, Château du Mesnil de Mathieu, nea[illegible]n, Department of Calvados, France, where the plants may [illegible]ewed.

Hurst[illegible]se Seedling Pine.
B. S. WILLIAMS can supply strong Plants of this choice new PINE at 15*s.* and 21*s.* each. A choice Stock of Smooth Cayenne and other Pines.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New Azalea Elegantissima.
B. S. WILLIAMS begs to intimate that he is now prepared to send out strong Plants of the above. It was exhibited at the Royal Horticultural Meeting, May 21, and was awarded a Label of Commendation.
Price 10*s.* 6*d.* each, extra size 15*s.* to 21*s.* each.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New Pelargoniums.
CHARLES TURNER has much pleasure in announcing that the beautiful SEEDLING PELARGONIUMS, so successfully exhibited this season by Messrs. Hoyle, Foster, and Beck, and described in the last Number of the *Gardeners' Chronicle*, will be sent out by him in October next.
CATALOGUES will be ready next month.
The Royal Nurseries, Slough.

Agricultural Seeds.
GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

PAMPAS GRASS.—Fresh imported Seed of good growing quality, 1*s.* per packet. Price per oz. to Trade on application.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3*s.* per lb., or 16*l.* per cwt.

NEWSPAPER

SHAW'S TIFFANY.—The lightest, cheapest, and most durable of all materials for Shading Conservatories and Hot-houses is SHAW'S TIFFANY. As a protection from cold winds and scorching heat, nothing equal to SHAW'S TIFFANY. For effectually preserving Fruits and Seeds from the Attack of Birds, Wasps and Insects, use SHAW'S TIFFANY.

Sold by all Nurserymen and Seedsmen. Samples and Prices on application.

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£2. 2s.

An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.

One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.

It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.

It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.

No Establishment, either private, commercial, or manufacturing, should be without one.

Six feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12s. Longer lengths of Suction at 1s. 6d. per foot.

May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,

John Warner & Sons, 6, Crescent, Cripplegate, London, E.C.

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JAMES & FREDERICK HOWARD,

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Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

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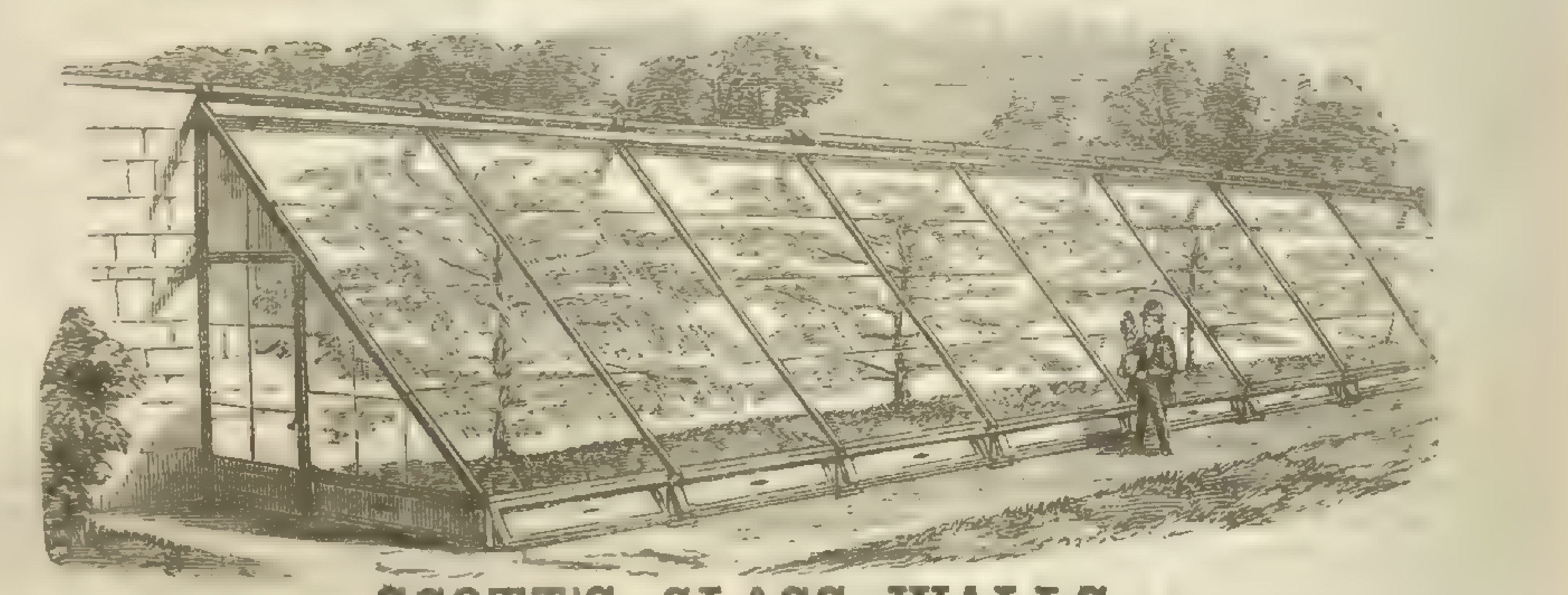

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Designed to meet the suggestions of James Scott, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

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Every description of IRONWORK. *Lists Free.*

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LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

WITH SILENT MOTION IF SPECIALLY DESIRED.

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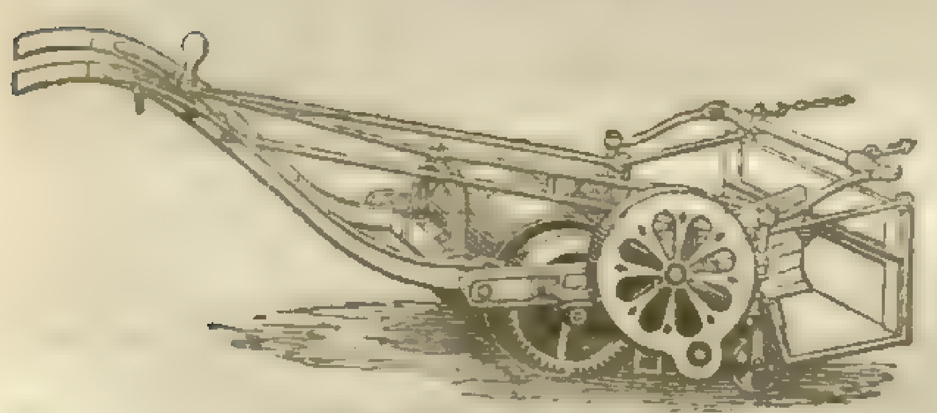

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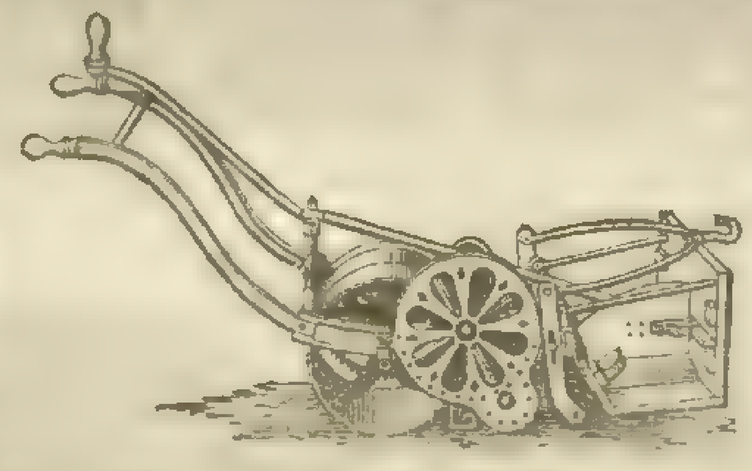

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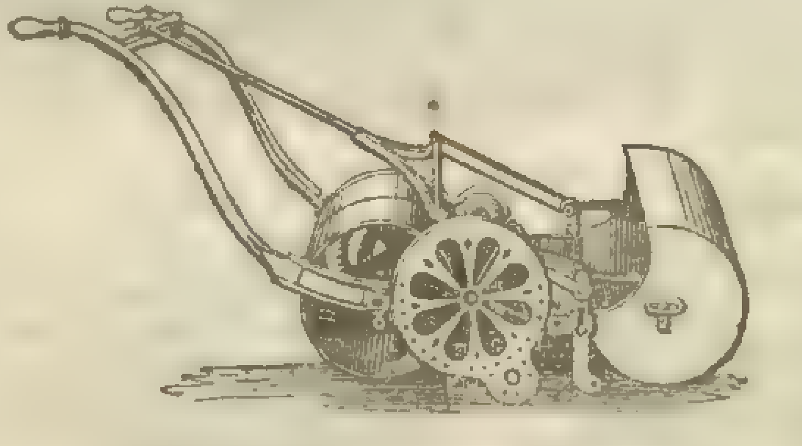

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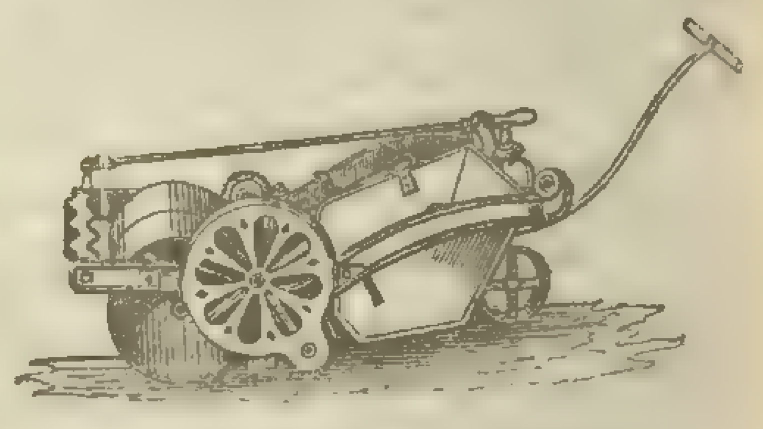

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Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Width of Cutter.				Width of Cutter.		
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*		No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0	*Drawn by a Horse.*		No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40s.; for Nos. 3 and 4 Machines, 30s.; Box, with complete Set of Tools, 10s.; Silent Movement, 20s.; Boots for Horses' Feet, 24s. per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey.*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30s.; for No. 7 Machine, 25s.; Box, with complete Set of Tools, 7s. 6d.; Silent Movement, 12s. 6d.; Boots for Pony, 21s.; Donkey, 16s. per set.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

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No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*		No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man.*
No. 9.—22-inch Machine	8 7 6	*Easily Worked by Two Men.*		No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*				

The Patent Delivering Apparatus, if attached to the Hand Machines, 25s.; Box, with complete Set of Tools, 5s.; Silent Movement, 7s. 6d. extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Width of Cutter.				Width of Cutter.		
No. 16.—16-inch Machine	£6 5 0	*Easily worked by a Stout Lad.*		No. 18.—12-inch Machine	£5 5 0	*Easily worked by a Lady.*
No. 17.—14-inch Machine	5 15 0	*Easily worked by a Stout Lad.*				
Silent Movement, 7s. 6d. extra.				Silent Movement, 4s. extra.		

*** *The Machines are warranted to give ample satisfaction, and if not approved of may be at once returned.*

The Prices, with a small charge for Packing, include Carriage to most of the Railway Stations and Shipping Ports in the Kingdom.

SOLE AGENTS FOR LONDON: J. B. BROWN & CO., 18, CANNON STREET, CITY, E.C.

GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THESE MACHINES were entered at the Royal Horticultural Society's Great Shows held at South Kensington, May 21, June 11, and July 2. They were the only Machines Highly Commended (no Prizes were given). They have carried off every Prize that has been given in all cases of Competition, and have just been awarded the Prize Medal of the Great International Exhibition, July 11, 1862.

GREEN'S PATENT LAWN MOWERS have attained the largest sale of any Machines extant, and are in constant use at the Royal Gardens, Windsor; the Royal Horticultural Society's Gardens, South Kensington; the Royal Botanic Gardens, Regent's Park; the Crystal Palace Company's Gardens, Sydenham; the Kensington Palace Gardens; the Hyde Park Gardens; and in most of the Nobility, Clergy, and Gentry's Parks, Squares, &c., throughout the Kingdom.

Suitable for One Person.

To Cut 12 inches	£5 0 0
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Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0 ...	... £8 15 0
To Cut 20 inches	8 0 0 ...	... 9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0 ...	... £ 9 17 6
To Cut 24 inches	9 0 0 ...	... 10 7 6

To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l*. 10*s*. If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0	£21 10 0
To Cut 36 inches	23 0 0	24 16 0
To Cut 42 inches	26 0 0	28 2 0
To Cut 48 inches	29 0 0	31 8 0

Leather Boots for Horse, per set, £1 4*s*.

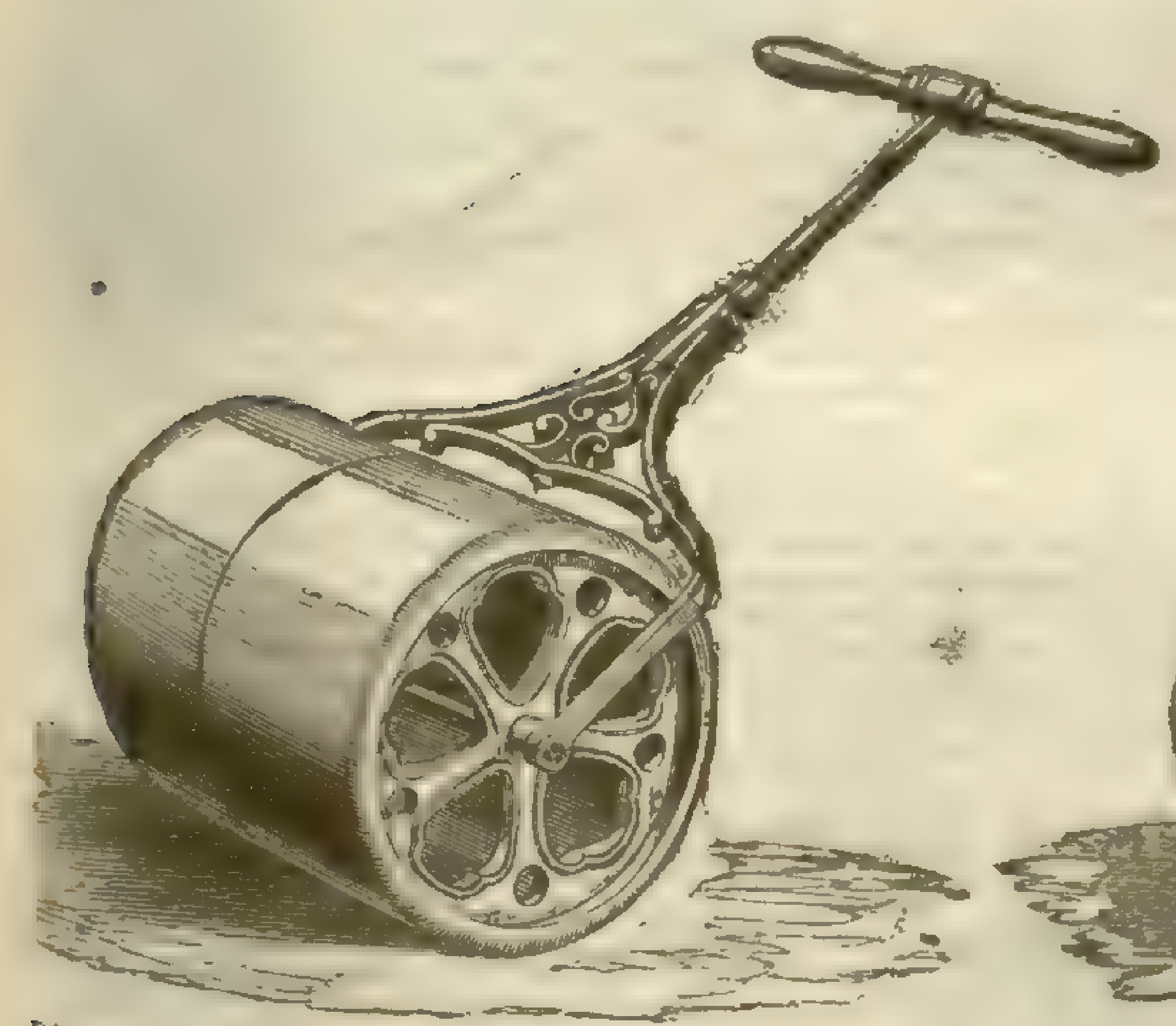
Donkey and Pony Machines, including Box of Requisites & Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0 ...	... £12 10 0
To Cut 26 inches	12 10 0 ...	... 13 12 0
To Cut 30 inches	16 14 0 ...	... 18 0 0

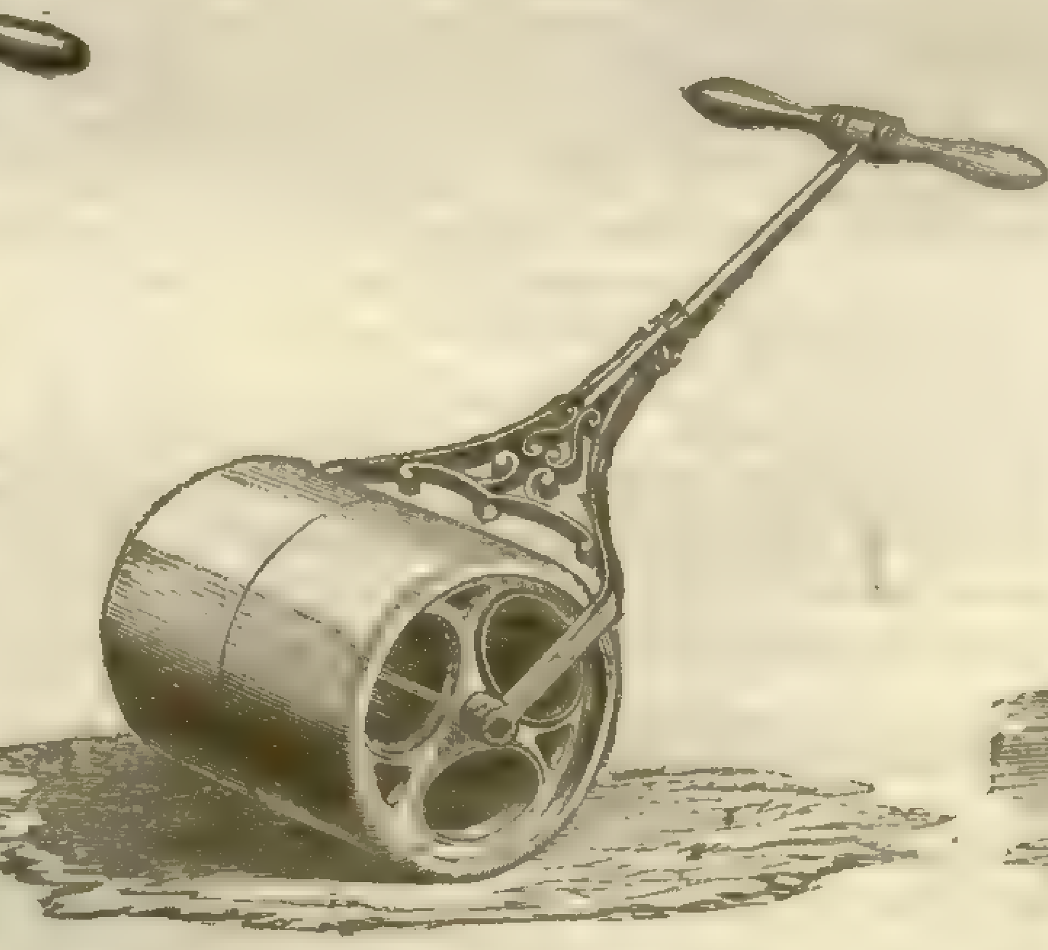
Leather Boots for Donkey, 16*s*.; for Pony, 20*s*.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length, 22 inches....Price £3 5*s*.



Diameter 16 inches, length, 17 inches....Price £2 10*s*.

Diameter 24 inches, length, 26 inches....Price £4 5*s*.

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GRAPE VINE MILDEW.—Gardeners desirous of effecting the removal of Mildew from Vines, may hear from a practical Man of a thorough remedy for this evil, by letter for 30 postage stamps, or personally to

A B., 5, Langton Road, Vassell Road, Brixton, S.

Upwards of 2000 Cases have been reported as Cured by

JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* each. A 1*s.* 6*d.* bottle will make 12 gallons fit for use.

Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1*s.* and 2*s.* per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP,

1*s.* per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. NEAL, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* each.

Wholesale by PRICE'S PATENT CANDLE CO., Limited.

Reduction in the price to 3s. per Gallon, equal to 9d. per Gallon fit for use, of

PAGE'S COMPOSITION for the DESTRUCTION of BLIGHT upon Roses, Wall-Fruit Trees, Cucumbers, Melons, Vines, Stove and Greenhouse Plants. Extra strong, 3*s.* per Gallon, sufficient to make four fit for use. Jars and Barrels charged at cost price. Ten Gallons and upwards, Carriage Free to London.

This Composition, after Ten Years' extensive use, is admitted to be the best for general purposes, and being reduced in price to 3*s.* per Gallon (or 9*d.* fit for use), will be the cheapest. To publish testimonials is unnecessary.

May be ordered of all the principal Nurserymen and Seedsmen in the United Kingdom, or of the Inventors and Manufacturers,

PAGE & TOOGOOD, Royal South Hants Seed Establishment, Southampton.

Potato Disease.

To the Editor of the Gardeners' Chronicle.

SIR,—Having manufactured several hundred tons of Flower of Sulphur this and last season, specially prepared for the Vine Disease, and it having been found a most successful remedy, it has occurred to us that it might be equally valuable as a remedy against the Potato disease, and we therefore wish to bring it before the notice of the Agricultural public, considering it well worth an extensive trial in the growing crops, which in some places are showing signs of disease. We are prepared to supply it in small quantities for experiments at the moderate price of 16*s.* per cwt., delivered Free to any Railway Station in London on receipt of Post Office Order for the amount. The smallest cask is 2 cwt., 32*s.*, with printed directions for its application.—Yours respectfully,

GIBBS, BELL, & Co.

Vitriol Works, near Victoria Docks, London, E.

Stanstead Park Nursery, Forest Hill, S.E., and Edinburgh.

DOWNIE, LAIRD, AND LAING have much pleasure in offering the following very select Seeds, saved from their choice collections.

ANTIRRHINUM, 6*d.* and 1*s.* per packet.
CALCEOLARIA, 1*s.* and 2*s.* 6*d.* per packet.
CINERARIA, 1*s.* and 2*s.* 6*d.* per packet.
HOLLYHOCK, 1*s.*, 2*s.* 6*d.* and 5*s.* per packet.
PANSY, 1*s.* and 2*s.* 6*d.* per packet.
PRIMULA SINENSIS FIMBRIATA, 1*s.* and 2*s.* 6*d.* per packet.
PRIMULA SINENSIS KERMESINA SPLENDENS, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

Strawberries.

CHARLES TURNER can now supply Strong Plants of the following Select kinds (as well as the older varieties), thereby insuring a crop of fruit next season:—

Per 100.—	s.	d.
ADMIRAL DUNDAS (Myatt)	5	0
BRITISH QUEEN (Myatt)	5	0
CAROLINA SUPERBA (Kitley)	5	0
CRIMSON QUEEN (Myatt)	5	0
EMPRESS EUGENIE (Knivett)	5	0
ELIZA (Rivers)	3	6
ELIZA (Myatt), syn. "Omar Pacha"	3	6
FROGMORE LATE PINE (Ingram), large, solid, rich, and juicy; a great cropper and fine grower	10	6
FILBERT PINE (Myatt)	5	0
GENERAL HAVELOCK (Tiley), early, large	5	0
OSCAR	5	0
PRINCE ARTHUR (Ingram)	10	6
PRINCE OF WALES (Ingram)	3	6
RIFLEMAN (Ingram), very large, great cropper, and fine flavour	10	6
SIR C. NAPIER (Smith)	5	0
SIR HARRY (Underhill)	3	6
WONDERFUL (Jeyes)	5	0
WIZARD OF THE NORTH (Robertson)	3	6

The Royal Nurseries, Slough.

New Plants of 1862.

JAMES DICKSON AND SONS, "Newton" Nurseries, Chester, have now ready Strong Plants, at Reduced Prices, of FUCHSIAS, CHRYSANTHEMUMS, PHLOXES, PETUNIAS, and VERBENAS of the most approved varieties of this season. The usual allowance to the Trade. Prices on application.

Also very strong VINES from Eyes for IMMEDIATE PLANTING of the leading varieties, and such as will give the utmost satisfaction. Prices moderate.

Tropæolum "Eclipse."

CHARLES TURNER strongly recommends this charming variety, which was raised by R. Headly, Esq., of Cambridge, and is a great addition to this favourite class of Bedding Plants. It is of the same habit as Elegans—the colour intense scarlet.

A Bed of the above may now be seen at the Royal Horticultural Gardens, Kensington; also at the Royal Nurseries, Slough. Strong plants, 12*s.* per dozen.

Choice Seeds for Present Sowing.

ROBERT PARKER begs to offer the following, all of which are warranted to be new and genuine, and the finest qualities of their respective kinds.

Per Pkt.—	s.	d.
CALCEOLARIA, Herbaceous, finest mixed	2	6
CINERARIA, finest mixed	2	6
CLIANTHUS DAMPIERII	2	6
DIANTHUS HEDDEWIGII, and vars., finest mixed, 6*d.* &	1	0
HOLLYHOCK, finest mixed	0	6
HUMEA ELEGANS	0	6
PANSY, finest mixed	1	0
PRIMULA SINENSIS DENTIFLORA	2	0
,, ,, ,, ALBIFLORA	2	0
,, ,, ,, KERMESINA SPLENDENS ..	2	6
STOCK, Scarlet, Intermediate	0	6
,, White ,, ...	1	0
SWEET WILLIAM, Auricula-flowered, finest mixed ..	0	6

A Priced and Descriptive CATALOGUE of SEEDS will be forwarded post free on application.

Exotic Nursery, Tooting, Surrey, S.

ROBERT PARKER begs to offer good healthy Plants of the following, all of which will prove desirable acquisitions to the most select collections:—

	£	s.	d.
ALOCASIA METALLICA .. .. each	1	11	6
CALADIUM BELLEYMEI	0	3	6
,, WIGHTII	0	3	6
CAMPYLOBOTRIS REFULGENS	0	3	6
CENTAUREA RAGUSINA	0	2	6
CLERODENDRON THOMSONÆ	0	3	6
COLEUS VERSCHAFFELTI	0	1	0
CYCLAMEN PERSICUM RUBRUM	0	2	6
FUCHSIA COMET	0	1	6
,, MINNIE BANKS	0	1	6
,, WHITE LADY	0	1	6
,, UNIVERSAL	0	3	6
,, CORNELISSONS, set of 10 double vars. ..	1	10	0
GERANIUM ADMIRATION	0	2	0
,, FLAMBEAU	0	3	6
ORCHIS FOLIOSA	0	5	0
RHODODENDRON NUTTALII	0	1	6
STATICE PROFUSA	0	3	6

Exotic Nursery, Tooting, Surrey, S.

CARTER'S LIST of SEEDS for PRESENT SOWING.

Per packet—	s.	d.
ANTIRRHINUM, choice mixed	0	6
,, new Carnation-striped	0	6
ALYSSUM SAXATILE COMPACTUM, new ..	0	6
AQUILEGIA CARYOPHYLLOIDES	0	6
CAMPANULA PYRAMIDALIS	0	6
CARNATION, extra choice	2	6
CHRYSANTHEMUM, Large Flowered, mixed ..	1	0
,, POMPONE, mixed	1	0
DAHLIA, finest double	1	0
DELPHINIUM GRANDIFLORUM CŒLESTINUM	0	6
,, FORMOSUM	0	3
HEARTSEASE, extra choice	1	0
HOLLYHOCK, prize mixed	1	0
INDIAN PINK, splendid double	0	6
ŒNOTHERA LAMARCKIANA	0	6
PHLOX, new French varieties	1	0
PICOTEE, extra choice	2	6
PELARGONIUM, choice mixed	1	0
,, new French	1	0
PENTSTEMON, fine mixed	0	6
POLYANTHUS, show flowers	1	0
STOCK, BROMPTON, mixed	0	6
,, IMPERIAL, mixed	0	6
SWEET WILLIAM, Hunt's newest	1	0
VERBENA, choice	1	0
WALLFLOWER, Double German, mixed	1	0
COLLECTIONS.		
CARNATION, 12 splendid varieties	3	0
PICOTEES, 12 splendid varieties	3	0
ANTIRRHINUM, 12 splendid varieties	3	0
HOLLYHOCK, 12 splendid varieties	5	0
STOCK, BROMPTON, 12 splendid varieties	2	6
STOCK, IMPERIAL, 10 splendid varieties	2	6
WALLFLOWER, double German, 12 splendid vars.	2	6

JAMES CARTER & Co., 238, High Holborn, W.C.

New Plant Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce the publication of their NEW SPRING CATALOGUE of BEDDING and other ORNAMENTAL PLANTS, including descriptions of the undermentioned POMPON DAHLIAS, &c.

Angel of Peace	Little Mary
Annie	Little Prince
Butterfly	Little Valentine
Fairy Nymph	Pearl of Lilliputs
Goldlight	Silver Pheasant
Jeannette	Star
Little Darling	Tom Tit
Little Dorrit	and others.

BANKS'S NEW FUCHSIAS.
WILLS'S NEW VERBENAS.
FERN-LEAVED PRIMULAS, white and red fringed.
BEDDING TROPÆOLUMS—elegans coccinea, Model, Constellation, and Beauty of Oulton Park.
PETUNIA MAGNIFICENS.
GLOXINIAS—Brilliant, Leviathan, Bird of Paradise, and Most Beautiful; these four are very large, new in colour, and distinct.
AUCUBA HIMALAICA, the finest habited plant of all the new Aucubas.
GERANIUMS of the Zonale section—Magenta, new colour; Woodwardiana, best formed large petal-flowered; Baron Ricasoli, without exception the best bedding or Vase Geranium of any at present known.
GERANIUMS, MINIMUM Section, Harry Hieover.
,, NOSEGAY ,, Pink Pearl.
,, VARIEGATED ,, Sunset, Gold Leaf, Mrs. Milford, The Countess, Gold Pheasant, Little Beauty, &c.

Wellington Nursery, St John's Wood, London, N.W

F. AND A. SMITH are sending out carefully selected SEED of the following (from their own stock) for present sowing:—

Per packet.—	s.	d.
ANTIRRHINUM, from named flowers	0	6
ALYSSUM SAXATILE COMPACTUM	0	6
CALCEOLARIA, finest strains .. .. 1*s.*, 1*s.* 6*d.*, &	2	6
CINERARIA .. ,, ... 1*s.*, 1*s.* 6*d.*, &	2	6
PRIMULA .. ,, ... 1*s.*, 1*s.* 6*d.*, &	2	6
DELPHINIUM FORMOSUM	0	3
,, CHERIANTHIFLORA	1	0
,, TRIUMPHATA EXCELSIOR	1	0
CLIANTHUS DAMPIERI	2	6
DIANTHUS HEDDEWIGI	0	6
FUCHSIA, from named flowers	1	6
GAILLARDIA GRANDIFLORA	0	6
MIMULUS, very fine	0	6
ŒNOTHERA LAMARCKIANA	1	0
PANSY, from Belgian flowers	1	0
PELARGONIUM, Spot / ,, Show / ,, Fancy	1	0
GERANIUM, Scarlet / ,, Zonale / ,, Variegated	1	0
PENTSTEMON	0	6
POLYANTHUS	1	0
STOCK, finest Scarlet Intermediate	0	6
SWEET WILLIAM, Auricula-eyed	0	6

☞ Their NEW CATALOGUE is now published, and may be had on application.

Dulwich, Surrey, S.

STELZNER AND MEYER, Ledeberg Nursery, Ghent, Belgium, beg to offer the following plants at the undermentioned low prices:—

Gloxinia (Gesneria) pyramidalis, very beautiful new distinct hybrid, received 1st Prize at the last Ghent show, and at the grand one at Malines, July 6, good and very strong plants, 7*s.* 6*d.* to 12*s.* 6*d.*
Ditto, smaller ones, 7*s.* 6*d.*
Cyperus alternifolius fol. var., 10*s.* 6*d.* to 15*s.*
Rhynchosia albo-nitens, beautiful variegated stove Climber, 5*s.*
Bouvardia albida, 3*s.* 6*d.*
Aster coccineus, 3*s.* 6*d.*
Rhododendron hybridum concessum, good plants, 120*s.* per 100.
,, ,, Fleurs de Marie, 100*s.* per 100.
,, President Van den Hecke, 300*s.* per 100.
,, Elfride, 60*s.* per 50.
,, Bylsianum, 120*s.* per 100.
Aspidium Frizelliæ, new, very fine for the open ground, 80*s.* per 100.
Cystopteris obtusa, new, very fine for the open ground, 40*s.* per 100.

Per 100—	s.	d.	Per 100—	s.	d.
Pteris tricolor ..	40	0	Gymnogramma lanata ..	40	0
,, cretica fol. var.	30	0	,, pulverul. argyr.	50	0
Adiantum concinnum ..	40	0	,, Laucheana ..	50	0
,, curvatum ..	30	0	Notochlæna nivea ..	25	0
,, macrophyllum	40	0	,, chrysophylla	60	0
Lygodium mexicanum	80	0			

All fine young Plants in 2-inch pots.

CHEILANTHES BORSIGIANA; the beautiful Golden Cheilanthes, one of the prettiest Ferns known. Nice young plants ready in August, at 10*s.* 6*d.* each, or 4*l.* per dozen.

A. STELZNER, late Traveller of Mr. Louis Van Houtte's Nursery at Ghent, begs to recommend himself kindly to his numerous friends and patrons throughout Great Britain.

MAGNIFICENT NEW JAPANESE LILY, LILIUM AURATUM

THIS SPLENDID LILY IS NOW IN FINE BLOOM AT THE

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, S.W.

Mr. VEITCH will have much pleasure in showing it to any lovers of Flowers who may favour him by CALLING.

ARAUCARIA IMBRICATA.

HUGH LOW & CO.

Have received by the R.M.S.S. *Seine* a supply of Seeds of ARAUCARIA IMBRICATA in unusually good condition. The Seeds are part of crop of present season, and have come direct from the Indian Territory, *via* Panama. Samples and price per bushel, or by 1000 Seeds, can be had on application.

CLAPTON NURSERY, LONDON, N.E.

CHARLES NOBLE begs to annex the names of the RHODODENDRONS which obtained the First Prize at the Royal Horticultural Gardens, May 21.

Lord Palmerston	Duke of Cambridge
Lady Palmerston	Floretta
Lord Granville	Princess Hortense

He also obtained the First Prize at the Grand Opening Show at South Kensington in 1861.

Bagshot.

Choice Seeds.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give the greatest satisfaction.

PRIMULA, per packet, 2*s.* and 3*s.* 6*d.* each.
CALCEOLARIA, per packet, 1*s.* 6*d.*, 2*s.* 6*d.*, and 3*s.* 6*d.* each.
CINERARIA, per packet, 1*s.* 6*d.* and 2*s.* 6*d.* each.
For numerous Testimonials see SEED CATALOGUE, post free on application.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

The Quickest Turnip known.

EARLY SIX WEEKS, or NIMBLE WHITE.

Fine fresh Seed, 9*d.* per lb.; 9*s.* per peck, or 32*s.* per bushel, Carriage Free.

Royal Berkshire Seed Establishment, Reading.

THE HEAVIEST CROPPING TURNIP.

The Grey Stone or Mottled Globe.

Excellent for present sowing for winter feed, or for later sowing to stand the winter.

SUTTON AND SONS, SEED GROWERS, Reading, are now harvesting a fine crop of Seed, and can therefore supply this popular sort at the reduced price of 10*s.* per Peck, or 35*s.* per Bushel, Carriage Free.

Royal Berkshire Seed Establishment, Reading.

The Best Substitute for Swedes.

THE YELLOW TANKARD TURNIP.—This is sometimes called Tankard Swede, the flesh being yellow, and somewhat similar in feeding properties. If sown now a heavy crop will be ready as soon as Swedes sown a month ago; or it may be sown as a stubble Turnip.

SUTTON & SONS can supply fine fresh Seed at 10*s.* 6*d.* per peck, or 10*d.* per lb., Carriage Free.

Royal Berkshire Seed Establishment, Reading.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,
And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality, at Market Prices.

CATTELL'S EARLY RELIANCE CABBAGE.
CATTELL'S DWARF BARNES CABBAGE.

These two Cabbages have proved themselves for many years past to be the two best Early Spring Cabbages in cultivation. If sown as early as the middle of July, they will not run to seed the following Spring. They may be had as usual in packets containing half-an-ounce of the Reliance, and one ounce of the Dwarf Barnes. Free by post for 12 Penny Stamps for each packet.

JOHN CATTELL, Nursery and Seed Establishment, Westerham, Kent.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe. Also to their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which for want of space there is erected at the Crystal Palace, Sydenham.

As an instance of success under unfavourable circumstances, Messrs. SUTTON *would refer to St. Paul's Churchyard, London, which has recently been laid down to Grass with their Seeds.*

Royal Berkshire Seed Establishment, Reading.

SPRING FLOWERS.—Double Crimson Primrose, 2*l.* per 100; Double White do., 12*s.*; Do. Rose, 12*s.*; Purple, 12*s.*; Early Yellow, 12*s.*; Lilac, 10*s.* Fine Double Polyanthus, 12*s.*; Double Red Hepatica, 12*s.*; Large Yellow Crocus, 1st size, 2*s.*; 2d size, 1*s.* 6*d.*; Blue do., 1*s.* Double White Narcissus, 3*s.*; poeticus, 3*s.* 6*d.*; Trumpet major, 3*s.*; Blue English Iris, 3*s.*; Good mixed Tulips, 3*s.* 6*d.*; Grape Hyacinth, 3*s.*; Dark Blue do., 4*s.* Josephine Scarlet Anemone, 7*s.*; Fine Single in variety, 4*s.* Double White Wood Anemone, 3*s.* 6*d.*; Double Blue sweet-scented Violet, 12*s.*; Double White do., 12*s.*; Single Blue do., 8*s.*; Do. White, 8*s.* Feathergrass, 12*s.*; Fine Double Pansy, 3*s.* per doz. Carriage allowed. Reference will also be given and expected from unknown correspondents.

A. LAMB, Pear Tree Hill, Lisburn, Ireland.

Royal Botanic Gardens, Regent's Park.

ROBERT MARNOCK, Esq., having completed his 21st year as CURATOR of the above Gardens, several of the Exhibitors, Judges of the Shows, and others have resolved to mark the sense they entertain of that gentleman's unvaried kindness, urbanity, and attention to them during that long period, by presenting him with a Piece of Plate.

The following Committee has been formed to carry out the object in view, viz.:—

Mr. W. Barnes, Camberwell } Treasurers
Mr. C. Turner, Slough }
Mr. W. Forsyth, Gunnersbury
Mr. S. Snow, Wrest Park, Beds.
Mr. Jas. Gray, Chelsea
Mr. M. Busby, Harrow Road
Mr. Thos. Taylor, Covent Garden
Mr. J. Drewett, Denbies, Dorking
Mr. Cutler, Tavistock Row, Hon. Sec.

The Subscription is limited to 1*l.* 1*s.* each person. Gentlemen desirous of becoming Subscribers to the Fund will kindly communicate with

EDWARD R. CUTLER, Hon. Sec.
14, Tavistock Row, London, W.C.—July 19.
Subscriptions received .. .. £58 15*s.* 6*d.*

The Gardeners' Chronicle

SATURDAY, JULY 19, 1862.

MEETING FOR THE ENSUING WEEK.

TUESDAY, July 22 { Royal Horticultural (Fruit and Floral Committees) at S. Kensington Noon

THE series of important letters on COTTON CULTIVATION IN INDIA, which appeared in our columns some time since (see Index to Vol., 1861) has been republished by their experienced author in a separate pamphlet,* with some additional notes. His original purpose was to contradict the impudent assertion of a Secretary to the Cotton Supply Association that "the Government (Cotton) farms (in India) did not succeed because they were not intended to succeed." This scandalous imputation Dr. WIGHT asserted and proved to be "false and slanderous," a declaration that every body acquainted with the facts was ready to endorse. It was in reality the trick of an unscrupulous agent desirous of throwing upon the Indian Government and its officers the blame for the Manchester market being dependent upon the United States for sufficient supplies; although it is notorious that the entire fault laid with the Cotton lords themselves, who are now deservedly reaping the harvest they were so selfish as to sow. As infatuation is proverbially blind, it is not to be wondered at if it leads men over precipices. Dr. WIGHT now enforces his opinions with new arguments, which we commend to the attention of those concerned.

No man acquainted with the progress of agriculture, or the possible results of scientific cultivation, has ever doubted that as fine Cotton as that called Sea Island may be grown in any climate warm enough and damp enough to suit its constitution. The most ill-informed observer who now visits the International Exhibition must be convinced of the fact. The Cotton of Queensland and New South Wales, quite new Cotton countries, is unsurpassable. The Jurors of this article have given 22 medals to exhibitors from 10 of our Colonies, viz., Barbados, Bermuda, Ceylon, Jamaica, Malta, Natal, New South Wales, New Zealand, Queensland, Trinidad; and honourable mentions to 14 others. So we may shut our ears to all further Lancashire clamour about this matter. It is demonstrated that if the manufacturers will provide a market, the British Colonies, single-handed, will feed it abundantly. If manufacturers refuse to provide the market the Colonies are too wise to become speculators for their benefit.

One extremely interesting fact has been disclosed by our mighty Exhibition. As fine Cotton can be grown inland as on the seabord. It has hitherto been almost an article of faith that a saline atmosphere alone can produce Cotton with the longest staple. Mr. NOWLAN, an exhibitor from Hunter Hills, near Maitland, a place some 70 miles inland in the Colony of New South Wales, has produced a sample equal to the finest in the building, and worth, according to the manufacturers, *four shillings* per lb.

This is in accordance with the assertion of KOSTER, who, in his *Travels in Brazil*, states that the districts which are universally allowed in that country to be the best adapted for the growth of Cotton are far removed from the sea coast, arid, and often very scantily supplied with water; that in his time Cotton plantations were gradually receding further into the interior, the soil preferred being a deep red earth, which becomes extremely hard after a long interval without rain.

Dr. WIGHT insists in the present work upon the importance of applying to Cotton the thoroughly well ascertained principles which guide the gardener and cattle breeder. It is impossible to observe them too scrupulously; and we entirely believe that if such men as those who create the wonderfully improved races of European flowers, fruits, and esculents were to take in hand Colonial Cotton farms, a few years would effect a total revolution in the produce of that crop, which would soon feel the effect of high scientific cultivation.

Look at the official reports obtained from the Southern States of North America, and published officially by the American Government. In Alabama the average yield to the acre is estimated at from 600 to 800 lb. in the seed, or from 250 to 400 lb. clean. But in Georgia the Sea Island plant only yields about 125 or 130 lb. of clean ginned Cotton per acre; of the short stapled, in the hill country, from the Mississippi to the Carolinas, not more than 500 lb. of seed Cotton or 150 lb. of clean Cotton can be obtained to the acre. And the mean quantity over all is estimated at only 125 lb. of ginned Cotton of both Sea Island and of the short staple to the acre. Here, in the best Cotton country of the United States, the crop varies from only 125 lb. to 400 lb. of cleaned Cotton per acre. It would be very difficult to make us believe that in so small an area climate makes all, or virgin soil makes all—the difference. In Cotton as in corn the true causes of difference are to be found in the varying skill and intelligence of the Cotton planter. It is known indeed that this has not escaped the sagacity of the Southern planters, who take care to procure seeds from Mexico, instead of relying upon their own.

* *Notes on Cotton Farming Explanatory of the American and East Indian Methods, with suggestions for their improvement.* By ROBERT WIGHT, M.D., F.R.S. Late Superintendent of the Government Experimental Cotton Farms, Madras. Whitaker.

—— WE are glad to see that an AURICULA SHOW on a national scale is in a fair way of being repeated next season. On this occasion it is proposed to be held at York, in the metropolis of the north, as that of the present year was in the metropolis of the south. The Secretary, Mr. DOUGLAS, of York, invites the growers and fanciers of this flower to send in their names as subscribers without delay, in order that on the first move of the plants the schedules may be arranged, and the date of the show fixed, as data for the guidance of those who are about to prepare their plants for competition.

Bearing in mind the appearance of the plants at the London show, as well as the feeling which was manifested respecting them, we venture, though not ourselves 'in the fancy,' to advise those who are concerned in the matter that some well-considered rules should be propounded for the purpose of avoiding the stumbling blocks of the past. No question seems to have arisen as to the properties of the individual flowers or pips, which are not only very well defined, but generally admitted. But in respect to the truss there is evidently either an utter diversity of opinion, or a misunderstanding as to the meaning and application of certain phrases in the prize schedules. We have not the last year's schedule at hand, but as we understand the question, it was provided that a truss should consist of not fewer than three pips. This provision was taken by some to mean that three pips only were sufficient, while others understood that there might be as many beyond three as the plant would produce. The consequence was of course confusion; and thus while some plants bore fine bunches of flowers and were really ornamental, others, including many of the "best" judged technically, were but paltry and miserable-looking objects.

It is clear that for an Auricula show to take any hold of the public favour, it must be such as to please the public; and though the growers of this flower may be sufficiently confident to entertain the belief that they can dispense with outside patronage, yet they may depend upon it both their exhibition and the

position of their flower would be all the better if that patronage were secured. The problem then is, how to secure this without at the same time sacrificing the technical points which are the life of the 'fancy.'

The first consideration, as it appears to us, is that every plant admitted to competition, should be in itself a presentable object—something which may fairly claim to be regarded as "a thing of beauty." What would be said of an exhibition Pelargonium from which, in search of some peculiar arrangement of the spots, all but a few stray pips or even trusses of flowers had been cleared away? What would be said of the spike of a show Hyacinth with all its pips removed, save two or three of the most perfect? What! but the very same which may fairly be said of a three-pip Auricula, namely, that some busybody had by intermeddling utterly spoiled that which was naturally beautiful. Therefore we say, a good truss and a well-furnished plant should be a *sine quâ non*. And a good well-furnished Auricula truss has long ago been settled to consist of not fewer than seven pips. It might we think be put thus: from 7 to 10 pips; for too many would be only less objectionable than too few, and any necessary thinning out of some to bring the total number within this standard, would be conducive to the better development of the remainder.

To secure that the necessary technical quality and excellence should not be overlooked, nothing can be required but to determine that of the truss thus limited, the five, or three, or two, or even the one best among them, shall alone be judged in determining their technical merit. Surely this plan would do as well as cutting off the remainder. It would at least secure a furnished plant without sacrificing the points of floral excellence; and while the public would be pleased, we think the "fancy" should be satisfied.

It has been objected, further, that at the recent show one party, the most distant as it happened from the place of meeting, had adopted the expedient of taking the plants from the pots in which they had been grown, and had set them up for adjudication and display in pots stuffed with short Grass—the most convenient accessible material we suppose. The point urged against this plan is that such plants are not shown in a growing condition. To us it does not appear that there lurks here any evil in principle. The plants have already been, we will say, grown to the state in which they are shown, they are removed from their pots for convenience of carriage, and they are set up again temporarily in a manner which imitates their natural style of growth, in all which, surely, whatever loss or detriment there is falls upon the exhibitor himself, and upon the exhibitor only, provided the setting up be neatly done (which it hardly was, it must be owned, at the Regent's Park), for his plants clearly compete under less favourable circumstances than those which remain undisturbed. This neatness however—presentableness in fact—should be positively insisted on, otherwise a loss is experienced by the visitor, be he looker on or connoisseur, his loss consisting in missing what he has a right to expect, namely a perfect and finished *tout ensemble*.

Then we are glad to notice that a champion has appeared in behalf of the self-coloured Auriculas, which are really the most telling of all. The Rev. G. JEANS has elsewhere written thus: "I remember when selfs, with the exception of Redman's Metropolitan, were thought immeasurably below edged flowers, and white edged beneath the greens and greys. But the selfs are and always have been and will be the favourites of the uninitiated, and accordingly they now hold up their heads with Leigh's Col. Taylor himself." Some of the clear distinct-coloured varieties of this character are very charming; and we fear we are almost heterodox enough to say, that the Alpines, which show two or more dark colours instead of one dense even hue, are very charming too. As for the greens, the grays, and the whites, they have a quaint beauty of their own, as might indeed be expected when the proportions of the "tube," the "paste," the "ground-colour," and the "margin" have been so nearly adjusted as they are by the floral code.

One word more. If in reply to our pleadings for beauty of plant, the Auricula fancier should say he cares only for the perfection of the individual pip, why nothing can be easier than to meet his requirements. Indeed for the display of individual pips there is at present far too great an amount of trouble taken in carrying the plant from place to place. Pluck the flowers and show them in stands, and the thing would be done with a tithe of the trouble and cost now incurred. The best 12 Auricula blooms, three of each class, would be a new entry for the prize schedules. And if individual perfection of pip be everything, so that now for its sake nearly all the flowers may be removed from the truss, this showing of cut flowers in stands is clearly the proper course. But we think the majority will go with us in holding that a fine plant is better than a cut flower; and that if five or three or any other number out of a truss numbering "from seven to ten" pips be selected for judgment as to floral technicalities, the whole case is met on both sides.

THE INTERNATIONAL EXHIBITION.

IN Class X. devoted to Engineering and Architectural contrivances, and in Class XXXV. consisting of Pottery we find a few matters deserving of record in our columns on account of their horticultural interest.

One of these, called a Patent Fern Stand, is shown by Mr. JENNINGS, Holland Street, Blackfriars (2386). It consists of a cast-iron standard 2½ feet high with a circular foot supported on knobs, and having a table-like top filled with Ferns and covered by a dome-shaped glass shade 13 inches broad and 18 inches high, the rim of which is closed by means of an india-rubber band, rendering the interior air-tight. The stand itself is a pretty object for a room or a recess, but of course in a cultural point of view the contrivance for rendering it airtight is wholly unnecessary, the glass shade without this addition affording ample protection for the plant. Mr. Jennings also exhibits a patent capsule for closing up "family jars," that is to say pickles and preserves. This capsule consists of an Indian-rubber rim fixed to a metal cap, and may be applied almost instantaneously. Something of the same kind has been applied to little vases (something like the dwarf Hyacinth glasses which have lately come into use) intended for cut flowers, and has the effect of assisting to hold the flowers firmly and to check evaporation.

Messrs. BROOKS & SMITH, 154, Goswell Street (2374), exhibit drawings of Sash bars, the peculiarity of which consists in their having a rather deep groove or gutter which comes just beneath the edge of the glass, so that when the glass is laid on and puttied over, a hollow space is enclosed in the substance of the bar.

Mr. NIXON, Kettering (2394) has put up on a small scale what he calls a Self-Ventilating Greenhouse. It is constructed with zinc sash-bars which are grooved at the sides to receive the edges of the glass, the panes being fixed by means of a stop screwed on at their base; but there is nothing to show how they are secured in houses of larger size where two lengths may be necessary. There is no putty used. We do not find any indication of what is meant by the designation "self-ventilating," as applied to this model structure.

Mr. S. E. ROSSER, Northumberland Street, Strand (2399), has among other things a Ventilator, which might be adapted to any form of horticultural building. As applied to a span roof, it consists of a short sash on each side of the ridge, forming as it were a capping to the ridge, which is lifted up bodily by means of a perpendicular screw working in the ridge plate. A considerable amount of ventilation might be very readily given by this contrivance.

Mr. J. TAYLOR, jun., 53, Parliament Street (2405), exhibits Capping for garden walls, in the form of coping tiles of terra cotta or artificial stone; they are about 1½ foot wide, with one of the edges grooved to receive the plain edge of the adjacent tile. The object is to afford shelter to plants on the walls.

A considerable number of Vases, Urns, and similar garden ornaments in terra cotta and other pottery, together with pedestals and flower stands, are shown by many different exhibitors. Mr. BEAUMONT, Barnsley (2371), has terra cotta vases on which fruits and other figures are modelled. Mr. HOWSE, Hurtford Fire Clay Works, N.B., (2301), has Vases of various forms which appear as if made of the same material as fire-bricks. Mr. G. MAW, Broseley, exhibits on the part of several neighbouring manufacturers, various articles of this class, made from the Shropshire coalfield clay. Among these are terra cotta Pedestals, Urns, Vases, and Orchid pots for suspension; a square Orange tub consisting of an electro-bronze frame, with the sides of majolica tiles; a Mignonette box of similar character; another prettily figured terra cotta Mignonette box, an elegant terra cotta vase-like flower pot and stand, marked 16*s.*; and finally a variety of forms of tile for garden edgings, the material about an inch in thickness, plane, with the upper edge cut out in various designs, of which the best seems to be the plain scolloped or "crenated"; the different patterns are prepared in terra cotta and in red ware, and also of a dark colour as if fused. The Orange box is provided with a space between the tiles and the slate lining to keep the earth from being heated. Some very good looking Vases, made of a patent soluble silica, come from Mrs. PAINE, Farnham (2325). One of these, of large size with a feather-like ornament repeated round the sides, is marked 30*s.*; another very handsome one covered with well modelled branches of the Hop, is priced 50*s.*; while a very pretty low tazza-like vase with a wreath of Hop vine around the rim is 30*s.* These articles are all particularly well finished. Messrs. GARRETT, BROTHERS, Paddington (2286) exhibit a Flower Pot made to resemble rough bark, and ornamented with a wreath of Ivy, or in other cases with a wreath of Oak; the same forms are made in terra cotta and in red ware, and in some cases the former are glazed, with the wreath slightly coloured. The unglazed forms are from 1*s.* 3*d.* to 2*s.* 3*d.* the pot and stand, according to size; and the glazed ones from 2*s.* 6*d.* to 5*s.* The same exhibitors have provided a form of square tile, hollowed out on the face, and furnished with a projecting portion like a scollop shell; it is intended to be used for planting Ferns and other plants against walls, or in columns, for which purpose it will be very useful. The larger size, about 10 inches square, costs 8*s.* each. Messrs. F. & G. ROSHER, Blackfriars and Chelsea (2336) have Pedestals, Vases, and Balustrading in artificial stone; and they also exhibit various forms of Garden Edging, of which, among the plane forms the scolloped and trefoil patterns are the best. They are made in terra cotta, terro-metallic and red ware, the terro-metallic form having a dark scoria-like colour. Some forms of the edging are made with the rim thicker than the body of the tile, and of these the best are what are called the ball-pattern and the cable-pattern, both being made in terro-metallic and in terra cotta. Messrs. Rosher's artificial stone is prepared with Bennett's patented indurating solution, which is said to impart increased hardness, a better colour and surface, and greater durability.

Of the same character as the foregoing, though shown in a distinct class, are the exhibitions from Mr. MILLICHAMP, Lambeth (6872), who had a variety of terra cotta Vases and Pedestals; flower pots in imitation of rough bark, and having a firm broad base; and various forms of edging tiles similar to those already mentioned. Some of the terra cotta vases in this collection are of a basket pattern, which does not appear to be altogether in good taste.

The YNISMEDEN BRICK & PIPE CO., Swansea (6895), show terra cotta Vases; so also does Mr. T. GRIMSLEY, Oxford, as well as Tazzas and appropriate Pedestals. Some very fine and handsome subjects in this way come from Mr. BLASHFIELD, Stamford (6839); they consist of large Tazzas, Vases, and Urns in considerable variety, and some of a highly decorated character. With them are various vase-like pots and stands, and some very highly finished articles in red ware.

From Mr. ROBERTS, Upnor (6881), are Garden Edging tiles of narrow upright form, about 10 inches deep, 4 or 5 inches wide, and half an inch thick, the upper edge cut into a device. Garden edging in glass, both green and blue, resembling in form those of Maw & Rosher, are shown by Messrs. KILNER Brothers, Upper Thames Street.

Messrs. MINTON & Co., Stoke upon Trent, embrace in their grand display some very showy Majolica Vases and Pedestals, as well as tiles in various patterns, all of which are adapted for conservatories, colonnades, or other parts where everything is in high keeping. One very striking vase was of dark blue, with Ferns and Foxgloves in green and red. These exhibitors also have several forms of earthenware seats, suitable for such situations as those just indicated. Other similar seats come from Mr. COPELAND, New Bond Street.

From Messrs. GOODE & Co., South Audley Street, are patterns of various ornamental tiles arranged to form the sides of Mignonette boxes for balconies and window ledges. Messrs. BOURNE & SON, City Basin, exhibit patent Vitreous Stoneware in the form of Vases; also a shallow Fern Stand in imitation of rustic rods bound together by a wreath of Fir branches and cones in gilt. Messrs. KEYS & BRIGGS, Stoke-upon-Trent, have in their collection a Flower Pot in imitation of rough bark, with fronds of the Filix-mas in green and very nicely modelled, around the sides. Mr. GROVE, Barlaston near Stone, whose name we do not find in the catalogue, has a collection of Flower Pots and stands, Mignonette boxes, and other broad shallow receptacles for Plants, made in imitation of rough wood, and as it seemed to us designed in very good taste. The most pleasing are some which look as if formed of Fir rods, surrounded towards the base (which gives bulk and firmness to the figure) by a wreath of cone-bearing Fir twigs, the rods being of a dark brown, the cones light coloured, with a few green leaves intermixed. There are also stands of similar character. The moderate sized samples are priced about 5*s.* or 6*s.* each, including the stand. A shallow Fern Pot, resembling rough bark, and surrounded by green Fern leaves, was also very well suited for a small bell-glass Fernery. Other kinds of wood were also imitated both in the pots and boxes. These are some of the best imitations of rustic wood we have seen.

ON THE UNIFORMITY OF RELATIVE CHARACTERS BETWEEN ALLIED SPECIES OF EUROPEAN AND AMERICAN TREES.

BY THOMAS MEEHAN.

To whatever principles the origin of species may be owing, the following observations tend to show that their respective differences are the result of one unvarying law.

Noticing that European Willows, Oaks and other trees retained their green leaves in the autumn much longer than closely allied American species growing near them, and that this could not be owing to immediate climatic influences, as Gleditschia triacanthos, Robinia pseudacacia, and other American trees, with no European representatives, possessed the same characters, I was led to believe it was rather the result of inherent specific peculiarities, which further investigation tended to confirm.

It will be seen from the subjoined Table, that on any positive difference being ascertained to exist between an American and a closely allied European species, the relative differences between all other closely allied species of the same differing geographical distribution are of the same character and nature.

For instance, the European Plane (Platanus orientalis) may be distinguished by a compactness of growth when compared with the diffuse habit of the American species, and the same compactness and diffuseness will be found to prevail in all the respective European and American species of other genera.

The nut of the European Chestnut (Castanea vesca),

is characterised by large size; the American (C. americana) is much smaller, and the seeds of all allied European and American species bear the same relative proportions; and so of other characters that I have compared, and which I may enumerate as follows:—

1. *Colour and Persistency of the Leaves.*—In which the American species change to some brilliant hue, and fall comparatively early, while the European co-species fade black, and are retained to a later period of the season.

2. *Outline of the Leaves.*—In which the American species have the leaves less lobed, less deeply toothed or serrated, less in width in proportion to their length, and less petiolate than the European species.

3. *Size of the Seeds.*—In which the American are smaller than the European.

4. *Habit of Growth.*—In which the American is more diffuse, has much fewer branchlets, and more vigorous main branches, and the outline more irregular and informal than European trees.

5. *Size of the Buds.*—In which the American have smaller ones than the European, and usually set at wider spaces between the nodes.

The observations finally made were taken at Germantown, Pa., during the first week in November, 1861.

European Species.	*American Species.*
Larix europæa	Larix americana
Quercus robur	Quercus alba
,, Cerris	,, macrocarpa
Betula alba	Betula populifolia
Populus tremula	Populus grandidentata
,, dilatata	,, caroliniana
Morus alba	Morus rubra
Euonymus europæus	Euonymus atropurpureus
Spiræa salicifolia	Spiræa carpinifolia
Berberis vulgaris	Berberis canadensis
Carpinus betulus	Carpinus americana
Cornus sanguinea	Cornus sericea
Ulmus campestris	Ulmus americana
Corylus avellana	Corylus americana
Alnus glutinosa	Alnus serrulata
Castanea vesca	Castanea americana
Pyrus malus	Pyrus coronaria
Tilia europæa	Tilia americana
Ulmus montana	Ulmus fulva
Fraxinus excelsior	Fraxinus acuminata
Cerasus padus	Cerasus virginiana
,, mahaleb	,, serotina
Fagus sylvatica	Fagus ferruginea
Cercis siliquastrum	Cercis canadensis
Celtis australis	Celtis occidentalis
Platanus orientalis	Platanus occidentalis
Acer platanoides	Acer saccharinum
Juglans regia	Juglans nigra
Cratægus oxyacantha	Cratægus cordata

In the first of the points to which attention has been directed, the only exception appears to be in Larix europæa, which drops its leaves at near the same time as the American, and, unlike all the other species named, exhibits in fading the same tinted leaves.

In point 2, Fagus ferruginea has a more strongly toothed margin than the European F. sylvatica; but it is also worthy of note that the leaves of the English species are more coriaceous than the American, which may have checked the prolongation of the nerves forming the teeth in the latter species. If there is any difference in the consistency of the leaves, it is usually in favour of the American species.

In 3, Quercus Cerris has smaller acorns than C. macrocarpa, but it is the most distantly allied species brought into comparison.

In 4, I know of no exceptions.

In 5, in some few instances the buds of European species appear to be no larger than the American, and in still fewer instances seem smaller; but the rule holds good so generally as to form a striking and prevailing character.

It is proper to remark that the observations were taken from allied species that I have been able to find growing in proximity to each other, and in as similar circumstances as possible. This is very important, as, to a limited extent, circumstances have an influence in the variation of characters. For instance, Quercus alba, when growing in the full light and unsurrounded by other trees, has its leaves much more deeply sinuated than when growing in a mass with others. Lack of attention to this fact would make standard botanical works in some instances seem to oppose the conclusions I have arrived at. As an example of this, Michaux figures Fagus ferruginea with larger fruit than F. sylvatica, and the leaves of Juglans regia as less serrulate than those of J. nigra, neither of which agrees with my experience of plants grown near each other in this climate, and is probably, if not altogether an error in drawing, to be accounted for by the supposition that the sketches were made from specimens growing under widely different circumstances.

The species employed in the comparisons are not in all cases the nearest that might be had. Pyrus baccata, for instance, would be a much better match for P. coronaria than P. malus; but they were the best my facilities afforded me. Some allied trees could not be compared in all points, and were therefore left from the list. Æsculus, for instance, had shed its leaves at the date given,—too early for comparison in persistency of foliage; but in points 2, 3, 4, and 5, the differences between Æ. hippocastanum, on the European, and Æ. flava, on the American side, agree with other species of the genera named.

The observations are perhaps too limited, in the absence of more extensive examinations of other characters and other plants, to establish the fact that, whatever may be the principle governing the origin of species,—whether it be by "progressive development," "natural selection of physiological advantages," or by "special and continuous acts of creation,"—it is in conformity with one regular and uniform law; but their tendency is so evidently in that direction, that I submit the facts for more general investigation, in the belief that it will prove a novel and interesting branch of study in botanical science. *The Gardeners' Monthly.*

FOREIGN CRITICISM.

What our Friends think of us.—A fortnight ago we gave some account of the Exhibition of the Royal Horticultural Society on the 14th of June, when unfortunately it poured with rain. We must, however, add, that the bad weather did not prevent people from admiring our countryman M. Durenne's beautiful fountain, cast at his foundry at Sommevoire, to decorate the garden at Kensington, or that other exhibited by M. Barbezat and cast at Val-d'Osne. An abundant supply of water, raised by steam, flows from these two magnificent specimens of French industry, and produces the most charming effect. We rejoice that France has contributed to the decoration of the part of the garden in the middle of which stands the statue of King Charles Albert.

The greatest novelty at the Exhibition of the 14th of June was unquestionably a basket of Mexican flowers, the form of which surpassed in oddness all that can be imagined. Picture to yourself large green flowers, with a cup-shaped corolla, from the centre of which projects an arm, ending in a sort of hand, from the palm of which appears a crimson style. These odd freaks of nature proceeded from Cheirostemon platanoides, which well deserves its name. I heard it asserted that it was flowered for the first time in England by Mr. Charles Dorrien, of Ashdean, near Chichester; but I think I recollect having read somewhere (though I never had an opportunity of seeing it) of its having been introduced into France before it appeared on the other side of the Channel.

The cultivation of Orchids continues to make rapid progress, notwithstanding the obstacles and disappointments which gardeners must meet with who devote themselves to the care of so capricious a plant. What care, what trouble is represented by a plant like Mr. Williams's Chysis Limminghi, or by Dendrobium Falconeri exhibited by Mr. Bateman! Admired as they are by ladies, who perhaps fancy they see in them a reflection of their own beauty, would not their admiration be far greater if they could be made to understand the difficulties overcome, and the horticultural skill represented by these airy forms, many of which would be irreparably injured by a breath of wind. If these humble rivals of feminine grace did not possess an irresistible fascination, who would devote themselves to their cultivation? But is not the increasing interest which they excite, a kind of protest against the dull routine of modern society?

The contest for the prize offered by Sir Wentworth Dilke for the best dessert of fruit and flowers, excited as much interest as the Derby day. There were as many as 45 different groups, and round a table 100 yards long, on which Pomona displayed her most tempting fruits, I heard bets being made, thus introducing to this quiet place the habits of the turf.

The second exhibition of flowers for the season took place on the 17th June, at the Regent's Park Gardens, on which occasion the weather was more favourable than it was on the 14th. There the numerous visitors who were attracted to this charming place, could freely gaze upon the beautiful collection of Japanese plants imported by Mr. Veitch, while those others with variegated leaves again excited enthusiastic admiration.

A very beautiful exhibition, exclusively of Roses, was held on the 26th of June at the Gardens at Kensington. Nothing could be more magnificent or bear stronger testimony to the skill and courage of English gardeners. They have not only infused into this lovely flower every colour of the rainbow, but have increased its size indefinitely. In this way they prove how thoroughly they understand the use of greenhouses and artificial heat. *M. Barral, in Revue Horticole.*

THE FANCY PELARGONIUM.

[*Reprinted from the Florist at the desire of the Author.*]

This plant, although one of comparatively easy culture, is, perhaps, more generally mismanaged than any other. Instead of short, sturdy specimens, how frequently are they weak, drawn, and sickly, when with an ordinary amount of care they might have been all that could be desired. As a decorative plant its merit is very great, producing, as it does, large masses of flower of the gayest and most varied colours; in fact, by slightly varying the ordinary treatment, it may be had in bloom nearly the whole of the year.

The mode of treatment which I have found most successful is as follows, commencing with the propagation of the plant:—To insure success, the cuttings should be moderately firm and well ripened shoots; the method of making them is too well known to need description here. The soil in which they thrive best is thoroughly decomposed loam and dung; this, with a liberal admixture of sharp silver sand, with the addition of a little leaf mould for the cuttings, is all that is necessary to grow them in perfection. Having a supply of the foregoing, next procure some clean sized, 48-pots, well drain them with broken potsherds, make the soil fine, fill them, and them moderately firm; then insert the cuttings, as many as the pot will hold without crowding; make them quite tight, and the operation is complete. Now set in a light airy place, protected from heavy rains. Do not shade, as they will bear any amount of light; give occasional supplies of water, and in three weeks or a month they will have struck root. When rooted sufficiently, pot them off separately into small 60-sized pots, taking care to preserve as much of the root as possible; after potting, place them where they can be kept moderately close and warm. As soon as established, give abundance of air; and should green fly make its appearance fumigate immediately. This is of the greatest importance. Their next shift may be into 48-sized pots, in which after growing a few joints they may be stopped, which will cause them to break and make dwarf bushy plants. If they have been well attended to they will be ready for their final shift by the middle of November into 32-sized pots, which will be large enough for the first season. Well drain the pots and use the compost rather coarser than before. After this keep them rather close for a few days until they are established, when, on all favourable opportunities, they should have abundance of air. The night temperature need not exceed 42°; it is a common mistake to keep Fancies too warm. Carefully remove all decayed foliage, and keep the stage, glass, and all about them perfectly clean. In watering great care must be taken at this season; it is better to keep them rather on the side of dryness than otherwise. If possible, choose a fine bright morning for this operation. Make a little fire, and open the sashes at the same time to dispel the damp, so that the house may become perfectly dry before closing, which should be done early to dispense with fire heat as much as possible. As soon as shoots are sufficiently long they should be tied out; fasten a piece of string beneath the rim of the pot, and draw the shoots down gradually as they elongate. When the days lengthen they will require rather more water, and occasionally a little weak liquid manure may be given them. Sheep or deer dung is the best. As the plants progress they will require all the space that can be given them. Pay every attention to them now, as it is of the utmost importance that they should become as strong as possible the first season. In bright weather, when the trusses of bloom make their appearance, a slight shade will be necessary; increase it as the season advances, and occasionally the syringe may be drawn over them on fine days before closing the house. Before the flowers expand, fumigate two or three nights in succession; this will destroy all green fly, and keep the plants clean for the rest of the season. The cultivator will now have little to do but to admire their beauties as they come into bloom.

If you intend exhibiting, the treatment the second season must be slightly varied. As the plants go out of flower they should be watered sparingly and placed where they can have abundance of air and sun, so that they may become ripe and hard before cutting down, which is generally performed about the second or third week in July. Leave the shoots from 4 to 5 inches in length and cut them, so that when completed the plants form half a globe. They should now be watered and occasionally sprinkled, to induce them to break freely. When the shoots are about half an inch in length they should be shaken out, the roots shortened, and repotted into a size smaller pot. After potting they may be placed in a pit; keep them close, and shade gradually, reducing this as they become established. They should be housed by the first week in September, and encouraged to grow as much as possible. Those for the May shows should receive their final shift into 8-inch pots not later than the first week in October; those for June and July, in November. Use the same compost as before recommended, break it fine, but do not sift, and use abundance of drainage. They will require great care to prevent their becoming drawn, and train the shoots so as to form handsome round bushes. In January, those intended for early flowering should be selected, and receive a little fire heat, with a temperature of 45° at night, and 50° by day. Increase the temperature as the season advances. Give occasional supplies of weak liquid manure, and attend strictly to fumigation. Those for June should not be excited at present, and those for late flowering should be stopped about the middle of the month. As the plants advance, they require increased attention; and when coming into flower carefully exclude all bees, and invariably water them in the morning, so that they may become dry before night. If the house is closed when damp the flowers decay and soon fall off. They should now be from 2 to 3 feet through, and loaded with flowers of fine quality, and fit objects to grace any of the metropolitan exhibitions. The following are a few of the best varieties in cultivation; Acme, Arabella Goddard, Beauty, Bridesmaid, Captivator, Clara Novello, Cloth of Silver, Celestial, Emperor of Morocco, Formosum, Lady Craven, Madame Sainton Dolby, Madame Rougière, Modestum, Negro, Omega, Princess Royal, Queen of the Valley, Rosabella, Sarah Turner, and Undine. *Henry Bailey, Jun., Shardeloes Gardens, Amersham, Bucks.*

Indoor Gardening.

To continue the subject of striking cuttings without heat, that is to say, without artificial heat.

The Verbenas, Heliotropes, Calceolarias, and Geraniums are those most often wanted. Mimulus grows so well from seed, that except for winter flowering or keeping some favourite kind it seems scarcely worth while preserving it through the winter when room is very precious. A favourite amusement of mine is to sow a few seeds of this early in the year in a small pot of soil, when almost every blossom opens unlike its neighbour.

The Verbenas and Calceolarias require little care in winter, provided they are safe from damp and from actual sharp frost. They require abundant light. Heliotropes cannot bear a single degree of frost; at least, they will not in pots. And yet once I had some quite covering two walls in a greenhouse, where they grew in a pit of soil and were completely woody. The hot-water pipes getting out of order the frost got in and quite destroyed the leaves, but of course the soil was not frozen, and in a short time all the woody branches put out young shoots again and were covered soon with blossoms. The plants were trained on a trellis, and made one of the nicest climbers for a wall that I have ever seen — the house was always so delightfully perfumed. The young plants, however, do require warmth.

Geraniums must be kept also from sharp frost, though they will live with less light and have often been kept successfully covered up with hay.

The cuttings to strike now should mainly then depend on the accommodation that we have to offer them. For my own part after August I grudge every inch of room that is stolen from my bulbs. They seem to be such an unfailing enjoyment that with these alone and a few Chinese Primroses, one or two tree Carnations, and one or two Heaths or Camellias, I thing that indoor gardeners should get through the winter well.

The Verbenas and Calceolarias, however, if they are to be, should be struck in sand and water, as we should do Begonias, and as we may do any of the very young soft shoots. Many hard-wooded plants even, hard to strike by other means, will grow in this way well.

The shoots, taken as short as possible and as fresh, and having only the lowest leaves snipped off, if necessary, near the stalk (not close to it), should be stuck in all over the surface till they look like a little forest. A common crockery saucer answers best, the largest one can get; and being nearly filled with pure silver sand, the water has just to be poured on gently till it has soaked and covered it. It is always well to shade these things if possible, and a most feminine "hand-glass" is formed of a roll of pasteboard with a piece of oiled paper or oiled silk or linen tacked round the top like a drum-head. The lower the walls are the better, so that they keep clear of the young plants.

When transplanted, very poor sandy soil does best for the winter, and on the whole, for in-door gardeners, perhaps single pots are best. The cuttings raised in sand must as a rule have their roots filled in round with sand when they are first removed.

One of the most delightful window plants I have ever known for places where they have light without any heat is the little red Indian Pink. Some years ago we had it kept in a sort of study in which no one sat, and which contained several plants. This Pink would always blossom the whole winter, and was delightfully fragrant, much like a clove Carnation. We got our plant from a cottage window, and all trace of it has been lost. If any one, however, should recognise its description I should be exceedingly grateful if they would tell me its name and where it can be obtained. It grows like any other common hardy Pink and has dark green leaves, much like a Sweetwilliam, and cuttings of this should be struck now as soon as possible for flowering in the spring. *E. A. M.*

Home Correspondence.

Is the Gladiolus of the New Forest G. segetum or communis, or what else.—It was my business to endeavour to settle this question long before it occurred to the inquirer in the *Chronicle*. I may perhaps first state a few of the facts in the history of the English plant. In July 1857, the lamented Mr. Borrer, who did more for the advancement of British Botany than any one of his contemporaries, informed me that a Gladiolus had been found wild in the New Forest. From a comparison of it with the works of Koch and Reichenbach, he thought it might be the G. imbricatus (Linn.), although he noticed several points in which our plant disagreed from that of those German authors. He remarks that "the plant is in every part much smaller than G. communis (as it grows in our gardens at least), with fewer flowers, and the valves of the capsule are not keeled." He informed me that the discoverer in June 1857, was the Rev. W. H. Lucas. Mr. Borrer saw the plant in "two places about two miles apart, and each at least a mile from any house. In both places it grows scattered on dry ground amongst brakes (Pteris), which overtop it before it comes into flower. The situation is such in both places, that I should suppose no one would suspect that the plant is other than indigenous, as truly as its companion Habenaria bifolia." Mr. Borrer was not accustomed to admit plants to be indigenous without a careful examination of their claims, and as he speaks so decidedly in this case, I for one am ready to accept his conclusions. In another letter he states that Gladiolus had been noticed in two additional places, making four in all. This was in 1858, since which time I have received no further information concerning the plant found in the New Forest. But Mr. A. G. More has learned that it exists, or did recently exist, in a wild neglected wood in the Isle of Wight. This is not the proper place to enter upon the discussion of intricate botanical subjects. I shall not therefore trouble the readers of the *Chronicle* with my reasons for believing the plant not to be G. segetum, but simply state that our plant has much more slender leaves, anthers considerably shorter than their filaments, much smaller flowers, and slightly winged seeds. It agrees more nearly with G. communis, but wants the large flowers, broad leaves, strong keels to the upper part of the valves of the capsule, and strongly winged seeds. G. imbricatus has broader leaves, of which the lowest is bluntish (whilst they are all narrow and very acute in our plant), differently shaped stigmas and more closely placed flowers. After much consideration I have arrived at the conclusion that our plant is the G. illyricus (Koch). It is one of the small number of plants which make their way from the coasts of the Mediterranean Sea, up the western shores of Spain and France, until they just reach our southern or western districts. G. communis does not approach nearer to us than the south of France. G. segetum extends far up the west coast of that country; and G. imbricatus is unknown there. I think that those botanists who allow that more than two European species of Gladiolus exist will call this plant G. illyricus, and that those who combine the supposed species under two names will denominate it G. communis. *C. C. B.*

Detonation of Palms.—With respect to the opening of the spathes of Palms with an explosive sound I was not aware there was any doubt on the subject, until I observed the remarks following Dr. Seemann's communication in *Gardeners' Chronicle* and *Bonplandia*. It has been asserted in many works, more particularly with reference to the Talipot Palm (Corypha umbraculifera) that "it bursts with a loud report, which may be heard at a considerable distance." As far as my knowledge goes this is an exaggeration, for the spathe of that Palm, as in all those I have observed, when it expands only produces a slight explosive sound, more or less loud, but audible only to an attentive observer. This I have remarked in Ceylon, as well as in the Coconut, Caryota urens Palm and the Betel nut tree, but I have no doubt it obtains in all Palms; yet I do not consider it occurs in every spathe that opens, as that phenomenon would depend upon the greater or less quantity of air contained within, for I do not regard the explosive power to result from any accumulation of heat, but from compressed air. The expansion of the spathe occurs at all times of the day. The Palm spathes, it may be remarked, expand when in a green state, and the same circumstance occurs in Peas, Beans, and other leguminous plants when opened artificially, the explosive sound being emitted in them (according to the compressed air within) to a greater or lesser degree, and sometimes not at all. It may also be produced in the pods of the Gomphocarpus or Cape Cotton shrub, the Bronbadero of the Portuguese (Asclepias), Bladder Senna (Colutea), and many others. Many of the pods of the leguminous trees, when ripe, may frequently be heard expanding with a slight noise on shedding their seeds. The reason it is doubted is probably that few persons have paid much attention to it, or had an opportunity of making observations in large groves of Palms, such as may be seen growing in Ceylon, South Sea Islands, &c., or had the patience required to watch the result. As we have now growing in the Sydney Botanic Gardens specimens of Seaforthia, Cocos plumosa, and Date Palms, bearing spathes, when an occasion again offers experiments may be tried artificially whether any explosive sound results on their being opened, although from what I have observed formerly the result would not be decisive from a few solitary examples. *George Bennett.*

Summer Roses.—In speaking of the late Rose Show at the R. Hort. Society's Gardens, you say, "Both among old and new varieties the exhibition of the 26th ult. offered unmistakable evidence that the race of the Hybrid Perpetuals is the dominant one, if it be not indeed destined to become almost the exclusive occupant of our Rosarium." As a patron of the Rosarium, as a patron of that truly fairy scene a Rosarium in full bloom—not a few pets in pots, but a well arranged garden of Roses—let me say a few words for the Gallicas, the Hybrid Chinas, and Hybrid Bourbons, for those sorts that usually pass under the name of "summer Roses." These pets in pots may be all very well for the Rose shows at Kensington or the Regent's Park; but for the Rosarium, to denude it of the summer Roses would be to rob it of three-fourths of its beauty and splendour. It is now six weeks since the blooming began, and while many a Hybrid Perpetual has shed its half dozen or dozen blooms, and has only a few fading leaves left, the summer Roses are many of them still gay, after showing double as many blooms at the same time during four or five weeks. Where is the Hybrid Perpetual such as Leopold de Beauffremont, which, on a standard 4 or 5 feet high, will carry a head nearly as big as a carriage umbrella, with its 50 or more blooms out at the same time, and keep that up for a month? It is to those only who reside in the country during what is called the height of the London season, that these real glories of the flower garden are capable of being thoroughly known and appreciated. As individual flowers it would be difficult to find the peers or peeresses of such Roses as Senateur Vaisse, Comtesse de Chabrillant, Mrs. Rivers, Madame Vidot, Wm. Griffith, Prince Leon, Victor Verdier, Géant des Batailles, Gen. Jacqueminot, and others that might be named. And with these, with the constitution of Baronne Prévost, we might perhaps keep up the splendour of the Rosarium without the help of the summer Roses—size, shape, and colour, from the delicate blush to the fiery crimson. But while in the summer Roses we have every shade, from Madlle. Zoutman and Blanchefleur, to Ohl and Boule de Nanteuil, let us hope the summer Roses will still find their place in what is deserving of being called a Rosarium. In form alone can the summer Roses be said to be inferior; while in variety of colour, in profuseness of bloom, in richness of perfume, and above all in vigour of constitution, they far surpass the Hybrid Perpetuals as a class. In the famous winter of 1860-61, I scarcely lost a summer Rose, while the Hybrid Perpetuals disappeared by hundreds. Allow me to say thus much in vindication of the *Summer Rose. Brantham Court.*

Archerfield Early Muscat Grape.—In answer to the inquiry of Mr. Rivers concerning this Grape, I have to say that it is not a seedling raised by me. It came into my hands in 1858 while forming a collection of Grapes with which to plant a range of Vineries here—not one of which was received from any foreign source. From the very weakly condition of the Vine in question it was cut down in the winter of 1858, grown on the following summer and planted in 1860. For anything I know to the contrary it may have been a seedling Vine; this is possible but not probable. Whether it be the same as that which Mr. Rivers—from description—suspects it to be, remains yet to be proved, and I can conceive of only one way of satisfactorily settling the point, *i.e.*, that both varieties be laid before the Fruit Committee of the Royal Horticultural Society of London at the same time and in a ripe state. And if Mr. Rivers, or any other grower, will kindly lend their aid in doing this, I will be happy, if all goes well, to produce the Archerfield Muscat in a ripe state from the middle of April next onwards throughout the season. I suspect, however, if Mr. Rivers describes it correctly, that the Smyrna Muscat is not the same as the variety grown here. According to Mr. R. the Smyrna ripens at the same time as the Royal Muscadine. I grow the Muscadine here in the same house with Black Hamburghs, and I find that it ripens at least three weeks before the Hamburghs, while according to my experience of the Archerfield Muscat it requires 5° more heat to ripen it about the same time as Black Hamburghs, as I have previously stated in your columns. I found that a house of Black Hamburghs shut up on Dec. 1 ripened at the same time as the Archerfield Muscat started on Dec. 14, having throughout its various stages at least 5° more heat than the Hamburghs. I should think with the same temperature they would be about equal in point of earliness; and all who have grown the Royal Muscadine know it to be some weeks earlier than the Black Hamburgh. *D. Thomson, Archerfield, July* 14.

Diseased Pine Apples (see p. 621).—Having met with the same disappointment in my Pines for two successive years as your correspondent, I was at a loss to know what to do with them. Having been informed that the cause might possibly be want of a greater amount of bottom heat, I applied it, and to my satisfaction I have now the pleasure of cutting good and perfect fruit. If your correspondent should desire further instruction, I shall feel great pleasure in furnishing him with my method of treating the Pine practically if he will correspond with me by letter. *G. C., W. Dengate, Seedsman, Ticehurst, Sussex.*

Lawn Mowers.—I have tried both Green's and the machines of others, and I find Green's the best. I consider his machine for 1862 equal to all that has been said in favour of it. I have tried it on different kinds of Grass, and it performs its work efficiently. *C. Spink, Gardener, Chapel Allerton Hall, Leeds.*

Killarney.—The native grandeur of the scenery of Killarney needs but little comment. None who have visited this enchanting locality, abounding in every variety of Nature (and complete in all) but must acknowledge how great a loss any person must have who, in search of the "sublime and beautiful," has passed by this spot. But my present desire is to draw attention to the horticultural portions of the two demesnes which form the immediate boundaries of the upper and lower lakes. The noble proprietor of the Kenmare property deserves the warmest thanks from all classes, and especially tourists; for his lordship, with becoming liberality, permits such persons at all times to visit his demesne, the drives through which are kept most scrupulously neat, and the views from many places are not to be equalled; but on one day his lordship opens to all the flower grounds in front of the family mansion, and it would be unfair not to offer a meed of praise here in honour of the great change and visible advance in the taste displayed in the arrange-

ment of the terrace, which is laid out in the Italian style of horticulture; the beds all of the newest and most exquisite design, and filled with plants grouped with every due care and attention to the variety of colour and size. It is a gratifying consequence that this privilege is duly valued, and that Lord Castlerosse is rewarded by his humbler neighbours with the only thanks they can bestow—respect for the opportunity afforded them to take a lesson if they are inclined to imitate in a smaller way. And the truly magnificent estate of "Muccross" is equally worthy of comment; to any fancier of the Fern tribe this is a perfect nursery. In no part of the United Kingdom is there to be found so large a variety of native Ferns as here; it is quite refreshing to see such gorgeous specimens; but I cannot refrain from expressing surprise that in none of these princely residences is there a conservatory of any sort to be found, not a yard of glass! One can scarcely conceive the fact, that in this age of progress any one possessing the broad acres and lordly mansions of Kenmare and Muccross could overlook the advantage of a range of glass. However, if those who make these magnificent estates their home be content it is no affair of any other party, and most certainly to see the grounds at this season such would never be missed. *E. A. M., Dublin, July* 8.

Quercus Mirbeckii.—I see in your pages a question about this Oak, which I can answer I think. It is a native of Morocco, Algiers, Tunis, and all North Africa, as well as South Spain; a sub-evergreen of good size, common about the Cork woods in the neighbourhood of Gibraltar and along the mountains, growing with Quercus Ilex, Quercus gramuntia, and Q. suber. It is often called Quercus Zan—leaves often very large. The Hare's-foot Fern is found growing on the Cork trees with the common Polypody on the smoother bark of the Q. Mirbeckii. *Chas. S. Cocks, July* 16.

Water Pipes.—Your Correspondent "H. H." goes rather a circuitous way to work in recommending iron pipes used for conveying water to be filled with earthen tubes to prevent the rust of the iron being injurious to the water. Thanks to the repeal of the duty on paper there is no longer need for the use of iron pipes, either for the conveyance of water, gas, or sewage; for the Patent Bituminised Pipes, made under the patent of Mr. Charles Newbold, are found to answer every purpose, with the advantage of being inoxidable, only about one-fifth the weight of iron, and from 30 to 40 per cent. cheaper; while as compared with lead the Bituminised pipes are only one-fourth the price. I have lately used a considerable length for conveying sewage, and they answer perfectly, and I am now using many hundred yards of the smaller size (2-inch) for the conveyance of water to supply a number of first-class villas. These pipes are proved by hydraulic power to resist a pressure of 220 lbs. to the square inch, equal to 506 feet head of water, which is more than double the altitude of the highest reservoir in London. The bituminous pipes will stand 150° of heat, and rats or vermin will not touch them, and when laid under ground they may be considered indestructible except by fire. The pipes vary in size from 2 inches to 3 feet in diameter, the former being 2*d*. per foot, and the latter 13*s*. They are readily laid by any intelligent labourer, and connections and branches are attached in a very simple manner. For garden and agricultural purposes I think they will be found exceedingly useful, and for exportation, from their lightness, they are also very desirable. So far I have every reason to be satisfied with the pipes, except when exposed to the sun, and that they will not stand. *W. P. Ayres.*

Strawberries.—On gathering fruit from plants of British Queen, of which there is an abundant crop, I find whole handfuls, some ripe but most unripe, lying on the bed, severed from the stalks close to the fruit. Is this the consequence of Grass having been put under them, and becoming partly rotten from the abundance of rain, and the fruit also rotting from the effects of it?—or is it done by mice, of which several have been seen burrowing under the Grass? *R. Salwey, Sevenoaks.*

Orchard Houses.—There are many I fear whose experience quite coincides with that of Mr. Cox respecting orchard houses. The fact is we have been led to expect far too much from such structures. They are certainly very useful for many things besides the growth of fruit, but as that is the primary object let us inquire into the cause of failure. Last spring fruit trees generally bloomed well, but at the time the flowers were open what was the state of the atmosphere? Why, much more like that of Lord Mayor's day in November than March. The weather was exceedingly cold, and what was worse, rain fell all day and every day; the atmosphere of every orchard house not artificially heated was so charged with moisture that setting could not take place. The pollen cells were kept so continually moist that in many cases they never burst at all, for at this stage I paid particular attention to them. For such conditions we have a simple remedy; all we want is a hotwater pipe laid along just inside the front ventilator, and in very many cases this could be supplied from some apparatus already at work. I am not alluding to forcing—that is another affair; all I propose is, power to dry the atmosphere of the house, and this could be done by heating the pipe by day, while air was on; it would also be useful in case of sharp frosts, for I find the thermometer in an orchard house to be only about 4° higher than in open air on a sharp morning, but with a hotwater pipe we could dry the atmosphere and keep out frost. If all is well I intend to introduce a beehive into a large house next spring, believing that I shall find its inmates useful auxiliaries in such a place. *A. Dawson, Rood Ashton, July* 15.

——The house I have under my charge corresponds with that of your correspondent, except that my trees are planted in the side borders, and those in pots are placed in the centre beds. My experience does not at all coincide with that of your correspondent. This is my fourth fruiting season, and all the trees in the house, consisting of Apricots, Peaches, Nectarines, Plums, Pears, Apples, and Cherries, are in every way satisfactory. There is not a tree on which I have not been obliged to thin the fruit very severely; every blossom seems to have set. In fact those in pots are more promising than those planted out. Apricot trees, which your correspondent condemns as worthless, with me are bearing each 2 dozen fruit, and they are not more than 3 feet high. I have had the curiosity to count the fruit on some of the trees, and I find that Peaches and Nectarines are carrying from 4 to 5 dozen. On a Plum tree I find there are 79 fine fruit, all swelling as regularly as one could wish. In short I have not a tree that is not in every way satisfactory. Numbers of visitors have pronounced them beautiful objects. I hope this will lead your correspondent to think that orchard houses are not a failure after a year or two as he states. *H. Harrison, Gardener, Lower Park, Dedham, Essex.*

Orchard Houses.—My experience as to an Orchard House is precisely that of Mr. E. W. Cox. Seven years ago I built a lean-to Orchard House for Peaches and Nectarines. I had my trees from Mr. Rivers, whose management I carefully followed. I have an unlimited supply of river water, with which the trees were regularly syringed by means of a hose, besides all the manure that could be applied, yet in the third year the trees began to show signs of decay, and in the fourth, with a few exceptions, they all died in the course of the summer. I attribute this to the annual cutting the toproots which strike through the pot. Be that as it may such is my experience, although there is no denying the success of Mr. Rivers. I have now re-made my border, in which I have planted my Peaches and Nectarines, and I have every prospect of abundance of good fruit. *G. L., Cambridge.*

Societies.

BOTANICAL OF EDINBURGH: *June* 12.—Professor Balfour, V.P., in the chair. The following communications were read:—I. *On the Nature and Peculiarities of the Fern Spore.* By Mr. J. Scott. In this paper the author described the spore of Ferns, and traced its development, and the changes which it undergoes. He showed that it was not produced directly by the fertilisation of a germ through the medium of antheridia and archegonia, and that when sown it reproduced, in a marked way, the variations which happened to occur in the Fern from which it was taken. He examined the theories which have been advanced relative to its nature, more especially those which consider it a bud, and those which regard it as an unfertilised germ; and he stated various reasons for rejecting the former view and adopting the latter. He therefore considered the spore to resemble the seeds or germs of such plants as Cœlebogyne, where the embryo is perfected without contact of pollen. The paper was illustrated by living specimens of ferns in various states produced from spores.—II. *Gleanings among the Irish Cryptogams.* By Dr. Carrington.—Dr. Douglas Maclagan stated to the meeting that, in examining the ovaries of Richardia Æthiopica, he found them to contain abundance of acicular crystals or raphides, and starch granules—the former being 1-1000th of an inch in length, and the latter 1-6000th of an inch in breadth. By chemical analysis, he ascertained the crystals to be composed of oxalate of lime and not phosphate of lime.—Professor Balfour announced that General Grey had transmitted to the Museum at the Botanic Garden, by command of the Queen, a collection of Scotch Alpine flowers, modelled in wax. The flowers are some of those found in the neighbourhood of Balmoral, and they have been modelled by Miss Matheson, of Aberdeen. The flowers are neatly arranged on a small rockwork of granite, which is raised on an oval pedestal of imitation granite. The whole is covered by a bell-jar, and the date is marked "June 1862."—Dr. Greville exhibited roots of New Holland Acacias which emitted a strong garlic odour. He stated that while repotting a number of these plants he found the same strong garlic smell to be given off by 20 different species.—Wm. A. Stables, Esq., sent specimens of Pinguicula alpina, from the Black Isle, Ross-shire, accompanied by the following note:—"I was lately in the vicinity of the habitat of Pinguicula alpina, [and send you herewith a few dried specimens. I have sent a few roots at the same time to the Botanic Garden. The station is wofully encroached upon by the plough, a very small corner of it indeed being left. One outlying portion of the habitat, and the first I came to, afforded no specimens at all—the marsh being converted into square fields, on which large bullocks were grazing. The progress of improvement along the 'Millbuy' is very great, and will, I fear, soon remove P. alpina from the list of British plants."—A letter was read from Mr. John Sim, in which he mentioned that he had found Claytonia alsinoides in great abundance, along with Asperula taurina, Symphytum officinale. Valeriana pyrenaica, Doronicum plantagineum, &c., by the side of a small stream in the woods of Murrayshall, about three miles east of Perth. On Moncreiffe Hill, near Bridge of Earn, he had also met with Asperula taurina, Doronicum pardalianches, D. plantaginea, Anchusa sempervirens, Allium scorodoprasum, and Scrophularia vernalis.—The following note from J. Anderson, Esq., Perth, was read:—"I enclose a very singular shoot from the plant known as Taxus japonica or Cephalotaxus Koriana, which proves it not to be a distinct species as described, but a sub-variety of Cephalotaxus drupacea or Fortune's female variety."

LOUTH HORTICULTURAL EXHIBITION.—On Thursday July 10, the summer Flower, Fruit, and Vegetable Show of Louth in Lincolnshire was held in the grounds of the Rev. W. Smyth, of Elkington Hall, advantage being taken to combine into one gala day the two attractions of the Flower Show and a Review of the first battalion of Lincolnshire Volunteers, which in spite of threatening and uncertain weather collected some 3000 or 4000 people. The park and grounds are about three miles from Louth, and are extensive and picturesque. The tent for the flowers was a long narrow centre one, with a semicircular wing open to it at each end appropriated to the fruits and vegetables; the flowers being placed along a centre table, and the fruits on tables circularly disposed round the side tents at the end. This arrangement of the plants had the advantage of showing both their sides, and rendering visible any defect of growth, at least in the taller ones. But it rendered the general aspect heavy, and prevented the collections of similar things from being seen together. The Fuchsias, as usual, were too old, and many of them not in flower, but two or three of them will be fine objects in another week. These occupied the centre of the table or stand, and crowned the whole length of the centre. The collections that were most conspicuous and attracted most attention were the handsome foliage plants and the Ferns; the best of which came from Mr. Chatterton of Tathwell. Among the former was a Maranta zebrina, some Caladiums, Cissus discolor, a Ricinus, and above all a Croton, a model of growth and golden beauty. The Ferns would have attracted observation at Kensington, and consisted of Dicksonia antarctica, Adiantum trapeziforme, Nephrodium exaltatum, Platycerium alciforme, Polypodium aureum, and Gymnogramma chrysophyllum. There was a handsome Clerodendron infortunatum, some Allamandas not well covered with flower, and a bright coloured but straggling Euphorbia. Neither Achimenes nor Gloxinias were well represented, and the collection of the former that obtained the second prize we thought entitled to the first, as dwarfer and better grown. Cockscombs were few but good; and one collection of Balsams by Rev. F. Pretyman was deservedly marked with a prize, being dwarf, bushy, and full of fine flowers.

In Cut Flowers some stands of Sweet Williams, that might have been mistaken for Phloxes, were very ornamental. But the table of Roses engrossed the visitor's admiration. There were a fair number of pans staged in twelves and sixes, the Rev. S. R. Hole carrying off the Silver Cup, a very elegant cup too, as he deserved, for there is a poetical justice in the Rose paying him this tribute. But it was thought by many that if the Rev. James Garvey had not divided his forces by competing in both classes of twelves, he need not have been contented with coming in second for the Cup.

In Fruits there was nothing that calls for particular remark. There were two good Pines, a Queen taking the prize; one Melon only; the Grapes not in abundance, and only one dish well coloured; Cherries poor; several dishes of Strawberries, those that gained the 1st and 2d prizes really fine. Of Vegetables there was a good collection, all of it creditable, but nothing extra. The Cauliflowers looked the best; the Cucumbers nearly all of the Syon House family. Altogether it was a good provincial exhibition, and showed the advances that good gardening is everywhere making.

Notices of Books.

Lectures on the English Language. By George P. Marsh. Edited, with additional Lectures and Notes, by W. Smith, LL.D. Small 8vo., pp. 498. Murray.

No one who watches the progress of deterioration that European tongues are slowly undergoing can doubt that a learned critical book like this is of the utmost value to the student of languages. Whether it will dam back the stream of change in England we cannot pretend to say. It must surely do something towards effecting so desirable a result. Our colonies, our prodigious commerce, and our daily intercourse with numberless foreign countries, more especially with our American kinsmen, necessarily produce a mixture of dialects, amidst which the language of Addison runs great risk of perishing.

"The purism," says Dr. Smith, "which has for some time prevailed in Germany and Scandinavia, has expelled from their respective literatures not only foreign complex phrases, but, to a considerable extent, all words of extraneous etymology. In English, we have no means

of supplying the place of such expressions, and the essentially mixed character of the speech renders them less repugnant to our taste than they are in languages which are so constituted as to be able to do without them. A large proportion of these foreign mercenaries were first employed in the nomenclatures of the learned professions, and many are still confined to them. Others have passed from the bar, the pulpit, and the academic hall into the language of common life, and are, though with a certain hesitation, often used by the most unschooled persons. The lawyer speaks of the rule *caveat emptor*, denies the authority of an *obiter dictum*, contends that the *onus probandi* lies on the other side, disputes how far words spoken are a part of the *res gestæ*, and mentions an undecided question as being still *sub judice*. The dialects of logic, of criticism, and of parliamentary law, have also contributed largely to scatter through our speech these incongruous expressions, the currency of which amounts to a confession, that our own language is too poor to furnish a dress for many ideas which we have borrowed from alien sources. People who know small Latin make deductions *à priori*, *à posteriori*, and *à fortiori*, use arguments *ad hominem*, and denounce the conclusions of their opponents as *non sequiturs*; college graduates make affectionate mention of their *alma mater*; critics quote *verbatim et literatim*, and note a casual error of speech as a *lapsus linguæ*; in all deliberative bodies resolutions are adopted *nemine contradicente*, and when the business of the meeting is terminated, the assembly is adjourned *sine die*; protectionists and free-traders dispute about *ad valorem* duties; politicians hold offices *ad interim*, *durante bene placito*, or *pro tempore*; all the world says *et cetera*; and *vice versâ*, though with a pronounciation of the *v* which comes unfortunately near a *w*, has even entered into the vulgar Cockney dialect. Many Greek and Latin nouns are employed in English with their original plurals. Thus we write phenomen*a* not phenomenon*s*; memorand*a* perhaps more frequently than memorandum*s*; termin*i* of a railroad not terminus*es*, and some very classical and critical persons have gone so far as to say omnib*i* for omnibus*es*. But all these are exceptional cases, and the frequent use of foreign forms and phrases is contrary to the genius of every cultivated language, as well as to the general rules of idiomatic propriety and good taste."

In this we hope all lovers of manly Anglo Saxon literature will concur.

It is not, however, by operating solely upon the mind of students and scholars that we can expect our mother tongue to be purified. There remains the great mass of readers and writers which cheap books and almost unlimited education have brought forth and are daily encreasing. Upon that prodigious multitude learned dissertations produce no effect. For the crowd short simple rules, *made plain by many instances*, are wanted; and he who shall address himself to the task of thus reforming our familiar tongue will deserve the gratitude of his countrymen. Nor do we think he will run the risk of being praised and starved. On the contrary if real talent and sound critical judgment are applied to the task, he will find it not more honourable than profitable. Let us hope that the day is near at hand when such a guide may be a text-book in every school.

The *Botanical Magazine* for June contains figures of the following subjects:—*Bolbophyllum cupreum*, an insignificant tropical Eastern epiphyte.—*Rhododendron fulgens*, one of the magnificent Indian species, with which "none can vie in colour," and which "from the gorgeous hue of its blossoms received the name of fulgens from its discoverer, Dr. Hooker." It has the leaves rusty beneath, and is closely allied to R. campanulatum. The specimen figured flowered at Kew.—*Palisota Barteri*, a stove herb of no great beauty, discovered by the lamented Mr. Barter, in tropical Africa.—*Anthurium Scherzerianum*, a pretty little stove herb, from Guatemala and Costa Rica, which was shown the other day at Kensington by Mr. Wendland, gr. to the King of Hanover; it has thick elongate-oblong acuminate leaves, and a scarlet spathe and spadix, elevated on a slender peduncle nearly as long as the leaves, the spathe ovate, and becoming deflected against the stalk.—*Oreodaphne californica*, a "fine evergreen hardy tree," with oblong-lanceolate leaves, strongly aromatic, with a pungent camphor-like smell; the flowers are green, as in many other Lauraceæ, and are collected into close short umbels on the axils of the leaves.—*Echinostachys Pineliana*, a tall and striking bromeliaceous plant, with the green leaves obscurely banded, and the erect flowering stem loosely but wholly clothed with bright red bracts, and terminating in a short dense cylindrical spike of small yellow flowers; it is said to come from Rio de Janeiro.

The July Part of the same work contains: *Rhododendron Dalhousiæ hybridum*, one of Mr. Anderson Henry's fine productions from R. formosum, fertilised by R. Dalhousiæ; the large handsome white flowers are tinged with pink.—*Cœlogyne Parishii*, a Moulmein species having close affinity with C. pandurata, the pseudo bulbs curiously cylindraceo-tetragonal, the flowers large pale green with a beautifully crested lip, slightly marked with dark-coloured blotches.—*Ischarum Pyrami*, a curious tuberous Aroid, brought by Dr. Hooker from the shores of the Lake of Tiberius; it has elliptic subovate Calla-like leaves, and a revolute purple spathe disclosing the long fusiform apex of the spadix, which is also purple.—*Clusia Brongniartiana*, a native of Cayenne, a stove shrub, with thick oblong acuminate leaves, and a drooping cymose inflorescence consisting of few moderate-sized white flowers.—*Saccolabium miniatum*, a very handsome Javanese epiphyte with spikes of orange-red flowers. This beautiful plant is not very often seen, although introduced many years since; its flowers continue a long time in perfection.

BOOKS, &c., RECEIVED.—*Thoughts on the Dwellings of the People, &c.* By T. Hare, Barrister-at-Law (Sampson Low & Co.). An attempt to show "the forces and means" which exist in London for improving the dwellings of the poor. This should be studied by the gentlemen entrusted with the administration of Mr. Peabody's princely gift.——*The Farm and Fruit of Old, a Translation in Verse of the First and Second Georgics of Virgil.* By a Market Gardener (Sampson Low & Co.).——*Handbook to the Pictures in the International Exhibition.* By Tom Taylor (Bradbury & Evans). Here is indeed a guide to the Exhibition, full of wise suggestions, free from crabbed sneers, truthful, clear, and trustworthy. Those who have no opinions of their own upon art, may safely form them upon those of Mr. Tom Taylor.——*Black's Picturesque Guide to Yorkshire*, Second Edition (Blacks), is greatly altered from the first edition. The places are described alphabetically, or nearly so, new illustrations are introduced, much additional matter, and a full Index.——*The Influence of Railway Travelling on the Public Health* (Hardwicke). This collection of cases, republished from the *Lancet*, goes far to show that, irrespective of accidents, railway travelling produces very serious effects upon some constitutions, an opinion in which we have our own good reason for concurring.

Garden Memoranda.

MR. CUTHILL'S, DENMARK HILL, CAMBERWELL.—The chief feature of attraction here at present is Strawberries, of which, like most other people, Mr. Cuthill has this season a comparatively scanty crop. The earliest has been his Black Prince, from which he gathered ripe fruit on the last day of May. Then came in in quick succession Princess Royal, Highland Mary, and Richard the Second. Prince of Wales, and a sort called Newton Seedling, were nearly three weeks later than the Black Prince. Dr. Roden, of The Grange, Kidderminster, writing to Mr. Cuthill on the 20th ult. says, "I hear a bad account of the Strawberry crops all about this neighbourhood, but mine, I am happy to say, will be a very abundant one. Richard the Second and Princess Royal are a perfect sight—but when they will ripen, I don't know. I expect with this cold sunless weather they will be at least another week before they commence to ripen, but they will be very fine, and I think Richard the Second will be first this season. Highland Mary, strange to say, does not crop with me at all satisfactorily. Prince of Wales does extra well; British Queen and Carolina Superba are great favourites of mine, and bear immense crops of fine high-flavoured fruit, and these with Richard, Princess Royal, and Prince of Wales, I intend to keep for my main crops out of a collection of some 100 sorts. Marguerite and La Constante I must not omit to say will turn out great favourites where the soil suits them, the former for an early sort, which, on account of its fine handsome fruit, will supersede Keens', Princess Frederick William, and I think also Eclipse; and the latter for a moderately late sort, with handsome, well-coloured, high-flavoured berries, of uniform conical shape, indicated I conclude by the name it bears." The partial failure, which has been almost universal, Mr. Cuthill accounts for as follows: Last autumn was hot and dry; the plants therefore after bearing a heavy crop had not sufficient means of recruiting themselves, few roots having been made. Spring arrived, and so wet, cold, and sunless did it prove that the few fibres the plants attempted to produce perished and left nothing to support the blossom, which in consequence either became blind or died outright. Even forced Strawberries have this year scarcely fared better than those out of doors. The plants grew too luxuriantly late in the autumn, and did not ripen sufficiently to bear satisfactorily. Some also used strong runners from plants that had not borne fruit, and their naturally over vigorous growth was increased by the application of manure water late in the year. Mr. Cuthill is of opinion that spring is the only time during which liquid manure can be given with advantage; for if a Strawberry plant is not permitted time enough to ripen its crown in autumn, it is sure to be fruitless or nearly so the following season. The employment of too rich soil when the runners are potted up also adds to the mischief. We found Mr. Cuthill's fruit very free from sand and grit, which during this wet season would have been plentiful had it not been kept under by a thick layer of strawy manure being placed over the plants early in spring. This has also had the effect of keeping down wireworm, which has been everywhere unusually abundant. If Mr. Cuthill had, however, known that April would have been so unfavourable to growth he would not have covered his plants with manure so early, as they remained dormant for a considerable time to their disadvantage. It is, he thinks, safest to mulch just before the plants push into active growth. Spring covering with rough dung from the stables is a practice much in favour with Mr. Cuthill not only in the case of Strawberries but also in that of Rhubarb and other things; he says that it has the good property of keeping the plants under it secure from frost and other vicissitudes of weather, and the nourishment washed down from it to the roots just when they most need it is a wonderful advantage to crops just beginning to push into growth.

Cucumbers are pretty extensively grown here. Of Prince Albert, a new dark green variety of excellent flavour and a great bearer, Mr. Cuthill has 24 lights full; of Highland Mary, 12 lights, and an equal number of Dr. Livingstone, Hamilton's Favourite, and Black Spine. All are fruiting well; but of Prince Albert and Highland Mary there is an unusually abundant crop, which may be seen hanging from the trellises, over which they are trained, in all stages of growth, from small fruit not larger than the finger to that of 15 inches in length, straight and otherwise well formed. They are grown in a compost consisting of one-third Mitcham loam and two-thirds road sand, collected in winter and mixed together in as rough a state as possible. Little water is given; but the plants are often sprinkled over-head, and shut up warm early in the afternoon. The mould is put into the frame so as to have a slight ridge in the middle, in order to prevent water from settling about the necks of the plants. About the end of June Mushroom spawn is introduced along the front and back of the pits, and from this in due time a crop of Mushrooms is obtained, and that without any inconvenience or injury to the Cucumber plants.

In the cultivation of Mushrooms Mr. Cuthill is most successful, and his mode of treatment has been fully given in a small pamphlet published by him on the subject. Two beds are now in full bearing. A thin covering of straw is put over them, and they are occasionally sprinkled with water. Mushrooms can be had here all the year round. Two new beds are in course of formation, to succeed those now in use. From that troublesome pest to Mushroom growers, the woodlouse, no inconvenience is felt; it is kept effectually in check by the application of boiling water round the sides of the beds, which are made a trifle higher in the middle, in order that the water may not run on the beds and injure the Mushrooms.

Two rows of Asparagus planted in 1860 by way of experiment are now in excellent condition. When planted the ground was merely trenched, manure being dug in afterwards. The plants were set 1 foot apart in the rows, and the latter were made 4 feet asunder, with a row of Seakale in the centre. Both Asparagus and Seakale have received every year good soakings of manure water in spring, and also when the weather was dry during summer. Plenty of salt has also been put on in March and the soil drawn up with a hoe, so as to cover the Asparagus to the depth of about 4 inches. The Seakale has also been covered with mould, which is all that has been done. Both roots and tops, having so much room and air, are very vigorous. In some instances the crowns even measure 1 foot in diameter, and would prove invaluable for lifting and forcing. Being also so near the surface they get well ripened, and are on that account the better able to withstand all unfavourable changes of weather. In short Mr. Cuthill is of opinion that by following the plan of culture just recorded, both these esculents might be managed sufficiently cheaply to bring them within the reach of everybody. The ground between the rows might also be occupied with other crops, provided that they did not rise so high as to shade the Asparagus.

BIDDULPH GRANGE (*continued from p. 575*).—What is called the Chinese garden was in so incomplete a state when described on a former occasion that some further account of it (accompanied by a plan) may now be admissible. This garden, like China itself, is exceedingly difficult of access; and strangers will sometimes wander for hours about the grounds without being able to find either of the two narrow passes by which it is approached. The best mode of entering is from the dark rocky glen formerly occupied by Sikkim Rhododendrons, but now more appropriately devoted to Ferns, Bog-plants (No. 26), &c. Passing from this through a long irregular tunnel, apparently excavated from the living rock, and flanked by grottos of considerable extent, the visitor suddenly finds himself on the threshold of a gorgeous Chinese temple, the view from which cannot fail to recal the old familiar "willow-pattern," which, indeed, suggested the idea out of which this singular garden has sprung. The temple with its gilt dragons and bells and latterns looks out upon a little lake surrounded by bold masses of rock, some of them of the most romantic forms, and spanned at a narrow point by the conventional bridge with the zigzag railing attached, and overhung by something like the conventional weeping tree. On the right a gaudy Joss house may be seen in the distance, backed by a bold face of rocks, and approached by a winding flight of steps, while on an eminence to the left there stands a tiny fort mounting two guns, and literally commanding the whole place. Lines of ruined walls (supposed the remains of the Great Wall of China), with dilapidated doorways and towers overhung with Ivy, may be observed in all directions, presenting an effectual barrier to the outer world. A great frog "couchant," soon attracts the eye, while lions, kymans,

REFERENCES TO NUMBERS IN PLAN.

1. Ornamental parterre, with dragons in red gravel.
2. Old Oak stumps arranged in large masses and crowned with Golden Yews and Evergreens of various kinds.
3. Lofty rocks crowned by Purple Beech.
4. Aucuba japonica.
5. Masses of Tufa with Rock Plants.
6. Bank devoted to Spring Bulbs.
7. High knoll, on which are tall American Weeping Willows, &c.
8. Masses of C. pyracantha, Pyrus japonica, &c.
9. Clumps of Evergreens.
10. Bank of Berberis Darwinii, Mahonia japonica, M. Bealii, &c.
11. Cryptomerias.
12. Shady Corner occupied by Cephalotaxus Fortuni (male and female C. drupacea, &c.
13. Group of large-leaved Funkias.
14. Large Oak stump with Skimmia japonica.
15. Pawlownia imperialis.
16. Sheltered nook containing Lilium giganteum.
17. Row of Arbor-vitæs at back of semicircular wall.

18 & 19. Miscellaneous borders.

20. Thuja pendula.
21. Bambusa Metake.
22. Weeping Thorn overhanging bridge.
23. Spiræa callosa.
24. Thujopsis dolabrata.
25. Black Maple from Japan.
26. Bog on which grow Pinguiculas, Bog Asphodels, &c.
27. Fine plant of Thujopsis borealis.
28. Gunnera scabra.

and sundry other Chinese monstrosities have each their places assigned to them; but these are all eclipsed by a huge gilt bull, with the solar disc between his horns, reposing with much dignity under a canopy placed in the centre of the semi-circular wall abutting on the parterre (1). This bull was modelled on the spot by Mr. Waterhouse Hawkins, who has evidently bestowed much labour and skill on the work; it would however have been in better keeping had there been more of the grotesque in the composition. The gilt dragons—excellent in their way—that clasp the angles of the temple, are also by Mr. Hawkins, but the temple itself, and indeed all the chief architectural features of the garden, were designed by Mr. Cooke, and both in the details and the colouring evince the fidelity of the artist to Chinese prototypes.

Without pausing now to discuss the merits of the Chinese style from an artistic point of view, it must be admitted on all hands that it affords the highest facilities for the cultivation of particular plants, those especially that may happen to require peculiar or exceptional treatment; for in it we have a commingling of the natural and artificial, of the rough and smooth, which is quite impossible under any other *régime*, but quite indispensable if we are to compress into a limited space nearly all the varied aspects of vegetation. The present rage for what are called "bedding plants," however beautiful the effects produced, has gone far to exterminate a thousand interesting things, for no other reason than that they will not accommodate themselves to the formal parterre. But in a garden such as that we are describing, the idiosyncrasy of any particular plant may be studied without marring the harmony of the scene. Climbers and creepers, wet plants or dry, the denizens of the sunniest rocks or of the densest shade, may each be humoured in their several ways, and yet each contribute to the general effect. Of these capabilities of the Chinese style Mr. Bateman has largely availed himself in the example he has given us, affording as it does the most ample illustrations of the strange kind of contrasts we have endeavoured to explain; but as it would be impossible without extending this notice beyond all reasonable bounds, to give a minute description of the varied contents of this unique garden, we can do no more than refer the reader to the accompanying plan, by means of which and the references some general notion of the whole may be obtained. Beyond this we cannot go, yet space may perhaps be found for the following notabilia.

Acer polymorphum rubrum (recently exhibited at South Kensington) is perhaps the most effective plant in the collection. It is perfectly hardy, has a light and elegant foliage, while in the richness of its dark red leaves it far surpasses the Purple Beech or the Purple Hazel—its only competitors in its particular line.

Thujopsis dolabrata.—This too is perfectly hardy (having stood out the last three winters without any protection), and promises to be a beautiful object. The variegated form of this lately introduced from Japan, will be a grand acquisition. Thujopsis borealis also forms a beautiful tree.

Lilium giganteum.—This has stood out several winters, and flowers finely about every other season.

Bridgesia spicata has so insinuated itself into the tufa rocks, that the severe winter of 1860-61 failed to destroy it. Among these rocks (which were brought from Derbyshire), many other rarities, *e. g.* Linnæa borealis, succeed perfectly, though generally found exceedingly difficult to grow.

Bambusa Metake.—This plant is quite invaluable to garden scenery. It grows and spreads rapidly either on dry land or near the edge of water. Here it is already 12 feet high, and will probably grow much taller. The variegated form, also newly introduced, appears to be equally robust.

(To be Continued.)

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—If bright warm weather should set, in the beds and borders of this house must be liberally supplied with water, and specimens or twiners upon which red spider may seem inclined to be troublesome should be well washed with the garden engine as often as may be necessary to thoroughly clean them. Plants in bloom must not, however, be dashed overhead with the engine; everything blooming in pots should therefore be moved out of the way, and others spared as much as possible. If former directions, however, have been attended to, little inconvenience will be experienced from red spider except perhaps in the case of plants in a weakly state or in ill-health, which should be placed by themselves and receive special treatment till their energies are restored. Remove all decaying leaves and flowers the moment they are perceived, and endeavour to have a good supply of specimens in full beauty to take the place of such as may be getting out of bloom. Greenhouse plants generally should now be out of doors; most hard-wooded plants in frames will likewise be benefited by exposure to night dews; for that purpose, therefore the lights should be removed in the evening, replacing them in the morning and shading during bright sunshine; but giving air freely back and front, or what is better tilting the sashes at the sides, a practice which does not subject the plants so much to currents of drying air. Things in want of more pot room should be shifted as soon as possible so as to get them well established before winter; but in shifting now care must be taken to have both balls and soil in a proper state as regards moisture, and the plants must be carefully shaded so as to keep the atmosphere as moist as possible for a week or two after shifting. Let any repairs required to be done to plant houses be seen to while their occupants are out of doors. Show houses should now be kept as gay as possible, especially the conservatory, which must be supplied occasionally with selections from reserve houses of the showiest plants in bloom; carefully tie out the different varieties of Lilium lancifolium before they come into flower; two other good autumn plants should likewise have similar attention, viz., Crowea saligna and Plumbago capensis; these are invaluable for purposes of autumn decoration, as are also the different kinds of Kalosanthes. Pot on Chrysanthemums, and stake them securely as they advance. The stock of autumn and winter flowering plants should not be stopped after this, but have every encouragement to assist in ripening their wood early, that no difficulty may arise in getting them into bloom at the time wanted. Daphnes, Oranges (of different kinds), Myrtles, and Gardenias intended for forcing should be removed to a cool airy house to rest.

FORCING DEPARTMENT.

PINERIES.—Finish potting, both of the fruiting and succession plants, a soon as circumstances permit, that time may be allowed them to complete their growth before the dull days of autumn. In replunging them allow plenty of room between the plants for their growth during the next three months, and keep them as near the glass as the form of the pit or house will permit. Keep up a steady bottom heat at 80°, to facilitate a quicker growth of the root after potting; it may gradually decline a few degrees as the plants advance. Syringing should be diminished (unless in dry airy houses), except in the case of plants swelling their fruit, which will require a moist atmosphere. Air should be freely given on all favourable occasions; but the plants will enjoy being closed up early in the afternoon at a temperature of 85° or 90° for three or four hours, giving as much air afterwards as will produce a gentle circulation during the night. Water fruiting plants with liquid manure when dry; where the fruit is cut from those kinds which do not produce suckers freely, the stools should be shaken out of their pots and repotted in deep and less-sized pots, plunging them in a brisk bottom heat; this will generally induce them to produce a supply.

VINERY.—Ripe Grapes should be occasionally looked over, to remove decaying berries. Wasps, though not plentiful this year, are sometimes troublesome, and, to prevent their entrance, tack hexagonal or other netting on slight frames, and place them over the sliding sashes and ventilators; all late growths should be stopped back, but preserve the principal leaves untouched, until they die naturally.

PEACHES.—Look sharply after red spider upon trees generally, but particularly on any that may happen to be weakly from over cropping; wherever that pest is perceived give the trees a thorough washing with the engine, repeating the operation as often as may be necessary. Do not allow borders where fruit is not yet ripe to become dry; neither must trees from which the crop has been gathered be permitted to suffer from want of water at the root if the foliage is to be kept in health for any length of time.

FLOWER GARDEN AND SHRUBBERIES.

Go over beds frequently, keeping the young shoots of Verbenas, &c., nicely regulated and pegged down until the surface of the ground is well and fairly covered, after which the shoots of most varieties may be allowed to ramble at liberty. Keep down weeds, and if the weather should be such as to render watering necessary, do not let the plants feel the want of moisture at the root. Cuttings of choice herbaceous plants, Carnations, Picotees, &c., put in early, should be pricked out or potted immediately they are struck, to get established. Early struck Pansies may be planted out for autumn blooming. Young seedling Wallflowers, Brompton Stocks, Sweet Williams, and other biennials, should either be planted out into reserve beds, or where they are to flower. The propagation of bedding plants must soon be commenced; therefore make notes of desirable new things. The present will prove a favourable time to propagate by cuttings most kinds of Roses. Choose the ends of the shoots for the purpose with the bottom part partly ripened. Noisettes, Bourbons, Chinas, and Hybrid Perpetuals will strike freely in sandy soil if selected as just directed. If evergreens are to be removed do not let it be forgotten that during the whole of August and September is the best season for transplanting them. Ground may therefore now be prepared for their reception.

HARDY FRUIT AND KITCHEN GARDEN.

Summer pruning will require diligent following up; all kinds of trees may have a final removal of superfluous shoots; and such as are well placed, but not required for laying in, should be stopped to induce the formation of fruitful spurs. Strawberry runners for future beds must also now receive attention. Get all kinds of winter greens planted out as speedily as ground can be obtained for them, and where this cannot be done at present to the usual extent see that the plants are either pricked out or sufficiently thinned to allow of their growing dwarf and strong; if a goodly portion of old Mushroom bed dung were mixed with the soil before pricking out the roots would run into that, so that the plants might be removed with balls, and would hardly feel the shift. Also get Leeks planted on strong deep heavily manured land. Potatoes in some few instances are reported to be diseased; those on soils most unfavourable to their keeping sound should therefore be taken up and used first. Store them in small quantities in sheds, lofts, &c., to dry, before attempting to pit them. If not already sown, lose no time in getting in Lettuce, &c. A crop of dwarf French Beans should be sown under a south wall, for a late supply; and an empty Melon pit may be planted later, keeping the sashes off. Prune off superfluous shoots from Tomatoes against walls, that they may not shade the ripening fruit. The leading shoots may be pinched out when sufficient fruit is set, which will assist to ripen the crop.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending July 16, 1862, as observed at the Horticultural Garden.

July.	Moon's Age.	Barometer. Max.	Barometer. Min	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind	Rain.
Thurs. 10	13	29.741	29.725	77	39	58.0	61	58½	W.	[illegible]
Friday 11	○	29.874	29.742	69	49	59.0	60	58	S.W	[illegible]
Satur. 12	15	29.455	29.394	72	45	58.5	60½	58	S.W.	.05
Sunday 13	16	29.810	29.770	75	51	63.0	60½	58	S.W	.00
Mon. 14	17	29.824	29.736	75	45	60.0	61	58	S.W	.00
Tues. 15	18	29.772	29.676	70	48	59.0	61½	58	S.W	.10
Wed. 16	19	29.743	29.626	68	42	55.0	62	58	S.W.	.11
Average		29.688	29.669	72.3	45.5	58.9	60.9	58.1		.72

July 10—Cloudy and windy; thunder 7 P.M., cold, with rain at night.
— 11—Cloudy; fine; densely overcast at night, heavy rain.
— 12—Densely clouded; cloudy and fine; rain.
— 13—Cloudless and fine, very fine throughout.
— 14—Fine; very fine; cool at night.
— 15—Very fine; cloudy and fine; showery; very dry air in intervals.
— 16—Fine with clouds; showery; thunder showers, hail in some places; cold at night.

Mean temperature of the week 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending July 26, 1862.

July.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 20	72.5	51 2	61.8	22	0.72 in	1	1	3	—	1	18	10	2
Mon. 21	73.2	51.0	62.1	16	0.54	2	1	3	1	4	13	9	3
Tues. 22	73.5	51.8	62 7	20	1.37	3	3	2	1	3	12	10	2
Wed. 23	74.2	53 0	63 6	18	0.70	1	5	5	2	3	11	5	4
Thurs. 24	72.5	52.2	62.3	13	1.16	1	7	4	2	4	12	3	3
Friday 25	73.7	50.0	61 8	10	0.36	2	6	3	—	2	10	11	2
Satur. 26	73.1	51.1	62.1	18	1.22	2	1	4	2	4	13	7	4

The highest temperature during the above period occurred on the 25th, 1844—therm. 92 deg.; and the lowest on the 24th, 1860—therm 39 deg.

Notices to Correspondents.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

CHARCOAL: *Halesowen*. Apply it in dust and fork it in carefully, so as not to injure any roots.

DISEASE IN PEARS: *Lady V.* Next week.

INSECTS: *J. A.* The larger insects you have sent are Helophorus aquaticus, a beetle residing in water and damp earth. It is new to us that they should eat off young Turnip plants. The others are the common Turnip flea beetle, Haltica nemorum. You must get your plants as rapidly forward as possible, and give them a strong dusting of finely powdered lime early in the morning whilst the leaves are wet with dew. *T S P.* Next week. *W.*

MOWING MACHINES. We have had no indisposition to admit fairly expressed opinions on these useful contrivances; but we really cannot receive declarations to the effect that any of them are useless. This is surely disproved by their enormous sale. People would not go on buying them if they did not answer the purpose. We have in use one of those you found worthless, and nothing can behave better.—*B & Co.* We are still in the dark. Surely you do not imagine that we should permit so unfair—nay, so untrue—a statement to go forth without some qualification.

NAMES OF PLANTS: *J. W.* Caprifolium pubescens, from North America, not Australia.—*Amelia.* 1. Cyathodes glauca; 2. Astroloma humifusum; 3. Atherosperma moschatum.—*W. Rake* sends a specimen of Gladiolus found yesterday near Lyndhurst in the New Forest, more than a mile from any house, growing and flowering abundantly in the open moor, not under trees, but amongst brake the fronds of which overtopped the Gladiolus and had to be pushed aside to find the flower. This is the Gladiolus illyricus of Prof. Babington concerning which some observations will be found in another column.—*J M R.* Lathyrus Nissolia.—*Cambria.* 1. Hypericum barbatum; 2. Chrysocoma Linosyris; 3. Vicia lathyroides; 4. Achillea tomentosa.—*G G.* Allium sphærocephalum.—*Æsculapius.* Veratrum nigrum, with flowers not yet expanded.—*Chepstow.* 1, not found; 2, Specimen wholly insufficient; 3, Sutherlandia frutescens; 4, No doubt some Hardenbergia; not determinable by a flowerless fragment.

ORCHID GROWERS: *H Rcb.* We must beg you to say for whom the gardener is wanted, the place, the wages, and other conditions. No one will engage himself blindfold. No doubt a good man may be found if the inducement is sufficient. One of the pamphlets is sent by post (two copies); we do not know to what other you allude.

ORNAMENTAL FOLIAGED PLANTS: *F H L.* The introduction of variegated plants amongst these cannot be considered to disqualify them for purposes of competition.

THE LATE ROYAL MARRIAGE. We have authority to state that the bouquets for the Princess Alice and the other Princesses on the late interesting occasion were supplied by Messrs. Veitch by special command of Her Majesty the Queen, and not by Harding as has been represented in the Court Journal.

MISC: 1s. will be paid for a clean copy of No. 45, 1861. Apply at the *Gardeners' Chronicle* Office.

ERRATUM. In the advertisement respecting the List of Prizes awarded at the Royal Botanic Society it is stated for four prizes "Mr. G. Bowman, Gr. to R. Hall, Esq., for, &c., Loughboro', Leicestershire." It ought to be "G. Bowman, Gr. to R. Hole, Esq., Quorn Lodge, near Loughboro'."

THE LONDON MANURE COMPANY
(ESTABLISHED 1840)

Are now prepared to send out the following MANURES :—

CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.

PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

LAWES'S MANURES.

The Manures manufactured by J. B. LAWES for the present season of 1862 are now ready for delivery at his Factories, at the following prices :—

LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6	6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES ..	5	5
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8	0

These Manures can be obtained of Mr. LAWES, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.

Genuine Peruvian Guano direct from Messrs. Gibbs ; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

American and other Cakes at market prices.

Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C. ; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.

Extract of Opinion from MR. WAY, *January* 23, 1862.

"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."

Extract of Opinion from DR. VOELCKER, *January* 1862.

"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."

The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer ; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.

Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

Land Drainage.

WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.

Repayment may be made by the Landowner as successive portions of the works are completed ; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.

No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.

Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

THE LANDS IMPROVEMENT COMPANY.— Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.

TO LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &C. IN ENGLAND AND WALES AND IN SCOTLAND.

The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

WARWICKSHIRE AGRICULTURAL SOCIETY.

The WARWICKSHIRE AGRICULTURAL SOCIETY will hold their GREAT ANNUAL EXHIBITION of HORSES, CATTLE, SHEEP, PIGS, IMPLEMENTS, WOOL, CHEESE, FRUIT, and FLOWERS, at Aston Park, Birmingham, on SEPTEMBER 17, 18, and 19, when PRIZES to the amount of NINE HUNDRED and SEVENTY POUNDS will be awarded.

More than half this amount is offered by the Birmingham Local Committee, and is Open to all England.

The Entries close on August 1.

Prize Lists and every information may be obtained on application to Mr. JOHN MOORE, Secretary, Warwick ; or to

JOHN B. LYTHALL, Local Secretary.

Offices, 14, Temple Street, Birmingham.

Open to All England.

SHEFFIELD POULTRY, DOG, and HORTICULTURAL SOCIETY.
EXHIBITION of HUNTING HORSES.

The Committee have pleasure in announcing to the Nobility, Clergy, Gentry, and Inhabitants of Sheffield and surrounding District, that they have engaged the extensive ground, Cremorne Gardens, Sheffield, for the ANNUAL EXHIBITION of POULTRY, PIGEONS, RABBITS, DOGS, HUNTING HORSES, PLANTS, FLOWERS, FRUITS, and VEGETABLES, which will be held as above, on AUGUST 2, 4, and 5.

From the Entries made by the first Breeders in the Kingdom, the Committee anticipate a most successful Show.

ELEVEN SILVER CUPS, and MONEY PRIZES to the value of £400 will be offered for Competition. The Grounds will be entirely closed on the Sunday, and the services of the Police will be engaged during the Exhibition to secure order.

Military Bands will be in attendance during each day of the Show.

Entries close on Wednesday, July 23. Prize Lists and Forms of Entry may be had from the Secretary, Mr. GEO. WOSTENHOLM, 49, Queen Street, Sheffield.

WILLIAM WOOD, Chairman.

YORKSHIRE AGRICULTURAL SOCIETY.—
President :—H. S. THOMPSON, Esq., M.P.

Vice-Presidents :—

The Right Hon. Lord Bolton	George Lane Fox, Esq.
The Right Hon. Earl Cathcart	The Rt. Hon. Lord Wenlock
The Right Hon. Lord Herries	The Rt. Hon. Lord Feversham

The TWENTY-FIFTH ANNUAL SHOW will be held at YORK, on August 6, 7, and 8, when nearly 900*l.* will be offered in Prizes for HORSES, CATTLE, SHEEP, PIGS, POULTRY, WOOL, IMPLEMENTS, &c. For IMPLEMENTS, 250*l.* is offered, including 100*l.* for STEAM PLOUGHS, and 30*l.* for REAPING and MOWING MACHINES.

In addition to the usual Money Prizes, the Society offers 12 Silver Medals, the President offers a Prize of 50*l.*, in addition to a Gold Medal, given by the Council of the Society, for an Essay on Yorkshire Farming ; and a Special Prize of 25*l.* for the best Five Years' old Hunter, is offered by the Right Hon. Lord Wenlock.

The ENTRY CLOSES on JULY 21.

For Prize Sheets, apply to J. WILKINSON, Solicitor, Coney Street, York ; or to me, JOHN HANNAM, Secretary.
Kirk Deighton, Wetherby.

SPARKENHOE FARMERS' CLUB.
ALL ENTRIES CLOSE ON THURSDAY, AUGUST 7.

This GREAT ANNUAL SHOW will be held at Leicester, on the 2d, 3d, and 4th SEPTEMBER. 1100*l.* will be awarded in Prizes, including 50*l.* given by the Mayor and Members of the Corporation.

Covered Sheds will be erected for Cattle, Horses, Sheep, and Pigs.

Exhibitors of Implements requiring Covered Shedding must make special application.

Hay, Corn, Straw, Cake, and Roots can be purchased in the Show ground at reasonable rates.

The sum of 1*l.* will be given to the Dairymaid who manufactures the first prize Cheese, and 10*s.* to the same for the second prize Cheese, in each of the four classes.

All Certificates of Entry, which may now be had of me, must be returned on or before August 7, except for Fruit and Flowers.

Further particulars may be had on application to me.

THOMAS DAVENPORT, Secretary and Collector.
Ashby-de-la-Zouch, July 19.

The Agricultural Gazette.

SATURDAY, JULY 19, 1862.

IT is an exceedingly interesting question which is presented by the alternative of straw or water as the carrier of manure to the land. It is difficult to put this alternative completely and therefore fairly, owing to the many considerations which complicate the matter. The preference may depend on the character of the soil—straw is for clay lands a very important part of manure—water would on clay lands be a nuisance. It may depend on the kinds of crops which it is desired to grow—seed crops need dry land after the formation of the bloom—a succulent growth demands abundant moisture throughout its continuance. It may depend on the nature of the climate, and the difference between sterility and productiveness may in fact hinge simply on the presence of water.

Thus, to put an extreme case :—given a sandy soil with free drainage—growing Italian Ryegrass—in a dry season—and an abundant supply of water will be the best possible carrier of manure. And on the other hand, given a clay soil in a comparatively damp climate yielding a crop of Wheat—and it is plain that such manure as may be needed had better be wrapped up in straw, whose decomposition in the land will act as a ferment in setting other trains of chemical action agoing, and thus in liberating from their land-locked plight those ingredients of food for plants which all clay soils contain.

But the division of agricultural produce into seeds and succulent growth respectively as being best obtained by farm-yard dung and liquid manure respectively is unfair towards the former —for the latter is entirely unadapted to the growth of many crops of the latter class. Turnips and Mangel Wurzels and other *fallow* green crops are grown not merely for their produce to be consumed by sheep and cattle on the land and to be the source of farm-yard dung—they are grown for the fallow operations which the land receives during their growth, on which its fertility for the next year's grain crop depends. And these fallow operations cannot be conducted except in dry weather and on dry land. To feed a growing Turnip crop as a Grass field may be fed by a stream of liquid manure flowing over its surface, and trickling through its substance, would, even if possible otherwise, be fatal to the uses of the Turnip as a fallow crop. And even though a continuous stream of water should be found capable of growing large individual Turnips, or many tons of them per acre, yet there would be an entire loss of the advantage which is derived from repeated horse-hoeings and stirrings of the soil, and this of itself would be fatal to the adoption of the plan. On the other hand, for all those crops, and all those soils, and all those climates to which liquid manuring is adapted, there is this especial advantage connected with its use—that straw is thus set free to be used as food, and that water by its weight and fluidity may be made to take itself and all its contents with little expense to the land which it is to feed.

If we confine its operations to Grass land, and well drained soils of the freer class, with sloping surfaces, especially if in a warm and dry climate, then liquid manuring will be an unquestionable success. There is nothing more wonderful in agriculture than its produce under these circumstances when liberally applied. The Craigentinny meadows, near Edinburgh, with their 50, 60, and even in some cases 80 tons of green food per acre, are a proof of what may be done with liquid manure liberally applied to plants, and soils, and circumstances for which it is suited. And when London sewage, 10,000,000 cubic feet per diem, shall in like manner be applied to the growth of Italian Rye-grass, and other Grasses, on some 15,000 or 20,000 acres where there is but a scanty population to be poisoned, instead of being floated up and down the river in the midst of 3,000,000 Londoners, no doubt a large and valuable produce will be thus obtained. They say that the ingredients which it contains are equal to 100 tons of guano daily, and this floated over and washed into 20,000 acres would be more than 30 cwt. per acre per annum.—more than the very richest manuring known to ordinary farming. That it would produce results in our climate as extraordinary as those of Craigentinny, or that of Edinburgh, which have been already described in our columns, there seems no reason to doubt.

At Carlisle where the waste of 20,000 people is thrown into a stream of water of 5000 or 6000 cubic feet per hour, pumped up and mixed with carbolic acid for disinfection and deodorisation, and spread over 110 acres of alluvial Grass land, the results, though not so good as those at the Edinburgh meadows, are still, they say, sufficient for a profit on the outlay.

A five-horse power engine working 12 hours a day pumps the sewage from the under-ground channel—at the rate of 6000 cubic feet per hour, and a stream such as a teapot would deliver is continually pouring into it a solution containing 1 per cent. of carbolic acid and 5 per cent. of lime —this effectually removes all offensive smell. The whole runs from the engine house in surface cast-iron gutters, at the end of which it is allowed to pour out five or six hours at a time to each place at half an acre or thereabouts apart. There it spread about upon the flat over the meadow and ultimately sinks in. The produce at the end of April when we saw it was nothing like so abundant or so promising as that of the Edinburgh meadows, which they were then already cutting in heavy swathes. But we are informed that three cuts for hay had been made at Carlisle the previous year ; that a heavy stock of sheep and cattle had been kept on the land, and that notwithstanding the high rent which the meadow commanded, and the considerable cost for engine and works which had been incurred, yet the returns were sufficiently profitable. A comparison of Carlisle and Edinburgh leads to the conclusion, that the true way to obtain a full profit from sewage is to apply it to poor light and free soils, which can be had for about nothing—to soils moreover which present sloping surfaces, over which the stuff may pour—and possibly also to apply it in a putrid state, containing its elements in a condition in which they are at once ready to feed both the roots and the leaves of the plants among which it flows.

At Rugby, where Mr. CAMPBELL and Mr. WALKER apply the waste of 8000 people, the results which we saw upon the former farm were more promising than those at Carlisle. Mr. CAMPBELL farms 300 acres, half of which is arable ; it is not first rate land, but a tolerably free red loam, over a variable gravel occasionally mixed with clay.

About 30 acres are arranged for the application of sewage. Thirteen acres are this year under Italian Rye-grass, and a magnificent swathe was being cut on the 27th of April. Half of these 13 acres had been sown in the autumn of 1860, and the other half in the autumn of 1861. Forty-five cows had been feeding on the former half since the beginning of the month, and they had cleared about five acres. Each cow in that time had eaten at least 1 ton, so that the produce of the first cut must have been at least 9 tons per acre. Beginning so early it must have been comparatively light at first; but towards the end of the month at least 12 or 13 tons per acre must have been produced. The Grass was dark green, fresh and succulent from the ground upwards, as thick as it could stand, and about 20 inches high. The seed is sown in autumn upon a manured corn stubble, and the plant is watered lightly at first, coming to its full yield in the second year. The mode of applying the sewage is extremely simple. It is delivered from the mouth of a pipe at the top of the field, and is distributed by means of open gutters made by spade, the first size being about 12 inches wide and 9 inches deep—this conveying it along the top of the field and thence down the channels, every 16 yards from top to bottom of the field. This second series of channels are 6 inches deep and wide, and a stop at every 16 or 18 yards in their course directs some of their water to either side along channels not much bigger than wheel tracks, from which it spreads over the whole surface.

Besides Mr. CAMPBELL'S share in the sewage of Rugby, containing a population of 8000 people, he uses all the waste of his cowhouse, which, with gas liquor, &c., flows into a tank whence it is pumped and taken on to the land by water carts. Mr. CAMPBELL'S farm contains in its well-arranged cow-house and dairy, herd of dairy cows, and good management generally, much of agricultural interest, besides his experience in the use of town sewage.

As announced last week, Mr. STRAFFORD on Tuesday last disposed of a portion of the herd of Mr. ATHERTON, of Speke, near Garston, Lancashire. A large and distinguished company were present, and a very successful sale was effected. Among the highest prices reached were 105*l.* for *Cherry Duchess* 3d, a 6-year old cow, bought by Mr. TORR, of Grimsby—162*l.* 15*s.* for *Finella 3d*, a 4-year-old cow, bought by Mr. STEWART—215*l.* 5*s.* for *Cherry Duchess 7th*, a 2-year-old heifer, bought by the Hon. Colonel PENNANT—and 147*l.* for *Cherry Duchess 9th*, a 5-month-old calf, bought by Mr. R. E. OLIVER.

Among the bulls were GRAND DUKE 3d, bought for 204*l.* 15*s.* by Mr. A. J. ROBARTS; GRAND DUKE 5th, bought for 210*l.* by Mr. HARVEY; and GRAND DUKE 7th (18 months old), bought for 336*l.* by Mr. OLIVER. Forty-two cows and heifers averaged 74*l.* 14*s.* 6*d.*

The six *Cherry Duchesses*, a family of BATES'S blood, which were last week stated to be the most valuable family of the herd, averaged 115*l.* each. The three *Finellas*, from a family of BOOTH'S breeding, averaged 88*l.* 10*s.* The three GRAND DUKE bulls averaged rather more than 250*l.* apiece. Altogether the sale must rank as one of the few principal events of the kind of which the Short-horn breed can boast.

PRESENT APPEARANCE OF THE CROPS.

BERKSHIRE: *Coleshill, Highworth, July* 14.—It is very difficult to give a correct report of the present state of the crops hereabouts, as they vary more than usual. I happen however to have seen them for some miles round Faringdon recently, and from my own observation draw these conclusions:—That the Wheat, on moderately good and well managed soils (where the drainage is effectual underneath, whether natural or artificial), promises a fair average crop. Upon other descriptions of land, whether inferior thin soils or undrained clays, and even on some well drained, but in low situations, the prospect is bad, and under any circumstances the yield must be deficient. Barley still more variable than the Wheat, and has suffered more from the excessive rains, but a good deal short in straw, and coming into ear in patches. Oats generally a good crop. Beans very bulky as to straw, and as yet promise well as to corn. Winter Beans have suffered much from blight Peas tolerably good. Grass abundant, and a good deal of hay is secured in good condition; suffered less from early rains than usual, the weather being cold. Ten days ago a good deal was injured very rapidly; the air was very close and oppressive for two or three nights. Mangold partial; not doing well. Swedes where planted promising, also Turnips, but a great deal yet to be done, and many acres intended for Swedes can never be planted. It has been altogether a very trying season for the farmer, both as to planting spring corn and preparing for roots, but should the weather now take up, I hope there has not been a great deal of mischief done. The harvest must be comparatively late, and therefore not over-productive; but should it please God to vouchsafe to us a sunny genial season henceforward, there will be found I believe in the character of the season as a whole many compensating circumstances, although there is no doubt in some localities there will be a general deficiency in the corn crops. I should add that I hear a good deal said about the Wheat being injured by red gum, but have not as yet seen this myself. *E. W. Moore.*——*Peasemore, near Newbury, July* 14.—The continued wet and cold has done much damage to the corn in this neighbourhood. I think it is now too late for the Wheat to be a good crop; its ears being small and much down. I should therefore say under an average. The Barley and Oats are backward, but as yet, I think, showing for a fair crop, should the weather be favourable, except in a few instances, when sown out of season. Very few Beans and Peas planted. *Stephen M. Plummer.*——*Thatcham, Newbury, July* 15.—The Wheat crop hereabout looks somewhat gloomy, the plant in many pieces being thin on the ground, with a small ear, and very uneven at head. Barley, Oats, and Beans are promising, but backward. Peas a partial crop. The hay is much damaged. The Potatoes are showing decay in many places. *John Adnams.*

CAMBRIDGESHIRE: *Chatteris, July* 15.—Wheat has shot well into the ear, and although not thick upon the ground, looks bright and healthy. We have heard of some instances of red gum injuring the ear, but have not seen any at present. We are just arriving at the critical time when disease, should there be any, will begin to show itself. Oats is the most various crop we have this year; some are as good as could be desired, others are very bad indeed. The wireworm is the great foe this crop has to contend against, and in some instances it has made serious havoc. Some have been partially ploughed up, and some resown without ploughing, whilst others have been unhurt; where there is a full plant, and the land in good condition, the crop is very fine, but where broken in plant, very poor, in many instances. Barley is but little grown, all that we have seen is promising. We have not seen a finer crop of Bean straw for some years, we have heard some complaints of the blossom not setting well, but as far as our own observation enables us to estimate the crop, we should speak favourably of it. There is a good deal of straw, and very fairly podded; we have seen no disease at present. Peas is a difficult crop to estimate. There is a full crop of straw, and a good show of corn, in many instances, but the crop continues to flower, although within a very short time of being ready for harvesting, which is a thing we regard unfavourably. Mangels generally a good plant, but requiring more warmth to enable them to grow rapidly. Coleseed: great complaints about the fly, much has to be re-sown, and a great deal will be a thin plant. Potatoes, healthy at present and promising. Warm weather and some sun required for all crops. *A. S. Ruston.*

CHESHIRE: *Stapleford House, July* 5.—On the best description of land the Cereal crops generally are full and healthy in appearance, but on a close examination we find that the Wheat crops are affected to a considerable extent with yellow rust in the ear (specimens of which I inclose), and which I fear will prove injurious, both as regards quality and quantity, should the present showery weather continue. I have examined some of the affected ears, and it appears to me that the small maggot which is found upon or embedded in the grain is the production of the Wheat midge so prevalent and mischievous in wet seasons, and nothing but hot dry weather will check the evil. On the flat clay land the crops of Wheat and Oats are most unpromising; the former being thin on the ground and small in the ear, and many crops of the latter are miserable in the extreme, so that we cannot look forward to anything approaching to an average. Potatoes, Mangels, and Turnips, have all been seriously affected by the constant wet and cold weather, and the season is so far advanced that should the weather improve, we can hardly expect average crops of either. The low meadow lands have all been flooded, and the crops of hay Grass generally are light; there is a great extent of meadow land to mow, but haymaking at present is quite at a stand still. *W. Palin, Tarvin, Chester.*

DEVONSHIRE: *Stancombe, near Kingsbridge, July* 15.—The continuous wet of the last fortnight has much damaged our Cereals, and the harvest, which at one time promised to be early, is not likely to begin till the middle of August, Barley being especially late. The hay has suffered much by the late rains, but the green crops are looking well. *Samuel Cornish.*

ESSEX: *Tiptree, near Kelvedon, July* 15.—Wheat in this neighbourhood is quite an average; Barley an average; Oats hardly average, but much improved; Beans and Peas over average; Potatoes very promising, this season suits them; Mangel plant well; Turnips much eaten by fly, and resown. The unusually prolonged greenness of the crops is at length giving way to the last few days of sunshine. On a continuance of this will depend the success of the harvest, which has been delayed beyond expectation by the cool, cloudy, and wet weather of the last few weeks. Hay is a heavy crop, some of it very indifferently got up. Thick sown crops of Wheat, not kept clear, have gone down full early and must suffer. My own crops never were better, if so good. It is decidedly a favourable season for heavy lands, especially where drained. *J. J. Mechi.*

HEREFORDSHIRE: *near Ross, July* 15. The Wheat crop both of autumn and spring planted is very thin, weak, and irregular, and must of necessity prove considerably below an average. In former years a large breadth of the Turnip land was planted with Wheat in the spring (in many cases all and no other corn grown), this year the unpropitious weather and the relatively higher price of Barley have tended to reduce the acreage. I have heard of some White Talavera proving so bad that it has been sheeped off, and the land ploughed, and this upon our driest and most highly cultivated soils. The Barley, like the Wheat, is thin, weak, and irregular; I never remember seeing it come into ear so much; so consequently there must be a very defective yield and inferior quality. Upon the dry soils the Peas are a luxuriant crop; but upon the cold lands many acres have been ploughed up. The Beans were a short time since a very luxuriant crop they are now much blighted, but in many cases this attack is too late to affect the general crop. Oats are not much grown, but where they are, the prospect is similar to that of the Wheat, viz., below an average. Crops of hay upon good dry land unusually heavy, a most tedious time for making, and very few dry hours consecutively. Potatoes are at present free from disease. The Swedes and Turnips were never so backward, neither do I ever remember seeing them planted with the land so foul; the early planted have very generally been destroyed with the fly and a second planting resorted to. The Mangels are worthless; last year they were attacked by a grub before unknown to us, and this year they have suffered much worse than then. The Apple crop is very partial. The Oaks are now recovering from the attack of caterpillars, which a month ago divested them of every leaf, and made our fine woods look as in winter.

LINCOLNSHIRE: *Decoy Farm, Spalding.*—My address is as above, but my remarks on our prospects will apply to Deeping St. Nicholas, a fen district comprising light peaty soils and strong useful soils from which the peat has been nearly all decomposed. The Wheat crop is promising, being strong in straw, very little laid, and a fair bulk, with a dry warm month will I think produce a full average crop. Oats are a more partial crop, many thin from wire worm, and the full crops a good deal laid with the recent storms; they have a very good head, and may come to be nearly an average. Beans are very fine, and if not damaged with fly will be a great crop. Mangel crop very backward, has suffered more than any from the cold and wet, at present looking very indifferent. A great deal now depends on the weather during the next four weeks. *Thomas Aitken.*

NORFOLK: *Bacton Abbey, North Wickham, July* 15.—It is yet too early to form any reliable opinion of the prospects of the coming harvest. Outward appearances denote a fair crop, but on closer examination there is much under corn, and the last more or less affected by red maggot. Considering the untoward spring and the cold wet weather during the past few weeks we can scarcely hope for an average crop of Wheat. Fine warm weather would now do much towards improving the quality, but a return of bad weather would render the crop as bad as in 1860. Wheat cutting cannot under any circumstances generally commence here before the middle of August, and will in all probability be a week or two later. Barley is good where early sown, but later sown not so promising. Oats and Peas a fair crop. Beans have made too much haulm, and are thinly podded. The hay crop is variable, but has been secured in better condition than could have been expected. Early sown Swedes good; later sown grown slowly and injured by wireworm. Mangel Wurzel not generally doing well. Much of the crop has been ploughed up or resown with Turnips. The leaves are affected as last year. Some insect has attacked them at an early stage, and whole fields have disappeared; others much stinted in their growth. Corn markets are dull, although it is supposed there is less Wheat on the growers' hands than has been known at this season for many years past. *W. Cubitt.*——*Denver, Downham Market, July* 15. Having seen a great many of the growing crops in this county during the last week, and having made many inquiries of the growers as well, I cannot give you a favourable report. Wheat will be below an average considerably, and the red rust is making its appearance as to cause some uneasiness. Early sown Barley very good; the latter sown not good, but it may improve if the weather comes favourable. Oats are very partial, but very few good. Beans very good if the top pods stand. Peas various. Potatoes very promising at present. Mangel and Swede Turnips a fine plant, but want sun and dry weather. Common Turnips are hardly forward enough to say much about, and several fields to sow yet. Hay of both sorts a fine crop and a great deal secured in middling condition only, owing to want of sun and the showery time we have had. *Thos. Brown.*

NORTHUMBERLAND: *Manor House, Woodhorn, Morpeth, July* 15. —Since our report in May on the prospects of the crops, the country has assumed quite a different appearance, and many of our agricultural prophets must now find their predictions sadly at fault, owing to the unsatisfactory change produced by a long period of wet weather accompanied by a low temperature. Wheat generally in this district is below an average, and as to spring Wheat I fear there is a poor chance in some instances of its ever reaching maturity. Barley is our best crop—though its breadth is limited—and is unquestionably above an average. Oats on friable loams are good, on strong clays very sickly, and on light soils much grubbed. Beans and Peas are below an average, and like other crops, very backward; and on the whole we must make up our minds to a late harvest and inferior yield. We are in the midst of haytime, and as might be supposed our pastures are full of Grass. Turnips are growing well now on Turnip soils, though on strong land the breadth sown is below an average, and the braird irregular. *Jacob Wilson.*

SUFFOLK: *Framlingham.*—I was from home yesterday to London and back. I saw on the whole not a promising appearance for the coming harvest, more particularly many fields of Wheat, poor, thin, and starving. Here we are in a position that bids us look forward to a harvest quite up to the average of years. Our land is somewhat heavy, too much so for sheep feeding, and not requiring more than two horses for ploughing; subsoil blue clay, covered with rather too thin a coating of vegetable mould. On the poorly manured farms, such as have not adequate tillage, bullock muck and draining are seen, the reasons of their poverty and the certainty of its continuance till a more generous system is adopted, and the crops for the last few years have been so unremunerative that many who know better have not the means to make the requisite alteration. I have good authority (personal knowledge and experience) that never has there been more poverty amongst farmers than is now the case. I am speaking of such land as I have described, with farms from 200 acres downwards, not of extensive flock farms with arable lands of less expensive cultivation. To the immediate answer of your questions: Barley very much improved; early in the season the appearance was poor indeed, many not looking for more than $1\frac{1}{2}$ to 2 quarters per acre will now get 3 or 4. Wheat, but not so much as the Barley, felt the effects of the continuous wet, but is now doing very well. Beans luxuriant. Mangel is a good plant, but wanting dry weather and sun. Grass has been much more than average; the making it has been tedious, and generally the colour and bouquet are gone, but with care very little has been spoiled. Of Clover, the same may be said, with the exception that some crops are lighter than usual; all we want now is summer weather—indeed I may say upon my farm, taking the average of all produce, roots, cereals, legumes, and the Grasses, that I never had a better prospect. Oats and Peas: not so many cultivated as to require notice. Turnips not yet out of danger from fly. We have had slow retarding weather, and harvest must be comparatively late. Wheat now in blossom. Beef off the Grass, not good enough for the London market, at least not such as I should dare to send, sells readily, 8*s.* per 14 lb. *Geo. Edwards.*

SUSSEX: *Lynch, Midhurst, July* 14.—I am sorry I cannot give you a more flourishing account of our neighbourhood. The Wheat crop is not at all a good one, thin and scrawly, very much injured by the gales of wind, and some of it showing symptoms of premature ripeness. Barley very late, just coming into ear, not good. Oats looking very well. Peas and Beans looking very well. Hay crop large but much injured, and a considerable quantity of the late meadow still out. Mangels bad, Swedes and Turnips bad. Potatoes showing signs of blight. The continued cloudy and cold weather very much retards the crops. I cannot say when harvest will commence, but with good weather from two to three weeks. *James Eames.*

WARWICKSHIRE: *Milcote, Stratford on Avon, July* 14.—The Wheat in this immediate neighbourhood is very various. It is somewhat strange that this cold and wet season should have produced effects so opposite to those generally expected to be the result of such a spring as the last has been. On the heavy and well cultivated soils the crop is good, and in many instances both long and strong, but on the friable turn up soils it is short, thin, and a small crop. So positive is the distinction, that in every Wheat field containing both strong and light soil, the appearance of the crop changes to a drill row with the land—the difference being invariably in favour of the heavier. In early spring the ravages of the wireworm to the plant growing after seeds were very considerable, and consequently some fields are too thin to be a full crop. This pest seems to become more general year by year, and is an obstacle to growing Wheat after seeds successfully, which neither energy nor skill can at present overcome. Very early ploughing seems the only remedy, but by such management a greater sacrifice of sheep and cattle food is called for than can always be submitted to, and besides the ground is sometimes too hard to be ploughed. Barley is very irregular and unsatisfactory; although many fields promise well, the majority are so different that there cannot be a full crop; it is much improved lately, otherwise we should not have had half our

average. Beans are long and luxuriant, the pods are thinly set on the stems, but I think they promise to produce an average yield. Peas in many instances are a complete failure, and have been ploughed up; in other cases there is a tolerable crop. No Oats are grown in the district. It has been a sad season for roots where autumn cultivation has not been adopted; many fields intended for Swedes will not be ready this year to be planted with roots of any kind. Nearly all the first-sown Swedes were eaten by the fly, and until the last few days those remaining grew very slowly; they are now doing better. Mangels are generally a good plant, but the insect in the leaf being so general, and the temperature so cold, they are small and backward; as they are more healthy in appearance the last few days, I hope we may yet have a fair crop of this useful root. The crops of Grass have been heavy, and although some damage has been done on the low meadows by floods, and the progress of haymaking was much retarded by the sunless weather, yet the principal part of the crop may be said to be secured satisfactorily. Potatoes are looking well, and at present there is but little complaining about disease amongst them. *J. C. Adkins.*

WILTSHIRE: *Avebury, Chippenham, July* 15.—I am sorry it is not in my power to report a more favourable account of the growing crop of Wheat in our neighbourhood. In a few instances it is very good, but in general very thin on the ground; though much improved of late, still nothing like an average crop. The Corn requires more warmth to bring it to perfection. Barley not so good as once expected; Oats, some good, the backward sowing inferior; Beans and Peas bid fair for a crop; Swedes and Turnips very backward, they appear to be coming on, but late for a heavy crop of Swedes. Some very good hay, and a good deal very indifferent. *Geo. Brown.* —*Overton, near Swindon, July* 15.—From the present appearances we are not likely to be reaping till the end of August. The Wheat has somewhat improved during the last month. Should we now have fair seasonable weather I do not think the crop would be much deficient. On some of the best tiled soils that are tolerably dry there is promise of an average crop of Wheat. On the wet and cold lands the Wheat is anything but promising. Oats mostly backward and not good. Beans good. Peas partial, some having perished from the continued wet are being fed off; about half the hay has been secured in good order, a third still to be ricked. Roots are backward and requiring fine weather. *T. H. Redman.*

GREAT INTERNATIONAL SHOW AT BATTERSEA PARK.

THE IMPLEMENT YARD.—We resume our walk round the stands. Close by that of Messrs. Ransomes & Sims, to which we last referred, was the stand of *Messrs. Smyth & Sons*, of Peasenhall, to whose firm must be attributed much of the reputation which the Suffolk drill has acquired. They show a large number of drills and manure distributors and broadcast sowing machines.

Messrs. Tuxford & Sons show no fewer than 19 steam engines, 17 of them portable, and the others fixed engines. They are of two different makes, some of them with vertical cylinders, others with horizontal. In the former case the cylinder and slide and expansion valves encased in a steam jacket, and the whole of the working parts encased in iron housing under lock and key. They vary from 12 to 2-horse, and even 1-horse power. Their combined threshing and straw stacking, riddling and winnowing machine was also exhibited; and with it, saw table, Appold's pump, &c.

Mr. J. Woodbourn, of Kingsley, Alton, showed small and compact threshing machines, waggons, carts, ploughs.

Messrs. J. B. Brown & Co., of 18, Cannon Street, London, had at their stands Messrs. Shanks's steam engine, steam crane, chaff cutters, and rick stand.

Messrs. Ellis, of Oswestry, exhibited steam engine and threshing machine.

Messrs. Brigham & Bickerton, of Berwick-on-Tweed, had their combined reaper and mower, in which the cutting blade lies perfectly and easily flat on the ground, owing to a double-jointed attachment to the framework of the implement.

Messrs. Brown & May, of Devizes, exhibit three portable steam engines and a set of steam cultivating apparatus, consisting of an improved windlass, 1400 yards of iron rope (steel), with all the necessary pulleys, anchors, cultivators, &c., complete, price 200*l*.

Messrs. Childs Brothers, of 481, New Oxford Street, London, exhibited parts of a machine which, when completed, is to mow or reap, and rake and bind the sheaves into bundles!—also a number of American machines for ploughing, cultivating, and sowing.

Mr. Gardiner, of High Street, Borough, showed Hussey's reapers.

Mr. J. Grant, of 11a Albion Place, Maidstone, showed a portable farm railway and trucks.

Messrs. Hancock & Co., of Tipton, showed their pulveriser plough with its three-fold mouldboard, taking the whole depth at thrice; also the apparatus for squeezing and manipulating butter without handling it.

Messrs. Hughes, of Dover Road, showed various mills and millstones.

Messrs. Johnson & Whitaker, of Leigh, showed a pulper in which a revolving toothed roller tears on one side of the root, while a larger toothed cylinder is biting at the other—they call it a pulper "on the sun and planet system."

Mr. Lyne, of Beech Hill, near Reading, shows jointed lever harrows, in which every longitudinal bar attached to one common cross bar in front is allowed independent up and down motion behind. We doubt the policy of the alteration. At present a very large clod will lift the whole framework of the harrow, and the whole weight of the implement is thus brought to bear on it. By this alteration it will only lift one bar, which has not weight enough to do what is required to be done.

Messrs. Priest and Woolnough, of Kingston-on-Thames, show seed drills, horse-hoes, corn-dressers, &c.

Mr. Sheen, of Buckingham Road, Aylesbury, exhibits ploughs—one with a *wooden* mould-board! And a large number of other implements, cultivators, chaff-cutters, &c.

Mr. W. Snowden, of Gloucester, shows his well known paring plough, in which a broad share is kept clear by the intromittent action of a chisel edge passing to and fro through a slot in the lower part of the abrupt mould board by which the slice cut off is turned over.

Mr. Warren, of Maldon, Essex, shows ploughs, harrows, rollers, &c.

Mr. J. Whitmee, of 70, St. John Street, Clerkenwell, shows chaff-cutters, Oat and corn crushers, and domestic flour mills.

We then come upon what is called the Miscellaneous Department of the show, in which domestic utensils and contrivances are mixed up with other articles more strictly agricultural, and yet not coming under any of those classes of farm tools and machines shown in the previous classes. Thus we have *Gardner's* (of Birmingham) sausage machine, *Edgington's* (of Old Kent Road, London) well-known tents, waggon covers, rick cloths, &c.; *Bradford's* (63, Fleet Street) washing machines and churns, *Biggs's* sheep dipping apparatus, *Henton's* (7, Bridge Street, Lambeth) elastic saddles, *Archer's* (New North Road, N.) washing machine, *Smith's* (Kilmarnock) enamelled troughs for cattle, and other articles of earthenware, *Fison's* (Stowmarket) kiln, tiles, &c.; *Eaton's* (Thrapston) sheep cribs, &c.; *Samuelson's* (Banbury) lawn mower, &c.; *Hill & Smith's* (Dudley) gravel screen, pig trough, cow crib, wire netting, garden seats, field gates, &c.; *Warner's* (Cripplegate) pumps and garden engines—a very large assortment, *Smith's* (64, Port Dundas Road, Glasgow), stable stalls and fittings, also patent dry deodorising closet, invented by Messrs. Smith & Carrick, of Glasgow, which will, we suspect, be found to be an interference with the patent rights of Mr. Moule, of Dorchester. *Mr. Dodge*, of 25, Dowgate Hill, E.C., shows India-rubber hose and bands; *Messrs. Burney*, of Millwall, wrought iron cattle troughs, cart bodies; *Messrs. Young*, of Ayr, cheese presses, guano pulveriser and breaker, &c.

At stand 175 is a model of a system of irrigation exhibited on the small scale here by *Mr. Isaac Brown*, of 59, Marischal Street, Aberdeen, which was also shown on a large scale daily near the show-yard. It consists in an arrangement of finely perforated pipes, placed on the surface about 20 yards apart, according to the supply of pressure from the mains, which are self-acting in the distribution of river or other water in the form of showers over the whole of the land they are conducted, which may be kept up during the night or day, without the labour that is required in irrigating by means of hose pipes, thus giving facilities for an abundant supply of moisture during the scorching heat of summer, and securing to the crops those important elements of fertility upon which their successful cultivation depends. The material used being composition lead piping, is of a most permanent character, and will not deteriorate in value, being worth as old material more than 2*l*. per acre. The cost of mains, distributing pipes, &c., per acre, 14*l*. 10*s*.*

Mr. Sawney, of Beverley, shows saw tables, riddling machines, &c. Churns are shown in great numbers by *R. Tinkler*, of Penrith; pumps by *Fowler*, of Fleet Street; mincing machines by *Lyon*, of Finsbury; stalls and stable fittings by the *St. Pancras Iron Works Co.*; lawn mowers, garden chairs, &c., by *Ferrabee & Co.*, of 75, High Holborn; inodorous felt by *Croggon*, of Goree Piazza, Liverpool; manures by *Prentice & Co.*, of Stowmarket; wire fencing by *Greening & Co.*, of Manchester; Lyne's field stile, pulley, blocks, &c., by *Amies & Barford*, of Peterborough; washing machines by *Briggs & Starkey*, of Parker Street, Liverpool; also by *Hornsby* of Grantham, *Pearson* of Leeds, and *Summerscales* of Keighley.

Mr. Hornsby's washing machine deserves mention as giving prominence to a principle in its action, which if it also contributes to the efficiency of other machines does so in a less degree than here. It consists of a tub or vessel, the interior of which is covered with ribs or corrugations, and at the bottom of which is a patented hollow bridge, which being emptied of water at each oscillation becomes filled with air, which afterwards bubbles up through the material that is being washed, and thus a violent action is sustained, and the clothes thoroughly cleansed from every impurity in a short space of time. Besides the large show of washing machines in this department of the show there is a great collection of cattle fencing, iron gates and hurdles, and wire netting exhibited at many stands.

Mr. Weir, of 142, High Holborn, shows washing machines, models of Mr. Halkett's arrangements for carrying out the patent guideway system of steam culture.

Messrs. Brown & Co., of Cannon Street, exhibit lawn mowing machines, garden rollers, wire fencing, garden seats, &c.

Messrs. Cottam & Co., of Winsley Street, show stable fittings, water troughs, hay racks, and *Messrs. Ransomes & Sims* show their collection of pig troughs, &c., and we have not space for a full enumeration of the number and variety of articles exhibited at no less than 342 stands within the enclosure.

THE DRAY HORSES AND THE CLYDESDALES AT THE BATTERSEA SHOW.

THERE were no less than four classes for Dray Horses, and in each two prizes were offered. We think at future shows three of these classes might be very well discontinued without injuring the Society, continuing only one class for *Dray Stallions* of any age. In this class there were five entries, Mr. Manning's Sampson being, we consider, the best; but unfortunately having side bones, to which these great horses are so very prone, he was passed by. The prize was given to Mr. Foster for his black roan colt, Enterprise. There is so little difference between the animals in the Dray and the Agricultural Classes that it is by no means uncommon for a horse to win a prize as a dray horse one year and as an agricultural stallion the next. The fact is, although the dray horse is a very valuable animal, yet, as greater activity is now called for, some of the huge massive strength is dispensed with. The Clydesdale prize horse would have suited for either class. The distinction being therefore so slight, it is quite idle to endeavour to keep up the difference in the mares of young classes.

We hope to see at the Smithfield Show in December, an exhibition of dray horses, which with other horses suitable for the metropolis would no doubt very much increase the attractions of the Cattle Show.

The *Clydesdale* horses we certainly consider the best in the Show, the observation applying more particularly, or perhaps exclusively, to the stallions of any age over two, rather than to the younger horses or the mares and fillies. And if it was true what we were told, that the 1st prize horse cost 500*l*., and that the highly commended sold for this sum, it would certainly justify our opinion. We should, however, have held a better opinion of the breed if a larger number had contended for the honours. This, however, may perhaps be accounted for by the long distance they would have had to be sent, and the anticipated uselessness of contending against such animals as the four best horses.

The virtues of these horses are, great activity as well as strength, splendid action, with good legs and feet. Their failings are, they are often too short in the rib, and light in the carcase, in proportion to the length of leg, and consequently they too frequently get very bare in their work and require a large quantity of the best food to keep them in condition. The stallions in question, or at any rate the greater number, appeared whilst possessing the virtues to be free from the defects we have alluded to.

This observation applies more to the 2d prize and commended animal than even to the 1st prize horse himself, whose great size, strength, and hind quarters, associated with the activity of a pony, no doubt carried the day in spite of his rather hairy legs. We are inclined to think that these animals were fed (qy. fatted) for the occasion. We observe that there were only seven horses competing for three prizes, whilst in the first Suffolk class 18 contended for two prizes.

The 2-year-old Clydesdale Class had only five colts competing for the three prizes. Mr. Mowbray getting the 1st prize for No. 951, a fine brown colt, and a commendation for the next number, whilst the 2d prize went to Mr. Daniel Logan, and the 3d to Mr. Hendries (No. 949) for his bay colt. This class was not so good as the preceding, and we observe that there are no sons or grandsons of Clyde amongst them as in the first class.

Of mares with foals there were but four, so that they nearly had a prize each. Mr. Kerr's and Mr. Gray's were fine powerful mares.

Of the mares in foal there were seven, four belonging to the same owner, and they were better than the preceding class. Mr. Stirling's three best mares were very fine animals, as well as 962, belonging to the Duke of Hamilton.

Class V., for two-year-old fillies, contained only four

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* We give here Mr. Brown's own account of his system of irrigation. He says it has advantages over others hitherto used for the purposes of agriculture and market gardening, from its mode of distributing water in the form of gentle showers, and regulating the supply during day or night according to the requirements of the crops, and without the labour and expense necessary where hose-pipes are used. Irrigation through such appliances as this system embodies, can, without any surface-preparation, and even over land with a considerable elevation, be successfully conducted for every variety of crop, and, from the position of its mains and distances of its distributing pipes, will not interfere with ordinary farming operations. Experiments in 1860 and 1861, on permanent Grass-land, with water from the river Eden, in Cumberland, through this mode of irrigation, gave the following results:—1860. From the first week in May to the first week in October, seven crops of Grass were cut, averaging 1000 stones each per acre, or an equivalent to about 11 tons of dry hay for the seven cuttings. 1861. From the last week in April to the second week in September, six crops were taken, averaging 1000 stones each per acre; or an equivalent to more than 9 tons of dry hay for the six cuttings. A light dressing of a mixture of superphosphate of lime, nitrate of soda, and sulphate of ammonia, was given to every second crop, and had the effect, with such a supply of moisture, of maintaining the growth, from the beginning to the end of the season, although the heat in both years was much below an average. Cultivation of every description, in proximity to rivers and streams of water, or the filtered sewage of towns, would derive important advantages by its adoption. A single shower previous to sunrise would afford protection to young plants and fruit trees from spring frosts; and, during the heat of scorching summer weather, facilities would be given for combining an abundant supply of the then all-important element, thus rendering more soluble, and hence more certain, the utility of manures, particularly those known as artificial preparations.

competitors for three prizes; Mr. Hendries getting the 1st prize for his bay, three years old; and the 2d going to Mr. Findley for his bay filly "May Gray."

The Clydesdales would certainly be the most valuable breed of cart horses in the kingdom if their faults could be eradicated by careful selection and their many good qualities retained, not allowing any light carcased, irritable, or long legged mare to be devoted to the stud on any terms, but by using such stallions as the four best in the Show, with deep-bodied, short-legged mares, whose circular ribs are never to be seen, whether in full work or with lusty foals by their side. *W. C. S.*

OCCASIONAL DRAINAGE.

[On the occasion recently of a meeting of the foremen in the employ of the General Land Drainage Company, to present Mr. Bailey Denton, the Company's engineer, with a memorial of their esteem "in grateful remembrance of his kind and straightforward interest in their welfare, and as a token of their high estimation of his abilities," the following remarks were made by Mr. Denton on this subject:—]

I dare say there are many at this table who will remember that only a few years back the free soils of the country were drained upon the same system as the clays, the saturated gravels and sands were drained perhaps a little wider in the intervals between the drains, but they were drained on the same system as to depth and parallelism as the clays. I challenge the experience of this room—and it is the leading experience of England—to state whether after what they have learnt in the exercise of their duties, there can be any greater folly than in treating the free soils of our valleys in the same way as the clays of our hills. The clays, no one can doubt, require the aeration of very frequent drains, and a parallel system or as nearly parallel as the undulations of the soil and the irregularity of the surface will admit, to make that aeration uniform. But when we descend from the clays into the free soils, I think every one here will say the rules that have prevailed for the former are totally inapplicable.

I think we have proved by our operations throughout England—I believe I may say every county in England without exception—that in the free soils it is our duty first to consider the irregularities of the surface, and then to apply the fewest deep drains that will draw the water out of intermediate test-holes, making those test-holes the index to the perfection of our work, and not increasing the number of drains beyond that quantity which will act upon the water in the test-holes in a manner to prove that the land is sufficiently drained. I think we shall all agree that in clays the test-hole will not apply as an index. We have tried to drain clay lands by test-holes, and so minute are the necessary observations to enable us to draw safe deductions that the attempt has proved a practical failure. But not so in free soils; the deeper the drain, the greater and more certain will be the effect on the test-holes, and the judgment of the foreman is required to put into free soils as few drains as possible to effect the object aimed at, which is, the response of the water in the test-holes to the influence of the drains. It is true skill to do what is required in the free soils, while care and diligence alone are requisite in the clays, the fact being that money governs the drainage of clay, judgment the drainage of free soil. You cannot drain clay lands too much; the greater the number of drains you put into clays, the better is the drainage, but money steps in and says, "thus far shall you go and no further," it will not pay to put in drains beyond a certain number, and there you stop.

You may say we did not come up to London to hear a lecture upon drainage; but, when I tell you that the greatest difficulty I have to contend with is in showing that there is reason in what I am saying to you, you will understand why I refer to this one great point of practice. I am asked, "What is the meaning of occasional drainage?" which, as you know, simply means appropriate drains under circumstances where the gridiron system does not rightly apply.

I am asked, in this year 1862, if there is any thing special in "occasional drainage;" if, in point of fact, there is any thing different in occasional drainage to parallel drainage, except in the name. Now when I say that I believe it is the most important thing connected with agriculture to determine the appropriate drainage of different soils, inasmuch as we are at this moment spending millions in drainage, and have a hundred millions yet to spend, I think I am justified in referring to the subject, although you have come up to London to see the Exhibition and have a dinner here, because there could be no more fit tribunal to determine whether there is reason or not in what I say, and in what we all practise, than you, my friends, who represent a collected experience superior to any in England.

You have done me the favour to say that I direct your actions with some ability. I hope I may deserve such praise, and, as you have said so much, I feel I should not deserve the reputation that you are kind enough to say I possess if I did not take this opportunity to appeal to you whether those who control the drainage of England ought not to know the difference between the drainage of free soils by occasional deep drains and the drainage of clays by uniform parallel drainage? It is indeed a thankless work to find, as we often do, that after using our best judgment in reducing the number of drains while increasing their depth—I refer, of course, to the free soils—so as to produce the best drainage at the least cost, all the efforts of the Inspector seem directed to prove that our work is very costly, simply because the number of rods are few comparatively with the lazy gridiron work, which is never so effectual and never so cheap in reality. How severely have I felt the reproof which real science has received, when I have been asked by some of you if the reason why the inspectors have been so particular in having fixed widths and fixed depths has not been to enable them the readier to make their calculations and fill up their stereotyped form. You uttered a telling satire on the intelligence of our times when you, in the simplicity of your minds, asked this question.

AGRICULTURAL STATISTICS.

[On Friday week this subject was brought under the notice of the House of Commons.]

Mr. Caird said he was desirous of calling the attention of the House to this subject before the close of the Session. He might find an argument for pressing it at present in the unfavourable character of the weather. The continued cold and wet could hardly fail to be prejudicial to the crops, though he hoped that no serious damage had yet been sustained which might not be repaired by a few weeks of sunshine and heat. His information from several of the largest Corn-growers led to that conclusion, but it had generally proved in England that a season characterised by cold weather was an unfavourable one for Wheat. This question was one of growing importance, from the increasing dependence of the country upon foreign food. Since 1847 about one-fourth of our population, on the average, subsisted on foreign corn. But in the last three years this proportion had been gradually increasing, and within the last harvest year probably not less than one-half the population of this kingdom were fed on imported corn. This was partly the result of very deficient harvests, but partly also, he believed, it arose from a diminished breadth of corn.

The high price of labour, and the increasing value of live stock and animal produce, concurred, in his opinion, in tending to diminish the extent of land in corn, and to increase that of pasture. Such a change would be perfectly legitimate and proper, and would be productive of little inconvenience, if we had any means of knowing with accuracy the extent to which it was taking place. But how vast the result which such a change might be silently working! If one farmer found it his interest to lay one-fourth of his corn land to Grass, the probability would be that the same circumstances might influence all others. Now, one-fourth of the corn crop of these kingdoms might be taken at 10,000,000 quarters. A deficit so vast, coming suddenly and without warning, would agitate every market, and unhinge all monetary operations. To some extent, he believed, we were at present experiencing the effects of such a change. The deliveries of home-grown Wheat, as shown by the corn returns for the last 16 weeks of this and the previous years were 50 per cent. less than the average of preceding years. The crops of 1860 and 1861 were, no doubt, most defective, but he could not help believing that so vast a decrease, especially in the present year, was partly caused by a diminution of the breadth sown.

Now, a return of the acreage under each crop would give timely warning of any serious change. It was important to consider the principal sources of our supplies. Last year North America gave us three-eighths; Russia, one-eighth; Turkey and Egypt, one-eighth; or five-eighths in all were thus drawn from distant sources of supply. The remainder was got from the nearer parts of Europe; but, as the large proportion came from a distance, it was important that early notice of our probable requirements should be had. Moreover, we might have formidable competitors in the world's corn-market. France, which in 1858 and 1859 gave us about one-fifth of our foreign supply, imported last year upwards of 5,000,000 qrs. of Wheat and flour.

It would be a mistake to treat this question as one solely affecting the farmers. He believed them to be fully as much interested in obtaining reliable information as any class, for they had the earliest command of the market, and might take advantage of that position if they had any means of accurately anticipating the course of prices. But the vast importance of the question as affecting the supply of food ought to override every objection in a country like this, which now so largely subsisted on foreign corn. It also most materially affected both financial and commercial proceedings. We paid for foreign corn last year the vast sum of 35,000,000*l.* sterling, and this was 15,000,000*l.* more than in any one year before 1860. But if we extended our calculations and a comparison of the cost of foreign corn and provisions for 1860, 1861, and 1862 (calculating the remainder of the present year in the same ratio as it had hitherto maintained), and compared it with that of 1857, 1858, and 1859, we should find the most startling result. That which cost us 66,000,000*l.* in the former three years, was increased to 118,000,000*l.* in the latter. So that we had been paying in the last three years not less than 17,000,000*l.* a-year more for foreign corn and provisions than we had been accustomed to do. Agricultural statistics would not prevent this, but they would give us timely warning of what was coming.

Again, in regard to commerce, the transport of such vast supplies is a matter of immense importance. Upwards of 3,000,000 tons weight of corn were imported last year, and must have employed that amount of shipping. And if we calculate three months as the average voyage, this would occupy for the whole year one-fourth of our foreign-going ships. A question thus vitally affecting the supply of food, and the financial arrangements of the country, and giving such vast employment to the mercantile marine, ought not to be treated as a farmer's question.

What had been done by the Government? The Chancellor of the Duchy (Mr. Cardwell) some time ago suggested the employment of the county police as the most economical machinery for collecting the returns. Circulars had been sent by the Home Secretary to the various counties, and the result was that 30 were favourable to the collection, but only 16 approved of the police. Twenty-one expressed no opinion as to the value of the statistics, but objected to the police. Six deferred the question, and two adjourned it altogether. The majority thus disapproved of the employment of the police. But there is really no advantage in selecting that body; for the service must be paid for, whoever performs it. He had not a doubt that either the Registrar-General, or the Inland Revenue, could do it with the machinery at their command, and at a cost not exceeding 20,000*l.* A sum which, for such an object, in a great country like this, was really unworthy of consideration. As the acreage was the only fact that could be ascertained, the inquiry should be limited to that, and it might be completed before harvest in each year. No Act of Parliament was needed—only an order of that House, and provision made for the necessary expenses. He was at a loss to know who really were the opponents of the measure. He believed that much of the former opposition to it on the part of certain farmers had died out, and the great body of them was not against it, for it had been most successfully done in Ireland and Scotland, and in several English counties. The great landlords were not against it, for the House of Lords had already passed a Bill on the subject. He would venture to adduce one opinion which he believed would have the greatest weight with both the House and the country. It was that of the lamented Prince Consort. In July, 1860, as President of the International Statistical Congress, the Prince in his opening address referred to agricultural statistics in these words:—"The Registrar-General of Ireland has proved by his success in obtaining these returns, at a comparatively moderate expense, and by the voluntary assistance of the landowners and cultivators, as well as of the clergy of all denominations, that the apprehension was groundless, that it could not be done without inordinate cost, or without injuring individual interests. We must hope," he added, "that considering its importance with regard to all questions affecting the food of the people, this inquiry will not only be extended to England and Scotland but also to the continent generally, wherever it may not already have been instituted." He trusted that such an opinion would have its full effect on her Majesty's Government, and he begged to ask the noble Viscount whether the Government would take this matter up seriously, and themselves bring forward a plan for obtaining returns of the acreage under the various crops in Great Britain.

Sir G. Grey said he was far from being disposed to deny the advantages to be derived from a system of agricultural statistics. Such a system would, however, be, he thought, comparatively unsatisfactory if it were not to embrace live stock within its operation. It might, at the same time, be more prudent to confine the returns in the first instance to the amount of ground on which corn was grown. Considerable prejudice existed against the collection of such returns, but this prejudice had, he thought, been greatly diminished by the evidence which had been furnished through the courts of quarter, sessions showing that there was no indisposition on the part of the owners of land to supply the information required, notwithstanding that there was, he believed, some apprehension on that score on the part of the farmers. The result of the inquiries which had been addressed to the justices of quarter sessions on the subject was to show that it would not be desirable to enforce their being so employed. He was not, however, without hope that through the agency of the Registrar-General, if Parliament were disposed to incur the additional expense necessary for the purpose, an efficient system of agricultural statistics might be secured, while he was of opinion that it was perhaps desirable it should not in the first instance be made compulsory.

QUALITY OF OATS.

In ascertaining the value of Oats as a provender for horses, we should be governed always by the weight per imperial bushel, and by their condition as to sweetness, dryness, colour, and age. In buying or selling grain, it is generally understood, that 1*s.* per quarter is given or allowed when the natural weight of the grain is 1 lb. heavier or lighter per imperial bushel than the guarantee. This we would consider as strict justice between buyer and seller, when the Oats are above 39*l.* per bushel: but the principle does not hold good when applied to foreign Oats and common Tartars, many of which are only about 35 to 37 lb. per bushel. Good Scotch Oats 41 lb. per bushel at 24*s.* per quarter are much cheaper provender for hard working horses, than are the foreign or common Tartar Oats 37 lb. per bushel at 20*s.* per quarter, and yet foreign and English common Oats are generally sold for only 3*s.* or 4*s.*, instead of 6*s.* or 7*s.* less than the Scotch. I particularly wish it to be understood that I am speaking now of the relative value of Scotch and Tartar Oats as an economic

provender for hard-working horses. For horses which get little more than sufficient exercise to keep them in health, and whose owners allow them their 8 bushels of Oats per week, regardless of work, I recommend Tartar as a wise economy, which will prevent their animals becoming too plethoric, and yet certain sufficient nutriment for the little muscular exertion required from them. At one of the collieries under my superintendence, the agent bought new Tartars in December and January, from 35 to 37 lbs. per bushel. The consequence was, all the horses in the pit rapidly lost flesh, and many of them being aged, a great deal of trouble and expense was incurred to get them into condition again. Without doubt, this gentleman supposed when he bought the Oats, that 3 or 4 lbs. in weight in an imperial bushel was of no great consequence, so long as he had 8 bushels to the quarter. He, no doubt, supposed that they ought to feed their animals on the same number of bolls, and keep them in as good a condition, upon such inferior provender, as we could do, at an adjoining colliery, on good Scotch Oats 41 lbs. per bushel; and yet each gentleman was paying within a fraction the same price for their Oats. This circumstance, amongst others, led me to investigate the principal causes why the foreign and common Tartar Oat is so inferior for hard-working animals. I therefore ascertained the difference between the weight of husks in a given quantity of each. One oz. of old foreign Oats, 39 lb. per bushel, were weighed; the same weight of old Scotch 40 lb. per bushel; and the same weight of Tartar Oats 36 lb. per bushel. The foreign Oats contained 1112 kernels; the Scotch Oats 1084; and the Tartars 1144. The husks were taken off and weighed. The husks of the 1144 grains of Tartars weighed 120 grains; of the 1112 kernels of foreign Oats 126 grains; while the husks of the 1084 grains of Scotch only weighed 26 grains. From this experiment we may draw the following deductions:—First, that the husk of foreign Oats is thicker than the husk of the English common Oats; secondly, that the husk of both is enormous when compared with Scotch. I would particularly draw your attention to the fact that the foreign Oats were an extra good sample of Swedish growth, 39 lb. natural weight, whilst the English and Scotch were rather below the average; thirdly, there are 12 lb. 1 oz. of husk to the bushel of ordinary common Oats, 16 lb. 8 oz. to the bushel of foreign Oats, and only 8 lb. 2 oz. per bushel in Scotch. Couple this with another fact, not less important, that the relative positions of the quantity of nutriment in Wheat and Oats are entirely opposite—the bran of Wheat being richer in nitrogenous matter than flour—whereas, the bran of Oats contains little more nutriment than the same quantity of Oat-straw, and you will readily perceive the superiority of the short Oat. I believe there is more difference than the weight of the husk, as we find that nearly a third more of the common or foreign than of Scotch is required to keep the horses in the same working condition. One gentleman, a colliery owner and manager, told me that he knew Oats when crushed three or four days before being used, deteriorated, and that the nutriment was dried up and lost, but he did not condescend to tell me how. The same gentleman stated that he proved, by many years' experience, that all horses, old as well as young, thoroughly masticated whole Oats if given with crushed Beans. As the latter statement, if true, would render entirely useless the cutting of hay to mix with the Corn, and the former certainly prove that the principle of bruising Oats was wrong, we at once set to work to ascertain the truth of these statements. For this purpose, 1 bushel of old Scotch Oats, 43 lbs., and a bushel of the same crushed, were put in sacks, and also 2 bushels of new, weighing 39½ lbs. per bushel, were treated the same way, and allowed to stand for a month, at the end of which the four separate bushels were again weighed, the difference between the 2 bushels of crushed and uncrushed old Oats was barely 4 oz., and, in the new, only 1 oz. The 4 bushels were then placed in a box with four compartments, lying about 3 inches thick, and then exposed to a current of air in a granary for other 21 days, when they were again weighed, the crushed Oats only losing 2 oz. in weight in the old, and 4 oz. in the new. Now, when we remember that the whole Oats lose from 1 lb. to 2 lbs. in weight per bushel, from harvest to harvest, I confess I expected more loss of weight than we got, but not of nutriment. Out of the 20th part of loss of weight in a bushel of 40 lbs. Oats, in whole as well as crushed, not a particle of it would be nutritive matter. Oats contain about 20 per cent. of water, and this doubtless is the constituent which evaporates, as is negatively proved by the fact that old Oats contain more feeding properties than new; and further, the drier the Oats the more suitable for a feeding material, whether old or new. Having had, for several months, 150 horses under my superintendence, where old Oats and crushed Beans are used, I have had an opportunity of testing the truth of the statement that crushed Beans assist in the digestion of whole Oats, and have found that more than 50 per cent. of the animals voided whole Oats with their fæces in as great quantities as when fed exclusively upon the latter alone; so that both statements given as legitimate objections to our plan of feeding were proved false. The same remarks are applicable to the selection of Beans and Peas as provender; as to Oats, the best is always the cheapest, and Beans and Peas, like Oats, are very much more valuable as feeding material, when a year old, than when new. Indeed, new Beans, but more especially new Peas, are very objectionable, being very apt to produce flatulent colic in horses, in proof of which I may mention that the same gentleman who bought the common Tartar Oats also bought a lot of new soft Peas, about Christmas, which were given to the horses, and produced an immense number of cases of gripes, not less than 70 per cent. above the general average. Indian Corn or Maize is sometimes used as food for horses, but its composition proves it to be an inferior food for hard-working animals. But although not very rich in nitrogenised matter, it contains a very much larger amount of fatty material than either Oats or any of the leguminous seeds, and must prove a very useful article for fattening poultry, pigs, and cattle, where there is little more comparative consumption of muscle than of the other structures of the body; but, from the composition of the Locust Bean, and the relative price of the two, I think the latter is very much cheaper as a cattle food than the former. I may mention, in proof of the assertion, that Indian Corn is not a suitable provender for hard-working animals, that a large firm in Glasgow, keeping several hundred horses, bought largely of this grain in 1856, and very imprudently used it. For most of the horses the results were just what might be expected, great loss of condition, half of them in a very short time not being able to do their usual work. Bran, one of the most important articles of provender used for our domestic animals, is indispensable in keeping a large stud of horses in general good health. No horse should go more than a week without a mash made with cold water; it may also be used with advantage dry, mixed with the Oats and cut hay, when the animal will not eat it in the form of a mash, a very common occurrence. I consider this provender the natural laxative of the horse, and it is the best means for preventing several very common diseases of the digestive organs, as colic, impaction of the bowels, &c. *Mr. Hunting, of South Hetton Collieries, before the Newcastle Farmers' Club.*

Home Correspondence.

Steam Cultivation.—It is gratifying to perceive that the determination of the Royal Agricultural Society not to award any prizes has in no way tended to diminish the number of exhibitors of the various steam cultivators; but on the contrary, the trials of the various implements in connection with the Battersea Show must be considered highly instructive and successful. This is quite as it should be. Misled by the awards of former years, too much attention has been given to one system, to the exclusion of others of equal merit, and possessing in some respects very superior advantages. The public very naturally look to the implement or to the animal to which a prize has been given; but should an error or mistake be made it cannot in the former case be easily rectified, but in the latter, if the judgment be impeached, it can be decided in the place. The working of the implements being open to public inspection, the different plans and systems of the various exhibitors will have to depend solely upon their respective merits and advantages, and the farmers must judge for themselves. All that can be reasonably expected is land to be found for the trial. Wishing to see what improvements had taken place, induced me to witness the operations at Farningham. It would occupy far too much space were I to attempt to describe in detail, indeed it would be superfluous: a few extracts, however, from the note book of an interested observer may not be out of place in the columns of a journal which has devoted many of its pages to this important and interesting subject. In a large, square, and tolerably level field near the station, a set of Fowler's large tackle was at work, ploughing and cultivating alternately, and here appeared to be the great focus of attraction. It was instructive to observe the lively interest taken in the proceedings by the inhabitants of many foreign nations, who assembled in large force upon the occasion. The inquiries that were made, the difference of opinion that existed, were bewildering, and it must have been evident to Mr. Fowler that to see a matter plain as the daylight is one thing, but to make it intelligible to those who have never given it much attention, or taken the trouble to understand, is a very different and somewhat tedious affair. There was the farmer drawn thither by motives of curiosity and taking merely a superficial view, could not see how farming could ever pay for such expensive machinery as that. Others, disposed to take a more favourable view, were anxious to become purchasers; but it was too costly, and the machinery too complicated, requiring a skilful engineer; and some had no desire for an expensive class of workmen, and required something more adapted for ordinary farm purposes. The man with his farm all hill and dale was contending that it was utterly impossible that the system could work on his land. The gentry patronized, were highly delighted, and became purchasers upon the spot. Adjoining were the Messrs. Howard, also ploughing and cultivating with the stationary engine, and patent two wheel windlass alongside, and beautifully got up for the occasion it certainly was, glistening in its paint and polished steel, as now and then a fitful gleam of sunshine glanced across the scene. Upon an inspection of the windlass a doubt appeared to exist as to its being formed of sufficient strength to stand the test of durability, and whether the drop drum really was superior to the old sliding pinions or clutchers. This, however, time will show. The construction of the cultivator giving it a tendency to ride upon the surface, instead of penetrating, is decidedly wrong. The tines are too numerous and badly formed. The ploughing I regret to hear is a matter of dispute between the rival patentees. Farther off in a field to the south-west, I understood, for time would not allow me to witness, was the "Woolston" system, doing its work in its usual skilful and masterly manner. Upon a review of the respective systems they may be reduced into two forms, viz.:—the locomotive or self-propelling engine, and the stationary or ordinary portable engines, termed the "Woolston" system. Granting that some of the objections that were raised in the former case were of little moment, it is unquestionable that there exists some amount of difficulty. In the case of the hill farmer, which may be considered the gravest objection, supposing the field assigned had been one of those irregular, ill-shaped, and undulating surfaces, which are to be found in all counties, but more particularly so in some than in others; it is impossible that the tackle could have worked. Turn it over then to the "Woolston" system. The stationary engine, with its simple mode of anchorage, would have met the case, and as easily disposed of all the obstacles, as I have personally witnessed and can testify. There exists, then, this distinction:—The one claims for itself a system,—the fields must be large, square, and tolerably level, to insure the proper working of the tackle, and hence the necessity for a plan of operations, as shown by the author of an excellent work entitled, "Hints to Landlords, Tenants, and Labourers," wherein he delineated a farm as existing under its old system of horse culture, and as it should be under the new dynasty of steam. My desire is not to raise invidious comparisons, but to endeavour to show that obstacles which are found in the one, may not exist, or be overruled by the other. Not to cripple by a too rigid adherence to a custom which more properly belongs and should become the reminiscence of a past age. What relation does ploughing bear to steam cultivation, any more than the old stage coach to the railway? It is utterly opposed and altogether contrary to the teaching of Divine law to stand still. Wherever there is found a lack of grain, abundance of weeds spring up to fill the gaping space. Take this implement: probe the stubborn though fruitful subsoil, let the pent up poison slowly drain away; cleanse the foul yet noble rivers, and be more the creatures of circumstances, and less the victims—as was ever intended. The power exists to work out this grand moral and social revolution in our fields as it has been done in our factories, and reduce the various operations of the farm to a system whereby we shall be the better enabled to withstand the disastrous effects of unfavourable seasons; let us then endeavour to economise a portion of the millions which are annually paid for foreign produce in bringing about this very desirable consummation, ere we are driven into a consideration of the same by failing harvests, scarcity, or famine, which as viewed in either form can only be regarded as a national calamity. *W. S., Guildford, July 9.*

Foreign Correspondence.

The Fat Show at Leipzig.—The first great fat Show of the newly formed German Agricultural Society commenced early last month. A place with covered sheds and tents, near the Berlin railway station, had been duly arranged by the city at an expense of about 200*l.* The catalogue of the Show contained 213 numbers, with about three times that number of beasts, which (at least for German ideas) showed quite extraordinary weights and fatting qualities. In South Germany people have scarcely any idea as to what weight and what quality, by means of rational breeding and feeding, those of our domestic animals may be brought which furnish us with our principal food — meat. There were several oxen of over 2100 lbs. of live weight; the prize beasts were almost all over 1900 lbs. The fat cows were 1300 to 1500 lbs. Wethers not quite 18 months old, of the English Cotswold race, weighed 200 lbs.; wethers over 18 months old, 212 lbs. English cross-bred sheep weighed 200 lbs.; an Oxfordshire Down wether, even 280 lbs. Pigs between 4 or 8 months old, up to 250 lbs.; pigs from 8 to 14 months old, 480 lbs. Full grown pigs were exhibited to a weight of 800 lbs. The committee of the show, to which the following gentlemen had been invited—Herr von Lengerke from Prussia, Mr Zimmermann and Mr. Schmalz from Saxony, the well known wholesale dealer Claus-Olde from Hamburg, Dr. Stockmeyer from Hesse, Professor Dr. Rueff (from Wurtemberg) — had no easy work in awarding the prizes, which amounted altogether to about 600*l.* Würtemberg exhibited only three lots of fat sheep (crosses of Southdowns and country sheep), and Merinos and country sheep bred on the Ganterhof, which got one 1st prize and two 2d prizes in different categories. Good fatting qualities, their quantity and early maturity, were the principal points regarded by the judges in determining the prizes, also the produce of milk, wool, &c., were taken into consideration. What a high value was put on good quality may be proved by the fact that an English

dealer paid 10½ thalers (or about 1*l.* 12*s.*) lbs. Leipzig for the centner, or the 100 lbs. live weight of old well fed cows which received the first prize, and 10 thalers (per 100 lbs.) for a 10-year old fat Durham bull, though the prices of butcher's meat had fallen previously to the show in England. Also wethers were paid for this reason with lower prices. Pigs fetched 12 to 14 thalers per 100 lbs. of live weight, although the demand for pork has diminished considerably, especially in Saxony, where important, but also very sad observations have been made lately on a very dangerous disease produced by pork which contained parasites. At the general meeting of the Society on the 4th June, to decide upon a place for the holding of the next Show, Stuttgart and Frankfort-on-Maine, &c., were proposed. Very important offers were made by the city of Hamburgh in case a similar Show should take place there, especially if it should be an international one. It is left now to the committee to decide after further discussion on the place of the next exhibition. The Show was numerously attended from far and near, and 1200 thalers (or about 175*l.*) were received in the three Show days for entry money. On the 5th the King of Saxony came over from Dresden to inspect the show, and remained over an hour. The members of the committee and the judges were introduced to his Majesty, and then invited by him to dinner in the new palace built for the King by the University. An exhibition of breeding stock was not in connection this time with the fat show; however, some breeders had also exhibited some animals fit for breeding purposes. Mr. G. Zoeppritz, (of the Ganterhof in Würtemberg), had a fine exhibition of rams of the Southdown blood near the principal show place, and got very fair prices for them from breeders of North Germany. The King of Saxony himself chose one of these rams, and bought it at a very high price. *J. Rühlen, Stuttgart, June 28.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

We have to add to our former reports the following announcements and resolutions which have been adopted at Council meetings since:—

JOURNAL.—Mr. Wren Hoskyns reported that the successful competitor for the Essay Prize in Class IV. (1862) on recent improvements in haymaking was announced to be Mr. T. Bowick (bailiff to Lord Leigh), Stoneleigh Abbey, Kenilworth. The paper sent in by Mr. Robert Smith, of Emmetts Grange, South Molton, was highly commended.

FINANCES.—The Hon. Colonel Hood reported that the Secretary's receipts during the past month had been examined by the committee, and found correct. The balance in the hands of the bankers on the 30th June amounted to 2916*l.* 19*s.* 10*d.* The balance sheet for the quarter ended 30th June, and the statement of subscriptions and arrears, were laid on the table; the amount of arrears then due was 884*l.*

The Hon. Colonel HOOD having moved "That a permanent list of judges, both for live stock and implements, shall be formed under the supervision of the Stock and Implement Committees, who shall report from time to time to the Council all names placed on such lists; that both committees shall meet for this purpose, and shall submit to the Council the best mode, in their opinion, of accomplishing this object," the motion was seconded by Mr. George Turner, and carried unanimously.

Mr. TORR having brought forward the motion of which he had given notice—"That a register of the number of stock exhibited in each class for the last three years be formed by the Secretary, and that it be laid before the Council on the day when the amount of prizes to be offered is fixed," it was seconded by Lord Walsingham, and carried unanimously.

Reviews.

Occasional Tracts on Agricultural Subjects. No. 1. Cattle Management. By R. O. Pringle, Editor of the "Irish Farmers' Gazette." Lockwood & Co., 7, Stationers' Hall Court.

A compendious and well packed store of useful instruction on its subject, giving personal experience, and quoting that of many others, most of whom we have long known to be authorities. Mr. Pringle here collects a great deal of serviceable information on cattle management, both as regards a breeding and a fattening stock. We quote the following paragraphs on the question of cooking food for fat beasts:—

"Referring to Colonel McDouall's system of feeding, Mr. McCulloch, of Auchness, who is agent or factor on the Logan estate, says:—'The two facts of greatest practical value brought out by those experiments, are the superiority of cooked over uncooked food, as an auxiliary to roots. By merely boiling the same quantity of Bean meal (4lbs.) instead of giving it raw, an equal result is produced by 71 cwt. of Mangels as by 84 cwt.; and with Swedes the cooking of the auxiliary Bean meal makes a saving over the raw meal of 27 cwt. of Swedes; or to put the value of the cooked food in another light, it appears that an ox fed on Turnips alone, consumed daily 150 lbs. of Swedes, while one with 4 lbs. raw Bean meal consumed daily 130 lbs. Swedes, and another with 4 lbs. Bean meal cooked, consumed daily 100 lbs. Swedes, the 4 lbs. raw Bean meal being an equivalent to 20 lbs. of Turnips; whilst by merely cooking it, it became equal to 50 lbs. of Turnips."

"A Kentish feeder, who has used Rape cake with success, began by using it crushed, mixed with shells of Oats, chopped straw, and a sprinkling of Bean meal. This mess was moistened with cold water, and well mixed. He found some difficulty in getting the cattle to take to it at first, but although the system answered fairly, yet he has latterly had recourse to steaming with more satisfactory results. He now uses a portion of Bean straw, rough seeds, and chopped straw, together with 4 lbs. of Rape cake and 2 lbs. of Bran. The whole is previously mixed, and then steamed together. The Bean straw and bran give a relish to the mess, and the cattle devour it greedily. The daily allowance of food for each beast by this system consists of—

Chopped Oat straw, shells of Oats, and Bean straw	16 lbs.	22 lbs.
Rape cake	4 ,,	
Bran	2 ,,	

"The above are all blended together previous to being steamed.

Swedes 60 lbs., or Mangolds 50 lbs., given in a raw or natural state	60
Dry chopped straw in addition	2
	84

"Upon this fare, he calculates in heifers weighing from 7 cwt. to 9 cwt. each, an average gain, through a lengthened course, of not less than 14 lbs. per week each; and on cattle of a larger size, say from 10 cwt. to 12 cwt. each, a gain of from 14 lbs. to 18 lbs. per week each. He further finds that when the cattle are bought in fresh condition it requires 16 weeks, or, when lean, 20 to 24 weeks, to make them fit for market."

"Mr. Ogden, Berry Hill, Northumberland, gives each of his fattening cattle '2 lbs. of oilcake, 2 lbs. of Bean meal, 4 lbs. of cut straw, 1½ oz. of salt daily. In preparing this mixture, to serve 24 cattle for 24 hours, 48 lbs. of oilcake, 48 lbs. of Bean meal, 96 lbs. of cut straw, and 30 oz. of salt, are, in the first place well mixed together in a trough; 36 gallons of boiling water are then added, after which the whole mass is well turned and incorporated together and pressed down, and in an hour or two is quite ready for the cattle.' This is prepared every forenoon, and keeps quite sweet for 36 hours. A daily feed of this mixture effects a great saving of Turnips, the cattle consuming '1 cwt of Turnips less per day than when fed on Turnips alone.'"

"Mr. Coleman, Park Farm, Woburn, considers that by adopting the following plan he is enabled to keep one-third more stock than on the dry, or Norfolk system. He says, 'The corn or meal I use is ground, and then boiled; the chaff is placed in layers of about 6 inches in thickness, in large cisterns; upon this chaff a thin coating of pulped or cut roots is spread, and upon the roots a portion of the boiling mucilage is poured, to which, after being slightly mixed, is added more chaff, roots, and mucilage, until the cistern is quite full. It is then left for 24 hours, in which time fermentation takes place; and with three parts of straw and one of inferior hay, 1 lb. of Linseed meal, half a bushel of roots per head per diem, I have had 80 head of store cattle all winter, that have kept in good condition, thriven, and done well. With fatting cattle the proportion of hay is greater, and I generally commence with 4 lbs. of meal or cake, and gradually increase to 8 lbs., which quantity I rarely if ever exceed. My mixture usually consists of 1 lb. of Linseed to 4 lbs. of Barley, Lentils, or other Corn meal; it boils down and makes a much better mucilage. Upon 120 acres of roots, 100 of upland hay, 80 of pasture hay, I never had less than 250 head of cattle all winter; 80 fat ones sold at Christmas, and I shall get rid of 80 more before this month is up; 80 store cattle, &c., and over 1000 sheep. I hesitate not to say, had it not been for the consumption of straw I could not have kept more than half the number.'"

A Lecture on the Breeding and Form of Farming Stock, delivered to the Derbyshire Agricultural Society, on Friday, May 9, 1862. By J. Hitchman, M.D., Chairman of the Committee of the Society. Bemrose & Sons, Derby.

This lecture, published by request, ably illustrates the extent of that "dominion" which God gave man over the fowl of the air, and over the cattle, and over all the earth, by the degree to which, applying his mind and will to the task, he has modified the very form and character of the creatures he has had to deal with. The original rock dove, with the many varieties of its descendants, is not a more striking illustration of this moulding power than we have in the original sheep and the tribes and breeds and families to which under the influence of circumstances and under human guidance it has given rise.

The argument founded on the law that animals bring forth of their kind is stated all through the pages of this pamphlet as the groundwork and explanation of all success in breeding—you must choose parents possessing those qualities which you desire in your future herd. These qualities are thus described and enumerated:—

"In the bull, the head should be well set upon a broad deep muscular neck, having the horns short, and not too bright; the ears long, and situated near to the head, the inside skin having an orange tint; the forehead should be broad at this point, with a somewhat concave appearance between the eyes, the eyes themselves large, mild, lustrous, and prominent. The butcher knows if he finds the eye of the calf protuberant, and by elevating the eyelids sees fat underneath, that the protuberance is caused by fat in the socket; and if it be found in quantity here, it is a fair criterion that it is well diffused in more important points. A fine flesh-coloured muzzle, with nostrils well dilated; the neck, as said before, broad, deep, and muscular; the shoulder blades well set toward the rib behind, and yet stretching up finely towards the 'crop,' leaving no deep hollow between it and the ribs; chest deep; ribs well rounded, and stretching backwards to the hook bone, so as to leave no very wide space there. The breadth between the 'hook bones' should be proportionate to the length from them to the point of the fleshy rump; and the tail set on as in this diagram; the forelegs should be broad and muscular, from this point upwards; the thighs well developed, and touching each other inwardly, to near the hock; the skin covered with thick, soft, somewhat curly hair, and should be to the touch, when the animal is in a store condition, soft, elastic, and pleasant to the feel; but when the animal is fully fat (however soft the hair) the skin itself should be very firm, resisting, resilient to the pressure, like to the feel of a strained, well distended air cushion. As I said before, the bones should be as small as is compatible with the full steady support of the animal. In the cow, we everywhere expect greater roundness of form, a softer touch, wider hips, and a more delicate outline. In both, a graceful carriage and lively air are desirable.

"Such I conceive to be the perfect animal—some one has said, 'the perfect monster the world never saw,' but to this we aspire at our shows, and the 'Prize Taker' is, or ought to be, the one which possesses the above points in the greatest perfection; however, practically, if there be a deep chest, a round rib, a broad loin, a mellow skin, and small bones, you have a beast which will repay your care."

As to the management of the herd with a view to the maintenance of a character thus described, Dr. Hitchman contends for allowing ample maturity and full age to the heifer before you breed from her—and for the rest the general principles which should guide you are well illustrated by his remarks on colour, which we quote as follows:—

"Now, notwithstanding that there is a race with the 'alloy' of the Galloway in its blood, yet is the original 'Short-horn' as distinct a tribe as any other of our races, and has, probably, an ancestry as remote; and I am as positive, as I am of my own existence, that a uniformity of colour, as unvaried as any other class of animals, could be secured in process of time, if breeders were unanimous in determining upon one of three colours, viz., red and white, white, or red. So long as roan, which is a compound colour, is determined upon, so long will it be a matter of the greatest possible uncertainty what the actual colour of the progeny may be. Certainly 'roan' is a very beautiful colour, and the variety which it leads to makes a herd of 'Short-horns' a most picturesque object in the parks or meadows of a nobleman; but still, this variety detracts from its dignity as a tribe, and lessens its effect when viewed as a herd in the stalls, or grouped for sale in the market. I say that this uniformity may be effected, because, even now, there is a kind of unity amid all this variety, for, if we cannot determine what the colour of the future calf will be, we can at all events, predicate what it will not be; we know that it will not be entirely black, or have any patch of that colour; black, or anything approaching black, would taint the fair fame of the Shorthorn, as assuredly as would a woolly scalp, a flat nose, a protuberant lip, and a dark skin in her progeny, sully the honour of a Virginian lady.

"Perhaps there have been more good Short-horns of a white than of any colour; although it is now very unpopular—unpopular, because it betrays dirt, and is difficult to keep unsullied; and, erroneously unpopular, as implying weakness of constitution. It is as hardy as any colour. Stick to facts and not to fancies. In what colours does Nature robe the animals which spend their lives amid the regions of eternal snow? What is the predominant colour in the Arctic hare, the Esquimaux dog, and the Polar bear? Of what colour are the body ends of nearly all feathers, especially the feathers of all water-fowl occupying cold latitudes? What colour has instinct and experience alike sanctioned, as the proper one to husband and preserve the heat of the human body? Let no man who puts on a white shirt, condemn white colour in his ox, as a sign of being 'nesh.' A white cow may be 'nesh,' but the same cow would have been as 'nesh,' or 'nesher,' if she had been of any other colour.

"In determining the colour and the texture of the hair and skin, the influence of the male predominates, where both have an equal hereditary tendency; that is, supposing that the female had, through six successive generation's been red, and the male through as many been white, the progeny will partake more of the latter colour. Bear in mind, that this effect will follow only where the hereditary bias, towards a special colour and character of hair, is equal in both of the sexes. Look at the mule, carrying always hair of the coarseness and colour of the ass: reverse the procedure, let

the horse be the sire, and the 'hinny,' or as I have heard it called in Derbyshire, the 'foulart,' will have the hair and the colour of the horse. From early childhood, I have reared birds, rabbits, and other pets, and have never known an instance where the male has not influenced mainly the colour and texture of the external covering of the body; if you pair a male goldfinch with a hen canary, the mule progeny will resemble the goldfinch. Place a Dorking cock with Cochin-China hens, and the feathers of the offspring will resemble mainly the Dorking. Reverse the procedure; let the Oriental be the lord of the harem, and the scene is changed, the offspring of the Dorking hens will be far more like 'Cochins' in their feathers than Dorkings.

"Again and again have I known a white boar produce all white pigs from a black sow; and *vice versâ*, but let it be ever remembered, that for such results to follow, the bias, or hereditary transmission of the special colour, must be equal on both sides. A white boar, *e.g.*, descended from a black sow, by a white boar, when placed with a black sow, would not make so decided an impression upon the colour as one which had for many generations descended from a white strain.

"While the male bird or animal thus affects the covering of the body (whether feathers or hair), the constitution, or special qualities of the creatures produced, remain the same as those of the female parent; thus, in reference to the progeny of a Dorking cock and Cochin hens, I wrote some years ago in our excellent local paper, *The Reporter*. (I presume you all know that Cochin-China pullets lay in winter, and are very hardy).

"'The progeny grows rapidly, and to a large size, the yellow legs of the Cochin (change of skin, you observe) are often displaced by the white legs of the Dorking; it produces more eggs than the Dorking, of equal size, and of a richer colour (thus, while exhibiting the external characteristics of the Dorking fowl, retaining the coloured egg of the Cochin China fowl). Although the thermometer stands at 18° below freezing point, a hen of this breed, with no especial advantages of warmth or shelter, with no 'greaves,' fat, or animal food, is supplying us five times a week with an egg of good size (six to the avoirdupoise pound), as beautiful in colour as those of her dam from the Celestial Empire, and as rich in favour as the eggs which her great great paternal grandmother deposited upon the sunny slopes of Dorking in Surrey. She performs this duty, too, in a true Wellingtonian spirit, coming off her nest with quiet dignity, making no grand cackle about the glory of an achievement which might well inspire the lazy hens around her with envy, if not with admiration. Therefore, the introduction of these fowls, from 'The Flowery Land,' is a national benefit, for the farmer who keeps Shanghae hens and Dorking cocks, will have a supply of eggs (when eggs are scarce) for the market. But let him not think to perpetuate the race by breeding from this cross. Better to sell their eggs at 40 for a shilling, for the patriotic purpose of pelting a political renegade, than place them under a hen to be warmed into a bundle of bones, muscles, and feathers, into a walking, eating creature, that would require the genius of Adam himself to supply it with an appropriate name. For, as sure as the young mongrels would chirp, so surely would they reverse the excellent properties of their parent, and by a rapid process of degeneration (for all one can tell), their offspring might grow up more ravenous than a distorted Cochin, and almost as eggless as an Ornithorhynchus or a Kangaroo.'"

On "in-and-in breeding," we quote further:—

"It must ever be borne in mind that there are geographical limits beyond which certain tribes of cattle do not thrive, and, that as a rule, it is better to improve the local stock, or tribe, than to introduce new varieties. People dread to carry out this to the extent it might be done, from fear of deteriorating their stock by too close an affinity of blood: but there is no solid foundation for this fear, provided the stock are themselves thoroughly sound, and free from misshapen forms. The best formed animals I have ever seen, have been derived from close breeding on both sides, from families remarkable for form and quality. This magnificent bull 'Comet,' the first 'thousand guinea' Short-horn, was got by 'Favourite' (out of his own daughter), (his dam also being by 'Favourite') while the grand-dam (Phœnix) was by 'Foljambe,' 'Foljambe' himself being the sire of 'Favourite.' Can anything be closer? Here is a fine bull, 'Grazier,' used for upwards of 12 years in the herds of Lord Carlisle, Lord Feversham, Sir J. Johnstone, Mr. W. Smith, and others. He was by 'Midas,' out of a cow 'Patch,' related to 'Midas.' His grand-dam was by 'Midas,' and the great grand-dam, both of 'Midas' and of 'Patch,' were by 'Punch,' and all but a few removes from 'Favourite,' and these removes all relatives possessing 'Comet' and 'Favourite' blood.

"Breeding in-and-in is a monstrous evil if it be not conducted with a due regard to the perfect health and form of the special animal used. I had strong *a priori* convictions against it, under any circumstances, and corresponded largely with breeders to get at facts, rather than opinions, but I cannot say that my inquiries were very successful. One said it led to disease, others said it did not, and nearly all sent opinions only, when I wanted the facts upon which the opinions were founded.

"More than 18 years ago, Mr. Charles Large, a man of sound judgment, and a most successful exhibitor and breeder of sheep, taking prizes at the Royal Society at its meetings in Cambridge, Bristol, Derby, and elsewhere, wrote to me, that 'any change of blood should be got with the greatest possible caution, and more particularly where a flock is in high repute;' but he thinks that if too long continued without change, 'the flock would not produce so many lambs as where fresh blood was introduced.' This may probably be the real truth, for we hear of a sad falling off in the prolific power of some of our prize winners; still, other causes operate to produce this.

"To be, however, the historian of my own experience, I repeat, that the best animals I have ever seen have been the results of close breeding—this animal here is a descendant of 'Young Duchess,' purchased at Charles Colling's sale (Oct. 11, 1810), by Mr. Bates, for 183 guineas. 'Young Duchess' being by Comet (out of his half-sister, dam of Young Duchess by Favourite), her dam being by Favourite, the sire of Comet. Well, I saw this cow Duchess 66th, sold at Tortworth, for 700 guineas, and a calf at five weeks old, for 310 guineas. She went to America. Her offspring was placed to this bull, 2nd Grand Duke (sold for 1000 guineas), who was out of her half-sister, Duchess 64 (saw sold for 600 guineas), and got by the same bull as herself. The result of this close union is this—the 2nd Duke of Thorndale, sent back to England in 1861, and sold for 400 guineas; and now this year, his own brother, the "Duke of Geneva," has arrived from New York, having been sold to the Hon. Colonel Pennant, of Bangor, for 600 guineas. Her calf, which I saw sold at five weeks old, for 310 guineas, at the same time as herself, at Tortworth, proved the dam of this 'Duchess 77,' and of twins, Duchesses 78 and 79. Duchess 77 won the first prize at the Royal Agricultural Show, at Leeds, as the best cow in the yard—18 other prizes, and 7 challenge cups, in the counties of Durham, Lancashire, Yorkshire, &c., and her owner, Captain Gunter, writes me thus—'I have several times been offered bonâ fide 800*l*. for her." The twin Duchesses 78 and 79 have been great winners, Duchess 78 winning the heifer prize, at the Royal, last year. They are white and roan, the white has had precedence of the roan in four cases, and the roan of the white in three, including the Royal prize, in which the white is not even reckoned second to her Such are the chances of war.

"I saw the fine bull, 'Master Butterfly,' take the first prize for bulls under two years old, at the Royal Agricultural Show, at Carlisle, in 1855, and again at the Meeting of the Royal, at Chelmsford, in 1856, for bulls above two years old; he was then sold for 1200 guineas, to Mr. Ward, of Geelong, in Australia. He is the offspring of this cow 'Butterfly,' and the bull 'Frederick;' of whom there is only a most unsatisfactory portrait published. They subsequently produced another bull calf, 'Royal Butterfly,' whom I saw the winner of the yearling prize, at the Royal Meeting at Warwick, in 1859; and of the first prize for bulls above two years old at the Royal Meeting at Canterbury, in 1860. For him also, the magnificent sum of 1200 guineas has not only been offered but refused. Colonel Townley writes to me thus, 'I refused at Warwick, for my present bull, own brother to Master Butterfly, 1200 guineas." How closely they are bred is shown by the above table derived from the Herd Book.

The following are the propositions which are illustrated in course of this very interesting and instructive lecture:—

"1. That man has been endowed with the means of controlling and modifying the form of all animals.

"2. That such modified forms can be handed down to the progeny, but being departures from the primitive, or natural type, the form can only be maintained by assiduous attention on the part of the breeder.

"3. That not only because the qualities of the male can be immediately brought to bear upon larger numbers, but also because of his own special endowments it is best to seek for improvement of form and quality through him.

"4. That qualities both of the form and also of the character become hereditary in proportion to the frequency of their repetition in past generations, but, that it is dangerous to breed from any animal with important defects, however high its pedigree.

"5. That healthful, well-formed animals without hereditary taint, even if closely related, may be safely permitted to propagate their kind, provided the practice be not continued through many generations.

"6. That young animals, for their first impregnation, should be placed to the best of their own kind, in order to avoid the reappearance of stain in any future progeny.

"7. That science has not yet revealed any trustworthy arrangement by which the proportion of the sexes can be determined upon and secured."

Farm Memoranda.

South Hants Farm: *Report to the end of June.*—During the past 10 days the weather has improved, and has been somewhat drier than during the previous month, and although there has not been much sunshine, yet the hay which at the time of our last report was threatened with serious damage, has since been carted in fair condition; the great absence of sunshine has, however, caused much of the hay to overheat in the stack, for in many instances where it seemed to be sufficiently made it has proved otherwise. We have just commenced cutting the meadow and dry pasture Grass, and the crop is abundant, but the weather being cold and cheerless for the time of year, and appearance being in favour of rain than otherwise, it is more than likely that the hay will be damaged before it can be got into stack. Haymaking machines are to be seen at work almost everywhere, and such has been the demand for them this year, that we understand the different makers have had some difficulty in supplying their numerous customers. Hand labour is annually becoming more scarce, therefore machinery in every department of agriculture will become an actual necessity. The work of the farm during the past fortnight has proceeded with but little delay, earthing up Potatoes has been going on, which work is now finished, the whole of the crop having been seeded with Turnips as the work went on; indeed, the portion of early Potatoes first seeded with Turnips are looking remarkably healthy and strong. The young Turnip plants are coming into second leaf, and look very kind and growing, although they had at first suffered a little from the attack of the fly. Horse and hand hoeing the early Mangel crop has been continued, and although the weather has not been warm enough for the young plants to grow very fast, yet the plant seems established, and with more regularity than in some seasons. In our sandy loam soil we generally get some Couch Grass, particularly where the seed is drilled, as a second crop at once ploughing; we are not, however, deterred from sowing after one ploughing, because we make it a rule to have the Couch forked out by women, by which means it is more surely eradicated than by extra ploughing, and we feel assured that it answers a good purpose, and that 5*s*. spent in hand labour often saves 20*s*. in horse labour, irrespective of the time gained, because extra ploughing cannot be effected without loss of time, and we contend that the time gained is often equal to a certain outlay in manures. The Carrot crop bids fair for an average plant; this crop is always the most difficult and expensive to keep clean and free from weeds of any under farm culture, and except when they are drilled on the baulk or ridge they cannot be horse-hoed when the plants are young, therefore when drilled on the flat it is more particularly women's work to hoe them, and this we do with small 4-inch hoes, and the earlier it is done the better. We do not however get so many weeds when we sow after Trifolium by one ploughing as when sown after a fallow. We only completed drilling Carrots on May 24, yet they are quite forward enough to produce a first-rate crop, as we have noticed the plants do not usually make much progress towards rooting until the autumn rains set in. The stock are now living on Clover; the oxen, steers, and heifers of all ages, as well as calves, feed upon it. Those animals however which are progressing towards maturity get about 20 lbs. each of Mangel per day with cake meal. The Mangels have kept well in stock all the spring and up to the present time, and we have fortunately a good quantity left in stock for use up to September. This is always advantageous, for in case of hot weather when the Grasses are old and dry the Mangel proves a capital auxiliary. We still continue cutting for the young stock the Grass on the borders of fields, and where cut first there is now a second cut ready for use, and for feeding young cattle it is equally nutritious as Clover, and pays well for cutting. We continue to plant Cabbage and Kohl Rabi wherever there may happen to be loss of plant in the root crops; it is a capital plan to fill up vacancies in the Mangel crop. We have often planted Mangel roots, and seen it done to fill up vacancies, but we never saw the roots come large enough to pay for doing, whereas both Cabbage and Kohl Rabi are sure to grow when planted, and always give a valuable crop. The Wheat crop generally this year shows a very small head, and looks uneven, and this in some measure has been occasioned by the cold wet weather, and the effect of rough winds, which has broken down the plants, the harvest cannot now be early if the weather were to change to very fine, it may however happen about the average period, the first week in August. The Oats are looking the best of the grain crops, and are rather forwarder than the Wheat where early sown. Beans and Peas, especially the latter, are looking well and free from blight, and are likely to prove over an average crop. It is too early to speak of Potatoes, although some early sown show blight. *J. B.*

Miscellaneous.

Fat Stock at Battersea.—We took the measurement of the greater number of the prize animals with a view of giving them, but upon reflection, we consider it better to withhold them; as, without explanations as to the fatness of each animal, comparison on that basis would be invidious—several of the animals being better fitted for the shambles than for breeding purposes. Indeed, leading agriculturists from the Continent expressed their surprise and regret that the breeders of such beautiful animals as our Shorthorns, Devons, and Herefords, should send them to the Showyard in such a state of fatness as to endanger their procreative powers. It would be a curious, and doubtless instructive lesson, to all exhibitors, were the future history of these over-fattened animals ever to be recorded. The Suffolk horses carried immense masses of flesh and fat. The sheep were also shown in a state of unnatural obesity, and in some of the classes the awards of the judges could only be explained on the ground that they considered some of the animals not very suitable for breeding purposes. *North British Agriculturist.*

Calendar of Operations.

JULY.

Berwickshire Merse Farm, *July* 14.—It would seem that two or three sunny days are to make our summer. For 10 days the air temperature has been in pleasing contrast to that of the previous bleak fortnight, and frequent showers have somewhat revived the failing pastures; but, until we have more light, little progress can be made towards harvest Early winter Wheats are putting out a small head, and piec

of Barley are getting ragged here and there. Oats are short, and show no sign of the ear; but they are of a healthy colour, and may yet be our best crop. Wheat can scarcely reach an average, and Barley is certain to be far short of it. Beans are few, but blooming freely. Potatoes are vigorous, but the soft weather has delayed the cleaning till the young tubers are being turned up by the horse-hoes. There is abundance of extra hands from Ireland, and Swedes are mostly singled. But for the larger half of the Turnip crop, which has been sown during the last three weeks, it would be difficult to say when it will be ready. The fleas, too, which we hoped had been starved out during the interval, are hopping about as lively as ever. Although the prospect of winter food is thus far from assuring, yet lambs bring within 1s. of last year's prices, this slight fall being fully accounted for by inferiority of condition and vigour. There is a portion of fat sheep still in hand which will benefit by the revival of Grass, and the price is somewhat lower. Wool has advanced suddenly to some 3*d.* a lb. above last year's price, but a large portion was sold when the Yorkshire staplers came their rounds at half that rise. Ewe fleeces are badly "coated," and the clip is no way above an average. There is a fine crop of mixed seeds in hand just now, which means that the swathes are looked at between showers. Much of it has lain thus for 10 days, but two or three clever people have theirs in the cock. Dry and sunny weather would suit everything now. Under the most favourable circumstances there can be no harvest until September. *J. T.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Thursday, July 16, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Friday ..	11	29.95	57	50	W.	2	3	67	44	80	41	0.15	60	59
Saturday ..	12	29.47	60	58	W.	3	7	64	50	78	49	0.35	60	58½
Sunday ..	13	29.83	66	59	W.	2	3	68	48	88	44	0.04	60	58½
Monday ..	14	29.88	65	60	W.	3	4	73	54	93	51	..	61	58½
Tuesday ..	15	29.81	61	55	S.W.	3	3	74	48	89	43	..	62	59
Wednesday.	16	29.77	59	55	W.	3	5	71	49	87	47	0.06	61½	59

Notices to Correspondents.

☞ Correspondents are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

Drainage: *Query.* By all means carry your drains in the direction of the inclination, otherwise, because water will not run up hill, one side only of your drains will work. In your clay by no means allow the distance from drain to drain to exceed 25 feet. You must scarcely expect to do your work, 4 feet deep, at less than 4*l.* 10*s.* per acre, considering the price of your pipes, and the stony subsoil. If you employ 1½ inch pipes for the first length of each drain, using 2-inch pipes when the accumulation of water shows it to be necessary, the outlay will be somewhat reduced. The article Drainage in "Morton's Encyclopædia of Agriculture" will afford much valuable information.

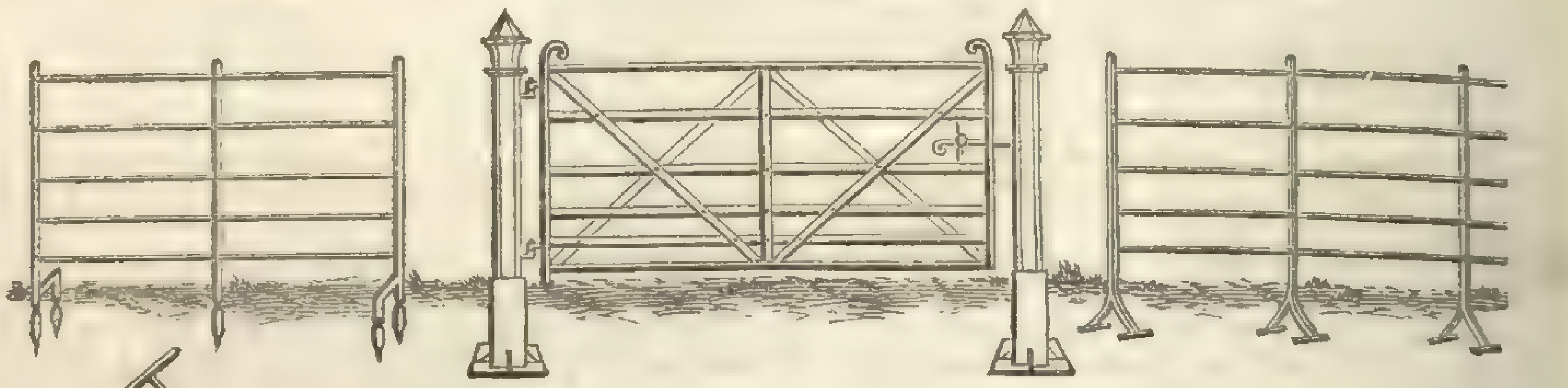
Foot Rot: *P Picton.* Sulphate of lime powdered, 1 oz.; Sulphate of zinc powdered, 1 oz.; Creosote, 1 scruple; Stockholm Tar, 4 oz; Lard, 4 oz.; to be made into an ointment and applied occasionally to the feet of the sheep and between the claws. *W C S.*

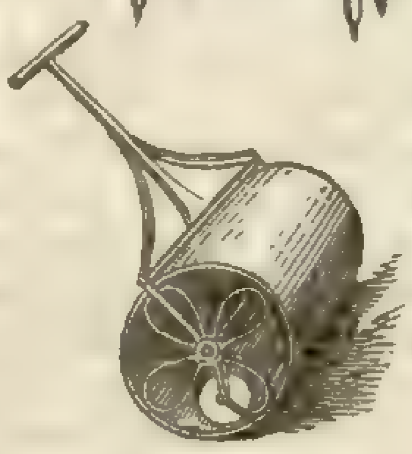
Grass: *S. Broome, Temple Gardens.* The Grass is the Avena flavescens—Yellow Oat Grass. Your notes on the change in the meadow resulting from cultivation are very interesting. The little book on Meadow and Pasture Grasses by Professor Buckman of Cirencester will perhaps be the best for your purpose. Sowerby has published Engravings of Grasses, which are well done, and therefore somewhat costly.

Pastures: *A Roberts.* The usual practice with regard to the droppings on the pastures is to knock them abroad when they have arrived at a certain degree of consistency. We believe that an old man and donkey cart might be usefully employed constantly during summer in collecting them and forming a heap, wherever there is extent and herd enough to give him work.

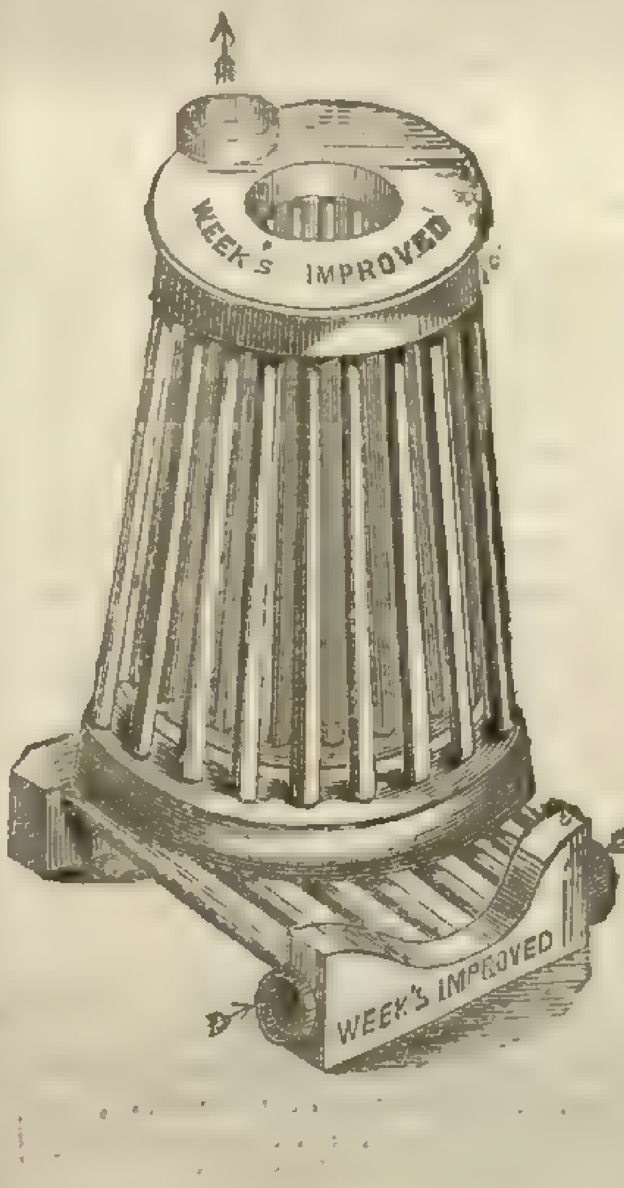
Rosher's Paving Tiles.—We have seen specimens of the so-called "Grooved Terro-metallic Stable Paving Brick," which appear to unite indestructibility with the form adapted for a good flooring for the stable.

COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,
MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.
PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED,
IN VARIOUS STYLES.



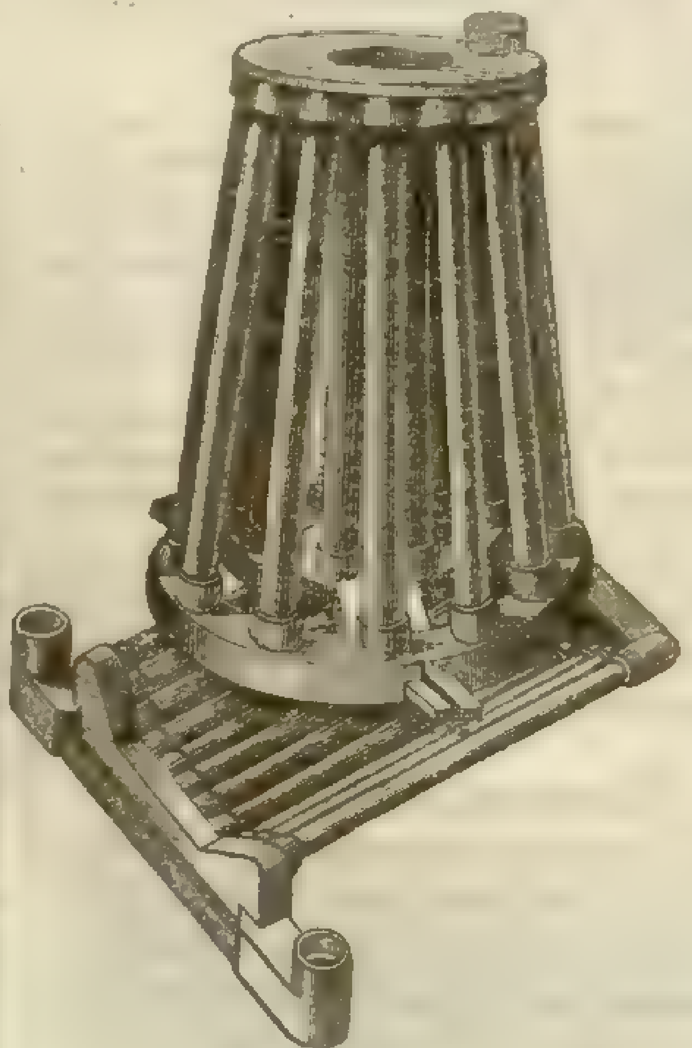


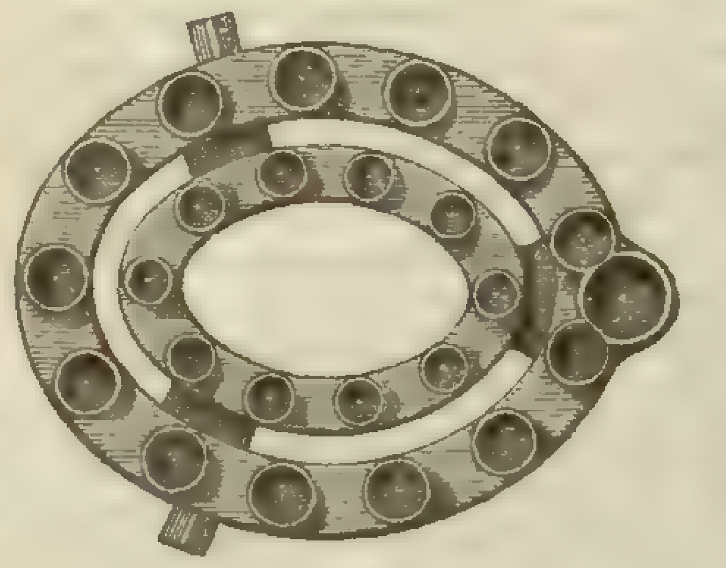
IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes.
VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.
The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.
Illustrated CATALOGUES and DRAWINGS free on application to
COTTAM & CO., ENGINEERS and IRON FOUNDERS,
2, WINSLEY STREET (Opposite the Pantheon), OXFORD STREET, LONDON, W.



JOHN WEEKS AND COMPANY,
HORTICULTURAL BUILDERS
AND
HOT-WATER APPARATUS MANUFACTURERS
TO
HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS of WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN
THE TOWER OF LONDON
THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN
THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM
And NUMEROUS PUBLIC COMPANIES.
KING'S ROAD, CHELSEA, S.W.

GRAY'S OVAL TUBULAR BOILER.
INTERNATIONAL EXHIBITION,
Class IX., No. 2119.

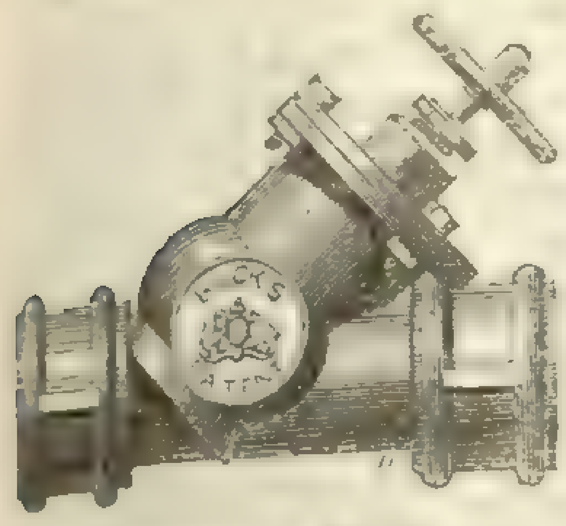

ELEVATION.


PLAN.

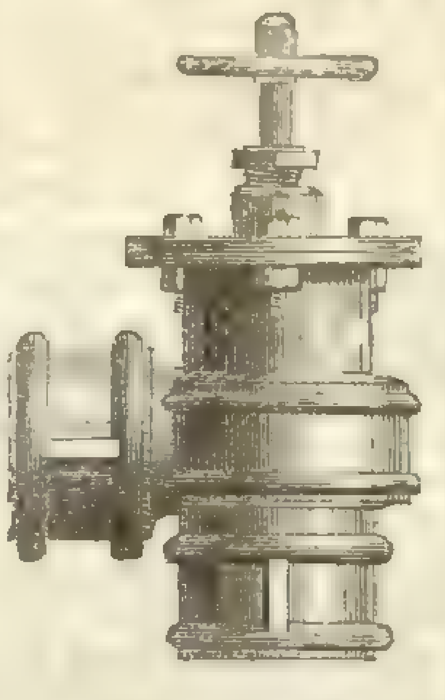
Mr. Gray begs to call the attention of the Nobility, Gentry, Nurserymen, Gardeners, &c., to his
NEW OVAL TUBULAR BOILER,
acknowledged by practical judges to be a great improvement on every form of Tubular Boiler yet introduced. It has proved itself superior to all other Boilers for quickness of action and economy of Fuel, doing its work with one-third less the amount required by any other.
Extract from Report in Gardeners' Chronicle *of International Exhibition, May 24, page 476.*
"The upright form of Boiler is usually made on a circular plan, but the oval form given to Mr. Gray's variety of it is said to be preferable in consequence of its bringing the tubes in closer contact with the fire. The usual form of a furnace being a parallelogram rather than a square, it seems feasible that the Boilers on the oval plan should bring the tubes more completely within range of the burning fuel; and this being so the change, though a slight one, is no doubt an improvement."
They are made of all sizes, which, with prices, may be had on application.
JAMES GRAY, HORTICULTURAL WORKS,
DANVERS STREET, PAULTON'S SQUARE, KING'S ROAD, CHELSEA, S.W.

Horticultural Works, Danvers Street, Chelsea, S.W.

BECK'S PATENT HOT WATER VALVE.



HORIZONTAL VALVE. 2" 18s. 6d.; 3" 25s.; 4" 30s.



ANGLE VALVE. 2" 17s.; 3" 23s.; 4" 28s.

JAMES GRAY, Sole Agent, begs to call attention to this most simple and perfect Valve ever invented. It is perfectly water-tight, and is never liable to get out of order, or to get fixed by standing.

To ARCHITECTS, ENGINEERS, GARDENERS, & OTHERS.—BECK'S Patent Valve has been submitted to several of the most scientific men of the day, and has invariably met with unqualified approval. A liberal Discount to the Trade.

CONSERVATORIES, GREENHOUSES, VINERIES, and every description of HOTHOUSE erected on the most improved principles, and of best materials, at the lowest possible price consistent with good workmanship.

Heating by Hot Water in all its branches. Boilers of every approved description, Tubular, Saddle, Conical, &c.

JAMES GRAY, Horticultural Works, Danvers Street, Paulton's Square, King's Road, Chelsea, S.W.

E. DENCH'S HORTICULTURAL WORKS, 152, King's Road, Chelsea, S.W., Manufacturer of every description of HORTICULTURAL BUILDINGS either in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without. HOT WATER APPARATUS Manufacturer.

Hothouses for the Million.

INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.

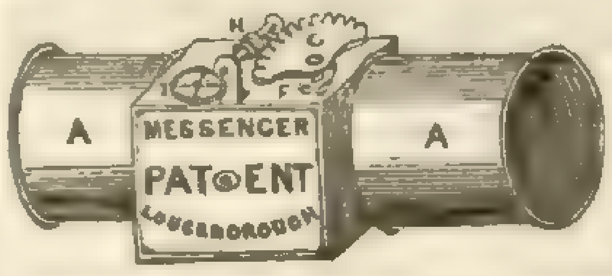
HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to Railway Stations round London. Illustrated Circulars with Lists of Prices, can be had on prepaid application to S. HEREMAN, 7, Pall Mall East, London.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

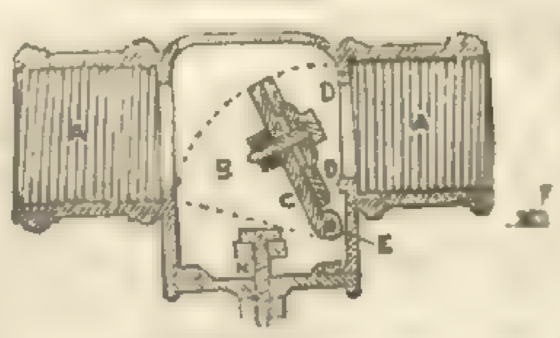
Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3l. 10s.

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.



ELEVATION.



SECTION.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough, has recently patented a Valve which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under.

Two-inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s.

A liberal discount to the Trade.

JOSEPH SMITH, HORTICULTURAL BUILDER, New Road, Hammersmith, W., has for SALE several GREENHOUSES, viz.:—

	£	s.
Span Roof, 27 feet long by 16 feet 6 inches wide.. ..	47	10
Lean-to, 24 feet long by 12 feet 6 inches wide	34	0
Ditto, 22 feet long by 12 feet wide	28	0
Ditto, 100 feet long by 13 feet wide, glazed with 21-oz. glass	100	0
Second hand, 15 feet long by 7 feet wide	15	0
20 extra stout, 10 feet 6 inches by 4 feet 2 inches, Lights, 21-oz. glass	35	10
Smaller sizes 2¼ inches, thick, 9½d. per foot.		
50 6-feet by 4-feet lights, 15s. each, the lot	37	0

Houses made to order from 1s. per sq. foot; if Unglazed, 8d. Pit Lights with 15-oz. Glass, 8d. per foot; with 21-oz. Glass, 9d. per foot.

FOWLER'S STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

THE SILENT GEAR OF SAMUELSON'S LAWN MOWING MACHINES IS NOT LIABLE TO DERANGEMENT.

SAMUELSON'S SILENT, SELF-CLEANING, LAWN MOWERS,

WITH MANWARING'S PATENT NOISELESS GEAR, AND BOYD'S PATENT SELF-CLEANING BRUSH.

THESE STANDARD MACHINES ARE CONSTRUCTED WITH A SIMPLE AND DURABLE SILENT DRIVING GEAR.

PRICES, including Packing Case, and Carriage paid to any Railway Station in the Kingdom:—

	Width	Boyd's & Manwaring's Patent.	Manwaring's Silent Gear only.
MANUAL POWER	12 inches wide	£5 0 0	£4 12 0
	16 "	7 0 0	6 10 0
	19 "	7 10 0	7 0 0
	22 "	8 10 0	8 0 0
PONY POWER	22 inches wide	£9 5 0	£8 15 0
	25 "	12 0 0	11 10 0
	30 "	15 15 0	14 14 0

TESTIMONIAL. Donnington, Chichester, March 5.

SIR,—In reply to your letter of the 25th ult. respecting the Lawn Mower I had from you last year, I am pleased to give it my most decided approval; for although I have had one in use for the last 15 years, I have never had one that did its work as well as this, or which was so little liable to get out of order. I consider the cleaning and sharpening apparatus a very great improvement. I have a piece of lawn which in the days of the Scythe always took up two men's time for three days to roll, mow, and sweep; they can now with ease go over this ground with your Machine in a little over two hours, and leave it well finished, so that in fact these Machines soon pay for themselves in labour only, to say nothing of the many other advantages derived from them.—Yours faithfully, W. J. HUMPLING.

Orders direct or through Dealers will be executed according to priority of receipt. May be obtained at the WORKS, Banbury; at Mr. SAMUELSON'S Warehouses, 2, Parliament Street, Essex Bridge, Dublin; Newcastle; Stockton; York; Shrewsbury; and Bristol. Also of all Ironmongers and Seedsmen, and at

MR. SAMUELSON'S WAREHOUSE, 76, CANNON STREET WEST, LONDON, E.C.

Card.

SAMUEL N. McGERROW, GENERAL HORTICULTURAL BUILDER, Knotty Ash, near Liverpool.

Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hot-houses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.

Apply to JOSEPH MEREDITH, Vine Cottage, Garston, near Liverpool.

N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, TUBULAR, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 12s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

Horticultural Buildings and Heating by Hot Water.

BURY AND POLLARD, PARK IRON WORKS, New Park Street, Southwark, S.E., Manufacturers of every description of Buildings for Horticultural Purposes, with their Improved CONICAL BOILER for heating the same, are prepared to undertake works of any magnitude, and refer among others to the celebrated range of Forcing Houses at Her Majesty's Gardens, Frogmore, and at Sir Robert Peel's, Drayton Manor, constructed under the superintendence of their Manager, Mr. JOHN JONES.

Further information forwarded on application.

West of England, Ireland, and Wales.

VINCENT SKINNER (late Partner with J. WEEKS & Co.), erects CONSERVATORIES, HOTHOUSES, and HOT-WATER APPARATUS. His improved Pipe Boilers, which give such universal satisfaction for Warming Churches and Hothouses, will heat from 100 to 2000 feet of Pipe.

Plans and Estimates on application to V. SKINNER, Bridewell Street, Bristol.

CARSON'S
ORIGINAL ANTI-CORROSION PAINT.

WHITE ... ... / LIGHT STONE ... ... / DRAB OR PORTLAND Do. / BATH Do.... ... ... / CREAM COLOR	30s. per cwt.
LEAD COLOR ... ... / LIGHT AND DARK OAK	26s. "
BRIGHT RED ... ... / DARK Do. (OR BRICK COLOR) / LIGHT & DARK CHOCOLATE / BLACK	26s. per cwt.
BRIGHT GREEN ... ... / DEEP GREEN ... ... / BLUE (for Carts & Waggons)	44s. "

PATRONISED BY

THE BRITISH GOVERNMENT | THE LAMENTED PRINCE CONSORT | RAILWAY AND CANAL COMPANIES
THE RUSSIAN GOVERNMENT | MOST OF THE NOBILITY & GENTRY | COLLIERIES, IRON MASTERS, &c.

It is extensively used at home and abroad for all kinds of

OUT-DOOR WORK,

and has been proved, after a practical test of 70 years, to surpass any other Paint. It is applicable to WOODEN HOUSES, FARM and other OUT-BUILDINGS, PARK FENCING, GATES, &c.; also IRON ROOFING, BRIDGES, HURDLING, and every description of Iron Work, while for

PUBLIC EDIFICES, MANSIONS, VILLA RESIDENCES,

and every kind of BRICK, STONE, COMPO, &c., it is unrivalled, presenting the appearance of fine cut stone.

It is undoubtedly the only Paint that will stand on

CONSERVATORIES, GREENHOUSES, FRAMES, &c.,

and is in consequence largely used by the Nobility and Gentry, also many eminent Horticulturists, for such purposes. The ANTI-CORROSION is LOWER IN PRICE, and LASTS TWICE AS LONG as the Best White Lead; at the same time is economical in application, as

ANY PERSON CAN LAY IT ON.

The Anti-Corrosion is a Powder, and will keep any length of time.

Carriage paid upon quantities of not less than 5 cwt. to any station in England and Wales, or by Water to any Port in the United Kingdom, where there is direct communication from London, as Leith, Dublin, Belfast, Glasgow, Aberdeen, &c.

Casks not returnable, a uniform rate of 1s. being charged for all sizes up to 5 cwt., which are free.

OIL, TURPENTINE, AND BRUSHES.

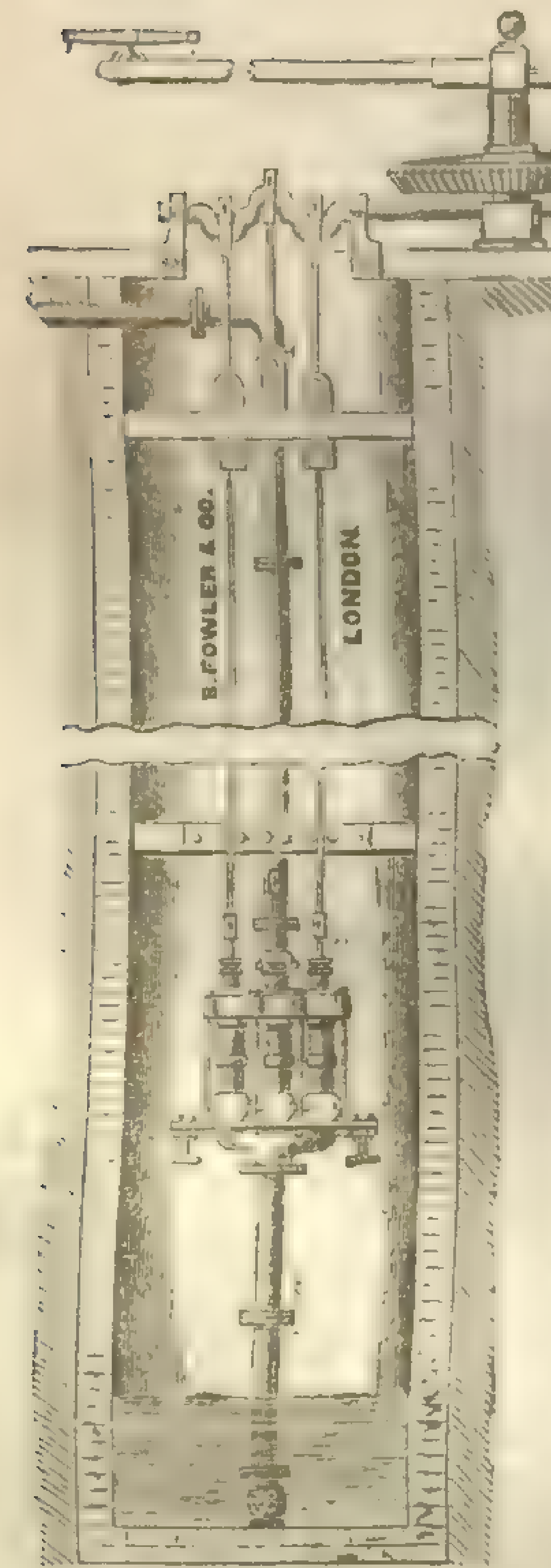
Patterns, Cards, and Testimonials sent upon application to

WALTER CARSON & SONS (SUCCESSORS TO THE INVENTORS),

9, GREAT WINCHESTER STREET (NEAR THE ROYAL EXCHANGE, LONDON, E.C.).

No Agents throughout the United Kingdom.

BENJAMIN FOWLER & CO.,
MANUFACTURERS OF PUMPS AND HYDRAULIC MACHINERY,
WHITEFRIARS STREET, FLEET STREET, LONDON, E.C.



No. 37.

THE accompanying Sketches show some useful forms of apparatus in general demand for Raising and Forcing Water or Liquid Manure. The Landscape Sketch shows the adaptation of Fowler's Improved Hydraulic Rams for the supply of Mansions, Farms, &c. A large number of these simple Self-acting Machines are in use, giving great satisfaction. Their adoption is not confined to positions as shown below, as they are suited to any situation where a few feet fall can be obtained from a spring, brook, or stream; they will force to an elevation equal to ten or more times the number of feet of fall, and to any distance.

No. 4.

No. 38.

No. 37. FOWLER's Improved Simple HORSE GEAR for raising water from deep wells with double or treble pumps B. F. & Co. also make and fix Deep Well Pumps of all descriptions for hand power.

No. 4. FOWLER's CAST IRON BORED PUMPS of all sizes, with improved brass valves for Garden and Farm use, from 1*l*. 5*s*. each.

No. 38. FOWLER's Galvanized Portable LIQUID MANURE PUMPS, with flexible suction hose. Price with 10 feet of pipe and strainer, 4*l*. 5*s*.

No. 138. FOWLER's Improved DOUBLE ACTION FORCE PUMP in frame. These excellent pumps are largely used and much approved.

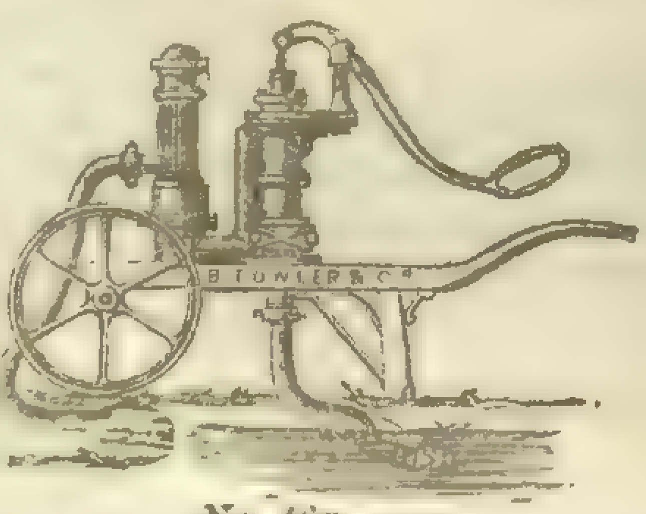
No. 46*a*. FOWLER's Superior DOUBLE-ACTION PORTABLE FORCE PUMPS and simple FIRE ENGINES for Water or Liquid Manure. Prices, 5*l*. 15*s*., and 7*l*. 10*s*.

No. 50. FOWLER's Improved (Holman's Patent) DOUBLE-BARREL PUMPS, FARM FIRE ENGINES, and IRRIGATING PUMPS. Prices, from 12*l*. 10*s*.

No. 49. FOWLER's Improved GARDEN ENGINES of all sizes, in Oak and Galvanized Iron Tanks, from 50*s*. each.

No. 49A. FOWLER's Improved SWING WATER CARRIERS, holding 24 and 35 gallons. Prices, 42*s*. 6*d*., and 50*s*.

No. 49.



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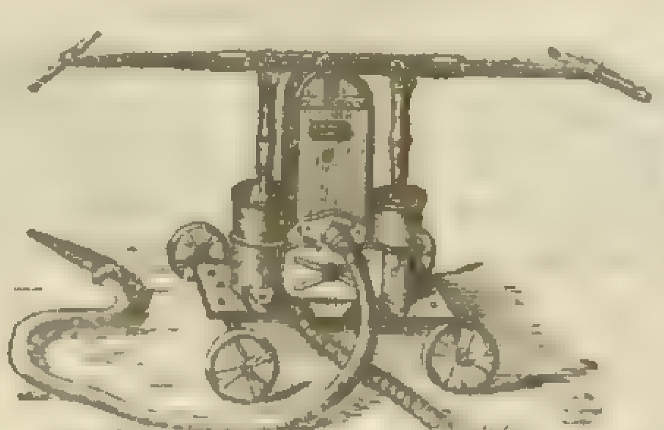

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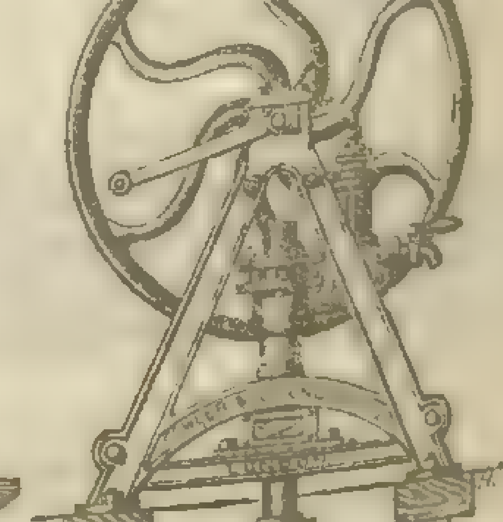
No. 49 A.



No. 138.

FURTHER PARTICULARS, ESTIMATES, AND ILLUSTRATED PRICE LISTS ON APPLICATION.

Greenhouses, Orchard-houses, and Conservatories.

H. FREEMAN'S HORTICULTURAL WORKS, Triangle, Hackney, London, N.E.: established 20 years. Good substantially made GREENHOUSES, glazed, ready for fixing, ... feet by 1... feet, 50*l.*; 21 by 13, 28*l.*; 12½ by 10, 15*l.* ... ORCHARD-HOUSES 10 per cent. cheaper. A large assortment kept. Estimates given for heating, or any branch in ... wood.

NOTICE.—The exorbitant price hitherto charged for Horticultural Buildings induces Messrs. HENRY SMITH & ... to inform the Nobility and Gentry that upon application they can receive DRAWINGS and ESTIMATES Free ... of HORTICULTURAL BUILDINGS and for HEATING by HOT WATER. Gentlemen wishing to construct ... can be supplied at a low cost with Working Drawings and Specifications.

HENRY SMITH & COMPY., Horticultural Builders and Hot-Water Apparatus Manufacturers, 31, Margaretta Terrace, ... Street, Chelsea, S.W.

KENT'S PATENT WATERPROOF GLAZING.—GREENHOUSES on hand or to order, with best materials and workmanship.

Apply to A. KENT, Horticultural Builder, Chichester; or at Works, to Mr. PITMAN, 30, Lower Church Street, Chelsea, S.W.

Greenhouse.

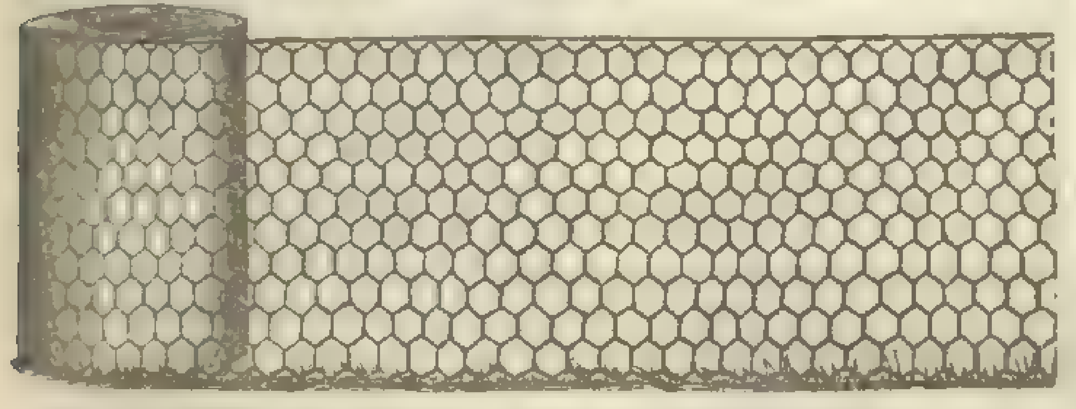
FOR SALE, a span-roofed GREENHOUSE, 20 feet by 14 feet; a small Forcing House, 12 feet by 6 feet, and Hot-water Apparatus.

Apply to Mr. OSWALD STRONG, Builder, High Street, Peckham, S.E.

FOR SALE, a GREENHOUSE, a Bargain, 28 ft. 9 in. long, 12 ft 3 in. wide, 2 ft. 6 in. high in front, with glass and door at both ends; roof half span with improved ventilation; glazed with 21 oz. sheet glass, the front and ends with ... do.; painted three coats of best oil colour. Price 33*l.*

To be seen at JOHN OVERALL'S, Horticultural Builder, 16, Shacklewell Lane, Kingsland, London, N.E.

NEW IMPROVED PREMIUM WIRE NETTING. Great Improvement with Reduced Price.



PRICES PER LINEAL YARD 24 INCHES HIGH.

Size of Mesh	Mostly used for	Light.		Medium		Strong.		Extra Strong.	
		Jap	Gal.	Jap	Gal.	Jap	Gal	Jap	Gal.
2½ in.	Poultry ..	3*d.*	4*d.*	3¾*d.*	5*d.*	4½*d.*	6*d.*	5½*d.*	7*d.*
2 in.	Poultry ..	3½*d.*	4¼*d.*	4*d.*	5*d.*	5*d.*	6½*d.*	6½*d.*	8*d.*
1⅝ in.	Small Rabbits	4*d.*	4¾*d.*	4¾*d.*	6*d.*	5½*d.*	7*d*	7*d.*	9*d.*
1½ in.	Smallest Rabbits	5*d.*	6*d.*	5¾*d.*	7*d.*	7*d.*	9*d.*	9*d.*	11*d.*

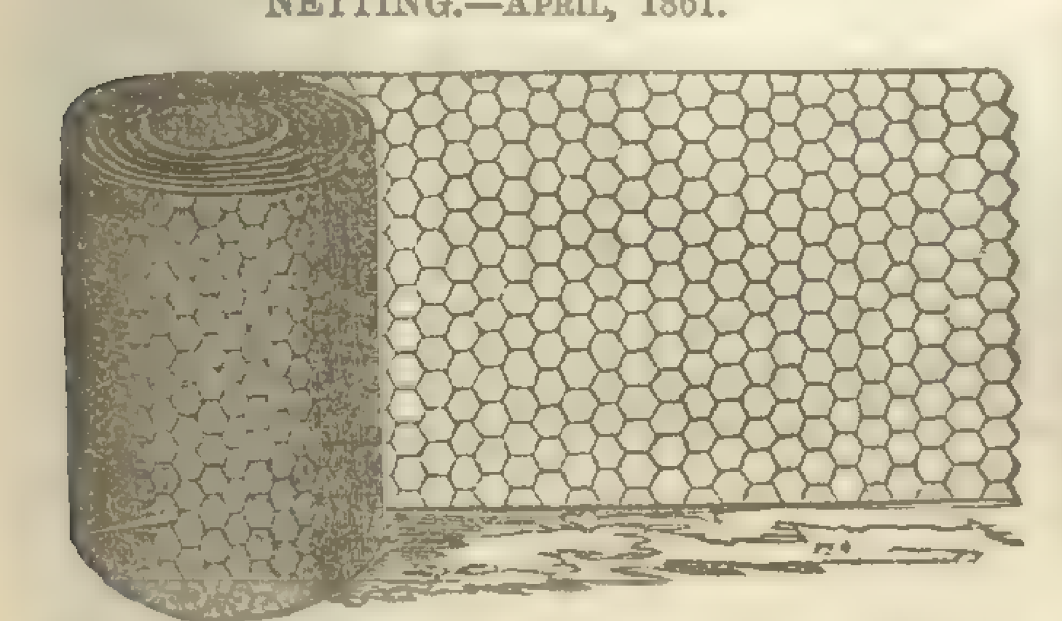
Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

⁎ Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.

J. B. BROWN & CO., 18, Cannon Street, City, London, E.C.

BARNARD, BISHOP, AND BARNARDS, Norwich.

FURTHER REDUCTION in the PRICE of WIRE NETTING.—APRIL, 1861.



BARNARD, BISHOP, & BARNARDS beg to inform their friends and the public that they have made a further reduction in the prices of Machine made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2 inch mesh, 24 inches wide ..	No. 19	.. 4¼*d.*	.. 3½*d.*
2 inch " " " ..	" 18	.. 5	.. 4
2-inch " " " ..	" 17	.. 6½	.. 5
2-inch " " " ..	" 16	.. 8	.. 6½
1½-inch " " " ..	" 19	.. 4¾	.. 4
1½-inch " " " ..	" 18	.. 6	.. 4¾
1½-inch " " " ..	" 17	.. 7	.. 5½
1½-inch " " " ..	" 16	.. 9	.. 7

All the above kinds can be made any width (under 6 feet), at proportionate prices.

Strong Galvanised Poultry Netting, 7½*d.* per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11*d.* per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.

Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.

Five wires, 3 feet 6 inches high, pronged Standards, 8 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10*d.* per yard.

The same with Galvanised Wire Rope, 1*s.* per yard.

Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.

⁎ Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

Glass.

THOMAS MILLINGTON, HORTICULTURAL WAREHOUSE, 87, Bishopsgate Street Without, London, E.C.

ESTABLISHED 1750.

NEW REDUCED TARIFF.

SMALL SHEET SQUARES.

Best. 20*s.* 2nds. 16*s.* 3rds. 12*s.* 6*d.* 4ths. 11*s.* } Per 100 feet

6 in. by 4 in.	9½ in. by 7½ in.	14 in. by 10 in.
6½ " by 4½ "	10 " by 8 "	15 " by 10 "
7 " by 5 "	11 " by 9 "	12 " by 11 "
7½ " by 5½ "	12 " by 9 "	13 " by 11 "
8 " by 6 "	13 " by 9 "	13½ " by 11½ "
8½ " by 6½ "	12 " by 10 "	
9 " by 7 "	13 " by 10 "	

Best. 23*s.* 2nds. 18*s.* 6*d.* 3rds. 14*s.* 6*d.* 4ths. 12*s.* 8*d.* } Per 100 feet

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 " by 11 "	17 " by 12 "	22 " by 15 "
17 " by 11 "	18 " by 12 "	24 " by 15 "
18 " by 11 "	22 " by 12 "	20 " by 16 "
13 " by 12 "	17 " by 13 "	20 " by 17 "
14 " by 12 "	23 " by 13 "	20 " by 18 "
15 " by 12 "	22 " by 14 "	

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers & others.

	Best.	2nds.	3rds.	4ths.	
16 oz.	22*s.* 0*d.*	18*s.*	15*s.* 0*d.*	12*s.* 6*d.*	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

20 in. by 12 in. | 20 in. by 13 in. | 20 in. by 14 in. | 20 in. by 15 in.

GLASS, cut according to size not on the List.

16 oz. 4ths. 1¾*d.* 2*d.* and 2½*d.* per foot.
" 3rds. 2¼*d.* 2½*d.* and 3*d.* "
21 oz. 4ths. 2¾*d.* 3*d.* and 3½*d.* "
" 3rds. 3½*d.* 4*d.* and 4½*d.* "

Various thicknesses of Sheet Glass to the foot.

15 oz. 26 oz.
21 oz. 32 oz.

Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.

Genuine White Lead, 32*s.* p. cwt | Linseed Oil Putty, 8*s.* per cwt.
Anticorrosion Paint, 34*s.* " | Patent Dryers, 28*s.* to 42*s.* "

CRYSTAL GLASS SHADES. EBONY and GILT STANDS.
HARTLEY'S IMPROVED PATENT ROUGH PLATE.
⁎ Not accountable for breakage.
SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

JAMES PHILLIPS AND CO., 180, Bishopsgate Street Without, E.C., beg to hand their Prices of

FERN SHADES.

	Shade *s.*	Shade *d.*	Stands. *s.*	Stands. *d.*	Glass ditto. *s.*	Glass ditto. *d.*
6 ins.	1	4	1	6	1	0
7 "	1	8	1	6	1	3
8 "	2	0	1	9	1	6
9 "	2	6	2	0	1	9
10 "	3	3	2	3	2	0
11 "	4	0	2	6	2	6
12 ins.	5	6	2	9	3	0
13 "	7	6	3	0	3	6
14 "	10	0	3	3	4	0
15 "	14	0	3	6	4	6
16 "	18	6	3	9	5	0

TANK AQUARIA.

Glazed with Stout Sheet Glass, and Slate Bottoms.

	£	*s.*	*d.*
12 inches long ..	0	18	0
14 " ..	1	1	0
16 " ..	1	4	0
18 inches long ..	1	7	0
20 " ..	1	10	0
24 " ..	1	16	0

Larger or smaller sizes in proportion.

BEST ROUND AQUARIA.

With Ebony Stands.

	s.	*d.*	
12 inches diameter	5	0	each
13 "	6	0	"
14 "	8	0	"
15 "	9	0	"
16 "	10	0	"
17 inches diameter	12	0	each
18 "	13	0	"
19 "	14	0	"
20 "	15	0	"

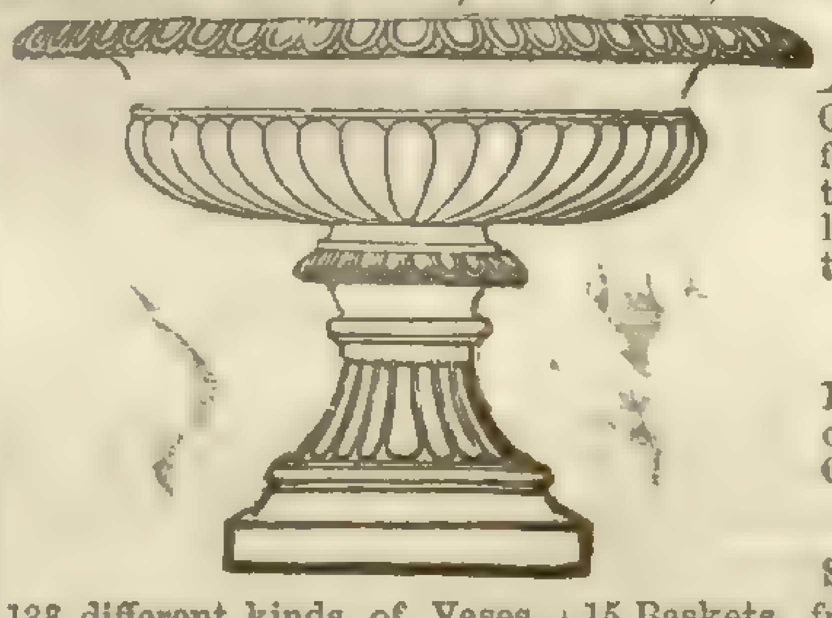
FERN CASES.

With Span Roofs, same price as Tank Aquaria.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, and every description of Glass for Horticultural purposes.

Artificial Stone Works, 371 to 375, Euston Road, N.W.



AUSTIN, SEELEY, & CO. beg to inform the Public, that they have lately enlarged their Stock of

VASES, FIGURES, FOUNTAINS, & other GARDEN ORNAMENTS.

The present Stock comprises:

- 138 different kinds of Vases, from 9*s.* to 30*l.*
- About 200 Fountains, from 10*l.* to 400*l.*
- 52 Statues, Modern and Antique
- 44 Small Figures and Groups of Children
- 70 Figures of Animals & Birds
- 15 Baskets, from 1 to 10 feet diameter [&c.
- 17 Flower Boxes for Windows,
- 6 Garden Seats
- 22 Sun-dial Pillars
- 34 Baptismal Fonts, from 3*l.* to 15*l.*
- 22 Ornaments for Gate Piers

Having during the last 30 years executed for the Royal Gardens and for the grounds of the principal nobility an immense quantity of such work, they presume that it is needless to warrant its durability; but they are prepared with the most unquestionable references if desired.

THE WOOLSTON FARM.—It is the oldest Steam-cultivated Farm in the world, and is open to the inspection of all.

Woolston is four miles from Bletchley Station on the London and North Western Railway.

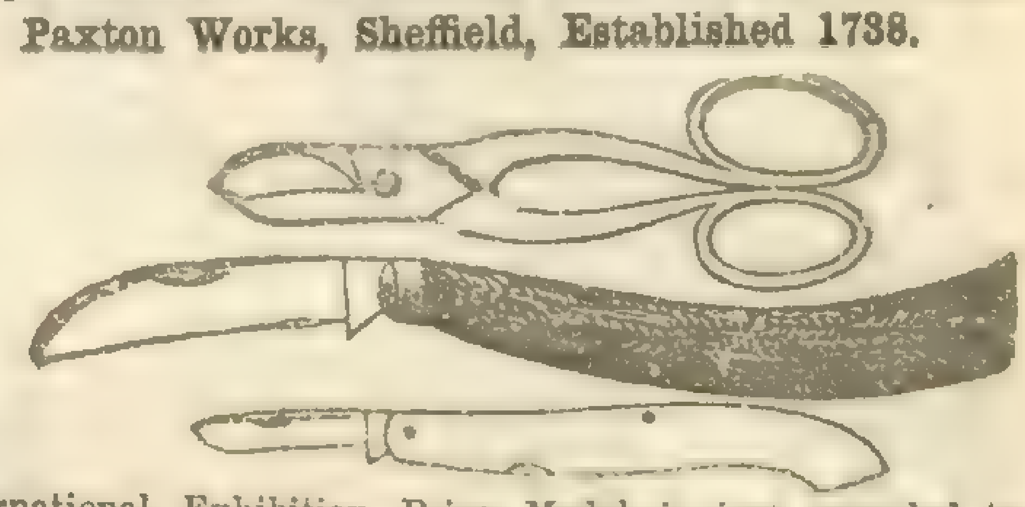
FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to

JOHN FOWLER, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

TO BE SOLD, a SHANKS' PATENT (1861) HORSE LAWN MOWER, 36 inches wide, quite new. Price, with the Horse Boots, £17 cash on delivery.

Apply to BRYAN JOHNSON, Engineer, Chester.

Paxton Works, Sheffield, Established 1738.



International Exhibition Prize Medal is just awarded to SAYNOR & COOKE for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR AND COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.

CAUTION.—None are genuine unless marked SAYNOR. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability. Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

TANNED NETTING at Reduced Prices.—200 square yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Scrim Canvas for Wall Fruit, Greenhouse Shades, and Tulip Covers.

Address in full, FREDERICK EDGINGTON, Marquee, Flag, and Banner Manufacturer, Thomas Street, Old Kent Road, London, S.E.

TANNED NETTING for the Protection of Fruit Trees, at 1*d.* per square yard; 200 yards, 14*s.*; 500 yards, 30*s.*; 1000 yards, 50*s.* Cotton Netting, Tiffany, Scrim Canvas for Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c.

Be particular, JOHN EDGINGTON & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

TANNED GARDEN NETTING for preserving Seed Beds, Fruits, Strawberries, from frost, blight, birds, &c., and as a Fence for fowls, &c. 1 yard wide, 1½*d.*; 2 yards, 3*d.*; 3 yards, 4½*d.*; and 4 yards, 6*d.* per yard, in any quantity, may be had at CHAS. WRIGHT'S, 376, Strand, W.C.

GREENHOUSE and FLOWER-POT STICKS VARNISHED:—1 foot, 3*d.*; 1½, 4*d.*; 2, 5*d.*; 2½, 7*d.*; 3, 10*d.*; 4, 1*s.* 6*d.* per dozen. DAHLIA STICKS VARNISHED, per dozen:—3 feet, 1*s.* 6*d.*; 4, 2*s.* 3*d.*; 5, 3*s.*; 6, 3*s.* 6*d.* An allowance to Nurserymen.

BRITTAIN'S PATENT GARDEN NETTING will be found superior to every other article for the protection of Fruit Trees from frost, birds, &c.; whilst rendering this service light and air are not impeded. It is also a beautiful Shading for Hothouses, and is cheaper, being more durable, than any kind of Tiffany, or other material in use. NETTINGS, No. 1, 15*s.*; No. 2, 18*s.* 9*d.*; and No. 3, 22*s.* 6*d.* per piece, or 4*d.*, 5*d.*, and 6*d.* per square yard. Pieces, 30 yards long, 55 inches wide. GARDEN MATS, highly recommended, 50 by 70 inches, 20*d.* each.

Agents: ROBT. HEINEKEY & Co., 20, Harp Lane, Tower Street, London, E.C.

To Nurserymen and Others.

TO BE LET ON LEASE, a NURSERY GARDEN of Five Acres, well stocked with all sorts of young Trees, comprising most of the New Conifers, &c., Roses, Rhododendrons, Hollies, Spruce and Scotch Firs, Laurels, and a large quantity of Seedlings of all sorts. Rent per acre, 4*l.* per annum. Stock to be taken at a valuation. Canal carriage adjoining, Railway Station 3 miles, and 20 miles from London. Thirty Acres unplanted may be had if required.

A Four-room HOUSE and GARDEN to LET with it, at 8*l.* per annum.

For further particulars apply to Mr. J. C. STEVENS, Horticultural Agent and Auctioneer, 38, King Street, Covent Garden, London, W.C.

Sale by Auction.

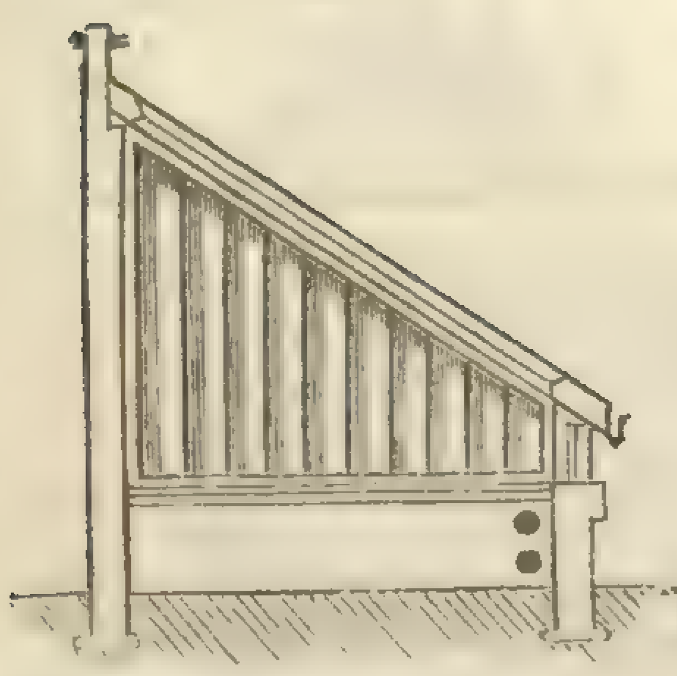
Orchids.

MR. J. C. STEVENS begs to announce that he has received instructions to submit to PUBLIC COMPETITION during the month of AUGUST, at his Great Room, 38, King Street, Covent Garden, W.C., without the least reservation, the whole of the VALUABLE and EXTENSIVE COLLECTION of ORCHIDS, the property of a large Continental Grower who is giving up their Culture.

Catalogues will be ready shortly.

J. JONES'S HOT-WATER APPARATUS.

No. 7.



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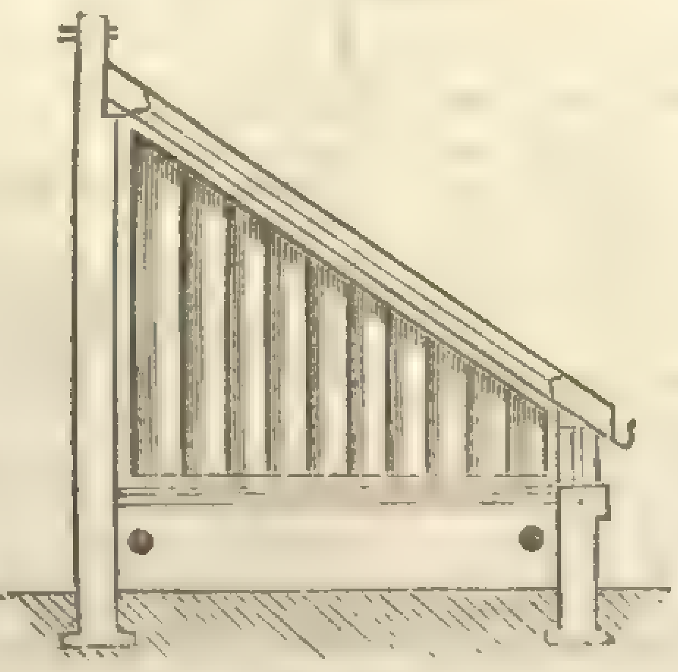

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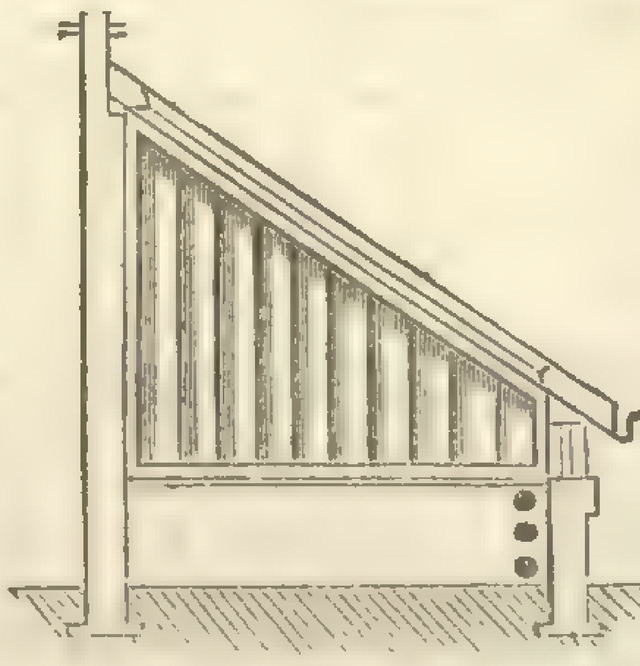

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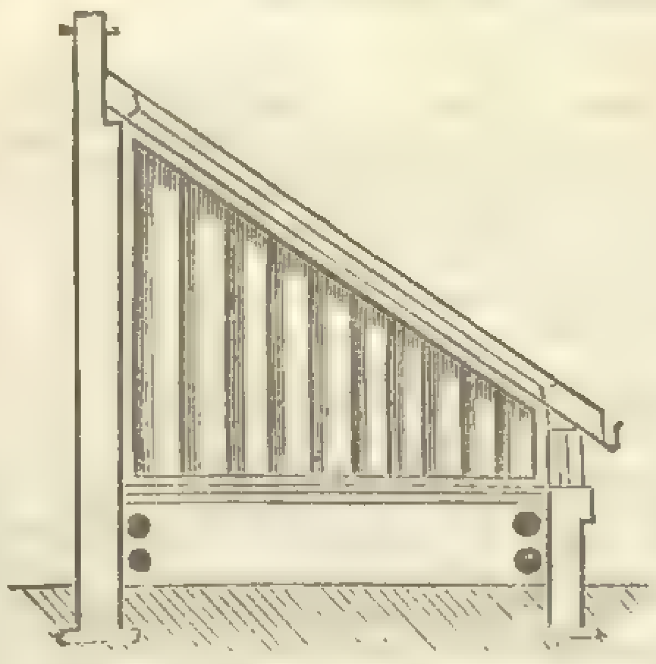

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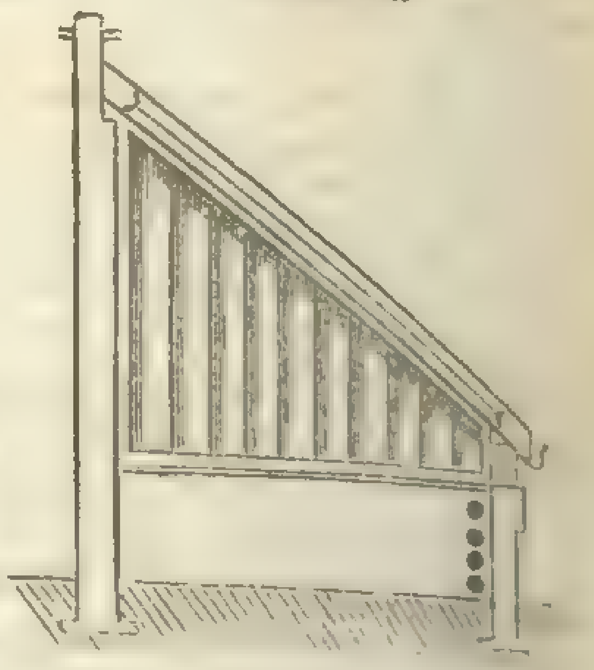
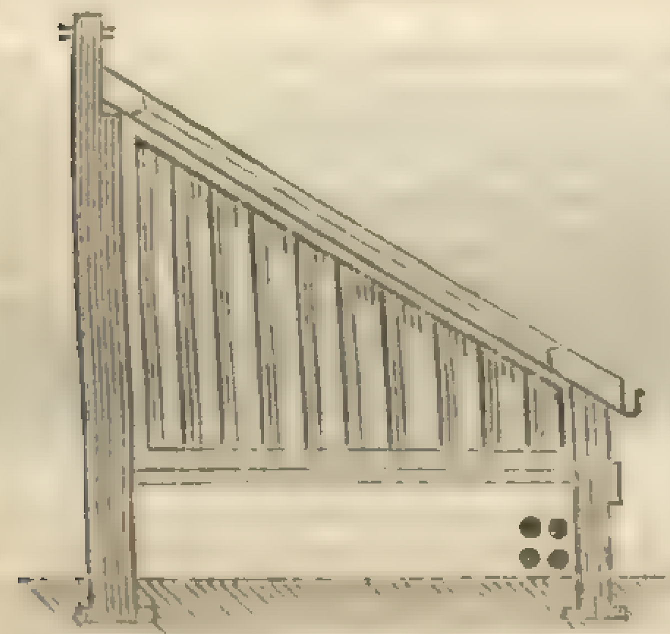


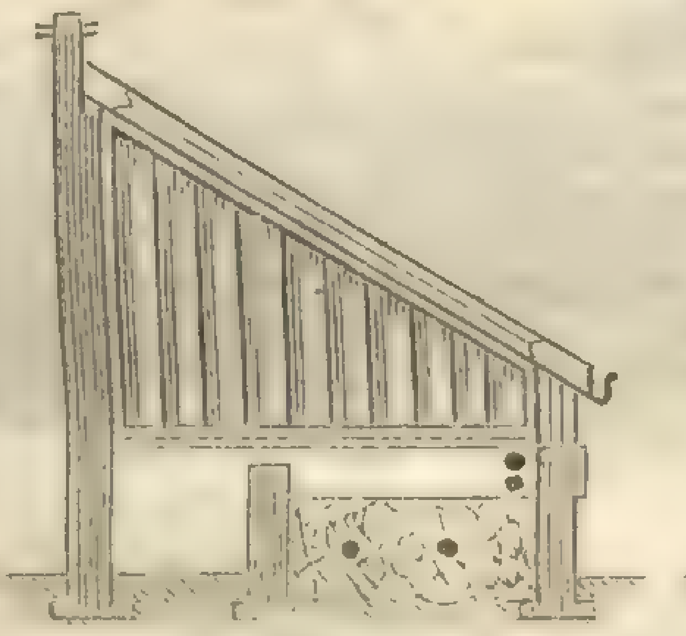
Size of House	Price (No. 7)	Price (No. 8)	Price (No. 9)	Price (No. 10)	Price (No. 11)
20 by 10 ft.	£9 0 0	£9 0 0	£13 0 0	£14 0 0	£15 0 0
30 ,, 12 ,,	12 0 0	12 0 0	17 0 0	19 0 0	21 0 0
40 ,, 15 ,,	15 0 0	15 0 0	21 0 0	24 0 0	25 0 0
50 ,, 15 ,,	18 0 0	18 0 0	24 0 0	28 0 0	29 0 0
60 ,, 15 ,,	20 0 0	20 0 0	27 0 0	32 0 0	33 0 0
70 ,, 15 ,,	22 0 0	22 0 0	30 0 0	36 0 0	37 0 0
80 ,, 15 ,,	24 0 0	24 0 0	33 0 0	40 0 0	41 0 0
100 ,, 15 ,,	26 0 0	26 0 0	36 0 0	44 0 0	45 0 0

No. 12.



Price
Same as No. 11.

No. 13.

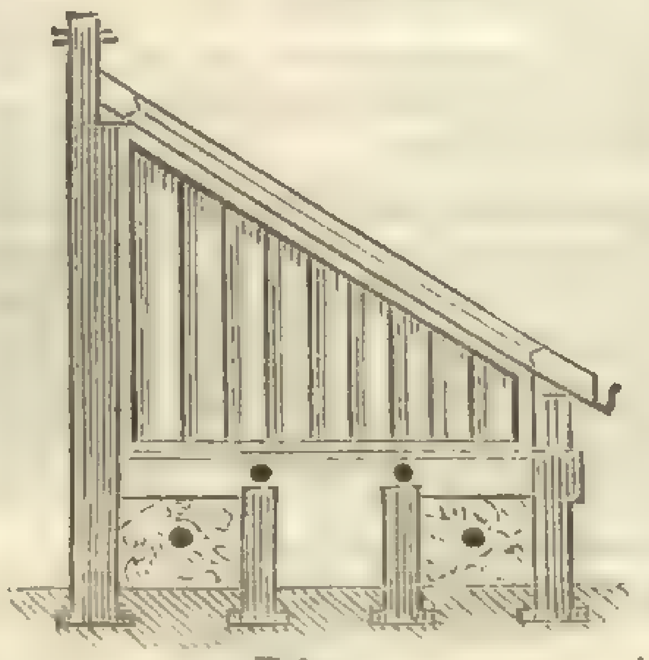


Price
Same as No. 11.

No. 14.

Price
Same as No. 11.

No. 15.

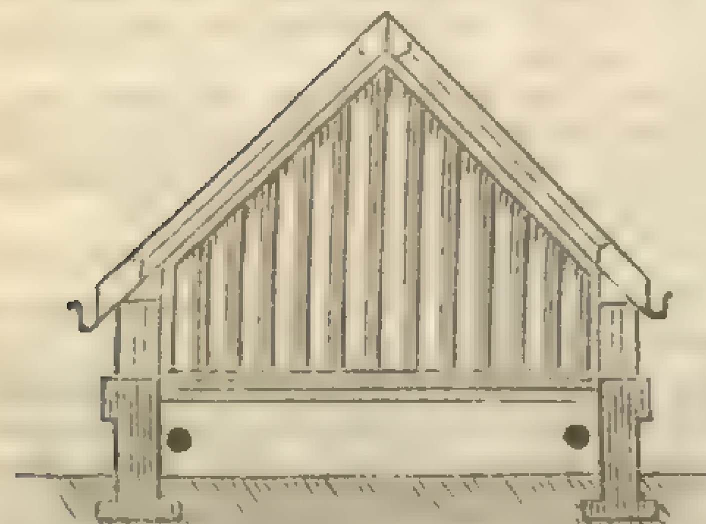


Price
Same as No. 11.

No. 16.

Price
Same as No. 7.

No. 17.



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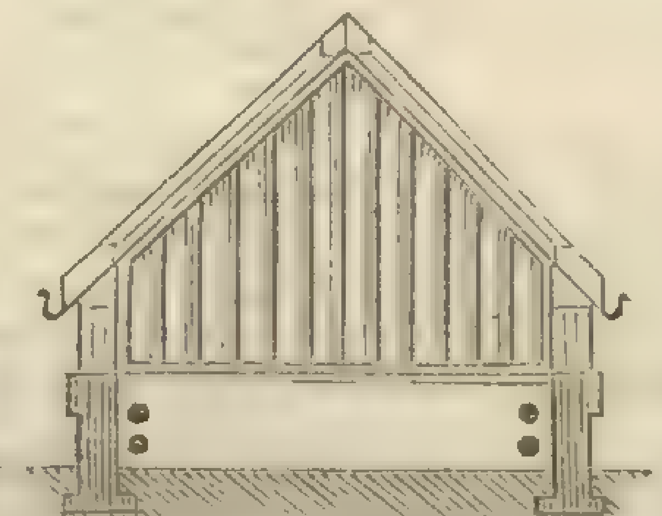

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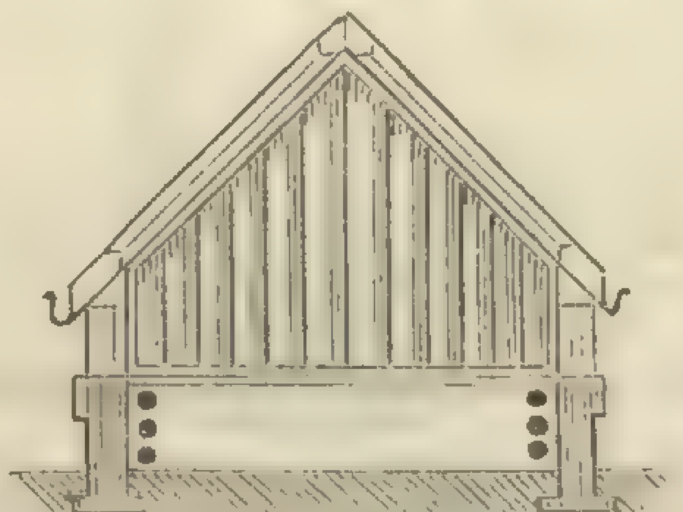

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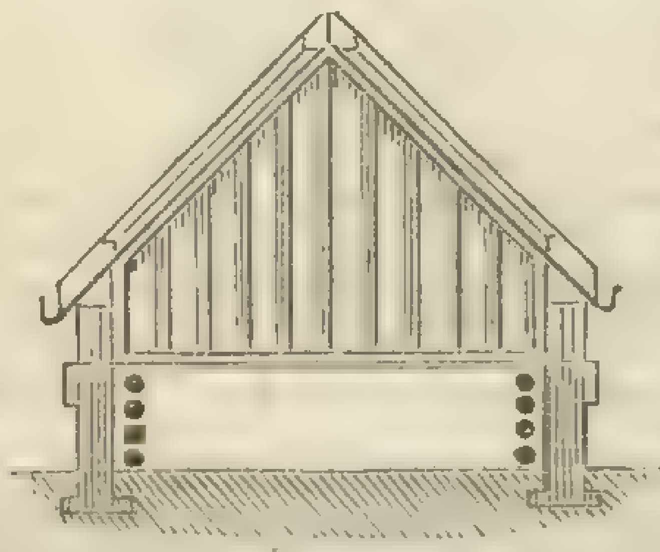
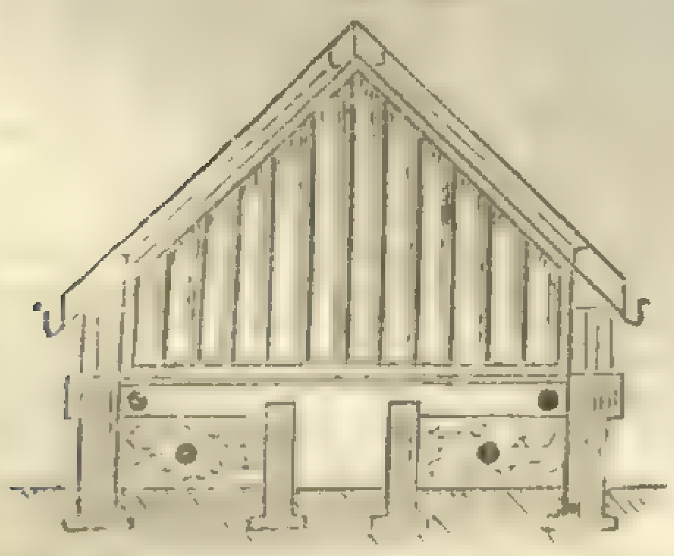


No. 21.

Size of House	Price (No. 17)	Price (No. 18)	Price (No. 19)	Price (No. 20)	Price (No. 21)
20 by 10 ft.	£9 0 0	£14 0 0	£18 10 0	£23 0 0	£23 0 0
30 ,, 12 ,,	12 0 0	19 0 0	24 0 0	30 0 0	30 0 0
40 ,, 15 ,,	15 0 0	24 0 0	29 0 0	36 10 0	36 10 0
50 ,, 15 ,,	18 0 0	28 0 0	34 0 0	42 10 0	42 10 0
60 ,, 15 ,,	20 0 0	32 0 0	39 0 0	49 0 0	49 0 0
70 ,, 15 ,,	22 0 0	36 0 0	44 0 0	56 0 0	56 0 0
80 ,, 15 ,,	24 0 0	40 0 0	49 0 0	63 0 0	63 0 0
100 ,, 15 ,,	26 0 0	44 0 0	54 0 0	70 0 0	70 0 0

No. 22.



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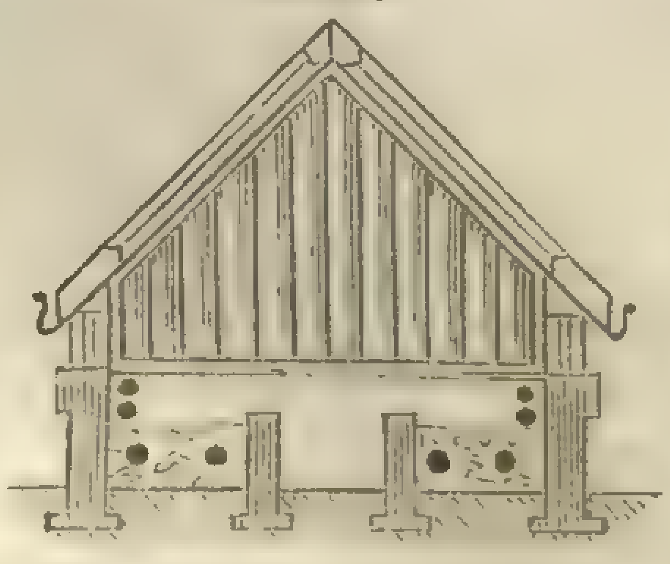

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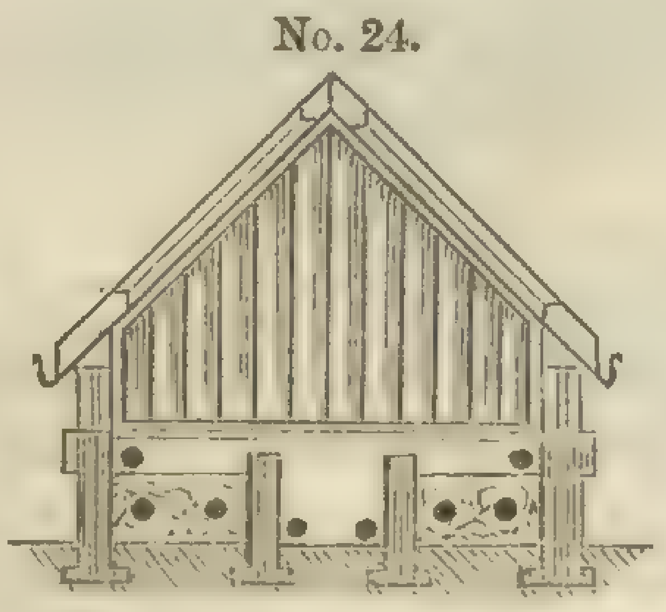

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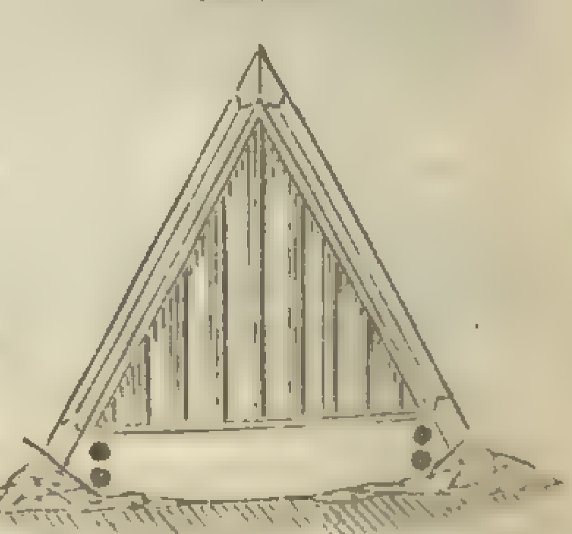

Size of House	Price (No. 22)	Price (No. 23)	Price (No. 24)	Price (No. 25)	Price (No. 26)
20 by 10 ft.	£15 0 0	£25 0 0	£25 0 0	£18 10 0	£14 0 0
30 ,, 12 ,,	21 0 0	32 0 0	32 0 0	25 0 0	19 0 0
40 ,, 15 ,,	25 0 0	38 10 0	38 10 0	30 0 0	24 0 0
50 ,, 15 ,,	29 0 0	44 10 0	44 10 0	35 0 0	28 0 0
60 ,, 15 ,,	33 0 0	51 10 0	51 10 0	40 0 0	32 0 0
70 ,, 15 ,,	37 0 0	58 0 0	58 0 0	45 0 0	36 0 0
80 ,, 15 ,,	41 0 0	65 0 0	65 0 0	50 0 0	40 0 0
100 ,, 15 ,,	45 0 0	72 0 0	72 0 0	55 0 0	44 0 0

J. Jones will be happy to supply HOT-WATER APPARATUS for HOUSES according to any of the above Plans, delivered Free to any Station in England at the prices named, which include strong CAST-IRON CYLINDER or SADDLE BOILER, FURNACE DOORS, FIRE BARS, SOOT DOORS, CISTERN and DAMPER, 4-inch HOT-WATER PIPES and CONNECTIONS, all of the best quality; or he will forward ESTIMATES for WORK erected complete, with WROUGHT or CAST-IRON BOILER of any sort, at a small addition to the above prices.

*** *The Black Circles on Sections of Houses show the arrangement of Pipes.*

Illustrated Catalogues and further particulars post free on application to

J. JONES, IRON MERCHANT AND HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by William Bradbury, of 13, Upper Woburn Place, in the Parish of St. Pancras, in the Co. of Middlesex, and Frederick Mullett Evans, of No. 11, Bouverie St., in the Precinct of Whitefriars, City of London, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St Paul's, Covent Garden, in the said Co.—Saturday, July 19, 1862.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 30.—1862.] SATURDAY, JULY 26. {Price Fivepence. {STAMPED EDITION, 6*d*.

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NOTICE TO ADVERTISERS. — *Advertisements should reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

HORTICULTURAL GARDEN.
WEEK ENDING AUGUST 2.

Monday	..	Admission 1*s*. 0*d*.	Open at Nine.
Tuesday	..	Admission 1*s*. 0*d*.	Open at Nine.
Wednesday	..	Admission 1*s*. 0*d*.	Open at Nine.
Thursday	..	Admission 1*s*. 0*d*.	Open at Nine.
Friday	..	Admission 2*s*. 6*d*.	Open at Nine.
Saturday	..	Admission 5*s*. 0*d*.	Open at Nine.

Bands daily at Four o'clock.

MONKS KIRBY FARMERS' CLUB.—GRAND HORTICULTURAL FETE at NEWNHAM PADDOX.
The THIRD ANNUAL GRAND HORTICULTURAL FETE of this Society will, by the kind permission of the Right Hon. the Earl of DENBIGH, again be held in the Pleasure Grounds at Newnham Paddox, on TUESDAY and WEDNESDAY, August 12 and 13, when Premiums are offered for PLANTS, FLOWERS, FRUITS, &c.
By permission of Col. the Right Hon. Earl Howe, the Band of Prince Albert's Own Leicestershire Yeomanry Cavalry will attend, conducted by Mr. H. Nicholson.
Class VII. For Nurserymen, Gentlemen's Gardeners, and Amateurs. Open to All England.
Class VIII. For Gentlemen's Gardeners only. Open to All England.
No Entrance Fees for either of these Classes. All Entries close on August 5.
Schedules, &c., may be obtained on application to Pailton, near Lutterworth. W. B. WEBB, Secretary.

Royal Botanic Gardens, Regent's Park.
ROBERT MARNOCK, Esq., having completed his 21st year as CURATOR of the above Gardens, several of the Exhibitors, Judges of the Shows, and others have resolved to mark the sense they entertain of that gentleman's unvaried kindness, urbanity, and attention to them during that long period, by presenting him with a Piece of Plate.
The Subscription is limited to 1*l*. 1*s*. each person, and the list will be closed on THURSDAY, the 31st inst.
The presentation will take place at a Dinner to be holden at the London Tavern, Bishopsgate Street, on THURSDAY, August 7, when Sir JOSEPH PAXTON, M.P., will take the Chair.
Subscriptions already received .. .. .. £91 1*s*.
Gentlemen desirous of contributing to the Fund will have the kindness to communicate at once with
E. R. CUTLER, Hon. Sec.
14, Tavistock Row, London, W.C.—July 26.

F. AND A. SMITH beg to announce to their friends that their fine COLLECTION of BALSAMS is NOW in BLOOM, and may be seen every day, Sunday excepted.
Dulwich, Surrey, S.

Fine Bedding Geraniums.
MESSRS. E. G. HENDERSON AND SON respectfully call the attention of Amateur Cultivators and others to the undermentioned Novel and very beautiful varieties of VARIEGATED ZONALE GERANIUMS, adapted for bedding and conservatory culture in pots, which are now in fine condition.
MRS. MILFORD, rich broad massive features, very distinct.
MRS. POLLOCK, SUNSET, THE COUNTESS } The picturesque leaf-tints of these varieties are greatly admired as seen planted in their respective groups.
THE NEW FERN-LEAVED FRINGED CHINESE PRIMROSE.—Strong plants for winter bloom.
Wellington Nursery, St. John's Wood, London.

MESSRS. E. G. HENDERSON AND SON offer Seed of
CALCEOLARIA .. .. .. first quality
CINERARIA .. .. .. "
PRIMULA (fimbriated).. .. .. "
at 2*s*. 6*d*. and 5*s*. per packet; smaller ones 1*s*. each. All the above are to be seen in bloom at the Nursery in their respective season.
Wellington Nursery, St. John's Wood, London, N.W.

Calceolaria, Cineraria, and Primula.
BUTLER AND McCULLOCH respectfully beg to offer the following Seeds, saved from Collections containing only the Choicest strains:—
CALCEOLARIA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
CINERARIA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
PRIMULA SINENSIS FIMBRIATA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

Roses.
PAUL AND SON'S COLLECTION of ROSES is NOW in FULL BLOOM. The Nurseries are reached in one hour by trains from Bishopsgate to Cheshunt Station, leaving London at 9.30 A.M., 12.46, 2.30, 3.30, 5.10, 6.10 P.M.
Old Cheshunt Nurseries, Herts, N.

WM. PAUL'S ROSES and HARDY ORNAMENTAL TREES are now in full beauty. Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.
Nurseries and Seed Warehouse, Waltham Cross, N.

RICHARD SMITH begs to inform the Public that he has a larger and finer COLLECTION of ROSES this season than he has ever had; they are NOW in FULL BLOOM and in the finest condition.
As the Stock is so large the prices will be very reasonable.
Nurseries, Worcester.

Roses.
EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

Rose Beauty of Waltham.
THE FINEST OF ALL THE NEW ROSES.
WM. PAUL (Son and Successor to the late A. PAUL) has now ready for delivery fine strong plants of this beautiful New Rose, which has received a First Class Certificate from the Royal Horticultural Society of London. Price 5*s*. each.
All the novelties of other raisers at the advertised prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

New Verbenas, Fuchsias, &c., of 1862.
W. DILLISTONE can now supply the above in good Plants, at low prices. Lists upon application.
Munro Nursery, Sible Hedingham, Halstead, Essex.

New Fuchsias, Verbenas, Petunias, &c., of 1862.
H. WALTON can now supply the above, in healthy Plants, at as low prices as any in the Trade. LISTS on application, enclosing one stamp.
VERBENA FOXHUNTER, 6*s*. per dozen.
Edgend, Marsden, near Burnley, Lancashire.

Calceolaria, Cineraria, and Primula, Extra Fine.
BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.
CALCEOLARIA, 1*s*. and 2*s*. 6*d*. per packet.
PRIMULA, 1*s*. per packet.
CARNATION, 1*s*. and 3*s*. per packet.
GUNNERA SCABRA, 1*s*. per packet.
CINERARIA, 1*s*. per packet.
PICOTEE, 1*s*. and 3*s*. per packet.
PELARGONIUM, Large fl., 1*s*. per packet.
" Fancy, 1*s*. per packet.

New Pelargoniums.
CHARLES TURNER has much pleasure in announcing that the beautiful SEEDLING PELARGONIUMS, so successfully exhibited this season by Messrs. Hoyle, Foster, and Beck, and described in the last Number of the *Gardeners' Chronicle*, will be sent out by him in October next.
CATALOGUES will be ready next month.
The Royal Nurseries, Slough.

Equalled by None.
J. DOBSON AND SONS' splendid Hybridized CALCEOLARIA SEED, in sealed packets, 1*s*. 6*d*., 2*s*. 6*d*., 3*s*. 6*d*., and 5*s*. First Prizes given wherever exhibited.
Woodlands Nursery, Isleworth.

Prize Cineraria Seed.
J. DOBSON AND SONS have carried off the First Prizes every time they have exhibited this season. New Seed, in sealed packets, 1*s*., 2*s*. 6*d*., and 5*s*.
Woodlands Nursery, Isleworth.

NEW VERBENAS of 1862.—Very strong healthy plants at 1*s*. each, or 12 of the finest varieties for 10*s*. Hamper and package free.
EDWIN COOLING, Mile Ash Nurseries, Derby.

JEAN VERSCHAFFELT, Ghent, Belgium, begs respectfully to announce that his NEW DESCRIPTIVE CATALOGUE for the Autumn of 1862 is now ready, and can be had on application either to himself or his Agents, Messrs. R. SILBERRAD & SON, 5, Harp Lane, Great Tower Street, E.C.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize plants, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet. Reference given. Stamps taken.
G. KNIGHTS, Whitton, Ipswich.

Agricultural Seeds.
GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

PAMPAS GRASS.—Fresh imported Seed of good growing quality, 1*s*. per packet. Price per oz. to Trade on application.
JAMES CARTER & CO., 237 and 238, High Holborn, W.C.

Stones or Sprotborough Cabbage Seed.
JOHN SCHOLEY, NURSERYMAN and SEEDSMAN, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3*s*. per lb., or 16*l*. per cwt.

Good Seeds, Carriage Free, at Market Prices.
SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

To the Seed Trade.
THE ANNUALS, &c., at JAMES CARTER & Co.'s Seed Farms at Dedham and St. Osyth are NOW in FULL BLOOM, and J. C. & Co. will be happy to receive a visit from any of their friends. (Eastern Counties Railway, Ardleigh Station.) Letters of Advice will receive immediate attention.
JAMES CARTER & CO., 237 & 238, High Holborn, London, W.C.

CARTER'S FIRST-CLASS SEEDS of
CALCEOLARIA, 2*s*. 6*d*. per packet.
" new blotched, 2*s*. 6*d*. per packet.
CINERARIA, 2*s*. 6*d*. per packet.
PRIMULA, mixed fringed, 1*s*. per packet.
" dark carmine fringed, 2*s*. 6*d*. per packet.
" pure white fringed, 2*s*. 6*d*. per packet.
JAMES CARTER & CO., 237 & 238, High Holborn, London, W.C.

Ex. Ex. Hollyhock.
DOWNIE, LAIRD, AND LAING are now sending out SEED saved from their unrivalled Collections of the above, in Packets containing Twelve Named Sorts (separate), at 2*s*. 6*d*. and 5*s*.
Stanstead Park Nursery, Forest Hill, London, S.E.

New Verbenas of 1862.
B. W. KNIGHT, FLORIST, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4*s*. per dozen, securely packed in tin box, post free. CATALOGUES of the varieties sent on application.

New Chrysanthemums, Hardy Variegated Plants, &c.
JOHN SALTER, F.R.H.S., begs to say that he is now sending out his NEW CHRYSANTHEMUMS. Full particulars will be found in the DESCRIPTIVE CATALOGUE, which will be sent post free on receipt of two stamps.
Versailles Nursery, William Street, near Hammersmith Turnpike, W.

To the Seed Trade.
CALCEOLARIA SEED in Packets, Crop 1862.—The best in England. Price on application.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

CLERODENDRON THOMSONÆ.—At the Royal Horticultural Society's Grand Show on May 21, we were awarded the First Prize for this very beautiful new climber. It is figured and fully described in Curtis's "Botanical Magazine" for last month. Healthy young plants, 7*s*. 6*d*. each; stronger, 10*s*. 6*d*. each.
THOMAS JACKSON & SON, Nurserymen, &c., Kingston, S.W.

Palms and other Stove Plants.
TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual size.
A CATALOGUE, giving the height of each plant, will be sent, post free, on application to Mrs. LE CREPS, Château du Mesnil de Mathieu, near Caen, Department of Calvados, France, where the plants may be viewed.

TO BE SOLD, 24 ORCHARD HOUSE TREES, PEACH, NECTARINE, &c.
For particulars inquire of J. BERTIE, Gardener, near the "Dolphin," Lower Sydenham, Kent, S.E.

Strawberry Plants—Ready August 18.
CUTHILL'S SORTS, all selected for next year's bearing. The price per 100, 7*s*. 6*d*. for the following:—Early Black Prince, Early Princess Royal, Highland Mary, Richard II., Prince of Wales, and Newton Seedling, still in bearing.
JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

Grape Vines.
J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.
WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Hurst House Seedling Pine.
B. S. WILLIAMS can supply strong Plants of this choice new PINE at 15*s*. and 21*s*. each. A choice Stock of Smooth Cayenne and other Pines.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Pine Suckers.
FOR SALE, RIPLEY QUEEN, and other SUCKERS, warranted clean and free from Scale.
Apply by letter to Mr. MCGREGOR, Seedsman, Merthyr Tydvil.

PINE PLANTS.—Four Dozen FRUITING PLANTS, Two Dozen SUCCESSION, the property of a private Gentleman.
In the care of Mr. THOS. SURMAN, Lavender Nursery, Lavender Place, Wandsworth, Surrey, S.W.

PINE PLANTS.—A large quantity of very finely rooted strong healthy Plants, from a stock that never had scale, in all sizes from Suckers to Fruiters, to be Sold cheap.
Apply to M. ROCHFORD, Market Gardener, Page Green, Tottenham, N

GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THESE MACHINES were entered at the Royal Horticultural Society's Great Shows held at South Kensington, May 21, June 11, and July 2. They were the only Machines Highly Commended (no Prizes were given). They have carried off every Prize that has been given in all cases of Competition, and have just been warded the Prize Medal of the Great International Exhibition, July 11, 1862.

GREEN'S PATENT LAWN MOWERS have attained the largest sale of any Machines extant, and are in constant use at the Royal Gardens, Windsor; the Royal Horticultural Society's Gardens, South Kensington; the Royal Botanic Gardens, Regent's Park; the Crystal Palace Company's Gardens, Sydenham; the Kensington Palace Gardens; the Hyde Park Gardens; and in most of the Nobility, Clergy, and Gentry's Parks, Squares, &c., throughout the Kingdom.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0	£8 15 0
To Cut 20 inches	8 0 0	9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0	£ 9 17 6
To Cut 24 inches	9 0 0	10 7 6

To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0	£21 10 0
To Cut 36 inches	23 0 0	24 16 0
To Cut 42 inches	26 0 0	28 2 0
To Cut 48 inches	29 0 0	31 8 0

Leather Boots for Horse, per set, £1 4*s.*

Donkey and Pony Machines, including Box of Requisites & Traces.

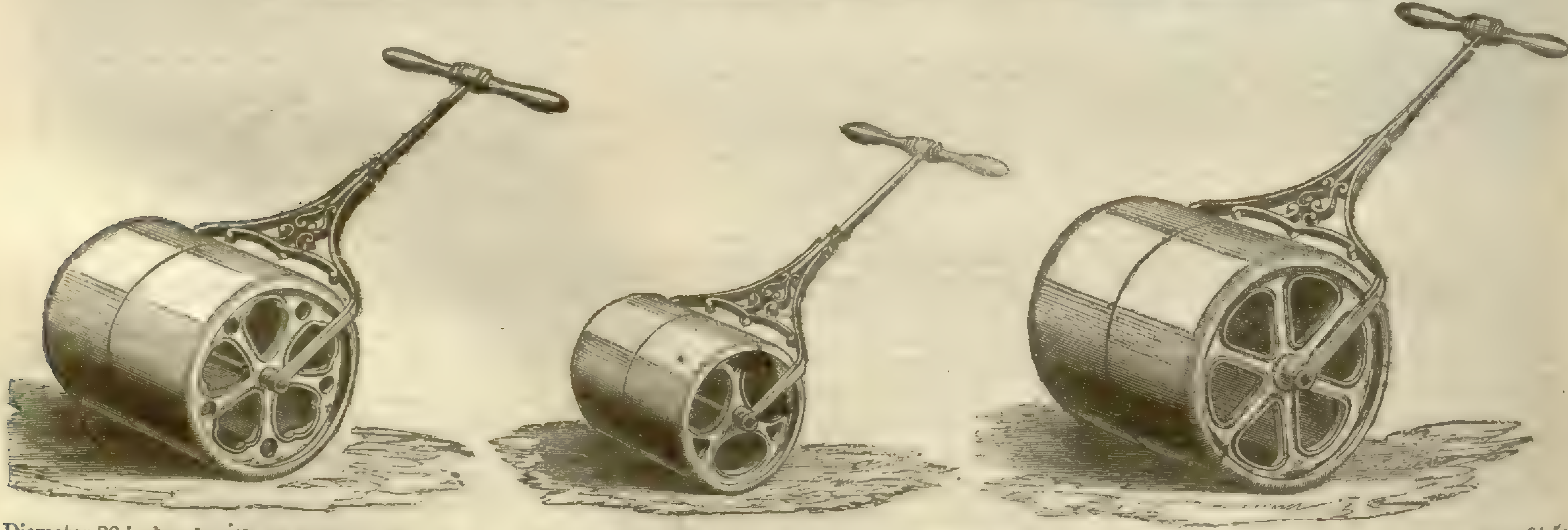
	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0	£12 10 0
To Cut 26 inches	12 10 0	13 12 0
To Cut 30 inches	16 14 0	18 0 0

Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

The above Machines are made from the best materials, and of superior workmanship; are delivered carriage free to all the principal Railway Stations and Shipping Ports in England; are warranted to give satisfaction, and if not approved of can be at once returned, if sent carriage free to Leeds.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length, 22 inches....Price £3 5*s.* | Diameter 16 inches, length, 17 inches....Price £2 10*s.* | Diameter 24 inches, length, 26 inches....Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

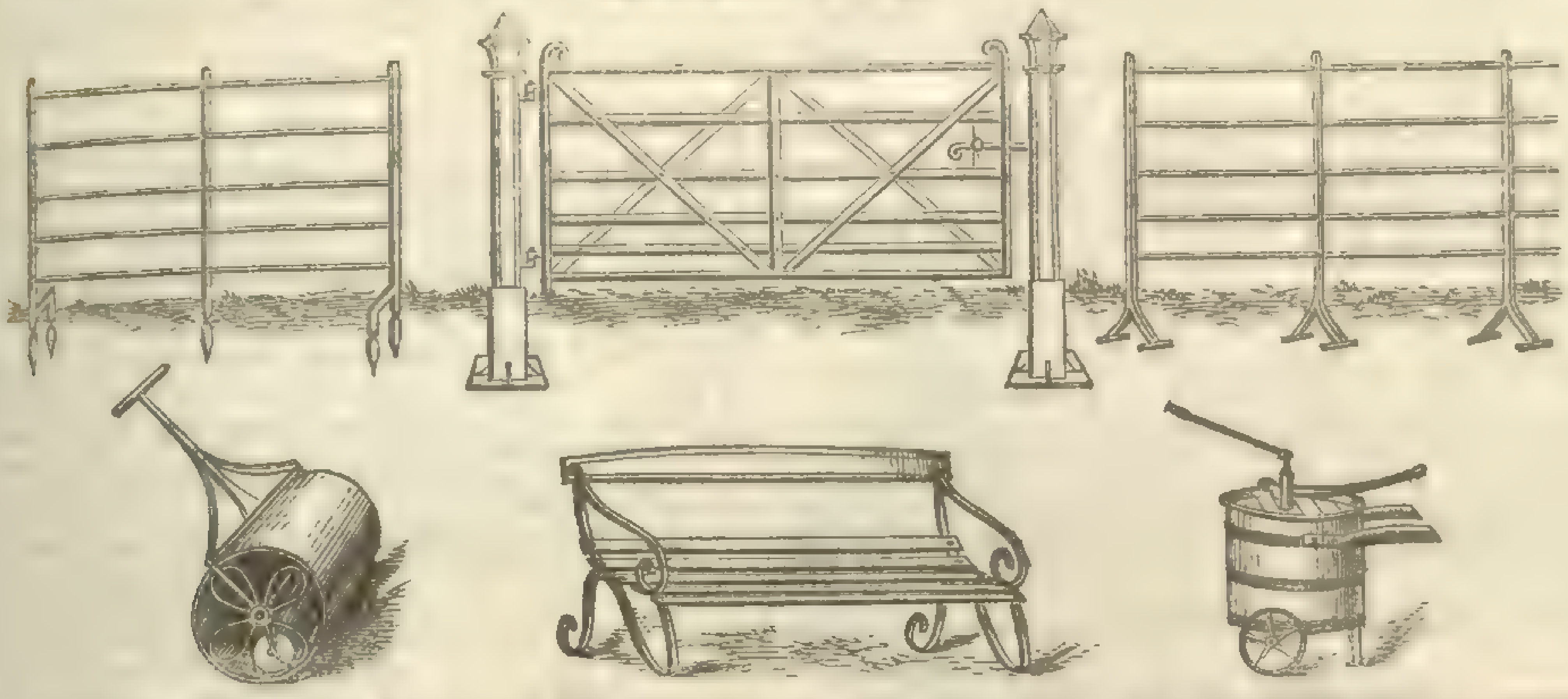
T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

COTTAM'S

CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.



IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes.
VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.
The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.
Illustrated CATALOGUES and DRAWINGS free on application to
COTTAM & CO., ENGINEERS and IRON FOUNDERS,
2, WINSLEY STREET (OPPOSITE THE PANTHEON), OXFORD STREET, LONDON, W.

JOSEPH HAYWOOD AND CO.,
MANUFACTURERS OF PRUNING and BUDDING KNIVES, SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

Paxton Works, Sheffield, Established 1738.

International Exhibition Prize Medal is just awarded to SAYNOR & COOKE for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR AND COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.

CAUTION.—None are genuine unless marked SAYNOR. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

SAMUELSON'S LAWN MOWING MACHINES,

WITH MANWARING'S PATENT NOISELESS GEAR, AND BOYD'S PATENT SELF-CLEANING BRUSH. Also,

SAMUELSON'S IMPROVED GARDEN ENGINES, WATER BARROWS, SYRINGES, WIRE NETTING, &c.

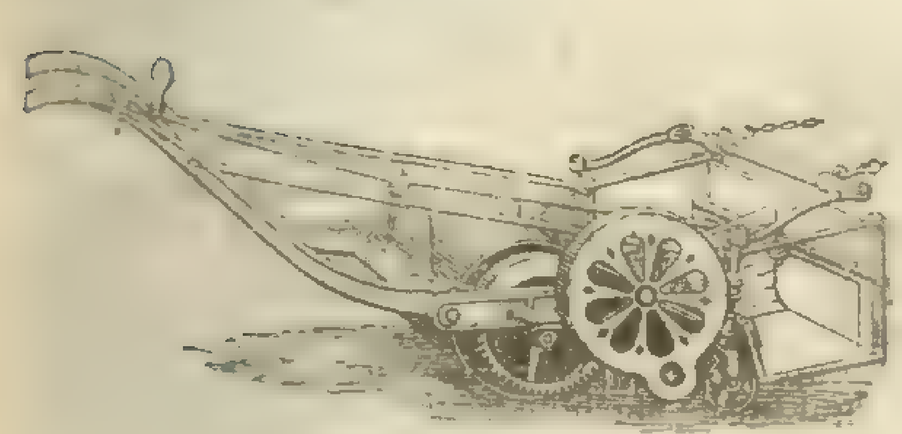
CATALOGUES FREE, ON APPLICATION TO BRITANNIA WORKS, BANBURY, OR TO
MR. SAMUELSON'S LONDON WAREHOUSE, 76, CANNON STREET WEST, CITY,
WHERE SAMPLES MAY BE SEEN.
DEPOTS also at SHREWSBURY, YORK, STOCKTON, and NEWCASTLE. Dublin Warehouse: 12, PARLIAMENT STREET, ESSEX BRIDGE.

SHANKS' NEW IMPROVED PATENT

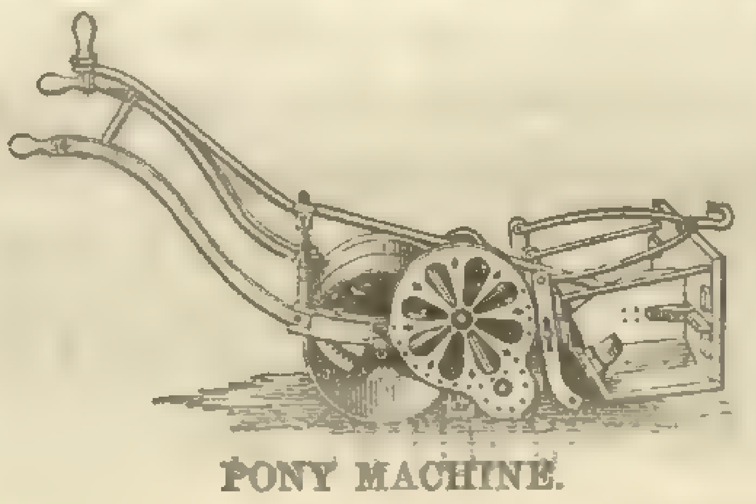
LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

WITH SILENT MOTION IF SPECIALLY DESIRED.

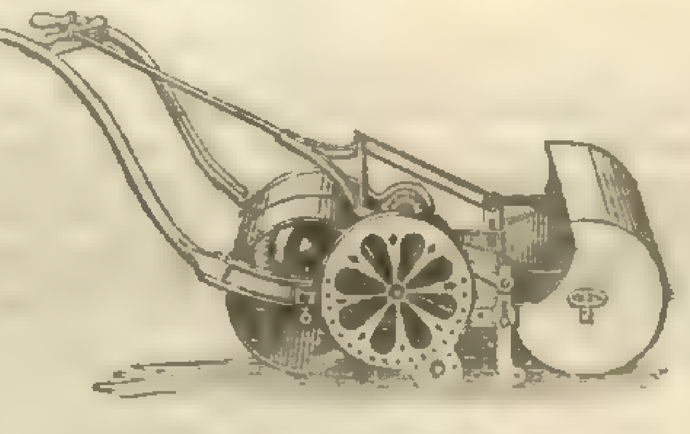
EXHIBITION PRIZE MEDAL AWARDED.



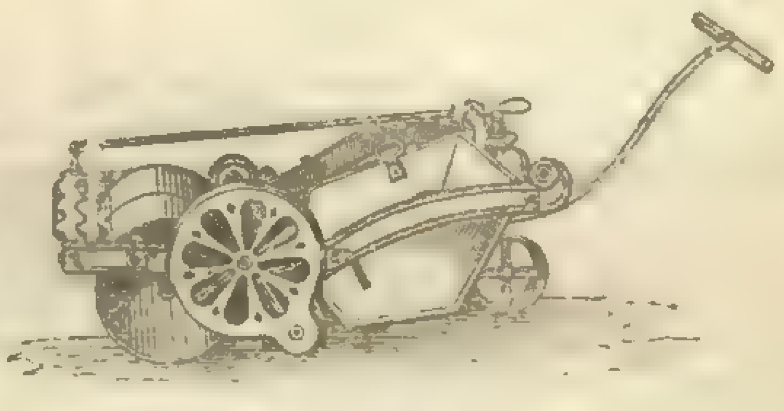
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

PRICES.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Width of Cutter.
No. 1.—48-inch Machine ... ... £28 0 0 } *Drawn by a Horse.*
No. 2.—42-inch Machine ... ... 26 0 0 }

Width of Cutter.
No. 3.—36-inch Machine ... ... £22 0 0 *Drawn by a Horse.*
No. 4.—30-inch Machine ... ... 19 0 0 *Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | Width of Cutter. No. 6.—28 inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey.*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Width of Cutter.
No. 8.—24-inch Machine ... ... £8 17 6 } *Easily Worked by Two Men.*
No. 9.—22-inch Machine ... ... 8 7 6 }
No. 10.—19-inch Machine ... ... 7 12 6 *Ditto by a Man and Boy*

Width of Cutter.
No. 11.—16-inch Machine ... ... £6 17 6 *Easily Worked by a Man.*
No. 12.—13-inch Machine ... ... 6 2 6 *Ditto by a Boy.*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Width of Cutter.
No. 16.—16-inch Machine ... £6 5 0 } *Easily worked by a Stout Lad.*
No. 17.—14-inch Machine ... 5 15 0 }
Silent Movement, 7*s.* 6*d.* extra.

Width of Cutter.
No. 18.—12-inch Machine ... ... £5 5 0 *Easily worked by a Lady.*
Silent Movement, 4*s.* extra.

*** *The Machines are warranted to give ample satisfaction, and if not approved of may be at once returned.*

The Prices, with a small charge for Packing, include Carriage to most of the Railway Stations and Shipping Ports in the Kingdom.

SOLE AGENTS FOR LONDON: J. B. BROWN & CO., 18, CANNON STREET, CITY, E.C.

New Azalea Elegantissima.

B. S. WILLIAMS begs to intimate that he is now prepared to send out strong Plants of the above. It was exhibited at the Royal Horticultural Meeting, May 21, and was awarded a Label of Commendation.

Price 10s. 6d. each; extra size 15s. to 21s. each.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Choice Seeds.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give the greatest satisfaction.

PRIMULA, per packet, 2s. and 3s. 6d. each.
CALCEOLARIA, per packet, 1s. 6d., 2s. 6d., and 3s. 6d. each.
CINERARIA, per packet, 1s. 6d. and 2s. 6d. each.

For numerous Testimonials see SEED CATALOGUE, post free on application.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality, at Market Prices.

Autumn 1862.—New Plants.

JEAN VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs respectfully to announce that he is now taking orders for the following SELECT NOVELTIES, fully described in his NEW CATALOGUE for the Autumn of 1862, and which will be sent out on and after September 1, at the following prices:— Each.—s. d.

	s.	d.
AZALEA INDICA, SECRETAIRE CLAUS ..	7	6
,, ,, VICOMTE DE FORCEVILLE, the finest double Red Azalea ever offered ..	10	6
CAMELLIA QUERCIFOLIA, Oak-leaved Camellia, good plants	21	0
,, ,, With buds	31	6
,, ,, A few stronger plants ..	42	0
HEBECLINIUM MACROPHYLLUM, fine plants, with very ornamental foliage, the leaves being nearly a foot long, and more than a foot in diameter, good plants ..	12	0
RHODODENDRON SOUVENIR DE JEAN BYLS, splendid hardy Rhododendron, figured in the *Illustration Horticole*, June, 1862, good plants	21	0
With buds	31	6
A few strong plants	42	0

One plant over to the Trade on every three taken.

A carefully Coloured Plate of the Rhododendron and Camellia will be sent to each Subscriber. The Subscription List is open now, and early orders are solicited, as they will be executed in strict rotation.

All orders to be addressed to M. JEAN VERSCHAFFELT, 43, Rue de la Caverne, Ghent, Belgium.

CATALOGUES can also be had of Messrs. R. SILBERRAD & SON, 5, Harp Lane, Great Tower Street, London, E.C.

Very Choice Primula, Calceolaria Cineraria, &c., 1s. per Packet, Post free.

SUTTON AND SONS can strongly recommend the following Choice SEEDS, at 1s. per packet each sort:—

PRIMULA SINENSIS FIMBRIATA	PANSY
CALCEOLARIA	PELARGONIUM
CINERARIA	CARNATION
POLYANTHUS	AURICULA

Royal Berkshire Seed Establishment, Reading.

THE BEST SORTS of CABBAGE SEEDS, in packets, 6d. each sort, Post Free, sufficient to raise a thousand plants of each.

SUTTON'S IMPERIAL	SUTTON'S DWARF COMBE
EARLY BLENHEIM	SHEPPARD'S EARLY MARROW
CATTELL'S DWARF	CATTELL'S RELIANCE
CHAMPION [BARNES	ATKINS'S MATCHLESS

Nonpareil, Early York, Enfield Market, Wheeler's Imperial, and other old sorts, 3d. per packet; Drumhead Cattle Cabbage, 2s. 6d. per lb.

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CATTELL'S EARLY RELIANCE CABBAGE, CATTELL'S DWARF BARNES CABBAGE.

These two Cabbages have proved themselves for many years past to be the two best Early Spring Cabbages in cultivation. If sown as early as the middle of July, they will not run to seed the following Spring. They may be had as usual in packets containing half-an-ounce of the Reliance, and one ounce of the Dwarf Barnes. Free by post for 12 Penny Stamps for each packet.

JOHN CATTELL, Nursery and Seed Establishment, Westerham, Kent.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to 7s. 6d. each;

ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA, 21s. each.

A Select LIST of the most rare kinds will be forwarded Post Free on application.

Dorking Nursery.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select Descriptions and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

New Plants of the Season.

GODWIN AND PADMAN have now ready the NEW FUCHSIAS of Messrs. Bull, J. Carter & Co., Cornelissen, E. G. Henderson & Son, Lemoine, W. Rollisson & Sons, G. Smith, F. & A. Smith, and Scott, at 1s. each, or 10s. 6d. per dozen.

NEW VERBENAS of 1862 .. .. .. 6s. per dozen.
NEW PETUNIAS .. .. .. 9s. ,,
NEW CHRYSANTHEMUMS of 1862 .. 12s. ,,
NEW TROPÆOLUMS of 1862 .. .. 12s. ,,

G. & P.'s SUPPLEMENTARY CATALOGUE, containing descriptions of above, on application to

Broadfield Nursery, Sheffield; or J. C. PADMAN, Boston Spa, Tadcaster.

Stanstead Park Nursery, Forest Hill, S.E., and Edinburgh.

DOWNIE, LAIRD, AND LAING have much pleasure in offering the following very select Seeds, saved from their choice collections.

ANTIRRHINUM, 6d. and 1s. per packet.
CALCEOLARIA, 1s. and 2s. 6d. per packet.
CINERARIA, 1s. and 2s. 6d. per packet.
HOLLYHOCK, 1s., 2s. 6d. and 5s. per packet.
PANSY, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS KERMESINA SPLENDENS, 1s. 6d. and 2s. 6d. per packet.

The New Rose "John Hopper."

ROBERT WARD begs to inform the Public that he will be prepared to send out his SPLENDID SEEDLING ROSE in the Autumn, which has had so much praise accorded to it by the Royal Horticultural Society, and the principal Growers and Connoisseurs in the kingdom.

See *Gardeners' Chronicle*, July 5, page 619; *Journal of Horticulture*, July 1, page 248; *Gossip of the Garden* for July; and *Floral Magazine* for August, in which it will be figured.

A DESCRIPTIVE CIRCULAR may be had on application, and on receipt of 13 postage stamps a beautiful illustration by Andrews.

Ipswich Rosery.

REIGATE SILVER SAND, best quality, 12s. per Ton or 1s. 3d. per Bushel, at Swan Place; delivered five miles, or to any London Wharf or Railway, 16s. per Ton, or 1s. 6d. per Bushel. Kentish and Hampshire PEATS, YELLOW LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE from Kingston.—J. KENNARD, Purveyor to Her Majesty, Swan Place Old Kent Road, London, S.E.

Upwards of 2000 Cases have been reported as Cured by

JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s. 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.

Seed Warehouse, 10 and 11, Exchange Street, Norwich

Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. NEAL, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by PRICE'S PATENT CANDLE Co., Limited.

Potato Disease.

To the Editor of the Gardeners' Chronicle.

SIR,—Having manufactured several hundred tons of Flower of Sulphur this and last season, specially prepared for the Vine Disease, and it having been found a most successful remedy, it has occurred to us that it might be equally valuable as a remedy against the Potato disease, and we therefore wish to bring it before the notice of the Agricultural public, considering it well worth an extensive trial in the growing crops, which in some places are showing signs of disease. We are prepared to supply it in small quantities for experiments at the moderate price of 16s. per cwt., delivered Free to any Railway Station in London on receipt of Post Office Order for the amount. The smallest cask is 2 cwt., 32s., with printed directions for its application.—Yours respectfully,

GIBBS, BELL, & Co

Vitriol Works, near Victoria Docks, London, E.

BURGESS AND KEY'S COMBINED GRASS MOWING and REAPING MACHINES, are made to cut the heaviest crops of Grass, both the Wheels being geared, and sufficient weight in the Machine to give grip on the ground.

The price of B. & K.'s Mower, 25l.; Combined Mower and Reaper, 30l.

BURGESS & KEY'S celebrated SELF DELIVERY REAPING MACHINES.

The superiority of this Machine over every other in use has been proved by the most influential farmers in England. Price 36l.

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SHAW'S TIFFANY.—The lightest, cheapest, and most durable of all materials for Shading Conservatories and Hot-houses is SHAW'S TIFFANY. As a protection from cold winds and scorching heat, nothing equal to SHAW'S TIFFANY. For effectually preserving Fruits and Seeds from the Attack of Birds, Wasps and Insects, use SHAW'S TIFFANY.

Sold by all Nurserymen and Seedsmen. Samples and Prices on application.

J. SHAW & Co., Oxford Street, Manchester.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the SCORCHING RAYS of the SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run

ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering"

NEW AND RARE ORCHIDS

FROM

BRAZIL, THE TENASSERIM PROVINCES, & THE EASTERN ARCHIPELAGO.

HUGH LOW & CO.

Have recently received from their Collectors in the above named Countries considerable quantities of NEW and RARE ORCHIDS, to an inspection of which purchasers are respectfully invited. Amongst the known species are comprised—

AERIDES LOBBI
,, Species resembling Æ. SCHRŒDERI
,, QUINQUEVULNERUM
,, SUAVISSIMUM
,, VIRENS, superb, remarkably long flower spike
,, SPECIES, spotted leaves, from Pulo Tinggi, China Sea
BURLINGTONIA FRAGRANS
CALANTHE VESTITA ROSEA
,, ,, LUTEA
CATTLEYA CRISPA
,, or LÆLIA, a fine looking plant
CŒLOGYNE ELEGANS
,, LOWI
,, PANDURATA
,, PARISHI
,, SCHILLERIANA
DENDROBIUM AGGREGATUM MAJUS
,, CHRYSOTOXUM
,, CUCULLATUM GIGANTEUM
,, DALHOUSIANUM
,, EBURNEUM
,, FARMERI ALBUM
,, FIMBRIATUM MAJUS
DENDROBIUM MOULMEINENSE
,, FORMOSUM GIGANTEUM
,, PIERARDI MAJUS
,, TORTILE ROSEA
EPIDENDRUM, very fine looking species, flower spike very long
IONOPSIS ROSEA
LIMATODES ROSEA
ONCIDIUM, four species
PHALÆNOPSIS GRANDIFLORA, of all sizes and in large numbers, the best and largest lot ever imported
,, LOWI (*Reichenbach fil.*)
SACCOLABIUM CURVIFOLIUM
,, BLUMEI MAJUS var. DAYI
,, VIOLACEUM
SOPHRONITIS CERNUA
,, GRANDIFLORA, a fine lot of this rare and beautiful plant
VANDA GIGANTEA, very fine plants
,, TRICOLOR

From other sources H. L. & Co. have also a supply of ANÆCTOCHILUS, in large numbers and many new species

AERIDES CRISPUM
,, LINDLEYANUM
,, MACULOSUM
,, WARNERI
CATTLEYA CITRINA
,, MOSSIÆ, many varieties
CYPRIPEDIUM LOWI
,, SPECIES, with remarkably handsome variegated foliage, in the style of and quite as beautiful as the leaves of Phalænopsis Schileriana
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,, LOWI
,, PICTUM
,, SALACCENSE
,, MONILIFORME
,, PAXTONI
ONCIDIUM PAPILIO MAJOR
,, PULCHELLUM
PHALÆNOPSIS AMABILIS
,, ROSEA
SACCOLABIUM GUTTATUM
,, REIDI
VANDA SUAVIS
,, HOOKERIANA

Prices moderate, as Stock of the majority is large.

AUSTRALIAN and BRAZILIAN TREE FERNS.

CLAPTON NURSERY, LONDON, N.E.

Strawberries.

CHARLES TURNER can now supply Strong Plants of the following Select kinds (as well as the older varieties), thereby insuring a crop of fruit next season :—

	Per 100.—s.	d.
ADMIRAL DUNDAS (Myatt)	5	0
BRITISH QUEEN (Myatt)	5	0
CAROLINA SUPERBA (Kitley)	5	0
CRIMSON QUEEN (Myatt)	5	0
EMPRESS EUGENIE (Knivett)	5	0
ELIZA (Rivers)	3	6
ELIZA (Myatt), syn. "Omar Pacha"	3	6
FROGMORE LATE PINE (Ingram), large, solid, rich, and juicy; a great cropper and fine grower	10	6
FILBERT PINE (Myatt)	5	0
GENERAL HAVELOCK (Tiley), early, large	5	0
OSCAR	5	0
PRINCE ARTHUR (Ingram)	5	0
PRINCE OF WALES (Ingram)	3	6
RIFLEMAN (Ingram), very large, great cropper, and fine flavour	10	6
SIR C NAPIER (Smith)	5	0
SIR HARRY (Underhill)	3	6
WONDERFUL (Jeyes)	5	0
WIZARD OF THE NORTH (Robertson)	3	6

The Royal Nurseries, Slough.

Tropæolum "Eclipse."

CHARLES TURNER strongly recommends this charming variety, which was raised by R. Headly, Esq., of Cambridge, and is a great addition to this favourite class of Bedding Plants. It is of the same habit as Elegans—the colour intense scarlet.

A Bed of the above may now be seen at the Royal Horticultural Gardens, Kensington; also at the Royal Nurseries, Slough. Strong plants, 12*s.* per dozen.

New Plants of 1862.

JAMES DICKSON AND SONS, "Newton" Nurseries, Chester, have now ready Strong Plants, at Reduced Prices, of FUCHSIAS, CHRYSANTHEMUMS, PHLOXES, PETUNIAS, and VERBENAS of the most approved varieties of this season The usual allowance to the Trade. Prices on application.

Also very strong VINES from Eyes for IMMEDIATE PLANTING of the leading varieties, and such as will give the utmost satisfaction Prices moderate.

DELPHINIUM FORMOSUM, TRUE. — MR. GLENNY will send a packet to any one who will forward a stamped envelope, or a packet of DIGITALIS, or TOBACCO, or all three.

GLENNY'S IMPROVED BALSAM SEED will keep 10 years, 6 classes, 37 stamps. Mixed, 13.

Dungannon House, Fulham, S.W.

FERNS, BRITISH and FOREIGN.—An immense variety, 3*s.* to 12*s.* per dozen; BEGONIAS and other Foliage Plants, STANDARD FUCHSIAS, 1*s.* 6*d.* to 3*s.* 6*d.* each; and all kinds of Greenhouse and Stove Plants, Evergreens, Climbers, &c. Gold and Silver Fish in immense quantity. The finest Collection in London of Foreign Birds and Cages, Budgrigars, 20*s.* per pair.

R. GREEN, 154, Kingsland Road, and Bedford Conservatories, Covent Garden Market, W.C.

F. AND A. SMITH are sending out carefully selected SEED of the following (from their own stock) for present sowing :—

	Per packet.—s.	d.
ANTIRRHINUM, from named flowers	0	6
ALYSSUM SAXATILE COMPACTUM	0	6
CALCEOLARIA, finest strains .. .. 1*s.*, 1*s.* 6*d.*, &	2	6
CINERARIA .. " .. .. .. 1*s.*, 1*s.* 6*d.*, &	2	6
PRIMULA .. " .. .. .. 1*s.*, 1*s.* 6*d.*, &	2	6
DELPHINIUM FORMOSUM	0	3
" CHERIANTHIFLORA	1	0
" TRIUMPHATA EXCELSIOR	1	0
CLIANTHUS DAMPIERI	2	6
DIANTHUS HEDDEWIGI	0	6
FUCHSIA, from named flowers	1	6
GAILLARDIA GRANDIFLORA	0	6
MIMULUS, very fine	0	6
ŒNOTHERA LAMARCKIANA	1	0
PANSY, from Belgian flowers	1	0
PELARGONIUM, Spot / " Show / " Fancy	1	0
GERANIUM, Scarlet / " Zonale / " Variegated	1	0
PENTSTEMON	0	6
POLYANTHUS	1	0
STOCK, finest Scarlet Intermediate	0	6
SWEET WILLIAM, Auricula-eyed	0	6

☞ Their NEW CATALOGUE is now published, and may be had on application.

Dulwich, Surrey, S.

Prize Calceolaria Seed.

J. DOBSON AND SONS' Splendid HYBRIDISED CALCEOLARIAS are second to none in the world.

First Prizes have been awarded them wherever exhibited this season.

Exhibitors should grow no other for 1863.

Hundreds of testimonials received as to their superiority over all others.

Sale of 1861, 4000 packets.

New Seed, growth of 1862, now ready in sealed packets, 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, 5*s.*

The Trade supplied liberally. A lot of fine plants for sale.

Woodlands Nursery, Isleworth, W.

DOBSON'S Splendid HYBRIDISED CALCEOLARIA SEED, in Sealed and Printed Packets, 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, and 5*s.*

AGENTS who will supply it Free—

Messrs. Hurst & McMullen, 6, Leadenhall Street, City, London.
" Fraser, Richardson, & Goad, 82, Bishopgate St., do.
" Fisher, Holmes, & Co., Handsworth Nursery, Sheffield.
" Garraway & Co., Durdham Down, Bristol.
" Dickson, Hogg, & Robertson, Dublin.
" Dickson & Turnbull, City Nursery, Brechin.
" Dickson & Son, 106, Eastgate Street, Chester.
" Veitch & Son, Chelsea.
" Rollisson & Sons, Tooting.
" Fraser, Lea Bridge Road, Essex, N.E.
" Vilmorin, Andrieux, & Co., Paris.
Mr J. Bell, Exchange Street, Norwich.
" H. Brown, Commutation Row, Liverpool.
etc, etc.

And may be obtained through every respectable Seedsman and Nurseryman in the Three Kingdoms.

Be particular in ordering DOBSON'S Splendid Hybridised Calceolaria (which is printed on each packet), and have no other. We have found it necessary to caution the public, an inferior kind having been substituted in our name by some unprincipled persons.

J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

WHEELER'S ORANGE GLOBE MANGEL, WHEELER'S IMPERIAL SWEDE, GRASS SEEDS for PERMANENT PASTURE, GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

THE HEAVIEST CROPPING TURNIP.

The Grey Stone or Mottled Globe.

Excellent for present sowing for winter feed, or for later sowing to stand the winter.

SUTTON AND SONS, SEED GROWERS, Reading, are now harvesting a fine crop of Seed, and can therefore supply this popular sort at the reduced price of 10*s.* per Peck, or 35*s.* per Bushel, Carriage Free.

Royal Berkshire Seed Establishment, Reading.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe.

Messrs. SUTTON & SONS have been honoured with applications from THE EDUCATIONAL DEPARTMENT of the SOCIETY of ARTS, and from Dr. Kirkpatrick on behalf of THE ALBERT NATIONAL AGRICULTURAL FARMING INSTITUTION at Glasnevin, for their unique Collection of Grasses, at the termination of the International Exhibition.

Messrs. SUTTON & SONS have also been highly complimented on this Case of Seeds and Specimens by many eminent Agriculturists and Botanists who have visited the Exhibition. They also invite inspection of their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which, for want of space there, is erected at the Crystal Palace, Sydenham.

Royal Berkshire Seed Establishment, Reading.

The Gardeners' Chronicle

SATURDAY, JULY 26, 1862.

MEETING FOR THE ENSUING WEEK.

FRIDAY, August 1 { Royal Horticultural (General Meeting) at S. Kensington .. .. 2 P.M.

IT is scarcely possible to go through any district where Onions are largely cultivated without observing large naked gaps or patches of yellow plants which will sooner or later perish. This failure has arisen partly from a little insect which attacked the young plants before they were well established, but in great measure also from a minute mould, which, like that which has proved so destructive to Roses, may easily escape the eye which is not especially directed towards the diseases of vegetables. Nor has the evil been confined to the common Onion. In some gardens Shallots have proved a complete failure, while Garlic, Sweet Leeks, and other plants of the same genus have suffered more or less. The disease, however, is now taking another course. About a fortnight since we observed some pale yellow spots about the swollen stems of seed Onions. We pointed these out to one or two friends as the sure forerunner of the fatal parasite, and at the moment in which we write the mould which was described formerly under the name of *Botrytis destructor*, but now referred to the genus *Peronospora*, is overrunning the whole stem, and will probably in the end destroy all hope of perfect seed. The mould may be seen with the naked eye if the stem is held so as to show any minute matter which may project beyond the surface, while a common lens will exhibit the little scattered grey plants loaded with multitudes of spores. In wet weather these spores multiply prodigiously, for not only do they germinate themselves, but they produce from their granular contents numbers of minute zoospores, spores, that is, which exhibit the characters of certain minute animals, moving about by one or more lash-like appendages which vibrate incessantly, and are only distinguished from them by their at length germinating like vegetables. In dry weather, they would perish at once, even were they produced, but in a damp atmosphere, while the stems are bathed in moisture, they move about in every direction till they find a fitting resting place, and thus propagate the plant with inconceivable rapidity. We call the attention of our readers to this point the more willingly, because very few are aware of the nature of the attack, and because our observations on the similar affection of Roses have been received with satisfaction by several extensive Rose growers. Even though we can suggest no remedy, it is some aid to contentment to know precisely the nature of the evil from which we suffer.

The disease might at first sight be taken for a case of *Chlorosis*, a disease which under a multitude of forms is prevalent at the present moment.

A very singular case has lately occurred to us, which we take the present opportunity of recording. Some Yews a few days since attracted our attention not merely by their pale colour, but by a habit quite at variance with that which they usually wear. The young shoots drooped in every direction, some of them being a foot or more in length; the leaves were no longer in the slightest degree two-ranked but were arranged spirally round the stem; they had lost all stiffness, and were drooping and flaccid, often curled and irregular, and in some cases had acquired more than twice their usual width, with a proportional increase of succulence, and many of the axils contained pushing but at the same time very imperfect buds. The affection has evidently arisen from superabundance of moisture, and defect of warmth and light, and the tissues are so loose and delicate, that they can neither stand the effects of drought nor frost. It is quite clear that if they are not timely clipped, the trees will wear a miserable appearance in winter, for there is no probability that any favourable change of weather can make the tissues sound. *M. J. B.*

MORE than 50 years ago Mr. SOWERBY published a figure of an orange-coloured Fungus which occurs in incredible profusion on the leaves of Pear trees, without much discrimination as to varieties, and sometimes not sparing a single leaf. It appears, we believe, exclusively on the upper surface of the leaves, and consists of a number of cells crowded into a suborbicular patch, each individual cell or cyst containing within a multitude of minute gelatinous spores, which ooze out as the walls contract, insomuch that the plant resembles a group of miniature volcanoes. The spores are so abundant, that some leaves forwarded by post have left a sort of nature printing on the paper, of a bright orange, and like so many similarly coloured Fungi, the little parasite diffuses a sweet scent.

This Fungus often occurs on Pear leaves in a less highly developed condition, forming darker and smaller spots; but if the under surface of such leaves be examined, it will be found much swollen beneath the spots, and in due time the well-known *Roestelia cancellata* will be developed, which is the plague of Pear growers. Mr. SOWERBY at once suggested that the two Fungi were mere conditions of one species, and that these were analogous to dioicous plants among Phænogams. Modern observers have to a certain extent confirmed the notions of SOWERBY, which were much extended by FRIES; and though sexual distinctions have not been established amongst Fungi, their existence has been strongly suspected, while in a great number it is now a well-established fact that the same Fungus may produce two or more forms of fructification; but whether any of the secondary forms possess sexual functions is extremely uncertain. The secondary forms, it should be observed, are in many cases capable of germination, and are produced in such profusion that the chance of the diffusion of the parasite is immensely increased.

Where the trees really suffer, the only chance of remedy is picking the leaves and burning them, to which should be added the removal of the earth immediately round the root, and the substitution of some mould from a distant pasture.

After all, however, the complete extirpation of the plague is extremely doubtful, as the minute gelatinous spores will adhere to various parts of the tree, and under favourable circumstances will be ready to propagate the malady the next season.

The present seems to be a great year for parasitic Fungi. Pear trees and Apple trees are suffering to a great extent from a minute brown mould, Cladosporium dendriticum. In many cases the young shoots are much dwarfed from the parasite, and appear unlikely to form healthy fruit buds for the next year. We have never seen it so abundant before, and unfortunately we know of no remedy. The threads are at first developed beneath the cuticle, and no external application can reach them. In this case the extirpation of the leaves

is an impossibility, and where the orange-coloured parasite is very abundant, the stripping the leaves may be a worse evil than leaving the Fungus to take its course. *M. J. B.*

—— CONSIDERABLE attention has already been directed to the breeding of the AILANTUS SILKWORM, or Ailanticulture as it is now called, both in this country and in France. It is a subject well worthy of attention, for if the worm is as hardy and the produce as useful as the statements made concerning them seem to indicate, this branch of industry may do something to fill up the fearful void caused by a deficient supply of cotton. On this subject there is a very interesting article by Mr. MORRIS, in a recent Number of the *Technologist*.

The textile material yielded by this kind of Silkworm, *Bombyx* or *Attacus Cynthia*, and which has received the name of Ailantine, is described by Mr. MORRIS as being more beautiful and much stronger than cotton, and indeed intermediate between silk and wool. The material itself, which is "superior to cotton, and almost at the same price," may be seen in the French Court of the International Exhibition (No. 837.)

We transcribe a few of Mr. MORRIS's propositions in respect to Ailanticulture :—

"The *Ailantus glandulosa* is a hardy tree possessing great vitality, and may be grown anywhere, even in the most arid and unfruitful soil, where neither cereals, nor herbage, nor succulent plants can be made to grow.

"The Ailante Silkworm is as hardy as the plant it feeds upon. No severity of weather can detach it from the leaf to which it adheres, nor hinder it from spinning its cocoon." "In very warm climates the *Bombyx Cynthia* gives two crops a year, but in colder regions only one."

Algerian cotton sold last March at Liverpool, at from 2*s.* to 2*s.* 6*d.* per lb. "The present price of Ailantine is but a trifle higher than this quotation; the intrinsic value of the material is quadruple that of cotton, as regards strength, durability, and beauty.

"More than a million of these trees were planted in France in 1861, and more than 100 millions of seed sown, sufficient to cover nearly 50,000 acres.

"Along the barren sea-coasts of England, the *A. glandulosa* would flourish extremely well. The labour of children could also be advantageously directed to this new commercial project; and at a moment like the present when a single unforeseen event, a single emergency, has arrested the prosperous career of a mighty industry, and plunged into distress those operatives dependent upon it, it will be seen at once how worthy an object of development in England is this Ailantine economy. If the Chinese can clothe themselves at such a minimum price with the products of this silkworm, it is certainly worth an effort to endeavour to give the suffering poor of England the opportunity of bettering their condition, when the result is so clear, and the manipulation so easy and inexpensive."

The same publication (*Technologist*, July, 1862) contains also an interesting paper on Silk-producing Insects, in which some 44 species are noted. Several of these are cultivated to a considerable extent, especially in China, India, and other parts of the East. The most important of them feed on the Mulberry. The common *Bombyx Mori*, which spins the best silk, produces but one crop annually; while *Actias selene*, an Indian species feeding on *Coriaria nepalensis*, *Cedrela paniculata*, Wild Cherry, Walnut, &c., and producing "strong tenacious elastic brilliant" silk, yields four broods; and *Antheræa assama*, which feeds on *Michelia*, *Laurus*, and *Tetranthera*, and whose silk forms one of the principal exports of Assam, has generally five broods annually. *Antheræa paphia*, the Tasseh silkworm, one of the most common in use of the wild native Indian species, yields an abundant supply of durable silk; and *A. Peruyi*, which feeds on the "Chesnut Oak, probably *Castanea japonica*," produces large quantities of strong silk in Mantchouria. Finally, *Attacus Ricini*, the Eria silkworm, is reared over a great part of Hindostan, and furnishes four or five crops in the year. The produce of this latter, which feeds on the Castor-oil plant, gives a cloth of seemingly loose texture, but of incredible durability, the life of one person, it is stated, being seldom sufficient to wear out a garment made of it.

According to *Galignani*, the Société d'Acclimatation of Paris has received intimation from M. G. Simon, now in China, of a curious breed of Silkworms inhabiting the province of Che-Kiang, and especially the district adjoining the town of Hangcheoo. This new Silkworm is much smaller than the common one, but does not differ from it in other respects: it has the same number of legs, the same spots, and is of the same colour; but its habits are much more independent. The insect deposits its eggs chiefly on the branches and within the interstices of the bark of the Mulberry tree, on the leaves of which it generally feeds. The inhabitants do not attempt to collect these eggs. Early in August—that is, two months after the ordinary Silkworm has performed its various evolutions, myriads of minute worms suddenly make their appearance on the bark of the Mulberry tree, and invade the new crop of leaves. They grow fast, the gardeners doing nothing more than protect them from birds by nets. As these silkworms make their appearance unexpectedly, as it were, and yield a second crop of silk without any trouble, they are called Tien-tze, or children of heaven, by the people. The warmer the winter has been, the greater is the number of these worms; they bear a temperature of 25° Fahrenheit very well. Their existence as silkworms does not exceed three weeks: at the end of that time they congregate under the leaves, which they bind together, and then spin their cocoons, an operation which takes them three days. A week later, their metamorphosis is complete; the cocoon is perforated, and the perfect insect comes out. The cocoons are extremely small, but from 15 to 18 kilogrammes of them yield one of silk. The Chinese do not use this silk alone, but mix it with the other.

—— The difficulty experienced by many persons in blooming the CLOTH OF GOLD and ISABELLA GRAY ROSES is attributed by "Amicus," in an article recently published in the *Florist*, to the fact that they are early bloomers and require an early stock, and the remedy he proposes is to work them on a stock of this character. "Amicus" has, it appears, two old trees of the "common old-fashioned white (centre lightly blush) garden Rose," covering a large space on a south wall. On young wood of these he worked buds of Cloth of Gold, Safrano, and Isabella Gray. The first has bloomed "freely and splendidly" for five years past; the two latter kinds for the last two years equally well. Banksian and other stocks had been tried, and though Safrano did very well almost everywhere, the other two could not be got to flower till they were worked on the White Rose, which is a very early bloomer. The conditions under which these results have been obtained are described thus:—The soil is a poor one, worn-out gravelly loam; the climate too moist for pleasure, but otherwise genial; the aspect due south; the treatment liquid manure two or three times a year; no pruning except of dead or broken wood, and every spray trained in. The three varieties have nearly occupied the large space which the old one held possession of for many years. The writer believes this stock to be the best of all parents for spring and summer Roses.

—— Our correspondent "Summer Rose" (p. 668) is in error if he supposes that in the passage quoted by him, we meant to do more than record what—taking the varieties of Roses exhibited on the occasion in question as our guide—seemed to be not indeed a fact accomplished, but a fact in very fair way of accomplishment. Perhaps we should have said that these H. P. varieties seemed to be monopolizing the space on the exhibition tables, rather than in the Rosarium, but still in Rosariums planted with a view to exhibiting, the matter would necessarily stand much as we put it. We had certainly no intention of saying a word against good summer Roses, especially considering the variety to be secured in a garden by a fair admixture of these classes with the encroaching and progressing Hybrids. Indeed, to name a familiar instance, we would hardly give up the common Cabbage Rose or the common Moss Rose, for any other Rose that blows.

—— We understand that Mr. VEITCH has the MUTISIA DECURRENS blooming very finely in his nursery at Combe Wood, where it has lived unharmed through the past winter as a hardy climber without any other protection than that afforded by the surface over which it has been trained. When the hardiness of the plant, its free-blooming character, and the large size and brilliant orange colour of its flower-heads are taken into account, this may be estimated as one of the finest of hardy climbers recently introduced.

—— Further plants of the splendid LILIUM AURATUM have now been flowered at Mr. VEITCH's Chelsea Nursery; and these have proved much finer than that which formed such an attractive feature at the last South Kensington flower show. The blossoms of these more vigorous plants, with the segments in their naturally recurved position, measure fully 8½ inches across; they are deliciously scented. The sub-horizontal position assumed by the flowers when developing as their natural attitude, gives them even a finer appearance than was produced by the more erect-flowered specimen which was exhibited. An abortive growth in the axil of a second upper leaf on one of the plants in question, indicates that when better established this Lily is likely to be at least two-flowered—probably more; and we hear also that Mr. STANDISH has some two-flowered plants coming on, of what is supposed to be the same species. So that we have probably in this new Japanese Lily a much finer plant than has been suspected—fine indeed as its present appearance is.

—— "S.," a correspondent of the *Florist*, suggests that the NEW ARCADIAN FIR referred to in our last volume (p. 755) under the name of *Abies Reginæ Amaliæ* of Heldreich, the *Pinus peloponnesiaca* of some nursery catalogues, and closely allied to *Abies Apollinis*, may be the same as *Abies cephalonica*. A peculiarity which is stated of this Arcadian Fir is that when cut down, or when its leader is destroyed, it always produces a number of new leaders, which is an unusual feature with coniferous plants. The *Abies cephalonica* is also stated by "S." to form new leaders invariably, but whether to the same extent as is assigned to *Abies Reginæ Amaliæ* he cannot vouch. The opinion thus expressed seems to have been formed partly on the evidence of young plants of reputed peloponnesiaca in Mr. Rivers's nursery, of the identity of which with cephalonica, "S." is now quite convinced; and he is led to ask: May not the German botanists have mistaken for a new species one long known to us under the name of cephalonica?" Since however the new *A. Reginæ Amaliæ* is described to have leaves even blunter than *A. Apollinis*, which according to Endlicher is a variety of *A. Picea*, and those of *A. cephalonica* are acuminately pungent, we do not see how the two can very well be identical. There is probably some mistake about the cultivated plants.

FRUITS IN THE INTERNATIONAL EXHIBITION.

VICTORIA, AUSTRALIA.—A large collection of castings in gypsum of Victorian fruits and vegetables, prepared by Mr. Todt for the commissioners of the Colony, enables us to form some opinion as to what Horticultural subjects may be successfully cultivated in that country.

The total area of Victoria is 86,831 square miles, or nearly that of England, Scotland, and Wales united. From the inscription on the Victoria Gold Pyramid in the Exhibition, it appears that the population of Australia Felix, now called Victoria, was only 177 in 1836; in 1851 it was 77,354; and in 1861 it had reached as high as 540,322. This is however little more than one person to 100 acres; but according to the statistics of the Colony in 1857, not one-tenth of the population was occupied in pastoral and agricultural pursuits. The proportion of labour devoted to the cultivation of the soil must therefore have hitherto been very small; and whilst emigrants have to make that which forms the staff of life their principal consideration, the cultivation of fruits cannot be expected to receive much attention. Gold digging powerfully attracted labour from the cultivation of the land. It even appears from statistical tables that instead of the extent of ground under tillage being annually increased, as is usually the case in new colonies, it actually diminished to a great extent in Victoria, after the gold discovery in 1851. In that year the number of acres under Wheat for example were 28,567: in 1854 they fell to 7,553. The acreage however under this crop is now increasing rapidly; whilst "the demand for fruit and vegetables, and the eminent capabilities of the soil and climate for bringing such productions to perfection, have had the effect of causing about 7,300 acres to be laid out as orchards and market gardens, making an increase in three years of nearly 2500 acres." Still this is small in proportion to the wants of a so largely increased population.

Melbourne, the capital of Victoria, is situated in lat. 37° 49′ *south*. If a continued line were drawn at a corresponding distance *north* from the equator it would pass through the Azores, the extreme south of Italy, the southern parts of Portugal and Spain, and nearly through the centre of Asia Minor. The fruit productions of these countries are familiar to Europeans. They are, for instance, Oranges, Grapes, Figs, Melons, and Cucumbers, Apples, Pears, Plums, Cherries, Apricots, Peaches, and Nectarines, &c. Were climate regulated uniformly according to latitude we should expect that all these things would succeed equally as well in Victoria as in those places which we have mentioned in Europe and Asia; that they actually do so is proved by the exactly modelled representatives of the fruits in this Exhibition.

Among the models of *Apples*, the Blenheim Pippin, Alexander, Lord Nelson, Royal Sovereign, Holland Pippin, were of an unusually large size, and highly coloured. There were also the Red Quarrenden, very fine, and a most useful early Apple that may be eaten from the tree. Scarlet Nonpareil, Stone Pippin, Hawthornden, Royal Russet, Rhode Island Greening, Ribston Pippin, Norfolk Beaufin, Beauty of Kent, Stirling Castle, Hoary Morning, Golden Pippin, Wheeler's Russet, Royal Pearmain, Dumelow's Seedling, under that name, and also that of its synonyme the Wellington, Cornish Gilliflower, Passe Pomme, Red Astrachan, very finely coloured, and others. There is also an Australian Pippin, and a Seedling Apple, said to produce two crops annually. Owing probably to the effects of climate, the Hawthornden and some other varieties are more elongated than they generally grow. The Tower of Glammis in the Exhibition appears to be the Blenheim Pippin, and the Golden Harvey is doubtless the Golden Reinette.

Pears.—Some of the specimens of these are also very large. A Uvedale's St. Germain weighed 2 lbs. 13 oz.; another of the same sort under the name of Belle Angeville (Belle Angevine) is highly coloured next the sun. A good collection is represented, consisting of Autumn Bergamot, Brown Beurré, Marie Louise, Crassane, Duchesse d'Angoulême, large and fine, Bon Chrétien, doubtless Williams's Bon Chrétien, Beurré Rance, Beurré Diel, Beurré de Bolwiller, Beurré de Capiaumont, and others. Under the name of St. Germain is modelled a fine specimen of Napoleon, whilst under the latter name is represented a Grosse Calebasse. The specimen of Bishop's Thumb is 6 inches long. That called Van Mons is different from the Van Mons Léon le Clerc. The Beurré d'Aremberg and some others have been taken from sorts incorrectly named.

Cherries.—Early May, doubtless the May Duke;

Holman's Duke, Florence, Waterloo, are modelled of average size.

Plums.—Coe's Golden Drop is a very good specimen; the Red Magnum Bonum is below average size. Both Cherries and Plums however grow vigorously in the Colony, we are informed on good authority, and produce heavy crops of well flavoured fruit. The *Peach*, *Nectarine*, *Apricot* succeed well and produce very abundant crops.

Figs.—There is a model of the White Ischia. Mr. Smith, in *Mueller's Report on the Resources of Victoria*, states that "Fig trees grow in perfection some varieties bearing their two crops in the year freely. The leading varieties are Green and White Provence, Green and Brown Ischia, and Smyrna. It may be expected that dried colonial Figs will eventually supersede those imported."

Of *Quinces* some very large specimens are modelled, together with fruit of a common *Walnut*. This tree is highly prized in the colony for its stately grandeur of appearance, as well as for its abundant fruit.

It is stated in Dr. Mueller's Report above referred to, that none of the small English fruits, such as the Gooseberry, Currant, Raspberry, or Strawberry, succeed well except in cooler valleys, or mountainous elevations, where they always attain perfection as regards both quality and productiveness. Doubtless the general level of the country will be too hot for these very useful fruits; but there is a large extent sufficiently elevated to be cool enough for their successful cultivation. Strawberries, apparently the Round White Carolina, is represented among the models; and Gooseberries and Currants are seen bottled or preserved. In short it is evident from the kind of fruits we see represented in this Exhibition that all the fruits that are most esteemed in Europe, and that require its finest climates for their perfection, may be produced in the colony of Victoria in the greatest abundance as soon as labour sufficient for extended cultivation is at command. ||

SCIENTIFIC BALLOON EXPERIMENTS BY MR. GLAISHER.

THE balloon left the earth at 9 43 a.m., with the barometer at 29·50, and the temperature 55 deg. At 9 47 they got a temperature of 45 deg. At this time the air was dry, and the temperature began to decrease, till at 2 minutes after 10 it was 26 deg. The sun was then shining on the balloon with great brilliancy. At 3 minutes after 10, when Mr. Glaisher and his aeronaut (Mr. Coxwell) were about two miles high, they heard the strains of a band of music. At about the same time they got a peep at the earth, and the sight was most pleasing. Even with the naked eye the fields looked like a tessellated pavement, possessing a combination of beautiful colours, and the roadways were as sharply and clearly defined as though the observers had been but a little height over them. Gazing through the thin attenuated air at this altitude did not present the difficulties which were offered by the thicker stratum below. In five minutes the temperature began to increase to 31 deg. and at a quarter past 10 it was 37 deg. On starting Mr. Coxwell's pulse was beating at 75 and Mr. Glaisher's at 76, but at this time (10 15) Mr. Coxwell's had risen to 86, and Mr. Glaisher's to nearly 100. At this time the gas in the balloon, which previously had been opaque, became perfectly transparent, and, the neck being open, Mr. Glaisher could see right through the gas to the top of the balloon. The proportions of the machine were observed to be accurate, and the netting clung tightly around it. Here also a striking change was observed in the surrounding scenery. From the pale light blue colour of the sky below that which now surrounded them was an intensely deep Prussian blue. The *cumuli* clouds far below were very rocky in appearance, and the sun was shining upon their surface. The stratum cloud was then at the same elevation as the balloon. The barometer at this time read 16 inches; and the temperature, continuing slowly to increase, was 38° at 10 30. Now the barometer was reading less than 15 inches, showing that the aeronauts were nearly four miles high. Here palpitation of the heart was very susceptible, so much so that each man could hear the beating in the breast of the other. The ticking, too, of Mr. Glaisher's watch was remarkably loud, reverberating like a chronometer beating upon a sounding board, and the rustling occasioned by the turning over the leaves of his notebook represented the rushing of a high wind. At 10 35 the temperature had increased to 42°, and they were at a height of four miles. Here the air was very dry. At this time it was remarked that the hands were dark blue, and the lips also blue, but not the face. Now the temperature began to decrease with wonderful rapidity. In four minutes it was reduced to 36°, and by 10 47 it was down to 31°. At 11 1 the highest elevation was reached. The barometer reading a little above 11 inches, it was evident that the voyagers had ascended to very nearly five miles. Here the temperature was 16°, and the breathing, which was observed to be interfered with when heart palpitation commenced, again became affected. A deep blue sky was to be seen at this point, with clouds below, and the cold was felt. At 10 57 the feeling of sea-sickness, with its uncomfortable manifestations, came over Mr. Glaisher, and at 11 7 the same feeling returned, but it was not so prolonged in duration. Mr. Glaisher had been warned that at this height blood would issue from the nose, that the eyes would be affected, and there would be a tingling in the ears; but in neither the case of Mr. Coxwell or himself were either of these manifestations perceived. Mr. Coxwell only found it necessary to throw on one additional coat while they were up, and Mr. Glaisher, after wrapping a cloak around him for a short while, soon threw it off. The fingers were not benumbed, nor were either of the voyagers uncomfortably cold. When they were between three and four miles high Mr. Glaisher suggested that the balloon should make its first "dip," Mr. Glaisher, it will be remembered, desiring, in order to the perfecting of his experiments, to descend to the earth two or three times before making his final ascent to the highest altitude; but Mr. Coxwell, having felt certain that they were proceeding too near to the Wash to enable them, if they made a dip, to get up again, the attempt was abandoned, and the ascent to the highest elevation was made at once. Having attained it, the voyagers, in a style most characteristic of Englishmen, sipped at the small quantity of sherry which they had taken with them in order to drink to the health of the Queen; to the British Association, associating with it the name of Dr. Fairbairn (its President); success to the town of Wolverhampton, associating with the toast the name of Lord Wrottesley; and the directors and engineer of the gasworks, with thanks to them for kindness and attention in connection with the ascent. During the "speaking," as indeed often before, Mr. Coxwell spoke in terms of astonishment at the collectedness of Mr. Glaisher, that gentleman's deportment being all that of an experienced aëronaut, instead of a traveller in mid air for the first time. As we have before remarked, unless Mr. Glaisher had displayed this collectedness, it would have been impossible that so numerous and much diversified observations could have been made as his book now bears upon its pages. During the last mile there was the extraordinary change of 26° in the temperature. On the earth, it will be remembered, it was 55°, at half a mile it was 45°, at less than a mile it was 43°; it then decreased to 26°; at about two miles it increased constantly till the height of four miles was reached, when it was 42°; and between 4 and 5 miles it rapidly decreased from 42° to 16°. The air was dry throughout. At the highest elevation it was 80° below zero. No dew was deposited. The dry bulb read 16° and the wet bulb 9°. Regnault's hygrometer at zero had no dew; nor had Daniel's hygrometer any dew at 8° below zero. No dew could be deposited at this elevation at either of the hygrometers.

At half-past 11 Mr. Coxwell became uneasy as to their position in relation to the coast, and at 11 42, when they were above the clouds, the earth was visible and the Wash in the distance. The voyagers then brought their balloon and themselves down as quickly as possible. In descending the shadow of the balloon was seen on the clouds, and it continued to increase as the clouds were neared. In passing through the cloud the balloon could not be seen from the car, so dark was it. It was stated that they landed at Langham, near Oakham. The precise spot at which *terra firma* was again touched was a meadow near the boundary of the parishes of Langham and Ashwell, in Rutlandshire.

They were seen descending by the residents in the neighbourhood, and by Mr. E. G. Baker in particular. So rapidly were they coming down that Mr. Baker prepared restoratives, and gave such orders as he feared would be called for on account of what he expected would be the personal injuries which the voyagers would suffer. Happily, however, Mr. Baker's kindness in this regard was scarcely necessary, inasmuch as Mr. Glaisher sustained only a slight injury to the face and hand, the inconvenience from which yesterday was merely a headache, and Mr. Coxwell escaped altogether. The instruments, of course, were considerably injured, but not so much so as on the last occasion. The rapidity with which the descent was made was chiefly owing to the effect upon the gas of the cold in the higher altitude, and on passing down through the clouds. The next ascent will be made when the wind has attained a westerly direction. The balloon proved all that could be expected, and Mr. Coxwell feels satisfied that with it he can reach an altitude of nearly six miles.—*From the Times.*

FOREIGN CRITICISM.

WHAT OUR FRIENDS THINK OF THEMSELVES.—The Exhibition of the Central Horticultural Society (of Paris) has wound up modestly, without noise, and almost in perfect solitude; and what else could be expected, when for a whole month the attention of the public was directed towards flowers, especially in Paris, where taste is ever changing, and impressions are so quickly effaced. That exhibitions are useful, no one disputes, their object being the development of a taste for gardening, and to mark the progress that is made; but if this influence is to be maintained, it must not be abused. To repeat them too often, and to make them last too long, is to render them excessively monotonous, and consequently to produce an effect quite different from what was desired. It must not be forgotten that things of luxury have but a secondary value, and if their position is to be maintained, nothing must be done to diminish the feeling which alone makes them appreciated. On the other hand, the progress from one year to another is not so extremely rapid as to admit of much variety in the character of these exhibitions. It strikes us, whatever may be said or thought to the contrary, that if these exhibitions were to take place every three, or even every four years, it would be amply sufficient for the wants of horticulture. Anyhow it would greatly diminish the labour, and be a great saving to horticultural societies. With the exception of perhaps a few nurserymen, who only view these exhibitions as a means of extending their trade, no one would complain, and the art of horticulture would lose nothing by it.

After the lapse of a month we found in the Palace of the Champs-Elysées almost precisely the same things as we saw there before—Cannas, Caladiums, large masses of flowers scattered about the immense space which this Society has at its disposal. As on our first visit, so on this we found groups jumbled together, and of very unequal value: some were very good, we may even say excellent, and some were unmistakeably bad. Of the last we shall say little; their inferiority is less the fault of their owners, than of a certain depraved horticultural taste, which for some years seems to have gained ground with the public, and so reacts on gardeners. We understand innovations, but we would have them of a different kind. Marching is not always advancing, it is sometimes retreating, and what is here particularly vexatious is that this retrograde movement is not confined to the growth of plants of mere ornament.

Rhododendrons are the natural pendant of Pelargoniums, but notwithstanding their classical beauty there were very few in the Exhibition, at least during the last days. The only collection worthy of notice was a lot of about 50 plants, belonging to M. Dieuzy-Fillon. They were pretty shrubs, well grown and regularly flowered, but their colours were rather too pale, the prevailing tint ranging from white to mauve. Each of these specimens taken separately was faultless, but viewed in mass they were insipid; an effect that could have been easily remedied by introducing a few varieties of brighter colour.

Petunias—we mean seedling Petunias,—those which are considered as new and improved varieties—were represented by several lots which no doubt pleased amateurs. We remarked those belonging to M. Loise and to M. Chaté. In both collections there were pretty specimens, and in both very indifferent ones. The great aim seems to be to enlarge the corolla to an extravagant size, and to obtain pale slate-coloured tints, softer to the eye than the rich purple of the wild plant. We think the growers of these plants make a great mistake; when the corolla of Petunias is too much enlarged it becomes flaccid and loses its regularity, looking weak and sickly, which is anything but desirable. Converting it into a double flower is no better; and our opinion is that the nearer they approach their original tint the handsomer they are, and if they are variegated the colouring should be brighter or more decided. Gardeners would do well to return to the old varieties, which are undoubtedly superior to those which they are now endeavouring to obtain.

What must we say of Roses!—brilliant as they were 20 years ago, and now in 1862 so dull in comparison, if we may judge from most of those we saw at the last exhibition. Everything grand becomes dim in time; as our most copious novelist declares, "*tout passe, tout lasse, tout casse:*" yet if any royalty could be indestructible, it seems to us it should be that of the Queen of flowers. But alas! *Quantum mutata ab ipsa!* Imagine a lot of deformed sickly bushes, with curled leaves, and ragged flowers, of the most wretched appearance, which up to the last few days exposed their misery to the eyes of the scanty visitors. Well worth while was it to descant on the Rose and the Rose tree, to fill so many catalogues with high sounding or ridiculous names, to sow, to graft, to hybridise, only to arrive at such a result. Fifty years ago we really had Roses worthy of the name; but to find any now we must search in the remote corners of the provinces, where our modern Rose growers and their improvements have not penetrated. Under the plea of progress, many a good thing has been spoilt, and not only have flowers suffered, but other things far more useful; amongst which are some of our original excellent races of cattle and poultry, which by unskilful or too impatient management threaten to disappear altogether.

If the exhibition of Roses was unsatisfactory, we are at least able, by way of compensation, to record a revival of the cultivation of the Carnation. It is said that last year, when the Emperor visited the horticultural exhibition at Fontainebleau, he was heard to express his surprise at not seeing a single Carnation, his favourite flower. "Why," said he to one of the principal exhibitors, "have you no Carnations amongst so many flowers!" "Sire," replied the exhibitor, "Carnations are no longer the fashion, people have left off growing them." Thus it is; fashion, not a love of the beautiful, is the guide of the gardener. If the taste of the public were so depraved as to prefer Thistles to Roses we should see plenty of gardeners cultivating Thistles to satisfy the caprice of the moment. Fortunately such fancies cannot last for ever; sooner or later common sense conquers folly, and good things will regain the favour they ought never to have lost.

A month since plants with richly coloured foliage, such as Caladiums, Begonias, Cissus discolor, Coleus

Blumei and Verschaffelti, &c., were to be found in most collections. These beautiful plants well deserve the favour shown them, and the Imperial Horticultural Society only performs an act of justice in encouraging their production; but why need they associate with them those miserable sickly discoloured abortions, upon which they have so emphatically conferred the title of *variegated plants?* Some of these things are tolerable, and we might endure them if they were introduced with discretion, but in masses they are hideous, and the infatuation for these remains of bad cultivation is become such, that cultivators do not hesitate to exhibit groups composed of nothing else. It is just as if a sovereign wishing to give some illustrious traveller an idea of the people he governed, were to call together all the deformed, the hump-backed, the squint-eyed, the scrofulous, and the impotent of every sort. Nothing moreover shows more plainly the ugliness of these plants than massing them together; and if that is what exhibitors wish to show, they have succeeded perfectly and deserve our thanks.

Lovers of trees, especially those who delight in the new ways of pruning and training fruit trees, found plenty to satisfy them at the Exhibition of the Imperial Horticultural Society. There were specimens of all kinds of training, horizontal and oblique, spiral, palmetto, simple, double, candelabra-shaped, V-shaped, U-shaped, and many more as ingenious as novel. We do not wish to speak ill of anything, but surely such trifles are more fit to amuse little suburban amateurs than to deserve serious consideration. They however meet a want in our nature, that of bestriding an ever changing hobby, though at the risk of seizing some shadow instead of a substance.

The lots of fruit kept over from last year and placed among the exhibition were rewarded according to their merits; but amongst the persons rewarded were mere dealers in provisions, whose only garden was their counter. We should like to know for what the Horticultural Society rewarded them? Was it for exhibiting fruits gathered by others? If so, we do not see why he who eats the fruit, should not also have one of the Society's prizes, for his discernment is of the same kind as the dealer's, clearly showing that he knows good fruit from bad. Let a jackdaw disguise himself in the features of a peacock as much as he likes, but let him be taken for a jackdaw and not for a peacock. We should advise the Horticultural Society to think about this. The best intentions are often frustrated by cupidity, and if dealers are to be decorated for things they never grew, a door is opened to fraud, which must be most prejudicial to horticulture and to all true gardeners. *Naudin in Revue Horticole.*

EGYPTIAN GARDENING.

Egypt, the land of mystery—ever that—in arts and sciences of old, and socially and politically so now. Those who have travelled Europe only, find on arriving in Egypt that they are for the first time fairly abroad. Costumes, language, donkeys, camels, equipages of every style—from those of our Elizabethan era to the dashing ones of modern days—antique enough on the one hand to create a laugh, and dazzling enough in gay colours on the other to make a sensation in Rotten Row or the Bois de Boulogne, constantly attract attention. Then the streets are narrow, the thoroughfares crooked, and the eternal oh aw, riglac (look out! mind your legs) of drivers and scises,* keeps the poor pedestrian, or donkey equestrian, in constant fear and trembling for the safety of his Cashmere, patent-leather or bare shins. Then the oaths, exclamations, and execrations of Arabs, Syrians, Greeks, Levantines, and Jews—all lead one to believe that he has just reached the spot where that celebrated monument the Tower of Babel fell, when each spoke the jargon most convenient to him. But to advert to Egyptian gardening, let me tell the reader that if he should reach Egypt as I did in the month of December, he must prepare himself for a scene, such as would greet him if he had dropped from midwinter into the first weeks of June, after a dripping April and sunny May in England, such as veterans only can remember.

On entering Alexandria one feels disappointed; the expectations formed of that highly and justly vaunted fertile Valley of the Nile, are not realised, owing to the city being placed on a slight eminence near the seaboard. In and about the town are some avenues of Acacia Ledbeck (considerably the quickest growing tree in Egypt) and of the Sycamore Fig. One or two fine groves of Date Palm, and some solitary Palms of other kinds, strike the eye in conjunction with domes and minarets, giving the whole a peculiarly Eastern aspect. Leaving Alexandria by the banks of the Mahmoodiah Canal, we are at once amongst gardens and villas, the latter not distinguished for their fine architecture, such as one might expect modern Egypt to possess, but the gardens, owing to their wild luxuriance, speak of sunny skies and water in abundance. The villas are the summer residences of Alexandrian merchants.

Leaving Alexandria for Cairo by railway, spreading wide out before one lies that plain tract of land known as the Delta, watered by the overflowing of the Nile, and when the Nile recedes by numerous canals, from which water is lifted by means of the Lackia, an old Egyptian contrivance for raising water, made with cogwheels, and a skeleton barrel wheel, over which suspended equidistantly are two looped ropes, made of Palm fibre; the loops are shortened and lengthened as the water rises and falls, and are kept in position by means of short pieces of stout sticks, fastened to which are earthen jars, which fill and empty themselves into a stone trough as the wheel revolves. The water is conveyed on land by means of mud gutters or small canals. Before the introduction of steam the Lackia was the chief means of raising water for irrigation, and thousands of oxen were employed in this kind of labour. Now, in the case of the Pashas and other wealthy proprietors, steam pumps of great power are adopted, which compel actual rivulets to travel over thousands of acres. So advantageous have such contrivances been found to be, that a 30-horse engine and pump are said to clear their cost in about two years, by the extra crops produced, and if well erected and taken care of, they need few repairs for 10 or 15 years. At the time I speak of, the Delta and the whole of the Valley of the Nile present a picture such as can only be seen in Egypt. Spreading as far as the eye can reach, and to all appearance as level as a cricket ground, stretch fields of the greenest Clover and Wheat imagination can depict; these are occasionally broken by tracts of Cotton, peopled by scores of ragged Arab boys and girls, who under the direction of a driver are busy gathering the snowy produce. A distant village, and some Date Palm trees occasionally break the quiet monotony of the scene. Little more of interest offers itself on the way beyond bales of cotton and dirty Arabs at the different stations, or the fine bridges built by Robert Stephenson, to carry the railway across the Nile; but on nearing Cairo groves of trees, avenues, and gardens, planted by the late Mahomed Ali, prove the country to be not entirely treeless. The Pasha just named was a great lover of gardening and arboriculture. Several good gardens and some fine avenues in the vicinity of Cairo, were created by him. Among these the Garden of Shubra, and the magnificent avenue of Sycamore Fig trees by which it is approached from Cairo, stand pre-eminent; this avenue, said to have been planted some 45 years ago, has all the appearance which a fine avenue of wide spreading Oaks a century and a half old would have in England. Shubra was the glory of the declining days of this modern Solomon—Mahomed Ali, and he often went with great pageantry from Cairo to visit the fair houris of the Garden; after his death it was some time in abeyance and much neglected, but eventually it became the property of his son Haleen Pasha, by far the most intelligent and enterprising of the present Egyptian Princes, who bids fair to make Shubra outshine its ancient glory. The entrance to the Garden is through an elaborate iron gateway, which would not disgrace a ducal park or garden at home. A straight path or drive leads from the gates to a very handsome harem palace, just erected on the banks of the Nile. Opposite this, on an elevated mound of terraces, formed at right angles, stands the Prince's Kiosk, a place for receiving male visitors—it being against the Muslim etiquette to introduce them to any part of the building just named. The terraces on which the Kiosk stands are about 20 feet wide, and the walls 12 feet high. The two lower ones are planted with Mandarin Orange trees and flowering shrubs. The third is laid down with Grass, which is kept in excellent order. The upper terrace on which the Kiosk stands is paved with white marble, small square compartments being left for choice plants, and others contain vases tastefully arranged. The Kiosk is graceful but unpretending in structure, skilfully furnished and decorated, and in the Prince's studio are some good water-colour drawings done by his Highness, who is the only Egyptian Prince who can claim any kindred feeling with professors of the fine arts. The garden is divided by means of straight walks and avenues, something in the Dutch style, but it is destitute of any preconceived or regular design. It was the work of Greek gardeners, who have long been in great repute in Egypt; the walks are bounded by magnificent Myrtle hedges, from 6 to 8 feet high. Sometimes they are cut square, but oftener they are undulating; the compartments are filled with all kinds of fruit trees generally grown, each sort being placed by itself, but often mixed and planted so close together, that their leaves and branches defy the powerful Egyptian sun to enter. This garden can I think boast of the finest collection of Citrons and Oranges to be found in the world. The Shaddock Sultan, the large Shaddock, and some smaller varieties, the immense Indian Pommelow, Mandarin, Blood, and other Orange trees, the Pear Lemon; several varieties of sour Limes, and two or three sweet kinds; Peach trees, Apricots, Figs, Pomegranates, Plums, Apples, Pears, and Vines, all grow in a manner that would perfectly bewilder an English gardener at first sight. When I first called there, Haleen Pasha had a Belgian gardener, who had just arrived, and the poor fellow was in a perfect dilemma as to where to begin and how to proceed. He said, "Voyez vous, monsieur; ce n'est pas un jardin ça—c'est un bosquet; diable! que voulez vous que je fasse?" I recommended him to apply the axe freely, which I saw afterwards he had done much to the satisfaction of the Prince, who is anxious to establish an English garden, with Grass lawns, &c. Following one of the broad walks at a right angle with the entrance I found a magnificent kiosk which had been built by Mahomed Ali, and it is still certainly the finest thing of its kind at the present time in Egypt; it is a square pile of building, having marble steps and entrance doorway; a large basin occupies the centre of the court, covering nearly an acre of ground; lions and griffins jet water from a raised pavilion in the centre and from the outer corners of the basin. The angles of the square are occupied by a billiard room, breakfast room, bed room, and library; and a covered promenade supported by graceful columns, leads from one apartment to another, the whole being paved with marble and surrounded with gas lamps. The Egyptians boast that Mahomed Ali introduced gas here before it was used by the good people of Paris, and also that the great Pasha used to refresh himself on a summer's evening by being drawn about in a boat on the basin, by a number of fair Naiades. The great recommendation of the garden at present is its shady walk of Acacia Ledbeck; little has been done in the introduction of rare trees, and the great sameness of the garden is occasionally relieved by a tasteful flower garden and aviary. What can be done with it? I trust some English gardener will soon be able to show.

The next garden worthy of notice made by Mahomed Ali, is the one in the Esbequia, a large open place in Cairo, surrounded by hotels, harem residences, and many private houses occupied both by Europeans and Egyptians. The Esbequia was formerly a kind of swamp, but it was levelled, filled, and formed into a public garden by the above-named Pasha—this, too, is in the Dutch style, and much better executed than the garden at Shubra; the chief drives radiate from a circular opening in the centre; they are broad, but shaded by the trees planted on each side. The divisions formed by the drives are again laid out with narrower paths, some straight, others curved, *à l'Anglais*, as every garden with a curved path is styled by foreigners. In the interior are some fine trees of Ficus indica and Cathartocarpus Fistula, which in spring are covered with golden racemes as large as those of a Wistaria. In this garden some of the walks are bounded by hedges of Duranta Plumeiri, called by the Arabs sagher afrangi—the Frank tree, owing probably to its rapid growth. It certainly surpasses anything else I have seen for making quick hedgerows. Like Shubra, this garden has been and still is much neglected; having no boundary fence, it is the resort of all the dogs in the neighbourhood and of the still dirtier Arabs. The interior is rarely entered by respectable people, who confine themselves to the boundary avenues. I observed the last time I passed through this garden that a great portion of it was being dug up and cultivated with market garden crops, and that a large portion on the south side was being enclosed by some antiquated harem ladies, widows of Ibrahim and Abbas Pashas. Under the avenues on the northern boundary have sprung up a host of wooden shanties, flourishing under the name of the Café d'Italia, Café de France, Café Concert, and Café Elysée—there is, we have reason to be thankful, nothing English amongst them. In front are placed numerous chairs and seats with elevated orchestras, filled as usual by German bands. This place has resolved itself into a sort of Rotten Row for Cairo, with this exception, that the aristocratic greyhound and dirty cur go side by side. It is a great pity that the garden has sunk into this state, but probably the Viceroy will profit by his visit to England, and improve it on his return to Cairo.

Ibrahim Pasha imitated the example set by his father, and obtained from the R. Horticultural Society of England a very excellent and highly intelligent gardener, Mr. Traill, who remained upwards of 20 years in Egypt. Under Mr. Traill's direction gardening began to assume a higher order. He was assiduous in the introduction and acclimatising of new plants, and Egypt owes several of her newer fruits to his care. The Mango, Guava, Papaw, and Loquat were of his introduction. Ibrahim Pasha was the most liberal patron of gardening Egypt has yet known. He placed money and means at the disposal of Mr. Traill, and under his direction rose the once celebrated garden of Rhoda, on the Rhoda Island, said to have contained at one time the finest collection of Palms and tropical trees in the world. *Peter Wallace, Terrace, Turnham Green.*

(*To be continued.*)

Indoor Gardening.

Window gardeners are always wanting to enlarge their bounds. A short time ago I received a letter from an inhabitant of a large town who described himself as being exceedingly fond of plants, but said that he had been at present balked in every attempt to grow them. Inside his house he had to contend with gas; outside soot and smoke baffled all his efforts. "The leaves turned yellow, the flowers fell off unopened; aphides attacked the Geraniums and red spider the Fuchsias." At last he was almost ready to give up in despair one of the greatest pleasures that those who are fond of country have when they live in towns—the delight of cherishing a little spot of green.

* Men who run before carriages to clear a way through the crowd.

It struck me directly that here was the very place to have a "Belgian greenhouse," one of those little outside window gardens that are gaining ground slowly but surely here, and which in Paris are a constant ornament to all sorts of rooms. I have heard of them seen high up, suspended from the window of some quatrième étage like a cage of flowers.

Why should not my correspondent, therefore, construct such a window garden, and why should not [illegible] other people, living in towns like he does, do the same thing this winter?

Such a great many people are of my own opinion, that so long as a thing is green you must gain something by having it in your window, and when one's prospect is of smoky chimneys and of bare red walls, it is clearly evident that we have not much to lose by shutting out their view.

These windows, be it observed, will not in winter grow tender greenhouse plants; they will, however, keep half hardy things in safety, and will afford a space for many sweet spring flowers.

The way to manage this, which I think seems most practically convenient, is to have a strong wooden zinc-lined box, not exceeding 8 inches deep—it should be a few inches, if possible, longer than the window on each side, as this gives an appearance of much greater space, while it remains, of course, perfectly well in reach. The box should be about 2 feet wide (that is, projecting from the window-sill) or it may be as wide as half its own length. We must, however, remember not to go out too far for what the supports will carry. These supports may be like those of a balcony, or if low enough a further help may be given by posts fixed in the ground. The leads outside a window also are always a most capital place for such a box of flowers.

The glazed frame may be either fixed to the box or separate. To be separate has perhaps its advantages, as then in summer it may be sometimes dispensed with, but perhaps in very smoky places this would not in any case be practicable, and there is always the danger of letting in rain to guard against. The lower box being prepared, a glazed frame of some kind has to be made to enclose it. The joints of this must fit very closely, and the lighter the wood work consistent with strength, the better. Abroad, the frames are often made to extend half way up the window, and it strikes me that one of Mr. Hereman's sashes would have a capital effect if supported on a low perpendicular wooden wall in front. The sides would be all of glass, and thus would admit light, and a couple of little shelves, or a bank of flowers might be placed to cover the little low wall thus formed. The sides would be also glazed to fit the slope of the front, and one of these ought to open out with hinges, and hook back outside. The more usual way, however, is to have a sort of second window-frame, placed all round the front and two ends of the box, to the height of perhaps 18 to 24 inches; another frame fits to the front, and is provided with strong iron hooks to fasten to the wall at each side the window, or else is securely fastened along the edge of the upper window sash. Abroad this is done more easily, because the windows open as doors. In England, however, it can be done effectually. The chief thing is to prevent thoroughly any leakage between the window and the frame, as dryness is in winter a great element of success.

The long sash sloping from the top could doubtless more easily be made watertight where it joins the wall, but it must be remembered that extra length gives in winter a larger space for radiation, and unless arrangements can be made for covering it at night this would be a difficulty.

The sides have to be fitted with glazed frames also. And the arrangements for air giving are best made in all cases by having one whole side open out on hinges like an old-fashioned lattice window, while a single pane may also be made to open for giving sometimes just a little air. It is very well also to have the top sash lift up—just as a hot-bed frame does—if the window greenhouse can be got at from outside, and a sort of veil of netting or of gauze fastened over the whole space inside prevents any smoke getting in summer. The best dimensions seem to me to be those which include a space say 4 inches wider than the actual window, a width of about 2 feet, and a height of from 18 to 24 inches in front, the roof sloping therefrom to the half window, or to the cross-bar when the windows open door-ways. Two great points have to be thought of still—the sort of glass, and the question of double glazing, at least for the roof.

As to the sort of glass, several things have to be considered. Price, degree of light and warmth, requirements of shade, and size of panes. The 21 oz. sheet glass is that chiefly recommended by Mr. Rivers for orchard houses, and that applies much to these little greenhouses, as they are also unheated. The 16-oz. glass is cheaper, but of course much thinner. Hartley's rough plate shuts out ugly views, and does without any shading, while admitting light abundantly; but this at first comes rather more expensive. The large panes are less essential for the outside. Many people, however, like to throw their window inside into one large pane, to gain a more uninterrupted view of their little garden, and where a window could be made to open as a door (opening into the room), it would be a great improvement. The expense of these little window greenhouses would be very trifling; the wooden box and the frame either of iron or wood with low front, ends and top of strong glass, being I believe attainable for about two guineas. This of course is counting on single glazing.

The difference of temperature made by the double roof, including as it does "a blanket of dry air," 4 or 6 inches thick, amounts, Mr. Rivers says, to as much as 12° in a house that is slightly heated. A difference such as this would give us immense advantages in the way of growing rather more tender flowers in the winter, and it is probable that the warm air from the room against which it is built would, under these circumstances, quite exclude all frost. It certainly would do so with the aid of a lamp suspended from the roof, or even of a burning candle standing near the front.

Coverings, too, are a most important point. To quote Mr. Rivers again, painted table covers are amongst the best of coverings, and long ago I experienced myself their very great usefulness in admitting of being made up like a box cover with seams stitched an inch over, so as exactly to slip on to the frame one wanted covered. I am not myself carpenter enough to know how it is done, but there is some way I know of fastening two boards together like a wall and a lean-to, and screwing the flat piece to a proper wall; the slope thus covers a folded or rolled up cover, and also prevents the rain getting in at all.

I am here however only stringing together all the hints that I have picked up, in the hope that some one may be able to make some use of them.

The draining this case must by no means be forgotten. It is a dreadful thing to find a bath of water accumulating round one's plants; and as I have said, in these things dryness is half the battle, or even more than half. A hole at one corner with a small pipe does well, or if posts are used for support one of these may be hollow. It is easy in making the lining to render the bottom of the box not a perfect level and a very slight slope is quite enough for the purpose. The water thus, if any does collect, runs naturally towards the opening.

A few words as to aspect are also requisite. Perhaps where it is any object to have green and flowers in winter, the east is almost the worst, the north the next worst aspect.

Very few things will blossom on the north, though many will look green—and the east is liable to the scorchings and disasters caused by the morning sun striking on unthawed foliage.

The south is the best—the west the next best aspect, and in both of these many things will blossom even from Christmas onwards.

The plants for growing, and the arrangements for them, must however be left to another week. *E. A. M.*

Home Correspondence.

Lilium auratum.—From your description of this Lily it would appear that a native specimen of that plant is not among the set I gave you when I came home. The plant was difficult to dry, and out of 8 or 10 specimens put in I was only able to save the fragments of two. One of these I now send you. Instead of growing only 2 feet in height it is usually 4, and produces often three, four, and five of its large blossoms on the top of the stem. It flowers during the hottest time of the year, from the end of June to the beginning of August. I rather suspect it to be the great great grandmother of L. speciosum. Lilium tigrinum is the species usually eaten by the natives both in Japan and China. *R. Fortune.*

Orchard Houses.—I am glad to see reports both as to success and failure of orchard houses in your columns, for I am of opinion that as much is learned from the one as from the other. Let us hope that managers of orchard-houses will briefly give us their experience this season, for doubtless some of them may be able to make a few suggestions which may enable us to prevent disappointments in future. Having determined that if possible I would succeed with trees in pots, I paid every attention both to the trees, and also to the directions given for their treatment by some of our most successful growers; but still I am under the discouraging necessity of having to "try again." The trees came under my care in March 1860. They were then in 9-inch pots, which were full of roots. I plunged them up to the rims, and put a good spadeful of manure under each of them. That year, all things considered, they did pretty well. In October of the same year the trees were repotted according to directions which were given, and better things were expected of them the following year. Well, Plums were better, in fact an abundant crop, and in some Pears there was an improvement, but Peaches, Nectarines, Apricots, and Cherries were worse. However I continued assiduously to "pinch," and "syringe," and "top-dress" all last summer, and I thought that surely I should have something of a crop in 1862. The pots were well filled with roots, and the wood was well ripened. I therefore in November partially plunged the pots, covered the surface 6 inches thick with dry leaves and thatched with straw. Early in March I brought them out of the leaves, painted them with soft soap, sulphur, and tobacco-water, set them upon the bed nearest the front ventilators in the orchard-house which is a lean-to 108 feet long, 15 feet wide, 11 feet high at back, and 3 feet high at front. All seemed prosperous until April 12, when we had 11° of frost, and 6° in the orchard-house; well, the blooms did not seem to be much injured, but not making much progress in a week or 10 days I examined them with a pocket lens, and I found that the stamens and pistil were covered with green fly. Now, let me ask, was it frost, or was it fly? or what was it that caused most of the fruit to drop? Later blooming Pears are a better crop. *B. G., Alderley Edge, Cheshire.*——I have had a large Orchard-house at work for four or five years. The trees bear abundantly and are in perfect health. They are not treated on Mr. Rivers's plan, but are confined to the pots. *Lancashire.*

Summer Roses.—I have read what "Brantham Court" has said in your last Number, and I beg also to put in a word in favour of some of the summer Roses. For exhibition, and also for grand display in the Rosarium, the following are well adapted. With the exception of the White Bath (very hardy on Manetti), and Œillet Parfait, unapproached as a variegated Rose, they are all of iron constitution. Moss—Gloire des Mousseuses, White Bath. Hybrid Provence—Blanchefleur, Princess Clementine. Hybrid China—General Jacqueminot, Madeline, Beauffremont. For Poles—Chenédolé, Brennus, M. Plantier, Triomphe de Bayeux. Hybrid Bourbon—Paul Ricaut, Coupe d'Hébé, Charles Lawson, Paul Perras, Comtesse Molé, fine and quite distinct; Charles Duval. For a Pole — Frederick the 2d. Gallica — Adèle Prevost, Cynthia, Kean, Boule de Nanteuil, Ohl, Napoleon, D'Aguesseau, La Volupté, Triomphe de Jausseus, Trauson Goubault, W. Tell, Sanchette, Œillet Parfait, Tricolor des Flandres. Damask—La Ville de Bruxelles, M. Zoutman. Alba—F. Parmentier, M. Audot, the only true flesh; La Séduisante, Queen of Denmark, Sophie de Marsilly. Austrian—Persian Yellow, Harrisonii. These are pure yellows, and fit for decoration. I should be sorry to be without the Roses just named; they should be retained. How grandly have they bloomed in both my gardens! how healthy do they look in the midst of many rain-sickened H. P.'s! Morever, they have this attribute—you may hack them for bouquets day after day without doing them an injury. *W. F. Radclyffe, Rushton, Blandford.*

European Gladioli.—I am glad to have elicited from such good authority as "C. C. B." some authentic account of the Gladiolus of the New Forest. The Gladiolus of the New Forest resembles, to my recollection, the G. triphyllus of Bertoloni, Bologna, more than any other. This was pronounced by Dr. Herbert to be a small variety of G. communis. G. segetum is a much taller plant, with flowers closer together, and with sharper and narrower leaves. This, if I mistake not, is the common Corn Flag of Italy, and grows remarkably fine in the corn fields of Calabria. G. imbricatus, as I have it from the late Prof. Fischer, of St. Petersburg, is a lower plant, with smaller flowers and less regular spikes of flower. G. byzantinus is larger than all those above-named, and has deeper coloured flowers, numerous, and affecting a distichous arrangement—quite a distinct plant; moreover it has green sheaths to the leaves, while segetum has brown, by which sign they may be distinguished as soon as above-ground. G. communis has broader and more spreading leaves, fewer flowers than the others, and blossoms earliest. G. segetum has a pretty variety, G. Andersoni, raised in the Chelsea garden; it has narrow variegated and undulated segments to the corolla. Species of Gladiolus are said to grow in Gallicia, near the Vistula, near the Rhine, about Worms, but to which of the above they may be referred I am ignorant. Probably ours is one of these more northerly European plants. The Isle of Wight Flora seems to be partly extended into the woody and heathy country all round Southampton even into the tertiary soils of Dorsetshire. *I.*

Strawberries.—Having heard from many quarters that there has been a partial failure of the Strawberry crop this year, I may just say that here it has been the finest I ever remember. The quantity of fruit has been enormous, and the quality everything that could be desired. Sir Charles Napier has been splendid, and I consider this one of the finest, if not the very finest, Strawberry yet sent out. I gathered the first fruit on the 8th of June, and there is still a large quantity on the same beds. La Constante is also a first-rate kind and a great cropper here, and so is Ingram's Rifleman, which has borne fruit this year $3\frac{1}{2}$ inches in diameter. Oscar produces a large quantity of fine handsome fruit, but the flavour is not good. Empress Eugenie is a great bearer, and the fruit remarkably fine; and although the flavour is not quite equal to some others, I consider it the best of the very large kinds. To show you how strong Strawberries grow on our soil, I send you a plant of this variety, a last year's runner; all the plants are as nearly the same size as possible. The runners were pegged down in the ground, and planted in the beds $2\frac{1}{2}$ feet apart every way in August last, and I believe each plant has borne about half a peck of fine large fruit this season. The foliage was much injured by the severe frost in April. No manure was dug in when the runners were planted, but the rotten dung from an old hotbed was thrown over the beds in March. *Henry Doubleday, Epping.*

Strawberry Crop.—The Strawberry season here, and I believe in this country generally, and even in France, has been bad; the crops light, and the fruit, with a few

exceptions, flavourless. This is not to be wondered at. We have had a winter scarcely less severe than the preceding one, a worse January and February, and a wet March, and I may say a cold summer, the clouds pouring rains with the wind in the north-east; in June we had a severe frost or two. This will account for the plants not bringing their crops to maturity. In breaking up some of my plants, young and strong, I found the roots decayed. The plants, when I broke them up, were just making fresh roots from the base. Long-continued rains and an overcharge of moisture without sun is what has done mischief to the Strawberry plants, and also to our Roses. There will be many deaths, I fear, among the latter, if we do not soon get sun and hot genial nights. Mr. Miller, of Perth, N. B., called here and spoke in raptures of the Strawberry crop at Shardeloes, especially naming Sir C. Napier and Admiral Dundas. The management there no doubt is first-rate; and, if the garden is near the house, it is in a dry healthy situation, favourable for such a year. Many years ago I rode with Viscount Curzon, with whom I was staying at Penn, to Shardeloes, and the fine situation of the house, the lovely park, and fine sheet of water, bounded by an unfortunate road from Amersham, I have not forgotten. I have had an immense crop from a few sorts out of 57. Of sorts not Hautbois or Alpine, the best for heavy crop and good flavour, in all weathers wet or dry, are Rivers's Eliza, Wonderful, and Bicton White Pine. The first never fails in plant, or fruit, or flavour. It is the best Strawberry for manifold accomplishments that I have ever had the handling of. I speak of it after two tremendous winters and two wet summers. It nearly approaches the Queen in flavour, and with an immense crop of leaves, which shut out the blackbirds, it has the power to ripen its fruit with weak suns, and in wet weather. It is always rich and good in any weather, better still when the sun shines. This is a valuable attribute. In our humid and fickle climate, a great many Strawberries, usually good, have been perfectly "nasty." My beds of Eliza are my winter garden. They look like clumps of Firs in winter, deep green; and, by shooting the wet off their crowns, they have preserved their roots; and hence (originally planted with half inch bones) they have furnished a splendid crop of rich fruit, which we could not pick and give away fast enough. Wonderful is also excellent and very hardy, and like the former of quick establishment. It would be difficult to colour its tips, if it was as thickly covered with leaves as the former, but it casts its fruit beyond the reach of its leaves, at the base of the plant; hence it has been well coloured and next in flavour. In sunny years it is better of course, but it has been good flavoured. These two I have already increased. Bicton Pine has yielded a heavy crop of fine fruit of good flavour. It is still the best White, taken at all points. The Brittany White Pine is firmer, and higher in flavour, but it is a very shy setter. I will give it one more year's trial. Trollope's Victoria (a good southern Strawberry) has had a middling crop of eatable fruit. Here I must stop; and I will not speak of those that have failed, or, having fruited heavily, were uneatable. The season has been abnormal. I will now speak of a few of the trial Strawberries. A great many of these must stand over. The first, a single Hermaphrodite plant, is a complete success. It is No. 1 Hautbois, as yet unnamed, raised by Mr. Rivers from Belle Bordelaise. It is a very healthy plant, heavy cropper, and with fruit larger than I ever grew the monstrous Hautbois. The quality and flavour are excellent. It does not require a staminate; what will some of the learned manipulators say to this? Staminates, which give 10 runners to one of a pistillate or hermaphrodite, shall never come into my garden. Mr. Prince, of Flushing, will not approve of this. The next I speak of, will, I believe, be a very valuable Strawberry—Frogmore Late Pine: it is later than Eleanor, firmer in flesh, and very handsome. I spoiled my plants, which were very good, when they came, and their recovery proves their hardihood. The plants are doing well now. I shall increase it. The next is favourably spoken of in your Paper of Saturday the 19th. A good sized bed of them, with half-inch bones, will be planted to-morrow. It is a beautiful green glazed plant, very hardy and frost-resisting in its leaves and roots. The fruit is large and handsome, the type for show. Mr. Gloede, when here, told me that it was a heavy cropper in France. The flavour was better last year. I think in a less abnormal summer it will be very good; it is worth a trial. Eclipse and Sanspareil have not had a fair trial; but I think well of them, and shall increase them a few plants. They are both good in constitution, especially the latter. I fancy they will both be good for quality. Over all the other trial Strawberries I must cast a veil for the present. My object is not to point out what are bad, but what are good. If I cannot speak well of a Strawberry plant kindly sent to me for trial, the sender may be sure that I shall never open my lips against it. A few words in conclusion. Hautbois to succeed must be kept apart, and have their runners cut off during fruiting. Their roots require a deal of water, and their fruit as much sun as water. They should be dead ripe when picked. In two years they will run down 30 inches in ground even that has never been trenched. In all cases trench. After fruiting I dress all plants and keep off their runners; and, if it is dry weather, I water heavily. They at once make new roots from the base, send up a good volume of leaves, which have time to harden; and, if the next season is bad, I have plenty of Strawberries when most other people here have none. I would rather keep a plant alive than have to raise it from the dead in spring. *W. F. Radclyffe, Rushton Rectory, July 23.*

Potatoes and Rotten Tan.—The following paragraph has appeared in some of the Bath papers:—"During the week we have seen a most extraordinary crop of Ashleaf Potatoes, grown by Mr. Lock, of Belvoir Castle, Lower Bristol Road, in a piece of garden land adjoining the Bath Gaol. The average number each haulm bore was about 20 good sized Potatoes, and in some instances as many as 34 and 35 were produced. This unusual crop is the result of rotten tan, which has been used solely as manure to the land. Another gratifying fact is that throughout the entire crop, which is of some extent, not the slightest symptom of disease is exhibited. The boiling qualities of the Potatoes are also excellent. We feel pleasure in giving publicity to the above, as it is earnest proof of what this very useful esculent is capable of producing by good management and the use of proper manures, and could such a result be realised in other places the quantity of Potatoes raised in the same area of land would be at least double that of the present average crops." After many years experimentalising I have proved the above to be the best method I can discover for growing Potatoes, not only as regards producing a very large crop, but also as respects preserving them from disease. *D. Lock, Belvoir Castle, Twerton, near Bath.*

Societies.

ROYAL HORTICULTURAL: *July* 22 (*Floral Committee.*)—Mr. Leach of Clapham produced on this occasion well flowered vigorous plants of Disa grandiflora, and of a variety of that species called superba. Beautiful as the former is admitted to be, the latter is still more striking, its flowers being much more vivid in colour than those of the species, and in Mr. Leach's hands at least it seems to be equally free flowering. From Messrs. Veitch came an interesting collection of plants, among which were the glorious Lilium auratum, fully described at p. 644, and again alluded to in another column of to-day's Paper; a variety of Niphobolus lingua called corymbiferus; a Hemerocallis from Japan, with foliage beautifully striped, something like that of Arundo Donax versicolor; a new Japanese Farfugium with ample deep green leaves edged with white; a Saccolabium, probably a variety of Blumei; and various Caladiums and other plants remarkable for the beauty of their leaves. Messrs. Downie, Laird, and Laing again showed their Calceolaria Cloth of Gold; Mr. Geo. Smith, of Hornsey, had plants of a light coloured Fuchsia named Bridesmaid; and a pale variety of Fuchsia called Novelty, with flowers growing upright instead of drooping, was shown by Mr. Wyness, gr. at Buckingham Palace. A large panful of Round-leaved British Sun Dew (Drosera rotundifolia) gathered on Hampstead Heath, was shown by Mr. Pilbeam. A handsome seedling Picotee named Lady Elcho was furnished by Mr. Turner of the Royal Nursery, Slough, who also sent a bloom of the pretty purple Dahlia called Lord Derby, and cut flowers of the following Carnations, viz.:—Samuel Moreton, Premier, Mayor of Oldham, Florence Nightingale, Princess Royal, Mrs. Chapman, King John, Lord Rancliffe, Young Milton, Favourite, Twyford Perfection, and Dreadnought. From the same exhibitor also came the following Picotees, viz.:—Jessie, Mrs. Norman, Miss Meeking, Mr. Ingalton, Flower of the Day, Favourite, Mr. Varley, Rosy Circle, and three promising seedlings. Mr. Geo. Smith, of Hornsey, furnished beautiful trusses of the following kinds of Verbenas, viz.:—Garland, Dante, Duchess of Somerset, The Moor, Ariosto Improved, Warrior, Leader, Foxhunter, Great Eastern, Reine des Amazons, Zampa, Earl of Shaftesbury, Géant des Batailles, Mrs. C. Shepherd, Firefly, Mrs. Moore, Nemesis, Admiral Dundas, Magnificent, Souvenir de l'Exposition, Madm. H. Strenger, Le Bon Nicholas, Ocean Pearl, and General Simpson.

July 22 (*Fruit Committee*).—Mr. Turner, Royal Nursery, Slough, contributed Noblesse and Grosse Mignonne Peaches, and Hunt's Tawny Nectarine. Of Plums, Mr. Tillyard, gr. to J. Kelk, Esq., sent famous specimens of Greengage, Victoria and Jefferson; and from Messrs. Lane & Son, of Great Berkhampstead, came a fine dish of Kirke's Plum. Of Currants, Mr. Turner exhibited Wilmot's or Gloucester Red, Cherry Red, Red Grape, Black Naples, large White Dutch and Champagne, the last a grizzly-coloured sort. From Mr. Lakeman, gr. to J. Campbell, Esq., Grove House, Hendon, came White Dutch, Pearl White, and common White, Houghton Castle or Goliath, a fine red; Red Dutch, Knight's Large Red, Black Naples, and common Black Currants. A collection of Strawberries came from Mr. Turner, who furnished Rivers' Eliza, British Queen, Prince of Wales, Prince Arthur, Carolina Superba, Oscar, Crimson Queen, Elton, Sir Charles Napier, Wizard of the North, Victoria, Empress Eugenie, Eleanor, Rifleman, Filbert, and Frogmore Late Pine. From Mr. Ingram, Royal Gardens, Frogmore, also came Late Pine, Rifleman, Elton Improved, Cockscomb, and Fairy Queen, the last a conical kind of good flavour. From Capt. Goldney came Etonian, a good looking fruit, but acid. Myatt's Pine Apple, a small kind now seldom seen, but extremely rich in flavour, was shown by Mr. Wrench of London Bridge. A white seedling Grape of considerable promise was exhibited by Mr. Thomson of Dalkeith, and a long Marrow-shaped White-fleshed Melon came from Messrs. Carter of Holborn.

Notices of Books.

In the new *Edinburgh Review* we find among other very interesting essays, a capital notice of *Troyon's Lake Habitations in Ancient and Modern Times.*

"Twenty years ago, or little more, it was the commonly received doctrine that there were not any traces of man to be found in Europe attributable to any age earlier than that very recent period known, or, at all events, indicated to us through history. And now, simultaneously, and from various corners of Europe, a new school of inquirers, proceeding, as we shall see, by a method utterly different from any adopted before, inform us that this quarter of the globe was peopled for uncounted ages before history began—peopled by a race of whose memory history contains no record whatever. It tells us of entire populations, with their arts, customs, and languages, buried and forgotten before Troy Town was besieged, or the oldest piles of Cyclopean masonry were massed together by their mysterious architects: with annals far antecedent to the memory of Spenser's Eumnestes, who

—'all the wars remembered of King Nine,
'And old Assaracus and Inachus divine.'

From the mounds and dykes of farthest Scandinavia—from limestone caves and turf deposits scattered over Western Europe—from the bogs of Ireland and the lake shores of Switzerland—nay, from the gravel and sand strata of past geological periods, in Picardy and in Suffolk—the evidence accumulates upon us of the existence, and long continuance, of successive 'prehistorical' races of men; smaller men than ourselves; a 'feeble folk,' apparently, who must have had a difficulty in maintaining their existence against the inclemency of climate and the incursions of wild beasts, yet who must have struggled on, through multiplied centuries of unprogressive existence: so low, in some respects, that they did not know the use of metals until introduced at a comparatively late period; yet so far advanced in others, that they lived in numerous societies, practised some rude agriculture, buried their dead with peculiar usages, and were certainly a good way removed from the low savage type."

This rather long extract tells the reader exactly what the dissertation in question relates to. Its purpose is to show that the antiquity of the human race is something far beyond any thing hitherto imagined, and to enquire into the value of the evidence upon which modern historians found their belief that once there lived in Europe, in holes and caves and woods, and island cabins built on piles, a race of little men, now perhaps represented by Lapps and Finns. The latter are called lacustrine, because they secured themselves from wild beasts by impassible barriers of water, and their history has been most especially studied in Switzerland by Mr. Troyon, who ventures thus to describe their primitive life:—

"The first possessors of the soil (the wild beasts) had to retire step by step before a new population, which came to raise upon the waters its picturesque groups of cabins, the smoke from whose hearths spread itself in the air. Fires lighted on the beach, where the domestic animals were folded, served to keep at a distance during the night the carnivorous ones, who as yet had only learnt to know that element by the electric flashes of the storm. As soon as the lacustrine habitation had attained some development, thousands of piles supported a platform crowned by numerous circular huts, with conical roofs. A narrow bridge connected these dwellings with the shore; boats, fastened to the piles, served for fishing and for voyages of discovery. Among the trophies of the chase which decorated the dwellings, were the antlers of huge stags, bear-skins, the manes of wild boars, and the skulls of wild bulls. The furniture was of the most primitive kind. Leaves, dried Grass, Moss and straw heaped on the floor, served the purpose of beds. On the hearth, situate in the middle of the room, was placed the *pôt-au-feu* of the family. The earthenware vessels were grouped in some corner. The arms and various utensils hung from the roof. These slight habitations sheltered thousands of families during a number of centuries; but who will ever tell of all the scenes of joy and grief which they have witnessed!"

However much colour this statement may have received at the hand of the historian, no kind of doubt now remains as to the existence and in some measure the habits of the prehistoric races. As to their habitations, the traces of which are still visible beneath the waters of lakes, they seem to have been like those of the Malay Archipelago, which were only to be approached by bridge or wading. It is thought too that Irish *crannoges* were habitations of an analogous kind, also traceable into dim antiquity. The reviewer closes his sketch of Mr. Troyon's labours "with a strong impression that, notwithstanding all the industry, and the very ingenious reasoning, which our guides have expended in its investigation,

they have as yet done little more than excite instead of satisfying curiosity. The field has been scarcely opened. Already indications are mentioned, by M. Ferdinand Keller, of discoveries in the Italian lakes of the same kind with those made in the Swiss. We are told that piles very similar to those of the Swiss lakes were discovered in draining a mere at Wretham, in Norfolk, some years ago, together with deer's horns. Unluckily attention had not at that time been called to the subject. The waters of France and other countries, in particular the Loire, Rhone, and Garonne, whose courses were pointed out by M. Worsaae long ago as probable lines of migration of the primeval races—have yet to be thoroughly interrogated, and made to discover their secrets. The many caverns and recesses of the earth, used for similar purposes of security, have, as yet, been only very partially made to give up their deposits. And, without prejudging the results of future inquiry, it may, perhaps, be conjectured that the farther it is carried, the more probable it is that the sharp and definite generalisations hitherto made will be somewhat invalidated."

Among the other papers the reader will find a capital exposure of Carlyle's romance of Frederick the Great, for a romance it now appears to be; and a perfect crowd of amusing anecdotes into the bargain.

In the new Number of the *Quarterly* the reader will find a notice of the International Exhibition, delightfully amusing because of its crabbed criticism. It is plain that the writer has been looking at the place with spectacles whose peculiar quality is to distort what is seen. He has not a word to say in favour of the Building, inside or outside, of the Royal Commissioners and their management, or of the ceremonials* and public days, and his admiration of the contents, when admiration is extorted, is as niggardly and perverse as an atrabilious temperament can render it. The author of this curious dissertation seems to have a notion that he alone should have been entrusted with the destiny of the undertaking; that is to say in the absence of the good Prince whose loss is felt more and more every day. We doubt whether anybody else will be of the same opinion.

That mistakes have been made, are made, and will be made, we did not want the Quarterly Reviewer to announce. Such is the case with all human undertakings, and so will it ever be until man has some divinity to guide him. But to see in what is now a perfectly successful operation, a mere heap of errors piled on blunders, like a modern Pelion on Ossa, is rather too absurd. The goodness or badness of the management is to be decided by the result, and not by picking out small errors and putting them under a Quarterly microscope.

Of course the reviewer's fiercest denunciation is levelled at Captain Fowke; a skilful move, because it enlists the sympathies of all the disappointed gentlemen who think that they should have been employed to produce some miraculous design, which could have neither been built nor endured. Since no two people ever quite agreed in matters of taste, we leave this criticism to the judgment of professional architects, merely remarking that the building was intended not only to be looked at but to be used: a point that is sometimes forgotten by our architectural friends; as when they construct conservatories admirable for classical taste, but having the small fault that plants refuse to grow in them. The internal arrangements not being matters of taste, we may presume to describe them from our personal knowledge as being most convenient, and perfectly adapted to their purpose. The critic tells us indeed that he knew when he saw the engraving of the interior that the nave would be dark without being substantial; and had this been true a fault of the gravest would have been committed. The event has shown that he was no prophet then, and nobody would take him for one now.

When the reviewer condescends to notice the contents of this magnificent assemblage of earth's treasures, he is hardly more courteous than when carping at the Royal Commissioners and their Engineer. He thinks that the carpet makers have no business next the nave, because of their "ineffective productions;" but that the *furniture makers* should have had the preference; and this odd argument is so strongly put that one would almost imagine the reviewer to be himself a furniture maker. His feelings are shocked at the Victorian gold obelisk having been placed behind Minton's fountain; and at the wealth of two colonies having been allowed to intrude upon a painted window, although he shortly after informs his readers that "Glass painting alone is standing still;" if so one would think that the less it is seen the better. As to Russia, "if not actually retrogressive, she is stationary." He turns up his æsthetical nose at her church plate and her porcelain; it is "an ignoble function for the State art manufactory of such a nation to challenge the western world to admire the pips of a sham currant and the filaments of a make-believe gooseberry." Austria is complimented by being called "a loose bundle of nationalities;" "the other German States masquerade as the Zollverein." France gets civil treatment. As for Great Britain, her *furniture* would be her *chef d'œuvre* were it not for Armstrong guns. The British Colonies are permitted to occupy 21 lines of this review, at which we are not surprised, for the critic soars far too high to see such mean articles as minerals, wool, and those other raw materials which constitute the strength of nations; if he vouchsafes a civil nod to woods it is merely because he thinks they may be useful to *furniture makers*. Furniture again! It is clear—the reviewer *must* be, *is* some cabinet maker's man.

If in these remarks we have imitated our over wise reviewer, it has been in order that he may judge how he likes his peculiar style when it is applied to himself. We must not, however, be so unjust as to insinuate that the critic's remarks contain nothing worthy of praise. On the contrary, we may willingly recognise the justice of many of his observations, which well deserve consideration—we wish we could add respectful. Nothing for instance can be more true than the following sentence, which it is to be hoped will sink deep into the hearts of our own manufacturers. Prussia's "crowded shopful of Dresden China, with its figurantes in shepherdesses' dresses, and its nymphs in no dresses at all, shows how accurately yet how tamely this generation can go on copying a phase of art which lost all its value when it ceased to represent the feelings of the frivolous age which gave it birth, and which no thinking man can now look upon without remembering how near in date were the days of the Parc aux Cerfs and of the Petit Trianon, to those of the Temple and the Place de la Revolution."

And again, speaking of France:—"May it not be that the French in their present pursuit of serious art act somewhat like their wives in their cultivation of the art of dress? Frenchwomen boast of being the best dressed women in the world, but their excellence consists in the way in which they put on the clothes which are dictated to them by the tyrant *modistes*. Sometimes taste in dress takes a healthy hue, and then 'well-dressed' persons appear in becoming clothes. But fashion changes, the graceful full skirt is inflated and stiffened by the hoop, and the hoop has the additional abomination of a short waist superadded, till the ladies walk about looking more like bells than belles; the most neatly moulded head and the scraggiest skull are equally weighted with the menacing wreath, or topped by one of those peaked bonnets which have supplanted the modest head-gear of five or six years ago, and the 'best dressed woman in the world' is the one who has most slavishly conformed to these successive disfigurements."—Oh! si sic omnia.

After all the reviewer is compelled in spite of himself to offer a tribute of praise to the glorious spectacle that has somehow raised his bile. "Officials," he says, and he might have added critics, "may have done their little best to spoil the good result, but, after every abatement has been made, great gratification to multitudes, tangible instruction to a smaller but numerous class, will be the gross result of the Exhibition of 1862, as it was of that in 1851. Whether there will ever be another in England, or whether there will not, these two will have left their mark on history. The names of the Commissioners and of the engineer will be forgotten, while the date of both will be remembered as occurring in the reign of Queen Victoria, and as having been among the many wise conceptions for the public good of that Prince who had so eminently the capacity of swaying events by his consciousness of quiet power." And thus the furniture maker growls farewell.

The other articles are on *Brunel* (most interesting), *Sussex Antiquities*, *Lives of the Archbishops of Canterbury*, *Volunteers*, *English Poetry*, *the Sandwich Islands*, and *the Bicentenary*, all good, but with the last of which our Dissenting friends will not be greatly pleased.

* For instance, he is of opinion that the Royal Society, and all other Societies, should have been asked to take part in the processions on ceremonial days, a suggestion for which the learned critic must not expect the thanks of the Royal Society.

NEW BOOKS RECEIVED.—*Waste Products and Undeveloped Substances.* By P. L. Simmonds, Hardwicke. 12mo. A large collection of notes concerning all manner of things, vegetable and animal, which are wasted now, but which the author thinks may be converted to some useful purpose. Undoubtedly the world is a great treasure house of such articles; the first thing is to know of them, and that Mr. Simmonds abundantly teaches; the second is to ascertain whether it will pay to use them.——*Stainton's Natural History of the Tineina*, vol. vii., containing Bucculatrix and Nepticula. Van Voorst. As he began so Mr. Stainton goes on, carefully, minutely, patiently, resolutely. Assisted as he now is by Professors Zeller and Frey and Mr. Douglas, his book, when finished, will be a model of most untiring industry. The little moths to which so much talent is devoted are among our pests, some of them among our greatest; we now are taught their haunts and habits; and if we cannot subdue them it is not the fault of Mr. Stainton.——*Studies in Animal Life.* By G. H. Lewes. 8vo., Smith & Elder. A volume of reprints from the Cornhill Magazine, well written and agreeably selected. They relate exclusively to animal life, and form pleasant companions for the lover of Natural History. We select the following as an example of the author's lucid style.

"It is to Linnæus that we are indebted for the most ingenious and comprehensive of the many schemes invented for the cataloguing of animal forms; and modern attempts at classification are only improvements on the plan he laid down. First we may notice his admirable invention of the double names. It had been the custom to designate plants and animals according to some name common to a large group, to which was added a description more or less characteristic. An idea may be formed of the necessity of a reform, by conceiving what a laborious and uncertain process it would be if our friends spoke to us of having seen a dog in the garden, and on our asking what kind of dog, instead of their saying 'a terrier, a bull-terrier, or a Skye-terrier," they were to attempt a description of the dog. Something of this kind was the labour of understanding the nature of an animal from the vague description of it given by naturalists. Linnæus rebaptised the whole animal kingdom upon one intelligible principle. He continued to employ the name common to each group, such as that of *Felis* for the cats, which became the *generic* name; and in lieu of the *description* which was given of each different kind, to indicate that it was a lion, a tiger, a leopard, or a domestic cat, he affixed a *specific* name: thus the animal bearing the description of a lion became *Felis leo*; the tiger, *Felis tigris*; the leopard, *Felis leopardus*; and our domestic friend, *Felis catus*. These double names, as Vogt remarks, are like the Christian and sur-names by which we distinguish the various members of one family; and instead of speaking of Tomkinson with the flabby face, and Tomkinson with the square forehead, we simply say John and William Tomkinson.

"Linnæus did more than this. He not only fixed definite conceptions of Species and Genera, but introduced those of Orders and Classes. Cuvier added Families to Genera, and Sub-kingdoms (*embranchements*) to Classes. Thus a scheme was elaborated by which the whole animal kingdom was arranged in subordinate groups: the sub-kingdoms were divided into classes, the classes into orders, the orders into families, the families into genera, the genera into species, and the species into varieties.

"The guiding principle of anatomical resemblance determined each of these divisions. Those largest groups, which resemble each other only in having what is called the typical character in common, are brought together under the first head. Thus all the groups which agree in possessing a backbone and internal skeleton, although they differ widely in form, structure, and habitat, do nevertheless resemble each other more than they resemble the groups which have no backbone.

"This great division having been formed, it is seen to arrange itself in very obvious minor divisions, or Classes—the mammalia, birds, reptiles, and fishes. All mammals resemble each other more than they resemble birds; all reptiles resemble each other more than they resemble fishes (in spite of the superficial resemblance between serpents and eels or lampreys).

"Each Class again falls into the minor groups of Orders; and on the same principles: the monkeys being obviously distinguished from rodents, and the carnivora from the ruminating animals; and so of the rest.

"In each Order there are generally Families, and the Families fall into Genera, which differ from each other only in fewer and less important characters.

"The Genera include groups which have still fewer differences, and are called Species; and these again include groups which have only minute and unimportant differences of colour, size, and the like, and are called Sub-species, or Varieties.

"Whoever looks at the immensity of the animal kingdom, and observes how intelligibly and systematically it is arranged in these various divisions, will admit that, however imperfect, the scheme is a magnificent product of human ingenuity and labour. It is not an arbitrary arrangement, like the grouping of the stars in constellations; it expresses, though obscurely, the real order of Nature. All true Classifications should be to *forms* what laws are to *phenomena*: the one reducing varieties to systematic order, as the other reduces phenomena to their relation of sequence.

"Now if it be true that the classification expresses the real order of nature, and not simply the order which we may find convenient, there will be something more than mere resemblance indicated in the various groups; or, rather, let me say, this resemblance itself is the consequence of some community in the things compared, and will therefore be the mark of some deeper cause. What is this cause? Mr. Darwin holds that 'propinquity of descent—the only known cause of the similarity of organic beings—is the bond, hidden as it is by various degrees of modification, which is partially revealed to us by our classifications'—'that the characters which naturalists consider as showing true affinity between any two or more species are those which have been inherited from a common parent, and in so far all true classification is genealogical; that community of descent is the hidden bond which naturalists have been unconsciously seeking, and not some unknown plan of creation, or the enunciation of general propositions, and the mere putting together and separating objects more or less alike.'"

Garden Memoranda.

MR. WILLIAMS', PARADISE NURSERY, HOLLOWAY.—It may be interesting to know that the fine plants of the Madeira Orchis foliosa which were so much admired at our great exhibitions this year are producing seed

which Mr. Williams is of opinion will ripen; if that should prove to be the case, therefore, this charming terrestrial Orchid, which hitherto has been little cultivated in this country, may be expected to become plentiful. It grows as freely as an Achimenes, and to have it in perfection it should have nearly the same kind of treatment. Mr. Williams has it in deep pots and in shallow pans, and it succeeds equally well in both. The only point requiring special attention is to take care to provide efficient drainage; for if that is scanty or gets out of order the plants are sure to fall into ill-health.

With regard to fine foliaged plants, it may be worthy of notice that the whole of the beautiful specimens which Mr. Williams is in the habit of exhibiting are grown in a house to which no artificial warmth is applied from the middle of May till the beginning of October. Under this treatment they succeed perfectly, and even this year, sunless as it is, they get no stimulus in the way of fire heat. Nevertheless Cyanophyllum magnificum is furnished with foliage of unusual size and beauty, great Tree Ferns are making fine heads of leaves; a globular specimen of Gleichenia dicarpa, one of the very handsomest species of that fine genus, wears the deep green livery of perfect health, and Crotons, Palms, Cycads, and Caladiums seem quite at home under this comparatively cool mode of management, while at the same time a great saving must be effected in the way of fuel. Orchids too appeared to be in excellent condition; but to these, as a matter of course, more warmth is applied. Many of them are just being repotted, and they are otherwise being put in good order for the winter.

Hard-wooded greenhouse plants are now for the most part out of doors, in the shape of clumps interspersed with little walks and edged with variegated Coltsfoot, a plant well suited for that description of decoration.

Of hardy variegated plants Mr. Williams has an unusually fine collection, out of which has been formed a pretty little ribbon bed; it consists of Plantago purpurea, Funkia undulata, Variegated Coltsfoot, and a dwarf-growing variety of Festuca, the green, white, and red leaves of these plants forming a charming contrast of colour. Many other hardy plants might however also be employed for this purpose, and with equally good effect. A charming ribbon, made of summer flowering plants, also meets the eye on just entering the nursery. This consists of a line of Variegated Arabis next the walk, then one of dwarf Blue Lobelia, which is succeeded by Yellow Calceolaria and Scarlet Geranium, the whole being backed up with Perilla and Tritoma Uvaria, the last not yet in bloom.

Along the sides of the principal walk which runs up the centre of the nursery are various Conifers, which this dripping season seems to suit, for they look extremely green and healthy; even little plants of Thuja aurea are in excellent condition, their peculiar lively look contrasting well with that of a line of the grey Stachys lanata planted in front of them.

Masses of rockwork, ornamented with hardy Ferns and other plants suitable for such situations, have lately been put up in different parts of the nursery as screens, and with good effect. Various other little alterations of a decorative character have also recently been made, and everywhere may be observed evidences of taste and good order.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Now, when most kinds of hard-wooded greenhouse plants are out of doors, painting and other repairs required by the houses in which they are grown should be done, or at least as soon as the weather shall have become sufficiently dry for the purpose; for paint to stand well should only be put on when the woodwork is thoroughly dry. Therefore be sure that this is so before commencing, whatever inconvenience any delay may involve. As has been already stated it is now time to provide and encourage an assortment of flowers adapted for blooming late in autumn and early winter. Camellias if forced into wood will be tolerably forward. They should be kept out of doors in a good place on cool flags or cool ashes to prevent worms from deranging the drainage. Chrysanthemums should now or very soon receive their last shift if possible, using chiefly good fibrous loam for the purpose with plenty of charcoal. This is the best way to keep them stiff in habit and to preserve their lower leaves. Any necessary amount of strength may be imparted to them when the flower buds are formed by good liquid manure. Successions of Brugmansias, Clerodendrons, Euphorbias, Poinsettias, &c., should receive a last shift in order that they may produce a rich display in the conservatory. Climbers on ornamental trellises should be occasionally cut back with the view of having a succession late in the season when flowers become scarce. A batch of such things as Thunbergias, Ipomœas, Jasmines, Stephanotis, Passifloras, &c., should be got up ornamental trellises without delay; Clematis bicolor and C. azurea grandiflora force well in early spring, provided they are rested behind a shady wall for a month or two about this season. These latter plants although perfectly hardy are well adapted for conservatory trellises. Keep late-growing Orchids at the warmest end of the house. Give air liberally in the early part of the day.

FORCING DEPARTMENT.

PINERIES.—Plants growing in dung pits must be freely supplied with air to prevent their getting drawn, and they should also be kept near the glass and not allowed to stand too closely together, for strong robust plants need hardly be expected unless this is attended to, and weakly drawn ones seldom or never yield fine fruit. Give careful attention to such as are swelling; afford them plenty of warmth and moisture, and as much manure water at the root as the soil will bear. Remove useless suckers and gills as soon as they are perceived, which, if left, only rob the fruit and weaken the sucker which it may be necessary to leave on the plant for keeping up the stock. Do not allow young stock in free growth in the succession pits to stand too closely together, nor to sustain any check through neglect in watering, or the want of pot room. Plants growing in beds of soil must also be carefully attended to with water, keeping the soil in a nice moist state. Where rapid growth is required keep as warm and moist as can be done without drawing the foliage, and give plenty of strong clear manure water at the root, and the plants will make rapid progress for the next two months. In planting out Pines the bed should be from 18 inches to 2 feet deep, and should consist principally of good rich mellow turfy loam, well broken up, and carefully intermixed with a liberal sprinkling of clean sand, and a small proportion of leaf soil or good rich fibry peat; for when rough turfy soil is used and the bed is ever, from any cause, allowed to get thoroughly dry, it is very difficult to moisten it again, as the water passes off through the lumps without penetrating them.

VINERIES.—See that Vines from which the fruit has just been cut are free from insects, giving the foliage an occasional washing with the engine if red spider is at all troublesome; and use every precaution to keep the leaves in health as long as possible. Prevent the growth of laterals, which only shade and injure the principal foliage. Late Grapes colouring should be assisted with slight fires during wet cloudy weather, especially Muscats, which, after this season, where they are not already all but ripe, will require gentle fires, unless the weather should prove more bright and sunny than it is at present.

PEACHES.—The principal points to be attended to now are keeping the foliage free from insects, tying in growing shoots, keeping the borders in a proper state as regards moisture, and giving a sufficiency of air. Where the crop is nearly ripe cease watering, and expose every fruit to the sun's rays by removing any leaves that may happen to cover it. If this is not done, the shaded fruit will be deficient in colour.

MELONS AND CUCUMBERS.—If the weather is bright dew the plants overhead once or twice a week, observing always to use a finely perforated rose for the purpose, as a heavy stream breaks down the leaves, which often do not return to their proper position. For the same reason, when the plants require water at the roots, it is best not to use a rose, but to introduce the spout of the watering pot between the leaves. Sow seeds of Cuthill's Prince Albert or some other free bearing Cucumber for fruiting in fire-heated pits.

FLOWER GARDEN AND SHRUBBERIES.

Decayed blooms should be removed from Roses; for if allowed to hang they have a very untidy appearance and tend to encourage mildew. Roses, if in masses or beds, should be arranged so that their colours may be as much contrasted as possible; where this has not hitherto been attended to, the present arrangement should be carefully examined while the plants are in flower and any alterations noted that may be considered necessary to render the effect more satisfactory next season. This will greatly facilitate the operation of making alterations at the proper season. Proceed with the propagation of favourite sorts either by means of budding or cuttings. Many prefer having Hybrid Perpetuals, Teas, Chinas, and Bourbons on their own roots. Short jointed cuttings taken off now therefore will root freely if properly made and attended to under a hand-glass, provided the situation is somewhat warm and shaded. The readiest way of propagating them, however, is by means of cuttings taken off plants grown under glass for flowering in spring. If judiciously selected they will root almost as freely as Verbenas. In some neighbourhoods black fly is becoming troublesome on Dahlias and Asters. Where such is the case tobacco-water and soap-suds may be used with advantage. The strength of the mixture should be tested by dipping some of the shoots worst affected into it and using it sufficiently strong to kill the insects, but not so much so as to injure the leaves. It should be applied in the evening when there is a prospect of a dry night, using a fine syringe or finely rosed watering-pot, and giving enough to moisten the whole of the foliage. Go over beds of Verbenas frequently and remedy any defects that may be perceptible without loss of time. Where the stock is growing vigorously, pegging and training will involve considerable attention, and it will be necessary to inspect the beds frequently, removing decayed flowers, and cutting back such of the shoots as may incline to encroach upon the edging of the beds. Keep herbaceous plants neatly tied up, and cut off the flower stems of any that are becoming unsightly. Take advantage of leisure hours to put in cuttings of choice things. Keep gravel walks smooth and neat by weeding, sweeping, and rolling.

HARDY FRUIT AND KITCHEN GARDEN.

It may still be advisable to go over such trees as are over luxuriant and stop about half the shoots, beginning of course with the strongest; for a general stopping at this time would probably be of little farther service than to induce the production of a mass of useless spray, whereas stopping the stronger shoots or those which incline to grossness will divert the sap into the weaker ones, which will be strengthened, while the buds on the shoots that have been stopped will become full and plump without starting into growth. The only effectual method, however, of curing a gross habit of growth when this is the case in ordinary seasons is root pruning, or keeping the roots within proper limits by means of shallow, well drained borders. Should it be found that the shoots after stopping incline to start into growth, it will be advisable as soon as the fruit is gathered to open a trench at a moderate distance from the stem of the tree, cutting the stronger roots. This will be of the greatest service in checking growth, and will probably do more towards securing ripe wood than anything else that could be adopted. Early Pears should be gathered before they are quite ripe, by which their juiciness will be increased. Get Strawberry plantations intended to stand for next season trimmed as soon as convenient, cutting off and clearing away the runners so as to afford the leaves plenty of room. Attend to providing plenty of Lettuce, Endive, &c., for winter salads; also see that there is a good bed of Parsley provided in some sheltered spot, where it can be readily protected in severe weather. As observed in former Calendars, let all spare ground from Potatoes or otherwise be followed up with winter crops of some kind. Amongst the most valuable stand the old Green Kale and Cottager's Kale. The early Ulm Savoy is also very useful, provided it is got in sufficiently early and on well manured ground.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.

For the Week ending July 23, 1862, as observed at the Horticultural Gardens

July.	Moon's Age.	Barometer. Max.	Barometer. Min	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind	Rain.
Thurs. 17	20	29.857	29.797	70	50	60.0	62	58½	S.W.	.03
Friday 18	((	29.950	29.875	75	45	60.0	62	58½	S.W.	.00
Satur 19	22	29.985	29.943	72	45	58.5	61	58	S.W.	.00
Sunday 20	23	30.062	30.058	73	47	60.0	61	58	S.W.	.00
Mon. 21	24	30.166	30.133	72	36	54.0	61	58	W.	.00
Tues. 22	25	30.192	29.991	71	49	60.0	60	58	S.W.	.23
Wed. 23	26	29.901	29.893	67	42	54.5	60½	58	N.E.	.03
Average		30.017	29.955	71.4	44.8	58.1	61.0	58.1		.29

July 17—Clear; cloudy and fine; dry air; rain at night.
— 18—Fine; very fine throughout.
— 19—Fine; rather windy; cloudy; very fine.
— 20—Brisk gale; fine throughout.
— 21—Very fine; clear at night; nearly at freezing towards morning.
— 22—Fine; cloudy; overcast; rain at night.
— 23—Rain; overcast; hazy clouds; fine at night.

Mean temperature of the week 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK

During the last 36 years, for the ensuing Week, ending Aug. 2, 1862.

July and August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 27 ..	74.5	18.7	63.2	17	0.98 in.	2	3	5	2	3	12	6	3
Mon. 28 ..	76.0	18.7	64.1	19	1.39	2	2	3	3	1	11	10	4
Tues. 29 ..	75.6	18.3	63.2	15	1.31	3	4	4	1	4	12	5	3
Wed. 30 ..	74.8	18.4	63.0	16	0.88	4	3	3	1	2	10	9	4
Thurs. 31 ..	74.9	18.3	63.0	14	0.66	2	4	2	—	4	14	8	2
Friday 1 ..	75.9	18.4	63.5	17	1.23	1	3	6	2	3	12	8	1
Satur. 2 ..	75.8	19.9	64.1	17	1.03	1	4	3	—	8	12	5	3

The highest temperature during the above period occurred on the 2d of August, 1856—therm. 92 deg.; and the lowest on the 1st of August, 1858—therm. 34 deg.

Notices to Correspondents.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

☞ CORRESPONDENTS are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

BAMBOOS: *L H.* The Nergali requires a rich damp soil in a warm place. It is not so hardy as Metake, nor so strong a grower. We find it succeed pretty well in clay in a shady plantation; but it prefers a better place.

BOOKS: *Q.* Cuthill's Treatise on the Strawberry may possibly answer your purpose.

FERNS: *A Fern Fancier* does not say where she wishes to grow Dicksonia antarctica out of doors. Yet to know the climate is indispensible. We have no knowledge of any such attempt having been made; but it would probably succeed in the south-west of Ireland, or even perhaps in some warm nook on the south-west coast of Scotland.

GARDENERS: *J W.* A garden labourer has no need to know anything of Botany, but a gardener who desires to rise above the low level ought to be familiar with at least the rudiments of the science.

LIME TREES: *Diss.* The excrescences are the galls of an insect.

NAMES OF PLANTS: *W W.* 1, The narrow-leaved Sweet Bay; 2, Phillyrea latifolia.—*A A R.* Bignonia jasminoides.—*Z N C.* 1. Probably Selaginella sarmentosa, but not sufficiently mature; 2, Selaginella serpens; 3, Asclepias curassavica; 4, A leaf of some Begonia.

PEAS: *W.* It is obviously impossible to form any opinion on Peas from gathered samples. We have handed those you have sent us over to the Fruit and Vegetable Committee of the Royal Horticultural Society for inspection.

PRUNING SCISSORS: *H. C., Hants,* begs to enquire whether Saynor or any other of the Sheffield cutlers are about to make any of the pruning scissors after Dodman's pattern, as he wants to purchase a pair, and would wait for that pattern, as he prefers it.

THE LATE ROYAL MARRIAGE.—We are assured by Mr. Harding, of Maddox Street, that he really did supply by express order from Osborne, the Wedding Bouquet for H R.H. the Princess Alice. That being so it appears that two bouquets were supplied, one by Messrs. Veitch and one by Mr. Harding.

THE LONDON MANURE COMPANY
(Established 1840)
Are now prepared to send out the following MANURES :—
CORN MANURE for AUTUMN SOWING.
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BLOOD MANURE for CORN.
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LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 0
These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.

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Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. Voelcker, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. Humbert, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

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The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
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3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
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Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

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An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.
One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.
It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.
It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.
No Establishment, either private, commercial, or manufacturing, should be without one.
Six feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12*s*. Longer lengths of Suction at 1*s*. 6*d*. per foot.
May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,
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H. J. MORTON and CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.
GALVANISED IRON ROOFING
for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d*. per yard.
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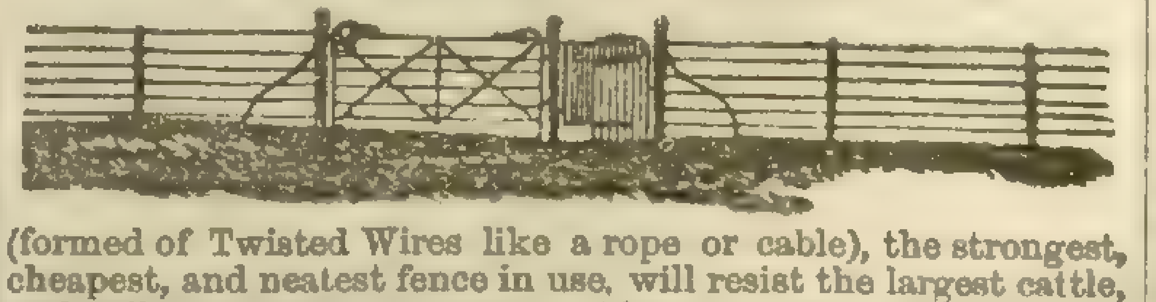

(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1*s*. per yard.
This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.
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GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.
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SHEFFIELD POULTRY, DOG, and HORTICULTURAL SOCIETY.
EXHIBITION of HUNTING HORSES.
The Committee have pleasure in announcing to the Nobility, Clergy, Gentry, and Inhabitants of Sheffield and surrounding District, that they have engaged the extensive ground, Cremorne Gardens, Sheffield, for the ANNUAL EXHIBITION of POULTRY, PIGEONS, RABBITS, DOGS, HUNTING HORSES, PLANTS, FLOWERS, FRUITS, and VEGETABLES, which will be held as above, on AUGUST 2, 4, and 5.
From the Entries made by the first Breeders in the Kingdom, the Committee anticipate a most successful Show.
ELEVEN SILVER CUPS, and MONEY PRIZES to the value of £400 will be offered for Competition. The Grounds will be entirely closed on the Sunday, and the services of the Police will be engaged during the Exhibition to secure order.
Military Bands will be in attendance during each day of the Show.
Entries close on Wednesday, July 23. Prize Lists and Forms of Entry may be had from the Secretary, Mr. Geo. Wostenholm, 49, Queen Street, Sheffield.
William Wood, Chairman.

MANCHESTER and LIVERPOOL AGRICULTURAL SOCIETY.
The ANNUAL SHOW of LIVE STOCK, IMPLEMENTS, and MACHINERY, &c., will take place at Warrington, on WEDNESDAY the 10th, and THURSDAY the 11th of September next. Entries close on the 11th of August. For Prize Lists and Forms apply to
T. B. Ryder (Surveyor &c.), Secretary.
57a, Church Street, Liverpool.—July 26.

SPARKENHOE FARMERS' CLUB.
All Entries Close on Thursday, August 7.
This GREAT ANNUAL SHOW will be held at Leicester, on the 2d, 3d, and 4th SEPTEMBER. 1100*l*. will be awarded in Prizes, including 50*l*. given by the Mayor and Members of the Corporation.
Covered Sheds will be erected for Cattle, Horses, Sheep, and Pigs.
Exhibitors of Implements requiring Covered Shedding must make special application.
Hay, Corn, Straw, Cake, and Roots can be purchased in the Show ground at reasonable rates.
The sum of 1*l*. will be given to the Dairymaid who manufactures the first prize Cheese, and 10*s*. to the same for the second prize Cheese, in each of the four classes.
All Certificates of Entry, which may now be had of me, must be returned on or before August 7, except for Fruit and Flowers.
Further particulars may be had on application to me.
Thomas Davenport, Secretary and Collector.
Ashby-de-la-Zouch, July 26.

WARWICKSHIRE AGRICULTURAL SOCIETY.
The WARWICKSHIRE AGRICULTURAL SOCIETY will hold their GREAT ANNUAL EXHIBITION of HORSES, CATTLE, SHEEP, PIGS, IMPLEMENTS, WOOL, CHEESE, FRUIT, and FLOWERS, at Aston Park, Birmingham, on SEPTEMBER 17, 18, and 19, when PRIZES to the amount of NINE HUNDRED and SEVENTY POUNDS will be awarded.
More than half this amount is offered by the Birmingham Local Committee, and is Open to all England.
The Entries close on August 1.
Prize Lists and every information may be obtained on application to Mr. John Moore, Secretary, Warwick; or to
John B. Lythall, Local Secretary.
Offices, 14, Temple Street, Birmingham.

The Agricultural Gazette.

SATURDAY, JULY 26, 1862.

It is plain from the reports which have already appeared in our columns that liquid manure, whether it be the waste of our farmsteads and cow-byres, or that of our households and towns, is applicable only to Grass lands. Our instances have hitherto, however, for the most part been of the latter kind only; and, indeed, it is needless to state here what every body knows, that the use of liquid manure in ordinary farm management is more the exception now than ever it has been. The use of the water-cart, except perhaps at seed time, when it takes the form of the water-drill, is not extending. A ton of liquid manure may contain as much ammonia, and perhaps as much phosphate of lime, as a ton of farm dung; but the latter contains a large proportion of organic matters in the condition of gradual fermentation and putrefaction; and there can be no doubt that in the great majority of cases this serves a most useful and fertilising purpose on the soil. Experience thus bears witness to the merits of ordinary farm practice; and the dung cart is not likely to be supplanted, hardly even to be generally supplemented, by the liquid-manure cart. Where, however, liquid manure can be delivered through pipes by its own mere weight the practice is not likely to die out.

The only instance of the kind with which we are well acquainted is that which has been in operation now for many years at Lagg, near Ayr. There is on this farm, which lies on the hill top and hill side facing Ayr and the sea to the south of the town, a considerable quantity of arable land lying at least 100 feet below the farm-stead. All the waste of the cow houses, stable, and piggeries here flows into a tank which commands some

50 acres of this land, and into which water also may be turned at will. The tank holds 70,000 gallons, and is emptied 10 or 12 times every year over about 10 acres (Scotch), one quarter of the 50 acres just named. The rotation adopted on this piece of land is :—1. Wheat, generally sown in January and February; Italian Rye-grass seed (4 bushels per acre) is sown broadcast in April among the young Wheat, and hoed or harrowed in. 2. Italian Rye-grass is cut at least four times during the following year—manured with 1½ cwt. of nitrate of soda before the first cutting, and washed in with liquid manure—then receiving 1 cwt. of nitrate of soda per acre and a washing in with the liquid manure after every successive cutting except the last—ploughed up in November. 3. Beans—generally a heavy crop. 4. Swedish Turnips and other roots partly removed, and the land is then ploughed for Wheat.

The tank—70,000 gallons—emptied 10 or 12 times each year, yields about 120,000 cubic feet per annum, or 10,000 cubic feet, *i.e.*, about 300 tons per acre. The urine of 9 horses and 60 or 70 cattle, as well as the soakage and waste of all the yards and dung heaps, finds its way into the tank, so that, taking the nitrate of soda into account, the treatment of the land is most liberal. The water is laid on by underground pipes from the tank, and occasional hydrants, from which by gutta percha piping and a jet it is laid evenly over the whole land, the whole labour being accomplished by a couple of women. The produce is very large; 3 tons of hay have been made at a cutting per Scottish acre; from which we may infer that 12 tons of green food per acre are sometimes removed at a cutting. If 30 to 40 tons per acre per annum are thus obtained, it is a cheap and profitable undertaking. For the land is left the richer for the process, and very heavy crops of Beans and Wheat are obtained. The 12½ acres keep from 40 to 70 head of cattle and 9 horses during the summer months, or from May 1 till the end of October, which at the rate of 1 ton daily to every 30 head corresponds to between 30 and 40 tons per acre. In one instance, of which every detail of expenditure, including interest of capital and tear and wear of apparatus, had been carefully recorded, a profit of 12*l.* per acre was made in the year. And though this of course was an exceptional instance, depending upon successful marketing as well as good home management, yet Mr. Ralston is satisfied that his expenditure on tanks, underground piping, and labour of distributing the liquid, is profitable.

Perhaps, however, one of the most extraordinary establishments in the island, in which liquid manuring is adopted as part of the regular system of management, is that of Mr. Harvey, of Port Dundas, on the outskirts of Glasgow. There are here several distilleries, Mr. Harvey's among the number, and the spent malt (draff) and spent liquor of the stills (pot ale) are good cow food. There has thus gradually grown up in this locality under Mr. Harvey's energetic management one of the largest dairies in the kingdom—probably in the world. Cow byres some 56 yards long, and from 12 to 24 feet wide, according as one or two rows of cows are to be accommodated, stand closely packed, the whole surface of the ground being thus covered by a roof. And from 900 to 1000 cows are pretty constantly in milk. They are fed during winter partly on steamed Turnips, 7 tons being steamed daily in order to give one meal daily to 900 cows—also on coarse hay, of which as of straw they get between 20 and 30 lbs. a day apiece—also on draff, of which they receive half a bushel daily each—also on Indian Corn meal, of which they have 3 lbs. daily each—also on pot-ale, of which they receive three times a day nearly as much as they will take, *i.e.*, from 6 to 10 gallons daily. During the summer they are let out, a byre full at a time, for half a day to Grass, and coming in receive their spent malt and still-liquor and hay in addition. They are managed, cleaned, and fed by two men to a byre holding about 100 cows; the milking is done three times a day, by women who take charge of 13 cows in full milk, or double that number in half milk apiece. Between 4 and 5 (taking the winter management), the byres are cleaned out, and the cows receive a "big shovelful" of draff apiece, and half their steamed Turnips and meal, and a "half stoupful," probably 2 gallons, of pot-ale. They are also milked thus early. At 7 they receive their fodder-straw or hay. At 10 they get a "full stoupful" (probably 3 or 4 gallons), of pot ale. They are milked at noon. At 2 p.m. or thereabouts they are foddered again, and at 4 p.m. receive the same food as at the morning meal. They are again milked at 5 to 6, cleaned out and left till morning. The loss by pleuro-pneumonia in so large an establishment, thickly housed together, has been very great. Mr. Harvey has however at length got rid of it by never going to market for cows. He buys yearlings, rears them on farms near Port Dundas—does not bring them into his byres until fully satisfied that they are free of all infection—keeps them for a couple of years, bringing them to the pail at 3 and 3½ years old. They are chiefly Ayrshire and Short-horns, and being worth from 14*l.* to 20*l.* a-piece, an enormous capital is thus invested. Some 1500 acres of land are held close by, and a large extent of Grass land is watered from the byres. The whole waste of every kind of the establishment is pumped to a large wooden tank on the highest ground at hand, and thence by underground piping, extending in some instances for a mile or more, it is conveyed over about 500 acres of land. It is thus conveyed to one outlet in each field, and thence by pieces of metal piping fitting together, and by India-rubber hose at the end of this, it is conveyed over the whole surface of the field, receiving one good dressing at least twice a year. There are no means of giving an exact account of the resultant produce—for the fields are all grazed—every cow being turned out as we have said for half the day during the summer months. But Mr. Harvey is satisfied with this part of the large system, which as a whole proves profitable. As to the produce of the byre under the management thus roughly described, it is stated never quite to have come up to 2 gallons per day throughout the year for the whole number of cows in milk. But being close on this it must be supposed equal to nearly one-half more than is obtained under ordinary management in the dairy districts of England.

It is a fact of serious importance to which Dr. Anderson's analyses in the Part just published of the Highland Society's Transactions point—the untrustworthiness of Peruvian guano as the manure of constant quality which it has hitherto been supposed to be. The chemist to the Highland Society states it as a well known fact, that variations exist to the extent of 3 or 4 per cent. in the ammonia it contains, which though they have a most material influence on the value of the manure, are not recognised in the price, and hence but little attention has been paid to them by the farmer. They are natural and original differences in the article imported, and in no degree the result of adulteration.

Other differences, as of colour and density, have been latterly observed, and no doubt have also been attributed, sometimes if not always unjustly, to unfair dealing.

"During the last year or two a considerable quantity of guano has been imported of a dull greyish-brown colour, very different from that yellowish tint which is generally recognised as characteristic of the produce of the Chincha Island, and this has led to suspicions of adulteration on the part of purchasers which, however, have not generally any foundation, as these samples are quite up to the average."

Recently however differences have been observed, which for the very reason that they are natural, are of most serious importance. The first of these instances to which Dr. Anderson adverts, "was that of a very large cargo of what appeared excellent guano, and of which a considerable portion had been sold from the ship's side, when circumstances were observed which excited the suspicion of the merchant, and a sample was sent for analysis. It contained no less than 10 per cent. of sand, and 15 per cent. of alkaline salts. In fact the large amount of sand and of alkaline salts indicated an inferiority to the extent of nearly 25 per cent. The *sand* in this case was of a very peculiar kind, consisting of large grains mixed with small rounded pebbles about the size of a Pea, and rarely reaching that of a Bean, and was obviously not an adulteration. As soon as these facts were observed, analyses were made of different parts of the cargo with the result of showing that there was considerable variety in it."

These analyses resulted in 9, 13, 10 and 12 per cent. of alkaline salts respectively, and 4, 7, 13, and no less than 18 per cent. of sand.

"The occurrence of so large a quantity of sand in a genuine Peruvian guano (for there was no doubt about its being in the state in which it left the island), led to some inquiry as to its cause, and it turned out that the vessel, being a new and very fine one, the captain was unwilling to run the risk of waiting till his turn for loading came, and shipped his guano from a part of the island which had not been previously worked.

"About a year after the importation of this cargo another appeared, containing lumps of a very unusual appearance. They were not the soft whitish masses found in all good Peruvian, but were hard saline substances, which required a sharp blow of the hammer to break them, and then showed a dark grey appearance and crystalline fracture."

These lumps were of large size and had a saline taste—they contained 11, 21, and 27 per cent. of sand in the three instances in which they were analysed, and 9, 8, and 5 per cent. of ammonia. The alkaline matters, amounting to 32, 33, and 43 per cent., consisted for the most part of common salt. It is plain that the occurrence of such material in any quantity in a guano must materially diminish its value—and accordingly the three guanos in which these lumps were found gave on analysis no less than 10 per cent. of sand and 16 per cent. of salt.

The fact then seems to be that the importers of Peruvian guano are at length working beds of inferior quality, and this is the time chosen for raising the price of it to 14*l.* 5*s.* per ton! The last case quoted by Dr. Anderson is of a cargo whose analysis indicated the presence of from 13 to 39 per cent. of sand; and as he justly says:—

"The occurrence of these peculiarities in Peruvian guano is a subject which ought to excite some attention. All of them have been observed within little more than two years, and before that time irregularities of composition were entirely confined to a comparatively trifling variation in the proportion of ammonia, sand and other foreign matters being quite unknown. It is probable that the explanation of all this is to be found in a more careful clearing of the surface of the rock of which the guano islands is composed, by which means sand, and the salt produced by the evaporation of the spray, have been brought home. And this necessarily excites our suspicion, that the supplies of guano are approaching their end, or at least that the prospect of their exhaustion has led to a more thorough clearance of the surface. Whether this be the case or not, there is no doubt that cargoes inferior to the average are now being occasionally imported. Few of these reach the farmer in the state in which they are brought home, for the importers are most unwilling to admit the possibility of variations, which would render necessary the sale at various prices determined by analysis, and they prefer to mix the inferior guanos with those which exceed the average, and thus to secure uniformity. I know that this was practised in relation to one of the cargoes, whose analysis I have given above. In other cases, however, though not without great difficulty, a reduction in price was obtained."

Nothing is more certain than that the raised price of guano and its failing quality are the best possible incentive to the manure manufacture; and it is satisfactory to know that the same paper from which we quote this account of recent importations of guano, gives an analysis of the so-called ulmate of ammonia, a new manure which is likely to be a useful competitor with guano for the custom of the farmer:

"It is a dark brown powder, in a high state of division, and is stated to be made by a chemical process, by which woollen are separated from Cotton and linen rags. Analysis showed its composition to be—

Water	9.21
Organic matter and ammoniacal salts	78.05
Protoxide of iron	2.88
Carbonate of lime	2.15
Alkaline salts	1.74
Sand	5.97
	100.00
Ammonia (ready formed)	0.88
Nitrogen, 10.44, equal to ammonia	12.68
Total ammonia	13.56

It will be noticed that the quantity of ready formed ammonia in this manure is small; and so far the name of Ulmate of Ammonia applied to it would not be chemically correct, although it conveniently distinguishes the substance. As a source of nitrogen, it is likely to prove of very considerable importance; and it especially deserves the notice of the farmer, inasmuch as it brings into use a supply of nitrogen which was formerly lost to agriculture.

On Friday next, Mr. Strafford is to dispose by auction of the large herd of pedigree Short-horns which have for many years been bred by Mr. J. Banks Stanhope, M.P., at Revesby Abbey, near Boston, Lincolnshire. About 50 head are descended from first-class stock, purchased at the celebrated Hendon and Fawsley sales, and also from Mr. Bolden, of Lancaster. Twenty-four heifers and 15 young bulls are by the 7th Duke of York from *Duchess 69th*, which was bought as a calf at the Tortworth sale for 400 guineas. And among the other bulls employed

of late years have been Grand Duke (10,284), Duke of Bolton (12,738), Emperor (14,505), &c. Among the eight or nine distinct families into which the herd may be divided we may name one including seven animals descended from *Lady Barrington*, a cow of Bates breeding, several of whose descendants were sold at Mr. Atherton's sale last week—one of them making upwards of 90*l*. The cows and heifers are chiefly in calf to the 7th Duke of York (17,754) and to George I. a three-year old bull of Mr. Stanhope's breeding, which is to be Lot 1 of the bulls to be sold next Friday. He won the first prize in his class, and the Marquis of Exeter's cup, value 25*l*., as the best bull in the yard at the Stamford Show of the Northamptonshire Agricultural Society the other day.

TESTING OF SEEDS.

REPORT BY THE ORDINARY COMMITTEE OF THE KELSO ASSOCIATION FOR ANALYSING AND TESTING MANURES, FOOD FOR CATTLE, AND SEEDS.

The Members of this Association having, at a General Meeting, which was held in the month of January last, resolved that the farm Seeds used by them this year should be tested for the purpose of ascertaining their germinating qualities, remitted to this Committee to make the necessary arrangements for getting this done. The Committee having got a competent person to test the samples of Seeds afterwards referred to, think that it will be interesting to the Members to have the following Report regarding his experiments laid before them. From unavoidable causes it was found to be impossible to test a greater number of samples this year. From the annexed Table, which shows the results of the experiments made with Clover Seeds, it will be observed that the first four samples were subjected to different temperatures, but the others were only tested in a temperature of 60° as it was found that there was no difference in the number of Seeds which vegetated, although those in the higher temperature came up sooner. The light and dark coloured Seeds of the first four samples were tried, and the results are also stated in the Table). It will be seen that

No. 1. White Clover	at 83*s*.	per cwt. produced on an	average of three trials—	50	Plants per 100 Seeds.
No. 2. Alsike	at 178*s*.	"	"	68	"
No. 3. White	at 72*s*.	"	"	52⅔	"
No. 4. Alsike	at 160*s*.	"	"	66	"
No. 5. White	at 80*s*.	"	"	86	"
No. 6. Alsike	at 130*s*.	"	"	92⅔	"
No. 7. Red	at 64*s*.	"	"	80⅓	"
No. 8. Yellow	at 28*s*.	"	"	73⅓	"
No. 9. White	at 84*s*.	"	"	42⅓	"
No. 10 Yellow	at 26*s*. 6*d*.	"	"	38	"

The per centage of weeds found in each sample is stated in the last column of Table, and in order to ascertain their description, and what proportion of them vegetated, 20 seeds were taken from each of the first four samples, with the assistance of a powerful lens, and sown, but it was not considered necessary to do this with the other samples. The soil was carefully calcined for the purpose of destroying any Seeds which might have been in it previously, and to make sure that none remained, a quantity of it was tried blank from 24th February to 2d April, but no plant of any kind appeared. The following was the produce of weeds :—

No. 1. 4 weeds out of the 20 sown appeared, viz., 1 Ribgrass, and the other three apparently the common dock of Clover fields (Rumex crispus.)

No. 2. 5 out of the 20 appeared, viz., 1 Grass, 1 Thistle, 1 Ribgrass, and 2 not known from the early stage of their growth.

No. 3. 1 out of the 20 appeared, viz., 1 Chickweed (Stellaria media.)

No. 4. 5 out of the 20 appeared, viz., 3 Grasses, and the other two a species of Rumex.

The samples were all true to name; had it been otherwise, it would have been easily observed, as there is a striking difference in the forms of the seed leaves (cotyledons) when fully developed. In the White Clover they are small and blunt at the extremity, with the base of the leaf running gradually into the foot stalk. The Alsike has slender foot stalks, equal in thickness their entire length, and terminating abruptly at the leaf, which is of a true oval shape. The Red has seed leaves similar to the Alsike, but nearly four times as large. The Yellow has large seed leaves, and of a dark green colour, with very short foot stalks.

The Committee do not think it necessary to make any remarks upon the results obtained, as the Members of the Association are sufficiently interested in the matter to know what further experiments should be made in future years.

TABLE REFERRED TO IN PRECEDING REPORT.

Description of Seeds.	Price per cwt.	No. of Sample.	Average Temperature.	Number of Seeds sown, and dates.	Number of Plants which appeared, and dates when counted.			Average Number of Plants per 100 Seeds.	Per centage of Weeds.
	£ s. d.								
White Clover ..	4 3 0	1	70°	100 .. Feb. 24	38 .. Feb. 28	48 .. March 3	48 .. March 6	50	2
"	"	"	60°	100 .. "	32 .. March 3	47 .. March 6	49 .. March 13		
"	"	"	50°	100 .. "	48 .. March 19	53 .. March 26	53 .. April 2		
Alsike Clover ..	8 18 0	2	70°	100 .. Feb. 24	57 .. Feb. 28	69 .. March 3	69 .. March 6	68	1
"	"	"	60°	100 .. "	55 .. March 3	62 .. March 6	62 .. March 13		
"	"	"	50°	100 .. "	55 .. March 19	69 .. March 26	73 .. April 2		
White Clover ..	3 12 0	3	70°	100 .. Feb. 24	48 .. Feb. 28	55 .. March 3	55 .. March 6	52⅔	2½
"	"	"	60°	100 .. "	42 .. March 3	42 .. March 6	48 .. March 13		
"	"	"	50°	100 .. "	41 .. March 19	49 .. March 26	55 .. April 2		
Alsike Clover ..	8 0 0	4	70°	100 .. Feb. 24	37 .. Feb. 28	66 .. March 3	66 .. March 6	66	3
"	"	"	60°	100 .. "	48 .. March 3	63 .. March 6	65 .. March 13		
"	"	"	50°	100 .. "	59 .. March 19	67 .. March 26	67 .. April 2		
White Clover ..	4 0 0	5	60°	100 .. April 8	80 .. April 10	86 .. April 15	86 .. April 21	86	1¼
"	"	"	"	100 .. "	77 .. "	78 .. "	83 .. "		
"	"	"	"	100 .. "	80 .. "	88 .. "	89 .. "		
Alsike Clover ..	6 10 0	6	60	100 .. April 8	85 .. April 10	92 .. April 15	95 .. April 21	92⅔	1
"	"	"	"	100 .. "	86 .. "	89 .. "	92 .. "		
"	"	"	"	100 .. "	91 .. "	91 .. "	91 .. "		
Red Clover ..	3 4 0	7	60°	100 .. April 8	78 .. April 10	83 .. April 15	83 .. April 21	80⅓	1⅓
"	"	"	"	100 .. "	67 .. "	72 .. "	76 .. "		
"	"	"	"	100 .. "	81 .. "	82 .. "	82 .. "		
Yellow Clover ..	1 8 0	8	60°	100 .. April 8	67 .. April 10	73 .. April 15	74 .. April 21	73⅓	½
"	"	"	"	100 .. "	65 .. "	68 .. "	68 .. "		
"	"	"	"	100 .. "	64 .. "	78 .. "	78 .. "		
White Clover ..	4 4 0	9	60°	100 .. May 13 ..	28 .. May 20	41 .. May 26	41 .. June 2	42⅓	5
"	"	"	"	100 .. "	34 .. "	38 .. "	39 .. "		
"	"	"	"	100 .. "	44 .. "	47 .. "	47 .. "		
Yellow Clover ..	1 6 6	10	60°	100 .. May 13	39 .. May 20	39 .. May 26	39 .. June 2	38	¼
"	"	"	"	100 .. "	33 .. "	39 .. "	39 .. "		
"	"	"	"	100 .. "	32 .. "	36 .. "	36 .. "		
					Light Coloured Seeds.				
White Clover ..	4 3 0	1	65°	50 .. Feb. 24	23 .. March 4	30 .. March 8	30 .. March 13	60	
"	3 12 0	3	"	50 .. "	32 .. "	34 .. "	34 .. "	68	
					Dark Coloured Seeds.				
White Clover ..	4 3 0	1	65°	50 .. Feb. 24	20 .. March 4	23 .. March 8	24 .. March 13	48	
"	3 12 0	3	"	50 .. "	17 .. "	23 .. "	23 .. "	46	
					Light Coloured Seeds.				
Alsike Clover ..	8 18 0	2	65°	50 .. Feb. 24	28 .. March 4	35 .. March 8	36 .. March 13	72	
"	8 0 0	4	"	50 .. "	21 .. "	21 .. "	21 .. "	42	
					Dark Coloured Seeds.				
Alsike Clover ..	8 18 0	2	65°	50 .. Feb. 24	30 .. March 4	35 .. March 8	35 .. March 13	70	
"	8 0 0	4	"	50 .. "	34 .. "	34 .. "	35 .. "	70	

THE AWARDS AT KENSINGTON.

Exhibitors of Seeds and Foods.

Medallists.

Nation.	No. in Catalogue.	Name of Exhibitor.	Objects Rewarded and Reasons for the Award.
United Kingdom	700	Atkins, T. K. ..	For English flour made by Callard's process.
" "	702	Earl Darnley ..	For fine quality of Hops in the collection of Baker & Co.
" "	705	Butler & McCulloch	Series of dried culinary herbs.
" "	707	Carter & Co.	Seeds, flowers, and floral designs.
" "	708	Chambers, W. E. ..	Cereals, the Wheat being very fine.
" "	710	Christie, W. ..	Excellent wheaten flour.
" "	711	Davies, E. J. ..	Compressed hay and other forage.
" "	718	Kitchen, J. ..	Excellence of a pocket of golden Hops.
" "	719	Liverpool Committee of the International Exhibition, 1862	Very interesting collection of imports and their appliances.
" "	722	Payne, Caroline ..	For a pocket of Farnham Hops. Excellent quality and well cured.
" "	725	Raynbird, Caldecott, & Bawtree	Excellent seed-corn and seeds.
" "	736	Wellsman, J. ..	For exceedingly fine Oats.
" "	737	Abbot / Thomas Taylor	For excellence of quality of Hops in the collection exhibited by C. Woolloton and Sons.
Honourable Mention.			
United Kingdom	702	Cutbush, J. R. ..	Hops. In Baker & Co.'s Collection. Fine flavour.
" "	702	Pulham, D. ..	Hops. In Baker & Co.'s Collection. Fine quality.
" "	735	Webb, R. ..	For Mummy Wheat, Cobnuts, and Filberts.
" "	738	Wrench, J., and Sons.	Cereals. For Goodness of quality.

We referred to many of the Stands thus distinguished several weeks ago, and among others to that of Chambers (708), Raynbird (725), and Wrench & Son (738).

We also called attention to the Stand of Messrs. Sutton & Sons, of Reading, which to the eye of an agriculturist looks certainly one of the most important in the Class. And this opinion will, we believe, be generally entertained notwithstanding that it receives no award whatever from the Jury!

Exhibitors of Wool.

Medallists.

Nation.	No. in Catalogue.	Name of Exhibitor.	Objects Rewarded and Reasons for the Award.
United Kingdom	972	Cantor & Co. ..	Collection of Turkey sponges.
" "	975	Darney, J., and Sons.	For series of glues.
" "	1070	Fauntleroy, R., and Sons.	For series of rare ivories.
" "	979	Fentum, M. ..	Excellence of work in ivory.
" "	986	Heinrich, J. ..	Excellence of manufacture of tortoiseshel combs.
" "	989	Jaques, J., and Son.	Billiard balls and chessmen. Excellence of work.
" "	990	Jewesbury, H. W., & Co.	Fine collection of varieties of cochineal.
" "	999	Moore, W. S. ..	Stained brush handles, and specimens of work in ivory.
"	1004	Prockter & Bevington.	For series of glues.
" "	1005	Puckridge, F. ..	Excellence of manufacture of goldbeaters' skin
" "	1015	Stewart, R. S., & Co.	For workmanship in real and imitation tortoiseshell.
" "	1007	Royal Agricultural Society :—	
" "	—	Druce, Jos. ..	For Oxford Down fleeces.
" "	—	Garne, Robt. ..	For Cotswold fleeces.
" "	—	Greetham, Thos.	For Lincoln fleeces.
" "	—	Harris, T. ..	For Leicester fleeces.
" "	—	Harris, T. ..	For cross breeds fleeces.
" "	—	Neve, G. ..	For Kent fleeces.

THE AWARDS AT KENSINGTON (*Continued*).

Nation.	No. in Catalogue.	Name of Exhibitor.	Objects Rewarded and Reasons for the Award.
United Kingdom	1007	Royal Agricultural Society :—	
,, ,,	—	Radnor, Lord ..	For South Down fleeces.
,, ,,	—	Rodwell	For Down and Leicester fleeces.
,, ,,	—	Sandbach, H. B.	For Shropshire Down fleeces.
,, ,,	—	Sturgeon, Chas.	Pure Merino fleeces.
Ireland.	1007	Carrol	Excellence of quality of wool.
,,	—	Heygate, Sir F. ..	Excellence of quality of wool.
Scotland.	1007	Cairns, John ..	For Cheviot and Leicester cross fleeces.
,,	—	Finlay, Alexander, M.P.	For South Down fleeces.
,,	—	Hope, Geo. ..	For Cheviot washed fleece.
,,	—	Hunter, Jas. W. ..	For South Down and Leicester cross fleeces.
	—	Tweeddale, Marquis of.	For Highland washed fleeces.

Honourable Mention.

United Kingdom	1007	Royal Agricultural Society :—	
,, ,,	—	Dorrien, Chas.	For pure Merino fleeces.
,, ,,	—	Downing J. B.	For Ryeland fleeces.
,, ,,	—	Durnford ..	For Oxford Down fleeces.
,, ,,	—	Flocks of late Prince Albert	For Southdown fleeces
,, ,,	—	Horton, Thos.	For Shropshire Down fleeces.
,, ,,	—	Inge, Colonel	For Leicester fleeces.
,, ,,	—	Muirton, Mr.	For Kent fleeces.
,, ,,	—	Ransome, Mr.	For Down and Leicester cross fleeces.
,, ,,	—	Richmond, Duke of	For Southdown fleeces.
,, ,,	—	Royal Agricultural College	For Cotswold fleeces.
,, ,,	—	Sharpe, W.	For Lincoln fleeces
,, ,,	—	Sondes, Lord	For Southdown fleeces.
,, ,,	—	Tattenham, Col.	For Shropshire Down fleeces.
,, ,,	—	Walsingham, Lord	For Southdown fleeces.
Scotland	1007	McCallum, J. ..	For Highland laid fleeces.
,,	—	Reed, E.	For Cheviot laid fleeces.
,,	—	Dunbar, Sir G. ..	For Cheviot and Leicester cross fleeces.
,,	—	Swanson, Jas. C.	For Southdown and Leicester cross fleeces.

Exhibitors of Stable Fittings, &c.

Medallists.

United Kingdom	5983	Barton, J... .	For simplicity of arrangement in stable fittings, and for an invention for measuring corn.
,, ,,	6025	Cottam & Co. ..	For improved arrangement of stables, and for economic conservatories.
,, ,,	6059	Field, W., & Son	For a good collection of all kinds of horse-shoes now used in England.

Honourable Mention.

United Kingdom	6138	Lines, W. D., and Palmer, W.	For excellence in the manufacture of horse-shoes.
,, ,,	6150	Mathews, W.	For excellence in the manufacture of horse-shoes.
,, ,,	6159	Musgrave, Bros.	For excellence of manufacture in stable fittings.
,, ,,	6209	St. Pancras Iron Works	Excellence of workmanship in stable fittings.

PRESENT APPEARANCE OF THE CROPS.

Essex: *Dorwards Hall, Witham, July* 16.—I have seen a large breadth of the crops in this county within the last week, and I fear there is reasonable apprehension of a defective Wheat crop, especially in the white varieties. What is called here the "red gum" (the maggot of the Wheat midge?) is spreading fast, and the damage now in many fields amounts to one fourth, and in some instances considerably more than this. The weather for the last six or eight weeks has been cold, showery, almost sunless, and windy, and these atmospheric conditions occurring when the Wheat is on the bloom, an inferior yield of grain both in quantity and quality may be expected to follow. Barley, Oats, and Beans at present indicate average crops, but the latter is much infested with the black louse. Peas I think will be defective. It is too early to give an opinion upon this crop. Mangels show a good plant and are now growing freely. Swedes and common Turnips continue to suffer from the ravages of the fly, and a free growing plant is rarely to be met with Insect enemies of all kinds have been very destructive throughout the season, and they still prevail. But it is cheering to look at the Potato; up to the date of this note I cannot find a vestige of the disease. I have examined them in many localities and soils. Yesterday I went over upwards of 100 allotment gardens to determine prizes for cultivation, and I found all the early sorts nearly ripe and in excellent condition, not a tuber unsound. I attribute this to the healthy and dry state of the interior soil, for although we have had continued showers of rain for the last two months, we have had no heavy storms with thunder, which are generally the precursors of the disease in this root. The rain-fall here has been about the average since the 1st of January to the 30th of June (six months), my rain gauge shows only 11.11 inches. Wheat defective, below average. Barley good, perhaps above average. Oats fairly promising. Beans good. Peas questionable, too early to pronounce upon. Potatoes free from disease, promise a good crop. Mangels a good plant and growing well. Swedes greatly damaged by fly, very unpromising. Common Turnips, hardly any to be seen. Seeds: Turnips a great failure. Mangel doubtful. *Henry Dixon.*——*Maldon.*—I am very sorry to inform you that the blight on Wheat manifests itself more every day in Essex and Suffolk. One third of the entire crop will be lost. I firmly believe now that nearly half is already destroyed, and that not more than 2½ quarters per acre will be the average crop. It is rare to find any plots or ears free from the contagion, thick and strong crops on the best of lands suffering most. Most (on one side) of the ears are smitten most. I enclose a fair specimen of 2 kinds of disease it is infested with. Potatoes are still free from disease here, and the earliest are fast ripening. Seeds of all kinds ripen very slowly and badly for want of warmth and sunshine. *A. Hardy.* ——*Colchester, July* 10.—Turnip seed in this locality is about one-third of a crop. Swede weak, has much insect, and many of the bulbs are rotten or rotting, will probably yield about the same as Turnip. Mangel Wurzel is weak. *N. B.*

Gloucestershire: *Didmarton, Chippenham, July* 17.—I regret being unable to report so favourably of the growing crops in this neighbourhood, as I could a few weeks since. With a continuance of low temperature much of the corn presents a very sickly colour, is patchy and comes into ear irregularly and weak, Oats looking the best. Sun is much wanted to mature the crops, and harvest cannot be early; having little opportunity to cleanse the land properly during the wet spring, roots will be late and uncertain. Hay a good crop, but much injured, and a good deal yet to be secured. *Stiles Rich.* *Cirencester, July* 15.—The Wheat in this district looks tolerably healthy where the soil is dry and in good heart. The more forward fields have flowered. The later sorts are in flower. The ear came out small, but has since considerably improved; in some instances there are complaints of its being root-fallen, and certainly it is quite the exception to see a thick piece of Wheat. The yield will still depend greatly on the weather between this and harvest. It may under favourable circumstances be an average. Harvest will be much later than was expected at one time, the middle to the latter end of August. Barley, which was most unpromising three weeks since, has greatly improved; still straw will be short and the quality generally inferior. Oats are very variable. Beans and Peas generally good. Potatoes sound at present and growing fast. Root crops backward, in many cases resown on account of fly. *J. Coleman.*

Home Correspondence.

Royal Agricultural College.—I have waited more than a week in anticipation of a reply to Mr. C. Lawrence's letter on the present state of the College, from some spirited friend to the Institution. As however no one seems to consider it worthy of notice, I venture a few remarks, in the hope that it may tend to place the subject in a proper light before the public. The existing differences between the Principal and Professors are indeed a misfortune to every one connected with the College, and if allowed to proceed unchecked will undoubtedly, ere long, become a public calamity; yet from Mr. Lawrence's letter a stranger would naturally infer that this feeling is unknown in the neighbourhood of Cirencester (Mr. Lawrence writes from Cirencester), and that it had been pent up with the intentional and preconcerted determination of an outburst at Battersea. This however was not the case. The College affairs have for some time past, I am told, furnished a serious topic of conversation among the Cotswold farmers, who, one and all, have long ago learnt to appreciate the services rendered them by Dr. Voelcker, Professors Buckman and Brown, and they know full well the loss that their neighbourhood—apart from the College—must incur in the event of the resignation of any of these Professors. The one-sided discussion of these grievances at the annual dinner of the Royal Agricultural College Club appears to have been entirely opposed to Mr. Lawrence's ideas of propriety, but I must remind him that neither the British farmer nor the British farmer's son can avoid speaking out in a manly and straightforward way, and the threat of expulsion without a reasonable cause, which seems to be ever hanging over the heads of the present students, is powerless beyond a certain limit. It is only natural that as the cause for this estrangement is one-sided, so should the remarks of the various speakers have pointed in that direction. Mr. Lawrence regrets the absence of the Principal from the club dinner, and his consequent inability to give his account of the picture in which he unfortunately forms too prominent a feature; whilst all those professors who really feel an interest in the College and students, were present. Now I take it for granted that the Principal had as much notice of this dinner as any of the other professors—his non-attendance must have been entirely his own choice. Mr. Lawrence errs greatly in attributing the present flourishing state of the College to the existing management; and as far as the number of students is concerned, I believe I am correct in stating that Mr. Haygarth left at his death 102 on the books, which number has never been either exceeded or equalled; the present number I believe being about 80. Then with regard to the "numerous applications for future admission;" it is due mainly to three causes, viz.:—1st. The popular status given to the College by the able management of the late Principal (Mr. Haygarth). 2. Its connection with certain eminent professors of world-wide fame, under whose patronage and careful nursing it has grown for a period of 15 years. 3. The recommendations to it through the influence of old students who studied there during Mr. Haygarth's successful regime. And in proof of the above it was well said by the gentleman who proposed "Success to the College," at the late dinner, "that it will take many years of mismanagement to do away with the good work done by Mr. Haygarth, who, from small beginnings brought the college to a state of efficiency of which we are still reaping the fruits." Mr. Holland, as usual, was at his post at the dinner, and met with such a hearty reception from every one present, as he richly deserves; for in every emergency, come what may, he is always ready to meet it, and do his duty; a fact so well known as on all occasions to guarantee him the confidence of the professors, students, and shareholders; and as he has said that a thorough inquiry and investigation shall take place, the public may be assured that this will be the case. At the same time it is to be hoped that the other members of the council may be aroused to lend their aid and support to Mr. Holland in this all important question. Mr. Lawrence must remember that now the matter is before the public it will be discussed, despite any desire to hush it up. *Agricola.*

Drying Grain: 1856 *and* 1862.—There has rarely been a season of harvest in Scotland more calculated than the present (1856) to excite the anxiety of the farmer, or to put into peril the interests of the consumer of grain, and it has been difficult to look at the crops of Wheat and Barley, drenched by the rains in the last days of September and in the commencement of October, and in the best parts of Scotland, without asking the question, whether no means can be found to prevent the food of man being destroyed to such an extent, and the just hopes of the best farmers disappointed? The quality of all grain crops must necessarily depend primarily on the season and sunshine by which they have been ripened; but it rarely happens that the quality and sample would be seriously deficient, if the moment the crops have ripened they could be secured against the subsequent risks of the season. After the period of ripening has come, it may be asked, to what amount of deterioration is the crop liable? It is to be feared that in Scotland, at least in the present year, that amount is very serious. It may be assumed that the quarter of Wheat in perfect condition is worth at the present time 70s. Its possible deterioration from such a harvest as we have lately had may be taken at any sum varying from 1s. to 30s. a quarter; indeed, if the Wheat has sprouted in the field, it is lost as the material of bread, and is saleable only at a low rate for other purposes. The question is, whether at a cost which it is reasonable to incur the Wheat crop can be saved from the risks of the season, and its quality preserved at that standard of excellence to which the season may have matured it. It is similar to a case of insurance—a sum to be paid to cover a risk—uncertain in its degree, but the insurance certain to cover the loss, whatever it may be. My belief is, that such a system is attainable, and if it be, it ought to have a fair trial. It seems to me that it might consist in the following scheme of operations:—

	£	s.	d.
1. A field of Wheat to be cut the moment it is ripe, irrespective of the state of the weather, it being immaterial, so far as the crop is concerned, whether it rains or does not rain—to be cut by the scythe, and at a cost of about 8s. per acre	0	8	0
2. Each scythe to be followed by about eight women or young persons, whose duty it shall be, by means of a short knife, as the grain falls from the scythe, to separate the ears from the straw at a cost of about 8s. per acre	0	8	0
3. The ears of Wheat to be immediately put into sacks or carts properly fitted for the purpose, and at once carried to a drying house at the farm buildings.			
4. The drying house to be a barn or other building properly fitted with an apparatus for heating it with currents of dry air, of a temperature of about 120° or 130°. This temperature would expel all water and moisture from the ears of Wheat, in 4, 5, or 6 hours, according to circumstances, create a condition in which the grain would keep in the husk in the best manner, the sample being the best which the season had produced. All risk is from that moment at an end. The cost of the fuel required for this process could in no case, it is believed, exceed 1s. per quarter, in many cases only 6d., and labour 6d. or 1s. more; in all per quarter	0	10	0
Total cost per acre	1	6	0
But from this sum falls to be deducted the cutting down of the crop in the ordinary way, say ..	0	10	0
Total extra expense for 1 acre producing 5 quarters of Wheat	0	16	0

Nearly 3s. 2d per quarter, or 5d. per bushel.

This sum is to be placed against the possible deterioration in the quality and consequent money value of grain exposed to all the vicissitudes of weather. Is it reasonable to cover a risk and secure a certainty at this cost? In the case of Scotland in the present year, the answer no doubt must be, that over a wide extent, the actual loss incurred for exceeds the cost of the remedy proposed. It may be stated that an excellent and powerful heating apparatus may be erected for about 40*l*. The cost of separating the corn from the straw is taken at 8s. per acre (assuming 5 quarters of grain); the probability is, that in practice, it would cost less money. I have a strong persuasion that the whole operation would be practically accomplished for less rather than more money than has been estimated, and the larger the scale, the smaller must be the cost of the drying process—at all events, something between 4*d*. and 6*d*. per bushel. Another

consideration arises from the successful adoption of this scheme; the present system of threshing out the Wheat crop would be no longer applicable, the process of threshing would be applied to the ears alone, the straw would no longer pass through the threshing machine, and consequently a much smaller machine would be required, and much less power to work it. Inasmuch as power and labour are the equivalents of expense, so the discontinuance of powerful machinery and labour implies an important economy in this respect. There would be saved a costly machine, and a costly power of steam or horses, that of water being more rare. The manual labour would be much less, from the less bulky nature of the material to be dealt with; a very light machine would separate the grain from the husk and clear it of the chaff. Here, therefore, would be an important saving to set against the assumed extra expense of 3*s.* 2*d.* per quarter, or 5*d.* per bushel. The result or object to be gained seems to be, to place the Wheat crop, after it has ripened, in circumstances of certainty and security, independent of all weather, and to secure its quality and sample at the highest standard to which the season may have matured it. There would be no waiting for dry weather to commence the cutting down of the crop—it would be a matter of indifference whether it rained or not during harvest, except as regarded the comfort of persons employed; a new class of labourers would be introduced into the operations of harvest, it would no longer be necessary to have the most able-bodied at high wages, the labour would be comparatively light, and could be performed by the weaker and more numerous, without fatigue and at moderate wages, although, no doubt, the principle of contract would be introduced with advantage, and good wages might and ought to be earned, and vigour and despatch secured. It is to be observed that the process of drying by currents of pure and dry and heated air can have no injurious effect on the taste and delicacy of the flour. It is not a process similar to drying in a kiln by which the taste of grain is affected—the processes are totally dissimilar, except that both produce dryness. In conclusion, I may remark that the agricultural world is at present in pursuit of the important object of reaping by a machine as a substitute for the sickle and scythe, and it seems nearly to be attained. When that object is fully attained, it would only harmonise with the end and object of the present statement. The separation of the ears of wheat from the straw would be readily effected as the crop was laid on the ground by the action of the reaping machine—its position would give every facility for the operation. The substitution of machinery for manual labour would liberate a greater number of persons for the various parts of a new system of harvest operations. The complete success of the reaping machine would only facilitate the success of the drying system, which I am desirous to bring under consideration. *A Landlord, October* 1856. Since 1856 a vast progress has been made towards perfecting a reaping machine, indeed it may be said that it is an established implement in farming. The object of drying grain by heated air seems, therefore, to have made an advance also; can it not now make a still further progress? can a reaper not be found to cut the ears off the crop without the intervention of manual labour, leaving the straw to be afterwards cut by the scythe? It seems to be a most important object to secure the highest quality of grain in all seasons. June, 1862.

Farmers' Clubs.

WENLOCK: *The Manure and Food Market.*—Mr. MEIRE lately read a paper on this subject. He said:—If he was asked, as a practical farmer, what their test of the quality of manure should be, he would say that he would take a certain quantity of pure Peruvian guano and the same money value of artificial manure, and, with his field as his laboratory, he would test the quality by the crop produced. He had no doubt that it could thus be seen whether the artificial manures made by the different companies in England were genuine; and this could be at once told if they would bear the test. If the superphosphates which are sold in the market would come up to this test, in a commercial point of view, it would be clear that the firm which produced it were selling the *bonâ-fide* thing to their customers. With regard to the system of employing agents, he did not object to the agents themselves, who, in most cases, were highly respectable men, and who pushed their business with great zeal and energy; but he objected to the system, and there was not a doubt that it was becoming irksome to the practical farmers of England to have to attend to the calls of those gentlemen. He thought he might suggest — which he would do with great respect—that the business between the manufacturer and the farmer could be carried on in a much more satisfactory manner to both parties if it were transacted on the principle of the old wool sales. The committee of management connected with those sales took care to fix a day to suit both buyer and seller; and it was a fact that the sales were wonderfully well attended, and a large amount of business was always done, and a vast amount of good was done by that intelligent mode of doing business. The fact was, the farmers had not of late done justice to their intelligence, for they had not taken care to give their orders to the firms with which they dealt, in proper time and in a business-like manner, but kept buying in small quantities, just when they wanted the manure. The consequence was that the manufacturers were compelled to employ a large number of intelligent men as agents to push their trade. That was a mistake, for all these men must, of course, be paid by the men who buy the article. He would, therefore suggest that it should be suggested from the Club to the principal producers of manure in the midland counties, and ask them to meet them at Wenlock, or some central place, and try to agree to some arrangement which might be mutually beneficial to all parties. He was quite sure if some hundreds of men were to meet in some great agricultural hall at certain seasons, and have the dealers in manure to meet them, both parties would derive great benefit in the large saving of cost to the purchaser and expense to the seller.

Artificial Foods.—Mr. Meire next referred to artificial foods, which he believed were even more adulterated than manures. He defied any one to test the extent to which this adulteration was carried. The sale of these was also through agents; and if the consumer was not careful as to the parties from whom he purchased, he was almost sure to become a victim. Farmers did not go to the right market at the right time, and thereby laid themselves open to the smart dealings of the agents. He believed genuine oilcake was the best feed the farmers could have; but they seldom got the right article, and they bought in small quantities just when they wanted it, instead of getting large quantities at times when they could get it best. Now, in this, as in the case of manure, they should test it for themselves, and their cattle would be the best laboratory. He had himself for the last 12 months used Oats with oilcake for his sheep, and he never had lambs so healthy before. He must, however, observe that the grain should be old, or it would be hurtful rather than otherwise. He thought farmers ought to be free from Excise in malting their own Barley, as they could then produce excellent cattle food at a cheap rate, and so become competitors with the makers of cattle food. He had used in feeding upwards of a thousand bushels of Oats, and he never gave oilcake without Oats. He would not give his stock new Barley, for it would destroy them; and of this he had had practical experience. He could not agree with the four-course system, and thought that the five-course system of crops was much better for the land and the farmer. He had adopted the latter because he had a lease, and he found it to be the best. He thought that the landlords ought not to object to the farmers growing and selling anything they liked on their farms, if they had good security for their rents. Farmers ought to be allowed to sell any produce off the land, except their wives and children.

MR. EVAN DAVIES, of Patten, said he had long and earnestly urged upon the Club that it would be much better for the farmers not to purchase small quantities of manure as individuals; but they should go to some respectable manufacturer and give an order for 100 tons at a time, by which he had no doubt they would get it cheaper, for the manufacturer would not be obliged to pay a commission upon the sale of it, and it would secure a first-rate article, for their custom would be such that no firm would think of deceiving them at the risk of losing. He had always confined himself to the use of Peruvian guano until it became too dear; but since he had purchased bones, and dissolved them himself, and, if it were not for the inconvenience of this plan, it would be found by far the cheaper. He had found that in the greater portion of the manures sold there was a very large quantity of ashes and other things which were of no use to the land. It was, of course, necessary to mix some ashes to dry the manure sufficiently to make it work; but in most of the stuff offered for sale there was a large proportion of matter that was useless. There was no doubt that first-rate superphosphate manure could be made for 5*l.* per ton. If they were to unite together and give their orders to one house in which they had confidence; or, as different people no doubt had their friends and partialities, let them say to three houses, they would get much better served. That there was adulteration could not be doubted. He had seen some delivered to some of his neighbours that they could not separate, and which was not worth the trouble of wheeling off the road, for it stuck in lumps like glue. As to artificial foods, he did not wish to say much; it was a subject which he had mentioned several times to their Club. He had used for a long time Peas, Barley, Wheat, and oilcake together for feeding, which a friend of his said was such excellent food that, if it were patented, he would make his fortune by it; but he did not wish to make his fortune off the farmers. He was willing to work for them with his tongue and with his pen to support the interests of the farmers—a class who work industriously for their living, and deserved to do well. Mr. Davies produced a sample of Clover seed, which appeared to be as nice a sample as any man need look at; but, on being subjected to examination under a powerful magnifying glass, a great part of it was easily discovered to be small flint stones, which, he said, would help to weigh, but certainly would not grow. He advised every farmer to get one of the glasses which he had for examining seeds, as they would find it very useful. He might, he thought, say a word about oilcake, and mention that a friend of his had an opportunity of visiting a very large manufactory of oilcake, and he could not help observing that the bran was shovelled into the mill as fast as the seed, and sometimes faster. Now he thought it hard to pay 10*l.* or 12*l.* per ton for bran.

MR. SMITH, of Sutton Maddock, said with regard to the present system of farming, they were obliged to use some artificial aids, in order to raise the quantity of stock they required to meet the increased consumption of a continually-increasing population, and it behoved them to consider well what were the best for their purpose, and how they were manufactured. He believed oilcake to be the best they could have; but what had been recently stated in a circular should open their eyes, and put them upon their guard as to the purchase of it. It was stated that there were 15,000 tons more oilcake annually used in this country than there was of Linseed imported to make it of, and very little indeed was grown in this country, and to the extent of the difference the farmers were robbed. He thought, as a manure, there was nothing like a soluble phosphate. Perhaps some of the other manures, sold at small prices, might do something for the land at a period to be looked for in the future; but they wanted something for themselves as well as for their children. He was sure that manures were most fearfully adulterated. He gave some instances of several lots he had bought, which had been sold to him as something superior, but he had derived no benefit from them; they contained neither ammonia nor soluble phosphate. They must remember that they could turn their capital but once a year, and then it became a question whether manures or food were of the most importance. The reduction which was continually taking place in the price of condiments was very suspicious. He then spoke of the four-course system as perhaps well enough for twenty years ago, but not at all suited to the present mode of farming; and if farmers were continued to be tied down to it, it would become one of the greatest curses of the land.

MR. GRIFFIN, of Wolverhampton, said, with reference to Mr. Meire's remarks on the cost of agencies, the manufacturers would be very glad to get rid of it, and would be pleased to give a proportionate benefit to the farmers. As to adulteration, he could assure them that their works were always open to inspection, and anybody was welcome to go and see for themselves. Cattle foods they had been able to reduce, and he thought they should be able to do so still more. The success which had attended the sale of these articles had stimulated others to go into the trade; and there was one kind sold at 18*l.* 10*s.*, which he was quite sure should not cost more than 46*s.*, and leave the manufacturer a fair profit. Of course he should not mention names. He sincerely hoped the subject would be ventilated by practical men, and by clubs such as that now assembled; and if it were taken up generally he should be very glad.

The CHAIRMAN then moved a resolution to the following effect—"That it is the opinion of this meeting that a much greater degree of attention should be paid to the subjects of artificial manures and feeding stuffs than has been given hitherto by the farmers in general."

The motion was unanimously agreed to, and the proceedings terminated with a vote of thanks to the Chairman.

Reviews.

An Inquiry into the Relative Value of various Kinds of Food. By Proctor & Ryland. Birmingham.

We have here a pamphlet which marshals very skilfully a great many facts recorded by a number of feeders in the agricultural periodicals of past years, and deduces from them the value of Swedes, Clover hay, Beans, and Peas, Oats, Barley, oilcake, &c., in the manufacture of flesh. Any one wishing to learn what has been done towards the elucidation of this subject by the labours of practical observers and scientific men, will find in these pages a useful collection of facts. We must however warn him against one fallacy which the writers seem to have sanctioned by their mode of drawing inferences from one set of results and applying them to the explanation of another. Take the following as examples:—

"EXPERIMENT No. 1.

"The result of a very extensive trial of the increase of weight gained from the consumption of Swedes is reported by Mr. Morton, in the Journal of the Royal Agricultural Society, vol. x., page 358, showing that sheep gained 1 lb. of flesh from each 150 lbs. of Swedes consumed on the land.

"EXPERIMENT No. 2.

"Mr. Robert Smith reports an experiment in the Royal Agricultural Society's Journal, vol. viii., page 27, in which 2467 lbs. of Swedes were consumed on a field with a shed to run under, and produced 25½ lbs. increase of weight, which shows that 100 lbs. of Swedes, fed in this manner, is equal in effect to 150 lbs. consumed without shelter—a proof of the great value of shelter when it can be conveniently obtained.

"EXPERIMENT No. 3.

"The same gentleman reports another experiment which appears to confirm the above:—The sheep consumed 1995 lbs. upon the land, but had a paddock with a shed in which they could take shelter. This quantity of Swedes produced an increase of 26¾ lbs. live weight, which was equal to 75 lbs. Swedes to 1 lb. flesh; but as they were having the assistance of a Grass paddock, the increase cannot be traced to the Swedes alone. It must therefore stand just for what confirmation it gives to the previous experiment.

"Having assigned to Swedes a somewhat definite value according as they may have been consumed, we now

proceed to other experiments, in which various kinds of food have been used with them.

"The five succeeding experiments were carried out by Mr. Robert Smith, and reported in the Journal of the Royal Agricultural Society, vol. viii., pages 27 and 28:—

"EXPERIMENT No. 4.

Lambs were fed upon
½ lb. Oilcake, ¼ ,, Peas, 20½ ,, Swedes } daily for 15 weeks, each increased 33½ lbs.

"EXPERIMENT No. 5.

Lambs were fed upon
½ lb. Oilcake, ½ ,, Peas, 20 ,, Swedes } daily for 10 weeks, each increased 26½ lbs.

"EXPERIMENT No. 6.

Lambs were fed upon
1¼ lbs. { Oilcake, Peas }, 18½ ,, Swedes } daily for 10 weeks, each increased 33½ lbs.

The whole of this food was consumed in a field which had a shed to shelter the sheep. As shown in Experiment No. 2, Swedes thus consumed produced 1 lb. flesh for each 100 lbs. fed. At this rate the Swedes consumed in the three preceding experiments, weighing 4818 lbs., should produce 48½ lbs. flesh. The total increase of weight was 93½ lbs., so that after deducting for the meat formed from the Swedes, we have 45 lbs. remaining as that resulting from the use of 105 lbs. Oilcake and 105 lbs. Peas mixed together, showing that 4½ lbs. of mixed Oilcake and Peas will produce 1 lb. of flesh. A corresponding trial is also reported, in which no shedding was provided for the sheep.

"EXPERIMENT No. 7.

Shearlings fed on
½ lb. Oilcake, ¼ ,, Peas, 24 ,, Swedes } daily for 8 weeks, each increased 21½ lbs.

The weight of Swedes consumed was 1344 lbs., and as these were fed on the open field, without shelter, it would take (according to Experiment No. 1) 150 lbs. to make 1 lb. of meat. The total quantity of Swedes, therefore, produced nearly 9 lbs., which, deducted from the entire increase, 21½ lbs., leaves 12½ lbs. increase of weight as caused by the Cake and Peas. The quantity of Oilcake and Peas consumed was 56 lbs., and according to our calculation that 4½ lbs. is equal to 1 lb. flesh, this quantity ought to produce 12½ lbs., which is exactly the weight shown in this trial. This is a point of such importance that we shall not hesitate to quote another trial.

"EXPERIMENT No. 8.

Shearlings having a shed to run under received
½ lb. Oilcake, ½ ,, Peas, 20½ ,, Swedes } daily for 8 weeks, each increased 24 lbs.

Following a similar mode of calculation, we find 1148 lbs. Swedes consumed, and as the sheep had the shelter of a shed, 100 lbs. ought to produce 1 lb., and therefore we may calculate that this weight of Swedes produced 11½ lbs. flesh. In like manner, 56 lbs. of mixed Oilcake and Peas ought to produce, as already shown, 12½ lbs. of flesh, which is found to be the case, for the total of these two is again equal to the result of the experiment."

Now, although 150 lbs. of Swedes have produced 1 lb. of mutton, yet it does not follow that of the result of feeding on Swedes and cake, only 1 lb. of meat for every 150 lbs. of the former is to be put to the credit of the Swedes. Foods very often are increased in their efficiency by the addition of other ingredients to their material. Turnips may fail of producing any increase of growth whatever, and the addition of hay may make *them* a nutritious food. In fact there is an instance quoted in these pages which ought to have made this truth more distinctly recognised than it has been in these pages. Messrs. Proctor and Ryland say:—

"We are fully aware of the fact that there is a variation in the quality of food, and consequently there must be a difference in the product obtained by its use; but it is satisfactory to know that these are exceptional cases; and not the general rule. This difficulty will be easily met by the judgment and discretion of our friends as such cases arise; and we have, therefore, no hesitation in presenting them with the following summary, as showing a very approximate mode of calculating the relative value of the different kinds of food there mentioned.

	lbs.		lb.	
Swedes consumed in the field	150	produce	1	flesh.
Ditto Ditto with shed to run under	100	,,	1	,,
Good Clover hay	18	,,	1	,,
Beans	8	,,	1	,,
Beans and Peas	8	,,	1	,,
Oats	7	,,	1	,,
Barley	6	,,	1	,,
Linseed Cake	5 to 7	,,	1	,,
Linseed Cake and Peas	4½	,,	1	,,

"We may now proceed to compare the feeding value thus assigned to the above descriptions of food with their average market prices. When Swedes are removed from the land for consumption, a variety of expenses are incurred which cannot be noticed here. We must therefore take Swedes in the field, and there, without any expenses being incurred for shelter, we see 150 lbs. producing 1 lb. increase of live weight; if we estimate this increase as worth 6*d.* per pound, then 150 lbs. of Swedes should also be worth 6*d.*, which is equal to 6*s.* 8*d.* per ton. This value approximates very closely to the general opinion of stock masters. A meeting of the Oxford Farmers' Club was held in May, 1858, to consider the value of Swedes. The subject was ably treated, and much practical information brought to bear upon it. After the discussion it was agreed that, 'in the opinion of this Club seven shillings is the value of a ton of Swedes'—an estimate which very closely approximates to our own. In pursuing the same mode of calculation for the other bodies named, we arrive at the following results:—

				£ s. d.	
Good Clover Hay	18 lbs.	for 6*d.*,	equal to	4 6 0	per ton.
Oats	7	,, 6*d.*,	,,	0 2 8	per bushel of 40 lbs.
Barley	6	,, 6*d.*,	,,	0 4 2	,, 50 lbs.
Linseed Cake	5 to 7	,, 6*d.*,	,,	8 0 0 to £11 6 0	per ton.

"There are two very singular exceptions from the above list, viz.: Beans and the mixed Beans and Peas. According to the rate at which they were used it would appear that their feeding value is considerably below their market price.

Beans	8 lbs.	for 6*d.*,	equal to	3*s.* 9*d.*	per bus. of 60 lbs.
Beans and Peas	8 lbs.	for 6d.,	,,	3*s.* 9*d.*	,, 60 lbs.

"This is a point of singular interest and importance and one which demands a closer inquiry; for it is evident that when Beans or mixed Beans and Peas are used in the manner named in the Experiments 15 and 16, the results are very far from economical. To render this fact even more striking than it has already been shown, we extract from the Highland Society's Journal some very interesting experiments carried out and communicated by Mr. Bruce, in which Linseeds and Beans were used in conjunction.

"EXPERIMENT 19.

Linseeds .. 504 lbs., Beans .. .. 36 ,, } produced 169 lbs. increase.
Which is equal to
Linseeds .. 3 lbs., Beans .. .. ¼ ,, } producing 1 lb. flesh.

"EXPERIMENT 20.

Linseeds .. 48 lbs., Beans .. .. 310 lbs. } produced 96 lbs. increase.
Which is equal to
Linseeds .. .. ½ lb., Beans .. .. 3¼ lb. } producing 1 lb. flesh

"EXPERIMENT 21.

Linseeds .. 420 lbs., Beans .. .. 700 lbs. } produced 319 lbs. increase.
Which is equal to
Linseeds .. 1¼ lbs., Beans .. .. 2⅕ lbs. } producing 1 lb. flesh.

"The evidence of these experiments (19, 20, and 21) although offering a striking contrast to the result obtained by the use of Beans in the former experiments (15 and 16) are by no means contradictory, but illustrate a principle of great pecuniary value to all stock masters. Former experiments have shown that

8 lbs. of Beans are necessary to produce 1 lb. flesh.
6 ,, of Linseed ,, ,, 1 lb. flesh.

but the experiments (19, 20, and 21) recorded above, show that 3½ lbs. of mixed Beans and Linseeds will produce 1 lb. flesh. When Beans and Linseeds were used at separate times they do not produce more than one-half the increase of meat which they yield when given at the same time."

Notwithstanding the important influences which the commixture of food produces upon the feeding value of their several ingredients, yet there is a singular uniformity and agreement in the results of the experience of feeders here collected. This agreement is, indeed, so surprising, that it makes us more inclined to doubt than to believe in the methods which have led to it.

One of the facts on which so symmetrical a structure has been raised, is that observed by Mr. Morton, and quoted by him in a Paper on the Meat Manufacture, in the 10th Volume of the English Agricultural Society's Journal. But that Paper contains several other facts differing very materially from the one which has been selected, though all of them were equally true. The Paper was in fact condemned by a writer of the time (1850), in that it was so various in its teachings as to be of no service as a guide. A correspondent of the *Mark Lane Express* wrote thus about it:—

"In page 348 it is stated that an ox will pay 5*s* a week for 7 cwt. of roots and 35lbs. of grain; *i. e.*, 2lbs of meat at 6d. per lb. will be produced by 156⅘lbs. of roots and 7lbs. of grain, which appears to be information obtained by experience, and I believe may be considered conclusive. But in proceeding to page 355, we find it stated that the farm from whence these results have proceeded has produced annually, for a succession of four years, 1,360 tons of esculent food, of which 400 tons was either sold or consumed by horses, and the remaining 960 tons, with the assistance of an expenditure of £240 in the purchase of food, has produced 19,504lbs. of meat, of which, supposing 9,504 lbs. to have been produced by the outlay of £240, only 1 lb. has been produced by the consumption of 200lbs. of esculent food. It is stated, also, that the amount received in value for 4,000 tons of 'green food' in the four years, after all expenses were deducted, was only 3*s.* 4*d.* per ton: and the figures representing in detail the increase in the weight of the animals, state the cattle to have gained from 8 to 16 imperial stones each, the sheep 40 lb., and the pigs about 5 stones each: and, notwithstanding the increase in the weight of the sheep, being more than 40 per cent., and the cattle nearly 30, the profit on the sheep is represented to be 4½ per cent. only, and on the cattle 11, the average price during the period being 6*d.* per lb., sinking the offal, according to the returns of Smithfield Market; and the answer to the Society's question, 'What animals make the most meat out of the food they consume?' the hog is stated to be first, then the sheep, and the ox last. How such paradoxical reasoning can be made reconcileable to the rules of logic I am at a loss to know, but it may be admitted that such statements appear to furnish an answer to the Society's question, 'Whether it is consistent with improved husbandry that farmers should breed their own stock?' as, barring all want of judgment in the selection of animals, 4½ per cent. is far below the average of a breeding flock of sheep, and 11 not a remunerative one on the grazing of cattle.

'Now it appears singular that statements so little in accordance with each other should be published. It is assumed at the commencement that 150 lbs. of Turnips or 140 lbs. of Grass will produce a pound of meat, and it is afterwards shown by the example introduced that it has required more than 200 lbs. to produce a pound of meat. It is also stated that an ox will pay 5*s.* a week for 7 cwt. of Turnips and 35lbs. of grain, and it is ultimately represented that only 3*s.* 4*d.* a ton has been obtained for the esculent food for a succession of four years, when the ox makes a return of 6*s.* a ton for the Turnips, allowing 1*s.* per stone for the grain—a price ample for either Beans, Barley, Peas, or Oats. But we need not refer to such visionary statements for authority; for sheep are extensively produced to weigh from 18 to 20 lbs. a quarter at 14 months old, which gives an average rate of increase of 1¼ lb. a week during the whole time of existence, and they do not consume the amount of food per week in proportion for the average time. It is still also more singular that the sheep for an average of four years, after having gained in weight about 45 per cent., and the cattle nearly 30, the former should have returned a profit of only 4½ and the latter 11, unless there was some particular cause beyond want of judgment in the purchase of the animals. That such blunders should have emanated from one who appears to possess the requisites necessary for an author is unaccountable."

We republish this statement because it bears directly upon this question of uniformity in agricultural experience, which the writer seemed to believe in, and which Messrs. Proctor and Ryland in this pamphlet deduce in so surprising a manner—a manner so surprising as to be to us a confirmation rather of our doubts than of our faith in the methods they adopt. Mr. Morton thus replied to the criticism in the *Mark Lane Express*, and we reproduce his answer from that Paper of Sept. 2, 1850, here, because it bears upon the remarks already made.

"Your Correspondent, whom I have to thank for the friendly criticism of my essay on the above subject, which he published in your last week's Paper, cannot have had his 'attention directed to agricultural pursuits for some years' to much purpose, if he has not long before this discovered that the occurrence of anomalies and paradoxes in the results and the practice of agriculture is no ground for either surprise or suspicion—an almost constant succession of such things being the ordinary experience of the farmer. I submit, therefore, that unless he is prepared to disprove any of the assertions of fact which he has quoted from me, the circumstance that they disagree with one another does not justify him in calling them either 'blunders' or 'visionary statements.' In the absence of any external evidence bearing on their truthfulness, the use that is made of them in the argument—not the character of the statements themselves—is the only point which he is competent to discuss. And I must remind him that the charge of bad logic which he prefers is to be sustained not by merely exclaiming against the premises that are advanced, but by considering the propriety of their connection with the conclusions that are inferred from them; and this, except in a single instance, where any reader of the essay will perceive.

"Though, however, I do not believe that your correspondent has made out a case against me incapable of satisfactory reply, yet I am far from supposing such a case might not appear on further examination; and therefore, with your leave, I will take up in succession some of the points which he has raised.

"1. The ability of 150 lbs. of Turnip to produce 1 lb. of meat was not 'assumed'; it was *ascertained.* During the winter of 1842-3 a flock of 200 Cotswold and cross-bred (Leicester and Cotswold) tegs were fed on the produce of about 15 acres of Swedish Turnip, and the meat produced, calculated from their ascertained increase of weight during a period of about four months, corresponded to 1 lb. for every 150 lbs. of the Turnips consumed. This, therefore, I was at liberty to use as a fact; and, when once carefully determined, it was nothing to me, and should be nothing to 'P. I.,' as to its credibility, that it differed from the facts of any other experience. But, however good a fact, considering the extent and the period of the experiment, it might be, no extravagant use was made of it; no assertion was based upon it as to the value of Turnips per ton, whether grown in England or Scotland, and whether consumed by well-bred or ill-bred cattle or sheep. It was used only to determine the *relative* merits as meat-producers of certain rotations of crops, where any unlikelihood of its being an *ordinary* truth, as it would affect every case alike, could not influence the result of the comparison.

"2. I know it is inconsistent with the next statement quoted, namely, that 'an ox will pay 5*s.* a week for 7 cwt. of roots and 35 lbs. of grain;' that is to say, the two statements do not agree as to the meat-producing capabilities of 'roots;' but the latter is a fact, too, as many can testify. And this being the case, I might have used it in calculating *positive* results more fully than I did. My error lay in using these apparently inconsistent data to determine the *relative* merits of two rotations; to which, however, they seemed respectively adapted—the one yielding a produce of grain as well as of roots, and the other yielding green food alone. At the same time I do not agree with 'P. I.' as to the mode of exposing the inconsistency of these data. This is to be done, not by deducting from the *money* produce in the latter, the cost of the grain (and so obtaining 6*s.* or 7*s.* a ton for the roots alone, to compare with about 4*s.* 6*d.* in the former case), but by deducting from the *meat* produce, in the latter, the portion of it due to the grain consumed; for, in the case of ordinarily good stock, 35 lbs. of grain given weekly to each will more than pay its cost.

"3. But this, again, is inconsistent with the result of four years' experience on Whitfield Farm, when, after deducting the full cost of grain consumed, it has taken 200 lbs. of esculent food to produce 1 lb. of meat. Well! so long as these are all facts, we must even submit to them, whatever tale they tell; and it is only the *use* that is made of them that is open to criticism. And what use was made of this fact? It was used merely to point out that, with whatever accuracy the *relative* merits of certain rotations had been calculated, their *actual* ability to produce the quantities of meat attributed to them might, in many a man's experience, fail.

"4. Again: your correspondent is unable to see how the assertions that certain sheep and cattle had increased in weight 45 and 30 per cent. respectively, and yet had paid only 4½ and 11 per cent. on their value, are compatible with each other. But weight and value are by no means synonymous. Many an ox and sheep, before this, has been increasing in the one at the very time that it was diminishing in the other: the latter is determined, not by the intrinsic worth of the article, but by the relation of the demand to the supply at market. The assertions, however, as 'P. I.' has quoted them, were never made. The four years' cash account was cited only for the sake of its aggregate result, not to compare the contribution to it of cattle, sheep, and pigs respectively; for in that respect it was expressly stated that reliance was not to be placed on it.

"5. I do not at all think, with your Correspondent, that it is 'singular that statements so little in accordance with each other as these should be published.' On the contrary, I submit that, whenever any writer on an agricultural subject shall pretend to base his argument upon numerous assertions of fact, all telling exactly the same tale, that very circumstance will in most cases be *primâ facie* evidence of their unsoundness. There is no such thing as perfect uniformity of experience on this or on any other point in farm practice. And 'P.I.' does not prove my assertions to be 'visionary state-

ments' either by exposing their inconsistency, or by saying that sheep 'are extensively produced to weigh from 18 to 20lbs. a quarter at 14 months old, which gives an average rate of 1¼ lbs. a week during their whole time of existence; and they do not consume the amount of food per week in proportion for the average time. For, let him take even the comparatively rare case he here quotes, and deduct from the weight of carcase that is assumed whatever had been already attained before the lambs were put on Grass, and whatever is due to the grain subsequently consumed, and I do not believe that even here the result will so greatly differ from the conclusion which he condemns."

For these long quotations to which our notice of a useful pamphlet has given rise, an apology might be demanded were it not that they appear to be needed for the exposure of an error which is likely to mislead its readers, and into which a good many casual observers of agricultural experience are otherwise liable to fall.

Farm Memoranda.

COLLEGE FARM, CIRENCESTER.—June, usually the finest and clearest during the summer, has this year been remarkable for its gloomy chilly character. Up to the 15th we had showery weather, resulting in a total rain fall of 3.25 inches—after that dry but very ungenial. Heavy seed crops were cut, but could not be made properly, and in many cases over heating was the result. On the whole we were fortunate, spoiling little and that of very inferior quality, whilst our best and bulkiest crops were comparatively uninjured. In many cases the crop was not less than 35 cwt. per acre. There is still (July 15) much English hay about in this country and likely to be if the present unsettled weather continues. On May 29, our first Turnips were drilled, a few acres of early white Turnips for feeding off in August. Land in excellent condition after the steam grubber. Plant came up and went along well, and is now being singled. The land has recently been occupied, and last year was much infested by wireworm. It has been thoroughly worked and cleaned, and none are now visible. The rooks have lately however been very busy digging up whole rows, and if allowed to go on unmolested would destroy the crop in a few days. It appears that they dig up the plants indiscriminately, hoping to find a palatable grub or wireworm under each. No doubt there are wireworm or other enemies present; but the remedy so ruthlessly administered is far worse than the disease. We were able to plant about 30 acres of Swedes early in June, using the Wheeler's Imperial and the Skirving's Purple Top; these have come up well, and, considering the coldness of the weather, grow rapidly. There have been great complaints of loss of plant from the fly; our earlier sown roots have escaped almost untouched, which I attribute to the early thorough-cultivation by steam producing a deep fine seed bed with plenty of moisture underneath. With such a condition of soil and plenty of well-burnt ashes, I prefer the dry drill to the liquid drill, as with the same quantity of artificial, I think the crop in the former case grows on later in the autumn. The Mangels grow very slowly. The ends of the leaves had been attacked by an insect. It was a long time before we could see to hoe them; now the weeds are cleared away, and the land deeply stirred between, we may expect to see some progress. The heavy soils have suffered extremely from the wet spring, especially from the unusual weather in March, and those who had been most diligent in autumn work and early spring stirring were unfortunately the most injured, as the fine soil ran together, and the under crust became tough and raw. Weeds also grew more abundantly. Much of this land will not be planted at all, and it will be fortunate if the season allows of a sufficiently good bare fallow for Wheat. The steam plough will prove of great value in such cases. Since our own work was finished we have been tearing up some of these fallows where operations by horse power were next to useless. Considering the tough condition of the fallow land, a tilth could never have been obtained but for the frequent showers that occurred during the first part of the month, and as it is we fear the roots have been put in badly as a rule.

The early Wheats came out into ear towards the third week of June, as might be expected small in size and frequently attacked by true smut. The blossoming has been on the whole successful, and the result must depend in great measure upon the weather through July and the first part of August, with much more favourable weather than we have had. Wheats in this district will not be ready for the sickle before about the middle of August, and should the weather continue cold and stormy it may be delayed to near the end of that month, so the harvest cannot now be an early one.

Barley is very backward and has looked exceedingly yellow, and spindled. The rain has however had a beneficial influence where the soil was dry and porous. The yield may yet be an average. The straw must be short and the quality of a great deal inferior. Oats are looking well where the soil is good. The early sown fields will be ready as usual considerably before anything else, except Peas, which are a splendid crop, being fairly podded and abundant in straw. Beans are said to be quite a promising crop.

Sheep: the lambs were weaned towards the end of May and on young Vetches partly mown and partly eaten on the ground. From this they have been changed to Saintoin, the aftermath of seeds, &c., and are now doing well. They have been dipped in Bigg's composition, which can be depended upon to kill the vermin and clean the skin. By way of an experiment 50 were dipped in a solution containing M'Dougall's preparation, which appears to consist principally of carbolic acid. It killed the ticks, but the appearance of the wool when dry was not so satisfactory as when Bigg's composition was employed. The remainder of the fatting sheep, shearlings, have been sold at prices varying from 6½*d.* to 7*d.* per lb. *John Coleman, July* 15.

SOUTH HANTS FARM: *Report to July* 14.—The meadow and pasture hay has after a very tedious time been stacked in tolerable order; it however required a great deal of patience and forbearance to wait the time, but in every instance where parties waited for the favourable change in the weather they have been amply repaid, for in all cases where hay has received damage by rain it is essential that it should be carted to stack entirely free from water, as in that case it will always be fit for cattle of some kind, whether it be damaged little or much.—Hoeing the root crops is now the chief work of the farm both for women and men; the men are daily hoeing the Mangel crop, and the earlier this is done the better, as soon as the plants are strong enough for the horse hoe to pass between the lines without burying them; after the horse hoeing has been done about two or three days, the hand hoeing should then take place, and we hold that though there may be few weeds the hoeing should proceed; we have often known the hoeing delayed because but few weeds appeared, but the age and strength of the plant should be the guide as to the time of hoeing. With regard to the second hoeing it should also be preceded by horse-hoeing, and the sooner the second hoeing succeeds the first the better, because the weeds are so much more easy to destroy whilst young, and it often happens that in delaying the second hoeing the harvest is ready before the hoeing is completed; it should however be foreseen as much as possible, so as to complete the hoeing of root crops before the harvest begins, for the hoers always require more money for the work during the harvest time, besides which it is often difficult to obtain the labourers at any rate, and thousands of acres of roots in the country are annually damaged from this circumstance.

This is now the period of the year when the mode of cropping and the rotation adopted on a farm is seen to the best advantage; and as we have from time to time been stating the different methods pursued in the management and cultivation of our crops, we now propose to show the acreage of the different crops growing on the farm, which consists of 100 acres of arable or land under tillage. We have 40 acres of Wheat, 26 acres of Oats, 15 acres of Potatoes, 8 acres of Mangel, 2 acres of Carrots, and 2 acres of Cabbage and Kohl Rabi; thus the 100 acres are cropped at present. The sale crops extending over 81 acres out of the hundred seem to leave but little room and a very small acreage for the production of green food and fodder for stock; it must however be borne in mind that 6 acres of the Mangel crop are after hay cut early, and stacked in good condition. There are also 14 acres of Potatoes which are seeded with Turnips; the plants have established themselves with great regularity, and promise an abundant crop ready for pulling and storing (for use in the winter) previous to digging the Potatoes. Our root crops we add to largely every year by sowing Turnips after corn crops, and they succeed particularly well after the Canadian Oats; as the crop is always fit to cut before the Wheat we are enabled to put in a long lair of Turnips before the carting of corn commences, our practice being, to plough between the stooks and drill Turnips every day as fast as the land is cleared, the corn sheaves occupying one-third of the land; the other two-thirds are seeded before the carting and stacking of corn commences. About 20 acres of land are usually cropped with Turnips in this manner, the produce of which in some early seasons is very valuable, and in any season is important, for the climate of South Hants is so mild that the Turnips when late soon grow during the whole winter when the weather is open.

It will be observed that the 100 acres of land cultivated according to the before named rotation of crops, whilst it affords 81 acres of saleable produce, yet it gives 46 acres of root produce of more or less value for the feeding of stock during the year, our object being to grow the greatest amount of saleable produce in the summer months, and to maintain the largest number of valuable stock during the winter months.

The horses have been lately engaged drawing chalk, and heaping in readiness for application during the winter months. We have 7 or 8 miles to go for chalk, and it being very heavy cartage it is best done in the summer months if the time can be spared, which is not very often the case. As the harvest draws near, we have left off carting chalk, and commenced carting manure from the homestead and cattle boxes, and heaping it in the field nearest to where it will be required for use; we hold it to be desirable to have the manures heaped before harvest, in order that all the horse labour may be available during the harvest, and afterwards (until the Wheat season) for the autumn cultivation of the land, which is certainly the most important tillage work of the whole year, for whether the land is intended for Potatoes or roots of any variety, in the following summers it is a matter of immense importance that the land should receive a certain amount of autumn tillage, and we maintain that it is one of the greatest and most valuable points of root cultivation. *J. B.*

Miscellaneous.

Leather Soles for Horses.—To those who believe that leather soles may sometimes be useful by defending the horse's foot from loose stones in the road, I say that if horses be properly shoed, they will not be inconvenienced by the stones, and if the shoeing is bad, though leather may tend to hide some faults, it will not mend them. There is one view of the subject that has escaped notice; it is surprising to see men who, on other matters, try to follow in the track of Nature's laws, not alive to the truth that the contact of atmospheric air to the surface of the horse's foot is essential to the health of the organ. I regard cleanliness to be as necessary to the health of horse's feet in their domesticated state as it is to the feet of men. No part of the horse is more bountifully supplied with blood than the foot, which, besides serving for growth and nourishment, keeps up secretions, which, among other offices, maintain due elasticity in the hoof, and regulate the normal temperature. How, in the absence of any proof that leathern soles have ever been useful, they should have been tolerated so long is astounding. It is extensively known that the secretion which goes on over the surface of an animal's body cannot be obstructed by artificial interference without producing ill effects, and if obstruction be extended over a large surface, the general health, and even the life of the animal, is forfeited. What would be said by any one of common sense if it was proposed to cover the sole of the human foot with a tar plaster, and to keep it permanently on? Let this view be taken, and let it be understood that the argument applies equally well to the case of the horse, and it cannot fail to arrest attention.—*Mr. Gamgee, sen., in Edinburgh Veterinary Review for July.*

Calendar of Operations.

JULY.

MID-LOTHIAN: *July* 22.—A few slight gleams of sunshine remind us that it would still favour us with genial heat, did the overhanging clouds not intercept its bright rays. The nights are usually clear and cloudless and of course cold and wintry, the days are cloudy and thick and barren. Nothing grows with vigour, even the weeds are easily kept under in the Potato and Turnip fields. Strong wind from the west continued over the 21st from the 17th, blackening Potato leaves and stems, breaking down Beans, injuring the Wheat and knee-knapping the heavier fields of Barley. At present the prospects of the harvest are becoming less favourable, both as to Corn and Potatoes, and though the Turnip crop has improved there is still much room for amendment in the best, and the latest are far in arrear, many being unfit for singling. Genial heat is much wanted, and even should it now favour us, the harvest must be late, as the Wheat is scarcely at its full length, the Barley barely full out, and the Oats half way. It must be the middle of September before much can be cut down with present prospects. The labour of late has been in clearing up the cattle courts of the running manure, storing it in the fields in heaps for autumn manuring, horse-hoeing Turnips, furrowing up Potatoes, singling yellows, and hoeing Swedes; laying in lime from the kiln, and mixing up compost of lime and root-weeds; disposing of grazing beasts in the fat market, supplying their places with store stock—but with the risk of murrain being brought on to the farm with the fresh stock, it being prevalent. Grass however is getting short.

WESTER ROSS: *July* 21.—Ever since the beginning of June, the weather has been cold and wet and stormy, and the crops have made correspondingly insignificant progress. On Saturday the wind, accompanied with heavy showers of rain, blew tempestuously, which we fear has done great damage to the Wheat crop, much of it being broken down, so that it cannot rightly fill. Previous to this, and before coming into ear, many fields of Wheat from the redundance of wet, and the continuance of cold, presented an uncommonly unhealthy withered appearance, and we suspect that a crop so affected can scarcely bring to maturity an average yield of grain. Otherwise the Wheat crop was abundantly promising, and although the weather on the whole was wet, we had a few fine days when the autumn Wheat was in bloom, and we were hopeful that it had escaped free from rust; but broken down, and damaged as it now appears, we are meantime at a loss what to say, and must wait the result. Barley is much complained of as being thin and unpromising; and Oats even, that delight so much in wet, appear half drowned and starved. On dry early fields they are well advanced and abundantly strawed, but, in the higher districts where they are the staple crop, they are late and thin, and unpromising. The harvest must now necessarily be late, and should the weather before us be cold and wet and sunless as that now passing, the harvest will be later than we anticipate, and the quality of the grain worse than we would desire. A few weeks of dry genial weather would do much to remove our fears, and would yet secure abundant food for man and for beast. The Potato crop is so slowly advancing that it is in much danger of being overtaken by desease long ere the tubers be sufficiently matured. A late year is now-a-days almost certain to prove disastrous to the Potato grower. The few fields of Turnips were unusually and hopelessly late, but generally the crop was laid down in good time. The Swedes have been singled, but are making little progress. Common Turnips that have been in the ground for more than a month are not yet fit for the hoe, and altogether, meantime, the state of our Turnips is discouraging. Nor is the condition of our pastures greatly more hopeful. In many quarters they have become quite bare, and this, along with the state of our Turnip crop, has meanwhile lowered materially the price of store cattle. For harvesting hay the season has been most unfavourable. It was no easy matter to get it seasonably into ricks, and those who had that accomplished have now the infelicity of beholding it scattered anew athwart the fields.

CARNARVONSHIRE: *Penmaenmawr, July* 21.—The corn crops generally in this neighbourhood are looking well, especially taking into account the late sowing Welsh farmers are addicted to. Wheat I should consider an average crop, but some fields are blighted, so much so as to have the appearance at a distance of being fit for the sickle. A plot of Hallett's Pedigree is most promising, and very superior to every thing in this part of the country. Oats are a good plant, but at present rather short in the straw. Barley late, too late to form any opinion at present of the probable yield. Peas good; Beans but little cultivated. Potatoes are dwarf, strong, and free from disease; a large breadth planted. Green crops promising, but not first-rate. Hot weather is

much wanted. So far we have not yet had a real summer's day. *W. P. A.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending July 23, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0-6	Amount of Cloud 0-10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	17	29.90	58	54	S.W.	2	6	68	46	89	45	0.06	61½	59
Friday ..	18	29.95	60	54	W.	2	5	69	53	85	50	0.10	61	59
Saturday ..	19	29.99	59	55	S.W.	4	6	70	52	88	48	..	62	59½
Sunday ..	20	30.13	62	55	W.	3	4	70	50	74	46	0.01	61	59½
Monday ..	21	30.19	62	55	N.W.	3	3	70	50	85	47	..	61½	59½
Tuesday ..	22	30.22	64	56	S.W.	2	2	71	41	89	37	..	61½	59½
Wednesday.	23	29.95	56	55	E.	1	7	70	51	84	50	0.18	61½	59½

Notices to Correspondents.

COW PARSNIP: *Old Subscriber.* The Cow Parsnip *Heracleum sphondylium* has been grown for cow and pig food in this country. Mr. Taunton described its cultivation by himself in a communication to M. Vilmorin, of which the following account was given by our Correspondent *Wallia*, in our columns 12 years ago. "Mr. Taunton informed M. Vilmorin, that he had, for some years, been in the habit of sowing varieties of Heracleum in the autumn in patches amongst his Wheat. The young plant shoots in the following spring, and for the last four years, he says, 'I have fed them off regularly with sheep three times in the course of the year. I begin them in April, when they furnish me with the first green food I have to succeed my Turnips and other root crops. Young sheep that have never before fed on it seem to dislike it at first, but those that have eaten it the previous year devour it greedily, as also do the young stock in a very short time; and so well does it agree with them that I give them nothing else for the remainder of the year.' Mr. Taunton observed that sheep eat all the different species presented to them, without any apparent preference of one to the other. The H. sphondylium and H. sub-villosum seemed to be liked by cows, horses, and pigs; but there are some other kinds which the latter animals will not touch. The H. asperum seemed to be the most relished by the stock generally. In poor calcareous soils the plant will not attain that height and luxuriance of growth which distinguish it in its own indigenous deep rich earth. It requires a light soil into which its roots can run deeply down. Where Mr. T. had trenched the land the plants grew to the height of from 6 to 9 feet; but when sown on a hard shallow calcareous soil, its size, even after the lapse of three or four years, was quite insignificant. Therefore to prepare the land properly for it, the ground should be ploughed to at least the depth of 1 to 1½ foot; or, better still, it should be trenched even more deeply with the spade. The H. asperum grown in a sandy ferruginous soil and deeply trenched, proved to be biennial, and died as soon as its fructification was over; whilst, in a calcareous soil, where it was fed off by sheep (whether it was that the hard subsoil, arresting the spreading of its roots, prevented its running to seed, or that the same result was caused by the browsing of the sheep), it was as long lived as the other varieties, and, like them, for five years has not once run to a head. It is not easily destroyed where it has once established itself. A piece of ground in which the plant had been too thinly sown was ploughed up and harrowed for a fresh sowing. None of the old roots seemed to be injured by the operation; on the contrary, they shot out with increased vigour, seeming to prove that, in an extensive cultivation of the Heracleum, it should only be grown in land where it is intended to remain for several years; for it would be extremely difficult to get rid of it without far more trouble and expense than a mere ploughing. Mr. Taunton had reason to believe that the productiveness of the crop of Heracleum would, after previous manuring, be even increased by a good ploughing and harrowing, but had not actually put this opinion to the test of experiment. It would be very expensive to trench any considerable extent of land for its cultivation; and yet, without that process, the advantages to be expected from its rapid growth and gigantic size could scarcely be looked for. In a deep loamy soil it might be cultivated with less labour and expense, for its roots would be able to spread themselves freely. A root of the H. asperum, dug up by Mr. T., was longer and larger than any Parsnip he had ever seen; and he mentions, on the authority of an able chemist, that the roots of the Heracleum contain more saccharine matter than those of any other plant of the same family, although to the taste they are not so sweet as the Carrot." *Wallia.*

JAMES PHILLIPS AND CO., 180, Bishopsgate Street, Without, E.C., beg to hand their prices of

GLASS FERN SHADES.

	s.	d.
6 inches ..	1	4
7 „ ..	1	8
8 „ ..	2	0
9 „ ..	2	6
10 „ ..	3	3
11 „ ..	4	0
12 „ ..	5	6
13 „ ..	7	6
14 „ ..	10	0
15 „ ..	14	0
16 „ ..	18	6

TERRA COTTA STANDS FOR SAME.

6 inches	1s. 6d.	12 inches	2s. 9d.
7 „	1 6	13 „	3 0
8 „	1 9	14 „	3 3
9 „	2 0	15 „	3 6
10 „	2 3	16 „	3 9
11 „	2 6		

GLASS STANDS FOR SAME.

6 inches	1s. 0d.	12 inches	3s. 0d.
7 „	1 3	13 „	3 6
8 „	1 6	14 „	4 0
9 „	1 9	15 „	4 6
10 „	2 0	16 „	5 0
11 „	2 6		

TANK AQUARIA.
Glazed with Stout Sheet Glass, and Slate Bottoms.

	£ s. d.		£ s. d.
12 inches long	0 18 0	18 inches long	1 7 0
14 „	1 1 0	20 „	1 10 0
16 „	1 4 0	24 „	1 16 0

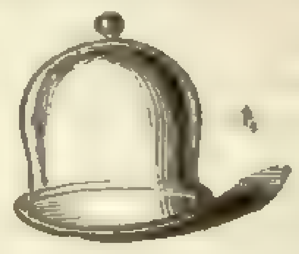
Larger or smaller sizes in proportion.

BEST ROUND AQUARIA.
With Ebony Stands.

	s. d.		s. d.
12 inches diameter	5 0 each	17 inches diameter	12 0 each
13 „	6 0 „	18 „	13 0 „
14 „	8 0 „	19 „	14 0 „
15 „	9 0 „	20 „	15 0 „
16 „	10 0 „		

FERN CASES.
With Span Roofs, same price as Tank Aquaria.
Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.
Milk Pans, and every description of Glass for Horticultural purposes.

THOMAS MILLINGTON, 87, Bishopsgate Street Without, E.C.
HORTICULTURAL GOODS.



PROPAGATING GLASSES.

3 inches	0s. 4½d. each.	12 inches	1s. 9d. each
4 „	0 5½ „	13 „	2 0 „
5 „	0 6½ „	14 „	2 6 „
6 „	0 8 „	15 „	3 0 „
7 „	0 10 „	16 „	3 6 „
8 „	1 0 „	17 „	4 0 „
9 „	1 2 „	18 „	5 0 „
10 „	1 4 „	19 „	6 0 „
11 „	1 6 „	20 „	7 0 „

HAND GLASSES.

12 inches	6s. 0d. each	18 inches	9s. 0d. each
14 „	7 0 „	20 „	10 0 „
16 „	8 0 „	24 „	12 0 „

If open top, 1s. extra.

CUCUMBER GLASSES. From 12 inches long and upwards, 1d. per running inch.

ROLLING PINS. From 12 inches long, 1½d. per running inch.

Improved ANTI-CORROSION and other PAINTS. GAS and LAMP GLASSES, GLOBES, &c. CHIMNIES of every description.
Not accountable for Breakage.

Oil Paint no longer Necessary.

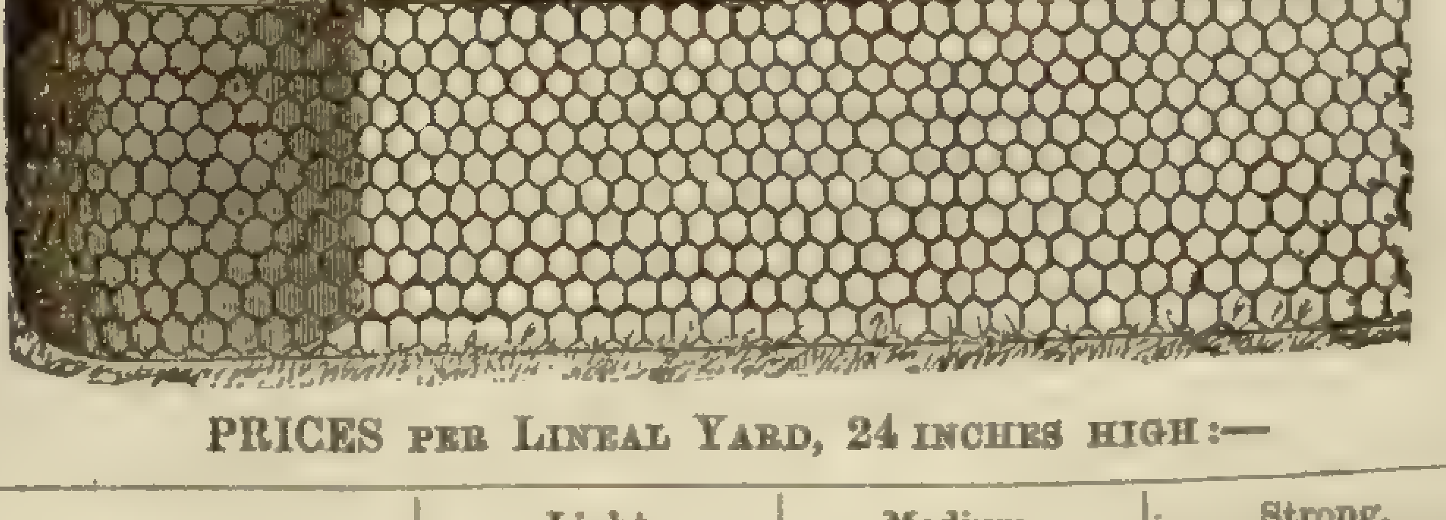
HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.
Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.
Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.
RANSOMES & SIMS, ORWELL WORKS, IPSWICH,
Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

TWO HUNDRED SETS
OF
STEAM PLOUGHING and CULTIVATING APPARATUS
HAVE NOW BEEN SENT OUT BY
JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD.
Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.
Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

NEW IMPROVED PREMIUM WIRE NETTING.

GREAT IMPROVEMENT,



WITH REDUCED PRICE.

PRICES PER LINEAL YARD, 24 INCHES HIGH:—

Size of mesh.	Mostly used for	Light. Japanned.	Light. Galvanized.	Medium. Japanned.	Medium. Galvanized.	Strong. Japanned.	Strong. Galvanized.	Extra Strong. Japanned.	Extra Strong. Galvanized.
2½ inch	Hares, Dogs, Poultry	3d.	4d.	3¾d.	5d.	4½d.	6d.	5¼d.	7d.
2 inch	Game or Poultry Netting	3½d.	4¼d.	4d.	5d.	5d.	6½d.	6½d.	8d.
1½ inch	Small Rabbits, Hares, &c.	4d.	4½d.	4¾d.	6d.	5½d.	7d.	7d.	9d.
1¼ inch	Smallest Rabbits..................	5d.	6d.	5¾d.	7d.	7d.	9d.	9d.	11d.

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

*** *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

HOT-WATER PIPES

DELIVERED TO ANY STATION IN ENGLAND.

J. JONES

BEGS to state that he can now supply HOT-WATER PIPES and FITTINGS delivered Carriage Paid to any Railway Station in England, and that he has made very advantageous arrangements for delivery at the following Stations; and parties availing themselves of this offer will in many cases get their Pipes at a Country Station at a less price than would be charged in London.

Alfreton
Accrington
Ashbourne
Adlington
Ashby-de-la-Zouch
Atherstone
Bradford (Yorks.)
Burton
Burnley
Bolton
Bingham
Bulwell
Beverley
Bury
Bedale
Barnsley
Barton
Birkenhead
Chesterfield
Chester
Chorley
Chelford
Crewe
Cheadle
Congleton
Colwich
Derby
Dewsbury
Doncaster
Driffield
Droitwich
Dudley
Edgebaston
Eckington
Farnworth
Gainsborough
Grantham
Halifax
Harrogate
Ilkeston
Kirkham
Knapton
Knaresborough
Lancaster
Leeds
Liverpool
Loughborough
Leek
Lichfield
Leamington
Leicester
Lincoln
Macclesfield
Malton
Manchester
Mansfield
Market Harboro'
Marton
Nottingham
Normanton
Northallerton
Northampton
Oakham
Oldbury
Oldham
Ormskirk
Oswestry
Oundle
Preston
Pontefract
Peterborough
Penkridge
Retford
Richmond (Yorks.)
Rotherham
Rochdale
Rugeley
Rugby
Redditch
Shrewsbury
Stafford
Stourbridge
Salford
St. Helen's
Settle
Skipton
Stamford
Sleaford
Scarborough
Selby
Sheffield
Tamworth
Thirsk
Tipton
Trentham
Thrapston
Uttoxeter
Ullesthorpe
Worcester
Wolverhampton
Wellington (Salop)
Wrexham
Warrington
Wigan
Wakefield
Worksop
Wellingboro'
York

Also to any Station in Derbyshire, Shropshire, Warwickshire, Cheshire, Lancashire, Yorkshire, Leicestershire, Worcestershire, Lincolnshire, and Staffordshire.

J. JONES will be happy to forward his ILLUSTRATED CATALOGUE of HOT-WATER PIPES, BOILERS, and FITTINGS, and PRICES for the same delivered Free to any Station; but parties requiring prices must state the quantities of Pipes, &c., required, and the Station to which they are to be delivered.

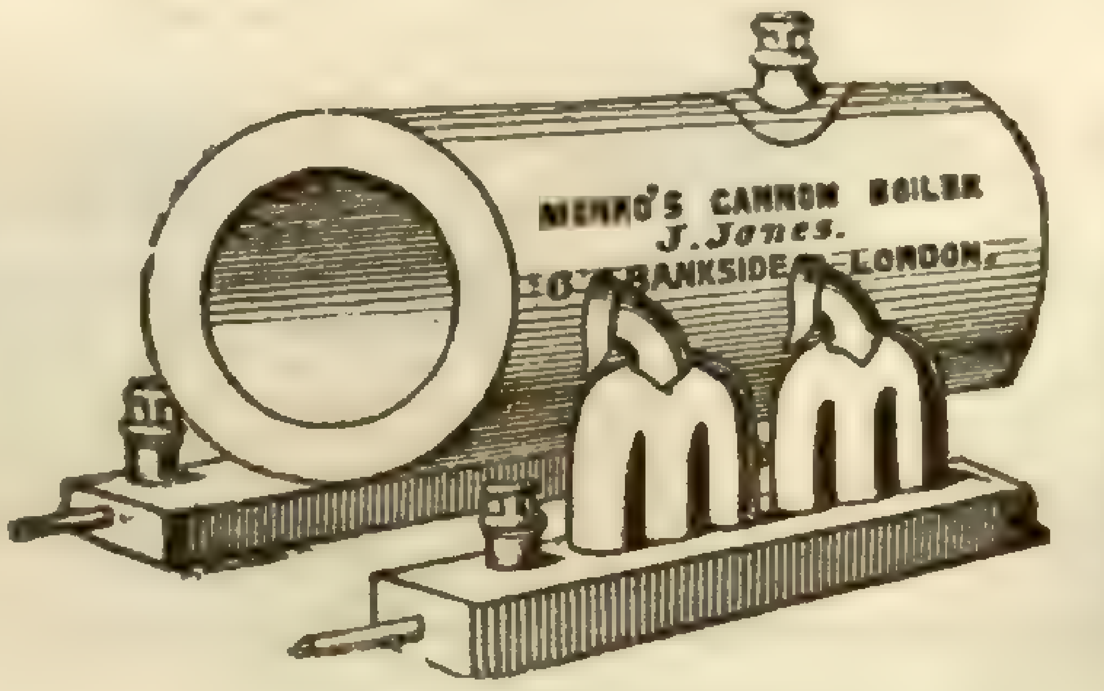
J. JONES,

IRON MERCHANT AND HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

20-inch	Wrought Iron	... £3 15 0
24-inch	"	... 6 10 0
30-inch	"	... 7 10 0
36-inch	"	... 8 10 0
48-inch	"	... 12 0 0
60-inch	"	... 20 0 0
72-inch	"	... 25 0 0



MONRO'S CANNON BOILER.

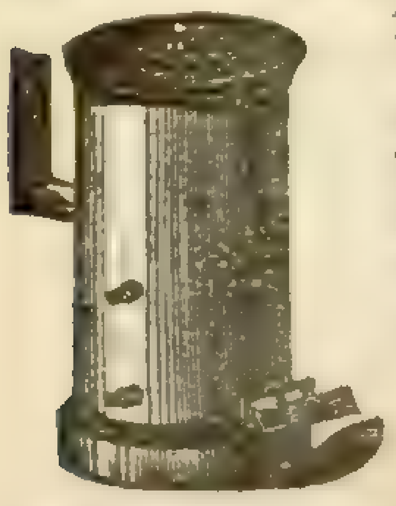
These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by J. JONES, 6, Bankside, Southwark, London, S.E.

Prices for HOT-WATER PIPES, ELBOWS, TEES, SYPHONS, VALVES, TROUGH PIPES, ORNAMENTAL COIL CASES, BECK'S PATENT VALVES, &c.; or ESTIMATES for HOT-WATER APPARATUS, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON, SADDLE, or CYLINDER BOILERS, will be sent, with an ILLUSTRATED CATALOGUE, free on application.

J. JONES,

HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, LONDON S.E.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

Hothouses for the Million.

INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.

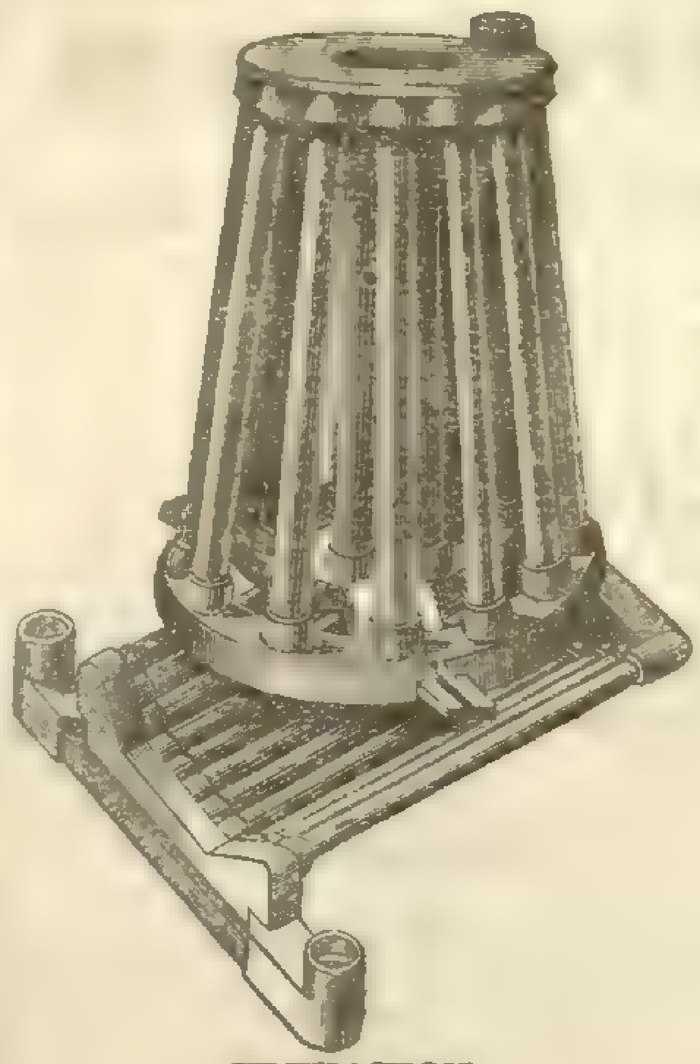
HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. **LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17*l.* SPAN ROOFS, 30 feet in length, for 33*l.*;** and all other dimensions at equally low prices. Delivered free to Railway Stations round London.

Illustrated Circulars with Lists of Prices, can be had on prepaid application to S. HEREMAN, 7, Pall Mall East, London.

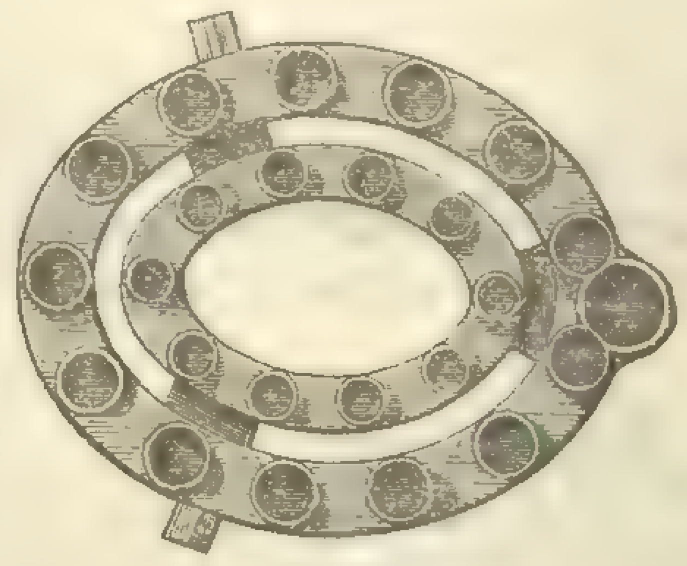
GRAY'S OVAL TUBULAR BOILER.

INTERNATIONAL EXHIBITION,

Class IX., No. 2119.



ELEVATION.



PLAN.

Mr. GRAY begs to call the attention of the Nobility, Gentry, Nurserymen, Gardeners, &c., to his

NEW OVAL TUBULAR BOILER,

acknowledged by practical judges to be a great improvement on every form of Tubular Boiler yet introduced. It has proved itself superior to all other Boilers for quickness of action and economy of Fuel, doing its work with one-third less the amount required by any other.

Extract from Report in Gardeners' Chronicle *of International Exhibition, May 24, page* 476.

"The upright form of Boiler is usually made on a circular plan, but the oval form given to Mr. GRAY'S variety of it is said to be preferable in consequence of its bringing the tubes in closer contact with the fire. The usual form of a furnace being a parallelogram rather than a square, it seems feasible that the Boilers on the oval plan should bring the tubes more completely within range of the burning fuel; and this being so the change, though a slight one, is no doubt an improvement."

They are made of all sizes, which, with prices, may be had on application.

JAMES GRAY, HORTICULTURAL WORKS,
DANVERS STREET, PAULTON'S SQUARE, KING'S ROAD, CHELSEA, S.W.

A FIRST-CLASS PRIZE MEDAL HAS BEEN AWARDED TO J. WEEKS & CO. FOR THEIR IMPROVED METHOD OF HEATING BY HOT WATER.

JOHN WEEKS & COMPANY,

HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS

TO

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN
THE TOWER OF LONDON

THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN
THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM

And NUMEROUS PUBLIC COMPANIES.

KING'S ROAD, CHELSEA, S.W.

E. DENCH'S HORTICULTURAL WORKS, 152, King's Road, Chelsea, S.W., Manufacturer of every description HORTICULTURAL BUILDINGS ether in Wood or Iron, or Patent Galvanised Iron. Glazed with Putty or without.
HOT WATER APPARATUS Manufacturer.

Card.

SAMUEL N. McGERROW, GENERAL HORTICULTURAL BUILDER, Knotty Ash, near Liverpool.

Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

Greenhouses, Orchard-houses, and Conservatories.

H. FREEMAN'S HORTICULTURAL WORKS, Triangle, Hackney, London, N.E.: established 20 years. Good substantially-made GREENHOUSES, glazed, ready for fixing. 40 feet by 13 feet, 50*l.*; 21 by 13, 28*l.*; 12½ by 10, 15*l.* ORCHARD-HOUSES 10 per cent. cheaper. A large assortment kept. Estimates given for heating, or any branch in the trade.

JOHN KENSHOLE, Jun., BUILDER and CONTRACTOR, Heavitree, near Exeter, begs to inform the nobility, clergy, and gentry, that he is prepared to execute GREENHOUSES, CONSERVATORIES, VINERIES, &c., with despatch, and on the most reasonable terms, combined with well seasoned material and workmanship. Estimates and designs given.

Horticultural Buildings and Heating by Hot Water.

BURY AND POLLARD, PARK IRON WORKS, New Park Street, Southwark, S.E., Manufacturers of every description of Buildings for Horticultural Purposes, with their Improved CONICAL BOILER for heating the same, are prepared to undertake works of any magnitude, and refer among others to the celebrated range of Forcing Houses at Her Majesty's Gardens, Frogmore, and at Sir Robert Peel's, Drayton Manor, constructed under the superintendence of their Manager, Mr. JOHN JONES.

Further information forwarded on application.

JOSEPH SMITH, HORTICULTURAL BUILDER, New Road, Hammersmith, W., has for SALE several GREENHOUSES, viz.:—

	£	s.
Span Roof, 27 feet long by 16 feet 6 inches wide	47	10
Lean-to, 24 feet long by 12 feet 6 inches wide	34	0
Ditto, 22 feet long by 12 feet wide	28	0
Ditto, 100 feet long by 13 feet wide, glazed with 21-oz. glass	100	0
Second hand, 15 feet long by 7 feet wide	15	0
Extra stout, 10 feet 6 inches by 4 feet 2 inches, Lights, 21-oz. glass	35	10
Smaller sizes 2¼ inches, thick, 9½*d.* per foot.		
50 6-feet by 4-feet lights, 15*s.* each, the lot	37	0

Houses made to order from 1*s.* per sq. foot; if Unglazed, 8*d.* Pit Lights with 15-oz. Glass, 8*d.* per foot; with 21-oz. Glass, per foot.

NOTICE.—The exorbitant price hitherto charged for Horticultural Buildings induces Messrs. HENRY SMITH & COMPY. to inform the Nobility and Gentry that upon application they can receive DRAWINGS and ESTIMATES Free for all kinds of HORTICULTURAL BUILDINGS and for HEATING by HOT WATER. Gentlemen wishing to construct their own can be supplied at a low cost with Working Drawings and Specifications.

HENRY SMITH & COMPY., Horticultural Builders and Hot-Water Apparatus Manufacturers, 31, Margaretta Terrace, Oakley Street, Chelsea, S.W.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.

Apply to JOSEPH MEREDITH, Vine Cottage, Garston, near Liverpool.

N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, TUBULAR, and Elliptic, from 24*s.* each. Improved Boilers and Iron Stands to use without brickwork, 50*s.* each. Valves from 12*s.* 6*d.* each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

Kent's Patent Weatherproof Glazing.

ALFRED KENT undertakes the direction of Horticultural Works, superintends personally and adapts his PATENT GLAZING for workmen or builders generally employed on Estates. Plans and elevations provided, the best sizes and forms suggested to suit the requirements of each building.

For terms of commission apply to A. KENT, Horticultural Builder, Chichester.

TO BE SOLD CHEAP, a Small New GREENHOUSE, a Lean-to, with a Door at each end, Painted and Glazed, complete; height at back, 8 feet; length 15 feet by 9 feet 8 inches wide.

Apply to WM. WITHAM, Greenhouse and Hothouse Builder and Hot Water Apparatus Manufacturer, 8, George Street, Camberwell, S.

FOR SALE, GREENHOUSES, new and improved make, good seasoned Yellow Deal, and superior workmanship.

One Lean-to, 29 feet long by 12 feet wide, Lights in front to open, frontage 5 feet high, Top Lights to run, Glass Ends and Glazed Doors, all Glazed with best quality Stout Sheet Glass, and Painted four coats £45
One Lean-to, 3 feet high, frontage same length and width, plainer make £35
One Lean-to, 21 feet by 12 feet, 5 feet high front, best make, as above £35
One Lean-to, same length and width, 3 feet high frontage, plainer make £30

Apply to A. KENT, Horticultural Builder, Chichester.

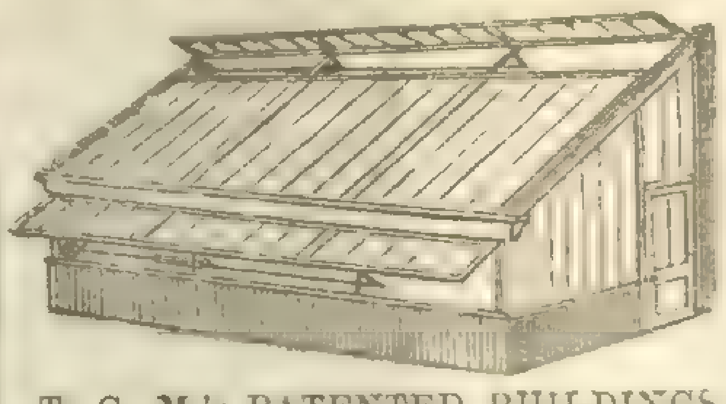
Sacks. Bags. Mats.

JAMES T. ANDERSON, SACK and BAG MAKER, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), supplies SEED BAGS at the following low prices:—

2 Bushel Bags..8*s.* 9*d.* per doz.	½ Bushel Bags..4*s.* 9*d.* per doz.
1 Bushel Bags..6*s.* 3*d.* ,,	Peck Bags ....3*s.* 6*d.* ,,

Coarser Bags much cheaper.
3 Bushel Grass Bags at 1*s.* each | 4 Bushel Sacks at 1*s.* each.
ARCHANGEL and PETERSBURG MATS.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough.

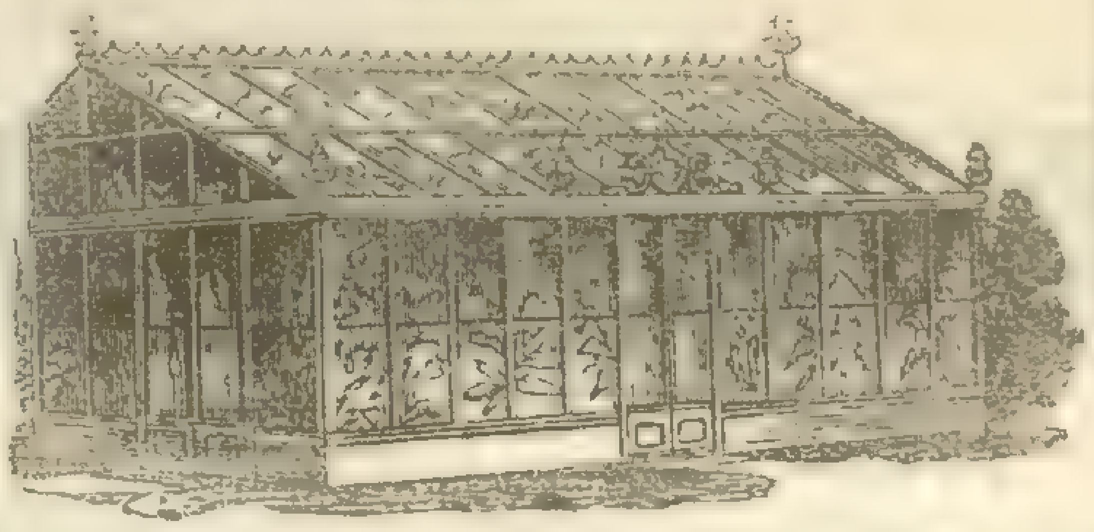


T. G. M.'s PATENTED BUILDINGS combine all the modern improvements, are well made of best seasoned red Deal, most effectually ventilated by means of his unequalled Apparatus, can be made either plain (and which are at the same time elegant in appearance), or of the most elaborate design. They can be fixed as permanent buildings, or made to be portable.

T. G. M.'s HEATING APPARATUS continues to give the greatest satisfaction for its heating qualities and small consumption of fuel.

ILLUSTRATED CATALOGUES of the above, Glazing without Putty, Garden Engines, &c., sent upon application.

JAMES WATTS AND CO., HOTHOUSE BUILDERS and HOTWATER APPARATUS MANUFACTURERS, near the Green Man, Old Kent Road, London, S.E.



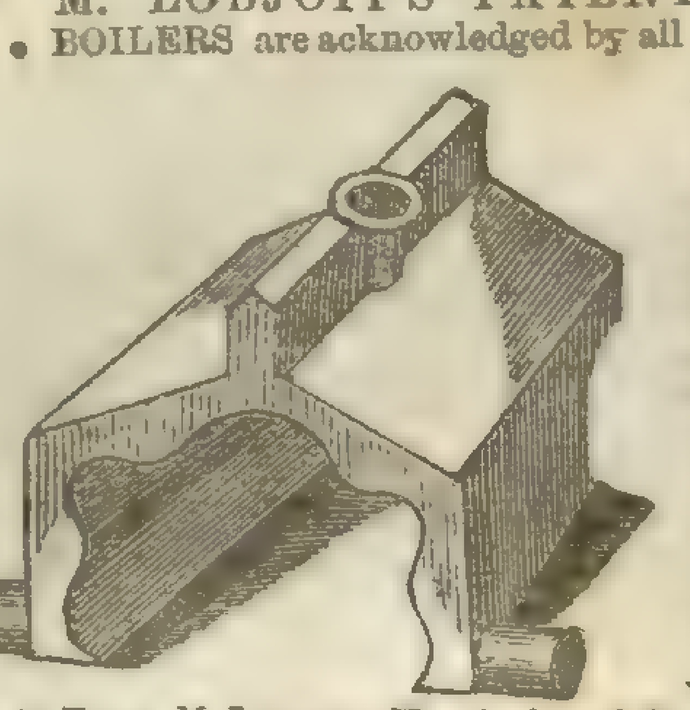
200 CUCUMBER and MELON BOXES and LIGHTS, and from 400 to 500 LIGHTS for PITS of all SIZES kept in STOCK.

Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.

10 dozen strong Zinc HAND GLASSES, Glazed and Painted complete, ready for immediate use, 18, 20, and 22, all shifting tops.

References to the Nobility, Gentry, and Trade in most of the counties in England.

T. M. LOBJOIT'S PATENT HOT-WATER BOILERS are acknowledged by all who have them in use to be the most powerful Boilers now known, and are the most economical, requiring less fuel and attention than any other. They are made of various sizes, suitable for heating the smallest Greenhouse to the largest Conservatory, Churches, and Buildings of all descriptions.



Testimonials forwarded on application to THOS. M. LOBJOIT, Horticultural Builder and Hot-Water Apparatus Manufacturer, Turnham Green, W., and at Acton, Middlesex, W.

Artificial Stone Works, 371 to 375, Euston Road, N.W.

AUSTIN, SEELEY, & CO. beg to inform the Public, that they have lately enlarged their Stock of VASES, FIGURES, FOUNTAINS, & other GARDEN ORNAMENTS.

The present Stock comprises:

133 different kinds of Vases, from 9*s.* to 30*l.*	15 Baskets, from 1 to 10 feet diameter [&c.
About 200 Fountains, from 10*l.* to 400*l.*	17 Flower Boxes for Windows, 6 Garden Seats
52 Statues, Modern and Antique	22 Sun-dial Pillars
44 Small Figures and Groups of Children	34 Baptismal Fonts, from 2*l.* to 15*l.*
70 Figures of Animals & Birds	22 Ornaments for Gate Piers

Having during the last 30 years executed for the Royal Gardens and for the grounds of the principal nobility an immense quantity of such work, they presume that it is needless to warrant its durability; but they are prepared with the most unquestionable references if desired.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.—July 26.

DUNN'S GARDENER'S PENCILS. Price 1*s.*, will refill for 6*d.*

DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.

Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.

These pencils may be procured at the Office of the *Journal o Horticulture*, 162, Fleet Street, E.C.

N.B.—A liberal allowance to the Trade.

Prize Medal at the International Exhibition, 1862.

E. WOLFF AND SON'S Solid INK PENCILS in Cedar, for GARDEN TALLIES.—These Pencils are the best and cheapest invention ever used for writing on Garden Tallies of all descriptions; the action of the air, rain, &c., not having the slightest effect upon them. The advantages resulting from their use are; firstly, the simplicity of an ordinary lead pencil; secondly, the superiority and portability of a dry pencil over liquid ink or paint; and thirdly, THEIR REASONABLE PRICE, which places them within the reach of all classes. These pencils are also useful for all kinds of writing, memoranda, &c.

Price 3*d.* each; extra thick, 6*d.* each. To be had retail of all Seedsmen, Nurserymen, and Stationers, and wholesale at the Manufactory,
22 & 23, Church Street, Spitalfields, N.E.

TO BE LET, a FARM situate in Surrey, 16 miles from London, and near a Railway Station. It contains 90 acres of Grass, and 70 acres of Arable Land, with superior Homestead.

For particulars, apply to Mr. BAILEY DENTON, 52, Parliament Street, Westminster, S.W.

To Nurserymen and Others.

TO BE LET ON LEASE, a NURSERY GARDEN of Five Acres, well stocked with all sorts of young Trees, comprising most of the New Conifers, &c., Roses, Rhododendrons, Hollies, Spruce and Scotch Firs, Laurels, and a large quantity of Seedlings of all sorts. Rent per acre, 4*l.* per annum. Stock to be taken at a valuation. Canal carriage adjoining, Railway Station 3 miles, and 20 miles from London. Thirty Acres unplanted may be had if required.

A Four-room HOUSE and GARDEN to LET with it, at 8*l.* per annum.

For further particulars apply to Mr. J. C. STEVENS, Horticultural Agent and Auctioneer, 38, King Street, Covent Garden, London, W.C.

Sale by Auction.

Orchids and Ferns.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY, July 31, at half-past 12 o'clock precisely, an IMPORTATION of ORCHIDS from South America, including fine healthy Plants of the very rare and valuable Cattleya superba; a few established Orchids, the property of a gentleman. Also a large Collection of HARDY FERNS from Wales. On view the Morning of Sale and Catalogues had.

Orchids.

MR. J. C. STEVENS begs to announce that he has received instructions to submit to PUBLIC COMPETITION during the month of AUGUST, at his Great Room, 38, King Street, Covent Garden, W.C., without the least reservation, the whole of the VALUABLE and EXTENSIVE COLLECTION of ORCHIDS, the property of a large Continental Grower who is giving up their Culture.
Catalogues will be ready shortly.

MESSRS. MOORE AND HILL have been desired by Mr. John Howell to announce that his ANNUAL AUCTION SALE of about 40 COTSWOLD SHEARLING RAMS will be held on TUESDAY, August 5, at 4 o'Clock, when he hopes to be favoured with the company of his friends.

Ewen, 3 miles from Cirencester, 2 miles from the Tetbury Road Station, and near the Cirencester Junction on the Great Western Railway.

Annual Sale of Rams.

MESSRS. MOORE AND HILL respectfully announce that Mr. Henry Howell has desired them to name WEDNESDAY, August 6, at 4 o'Clock, for his ANNUAL SALE of about 40 LONG-WOOLLED SHEARHOG RAMS, when he hopes to be favoured with a numerous Company.

Coates, 3 miles from Cirencester and 1 from the Tetbury Road Station.

Revesby Abbey, near Boston.

EXTENSIVE AND IMPORTANT SALE OF SHORTHORNS.

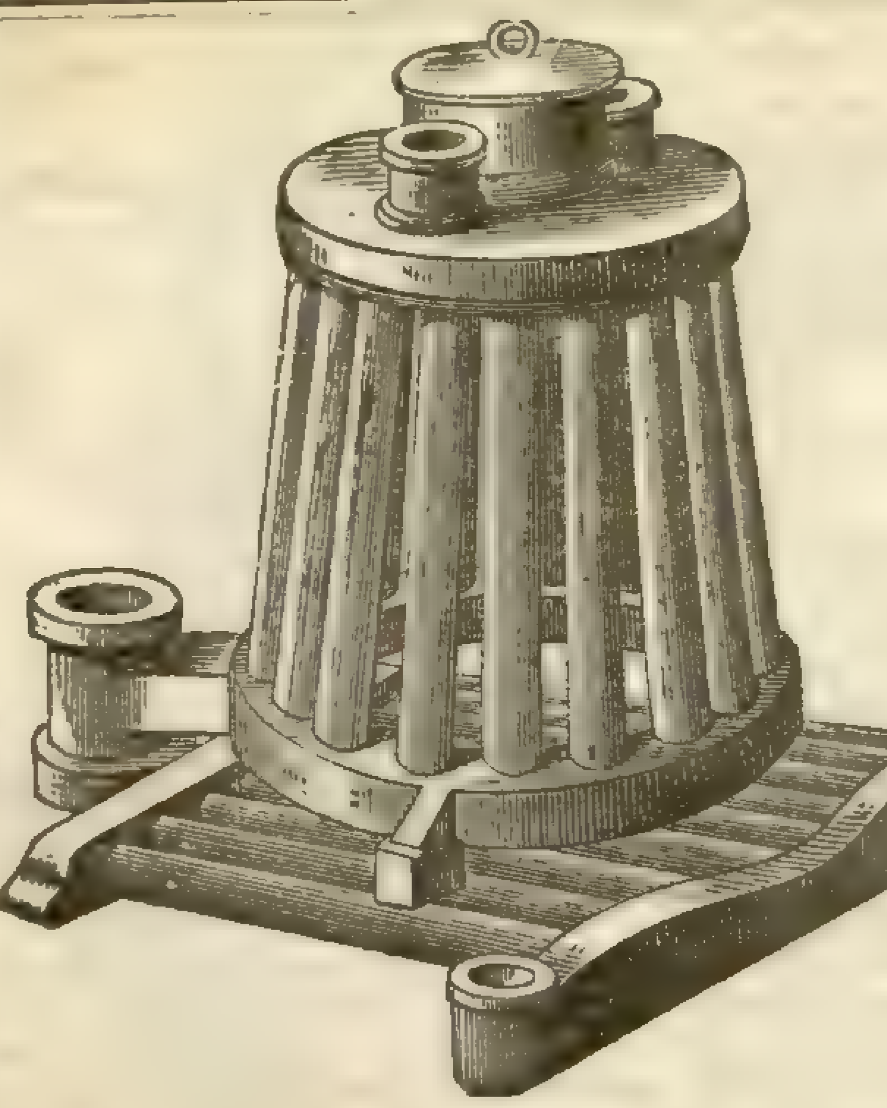
MR. STRAFFORD is favoured with Instructions from J. Banks Stanhope, Esq., M.P., of Revesby Abbey, Lincolnshire, to announce for SALE by AUCTION, without reserve, on FRIDAY, August 1, being the day after the Lincolnshire Show at Lincoln, his Entire Herd of SHORT-HORNED CATTLE, consisting of about 50 head of PURE-BRED BULLS, COWS, and HEIFERS, descended from the famed herds of Sir C. Knightley, Messrs. Bolden, Tanqueray, and other eminent Breeders, to which have been used the Duke of Bolton (12738), and Seventh Duke of York (17754). Most of the young Stock are by the latter Bull, and the Cows and Heifers are chiefly served by him. Also will be Sold about 80 head of well-bred CATTLE, comprising the blood of Cramer (6907), Dennison (10110), Duke of Bolton (12738), Emperor (14505), Romulus (8256), &c.

Catalogues, with Pedigrees, may be had on application to Mr. GEO. BELL, at the Home Farm, Revesby, near Boston; or of Mr. STRAFFORD, 13, Euston Square, London, N.W.

MR. HALL will peremptorily SELL by AUCTION, at the George Hotel, Shrewsbury, on THURSDAY, July 31, at 4 o'Clock, subject to conditions and unless previously disposed of by Private Treaty, a Valuable CONSERVATORY, together with other Property, standing on land (required for Building purposes), near the Column, Shrewsbury. This Conservatory is of the following dimensions, namely, 45 feet 6 inches long, 18 feet wide, and 9 feet 6 inches high, to the springing of roof. It is elegant in design, decorated sufficiently to ornament a nobleman's demesne, is fitted with stages Heated with Hot-water Pipes, and constructed of iron framing, with metallic sash bars. The situation being at a very moderate distance from Railways (to all parts), would render its removal an easy matter.

A Lithographic Drawing will be sent by Post to parties applying to Messrs. H. T. & G. WACE, Solicitors, Shrewsbury, from whom also any further information may be obtained.

PRIZE MEDAL
FOR ORMSON'S CONSERVATORY.



PRIZE MEDAL
FOR ORMSON'S PATENT JOINTLESS TUBULAR BOILER.

ORMSON'S CONSERVATORY.

INTERNATIONAL EXHIBITION.

CLASS 9, OPEN COURT, EASTERN ANNEXE.

OPINIONS OF THE PRESS.—EXTRACTS.

Gardeners' Chronicle.

"Mr. ORMSON, King's Road, Chelsea, has set up the very elegant curvilinear-roofed Conservatory. This is a light and graceful building, and is constructed of wood and iron, with a good deal of light ornamentation. The merits claimed for it are novelty and beauty of outline, chasteness and elegance in detail, and strength and lightness of construction, and these qualities it seems to possess."

Journal of Horticulture.

"It is impossible to speak too highly of the fine specimen of conservatory architecture Mr. ORMSON exhibits, and which is altogether novel in character as well as light and elegant in design. The ends consist of two half domes, and from the top of these extends the lofty, long, oval, dome-shaped centre supported by ornamental girders and arches springing from the top of elegant cast-iron columns; whilst the portion of roof between the base of the dome and the upright sides is formed on another curve, arching to meet the base of the girders. The structure thus formed affords abundance of light, and ventilation is amply provided for by every alternate sash at bottom being made to open; whilst in the upper portion there are two rows of sashes which can be opened for the escape of heated air."

Gardeners' Weekly Magazine.

"This is a grand promenade conservatory, with rectangular and curvilinear outlines, and of proportions adapted only for a great garden. The whole of the work is of the highest class, and the finish excellent. Mr. ORMSON also shows his tubular boiler, which we know to be powerful and trustworthy, and they merit the inspection of all interested in such matters."

Illustrated London News.

"No object in the horticultural department attracts the eye sooner than the splendid conservatory erected by HENRY ORMSON, of King's Road, Chelsea; nor is there anything more deserving of attention than the structure and the varied designs for conservatories, greenhouses, hothouses, Orangeries, Heath and Orchid houses, Vineries, Pineries, and Cherry, Fig, Plum, Peach, and Apricot houses, which are displayed upon paper within it. The accompanying Engraving shows that the erection of conservatories may be considered the highest grade in horticultural architecture; it shows in fact that architecture has become the ally of horticulture, and is bent upon doing it honour. The central mass of roof is supported within upon fluted cast-iron pillars, with enriched capitals forming along each side six arches, corresponding with that which spans the apse at either end. The framework of this upper portion of the building, artistically cumulative in effect, is principally of iron. The details seem to be finished with great care. The employment of colour has been very judicious; a white ground is relieved by the palest of greens, and, gilt here and there to a terminal ornament, gives to the inside an air of wonderful grace. Aëration, light, and elegance are all here admirably provided."

Daily News.

"HENRY ORMSON, of Chelsea, shows a beautiful structure in glass and iron of large proportions, highly decorated, which is decidedly a model of horticultural architecture. The visitors went round it, and into it, and paced it, and asked about it, and only wished they had money to buy it, and have it sent home. The roof is in three divisions receding to the top. In the middle of each side are two recessed doorways, and at either end an apse with semi-dome. White, pale green, and gold are the prevailing tints. Within are to be found upon paper designs for all sorts of Greenhouses, Hothouses, and Conservatories, from the very humble to the very splendid.

"Under the same roof are to be found ORMSON's well-known Jointless Tubular Boilers for the economic heating of horticultural buildings."

HENRY ORMSON, HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,
STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 31.—1862.] SATURDAY, AUGUST 2. {Price Fivepence. Stamped Edition, 6d.

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IMPORTANT NOTICE. — VISITORS paying for Admission to the HORTICULTURAL GARDEN from the EXHIBITION can return to it, from the Garden by a PASS, WITHOUT REPAYMENT.

ROYAL HORTICULTURAL SOCIETY. AUTUMN SHOW, September 10, 1862.—An Additional Prize of 10*l*. will be given for the Best Specimen of a CONSERVATORY TUB. There is no restriction as to material, size, form, or design. It may be of wood, slate, stone, pottery ware, Terra Cotta, or any other substance. It may be in one piece or in many, fastened or bound together. Fitness for its purpose, elegance of design, superiority of workmanship, and cheapness, will be the test of merit.
Letters to be addressed to Mr. G. Eyles, Garden Superintendent, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY.
Special PRIZES for the March Show in 1863.
10*l*. for the Three Best CAMELLIAS.
3*l* for the Three Best TREE MIGNONETTES.

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.
LIST OF AWARDS, July 22, 1862.

First Class Certificate.
Disa grandiflora superba, from Charles Leach, Esq., Clapham.
Picotee *Lady Elcho*, from Mr. Turner, Slough.
Hemerocallis sp. Japan, from Messrs. Veitch & Son, Exeter and Chelsea.

Commendation.
Niphobolus Lingua corymbiferus, from Messrs. Veitch & Son.

Special Certificate.
Messrs. Veitch & Son, for Lilium auratum.
Mr. Turner, for a Collection of Carnations and Picotees.
Mr. G. Smith, Hornsey Road, for a Collection of Verbenas.
The next Meeting of the Committee will take place on Aug. 12.
Thomas Moore, Secretary to the Committee.

CRYSTAL PALACE.—GREAT AUTUMN SHOW of FLOWERS and FRUIT. — WEDNESDAY and THURSDAY, September 3 and 4.
Schedules of Mr. Houghton, Crystal Palace. Entries close August 26.

New Pelargoniums.

CHARLES TURNER has much pleasure in announcing that the beautiful SEEDLING PELARGONIUMS, so successfully exhibited this season by Messrs. Hoyle, Foster, and Beck, and described in the last Number of the *Gardeners' Chronicle*, will be sent out by him in October next.
CATALOGUES will be ready next month.
The Royal Nurseries, Slough.

Tropæolum "Eclipse."

CHARLES TURNER strongly recommends this charming variety, which was raised by R. Headly, Esq., of Cambridge, and is a great addition to this favourite class of Bedding Plants. It is of the same habit as Elegans—the colour intense scarlet.
A Bed of the above may now be seen at the Royal Horticultural Gardens, Kensington; also at the Royal Nurseries, Slough. Strong plants, 12*s*. per dozen.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.
Exotic Nursery, Tooting, Surrey, S.

B. S. WILLIAMS'S AUTUMN CATALOGUE for 1862 is now ready, post free, to all applicants, containing select lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladiolus, Amaryllis, Caladiums, Gloxinias, and many other Fine Bulbs, with Hints on their Culture for the guidance of Amateur growers. To which is added a SUPPLEMENTAL and DESCRIPTIVE LIST of NEW, BEAUTIFUL, and RARE PLANTS.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

KEMP'S EARLY INCOMPARABLE CABBAGE is the best and earliest in cultivation. Price 1*s*. per Packet, Post Free.
E. P. Dixon & Sons, 57, Queen Street, Hull.

Stones or Sprotborough Cabbage Seed.

JOHN SCHOLEY, Nurseryman and Seedsman, Pontefract, has the above to offer to the Trade, his own growing of 1861.
The above CABBAGE is the earliest and best that supplies the Leeds and Manchester Markets.
Price 3*s*. per lb., or 16*l*. per cwt.

WM. PAUL'S ROSES and HARDY ORNAMENTAL TREES are now in full beauty. Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.
Nurseries and Seed Warehouse, Waltham Cross, N.

RICHARD SMITH begs to inform the Public that he has a larger and finer COLLECTION of ROSES this season than he has ever had; they are NOW in FULL BLOOM and in the finest condition.
As the Stock is so large the prices will be very reasonable.
Nurseries, Worcester.

Roses.

EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

Rose Beauty of Waltham.
The finest of all the New Roses.

WM. PAUL (Son and Successor to the late A. Paul) has now ready for delivery fine strong plants of this beautiful New Rose, which has received a First Class Certificate from the Royal Horticultural Society of London. Price 5*s*. each.
All the novelties of other raisers at the advertised prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Roses.

PAUL and SON'S COLLECTION of ROSES is NOW in FULL BLOOM. The Nurseries are reached in one hour by trains from Bishopsgate to Cheshunt Station, leaving London at 9.30 A.M., 12.46, 2.30, 3.30, 5.10, 6.10 P.M.
Old Cheshunt Nurseries, Herts, N.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize plants, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet. Reference given. Stamps taken.
G. Knights, Whitton, Ipswich.

F. and A. SMITH beg to announce to their friends that their fine COLLECTION of BALSAMS is NOW in BLOOM, and may be seen every day, Sunday excepted.
Dulwich, Surrey, S.

New Fuchsias of 1862.

B. W. KNIGHT, Florist, &c., 67, High Street, Battle, Sussex, is now sending out the NEW FUCHSIAS of 1862, at 12*s*. per dozen.
CATALOGUES sent on application.

New Verbenas of 1862.

B. W. KNIGHT, Florist, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4*s*. per dozen, securely packed in tin box, post free. CATALOGUES of the varieties sent on application.

New Verbenas, Fuchsias, &c., of 1862.

W. DILLISTONE can now supply the above in good Plants, at low prices. Lists upon application.
Munro Nursery, Sible Hedingham, Halstead, Essex.

Equalled by None.

J. DOBSON and SONS' splendid Hybridized CALCEOLARIA SEED, in sealed packets, 1*s*. 6*d*., 2*s*. 6*d*., 3*s*. 6*d*., and 5*s*. First Prizes given wherever exhibited.
Woodlands Nursery, Isleworth.

Prize Cineraria Seed.

J. DOBSON and SONS have carried off the First Prizes every time they have exhibited this season. New Seed, in sealed packets, 1*s*., 2*s*. 6*d*., and 5*s*.
Woodlands Nursery, Isleworth.

To the Seed Trade.

CALCEOLARIA SEED in Packets, Crop 1862.—The best in England. Price on application.
Barr & Sugden, Seed Merchants, 12, King Street, Covent Garden, W.C.

Major's Half Shrubby Calceolaria Seed.

H. MAJOR'S New Half-Shrubby CALCEOLARIA SEED is now ready as usual, and may be had in packets at 2*s*. 6*d*. each, or three for 5*s*. post free.
Postage stamps may be sent in payment.
Knosthorpe, near Leeds, Yorkshire.

MESSRS. E. G. HENDERSON and SON offer Seed of
CALCEOLARIA .. .. .. first quality
CINERARIA .. .. .. ,,
PRIMULA (fimbriated).. .. ,,
at 2*s*. 6*d*. and 5*s*. per packet; smaller ones 1*s*. each. All the above are to be seen in bloom at the Nursery in their respective season.
Wellington Nursery, St. John's Wood, London, N.W.

CARTER'S FIRST-CLASS SEEDS of
CALCEOLARIA, 2*s*. 6*d*. per packet.
,, new blotched, 2*s*. 6*d*. per packet.
CINERARIA, 2*s*. 6*d*. per packet.
PRIMULA, mixed fringed, 1*s*. per packet.
,, dark carmine fringed, 2*s*. 6*d*. per packet.
,, pure white fringed, 2*s*. 6*d*. per packet.
James Carter & Co., 237 & 238, High Holborn, London, W.C.

New Hardy British Ferns.

J. IVERY and SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDLÆ at 5*s*. to 7*s*. 6*d*. each;
ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5*s*. each;
OSMUNDA REGALIS CRISTATA, 21*s*. each.
A Select LIST of the most rare kinds will be forwarded Post Free on application.
Dorking Nursery.

Good Seeds, Carriage Free, at Market Prices.

SUTTON AND SONS,
Seed Growers and Merchants,
Royal Berkshire Seed Establishment, Reading.

JAMES CARTER AND CO.,
Seed Merchants and Nurserymen,
237 and 238, High Holborn, London, W.C.

Agricultural Seeds.

GEORGE GIBBS AND CO.,
Seedsmen,
26, Down Street, Piccadilly, London, W.

RAYNBIRD, CALDECOTT, AND BAWTREE, Seed Merchants and Growers, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.
Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.
Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality, at Market Prices.

JEAN VERSCHAFFELT, Ghent, Belgium, begs respectfully to announce that his NEW DESCRIPTIVE CATALOGUE for the Autumn of 1862 is now ready, and can be had on application either to himself or his Agents, Messrs. R. Silberrad & Son, 5, Harp Lane, Great Tower Street, E.C.

Palms and other Stove Plants.

TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual size.
A CATALOGUE, giving the height of each plant, will be sent, post free, on application to Mrs. Le Creps, Château du Mesnil de Mathieu, near Caen, Department of Calvados, France, where the plants may be viewed.

TO BE SOLD, 24 ORCHARD HOUSE TREES, PEACH, NECTARINE, &c.
For particulars inquire of J. Bertie, Gardener, near the "Dolphin," Lower Sydenham, Kent, S.E.

Grape Vines.

J. IVERY and SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.

WM. PAUL (Son and Successor to the late A. Paul) has a large stock of vigorous, close jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

TO be DISPOSED OF, nearly 300 healthy SUCCESSION PINE PLANTS, in a thriving condition. They may be had at a low figure.
For further information, apply to Messrs. Wheeler & Son, Nurserymen, Gloucester.

Pine Suckers.

FOR SALE, RIPLEY QUEEN, and other SUCKERS, warranted clean and free from Scale.
Apply by letter to Mr. McGregor, Seedsman, Merthyr Tydvil.

Strawberry Plants—Ready August 18.

CUTHILL'S SORTS, all selected for next year's bearing. The price per 100, 7*s*. 6*d*. for the following:—Early Black Prince, Early Princess Royal, Highland Mary, Richard II., Prince of Wales, and Newton Seedling, still in bearing.
James Cuthill, F.R.H.S., Camberwell, London, S.

Ex. Ex. Hollyhock.

DOWNIE, LAIRD, AND LAING are now sending out SEED saved from their unrivalled Collections of the above, in Packets containing Twelve Named Sorts (separate), at 2*s*. 6*d*. and 5*s*.
Stanstead Park Nursery, Forest Hill, London, S.E.

To the Seed Trade.

THE ANNUALS, &c., at James Carter & Co.'s Seed Farms at Dedham and St. Osyth are NOW in FULL BLOOM, and J. C. & Co. will be happy to receive a visit from any of their friends. (Eastern Counties Railway, Ardleigh Station.) Letters of Advice will receive immediate attention.
James Carter & Co., 237 & 238, High Holborn, London, W.C.

Calceolaria, Cineraria, and Primula.

BUTLER AND McCULLOCH respectfully beg to offer the following Seeds, saved from Collections containing only the Choicest strains:—
CALCEOLARIA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
CINERARIA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
PRIMULA SINENSIS FIMBRIATA, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. per packet.
Butler & M'Culloch, Seed Merchants, Covent Garden Market, London, W.C.

Calceolaria, Cineraria, and Primula, Extra Fine.

BARR AND SUGDEN, Seed Merchants,
12, King Street, Covent Garden, W.C.
CALCEOLARIA, 1*s*. and 2*s*. 6*d*. per packet.
PRIMULA, 1*s*. per packet.
CARNATION, 1*s*. and 3*s*. per packet.
GUNNERA SCABRA, 1*s*. per packet.
CINERARIA, 1*s*. per packet.
PICOTEE, 1*s*. and 3*s*. per packet.
PELARGONIUM, Large fl., 1*s*. per packet.
,, Fancy, 1*s*. per packet.

REIGATE SILVER SAND, best quality, 12*s*. per Ton or 1*s*. 3*d*. per Bushel, at Swan Place; delivered five miles, or to any London Wharf or Railway, 16*s*. per Ton, or 1*s*. 6*d*. per Bushel. Kentish and Hampshire PEATS, YELLOW LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE from Kingston. An inspection invited.—J. Kennard, Purveyor to Her Majesty, Swan Place, Old Kent Road, London, S.E.

GARDENERS' CHRONICLE

F. and A. SMITH are sending out carefully selected SEED of the following (from their own stock) for present sowing:—

	Per packet.—s. d.
ANTIRRHINUM, from named flowers	0 6
ALYSSUM SAXATILE COMPACTUM	0 6
CALCEOLARIA, finest strains	1s., 1s. 6d., & 2 6
CINERARIA "	1s., 1s. 6d., & 2 6
PRIMULA "	1s., 1s. 6d., & 2 6
DELPHINIUM FORMOSUM	0 3
" CHERIANTHIFLORA	1 0
" TRIUMPHATA EXCELSIOR	1 0
CLIANTHUS DAMPIERI	2 6
DIANTHUS HEDDEWIGI	0 6
FUCHSIA, from named flowers	1 6
GAILLARDIA GRANDIFLORA	0 6
MIMULUS, very fine	0 6
ŒNOTHERA LAMARCKIANA	1 0
PANSY, from Belgian flowers	1 0
PELARGONIUM, Spot / " Show / " Fancy	1 0
GERANIUM, Scarlet / " Zonale / " Variegated	1 0
PENTSTEMON	0 6
POLYANTHUS	1 0
STOCK, finest Scarlet Intermediate	0 6
SWEET WILLIAM, Auricula-eyed	0 6

☞ Their NEW CATALOGUE is now published, and may be had on application.

Dulwich, Surrey, S.

DOBSON'S Splendid HYBRIDISED CALCEOLARIA SEED, in Sealed and Printed Packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s.

Agents who will supply it Free—

Messrs. Hurst & McMullen, 6, Leadenhall Street, City, London.
" Fraser, Richardson, & Goad, 82, Bishopgate St., do.
" Fisher, Holmes, & Co., Handsworth Nursery, Sheffield.
" Garraway & Co., Durdham Down, Bristol.
" Dickson, Hogg, & Robertson, Dublin.
" Dickson & Turnbull, City Nursery, Brechin.
" Dickson & Son, 106, Eastgate Street, Chester.
" Veitch & Son, Chelsea.
" Rollisson & Sons, Tooting.
" Fraser, Lea Bridge Road, Essex, N.E.
" Vilmorin, Andrieux, & Co., Paris.
Mr. J. Bell, Exchange Street, Norwich.
" H. Brown, Commutation Row, Liverpool.
etc, etc.

And may be obtained through every respectable Seedsman and Nurseryman in the Three Kingdoms.

Be particular in ordering Dobson's Splendid Hybridised Calceolaria (which is printed on each packet), and have no other. We have found it necessary to caution the public, an inferior kind having been substituted in our name by some unprincipled persons.

J. Dobson & Sons, Woodlands Nursery, Isleworth, W.

E. DENCH'S Horticultural Works, 152, King's Road, Chelsea, S.W., Manufacturer of every description of HORTICULTURAL BUILDINGS either in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without. HOT WATER APPARATUS Manufacturer.

Card.

SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool. Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

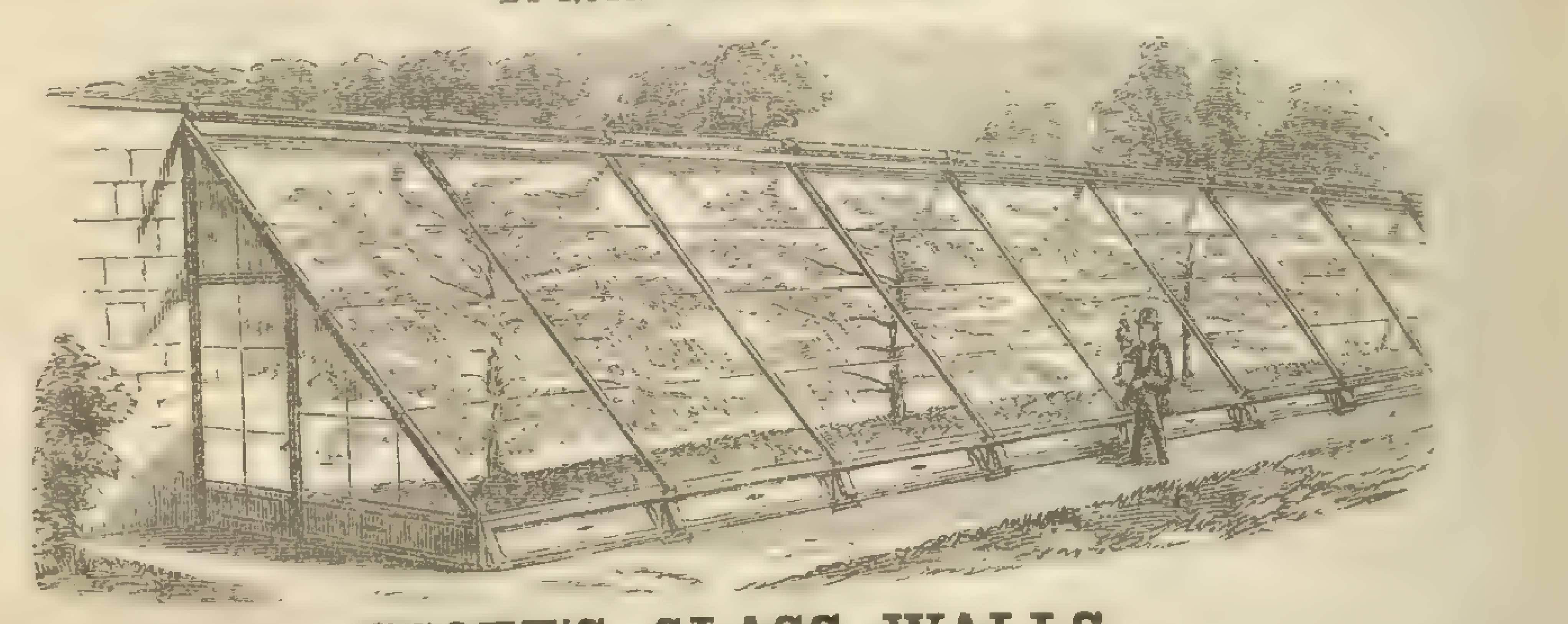
NOTICE.—The exorbitant price hitherto charged for Horticultural Buildings induces Messrs. Henry Smith & Compy. to inform the Nobility and Gentry that upon application they can receive DRAWINGS and ESTIMATES Free for all kinds of HORTICULTURAL BUILDINGS and for HEATING by HOT WATER. Gentlemen wishing to construct their own can be supplied at a low cost with Working Drawings and Specifications.

Henry Smith & Compy., Horticultural Builders and Hot Water Apparatus Manufacturers, 31, Margaretta Terrace, Oakley Street, Chelsea, S.W.

ST. PANCRAS IRON WORKS COMPANY,

OLD ST. PANCRAS ROAD, LONDON, N.W.

BY ROYAL LETTERS PATENT.



SCOTT'S GLASS WALLS,

Designed to meet the suggestions of James Scott, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

CONSERVATORIES | PINE and MELON PITS | BALCONIES | GATES
GREENHOUSES | VASES | IRON SASHES | TANKS
HOTHOUSES | VERANDAHS | IRON HURDLES | HOT-WATER WORK.

PATENT WROUGHT-IRON STABLE FITTINGS AND ENAMELLED MANGERS.

Every description of IRONWORK. *Lists Free.*

ST. PANCRAS IRON WORK COMPANY, OLD ST. PANCRAS ROAD, LONDON, N.W.

HOTHOUSES FOR THE MILLION.

INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.

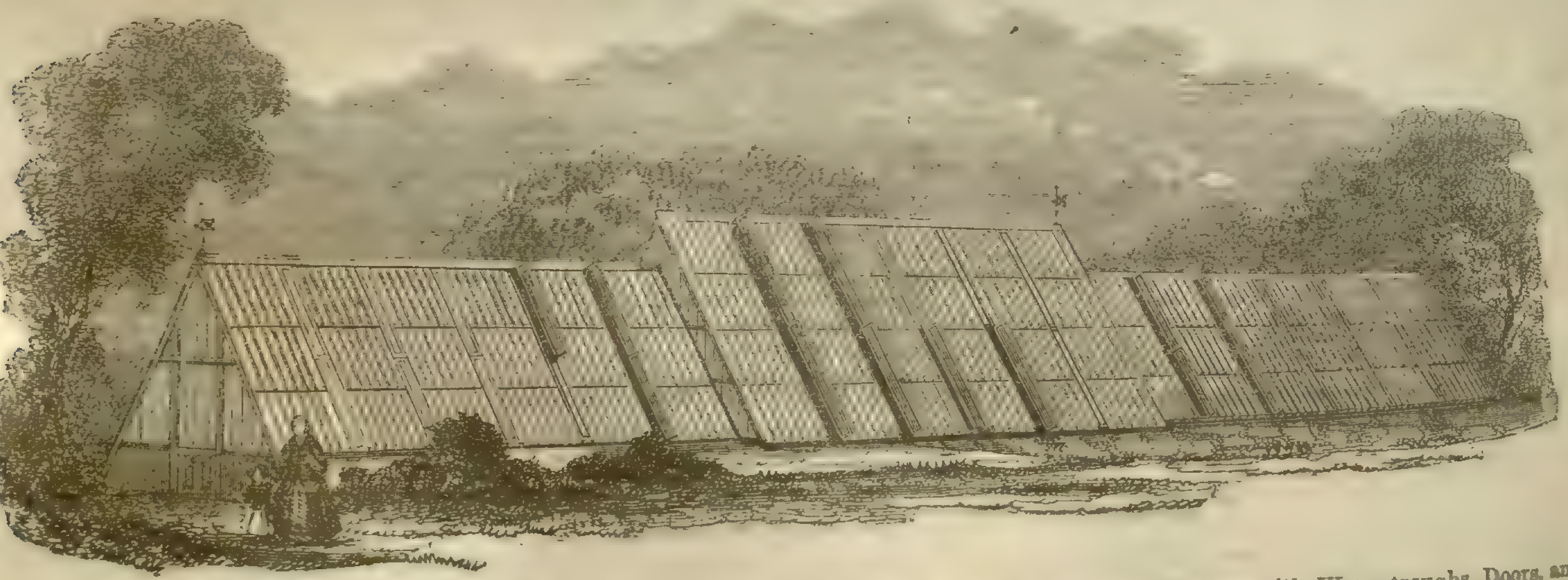
AWARDED A PRIZE MEDAL.

ON THE PRINCIPLE INVENTED AND PATENTED BY

SIR JOSEPH PAXTON, M.P.

COMBINING SIMPLICITY, CHEAPNESS, EXCELLENCE, AND DURABILITY,

BEING CAPABLE OF FULFILLING IN THE MOST PERFECT MANNER ALL THE REQUIREMENTS OF HORTICULTURE.



The Cash Prices of Lean-to Houses complete are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£12 0 0	£16 0 0	£21 0 0	£28 10 0	£34 5 0
31 3 in length	16 10 0	21 2 6	26 10 0	37 12 0	45 16 0
41 11 in length	20 18 0	26 18 6	33 7 6	46 14 0	57 7 0
52 7 in length	25 12 6	32 15 0	40 5 0	55 16 0	68 18 0
63 3 in length	30 6 0	38 10 0	47 2 6	64 18 0	80 10 0
73 11 in length	34 12 6	43 15 0	53 7 6	74 0 0	92 0 0
84 7 in length	39 6 0	49 11 6	60 5 0	83 2 0	103 11 0
95 3 in length	43 19 0	55 10 0	67 2 6	92 5 0	115 2 0
105 11 in length	48 17 6	60 12 6	73 10 0	101 10 0	126 13 0

The Cash Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£24 0 0	£32 0 0	£42 0 0	£57 0 0	£68 12 0
31 3 in length	38 0 0	42 5 0	53 0 0	75 4 0	91 10 0
41 11 in length	41 16 0	53 17 0	66 15 0	93 8 0	114 14 0
52 7 in length	51 5 0	65 10 0	80 10 0	111 12 0	137 10 0
63 3 in length	60 12 0	77 0 0	94 5 0	129 16 0	161 0 0
73 11 in length	69 5 0	87 10 0	106 15 0	148 0 0	184 0 0
84 7 in length	78 12 0	99 3 0	120 10 0	166 4 0	207 2 0
95 3 in length	87 18 0	111 0 0	134 5 0	184 10 0	230 4 0
105 11 in length	97 15 0	121 5 0	147 0 0	203 0 0	253 6 0

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

The above prices do not include package, railway freight, heating apparatus, or erection.

Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

SAMUEL HEREMAN, 7, PALL MALL EAST, LONDON, S.W.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

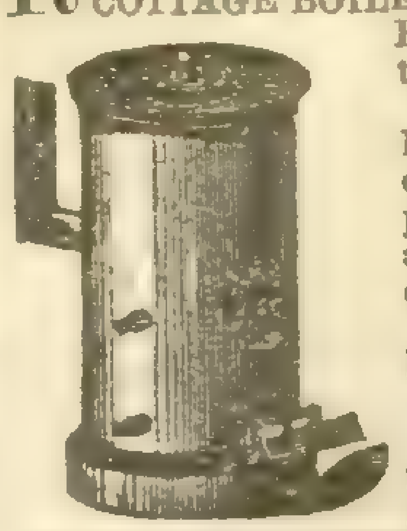
TWO HUNDRED SETS
OF
STEAM PLOUGHING and CULTIVATING APPARATUS
HAVE NOW BEEN SENT OUT BY

JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD.

Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

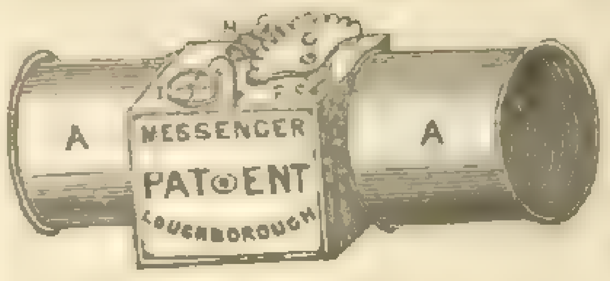


Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

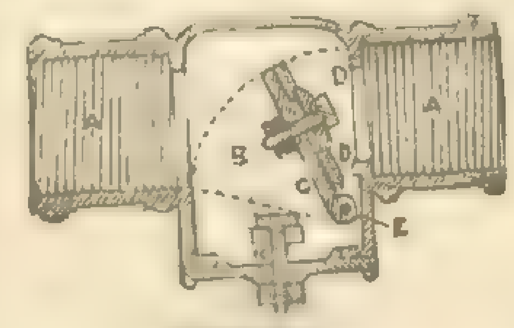
Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.



ELEVATION.



SECTION.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough, has recently patented a Valve which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under.

Two-inch, 17*s.* 6*d.*; 3-inch, 23*s.*; 4-inch, 28*s.*

A liberal discount to the Trade.

SAMUELSON'S LAWN MOWING MACHINES,
WITH MANWARING'S PATENT NOISELESS GEAR, AND BOYD'S PATENT SELF-CLEANING BRUSH. Also,

SAMUELSON'S IMPROVED GARDEN ENGINES, WATER BARROWS, SYRINGES, WIRE NETTING, &c.

CATALOGUES FREE, ON APPLICATION TO BRITANNIA WORKS, BANBURY, OR TO

MR. SAMUELSON'S LONDON WAREHOUSE, 76, CANNON STREET WEST, CITY,

WHERE SAMPLES MAY BE SEEN.

DEPOTS also at SHREWSBURY, YORK, STOCKTON, and NEWCASTLE. Dublin Warehouse: 12, PARLIAMENT STREET, ESSEX BRIDGE.

A FIRST-CLASS PRIZE MEDAL HAS BEEN AWARDED TO J. WEEKS & CO. FOR THEIR SUPERIOR UPRIGHT TUBULAR BOILER AND GENERAL IMPROVEMENTS IN HEATING BY HOT WATER.

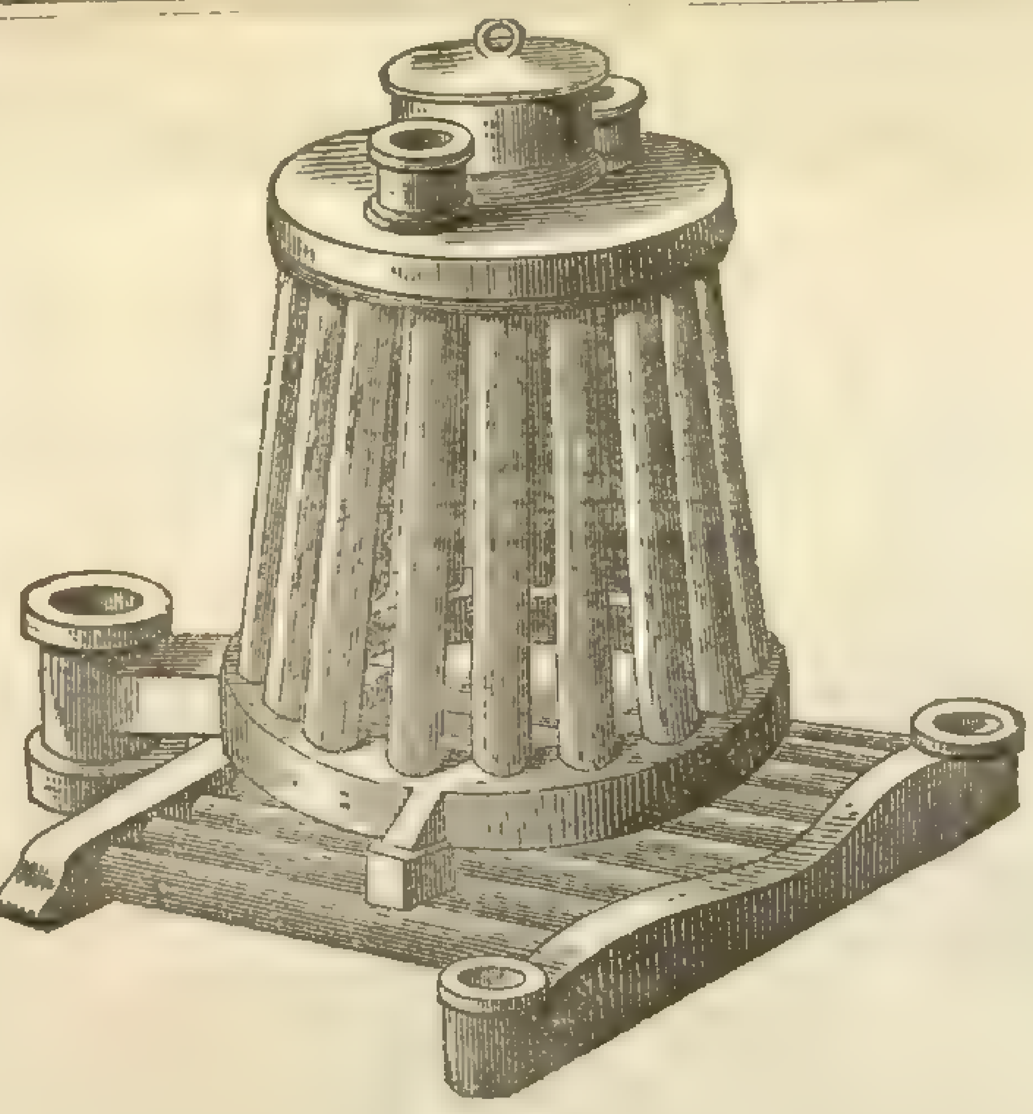
JOHN WEEKS & COMPANY,
HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS
TO

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN
THE TOWER OF LONDON
THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN
THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM

And NUMEROUS PUBLIC COMPANIES.

KING'S ROAD, CHELSEA, S.W.

FIRST CLASS PRIZE MEDAL
FOR ORMSON'S CONSERVATORY.



FIRST CLASS PRIZE MEDAL
FOR ORMSON'S PATENT JOINTLESS TUBULAR BOILER.

ORMSON'S CONSERVATORY.

INTERNATIONAL EXHIBITION.

CLASS 9, OPEN COURT, EASTERN ANNEXE.

OPINIONS OF THE PRESS.—Extracts.

Gardeners' Chronicle.

"Mr. Ormson, King's Road, Chelsea, has set up the very elegant curvilinear-roofed Conservatory. This is a light and graceful building, and is constructed of wood and iron, with a good deal of light ornamentation. The merits claimed for it are novelty and beauty of outline, chasteness and elegance in detail, and strength and lightness of construction, and these qualities it seems to possess."

Journal of Horticulture.

"It is impossible to speak too highly of the fine specimen of conservatory architecture Mr. Ormson exhibits, and which is altogether novel in character as well as light and elegant in design. The ends consist of two half domes, and from the top of these extends the lofty, long, oval, dome-shaped centre supported by ornamental girders and arches springing from the top of elegant cast-iron columns; whilst the portion of roof between the base of the dome and the upright sides is formed on another curve, arching to meet the base of the girders. The structure thus formed affords abundance of light, and ventilation is amply provided for by every alternate sash at bottom being made to open; whilst in the upper portion there are two rows of sashes which can be opened for the escape of heated air."

Gardeners' Weekly Magazine.

"This is a grand promenade conservatory, with rectangular and curvilinear outlines, and of proportions adapted only for a great garden. The whole of the work is of the highest class, and the finish excellent. Mr. Ormson also shows his tubular boiler, which we know to be powerful and trustworthy, and they merit the inspection of all interested in such matters."

Illustrated London News.

"No object in the horticultural department attracts the eye sooner than the splendid conservatory erected by Henry Ormson, of King's Road, Chelsea; nor is there anything more deserving of attention than the structure and the varied designs for conservatories, greenhouses, hothouses, Orangeries, Heath and Orchid houses, Vineries, Pineries, and Cherry, Fig, Plum, Peach, and Apricot houses, which are displayed upon paper within it. The accompanying Engraving shows that the erection of conservatories may be considered the highest grade in horticultural architecture; it shows in fact that architecture has become the ally of horticulture, and is bent upon doing it honour. The central mass of roof is supported within upon fluted cast-iron pillars, with enriched capitals forming along each side six arches, corresponding with that which spans the apse at either end. The framework of this upper portion of the building, artistically cumulative in effect, is principally of iron. The details seem to be finished with great care. The employment of colour has been very judicious; a white ground is relieved by the palest of greens, and, gilt here and there to a terminal ornament, gives to the inside an air of wonderful grace. Aëration, light, and elegance are all here admirably provided."

Daily News.

"Henry Ormson, of Chelsea, shows a beautiful structure in glass and iron of large proportions, highly decorated, which is decidedly a model of horticultural architecture. The visitors went round it, and into it, and paced it, and asked about it, and only wished they had money to buy it, and have it sent home. The roof is in three divisions receding to the top. In the middle of each side are two recessed doorways, and at either end an apse with semi-dome. White, pale green, and gold are the prevailing tints. Within are to be found upon paper designs for all sorts of Greenhouses, Hothouses, and Conservatories, from the very humble to the very splendid.

"Under the same roof are to be found Ormson's well-known Jointless Tubular Boilers for the economic heating of horticultural buildings."

HENRY ORMSON, Horticultural Builder and Hot-Water Apparatus Manufacturer,
STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

West of England, Ireland, and Wales.

VINCENT SKINNER (*late Partner with* J. Weeks & Co.), Horticultural Builder and Hot-Water Apparatus Manufacturer. HEATING on the ONE-BOILER SYSTEM. Plans and Estimates on application.

Vincent Skinner, Bridewell Street, Bristol.

Horticultural Buildings and Heating by Hot Water.

BURY and POLLARD, Park Iron Works, New Park Street, Southwark, S.E., Manufacturers of every description of Buildings for Horticultural Purposes, with their Improved CONICAL BOILER for heating the same, are prepared to undertake works of any magnitude, and refer among others to the celebrated range of Forcing Houses at Her Majesty's Gardens, Frogmore, and at Sir Robert Peel's, Drayton Manor, constructed under the superintendence of their Manager, Mr. John Jones.

Further information forwarded on application.

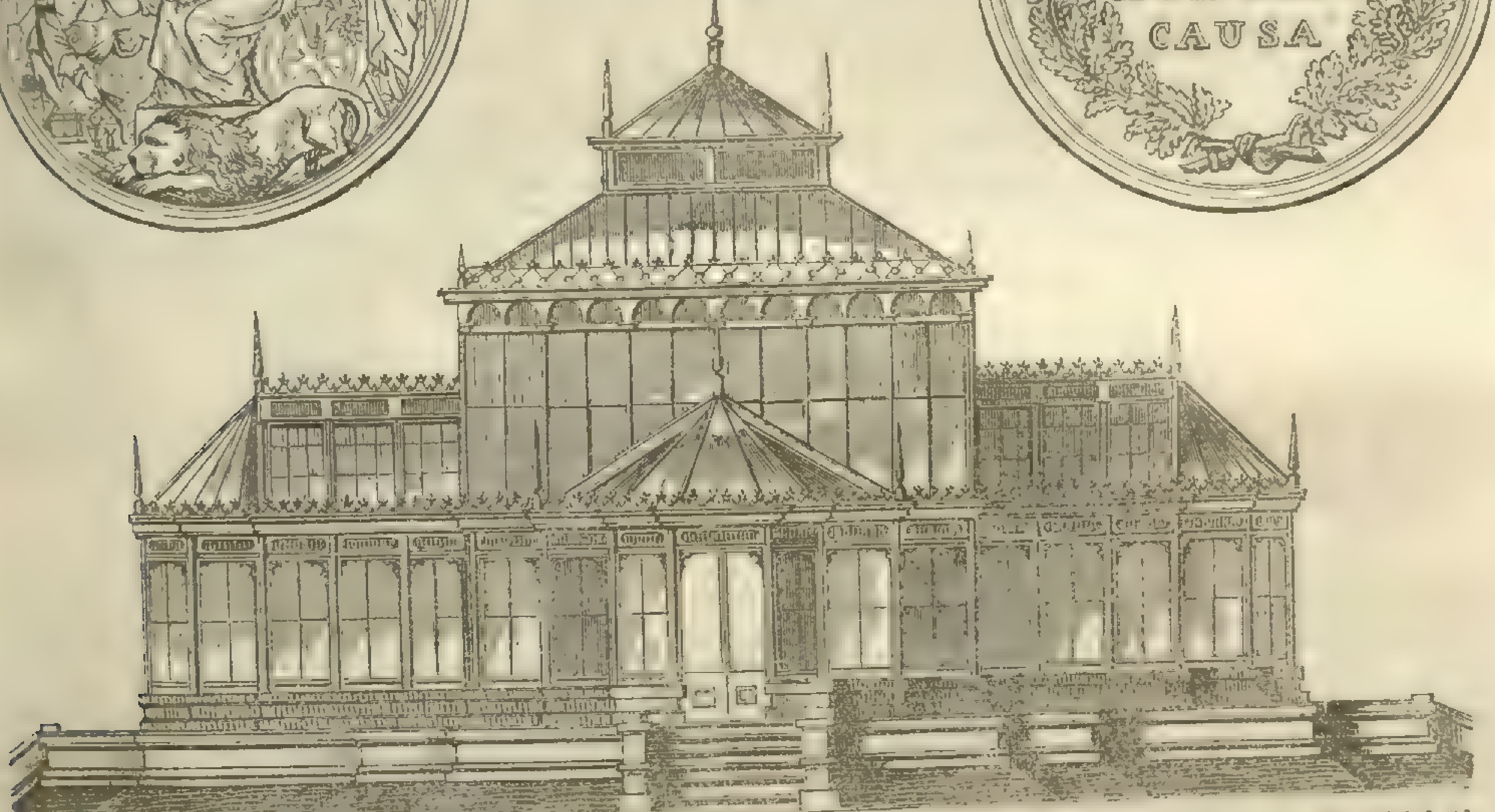
JOHN TAYLOR & SONS,

HORTICULTURAL BUILDERS AND ENGINEERS,

HARROW ROAD, LONDON, W.

INTERNATIONAL EXHIBITION, Class IX., 2191.

PRIZE MEDAL For CONSERVATORY, DOUBLE CHAMBER CORRUGATED and HORIZONTAL TUBULAR BOILERS.



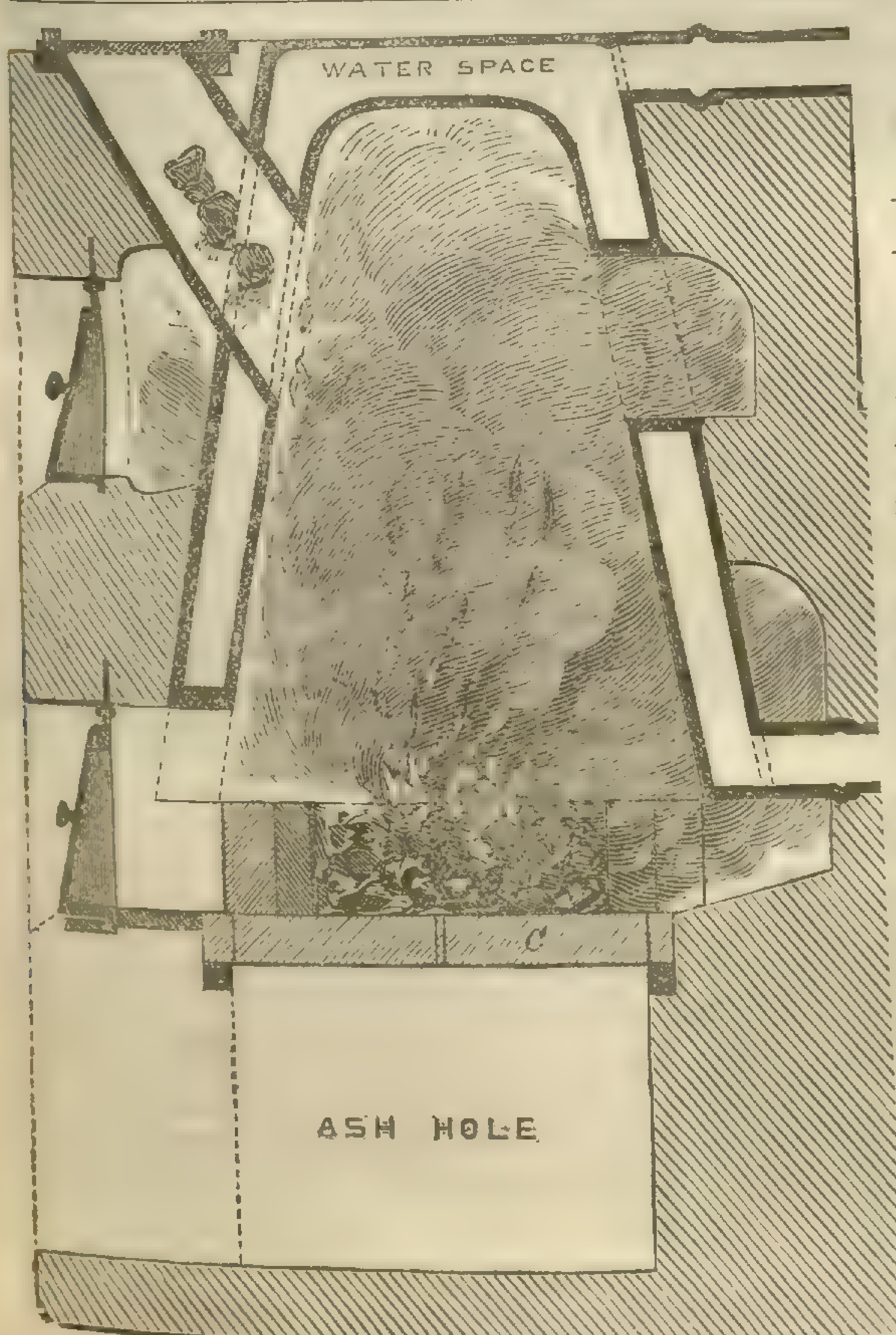
J. TAYLOR and SONS call the attention of the Nobility and Gentry to the very superior manner in which they erect CONSERVATORIES, VINERIES, FORCING, FRUIT, and PLANT HOUSES of every description, combining the most modern improvements with elegance of design and durability of materials and workmanship.

Our VENTILATING APPARATUS for the Roofs and Fronts of Horticultural Buildings, &c., supersedes any now in use, as being the most simple and effective in its action.

Our system of HEATING APPARATUS for Churches, Public Buildings, Mansions, Schools, Offices, Baths, Horticultural Buildings, &c., is particularly worthy of notice, we having for many years devoted especial attention to this branch. The great variety of work which has passed through our hands has gained us such experience in the mechanical details as to insure success and entire satisfaction in any undertaking entrusted to our care.

The superiority of our DOUBLE-CHAMBER CORRUGATED and HORIZONTAL TUBULAR BOILERS has caused them to be acknowledged as the best now in use, being both powerful and rapid in action.

See CONSERVATORY, BOILERS, &c., exhibited at the International Exhibition, Class 9 (2191), Open Court, Eastern Annexe.



THE IMPROVED

CONICAL BOILERS,

SOLELY MANUFACTURED BY

BURY & POLLARD

(SUCCESSORS TO JOHN R. PEILL, Late STEPHENSON & PEILL),

HAVE attained a celebrity far surpassing any other Boilers ever invented. Of the many hundreds which have been fixed in this and foreign countries, not one single Boiler has ever proved defective, or failed to give the most complete satisfaction. They are connected with large ranges of Pipes (in some cases several thousand yards), at many Public Establishments, at the Crystal Palace, the Royal Botanical Gardens at Kew, and at the Regent's Park, as well as at most of the Nobility's Seats throughout the Kingdom.

All particulars may be obtained on application to Bury & Pollard, Sole Manufacturers, Park Iron Works, New Park St., Southwark, S.

Price £4 10s. and upwards.

Every description of MATERIAL for HEATING BUILDINGS, supplied of the best description, with directions for putting up HOT-WATER APPARATUS.

Greenhouses, Orchard-houses, and Conservatories.

H. FREEMAN'S Horticultural Works, Triangle, Hackney, London, N.E.: established 20 years. Good substantially-made GREENHOUSES, glazed, ready for fixing, 42 feet by 13 feet, 50*l.*; 21 by 13, 28*l.*; 12½ by 10, 15*l.* ORCHARD-HOUSES 10 per cent. cheaper. A large assortment kept. Estimates given for heating, or any branch in iron or wood.

Heating.

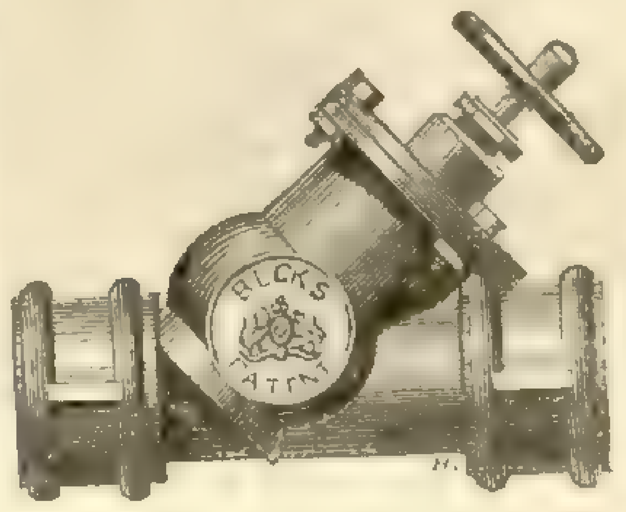
HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c. References to Noblemen and Gentlemen and their gardeners sent on application.

Apply to Joseph Meredith, Vine Cottage, Garston, near Liverpool.

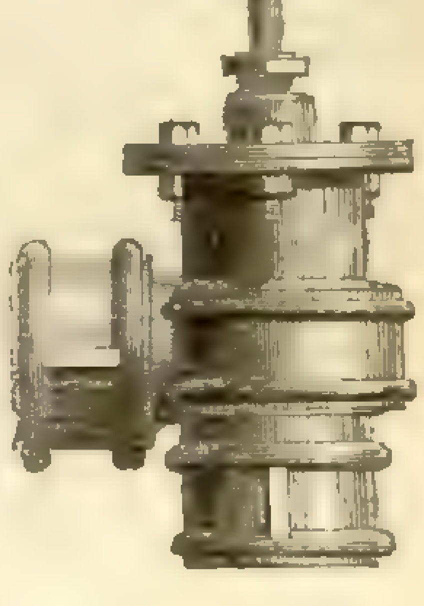
HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, Tubular, and Elliptic, from 24*s.* each. Improved Boilers and Iron Stands to use without brickwork, 50*s.* each. Valves from 12*s.* 6*d.* each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at Mr. Lynch White's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

Horticultural Works, Danvers Street, Chelsea, S.W.

BECK'S PATENT HOT WATER VALVE.



Horizontal Valve. 2" 18*s.* 6*d.*; 3" 25*s.*; 4" 30*s.*



Angle Valve. 2" 17*s.*; 3" 23*s.*; 4" 28*s.*

JAMES GRAY, Sole Agent, begs to call attention to this most simple and perfect Valve ever invented. It is perfectly water-tight, and is never liable to get out of order, or to get fixed by standing.

To Architects, Engineers, Gardeners, & Others.—Beck's Patent Valve has been submitted to several of the most scientific men of the day, and has invariably met with unqualified approval. A liberal Discount to the Trade.

Conservatories, Greenhouses, Vineries, and every description of Hothouse erected on the most improved principles, and of best materials, at the lowest possible price consistent with good workmanship.

Heating by Hot Water in all its branches. Boilers of every approved description, Tubular, Saddle, Conical, &c.

James Gray, Horticultural Works, Danvers Street, Paulton's Square, King's Road, Chelsea, S.W.

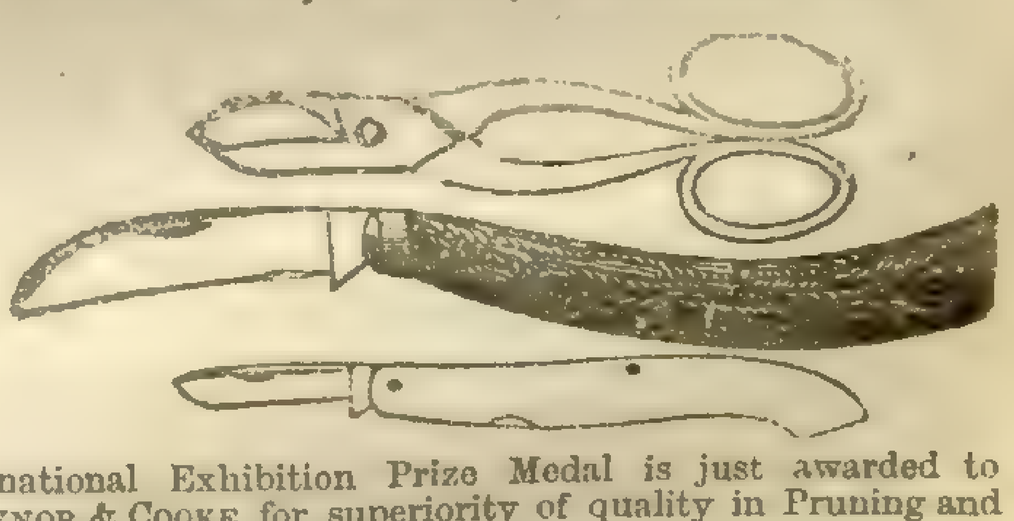
JOSEPH HAYWOOD AND CO.,

Manufacturers of PRUNING and BUDDING KNIVES, SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

Paxton Works, Sheffield, Established 1738.



International Exhibition Prize Medal is just awarded to Saynor & Cooke for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR and COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.

Caution.—None are genuine unless marked Saynor. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

Liquid Manure Distributor.

THE JUDGES of the Liverpool, Manchester, and Staffordshire Agricultural Shows, 1861, have each awarded the First Prize to I. James, Tivoli Works, Cheltenham, for his LIQUID MANURE DISTRIBUTOR, making a total of 17 Prizes. It is also well adapted for Watering Streets, supplying the Steam Plough, Irrigating, or for a Fire Engine. Also his last great improvement in WASHING MACHINES, which have been awarded several First Prizes, and will wash 20 Shirts in 20 minutes.

Choice Seeds.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give the greatest satisfaction.

PRIMULA, per packet, 2*s*. and 3*s*. 6*d*. each.
CALCEOLARIA, per packet, 1*s*. 6*d*., 2*s*. 6*d*., and 3*s*. 6*d*. each.
CINERARIA, per packet, 1*s*. 6*d*. and 2*s*. 6*d*. each.

☞ For numerous Testimonials see SEED CATALOGUE, post free on application.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of Exhibition, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. Wheeler & Son, Seed Growers, Gloucester.

New Plants of the Season.

GODWIN and PADMAN have now ready the NEW FUCHSIAS of Messrs. Bull, J. Carter & Co., Cornelissen, E. G. Henderson & Son, Lemoine, W. Rollisson & Sons, G. Smith, F. & A. Smith, and Scott, at 1*s*. each, or 10*s*. 6*d*. per dozen.

NEW VERBENAS of 1862 .. .. 6*s*. per dozen.
NEW PETUNIAS ,, ... 9*s*. ,,
NEW CHRYSANTHEMUMS of 1862 .. 12*s*. ,,
NEW TROPÆOLUMS of 1862 .. .. 12*s*. ,,

G. & P.'s SUPPLEMENTARY CATALOGUE, containing descriptions of above, on application to

Broadfield Nursery, Sheffield; or J. C. Padman, Boston Spa, Tadcaster.

The Best Substitute for Vetches is

TRIFOLIUM INCARNATUM.—This crimson Clover deserves to be generally cultivated. If sown in August either on fresh land or upon a Corn stubble, a heavier crop of Clover will be ready for mowing in May and June next than from common Clover sown the previous spring, and is highly valuable either for soiling or for hay. To insure success it is only necessary to obtain new Seed, and to sow in August or the first week of September.

Sutton & Sons, Reading, can supply fine new Seed just threshed. As it is becoming scarce, early orders should be given. Samples with price may be obtained post free.

Royal Berkshire Seed Establishment, Reading.

Very Choice Primula, Calceolaria, Cineraria, &c., 1s. per Packet,
Post Free.

SUTTON and SONS can strongly recommend the following Choice SEEDS, at 1*s*. per packet each sort:—
PRIMULA SINENSIS FIMBRIATA
CALCEOLARIA
CINERARIA
POLYANTHUS
PANSY
PELARGONIUM
CARNATION
AURICULA

Royal Berkshire Seed Establishment, Reading.

THE BEST SORTS of CABBAGE SEEDS, in packets, 6*d*. each sort, Post Free, sufficient to raise a thousand plants of each.
SUTTON'S IMPERIAL
EARLY BLENHEIM
CATTELL'S DWARF BARNES
CHAMPION
SUTTON'S DWARF COMBE
SHEPPARD'S EARLY MARROW
CATTELL'S RELIANCE
ATKINS'S MATCHLESS

Nonpareil, Early York, Enfield Market, Wheeler's Imperial, and other old sorts, 3*d*. per packet; Drumhead Cattle Cabbage, 2*s*. 6*d*. per lb.

Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

The Quickest Turnip known.

SUTTON'S EARLY SIX WEEKS or NIMBLE WHITE.

Fine fresh Seed, 9*d*. per lb.; 9*s*. per peck, or 32*s*. per bushel, Carriage Free.

Royal Berkshire Seed Establishment, Reading.

Improvement of Grass Lands
by Sowing Good Seeds of the Most Suitable Kinds.

SUTTON'S RENOVATING GRASS SEEDS
should now be sown.

These Seeds consist of PERENNIAL CLOVERS and FINE GRASSES for improving the bottom.

Price 9*d*. per lb., or 80*s*. per cwt. 8 to 12 lbs. per acre will be sufficient, and will effect a great increase in the produce.

Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

STELZNER and MEYER, Ledeberg Nursery, Ghent, Belgium, beg to offer the following plants at the undermentioned low prices:—

Gloxinia (Gesneria) pyramidalis, very beautiful new distinct hybrid, received 1st Prize at the last Ghent show, and at the grand one at Malines, July 6, good and very strong plants, 7*s*. 6*d*. to 12*s*. 6*d*.
Ditto, smaller ones, 7*s*. 6*d*.
Cyperus alternifolius fol. var., 10*s*. 6*d*. to 15*s*.
Rhynchosia albo-nitens, beautiful variegated stove Climber, 5*s*.
Bouvardia albida, 3*s*. 6*d*.
Aster coccineus, 3*s*. 6*d*.
Rhododendron hybridum concessum, good plants, 120*s*. per 100.
,, ,, Fleurs de Marie, 100*s*. per 100.
,, President Van den Hecke, 300*s*. per 100.
,, Elfride, 60*s*. per 50.
,, Bylsianum, 120*s*. per 100.
Aspidium Frizelliæ, new, very fine for the open ground, 80*s*. per 100.
Cystopteris obtusa, new, very fine for the open ground, 40*s*. per 100.

	Per 100—s.	d.		Per 100—s.	d.
Pteris tricolor ..	40	0	Gymnogramma lanata ..	40	0
,, cretica fol. var.	30	0	,, pulverul. argyr.	50	0
Adiantum concinnum ..	40	0	,, Laucheana ..	50	0
,, curvatum ..	30	0	Notochlæna nivea ..	25	0
,, macrophyllum	40	0	,, chrysophylla	[illegible]	0
Lygodium mexicanum	80	0			

All fine young Plants in 2-inch pots.

CHEILANTHES BORSIGIANA; the beautiful Golden Cheilanthes, one of the prettiest Ferns known. Nice young plants ready in August, at 10*s*. 6*d*. each, or 4*l*. per dozen.

A. Stelzner, late Traveller of Mr. Louis Van Houtte's Nursery at Ghent, begs to recommend himself kindly to his numerous friends and patrons throughout Great Britain.

Autumn 1862.—New Plants.

JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium, begs respectfully to announce that he is now taking orders for the following SELECT NOVELTIES, fully described in his NEW CATALOGUE for the Autumn of 1862, and which will be sent out on and after September 1, at the following prices:—

	Each.—s.	d.
AZALEA INDICA, SECRETAIRE CLAUS	7	6
,, ,, VICOMTE DE FORCEVILLE, the finest double Red Azalea ever offered ..	10	6
CAMELLIA QUERCIFOLIA, Oak-leaved Camellia, good plants	21	0
,, ,, With buds	31	6
,, ,, A few stronger plants ..	42	0
HEBECLINIUM MACROPHYLLUM, fine plants, with very ornamental foliage, the leaves being nearly a foot long, and more than a foot in diameter, good plants ..	12	0
RHODODENDRON SOUVENIR DE JEAN BYLS, splendid hardy Rhododendron, figured in the *Illustration Horticole*, June, 1862, good plants	21	0
With buds	31	6
A few strong plants	42	0

One plant over to the Trade on every three taken.

A carefully Coloured Plate of the Rhododendron and Camellia will be sent to each Subscriber. The Subscription List is open now, and early orders are solicited, as they will be executed in strict rotation.

All orders to be addressed to M. Jean Verschaffelt, 43, Rue de la Caverne, Ghent, Belgium.

CATALOGUES can also be had of Messrs. R. Silberrad & Son, 5, Harp Lane, Great Tower Street, London, E.C.

MAGNIFICENT NEW JAPANESE LILY, LILIUM AURATUM.

PLANTS of the above splendid LILY, which excited so much admiration at the ROYAL HORTICULTURAL SOCIETY'S EXHIBITION, July 2, continue flowering, and may be seen daily (Sundays excepted), at

Mr. JAMES VEITCH'S, Jun.,
ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, S.W.

ROYAL HORTICULTURAL SOCIETY.

REMAINING

ARRANGEMENTS FOR THE EXHIBITIONS AND MEETINGS IN 1862,

TO BE HELD AT

THE GARDEN, SOUTH KENSINGTON, W.

August 12, Tuesday. Fruit and Floral Committee.
,, 26, Tuesday. Fruit and Floral Committee.
Sept. 5, Friday. Meeting for Election of Fellows.
,, 10, Wednesday. Show of Autumn Flowers, and Fruit and Floral Sub-Committee.
Sept. 23, Tuesday. Fruit and Floral Committee.
October 8, Wednesday. Fruit and Floral Sub-Committee.
October 8, 9, & 10. Great International Show of Fruit, Gourds, Roots, Vegetables, and Cereals. The Show of Gourds, Roots, and Cereals to continue until the 18th.
Nov. 7, Friday. Meeting for Election of Fellows.
,, 11, Tuesday. Fruit and Floral Committee.
Dec. 9, Tuesday. Fruit and Floral Committe.

*** At some period during the season it is hoped that the Memorial of the Exhibition of 1851 will be finished, and probably publicly uncovered.

ELECTION OF FELLOWS.

Gentlemen and Ladies wishing to become Fellows have to be proposed by some one already a Fellow, to whom they are personally known. The subscription is Two Guineas Entrance Fee, and Two Guineas or Four Guineas a year according to the privileges wished.

ADMISSION OF THE PUBLIC.

I. REMAINING HORTICULTURAL EXHIBITIONS.

Sept. 10. Autumn Flower Show .. .. 2*s*. 6*d*. | October 8. Fruit and Vegetable Show .. .. .. 2*s*. 6*d*. | October 9. Fruit and Vegetable Show .. .. 1*s*. 0*d*.
October 10. Fruit and Vegetable Show .. .. 1*s*. 0*d*. | October 11-18. Gourds, Roots, and Cereals .. .. 1*s*. 0*d*.

Admission by payment at the door, or by tickets previously purchased.

From 12th July to 18th October.

		s.	d.
Sundays	No admission by payment.		
Mondays .. (Band), Tuesdays .. (Band), Wednesdays (Band), Thursdays .. (Band)	Gardens alone	1	0
	Gardens and Exhibition	1	6
	Gardens from Exhibition	0	6
Fridays .. (Band) ..	.. ..	2	6
Saturdays .. (Bands) ..	.. ..	5	0

From 18th October to 31st December.

		s.	d.
Sundays	No admission by payment.		
Mondays	.. ..	0	6
Tuesdays	No admission by payment.		
Wednesdays	.. ..	2	6
Thursdays	No admission by payment.		
Fridays	ditto.		
Saturdays ..	.. ..	2	6

The Council have the pleasure to announce that Her Majesty's Commissioners for the Exhibition of 1851 have given their consent that until October 18 Visitors may be permitted to use a temporary roadway for admission from Kensington Gore leading to the back of the Conservatory. The Council sought this concession in order to abate the confusion which, without it, must be attendant on the number of carriages visiting the International Exhibition of 1862.

STRAWBERRIES for AMATEURS.—Plants of the six most useful sorts, chosen to afford a long succession of fine fruit, one of each sort, or four plants of ECLIPSE, free by post, for 24 stamps. The sorts include ECLIPSE, new, pronounced first rate, both for Forcing and Out-doors, by the Royal Horticultural Society; PRINCESS, the finest of the very early sorts; SIR HARRY, SIR CHARLES NAPIER, WONDERFUL, the best for very rich soils; and ELEANOR, very fine and late: or OSCAR, if ordered.

Also very choice CAULIFLOWER and pure WHITE BAVARIAN CUCUMBER, 1s. per packet.

Address A. Moss, Jun., Chadwell Heath Mills, Essex, E.

Strawberries.

CHARLES TURNER can now supply Strong Plants of the following Select kinds (as well as the older varieties), thereby insuring a crop of fruit next season:—

	Per 100.—s.	d.
ADMIRAL DUNDAS (Myatt)	5	0
BRITISH QUEEN (Myatt)	5	0
CAROLINA SUPERBA (Kitley)	5	0
CRIMSON QUEEN (Myatt)	5	0
EMPRESS EUGENIE (Knivett)	5	0
ELIZA (Rivers)	3	6
ELIZA (Myatt), syn. "Omar Pacha"	3	6
FROGMORE LATE PINE (Ingram), large, solid, rich, and juicy; a great cropper and fine grower	10	6
FILBERT PINE (Myatt)	5	0
GENERAL HAVELOCK (Tiley), early, large	5	0
OSCAR	5	0
PRINCE ARTHUR (Ingram)	5	0
PRINCE OF WALES (Ingram)	3	6
RIFLEMAN (Ingram), very large, great cropper, and fine flavour	10	6
SIR C. NAPIER (Smith)	5	0
SIR HARRY (Underhill)	3	6
WONDERFUL (Jeyes)	5	0
WIZARD OF THE NORTH (Robertson)	3	6

The Royal Nurseries, Slough.

Fine Bedding Geraniums.

MESSRS. E. G. HENDERSON AND SON respectfully call the attention of Amateur Cultivators and others to the undermentioned Novel and very beautiful varieties of VARIEGATED ZONALE GERANIUMS, adapted for bedding and conservatory culture in pots, which are now in fine condition.

MRS. MILFORD, rich broad massive features, very distinct.

MRS. POLLOCK, SUNSET, THE COUNTESS } The picturesque leaf-tints of these varieties are greatly admired as seen planted in their respective groups.

THE NEW FERN-LEAVED FRINGED CHINESE PRIMROSE.—Strong plants for winter bloom.

Wellington Nursery, St. John's Wood, London.

DOUGLAS FIR.—This noble Tree is now proved to be amongst the most ornamental and valuable Timber Trees; and having stood at Elvaston the winter of 1860 with impunity, when both the Common Oak and Holly were severely injured, proves its hardiness.

Splendid plants, all from seed, with extraordinary roots, can be supplied as under. Those who wish to plant Park Groups or Avenues should order early before the stock is exhausted. 1 to 1½ ft., 50s. per 100; 2 ft., 75s. per 100; 3 ft., 100s. per 100.

WILLIAM BARRON, Elvaston Castle, Derby.—Aug. 2.

Prize Calceolaria Seed.

J. DOBSON AND SONS' Splendid HYBRIDISED CALCEOLARIAS are second to none in the world. First Prizes have been awarded them wherever exhibited this season.

Exhibitors should grow no other for 1863.

Hundreds of testimonials received as to their superiority over all others.

Sale of 1861, 4000 packets.

New Seed, growth of 1862, now ready in sealed packets, 1s. 6d., 2s. 6d., 3s. 6d., 5s.

The Trade supplied liberally. A lot of fine plants for sale.

Woodlands Nursery, Isleworth, W.

Stanstead Park Nursery, Forest Hill, S.E., and Edinburgh.

DOWNIE, LAIRD, AND LAING have much pleasure in offering the following very select Seeds, saved from their choice collections.

ANTIRRHINUM, 6d. and 1s. per packet.
CALCEOLARIA, 1s. and 2s. 6d. per packet.
CINERARIA, 1s. and 2s. 6d. per packet.
HOLLYHOCK, 1s., 2s. 6d. and 5s. per packet.
PANSY, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS KERMESINA SPLENDENS, 1s. 6d. and 2s. 6d. per packet.

New Plants of 1862.

JAMES DICKSON AND SONS, "Newton" Nurseries, Chester, have now ready Strong Plants, at Reduced Prices, of FUCHSIAS, CHRYSANTHEMUMS, PHLOXES, PETUNIAS, and VERBENAS of the most approved varieties of this season. The usual allowance to the Trade. Prices on application.

Also very strong VINES from Eyes for IMMEDIATE PLANTING of the leading varieties, and such as will give the utmost satisfaction. Prices moderate.

To the Trade.

JOHN KEARSLEY AND SONS beg to offer as below, all fine Plants:—

	Per doz.—s. d.		Per doz.—s. d.
Gardenia florida plena	12 0	Aspidium nidens	12 0
" Fortunii	12 0	Lycopodium lepidophyllum	12 0
Caladium Chantini	12 0	Lycopodium caulescens	9 0
" Belleymei	12 0	Dicksonia antarctica	12 0
Gesnera Donckelaari	12 0		Per 100.—s. d.
Anæctochilus argenteus, fine	18 0	Azalea indica, fine	75 0
Croton variegatum	12 0	Primula sinensis pleno	75 0
" pictum	12 0	Tritoma Uvaria	60 0
Hoya variegata	12 0	Humea elegans	25 0
Pothos argyræa	12 0	Cyclamen persicum, of sorts	50 0
Maranta rosea lineata	24 0	Crassula coccinea	50 0
Verbena Fox-hunter	4 0	Euonymus variegata	20 0
Cytisus canariensis	60 0	Lobelia speciosa, true	16 0

Nursery, 44, Vicar Lane, Leeds.

CATTELL'S EARLY RELIANCE CABBAGE, CATTELL'S DWARF BARNES CABBAGE.
These two Cabbages have proved themselves for many years past to be the two best Early Spring Cabbages in cultivation. If sown as early as the middle of July, they will not run to seed the following Spring. They may be had as usual in packets containing half-an-ounce of the Reliance, and one ounce of the Dwarf Barnes. Free by post for 12 Penny Stamps for each packet.

JOHN CATTELL, Nursery and Seed Establishment, Westerham, Kent.

ROYAL HORTICULTURAL SOCIETY.—A BALLOT for the undermentioned Plants and Bulbs sent home by the Society's Collectors in Brazil and South Africa, will take place in the Council Room, at the Garden, South Kensington, on WEDNESDAY, Aug. 20, at 2 o'Clock, P.M.

No. 1. CATTLEYA, SP.
" 2. " SP.
" 3. SOPHRONITIS, SP.
" 4. ONCIDIUM, SP.
" 5. BERTOLONIA MARGARITACEA, Very ornamental. Leaves covered with small white spots
} South Brazil.

" 6. BRUNSVIGIA, SP.
" 7. HÆMANTHUS, SP.
" 8. AMARYLLIS, SP.
" 9. MISCELLANEOUS BULBS. (Species unknown). In small lots
} South Africa.

Fellows of the Society desirous of obtaining any of these plants, if Life Members of 40 guineas, or Annual Subscribers of 4 guineas, are requested to name *two* numbers; if Life Members of 20 guineas, or Annual Subscribers of 2 guineas, to name *one* number.

The arrangements for conducting the Ballot render it necessary that the numbers *only* of the lots should be sent to Mr. MURRAY, at the Offices of the Society, South Kensington, W., on or before Friday, August 15, *after which date applications will be too late.*

BANBURY HORTICULTURAL SOCIETY.
OPEN PRIZES.
The SIXTEENTH ANNUAL EXHIBITION of this Society is fixed for TUESDAY, August 26, when, in addition to the usual number of Prizes to be competed for by Members, the following are offered, open to all England, on payment of an Entrance Fee of 2s. 6d.

For the best 6 STOVE or GREENHOUSE PLANTS, either in Flower or Ornamental, of at least four different Genera, but not Fuchsias or Annuals, 1st Prize, 3l.; 2d, 2l.
For the best 24 DAHLIAS, 24 varieties, 1st Prize, 3l.; 2d, 2l.
For the best 18 HOLLYHOCKS, 2 Blooms of each, 1st Prize, 2l.; 2d, 1l.
For the best 12 varieties of VERBENAS (5 trusses in a bunch), 1st Prize, 1l.; 2d, 15s.
For the best Collection of FRUIT, grown by the Exhibitor, 1st Prize, 2l.; 2d, 1l.

The Judges may withhold any prize if the production exhibited is not considered worthy. Intended Exhibitors must give notice to the Secretary on or before Saturday, August 23. The Society will, if requested, convey the productions from and to the Railways.

The Bands of the 26th Cameronians and the 3d Oxfordshire Rifle Volunteers will play during the day.

For further particulars, apply to E. J. HARTLEY, 57, High Street, Banbury. Acting Secretary.

Royal Botanic Gardens.

THE PRESENTATION of a SERVICE of PLATE to ROBERT MARNOCK, Esq., will take place at a DINNER to be holden at the London Tavern, Bishopsgate Street, E.C., on THURSDAY, the 7th inst.

Dinner to be upon Table at Half-past 5 o'Clock. Tickets 21s. each.

Gentlemen desirous of being present upon this interesting occasion will be pleased to signify their intention at once to E. R. CUTLER, Hon. Sec., 14, Tavistock Row, W.C.

The Gardeners' Chronicle

SATURDAY, AUGUST 2, 1862.

OF all the subjects of garden cultivation, no plant exceeds in importance THE VINE, if, indeed, any can be compared to it. It constitutes a large part of the wealth of countries suitable to its growth as a field crop, and in less favoured regions it is the most valuable part of the fruit garden. Treatises without end have been written on its management, many good, some indifferent, and a few quite discreditable to their authors. It is needless to name the latter, for they are notorious among intelligent gardeners. Such being the case, it would seem a superfluous task to undertake any further enquiry into either the art or theory of growing this famous tree. Mr. THOMSON is of a different opinion—and so are we. All practical men claim a right to speak on that branch of gardening in which they have publicly displayed their skill; all sensible men will listen to them with fixed attention. Possibly they may have nothing to say that has not been said before; but even then it is desirable to know how far they agree or disagree with received rules of management; and that is better by far than propounding new ideas, the real value of which is for the moment unascertainable.

For these reasons we opened with much interest a volume on the Vine * which has just reached us. Its author has long been known as an excellent cultivator, especially of Grapes; that he is also a man of good sense is now shown by his having confined his treatise within the limits of his own personal experience; leaving others to weary the reader with matters historical, pomological, chemical, or physiological (we might rather say pseudophysiological). That this is so will be seen by the following enumeration of the subjects treated of:—"Shape and size of vinery; atmospheric heat of vinery; bottom heat; ventilation; construction of vinery; subsoil and drainage; coverings for borders; compost suitable for Vines; young Vines for planting; season for planting Vines; various ways of planting Vines; treatment of Vines first year after planting; the second year's treatment; the fruiting year; pruning Vines; grafting and inarching Vines; fruiting Grape Vines in pots; selection of Vines; the diseases Vines are subject to; red spider; rust on Grapes; mildew on the Vine; warts on the back of the leaf; air-roots on the Vine; packing Grapes; keeping Grapes after they are ripe; amateur's vinery calendar; experiments with Vines." All these subjects, be it observed, are treated of with reference exclusively to cultivation under glass, out-door management having ceased to have any significance since the price of Vineries has sunk to the low rate at which they may now be procured.

One of the first points to which the reader's attention has been directed is that most important one of ventilation, without a perfect control of which no skill can possibly procure good Grapes. After adverting to the common and clumsy plan of lowering temperature and finding room for fresh air by pulling down top ventilators, the author proposes a new scheme of his own:—"This apparatus consists of a sheath of copper placed over a row of the front pipes. The diameter of this sheath is one inch more than the hot pipe it encloses, consequently there is an open space of half an inch all round the pipe inside the sheath. This cavity is fed with fresh air from the exterior of the house by a pipe 5 inches in diameter, which springs from the lower surface of the sheath, and passes through the front wall of the house to the external air. There is a valve in the feed-pipe to modify the supply of fresh air at pleasure. In the upper surface of the sheath is a double row of small holes, so that the moment the cold air comes into the hot chamber round the pipe, and gets hot, expanded, and lighter, it makes its exit through these holes into the general atmosphere of the house. In our early vineries last winter, the valves were kept open constantly, both night and day, with great advantage to both fruit and foliage."

This is much the same as the excellent but ruder plan of admitting air through underground flues, the ends of which, opening into the house, are so placed as to compel the cold fresh air to strike the heated pipes or other heating apparatus.

Speaking of young Vines and their treatment, Mr. THOMSON gives very useful advice:—"The size of pot they should be shifted into depends on what they are intended for. If for planting out, an 8-inch pot is sufficient; if for fruiting in pots the following season, the size should not be less than 8 inches, or more than 11 inches. I have seen at Floors Castle 14 bunches, averaging half a pound each, on a one-year old Vine, in an 8-inch pot. Mr. Rose, however, told me that he kept the pot standing in a saucer, into which he poured guano-water occasionally, till the Grapes began to colour. I have found a compost the same as that recommended for the borders answer admirably for Vines in pots. When potted, they should for a few days be shaded, as the roots must suffer more or less in the process, and are not prepared to supply the foliage with the needful sap to resist the demands made upon it by a powerful sun. In March or April the temperature and general treatment as to airing should be the same as what will be recommended for the first year they are planted out in the border. Whether Vines are intended for fruiting in pots or planting out, I consider that they should be stopped when, including their pot, they are 6 feet high; the laterals, as they appear, should be stopped at one joint. These laterals will break again, and should be pinched, so as to leave another joint. The best position for such Vines to grow in is in the full blaze of the sun. I have grown them trained up under the rafters of a Pine pit, and found them prove very fruitful, and also against the back wall of a Pine stove; but they will do well in any situation where they can have Vinery or Pine-stove heat, be regularly watered, have the full influence of the sun, and be kept free from red spider. When the canes become brown, and all the symptoms of ripening show themselves, the whole of the lateral branches may be cut off, care being taken not to injure the leaves that spring from the main stem, as their office is to fill out the buds that are to show the young bunches of fruit next season. When fairly ripened—say in September—and the leaves are getting an autumn tint, they may be removed and nailed up against a wall, provision being made that they do not suffer for want of water. From this position they should, on the approach of frost, be removed to an airy shed, Peach-house at rest, or some other shelter where they can be kept cool, and at the same time protected from severe frost. Thus prepared, they are fit either for fruiting in the pots

* *A Practical Treatise on the Cultivation of the Grape Vine.* By WM. THOMSON, Gardener to his Grace the Duke of BUCCLEUCH, K.G., &c., Dalkeith Park, Scotland. Blackwoods. 8vo. pp. 69.

they are in, or for planting out in a border. If wanted for the former purpose, they may be cut back to 5 feet, including pot. Their roots should never be allowed to get dry during their season of rest, as is sometimes the case, nor should they have much water." The author is not however an advocate of growing Vines in pots, except for special purposes, although he has himself grown 200 bunches of Grapes in a house 30 feet long and 13 feet wide.

Perhaps there is nothing that more perplexes amateurs and inexperienced Gardeners than working one kind of Vine upon another. They will find their difficulty removed by attention to Mr. THOMSON's simple directions:—"When it is considered desirable to increase the varieties of Vines in a house, the simplest way of doing so is either to graft or inarch them. For my own part I prefer the latter method; and by putting young wood to young wood, all that is necessary is to bring the Vines to be united into a convenient position to each other, and to take a slice with a sharp knife off each, nearly half through their diameter, the wounds to be the same length; then bring their wounds together, so that at least two of their sides or lips are in close contact; then put a distinct tie above the wounds, and one below them, to enable you to undo the tie that is to hold the wounds together betwixt these two at any time, without the risk of destroying the embryo union that may be taking place; then with soft matting, thoroughly, and rather firmly, bandage the whole length of the wounds. The Vines will swell as they grow, and this bandage will have to be slackened occasionally, when the importance of the two ties first referred to will appear. The growth of the stock on which the new Vine is inarched may be stopped at three joints past its point of junction with the new one. In nine out of ten cases the union should be complete in a month, when the bandage may be taken off, but the ties above and below retained for some time afterwards. When the young Vine shows by its vigorous growth that it is deriving supplies of sap from its new parent, its connection with its own roots may be half severed, and by the end of the season cut off entirely. I have inarched young wood on to old, but do not recommend it where young can be had conveniently. I do not consider grafting so certain a plan as inarching in the manner I have described; and, besides, it leads to a good deal of bleeding when the graft is put on just as the old parent Vine is started into growth. I have raised seedling Vines from seed, inarched them on old established Vines the same season, and fruited them the next; when inarched, their stems were no thicker than stocking-wires."

One of the author's last experiences is thus described:—"This was the raising of the roots of a house of Vines in the gardens at Dalkeith in June 1855. It was evident that the roots of the Vines in question had gone down into the subsoil, and I determined to raise them and lay them in new soil. On the 8th of June, after covering the glass of the house with a tarpaulin, I had a trench cut down right along the border, within 12 feet of the front of the house, and then cleared away all the old soil and raised the roots close up to the front wall. We thus had the whole of the roots disengaged from the soil, as there was then no border inside the house. I had them laid as fast as possible into the new soil, and well watered. Their foliage all flagged and hung down; but I kept the house close, moist, and warm, and excluded all the direct rays of the sun effectually. The berries in the bunches were the size of Peas, and for a few days they were quite wrinkled in their skins. At the end of a week the leaves began to turn up a little. I then took off the tarpaulin and put on a lighter shading of tiffany, and in the course of another week I removed this also and put on hexagon netting. In a month from the date of the operation, they were perfectly recovered and growing fast. They ripened 30 lb. of good Grapes the same year, and in 1856 bore a splendid crop of fruit, and continued to do so for three subsequent years. The Vines were, however, old, and had been pruned on the long spur system, which rendered them unsightly. All our other Vineries were planted with young Vines in 1855, and in 1860 were in full bearing. Under these circumstances I was induced to make arrangements for doing away with the old Vines in question, but, before doing so, determined to have one more crop off them as early as possible in 1861, and replant the house the same year. To hasten this, I removed a Pine pit, no longer required in the house, the removal of the front wall of which gave access to the roots of the Vines in the outside border through the arches of the front wall of the house. I then filled the interior of the house, previously occupied by the pit, with hot fermenting dung and leaves. This material was placed in close contact with the roots of the Vines through the arches, and acted as a hot lining to the entire border. The outside surface of the border was covered with dry leaves and thatched. The house was started in this way on the 1st of September, and on the 1st of January 1861 we cut the first dish of Grapes, exactly three months earlier than we cut from the same house the year before, though started at the same time, and treated in the same manner, with the exception of the hot lining to the roots. Seeing that the success of this experiment was so satisfactory, and finding, on examination, that a host of fine young roots had established themselves in the lining as it cooled, I made up my mind to give them another trial, and last summer I pruned them in July. In the end of August I put a quantity of hot fermenting dung and leaves on the top of the previous year's lining, so to speak; and we cut excellent Grapes on the 1st of January this year. The crop was nearly double that of last year; and in March the wood was perfectly ripe, and much stronger than ever I saw it on this house before. I need scarcely add that the sentence at one time recorded against them for their unsightliness has been revoked."

This was a good experiment, and is well described. It must be a useful guide in many an old garden besides that of Dalkeith; and it may be taken as an example of the clear, practical way in which Mr. THOMSON has dealt with a most important subject. When books on Gardening are written thus conscientiously, they are alike honourable to their author and valuable to the public.

—— THE flowers of the MEXICAN HAND PLANT, *Cheirostemon platanoides*, mentioned in our notices of the exhibitions of the Royal Horticultural Society, and again alluded to at page 667, were not the first that have been produced in this country, as seems to have been supposed. In the spring of 1859 Mr. C. DORRIEN, of Ashdean, by whom the sample shown last June was also produced, flowered the fine specimens represented in the *Botanical Magazine* of that year (t. 5135). Sir W. J. HOOKER tells us that a plant had been long cultivated at Kew, where it had at that time attained a height of 23 feet, but without bearing flowers. In the Jardin des Plantes at Paris, according to a note by M. ADR. DE JUSSIEU, published in VAN HOUTTE's *Flore des Serres* (vii. 7), and accompanied by a coloured figure, this curious tree flowered sparingly in the year 1850, and more abundantly in 1851. M. DE JUSSIEU states that it was introduced to the Montpelier Garden from that of Madrid, and appeared in a catalogue of plants of that establishment in 1813. This tree had not then flowered, though 20 feet high, but at last it became covered with blossoms. It was not mentioned in the Paris catalogue of 1816, but was included in that of 1829. This tree, at the date above mentioned, was upwards of 30 feet high, and was growing in a greenhouse pavilion along with other plants of the warmer temperate climates.

—— We find in the *Florist and Pomologist* (i. 100) some strictures on the Royal Horticultural Society, in reference to its dealings with Florists and Florists' flowers, from which the following extracts will serve us as a text:—

"I read that on June 11, 1862, the following prize was given to Mr. H. NORMAN, Plumstead, for 24 varieties of Pinks—10*s.*! and that on May 21, the same gentleman was lucky enough to get 2*l.* for 24 Tulip blooms, and Mr. C. TURNER 30*s.* for the like number. Can you inform me, or your readers generally, whether this is all that is to be done for florists' flowers by the Royal Horticultural Society after all the fine promises of patronage made to us a year or two back?"—*A Florist of the Old School.*

"Yours is a florists' periodical, and it has always been appreciated for the soundness and independence of its views; I therefore ask you the question, whether or not you consider what the Royal Horticultural Society is doing for florists' flowers is anything like a fulfilment of the promises made to the floral world when it started on its new course? It was said both the Pomological and Floricultural Societies would be superseded by the full recognition of meritorious garden flowers, fruits, and vegetables, by the Committees of Fruits and Flowers formed under the auspices of the Society. I have no fault to find with these Committees, which I hear on all sides are well managed; but I think the now great and powerful Society might acknowledge in a more suitable manner florists' flowers at their exhibitions than by merely throwing them the crumbs left after the great aristocratic classes have been satiated to repletion. * * * I am not thankful and out with it; and wish you to tell the world that I and many others are not satisfied with present proceedings. I wish to respect every florist and every kind of florists' flowers, supposing always there is fair play between us; but if not, why then you may as well know that I don't care a fig for Orchids, or Mosses, or Cordylines, or Anæctochiluses (how can one like a plant always poked under a glass, and which mustn't be handled?) or such like things. Perhaps it is because I can't afford to get them, or couldn't grow them if I did; but any how I don't begrudge those who have the means to purchase and grow them, if they will let us share with them the honest rewards of skill, anxiety, and cultivation due to us as florists (I won't say of a humbler class—never, where all are alike the offspring of one great Creator's skill), and as fellow labourers and improvers in the same great field of practical horticulture. Why, I am told it is no uncommon thing for one great exhibitor to obtain from 50*l.* to 70*l.* at a single exhibition! Goodness me! only let one 50*l.* be offered for collections and specimens of hardy border flowers, and a reasonable time given to attend to their cultivation, and see what could be produced in this way. * * * I must press upon you to take up this subject strongly, as you have ever done what you have undertaken; and I doubt not we shall, in some quarter or other, get due recognition for the classes now too much neglected by the great Society, or a popular florists' flower society must be started."—*Florist.*

So then it would appear there is a smouldering dissatisfaction among florists, or at least amongst a section of them, at the treatment they receive at the hands of the Horticultural Society. They don't think themselves duly recognised by the "great Society," as we gather from what "Florist" says, and it is as well, therefore, to "out with" the fact, and submit it to examination. We are not the judges between the parties directly concerned, but the question is one of public horticultural interest, on which, as journalists, we may at least form an opinion. Besides, a little ventilation of the subject may do no harm.

First of all, let us clear the way by avowing that there does not appear to be any reason *per se* why florists' flowers should not be recognised and encouraged to the full extent of a "Florist's" desires. The only objections arise out of questions of administration. Exhibitions must be made to pay, if possible; at all events they must be planned out with that object. This must place a limit to the prizes somewhere. The writer we have quoted would no doubt leave out the Orchids and Cordylines, and such things which he honestly tells us he don't care for, and would moreover in all likelihood give us Pinks and Pansies in their stead, unless indeed he would prefer to offer separate prizes for every flower that has its admirers. But surely he must see on reflection that this latter plan would be too costly to be practicable, and that the former could not be generally acceptable; for reducing the question to its simplest terms, it would merely be substituting "Florist's" particular hobby for the hobby of some other person or class. Unless, therefore, it could be shown that he commands an overwhelming majority amongst the visitors, the change must be a failure from a general point of view; he and those who go with him might be gainers, but those who cared for, let us say, Orchids, and who did not care for Pansies, would be losers. We shall perhaps be told that the masses would go after the Pansy, and not after the Orchid. "Look," it will doubtless be said, "at the crowds which surround the florists' flowers at an exhibition." But this does not carry conviction to our mind. Did "Florist" ever reflect how these crowds are made up? Excepting only in case of the Rose, which is a source of universal attraction, our own observation of the crowds which collect about florists' flowers amounts to this:—their admirers are full of enthusiasm, and collect in groups about a fine stand of blooms, and scrutinise, discuss, and annotate to their heart's content, all the while seemingly unconscious that they are stopping the onward flow of visitors. Seeing these so earnestly occupied, others press around them to ascertain the cause, and the notion spreading through the adjacent crowd that something of especial excellence must be there to attract so much attention, the crowd presses in, and the blockade is complete. But this surely is no proof of a popular preference for flowers of the class under consideration. On the other side, it may at least be urged that the crowds which do under present conditions flock to the flower shows, come with the distinct impression that such things as Orchids, Anæctochiluses, &c., are to be seen; nay some among the many may be thoroughly aware that an examination of Cordylines and Caladiums awaits them. The negative evidence is consequently rather against "Florist's" views, if we are to set out with the proposition that exhibitions must be planned so as to give fair promise of being remunerative. The only alternative is to assume that the public don't care what flowers it sees, and would come as readily to see one set as another; but then, if so, it would certainly have no special sympathy with the subjects "Florist" himself prefers.

But now as to the actual complaints in which "Florist" indulges. They amount to this, as we read them, that the R. H. S. does not sufficiently encourage florists' flowers in general, or hardy border flowers in particular. Let us see, however, what are the facts. An examination of the schedules for the current year gives the following comparative results as to the subjects invited, by having prizes offered for them:—

Florists' Flowers.	Other Flowers.
March 19.—Hyacinths, Tulips, Camellias, Pelargoniums.	Amaryllids, Lily of the Valley, Primulas, Spring flowers.
April. 9.—Azaleas, Rhododendrons, Cinerarias, Auriculas.	Spring flowers, greenhouse plants, hardy herbaceous plants.
May 21.—Azaleas, Rhododendrons, Roses, Pelargoniums, Cinerarias, Tulips.	Stove and greenhouse plants, Orchids, Heaths.
June 11.—Azaleas, Roses, Pelargoniums, Calceolarias, Rhododendrons.	Stove and greenhouse plants, foliage plants, Orchids, Cordylines or Dracænas, Heaths, Ferns, Anæctochiles, Tropæolums.
June 26.—Roses.	——
July 2.—Azaleas, Pelargoniums, Fuchsias.	Stove and greenhouse plants, foliage plants, Orchids, Begonias, Caladiums, Ferns.
Sept. 10.—Roses, Hollyhocks, Asters, Gladioli, Phloxes, Verbenas, Dahlias.	——

We certainly do not find among the foregoing the Pansy, the Ranunculus, the Pink, the Carnation and Picotee, or the Chrysanthemum; but of these the most

important, namely, Carnations and Picotees, and Chrysanthemums, do not fall in season at the dates of the shows. Pansies, Ranunculuses, and Pinks remain uninvited specially, but not therefore rejected. Can the omission of specific prizes for these be made into a grievance? Does such an omission prove that the Society neglects the florists—"snubs" them, as has sometimes been elegantly said? We suppose the foregoing are some of the hardy flowers "Florist" alludes to. A very small sum would supply the prizes required for them, and had they come in in the ordinary arrangement no one could have begrudged them. But to have omitted them altogether! What thoughtlessness, or worse! (it must be a slight) is this, to quote from the passages we have set down as our text:—"Is this all that is to be done for florists' flowers by the R. H. S. after all the fine promises of patronage?" Is this not "throwing them the crumbs left after the great aristocratic classes have been satiated to repletion?"

Before forming an opinion on these questions, let us, however, just look back at the list of flowers which are specially invited by prizes in the course of the season. Let us, moreover, gather up these "crumbs" and examine them, in order to ascertain their measure and their worth. Roughly put together, we find these "fragments" come out thus, "according to Cocker:"—For florists' flowers, 770*l.* 15*s.*; for other plants and flowers, 820*l.*; the items being distributed through the season in the following proportions, from which it will be seen that on four occasions, out of the seven spring and summer shows, florists' subjects have either a monopoly or the preponderance given to them:—

	For Florists Flowers.			For other Flowers.		
	£	s.	d.	£	s.	d.
March 19	38	10	0	14	15	0
April 9	42	5	0	10	15	0
May 21	187	10	0	243	0	0
June 11	152	10	0	286	10	0
June 26	134	5	0	....		
July 2	85	0	0	265	0	0
Sept. 10	130	15	0	....		
£	770	15	0	820	0	0

And so, with 770*l.* on his side against 820*l.* offered for Orchids and all other "aristocratic" plants put together, "Florist" thinks that his brotherhood have had scant measure dealt out to them; because, forsooth, two or three classes of hardy flowers have been omitted. This is his grievance. We cannot but think that the number of those "many others" who join him in not being "satisfied with present proceedings," has been a great "deal" magnified. We believe the fraternity generally will repudiate the complaints to which we have been alluding, and which, except in so far as they relate to "hardy" flowers, have no point whatever; and will admit that instead of being scurvily treated they have been liberally dealt with. We say nothing now of the means provided by the Society for the examination and adjudication of new flowers, in which the florists have at least all the facilities which the Floricultural Society ever afforded them, free of cost. —— †.

New Plants.

248. Dendrobium nodatum.

D. (Holochrysa) caulibus erectis moniliformibus articulis sectione verticali subrhombeis, foliis . . . . . , floribus geminis lateralibus, sepalis petalisq. lanceolatis, mento brevi obtuso, labello subrotundo ovato acuto ad basin unguis piloso, columnâ basi foveatâ.

A beautiful thing notwithstanding its having an inelegant upright stem with gouty joints. The flowers are pale lemon coloured, with a rich orange coloured lip whitish at the point, deep violet on each side of the base. The anther and some streaks on the column are deep purple; the stigma sea green. Introduced from Moulmein by Messrs. Low & Co.

THE INTERNATIONAL EXHIBITION.

Among the articles in Terra Cotta shown in Class XXXV., are some very handsome Vases and Tazzas of large size from Mr. Blanchard, Southwark (6832), not mentioned at p. 666.

In Class XXXIV., devoted to Glass, we observe from Messrs. Bowron & Co., Stockton on Tees (6758), some tall Hyacinth glasses provided with a foot like that of a wine glass; they are not in appearance at all equal to Tye's glasses, which are now very much used. From the same firm came some large-sized Glass Vases suitable for window aquariums, vivariums, &c. Mr. H. Hetley, Wigmore Street (6728), shows Propagating Glasses, and two or three forms of neat-looking but not unusual square-topped and round-topped Ward's cases. Messrs. Hetley & Co., Soho Square (6729), have a form of Glass Vase with a low foot suitable for aquariums. From Messrs. Chance, Brothers, & Co., Birmingham (6716), are roof tiles of rough plate glass, which may be made available for various supplementary horticultural uses, when a moderate admission of light is advantageous. Messrs. Dobson & Pearce, 19, St. James's Street, exhibit stands for table decoration with fruit and flowers after Mr. March's clever design; and along with them other stands for cut flowers, which appear very much inferior in taste, and are formed thus:—from the foot rises a ring of twisted glass, having a loop at each side, into which are dropped slender glasses very like footless apothecaries measures, and the centre consists of a taller vessel of the same character. so that there are three glasses for holding flowers.

Classes XXXI. and XXXII., devoted to Iron and Steel, present a few subjects for our record. Messrs. Kennard & Co., Upper Thames Street (6127) exhibit Urns of cast iron, adapted for garden ornaments; useful seats with iron frames and wooden bars and backs; and tables made of ornamental cast iron pillars and imitation marble tops, such as might be used in summer houses. Mr. Finch, Dudley (6061), has a good looking garden seat with the iron ends made in imitation of rough hazel rods, the back and seat being of bars of dressed wood. Tools in considerable variety are produced by Messrs. Parkes & Co., Birmingham (6542). Among them we notice various forms of their excellent light Digging Forks, which are well known, and capital spades, the strongest form among which seemed to be one with a solid metal neck continued into a flat plate which passes up the centre of the handle, and stands edgeways to the plane of the blade, the wooden handle being rivetted through laterally. Mr. Thomas, Birmingham (6554) has an exhibition of edge tools, the most noticeable of which in a horticultural point of view are shears, hoes, and spuds. One implement, called a Transplanter, is like two trowels forming the ends of a pair of shears. Garden Cutlery in the form of knives, scissors, and shears of all sorts and sizes are shown by Messrs. Saynor & Cooke, Sheffield (6548). Light forks, shears, hoes, rakes, trowels, &c., came from Messrs. Gilpin & Co., Cannock (6507) in whose collection we noticed a Dutch Hoe made with an eye at the centre of the bow, so as to admit of its being fixed on the handle by means of a wedge. The object is to facilitate the adjustment of a new hoe to an old handle. In the collection of Messrs. Wood Brothers, Stourbridge (6260) are to be seen various forms of fork and spade; as also in that of Messrs. Watkin & Co. of the same place (6242). Messrs. Mapplebeck & Lowe, Birmingham, moreover show in Class 9 (2149) a collection of light and well-made spades, shovels, and digging forks, including the same kind of spade as that noticed in the exhibition of Messrs. Parkes.

A good deal of Ornamental Wirework, chiefly in the form of Flower Stands, Archways, and Hanging Baskets, is exhibited. Mr. Geddes, Manchester (6070), has an elegant and elaborate wire stand for flower-pots. Messrs. Walker & Clark, Cardington Street (6238), have wire baskets for plants fitted with a tin vessel to prevent the spilling of water; an archway; and large window flower stands, of twisted wire. Harriet West, Euston Road (6247), has also flower stands and hanging baskets of elegant patterns. Mr. Reynolds, New Compton Street (6192) shows a considerable number of wire articles including archways, flower-stands, and hanging baskets; also garden-edging about a foot high, of thick twisted cord-like zinc wire, worked into a scroll pattern; a Rose Temple of twisted wire; and a very useful Rose stick with a three-pronged foot, made of a twisted galvanised iron rod. Messrs. Jeffrey & Jaffray, Oxford Street (6121) show wire stands for flower pots, and others made to hold flat glass vessels covered over with open work wire tops to receive cut flowers. A great variety of flower stands and baskets both circular and oblong, made of wire, come from Messrs. Richards & Co., Oxford Street (6195). Models of flower stands, archways, temples, &c., in wirework are produced by Mr. Grout, Spitalfields (6086). And from Mr. Robotham, Birmingham, is a wire temple, and a further supply of flower-stands and hanging baskets, of which a great variety will be found among the articles produced by the several exhibitors.

Indoor Gardening.

Having made a window greenhouse, we next must proceed to fill it, and though it seems strange so soon to be talking of winter flowers, still we must bethink ourselves of them now if we wish to have them early.

Some persons are very fond of having a good many stationary plants—things which month after month we go on knowing and watching, as we may do so well in the case of evergreens. Few things, indeed, look more continually pleasant than their dark glossy leaves.

Myrtles of all kinds always look delightful—the numerous prettily foliaged Firs also, with their bright green tipped branches or their feathery boughs, or their stiff little dark green spires; the various little plants of hardy kinds with bright coloured berries, too; and then there are hardy Heaths that blossom all the winter, dark green, brown-flowered Wallflowers, which give a pleasant scent, recalling old cottage gardens; small plants of Rhododendron, evergreen Ferns sometimes, and some of the pretty little gold leaved shrubs. I fancy generally it is most effective when these are grouped together rather in the corners, and when just in the centre there is one waving plant. A spreading Fern for instance, like some of the Lastreas, in summer or in autumn, and perhaps in winter either a pretty drooping Fir or else a plant of fountain-shaped Begonia, the latter being brought in for protection if the frost gets sharp at night.

From five to eight Evergreens are abundant for such a case, unless they are required to form a sort of hedge at the back, when one good sized one in each corner and in the centre, with one or two smaller in between on each side, look extremely well. It is quite an art to make the plants form *one group*, and not to make them match too exactly. The two corners for instance should not have plants just of the same height, and yet the colour at one end should be repeated in some way towards the other end. Camellias may be grown well in these little greenhouses, but they will require in summer sun to ripen their wood and a good deal of air. Rhododendrons also fail to blossom well unless they have similar treatment; sometimes, however, people can contrive an ash-bed in a garden, or a box on a roof, to sink them in for a change, while Geraniums or Fuchsias take their place in summer; at this time of year too a few pots of Japan Lilies or of Gladioli are perfectly lovely to bury amongst the evergreens. Having shone there brightly they depart at last to an ash-bed refuge, where they still are watered till the leaves begin to fade; water then lessening, the leaves dry off, and the pots are ready to be laid on one side in a heap, or the bulbs to be taken up and stored away in dry sand and paper bags, where they will be safe from frost. Tuberous-rooted Begonias may be treated in the same way, and all such things are valuable on account of their being so easily kept safe during the time that they are not ornamental. Some of the miniature Dahlias would also be very pretty, but these are meant more for places where there is some room for bringing on successions. Ivy-leaved and sweet-scented Geraniums are also good plants to use, as they keep green and nice without heat in winter, and the common Scarlet Geranium makes a very bright glow of colour mixed with refreshing velvet green, and it often will go on blossoming very well in such a place. About three or four plants in flower make such a nook very gay, and for nine months of the year a Heliotrope, bought for a few pence, scents the whole air surrounding it. Balsams are very pretty too in the autumn, and some people are fond of them as having a sort of prescriptive right to windows. Farm-houses especially, in the very country places, are apt to be famous for their Cloves and Balsams; and most people who have known them have a pleasant remembrance of them.

Carnations again do delightfully under glass without any heat. Auriculas also get seldom a better chance, and they are so pretty. Little knots of Auriculas placed all along in threes—they would look really lovely with their downy floury leaves, and their sharply defined edges, and their velvet petals. I dare not talk of Violets, because in London I cannot grow them, but they in most places grow also well under glass.

Our floral mainstay is however in bulbs, or at least in bulbs and tubers. A dark dry cellar or cupboard to root in; a light cool place to bloom in; a tolerably open ash-bed to die down in; such are the three requirements—the only three—of the bulb class. And if in a Belgian window garden one saw nothing but azure blue dots appearing through green sheaths under the shade of trees, I for one should look at them and hardly feel discontented. The Hyacinths, however, the Crocuses, the Snowdrops, and the Tulips leave us little danger of being reduced to Scillas. The mode of growing these bulbs I will write of another week.

The best way, as it seems to me, of filling these boxes is to fill the box about 2 inches deep with broken charcoal, just placing an empty pot to "keep room" for any very large pot coming. It is very well to lay a layer of Moss on the top of the charcoal. A mixture of Cocoa fibre and silver sand may then fill up the box, fitting closely round the pots of plants sunk in it.

Lycopodiums or common English Mosses, such as Hypnums, grow beautifully in this, and make quite a bed of green if not disturbed too often.

The watering must be always given carefully in cold weather and early in the day. It is quite surprising how little plants want in winter, and the less they have so as just to keep unflagged the better. All they do have should be given warm—more almost than luke-warm—but it should be given only, generally, to the roots. Sponging is the best thing for downright cleaning leaves, and for mere bedewing nothing that I know equals the benefit of a little mist bath, caused by closing up all the glasses when the sun is shining in the morning. This is the best of remedies against a scorching frost, only you must mind in that case that a sprinkling of water on the soil does supply the vapour, as it is not desirable to draw it from the plants. One great difficulty in winter nights is this drying, from vapour rising and condensing on the glass; the dry air, of course, like dry sponge, absorbing more. When this has taken place, a good bedewing becomes quite necessary, and if you cannot create an atmosphere of steam a little syringing even may be required. A small lamp or candle, however, under a little tin filled with hot water, keeps up a gentle vapour bath with exceedingly good effect.

In winter probably the chief air will be given from the room. Where gas is not burnt the windows can hardly be kept too much open except in great heat or dryness, as on a winter's evening, when it is not desirable, since the greater the warmth within the

greater the condensation from the cold without. The lamp, with the warm water, is in such cases our best safety. *E. A. M.*

Home Correspondence.

Orchard Houses.—I always read the accounts of failure in orchard-house culture given by some of your correspondents with much interest, and with, I confess, equal surprise. The culture seems so simple, and success here has always been so invariable during 12 years, that some great deviation from the common rules of culture must be practised. I have thousands of trees in different descriptions of house, large and small, span-roofed and lean-to, and I firmly believe scarcely a single tree can be found in an unhealthy state, and they are all cultivated in pots. I believe this great success is owing to the men who attend to them having no ideas of their own, and simply obeying orders. The trees are top-dressed, surface-dressed, syringed and pinched regularly, and complete success is the reward. My fruiting trees are now many of them 12 years old; they have never once failed in giving me a crop of fruit, more or less, and they are now if possible in a more vigorous state than ever—not so full of fruit as usual, owing to the gloomy moist weather while they were in bloom, so that pollen never became so dry and active as it should have been. This was the case here with many kinds of Plums out of doors which came into blossom after the severe frost of the 15th of April and set an abundance of fruit, which swelled to the size of a Barleycorn and then dropped off. The blossom on Apple trees was magnificent, and the fruit set in clusters so thickly that I anticipated too heavy a crop; but after swelling to the size of a horse-bean they all or nearly all dropped off, and the trees with some few exceptions are bare of fruit. This, as with the Plums, was I take it owing entirely to imperfect impregnation. All kinds of fruit blossoms, and more particularly those of stone fruits, require an active dry atmosphere, a cold dry wind and bright sunshine is the most favourable of all kinds of weather. I have reason to believe that the builders of small orchard houses too often place them in confined situations in small gardens, and forget that a free circulation of air is of all things most necessary. Lean-to houses are placed against party walls that cannot be perforated so as to have the front and back ventilating shutters on the some level, and within 2 feet of the ground; this low lateral ventilation is so necessary that trees placed on the surface of the ground in an orchard-house will not grow, or even keep in health without it. Ventilation at the top of the roof of a lean-to house against a party wall that cannot be perforated for shutters will, if abundant, do very well for Peach trees trained on a trellis under the glass, but not for trees in pots placed on the floor of the house. All my houses have low lateral ventilation, and although, as is well known, the months of June and July, up to a recent date, were cool, cloudy, and windy, the ventilators were open night and day; to this I impute the remarkable vigorous health of all my trees. In town gardens, or, indeed, in any small gardens surrounded by walls, orchard-houses should be built in the most open and airy space to be found, and in such places the ventilating shutters should be of double width; thus, in a 14 feet wide span-roofed house, or in a lean-to house of the same width, the shutters should be 2 feet in width instead of 1 foot, which is quite sufficient for houses of such dimensions if built in an exposed situation. No syringing, no manure watering, will avail without abundant ventilation. *T. R.*

Great advantage of Removing Bees to Heather.—As the time has now arrived for removing bees to the moors, I wish to remind your readers of the very great advantage a hive taken to the heath has over one that cannot get to the heather, as it gives the bees at least six weeks longer for honey harvest, and at a time when, if left at home, they would be consuming their stores of honey, for I find my bees not taken to the moors always lose weight after July. No time should therefore be lost in sending them to the heather. As this season has been very unfavourable for the collection of honey in nearly all parts of England, bees that cannot be sent to the moors should be fed during August and September with about 15 pounds of sugar boiled for five minutes with $7\frac{1}{2}$ pounds of water to each hive. This will preserve them during the winter, as little or no honey has at present been collected. In removing bees to the heather the first thing to be attended to is to give them plenty of room, as, if the weather is favourable, they collect from it a great store of honey; therefore, the day before I remove them I place another hive on the top of the stock (when I want to join the bees when they return home to another stock), and appropriate to myself the whole of their store of honey, or if I want to take the old hive from the bees and leave them in the new hive; but if I want the bees to remain in their old hive I place the addition underneath, as the bees always fill the top hive first and afterwards the bottom hive, and the honey in the new hive being placed in new combs, in which there has been no brood, is very beautiful and of much more value than honey out of old combs. Where the two hives join I tie a piece of calico securely with two strings on each hive, so that they cannot separate, or any bees escape when being removed. I then raise the hives on pieces of wood about an inch from the floor board and early the next morning I find every bee gone off the floor board into the hive. I then spread a piece of net or leno on a board, lift the hive upon it, and tie the net very securely with two strings round the hive, and when so fastened I turn the hive upside down, place it on a cloth and then tie the corners together. The hive is then easily carried by suspending it on a pole across the cart from this cloth, but it matters very little whether it is suspended or not, as the combs will not break down. Owing to the hive being turned bottom upwards the bees obtain plenty of air, and do not melt the combs with heat, and I do not find the honey to run out of those cells that are not sealed over, to do the bees any injury. I let them remain at the moors until about the middle of September, and when brought home I weigh each hive and deprive it of its surplus stores, which I consider sufficient return for my kindness in having given the collectors a change of air and luxuriant pastures, where many tons of honey are annually lost to the world for want of collectors. *Wm. Carr, Newton Heath, near Manchester.*

Bougainvillea glabra.—This plant has been an object of great interest during the last six weeks at Headington Hill near Oxford, the delightful residence of James Morrell, Esq.; it is flowering profusely in a pot 14 by 16, and has every appearance of lasting in bloom till Christmas. To Mr. Ward, the head gardener there, is due the great merit of being, I believe, the first to flower this charming plant in a pot; it was a cutting last autumn, kept dry and almost leafless in winter, and in a 48 pot when it began to show flower, since which three or four changes, and a mixture of loam, peat, and leaf mould, with a large proportion of sand, have produced a plant about four feet high by three wide, literally loaded with bloom. *J. K. H., The Castle, Wallingford.*

Japan Lilies.—These have entirely failed with me this year, although they have been treated in the same way as heretofore. I understand the complaint is general. Can any of your readers explain the cause, or say what is the best mode of growing them successfully. *R. H., T. H. S.*

Chamærops Fortuni.—At a late visit to Kew Gardens I had the opportunity of seeing three large specimens of this Palm, apparently quite hardy, and in full blossom, the spadix with yellow flowers being many inches in length. *G.*

Strawberries.—I see that I left out of my account of Strawberries last week the name of Marguerite. La Constante is all that is said of it. It does not, however, make plant fast enough to please me, and is shy and slow to run. It is a very good Strawberry, and uniform in shape. *W. F. Radclyffe, Rushton, Blandford.*——Let me add a word about La Constante and Marguerite; the latter is quite a novelty, and where the soil and climate suit will be a splendid sort, both as to immense size, colour, form, and flavour. *W. R., Kidderminster.*

Melons.—Can any of your Correspondents kindly inform me what is the matter with my Melons? No plants could be more vigorous or healthy up to the time they were showing fruit, when the leaves were suddenly attacked with an affection like burning; it began first with the oldest leaves, and gradually affected the plants till they were leafless. I am puzzled, because I have only one sort attacked, the seed of which was four years old, and it was saved in a pit in which the plants showed symptoms of much the same disease. Could it be transmitted through the seed? Other sorts growing by the side of the deceased plants are healthy, and setting abundance of fruit. The diseased kind is the Beechwood. The plants are growing in a small span-roofed house in large pots standing on slates placed over a flow and return pipe. Soil, strong turfy loam. *B., Isle of Wight.*

Muscat Grapes.—The Cannon Hall Muscat, from whence the accompanying berries were taken, is grown in the inside border of a house in which other Muscats and Black Hamburghs are planted. All the other Vines are in good health and free from spots. On the berries of this Vine only a brown spot makes its appearance, which increases and becomes like the sample sent. The Vine itself is remarkably vigorous, and, singularly enough, has the finest foliage and the strongest wood of any other in the house. Can you oblige me by explaining the probable cause of this mischief? *A. J.* [Cold is doubtless the cause of the bletted appearance which your Grapes present. Muscats require more heat than Hamburghs to ripen them in perfection, especially during such sunless weather as we have of late experienced.]

Diseased Pine Apples.—Of all branches of gardening I know of none that has made less progress than that of the cultivation of the Pine Apple. One would have thought that the day had gone by for distorted heads, but it is a fact that such things are still to be met with. I have seen Pines, even in large and well kept gardens, more like Jerusalem Artichokes in shape than Pine Apples: a whole house of suckers starts into fruit and the stock all but lost. This is a fact known to many a gardener; therefore Pine Apples are considered expensive and unprofitable to grow. If your correspondent "Dilemma" (see p. 621) will act up to my system of culture, he will never again have to complain of distorted heads or premature fruit. I never remove a sucker I want for stock until it becomes hard and brown as a nut at the base. I strip off a few of the scale-like leaves and thrust it very firmly into a bed of tan, with a bottom-heat of from 90° to 95°. In 10 days I find plenty of beautiful white roots. I then lift the plants and pot them into 6-inch ones, using good fibry loam. I press the soil firmly at every time of potting, plunge the pot up to the rim in a bottom-heat as before, and in three weeks they are ready for a shift into 8-inch pots, and so on until I reach a 13-inch pot, which I find large enough for most varieties. I make it a rule to have the bed turned over once every month, and occasionally a little fresh tan is worked in with the old. By these means I keep up a bottom heat of about 90° or 95° all the year round. During winter I rock the pots to and fro, so as to form a cavity round them. By these means I never fail to grow the plant until it has matured its fruit. By the above mode of treatment I obtain fruit of the Ripley Queen, from three to 5 lb. weight in 16 months. From the time of planting the sucker I use liquid made from sheep dung, mixed with rain water, so as to have the appearance of Burton bitter ale, taking care to have it of the same temperature as the bottom-heat thermometer. I close up early every day, syringe the house well, and about twice a week I syringe the whole kerb with a very fine syringe. I go round every evening about 9 o'clock and damp all the paths. This I hold as an article of faith. *J. Hickson, The Gardens, Wentworth, Surrey.*

Orchard House Success.—As Mr. E. W. Cox, of Highwood, Hendon, has written to you upon the subject of orchard house failure, may I be permitted to speak of orchard house success. For eight years I have been growing Peaches, Nectarines, and Plums in pots, but I have departed in some respects from the practice recommended by Mr. Rivers. My success this year has been far greater than has ever been the case before, and I attribute it to the following causes. In the month of January, when a small Grape house was started, I placed all my Peaches, Nectarines, and Plums on the border. I was contented with a very low temperature at first, and admitted plenty of air. This treatment was successful, and in the month of March every one of my trees had set a full crop of fruit. They were assisted with manure water once or twice a week. In the beginning of April I removed them from the Grape house and placed them in a pit which I had prepared for their reception. They were plunged in leaves and as near to the glass as possible. Syringing was continued, and manure water given until the fruit began to ripen, and a finer, more highly flavoured crop of fruit was never grown than I have gathered this season. Early Prolific Plum were gathered on Easter Monday, and from that day until last week, when the last dish was gathered, we had Peaches and Nectarines in abundance. For manure water I prefer sheep droppings to guano, and the pots have had this well diluted without stint. Each pot (which, by the bye, are only 12-inch) when first started was placed on a slate, which prevented the roots from penetrating the border. One Peach tree I allowed to remain in the Vinery, and of course it ripened its fruit earlier than those removed to the pit. It occupies the only place in the Vinery which received the full rays of the sun, but the fruit was not of that uniformly high flavour that those in the pit had. I may add that this season, Grapes in pots have answered better than they have done ever before. This I attribute mainly to a treatment which for experiment I have adopted. An iron stand was made and fixed so that the hot-water pipes were about a foot below the level of the rods which formed the base of the stand. On this the pots were placed, and so arranged that abundance of air was given by means of ventilators which were never closed. There are now on each Vine eight or nine bunches just beginning to colour. The sorts are Gros Colman, Purple and White Frontignan, Black Hamburgh, and West's St. Peter. I may add that these Vines are from eyes only, started in January, 1861. Mr. Rivers supplied me with a Grape eight years ago, which is of a beautiful pink colour, and ripens earlier, whether with or without heat, than any other which I have grown; it is Chasselas Rouge Royal, and is most worthy of culture. No variety appears to thrive in this sandy soil on the chalk better than this. *Winfrith Rectory, Dorset.*

Societies.

ENTOMOLOGICAL: *July 7.*—F. Smith, Esq., President, in the chair. Among the donations received since the last meeting, were the Transactions of the Royal Societies of Madrid and Munich, and the Entomological Societies of the Netherlands, and of a new Entomological Society recently established at St. Petersburg. The President exhibited a collection of galls of different species, recently obtained by the British Museum from Germany, amongst which was the round Oak gall-apple, which during a few years past has become widely spread over the South of England, threatening to affect the growth of the Oak to a serious extent. Three years ago multitudes of the galls might have been collected in the neighbourhood of London, but the tomtits having found out that the galls contained a delicious morsel have attacked them so effectually that this year not a gall is to be found; a more convincing proof of the impolicy of destroying insectivorous birds could not be adduced. Pro-

fessor Westwood exhibited a continuation of the series of the illustrations of economy and transformation, recently presented to the Museum of Oxford by Mr. S. Stone, of Brighthampton. Amongst these were specimens of Trichosoma Lucorum and its parasites, also of several other species of Tenthredines and other Hymenoptera which burrow into [illegible], Raphidia sp., Hemerobius sp., also the transformations of several species of Libellulidæ, gall flies and leaf-mining insects. He also exhibited a drawing of Acarus domesticus, De G. (A. Siro, Linn.) found by Dr. Maddox in a nitrate of silver bath prepared for photographic purposes, and suggested that Mr. Crosse's famous creation of Acari might probably be explained on the principle that in that instance as in this and others to which he alluded, the insects had been attracted by some of the chemical substances employed. He also exhibited a great number of photographic representations of different species of British insects received from J. C. Dale, Esq., some of which were remarkable for the marvellous manner in which the most minute species of Chalcididæ, &c., were brought out. Mr. Pascoe read a note on two exotic genera of Longicorn beetles, Stenidea and Blabinotus. Mr. Stainton exhibited two species of Micropteryx, reared by Mr. Wilkinson from Birch and Oak leaves. Mr. Walker read a paper containing a description of new exotic species of Chalcididæ, and Mr. Trimen descriptions of new butterflies collected in Caffraria by Mr. D'Urban.

Notices of Books.

The Field Botanist's Companion; comprising a Familiar Account in the Four Seasons, of the most common of the Wild Flowering Plants of the British Isles. By Thomas Moore, F.L.S., &c. Lovell Reeve & Co.

To enjoy the country it is not necessary that we should be naturalists, or deeply versed in all the technical terms that are used by scientific men, but we think a little knowledge of some of the more common plants with which our fields and hedges are enlivened throughout the year is very desirable, and when acquired in early life it is rarely forgotten, but in most instances is found to be a never failing source of pleasure and amusement. It is with the view of supplying this kind of information in a popular form, and training up students for the more advanced Floras of Botanists, that the beautiful work before us has been prepared, and after a careful examination of its contents we have no hesitation in saying that, like the other works of its author, it is admirably adapted for its purpose, by the pleasing manner in which the various plants selected for illustration are placed before us and minutely described; as well as by the small coloured figures that are given of the plants themselves, with dissections of some of the most essential parts by which they are characterised. A few of the latter are magnified, and all bear evidence of having been drawn by the skilful hand of Mr. Fitch, acknowledged to be one of the first botanical artists of the present day.

The book, we are told, does not contain *all* our British plants, but only those most likely to be met with in our home walks or pleasure trips. These have been divided under the four seasons, an arrangement which it has been thought would simplify the task of searching for the name of a flower by excluding those which bloom at other seasons. Technical or scientific terms which are apt at first to puzzle the young beginner and render the study of botany uninviting, have been avoided as much as possible, although it was found impracticable to dispense with them altogether. Where such terms are used, care has been taken to make them self explanatory; and an excellent Glossary at the end of the work supplies any further information that may be required.

The plants selected to illustrate Spring Flowers are 24. These are described in a popular manner, and the peculiar character appertaining to each clearly pointed out. As an example of the way in which this is done, we give the following extract.

"The Lady's Smock (Cardamine pratensis), during the months of early spring imparts its own blush to the surface of moist low lying meadow land, among the herbage of which it grows up. This plant, sometimes called Bitter-cress and Cuckoo flower, is a dwarf herb, growing erect to about a foot in height, and having pinnate leaves; the flowers are large and showy, and will serve to illustrate the structure of a considerable polypetalous regular-flowered group or Order, known as Cruciferous plants or Cross-bearers, from the circumstance of their flowers having four equal parts arranged in opposite pairs so as to form a cross. The group may be known by this circumstance and by having six stamens, two shorter than the rest. The Cruciferous order, besides being an extensive one, is important, containing among other subjects of utility the whole Cabbage family.

"To the same order belongs the Wallflower (Cheiranthus Cheiri), 'grey ruins' golden crown,' a flower well known in every garden, and prized for its delicious fragrance, found here and there in a wild or semi-wild state on walls and old buildings, or in rocky situations, generally near habitations. In the Wallflower we have a plant of sub-shrubby growth, furnished with simple leaves, and its yellow or reddish-bronzy flowers are succeeded by what are called siliquose pods containing the seeds, as is the case also with the Lady's Smock. In both these plants the inflorescence or collection of flowers forms a kind of corymb in the earlier stages, lengthening out by degrees into a more or less elongated raceme. This flower has been made the emblem of friendship in adversity, because though Time, the rude and sacrilegious despoiler of consecrated places, may waste and overthrow the structures of the past, and leave them uninhabited, the Wallflower, 'mantling o'er the battlement,' still lends a melancholy grace 'to haunts of old renown.'"

In a similar style the other Spring Flowers are noticed; then follows a summary, comprising descriptions of—1, the groups and orders; 2, the genera or families; and 3, the species and varieties, with their habitats and usual time of flowering. This mode of arrangement is also adopted in the parts devoted to summer flowers, and the flowers and fruits of autumn.

Of Summer Flowers, which are by far the most numerous and occupy the largest portion of the work, we are furnished with illustrations and descriptions of no fewer than 68 well-known plants. They have been selected as the best for exhibiting the peculiar forms of structure by which they may be readily identified, and arranged in their natural orders, and we feel assured they will not only prove extremely useful in this respect to the young student, but will be found highly interesting and instructive by the general reader. In this opinion we think we shall be borne out by the following extract:—

"In lakes and slowly moving waters will be seen floating the broad peltate roundish heart-shaped glossy leaves of the white Water Lily (Nymphæa alba), and amongst them, just lying above the water surface, the beautiful rosette-like flowers, which are among the most lovely of our wildings. It is indeed,

> 'A water weed, too fair
> Either to be divided from the place
> On which it grew, or to be left alone
> To its own beauty.'

This 'water-weed' represents the Nymphæaceous family, a small assemblage of Thalamiflores, all having aquatic predilections. The plant has a thick root stock, which is submerged, rooting into the mud, and producing annually the broad floating leaves, which are attached by a slender petiole or stalk fixed near the centre, and which elongates sufficiently to bring the leaves to the surface. The flowers also have separate stalks, which elongate to a sufficient extent to elevate the chaste and noble blossoms above the water. Thus in all her classic purity, 'upon her throne of green, sits the large Lily as the water's queen,' and there 'she seems, as lovely as she is, the fairy of the stream.' The blossoms are rather peculiar, having numerous sepals and petals and stamens, all present; but the transition from one series of organs to the other is so gradual, that it is difficult to determine where the one ends and the other begins. The calyx is usually set down as consisting of about four sepals, like the outer petals in form, but green exteriorly; then come the numerous petals, set in several rows, and passing gradually into the numerous stamens the anthers of which are adnate or fixed by their whole length. The ovaries too are numerous, imbedded in the thick receptacle, forming separate cells radiating from a common centre, while the petals and stamens are attached to the outside of the receptacle nearly as high as the top of the cells.

"One interesting peculiarity has been recorded of the white Water Lily, namely, that its flowers expand only in bright weather and close towards evening, when they either recline on the surface of the water, or sink beneath it; so that it has been called 'day's own flower,' and described as 'drooping its head beneath the waves,' there 'watching, weeping, through the live-long night, impatient for the dawn.'"

We had marked another passage or two for quotation, but must omit them for want of room. Those we have given we think will suffice to show the design of the work, and the great ability with which it has been executed. We will now merely state that to illustrate the flowers and fruits of Autumn, ten plants usually met with at that particular season are figured and described; while for Winter, interesting notices, with figures, are given of the Holly and Mistletoe—fitting emblems of the closing year—and with these the work concludes. Let us add that we cordially recommend this book. It is beautifully printed, and cannot fail of obtaining that degree of public patronage which it so justly merits.

Garden Memoranda.

Biddulph Grange, near Congleton (*Concluded from p. 672.*)—In gardens of this magnitude, and containing such a very unusual collection of rare and interesting hardy plants, there will necessarily be a multitude of features and of objects which cannot be described without rendering such details tiresome. I shall therefore now leave the rest of its treasures to reward the scrutiny of the visitor, and merely offer a few further remarks on some of the more notable general characteristics of the place, especially those which illustrate important principles in landscape arrangement.

That which will be almost certain to strike first the attention of any experienced observer is the art-like treatment of all the parts in the neighbourhood of the house, and the happy manner in which this treatment is carried out so as to lose itself in a more irregular arrangement. Art, in fact, is distinctly expressed in every possible variety, wherever it is demanded by the proximity of an architectural object; and there is nowhere that confusion of the rude with the cultivated, or the purely picturesque with the formal, which constitutes the deformity of so many gardens. The subordinate parts of each scene are all consistent and harmonious.

At the same time the grounds are broken up into a very uncommon diversity of separate scenes, each, to a certain extent, complete in itself. This is even the case with the views from the principal windows, each of these views having something quite distinctive and apart from the rest, while each contributes to form the general composition. In the larger scenes, too, the isolation of particular departments, all having a definite character and purpose, is peculiarly noticeable. The different parterres, the Bulb Garden, the Arboretum, the Wellingtonia avenue, the Pinetum, the Stumpery, the rocky glen, the Rhododendron ground, and "China," are all illustrations of this class, and all have a practical as well as an artistic intention.

Great ingenuity is likewise shown in at once dividing and connecting these separate scenes. The transitions are sometimes sudden, sometimes very gradual and imperceptible. All are differently effected; and some are brought about by the most clever expedients. Hedges, banks of earth, evergreen shrubs, tunnels, buildings, masses of rock, roots, or stumps, and evergreen or architectural archways, are some of the means thus employed; but with an infinite variety of application.

Plants of one kind, colour, or habit, are frequently grouped about the place in masses, so as to avoid the tameness incident to a more common and general admixture. Irish Yews, Taxus adpressa, Aucubas, Tree Ivy, and many other things, are thus brought together in clusters, thereby creating some striking feature at points where such an effect is significant and telling.

Nothing has perhaps been more studied by Mr. Bateman, or been more elaborately provided for, than the selection of suitable positions and aspects for plants. Indeed, this is the key to a great deal of what has been done in diversifying the surface of the ground. Each plant or class of plants has a home prepared for it congenial to its natural habits, or to what is known of its requirements and aptitudes in this country; and the enthusiasm and fidelity to fact with which this has been accomplished, renders the value of these gardens, as a practical guide to cultivators, really inestimable. For here, it must be added, no foregone conclusions or musty precedents are admitted as truth. And the moment a sufficient test establishes the correctness of any practice, all prejudices to the contrary are entirely discarded, and the system of treatment at once changed.

Attention to the smaller details of arrangement and keeping is another of the matters which arrest and gratify the intelligent visitor to these gardens. The great principle that nothing is too little to be done well, and that beauty of design is indicated as much by the lesser as the larger points, is here profoundly recognised. None know better than professional men how the neglect of some trifling detail, or its imperfect execution, will mar even the best considered and most artistic production; and in gardens, slovenly keeping too is nearly tantamount to the same discordancy.

In the adaptation of existing materials to specific objects, and the application of novel expedients to accomplish any particular purpose, considerable skill has been often exhibited in this place. A concealed ice-house is concocted out of a lofty mass of rock which it was necessary to raise between the Chinese waters and the larger lake. A tennis court gives propriety and use to a high wall in the western terrace, that would otherwise be ugly and unmeaning. The overflow to the Chinese waters, as formerly mentioned, is hidden by a mass of natural-looking stone which juts up in the pool, and makes a picturesque adjunct to the neighbouring rocks. There is a tunnel, lined with wood to make it dry and comfortable, for conveying one of the principal walks under part of the house. And many other similar contrivances might easily be mentioned.

All the architectural decorations to the gardens, too, are moreover singularly appropriate and effective, bold, and often original in detail, well adapted to express their purpose; and free from any affectation of fineness or finish. There is a roughness and a masculine character about them which should always belong to garden ornaments, as distinguished from those proper to the interior of a mansion.

The present gardener at Biddulph Grange is Mr. Sheppy, and Mr. Sherratt has the charge of the kitchen gardens and the excellent fruit houses at Knypersley. To both of these gentlemen the highest credit is due for the condition and keeping of everything in their several departments.

The opportunity of bestowing praise, with conscientiousness and discrimination, is an agreeable one; and it is only right to observe that I never inspected any place which, without pretending to really

grand features, or embodying large general scenes, contained so much that is worthy of commendation, or that left a more pleasing impression on my mind. For it is at once the unmistakeable exponent of enlarged views, of a loving devotion to plants, of an enlightened appreciation of their character and wants, and of that painstaking attention to the minutest details of both culture and design, which indicates the true and hearty disciple of both science and art.

It only remains to state that the public are admitted to these gardens free on the first Monday in the months of May, June, July, August, and September; and by tickets on all Fridays (except Good Friday) throughout the year. Tickets, 5s. each, and admitting five persons, may be had of Mr. Sherratt, at the Church Horse Inn, Biddulph. The money for the tickets is put into the box of the Biddulph Old Friendly Society, kept for the purpose at the Church Horse Inn. To foreigners and persons from a distance, who may declare themselves unacquainted with the regulations, tickets are issued on other week days. No admission is given, under any circumstances, on Sundays.

Biddulph Grange is within an hour's easy walk, or a quarter of an hour's drive, of Congleton Station, from which conveyances can always be procured. *Edward Kemp, Landscape Gardener, Birkenhead Park.*

Miscellaneous.

Hardy Substitute for Cotton.—We find the following in the *Kingston Whig* (Canada). It is an extract from a communication made to Viscount Monck by Dr. Hart of St. Louis, and by him transmitted to the Botanical Society of Canada. The plant referred to is some kind of Asclepias, and most probably the common A. Syriaca now called A. Cornuti, the species not being Syrian. "The Silk Weed is adapted to rich, moist, bottom soil. I recommend the London district, Canada West, or anywhere along the country that the Welland Canal runs through, or on the banks of the St. Lawrence, Canada West. The ground for planting should be prepared as follows:—Plough up four furrows, thrown together, then harrow down the ridge to pulverise it. Plant the seed about 12 inches apart in the centre drill made by the centre teeth of the harrow, cover lightly with the harrow or hoe; when the plant is three weeks old hoe the weeds away from it, then, with a light one-horse Yankee plough, bar off on both sides of the ridge and about 6 inches from the plant, coming back immediately with the plough and throw a furrow back to the plant, thereby hilling it on both sides. If the season is dry, throw two furrows to the plant; the oftener the middles are ploughed out, the more the plant will grow; it will not bear dirt taken away from it, but will stand hilling; the larger the plant grows, the more dangerous to plough so close as to cut the plant; the side roots supply the branches and bulbs. After the 14th of August the plant must be cultivated no more; must be left untouched. The pods are ripe when they change colour from a pea-green to a dark green and yellow. On pressing a pod it will split, when ripe; they ought to be gathered b fo e they split open. Squeeze a pod open, and, with the thumb and forefinger of one hand, seize the silk where it joins the bottom of the pod, and the thumb and forefinger of the other hand, making a circular sweep; all the seeds are detached at one sweep, leaving the richest mass of satiny silk; the seeds to be thrown in one sack, the satin or silk in another. I have been precise in my directions, entertaining the most implicit confidence that the Silk can entirely supersede the Cotton plant. Its fibre or staple is longer and firmer, and of a gloss no silk or satin can match. During ten years I have planted Cotton in Yazoo, Mississippi Valley. My brand was sought by the Liverpool and Manchester speculator, and brought the highest prices; and on that practical experience I ground my convictions with regard to the Silk Weed. Who knows but this plant may, from its hardiness, glossiness and fibrous texture, yet take the place of Cotton, which could not grow in Canada, lying so far north as it does. But this plant, borne from the heights of the Rocky Mountains, may find a more congenial home in the less rigorous climate of Canada."

Cricket Match.—A contest was played at Balham on Saturday last between two elevens selected from the firms of Messrs. Beck, Henderson, & Child, Adelphi, Strand; and that of Messrs. Carter & Co., Holborn; which was decided in favour of the latter by four runs on the first innings, there not being time to play the match out. The former scored 67 and 30, their opponents 71 and 12, with three wickets down. For Carter & Co., Bolton scored 39 and Fraser 19 in the first innings; for Beck & Co., Dean scored 19, and Cheeseman 9. The two last named bowled for their side throughout, while Messrs. Sharman, Ellis, Fraser, and Simpson "handled the leather" for their party. A return match will be played shortly. A match is also arranged between the firms of Messrs. Beck, Henderson, & Child, and Messrs. Minier, Nash & Nash, to be played at Balham, on Saturday the 9th inst.

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Now that there is a profusion of flowers out of doors, it will not be possible to maintain the interest of this house, except by keeping it furnished with handsome specimens of showy plants in first-rate condition; and, with proper convenience, this is no difficult matter. Nothing, therefore, should be brought here that is not well bloomed; nor should a single plant be allowed to remain a day after it begins to get shabby, for it is bad management to occupy glass structures with plants of inferior interest to such as are plentiful in the open air. It is not desirable however to crowd the house with flowering plants; the aim should rather be to have a moderate number of handsome specimens effectively arranged, which will be far more interesting than a larger amount of floral display from plants of no individual merit. A thin arrangement moreover will be advisable, on account of the permanent occupants of the beds or borders, which at this season especially should be allowed plenty of room, in order to secure strong well ripened wood; for unless this is obtained they will not bloom finely. Use every means to keep insects in check, and to make order and neatness everywhere conspicuous. In the stove such of the inmates as are intended for the decoration of the conservatory in autumn and early winter should be carefully looked over, shifting any that are likely to want more pot room, without unnecessary loss of time, so as to get the pots well filled with roots before the flowering season. Also keep the shoots tied out rather thinly, and expose the plants to as much sunshine as they will bear without scorching their foliage, which after the comparatively dull weather we have had may be apt to blister. Give clear weak liquid-manure water to young growing specimens. Maintain a moist atmosphere, and ply the syringe vigorously upon any plant at all infested with red spider. With respect to Orchids encourage any backward plants with plenty of heat and moisture, while this can be safely done. See that specimens on blocks and in baskets are properly supplied with moisture at the root, and to prevent any mistake handle every plant at least once a week, and immerse those found to be dry in tepid water until the material about their roots is well soaked. Syringe lightly morning and evening, and sprinkle the floors, &c., frequently, so as to keep the atmosphere thoroughly moist.

FORCING DEPARTMENT.

PINERY.—Attend carefully to growing stock, keeping the bottom heat regular, and the atmosphere warm and moist, and use every means to secure rapid vigorous growth. This will not be obtained, however, unless all is right at the root, therefore attend well to watering, and never allow any of the plants to become pot-bound. Give air moderately to young stock, and shut up early in the afternoon, giving the plants a gentle syringing, and the house a good steaming by wetting every available surface. Continue to pot a few suckers, as they can be obtained of sufficient strength, and do not allow too many to be produced by one plant, as they weaken each other. Indeed, never allow a sucker to grow to any size that is not likely to be wanted for stock, and unless in the case of any scarce sort, never more than two on a plant. Plants growing in beds of soil must be very carefully attended to with water, giving enough at each application to moisten the whole body of soil; for unless this is attended to, the bottom of the bed will sometimes get quite dry, while the surface is moist.

VINERIES.—The inside borders of houses intended to furnish a late supply of Grapes should be well soaked with manure water as soon as convenient, so as to allow of their becoming dry before the damp cloudy days of autumn set in, for damp will be most injurious then, and anything likely to cause it should be avoided. Muscats beginning to ripen should be assisted with fire heat, and those for late use should be pushed on with all possible expedition; for those ripened late in the season are seldom of good quality.

FIGS.—Second crops will be fast advancing towards maturity; as soon as the fruit begins to ripen the atmosphere should be kept dry and rather cool, giving air freely every fine day. Use every care to keep the foliage clean and healthy, and clear of insects, and do not crowd the young shoots.

MELONS.—As has been formerly stated, plants on which the fruit is ripening should be kept dry at the root, and freely exposed to air on fine days, avoiding moisture in the atmosphere as far as can be done without injury to the other plants. Do not allow the bottom heat to decline where the fruit is setting, which is a frequent cause of dropping off. Keep a watchful eye on the foliage, and guard against red spider, which, if once allowed to establish itself, can hardly be removed without greatly injuring the tender leaves.

FLOWER GARDEN AND SHRUBBERIES.

Now that the effect of the present arrangement of colours in beds can be fairly seen, there is an excellent opportunity for noticing any mistakes, and determining upon the arrangement for next season, and this should be done without delay. When it is decided what each bed is to be occupied with next season, a plan of the garden should be made, writing the names of the plants on the beds according to the arrangement decided upon. This will be of the greatest service in showing at any time what quantity of each kind of plant has to be propagated; and unless some method of this sort is adopted, it is not unusual to find at planting out time that there is a scarcity of some things and too many of others, whereas, those who have their plan to refer to can tell at a glance the exact number required of everything, and thereby avoid mistakes. Dahlias are now growing very rapidly, and will require to be gone over frequently to keep the side branches securely tied in; for when left untied, they are readily broken off by a thunder-storm. Hollyhocks must also be securely tied to their stakes. Continue to remove dead flowers from Roses, and give plenty of manure-water to the autumn-blooming varieties. Plant out rooted cuttings of Pansies, &c., in nursery beds in a shady situation, keeping them well watered if the weather continues dry until they get established. Finish budding Roses and take care that Carnations and Picotees do not suffer from drought. Layering may be commenced with such shoots as are sufficiently long for the purpose. Cross breed flowers which have the desired properties. The operation is a pleasing one and is attended with little difficulty. Mark seedlings which promise well, and pull up those which are not up to the mark. Plant out Pink pipings, and put in a second crop of cuttings; these will often strike root, and make better plants than the early ones. Look over Tulips and divest the bulbs of their loose skins. Arrange the rows of the bed so as to be ready for planting. Discard all impure flowers, whether stained in the base or on the stamens; whatever good qualities a flower may possess, these defects render it utterly worthless.

HARDY FRUIT AND KITCHEN GARDEN.

Commence layering Strawberry runners in small pots for forcing; pot for early work as soon as they are well rooted; place the plants in a situation fully exposed to air and light; set the pots on coal ashes to prevent worms from entering. Gather Pears and Apples as they ripen. The main breadth of Spinach for furnishing the winter supply should be sown at once; also prepare ground for winter Onions. Get a good breadth of Lettuce and Endive planted out for the autumn supply, and sow some hardy sort of Lettuce for planting out against south walls, or in frames, to come in after the frost cuts off out-door sorts. Dig down exhausted plantations of Strawberries, and get the ground planted with winter Greens, if there is not already sufficient of these planted; make a further sowing of Turnips.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,

For the Week ending July 30, 1862, as observed at the Horticultural Gardens

July.	Moon's Age.	Barometer. Max.	Barometer. Min	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind	Rain.
Thurs. 24	27	29.987	29.886	74	54	64.0	60½	58	S	[illegible]
Friday 25	28	30.045	29.979	81	41	61.0	60½	58½	W	[illegible]
Satur 26	●	30.084	29.928	83	46	64 5	63	59½	S.	[illegible]
Sunday 27	1	30.072	29.925	77	37	57.0	63½	61	N	[illegible]
Mon. 28	2	30.103	29.985	78	41	59.5	63½	60½	W	[illegible]
Tues. 29	3	30.047	29.987	79	50	64.5	64	60½	N E	[illegible]
Wed. 30	4	30.065	30.018	78	41	59.5	65	61	N.W	[illegible]
Average		30.057	29.957	78.5	44.3	61.4	62.8	59.8		[illegible]

July 24—Uniformly overcast; overcast and fine.
— 25—Fine, rather windy; few small white clouds; fine.
— 26—Very fine throughout.
— 27—Very fine; dry air; cold at night.
— 28—Very fine; rather windy; hot sun; cool at night.
— 29—Fine; very fine; slight rain at night.
— 30—Cloudy, fine with brisk wind; cool at night.
Mean temperature of the week 1½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK

During the last 36 years, for the ensuing Week, ending Aug. 9, 1862.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 3..	74.5	51 4	63.0	19	0.38 in	3	1	3	2	4	15	4	1
Mon. 4..	75.6	51.1	63.4	16	0.85	2	3	4	3	4	14	3	1
Tues. 5..	73.9	51.4	63 6	17	0.88	1	4	4	2	4	13	5	3
Wed. 6..	72.8	51 9	62.3	16	0.58	—	6	3	1	5	11	8	2
Thurs. 7..	74.5	50.6	62.5	12	0.57	1	4	3	—	5	[illegible]	3	—
Friday 8..	74.5	49.7	62 1	15	0.50	2	5	2	—	5	17	5	—
Satur. 9..	74.4	50.4	62.4	14	0.40	2	7	1	—	5	13	7	1

The highest temperature during the above period occurred on the 3d, 1857—therm. 90 deg.; and the lowest on the 6th, 7th, and 8th, 1858—therm. 37 deg.

Notices to Correspondents.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

☞ CORRESPONDENTS are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

HEATING: *Eques* We cannot advise you to take such advice, or to employ the person who has given it. The material is bad, the plan unworkable, and the scheme can only end in failure.

NAMES OF PLANTS: We much regret the necessity of once more reminding our friends that we cannot spare time for naming heaps of common things. The limit of the number is four, as has been very often announced.—*A J.* 1, Iris Sibirica; 2, Hoteia japonica; 3, Platanus cuneata.—*G X.* Chrysosplenium alternifolium.—*Barnsley.* 1, Spiræa callosa; 2, Spiræa Douglasii; 3, Spiræa tomentosa; 4, Spiræa ariæfolia.—*R S S.* Gnaphalium germanicum.—*Helston.* 1, Cratægus torminalis; 2, Pyrus domestica; 3, Cotoneaster frigida; 4, Rubus villosus.—*Oakley.* Ornithogalum arabicum; the specimen of Rose is quite insufficient for identification.—*Hidenley.* In a young state they are hardly if at all distinguishable. Abies Nordmanniana has the points of the leaves turned up; otherwise the distinction resides in the habit and cones. Nothing can be more wretched than the rigmarole statements in Gordon's Pinetum. The author has not a notion how to point out scientific distinctions.

ŒNOTHERA LAMARCKIANA: *C R.* This is a biennial, but will flower the first year if sown early enough. It is regarded by botanists as a mere variety of Œ biennis.

RASPBERRIES: *J. B.* Don't remove the old canes before the winter pruning. Never shorten shoots that have been budded until the bud has taken.

MISC.: Full price will be given for No. 36, 1858.—*W F.* The questions you ask can only be satisfactorily answered privately; send your address and we will communicate with you by letter.

THE LONDON MANURE COMPANY
(Established 1840)
Are now prepared to send out the following MANURES :—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.
116, Fenchurch Street, E.C. Edw. Purser, Secretary.

LAWES'S MANURES.
The Manures manufactured by J. B. Lawes for the present season of 1862 are now ready for delivery at his Factories, at the following prices :—

LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME	£6	6
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES ..	5	5
LAWES'S BARLEY, GRASS, and MANGEL MANURES	8	0

These Manures can be obtained of Mr. Lawes, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.
BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES OF LIME.
Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. Voelcker, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

SPARKENHOE FARMERS' CLUB.
All Entries Close on Thursday, August 7.
This GREAT ANNUAL SHOW will be held at Leicester, on the 2d, 3d, and 4th SEPTEMBER. 110*l.* will be awarded in Prizes, including 50*l.* given by the Mayor and Members of the Corporation.
Covered Sheds will be erected for Cattle, Horses, Sheep, and Pigs.
Exhibitors of Implements requiring Covered Shedding must make special application.
Hay, Corn, Straw, Cake, and Roots can be purchased in the Show ground at reasonable rates.
The sum of 1*l.* will be given to the Dairymaid who manufactures the first prize Cheese, and 10*s* to the same for the second prize Cheese, in each of the four classes.
All Certificates of Entry, which may now be had of me, must be returned on or before August 7, except for Fruit and Flowers.
Further particulars may be had on application to me.
Thomas Davenport, Secretary and Collector.
Ashby-de-la-Zouch.—Aug. 2.

MANCHESTER and LIVERPOOL AGRICULTURAL SOCIETY.
The ANNUAL SHOW of LIVE STOCK, IMPLEMENTS, and MACHINERY, &c., will take place at Warrington, on WEDNESDAY the 10th, and THURSDAY the 11th of September next. Entries close on the 11th of August. For Prize Lists and Forms apply to
T. B. Ryder (Surveyor &c.), Secretary.
57a, Church Street, Liverpool.—Aug. 2.

The Agricultural Gazette.

SATURDAY, AUGUST 2, 1862.

MEETINGS FOR THE ENSUING WEEK.

Tuesday, Aug. 5 / Wednesday, — 6 / Thursday, — 7	Yorkshire Agricultural Society at York; and Agricultural Improvement Society of Ireland at Limerick.

On Monday and Tuesday, August 4th and 5th, respectively, Mr. Strafford will dispose by auction of some pure bred Short-horn cattle, the property of Mr. Fawkes, of Farnley Hall, near Otley, and of the herd belonging to the Rev. J. D. Jefferson, of Thicket Priory, Fulford, near York. Of fifty for sale next Tuesday on the latter list, a large proportion are by bulls of Mr. Bolden's breeding:—Veteran (13,941) Ranter (18,666) and Waterloo Hero (13,981)—the last being of a distinguished family descended from the Kirkleavington herd. Mr. Fawkes's name has long stood in the first rank of Short-horn breeders. For more than a quarter of a century, without adopting any particular fashion he has prosecuted independently the cultivation of his herd. And it has achieved so many individual successes in competition with those of other breeders as quite to justify the high reputation in which it has been held.

As an illustration of the long establishment of the Farnley herd it may be mentioned that several of the lots to be sold on Monday are descended from *Medora*, bought by Mr. Fawkes so long ago as 1834, at Mr. Richard Booth's sale at Studley. Two of the bulls and one cow are from *Laura*, the dam of Leviathan, the prize bull at the Dublin Society's Spring show this year. The oldest cow on the list is half sister to the celebrated bull John o' Groats, winner of the 1st prize at the Yorkshire, and of the 2d prize at the Royal Agricultural Society at Carlisle, who afterwards won the 1st prize at the Salisbury meeting of the English Agricultural Society, and the 1st prize at the Highland Society's meeting the same year.

The subject of breeding animals from a selected stock is a matter which for years has been most fully recognised and carefully acted upon, but as regards a selection of plants from which to raise seed, farmers have been much more slow in arriving at anything like practical results. They have simply felt satisfied with an occasional change of seed, which experience has taught them prevents a too obvious degeneracy; but the setting aside of particular or selected roots from which to grow an *advanced* seed has not received its due share of attention. We are however beginning to recognise its importance, so that the following experiments, bearing directly upon this question, will be of interest to at least some of our readers.

In 1848 we sowed a plot of Wild Parsnip seed that had been gathered the previous autumn and stored through the winter. The original roots were anything but fleshy, and they had many lateral rootlets, which would be no recommendation in a cultivated root.

Our first crop of roots from the wild seed were not on the whole much better, but still there were a few amongst them which in growing showed a broader leaf, and to these were attached more fleshy roots. The best of these, then, were selected and put in sand for the following winter, and from this store they were planted out to produce seed; this seed was sown as before, and the manifestly improved roots again and again selected up to the present time, and the result has been that there is now in cultivation a Parsnip of which the Messrs. Sutton, to whom we have consigned the seed, speak as follows:—

"We are happy to tell you that in lifting some of each of all the varieties of Parsnips in our trial-ground your 'Student' was decidedly the best shape, varying in length, but always clean and straight."

A specimen grown in our own garden from seed sown in 1861, which seed was grown by the Messrs. Sutton, to whom we had previously consigned our stock for the sake of change of air, possessed a form of root vastly different from that of the wild original, and coincident with this change of shape there has been brought about a succulent well flavoured vegetable.

In 1857, as may be seen from the following report to the British Association, we had got on a good way towards these results; the desired change of scene was effected in the manner described above:—

"It may be well in this place to refer to some experiments which I have now been carrying on for nearly 10 years in the ennobling of the Wild Parsnip. Of course it was known that our garden esculent was derived from the *Pastinaca sativa* of our fields: but the progress of the experiments has been marked by some interesting facts relating to malformations of roots known as Finger-and-toe, and which will be found detailed in the 'Journal of the Royal Agricultural Society;' and at the same time it was a matter of no small interest to myself and pupils to note the great changes that took place as the experiments proceeded. The result has been the production of a good-sized Parsnip of a regular shape, but containing more flavour than is perhaps desirable;* but, inasmuch as some people complain of the want of flavour in the ordinary cultivated Parsnip, time may tone my specimens to the requisite degree. I would remark that I sadly want a change of soil for continuing the experiments."

Again, as explaining many facts of interest connected with the results we have here recorded, we again quote from the same report some remarks and conclusions upon these, to us, very interesting experiments:—

"It is not a little curious that experiments of a like kind with the Carrot have resulted in a failure. On reporting upon this last year, it was stated by Mr. Bentham, that Villemain had succeeded in advancing the Carrot and some others, but had failed in all his experiments with the Parsnip. This is curious, as showing that we cannot always command success in experiments of this nature—some circumstance or other may be wanting, and therefore we must not pronounce a thing impossible that we have tried ourselves without success; and at the same time it shows us that there are certain laws which operate to produce the changes we have noted, so that, from a repetition of experiments of this kind we may hope to become acquainted with some new facts connected with vegetable growth.

"An observation of some practical importance may be here noted. As a rule it may be laid down that neither Parsnips nor Carrots yield good roots in field cultivation in a district where these plants abound as wild natives, as they usually grow small and very much forked, digitated, 'finger-and-toed;' and therefore, if grown as an agricultural crop under such circumstances, a much more careful preparation of the soil, even than that usually employed, will be necessary to ensure success; and thus it is that success is much more general with these roots in garden than in field culture.

"But, besides, this own-grown seed tends much to degeneracy, especially in the field crop; and in the choice of seed we should always, if possible, choose that from a poorer soil and backward climate rather than in poor root soils to introduce a seed that had been grown in a district so much richer. These, indeed, may almost be considered as general laws."

Now this example of advance or ennobling will be sufficient for our present purpose, though we might adduce many others. It will be remarked that the results here arrived at are due to the careful selection of advanced subjects from which to breed a still more advanced progeny; we would now however direct particular attention to some curious results obtained from following out an opposite mode of treatment.

We had long become convinced that malformed roots yielded a seed which would bring about a progeny as badly formed and in some instances even worse formed than the parents from which they spring; and in order to obtain direct evidence upon this point, upon which so much of practical importance depends, we have carefully carried out the following experiments:—

On the 26th of March, 1860, a root of Skirving's Swede and one of the Student Parsnip were selected and planted for seed.

Had we been going to grow the best of seed we should of course have selected the best shaped roots for our purpose, but in this case the most viciously formed roots were selected.

The specimens planted in our garden (where by the way they were the only seeding examples) in due time ripened their seed, which was carefully collected and stored.

Early in April, 1861, these seeds were sown in our experimental plots *without manure*, in the following order:—

Plot *a*. Seed obtained from the malformed Parsnip.
Plot *b*. Seed of the Student Parsnip grown and communicated by Messrs. Sutton.
Plot *c*. Seed of malformed Swede.

Of the Swedes we can only regret that no plot of good seed was sown by way of comparison; we must therefore compare with a piece of Swedes in an adjoining field.

The following are the tabulated results:—

Table of Results of Experiment.

	lbs.	oz.
Plot *a*. 75 roots from seed of malformed Parsnips weighed in all	7	4
Plot *b*. 63 roots from seed of Student Parsnip ..	14	0
Plot *c*. 70 roots of Swedes from seed of malformed plants	19	8
	Inches.	
a. Circumference of best sample	6¼	
b. Ditto ditto	10	
c. Ditto ditto	8½	

We may further describe the Parsnips from *a* to be but little fingered and toed; but taking the number of roots into consideration they were not half the weight of *b*, which were grown under the same conditions. *b*, again, can only be considered as a poor crop, which is accounted for from being grown without manure.

With regard to the Swedes, they were, indeed, a poor crop, and presented all the evils of degeneracy, viz., neckiness, want of bulb (not one but was simply a tap root), and forked, shapeless, fingered and toed roots in endless variety. Their spindle-shaped roots were quite remarkable, and they were the rule, although with good seed they would have been the exception. Those in the field hard by were bulboid, and would average as much as half a pound each. From these experiments, then, we can have no doubt but that a degenerate stock will result as a rule from a badly grown seed, and we are now therefore equally prepared to affirm—

1. That by means of selection we may produce roots that are well shaped and have the capabilities of affording the largest crop.

2. That by designedly selecting malformed degenerate roots we produce a seed that will result in as great if not greater degeneracy.

That these are important conclusions few will be disposed to deny. They have most interesting bearings on the subject of vegetable physiology, and consequently should be studied by the farmer. It is a practice much to be desired, not only that a proper choice may be made of seeding examples, but that there be a change of situation, and if possible a time of storage before being planted for seed. These are all cultivative processes, and to the care with which they are carried out must we look for permanence in our derivative root crops.

—— We call attention to the advertisements, on this page, of the meetings of the Sparkenhoe Farmers' Club and the Manchester and Liverpool Agricultural Society. The entries to the former close next Thursday, and those to the latter next Saturday. These associations are among the most influential and successful of our Provincial Societies; and well deserve the support they have received.

* "During the time that my experiments have been in progress, I have been enabled to watch the downward progress of Parsnips left from an abandoned garden; and though these have not even yet lost all traces of their civilisation, they are essentially Wild Parsnips."—*Buckman's Reports, &c.*

AGRICULTURE OF IRELAND.

HAVING recently visited friends in Connaught, even to its western limits, and travelled through conterminous portions of the much fairer province of Leinster, I can form a probably just estimate of the condition of the growing and now ripening crops on the extensive area of land which I have viewed with an observant eye during a tour of one month's duration.

My first halt—after a railway transit through the luxuriant, well cultivated, and English-like counties of Carlow and Kildare, with large and regularly hedged fields of Wheat, and meadows, and accurately drilled Turnips and Mangels of good promise—was at the residence of Mr. Dundas, in the vicinity of Athlone, on the 18th of June. This town, which is in the centre of Ireland, on the confines of Leinster and Connaught, and divided into two portions by the Shannon (which is crossed here by a very noble bridge), has some of the characteristics of a border town, especially on a market day when the peasantry of the two provinces intermingle, and creels of turf on cars, and panniers on donkeys' backs, jostle against drays and carts laden with coals. The black peat too on reclaimed bog land close to the town, teeming with verdant crops of Potatoes, Cabbages (these in great quantities), and Oats, alternating with luxuriant Wheat, and upland meadows on the calcareous lands of higher elevation, present distinct agricultural features.

Near the town the black reclaimed bog on the Roscommon side is of great depth and divided into many small holdings. Its contiguity to the town (in which there is usually a garrison of 1000 soldiers), with the facilities of obtaining town manure, have led to the reclaiming of this particular portion of bog; but vast tracts of similar peat soil elsewhere in Connaught might be rendered equally fertile by draining and the commixture with it of the limestone gravel, which is abundant. Carrots and Parsnips are not grown here—at least in large quantities, and these would flourish in this loose and deep soil.

All along the course of the Shannon, from Athlone to Shannon Harbour, the disparity between the two provinces is apparent; the land on the Leinster side is more elevated and less boggy, and the superiority of the crops is evident. I saw no symptoms anywhere of blight on the Potatoes, and excepting on low lands where the cereal crops (Oats especially) were sown late in the season, there was a fair promise of harvest yield—unless the low temperature (not rising above 60° during the summer hitherto) should continue.

On the 21st of June I drove to the Seven Churches, on the banks of the Shannon and in the King's County, the property of Sir Arthur Maginnis. It contains about 8000 acres, of which 5000 are bog land; yet it is a very good model of improvement and successful cropping on the arable portions. It contrasts advantageously with some adjoining properties, in regularity of fields, neatness and commodiousness of farm houses, and the evident comfort of the tenantry, who hold their lands at very moderate rents, whereas other proprietors raise the rents excessively, and do nothing whatever to benefit their tenantry. This property fortunately is possessed by a gentleman of enlightened and liberal mind, and watched over by an agent who—himself a gentleman of independent means and high local position—takes pleasure in personally superintending the improvements on it. Many miles of new stone wall fences on the boundaries have been built at the proprietor's cost, a long course of arterial drainage has bee n cut through the bog, and about 50 iron gates have been given to the tenants. It was stated to me tha t no pauper from this estate had been in the Birr Workhouse for many years, and that the poor rates are but 8½*d* in the 1*l*. on Griffith's valuation. Some families have been on the land during 200 years, and the repr esentative of one of these tenant families, who showed me the ruins of the Seven Churches, and is 95 years old, speaks with honest pride of both landlord and agent, who give ample employment to all the small holders on the estate.

I saw an Oak tree there at least 40 feet in length and of great diameter, which had been raised up from the bog; it was perfectly sound. Sir Arthur Maginnis is an absentee—filling I believe some foreign diplomatic or military appointment, yet doing the duty of a landowner in Ireland by dealing generously with his tenants, and retaining the services of a gentleman—such as is Mr. Dundas—who thinks his duty is to do much more than attend on office days twice in the year to receive rents and sign receipts. On some estates about Athlone tenants were borrowing money from a loan fund to pay their last gale rent, and dreading Potato blight and short corn crops, a recurrence of which this year would ruin multitudes of small farmers. Happily the old wet turf of last year's cutting, which had been left on the bogs, is being now dried and sold for fuel at about one fourth of the price of dry turf last winter. Turf cutting is now proceeding vigorously, and it may be expected that a reserve of supply will in future be stored up.

June 20th, fine meadows and promising crops of cereals around Ballinasloe. The tenantry on Lord Clancarty's estate are evidently in a prosperous condition, and their crops give promise of productiveness if God shall grant us warm and dry weather. The small holders and landowners have neat and comfortable dwellings—no beggars here—nor indeed at Athlone, with scarcely an exception. I visited Mr. Allan Pollok's celebrated Home Farm at Lismany. This spirited Scotsman has purchased 32,000 acres in Galway and Roscommon. He has on the Home Farm 4000 acres, and altogether in Galway about 16,000 acres. By paying the previous occupiers very liberally on their emigrating from the country, or settling elsewhere in it, or taking employment with him as labourers on his various farms, he has succeeded in obtaining clear occupancy of the lands, and he is probably the most extensive agriculturist (in improved husbandry) in Europe, giving constant work to hundreds of people, and higher wages than are ordinarily paid. His 16,000 acres in the county of Galway present the appearance of the best cultivated Scotch fields, with the same economy of land (avoiding hedge rows, very unpicturesquely it must be said) and regularity of field rotations and culture, and the most commodious and appropriate farm buildings, with steam engines, gas lighting, mills, &c. The Home Park alone has trees; but young plantations of great extent have been made on the external boundaries of this principal farm. Some of his drained and completed farms have been let. I have been told that the purchase money of Mr. Pollok's estates amounted to £200,000, and that he had expended twice that sum on the improvements. His present expenditure in wages is about £2000 per month. There is no appearance of failure in any of the crops, and the large flock of sheep and herd of cattle appear to be in high condition.

From June 23 to June 29 went from Athlone to Castlerea by railway—miserably poor bog land along the line, wretched hovels, squatters inhabiting them, yet a great deal of cut out bog, reclaimable, but totally neglected, looking imploringly on the passing travellers to make arterial drains (of which I have seen but few throughout my tour) and tramways for conveying limestone gravel to effect its amendment. Here and there however are healthy patches of Potatoes (for which guano and ashes are applied) and rank looking Oats, though partially injured by wetness. Lord Mount-Sandford has the reputation of being a good landlord, but the town looks hopelessly poor. The farm houses however, and holdings generally on his lordship's estate towards French Park are better in appearance than those about the latter village and adjacent demesne, and farms, though the limestone soil here is extremely fertile. Some of the finest crops I have seen were in this neighbourhood, where art and care seem to have been somnolent, and the worst specimens of slovenly management and carelessness are conspicuously observable. Towards Boyle, the hand of improvement appears, the farm houses of Mr. Lloyd's tenantry and those of another gentleman whose name I have forgotten are favourable indicators of the landlord's care. And distant farm houses—new, and well thatched and white, on the more northern parts of Lord Lorton's estate in Roscommon, are some of the memorials of that good nobleman, whose death has been a great calamity. In such a grazing district, there are few labourer's houses, or indeed any habitations to be seen, and there is a lamentable deficiency of shelter of any sort. Cattle and sheep grazed in large numbers, and tenants who will not take the trouble or incur the expense of levelling the mounds and ridgelets which mark the sites of vanished cabins and of Cabbage gardens or parkeens are not likely to plant trees for ornament; nor will they break up the large grazing fields for a course of tillage merely to employ labour which might not prove remunerative.

The Boyle and Rockingham estate in the county of Roscommon contains nearly 30,000 acres, and in the county of Sligo upwards of 15,000. The princely demesne with its noble mansion contains 2,488 acres, and the magnificent mansion house looks upon Lough Key, about 3 miles in its extreme points from N.W. to S.E. and 2¼ miles from W. to E. And all this expanse of water and well wooded islands is backed by the Curlew mountains on the N. E., dividing the counties of Roscommon and Sligo. From the woods and plantations much timber was gratuitously distributed last winter and spring for fuel to the poor, but now there is an abundant supply of old and new turf. To provide the tenantry on the estate with timber for ornament or shelter there is a large nursery kept neatly by a Scotsman who is allowed to sell young trees from it. He has some of the Braemar Fir, which is so suitable to elevated and exposed situations, and charges from 1*l*. to 1*l*. 5*s*. per 1000 for the best lots.

The population of Lord Lorton's estate in the county of Roscommon (including the pretty town of Boyle, with 3000 inhabitants, which is remarkable for the well preserved architectural remains of a noble abbey, picturesquely placed within elegantly kept gardens, bordered by a rapid and clear river and fine timber) amounted in 1851 to 11,538 souls, and that of the Sligo estate to 4125. Mr. Coulter, the accurate special correspondent of *Saunders' Newspaper*, reported in April last* as follows:—"The estate comprises a great deal of rough and unimproved land, as well as some of the best soil in the country. The latter includes the plains of Boyle, a vast tract of high limestone lands with an undulating surface, without trees or rocks, famous for their rich pastures and their properties of fattening cattle. These plains are divided into grazing farms, averaging from two to three hundred acres, but there are several farms ranging from six to eight hundred acres in size. The rents on Lord Lorton's estate are moderate, good land being let at 1*l*., and town parks at 3*l*. 10*s*. per acre. The poorer tenants are chiefly those on the Curlew mountains, where the lands are let not by the acre but by bulk. The size of the farms is from 10 to 15 acres, though there are some even smaller, and their rent is about 10*s*. per acre. These mountains, which are situated to the north of Boyle, are cultivated nearly to the summit and are thickly dotted over with small white cottages, whose occupants are just now much reduced in means. Two facts which I have learned on good authority suffice to indicate the present condition of the small holders on this district. For several years there have been no arrears on the estate; but now there are some hundreds of pounds which it has been found impossible to collect. The demesne is always let out in grazing to small farmers; and a few years ago there was not accommodation for one half the applications, whereas at present the grounds are not half stocked. The deposits in the Boyle Savings Bank have diminished to the extent of 1000*l*. in the course of the last year. The people in some places in the neighbourhood of Boyle are paying their rents by bills, which they hope to renew, so as to carry them on until the harvest, when another gale of rent will come on them. It is also a fact that whereas a year or two ago there were no farms vacant, and people were always found in abundance anxious to purchase the good-will of any holding that might be in the market, there are many farms now to be had on comparatively cheap terms, but purchasers are not so numerous or so eager as formerly. All these facts plainly show a considerable diminution in the means and the comforts of the small farmers and of the labouring classes."

From Boyle I accompanied a friend who is in the magistracy, to the Court House at Carrick-on-Shannon, which is partly in the County of Leitrim, whence I returned gladly to Boyle, disheartened by the unfavourable aspect of the rural population assembled in the Sessions House and in the streets of Carrick, which though on a very favourable site for commercial traffic seems to derive little benefit from the broad expanse of the Shannon, navigable to Lough Allen, which flows by the town. I did not see even a single boat at the Quay, where a little fleet might be expected to have moorings. All round Carrick however the Potatoes and Oats (always excepting those late sown on cold wet land) looked well, but will probably decline if a favourable change of weather should not come. The probability of great scarcity loomed in the distance all through the later part of spring, although there was no sufficient ground for the exaggerated reports of existing and anticipated distress which had been so eagerly circulated. I fully believe however that it was necessary to apply the screw to indolent or apathetic landowners who might not otherwise have supplied the fuel and employment so indispensably necessary to avert the misery consequent on the failure of turf and Potatoes in a great degree during the last year. The demand for aid was nobly responded to by several of the Connaught gentry, whose names Mr. Coulter has particularized. The Wheat, Potatoes and meadows about Elphin give great promise of productiveness, but a rumour of some indications of blight upon the Potatoes has reached me, but I have not seen a diseased bed or drill of Potatoes anywhere either in Connaught or in Leinster.

The antiseptic qualities of peat soil, more especially in the first and second years after it has been reclaimed, afford ground for more hope as to the ultimate soundness of the Potato crop in Connaught than Leinster, or the eastern districts of Ireland, where there is no peat. This may prove some compensation for the general inferiority of climate prevailing in the western districts.

From Boyle to Ballymote (in the county of Sligo) where I attended another Quarter Sessions, is a long desolate road, unsheltered by a hedge or tree along the limestone mountains, which in one place present a range of openings into caves of considerable depth. The view from the top of the elevated ridge immediately above these caves comprehends a vast district of varied scenery. From the want of good bye-roads to the bogs in Connaught, the turf is brought to towns and hamlets in many instances on the backs of asses, which find footing through narrow passes unsuited to the transit of carts; and this accounts for the great numerical preponderance of asses in many localities and fewness of horses; besides the facility of feeding these.

Among the incongruities of the west are to be noticed the wearing of a hoop and shawl, with a well-trimmed bonnet and veil occasionally, by peasant gardeners walking to market, though they be bare-footed. I specially noticed two girls in this costume on the lonely road to Ballymote. They probably had their shoes and stockings under their shawls, to be worn on their entrance into Ballymote, and this not from poverty but from habit, and the comfort of walking without the incumbrance of shoes.

Headfort, County of Galway: July 1.—The Wheat and other cereals growing on the calcareous soil here look very weak, and altogether there is an aspect of comfort and good husbandry around the little town. The handsome mansion and well-timbered demesne of Mr. St. George, and the excellent Deanery House, with its well kept gardens and shrubberies, attest the good taste of the hospitable and generous incumbent. Some arterial drainage, near the residence of Mr. St. George,

* His observations on the Existing Condition and Prospects of the West of Ireland, have been published in a handsomely got up volume, with a Map and several Engravings of Scenery and Costumes.

was effected by his predecessor; and some miles distant from this place the tributary river flowing from Tuam to Lough Corrib, through Annaghdown, has been deepened and widened so as to render it a navigable canal through a large turf bog, and effective (besides its draining utility), as a medium of communication with Lough Corrib and Galway, whence sea-weed and sea sand, and building materials, &c., can be easily conveyed into the interior by boats. Salmon, too, have found a free access up this river, to the delight of anglers, who have killed in a day six or seven of this fine fish with a single rod.

The village of Annaghdown is surrounded by some well-improved demesnes of fertile soil, but nothing can exceed in desolation of appearance some of the tract between Annaghdown and Headfort. If the masses of rocks which have been laboriously removed from the surface, and piled in unsightly heaps or rudely ranged into frequent fences, were laid in in circular or quadrilateral figures to enclose trees, or built in "stells" for the sheltering of cattle or sheep, they would be useful; in their present position they are incumbrances on the soil. Spirited and wealthy proprietors might render such frightful deserts picturesque and beneficial by planting frequent clumps of trees, fenced by the superabundant stones; or by planting the stony surface with trees wherever they can be introduced, and making strong and regular boundary fences with the stones. Woodland would be beautiful through the undulating and rocky surface; the timber would become valuable; and as game preserves the close covers would be highly prized by the sportsman.

My next paper will relate to the condition of the more western parts of Connaught, including Connemara. *Martin Doyle.*

THE OSIER.

"There is not a single twig of the meanest Willow," says Dr. Walker, in his work on the Hebrides, "but what may be turned to some useful purpose." This leads me to a consideration—viz., in what way could they be disposed of to the best advantage for baskets and other industrial purposes. I need not enumerate the various purposes for which they are employed, but simply remark that the basket maker, the turner, and the cooper, would be less economical and useful were it not for the genus Salix. Charcoal and cases of lead pencils are also made from the Willow wood. Boards and planks of the Willow are well fitted for scaffolding, and sheeting for carts, lofts, &c.; and in localities where small timber are scarce we cut it up for paling rails. Being of a tough nature and light, it is very well adapted for these purposes. The very best kind of charcoal is made from Willows, and is highly esteemed in the making of gunpowder. The bark is used for tanning several kinds of leather. So from this we may learn that the consumpt for Willows, if more extensively grown, might be greater; and plantations, or large beds of Osiers might be very advantageously grown in almost any soil, such as banks of rivers, drained moors, &c., and, annually cut, would produce a sum of money that I have no doubt would largely remunerate the grower. And from land that cannot otherwise be made available for tillage, notwithstanding the vicissitudes of seasons, taking good and bad under view, the writer has experimentally ascertained that an acre of Willows or Osiers will often bring the grower a larger sum of money than an acre of Wheat; and likewise from land that would be almost useless for other kinds of crops. It is rather astonishing that the growth of them is not more attended to both in England and Scotland. As regards the nature of the soil and subsoil suitable for growing them in to the best perfection, Osiers delight in banks of rivers or drained moors, and are greatly invigorated by occasional floods or irrigations. Plantations of them may also be formed, and will succeed well, on low spongy bottoms along the margin of streams, in almost any lowland district of Britain.

In the great majority of farms are to be found level, marshy, wet spots, which, by drainage, cannot well be made available for tillage, which might be planted with the Willow, and would afterwards recompense the proprietor or farmer in a twofold way. The land might be prepared in various ways for this crop, owing to the extent and nature of the soil. Where the land will admit of being ploughed and harrowed, and has formerly undergone cultivation, I find that, at the present prices of Willow sets or plants, and the expense of labour, it would not cost more than 8*l.* 15*s.* per English acre, allowing the plants to be planted at a distance of 28 inches by 18 inches apart. But I find that for plantations of any considerable extent for Osiers, the ground should be formed by the spade into beds of from 8 to 9 feet broad, with intervening furrows or narrow ditches to carry off the water. The plantation may be made at any time between the fall of the leaf and an advanced period in spring; but the two last weeks of February and first week of March are the most proper times for planting the Willows. Cuttings 15 inches long should be taken with the knife on an upward slope from well ripened wood of either two or three years' growth; experimental trial convinces me they grow more luxuriant when planted about two-thirds of their length in the ground, than when they are less deeply put in the ground. Having at one time about an English acre of Willows under my care, it all received the same preparation; but after the number of cuttings required were lopped off from the plants of second year's growth, and dressed to the length of 15 inches, I caused the sets or cuttings of No. 1, or one-third part of the said acre, to be put in the soil to the depth of 10 inches. No. 2, as another third part of the same, had its cuttings planted to the depth of 7 inches. No. 3, another third part, planted to the depth of 4 inches. A decided difference was yearly to be seen on the growth of the plants—No. 1 producing in autumn of the third year one-fourth value of more Willows than that of No. 2; and No. 2 equivalent, or nearly so, to the same value over No. 3. I can learn from frequent trials that, where depth of soil can be obtained, Osiers succeed best in a deep, moist, free soil —ground to be dug to the depth of 24 inches, with a small quantity of dung and old lime rubbish put in the bottom of the trench. When Willows are planted in stiff tenacious soils, they are much more tardy in growth, and very liable to the ravages of a brown bug, which is accompanied by a black caterpillar, often making great ravages. The ground should be hoed and kept clean: the space will well admit of this, as Osiers should in no case be planted closer than 28 inches by 18 apart. The expense of preparing Osier plantations by spade work in this way, of course depends much on the nature and situation of the land; but in ordinary soils, drains can be cleared out to the depth of 30 inches by 22 inches broad at surface, having a scarpment, leaving it 12 inches broad at bottom. This form of a ditch can be made throughout at from 5½*d.* to 6*d.* per perch, and the ground of an English acre, trenched and prepared to the depth of 2 feet, for 6*l.* 10*s.* 6*d.*, or nearly so, and planting performed at about 18*s.* per English acre. The Willow, for the use of the basket maker, should be cut every year slopingly with the knife, within three buds of the point whence the shoot issued, and will admit of being cut back once in three years for the use of the cooper, exactly to the swell of the shoot of the three years' growth—thus compressing the plant back to its ancient dwarf form, at the same time realising a handsome return.

Moreover, by treating Osiers in this way, they will last and produce well for a great many years. The ground should be deeply stirred with the hoe and kept clear of weeds; but digging with a spade around the roots of Willows often proves very hurtful to the fibrous feeders, as we often meet with a great portion of such oozing and growing very near the surface of the soil. Plantations of Osiers thus treated, notwithstanding the vicissitudes of the seasons, will bring the grower at least the sum of 12*l.* sterling for every year after they arrive at their full stage of growth. This sum of 12*l.*, I have minutely tested, can be at the present time realised from an English acre of Willows, after all expenses of cleaning and cutting down the crop are deducted.

The best Varieties and most profitable Applications.—The kinds most approved of for pollarding coppice-wood, fuel, poles, or bark, are the Huntingdon Willow (Salix alba), and a variety called the red-twigged or Bedford (Salix Russelliana).

The best sorts for Osier grounds are—1st, The common Osier (Salix viminalis); 2d, The Red Osier (Salix rubra); 3d, The fine Basket Osier (Salix Forbyana); 4th, The Velvet Osier (Salix mollissima); 5th, The Long-leaved Willow (Salix triandra); 6th, The Golden Willow (Salix vitellina). These are the sorts most esteemed for the various purposes of the basket-maker, the cooper, and the turner. The way in which Willows are most commonly disposed of, after being cut, is—they are sorted into trusses and tied into bundles of 2 and sometimes 3 feet in circumference; and if intended to be stripped of their bark, they are set on their thick end, immersed a few inches in standing water, and left there until the latter part of the following month of May.

It has of late been asserted by various respectable parties that as high a sum as from 13*l.* to 14*l.* of nett profit, and sometimes more, could be derived at the present time from an English acre of Willows, under very ordinary treatment: they succeed best in northern exposures, provided they are not over-topped. Should the ground be at all suitable for the crop, each set will produce of the first year two good basket-rods, or 24,000—worth 6*d.* per 100 of 120. The second year, the sets being much stronger, will produce on an average six rods, one more or less being considered a very common number—one of which may be left on each stock for hoops, and the remaining 60,000 cut for baskets, which would be worth much about 24*l.* sterling. By the third year there ought to be at least 12,000 hoops, worth 4*s.* per 100 of 120, and from 28,000 to 29,000 rods, worth at least 13*l.* 10*s.*

These results may be obtained even by fair cultivation under ordinary circumstances: of course, it may sometimes be difficult to obtain a ready market or sale for the basket-rods; the hoops we find to be always such, and much sought after. The greater part of those used in Ireland are imported and much sought after also, with commonly a very scanty supply. No hoops should be left by the third year on the plants, as the rods which grow under the shade of the hoops are seldom or ever strong enough. Mr. Philips, of Ely, in England, one of the greatest cultivators of Osiers at the close of the eighteenth century and beginning of the present, says that he always obtained from 12*l.* to 18*l.* per acre, according to the fluctuation of prices, after deducting all costs of labour &c., the red Welsh Willow (Salix purpurea) and the white Welsh (S. helix), being at that time the two leading and favourite sorts, they being at that time disposed of in bunches an ell in circumference, after being peeled and whitened by compressing them in an iron hoop to this size. If the plants be not in any way destroyed by insects, to which in some years they are subject, under good cultivation upwards of 10*l.* could at the present time be realised of nett profit, after deducting all expenses of labour, from an English acre of Osiers. And although an old adage in Lincolnshire, it is nevertheless still true, that a Willow will buy a horse before an Oak will buy a saddle. As to what towns and countries they are in most request, we find them in request in a great many large manufacturing towns and seaports, more especially in Dublin. The butter trade in Ireland causes a great consumption for hoops for butter firkins throughout the season. I have witnessed hoops of Hazel and Black Sally, as it is termed, sold at 12*s.* and 13*s.* per 1000, and the cooper cut them at his own cost; and in Dublin there is the Institution for the Blind, that requires to import a great many yearly to keep their hands employed. A much greater consumption for Willows might be relied upon, were they but more extensively cultivated. In almost every seaport town of Britain, an accurate calculation has of late been made that at least 6000 acres of Willows could readily be disposed of in Scotland and England, at prices that would very handsomely remunerate the grower. *Mr. J. Forbes, Monymusk, in the Trans. Agri. Soc.*

Home Correspondence.

Guano.—Your article in the *Agricultural Gazette* of last week, on the increasing price and failing quality of guano, must impress upon all farmers who have been accustomed to its use, the importance of finding a substitute for it (for at least some of their crops), equal in efficacy, and more moderate in price. I have been in the habit of sowing 2 cwt. of guano per acre with the Wheat early in October, according to Mr. Caird's recommendation, and with satisfactory results. It has often suggested itself to me, that if twice the quantity, viz. 4 cwt., of bone dust were used, the effects might be equally beneficial, and that the succeeding Turnip crop would be also greatly benefited by the bone phosphate. The money value of each would be about equal. According to the analysis of Professor James Johnson, bone dust consists of 33 per cent of organic matter containing 6 per cent. of ammonia and 50 per cent. of phosphate of lime, so that two parts of bone dust would not contain much less ammonia than one part of guano. Would the organic matter of the bones exposed to the frosts and rains of winter be sufficiently decomposed, and become available food for the Wheat plant at the time it requires it? I have seen it remarked that on stiff land like mine, bones do not have the same effect as on light land. Rape cake has been strongly recommended to be sown with Wheat on heavy land. According to Dr. Anderson's analysis it contains from 6 to 7 per cent. of ammonia, and the same of phosphate of lime; it would not seem from this to be of equal value to bone dust, as it is very deficient of phosphates On the other hand it contains a large per centage of organic matter, and about 11 per cent of oil; probably these fertilising matters may compensate for its deficiency of phosphate. *Thomas Jenkins, Coventry.*

Drying Corn in Round Stooks.—To protect Wheat sheaves best from wet and wind I recommend that the stooks or shocks be formed round-fashioned, which I find by practical experience will stand more firm and erect, and will keep the corn in preservation far better in fickle weather, and even plumper when cut green, being more regularly dried when it is too hot and parching, than in ordinary stooks longitudinally formed, which are more exposed to boisterous winds and driving rains on the whole length of the stook, at least on one side of it, and sometimes on the opposite side, when the wind chances to change during the storm; whereas in round stooks, much less ears are exposed on any given number of sheaves, and only one-fourth of them are subjected much to driving rains, and that windward, let it blow from what quarter it will, N., E., S., or W.; thus three-fourths of the corn is protected and preserved. It too frequently happens that in the hurry of harvest operations too little care is betowed to set the sheaves properly, so as to insure their not falling down, and being injured should driving winds and wet occur. Long stooks are more subjected to those vicissitudes, and to take more harm than those of round formation, from various other causes which might be enumerated and explained. One man instead of two is sufficient to form round stooks, and if properly and carefully done, they would were it required stand a considerable time firm and erect, with the corn protected and comparatively safe, till suitable weather offered for carrying it to the garner. The quarter which only is exposed to the rain most, very soon dries from the current of the wind around the whole stook, with less power to blow it down, and catching the sun all day from its rising to its setting, are benefits which cannot be derived in ordinary stooks placed lengthways. My method is this: first, to place one sheaf firm on its bottom, on the middle of the stitch (not in the furrow) for support of the rest; 2dly, three more firmly and equidistantly around it; 3dly, three more

repeated; and lastly and 4thly, to complete the stook place six more outside, at equal distances around the whole, in all 13, pressing the ears, and lapping them as evenly together as possible. Another advantage of round stooks is, that the produce of several stitches can be placed on one, so that the land between can if necessary be cleaned or ploughed before the corn is carted. The same rule applies to Beans and many other crops. Round stooks too, from the ears being less exposed, are better protected from predatory birds, which often commit too great havoc by devouring corn in times of scarcity, and more especially this year, from the circumstance of their rejecting the blighted corn (which unhappily so much prevails), and feeding upon the best. On small plots near neighbourhoods and homesteads where sparrows frequent most, one quarter of the entire crop of Wheat may be fairly stated as being destroyed by those depredators, in some cases half, and in others even the whole. *A. Hardy, Maldon, Essex, July* 28.

Crops in Notts.—Since I last wrote to you, I have had the opportunity of seeing the crops in my neighbourhood; but as the soil varies much here—from strong clay to very light sand—of course there is much difference in crops. My own farm is a good loam, on which I can eat off my Turnips with sheep; my Wheat is a fair crop, Barley good, and Peas the best I have seen this year; and I think the best crop I ever had. On the sandy soils the Wheat crops vary a good deal; some of them are very thin, and broken down straggling crops; others are a good average crop for that description of soils, but I hear of complaints of red rust on some crops. Barley and Oats are good. Turnips are good, and where early sown and singled out are looking very well indeed. Mangels—very few grown about here this year; they have not done well in the early part of their growth, the weather was too cold and cloudy for them. Pastures have gone off very much the last few weeks; hay crops are generally good and well secured. On the good clay soils north of Newark, and on the well managed and drained farms, I am informed the farmers' prospects are very good; Wheat is a full average crop; Barley ditto; Beans were most promising, but now are covered with the smother fly, and the tops are quite black with the fly; Peas are on some farms quite a failure, and have been ploughed up, and again on other farms are very good crops. Potatoes are generally good; and the Swedes on the clay soils, where early sown, are very good. Summer fallows are in a forward state, and well cleaned; and many of the farmers are now busy in pen fallowing their Clover stubble ready for Wheat. On the badly managed and undrained clays the crops are very poor, Wheat thin on the ground, and badly storm-broken, with a very small ear, and Barley a bad crop. *Charles Doncaster, Southwell.*

Arable v. Pasture Land.—In a late Number of your valuable Paper it is stated, on the authority of Mr. Caird, that as much land as would produce 10 millions of quarters of grain has gone out of cultivation since the repeal of the Corn-laws, and has been laid down in pasture. Now, I would beg Mr. Caird to specify the counties where such alteration has taken place. It appears to me that his is a foregone conclusion, since he says that it has happened as he expected or foretold. According to the general belief and statement, cattle and sheep are chiefly means of manufacturing manure, and if so their increase would point to a further addition to grain crops, to which the constant inclosures of waste lands must have greatly added. Near large and growing towns the demand for dairy produce may have displaced corn crops; in Ireland there is some decrease, but Ireland never produced the number of millions stated; generally speaking, I believe, more grain is now produced than five, ten, or any given number of years ago, at the same time that infinitely more is consumed. If, however, Mr. Caird can furnish convincing proof to the contrary, I must bow to his authority; the return of sales in the various markets is no proof whatsoever, for these constitute but a very small part of the transactions in British grown corn. *Mercator.*

Crops near Faringdon.—We are sorry to report that the cold, ungenial, and unseasonable weather which has hitherto been the concomitant of the season still remains with us, to the serious injury, we much fear, of the past, present, and prospective of the agricultural interest. Everywhere we have had abundant crops of hay, and scarce anywhere has it been secured in good condition. The overflowing of the Thames spoiled some hundreds of acres between here and Oxford, and in many instances where cut swept it entirely away. The hay harvest has been an unusually expensive one, and very protracted; and a considerable acreage is yet unsecured. If the condition of the dry provender for winter keep presents an unpromising aspect to dairy farmers, that of the root crops is not less so to the flockmaster. The Swede crops are very unpromising, the fly ravages being more than ordinarily severe, in many instances necessitating a second and even a third sowing; and in fields where resowing has not been necessary the growth is very slow indeed. On most farms the Mangel has been and is now suffering from the ravages of "the worm," a sort of white maggot with a black head, which, burrowing its way into the cellular interstices of the leaves, feeds with a voracity most damaging to the growth and well-being of the crop. With this and the cold weather they do not grow, and unless we have a change of weather speedily, light crops must inevitably be the result. This continuous cold and damp weather renders a prospect of a short field in the Wheat crop almost a certainty. Red gum is reported to be making its appearance extensively, although we have not seen much of it in our own district. In some places the Wheat—and this applies more especially to spring Wheat—is thin on the ground, and there is a very apparent want of length in the ears, which must tell in the bushel. On the drier soils we have seen some very good pieces of Oats, and Barley also on the same descriptions of soil, especially if sown early, also appears at this stage as if of an average bulk. Beans generally are abundant in straw, nor have we yet heard of any serious blight in the crop. Unless we are favoured with more genial weather we must calculate on a very late harvest. *W. J. M., Buscot Park, Lechlade, July* 23.

The Quality of Australian Wheat and Flour.—I beg leave to report the results of my chemical examination of a sample of Wheat received from you on the 9th ult., and a sample of flour received from you on the 15th ult. The sample of Wheat is the average of 12 samples, and the sample of flour is the average of 8 samples exhibiting in the South Australian Court of the International Exhibition. The weight of the Wheat per bushel was ascertained by a number of experiments, and the average of these was taken and gave the weight of 65¼ lbs. The yield of flour and of bran in 100 parts of the Wheat was determined by taking the average of several experiments made in the manner described by M. Boussingault in his "*Economie Rurale*," when experimenting upon 24 different descriptions of Wheat grain grown in the Jardin des Plantes. The results gave me 83.5 per cent. of flour and 16.5 per cent. of bran, which is a low per-centage of bran. From having got in this way only this small quantity of bran, it is a necessary conclusion that this Wheat will yield a higher per centage of the finer flours, when ground and dressed in the usual manner, than Wheats having a higher per-centage of bran. Of the 24 specimens mentioned above as having been experimented upon by M. Boussingault, only four gave a little less bran than this did, while most of the specimens yielded a much higher per-centage. There are no methods on a small scale of ascertaining correctly the amount of the yield of the different flours or products from Wheat, as grinding it in a steel mill cuts the seed up too much, while our means of rubbing down, as stones would do, are insufficient. I have made, however, experiments by passing it through a steel mill, and likewise by rubbing it down with the best means I had, and passing it through a coarse sieve, and repeating this several times on the brans, in order to separate only the coarsest bran. With the steel mill the coarse bran was only 3 per cent., while with rubbing it down it was as much as 6 per cent., which is probably too low in the one case and too high in the other. If, however, I take the mean of these results, and calculate the total yield of sifted products per bushel of Wheat, I find it to be a fraction above 61½ lbs., a large yield of gross products which, even if they had been enough to operate upon, but which they were not, I did not possess the means of separating into the different qualities of flour, and the other different mill products. The moisture or water in the Wheat when dried at 212° Fahrenheit is only 12.57 per cent., whereas in Wheat of this country, it varies according to season and other causes from about 15 to 20 per cent. The dry matter, in which are included the nitrogen and ash afterwards mentioned, is 87.43 per cent. The nitrogen in the Wheat when deprived of moisture amounts to 2.08 per cent., and in its ordinary state to 1.91 per cent.: this represents in the one case 12.96 per cent., and in the other 11.28 per cent. of gluten and albumen. The ash obtained in burning the Wheat was 1.58 per cent. on the dry, and in its ordinary state 1.41 per cent. which is considerably below the average per-centage of ash in Wheat in this country. In order the better to compare these results with those of Wheat in this country, I have placed them in the following order:—

Table of Moisture, Dry Matter, Nitrogen, and Ash.

Substances found.	South Australian Wheat.	English Wheat. Average of 10 years.
Moisture in 100 parts ..	12.57	17.10
Total dry matter ..	87.43	82.90
	100.00	100.00
Nitrogen in 100 parts dry matter	2.08	2.20
Ash ditto	1.58	1.98

These results of the examination of English Wheat I have taken from a paper by Mr. Lawes and Dr. Gilbert, "On the Composition of Wheat Grain," in the Quarterly Journal of the Chemical Society, vol. x., where these gentlemen have come to the conclusion, from their experiments upon English Wheat, that a high per-centage of dry matter, together with a low per-centage both of mineral matter and of nitrogen in that dry substance, are a sure indication of the good quality of the grain. By a comparison of the above results, it will be seen that in all these respects the South Australian Wheat has much the advantage over the English Wheats in the average of ten years; but in some more than others. The ash of the Wheat was examined for its constituents; but as it exhibited nothing different from Wheat ashes generally, I need not, I think, give the analysis. The flour to the eye has great beauty and texture. To determine the moisture in the flour, it was dried at 212°, and gave 12.58 per cent., which is a very low per-centage. Of a number of different kinds of flour of this country and of France, but all good, and some of the finest quality, which I examined recently, the moisture was from 13 and a fraction to 15 and about a-half per cent. The nitrogen in the dry flour is 1.74 per cent., and in the flour as it is delivered 1.52. These figures represent 10.84 in the one case and 9.47 per cent. of gluten and albumen in the other, which is the average quantity of these substances in good flour. The ash in the flour is extremely low, being only 0.58 per cent. on the dry, and 0.52 per cent. as delivered. Several experiments were made in order to test the bread-producing qualities of the flour, and for this purpose bread was made from it, and when baked and taken out of the oven, was allowed to remain till thoroughly cold, when it was weighed. The average of the experiments showed that from 100 parts of flour 137½ parts of bread of good quality and lightness were produced. This is, if anything, a higher product of bread than is obtained from English flour generally, although it approaches very nearly to it. I may add, however, that the baker sets great store upon this quality of a large product of bread; and my experiments, only able to be on a small scale, may not perhaps have done justice to the flour in this respect, but it could be readily tried by a baker on a large scale, if you thought it necessary to do so. *Dugald Campbell, F.C.S., Analytical Chemist to the Brompton Hospital, &c., 7, Quality Court, Chancery Lane, London, June* 14. [This letter has been sent to us for publication, having been a report by Mr. Campbell to F. S. Dalton, Esq., the Commissioner for S. Australia at the International Exhibition.]

Crops near Ayr.—Since last writing to you regarding the appearance of crops in this county, we have had a continuation of cold, wet, unseasonable weather, with very little sunshine or heat, which has done much to retard vegetation; and I am sorry to have to report very unfavourably on crops in general. In spring and during the early part of summer, Wheat promised to be a fair if not fully an average crop, especially on light soils, but it is now evident we must have light crops and a considerable deficiency in the quantity of straw. We have also had several heavy storms, which it is to feared, must have damaged the Wheat in bloom. Oats also will be extremely light, and on clay soils not much more than half a crop, to judge from present appearances. In many places it was severely tried and much thinned in spring by grub. Turnips and Mangel are also far behind, and unless we have now fine warm weather there must be a great deficiency. A large extent has yet to be singled. Potatoes, of which a considerable extent has already been raised for early market, have generally turned out very badly. I presume the average weight per acre will not be 3 tons, and this on soil which at a corresponding period has, in other years, turned out 5 or 6 tons. Disease has already appeared in some places; in fact I have seen a good many roots in my own fields affected. In many places pasture is so bare that cows have to be fed indoors upon Bean-meal, &c., to keep up their condition. On the whole, crops of all kinds—except Beans, which promise to be above an average—will, it is feared, be lighter than we have had them for many years, and we cannot now look forward to an early or an average harvest. *Andrew W. Ralston, Lagg, July* 24.

Farmers' Clubs.

Melksham: *Mowing and Reaping Machines.*—At a recent meeting here, Mr. Caldwell said he had been requested to propose the health of the "Unsuccessful Competitors"—rather a bold undertaking, they would perhaps say, for one of the judges who had been the means of placing them in that awkward predicament; but everyone knew that where there were nine competitors and only three prizes, six must go to the wall. With regard to the trials which had taken place in the field that day, they did this society more credit than the trials of any other society that he had had to do with. We heard a great deal in dairy counties about the difficulties between masters and servants; but if he was any judge, the manner in which the mowing machines had been worked that day, showed, at all events, that nine gentlemen in this dairy district had each a servant who looked to his master's benefit. They had just had before them a gentleman who had returned thanks on behalf of Messrs. Burgess and Key, who, it must be confessed, were so far in the minority as to have won only the third prize with an "improved" machine. But he might tell them that no new machine was ever fit to compete, on the first day of its trial, with an old machine, when that old machine was properly handled. It was the same with an old plough and a new one: put a new plough on brash land, side by side with an old one, the face of whose share had been sufficiently smoothed to its work, and they would at once see the difference. From the first invention of steam ploughing and mowing machines he had been a judge and a steward of the Royal Agricultural Society. He had seen the working, from first to last, of the whole of the implement machinery. He had watched its progress; he had studiously studied it because he had been obliged, by the retu ns

he had to make in writing, to be faithful to his text. And after watching all that had been done, he must say that the improvement which had been made in the mowing department had more advanced, and had more adapted itself to the agricultural mind, than any of the other complicated machinery which had been brought forward; and he considered that immense credit was due to the men who had driven the horses in the machines that day for the way in which they had managed their work. A great deal had been said about the pace at which No. 4 was cutting down its acre. He should like any gentleman honestly to say, whether there ever was a machine brought to trial in better order, with better horses, better harness, or more thoroughly equi pped throughout—in short, the man who drove it sat, reins in hand, like a gentleman in his carriage. Others there were in the field, but not of the same style; but did they mark the work which the machine No. 9 was doing in yonder field, in a piece of Grass twice as difficult to cut? He had walked behind the two uppermost machines and looked at their knives, one of which he found not sharp enough for its work; but when he came to No. 9, he found the ground cleared in a manner that could not fail to satisfy the most fastidious of masters, and which the most prejudiced labourer would find it difficult to say he could excel. He was happy to find that that machine belonged to, or rather was made by, Burgess & Key; and he said it openly to the world, and he cared not from whom the answer came, that, with knives properly sharpened, he would take Burgess & Key's machine upon any land they could find—whether on the North Mead at Lacock, or any other, he cared not where—and he would work it for 50*l.*, and cut the Grass either above the flood mark, or, if they liked, below the silt; and he would bet another 50*l.* that no other machine would cut an acre of the same Grass through the silt without coming to a full stop. As a member of the Melksham Society, he was glad of the opportunity of a trial of these machines in that district; and his advice to them was this: if they had got light crops and a nice pair of trotting horses, buy Wood's machine; but if they wanted to cut 2 tons to the acre, don't buy it: for, if they liked to have the field raked, he would go at once with Burgess & Key's No. 9 machine, and would cut 3 inches of Grass where Wood's had been at work. If they did not like to believe what he said, let them try the machines themselves. As to the manufacturers, he cared not what they thought of his remarks; he was for the best machine that would suit the farmer, and, according to the trials that day, and the work he had since done, he must say that the nine gentlemen who had sent machines into the field had got nine serv ants who could work a mowing machine well; and he believed, whether his friends and neighbours in the county of Wilts used Burgess & Key's or Wood's machine, that they would have no difficulty in finding men to work them, and that those men would, when they got accustomed to them, thank their masters for bringing them forward. In conclusion Mr. Caldwell said he hoped the improvements which had been introduced for the gathering in of their crops would be as successful as the Society of which they were members, and expressing his hearty good wishes for their well-being, the hon. gentleman resumed his seat amidst the cheers of the company. *Devizes Gazette.*

Reviews.

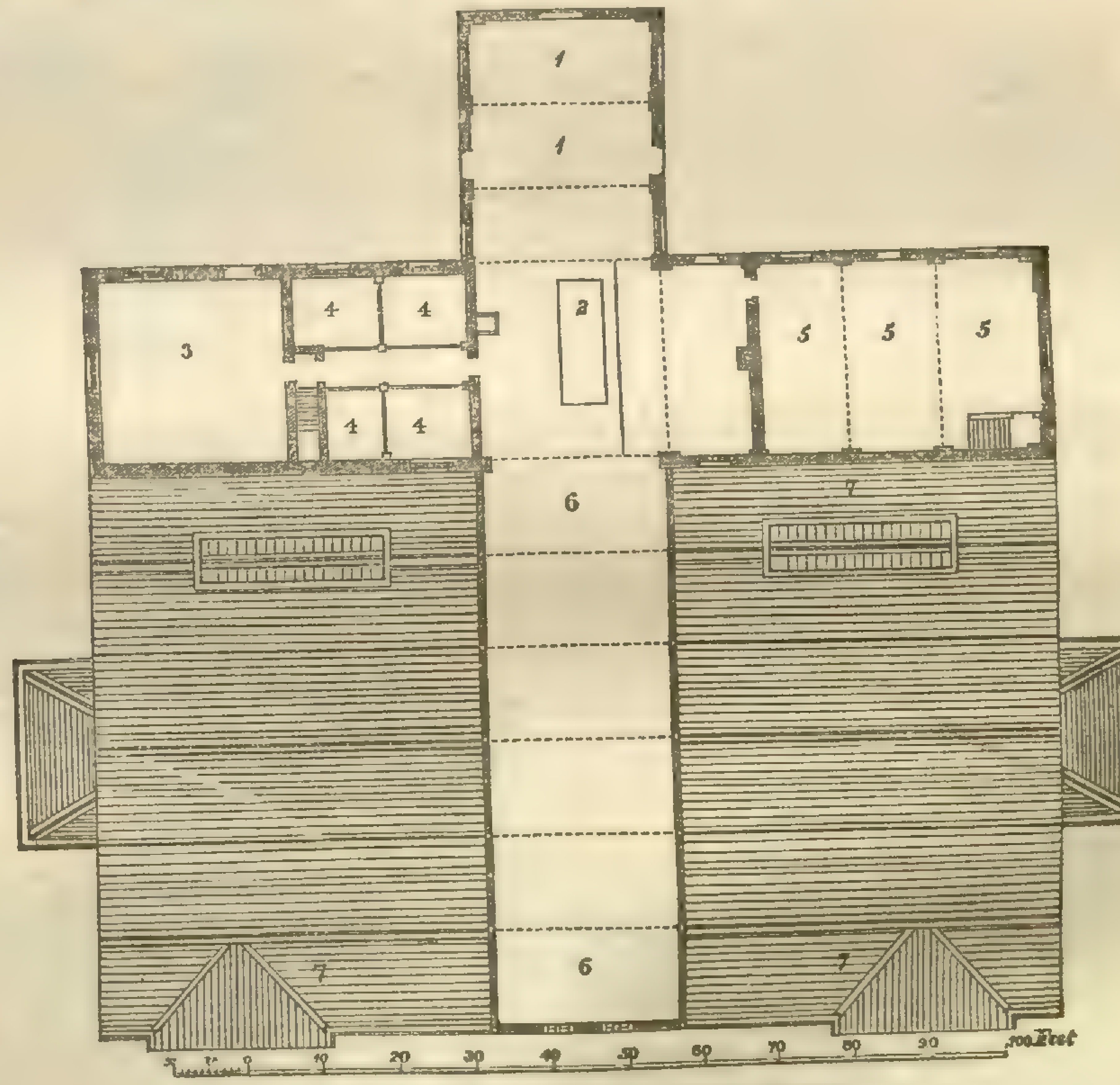
Prize Designs for Covered Homesteads.
By P. D. Tuckett, F.G.S.

We have here the plans and sketches of two sets of farm buildings which Mr. Tuckett sent to Leeds last year in competition for the prizes offered by the Yorkshire Agricultural Society. It was understood at that time that the Society were to publish a pamphlet which should be a record of the important collection of designs then exhibited. This was the more necessary because very few people took the trouble to visit the apartment in which they were shown; and it was also necessary because, as we pointed out at the time, some vindication was necessary, if possible, of the awards then made. The first prize set of buildings for the larger class of farms, in particular, was distinguished by a great many faults, which were specified in our report of the Leeds meeting. The prize for the smaller class of buildings was very deservedly awarded to Mr. Tuckett. It is on a well-known principle, which has for some years been adopted. The Rev. J. Cooke, of Semer, first we believe called attention to the advantage of covered yards; and Mr. Beadel, of Gresham Street, first carried out Mr. Cooke's idea in a systematic manner. Mr. Tuckett's designs are essentially on this plan. There is given in Morton's "Farmer's Calendar"* a series of engravings of a set of buildings erected by Mr. Beadel on the estate of Mr. Garth, near Twyford, which were described two years ago in this Journal. We quote the description once more, accompanying it by these engravings, because they sufficiently illustrate the plan which Mr. Tuckett, has adopted:—

"At the Home Farm, Haines Hill (Figs. 13, 14, 15) Berkshire, on the estate of J. C. Garth, Esq., capital buildings have been erected on this principle by Messrs. Beadel, of Gresham Street, E.C., and their leading feature—extensive yards under lofty roofing—is more or less carried out at all the other homesteads which those gentlemen have erected on the estate. The main block of buildings occupies a ground plan of about 140 feet by 100. There is a lofty range on the long side, which runs north and south, and from the middle of this projects a shorter piece of the same height towards the east; while the main block is an extension

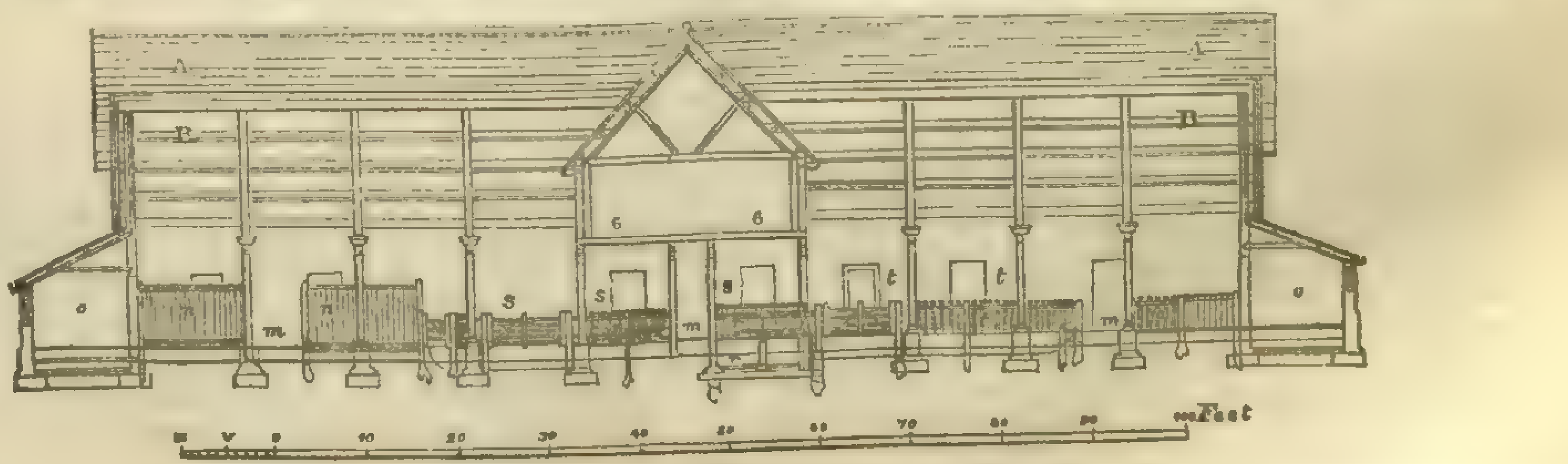
HAINES HILL HOMESTEAD: GROUND PLAN.

for about 100 feet westwards of the same roof of its full length, generally, however, of a somewhat lower elevation. The lofty range includes in its centre a very complete threshing machinery, worked by a steam-engine of 8-horse power—all erected by Messrs. Ransome, of Ipswich. On the one side of this centre-piece lie the granaries above and cattle-food stores with chaff-house below; and on the other side lies hay and chaffing



HAINES HILL HOMESTEAD: UPPER FLOOR.

apparatus above and roots below. The hay is put in from the cart or waggon outside, on the level of the upper floor; the roots are thrown in from the ground floor below. The corn to be threshed is thrown in on the upper floor at the end of the arm of the buildings which projects eastward; the ground floor of that piece being occupied by carpenters' shops. The corn fed into the machine on the upper floor passes downwards, the



SECTION.

chaff is blown out below; the straw re-appears, being lifted by the clever elevating shaker employed by Messrs. Ransome in their fixed barn machinery; and the corn being winnowed on its descent is brought upwards in elevators and passed through another winnower before it reaches the separators, from which it is

* Routledge, Warne, & Co.

delivered in sacks on the granary level. These are at once wheeled off to the stores, while the straw is carried away and stored on a floor on the same level, which extends under the higher part of the roof right over the covered yard below, from which it is thrown down for the supply of the yards.

"From this floor you look down upon the yard below, and you see that the space is divided by three parallel gangways, extending westward from the north and south line of stores of chaff and roots, parallel with the sides of the yard. The two side gangways are about 4 or 5 yards from the side walls, the middle gangway extends down the centre of the intervening space. As you walk down one of these side gangways, you have on either hand the boxes in which the farm horses are kept solitarily, most complete in all their equipments, with manger, water trough, &c., only boarded up so high as to make it a case of complete solitary confinement, except in so far as each has a look-out on the gangway. As you walk down the other side gangway you have on one hand first boxes for cows, then little yards for sows with litters. On the other hand you have three yards each for six or eight cattle; either dairy stock, fatting beasts, or young and growing heifers and steers. The central gangway under the straw floor from which you see all this has upon one side a long range of sparred flooring, divided into yards for ten or a dozen sheep each, and containing about 60 Hampshire Down tegs, which, when I saw them, were evidently in thriving condition. On the other side, and between you and the horse-boxes, lie another series of yards for fatting cattle. Over the sparred flooring on which the sheep are fed gypsum is occasionally spread, and the whole is brushed over every now and then; but the sheep keep in capital condition; and when a lot have been brought in lame from the pastures they have soon recovered themselves on the sparred flooring. The yards are sheltered on the north and east by the highest portion of the erection, and being also walled up on the sides to the roof, they are left for the most part open on the western side. The ridge lines of the roof are glass, and there is ample window room for light, so that light and ventilation are provided along with perfect shelter.

"Apart from this main block of buildings lies the manager's house, and outhouses, including dairy, slaughter-house, poultry-house, &c.

The figures representing ground plan, plan of second floor, and cross section, from *o* to *v* on the ground plan, are sufficiently explanatory of this very efficient set of Messrs. Beadel's farm buildings. They cost, as a general rule, from 10*l.* to 14*l.* per square of 100 feet (10 feet square), varying according to the proportion of loftier building erected and the preliminary difficulties of the ground. We add here the following references to the index letters:—

"*Ground Plan of Buildings at Haines Hill.*—*a*, Carpenter's shop. *b*, Sawing-room. *c*, Threshing and dressing room. *d*, Engine-room. *e*, Boiler-house. *é*, Boiler. *f*, Coal-house. *f'*, Ash-pit. *g*, Meal-house. *h*, Cooking-room. *i*, Chaff-house. *j*, Mill-room. *k*, Root-house. *l*, Mixed food for horses. *m m*, Gangways. *n n*, Loose boxes for horses. *o*, Harness-room. *p*, Bailiff's horse. *q q*, Calves' pens. *r r*, Sheep boxes, with sparred floors. *s s*, Cow yards. *t t*, Bullock-yards. *u u*, Pig-sties. *v*, Bull-house. *w w*, Breeding sows. *x*, Horse-box. *y*, Infirmary.

"*Plan of Second Floor of Buildings at Haines Hill.*—1 1, Sheaf-lofts, fed from the waggon outside. 2, Threshing-machine. 3, Granary. 4 4, Corn-bins. 5 5, Store-loft 6 6, Straw-floor, extending over yard. 7 7, Roof of yard.

"*Section across Yard of Buildings at Haines Hill.*—A A, Roof of granary and barn. B B, Roof of yard. 6 6, Floor of straw-gallery (see 6 6, Fig. 14). *m*, Gangways. *n*, Horse-boxes. *o*, Harness-room. *r*, Sheep-pen, with tank beneath-*s s*, Cow-yards. *t t*, Bullock-yards. *v*, Bull-house. *w*, Breeding sows."

This account of the Haines Hill farmery will suffice very well as a general description of the buildings designed by Mr. Tuckett, and described in his book. The first few pages of the work are occupied with a good essay on the subject of shelter for live stock, produce, and manure; and the plans which are given are accompanied by full specifications of the work to be done in their rotation.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending July 30, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0-6	Amount of Cloud 0-10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	24	30.03	57	56	S.W.	2	8	66	52	74	49	0.04	61	59½
Friday ..	25	30.06	62	58	W.	3	5	74	56	113*	55	0.01	61½	59½
Saturday ..	26	30.10	68	61	W.	2	2	72	43	115	41	..	62	59½
Sunday ..	27	30.09	62	55	W.	2	2	81	49	118	46	..	63½	60
Monday ..	28	30.16	63	57	W.	1	2	73	40	115	38	..	63	60
Tuesday ..	29	30.11	64	57	N.	2	1	77	44	121	41	..	63½	60½
Wednesday.	30	30.11	64	57	N.	2	2	78	51	123	50	..	64	61

* These readings from this date are taken from a Vacuum Solar Radiation Thermometer which registers from 20° to 30° higher than an exposed blackened bulb.

Calendar of Operations.

JULY.

Northumberland Farm.—The cold and wet weather which was so prevalent throughout the whole of June, continued up to the middle of the present month, when it was succeeded by brisk drying winds, which increased to such an extent, that on the 19th and 20th it blew a perfect hurricane, carrying with it vast masses of hay and clouds of dust, and in many cases, on light sandy soils in exposed situations, even acres of Turnips which had been recently hoed, leaving in its wake melancholy evidences of destruction to the growing grain crops. The serious apprehensions entertained by clay land farmers in this neighbourhood of a short yield and late harvest, have now been sadly increased; for the straggling broken stems of the Wheat crop, below an average, at once show that there is now no hope of their either rising or filling, added to which is the misfortune of the bloom being blown off at such an early period. A similar wind arose on the 24th, with equally devastating results. The rain has however now abated for a while, but sunny weather is sadly wanted for all crops. The Clover hay has been stacked in excellent order, and is keeping admirably; and, should the weather hold good for a few days longer, we shall hope to have our meadows also safe. The whole of it has been cut with Burgess & Key's combined machine to our utmost satisfaction. Barley is a full crop, and has withstood the wind much better than the Wheat. The early varieties of Oats came into ear about the 10th, and on sharp lands are an excellent crop; whilst the later sorts on strong lands are now just beginning to shoot out, and are unquestionably short and light. The Swedes have all been hoed once, and are now ready for a second attack, whilst of course the horse-hoe has been constantly kept at work. On the whole, Turnips do not make great progress in growth; and though they have not suffered from the ravages of the Turnip flea, yet the woodpigeons have committed great havoc with the leaves, which must naturally check their growth for a time. The manual labour has lately been employed in haymaking, Turnip hoeing, threshing Wheat and Oats, drawing together and turning manure preparatory to autumn application, horse-hoeing root crops, and ridging up Potatoes; whilst the horses have been working only about half time, in carting hay, horse-hoeing, working a small bit of bare fallow, and other such like odd jobs. The cattle have yet plenty of Grass, though this is by no means a fast feeding year, and the late winds have somewhat checked the Grass. Sheep are doing better and selling well, hoggets going off at 7*d.* to 7½*d.* per lb. The lambs are running over old pasture, whilst the ewes are still on second years Grass. Shearling rams are receiving a small quantity of artificial food preparatory to their sale in September. The whole of the sheep stock will be dipped next week in Biggs's composition, which has been found the most efficacious here. The Northumberland Agricultural Society hold their Show at Belford on August 1, which is expected to be a most successful one, inasmuch as the entries are larger than usual, amounting to 328 of live stock alone. A great novelty in this Show exists in the fact of this being the first occasion on which the large and small Leicesters have competed in separate classes. *J. W.*

Notices to Correspondents.

☞ Correspondents are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

Address.—Will Mr. J. H. Dickson favour us with his address. A letter to him has been returned.

Agricultural Gazette.—We don't issue *Covers* for binding the *Agricultural Gazette.*

Barren Field: *Agricola.* If not poisoned you should be able to fertilise it by adding vegetable and mineral manures, and probably the best plan will be to try Buckwheat and plough it in. If you can get a compost made of lime and any vegetable refuse as a dressing, apply it liberally.

Taking a Farm: *Ploughman.* It is usual to estimate farm capital at 10*l.* per acre. But 100 acres of good land cannot be stocked and managed for 1000*l.* A grazing or dairy farmer is liable to risks of a different kind, but often quite as serious as those of arable culture. Pleuro-pneumonia may destroy your profits for several years at a single blow.

Wages and Labour: *G R A.* It is customary to claim 10 hours work in a day's labour from the agricultural labourer whenever daylight allows it—6 till 8, 9 till 12 (or 1), and 1 (or 2) till 6 are common hours. And in winter time breakfast should be taken before coming to work; *i.e.* until a man can begin the day at 6 he should work from 7 (or dawn) till 12, and from 1 till twilight. It is not customary to *give* an hour on Saturday afternoon.

Erratum: *Lagg by Ayr.* The rotation adopted on the irrigated portion of this farm, as described in a leading article last week, should have been stated as follows:—1. Wheat, generally sown in January and February; Italian Rye-grass seed (4 bushels per acre with 4 or 5 lbs. per acre of Red or Alsike Clover) is sown broadcast in April among the young Wheat, and hoed or harrowed in. 2. Italian Rye-grass is cut three or four times during the following year—manured with 1½ cwt. of nitrate of soda or Peruvian guano before the first cutting, and washed in with liquid manure—then receiving 1 cwt. of nitrate of soda or Peruvian guano per acre, and a washing in with the liquid manure after every successive cutting except the last. Ploughed up in November. 3. Beans—generally a heavy crop. 4. Swedish Turnips and other roots partly removed, and the land is then ploughed for Wheat. The result in a particular instance of this management, of which every detail of expenditure, including interest of capital and tear and wear of apparatus, had been carefully recorded, should have been stated as a profit of 12*l.* per Scotch acre.

Potato Disease.

To the Editor of the Gardeners' Chronicle.

Sir,—Having manufactured several hundred tons of F[illegible] of Sulphur this and last season, specially prepared for the V[illegible] Disease, and it having been found a most successful remedy, it has occurred to us that it might be equally valuable as a remedy against the Potato disease, and we therefore wish to bring it before the notice of the Agricultural public, considering it well worth an extensive trial in the growing [illegible] which in some places are showing signs of disease. We are prepared to supply it in small quantities for experiments at the moderate price of 16*s.* per cwt., delivered Free to any Railway Station in London on receipt of Post Office Order for the amount. The smallest cask is 2 cwt., 32*s.*, with printed directions for its application.—Yours respectfully,

Gibbs, Bell, & Co.

Vitriol Works, near Victoria Docks, London, E.

Upwards of 2000 Cases have been reported as Cured by

JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1*s.* 6*d.*, 2*s.* 6*d.*, and 5*s.* each. A 1*s.* 6*d.* bottle will make 12 gallons fit for use.

Seed Warehouse, 10 and 11, Exchange Street, Norwich.

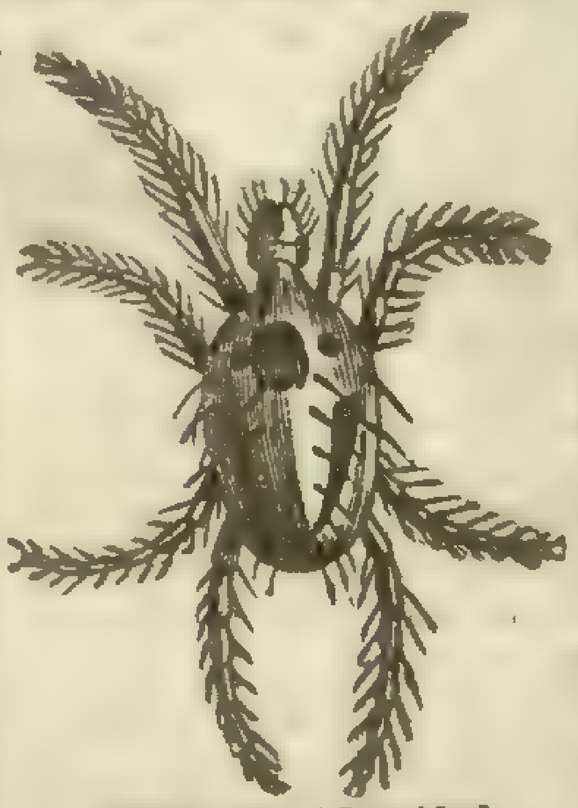
Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1*s.* and 2*s.* per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1*s.* per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. Neal, Edward Street, Birmingham.



Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved [illegible] hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* each.

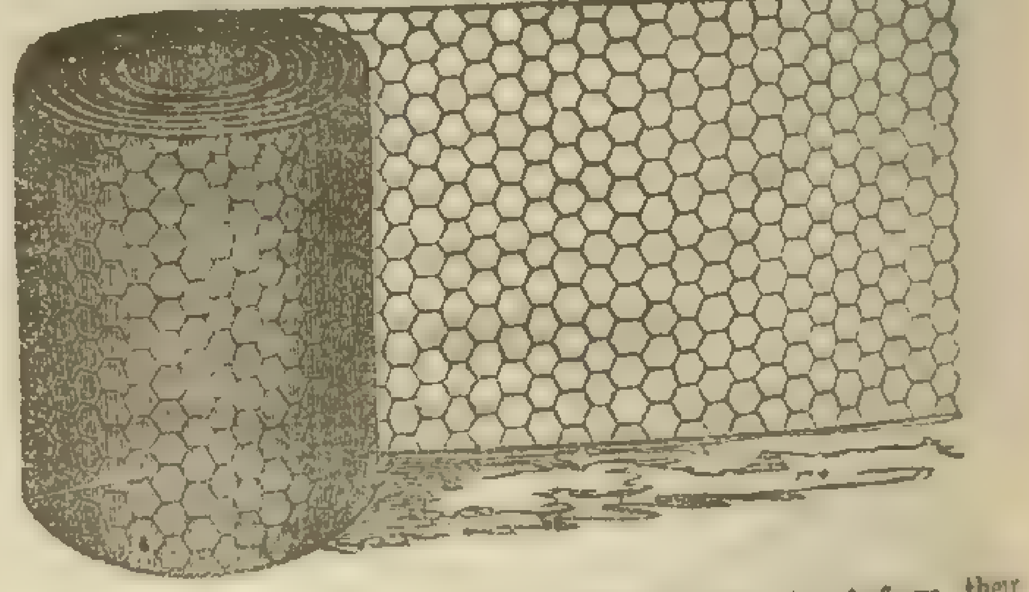
Wholesale by Price's Patent Candle Co., Limited.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to

John Fowler, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

BARNARD, BISHOP, and BARNARDS, Norwich.

FURTHER REDUCTION in the PRICE of WIRE NETTING.—April, 1861.



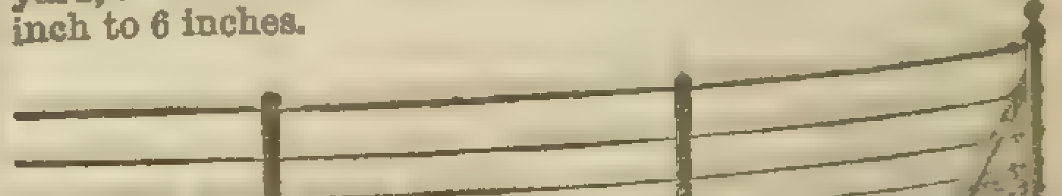
Barnard, Bishop, & Barnards beg to inform their friends and the public that they have made a further reduction in the prices of Machine made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch mesh, 24 inches wide..	No. 19	4½*d.*	3½*d.*
2-inch ,, ,, ,, ..	,, 18	5	4
2-inch ,, ,, ,, ..	,, 17	6¼	5
2-inch ,, ,, ,, ..	,, 16	8	6¼
1⅝-inch ,, ,, ,, ..	,, 19	4¾	4
1⅝-inch ,, ,, ,, ..	,, 18	6	4¾
1⅝-inch ,, ,, ,, ..	,, 17	7	5½
1⅝-inch ,, ,, ,, ..	,, 16	9	7

All the above kinds can be made any width (under 6 feet) at proportionate prices.

Strong Galvanised Poultry Netting, 7½*d.* per yard, 3 feet wide.

Galvanised Sparrow-proof Netting for Pheasantries, 11*d.* per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.



Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.

Five wires, 3 feet 6 inches high, pronged Standards, 3 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10*d.* per yard.

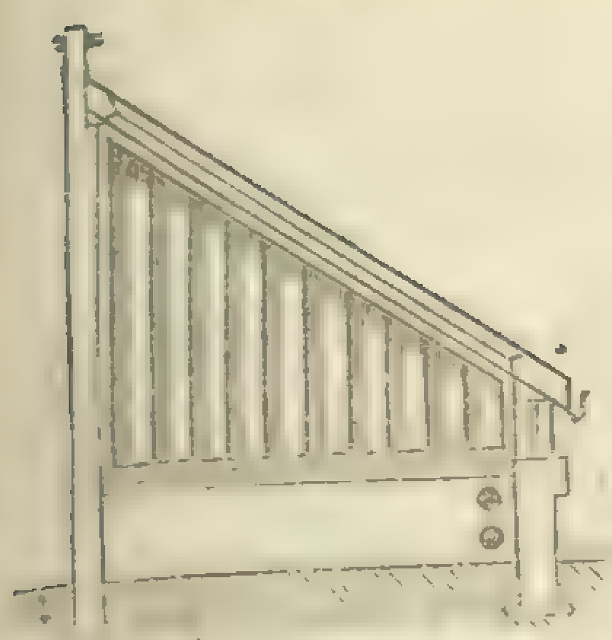
The same with Galvanised Wire Rope, 1*s.* per yard.

Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.

*** Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

J. JONES'S HOT-WATER APPARATUS.

No. 7.



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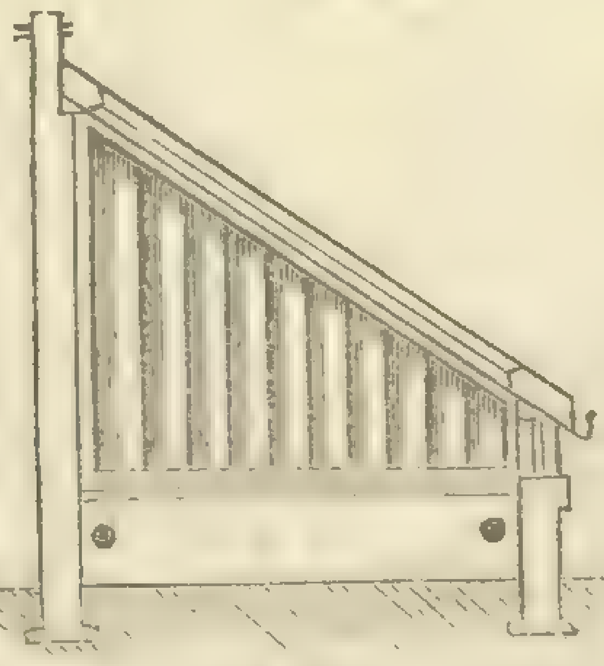

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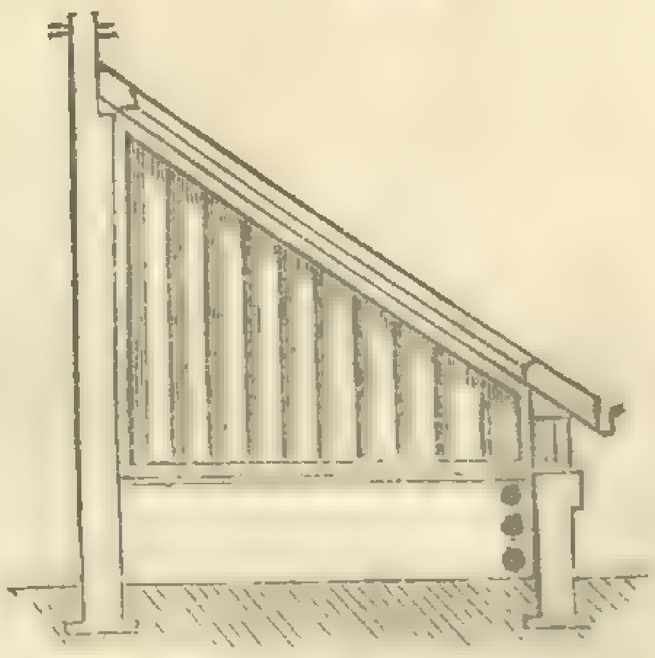

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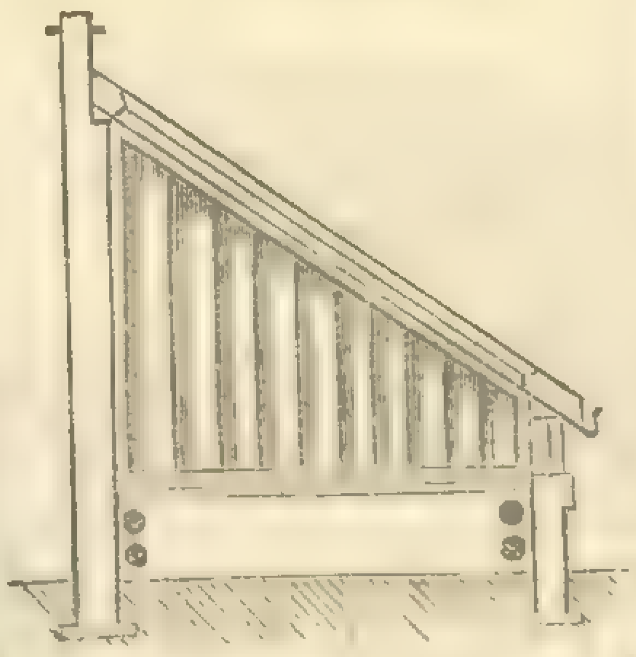

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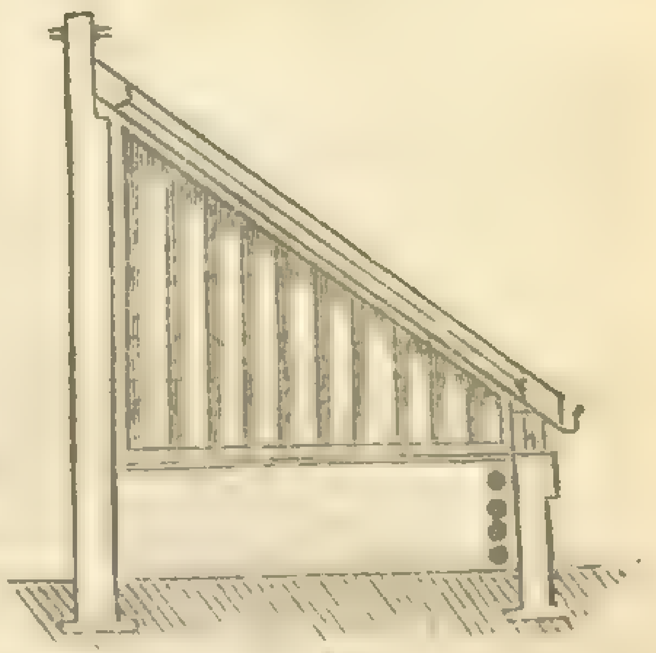
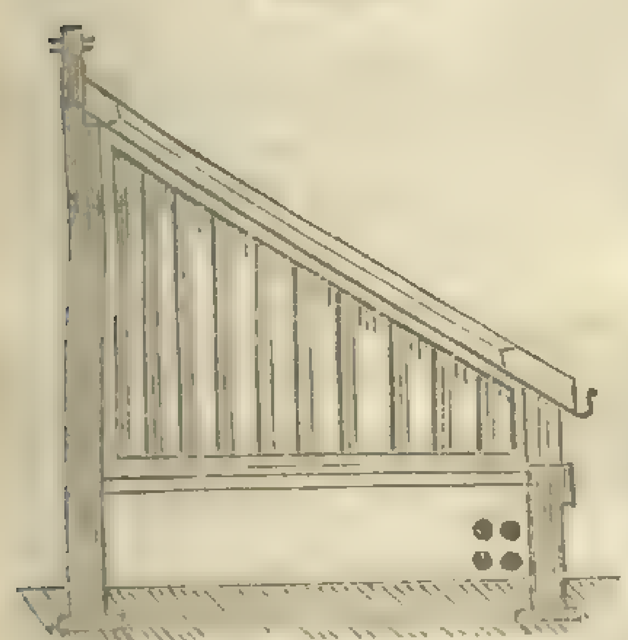


Size of House	No. 7 Price	No. 8 Price	No. 9 Price	No. 10 Price	No. 11 Price
20 by 10ft.	£9 0 0	£9 0 0	£13 0 0	£14 0 0	£15 0 0
30 ,, 12 ,,	12 0 0	12 0 0	17 0 0	19 0 0	21 0 0
40 ,, 15 ,,	15 0 0	15 0 0	21 0 0	24 0 0	25 0 0
50 ,, 15 ,,	18 0 0	18 0 0	24 0 0	28 0 0	29 0 0
60 ,, 15 ,,	20 0 0	20 0 0	27 0 0	32 0 0	33 0 0
70 ,, 15 ,,	22 0 0	22 0 0	30 0 0	36 0 0	37 0 0
80 ,, 15 ,,	24 0 0	24 0 0	33 0 0	40 0 0	41 0 0
100 ,, 15 ,,	26 0 0	26 0 0	36 0 0	44 0 0	45 0 0

No. 12.

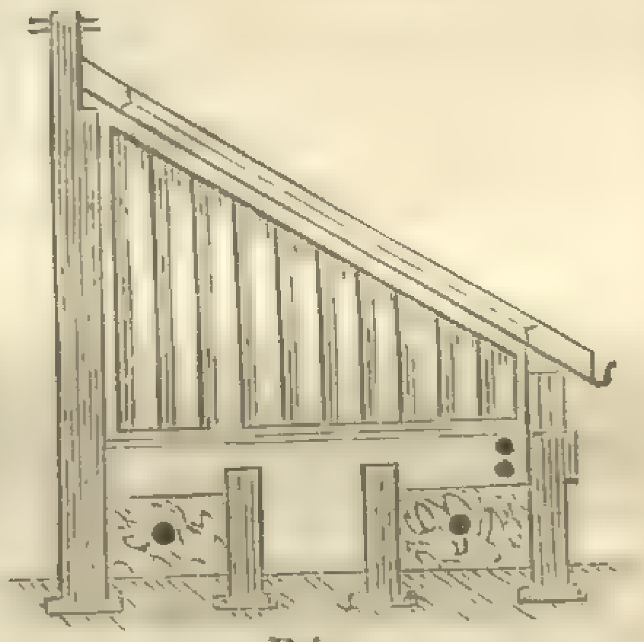


Price
Same as No. 11.

No. 13.

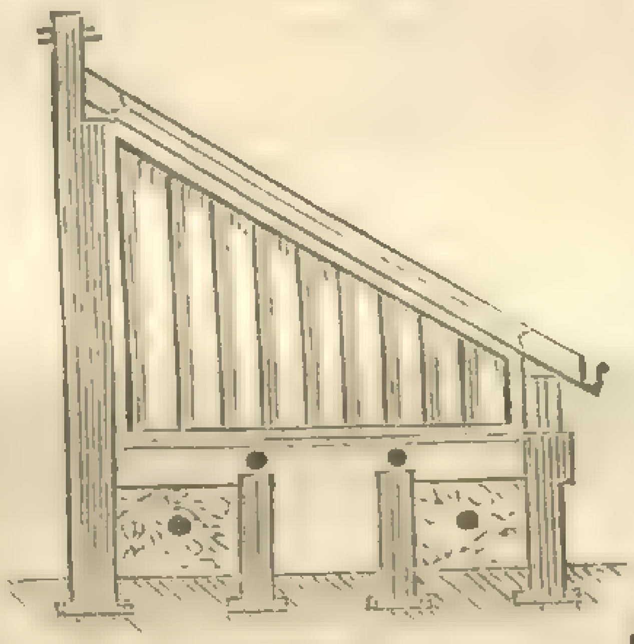
Price
Same as No. 11.

No. 14.



Price
Same as No. 11.

No. 15.

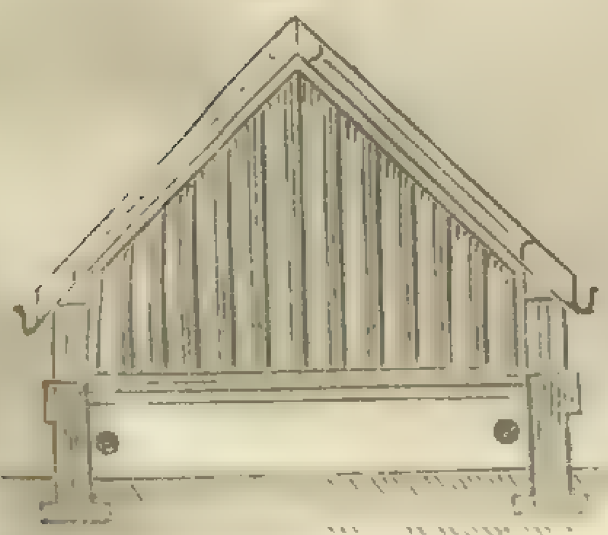


Price
Same as No. 11.

No. 16.

Price
Same as No. 7.

No. 17.



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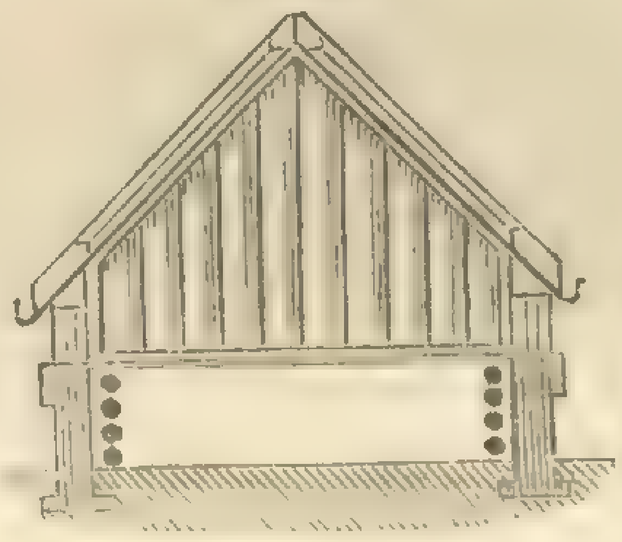


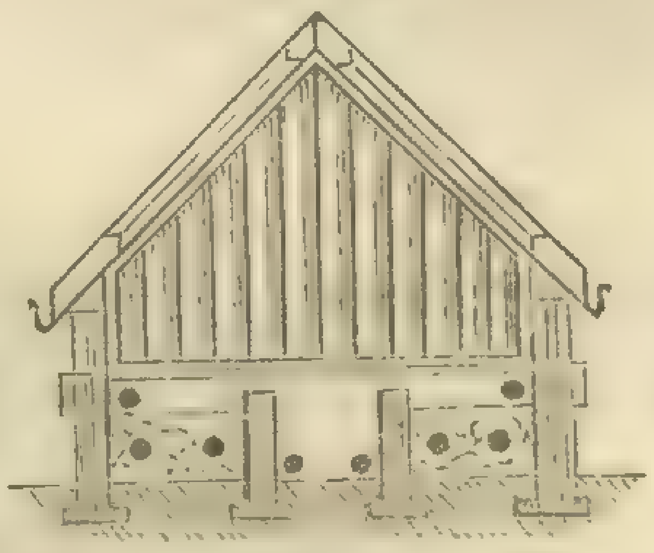
No. 21.

Size of House	No. 17 Price	No. 18 Price	No. 19 Price	No. 20 Price	No. 21 Price
20 by 10ft.	£9 0 0	£14 0 0	£18 10 0	£23 0 0	£23 0 0
30 ,, 12 ,,	12 0 0	19 0 0	24 0 0	30 0 0	30 0 0
40 ,, 15 ,,	15 0 0	24 0 0	29 0 0	36 10 0	36 10 0
50 ,, 15 ,,	18 0 0	28 0 0	34 0 0	42 10 0	42 10 0
60 ,, 15 ,,	20 0 0	32 0 0	39 0 0	49 0 0	49 0 0
70 ,, 15 ,,	22 0 0	36 0 0	44 0 0	56 0 0	56 0 0
80 ,, 15 ,,	24 0 0	40 0 0	49 0 0	63 0 0	63 0 0
100 ,, 15 ,,	26 0 0	44 0 0	54 0 0	70 0 0	70 0 0

No. 22.

No. 23.

No. 24.



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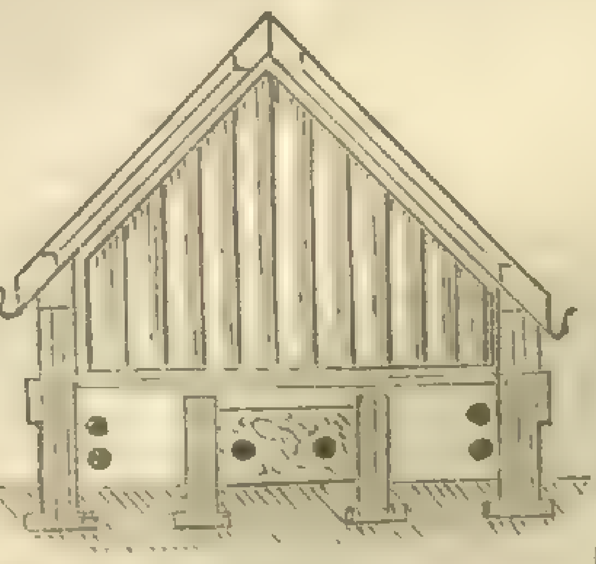

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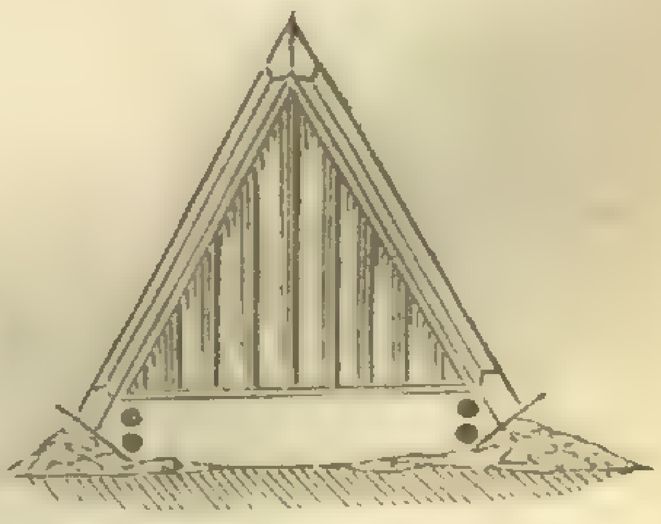


Size of House	No. 22 Price	No. 23 Price	No. 24 Price	No. 25 Price	No. 26 Price
20 by 10ft.	£15 0 0	£25 0 0	£25 0 0	£18 10 0	£14 0 0
30 ,, 12 ,,	21 0 0	32 0 0	32 0 0	25 0 0	19 0 0
40 ,, 15 ,,	25 0 0	38 10 0	38 10 0	30 0 0	24 0 0
50 ,, 15 ,,	29 0 0	44 10 0	44 10 0	35 0 0	28 0 0
60 ,, 15 ,,	33 0 0	51 10 0	51 10 0	40 0 0	32 0 0
70 ,, 15 ,,	37 0 0	58 0 0	58 0 0	45 0 0	36 0 0
80 ,, 15 ,,	41 0 0	65 0 0	65 0 0	50 0 0	40 0 0
100 ,, 15 ,,	45 0 0	72 0 0	72 0 0	55 0 0	44 0 0

J. Jones will be happy to supply HOT-WATER APPARATUS for HOUSES according to any of the above Plans, delivered Free to any Station in England at the prices named, which include strong CAST-IRON CYLINDER or SADDLE BOILER, FURNACE DOORS, FIRE BARS, SOOT DOORS, CISTERN and DAMPER, 4-inch HOT-WATER PIPES and CONNECTIONS, all of the best quality; or he will forward ESTIMATES for WORK erected complete, with WROUGHT or CAST-IRON BOILER of any sort, at a small addition to the above prices.

**** The Black Circles on Sections of Houses show the arrangement of Pipes.*

Illustrated Catalogues and further particulars post free on application to

J. JONES, IRON MERCHANT AND HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

RUSSIAN DINNER TABLE FLOWER POT COVERS.—Commended by the Royal Horticultural Society. A set of 12 different sizes sent, carriage paid, for 21s. Priced List, with specimens, sent free by post.
Barr & Sugden, Seed Merchants and Florists, 12, King Street, Covent Garden Market, W.C.

Improved Garden Furniture to Imitate Cane in Wrought Iron.

HAAS DEMRATH begs to call the attention of the Nobility and Gentry to his Stock of GARDEN SEATS, TABLES, COUCHES, and General IRON and WIRE-WORK, suitable for Conservatories, Gardens, &c. Owing to his success on the Continent, the Manufacturer has been induced to open an Agency in England, and an inspection of Stock is respectfully solicited at
The Show Rooms, 47, High Street, New Oxford Street, W.C.

THE WOOLSTON FARM.—It is the oldest Steam-cultivated Farm in the world, and is open to the inspection of all.
Woolston is four miles from Bletchley Station on the London and North Western Railway.

Glass.

THOMAS MILLINGTON,
Horticultural Warehouse,
87, Bishopsgate Street Without, London, E.C.
Established 1750.
New Reduced Tariff.

SMALL SHEET SQUARES.

Best. 2nds. 3rds. 4ths. } Per 100 feet
20s. 16s. 12s. 6d. 11s.

6 in. by 4 in.	9½ in. by 7½ in.	14 in. by 10 in.
6½ ,, by 4½ ,,	10 ,, by 8 ,,	15 ,, by 10 ,,
7 ,, by 5 ,,	11 ,, by 9 ,,	12 ,, by 11 ,,
7½ ,, by 5½ ,,	12 ,, by 9 ,,	13 ,, by 11 ,,
8 ,, by 6 ,,	13 ,, by 9 ,,	13½ ,, by 11½ ,,
8½ ,, by 6½ ,,	12 ,, by 10 ,,	
9 ,, by 7 ,,	13 ,, by 10 ,,	

Best. 2nds. 3rds. 4ths. } Per 100 feet
23s. 18s. 6d. 14s. 6d. 12s. 8d.

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 ,, by 11 ,,	17 ,, by 12 ,,	22 ,, by 15 ,,
17 ,, by 11 ,,	18 ,, by 12 ,,	24 ,, by 15 ,,
18 ,, by 11 ,,	22 ,, by 12 ,,	20 ,, by 16 ,,
13 ,, by 12 ,,	17 ,, by 13 ,,	20 ,, by 17 ,,
14 ,, by 12 ,,	23 ,, by 13 ,,	20 ,, by 18 ,,
15 ,, by 12 ,,	22 ,, by 14 ,,	

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers & others.

	Best.	2nds.	3rds.	4ths.	
16 oz.	22s. 0d.	18s.	15s. 0d.	12s. 6d.	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

20 in. by 12 in. | 20 in. by 13 in. | 20 in. by 14 in. | 20 in. by 15 in.

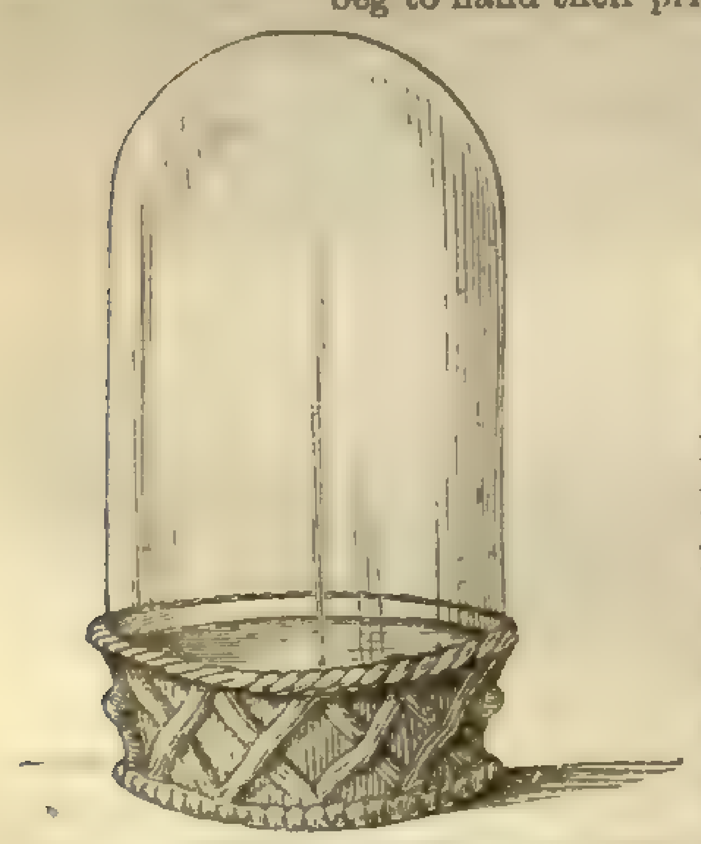
GLASS, cut according to size not on the List.
16 oz. 4ths. 1¾d. 2d. and 2½d. per foot.
,, 3rds. 2¼d. 2½d. and 3d. ,,
21 oz. 4ths. 2¾d. 3d. and 3½d. ,,
,, 3rds. 3½d. 4d. and 4½d. ,,

Various thicknesses of Sheet Glass to the foot.

15 oz. 26 oz.
21 oz. 32 oz.

Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.
Genuine White Lead, 32s. p. cwt | Linseed Oil Putty, 8s. per cwt.
Anticorrosion Paint, 34s. ,, | Patent Dryers, 28s. to 42s. ,,
CRYSTAL GLASS SHADES. EBONY and GILT STANDS.
HARTLEY'S IMPROVED PATENT ROUGH PLATE.
, Not accountable for breakage.
SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

JAMES PHILLIPS AND CO.,
180, Bishopsgate Street, Without, E.C.,
beg to hand their prices of



GLASS FERN SHADES.

	s.	d.
6 inches	1	4
7 ,, ...	1	8
8 ,, ...	2	0
9 ,, ...	2	6
10 ,, ...	3	3
11 ,, ...	4	0
12 ,, ...	5	6
13 ,, ...	7	6
14 ,, ...	10	0
15 ,, ...	14	0
16 ,, ...	18	6

TERRA COTTA STANDS FOR SAME.

6 inches	1s. 6d.	12 inches	2s. 9d.
7 ,, ...	1 6	13 ,, ...	3 0
8 ,, ...	1 9	14 ,, ...	3 3
9 ,, ...	2 0	15 ,, ...	3 6
10 ,, ...	2 3	16 ,, ...	3 9
11 ,, ...	2 6		

GLASS STANDS FOR SAME.

6 inches	1s. 0d.	12 inches	3s. 0d.
7 ,, ...	1 3	13 ,, ...	3 6
8 ,, ...	1 6	14 ,, ...	4 0
9 ,, ...	1 9	15 ,, ...	4 6
10 ,, ...	2 0	16 ,, ...	5 0
11 ,, ...	2 6		

TANK AQUARIA.
Glazed with Stout Sheet Glass, and Slate Bottoms.

	£ s. d.		£ s. d.
12 inches long ..	0 18 0	18 inches long ..	1 7 0
14 ,, ..	1 1 0	20 ,, ..	1 10 0
16 ,, ..	1 4 0	24 ,, ..	1 16 0

Larger or smaller sizes in proportion.

BEST ROUND AQUARIA.
With Ebony Stands.

	s. d.		s. d.
12 inches diameter	5 0 each	17 inches diameter	12 0 each
13 ,,	6 0 ,,	18 ,,	13 0 ,,
14 ,,	8 0 ,,	19 ,,	14 0 ,,
15 ,,	9 0 ,,	20 ,,	15 0 ,,
16 ,,	10 0 ,,		

FERN CASES.
With Span Roofs, same price as Tank Aquaria.
Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready or use.
Milk Pans, and every description of Glass for Horticultural purposes.

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.

£2. 2s.

An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.
One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.
It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.
It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.
No Establishment, either private, commercial, or manufacturing, should be without one.
Six feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12s. Longer lengths of Suction at 1s. 6d. per foot.
May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,
John Warner & Sons, 6, Crescent, Cripplegate, London, E.C.

WM. BLAKE'S DESCRIPTIVE and CULTURAL SEED POCKETS, GERMAN SEED ENVELOPES, &c.
Catalogues and Samples on application.
60—70, Howard Street, Glasgow.

TANNED NETTING for the Protection of Fruit Trees, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Cotton Netting, Tiffany, Scrim Canvas for Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c.
Be particular, John Edgington & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

BENJAMIN EDGINGTON'S Temporary Rooms, Lined, Boarded, and Decorated.
MARQUEES and TENTS of all dimensions, for Horticultural Shows, &c., on sale or hire.
FLAGS and BANNERS of every description, for sale or hire.
RICK CLOTHS, New and Second-hand, with Poles, &c., complete.
Address, Benjamin Edgington, 2, Duke Street, London Bridge, Southwark, S.E. No other Establishment.

HENRY J. MORTON AND CO.,
2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern
for Cottage Houses, &c., to contain 50 gallons, 26s.; 80 gallons, 31s. each; and 140 gallons, 37s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

Galvanised Iron Pumps
for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.

Galvanised Iron Swing Water Barrows
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35s. 0d. each.

COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,
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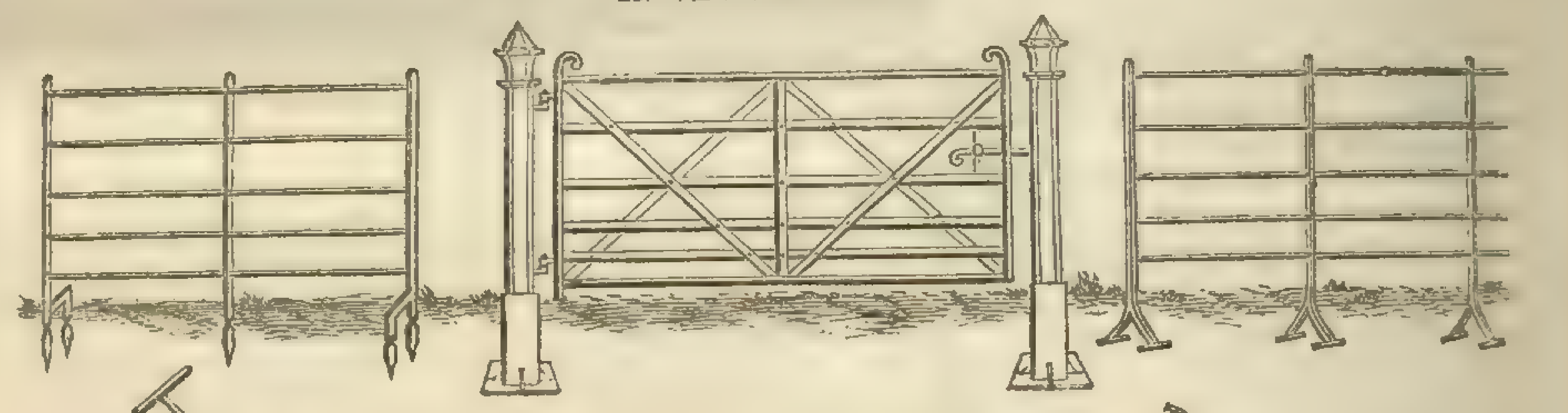

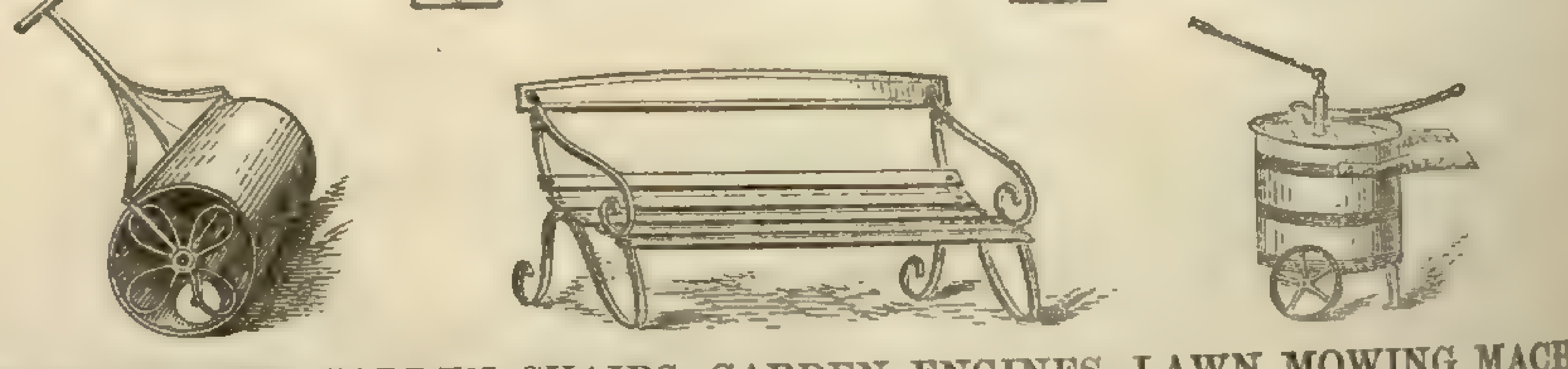

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Apply to Mr. SCOTT, Land Agent, 18, Parliament Street, Westminster, W.

TO BE LET, from Michaelmas, 1862, the DUNTON LODGE FARM, in the county of Bedford, four miles from Biggleswade, a Market Town, and Station on the Great Northern Railway, and 3 miles from Ashwell Station, mid-way on the Cambridge and Hitchin Railway:—containing 546 acres, the whole of which has been thoroughly Tile Drained, and, excepting the old Grass Land, either has, or will have been cultivated by the time of entry, with Smith's Steam Cultivating Apparatus, from 9 to 14 inches deep. It possesses a first-class recently-erected Farm House and Premises, in a central situation, well supplied with water; the fields are large, fences straight, gates and posts of iron, and roads good.

Particulars with plan will be supplied by MR. SIMON HUTCHINSON, Land Agent, Manthorpe Lodge, Grantham, on receipt of four Postage Stamps, and the Farm may be viewed upon exhibiting the same to the Foreman on the premises, now in the hand of the Earl Brownlow.

Sales by Auction.

MESSRS. MOORE AND HILL have been desired by Mr. John Howell to announce that his ANNUAL AUCTION SALE of about 40 COTSWOLD SHEARLING RAMS will be held on TUESDAY, August 5, at 4 o'Clock, when he hopes to be favoured with the company of his friends.

Ewen, 3 miles from Cirencester, 2 miles from the Tetbury Road Station, and near the Cirencester Junction on the Great Western Railway.

Annual Sale of Rams.

MESSRS. MOORE AND HILL respectfully announce that Mr Henry Howell has desired them to name WEDNESDAY, August 6, at 4 o'Clock, for his ANNUAL SALE of about 40 LONG-WOOLLED SHEARHOG RAMS, when he hopes to be favoured with a numerous Company.

Coates, 3 miles from Cirencester and 1 from the Tetbury Road Station.

To Market Gardeners, Nurserymen, and Farmers.

BRIXTON ROAD: WASHWAY FARM, NEAR THE WHITE HORSE INN, BRIXTON ROAD.

MR. W. T. ATWOOD will SELL by AUCTION on the Premises, TUESDAY, August 12, at 12 o'Clock, the LIVE and DEAD STOCK, the property of MR. JAMES TYLER, who is quitting the Premises, comprising capital Market Waggons, Market and Tumbril Dung Carts, 2 useful Cart Horses, Howard's P. P. Plough, Bentall's Scarifier and Horse-hoes, 80 3-light Boxes and Lights, Hand Glasses, Box and Long Barrows, Ware, Tubs, Watering Pots, Tools, Implements, Seeds, &c.

May be viewed the day before the Sale, and Catalogues had at the principal Inns in the Markets; and of the Auctioneer, Mortlake, Surrey, S.W.

Buckland, near Faringdon.

VERY IMPORTANT SALE OF FIRST CLASS SOUTHDOWN SHEEP, BERKSHIRE PIGS, SUFFOLK HORSES, CATTLE, &C.

MR. STRAFFORD has received Instructions from the Executors of the late Sir R. G. Throckmorton, Bart., to offer for SALE by AUCTION, without Reserve, on THURSDAY, September 4, at Buckland, the Splendid Flock of SOUTHDOWNS, consisting of about 300 Ewes and Ewe Lambs, with about 50 Rams and Ram Lambs; also the Choice Stock of BERKSHIRE PIGS, numbering about 70 head of Boars, Sows, and Young Pigs, including the First Prize animals at the recent Battersea Show, as well as some superior Suffolk and other HORSES, and the Dairy COWS, with a Short-horned BULL. The number of Prizes won by this Stock at the various meetings of the Royal Agricultural Society, Bath and West of England, Birmingham, and Smithfield Club, as well as the Gloucester and other local Shows, fully attest the high character of the same, and which are to be sold in consequence of the decease of their lamented owner.

Catalogues, with particulars, will shortly be issued, and may be had on application to Mr. GEO. WILLIAMS, at Buckland, near Faringdon; or of Mr. STRAFFORD, 13, Euston Square, London, N.W.

GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THESE MACHINES were entered at the Royal Horticultural Society's Great Shows held at South Kensington, May 21, June 11, and July 2. They were the only Machines Highly Commended (no Prizes were given). They have carried off every Prize that has been given in all cases of Competition, and have just been awarded the Prize Medal of the Great International Exhibition, July 11, 1862.

GREEN'S PATENT LAWN MOWERS have attained the largest sale of any Machines extant, and are in constant use at the Royal Gardens, Windsor; the Royal Horticultural Society's Gardens, South Kensington; the Royal Botanic Gardens, Regent's Park; the Crystal Palace Company's Gardens, Sydenham; the Kensington Palace Gardens; the Hyde Park Gardens; and in most of the Nobility, Clergy, and Gentry's Parks, Squares, &c., throughout the Kingdom.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0 ...	... £8 15 0
To Cut 20 inches	8 0 0 ...	... 9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0 ...	... £9 17 6
To Cut 24 inches	9 0 0 ...	... 10 7 6

To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0 ...	... £21 10 0
To Cut 36 inches	23 0 0 ...	... 24 16 0
To Cut 42 inches	26 0 0 ...	... 28 2 0
To Cut 48 inches	29 0 0 ...	... 31 8 0

Leather Boots for Horse, per set, £1 4*s.*

Donkey and Pony Machines, including Box of Requisites & Traces.

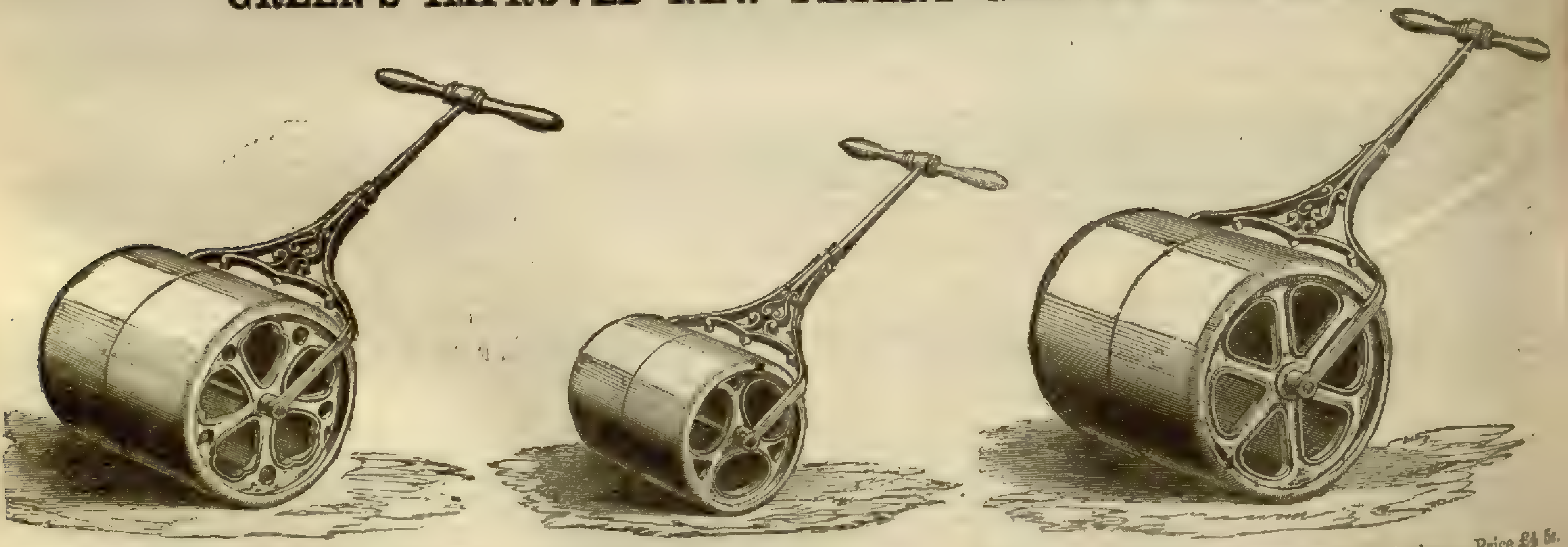
	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0 ...	... £12 10 0
To Cut 26 inches	12 10 0 ...	... 13 12 0
To Cut 30 inches	16 14 0 ...	... 18 0 0

Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

The above Machines are made from the best materials, and of superior workmanship; are delivered carriage free to all the principal Railway Stations and Shipping Ports in England; are warranted to give satisfaction, and if not approved of can be at once returned, if sent carriage free to Leeds.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length 22 inches.... Price £3 5*s.* | Diameter 16 inches, length 17 inches.... Price £2 10*s.* | Diameter 24 inches, length 26 inches.... Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN. SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 32.—1862.] SATURDAY, AUGUST 9. { Price Fivepence. STAMPED EDITION, 6d

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☞ NOTICE TO ADVERTISERS. — *Advertisements should reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.
A MEETING of this Committee will take place on TUESDAY, August 12, at 12 o'Clock. The subjects for examination must be at South Kensington for entry by 11 A.M.
THOS. MOORE, Secretary to the Committee.

ROYAL HORTICULTURAL SOCIETY.
FRUIT COMMITTEE.
A MEETING of the FRUIT COMMITTEE will be held at the Rooms, South Kensington, on TUESDAY, August 12, for the Examination of such FRUITS and VEGETABLES as may then be submitted for judgment, and when, besides Certificates of Merit for Seedlings, the following Prizes will be awarded :—

CLASS A.	For the best Three Dishes of PEACHES, distinct kinds, grown on the open wall	20s. 10s.
CLASS B.	Ditto ditto NECTARINES, ditto	20s. 10s.
CLASS C.	Ditto ditto APRICOTS, ditto	20s. 10s.
CLASS D.	For the best Three Dishes of PLUMS ..	20s. 10s.
CLASS E.	Ditto ditto CHERRIES	20s. 10s.
CLASS F.	Ditto ditto APPLES	20s. 10s.
CLASS G.	Ditto ditto PEARS	20s. 10s.
CLASS H.	For the best Collection of RASPBERRIES	20s. 10s.

*** All packages and communications must be received at the Rooms by 11 o'Clock on the day of Meeting, and addressed to ROBERT HOGG, LL.D., Secretary of the Committee.

CRYSTAL PALACE.—GREAT AUTUMN SHOW of FLOWERS and FRUIT. — WEDNESDAY and THURSDAY, September 3 and 4.
Schedules of Mr. HOUGHTON, Crystal Palace. Entries close August 26.

WM. PAUL'S ROSES, HOLLYHOCKS, and HARDY ORNAMENTAL TREES are now in full beauty. Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.
Nurseries and Seed Warehouse, Waltham Cross, N.

Roses.
PAUL AND SON'S COLLECTION of ROSES is NOW in FULL BLOOM. The Nurseries are reached in one hour by trains from Bishopsgate to Cheshunt Station, leaving London at 9.30 A.M., 12.46, 2.30, 3.30, 5.10, 6.10 P.M.
Old Cheshunt Nurseries, Herts, N.

RICHARD SMITH begs to inform the Public that he has a larger and finer COLLECTION of ROSES this season than he has ever had; they are NOW in FULL BLOOM and in the finest condition.
As the Stock is so large the prices will be very reasonable.
Nurseries, Worcester.

Roses.
EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

Rose Beauty of Waltham.
THE FINEST OF ALL THE NEW ROSES.
WM. PAUL (Son and Successor to the late A. PAUL) has now ready for delivery fine strong plants of this beautiful New Rose, which has received a First-class Certificate from the Royal Horticultural Society of London. Price 5s. each.
All the novelties of other raisers at the advertised prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Notice.
NURSERIES, SAFFRON WALDEN, ESSEX.
SUPERB DOUBLE HOLLYHOCKS. The GRAND COLLECTION is NOW on BLOOM, and Open to the inspection of all Visitors on any day, Sundays excepted.
WILLIAM CHATER.

Seed, Seed—Superb Double Hollyhock.
WILLIAM CHATER can supply, of sterling quality, from best mixed varieties, at 1s., 2s. 6d., and 5s per packet; or from separate named sorts, per Collection, 2s. 6d., 5s., 7s. 6d. or 10s.
Nurseries, Saffron Walden.

Ex. Ex. Hollyhock.
DOWNIE, LAIRD, AND LAING are now sending out SEED saved from their unrivalled Collections of the above, in Packets containing Twelve Named Sorts (separate), at 2s. 6d. and 5s.
Stanstead Park Nursery, Forest Hill, London, S.E.

JAMES CARTER AND CO.,
SEED MERCHANTS and NURSERYMEN,
237 and 238, High Holborn, London, W.C.

F. AND A. SMITH beg to announce to their friends that their fine COLLECTION of BALSAMS is NOW in BLOOM, and may be seen every day, Sunday excepted.
Dulwich, Surrey, S.

New Fuchsias of 1862.
B. W. KNIGHT, FLORIST, &c., 67, High Street, Battle, Sussex, is now sending out the NEW FUCHSIAS of 1862, at 12s. per dozen.
CATALOGUES sent on application.

New Verbenas of 1862.
B. W. KNIGHT, FLORIST, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4s. per dozen, securely packed in tin box, post free. CATALOGUES of the varieties sent on application.

New Verbenas, Fuchsias, &c., of 1862.
W. DILLISTONE can now supply the above in good Plants, at low prices. Lists upon application.
Munro Nursery, Sible Hedingham, Halstead, Essex.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize plants, 1s., 1s. 6d., and 2s. 6d. per packet. Reference given. Stamps taken.
G. KNIGHTS, Whitton, Ipswich.

Camellias and Azalea indica.
LOUIS VAN HOUTTE'S COLLECTIONS are advertised in his PRICE CURRENT, No. 93.

Amaryllises.
LOUIS VAN HOUTTE'S AMARYLLISES ready for Sale are Advertised in his PRICE CURRENT, No. 93.

PRUNUS TRILOBA and AMYGDALUS PERSICA VERSICOLOR to be had in any quantity at LOUIS VAN HOUTTE's Nursery.

CANNA IRIDIFLORA (R. & P.)—The TRUE one (see VAN HOUTTE'S "FLORA" xiii., page 129), at 21s.
N.B. This name has been advertised at A PENNY the packet in some Illustrated Seed List.

New Crassulas (Rochea versicolor).
LOUIS VAN HOUTTE'S New Seedlings are Advertised in his PRICE CURRENT, No. 93.

GUNNERA SCABRA.—Strong Plants, from 1s. to 10s. 6d. This noble Hardy Perennial is advertised in LOUIS VAN HOUTTE'S PRICE CURRENT, No. 93.

NEW HERBACEOUS PÆONIES.—CALOT'S NEW COLLECTION, 31 Varieties for 4l.
PARMENTIER'S „ 22 „ 2l. 8s.
LOUIS VAN HOUTTE, Ghent.

OTACANTHUS CŒRULEUS (LINDLEY). — This quite new acanthaceous, half shrubby Stove Plant, with numerous sky-blue flowers (colour of those of the Hovea Celsi) will be figured shortly in VAN HOUTTE'S "FLORA." Price 4s.

PESCATOREA CERINA (RCHB. FIL.), at 120s. This very scarce Orchid will be figured in one of the next Numbers of VAN HOUTTE'S "FLORA." Price 120s.

VAN HOUTTE'S NEW GESNERAS (Nægelias.) —Bicolor, chromatella, cymosa, Lindleyana, rosalba myriostigma, rosea punctatissima, Sappho. Three of them will shortly appear in the "FLORA." Price for the set, 20s.

VAN HOUTTE'S HERBACEOUS CALCEOLARIAS may be had of Messrs. R. SILBERRAD & SON'S Offices, 5, Harp Lane, Great Tower Street, London, E.C., in 4s. sealed packets.

To the Seed Trade.
CALCEOLARIA SEED in Packets, Crop 1862.— The best in England. Price on application.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

Major's Half Shrubby Calceolaria Seed.
H. MAJOR'S New Half-Shrubby CALCEOLARIA SEED is now ready as usual, and may be had in packets at 2s. 6d. each, or three for 5s. post free.
Postage stamps may be sent in payment.
Knosthorpe, near Leeds, Yorkshire.

GEORGE STANLY is now sending out Seed of his superb strain of Hybridised CALCEOLARIA, in 1s., 2s. 6d. and 5s. packets. Also Seed saved from his unequalled double SWEET WILLIAM, at 1s per packet. Also his superb strain of INTERMEDIATE STOCK, in 1s. and 1s. 6d. packets.
Manor Lane Nursery, Lee, S.E.

MESSRS. E. G. HENDERSON AND SON offer SEED of
CALCEOLARIA .. .. .. first quality
CINERARIA .. .. .. „
PRIMULA (fimbriated).. .. „
at 2s. 6d. and 5s. per packet; smaller ones 1s. each. All the above are to be seen in bloom at the Nursery in their respective season.
Wellington Nursery, St. John's Wood, London, N.W.

CARTER'S FIRST-CLASS SEEDS of
CALCEOLARIA, 2s. 6d. per packet.
„ new blotched, 2s. 6d. per packet.
CINERARIA, 2s. 6d. per packet.
PRIMULA, mixed fringed, 1s. per packet.
„ dark carmine fringed, 2s. 6d. per packet.
„ pure white fringed, 2s. 6d. per packet.
JAMES CARTER & Co., 237 & 238, High Holborn, London, W.C.

Good Seeds, Carriage Free, at Market Prices.
SUTTON AND SONS,
SEED GROWERS and MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds.
GEORGE GIBBS AND CO.,
SEEDSMEN,
26, Down Street, Piccadilly, London, W.

Prize Cineraria Seed.
J. DOBSON AND SONS have carried off the First Prizes every time they have exhibited this season. New Seed, in sealed packets, 1s., 2s. 6d., and 5s.
Woodlands Nursery, Isleworth.

Equalled by None.
J. DOBSON AND SONS' splendid Hybridized CALCEOLARIA SEED, in sealed packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. First Prizes given wherever exhibited
Woodlands Nursery, Isleworth.

Calceolaria, Cineraria, Primula, &c., extra choice.
BUTLER AND McCULLOCH, SEED MERCHANTS,
Covent Garden Market, London, W.C.
CALCEOLARIA, 1s., 1s. 6d., and 2s. 6d. per packet.
CINERARIA, 1s., 1s. 6d., and 2s. 6d. per packet.
CARNATION, 2s. 6d. per packet.
PICOTEE, 2s. 6d. per packet.
PELARGONIUM, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS, 1s. and 2s. 6d. per packet.

JEAN VERSCHAFFELT, Ghent, Belgium, begs respectfully to announce that his NEW DESCRIPTIVE CATALOGUE for the Autumn of 1862 is now ready, and can be had on application either to himself or his Agents, Messrs. R. SILBERRAD & SON, 5, Harp Lane, Great Tower Street, E.C.

Wm. Cutbush & Son's Dutch Bulb Catalogue.
WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE and PRICED CATALOGUE of HYACINTHS and other Dutch Flower Roots is now ready, post free, on application.
Highgate Nurseries, London, N.

Iris reticulata.
THOMAS HANDASYDE, Glen Nurseries, Musselburgh, begs to offer strong flowering roots of the above at 100s. per 100.

Orchids.
LOUIS VAN HOUTTE is inclined to EXCHANGE good Orchids for any one kind of plants of his CATALOGUE.

THE WHITE VARIEGATED ASH-LEAVED MAPLE is extensively grown in LOUIS VAN HOUTTE'S Nursery. Prices in CATALOGUE No. 94, ready in September.

WELLINGTONIA GIGANTEA.—Splendid specimens, 6 to 7 feet high, from Seed, of unexceptionable beauty, grown in baskets, at Four Guineas each.
Delivered free in London, from VAN HOUTTE'S Nursery at Ghent, Belgium.

FRUIT TREES. — The NEW BELGIAN KINDS will be Advertised in LOUIS VAN HOUTTE'S CATALOGUE, No. 94.

Palms and other Stove Plants.
TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual size.
A CATALOGUE, giving the height of each plant, will be sent, post free, on application to Mrs. LE CREPS, Château du Mesnil de Mathieu, near Caen, Department of Calvados, France, where the plants may be viewed.

Grape Vines.
J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.
WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines.
TO BE SOLD, Cheap, 1800 close-jointed vigorous Plants, with Canes 6 to 12 feet long, all struck from Eyes this season.
Apply to the GARDENER, at J. Lewis's Horticultural Works, Stamford Hill, Middlesex, N.

Pine Suckers.
FOR SALE, RIPLEY QUEEN, and other SUCKERS, warranted clean and free from Scale.
Apply by letter to Mr. MCGREGOR, Seedsman, Merthyr Tydvil.

Strawberry Plants—Ready August 18.
CUTHILL'S SORTS, all selected for next year's bearing.—The price per 100, 7s. 6d. for the following:— Early Black Prince, Early Princess Royal, Highland Mary, Richard II., Prince of Wales, and Newton Seedling, still in bearing.
JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

PEAT EARTH of excellent quality delivered at the Nine Elms Station, 5 tons for 55s.; at Guildford, 5 tons for 50s. It is now in first-rate order.—Apply to Mr. [illegible], 115, Strand, London, W.C., where a sample may be seen.

Dutch and other Bulbs.

B. S. WILLIAMS'S AUTUMN CATALOGUE for 1862 is now ready, post free to all applicants, containing select lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladiolus, Amaryllis, Caladiums, Gloxinias, and many other choice Bulbs, with Hints on their Culture for the guidance of Amateur growers. To which is added a SUPPLEMENTAL and DESCRIPTIVE LIST of NEW, BEAUTIFUL, and RARE PLANTS.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Choice Seeds, in Sealed Packets.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the under-mentioned Seeds, which cannot fail to give satisfaction.

AMARYLLIS, saved from choice named varieties, 2*s.* 6*d.* per packet.

CALCEOLARIA, Herbaceous, finest mixed, 1*s.* 6*d.*, 2*s.* 6*d.*, and 3*s.* 6*d.* per packet.

CINERARIA CRUENTA, fine mixed seed from named flowers, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

PRIMULA SINENSIS FIMBRIATA, Red, White, or Mixed, very choice, 2*s.* and 3*s.* 6*d.* per packet.

For numerous Testimonials see BULB CATALOGUE, post free on application.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New Plants of 1862.

JAMES DICKSON AND SONS, "Newton" Nurseries, Chester, have now ready Strong Plants, at Reduced Prices, of FUCHSIAS, CHRYSANTHEMUMS, PHLOXES, PETUNIAS, and VERBENAS of the most approved varieties of this season. The usual allowance to the Trade. Prices on application.

Also very strong VINES from Eyes for IMMEDIATE PLANTING of the leading varieties, and such as will give the utmost satisfaction. Prices moderate.

Stanstead Park Nursery, Forest Hill, S.E., and Edinburgh.

DOWNIE, LAIRD, AND LAING have much pleasure in offering the following very select Seeds, saved from their choice collections.

ANTIRRHINUM, 6*d.* and 1*s.* per packet.
CALCEOLARIA, 1*s.* and 2*s.* 6*d.* per packet.
CINERARIA, 1*s.* and 2*s.* 6*d.* per packet.
HOLLYHOCK, 1*s.*, 2*s.* 6*d.* and 5*s.* per packet.
PANSY, 1*s.* and 2*s.* 6*d.* per packet.
PRIMULA SINENSIS FIMBRIATA, 1*s.* and 2*s.* 6*d.* per packet.
PRIMULA SINENSIS KERMESINA SPLENDENS, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

F. AND A. SMITH are sending out carefully selected SEED of the following (from their own stock) for present sowing:—

	Per packet.—*s.*	*d.*
ANTIRRHINUM, from named flowers	0	6
ALYSSUM SAXATILE COMPACTUM	0	6
CALCEOLARIA, finest strains .. 1*s.*, 1*s.* 6*d.*, &	2	6
CINERARIA „ .. 1*s.*, 1*s.* 6*d.*, &	2	6
PRIMULA „ .. 1*s.*, 1*s.* 6*d.*, &	2	6
DELPHINIUM FORMOSUM	0	3
„ CHERIANTHIFLORA	1	0
„ TRIUMPHATA EXCELSIOR	1	0
CLIANTHUS DAMPIERI	2	6
DIANTHUS HEDDEWIGI	0	6
FUCHSIA, from named flowers	1	0
GAILLARDIA GRANDIFLORA	0	6
MIMULUS, very fine	0	6
ŒNOTHERA LAMARCKIANA	1	0
PANSY, from Belgian flowers	1	0
PELARGONIUM, Spot / „ Show / „ Fancy	1	0
GERANIUM, Scarlet / „ Zonale / „ Variegated	1	0
PENTSTEMON	0	6
POLYANTHUS	1	0
STOCK, finest Scarlet Intermediate	0	6
SWEET WILLIAM, Auricula-eyed	0	6

☞ Their NEW CATALOGUE is now published, and may be had on application.

Dulwich, Surrey, S.

Autumn 1862.—New Plants.

JEAN VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs respectfully to announce that he is now taking orders for the following SELECT NOVELTIES, fully described in his NEW CATALOGUE for the Autumn of 1862, and which will be sent out on and after September 1, at the following prices:—

	Each.—*s.*	*d.*
AZALEA INDICA, SECRETAIRE CLAUS	7	6
„ „ VICOMTE DE FORCEVILLE, the finest double Red Azalea ever offered	10	6
CAMELLIA QUERCIFOLIA, Oak-leaved Camellia, good plants	21	0
„ „ With buds	31	6
„ „ A few stronger plants	42	0
HEBECLINIUM MACROPHYLLUM, fine plants, with very ornamental foliage, the leaves being nearly a foot long, and more than a foot in diameter, good plants	12	0
RHODODENDRON SOUVENIR DE JEAN BYLS, splendid hardy Rhododendron, figured in the *Illustration Horticole*, June, 1862, good plants	21	0
With buds	31	6
A few strong plants	42	0

One plant over to the Trade on every three taken.

A carefully Coloured Plate of the Rhododendron and Camellia will be sent to each Subscriber. The Subscription List is open now, and early orders are solicited, as they will be executed in strict rotation.

All orders to be addressed to M. JEAN VERSCHAFFELT, 48, Rue de la Caverne, Ghent, Belgium.

CATALOGUES can also be had of Messrs. R. SILBERRAD & SON, 5, Harp Lane, Great Tower Street, London, E.C.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON AND CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladiolus, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe.

Messrs. SUTTON & SONS have been honoured with applications from THE SCIENCE and ART DEPARTMENT of the COMMITTEE of COUNCIL on EDUCATION; as also from Dr. Kirkpatrick on behalf of THE ALBERT NATIONAL AGRICULTURAL TRAINING INSTITUTION at Glasnevin, for their unique Collection of Grasses, at the termination of the International Exhibition.

Messrs. SUTTON & SONS have also been highly complimented on this Case of Seeds and Specimens by many eminent Agriculturists and Botanists who have visited the Exhibition. They also invite inspection of their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which, for want of space there, is erected at the Crystal Palace, Sydenham.

Royal Berkshire Seed Establishment, Reading.

Calceolaria, Cineraria, and Primula, Extra Fine.

BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.

CALCEOLARIA, 1*s.* and 2*s.* 6*d.* per packet.
PRIMULA, 1*s.* per packet.
CARNATION, 1*s.* and 3*s.* per packet.
GUNNERA SCABRA, 1*s.* per packet.
CINERARIA, 1*s.* per packet.
PICOTEE, 1*s.* and 3*s.* per packet.
PELARGONIUM, Large fl., 1*s.* per packet.
„ Fancy, 1*s.* per packet.

New Plants of the Season.

GODWIN AND PADMAN have now ready the NEW FUCHSIAS of Messrs. Bull, J. Carter & Co., Cornelissen, E. G. Henderson & Son, Lemoine, W. Rollisson & Sons, G. Smith, F. & A. Smith, and Scott, at 1*s.* each, or 10*s.* 6*d.* per dozen.

NEW VERBENAS of 1862 .. .. 6*s.* per dozen.
NEW PETUNIAS .. .. 9*s.* „
NEW CHRYSANTHEMUMS of 1862 .. 12*s.* „
NEW TROPÆOLUMS of 1862 .. 12*s.* „

G. & P.'s SUPPLEMENTARY CATALOGUE, containing descriptions of above, on application to

Broadfield Nursery, Sheffield; or J. C. PADMAN, Boston Spa, Tadcaster.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5*s.* to 7*s.* 6*d.* each;

ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5*s.* each;
OSMUNDA REGALIS CRISTATA, 21*s.* each.

A Select LIST of the most rare kinds will be forwarded Post Free on application.

Dorking Nursery.

To the Seed Trade.

THE ANNUALS, &c., at JAMES CARTER & Co.'s Seed Farms at Dedham and St. Osyth are NOW in FULL BLOOM, and J. C. & Co. will be happy to receive a visit from any of their friends. (Eastern Counties Railway, Ardleigh Station.) Letters of Advice will receive immediate attention.

JAMES CARTER & Co., 237 & 238, High Holborn, London, W.C.

Hyacinths, Tulips, &c.

LOUIS VAN HOUTTE, Ghent, grows extensively every kind of Flowering Bulb (see his CATALOGUE No. 93).

N.B.—The LILIES will be included in his No. 94; the GLADIOLUSES in No. 95.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, & Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

STRAWBERRIES for AMATEURS.—Plants of the six most useful sorts, chosen to afford a long succession of fine fruit, one of each sort, or four plants of ECLIPSE, free by post, for 24 stamps. The sorts include ECLIPSE, new, pronounced first rate, both for Forcing and Out-doors, by the Royal Horticultural Society; PRINCESS, the finest of the very early sorts; SIR HARRY, SIR CHARLES NAPIER, WONDERFUL, the best for very rich soils; and ELEANOR, very fine and late; or OSCAR, if ordered.

Also very choice CAULIFLOWER and pure WHITE BAVARIAN CUCUMBER, 1*s.* per packet.

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A. LAMB, Pear Tree Hill, Lisburn, Ireland.

Prize Calceolaria Seed.

J. DOBSON AND SONS' Splendid HYBRIDISED CALCEOLARIAS are second to none in the world.

First Prizes have been awarded them wherever exhibited this season.

Exhibitors should grow no other for 1863.

Hundreds of testimonials received as to their superiority over all others.

Sale of 1861, 4000 packets.

New Seed, growth of 1862, now ready in sealed packets, 1*s.* 6*d.*, 2*s.* 6*d.*, 3*s.* 6*d.*, 5*s.*

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DOUGLAS FIR.—This noble Tree is now proved to be amongst the most ornamental and valuable Timber Trees; and having stood at Elvaston the winter of 1860 with impunity, when both the Common Oak and Holly were severely injured, proves its hardiness.

Splendid plants, all from seed, with extraordinary roots, can be supplied as under. Those who wish to plant Park Groups or Avenues should order early before the stock is exhausted. 1 to 1½ ft., 50*s.* per 100; 2 ft., 75*s.* per 100; 3 ft., 100*s.* per 100.

WILLIAM BARRON, Elvaston Castle, Derby.—Aug. 9.

NEW AND RARE ORCHIDS

FROM

BRAZIL, THE TENASSERIM PROVINCES, & THE EASTERN ARCHIPELAGO.

HUGH LOW & CO.

Have recently received from their Collectors in the above named Countries considerable quantities of NEW and RARE ORCHIDS, to an inspection of which purchasers are respectfully invited. Amongst the known species are comprised—

AERIDES LOBBI
„ Species resembling Æ. SCHRŒDERI
„ QUINQUEVULNERUM
„ SUAVISSIMUM
„ VIRENS, superb, remarkably long flower spike
„ SPECIES, spotted leaves, from Pulo Tinggi, China Sea
BOLBOPHYLLUM SPECIES
BURLINGTONIA FRAGRANS
„ RIGIDA
CALANTHE VESTITA ROSEA
„ „ LUTEA
CATTLEYA CRISPA
„ or LÆLIA, a fine looking plant
„ AMETHYSTINA
„ LEOPOLDI
„ SPECIES BRAZIL
CŒLOGYNE ELEGANS
„ LOWI

CŒLOGYNE PANDURATA
„ PARISHI
„ SCHILLERIANA
DENDROBIUM AGGREGATUM MAJUS
„ CHRYSOTOXUM
„ CUCULLATUM GIGANTEUM
„ DALHOUSIANUM
„ EBURNEUM
„ FARMERI ALBUM
„ FIMBRIATUM MAJUS
DENDROBIUM MOULMEINENSE
„ FORMOSUM GIGANTEUM
„ PIERARDI MAJUS
„ TORTILE ROSEA
EPIDENDRUM SPECIES, long flower spike
IONOPSIS ROSEA
LÆLIA ELEGANS
„ WARNERI

LÆLIA PURPURATA, many varieties and plants of various sizes, some unusually large
LIMATODES ROSEA
„ SUPERBA
ONCIDIUM, four species
PHALÆNOPSIS GRANDIFLORA, of all sizes and in large numbers, the best and largest lot ever imported
„ LOWI (*Reichenbach fil.*)
RENANTHERA SPECIES
SACCOLABIUM CURVIFOLIUM
„ BLUMEI MAJUS var. DAYI
„ VIOLACEUM
SOPHRONITIS CERNUA
„ GRANDIFLORA, a fine lot of this rare and beautiful plant
VANDA GIGANTEA, very fine plants
„ TRICOLOR

From other sources H. L. & Co. have also a supply of

ANÆCTOCHILUS, in large numbers and many new species
„ LOWI, of this beautiful species H. L. & Co. have a large quantity of very healthy plants
AERIDES CRISPUM
„ LINDLEYANUM
„ MACULOSUM
„ WARNERI
CATTLEYA CITRINA
„ MOSSIÆ, many varieties

CYPRIPEDIUM LOWI
„ SPECIES, with remarkably handsome variegated foliage, in the style of and quite as beautiful as the leaves of Phalænopsis Schilleriana
DENDROBIUM CALCEOLARIA
„ DENSIFLORUM
„ LOWI
„ PICTUM
„ SALACCENSE

DENDROBIUM MONILIFORME
„ PAXTONI
ONCIDIUM PAPILIO MAJOR
„ PULCHELLUM
PHALÆNOPSIS AMABILIS
„ ROSEA
SACCOLABIUM GUTTATUM
„ REIDI
VANDA SUAVIS
„ HOOKERIANA

Prices moderate, as Stock of the majority is unusually large.

AUSTRALIAN and BRAZILIAN TREE FERNS.

CLAPTON NURSERY, LONDON, N.E.

ARAUCARIA IMBRICATA.

HUGH LOW & CO.

Have received by the R.M.S.S. *Seine* a supply of Seeds of ARAUCARIA IMBRICATA in unusually good condition. The Seeds are part of crop of present season, and have come direct from the Indian Territory, *via* Panama. Samples and price per bushel, or by 1000 Seeds, can be had on application.

CLAPTON NURSERY, LONDON, N.E.

INTERNATIONAL EXHIBITION.

PRIZE MEDAL AWARDED TO

JAMES CARTER & CO.,

237 & 238, HIGH HOLBORN, LONDON,

FOR A

GENERAL COLLECTION OF GENUINE AND CORRECTLY NAMED

VEGETABLE AND FLOWER SEEDS.

*** See *Jurors' Report.*

VAN HOUTTE'S CATALOGUE.

LOUIS VAN HOUTTE, NURSERYMAN,

GHENT, BELGIUM,

BEGS TO ANNOUNCE THAT HIS

FIRST AUTUMNAL CATALOGUE, NO. 93,

IS TO BE HAD AT MESSRS. R. SILBERRAD AND SON, 5, HARP LANE, GREAT TOWER STREET, E.C.

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The PRICE-CURRENT No. 94, containing all the Hardy Articles, will appear in September next.

LOUIS VAN HOUTTE begs to offer:—

STOVE PLANTS.

		s.	d.
Arisæma ringens (FLORE)		3	4
Per dozen		20	0
Atacia cristata (FLORE)	12s.,	40	0
Chrysophyllum macrophyllum	24s.,	60	0
Colvillea racemosa (Bot. Mag. 3325)		20	0
Cossignia borbonica	48s.,	160	0
Crinum giganteum (FLORE)		6	0
Doryanthes excelsa (FLORE)	4s.,	20	0
Otacanthus cœruleus, Lindley (FLORE)		4	0
Palisota Barteri		8	0

etc., etc.

GREENHOUSE.

		s.	d.
Agave Schiedigera		8	0
Cobœa fol. alb. var., per doz...		10	0
Heliotrope Surprise, per doz.		10	0
Petunia Belle Liégeoise (FLORE)		1	6

HARDY PERENNIALS.

		s.	d.
Arum crinitum	1s. 6d.,	4	0
Camassia esculenta		0	6
Dodecatheon splendens		4	0
Erianthus Ravennæ (Giant Grass), per doz.		4	0
Pansies, a dozen continental varieties for		5	0
Phlox Mad. Van Houtte (a dwarf striped variety) ..		2	0
Eight other new ones		12	6
Polemonium cœrul. fol. var.		2	0
Thalictrum anem. fl. pl.		1	0

HARDY TREES AND SHRUBS.

		s.	d.
Aucuba himalaica (FLORE)		3	0
Black-leaved Oak		4	0
Cupressus gracilis, fol. alb. var.		3	0
Thuja cristata		12	0

etc., etc.

Genuine Italian Rye-grass, produced from the Second Cut of Foreign Seed.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts., will again be able to supply the Trade with this article in the same fine quality as last season, and can deliver either now or in the spring at the purchaser's convenience.

Address for samples and prices as above, stating quantity required and time of delivery.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality, at Market Prices.

Improvement of Grass Lands

BY SOWING GOOD SEEDS OF THE MOST SUITABLE KINDS.

SUTTON'S RENOVATING GRASS SEEDS

SHOULD NOW BE SOWN.

These Seeds consist of PERENNIAL CLOVERS and FINE GRASSES for improving the bottom.

Price *9d.* per lb., or *80s.* per cwt. 8 to 12 lbs. per acre will be sufficient, and will effect a great increase in the produce.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

The Best Substitute for Vetches is

TRIFOLIUM INCARNATUM.—This crimson Clover deserves to be generally cultivated. If sown in August either on fresh land or upon a Corn stubble, a heavier crop of Clover will be ready for mowing in May and June next than from common Clover sown the previous spring, and is highly valuable either for soiling or for hay. To insure success it is only necessary to obtain new Seed, and to sow in August or the first week of September.

SUTTON & SONS, Reading, can supply fine new Seed just threshed. As it is becoming scarce, early orders should be given. Samples with price may be obtained post free.

Royal Berkshire Seed Establishment, Reading.

The Quickest Turnip known.

SUTTON'S EARLY SIX WEEKS or NIMBLE WHITE.

Fine fresh Seed, *9d.* per lb.; *9s.* per peck, or *32s.* per bushel, Carriage Free.

Royal Berkshire Seed Establishment, Reading.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,
And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester

CATTELL'S EARLY RELIANCE CABBAGE, CATTELL'S DWARF BARNES CABBAGE.

These two Cabbages have proved themselves for many years past to be the two best Early Spring Cabbages in cultivation. If sown as early as the middle of July, they will not run to seed the following Spring. They may be had as usual in packets containing half-an-ounce of the Reliance, and one ounce of the Dwarf Barnes. Free by post for 12 Penny Stamps for each packet.

JOHN CATTELL, Nursery and Seed Establishment, Westerham, Kent.

Fine Bedding Geraniums.

MESSRS. E. G. HENDERSON AND SON respectfully call the attention of Amateur Cultivators and others to the undermentioned Novel and very beautiful varieties of VARIEGATED ZONALE GERANIUMS, adapted for bedding and conservatory culture in pots, which are now in fine condition.

MRS. MILFORD, rich broad massive features, very distinct.

MRS. POLLOCK, SUNSET, THE COUNTESS } The picturesque leaf-tints of these varieties are greatly admired as seen planted in their respective groups.

THE NEW FERN-LEAVED FRINGED CHINESE PRIMROSE.—Strong plants for winter bloom.

Wellington Nursery, St. John's Wood, London.

New South Wales—Collections of Ferns.

M. GUILFOYLE begs to announce that he has made arrangements to execute Orders for Europe of COLLECTIONS of FERNS, selected from all the Australian Colonies and New Zealand by his Correspondents there, and also from the South Sea Islands, supplied by competent Collectors in New Caledonia, the New Hebrides, &c. Due care will be taken that none but well established plants in pots are sent out from his Nursery, and for such he has fixed the price of each case, containing at least 25 species of Australasian Ferns in duplicate, at 16*l.*, (freight and case included), shipped by him for London to order. The Island Ferns, among which a constant succession of novelties may be expected for years to come, will be separately charged for, at prices extremely moderate.

M. GUILFOYLE will also be happy to execute Orders for Seeds, Bulbs, and Living Plants of all kinds from the Islands of the S. W. Pacific, especially including Orchids, Pines, &c.

Orders with remittances to be addressed to M. GUILFOYLE, Exotic Nursery, Double Bay, Sydney, N. S. Wales.

MR. ALEXANDER PONTEY, Deceased.—All persons having any Claims or Demands against the Estate of the late Mr. ALEXANDER PONTEY, of 21, Cornwall Street, Plymouth, Devon, Nurseryman, Seedsman, and Florist, are requested to forward particulars thereof to his Executrix, Mrs. MARY LYNE PONTEY, at 21, Cornwall Street, Plymouth, aforesaid, in order that the same may be examined, and, if found correct, discharged; and all persons Indebted to the said Estate are requested to pay the amount of their respective debts, without delay, to the said Executrix.

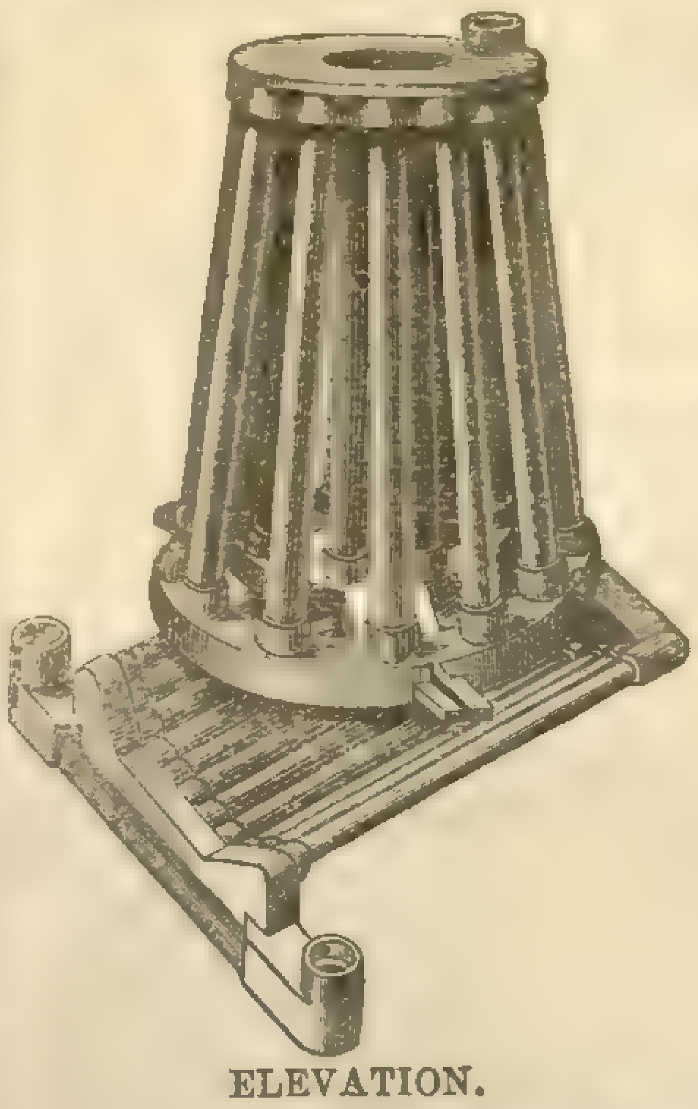
Mrs. PONTEY begs to offer her best thanks to the Friends and Customers of her late Husband for the kind and liberal support afforded him during his lifetime, and to inform them that it is her intention to continue the business until the same be satisfactorily disposed of.

Dated Plymouth, August 1, 1862.

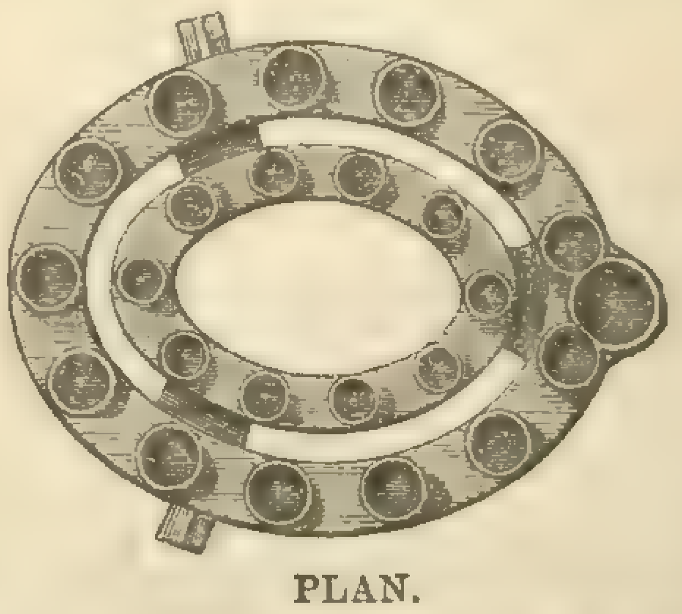
GRAY'S OVAL TUBULAR BOILER.

INTERNATIONAL EXHIBITION,

Class IX., No. 2119.



ELEVATION.



PLAN.

Mr. GRAY begs to call the attention of the Nobility, Gentry, Nurserymen, Gardeners, &c., to his

NEW OVAL TUBULAR BOILER,

acknowledged by practical judges to be a great improvement on every form of Tubular Boiler yet introduced. It has proved itself superior to all other Boilers for quickness of action and economy of Fuel, doing its work with one-third less the amount required by any other.

Extract from Report in Gardeners' Chronicle *of International Exhibition, May 24, page* 476.

"The upright form of Boiler is usually made on a circular plan, but the oval form given to Mr. GRAY's variety of it is said to be preferable in consequence of its bringing the tubes in closer contact with the fire. The usual form of a furnace being a parallelogram rather than a square, it seems feasible that the Boilers on the oval plan should bring the tubes more completely within range of the burning fuel; and this being so the change, though a slight one, is no doubt an improvement."

They are made of all sizes, which, with prices, may be had on application.

JAMES GRAY, HORTICULTURAL WORKS,
DANVERS STREET, PAULTON'S SQUARE, KING'S ROAD, CHELSEA, S.W.

A FIRST-CLASS PRIZE MEDAL HAS BEEN AWARDED TO J. WEEKS & CO. FOR THEIR SUPERIOR UPRIGHT TUBULAR BOILER AND GENERAL IMPROVEMENTS IN HEATING BY HOT WATER.

JOHN WEEKS & COMPANY,

HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS

TO

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN
THE TOWER OF LONDON

THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN
THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM

And NUMEROUS PUBLIC COMPANIES.

KING'S ROAD, CHELSEA, S.W.

TWO HUNDRED SETS

OF

STEAM PLOUGHING and CULTIVATING APPARATUS

HAVE NOW BEEN SENT OUT BY

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD.

Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

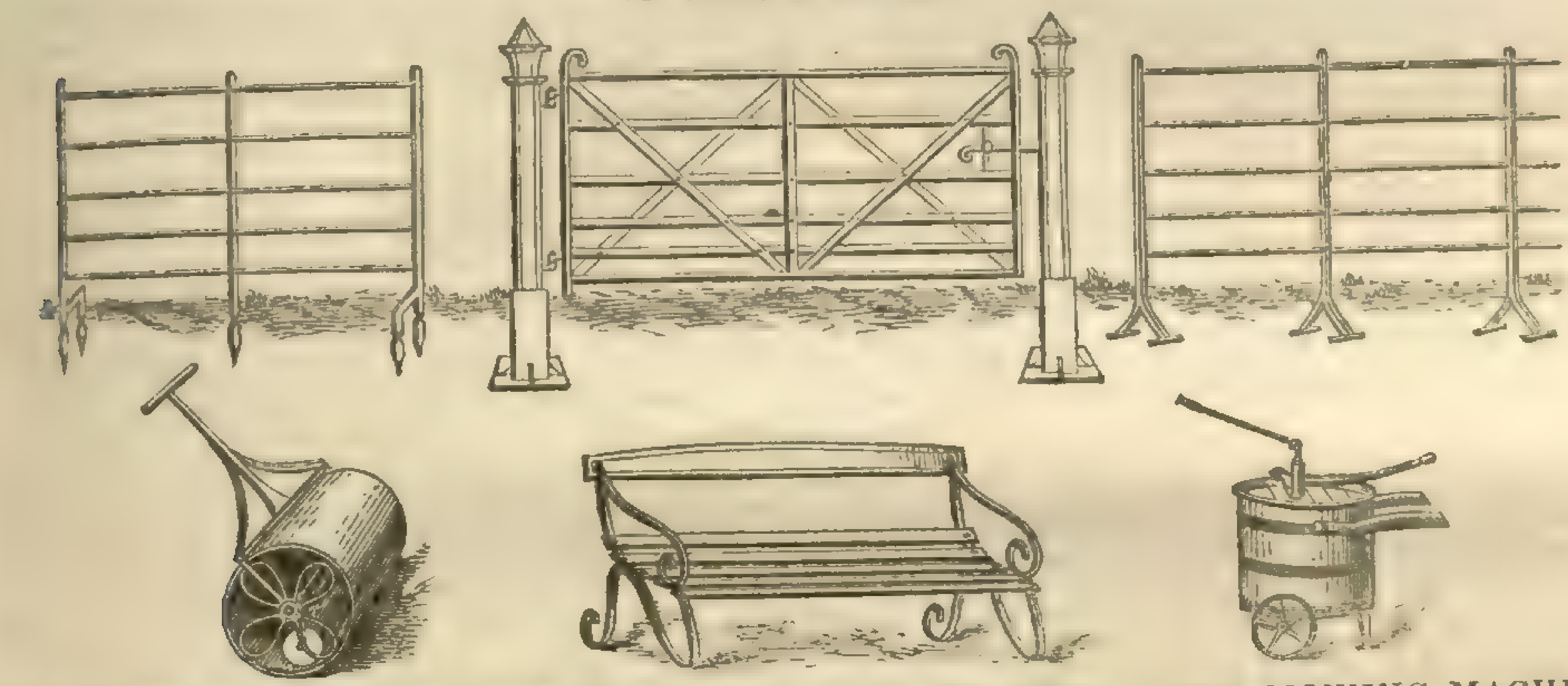
Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

COTTAM'S

CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.



IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.

The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to

COTTAM & CO., ENGINEERS and IRON FOUNDERS,

2, WINSLEY STREET (Opposite the Pantheon), OXFORD STREET, LONDON, W.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to

John Fowler, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

JOSEPH HAYWOOD AND CO.,

Manufacturers of PRUNING and BUDDING KNIVES, SPORTSMAN'S, and all kinds of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.

£2. 2s.

An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.

One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.

It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.

It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.

No Establishment, either private, commercial, or manufacturing, should be without one.

Six feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12s. Longer lengths of Suction at 1s. 6d. per foot.

May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,

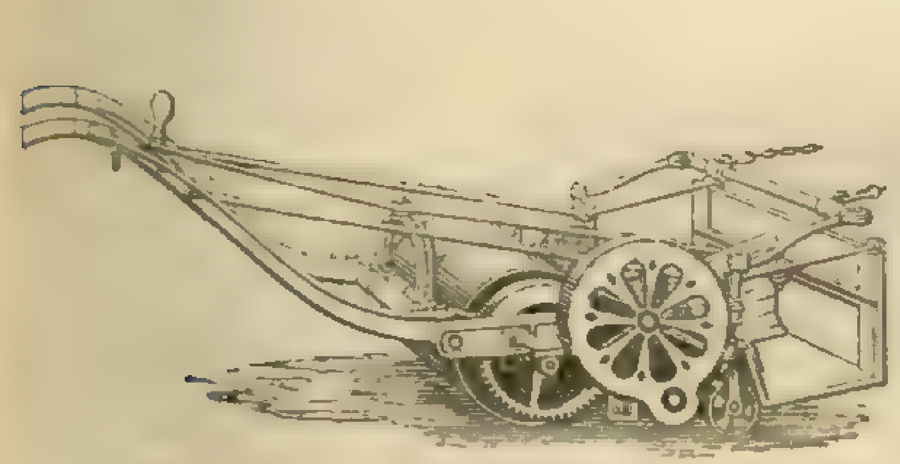
John Warner & Sons, 6, Crescent, Cripplegate, London, E.C.

SHANKS' NEW IMPROVED PATENT

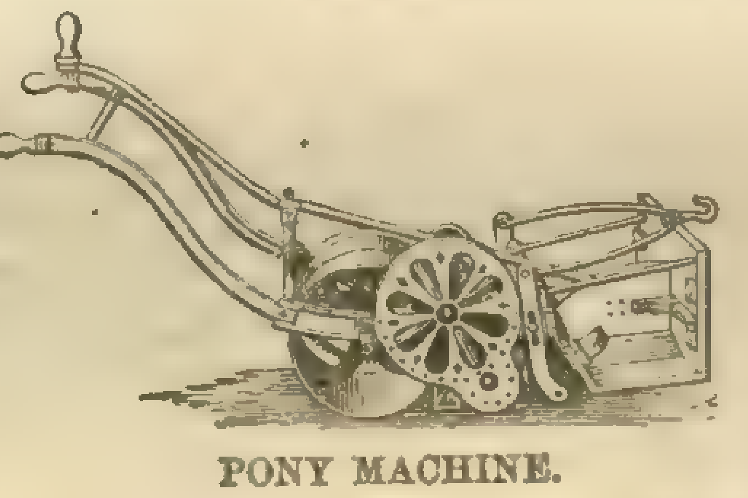
LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862

WITH SILENT MOTION IF SPECIALLY DESIRED.

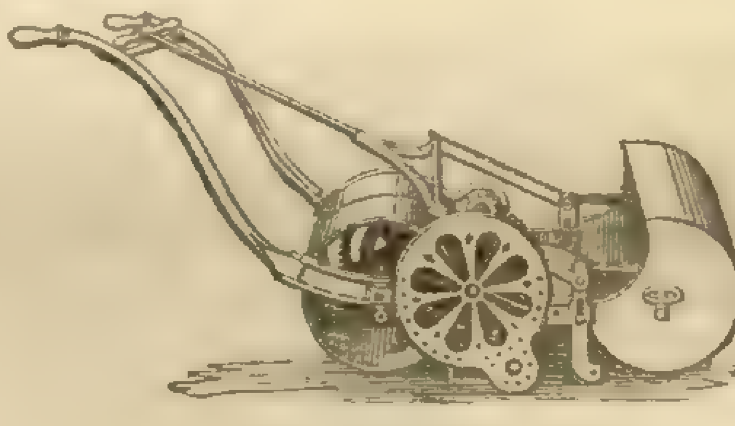
EXHIBITION PRIZE MEDAL AWARDED.



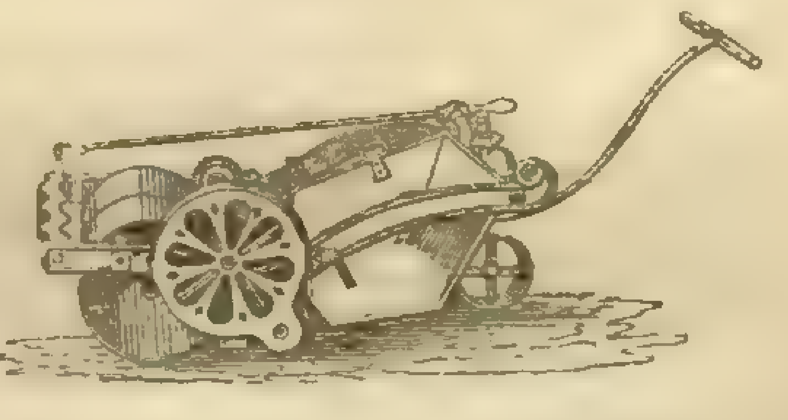
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

PRICES.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Width of Cutter.		
No. 1.—48-inch Machine	£28 0 0	*Drawn by a Horse.*
No. 2.—42-inch Machine	26 0 0	*Drawn by a Horse.*
No. 3.—36-inch Machine	£22 0 0	*Drawn by a Horse.*
No. 4.—30-inch Machine	19 0 0	*Drawn by a Horse or Strong Pony*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40s.; for Nos. 3 and 4 Machines, 30s.; Box, with complete Set of Tools, 10s.; Silent Movement, 20s.; Boots for Horses' Feet, 24s. per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | Width of Cutter. No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey.*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30*s.*; for No. 7 Machine, 25*s.*; Box, with complete Set of Tools, 7*s.* 6*d.*; Silent Movement, 12*s.* 6*d.*; Boots for Pony, 21*s.*; Donkey, 16*s.* per set.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Width of Cutter.		
No. 8.—24-inch Machine	£8 17 6	*Easily Worked by Two Men.*
No. 9.—22-inch Machine	8 7 6	*Easily Worked by Two Men.*
No. 10.—19-inch Machine	7 12 6	*Ditto by a Man and Boy*
No. 11.—16-inch Machine	£6 17 6	*Easily Worked by a Man.*
No. 12.—13-inch Machine	6 2 6	*Ditto by a Boy.*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25*s.*; Box, with complete Set of Tools, 5*s.*; Silent Movement, 7*s.* 6*d.* extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Width of Cutter.		
No. 16.—16-inch Machine ...	£6 5 0	*Easily worked by a Stout Lad.*
No. 17.—14-inch Machine ...	5 15 0	*Easily worked by a Stout Lad.*
No. 18.—12-inch Machine	£5 5 0	*Easily worked by a Lady.*

Silent Movement, 7*s.* 6*d.* extra. (Nos. 16, 17) — Silent Movement, 4*s.* extra. (No. 18)

*** *The Machines are warranted to give ample satisfaction, and if not approved of may be at once returned.*

The Prices, with a small charge for Packing, include Carriage to most of the Railway Stations and Shipping Ports in the Kingdom.

SOLE AGENTS FOR LONDON: J. B. BROWN & CO., 18, CANNON STREET, CITY, E.C.

ROYAL HORTICULTURAL SOCIETY.

REMAINING

ARRANGEMENTS FOR THE EXHIBITIONS AND MEETINGS IN 1862,

TO BE HELD AT

THE GARDEN, SOUTH KENSINGTON, W.

SHOW OF AUTUMN FLOWERS, WEDNESDAY, SEPTEMBER 10.

Class		1st	2d	3d
1. 48 Cut Roses. 3 trusses, distinct kinds	(Nurserymen)	£4 0s.	£3 0s.	£2 0s.
2. 24 Cut Roses. 3 trusses, distinct kinds	(Amateurs)	4 0	3 0	2 0
3. 24 Cut Roses. Single blooms. Distinct kinds	(Open)	2 0	1 0	0 10
4. 6 Roses, in Pots, not more than two of one kind	(Open)	3 0	2 0	1 0
5. 12 Hollyhocks, in spikes. Distinct kinds	(Open)	3 0	2 0	1 0
6. 12 Hollyhocks, single flowers. Distinct kinds	(Open)	2 0	1 0	0 15
7. 24 German Asters. "Quilled." Distinct kinds	(Open)	2 0	1 0	0 15
8. 24 French Asters. "Tasselled." Distinct kinds	(Open)	2 0	1 0	0 15
9. 24 Gladiolus, cut spikes. Distinct kinds	(Open)	2 10	1 10	1 0
10. 12 Gladiolus, cut spikes. Brenchleyensis colour. Distinct kinds	(Open)	2 0	1 10	1 0
11. 12 Pots of Gladiolus. Distinct kinds. Not more than 3 in each Pot	(Open)	3 0	2 0	1 0
12 24 Phloxes, single trusses. Distinct kinds	(Open)	2 0	1 0	0 15

Class		1st	2d	3d
13. 12 Dwarf Phloxes. Perennial upright growing kinds, in Pots. Distinct kinds	(Open)	£3 0s.	£2 0s.	£1 [illegible]
14. Phlox. The Dwarfest and best perennial upright growing Plant. (Prize offered by Dr. Lindley)	(Open)	1 0	—	—
15. 24 Verbenas, 5 trusses of each. Distinct kinds	(Open)	1 10	1 0	0 15
16. 48 Dahlia Blooms. Distinct kinds	(Nurserymen)	5 0	4 0	3 0
17. 24 Dahlia Blooms. Distinct kinds	(Nurserymen)	3 0	2 0	1 [illegible]
18. 18 Dahlia Blooms. Fancies. Distinct kinds	(Nurserymen)	3 0	2 0	1 [illegible]
19. 24 Dahlia Blooms. Distinct kinds	(Amateurs)	5 0	4 0	3 0
20. 12 Dahlia Blooms. Distinct kinds	(Amateurs)	3 0	2 0	1 0
21. 12 Dahlia Blooms. Fancies. Distinct kinds	(Amateurs)	3 0	2 0	1 0
22. 12 Bouquet Dahlias, in Pots		3 0	2 0	1 0
23. Miscellaneous. For flowers not specified	(Open)	2 0	1 0	0 10

*** A prize of 5*l.* is offered for the most Ornamental Collection of Twelve Standard Plants, suitable for the decoration of a dinner table. The Plants to be grown in pots not exceeding the following sizes, viz. :—One 24 pot, two 32 pots, four 48 pots. All 48's would be preferable. The plants may be ornamental either for their foliage, their flowers, or their fruit. Plants having either foliage, flowers, or fruit lower than 21 inches from the outside-bottom of the pot, will be excluded from competition. Elegance of form, slenderness of stem, and variety in colour will be the tests of excellence. Exhibitors are at liberty to screen the pots in any manner they may think appropriate, and the taste displayed in this will be considered in the award. This Prize will be competed for at the Show which is to be held on the 10th September.

GREAT INTERNATIONAL SHOW OF FRUIT, GOURDS, ROOTS, VEGETABLES, AND CEREALS

(OPEN TO ALL THE WORLD), OCTOBER 8, 9, and 10.

The Gourds, Roots, and Cereals will remain on Exhibition until October 18.

Note.—A dish of Apples, Pears, Oranges, Lemons, and the like, 6 fruits of each ; but of Plums, 9 fruits.

FRUITS.

Class.		1st	2d	3d
A. Collection of Fruits	(Fruiterers only)	£5 0s.	£3 0s.	£ — s.
B. Collection of Fruits. Not more than 2 dishes of any one kind	(Private growers)	6 0	4 0	3 0
C. Pine Apple, Queens		2 0	1 10	1 0
D. Pine Apple. Any other kind		2 0	1 10	1 0
E. Grapes, White Muscat. 6 bunches		4 0	3 0	2 0
F. Grapes, White Muscat. 3 bunches		2 10	2 0	1 0
G. Grapes. Any other white kind. 3 bunches		2 10	2 0	1 0
H. Grapes, Black Hambro' 6 bunches		4 0	3 0	2 0
I. Grapes, Black Hambro' 3 bunches		2 10	2 0	1 0
J. Grapes. Any other black kind. 3 bunches		2 10	2 0	1 0
K. Pears, dessert, 12 dishes, distinct kinds		4 0	3 0	2 0
L. Pears, dessert, 6 dishes, distinct kinds		3 0	2 0	1 0
M. Pears, dessert, 3 dishes, ripe fruit, distinct kinds		1 10	1 0	0 10
N. Pears, dessert. Single dish. ripe fruit, any kind		1 0	0 15	0 10
O. Pears, kitchen. Single dish, any kind		1 0	0 15	0 10
P. Pears. Heaviest 5 fruits, dessert		1 0	0 15	0 10
Q. Apples, dessert, 12 dishes, distinct kinds		4 0	3 0	2 0
R. Apples, dessert, 6 dishes, distinct kinds		3 0	2 0	1 0

FRUITS—*Continued.*

Class.	1st	2d	3d
S. Apples, dessert, 3 dishes, ripe fruit, distinct kinds	£1 10s.	£1 0s.	£0 10
T. Apples, dessert. Single dish, ripe fruit, any kind	1 0	0 15	0 10
U. Apples, kitchen, 12 dishes, distinct kinds	4 0	3 0	2 0
V. Apples, kitchen, 6 dishes, distinct kinds	3 0	2 0	1 0
W. Apples, kitchen, 3 dishes, distinct kinds	1 10	1 0	0 10
X. Apples, kitchen. Single dish	1 0	0 15	0 10
Y. Apples, kitchen. Heaviest 5	1 0	0 15	0 10
Z. Oranges, Lemons, &c., collection of 1 dish of each	3 0	2 0	1 0
AA. Four Orange-trees, bearing fruit. In Pots or boxes	3 0	2 0	1 0
BB. Melons. Single fruit, any kind	1 10	1 0	—
CC. Plums. Single dish, any kind	1 0	0 15	0 10
DD. Strawberries. Single dish	2 0	1 10	1 0
EE. Currants. Single dish	0 10	—	—
FF. Raspberries. Single dish	0 15	0 10	—
Note.—Fruits specified in the above Classes will be excluded from GG.			
GG. Miscellaneous	2 0	1 10	1 0

GOURDS.

§ I. *Gourds eatable when ripe.*

Class		1st	2d
I. The finest collection	(Foreign Growth)	£3 0s.	£2 0
II. The finest collection	(Home Growth)	3 0	2 6
III. The heaviest single specimen	(Home Growth)	3 0	2 0
IV. The heaviest single specimen	(Foreign Growth)	3 0	2 0
(Prizes offered by Dr. Lindley.)			
II. *Gourds for Ornament, or merely curious, and never eatable.*			
V. The most extensive collection, without regard to cultivation		3 0	2 0
§ III. *Mixed.*			
I. 6 Ornamental Gourds, whether eatable or not		3 0	2 0
(Prizes offered by Mr. Wilson Saunders.)			

VEGETABLES, GARDEN ROOTS, &c.

	1st	2d
I. Potatoes, collection of	3 0	2 0
II. Potatoes, 6 Kinds of Kidneys, 12 tubers of each	1 0	0 15
III. Potatoes, 6 kinds, "Rounds," 12 tubers of each	1 0	0 10
IV. Potatoes, Kidneys, 12 tubers	0 15	0 10
V. Potatoes, any other kind, 12 tubers	0 15	0 10
VI. Onions, 12	0 15	0 10
VII. Carrots, 12	0 15	0 10
VIII. Parsnips, 12	0 15	0 10
IX. Globe Artichokes, 12	0 15	0 10
X. Parsnip Chervil, 12	0 15	0 10
XI. Beet, 6 roots	0 15	0 10
XII. Turnips, 3 kinds, 6 of each	1 0	0 10
XIII. Turnips, 6 of one kind	0 15	0 10
XIV. Salsafy, 12 roots	0 15	0 10
XV. Scorzonera, 12 roots	0 15	0 10
XVI. Peas, 1 dish	0 15	0 10
XVII. Brussels Sprouts, 3 plants	0 15	0 10
XVIII. Borecoles, 6 kinds, 2 of each	0 15	0 10
XIX. Broccoli, 6 heads	0 15	0 10
XX. Cabbage, Savoys, 6 heads	0 15	0 10
XXI. Cabbage, any other kind, 6 heads	0 15	0 10
XXII. Yams, Chinese, 6	0 15	0 10
XXIII. Celery, red, 6 heads	0 15	0 10
XXIV. Celery, white, 6 heads	0 15	0 10
XXV. Endive, 6 heads	0 15	0 10
XXVI. Cardoons, 4 heads	0 15	0 10
XXVII. Mushrooms, dish	0 15	0 10
XXVIII. Miscellaneous	1 0	0 15

N.B. Nothing can be admitted here which is provided for by any other Class.

AGRICULTURAL ROOTS.

Class	
1. Mangel Wurzel, Long Red. 3 roots	Bronze Medal.
2. Mangel Wurzel, Long Yellow. 3 roots	Ditto.
3. Mangel Wurzel, Yellow Globe. 3 roots	Ditto.
4. Mangel Wurzel, Red Globe. 3 roots	Ditto.
5. Beet, White Sugar. 3 roots	Ditto.
6. Carrots, White Belgian. 6 roots	Ditto.
7. Carrots, Altringham. 6 roots	Ditto.
8. Cabbage, Cattle. The largest head of	Ditto.
9. Turnips, Swedes. 6 roots	Ditto.
10. Turnips, Yellow 6 roots	Ditto.
11. Turnips, White. 6 roots	Ditto.
12. Kohl Rabi. 6 roots	Ditto.

CEREALS.

In samples not less than a pint.

Note.—Both ear and sample are specially requested to be sent, but this is not imperative.

Class			
1.	General Collection of Wheats from all quarters		Bronze Medal
2.	Collection of Wheats from any one quarter		Ditto.
3.	" "	from the Baltic	Ditto.
4.	" "	from the Black Sea	Ditto.
5.	" "	from any part of Russia	Ditto.
6.	" "	grown in France	Ditto.
7.	" "	grown in Holland	Ditto.
8.	" "	grown in Belgium	Ditto.
9.	" "	grown in Denmark	Ditto.
10.	" "	grown in Sweden or Norway	Ditto.
11.	" "	grown in Prussia	Ditto.
12.	" "	grown in Austria	Ditto.
13.	" "	grown in Bavaria	Ditto.
14.	" "	grown in Wurtemberg	Ditto.
15.	" "	grown in North Germany	Ditto.
16.	" "	grown in Italy	Ditto.
17.	" "	grown in Spain	Ditto.
18.	" "	grown in Portugal	Ditto.
19.	" "	grown in Turkey, Egypt, or Tunis	Ditto.
20.	" "	grown in Algeria	Ditto.
21.	" "	grown in Southern Africa	Ditto.
22.	" "	grown in Lower Canada	Ditto.
23.	" "	grown in Upper Canada	Ditto.
24.	" "	grown in the Northern States of America	Ditto.
25.	" "	grown in the Southern States of America	Ditto.
26.	" "	grown in California	Ditto.
27.	" "	grown in Victoria or Vancouver's Island	Ditto.
28.	" "	grown in Australia	Ditto.
29.	" "	grown in England	Ditto.
30.	" "	grown in Scotland	Ditto.
31.	" "	grown in Ireland	Ditto.
32.	" "	sold in London Market	Ditto.
33.	" "	sold in Liverpool Market	Ditto.
34.	Sample of White Wheat of any kind		Ditto.
35.	Sample of Red Wheat of any kind		Ditto.
36.	Collection of Barley from any one quarter		Ditto.
37.	General collection of Barley from all quarters		Ditto.
38.	Malting Barley		Ditto.
39.	Collection of Oats from any one quarter		Ditto.
40.	General collection of Oats from all quarters		Ditto.
41.	Black Oats		Ditto.
42.	White Oats		Ditto.
43.	Rye		Ditto.
44.	Rice grown in North America		Ditto.
45.	Rice grown in South America		Ditto.
46.	Rice grown in the East Indies		Ditto.
47.	Collection of Rice from all quarters		Ditto.
48.	Head of Maize, or Indian Corn, of any kind		Ditto.
49.	Collection of different kinds of Maize, in heads, best in quality		Ditto.
50.	Maize, most numerous in kinds		Ditto
51.	Newly introduced or rare Cereals		
52.	Cereals of any kind, not included in the above		

MISCELLANEOUS.

A. Collection of Fruits, modelled in Wax	Large Bronze Medal.
B. Collection of Roots, modelled in Wax	Ditto.
C. Collection of Vegetables, modelled in Wax	Ditto
D. Collection of Ditto, in any other material	Ditto.
E. General Collection, embracing the whole or part of the subjects in the above International Show	Silver

A PRIZE of 5*l.* is offered by one of the Fellows of the Royal Horticultural Society for the 12 best STANDARD PLANTS for the DECORATION of the DINNER TABLE, to be awarded at the Show of Autumn Flowers, on September 10.
The Plants must be ornamental, either for their foliage, flowers, or fruit, and must be grown in pots not exceeding 6 inches in diameter; the foliage, flowers, and fruit must not be less than 20 inches nor more than 24 inches clear from the rim of the pot.
Elegance of form, slenderness of stem, and variety of colour, will be the tests of excellence.
The groups will be received as late as 10 o'clock, A.M., PROVIDED SPACE SHALL HAVE BEEN SECURED FOR THEM THE DAY BEFORE. Letters to be addressed to Mr. G. Eyles, Royal Horticultural Society's Garden, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY.
Special PRIZES for the March Show in 1863.
10*l.* for the Three Best CAMELLIAS.
3*l.* for the Three Best TREE MIGNONETTES.

BANBURY HORTICULTURAL SOCIETY.
OPEN PRIZES.
The SIXTEENTH ANNUAL EXHIBITION of this Society is fixed for TUESDAY, August 26, when, in addition to the usual number of Prizes to be competed for by Members, the following are offered, Open to All England, on payment of an Entrance Fee of 2*s.* 6*d.*
For the best 6 STOVE or GREENHOUSE PLANTS, either in Flower or Ornamental, of at least four different Genera, but not Fuchsias or Annuals, 1st Prize, 3*l.*; 2d, 2*l.*
For the best 24 DAHLIAS, 24 varieties, 1st Prize, 3*l.*; 2d, 2*l.*
For the best 18 HOLLYHOCKS, 2 Blooms of each, 1st Prize, 2*l.*; 2d, 1*l.*
For the best 12 varieties of VERBENAS (5 trusses in a bunch), 1st Prize, 1*l.*; 2d, 15*s.*
For the best Collection of FRUIT, grown by the Exhibitor, 1st Prize, 2*l.*; 2d, 1*l.*
The Judges may withhold any prize if the production exhibited is not considered worthy. Intended Exhibitors must give notice to the Secretary on or before Saturday, August 23. The Society will, if requested, convey the productions from and to the Railways.
The Bands of the 26th Cameronians and the 3d Oxfordshire Rifle Volunteers will play during the day.
For further particulars, apply to E. J. Hartley,
57, High Street, Banbury. Acting Secretary.

RUGBY HORTICULTURAL and COTTAGE GARDENERS' SOCIETY.
President—The Right Honourable Earl Denbigh.
The ANNUAL SHOW of the above Society, Open to All England, will be held at Rugby on FRIDAY, August 29.
Upwards of 80 Prizes in Class 5 will be offered for Plants, Fruits, Cut Flowers, Vegetables, &c., including 2 Silver Cups, as follows:—
Class 5. 36 Dahlia Blooms. Dissimilar. A Silver Cup, value 5*l.* 5*s.*
24 Roses. Distinct. 3 Blooms of each. A Silver Cup, value 4*l.* 4*s.*
24 Verbenas. Distinct. 5 Trusses of each. An extra Prize of 2*l.* by Mr. C. J. Perry, of The Cedars, Castle Bromwich, and Mr. W. H. Treen, Victoria Nursery, Rugby, in addition to the first Prize offered by the Society.
Entries to be made on or before August 23.
Schedule of Prizes and further particulars may be obtained on application to JOHN S. SAVAGE, Hon. Sec.
Rugby, August 9.

The Gardeners' Chronicle
SATURDAY, AUGUST 9, 1862.

MEETINGS FOR THE ENSUING WEEK.

Tuesday, Aug. 12 { Royal Horticultural (Fruit and Floral Committees) at S. Kensington Noon

There is no perfectly satisfactory protection for NEWLY PLANTED small specimens of RARE TREES. By protection we mean security against all kinds of external injury: sun, wind, birds, and chance accidents. If a handglass is used the air becomes overheated in a summer sun. A bell-glass renders matters worse, even if it be a carboy with the bottom cut off and the neck left open. When a few sticks are stuck round a plant they afford no protection against wind, or chance accidents, besides which they invite birds to perch upon them and defile the plant. Little iron triangles act in the same way. Leafless spray excludes too much the light that is indispensible; and as for evergreen spray plants might be as well covered with a piece of green baize. Then if straw or Reed mats are rolled up, they harbour insects, and greatly diminish the action of light.

One of our correspondents has, however, hit upon a method which seems perfect. He takes a common garden pot of sufficient capacity, inverts it, knocks out the bottom (Fig. 1) and a thoroughly

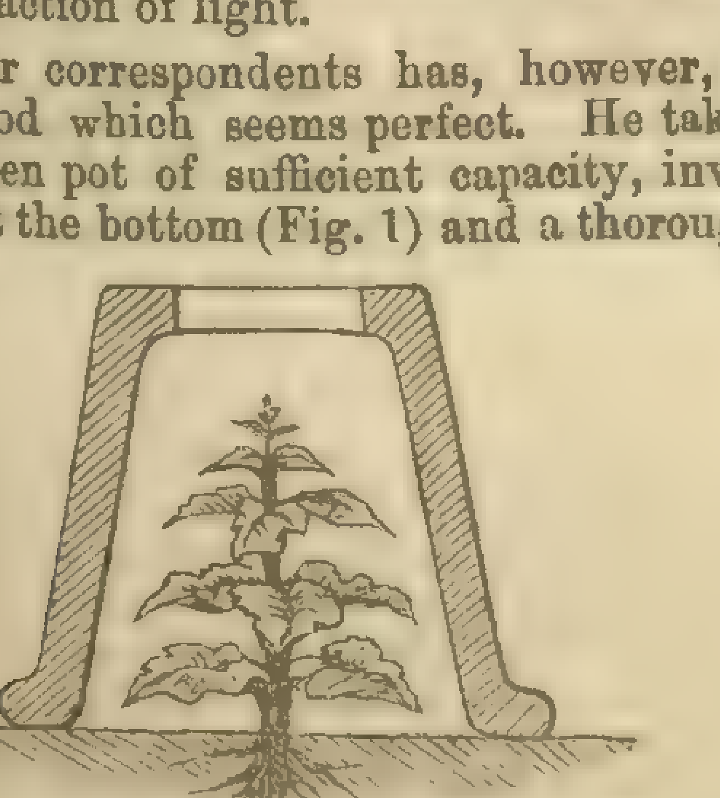


Fig. 1.

good guard is provided, free from all objections, and having the invaluable property of keeping the air within it damp if it is occasionally watered. It may be suggested that a Sea Kale pot would answer the same purpose; and perhaps it might, but if made domical, as is commonly the case, it would hardly admit light enough or allow sun-heated air to escape fast enough. If more light is wanted or more air a large piece is broken out of the north side of the pot.

Having found this a good scheme, it occurred to our correspondent that a similar contrivance might, if made to absorb water, and obstruct direct light, be useful in growing what are called ALPINE PLANTS, which in warm weather are ruined by the incurable dryness of the air that rests upon them. In order to effect his purpose he contrived the following apparatus (Fig. 2). A common seed

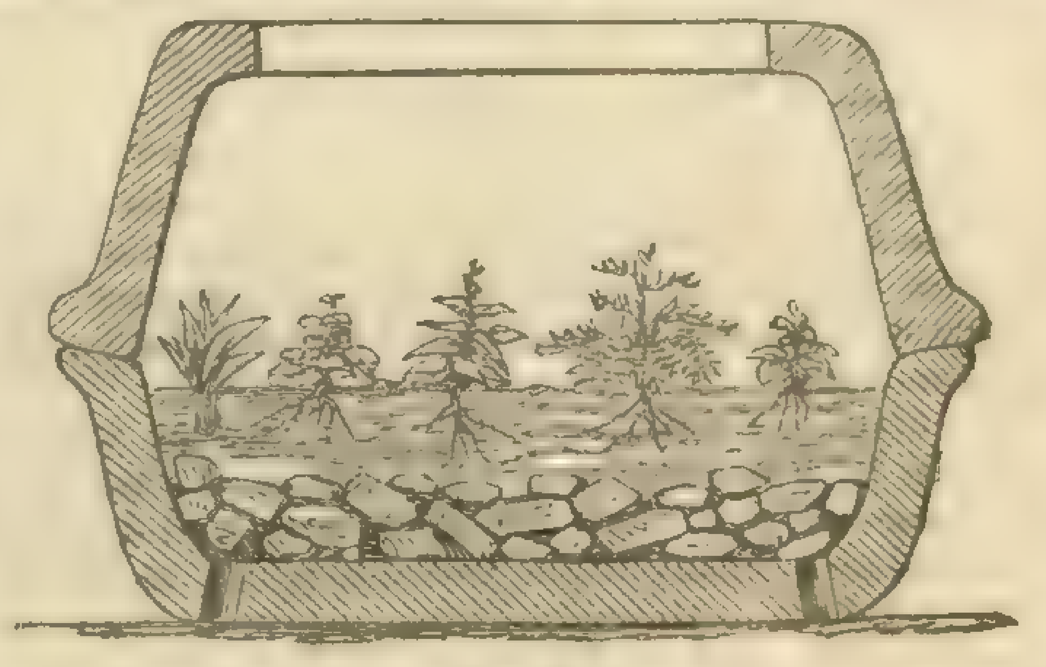


Fig. 2.

pan was filled with garden mould and peat, in which was planted a morsel of *Dryas octopetala*. Over this was inverted another seed pan of the same dimensions, but with the bottom knocked out. The whole was placed at the foot of a wall looking to the westward. There it has remained without further care for 2 or 3 years, we forget which, during which time *Dryas* has grown into a very respectably sized healthy individual. So far then the experiment is successful; and all difficulty in growing it in a suburban garden is at an end. It remains to be seen how far such treatment will suit other plants, such as *Linnæa*, *Saxifraga oppositifolia*, *Dianthus alpinus*, *Pyrolas*, *Primulas*, *Soldanella*, *Cortusa*, *Gentians*, &c. With care we should anticipate entire success. Since our correspondent has been so far encouraged he means to persevere, and in time we shall know the result.

In the meanwhile we should suggest that the thickest possible seed pans should be provided, and the least burnt; so that they may always remain damp; the grand object to be attained. Possibly indeed a set of partitions built up with what are called near London place bricks—that is to say half burnt bricks—might prove still more suitable. This however is for future inquiry.

—— We have already ventured an opinion that in the Fancy Pansies, the flowers of which have their varied colours for the most part grotesquely blended, a group of hardy flowers is springing up which are sure to win their way to popular favour. The Pansy or Heartsease has always indeed been a popular flower, and the richness of colour and perfection of form which has been imparted to it by the persevering skill of the florist, are qualities which even the uninitiated in the mysteries of floriculture can appreciate. It lacks only one thing, that is variety, but this lack is very patent, so much so that the sorts which are to be seen making up a large stand of blooms, are seldom more than very slight modifications of some three or four types. This sameness of character depreciates very much from the interest of the flower from a general point of view; and it is just in this very feature that the fancy group comes in to our relief. This view of the case has apparently presented itself to some of our professional florists, who are doing their utmost to combine with the striking and attractive colouring of the new race those excellencies of form and substance which are necessary qualities in high-class varieties of this, as of other florists' flowers.

That a high position will ultimately be gained by these Fancy Pansies there can be no question. All that was necessary thereto was that floricultural skill should be directed into this channel. But very few years have yet elapsed since the first varieties of this motley race were produced, and even now very considerable advances towards perfection have been made. Better form and firmer substance have been already secured, and it is well known that in the production of a new flower of whatever kind, one step gained is but a starting point from whence further advances will be made. That the advance is going on, we know, for during the past season a variety of this fancy race named aurea marginata, has won for its possessors, Messrs. Downie & Co., of Sydenham, a Certificate of the first class; and a box of beautiful blooms lately received from Mr. W. Dean, of Shipley, the raiser of Princess Alice, show that the progress is by no means limited to a single locality. To this latter collection we shall now confine our attention, passing the more remarkable varieties briefly in review.

Amongst the darker of these novel flowers Creole strikes us as being one of the most pleasing character; it is of a purplish lilac, paler towards the edges, and marked with dark purple blotches on the three lower petals, these colours being set off by a rich golden eye, while in addition the upper petals are of a velvety violet purple. Mulatto is in the same way. Pasha is of a more reddish or puce plum colour, with a bronzy cast on the lower part, and with its varied markings is distinct in character. More motley still is Leotard, which is a finely formed blotched sort, and has some half dozen colours, violet and plum, yellow and primrose, curiously blended, forming altogether a rich-looking flower. Somewhat in the same style are Louis Van Houtte, and Emperor of France. Princess Louisa is a large showy rosy violet, with dark veiny violet blotches on the white-ground lower petals, while the lateral ones are irregularly margined with the same rosy violet tint; it is both distinct and effective. In the Princesse Mathilde style, a very fine novelty called Mrs. Moore has the ground colour creamy yellow, the lower petals all laced with reddish plum colour, and all having towards the eye a dark blotch, which in the lower petal is much larger than in the others, and is separated from the belting by a zone of bright yellow, while the upper petals are dashed with plum colour; this is one of the finest varieties for shape we have yet seen. Etoile du Nord, a yellow ground flower with three very distinct dark blotches, has the lower petals narrowly, the upper ones broadly edged with deep reddish lilac. A good deal in the same way, but with a bronzy belt superadded on the lower petals and more heavily marked in the upper pair of petals, is Duc de Brabant. Both these are of good outline.

Another fine flower of this yellow-ground group is Prince Louis of Hesse, which has rich yellow lower petals, marked with prominent radiate maroon blotches, while the upper petals are broadly belted with a curiously striated rose-tinted purple; the form also is good. Harlequin is a very bold sort, yellow ground, with the upper petals marked by a large central purple blotch leaving a marginal belt of yellow, while the lower ones have a radiate maroon patch, and irregular spots of purple, giving the flower a very curious aspect.

Another set of the varieties produces large white ground flowers with prominent purple radiating blotches on the three lower petals, and the upper ones more or less but conspicuously marked with purple. One of the most pleasing of these is Princess Clotilde, which has the back petals wholly of a purple lilac. Prince Napoleon, Le Géant, and Imperatrice Eugénie, are also striking flowers of this strain, the latter being apparently the best in form. Not far removed in style from these, one called Donald Beaton, a variety in which the two upper petals have a large central spot of rich violet, and the lower petal is edged with the same colour. Paler than any of the foregoing is Princess Alice, a creamy white with large radiate violet spots on the lower petals and very slight markings on the upper. Rosetta is a particularly pleasing sort of this stamp, creamy white, with rich violet-purple veiny radiate spots tolerably uniform in size on all the petals. Adelina Patti, with the same ground colour as the foregoing, has the blotches of the three lower divisions more dense and less radiate, while the outer edges of the upper petals are marked by large angular patches of purple. Couronne de Flore is very fine both as respects size and form, white with moderate-sized blue-purple scarcely radiate blotches round the eye, and a broad belt of blue-lilac to the upper petals. Of the yellows, Cloth of Gold is bright, with bronzy markings round the eye, the flowers large and showy, as well as of good outline. The foregoing are all seedlings raised by Mr. Dean, and although so brief a sketch must fail to convey a complete notion of the curious appearance—pleasing however as well as curious—of the flowers themselves, it must be evident that there is here a large amount of variety, and brilliancy of colour enough to light up many a parterre. That the Fancy Pansy has not yet reached its limit, as the show varieties seem to have done, we are assured by a further series of yearling unproved sorts which accompanied those we have been referring to, and among which some very remarkable forms occur, of which we shall hear more another season.

As these Fancy Pansies have something of novelty still hanging about them, and are besides bright and gay-looking objects, and moreover hardy enough to become everybody's flowers, we think the great Societies would do well to take note of them for their prize schedules another season. At the later spring or early summer shows they would form a feature of no small interest. We should certainly suggest that they should be shown in the form of pot plants; but as the number of plants could not be fixed sufficiently high to give anything like an idea of the great variety which occurs amongst them, it might be desirable to invite also stands of some two or three dozen cut blooms. If we mistake not, a very attractive feature would be thus introduced; and it would at least be a step towards that recognition of "hardy" flowers by the Royal Horticultural Society, which a "Florist" has urged in the remarks published elsewhere, which were quoted by us last week.

—— Those who are interested in the cultivation of the Grape Vine, and who may find themselves in London with a few spare hours at their disposal, would,

we are sure, regard them as being well spent, if they were devoted to a visit to the establishment of Mr. KAY, of Finchley. In the management of this generous fruit, Mr. KAY is undoubtedly a master hand, as his well cropped healthy Vines, filling house after house, sufficiently attest. Our principal object, however, is to direct attention to one in particular of the Vines growing in his garden at Finchley, which seems deserving of especial mention. This is a Black Hamburgh, and though but 6 years old, entirely fills a house somewhere near 90 feet long, and 19 feet wide. This Vine is now carrying a prodigious crop of fruit, which by-and-by, when mature and coloured, will form a picture worth travelling to see. We should be glad to learn from Mr. KAY some particulars of the history and progress of this giant stripling, and of the management under which so large and healthy a development has been obtained. We also hope to hear by-and-by what the present crop actually realises in the form of perfect ripened marketable fruit. The stem enters the house, which is a low span-roofed one, near the centre, and branches are led away right and left at proper distances towards each end, the whole area being completely furnished.

At the same place we saw some PEACH TREES which have only been planted three years, but which cover an area of 240 square feet, and were at the time we saw them bearing comparatively good crops of fruit.

The principle on which Mr. KAY works will be indicated by the concluding paragraph of a plain practical homely paper of his on pruning forest trees published some 17 years since in the *United Gardeners' Journal*, which reads thus:—"I can easily perceive that my opinion on summer pruning will not be very favourably received by some portion of your readers, when they find that their hitherto agreeable idea of cutting off branches for the better support of those which are left, is not only erroneous, but diametrically opposed to all laws connected with vegetable physiology."

—— We recently mentioned (p. 478) that Mr. THOMSON of Dalkeith, who has been discussing with Mr. TILLERY, of Welbeck, the subject of LATE *versus* EARLY GRAPES, proposed to exhibit before the Royal Horticultural Society's Fruit Committee in January or February next, newly ripened Black Hamburghs, against the best old black kept Grapes Mr. TILLERY can bring out. The challenge was made in the *Florist*, and in the same publication Mr. TILLERY now accepts the challenge in these words:—"Not having received the May Number of the *Florist and Pomologist*, I did not see friend THOMSON'S challenge to show his winter-ripened Grapes against late ones in January or February, until noticed lately in the *Gardeners' Chronicle*. I shall be quite prepared to do battle with him during these months at the several meetings of the Fruit Committee. We may therefore look forward to some interesting exhibitions at the opening of the season of 1863.

—— The following further report by Mr. SKINNER on the state of the Orchids in the drawing room at Malvern Link, previously alluded to in our columns at pp. 212, 356, 380, and 452, will doubtless be read with interest.

Aug. 4, 1862.

1. *Lycaste.*—I sent this to Kensington for exhibition on the 21st May; it was afterwards returned to Mr. VEITCH, and has since pushed a new flower at Chelsea.
2. *Lycaste Skinneri.* — The leaves of this are still perfect, and two new pseudo bulbs in great health are forming. I have cut off a dead flower to-day, but the bloom which opened on the 23d May is at this moment in perfect beauty, though the plant has not had proper care in shading.
3. *Barkeria.*—This is growing vigorously, and will have five new stems, all of which will likely flower in the month of November.
4. *Odontoglossum grande.*—I brought this down on the 27th May; it has formed a new pseudo bulb, and the flower stem is now half an inch high.

The mode of treatment has never been changed from the first.

EGYPTIAN GARDENING.

(*Continued from p. 692.*)

MR. TRAILL, profiting by the fine climate, soil, and central position of Egypt, and aided by the liberal patronage of Ibrahim Pasha, resolved to create a garden such as would be unrivalled in the world for collection and grouping of tropical and exotic trees, a very difficult task to accomplish where a plane surface must be always maintained for purposes of irrigation. The almost total absence of rain in the neighbourhood of Cairo renders that mode of watering very frequent, and makes any attempt at undulating adornment of groundwork almost impossible.

To accomplish this object Mr. Traill placed himself in correspondence with the directors of the leading Horticultural and Botanical Gardens of England, the Continent, of India and America, from whence he constantly received seeds and plants, and sometimes even a collector was sent to obtain and transport plants of difficult growth or delicate constitution. That he succeeded there can be no doubt, at least if we may judge by the general praise bestowed upon his garden by all who knew it in its flourishing days, and the many fine avenues of Teak, Cathartocarpus, Ficus reflexa and indica, Casuarinas, and Poinciana regia, with which it is adorned; these last are about 30 feet high, branching at about 10 feet from the ground into regular round-headed trees, the branches at their greatest breadth being about 30 feet in diameter, lying massed over each other in perfect banks, from which in the flowering season start spikes of gorgeous vermilion and orange butterfly-like flowers, just enough to illuminate the tree without destroying the beauty of its silken verdure.

Dotted about still remain some fine examples of Caryotas, a noble Cocos plumosa, a still finer Banyan. The latter stands in front of the house occupied by Mr. Traill, and measures 25 feet in circumference at the base, and from its wide spreading top aëriel roots are fast finding their way to the ground. There are also some groups of Parkinsonia aculeata, one of the most picturesque trees in Egypt; it forms a compact round head from 10 to 15 feet in height, clothed with Blechnum-like delicate pea-green leaves, and the stem and branches are of the same colour; in summer it is covered with masses of pale yellow flowers having red-tipped anthers.

The first great destroyer of this garden was an unusually high rise in the Nile, like that of last year, which rose 30 feet above low Nile level, and drowned or washed away many of the valuable plants there collected together. Ibrahim Pasha, when he saw the havoc the Nile had made, said "*Malesh-lazem âmeló caminh*" (Never mind, it will be necessary for you, Mr. Traill, to make the garden again), and under his steady care the garden was again assuming its former appearance when a greater misfortune occurred. Ibrahim Pasha died, and the garden became the property of his three sons, Pashas Achmed, Ismail, and Mustapha, who, not having learnt the value of the fable about the bundle of sticks, each formed different ideas of its utility and worth, and as every Viceroy of Egypt forms opinions diametrically opposed to those of the one who preceded him, no arrangements were made about keeping this garden in order; and the Crimean war a few years later having raised Wheat up to war prices, every part of the garden available was ploughed and sown with Wheat. An English gentleman long resident in Cairo, and who was intimate with Mr. Traill, told me that shortly after the event above mentioned he went with some friends to see the Rhoda Garden, and found it in the state just described. He said, "When I saw the garden ploughed and broken up in such a manner, knowing the trouble and the labour poor Traill had had to get it into the state of perfection it was in a short time before, I felt I could have sat down and cried with vexation."

Among the other rarities of this garden were Cinnamon, Clove, Nutmeg, Coffee and Tea plants; they were moved some years ago to the garden of Ismail Pasha, on the Island of Gezira, and the Cinnamon and Clove trees only now exist. The wreck of this fine garden has still many visitors, particularly on a day which occurs about the end of April or beginning of May, termed by the Arabs *Shem el nâseme* (smelling the balmy air), when every class of the Cairenes turn out early in the morning, bouquet in hand, and in holiday attire, to walk the gardens and groves of the vicinity; and though Myrtle walks, fine shrubs, and gay flowers have given way to Clover and corn fields, it is still the most picturesque and park-like place to be found in Egypt, and has in addition to its other attractions the reputation of being the place where Pharaoh's daughter found the infant Moses; also the Nileometer, a work of great antiquity, stands on the upper end of the island.

Several other gardens and experimental grounds were formed under the direction of Mr. Traill; but these are likewise in a state of decay, owing to the young scions of Egypt having no reverence for the works of their sires; each seeks to build up something new merely to illustrate his own existence for the time. The works of yesterday are neglected for those of to-day. Thus ruin and novelty are ever side by side.

Ismail Pasha, the heir apparent to the Viceroyalty, is at the present time forming a new garden on the Gezira Island opposite Boulac, and situated about a mile west of Cairo. The Palace gardens and appendages have been upwards of seven years in progress, and the work proceeds so painfully slow that it makes one's nerves ache to watch its progress. Yet many novelties have crept in, and the parts finished are said to be the most costly and recherché of anything of this kind yet attempted in that country. As in the case of every garden in Egypt in which there is an Hareem Palace, a separate garden for the ladies is formed adjoining the Palace, and enclosed by walls varying from 20 to 30 feet in height; the one at Gezira is probably the best and largest harem garden in the country, and would but for its prison-like walls be a little Paradise anywhere. Facing the windows of the rooms occupied by the ladies elect, on an elevated terrace is a square basin, into which four large lions jet streams of water from the outside of a Chinese pagoda-like temple; the basin is surrounded by a low handsome iron railing with gates at each side, for the entrance of some miniature boats which float in the basin; walks and steps of marble, and a cased marbled wall about 4 feet high, surround the basin and two small inner gardens. Near the steps, and by entrances from the different compartments, are some fine marble vases, and at the different angles of these walls are some very good statues, copies from the Italian school.

At the north end of the basin, against the boundary wall, is a small Moresque temple, furnished with divans, &c. A low wall, with a gilt iron palisading, divides the hareem garden in the centre. This is a kind of rubicon, and the gardeners are only admitted into the inner compartment just described, under the surveillance of some of the swarthy sons of Africa, known as eunuchs. These fellows are the terror of the poor Arab gardeners, who scarcely ever come in contact with them without getting a beating, unless they have managed to bring with them some of the choicest fruit in the garden, for those thick lipped specimens of humanity to wag their jaws over. The outer compartment of this garden, about an acre and a half in extent, forms a kind of walking or playground for the ladies when they feel disposed, or rather when permitted, to enjoy a little fresh air. The eunuchs scour the garden with loud cries of *yella yella*, and the lazy Arab gardeners, only too glad of any excuse that gives an opportunity to have a smoke and talk, bundle out like a flock of sheep before a brisk dog. The joyous shouts and merry peals of laughter which follow the clearance of gardeners, tell how much the fair prisoners are enjoying themselves. In one corner of the garden is a labyrinth formed with Myrtle hedges, and in the other corners are wooden horses and box swings, such as are seen at fairs in England. In the centre of the garden is a beautiful fountain from the Val d'Osne, surrounded by a marble basin and steps and a walk 15 feet in width, the whole inclosed with a 2 feet balustrade and cornice, and entered by four central paths, each having two of the most elegant marble vases, erected on round columns and pediments, I ever beheld. In the divisions formed by the walks near the balustrades are planted in each two Weeping Willows, the whole being as gardenesque in appearance as the most fastidious taste could desire. The Weeping Willow in Egypt deserves especial mention for its rapid luxuriant growth and great beauty, beyond any other tree in the country. The trees referred to in connection with the fountain in question were planted about five years ago, and were then about 10 feet high, with stems the thickness of a man's wrist. They are now 25 feet in height, have heads proportionately broad, and the stems at the base are 3 feet in circumference—they form intense shade, and have the appearance of a mountain of plumes; the young shoots, which are produced in great masses, are often 10 and 15 feet long, and so flexible, that a lady might darn her stockings with them. These trees are held in great esteem by the hareem ladies, who are great lovers of shade and scented plants of almost every kind, from the fine scented Jasminum Sambac to the common Basil and Southernwood. After the Willows the Rose trees of this garden attract most attention.

Roses do not long remain small bushes in this climate; they rise into large shrubs, particularly the China and Tea-scented classes, which are always covered with bloom during autumn and spring. To break the monotony of the high blank wall which surrounds this garden, Bananas are planted, which serve a double purpose of hiding an ugly wall and producing fruit for the vortex of mouths one has to supply in an establishment where 150 ladies live. The Turkish women are very fond of roaming the garden and gathering fruit and flowers for themselves, consequently every hareem garden contains a mixture of everything the country produces; in the garden at Gezira were Mangoes, Loquat, Guava, Custard Apple, Soursop, Rose Apple, and every kind of Orange, Citron and Lemons, with a first-class collection of European fruit trees from Belgium, every kind of which succeed well in the country, and I have gathered Peaches from standard trees 8 oz. in weight. Amongst the over-crowded trees of this garden are about 200 statues, which were intended for the outer garden, and some were placed in front of the Pasha's Kiosk; but one day a venerable and pious Sheik or D.D. of the Muslim creed, paying a visit to Ismail Pasha, told him it was against the command of God and the Prophet to make anything in the image of man, and producing the Koran to affirm his assertion, I had speedy orders to dismount my beautiful Venuses and Psyches, and hide them away in the hareem garden, where only myself and the Arab gardeners were allowed to enter. I shall never forget the amusing and serious face of Ismail Pasha when he told me to remove the statues; he really looked as if he believed all the Sheik had told him. The portions of the outer Gezira garden which are finished, contain a beautiful Pavilion Kiosk, fronted by a flower garden around a circular lake of water, on which are swans, pelicans, and many of the beautiful varieties of wild ducks for which Egypt is famous. This is surrounded by a semi-circular hedge of Myrtle, about 4 feet in height and 2 feet and a half in thickness, having three entrances, each guarded by two lions rampant, with shields bearing I. P. in conspicuous large letters.

The drives are broad, bounded with low Myrtle hedges, backed with borders 15 feet wide, planted with various trees and flowering shrubs; a hedge of Duranta is planted at the back of the borders to hide the cultivation of the interior compartments, which are at present used for rearing young trees and nursery stock, planted amongst the Orange and other trees of larger growth. At the back of the kiosk are some lawns formed of the common Cyperus-grass, which

resists the strong heat of summer, and is better adapted for the country than European Grasses. A winding river about half a mile in length, just made, completes the category of work at present done at this place, which if carried out as commenced will form a very respectable garden.

It would be unfair to leave this part of the subject without referring to the garden of Mustapha Pasha, who is also a patron of gardening, employing a French gardener to direct his work. In the above named Prince's garden are erected some glass houses for Pine cultivation, the only ones existing in Egypt; with the exception of this novelty there is nothing worthy of special notice.

I omitted to mention amongst many other fine things introduced into this country are three kinds of Bougainvillea, which grow and flower in a manner that elicits admiration from all who see them, and I never yet could get a lady away from this queen of climbers without giving her some racemes of its fine magenta-coloured bracts. I have seen it covering a space of 40 square feet, a perfect blaze of flowers. *Peter Wallace, Terrace, Turnham Green.*

(*To be Continued.*)

Indoor Gardening.

The permanent plants are always the most important, whether for standing in windows or for filling the little hanging greenhouses which we have been considering lately, and there are two great points it seems to me about these which window gardeners sometimes are apt to mismanage or neglect—two points, in fact, of which window gardeners dread the very mention—I allude to *potting*, and still worse, to *pruning!*

Everybody who ever has had three window plants to take care of must be aware of their tendency to grow long, but not quite so bushy as might be desired. Two reasons especially tend to produce this fault: first, that the plants are often placed in too close quarters to allow light and air to penetrate; and secondly, they are allowed unchecked to run up to an awkward height, so that when we cut off one-third of each new shoot the lower part becomes bare, and a sort of bush of sprouts breaks out suddenly round the top.

Of course now in window gardens it is a great object always to prevent this ugly and irregular growth; and hearing of all the directions as to pinching, not chopping, dwarf fruit trees in pots, it seemed to me to be the most feasible plan for such pot plants also. I have tried it often, and many people also tell me it answers well. In this case you only pinch off the very end of a shoot that is likely to grow too long, or that is inclined to grow out without corresponding bushiness near the stem. In all plants where the shape does not depend on a good leader, this mode I think answers well, and saves many dangers attendant on ill-judged pruning; where the leader is of importance of course it must not be touched, and also we must beware of plants which blossom on the tips of the branches. These, however, are not at all numerous, though quantities flower on the young side shoots, which this method increases very much.

Secondly, as to the potting. Does it not stand to reason that a plant in a pot must want a sort of close-packed food, like the meat in a meat lozenge. I am almost sure, on the contrary, that the "light handling" system is terribly widely practised. How else do we account for all those untidy uncomfortable Geraniums, in each of whose pots there is a shrunk ball of earth far below the rim, and very often shaky? The pot may not have been soaked before it was first filled, the effect of which for some reason that I forget is to make an empty space between the soil and pot, like there comes in a wall built with new dry bricks to which the mortar binds not; but quite as often, perhaps, the soil has been put in loosely and has merely caked from natural dryness following upon wetness, and thus the plant has, in fact, about one-third of the food it might have.

It is really very essential to attend to such things at present. The great gardeners manage to have splendid plants in 4 or 5-inch pots, and people who see this copy the size of pots—only we do not attend at the same time to the well packed-in soil or to the pinching system, saving a waste of growth. Another grievous forgetfulness too, especially in cases where watering the plants has to be done by deputy, is that very few deputies indeed can be prevailed upon to consider that a plant nearly level potted (potted that is with packed soil firmly, nearly up to the rim of the pot, and if shrunk refilled), requires a different style of watering. We say generally "just fill up the pot and let the water run off," but in point of fact when done, that nearly amounts to no watering in these cases. The pot is nearly full, and it would require a considerable time to soak it. The right plan would be to give the surface watering, because this has the effect of encouraging surface roots, but to half fill the saucer also and let it soak a short time, unless we are luckily in a position to keep up continually some moisture round the porous pot entirely. In that case we really can hardly use too small pots. Where however we have these well packed pots of soil, even if of necessity they are unprotected, we may at least content ourselves with the hope that they are a great deal better off than their neighbours, which are loosely potted. It must take some time to *dry* through so compact a mass, while a bath in a tub at any time *soaks* it through and sets it up for days. The lightly potted things admit air very easily; everything with them easily comes and goes easily, water pours through quickly, so that it is sooner wet, but it holds after all far less, because the water of course where not soaked up flows down, and thus all the hollows left amongst the soil, are left unoccupied also by the water.

I believe this is one reason why things often grow well in sand. It is quite impossible then not to pack pretty closely. Of course in many things that blossom and die away, we have not any need to trouble about such extra care and caution. It is the lasting things that especially require it. The Myrtles for instance, the Rhododendrons, the Firs, the Ivies, the three latter of which, like Heaths and Camellias, may even have with advantage small lumps of sandstone mixed with the soil. Among these permanent plants we may also class the Jasminum nudiflorum, Cytisus, Daphne of several sorts, Berberis, Acacia, and Cistus, blossoming for the most part in the winter and early spring; and Azaleas, Camellias, and Ericas, when well covered in frost, do often as well or a great deal better in the "Belgian greenhouse," or in the window of a room without a fire, as in a room exposed to frequent change of temperature, and often deprived of the abundant air they need.

It is amongst these sort of slow-growing tough-leaved plants that we shall most wisely select our winter stock. It is troublesome work, and often ill-rewarded, to keep up in the autumn a stock of soft-wooded plants. For Roses, however, I must say a word most earnestly. The little red China Rose and the delightful Tea-scented ones do so delightfully in a dry place without heat. They ought, however, to be prevented flowering now if we hope to have them blossoming in the winter. *E. A. M.*

Home Correspondence.

Cottage Garden Societies.—We have looked with delight and admiration upon the glorious displays of flowers and fruit at the Royal Horticultural Society's and other great shows; we exult over the triumphs of skill and intelligence there exhibited; we return to our own humble gardens and watch with hope, not unmingled with anxiety, the progress of our latest acquisitions; we may regard with satisfaction our own little successes; we watch eagerly for "latest intelligence" of new plants; we are deeply interested in knowing how many, and which among the "forthcoming brood" of new Roses will stand; we chafe under the disappointments of a fickle climate—in short all the doubts and fears beset us which more or less affect our own gratification in these especial particulars, and when we balance our gardening accounts of pleasures and regrets, we must feel that whichever way the result stands we have a duty to perform, which, if done faithfully, will add to the former and diminish materially the latter. This duty is not fulfilled by simply admitting that the benefits of good horticulture are of equal importance to the labouring poor in their humble sphere as to others—it is a more active principle; it requires the direct aid and recognition of all who are capable of affording them; it calls upon the wealthier to assist with their contributions, the professional gardeners with their advice, and the amateurs with their cooperation in devising and carrying out the best means in aiding their poorer neighbours where they can aid themselves. Happily, the benevolence of this country never stands still; where there is good to be done, it is sought out and worked out always with a good will, and nearly always successfully. The cottage garden has become an object of interest and solicitude, frequently by personal acts of kindness to the occupants by individuals, and more commonly by the formation of societies, whose especial care is to promote general amelioration by offering rewards and gratuities for their good culture and best specimens of their produce. But this has not been done on a uniform plan—difference of times and situations must of course necessitate different modes of action; nevertheless the principle has for some years past been acknowledged, that the industrious labouring man who takes a delight in his garden is deserving not only of recognition by his neighbours but also of reward, that is, of some gratuity or prize in addition to the actual reward his own industry naturally brings; this point arrived at it should not stop there, but while encouraging those who are already taking pains to apply the resources within their reach to the production of profitable culture, others should be induced to follow their example. Some provincial Horticultural Societies have established a cottage garden department in connection with their principal show. In some such instances I have known the cottagers' produce to be exhibited outside the tent or other temporary erection which contained the main attractions, as if the more homely but invaluable Potatoes and Cabbage were either considered unworthy of a place under the same covering as the pretentious Melons and Cucumbers of the professional grower, or were allowed to be brought there on sufferance. Apparently, in such cases, the cottagers' competitions are left to accident; if he has anything to show he may bring it, and if nothing is brought it is of little consequence. I conjecture this, not by any means with a view of depreciating any kind of encouragement whatever that may be held out to the cottager, but because it is ineffectual in working out sufficient general good in the district in which such shows are held. If the labouring man is only allowed to exhibit his produce on sufferance, he had better not exhibit at all; and exhibitors under those circumstances are few and far between. There are not enough of them—hence I affirm that the plan is ineffectual. If provincial societies can afford to have grand shows they ought also to be able to afford the cottagers suitable opportunities for displaying their garden produce, either by granting them a separate show, or by putting them on such a footing in connection with the great show as will effect the object in view. In numbers of country towns and villages where grand shows are not attempted and where Cottage Garden Societies have been got up, the claims of the labouring poor are more fully acknowledged; and whether there be two, or three, or more parishes grouped together, or only a single district, the promoters are always deserving of success on the simple score that they cannot have been prompted to their exertions by other than a kindly feeling towards their resident poor. In all undertakings of this kind, the funds at the disposal of managers are necessarily limited; the question is, how may they best be disposed of—how make the smallest amount go the farthest possible? It is most usual to appropriate the donations and subscriptions collected for the purpose to two chief items—to the best stocked and most carefully cultivated gardens, and to prizes for the best specimens of produce; to the latter must be added expenses attending the show—but which, if well managed, may be greatly diminished by charging a small fee to visitors for admission, and by rendering the show attractive by prevailing upon the owners of plants and flowers in the district to lend them for the occasion. Now it is of most frequent occurrence that the entries for the garden prizes are very few in comparison with the whole number of cottage gardens within the district or parishes over which the appointed judges of the society have jurisdiction, if I may use the term. Three or four industrious men have attained the knowledge and habit of getting up their gardens satisfactorily—they carry off the prizes year after year—the others cannot touch them, they try for a short time and then abandon all further attempts, saving for raising vegetables for the use of themselves and families. The prizes may be stretched out to a fourth and even to a fifth and sixth, yet the great majority, the mass, is left untouched. There is nothing unnatural or wrong in this, it is but just that the best man should have the prize, and if he gain it year after year the greater the honour to him. In the competition for the prizes for vegetables, the number of competitors is also very often far too few, chiefly those who have succeeded with their gardens, with the addition of some whom the accidents of favourable situation, good soil, or a propitious season have enabled to get fair crops and stimulated to try their chance for a prize. The earnest hope of inducing societies to extend their sphere of usefulness, to point out how it may be done, and to prove that the good may be accomplished with a limited amount of means, has prompted me to pen this article, and as facts are more powerful than arguments, I propose to state as briefly as is consistent with clearness what has been done here by the Society of which I am the Secretary. On Wednesday, July 23, the Blechingley and Nutfield Cottage Garden Society held their fourth annual show in the park of the President for the year, Henry E. Gurney, Esq., Priory, Nutfield, Surrey. The show was held in a spacious tent, 80 feet long by 20 wide. Three tables, extending the whole length of the tent, with cross benches at the side opposite the entrance, were entirely filled with garden produce from the two parishes, with the exception of a collection of Ferns from Messrs. Ivery, of Dorking, and some boxes of cut flowers, chiefly Roses, from Mr. Cattell, of Westerham, nurserymen in the vicinity, who supply the patrons of the Society, and who were on that account solicited to assist in rendering the show attractive. Of the three tables the outside two were entirely filled with cottagers' produce, the number of competitors being 96, and the number of specimens sent in by them upwards of 600. These two parishes extend over an area of about 9000 acres, an exclusively agricultural district, but containing many mechanics employed by the resident tradesmen. Scattered over the two parishes are about 250 cottages with gardens attached, occupied chiefly by the agricultural labourers, some being inhabited by the mechanics, working gardeners, &c., who, by this Society, are formed into a distinct division, and not allowed to compete with the agricultural workmen, who form also a division. The whole of these gardens are inspected by judges appointed by the committee during the summer previous to the day of show. The judges are directed to select the four best managed gardens, two in each division; to these four a prize of some value is awarded for the purpose of keeping alive a spirit of competition; they are also directed, in addition to the four best, to make a list of all they find worthy of reward, classifying them according to the degree of skill and care displayed in the culture, distinguishing the divisions, but not making more than three classes in each. This year, in the agricultural labourers' division 12 were

recommended for Class 1, 39 for Class 2, and 68 for Class 3. In the Mechanics and Garden Labourers' Division, 8 were recommended for Class 1, 9 for Class 2, and 12 for Class 3; in all, 148 out of the whole 250 inspected. Last year there were 141, and the year before 101. Now, the sums awarded to each in these several classes depend on the amount of subscriptions and donations collected, and so satisfied are the resident gentry, farmers, and tradesmen, that the principles which guide the committee in awarding the gratuities have proved to have worked out immense good in the district, not so much by the prize money distributed among the labouring poor, as by the greatly increased quantity of useful food actually raised by themselves, that the liberality of the patrons have enabled the committee this year to award the 1st class 5*s.* each, the 2d 3*s.*, and the 3d 2*s.* each. Small as these last two sums are, they are not despised by the recipients; the fact of a recognition of their industry even by so small a sum serves in some degree to stimulate them to perseverance. This is verified two ways — successive inspections report little or no falling off which cannot be accounted for by adventitious circumstances—and the large number of competitors at the annual shows. This year, as before stated, there were 96 exhibitors, last year 120, the difference being on account of the season. In both instances the quality of vegetables was such as to call forth the highest tribute of praise from the professional gentlemen who acted as judges. Their task was not an easy one; the articles exhibited were, of course, those most necessary to the cottager— Potatoes, Cabbage, Carrots, Peas, Onions, Parsnips, Turnips, Rhubarb, Beans, Red, White, and Black Currants, Gooseberries, Raspberries, in all about 30 different varieties of vegetables and fruit, besides flowers in pot, in bouquet, and wild flowers collected by children. The competition in all these various items was very keen this year. The judges awarded to round Potatoes alone three equal first prizes, three equal seconds, four equal thirds, and four equal fourths; and so highly were the specimens commended that, with the assent of the committee, six extra prizes of small amount were awarded to the same article in addition to the foregoing. A similar plan was adopted with the other produce as regards extras, but not to such an extent—it being considered that Potatoes being the chief article of the cottagers' care, the greatest number of awards should be assigned to them. Other particulars are purposely omitted here, sufficient being stated I think to show distinctly the method pursued by this Society and to prove that it is successful. The central table and cross benches at the bottom of the tent were occupied by plants and flowers kindly lent for the occasion by the patrons and the nurserymen who serve them. These formed a very pleasing display, and although it is unnecessary to enumerate here the various plants brought, yet it is due to the respected raisers of them to single out a few specimens. Fine foliaged plants, as Caladiums, Dracænas, Zebrinas, Begonias, &c. were supplied by Mr. Lovell, gr. to the President, H. E. Gurney, Esq. Amaryllis and some stove plants by Mr. Duncan, gr. to Rev. C. P. Chawner, one of the Vice-Presidents. A remarkably fine Orange tree, with two dozen fruit of correct form and colour, from the greenhouse of Edward Birkbeck, Esq., one of the Vice-Presidents. Pelargoniums by Mr. Briggs, gr. to the Misses Fuller. The fine condition of all these plants proved that they can be got up in Surrey as well as elsewhere. Nor should mention be omitted of some Fuchsias by Mr. Thurston, assistant gr. to H. E. Gurney, Esq. The subject of Fuchsias, it will be remembered by the readers of the *Gardeners' Chronicle*, was ably discussed in the early spring, as to the state in which they should be exhibited at shows. It was then suggested that young plants, compact and well bloomed, were greatly to be preferred to old and straggling things too often intruded into floral exhibitions. The idea mooted in the articles alluded to has been admirably carried out by Mr. Thurston, whose beautiful plants in the conservatory of his employer excite the admiration of all who see them. Nor was this show without its novelties—a beautiful Rose raised by Mr. Cattell of Westerham was exhibited publicly for the first time. Of the merits of this seedling I can only speak from the view of the single bloom there shown. It is of a rich crimson, large and full, and I believe a great acquisition to the few produced by our English growers. It is refreshing to find such Roses as Beauty of Waltham, Reynolds Hole, and this new production of Mr. Cattell's, which will bear comparison with the other two coming in close succession. Our countrymen do not mean that the French growers are to monopolize the whole brood, and I am sure Mr. Radclyffe will form a just estimate of this novelty when he sees it. It would be superfluous on my part to add a word of praise to the magnificent collection of hardy Ferns possessed and raised by Messrs. Ivery; that firm enjoys a world-wide reputation for these as well as for Azaleas, and my personal knowledge of the head of that firm assures me that their reputation is richly merited and worthy of greater extension if possible. The amount distributed as prizes to the working people on the evening of the day of show was about 42*l.* *Adolphus H. Kent, Grammar School, Blechingley, Surrey.*

Orchard Houses.—As orchard-house experience has been invited, I venture to give mine. Six years ago I built an orchard house 60 feet by 20, and filled it with trees of all sorts from Rivers. I knew nothing of fruit growing; had to start to business at half-past 7 in the morning, and did not get back till 6 or 7 at night. My "gardener" was a carman, who knew how to dig, and that was all, so we steered closely by Rivers's directions. The trees grew well, and fruit was plentiful and fine; and unless where trees had been allowed to overbear grossly, the yearly crop has been regular. I propose having the pleasure to send you photographs of bearing trees of Nectarines, Peaches, Plums, and Pears, which in my humble opinion leave nothing to be desired. I have found Figs too to answer perfectly; the only serious trouble I have had was with Apricots Several of my trees (Peaches and Apricots) have shanked off and died; the fruit of the survivors is most excellent, but the crop is with me neither large nor certain. In two small houses I was looking over last week in the neighbourhood of Birkenhead the Apricots were, on the contrary, the largest and most certain crop. I fancy the question is one of air enough. Several friends have rather taunted me with buds falling off and fruit dropping, which they said could only be owing to Gishurst Compound; so last winter I determined to "better the instruction," and dosed every one of my trees very much more heavily than trees could have been exposed to in regular practice. I did kill some buds (at least, buds fell off); on the less strong trees a considerable proportion, and for a short time I thought I had sacrificed much of my Pear crop; however, in almost all cases it has proved only a wholesome early pruning, as the trees have full crops. I find that a more recently built low house, 30 feet by 14, on the whole gives the finest flavour and colour to Nectarines, Peaches, and Apricots; Plums and Pears are ripened outside. *G. W., Gishurst Cottage, Weybridge Heath.*

Glow-worms.—It may interest your readers to know that flower gardens and lawns can be illuminated at this season of the year in a manner that is quite dazzling with these beautiful little creatures. During the late holidays my children amused themselves in collecting a quantity, and placing them on the lawn in the shape of groups and figures; they also festooned the borders with them, and the effect was most brilliant. *W. J. Epps, Maidstone.*

Small Birds.—When a subject of public interest is discussed, the opinions of individuals are often guided by their own particular feelings, without considering the real merits of the question. As in great things, so it is in little. Persons jump at conclusions without looking into the merits of the case. Now the bird controversy seems to be one which is taken upon extreme grounds by those who are destructive and those who are preservative. The correct course appears to be the happy medium between the two. The indiscriminate slaughter of all small birds is a mistake—a distinction should be made with regard to those having soft and hard bills; the warblers and fly catchers, on the one hand, and the finches on the other. A few of the songsters live on our island all the year; some visit us during the spring and summer. The sparrow, greenfinch, chaffinch, &c., commit great havoc amongst fruit, Wheat, and Barley, and their natural enemies the hawks having become almost extinct, near the haunts of man where the common sparrows rejoice to congregate, it is therefore necessary to keep them under control at certain seasons of the year. The warblers and flycatchers should, on the contrary, be protected with the greatest care, their principal food consisting of minute eggs, insects, and grubs. The linnet, the siskin, redpole, and muggy, may occasionally pierce a Cherry or a Plum; this is not from choice, but in search of a maggot or caterpillar, which is feeding on the fruit. These interesting and useful birds are sure not to be too numerous; many of them, being migratory, fall in their long flights from place to place. Nevertheless, they are killed as supposed marauders, and for the benefit of bird stuffers. The lark, linnet, robin, titmouse, hedge sparrow, &c., are also persecuted by men and boys. If the latter knew what an increase of Apples and small fruit would result from befriending the true insect-feeding birds, they might be induced to have compassion upon the innocent victims, on the score of self interest. *Falcon.*

Trees in Pots.—In p. 693 your correspondent "Lancashire" refers to his trees, and says:—"They are not treated on Mr. Rivers's plan, but confined to pots." I have always understood that Mr. R. is a strong advocate for pot-culture, although he points out how trees may be planted in orchard houses, if such a mode of culture is desired. I know well that all his finest and oldest trees are in pots, some of them placed on bricks, as mentioned in 10th edition of "Orchard House," so as to be fed entirely from above (see p. 51), their roots not being suffered to go into the border. The other trees are placed on the border and their roots "confined to the pots" by being lifted twice in June and twice in July, so that only a few fibrous roots make their way through and seem to give increased size to the fruit. The plan they are treated on if different from the above would interest your readers. *Persica.*

Trade Memoranda.—I think the enclosed letter from a person calling himself by a double Christian name may be of use in cautioning the Trade. I executed the person's order, with instructions not to leave the goods without the money, and I wrote to him to this effect. Upon the carrier's calling he found the gentleman's residence a coffee-shop, and that he was stopping there, but was not within; consequently the goods were taken back to the inn, ready to be delivered to this party upon receipt of the money. He has not called, and the goods are returned to me with 9*s.* 2*d.* charges. *E.*

Societies.

Royal Horticultural: *Aug.* 1.—S. Godson, Esq., in the chair. The following candidates were elected, viz.:—

His Highness Mohammed Saïd, Viceroy of Egypt (Honorary Member); R. Abbott, Esq.; Lady Brinckman, J. Campbell, Esq.; Miss C. Hardy, Captain G. Lane, D. Mac Gillivray, Esq.; and T. T. Paget, Esq.

Entomological: *Aug.* 4.—F. Smith, Esq., President, in the chair. On the motion of the Rev. Hamlet Clark a vote of thanks was passed unanimously to W. W. Saunders, Esq., for his kindness in entertaining the Society at Reigate on the 6th ult. Mr. S. Stevens exhibited a box of magnificent Coleoptera collected in the interior of Cochin China by the late M. Mouhot. Mr. Stainton exhibited a curious series of varieties of Gracillaria semifascia reared from small conical galls on Maple leaves. Mr. Wallace exhibited some remarkably effective photographic representations of insects, both of the natural size and magnified. The President exhibited two very rare Staphylinidæ captured at Reigate by his son. Also a singular specimen of the honey bee, exhibiting the characters of all the three kinds of individuals in a hive, the head being male, the legs partly male and partly worker, and the sting like that of the queen. He also read a paper containing a revision of the Cryptocerides, a remarkable tribe of exotic ants. Professor Westwood gave an account of a bee which he had recently captured having a number of Orchid pollen masses attached to its forehead. Mr. Wallace communicated some notes on Nematus ventricosus, the larva of which has attacked Gooseberry and Currant leaves during the two last and present year in immense quantities, and stated that from observations which he had made the most effectual mode of destruction was to collect the leaves as soon as they show the attacks of the newly-hatched grubs, which are then congregated in large numbers on the undersides of the leaves where the eggs had been deposited, the leaves for the first day or two being easily distinguishable by being riddled with small holes. If this be delayed for three or four days the grubs wander off singly to other parts of the trees, and are then more difficult to be dealt with.

Notices of Books.

British Columbia and Vancouver's Island. By D. G. F. Macdonald, C.E. 8vo. Longmans. pp. 524.

Here is a portentous volume professing to treat of our two youngest colonies by one who begins by assuring his readers that "he can have no possible inducement to advance statements unwarranted by facts." Seeing that nobody has questioned the gentleman's motives, such a disclaimer inevitably suggests the well known *qui s'excuse s'accuse*; and we suspect that if his true history were discoverable the application of the proverb would be just enough. The author says he has been employed professionally by the "Chief Commissioner of Lands and Works of British Columbia," but he does not say why he ceased to be so employed; he was engaged moreover on the "British North American Boundary Commission," but the cause of his leaving it remains unexplained; "private individuals" too availed themselves of his services; nevertheless he left them, or they left him, we know not which. One would have thought that advantages like these would have proved golden opportunities to a man of energy and talent, the only men wanted in new colonies; but we are left to infer that such was not the case. It would have been interesting to learn why the author left Vancouver for San Francisco; why this thriving place was as unpropitious as Vancouver and British Columbia; and what it could have been that sent him home from California. It is very strange! Those of our acquaintance who reach Vancouver to settle prefer staying there, or if they come home it is only to go back, and generally with brides.

Judging from the tone of the book Mr. Macdonald went out expecting the roughest of our British Colonies to be a Paradise, New Westminster a kind of Edinburgh, Victoria a young Brighton, the Frazer river a Nile, and Esquimalt harbour a juvenile Plymouth. Instead of this he found British Columbia a land of mountain, swamp and forest, New Westminster a clearing of stumps inhabited by mosquitoes, Victoria only a village of wooden houses "beautifully situated," the Frazer river without "fertilising qualities, which is remarkable *considering the extent of its course*," (why remarkable, Mr. Macdonald?) and as for Esquimalt, although the harbour must be for large ships "and consequently the emporium" of the island, yet the town as it is called is "as yet a mere hamlet, consisting of half a dozen houses, three or four grog shops, two retail dealers, and a couple of stores." Did he expect that a new colony should be born into the world ready made and complete in every part like Minerva when she was knocked out of the head of

Jupiter. It is evident that our author has been to a region for which he is in every respect unsuited, and that like all such persons he has returned a disappointed man, seeking consolation in grumbling at the countries that rejected him.

The true history of his discontent is probably revealed, though dimly, in the following piece of Sybaritic twaddle.

"Although there are some handsome women to be met with amongst the northern Indians of America, there are none comparable to our tropical belles. In the native beauty of Panama the grace which pervades the whole figure is wonderfully brought out. There the female form is full of ease, delicacy, and beauty. The day was sultry as I turned into one of those snug retreats, scarcely visible through the luxuriant verdure, so frequent in the isthmus, to get a mouthful of cold water. The heads of the family had doubtless gone to the trackless woods to gather the wild fruits so pleasing to the eye and so grateful to the taste, for no one was visible but a young Indian maiden, who, fawn-like, startled at my approach, and would have fled into the thicket had I not made signs of peace and friendship. Raising my hands in the form of a cup, the woodland beauty was instantly reassured, and led the way to a shady grotto where a crystal mountain spring flowed gently from the rifted rock, whilst I followed in speechless admiration of the vision of loveliness which floated onward in such bashful coyness. This charming nymph was attired in a loose covering of the purest white, down which her plenteous black hair hung to an almost incredible length. Her complexion was soft tinted olive, so delicate that the slightest emotion gave a crimson hue to her soft and simple cheeks. Her forehead was exquisitely chiselled, and her features Grecian in their contour; but how shall I describe those glorious dreamy eyes, or those long, drooping lashes, which ever and anon came softly down, like silken curtains! Could an artist place on canvas the picture there presented, the shady dell, the tropical fruits and flowers, the limpid spring and mossy rocks, the emerald skies and purple mountain peaks, that sweet sad face and faultless form, he might lay down his pencil and live upon his fame for ever. As she stepped on the slippery rock, with a quaintly fashioned Gourd, to dip up the clear water, there was disclosed a foot whose polished outlines had never been warped by the rough shoe of civilisation, and which her native innocence had never been taught to hide. She was indeed exquisitely beautiful, and recalled the lines of a great poet:"—and so on.

The author here betrays himself. The country for him was the "land of the Myrtle and Orange," where "all *save the spirit of man* is divine." He should never have exchanged kid-gloves and patent leather boots and a bed of down for a buffalo robe not over sweet, a trapper's rations, and a surveyor's tent. "Fawn-like maidens," "sweet sad faces," and "faultless forms," "attired in loose coverings of the purest white," the charms of a Musselman's paradise, were not to be expected, Mr. Macdonald, in British Columbia, where there is no hope for the luxurious and effeminate.

If this book were really trustworthy it might be useful in spite of its dismal descriptions and preposterous sententiousness. But when we find an author who boasts of his personal knowledge of all that he mentions, asserting that at Victoria the thermometer stood at 26° below zero in the beginning of Nov. 1859, in a country which elsewhere he declares to be the "mildest and most healthy in British North America," our faith in his accuracy is shaken to the foundation. It so happens that although the last part of the description is true enough, the first is just the reverse. We affirm that no such cold has ever been experienced in Vancouver, and that at the very time when, according to Mr. Macdonald, the thermometer fell to 26° *below* zero, it in reality did not register less than 13° *above*. If in such an important point as this the author is wrong to the extent of 39°, what faith can be placed in his other statements?

When we look to what he has to say upon natural history our distrust increases instead of diminishing. Vancouver "possesses but a poor Flora, and no new varieties of plants have been found." Will Mr. Macdonald condescend to look at the Vancouver Court in the International Exhibition? and will he tell us what he really means by "new varieties of plants?" We believe indeed that nothing has been newly created for his special contemplation; but we can inform him that in point of richness the island does not yield to England herself. So with British Columbia; it too "presents but a poor Flora." We should be obliged by being told where in the same latitudes there is a richer; here however the author walks on stilts, and we especially recommend the beginning of his 7th chapter to all admirers of commonplace magniloquence. Upon turning to his first chapter we find the clue to his Natural History absurdities. He knows nothing whatever about the subject. According to his account "Cedars" grow in British Columbia upwards of 200 feet in height? What are these Cedars? which as he wisely remarks are found instead of Palms and Bananas Imagine the expectation of finding trees of the tropics growing in a country as cold as Scotland! Of Abies Douglasii all he knows is that it makes first-rate spars, a statement true enough; but then he adds that Pinus Lambertiana is also found in the colony. If that be so no one has seen it there except our learned author. Could we suppose him to mean anything, he might possibly have Pinus monticola in his eye.

But the volume is quite beneath criticism. The book appears to us to be as untrustworthy as it is prosy; and even if it were otherwise it would still remain a specimen of rigmarole in the book-making line the like of which we never saw before. The author writes in the manner of a man talking in his sleep, now on one subject now another, returning to the first and then discoursing of a third, to be followed again by one of its predecessors. To wind all up appropriately, he treats his readers to some 21 pages of remarks upon the International Exhibition, chiefly borrowed from the *Times* and other newspapers, as if such matter had any earthly relation to British Columbia and Vancouver.

Garden Memoranda.

Messrs. Carter and Co's Annual Grounds at Dedham and St. Osyth.—That Annuals are destined to play a far more important part in the decoration of our ornamental grounds than they have ever yet done, is, we think, a fact which few who have had the good fortune to see the farms now under notice will venture to dispute. At both places they are grown most extensively; an acre of one variety is the rule rather than the exception, and, seen in masses of such dimensions, the effect of the different colours is truly magnificent. Fields of Scarlet Geraniums could not possibly be more striking than Mr. Dunnett's selected stock of Tom Thumb Nasturtiums or Tropæolums of the Lobbianum breed. Of the former there are no fewer than six varieties, varying from brilliant scarlet and dark crimson, to bright orange and yellow, spotted and blotched, dwarf, and so free flowering that scarcely a leaf can be seen. Mr. Dunnett has also a creamy white kind called Pearl, dwarf, compact, and free blooming, of which considerable expectations are formed. Of Tropæolums there are five distinct kinds, whose value in a decorative point of view can scarcely be overrated. Even into the pale yellow T. Scheuermannianum has been infused a colour equal to that of a rich salmon Pelargonium, and by means of constant and careful selection corresponding improvements are being effected in other kinds. Next in point of attractive display are perhaps Petunias, of which there are varieties of every shade, some self-coloured, others veined and pencilled in the most beautiful manner imaginable, while a third class has broad bands of rich purple laid on a white ground after the manner of Madame Ferguson, and in one instance we even noticed a crimson star set in a field of deep violet. This if constant will probably turn out to be an acquisition. With the different kinds of Clarkia large areas are occupied. In this class of Annuals great advancement has been made within these last few years. One of the most recent improvements is a white variety of integripetala, with blossoms as large as a half-crown piece and of snowy whiteness. Of equal beauty is C. integripetala marginata, a purple sort distinctly edged with white, and a dwarf purple variety named integripetala compacta, which rises little more than half the height of any of the others, will prove extremely useful for small beds, and other purposes for which low growing annuals are required. Of double flowered Clarkia pulchella—a great acquisition—there was also a beautiful plantation. Not less than three acres were cropped with Nemophila insignis, and of N. maculata and other kinds of Nemophila, there were also large breadths now being harvested. To this variety of Annual has also been added a very desirable new sort in the way of discoidalis, but with a conspicuous border of pure white. At least 4 acres were occupied with Stocks of different descriptions, which have bloomed well this year, though perhaps on the whole scarcely so fine as they did last season. Of Saponaria calabrica there are quite 4 acres, and covered as they are at the present time with multitudes of small starry pink flowers they have a most lively and cheerful appearance. To this has been lately added a white kind; one of the prettiest is rosea alba a new variety raised by Mr. Dunnett, whose delicate little flowers are minutely but distinctly margined with white. For small beds or for the decoration of rockwork nothing could be more useful than these compact-growing free blooming little plants. Rhodanthe Manglesi covered nearly half an acre with charming rosy pink everlasting flowers. Never before have we seen this in such fine condition; in its present state it forms one of the brightest ornaments of the whole collection. In the same way, but scarcely so handsome, is Acroclinium roseum, also an everlasting, and one whose dry hard blooms are very useful for making winter bouquets. The blue and white Catananches likewise furnish useful flowers for a similar purpose, as do also Xeranthemums and Helichrysums. Of Sweet Peas no fewer than 12 acres are grown, both in separate colours and mixed, and the fragrance emitted by such large plantations of them is truly delightful.

Among Stock-flowered Larkspurs are some beautiful varieties; they grow about 18 inches in height, and may be had in 10 different colours. Fine dwarf Rocket Larkspurs may also be had in 12 different colours, double and showy; the Chamois Larkspur is likewise a desirable variety, being a most profuse bloomer and dwarf in habit. These, together with Pyramidal and other sorts, were separated from each other by means of broad belts of Bartonia aurea. Among Viscarias is a new dwarf scarlet or rather purplish crimson, which as regards brilliancy of colour is unsurpassed in its class; V. Dunnetti and oculata coccinea are also beautiful additions, and form good companions to the old V. oculata. Among Leptosiphons are the new French hybrids in all shades of colour from deep orange to pure white; even purple and crimson are not uncommon among them, and their compact growth and the profusion with which they flower make them unusually suitable plants for edgings. Of Kaulfussia amelloides and alba there are fine beds. Lupines too of different colours are cultivated extensively; among them two of the most striking are hybridus insignis and Dunnetti superbus; we also observed two new sorts—one a crimson variety of Hartwegii, and the other a very dark purple, a cross between mutabilis and Dunnetti, and of other colours one of the very best is subcarnosus, whose compact and beautiful spikes of rich ultramarine blue and white scarcely rise more than a foot from the ground. Among Minor Convolvuluses monstrosus stands in the first rank; its yellow-eyed conspicuous large white blossoms, broadly edged with a band of the most beautiful deep purplish blue it is possible to conceive, are extremely handsome, and, produced in profusion as they are here, the effect is unusually striking. Malvas of different kinds generally succeed well; but this season their tops are blighted and dying off very much after the manner of diseased Potato haulm. Among Nolanas was a new kind, very dwarf in growth, and furnished with multitudes of silvery grey, or rather very pale mauve-coloured blossoms. To the handsome N. violacea, and others of this class, this will form a suitable associate. Mule Pinks and the different varieties of Phlox Drummondi vied with each other in brilliancy of colour, and among Candytufts—a class of annuals second to none, either for usefulness or beauty—were some splendid varieties of all shades of colour, from rich crimson to pure white. To this section Mr. Dunnett—now one of the firm—has lately added a delicate mauve-coloured sort, which in its way cannot fail to be a favourite. Of the showy yellow Eschscholtzia californica and tenuifolia, no less than 2 acres are grown, and nearly an equal amount of land is cropped with the different sorts of Coreopsis and Godetias. Among the latter is a charming new kind—delicate pink with a rosy eye—to which it is proposed to give the name of The Bride. With beautifully striped French Marigolds, large breadths are planted, and we also noticed on a border a charming dwarf sort, the plants of which scarcely rise 6 inches in height and are covered with orange flowers. For edgings and small beds this miniature Marigold will be invaluable; of the orange and lemon African varieties there is likewise a fine "strain," some of the blooms measuring quite 4 inches in diameter, very double, and in several instances beautifully quilled. Brachycomes, blue, white, and mixed, quite carpeted the ground with handsome dark-eyed Cineraria-like blossoms; and with the beauty of Nemesia versicolor compacta all must be struck; its lovely blue and white blossoms, not unlike those of a Lobelia, are produced in the greatest possible abundance, and the plants themselves are so compact that for edgings or even for indoor decoration in pots they would be found most useful. Mesembryanthemum tricolor and the white and yellow varieties alba and glabra also form very suitable and showy plants for sunny borders, rockwork or even for pot culture.

Among dwarf Œnotheras nothing beats macrocarpa and taraxacifolia; in the evening the bright yellow blossoms of the one and the pure white flowers of the other quite cover the beds in which they grow, and produce a charming effect at a time when there is little else to interest. Among tall sorts Lamarckiana is the best; it is said to be a variety of biennis, but it blossoms much more freely, and its blooms individually are at least three times the size of those of biennis. Associated with these was a new variety named cinnabarina, a kind with handsome orange yellow flowers with a throat stained with rich salmon. To tall sorts this will be found a useful addition. Of Chrysanthemums we observed fine beds of double and single yellow and white sorts; also of tricolor and the lovely variety called Burridgeanum. The last is certainly one of the most beautiful of single Chrysanthemums in cultivation, and one which when once seen in full beauty will not readily be forgotten. No garden either large or small should be without it. Eucharidiums of different sorts also made showy beds; a flesh-coloured kind has lately been added to them, which will form a good companion for the crimson and white varieties; we likewise noticed a fine bed of Alonsoa Warscewiczi, which when in full flower as this was, is very showy. Antirrhinums comprised some fine kinds, and of Poppies, both German and French, there were many brilliant sorts.

Vegetables in some instances separate the different kinds of flowers from one another, and among these a few are worthy of notice. First, may be named the Enfield Market Cabbage, with which at least 16 acres are filled; among other sorts were Battersea, Atkins' Matchless, Large and Early York, Champion, Oxheart, and Carter's Superfine Dwarf. Broccolies consisted of Snow's, Early Malta, Adams' Early White, Imperial White, Grange's Early, Dalmeny

Park, Tamworth, Wilcove, Large Mammoth, Miller's Dwarf, and Chappell's Cream. Among Peas were Advancer, one of the best dwarf wrinkled Marrows in cultivation. There was also an Early Kidney frame Potato earlier than the Ashleaf, with scarcely any haulm, and therefore very suitable for forcing. Dunnett's extra fine garnishing Parsley is also one of the best curled varieties we have met with. Of Lettuces, there are some fine sorts conspicuous, among which were Dunnett's Giant Black Seeded Bath and Carter's Giant White Cos. Cole's varieties of Celery are also grown in great quantities, as is also Turner's Incomparable; and among Beets are some high coloured kinds. Beck's Gem Bean may also be worthy of mention; it scarcely rises 8 inches in height, and bears abundantly. Of Leeks there were Henry Prize and Ayton Castle, both fine kinds. We also observed over 50 lights filled with Carter's Champion Cucumber, an excellent winter variety. Other vegetables are also grown extensively for seed; but these are among the most important. We may add that the utmost care appeared to be taken to keep everything true to name, and that neatness, order, and skilful management were everywhere observable.

Miscellaneous.

Testimonial to Mr. Marnock.—On the evening of the 7th inst., at the London Tavern, a Testimonial to Mr. Robert Marnock was presented on the part of 153 subscribers, consisting chiefly of exhibitors and others connected with the flower shows of the Royal Botanic Society. In the management of these exhibitions he has won the esteem of those with whom he has officially come in contact; and the substantial testimonial presented on this occasion, consisting of a Tea Service and other articles of plate to the value of 140*l.*, was an acknowledgment of the urbanity and integrity with which Mr. Marnock's intercourse with them has always been characterised.

The Lampern.—The Lampern is plentiful in many of the English rivers, and if the generality of residents near the water were only aware of its excellence for the table, would soon be thinned in numbers. The prejudice that exists against the eel and the lamprey is absolutely mild when compared with the horror with which the Lampern is contemplated in many parts of England. Not only do the ignorant people refuse to eat it, but they believe it to be actually poisonous, and would sooner handle an angry viper than a poor harmless Lampern. It is fortunate for the fish that its evil reputation is so widely and firmly established, for, under shelter of its name, it passes scathless through many a stream, from which it would be nearly extirpated if its right character and good qualities were better known. Granted the bad reputation, the creature certainly behaves in a manner well calculated to strengthen any unfavourable reports. For, as soon as grasped, it writhes about in a viperine, not to say venomous fashion, and is sure to fix its sucker of a mouth on the imprisoning hand. Few uninitiated captors can endure to any farther extent, and when they feel the cold lips pressed to the skin, and the quick suck by which the fish attaches itself, they generally utter a scream of terror, and fling the Lampern away as far as their arm can jerk it. Yet the creature has no idea of using its mouth as a weapon of offence, and when it affixes itself to the hand, is only seeking for a point of support as a fulcrum for its struggles. Certainly, it has teeth, and under proper circumstances can use them in the task for which teeth were made, but it seems either to be unable or unwilling to employ them as weapons. I have caught thousands of these fish with the bare fingers, and had six or seven affixed on my hand at the same time; but they never did the least harm, and though I am afflicted with a peculiarly delicate skin, they did not even leave the least mark of their presence. It is a pretty sight to see these fish come working their way up a rapid stream, especially when the water is high and the current strong. They are very cunning in seeking the spots where "dead water" is produced, and steer for them as for so many havens of refuge. In the shallower parts of the river they may be seen in their fitful progress from stone to stone, sometimes appearing singly, sometimes in bands of three or four, and sometimes in actual shoals. In the deeper water the Lampern is very seldom seen, as it is a ground-loving fish, and keeps itself mostly to the bed of the river. Now and then, however, a solitary specimen may be seen near the surface, wriggling its way painfully along; and in muddy spots, where it finds no hold, is sometimes swept back repeatedly by the current before it succeeds in passing the inhospitable spot. *Routledge's Illustrated Natural History.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—In order to maintain a certain amount of gaiety in this house a stock of succession plants must necessarily be kept up. Any plants, therefore, in pots, which it is desirable should be grown quickly, may now have a shift; it will not, however, be advisable to give them a large shift at this season, as whatever wood the plant makes after the present shift must be ripened, with perhaps the exception of such free flowering plants as bloom on the current growing wood. As this shift will have to carry the plant through the winter months, the drainage of the pots should be ample. When established a free open situation should be selected for the newly-potted plants, in order that any new growth made may be ripened. Where valuable, tender-rooted plants are out of doors care must be taken to keep heavy rains off them, and if the weather should again become dull and wet no time should be lost in removing them under the cover of glass. The more hardy plants left out should be examined frequently, to see that water passes freely through the pots. A number of Orchids will by this time have made their growth, and may be removed gradually to a drier and cooler atmosphere. Those which still continue growing must be syringed two or three times a day, and a humid air maintained by well watering all vacant surfaces. At the same time plants growing on blocks, or suspended in baskets, should be frequently soaked, to effect the complete moistening of the growing material. Some young plants which it is desirable to lose no time with, may again have a shift and otherwise be put in order for the winter.

FORCING DEPARTMENT.

Pinery.—Whenever the house for next season's fruiting is ready, succession plants had better be transferred there at once. Forward plants should be selected, and should have their final shift before being put into winter quarters. When it is desirable to have fruit early, say in April and May, the fruiting pot should not be over large, as it will be necessary to get the plants into rest early. As a rule they should have their pots well filled with roots by the middle of September, and while growing allow them all the light you can command, and a proportionate quantity of air. The best Pines for very early forcing are the Black Antigua, common Queen, and the Providence; to assist them a few Jamaicas may be started in October, as they take a couple of months longer to ripen than the above. For the summer crop the plants may remain for a week or two, unless there are reasons for potting them immediately. They may have a larger shift than recommended for the above, and should be kept longer growing in the autumn.

Vinery.—If the wood is nearly ripe, early forced Vines may have the lights removed; this course is, however, not imperative. But if the sashes are permitted to remain on, cleanliness must be observed and all laterals kept down.

Peaches.—It is a good plan to stop the wood of strong and healthy Peach trees about the period when the last swelling for ripening takes place, at least all the grosser portion of the shoots; give also liquid manure freely at the same time, provided the borders are dry, and that size in the fruit is a particular object.

Cucumbers.—If the weather continues bright, dew the plants overhead once or twice a week, observing always to use a fine rose, as a heavy stream breaks down the leaves. For the same reason, when the plants require water at the roots, it is best not to use a rose, but to introduce the spout of the watering pot between the leaves.

FLOWER GARDEN AND SHRUBBERIES.

Flower-gardens will be now in their greatest beauty, and every means must be taken to keep turf, gravel, and edgings of all kinds in the neatest possible order, that no drawback to the complete keeping of the whole may occur; dead flowers should be picked off daily, and stray growths reduced within proper limits. Trailing and climbing plants should be frequently gone over, to keep them neatly trained and secure from rough winds; for the same purpose examine Hollyhocks, Dahlias, and other tall-growing plants. Remove dead flowers from Roses, and encourage the production of autumn blooms in the Perpetuals, by watering with liquid manure, and mulching the surface of the ground, where practicable. Commence the propagation of plants for next season, in which dispatch with the more delicate Pelargoniums should be urged, to get them established before winter. Fork ground among Dahlias slightly, and mulch the surface with very rotten manure; water plentifully every evening when the weather is dry; take care that the laterals are well staked out, and use every means to entrap earwigs and other vermin which injure the flowers. Look over faded blooms of Pinks, extracting the petals from the pods. Should wet set in, these decayed petals will act prejudicially, by retaining moisture round the lower part, which will cause rottenness and consequent destruction. Rooted cuttings of Pansies for making up autumnal beds should now be ready, or nearly so. It will, therefore, be necessary to make beds for their reception. In doing this it is absolutely necessary that wireworms should be caught, therefore the compost should have repeated turnings; for these pests are as destructive to young Pansies as they are to Carnation layers. Throw out the soil from the Tulip bed on to the paths, so that it may sweeten previously to being returned. Some florists adopt the plan, with considerable success, of sowing Mustard seed on it, which, after having vegetated, is mixed with the soil; this is believed to be the means of banishing wireworms from the bed.

HARDY FRUIT AND KITCHEN GARDEN.

The summer pruning and nailing in of the current year's wood will require following up; the late rains have caused an increased growth of midsummer wood which must be suffered to remain for a short time; from the same cause it is probable some of the foreright shoots stopped earlier may again break; where that is the case it will be better to wait for a week or two, till growth becomes less active, before stopping or cutting back is resorted to. Those trees which had their breast-wood loosely tied in may now have the shoots cut back to two or three eyes, beginning with the least vigorous first, as they will be least liable to start, and allowing the stronger growing kinds to remain as they are till growth is so far on the decline that all danger of their again breaking is over, which would prevent the formation of fruit-buds from the remaining eyes. Where time will permit, Currants, Gooseberries, and Raspberries will be benefited by the remaining wood of the present year's growth being thinned, leaving only sufficient to furnish next season's crop. Clear away haulm stumps and the refuse of crops directly they are over, and if the ground is not wanted dig it and let it remain till wanted. At this season, however, there is seldom ground to spare; for it should be remembered, that the supply for several months of the next winter and spring will depend on the diligence now made use of, in planting out so large a supply of those kinds of vegetables most likely to be in demand as can possibly be found room for. Potatoes and other crops soon coming off may therefore be interlined with any of the different kinds of Broccoli or winter Greens; and where the above are not sufficient, a quantity may be planted at 1 foot apart, to wait for ground as it comes in by the removal of other crops.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Aug. 6, 1862, as observed at the Horticultural Gardens

July and August.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind	Rain
Thurs. 31	5	30.069	29.981	74	42	58.0	64	61½	S.W.	[illegible]
Friday 1	6	29.997	29.967	82	45	63.5	64	61	S.W.	[illegible]
Satur 2	7	29.916	29.918	79	41	60.0	65	62	S.W.	[illegible]
Sunday 3	[illegible]	30.048	29.987	81	40	60.5	65	62½	W.	[illegible]
Mon. 4	9	29.996	29.903	75	54	64.5	65	62	S.W.	[illegible]
Tues. 5	10	29.659	29.595	74	47	60.5	65	62	S.	[illegible]
Wed. 6	11	29.749	29.666	71	50	60.5	64½	62	S.W.	[illegible]
Average		29.966	29.859	76.5	45.5	61.0	63.0	61.8		[illegible]

July 31—Overcast; very fine; fine but cool at night.
Aug. 1—Very fine; hot sun and very dry air; fine at night.
— 2—Overcast; very fine; rain.
— 3—Very fine, hot; fine; cold at night.
— 4—Very fine throughout.
— 5—Very fine; few low white clouds; fine.
— 6—Very fine; cloudy; rain at night.
Mean temperature of the week 2 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Aug. 16, 1862.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 10..	75.5	52 [illegible]	64.2	17	1.06 in	1	6	2	2	5	13	6	1
Mon. 11..	75.8	51.8	63.8	17	0.78	1	1	3	1	5	14	10	1
Tues. 12..	75.2	51.2	63 2	14	0.47	2	2	1	1	6	13	[illegible]	4
Wed. 13..	74.1	50 2	62 2	16	1.14	1	3	2	3	5	14	3	5
Thurs. 14..	72.3	51.1	61.7	14	0.79	—	9	4	2	2	12	5	[illegible]
Friday 15..	72.8	50.1	61.5	14	0.61	4	5	4	1	4	8	5	5
Satur. 16..	73.3	51.5	62.4	16	0.58	—	2	4	2	5	4	[illegible]	4

The highest temperature during the above period occurred on the 10th, 1842—therm. 93 deg.; and the lowest on the 13th, 1839—therm. 32 deg.

Notices to Correspondents.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

Books: *A Young Gardener* We can learn nothing about it. If those who have articles for sale do not think it worth while to advertise them we cannot do it for them.—*Windsor.* Dr. Lindley has nothing whatever to do with the publication of the Proceedings of the R. Horticultural Society, the entire responsibility belongs to Mr. A. Murray.

B. Columbia: *J N.* Very likely. We do not remember. You will see next week that the Oregon Association is endeavouring to send out a Mr. Brown.

Insects: *T S P.* The insect represented in your very characteristic sketches is the Panorpa communis.—*T S P* The green larva of the Sawfly found on the Alder is the Nematus ventralis of Panzer and Brischke. We suppose that on the Rose is Cladius difformis (both Sawflies).—*E O.* We have found slightly diluted spirit (either methylated or spirit of wine) answer for preserving spiders. *W.*

Joyce's Stove: *B.* If the combustion in this is very slow, the fuel perfect, and no bad fumes arise from the ventilator, it may be used *without danger* in a room with Achimenes, Lycastes and other plants. But then it will not itself keep the air moist, which is indispensible. We cannot recommend it.

Names of Plants: *J D.* Some Helichrysum with which we are unacquainted. Please send it again when it seeds, and say from what country you have received it.—*A C.* 1, a bit of some Anthurium; 2, an Epidendrum without flowers; 3, a withered leaf, et præterea nihil; 4, a leaf which may belong to Oncidium Cebolleta, or to several other plants. Such fragments are beyond identification.—*An Old Subscriber.* Juniperus Sabina.—*Mona.* The "fruit" called very choice and rare, given your friend by a Canadian sailor, is from a kind of Walnut tree called Juglans cathartica. Mind what you are about if you proceed to eat it.—*Rusticus.* It is *impossible* to name such things.—*Paxtonia.* Illecebrum verticillatum. It is a common Mediterranean plant, and gives its name to the natural order Illecebraceæ.

Orchid Growers: *C S* has received several applications, but none are satisfactory. The writers generally express their confidence that they can manage his plants perfectly well. But *C S* wants the opinion of others *who are well known as being extremely* skilful in this difficult branch of gardening, and not of the applicants themselves. The applications of "V." and "F. G" are not such as can be entertained.

Thuja aurea: *A Devonian.* The plant raised from Nagasaki seeds brought home by Sir Michael Seymour is certainly this. If it should ever produce cones hereafter A Devonian would much oblige us by communicating a specimen of them.

Waterside Plants: *J Gudgeon.* Alders, Willows, and Dogwoods; very little else will grow.

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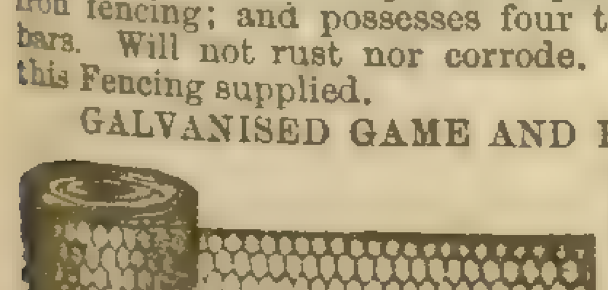

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Copies of the Prize Lists and Regulations, with the Statement of Receipts and Expenditure for 1861, may be had on application to the Secretary. F. Brailsford, Secretary.

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State of the Crops.

THE AGRICULTURAL GAZETTE of the 16th AUGUST will contain full particulars of the STATE of THE CROPS throughout the Country. A copy sent for six stamps. Order of any Newsvendor.

Office for Advertisements: 41, Wellington Street, Strand, W.C.

The Agricultural Gazette.

SATURDAY, AUGUST 9, 1862.

The Yorkshire Agricultural Society, now a quarter of a century old, has just held its twenty-fifth meeting, under the presidency of Mr. H. S. Thompson, M.P., one of its originators. At its annual dinner, held last Wednesday, Mr. Thompson called attention to the agricultural progress which the history of the past twenty-five years illustrates.

In one sense, he declared, we have made none whatever. As heavy crops of Turnips and of Wheat were grown in olden time as are ever heard of now. As good a Leicester sheep was bred last century as Mr. Sanday offers now. No better Short-horns are to be seen in 1862 than were known to Short-horn breeders 30 years ago.

But this, is no proof whatever of the want of progress. If it were, civilisation itself may in the same sense be said to have stood still for 1800 years. No higher examples of excellence exist amongst us now than then. It is the *extension* of merit rather than extraordinary examples of it which prove the agricultural or any other status of the community. And it is to societies such as have just held their annual *fêtes* at York and Limerick that we owe the progress of this kind which the past 25 years unquestionably exhibit in the agricultural world. The share which Mr. Thompson had in the establishment of the Yorkshire Agricultural Society he may well look back upon with satisfaction as one of the best of many successful efforts he has made for the agricultural progress which in a certain sense he took upon him to deny.

It is satisfactory to know that the meeting which has just closed the year of his presidency is one of the most successful on record. A larger show of implements by most of the leading implement makers than was ever exhibited at any previous meeting; as good a collection of Short-horns, including many celebrated animals; a very fine show of horses and very satisfactory classes of Leicester sheep may be named as among the features of the meeting. Trials of mowers and awards for this and other classes of machines, and an exhibition of Fowler's and of Howard's steam ploughs and cultivators, were other features of the meeting.

No official award of superiority to either of the rival steam plough makers, Messrs. Fowler and Howard, was attempted—but the trial of their machines was watched, and to some extent directed by Mr. Morton, whose report, prepared and ready for the press six hours after his field observations were completed, ought to have been in the hands of the public on the following morning. The subject of it was, on Tuesday and Wednesday last, interesting to large numbers of Yorkshire agriculturists, and it would have been read by them had it been forthcoming at once. Nothing is more certain than that a publication a week after the interest has passed away is no publication at all; for not one in twenty of those who would have read the account last week will care to look at it when it at length appears.

We give the main facts that were observed—and if any excuse be needed for thus postponing all attempt at the description of the Horse classes, many of which are admirable—of Lady Pigott's, Mr. Booth's, Colonel Towneley's, Lord Feversham's, and Mr. Douglas' Short-horns—of Mr. Borton's Leicester Sheep—of Mr. Wainman's Pigs, and of many other first-class animals towards which unquestionably the interest of spectators was principally directed, in order that we may once more state the case for steam ploughing—it is to be found in the fact that the tillage of the soil in which so great an improvement is thus effected lies at the foundation of all agriculture. Great interest is taken in improving, by careful breeding, the form of the well bred ox and sheep—in the filling up of particular points—and in the thickening of the flesh where the meat is best; but some of us are in the habit of thinking that much of what is called breed "goes in at the mouth." And so with plants; a good crop does to a great extent, no doubt, depend on the variety of the plant that is being cultivated, but it depends still more on what is put into the soil. And the parallel does not cease even here; for manure itself depends for its efficiency—and still more the *natural* contents of the soil depend for their efficiency—on the tillage of the land. The application of steam power *here* is thus as a weighty lever placed under the very foundation stone of agriculture; and steam cultivation will thus affect agricultural progress throughout every one of its stages.

Fowler's 14-horse power engine on this occasion worked his 4-furrow balance plough with the digging breasts, and his 6-tined cultivator; Howard's 10-horse power engine worked his 3-furrow balance plough and 3-tined cultivator; and Fowler's 8-horse power engine worked his 4-furrow ordinary plough. This was the order of their position on a field of light soil (with, however, patches of clay in it), long enough for a furrow of 320 to 350 yards. The judgment of the reporter was based less upon the appearance of the work and less upon the extent of it done in a given time than it generally has hitherto been. The real measure of the work done lies in the weight of earth moved per acre, and in a given time. To ascertain this two square yards of the earth ploughed or cultivated were weighed in some 15 or 20 instances, and the quantity of earth moved per acre and per hour was then estimated.

The following were the results recorded:—

Fowler's (so-called) 8 horse-power engine with moving anchorage and clip drum on the same headland, and moving anchorage on the far headland, ploughed with the aid of four men and two lads, 1 acre in an hour, moving 938 tons of earth per acre and per hour.

Fowler's 14 horse-power engine, with the aid of three men and two lads, worked with the "diggers" 1 acre 1 rood and 5 perches per hour, moving 1002 tons of earth per acre and 1280 tons of earth per hour.

The same engine with the same hands "cultivated" 1 acre 3 roods and 24 perches per hour, moving however only 650 tons of earth per acre and 1240 tons per hour.

Howard's 10 horse-power engine with double windlass, five men and two lads and three-furrow plough, worked 3 roods per hour—932 tons per acre and 774 tons per hour. The same engine and apparatus, with a 3-tined cultivator, worked 1 acre per hour, and moved 660 tons of earth per acre and per hour. The digging of Fowler's engine was done too fast, and the surface was left *too* rough—the working of Howard's cultivator was done too slow, and the earth was not sufficiently disturbed, though all effectually cut off the subsoil—and greatly to the surprise of the reporter there

was actually more earth per acre moved here than in the case of Fowler's cultivator, which was driven so fast as to throw the whole extremely loosely and roughly together. The rapidity, however, of the work was such in the latter case as well as in the "digging," as to bring out a very large performance of work done in a given time.

The ploughing was in both cases admirable—perfect according to the mode of judging hitherto adopted, which depends upon the surface presented to the light—excellent according to that better mode of judging which looks at the quantity of earth moved per acre and the state of the floor on which it lies.

Both the quantity and quality of the work accomplished were satisfactory proofs of the success with which steam is now applied to cultivation—and though the land was for the most part light and easy, and therefore not well adapted for anything like a serious trial of the steam plough, yet the easy accomplishment of the work given it to do no doubt helped to convince many a spectator of his interest in at once commencing the cultivation of his land by steam.

—— The sale last week of 37 cows and heifers and 11 bulls, of all ages, included in Mr. Banks Stanhope's herd, realised close on 2000*l.*—the animals averaging 41*l.* 9*s.* each. Among the highest prices was 150 guineas for *Bracelet*, a five-year old cow, daughter of *Bijou* by 2d Duke of Bolton. She was bought by Mr. Heneage, M.P.—Mr. Strafford's sales from Mr. Fawkes' herd, and from that of the Rev. J. D. Jefferson, in Yorkshire, on Monday and Tuesday last, did not result in so high an average price. In the former case, 30 cattle of all ages realised 38*l.* 3*s.* apiece, in the latter case 49 head of stock fetched only 24*l.* 5*s.* each. Mr. Fawkes had sold in 1851 a draught from his herd for 47*l.* 15*s.* 6*d.* each over 32 head of cattle; and another sale in 1856 of 33 head realised 43*l.* 10*s.* 6*d.* each. The present sale thus does not realise the expections which had been formed.

—— We shall next week give our annual report of harvest appearances and prospects. As regards the Wheat crop, it seems impossible to doubt that it must prove a very inferior one. Both wind and blight have done unusual injury. Harvest is now general in all the southern and eastern counties.

AGRICULTURE OF IRELAND.

(*Continued from p.* 723).

From Headford I went to Cong, a village built on an island formed by the issues of subterraneous streams that flow from Lough Mask, having a fall of 22 feet into Lough Corrib under a wide ridge of limestone, the uneven surface of which presents a very curious geological appearance. If Lough Carra, which lies N.E. of Lough Mask, were united with the latter, and this again with Lough Corrib (at Cong), which requires only 3 miles of canal, there would be, says Sir Robert Kane, about 50 miles of direct navigation with the sea opened, "and a coast of nearly 200 miles would have a cheap and ready outlet for its agricultural produce." In the famine year this project was commenced, but from engineering difficulties or doubts of remunerative results, or want of funds, there has been but a lock of excellent workmanship built, and a canal of no great length cut, as memorials of a great work commenced and abandoned. A steamer plies in summer between Galway and Lough Corrib. Mr. Coulter remarks, after some expressions of regret that the cut has not been deepened, for the length of even a furlong, so as to be navigable from the quay where the steamer now stops to the Bridge of Cong on the Ballintobe road, that, if this work were carried out at a cost of 200*l.*, it would supply the wants of the barony of Kilmaine and the southern part of the county, whilst the railway in progress by Claremorris to Castlebar will be available for the accommodation of the northern baronies of this part of the county of Mayo. The inhabitants of the north-western shore of Lough Mask, including the people of Tayce's county, would derive great benefit from the improvement of the navigation to Cong, and already, even in its imperfect state, they are taking advantage of it. They cross Lough Mask in boats, and are then within 3 miles of Lough Corrib, from which the steamer brings them in a few hours to the 'City of the Tribes.'"

Mr. Benjamin Lee Guinness, one of the most generous and patriotic of landlords, has purchased a large part of the property in and around Cong, with other estates also, and his improvements are constantly in progress.

The Ashford estate, which had been in a miserable condition, with wretched cabins inhabited by a poor tenantry, is now undergoing rapid transformation. He has made roads at his own expense, built boundary walls of great length and durability, cleared away hovels, and erected in their room many neat cottages for small farmers and labourers, and houses, two stories high, costing from 120*l.* to 150*l.* each, for larger farmers. He has reclaimed much land, and planted trees largely. He has been for some time paying 70*l.* a week for labour, and has given great relief during the winter by supplying coals and brushwood from his plantation to the necessitous. In short, this spirited and benevolent capitalist is doing what the half dozen previous possessors of his estates failed to do, as the face of the country there testifies. Dr. Veitch, a landlord (on a much smaller scale) in that neighbourhood, seems also to have done much in improving the houses and farms of his tenants; to the labourers he lets a rood of land, and gives materials to those who will build new houses, and affords them work by which they may earn sufficient to repay themselves for what they expend in improvements. He has totally changed the appearance of the habitations near Cross. If Mr. Guinness possessed the whole village of Cong, it would soon become a neat and interesting place, with its fine old abbey adjoining the desmesne of Mr. Guinness, and adjacent lakes with some of their numerous islands in view, and ranges of distant mountains towards the west and the north. Wheat flourishes on the limestone soil here; and there are three corn mills with great water-power in constant work, but the Wheat crop was deficient here last year, though those of Oats and Potatoes were pretty good.

Respecting last year's crop, Mr. Coulter, who was at Cork in April this year, writes thus:—"The failure of the Potato crop in this district was very great; but as it was more extensively sown last year than at any former time since the famine, there is yet a considerable quantity available for consumption. In the year 1860 this crop was peculiarly good and abundant, and all who had planted largely realised a considerable amount by the sale of Potatoes, which were sent by boat from Cong to Galway. So great was the exportation of Potatoes from this and the adjoining districts, that one man sent cargoes to the value of 10,000*l.* to persons in Dublin on whose behalf he had purchased. The profits of the year were so large, that the people were tempted to sow Potatoes in every perch of land they could rent, hoping that they would have an equally favourable season. They took a great deal of con-acre at the rate of 7*l.* and 8*l.* an acre for this purpose, and manured the Potatoes with guano, which they obtained on credit. The stimulating properties of the guano caused the stalks to grow up quickly and luxuriantly, whilst the tubers were but partially developed, and afterwards the combined influences of the blight and the wet weather prevented them from reaching maturity, and hence resulted a serious deficiency in the crop, and a consequent heavy loss upon all who had cultivated it extensively." In many parts of West Connaught the cultivators of Potatoes on the bog soils use guano with ashes. This practice is new to my experience or observation.

July 8th.—I started from Headford for Connemara, and crossed Lough Corrib at the narrow ferry; proceeded to Oughterarde through a picturesque country, presenting a varied surface of limestone rocks in fantastic groups, with patches of Wheat, Oats, and Potatoes, and copsewood (cruelly nipped by cattle and sheep), intermingled very prettily to the eye of an artist, but offensively to that of a mere farmer, who in vain would attempt to introduce a plough amidst such obstacles. The spade and hand grubber are the only useful implements there. However, there is some open and easily cultivable soil to be seen along the road. About two miles from Oughterarde, and where the road from the ferry meets the main Galway line, a natural arch of limestone many yards in length, under which a continual stream runs, is a portion of the road. Above the town there is a waterfall which falls over a large mass of rocks.

Near Maycullen, on the estate of Lord Campbell, between Galway and Oughterarde, a great deal of bog land has been drained by Mr. Skilling, Professor of Agriculture in the Queen's College at Galway, and agent also for the property which devolved, unluckily, as his lordship the late Lord Chancellor of England thought at the time, when certain responsibilities connected with his high office, and applying to that property through legal technicalities, rendered him the actual proprietor. Happily for the locality his lordship authorised the agent to drain the bog portion, which contains about 300 acres, with a lake at the lower boundary. This lake before the commencement of the drainage covered a large area, and kept the whole bog in the condition of a semi-fluid quagmire. This dropsical case appeared hopeless, as there was neither fall nor outlet for the water. On examination Mr. Skilling observed deep cavernous openings into the strata of carboniferous limestone at the foot of the adjacent hills. These fissures, which are there called swallow holes (resembling the cavern near Cong, already noticed), appeared to Mr. Skilling as the natural reservoirs for absorbing all the surrounding liquid. He accordingly cleared them, so that they were rendered the free recipients of all the water conducted into their capacious throats by wide and deep main drains through the bog, which is now fair pasture, and will eventually be cultivated. The cost of this has been very trivial. Now, the existence and perfect operation of these natural vents suggests the practicability of draining flat bogs under certain conditions of the subsoil, by excavating absorbent swallows to receive the fluid from the drains. It is only necessary to sink the "swallow" into or through a porous stratum. Mr. Skilling executed some draining at Barna, on soil of granite formation, from which the superincumbent peat had been cut away. Hundreds of acres had been there in a deplorable state of infertility. After the draining, so easily accomplished, it was let to tenants three or four years ago, and it now yields fine crops of sound Potatoes, Turnips, and Oats.

It has providentially come to pass that many parts of a wild and cheerless district, with a bleak road 30 miles in length, jocosely or with harmless ostentation called the avenue to Ballinahinch House, and onwards through an equally dreary length of road by bog, heath, and mountain, unrelieved by any decent habitations or improvements except at Clifden—have become the sites of handsome houses of tasteful architecture, with verdant fields and hedgerows, and plantations, and school-houses, and places of public worship, that are models for imitation in many other and much more naturally favoured parts of Ireland. Nor are there wanting good examples of husbandry and rural economy in all its departments by Irish and English gentlemen who have acquired estates there within recent years, and by Scotch farmers who have settled there, determined, if possible, to subdue the difficult soil.

After a few hours' delay at Oughterarde, where I heard that the few resident gentry—Mr. O'Flaherty and Mr. Martin being the principal proprietors—are improving and humane landlords, I took a seat on one of Bianconi's car's for Clifden—a long and dreary drive, with glimpses of fair spots about the northern extremity of Lough Corrib—immense tracts of bog and mountain—passed by Ballinahinch House, which, though a plain building, is in a grand situation, and so sheltered that timber is around it; its past hospitalities and cheerful gatherings and ancestral prestige are among the records of a past age. The Bill for the Prevention of Cruelty to Animals, carried through Parliament by the untiring perseverance and humanity of the late Richard Martin, is the best memorial of that last lineal representative of an old and time-honoured family.

The Law Insurance Company, which purchased the estate, vast in area, but not proportionally in income, has been blamed for not expending capital improvement, and particularly for want of liberality to the tenantry during the late season of distress. There is ample field for improvement. Fences and drains are required in the first instance. "The only way," says Mr. Coulter, "in which the mountain grazing ground is divided amongst the tenants is by being lock-spitted (*i.e.*, marked out by turning up a sod); and the occupation of the children is to sit all day at their respective lockspits to prevent trespass on their ground by the sheep and cattle of their neighbours, and to take care that their own stock does not bring them into trouble by straying into the adjacent lands. Thus the young, being constantly engaged in this manner, are allowed to remain in ignorance, not only of book-learning but of useful practical knowledge suited to their station in life. It is a sad thing to see those quick-witted and intelligent children thus deprived of the benefits of education, and allowed to grow up in a state of ignorance, to which much of the backwardness of their fathers is attributable." He adds what is to this effect, viz., the landlords here and about Clifden are absentees, and only one gentleman there who has purchased property about Clifden, has expended money in improvements, and the support thereby of labourers.

The Rev. Hyacinth Darcy has established various schools—one of them an agricultural school, for orphans, at Ballinree, four miles distant from Clifden, and others in and near the town, which have endeared him to his congregation and rendered his name familiar to many.

From Clifden to Streamstown the country is sadly desolate; yet the partly cultivated farm of an industrious Scotsman was attractive from the appearance of first-rate moorland fences, a large well tilled moory field in course of preparation for Rape seed, and the evidences of a careful economical method of cutting turf in long straight parallel lines: the systematic mode pursued there is also on an extensive scale, and therefore affords much employment. The cutting and saving of a large supply of turf in a favourable season, lest years of scarcity should follow, is such a new feature in Irish bog-husbandry, that it merits especial remark here. A splendid view of Ballinakill Bay opened to me on coming round the base of a hill. The Island of Achill—very distant however—Clew Island, nearer and part of the Twelve Pins, and the Mayo Mountains, unexpectedly burst upon me. There are splendid meadows in the foreground on Mr. Brown's improvements. This gentleman has done wonders in reclaiming wild land, and has a fine lawn sloping to the beautiful bay of Ballinakill, which comprehends three smaller bays. Unfortunately his house demesne and farms face the north. I never saw more promising Potatoes and Oats than there, yet the natives say that Sea-weed (which is brought up there), frequently applied, without enriching manures, periodically stimulates the soil too much and expends it. On the southern side of the bay there is a neat looking hotel (the hospitalities of my friends rendered

my acquaintance with any hotel accommodation during my four weeks ramble a merely problematical consideration), frequented by anglers for salmon. Mr. Prior has property highly improved there, and gives more employment than any other proprietor in that district. The road running through the three properties Sehena and Cleggan, belonging to Mr. Twining (a most excellent improver), and Ballinakill (Mr. Prior's), meet at the high road leading from Clifden to Westport, at Ballinakill Church.

Letterfrack is truly the gem of Connaught. This charming village, distant about 10 miles from Clifden, owes its superiority over all other villages in the west, to the philanthropy and good taste of Mr. Ellis, a member of the Society of Friends, who came there from Bradford, in Yorkshire, soon after the famine period, in order to colonise this poor unheeded place, and he expended large sums in building tasteful houses and making various improvements. Subsequently (in 1857) Mr. Hall became the purchaser of the property. This gentleman has a very nice residence, and has built a school house and contributed to the building of a church. Mr. Butler has effected a surprising metamorphosis of land near the village, and has a tasteful place of residence. There is a parsonage also, and one of the neatest hotels imaginable, built and kept by an Englishman who came over with Mr. Ellis: and the village and district have had the good fortune to secure the medical services of an intellectual and accomplished gentleman. A vein of limestone on a very small area is in the immediate neighbourhood, and contributes greatly to the amelioration of the surrounding land.

From Letterfrack towards the Killeries the highland road is very bleak, until the turn of the road to Leenam brings the bay and the opposite hills into full view—a grand scene is then present. Killery harbour runs inland about 10 miles between the highest mountains in the west, rising precipitously from the water's edge, and into this magnificent, yet narrow estuary, the waters of a tributary lake flow into it from a vast mountainous range tenanted by Captain Houston from the Marquis of Sligo. This lake is one of the best and most picturesque in the province for salmon fishing; here Captain Houston has a newly erected villa with plantations surrounding it, besides the romantic cottage of Delphi embosomed in wood, which formerly was tenanted by members of Lord Plunket's family as a fishing lodge. Between these two places, and on the road by the margin of the lake, conducting from one to the other, an illustration of the miseries which decimated the peasantry in the famine of 1846, was afforded. Two mothers, with two young children and a boy 14 years old, were found dead together by a shepherd; they had been wandering in search of sustenance, and being exhausted from cold and hunger had not strength to bear up against a storm of sleet which fell upon them in that bleak place.

I was informed that Captain Houston possesses 15,000 Blackfaced Sheep, crossed with Leicesters, but is reverting to the pure Blackfaced Sheep, of which he can maintain one third more on the land, and this increase of numbers compensates for the loss in wool incurred from discontinuance of the cross. The Kyloes are kept out during the whole year. There are many Scotch shepherds with native ones under them.

The Hon. David Plunket of Aasleagh, at the head of the bay, has 1200 Cheviots and Blackfaced Sheep, and a suitable staff of shepherds and labourers, who have the use of cows, and manured Potato ground, and a cottage, with from 8*d.* to 1*s.* a day according to the season of the year. He employs 40 men in salmon-fishing during the season, and some as water-bailiffs, and in making and repairing boats. All this gives a good deal of employment. That gentleman's side of the bay is a very interesting locality, and not the less so from the strong contrast his cottages present to the hovels of the wretched village of Leenam on the northern and opposite side of Killery harbour, where the road branches off on the left to Maum which is at the head of Lough Corrib. Instead of going there, where extreme beauty is said to exist, I went to Westport, a dreary drive, except in one picturesque and timbered glen, where a bridge had been swept away a short time before by the river Eriff. At length Clew Bay appeared, with Clare Island in the middle, Croagh Patrick being but a few miles distant on the south-west, and the north side of the harbour gay with bathing lodges. The only object of attraction in the town is the approach from the handsome hall to the fine demesne of the Marquis of Sligo. The crops immediately about Westport are healthy and luxuriant, but beyond a short radius very poor soil and indifferent cultivation testify of corresponding poverty among the cultivators. The bogs around are ugly though beneficial features in the scenery.

The salmon fishery of West Connaught affords much employment to fishermen during a long season. From Galway the weight of salmon forwarded to Dublin is very considerable, and from Westport and other places there is also a regular supply sent daily or frequently by Biancone's vans to the nearest railway station, and judging from the size of the cases and the draught labour to the three horses which draw the vans (a few passengers inclusive), the weight is often very great. The proprietors of fisheries are anxious to have bag nets tabooed by the Legislature; this has been or will be accomplished I believe in the present session of Parliament, as these take a large proportion of the fish bred in the rivers. The abolition of these nets has been recommended by a committee of the House of Commons. The multiplication of salmon if duly preserved would be prodigiously great. I was informed that one person has established 23 bag nets around Achill, which arrest the fish that would otherwise return to the rivers where they are bred; and this capture too is effected where no salmon are bred. The proprietors of the spawning rivers in which the fish are bred, obtain them in so small a proportion that they have contemplated the expediency of abandoning the protection of the rivers; and were this to be carried out, a vast number of people would be thrown out of employment.

July 11th.—Started by a van for Claremorris en route homewards, with the unpleasant conviction that there is very little import or export commerce at Westport, though its harbour is I believe safe, and there is a good quay with several merchants' stores. There are good farm houses (comparatively with preceding ones that have been cleared off,) on the road to Castlebar; Lord Sligo has taken pains to improve the condition of his tenantry and increase the value of his own property. He has had his lands "striped," or divided, and insists on the tenants building new houses, having three windows in front and providing proper offices and sheds for their cattle. Some 12 or 13 years ago it was a common thing to see three or four cows tied up inside the farmer's dwelling, whilst the pig had the run of the house at all times, and was a recognised member of the family. The Marquess will not allow this practice to be carried on, and he has undoubtedly done much to reform the habits of his tenantry in this respect."* Lord Lucan's farm, after I had passed through the little town of Castlebar, which has fully the average proportion of wretched suburban cabins so generally characteristic of Connaught towns, strikes the traveller's eye immediately—it appears to be so complete, so Scotch-like—with a steam-engine in the farm-yard, and appropriate offices. But, as I had seen the gigantic scale of Mr. Pollok's agriculture, a desire to examine the farm operations of Lord Lucan, though second in Ireland to those of Mr. Pollok only, did not induce me to delay my progress. There are some wretched villages (one of which is between Westport and Castlebar); others have disappeared, or nearly so. The village adjoining the demesne of Sir Robert Lynch Blosse, is of an improved description, and the farms around on this baronet's estate are evidently of a thriving character, indicative of the landlord's care. Having arrived at Claremorris I entered a railway carriage, and thence retraced my route to home. *Martin Doyle.*

* Coulter's "West of Ireland."

THE EDUCATION OF THE FARMER.

A young man fresh from the University, who had taken cordially to the position of a country gentleman —and, among other occupations, had adopted that of agriculturist—was riding round his land one morning with a neighbour of long experience and well-proved practical ability and judgment as a farmer. He listened with docility and good-will to the instruction and advice that were given to him; and, struck at length by the wisdom and good sense of his companion's discourse, he at length exclaimed, "Ah Mr.——, I wish I knew as much as you do." "Make yourself perfectly easy on that score, my dear fellow," was the reply—"*You never will.*" The one was fresh from the schools, and the other had spent all his life in the fields, and yet there was neither mock modesty in the speech of the one, nor arrogance in the answer of the other. Let us hear Mr. —— finish his reply:—"I have been accustomed," he said, "to be amongst plants and animals, constantly riding or walking on the soil which supports them both, since I was a child. Ever since I can remember I have had to do with the tillage of the land, the cultivation of crops, the management of live stock. There is not an aspect of weather, land, or life so far as the live stock of the farm are concerned, which I have not habitually witnessed, realized, and studied—that of which instances and striking cases may be observed by you is foreseen or recognised by me in its first beginnings almost as an instinct. Long familiarity with the details of my occupation, beginning, too, with the mind of a child which has hardly any other impressions on it to weaken the sensitiveness with which its early knowledge is received, gives me almost unconsciously, and without the effort of any special attention such as you must exercise, those intimations of fitness or of unfitness, of quality and condition, whether of soil, or crop, or animal, on which the right direction of our business of course depends." Mr.——was perfectly correct; it is an immense advantage to an agriculturist, as to the follower of any other occupation, to learn that occupation young.

Now we have before us a book written, we presume, with the intention of carrying out the idea of Mr. ——, and of impressing agricultural truths upon the mind when young. Unfortunately, however, there is a great difference between its pages and those from which the early lessons just alluded to were learned. The latter were on the face of nature, and explained and pointed out in the familiar words of a homely practical observer. Here, in Mr. Wallace Fyfe's "Catechism of Agricultural Science, as applied in practice,"* we have, not a familiar talk of air and earth, and plant and animal, but a formal treatise, in which truth is stated not as observed in the field, but as it exists in the mind of a philosopher.

Take for an example of its teaching the question:—"What is lime?" Well; we might say to a child—it is sometimes chalk; oftener it is in a stone, which they burn in the kiln, and so make it "quick" in various ways and active for various uses to which it is applied—oftener still it occurs not more perhaps than a pinch in every handful in the mould of ordinary soils, where it lies hid in other matter, and where, though its action and activity are both hindered and hidden by the condition in which it exists, it yet is "quick" for many useful purposes, and does much for the fertility of the land. What these purposes are might be further enumerated one by one, and explained pretty fully without the use of very long words. But we do not think that Mr. Fyfe helps forward the knowledge of a child by declaring that "lime is an alkaline earth of insuperable (!) importance in agriculture, since it forms an essential organic constituent of every cultivated vegetable."

The fact is, Mr. Fyfe and Mr. —— differ altogether in their plans of agricultural education. The first note on the first page of the book, just published by the former, speaks thus:—

Junior Class.

"The teacher will occupy the first year or years in furnishing an idea in school of the nature of the sciences engaged in agriculture; he will then arrange in the neighbourhood to illustrate them practically on the farm."

Now the superiority which the well educated University man detected in his companion arose from just the opposite plan having been pursued—he had seen every aspect of nature on the farm before they had been pointed out to him there—and they had been pointed out repeatedly long before they had been explained to him in books. We are bound also to say that when pointed out and discussed in the fields they were explained in simpler words than Mr. Fyfe employs. And if this was an advantage even when the things themselves to which the words related lay before his eyes, how much more important must it be when the words alone are the only chance the pupil has of obtaining right ideas. A catechism of first knowledge for the teaching of children ought to be written in words of two syllables at most, and every where the child should be made to feel how much better off are those who have facts and knowledge in their minds than those who have merely words upon their tongues. The very first answer in Mr. Fyfe's book sins against both of these rules. The child is told that hitherto agriculture has been commonly regarded more as an art than as a science, and "it is only of late years that education has been called in to propagate a knowledge of the cultivation of the land." Instead of talking about "propagating knowledge," the child had better try to get it; and this he will do better by learning what farmers do in the field and farm yard, or even what his master is doing in the school garden, than by hearing farmers laughed at or condemned for their want of progressive intelligence."

It is quite true what the author states, in answer to question 6—"what agriculture has yet to accomplish is, largely stated, this:—The amount of produce which we now raise must be driven onwards to the amount we could raise—bearing in mind that as far as past experience goes we shall never raise more than is economically required. We must attempt however, to redeem the needless destitution of the land by undertaking to raise an adequate supply of subsistences." This may be quite true—but is a child likely to understand it; and if he should come to know exactly what it means—is the end desired brought any nearer by teaching of this kind. A child who is to be a ploughman or a herdsman, or a labourer on a farm, or even himself the master of these men, may have the details of his future duty impressed upon his mind most usefully at school—he may even by and by learn the "reason why," and so have the reasonableness of his duty impressed upon his mind with great advantage to the future faithful discharge of it—but as for "the value and importance of the study of agriculture"—"the limits and capabilities of cultivation"—"the manner in which agriculture is advanced by science"—and so on; these, which are the subjects of Mr. Fyfe's opening chapter, are topics on which a *Senatus Academicus*—a Board of Agriculture—or even a Farmer's Club—may interest themselves, but which are not the points to which the attention of a child should be directed.

The aim of the book is admirable, and it is directed towards an object which well deserves the effort needed for the attainment of it—an object useful, desirable, and to a great extent attainable—but the plan of the book is, as we believe, essentially mistaken, and its style is adapted rather for educated men than for the ignorant children for whom it is intended. *Oxford Journal.*

Home Correspondence.

The International Exhibition—Jury Awards.—In last Saturday's *Agricultural Gazette* there is a list of awards which I cannot understand. I see under "Nation" the words "United Kingdom," by which I understand that the "seeds and foods" must be the produce

* Groombridge & Co.

of the United Kingdom—the great object as I supposed of the International Exhibition; and I should have thought that anything of foreign growth exhibited in that department ought to disqualify the exhibitor from obtaining a prize. I find first, Medallists: "705. Butler & M'Culloch—Series of dried Culinary Herbs." These may or may not be of foreign growth; I suspect some of them are, but I don't think so much of that as "707. Carter & Co.—Seeds, Flowers, and Floral Designs." Here is a collection of little samples of kitchen garden and flower seeds. Of what value such a collection may be to the international public I cannot make out. I doubt if they are all home-grown; but the flowers and floral designs are made of the produce of France, &c., and therefore surely have no business there; what value have they among seeds and foods? The next is "708. Chambers, W. E.—Cereals; the Wheat being very fine." This is Wheat imported from California, and can have no business there whatever. There are nine little samples besides I think. "719. Liverpool Committee of International Exhibition of 1862—Very interesting collection of Imports and their appliances." Is that rightly placed there? "725. Raynbird, Caldecott, & Bawtree—Excellent Seed Corn and Seeds." I wish you could see that collection in a prettily designed case, the samples rather more than a lozenge box would hold; about 9 or 10 samples of Wheat, some of which I never heard of; 5 or 6 of Barley, to which I may say ditto; and a small collection of seeds, among which I see Lucerne, and I know not what other foreign produce, which should disqualify the collection. At the back is a glass case with some 8 or 10 bunches of corn, very fine and pretty to look at, but some of them different from the grain in sample, the two not tallying one with the other—I ask you if this is right and just? If a man's case is not worthy of a medal, be it so, but don't give the medal to others who are disqualified from receiving it. *Z.* [We are quite as much at a loss to understand the awards of the Juries as the world outside. What seems to us most extraordinary is, not that medals should have been given to A. B. and C., who we dare say deserved them, according to some mysterious rule in the minds of the Jurors, but that others should have been passed by who had at least equal claims. Take for example the exhibition of Wrench & Sons. This consisted of, we think, full 16 large samples of some of the finest Wheat ever seen in Mark Lane; 9 or 10 samples of fine Oats; Barley, the finest of the year; Red Clover, a sample such as has not been seen for years; and all the other leading agricultural seeds and grains in first-rate condition, 48 samples in all, each in quantity sufficient in professional language to "handle," and all the produce of the United Kingdom. Suttons of Reading have also received hard usage.]

Occasional Drainage.—Although acquainted with every system of thorough drainage in use in Great Britain and Ireland during the last half century, I have never seen so common sense a doctrine propounded in its regard as that given forth on a late occasion by Mr. Bailey Denton when addressing his friends on accepting from them the memorial "in grateful remembrance of his kind and straightforward interest in their welfare and as a token of their estimation of his abilities." It does not in the least degree take from the merit of the late Mr. Smith, of Deanston, to say that land draining with broken stones had been known and practised in Ireland long before his name was ever heard of here or seen in print, nor from that of McAdam that roads were metalled ("pored or paved") in Ireland long before he was ever heard of. No, for Mr. Smith it was who reduced such drainage to a system; but as no man can be truly said to be infallible, Mr. Smith made one or two mistakes; 1, in saying "so far shalt thou go and no further" in sinking your drains; and 2, in seeking to enforce a rule as to the space which should be between the drains being the same, or nearly so, regardless of all circumstances in relation to the land to be drained. Mr. Parkes, in seeking to correct Mr. Smith's first error, fell much more deeply himself into the second, at least in as far as his public draining in Ireland went. Still, Mr. Parkes is also entitled to our respect for having done the best he knew how to do. I having so far, I hope, done justice to the memory of Mr. Smith, although I was the first in Ireland who had the hardihood publicly to expose his "weak points," and to that of Mr. Parkes, whether living or dead, I hope, should what I am now writing meet the eye of Mr. Denton, he will not take it amiss in me if I say that I have seldom if ever met a practical man in Ireland whose opinions I would value on land draining that did not entertain the same views as he does, and who have never failed to carry them out, if not constrained to depart from the rules of common sense, and to adhere to the conventional rules of the drainage inspectors of the Board of Works, or those of employers whose knowledge of drainage amounted to what they had learned from reading the productions of Messrs. Smith and Parkes, or who had seen their systems merely put into practice without being able to appreciate their respective value or to anticipate their results. Were it not that it might be a waste of your space, of the patience of your readers, or perhaps of my own time, I could now give you a series if not hundreds of examples from various parts of Ireland as corroborative of the views so clearly set forth by Mr. Denton in his short but important address. I could also give you numerous instances of the uselessness—I had almost said mischievousness—of having large sums of money expended in land drainage in Ireland, in ignorance of the common sense principles so clearly pointed out by Mr. Denton, and so well received, from having been so well understood, by his intelligent audience. There is one of the many valuable paragraphs in this short address, which cannot be too closely studied in Ireland, at least by those engaged in such works, whether under the Board of Works or any other board, or even by those who may hereafter drain land by the expenditure of their own money. "You cannot drain clay lands too much; the greater the number of drains you put into such lands the better is the drainage, but money steps in and says 'thus far you shall go and no farther;' it will not pay to put in drains beyond a certain number, and there you stop." Just so, but "there you should not stop" till you effect if possible by subsoiling what has been but begun by the drainage. Here, again, money or rather the absence of it steps in as a barrier to your proceedings, and the more impassible the barrier will be in the absence of skill with or without the money. With you in England this difficulty must disappear in presence of the powerful machinery you have called into existence in "smashing up" your heavy clay lands when drained, and whose expense in drainage you can so well lighten by the application of such machinery to subsoiling. No doubt but in the course of time such machinery will find its way to an adequate extent on most lands to which it may be applicable. But much though the clay lands in Ireland require thorough drainage and subsoiling, and much though the wealth of the country, whether we view it nationally or imperially, would be increased by these operations, there are vast tracts of much greater extent now comparatively valueless that could be rendered for many crops even more valuable than the rich clay lands by "occasional drainage" and thorough subsoiling, which latter can be made comparatively cheap by a thorough knowledge of the former—that is, by employing the one as an auxiliary in the expense saved in the former. But here steps in a double difficulty, that of obtaining the money, and when obtained of economically employing it. On much of the lands which I am now considering, expensive or even light ordinary machinery cannot be profitably employed because of the vast amount of stones and other difficulties which ever and anon present themselves. Can these difficulties be surmounted? Oh, yes, unquestionably they can. How, it may be asked? By adopting the simple but significant advice of the great Duke of Wellington, who knew Ireland and Irishmen well—"Employ Paddy and not his horse"; or if alive now, he would say, "or other more complicated and expensive machinery." Had his advice been taken when he carried the Emancipation Bill we should not have heard of starvation, or of so many agrarian outrages in Ireland. I may be told by some who either do not know Ireland, or how her resources can be developed, that labourers' wages are now so high in Ireland as to preclude the possibility of having such works done by the spade, fork, pickaxe, and crowbar. Such an assertion would be the antipodes to truth. It is true that men in Ireland are not so plentiful now as when I once and often had them employed at 6*d.* a day, where they are now paid just three times that sum daily. Nevertheless, such has been the improvement in the Irish labourer's habits from being regularly employed and pretty fairly paid, paradoxical though it may appear, work can be more cheaply done in Ireland now with wages at 1*s.* 6*d.* or even 1*s.* 9*d.* a day, than when it was but 5*d.* or 6*d.* a day. As in the former case, and but for the same reasons, I could give you many examples in proof of what I state. *Edward Carroll, Kilgreany Lodge, Clonegal, August* 2.

Value of different Foods.—It rarely happens that men in my class of life pay much attention to what can be seen in agricultural periodicals, more rare to see the name of one of us as a contributor to such, but more rare of all to find one of us acting the critic or censor on the productions of literary men supposed to be high authorities on all things in general and everything in particular. I am led to address you on the subject of the above heading, though perhaps in an indirect manner, from having seen in the *Agricultural Gazette* of the 26th ult., the following, being part of an important discussion between "P. L.," a writer in the *Mark Lane Express*, and Mr. Morton. "P. L." says, "But we need not refer to such visionary statements for authority, for sheep are extensively produced to weigh from 18 to 20 lbs. a quarter at 14 months old, which gives an average rate of increase of 1¼ lb. a week during the whole time of existence, and they do not consume the amount of food per week in proportion to the average time." To this Mr. Morton replies: "There is no such thing as a perfect uniformity of experience on this or any other point in farm practice. And 'P. L.' does not prove my assertions to be visionary statements either by exposing their inconsistency or by saying that sheep *are* extensively produced to weigh from 18 to 20 lbs. a quarter at 14 months old, which gives an average rate of 1¼ lb. a week during the whole of their existence; and they do not consume the amount of food per week in proportion for the average time." This, with the concluding portion of Mr. Morton's reply, would or ought to be sufficiently convincing of the fallacy of "P. L.'s" reasoning on this part of the subject; but as all farmers, especially those of my class, are not all logicians, they all can nevertheless understand hard facts when placed before them. Assuming now that "P. L.'s" 14 months' old sheep produced 18 to 20 lbs. a quarter by whatever means may have been adopted to bring them up to that weight. Let us see the cost of feeding such by the most simple, the most primitive, and least expensive means to bring such sheep up to such money value at 14 months old. I am in the habit of doing something in this way, and here is my debtor and creditor account:—

Dr. LAMB ACCOUNT.

			£ s. d.
1861.			
March	1.	To market value of lamb when born ..	£0 10 [illegible]
July	1.	To ewe's milk consumed during 122 days, at 1 quart each, 122 quarts at 2*d.** ..	1 0 4
Nov.	1.	To 17½ weeks' Grass at 4*d.* per week ..	0 [illegible]
1862.			
March	1.	To 17 do. do. at 4½*d.* do. ..	0 6 [illegible]
May	1.	To 7 do. do. at 6*d.* do. ..	0 [illegible]
		Total cost of production ..	£2 [illegible]
		To profit on the rearing of lamb ..	0 [illegible]
			£2 8 6

Cr.

			£ s. d.
1862.			
May	1.	By 74 lbs. of mutton at 6*d.* ..	£1 17 6
,,	,,	By 8 lbs. of wool at 1*s.* 4½*d.* per lb. ..	0 11 0
			£2 8 6

* The value of the milk set down is less than it would be in the support of my family; and the value of the lamb itself, as well as of its Grass, was the ordinary market value.

Although admitting with "P. L." that such hoggets should weigh "18 to 20 lbs. a quarter, and taking credit for each as if it did, your readers can see my profits on the most ordinary feeding obtained in the most simple and inexpensive manner. But they never weighed any such weight, nor were they ever fat at all, and were sold as store stock to an extensive sheep feeder at an average price of 2*l.* 10*s.*, which would come to more than 8*d.* a pound for bones and all. So, according to my simple logic, "P. L." could with as much justice calculate the value of an Irish long-horned ox, or of an Irish greyhound pig, including horns, hoofs, and all, to prove Mr. Morton to be a "visionary" writer, as to calculate the value of a fat English hogget without making due allowances for the circumstances attendant on rearing, and its money value as a store animal, as to assume what he has done. *An Irish Cottier Farmer.*

The Condition of the Herefords at Battersea.—The following letter has been addressed to the agricultural papers by Mr. Duckham, the editor of the Hereford Herd Book, on Sir W. Jones's remarks at Durham on this subject. Sir W. Jones had said:—"The obesity of many of the animals exhibited at Battersea was a disgrace to the common sense of agriculturists. He would venture to say that among the Herefords there was hardly a bull that could get a calf." To this Mr. Duckham rejoins:—

This statement I beg respectfully to deny; and I can only account for his thus selecting those classes from two causes: first, his probable want of knowledge of their character; secondly, the unseemly manner in which it appears the very excellent remarks made by Mr. Ellis respecting the overfed animals that day exhibited were received by the company: and thus, possibly, Sir Willoughby thought he would select a class of animal that would not excite the ire of his hearers; but, thanks to your spirited endeavours, such ill-judged remarks are no longer confined to the district where uttered, but are conveyed all over the known world; and I hope your contemporaries will, in common fairness, give equal circulation to my denial of the statement, as I am prepared to maintain that the majority of Herefords exhibited at Battersea looked like what they really were (with only a very limited exception), viz., animals kept by tenant farmers for breeding purposes, and of the three great national breeds, viz., Shorthorns, Herefords, and Devons, contained the least number of pampered or over-fed animals in proportion to the numbers exhibited. Unquestionably a certain amount of extra feeding is absolutely requisite to secure success in the show-yard, yet there is a wide discretion which should be exercised, and I state, fearless of contradiction, was exercised by the Hereford breeders. I can readily imagine breeders of an inferior class of animal falling into such an error as Sir Willoughby, upon looking at the Hereford classes, with their cylindrical form evenly covered with heavy flesh, and low legs, displaying, as they unquestionably do, great constitution with aptitude to fatten; and to such persons, before making any comment upon them (particularly in public), I respectfully recommend the consideration of the following extract from the very practical speech of Mr. Taylor at the Dereham meeting, where he acted as a judge. Although given principally in allusion to horses, yet it is thoroughly applicable to the true-bred Hereford and Sir Willoughby's position: "I have had gentlemen calling upon me, and asking 'How is it that you get them so fat?' There is no difficulty, I answer, in getting them fat; the difficulty lies in keeping them poor. If you get a good constituted carthorse, for instance, you cannot keep it poor without you deprive him of food so as to injure him. Anothes thing, gentlemen, I believe that there are many people who do not know when a horse is fat or when it is lean."

Steam Cultivation.—For some time (I may say years) my time has been considerably occupied in showing my farm and giving what information I could upon the question of steam cultivation. The time is now come for me to go out a little to see and learn all I can. The last three days have been spent in the neighbourhood of St. Neots, with Mr. Topham, of Great Staughton, Mr. Armstrong, of Graffam, Mr. Cranfield of Buckdon, and Mr. Addington, of Chawson. Mr. Topham and Mr. Armstrong have had a set of my tackle between them for four years. Mr. Topham has of ploughed land 570 acres, principally poor woodland clay. Besides draining it, he has cleared it of numerous hedges and some wood. In addition to this he has nearly completed a good gravel road from one end of the farm to the other. Mr. Armstrong has 650 acres of ploughed land, all poor woodland clay, the whole of which has been cleared of useless hedges, re-arranged in large

fields, with good roads, as well as drained. These two gentlemen now find that one set of tackle is not enough for them, therefore it has been arranged that Mr. Armstrong should keep the old one, Mr. Topham having ordered me to send him a new one. Mr. Cranfield has had a set of my tackle nearly four years; he occupies 840 acres of ploughed land, three-fourths poor woodland clay, and the rest friable land; the poor land has all been cleared of its numerous useless hedges, rearranged as well as drained, and good roads have been made over it; large open fields from 50 to 80 acres each are now the order of the day. The farms of Mr. Topham, Mr. Armstrong, and Mr. Cranfield all join, and it is a ride of six miles to pass from one end of them to the other. The lands are all clean, and I was especially delighted to see how these gentlemen were smashing up their land after feeding on the Clovers and Rye-grass, &c., to roast them ready for planting at the proper season. I went from Graffam to Chawson, where I found Mr. Addington starting a new set of my tackle on stiff clay land. I have several other sets in that neighbourhood, but time did not admit of my seeing more of the gentlemen's farms who have them. The evidence on these farms is very conclusive in favour of steam cultivation. To say nothing of the kind way in which I was received on this my first visit in that district, I am at liberty to state that if any gentlemen would like to see these farms they are welcome. *William Smith, Woolston, Bletchley Station, Bucks, July* 31.

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

Monthly Council: *Wednesday, Aug.* 6.—Present: Viscount Eversley, President, in the chair; Lord Walsingham, the Hon. A. Vernon, Sir A. K. Macdonald, Bart.; Mr. Raymond Barker, Mr. Cantrell, Colonel Challoner, Mr. Braudreth Gibbs, Mr. Hamond, Mr. Fisher Hobbs, Mr. Lawrence, Mr. Milward, Mr. Randell, Mr. Shuttleworth, Mr. Owen Wallise, Mr. Henry Wilson, Professor Wilson, Mr. Frere, Professor Simonds and Dr. Voelcker.

H.R.H. the Duke of Cambridge, K.G., &c., was elected a Life Governor of the Society. The Marquis of Anglesey, and the Marquis of Bristol, were elected Governors.

The following New Members were elected:—

Aylesford, Earl of, Aylesford, Maidstone
Abercorn, Marquis of, Chesterfield House, South Audley Street, W.
Argent, John, Church Farm, Egham
Araujo, Captain F. J. da Silva, Rio de Janeiro
Appach, Reginald, Maytham Hall, Rolvenden, Kent
Arbuthnot, W. Hugh, Bridgen Place, Kent
Adeane, Henry John, M.P., Babraham Park, Cambridge
Black, James, 20, Great George Street, S.W.
Bromfield, Henry, Blockley Vicarage, Moreton-in-Marsh
Bennett, George, 30, Fenchurch Street, E.C.
Bayes, Charles, Kettering
Bogue, John Morris, Westward Park, Wigton
Boucherett, Henry Robert, Willingham, Lincoln
Bessborough, Earl of, 40, Charles Street, Berkeley Square, W.
Briggs, T. Barker Wawne, Caple Lodge, Folkestone
Beviss, John, Sydling, Dorchester, Dorset
Brownlow, Earl, Ashridge, Berkhampstead
Burnett, Francis, Kingscote, Wotton-under-Edge
Beecroft, William, Upton, Chester
Bond, Frederick, Whitelackington, Ilminster
Blundell, John, Crooke Hall, Chorley
Battcock, Frank, Hemingford Abbotts, St. Ives, Hunts.
Bean, Alfred William, Shooter's Hill, Kent
Carey, Arthur, Oak Hall, Wanstead
Cole, Wentworth L., Cirencester
Calthorpe, The Hon. F. H. W. Gough, M.P., Perry Hall, Stafford
Clarke, Nathaniel, Beamish Park, Fence Houses
Chadwick, Frank, The Hermitage, Preston, Lancaster
Combe, Richard Henry, Pierrepont, Frensham, Surrey
Dudin, John B., Hayes Grove, Bromley, S.E.
Digby, George Digby Wingfield, Sherborne Castle, Dorset
Day, William, Woodyates and Alvediston, Salisbury
Ellis, Charles, Meldreth, Royston, Cambridge
Ekin, Thomas, Newmarket
Elliot, John Lettson, The Brewery, Pimlico, S.W.
Effingham, Earl of, Tusmore House, Bicester, Oxon
Entwisle, John, Foxholes, Rochdale
Felgate, William, 9, Westbourne Crescent, Hyde Park Gardens, W.
Fryer, Henry Charles, Lodge Park, Taliesin, Shrewsbury
Gurney, Samuel, Carshalton, S.
Gower, Granville W. G. Leveson, Titson Park, Godstone, Surrey
Hamilton, Sir Robert North C., Bart., K.C.B., 129, Park Street, Grosvenor Square, W.
Harcourt, Colonel Francis V., 5, Carlton Gardens, S.W.
Hoffschlaeger, J. F., Weisin de Mecklenburg.
Hilliard, William Edward, Cowley House, Uxbridge
Hunt, William, Deeping St. Nicholas, Spalding
Howe, Earl, Gopsall, Atherstone
Hamilton, John, Hilston Park, Monmouth
Hardy, William, Thistleton, Market Overton
Homfrey, Samuel, Glen Uske, Monmouth
Houghton, Thomas, Hemshill Manor, Nottingham
Howell, Henry, Coates, Cirencester
Hollins, J. Carter, Lodge Farm, Snitterfield, Stratford-on-Avon
Johnson, Richard Wm., Bricklehampton, near Pershore
Joicey John, Urpeth Lodge, Fence Houses
Lambert, Henry Thos., 74, Grosvenor Street, W.
Lechmere, Sir Edmund A. H., Bart., Rhyd Court, Upton-on-Severn
Letteroth, Robert, Hamburgh
Lee, Vaughan H., Pudlicote, Charlbury, Oxon
Loyd, Wm. Jones, Langleybury, Watford
Le Gallais, Albert, La Moire House, Island of Jersey
Morris, Norman, The Warren, Edenbridge, Kent
Mathews, Augustus, Pitchcombe, Stroud
Maberley, The Hon. Mrs., 15, Manchester Square, W.
Murton, Walter, East Stour, Ashford
Mangles, Ross D., Stoke, near Guildford
Montagu, G. H., Caversham Hill, Reading
Matson, William Bawtree, Kentish Buildings, Southwark, S.E.
Moore, James, Monksbury Court, Hereford
Monckton, Edward, Hale Place, East Peckham, Tunbridge Wells
Phillimore, Rev George, Radnage, Stokenchurch, Oxon
Peele, Henry, Durham
Portman, The Hon. W. H. B., M. P.; Bryanston, Blandford
Plumptre, John Bridges, Goodnestone Farm, Wingham
Pakington, Sir John, Bart., Westwood Park, Droitwich
Paull, Wm. Joseph, Piddletown, Dorchester
Phillips, Thomas E., 37, Wilton Place, S.W.
Paget, Thomas Tertius, Humberstone, Leicestershire
Price, Thomas, Querrington, Fairford
Price, Charles, Querrington, Fairford
Ramsbotham, John, Crowborough Warren, Tunbridge Wells
Robinson, Sir John Stephen, Bart., Rokeby Hall, Louth, Ireland
Ridler, Richard Henry, Shobden, Herefordshire
Rimell, Richard, Jun., Whitbourne, Bromyard
Smith, Joseph Lambourne, Ledbury, Hereford
Smythe, Sir Charles Frederick, Bart, Acton Burnell, Shrewsbury
Shepheard, Joseph, Torpoint, Cornwall
Stafford, Thomas, Marnham, Nottingham
Stirling, Sir Walter, Bart, Burrs Wood, Tunbridge Wells
Stiles, Stephen, Shirburn Farm, Tetsworth
Scott, William, Empshott Grange, Petersfield
Shelburne, Earl of, Bowood, Calne, Wilts
Stratford, Hugh Stratford, Thorpe Lubenham Hall, Market Harboro'
Squire, William, 5, Coleman Street, E.C.
Seager, James Lys, Carroun House, South Lambeth, S.
Stafford, Robert, 31, Hyde Park Square, W.
Tombs, John, Hatherop, Fairford
Turner, John, Englefield, Reading
Tavendale, Joseph, Pendley Farm, Tring
Tayler, Rowland, Colchester
Tempest, Colonel, Tong Hall, Leeds
Talbot, Hon. Colonel W. P., Honeybourne, Gloucester
Townshend, The Marquis, Raynham Hall, Norfolk
Taylor, Henry T., Holmer House, Hereford
Underhill, W. S., Newport, Salop
Vivian, Major General Sir R. J. H., Bart., K.C.B., Caterham, Surrey
Vernon, Hon. Fitzpatrick H., Farming Woods, Thrapstone
Verner, Edward Wingfield, 86, Eaton Square, S.W.
Watson, Robert, Scurrington, Whatton, Notts
Wigsell, Capt. Atwood Dalton, Sanderstead Court, Croydon, S.
Wilson, Henry Maitland, Stowlangtoft, Bury St. Edmunds
Wright, Henry Banks, Shelton Hall, Newark
Wright, John, Yeldersley House, Derby
Woolloton, Charles, Lynton Lodge, Clapham Park, S.
Wienholt, Frederick, Island House, Langharne, Carmarthen
Wilkins, Edmund, Mortimer, Reading

Finances.—Mr. Fisher Hobbs presented the report of the committee, from which it appears that the Secretary's receipts during the past month had been examined by the committee, and by Messrs. Quilter, Ball, & Co., the Society's accountants, and were found correct. The balance in hands of the bankers on the 31st July amounted to 10,129*l.* 5*s.* 11*d.*

Implements.—Colonel Challoner reported that the Committee had considered the list from which the Judges were selected during previous years, and recommended the addition of several names. It having been represented that inconvenience had arisen from exhibitors being obliged to have their miscellaneous articles in a separate stand, the Committee recommended the substitution for the order to that effect, that the exhibitors be directed to have their miscellaneous articles separately arranged, but in the same stand, and entered at the end of their list in the catalogue under the head of Miscellaneous Articles. This report was adopted.

Stock Judges.—The Committee recommended that the Secretary be instructed to communicate with local Societies, requesting them to communicate to him the names of those persons who are in their opinion best qualified and will act as judges of live stock under the respective headings of Horses, Cattle, Sheep, and Pigs, which was agreed to.

House.—The report was presented by Mr. Fisher Hobbs, and recommended the grant of additional room accommodation to the Secretary, which was unanimously adopted.

Protests.—The Stewards of Live Stock reported that the mare No. 746 was not entitled to the prize awarded; the first prize devolved to No. 708, "Barbara," the property of Lord Berners.

Colonel Challoner having moved that the cordial thanks of the Society should be offered to Lord Portman for having so kindly undertaken, and so efficiently filled, the office of President at their late meeting in Battersea Park, it was seconded by Lord Walsingham and carried unanimously.

The Council, after granting the usual vacation to the Secretary and clerks, adjourned over the autumn recess to Wednesday, November 5.

ROYAL AGRICULTURAL IMPROVEMENT OF IRELAND.

Limerick.—The annual meeting of this Society has been held under extremely unfavourable circumstances—one of which undoubtedly has been the weather—another, the meeting on the same week of the Yorkshire Agricultural Society—and the third and most serious of all, the gloom thrown by the re-appearance of agrarian crime. Owing to these or other causes there was a great falling off both in the entries and attendance.

The Lord-Lieutenant dined with the Society on the evening of Wednesday, and made the following remarks on Agricultural Progress:—

"I am aware that fault has been found with me once and again for dwelling upon the superior adaptation of the country to purposes of pasture and the rearing of cattle, and so seeming, by implication, to discourage tillage and the growth of crops. Now, no one could refuse to give to tillage and the growth of crops their proper opportunity and their proper sphere; but surely it is the part of a prudent man to take things as they are, and to follow the indisputable law of nature. It is undoubtedly true that for a late season or two there has been a material falling off in what may be termed the general agricultural income of the country; but it is as true, and can be proved from authentic documents, that this disease has fallen upon tillage and crops, whereas the value of stock has actually increased. I am sure you will excuse me for pointing your attention to this subject, which does seem to me entitled to your most serious consideration; and it seems to me to establish, indisputably, that in Ireland stock is the most steady and permanent part of her rural income. I think we should be quite wrong to consider that the increase of cattle necessarily leads to the decrease of tillage. Modern husbandry has introduced stall-feeding, and stall-feeding increases manure, which is the surest staple of tillage; and I believe it to be true, notwithstanding the decrease for the last few years in the value of crops, still, that all the processes and methods of agriculture in Ireland are exhibiting continued improvement. Much capital has been devoted to drainage, and, whether we consider the character of the crops, the soil, or the climate, there is no doubt that agricultural speculation could not take a more beneficial direction. The late report of the Commissioners of Public Works shows that in Ireland, on 200,000 acres of thorough draining, and in a great part, subsoiling, have been carried into successful operation since 1848. The amount expended in the last few years was, in 1859, 30,000*l.*; in 1860, 32,000*l.*; in 1861, 36,000*l.*; and in the first half of the present year, 32,000*l.* In the county of Limerick alone the gross expenditure contemplated and in progress under the Lands Improvement Acts has been 188,000*l.*, of which 9000*l.* has been for labourers' dwellings. This quota is above the average of the other Irish counties, and is only exceeded by Cork and Kerry.

We shall give the Prize List and a report next week.

Yorkshire Agricultural.—A very successful meeting of this Society has been this week held at York, under the Presidency of Mr. Thompson, M.P. A general reference to the show is given in another column, and the awards of prizes are given below.

The following figures illustrate the progress of the Society in the different departments of its annual exhibition.

Years.	Places of Meeting.	Entries of Stock.	Entries of Implements. No. of Exhibitors.	Entries of Implements. No. of Implements
1838	York	301	....	....
1839	Leeds	240	....	....
1840	Northallerton ..	308	....	....
1841	Hull	305	....	....
1842	York	384	....	....
1843	Doncaster	289	....	....
1844	Richmond	270	....	....
1845	Beverley	375	....	....
1846	Wakefield	364	....	....
1847	Scarborough .	313	....	....
1848	Royal Show at York	..	....	....
1849	Leeds	396	....	....
1850	Thirsk	461	....	....
1851	Bridlington	402	....	....
1852	Sheffield	597	....	....
1853	York	784	87	650
1854	Ripon	870	75	600
1855	Malton	852	88	753
1856	Rotherham	790	93	707
1857	York	843	102	983
1858	Northallerton ..	679	94	721
1859	Hull	748	141	1026
1860	Pontefract	611	119	896
1861	Royal Show at Leeds	..	....	....
1862	York	664	147	1566

On the present occasion there are 74 Short-horn cattle of various ages, 56 pens of Leicester sheep, 94 pens of pigs, and no fewer than 240 horses exhibited. It will be seen that Warlaby blood is in the ascendant, Mr. Booth showing two celebrated cows, *Queen of the Vale* and *Queen of the Ocean*, and one heifer calf *Queen of the May* 2, and taking the 1st prize in every case. Colonel Towneley takes the 1st prize in the old Bull class with Royal Butterfly, which has taken prizes before; and Mr. Ambler of Watkinson Hall, taking the 1st prize in the 2-year old and yearling bulls. To the other classes and the show of horses we must refer hereafter, and it must suffice to call attention to the general account given in another page of the implement yard, and to the particular account there given of the steam ploughing.

It will be seen from the prize list that Mr. Cranston takes the prize for Wood's mower, which has had great success in almost all its Yorkshire competitions with its great rival the machine of Burgess & Key. It was, however, here pitted against no fewer than 13 other machines by different makers. The trial was on a fair crop of Grass, but it was so impeded by the crowds of spectators, that beyond an examination of the quality of the work accomplished there was little opportunity of forming a right estimate of the relative merit of the machines.

The following is the list of Judges:—

Cattle.—Mr. J. Woodley, Stanwick Park, Darlington; Mr. Stratton, Walls Court, Stapleton, Bristol; and Mr. G. Drewry, Holker House, Newton in Cartnell.

Sheep and Pigs.—Mr. L. Borman, Irby, Grimsby; Mr. Richard Woods, Osberton, Worksop; and Mr. J. Wood, Stanwick, Darlington.

Horses.—Mr. J. Wood, Overton, Oakham; Mr. C. Garfit, Knutsford; and Mr. Parrington, Brancepeth, Durham.

Poultry.—Mr. J. O. Jolly, Acomb, York; and Mr. T. J. Charlton, Bradford.

Flax.—Mr. H. Tennant, Tockwith.

Wool.—Mr. G. Clayton, Stainley Hall, Ripley.

Implements.—Mr. Druce, Eyesham; Mr. Scott, Boroughbridge; and Mr. Outhwaite, Bainesse.

Steam Ploughs.—Mr. J. C. Morton, Streatley.

SHORT-HORNED CATTLE.

Best Bull of 3-years old and upwards.—20*l.* to Lieut.-Col. Towneley, for Royal Butterfly; 10*l.*, Lord Feversham, for Skyrocket. Mr. Homes's Van Tromp, highly commended; and the Duke of Montrose's bull and Mr. J. Robinson's Second Duke of Airdree, commended.

Bull 2 years old.—25*l.*, Mr. H. Ambler, Halifax, for Gamester;

10*l*., Mr. J. Charlesworth, Headfield, Dewsbury, for General Murat. Lieut.-Col. Towneley's Master Frederick, highly commended; and Mr. Fawkes's Lord Cobham, commended.

Yearling Bull.—20*l*., Mr. H. Ambler, Watkinson Hall, Halifax, for Windsor Augustus; 10*l*., Mr. S. Majoribanks, Bushey Farm, Watford, Herts, for Whipper-in. Lieut.-Colonel Towneley's Royal Butterfly 10th, highly commended; and Mr. Carr's Don Windsor, commended.

Bull Calf upwards of 5 months old.—10*l*., Mr. J. Robinson, Clifton Pastures, Newport Pagnell, for Jericho; 5*l*., Lady Pigot, for Pan. Mr. R. Middlebrough, commended.

Cow of any age, in Calf or Milk.—15*l*., Mr. R. Booth, Warlaby, for Queen of the Vale; 5*l*., Mr. R. Eastwood, Swinshaw House, Burnley, for Rosetta. Mr. J. Douglas, Athelstaneford, for Maid of Athelstane, highly commended; Lord Feversham, for Valetta, and Lieut.-Col. Towneley, for Rose of Lancashire, commended.

Three-year-old Cow, in calf or milk, and having had a calf.—10*l*., Mr. R. Booth, for Queen of the Ocean; 5*l*., Lady Pigot, for Pride of Southwicke. Messrs. A. & A. Mitchell, Alloa, N.B., for Mistleto, highly commended; Lieut.-Col. Towneley, for Young Butterfly, commended.

Two-year-old Heifer, in calf.—10*l*., Mr. J. Douglas, for Queen of Athelstane; 5*l*., Mr. G. Atkinson, Hall Farm, Seaham, for Snowdrop. The class was commended.

Yearling Heifer.—10*l*., Mr. R. Booth, for Queen of the May; 5*l*., Mr. J. R. Singleton, Givendale, for Miss Waterloo the 4th. The class was commended.

Heifer Calf, upwards of 5 months old.—5*l*., Lieut.-Colonel Towneley, for Frederick's Farewell; 3*l*., Lady Pigot, for Castiamra; Mr. T. Jolly's Lady Leonara commended.

Fat Ox, under 4 years old,—10*l*., Mr. J. Ellison, Allerton House, Knaresbro', for Nothing Left.

CATTLE OF ANY BREED.

Cow for Dairy purposes.—5*l*., Mr. Q. Clark, Bilton, for Useful; 2*l*., Mr. R. Brooke, Gateforth House, for Maggie.

EXTRA STOCK.—1, Mr. Tennant, Scarcroft Lodge, Leeds, for Rosa; 2, Lord Feversham, for The Swell.

LEICESTER, OR LONG-WOOLLED SHEEP.
(Not Cotswold.)

Shearling Ram.—15*l*., Mr. J. Borton, Barton House, Malton; 5*l*., ditto. Mr. S. Wiley, Brandby, was highly commended; and Mr. T. Beal, Scrayingham, commended.

Ram of any age.—10*l*., Mr. J. Borton, Barton House, Malton; 5*l*., ditto.

Pen of 5 Ewes.—5*l*., Mr. W. Lovell, Nafferton Grange, Driffield; 3*l*., Mr. R. Topham, Scampston.

Pen of 5 Shearling Wethers.—5*l*., Mr. F. Jordan, Eastburn House, Driffield; 3*l*., Mr. F. Rickell, Warter.

Pen of 5 Shearling Gimmers.—10*l*., Mr. S. Wiley; 5*l*., Mr. W. Lovel, Nafferton Grange, Driffield. G. L. Fox, Esq., Bramham Park, Tadcaster, highly commended.

SHORT-WOOLLED SHEEP.

Shearling Ram.—10*l*., Earl of Yarborough, Brocklesby.

Pen of 5 Shearling Gimmers.—5*l*., Mr. T. Marris, The Chase, Ulceby; 2*l*., Mr. W. Thompson, Hunsley, Beverley.

COTSWOLD SHEEP.

Shearling Gimmers.—10*l*., Mr. J. M. Read, Elkstone, Cheltenham.

Pen of 5 Shearling Gimmers.—5*l*., Mr. J. M. Read, Elkstone, Cheltenham.

CROSS-BRED SHEEP.

Pen of 5 cross-bred Shearling Wethers.—5*l*., Lord Wenlock, Escrick Park; 2*l*., Mr. W. Thompson, Hunsley, Beverley.

EXTRA STOCK.—Mr. F. Jordan, Eastburn House, Driffield. Mr. W. Angas, Neswick, Driffield, highly commended.

PIGS

Boar, large breed.—5*l*., Mr. T. Crisp, Butley Abbey, Wickham Market; 2*l*., Mr. E. Dyson, Leeds.

Sow, large breed, in pig or milk.—5*l*., Mr. T. Crisp; 2*l*., Mr. E. Harrison, Woodhouse Moor, Leeds.

Boar, small breed.—5*l*., Mr. W. B. Wainman, Carrhead, Cross Hills; 2*l*., ditto.

Sow, small breed, in pig or milk.—5*l*., Mr. W. B. Wainman, Carrhead, Cross Hills; 2*l*., ditto.

Boar of any breed, not qualified to compete in classes 22 and 24.—5*l*., Mr. J. Harrison, jun., Heaton Norris, Stockport; 2*l*., Mr. W. B. Wainman.

Sow of any breed, in pig or milk, not qualified to compete in classes 23 and 25.—5*l*., Mr. W. B. Wainman; 2*l*., ditto.

Three Store Pigs of any breed, and of the same litter, from 4 to 9 months old.—5*l*., Lord Wenlock; 2*l*., Sir G. O. Wombwell, Bart.

Boar, large breed, under 12 months old.—3*l*., Mr. W. B. Wainman,

Sow, large breed, under 12 months old.—3*l*, Mr. J. Dyson, Dock Street, Leeds.

Boar, small breed, under 12 months old.—3*l*., Sir G. O. Wombwell, Bart.

Sow, small breed, under 12 months old.—3*l*., Lord Wenlock.

EXTRA STOCK.—Lord Wenlock. Mr. H. Whitaker, York, highly commended.

THE IMPLEMENT AWARD.

Combined Threshing and Dressing Machine.—15*l*., Mr. E. Humphries, Pershore. Commended, Messrs. Turner, Ipswich.

Threshing Machine, single blast, not to finish.—15*l*., Mr. E. Humphries. Commended, Messrs. Turner.

Winnowing, Dressing, and Screening Machine.—5*l*., Messrs. Hollis & Son, Witney.

Blower for Grain.—3*l*., Mr. Sawney, Beverley.

Pulper.—3*l*., Messrs. Samuelson & Co., York.

Grinding Mill for farming purposes.—5*l*., Messrs. Ashby & Co., Stamford.

Two Horse Portable Horse Power for the minor machinery of a farm.—5*l*., Mr. J. Weighill, Pickering. Highly Commended, Messrs. Richmond & Chandler, Salford; Messrs. Woods & Cocksedge, of Stourmarket; Messrs. Turner, Ipswich, Commended.

Drill for general purposes, adapted for applying artificial manures with the seed.—5*l*., Mr. J. Coultas, Jun., Grantham. Commended, Messrs. Coultas & Son, Grantham.

Corn, Turnip, and Small Seed Drill.—5*l*., Messrs. Coultas & Son. Commended, Messrs. Hollis & Son.

Two-ridge Drill for Turnip and Mangel Seed.—3*l*., Mr. J. Barker, Dunnington.

Two-ridge Drill for Turnip and Mangel Seed and Artificial Manure.—3*l*, Mr. J. Coultas, Grantham.

Drill for Water and Liquid Manure.—3*l*., Messrs. Reeves, Westbury.

Artificial Manure Distributor.—3*l*., Messrs. Reeves, Westbury.

Mowing Machine.—10*l*, Mr. W. Cranston, London. Messrs. Samuelson & Co., York, Highly Commended; Mr. Watson, Gembling; Mr. Kearsley, Ripon; and the Busby Implement Company, Newton-le-Willows, Commended.

Horse Rake for Corn.—3*l*., Messrs. Ashby & Co., Stamford.

Horse Rake for Hay.—3*l*., the Busby Implement Company.

Two-horse Waggon.—3*l*., Messrs. A. & E. Crosskill, Beverley.

Single-horse Cart.—5*l*., the Busby Implement Company.

LONG WOOL.

Five Hog Fleeces.—5*l*., Messrs. T. C. & J. B. Booth, Killerby, Catterick. Mr T. Marris, The Chase, Ulceby, Highly Commended. Mr. T. H. Chambers, Staxton, Ganton, Commended.

SHORT WOOL.

Five Hog Fleeces.—5*l*., Lord Wenlock, Escrick Park, York.

FLAX.

Specimen of Green Flax, not less than 20 stones.—5*l*., Mr. J. Hodgson, East Lilling, York.

Reviews.

Biographical Sketch of the late William Blamire, Esq., formerly M.P. for the County of Cumberland, and Tithe, Copyhold, and Inclosure Commissioner for England and Wales. By Henry Lonsdale, M.D. Routledge.

This is the memoir of a man to whom English Agriculture and English society are both greatly indebted. Nothing has tended more on the one hand to agricultural improvement, and on the other to the removal of a constant source of irritation and dispute in country parishes, than the Tithe Commutation Act. And as of this Act Mr. Blamire may be fairly considered the author, so he was from the commencement of its operation its administrator.

There is given in these pages an account of one of the most laborious and most useful lives of which the present century can boast. The Tithe Commutation Act—the Copyhold Enfranchisement Act—the Commons Enclosure Act—the Drainage Acts, both public and incorporating loan companies were all administered by Mr. Blamire as the chief worker of these separate commissions.

His biography is written by an enthusiastic friend, but it is hard to see how any one coming a stranger to the office of his biographer, and reading the history of his day, could avoid the expressions of eulogy and praise which are here collected. We confine ourselves to an extract:—

"To enable the reader to form a proper estimate of what the Tithe Commutation Act has *done*, the writer should produce a picture of the state of things which prevailed before the Tithe Act was *known*. Landseer painted 'Peace' and 'War' as two companion pictures, but his 'War,' though representing the victims of a 'bubble reputation even at the cannon's mouth,' was tame and unimpressive compared with the wars of tithes in England 40 years ago. We read in history of the contending factions of York and Lancaster, but the war of tithes—the priest fighting with his parishioners—was more constant, more rancorous (there could be no chivalry in a tithe goose), and, in a moral point of view, more deadly than the 'Wars of the Roses.' Blamire came with his commutation scheme in 1836, and in a few years established peace. No two pictures could be more antipodal than the tithe war and the tithe peace, and few subjects could be found more illustrative of the deadly *animus* of the past and the pacific *status* of the present condition of rural England. Parishes formerly hotbeds of feud and hate are now marked by amity and repose, and the clergyman, at one time likened to everything that was bad, is now on good terms with his flock.

"The evils of the tithe system are much forgotten because no longer felt by the people of England. No greater evil was attached to the tithe system than the constant tithe suits and never-ending bickerings. There were series of reports published for tithe cases, lawyers noted as tithe lawyers, and a court (the equity side of the Exchequer) occupied almost entirely by tithe causes. The annual law expenditure must have been something tremendous. It is believed that every parish in England has had at some time its tithe suit. Caldbeck, in Cumberland, was noted for spending nearly the value of the land in litigation, and in the case of 'Fellowes *versus* Clay,' in Devonshire, 15,000*l*. had been wasted in law expenses."

Farm Memoranda.

SOUTH HANTS FARM.—*Report to the end of July.*—Since our last report the weather has been everything that could be desired for the crops of Corn and Pulse, which are fast maturing for the harvest; the latter hay also has been got up well. The root crops had heretofore made very slow progress, but during the last two weeks of the month they have made most rapid growth, and there seems to be, generally speaking, a more regular plant on the land than usual of all kinds of roots, as well of early as late sowings. It is now near enough to the harvest to estimate the yield of the different grain crops, and we find that with scarcely any exception the early sown Wheat is very much broken down; all those ears which have fallen prematurely must prove very deficient, and the little grain found in them will prove to be worthless as millers' Wheat. There are a few pieces of Wheat of latter sowings which still show tolerably even at head, but the straw is not ripening a good colour, and the ears look blighted; this arises, no doubt, from the same cause which generally affected the early sown Wheat, viz., the spring and summer months having proved unusually cold and wet, the Wheat plant has been damaged at the root, and this circumstance, together with the effect of the late boisterous weather, has broken down the Wheat crop in a serious manner, and in consequence, the crop for the South Hants district must be estimated much below an ordinary average, both in quantity and quality, should the harvest prove ever so fine for the ingathering. The Barley crops, which promised badly at first, are wonderfully improved, and may now be reckoned to produce an average crop of grain, the quality of which generally is not much to be depended on for malting purposes, as the seed time was delayed by unpropitious weather far beyond the usual period required to produce Barley of first-rate quality. Oats of all varieties, whether early or late kinds, are unusually well planted, and remarkably gross in the straw wherever the land was good enough to produce it; the grain too seems to be well set, promising an abundant crop of excellent quality, and the crop altogether may be estimated as being much over the average produce for ordinary seasons. Beans and Peas seem to have podded well everywhere in this district, but especially the Beans; both however may be fairly stated to promise over an average crop, many of the early kinds of Peas being cut, and carting to stack is now going on in different directions. Potatoes, taking the early varieties, have now been lifted, or are in process of being taken up for market; the crop is nearly everywhere abundant, and although in some fields there are a considerable number of diseased tubers, yet the crop of sound roots may be called over the average produce of those seasons since the year 1845, when the disease first made its appearance. It is rather early to speak so decidedly as to the probable produce of the later varieties, upon the result of which the country depends for the main supply during the winter and spring, but it may fairly be expected to yield an average return of roots of better quality than we have had for several years past, as every day's continuance of the present fine weather must tell wonderfully in favour of the soundness and quality of the tubers; and we observe that the haulm is not as yet affected with disease, except to a very trifling extent in some sorts, whilst the Fluke variety is as yet untouched, and wears a healthy hue, with the darkest and most luxuriant foliage; this, together with the perfect white blossom peculiar to this variety, makes, as we thought last week on looking over 10 acres of our crop, one of the handsomest crops of field produce we have ever seen. The crops of Mangel and Carrots, although not so early sown as usual, are everywhere very growing, and, generally speaking, the crop of Turnips may be looked forward to with the promise of a most abundant crop. The second cutting of Clover is generally very deficient, for although the weather was moist enough to have produced a good crop, yet it has been so cold for the season that a species of blight has generally attacked the plant, and stopped the growth, and, light as it is, it ought now to be cut where intended for hay. The harvest will be pretty general in this district about the 11th of August. We commenced cutting some early sown White Canadian Oats this day, July 31; on the morrow we commence ploughing and sowing Turnips between the rows of stooks, which are purposely packed into round stooks on every third ridge, thus giving us two-thirds of the land for cultivation before carting the crop. This is now the period for holding fairs for the sale and purchase of the Hampshire Down sheep; this variety is fast becoming more fashionable and better appreciated, arising in a great measure from the improvements made by the breeders, they having studied the points desirable to the graziers. It is now an increasing practice for the farmers of this district to purchase ewes at the early fairs, like Stockbridge, Overton, Alresford, and some others, and turn the tup with them at home; many also hold on a good number of ewes of the former year's stock for the like purpose, and we think they are wise in so doing, particularly when stock is high to purchase; it is, in fact, the only defensive position of the grazier, and were it more generally acted upon, it would take the undue advantage which the breeder now has out of his hands. *J. B.*

Calendar of Operations.

JULY.

LAMMERMUIR SHEEP FARM: *July* 28—Such a cold and unkindly summer we never before had to write of. Heat is what we need, and the summer passes away without bringing it. On those rare occasions on which the sun breaks through the cold wintry looking clouds, we feel there is warmth in his light as of old, and on the sunny side of some good shelter we can sometimes fancy that summer has come, but leave this favoured spot and the air is ungenial and cold as March. This is not the character of one or even two weeks of this strange season, but of the whole month of June and now nearly all July. These last few days have been boisterous, dry, and still cold. The effect of such weather on the crops is now unmistakably apparent. Wherever the land is dry and light the bulk of crop is fair, but on the cold clay lands most miserable. What in ordinary seasons is our best cropping land, is this year the worst, the inferior land where dry looking a fair crop. A considerable breadth of Potato Oats on the heavy land look like half a crop, and so late that we will not venture to say when harvest may be expected. Turnips are also very backward. The Swedes are now all thinned, and the first sown are spreading in the drill, but seem to have a cold crumpled up look. The last sown (Yellows) are not yet thinned, and do not look well, having suffered from fly as well. The only crop that is anything like generally good is Clover-hay. This however, like the corn, is bulkiest on dry land. The weather is now favourable for securing it. The horse rake is an immense help in hay making, the manual labour being concentrated on the ricking, while the horse-rake with a little assistance from the hand-rake brings up the rear and finishes in a clean business-like manner. Every person now sows Alsike Clover in part, and a strong growing Clover it is, but experience is teaching us that it is neither perennial nor even biennial. Last year we had a magnificent piece of Alsike. We call it Alsike, as although sown down with mixed Clovers the Alsike took entire possession of the ground. The result was an immense crop of hay, but little or no aftermath, and this spring, having allowed the field to lie for grazing, not a plant of the Alsike is to be seen, and the field which last year was so luxuriant, looks this year poverty stricken and scanty. Of course cutting for hay last year is against the grazing this year, but on a portion which was grazed the first year we notice a marked deficiency of Clover the second. A peculiarity of growth in this Clover we may notice—that when reserved for hay it makes its most rapid growth a week or two just before coming to the scythe. Stock and crop alike suffer from the ungenial weather; lambs were a full crop in point of numbers

but quality is now deficient. This is telling specially on individual lambs. The tops looking tolerably well, but a long list of dry-skinned ill-thriven looking lambs amongst them. Still prices keep high, being a little lower than last year, but not so much lower as might have been expected from the prospect of the Turnip crop. The high price of wool may in some degree tend to keep up the price of lambs. Our hill pastures have never come right this season, being deficient in bottom. There is small prospect of much hay being made amongst the sheep's feet this year. *J. S B.*

North Lincolnshire: *Aug.* 4.—The month of July has been a great contrast to the preceding one; the former part of it, up to the 17th, we had frequent showers, but since that date to the conclusion (with the exception of the 31st, on which day we had a nice rain) the weather has been all we could wish for bringing on the harvest. I hope the last three weeks have somewhat relieved our fears as regards the Wheat crop, and that after all we may have about an average, though I hear many complaining of red gum or rust. We hope to commence harvest about the 8th, with Poland Oats and Wheat by the 12th; our practice is to mow all with the scythe, principally done with the men who usually work for us—they go in families and work by the piece—the price we expect to be about 8s. per acre, making it ready for the waggon. Turnips, both Swedes and Whites, are looking well, the rain last Thursday just came right to keep them growing; we have finished hoeing the first time over, and the greater part gone over a second time. This work is also done by the piece, Swedes costing 7s., twice over; White Turnips, 6s. Mangels are again a failure. Hay crop not heavy, but pretty well got. Pastures have gone off very much this last month, and are getting very bare and a good deal burnt up. We have had the steam cultivator at work for three weeks past; have done 60 acres of seed land for Wheat, some of it three times over, making a good fallow for it. Where similarly done last year the Wheat is looking remarkably well. *S.*

South Northamptonshire.—The past week has been more cheering to the agriculturist and more favourable for the development and ripening of the cereals; in many places the Wheat crops have sustained considerable damage from the high winds which prevailed from the 20th to the 24th of last month; in exposed situations, on many fields more than a third of the crops are broken down, this is more particularly the case with early sown Wheats and where the land was loose and hollow. Our later sown and spring crops we consider quite an average, and should fine weather continue the quality will be good. Barley is late, and very little of the crop will be fit to cut before Aug. 20; the late sown crops on light soils have greatly improved within the last month, and on such soils in good condition the crop is a good average. Beans are bulky, but are now suffering from an attack of the Bean Aphis, or Black Dolphin, which in some places have greatly injured the crops. The hay harvest has been protracted and expensive, a considerable breadth has been carried in good condition during the past week; previously much hay was spoiled, many ricks had to be cut, some turned and a few fired. Our Swedes sown from May 30 to June 28 look healthy and grow well. Turnips generally in this locality are very backward: they may still be a fair but cannot be a heavy crop. *G. M.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Aug. 6, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0-6	Amount of Cloud 0-10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.*	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.										Inches.		
Thursday ..	31	30.10	62°	59°	S.W.	2	5	74°	50°	118°*	46°	..	64°	61°
Friday ..	1	30.05	65	60	S.W.	2	5	75	48	123	44	..	64	61½
Saturday ..	2	30.02	63	58	W.	3	4	79	55	115	54	..	64	61½
Sunday ..	3	30.10	66	60	W.	1	2	73	42	117	39	..	64	61½
Monday ..	4	30.01	63	57	W.	2	4	78	43	120	40	..	64	61½
Tuesday ..	5	29.65	62	58	S.W.	3	4	74	54	115	51	0.01	64	61½
Wednesday .	6	29.77	64	58	S.W.	4	3	72	47	116	41	..	63½	61½

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Notices to Correspondents.

Books: *Jersey.* Morton's "Farm Calendar" (Routledge) or the "Cyclopædia of Agriculture" (Blackie), 10s. 6d. and 2l. 15s. respectively. The quarter's charge for the Paper is 6s.6d.

Forage Plants: *Old Subscriber.* Next week: meanwhile we would say that Lucerne is to be preferred to any Cow Parsnip on rich deep calcareous loams. If you have that kind of soil and a good climate, grow Lucerne. If you have command of ample liquid manure grow Italian Rye-grass.

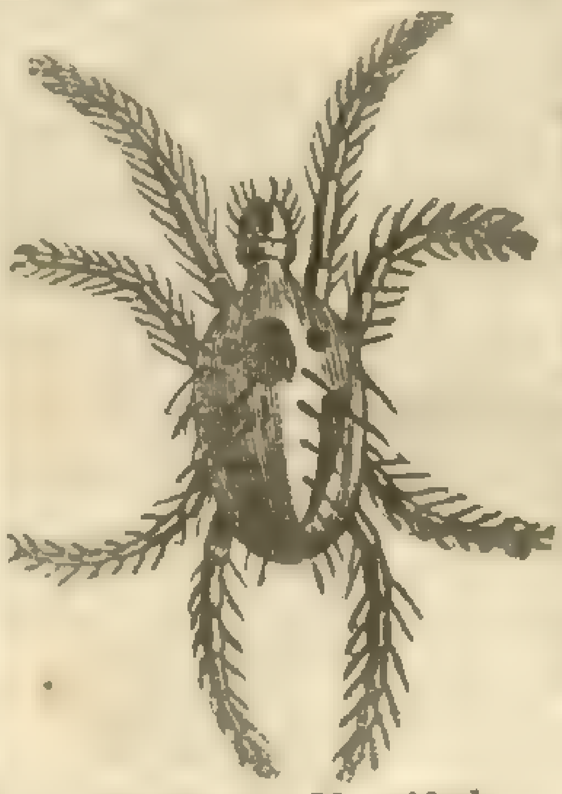
Red Gum: *S B.* This is the name of the disease from which your Wheat is suffering.

Upwards of 2000 Cases have been reported as Cured by
JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.
Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.
Both may be obtained of all principal Seedsmen.
Patentee: J. Neal, Edward Street, Birmingham.



Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.
This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.
Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.
Wholesale by
Price's Patent Candle Co., Limited.

BURGESS AND KEY'S COMBINED GRASS MOWING and REAPING MACHINES are made to cut the heaviest crops of Grass, both the Wheels being geared, and sufficient weight in the Machine to give grip on the ground.
The price of B. & K.'s Mower, 25l.; Combined Mower and Reaper, 30l.
Burgess & Key's celebrated SELF DELIVERY REAPING MACHINES.
The superiority of this Machine over every other in use has been proved by the most influential farmers in England. Price 36l.
Burgess & Key, 95, Newgate Street, London, E.C.
*** Full particulars sent on application.

BENJAMIN EDGINGTON'S Temporary Rooms, Lined, Boarded, and Decorated.
MARQUEES and TENTS of all dimensions, for Horticultural Shows, &c., on sale or hire.
FLAGS and BANNERS of every description, for sale or hire.
RICK CLOTHS, New and Second-hand, with Poles, &c., complete.
Address, Benjamin Edgington, 2, Duke Street, London Bridge, Southwark, S E. No other Establishment.

TANNED NETTING for the Protection of Fruit Trees, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Cotton Netting, Tiffany, Scrim Canvas for Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c.
Be particular, John Edgington & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

W. FOX and CO., 105, Holborn Hill, E.C. Great Reduction in the PRICE of WIRE NETTING.
LIGHT.
2-inch Mesh 24 ins. wide, 4d. per yard, galvanized after made.
" 30 " 5d. " "
" 36 " 6d. " "
" 42 " 7d. " "
" 48 " 8d. " "
MIDDLE.
2-inch Mesh 24 ins. wide, 5d. per yard, galvanised after made.
STRONG.
2-inch Mesh 24 ins. wide, 6½d. per yard, galvanised after made.
Garden Arches from 14s.; Seats from 16s.; Chairs from 6s.; Flower Stands from 6s.; Hen and Pheasant Coops, 18s; Diamond Lattice Fencing Twine, and every article in Iron and Wire Work. Carriage paid on 50s. orders.
Illustrated Catalogues on application.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.
PROTECTION from the SCORCHING RAYS of the SUN.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.
Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.
Elisha Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

Oil Paint no longer Necessary.
HILL and SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which Hill & Smith will forward on application.
Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.
Apply to Hill & Smith, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

WM. BLAKE'S DESCRIPTIVE and CULTURAL SEED POCKETS, GERMAN SEED ENVELOPES, &c.
Catalogues and Samples on application.
60—70, Howard Street, Glasgow.

JAMES PHILLIPS AND CO., 180, Bishopsgate Street, Without, E.C., beg to hand their prices of

GLASS FERN SHADES.

	s. d.
6 inches ..	.. 1 4
7 " ..	.. 1 8
8 " ..	.. 2 0
9 " ..	.. 2 6
10 " ..	.. 3 3
11 " ..	.. 4 0
12 " ..	.. 5 6
13 " ..	.. 7 6
14 " ..	.. 10 0
15 " ..	.. 14 0
16 " ..	.. 18 6

TERRA COTTA STANDS FOR SAME.

6 inches	1s. 6d.	12 inches	2s. 9d.
7 "	1 6	13 "	3 0
8 "	1 9	14 "	3 3
9 "	2 0	15 "	3 6
10 "	2 3	16 "	3 9
11 "	2 6		

GLASS STANDS FOR SAME.

6 inches	1s. 0d.	12 inches	3s. 0d.
7 "	1 3	13 "	3 6
8 "	1 6	14 "	4 0
9 "	1 9	15 "	4 6
10 "	2 0	16 "	5 0
11 "	2 6		

TANK AQUARIA.
Glazed with Stout Sheet Glass, and Slate Bottoms.

	£ s. d.		£ s. d.
12 inches long	0 18 0	18 inches long	1 7 0
14 "	1 1 0	20 "	1 10 0
16 "	1 4 0	24 "	1 16 0

Larger or smaller sizes in proportion.
BEST ROUND AQUARIA.
With Ebony Stands.

	s. d.		s. d.
12 inches diameter	5 0 each	17 inches diameter	12 0 each
13 "	6 0 "	18 "	13 0 "
14 "	8 0 "	19 "	14 0 "
15 "	9 0 "	20 "	15 0 "
16 "	10 0 "		

FERN CASES,
With Span Roofs, same price as Tank Aquaria.
Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready or use.
Milk Pans, and every description of Glass for Horticultural purposes.

THOMAS MILLINGTON, 87, Bishopsgate Street Without, E.C.
HORTICULTURAL GOODS.

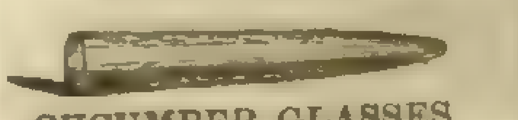
PROPAGATING GLASSES.

3 inches	0s. 4½d. each.	12 inches	1s. 9d. each.
4 "	0 5½ "	13 "	2 0 "
5 "	0 6½ "	14 "	2 6 "
6 "	0 8 "	15 "	3 0 "
7 "	0 10 "	16 "	3 6 "
8 "	1 0 "	17 "	4 0 "
9 "	1 2 "	18 "	5 0 "
10 "	1 4 "	19 "	6 0 "
11 "	1 6 "	20 "	7 0 "

HAND GLASSES.

12 inches	6s. 0d. each	18 inches	9s. 0d. each
14 "	7 0 "	20 "	10 0 "
16 "	8 0 "	24 "	12 0 "

If open top, 1s. extra.



CUCUMBER GLASSES.
From 12 inches long and upwards, 1d. per running inch.

ROLLING PINS.
From 12 inches long, 1½d. per running inch.

Improved ANTI-CORROSION and other PAINTS.
GAS and LAMP GLASSES, GLOBES, &c.
CHIMNIES of every description.
Not accountable for Breakage.

Paxton Works, Sheffield, Established 1738.

International Exhibition Prize Medal is just awarded to Saynor & Cooke for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR and COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.
Caution.—None are genuine unless marked Saynor. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

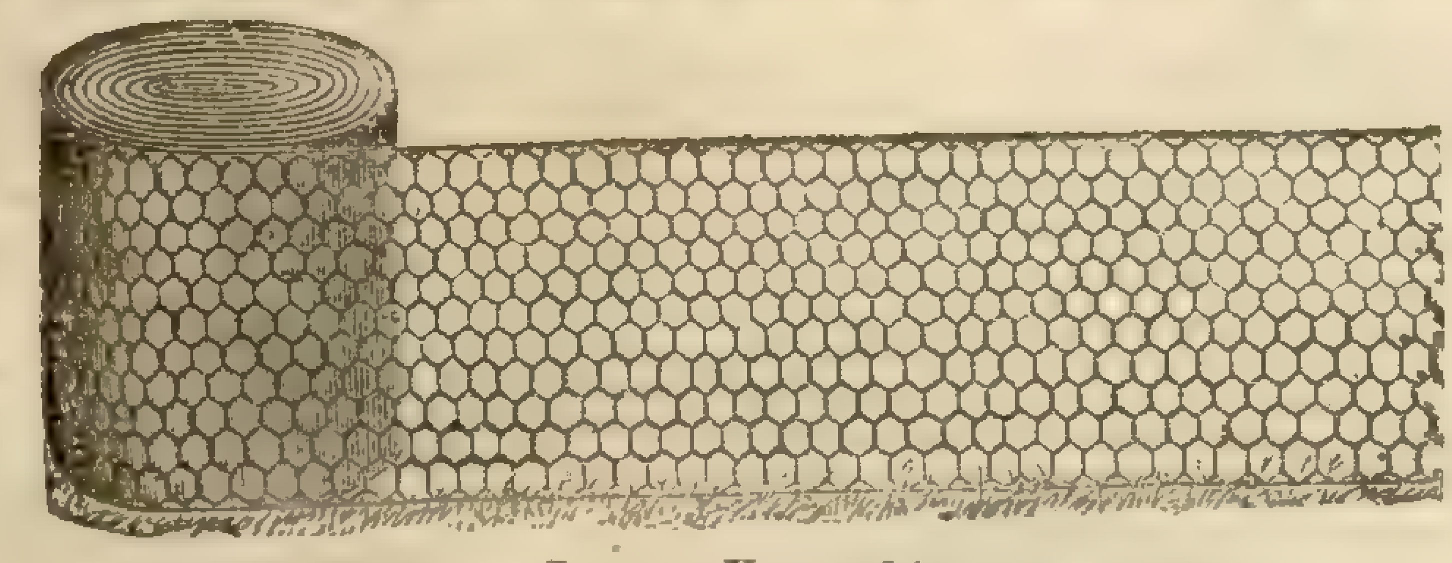
FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, Orwell Works, Ipswich,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

NEW IMPROVED PREMIUM WIRE NETTING.

GREAT IMPROVEMENT,



WITH REDUCED PRICE.

PRICES per Lineal Yard, 24 inches high:—

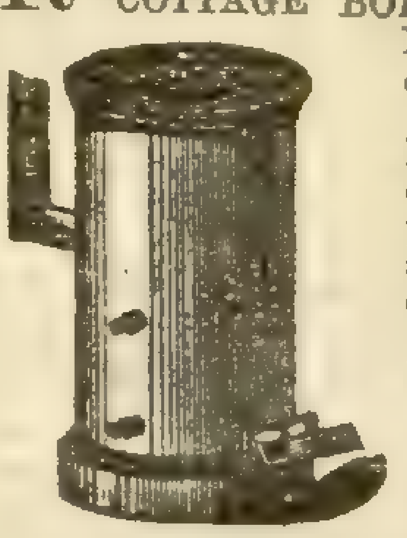
Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra Strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
2¼ inch	Hares, Dogs, Poultry	3*d.*	4*d.*	3¾*d.*	5*d.*	4½*d.*	6*d.*	5½*d.*	7*d.*
2 inch	Game or Poultry Netting	3½*d.*	4¼*d.*	4*d.*	5*d.*	5*d.*	6½*d.*	6½*d.*	8*d.*
1⅝ inch	Small Rabbits, Hares, &c.	4*d.*	4¾*d.*	4¾*d.*	6*d.*	5½*d.*	7*d.*	7*d.*	9*d.*
1½ inch	Smallest Rabbits.................	5*d.*	6*d.*	5¾*d.*	7*d.*	7*d.*	9*d.*	9*d.*	11*d.*

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

** *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about [illegible] per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

Hothouses for the Million.

International Exhibition, Class 9, Open Court, Eastern Annexe.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17*l.* SPAN ROOFS, 30 feet in length, for 33*l.*; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to S. Hereman, 7, Pall Mall East, London.

THE SILENT GEAR OF SAMUELSON'S LAWN MOWING MACHINES IS NOT LIABLE TO DERANGEMENT.

SAMUELSON'S SILENT, SELF-CLEANING, LAWN MOWERS,

WITH MANWARING'S PATENT NOISELESS GEAR, AND BOYD'S PATENT SELF-CLEANING BRUSH.

THESE STANDARD MACHINES ARE CONSTRUCTED WITH A SIMPLE AND DURABLE SILENT DRIVING GEAR.

PRICES, including Packing Case, and Carriage paid to any Railway Station in the Kingdom:—

	Width	Boyd's & Manwaring's Patent.	Manwaring's Silent Gear only.
MANUAL POWER	12 inches wide	£5 0 0	£4 12 0
	16 "	7 0 0	6 10 0
	19 "	7 10 0	7 0 0
	22 "	8 10 0	8 0 0
PONY POWER	22 inches wide	£9 5 0	£8 15 0
	25 "	12 0 0	11 10 0
	30 "	15 15 0	14 14 0

Testimonial.

Donnington, Chichester, March 5.

Sir,—In reply to your letter of the 25th ult. respecting the Lawn Mower I had from you last year, I am pleased to give it my most decided approval; for although I have had one in use for the last 15 years, I have never had one that did its work as well as this, or which was so little liable to get out of order. I consider the cleaning and sharpening apparatus a very great improvement. I have a piece of lawn which in the days of the Scythe always took up two men's time for three days to roll, mow, and sweep; they can now with ease go over this ground with your Machine in a little over two hours, and leave it well finished, so that in fact these Machines soon pay for themselves in labour only, to say nothing of the many other advantages derived from them.—Yours faithfully,

W. J. Humpling.

Orders direct or through Dealers will be executed according to priority of receipt. May be obtained at the Works, Banbury; at Mr. Samuelson's Warehouses, 2, Parliament Street, Essex Bridge, Dublin; Newcastle; Stockton; York; Shrewsbury; and Bristol. Also of all Ironmongers and Seedsmen, and at

MR. SAMUELSON'S WAREHOUSE, 76, CANNON STREET WEST, LONDON, E.C.

Card.

SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool.

Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

JOHN KENSHOLE, Jun., Builder and Contractor, Heavitree, near Exeter, begs to inform the nobility, clergy, and gentry, that he is prepared to execute GREENHOUSES, CONSERVATORIES, VINERIES, &c., with despatch, and on the most reasonable terms, combined with good seasoned material and workmanship. Estimates and designs given.

E. DENCH'S Horticultural Works, 152, King's Road, Chelsea, S.W., Manufacturer of every description of HORTICULTURAL BUILDINGS ether in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without.

HOT WATER APPARATUS Manufacturer.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.

Apply to Joseph Meredith, Vine Cottage, Garston, near Liverpool.

N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

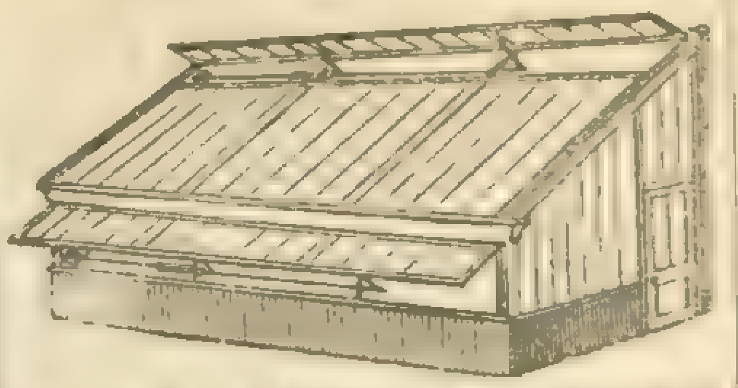
HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, Tubular, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 12s. 6d each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. Lynch White's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

NOTICE.—The exorbitant price hitherto charged for Horticultural Buildings induces Messrs. Henry Smith & Compy. to inform the Nobility and Gentry that upon application they can receive DRAWINGS and ESTIMATES Free for all kinds of HORTICULTURAL BUILDINGS and for HEATING by HOT WATER. Gentlemen wishing to construct their own can be supplied at a low cost with Working Drawings and Specifications.

Henry Smith & Compy., Horticultural Builders and Hot-Water Apparatus Manufacturers, 31, Margaretta Terrace, Oakley Street, Chelsea, S.W.

T. G. MESSENGER, Horticultural Builder and Engineer, Loughborough.

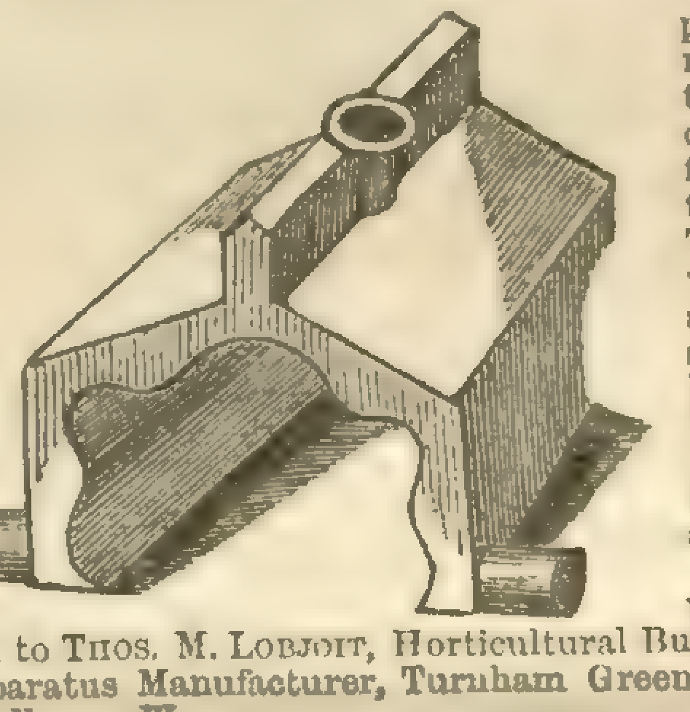


T. G. M.'s PATENTED BUILDINGS combine all the modern improvements, are well made of best seasoned red Deal, most effectually ventilated by means of his unequalled Apparatus, can be made either plain (and which are at the same time elegant in appearance), or of the most elaborate design. They can be fixed as permanent buildings, or made to be portable.

T. G. M.'s HEATING APPARATUS continues to give the greatest satisfaction for its heating qualities and small consumption of fuel.

ILLUSTRATED CATALOGUES of the above, Glazing without Putty, Garden Engines, &c., sent upon application.

T. M. LOBJOIT'S PATENT HOT-WATER BOILERS are acknowledged by all who have them in use to be the most powerful Boilers now known, and are the most economical, requiring less fuel and attention than any other. They are made of various sizes, suitable for heating the smallest Greenhouse to the largest Conservatory, Churches, and Buildings of all descriptions.



Testimonials forwarded on application to Thos. M. Lobjoit, Horticultural Builder and Hot-Water Apparatus Manufacturer, Turnham Green, W., and at Acton, Middlesex, W.

Greenhouses, Orchard-houses, and Conservatories.

H. FREEMAN'S Horticultural Works, Triangle, Hackney, London, N.E.: established 20 years. Good substantially-made GREENHOUSES, glazed, ready for fixing, 42 feet by 13 feet, 50l.; 21 by 13, 25l.; 12½ by 10, 15l. ORCHARD-HOUSES 10 per cent. cheaper. A large assortment kept. Estimates given for heating, or any branch in iron or wood.

JAMES WATTS and CO., Hothouse Builder and Hotwater Apparatus Manufacturers, near th Green Man, Old Kent Road, London, S.E.

200 CUCUMBER and MELON BOXES and LIGHTS, and from

400 to 500 LIGHTS for PITS of all SIZES kept in STOCK.

Glazed and Painted complete, ready for immediate use. Packed and sent to all parts of the kingdom.

10 dozen strong Zinc HAND GLASSES, Glazed and Painted complete, ready for immediate use, 18, 20, and 22, all shifting tops.

References to the Nobility, Gentry, and Trade in most of the counties in England.

Improved Garden Furniture to Imitate Cane in Wrought Iron.

HAAS DEMRATH begs to call the attention of the Nobility and Gentry to his Stock of GARDEN SEATS, TABLES, COUCHES, and General IRON and WIRE-WORK, suitable for Conservatories, Gardens, &c. Owing to his success on the Continent, the Manufacturer has been induced to open an Agency in England, and an inspection of Stock is respectfully solicited at

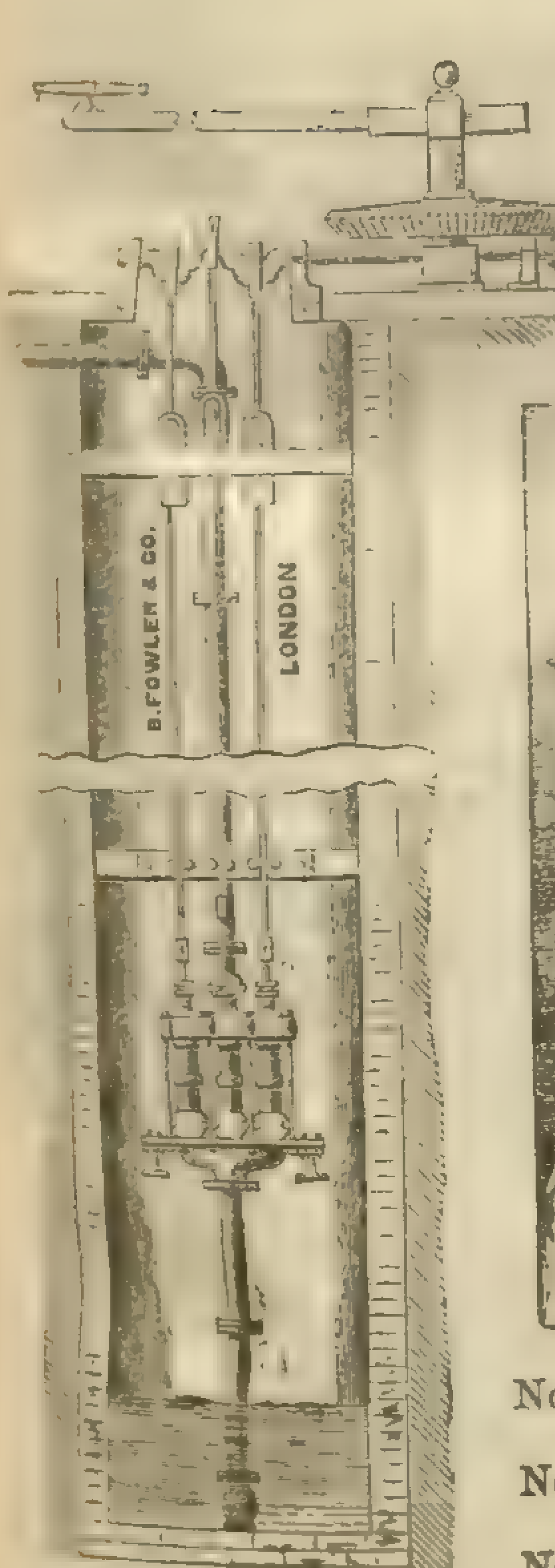
The Show Rooms, 47, High Street, New Oxford Street, W.C.

BENJAMIN FOWLER & CO.,

MANUFACTURERS OF PUMPS AND HYDRAULIC MACHINERY,

WHITEFRIARS STREET, FLEET STREET, LONDON, E.C.

THE accompanying Sketches show some useful forms of apparatus in general demand for Raising and Forcing Water or Liquid Manure. The Landscape Sketch shows the adaptation of Fowler's Improved Hydraulic Rams for the supply of Mansions, Farms, &c. A large number of these simple Self-acting Machines are in use, giving great satisfaction. Their adoption is not confined to positions as shown below, as they are suited to any situation where a few feet fall can be obtained from a spring, brook, or stream; they will force to an elevation equal to ten or more times the number of feet of fall, and to any distance.



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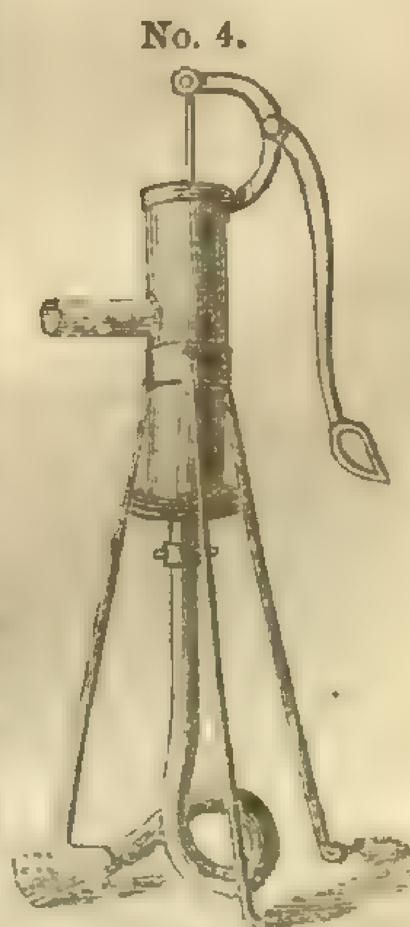


No. 38.

No. 37. Fowler's Improved Simple HORSE GEAR for raising water from deep wells with double or treble pumps. B. F. & Co. also make and fix Deep Well Pumps of all descriptions for hand power.

No. 4. Fowler's CAST IRON BORED PUMPS of all sizes, with improved brass valves for Garden and Farm use, from 1l. 5s. each.

No. 38. Fowler's Galvanized Portable LIQUID MANURE PUMPS, with flexible suction hose. Price, with 10 feet of pipe and strainer, 4l. 5s.

No. 138. Fowler's Improved DOUBLE ACTION FORCE PUMP in frame. These excellent pumps are largely used and much approved.

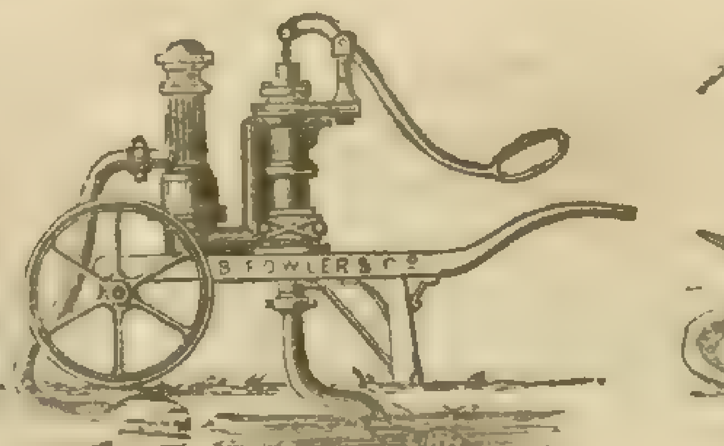
No. 46a. Fowler's Superior DOUBLE-ACTION PORTABLE FORCE PUMPS and simple FIRE ENGINES for Water or Liquid Manure. Prices, 5l. 15s., and 7l. 10s.

No. 50. Fowler's Improved (Holman's Patent) DOUBLE-BARREL PUMPS, FARM FIRE ENGINES, and IRRIGATING PUMPS. Prices, from 12l. 10s.

No. 49. Fowler's Improved GARDEN ENGINES of all sizes, in Oak and Galvanized Iron Tanks, from 50s. each.

No. 49a. Fowler's Improved SWING WATER CARRIERS, holding 24 and 35 gallons. Prices, 42s. 6d., and 50s.

No. 49.



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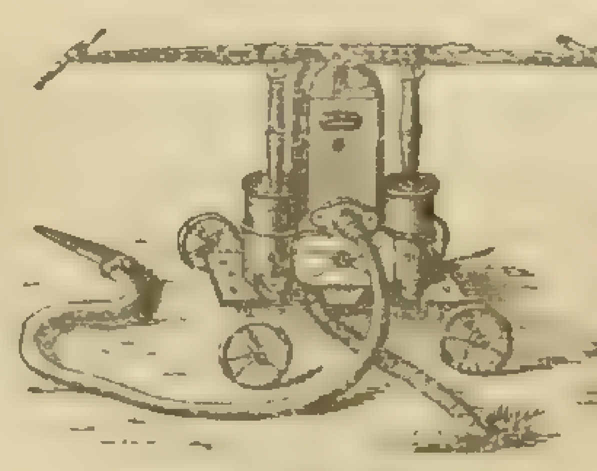

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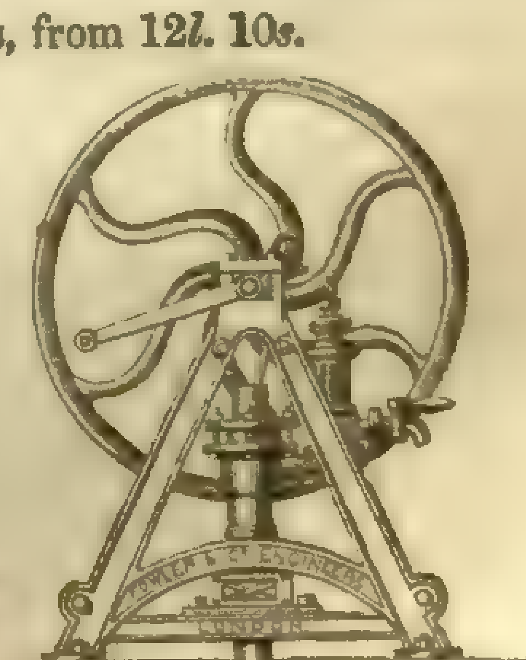
No. 49 a.



No. 138.

FURTHER PARTICULARS, ESTIMATES, AND ILLUSTRATED PRICE LISTS ON APPLICATION.

GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THESE MACHINES were entered at the Royal Horticultural Society's Great Shows held at South Kensington, May 21, June 11, and July 2. They were the only Machines Highly Commended (no Prizes were given). They have carried off every Prize that has been given in all cases of Competition, and have just been awarded the Prize Medal of the Great International Exhibition, July 11, 1862.

GREEN'S PATENT LAWN MOWERS have attained the largest sale of any Machines extant, and are in constant use at the Royal Gardens, Windsor; the Royal Horticultural Society's Gardens, South Kensington; the Royal Botanic Gardens, Regent's Park; the Crystal Palace Company's Gardens, Sydenham; the Kensington Palace Gardens; the Hyde Park Gardens; and in most of the Nobility, Clergy, and Gentry's Parks, Squares, &c., throughout the Kingdom.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0 ...	... £8 15 0
To Cut 20 inches	8 0 0 ...	... 9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0 ...	... £9 17 6
To Cut 24 inches	9 0 0 ...	... 10 7 6

To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0 ...	... £21 10 0
To Cut 36 inches	23 0 0 ...	... 24 16 0
To Cut 42 inches	26 0 0 ...	... 28 2 0
To Cut 48 inches	29 0 0 ...	... 31 8 0

Leather Boots for Horse, per set, £1 4*s.*

Donkey and Pony Machines, including Box of Requisites & Traces.

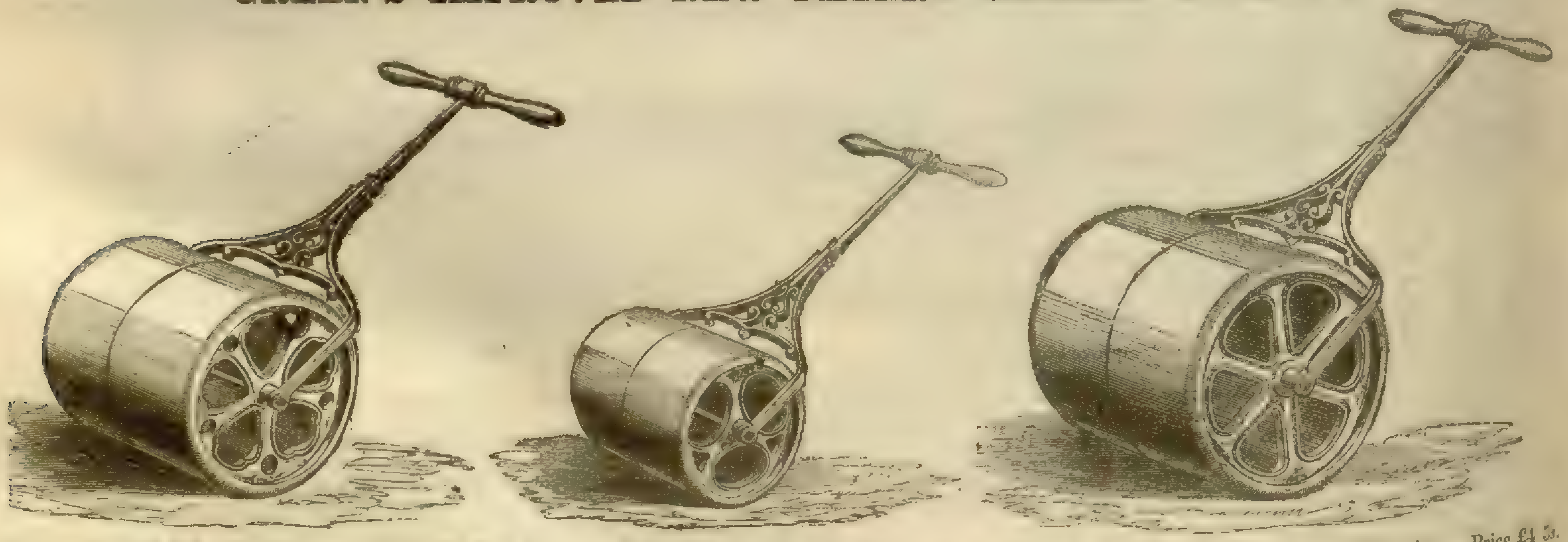
	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0 ...	... £12 10 0
To Cut 26 inches	12 10 0 ...	... 13 12 0
To Cut 30 inches	16 14 0 ...	... 18 0 0

Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

The above Machines are made from the best materials, and of superior workmanship; are delivered carriage free to all the principal Railway Stations and Shipping Ports in England; are warranted to give satisfaction, and if not approved of can be at once returned, if sent carriage free to Leeds.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length 22 inches.... Price £3 5*s.* | Diameter 16 inches, length 17 inches.... Price £2 10*s.* | Diameter 24 inches, length 26 inches.... Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Notice.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), HORTICULTURAL VALUER, begs to inform his friends and the public that he has REMOVED from Perry Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

THE WOOLSTON FARM.—It is the oldest Steam-cultivated Farm in the world, and is open to the inspection of all.

Woolston is four miles from Bletchley Station on the London and North Western Railway.

RUSSIAN DINNER TABLE FLOWER POT COVERS.—Commended by the Royal Horticultural Society. A set of 12 different sizes sent, carriage paid, for 21s. Priced List, with specimens, sent free by post.

BARR & SUGDEN, Seed Merchants and Florists, 12, King Street, Covent Garden Market, W.C.

GARDEN SCULPTURE. — Fountains, Statues, Tazzas, Vases, &c., executed in Marble and Stone by J. FORSYTH, 21, High Street, Camden Town, London, N.W. Designs and Estimates forwarded free of expense. Two Prize Medals 1862.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.

Manufactory: Stoke-upon-Trent.—Aug. 9.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

Sacks. Bags. Mats.

JAMES T. ANDERSON, SACK and BAG MAKER, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), supplies SEED BAGS at the following low prices:—

2 Bushel Bags..8s. 9d. per doz. | ½ Bushel Bags..4s. 9d. per doz.
1 Bushel Bags..6s. 3d. ,, | Peck Bags ....3s. 6d. ,,

Coarser Bags much cheaper.

Bushel Grass Bags at 1s. each | 4 Bushel Sacks at 1s. each.

ARCHANGEL and PETERSBURG MATS.

SHAW'S TIFFANY.—The lightest, cheapest, and most durable of all materials for Shading Conservatories and Hot-houses is SHAW'S TIFFANY. As a protection from cold winds and scorching heat, nothing equal to SHAW'S TIFFANY. For effectually preserving Fruits and Seeds from the Attack of Birds, Wasps and Insects, use SHAW'S TIFFANY.

Sold by all Nurserymen and Seedsmen. Samples and Prices on application.

J. SHAW & Co., Oxford Street, Manchester.

DUNN'S GARDENER'S PENCILS.

Price 1s., will refill for 6d.

DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.

Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.

These pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.

N.B.—A liberal allowance to the Trade.

Prize Medal Awarded.

ALLEN'S PATENT PORTMANTEAUS and TRAVELLING BAGS, with Square Openings; LADIES' WARDROBE TRUNKS, DRESSING BAGS, with Silver Fittings; DESPATCH BOXES, WRITING, and DRESSING CASES, and 500 other articles for Home or Continental Travelling. Illustrated Catalogue post free.

Also ALLEN'S Barrack Furniture Catalogue of Officers' Bedsteads, Wash Hand Stands, Canteens, &c., post free.

J. W. ALLEN, Manufacturer and Patentee, 31, West Strand, London, W.C.

GLENFIELD PATENT STARCH, used in the Royal Laundry.—The ladies are respectfully informed that this Starch is exclusively used in the Royal Laundry, and Her Majesty's Laundress says, that although she has tried Wheaten, Rice, and other Powder Starches, she has found none of them equal to the Glenfield, which is the finest Starch she ever used.

WOTHERSPOON & Co., Glasgow and London.

Prize Medal, Paris Exhibition 1855.

METCALFE, BINGLEY, AND CO.'S New Pattern and Penetrating Tooth Brushes, Penetrating unbleached Hair Brushes, Improved Flesh and Clothes Brushes, and genuine Smyrna Sponges; and every description of Brush, Comb, and Perfumery for the Toilet. The Tooth Brushes search thoroughly between the divisions of the Teeth and clean them most effectually—the hairs never come loose.

M., B., & Co.'s new and delicious Perfumes the Fairy Bouquet and the Oxford and Cambridge Bouquet, in bottles 2s., 3s. 6d., and 5s. METCALFE's celebrated Alkaline Tooth Powder, 2s. per box.

Sole Establishment, 130B and 131, Oxford Street, 2d and 3d doors West from Holles Street, London, W.

WHITE and SOUND TEETH are indispensable to personal attraction, and to health and longevity, by the proper mastication of food. ROWLANDS' ODONTO, or Pearl Dentifrice, compounded of Oriental ingredients, is of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in giving a delicate fragrance to the Breath. It eradicates Tartar from the Teeth, removes spots of incipient decay, and polishes and preserves the enamel, to which it imparts a pearl-like whiteness. Price 2s. 9d. per box.

Sold at 20, Hatton Garden, E.C.; and by Chemists and Perfumers. Ask for "ROWLANDS' Odonto."

NEW ARCHANGEL MATS,

Price per 100 on application to

JAS. CARTER & Co., 237 & 238, High Holborn, W.C.

CHUBB & SON.—"For Perfection of Workmanship and Construction of Locks, also for the Manufacture of Iron Safes," Prize Medal awarded at International Exhibition.

CHUBB'S PATENT SAFES, the most secure against Fire and Thieves.

CHUBB'S FIRE PROOF STRONG ROOM DOORS; CHUBB'S PATENT DETECTOR LOCKS and STREET DOOR LATCHES; CHUBB'S CASH and DEED BOXES.

Illustrated Price List gratis and post free.

CHUBB & SON, 57, St. Paul's Churchyard, London, E.C.

BREIDENBACH'S WOOD VIOLETS SCENT, 2s. 6d.

BREIDENBACH'S WOOD VIOLET PHILOCOME.
BREIDENBACH'S WOOD VIOLET COLD CREAM.
BREIDENBACH'S WOOD VIOLET MILK for the Complexion
BREIDENBACH'S WOOD VIOLET SACHET.
BREIDENBACH'S LAST NEW PERFUME.

H. BREIDENBACH,
157B, New Bond Street (facing Redmayne's).

HANDSOME BRASS and IRON BEDSTEADS.—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for home use and for tropical climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.

HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

THE PERFECT SUBSTITUTE for SILVER.—The REAL NICKEL SILVER, introduced more than 25 years ago by WILLIAM S. BURTON, when PLATED by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver. A small useful set, guaranteed of first quality for finish and durability, as follows:—

	Fiddle or Old Silver Pattern.	Thread or Brunswick Pattern.	Lily Pattern.	King's or Military Pattern.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
12 Table Forks	1 13 0	2 4 0	2 10 0	2 15 0
12 Table Spoons	1 13 0	2 4 0	2 10 0	2 15 0
12 Dessert Forks	1 4 0	1 12 0	1 15 0	1 17 0
12 Dessert Spoons ..	1 4 0	1 12 0	1 15 0	1 17 0
12 Tea Spoons	0 16 0	1 2 0	1 5 0	1 7 0
6 Egg Spoons, gilt bowls..	0 10 0	0 13 6	0 15 0	0 15 0
2 Sauce Ladles	0 6 0	0 8 0	0 9 0	0 9 0
1 Gravy Spoon	0 6 6	0 10 0	0 11 0	0 12 0
2 Salt Spoons, gilt bowls..	0 3 4	0 4 6	0 5 0	0 5 0
1 Mustard Spoon, gilt bowl	0 1 8	0 2 3	0 2 6	0 2 6
1 Pair of Sugar Tongs ..	0 2 6	0 3 6	0 4 0	0 4 6
1 Pair of Fish Carvers ..	1 4 0	1 7 6	1 10 0	1 12 0
1 Butter Knife	0 2 6	0 5 6	0 6 0	0 7 0
1 Soup Ladle	0 10 0	0 17 0	0 17 0	1 0 0
1 Sugar Sifter	0 3 3	0 4 6	0 5 0	0 5 6
Total	9 19 9	13 10 3	14 19 6	16 4 0

Any article to be had singly at the same prices. An Oak Chest to contain the above, and a relative number of Knives, &c., 2l. 15s. Tea and Coffee Sets, Dish Covers and Corner Dishes, Cruet and Liqueur Frames, &c., at proportionate prices. All kinds of re-plating done by the patent process.

BEDSTEADS, BATHS, and LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS, devoted exclusively to the SEPARATE DISPLAY of LAMPS, BATHS, and METALLIC BEDSTEADS. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from .. .. 12s. 6d. to £20 0s. each
Shower Baths, from .. 8 0 to 6 0 ,,
Lamps (Moderateur), from 6 0 to 8 10 ,,
(All other kinds at the same rate).
Pure Colza Oil .. .. .. 4s. 6d. per gallon.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 500 Illustrations of his illimited Stock of Sterling Silver and Electro Plate, Nickel Silver, and Britannia Metal Goods, Dish Covers, Hot Water Dishes, Stoves, Fenders, Marble Chimneypieces, Kitchen Ranges, Lamps, Gaseliers, Tea Trays, Urns, and Kettles, Clocks, Table Cutlery, Baths, Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Room, Cabinet Furniture, &c., with Lists of Prices, and Plans of the 20 large Show Rooms, at 39, Oxford Street, W.; 1, 1A, 2, 3 and 4, Newman Street; 4, 5, and 6, Perry's Place; and 1 Newman's Mews, London, W.C.

THE ADVERTISER wishes to share in Occupying a well built and quiet HOUSE, in or close to London, W. or S.W. She would be glad to pay half the house rent for three good sized rooms, with a housekeeper's room or small kitchen. Perhaps to the wife of a Naval Man or of a Barrister, &c., this mode of securing occasional companionship might be agreeable. —Miss M., *Gardeners' Chronicle* Office, W.C.

To Trustees, Capitalists, &c.

MESSRS. LEIFCHILD, SON, AND CHEFFINS are instructed to LET or SELL by PRIVATE CONTRACT, with possession at Michaelmas next, PARSONAGE FARM, Bardfield Saling, near Braintree and Dunmow, comprising a convenient Farmhouse, Orchard, and Gardens, two Farm Homesteads, three Cottages, and Gardens; 129A. 3R. 8P. of excellent Arable, Pasture, and Wood land, abutting on good roads. This desirable Farm is great tithe free, land tax redeemed, and is now in the occupation of Mr. Joseph Marsh, under a lease which will expire at Michaelmas, 1862, at the apportioned rent of 122l. per annum. Also an important Freehold Investment, comprising the freehold rent-charge, in lieu of rectoral tithes, commuted at 235l. per annum, arising from the tithable lands in the above-named parish of Bardfield, Saling, due and payable on April 1 and Oct. 1 in every year; the Land Tax is redeemed.

Further particulars and terms may be had at the Land, Timber, Auction, and Estate Offices of Messrs. LEIFCHILD, SON, & CHEFFINS, 62, Moorgate Street, City, E.C.

To Florists, &c.

TO BE DISPOSED OF, a NURSERY, within 5 Miles of Covent Garden, containing under Half an Acre of Freehold Ground; Three Hothouses, 62 ft. by 9 ft.; and Three Pits, 24 ft. by 6 ft.; about 100,000 Plants, Shrubs, Trees, &c.; well fenced round, and good soil. The whole for 400l. The land will be worth the whole sum in 7 years' time for Building.

For particulars apply to W. C., 1, Edmund Terrace, Ball's Pond Road, Islington, N.

South of Devon.

MR. ALEXANDER PONTEY, DECEASED.

TO NURSERYMEN, SEEDSMEN, AND OTHERS.

TO BE DISPOSED OF, by Private Contract, on advantageous Terms, with early possession, the Well-Established BUSINESS of a NURSERYMAN, SEEDSMAN, and FLORIST, which for very many years has been extensively and successfully carried on by Mr. ALEXANDER PONTEY, of Plymouth, Devon, and his predecessor, and is now to be disposed of only in consequence of his sudden death.

The Lease of the Business Premises and Stores, which are most conveniently situated near the Market, as well as the Leases of the Nurseries, which are most extensive and well-stocked, both at Plymouth and Vinstan (about Two Miles from Plymouth, on the Tavistock Road), have many years to run.

The Plant, which is of the most Modern construction, and the Stock, the most varied in the West of England, to be taken in the usual way, at a fair valuation.

For further particulars, application may be made to Messrs. SKARDON & SONS, Auctioneers, Bedford Street, Plymouth; or to Messrs PHILLIPS & SON, Solicitors for the Executrix, Frankfort Lane, Plymouth.

Dated Plymouth, August 1, 1862.

TO BE LET, from Michaelmas 1862, the DUNTON LODGE FARM, in the county of Bedford, four miles from Biggleswade, a Market Town, and Station on the Great Northern Railway, and 3 miles from Ashwell Station, mid-way on the Cambridge and Hitchin Railway:—containing 546 acres, the whole of which has been thoroughly Tile Drained, and, excepting the old Grass Land, either has, or will have been cultivated by the time of entry, with Smith's Steam Cultivating Apparatus, from 9 to 14 inches deep. It possesses a first class recently-erected Farm House and Premises, in a central situation, well supplied with water; the fields are large, fences straight, gates and posts of iron, and roads good.

Particulars with plan will be supplied by MR. SIMON HUTCHINSON, Land Agent, Manthorpe Lodge, Grantham, on receipt of four Postage Stamps, and the Farm may be viewed upon exhibiting the same to the Foreman on the premises, now in the hand of the Earl Brownlow.

PUBLIC SALES. — Not a single plant has ever been sent to a Public Auction from my Establishment.

LOUIS VAN HOUTTE, of Ghent.

Sales by Auction.

Important Sale of Established Orchids, and a few Imported.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions to SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, London, W.C., on THURSDAY, August 28, at half-past 12 o'Clock precisely, without the least reservation, the Valuable and Extensive COLLECTION of ORCHIDS, the property of a large Continental Grower, who is giving up their culture, consisting of fine healthy plants of the following well-known varieties:—

Aerides crispum	Phalænopsis grandiflora
,, affine	,, amabilis
,, Fieldingii	Angræcum eburneum
,, suavissimum	Arpophyllum giganteum
Cattleya citrina	Cœlogyne Lowii
,, elegans	,, cristata
,, guttata	Cypripedium villosum
,, lobata	,, hirsutissimum
,, Leopoldi	,, caudatum roseum
,, labiata picta	Vanda suavis
,, marginata	,, tricolor
,, Trianæi	,, guttata
,, Isabellina, new	Saccolabium retusum
,, Schilleriana	,, Blumei
Lælia purpurata	Uropodium Lindeni
Chysis Limminghi	&c. &c.

Also a small Importation from the East Indies of choice SACCOLABIUMS, &c.

On View the Morning of Sale, and Catalogues had.

To Ironmongers, Builders, and Others.

MESSRS. FULLER AND HORSEY are instructed by Messrs. Tiddeman & Co. (whose premises are required for the purposes of the London, Chatham, and Dover Railway), to SELL by AUCTION, on TUESDAY, August 19, at 11 o'Clock, at St. Anne's Wharf and Victoria Wharf, Earl Street, Blackfriars, in Lots, without reserve, 5000 yards HOT-WATER PIPES, Connections, Syphons, Bends, T-pieces and Valves, Hot-Water Boilers, Double Doors and Frames, Flanged and Socket Pipes; 200 Tons of BUILDERS' CASTINGS, including 10,000 yards' round and OG Rain-water Guttering and Pipes, from 2 to 6 inches, Rain-water Heads and 40 tons Sash Weights, 100 Cast-iron Furnace Pans, Furnace Doors, Copper Hole and Soot Doors, Coal Plates, Air-bricks, Horse and Mare Pots, Mangers, Racks, Stall-posts, Sewer Grates, Iron Pumps, Navvie Barrow Wheels, Truck Wheels, Newel and Railing Bars, Cast-iron Columns, Galvanised Pans, large Cast-iron Cistern, Garden Rollers, Pig Troughs, Register Stoves, 40 Dantzic Planks, two Spring Carts, and numerous other items.

To be viewed on Monday previous and Morning of Sale, when Catalogues may be had on the Premises; and of Messrs. FULLER & HORSEY, Billiter Street, London, E.C.

South Essex and Middlesex.

MESSRS. LEIFCHILD, SON, AND CHEFFINS, will SELL by AUCTION, at Garraway's Coffee House, Cornhill, London, on TUESDAY, August 26, at 12 for 1 o'clock, in Two Lots, a desirable small FREEHOLD ESTATE, called Popham House, or Popping House Farm, in the parishes of High Lever and Little Lever, near Chipping Ongar, and Fyfield, in South Essex. The Farm comprises a good Cottage and Homestead, with Yard and Garden, abutting on the high road from Moreton to Matching Green, and Bishop Stortford, with eight fields of Arable and Pasture Land, containing 18A. 3R. 12P., let from Lady Day last at 30l. per annum; land tax, 16s. 9d. per annum. Also, a valuable enclosure of Freehold Building Land, containing 5A. 0R. 13P., with 1200 feet of frontage; capitally situate within a short distance of the Railway Station at Ponders End, in the parish of Enfield, in the county of Middlesex.

Particulars and Conditions of Sale may be had at the Red Lion Inn, Chipping Ongar; the Railway Hotel, Ponders End; at GARRAWAY'S; of Messrs. BIRCH, INGRAM, & WHATELY, Solicitors, 68, Lincoln's Inn Fields; and at the Land, Timber, Auction, and Estate Offices of Messrs. LEIFCHILD, SON, & CHEFFINS, 62, Moorgate Street, City, E.C.

HOT-WATER PIPES

DELIVERED TO ANY STATION IN ENGLAND.

J. JONES

BEGS to state that he can now supply HOT-WATER PIPES and FITTINGS delivered Carriage Paid to any Railway Station in England, and that he has made very advantageous arrangements for delivery at the following Stations; and parties availing themselves of this offer will in many cases get their Pipes at a Country Station at a less price than would be charged in London.

Alfreton
Accrington
Ashbourne
Adlington
Ashby-de-la-Zouch
Atherstone

Bradford (Yorks.)
Burton
Burnley
Bolton
Bingham
Bulwell
Beverley
Bury
Bedale
Barnsley
Barton
Birkenhead

Chesterfield
Chester
Chorley
Chelford
Crewe
Cheadle
Congleton
Colwich

Derby
Dewsbury
Doncaster
Driffield
Droitwich
Dudley

Edgebaston
Eckington

Farnworth

Gainsborough
Grantham

Halifax
Harrogate

Ilkeston

Kirkham
Knapton
Knaresborough

Lancaster
Leeds
Liverpool
Loughborough
Leek
Lichfield
Leamington
Leicester
Lincoln

Macclesfield
Malton
Manchester
Mansfield
Market Harboro'
Marton

Nottingham
Normanton
Northallerton
Northampton

Oakham
Oldbury
Oldham
Ormskirk
Oswestry
Oundle

Preston
Pontefract
Peterborough
Penkridge

Retford
Richmond (Yorks.)
Rotherham
Rochdale
Rugeley
Rugby
Redditch

Shrewsbury
Stafford
Stourbridge
Salford
St. Helen's
Settle
Skipton
Stamford
Sleaford
Scarborough
Selby
Sheffield

Tamworth
Thirsk
Tipton
Trentham
Thrapston

Uttoxeter
Ullesthorpe

Worcester
Wolverhampton
Wellington (Salop)
Wrexham
Warrington
Wigan
Wakefield
Worksop
Wellingboro'

York

Also to any Station in Derbyshire, Shropshire, Warwickshire, Cheshire, Lancashire, Yorkshire, Leicestershire, Worcestershire, Lincolnshire, and Staffordshire.

J. Jones will be happy to forward his ILLUSTRATED CATALOGUE of HOT-WATER PIPES, BOILERS, and FITTINGS, and PRICES for the same delivered Free to any Station; but parties requiring prices must state the quantities of Pipes, &c., required, and the Station to which they are to be delivered.

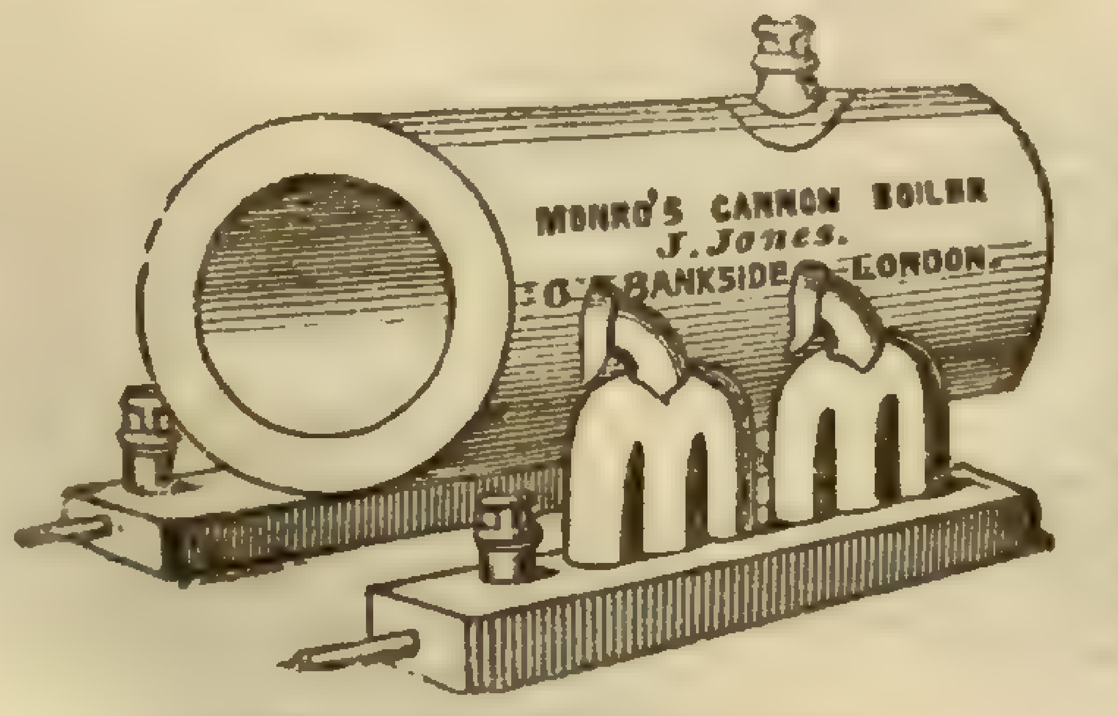
J. JONES,

IRON MERCHANT AND HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

20-inch Wrought Iron	... ...	£3 15 0
24-inch "	... ...	6 10 0
30-inch "	... ...	7 10 0
36-inch "	... ...	8 10 0
48-inch "	... ...	12 0 0
60-inch "	... ...	20 0 0
72-inch "	... ...	25 0 0



MONRO'S CANNON BOILER.

These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by J. Jones, 6, Bankside, Southwark, London, S.E.

Prices for HOT-WATER PIPES, ELBOWS, TEES, SYPHONS, VALVES, TROUGH PIPES, ORNAMENTAL COIL CASES, BECK'S PATENT VALVES, &c.; or ESTIMATES for HOT-WATER APPARATUS, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON, SADDLE, or CYLINDER BOILERS, will be sent, with an ILLUSTRATED CATALOGUE, free on application.

J. JONES,

HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, LONDON S.E.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 33.—1862.] SATURDAY, AUGUST 16. {Price Fivepence. Stamped Edition, 6d.

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ROYAL HORTICULTURAL SOCIETY.
FRUIT COMMITTEE.
A Meeting of the Fruit Committee will be held at the Rooms, South Kensington, on TUESDAY, August 26, for the Examination of such FRUITS and VEGETABLES as may then be submitted for judgment, and when Certificates of Merit for Seedlings will be awarded.
** All packages and communications must be received at the Rooms by 11 o'Clock on the day of Meeting, and addressed to Robert Hogg, LL.D., Secretary of the Committee.

ROYAL HORTICULTURAL SOCIETY. AUTUMN SHOW, September 10, 1862.—An Additional Prize of 10l. will be given for the Best Specimen of a CONSERVATORY TUB. There is no restriction as to material, size, form, or design. It may be of wood, slate, stone, pottery ware, Terra Cotta, or any other substance. It may be in one piece or in many, fastened or bound together. Fitness for its purpose, elegance of design, superiority of workmanship, and cheapness, will be the test of merit.
Letters to be addressed to Mr. G. Eyles, Garden Superintendent, South Kensington, W.

A PRIZE of 5l. is offered by one of the Fellows of the Royal Horticultural Society for the 12 best STANDARD PLANTS for the DECORATION of the DINNER TABLE, to be awarded at the Show of Autumn Flowers, on September 10.
The Plants must be ornamental, either for their foliage, flowers, or fruit, and must be grown in pots not exceeding 6 inches in diameter; the foliage, flowers, and fruit must not be less than 20 inches nor more than 24 inches clear from the bottom of the pot.
Elegance of form, slenderness of stem, and variety of colour, will be the tests of excellence.
The groups will be received as late as 10 o'clock, A.M., provided space shall have been secured for them the day before. Letters to be addressed to Mr. G. Eyles, Royal Horticultural Society's Garden, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY.
Special PRIZES for the March Show in 1863.
10l. for the Three Best CAMELLIAS.
3l. for the Three Best TREE MIGNONETTES.

CRYSTAL PALACE.—GREAT AUTUMN SHOW of FLOWERS and FRUIT. — WEDNESDAY and THURSDAY, September 3 and 4.
Schedules of Mr. Houghton, Crystal Palace. Entries close August 26.

ALNWICK HORTICULTURAL and BOTANICAL SOCIETY.
The ANNUL EXHIBITION of this Society will be held (by permission of His Grace the Duke of Northumberland, K.G., Patron of the Society), in the Alnwick Abbey Grounds, on THURSDAY, September 4.
John Thompson, } Hon.
Henry Hunter, } Secretaries.

Rose Beauty of Waltham.
The finest of all the New Roses.
WM. PAUL (Son and Successor to the late A. Paul) has now ready for delivery fine strong plants of this beautiful New Rose, which has received a First-class Certificate from the Royal Horticultural Society of London. Price 5s. each.
All the novelties of other raisers at the advertised prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

RICHARD SMITH begs to inform the Public that he has a larger and finer COLLECTION of ROSES this season than he has ever had; they are NOW in FULL BLOOM and in the finest condition.
As the Stock is so large the prices will be very reasonable.
Nurseries, Worcester.

Roses.
EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

WM. PAUL'S ROSES, HOLLYHOCKS, and HARDY ORNAMENTAL TREES are now in full beauty. Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.
Nurseries and Seed Warehouse, Waltham Cross, N.

New Herbaceous Phloxes, Roses, Hollyhocks, Pentstemons, &c.
EDWARD WEBB, of the Gower Inn Rosery, Park Mill, near Swansea, Glamorganshire, respectfully informs his friends and the public generally that his magnificent collection of HEBCACEOUS PHLOXES is now blooming in great perfection. Also his unrivalled collection of HOLLYHOCKS, PERPETUAL ROSES, PENTSTEMONS, &c., is now in full bloom. He respectfully solicits an early inspection.—Aug. 16.

JAMES CARTER and CO.,
Seed Merchants and Nurserymen,
237 and 238, High Holborn, London, W.C.

Hyacinths, &c.
WM. PAUL'S DESCRIPTIVE CATALOGUE of HYACINTHS and other DUTCH BULBS, with Hints on Culture, is now ready. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Dutch Flower Roots.
WILLIAM WOOD and SON'S AUTUMN CATALOGUE for 1862 is now ready, containing superb collections of Gladioli, Hyacinths, Crocus, Ixia, Narcissi, Sparaxis, &c., and will be forwarded gratis and post paid on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Wm. Cutbush & Son's Dutch Bulb Catalogue.
WM. CUTBUSH and SON beg to announce that their DESCRIPTIVE and PRICED CATALOGUE of HYACINTHS and other Dutch Flower Roots is now ready, post free, on application.
Highgate Nurseries, London, N.

Notice.
Nurseries, Saffron Walden, Essex.
SUPERB DOUBLE HOLLYHOCKS. The GRAND COLLECTION is NOW on BLOOM, and Open to the inspection of all Visitors on any day, Sundays excepted. William Chater.

Seed, Seed—Superb Double Hollyhock.
WILLIAM CHATER can supply, of sterling quality, from best mixed varieties, at 1s., 2s. 6d., and 5s. per packet; or from separate named sorts, per Collection, 2s. 6d., 5s., 7s. 6d. or 10s.
Nurseries, Saffron Walden.

Hollyhocks.
DOWNIE LAIRD and LAING'S Superb Collection of the above are in BLOOM. An inspection invited any day (Sunday excepted).
Stanstead Park Nursery, Forest Hill, S.E.

Ex. Ex. Hollyhock.
DOWNIE, LAIRD, and LAING are now sending out SEED saved from their unrivalled Collections of the above, in Packets containing Twelve Named Sorts (separate), at 2s. 6d. and 5s.
Stanstead Park Nursery, Forest Hill, London, S.E.

JAMES CRAWFORD, High Beach, Essex, begs to inform the ladies and gentlemen of High Beach and its vicinity, also the public generally, that he has for SALE a very select COLLECTION of CAMELLIAS, AZALEAS, STOVE and GREENHOUSE PLANTS in general. The above he offers on advantageous terms, and solicits inspection.

Prize Cineraria Seed.
J. DOBSON and SONS have carried off the First Prizes every time they have exhibited this season. New Seed, in sealed packets, 1s., 2s. 6d., and 5s.
Woodlands Nursery, Isleworth.

Equalled by None.
J. DOBSON and SONS' splendid Hybridized CALCEOLARIA SEED, in sealed packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s. First Prizes given wherever exhibited
Woodlands Nursery, Isleworth.

To the Seed Trade.
CALCEOLARIA SEED in Packets, Crop 1862.—The best in England. Price on application.
Barr & Sugden, Seed Merchants, 12, King Street, Covent Garden, W.C.

Major's Half Shrubby Calceolaria Seed.
H. MAJOR'S New Half-Shrubby CALCEOLARIA SEED is now ready as usual, and may be had in packets at 2s. 6d. each, or three for 5s. post free.
Postage stamps may be sent in payment.
Knosthorpe, near Leeds, Yorkshire.

GEORGE STANLY is now sending out Seed of his superb strain of Hybridised CALCEOLARIA, in 1s., 2s. 6d. and 5s. packets. Also Seed saved from his unequalled double SWEET WILLIAM, at 1s. per packet. Also his superb strain of INTERMEDIATE STOCK, in 1s. and 1s. 6d. packets.
Manor Lane Nursery, Lee, S.E.

High Beach, Essex.
JAMES CRAWFORD begs to call attention to his NEW CALCEOLARIA EMPEROR OF MOROCCO, without exception the best ever offered to the public for habit, size, and colour.

Cineraria and Calceolaria Seed.
F. and A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1s., 1s. 6d., and 2s. 6d., free by post.
Dulwich, Surrey, S.

MESSRS. E. G. HENDERSON and SON offer SEED of
CALCEOLARIA .. .. .. first quality
CINERARIA .. .. .. "
PRIMULA (fimbriated).. .. "
at 2s. 6d. and 5s. per packet; smaller ones 1s. each. All the above are to be seen in bloom at the Nursery in their respective season.
Wellington Nursery, St. John's Wood, London, N.W.

Good Seeds, Carriage Free, at Market Prices.
SUTTON AND SONS,
Seed Growers and Merchants,
Royal Berkshire Seed Establishment, Reading.

New Fuchsias of 1862.
B. W. KNIGHT, Florist, &c., 67, High Street, Battle, Sussex, is now sending out the NEW FUCHSIAS of 1862, at 12s. per dozen.
CATALOGUES sent on application.

New Verbenas of 1862.
B. W. KNIGHT, Florist, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4s. per dozen, securely packed in tin box, post free. CATALOGUES of the varieties sent on application.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize plants, 1s., 1s. 6d., and 2s. 6d. per packet. Reference given. Stamps taken.
G. Knights, Whitton, Ipswich.

New Verbenas, Fuchsias, &c., of 1862.
W. DILLISTONE can now supply the above in good Plants, at low prices. Lists upon application.
Munro Nursery, Sible Hedingham, Halstead, Essex.

Intermediate Stock.
JOHN REEVES has a small quantity of his well-known Strain to dispose of at 2s. 6d. per packet. Remittance to accompany all orders.
John Reeves, Ladbroke Nursery, Notting Hill, W.

JEAN VERSCHAFFELT, Ghent, Belgium, begs respectfully to announce that his NEW DESCRIPTIVE CATALOGUE for the Autumn of 1862 is now ready, and can be had on application either to himself or his Agents, Messrs. R. Silberrad & Son, 5, Harp Lane, Great Tower Street, E.C.

Iris reticulata.
THOMAS HANDASYDE, Glen Nurseries, Musselburgh, begs to offer strong flowering roots of the above at 100s. per 100.

FOR SALE, a large Collection of BRITISH and EXOTIC FERNS, at
J. Illman's Nursery, Wellington Place, Strood, Kent.

To Nurserymen, &c.
WANTED, 2000 GOOSEBERRY TREES, Ashtons, three or four years old.
Apply, stating lowest possible price, to T. Leeming, Bridge End, Skerton, Lancaster.

Pine Plants.
FOR SALE, about $3\frac{1}{2}$ dozen strong, healthy, FRUITING and SUCCESSION PLANTS.
Apply to Mr. Nicklin, Fruiterer, Guildford.

Palms and other Stove Plants.
TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual size.
A CATALOGUE, giving the height of each plant, will be sent, post free, on application to Mrs. Le Crefs, Château du Mesnil de Mathieu, near Caen, Department of Calvados, France, where the plants may be viewed.

Grape Vines.
WM. PAUL (Son and Successor to the late A. Paul) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines.
J. IVERY and SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.
TO BE SOLD, Cheap, 1800 close-jointed vigorous Plants, with Canes 6 to 12 feet long, all struck from Eyes this season.
Apply to the Gardener, at J. Lewis's Horticultural Works, Stamford Hill, Middlesex, N.

Strawberry Plants—Ready August 18.
CUTHILL'S SORTS, all selected for next year's bearing.—The price per 100, 7s. 6d. for the following:—Early Black Prince, Early Princess Royal, Highland Mary, Richard II., Prince of Wales, and Newton Seedling, lasted 60 days this year. Strawberry Pamphlet, 1s.
James Cuthill, F.R.H.S., Camberwell, London, S.

GEORGE BRADSTOCK can supply strong healthy plants of the OSCAR STRAWBERRY, at 2s. 6d. per 100. Post-Office Orders made payable at Carshalton, Surrey.
The Grounds, Beddington Corner, Surrey.

Agricultural Seeds.
GEORGE GIBBS and CO.,
Seedsmen,
26, Down Street, Piccadilly, London, W.

TRUE DRUMHEAD, and the Large EARLY FIELD IMPERIAL CABBAGE, at 3s. 3d. per 1000.
GARDEN SEED, Wholesale.
Thomas Welland, Surrey Gardens, near Godalming, Surrey.

MANGEL WURZEL SEED, in Red and Yellow, Long and Red, Yellow and Orange Globe varieties for Sale.—For price apply to the Grower,
Mr. S. A. Daintree, Fendrayton, St. Ives, Hunts.

Choice Seeds, in Sealed Packets.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give satisfaction.

AMARYLLIS, saved from choice named varieties, 2s. 6d. per packet.
CALCEOLARIA, Herbaceous, finest mixed, 1s. 6d., 2s. 6d., and 3s. 6d. per packet.
CINERARIA CRUENTA, fine mixed seed from named flowers, 1s. 6d. and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, Red, White, or Mixed, very choice, 2s. and 3s. 6d. per packet.

For numerous Testimonials see BULB CATALOGUE, post free on application.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned new and fine AZALEAS. For October next.

FLAG OF TRUCE.—This fine variety can, without hesitation, be pronounced the finest and most beautiful in cultivation, and must find its way into every collection; the flowers are of a pearly whiteness, very large and double; it was shown at the gardens of the Royal Botanic Society, March 20, 1861, when just opening its flowers, and received a second class certificate; again at the Royal Horticultural Society, South Kensington, March 23, when it received a first-class certificate. It was again exhibited on April 3, when in fine condition, and received a Silver Medal for its superior merits; the plant is of first-rate habit, with glossy green foliage, and will prove a grand feature in any collection, whether for the purpose of exhibition or the decoration of the conservatory. Plants grafted or on their own roots, 21s. to 31s. 6d. each.

PRINCE OF ORANGE.—Brilliant orange scarlet, with dark crimson spots, the form of the flower is the acme of perfection; its habit is very compact and the flowers are produced in great profusion; it will be found one of the most distinct and valuable varieties ever introduced, and no collection will be complete without it. It was, while a seedling plant, exhibited at the Royal Botanic Society's Gardens, Regent's Park, March 24th, 1860, when it received a first-class certificate, and was universally admired by all who saw it, and pronounced by eminent judges to be the finest coloured Azalea extant. Plants grafted or on their roots, 21s. and 31s. 6d. each.

CLAPHAM BEAUTY.—Fine bright rosy pink, slightly suffused with carmine spots on the upper petals; good form and substance, vigorous and compact habit, very free bloomer. This will be found a most distinct and valuable colour for exhibition and other purposes. It was exhibited when a seedling at the Royal Botanical Society's Gardens, Regent's Park, March, 1861, and was pronounced by the best judges to be a flower of great merit. Plants grafted or on their own roots, 21s. and 31s. 6d. each.

LORD CLYDE.—Delicate salmon, suffused with rosy carmine spots and shading of darker rose; the flower is first-class as regards shape, and of good substance; habit free and vigorous, with bright shiny foliage. A most useful and distinct variety and will give the greatest satisfaction to every purchaser; it will be found an acquisition in every collection. Plants grafted or on own roots, 10s. 6d. and 15s.

CRISPIFLORA ROSEA.—Fine bright rose, of fine form and excellent habit; the flowers are waved or crisped, as in Crispiflora; but the flowers are much finer than that variety, being first-rate in shape and of great substance. It will be found a valuable variety for decorative purposes, also for exhibition. Price per plant, 10s. 6d. and 15s., grafted or on their own roots.

PRINCESS ALICE.—Another valuable addition to the single white varieties; the flowers are very pure white, of medium size, and possessing great substance, fine form, and excellent habit. This will be found a first-class plant for growing into specimens for exhibition purposes. Plants grafted or on their own roots, 10s. 6d. and 15s. each.

The Stock of the above is limited, and many orders have been received. Early application is requested to prevent disappointment. All orders will be sent out according to priority.

CATALOGUES gratis on application.

Dulwich, Surrey, S.

PEAT EARTH of excellent quality delivered at the Nine Elms Station, 5 tons for 55s.; at Guildford, 5 tons for 50s. The Peat is now in first-rate order.—Apply to Mr. BETTS, 115, Strand, London, W.C., where a sample may be seen.

Autumn 1862.—New Plants.

JEAN VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs respectfully to announce that he is now taking orders for the following SELECT NOVELTIES, fully described in his NEW CATALOGUE for the Autumn of 1862, and which will be sent out on and after September 1, at the following prices:—

	Each.—s.	d.
AZALEA INDICA, SECRETAIRE CLAUS	7	6
" " VICOMTE DE FORCEVILLE, the finest double Red Azalea ever offered ..	10	6
CAMELLIA QUERCIFOLIA, Oak-leaved Camellia, good plants	21	0
" " With buds	31	6
" " A few stronger plants ..	42	0
HEBECLINIUM MACROPHYLLUM, fine plants, with very ornamental foliage, the leaves being nearly a foot long, and more than a foot in diameter, good plants ..	12	0
RHODODENDRON SOUVENIR DE JEAN BYLS, splendid hardy Rhododendron, figured in the *Illustration Horticole*, June, 1862, good plants	21	0
With buds	31	6
A few strong plants	42	0

One plant over to the Trade on every three taken.

A carefully Coloured Plate of the Rhododendron and Camellia will be sent to each Subscriber. The Subscription List is open now, and early orders are solicited, as they will be executed in strict rotation.

All orders to be addressed to M. JEAN VERSCHAFFELT, 43, Rue de la Caverne, Ghent, Belgium.

CATALOGUES can also be had of Messrs. R. SILBERRAD & SON, 5, Harp Lane, Great Tower Street, London, E.C.

Fine Bedding Geraniums.

MESSRS. E. G. HENDERSON AND SON respectfully call the attention of Amateur Cultivators and others to the undermentioned Novel and very beautiful varieties of VARIEGATED ZONALE GERANIUMS, adapted for bedding and conservatory culture in pots, which are now in fine condition.

MRS. MILFORD, rich broad massive features, very distinct.
MRS. POLLOCK, SUNSET, THE COUNTESS } The picturesque leaf-tints of these varieties are greatly admired as seen planted in their respective groups.
THE NEW FERN-LEAVED FRINGED CHINESE PRIMROSE.—Strong plants for winter bloom.

Wellington Nursery, St. John's Wood, London.

CLEARANCE SALE of PINUS SEED, viz.:—100 lbs. Larix, 100 lbs. Picea, 30 lbs. Abies, 2 lbs. Strobus, and ½ lb. Thuja Nepalensis. Samples on application.

C. APPELIUS, 132, Upper Thames Street, London, E.C.

Very Choice Primula, Calceolaria, Cineraria, &c., 1s. per Packet,
POST FREE.

SUTTON AND SONS can strongly recommend the following Choice SEEDS, at 1s. per packet each sort:—
PRIMULA SINENSIS FIMBRIATA
CALCEOLARIA
CINERARIA
POLYANTHUS
PANSY
PELARGONIUM
CARNATION
AURICULA

Royal Berkshire Seed Establishment, Reading.

Improvement of Grass Lands
BY SOWING GOOD SEEDS OF THE MOST SUITABLE KINDS.

SUTTON'S RENOVATING GRASS SEEDS
SHOULD NOW BE SOWN.

These Seeds consist of PERENNIAL CLOVERS and FINE GRASSES for improving the bottom.

Price 9d. per lb., or 80s. per cwt. 8 to 12 lbs. per acre will be sufficient, and will effect a great increase in the produce.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

The Best Substitute for Vetches is

TRIFOLIUM INCARNATUM.—This crimson Clover deserves to be generally cultivated. If sown in August either on fresh land or upon a Corn stubble, a heavier crop of Clover will be ready for mowing in May and June next than from common Clover sown the previous spring, and is highly valuable either for soiling or for hay. To insure success it is only necessary to obtain new Seed, and to sow in August or the first week of September.

SUTTON & SONS, Reading, can supply fine new Seed just threshed. As it is becoming scarce, early orders should be given. Samples with price may be obtained post free.

Royal Berkshire Seed Establishment, Reading.

THE BEST SORTS of CABBAGE SEEDS, in packets, 6d. each sort, Post Free, sufficient to raise a thousand plants of each.
SUTTON'S IMPERIAL
EARLY BLENHEIM
CATTELL'S DWARF BARNES
CHAMPION
SUTTON'S DWARF COMBE
SHEPPARD'S EARLY MARROW
CATTELL'S RELIANCE
ATKINS'S MATCHLESS

Nonpareil, Early York, Enfield Market, Wheeler's Imperial, and other old sorts, 3d. per packet; Drumhead Cattle Cabbage, 2s. 6d. per lb.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
GRASS SEEDS for LAWNS,

And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.

We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.

Our "LITTLE BOOK" sent free for four stamps.

J. C. WHEELER & SON, Seed Growers, Gloucester.

HALLETT'S PEDIGREE NURSERY WHEAT.—The Advertiser having grown the above fine and prolific Wheat from seed obtained direct from Mr. Hallett of the Manor Farm, Brighton, can supply a limited quantity at One guinea per bushel. This Wheat should be sown early. Quantity required, one to two pecks per acre.

Apply to Mr. H. COPLAND, Broomfield Place, Chelmsford.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover; and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality, at Market Prices.

Genuine Italian Rye-grass, produced from the Second Cut of Foreign Seed.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts., will again be able to supply the Trade with this article in the same fine quality as last season, and can deliver either now or in the spring at the purchaser's convenience.

Address for samples and prices as above, stating quantity required and time of delivery.

CATTELL'S EARLY RELIANCE CABBAGE,
CATTELL'S DWARF BARNES CABBAGE.

These two Cabbages have proved themselves for many years past to be the two best Early Spring Cabbages in cultivation. If sown as early as the middle of July, they will not run to seed the following Spring. They may be had as usual in packets containing half an-ounce of the Reliance, and one ounce of the Dwarf Barnes. Free by post for 12 Penny Stamps for each packet.

JOHN CATTELL, Nursery and Seed Establishment, Westerham, Kent.

MR. ALEXANDER PONTEY, Deceased.—All persons having any Claims or Demands against the Estate of the late Mr. ALEXANDER PONTEY, of 21, Cornwall Street, Plymouth, Devon, Nurseryman, Seedsman, and Florist, are requested to forward particulars thereof to his Executrix, Mrs. MARY LYNE PONTEY, at 21, Cornwall Street, Plymouth aforesaid, in order that the same may be examined, and if found correct, discharged; and all persons Indebted to the said Estate are requested to pay the amount of their respective debts, without delay, to the said Executrix.

Mrs. PONTEY begs to offer her best thanks to the Friends and Customers of her late Husband for the kind and liberal support afforded him during his lifetime, and to inform them that it is her intention to continue the business until the same be satisfactorily disposed of.

Dated Plymouth, August 1, 1862.

REIGATE SILVER SAND, best quality, 12s. per Ton or 1s. 3d. per Bushel, at Swan Place; delivered five miles, or to any London Wharf or Railway, 16s. per Ton, or 1s. 6d. per Bushel. Kentish and Hampshire PEATS, YELLOW LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE from Kingston. An inspection invited.—J. KENNARD, Purveyor to Her Majesty, Swan Place, Old Kent Road, London, S.E.

THE LONDON MANURE COMPANY
(ESTABLISHED 1840)

Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE OF LIME.
DISSOLVED BONES for PASTURES.
CONCENTRATED URATE.
BLOOD MANURE for CORN.
PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every other Manure of value.

116, Fenchurch Street, E.C. EDW. PURSER, Secretary.

LAWES'S MANURES.
The Manures manufactured by J. B. LAWES for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—

LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME .. .. £6 [illegible]
LAWES'S SUPERPHOSPHATE of LIME from BURNT BONE or MINERAL PHOSPHATES .. 5 5
LAWES'S BARLEY, GRASS, and MANGEL MANURES 8 [illegible]

These Manures can be obtained of Mr. LAWES, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

American and other Cakes at market prices.

Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.

Extract of Opinion from Mr. WAY, *January* 23, 1862.

"This material contains in round numbers 44 per cent. (44 p...) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."

Extract of Opinion from Dr. VOELCKER, *January* 1862.

"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a percentage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."

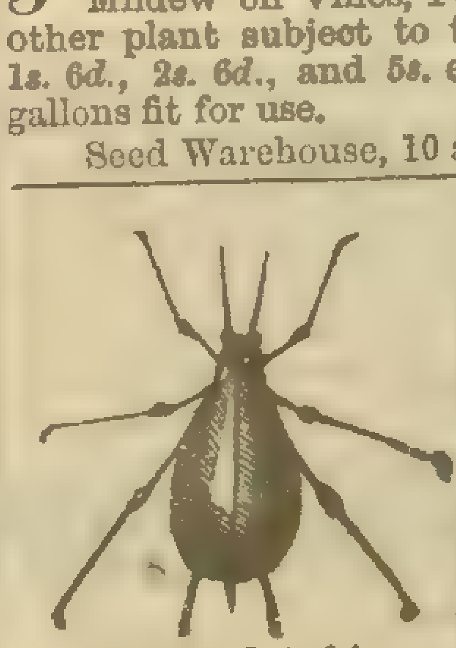
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.

Analyses, with opinions by the late and present Chemists of the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & CO., Plymouth.

Upwards of 2000 Cases have been reported as Cured by

JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s. 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.

Seed Warehouse, 10 and 11, Exchange Street, Norwich.



Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. NEAL, Edward Street, Birmingham.

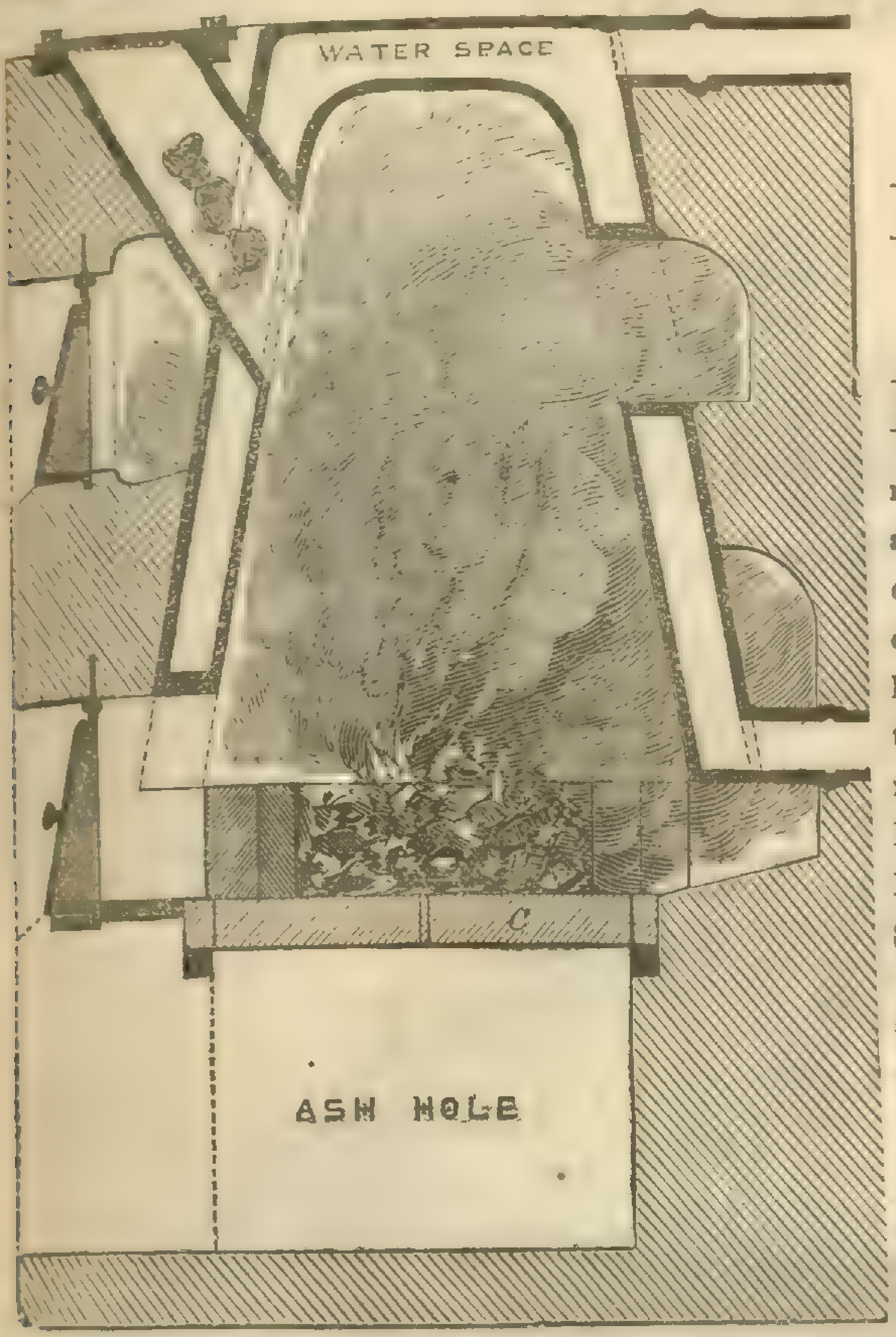
Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by PRICE'S PATENT CANDLE CO., Limited.



THE IMPROVED

CONICAL BOILERS,

SOLELY MANUFACTURED BY

BURY & POLLARD

(SUCCESSORS TO JOHN R. PEILL, LATE STEPHENSON & PEILL),

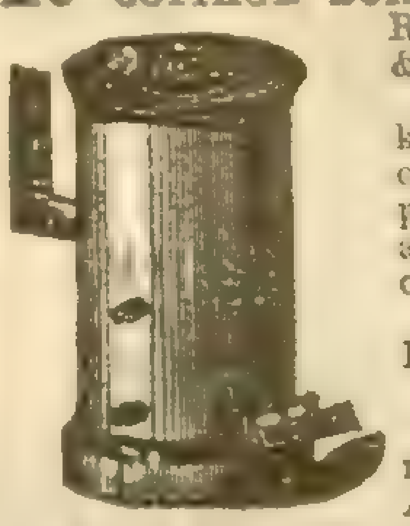
HAVE attained a celebrity far surpassing any other Boilers ever invented. Of the many hundreds which have been fixed in this and foreign countries, not one single Boiler has ever proved defective, or failed to give the most complete satisfaction. They are connected with large ranges of Pipes (in some cases several thousand yards), at many Public Establishments, at the Crystal Palace, the Royal Botanical Gardens at Kew, and at the Regent's Park, as well as at most of the Nobility's Seats throughout the Kingdom.

All particulars may be obtained on application to BURY & POLLARD, Sole Manufacturers, Park Iron Works, New Park St., Southwark, S.

Price £4 10s. and upwards.

Every description of MATERIAL for HEATING BUILDINGS, supplied of the best description, with directions for putting up HOT-WATER APPARATUS.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

Hothouses for the Million.

INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17*l*. SPAN ROOFS, 30 feet in length, for 33*l*.; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to S. HEREMAN, 7, Pall Mall East, London.

A FIRST-CLASS PRIZE MEDAL HAS BEEN AWARDED TO J. WEEKS & CO. FOR THEIR SUPERIOR UPRIGHT TUBULAR BOILER AND GENERAL IMPROVEMENTS IN HEATING BY HOT WATER.

JOHN WEEKS & COMPANY,

HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS

TO

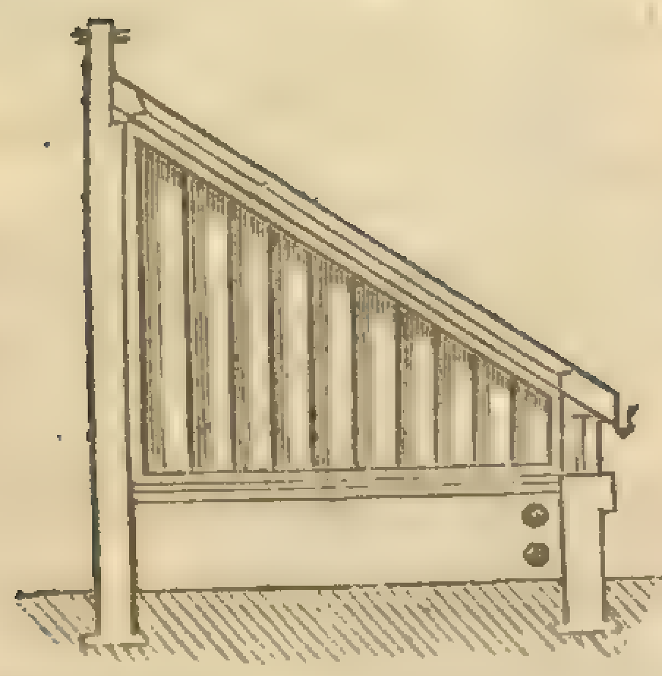
HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN
THE TOWER OF LONDON
THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN
THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM

And NUMEROUS PUBLIC COMPANIES.

KING'S ROAD, CHELSEA, S.W.

J. JONES'S HOT-WATER APPARATUS.

No. 7.



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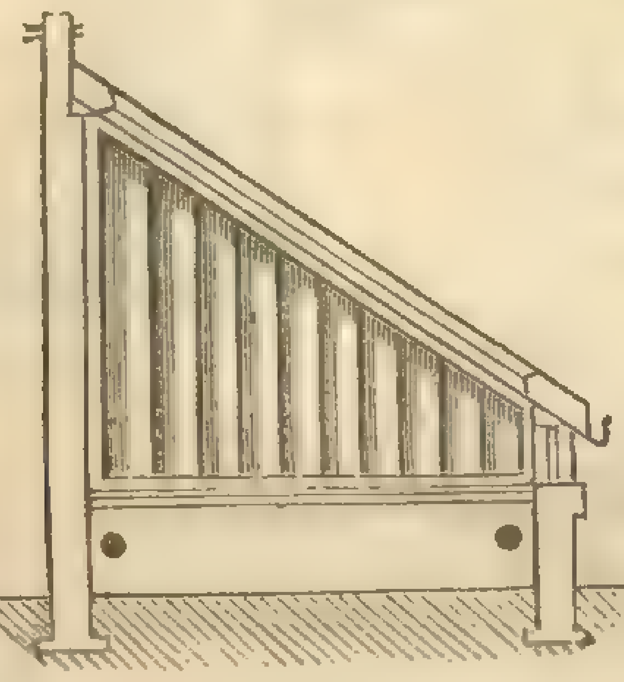

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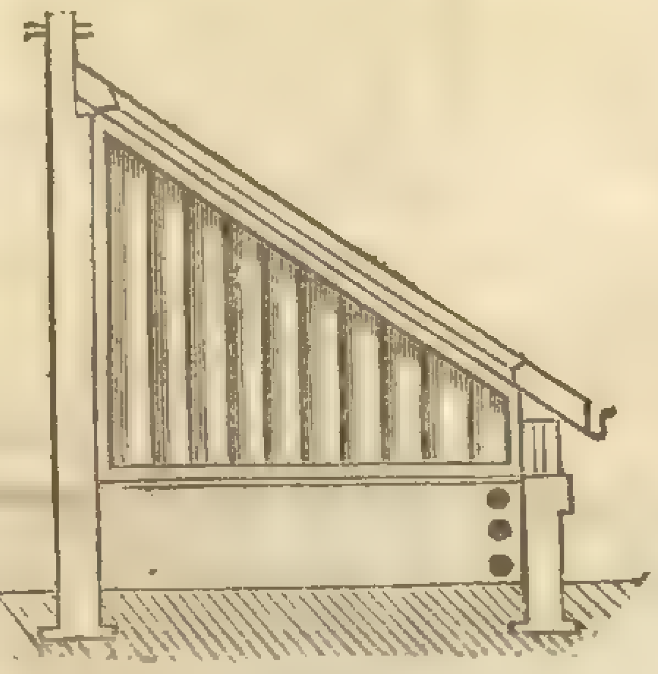

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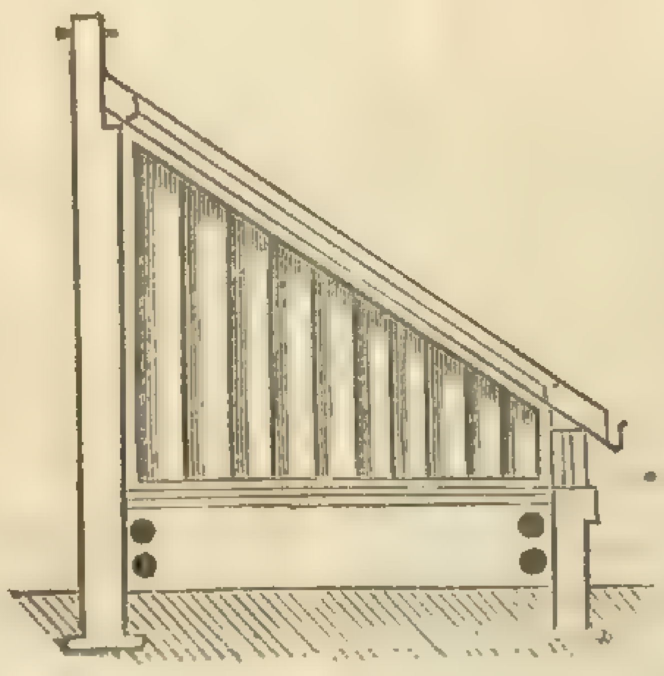

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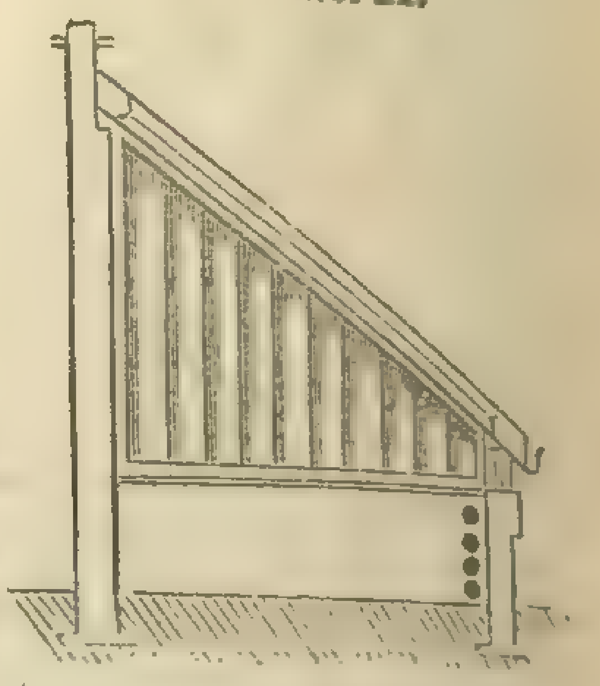
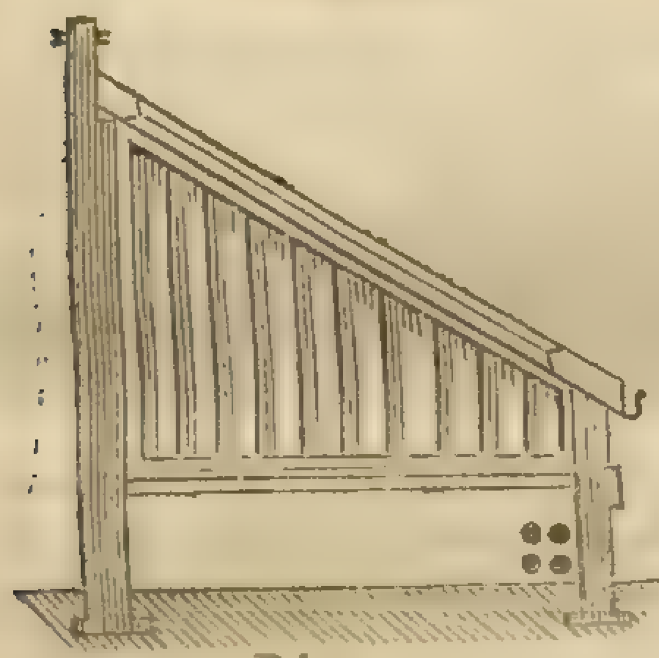


Size of House	No. 7 Price	No. 8 Price	No. 9 Price	No. 10 Price	No. 11 Price
20 by 10 ft.	£9 0 0	£9 0 0	£13 0 0	£14 0 0	£15 0 0
30 „ 12 „	12 0 0	12 0 0	17 0 0	19 0 0	21 0 0
40 „ 15 „	15 0 0	15 0 0	21 0 0	24 0 0	25 0 0
50 „ 15 „	18 0 0	18 0 0	24 0 0	28 0 0	29 0 0
60 „ 15 „	20 0 0	20 0 0	27 0 0	32 0 0	33 0 0
70 „ 15 „	22 0 0	22 0 0	30 0 0	36 0 0	37 0 0
80 „ 15 „	24 0 0	24 0 0	33 0 0	40 0 0	41 0 0
100 „ 15 „	26 0 0	26 0 0	36 0 0	44 0 0	45 0 0

No. 12.

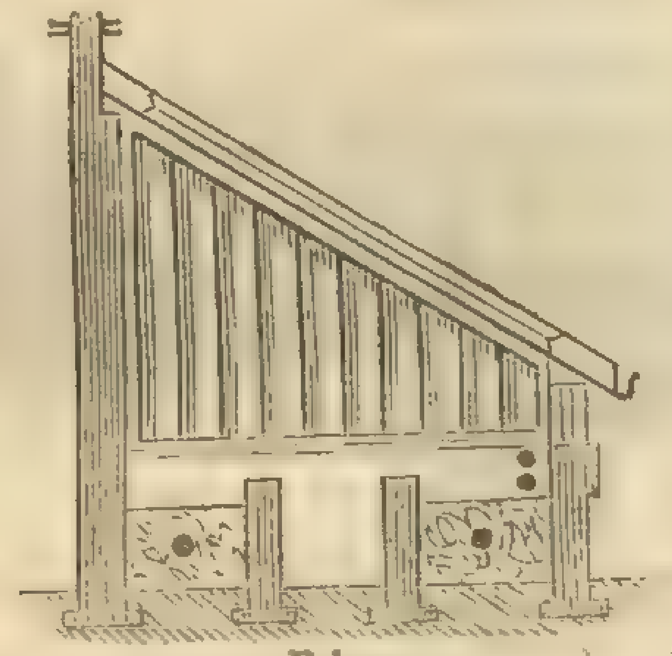


Price
Same as No. 11.

No. 13.

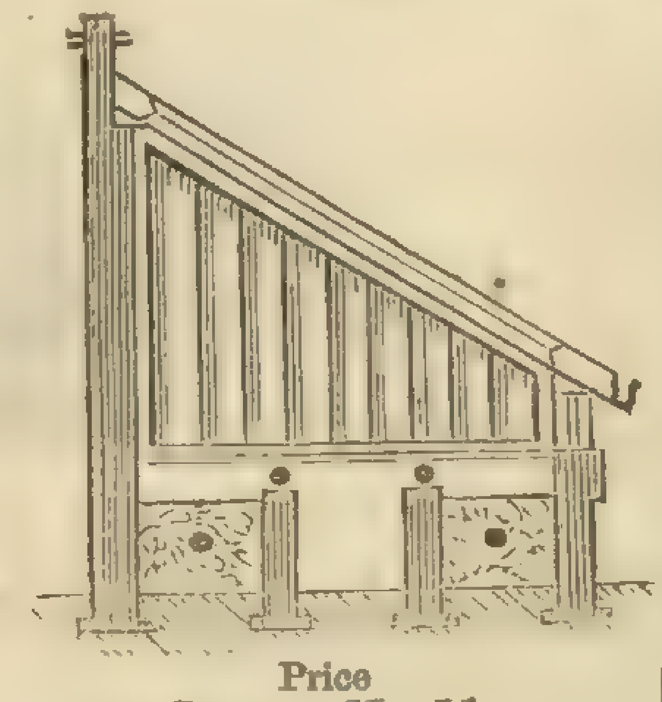
Price
Same as No. 11.

No. 14.



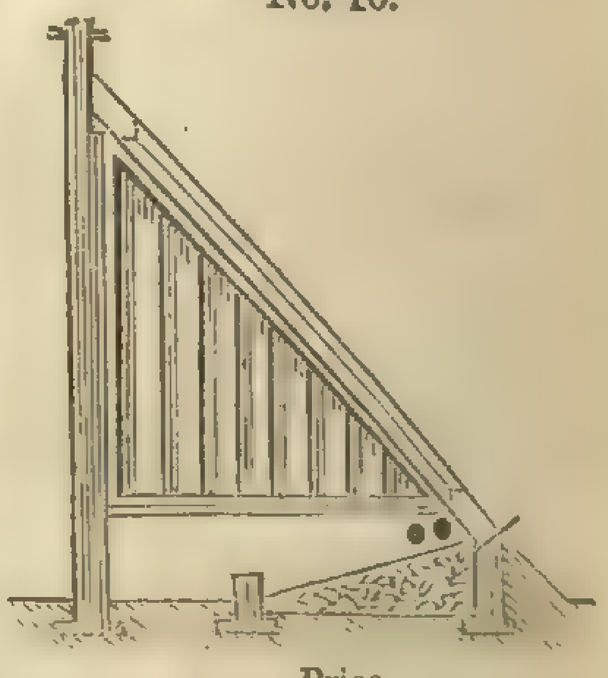
Price
Same as No. 11.

No. 15.



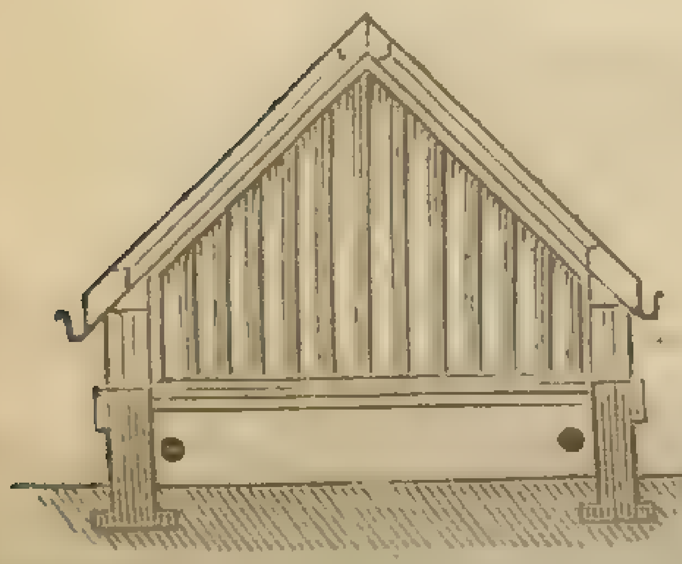
Price
Same as No. 11.

No. 16.



Price
Same as No. 7.

No. 17.



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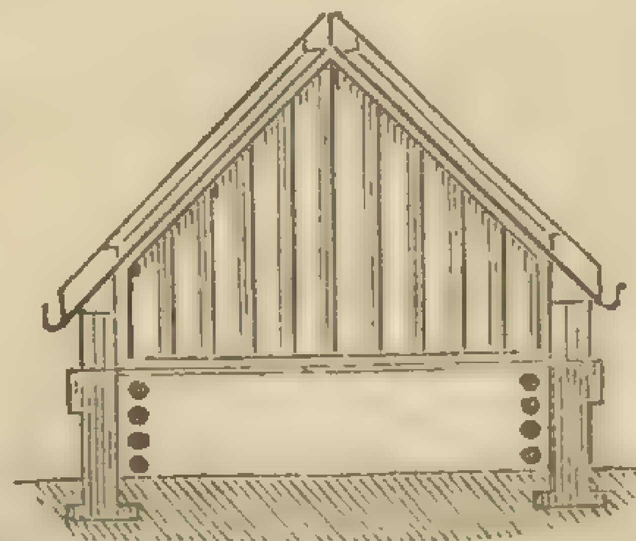
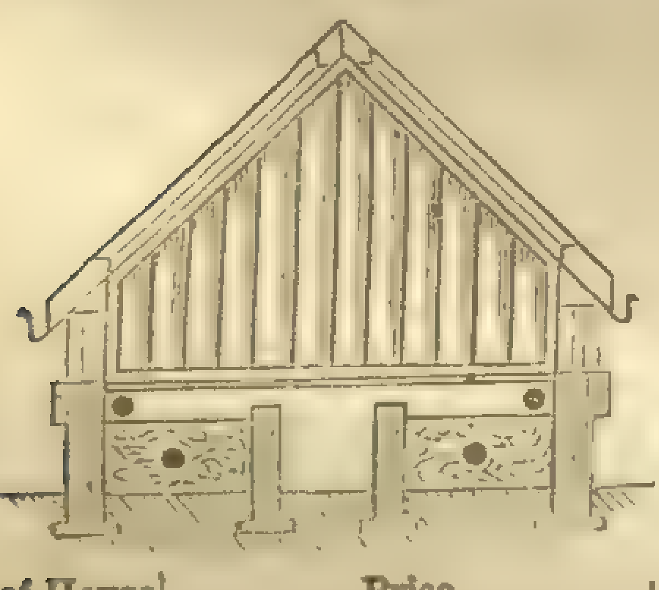


No. 21.

Size of House	No. 17 Price	No. 18 Price	No. 19 Price	No. 20 Price	No. 21 Price
20 by 10 ft.	£9 0 0	£14 0 0	£18 10 0	£23 0 0	£23 0 0
30 „ 12 „	12 0 0	19 0 0	24 0 0	30 0 0	30 0 0
40 „ 15 „	15 0 0	24 0 0	29 0 0	36 10 0	36 10 0
50 „ 15 „	18 0 0	28 0 0	34 0 0	42 10 0	42 10 0
60 „ 15 „	20 0 0	32 0 0	39 0 0	49 0 0	49 0 0
70 „ 15 „	22 0 0	36 0 0	44 0 0	56 0 0	56 0 0
80 „ 15 „	24 0 0	40 0 0	49 0 0	63 0 0	63 0 0
100 „ 15 „	26 0 0	44 0 0	54 0 0	70 0 0	70 0 0

No. 22.



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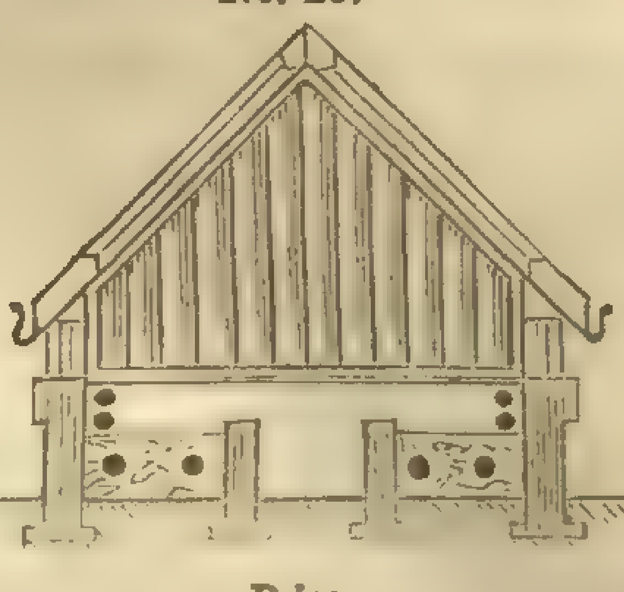

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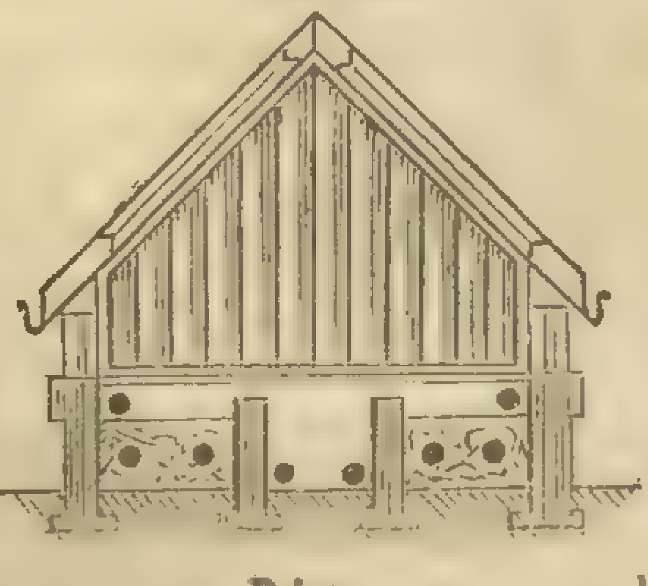

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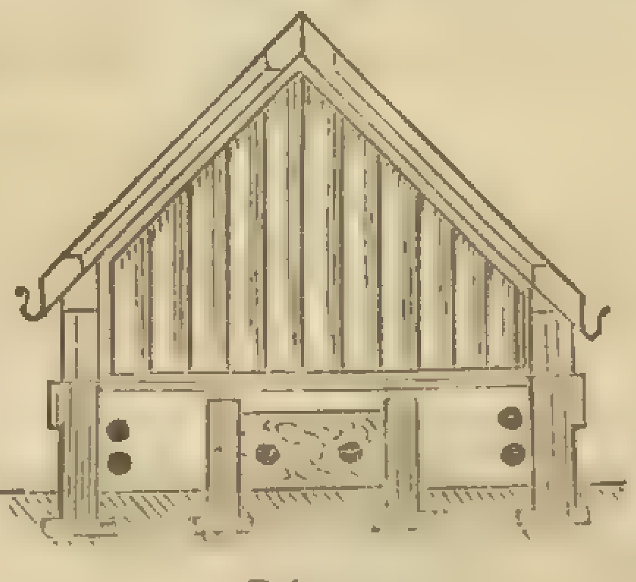

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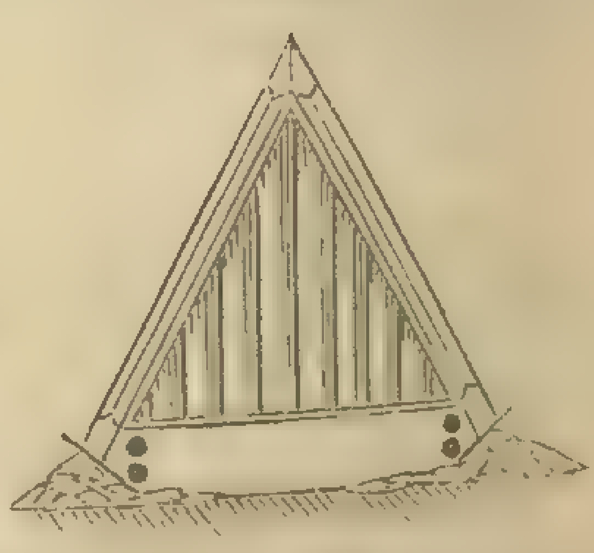


Size of House	No. 22 Price	No. 23 Price	No. 24 Price	No. 25 Price	No. 26 Price
20 by 10 ft.	£15 0 0	£25 0 0	£25 0 0	£18 10 0	£14 0 0
30 „ 12 „	21 0 0	32 0 0	32 0 0	25 0 0	19 0 0
40 „ 15 „	25 0 0	38 10 0	38 10 0	30 0 0	24 0 0
50 „ 15 „	29 0 0	44 10 0	44 10 0	35 0 0	28 0 0
60 „ 15 „	33 0 0	51 10 0	51 10 0	40 0 0	32 0 0
70 „ 15 „	37 0 0	58 0 0	58 0 0	45 0 0	36 0 0
80 „ 15 „	41 0 0	65 0 0	65 0 0	50 0 0	40 0 0
100 „ 15 „	45 0 0	72 0 0	72 0 0	55 0 0	44 0 0

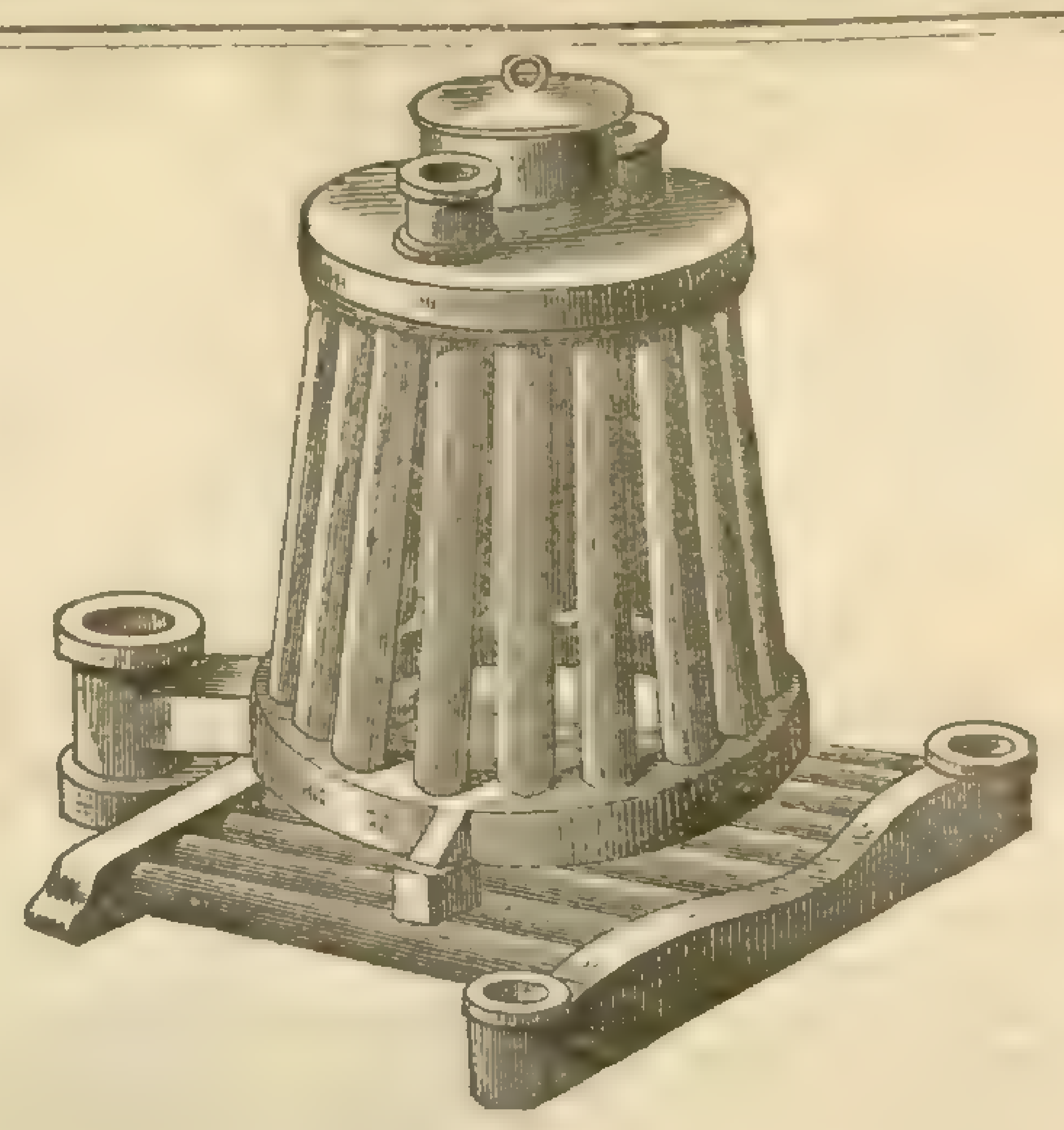
J. Jones will be happy to supply HOT-WATER APPARATUS for HOUSES according to any of the above Plans, delivered Free to any Station in England at the prices named, which include strong CAST-IRON CYLINDER or SADDLE BOILER, FURNACE DOORS, FIRE BARS, SOOT DOORS, CISTERN and DAMPER, 4-inch HOT-WATER PIPES and CONNECTIONS, all of the best quality; or he will forward ESTIMATES for WORK erected complete, with WROUGHT or CAST-IRON BOILER of any sort, at a small addition to the above prices.

⁂ *The Black Circles on Sections of Houses show the arrangement of Pipes.*

Illustrated Catalogues and further particulars post free on application to

J. JONES, IRON MERCHANT AND HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

FIRST CLASS PRIZE MEDAL
FOR ORMSON'S CONSERVATORY.



FIRST CLASS PRIZE MEDAL
FOR ORMSON'S PATENT JOINTLESS TUBULAR BOILER.

ORMSON'S CONSERVATORY.

INTERNATIONAL EXHIBITION.

CLASS 9, OPEN COURT, EASTERN ANNEXE.

OPINIONS OF THE PRESS.—EXTRACTS.

Gardeners' Chronicle.

"Mr. ORMSON, King's Road, Chelsea, has set up the very elegant curvilinear-roofed Conservatory. This is a light and graceful building, and is constructed of wood and iron, with a good deal of light ornamentation. The merits claimed for it are novelty and beauty of outline, chasteness and elegance in detail, and strength and lightness of construction, and these qualities it seems to possess."

Journal of Horticulture.

"It is impossible to speak too highly of the fine specimen of conservatory architecture Mr. ORMSON exhibits, and which is altogether novel in character as well as light and elegant in design. The ends consist of two half domes, and from the top of these extends the lofty, long, oval, dome-shaped centre supported by ornamental girders and arches springing from the top of elegant cast-iron columns; whilst the portion of roof between the base of the dome and the upright sides is formed on another curve, arching to meet the base of the girders. The structure thus formed affords abundance of light, and ventilation is amply provided for by every alternate sash at bottom being made to open; whilst in the upper portion there are two rows of sashes which can be opened for the escape of heated air."

Gardeners' Weekly Magazine.

"This is a grand promenade conservatory, with rectangular and curvilinear outlines, and of proportions adapted only for a great garden. The whole of the work is of the highest class, and the finish excellent. Mr. ORMSON also shows his tubular boiler, which we know to be powerful and trustworthy, and they merit the inspection of all interested in such matters."

Illustrated London News.

"No object in the horticultural department attracts the eye sooner than the splendid conservatory erected by HENRY ORMSON, of King's Road, Chelsea; nor is there anything more deserving of attention than the structure and the varied designs for conservatories, greenhouses, hothouses, Orangeries, Heath and Orchid houses, Vineries, Pineries, and Cherry, Fig, Plum, Peach, and Apricot houses, which are displayed upon paper within it. The accompanying Engraving shows that the erection of conservatories may be considered the highest grade in horticultural architecture; it shows in fact that architecture has become the ally of horticulture, and is bent upon doing it honour. The central mass of roof is supported within upon fluted cast-iron pillars, with enriched capitals forming along each side six arches, corresponding with that which spans the apse at either end. The framework of this upper portion of the building, artistically cumulative in effect, is principally of iron. The details seem to be finished with great care. The employment of colour has been very judicious; a white ground is relieved by the palest of greens, and, gilt here and there to a terminal ornament, gives to the inside an air of wonderful grace. Aëration, light, and elegance are all here admirably provided."

Daily News.

"HENRY ORMSON, of Chelsea, shows a beautiful structure in glass and iron of large proportions, highly decorated, which is decidedly a model of horticultural architecture. The visitors went round it, and into it, and paced it, and asked about it, and only wished they had money to buy it, and have it sent home. The roof is in three divisions receding to the top. In the middle of each side are two recessed doorways, and at either end an apse with semi-dome. White, pale green, and gold are the prevailing tints. Within are to be found upon paper designs for all sorts of Greenhouses, Hothouses, and Conservatories, from the very humble to the very splendid.

"Under the same roof are to be found ORMSON'S well-known Jointless Tubular Boilers for the economic heating of horticultural buildings."

HENRY ORMSON, HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,
STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

Calceolaria, Cineraria, and Primula, Extra Fine.

BARR AND SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

CALCEOLARIA, 1s. and 2s. 6d. per packet.
PRIMULA, 1s. per packet.
CARNATION, 1s. and 3s. per packet.
GUNNERA SCABRA, 1s. per packet.
CINERARIA, 1s. per packet.
PICOTEE, 1s. and 3s. per packet.
PELARGONIUM, Large fl., 1s. per packet.
" Fancy, 1s. per packet.

CARTER'S FIRST-CLASS SEEDS of
CALCEOLARIA, 2s. 6d. per packet.
" new blotched, 2s. 6d. per packet.
CINERARIA, 2s. 6d. per packet.
PRIMULA, mixed fringed, 1s. per packet.
" dark carmine fringed, 2s. 6d. per packet.
" pure white fringed, 2s. 6d. per packet.

James Carter & Co., 237 & 238, High Holborn, London, W.C.

Calceolaria, Cineraria, Primula, &c., extra choice.

BUTLER AND McCULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

CALCEOLARIA, 1s., 1s. 6d., and 2s. 6d. per packet.
CINERARIA, 1s., 1s. 6d., and 2s. 6d. per packet.
CARNATION, 2s. 6d. per packet.
PICOTEE, 2s. 6d. per packet.
PELARGONIUM, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS, 1s. and 2s. 6d. per packet.

Dutch and other Bulbs.

B. S. WILLIAMS'S AUTUMN CATALOGUE for 1862 is now ready, post free to all applicants, containing select lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladiolus, Amaryllis, Caladiums, Gloxinias, and many other choice Bulbs, with Hints on their Culture for the guidance of Amateur growers. To which is added a SUPPLEMENTAL and DESCRIPTIVE LIST of NEW, BEAUTIFUL, and RARE PLANTS.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

New Plants of 1862.

JAMES DICKSON AND SONS, "Newton" Nurseries, Chester, have now ready Strong Plants, at Reduced Prices, of FUCHSIAS, CHRYSANTHEMUMS, PHLOXES, PETUNIAS, and VERBENAS of the most approved varieties of this season. The usual allowance to the Trade. Prices on application.

Also very strong VINES from Eyes for Immediate Planting of the leading varieties, and such as will give the utmost satisfaction. Prices moderate.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to 7s. 6d. each;
ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA, 21s. each.

A Select LIST of the most rare kinds will be forwarded Post Free on application.

Dorking Nursery.

Strawberry Plants and Catalogue.

WILLIAM JAMES NICHOLSON has great pleasure in again offering fine laid Plants of his great Collection of STRAWBERRIES of more than 200 varieties, including all those new sorts sent out since the publication of the Catalogue for 1860, and many others of great interest.

A new DESCRIPTIVE CATALOGUE of the above may be had about September 1, by applying to the Growers,

William James Nicholson, Egglescliffe, Yarm, Yorkshire.

STRAWBERRIES for AMATEURS.—Plants of the six most useful sorts, chosen to afford a long succession of fine fruit, one of each sort, or four plants of ECLIPSE, free by post, for 24 stamps. The sorts include ECLIPSE, new, pronounced first rate, both for Forcing and Out-doors, by the Royal Horticultural Society; PRINCESS, the finest of the very early sorts; SIR HARRY, SIR CHARLES NAPIER, WONDERFUL, the best for very rich soils; and ELEANOR, very fine and late; or OSCAR, if ordered.

Also very choice CAULIFLOWER and pure WHITE BAVARIAN CUCUMBER, 1s. per packet.

Address A. Moss, Jun., Chadwell Heath Mills, Essex, E.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.
2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

Thomas Jackson & Son, Nursery, Kingston, S.W.

DOUGLAS FIR.—This noble Tree is now proved to be amongst the most ornamental and valuable Timber Trees; and having stood at Elvaston the winter of 1860 with impunity, when both the Common Oak and Holly were severely injured, proves its hardiness.

Splendid plants, all from seed, with extraordinary roots, can be supplied as under. Those who wish to plant Park Groups or Avenues should order early before the stock is exhausted. 1 to 1½ ft., 50s. per 100; 2 ft., 75s. per 100; 3 ft., 100s. per 100.

William Barron, Elvaston Castle, Derby.—Aug 16.

Stanstead Park Nursery, Forest Hill, S.E., and Edinburgh.

DOWNIE, LAIRD, AND LAING have much pleasure in offering the following very select Seeds, saved from their choice collections.

ANTIRRHINUM, 6d. and 1s. per packet.
CALCEOLARIA, 1s. and 2s. 6d. per packet.
CINERARIA, 1s. and 2s. 6d. per packet.
HOLLYHOCK, 1s., 2s. 6d. and 5s. per packet.
PANSY, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS KERMESINA SPLENDENS, 1s. 6d. and 2s. 6d. per packet.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON AND CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladiolus, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, Seedsmen to the Queen, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe.

Messrs. Sutton & Sons have been honoured with applications from The Science and Art Department of the Committee of Council on Education; as also from Dr. Kirkpatrick on behalf of The Albert National Agricultural Training Institution at Glasnevin, for their unique Collection of Grasses, at the termination of the International Exhibition.

Messrs. Sutton & Sons have also been highly complimented on this Case of Seeds and Specimens by many eminent Agriculturists and Botanists who have visited the Exhibition. They also invite inspection of their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which, for want of space there, is erected at the Crystal Palace, Sydenham.

Royal Berkshire Seed Establishment, Reading.

Splendid Prize Specimen Plants.

MESSRS. VEITCH AND SON, having now for many years past been invariably successful at the Great Metropolitan Exhibitions in obtaining the First Prizes with

FINE FOLIAGED AND VARIEGATED PLANTS,

think it is advisable for them to discontinue exhibiting in that class, and are therefore desirous of parting with their

MAGNIFICENT SPECIMENS

at very moderate prices.

These plants can be seen at the Royal Exotic Nursery, Chelsea, and any gentleman willing to take the entire lot would have them a bargain.

Royal Exotic Nurseries, Chelsea and Exeter.—August, 16.

New Fuchsias, &c.

GODWIN AND PADMAN have now ready NEW FUCHSIAS at 1s. each, or 10s. 6d. per dozen.

NEW VERBENAS of 1862 .. .. 6s. per dozen.
NEW PETUNIAS " .. .. 9s. "
NEW CHRYSANTHEMUMS of 1862 .. 12s. "
NEW TROPÆOLUMS of 1862 .. .. 12s. "

G. & P.'s SUPPLEMENTARY CATALOGUE, containing descriptions of above, on application to

Broadfield Nursery, Sheffield; or J. C. Padman, Boston Spa, Tadcaster.

Prize Calceolaria Seed.

J. DOBSON AND SONS' Splendid HYBRIDISED CALCEOLARIAS are second to none in the world.

First Prizes have been awarded them wherever exhibited this season.

Exhibitors should grow no other for 1863.

Hundreds of testimonials received as to their superiority over all others.

Sale of 1861, 4000 packets.

New Seed, growth of 1862, now ready in sealed packets, 1s. 6d., 2s. 6d., 3s. 6d., 5s.

The Trade supplied liberally. A lot of fine plants for sale.

Woodlands Nursery, Isleworth, W.

DUTCH AND OTHER FLOWER ROOTS.

HUGH LOW & CO.

Have now ready for distribution their CATALOGUE of the above, which can be had on application.

The Trade supplied.

CLAPTON NURSERY, LONDON, N.E.

DUTCH FLOWER ROOTS.

JAMES VEITCH, Jun.,

ROYAL EXOTIC NURSERY, CHELSEA, S.W.,

Begs to announce that he has received his Annual Supply of BULBOUS ROOTS from Holland, and is pleased to say they are in excellent condition.

CATALOGUES are now ready, and will be forwarded on application.

J. V., Jun., desires to impress upon those who patronise him the great advantage of giving him their orders early, as the successful Cultivation of Bulbs depends in a great measure upon their being planted early in the season.—August 16.

MAGNIFICENT NEW JAPANESE LILY, LILIUM AURATUM.

PLANTS of the above splendid LILY, which excited so much admiration at the ROYAL HORTICULTURAL SOCIETY'S EXHIBITION, July 2, continue flowering, and may be seen daily (Sundays excepted), at

Mr. JAMES VEITCH'S, Jun.,

ROYAL EXOTIC NURSERY, KING'S ROAD, CHELSEA, S.W.

NEW AND RARE PLANTS.

THOMAS JACKSON & SON

Having a good Stock of the undernamed BEAUTIFUL NEW PLANTS, respectfully offer them at very low prices:—

	Each.—s.	d.
ALOCASIA MACRORHIZA VARIEGATA	31	6
" METALLICA	31	6
ARALIA DUNCANII	5	0
CAMPYLOBOTRYS GHIESBRECHTII	2	6
" PYROPHYLLUS	3	6
CLERODENDRON THOMSONÆ	3	6
CORDYLINE HELICONIFOLIA	5	0
COSTUS VILLOSUS	3	6
IMPATIENS FLACCIDA	5	0
PHYLLOGATHUS ROTUNDIFOLIUS	7	6
POLLIA PURPUREA	5	0
RHYNCOSIA ALBO-NITENS	10	6
SPHAROSTEMA MARMORATUM	7	6
AGAVE SCHIEDIGERA	10	6
AZALEA KINGHORNII	3	6
" PRESIDENT	3	6
" MARS	3	6

	Each—s.	d.
	10	6
DRACÆNA ERYTHRORACHIS	10	6
DASYLIRION ACROTRICHON	5	0
ERICA DOUGLASII	7	6
FICUS BEGONIFOLIA	10	6
LYCOPODIUM ULIGINOSUM	31	6
MACROZAMIA MACKENZII	3	6
PIMELEA ELEGANS	7	6
SEAFORTHIA ELEGANS	7	6
ARUNDA CONSPICUA	5	0
JUNIPERUS DRUPACEA	10	6
PICEA SPECIES, from Vancouver's Island, 1½ ft., in pots (This fine new Fir is quite hardy, specimens in our Nursery having withstood the two last winters.)	31	6
QUERCUS BAMBUSÆFOLIA	7	[illegible]
SERISSA FŒTIDA VARIEGATA	10	6
RETINOSPORA OBTUSA		

NURSERIES, KINGSTON, S.W.

ROYAL HORTICULTURAL SOCIETY.—
FLORAL COMMITTEE.
LISTS OF AWARDS, August 12, 1862.
FIRST CLASS CERTIFICATE.
Hollyhock, Gem of Yellows, from Mr W. Chater, Saffron Walden.
Hollyhock, Glory of Walden, from Mr. W. Chater.
Hollyhock, Imperator, from Mr. W. Chater.
Lycopodium Phlegmaria, from Messrs. Veitch and Son, Exeter and Chelsea.
[illegible], from Mr. Turner, Slough.
SECOND CLASS CERTIFICATE.
Hollyhock Hesperus, from Mr. W. Chater.
[illegible] conspicua, from Mr. G. Smith, Hornsey Road.
Petunia Butterfly, from Mr. Holland, gardener to R. W. Peake, Esq.
The next MEETING will take place on August 26.
THOMAS MOORE, Secretary to the Committee.

RUGBY HORTICULTURAL and COTTAGE GARDENERS' SOCIETY.
President—The Right Honourable Earl DENBIGH.
The ANNUAL SHOW of the above Society, Open to All England, will be held at Rugby on FRIDAY, August 29.
Upwards of 80 Prizes in Class 5 will be offered for Plants, Fruits, Cut Flowers, Vegetables, &c., including 2 Silver Cups, as follows:—
CLASS 5. 36 Dahlia Blooms. Dissimilar. A Silver Cup, value 5*l.* 5*s.*
24 Roses. Distinct. 3 Blooms of each. A Silver Cup, value 4*l.* 4*s.*
24 Verbenas. Distinct. 5 Trusses of each. An extra Prize of 2*l.* by Mr. C. J. Perry, of The Cedars, Castle Bromwich, and Mr. W. H. Treen, Victoria Nursery, Rugby, in addition to the first Prize offered by the Society.
Entries to be made on or before August 23.
Schedule of Prizes and further particulars may be obtained on application to JOHN S. SAVAGE, Hon. Sec.
Rugby, August 16.

WORKSOP FLORAL AND HORTICULTURAL SOCIETY.
The ANNUAL SHOW of this Society will be held on THURSDAY, September 4. In addition to the usual Prize List, the following Extra Prizes, Open to all Growers, will be offered for Competition:—
For the best Collection of Fruit, to consist of 8 Dishes, 6 distinct varieties, 1st Prize, 5*l.* 5*s.*; 2d Prize, 3*l.* 3*s.*; 3d Prize, 1*l.* 10*s.* Entrance 1*s.*
For the best 3 Vines in Pots, 1st Prize, 1*l.* 1*s.*; 2d Prize, 10*s.* 6*d.*; 3d Prize, 5*s.* Entrance 1*s.* 6*d.*
For the best 6 Bunches of Grapes, 3 Black and 3 White, 1st Prize, 1*l.* 1*s.*; 2d Prize, 15*s.*; 3d Prize. 10*s.* Entrance 2*s.*
For the best Two Dishes of Fruit, viz.:—6 Peaches, and 6 Nectarins, 1st Prize, 1*l.* 1*s.*; 2d Prize, 10*s.* 6*d.*; 3d Prize, 5*s.* Entrance 1*s.* 6*d.*
For the best Pine Apple of any variety, 1st Prize, 1*l.* 10*s.*; 2d Prize, 15*s.*; 3d Prize, 7*s.* 6*d.* Entrance 2*s.*
Entrance for the whole of the above five prizes, 8*s.*
For the best 12 French Asters, 1st Prize, 1*l.* 1*s.*; 2d Prize, 10*s.* 6*d.*; 3d Prize, 5*s.* Entrance 1*s.* 6*d.*
For the best 12 German or Quill Asters, 1st Prize, 1*l.* 1*s.*; 2d Prize, 10*s.* 6*d.*; 3 Prize, 5*s.* Entrance 1*s.* 6*d.*
For the best 12 Dissimilar Blooms of Dahlias, 1st Prize, 1*l.* 1*s.*; 2d Prize, 10*s.* 6*d.*; 3d Prize, 5*s.* Entrance 1*s.* 6*d.*
For the best 12 Single Blooms of Hollyhocks, distinct varieties, 1st Prize, 1*l.* 1*s.*; 2d Prize, 10*s.* 6*d.*; 3d Prize, 5*s.* Entrance 1*s.* 6*d.*
Schedules and Particulars on application to GEORGE BAXTER, Hon. Secretary.

The Gardeners' Chronicle

SATURDAY, AUGUST 16, 1862.

IT has been frequently asserted, but never shown, that in this England of ours, TOBACCO and INDIAN CORN might be made field crops, and that even the VINE would in good situations yield its ripened bunches to the wine-press. It is worth consulting the International Exhibition to ascertain whether it throws any light upon any of these points, for there we have specimens of produce from all the corners of the earth.

TOBACCO samples are as plentiful as Blackberries. Those from the United Kingdom being all foreign grown, may be passed by and we must confine attention to those really from foreign countries. Had the Jury awards conveyed a tolerable idea of the comparative merits of the Exhibitors; or could they be regarded as complete returns, they would throw some light upon this question, and go far to solve a problem of great agricultural interest. But the single fact that they do not mention the admirable cigarettes from the Ecuador,* whose quality is equalled by nothing except the Havana cigars of Partagas, which represent the highest excellence to which Tobacco can possibly be brought, prevents our using them except with some reserve. It is however desirable that they should receive some examination, unless enthusiastic growers in this country are to be misled.

If there is any one point in the history of the Tobacco plant more certain than another it is that although it will thrive as a summer annual in latitudes as high as even Sweden, yet it can never lose its nauseous odour and acquire the fragrance which gives value to its narcotic qualities except under the prolonged influence of a fervid sun. In the cloudy regions of the north it produces leaves and flowers as fine as in Cuba, and its seeds are formed abundantly; but the Tobacco manufactured from it, even when the grower knows how to manufacture it, is such as no person with taste more refined than a cabman's can endure. Nevertheless the Jury has given five medals for Tobacco grown in Sweden; which would seem to negative our statement. We find, however, that the medals have not been given for *good* Tobacco, but for *well made* cigars. This circumstance sweeps Sweden out of the list of apparent exceptions to our rule. We may add that having been permitted to taste one of these "decorated" Swedish Cigars we entirely agree with the Jury as to the excellence of their make, merely adding that their quality was detestable. Other medals have been awarded for Tobacco in Belgium, Baden, France, Frankfort, Hanover, Hesse, Prussia, Switzerland, and Nova Scotia, all northern countries wholly or in part. But as some of these medals are given for what is "well made and cheap," one for an exhibition representing "a large export trade," and another for "a *specialty* of fine cigars" (Qu. meaning), no possible inference as to quality could be drawn from such cases, even if we knew that the Tobacco employed was not of American growth. In Belgium, indeed, a medal is given for Tobacco of "fine home growth," quality not specified, which leads us to suspect that in other cases it is not home-grown.

These northern cases being thus disposed of, we have only Southern countries to consider, and here we find an entire confirmation of the rule above laid down. The hot southern provinces of Austria and Russia, the Levant, and tropical stations, are alone, among old countries, found to yield Tobacco deserving decoration. Over all the flag of Cuba still floats triumphant, as is shown by the Tobacco of Partagas & Co., with perhaps the solitary exception of that of Ecuador, already alluded to; we say perhaps, because Cigars and Cigarettes are not strictly comparable, owing to fundamental differences in the manner of making them up. We think it the more important to mention this fact because it is opposed to the belief that the Havana can alone bring into the market Tobacco of the highest quality, fit, as a Spanish friend used to say, "to be smoked in church."

But if Hungary, Bessarabia, Syria, and the Morea can produce excellent Tobacco, why should not our Australian colonists find it profitable to grow it? We are decidedly of opinion that they each may enter the field advantageously if they think it worth their while. Queensland, New South Wales, and Victoria have produced it in the Exhibition, and been distinguished by medals; the New South Wales negrohead indeed is to our certain knowledge equal to the finest Cavendish. Although Western and Southern Australia make no sign as yet, they need not despair of adding Tobacco to their sources of prosperity; Tasmania is probably too cold. All that the Australians need do is to secure the services of some skilful Tobacco *makers* from Cuba or Hungary, or elsewhere, and not to entrust their interests to ignorant makers from countries less renowned for excellence, or to pretenders who know everything intuitively. Making Tobacco is like making Ale or preparing the leaves of the Tea plant for use. These processes, especially fermentation, require the greatest nicety and long experience, as was seen in the Tea plantations of the Himalayas, where the quality of Tea was unsatisfactory until experienced makers were obtained from China. One other word of advice may also be offered. Let our Australian friends eschew the green-flowered Tobaccos of all kinds. It is true that one of them yields the common samples of Egypt and Syria; but the best of those is inferior to good American; and to this Latakia is no exception, for that admirable sort is Virginian Tobacco grown near Broussa. The kinds to employ are either the pink or white flowered varieties of N. Tabacum, or the white-flowered N. persica, which yields the far-famed fragrant Tobacco of Shiraz. Possibly the wild white Tobacco of N. Holland may be capable of improvement by cultivation, but that can only be ascertained after long and careful experiment.

* These were shown by the Commissioners for Ecuador, through Mr. LOUIS LEVINSOHN, of 7, Finsbury Square, who we believe is charged with the duty of bringing them into notice. We believe they arrived too late for examination by the Jurors. As to the wonderful cigars of Partagas we must not excite the interest of smokers without mentioning that they may be had of Mr. WILLSHIRE, 2, Lime Street Square, but no where else.

IN our last Number will be found some valuable remarks on COTTAGE GARDEN SOCIETIES, and on the mode of rewarding the industrious cottager, which has been so successfully adopted by the Blechingley and Nutfield Society. The subject is one of great importance, and the details with which our Correspondent has favoured us, are highly deserving the attentive consideration not only of those who may be concerned in the management of such associations, but of all who take an interest in the prosperity of the labouring classes, and are anxious to lend a helping hand to promote their happiness and improve their condition.

At one time it might have been a question with many how these desirable objects were most likely to be accomplished; but at the present day we have sufficient evidence in almost every direction to show that one of the first steps to be taken, and which will eventually lead to success, is to give the cottager a more powerful motive for spending his leisure at home than for wasting it abroad. But to keep him at home he must be employed, and a moment's reflection will convince him that there is no sort of occupation more agreeable and conducive to health than that of cultivating his little garden, either for the sake of profit, or to increase the comforts of himself and family.

We think all must admit that a vast improvement has taken place in the habits of the labourer since provincial associations were formed for the purpose of inciting him to exertion by offering prizes for the produce of his garden; and so popular has the taste for gardening become, that there is scarcely a large town or district throughout the kingdom without its horticultural society.

But it is not always at large exhibitions that merit meets its reward. There the rare and beautiful fruit and flowers of the wealthy naturally form the chief objects of attraction, while the more humble productions of the cottager are occasionally shown to disadvantage. We are therefore inclined to agree with our Correspondent, that in towns or villages where grand displays are not attempted, the claims of the cottager have a much better chance of being fully acknowledged than when their productions are made to form part of a provincial show. Where they have done so, however, it is only fair to state that we never knew them to be overlooked, or treated with indifference, but, on the contrary, they were regarded with a feeling of pleasure, and as a proof of the condition of the labourer in the district in which they were shown.

In all undertakings of this kind, as our Correspondent remarks, the funds at the disposal of managers are necessarily very limited, and the question is how they may be disposed of to the best advantage. Hitherto the plan which has been generally followed is to set aside a portion of the amount subscribed as prizes for the best stocked and most carefully cultivated garden, and another portion for the best specimens of garden produce. But here arises the difficulty which has been the cause of much unpleasantness, three or four industrious men carry off the prizes year after year, and their neighbours finding they cannot beat them abandon all further attempts at competition, and are content with merely raising vegetables for themselves and families.

To remedy this state of things in some measure, a scheme has been devised and acted on by the Blechingley and Nutfield Society, which although not altogether new to us, is in some respects superior to any we have seen in operation. On this account we think the following epitome of its principal features may be useful.

The two parishes of Blechingley and Nutfield comprise an area of about 9000 acres. Scattered over these are about 250 cottages with gardens attached, and occupied chiefly by agricultural labourers, who form one division, while mechanics and garden labourers, &c., form a second division, and are not allowed to compete with those of the first. The whole of the gardens are inspected by judges appointed by the committee. The judges select two of the best managed gardens in each division, and to these prizes of some value are awarded. They also make a list of all they deem worthy of reward, and arrange them in three classes. This year in the agricultural labourers' division, 12 were recommended for class 1, and awarded 5*s.* each; 39 for class 2, and awarded 3*s.* each; 68 for class 3, and awarded 2*s.* each. In the second division, 8 were recommended for class 1; 9 for class 2; and 12 for class 3; each being awarded the same as those in the first division. Out of the 250 gardens inspected, 148 were considered deserving of reward; and although the amount is but small, it appears to have answered the purpose for which it was intended, and been the means of effecting much good in the district.

Here then is an example which we think every Cottage Garden Society will do well to imitate.

The principle is good, and the arrangements with regard to classification, &c., may be varied according to circumstances.

—— We have read carefully the report of a meeting of the Cotton Supply Association, held on Wednesday in the Board Room of the Royal Horticultural Society; but we fail to perceive that much new information was elicited. Many speakers assured the meeting that the countries they represented could supply Cotton in boundless quantity; but we knew that perfectly well before. No well-informed man requires to be told that Cotton is at home in most tropical and many extratropical countries. The real and only question is, as Mr. Marsh observed, a question of price. Will it pay to furnish this material? Unless the Lancashire manufacturers can make that clear no Cotton will be grown for them. Colonies will not produce it at a loss, any more than mill-owners will manufacture upon such a condition. Open a paying market and Cotton countries will fill it. Gentlemen seem to forget that Cotton is not like corn; if you cannot sell corn you may eat it; but if Cotton cannot be sold it is valueless. As usual, the Indian Government was called to account for its shortcomings, as if it was its business to grow Cotton. One speaker indeed complained that the Secretary of State for India only showed him the cold shoulder; a not very surprising circumstance, if true, considering the course that has uniformly been taken by the Cotton merchants towards the Indian Government, whose efforts to foster Cotton farming, although quite uncalled for, would have been perfectly successful had the merchants themselves done their duty half as well as Secretaries of State have done theirs.

—— The Council of the Royal Horticultural Society have issued a circular to the Fellows, inviting contributions to form a fund for the purchase of one of the French fountains now in the garden, or of some of the minor works of Art there exhibited. They state that they feel that they have still so much to do to complete the garden, that their continued efforts, so far as the Funds of the Society are concerned, should rather be directed to that end, and they therefore have resolved to open a subscription to form a special fund for this object. In coming to this resolution the Council have undoubtedly acted wisely. With an extensive and costly establishment to maintain, an unfinished garden, and various additional improvements in contemplation, it would be an unwise application of any funds they might have at their disposal, to sink in any single object of embellishment so large a sum as would be required to purchase one of the fountains. The price put upon the larger fountain (Durenne's) although orginally higher, is now understood to be 5000*l.*, and of the smaller one (Barbezat's) 4000*l.*, sums far beyond what could be legitimately withdrawn from the means of the Society. It is evident therefore that in no other way could the acquisition of these works be attempted, and it puts the matter on its fairest footing. If the Fellows themselves wish to retain these works, they have only to contribute to the fund. If they are indifferent about it, it is not for the Council to press it. But we do not believe that they are indifferent on the subject. The feeling that the works should be retained, has been too loudly and generally expressed to leave any doubt about it. It is clear however, from the sums required, that it is not an ordinary subscription which is now in question; it is a matter requiring handsome donations. Being in the nature of things almost confined to the Fellows themselves, the subscriptions to be effective must make up in their amount for their limited number. Already we understand that some liberal donations have been made, and we trust soon to be able to announce that the object in view will be accomplished.

EGYPTIAN GARDENING.

(*Concluded from p. 741.*)

In few countries having pretensions to civilisation, and possessing the auxiliaries of sun, fine soil, and water, has gardening made less progress than in Egypt. This may in some measure be attributed to the want of taste and energy on the part of the proprietors of land, and also to the uncertainty under which property was held under the late changeful Mameluke governors of that country, together with a strong determination on the part of the Muslim population not to encourage anything new, particularly if imported by the hated Nazarene. Some 20 years ago, when Ibrahim Pasha erected a 100-horse power engine and pumps to take the place of 500 Sackias which supplied water to the market gardens in the neighbourhood of Boulac, the people pronounced him mad; and when they saw the huge machine belching out columns of water, they at once said the Franks had brought "*Whaked afreet*—a devil," to empty the Nile.

Such is the fertilising power of Nile water, that when the Cornish engine just mentioned was erected, 700 or 800 acres of land were brought under cultivation in the immediate vicinity of Cairo, by means of levelling a number of sandhills, and mounds of accumulated rubbish, probably the sites of some former towns or villages. These are now covered with market gardens and sugar fields; the latter are chiefly for the consumption of the Cairenes, and when in season, one rarely encounters an Arab on the road who is not engaged in chewing and sucking the sugar cane; vendors, squatted on the ground, sell it in every part of the town at the rate of one and two canes a penny.

The division of this land into fields and gardens is effected by planting rows of Prickly Pears, which grow so rapidly and in such a stalwart manner, as soon to defy entrance, except by the legitimate gateways, in addition to forming a secure fence. The fruit, which they bear in abundance, is also sold in the streets and markets of Cairo. In order to form a fruit garden in Egypt it is necessary to choose a site above the highest level of the highest water-mark of the Nile, or to raise the ground above that level, to avoid the water from overflowing, or filtration forcing its way in and lying about the roots of the fruit-trees, an evil fatal to many, especially to Orange trees. The management of the Date Palm, the Citron tribe, Vine, Fig, Melons and Water Melons, forms the chief occupation of the Arab fruit gardener.

The Date Palm is cultivated from one end of Egypt to the other, and forms a source of great revenue to the government; it also furnishes abundance of nutritious food for the people, at the moment when gathered ripe from the trees, and afterwards in a pressed and dried state. From Cairo upwards, the Dates are of superior quality compared with those of lower Egypt; each tree pays a tax of an Egyptian piastre (about 3*d* English) to the revenue, and produces to its owner in good seasons about a dollar in the shape of fruit, and fibre for rope making; the lower leaves are also used for making crates, seats, and bedsteads. The male and female Palm are both grown; it is always necessary to have several of the former in every grove and clump of female trees. They are generally planted in the form of suckers, which are produced in abundance at the foot of the old trees; where they have neglected to plant male trees, or probably where the latter have died, the growers are obliged to cut spathes of the male blooms and tie them in the trees near the female flowers, leaving the pollen, which is produced in abundance, to be scattered by the wind.

Orange trees and others of the Citron tribe are confined to Central and Lower Egypt, the upper country being too hot for them. They are a source of great profit to the growers, Oranges being seldom cheaper than 10 for a piastre, and often only five. I have known Lemons sold two for a piastre; being dearer than they are in England. Both Oranges and Lemons can be preserved in excellent condition until the middle of June, by being packed in half-dried sand, in layers of six deep, allowing about 2 inches between each Orange, to be filled with sand. The Oranges ripen about the middle of January, and the middle of February is the month for storing away those intended for summer use. The Mandarin Orange is the most esteemed, and is named by the Arabs "Yussef Effendi," having been first introduced by some person of that name; it ripens in December, but will not keep beyond a week or two when packed in sand; consequently it is gathered and used fresh from the trees. Seedling Orange trees are preferred, possessing as they do greater durability and productiveness, and the fruit is sweeter; but they take longer to come into bearing. Many trees are budded, the stock being with few exceptions the Seville Orange, which grows more rapidly in Egypt than a common Willow does in England.

The Blood Orange, too, is a special favourite, and many absurd stories are told of its origin, some seriously setting forth as a well-authenticated fact that it was obtained in Malta from a cross or graft on the Pomegranate; the Arabs, however, have even a more ridiculous story about it than that. The Mandarin Orange being difficult to rear from seed, they are likewise budded on the Seville Orange stock, but the fruit is better flavoured when budded on the Shaddock; they, however, form quicker and finer trees on the first-named stock.

Budding is done in the same manner as in England, but the operation can be performed at two seasons, viz., March and September; the former month is preferable. In case buds should fail, which is of rare occurrence, they are replaced in September. During the hot dry months of summer vegetation, like animal life, seems to be too idle to exert itself, and takes a rest; but when the rising Nile *has filled every cranny and crevice of the baked earth with water*, vegetation starts again into activity, and an autumn growth, equal to that of a whole summer, is formed.

Nothing can be more delightful than the fragrance of these gardens when in bloom in the months of March and April. The Seville Orange trees are much cultivated for the flowers they produce, which are distilled into Orange flower water, an article in great demand amongst Egyptian ladies for its odour and also for mixing with the water they drink.

The Vine is cultivated in central and lower Egypt. In the neighbourhood of Alexandria are some excellent Grape gardens, but the district most celebrated for its Grapes is Fiume, situated about 50 miles south of Cairo, and bordering on the Libyan desert; this district is watered by a canal, brought from the upper Nile waters, irrigating in its course over 200 miles of country: the canal is named "Bah-er Yusef," Joseph's River. In the district just named the Muscat of Alexandria is cultivated more than in any other part of Egypt, for supplying the Cairo and other markets.

In Egypt they have several kinds of Grapes, but those most esteemed are the Alexandrian Muscat, and a late black Grape known in the country as the Enab Roomee, Greek Grape.

Anyone who has only seen the Vine grown in England and the colder parts of Europe, can form but little idea of the mighty powers that plant possesses in the shape of growth. In Egypt it is used for shade as well as fruit. I have seen Vines planted to cover a verandah which formed the approach to a dwelling; they had clear stems 10 feet high and 2 feet in circumference. The Greek gardener who had charge of them told me that they had been planted about 15 years; each Vine covered a space on the top of the verandah of 10 square yards. The Vine would be more extensively cultivated in Egypt, but the Koran forbids the use of wine to the faithful; they simply grow Grapes for the consumption of the markets.

Fiume and Alexandria are districts noted for Figs, and Fig trees are so gigantic and fruitful that it is difficult to realise the idea of a barren tree; they assume the size and form of coppice Oaks, and actually glut the markets with their sugary fruit, which is the cheapest of any grown in the country. The Pomegranate is the Red Currant of Egypt, and is as plentiful in every garden, as Currant bushes are at home; like the Currant too it has its enemies—not blackbirds, but a large black fly, which, when the fruit is the size of an Apple, bores a hole near the apex and deposits its larvæ, which produce white grubs, causing the fruit to become worthless. The Pomegranate flowrs in April, and forms a beautiful object when covered with scarlet blossoms; as soon as the fruit has attained the size of a good Apple, in June, it is cased in a basket made of Date leaves, to prevent the inroads of the flies just mentioned, which destroy every fruit left uncovered, the fruit being much esteemed. This basket making has assumed a trade similar to that of punnet making for Strawberries in England.

For Melons and Water-melons Egypt has long been famous, the former are chiefly cultivated on the mud banks of the Nile, as the water recedes. These banks are farmed by the "Feláheen peasants" of Egypt, as are Osier beds on the Thames. The Melon seeds are sown in April in the neighbourhood of Cairo, but higher up the country much earlier; hence the first supplies are usually in the markets by the middle and end of May; they receive little attention beyond the digging of the holes, and the sowing, together with an occasional spreading of the branches; the quantity of fruit produced is truly astonishing. In Cairo and the vicinity, one rarely passes 100 yards without seeing piles of them offered for sale at about 1*d.* and 2*d.* each. I do not wish to detract from the credit of our Melon growers at home; but after having eaten of the delicious green and white-fleshed Melons of Egypt, I am sure it would be difficult for anyone to reconcile himself to eating the produce in this country. The Water Melon, the Bâteekh, the *summum bonum* of the Arab's heart—the fruit *par excellence* of the Feláheen—is grown in every part of Egypt like Swede Turnips at home; yet there are districts famed for their production, too; one in particular is situated in lower Egypt on the Damietta branch of the Nile, and is known as the Kaffra-el-Bâteekh, the district of Water Melons; here they are grown to about 30 lbs. in weight, and said to be the most sugary aud juicy of any produced in the land. The Arabs eat them as cows do Turnips; fruit of these and bread form the chief part of summer sustenance. A great number of Water Melons are grown on the mud banks, but many fields are likewise devoted to their culture.

As I have before mentioned, Peaches, Nectarines, Apricots, Plums, Pears, and Apples grow and produce fruit in abundance in Egypt, but the Arabs as yet understand little of their culture; they rarely use the pruning knife, know nothing of summer stopping, plant them as thick as trees in a game cover, and leave all the fruit upon the trees they bear. I have seen Peaches, Nectarines, and Apricots hanging like strings of Onions, and I really believe that the cultivators think it would be interfering with the will of Providence to pull any of them off. I have seen them look aghast when they saw me pulling off the green fruit and throw it on the ground. I will conclude this article with one observation, and that is, I never met a European from any country, who did not express this feeling that it is a great pity so fine a country as Egypt should be mismanaged as it is; acres of splendid land lie year after year without crops, simply because there is either a want of spirit or capital to irrigate them. *Peter Wallace, Terrace, Turnham Green.*

Indoor Gardening.

August is doubtless early to begin to think about bulbs, and yet when November comes we are not averse to have Tulips and Narcissi unfolding their scented blossoms. I have sometimes then wished desperately that my own were out, and have been reminded mournfully that they had not long been in. And then comes a spell at forcing, which one cannot help doing, and yet which one grieves over, knowing its ill effects.

Those who have not tried growing bulbs much indoors will perhaps not be aware of the tiresomeness of some of them. Put them in when you will, they are so very uncertain—out of five or six dozen Tulips, for instance, perhaps only a dozen or so will make a fair

start together: and thus for the Tulips one must give oneself a wide margin, while the Hyacinths and Narcissi are more matters of calculation: a good month or six weeks in the dark is generally a fair start for their roots, and after that, another two months or so without any forcing is likely to bring them out. They might be in a warm place otherwise, a few days at last, if backward: and a friend told me the other day that she forced hers successfully just to start the buds, afterwards removing them to a much cooler place.

I write of these things however so very early just now, because of the great charm of the little miniature Hyacinths, and because I am myself very full of planting white Roman and pink Parisian Hyacinths (dwarf flowers of this kind), described as very fragrant and very early flowering, and the former of which put up a great many flower spikes. My own ambition is to have these out in blossom the first week of December, and if this is to be done it must be set about soon. I do not think that for growing early flowers anything answers generally better than silver sand. It has too the great advantage of permitting any changes in their subsequent arrangement. We can so very easily wash off all the old sand and let the roots twist down into some new shaped dish or vase that we want to fill with them. The bulbs should be planted in the dry sand at first, or, in any case, in such as is nearly dry. If the pots or pans are porous and stand upon a damp floor they will gain in this way quite sufficient moisture, and as they begin to grow they must be further watered; and I think that when grown in sand the bulbs do best uncovered till they are far advanced. It does not seem however to matter very much either way. They ought to be kept most strictly in the dark, till they have put out a regular sheaf of roots, and then be brought to the lightest place they can have.

The Cyclamen persicum is another flower that soon ought to be repotted in nice rich porous soil. This is a plant for which we must avoid stagnation carefully, as though it likes regular watering, damp is quite fatal to it. Leaf soil and sand, or a sort of sandy loam, seems to suit it well, and it is one of the most exquisite window plants we can have. I think it will be well adapted to the out-side window plant cases, as it is not fond of much heat, though frost of course would injure its pretty flowers, as they come out so early.

The miniature Hyacinths, three in a pot of the smallest size that holds them, Scilla sibirica also, planted in the sand, and Van Thol Tulips, started early and potted also in very little pots three or four together, would probably be beginning to flower there very early; it seems sometimes too that such things as Primroses, Auriculas and Anemones come on as if by mistake in autumn if watered and looked after, and then go on blossoming if preserved from frost, and above all from damp.

The little blue Lobelia is one of the indoor plants that we should not fail to try to keep on for autumn. Crockery saucers filled with sand and water, and stuck all over with its little inch-long shoots will be perfect nurseries of beautiful little plants before we know where we are, and these are real little treasures for our autumnal window garden. Now is the best time too for striking the delightful Lemon plant or Verbena. I have found it myself do best in silver sand, shaded, but with some air always. An old servant of ours used however to strike remarkably healthy plants of it by planting the cuttings of half ripened wood in a pot of soil, and putting the pot without any further protection to stand on the side of a bushy evergreen, shaded by its boughs.

This is one of the plants which ought, I think, to have firm, well rammed soil to grow in, though of a sandy nature. In some parts of England where it bears being out of doors, its leaves and growth surpass far what it is indoors. In towns however I do not find it stands any exposure well, and the cuttings probably would do best in a northern or western window, where they could moreover be shaded by day with a bell glass. I have struck a great many in a cold frame thus placed. The leaves should not be taken off at the top, only the lower ones carefully *cut* off, without bruising the stem. *E. A. M.*

Home Correspondence.

Orchard Houses.—I am glad Mr. Cox has given a history of the results of his orchard-house management, as it has caused others to write also on the same subject. If all those who have had any experience in this mode of cultivation would give as candid an account of their management as some of your correspondents have done, we shall have a good deal of information elicited. It is probable that an accurate account of cultivation which has terminated in failure will be more useful than a history of successful efforts, as others may be guarded against making the same injurious mistakes. You, Mr. Editor, when advocating the showing of Roses in pots will remember how many persons wrote and spoke against the possibility of their being so exhibited, and yet we have lived to see wonderful rose trees in pots with 30 to 50 blooms in the greatest perfection. If Peach trees in pots could be exhibited at our great flower shows without the fruit falling off, people would have no more idea of writing against this mode of cultivation, than of attempting to deny that Azaleas, Geraniums, Roses, or any other class of plants, could be grown in pots. [They might be shown with *unripe* fruit.] Taking Vineries in general (at least in this neighbourhood), I think half are more or less failures every year; no one attempts to write against the cultivation of Vines under glass; if there are no exceptional circumstances, the cultivator, not the mode of cultivation, is blamed when there is no crop of Grapes. Orchard houses are new things, their management is understood by few persons at present, the number will rapidly increase, and he who cannot command a good average crop will soon be considered a poor gardener. At present it is very unfair to severely blame a man for failing in a new mode of cultivation which he had no opportunity of learning during his apprenticeship. Mr. Cox says the first year his Peaches procured from Mr. Rivers fruited well, but have failed since; he is now convinced "that Peaches in pots answer only for a year or two." This is a singular conclusion to come to. Are his trees dead or dying, or unhealthy? Why should they fail after a year or two? When he bought his trees they fruited, because they had been well grown the year before he received them—have they not failed since because improperly managed during the previous season? If his argument be correct, it proves that Peach trees in pots can only fruit once and then are worn out. In your Number for July 19 is a very sensible letter from A. Dawson, Rood Ashton. By the bye, where is Rood Ashton? What a pity the counties are not given by your Correspondents; it is not every one who knows where Hendon or Rood Ashton are. No doubt the pipe he mentions might be useful in certain cases, but I think he cannot often remember similar weather whilst Peaches were in bloom; the case is too exceptional to be provided against where expense is an object. Mr. Harrison's letter of the same date proves that he can grow Orchard-house trees with success; I hope those who have failed will remember "what man has done man may do." "G. L.," of Cambridge, killed all his trees in four years; and though he cannot deny Mr. Rivers keeps his trees alive and fruits them also, still he has given up the attempt. I really do not wonder, if he has managed them in such a way that they were all dead in four years; they were scarcely likely to fruit during their miserable existence. I send you a photograph of my house. The fruiting trees have most of them been six or seven years in pots; they are many of them 6 to 7 feet high, in the most perfect health and luxuriance. Having lost most of our Peaches in the nurseries in 1860 by frost, we were obliged last year to depend on the orchard-house trees for a supply of young shoots for budding, and they were therefore allowed to grow wild all last summer. We also took up 40 trees in September that had been planted in the open borders and potted them; these of course I did not expect to bear fruit this season, the result is we have only half a crop of fine Peaches this year. Seven years is considered an average; taking the last seven, we have had six splendid crops and a good half one. I do not fear a failure in future, or being able to keep the greater part of the trees in health for the next 20 years if I live so long. Let Peach trees be devoured by red spider every season, root through the pots into the border for months, and then have all the best of the young roots cut off in removing them, or any other treatment equally unnatural or injurious, and there is nothing surprising if they become unhealthy and die; but the person who has the care of these unfortunate trees ought not to call himself a gardener, nor say that Peach trees cannot be grown and fruited in pots. *J. R. Pearson, Chilwell, Notts.* [The photograph shows a long narrow house *full* of trees in glorious health; and photographs *must* tell the truth.]

Laburnum Poisoning.—It is generally known that the seeds of Laburnum are dangerous to life, yet the tree is a favourite with most people, and is cherished in pleasure grounds, and about houses—the children also make their plays under the trees. In spring for a little while the flowers are very pretty, but summer soon spoils the green of the leaf, and autumn fills the boughs with bunches of clumsy pods, yet the children still play beneath; when at length one of them takes up a pod, shells out the seeds and deals with them as it would perhaps with three or four peas out of a pod beguiled from the gardener or the cook; in less than a quarter of an hour it is sick unto death. I describe what befel a little child of mine yesterday, who was so nearly lost, that I have atoned for my own neglect of knowledge hitherto, by sacrificing every Laburnum in my grounds to-day. Surely death is apt to be near enough to the children without providing a perch for him in the branches over their heads. *H. G. C. B.* [This warning is well timed. The poisonous quality of Laburnum seeds has been announced very often. Some one should invent a means of preventing the blossoms setting their pods.]

Strawberries.—There are three very good treatises on the management of Strawberries, which I name in the order that I received them, viz., Mr. Underhill's, Mr. McEwen's, and Mr. Cutbill's; still we are subject to abnormal years, which, from the failure, as I hear, of Strawberries this year, even under able hands, and in lands where liberties may usually be taken, induces me to make a few observations. That Strawberries should fail when not well established, or when not properly treated, in such a year as this, does not surprise me; but I cannot help asking the question, why Strawberries established in lands naturally suited to them or made suitable to them, should fail as I hear they have done? I think the failure has arisen from one or other of the following causes. People do not procure sorts suitable to their localities and circumstances. Some sorts will do admirably in one locality, that will ordinarily do nothing in another; and this may be the case even in the same garden. Some sorts absolutely require clay or, as we say, loam, alumina; and properly speaking, this is the natural soil for both Roses and Strawberries, which in many respects are convertible terms; some sorts also require more expensive manuring than others: this is what I mean by circumstances. I believe, however, that in this cold "terraqueous" season, the chief reasons to be these,—the rotting of the roots by the admission of continued rains through the exposed crowns, which gave the frosts the power of biting the roots at the base of the plants, and the not manuring and watering the plants immediately after cropping last year, so as to enable them to make that powerful volume of roots so necessary to future cropping, which this cold wet spring, even with spring manuring, it was impossible for them to do. Mulching, this last cold spring, in places where the sun does not rise and reign all day, kept off what little sun there was. Hence, as I dressed heavily immediately after cropping last year, and as I get no direct sun till it is over-head, or going down (I face the west), I put on neither mulching nor clean Wheat straw, in order that the ground might be warmed; and I may observe, that none of the established sorts failed of crop, save those that let the water through their open crowns into their roots. Of these there were four sorts which I will not name, as they are in ordinary years good sorts; every one of the sorts, which, by folding their leaves over their crowns, shot off the long continued winter and spring rains, cropped heavily. The four sorts referred to above wintered apparently perfectly well, bloomed most beautifully, and formed their fruit, but from injury to the roots they were unable to perfect it. The unestablished trial Strawberries, put in late, I did not of course expect to do anything. There is also another reason why persons not only this year, but in favourable years, have failed. They first take a crop of fruit and then allow the plants to "run," and that without giving them any manure or water after cropping. If a plant that is weak is so treated, it will never more be worth a farthing. At the spring of the year, disfruit all badly wintered and weak plantations, and they will at once make plant, and restore to you next year a hundred fold. Liberties I know can be taken in soils abounding in potash (the grand constituent of a Strawberry: cowdung contains more of it than any other manure), but in 97 places out of 100 where Strawberries are grown, such liberties cannot be taken even in ordinary years. I see that first-rate cultivators with the best soils for Strawberries have, by trusting to March dressings, failed more or less. Whether your readers dress in March or not, let them take care to provide against such a year as this, by dressing, watering, and keeping the runners off immediately after cropping. I dress after cropping, also in mid-winter, and usually again at the spring; but the first is the sure key of the next year's success. In conclusion, keep only such sorts as are suitable to your locality and circumstances. The Queen, Carolina superba, Filbert Pine, and Myatt's Pine Apple, are the best for flavour and quality, but they cannot be grown even with able treatment in more than five gardens out of 100. In my N.E. garden, if I put the Queen in half dead, she will in two months become a stalwart plant, with broad leaves of a dense green. I merely "run" her there, as it is open to boys and birds. The soil is rich black land mixed with gravel and resting on gravel. She cared not one farthing for the two last winters. I have just sent 170 splendid plants to France, as they will have the Queen, though she is always sickly. Put her into soil that she likes, and the more she is exposed to all four winds the healthier she will be. Muffling up the crowns of any Strawberries is the sure step to ruin. It softens the crowns and promotes premature quickening, and endangers inflorescence. The genus Fragaria is, with a few exceptions, "hardy."

"Trench well the ground, manure well at all times,
Pump in hot weather; 'tis good for hot climes.
If fine fruit be your aim, upon my word
You must cut off the umbilical cord
And runner, which left on, will spoil your crop,
Disappoint your hopes, and make your jaw drop.
Take this advice, and you will never cry
Alas! alas! I've got no Strawberry!"

W. F. Radcliffe, Rectory, Rushton, near Blandford.

Fruit Showing.—Being present at the York Horticultural Fête on the 6th August, I was surprised to find in "the Collection of 10 varieties of fruits," to which the first prize was awarded, that five sorts of Grapes were admissible as five of the varieties; and also that only one moderate sized bunch constituted a dish, so that "the Collection of 10 varieties of fruit," consisted of five varieties of Grapes, one Pine, one Melon, one dish of Peaches, one dish of Nectarines, and one dish of Cherries; thus making the 10 varieties. I shall feel extremely obliged for your opinion as to whether five varieties of one kind of fruit should be allowed in a collection of 10? and if such is customary at the exhibitions of fruit held in the Horticultural Gardens, South Kensington? If five varieties be allowed, why not the entire collection of 10 or any other number be made up of one class of fruit? say

10 varieties of Pines, or Peaches, or Melons, &c. The circumstance appeared to strike both interested and disinterested observers as novel and irregular, and surely an error of judgeship to award such the first prize; hence my appeal to you. *Amateur.* [We do *not* think this award defensible. Had it been intended that half the sorts should be Grapes it should have been so stated in the schedule. If five varieties out of 10 could be varieties of Grapes, we see no reason why the whole of them should not have been such; or 10 sorts of Plums; or Melons, or Peaches—which would have been too absurd.]

Orange Trees in Spain.—I am proprietor in Spain on rather a large scale, of lands covered with Orange trees, in the district of Carcagente, in the province of Valencia. In some particular localities of that district we suffer from ravages caused by a kind of slug (grub) which kills the young trees during the three or even four first years of their growth. He lives always under ground, and is very seldom, if ever, seen on the surface, so that his existence is only found out by the sickness and death of the the tree, and too late to remedy the evil. He eats the tender bark or epidermis of the young tree above the fibrous roots and below the surface of the earth. See the annexed rough sketch. The ravages caused by this creature in the Orange districts of Spain are enormous. If any means could be found in practical science to avoid them, it would be a great benefit to our agriculture. My object in addressing you is to know if the subject has been treated in your journal, and, if so, in what numbers, or if you could by any means assist me in my search for a practical remedy to the evil. *A. De Villalobos, Member of Parliament in Madrid.* [We had not before heard of this. The sketch sent us by our correspondent looks very like the larva of the Cockchafer.]

Mowing Machines.—Much has been said lately respecting the merits of Green's Lawn Mowers; can any of your correspondents teach me to remedy one nuisance attending them? I have had one for two years. In six months the pinion chain was useless from its stretching. I wrote to the machinists of whom I purchased it, and they sent me a new one of a stronger pattern. This too has now become useless from the same reason; and I am advised to dispense with it, and have it altered at an expense of 35*s*. I would gladly avoid this expense if possible; if the defect I complain of is general, it is in my opinion fatal to the reputation of these machines. Of course it does not appear in any of the trials. *Clericus.* [We believe that some improvement has been made in this respect. Mr. Green has forwarded the following reply to our Correspondent's complaint:—It is only by comparison that the merits, or demerits, of my machines can be tested. "Clericus" admits having had one of my machines in use two years, but gives no idea how much work it has done, nor the amount he has expended in repairs during that time. I should be glad to learn whether "Clericus" has ever had a machine from any other maker in use the same time, as I know from experience how much depends upon management or mismanagement; and, noting all he says, I am inclined to believe that his machine has not been in the most skilful hands. Each year that I have been a maker I have introduced improvements, and that they have been duly appreciated the very large and increasing demand for my machines fully proves, and although I cannot say that they are perfect, I am confident that they will do more work, with less wear and tear, and in a superior manner to any machine yet out, and at a cost that cannot be equalled by any other means.]

Cheirostemon.—In reference to a paragraph in your paper, I can state that the late Mr. Lambert received a plant of Cheirostemon from Paris as early as 1823, and I saw it in flower at the Villa Butera at Olivenza, near Palermo, in 1832, on trees which must now be of large size, if they have survived the troubles that have taken place since that time. *I.*

Orchard Houses.—In my note of last week on this subject, which you did me the honor to print, I meant to say that some of my "Peach" Apricots (a variety of the Moor Park) had shanked off, not as it appears—"Peaches *and* Apricots." *Geo. Wilson.*

Bougainvillæa glabra.—Mr. Ward (see p. 460) is not the only person who has bloomed this in a pot; for here we have at present three in flower. A small plant was placed under my care in March last; from this I propagated two cuttings, which are now along with the parent plant in full bloom, so that it is evident that it can be propagated and flowered in less than six months. *Andrew Armstrong, Redrier Garden, Andover.*

Fountains.—I see with pleasure that the Council of the Royal Horticultural Society are taking steps to secure one of the French fountains for the garden, by opening a special subscription list for this purpose. Every one who has seen and admired these beautiful fountains must rejoice that this step has been taken, and I shall be happy to contribute my mite. But I should like to know which of the fountains it is that is to be selected. The Council in their circular say that they propose to leave the selection to the judgment of their Fine Arts Committee. Now, I admit that in ignorance of the sum which may be collected the Council could scarcely do otherwise, and that they very wisely place the responsibility upon the proper shoulders. But with me and the other subscribers it is different, and I am never disposed to leave the selection to another except when I cannot make up my own mind. Now I am not in this predicament. My own mind is perfectly made up. I made it up from the very first in favour of the smaller fountain; and although I do not wish to hamper the Council by attaching any conditions to my subscription, I shall in forwarding it simply say "I prefer the smaller fountain." If other subscribers were in like manner simply to intimate their preference, the Council would have the means before them of arriving at the wishes of the subscribing Fellows, and I feel sure would if practicable carry the wishes of the majority into effect. *Q.*

Wild Lupine.—We were much surprised in a wild rocky part of the Dee, between Aboyne and Ballater, to find a Lupine naturalised among the rocks, exactly as some of the species occur in Western America. It was observed last year there by Mr. H. Heathcote, and there is little doubt that, as it is a spot unvisited by tourists, that it will be permanently established, especially as it produces good seed. It struck us at once as closely resembling in habit and general appearance Lupinus rivularis; but as it is a difficult matter to determine a Lupine accurately, even with the help of a Herbarium and complete specimens, we applied to Mr. Black at Kew for his opinion. His reply is as follows:—"Without flowers it is almost impossible to say with certainty to what species your Lupine is referable. So far as I can make out L. polyphyllus (of which so many forms are cultivated in gardens) is the name for your plant. It bears much resemblance also to L. rivularis, laxiflorus, and a number of others bearing different names in the garden, and of these probably most are referable to L. polyphyllus." As we have secured perfect seeds we shall hope to arrive at something more positive. Meanwhile it is well to record the appearance of a plant which may spread for miles along the river. *M. J. B.*

Societies.

Royal Horticultural: *Aug.* 12.—(*Floral Committee*).—A valuable collection of plants was shown on this occasion by Messrs. Veitch, who furnished an Oxalis from Japan with ample fleshy deep green leaves and beautiful bright rosy blossoms, each as large as a half-crown piece. We did not however see how it was to be distinguished from O. Bowiei. The same firm also contributed an example of Lilium auratum in fine flower, the sweet-scented creamy blossomed L. Nilighiricum, Lycopodium Phlegmaria, Gleichenia rupestris, an extremely handsome species, and Lomaria gibba, another remarkably fine new Fern. From Mr. Ault, of Stratford, came a large plant of double white Petunia; and a pretty striped kind in the way of Madame Ferguson, but edged with white, named Butterfly, was shown by Mr. Holland of Isleworth, who also had other Petunias called Crimson Gem and Beauty. Among Hollyhocks, cut blossoms of which were exhibited by Mr. Chater of Saffron Walden, the best were Gem of Yellows, Imperator, a salmon-coloured sort; and Glory of Walden, deep crimson. A Hollyhock, named Prince of Hesse, came from Messrs. Downie, Laird, and Laing, who also showed a collection consisting of the following kinds, viz.:—Pink Queen, Mrs. Todd, Mrs. B. Cochrane, Lady Dacres, Senator, Empress Eugenie, Lady King, Primrose Gem, Lord Loughborough, Prince Charlie, Mrs. Chater, Mrs. Balfour, Stanstead Rival, George Keith, Masterpiece, Rosy Gem, Wm. Blackwood, Prince Imperial, Golden Fleece, Margaret, Yellow Defiance, King of Purples, Shortgrove Perfection, and Black Knight. Of Dahlias, a handsome novelty named Caractacus, a well modelled buff-yellow, tipped with deep crimson, was shown by Mr. Turner of Slough; and Dahlias Buffon, Orange Gem, General Jackson, Paragon, and Mauve Queen, came from Mr. Perry of Birmingham. A Verbena named Polly was furnished by Mr. Treen of Rugby; and from Mr. Wendel of Erfurt came a collection of Giant Ten-week Stocks, double and showy, but evidently suffering from the effects of the long journey to which they had been subjected. From the Garden of the Society came Hippeastrum reticulatum, and one or two other plants.

Aug. 12.—(*Fruit Committee*).—Mr. Thomson, gr. to the Duke of Buccleuch, at Dalkeith Park, sent a Seedling Grape, between Chasselas Musqué and Muscat of Alexandria, of which considerable expectations are formed. Dishes of excellent Apricots came from Mr. Cunningham, gr. to the Bishop of London, who also showed one or two varieties of Apples; Mr. Webb, of Calcot, near Reading, also contributed Apples, among which were two very good dishes of white and red Astrachan. Several Melons were shown by various growers, among which were Alexander's Green-flesh, small Musk, and others. From the Society's garden also came Scarlet Gem, Fleming's Hybrid, and Early Cantaloupe. Of Potatoes, Mr. Webb showed specimens of his Imperial Kidney, a fine looking kind, said to be excellent when cooked.

Reviews.

Notes on the Chase of the Wild Deer in the Counties of Devon and Somerset; with an Appendix and numerous Illustrations. By Charles Palk Collyns. Longman & Co. 8vo.

Mr. Collyns is a pleasant writer, and we have derived much information and amusement from the perusal of his book. It is evidently the production of a thorough sportsman, well acquainted with his subject, and desirous that the noble and ancient pastime of hunting "the Lord of the Forest," "should not cease to exist in the West of England, without some record being handed down to posterity of the good men and true—the Aclands, Bassetts, Fortescues, Worths, Chichesters, and others—by whom it has been fostered and promoted."

Before the Conquest, and even for centuries since that event, hunting was regarded as an art in which it was indispensable that every true knight should be expert. The wild deer then roamed over the greater part of North and South Devon, as well as a large portion of West Somerset, and the hills and vales often echoed the notes of the hunter's horn. But times are changed, and with the advance of civilisation amusements have been introduced of a more refined and less exciting character, while circumstances consequent upon the increase of population have led to the enclosing of large tracts of land that were formerly waste, and devoting them to the purposes of agriculture. Hence the vast extent of woods and waste which years ago were the favourite haunts of the wild deer have been greatly circumscribed, and "their range is now principally confined to the high moorland region of Exmoor, and the open land stretching away to the Quantocks, a district flanking the Bristol Channel, and extending from north to south about 40 miles, and from east to west about 50 miles." Even there, we are told, the ploughshare creaks where but a few years ago the bittern boomed, the heron screamed, and the plover whistled in the sedgy morass. The long drawn furrow and the measuring-chain predict further enclosure and renewed encroachment on the habitation of the dun deer; and in all probability there are sportsmen now alive, who, in their old age will tell of stag-hunting as of a thing that was—as a sport which they remember, but has passed away.

The earliest record of stag-hounds being kept in the district of Exmoor is 1598, when the ranger of Her Majesty Queen Elizabeth had a pack at Simonsbath—a small hamlet, which is now the centre of the recently formed parish of Exmoor. The virgin Queen is said to have been no ordinary lover of the chase. "At the age of *seventy-four* she is mentioned by Rowland White as still enjoying her favourite sport, and as being 'well and most excellently disposed to hunting,' and when her infirmities were such that she could no longer mount her horse, she witnessed from a balcony the pursuit of the deer by others." Mr. Collyns must surely have been nodding after a hard day's run when he penned the above, or else Rowland White whom he has quoted, for it is a matter of history that Queen Elizabeth never lived so long—her hunting days having ended sometime previous to her death in 1603 at the age of 69.

Among the noblemen and gentlemen who have patronised the sport, or been Masters of the Hunt, none are more celebrated than the father and grandfather of the present Sir Thomas Dyke Acland, each of whom held the office of Ranger of Exmoor under grant from the Crown, and for many years towards the close of the last century, hunted the country in a manner worthy of the name they bore, and of the character they left behind them, of "fine old English gentlemen." Those indeed, says Mr. Collyns, were palmy days. "Then flourished such hospitality, as even in our hospitable west country has never been surpassed. The doors of Holnicote and Pixton, seats of the Aclands the former situated in the lovely vale of Porlock, and the latter on the river Barle near Dulverton, and Highercombe, the hunting and shooting lodge of the family, were open to all comers. Good cheer and a kindly welcome greeted alike nobleman and commoner. During the hunting season the rooms of the houses were filled by those who first presented themselves unbidden, but welcome guests; and when neither house nor stable could hold either guest or steed for the night, still the late comer found hospitable welcome at the board, and sought his couch at the humble inn in the small and pretty town of Dulverton, situated in the heart of the hunting country, and well known to every sportsman in the west."

For half a century this romantic spot has been the home of our author, who informs us that he has hunted with stag hounds for 46 years, and regularly noted the chases which have occurred from 1816 down to the present time. During this long period he has had the best opportunities of becoming acquainted with the nature and habits of the deer, and we think the numerous incidents he has detailed respecting them are highly interesting, and cannot fail to amuse the sportsman as well as the general reader.

Some writers have asserted that the red deer was introduced from France, but Mr. Collyns assumes it to be a native of this country. The male, or stag, is a noble animal, remarkable for his fleetness, as well as for his exquisite sense of smell, and keenness of vision. He is not considered fit for the chase until he is five years old; at the age of 14 or 15 he is in his prime; and although it is a disputed point, Mr. Collyns gives it as his opinion that he lives from 20 to 30 years. He is not fierce unless molested, but let the hunter beware when he turns to bay. Vigorously does he then use horn and hoof in self defence, and fearful are the wounds he inflicts with his antlers on the incautious.

For craftiness he rivals the fox, and in some respects even surpasses him in resorting to such expedients as the following to evade and baffle his pursuers.

"It is a common incident in stag-hunting for an old deer, when roused, to beat the covert until he can light

upon one of his younger companions. When found, the veteran by a stamp of the foot, or application of the horn, rouses his young friend from his bed or lair, in which he places himself, and putting his head close to the ground, allows the hounds to pass him in pursuit of the dislodged substitute. Probably the sense of smell —in a stag most acute—enables the cunning old forester to find out the whereabouts of his inferior. Certain it is, that the trick is often played; though seldom with success, as the habit of the deer being known to the sportsman, the change is frequently discovered, and the wily old rogue prevented from reaping the fruits of his craftiness and subtlety." * * * "I have known an old stag during one chase turn out three different deer, and lie down in their beds or lairs. On each occasion the hounds were stopped, brought back, and laid on again. At length being unable, after beating the covert, to find another deer to do duty for him, our stag broke, and after a good run foiled his pursuers by sinking himself in a deep pool, and allowing the hounds to pass him."

Deer are fond of water, and when hard pressed can swim with great ease and buoyancy. They frequently indulge in a bath, or wallow in the mud to prevent the flies from tormenting them during the heats of summer and autumn. The invigorating effect which a plunge in water has upon a deer is almost incredible. Mr. Collyns says, "I have seen a stag with his tongue hanging out of his mouth, and his nostrils opened wide, apparently scarce able to drag one leg after another, rise from the rippling pools of a mountain stream, active and fresh as if he had just left his lair."

Hunting the stag is far more exciting and laborious than that of hunting the fox; but as in the latter we are often indebted for much of our sport to the earth-stopper; so in stag hunting it chiefly depends on the keen perception and skill of the "harbourer" in discovering by certain signs where a stag has made his lair, and is likely to be found. Mr. Collyns presents us with an amusing account of the harbourer's duties, and of the careful and cautious manner in which he performs them; but we cannot spare the time to accompany him at 4.30 A.M. in his solitary walk of many miles; suffice it to say, he has been successful in tracking a "warrantable" deer, and having galloped to the spot where he is likely to break cover, we draw rein to copy the clever portrait which Mr. Collyns has painted of him:—

"Hark! a rustle in the wood, then a pause. Then a rush, and then—in his full glory and majesty, on the bank separating the wood from the field, stands the noble animal! Look at him—mark his full thoughtful eye—his noble bearing. Look at his beamed frontlet, how he bears it; not a trace of fear about his gestures—all dignified and noble, yet how full of thought and sagacity. He pauses for a minute, perfectly regardless of the hundreds at the gate who gaze upon him,

'Attentique ora tenebant.'

You need not fear that he will be 'blanched,' that is, headed, by the formidable array drawn up to inspect him. He has too well considered his course of action to be deterred from making good his point. Quietly and attentively he listens to the tufters, as with unerring instinct they approach. 'The cry is still, they come.' His noble head moves more quickly from side to side—the moment for action has arrived. The covert is no longer safe. He must seek safety in flight, and look to securer shades wherein to rest. So he gathers himself together to run his course:—

'But ere his fleet career he took,
Like dewdrops from his flanks he shook;
Like crested leader, proud and high,
Tossed his beamed frontlet to the sky;
A moment gazed adown the dale,
A moment snuffed the tainted gale;
A moment listened to the cry
That thickened as the chase drew nigh
Then as the headmost foes appeared
With one brave bound the copse he cleared.'"

There! you have now seen a wild stag break covert. Did you ever see a finer sight?

A capital description follows of the chase and the numerous incidents that usually occur during the run, which frequently terminates by a kill, or take in the water.

In the appendix notes are given of the chases between 1780 and 1825, as well as of the most striking events connected with the chase of the deer from 1827 to the close of 1861. There is also a map of the stag-hunting country in Devon and Somerset, with the names of the various places mentioned in the book, which is illustrated throughout with a number of highly characteristic sketches. Upon the whole we consider Mr. Collyns' entertaining work a valuable addition to the library of every sportsman who has a desire to become acquainted with stag-hunting. The gradual extermination of the red deer must be a matter of regret, but we confess that their roaming propensities and the havoc they commit on corn and Turnip crops ill accord with high rents and good farming.

The *Florist* for the months of June and July contains figures of *Mutisia decurrens* capitally rendered by Fitch; a valuable Hybrid Pink called *Dianthus hybridus multiflorus*, which is much too pale in colour; a fine Indian Azalea, called Mars, "the brightest of all those with red flowers approaching to scarlet"; and a brilliant little Summer Pear called *Doyenné d'Été*. Mr. Thomson, of Archerfield, Mr. Henderson of Trentham, and the Rev. G. Jeans continue the discussion on Vine culture. Mr. Henderson remarks: "It is taking us by surprise when we read: 'June and July are better wintering months for Vines than August and September'; and he requests an explanation. To which Mr. Jeans replies:—"Please, Mr. Henderson, not to draw off the attention of the combatants till they have finished, and kindly accept an answer to your question at present from one outside the ropes. By the expression 'wintering in summer,' is meant doing the work of winter in summer." The winter's work being to give rest to the plant, and to ripen its new wood, the assertion is that these results are more easily secured in the hotter months of June and July than in the comparatively cooler ones of August and September. "I think," continues Mr. Jeans, "he is right, and that on reflection you will see that at least this is possible. A striking instance that occurred will make this plainer than any reasoning." "I think I met with it in the 'History of Ceylon:' that Sir Emerson Tennant introduced the Vine into the Government gardens in that colony, and it was found that being there an evergreen, owing to the climate being a perpetual summer, it produced no fruit. The gardener then devised a plan for wintering it, and for the two hottest and driest months in the year he laid bare its principal roots. The effect was a shedding of the leaves and the plant going to rest, and the following season it produced fruit as in Europe. Thus in popular but intelligible language, which may very legitimately be borrowed from Ireland, the Vine was successfully wintered, and wintered in the hottest months of the year." Mr. W. Barnes gives instructions how to grow Azaleas. Another correspondent, "C. C.," writing of the shanking of Grapes, while coinciding with the view that the fault may often be laid to the roots and the border (for if Vines are planted in a cold deep undrained border it is useless to expect a crop of well-ripened fruit, and even in an average good border if a soaking of cold rain falls just as the Grapes are changing colour it will cause shanking, and a continuation of wet will prevent the fruit colouring), yet maintains that this does not explain all cases; as, for instance, when the border is made on the most approved principles, and the roots are inside. In such cases as these "C. C." traces it to the "want of sufficient healthy foliage to bring the crop to perfection, and ripen the wood for the future season, without which the crop gets less each succeeding year." There is also in the July Number some articles on the "Horticultural Society and Florists' flowers," which we intend to notice elsewhere; Mr. Tillery descants on the advantages of having a plant house in a north aspect in the summer months; and there is a biographical notice of the late Mr. J. Edwards.

Gossip of the Garden in its June and July Numbers contains some interesting papers on the cultivation and exhibition of the Auricula, of considerable interest to the growers of that flower. There is also more about Tulips, including some reminiscences of an old florist, in which amongst other curious records we find that "the highest price for a Tulip raised in England was offered to Mr. Davy, of Chelsea, for his La Joie de Davy (170*l.* 10*s*.), which was refused." The Royal National Tulip Exhibition at Leeds is noticed; and there are some notes on the Stapleford Tulips. Finally, there are obituary notices of the late Mr. Edwards, of London, and Dr. Horner, of Hull.

From Mr. Van Voorst has been received the new Part of *Sowerby's British Wild Flowers*, containing all our native Orchids.——Messrs. Longmans have issued an extremely well written, well illustrated, compact, and useful *Guide to the Pyrenées* from the pen of Mr. Charles Packe. It will do much to wean our Alpine travellers from used up Switzerland.——Day & Son produce *The Development of Ornamental Art in the International Exhibition*, by Mr. C. Dresser.——From Messrs. Groombridge we have a second edition of *Brambles and Bay Leaves; Essays on things Homely and Beautiful*, by Shirley Hibberd.——The *Floral Magazine* (Reeve) contains in the August Number good figures of two new Petunias, the fine Rose called John Hopper, two handsome Cinerarias, and a pretty little novelty already familiar to plant lovers under the name of Sarmienta repens. Improvement in this periodical is very considerable; but we must still ask its learned and Reverend Editor why he makes the word *Senecio* feminine, and upon what ground he throws his Petunias into the species *nyctaginiflora*.

Mr. Hardwicke proposes to publish by subscription a new edition of *Sowerby's English Botany*, enlarged, re-arranged according to the natural orders, and entirely revised. The work originally consisted of 2592 coloured plates of British Plants, and contained a description of each, with some account of its localities. In 1830, a Supplement appeared, containing 368 plants. The whole was completed in 36 volumes royal octavo, but the work was not arranged according to any system of classification. It is now proposed to make use of the plates, and bring out an edition "adapted to the requirements of botanical science at the present day." The letterpress is to be under the general superintendence of some leading botanist, but no name is announced. It is however stated that the work is to appear in monthly parts, each containing 24 plates, price 5*s*. each. It seems therefore that it will eventually occupy about 125 parts, to be produced in about 10 years and a half. Of these it is announced that the flowering plants will be first completed in 66 parts.

Garden Memoranda.

Messrs. Lee's Nursery, Hammersmith.—Since we last visited this establishment new and commodious offices have been built; the former ones, together with Messrs. Lee's dwelling-house have been pulled down, the ground on which they stood, as well as a considerable slip all along the east side of the nursery, being required for railway purposes. This alteration rendered the making of a new entrance walk necessary, and also the removal of a large conservatory recently put up for the accommodation of Orange trees in tubs, Tree Ferns, Camellias, and plants of that description, of which Messrs. Lee have a large and fine collection. This house was moved whole without even the breakage of a square of glass, by means of a series of ordinary mechanical appliances, of which a full account will be found at p. 364 of our volume for last year. In a line with the conservatory just alluded to, has been built a new set of span-roofed glass-houses, 190 feet in length, forming a finished boundary to that side of the nursery, and immediately in front of them is a "chain border" now gay with bedding plants, rows of which also make suitable edgings to the principal walks.

The side shelves of the conservatory were occupied with summer flowering plants and Cape Heaths, the latter well-grown specimens in excellent health, and many of them covered with bloom. For the growth of Heaths this nursery is justly celebrated, a large amount of glass being devoted to their culture. On one of the pillars was the variegated leaved Cobæa, a plant apparently well adapted for that kind of decoration. Among standard Fuchsias, of which we noticed several, were Sir Colin Campbell, certainly one of the very best double kinds, and Comet, a large single flowered sort, with wide spreading sepals, disclosing to view a finely-formed deep violet corolla. Of sorts with white corolla the best was Madame Cornellissen. A vigorous plant of Lilium giganteum has bloomed freely here, the main stem being quite 10 feet in height, and measuring at the base fully 5 inches in diameter. Among Cordylines we observed an admirable specimen of indivisa, with ample foliage, 4 inches in width, and quite 4 feet in length, beautifully veined with reddish orange, and graceful in form. When seen like that under notice, this is truly a handsome plant, very different in habit from that of most occupants of our greenhouses, and therefore contrasting strikingly with them, and forming an agreeable variety.

Among Verbenas out of doors, one of the best was Fireball, an intense crimson scarlet with a white eye. Dwarf blue Lobelias were also in beautiful condition, as were likewise yellow Calceolarias and Tom Thumb Geraniums, the whole being tastefully bordered with Cerastium tomentosum, the grey leaves of which look not unlike an edging of Aberdeen granite.

In the range of new houses above alluded to we noticed some fine New Zealand and other Ferns, of which Messrs. Lee have a large collection. Caladiums, Coleus Verschaffelti, and other plants of similar kinds were also plentiful. Gesnera Donkelaari has been finely in flower, as have also Achimenes and new Ghent Gloxinias. The beauty of these is, however, now nearly over. Of Dracæna terminalis and its upright growing variety there is a fine stock, as well as of other fine-foliaged plants, such as Alocasia metallica, Cyanophyllums and Musas, among which was a good-sized vigorous plant of the new variegated variety.

In a damp stove were Orchids in pots, baskets, and on blocks. These grow here very freely, small plants acquiring considerable size in a comparatively short time.

Vines for fruiting in pots are produced in this nursery in great numbers. Large houses are entirely devoted to their culture, and at present they contain many hundreds of plants from eyes in all stages of growth, the whole strong, healthy, and short jointed. That the demand for this kind of stock still continues great is proved by the attention paid here to its cultivation.

The growth of fruit trees in pots is also apparently very much on the increase. An orchard house 180 feet in length is devoted to them by Messrs. Lee, who have an extensive collection, on which much care and pains are bestowed. The plants are at present out of doors plunged in beds, nearly a quarter of an acre of ground being thus occupied.

Near the principal entrance we observed a plantation of beautiful Standard Bays and Laurustinus with well-formed heads and clean straight stems, just the description of plants for a well-kept terrace garden, in which they would look almost as well as Orange trees. Of Araucaria imbricata too there are many thriving young trees, and of Roses and other nursery stock there is an unusually fine collection.

Miscellaneous.

Cricket.—A match was played at Balham on Saturday, August 9th, between 11 selected from the cricket club in connection with the seed establishment of Messrs. Beck, Henderson, & Child, and a like number from the firm of Messrs. Minier, Nash, & Nash. A

very closely contested game resulted in favour of the former by three runs. For Messrs. Beck & Co.'s club, the principal scorers were Cuming, Dean, and Cheeseman; for their opponents, Barton, Swain, and Wood. A return match between Messrs. Jas. Carter & Co.'s house, and the club of Messrs. Beck, Henderson, & Child, will be played at the same place during the present month.

Grand Floral Jubilee at Dumfries.—We learn that arrangements are being made at Dumfries for the celebration there of the 50th anniversary of the Dumfries and Galloway Horticultural Society next month. This Society is the oldest of the kind in Scotland, and it was thought proper that on reaching its 50th year, which it will do on the 5th of September next, there should be a demonstration of a varied and extensive character, so as to signalise the jubilee in an appropriate manner. There will accordingly be a grand ball, an extensive exhibition of flowers, fruits, and vegetables, an imposing procession, and a public banquet, besides accompaniments in the shape of house and street decorations, musical promenades and concerts. The Duke of Buccleuch, president of the Society, and others of the nobility are patronising the display; and it is expected that the 5th of September will prove a memorable gala-day for the people of Dumfries-shire and Galloway.

Expedition to Vancouver's Island and British Columbia.—At a meeting of gentlemen interested in Arboriculture and Horticulture, members of the Association and of the Committee of the Oregon Botanical Expedition, held at Edinburgh on July 21, 1862, George Patton, Esq., of The Cairnies, in the chair, the subject of reorganising the Oregon Association, with a view to the employment of a botanist to collect the seeds of hardy trees and plants, and the seeds and roots of flowers, was brought before the meeting. The Committee formerly appointed reported that they were at present enabled to obtain the services of a collector, in every way qualified, in the person of Mr. Robert Brown, a gentleman devoted to Natural Science, whose merits were attested by high authorities, and whose successful prosecution of science had already been proved by contributions to botanical and various other learned societies. They stated that Mr. Brown was prepared to proceed immediately upon the performance of his duties, and to prosecute the object of the Association in whatever part of the world the Association might direct. The meeting was of opinion that the resumption of the labours of the Oregon Committee upon an extended field would be of national importance, and would tend greatly to the individual advantage of those friends of Arboriculture and Horticulture who might become members. The meeting proceeded to consider as to the part of the world which it would be most desirable to explore. It had been considered at a former period that Japan would form the most advantageous region for the prosecution of the objects of the Association; but, from the experience since had, and the recent exploration by collectors, the meeting came to the unanimous opinion that Vancouver's Island and the territory of British Columbia, with the neighbouring countries, would form a field from which more valuable contributions might be expected, of trees, flowers, and other plants adapted to the climate of Great Britain, than from any other region. They were of opinion that this field had hitherto been imperfectly explored, and that it was peculiarly rich in the description of objects which it was important to introduce. After deliberation, it was unanimously resolved that the Oregon Association be revived, and 1st, That an Association, to be called "The British Columbia Botanical Association," be formed, for the purpose of having an exploration made of British Columbia, Vancouver's Island, and the countries adjoining the Rocky Mountains, with a view to the transmission of seeds of hardy trees and plants, and the seeds and roots of flowers, to the members; the field of exploration being subject to modification or extension according to the direction of the committee. 2d. That members should subscribe in shares of 5*l*. each, payable yearly, in proportion to which shares, the seeds, &c., sent home, should be distributed in the sight of the committee; it being understood, unless otherwise expressly conditioned, that subscriptions should be continued for three years; and that no member shall be called upon to pay more than the amount of shares subscribed by him. 3d. That Mr. Brown be appointed collector, and be requested to hold himself in readiness to leave this country for Vancouver's Island so soon as he may be directed by the committee. 4th. That Prof. Balfour, with the assistance of Mr. M'Nab and Mr. M'Intosh, prepare such instructions as may be thought necessary to the botanist. 5th. That Sir Wm. Gibson-Craig, Bart., of Riccarton, be appointed Chairman; Mr. Isaac Anderson-Henry of Woodend, Secretary; and Mr. James M'Nab, of the Royal Botanic Garden, Treasurer. 6th. That the management of the affairs of the Association be placed under the following committee, with power to add to their number, and to sub-commit:—Sir Wm. Gibson Craig, Bart., Chairman; the Hon. Viscount Dalrymple; Sir William Jardine, Bart.; Sir David Dundas, Bart.; J. H. Balfour, Esq., Professor of Botany in the University of Edinburgh; Archibald Campbell, Esq., of Blythswood; Col. Ferguson, of Raith; T. A. Hog, Esq., of Newliston; Humphrey Graham, Esq., of Belstane, W. S.; Isaac Anderson-Henry, Esq., of Woodend, Secretary; Charles Lawson, Esq., of Borthwick Hall; Charles M'Intosh, Esq., Murrayfield; James M'Nab, Esq., Superintendent of the Royal Botanic Garden, Edinburgh, Treasurer; T. Gambier Parry, Esq., of Highnam Court; George Patton, Esq., of The Cairnies; David Smith, Esq., Manager of North British Insurance Company; Wm. Thomas Thomson, Esq., Manager of the Standard Insurance Company. 7th. That the Secretary be requested to get the foregoing minute and resolutions printed and circulated among the members of the Oregon Association, and others interested in Arboriculture and Horticulture; and that the parties so written to communicate immediately with the Secretary, and, if desirous of joining the Association, pay to the Treasurer, Mr. James M'Nab, Royal Botanic Garden, the amount of their first year's subscription, so as to enable the Committee to despatch Mr. Brown in time to obtain the seeds of this season.

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—The time has now arrived when plants intended to supply a floral display under glass during autumn and winter must have attention. Let Begonias have another shift if not already in pots sufficiently large. Keep the plants thin that their foliage may be kept from injury. Crowea saligna and Plumbago capensis are both valuable autumn-blooming plants, and the latter furnishes large supplies of cut flowers. Attend to Chrysanthemums, water freely with liquid manure; good specimens should be aimed at rather than a few fine blooms. The earliest winter-flowering Heaths and Epacrises must soon be placed under glass, as it will forward their blooming; the appearance of "Bulb Catalogues," too, tells us that Hyacinths and Narcissus, for forcing, must soon occupy attention; about equal portions of good soft loam and decayed leaf-mould with silver sand will be the best soil for them if for forcing, but well-decomposed cow-dung must be substituted for the leaf-soil when the bulbs are intended for late flowering. After potting place them on a dry bottom and cover the pots 2 or 3 inches deep with old tan or ashes, preserving them at the same time as much as possible from heavy rains; under this treatment they will fill their pots with roots, and will be in readiness for forcing when wanted. Van Thol Tulips for forcing may be potted early next month. Place them on coal ashes and cover them as recommended for Hyacinths, and early in November remove them into heat; the principal bulk need not be potted until late in October, and a last batch of Tournesol or Rex Rubrorum towards the end of November.

FORCING DEPARTMENT.

PINERIES.—Comparatively dry conditions both as to soil and atmosphere should be observed during the ripening of the fruit, therefore be careful not to over-water plants on which the fruit is approaching maturity, and it will be advisable to use slight fires during rainy weather, should that occur, so as to allow an opportunity of giving sufficient air to prevent a stagnant state of the atmosphere, for fruit of first-rate quality cannot be expected from plants growing in a sodden soil or a damp unhealthy atmosphere. Endeavour to afford growing stock a steady bottom-heat of about 85°, and keep it well supplied with manure water at the root, but avoid getting the soil too wet. As fire-heat will soon be necessary to a considerably larger extent than has been the case during the summer, care must be exercised to secure a properly moist state of the atmosphere, keeping the evaporating pans or troughs regularly supplied with water, and moistening the floors, &c., frequently, as any sudden change from a moist to a dry state of the atmosphere would be most injurious to growing stock, and also to plants swelling their fruit. Be as sparing of fire-heat, however, as circumstances will allow, and during the present comparatively favourable weather shut up early in the afternoon.

VINERY.—Inspect ripe Grapes frequently, and remove all decayed or unhealthy berries; keep the house well aired and free from moisture. Maintain a moist growing temperature in the late house; if mildew appears, dust sulphur over both fruit and shoots; it may afterwards be washed off without injury, but perhaps the best preventive of this pest is heat and moisture regularly maintained from the time the fruit is set till it begins to ripen.

FLOWER GARDEN AND SHRUBBERIES.

The beauty of bedding plants is but of comparatively short duration in most localities, even in the best of seasons; and now that they are in full flower, every care should be taken to render them as attractive as possible. Go over the beds frequently, and remedy any defects that may be perceptible such as pegging down plants that have an inclination to grow too high for the others, and keep the edges of the masses well filled up without allowing them to become too bulky. Where the plants are still pushing freely, some considerable trouble will be involved in stopping the shoots; but this is an operation which must be attended to sufficiently often to keep the plants within due limits; for nothing looks worse than to see them running over the edging, or encroaching upon the grass. Attend to plants in vases, taking care that they do not suffer from want of water at the root, and some things grown in this way may even be benefited by an occasional supply of manure-water, provided it is given often and weak. Too strong doses are more productive of harm than of good.

Propagation of all the more important plants should now or soon be pushed forwards; late struck cuttings, as has often been remarked, are bad to keep through the winter through having an insufficient amount of roots and ill-ripened wood. Let Scarlet and other Geraniums struck in the open ground be taken up and potted immediately they have made roots; they will require a close frame for a week or two, when they should be placed on a dry bottom in a southern exposure to harden them for the winter. For the same purpose Verbenas, Petunias, &c., struck in pans, and intended to be kept in them through the winter, should be placed in a similar situation, at the same time stopping the points of the shoots. It should in fact be a point to keep them as hardy as possible by fully exposing them, until they are placed in their winter quarters. Mignonette for winter and spring flowering may yet be sown. Phloxes will now be making a tolerably good show, and should have care bestowed on them. Let the borders be cleaned and neatly raked over, filling up vacant places with spare Chrysanthemums or spring struck Pansies. All evergreens in unsuitable situations may now be moved; where general transplantation of evergreens is intended the middle of next month is perhaps the best time of the year for the operation. Deciduous shrubs and trees, as a matter of course, should not be transplanted until they have shed their leaves. The roots may, however, now or soon be cut round preparatory to removal.

HARDY FRUIT AND KITCHEN GARDEN.

Apples and Pears should be gathered as they ripen. Early fruit more particularly is the better for being gathered a few days before it ripens on the tree, as in the latter case it usually turns mealy directly. Protect finer kinds of fruit from wasps. Peaches and Nectarines should likewise be gathered a day or so before they are quite ripe. Earth up Celery as it advances in growth; plant out Cabbage sown last month for Coleworts. Brown Cos and hardy Cabbage Lettuces should soon be sown for spring use, and prepare a rich piece of ground in a sheltered situation, and plant out those sown last month. If the season is not too severe they will be useful through the early part of the winter. Plant Broccoli and other winter Greens. Sow Chervil, American Cress, and Parsley in a sheltered situation. Sow Early Horn Carrot to remain in the ground for winter use. Cut herbs, if not already done, and keep the hoe moving among all growing crops.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Aug. 13, 1862, as observed at the Horticultural Gardens.

August.	Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth		Wind	Rain.
		Max.	Min	Max.	Min.	Mean	1 foot deep.	2 feet deep		
Thurs. 7	12	29.452	29.345	66	48	57.0	63	61½	S.W.	[illegible]
Friday 8	13	29.529	29.472	68	50	59.0	63	61	S.W.	[illegible]
Satur. 9	○	29.814	29.678	69	42	55 5	62½	61	W.	[illegible]
Sunday 10	15	29.984	29.653	67	51	59 0	62	60½	W.	[illegible]
Mon. 11	16	39.083	30 054	70	40	55.0	62	60½	W.	[illegible]
Tues. 12	17	30.122	30.016	74	45	59.5	61½	60	W	[illegible]
Wed. 13	18	29.952	29 788	72	53	62.5	61½	60	S.W	[illegible]
Average		29.948	29.758	69.4	47.0	58 2	62.2	60 6		[illegible]

Aug. 7—Rain; heavy showers; clear and fine at night.
— 8—Low dusky white clouds; heavy showers, rain at night.
— 9—Cloudy; fine in forenoon, cloudy; fine, rather cold at night.
— 10—Lightly overcast and fine; very fine throughout.
— 11—Overcast, cloudy and fine; cold at night.
— 12—Partially overcast and fine; cloudy, fine.
— 13—Cloudy; overcast; heavy showers at night.

Mean temperature of the week 4¾ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Aug. 23, 1862.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 17 .	73 3	50 5	61.9	19	1.12 in.	4	2	1	2	5	8	12	2
Mon. 18..	73.6	52.1	62.8	13	0.38	2	6	5	3	4	[illegible]	[illegible]	1
Tues. 19..	73.0	52.0	62 5	17	0.42	2	4	3	2	3	[illegible]	9	3
Wed. 20..	72.6	57 3	61 9	15	0.45	2	3	3	—	5	9	[illegible]	3
Thurs. 21..	72.3	49.7	61.0	13	0.62	3	2	1	1	4	8	11	3
Friday 22..	74.3	50.3	60 8	14	0.67	2	2	3	—	4	10	[illegible]	[illegible]
Satur. 23..	74.9	49.2	60.6	18	0.95	2	3	3	1	3	10	11	3

The highest temperature during the above period occurred on the 18th, 1842—therm. 92 deg.; and the lowest on the 21st, 1850—therm. 32 deg.

Notices to Correspondents.

*** In consequence of a change in the printing arrangements of the *Gardeners' Chronicle*, no immediate replies can be given to Correspondents whose letters arrive AFTER THE MORNING POST OF WEDNESDAY. Those received later will receive attention the week after.

NAMES OF FRUITS: *J M.* Your Plum is the Drap d'Or.—*J D H.* The Pear was decayed inside; it appeared to be the Passe Madeleine, early and a great bearer, but of bad quality.

NAMES OF PLANTS: *R H.* 1, Adiantum tenerum; 2, Rivina pubescens; 3, Pilea herniarioides; 4, Hypochæris glabra.—*G.* Teucrium fruticans.—*E A.* Campanula nobilis and Veratrum nigrum.—In a scrap of blotted paper on which little was legible except *Somersetshire*, was a piece of Lythrum Salicaria, one of the most beautiful of wild plants.—*S A M.* Pteris serrulata.—*J S.* Gentiana asclepiadea.—*T I.* Your specimens were unfortunately quite dried up when they arrived. We cannot at this moment ascertain what they are, but if we can do so at a later period we will communicate with you by letter. *M. J. B.*

ORCHIDS: *C S.* Can receive no more applications. He doubts whether any of the applicants are competent to take charge of such a collection. Moreover he regrets to find so many the productions of very illiterate persons.

PSIDIUM CATTLEYANUM: *J C L.* We never before heard that it will not set its blossoms. Is it possible that the roots are kept too cold?

ROSES: *H W C.* Of all materials tan is the worst for Roses, unless it is thoroughly rotted or charred. Good loam is what they want, not decayed inert vegetable matter.

VINES: *K K.* Plant the roots inside, unless you can warm the outside border. Two feet are a good depth.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to

JOHN FOWLER, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

SMITH'S PATENT COMBINED MACHINE.—This Machine is admirably adapted for cultivating Light Land Wheat, Barley and Oat Stubbles, and Drilling in Stubble Turnips. Fifteen acres may be Cultiuated and Drilled in one day; for Cultivating Light and Heavy Land Pea and Bean Stubbles, and Drilling in Wheat; and for cultivating Heavy Land Wheat Stubbles, and Drilling in Vetches. One operation will be enough for each crop, especially in wet seasons. It is warranted to do its work well.

For Price and particulars, apply to WILLIAM SMITH, Woolston Bletchley Station, Bucks.

THE NATIONAL EXHIBITION of SPORTING and other DOGS.—The THIRD GREAT ANNUAL EXHIBITION of SPORTING and other DOGS will be held at BIRMINGHAM, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4.

Copies of the Prize Lists and Regulations, with the Statement of Receipts and Expenditure for 1861, may be had on application to the Secretary. F. BRAILSFORD, Secretary.

Offices: Castle Chambers, High Street, Birmingham.

SMITHFIELD CLUB FAT CATTLE SHOW. The ANNUAL CHRISTMAS SHOW of FAT CATTLE, SHEEP and PIGS, will be held at the Agricultural Hall, Islington, on MONDAY, December 8, and four following days.

In addition to Prizes to the amount of 1820*l.*, the following Cups will be offered:—

A Silver Cup, value 40*l.*, for the best Steer or Ox in any of the Classes.

A Silver Cup, value 40*l.*, for the best Heifer or Cow in any of the Classes.

A Silver Cup, value 20*l.*, for the best Pen of Leicesters, Cotswolds, Lincolns, Kentish, or other Long-woolled Breed in any of the Classes.

A Silver Cup, value 20*l.*, for the best Pen of 1-year old Southdowns, Hampshire or Wiltshire Downs, Shropshire or other Short-woolled Breed in any of the Classes.

A Silver Cup, value 20*l.*, for the best Pen of any other Breed of Sheep (not specified above) in any of the Classes.

The Prize Sheet now contains distinct Classes under the following heads:—

CATTLE.

Devons	Norfolk or	Scotch Polled
Herefords	Suffolk Polled	Irish
Short-horns	Long-horns	Welsh
Sussex	Scotch-horned	Cross or Mixed

SHEEP.

Leicesters	Southdowns	Oxfordshire
Cotswolds	Hampshire or	Mountain
Lincolns	Wiltshire Downs	Cross Breeds
Kentish, or	Shropshire	(Long and Short-woolled)
Romney Marsh, and other Long Wools	Other Short Wools	

PIGS.

Classes according to age up to 18 months' old.

The Entries for Live Stock close on November 1.

The Entries for Agricultural Implements, Roots, Seeds, &c., close on October 1.

Prize Sheets and full particulars can be obtained on application to B. T. BRANDRETH GIBBS, Hon. Sec.,
Corner of Half Moon St., Piccadilly, London, W.

N.B.—It is absolutely necessary that all communications on the Club's business should have the words SMITHFIELD CLUB outside, to distinguish them from private letters. If this be neglected, there will be risk of delay and inconvenience.

The Agricultural Gazette.

SATURDAY, AUGUST 16, 1862.

THE greater part of our present Number is occupied with reports of the coming harvest and of the present appearance of the crops. There can be no doubt, if the gentlemen who have favoured us with their opinions have taken only ordinary care in forming them, that the Wheat harvest crop of 1862 is one of the worst we have had for many years. There has always hitherto on the occasion of these annual returns been, among 200 correspondents, a considerable proportion who have declared the crop to be over average, even where the preponderance of opinion, and the ultimate experience, lay all the other way. We have never before had to report that of 188 reporters there is only one who speaks of the crop in his neighbourhood as being "very good"—and he is from an Irish county whose Wheat crop has no great influence on the general supply of the year. And it is a still worse report of the information which has reached us, that out of 188 there are no fewer than 150 who declare the crop to be inferior—only 37 who anticipate an ordinary return. Storms of wind causing the plant to be root fallen before the seed was fully formed—"red gum" and "mildew," the consequence of an unkindly summer—have produced their natural result, a deficient harvest. A correspondent, who very properly adopts the signature "Common Sense," fairly describes our position in the following paragraph:—

"I have often in former years observed the curious unwillingness shown by the public (that is the newspapers) to acknowledge the unpleasant fact of a deficient harvest.

"Our summer throughout England has been cold and wet. The consequence, namely, a deficient harvest, is as certain as that two and two make four; yet I observe the newspapers persist in inserting nonsensical paragraphs as to the probability of an average produce, which one should think the slightest consideration would show to be now impossible."

The following is the tabular epitome of the returns in the following pages, and it entirely bears out the above prediction of "Common Sense:"—

Crops.	Over Average.	Average.	Under Average.	Total Reports.
	No.	No.	No.	No.
Wheat	1	37	150	188
Barley	26	108	53	187
Oats	37	108	55	200
Beans	42	80	13	135
Peas	10	73	23	106

It results from these figures that the Wheat crop is very inferior, that Barley is barely an average crop, that Oats are a fair average, that Beans are generally good, and Peas on the whole a fair crop.

"ON September 4, 1847," says Prof. SIMONDS,* "I was consulted by Mr. STATHAM, farmer, of Datchett, near Windsor, with reference to a cutaneous disease of a destructive nature that had broken out among his sheep. I was informed by him that he had purchased 56 sheep of the Spanish breed in Smithfield Market on the 26th of July.

"A few days subsequently, while going over his grounds, Mr. STATHAM saw one of the 'Spanish sheep' standing apart from the others; and on examining it, he found the surface of its body covered with eruption, which he thought resulted only from the stings of wasps or hornets, and on that account the animal was not removed.

"On the following day several more of the 'Merinos' were found to be similarly affected; and from this time the disorder continued to spread, and many of the sheep died.

"It was about a fortnight after the two flocks were pastured together, that the malady *first* showed itself in the Downs, and these seemed to suffer more from it than the Merinos. The flocks were now separated; still the disease continued to advance, and daily losses were sustained."

Professor SIMONDS proceeds to describe the disease and the history of this particular instance of it, and the treatment he recommended. On the first point three stages of the disorder are described. We quote the following passages:—

"Those in the *first* stage of the affection were extremely low in condition; a mucous discharge from the nostrils was present; the breathing was quick and catching; the visible mucous membranes were inflamed, particularly the conjunctival lining of the eyelids, from which tears flowed in large quantities: all food was refused; rumination had ceased; the ears were lopped; the head held low; and a disinclination was evinced by the patients to associate with each other, some standing and having a most dejected appearance, and others lying down. The pulse was considerably accelerated, and scarcely perceptible at the maxillary artery, but at the heart it gave to the hand a jerking sensation: the skin was hot, red, and elevated in patches in the form of nodules or papulæ, approximated to each other. The chief seat of the eruption was on the inside of the arms and thighs, on the sides of the face, the labia of the female and the præputium of the male, parts which are either nude or covered only with hair; but, on separating the wool, the whole of the skin was seen to be similarly affected, although less intensely.

"In the *second* stage greater debility and emaciation existed; the discharge from the Schneiderian membrane was increased, viscid, and adherent to the alæ of the nostrils, impeding the respiration: the capillaries of the eyelids were in a highly congested state; the pulse was indistinct even at the heart; the ears and the feet were cold; and the wool came off easily, showing the skin underneath it inflamed, the redness existing principally between the elevations, although no distinct areola was present. The summits of the nodules were blanched, arising from effusion of a *very small quantity* of serous fluid beneath the cuticle, which scarcely gave to it the character of a true vesicle. All the papulæ, however, had not taken on this change.

"In the *third* stage the vital powers were prostrate; the fever had become of a typhoid character, the discharge from the nostrils fetid, and other general symptoms much aggravated. The cuticle covering the majority of the nodules had assumed a brown colour, and pus here and there was formed on the *margins* of some of them, shewing the ulcerative state to have commenced: in others, simple desquamation of the cuticle had begun to take place."

The history of the attack is simple enough; the sheep had been imported in the "Trident," "Mountaineer," and "Princess Royal," from Denmark and from Hamburgh, in an infected state, and the disease developed in the natural way. Inspection at market and at ports, and the prompt condemnation of any infected animals put a stop to the attack, and it soon ceased to occupy public attention.

This, however, has been again aroused in a very painful degree during the past week by the re-appearance of the disease in Wiltshire, and we therefore reproduce Mr. SIMONDS' remarks on the third point alluded to—the treatment he recommended for the disease:—

"The treatment recommended in the *first* stage consisted of a dose of laxative medicine at the onset, followed by the daily exhibition of mild diffusible stimulants, in conjunction with febrifuges; such as the spirit of nitric ether, acetate of ammonia, and very small quantities of the antimonial compounds. After the acuteness of the attack had passed off, vegetable and mineral tonics conjoined were administered, as the compound tinctures of bark and gentian, and the sulphate of iron.

"When there were symptoms of approaching ulceration of the cutis, a very dilute solution of the chloride of zinc was applied; and the same was directed to be used when the ulcerative stage was established. Careful nursing, and generous and varied diet, were especially enjoined.

"As prophylactic measures, isolation of the apparently healthy sheep was strictly enforced, with daily inspection, and instant removal of any in which the slightest indication of the affection manifested itself. The exhibition of aperients occasionally, the feeding of the animals on Grass land where they could have access to water, and the placing of rock salt in their troughs, were also recommended."

In addition to this, and as a preventive measure, inoculation is recommended, the "matter" used being taken from animals in which the disease has taken a mild form.

The reappearance of the disease in Wiltshire seems at present to be inexplicable. The flock of Mr. JOSEPH PARRY, of Allington (1000 ewes and their produce) are the sufferers. They had always been a notoriously healthy flock, well tended, carefully fed, and with all the advantages of fine Down air. Professor SIMONDS, who was immediately consulted, pronounced the disease to be small-pox, from the description of it, though nothing that he could learn of the history of the case cleared up the mystery of its appearance. On inspecting the flock he found the sheep suffering from every stage of the disease, some of them exhibiting the incipient symptoms, others exhibiting all the fetid symptoms of the loathsome disorder at its height, and not a few already past the crisis, some 200 of them being convalescent.

As the most effectual means of preserving those that have not already been attacked, Professor SIMONDS suggested that the whole of the sheep should at once be inoculated; and, having placed the case entirely in the hands of the Professor, Mr. PARRY assented to this proposition, and the whole flock of 1700 sheep and lambs (exclusive of the large number which have died and those which are recovering) are accordingly at this moment either in an incipient or a malignant state of small-pox.

We have not heard of the spread of the disorder; and the case being in the hands of one who has had more experience in this particular disease than any other professional man in the country, it will we hope be successfully confined within the limits of its first appearance.

THE new self-acting reaping machines have acquitted themselves exceedingly well in such trials as they have already received this harvest. At the farms of Messrs. BLYTH & SQUIER, whose experience in steam ploughing near Stanford-le-Hope has been related in these columns, Mr. McCORMICK's new reaper, shown in the International Exhibition, was tried last week with perfect success. The novelty of the implement consists in the mechanism, by which one fan of the revolving reel leaves the companionship of the other three at each revolution, and after performing its office in bending towards the cutter all the ears which fall within its reach, falls upon the quadrant platform behind the cutter, sweeps it clear of all the cut corn upon it, landing this in a sheaf on one side of the wake of the machine, out of the way of the horses upon the following journey, and then regains its place in the revolving reel ready for its office there. The work at Stanford-le-Hope, both on a light and heavy crop, was exceedingly satisfactory, the crop being well and evenly bunched out upon the stubble ready for tying.

The new reaper by SAMUELSON and RANSOME has also during the past week received a satisfactory trial. It, too, sweeps the platform which receives the cut corn. Instead, however, of the four arms which do this being placed as a reel for bending the standing corn to the cutters, one of the four leaving its place at every revolution to sweep aside the corn that has fallen to them; they are arranged merely for the purpose of thus keeping the platform clear. They revolve more slowly, and each in its turn comes down to remove its sheaf.

Each pair of these rakes balance on the common centre, and as they revolve, the bed on which they run lifts them or lets them fall into the positions needed for their efficiency. At Foxley Farm, near Kingston-on-Thames, last week, it was successfully exhibited, working satisfactorily, even under the disadvantage of a broken rake for a considerable part of the trial.

* Practical Treatise on Variola Ovina, or Small-pox in Sheep. Ridgway, Piccadilly.

THE PRESENT APPEARANCE OF THE CROPS.

FROM THE REPORTS (AUGUST 6TH TO 9TH) OF OUR OWN CORRESPONDENTS.

COUNTY.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	POTATOES.	HAY.	ROOT CROPS.	WHEN WILL HARVEST BE GENERAL.	NAME AND ADDRESS.
SCOTLAND.										
INVERNESS	Average; but much rust	Below average	Average	Good	Good	Free from disease	Light crop	Late and unpromising	Middle of Sept.	A. Simpson, Beauly
	....	Backward	Behind last year	....	....	Fair	Good	Very inferior	Sept. 12	H. Ainslie, Fort William
ELGIN	Fair	Good	Very fine	None	None	No disease as yet	Good	Not very promising	Beginning of Sept.	J. Hamilton, Forres
MORAY	Heavy, but diseased; under average	Good; full average	Heavy on low grounds; light on hills	About an average	Few grown	Bad, by cold, wet, and wind	Heavy	Late and bad	Middle of Sept.	J. Grigor, Forres
PERTH	Considerably under an average	Under average	Fair average	Good	....	Very various	Fair crop	Healthy, but backward	First week of Sept.	D. Edie, Elliot Head, Bridge of Earn
FORFAR	Under average	Above average	Above average	Over average	Over average	Under average	Average	Under average	Ten days later than average	R. Colvill, East Newton, by Chance Inn
	Under average, and late	Under average	An average	Average, but late	....	Very bad	Good	Turnips bad	Second week Sept.	W. Smith, West Drums, Brechin
	Indifferent; damaged by hurricane	Bad on clay land; average on free land	Average	Bulky crop if they corn	....	Half a crop; smashed by hurricane	Not an average	Turnips miserably bad	Middle of Sept.	A. Bell, Ferryden Farm, Montrose
ABERDEEN	....	Sober	Sober	Good	....	Promising	Light	Promising	Sept. 25	J. Laing, Peterhead
	....	Average	Nearly average	None	None	Middling	Half a crop	Improving	End of Sept.	J. Mc Donald, Huntly
STIRLING	Fair average	Under average; improving	Much under average	Above average	....	Under average; and not promising	Above average; well got	Unusually backward	2d week in Sept.	A. Buchanan, Whitehouse Farm
	Bare average	Much under average	Under average	Average	None	Under average	Average	Under average	Sept. 12	D. Morton
FIFE	Much under average	Under average	Under average	Average	....	Much under average	Above average	Very late	2d week in Sept.	W. Veitch, Kinghorn
	Under average	Under average	Average	Above average	....	Under average	Above average	Promising	Sept. 10 to 15	R. Russell, Pilmuir, Leven
	Below average	Under average	Under average	Good, but late	Good	Bad	Good; full average	Turnips very late	2d week Sept.	J. Morton, Lambeletham, St. Andrews
	Thin, rusted, and much under average	Thin; under average	Average	Full average	Fully an average crop	Very much under average	Above average	Very late; under average	Sept. 16	J. Pitcairn, Kinnaird
MID-LOTHIAN	Below average	Fair average	Unequal, improving	Good	Not grown	Generally inferior	Good	Late, but promising	Sept. 10	J. Melvin, Bonnington, Ratho
MID-LOTHIAN (WEST)	Under average: thin with small heads	Average on light soils; bad on clay	Average on light soils; very bad on clay	Average	....	Very much damaged by wind	Above average	Late, and under average	3 or 4 weeks later than usual	P. Mc Lagan, Pumpherstone, Mid-Calder
EDINBURGH	Under average	Under average	Average on light soils; greatly under average on clay	Average, but late	....	Much damaged by winds	A full crop; well got	Under average; very late	Middle of Sept.	J. Hislop, Mid-Calder
HADDINGTON	Under average	Good	Various; rather under average	Average	....	Half a crop	Heavy crop, and well secured	Various; now growing fast	Sept.	G. Hope, Fenton Barns, Drem
AYRSHIRE	Not average	None	Under average	Good, but running strawey	None	On light sandy land good; on heavy land very bad	Good; not yet secured	Not promising	Sept.	W. McJannet, Bogside Farm, by Irvine
	Light and unpromising	Fair; little grown	Very light on clay	Above an average	....	A small crop; (disease)	A good crop	Late and unpromising	2d week Sept.	A. Ralston, Lagg
LANARK	Under average	Various and late	Very poor and late	Good	None grown	Inferior	Good	Very poor	End of Sept.	J. Munro Mackenzie, Wishaw
PEEBLES	Small ear, and sometimes thin	Small ear, and generally thin	Pretty thick on the ground; bare average	Average crop	....	Very unequal; damaged by winds *	Clover hay above an average; meadow very good	Turnips never worse; all late	Second week of Sept.	J. Lyle, Innerleithen
BERWICK	....	Thin; light; best on dry soils	Vary from fair bulk on dry lands to half a crop on wet clay	Few grown	Not many grown	Much blackened by the high winds	Good crop on light lands	Improving rapidly	....	J. S. Bertram, Cranshaws, by Dunse
	Under average; hurt by winds †	Average	Average	Good, but hurt by winds	....	Under average	Good	Late; growing well now	Perhaps 10th Sept.	John Wilson, Edington Mains, Chirnside
	Under average	Under average	Average	Average	....	Under average	Above average	Under average	Sept. 20.	G. Logan, Humehall by Stitchill
DUMFRIES	....	Middling	Below average	....	....	Not looking well	Good	A full month behind	The end of Sept.	J. Little, Langholm
WIGTON	Under average	None	Various	Few grown	None	Disease now very general	A good crop	Very poor and deficient	Second week of Sept.	A. H. McClean, Auchneel, Stranraer
	One-fourth under average	....	Fair on lea land, but under average on green crop land.	Quite an average	...	One-third deficient	Nearly over average	About half deficient	About four or five weeks later than usual	D. McCullock, Auchness
ENGLAND.										
NORTHUMBERLAND	Below average	Generally good	Inferior except on dry loams	Good	Good	Injured by winds	Large and pretty well got	Late and small	Beginning of Sept.	J. Grey, Dilston
	Light and damaged by wind	Middling	Fair on light soils; very light on clays	A good crop generally	Good	Middling prospect	Good	Very late	Sept.	——, Coldstream
	Below average, much broken by wind	Fully average	On light lands over average; very short on clays	A fair crop	Good, but late	Fair bulk; somewhat diseased	Clover under average; Meadow Hay full average	Excellent braird, but slow	Sept. 15	J. Wilson, Woodhorn, Morpeth
	Much under average	Under average	Under average	Good	Few	Poor	Good	Very late	Sept.	T. P. Dods, Anick Grange, Hexham
CUMBERLAND	Under average	Under average	Under average	Not many grown	....	Under average	Average	Bad	Sept	J. Rigg, Abbey House, Abbey Town
	Under average ‡	Average	Under Average	Over Average	....	Bad	Over average	Under average; late	Middle Sept.	T. Gibbons, Burnfoot, Esk
	Under average	Average	Average	None	None	Average	Over average	Uncertain	Middle of Sept.	T. Wilson, Ullswater
WESTMORELAND	Under average; slightly rusted	About an average	Very light and thin	Very promising	....	Very indifferent	Above average	Very backward	Sept. 10	W. Key, Casterton Hall, Kirkby-Lonsdale
	Under average	Average	Under average	None	None	Look well	Over average	Under average	Mid. of Sept.	J. Robinson, Warcop
DURHAM	Autumn sown good; spring thin	Average	Below an average	None	Over average	Bad; blighted with the wind	Average and well got	Very late	Sept.	G. Crofton, Kimblesworth
	Variable, but thin	Average	Average	Good	Good	Good	Good	Variable	Latter end of Aug.	R. B. Dixon, Darlington
	Thin; damaged by wind	Good average	Short and poor	....	....	Late; damaged by wind	Average	Turnips promising; late	Sept. 20	G. Bell, Hallgarth Street
YORKSHIRE	Much affected with rust and broken with storms	Good where sown early	Good crop	Good where free from blight	Good crop	Free from disease but light	Large crop, well got	Mangels bad; Turnips improving; Swedes good	Aug. 13	J. Clark, Sen., Hessle, Hull
	Improved, but under an average	Average	Average	Average	Average	Promising	Average and well got	Vary; early sown Swedes on good land promising	About last week in Aug.	H. J. Turner, Richmond
	Scarcely average	Average	Average	Good	Fair *	Tolerably good	Very heavy	Promising	Aug. 18	H. O. Briggs, Wakefield
	Average	Good	Good	Average	....	Damaged by wind	All in	Much improved	Aug. 20	T. Taylor, Darrington, near Pontefract
	Light, caused by plant thin on the ground; storm-broken and red rust	Average	Average	Badly podded	....	Light crop; not diseased	Good; well got	Looking well; but backward	About Aug. 24	P. Stevenson, Rainton, near Thirsk

* The disease has appeared.

† I fill this up on the morning of August 8, at which time, and for 24 hours preceding, we have a violent storm of rain with N.E. gale, which has completely soaked the land and broken down the crops very much. It still rains as heavily as ever, with no appearance of abating.

‡ In this district we have had an average of three days' rain in the week all this summer, and our heaviest crops are all beat down by the incessant rains.

THE PRESENT APPEARANCE OF THE CROPS—(*Continued*).

COUNTY.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	POTATOES.	HAY	ROOT CROPS.	WHEN WILL HARVEST BE GENERAL.	NAME AND ADDRESS.
ENGLAND.										
YORKSHIRE......	One-third under average	Full average	One-fourth below the average	One-fourth above the average	Full average	One-third below the average	A fine average crop	Swedes average; but late. Mangels gone	1st week in Sept.	J. Outhwaite, Bainesse, Catterick
LANCASHIRE	Plenty of straw, but small in the head; must be light	Looks well and promising	Looks well	Full in the straw; but troubled with lice	....	The early ones are diseased	A full crop, and well housed	Turnips and Mangels are very late, and must be light	End of Aug.	R. Robinson, Garstang
	Much under average	Average	Above average	Attacked with fly	None grown	Under average; slightly diseased	Under average; one-third badly got	Late	End of Aug.	F. Twining, Parbold Hall, Wigan
	Indifferent	Fair	Fair	Average	Very few grown	One-third short	Great crop	Very various	End of Aug.	G. W. Fowler, 21, Brunswick Street, Liverpool
	Very poor on low lands	Very uneven; not good	Very good	Good	None grown	Good	Heavy, and well got	Late; but healthy	Sept. 1	G. Drewry, Holker, Newton-in-Cartmell
	Below average	Below average	About average	Good	None grown	Below average	Good	Promising	End of Aug.	R. Bell, Mosbro' Hall, St. Helen's, Rainford
	Average; affected with red gum; white Wheat much damaged by it	Under average; but little grown	On warm land good crops; very bad on cold land	Over average	None grown	At present bad	Clovers over average; hay below average	Mangels inferior, Swedes promising; finger and toe disease in some fields	Last week in Aug.	W. B. Burnham, Spital
CHESHIRE	On the good soils full, but defective from rust; on the cold soils short and small in the ear	On the best Barley land good crops, some laid; where the land is cold, very poor; below average	Full crops, but on good land much laid; on flat clay land short and poor; below an average	....	....	Some very poor; symptoms of disease in the early kinds	Tolerable; some fine hay secured during the latter part of July	Late and small generally, although improved	From Aug. 20 to 27	W. Palin, Stapleford Hall
DERBYSHIRE	....	....	Short in the straw; not good	....	....	Bad and partially diseased	Good and well got	Bad and late	End of Sept.	B. Swaffield, Hartington
	Below average	Average	Below average	Average	Average	Good	Above an average	Bad; but lately improved	Early in Sept.	J. Parkin, Idridgehay
NOTTINGHAM	Nearly average	Below average	Above average	Above average	....	Good	Large crop; well secured	Turnips promising; Mangel half a crop	Aug. 15	C. Paget, M.P., Ruddington Grange
	Under average	Much under average	Average	Average	Average	Average; commencing with disease	Good crop	Very indifferent	Aug. 25	J. Buckley, Normanton Hill
	Under average	Average	Average	Over average	Average	Average	Over average	Under average	Aug. 18	C. Walton, Clifton, near Newark
	Bad; many deaf ears	Not bulky; pretty quality	Bad	Bad	Fair	Good quality; but short in quantity	Good and well got	Much damaged by fly	Aug. 11	W. Chouler, jun., South Muskham, Newark
LEICESTER	Generally promising; but sometimes defective in ear	Good on light, but bad on heavy undrained lands	Average	Very heavy; but blighted	Average	Great breadth, and healthy	Over average, and got well	Very late and unpromising	Last week in Aug.	J. Spencer, Knossington
LINCOLN	Average in bulk, but injured by red gum	Good	Light	Good	....	Good	Light crop	Good	Aug. 20	C. Sharpley, Acthorpe Louth
	Not an average	Good	Good average	Winter Beans good; spring Beans not good	Scarce any grown	But little diseased	Light crop	Mangel Wurzel not good	Aug. 23	J. G. Dixon, Caistor
	Fair crop; much blighted	Fair average crop	Average on dry light lands; thin on clays	Average crop; injured by filth	Good	As yet looking healthy	Crops good and well got	Mangels good; Turnips fair	Aug. 18 to 20	W. Dudding, Panton House, Wragby
	Doubtful	Fair	Average	....	Not grown	Partly diseased	Well	Good plant	About Aug. 20	——, Market Rasen
	Good	....	Good	Very fine	....	Better than for years	Fair	Mangels inferior; Rape promising	Aug. 13	T. Aitken, Decoy Farm, Spalding
	Average	Bare average	Average	Injured by the fly	....	Good but small	Average	Looking well	Aug. 18	E. Darby, Aswarby, Folkingham
	Fair bulk, but ears deficient; much storm-broken, but few "laid" crops	Average	Good	Great bulk; but not well podded	Good crops; well corned	Backward; symptoms of disease	Large crops; well saved	Late; Mangel much damaged by insects	Middle of Aug.	J. A. Clarke, Long Sutton
	Barely average	Average	Average	Good	Good	Good	Average	Turnips promising; Mangels bad	Aug. 18	F. Sowerby, Aylesby
SHROPSHIRE	Below average; much diseased; red gum general, and mildew foreshadowed	Below average; the earing very unequal	A good average, and encouraging	....	Bulky; but the bushels will be few per acre if cold weather	Tolerably healthy	Good average; except those who were impatient, well harvested	Swedes good, except where injured by the fly; Mangels bad	Not under three weeks, and if cold weather continues later	E. Davies, Patten, Wenlock
	Various; red gum in most of it badly; under an average	A very light crop, irregular and bad; much under an average	Moderately good on good land; short and light on middling land	....	....	Looking very bad	A good average; perhaps rather more	Mangel Wurzel a failure; Swedes very late	Sept. 1	R. Shirley, Bawcott, Church Stratton
	Good average	Good	Good	Very good	Good	Looks well	Heavy, and well got	Bad, but improving	Aug. 16	J. W. Bowen, Strawardine
HEREFORD	Not average	Full average	Average	Winter planted good	Average	Good; slight disease	Very heavy	Not very good	Aug. 18	P. N. Edwards, Brinsop Court
	Average	Average	Average	....	Average	Good	Average	Late and small	Aug. 14	J. Mathews, Blakemore
	20 per cent. below an average	Below average	Average	Above average	Very bad, excepting upon warm dry soils	Average	Good crop, and well saved	Very late; Mangels valueless	About Aug. 18	T. Duckham, Baysham Court, Ross
STAFFORD..	Under average	Bad; in some cases very bad	An average	Full crop, but blighted	Bad generally	An average, but diseased	Full crop	Average	Aug. 18	——, Penkridge
WARWICK	Under Average	Very late	Average	Good	Bad	Slightly diseased	Good	Very late	Aug. 20	J. H. Burberry, Kenilworth
	Short average	Moderate	Very good	Over average	Many failures	small breadth, but still sound	Full crop, good quality	Swedes promising; Mangels and Carrots bad	Aug. 6 to 16	T. Bowick, Stoneleigh Abbey Farm, Kenilworth
	Not good; much of it unkind; not average	Improved lately, but below average	None grown	Very good	Very deficient	Good, and of superior quality; but the disease has shown itself	A good crop, variously gathered	Late, but now growing fast	Aug. 18	J. C. Adkins, Milcote, Stratford-on-Avon
NORTHAMPTON..	Very light, much diseased; not average	Fair; about an average	Good; full average	Good; full average	Full crops; much damaged	Full crops; partially diseased	Good crops; the late well got	Late, and very bad	Last week in Aug.	J. B Smeeton, Cromwell House, Naseby
RUTLAND	Under average	Over average	Full average	Average	Over average	Partially diseased	Good crop, well got	Good	Aug. 18	W. Fancourt, Empingham
HUNTINGDON....	Under an average	Average	Average	Average	Under an average	Fair crop	Full crop	Mangel good; Turnips late	Aug. 8	R. Beart, Godmanchester
	Barely average	Good	Good	Very good	Good	Very good	Good	Not good	Aug. 7	P. Purves, Brampton
CAMBRIDGE......	Below average; early white Wheats half a crop, and very inferior	Below an average, and much of inferior quality	Mostly a good crop	Good	About two-thirds of a crop	Good and sound at present	Bad crop, and half spoiled where cut early	Considerably below an average at present but the plant is mostly good	About Aug. 13 or 14	J. Webb, Babraham
	Not bulky, but promising about an average yield	Little grown; a good crop	Very good where uninjured by wire-worm	Fine crop of straw, fairly podded	Not a heavy crop, but well podded	Healthy at present	Average	Doing well now	Aug. 12	A. S. Ruston, Aylesby House, Chatteris
NORFOLK	Under average	Good average	Fair average	Very good	Not many grown	Good at present	Plenty, but inferior	Mangel good; Turnips promising	In about a week	T. Brown, Denver
	Good; much broken by wind	Very good	Good	....	Good	Good	Good	Very good	Aug. 12	——, Rougham

THE PRESENT APPEARANCE OF THE CROPS—(*Continued*).

COUNTY.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	POTATOES.	HAY.	ROOT CROPS.	WHEN WILL HARVEST BE GENERAL.	NAME AND ADDRESS.
ENGLAND.										
NORFOLK	Good crop in appearance but much blighted and full of red gum	Very good crop, ripe in 10 days	Very good; Canadians excellent, some thrashed weighing 14 stone per co.	None grown here	Very good	None grown except in small patches; diseased	Good, where time was given it in the field	Very good	Aug. 12	J. Hudson, Castle Acre Lodge, via Brandon
	Under average; blighted	Over average and good	Average	Bulky, but thinly podded	Average	Good crop; beginning to be diseased	Bare average	Fair; want rain	Middle of Aug.	W. Cubitt, Bacton Abbey, North Walsham
	An average bulk of straw; grain inferior; uneven in sample; thin in berry; yield barely an average	Bulky; rather coarse in berry; sample various; yield a good average	Oats bulky, and grain fine and heavy	Plenty of stems, indifferently podded	Plenty of pods, moderately filled	Slight symptoms of disease	Fair; little the worse for the weather at the time of carting	All wanting rain, and at a stand-still; Carrots bad	Aug. 11 or 12	W. H. Taylor, Wymondham
SUFFOLK	A quarter per acre below an average; quality inferior	Full crop, with prospect of fine quality	None grown	Average	Average	Pretty good; partially diseased	Average quality badly damaged in making	Mangels promising; Swede Turnips never worse	Aug. 11	C. Wilton, Wickham Market
	Under average	Average	Very good	Under average	Average	Very good	Good; badly secured	Very good	About Aug. 11	T. Crisp, Butley Abbey
	Talavera and early Wheat blighted; not average	On the whole promising	Few grown here, but quality and yield first-rate	At the present moment promise well	A good crop	A little diseased, but on the whole fair	A heavy crop; fairly secured	Good, but wanting rain	Aug. 11	H. Edwards, Woodbridge
	Under average	Bare average	Not grown	Above average	....	Good	Good	Mangels good; Turnips beaten with fly and drought	Aug. 16	G. Edwards, Framlingham
	Fair, but broken down upon the broken lands; such as Pea and Bean stubbles	Good, but rather late	Middling	Fair	Fair	Much damaged by disease	Plentiful but of various quality	Very good	About Aug. 14	L. O. Cottingham, Saxmundham
ESSEX	Red sorts a full average; white * sorts greatly damaged and far below average	Very good; some already harvested	Barely an average	A full yield; some damaged by aphis	Not average	Rarely diseased; tubers will be small	Much bad; a little good	Mangels in good plants, and promise fairly; Turnips not promising	Aug. 11	H. Dixon, Witham
	Near average	Over average	Under average	Over average	Over average	Over average	Over average	Average	Aug. 5	J. J. Mechi, Tiptree Hall, Kelvedon†
	About an average	Good	Below an average	Very good	Very good	Better than for years	A good crop; indifferently got	Good	Aug. 11	A. Barfield, Dunmow
	Talavera, not half a crop; other white Wheat injured	A full average	Good crop	Good	Below an average	Partially blighted	Good crop	Mangel Wurzel good: Swedes partial	Aug. 4	W. Fisher Hobbs, Boxted Lodge, Colchester
	Beaten down; under average	Good	Middling	Good	Good	Middling	Good	Good	Aug. 9	C. Hall, Princes Gate, Romford
	Some crops much laid, and on the whole somewhat below an average	An average	Full an average, if not more	Various; but in general the good crops preponderate	Peas generally good	A very little disease among them; on the whole good	A good crop; got up well	Mangels and Turnips as far as I have seen good	Aug. 6	G. Wilkins, Wix Parsonage, Manningtree
	Blighted; much under average	Average	Under average	Winter-sown over average	Average	Blighted; tubers small, but sound	Abundant, but much injured	Turnips injured by fly	Aug. 4	A. Hardy, Maldon
MIDDLESEX	Not an average	Average	Average	Very good	Not an average	Good plant, but diseased	Good, but damaged	Good	Aug. 11	C. Webster, Uxbridge Common
	Under average	Average	Average	Average	....	Under average	Over average	Promising	Aug. 13	T. Hewitt, Park Farm, Cranford
BEDFORD	Average	Not average	Average	Good	Good	Good	Average	Turnips bad; Mangels good	Aug. 11	W. Lavender, Biddenham
	Blight and damage by wind; not average	Various; under average	Good	Full crop; much fly and blight	....	Small; not much diseased	Average; ill got	Late; not average	Aug. 11	W. Pike, Stevington
HERTFORD	Not exceeding an average	Good	About an average	Bulky; not well corned	Under average	Very fine grown	Good; indifferently got	Not good	About Aug. 12.	G. Webb, Beaumont Hall, St. Albans
	Extremely various; below an average	Good average	Various; good in places	Fair crop	Abundant	Good at present; symptoms of decay	Much damaged	Late and various	Aug. 11	——, St. Albans
	Barely average	Average	Very good	....	Good	Very large crop; but little disease	Large crop	Mangels good; Swedes indifferent	Aug. 12	J. B. Lawes, Rothamsted
BUCKINGHAM ..	Under average	Good	Good	Good	Not good	Middling, having blight	Good	Not average	Aug. 5	E. Evans, Boveney Court, Windsor
	One-fifth below average	One quarter below average	Thin and short; below average	Good crop; above average	Good	Diseased; not much grown	Bulky, but carted before ready	Mangel fair; Swedes patchy and late	About Aug. 15	W. G. Duncan, Bradwell, Stoney Stratford
	Average	Various	Various	Good	....	Good	Average	Bad	Aug. 17	W. Smith, Woolston
	Diseased; below average	Bulky; late	Fair average; late	Bulky; not well podded	....	Much diseased	Full average	Very late	About Aug. 20	A. Fraser, Botolph House, Winslow
OXFORD	Under an average	Under an average, but improved	Good	Good	Fair	Good	Much damaged	Good plant, but does not grow well	Aug. 11	S. Druce, Eynsham
	Broken down by wind; blight in the white and old April sorts; under average	Much improved latterly, but decidedly under an average crop.	A full average, having stood the late heavy rains better than the Barley	Over an average; a great deal of straw, and well corned	A full crop	Good, but disease has appeared	A great crop; on the whole well got	Full plant, but very backward	Aug. 15 or 20	M. Savidge, Churchill Mount, Chipping Norton
WORCESTER	average crop	Considerably under average	Good	Full average	Very variable	Early, small and slightly blighted; late tubers healthy	Abundant; much injured	Very late	Aug. 14	H. Hudson, The Elms, near Pershore.
MONMOUTH	Average	Average	Very good	Very good	....	Good, but blighted	Very good	Very good	Aug. 20	H. Pride, Monmouth
	Average	Under average	Rather light	Blighty; uncertain	Average	Early; blighted	Good	Promising	About Aug. 16	T. Beckingham, May Hill
	Promise well	Promise well	Promise well	None grown	Fair	Generally look bad	Good crops on the whole; well got	Swedes very promising; Mangold not good	Aug. 16	W. H. Little, Llanvair Grange, Abergavenny
GLOUCESTER	Much improved lately	Differs from good to very middling	Oats middling; very few grown	Very good	Mostly a failure	Looking rather sickly	Good; mostly well got up	Doubtful	Aug. 12	——, Berkeley
	Twenty per cent. under average	Under average	Average	Over average	Various	Good	Good	Much below average	Aug. 18	J. F. Peacey, Winchcombe
	Much red gum; many of the roots dead, and corn will dry light	Healthy on light free land, but patchy and short ears on stronger and cold soils	Good; rain and wind have laid the straw flat	Good where sown early	Very good where sown in the fine weather in February	Very bad; the disease appeared in low places in June	Very good on light soils; bad on cold exposed land	The worst I ever saw	Aug. 16	H. Cox, Minchinhampton
	Under average	Under average	Average, but late	Full average	Average	Fair crop, but disease	Good crop, but injured	Late sown, and variable	About Aug. 14	S. Rich, Didmarton, Chippenham

* Some threshed, and yielding 2 quarters per acre.

† All kinds of cottage garden produce have been much more abundant than last year. Potatoes are particularly good, being nearly twice as large in size as at this time last year. Some fine early white Wheats have been much blighted, but the general crop is good. Turnips were eaten by fly, but those re-sown are doing tolerably well. Mangel are a full plant. Hay is abundant.

THE PRESENT APPEARANCE OF THE CROPS—(*Continued*).

COUNTY.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	POTATOES.	HAY.	ROOT CROPS.	WHEN WILL HARVEST BE GENERAL.	NAME AND ADDRESS.
ENGLAND.										
GLOUCESTER	An average in bulk, but inferior in yield	Fully one-third below an average]	Below an average, and a small breadth planted	Over an average, and a full breadth planted	About half a crop	An average crop; disease appears]	A stack of fine quality can scarcely be found	Mangels improving; Swedes almost a failure	Aug. 18	W. Woodward, Ashchurch, Tewkesbury
	Barely average	Late sown, short in straw, and under average	Fair average	Good	Variable	Sound crop; moderate	Bulky	Backward	Aug. 15	J. Coleman, Royal Agricultural College, Cirencester
	Considerably under average	Late; not average	Good	An average	Partial crop	Average; signs of disease	Good crop; fairly got	Late	Aug. 11	G. Edmonds, Lechlade
SOMERSET	Not good; below an average	Very good	Good	Very good	Not grown	Badly diseased	Large crop; badly taken	Good plant, but late	Aug. 20	J. W. Eastment, Wincanton
	Rather under average	Very good	Very good	Good	Under average	Partially diseased	Early; bad	Good; but late	Aug. 19	C. P. Collyns, Dulverton
WILTS	Under average	....	Good crop	Very good	Not good	Good	Over average	Very backward	Last week in Aug.	T. P. Brown, Burderop
	Much improved; but under average	Good	Good	Good	Average	The backward crop free from disease	Full crop	Promising; but backward	About Aug. 20	G. Brown, Avebury, near Chippenham
	Thin; and much injured by rain	Promises; but injured by weather	Over average	....	....	Cases of disease	Arable hay; Clover, good; well got; meadow crop moderate	Good; but late	Aug. 14	T. Chandler, Aldbourne, Hungerford
	Under average; much blown about	Fair; much improved, but late	....	Good; full average	....	....	....	Late; not average	Aug. 11	T. Arkell, Pen Hill Farm, Swindon
	Considerably under average	Late and unpromising	Average	Very unpromising	Much below average	Various and uncertain	A fair crop of average quality	Backward, but promising	Aug. 18.	J. Stratton, Manningford Bruce, Pewsey
BERKS	Under an average; some blight and red gum	Very promising and good; over an average	Very fine; over an average	A very fine crop; over an average; no blight	Very indifferent	Much blighted	An abundant swath, but badly made	Promise well in some places	About Aug. 15 or 16	T. Fordham, Snelsmore Hill, Newbury
	Barely average	Fair	Good	Good	Fair	Good; disease reported	Good; generally well made	Late; but promising	Latter end of next week	E. W. Moore, Coleshill, Highworth.
	Under an average	Fair crop	Fair crop	Good	Good	An average	Good	Various; generally very late	About Aug. 15	S. M. Plummer, Peasemore, Newbury
	Generally a thin plant; the ears badly filled; under an average	Variable; but much improved	Very good; promises over an average	Very good	Variable; not an average	Good; but going off very fast	A good crop; the early cutting injured, the latter well got	Generally a good plant; but not well grown	Aug. 8 to 15	T. Owen, Clapton, Hungerford
	6 to 8 bushels per acre below average	Good; much improved of late	Good	Not many grown	Not many grown	The haulm much affected	Some well saved, and much a good deal damaged	Indifferent; require rain	Aug. 4 to 6	J. B. Spearing, Moulsford, near Wallingford
	Under average	Above average	Above average	Average	Barely an average	Diseased	Much damaged	Promising	About Aug. 14	J. Adnams, Thatcham, Newbury
SURREY	8 bushels per acre under an average; blighted, and broken down by wind; Talavera nearly a failure	Varies very much on poor and ill-farmed land; very indifferent, and considerably under an average	Very much improved by the late fine weather; but under an average	A good crop; well podded; quite an average	Very good; above an average	Partially diseased; the crop is the best grown for years	A great crop; inferior in quality, and overheated	Mangels very good; Swedes indifferent, nearly the whole been sown twice	About Aug. 18	W. Willis, West Molesey
	On dry lands promises fairly as to bulk, but greatly diseased, and the ears badly set	Fair and of good quality	Very good both as to quality and quantity	None grown	Very few grown	Looking very well, and on light lands are free from disease	A good crop, variously got	Mangels in general strong and healthy; Turnips and Swedes need rain	Aug. 12	J. Arnot, Woodcote, Carshalton
KENT	Average	Average	Average	Almost a total failure	A poor crop	Symptoms of the disease	A fair crop	Mangel inferior; Turnips middling	About Aug. 15	M. Sandford, Martin Farm, near Dover
	About 2-3ds of an average crop	Much under an average	Very good; above an average	Very good; above an average	Not 1-3d of an average crop	A great breadth; a good crop	A good crop	Very good	Aug. 4	R. Matson, Wingham
	4-5ths of an average	Scarcely an average	Above an average	Below an average	Half our usual crop	Disease prevailing	Quantity large; quality inferior	A good plant generally	Aug. 6	W. Manser, Ramsgate
SUSSEX	Generally much blighted; 1-3d deficient	Quite an average	Quite an average	Fair	....	Blight has set in	Abundant, but badly stacked	Backward generally	Aug. 10	F. F. Hallett, the Manor House, Brighton
	Under average	Average	Over average	Average	Average	Good; slightly diseased	Good; generally well made	Inferior	Aug. 8	H. S. Hayward, Folkington
	Below an average; very much damaged by the wind	Average	Over average	Over average; very much injured by wind and red rust	Average	Blighted	Over average; very much injured by wet	Below average	Aug. 16	J. Eames, Lynch Farm, Midhurst
	Under average	Under average	Good	Average	Average	Blighted	Good	Backward	Aug. 15	J. Brotherston, Rose Hill, Robertsbridge
	Backward Wheat good; forward wretchedly bad	Generally good	Very good	....	....	Haulm blighted	Heavy crop, but much damaged	Generally good	Aug. 11	H. E. Sadler, Mid Lavant
HANTS............	Much under average	Average	Over average	Over average	Over average	Over average	Abundant	Good	Aug. 11	J. Blundell, Bursledon, Southampton
	Under average	Good	Good	Good	Moderate	Diseased	Large crop; damaged	Late	Aug. 11	H. Raynbird, Basingstoke
	Nearly average; large portion late sown	Promising, but late	Bulky crop, late	Good	Good	Large average; partially diseased	Average	Under aver.; very backward	Aug. 11	J. T. Twynam, Winchester
DORSET	Under average	Good	Very good	....	....	Diseased	Good	Good	Aug. 17	J. Furmedge, Langdon, Beaminster
	Under average; hurt by wind	Average	Good	....	....	Blighted to some extent	Over average	Good	Aug. 15	W. J. Voss, West Bucknowle, Corfe Castle
	Thin	Good	Good	Good	Good	Getting diseased	Good	Generally very good	Aug. 18	W. J. Pope, Bridport
DEVON............	Below average; damaged by wind	Average	Above average	....	....	Diseased	Light and damaged	Indifferent	Aug. 25	J. Benson, Tavistock
	Below an average	Late and uncertain	....	....	....	Much diseased	Abundant	Very good	Aug. 20	S. Cornish, Stancombe, near Kingsbridge
	Under average	Promises to be good	Promises to be good	....	....	Crop much rotten	Small crop; much damaged	Fine prospect	Third week in Aug.	R. W. Clark, Plymouth
	Under average	Under average	Under average	None grown	None grown	Partially diseased	Indifferently harvested	Promising	In a fortnight	G. Langden, Ashford, Barnstaple
	Good	Good	Very good	Not grown	None grown	Diseased and bad	Good	Various; bad to very good	Aug. 20	P. Cowan, Tavistock Manor, Barnstaple
	Average	Average	Average	Not grown	None grown	Diseased	Damaged	Good	Aug. 20	——, Totness
	Under average	Average	Average	....	Average	Much diseased	A fair crop; some spoilt	Very promising	Aug. 11	G. Turner, Beacon Downs Exeter
CORNWALL	Good; injured by wind	Good	Very good	....	....	Much diseased	Good crop; damaged	Very good	Aug. 18	T. D. Simmons, Killiganoon, Truro
	Below an average; sadly blown about	Generally good; fair average	Very heavy crop	None	None	Partially diseased; crop good	Quantity and quality various	Very good	Aug. 18	J. Wills, Launceston
	Under average	Average	Average	....	....	Diseased	Various	Very good	About Aug. 18	J. Michell, Tregoose, Truro
WALES.										
CARNARVON	Slightly injured by blight, but fair	Good	Good	Good	Fair	Good	Good	Late and partial	End of Aug.	J. Williams, Bodafon, Llandudno
CARMARTHEN....	Under average	About average	Full average	None	None	Good; disease appearing	Good full average	Very bad	End of Aug.	J. Burnell, Penyfan, Llanelly
IRELAND.										
LONDONDERRY ..	Does not promise well	Very little cultivated	On the whole a promise of a fair yield	....	....	Looking well and abundant	Upland good, meadow hay backward	Turnips rather backward	Middle Sept.	——, Garvagh
	Average	Under average	Under average	None	None	Not promising	Good	Doubtful	Latter end of Sept.	C. Pollock, Farmhill, Magherafelt

THE PRESENT APPEARANCE OF THE CROPS—(*Continued*).

COUNTY.	WHEAT.	BARLEY.	OATS.	BEANS.	PEAS.	POTATOES.	HAY.	ROOT CROPS.	WHEN WILL HARVEST BE GENERAL.	NAME AND ADDRESS.
IRELAND.										
ARMAGH	Not good	Average	Not good	Not good	....	Not good, but no disease	Average	Not good	1st week Sept	W. B[illegible], A[illegible]
	A fair crop	None	Very light	None	None	Very good	A fair crop	Promise to be fine	Middle Sept.	R. B. Hardy, Cooley Hill, Tandragee
ANTRIM	Not average	....	Various	Good	Good	Various	Full average	Not average	Sept. 20	J. Burm[illegible], [illegible]dalstown
TYRONE	Bad and thin	None	Good	None	None	Bad	Good	Very bad	Middle Sept.	W. Pater[illegible], [illegible] Lodge, Newton [illegible]
FERMANAGH	Under average	....	Very bad	Under average	....	Bad	Good	Very bad	Sept. 15	Andrew Mur, [illegible]boro'
DOWN	Not more than half a crop	Half a crop to last year	Winter Oats good, the other kinds inferior	Good crop	Very bad, few sown	Good, but a little appearance of disease	A great crop and good	Turnips average	Sept. 8 to 16	W. M'Cleery, Portaferry
	Injured, but still nearly an average if the weather improve	Average	Above average on all rich soils; inferior on cold land; will not be an average	Very luxuriant, but not very well podded	Very little grown	Generally late planted; improved	Saved with difficulty, but on the whole an average	Turnips and Mangels very backward; improved of late	Middle of Sept.	J. Andrews, Comber
LOUTH	Average	Average	Not good	....	None	Injured by rain and high winds	A good crop, badly saved	Turnips not one-third of a crop	Very late	W. M'Culloch, M[illegible]harlin, Dundalk
LEITRIM	....	....	Promising well	....	....	Blight partially	Light on permanent meadows	Good on dry soils	About Sept. 10	J. Lindsay, Ba[illegible] Cottage, M[illegible]hamilton
CAVAN	....	....	Greatly improved, but not average	....	....	Looking fine; the disease has appeared	Better than last year	Not very good	Middle Sept.	T. Chambers, B[illegible]borough
	Thin, but the ear fine	....	Short, a deficient crop	....	....	Remarkably fine	Very short	An average crop	1st week Sept.	J. A. Nesbitt, Belt[illegible]
LONGFORD	....	....	Under average	....	....	Average	Under average	Late and unpromising	Middle Sept.	J. M. Goodriff, Granard
WESTMEATH	Fair	Good	Average	....	....	Under average	Good	Under average	Sept. 20	W. Newburne, Gaybrook, Mullingar
MONAGHAN	None	None	Light crop	....	....	Good	Good	Middling	Sept. 20	Rev. Thos. Middleman, Castleblaney
ROSCOMMON	Not good	Good	Very good	....	....	Very good	Average crop	Very good	Sept. 20	J. Kelly, Brooklodge, Roscommon
GALWAY	Various	Good	Good	....	....	Promising, but with blight	Average	Promising	Sept. 1	G. Lamb, Mount Bellew
CLARE	Average; injured by rust	Full average	Various	....	....	Blight; diseased	Average	Various	Sept. 1	E. Bennett, Ballyear House, Newmarket-on-Fergus
LIMERICK and TIPPERARY	Not average	Not average	Very good	....	....	Excellent	Good	Average	Sept. 10	W. Digan, Killaloe
	....	....	Below average	....	....	Diseased	Below average	Middling	Sept. 1	R. D. Bolton M[illegible], Ballywire
	Good	Good	Average crop	....	....	Good	Good	Good	About Sept. 5	W. Ryall, Cashel
CARLOW	Very good	Good	Good and improved	....	....	Look well	Good crop	Doing well last 14 days	End of Aug.	T. G. Mosse, Rutland House
	Autumn sown average; spring sown under; all affected with rust	Early sown a fair average on suitable soils; late sown below an average	Autumn and very early sown above average	....	....	Early planted crops light but good; late planted average	Early meadows a fair average, and well got up	A thin crop from bad seed, and plants suffered from wet	September	E. Carroll, Kilgreany Lodge, Clonegal
	Good	Good	Good	....	....	Good	Good	Mangels good; Turnips very bad	Very late; Sept. 1	J. De Renzy, Clonegal
WEXFORD	....	Remarkably well	Rather thin, and do not promise an average yield	Attacked with blight	....	A fair average, and quality good	Somewhat more than an average	Look healthy	Sept. 10	W. Boxwell, Sarsfi[illegible], Kilmore
	Good	Very good	Winter very fine; spring good	....	....	Remarkably fine	Splendid crop	Very good	About Aug. 15	G. Glascott, Valentia, Camolin
KILKENNY	Good	Average	Below average	....	....	Hardly average; blighted	Very good	Average, but late	Sept. 15	D. A. Milward, Newross
	Average but rusty	Bad	Under average	....	....	Average; holding well	Under average	Thin and late	Latter end of Aug.	P. Grace, Uppercourt, Freshford
KERRY	Indifferent	Middling	Short and poor	....	....	Very doubtful	Over average crop	Good	Sept. 1	Rev. J. O'Sullivan, P.P., and V.G., Kenmare
NORTH KERRY	Smutted; mildewed; red rust	....	Some very good; some very bad	....	....	Very good	Very good	Very bad	First week in Sept.	J. Creagh, Tarbert
CORK	Bad, with both smut and rust appearing	Bad crop; not much sown here	Good in this neighbourhood	....	....	Tubers sound, firm, and productive	A good crop, except in low land	Bad and late	Very late	D. Clanchy, Charleville
	Good	....	Good	....	....	Small, and changing fast	Good	Fair	End of Aug.	S. Piddell, Kildorrey
	Scarcely average	....	Average	....	....	Average; symptoms of disease	Very good	Scarcely average	End of Aug.	J. Byrne, Shanballymore
	Under average; rusted	....	Average	....	....	Over average	Average	Various	Sept. 1	F. A. Twiname, Bally Philip, Kanturk

Societies.

Royal Agricultural Improvement of Ireland.—The following is the prize list at the late show at Limerick:—

Class A.—Short-horns.

Section 1. For the best Bull, calved in 1857, 8, or 9.—10*l*., Mr. William Coppinger, of county Cork, "Troubador;" 5*l*., Mr. Francis W. Lowe, "Little Wonder."

Section 2. For the best Bull calved in 1860.—10*l*., "Victor Emanuel," Lord Talbot De Malahide; 5*l*., "King of Hearts," Marquis of Waterford.

Section 3. For the best Bull calved in 1861.—10*l*., "Jemusder," Mr. William Coppinger; 5*l*., "Field Marshal," Marquis of Waterford.

Section 4.—For the best Bull calved in 1861.—5*l*., "Royal Ranger," Mr. Thomas Ball, Adare; 2*l*., "Ethelbred," Mr. Richard Welsted, Castletown-roche.

Section 5. For the best Cow in calf or in milk, calved before 1859.—10*l*., "Beauty 2d," the Messrs. Christy, Fort Union, Adare; 5*l*., "Jenny Jenkins," Messrs. Christy.

Section 6. For the best Heifer in calf or in milk, calved in 1859.—10*l*., "Recherche," Mr. Thomas Ball; 5*l*., "Evening," Sir Robert Paul, Waterford.

Section 7. For the best Heifer in calf or in milk, calved in 1860.—10*l*., "Pride of Adare," Mr. Thomas Ball; 5*l*., "Avenel," Mr. James Anderson, Grace Dieu, Waterford. For the best Heifer, calved in 1861.—15*l*., "Pride of Munster," Mr. Thomas Ball; 10*l*., "British Queen," Mr. Richard Welsted, Ballytown-roche; 5*l*., "Aunt Anne," Mr. Richard Welsted. "Mantilla," Mr. Bloomfield, highly commended.

Section 9. For the best Heifer calf caved in 1862.—5*l*., "Wood Flower," Mr. Thomas Ball; 2*l*., "Pink of Fashion," Mr. Thomas Ball.

Class B.—Other Breeds.

Section 3. For the best Devon Bull, calved on or after Jan. 1, 1857.—10*l*., "Master Bodley," Mr. W. Coppinger. "Sir Charles," Earl of Charlemont, commended.

Section 4. For the best Ayrshire Bull, calved on or after January 1, 1857.—5*l*., "Robin," Mr. Borthwick, Carrickfergus. Mr. Hayes's Bull commended.

Section 6. For the best Kerry Bull calved on or after Jan. 1, 1857.—5*l*., "Charlemont," Mr. Ralph S. Cusack, St. Doulogbs, Dublin; 3*l*., "Young Rory," Earl of Charlemont.

Section 10. For the best Polled Angus or Galloway Cow, in Calf, or in Milk, calved before 1859.—5*l*., Mr. O'Reilly, Dease, Ashbourne.

Section 12. For the best polled Angus or Galloway Heifer calved in 1860 or 1861.—4*l*., Mr. O'Reilly Dease. Mr. William Owen's Heifer commended.

Section 13. For the best Devon Cow in calf or in milk, calved previous to January 1, 1859.—4*l*., "Lady Carberry," Mr. William Coppinger.

Section 14. For the best Devon Heifer in calf or in milk, calved in 1859.—3*l*., "Young Ruby," Earl of Charlemont.

Section 15. For the best Devon Heifer, calved in 1860 or 1861.—3*l*., "Young Beauty," Earl of Devon.

Section 16. For the best Ayrshire Cow in calf or in milk, calved before 1859.—4*l*., Mr. Borthwick.

Section 17. For the best Ayrshire Heifer in calf or in milk, calved in 1859.—3*l*., "Maggie," Mr. Borthwick.

Section 18. For the best Ayrshire Heifer calved in 1860 or 1861.—3*l*., "Bessie Bell," Mr. Borthwick.

Section 19. For the best West Highland Cow in calf or in milk, calved previous to January 1, 1859.—4*l*., Mr. Alan Pollok, Creggs, county of Galway.

Section 21. For the best West Highland Heifer calved in 1860 or 1861.—3*l*., Mr. Alan Pollok.

Section 22. For the best Kerry Cow in calf or in milk, calved previous to January 1, 1859.—5*l*., "Johanna," Mr. F. J. M'Carthy, county of Clare.

Section 23. For the best Kerry Heifer in calf or in milk, calved in 1859.—5*l*., Mr. O'Reilly Dease; 3*l*., same owner.

Section 24. For the best Kerry Heifer, calved in 1860 or 1861.—3*l*., "Colleen Bawn," Mr. Ralph S. Cusack; 2*l*., Mr. Edward Roe, county of Kerry.

Challenge Cups.

The Fitzwilliam Walsh Challenge Cup, value 50 guineas, for competition by members of the South West Agricultural Society. For the best animal of the neat cattle class. Cup to be won three years in succession before it becomes the property of the winner. Awarded to heifer "Recherche," property of Mr. Thomas Bull.

The Fitzgerald Challenge Cup, value 10*l*. for competition by members of the South West Agricultural Society. For the best Bull that shall in the opinion of the judges be a thorough-bred animal. Cup to be won three years in succession before it becomes the property of the winner. Awarded to bull "Lord of Athelstane," the property of Lord Clarina.

The Earl of Devon Prize, a gold medal, value 5*l*., for competition by members of the South West Agricultural Society. For the best three breeding cows or heifers of any age, being in calf or having had live produce within six months previously. Won by "Rochester," "Pride of Adare," and "Pride of Munster," the property of Mr. Thomas Ball.

Class C.—Horses.

Section 1. For the best Stallion of any breed for agricultural purposes foaled on or after January 1, 1855, and previous to January 1, 1860.—25*l*., "Brown Stout," Mr. Thomas Forshaw, Lancashire; 15*l*., "Lord Clyde," Mr. John Mill, Donabate, county Dublin.

Section 2. The medal for the best Stallion in this section was awarded to "Brown Stout." Medal to breeder awarded to Mr. Forshaw, Lancashire.

Section 3. For the best draught mare in foal, or with foal at her foot, or having reared a foal in 1862,—15*l*., Clydesdale mare, "Bess," the property of Mr. John Mill, Donabate. For the second best, do.,—5*l*., Clydesdale mare "Molly," bred by Mr. Allan Pollok, Creggs, county of Galway.

Section 4. For the best draught filly, foaled in 1859,—[illegible] "Jean," bred by Mr. Allan Pollok. For the second best [illegible] —5*l*., "Moggie," property of Mr. Robert Shaw [illegible]

Section 5. For the best draught filly, foaled on or [illegible] January 1, 1860,—5*l*., "Sally," bred by Lord Clarina.

A Cup or piece of Plate, value 50*l*., for the best Stallion, Mare or Filly in any of the sections. "Brown Stout," the property of Mr. Thomas Forshaw, Lancashire.

The Croker Challenge Cup, for the best weight-carrying hunter. Won by thoroughbred Stallion "Young Captain," the property of Mr. Daniel Lane, sen., of Kanturk.

Prizes offered by the South West Agricultural Society—General competition—For the best blood mare for hunting purposes.—10*l*., won by hunting mare "Rosealla," the property of Mr. J. Bouchier, Bruff; 5*l*., won by hunting mare "Roseabella," same owner.

Sheep.

The Cork Challenge Cup, value 50*l*., for the best shearling

[illegible] Classes D and E. Won by one shear shearling Ram, [illegible] of Mr. George Turner, Exeter.

CLASS D.—LEICESTERS.

Section 1. For the best shearling Ram, 15*l.*, Mr. G. Turner; [illegible], Mr. Longfield, Castlemary; 5*l.*, Mr. Thomas Owen, [illegible].

Section 2. For the best Ram of any other age, 10*l.*, Mr. G. [illegible]; 5*l.*, Mr. Owen; 3*l.*, Mr. Meade, Ballinhassig.

Section 3. For the best pen of 5 shearling Ewes, 10*l.*, Mr. T. [illegible], Somersetshire; 5*l.*, Mr. Longfield, Castlemary.

Section 4. For the best pen of 5 Ewe Lambs, 5*l.*, Mr. T. [illegible]

CLASS E.—OTHER LONG WOOLLED SHEEP.

(Not qualified to compete as Leicesters.)

Section 1. For the best shearling Ram.—15*l.*, Mr. T. B. Browne, Gloucestershire; 10*l.*, same owner; 5*l.*, Mr. F. Page, [illegible].

Section 2. For the best Ram of any other age.—10*l.*, Mr. Wm. H. Carroll; 5*l.*, Mr. T. B. Browne; 3*l.*, Mr. T. B. [illegible]

[illegible] For the best pen of 5 shearling Ewes.—10*l.*, Mr. [illegible] Norris, Lincolnshire; 5*l.*, Mr. Longfield, Castlemary.

[illegible] 4. For the best pen of 5 ewe Lambs.—5*l.*, Mr. L. [illegible].

[illegible] Cork Challenge Cup, value 50*l.*, for the best shearling [illegible] Classes F. and G. The Judges recommend it to be [illegible] if it can be done according to the rules of the [illegible] animal exhibited being of merit sufficient to [illegible] the prize.

CLASS F.—SOUTH DOWNS.

[illegible] 1. For the best shearling Ram.—No entry.

[illegible] 2. For the best Ram of any other age. No merit.

[illegible] 3. For the best pen of 5 shearling Ewes. No merit.

[illegible] 4. For the best pen of 5 Ewe Lambs, 3*l.* No entry.

CLASS G.—SHORT WOOLED SHEEP.

(Not qualified to compete as South Downs).

[illegible] For the best shearling Ram, 10*l.*, Shropshire [illegible] Mr. Peter Broughton; 5*l.*, Shropshire Down Ram, Mr. [illegible] Hamilton, Dunboyne; 3*l.* Shropshire Down Ram, same owner.

Section 2. For the Best ram of any other age, 5*l.*, Shropshire [illegible] Rams, same owner; 3*l.*, Shropshire Down Rams, same owner.

Section 3. For the best pen of 5 shearling Ewes, 5*l.*, Mr. Charles Wm. Hamilton; 3*l.*, same owner.

Section 4. For the best pen of 5 Ewe Lambs, 3*l.* No entry.

CLASS H.—SWINE.

Section 1.—1st, 5*l.*, Berkshire Boar "Nero," Mr. Robert S. Backas, Butlerstown, county Waterford; 3*l.*, Berkshire Boar same owner.

Section 2.—1st, 4*l.*, for the best Boar over 18 and under [illegible] months' old, Berkshire Boar "Lord Nelson," Mr. Backas.

Section 3.—1st, 4*l.*, for best breeding Sow under 18 months' [illegible] Berkshire Sow "Victoria," property of Mr. Wm. Joyce, [illegible] Farm, county Waterford; 2*l.*, Berkshire Sow "Colleen," property of Sir Robert Paul.

Section 4.—1st, 4*l.*, for best breeding Sow over 18 months' old, Berkshire Sow "Gipsy," property of Mr. Wm. Joyce; 2*l.*, Yorkshire Sow, Mr. John Kenny, Model Farm, Clarina.

Section 5.—1st, 8*l.*, for best lot of three breeding Pigs, Berkshire Pigs, Mr. Wm. Joyce; 4*l.*, Berkshire Pigs, same owner. The medal for the best Boar in this section was awarded to Yorkshire Boar, "Young Volunteer," belonging to Mr. Langtry.

Section 6. Small Breed.—1st, 5*l.*, for best Boar under 18 months old, Yorkshire Boar "Volunteer," Mr. George Langtry, of Kilmore House, Lurgan.

Section 7.—No merit in section for best Boar over 18 months' and under 36 months' old.

Section 8.—1st, 4*l.*, for best Breeding Sow under 18 months' old, "Princess," the Commissioners of National Education; [illegible] by White Sow, Mr. Langtry.

Section 9.—1st, 3*l.*, for best Breeding Sow over 18 months' [illegible] by Sow the property of Mr. Thos. Franks, Mallow. [illegible] for 2d prize of 2*l.*

IMPLEMENTS.

The *Farmers' Gazette* Challenge Cup, value 50 guineas, presented by Messrs. W. S. and E. Purdon, for the best general [illegible] of implements, suited to the agriculture of Ireland, [illegible] by Mr. Thomas M'Kenzie, Munster Agricultural Hall, [illegible] Mr. Robert Gray, Belfast, commended.

The Judges awarded medals to Welshe's prize bruiser, Ken-[illegible] mower, and Clayton and Co.'s elevator.

[illegible] were also given for the best poultry, and for farm [illegible] Flax, and other products.

YORKSHIRE AGRICULTURAL.—The following is the address of Mr. H. S. Thompson, M.P., the President [illegible] Society, at the annual meeting last week, to which we referred last Saturday:—

In proposing the toast—"Success to the Yorkshire Agricultural Society," he said:—The first meeting [illegible] was held for the formation of the Society was held [illegible] Gale in August, 1837, so that the Society had existed [illegible] for a quarter of a century, and it would be interesting briefly to review their progress and proceedings during that time, and point out their principal failures and successes. As he had been one of the [illegible] of the Society, and had taken an active part [illegible] its management from its commencement, he was thoroughly acquainted with the views and objects which prompted its formation, and he could safely say [illegible] in almost all respects the Yorkshire Agricultural Society had more than realised the expectations of its founders. The principal disappointment that they had [illegible] with was that they had failed to raise the standard [illegible] perfection in their stock, or to increase the maximum produce in their crops. He had been a constant [illegible] at the Shows of this Society, and a very fre-[illegible] at those of other Societies, and he was confident [illegible] the prize animals shown by Lord Spencer, Messrs. [illegible], Bates, Wiley, &c., in the early days of this Society [illegible] good in every respect as those shown by Colonel [illegible], Mr. Fawkes, Lord Feversham, and other [illegible] breeders of the present day. The same might be [illegible] of the other classes of stock. Then as to their [illegible]—on the best land in a good season it was usual, [illegible] years ago, to grow five quarters of Wheat to the acre, [illegible] uncommon to grow six; occasional instances [illegible] be found where the produce was still greater, and [illegible] yet to learn that they could do more now. This [illegible] certainly been a disappointment to the early pro-[illegible] of the Society. They were keen and sanguine [illegible], and confidently expected to be able considerably [illegible] increase their maximum produce. They knew that the obstacle to the growth of heavy crops was that they were laid flat by wind and rain to the great injury of the produce, but they also knew chemically the nature of the substance which gave stiffness to the straw, and it seemed probable, until it had repeatedly been tried in vain that they could supply that material, called silicate of potash, in sufficient quantity to enable a much larger crop of corn to stand upright than any yet grown. But as yet they had made no progress in this direction. Now, as heretofore, the farmer who makes his land very rich has the mortification of seeing his splendid looking crops dashed to the ground and his hopes of a large yield entirely destroyed. Then what had been done in the way of root crops? He would give them an illustration on this point, which told its own story. Fully 20 years ago an old friend of his, to whom he was paying a visit, told him that he could grow 100 tons of Swedes to the acre. He looked rather incredulous. His friend took him to his Turnip-house and showed him some splendid roots. There, said he, those Turnips weigh 9 or 10 lb. apiece, and some of them 14. But what of the 100 tons to the acre? Oh, said he, with such Turnips as those it can be easily done; at 2 feet between the rows and 1 foot between the plants there are 22,000 roots to the acre. If each weighed 7 lbs. that would be 70 tons, but if we raise the average weight to 10 lb., and some of these weigh 14, that would be 100 tons to the acre. "I merely asked that he would be kind enough to invite me to come and see them as soon as he had accomplished it. Year after year passed away, and I never failed to ask whether he had yet grown the 100 tons to the acre. The answer was always no! not yet!" One year it was the fly, another it was the wireworm, a third the seedsman had to bear the blame, a fourth the weather was in fault, but somehow or other his friend lived to a good old age, and died without growing 100 tons of Swedes to the acre, or even 50.

If then, their best cattle and their best crops were no better now than in 1837, had the Society effected nothing, had Yorkshire farming not advanced during that time? On the contrary, he sincerely believed that never since the world began had so great improvements been realised in so short a time. If select specimens of cattle or sheep had not reached a higher standard of perfection, good stock had been more generally diffused, and what was still more satisfactory, it was becoming quite uncommon to see bad stock. If their best crops in the best seasons did not yield more per acre, the average produce of the country had been largely increased. The wet soils had been dried, the strong soils more thoroughly broken up, and the whole of the land managed with greater intelligence, and consequently with greater success. Their means of cultivation had been largely increased. One of the most striking changes that had taken place during the quarter of a century which they were reviewing was that the whole machinery of the farm had during that period been changed. It would surprise many of those present to learn that at the second annual show of the Society held in Leeds, in 1839, 424*l.* was offered in prizes for stock, 65*l.* for wool, roots, seeds, &c.; 80*l.* for reports on various agricultural subjects, and only 30*l.* for implements. The Council of the Society were then, as now, anxious to employ the funds of the Society in the way they thought most conducive to agricultural improvement; yet, out of 600*l.* offered in prizes 30*l.* only was allotted to the show of implements. Now they offered 250*l.*, and the increase in the numbers and merit of the implements was far more than in proportion to the increase in the prizes offered. The most striking feature in this general improvement of agricultural machinery had been the introduction of steam power. This great triumph of art was also in all its aspects a great agricultural success, for it had vastly increased the efficiency of agricultural machinery and its economy of working, and yet without injury to the agricultural labourer. The first steam threshing machine brought into the Society's show-yard was at Hull in 1841, and many remonstrances were made to him as one of the Council, against allowing so dangerous an engine to work in a crowded showyard. As they well knew, it was now more common to thresh by steam than by any other power. The latest great improvement in this department was the introduction of the steam plough, which they had had so good an opportunity of seeing at work during the present meeting. That work had been well done, and he had been frequently asked to give his opinion on the exact position of this question at the present moment. He would endeavour to do so without either under or overstating the matter. In few words, then, he should say that the efficient cultivation of the land by steam-power had been thoroughly accomplished, but that the most economical mode of applying it had by no means been finally settled, but that it was making rapid progress, and that in a few years steam ploughs would be as common as steam thrashing machines were now. He was told by the manufacturer of Fowler's steam ploughs that since the 1st of January, 1862, he had turned out 45 sets of engines and apparatus, of which some few had gone abroad, but the great majority had gone into the hands of Englishmen. This showed that the employment of steam for the cultivation of the land was rapidly increasing, and he thought that the present was an occasion on which he might properly ask them to consider to whom it was due that the steam plough had attained its present efficiency? These things did not make themselves, and when a great improvement had been realized, the authors of it ought not to be left unnoticed. Many persons had helped forward the question of steam cultivation, but the two men who appeared to have the greatest claim on their gratitude, were Messrs. Fowler & Smith. These men had spared neither labour nor expense, and in the face of ridicule and incredulity had with true British pluck persevered until they had triumphed over the numerous difficulties and repeated failures which they had encountered, until they had brought the steam plough into a sufficiently perfect state for the farmer to take it up; and he would presently ask leave to propose their healths with three hearty English cheers.

The improvements in agricultural implements of all kinds during the last 25 years have been so great and so general that he could only allude to them in the most general terms. During that period they had witnessed the rise and progress of the steam threshing machines, of the reapers and mowing machines, and the great characteristic of the period had been an enormous improvement in the machinery for carrying on the business of a farm, and a corresponding advance in the intelligence of the tenant farmers by whom these improvements had been brought into active operation.

Having devoted so much time to a consideration of the past, he would in the briefest possible way allude to the future. One of the most important points to which he wished to call their attention was the covering of farmyards. This was easily managed, certain in its effects, and would produce an amount of benefit both to stock and crops which would surprise those who had not witnessed it. He had constructed two within the last few years, and he was convinced that the manure made in them was fully 25 per cent. better than that made in open yards. Where new farmsteads were being erected, the additional cost of covering the yard was scarcely appreciable as covered sheds for cattle were rendered unnecessary, and other changes could be made which reduced the cost, but where applied to existing buildings the cost was about 5*s.* per square yard of ground covered. This outlay was soon repaid, as it at once increased the farmer's means of fertilizing his land 25 per cent., besides improving the condition of his stock, and saving expense in moving the manure to heaps, &c. The toast he had to propose was "Success to the Society," and he had shown that hitherto they had had great success. He had no fears for the future. When Englishmen had a good cause in hand, they never failed, and this was as good a cause as could well be imagined; it was no less than to provide food and employment for a nation.

Reviews.

Instructions on the most improved mode in the Cultivation and Preparing of Flax for Spinning, &c. Also *Instructions on the mode of separating the Flax and Hemp fibre from the wood on which it is produced, &c.* By J. Hill Dickson, Lower Tooting, London.

The above are a few words only of of a most elaborate title page—in which the contents of a very full and instructive work are described. Mr. J. H. Dickson was a constant correspondent of the *Agricultural Gazette* 12 or 14 years ago, when Flax culture was more industriously and importunately advocated than it is now. There are, however, districts large enough where the cultivation of it is still maintained, and where the cultivators of it are numerous enough to ensure a sale for a very explicit book of instructions. And accordingly this volume—a second edition of one formerly noticed in our columns as containing such instruction, together with much other useful information—is likely to obtain a ready sale.

Mr. Dickson has invented machinery and processes by which Flax and other fibres are brought into such a condition as enables them to be dealt with and manufactured by Cotton machinery. And as his book is likely to induce the cultivation of such fibres, good would no doubt be done by its general circulation both in this country and our colonies. Failing cotton, the next best thing seems to be these fibres treated by Mr. Dickson's process. He has forwarded to us specimens which have been prepared by him from the Rheea—an Indian plant—of which a large supply were it available, being convertible by Mr. Dickson's process, would go far to set the Cotton mills to work again. Mr. Dickson has had long experience both in the growth and manufacture of Flax, and his book would no doubt be of service both to growers and to manufacturers were it widely distributed and read both in our colonies and at home.

Miscellaneous.

Leather Soles for Horse Shoes.—Observing in your valuable Paper of last week a paragraph from a veterinary surgeon deprecating the use of leather soles under horses' feet, being, as he says, detrimental to the constitution of the horse in many ways, as an old horse master and sportsman I most decidedly differ from him. "Facts are stubborn things." I have a

carriage horse, now 20 years old, and which has since I have had him, the last 12 years, been shod with leather during the summer months, has never been sick or sorry, and is as healthy and in as nice condition as any horse need be. I had an old pony, 22 years old, likewise, who never suffered in the least, as well as others; therefore, from these facts, I most unhesitatingly deny his theory. *Veritas, July* 31.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Aug. 13, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.										Inches.		
Thursday ...	7	29.28	66°	60°	S.	4	6	70°	54°	115°*	52°	0.48	62½°	61°
Friday ...	8	29.52	60	54	W.	3	4	66	50	109	48	0.01	62	61
Saturday ...	9	29.77	57	53	N.W.	3	6	60	52	112	50	0.07	62	61
Sunday ...	10	30.02	59	53	W.	2	6	62	44	111	39	..	61½	60½
Monday ...	11	30.14	60	55	W.	2	6	66	53	93	51	..	61	60
Tuesday ...	12	30.16	63	56	[illegible]	1	6	65	55	86	53	..	61	60
Wednesday	13	29.99	60	58	S.W.	2	7	71	50	108	47	..	61½	60

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Calendar of Operations.

JULY.

East Gloucestershire. — Until within the last fortnight with the exception of about nine days in the latter part of June, since the beginning of March, the weather has been such as to defeat every attempt to cultivate and manage land in the manner it should be. This, together with the low temperature, has been most unpropitious for the probability of an abundant harvest, and therefore most of the crops wore an unpromising appearance. The glorious weather of the last fortnight, however, has operated wonderfully in improving the prospects of the crops generally. The effect of the long continued cold wet weather operated variously on the different crops, according to the condition and nature of the land, from which cause the at all times difficult task of estimating the probable result of a harvest before it is gathered is greatly increased on the Vale part of this district; on the lighter descriptions of land some good Wheat crops may be seen, but on the wet, undrained and badly cultivated land the crop will doubtless be very deficient. The Barley, too, where it has been planted, presents even a worse aspect. Beans give a much better promise. On the Cotswolds the Wheat crop varies in appearance quite as much, the recent winds having in some places blown it about a good deal so as to become knee broken. Considering that it had not arrived so nearly at maturity as the Vale Wheat, this fine weather may exercise greater good in filling and perfecting the grain; indeed, we believe this to be the case from careful personal inspection. Barley on the Cotswolds presented a most unpromising appearance, but the dry and warm weather has greatly improved it; still this crop cannot, under the most favourable circumstances, be anything approaching to an average one. Oats are better. Haymaking is now concluded. The quantity of hay made is above the average, though a considerable quantity has been more or less injured by the rains. Potatoes show indications of blight. The root crops have given farmers this season the greatest possible trouble and vexation. From the perpetual wet weather it seemed more like cultivating weeds than Turnips, for every operation induced greater growth of rubbish instead of clearing, and a proper seed bed. Besides, where Swedes were planted in proper season the fly in many instances destroyed them, so that very few promising fields are seen. Many finding the season advancing, and knowing the impossibility of cleaning the land planted, without cleaning a fair plant has been obtained, but a considerable portion of land intended for Turnips will not be planted at all. The ram sales are now nearly over, some below and others above the prices of former years.

Notices to Correspondents.

*** We have to acknowledge the receipt of communications from students of the Royal Agricultural College, from Messrs. Raynbird & Co., and from many other correspondents, which must unfortunately be delayed till next week. The report of the steam ploughing at York is also unavoidably postponed. The substance of it was given in a leading article last Saturday.

Osiers: *Enquirer* writes, Will Mr. Forbes, or any one conversant with the matter, say if sets of Osiers of 1-year's growth will do to plant, and if not, how older sets are to be obtained? Also, supposing men are set to dig up a boggy meadow 24 inches deep, can the sets be put in as they go on?

MESSRS. SAMUELSON & CO.'S
NEW PATENT SELF-RAKING REAPER,

WITH SIDE DELIVERY IN SHEAVES (RANSOME'S AND SAMUELSON'S PATENTS),

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And after that date during the HARVEST, at BANBURY.

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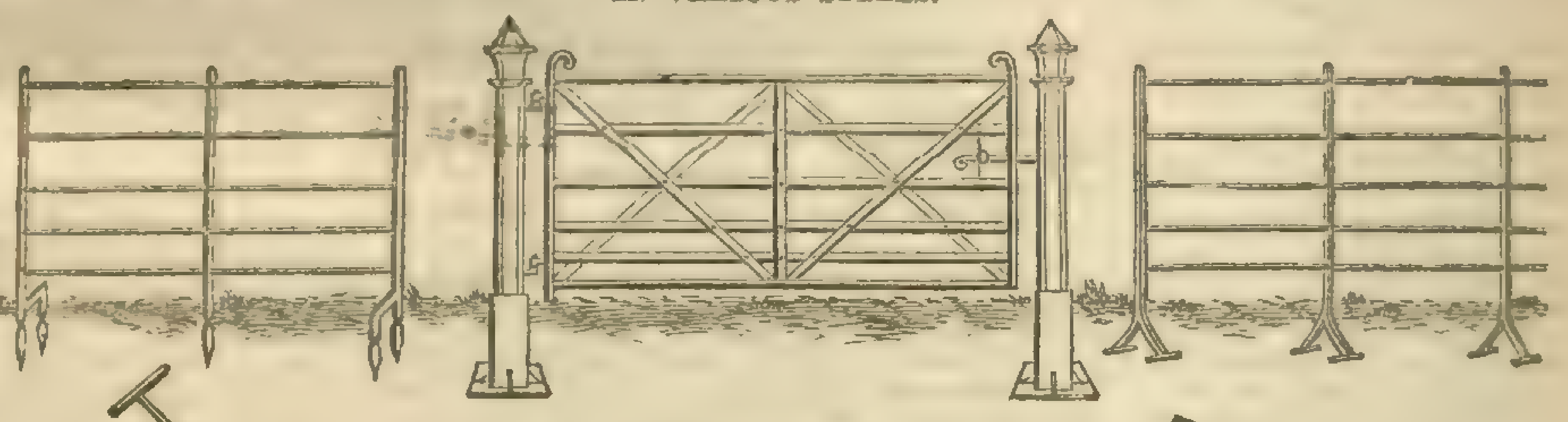

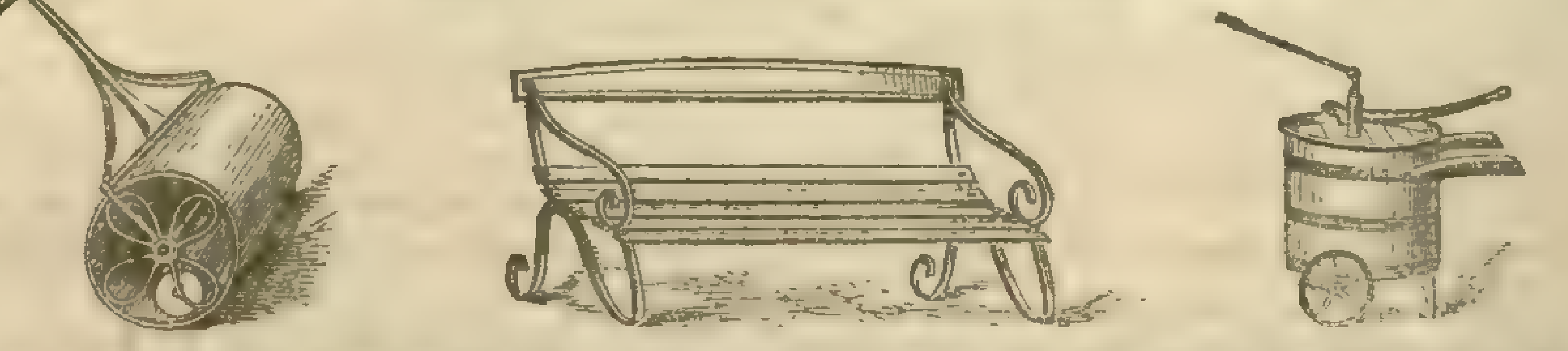

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Drab or Portland Do.
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} 30s. per cwt.

Lead Color ... ...
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} 26s. "

Bright Red ... ...
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Blue (for Carts & Waggons)
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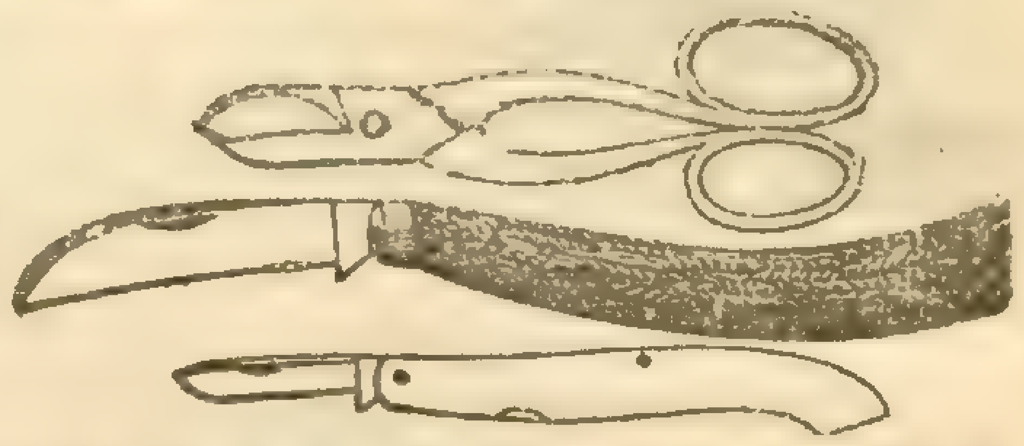

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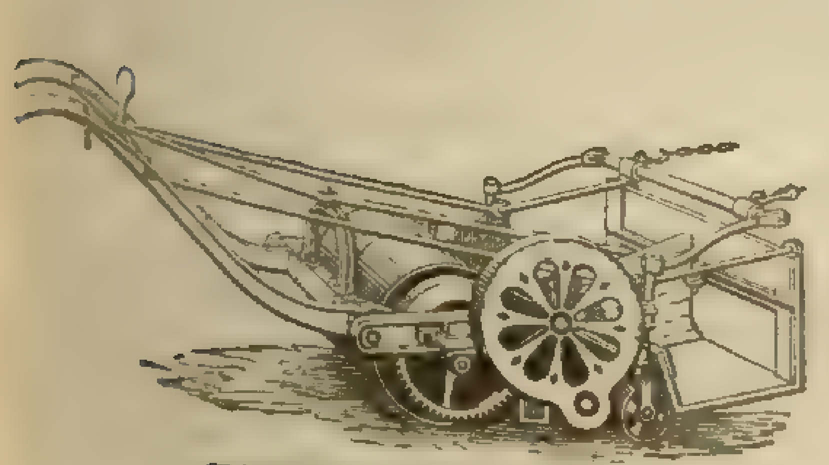

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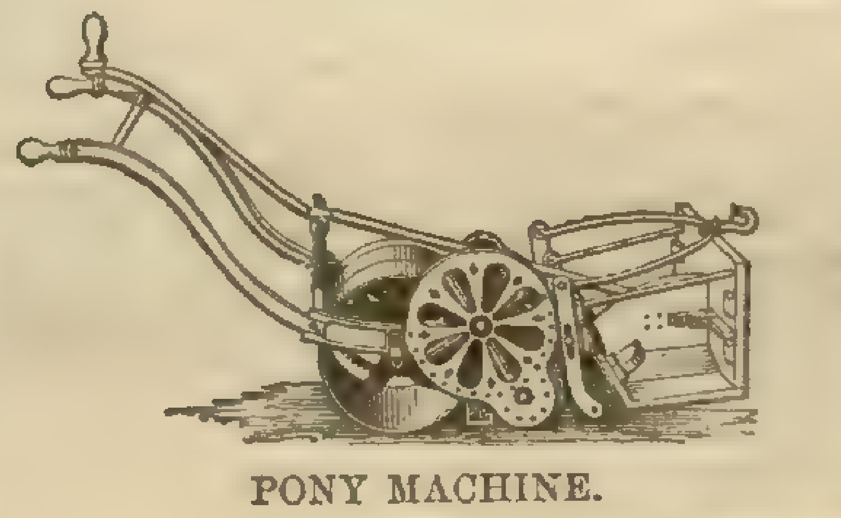
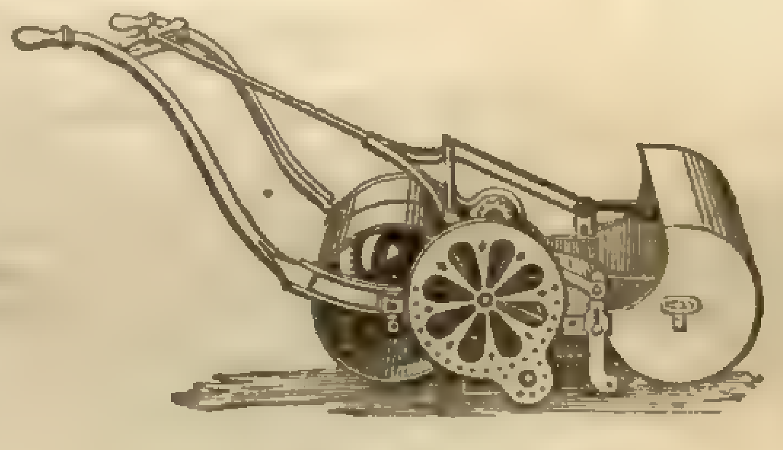


PONY MACHINE.



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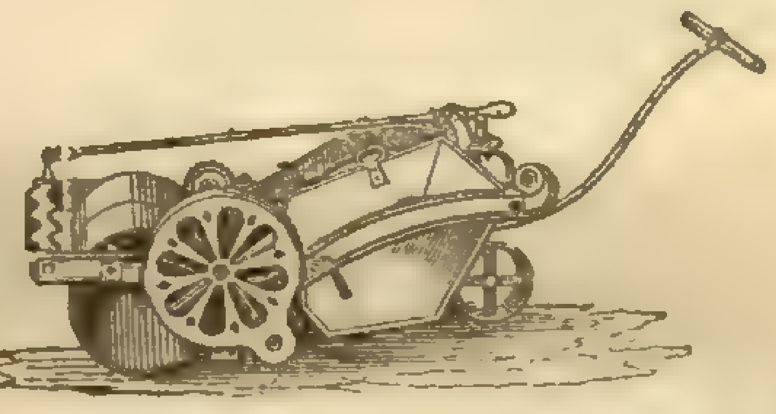

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Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40*s.*; for Nos. 3 and 4 Machines, 30*s.*; Box, with complete Set of Tools, 10*s.*; Silent Movement, 20*s.*; Boots for Horses' Feet, 24*s.* per set.

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10 ,, ...	3	3
11 ,, ...	4	0
12 ,, ...	5	6
13 ,, ...	7	6
14 ,, ...	10	0
15 ,, ...	14	0
16 ,, ...	18	6

TERRA COTTA STANDS FOR SAME.

6 inches	1s.	6d.	12 inches	2s.	9d.
7 ,, ...	1	6	13 ,, ...	3	0
8 ,, ...	1	9	14 ,, ...	3	3
9 ,, ...	2	0	15 ,, ...	3	6
10 ,, ...	2	3	16 ,, ...	3	9
11 ,, ...	2	6			

GLASS STANDS FOR SAME.

6 inches	1s.	0d.	12 inches	3s.	0d.
7 ,, ...	1	3	13 ,, ...	3	6
8 ,, ...	1	6	14 ,, ...	4	0
9 ,, ...	1	9	15 ,, ...	4	6
10 ,, ...	2	0	16 ,, ...	5	0
11 ,, ...	2	6			

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Glazed with Stout Sheet Glass, and Slate Bottoms.

	£	s.	d.		£	s.	d.
12 inches long ..	0	18	0	18 inches long ..	1	7	0
14 ,, ..	1	1	0	20 ,, ..	1	10	0
16 ,, ..	1	4	0	24 ,, ..	1	16	0

Larger or smaller sizes in proportion.

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	s.	d.			s.	d.	
12 inches diameter	5	0	each	17 inches diameter	12	0	each
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14 ,,	8	0	,,	19 ,,	14	0	,,
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16 ,,	10	0	,,				

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6½ ,, by 4½ ,,	10 ,, by 8 ,,	15 ,, by 10 ,,
7 ,, by 5 ,,	11 ,, by 9 ,,	12 ,, by 11 ,,
7½ ,, by 5½ ,,	12 ,, by 9 ,,	13 ,, by 11 ,,
8 ,, by 6 ,,	13 ,, by 9 ,,	13½ ,, by 11½ ,,
8½ ,, by 6½ ,,	12 ,, by 10 ,,	
9 ,, by 7 ,,	13 ,, by 10 ,,	

Best. 23s. 2nds. 18s. 6d. 3rds. 14s. 6d. 4ths. 12s. 8d. } Per 100 feet

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 ,, by 11 ,,	17 ,, by 12 ,,	22 ,, by 15 ,,
17 ,, by 11 ,,	18 ,, by 12 ,,	24 ,, by 15 ,,
18 ,, by 11 ,,	22 ,, by 12 ,,	20 ,, by 16 ,,
13 ,, by 12 ,,	17 ,, by 13 ,,	20 ,, by 17 ,,
14 ,, by 12 ,,	23 ,, by 13 ,,	20 ,, by 18 ,,
15 ,, by 12 ,,	22 ,, by 14 ,,	

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16 oz.	22s. 0d.	18s.	15s. 0d.	12s. 6d.	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

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21 oz. 32 oz.

Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.
Genuine White Lead, 32s. p. cwt | Linseed Oil Putty, 8s. per cwt.
Anticorrosion Paint, 34s. ,, | Patent Dryers, 28s. to 42s. ,,

CRYSTAL GLASS SHADES. EBONY and GILT STANDS.
HARTLEY'S IMPROVED PATENT ROUGH PLATE.
, Not accountable for breakage.
SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

BURGESS AND KEY'S COMBINED GRASS MOWING and REAPING MACHINES are made to cut the heaviest crops of Grass, both the Wheels being geared, and sufficient weight in the Machine to give grip on the ground.

The price of B. & K.'s Mower, 25l.; Combined Mower and Reaper, 30l.

BURGESS & KEY'S celebrated SELF DELIVERY REAPING MACHINES.

The superiority of this Machine over every other in use has been proved by the most influential farmers in England. Price 36l.

BURGESS & KEY, 95, Newgate Street, London, E.C.
, Full particulars sent on application.

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.

£2. 2s.

An efficient means of Extinguishing Fires at their commencement Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.

One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.

It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.

It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.

No Establishment, either private, commercial, or manufacturing, should be without one.

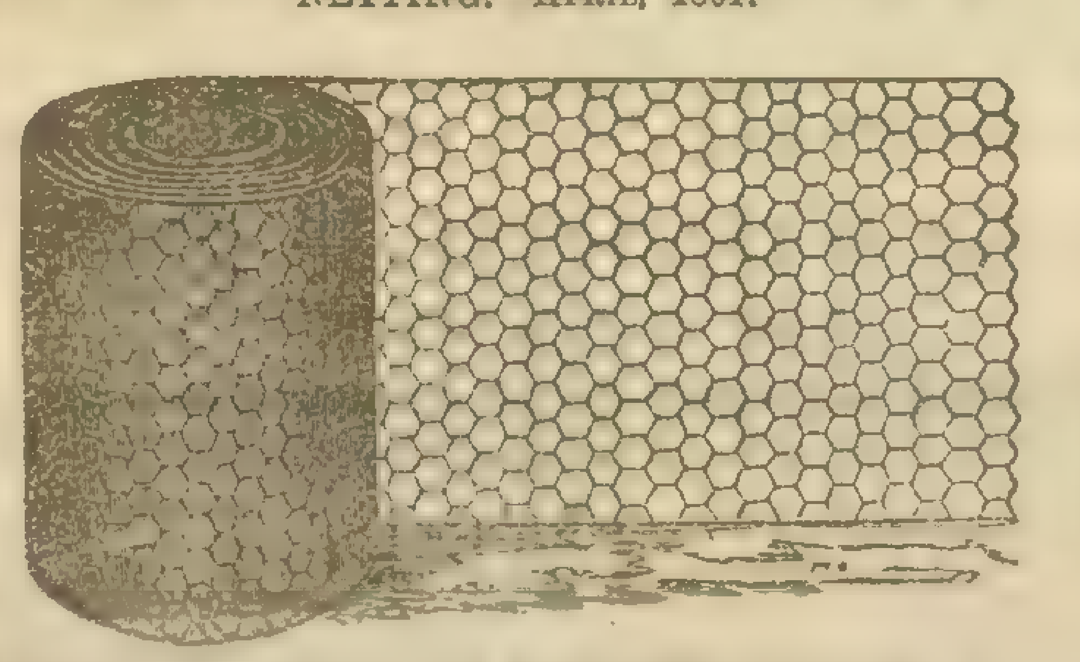
Six feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12s. Longer lengths of Suction at 1s. 6d. per foot.

May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,

JOHN WARNER & SONS, Crescent, Cripplegate, London, E.C.

BARNARD, BISHOP, AND BARNARDS, Norwich.

FURTHER REDUCTION in the PRICE of WIRE NETTING.—APRIL, 1861.



BARNARD, BISHOP, & BARNARDS beg to inform their friends and the public that they have made a further reduction in the prices of Machine made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch mesh, 24 inches wide..	No. 19	.. 4¼d.	.. 3½d.
2-inch ,, ,, ,, ..	,, 18	.. 5	.. 4
2-inch ,, ,, ,, ..	,, 17	.. 6½	.. 5
2-inch ,, ,, ,, ..	,, 16	.. 8	.. 6½
1⅝-inch ,, ,, ,, ..	,, 19	.. 4¾	.. 4
1⅝-inch ,, ,, ,, ..	,, 18	.. 6	.. 4¾
1⅝-inch ,, ,, ,, ..	,, 17	.. 7	.. 5½
1⅝-inch ,, ,, ,, ..	,, 16	.. 9	.. 7

All the above kinds can be made any width (under 6 feet), at proportionate prices.

Strong Galvanised Poultry Netting, 7½d. per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11d. per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.

Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.

Five wires, 3 feet 6 inches high, pronged Standards, 8 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10d. per yard.

The same with Galvanised Wire Rope, 1s. per yard.

Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.

, Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

NEW ARCHANGEL MATS.
Price per 100 on application to
JAS. CARTER & Co., 237 & 238, High Holborn, W.C.

Sacks. Bags. Mats.

JAMES T. ANDERSON, SACK and BAG MAKER, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), supplies SEED BAGS at the following low prices:—

2 Bushel Bags..8s. 9d. per doz. | ½ Bushel Bags..4s. 9d. per doz.
1 Bushel Bags..6s. 3d. ,, | Peck Bags ......3s. ,,

Coarser Bags much cheaper.
Bushel Grass Bags at 1s. each. | 4 Bushel Sacks at 1s. each.
ARCHANGEL and PETERSBURG MATS.

WM. BLAKE'S DESCRIPTIVE and CULTURAL SEED POCKETS, GERMAN SEED ENVELOPES, &c.
Catalogues and Samples on application.
60—70, Howard Street, Glasgow.

SHAW'S TIFFANY.—The lightest, cheapest, and most durable of all materials for Shading Conservatories and Hot-houses is SHAW'S TIFFANY. As a protection from cold winds and scorching heat, nothing equal to SHAW'S TIFFANY. For effectually preserving Fruits and Seeds from the Attack of Birds, Wasps and Insects, use SHAW'S TIFFANY.

Sold by all Nurserymen and Seedsmen. Samples and Prices on application.

J. SHAW & Co., Oxford Street, Manchester.

TANNED NETTING for the Protection of Fruit Trees, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Cotton Netting, Tiffany, Scrim Canvas for Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c.

Be particular, JOHN EDGINGTON & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the SCORCHING RAYS of the SUN

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.

ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

HENRY J. MORTON AND CO.
2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern

for Cottage Houses, &c., to contain 50 gallons, 26s.; 80 gallons, 31s. each; and 140 gallons, 37s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

Galvanised Iron Pumps

for Liquid Manure or Domestic Use, 3 inches diameter, 26s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.

Galvanised Iron Swing Water Barrows

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35s. 0d. each.

Garden Sculpture.

FOUNTAINS, STATUES, TAZZAS, VASES, &c., executed in Marble and Stone by J. FORSYTH, 21, Hall Street, Camden Town, London, N.W. Designs and Estimates forwarded free of expense.

Two Prize Medals 1862.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.

Manufactory: Stoke-upon-Trent.—Aug. 16.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro-metallic and other Stable Paving Bricks of great durability. Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

TWO HUNDRED SETS
OF
STEAM PLOUGHING and CULTIVATING APPARATUS
HAVE NOW BEEN SENT OUT BY
JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD.

Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

Card.

SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool. Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

E. DENCH'S HORTICULTURAL WORKS, 152, King's Road, Chelsea, S.W., Manufacturer of every description of HORTICULTURAL BUILDINGS ether in Wood or Iron, or Galvanised-Iron, Glazed with Putty or without. HOT WATER APPARATUS Manufacturer.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hot-houses, and Laying out Kitchen Gardens and Vineries. Advice on Planting, &c. Apply to JOSEPH MEREDITH, Vine Cottage, Garston, near Liverpool. References to Noblemen and Gentlemen and their ... sent on application.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. ... and Cast-iron Boilers, Saddle, Conical, Cylinder, ... and Elliptic, from 24s. each. Improved Boilers and ... to use without brickwork, 50s. each. Valves from ... each. Beck's Patent Valves. Furnace Doors, Furnace ... Supply Cisterns, and Builders' Castings of every description ... stock, at ... WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

Greenhouses, Orchard-houses, and Conservatories.

H. FREEMAN'S HORTICULTURAL WORKS, Triangle, Hackney, London, N.E.: established 20 years. Good ready-made GREENHOUSES, glazed, ready for fixing, ... by 13 feet, 80l.; 21 by 13, 28l.; 12½ by 10, 15l. ORCHARD-HOUSES 10 per cent. cheaper. A large assortment. Estimates given for heating, or any branch in ... wood.

Improved Garden Furniture to Imitate Cane in Wrought Iron.

HAAS DEMRATH begs to call the attention of the Nobility and Gentry to his Stock of GARDEN SEATS, ... COUCHES, and General IRON and WIRE-WORK, suited for Conservatories, Gardens, &c. Owing to his success on the Continent, the Manufacturer has been induced to open ... in England, and an inspection of Stock is respectfully solicited at ... Show Rooms, 47, High Street, New Oxford Street, W.C.

West of England, Ireland, and Wales.

VINCENT SKINNER (*late Partner with* J. WEEKS & Co.), HORTICULTURAL BUILDER and HOT-WATER APPARATUS MANUFACTURER. HEATING on the ONE-BOILER SYSTEM. Plans and Estimates on application.

VINCENT SKINNER, Bridewell Street, Bristol.

ELEVATION.

SECTION.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough, has recently patented a Valve which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under.

Two-inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s.

A liberal discount to the Trade.

JOSEPH SMITH, HORTICULTURAL BUILDER, New Road, Hammersmith, W., has for SALE a quantity of ... and other LIGHTS, and five ready-made GREENHOUSES, viz.:—

	£	s.
... Roof, 27 feet long 16 feet 6 inches wide for ..	47	10
..., 24 feet by 12 feet 6 inches	34	0
... glazed with 21 oz. glass, 100 feet by 13 feet ..	100	0
... ditto, 22 feet by 12 feet	28	0
... ditto, 12 feet by 7 feet	15	0
... and Front Lights for a Lean-to House, 50 feet by ... feet; 560 square feet	30	0
Also Roof Lights for Houses, 45 feet by 18 feet; ... square feet	31	0
... (10 feet 6 inches by 4 feet 2 inches) Lights,	35	0
... 6 feet 10 inches by 4 feet 2 inches	20	0
... 4-feet Lights, 15s. each, or the lot for ..	37	0

Houses made to order from 1s. per sq. foot; if Unglazed, 8d. ... Lights with 15-oz. Glass, 8d.; 21-oz., 9d. per foot.

*** Estimates given for Heating by Hot Water.

RUSSIAN DINNER TABLE FLOWER POT COVERS.—Commended by the Royal Horticultural Society. A set of 12 different sizes sent, carriage paid, for 21s. Priced List, with specimens, sent free by post.

... & SUGDEN, Seed Merchants and Florists, 12, King Street, Covent Garden Market, W.C.

BENJAMIN EDGINGTON'S TEMPORARY ROOMS, Lined, Boarded, and Decorated.

MARQUEES and TENTS of all dimensions, for Horticultural ... &c., on sale or hire.

FLAGS and BANNERS of every description, for sale or hire.

RICK CLOTHS, New and Second-hand, with Poles, &c., ... etc.

Address, BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, Southwark, S.E. No other Establishment.

METCALFE, BINGLEY, AND CO.'S NEW PATTERN TOOTH BRUSHES, Penetrating Unbleached ... Brushes, genuine Smyrna Sponges, and every description of Brush and Comb and Perfumery for the toilet. METCALFE'S ... Alkaline Tooth Powder, 2s. per box.

THE FAIRY BOUQUET.—This delicious perfume was originally discovered by one of Titania's principal attendants. It is made from wild flowers, culled by fairy hands from "the bank whereon the wild Thyme grows." The authenticity of the recipe is vouched for with the same degree of certainty as is the existence of Titania herself. It is now prepared solely by METCALFE, BINGLEY, & Co., Perfumers, &c., 130B and 131, Oxford Street, London, W.—In bottles, 2s., 3s. 6d., and 5s. each.

Notice.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), HORTICULTURAL VALUER, begs to inform his friends and the public that he has REMOVED from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

CHUBB & SON.—"For Perfection of Workmanship and Construction of Locks, also for the Manufacture of Iron Safes," Prize Medal awarded at International Exhibition.

CHUBB'S PATENT SAFES, the most secure against Fire and Thieves.

CHUBB'S FIRE PROOF STRONG ROOM DOORS; CHUBB'S PATENT DETECTOR LOCKS and STREET DOOR LATCHES; CHUBB'S CASH and DEED BOXES.

Illustrated Price List gratis and post free.

CHUBB & SON, 57, St. Paul's Churchyard, London, E.C.

BREIDENBACH'S WOOD VIOLETS SCENT, 2s. 6d.

BREIDENBACH'S WOOD VIOLET PHILOCOME.
BREIDENBACH'S WOOD VIOLET COLD CREAM.
BREIDENBACH'S WOOD VIOLET MILK for the Complexion
BREIDENBACH'S WOOD VIOLET SACHET.
BREIDENBACH'S LAST NEW PERFUME.

H. BREIDENBACH,
157B, New Bond Street (facing Redmayne's).

HANDSOME BRASS and IRON BEDSTEADS.—HEAL & SON'S Show Rooms contain a large assortment of Brass Bedsteads, suitable both for home use and for tropical climates; handsome Iron Bedsteads with Brass Mountings and elegantly Japanned; Plain Iron Bedsteads for Servants; every description of Wood Bedstead that is manufactured, in Mahogany, Birch, Walnut-tree Woods, Polished Deal and Japanned, all fitted with Bedding and Furniture complete, as well as every description of Bedroom Furniture.

HEAL AND SON'S ILLUSTRATED CATALOGUE, containing Designs and Prices of 100 Bedsteads, as well as of 150 different articles of Bedroom Furniture, sent free by post.

HEAL & SON, Bedstead, Bedding, and Bedroom Furniture Manufacturers, 196, Tottenham Court Road, W.

THE PERFECT SUBSTITUTE for SILVER.—The REAL NICKEL SILVER, introduced more than 25 years ago by WILLIAM S. BURTON, when PLATED by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver. A small useful set, guaranteed of first quality for finish and durability, as follows:—

	Fiddle or Old Silver Pattern. £ s. d.	Thread or Brunswick Pattern. £ s. d.	Lily Pattern. £ s. d.	King's or Military Pattern. £ s. d.
12 Table Forks	1 13 0	2 4 0	2 10 0	2 15 0
12 Table Spoons	1 13 0	2 4 0	2 10 0	2 15 0
12 Dessert Forks	1 4 0	1 12 0	1 15 0	1 17 0
12 Dessert Spoons ..	1 4 0	1 12 0	1 15 0	1 17 0
12 Tea Spoons	0 16 0	1 2 0	1 5 0	1 7 0
6 Egg Spoons, gilt bowls..	0 10 0	0 13 6	0 15 0	0 15 0
2 Sauce Ladles	0 6 0	0 8 0	0 9 0	0 9 6
1 Gravy Spoon	0 6 6	0 10 0	0 11 0	0 12 0
2 Salt Spoons, gilt bowls..	0 3 4	0 4 6	0 5 0	0 5 0
1 Mustard Spoon, gilt bowl	0 1 8	0 2 3	0 2 6	0 2 6
1 Pair of Sugar Tongs ..	0 2 6	0 3 6	0 4 0	0 4 6
1 Pair of Fish Carvers ..	1 4 0	1 7 6	1 10 0	1 12 0
1 Butter Knife	0 2 6	0 5 6	0 6 0	0 7 0
1 Soup Ladle	0 10 0	0 17 0	0 17 0	1 0 0
1 Sugar Sifter	0 3 3	0 4 6	0 5 0	0 5 6
Total	9 19 9	13 10 3	14 19 6	16 4 0

Any article to be had singly at the same prices. An Oak Chest to contain the above, and a relative number of Knives, &c., 2l. 15s. Tea and Coffee Sets, Dish Covers and Corner Dishes, Cruet and Liqueur Frames, &c., at proportionate prices. All kinds of re-plating done by the patent process.

BEDSTEADS, BATHS, and LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS, devoted exclusively to the SEPARATE DISPLAY of LAMPS, BATHS, and METALLIC BEDSTEADS. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from	12s. 6d.	to	£20 0s. each
Shower Baths, from ..	8 0	to	6 0 ,,
Lamps (Moderateur), from	6 0	to	8 10 ,,

(All other kinds at the same rate).

Pure Colza Oil .. .. .. 4s. 6d. per gallon.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 500 Illustrations of his illimited Stock of Sterling Silver and Electro Plate, Nickel Silver, and Britannia Metal Goods, Dish Covers, Hot Water Dishes, Stoves, Fenders, Marble Chimneypieces, Kitchen Ranges, Lamps, Gaseliers, Tea Trays, Urns, and Kettles, Clocks, Table Cutlery, Baths, Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Room, Cabinet Furniture, &c., with Lists of Prices, and Plans of the 20 large Show Rooms, at 39, Oxford Street, W.; 1, 1A, 2, 3 and 4, Newman Street; 4, 5, and 6, Perry's Place; and 1 Newman's Mews, London, W.C.

To Nurserymen.

WANTED, a NURSERY GARDEN, in a Parish near Hastings, and Land for that purpose would be Let on easy terms.

Apply to M. F. C., 10, Carlisle Parade, Hastings.

WANTED, in the neighbourhood of London, or any large Market Town in the South, a HOUSE and GARDEN of 3 or 4 acres. The ground need not be all together.—Address A. N., Post Office, Peterboro'.

TO BE LET, a DESIRABLE FARM. — Persons who are wanting to take on Lease, or otherwise, from Michaelmas next, a good STOCK FARM, consisting of about 250 Acres, of which 80 are Pasture, with a superior Farm House, Cottages, and suitable Farm Buildings thereon, are invited to make a written application only, to Messrs. DRUCE, Eynsham, Oxford.

A Railway Station is on the Farm, and the neighbourhood is of first-rate character.

TO BE SOLD, with immediate possession, a smal NURSERY, comprising one quarter of an acre, Greenhouse 30 feet by 14, 8-light Pit, 2-light Frame, and other Pit erections. Stock and Appendages for 55l., with Jobbing Business. Lease 6½ years.

Apply, S. M., 20, Woodland Terrace, Ball's Pond, N.

To Nurserymen and Gardeners.

TO BE LET, a small genteel NURSERY, Seedsman and Florist Business, about 18 miles from London; now in excellent order, and well adapted for any person of taste. Rent moderate, expenses small, and early possession easy. Particulars first to L. M., 38, Greek Street, Soho, London, W.

TO BE LET, from Michaelmas 1862, the DUNTON LODGE FARM, in the county of Bedford, four miles from Biggleswade, a Market Town, and Station on the Great Northern Railway, and 3 miles from Ashwell Station, mid-way on the Cambridge and Hitchin Railway:—containing 546 acres, the whole of which has been thoroughly Tile Drained, and, excepting the old Grass Land, either has, or will have been cultivated by the time of entry, with Smith's Steam Cultivating Apparatus, from 9 to 14 inches deep. It possesses a first-class recently-erected Farm House and Premises, in a central situation, well supplied with water; the fields are large, fences straight, gates and posts of iron, and roads good.

Particulars with plan will be supplied by MR. SIMON HUTCHINSON, Land Agent, Manthorpe Lodge, Grantham, on receipt of four Postage Stamps, and the Farm may be viewed upon exhibiting the same to the Foreman on the premises, now in the hand of the Earl Brownlow.

South of Devon.

MR. ALEXANDER PONTEY, DECEASED.

TO NURSERYMEN, SEEDSMEN, AND OTHERS.

TO BE DISPOSED OF, by Private Contract, on advantageous Terms, with early possession, the Well-Established BUSINESS of a NURSERYMAN, SEEDSMAN, and FLORIST, which for very many years has been extensively and successfully carried on by MR. ALEXANDER PONTEY, of Plymouth, Devon, and his predecessor, and is now to be disposed of only in consequence of his sudden death.

The Lease of the Business Premises and Stores, which are most conveniently situated near the Market, as well as the Leases of the Nurseries, which are most extensive and well-stocked, both at Plymouth and Vinstan (about Two Miles from Plymouth, on the Tavistock Road), have many years to run.

The Plant, which is of the most Modern construction, and the Stock, the most varied in the West of England, to be taken in the usual way, at a fair valuation.

For further particulars, application may be made to Messrs. SKARDON & SONS, Auctioneers, Bedford Street, Plymouth; or to Messrs. PHILLIPS & SON, Solicitors for the Executrix, Frankfort Lane, Plymouth.

Dated Plymouth, August 1, 1862.

Sales by Auction.

Important Sale of Established Orchids, and a few Imported.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions to SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, London, W.C., on THURSDAY, August 28, at half-past 12 o'Clock precisely, without the least reservation, the Valuable and Extensive COLLECTION of ORCHIDS, the property of a large Continental Grower, who is giving up their culture, consisting of fine healthy plants of the following well-known varieties:—

Aerides crispum	Phalænopsis grandiflora
,, affine	,, amabilis
,, Fieldingii	Angræcum eburneum
,, suavissimum	Arpophyllum giganteum
Cattleya citrina	Cœlogyne Lowii
,, elegans	,, cristata
,, guttata	Cypripedium villosum
,, lobata	,, hirsutissimum
,, Leopoldi	,, caudatum roseum
,, labiata picta	Vanda suavis
,, marginata	,, tricolor
,, Trianæi	,, guttata
,, Isabellina, new	Saccolabium retusum
,, Schilleriana	,, Blumei
Lælia purpurata	Uropodium Lindeni
Chysis Limminghi	&c. &c.

Also a small Importation from the East Indies of choice SACCOLABIUMS, &c.

On View the Morning of Sale, and Catalogues had.

To Ironmongers, Builders, and Others.

MESSRS. FULLER AND HORSEY are instructed by Messrs. Tiddeman & Co. (whose premises are required for the purposes of the London, Chatham, and Dover Railway), to SELL by AUCTION, on TUESDAY, August 19, at 11 o'Clock, at St. Anne's Wharf and Victoria Wharf, Earl Street, Blackfriars, in Lots, without reserve, 5000 yards HOT-WATER PIPES, Connections, Syphons, Bends, T-pieces and Valves, Hot-Water Boilers, Double Doors and Frames, Flanged and Socket Pipes; 200 Tons of BUILDERS' CASTINGS, including 10,000 yards' round and OG Rain-water Guttering and Pipes, from 2 to 6 inches, Rain-water Heads and 40 tons Sash Weights, 100 Cast-iron Furnace Pans, Furnace Doors, Copper Hole and Soot Doors, Coal Plates, Air-bricks, Horse and Mare Pots, Mangers, Racks, Stall-posts, Sewer Grates, Iron Pumps, Navvie Barrow Wheels, Truck Wheels, Newel and Railing Bars, Cast-iron Columns, Galvanised Pans, large Cast-iron Cistern, Garden Rollers, Pig Troughs, Register Stoves, 40 Dantzic Planks, two Spring Carts, and numerous other items.

To be viewed on Monday previous and Morning of Sale, when Catalogues may be had on the Premises; and of Messrs. FULLER & HORSEY, Billiter Street, London, E.C.

Buckland, near Faringdon.

VERY IMPORTANT SALE OF FIRST CLASS SOUTHDOWN SHEEP, BERKSHIRE PIGS, SUFFOLK HORSES, CATTLE, &C.

MR. STRAFFORD has received Instructions from the Executors of the late Sir R. G. Throckmorton, Bart., to offer for SALE by AUCTION, without Reserve, on THURSDAY, September 4, at Buckland, the Splendid Flock of SOUTHDOWNS, consisting of about 500 Ewes and Ewe Lambs, with about 50 Rams and Ram Lambs; also the Choice Stock of BERKSHIRE PIGS, numbering about 70 head of Boars, Sows, and Young Pigs, including the First Prize animals at the recent Battersea Show, as well as some superior Suffolk and other HORSES, and the Dairy COWS, with a Short-horned BULL. The number of Prizes won by this Stock at the various meetings of the Royal Agricultural Society, Bath and West of England, Birmingham, and Smithfield Club, as well as the Gloucester and other local Shows, fully attest the high character of the same, and which are to be sold in consequence of the decease of their lamented owner.

Catalogues, with particulars, may be had on application to MR. GEO. WILLIAMS, at Buckland, near Farringdon; or of MR. STRAFFORD, 13, Euston Square, London, N.W.

GREEN'S.

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THESE MACHINES were entered at the Royal Horticultural Society's Great Shows held at South Kensington, May 21, June 11, and July 2. They were the only Machines Highly Commended (no Prizes were given). They have carried off every Prize that has been given in all cases of Competition, and have just been awarded the Prize Medal of the Great International Exhibition, July 11, 1862.

GREEN'S PATENT LAWN MOWERS have attained the largest sale of any Machines extant, and are in constant use at the Royal Gardens, Windsor; the Royal Horticultural Society's Gardens, South Kensington; the Royal Botanic Gardens, Regent's Park; the Crystal Palace Company's Gardens, Sydenham; the Kensington Palace Gardens; and the Hyde Park Gardens; and in most of the Nobility, Clergy, and Gentry's Parks, Squares, &c., throughout the Kingdom.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0	£8 15 0
To Cut 20 inches	8 0 0	9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0	£9 17 6
To Cut 24 inches	9 0 0	10 7 6

To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0	£21 10 0
To Cut 36 inches	23 0 0	24 16 0
To Cut 42 inches	26 0 0	28 2 0
To Cut 48 inches	29 0 0	31 8 0

Leather Boots for Horse, per set, £1 4*s.*

Donkey and Pony Machines, including Box of Requisites & Traces.

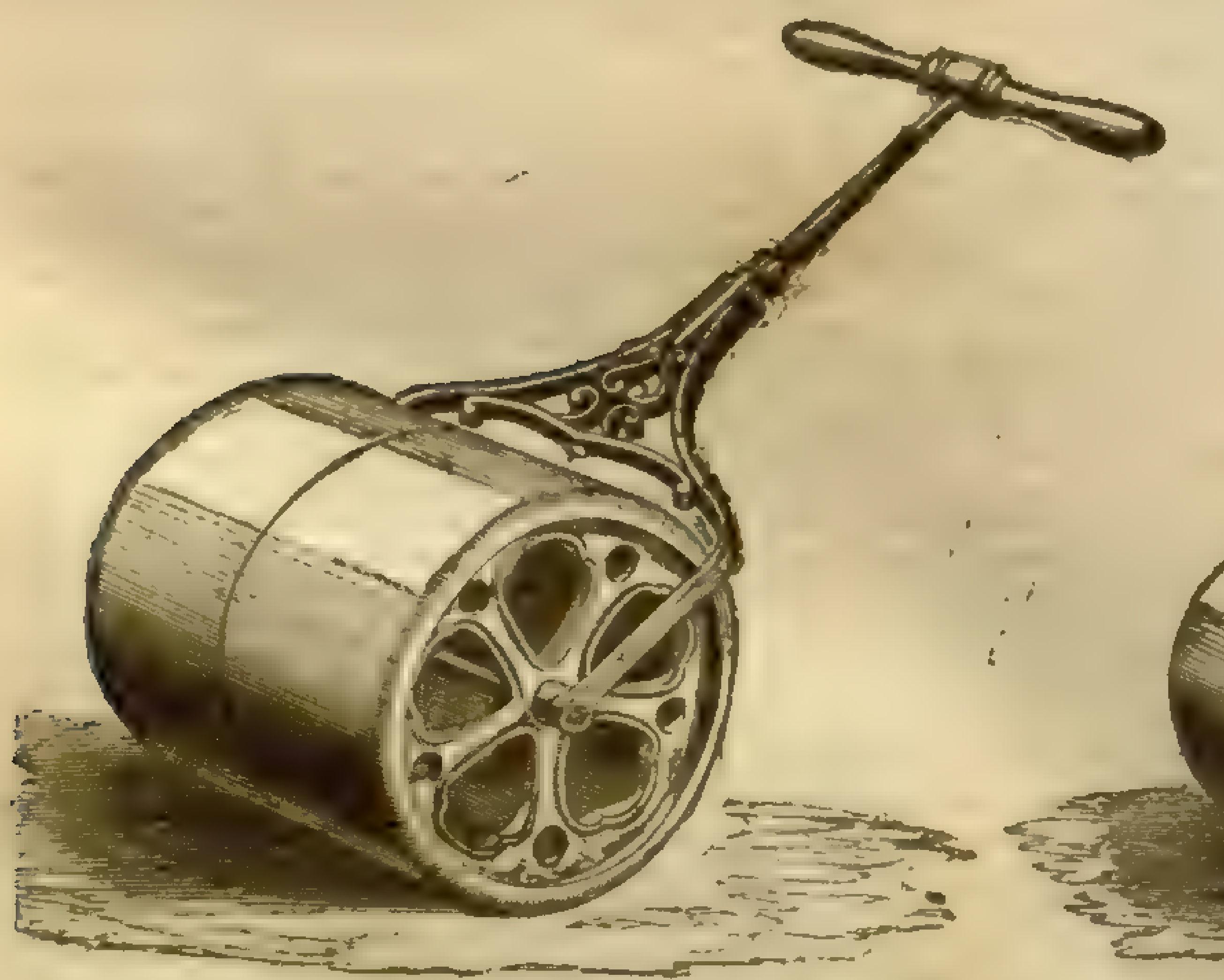
	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0	£12 10 0
To Cut 26 inches	12 10 0	13 12 0
To Cut 30 inches	16 14 0	18 0 0

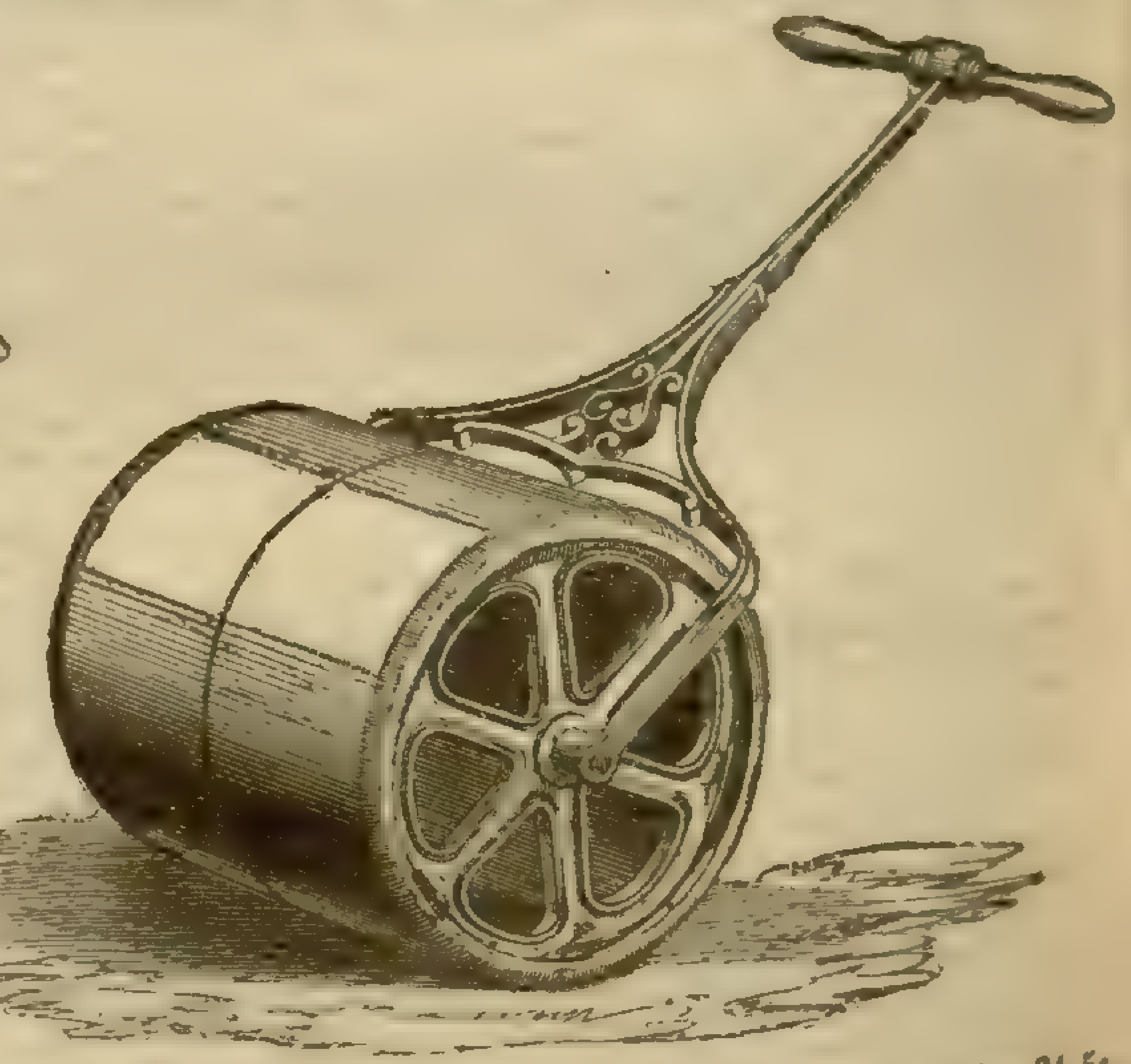
Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

The above Machines are made from the best materials, and of superior workmanship; are delivered carriage free to all the principal Railway Stations and Shipping Ports in England; are warranted to give satisfaction, and if not approved of can be at once returned, if sent carriage free to Leeds.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.





Diameter 20 inches, length 22 inches.... Price £3 5*s.* | Diameter 16 inches, length 17 inches.... Price £2 10*s.* | Diameter 24 inches, length 26 inches.... Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, in the Parish of St. Pancras, in the Co. of Middlesex, and FREDERICK MULLETT EVANS, of No 11, Bouverie St., in the Precinct of Whitefriars, City of London, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St Paul's, Covent Garden, in the said Co.—SATURDAY, August 16, 1862.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 34.—1862.] SATURDAY, AUGUST 23. {Price Fivepence. Stamped Edition, 6d.

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ROYAL HORTICULTURAL SOCIETY.
FRUIT COMMITTEE.
A Meeting of the Fruit Committee will be held at the ... South Kensington, on TUESDAY, August 26, for the ... nation of such FRUITS and VEGETABLES as may then ... mitted for judgment, and when Certificates of Merit ... dlings will be awarded.
All packages and communications must be received at ... Rooms by 11 o'Clock on the day of Meeting, and addressed
Robert Hogg, LL.D., Secretary of the Committee.

ROYAL HORTICULTURAL SOCIETY.—
FLORAL COMMITTEE.
A Meeting of this Committee will take place on TUESDAY, ... 26th, at 12 o'Clock. The subjects for exhibition must ... South Kensington, for entry by 11 A.M.
Thos. Moore, Secretary to the Committee.

CRYSTAL PALACE.—GREAT AUTUMN SHOW OF FLOWERS and FRUIT.—WEDNESDAY and THURSDAY, September 3 and 4.
Schedules of Mr. Houghton, Crystal Palace. Entries close August 26.

The Great Flower Show of the North.
THE EXHIBITION of the BISHOP AUCKLAND FLORAL and HORTICULTURAL SOCIETY will take ... in Auckland Park, on FRIDAY, August 29, when about ... will be awarded in Prizes.
Rev. E. Healy, S. J. Cherrett, } Hon. Secretaries.
Bishop Auckland, Aug. 23.

RIPON HORTICULTURAL SOCIETY'S ANNUAL EXHIBITION, SEPTEMBER, 2 and 3.
Nearly 30l. to be awarded in Prizes for Dahlias and Hollyhocks. Schedules to be obtained of Mr. J. Wood, Secretary, Ripon.

To the Seed Trade.
CALCEOLARIA SEED in Packets, Crop 1862.—
The best in England. Price on application.
Barr & Sugden, Seed Merchants, 12, King Street, Covent Garden, W.C.

FINEST HYBRIDISED CALCEOLARIA CROP, 1862, warranted to give satisfaction, 1s., 1s. 6d., and 2s. 6d. per packet.
Edward Taylor, Nurseryman and Florist, Malton, Yorkshire.

High Beach, Essex.
JAMES CRAWFORD begs to call attention to his NEW CALCEOLARIA EMPEROR OF MOROCCO, without exception the best ever offered to the public for habit, size, and colour.

New Fuchsias of 1862.
B. W. KNIGHT, Florist, &c., 67, High Street, Battle, Sussex, is now sending out the NEW FUCHSIAS of 1862, at 12s. per dozen.
CATALOGUES sent on application.

New Verbenas of 1862.
B. W. KNIGHT, Florist, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4s. per dozen, securely packed in tin box, post free. CATALOGUES of the varieties sent on application.

Iris reticulata.
THOMAS HANDASYDE, Glen Nurseries, Musselburgh, begs to offer strong flowering roots of the above at 10s. per 100.

Fine Camellias and Azaleas.
F. AND A. SMITH have an immense stock of AZALEAS and CAMELLIAS well set with flower buds, ... fine growth and in healthy condition, now offering at moderate prices, which may be had on application.
Dulwich, Surrey, S.

Cineraria and Calceolaria Seed.
F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1s., 1s. 6d., and 2s. 6d., free by post.
Dulwich, Surrey, S.

New Herbaceous Phloxes, Roses, Hollyhocks, Pentstemons, &c.
EDWARD WEBB, of the Gower Inn Rosery, Park Mill, near Swansea, Glamorganshire, respectfully informs his friends and the public generally that his magnificent collection of HEBCACEOUS PHLOXES is now blooming in great perfection. Also his unrivalled collection of HOLLYHOCKS, PERPETUAL ROSES, PENTSTEMONS, &c., is now in full bloom. He respectfully solicits an early inspection.—Aug 23.

JAMES CARTER AND CO.,
Seed Merchants and Nurserymen,
237 and 238, High Holborn, London, W.C.

Hyacinths, Crocus, &c.
JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

Hyacinths, Crocus, &c.
JAMES CARTER AND CO.'s first consignment of DUTCH BULBS has arrived in splendid condition. CATALOGUES free of charge on application to
237 and 238, High Holborn, London, W.C.

SUTTON'S SELECT LIST of EXHIBITION HYACINTHS, TULIPS, JONQUILS, &c. (Post free), with prices and full description. This List contains all the Hyacinths necessary for competition at the Great Hyacinth Shows, and none are extravagant in price.
All Goods delivered carriage free.
Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

Hyacinths, &c.
WM. PAUL'S DESCRIPTIVE CATALOGUE of HYACINTHS and other DUTCH BULBS, with Hints on Culture, is now ready. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Dutch Bulbs.
CHARLES TURNER'S CATALOGUE of a selection of the best in each class is now ready, and will be forwarded on application post free.
The Royal Nurseries, Slough.

Dutch Flower Roots.
WILLIAM WOOD AND SON'S AUTUMN CATALOGUE for 1862 is now ready, containing superb collections of Gladioli, Hyacinths, Crocus, Ixia, Narcissi, Sparaxis, &c., and will be forwarded gratis and post paid on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Wm. Cutbush & Son's Dutch Bulb Catalogue.
WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE and PRICED CATALOGUE of HYACINTHS and other Dutch Flower Roots is now ready, post free, on application.
Highgate Nurseries, London, N.

Rose and Bulb Catalogues for 1862-3.
EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded Gratis and Postpaid on application.
Seed and Nursery Establishment, Tunbridge Wells, Kent.

Dutch Bulbs.
PAUL AND SON have received their annual importation of the above in good condition. Early Orders are solicited. CATALOGUES Post free on application.
Old Cheshunt Nurseries, Cheshunt, Herts.

Roses, &c.
PAUL AND SONS respectfully invite attention to their ANNUAL SHOW of ROSES, GLADIOLI, HOLLYHOCKS, and ASTERS, now in FULL BLOOM at their establishment, 1 Mile from the Cheshunt Station of the Eastern Counties Railway.
Old Cheshunt Nurseries, Cheshunt, Herts.

Rose Beauty of Waltham.
The Finest of all the New Roses.
WM. PAUL (Son and Successor to the late A. Paul) has now ready for delivery fine strong plants of this beautiful New Rose, which has received a First-class Certificate from the Royal Horticultural Society of London. Price 5s. each.
All the novelties of other raisers at the advertised prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Roses.
EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

THE BEST NEW ROSE, at the Great Rose Show of the Royal Horticultural Society, June 26, was JOHN HOPPER.
See *Gardeners' Chronicle*, July 5, page 619; *Journal of Horticulture*, July 1, page 248; *Gossip of the Garden* for July; and *Floral Magazine* for August, in which it is figured.
A DESCRIPTIVE CIRCULAR may be had on application, and on receipt of 13 postage stamps a beautiful illustration by Andrews.
Robert Ward, The Rosery, Ipswich.

WM. PAUL'S ROSES, HOLLYHOCKS, and HARDY ORNAMENTAL TREES are now in full beauty. Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.
Nurseries and Seed Warehouse, Waltham Cross, N.

WILLIAM HOLMES offers the following in fine Plants:—

NEW CHRYSANTHEMUMS	..	12s. per dozen.
NEW FUCHSIAS	..	12s. "
NEW VERBENAS	..	6s. "

Frampton Park Nursery, Hackney.—Aug. 23.

JAMES CRAWFORD, High Beach, Essex, begs to inform the ladies and gentlemen of High Beach and its vicinity, also the public generally, that he has for SALE a very select COLLECTION of CAMELLIAS, AZALEAS, STOVE and GREENHOUSE PLANTS in general. The above he offers on advantageous terms, and solicits inspection.

Good Seeds, Carriage Free, at Market Prices.
SUTTON AND SONS,
Seed Growers and Merchants,
Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds.
PETER LAWSON AND SON,
The Queen's Seedsmen,
27, Great George Street, Westminster, S.W.

Agricultural Seeds.
GEORGE GIBBS AND CO.,
Seedsmen,
26, Down Street, Piccadilly, London, W.

Hollyhocks.
DOWNIE LAIRD AND LAING'S Superb Collection of the above are in BLOOM. An inspection invited any day (Sunday excepted).
Stanstead Park Nursery, Forest Hill, S.E.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize plants, 1s., 1s. 6d., and 2s. 6d. per packet. Reference given. Stamps taken.
G. Knights, Whitton, Ipswich.

Strawberries.
CHARLES TURNER can still supply strong PLANTS for fruiting next season of all the leading kinds. CATALOGUES may be had on application.
The Royal Nurseries, Slough.

Strawberry Plants—Ready.
CUTHILL'S SORTS, selected Plants for bearing in 1863, all one price, 7s. 6d. per 100. Early Black Prince, Early Princess Royal, Highland Mary, Richard II., Prince of Wales, and Newton Seedling, lasted in bearing this year 60 days. Strawberry Pamphlet, 1s.
Best MUSHROOM SPAWN, 5s. per bushel.
James Cuthill, F.R.H.S., Camberwell, London, S.

Strawberries.
Now ready, free per post on application,
A DESCRIPTIVE CATALOGUE of STRAWBERRIES.
By Thomas Rivers, Nurseries, Sawbridgeworth.

Vines in Pots.
PAUL AND SON invite gentlemen planting Vineries to inspect their fine Stock of the best varieties of Vines.
Old Cheshunt Nurseries, Cheshunt, Herts.

Grape Vines.
WM. PAUL (Son and Successor to the late A. Paul) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines.
J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.
JAMES CRAWFORD, High Beach, Essex, begs to offer, at low prices, a fine stock of strong healthy Plants, including all the best sorts.

Grape Vines.
TO BE SOLD, Cheap, 1800 close-jointed vigorous Plants, with Canes 6 to 12 feet long, all struck from Eyes this season.
Apply to the Gardener, at J. Lewis's Horticultural Works, Stamford Hill, Middlesex, N.

QUEEN PINES.—Four dozen Fruiting, two dozen Succession, the property of a gentleman who is giving up their growth.
In care of Mr. Thos. Surman, Lavender Nursery, Lavender Place, Wandsworth, Surrey, S.W.

Palms and other Stove Plants.
TO BE SOLD, an extensive Collection of STOVE PLANTS, comprising a large number of very fine and rare PALMS of unusual size.
A CATALOGUE, giving the height of each plant, will be sent, post free, on application to Mrs. Le Creps, Château du Mesnil de Mathieu, near Caen, Department of Calvados, France, where the plants may be viewed.

FOR SALE, a large Collection of BRITISH and EXOTIC FERNS, at
J. Illman's Nursery, Wellington Place, Strood, Kent.

HIMALAYAN FOREST TREE SEED.—The Undersigned will receive Orders for transmission to the Collector in India until Sept. 27, 1862.
PRINTED LISTS will be furnished on application.
Peake, Allen, & Co., Albion Place, London Wall, E.C.

Orchard House Culture.
MESSRS. THOS. RIVERS AND SON invite lovers of Fruit Tree Culture to an Inspection of their ORCHARD HOUSES and FRUIT TREES in POTS. The mode of culture, which is very simple, will be given if required. Harlow Station, where flies attend, is the most convenient for the Nurseries.
Sawbridgeworth, Herts.

PEAT EARTH of excellent quality delivered at the Nine Elms Station, 5 tons for 55s.; at Guildford, 5 tons for 50s. The Peat is now in first-rate order.—Apply to Mr. Betts, 115, Strand, London, W.C., where a sample may be seen.

HOT-WATER PIPES

DELIVERED TO ANY STATION IN ENGLAND.

J. JONES

BEGS to state that he can now supply HOT-WATER PIPES and FITTINGS delivered Carriage Paid to any Railway Station in England, and that he has made very advantageous arrangements for delivery at the following Stations; and parties availing themselves of this offer will in many cases get their Pipes at a Country Station at a less price than would be charged in London.

Alfreton	Chester	Gainsborough	Macclesfield	Peterborough	Selby
Accrington	Chorley	Grantham	Malton	Penkridge	Sheffield
Ashbourne	Chelford	Halifax	Manchester	Retford	Tamworth
Adlington	Crewe	Harrogate	Mansfield	Richmond (Yorks.)	Thirsk
Ashby-de-la-Zouch	Cheadle	Ilkeston	Market Harboro'	Rotherham	Tipton
Atherstone	Congleton	Kirkham	Marton	Rochdale	Trentham
Bradford (Yorks.)	Colwich	Knapton	Nottingham	Rugeley	Thrapston
Burton	Derby	Knaresborough	Normanton	Rugby	Uttoxeter
Burnley	Dewsbury	Lancaster	Northallerton	Redditch	Ullesthorpe
Bolton	Doncaster	Leeds	Northampton	Shrewsbury	Worcester
Bingham	Driffield	Liverpool	Oakham	Stafford	Wolverhampton
Bulwell	Droitwich	Loughborough	Oldbury	Stourbridge	Wellington (Salop)
Beverley	Dudley	Leek	Oldham	Salford	Wrexham
Bury	Edgebaston	Lichfield	Ormskirk	St. Helen's	Warrington
Bedale	Eckington	Leamington	Oswestry	Settle	Wigan
Barnsley	Farnworth	Leicester	Oundle	Skipton	Wakefield
Barton		Lincoln	Preston	Stamford	Worksop
Birkenhead			Pontefract	Sleaford	Wellingboro'
Chesterfield				Scarborough	York

Also to any Station in Derbyshire, Shropshire, Warwickshire, Cheshire, Lancashire, Yorkshire, Leicestershire, Worcestershire, Lincolnshire, and Staffordshire.

J. JONES will be happy to forward his ILLUSTRATED CATALOGUE of HOT-WATER PIPES, BOILERS, and FITTINGS, and PRICES for the same delivered Free to any Station; but parties requiring prices must state the quantities of Pipes, &c., required, and the Station to which they are to be delivered.

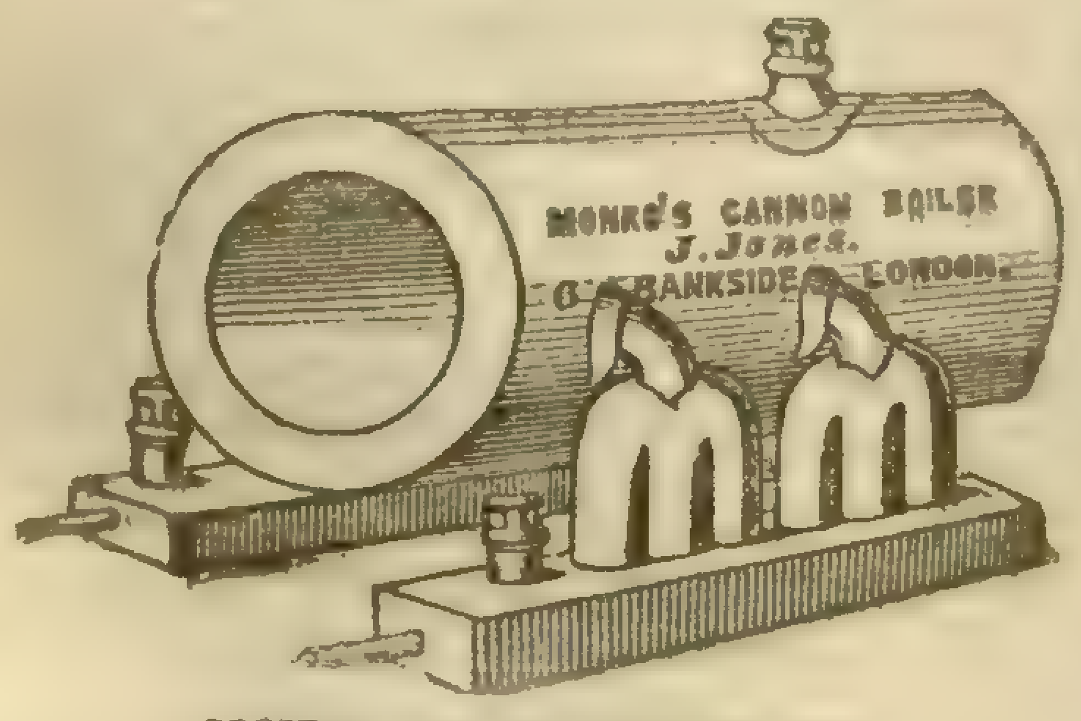
J. JONES,

IRON MERCHANT AND HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

20-inch Wrought Iron	... ...	£3 15 0
24-inch "	... ...	6 10 0
30-inch "	... ...	7 10 0
36-inch "	... ...	8 10 0
48-inch "	... ...	12 0 0
60-inch "	... ...	20 0 0
72-inch "	... ...	25 0 0



MONRO'S CANNON BOILER.

These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by J. JONES, 6, Bankside, Southwark, London, S.E.

Prices for HOT-WATER PIPES, ELBOWS, TEES, SYPHONS, VALVES, TROUGH PIPES, ORNAMENTAL COIL CASES, BECK'S PATENT VALVES, &c.; or ESTIMATES for HOT-WATER APPARATUS, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON, SADDLE, or CYLINDER BOILERS, will be sent, with an ILLUSTRATED CATALOGUE, free on application.

J. JONES,

HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, LONDON, S.E.

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Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

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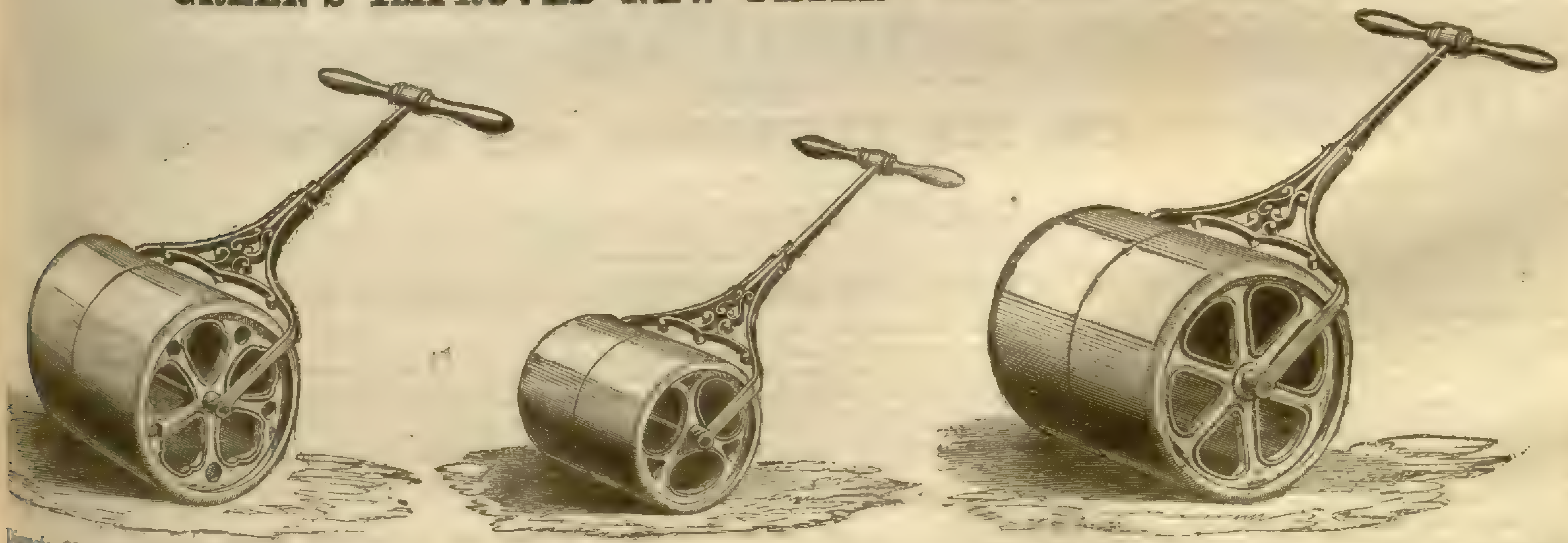
T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length 22 inches.... Price £3 5*s.* | Diameter 16 inches, length 17 inches.... Price £2 10*s.* | Diameter 24 inches, length 26 inches.... Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths,* and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

DOUGLAS FIR.—This noble Tree is now proved to be amongst the most ornamental and valuable Timber Trees; and having stood at Elvaston the winter of 1860 with impunity, when both the Common Oak and Holly were severely injured, proves its hardiness.

Splendid plants, all from seed, with extraordinary roots, can be supplied as under. Those who wish to plant Park Groups or Avenues should order early before the stock is exhausted. 1 to 1½ ft., 50s. per 100; 2 ft., 75s. per 100; 3 ft., 100s. per 100.

WILLIAM BARRON, Elvaston Castle, Derby.—Aug. 23.

JEAN VERSCHAFFELT, Ghent, Belgium, begs to announce he possesses a large stock of the following fine Plants with flower-buds, which he offers the Trade as follows:

		£	s.	d.
CAMELLIAS, extra fine sorts with buds, per 100 ..	£6 0 0			
Ditto ditto large plants, per 100	10l. to	15	0	0
Ditto ditto extra size, each ..	5s. to	1	1	0
AZALEA INDICA, first-rate sorts, extra fine Plants for winter flowering, per 100, from	4l. to	6	0	0
Ditto ditto on stems 1½ to 2 feet high, with nice heads, per 100 ..		10	0	0
JASMINUM GRANDIFLORUM		6	0	0
CITRUS SINENSIS (Otaheite Oranges) with fruit, per 25		2	10	0

Arundo Donax variegata.

JEAN VERSCHAFFELT, Ghent, Belgium, has a nice stock of this beautiful hardy variegated ARUNDO (the finest known), which he begs to offer in strong plants at the following low terms, viz.:—

Strong plants grown in pots, per dozen £1 5 0
Ditto ditto per 25 .. .. 2 0 0

Lilium lancifolium speciosum.

JEAN VERSCHAFFELT, Ghent, Belgium, having an extra large stock of this splendid LILY, is now able to offer its varieties very cheap, viz:—

	£	s.	d.
LILIUM LANCIFOLIUM (SPECIOSUM) RUBRUM, strong flowering bulbs, per 100	£2	0	0
Ditto ditto ALBUM, ditto, per 100 ..	1	16	0
Ditto ditto RUBRUM, extra strong bulbs, per 100 ..	3	0	0
Ditto ditto ALBUM, ditto, per 100 ..	2	10	0
Ditto ditto PUNCTATUM, strong flowering bulbs, per 25..	2	10	0

AZALEA INDICA, extra fine plants, clean and bushy, first-rate varieties, suitable for winter forcing, 4l. per 100; stronger plants, 6l. per 100.

JEAN VERSCHAFFELT'S Nursery, Ghent, Belgium.

Autumn 1862.—New Plants.

JEAN VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, begs respectfully to announce that he is now taking orders for the following SELECT NOVELTIES, fully described in his NEW CATALOGUE for the Autumn of 1862, and which will be sent out on and after September 1, at the following prices:— Each.—s. d.

	s.	d.
AZALEA INDICA, SECRETAIRE CLAUS ..	7	6
" " VICOMTE DE FORCEVILLE, the finest double Red Azalea ever offered ..	10	6
CAMELLIA QUERCIFOLIA, Oak-leaved Camellia, good plants	21	0
" " With buds	31	6
" " A few stronger plants ..	42	0
HEBECLINIUM MACROPHYLLUM, fine plants, with very ornamental foliage, the leaves being nearly a foot long, and more than a foot in diameter, good plants ..	12	0
RHODODENDRON SOUVENIR DE JEAN BYLS, splendid hardy Rhododendron, figured in the *Illustration Horticole*, June, 1862, good plants	21	0
With buds	31	6
A few strong plants	42	0

One plant over to the Trade on every three taken.

A carefully Coloured Plate of the Rhododendron and Camellia will be sent to each Subscriber. The Subscription List is open now, and early orders are solicited, as they will be executed in strict rotation.

All orders to be addressed to M. JEAN VERSCHAFFELT, 42, Rue de la Caverne, Ghent, Belgium.

CATALOGUES can also be had of Messrs. R. SILBERRAD & SON, 5, Harp Lane, Great Tower Street, London, E.C.

Dutch and other Bulbs.

B. S. WILLIAMS'S AUTUMN CATALOGUE for 1862 is now ready, post free to all applicants, containing select lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladiolus, Amaryllis, Caladiums, Gloxinias, and many other choice Bulbs, with Hints on their Culture for the guidance of Amateur growers. To which is added a SUPPLEMENTAL and DESCRIPTIVE LIST of NEW, BEAUTIFUL, and RARE PLANTS.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New Fuchsias, Verbenas, Chrysanthemums, Petunias, &c., of 1862.

H. WALTON is now sending out the above at low prices. Lists of Prices on application for one stamp. The Trade liberally dealt with.

FUCHSIAS 9s. to 12s. per dozen.

Edgend, Marsden, Lancashire.

New Fuchsias, &c.

GODWIN AND PADMAN have now ready NEW FUCHSIAS at 1s. each, or 10s. 6d. per dozen.

NEW VERBENAS of 1862 .. .. 6s. per dozen.
NEW PETUNIAS " .. .. 9s. "
NEW CHRYSANTHEMUMS of 1862.. 12s. "
NEW TROPÆOLUMS of 1862 .. .. 12s. "

G. & P.'s SUPPLEMENTARY CATALOGUE, containing descriptions of above, on application to

Broadfield Nursery, Sheffield; or J. C. PADMAN, Boston Spa, Tadcaster.

New Plants of 1862.

JAMES DICKSON AND SONS, "Newton" Nurseries, Chester, have now ready Strong Plants, at Reduced Prices, of FUCHSIAS, CHRYSANTHEMUMS, PHLOXES, PETUNIAS, and VERBENAS of the most approved varieties of this season. The usual allowance to the Trade. Prices on application.

Also very strong VINES from Eyes for IMMEDIATE PLANTING of the leading varieties, and such as will give the utmost satisfaction. Prices moderate.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to 7s. 6d. each;

ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA, 21s. each.

A Select LIST of the most rare kinds will be forwarded Post Free on application.

Dorking Nursery.

Stanstead Park Nursery, Forest Hill, S.E., and Edinburgh.

DOWNIE, LAIRD, AND LAING have much pleasure in offering the following very select Seeds, saved from their choice collections.

ANTIRRHINUM, 6d. and 1s. per packet.
CALCEOLARIA, 1s. and 2s. 6d. per packet.
CINERARIA, 1s. and 2s. 6d. per packet.
HOLLYHOCK, 1s., 2s. 6d. and 5s. per packet.
PANSY, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS KERMESINA SPLENDENS, 1s. 6d. and 2s. 6d. per packet.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned new and fine AZALEAS. For October next.

FLAG OF TRUCE.—The finest double white known; has obtained two Certificates and a Silver Medal for its superior merits, being the highest testimonial any Azalea has yet received, 21s. to 31s. 6d. each.

PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21s. to 31s. 6d. each.

CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very superior, 21s. to 31s. 6d. each.

LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10s. 6d. to 15s. each.

CRISPIFLORA ROSEA.—Fine bright rose; the flowers are waved or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10s. 6d. to 15s. each.

PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10s. 6d. and 15s. each.

Any of the above may be had in grafted plants, or on their own roots.

For full particulars see *Gardeners' Chronicle* of August 16, 1862, p. 758; or in CATALOGUES, which may be had gratis on application.

Dulwich, Surrey, S.

SPRING FLOWERS by the 100 at unusually low prices.—Fine strong plants of Double Polyanthus, Double Red Hepatica, Large Yellow Crocus, 1st and 2d size; Blue Crocus, Double White Narcissus Poeticus, Trumpet Major; Blue English Iris, good mixed Tulips, Grape Hyacinth, light and dark; Double Josephine Scarlet Anemone, fine Single in variety; Double White Wood Anemone, Double Blue Sweet-scented Violet, Double White, ditto, Single Blue and White ditto, Bleeding Nun, Feathergrasses, Fine Double Pansy, &c.

A. LAMB, Pear Tree Hill, Lisburn, Ireland.

CATTELL'S EARLY RELIANCE CABBAGE, CATTELL'S DWARF BARNES CABBAGE.

These two Cabbages have proved themselves for many years past to be the two best Early Spring Cabbages in cultivation. If sown as early as the middle of July, they will not run to seed the following Spring. They may be had as usual in packets containing half-an-ounce of the Reliance, and one ounce of the Dwarf Barnes. Free by post for 12 Penny Stamps for each packet.

JOHN CATTELL, Nursery and Seed Establishment, Westerham, Kent.

Genuine Italian Rye-grass, produced from the Second Cut of Foreign Seed.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts., will again be able to supply the Trade with this article in the same fine quality as last season, and can deliver either now or in the spring at the purchaser's convenience.

Address for samples and prices as above, stating quantity required and time of delivery.

DUTCH AND OTHER FLOWER ROOTS.

HUGH LOW & CO.

Have now ready for distribution their CATALOGUE of the above, which can be had on application.

The Trade supplied.

CLAPTON NURSERY, LONDON, N.E.

ROYAL HORTICULTURAL SOCIETY.

REMAINING

ARRANGEMENTS FOR THE EXHIBITIONS AND MEETINGS IN 1862,

TO BE HELD AT

THE GARDEN, SOUTH KENSINGTON, W.

SHOW OF AUTUMN FLOWERS, WEDNESDAY, SEPTEMBER 10.

August 26, Tuesday. Fruit and Floral Committee.
Sept. 5, Friday. Meeting for Election of Fellows.
" 10, WEDNESDAY. SHOW OF AUTUMN FLOWERS, and Fruit and Floral Sub-Committee.
" 23, Tuesday. Fruit and Floral Committee.

October 8, Wednesday. Fruit and Floral Sub-Committee.
October 8, 9, & 10. GREAT INTERNATIONAL SHOW OF FRUIT, GOURDS, ROOTS, VEGETABLES, AND CEREALS. The Show of Gourds, Roots, and Cereals to continue until the 18th.

Nov. 7, Friday. Meeting for Election of Fellows.
" 11, Tuesday. Fruit and Floral Committee.
Dec. 9, Tuesday. Fruit and Floral Committe.

*** At some period during the season it is hoped that the Memorial of the Exhibition of 1851 will be finished, and probably publicly uncovered.

ELECTION OF FELLOWS.

Gentlemen and Ladies wishing to become Fellows have to be proposed by some one already a Fellow, to whom they are personally known. The subscription is Two Guineas Entrance Fee, and Two Guineas or Four Guineas a year according to the privileges wished.

ADMISSION OF THE PUBLIC.

I. REMAINING HORTICULTURAL EXHIBITIONS.

Sept. 10. AUTUMN FLOWER SHOW .. .. 2s. 6d. | October 8. FRUIT AND VEGETABLE SHOW .. .. .. 2s. 6d. | October 9. FRUIT AND VEGETABLE SHOW 1s. 0
October 10. FRUIT AND VEGETABLE SHOW .. .. 1s. 0d. | October 11-18. GOURDS, ROOTS, AND CEREALS .. .. 1s. 0d.

Admission by payment at the door, or by tickets previously purchased.

From 12th July to 18th October.

			s.	d.
Sundays		No admission by payment.		
Mondays	(Band)	Gardens alone	1	0
Tuesdays	(Band)	Gardens and Exhibition	1	6
Wednesdays	(Band)	Gardens from Exhibition	0	6
Thursdays	(Band)			
Fridays	(Band)	.. ..	2	6
Saturdays	(Bands)	.. ..	5	0

From 18th October to 31st December.

		s.	d.
Sundays	No admission by payment.		
Mondays	.. ..	0	6
Tuesdays	No admission by payment.		
Wednesdays	.. ..	2	6
Thursdays	No admission by payment.		
Fridays	ditto.		
Saturdays	.. ..	2	6

The Council have the pleasure to announce that Her Majesty's Commissioners for the Exhibition of 1851 have given their consent that until October 18 Visitors may be permitted to use a temporary roadway for admission from Kensington Gore leading to the back of the Conservatory. The Council sought this concession in order to abate the confusion which, without it, must be attendant on the number of carriages visiting the International Exhibition of 1862.

Calceolaria, Cineraria, Primula, &c., extra choice.

BUTLER AND McCULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

CALCEOLARIA, 1s., 1s. 6d., and 2s. 6d. per packet.
CINERARIA, 1s., 1s. 6d., and 2s. 6d. per packet.
CARNATION, 2s. 6d. per packet.
PICOTEE, 2s. 6d. per packet.
PELARGONIUM, 1s. and 2s. 6d. per packet.
PRIMULA SINENSIS, 1s. and 2s. 6d. per packet.

Calceolaria, Cineraria, and Primula, Extra Fine.

BARR AND SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

CALCEOLARIA, 1s. and 2s. 6d. per packet.
PRIMULA, 1s. per packet.
CARNATION, 1s. and 3s. per packet.
GUNNERA SCABRA, 1s. per packet.
CINERARIA, 1s. per packet.
PICOTEE, 1s. and 3s. per packet.
PELARGONIUM, Large fl., 1s. per packet.
" Fancy, 1s. per packet.

Strawberry Plants and Catalogue.

WILLIAM JAMES NICHOLSON has great pleasure in again offering fine laid Plants of his great collection of STRAWBERRIES of more than 200 varieties, including all those new sorts sent out since the publication of the Catalogue for 1860, and many others of great interest.

A new DESCRIPTIVE CATALOGUE of the above may be had about September 1, by applying to the Growers,

William James Nicholson, Egglescliffe, Yarm, Yorkshire.

STRAWBERRIES for AMATEURS.—Plants of the six most useful sorts, chosen to afford a long succession of fruit, one of each sort, or four plants of ECLIPSE, free by post, for 24 stamps. The sorts include ECLIPSE, new, pronounced first rate, both for Forcing and Out-doors, by the Royal Horticultural Society; PRINCESS, the finest of the very early sorts; SIR HARRY, SIR CHARLES NAPIER, WONDERFUL, the best for very rich soils; and ELEANOR, very fine and late; or OSCAR, if ordered.

Also very choice CAULIFLOWER and pure WHITE BAVARIAN CUCUMBER, 1s. per packet.

Address A. Moss, Jun., Chadwell Heath Mills, Essex, E.

Strawberries.

CHARLES KIMBERLEY can supply strong Plants of the following kinds. Most of them have been transplanted; if done well, will bring a fine crop next season.

	Per 100.—s. d.		Per 100.—s. d.
Admiral Dundas (Myatt's)	5 0	Elton Pine	3 6
British Queen (Myatt's) ex. strong	5 0	Filbert Pine (Myatt's) ..	5 0
Carolina superba (Kitley's)	5 0	General Havelock (Tiley's)	5 0
Comte de Paris	3 6	Oscar (Turner's)	3 6
Black Prince (Cuthill's) ..	3 6	Prince Arthur (Ingram's).	5 0
Elton Pine..	3 6	Rival Queen (Tiley's) ..	5 0
Empress Eugenie (Knivett's)	5 0	Sir Chas. Napier (Smith's)	5 0
		Keen's Seedling	3 6
		Victoria (Trollope's) ..	3 6

Pinley Pine (Kimberley's).—This is an improved Elton Pine; the fruit is much darker, larger, and much more prolific; by far the best late Strawberry we have. Plants will be ready in September next. Per 100, 10s. 6d.

Stoke Nursery, near Coventry.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.
2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

Thomas Jackson & Son, Nursery, Kingston, S.W.

New White Grape "Chavoush."

CHARLES TURNER having made arrangements with Mr. Constantine, Gardener to C. Mills, Esq., Hillingdon Court, Uxbridge, for the Stock of this Vine, has determined to send it out at once, so as to enable those who may wish to plant it out this Season the advantage of doing so at once, thereby saving a Season.

Mr. Constantine gives the following Account of this Vine:—

"A Cutting of this Vine was given to me in 1857 by Mrs. Mills, under the name of Chavoush; it had been sent from Bithynia, Asia Minor, and was represented to be the best Grape that the Sultan had at his table. I find it to be a very free, strong-growing variety, an abundant bearer, and a very free setter, it bears freely under pot culture; when planted out the bunches get a large size with long heavy shoulders, the berries are large, long oval, and when quite ripe are of a beautiful light amber colour; the skin is very thin, and the flavour very rich; it grows freely in the same house with Black Hamburghs, but requires a week or two longer to thoroughly ripen, but does not require any additional heat; it hangs well without shrivelling."

A Bunch of it was sent to the Fruit Committee, Royal Horticultural Society, on August 13, 1861, the following is their Report given of it:—

"The large bunch exhibited was 9½ inches long, tapering, very well set, and with one large shoulder.—The berries are large long oval, the skin is of a fine light amber colour, thin, and adhering close to the flesh, which is rather firm, juicy, rich, and highly flavoured.—The bunch is very showy, and will prove a valuable addition to our collections of large bunched white Grapes. It was unanimously awarded a First-Class Certificate."

Three bunches of it were again exhibited by Mr. Constantine, at the Royal Botanic Show, on July 9th, 1862, and obtained a Silver Medal.

The *Gardeners' Chronicle* in their Report of that Show, speaks of it thus:—

"Another new Grape deserving of attention was Chavoush, a white oval berried variety, of which good examples were furnished by Mr. Constantine."

The following opinion has been received from the eminent Grape Grower, Mr. J. Spencer, of Bowood.

"My dear sir,—I like Constantine's Grape very much, this time it was in fine condition, and the flavour to my mind is richer and more vinous than any other early Grape. The appearance also is good, and as I think you once told me the bunch was large, it will be a valuable forcing Grape, and entirely supersede the Golden Hamburgh, which really is not worth planting. Pray make what use you like of this.—Yours faithfully,

John Spencer"

As the Stock is very limited, early orders are requested, and they will be first attended to.

Price for strong Plants fit for immediate Planting, 21s.

A few extra strong Plants in large pots, which will bring a crop next year will be charged 42s.

The Royal Nurseries, Slough.

New Bulb Catalogue.

MESSRS. E. G. HENDERSON and SON respectfully announce their BULB CATALOGUE for immediate circulation. A copy of which will be forwarded postage free on application.

THE TITIEN STRAWBERRY.
FUCHSIA BIANCA MARGINATA (Banks).
" MARS.
" MDLLE. TREBELLI.
SOLANUM CAPSICASTRUM VARIEGATUM.

Descriptions and prices of the above will be forwarded on application.

The SOLANUM CAPSICASTRUM VARIEGATUM, and the TITIEN STRAWBERRY, are now ready for sale. The FUCHSIAS will be sent out in October.

Wellington Nursery, St. John's Wood, London, N.W.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON and CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladiolus, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

Choice Seeds, in Sealed Packets.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give satisfaction.

AMARYLLIS, saved from choice named varieties, 2s. 6d. per packet.
CALCEOLARIA, Herbaceous, finest mixed, 1s. 6d., 2s. 6d., and 3s. 6d. per packet.
CINERARIA CRUENTA, fine mixed seed from named flowers, 1s. 6d. and 2s. 6d. per packet.
PRIMULA SINENSIS FIMBRIATA, Red, White, or Mixed, very choice, 2s. and 3s. 6d. per packet.

For numerous Testimonials see BULB CATALOGUE, post free on application.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

SPARKENHOE FARMERS' CLUB.—This GREAT ANNUAL SHOW will be held at Leicester, SEPTEMBER 2, 3, and 4, when 1100*l.* will be awarded in Prizes, open to all England, including the following for Fruit and Flowers:—

Best collection of FRUIT, 5*l.* 5*s.*; second best, 3*l.* 3*s.*; third best, 1*l.* 1*s.*

Best 24 DAHLIAS, 5*l.* 5*s.*; second best, 2*l.* 2*s.*; third best, 1*l.* 1*s.*

Best Collection of ROSES, 3*l.* 3*s.*; second best, 2*l.* 2*s.*; third best, 1*l.* 1*s.*

Best 12 ASTERS, 1*l.* 1*s.*; second best, 10*s.* 6*d.*

All Certificates of entry for Fruit and Flowers must be sent to me on or before THURSDAY, August 28. Further particulars may be had on application.

Thomas Davenport, Secretary and Collector.

Ashby-de-la-Zouch, Aug. 23.

DUMFRIES and GALLOWAY FLORAL JUBILEE.—The JUBILEE EXHIBITION will take place in the Pleasure Grounds of the Crichton Royal Institution, on SEPTEMBER 5, and will be open from half past 12 o'clock till 2 in the afternoon; charge for admission, 2s. 6d. each; from 2 till 4, 1s.; and from 4 till 7, 6d. Children admitted at half price.

Tickets for the Exhibition and for the Dinner, the latter 5s. each, to be had at a Booth erected at the Fountain, High Street, Dumfries, on Wednesday, Thursday, and Friday, 3d, 4th, and 5th September.

Competitors are requested to forward their articles on the 4th (being the day preceding the Show), or at latest very early next morning, and to supply the Secretary before September 1 with a list of the articles with which they intend to compete, and to intimate the Class or Classes in which they wish them entered.

Class A, or Open Class, is as follows (Entrance Fee, 10s):—

PLANTS IN POTS.

12 Greenhouse or Stove Plants, in flower, in pots (Fuchsias, Geraniums, and Calceolarias excluded), 1st prize, 80s.; 2, 50s.; 3, 30s.
4 Fuchsias, varieties, 1st, 20s.; 2, 15s.; 3d, 10s.
6 fine-foliaged Plants, 1st, 30s.; 2d, 20s.; 3d, 15s.
6 Exotic Ferns, 1st, 20s.; 2d, 15s.; 3d, 10s.
9 Gladiolus, 1st, 20s.; 2d, 15s.; 3d, 10s.
9 Phloxes, 1st, 20s.; 2d, 15s.; 3d, 10s.

CUT FLOWERS.

24 Dahlias, dissimilar blooms (Fancies excluded), 1st, 60s.; 2d, 40s.; 3d. 20s.
12 Fancy Dahlias, dissimilar blooms, 1st, 30s.; 2d, 20s.; 3d, 10s.
11 Hollyhock spikes, dissimilar, 1st, 60s.; 2d, 40s.; 3d, 20s.
12 Hollyhock blooms, dissimilar, 1st, 20s.; 2d, 15s.; 3d, 10s.
12 Roses, dissimilar blooms, 1st, 20s.; 2d, 15s.; 3d, 10s.

The Society's SILVER MEDAL will be given to the competitor who gains the greatest number of prizes in each of the three Classes, Open, Gardener, and Amateur.

All requisite particulars regarding the other Classes are given in the Programme Book, a new edition, which has just been published, price 2d. Copies can be obtained by applying at the *Standard* Office, or at Mr. Montgomery, Bookseller, Dumfries.

A copy sent by post on receipt of three postage stamps.

Dumfries, Aug. 23. Robert Irving, Secretary.

ROYAL HORTICULTURAL SOCIETY. AUTUMN SHOW, September 10, 1862.—An Additional Prize of 10*l.* will be given for the Best Specimen of a CONSERVATORY TUB. There is no restriction as to material, size, form, or design. It may be of wood, slate, stone, pottery ware, Terra Cotta, or any other substance. It may be in one piece or in many, fastened or bound together. Fitness for its purpose, elegance of design, superiority of workmanship, and cheapness, will be the test of merit.

Letters to be addressed to Mr. G. Eyles, Garden Superintendent, South Kensington, W.

A PRIZE of 5*l.* is offered by one of the Fellows of the Royal Horticultural Society for the 12 best STANDARD PLANTS for the DECORATION of the DINNER TABLE, to be awarded at the Show of Autumn Flowers, on September 10.

The Plants must be ornamental, either for their foliage, flowers, or fruit, and must be grown in pots not exceeding 6 inches in diameter; the foliage, flowers, and fruit must not be less than 20 inches nor more than 24 inches clear from the bottom of the pot.

Elegance of form, slenderness of stem, and variety of colour, will be the tests of excellence.

The groups will be received as late as 10 o'clock, A.M., provided space shall have been secured for them the day before. Letters to be addressed to Mr. G. Eyles, Royal Horticultural Society's Garden, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY. Special PRIZES for the March Show in 1863.

10*l.* for the Three Best CAMELLIAS.
3*l.* for the Three Best TREE MIGNONETTES.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL SOCIETY.

The NINTH ANNUAL GRAND AUTUMN SHOW will be held on WEDNESDAY and THURSDAY, September 17th and 18th, at the Royal Pavilion. Prizes to the amount of 350*l.* are offered for PLANTS, FRUITS, CUT FLOWERS, &c.

The RAILWAY CUP, value 10*l.*, is offered for the best group of three stands of Fruit and Flowers for the Decoration of the Dinner Table. Beautiful arrangement will be the test in this Exhibition. Ladies are invited to compete. The prizes will be awarded by a jury of Ladies.

Schedules of Prizes can be had on application to the Secretary, 96, St. James's Street, or of E. Spary (General Superintendent of the Exhibition), Queen's Graperies, Brighton.

By the kind permission of Colonel Perceval, the celebrated Band of Coldstream Guards will attend each day, conducted by Mr. Godfrey, Sen. By Order of the Committee,

Brighton, August 23. Edward Carpenter, Secretary.

The Gardeners' Chronicle

SATURDAY, AUGUST 23, 1862.

MEETING FOR THE ENSUING WEEK.

Tuesday, Aug. 26 { Royal Horticultural (Fruit and Floral Committees) at S. Kensington, Noon.

The "sere and yellow leaf," here and there falling from the trees, reminds us that the Hyacinth season is at hand: that is to say, the season when it is necessary to make selections of bulbs and to plan out the management which is to be adopted in order to bring about certain results at the blooming period. Those who are proposing to enter the lists in the competitive trials of the ensuing spring, will find it especially necessary to be now on the alert. Let us hope that a larger number of private growers than has hitherto engaged in the competition may come forward and dispute the honours with the nurserymen, who have as yet generally had it all their own way.

That the opportunity of competing will be afforded may be considered certain. There need, therefore, be no hesitation about making preparations for the struggle. The Societies, however, would do well to bring out their schedules as soon as possible, that there may be no doubt on two important points, viz., as to the time when the competitions are to take place, and the conditions of cultivation that may be imposed. As to time, the experience of previous years points to the middle of March as in every way suitable for a fine display of moderately forced flowers. And as to conditions, we believe both the Metropolitan Societies have hitherto avoided any cultural restrictions, the only condition—and this a very proper one—being that the lesser groups should consist of distinct varieties, duplicates being however admitted in the larger collections. The class of half a dozen new varieties is a source of much interest, and ought by all means to be kept up. So also the group of half a dozen varieties for amateurs, in which class the competition should be much more extensive than it was last season. Why not add, for lady gardeners, groups of half a dozen sorts grown in the drawing room in Tye's glasses. Surely many groups would be shown; and surely also some ladies who do not now know anything of the intense interest which attends the nursing up of flowers under their own eyes, will be tempted to try their hand, and so become won over as horticulturists.

For exhibition purposes at least, if not for all other decorative uses, the single-flowered Hyacinths are so much preferable to the double ones, that no one at all acquainted with the habits of the two classes would think of employing the latter. Some of the former are indeed remarkable for the advance in merit which they exhibit,

though the improvement has been but of recent date. This advance is however more manifest among the whites and reds than among the blues, whose place seems to be partly occupied by the new pucy-mauve or amaranth varieties which have recently sprung up. It may be useful just now, when selections are being made, to point out some of the finer varieties of the several colours which we have fallen in with.

Few flowers surpass a nicely-bloomed pure white Hyacinth, and some of the recently obtained white varieties with large flower-bells are specially fine. Nothing probably in this way can compare with the noble spikes of Madame Van der Hoop, which are made up of pure white bells of exquisite form. For general effect and for purity this is we believe one of the very finest sorts in existence; though in the shape of the bells, taken from a florist's point of view, it may be surpassed by Snowball, which however, notwithstanding its name, is of a creamy white, and in size it may be eclipsed by Miss Burdett Coutts, which again has a faint stripe of blush. This fine sort is morever by no means an expensive one, the price we observe in one of the leading catalogues now before us being set down at a florin. Alba maxima, and Mont Blanc are two other capital white varieties, with the flowers quite pure, and the trusses bold and well-filled; whilst Queen of the Netherlands is the cheapest of the pure whites, which we find noted amongst our memoranda as being of superior excellence. Even good old Grand Vainqueur is not now to be despised for general purposes.

Scarcely less delicately beautiful than the white are the blush-coloured varieties, of which there are some excellent forms, as, for example, Elfrida and Grandeur à Merveille, both large-flowered and effective sorts of similar character, and both remarkably cheap. A shade darker comes Norma, a beautiful large-flowered waxy-looking pink, also low-priced; and then there is Sultan's Favourite, still low-priced, which produces a full spike of blush flowers marked by a pink stripe down each segment. Cavaignac, a striped bright rosy pink, and Princess Charlotte, a soft delicate rose-pink, forming handsome spikes, are rather higher priced, and among the best of these pale reds. Koh-i-noor and Mrs. Beecher Stowe of similar colour, and great favourites with many persons, have the flower-spikes too full and confused-looking for our taste.

To these follow on the bright reds, which are amazingly improved, and very much enhance the general effectiveness of a group of Hyacinths. This set does not comprise any of those with the large bell flowers, but the trusses are good, and they are consequently very telling. Victoria regina and Reine des Jacinthes, both of a crimson lake, the latter the brighter tinted of the two, and both priced at a crown, are particularly good—better we think than the still higher-priced Pelissier which is very similar in colour. Lina is a cheaper and very good variety of the same stamp, while Robert Steiger is a still cheaper one (1s.), of a bright red, and good. There are two other very distinct sets among these high-coloured reds; one tending towards pink, in other words a very deep bright pink-rose, represented by Macaulay, which is a smooth-flowered excellent variety, better than Milton; the other verging towards orange, that is of a bright orange-red represented by Howard, which is almost the most brilliant Hyacinth known. That enviable position is held by Solfaterre, which has besides its fiery orange-red hue a light eye which increases its brilliancy, but unfortunately though long known this sort is so scarce and high-priced as to be almost unattainable. Howard is the nearest approach to it, and seems to have a good constitution.

Then come the pucy-mauves or blue-reds, a new shade of colour among Hyacinths, which our Belgian neighbours call amaranth. Some of these are very pleasing, and all are distinct. L'Unique, the oldest of this set, and a very pretty variety, is now to be found among the cheapest sorts, and may therefore be recommended for common purposes. Of the newer varieties which we have seen, Haydn a mauve with reddish-purple stripes, Prince of Wales a pucy-mauve with deeper stripes, and Honneur d'Overveen a deep pucy-mauve, are the best, but they are costly. We observe several other new kinds with long prices in this amaranth group, in some of the foreign lists which have reached us.

Then there are the blues, among which however we have seen but little novelty, though, as already mentioned, there appear to be some fine new sorts forthcoming. We have not met with varieties better than Baron Van Tuyll and Bleu Morant, both really good sorts and useful, as well as low priced. Argus is a most attractive sort and not dear; its azure tube, indigo limb and white eye render it unique. Of light blues verging towards gray, Grand Lilas, a shilling sort, and Couronne de Celle, that may be had for a florin, are noble flowers, the first being in our opinion the best; while of the dark-blues or blackish violets, General Havelock is remarkably fine, rather high in price, and somewhat more of a blue than Prince Albert, which is a cheap and common but very useful sort, one of the very darkest in colour.

Finally, among the yellows are a few very choice things, the most striking of which is decidedly Duc de Malakoff. This produces a bold spike, and has large smooth flowers of a straw-colour striped with rosy-lake; it is costly as yet, as indeed are all the good yellows which we noted last spring, among the best of which were Ida and Victor Hugo, both clear in colour, and more decided than most of the cheaper sorts.

Here, then, are some of the best materials for exhibition, as well as for home decoration; and our advice is to buy early, and to plant early; to get the bulbs well rooted in a cool place, neither wet nor dry, and plunged beneath some porous material which will hold just moisture enough to keep the crowns plump; and then, as required, to force gently into bloom. We may recur to some of these points hereafter.

Amidst the many conjectures that this strange sunless season has brought forth none seem as yet to explain satisfactorily the effects it has produced upon plants in gardens. We have seen stone fruit drop without apparent cause, Pears without a fruit to follow abundant bloom, Laurels and hardy Evergreens incapable of shedding their old leaves which still cling to the branches as if the dead were required to support the living. We see all this, but we find no explanation that will bear attentive scrutiny.

The general belief has been that constant rains and absent suns have so lowered the temperature of the soil that roots have been unable to act; and we ourselves were once inclined to adopt this view. But an examination of facts does not confirm the opinion. Let the reader study the following table:—

Mean Temperature of the Ground at the respective depths of 1 and 2 feet in the first, second, third weeks, and last 9 or 10 days of each month from March to June inclusive; with the average of each of these months, compared with the average of corresponding months for 18 years.

	1 Foot.	2 Feet.
March, 1862.	Deg.	Deg.
First week	41.3	41.4
Second week	46.4	44.0
Third week	45.7	44.4
Last 10 days	47.2	44.8
Average	45.1	43.6
Usual do. ...	42.1	42.2
April, 1862.		
First week	49.5	47.4
Second week	48.3	47.0
Third week	47.4	48.8
Last 9 days	52.1	50.2
Average	49.3	48.3
Usual do.... ...	47.2	46.3
May, 1862.		
First week	56.2	52.8
Second week	56.8	54.5
Third week	56.1	54.0
Last 10 days	57.6	55.4
Average	56.5	54.1
Usual do.... ...	53.0	52.1
June, 1862.		
First week	60.9	57.6
Second week	60.1	58.3
Third week	59.8	57.7
Last 9 days	60.2	57.8
Average	60.2	57.8
Usual do.... ...	60.4	58.3

From this it appears that the earth was considerably warmer than usual in March, April, and May; and that it only became cooler in June, the earth being then but a fraction less warm than customary.

The cause of the peculiarities of our season of 1862, still remains as obscure as ever; and we recommend it to the consideration of meteorologists. The continuous rains and cloudy skies we have endured seem however to have received some explanation from a letter that lately appeared in the *Times*. Mr. Tudor, an officer in the Coast Guard, wrote thus from Abbotsbury in Dorsetshire, July 22:—"It may be interesting to some of your scientific readers to know that a species of Mollusc, known to sailors as the 'Portuguese man-of-war,' and native of the Gulf of Mexico, has been within the last few days washed on shore in this neighbourhood in great numbers. As an old sailor, I have no recollection of having seen them north of the 48th degree of latitude, and then only in what is considered the usual track of the Gulf Stream. Their visit to this coast must indicate an extraordinary change in the course of the currents of the North Atlantic." Should this statement be corroborated by other observers of other phænomena we may then find the cause of our fogs and ceaseless drizzles in the deflection to the southward of that life-giving Gulf Stream which warms the shores of all the West of Europe, in the absence of which Ireland would be like Labrador, and Devonshire and Cornwall have winters as severe as those of Newfoundland.

SHIRAZ TOBACCO.

[The following is the manner of cultivating the famous Shiraz Tobacco mentioned in our last Number, as described by Dr. Riach, in the Horticultural Society's Transactions.]

In December, which is about the middle of winter here, the seed is sown in a dark soil which has been slightly manured; red clayey soil does not do. To protect the seed and to keep it warm, the ground is covered with light thorny bushes, which are removed when the plants are 3 or 4 inches high, and, during this period, the plants are watered every four or five days; only, however, in the event of sufficient rain to keep the soil well moistened, not falling. The ground must be kept wet until the plants are 6 or 8 inches high, when they are transplanted into a well-moistened soil which has been made into trenches for them; the plants being put on the top of the ridges, 10 or 12 inches apart, while the trenched plots are made so as to retain the water given. The day they are transplanted water must be given to them, and also every five or six days subsequently, unless rain enough falls to render this unnecessary.

When the plants have become two and a half to three and a quarter feet high, the leaves will be from 8 to 15 inches long. At this period, or when the flowers are forming, ALL the flower-buds are pinched or twisted off. After this operation (the watering being continued, and irrigation is the system universally employed throughout) the leaves increase in size and thickness until the month of August or September, when each plant is cut off close to the root, and again stuck firmly into the ground. At this season of the year heavy dews fall at night; while exposed to these the colour of the leaves changes from green to the desired yellow. During this stage, of course, no water is given to the soil. When the leaves are sufficiently yellow, the plants are taken from the earth, early in the morning, and while they are yet wet with the dew, and heaped on each other in a high kupper-house (a shed, the walls, &c., of which are made with light thorny bushes or the like), where they are freely exposed to the wind. While there, and generally in four or five days, those leaves, which were still green, become of the desired pale yellow colour. The stalks and centre rib of each leaf are now removed and thrown away. The leaves are again heaped together in the drying house for three or four days more, when they are in a fit state for packing. For this operation the leaves are carefully spread on each other, and formed into a sort of cake, 4 or 5 feet in circumference, and 3 or 4 inches thick, great care being taken not to break or injure the leaves. Bags made of strong cloth, but thin, and very open at the sides, are filled with these cakes, which are pressed very strongly down on each other; the leaves would be broken if this were not attended to. When the bags are filled, they are placed separately in the drying house, and turned daily, until they are to be sent away, when a second bag like the first is sometimes put on.

If the leaves be so dry that there would be a risk of their breaking during the operation of packing, a very light sprinkling of water is given them to enable them to withstand it without injury. The leaf is valued for being thick, tough, and of a uniform light yellow colour, and of an agreeable aromatic smell.

In the vicinity of Shiraz November and December are cool; January and February more so; these may be considered the winter months. In December and January snow falls not unfrequently; the hills are covered with it for some months, but it seldom lies any considerable time in the plains. March and April may be considered the spring (though then the sun during several hours of the day is extremely powerful); and

the remaining months, till November again, as the very hot summer and warm autumn of these parts.

The crops of Wheat are generally cut down in July, or even so late as August.

FRENCH COMMENTS ON ENGLISH GARDENING.

[The *Revue horticole* for August, which has just arrived, contains some remarks which English gardeners will read with interest. They are from the pen of M. Barral, one of the most judicious and experienced of Horticultural writers.]

Before quitting England I must say something more about the Horticultural Fêtes, which in spite of bad weather are always splendid there. The day of July 2 justified a joke of the English meteorologist who regularly predicts bad weather whenever he sees in the papers the announcement of a Horticultural exhibition, for the clouds persisted in keeping up the bad reputation of the sky of Great Britain, and would not give way to the sun till they had descended in abundant showers. The wind also being equally hostile, tore off the canvass of some tents erected to protect the more delicate of the innumerable flowers which spread their charms over the magnificent display. But in spite of all these vexatious contretemps, a crowd of elegant visitors poured into the gardens of the Royal Horticultural Society, with as much eagerness as if it was a most lovely day without either wind or rain; for the turnstiles returned the number of visitors as 12,000, the greater portion being of the sex which knows so well how to rival nature, and take their part in the great tournaments of Flora.

The graceful contest after attracting a great number of distinguished persons, amongst whom were the Duke of Cambridge and the Prince Napoleon, resulted in a grand victory on the part of the Fuchsia, which succeeded in completely regaining its lost popularity. It was impossible to view without emotion the masses of these flowers, which have been so unjustly condemned, and which seemed to protest against their undeserved neglect, by their gracefully drooping bunches of flowers. I never saw so complete a series of red, reddish purple, carmine, and crimson varieties; one would say that English gardeners have succeeded in teaching this rebellious plant to acknowledge them its masters. They have brought its corolla to an almost irreproachable form, although it always seems to delight in breaking from restraint.

There were also many Cape Heaths, so resplendent with flowers, that the plant seemed almost ashamed of its foliage.

The Japanese collections of Mr. Standish and Mr. Veitch might almost be announced as a new triumph, for I am not yet tired of admiring them. Mr. Veitch's plants were marvellously framed in Japanese pots, in which they looked as if they were proud of the skill of their countrymen. The pearl of the exhibition was, without doubt, a Lily the fragrance of which reminded us of the perfumed gardens of Yeddo, neither must we pass over in silence a white variety of Lapageria rosea.

The exhibition of fruit was worthy of the flowers. The Grapes in pots appeared to me wonderful; several plants were so laden with magnificent bunches, that the fruit alone of one specimen must have weighed as much as the whole plant, including the pot which held it. The pomology of France was represented by last year's fruits; the Apples, Pears, Figs, and Apricots had been so wonderfully well preserved that time had not even injured the velvety appearance of their skin; and you might have supposed, from seeing them so fresh, that it was but yesterday they were waving beneath the golden rays of an autumnal sun. But what astonished me more than anything, were the marvellous Peaches which the Chinese and Japanese have the patience to cultivate. These dwarf trees bear gigantic fruits, and may be so placed among the dessert as to offer to the guests, not only the fruit, but the very orchard that produced it.

The exhibition of Roses which took place at the gardens at Kensington, and at the Crystal Palace, Sydenham, were equally splendid, and have brought into notice most beautiful varieties. The climate of England being cold and damp, it is only by means of greenhouses that these grand results can be obtained. For that reason I must say a few words on greenhouses, more especially on Sir Joseph Paxton's system. In fact it is chiefly owing to the skill of this engineer that persons in England will be able to have orchards and vineyards under glass. The *Gardeners' Chronicle* tells us that English gardeners now hope to dispense with the assistance of the sun in producing fruits which nature seems to have refused their isle. This idea is suggested to our contemporary by a little pamphlet of Mr. Hereman's upon the system of cheap greenhouses, like those just mentioned.

My review must be incomplete, but my duty would be wholly unfulfilled were I to forget Kew and its Botanic Garden, the most beautiful in the world. The flag of Kew Gardens waves from the top of a gigantic pole 180 feet high, the trunk of a single specimen of Abies Douglasii. If a vessel sufficiently long could have been found to bring to England another specimen of the wonderful vegetation of Vancouver's Island, we should be able to admire in the midst of the parterres of the Royal Horticultural Society a still more admirable specimen of this timber, squared for the International Exhibition, but now waiting on the coast of the Pacific for a ship large enough to convey it here. It is not alone in England that the quality of this vigorous timber is appreciated. Twelve beams of Abies Douglasii have lately been made the subject of very interesting experiments in Cherbourg arsenal, respecting which M. Serres, the naval engineer, has just published a perfectly favourable report. He declares it is easy to construct out of single sticks spars 99 feet long and above 2 feet in diameter, which will be at the same time more solid, more light, and cheaper than the masts constructed of a dozen separate pieces, as is the usual practice, when such great dimensions are required. In fact, the strength of a Vancouver spar, weighing 8900 kilos., and costing only 4918 fr., possesses a resistance 14 per cent. greater than that of a spliced spar of the same size, costing 14,906 fr., and weighing 12,000 kilos.

INTERNATIONAL EXHIBITION. — FRUITS OF THE COLONIES.

Tasmania,—formerly called Van Diemen's Land, by which name it is as yet best known to many, is nearly as large as Ireland. It lies about 120 miles south of the south-eastern corner of the Austalian Continent, and between the 40th and 44th degrees of latitude. It is, therefore, about as far south from the equator as Italy, the south of France, part of Spain, Portugal, and Turkey are to the north of the line; and as in general climate may be tolerably well estimated by this distance, we may expect to find that Tasmania is capable of yielding by cultivation many of such vegetable productions as attain perfection in the countries just mentioned. We do not say that it will yield all these matters as are produced under corresponding parallels of latitude in Europe and Asia in countries influenced by the Mediterranean. The waters of this sea have got heated, and are cut off from ever being cooled by the currents from the polar seas; for the small portion of them that can enter by the Straits of Gibraltar can have but little effect; hence the superior warmth of the islands of the Mediterranean, and of the countries adjoining its shores, compared with those that are not so favourably situated. Emigrants are interested in the nature of the respective colonial climates. That of the one under consideration will be correctly understood as regards temperature from the following table, published in the "Papers and Proceedings of the Royal Society of Tasmania." The means are deduced from 14 years' observations at the Rose-bank Observatory. As winter there is summer with us, we arrange the months accordingly, for the sake of ready comparison.

	Hobart Town, Tasmania.			London, England.		Difference of temperature marked (+), lower (—).
	Mean temp.	Rain.		Mean temp.	Rain.	
	°	inches		°	inches	°
July	44	2.01	January..	36	1.62	+8
August ..	46	1.40	February	39	1.46	+6
Sept.	49	1.96	March ..	42	1.31	+7
October ..	52	1.59	April ..	47	1.57	+5
Nov.	56	3.30	May ..	54	1.91	+2
December	60	0.92	June ..	60	1.96	0
January..	61	1.13	July ..	63	2.46	—2
February	60	1.67	August ..	62	2.42	—2
March ..	58	1.66	Sept. ..	57	2.47	+1
April	53	1.62	October ..	50	2.69	+3
May	49	1.50	November	43	2.26	+6
June	45	1.78	December	39	1.47	+6
	53.13	20.60		49.83	23.64	+3.30

It will be seen from the above that the two hottest months, January and February, in Tasmania are somewhat colder than our July and August, the two hottest in England; but of late years the mean of these months has proved higher than formerly in Tasmania, and quite equal to that registered in this country. On the other hand, winter at Hobart Town may be said to be unknown. For some years the thermometer never once reaches the freezing point. Occasionally there may be 2° or 3° of frost. We are informed by Dr. Milligan that the Heliotropium peruvianum stands the winter out of doors at Hobart Town; and as every body knows how susceptible of frost that plant is, there cannot be a better proof adduced of the mildness of the climate. Pelargoniums and Fuchsias without any protection form large bushes. All plants of the temperate zone grow well. The heat of the hottest months is not of sufficient intensity to ripen the Grape as in similar latitudes in Europe; but the hardier fruits do well, for as Dr. Milligan remarked, the deficiency of atmospheric heat is compensated for to a considerable degree by the heat of the soil, which is greater than in countries where it is cooled down by severe winters. At considerable elevations of course we meet with a cold climate and a hardy vegetation.

With regard to moisture, it is to be observed in the preceding table, that on the average the fall of rain is very copious in the month immediately preceding the two hottest ones. This is favourable for the growth of crops; then come two rather dry months for ripening. In a pamphlet on "The Products and Resources of Tasmania," by George Whiting, Esq., Secretary to the International Commissioners of Tasmania, it is stated that "the central part of the island consists of table-land, averaging at least 3000 feet above the level of the sea, on which [table land] are seven lakes, varying in size from 2500 to 50,000 acres and containing an aggregate area of nearly 112,000 acres of fresh water. These lakes form the sources of many considerable rivers," two of which, the Derwent and Tamar are navigable for 40 miles from the open sea; and the Huon for 30 miles. These and eleven other rivers meander, summer and winter, through the mountain ranges (some of them 5000 feet high) and gently undulating hills which intersect the island. In all parts of the world we believe the saying holds true, that "where there is the mountain, there is the flood;" and it appears that, considering the size of the island, its mountain scenery is on a grand scale. Mount Wellington, at the base of which Hobart Town is situated, rises to the height of 4000 feet, whilst that of Ben Lomond is estimated to be 4200, or more than 1000 feet higher than the mountain in Scotland which bears the same name. The circumstance of water being abundant from high gathering grounds gives Tasmania an advantage over the more level countries of the Australian continent; for it affords the means of irrigation, and gives at the same time the command of immense water-power in case of such being required for machinery. Count Strzelecki calculates that the water from the crateriform lakes above mentioned is capable of irrigating all the adjacent lands available for cultivation. The soil is excellent, as may be inferred from the magnificent timber which it bears, as well as from the specimens of grain and fruit which we see in the Exhibition.

"No country," says Count Strzelecki, "reminds the traveller so much of the old one as [Tasmania] Van Diemen's Land. There the comfortable mansions and cottages, surrounded by pleasure-grounds, gardens and orchards, the neat villages, and prominently placed churches, forming as it were the centres of cultivated plains, divided and subdivided by hedgerows, clipped or brushed, and through which an admirably constructed road winds across the island, are all objects which forcibly carry back the mind to similar scenes of rural beauty in England and Scotland."

But with all the natural advantages which Tasmania possessed, it certainly was not a paradise as regards fruits. In Backhouse's excellent "Narrative of a Visit to the Australian Colonies," reference is made to a paper edited by Dr. Ross, on the roots and other indigenous esculents of the colony. "That account," says Backhouse, "met with attention in Europe from the remarkable circumstance that so few of these colonies yield any fruit suitable for human subsistence. In this respect the Australian regions stand singularly apart from every other portion of the known world." The indigenous fruits, as enumerated by Mr. Backhouse, are so few that it may be interesting to briefly notice them here. They are the Tasmanian Bramble, Rubus macropodus, which has a sweetish red fruit, but the seeds are large and hard. The finest fruit of the colony is Rubus Gunnianus, the fruit of which is large, of a fine red colour, with a flavour resembling that of the English Cranberry. Other species, the fruit of which may be eaten, are the Gaultheria hispida and G. antipoda, Astroloma humifusum, Styphelia adscendens, Leucopogon Richei, called Native Currant, the berries of which are small, white, and of a herby flavour; but a French naturalist named Riche, was lost for three days on the south coast of New Holland, and supported himself principally upon the berries of this plant; Polygonum adpressum, the Macquarie Harbour Vine, Mesembryanthemum equilaterale, Sambucus Gaudichaudiana, Coprosma microphyllum, called also Native Currant, as are likewise Leptomeria Billardieri; Exocarpus cupressiformis, and E. strictus.

Mr. Backhouse adds, "In closing the list of these indigenous vegetable productions of Tasmania which can in any way be rendered available for the sustenance of man, not one of them is of sufficient value to be worthy of the attention of the agriculturist or the horticulturist."

Slowly at first the fruits of Europe were introduced. Mr. Backhouse, in his narrative under date of August, 1832, mentions calling upon John H. Butcher, a magistrate residing at Richmond (Tasmania), "who, when he came to this country brought over a variety of fruit-trees packed and stowed in the bottom of the ship's hold. The Ribston Pippin, French Crab, Golden Harvey, and a few other sorts of choice Apples survived the voyage, and have stocked the gardens of the colony." In the same work we find the following entry on the 29th of August, 1834:—"Was occupied in assisting F. Cotton to plant some fruit-trees, and to engraft others. He had brought the trees and scions upon his back, more than 80 miles, to preserve them from injury." Owing to steam and the use of Wardian cases, the introduction of new fruits to the most distant colonies is rendered a matter of little difficulty, compared with what it must have formerly been.

In a paper on the Vegetable products exhibited by Tasmania we are informed that there are now in the colony 120 varieties of known Apples, including most of the best sorts cultivated in Europe and America. The delicate Italian Apple Male Carle, will grow and ripen its fruit without the protection of a wall. In 1860 Tasmania exported 118,810 bushels of Apples at prices ranging from 5*s*. to 15*s*. per bushel. About 60 sorts of Pears are cultivated, and Tasmanian Beurré Diel Pears have been sold in Sydney at 2*s*. 6*d*. each. Doubtless owing to the warmness of the soil, the Pear tree grows to a large size. One in the Garden of Government

Cottage, Launceston, is 86 feet in height and 8 feet in girth; and doubtless owing to the same important circumstance, "the Golden Pippin seems to have taken a new lease of life." The Raspberry, Strawberry, Currant, and Gooseberry, flourish like indigenous plants. All the choicest sorts of Plums which require shelter in England, ripen freely as standards in Tasmania; and the Cherry succeeds admirably. The Fig tree bears well without shelter, and the Mulberry is hardy and prolific. Peaches, Nectarines, Grapes, Apricots, Almonds, &c., although not equal to those of Australia, thrive and fruit largely without unusual care, particularly on the northern side of the island. The total value of fresh fruits and preserves exported from Tasmania in 1860 was 56,203*l*.

Three cases of Wax Models of Apples and Pears are to be seen in the Exhibition, and from these some idea can be formed of the size which these fruits attain and the colour they acquire in Tasmania. They are above the average size, and highly coloured. Among Apples are represented the Reinette de Canada, Alfriston, Beauty of Kent, large and fine; French Crab, a useful sort for shipping, owing to its long keeping property; the excellent Cornish Gilliflower, quite true to name, but more yellow than it usually becomes with us. The Rymer is not the true sort, but a large red Apple which at one time was grown for it. The New Rock Pippin, a rich very firm-fleshed sort, is much larger than with us; the Norfolk Beaufin is lighter coloured than usual. Altogether there are models representing upwards of 20 varieties of good sorts of Apples, both for dessert and kitchen use.

Of Pears, there are models of some large specimens of Uvedales St. Germain which weighed from 2lb. 6 oz., to 2 lb. 11oz., and one is stated to have weighed 3lb. 5 oz., but it does not appear to be so much larger than the others. The sorts are correctly named with the exception of the winter Nelis, which we can scarcely suppose would have been so much altered in character by climate; it is most probably the Ne Plus Meuris.

Besides these models there are samples of preserved Gooseberries, Currants, Cherries, Greengages, &c., and fruit of Cob Nuts, and Walnuts. Altogether the exhibition of these models is interesting and instructive, as it enables us to judge of the degree of perfection to which fruits may be grown in the colony.

Indoor Gardening.

JAPAN LILIES.—Some months ago the window gardeners were planting their Gloxinias and their Japan Lilies. It begins to be high time to ask now how they progress. My Lilies have been growing this summer out of doors without any shelter and with hardly any attention beyond a constant watering when the rain has failed. They are now well supplied with buds, and will soon be in full blossom. Last year I got them much earlier, but then they were kept partly in-doors, and just in front afterwards of a window that reflected heat upon them. They need a little attention now and then in the way of washing, to preserve them from green fly, which is very injurious to them, and they are also the better for occasional earthings up, as the roots that are apt to put out round the stem root very readily into the fresh earth and give more strength to the flowers. These certainly are amongst the very best of window plants, blossoming there, if possible, even better than elsewhere, for they do not require to have a great deal of heat like stove plants, and yet out of doors one is always apt to have flowers injured by a storm, or by some untoward accident. In a window full of Evergreens and Climbers a few pots of these Lilies certainly are most lovely.

One thinks just now especially with delight of the hardihood of Japan Lilies. A great many people will have seen already the magnificent new flower of this kind, introduced by Mr. Veitch this year from Japan. I mention it to-day, because a great many window gardeners will no doubt be in town this autumn who may not come every year; and as I see that Mr. Veitch allows the plant to be seen by visitors at his nursery, I want to remind those who may have missed the flower shows, or been deprived of a good view there by the crowd which surrounded the "Lilium auratum," to secure by all means a sight of this lovely flower. It is in habit as hardy as the common Japan Lilies, of which, after seeing their magnificent compatriot, one cannot quite help speaking with a sort of half-veiled contempt, which, considering their beauty, is really most ungrateful.

An uninterrupted view of the "Gilded Lily" for about half an hour yesterday, left me at last still quite unsatisfied; it is indeed a flower that one would like to watch for hours while its beauty grows on one. For those who have not yet seen it I must try to describe it, though I do not think it possible to do justice to it. Fancy an immense luminous white blossom, measuring somewhere about 8 inches in diameter; light seems absolutely to proceed from its exceeding whiteness, and while the petals have that thickly carved solid look that people describe as "waxen," their peculiar transparency gives it still a delicacy very far beyond wax. The star-like rays of most brilliant gold which run down each reflexed petal, and deepen and grow pale, varying day by day, seem to shed out also a sort of pale planet-light, till the sight of the flower hanging orb-like and glimmering, makes one recall the poets who call the flowers "earth's stars."

Every one knows in looking at white flowers that are very white, how one comes to feel sometimes a sort of touch of coldness, like the large icy aspect of a white Camellia, which with all its beauty has not any fragrance; one feels as if without colour there ought to be the more scent. Now this Lily is exquisite as any quite pure white flower, and yet it has these beautiful rays of gold that seem to be its framework, and still it pours out its delightful fragrance, just as if it had no other claim for notice! I know I am "out of order" in writing about one flower instead of following my own business as a working window gardener. Only I have a vision of quantities of windows filled with these Lilies some day; and people who do not see the beautiful flower itself will never guess by description how very lovely it is. I therefore regard it as a good work in window gardening to remind country visitors to go and see it now while it is in flower, and while they are in London.

To return again also to the common Japan Lilies, which we have already in tolerable abundance. A great many window gardeners who are economical in their plants, are apt I believe to think that these are very dear, because they see them advertised at 2*s*. or 3*s*. each, which for a single bulb sounds of course a good deal, especially when we wish to have several in one pot. I think people forget, however, that bulbs which go on increasing and strengthening every year are a better investment than many of those window plants which have to be thrown away, or which perhaps die in the winter a melancholy death; while hardy bulbs like these stand safely in some dry place. The Gloxinias are also delightful things to grow. Mine are now all covered with soft velvet leaves, in every shade from lightest to darkest green, looking, in my eyes, beautiful already, and with buds innumerable; but these Gloxinias were only started in a plant case with very little heat, and have since been standing in one out of doors, entirely unheated. From the time they died down last year, till I planted them early this spring, they were merely kept in a dry pot of sand, and never did any flowers give me so little trouble. *E. A. M.*

Home Correspondence.

Fruit Showing, (*see p.* 765).—I am greatly obliged to you for the just and common sense remarks you made last week on this subject, and I would beg to invite the especial attention of the judges of fruits on the occasion in question to your statement; I also think that the suggestion about naming the number of varieties of Grapes, or any one sort of fruit allowable in a "collection," may be worthy the attention of the Committee of Management in framing a future schedule, otherwise exhibitors are altogether in the dark, and cannot be expected to furnish collections of fruit to any Society, where an award is made so glaringly at variance with custom. In short, it would be easy in framing schedules to state clearly to what extent a repetition of one kind of fruit could be allowed in a "Collection;" exhibitors then would know what to do. *Amateur, York.*——The first prize at the York show was given to a collection containing 1 Pine Apple, 1 Melon, 1 dish of Peaches, 1 dish of Nectarines, 1 dish of Cherries, and five bunches of Grapes, distinct varieties, and all creditable specimens, equal to and in some instances decidedly superior to the same kinds exhibited in the other two collections; the second prize was given for 1 Pine, 2 dishes of Grapes, 1 dish of Peaches, 1 dish of Nectarines, and five varieties of berries, including Strawberries, not one dish of which was fit for dessert—they could only be used for preserving, none of them being more than second-rate in their respective classes. In the third collection there was nothing of superior merit—in short, it contained a Pine Apple not more than ½ a lb. in weight, a circumstance which must have prevented any exhibitor from receiving a high award. Impartially speaking, I think that the judges were right. Your correspondent's version of the matter reads very plausibly, and no doubt so many varieties of Grapes in a collection is an objection, and would have been so considered had all been nearly equal, but as the next collection possessed so many varieties of common fruit I cannot see how the judges could have acted otherwise. Allow me as a disinterested gardener, an admirer of horticultural and floricultural exhibitions, and not an exhibitor, to express my regret at the evident increase of jealousy that exists amongst exhibitors, and at the bad feeling frequently expressed by disappointed competitors. I am quite certain that if there is no check put upon this evil no competent and respectable gardener will give his service as judge, or lay himself open to the abuse to which he is at present liable, and that not unfrequently in the presence of his employer, who eventually gets disgusted and withholds his support from the society, at the same time forbidding the gardener's attendance either as exhibitor or judge. Societies generally select practical men for judges, and exhibitors ought to abide by their decision. No set of judges can ever hope to give general satisfaction, for exhibitors generally view their own productions with a too favourable eye. Then they appeal to you, providing for your judgment a partial statement. To judge fairly, however, all things must be minutely examined, or a just and impartial decision cannot be arrived at. *A Yorkshire Gardener.*

Cottage Garden Societies.—Mr. Kent's remarks respecting the success attending the Bletchingley and Nutfield Cottage Garden Society, tempt me to lay before you a few facts in connection with the cottage gardens in the neighbourhood of Sleaford. The Horticultural Society there organised seven years ago had for its object the promotion and improvement of the cultivation of flowers, fruit, and vegetables; cottagers were seriously taken into consideration, and good prizes were offered for their produce as well as for the best kept gardens. At the outset we had some trouble in getting them to compete, but now they are alive to their own interests and come forward in strong force. The annual show of the Sleaford Society was held in the grounds of Mr. Sharp, Nurseryman, of that town. Three large tents were arranged in different parts, so as to form a beautiful promenade between them. The first tent was filled with Stove and Greenhouse plants, and was all that could be desired. The second contained choice Fruits and cut Flowers of the best class. The third was filled with Vegetables, one-half from gardeners, and the other half from cottagers. Special Prizes were given for the best basket of Horticultural produce grown by a cottager, consisting of Fruits, Flowers, and Vegetables, the arrangement to be taken into consideration. The competition in this class was great, and the arrangement of the baskets excellent. The judges had great difficulty in deciding, and four extra prizes were given, making in all 12 prizes for cottagers' baskets. Separate prizes were awarded for Potatoes, Cauliflowers, Cabbages, Celery, &c., and small fruits, all being keenly contested, and the specimens good. The number of competitors has increased yearly, and this season last year's entries have been doubled. In judging gardens they are placed in three classes; 1st, garden labourers; 2d, gardens under half an acre; 3d, small gardens, or those under half a rood. Six prizes are offered in each of these classes, and all others worthy of notice are awarded from 2*s*. to 5*s*., according to merit. If any of the competitors take a 1st prize for two years running in any of the classes he is not allowed to compete for two years more, but he receives an extra prize of 10*s*. each year, till he is allowed to compete again, if the judges find the garden to be in as good condition as that of the previous year; but if not, the 10*s*. is withheld, but this we have not yet had to do, for once in the field there is no turning back. Advancement in cottage gardens is far greater than could have been anticipated. For the first year or two faults were pointed out in the system of cropping, better ideas and views of gardening were given, and better varieties of vegetables to grow were named; this information was well received, and now we have the pleasure of seeing every little garden in good condition and well cropped with summer and winter produce. I may just mention one case of great success—a farm labourer, renting a garden of half an acre, supplied himself and family with vegetables, and sold from it 20*l*. worth of produce, this was the crop of 1861. The same man before the society was formed did little more then supply his own family; he has now found out that it is more profitable to grow good vegetables then weeds. The worthy Rector of Kirkby Laythorpe (a parish in the neighbourhood of Sleaford) has taken the cottagers by the hand and yearly offers good prizes to be competed for by them, independent of the society's prizes, also all cottagers in his own parish obtaining prizes have the amount doubled to them: a noble example to the wealthy of this and other societies. Great credit is due to our Treasurer and Secretary for the straightforward manner in which the society is conducted. I do not think that the day is far distant when some of our Lincolnshire cottage labourers will show their baskets at the Royal Horticultural Gardens or at the Crystal Palace, if a class is open to them, and I have no doubt that the nobility and clergy will assist in the scheme. *D. L. Bloxholm.*

Wellingtonia.—I have a young plant of Wellingtonia about 2 feet 6 inches in height, which was planted out in an open situation, on a mound not much more than 1 foot in height and gradually sloped; the ground though flat is perfectly well drained. This is more than a year since, and it has grown and flourished till about two months ago, when it began to turn yellow at the lower part, and has now become so all over, the under side of the shoots being the only green parts left. I am anxious to know whether any plan can be suggested which is likely to restore it. My gardener proposes to dig in some leaf soil round it, would that be likely to suit? The soil is a good ordinary one where other evergreens do well, and a Cupressus Lawsonia planted in the same manner not far from the Wellingtonia looks perfectly healthy. *G. O.* [Without personal inspection it is impossible to say with any degree of accuracy what ails your Wellingtonia. It is probable, however, that it is suffering in some way from the effects of the large amount of wet which we have lately experienced. Digging in some well decayed leaf mould round its roots, if carefully done, may possibly assist in restoring it to health].

Vines.—I have two Vineries in which Pines are grown. I have no means of getting the Vines out of doors, and in consequence I cannot properly rest them.

I thought that if I brought the Vines down close to the front ventilators, and put something temporary in front of them, and left the ventilators a little open, it would rest them. Would asphalte answer my purpose, or would the smell from it be injurious to other things in the house? *S. W.* [Bringing the Vines down as you propose affords the best way of resting them; but on no account use asphalte; we recommend you to put a movable front into your house, so as to give the Vines when at rest a cool compartment to themselves.]

Judging Grapes.—How should Grapes be judged? Some think the size of berry the test of good cultivation, others that of the bunch. At a late show here the first prize was given to large red berries and small bunches, whilst some that were well coloured were passed over unnoticed. Would some one give us the benefit of their experience about judging Grapes? I am, of course, speaking of Hamburghs. *F., Liverpool.*

Vine Leaves.—Oblige me by naming the disease affecting the enclosed leaves. The Vines were planted last spring in a span-roof house, and have had only sun heat. They have grown very well, and their tops are quite healthy and growing still, but a great many of their lower leaves are affected as the enclosed. The roots are planted inside the house on a thoroughly well drained border. *J. M., M.D.* [The most recent explanation of cases of this kind has been given by Mr. Thomson in his Practical Treatise on the Vine, from which the following is an extract:—"This is a sort of conglomerate of little green warts that form on the lower surface of the leaf, as if the result of an extravasation of sap through the epidermis or skin of the leaf. Some able writers say this is not a disease. If it is not such, strictly speaking, it is at least organised, or organisable, matter in the wrong place; and I am confident it seriously impedes the important functions of perspiration, digestion, and respiration; so that if not in itself a disease, it leads to at least functional derangement, which is the same thing. As has been remarked while treating of the effects of sulphur, these green warts are more easily affected by the particles of sulphur floating in the atmosphere of the Vinery than any other portion of the Vine, except the young embryo berries. I can undertake to produce or prevent this disease, shall I call it, at any time betwixt the first expansion of the foliage and the stoning of the fruit. A close warm atmosphere saturated with moisture will produce it; whereas a free circulation of air, moderately charged with moisture, will prevent its appearance. I have seen instances where the leaves were so affected by it that they all cupped themselves up round the edges, the fruit did not swell to much more than half its natural size, and the general progress of the Vine was retarded."]

Orchard Houses.—As orchard house matters have been spoken of so much, I venture to give you the results of my experience. Like many others I am a young beginner in this mode of culture; I have now seen two seasons without failures with the trees that are under my charge. We shall not be able to make all trees in pots carry good crops every season. Last year we had 20 Plum trees in pots, which averaged 3½ dozen fruit each; this, I thought, was sufficient for them to bear. We had also a fine lot of Apricots and four trees with good crops of Pears. These trees were in a lean-to house, 100 feet by 10, with Peach trees trained on the back; the trained trees had no crop on them but made good wood; this spring they were all covered with bloom, but did not set many fruit, a circumstance which I attribute to damp, or to the effect of cold winds blowing through the back wall, which is made of feather-edged boards; consequently there is always draught. Some of the pot trees in this house have good crops on them this year. Peaches, Plums, Pears, Cherries, Gooseberries we also got very early. In January this year I had 20 Peach and Nectarine trees from Mr. Rivers, to fill a span-roof orchard house, 80 feet by 24; these I plunged in the centre bed of the house, with some trees from the lean-to house; they are standards 5 feet high, the heads are not large, but they have made good growth for next season. These have all good crops on them. I have thinned a great many off; the trees we had were equal to Mr. Rivers', and were all in bloom at the same time. But in the span-roofed house I kept the back ventilators closed until the fruit was set; the roof of this house is intended for Vines, which are planted inside. I had four trees, which were started in the Vineries to get them early, from which I have gathered 102 Peaches, and these trees look equal to last year's, so that orchard house culture has not been a failure here, as in many places. In your number for July 19, Dr. Dawson speaks of introducing a beehive into a large orchard house next spring. I have had bee-hives in all the houses here this spring, and have found great assistance from their inmates. *W. Dean, The Hasells, Sandy, Beds.*

Foreign Correspondence.

New Westminster, British Columbia, *May* 24, 1862.—I enclose a pamphlet of some interest to persons who are coming hither with ideas too golden for their real good. For all such it contains some wise advice.

There's welcome and ultimate wealth for all who come to abide and work industriously, and (above all) soberly; but all who do come should come intelligently; should look all their difficulties in the face beforehand, resolved to conquer. Then let them go in for "the long run;" we don't want emigrants who come "to make their pile" one day and perform "Klattawaw" from the country the next. They're of no real use. In miners' phrase that game's "played out," and more calculated to get the country into a regular state of "unhx" than to put it "in circumstances." In reading reports from a gold country, it should always be remembered that the words which are then meeting their eye in some English paper, may be literally true and yet convey the impression of quite a different set of facts to the apprehensions of folks at home ignorant of the difficulties and circumstances of the colony, to that which they convey to us here, who are familiar with surrounding circumstances. I was especially struck with this in perusing Mr. Donald Fraser's well written articles in the *Times*. They are substantially true, and yet do not convey a true impression. The country only requires to be truly known to be properly appreciated, and to attract what we want—a settled population.

The great wants of the country at present are (1) roads, and internal communications of all kinds, and (2) women. Of the latter, anything virtuous from 16 to 60 (pitted with small pox and not too attractive preferred), will do, to lick the present vagabond bachelor population into shape and settled habits, instead of unlimited drinks all round of a diluted poison that would electrify Dr. Letheby's weak nerves, and endless billiards, cards, poker, saloons, and 6*d.* cigars, varied only by the savage solace of vicious squaws—the only joys accessible to compensate them for the enormous, wearing, bodily toil undergone in mining for the four or five months that constitute the season.

It is astonishing to see how many men of education, birth, and character, as well as talent, among the miners, become gradually degraded by revolving in this vicious circle. Many in desperation take to what is called "squawing," rearing a young half savage brood in the bush—hidden as far as possible from the general gaze of men—for ever cut off from their other kindred at home—dragging on a weary existence, with the still small voice ever gnawing at the heart and reminding them of what they have lost,—talents neglected, opportunities wasted, character gone, and themselves utterly lost to society and to themselves, and to call a spade a spade all for want of respectable women as wives.

It would be of the greatest service to emigrants to British Columbia, if influential papers like the *Gardeners' Chronicle* would instil into the minds of the powers that be at home the absolute necessity of helping this colony to help herself in the construction of waggon roads up to the gold fields and agricultural lands, all high up the country, and intended eventually to connect with waggon roads and steamers from Tête Jaune Câche (at the source of Fraser River) over the flat and level pass across the Rocky Mountains to Jasper's House, down the Saskatchewan, *viâ* Edmonton House to Red River settlement, and thence on *viâ* the lakes and Great Western of Canada to the St. Lawrence—a feat which I look upon as certain to be accomplished within the next few years. With a Governor so intimately acquainted with every nook and corner of the country, and so influential with the various Indian tribes along the route, as Governor Douglas, the scheme of this Great Pacific Road *over British territory all the way* to us who know him, is feasible enough. His resolute energy, even with the little aid afforded him by this infant colony, and I may almost say no assistance from home, have already broken the back of the main difficulty in the way of its accomplishment, viz., getting up the Fraser and forcing the passes of the Cascade Range to Alexandria. By Jove! if your editorial eyes could but see the precipices, and (apparently) impassable places round, and sometimes through, which waggons now smoothly roll, carrying up grub to hungry miners (at a saving of many pounds sterling per ton in carriage, often many times the worth of the provisions themselves), you would toss up your cap with a Well done! young Columbia—*ite capellæ!*

And then turning to Arrowsmith's map of British Columbia and British America; find that when the roads this year designed and in course of construction are completed, you can get by boat up the Fraser *viâ* Hope and Yale (or by the competing line *viâ* Douglas and Lilloett), along Lake La Hache to Alexandria, and thence along the Fraser (which at and above Alexandria is a still deep stream and in no place less than 500 yards wide), by steamer (now being constructed), to Tête Jaune Câche, in 15 days from Victoria (soon to be done in 10 days), you will be still more inclined to applaud the skill and energy that have accomplished so much in so short a time, with such inadequate means. And you will be all the less surprised to hear that by a comparatively small outlay, in opening the route, the distance from Tête Jaune Câche to Red River by waggon road to the Saskatchewan, thence by steamer and waggon road *viâ* Edmonton House to Fort Garry; thence *viâ* Pigeon River to Lake Superior and the other lakes, in 20 more days the traveller can be brought into contact with the Atlantic, and you will probably think that the dream of an inter-oceanic road in British America is much nearer practical realization than you at first imagined. Why, 40,000*l.* to 80,000*l.* would do it: sufficiently, that is (I would have it to be well understood), to open the route for private enterprise to complete, as we do here, by charter for 5 years, and a small toll (hardly felt) levied on each piece of road as it is made, after having been well graded, built, and metalled. For the new roads of the present year the liabilities of the government in loans to road makers alone (irrespective of the cost of government), will be somewhere about 80,000*l.* Revenue last year about 50,000*l.* This year it will probably be nearer 90,0000*l.* To meet this a local act has been published, enabling the Governor to borrow 100,000*l.* on the general revenues of the colony at 6 per cent. per annum—a first-rate security.

Had not this expenditure been incurred in opening roads the country would only have fed 4000 or 5000 men, and the miners who are rushing in thousands to Cariboo, the same as in 1858, would inevitably have starved; the amount of suffering and privation that would have been endured would be something awful, and the country would never have recovered the collapse. It speaks volumes for the British gold fields that a second rush should have now occurred here. To no other gold colony that I have heard of have there ever been two general gold rushes. If the act for the loan be confirmed from home, as it undoubtedly should be, next year will see such a progress in the country from its comparative accessibility created by this wise expenditure, as will tell sensibly even upon the existing amount of imports of English goods direct from home instead of Yankee notions, give Mother England not only a strong eye but a strong hand and heart on the Pacific, and directly lead to the consolidation of our influence and power with China and our Eastern trade.

This is the critical year for British Columbia: a false step now—famine however partial up in the mines—ruin was certain. Fortunately for her she had a man of nerve and judgment rarely found at fault to act promptly in her hour of need, who by a wise and thrifty expenditure in reducing the enormous cost of carriage to the mines, stepped in in time, and barely in time, to save the country from the most disastrous results.

I must apologise for the length of my communication, but the theme is inspiring, and thoughts of the escape we have just had, and of the great results now before us, flowing from this single cause, and touching imperial as well as colonial interests, insensibly drew me on.

Reviews.

On the various Contrivances by which British and Foreign Orchids are fertilised by Insects, and on the good Effects of Inter-crossing. By Charles Darwin, M.A., F.R.S., &c. With illustrations. London. John Murray. 8vo.

It is not unadvisedly that we have so long delayed reviewing the work that heads this article. When a naturalist like Mr. Darwin, of "Warrior" power, tonnage, and metal, steers away from coasts on which he has won renown in Zoology and Geology, and aims his prow and points his guns at a science whose defences he is not usually supposed to have examined, it behoves the public to stand back, and the reviewer to scan closely the results, before he commits himself to their approval or the contrary. Such is our position in the present case. We confess that in attacking a purely botanical problem, and especially one so obscure and complicated as the physiology of fecundation in Orchids, Mr. Darwin has taken us completely by surprise; none can more deeply feel the special claim such a work has to an ample share of our columns; none can more heartily grant the prescriptive right which Mr. Darwin has long since established to a most attentive hearing, on whatever subject he speaks; and we frankly admit a proclivity to favour the writings of one who is amongst the oldest and most valued of our correspondents. These are given as excuses for our delay; that they are good reasons also, the following observations will amply prove.

Ever since the publication of the "Origin of Species," the public have waited impatiently for the promised "pièces justificatives," by which its author himself announced that the theory propounded in that work must stand or fall. Meanwhile a moiety of naturalists have accepted his conclusions (it matters not whether wholly or partially, for there is no logical middle course), some from having independently made similar experiments and observations to those which Mr. Darwin cites, and being therefore prepared to accept the conclusions he draws from them; some from a previous leaning to the views of Lamarck; and some from an impression or conviction that as what are called "secondary laws" are now the admitted regulators of all natural phenomena in which life is not concerned, so must they also be of biological phenomena. But the other moiety still waits the appearance of the detailed observations; some convinced of their impotence, but too honourable to condemn unheard; some more cautious or less prejudiced, regarding the question as an open one; and still others, already more than half persuaded, only waiting to strike their colours to a more dignified presence than the little green octavo of 1860. Such being the case, the appearance of the present work, which is not professedly put forth as a prop to Mr. Darwin's hypothesis, will be regarded by many as a disappointment; but on the other hand, by those interested in the study to which it relates, and by a still larger number who condemn the "Origin" while they admire its author, his return with undiminished powers of observation to cautious induction from positive facts, will be welcomed with acclamation.

The object of the work, as stated in the introduction, is "to show that the contrivances by which Orchids are fertilised are as varied and almost as perfect as any of the most beautiful adaptations in the animal kingdom; and secondly, to show that those contrivances have for their main object the fertilisation of each flower by the pollen of another flower." The author goes on to say that the investigation is an episode in his great work; that it was commenced with the view of establishing the doctrine (one of his own original and startling generalisations) "that no hermaphrodite fertilizes itself for a perpetuity of generations;" and that, carried away by the interest and beauty of the subject, he gave himself up to its pursuit; and having outrun the limits it was to have occupied in his work, he has treated it apart.

So far, then the "Fertilization of Orchids" is regarded by its author as part and parcel of his great inquiry into the origin of species; and by way of rendering his subject more acceptable to the timid inquirer, and less obnoxious to the unreasoning or prejudiced (especially, we suppose, to the reviewers of the "Origin"), he adds, "This treatise affords me an opportunity of attempting to show that the study of organic beings may be as interesting to an observer who is fully convinced that the structure of each is due to secondary laws, as to one who views every trifling detail of structure as the result of the direct interposition of the Creator."

The present work is one of a class of which Botany possesses singularly few examples, although in many respects it affords greater facilities for the prosecution of such inquiries than any other branch of Natural History. This is partly owing to the minuteness of the organs of reproduction, to the apparent uniformity of the process throughout large classes of plants, and to the slight, rapid, and often transient nature of the disturbances which accompany the operations of insects, the most active agents in the processes of impregnation; and still more, perhaps, judging from Mr. Darwin's methods, to the extraordinary patience required to master the details of comparative structure, to the necessity of pursuing the inquiry system-

atically upon many living specimens of closely allied species and varieties, and to the possession of considerable previous acquirements in entomology and chemistry; to which must be added almost limitless leisure to watch the growing flower up to the full development of its organs, and to master their forms, relations and positions, their every possible movement, spontaneous and induced, and everything of importance to the operation of fecundation.

Hence it is, no doubt, that while our library shelves teem with works devoted to artificial hybridization, and to the process of impregnation after the contact of the pollen, we have scarcely any devoted to the method by which the pollen reaches the stigma. In modern works little is to be found on this subject: much is attributed to the wind, and much to the indirect agency of insects; but the operations of the latter are supposed to be casual. As a general rule the insect alone was believed to benefit by the plant, to whose peculiarities of structure its own were consequently specially adapted, whilst that the plant should be so structurally modified as to avail itself of the insect's office, was only guessed at, and that the mutual adaptation was so complete that the extinction of a species of plant must follow from the withdrawal of the insect visiting it was never before satisfactorily established.

Again it has generally been assumed, and indeed has held the position of an axiom, that the end subserved by the coincidence of stamens and pistils in one flower, is the insured impregnation of the ovary by the pollen of its own flower, and conversely the pollen of each flower was assumed to be best suited for the pistil of the same; that Diclinism was hence an obstacle placed by Nature in the way of her own operations, and that the nearer the pollen and stigma were, the more certainly was the propagation of a numerous and healthy offspring secured. Mr. Darwin sets himself not merely to refute these ideas, but to establish what is pretty much their converse, to show by experiment that they cannot be true, and by reason that they ought not to be so.

To establish his point he selected primarily the British Orchideæ; a bold step, for in these plants the stamens and stigma are all but in actual contact in each flower, whilst a small but complicated intermediate apparatus has been generally supposed to be provided to secure self-fertilisation, and the form, colour, and odour of the flowers to lure insects to aid in the same. If to these facts are added the minuteness of the parts, the rarity of many of the species, and the acknowledged failure of Robert Brown to explain the physiological significance of their structural peculiarities, it is not surprising that they should long have been regarded as the forlorn hope of physiological botany.

How Mr. Darwin has met every difficulty, from the first—and no slight one—of procuring abundance of specimens of the rarest species, to the instituting of experiments with a fertility of resource that few possess, and the interpreting of phenomena with an equally rare sagacity, the volume itself must be consulted to show; for, from the nature of the enquiry, the work is ill-suited for extracts. Still, without examples, it is impossible to appreciate Mr. Darwin's methods, mental and manual, and we shall therefore select one from each part of his work (that devoted to British, and that to exotic Orchids) before giving our views of the value of his results.

With the exception of Cypripedium Calceolus, almost every British species has been examined, and is fully, nay laboriously described; of these we shall take the common Ladies' Tresses, (Spiranthes autumnalis), for illustration; premising that it is neither the most striking nor interesting example, but a fair and good one. First, the rostellum, which Mr. Darwin finds to be the most important agent, mechanically and functionally is carefully described, and every peculiarity, whether of form or minute anatomy that bears upon its function is detailed; it presents the general appearance of a boat, standing vertically on its stern, and filled with a milky viscous fluid, whose properties and power of adhesion he carefully makes out. This boat-shaped rostellum is decked by a peculiar membrane, and on its anterior face is a furrow, endowed with a remarkable vital property, for a touch with a bristle causes it to split along its whole length, and free some of the liquid, an action shown not to be mechanical nor the effect of violence. This exposes the boat-formed disc. The action is next shown never to take place spontaneously, though it may be induced by chloroform. The stigma is next fully described, and then the pollen, its mode of cohesion, its form, and its friability, this latter being a most important matter. Next is described a curious arrangement of parts in the bud long before expansion, which results in the pollen-masses coming into contact with the disc, becoming gradually denuded through the withering of some parts and the recession of others, and finally lying quite free in the expanded flower. Attention is next directed to the spiral arrangement of the flowers, the adaptation of the grooved and fringed labellum to the visits of bees, the position, &c., of the nectar; and the author proceeds thus, "When the flower first opens, the receptacle contains nectar, and at this period the front of the rostellum, which is slightly furrowed, lies close to the channeled labellum; consequently a passage is left, but so narrow that only a fine bristle can be passed down it. In a day or two the labellum moves a little farther from the rostellum, and a wider passage is left to the stigmatic surface. On this slight movement of the labellum the fertilization of the flower absolutely depends.

"With most Orchids the flowers remain open for some time before they are visited by insects; but with Spiranthes I have generally found the boat-formed disc removed very soon after the expansion of the flower. For example, in the two last spikes which I happened to examine there were in one numerous buds on the summit, with the seven lowest flowers alone expanded, of which six had their discs and pollinia removed; the other spike had eight expanded flowers, with the pollinia of all removed. We have seen that when the flower first opens it would be attractive to insects, for the receptacle already contains nectar; and the rostellum at this period lies so close to the channeled labellum that a bee or moth could not pass down its proboscis without touching the medial furrow of the rostellum. This I know to be the case by repeated trials with a bristle.

"Let it be observed how beautifully everything is contrived that the pollinia should be withdrawn by an insect visiting the flower. The pollinia are already attached to the disc by their threads, and from the early withering of the anther-cells, they hang loosely suspended but protected within the clinandrium. The touch of the proboscis causes the rostellum to split in front and behind, and frees the long, narrow, boat-formed disc, which is loaded with extremely viscid matter, sure to adhere longitudinally to the proboscis; when the bee flies away, so surely will it carry away the pollinia. Hence in Spiranthes, not only the pollen must be carried from one flower to another, as in most Orchids, but a lately expanded flower, which has its pollinia in the best state for removal cannot then be fertilized. Generally old flowers will be fertilized by the pollen of younger flowers, borne, as we shall see, on a separate plant. In conformity with this I observed that the stigmatic surfaces of the older flowers were far more viscid than those of the younger flowers.

"At Torquay I watched a number of these flowers, growing together, for about half an hour, and saw three humble bees of two kinds visit them. I caught one, and examined its proboscis; in the superior lamina, some little way from the tip, two perfect pollinia were attached, and three other boat-formed discs without pollen; so that this bee had removed the pollinia from five flowers, and had probably left the pollen of three of them on the stigmas of other flowers. The next day I watched the same flowers for a quarter of an hour, and caught another humble bee at work; one perfect pollinium and four boat-shaped discs adhered to its proboscis, one on the top of the other, showing how exactly the same part had each time touched the rostellum.

"The bees always alighted at the bottom of the spike, and crawling spirally up it, sucked one flower after the other. I believe humble bees generally act thus when visiting a dense spike of flowers, as it is most convenient for them; in the same manner as a wood-pecker always climbs up a tree in search of insects. This seems a most insignificant observation, but see the result. In the early morning when the bee starts on her rounds, let us suppose that she alighted on the summit of the spike; she would surely extract the pollen from the uppermost and last opened flower; but when visiting the next succeeding flower, of which in all probability the labellum would not have moved from the column (for this is slowly and very gradually effected), the pollen-masses would often be brushed off her proboscis and be wasted. But nature suffers no such waste. The bee first goes to the lowest flower, and crawling spirally up the spike, effects nothing on the first spike she visits till she reaches the upper flowers; there she withdraws the pollinia; she soon flies to another plant, and alighting on the lowest and oldest flower, into which there will be a wide passage from the greater reflexion of the labellum, the pollinia will strike the protuberant stigma; if the stigma of the lowest flower has already been fully fertilized, little or no pollen will be left on its dried surface; but on the next succeeding flower, of which the stigma is viscid, large sheets of pollen will be left. Then as soon as the bee arrives near the summit of the spike, she will again withdraw fresh pollinia, will fly to the lower flowers on another plant, and fertilize them; and thus, as she goes her round and adds to her store of honey, she will continually fertilize fresh flowers and perpetuate the race of our autumnal Spiranthes, which will yield honey to future generations of bees."

It would be difficult to match the above as a specimen of purely physiological investigation, laborious, ingenious, and conclusive as to its results, except by the similar descriptions of the other Orchids in the same work, some of which indeed far surpass it in point of interest. Take for instance the experiments on the pollinia of Orchis mascula and pyramidalis, and of Gymnadenia, which a child can repeat; or those connected with the explosive rostellum of Listera ovata, whose office, which is obvious enough when demonstrated by Mr. Darwin, had been completely misinterpreted by his predecessors.

(*To be continued.*)

The Science of Home Life. By A. J. Bernays. Allen & Co. 8vo.

Dr. Bernays, like many other modern chemists, has endeavoured to render his science popular by pointing out the manner in which it explains the phenomena that surround us; and he has been one of the most successful. His language is clear and his subjects well selected. The reader is not puzzled by elaborate disquisitions suited only to college lectures, nor bewildered by formulæ that the initiated hardly understand. What he says is short, plain, and to the purpose.

In the volume before us the author treats of heat; the atmosphere with its relations to animal and vegetable life; of fuel, and light; of water, soap and bleaching agents; of glass and porcelain, gold, silver and base metals, fermentation, and food. We content ourselves with what is said of wine:—

"Whether persons in robust health require the constant stimulus of wine, or any other form of alcohol, may, perhaps be questioned; but it would tax the ingenuity of any one to show that such persons are injured by it. But, in truth, the great majority of persons, especially among town populations, are not in robust health. The impurity of the air, the habits of town life, the demands on the nervous system in the struggle for existence, and many other causes in operation in towns, do, it is to be believed, more or less deteriorate the health of the majority of their inhabitants, and render the moderate use of wine or good unadultered beer decidedly beneficial.

"Its benefit in many cases of small or defective appetite can scarcely be questioned, and is, indeed, admitted by the most strenuous opponents of its general employment. But in such cases it may be regarded, not as an article of diet, but as a medicine.

"Dr. Carpenter, the great apostle of teetotalism, is obliged to confess of it, that 'there is another class of cases in which we believe that malt liquors constitute a better medicine than could be administered under any other form; those, namely, in which the stomach labours under a permanent deficiency of digestive power. . . . . . There are many cases in which no form of medical or hygienic treatment seems able to develope in the stomach that spontaneous power, which it has either completely lost, or which it never possessed, and in which the artificial excitement of an alcoholic stimulus affords the only means of procuring the digestion of the amount of food which the system really requires.'

"Within the last two or three years Messrs. Lallemand, Perrin, and Deroy, and subsequently Dr. Edward Smith, have shown by experiment that a part, and therefore perhaps all, of the alcohol taken into the system is exhaled, unchanged, by the lungs, skin, and other channels. This fact has been pressed into the service of teetotalism, and has been put forward in support of the sweeping assertion, that alcohol is useless as food and therefore injurious. It may, perhaps, show that it is incorrect to say, as Liebig formerly did, that 'alcohol stands high as a respiratory material. Its use enables us to dispense with the starch and sugar in our food, and is irreconcilable with that of fat.' But to affirm that it is useless is an assertion not only altogether incapable of proof, but contrary to the testimony and reason of every age. The upholders of this doctrine are compelled in its defence to ignore every argument except this one derived from pure science, thereby doing the science itself an injustice, and inflicting violence on the reason of impartial men."

We further recommend Dr. Bernays' opinion of beer to those who think that its only use is to muddle people's brains:—

"Beer is not to be regarded simply as a stimulant, for the beer of most brewers contains more or less of actual nutriment. In addition to sugar and dextrine, they often contain as much as 1 per cent. of gluten and albumen, together with salts of potash, soda, lime and magnesia, as well as the important acid of bones, phosphoric acid, in combination as phosphate."

Be it remembered however that in saying this he means real beer, not the poisonous adulterations which "form the rule in beer sold by retail."

The *Botanical Magazine*, for August, contains figures of some very pretty garden plants, noticed below:—*Nolana lanceolata*, a Chilian annual, exhibited last summer by Messrs. Veitch & Son, by whom it had been introduced. It is a prostrate hoary plant, having lanceolate leaves growing in pairs side by side, and producing handsome blue flowers with a white centre, "much larger and handsomer than in the well-known N. paradoxa." *Grammitis caudiformis*, a simple fronded Pacific Island Fern belonging to the Sellignea group, with copiously anastomosing veins. Sir W. Hooker identifies it with the Polypodium caudiforme of Blume, being, he observes, "so fortunate as to possess specimens exhibiting all the intermediate grades between the perfect sori of Grammitis, and that form of sori which would almost justify its being placed in Polypodium." *Bolbophyllum pavimentatum*, a little tropical West African Orchid with spikes of purplish-red flowers recalling to mind those of a Persicary.

"The specific name is given from the soil on which the plants grew, being as it were paved with the densely compacted pseudo-bulbs, a resemblance the more striking in the dried and compressed specimens where these pseudo-bulbs would be reduced to a nearly uniform level." *Ipomœa alatipes*, a smooth strong growing stove climber from tropical America, remarkable for its singularly winged peduncle bearing from two to four flowers of a deep salmon-colour, and measuring 3 inches across. *Anomochloa marantoidea*, a curious grass, with the aspect of a Maranta, and a native of Brazil. *Nephelaphyllum pulchrum*, a dwarf variegated orchid from Java, with prettily mottled leaves, much greener however in the plate than they usually are on the plant, where they are generally strongly suffused with purplish-brown. It does not by any means compare in beauty with the well-known Anæctochilus.

The *Florist* for the present month figures two very handsome Double Chinese Primroses called *Rubra grandiflora*, and *delicata*, varieties which have been raised and brought into notice by Messrs. F. & A. Smith of Dulwich, and to which we have already directed attention; also the Irish Peach Apple or Early Crofton, capitally rendered, and described as one of the most excellent of summer Apples. The Grape question is further commented on by Mr. Thompson. Mr. Radclyffe discourses upon Roses; and among other interesting jottings tell us that the following varieties are "the nearest perfection of any Roses that have been out for years—Comtesse Cécile de Chabrillant, Sénateur Vaïsse, Madame Furtado, and Empéreur de Maroc; these are the types of shape, and are good in every respect. The next three are also eclectic and grand Roses of the highest order of merit, viz., Victor Verdier, Madame Boll, and General Washington; these are all strong constitutioned Roses, of free growth." "A Country F.R.H.S." has some remarks on "Summer flowers and the Royal Horticultural Society," in which he urges the introduction at Kensington of more trees, evergreen hedges, and early summer flowers, suggesting further that "Mr. Eyles' practical judgment would soon obviate the difficulty if left to himself." It is argued that, "if the London public expect to see a flower-garden in perfection in June, some other description of plants must be used than Verbenas and Scarlet Geraniums." [Hear, Hear.] *Ed.*

Willkomm & Lange Prodromus Floræ Hispanicæ.—The first volume is now complete with an index of genera. It begins with Ferns and ends with Birthworts (*Aristolochiaceæ*). There is a long and carefully written account of Spanish Oaks in which the authors refer *Quercus Quexigo, faginea, australis* and *valentina* to Qu. lusitanica; *Q. pseudosuber*, and *Fontanesii* to Q. hispanica; of Q. Merbeckii and Zan nothing is said; the Cork tree of the West of France and N. of Spain is distinguished from the true Cork under the name of Q. occidentalis. We should add that the authors include in this Flora commonly cultivated plants as well as those which are truly indigenous.

Hooker's Species Filicum (Pamplin) has now reached as far as part xiv., or part ii. of volume 4. The number before us contains Nephrodium, in which is merged Lastrea; Nephrolepis, Oleandra, Fadgenia, and a part of Onoclea. As usual the numerous plates of this invaluable work are admirable specimens of correct free-hand drawing. Another part is to be published shortly.

We learn that there is in preparation a new edition of Bentham's capital *Handbook of the British Flowering Plants and Ferns*, in which every species will be illustrated by an original wood engraving by Fitch, special attention being given to the magnified dissections and parts of the plant. More than 150 of the engravings, which are excellent, and in every way worthy of the artist, are already finished. It is proposed to issue the work in 25 monthly parts at 2*s.* 6*d.* each, commencing with the new year. The work will be completed in two volumes of 1000 pages and 1250 engravings, price 3*l.* 3*s.*

Trade Lists Received.—Louis van Houtte, Ghent, *Prix courant*, *No.* 93. This forms a closely printed Catalogue of 86 pages, and is extremely rich in all ornamental plants—hardy bulbs, tender bulbs, stove plants, Greenhouse plants, Orchids, &c., &c., &c. Among the novelties is a beautiful Acanthad called *Otacanthus cæruleus*, which will be found a gem among stove plants. Its flowers are of the softest, but richest, blue.

Garden Memoranda.

S. Rucker's, Esq., West Hill, Wandsworth.—There is now in bloom here a magnificent specimen of Vanda Lowei, a Bornean species of extraordinary beauty, introduced to this country some years ago by Messrs. Low, of Clapton. It is planted in a large pot filled with Sphagnum and broken bricks, sunk in the floor of the house in which it is growing, and measures quite 8 feet in height. It has four lateral branches besides the main stem, all of which are furnished with long drooping chain-like flower-spikes, eight in number, and measuring quite 7 feet in length, festooning from the roof to which they are attached in the most graceful manner imaginable. These are covered with large showy blossoms, having a buff or rather pale lemon ground colour, most beautifully barred and blotched with rich cinnamon brown. When we state that on each spike there are at least 40 flowers fully expanded at one time, not huddled together in a confused way, but set at regular distance apart, varying from 3 to 4 inches, some idea of the glorious appearance presented by a specimen of the size just described may be conceived. A singular circumstance connected with the inflorescence is, that at the base of every spike are two, and in some instances three, blossoms of a rich orange yellow, covered with minute black spots, and quite different in colour and form from that of the rest of the flowers on the same spike.

This fine species of Vanda will be found fully described at p. 239 of our volume for 1847. We may mention that a specimen of it was shown in bloom this summer at one of the Royal Horticultural Society's exhibitions; but so poorly was the real beauty of the plant represented, that it was passed by comparatively unheeded. To Mr. Pilcher, Mr. Rucker's gardener, has been reserved the credit of first showing what this Vanda is capable of becoming under good cultivation, and well has the task been performed.

Among other rarities now in bloom here, must be named two plants of Disa grandiflora—one not more than 1 foot high with no fewer than four flowers on it; the other a little taller. These consisted of the high-coloured variety of this beautiful terrestrial Orchid.

Royal Botanic Gardens, Kew.—The bedding plants at this establishment are now in full bloom, and well worth inspection. Some account of them may therefore be interesting, especially, as in one or two instances combinations of an entirely new character have been effected. These occur at the end of the main walk next the lake. Forming a centre-piece is a large bed some 30 feet in diameter, in the middle of which is a square pedestal for supporting an ornamental vase; on each side of this little crucifixes made of Perilla nankinensis run into a belt of yellow Calceolaria some 6 feet in width; surrounding that again are blue Ageratum, Geranium Fothergilli, the silvery leaved Cineraria maritima and Scarlet and Purple Verbenas, and around the whole is, we understand, to be put an ornamental stone kerb now in course of erection.

It is however in four beds forming a necessary accompaniment of this central mass, in which by far the prettiest mixture is to be found. These are each about 45 feet in length and a trifle more than 8 feet in width and are planted as follows. Along the centre forming a chain is a series of diamonds measuring 4 feet in the side, made with Perilla; inside the diamonds is Flower of the Day Geranium, from which the flowers are kept constantly cropped; outside the angles are occupied with Lord Raglan Verbena, and round the whole is an edging made of variegated Alyssum, and Lobelia speciosa planted alternately, the white and the blue associating well together and forming an agreeable and pretty contrast. Than this arrangement nothing in its way could possibly be handsomer. True, it is somewhat faulty as regards heights; but the change from the usual mode of flower-bed management is altogether so strikingly beautiful that we have no hesitation in saying that it forms the beginning of an entirely new plan of flower-garden decoration.

Other beds, though inferior to these as regards effect, are nevertheless extremely pretty, notwithstanding certain drawbacks occasioned by the unfavourable season we have experienced. One square mass, consisting of Purple King Verbena in the centre, surrounded by Tropæolum Lobbianum elegans or Crystal Palace Nasturtium, and edged with the stone-coloured Cerastium tomentosum, had a charming effect. In the centre of a second bed were Lord Raglan and Purple King Verbenas, edged with Cerastium tomentosum. A third contained Countess of Ellesmere Petunia margined with variegated Alyssum. A fourth consisted of Punch Geranium, surrounded by Geranium Brilliant, and edged with Purple King Verbena. A fifth, Calceolaria amplexicaulis and Perilla, edged with Cineraria maritima. A sixth, Lord Raglan Verbena, margined with Cerastium tomentosum. A seventh, Roses, Mignonette, and Asters; the latter have, however, not flowered well this year. An eighth, Purple King Verbena and Tom Thumb Tropæolum, edged with Cerastium.

Of other square beds one was filled with Geranium Punch, edged with the grey leaved Stachys lanata. Another with Flower of the Day Geranium, surrounded by Geranium Brilliant, and edged with Purple King Verbena. A third with Geranium Punch, margined with the stone-coloured Gnaphalium lanatum, a useful plant for that purpose, and one which strikes freely and is sufficiently hardy to withstand the winter without requiring any great amount of care. Finally, in the neighbourhood of a large Turkey Oak, about the centre of the long straight walk, and elsewhere, we noticed fine masses of the dwarf purple Dahlia Zelinda, edged with orange and yellow Calceolarias.

Circular beds, of which there are several on both sides of the walk just named, are planted in the following manner:—one consisted of blue Ageratum and Tropæolum Lobbianum elegans; another Geranium Punch, edged with Variegated Balm, the last closely pinched in so as to form a neat miniature hedge; a third, French and African Marigolds surrounded by Gazania splendens and blue Lobelia; a fourth, Geranium Brilliant, edged with Mangles' Geranium; a fifth with Ageratum, margined with Géant des Batailles Verbena; a sixth with Golden Chain and Baron Hugel Geraniums, edged with Stachys lanata; others consisted of Alma and Bijou Geraniums, and the little sweet-scented Oak-leaved variety of Geranium called Lady Plymouth.

For little circles round the bases of standard Roses, by far the most showy plant was Crystal Palace Nasturtium, a much less leafy and more ornamental Tropæolum than the variety called splendens, which appeared to be unsuitable at least for small masses. Variegated Agathæa cœlestis and Ageratum are also good plants for small circles like those just named, as is likewise Heliotrope Miss Nightingale, a dwarf dark-coloured kind. One bed contained Centaurea ragusina, one of the most effective of white-leaved plants.

The small flower garden in front of the great Palm-house is also at present in its best condition. It contains good masses of Perilla, Cerise Unique, and Flower of the Day Geraniums, the last being employed as an edging; Lord Raglan and Purple King Verbenas; Calceolaria amplexicaulis and aurea floribunda; Blue Ageratum and Variegated Alyssum.

Vases round the lake were filled with Geranium Punch, which is considered better adapted for that purpose than Tom Thumb, being equally free-flowering and a little more robust in habit.

In one part of the grounds we observed a little locket formed of bedding plants, and in front of the old museum is what has been popularly named by the daily press a "Coventry ribbon"—a long bed containing lines of equal breadth (about 15 inches) of the following plants, viz., in the centre Perilla; on each side of that Cineraria maritima, surrounded by an edging of Purple King and Robinson's Defiance Verbenas, the two last forming a charming mixture of scarlet and purple. This ribbon being quite 30 yards in length and a little more than 7 feet in width, has a handsome and showy appearance; it is even better this year than last. It is backed up by a scroll of Ivy, associated with which are other beds filled with Fuchsias, Dahlias, and smaller kinds of bedding plants. The Dahlia beds are edged with the variegated variety of Phalaris arundinacea, a plant which did not appear to be so suitable for that purpose as variegated Balm, a compact and beautiful edging of which surrounded a large circular mass of Hollyhocks with excellent effect.

We may take this opportunity of saying, that never before have we seen Kew in better order than it is at present. The Grass is beautifully green, and the different shrubs and trees in excellent condition.

In-doors too things are equally satisfactory. The Royal Water Lily (Victoria Regia) is blooming beautifully both in the tank in house No. 6, and in the Victoria house, where no fewer than 19 leaves, each measuring quite 7 feet in diameter, cover the water. The latter is also singularly clean and free from confervæ; this is to be attributed to covering the soil, in which the Lily is growing, with sand, and to having no fish in the tank to burrow into the bottom and raise the mud. Of the variegated Alocasia macrorhiza this Aquarium contains a large and fine specimen; and until lately might also be seen in it one of the best plants in the country of Coleus Verschaffelti, which is now in the great Palm stove.

In the herbaceous ground various plants of Kniphofia Uvaria are now in bloom; they are not, however, by any means so fine as we have seen them in former years. They have not even yet apparently quite recovered from the ill effects of the hard winter of 1860-61.

Miscellaneous.

Structure of the Bark of Araucaria imbricata.—The frost of December 1860 caused serious damage to trees and shrubs in the Botanic Garden of Edinburgh. On the morning of December 24, Fahrenheit's thermometer stood at 6° below zero, according to the Kew standard. An account of the injury inflicted has been already published in the Transactions of the Botanical Society of Edinburgh. It has been stated that the great cold in the garden, as compared with other places near Edinburgh, may be accounted for by its low sheltered situation, and the descent of the heavy cold atmosphere from the more elevated localities around. Among the plants which suffered were two very fine specimens of Araucaria imbricata, which had stood for upwards of thirty years, and one of which had attained the height of 24½ feet, with a circumference of 4 feet at the base of the stem, and with twenty whorls of branches. These trees, which were great ornaments of the lawn in front of the range of hothouses, have been cut down. An opportunity was thus afforded of examining the structure of their wood and bark. The former is very hard and heavy, and promises to be valuable timber. In regard to the latter, the scars and markings, and their relation to the leaves, seem to deserve special notice. The sharp-pointed triangular hard and spirally arranged leaves are remarkably persistent. None of the plants in the garden have ever shed their leaves. They become sometimes of a brown colour; but even then they continue to adhere to the stem, and appear as unsightly appendages. In one of the plants cut down

the leaves show a splitting at the base, apparently from distension in the parts underneath, similar to what takes place in the petioles of many palms before they are detached. It is possible that, in the Araucaria, the splitting of the basis of the leaves may sometimes be the percursor of their fall. From the lower part of the leaves prolongations extend along the surface of the bark, and give rise to peculiar markings, which are well seen when the leaves are cut off close to their union with the stem. The base of the leaf remaining in the bark has the form of a narrow elongated ellipse, surrounded by cortical foliar prolongations. The markings on the bark, viewed externally, have a somewhat oblique quadrilateral form. The leaves, when examined by the microscope, show stomata on both surfaces, running in lines, not unlike the appearance presented by stomata in Equiseta. On removing the epiphlœum or outer bark, and examining its inner surface, we remark a difference in the appearance presented at the lower and upper part of the stem. In the lower portions the markings have an irregular elliptical form, with a deep depression, and fissures where the leaves are attached. Higher up the epiphlœal markings assume rather more of a quadrilateral form, with the depressions less deep, and the fissures for the leaves giving off prolongations on either side. Farther up the markings are smaller in size, obliquely-quadrilateral, and present circular dots along the boundary lines chiefly. Higher still the quadrilateral form becomes more apparent, and the dots disappear. The epiphlœum thus presents differences in its markings at different heights on the stem. The middle part of the bark, or mesophlœum, is well developed, and is of a spongy consistence. When examined microscopically it is seen to be composed of cells of various shapes—some elongated fusiform, others rhomboidal, others with pointed appendages. The variety of forms is very great, and it is possible that this may be partly owing to the effects of frost on the cells. On the spontaneous separation of the bark, the mesophlœum was seen to consist of distinct plates of a more or less quadrilateral form, with some of the edges concave and others convex, a part in the centre indicating the connection with the leaf, along with which it is detached. The endophlœum, liber or inner bark, is of a fibrous nature, and consists of elongated woody tubes. The appearances presented by the outer and middle bark of Araucaria imbricata bear a marked resemblance to those exhibited by certain fossils included in the genera Sigillaria and Lepidodendron. The sculpturesque markings on the stems of these fossil plants have induced geologists to look upon them as allied to the ferns and lycopods of the present epoch. But it is evident, from the specimens of Araucaria now laid before the Society, that much caution is required in making this determination. Other points of structure must be examined before a proper decision can be formed; when, for instance, the presence of scalariform tissue, or of punctated woody tissue has been satisfactorily shown under the microscope, we are entitled to hazard an opinion as to the affinities of the fossils. In many instances, however, external appearances are the only data on which to rely for the determination of fossil genera and species; and rash conclusions have often been drawn by geologists who have not been conversant with the structure of plants. The Araucaria markings point out the need of care in drawing conclusions, and their variation at different parts of the bark indicate the danger of a rash decision as to species. There can be no doubt that in vegetable palæontology the number of species has been needlessly multiplied—any slight variation in form having been reckoned sufficient for specific distinction. We can conceive that the Araucaria bark markings in a fossil state might easily supply several species of Sigillaria, or of Lepidodendron. The geologist, with little knowledge of the present flora of the globe, ventures often to decide on an isolated fragment, which a well-informed botanist would hesitate to characterise. Hence the crude descriptions of fossil vegetable forms, and the confusion in which Palæophytology is involved. Every geologist who examines fossil plants ought to be well acquainted with the minute structure of living plants, the forms of their roots, stems, leaves, fronds, and fructifications; the markings on the outer and inner surfaces of their barks, on their stems, and on their rhizomes; the localities in which they grow, and the climates which genera and species affect in various parts of the world. *Dr. Balfour, in the Proceedings of the Royal Society of Edinburgh.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c. — The usual supply of the different kinds of soil used in potting should be laid in as soon as convenient, after the ground gets a little dry, for even turf should not be carted and stacked when saturated with water. The soil should be neatly put up in narrow ridges, so as to be safe from wet, and exposed as much as possible to the action of the air. And as success in plant growing very much depends upon having suitable material for potting, no trouble or expense that may be necessary to procure this should be spared where well grown specimens are expected. Loam of moderately good quality may be obtained in most neighbourhoods, but good peat is not always so easily got. This is absolutely necessary, however, for the growth of choice hard wooded plants, and should be procured at the proper season, so as to have it in a fit state for use when wanted, for nothing is more disheartening, or worse economy, than being without suitable soil in a fit state for use, with which to pot at the proper time. Stove plants flowering in the conservatory will require attention to prevent their being injured by damp, especially Achimenes and Clerodendrons, which should be gone over every day in uncertain weather like the present, carefully picking off decayed flowers, &c. Twiners on the roof which have done flowering may be thinned out, so as to prevent their shading the house too much; for, after this season, permanent shade should be avoided as much as possible. Young stock in cold pits intended to flower next season, should be exposed to the midday sun, in order to ripen the wood, taking care not to do this so rashly as to injure the foliage. This, however, will only be proper in the case of such things as have already made plenty of young wood; but it is advisable after this season to be anticipating the approach of winter, and to use every possible means to forward the growth of valuable hard-wooded plants, in order to get it somewhat firm and able to resist damp, &c., as soon as possible; and this is especially necessary where the plants have to be wintered in cool houses.

FORCING DEPARTMENT.

Pinery.—Those who think of trying the planting out system cannot commence at a more favourable period than the present, for there is now no chance of hot, dry weather, to cause the plants to start prematurely into fruit, as is sometimes the case, to the disappointment of beginners and the undue discredit of the system. The bed of soil should be from 18 inches to 2 feet deep, and should consist principally of sandy, turfy loam, with a little leaf-mould or rich peat mixed with a liberal proportion of sharp sand, so at to ensure its taking water, if it is ever from any cause allowed to get dry; for if turfy loam and peat in a rough state are used, and ever get dry, it is nearly impossible to thoroughly moisten the bed again; if moderately fine soil however is used, and careful mixed with a proper proportion of sand, water will penetrate the mass freely, instead of passing off between the lumps, and the roots will be nearly as much under command as to moisture as those in pots. Persons commencing this method of cultivation should also be careful not to plant pot-bound stock; for such, whether young or old, seldom strike root freely, but are almost sure to fruit prematurely. For persons who grow Pines largely, and have several houses, or separately heated compartments, devoted to their culture, the planting out system has many advantages over pot culture; but where a regular supply of fruit has to be furnished from a moderate number of plants we would still prefer the pot system of cultivation.

Vineries.—Young Vines planted out this season have, in many cases, not succeeded quite satisfactorily. Where the border is composed of strong loam, it is almost sure to be too wet for the healthy action of the roots. In that case some have applied a covering of warm stable litter, extending it as far across the border as the roots reach. There is, however, considerable danger in applying fermenting materials to a recently made border, especially if it contains much undecayed vegetable matter; for if fermentation takes place in the soil, the roots will be ruined; therefore, the litter must be watched, and not allowed to heat too strongly. Plants in pots should on no account be allowed to remain in houses where the fruit is ripe, for every precaution will be necessary this season to prevent damp.

Melons.—These will now require close attention, for the season has been anything but favourable for their culture. Keep late plants thin of wood, and never allow any useless spray to crowd the principal shoots or leaves. Endeavour to maintain a regular bottom heat, and also to secure sufficient atmospheric warmth to allow of giving air freely for a few hours every day. Remove decaying leaves immediately they are perceived, and use every means to keep the plants perfectly clear of insects. Be careful not to keep the soil about the collars of the plants too damp, which, after this season, is apt to induce canker.

FLOWER GARDEN AND SHRUBBERIES.

In many neighbourhoods bedding plants are only just coming into full beauty. Go over them frequently, and remedy any defect that may be perceptible, without loss of time, for the flower garden this year will be enjoyed but for a comparatively short season; and now that the plants are in beauty, every means should be used to render them as enjoyable as possible, by maintaining the most perfect order and neatness. Where the stock is clean and growing vigorously, this will involve considerable labour, and it will be necessary to go over the beds frequently, pegging down where necessary, removing decayed flowers, and cutting back such of the shoots as may incline to encroach upon the edging of the beds. Keep herbaceous plants neatly tied up, and cut off the flower stems of any that are becoming unsightly. Take advantage of every leisure hour to put in cuttings, and use every possible despatch with this work until there is a good stock in a fair way for rooting of such things as are known to be difficult to winter except in the shape of well-established plants. Make gravel walks perfectly clean and smooth by weeding, sweeping, and rolling, as may be necessary, and keep climbers on walls within due limits. Propagate Hollyhocks by cuttings. Mark good seedlings, digging up all single and semi-double varieties. Take off the tops of seedling spikes, if not already done when the named sorts were; it throws strength into the remaining flowers, and encourages the formation and growth of the seed. Should sunny weather set in, take care that newly formed beds of Pinks and Pansies do not suffer from drought. Prick out seedling Pansies on well prepared beds. Carnations and Picotees should be layered; gentle waterings will be required, and the pots must be kept free from weeds. Prepare the Tulip bed by frequent turnings; add, if required, fresh compost, but avoid dung, in which Tulips never do well.

HARDY FRUIT AND KITCHEN GARDEN.

The prevalence of wet weather is causing an excessive amount of growth in fruit trees; and, excepting such as are bearing a good crop, they have in most cases already made as much or more young wood than there is much chance of getting ripened. It will therefore be advisable to go over the trees and stop about half the shoots, beginning of course with the strongest; for a general stopping at this time would probably be of little farther service than to induce the production of a mass of useless spray, whereas stopping the stronger shoots or those which incline to grossness, will divert the sap into the weaker ones, which will be strengthened, while the buds on the shoots that have been stopped will become full and plump without starting into growth. The only effectual method, however, of curing a gross habit of growth, when this is the case in ordinary seasons, is root pruning, or keeping the roots within proper limits by means of shallow well-drained borders. And should it be found that the shoots after stopping incline to start into growth, it will be advisable as soon as the fruit is gathered to open a trench at a moderate distance from the stem of the tree, cutting the stronger roots. This will be of the greatest service in checking growth, and will probably do more towards securing ripe wood than anything else that could be adopted. Get Strawberry plantations intended to stand for next season trimmed as soon as convenient.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Aug. 20, 1862, as observed at the Horticultural Gardens

August.	Moon's Age.	Barometer. Max.	Barometer. Min	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind	Rain.
Thurs. 14	19	29.757	29.745	71	46	58.5	62	60	S.W.	[illegible]
Friday 15	20	29.769	29.744	72	46	59.0	62	60	S.	[illegible]
Satur 16	21	29.777	29.748	68	52	60 0	62	59½	N E.	[illegible]
Sunday 17	☾	29 759	29.737	63	52	57.5	62	60	N.	31
Mon. 18	23	29 889	29.866	74	41	57.5	61	59	N.	00
Tues. 19	24	29 937	29.921	77	44	60.5	61	60	N W.	00
Wed. 20	25	30.029	29.837	74	52	63.0	62	60	S W.	00
Average		29.859	29.807	71.3	47.5	59.4	61.7	59.8		1.60

Aug. 14—Slight rain; cloudy; rain.
— 15—Overcast with slight haze; constant heavy rain.
— 16—Rain; constant rain; drizzly; very heavy rain at night.
— 17—Heavy rain; constant rain throughout.
— 18—Overcast; fine; very fine; cool at night.
— 19—Clear and fine; very fine throughout.
— 20—Rather foggy; heavy dew, very fine.
Mean temperature of the week 2½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Aug. 30, 1862.

August.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 24 ..	71.5	48 2	59.8	16	0.24 in.	2	2	1	1	5	14	6	6
Mon. 25..	71.4	50.8	61.2	15	0.62	3	2	3	—	6	9	9	4
Tues. 26..	72.7	48.7	60.7	11	0.51	1	2	4	—	1	10	9	9
Wed. 27..	73.2	49 8	61.5	11	1.32	2	5	3	—	5	10	7	4
Thurs. 28..	72.8	49.8	61.3	16	0.22	4	4	4	1	2	1	7	3
Friday 29..	71.6	48.3	60.0	14	0.58	2	5	3	—	5	8	10	3
Satur. 30..	71.8	48.1	60.0	8	0.92								

The highest temperature during the above period occurred on the 25th, 1859—therm. 89 deg.; and the lowest on the 29th, 1850—therm. 32 deg.

Notices to Correspondents.

Douglas Fir: *Old Sub.* Next week.

Fuchsias: *F C S.* inquires whether Fuchsias with white corollas belong to the light or dark class. We cannot say that we are learned in the mysteries of Fuchsia shewing; but common sense seems to say that white is light—not dark.

Emigration: *J G, Croydon.* Apply to the Emigration Commissioners, Park Street, Westminster. With the exception of Western Australia, one part of Australia is about as good as another.

Gladiolus: *Messrs. Youell & Co.*—The specimens you have sent us of G. Brenchleyensis are magnificent. True, owing doubtless to the unfavourable season, they are scarcely so fine as similar examples we have had from you in former years; but we have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli.‡

Laurels: *A H.* The appearance that surprizes you is caused by the stem of the common Laurel forming roots beneath the bark, which they force off. It is a common occurrence in wet seasons, or in damp thickly planted shrubberies. No doubt the branch has been injured in some way below the place where the roots are coming.

Names of Plants: *L M N.* Phalaris arundinacea variegated.—*Axminster.* No doubt a bit of the fine Phalænopsis Schilleriana.—*Manchester. W.* The leaf belongs to Gossypium barbadense and not to Gossypium herbaceum.

Vines: *E W.* We have no means of judging what has affected a few of your Vine leaves. Since the plants are for the most part healthy one looks to some local cause. Can it be that a current of cold air has struck the leaves when tender. They seem as if it might be so.

THE LONDON MANURE COMPANY
(ESTABLISHED 1840)
Are now prepared to send out the following MANURES:—
CORN MANURE for AUTUMN SOWING.
SUPERPHOSPHATE of LIME.
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CONCENTRATED URATE.
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LAWES'S MANURES.
The Manures manufactured by J. B. LAWES for the present season of 1862 are now ready for delivery at his Factories, at the following prices:—
LAWES'S PATENT TURNIP MANURE, and BONE SUPERPHOSPHATE of LIME £6 6
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These Manures can be obtained of Mr. LAWES, or through his appointed Agents, in all parts of the United Kingdom, at prices varying according to cost of carriage.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
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40 to 45 per Cent. of Soluble guaranteed.
1862.
BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.
Extract of Opinion from Mr. WAY, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. VOELCKER, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & CO., Plymouth.

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We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.
Our "LITTLE BOOK" sent free for four stamps.
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SEED WHEAT, delivered on the Eastern Counties or Great Northern Railways in New Sacks.
HALLETT'S PEDIGREE NURSERY, at 15s per bushel.
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The produce of Seed purchased direct from Mr. Hallett and Mr Sherriff last season by the grower, Mr. S. A. DAINTREE, of Pendrayton, St. Ives, Hunts, who can also supply of his own growth—
OLD GOLDEN DROP, at 72s. per quarter.
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QUINTIN'S GIANT RED, from stock direct from Major Quintin, at 64s. per quarter.
Please address as above, enclosing a remittance or reference; and the stock of the first two varieties, being very limited, an early application is desirable.

International Exhibition—Collection of Grasses.
SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe.
Messrs. SUTTON & SONS have been honoured with applications from THE SCIENCE and ART DEPARTMENT of the COMMITTEE of COUNCIL on EDUCATION; as also from Dr. Kirkpatrick on behalf of THE ALBERT NATIONAL AGRICULTURAL TRAINING INSTITUTION at Glasnevin, for their unique Collection of Grasses, at the termination of the International Exhibition.
Messrs. SUTTON & SONS have also been highly complimented on this Case of Seeds and Specimens by many eminent Agriculturists and Botanists who have visited the Exhibition. They also invite inspection of their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which, for want of space there, is erected at the Crystal Palace, Sydenham.
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This crimson Clover deserves to be generally cultivated. If sown in August either on fresh land or upon a Corn stubble, a heavier crop of Clover will be ready for mowing in May and June next than from common Clover sown the previous spring, and is highly valuable either for soiling or for hay. To insure success it is only necessary to obtain new Seed, and to sow in August or the first week of September.
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Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.
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The Agricultural Gazette.

SATURDAY, AUGUST 23, 1862.

CONSIDERABLE alarm continues to prevail in the minds of Agriculturists with regard to the advent of that very destructive and formidable disease the "Variola Ovina" or "Small Pox," which proved so destructive amongst our flocks in the years 1847 and 1848. During those years we had favourable opportunities of witnessing the character and studying the progress of the malady. A few observations may perhaps serve, without underestimating the gravity of the occasion, to lessen public alarm by showing how the enemy may be circumvented and destroyed. On the former occasion the disease was clearly traced to certain Merino sheep imported from Denmark and Germany. And although its outbreak in Wiltshire is at present involved in considerable mystery, yet we are by no means warranted in coming to the conclusion that it is therefore of spontaneous origin. It is to be hoped that a rigid inquiry will be made as to the disposition of the various lots of foreign sheep that have been imported during the last few months, for if it can be shown that any of these sheep have been so affected, natural causes will explain how the evil may be afterwards extended—one diseased carcase left heedlessly by the roadside may, by means of dogs or other animals, cause the infection to spread through a wide district, and the crowding of our sheep in close folds is of course more likely to extend the disease than the wider range given them on the Continent. Should the disease break out in any particular flock the important question occurs—What is to be done? Previous to which, however, arises one of almost equal importance—How is it to be discovered? To answer the last query first: Should one or more sheep appear listless, moping, or otherwise unwell, turn them instantly and examine the inside of the arms and thighs, where, should a red rash appear resembling flea bites, or watery bladders, or pustules, we may consider the disease exists in one or other of its stages. Should these marks not appear, let the turning process be daily continued for a week or more. Should several sheep be affected, select the mildest case, and from the discharge procured from the watery bladder or blister inoculate one or two healthy sheep at once, so that the lymph for inoculation may be secured from one remove and from a mild case. The shepherd must of course be allowed sufficient assistance so as to attend to his duties without being worked to death; and the men employed about the diseased animals should have nothing to do with the healthy flock, and more particularly with any neighbour's sheep. The most vigorous separation must be enforced, and should the disease spread, the animals in the various stages of the disease should be kept apart from each other. The whole flock, be it ever so large, should be turned and examined, and this operation should be repeated daily, or as often as it can well be done. Without asserting that the disease is not infectious in the early stage, it is far less so than afterwards; thus by carefully removing every affected case we may prevent the infection spreading to the remainder, and thus obviate the necessity of resorting to inoculation; for should no fresh case appear for 21 days we may consider the flock safe, unless again exposed to infection. By the time the disease has manifested itself in the inoculated cases we shall be able to judge as to the propriety of inoculating the whole flock, which, indeed, is the safest plan, unless there is every probability of confining the disease to ten or a dozen cases by daily examination and separation.

The carcases of the dead sheep, including the skins, must be buried carefully, or decomposed by sulphuric acid. It is reported, and we fear it is too true, that the disease is not confined to the county of Wiltshire. *W. C. S.*

To this we add the following remarks, with which we have been favoured by Mr. FISHER HOBBS:—

"In 1847 this disease was *first* brought into England by the importation of Merino sheep from Denmark and Holland, some of which were purchased in the Smithfield market for grazing purposes; the disease soon spread into different counties, causing great alarm and serious loss. A case occurred in this parish, where a lot of sheep having been purchased in an adjoining county, were sold to a farmer at 2*s.* 6*d.* each, turned into the parish roads by day, and placed in a field adjoining my land by night. Most of these sheep soon died, and some of them were buried close to my fence, but not until the disease had spread throughout the neighbourhood. I took every precaution which I considered necessary, by stopping up the gateways from the roads with furze or bush faggots, and by keeping my sheep as far as possible from the infected field whenever the wind came from that direction. However, I did not escape, but, amongst others, lost my best ram, although he had never travelled on the road nor been near the diseased lot. I therefore concluded that the disease was *infectious*, as well as *contagious*. The starling, as is well known, is in the habit of sitting on the backs of sheep, and thus, in the opinion of many observers, carries contagious disease from one flock to another. As an additional precaution shepherds armed themselves with guns to keep off the visitation of these birds. Some flockmasters in Suffolk adopted this course in 1848.

"At that time Mr. Stanley Carr, of Germany, wrote a very able letter on the subject to the Royal Agricultural Society of England, which may be found in the 8th volume of the *Journal*; and Professor Simonds also rendered great service; as he spent much time in numerous experiments, and then published a practical treatise on the subject, which ought to be read by every flock-master and grazier. It can be obtained of Ridgway, in Piccadilly.

"In 1848 the subject was thought of so much importance, that Parliament passed an Act (11 & 12 Vic., cap. 105) to prohibit the importation of sheep, cattle, &c., for the purpose of preventing the introduction of contagious or infectious disorders. At the same time, an Act was passed (11 & 12 Vic., cap. 107) to prevent the spreading of contagious and infectious disorders in this country. The two first clauses of the Act are the most important. The first refers to diseased animals exposed or offered for sale in any fair or market, which may be seized and destroyed by any inspector or other officer appointed by the mayor or by any two justices of the peace, with a penalty not exceeding 20*l.* The second clause refers to sheep or lambs turned out, kept, or depastured in or upon any forest, chase, wood, moor, marsh, heath, common, waste land, open field, roadside, &c. If labouring under any contagious or infectious disorder, the owner shall be subject to a penalty not exceeding 20*l.* The third clause refers to the sale of meat unfit for human food. There are altogether 22 clauses, but none which require special notice here, except clause 7, which inflicts a penalty of 5*l.* or two months' imprisonment upon any person who wilfully obstructs any officer in carrying out the purposes of the Act. In 1853 this Act was extended and further continued by 16 & 17 Vic., cap. 62, with the addition of a clause referring to glandered horses, making the owners subject to like penalties and regulations as for sheep or cattle. In 1858 the last amended Act, by the 21 & 22 Vic., cap. 62, was continued, and remains in force until the 1st of August, 1863.

"When the bill of 1848, cap. 107, first came before the House of Commons, the first clause was considered sufficient for the purpose. Sir John Tyrell, who was then member for Essex, and other county members, took much interest in the subject, and with some of them I had interviews, as well as with Mr. Labouchere, who, I

believe, had charge of the bill. I expressed to them my opinion that the first clause did not go far enough; the second clause was consequently added, and the bill thus amended passed through Parliament. The additional clause is now generally admitted to be the most important part of the Act.

"In 1847 and 1848 I devoted some time to this subject, and my object in writing now is to call the attention of magistrates in the rural districts and in market towns to the Act 11 and 12 Vic. cap. 107, so that they may be fully prepared, if necessary, to carry out the intention of the Legislature, as well as to assist the agriculturists in preventing the spreading of so contagious and infectious a disorder, and so great a calamity on the community at large."

The following are the clauses referred to:—

Whereas a contagious or infectious disorder, known or described as the sheep pox or Variola ovina, now prevails among the sheep in some parts of the United Kingdom, and it is necessary to take measures to prevent such disorder from spreading: Be it therefore enacted by the Queen's most Excellent Majesty, by and with the advice and consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, that in case any sheep or lambs infected with or labouring under the said disorder, or any disorder of the like nature, be exposed or offered for sale, or be brought or attempted to be brought for the purpose of being so exposed or offered for sale, in any market, fair, or other open or public place where other animals are commonly exposed for sale, then and in any such case, it shall be lawful for any clerk or inspector or other officer of such fair or market, or for any constable or policeman, or for any other person authorised by the mayor, or by any two justices of the peace having jurisdiction in the place, or for any person authorised or appointed by her Majesty in Council, to seize the same, and to report such seizure to the mayor or any justice of the peace having jurisdiction in the place; and it shall be lawful for such mayor or justice either to restore the same, or to cause the same, together with any pens, hurdles, troughs, litter, hay, straw, or other articles which he may judge likely to have been infected thereby, to be forthwith destroyed or otherwise disposed of in such manner as they shall deem proper, or as may be directed in manner hereinafter provided; and any person bringing or attempting to bring any sheep, lambs, oxen, bulls, cows, calves, or other horned cattle, into any such market, fair, or open or public place as aforesaid, knowing such sheep, lambs, or cattle to be infected with or labouring under either of such disorders as aforesaid, shall, upon conviction thereof, forfeit and pay for each and every such offence a sum not exceeding 20*l.*

II. And be it enacted, that if any person turn out, keep, or depasture any sheep or lambs infected with or labouring under the said disorder in or upon any forest, chase, wood, moor, marsh, heath, common, waste land, open field, road side, or other undivided or uninclosed land, such person shall, on conviction thereof, forfeit and pay any sum not exceeding 20*l.*

Many complaints have been this season made of injury to the Mangel crop by the attacks of a grub which eats up the substance of the leaf. The following is a letter on the subject addressed to Professor Voelcker, of the Royal Agricultural College:—

"My Mangel crop was drilled the 17th May, and came up most favourably on Monday the 2nd of June. I asked my bailiff what was the matter with it, he said, oh, it was a sharp frost last night; but on examination I found that instead of frost the leaves had within them a maggot which had caused the plant to brown and die off. The late rain and growing weather have enabled the plant somewhat to revive and also fresh plants to come up (for I had drilled 7 lb. per acre) but found to-day several leaves with maggots in them. My man told me 'a quantity had eaten themselves out of the leaves and dropped,' and that he saw 'a vast' number of sparrows picking up those maggots. I send you herewith some plants I brought up from the farm. My idea is either that the seed was damp and had bred the maggots, or that the leaves had been 'struck with a fly,' and then the maggot followed. You will please let me have your ideas upon these points. *S. S.*"

The maggot or larva here described is that of the Anthomyia (Pegomyia) betæ, Mangel Wurzel Fly. An allied species will sometimes be found mining Dock leaves in a like manner; they are hatched from eggs laid in the substance of the leaf. Mr. Curtis, in his admirable book on farm insects, says:—"These insects will seldom cause any loss to the Mangel Wurzel crop, should they ever abound to any extent; but whether they would prove injurious to cattle when the leaves are given as food I am not prepared to say, but I think not, as the skins are very tender."

As regards the opinion here expressed, it should be recollected that it was penned at a time when the Mangel was not so extensively cultivated as at present, indeed at a time when the increased growth of this root was recommended, as it was not liable to the same amount of injury, either from insects or other causes, as the Turnip. The case, however, of our correspondent will show that even in its young state the Mangel is liable to destruction from insects to such an extent as to result in the failure of "a plant."

For some time we have observed that this pest has been increasing. In 1861 we examined some fields in different counties, the leaves of which had been destroyed to such an extent by the mining of these fat maggots that it became a matter of interest to determine whether this method of injury to the plant lung resulted in any diminution of the size and weight of the bulb; and we are quite prepared to state, that from one-eighth to a third of the bulk of bulb was observed deficient in different fields, according to the severity of the attack. Two or three maggots are sufficient to eat out and cause a ragged and useless leaf; and we have seen no less than thirty maggots in the leaves of a single plant. Experiment has shown that the injury done to a Mangel plant by plucking off its fresh leaves, is very great; and we here repeat the maxim which we have before laid down: "that as long as a Mangel leaf is in a fit state to be wholesome or useful as food for cattle, so long is it important to the wellbeing of the root." We may therefore conclude that mechanical injuries to Mangel leaves whether by the process of stripping or as the result of insect ravages both in this plant as in the Turnip, will certainly conduce to a loss of the crop.

Still the advisability of stripping Mangels of their leaves as cattle food, takes a new turn in the case of these insects being found to prevail, as we only this week observed it to do, in large plants. It is a matter for consideration whether, when the insect has injured the leaf it would be well to strip it off as cattle food. Mr. Curtis inclines to the belief that such leaves would not be injurious as food; if not it may be that utilizing attacked leaves will be found the cheapest and most efficacious means of keeping this pest in check. But, be this as it may, we seem to have in this insect a creature capable of doing much harm; it may therefore be well to suggest that increased observation may greatly augment our knowledge of its natural history, and consequently enable us the better to prevent its ravages.

— We have received the following communication from certain of the students of the Royal Agricultural College. We rejoice with them that Dr. Voelcker remains their Professor of Chemistry; and we hope that an institution to which the country is already so largely indebted will retain that influence and prosperity which united counsels, and mutual confidence and forbearance can alone ensure to it.

The *Agricultural Gazette* having been the means of giving publicity to the speeches of the Royal Agricultural College Club at their annual dinner, we, the undersigned students of the College desire through your columns to rectify ideas which must have arisen in the public mind on the subjects brought forward in those speeches; and the rumours which have been spread in all directions by other means make it the more necessary that we, who can speak from actual knowledge of the facts, should make our protest against what is untrue, and maintain what we believe to be right. For this purpose we have assembled ourselves, excluding all who have not been in the College over one session, to agree amongst ourselves, as to the best means of so protesting against conclusions which must have been formed in the minds of those who read or heard the statements to which we have referred.

We think that on reflection it will be manifest to such persons that the reports they have heard arise from a onesided view of the case, and the consequence must be a onesided conclusion, unless, as we desire, it is made apparent that there is another side to the question. We trust that our words will not be without weight, as we are influenced by a sincere regard both for the Principal and the Professors for their uniform kindness and consideration. This being our feeling, we all experience great regret at the speeches that have been made, and especially at the effect they have had on the good name of our Principal, Mr. Constable, who deserves the esteem and respect of those under him, and has won them from those who know him best, as our signatures testify.

In answer to the assertion that we are in a school and not in a college, we protest that we have no reason to complain; we have quite as much liberty as is at all needed; our feeling is that we may do anything within the bounds of reason and the necessary control of a college. We have only to show ourselves trustworthy, to be trusted.

The stringency of the College rules has been complained of. That they are stringent we admit; but the public must be aware that in a college taking in students from 16 to 26 years and upwards, rules cannot be framed which will equally apply to all; but rules must be laid down or they cannot be enforced when necessary; and of course the Principal of a college ought to have the power of enforcing the rules, and mitigating them where they would bear with undue pressure; and we believe that such power has been used with judgment.

Offence has been taken at the severity with which punishment has been visited in the shape of expulsion. We confess that we are not quite clear as to the effect of being sent away from the College, whether it bears the serious consequences of expulsion from a public school, but if so, we still cannot see how, under the circumstances which have come within our knowledge, the Principal could have acted otherwise than he has. For our own part, we are ready to trust ourselves to his tender mercies, sure that if we do our duty, he will do his towards us.

If the ranks of the College have been thinned by the process, we believe that they have been improved, and that parents may all the more confidently send their sons to the College, as they will be less subject to the strongest form of temptation.

Enough we think has been said to show that we have not cause of complaint, whatever the Professors may have. That we should greatly regret the separation of any of them from the College is true, for we cannot but be grateful for the kindness we have received on all hands. We have, as it is, to regret the loss of two of the College staff, who have fairly earned the esteem and regard of us all. One has gone to take a Mastership at the new College at Haileybury; the other to seek a wider sphere for his well-known abilities; so we wish them Godspeed.

To those who are still remaining, we would suggest for their consideration our belief that differences have sometimes arisen from students bringing complaints to the Principal, in which cases Mr. Constable had the unenviable task of interfering, while, if the fault finders had gone to the Professors themselves, the matter would perhaps have been rectified without any ill-feeling.

In conclusion, we would express our hope that Mr. Holland and the Council, if such be called, will, in considering the matter, look both sides of the question fairly in the face, and that what we have said will serve to strengthen the hands of our deservedly esteemed Principal, that he may feel that some at least appreciate his labours, which are neither light nor lightly undertaken.

We believe that no one, seeing the College now, who knew it two or three years ago, can help feeling that there have been many improvements, and whatever may be said about the students being no better than the old ones (which point we have no wish to argue), we do not expect to find in the whole a pleasanter set of fellows on our way through life.

We appeal to your sense of justice and fair play when we ask you to insert this letter in your columns; and that our testimony may be as strong as possible, we have excluded, as before stated, all who have not been connected with the College over six months, and also the out-students.

We cannot refrain from taking this opportunity of expressing our hearty satisfaction at Dr. Voelcker's withdrawal of his resignation.

We are, Sir, yours truly,

Hyne	W. Colison	Gadsden
J. Roffie	Hughes	Robertson
Allersdey	Roberts	Willoughby
Miller	Hill	C. A. Helmsing
Krauss	Gray	Sheppard
Nettleship	Eccles	Monck
Rivington	Wall	

₊ The above 20 form a majority of the students not excluded from placing their signatures on the list.

Cirencester, August 13.

THE SELECTION OF BARLEY.

At the Annual Cup Dinner, at Tewkesbury, in May last, Mr. W. Woodward, of Northway House, remarked that increasing complaints were made by the maltsters of many lots of Barley not sprouting well and at the same time on the floor. This he (Mr. W.) attributed not only to the Barley crop being cut before it was thoroughly ripe, but also to the great mixture of varieties in the same field, which, although planted at the same time, on the same day, ripened at intervals a fortnight apart, so that it had become difficult to discover the best time (taking colour and maturity into consideration) to cut the crop. For this last reason he said it behoved the agriculturist to bestir himself and make the best selection of one variety of seed, according to his soil and situation. He further said that when the proper time of year came round, he should be pleased to see any of the gentlemen then present, and others who took an interest in Barley growing, at his house, and to accompany them in a tour of inspection of the crops growing in the neighbourhood. Many eminent agriculturists present concurred in these remarks, and promised that they would willingly lend a helping hand to try and remedy the evil.

A short time ago Mr. Woodward kindly sent me an invitation (which was to include any friends of mine who might wish to accompany us), which I was only too glad to accept; and accordingly a small party of gentlemen met at Northway House, on Thursday, the 7th instant. The preliminary business of the day was the discussion of a splendid luncheon which Mr. and Mrs. Woodward had placed before us, and about the excellence of which there was no difference of opinion. This we concluded by drinking the usual loyal toasts, together with the "Health of Mr. and Mrs. Woodward and family," and "Improvement in Barley Growing;" and then we commenced our journey of inspection of the different Barley fields in the district.

Our first halt was in a field at Bredon, where we found a very fair average crop for the season; we examined it carefully, and found it composed of two or three different sorts of Barley. We then journeyed on to Kemerton, where, in one field we found much the same state of things, with the crop above an average one; and in the same parish, a few fields further on, we examined another piece, with a good crop, in which not less than six or seven varieties were all growing together. From here we travelled on to a field in the occupation of Mr. Henry Butt, who takes great interest in the growing of Barley, and who is most anxious to get a true sort; as in other places, we made a very careful examination, and found his like the others, far from being of one sort. From here we went on to Bredon's Norton, to inspect a field of our host's. It was a piece of very fine "Chevalier" Barley, and we found it to be the cleanest we had seen, but it was not free from admixture with another sort. One portion of this field was planted with "Potter's" Barley; the difference was quite discernible even to the very drill, and although planted at the same time, it has given a much larger crop than the "Chevalier," and is about one week earlier. I must not omit to mention here that Mr. Woodward has had the "Chevalier" seed on his farms from seven to eight years, and it is very evident from this circumstance, and the crop being a thickly-sown one (the ears were short), that it is high time he changed it for some from a distant part, as all who are acquainted with Barley growing are aware of the benefits resulting from a frequent change of seed. From this we wended our way to a field at Eckington, presumed to have been sown with old-fashioned "Red-rowed" Barley, but such a mixture of sorts did the crop present, that it was impossible to tell which was predominant. We next moved on towards Bredon Hill, and, not far from Natford mill, inspected a field of Mr. Joseph Crump's, of Woollershill. This was by far the best piece of Barley we had seen, but late—too late, in fact, to enable us to distinguish the object we had in view. The seed of this Barley Mr. Crump had from Hampshire some 14 or 15 years back, and has never lost sight of the sort, and very wisely he has acted, for I can speak from experience of this

Barley, having watched it carefully for several years, as being well adapted to our district. It has always maintained those qualities required by the maltster, and has likewise proved satisfactory to the grower. We adjourned from the field to Mr. Crump's residence, where we were treated with generous hospitality and met with a hearty welcome; after which we wended our way to Eckington to inspect a field planted from the same kind of seed as Mr. Crump's. Here we were greatly disappointed; the crop was very bad indeed, but being a little earlier than that at Nafford, we had an opportunity of testing the sorts, and found, that in this respect, this piece of Barley was better than most others, although more than one sort was present.

Our expedition terminated for the day at Eckington; but I have since received three or four samples of Barley from E. Holland, Esq., M.P., of Dumbleton, stating his regret at not being able to join the party, as he regards the mixed seed question as a most important one; and enclosing specimens from one of his own fields, the seed sown being professedly the "Golden Drop;" but this, like all the others we had inspected, contains three or four different kinds.

Not satisfied with our journey on Thursday, we started again, on Monday last, through another district, commencing at Stratford Bridge, on the Worcester road. We there inspected a piece of Barley, and found it a fair average crop for the season, but very much mixed. Going on to another field, we found the same results; and in a small field close by a bad crop not forward enough for us to pick out the different sorts. The next field was one of Mr. Joseph Hall's, of Ripple, showing a fair crop, from seed of "Potter's" Barley, obtained by Mr. Hall this year from Hertfordshire, but far from being all of one sort, although much cleaner than anything we had seen that day. Not far from this we inspected a field belonging to another party; this was a bad crop, and all manner of sorts, as was the case with several large fields in this vicinity—in all instances two or three kinds, at least, mixed. Making our way to Mr. H. Lane's farm, we examined several of his fields, and found the crops very good indeed for the season; his principal growth is "Potter's," but like all the others, not clean. Going on towards Mr. Hall's residence, we examined several fields by the way, and found the same remarks applicable to all of them. The last field examined was one of Mr. Hall's own, near the new railway. Here were two sorts of Barley in the same field, the one from his own seed, the other from that he had obtained in Hertfordshire, the former was a complete mixture, the latter ("Potter's") the cleanest of any we had seen. This Mr. Hall is going to have picked over at once, ricked by itself, and put by for seed for next season.

Having thus examined the state of the Barley crop in this district—not hastily and inefficiently from the carriage of a railway train or the driving box of a trap, but patiently and carefully in company with gentlemen eminent for their experience and information—I think I may fairly claim the right to offer some advice upon a subject which I have made my study for some time past, and with which the nature of my business affords me peculiar opportunities of becoming acquainted. It is highly necessary that the attention of the English farmer should be directed, when growing Barley, to produce that which is fit for the maltster, leaving the coarser growths for grinding purposes to be supplied by the foreigner. There need be no fear of this not proving remunerative, for with the improvements which are being made in the art of brewing, the increased demand which is yearly arising for good malt liquors, and the vast consumption of the great breweries at Burton and elsewhere—demands which there is the greatest difficulty in supplying—it is certain that good malting Barleys will always command a price which will amply repay the grower for the care and attention bestowed upon them.

The operations need not be very troublesome nor very expensive. The sorts I should recommend for cultivation are "Chevalier's," "Golden Melon," "Potter's," and "Thanet." All these abound in the district, but, as I have shown, are so intermingled together, or mixed with other sorts, which have various qualities and ripen at different times, that I have found it impossible without careful picking to obtain a single sample of any one kind pure and unmixed. I should suggest therefore to my agricultural friends, that they should send trustworthy persons into their Barley fields to cut off a sufficient number of ears of one sort, and that the best in the crop, to plant an acre the next season, and when that season comes, let the crop from the picked seed be carefully gone over, and all the ears of the wrong sorts taken out. If this plan should be fairly carried out by each farmer, we should have the evil remedied, and a boon would be conferred not only upon the agriculturist himself, but upon the maltster and upon the country at large. This operation, to be successful this season, should be commenced immediately, before the Barley is thoroughly ripe, otherwise it will be too late to distinguish the different sorts. Mr. Woodward is having an acre of "Chevalier's" and an acre of "Potter's" picked over, and I have myself put on some hands to pick over 2 or 3 acres, and I earnestly trust that other cultivators will also come to the rescue so that we may be able unitedly to accomplish this great public good.

I have taken advantage, of the great circulation of your Paper, to place this matter at some length before the agriculturists of this district. I am conscious of having but feebly set forth a subject, the importance of which ought to command, and I trust will obtain general attention; and I shall be most happy to give the fullest advice and assistance in my power on it to any gentleman who may seek it at my hands.

With regard to the general state of the crops in this neighbourhood, I may observe that the Wheat crop is not an average; Beans are a good crop; Peas almost a failure; the root crop is far from being good, but where the fly has not taken it, great progress has been made since the last rains, but it is still very backward. The Barley crop is much better than was anticipated, and if it is let get thoroughly ripe before cutting, so that the short ears now so backward may have time to come to maturity, the quality will be very fair. I find, however, that some samples which have been just sent me from the Cotswolds, are much worse than any in this district. *George Blizard, Tewkesbury, August* 12.

REPORT TO THE

COUNCIL OF THE YORKSHIRE AGRICULTURAL SOCIETY,

ON THE STEAM CULTIVATION TRIALS AT YORK, ON TUESDAY, AUGUST 5, 1862.

The field set apart for the exhibition of steam ploughs and cultivators, though perfectly well fitted for showing the machines at work, being large enough for three or four hours' trial of all the different implements upon the ground, and providing a furrow upwards of 300 yards in length, is yet very ill adapted for the illustration of steam cultivation. It is for the most part an extremely light soil, and thus presents none of that difficulty as to either the labour or the quality of horse cultivation which proves on stiffer land the advantage of applying steam power to the cultivator or the plough. And besides that, there extends across the field a narrow bed or band of stiff clay which requires a double or triple power to cross it, so that the engines employed had to be worked throughout the furrow at much higher pressure than was needed, except at particular moments. A spectator had thus no sufficient opportunity given to him of estimating aright either the advantage or the cheapness of the cultivation of the land by steam. He had however ample opportunity of seeing how the machines of Fowler and of Howard were worked; and his own experience in cultivation elsewhere might enable him to judge of the greater advantage they must possess on the stiff soils of the country.

It is indeed impossible to over estimate the advantage of steam cultivation on stiff clay lands. They are dependent on proper cultivation even more than on the application of manures for their fertility, for they are already full of the food which plants require if only we could get at it. To this end they need to be broken up and exposed throughout their depth to the free access of air and weather. But there are comparatively few days during the year in our climate when this can be done by horse-power, for they are generally either baked by the sun so that horses cannot pull the plough or cultivator through them, or they are so softened by the rain that the trampling and the sliding of the team and tool will do more to close the land than open it. We want a power which shall make the full use of the short intervals when such land is in proper condition for tillage operations, and which shall at the same time avoid the evil of poaching the land above and hardening it below, which in the horse cultivation of clays is too often seen. A four-horse team and plough weigh more than 40 cwt., and all this goes trampling and sliding from end to end of the field that is being ploughed, over every 10 or 12 inches of its width; and thus of course a floor is formed beneath the soil, hindering drainage, which is the greatest improvement of which clay lands are capable. We want a tool weighing not more than 4 or 5 cwt. for every foot in the width worked by it—carried on wheels so as not to close the surface over which it travels, and driven by a power which shall not press upon the land that is being worked.

All this we have in the steam-drawn ploughs and cultivators that were seen at work yesterday. The ploughs employed weigh not more than 5 to 7 cwt. per furrow, the cultivators from 4 to 5 cwt. per foot of width, and both are carried on large wheels at wide intervals, thus traversing the field but once to every 4 or 6 feet width. The engines driving them either travel on the headland, as in Fowler's apparatus, or they may stand altogether out of the field, as in Howard's case. In both cases the tools can be drawn with wonderful effect through sun-baked clay which horses could not touch; and (supposing the land to be fit for horse work) in both cases the mischief done by drawing a heavy tool across the land that wants loosening and cultivating is reduced to a minimum: while for speed of work, in order to the full use of the short times when clays are fit for cultivation, the advantages of steam power are in both cases beyond a question.

We saw the speed of steam cultivation well illustrated yesterday, and the superior *quality* of steam cultivation was also sufficiently well shown, for the patches of clay land in the field were ploughed and cultivated, and the lighter soil was thrown about, so as no horse power could have done it.

The cost of the work cannot be illustrated by a few hours' trial; but there is now experience, both of Fowler's and Howard's apparatus, over years enough and acreage enough to prove that their better cultivation is generally attained at much less cost than is incurred in horse labour. I have walked over many thousands of acres cultivated by both, and having been allowed to inquire particularly into the history of steam cultivation over many scores of farms in all parts of the country, I am able to speak with some confidence on this point. It will be found that taking every particular of the expense into the account—wages, fuel, breakages, and tear and wear, and interest of capital—good ploughing may be done by steam for from 8*s*. to 10*s*. per acre, and one-way grubbing for from 5*s*. to 8*s*. per acre, which under horse labour would have cost 12*s*. to 18*s*., and 6*s*. to 10*s*. respectively for much inferior work.

There is, I believe, no one, unless he be interested in the success of one or other of the rival firms engaged in the manufacture of steam ploughs and cultivators, who will not greatly prefer thus confidently to report the unquestionable success of steam cultivation generally, rather than venture to compare the rival methods of it after a few hours' trial and inspection. Having, however, undertaken the duty of drawing up such a comparison, I have now to relate the performances of the machinery that was exhibited at work.

On one side of the field an ordinary Clayton & Shuttleworth's single cylinder 8-horse power moveable threshing engine, drove by strap a moveable anchor furnished with clip drum, by which the draught rope extending from it around another moveable anchor on the farther headland was drawn to and fro, and with it Fowler's ordinary 4-furrow balance plough. The engine has a single 9-inch cylinder, with 12-inch stroke, and it was working at a pressure probably upwards of 70 lbs., the gauge standing occasionally as high as 80 lbs.; though I was assured it was indicating beyond the truth—being out of order.* The engine was making about 130 revolutions per minute during the trial. The ploughing, as I measured it, was barely 5 inches deep. The furrow was 330 yards long. The plough made close on 13 journeys along this furrow within the hour, losing 6½ minutes on the headlands, and 1½ minute during one stoppage. Exactly 1 acre (not half a perch more) was accomplished within the hour. The men employed were: engine man, two anchor men, one ploughman, and two porter lads. The rope was well carried on 12 rope porters, which stood rather less than 50 yards apart.

The central plot—allotted to Messrs. Howard—was partly ploughed and partly cultivated. In their new three-furrow balance plough the two frames carrying the ploughs balance one another, not as in Fowler's machine by being both part of one rigid framework, thus balancing over the axle of the pair of wheels which carries it—but by each hinging separately on to a central framework which runs on three wheels; and each, as in its turn it drops into its work, lifts the other off the ground, the chain which connects the two passing over cams or eccentrics, thus giving to each as its turn comes to work an advantage in weight over the other.

The plough is drawn to and fro by a Clayton and Shuttleworth's ordinary 10-horse power engine, with 7-inch double cylinders and 12-inch stroke. It was working up to 70 lbs. pressure, and making from 125 to 130 revolutions per minute. It drives a double windlass, each barrel being geared into work alternately, while the other, which is then paying out the slack rope, drags upon a wooden stud, on which it drops when out of gear. The patent snatchblock arrangement, by which the slack drum is hindered from paying out rope any faster than its neighbour pulls it in, was also in operation, the advantage of it being that the slack rope behind the plough is thus kept at sufficient tightness to hinder it dragging on the ground. This rope runs all round the part of the plot which remains unworked, and was carried on eight high rope porters on wheels and nine lower ones, and on eight wheeled lower porters along the furrow on which the implement is at work. These latter porters are furnished with an ingenious leverage, enabling the porter lads very easily to shift them and replace them. The men employed here were: engineman and windlass man, two anchor men to shift the pulleys at either end of the furrow as it encroached on the unworked part of the land, one ploughman and two rope porters. The work accomplished with the plough was as nearly as possible (not half a perch less) three roods within the hour; and I estimated it at fully 5 inches deep. The ground was here upon the whole more difficult than where Fowler's plough was working; the clay patch being wider here than there. This work was accomplished in 14 journeys of the 3-furrow plough, along a furrow 314 yards long; seven

* It is proper to remark that the disc indicator of steam pressure attached to this engine was out of order—the index pointing at about 52 lbs. all day long! so that many spectators must have gone away with the impression that all the work done here was accomplished by about two-thirds of the force that was actually employed.

minutes were lost upon the headlands, and one minute was lost during a stoppage.

Howard's 3-tined cultivator, furnished with teeth projecting both ways, so as to come into operation on both the forward and backward journey without turning at the land's end, was also tried here. At first it was set too deep for the power of the engine when on the clay, and as it is not provided with any means by which the man can at once release it in any degree from its work, when once it stops, there it must remain till the engine acquires power to pull it through. Thus during the first half hour it made only four journeys, cultivating very deeply and thoroughly rather less than a quarter of an acre in that time. During the next half hour of its trial, when it was working at a less depth, it made seven journeys, accomplishing close on half an acre in the time, or at the rate of 1 acre per hour.

The outer plot was set apart for Fowler's 14-horse power engine with double cylinder of 7¾ inch, with 12-inch stroke, working at about 75 lbs. per inch, and making 150, often 180 revolutions per minute. The speed of its work was indeed such, that when on the lighter part of the field, the furrow slices were thrown from the mould boards or digging breasts fully 30 inches on one side, making quite a wave of earth, which was tossed off them in a thoroughly smashed condition—tossed however into heaps, which would require rather a laborious levelling during the next tillage operation. There are here 1 engine man, 1 ploughman, 1 anchor man, and 2 porter lads employed. The 4-furrow balance plough, with the digging breasts, made about 9½ journeys along a furrow 318 yards long—losing only 2½ minutes on the headlands—during half an hour, ploughing nearly 6 inches deep at the rate of 1 acre, 1 rood, 5½ perches per hour.

The 7-tined grubber was then tried—only 6 tines, however, being in operation—thus accomplishing a width of about 5½ feet at a time. It made 8½ journeys in the half hour, doing very thorough work at the rate of about 1 acre, 3 roods, 24 perches per hour. The advantage of great speed was shown in the complete wreck and smash of the earth that was moved. It was, however, here also, though in a less degree, occasionally left too irregularly for easy treatment afterwards with the harrows; and a less speed would, on this account, have been better. Howard's cultivator, driven not nearly so fast, was found on examination to have moved as much earth per superficial yard; but it was merely moved, not tossed about, and it would need, therefore, a crossing with the cultivator, before the ordinary harrows would take hold of it. Whereas Fowler's work would no doubt have been laid hold of by the harrow at once—though, as already said, sometimes too much laid in heaps.

In order still farther to compare the work done by the several cultivators and ploughs upon the ground, it was resolved to attempt an estimate of the earth moved per acre, in the several cases. To this end a frame 4 feet by 4 feet 6 inches, enclosing, therefore, 2 squaer yards of surface, was provided; and all the earth within this frame, which was dropped here and there on the several plots, was carefully collected and weighed. The following tables represent the work accomplished by the several machines, as thus ascertained:—

1. Fowler's (so-called) 8-horse power engine with moveable anchor, carrying clip drum and 4-furrow balance plough.

Labourers Employed.—Four men and two lads.
Estimated Depth of Work.—Barely 5 inches.
Quantity Ploughed per Hour.—One acre.
Weight of Earth moved per square yard, ascertained in four instances—

No.	Stones.	lbs.
1	35	8
2	29	0
3	31	2
4	28	10

Average weight of earth moved per yard .. .. 31 stones.
Weight of earth moved per acre .. .. .. 938 tons.
Weight of earth moved per hour by the so-called 8-horse power engine—4 men and 2 lads .. 938 tons.

2. Howard's (so-called) 10-horse power engine with windlass, and 3-furrow balance plough.

Labourers Employed.—Five men and two lads.
Estimated Depth of Work.—Fully 5 inches.
Quantity Ploughed per Acre.—Three roods.
Weight of Earth moved per square yard, ascertained in four instances—

No.	Stones.	lbs.
1	26	10
2	30	10
3	35	3
4	30	7

Average weight of earth moved per yard .. 30 st. 11 lb.
Weight of earth moved per acre .. .. .. 932 tons.
Weight of earth moved per hour by the so-called 10-horse power engine—5 men and 2 boys .. 774 tons.

3. Fowler's (so-called) 14-horse power engine with 4-furrow balance plough and digging breasts:—

Labourers Employed.—Three men and two lads.
Estimated Depth of Work.—Close on 6 inches.
Quantity Ploughed per Hour.—1 acre, 1 rood, 5½ perches.
Weight of Earth moved per square yard, ascertained in three instances:—

No.	Stones.	lbs.
1	31	8
2	34	—
3	35	3

Average weight of earth moved per yard .. 33 2
Weight of earth moved per acre .. .. .. 1002 tons.
Weight of earth moved per hour by the so-called 14-horse power engine—3 men and 2 lads .. 1280 tons.

4. Howard's 10-horse power engine, double windlass, and 3-tined cultivator.

Labourers Employed.—Five men and two boys.
Weight of Earth moved per yard, ascertained first when going deeply and doing ½ an acre per hour, 33 stones, equal to 998 tons per acre, or about 500 tons per hour. In this case, however, as already stated, the stoppages were frequent, the power being insufficient.

In the second case the weight of earth moved when the cultivator was going shallower and doing 1 acre per hour, was ascertained in three instances:—

No.	Stones.	lbs.
1	24	4
2	19	7
3	22	—

Average weight of earth moved per yard .. 21 12
Weight of earth moved per acre .. .. .. 660 tons.
Weight of earth moved per hour by the so-called 10-horse power engine and 5 men and 2 lads .. 660 tons.

5. Fowler's so-called 14-horse-power engine, with 6-tined cultivator.

Labourers Employed.—3 men and 2 lads.
Weight of earth moved per square yard ascertained in five instances:—

No.	Stones.	lbs.
1	22	7
2	22	7
3	20	0
4	24	0
5	20	0

Average weight of earth moved per square yard .. .. 21 st. 10 lb.
Weight of earth moved per acre .. .. 650 tons.
Weight of earth moved per hour by the so-called 14-horse power engine, 3 men and 2 lads .. .. 1240 tons.

The weight was here taken in so many instances because it was supposed that some mistake had been committed; the quantity of earth moved per acre by Fowler's cultivator certainly appearing to be very much greater than that moved by Howard, whereas repeated weighings proved it to be actually somewhat less. The fact was that it was thrown about so much more roughly in the former case that it lay looser and appeared to be deeper than it was. And one result of these weighings is to prove the fallacy of estimates of work of this kind by mere measurement, however honestly performed. The quantity of earth moved per hour (per day) is of course very much greater in Fowler's case than in Howard's. The power employed was much greater—how much greater is probably inadequately represented by the nominal horse-power of the several engines. The reader has however before him, in the speed of the engines and the size of the cylinders and the pressure of the steam, the means of comparing pretty accurately the power employed; and, contrasting this with the work accomplished in the several instances, he will draw his own conclusions of the merit of the several machines at work.

It is proper to add that the results of a racing trial do not necessarily represent the ordinary experience of the farmer, and that the above is to be taken as absolutely true only of the case here described, where ploughs and cultivators were employed on a foul Clover stubble in a light sandy field for an hour or two last Tuesday. It is also fair to add that the clayey part of the field extended more and more towards the latter side of the field here described, so that Fowler's 8-horse power engine worked on lighter land upon the whole than Howard's 10-horse power, and this latter on rather lighter land than Fowler's 14-horse power engine.

We add the prices of the apparatus employed;—

	£	s.	d.
1. Fowler's 3-furrow plough, 800 yards of rope, 5-tined grubber, and rope porters, two anchors	295	0	0
8-horse power engine	235	0	0
2. Fowler's 14-horse power engine, 4-furrow plough, rope porters, 800 yards of rope, and anchors ..	875	0	0
7-tined cultivator	70	0	0
3. Howard's double windlass, 1400 yards of rope, and cultivator	220	0	0
3-furrow plough	50	0	0
10-horse power engine	295	0	0

I have to add the expression of my best thanks to Mr. Brady Nicholson, the indefatigable steward of the department in which I was employed, for the means and facilities placed by him at my disposal for the discharge of my duty. *John C. Morton, August* 6.

LOOK AFTER THE RATS.

The enormous number of 651,050 living rats springing from one pair in three years appears a thing most incredible. Yet it is an arithmetical fact. Nevertheless, for the satisfaction of those who may feel curious in the matter, and have an inclination to investigate for themselves, I will give the round numbers of young, each littering, as they transpire. Therefore, suppose we commence with Lady-day, 1856, and finish on Lady-day, 1859, then we shall find the following to be the result:—

First litter, 8; second litter, 8.

In the third littering, the first young ones being then six months old, the four females, with their mother, will have a litter each, which, together, will number 40. Thus will they fall in to the finish:—

Fourth littering, 72; fifth, 232; sixth, 520; seventh, 1448; eighth, 3528; ninth, 9320; tenth, 23,432; eleventh, 60,712; twelfth, 154,440; thirteenth, 392,288. Now add all these together, and the number will be 651,050.

Wonderful as this calculation may appear, yet what will be more wonderful still is, that presently I shall be able to prove that they would eat and waste more food than would suffice to feed over 65,000 human beings. Or, to render the thing easier of comprehension, let us suppose them to have but one litter more—making 14 litterings in 3 years and 3 months—and then we shall find the number to be 1,015,048, which would eat and destroy more grain than would supply the whole of the British army with 1 lb. 9 oz. of bread each day by day, even though they numbered 101,504 men.

I will now put your losses into something like shape. The farmer who estimates his rats at 250, loses only 11 qr. 3 bushels and 1 peck in the half-year, amounting only to 22*l.* 16*s.* 3*d.*, which, to say nothing of the odd peck and bushels, is equal to giving 16 men a 2 lb. loaf each per day for six months, or eight men a loaf each per day the year round. But if we allow 10 rats to eat as much as an ordinary man, why then he is keeping equal to 25 men for six months out of the 12, or 12 men and a boy in laziness the year round. The farmer who estimates his rats at 500 loses just double the amount, namely, 45*l.* 12*s.* 6*d.*, which is equal to giving 32 men a 2 lb. loaf each per day for six months, or a loaf each per day to 16 men the year round; or at 10 rats per man, he is keeping equal to 50 men for six months in the year, or 25 men the year round in laziness. He who estimates his rats at 750 sustains a loss of a bushel and a half per day, or 34 quarters 1 bushel and 3 pecks in the half-year, which, at only 40*s.* per quarter, would fetch 68*l.* 8*s.* 9*d.*, which, to say nothing of the odd measure, would supply 48 men with a 2 lb. loaf each per day for six months, or 24 men with the same amount the whole year; but at 10 rats per man it is equal to keeping 75 men in laziness for six months, or 37 and a boy the year round. Those farmers who estimate their number of rats at 1000 will be sorry to learn that they each lose 2 bushels of corn per day, or 45 quarters and 5 bushels in the half year, which, at 40*s.* per qr., would realise 91*l.* 5*s.*; or, if the corn were distributed in 2-lb. loaves, it would supply 64 individuals daily for six months, or 32 the whole year through; or if disposed of according to the standard of 10 rats to a man, it would supply a hundred lazy men for six months, or 50 for the entire year.

We set down the smallest number as the average of farm vermin in England, namely 250, with the addition of twice the number of mice, which would be 500; and if we average 10 mice to a rat, that will be equal to 300 rats. This is rather an alarming state of things; still it is only averaging the farms at 300 acres each; and supposing them to have but one rat, or 10 mice to an acre. In truth, it does not signify what size the farm may be, so long as we average one rat or 10 mice to each acre; but for the sake of calculation we will lump them together, and then supposing them to be divided into equal portions of 300 acres; and what do you suppose would be the number of vermin upon the 303,720 farms? An amount equivalent to 91,116,000 rats, which, at the wine-glass standard, would consume 182,232 bushels of corn daily, or 4,157,167 quarters and four bushels in the half year, namely 182 days and a half; and which would supply 5,831,424 people with a two-pound loaf each daily for six months, or 2,915,712 people daily with a two-pound loaf each the year round. Or, at 10 rats per man, it would support 4,555,800 people for 12 months; about twice the population of London and its suburbs.

Let us now see what it would cost in money to feed these creatures. Supposing that we take grain at the price it is while I am writing. Corn is 75*s.*, Barley 43*s.*, and Oats 32*s.* per quarter. Let us lump them together, say one-third Wheat, one-third Barley, and one-third Oats, and then they would average 50*s.* per quarter; then averaging Wheat, Barley, and Oats at 50*s.* per quarter, it would cost 10,392,918*l.* 10*s.* to feed these rats for six months with a wineglass of corn each day; and all this without making any calculation for the young they would have during the same period.

If you would go a joyous man to market, and return a rich one, build all your ricks on staddles, and give every man, woman, and boy warning, that if they put anything whatever against the stacks or under them, so as to form a ladder for the vermin, that instant they are discharged; if not, you will find one-half your grain turned into rats, which will feed and fatten on the remainder. *Rodwell, in the Farmers' Gazette.*

Home Correspondence.

The International Exhibition—Jury Awards.—In your last Saturday's paper we read a letter from your correspondent "Z," in which he is pleased to remark on the Prize Medal awarded to our Firm in the following by no means flattering terms:—

"725.—Raynbird, Caldecott & Bawtree, excellent seed corn and seeds. I wish you could see that collection in a prettily designed case, the samples rather more than a lozenge box would hold; about nine or ten samples of Wheat, some of which I never heard of, five or six of Barley, to which I may say ditto, and a small collection of seeds, among which I see Lucerne, and I know not what other foreign produce, which should disqualify the Collection. At the back is a glass case with some eight or ten bunches of corn, very fine and pretty to look at, but some of them different from the grain in sample, the two not tallying one with the other. I ask you if this is right and just? If a man's case is not worthy of a medal, be it so, but don't give the medal to others who are disqualified from receiving it. *Z.*"

However much we dislike replying to an anonymous attack, as these remarks have a tendency to mislead, we must in justice to ourselves trespass upon your kindness to allow us space for a few words in reply, and we

will endeavour briefly to answer in detail the charges "Z" makes against us. 1, "Z" infers our samples are too small and too few in number. Our collection comprises 64 samples of Agricultural seeds and seed corn, in measures somewhere between a pint and a quart. We need not remark that samples exhibited in bulk have a great advantage in appearance, and our intention was to have shown large samples had the Commissioners space to spare to admit of our doing so. 2, "Z" complains he has never heard of some of our Wheat and Barley. We now give a list of them, feeling confident although "Z" confesses to a very limited knowledge of them, your readers will recognize the sorts as almost the most common in cultivation.

Talavera Wheat	Chevalier Barley
Chidham do.	Giant do.
Rough Chaff do.	Hudson's Golden Melon do.
Burwell do.	Golden Drop do.
Nursery do.	Thanet do.
Giant do., Col. Quentin's	Nottingham do.
Browick do.	Winter Barley do.
April do.	Brewer's Delight do.

And some few others in the ear.

3, "Z" charges us with exhibiting grain in the ear different from the grain in sample, and from the way he puts it almost inferring our samples are wrongly named. Any one who takes the trouble to examine the collection will see we do no such thing. It is true our samples of Wheat in the ear are in excess in number of those in grain. We never intended it should have been otherwise, and we are quite at a loss to perceive any good ground for this arrangement being complained of. 4, "Z" lays down as a rule, that an English exhibitor is disqualified if he exhibits Foreign produce, and consequently we are disqualified because we include Lucerne in our collection. If "Z" had taken the trouble to read the papers issued by the Commissioners, he would have known no such condition has ever been laid down by them. Hundreds of Englishmen exhibit Foreign produce in one form or another, and very many who do so have deservedly obtained Prize Medals. If he be a disappointed exhibitor, we are quite willing to make every allowance for his ruffled feelings, which have doubtless led him to make his attack anonymously. Should he again put in his appearance, we trust it will be in his own name when, if required, we shall be pleased to give further explanation. We regret the opinion of "Z" does not coincide with a jury numbering in its ranks English agriculturists of such note as Lord Portman, Charles Lawson, Esq., of the firm of Peter Lawson & Son, Professor Buckman, C. Wren Hoskyns, Esq., E. W. Thompson, Esq., of Canada, with many foreigners of equally high standing in their respective countries, who by giving up much time and attention to their arduous duties as jurymen, deservedly merit and receive the best thanks of the majority of the exhibitors of agricultural produce. Whilst our collection of agricultural seeds and seed corn served to illustrate (in a small way perhaps, but as much as the limited space allotted to us would admit of) the cereal and other farm crops most generally grown in this country, it is no secret that at the same time it serves our purpose of showing the goods in which we are dealers; and such, no doubt, has been the intention of most exhibitors, in common with whom we regret it was impossible from want of space to illustrate our subject so fully, and with as much success as in the foreign and colonial courts. But although ready to admit that in one or two instances, as in Australia, grain is exhibited of extraordinary quality, we consider this is due to a finer climate than our own. And without wishing to detract from the very many excellent collections, we are convinced that the advantage in the appearance of grain and seeds shown from abroad, is due to their being exhibited in bulk, rather than to any intrinsic superiority over those of English growth. The collections of Messrs. Thomas Gibbs & Co., and of Messrs. Peter Lawson & Son, at Battersea Park, would not suffer by comparison with any foreign or colonial collection in the International Exhibition; and it is much to be regretted these leading firms, so experienced as they are in showing agricultural produce, did not, as in 1851, give their aid in 1862 in again upholding the supremacy of our country in this department of agriculture. We believe at least one of these firms would have done so if placed upon the same footing as regards exhibiting space as the foreign nations have been. In conclusion, we think the present opportunity should not be allowed to pass away, but that the best use should be made by the farmer and seedsman of the collections from foreign countries and the colonies, by obtaining cereals and other products from them for the purpose of trial in this country, and by so doing promote one of the many ways of doing good, which the great and lamented originator of the International Exhibition had always foremost in his mind. *Raynbird, Caldecott, & Bawtree, Basingstoke, August* 13.

Steam Cultivation.—If testimony were yet considered wanting to the merits of the "Woolston system" of dealing with heavy clay soil, no better evidence could be shown than in the trial I have lately given in the smashing up of about 20 acres of as obdurate a nature as could be desired for such a purpose. The surface trodden by sheep in the feeding off Tares during the wet spring was as hard as a roadway; and the subsoil interlined with veins of water flint trampled and battered by the puddling process of horse culture for generations past, more resembled a bed of concrete than anything in the shape of soil. It was not without some slight misgiving that I sent the tackle down to work upon this desperate field; all the operations I had ever seen were light and easy compared to this, and so far as my experience had gone in working upon my best and lighter land, it had all been fair and pleasant sailing. The tackle placed, the entire length of rope paid out, the steam pressure limited to 55 lb. in one of Clayton & Shuttleworth's 10 horse-power double cylinder engines, the signal is given to commence working. Just what I expected; favoured by the wet spring and a somewhat spindly growth of Tares, the field had assumed its usual covering in the shape of a long and wiry description of water Grass, which choked the cultivator ere it had reached a dozen yards. Let down the tines, raise the frame, to give exit for the noxious Grasses, and try again. The grating noise and jumping action of the cultivator told that the conflict between the impervious substratum and the strength and endurance of the tackle had commenced. A few light mishaps incident to such heavy work, which the village blacksmith easily put to rights, and the field is completed, shaken and torn up in a manner never seen before. For a long time have I been toiling and battling with this same field. Although drained by the landlords at the commencement of a lease, the antidote for the evils of a wet soil somehow or other did not seem to work at all satisfactory. A series of summer fallows, liberal dressings of farm-yard manure, and a succession of green crops, brought great increase of straw, but the yield of corn was still very defective, and in all cases invariably brought me in a loser. I had also tried subsoiling on a part, but the wear and tear and expense, &c., added to the small amount of work done, were dreadful. When would the work be done? Eight powerful horses, two men, two boys, &c., for three-quarters of an acre per day; 40*s.* per acre for 14 inches depth; this would never do. In addition to all this, a constant tendency to relapse into its bound and grassy state. The extremely wet season of 1860 brought matters to a climax, and this tenacious field was in almost as bad a state as ever. It may be said that the facts which I have stated are not remarkable, and that hundreds of acres of clay land are in precisely the same condition. What has been the process for cleaning during the present season. First, a ploughing for the winter fallow, then another ploughing in the spring for the purpose of turning up that which the plough had previously turned down, commonly termed "hunting back," and a most expensive kind of sport it is, then another ploughing called cross-cutting, followed by harrowings, rollings, &c., without number, until finally the great bulk of twitch Grass has been extracted, with a goodly number of nursery plants still left to form in two or three years' time the basis for a series of like operations. A great part of this wretched system may date its origin from the want of an effective implement and power to handle these stiff clay soils at the right time. If all our attempts at cultivation will barely keep these soils sufficiently porous to imbibe the fertilising influence of atmospheric agencies, how is it possible that the trampling of horses, the glazing action of the plough, the consolidating effect of that ponderous implement the clod-crusher, can be the proper method for the cultivation of stubborn clay? It must remain for those who use these implements to reconcile this anomaly. *W. S. Guildford, Aug.* 14.

Harvest Dates.—I send you the dates of the Cereals coming into ear and flower on my farm for the last six years. The beautiful weather of the latter half of July has brought on the harvest, and it may commence here by the middle of August:—

	In Ear.			In Flower.
	Wheat.	Barley.	Oats.	Wheat.
1857....	June 10	June 22	June 22	June 18
1858....	„ 10	„ 17	„ 17	„ 14
1859....	„ 12	„ 12	„ 11	„ 19
1860....	„ 24	„ 24	„ 24	July 5
1861....	„ 20	„ 23	„ 20	June 25
1862....	„ 20	July 4	July 10	„ 27

Charles M. Caldecott, Holbrook Grange, Rugby.

State of the Crops in the South East of Ireland.—Since I filled your circular on the state of the crops in the immediate locality, I have been enabled to inspect them more minutely and to extend my lines of observation, and find now that the following varieties of autumn sown crops are being reaped, and the produce apparently above an average. Tawney or Dun winter Oats, which is more generally sown through the counties of Wexford, parts of Carlow, Wicklow and Kilkenny than in any other part of Ireland, never before better. Black Tartarian wherever autumn sown, stood the last winter well, and is now a fine crop, ripe. Siberian Oats, not much cultivated, but wherever sown last autumn now a most excellent crop. Bere or six-row Barley, not much sown, but where sown early and under favourable circumstances the crops appear highly advantageous, whether for stock feeding where it should be used on the farm, or the distiller. Potatoes, I regret to say, are attacked with the fatal disease in many parts, especially on damp soils, under circumstances which render the crops more susceptible of attack than when planted in dry land or land rendered so by judicious draining. The early planted crops under favourable circumstances are, though light in produce, exceedingly fine, never better in quality. Those on my limited farming I will now take up and store as best I can, and in the driest manner possible, in what we call pits in Ireland, not sunk below the surface, and ventilated by running sewers under them for the air to pass through, and sinking the ground alongside and at the ends of such pits, to admit the free escape of wet, whether proceeding from rainfall or pent up in the soil. Such as I will store in a house or shed I mean to have still better ventilated, but will studiously avoid the influence of light on the tubers, as it injures the flavour of them, though by no means injurious to the tubers for subsequent planting. I throw out these few hints for the consideration of your readers, and of those of the Irish papers who do me the honour of publishing some of my hastily written letters in your pages. *Land Drainage and Land Tenure in Ireland.*—Were the wet lands—mind, I don't now allude so much to the comparatively wild lands—fairly drained and sub-soiled in Ireland, and if their holders had a sufficient tenure in their holdings, and were practically educated in their management, we would soon be able to double or triple our exports to England for the benefit of the English farmers as well as of the English manufacturers, and make of our own people the extensive consumers of English manufactured articles and of exciseable articles, instead of being, as so many of them are, the miserable sufferers from poverty, and, it cannot be denied, in some cases the abettors, if not the perpetrators of crime, whether directly or indirectly. Could the English people in high and low quarters, but more especially in the middle ranks of life, but sufficiently know how far their interests are mutual, their sympathies with each other would be much more in unison; and until it is so, both will continue to suffer by derangements and distractions, differing but in degree and variety as each of the countries is circumstanced in relation to the other. But I fear I am drifting into ideas which some think should be foreign to the purposes of your paper. However, the time will come—indeed I suspect it is fast coming—when necessity will induce that co-operation between the English and Irish farmers in the true advancement of each other's interest, which I have but so cursorily glanced at the necessity and sound policy of. *Edward Carroll, Kilgreany Lodge, Clonegal, Aug.* 11.

Crops in Suffolk.—It is now pretty well ascertained in this division of the county that the nearer the Wheat comes to the scythe the worse it is, even worse than suspected to be three weeks ago, and that the produce both in weight and quantity must be much below an average. Being a large farmer I have had means and opportunity of knowing. *Robt. Stedman, Pakenham, Bury St. Edmunds, Aug.* 19. [Many thanks for your hint, which will be attended to next year.]

Calculating the Produce of Crops.—In a former table, I gave an estimation of a crop of Wheat, before or after its being cut or threshed, by counting the ears and grains off a lineal and square yard on common 7 ft. 4 in. stitches of land. At the request of inquiring correspondents, for their better and easier calculations, I now propose to give it by measure, which will be found applicable to all kinds of crops, as well as Wheat, if they are well dried before being threshed.

Lineal measure of common 7 ft. 4 in. stitches.—1 pint of any grain off each lineal yard, or 12 pints off every 12 yards, which is equal to 1 square rod (fractions omitted) makes 30 bushels or 3 qrs. 6 bushels per statute acre. Square measure, whether in stitches or not.—1 peck off a square rod, or a fraction over ½ a pint off each square yard, is equal to 40 bushels, or 5 qrs. per acre. Note.—In like manner all may be estimated by weight, thus showing the quality; and any aliquot parts may be easily demonstrated by Rule of Three.

No doubt many persons will this season have occasion to thresh their corn immediately after harvest to meet pecuniary difficulties. I recommend them to be cautious, lest the grain being some of it green and not sufficiently dry, it is heated in the sacks or in the bin, and thereby injured, and rendered unmarketable. I know it often happens so with seeds. *A. Hardy.*

Steam Culture.—You published in your last week's Paper a letter of mine, briefly detailing my visit to some of my steam cultivating sons near St. Neots. This week I have been otherwise employed, viz., converting my hay into manure to prevent a fire caused by its over-heating, the result of my carting it before I ought to have done, to enable me to send my men to Farningham to work my steam cultivating tackle; therefore I must book the loss to steam cultivation. Steam cultivation does not appear to suffer by the loss, for although I have not been visiting I have received good reports from my sons in several counties. Here is an extract from one who did last year 751 acres in 133 days, averaging 5 acres 2 roods 23 perches per day, the particulars of which have appeared in your Paper: "The more of which I see (steam cultivation) the better I like it. We are making famous progress with it this year; besides cultivating our 120 acres of fallow land twice over, other 50 acres have been gone over twice (340 acres in all), and I intend to keep it going without intermission until the end of the season. Simon Hutchinson, Manthorpe Lodge, Aug. 6, 1862." Besides these reports, I have had the pleasure of registering seven new born sons within the first seven days of this very August. Surely these facts are enough to show, that (although I lost by carting my hay too quickly to get away to Farningham), the Woolston system is hale and strong even after getting almost lost in the Farningham wilderness. "Lost, lost," was the general cry. "What is it that you

have lost?" "Smith's tackle. Can you tell me where it is?" "I know nothing about it, you may perhaps find it over yon hill." So much for Mr. Russell's Farningham arrangements. *William Smith, Woolston, Bletchley Station, Bucks, Aug.* 11.

Irish Agriculture.—We have had a very bad season of wet and cold up to this for farm and garden, but the Potatoes about here are all sound, and, strange to say, very fine; Oats, short and thin; Turnips and Mangels thin and bad. Continued heavy rain and cold north wind: nothing to enliven the scene but an odd murder. *Westmeath.*

Occasional Drainage.—As I am desirous by every means in my power to encourage discussion on this important subject, I write from Germany to state that I am now engaged on a second edition of my Treatise, "Land Drainage and Drainage Systems," in which I purpose going more fully than I have hitherto done into the appropriate drainage of "free soils" in contradistinction of "clays." It has been the practice with many to ridicule the adoption of the term "Occasional" Drainage, which I first used and still use as expressive of the appropriate drainage of lands which are not economically drained by the Smith-Parkes parallel system. Such are the "free soils," except in the comparatively few instances where they are of regular surface and uniform texture of subsoil; and as I am convinced that a great national injury is being enacted at the present time by the indiscriminate application of the gridiron to these soils, I have other than mere personal motives in directing public attention to the subject. I do so the more readily, as your Correspondent Mr. Carroll has expressed an agreement with my views. While thanking that gentleman for his support, let me quote the following paragraph from a recent discussion at the Institution of Civil Engineers:—

"Anybody could rule parallel lines on paper and set them out on land; but if we turn to the wet free soils, the extent of which in Great Britain was within a trifle equal to that of the clays, we find that there science was really required. They had not in such soils to multiply drains to overcome excessive retentativeness; but they had to reduce the water level through percolative matter, and to let off carefully and gradually that rain which fell upon the surface, and that water which gravitated through adjacent land into such soils; not to extract it too freely, but to remove the evil of stagnation and discharge the water set in motion into the rivers with as little disturbance to the arterial system as possible; not to 'gridiron' each field as a separate work, but to regard each valley or area of saturated free soil as subject to a system of drainage capable of both overcoming stagnation and increasing the perennial water supply. It was not possible to remove surplus water from clays too quickly, but it was quite possible to be too rapid with the free soils; in fact, the more gradual the action of drainage, so long as the water be moving, the better for such land, and the less derangement of the arterial system will be the consequence. This was a point which must some day receive attention from the engineers of Great Britain and have its due influence in the mode of underdraining itself. He, Mr. Denton, said this from a conviction that the absence of such reflections was hurrying the country on into a state of confusion becoming worse confounded every day; and it would explain, too, the overdraining of certain meadow land, of which so much is said. It seemed almost ridiculous at a period when science was so deservedly paramount, that in land drainage, an art essentially dependent on engineering and geological data, a parallel ruler should be the guide in all soils and all surfaces."

J. Bailey Denton, Treves, Aug. 18.

One Word on Steam Ploughing, or, rather, steam-cultivation—what will be the results? Good, most undoubtedly, and may praise, and honour, and profit be bestowed upon every man who is aiding in any way to bring it into general practice is my prayer; and first and foremost, I take this opportunity to thank, and most heartily, Messrs. Scragg, Delf and Howard for introducing it into the Hundred of Tendring. But I hear it asked, will it pay? Yes, most certainly it will pay; and it will do more, it will exalt land cultivators in the scale of Society, render their profession much more profitable, and in the end enable them to supply their countrymen with a sufficiency of corn, and take away the reproach that England now lies under, and the fearful danger she is in in being indebted to every corn growing country of the world for a sufficiency of daily bread. All this, and more, will all-powerful steam accomplish; land will be really, deeply and completely cultivated by its agency, and not, as now, scratched over 3 or 4 inches in depth only; more acres will be brought into tillage; certain and double the yields will be produced, though from one-third, or one-half, the quantity of seed per acre; farmers, as I have said, will become more wealthy, and be raised in the scale of society; and labourers, by being employed among ingenious and complicated machinery, will have their wits sharpened and be compelled to think, and not, as now, whip their more rational horses to make them think for them; and, lastly, the worthless, worse than worthless, and ugly mounds, miscalled hedges, full of spear Grass, and all other abominations, scattering their seeds all over the country, and occupying in this worthlessness full a tenth part of every farm in this country, delightful steam agency will knock down, and level with the rest of the lands, and bring them into tillage, and make them grow food for the benefit and sustenance of man, and not, as now, weeds and abominations of every kind only, useful to no living creature on earth, and—pardon me, gentle and intelligent readers—a disgrace—yes, a disgrace, for I have no better term, more gentle or flattering, to the age in which we live. By the agency of the steam engine, the masterpiece of human skill, we "put a hook into the nose of the Leviathan; play with him as with a child, and take him for a servant for ever;" and will he not cultivate our fields, thresh, winnow, and grind our corn, and make it into bread also? Yes, the patient, willing and all-powerful drudge will do this and much more; he is standing, as it were, in the market-place ready to be hired; set him, then, to work, and all will be done. *George Wilkins, Wix Parsonage.*

Foreign Correspondence.

Groningen, Holland: *The Distemper at Battersea.*—The agricultural editor of the *Illustrated London News* wrote some ridiculous words on our Dutch cattle in his report of the Battersea show from July 5. I wrote to him the following letter, dated London, July 8:—

"In your interesting report on the cattle show in Battersea I read some words on our Dutch beasts, which lead me to address a few words to you on the subject.

"I am very sorry that the numerous visitors of the show must have got a very bad idea of the Dutch breed. I suppose they could hardly believe that the beautiful Short-horns are but a highly improved breed, descended from Dutch cattle (introduced into England many years ago).

"It was not the fault of our principal breeders that no more or better specimens were sent to Battersea, but this was owing to an illness, the *Febris pecorum aphtosa* (formerly called the *Erysipelas aphtosum oris epizooticum*), which has affected almost all our herds.

"I am sure that this is the chief cause why the Dutch breeders did not send their beautiful cows, whose splendid production of milk makes them almost the best dairy cows in Europe, and induces the breeders from several parts of France, Germany, &c., to introduce them into their stalls.

"With your usual impartiality I have no doubt you will find space for these few lines in your wide-spread journal.

"I am, sir, &c., J. Boeke."

This editor, however, did not find the space to answer me, but only wrote the following words in the number of July 19:—"We hear many accounts of illness among prize cattle since Battersea, and trust it may not have an effect on the Yorkshire show entries. The Dutch get blamed for it, and—as according to the showing of one of their proprietors, who writes to us declaring that we do not rightly appreciate vaccine beauty, the illness of nearly all the Dutch herds produced such a short and bad entry in their class—it would seem not without cause."

I will not trouble your readers by saying more on this manner of the editor of the *Illustrated London News* of answering a polite letter, but must protest against his calling me "one of their proprietors." I had nothing to do with the Dutch gentleman who, as I heard afterwards, charged a dealer in cattle with buying for him some cows for some 18*l.* a piece, sent them to London, was beaten by the small cow of a French breeder of Dutch cattle, who got the first prize, and infected the healthy English cattle. He may justify his own doings. If it is a fact, however, that the Dutch cattle have left a very bad souvenir in England, I think it but right that some remedy should come from Holland. While I don't believe the Dutch exhibitor will do this, I take the liberty of telling some words to your readers about this illness (more troublesome than dangerous), and our manner of attending the patients.

The greatest part of the following particulars I owe to a letter and a printed report I got from Professor T. C. Billroth, the experienced veterinary surgeon, who is charged with the instruction in veterinary medicine and surgery at our agricultural college.

This gentleman told me the present epizootic is the fourth in his practice (viz., in 1838, 1842, 1844, and now). The illness is produced: first, by atmospheric influences, becomes contagious afterwards, and extends itself not only among cattle, but also among sheep and pigs, sometimes among horses, dogs, and cats. Man gets often the same illness by the use of milk from ill cows.

The well-known symptoms are: fever, a slimy mouth, thick tongue, and afterwards a kind of foot-rot, which often causes the death. The illness is not so dangerous when it limits itself to the mouth; and this fact gives more importance to the preventive vaccination. This vaccination is done by introducing some liquid into a small wound made for this purpose inside the upper jaw. The liquid is taken from the blisters in the mouths of ill cattle. This vaccination must be done when the illness is quite new, not sooner, and gives then the advantage that the illness produced by the vaccination becomes less serious than the common one, and prevents the otherwise mostly following dangerous foot-rot. When produced by vaccination the illness lasts but five days; otherwise eight or nine days. The vaccination is the more advisable while all the stock of cattle at a breeder's is ill at the same time; the breeder can give them a waiter, who gives them all necessary help.

If the progress of the illness is left to nature it often lasts weeks, and even months, before all the cattle of a breeder get it. The Dutch breeders do not ask the help of a veterinary surgeon for managing the illness. In the greatest number of cases they help themselves in the following manner, after the illness is broken out:—The ill cattle are placed in dry boxes with plenty of clean dry straw to lie upon; if they cannot eat the mouth is opened, and if the blisters are still filled with liquid they are opened with scissors, taking care not to remove the epidermis. The mouth is washed inside three or four times a day with a swab fixed to a stick, and dipped in a liquid made in the following manner:—Make a strong infusion (like Tea), from Sage (Salvia officinalis), and Elder flowers (Sambucus nigra), and dissolve in it some alum, some honey, and some vinegar. Mown Grass is given for food, and is brought into the mouth by the waiter. Several breeders give bread from Rice, which keeps cattle better in strength than only Grass. A soup of Linseed cake or flour and water is given for drink.

It is observed in Holland that this epizootic comes from the south-west and goes to the north-east. I hope it may soon leave Great Britain and never return. *J. Bocke, Principal of the Agricultural College at Groningen, Holland, Aug.* 8.

Societies.

Aberdeen. — Mr. M'Combie, of Tillyfour, well known as a breeder of Angus cattle, was entertained at dinner last week by the Royal Northern Agricultural Society, including 400 gentlemen and tenant farmers, the Marquis of Huntley in the chair. The toast of the evening was given by his lordship in the following terms. He said:—

I come now to the toast of the evening, which I have very great pleasure indeed in proposing—the health of our distinguished guest, William M'Combie, Tillyfour (loud and prolonged cheering). I am proud to say that I have had the pleasure of being acquainted with him since the time when his whiskers and mine were not quite of the colour that they are now (laughter and applause) I will not say how long ago that is, lest I might hurt his feelings. I remember perfectly well, upon more occasions than one, being associated with Mr. M'Combie—my humble unfortunate self—as a judge at a cattle show; and I was most proud of the situation to be sure, though I never came within a fourth part of his knowledge of cattle. I little thought recently that I should even sit, side by side, with Mr. M'Combie upon such an occasion as this; and I cannot express the satisfaction I feel at seeing before me such a respectable—I was going to say brilliant—assemblage; but the word brilliant is more appropriate for ladies (laughter), and is hardly consistent possibly with ploughing, sowing, reaping, and breeding of cattle. You cannot apply to these the word brilliancy. Well, at any rate, we know a good friend when we have one, and we hope to retain our friend, Mr. M'Combie, for many a long day yet amongst us. I will not detain you longer, but ask you to drink "Long life, health, and happiness to Mr. M'Combie." May he enjoy the honours he has gained long, and be still acquiring more year by year. (The toast was drunk amid deafening rounds of cheering, repeated again and again.) —Mr. M'Combie, who rose amid a renewed outburst of cheering, which lasted several minutes, said:—My lord marquis and gentlemen,—I feel quite overpowered by the expression of kind feeling toward me which has been made to-day by you, my lord, by the croupiers, by a large number of the landed proprietors of this the greatest cattle breeding and cattle feeding county in Britain—by the Lord Provost, by the magistrates, by many of the influential citizens of Aberdeen, by tenant-farmers and friends from various and distant parts of Scotland, by gentlemen with whom I have fought hard battles in our show yards, and by many of my old servants who have attained, by their good conduct, respectable positions in society (applause). I feel in my inmost heart the generous, the surpassing kindness you have shown me. I am very highly gratified by the terms in which you, my lord, have spoken of my exertions to improve our polled breed of cattle, and of the success with which these exertions have been crowned. I was led by a father, whose memory I revere, to believe that our polled cattle are peculiarly suited to our soil and climate, and that, if their properties were rightly brought out, they would equal if not surpass any other breed as to weight, symmetry, and quality of flesh. I resolved that I would endeavour to improve our native breed. I have exerted all my energies to accomplish this purpose. For many years I was an unsuccessful exhibitor at the Smithfield Club. I went to Baker Street—I minutely examined the prize winners—I directed my attention especially to the points in which the English were superior to the Scottish cattle. I came to the conclusion that I had been beaten, not because our Scottish breed was inferior to the English breeds. I saw that I had been beaten because I was imperfectly acquainted with the points of the animals most appreciated in Baker Street, and the proper system of feeding them. I selected the animals best fitted far exhibition at Baker Street. I doubled, I tripled, I quadrupled the cake allowed to my feeding stock (hear and cheers). I attained the object of my ambition. The English agriculturist always maintained that a Scot would never take a first place in a competition with a Short-horn, a Hereford, or a Devon; I have given them reasons for changing their opinion (deafening cheers). A Polled Scot exhibited by me took the first prize at Birmingham. To a Polled Scot exhibited by me the Prince Albert Cup was unanimously awarded at the late Great International Show in France by a jury of 12, consisting of English, Irish, and French gentlemen, in a competition with the finest oxen of the English breeds, in a competition with the finest oxen of the French breeds (cheers). I feel very highly gratified that you, my lord, representing the sentiments of this influential assembly of gentlemen—one of the most influential assemblies, I believe, that ever met in the metropolis of the North—having expressed yourself to the effect that I have reflected credit on Aberdeenshire, and promoted the agricultural interests of Scotland. I would return, my lord, to you, to the croupiers, and to the other gentlemen present, my warmest thanks for the tribute of respect you have paid me. I feel that I have received in this public manifestation of your sentiments a recompense more than sufficient for my humble efforts to improve our native breed. I shall remember the distinguished mark of favour which you have this day accorded to me to the latest hour of my existence with the warmest emotions of gratitude I trust that the honour you have done me may excite me and other parties to exert ourselves to the utmost of our power to uphold the honour of Scotland in the presence of British and foreign competitors, and to maintain our polled cattle in the pre-eminent position which was assigned them at the International Exhibition lately held at Poissy (loud cheers).

Aricultural Gathering at Ipswich.—On Thursday an agricultural meeting of singular interest was held at Ipswich. This town is the seat of the world-known factory of agricultural machinery, established and carried on now for upwards of half a century by the Messrs. Ransome. It occurred to these gentlemen that it would be interesting to the foreign agriculturists now in England to witness the working of some of the newest and highest developments of Agricultural mechanism, and with this object they reserved a crop of Red Wheat at their farm at Westerfield in order that it might be reaped, thrashed and dressed, and the land cultivated by steam on the same day; thus showing the power which the mechanist places at the com-

[illegible] of the agriculturist. The company invited in[illegible] representatives from all the countries which [illegible] sent Commissioners to the Exhibition, and many [illegible] most distinguished foreign agriculturists who are [illegible] London. Upwards of 140 of these gentlemen [illegible] down by a special train from London, and arrived [illegible] Orwell Works about half-past 11. At the works [illegible] were joined by a large party of agriculturists of the [illegible] and adjoining counties, including most [illegible] gentlemen who had won prizes for stock or [illegible] at the county meetings. After lunching at the [illegible] an hour was spent in looking over the factory [illegible] examining the many ingenious machines and con[illegible]trivances for saving labour and producing the sound workmanship for which the firm has long been celebrated. About 2 o'clock, after the workmen had assembled and given hearty cheers of welcome to the visitors, the party proceeded to the farm at Westerfield. The [illegible] there commenced with horse ploughing, and [illegible] the high crested prize ploughing now in vogue [illegible] England, and also the system of very broad furrows [illegible] adopted abroad, so that both English and [illegible] agriculturists had an opportunity of comparing [illegible] on the general advantages of the two systems. The patent Victorian reaper next commenced cutting the Wheat, and although the crop was by no means a [illegible]urable one, performed its work to general satisfac[illegible] delivering the crop in well laid bundles ready for [illegible], and leaving a clean cut and even stubble. [illegible]ler's steam plough with the disc anchor windlass, and an ordinary portable engine of 10-horse power then commenced working, and the simplicity of its action was as much admired as the thoroughly excellent character of the work produced. After the steam plough had worked for about an hour, steam and horse-power thrashing machines began their work upon the crop which had been cut by the reapers. The Patent [illegible] Thrashing Machine, with straw-stacking apparatus attached to it, was the general favourite, but a new machine prepared especially for foreign countries, worked exceedingly well, and was much admired on account of its greater simplicity and excellent performance.

Shortly before 5 o'clock the company left the trial field to examine some choice horses and pigs, which the neighbouring prize winners had sent down to the farm, and after half an hour had thus passed, about 250 [illegible] sat down to dinner in the part of the building [illegible] which the firm showed their machinery in motion at the recent Battersea Show. As most of the party had to return to London by a special train at 7 o'clock, the proceedings afser dinner were necessarily very brief.

The senior partner Mr. Robert Ransome briefly referred to the difficulties of inventors, and the great advantage which the co-operation of agriculturists in all parts of the world had been in enabling English mechanicians to produce machines suited to the wants of the agriculturist, and having bade a cordial welcome to all assembled called on Mr. Mechi to address the meeting. This gentleman proposed the health of the Foreign Commissioners, which was responded to by gentlemen from France, Germany, and Spain, all of whom expressed their pleasure at the success of the steam plough and other machinery which they had seen. After several speeches on subjects connected with the proceedings of the day, the hour having arrived for the departure of the train, the company separated; and thus terminated one of the most interesting and instructive agricultural meetings which has been held since the opening of the Exhibition.

The weather was most favourable throughout the day; and the varied character of the proceedings sustained the interest of the company, so that they separated with a feeling of regret at having so soon to part, and carrying with them an extended knowledge of the capabilities of machinery as applied to the operations of agriculture.

Farm Memoranda.

College Farm, Cirencester. — The weather throughout July has been favourable with us both for roots and grain; as with showers in the early part of the month and heavy rain about the 15th, we have had a higher temperature and more sunshine than at any previous period of the spring or summer.

Wheat.—The earlier sown fields after Clover are weak in the straw and much scrawled, partly owing to wind and partly to the wet cold spring; there is a considerable bulk on the ground, but we fear, according to [illegible], the yield will be deficient, as the ears are blind at the base. Red gum has appeared, especially in the White Wheats, and there is a considerable proportion of prematurely ripe ears which can yield only a tail [illegible] of corn. Altogether we see no reason to complain of our own crop; that it is superior to the generality of crops on similar land is we think attributable to the top-dressing of nitrate of soda, guano, and salt. During the month we sold our last stack of 1861 Wheat, and the account is satisfactory; 68 acres top-dressed at an average cost of 25*s.* per acre, produced 41 bushels per acre, whilst 12 acres unmanured being naturally the best soil, only yielded about 30 bushels per acre. Much of our Wheat is very backward, and none will be fit before the 2d week in August.

Oats are beginning to turn and will soon be ready for the scythe. We grow the Polands which ripen very rapidly after they once commence changing colour, and if not cut when literally green, considerable loss from shedding is unavoidable. We mow or cut with the reaper, leave them in swathe for a few days, and then bind and stook, giving them about ten days to a fortnight field room.

The *Mangel* crop has improved very much, and now promises to reach a fair produce. There is a marked difference in favour of those where the fly-manure was buried in the autumn instead of being bouted in in the spring. This is no solitary experience; and if manure is required for roots, we strongly recommend its application in the autumn in all cases where land contains sufficient clay to retain it, and we are inclined to believe that very little clay is required to ensure this: nature is so provident that nothing should be lost. 4 cwt. per acre of salt has been hand-sown between the rows, and horse-hoed in. A series of experiments are being tried to determine how far salt is beneficial, and to what extent it can be profitably used.

Swedes.—During the early part of the month our last fallow Swedes were drilled, a variety of Purple Top supplied by Messrs. Wheeler of Gloucester and adapted for late sowing was used, and 2 cwt. superphosphate drilled with about 250 gallons of water per acre. The land deep and fine under, with rough clots on the top. This field which is of rather a strong nature, was steam-ploughed in winter, and cross-grubbed at spring, and afterwards cultivated, dragged, and rolled down with horses. The Swedes are now singled, and promise a very fine crop. We must repeat our experiences in favour of steam cultivation for roots; our earlier sown fields were light in nature, and therefore might have been nearly as well prepared by horses, but we think a crop would have been difficult to produce on the field in question after such a spring, by horse labour.——Your readers will be interested in hearing that on Tuesday last we had a trial of Samuelson's machine on the College Farm, working it in company with our own —Burgess & Key's. The trial was not a competitive one, and therefore no actual results are given; it is sufficient at present to say that the draft of Samuelson's reaper was so easy, and the sheaves were delivered with such regularity, and in so suitable a form for tying up, that the machine was purchased for the use of the College, and will be at work constantly during the remainder of the harvest, when it will be open to the inspection of any visitors who are interested in the subject. *John Coleman, Farm Manager, Royal Agricultural College.*

South Hants Farm.—*Report to August* 14.—Harvest work now predominates, and all other farming operations must, in a great measure, be subservient to cutting and carting the crops. It is, however, in our opinion bad policy to allow the horses to be idle during the early part of the harvest, before the carting and stacking of the corn commences; it is too often the case that the horses are turned out to grass, and the carters and teamsmen set to cutting the crops. In our opinion, however, nothing can justify such a proceeding, for where hands are scarce the reaping machine can be made available; and it has now attained to such perfection that it makes excellent work, except in some particular cases where the crop is badly laid; and we hold that the horse labour which can be done during the harvest month is of great importance and of more value than at many other periods of the year. Our horses have been continually employed ever since the cutting of corn commenced, in ploughing and sowing daily Turnips between the rows of stooks. We have also carted to the stack two fields of White Oats in capital condition; this was done on the 11th of the month, and we have since been enabled to complete sowing our Turnips upon those ridges where the corn stood during the first operation of sowing the intervals. If however, we had no Turnip sowing to do, we should commence autumn tillage, and preparation of the land for the root crops of the next year, and this where the land is foul can be done best by the scarifier, which brings all the weeds to the surface, when they can be burnt: this operation may be done as often as required, but twice working will generally leave the land sufficiently clean on the surface, to be allowed to remain until after the Wheat sowing is completed, when it should be fallow ploughed a good depth, according to the nature of the soil, and left for the winter months to receive the full advantages of frost, &c. The cultivation of our farm being of a mixed character, we are enabled to autumn-till all the land we require for early root crops, such as Potatoes, Mangel, Carrots, &c., without the aid of extra animal power. Upon our system of tillage we are nearly always busy with our horses, but we are never subject to extraordinary pressure of horse-labour, which often occurs upon farms sown or tilled upon the four-course system, as it is termed; and it often happens that this pressure takes place twice a year, viz., preparing for Wheat out of ley, and preparing for Turnips after a fallow; and in the four-course rotation one-fourth of the arable being sown with Wheat and one-fourth part with roots, should an untoward season occur like the spring months of the present year, it is found impossible to till the land, and put in the roots at their proper season, without extra or supplementary power. And this brings us to the point how the extra power is to be obtained. There is offered to us steam cultivation, but many farmers are not so circumstanced as to avail themselves of it; any farmer, however, who has sufficient capital employed, can avail himself of supplementary animal power, and for this purpose, and to be applied to autumn tillage, we recommend that oxen should be used. For every hundred acres of arable land a farm may contain, purchase on the eve of harvest, say July 20, three oxen, and continue them in work whenever the weather is dry, using the scarifier during the whole time of harvest, and until the sowing time for Wheat commences, up to which time the horses of the farm having assisted the oxen in autumn tillage, the work will be in a forward state, and the oxen will then assist the horses in helping forward the Wheat season; and after the Wheat sowing is completed the oxen and horses join in fallow ploughing all the land intended for roots the following season. The work will then be sufficiently forward to dispense with the services of one horse for every hundred acres, or, in other words, to employ three horses instead of four. The result will be, that except by steam cultivation the land will be more forward than by any other means, and at a less cost than by employing the usual number of horses during the year. The account will stand as follows,—three oxen for four months will cost the same in keeping as one horse for the 12 months, and when kept in this liberal manner they will increase in value 1*l.* each during the four months, whereas the horse during the 12 months would have lost in value 55*s.* The advantages arising from this mode of proceeding are obvious: the root land is all tilled in the autumn, and done at less cost; when the oxen have done work, they are in improved condition, and become accustomed to the climate &c., and are valuable to put into the boxes to fatten off at the end of 21 weeks from the time of completing the work assigned them. In harvesting, both of Wheat and Lent corn, we prefer making ricks of moderate size to putting in barns, except however the portion required to be threshed first, such as seed Wheat, Lent corn for the sake of straw for fodder, &c.; indeed, where cattle are kept under cover, the whole of the space afforded by the barns will be required during winter for their accommodation. The thrashing by steam, too, has had its effect, for we prefer thrashing at the rick to thrashing at the barn. We have still a good quantity of Mangels left in excellent condition, and it forms a portion of the daily food, in conjunction with Clover, for all our fatting and store cattle under cover. *J. B.*

Chatteris, Isle of Ely.—Our fen lands generally grow Wheats better after Oats than almost any other preparation. We find the Nursery Wheat is ripening up rather brighter and kinder than any of the other varieties. The Red Chaff White too, is looking very well, on good and well-farmed lands. We like this variety on soils where there is danger of producing too much straw. It is short and stiff, and seldom gets laid. We have 6 acres of Hallett's Pedigree Nursery, which in consequence of the extreme drought of last autumn we did not get sown before November. It has a good head, and promises to yield well; but its success as a variety for fen lands will much depend upon the resemblance it bears to the Nursery, from which it is said it has been raised. This is a free-growing variety, and always produces a good quality of grain, and of great weight per bushel. Should Hallett's prove a coarser growing variety, more liable to get lodged, and yielding a coarser and inferior description of grain, as is the case with the Spalding and other coarse-growing varieties, it will not be suited for our fen lands, and its doom will be at once fixed. What we are growing this year is upon high lands, and not fen, but we purpose sowing three or four fields this autumn, with the old Nursery and Hallett's, planting one or two lands of the one, and then the same of the other, so that we may watch their respective growths under pecisely similar circumstances; and at harvest we intend stacking them separately, that we may learn the exact difference in quality, quantity, &c., and thereby determine their relative values for fen purposes. We commenced cutting Wheat on Saturday (9th), but shall not have much ready before the following week. We have already cut 58 acres Peas, and rather over 100 acres of Poland Oats. The Peas are well podded, and will probably yield about an average crop. The Oats, except one 10 acres, which was eaten by wireworm, have cut up a very good crop; about 3 qrs. per acre above last year, we should estimate, and the quality is very good. We stacked 18 acres yesterday in fine condition, but the heavy rain this morning has stopped operations for the day. We think on our gravelly fen soils the water drill and 2 cwt. of Lawes' superphosphate of lime have given us an increase of crop of fully 2 qrs. per acre. Our Friesland and Black Oats are generally good crops, but will not be ready for the sickle until the next and following weeks.

Beans are a fine crop of straw, and, as far as we have examined, are very fairly podded. We think this must prove quite an average crop, probably something more.

Mangels have grown well since the increase of temperature was realised, and the rain of this morning will help them considerably. With a mild growing autumn they may easily make a heavp crop.

Our Coleseeds for winter eating are doing well. The fly hurt one 6 acres, which we had to re-sow, the

remaining 90 acres is a good plant, and grows satisfactorily, and with occasional showers will make a heavy crop. We have 22 acres sown in May, on which we have just put 220 sheep. This grew remarkably well until the last two weeks, when it suffered from the heat and from want of moisture.

Our Grass keeping has been wasting rapidly, and the pastures look very brown and withered. Stock, however, have done well, where plentifully supplied with good water.

Potatoes at present are generally free from disease, but the critical time has now arrived, and with heavy rains we should probably soon see symptoms of disease; but with fine weather we hope they will continue sound. *A. S. R.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Aug. 20, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday	14	29.77	63	59	S.W.	2	5	72	64	108	58	0.23	61¼	60
Friday	15	29.82	61	58	W.	1	6	73	63	112	50	0.10	62	60
Saturday	16	29.85	59	57	N.E.	1	7	73	65	123	52	0.57	62½	60¼
Sunday	17	29.85	57	56	N.W.	2	8	64	54	77	53	0.64	62	60¼
Monday	18	29.97	53	55	N.	2	7	60	58	72	52	0.35	61	60
Tuesday	19	30.00	62	57	S.W.	2	2	71	44	115	41	..	61	60
Wednesday	20	30.03	63	59	S.W.	2	3	75	50	115	46	..	62	60

Calendar of Operations

AUGUST.

West Sussex: *August* 5.—We are just beginning harvest; there was a little cut last week, and the middle of this harvest will be general, so that we have not had it so late as we expected at one time, and it does not appear to have turned off prematurely either. That there is a little blight in the finer sorts of white Wheat is no doubt true, but not to the extent that was feared; but still none of it is a heavy crop. There is hardly a patch down any where, and this is an indication that the ears are rather light, and on the whole I should say the crop will be from one to two sacks per acre below average in this neighbourhood. Barley appears a fair crop, and late; and Oats are very good, but very green, so that harvest will be longer than usual, unless we have the weather very dry. We have only just been able to cut the Peas before beginning Wheat cutting, and then some of them were green; where they were not injured by the slugs in the spring they are a good crop, but very many of them were nearly destroyed, especially on the best land, so that we may write them deficient. Beans have promised well; we see a little blight on them, but still they are likely to be a good crop. Mangels are generally doing very well. Swedes about as usual; later sown Turnips have not come on very fast, as the weather was rather dry for some time after they were sown, but we have lately had some kindly showers which have made a great improvement in them. Potatoes are very much diseased, at least in the tops, but the roots are not yet so much injured, and as there is a good crop generally there may be a fair quantity saved. For harvest work there seems to be plenty of hands, and the price for cutting at present is not so high, and as it all stands up, the machines will have a favourable opportunity of being used. Grass mowing machines are coming into use, and answer well when properly managed, and the best plan is to let the mowing to the men at so much per acre, giving them the machine and horses; where this has been done the saving has been considerable, and the work is certainly done better than it generally is by hand, and the meadows are improved, all old withered Grass being combed out, and nothing left but the clean stubble, so that the second year it will be finer and cleaner. There is one serious objection to their use in Clover cutting—that they kill game without a licence and out of season, so that their use at that time may not become general for some time where the owner is also fond of game. *G. S.*

Notices to Correspondents.

Weed: *Old Sub.* Lolium temulentum—Darnel.

Wheat after Beans: *Falcon.* We prefer taking Wheat after Wheat with an intervening crop of Beans, to taking the two without an intervening crop, even though the Beans be not manured.

Upwards of 2000 Cases have been reported as Cured by
JOHN BELL'S COMPOSITION for destroying Mildew on Vines, Peaches, Nectarines, Roses, and every other plant subject to this pest. Sold in sealed bottles at 1s. 6d., 2s. 6d., and 5s. each. A 1s. 6d. bottle will make 12 gallons fit for use.
Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP,
1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.
Both may be obtained of all principal Seedsmen.
Patentee: J. Neal, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.
Wholesale by
Price's Patent Candle Co., Limited.

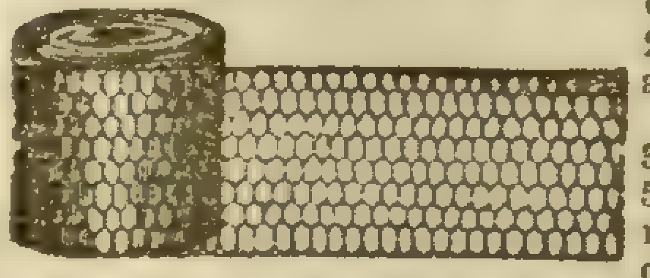
Sacks. Bags. Mats.
JAMES T. ANDERSON, Sack and Bag Maker, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), supplies SEED BAGS at the following low prices:—
2 Bushel Bags..8s. 9d. per doz. | ½ Bushel Bags..4s. 9d. per doz.
1 Bushel Bags..6s. 3d. „ | Peck Bags ....3s. 6d. „
Coarser Bags much cheaper.
ARCHANGEL and PETERSBURG MATS.

Patronised by H.R.H. the late Prince Consort.

GREENING and CO.'S IRON WIRE FENCES, manufactured by Patent Machinery, possess the following advantages:—
1st. Are easily fixed by unskilled labourers.
2nd. Require few and inexpensive supports.
3rd. Are ornamental in appearance.
4th. Have increased strength from their peculiar construction.
5th. Are but half the price of similar hand-made Fences.
Upwards of 40 varieties are made, the principal ones being:—
No. 1 a variety.—Cattle and Sheep Fence, 3ft. 9in. high, 1s. per yard.
No. 7 b variety.—Sheep folding Fence, 3ft. high, 9d. per yard.
No. 4. variety.—Hare and Rabbit-proof Fence.
No. 11. variety.—Poultry and Chicken-proof Fence.
No. 16. variety.—Italian pattern Garden Fence.
No. 20. variety.—An admirable substitute for the old-fashioned wire netting.
G. & Co. will be happy to forward, without charge, an explanatory Circular of the principal varieties. Their enlarged Catalogue of Fences and Gates post free on receipt of three stamps.
Address Greening & Company, Victoria Works, Oxford Street, Manchester.

Prices Reduced.
H. J. MORTON and CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.
GALVANISED IRON ROOFING
for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.
WIRE STRAND CABLE FENCING

(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1s. per yard.
This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.
GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 4d., 4½d., and 6¾d. per yard.
Galvanised, 24 ins. wide, 3-inch mesh, 2¾d., 3¾d., and 5½d. per yard. The Netting made any width, and with openings of any size.
GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.
Strong CATTLE HURDLES from 2s. per yard.
PATENT IMPROVED GAS WORKS
of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to
Henry J. Morton & Co., 2, Basinghall Buildings, Leeds.

BURGESS and KEY'S COMBINED GRASS MOWING and REAPING MACHINES are made to cut the heaviest crops of Grass, both the Wheels being geared, and sufficient weight in the Machine to give grip on the ground.
The price of B. & K.'s Mower, 25l.; Combined Mower and Reaper, 30l.
Burgess & Key's celebrated SELF DELIVERY REAPING MACHINES.
The superiority of this Machine over every other in use has been proved by the most influential farmers in England. Price 36l.
Burgess & Key, 95, Newgate Street, London, E.C.
*** Full particulars sent on application.

Garden Sculpture.
FOUNTAINS, STATUES, TAZZAS, VASES, &c., executed in Marble and Stone by J. Forsyth, 21, High Street, Camden Town, London, N.W. Designs and Estimates forwarded free of expense.
Two Prize Medals 1862.

MINTON and CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.—Aug. 23.

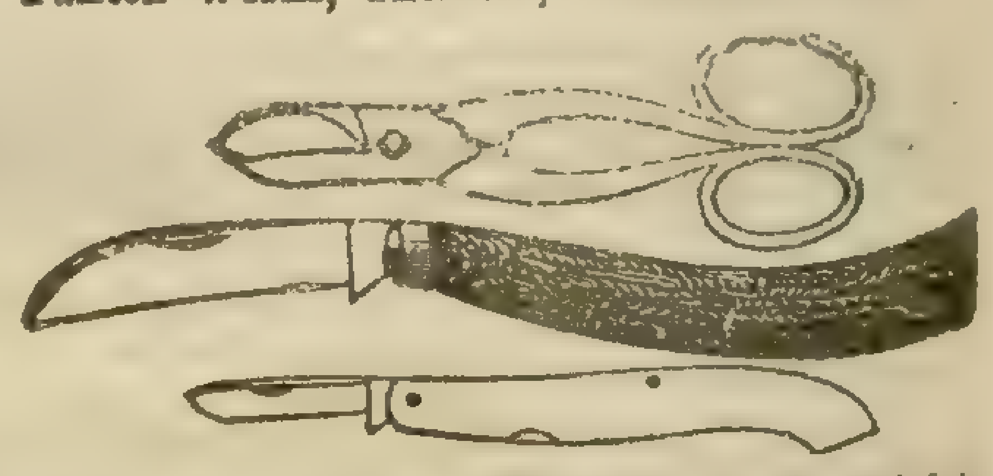
Garden Border Edging Tiles.
F. and G. ROSHER, Cement, Brick, and Tile Merchants, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.
They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.
N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.
Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.
To be obtained of F. & G. Rosher, at their Premises as above.

PROTECTED BY THE CUTLERS COMPANY
CORPORATE MARK.

JOSEPH HAYWOOD AND CO.,
Manufacturers of
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kind of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield

Paxton Works, Sheffield, Established 1738.



International Exhibition Prize Medal is just awarded to Saynor & Cooke for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR and COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.
Caution.—None are genuine unless marked Saynor. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.

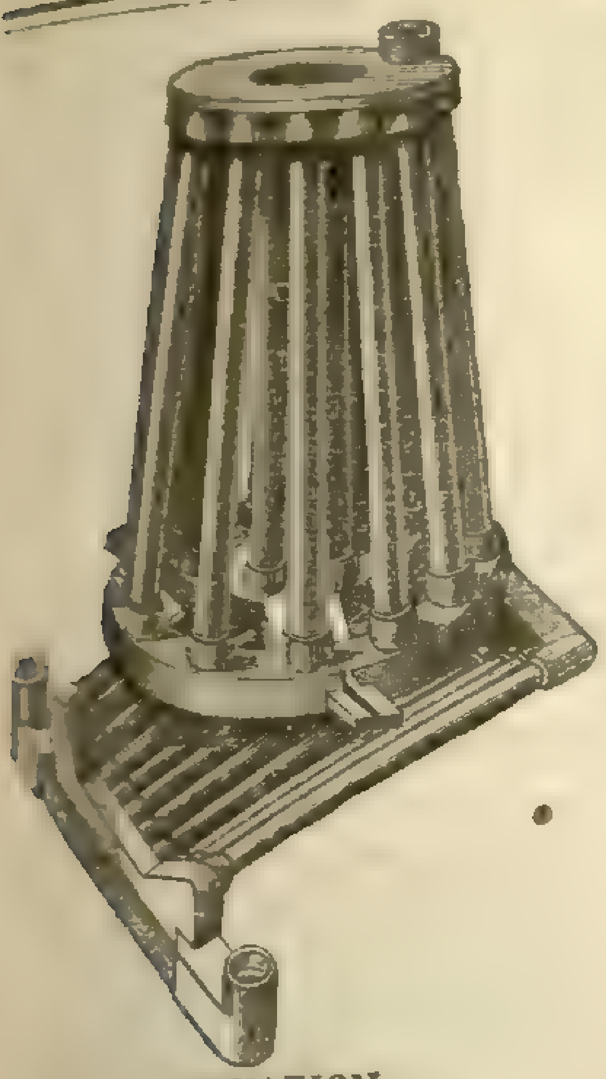
£2. 2s.

An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.
One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.
It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.
It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.
No Establishment, either private, commercial, or manufacturing, should be without one.
Six feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12s. Longer lengths of Suction at 1s. 6d. per foot.
May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,
John Warner & Sons, Crescent, Cripplegate, London, E.C.

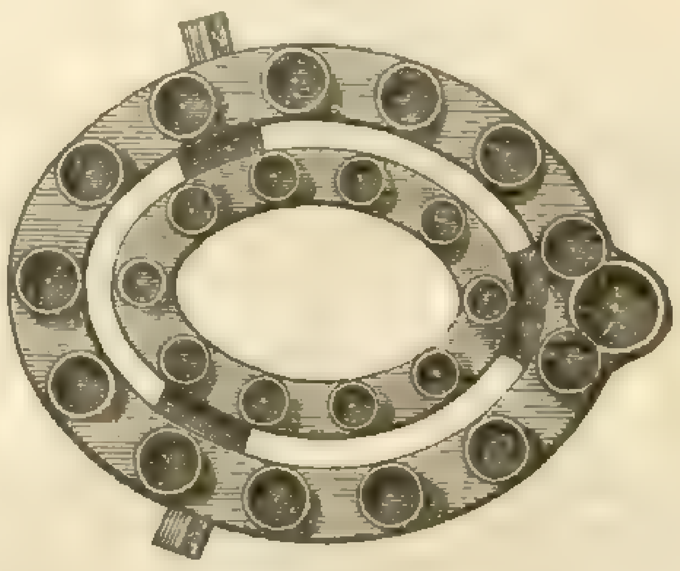
GRAY'S OVAL TUBULAR BOILER.

INTERNATIONAL EXHIBITION,

Class IX., No. 2119.



ELEVATION.



PLAN.

Mr. GRAY begs to call the attention of the Nobility, Gentry, Nurserymen, Gardeners, &c., to his

NEW OVAL TUBULAR BOILER,

acknowledged by practical judges to be a great improvement on every form of Tubular Boiler yet introduced. It has proved itself superior to all other Boilers for quickness of action and economy of Fuel, doing its work with one-third less the amount required by any other.

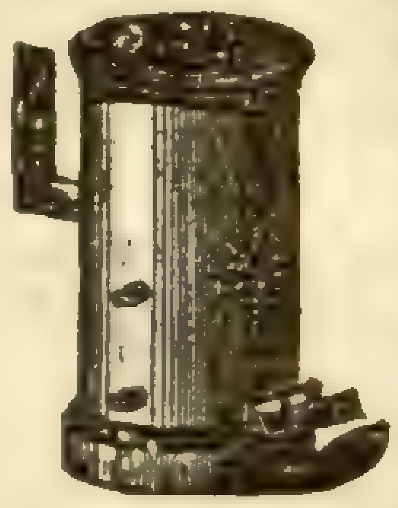
Extract from Report in Gardeners' Chronicle *of International Exhibition, May 24, page* 476.

"The upright form of Boiler is usually made on a circular plan, but the oval form given to Mr. GRAY's variety of it is said to be preferable in consequence of its bringing the tubes in closer contact with the fire. The usual form of a furnace being a parallelogram rather than a square, it seems feasible that the Boilers on the oval plan should bring the tubes more completely within range of the burning fuel; and this being so the change, though a slight one, is no doubt an improvement."

They are made of all sizes, which, with prices, may be had on application.

JAMES GRAY, HORTICULTURAL WORKS,
DANVERS STREET, PAULTON'S SQUARE, KING'S ROAD, CHELSEA, S.W.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

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Price complete from 3*l.* 10*s.*

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

Hothouses for the Million.

INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17*l.* SPAN ROOFS, 30 feet in length, for 33*l.*; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to S. HEREMAN, 7, Pall Mall East, London.

A FIRST-CLASS PRIZE MEDAL HAS BEEN AWARDED TO J. WEEKS & CO. FOR THEIR SUPERIOR UPRIGHT TUBULAR BOILER AND GENERAL IMPROVEMENTS IN HEATING BY HOT WATER.

JOHN WEEKS & COMPANY,

HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS

TO

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN
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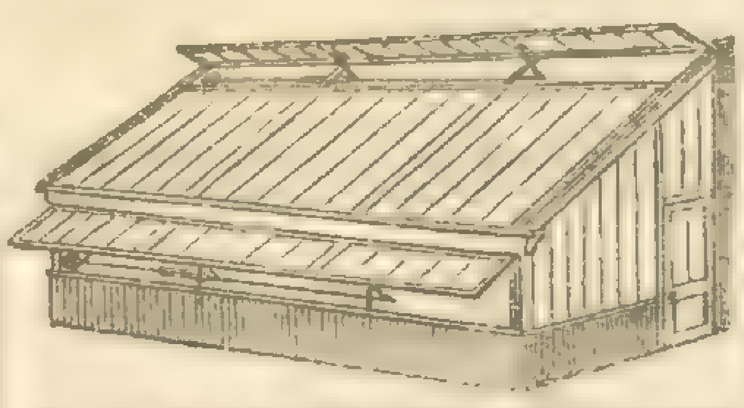
SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hot-houses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.
Apply to Joseph Meredith, Vine Cottage, Garston, near Liverpool.
N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, Tubular, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 12s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at
Mr. Lynch White's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

T. G. MESSENGER, Horticultural Builder and Engineer, Loughborough.



T. G. M.'s PATENTED BUILDINGS combine all the modern improvements, are well made of best seasoned red Deal, most effectually ventilated by means of his unequalled Apparatus, can be made either plain (and which are at the same time elegant in appearance), or of the most elaborate design. They can be fixed as permanent buildings, or made to be portable.
T. G. M.'s HEATING APPARATUS continues to give the greatest satisfaction for its heating qualities and small consumption of fuel.
ILLUSTRATED CATALOGUES of the above, Glazing without Putty, Garden Engines, &c., sent upon application.

JOHN KENSHOLE, Jun., Builder and Contractor, Heavitree, near Exeter, begs to inform the nobility, clergy, and gentry, that he is prepared to execute GREENHOUSES, CONSERVATORIES, VINERIES, &c., with dispatch, and on the most reasonable terms, combined with good seasoned material and workmanship. Estimates and Designs given.

JOSEPH SMITH, Horticultural Builder, New Road, Hammersmith, W., has for SALE a quantity of PIT and other LIGHTS, and five ready-made GREEN-HOUSES, viz.:—

	£	s
Span Roof, 27 feet long 16 feet 6 inches wide for Lean-to, 24 feet by 12 feet 6 inches ..	47	[illegible]
Ditto glazed with 21 oz. glass, 100 feet by 18 feet ..	[illegible]	0
Ditto ditto, 22 feet by 12 feet ..	100	0
Ditto ditto, 12 feet by 7 feet ..	[illegible]	0
Roof and Front Lights for a Lean-to House, 50 feet by 14 feet; 900 square feet ..	15	0
Also Roof Lights for Houses, 45 feet by 18 feet; 832 square feet ..	30	0
20 extra stout (10 feet 6 inches by 4 feet 2 inches) Lights ..	31	0
20 ditto, 6 feet 10 inches by 4 feet 2 inches ..	35	0
50 6-feet by 4-feet Lights, 15s. each, or the lot for ..	20	0
	37	0

Houses made to order from 1s. per sq. foot; if Unglazed, [illegible]
Pit Lights with 15-oz. Glass, 8d.; 21-oz., 9d. per foot.
, Estimates given for Heating by Hot Water.

MESSRS. SAMUELSON & CO.'S
NEW PATENT SELF-RAKING REAPER,
WITH SIDE DELIVERY IN SHEAVES (RANSOMES' AND SAMUELSON'S PATENTS).

One of these machines having been purchased after trial, for the Royal Agricultural College Farm at Cirencester may, by permission of the manager, be seen at WORK there during the HARVEST; also others at Banbury, at the Royal North Lancashire Show, the Sparkenhoe Club Show, and in various parts of England and Scotland. Particulars on application to the Works.

The advantages are, lightness of draught (barely one-half the draught of other self-delivering machines), and a money saving in binding, as tested by contracts made with Binders.

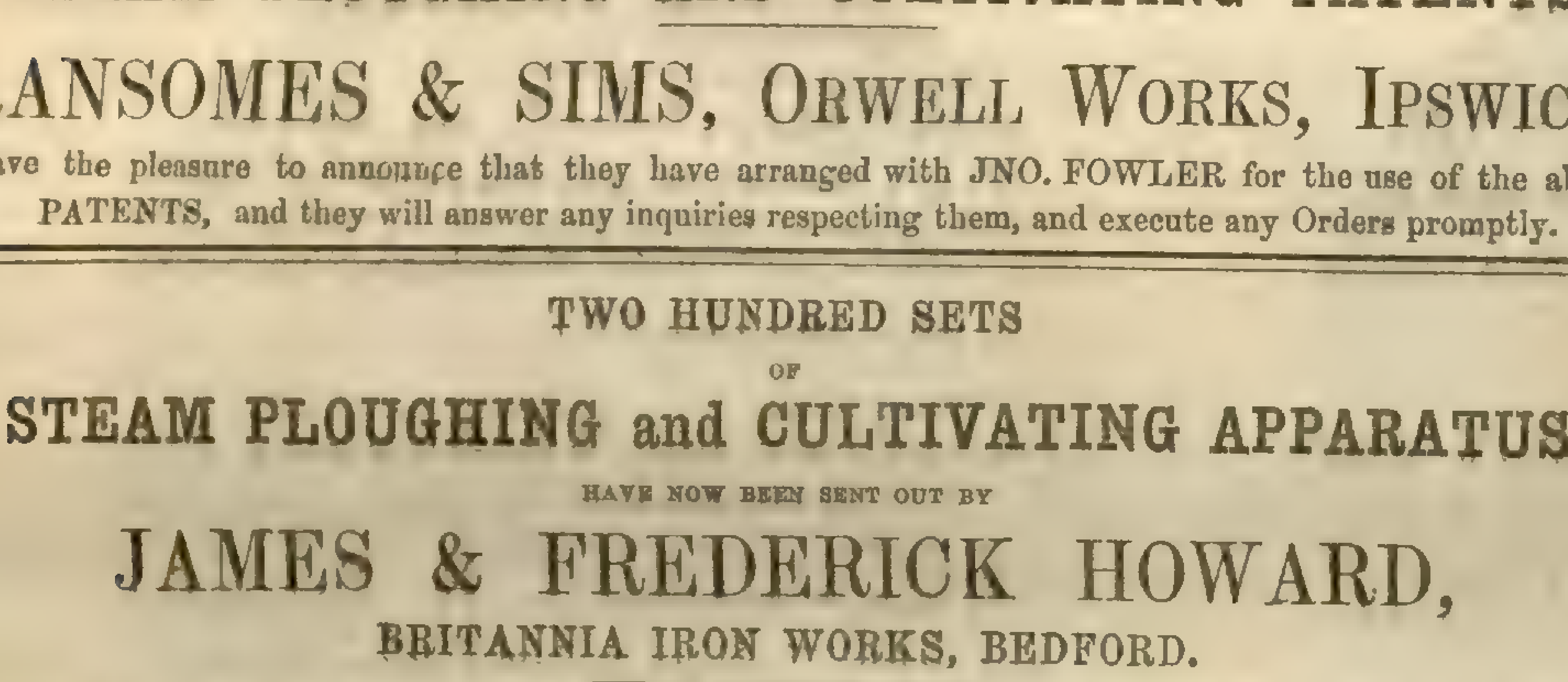
SAMUELSON & CO.,
76, CANNON STREET WEST, LONDON; AND BRITANNIA WORKS, BANBURY.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.
RANSOMES & SIMS, Orwell Works, Ipswich,
Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

TWO HUNDRED SETS
OF
STEAM PLOUGHING and CULTIVATING APPARATUS
HAVE NOW BEEN SENT OUT BY
JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD.

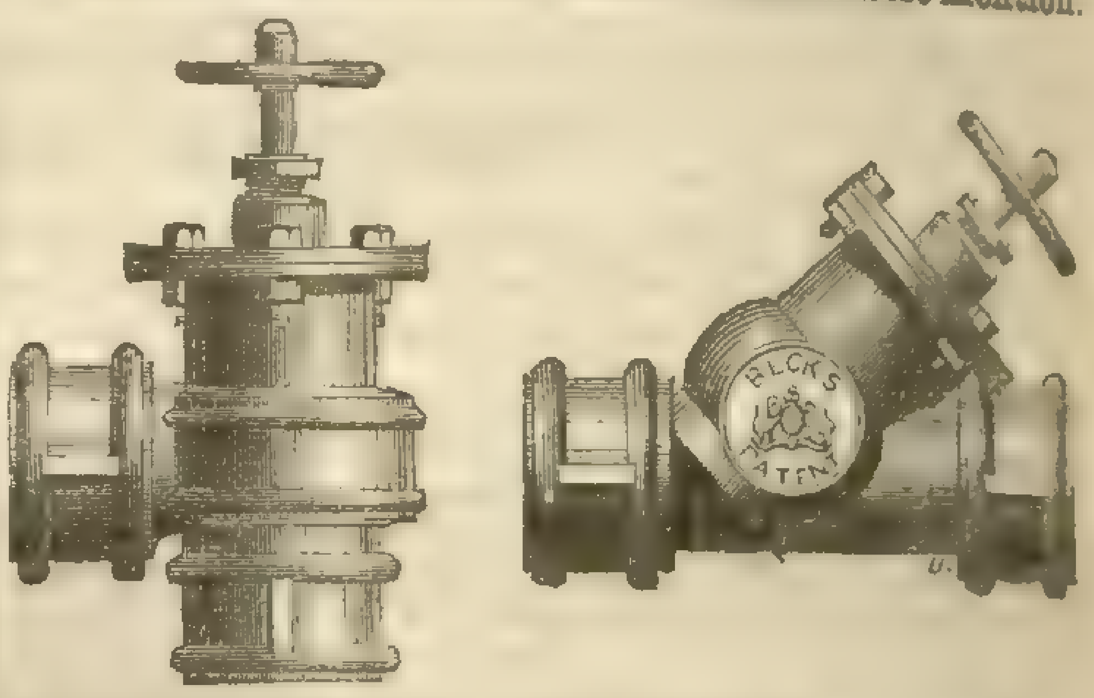
Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.
Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,
MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.
PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.



IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.
The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.
Illustrated CATALOGUES and DRAWINGS free on application to
COTTAM & CO., ENGINEERS and IRON FOUNDERS,
2, WINSLEY STREET (Opposite the Pantheon), OXFORD STREET, LONDON, W.

International Exhibition, Class 8. Honourable Mention.



BECK'S PATENT HOT-WATER VALVES.—The superiority of these VALVES over every other description is now universally acknowledged; they offer a free passage to the water, and are not liable to get out of order, nor to set fast if unused for any length of time.
Upwards of TWO THOUSAND of Beck's PATENT HOT-WATER VALVES are in successful operation.
For Price List apply to J. Beck, Patentee and Manufacturer of every description of Gas, Water and Steam Fittings, Hot-water Throttle Valves, &c.
N.B. A liberal discount to the trade.
133a, Great Suffolk Street, Southwark, S.E.

FOR SALE, now standing on the premises, at E. Dench's, 152, King's Road, Chelsea, S.W., two very handsome CONSERVATORIES, one 22 by 18, and very ornamental; one 25 by 15; and one VINERY, 16 feet wide by 36 feet long. To be Sold a Bargain.

DUNN'S GARDENER'S PENCILS,
Price 1s., will refill for 6d.
DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.
Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.
These pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.
N.B.—A liberal allowance to the Trade.

RUSSIAN DINNER TABLE FLOWER POT COVERS.—Commended by the Royal Horticultural Society. A set of 12 different sizes sent, carriage paid, for 21s.
Priced List, with specimens, sent free by post.
Barr & Sugden, Seed Merchants and Florists, 12, King Street, Covent Garden Market, W.C.

BENJAMIN EDGINGTON'S Temporary Rooms, Lined, Boarded, and Decorated.
MARQUEES and TENTS of all dimensions, for Horticultural Shows, &c., on sale or hire.
FLAGS and BANNERS of every description, for sale or hire.
RICK CLOTHS, New and Second-hand, with Poles, &c., complete.
Address, Benjamin Edgington, 2, Duke Street, London Bridge, Southwark, S.E. No other Establishment.

WM. BLAKE'S DESCRIPTIVE and CULTURAL SEED POCKETS, GERMAN SEED ENVELOPES, &c.
Catalogues and Samples on application.
60—70, Howard Street, Glasgow.

Improved Garden Furniture to Imitate Cane in Wrought Iron.

HAAS DEMRATH begs to call the attention of the Nobility and Gentry to his Stock of GARDEN SEATS, TABLES, COUCHES, and General IRON and WIRE-WORK, suitable for Conservatories, Gardens, &c. Owing to his success on the Continent, the Manufacturer has been induced to open an Agency in England, and an inspection of Stock is respectfully solicited at
The Show Rooms, 47, High Street, New Oxford Street, W.C.

TANNED NETTING for the Protection of Fruit Trees, at 1d. per square yard; 200 yards, 14s.; 500 yards, 30s.; 1000 yards, 50s. Cotton Netting, Tiffany, Scrim Canvas for Wall Fruit, &c. Sun Blinds, Awnings, Tulip Covers, &c.
Be particular, John Edgington & Co., 17, Smithfield Bars, E.C.; Old Kent Road, S.E.; and 18, Piccadilly, W.

SHAW'S TIFFANY.—The lightest, cheapest, and most durable of all materials for Shading Conservatories and Hot-houses is SHAW'S TIFFANY. As a protection from cold winds and scorching heat, nothing equal to SHAW'S TIFFANY. For effectually preserving Fruits and Seeds from the Attack of Birds, Wasps and Insects, use SHAW'S TIFFANY.
Sold by all Nurserymen and Seedsmen. Samples and Prices on application.
J. Shaw & Co., Oxford Street, Manchester.

Chubb & Son.—"For Perfection of Workmanship and Construction of Locks, also for the Manufacture of Iron Safes," Prize Medal awarded at International Exhibition.

CHUBB'S PATENT SAFES, the most secure against Fire and Thieves.
CHUBB'S FIRE PROOF STRONG ROOM DOORS; CHUBB'S PATENT DETECTOR LOCKS and STREET DOOR LATCHES; CHUBB'S CASH and DEED BOXES.
Illustrated Price List gratis and post free.
Chubb & Son, 57, St. Paul's Churchyard, London, E.C.

THOMAS MILLINGTON
87, Bishopsgate Street Without, E.C.
HORTICULTURAL GOODS.

PROPAGATING GLASSES.

3 inches ..	0s. 4½d. each.	12 inches ..	1s. 9d. each.
4 ,, ..	0 5½ ,,	13 ,, ..	2 0 ,,
5 ,, ..	0 6½ ,,	14 ,, ..	2 6 ,,
6 ,, ..	0 8 ,,	15 ,, ..	3 0 ,,
7 ,, ..	0 10 ,,	16 ,, ..	3 6 ,,
8 ,, ..	1 0 ,,	17 ,, ..	4 0 ,,
9 ,, ..	1 2 ,,	18 ,, ..	5 0 ,,
10 ,, ..	1 4 ,,	19 ,, ..	6 0 ,,
11 ,, ..	1 6 ,,	20 ,, ..	7 0 ,,

HAND GLASSES.

12 inches ..	6s. 0d. each	18 inches ..	9s. 0d. each
14 ,, ..	7 0 ,,	20 ,, ..	10 0 ,,
16 ,, ..	8 0 ,,	24 ,, ..	12 0 ,,

If open top, 1s. extra.

CUCUMBER GLASSES.
From 12 inches long and upwards, 1d. per running inch.

ROLLING PINS.
From 12 inches long, 1½d. per running inch.

Improved ANTI-CORROSION and other PAINTS.
GAS and LAMP GLASSES, GLOBES, &c.
CHIMNIES of every description.
Not accountable for Breakage.

Glass for Greenhouses.

JAMES PHILLIPS AND CO. beg to submit their prices as follows :—

ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 280 feet, 2¼d. and 2½d. per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each. Package included.

	3rds.	4ths.
12 by 9, 13 by 9, 14 by 9, 15 by 9; 12 ,, 10, 13 ,, 10, 14 ,, 10, 15 ,, 10	14s. 0d.	12s. 6d.
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11; 14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12; 18 ,, 12, 19 ,, 12, 20 ,, 12, 16 ,, 13; 17 ,, 13, 18 ,, 13, 19 ,, 13, 20 ,, 13; 16 ,, 14, 17 ,, 14, 18 ,, 14, 20 ,, 14	16s. 0d.	13s. 6d. per 100 feet.

Various other sizes.

GLASS FOR ORCHARD HOUSES,
As supplied by us to Mr. Rivers.

20 in. by 12 in., 20 in. by 13 in., 20 in. by 14 in., 20 in. by 15 in.

	16 oz.	21 oz.
Common	13s. 6d. ..	£0 18s.
Superior do.	16 0 ..	1 3
English Glass	18 0 ..	1 9

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11s. 6d.
8 ,, 6	8½ ,, 6⅜	9 ,, 7	9½ ,, 7½	
		10 ,, 8	10½ ,, 8½	12 6

Boxes 2s. each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.
16 oz. 4ths, 1¾d., 2d., and 2½d. 21 oz. 2¾d., 3d, and 3½d.
,, 3ds, 2d., 2½d., and 3d. ,, 3d., 3½d , and 4d.

London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, London, E.C.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to

JOHN FOWLER, 28, Cornhill, London, E.C. ; or Steam Plough Works, Leeds.

SMITH'S PATENT COMBINED MACHINE.—This Machine is admirably adapted for cultivating Light Land Wheat, Barley and Oat Stubbles, and Drilling in Stubble Turnips. Fifteen acres may be Cultiuated and Drilled in one day; for Cultivating Light and Heavy Land Pea and Bean Stubbles, and Drilling in Wheat; and for cultivating Heavy Land Wheat Stubbles, and Drilling in Vetches. One operation will be enough for each crop, especially in wet seasons. It is warranted to do its work well.

For Price and particulars, apply to WILLIAM SMITH, Woolston Bletchley Station, Bucks.

Gutta Percha Tubing for Watering Gardens.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following Testimonial from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq , *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

Notice.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), HORTICULTURAL VALUER, begs to inform his friends and the public that he has REMOVED from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the SCORCHING RAYS of the SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.

Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.

ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

Prize Medal Awarded.

ALLEN'S PATENT PORTMANTEAUS and TRAVELLING BAGS, with Square Openings; LADIES' WARDROBE TRUNKS, DRESSING BAGS, with Silver Fittings; DESPATCH BOXES, WRITING, and DRESSING CASES, and 500 other articles for Home or Continental Travelling. Illustrated Catalogue post free.

Also ALLEN'S Barrack Furniture Catalogue of Officers' Bedsteads, Wash Hand Stands, Canteens, &c., post free.

J. W. ALLEN, Manufacturer and Patentee, 31, West Strand, London, W.C.

THE PERFECT SUBSTITUTE for SILVER.—The REAL NICKEL SILVER, introduced more than 25 years ago by WILLIAM S. BURTON, when PLATED by the patent process of Messrs. Elkington & Co., is beyond all comparison the very best article next to sterling silver that can be employed as such, either usefully or ornamentally, as by no possible test can it be distinguished from real silver. A small useful set, guaranteed of first quality for finish and durability, as follows :—

	Fiddle or Old Silver Pattern.	Thread or Brunswick Pattern.	Lily Pattern.	King's or Military Pattern.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
12 Table Forks	1 13 0	2 4 0	2 10 0	2 15 0
12 Table Spoons	1 13 0	2 4 0	2 10 0	2 15 0
12 Dessert Forks	1 4 0	1 12 0	1 15 0	1 17 0
12 Dessert Spoons ..	1 4 0	1 12 0	1 15 0	1 17 0
12 Tea Spoons	0 16 0	1 2 0	1 5 0	1 7 0
6 Egg Spoons, gilt bowls..	0 10 0	0 13 6	0 15 0	0 15 0
2 Sauce Ladles	0 6 0	0 8 0	0 9 0	0 9 6
1 Gravy Spoon	0 6 6	0 10 0	0 11 0	0 12 0
2 Salt Spoons, gilt bowls..	0 3 4	0 4 6	0 5 0	0 5 0
1 Mustard Spoon, gilt bowl	0 1 8	0 2 3	0 2 6	0 2 6
1 Pair of Sugar Tongs ..	0 2 6	0 3 6	0 4 0	0 4 6
1 Pair of Fish Carvers ..	1 4 0	1 7 6	1 10 0	1 12 0
1 Butter Knife	0 2 6	0 5 6	0 6 0	0 7 0
1 Soup Ladle	0 10 0	0 17 0	0 17 0	1 0 0
1 Sugar Sifter	0 3 3	0 4 6	0 5 0	0 5 6
Total	9 19 9	13 10 3	14 19 6	16 4 0

Any article to be had singly at the same prices. An Oak Chest to contain the above, and a relative number of Knives, &c., 2l. 15s. Tea and Coffee Sets, Dish Covers and Corner Dishes, Cruet and Liqueur Frames, &c., at proportionate prices. All kinds of re-plating done by the patent process.

BEDSTEADS, BATHS, and LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW ROOMS, devoted exclusively to the SEPARATE DISPLAY of LAMPS, BATHS, and METALLIC BEDSTEADS. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from .. .. 12s. 6d. to £20 0s. each
Shower Baths, from .. 8 0 to 6 0 ,,
Lamps (Moderateur), from 6 0 to 8 10 ,,
(All other kinds at the same rate).
Pure Colza Oil .. .. .. 4s. 6d. per gallon.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 500 Illustrations of his illimited Stock of Sterling Silver and Electro Plate, Nickel Silver, and Britannia Metal Goods, Dish Covers, Hot Water Dishes, Stoves, Fenders, Marble Chimneypieces, Kitchen Ranges, Lamps, Gaseliers, Tea Trays, Urns, and Kettles, Clocks, Table Cutlery, Baths, Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Room, Cabinet Furniture, &c., with Lists of Prices, and Plans of the 20 large Show Rooms, at 39, Oxford Street, W.; 1, 1A, 2, 3 and 4, Newman Street; 4, 5, and 6, Perry's Place; and 1 Newman's Mews, London, W.C.

MR. ALEXANDER PONTEY, Deceased.—All persons having any Claims or Demands against the Estate of the late Mr. ALEXANDER PONTEY, of 21, Cornwall Street, Plymouth, Devon, Nurseryman, Seedsman, and Florist, are requested to forward particulars thereof to his Executrix, Mrs. MARY LYNE PONTEY, at 21, Cornwall Street, Plymouth, aforesaid, in order that the same may be examined, and, if found correct, discharged; and all persons Indebted to the said Estate are requested to pay the amount of their respective debts, without delay, to the said Executrix.

Mrs. PONTEY begs to offer her best thanks to the Friends and Customers of her late Husband for the kind and liberal support afforded him during his lifetime, and to inform them that it is her intention to continue the business until the same be satisfactorily disposed of.

Dated Plymouth, August 1, 1862.

WANTED to RENT, at Michaelmas, 2 to 4 Acres of good LAND, suitable for a Market Garden, within 10 miles of London. A House with Orchard would be preferred.

A. Z., *Gardeners' Chronicle* Office, W.C.

WANTED, to RENT or PURCHASE, Two Acres or more of GROUND to form a NURSERY, with or without Dwelling House on it, within 10 miles of Covent Garden; or a small Nursery might not be objected to.—Apply, by letter, to D. M., 2, Anderson Street, King's Road, Chelsea, S.W.

To Horticultural Builders and Others.

TO BE DISPOSED OF, an old-established HORTICULTURAL BUILDER'S BUSINESS, with the Lease, Goodwill, Machinery, Stock, &c. There is an extensive connection attached to the above, as having the patent right of manufacturing Patent Galvanised Iron Hot and Greenhouses, exclusive of the usual Iron and Wood Greenhouses manufactured by other Horticultural firms. The proprietor retiring from business.

For further particulars apply at 152, King's Road, Chelsea, S.W.

South of Devon.

MR. ALEXANDER PONTEY, DECEASED.
To NURSERYMEN, SEEDSMEN, AND OTHERS.

TO BE DISPOSED OF, by Private Contract, on advantageous Terms, with early possession, the Well-Established BUSINESS of a NURSERYMAN, SEEDSMAN, and FLORIST, which for very many years has been extensively and successfully carried on by Mr. ALEXANDER PONTEY, of Plymouth, Devon, and his predecessor, and is now to be disposed of only in consequence of his sudden death.

The Lease of the Business Premises and Stores, which are most conveniently situated near the Market, as well as the Leases of the Nurseries, which are most extensive and well-stocked, both at Plymouth and Vinstan (about Two Miles from Plymouth, on the Tavistock Road), have many years to run.

The Plant, which is of the most Modern construction, and the Stock, the most varied in the West of England, to be taken in the usual way, at a fair valuation.

For further particulars, application may be made to Messrs. SKARDON & SONS, Auctioneers, Bedford Street, Plymouth ; or to Messrs. PHILLIPS & SON, Solicitors for the Executrix, Frankfort Lane, Plymouth.

Dated Plymouth, August 1, 1862.

Lancashire.

TO BE LET, either for a Term or by the Year, "CARR SIDE FARM," situate in the township of Ince Blundell, about 9 miles from Liverpool. The Farm contains 181 acres, statute measure, viz. :—about 180 acres Arable, and the remainder Meadow and Pasture. There is a good House and first rate Outbuildings on the above.—Also, To be Let with the above (or alone), for a Term or by the Year, 755 STATUTE ACRES OF LAND, the greater part Tithe Free, situate in the township of Formby in the said county, and close to the Freshfield Station, on the Liverpool and Southport Line. Possession of the Land may be had on February 2 next, and of the Houses and Outbuildings on May 1 next.

For further Particulars, and to treat for same, apply to Mr. FISHER, Steward, Ince Blundell, Liverpool.

Sales by Auction.

Important Sale of Established Orchids, and a few Imported.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions to SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, London, W.C., on THURSDAY, August 28, at half-past 12 o'Clock precisely, without the least reservation, the Valuable and Extensive COLLECTION of ORCHIDS, the property of a large Continental Grower, who is giving up their culture, consisting of fine healthy plants of the following well-known varieties :—

Aerides crispum
,, affine
,, Fieldingii
,, suavissimum
Cattleya citrina
,, elegans
,, guttata
,, lobata
,, Leopoldi
,, labiata picta
,, marginata
,, Trianæi
,, Isabellina, new
,, Schilleriana
Lælia purpurata
Chysis Limminghi
Phalænopsis grandiflora
,, amabilis
Angræcum eburneum
Arpophyllum giganteum
Cœlogyne Lowii
,, cristata
Cypripedium villosum
,, hirsutissimum
,, caudatum roseum
Vanda suavis
,, tricolor
,, guttata
Saccolabium retusum
,, Blumei
Uropodium Lindeni
&c. &c,

Also a small Importation from the East Indies of choice SACCOLABIUMS, &c.

On View the Morning of Sale, and Catalogues had.

Rare and Valuable Plants.

MR. J. C. STEVENS begs to announce that he has received instructions from Messrs. Smith & Adamson, of Melbourne, to SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, London, W.C., on FRIDAY, August 29, at half-past 12 o'clock precisely, 64 healthy Plants, 1 foot high, of the rare and valuable ARAUCARIA CUNNINGHAMII GLAUCA, from Port Molle (vide *Gardeners' Chronicle*, 28th of September, 1861, for description and illustration), 65 Araucaria Cookii, 28 tree Ferns, 3½ to 6 feet, 20 Sterculia diversifolia, 5 Sterculia acerifolia, &c.

On view the day prior and morning of Sale, and Catalogues had.

Important Sale of Plants at the Arboretum, Leamington Spa, Warwickshire.

MR. J. C. STEVENS begs to announce that he has been favoured with instructions from the proprietor, John Hitchman, Esq., to submit to PUBLIC COMPETITION during the month of OCTOBER the Valuable and Extensive COLLECTION of SPECIMEN CONIFERS and other ORNAMENTAL PLANTS, consisting of upwards of 300,000, all of which have been well prepared for transplanting. More detailed particulars, with the days of Sale, will appear in next advertisement.

38, King Street, Covent Garden, W.C.—Aug. 22, 1862.

North Frith, near Tonbridge, Kent.

IMPORTANT SALE OF SHORT-HORNED CATTLE, SOUTHDOWN SHEEP, BERKSHIRE AND YORKSHIRE PIGS.

MR. STRAFFORD begs to announce that he has received instructions from EDWARD HALES, Esq., to offer for SALE by AUCTION, without reserve, on WEDNESDAY, September 24, at North Frith, near Tonbridge, his entire and select HERD of SHORT-HORNS, which have been purchased and bred from some of the best and most fashionable herds, such as Kirklevington, Fansley, Cobham, Tortworth, and others of celebrity. Amongst the Short-horns will be found the famous heifer Moss Rose, and the bull Fourth Duke of Thorndale (17750), as well as some superior specimens of his produce, and others by Fourth Duke of Oxford, Duke of Cambridge, May Duke, Cardinal, &c. The Southdown Sheep and Berkshire Pigs are chiefly bred from the famed Buckland stock ; the other Pigs are also of the best sorts.

Catalogues, with pedigrees and other particulars, will shortly be issued, and may be had on application to Mr. HALES, at North Frith, near Tonbridge ; or of Mr. STRAFFORD, 13, Euston Square, London, N.W.

CAUTION.—THE BRIGHTON WHEAT HAS BEEN SELECTED FOR SEVERAL GENERATIONS MORE THAN THAT GROWN FROM WHEAT PURCHASED IN PREVIOUS YEARS, AND CAN BE OBTAINED OF MR. HALLETT ALONE, OR OF HIS AGENTS.

Particular attention is called to the above caution, as Wheat *bearing scarcely any resemblance whatever* to this has recently been exhibited with the following attached to it—"Hallett's Pedigree Wheat, price one guinea a bushel."

If planted early as directed, this Wheat costs less per acre for Seed than Common Wheat.

THE TIMES.

Mr. Hallett exhibits his wonderful examples of what he terms "Pedigree Wheat," and a more curious or a more instructive lesson than he offers in his samples is not to be found in the Exhibition.—*Wednesday, June* 18, 1862.

The curiosity of 1851 was Messrs. Raynbird's splendid sample of Wheat produced by artificially hybridising two first-class varieties; the wonder this year is the "Pedigree" Wheat of Mr. Hallett, of Brighton. Taking a prime sort to begin with, by selection year after year, this intelligent cultivator has developed a breed of Wheat now possessing an established pedigree—a Wheat producing vegetable offspring with certain fixed characteristics, just as a pedigreed race of cattle or sheep perpetuate their kind with its peculiar form, properties, and propensities. It is in fact the nature of this Wheat now to grow great ears and tremendous yields per acre, while at the same time preserving a fine kernel of beautiful flour.—*Wednesday, June* 25, 1862.

THE AGRICULTURAL GAZETTE.

Certainly there is no section of the show in which the English exhibitors are more clearly in advance of all foreign competition; nor are any of the classes more manifestly led by their respective maxima than in those of agricultural products and agricultural machinery. There is a wider interval between the leaders and the "ruck" in the race of competition here than in any other section; and in both it is the English exhibitor who wins. Mr. Hallett's "Pedigree Wheat" may be named as the easy winner in the former class, and a large number of well-known English names come in abreast as winners on the latter course. In both these instances foreign competition is comparatively insignificant."—*Leading Article, Saturday, May* 3, 1862.

INTERNATIONAL EXHIBITION.

EASTERN ANNEXE, CLASS III.

HALLETT'S

PEDIGREE NURSERY WHEAT.

"BRED" ON THE SAME PRINCIPLE OF **REPEATED** SELECTION WHICH HAS PRODUCED OUR PURE RACES OF ANIMALS.

THIS WHEAT IS NOW READY FOR DELIVERY.

MARK LANE EXPRESS.

We have much pleasure in speaking to Mr. Hallett's statements, they being fully borne out by the specimens he presented to our notice. Referring to the Advertisement in this journal, we can affirm that the engraving of the "Pedigree Wheat" is in no respect apocryphal or exaggerated.—*Leading Article.*

It may be well here to look to "the certain circumstances" which have led to any better state of things. It was only last week, then, that a correspondent of our own made this appeal:—"It would be a treat to me, as I am certain it would be to hundreds of your readers, if the gentleman who advertises his Wheat (an engraving of the size of the head of which appears in your paper) would inform me through your columns where I can see any field, at present growing, which bears out his engraving and advertisement. I should travel any distance to see it, and would confirm in your columns what I now hesitate to believe, viz., that such a phenomenon was in existence in 1862 as a field with such a head of Wheat as he represents." J. W. H. H. should have been with us on Friday last, when we walked over Mr. Hallett's farm at Brighton, with the special object of judging for ourselves as to how his Wheats promised. We have strolled up to Kemp Town before now—have seen the selected ears blooming in the garden—have followed the experimentalist to his summer-house "study"—have listened and watched and wondered, as he displayed individual grains pasted on paper and encircled with mysterious lines in red and black ink—have heard their histories and pedigrees traced—their ultimate design foreshadowed—until, lost in a flow of energetic eloquence, we have asked ourselves, as we walked back to Brighton, whether any other man in the world would take so much trouble as this? and if the result would ever be worth his trouble in case he should do so? The practical answer is already before us. We have travelled from the garden ground to the farm itself, and there in large pieces, of many acres' extent, on the hill and in the valley, Mr. Hallett can show by far the finest Wheat we have seen this season. Remarkably even in appearance, with a run of magnificent ears that really do "bear out the engraving and advertisement," there is a crop that looks like seven or eight quarters an acre. And this, let us bear in mind, on land anything but naturally good, and with much of it that has scarcely been done justice to, in the way of dressing.—*Leading Article, August* 4, 1862.

1861, ACTUAL SIZE AFTER FOUR YEARS' **REPEATED** SELECTION, STARTING FROM A **SINGLE GRAIN** IN EACH YEAR.

Price Two Guineas a Bushel, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order. Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

A Printed Paper, "HOW OUR WHEAT CROPS MAY BE DOUBLED," forwarded upon application, enclosing Two Stamps.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by William Bradbury, of 13, Upper Woburn Place, in the Parish of St. Pancras, in the Co. of Middlesex, and Frederick Mullett Evans, of No 11, Bouverie St., in the Precinct of Whitefriars, City of London, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St Paul's, Covent Garden, in the said Co.—Saturday, August 23, 1862.

THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 35.—1862.] SATURDAY, AUGUST 30. {Price Fivepence. STAMPED EDITION, 6d.

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☞ NOTICE TO ADVERTISERS. — *Advertisements should reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

ROYAL HORTICULTURAL SOCIETY'S AUTUMN SHOW, WEDNESDAY, September 10, at South Kensington. Open at 1 o'clock. Admission Half-a-Crown. Bands at 2 o'clock. Next Election of Fellows, September 5.

RIPON HORTICULTURAL SOCIETY'S ANNUAL EXHIBITION, SEPTEMBER, 2 and 3. Nearly 30l. to be awarded in Prizes for DAHLIAS and HOLLYHOCKS. Schedules to be obtained of Mr. J. WOOD, Secretary, Ripon.

Roses, &c.

PAUL AND SON respectfully invite attention to their ANNUAL SHOW of ROSES, GLADIOLI, HOLLYHOCKS, and ASTERS, now in FULL BLOOM at their establishment, one Mile from the Cheshunt Station of the Eastern Counties Railway.
Old Cheshunt Nurseries, Cheshunt, Herts.

Rose Beauty of Waltham.
THE FINEST OF ALL THE NEW ROSES.

WM. PAUL (Son and Successor to the late A. PAUL) has now ready for delivery fine strong plants of this beautiful New Rose, which has received a First-class Certificate from the Royal Horticultural Society of London. Price 5s. each.
All the novelties of other raisers at the advertised prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Roses.

EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

THE BEST NEW ROSE at the Great Rose Show of the Royal Horticultural Society, June 26, was JOHN HOPPER.
See *Gardeners' Chronicle*, July 5, page 619; *Journal of Horticulture*, July 1, page 248; *Gossip of the Garden* for July; and *Floral Magazine* for August, in which it is figured.
A DESCRIPTIVE CIRCULAR may be had on application, and on receipt of 13 postage stamps a beautiful illustration by Andrews.
ROBERT WARD, The Rosery, Ipswich.

Rose and Bulb Catalogues for 1862-3.

EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded gratis and post-paid on application.
Seed and Nursery Establishment, Tunbridge Wells, Kent.

WM. PAUL'S ROSES, HOLLYHOCKS, and HARDY ORNAMENTAL TREES are now in full beauty Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.
Nurseries and Seed Warehouse, Waltham Cross, N.

To the Seed Trade.

CALCEOLARIA SEED in Packets, Crop 1862.—The best in England. Price on application.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

Fine Camellias and Azaleas.

F. AND A. SMITH have an immense stock of AZALEAS and CAMELLIAS well set with flower buds, of fine growth and in healthy condition, now offering at moderate prices, which may be had on application.
Dulwich, Surrey, S.

Cineraria and Calceolaria Seed.

F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1s., 1s. 6d., and 2s. 6d., free by post.
Dulwich, Surrey, S.

SUTTON'S IMPROVED ITALIAN RYE-GRASS SHOULD NOW BE SOWN for very early Spring feed, after which it may be ploughed up, or if allowed to remain, it will produce three or four good cuttings every year.
Royal Berkshire Seed Establishment, Reading.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

Hyacinths, Crocuses, &c.

JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

Hyacinths, Crocuses, &c.

JAMES CARTER AND CO.'s first consignment of DUTCH BULBS has arrived in splendid condition. CATALOGUES free of charge on application to 237 and 238, High Holborn, London, W.C.

Hyacinths for Forcing.

BUTLER AND McCULLOCH can strongly recommend the following for immediate planting:—
12 HYACINTHS, in 12 select and distinct varieties, 9s., 12s., and 15s. per dozen.
BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

Hyacinths, &c.

WM. PAUL'S DESCRIPTIVE CATALOGUE of HYACINTHS and other DUTCH BULBS, with Hints on Culture, is now ready. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Dutch Bulbs.

CHARLES TURNER'S CATALOGUE of a selection of the best in each class is now ready, and will be forwarded on application post free.
The Royal Nurseries, Slough.

Dutch Flower Roots.

WILLIAM WOOD AND SON'S AUTUMN CATALOGUE for 1862 is now ready, containing superb collections of Gladioli, Hyacinths, Crocus, Ixia, Narcissi, Sparaxis, &c., and will be forwarded gratis and post paid on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Wm. Cutbush & Son's Dutch Bulb Catalogue.

WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE and PRICED CATALOGUE of HYACINTHS and other Dutch Flower Roots is now ready, post free, on application.
Highgate Nurseries, London, N.

Dutch Bulbs.

PAUL AND SON have received their annual importation of the above in good condition. Early Orders are solicited. CATALOGUES post free on application.
Old Cheshunt Nurseries, Cheshunt, Herts.

Dutch Bulbs (Large Size).

JAMES FAIRHEAD AND SON beg to state their HYACINTHS, CROCUSES, TULIPS, &c. have arrived in prime condition, and are now ready for delivery. Early orders solicited. Also extra large double SNOWDROPS, on offer.
CATALOGUES free on application.
7, Borough Market, London, S.E.

Hyacinths, Tulips, Crocuses, &c.

BUTLER AND McCULLOCH'S DESCRIPTIVE CATALOGUE of BULBS, containing ample Cultural Directions, may be had free and post paid upon application.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

SUTTON'S SELECT LIST of EXHIBITION HYACINTHS, TULIPS, JONQUILS, &c. (post free), with prices and full description. This List contains all the Hyacinths necessary for competition at the Great Hyacinth Shows, and none are extravagant in price.
All Goods delivered carriage free.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Economy and Excellence.

H. BROWN'S PRICED DESCRIPTIVE CATALOGUE of HYACINTHS, GLADIOLI, and other BULBS for Show, &c., is now ready, post free. Collections from 10s. and upwards, and large quantities, specially ordered, carriage free, on exceedingly moderate terms.
Seed Warehouse, 4, Commutation Row, Liverpool.

PANSIES! PANSIES! PANSIES!—Seed from the most beautiful varieties of Pansies grown in England, carefully selected from First Prize plants, 1s., 1s. 6d., and 2s. 6d. per packet. Reference given. Stamps taken.
G. KNIGHTS, Whitton, Ipswich.

WILLIAM HOLMES offers the following in fine Plants:—

NEW CHRYSANTHEMUMS ..	12s.	per dozen.
NEW FUCHSIAS	12s.	"
NEW VERBENAS	6s.	"

Frampton Park Nursery, Hackney.

Gladiolus.

YOUELL AND CO.'S COLLECTION of the above, extending over Three Acres, is NOW in BLOOM, and will continue some weeks.
CATALOGUES will be forwarded on application.
Royal Nurseries, Great Yarmouth, Norfolk.

New Fuchsias of 1862.

B. W. KNIGHT, FLORIST, &c., 67, High Street, Battle, Sussex, is now sending out the NEW FUCHSIAS of 1862, at 12s. per dozen.
CATALOGUES sent on application.

New Verbenas of 1862.

B. W. KNIGHT, FLORIST, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4s. per dozen, securely packed in tin box, post free. CATALOGUES of the varieties sent on application.

Good Seeds, Carriage Free, at Market Prices.

SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, 27, Great George Street, Westminster, S.W.

Agricultural Seeds.

GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

Strawberries.

CHARLES TURNER can still supply strong Plants for Fruiting next season of all the leading kinds.
CATALOGUES may be had on application.
The Royal Nurseries, Slough.

Strawberry Plants—Ready.

CUTHILL'S SORTS, selected Plants for bearing in 1863, all one price, 7s. 6d. per 100. Early Black Prince, Early Princess Royal, Highland Mary, Richard II., Prince of Wales, and Newton Seedling, lasted in bearing this year 60 days. Strawberry Pamphlet, 1s.
Best MUSHROOM SPAWN, 5s. per bushel.
JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

GEORGE BRADSTOCK can supply 30,000 Plants of OSCAR STRAWBERRY, at 1s. 6d. per 100.
Post Office Orders made payable at Carshalton.
Address, the Grounds, at Beddington Corner.

Strawberries.

Now ready, free per post on application,
A DESCRIPTIVE CATALOGUE of STRAWBERRIES.
By THOMAS RIVERS, Nurseries, Sawbridgeworth.

Pine Plants.

T. PAPE can supply PROVIDENCE, RIPLEY, QUEEN, and MONTSERRAT plants, all sizes.
Undercliffe Gardens, Bradford, Yorkshire.

Vines in Pots.

PAUL AND SON invite gentlemen planting Vineries to inspect their fine Stock of the best varieties of Vines.
Old Cheshunt Nurseries, Cheshunt, Herts.

Grape Vines.

WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines.

J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.

JAMES CRAWFORD, High Beach, Essex, begs to offer, at low prices, a fine stock of strong healthy Plants, including all the best sorts.

Grape Vines.

TO BE SOLD, Cheap, 1800 close-jointed vigorous Plants, with Canes 6 to 12 feet long, all struck from Eyes this season.
Apply to the GARDENER, at J. Lewis's Horticultural Works, Stamford Hill, Middlesex, N.

FOR SALE, a large Collection of BRITISH and EXOTIC FERNS, at J. ILLMAN'S Nursery, Wellington Place, Strood, Kent.

HIMALAYAN FOREST TREE SEED.—The Undersigned will receive Orders for transmission to the Collector in India until Sept. 27, 1862.
PRINTED LISTS will be furnished on application.
PEAKE, ALLEN, & Co., Albion Place, London Wall, E.C.

WALL-TRAINED FRUIT TREES.—Intending planters of Trained Fruit Trees are invited to an inspection of our WALL-TRAINED TREES. They are very clean, and many of them being of large size could be seen and marked with Fruit on.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

Orchard House Culture.

MESSRS. THOS. RIVERS AND SON invite lovers of Fruit Tree Culture to an Inspection of their ORCHARD HOUSES and FRUIT TREES in POTS. The mode of culture, which is very simple, will be given if required. Harlow Station, where flies attend, is the most convenient for the Nurseries.
Sawbridgeworth, Herts.

PEAT EARTH of excellent quality delivered at the Nine Elms Station, 5 tons for 55s.; at Guildford, 5 tons for 50s. The Peat is now in first-rate order.—Apply to Mr. BETTS, 115, Strand, London, W.C., where a sample may be seen.

REIGATE SILVER SAND.—First quality, 9s. per ton; Second quality, 6s. per ton of not less than 4 ton lots, put on the rail at Reigate Junction.
WILLIAM SHORT, Reigate Heath, Reigate, Surrey.

REIGATE SILVER SAND, best quality, 12s. per Ton or 1s. 3d. per Bushel, at Swan Place; delivered five miles, or to any London Wharf or Railway, 16s. per Ton, or 1s. 6d. per Bushel. Kentish and Hampshire PEATS, YELLOW LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE from Kingston. An inspection invited.—J. KENNARD, Purveyor to Her Majesty, Swan Place, Old Kent Road, London, S.E.

New Plants of 1862.

JAMES DICKSON and SONS, "Newton" Nurseries, Chester, have now ready Strong Plants, at Reduced Prices, of FUCHSIAS, CHRYSANTHEMUMS, PHLOXES, PETUNIAS, and VERBENAS of the most approved varieties of this season. The usual allowance to the Trade. Prices on application.

Also very strong VINES from Eyes for Immediate Planting of the leading varieties, and such as will give the utmost satisfaction. Prices moderate.

New Hardy British Ferns.

J. IVERY and SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to 7s. 6d. each;

ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA, 21s. each.

A Select LIST of the most rare kinds will be forwarded Post Free on application.

Dorking Nursery.

DOUGLAS FIR.—This noble Tree is now proved to be amongst the most ornamental and valuable Timber Trees; and having stood at Elvaston the winter of 1860 with impunity, when both the Common Oak and Holly were severely injured, proves its hardiness.

Splendid plants, all from seed, with extraordinary roots, can be supplied as under. Those who wish to plant Park Groups or Avenues should order early before the stock is exhausted. 1 to 1½ ft., 50s. per 100; 2 ft., 75s. per 100; 3 ft., 100s. per 100.

William Barron, Elvaston Castle, Derby.

New Azaleas.

F. and A. SMITH have much pleasure in offering the undermentioned NEW and fine AZALEAS. For October next.

FLAG OF TRUCE.—The finest double white known; has obtained two Certificates and a Silver Medal for its superior merits, being the highest testimonial any Azalea has yet received, 21s. to 31s. 6d. each.

PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21s. to 31s. 6d. each.

CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very superior, 21s. to 31s. 6d. each.

LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10s. 6d. to 15s. each.

CRISPIFLORA ROSEA.—Fine bright rose; the flowers are waved or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10s. 6d. to 15s. each.

PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10s. 6d. and 15s. each.

Any of the above may be had in grafted plants, or on their own roots.

For full particulars see *Gardeners' Chronicle* of August 16, 1862, p. 758; or in CATALOGUES, which may be had gratis on application.

Dulwich, Surrey, S.

Exotic Nursery, Rouen, France.

To the Trade only.

J. WOOD respectfully informs the Trade that he has on Sale a great quantity of grafted EPIPHYLLUM TRUNCATUM, such as SPECTABILIS, ELEGANS, AURANTIACUM, MULTIFLORUM, RUCKERIANUM SUPERBUM, RUCKERIANUM RUBRUM, &c., on stout stems from 6 to 15 inches. These are the most beautiful of all winter flowering plants, the strongest heads capable of giving from 40 to 60 flowers.

Ten new and very superior varieties will be sent out as soon as the number (limited) of Subscribers is attained in two years grafts. Orders amounting to 5l. and upwards sent carriage paid to London. Prices on application.

Camellias, Azaleas, &c.

A. VAN GEERT, Nurseryman, Ghent, begs to inform the Trade that he can now supply good plants of CAMELLIAS with flower buds, best varieties, at 6l. per 100.

INDIAN AZALEAS, with flower buds, best varieties, 4l. to 5l. per 100.

A. V. G. begs to offer also the following interesting plants:—

THUJA VERVAENEANA, a fine new golden striped Arborvitæ, 36s. per dozen.
ABIES APOLLONIS, 9s. per dozen.
" PANACHAICA, 18s. per dozen.
THUJA ERICOIDES, very pretty, 18s. per dozen.
CUPRESSUS LAWSONI, 50s. per 100.
THUJA AUREA, fine, 42s. per 100.
THUJOPSIS BOREALIS, strong, 18s. per dozen.
PIMELEA SPECTABILIS, strong, 18s. per dozen.
" DECUSSATA RUBRA, strong, 18s. per dozen.
INDIAN AZALEAS, for stocks, strong, 25s. per 100.
GLYCINE SINENSIS, 40s. per 100.
ASCLEPIAS TUBEROSA, 20s. per 100.
JASMINUM GRANDIFLORUM, 12s. per dozen.
OTAHEITE ORANGES, 12s. per dozen.
LILIUM LANCIFOLIUM RUBRUM, fine roots, 63s. per 100.
" UMBELLATUM ATROSANGUINEUM, 25s. per 100.
ROEZLIA REGIA, fine ornamental, 7s. 6d. each.
GUNNERA SCABRA, 12s. per dozen.
BONAPARTEA GRACILIS (nearly hardy), fine strong plants, 36s. per dozen.

Autumn 1862.—New Plants.

JEAN VERSCHAFFELT, Nurseryman, Ghent, Belgium, begs respectfully to announce that he is now taking orders for the following SELECT NOVELTIES, fully described in his NEW CATALOGUE for the Autumn of 1862, and which will be sent out on and after September 1, at the following prices:—

	Each.—s.	d.
AZALEA INDICA, SECRETAIRE CLAUS ..	7	6
" " VICOMTE DE FORCEVILLE, the finest double Red Azalea ever offered ..	10	6
CAMELLIA QUERCIFOLIA, Oak-leaved Camellia, good plants ..	21	0
" " With buds ..	31	6
" " A few stronger plants ..	42	0
HEBECLINIUM MACROPHYLLUM, fine plants, with very ornamental foliage, the leaves being nearly a foot long, and more than a foot in diameter, good plants ..	12	0
RHODODENDRON SOUVENIR DE JEAN BYLS, a splendid hardy Rhododendron, figured in the *Illustration Horticole*, June, 1862, good plants ..	21	0
With buds ..	31	6
A few strong plants ..	42	0

One plant over to the Trade on every three taken.

A carefully Coloured Plate of the Rhododendron and Camellia will be sent to each Subscriber. The Subscription List is open now, and early orders are solicited, as they will be executed in strict rotation.

All orders to be addressed to M. Jean Verschaffelt, 43, Rue de la Caverne, Ghent, Belgium.

CATALOGUES can also be had of Messrs. R. Silberrad & Son, 5, Harp Lane, Great Tower Street, London, E.C.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON and CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

HYACINTHS for EXHIBITION.
Fresh Imported Bulbs.
SUTTON'S SELECTION.

			per 100.	Dozen.
Finest sorts by name	..	£4	4s.	12s.
Very fine	ditto ..	3	10	9
Good	ditto ..	2	10	6

Good Hyacinths for Beds, Ribands, &c. in separate colours, (fresh imported), 21s. per 100.

Anemones, Crocuses, Tulips, Gladioli, &c., also very low in prices, as per CATALOGUE, which may be had gratis and post free.

Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

New Bulb Catalogue.

MESSRS. E. G. HENDERSON and SON respectfully announce their BULB CATALOGUE for immediate circulation, a Copy of which will be forwarded postage free on application.

THE TITIEN STRAWBERRY.
FUCHSIA BIANCA MARGINATA (Banks).
" MARS.
" MDLLE. TREBELLI.
SOLANUM CAPSICASTRUM VARIEGATUM.

Descriptions and prices of the above will be forwarded on application.

The SOLANUM CAPSICASTRUM VARIEGATUM, and the TITIEN STRAWBERRY, are now ready for sale. The FUCHSIAS will be sent out in October.

Wellington Nursery, St. John's Wood, London, N.W.

Dutch and other Bulbs.

B. S. WILLIAMS'S AUTUMN CATALOGUE for 1862 is now ready, post free to all applicants, containing select lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladioli, Amaryllises, Caladiums, Gloxinias, and many other choice Bulbs, with Hints on their Culture for the guidance of Amateur growers. To which is added a SUPPLEMENTAL and DESCRIPTIVE LIST of NEW, BEAUTIFUL, and RARE PLANTS.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine Specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

SPRING FLOWERS by the 100 at unusually low prices.—Fine strong plants of Double Polyanthus, Double Red Hepatica, Large Yellow Crocus, 1st and 2d size; Blue Crocus, Double White Narcissus Poeticus, Trumpet Major; Blue English Iris, good mixed Tulips, Grape Hyacinth, light and dark; Double Josephine Scarlet Anemone, fine Single in variety; Double White Wood Anemone, Double Blue Sweet-scented Violet, Double White ditto, Single Blue and White ditto, Bleeding Nun, Feathergrasses, fine Double Pansy, &c.

A. Lamb, Pear Tree Hill, Lisburn, Ireland.

Strawberry Plants and Catalogue.

WILLIAM JAMES NICHOLSON has great pleasure in again offering fine laid Plants of his great Collection of STRAWBERRIES of more than 100 varieties, including all those New Sorts sent out since the publication of the Catalogue for 1860, and many others of great interest.

A new DESCRIPTIVE CATALOGUE of the above may be had about September 1, by applying to the Grower,

William James Nicholson, Egglescliffe, Yarm, Yorkshire.

STRAWBERRIES for AMATEURS.—Plants of the six most useful sorts, chosen to afford a long succession of fine fruit, one of each sort, or four plants of ECLIPSE, free by post, for 24 stamps. The sorts include ECLIPSE, new, pronounced first rate, both for Forcing and Out-doors, by the Royal Horticultural Society; PRINCESS, the finest of the very early sorts; SIR HARRY, SIR CHARLES NAPIER, WONDERFUL, the best for very rich soils; and ELEANOR, very fine and late; or OSCAR, if ordered.

Also very choice CAULIFLOWER and pure WHITE BAVARIAN CUCUMBER, 1s. per packet.

Address A. Moss, Jun., Chadwell Heath Mills, Essex, E.

Strawberries.

CHARLES KIMBERLEY can supply strong Plants of the following kinds. Most of them have been transplanted; if done well, will bring a fine crop next season.

	Per 100.—s. d.		Per 100.—s. d.
Admiral Dundas (Myatt's)	5 0	Elton Pine	3 6
British Queen (Myatt's) ex. strong	5 0	Filbert Pine (Myatt's) ..	5 0
Carolina superba (Kitley's)	5 0	General Havelock (Tiley's)	5 0
Comte de Paris	3 6	Oscar (Turner's)	3 6
Black Prince (Cuthill's) ..	3 6	Prince Arthur (Ingram's) .	5 0
Bicton Pine..	3 6	Rival Queen (Tiley's) ..	5 0
Empress Eugenie (Knivett's)	5 0	Sir Chas. Napier (Smith's)	5 0
		Keen's Seedling	3 6
		Victoria (Trollope's) ..	3 6

Pinley Pine (Kimberley's).—This is an improved Elton Pine; the fruit is much darker, larger, and much more prolific; by far the best late Strawberry we have. Plants will be ready in September next. Per 100, 10s. 6d.

Stoke Nursery, near Coventry.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.
2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

Thomas Jackson & Son, Nursery, Kingston, S.W.

Calceolaria, Cineraria, and Primula, extra fine.

BARR and SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

CALCEOLARIA, 1s. and 2s. 6d. per packet.
PRIMULA, 1s. per packet.
CARNATION, 1s. and 3s. per packet.
GUNNERA SCABRA, 1s. per packet.
CINERARIA, 1s. per packet.
PICOTEE, 1s. and 3s. per packet.
PELARGONIUM, Large fl., 1s. per packet.
" Fancy, 1s. per packet.

New Fuchsias, Verbenas, Chrysanthemums, Petunias, &c., of 1862.

H. WALTON is now sending out the above at low prices. Lists of Prices on application for one stamp. The Trade liberally dealt with.

FUCHSIAS 9s. to 12s. per dozen.

Edgend, Marsden, Lancashire.

New Fuchsias, &c.

GODWIN and PADMAN have now ready NEW FUCHSIAS at 1s. each, or 10s. 6d. per dozen.

NEW VERBENAS of 1862 .. .. 6s. per dozen.
NEW PETUNIAS " .. .. 9s. "
NEW CHRYSANTHEMUMS of 1862.. 12s. "
NEW TROPÆOLUMS of 1862 .. .. 12s. "

G. & P.'s SUPPLEMENTARY CATALOGUE, containing descriptions of above, on application to

Broadfield Nursery, Sheffield; or J. C. Padman, Boston Spa, Tadcaster.

New Herbaceous Phloxes, Roses, Hollyhocks, Pentstemons, &c.

EDWARD WEBB, of the Gower Inn Rosery, Park Mill, near Swansea, Glamorganshire, respectfully informs his friends and the public generally that his magnificent collection of HERBACEOUS PHLOXES is now blooming in great perfection. Also his unrivalled collection of HOLLYHOCKS, PERPETUAL ROSES, PENTSTEMONS, &c., is now in full bloom. He respectfully solicits an early inspection.

Cucumber Seed! Cucumber Seed!

JOSEPH HAMILTON, Botcherby, Carlisle, can supply Seed of his improved market favourite CUCUMBER, post free for 12 postage stamps. See *Gardeners' Chronicle*, Jan. 6, 1862, where it was pronounced the best and handsomest of the whole collection of 81 varieties. Also Lord Kenyon's Improved and Carter's Champion, the best of the Syon House race, 1s. per packet.

NEW AND RARE PLANTS.

THOMAS JACKSON & SON

Having a good Stock of the undernamed BEAUTIFUL NEW PLANTS, respectfully offer them at very low prices:—

	Each.—s.	d.
ALOCASIA MACRORHIZA VARIEGATA	31	6
" METALLICA	31	6
ARALIA DUNCANII..	5	0
CAMPYLOBOTRYS GHIESBREGHTII ..	2	6
" PYROPHYLLUS ..	3	6
CLERODENDRON THOMSONÆ ..	3	6
CORDYLINE HELICONIFOLIA ..	5	0
COSTUS VILLOSUS	3	6
IMPATIENS FLACCIDA	5	0
PHYLLAGATHIS ROTUNDIFOLIUS ..	7	6
POLLIA PURPUREA..	5	0
RHYNCHOSIA ALBO NITENS	10	6
SPHÆROSTEMA MARMORATUM ..	7	6
AGAVE SCHIEDIGERA	10	6
AZALEA KINGHORNII	3	6
" PRESIDENT	3	6
" MARS	3	6

	Each.—s.	d.
DRACÆNA ERYTHRORACHIS	10	6
DASYLIRION ACROTRICHON	10	6
ERICA DOUGLASII	5	0
FICUS BEGONIFOLIA	7	[illegible]
LYCOPODIUM ULIGINOSUM	10	6
MACROZAMIA MACKENZII	31	6
PIMELEA ELEGANS..	3	6
SEAFORTHIA ELEGANS	7	[illegible]
ARUNDO CONSPICUA	7	6
JUNIPERUS DRUPACEA	5	0
PICEA SPECIES, from Vancouver's Island, 1½ ft.; in pots (This fine new Fir is quite hardy, specimens in our Nursery having withstood the two last winters.)	10	6
QUERCUS BAMBUSÆFOLIA	31	6
SERISSA FŒTIDA VARIEGATA.. ..	7	6
RETINOSPORA OBTUSA	10	6

NURSERIES, KINGSTON, S.W.

Choice Seeds, in Sealed Packets.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give satisfaction.

AMARYLLIS, saved from choice named varieties, 2s. 6d. per packet.

CALCEOLARIA, Herbaceous, finest mixed, 1s. 6d., 2s. 6d., and 3s. 6d. per packet.

CINERARIA CRUENTA, fine mixed seed from named flowers, 1s. 6d. and 2s. 6d. per packet.

PRIMULA SINENSIS FIMBRIATA, Red, White, or Mixed, very choice, 2s. and 3s. 6d. per packet.

For numerous Testimonials see BULB CATALOGUE, post free on application.

CATTELL'S EARLY RELIANCE CABBAGE, CATTELL'S DWARF BARNES CABBAGE.

These two Cabbages have proved themselves for many years past to be the two best Early Spring Cabbages in cultivation. If sown as early as the middle of July, they will not run to seed the following Spring. They may be had as usual in packets containing half-an-ounce of the Reliance, and one ounce of the Dwarf Barnes. Free by post for 12 Penny Stamps for each packet.

John Cattell, Nursery and Seed Establishment, Westerham, Kent.

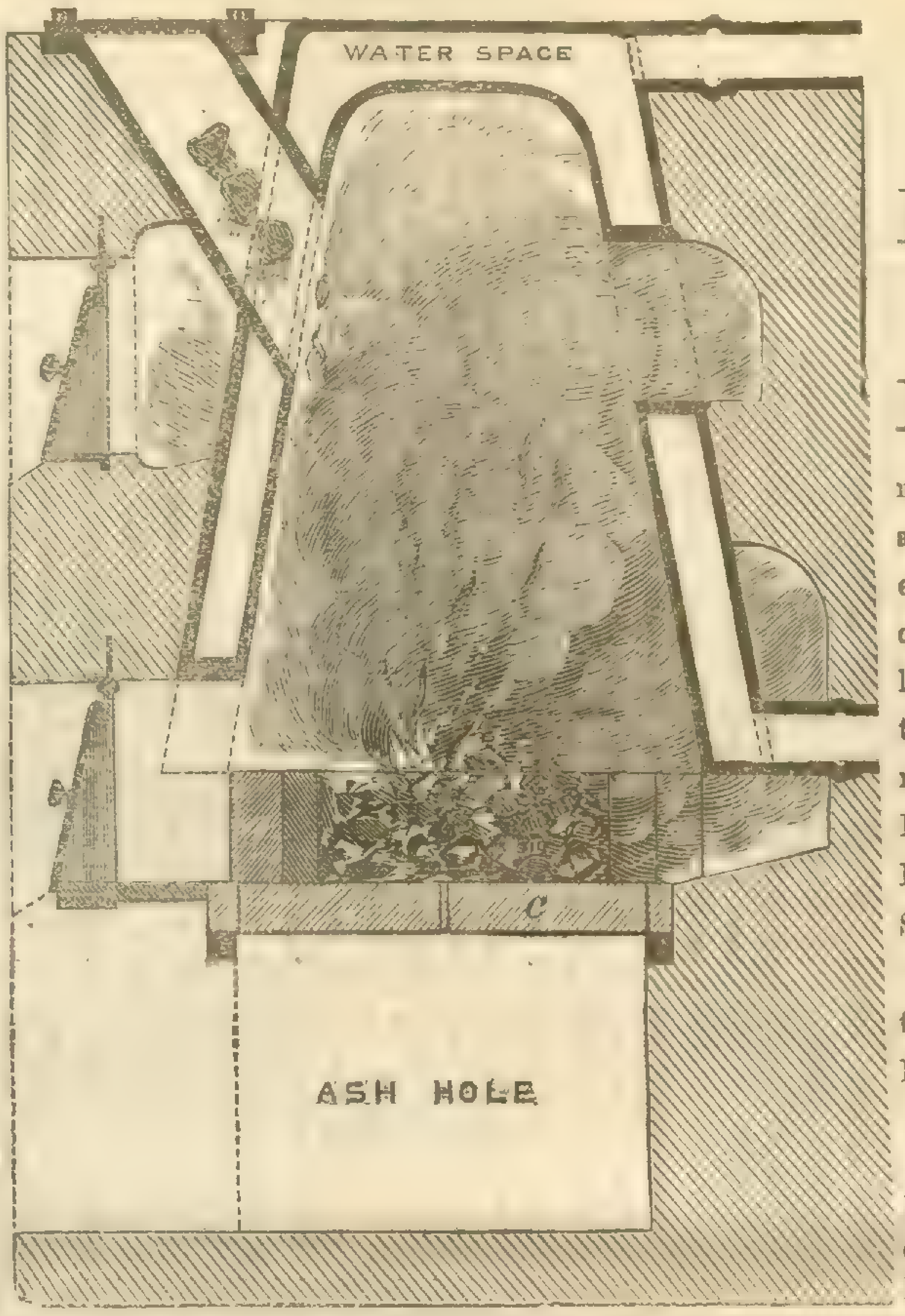
MR. ALEXANDER PONTEY, Deceased.—All persons having any Claims or Demands against the Estate of the late Mr. Alexander Pontey, of 21, Cornwall Street, Plymouth, Devon, Nurseryman, Seedsman, and Florist, are requested to forward particulars thereof to his Executrix, Mrs. Mary Lyne Pontey, at 21, Cornwall Street, Plymouth, aforesaid, in order that the same may be examined, and, if found correct, discharged; and all persons Indebted to the said Estate are requested to pay the amount of their respective debts, without delay, to the said Executrix.

Mrs. Pontey begs to offer her best thanks to the Friends and Customers of her late Husband for the kind and liberal support afforded him during his lifetime, and to inform them that it is her intention to continue the business until the same be satisfactorily disposed of.

Dated Plymouth, August 1, 1862.

Notice.

MR. A. CHANDLER (of the late Firm of Chandler & Sons), HORTICULTURAL VALUER, begs to inform his friends and the public that he has removed from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.



THE IMPROVED

CONICAL BOILERS,

SOLELY MANUFACTURED BY

BURY & POLLARD

(SUCCESSORS TO JOHN R. PEILL, LATE STEPHENSON & PEILL),

HAVE attained a celebrity far surpassing any other Boilers ever invented. Of the many hundreds which have been fixed in this and foreign countries, not one single Boiler has ever proved defective, or failed to give the most complete satisfaction. They are connected with large ranges of Pipes (in some cases several thousand yards), at many Public Establishments, at the Crystal Palace, the Royal Botanical Gardens at Kew, and at the Regent's Park, as well as at most of the Nobility's Seats throughout the Kingdom.

All particulars may be obtained on application to Bury & Pollard, Sole Manufacturers, Park Iron Works, New Park St., Southwark, S.

Price £4 10s. and upwards.

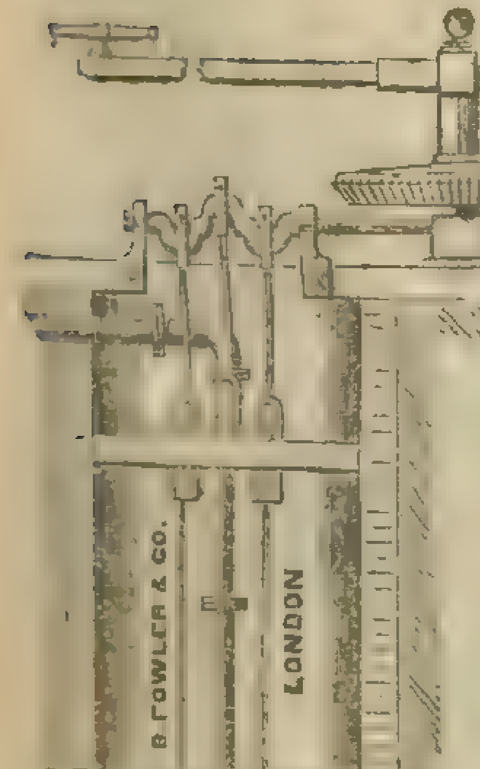
Every description of MATERIAL for HEATING BUILDINGS, supplied of the best description, with directions for putting up HOT-WATER APPARATUS.

BENJAMIN FOWLER & CO.,

MANUFACTURERS OF PUMPS AND HYDRAULIC MACHINERY,

WHITEFRIARS STREET, FLEET STREET, LONDON, E.C.

THE accompanying Sketches show some useful forms of apparatus in general demand for Raising and Forcing Water or Liquid Manure. The Landscape Sketch shows the adaptation of Fowler's Improved Hydraulic Rams for the supply of Mansions, Farms, &c. A large number of these simple Self-acting Machines are in use, giving great satisfaction. Their adoption is not confined to positions as shown below, as they are suited to any situation where a few feet fall can be obtained from a spring, brook, or stream; they will force to an elevation equal to ten or more times the number of feet of fall, and to any distance.



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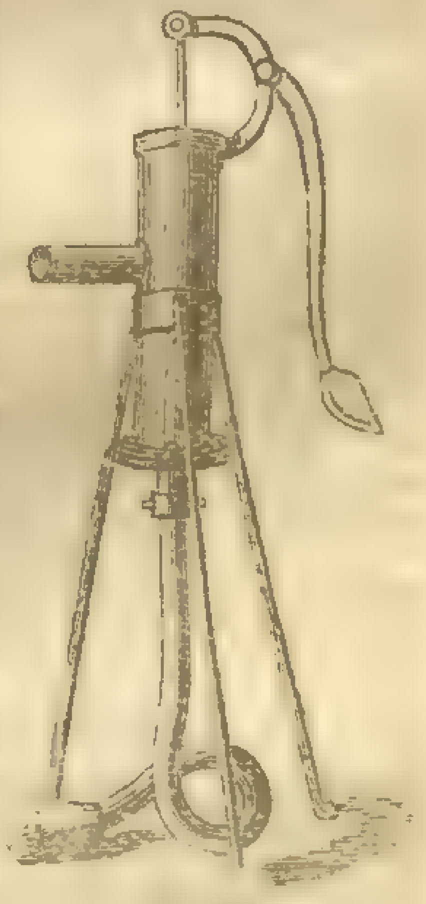
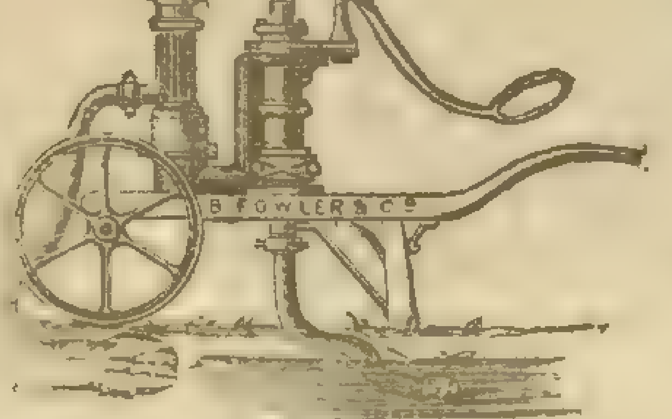

No. 38.

No. 37. Fowler's Improved Simple HORSE GEAR for raising water from deep wells with double or treble pump
B. F. & Co. also make and fix Deep Well Pumps of all descriptions for hand power.
No. 4. Fowler's CAST IRON BORED PUMPS of all sizes, with improved brass valves for Garden and Farm use, from 1l. 5s. each.
No. 38. Fowler's Galvanized Portable LIQUID MANURE PUMPS, with flexible suction hose. Price, with 10 feet of pipe and strainer, 4l. 5s.
No. 138. Fowler's Improved DOUBLE ACTION FORCE PUMP in frame. These excellent pumps are largely used and much approved.
No. 46a. Fowler's Superior DOUBLE-ACTION PORTABLE FORCE PUMPS and simple FIRE ENGINES for Water or Liquid Manure. Prices, 5l. 15s., and 7l. 10s.
No. 50. Fowler's Improved (Holman's Patent) DOUBLE-BARREL PUMPS, FARM FIRE ENGINES, and IRRIGATING PUMPS. Prices, from 12l. 10s.
No. 49. Fowler's Improved GARDEN ENGINES of all sizes, in Oak and Galvanized Iron Tanks, from 50s. each.
No. 49A. Fowler's Improved SWING WATER CARRIERS, holding 24 and 35 gallons. Prices, 42s. 6d., and 50s.

No. 49.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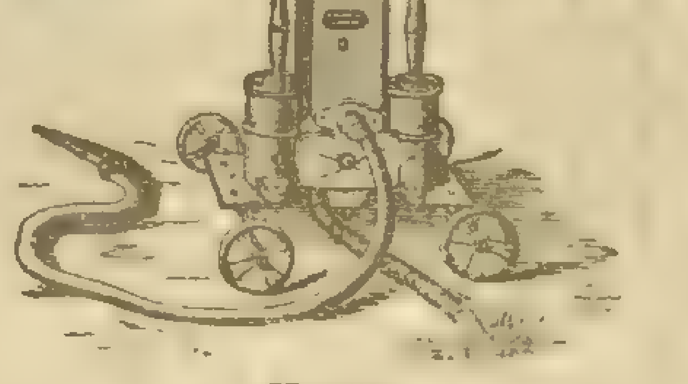
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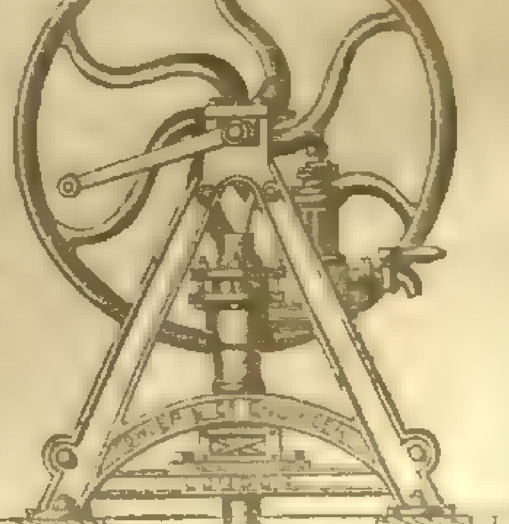
No. 49 A.


No. 138.

FURTHER PARTICULARS, ESTIMATES, AND ILLUSTRATED PRICE LISTS ON APPLICATION.

CAUTION.—THE BRIGHTON WHEAT HAS BEEN SELECTED FOR SEVERAL GENERATIONS MORE THAN THAT GROWN FROM WHEAT PURCHASED IN PREVIOUS YEARS, AND CAN BE OBTAINED OF MR. HALLETT ALONE, OR OF HIS AGENTS.

Particular attention is called to the above caution, as Wheat *bearing scarcely any resemblance whatever* to this has recently been exhibited with the following attached to it—"Hallett's Pedigree Wheat, price one guinea a bushel."

If planted early as directed, this Wheat costs less per acre for Seed than Common Wheat.

THE TIMES.

Mr. Hallett exhibits his wonderful examples of what he terms "Pedigree Wheat," and a more curious or a more instructive lesson than he offers in his samples is not to be found in the Exhibition.—*Wednesday, June* 18, 1862.

The curiosity of 1851 was Messrs. Raynbird's splendid sample of Wheat produced by artificially hybridising two first-class varieties; the wonder this year is the "Pedigree" Wheat of Mr. Hallett, of Brighton. Taking a prime sort to begin with, by selection year after year, this intelligent cultivator has developed a breed of Wheat now possessing an established pedigree—a Wheat producing vegetable offspring with certain fixed characteristics, just as a pedigreed race of cattle or sheep perpetuate their kind with its peculiar form, properties, and propensities. It is in fact the nature of this Wheat now to grow great ears and tremendous yields per acre, while at the same time preserving a fine kernel of beautiful flour.—*Wednesday, June* 25, 1862.

THE AGRICULTURAL GAZETTE.

Certainly there is no section of the show in which the English exhibitors are more clearly in advance of all foreign competition; nor are any of the classes more manifestly led by their respective maxima than in those of agricultural products and agricultural machinery. There is a wider interval between the leaders and the "ruck" in the race of competition here than in any other section; and in both it is the English exhibitor who wins. Mr. Hallett's "Pedigree Wheat" may be named as the easy winner in the former class, and a large number of well-known English names come in abreast as winners on the latter course. In both these instances foreign competition is comparatively insignificant."—*Leading Article, Saturday, May* 3, 1862.

INTERNATIONAL EXHIBITION.

EASTERN ANNEXE, CLASS III.

HALLETT'S

PEDIGREE NURSERY WHEAT.

"BRED" ON THE SAME PRINCIPLE OF **REPEATED** SELECTION WHICH HAS PRODUCED OUR PURE RACES OF ANIMALS.

THIS WHEAT IS NOW READY FOR DELIVERY.

MARK LANE EXPRESS.

We have much pleasure in speaking to Mr. Hallett's statements, they being fully borne out by the specimens he presented to our notice. Referring to the Advertisement in this journal, we can affirm that the engraving of the "Pedigree Wheat" is in no respect apocryphal or exaggerated.—*Leading Article.*

It may be well here to look to "the certain circumstances" which have led to any better state of things. It was only last week, then, that a correspondent of our own made this appeal:—"It would be a treat to me, as I am certain it would be to hundreds of your readers, if the gentleman who advertises his Wheat (an engraving of the size of the head of which appears in your paper) would inform me through your columns where I can see any field, at present growing, which bears out his engraving and advertisement. I should travel any distance to see it, and would confirm in your columns what I now hesitate to believe, viz., that such a phenomenon was in existence in 1862 as a field with such a head of Wheat as he represents." J. W. H. H. should have been with us on Friday last, when we walked over Mr. Hallett's farm at Brighton, with the special object of judging for ourselves as to how his Wheats promised. We have strolled up to Kemp Town before now—have seen the selected ears blooming in the garden—have followed the experimentalist to his summer-house "study"—have listened and watched and wondered, as he displayed individual grains pasted on paper and encircled with mysterious lines in red and black ink—have heard their histories and pedigrees traced—their ultimate design foreshadowed—until, lost in a flow of energetic eloquence, we have asked ourselves, as we walked back to Brighton, whether any other man in the world would take so much trouble as this? and if the result would ever be worth his trouble in case he should do so? The practical answer is already before us. We have travelled from the garden ground to the farm itself, and there in large pieces, of many acres' extent, on the hill and in the valley, Mr. Hallett can show by far the finest Wheat we have seen this season. Remarkably even in appearance, with a run of magnificent ears that really do "bear out the engraving and advertisement," there is a crop that looks like seven or eight quarters an acre. And this, let us bear in mind, on land anything but naturally good, and with much of it that has scarcely been done justice to, in the way of dressing.—*Leading Article, August* 4, 1862.

1861, ACTUAL SIZE AFTER FOUR YEARS' **REPEATED** SELECTION, STARTING FROM A **SINGLE GRAIN** IN EACH YEAR.

Price Two Guineas a Bushel, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order. Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

A Printed Paper, "HOW OUR WHEAT CROPS MAY BE DOUBLED," forwarded upon application, enclosing Two Stamps.

SPLENDID PRIZE SPECIMEN PLANTS.

MESSRS. VEITCH & SON,

Having now for many years past been invariably successful at the Great Metropolitan Exhibitions in obtaining the First Prizes with

FINE FOLIAGED AND VARIEGATED PLANTS,

think it is advisable for them to discontinue exhibiting in that class, and are therefore desirous of parting with their

MAGNIFICENT SPECIMENS

at very moderate prices.

These Plants can be seen at the Royal Exotic Nursery, Chelsea, and any gentleman willing to take the entire lot would have them a Bargain.

ROYAL EXOTIC NURSERIES, CHELSEA and EXETER.—Aug. 30.

DUTCH FLOWER ROOTS.

JAMES VEITCH, JUN.,

ROYAL EXOTIC NURSERY, CHELSEA, S.W.,

Begs to announce that he has received his Annual Supply of BULBOUS ROOTS from Holland, and is pleased to say they are in EXCELLENT CONDITION.

CATALOGUES are now ready, and will be forwarded on application.

J. V., Jun., desires to impress upon those who patronise him the great advantage of giving him their ORDERS EARLY, as the successful Cultivation of Bulbs depends in a great measure upon their BEING PLANTED EARLY IN THE SEASON.—August 30.

DUTCH AND OTHER FLOWER ROOTS.

HUGH LOW & CO.

Have now ready for distribution their CATALOGUE of the above, which can be had on application.

The Trade supplied.

CLAPTON NURSERY, LONDON, N.E.

SUTTON'S COLLECTIONS of BULBS

FOR

BLOOMING DURING THE WINTER AND SPRING.

SEEDSMEN BY APPOINTMENT. Sutton and Sons

THESE are every year becoming more popular, and the HYACINTHS, ANEMONES, TULIPS, &c., which we imported last season from the celebrated Dutch Florists, Messrs. de Boom, Veen, Byvoet, and others, having been so generally admired, we have imported from the same parties still more extensively. *As many of these sorts are at present unknown to English cultivators, we have considered it advisable to make up Collections* of the sorts which, after careful observation, we have found to be the best worthy of cultivation, being THE MOST SHOWY AND MOST CERTAIN TO THRIVE WELL under any ordinary treatment, and for which any good Garden soil (not particularly heavy) will be suitable.

Nos. 1, 2 and 3, are suitable for Out-door Decoration; and
Nos. 4, 5 and 6 contain those sorts best suited for growing in Pots and Glasses.

No. 1. Sutton's Collection of Bulbs for Open Ground, 42s.

24 FINE MIXED BORDER HYACINTHS	25 DUC VAN THOL TULIPS
12 ,, POLYANTHUS NARCISSUS	12 REX RUBRORUM Do.
25 PHEASANT'S EYE Do.	12 DOUBLE YELLOW Do.
25 MIXED BORDER Do.	12 FINE MIXED PARROT Do.
12 LARGE CAMPERNELLE JONQUILS	12 GESNERIANA Do.
100 FINE MIXED DOUBLE RANUNCULUS	50 FINE MIXED Do.
100 SCARLET TURBAN Do.	12 CHOICE ENGLISH IRIS
25 FINE MIXED DOUBLE ANEMONIES	12 ,, SPANISH Do.
25 ,, SINGLE Do.	6 LILIES OF SORTS
300 FINE CROCUS, in sorts	6 TRITONIA AUREA
100 DOUBLE SNOWDROPS	6 FERRARIA PAVONIA
50 WINTER ACONITES	6 ALSTRŒMERIA VAN HOUTTE
12 FINE MIXED GLADIOLUS	12 DOG'S TOOTH VIOLET

No. 2. Collection of all the same kinds in Reduced Quantities, 21s.

No. 3. A Small and Choice Collection, selected from the above, 10s. 6d.

No. 4. Sutton's Collection of Bulbs for Pots and Glasses, 42s.

24 FINE HYACINTHS, by name	6 PERSIAN IRIS
12 POLYANTHUS NARCISSUS, Do.	6 PEACOCK Do.
12 LARGE DOUBLE JONQUILS	100 FINE CROCUS, by name
12 SINGLE SWEET-SCENTED Do.	12 CHOICE IXIAS, Do.
12 ,, VAN THOL TULIPS	6 ,, SPARAXIS, Do.
6 SCARLET Do. Do.	6 ACHIMENES, Do.
6 DUCHESSE DE PARMA Do.	6 FERRARIA PAVONIA
6 KANARIE VOGEL Do.	6 LACHENALIA TRICOLOR
6 VERMILION BRILLIANT Do.	1 CYCLAMEN PERSICUM
6 DOUBLE TOURNESOL Do.	1 JACOBŒA LILY
6 REX RUBRORUM Do.	1 LILIUM LANCIFOLIUM ALBUM
12 SCILLA PRÆCOX	1 ,, ,, RUBRUM

No. 5. Collection of the same sorts in Smaller Quantities, 21s.

No. 6. A Small and Choice Assortment, 10s. 6d.

N.B. Any article above specified, if not required, will be excluded, and additional quantities of others included, according to the wish of the purchaser.

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL SOCIETY.

The NINTH ANNUAL GRAND AUTUMN SHOW will be held on WEDNESDAY and THURSDAY, September 17 and 18, at the Royal Pavilion. Prizes to the amount of 350*l.* are offered for PLANTS, FRUITS, CUT FLOWERS, &c.

The RAILWAY CUP, value 10*l.*, is offered for the best group of three stands of Fruit and Flowers for the Decoration of the Dinner Table. Beautiful arrangement will be the test in this Exhibition. Ladies are invited to compete. The prizes will be awarded by a jury of Ladies.

Schedules of Prizes can be had on application to the SECRETARY, 96, St. James's Street, or of E. SPARY (General Superintendent of the Exhibition), Queen's Graperies, Brighton.

By the kind permission of Colonel Perceval, the celebrated Band of Coldstream Guards will attend each day, conducted by Mr. Godfrey, Sen. By Order of the Committee,

Brighton, August 30. EDWARD CARPENTER, Secretary.

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.

LIST of AWARDS, AUGUST 26, 1862.

FIRST-CLASS CERTIFICATE.

Achimenes Mauve Queen, from Mr. A. Parsons, Welwyn.
Dahlia Countess of Shelburne, from Mr. C Turner, Slough.
Dahlia Charles Turner, from Mr. Keynes, Salisbury.
Verbena Lord Craven, from Messrs. Downie, Laird & Laing, Sydenham and Edinburgh.
Rhus vernicifera, from Messrs. Veitch & Son, Exeter and Chelsea.
Cryptomeria sp. Japan, from Messrs. Veitch & Son.
Rhododendron jasminiflorum superbum, from Messrs. Veitch & Son.
Bertolonia margaritacea, from the Society's Garden.

SECOND-CLASS CERTIFICATE.

Anthurium leuconeurum, from Mr. Bull, Chelsea.
Dahlia Dundreary, from Mr. C. Turner.

COMMENDATION.

Lobelia (Erinus) speciosa kermesina, from Messrs. Carter & Co., Sydenham.

SPECIAL CERTIFICATE.

To Messrs. Veitch & Son, for Lapageria rosea.

The next MEETING of the Committee will take place on Sept 10. THOMAS MOORE, Secretary to the Committee.

ROYAL HORTICULTURAL SOCIETY.
AUTUMN SHOW, SEPTEMBER 10, 1862.—An Additional Prize of 10*l.* will be given for the Best Specimen of a CONSERVATORY TUB. There is no restriction as to material, size, form, or design. It may be of wood, slate, stone, pottery ware, Terra Cotta, or any other substance. It may be in one piece or in many, fastened or bound together. Fitness for its purpose, elegance of design, superiority of workmanship, and cheapness, will be the test of merit.

Letters to be addressed to Mr. G. EYLES, Garden Superintendent, South Kensington, W.

A PRIZE of 5*l.* is offered by one of the Fellows of the Royal Horticultural Society for the 12 best STANDARD PLANTS for the DECORATION of the DINNER TABLE, to be awarded at the Show of Autumn Flowers, on September 10.

The Plants must be ornamental, either for their foliage, flowers, or fruit, and must be grown in pots not exceeding 6 inches in diameter; the foliage, flowers, and fruit must not be less than 20 inches nor more than 24 inches clear from the bottom of the pot.

Elegance of form, slenderness of stem, and variety of colour, will be the tests of excellence.

The groups will be received as late as 10 o'clock, A.M., PROVIDED SPACE SHALL HAVE BEEN SECURED FOR THEM THE DAY BEFORE. Letters to be addressed to Mr. G. EYLES, Royal Horticultural Society's Garden, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY.
Special PRIZES for the March Show in 1863.
10*l.* for the Three Best CAMELLIAS.
3*l.* for the Three Best TREE MIGNONETTES.

The Gardeners' Chronicle.

SATURDAY, AUGUST 30, 1862.

MEETING FOR THE ENSUING WEEK.

WEDNESDAY, Sept. 3 } Crystal Palace.
THURSDAY, — 4 }

THE OLD HORTICULTURAL GARDEN is well nigh forgotten; its glory has departed; and the world's (we mean the gardening world's) eyes are fixed upon South Kensington. The palatial architecture, waterfalls and basins, flower embroidery and tub decoration there have drawn attention from the humble fruit walls and plant houses, green turf, shady walks, fine trees, and country air of Chiswick. Gardening has to make way for music, South Kensington is the High Court of Horticulture, and Chiswick is consigned to the servants' hall.

Such seems to be the fate of the great. When we find Cintra migrating to a London suburb, and Versailles resigned for Claremont, we gardeners have little cause to complain. And after all such changes are beneficial in a horticultural as well as political sense. In Chiswick there was no sort of grace, except what the unalterably beautiful forms of nature could secure; the artificial arrangements of South Kensington were an undoubted want. In the former the taste of the public had no greater chance of improvement than in the New Forest—nor so much. The latter is pregnant with new ideas and artistic combinations, by which the country is already profiting. The flower gardens of our farmhouses are being laid out *à la Nesfield*, the time honoured patterns of DONALD DULLMAN disappearing. Vases, statues, Minton pavements, and terra cotta columns are turning out of doors dead walls, dirty gravel walks, box edging, and hideous red flower pots. In effecting this Kensington is taking a great part; old Chiswick standing aghast at innovations which seem to be the very incarnation of horticultural Red Republicanism.

But will it be always thus? Is Chiswick dying of despair at being deserted by the fastidious

daughters of fashion? have the misfortunes of former campaigns utterly demoralised her? or has she not rather taken up a new position "for strategic reasons?" Time alone will show. In the meanwhile what is her real condition in this present month of August, 1862? The ignorant observer may say she lies prostrate in hopeless ruin, Grass overrunning her walks, Brambles, Briars, and weeds taking possession of her flower beds. But these things are not even skin deep. Like a marble Juno overthrown in some old ruined city, begrimed with dust, and encased in the soil of ages; a little scrubbing will restore the features of her undying beauty, although stained perhaps by time like Venus tinted by the cunning hand of GIBSON. The intelligent visitor who explores the groves of Chiswick will see that beneath her ragged dress lies her form more animate and vigorous than ever. But let us descend from metaphor to simple prose.

It is a fact that under the skilful management of Mr. EYLES, seconded be it remembered by his very able foreman Mr. BARRON, the cultivation of Chiswick has never before been equally good upon the whole. Trimness and ornament have been discontinued, but in what concerns the health of plants and their successful treatment there is nothing to desire; the borders are rich with annuals and florists' flowers grown for the purpose of testing their true value, and checking the glowing descriptions of catalogue makers. Fruit trees on walls are pictures of perfect training, the Peaches and Pears alone being worth a visit from London. In the kitchen garden are large collections of esculents of many kinds, all grown as if for market. Fruit trees as open standards are as productive as the season has permitted. The small Vineries, and especially the Vines in pots, have set an example which all should imitate. The little Orchard house, the condition of the trees in it, and their heavy crops of fine fruit, dispose at once and for ever of all the doleful laments of incompetent gardeners or unskilful amateurs.

But the glory of the place just now is the huge iron Vinery. This building, originally intended as one wing of a grand conservatory, was for several years occupied by ornamental greenhouse plants; at a later period it was used for exhibition purposes, but is now converted into an experimental house for proving the qualities of Grapes. It is 180 feet long, 30 feet broad, and 26 feet high, and now contains 108 sorts, or reputed sorts, of Vines in full bearing, and in many cases nearly ripe. These form a vast canopy of singular beauty, and present a sight that is we believe unrivalled in any part of the world.

We refrain from dwelling further upon details, because we hope to induce horticulturists to visit the place and judge for themselves. It would also be fortunate if we should persuade those who are merely in search of the beautiful to examine some points in this Garden in merely an artist's spirit. The trees in the Arboretum are now 40 years old in many cases; having grown unchecked and unpruned they display their natural forms to great advantage, and form some charming studies for the landscape gardener. Then there are deserted by-walks fringed with Spanish Chesnuts and other trees, whose arms meet over head and cover a mass of tangled foliage on either side, producing the effect of narrow country lanes; with the exception that they are as free from dust as interruption. We strongly recommend this scenery, especially when in half light, to young artists in search of studies from nature.

In contemplating such results, one cannot but ask is this to be always so? is Chiswick to be for ever a mere hospital for invalid Kensingtonians, or a sort of Horticultural Court of Pie Powder? Surely not. We cannot but suggest throwing it open occasionally for purposes of recreation; not for costly Exhibitions and vast gatherings, but for quiet resort in fine weather, with a band or two, and some slight refreshments, no charge, or a very small one, being made at the gates, and admission being confined to Fellows of the Society and their friends. Should this meet the eye of any member of the Horticultural Council, we venture to hope that he will not regard the suggestion as unworthy of consideration. Another year there will be no International excitement, and something like what we propose will be wanted.

—— THE noble DISA GRANDIFLORA, which has again this year been exhibited in prime condition by Mr. LEACH of Clapham, promises to afford us some superior varieties. Of two splendid potsfull which Mr. LEACH sent to South Kensington about a month ago, one to which the Floral Committee then gave a first-class certificate, and which to distinguish it they named SUPERBA, was remarkably in advance of the ordinary kinds. Not only were its flowers larger than usual, but their form was better, being broader and more rounded in the parts, especially as regards the dorsal or hooded sepal; the colours moreover were very much deeper, and more decided. Instead of the ordinary orange red of the two lateral sepals and the washy pinkish hue of the dorsal one—we do not use the terms in a depreciatory sense, for even thus it is a splendid flower—the latter was stained of a deep purple rose, marked as usual with forking crimson lines, and the former were of a rich crimson hue. The yellow spotted petaloid development of the column, which some of our learned contemporaries call the "labellum," partook likewise of the same richness of colouring. This variety SUPERBA was truly a very superb plant.

—— We seem to be gradually acquiring ENGLISH SEEDLING ROSES of high merit—Roses of which Beauty of Waltham and John Hopper, both ranking A 1, may be taken as recent examples. Some other promising varieties of English origin have also made their appearance at the summer shows; and within the last few days Mr. LAXTON of Stamford has sent us two blooms of another (distinguished as 1, 58) which though perhaps less marked in character than the varieties we have named, appears likely to become an acquisition. It is of vigorous character, the branches armed with strong slightly recurved spines intermixed with numerous shorter spinous processes. The leaves are bold, with broad ovate strongly serrated leaflets. The flowers are remarkably sweet, moderate in size in the samples sent to us, of a bright lively pinkish-rose colour, full, with stiff nicely cupped petals. Altogether it seems to have many promising points about it, but we shall hope to see it in a better grown state, and properly exhibited another season. Mr. LAXTON attributes it to a cross between General Jacqueminot and what in his neighbourhood is called Maiden's Blush, and compares it with Lord Palmerston. It is described as a thorough perpetual, but apparently a late bloomer, though this may be owing to late budding.

—— In a cool moist summer like the present, when in too many instances bedding plants have either failed altogether, or have been thrown very late in flower, it may be well to know that PANSIES have, in some places at least, succeeded well. We find in *Gossip of the Garden* the following note on the subject:—"In visiting early in July a large private establishment in Craven, where flower-gardening is carried out on a large scale, the only beds which really looked gay and pleasing were those composed of Pansies, and these were full of flower. One sort was particularly attractive, because of its pleasing and bright blue-lavender colour. It is called the TRENTHAM BLUE PANSY, and is certainly a little gem for flower garden decoration." It is to be remembered that Pansies generally do well in the midland and northern counties. A dark purple double Pansy, as double as a Neapolitan Violet, which has been known for years but little patronised, and which has attracted some attention this season, is likely to be a very suitable kind for Pansy beds. Some of the distinct-looking Fancies too, would have a brilliant effect.

—— Of the NEW VERBENAS which have come under our notice during the present year, two stand out so very prominent as to merit this special mention. They bear respectively the names of Lord Leigh and Lord Craven, and have undoubted claims to the noble rank which their sponsors have claimed for them. The first-named was shown by the Messrs. PERKINS of Coventry, at the June Metropolitan exhibitions, and compared with Foxhunter, the very finest of the scarlets already sent out, was found to be fully equal in size, and superior in form, the colour being a crimson scarlet, with a bright yellow eye. Of Lord Craven, which is in the hands of Messrs. DOWNIE & Co., of Sydenham and Edinburgh, only a single truss has been shown, but from some examples which have recently come to our hands, we have no hesitation in placing it side by side with Lord Leigh, to which latter, both at Kensington and the Regent's Park, a certificate of the first class was given. The colour of Lord Craven is a rich velvety pucy purple, uniform in hue, the small throat of the latter only being white, and the flowers are of the largest size, and of good form, the trusses being well furnished. Indeed, both sorts are fine in form, colour, and truss.

—— We understand that the Society of Apothecaries is about to renovate its BOTANIC GARDEN AT CHELSEA, which for some few years past has been suffered to decline for want of the necessary expenditure. The garden is, as we are informed, to be devoted chiefly to medical and economical botany, in which branches of science it has now for nearly two centuries done good public service. It is to form a place of study, instead of being converted into building ground as seemed probable a short time since; and the wiseacres and busybodies who have agitated to get its walls thrown down, and its area converted into a promenade for nursemaids (for whom there is ample space in the Hospital grounds hard by) will not be gratified. Though this garden is unfavourably placed in one sense, it has on the other hand the great advantage of being readily accessible; and as plants of the kind required grow sufficiently well on the whole for the objects in view, it is a matter of congratulation for students, as it will redound to the credit of the Society, that it has not suffered its 'Vineyard'—as some of the local press has ignorantly designated the scene of Philip Miller's labours—to be abolished. It will only remain for the students to avail themselves of the advantages thus secured for them, and we hope they will do so fully, for there is abundant necessity, if we may judge from the rumours afloat as to the discreditable character of many of the examination papers of medical students.

—— The NATIONAL TULIP SOCIETY is one of those itinerant bodies, which, like the Royal Agricultural Society, hold exhibitions from year to year in different parts of the country—now at Cambridge, then at Sheffield, here at Slough, there at Derby, anon at Leeds—wherever, in fact, a cluster of florists can be found around which the more distant members of the fraternity may gather. It seems, however, that with a prize schedule varying from something like 50*l.* to 90*l.*, the result has always been a pecuniary loss to the managers, notwithstanding the support of a respectable subscription list.

We are glad to give the publicity of our columns to some remarks and suggestions on the organisation of this Society, in a recent number of *Gossip*; in which the writer observes:—"It is evident that a much lower rate of prizes must be resorted to if the National is to live. One of two things should be done; either reduce the schedule to about 40*l.* and have a subscription to that amount, or remodel the Society in the following manner. Let there be a National Tulip Society to which all the growers, north and south, may contribute. Let there be two exhibitions, one in the south, the other in the north; the date of the former to be fixed by the southern growers, that for the north by the northern growers. Arrangements could invariably be made for the south exhibition, to be held in London in connection with one of the great London shows. The funds to be divided betwixt the north and south as may be agreed on by a general committee. A subscription of 21*s.* and upwards annually to entitle the subscriber to exhibit at both shows; subscribers of 10*s.* 6*d.* at one exhibition only, but to have the power of selecting. A permanent treasurer and secretary to be appointed, with a committee of say six southern and six midland and northern growers, to meet when practicable; if not, to act by letter." The writer goes on to remark that it is hopelessly impossible to fix any one day that could suit the growers at the two extremities of the kingdom, and therefore that while only one exhibition is held, only one section of the growers can have an opportunity of competing. And this, it is thought, prevents many florists from subscribing at all.

The Tulip is thoroughly a florists' flower—one of the mysteries of which the general gardening community is so thoroughly ignorant that it seems to require almost more than any other a special Society to foster its cultivation, and to serve as a channel of intercommunication amongst those who are thus engaged. No doubt, if the principal growers throughout the country could agree to carry out some such plan as that which has been suggested for their consideration, a more complete success would be realised. We are very happy to lend our aid in circulating these suggestions, since a little thought and some friendly discussion bestowed on the subjects may work out from them some practical issue.

AMARYLLISES.

IT has been said by one of old, that there is "nothing new under the sun," and I make no pretension to teach the practical men of the gentle craft how to do that which is perfectly well known to them; but there are others who are always glad to receive information on most subjects relating to gardening, and it is for them this article is written.

I am, however, far from thinking that professionals behave well to this interesting family of plants; they will bear a great deal of bad treatment, and live. Frequently we find them in such very small pots, that we feel for them, for we can see that they have not been potted for a long time, and again we know that they receive bad treatment by having their still green leaves twisted off; they are then thrust out of sight, to be baked by the sun, or it may be to perish with cold; they are not again seen until such as are alive begin to push next season, when they receive some little attention. This treatment is sometimes experienced by many beautiful bulbs, and we must not be surprised if they in consequence degenerate and die. Some Amaryllises require rest—I mean drying completely off, but this should never be attempted until the leaves have become fully developed, and then rest should be induced and consummated in a gradual way, first by giving less water, and secondly by placing the plants in a well ventilated and more sunny situation under glass. Where the plants will gradually go to rest, it is good practice to allow all the leaves and flower stalks to remain until they are perfectly withered, when the plants may be removed to some dry shelf, where the temperature ranges about 50°—here they may remain until wanted. Should they require potting, I give them a good large shift, shaking away all the old soil, and removing bad roots if any. I drain well, and use for compost rough fibry loam, leaf soil, and sand. Little water is required until the plants begin their growth. They grow well when plunged in bottom heat. A temperature of from 65° to 70°, with a moist top atmosphere, seems very congenial to

them. When the blooms open they will last in good condition for several weeks in a room or conservatory. We have treated Amaryllis (Hippeastrum) aulica, as a perpetual grower for several years with complete success. When the plants have finished their growth, they are watered less frequently than when growing; they have been subjected to a temperature of from 60° to 70° the whole time, by this means, and by giving large pots we have obtained 10 flower spikes from one pot, the stems averaging 4 feet, and four spikes from one bulb. I have now bulbs 17 inches in circumference. I do not advise all the kinds to be treated in this way, some will rest, others will grow, and their peculiarities must be watched and treated accordingly.

It will thus be seen how very easy it is to cultivate this extremely beautiful class of flowers. They are cheap, elegant, easily increased and not readily lost; where room is not an object, several bulbs may be planted in one pot and with advantage, if a brilliant display is required. We have had A. Johnsoni with 12 spikes, some of them having five and even six blooms on a spike. A. vittata, with pure white and lake markings, is also a sight worth looking upon in midsummer; but when we can have these glorious enjoyments in February they are treasures indeed. Nearly all shades of colour may be had, from light rose to dark crimson maroon, and from light yellow to the deepest orange; they may be had striped with pink, lake, and scarlet; and in point of size they may be found from 2 inches in diameter to 8, they can be had in flower "all the year round." Our conservatory has not been without one since last January. Several seedlings are now showing flower, and will last in bloom until November, when A. aulica will commence and keep up the gaiety until some of the finer hybrids put it into the shade. I have often thought that a plant so useful and beautiful and so generally admired, deserves more extensive patronage than it receives; and I trust that some of our horticultural societies will offer suitable prizes, so that Amaryllids may be brought more prominently before the public. *William Payne, Fir Vale, Sheffield.*

AFRICAN VEGETATION.

[We are indebted to Sir Wm. Hooker for the following articles by Dr. Baikie, still commanding the dangerous Niger Expedition.]

A MISAPPLICATION of the name "Africa" is occasionally made in botanical descriptions, as when a plant is described as an "African" plant, or a name as an "African" name, forgetting that Africa is a great continent, including various regions and climates, and peopled by most numerous tribes, all differing from each other in language. In Koelle's "Polyglotta Africana," an imperfect and very incorrect work, specimens of about 200 languages and dialects are given, and these are hardly half of the entire number of African tongues. As a general rule one cannot travel 50 miles in any direction without meeting with a new language. This incorrectness of diction has found its way even into such a carefully prepared and standard work as "The Vegetable Kingdom," as in page 361, where the powdered leaves of the Baobab or Monkey Bread-fruit (Adansonia digitata) is said to constitute "Lalo, a favourite article with the Africans." Now, though it is much in use in many places, it cannot be called a favourite article, as it is seldom used when anything better can be got; and further, though in very general use throughout Central Africa, I very much question whether it is known to the Africans at large, its employment being limited by the distribution of the tree. And lastly, although I know the name of this substance in upwards of a dozen languages, in none of them have I found the name "Lalo;" but each nation has its own name. It is mixed with oil or butter in sauces to flavour them. I have often eaten this substance, though, like the natives around me, always from necessity and not from choice. Throughout Sudán, at least, no medicinal powers are ascribed to it; it is merely considered as an esculent.

At page 460 it is said that Balanites ægyptiaca is cultivated in Egypt "under the *negro* name of Soum." Here also, although I know its designation in several negro languages, in none of them have I heard "Soum," which has moreover to my ear not a negro sound. In Bórnu or Kanuri it is called "Béto;" in Márgi, "Adimoá;" in Fulfelde, "Tánne;" and in Hánsa, "Adduwa," which name has been adopted by Núpe. The Tawárek call it "tabórak," and the Arabic "hájilij." I have eaten its fruit, which when ripe, though slightly bitter, is not unpleasant. A colourless oil is extracted from the fruit by heat, and is used in cooking, and the best ink of this country is prepared from the charcoal of the burnt seeds.

Again, at page 547 the "Arachis hypogæa" is said to be very largely cultivated by the African negroes, who call the Arachis "Munduli," which is another name quite unknown to me. It certainly is very largely cultivated, but the most frequent names are modifications of the Hánsa names for it, viz., "Gúzhiya or Gújiya," and Gédde. In Bórnu it is called "Kólji."

Lastly, at page 764 "Sarcocephalus esculentus is the native Peach of Sierra Leone." This plant has a very extensive range, from the Atlantic to beyond Sudán. It is not generally known at Sierra Leone as the "Native Peach," which name was conferred on it by Afzelius or Don, or some other visiting botanist, with but little reason, its only resemblance to a Peach being the beautiful purplish crimson colour of the pulp of the fruit. But it is rarely edible, being generally hard, dry, and stringy, and flavourless. I have at times when travelling, or when food has been scanty, eaten it and appeased my hunger, but it bears less resemblance to a Peach than a Red-top Turnip does to a fine Smyrna Melon. It is rarely eaten in Sudán.

These trifling imperfections are of course of greater consequence in such an excellent work as the one I have now quoted, one which I never travel without, and which I would strongly urge all travellers interested in botany never to be without, and I have been, therefore, the more anxious to correct such petty errors. *Wm. Balfour Baikie, February 17.*

AFRICAN PALMS.

FAMILY CALAMACEÆ:—1. *Calamus sp.* possibly *secundiflorus*, at mouths of the Nun and Brass branches of the Kwóra or Niger. 2. *Calamus sp.* apparently different, near the banks of the Niger above the Delta. 3. *Raphia vinifera*, the Wine or Bamboo Palm. Constant along mouths and in deltas of rivers; also inland in moist places in Ibo, Benín, Yóruba, Dahómi, &c., and still further from the sea in Koróróofa, Adamáwa, Bautsi, Zúriya, Gbári, Núpe, Kámbari (as far as near to Yaúri), Bórgú, Gúrma, and along the road to Gónja. The greatest known distance from the sea is in the town of Kúno, and more than 400 miles from the sea.

Uses: Dried pinnæ of leaves used for making ropes, bags, mats, hats, and for tying thatch. Long midrib of leaves, often upwards of 30 feet in length, used in construction of roofs of houses, for poling canoes, for making seats, couches, &c. The soft inside part of this used for making a large kind of mat used in travelling, and called by Hánsa and Núpe "Mémme." Sap used as a kind of Palm-wine, and much relished by the drunken savages of the coast. Fruit occasionally eaten (the mesocarp), but bitter, and in a few places, as in Kúpa, oil is made from it. The fibre of the midrib is also woven with cotton into a kind of cloth in Benín and Yóruba.

FAMILY BORASSACEÆ: — 1. *Borassus æthiopum*, African Fan Palm. Nearest approach to sea along river Niger in Ibo, nearly 150 miles up. In Yóruba and some other places it is found very near the sea, abundantly scattered throughout Bonú, Núpe, Hánsa, Bórnu, scarce in Márgi, abundant along banks of river Binuwe in Koróróofa, and Húmarrúwa in Adamáwa, and in the west in Borgú and Gúrma. Wherever it is plentiful elephants abound, as they are very fond of its fruit.

Uses: Wood used in building. Fruit edible and pleasant, though with a slight terebinthine flavour. Pulp beaten with milk in Hánsa. Root-buds of seeds taken as an annual crop in October and November, and the spindle-shaped body roasted and eaten, and very palatable. Sap used as a kind of Palm wine. Mats and hats made of leaves. Of very slow growth, and the tallest of the African Palm, trees of 70 or 80 feet being often met with. Remarkable for the great swelling of its trunk, generally about two-thirds from the ground.

2. *Hyphæne Thebaica*, Dum Palm. Most abundant in Góbir, Maúri, Kábbi, Ázben, northern parts of Hánsa, Bórnu, Márgi; scattered in southern parts of Hánsa, Núpe, at Hórin, and in Borgú; the most southern station is at Lukója, where I have planted them. *Uses:* Fruit edible and very pleasant; kernels made into little perfume boxes at Kúno; leaves used for mats and the best kind of hats at Sókoto and Gwándu.

3. *Geonoma sp.* Found by Barter growing near the Niger.

FAMILY CORYPHACEÆ:—1. *Phœnix dactylifera*, Date Palm. In Ázben, northern parts of Hánsa, Kábbi, &c., but a few are found in South Hánsa, in Núpe, where they bear fruit, and at Hórin. They are now growing at Lukója. *Uses:* Fruit an important article of food.

2. *P. spinosa*, Spiny Date. In delta of Nun and Brass, in upper parts of Yóruba, in Núpe, Kámbari, Záriya, Báutsi, Kororófa, and Adamáwa, generally with Oil Palms. *Uses:* Leaves extensively used in Núpe and Záriya for making fine mats.

FAMILY COCACEÆ: 1. *Elais Guineensis*, Oil Palm. Most abundant in Ibo, Benín, Yóruba, and Bonú; also very abundant in Koróróofa, and in countries behind Adamáwa. Plentiful in Báutsi, Záriya, Gbári, and Núpe. Plentiful along road to Gónja. Extends along Niger to near Yaúri. Dr. Barth mentions a solitary specimen in Kábbi, vol. v., p. 316. Farthest from the sea in Záriya, or 300 miles, and in Adamáwa or about 350 miles. Barter and I considered the Oil Palm to be polyœcious.

Uses: Sap forms the sweetest kind of Palm wine. Fruit and kernel eaten. Mesocarp of fruit yields "Palm oil," kernel yields "Palm-nut oil" or "Nut oil." Young leaf-buds eaten occasionally. Leaves when *Raphia* is not procurable used for thatching. Wood used in building.

At West Bay, in Princes Island, we saw either a variety of the Oil Palm, or else another species of *Elais*. The nuts were larger, the foliage brighter green, and the trunk more robust, but we saw neither flowers nor ripe fruit.

2. *Cocos nucifera*, Coco-nut Palm. All along sea coast, and in deltas of rivers near towns. Extends up the Niger to Idda, where it fruits at 120 miles from the sea. I have two young trees at Lúkoja, more than 150 miles from the nearest salt water. *Uses:* Fruit eaten. Oil said to be made in small quantity in Kwita, E. from Akkrá.

This list thus includes 10 species of Palms at present known in Sudán, a number not likely to be much increased. *Wm. Balfour Baikie, Bida, Feb. 18, 1862.*

Indoor Gardening.

NEVER was there thought of such a pleasant way of learning our gardening A B C as that of growing Hyacinths! The time of year and the easy work and the cleanliness of the arrangements, and the absence of blight and insects, and the magnificent flowers with their delicious scent, all combine to make the business so attractive that surely nine-tenths who practise it may thenceforth be enrolled as gardeners.

There really are very few things essential to say about it, even for the benefit of those who are quite beginners. Still there are of course many little things which do tend to ensure success. We will suppose a group of half a dozen bulbs, growing in Tye's glasses, which, be it observed, are safe not to upset, and have capabilities of keeping the flowers in them upright when in bloom.

In the choice of flowers I never fancy there need be any great difference between those for pots or glasses; the only thing perhaps is that in glasses especially the beautiful even spikes and the clear brilliant colours show to the best advantage. Amongst the choice varieties that were named last week in the leading article I have had Madame Van der Hoop and Grand Vainqueur, Norma and Elfrida, Baron von Tuyll and Argus do beautifully in glasses and blossom all together. When people want, however, to ensure this blossoming together, especially rather early, the best plan would be to have a small reserve list. They have also thus the chance of varying their group a little.

The worst point in Hyacinth growing when performed in glasses always seems to me the horrid tendency which the bulbs have to topple over, and which is counteracted by an arrangement of sticks or wires which in the eyes of many entirely destroys the beauty of the flowers. This is a drawback which, however, is quite avoidable. I do not myself possess a single Hyacinth-glass wire, and unless the bulbs are moved from place to place while growing, they are seldom wanted. It is one of the special advantages of Tye's glasses that the roots curve about and steady the plants in the water, and when wires are used I always expect to hear of less success even in the flowers, because the chances are the bulbs have been taken in and out of their glasses, breaking the roots and bruising them.

In planting Hyacinths, therefore, for flowering in winter, it seems an essential point to do it in such a way that no change may be required. My favourite way of managing this is to put a few lumps of charcoal into the water before the bulbs are put on it. If the charcoal is soaked for a few days previously it does not float, and then it is easy when the roots have grown well to add a little fresh rain-water as that in the glass sinks gradually; if absolutely requisite the water can be poured away entirely and fresh water added, without displacing the bulb; I find, however, that the charcoal and the living roots preserve the water generally in a tolerably fresh condition. If not so, it is easy to pour it gently off (holding the bulb steadily in its place the while), and to add the fresh water by carefully pouring it down the edge of the glass.

For planting the bulbs in the first instance it is necessary to guard against a wet bowl to the vase; the few drops of water which are splashed upon it and supposed not to signify, are probably the cause of half our mouldy Hyacinths. The wet would *not* signify perhaps if they were exposed to air and light, but as this is quite impossible, the damp soon becomes blue mould, and if it goes no farther, at least looks unhealthy. The best plan is to try exactly how deep each bulb will go in its empty glass, then stick on the name and date by means of a bit of adhesive paper (like the edge of the postage stamp sheets) underneath the glass, put in the charcoal, and fill up the glass with rain water, so that the bulb may just *not* touch the water; then carefully wipe the inside of the bowl, put the bulb in its place, and carry it off forthwith to a dry, dark cupboard, or better still a cellar; the best place of all however is a shelf in a housemaid's closet, which generally is found placed in some dry cool corner—in all probability under the kitchen stairs.

The glasses ranged on the shelf may be left undisturbed for any time almost, provided it is quite dark. We may take them out when the roots are two inches long, or when they have reached the bottom of the glass; mine have often stayed and curled themselves round entirely before I brought them out. Even if the bulbs put up a short thick white shoot, we need not be distressed, as this will soon grow green in the light. The real distressing thing is when they shoot up long and thin, or when they do not begin *first* with a fine root growth.

When they are brought out, the lightest place is the best for them; but if they stand in an eastern window they should be carefully guarded from the morning sun if any frost has got to them. Every one knows how "frost" forms on the window on a frosty night, but they do not remark always, that if the cold is severe it forms on the flowers also, and I have had

some window plants perplex me by seeming scorched, the explanation of which was to be found only in the night's hoar frost and the morning's sunshine. The best place at night for the glasses is away from the window, and also away from light. One year my glasses vibrated between the window and a dark cupboard where they passed each night, and I have never certainly been more successful with them. The morning light is good for them when they are not frozen. Those bulbs, however, which we want to have very early do not seem to me to suffer much from being on a chimney-piece at night, if there is no gas. If the fire goes out they are not, after all, much warmer than in the day, and we save the check caused by a great decrease in their usual temperature. It is, however, *essential* that they should have all possible light by day. In all cases whatever the water added to Hyacinth glasses should be several degrees warmer than that in the glass before.

I hardly ever use for my own bulbs anything but charcoal to put into the water; but if one does use anything, sal-volatile does no harm, and a few drops of this may be dropped into the water after the flower stalks show. It is quite possible that it may do some good, and at any rate it is the easiest thing to try. Washing the leaves and stalks with a large camel's-hair pencil, and some warmish water, is however the very best and most useful mode of petting—the flowers become in this way quite wonderfully improved; and considering how much Hyacinths seem to be the special treasures of many invalid gardeners, this is a source of pleasure and a nice morning's work by no means to be despised. Two tumblers of warm water, (one to wash the brush in) and a little tray to hold all the apparatus, is the readiest way of indulging in this amusement.

Next week I hope to describe the dishes of mixed bulbs to be grown in sand, which though far from being magnificent florists' flowers, make the most charming groups and the loveliest winter bouquets. *E. A. M.*

ON THE "NARDOO" PLANT OF EASTERN AUSTRALIA.

By David Moore, M.R.I.A., Curator of the Royal Dublin Society's Botanic Garden, Glasnevin.

[Read before the Royal Dublin Society, on Monday, February 17, 1862.]

In the paper which I have now the honour to read before this sectional meeting of the Royal Dublin Society, my object will be to convey some idea of the nature and appearance of the plant which produces the food called "Nardoo" by the Aborigines of Australia, the position it occupies in systematic botanical arrangement, and point out the parts of it which contain the nutritive matter.

Before doing so, I may state that the Australian mail delivered here last January brought the sad tidings of the fate of the exploring party I have verbally alluded to, and, at the same time, two small packets of the "Nardoo," which formed a portion of that taken from Cooper's Creek to Melbourne by the party who rescued King, the only survivor. Valentine Hellicar, Esq., to whom we are indebted for one of the packets, sent it to his sister, Mrs. Ball, of Granby-row, with a request that it would be sent to me for the Botanical Garden, which that lady immediately complied with, and at the same time enclosed a short abstract taken from an article published in the "Ballarat Star" newspaper, giving a brief description of the plant. The fact of the fruit of any cryptogamous plant containing a sufficient quantity of nutritive substance to support human life during a lengthened period, at once struck me as being a very remarkable circumstance. It has been long known that the thallus of some, and the rhizomes of others, contain nutritive matter, which leads to their being occasionally used as food by the natives of various parts of the world; but this I believe to be the only instance on record of the fruit of any of them being employed for that purpose. Several species of Lichens and Algæ afford examples of cryptogamous plants which have the thallus nutritive, whilst Ferns have nutritive rhizomes. Among the latter, Pteris esculenta is largely used by the natives of New Holland, and Cyathea medullaris by the New Zealanders. Mr. Backhouse, in his work on the former country, speaking of the Pteris, says, "Pigs feed on this root when it has been turned up by the plough, and in sandy soils they will themselves turn up the earth in search of it." "The Aborigines roast it in the ashes, peel off its black skin with their teeth, and eat it with their roasted kangaroos, in the same manner Europeans do bread." "The root of the Tara-fern possesses much nutritive matter, yet it is to be observed that persons who have been reduced to the use of it in long excursions through the bush have become very weak, though it has prolonged life." Now, this last sentence has an important bearing on our present subject, affording as it does strong presumptive evidence that the nutritive matter in the rhizome or stem of the Fern and that contained in the fruit of the "Nardoo," are similar substances. Poor Burke and his companions were able to subsist on the latter during a considerable period, but they also died on it, with the exception of King, who was reduced to a mere skeleton when found by the relief party. I am not sufficiently acquainted with chemical substances to give a definite opinion on the matter: but I believe I am pretty safe in assuming, that the nutritive properties contained in the thallus or rhizomes of Cryptogamic plants depend chiefly on the presence of an amylaceous substance, analogous to gelatine, which occurs in the form of pure starch, or amylaceous fibre, which is also the case in the fruit of the "Nardoo." But, before observing farther on the nutritive parts of this plant, I shall state the position it occupies in the great section of plants to which it belongs.

Whatever doubt exists relative to its species, happily there is none respecting the genus. It is a Marsilea, and of the natural order Marsileaceæ, which Berkeley, in his "Introduction to Cryptogamic Plants," places between Lycopodiaceæ and Equisetaceæ. I shall not here state the botanical characters which serve to separate this order from its allies, but simply observe that it includes four genera according to that author, which contain a considerable number of species, all of a aquatic nature, growing in shallow pools and ditches liable to be occasionally dried up, and in geographical distribution extending over a considerable portion of the surfaces of both hemispheres. Our Irish Flora contains only one example of the order, namely, the Pillwort (Pilularia globulifera), a singular little plant, which, like the "Nardoo," creeps along the bottoms of shallow pools of water, producing its round pill like involucres or spore cases. In general appearance, the "Nardoo" plant bears a great resemblance to some dwarf species of Trifolium, or Clover, in its leaves; whilst the hard, horny involucres might be mistaken at first sight for the legumes of that genus. When growing, it sends out long rhizomes, or stems, which lie flat on the surface of the mud, producing leaves and involucres at intervals from above, and roots from the under side. When the pools become dried up, the leaves wither and decay, leaving the hard involucres on the surface, which the natives collect as required for consumption. It appears, from King's narrative, that the preparation consists of pounding them between stones, and baking into cakes as we use flour, or simply boiling.

The genus Marsilea is one of the highest order of Cryptogams, inasmuch as the prothallus is confluent with the spore, and does not form a distinct expansion. Besides, when vegetating, a root and frond or leaf are developed at the same time, similar to some monocotyledonos, or even dicotyledones, for example, the Water-Lilies, Nymphæaceæ.

The involucre of Marsilea being a metamorphosed leaf is a further indication of their near approach to Phænogamous plants. The microscope shows it is composed of parallel series of tough vascular tissue, which is probably unrollable spiral fibres, lying among the cellular mass, and giving form and consistence to the two valves. When examining this part of the plant, hot water was applied to soften it, which caused it to swell considerably, when the table of the microscope was covered with exceedingly minute roundish granules, which were tinged slightly of a brownish colour by iodine. I think it therefore probable that the mucilaginous valves of the involucres contain one of the elements of nutrition, though not, in my opinion, the principal one. When they open, their contents consists of two distinct spore-like bodies, sporangia and antheridæ, which are differently shaped, and perform very different functions. In fact, they are analogues of the ovules and anthers of flowering plants. Esprit Fabré regards them as such, and states that the latter "consists of a membranous sac, very thin and transparent, in which you see numerous pollen grains; and when crushed beneath the microscope, spermatic granules of extreme smallness are seen to come out." On the other hand, according to Dr. Lindley, Messrs. Brown and Griffith each regard both sorts of bodies as sporules. I have examined them carefully, and have studied the germination of the plant during the last month, when my observations tend to the confirmation of Fabré's views. The sporangial bodies have in a good many instances produced plants, whilst the antheridæ after the germination of the former became putrid and decayed. But the most convincing proof of the distinctness of the two bodies is their great difference in chemical composition, which I am not aware of having been previously pointed out.

The body which germinates, and produces the future plant, is filled with well-defined and very large starch granules, which have been taken even by some good Cryptogamic botanists for reproductive bodies. I applied the test of iodine to them, which speedily turned them a violet-blue colour, thus revealing their true nature, and at the same time affording evidence of the principal source of nutrition in the "Nardoo." The antheridæ were scarcely altered in colour by the application of iodine—if any, it was a very slight tinge of brown.

Having now, I trust, shown pretty clearly what the nutritive substances are, and the parts which contain them in this remarkable plant, I shall only further make a few brief remarks on the progress of germination.

The involucres were split, and laid on the surface of mud, covered slightly with water, on the 13th January last; when they were afterwards placed in a warm house, where they speedily softened. In this state the large oval sporangia could be seen lying among a mass of nearly globose antheridæ, about one eighth part the size of the former. They were without any regular cord or attachment to a central cord, and were surrounded by a gelatinous fluid. The first young frondlet was seen to be protruded from the nipple end of the sporangia on the ninth day after sowing, when a radicle was at the same time pushed into the soil. On the 14th day several others were visible, and on the 16th day the second frond or leaf was produced, which had a spathulate point. At this period the antheridæ were again carefully examined, and found to be breaking up in form and decaying; whilst the sporangia, which had not vegetated, retained their perfect form, unaltered in consistence. The progress of the young plants does not authorise me to make further observations on them at present; but on some future occasion I hope to be able to state with certainty which species of Marsilea is the "Nardoo" of Cooper's Creek, when the plants become fully developed. If Marsilea quadrifolia, which Dr. Harvey informs me is common through east and middle Australia, it has been cultivated at Glasnevin for a number of years; but if it be the large species gathered by Drummond in the Swan River district, and so kindly lent by Dr. Harvey for this occasion, it will prove a valuable and interesting acquisition.

Home Correspondence.

Tobacco.—I am obliged for the high opinion expressed in the *Gardeners' Chronicle* (see p. 763) of the Tobacco exhibited by Partagas & Co. I have however to request you in your next issue to make allusion to a slight error into which you have fallen, namely, that I am the only party of whom Partagas cigars can be obtained. I am the sole agent of Partagas & Co., and import his goods as a merchant for sale to the dealers in this country. His cigars can be obtained of T. B. Carlin, 189, Regent Street; also J. J. Carreras, 61, Princes Street, Leicester Square; Friburg & Co., 34, Haymarket, and 51, Cornhill; Charles Arnet, 324, Oxford Street; R. Lewis, 15, St. James's Street, Pall Mall, who are dealers, and in whom full reliance can be placed, and I trust that you will make this correction as early as possible. *A. G. Willshire, 2, Lime Street Square.* [We gladly rectify the error into which we inadvertently have fallen, and have much satisfaction in announcing where these admirable cigars can be purchased retail.]

Dry Rot in Beech Trees.—In September last you did me the favour to reply to an inquiry I made respecting some Beech trees, and the probable cause of their having died, which you attributed to dry rot at the roots (see Vol. 1861, p. 850). The trees, though quite dead, being picturesque objects, have not been removed, and some apprehension is entertained that their being allowed to stand may damage the trees adjoining, varying in distance from them from 300 to 400 yards. Will you be kind enough to say whether their remaining, with Ivy growing over them, is likely to injure the other trees? The soil is dry. *An Original Subscriber, Tunbridge Wells.* [We do not anticipate any danger.]

Ouvirandra fenestralis.—Amongst the multitude of choice fine-foliaged plants with which the conservatories and stoves at Dangstein are so admirably filled, none are perhaps more interesting at the present time than this remarkable Madagascar Lace plant. It is not only producing its singular looking skeleton leaves in great abundance, but also flowering freely and producing seeds. Several plants are growing in a tank measuring some 4 feet across, and having a depth of 16 or 18 inches of water, which remains nearly stagnant, the surface being only occasionally flooded, to clear off any scum that may have accumulated, nor does the house or water in which the plants are grown receive any aid from the heating apparatus during the summer months, and the temperature of the water in consequence does not range higher than from 60° to 65°; under these conditions the plants assume a valuable and healthy character, the leaves averaging from 18 inches to 2 feet in length, and from 4½ to 5 inches in width. The tank has now become so completely filled with foliage, as to entirely obscure the white tiled lining of the bottom, over which the lace-like character of these matchless leaves used to be seen so advantageously. Growing in a large inverted bell glass there is also a strong plant, which seems to thrive equally well as the others, and from the circumstance of its being placed on an elevated position and lighted all round the leaves are seen to excellent advantage. *D.*

Potatoes.—For the last two years my gardener has adopted a plan of treating Potatoes, which is so simple and so successful that I think it is a pity it is not more generally practised. The Potatoes are planted on ridges about 3 feet apart, at first only just below the surface, and afterwards, in about two months, covered with 3 or 4 inches of soil. In June, and before the disease has shown itself, the haulms are bent down on each side of the ridge, and enough earth laid on them to keep them down. The theory is, that when the Fungus, or whatever it is that produces the disease, appears, the rain washes it off the leaves into the trench instead of into the roots. Certainly my Potatoes treated in this way have been perfectly good, though the leaves are destroyed by disease, and where the disease attacked the leaves early it has stopped the growth of the Potatoes; but though sometimes small they are all perfectly sound. Last year part of my Potatoes were not treated in this way, and they were destroyed, while the others were perfectly sound. *W. D., Bath.*

Gymnogrammas.—In looking over the many beautiful sections of Ferns which we now possess, I often think that Gymnogrammas are not so extensively grown as they deserve to be, neither do we find them on all occasions so luxuriant as they might be, or possessing dimensions which would cause them to command attention at Horticultural exhibitions. Among them there are many beautiful varieties—for instance, peruviana, argyrophylla and others of equal merit, which though perhaps not extensively cultivated, are yet I think well known. Their treatment is simple enough, yet they require a little more care than others. The chief difficulty which I find some cultivators meet with is wintering them. Now as I have been very fortunate with them, I will throw out a few hints which, if carefully attended to, no one need despair of success. It will not be necessary to follow the plant through every stage of growth from its infancy, suffice it to say that by commencing with a young specimen in the spring, and keeping it moving throughout the season, no one need be afraid to have it in an 8 or 10 inch pot by the autumn, or even larger, depending on the variety, for some of them are rather stronger in growth than others, consequently they require more pot room. When a large plant is required, it may be encouraged over the second year in the same manner and under similar treatment as during the first and until it has got into a 15 or 16 inch pot, which sizes I have often had them in. Most of the Gymnogrammas being from tropical climates, require a rather high temperature; that in which I have found them to succeed best during the spring and autumn is 60° or 62° by night, allowing the house to rise 10° or 15° by day with sun; the heat during the growing season may run about 70° by night, and from 80° to 85° by day. The plants at this season must be carefully shaded from the direct rays of the sun. For this purpose I prefer a moveable or running shade, to one tacked on for several months together in summer. The fronds of these and many exotic Ferns are apt in dull weather when too much shaded to damp ere they become properly developed, in many instances causing the leaves to assume the appearance of having been clipped. Neither should they be syringed over head; sufficient moisture can be obtained by moistening the paths, &c. when required—indeed I never like to have that evaporation taking place in a Fernery which is unavoidable in other houses, such as plant stoves or Vineries, &c. While the latter require a free circulation of air, I generally find Ferns to grow most luxuriantly in a rather subdued atmosphere, though this must not be carried to an excess lest the air become stagnant; and although it is necessary to keep a Fernery somewhat closer in the growing season than the houses just named, yet I do not recommend any one to shut up a Fernery very early in the afternoon. In watering Ferns a liberal supply should be given in summer, and while they are in active growth; indeed, if ever they suffer from want of it, they receive a check which often spoils the appearance of the plants for the season. When the period of growth is over in the autumn, they must be gradually prepared for a season of rest by with-

holding water at the root and reducing the temperature. After this I have generally found it necessary in winter to remove Gymnogrammas from the Fernery (which in some cases has not a south aspect) to a house so situated, where they may receive more light and sun; without this they are difficult to winter successfully. The temperature of their winter quarters should run from 50° to 55° by night; in this position they must never have an excess of water at the root, neither will they require any moisture in the atmosphere of the house. If the foregoing remarks are carefully attended to, plants 3 feet in diameter, and well filled up with beautiful healthy fronds, may be grown in a couple of seasons. The sort of soil I have found best is two parts light turfy peat, one part light turfy loam, a little silver sand, and a few pieces of broken freestone. *J. R.*

Fruit Showing at York (see p. 788).—It would not have been necessary to trouble you further on this subject, had not your correspondent "Yorkshire Gardener" either wilfully or by mistake given an erroneous account, which, of course, can best be met, and refuted, by stating the truth. Not being in the habit of speaking or writing at random, I find the collection to which the 2nd prize was awarded, consisted of 1 Pine, 1 Melon, dish of Peaches, do. Grapes, do. Figs, do. Cherries, do. Strawberries, do. Raspberries, do. Gooseberries, do. White Currants, thus making 10 distinct varieties, which will be found to differ from your correspondent's account, inasmuch as he omitted Figs, Cherries, and Melons, three important dessert fruits, thereby disparaging the collection; but truth is not to be perverted in that manner. In reference to quality, as your correspondent institutes comparison I may mention that every variety of fruit shown (according to its respective class) was equal, and some dishes superior to that in the Grape collection, as for instance, Pine, Peaches, and Melon; Figs also were equally good; the commoner fruits too were really fine and well ripened, and as varieties formed a complete dessert, which would be regarded at any gentleman's table as far more consistent than having five dishes of Grapes consisting of one very moderate bunch each. Thus minutely and impartially given, this version of the matter may not read so "plausibly" as the last; a circumstance however, so much at variance with custom as 5 sorts of Grapes in a collection of 10 sorts of "fruits" could not pass unnoticed. *Amateur, Parliament Street, York.*——In common with many others I was surprised to find that a first prize was given for a collection of 10 varieties of fruit, in which there were five sorts of Grapes of only average merit, while a second collection had 10 distinct varieties of fruit of superior merit in their respective classes. "A Yorkshire Gardener" has however set up a defence of the award, and in doing so he has given a one-sided and incorrect account of the case. He says: "The second prize was given to one Pine, two dishes of Grapes, one dish of Peaches, one dish of Nectarines, and five varieties of berries;" whereas the collection really contained one dish each of the undermentioned fruits, viz., Pine, Grapes, Peaches, Figs, Melon, Cherries, Strawberries, Raspberries, Gooseberries, and White Currants. He therefore finds two dishes that were not there, viz., Nectarines and one dish of Grapes. He however fails to see three dishes that were shown, viz., Cherries, Figs, and Melon. He also alludes in strong terms to the Strawberries, but in my opinion the dish of Elton Pine exhibited was no unimportant addition to a dessert at this season of the year. *A Tourist, Essex.* [Among other letters on this subject is one from "An Old Surrey Farmer," from which the following is an extract. After stating that he examined the collections in question, he says:—"If such is the way in which judges award prizes at fruit shows, why require 10 varieties when 6 would equally answer the purpose? Suppose a man brings a fine horse, a good cow, an excellent sheep, a calf, and a good fat pig, and I bring five cows of different breeds and average merit, and carry off the first prize for five varieties of stock—what would my farming friends think? Such an exhibition would only prove that I was a good manager of cows. The prize was however offered for stock in general." "A Yorkshire Gardener," he adds, "has made a very incorrect statement about the matter." We are of the same opinion. That the award was preposterous and most discreditable to the good sense of the judges is manifest.]

Light and Dark Fuchsias.—Notwithstanding the common sense view that "white is light—not dark," I do not think, with all deference to your dictum (p. 792) that a Fuchsia with a white corolla could properly be classed as a light-coloured variety. If it may, it follows at least that Venus Victrix, which has a purple corolla, must go with the dark-coloured varieties, but this no one would admit. If so minute a classification were necessary (which I doubt), those varieties with white corollas and red sepals might form a third group, neither "light" nor "dark," but otherwise they seem to me to fall clearly into the "dark" group. In the flowers of a Fuchsia the corolla, having a much smaller surface, is overpowered by the colouring of the tube and sepals combined, which is nearly always uniform, and so a "dark" or a "light" Fuchsia, in the language of the craft at least, means respectively a Fuchsia with red or whitish sepals and tube, the corolla being of any other contrasting colour, but not referred to in the classification: unless indeed it be carried one stage further, and then we have lights with purple corolla, lights with red corolla, reds with purple corolla, reds with white corolla, and so on. *Ater.*

Golden Hamburgh Grape.—Some appear to entertain doubts as to the good qualities of this Grape. Having fruited it this season, and succeeded far beyond my most sanguine expectations, I beg to record my experience. With us the size of berry was about the same as a full grown Muscat—not the Muscat we so often see about the size of the old Sweet-waters, but large, and of a most beautiful amber colour, slightly tinged at the stalk of the berry with faint purple. The flesh is firm like that of the Black Hamburgh, but it has a sweeter and more delicious flavour. The stones separate freely from the flesh when taken into the mouth. It is a free bearer. As regards size the bunches are between the Muscats and Hamburgh, and approach the latter in shape. The only bad quality it has, if such it may be considered, is that it does not keep well, proving, therefore, to be a summer Grape. It may, however, be well to state that our Vines have had the same treatment as Muscats. It sets freely, but, judging from my own specimens, I think it requires more heat than the Black Hamburgh to ripen it in perfection. *W. Greenshields, Culzean Castle, Ayrshire.*

Societies.

Royal Horticultural: *August* 26 (*Floral Committee*).—Messrs. Veitch exhibited on this occasion a glorious specimen in a pot of Lapageria rosea, finely in bloom; also Lilium auratum, a large flowered variety of Rhododendron jasminiflorum, three plants of a Cryptomeria from Japan, Rhus vernicifera, a species stated to be hardy; Alocasia albo-violacea, and plants of Oxalis Bowiei and of Phyllagathis rotundifolia, the last in bloom. Lobelia speciosa kermesina, a handsome purple variety; and the grey-leaved Cerastium Biebersteini, a plant expected to be even more suitable for edgings than C. tomentosum, were contributed by Messrs. Carter of Holborn. From Mr. Francis, of Hertford, came a dwarf compact Scarlet Geranium, of which considerable expectations are formed; some tall Phloxes were shown by Mr. Young, and a seedling Heath of the aristata breed came from Messrs. Smith, of Dulwich. Mr. Bull furnished Begonia malabarica and Anthurium leuconeurum; Mr. Salter different varieties of Pyrethrum, and a tall Castor-oil like plant called Ferdinanda eminens. Among cut flowers were various stands of Hollyhocks from Mr. Chater and Mr. William Paul. Of Dahlias Charles Turner, exhibited by Mr. Keynes, is an excellent flower, yellow in colour, tipped with orange red; the same exhibitor also had Lord Wiltshire, a variety resembling Beeswing and Scarlet Gem. From Mr. Turner came Countess of Shelborne, an attractive looking violet-tipped lilac sort; Lord Dundreary; Lord Derby, one of the best of purplish crimson varieties, and Cygnet. Mr. Pope and Mr. Hopkins also showed blooms of Dahlias. From Mr. Parsons came flowers of a beautiful Achimenes named Mauve Queen, and from Messrs. Downie, Laird, and Laing, cut specimens of a large purplish violet Verbena called Lord Craven. Mr. Standish showed three or four good varieties of Gladiolus. The garden of the Society furnished Bertolonia margaritacea.

August 26 (*Fruit Committee*).—From Mr. Cunningham came six varieties of Peaches and dishes of red and white Alpine Strawberries. Mr. Rivers sent some early Peaches and a seedling Nectarine, and a yellow fleshed seedling Peach came from Mr. Rust, gr. at Broom House, Fulham. A good kitchen Apple, a seedling from the Wellington, was shown, but we could not learn by whom; and we also noticed two hybrid Melons said to have been crosses from Bromham Hall. From Mr. Smith, of Strood, came specimens of clustered Damson Plum, apparently a great bearer, and a large and fine Red Currant, named La Gondonier, came from Mr. Parsons, of Wellwyn.

Exeter Naturalists' Club.—At a meeting of this Club, held in Exmouth last week, Mr. D'Urban read a paper on the "English Ink Galls." Most persons, he said, must have noticed the hard brown galls, about the size of musket balls, so conspicuous in winter on the Oaks about Exeter. They are supposed to have made their first appearance in Devonshire about the year 1847. They were first noticed by Mr. Parfitt, who sent specimens of the insect causing them to Mr. Westwood, in 1848 or 1849. It has only lately, however, been determined to be *Cynips Kollari*, of Hartig, a species well-known in Germany. About three years ago it suddenly appeared in the woods to the north of London in vast numbers. It is closely allied to *Cynips gallæ-tinctoriæ*, producing the ink gall of commerce on *Quercus infestoria* in the Levant. The galls of the Devonshire species contain a considerable amount of tannin, making excellent ink, and yielding a good and permanent dye. Like all other insects which multiply rapidly, it is subject to the attacks of a parasite, which contributes to keep its increase within certain limits. This is a beautiful green chalcite, first bred from these galls by Mr. Parfitt, and described by him in the Zoologist for 1856 under the name of *Callimome Devoniensis*. Mr. D'Urban did not think that the galls occasioned much injury to large Oaks, but to young trees they are very injurious, frequently distorting the leading shoot, and seriously retarding its growth. They make their appearance on the Oaks in this neighbourhood early in July, and growing rapidly reach their full size in August. They are formed on the young shoots of the year, always in the centre of a bud, and are monotholasmous, that is, they contain a single individual only. Some of them produce the flies in September, nearly all being females. The males are remarkably scarce, and have but rarely been obtained. Some remain in the larva state within the gall all through the winter, and emerge in the spring. Few, however, of those hybernating escape the different species of tit, those little birds picking the hard galls to pieces to get at the fat white grub inside. The galls themselves are very persistent, remaining for several years on the trees. Those from which the fly has escaped may readily be known by the presence of a single round hole on one side. Mr. D'Urban then explained the manner in which galls are formed, and the mechanism of the instrument with which the gall-fly makes a puncture in the bark of the trunk or shoots, in the young bud, on the leaf, or on the peduncles of the flowers, according to the part of the tree selected by a particular species, of which a great many infest the Oak.

Botanical of Edinburgh: *July* 10.—Prof. Balfour, V.P., in the chair. Communications read:—

I. Cryptogamic Plants. By R. Brown, Esq.

II. Remarks on Fibrous Plants of Canada. By Prof. Lawson. The author remarked:—All the excitement of late years in regard to fibre plants has had but little practical effect in Canada. It is certainly remarkable that a country, whose soil and climate are so suitable for the growth of fibre plants, should be still so little known in European commerce as an exporter of fibres. However, we are not entirely without progress in this department. Within the last year or two the exertions of our agricultural societies have resulted in the somewhat general cultivation of Flax, although still in restricted quantities, throughout various parts of Upper Canada. The Flax produced is of very good quality, and has met with approval in England and Scotland, especially in the Dundee market, where Flax is the staple manufacture. It appears to me that the chief obstacle to the universal cultivation of Flax, and the introduction of some other improvements, in this country, is to be found, not so much in the high rate of wages as in the collateral expenses of hired field-labour, for unfortunately our farmers have none of the advantages of the bothy system, but have to make provision in their own houses for the farm labourers of so extravagant a kind as virtually to throw the majority of farmers back upon the labour of their own families. Under such circumstances, it is not to be wondered at if our progress in cultivation of a crop like Flax, requiring so much field-labour, should be slow. On the other hand, fibre plants of easy cultivation, with little labour, would hold out a strong inducement. I suspect that the key to our successful production of fibre in large quantities is to be found in the culture of perennial plants, which require less labour and care. We have many such among our indigenous plants, capable of producing fibres—Urticaceæ, Apocynaceæ, and Asclepiadaceæ—all easy of cultivation in our soil and climate, and capable of holding their own against the inroad of weeds. In the Botanic Garden, now in the course of formation here, we are collecting the various fibre plants suited to the climate, with a view to experiment, and hope ere long to publish the results. In the meantime, I enclose a few samples of Canadian fibres, and copy of correspondence on Asclepias Cotton and Asclepias Flax, in which some members of the Botanical Society of Edinburgh may possibly feel an interest, after the suggestive papers of Dr. Alex. Hunter and Dr. Cleghorn on the fibre plants of India. I ought to mention further, that common Hemp is obviously suited for successful cultivation in this country. The author then gave details of experiments on the cultivation of fibre plants, and illustrated the paper by specimens of fibres of various kinds.

III. Irish Cryptogams. By B. Carrington, M.D.

IV. Letter from Dr. Kirk (of the Livingstone Expedition). "H.M.S. Pioneer, River Shire, December 14. During the last two years we have been moving over a considerable geographical area, and getting news of all your doings at home only very seldom. Our mails are most uncertain, and some get lost in crossing the bar. Unluckily there have been lives lost there also, so that we think little of letters. Africa will soon be opened up. Vast things have been done by Burton and Speke; the west, too, has been entered at one point by Du Chaillu. I hoped to have heard long ago of my plants having reached England, but I fear most of them have been lost. What portion has reached I am not yet certain, but from the absence of many genera in the catalogue of what reached, I see that those collected on Zomba at high elevations have not been among the fortunate ones

"You have heard, I dare say, long ago of our journey to the Makololo country. By the time we reached it, the small remnant of the mission had gone off south; they had lost more than half their number through fever. At home they are laughing at the mixture we make of quinine and calomel; but yet we have spent four years out here and never lost a case, and during the past year we have had a large body of Europeans exposed to the fever, and frequently attacked by it, but as yet the treatment has proved successful. The preventive action of quinine is bosh in our experience, and we have tried it fairly. We are to make the attempt again. In the vessel we have always had several sick at one time; so, if the quinine changes this state of matters we shall believe in it. We did try it about seven months ago, with no perceptible result one way or another.

"In the interior we found the Makololo tribes fast on the decline. The chief Sekeletu had been seized with leprosy, and, believing himself bewitched, had killed some of the old men, his father's best soldiers. Now he is dependent on the young, and they—educated among the subject tribes, and feeling their weakness, being few, among so many—have degenerated into a very different race from their fathers who took the country. Now, the subject tribes are better than Makololo; but, with the Makololo, the subject tribes about them have gone down in the scale of honour too. The contrast was marked on leaving the free people of the Batoka lands, and entering that of the Makololo. In the former we had to purchase nothing; they gave the best willingly. The Batoka lands are the only ones suited for Europeans between the coast and the interior along the Zambesi. There are many places where people eager to make money might risk themselves, but this is the only European climate, and here the thermometer sometimes falls to 32°. Sheep would succeed admirably, but for the interior there will be some time needed. The Zambezi is not navigable much above Tette, and even to that place ships only of the most limited size could ply throughout the year. Above the Kebrabasca rapids the Zambezi is again navigable, but there are rapids, and a small trade would never pay. When trade, however, does get into this region, there are immense fields of coal ready to be taken from the mountain side, and to be tumbled on board the vessels. Our return was in canoes

and by them we got over a vast extent in a short time. We had Bashubea canoe-men, and they managed these logs of wood most admirably. We came down many rapids such as I had no idea could be passed at all. The skill displayed by these men was surprising. My crew were the best, and delighted in going first. We, however, got upset in Kebrabasca, while trying to be ready to help Dr. Livingstone. It was quite astonishing how we got out of this fierce rapid with perpendicular rocks all about. The canoe-men behaved well, but all my gear was lost, notes, &c., including a Government box chronometer worth 60*l.* In all, upwards of 100*l.* worth went down, and we were lucky in saving ourselves. We have been since then round to the Roruma, but this ship requiring between 5 and 6 feet when full of cargo, prevented us from getting up beyond 30 miles. The Roruma Bay is magnificent, and the river has no bar, and has great advantage over the Zambezi, where there is a bad anchorage, and a nasty surf. But whether the Roruma comes from the lake we have not found out, although we have been at the trouble of going to see, and carrying a boat over the 40 miles of the Shire, which is obstructed by rapids. We spent upwards of a month on Lake Nyassa, and sailed 200 miles north on this huge inland sea; then we heard of its north end, but hunger (for the country there had been desolated) forced us to return; and indeed we were quite done up, for we had been robbed twice, and lost our clothing. Don't suppose they did this by force—they came at night; if they had come by day we could have settled them. The exposure on the lake in an open boat to the full effect of the sun at the hottest season was most trying, while the daily storms rendered our progress slow. On Lake Nyassa severe storms come on suddenly, and lash the shore with a surf through which no boat can pass. Indeed, a vessel to sail at all times must be one fit for the ocean. The width of the lake varies from 15 to 50 miles, but we could not cross it on account of the storms. The waters are deep enough for all practical purposes. We got 100 fathoms at the mouth of a bay, and at one mile off shore no bottom with 690 feet of line; so, where the bottom is to be found in the centre, I cannot tell—perhaps it is below the sea level. The botany of the lake has nothing of interest until you get beyond lat. 12°; then the trees change considerably, and the hills come down near the lake. From the rich green on these hillsides the country must be better watered than that to the south, for we were there during the driest time of the year. The people are Marimba on the west side, but the north west is occupied by a tribe of Zulus, who had migrated from the country south of the Zambezi, and fought their way north, having established themselves with their cattle on fine table lands, described as healthy, and seemingly quite like those of the Batoka up the Zambezi. The borders of this land are deserts, all the people having been killed; and it has been a dreadful slaughter, for the shores are covered with skulls, and where a foraging party has passed, fresh bodies beginning to decompose lie scattered on the sand. Marimba are a treacherous, cowardly race, and cannot face the fierce charge of the Kaffir, who comes to close quarters at once, and defends his body with the ample shield, while he uses the club or spear with his right hand. The language of these Zulus is that of their native country, but they mix with it some words of the lake tribes. They kill all they find except young children, and these they carry off to educate them as their own. They do not engage in the slave trade. Their only thought is the cattle; they live for them entirely, and remove from place to place according to the pasture. The slave trade is at present very active; it has received a great impulse through the so-called free colonisation of the French. The Portuguese and Arabs are the people who take them to the coast. To the Portuguese is due the whole of that vast slave trade carried on from Ibo to Sofala. They hold that coast only to enable them to do this, while it was guaranteed them that they might put the slave trade down. Government have full knowledge of what goes on; indeed, so must the home Government of Portugal, for they give as court favours the several governorships, which are much sought after, knowing that the salaries are perfectly inadequate. How can these men make the fortunes they do, but by countenancing the slave trade? Already the slave agents of the Portuguese merchants of Tette have filled the Manganja hills discovered by us. They have come on our track; and now, after being absent a year, we discovered that we had been the means of opening a slave-hunting country. The hunting was done by a coast tribe—the Ajawa. The Portuguese sent their slaves to purchase the captives. On their way, the fine rich populous valley from the south end of Lake Nyassa to the rapids of the Shire had been laid waste, and now not a village stands where, when we first passed, all sorts of food could be obtained for a few beads. We drove back the first white Portuguese who ever entered the Manganja hills. He came at the head of a large body of armed slaves, intending to save the price paid to the Ajawa, and do the hunting himself. On hearing that we were destroying all Portuguese slave bands, he turned and fled. We have made a number of captures of Portuguese agents with slaves. Those they have are chiefly children. We settle all the prizes with the Bishop; in fact, we have made him chief of a large village, and given him such a start as no mission ever had before. Not only has he got all the slaves we took from the Portuguese, but also natives come and settle near him, for the security they feel. The Manganja country is at present in a strange state. There is no great chief, but each village is ruled by an independent man, and these seem to have sold the people for a long time back; now they are being carried off wholesale by the Ajawa. To the latter there cannot be much blame attached. The Manganja would do the same if they were not such cowards. They cannot face the Ajawa, but they do quite as bad by assisting the Portuguese to carry off the slaves bought from Ajawa, who are many of them their countrymen, and taken from some neighbouring village. One village seems to hate another, so that they quietly allow them to be carried off. They are quite incapable of a united attack to drive the intruders out. If the Ajawa could be reclaimed they possibly might prove the better people. Dr. Livingstone thought to go and speak to them, but the intentions of his party were mistaken, and they found themselves surrounded and attacked. Our party, including some of the Bishop's, had to fight in earnest, and the Ajawa did not retreat until several had been killed. We had left the vessel without any intention of fighting, and this small affair used up all the cartridge. It would be gross folly to go unarmed here—that is, without arms in the party. On Lake Nyassa our party (over 20 men), well armed with the best of rifles and revolvers, was not numerous enough to prevent the natives robbing us twice by night, and once attempting a night attack; and it was on the other side they killed Roscher, a Hamburg gentleman, who had reached the Lake about two months later than we did when we first discovered it in 1859. In order that the mission here (under Bishop Mackenzie) may be of use, the country must be opened up, and commerce begun; for until the natives can sell their produce, they cannot be expected to give up the slave trade. They grow cotton, and could grow any quantity. If merchants could get in to purchase it and other things, then the natives would be able to rise in civilisation; but I don't believe in missions which are not accompanied by other means beside teaching. A mission, to be successful, must aim at raising the natives: and the missionaries' work is vastly diminished if the civilising is in a great measure done for him by merchants and traders, and his hands thus left free for teaching. The Portuguese claim the coast, and I daresay the interior too; but the rivers ought to be open to all nations. At present it would be in vain to send out to purchase anything here. Being Government officers, we may do as we please: but a trader would be turned who came without a passport, and no foreign vessel would be allowed to pass.

"Now, I have completely tired you out, and not said a single word about botany; and the fact is, I have done very little to it of late. We have had a great deal of work in the steam-vessel, which is 2 feet too deep for the river. I have had no opportunity of getting up among the hills again. My collections and notes from the Makololo country were lost when my canoe upset. On the lake we met with an oil palm with small fruit. I see it mentioned by Captain Burton on Lake Tanganyika.

"I enclose some of the Cotton growing uncultivated on the hills at the north end of Nyassa. It will show you the fine quality of stuff which might be obtained even now."

V. Letter from Dr. Adams to Sir W. Jardine, Bart., relative to poisoning with Euphorbia in Malta:—

"I send you a few seeds of the sea spurge; there are upwards of 20 species of Euphorbia in Malta, and during the summer months, when the intense heat has withered the plants, and pasturage becomes scanty, goats often nibble the decayed stalks of one or other species, chiefly the E. pinea, which is the most common. The Tenhuta is a name generally applied to all the species. The goats do not eat Euphorbia eagerly, and when there is plenty of green pasture not at all. The milk impregnated with this poison, has, I am creditably informed, proved fatal to children under three years. Nausea, vomiting and diarrhœa are the chief symptoms induced. The dangerous effects of milk so poisoned have been known to the natives from time immemorial; and in the country districts, when wishing to take a brisk purgative, the natives are in the habit of drinking milk to which a few drops of the white juice of the plant have been added. I am told diarrhœa is a certain result. I have been particular in attempting to find out if the goats themselves are affected, but all the herdsmen say, not apparently in the slightest degree. With reference to Dr. Mackay's suggestion in explanation of the more violent symptoms in some of his patients compared with others, that the same was owing to yellow streaks in the milk and their unequal distribution, I cannot discover any proof. All the goatherds I have caused to be questioned on the subject state that the poisoned milk does not differ in appearance from other milk, and that they have no means of knowing when milk is poisoned by Euphorbia until it is used. This is also the experience of Dr. Gulia and other Maltese doctors. The Maltese consider the berries of the Persian lilac (Melia azedarach) a deadly poison, and are careful not to let the goats eat them. Dr. Gulia thinks it is a vulgar error; but many Maltese have assured me to the contrary, and that they have known persons to have been poisoned by milk of goats fed on these berries."

VI. An account of Prof. Balfour's Botanical Trip to Moffat, Dumfriesshire, on 5th July 1862. By Mr. J. Sadler.

VII. On the addition of Cystopteris alpina to the Arctic Flora. By W. Sutherland, M.A.

Prof. Balfour read a letter from A. Hewan, Esq., surgeon, Old Calabar, giving a sketch of a botanical excursion to Clarence Peak, Fernando Po.

A letter was read from Mr. J. Chalmers Morton, editor of the *Agricultural Gazette*, in which he expressed a wish to know the predominating plants growing on the irrigated meadows at Craigentinny. Professor Balfour had sent Mr. John Scott, one of the gardeners in the Botanic Garden, to make a collection of the plants, of which the following is a list:—Stellaria media, Poa trivialis, Ranunculus repens, Rumex obtusifolius, Senecio vulgaris, Polygonum amphibium, Cardamine pratensis, Atriplex patula, Ranunculus sceleratus, Alopecurus geniculatus, Glyceria fluitans, all of which were growing very rank and luxuriant, forming almost the entire pasturage. On the sides of the ditches occurred Ranunculus acris, sparingly, Anthriscus sylvestris, Holcus lanatus, Galium aparine, Triticum repens, Leontodon Taraxacum; and in drier spots Potentilla anserina, Trifolium repens, Plantago lanceolata, Alopecurus pratensis, Lolium perenne, Phleum pratense, Dactylis glomerata, Hordeum murinum, Arrhenatherum avenaceum, Geranium dissectum, Cerastium triviale, and Bellis perennis. Dr. Gairdner sent the flowering heads of a Gnaphalium, called in South America Sempre viva, and used at Monte Video as a remedy for diarrhœa and cholera. Rev. Mr. Robertson sent growing specimens of Pinguicula grandiflora from Ireland. The following candidates were duly elected:—As a Resident Fellow, J. Berryman, M.D.; as an Associate, Mr. J. Scott.

Notices of Books.

A Summer Tour in the Grisons and Italian Valleys of the Bernina. By Mrs. Henry Freshfield. Longman & Co.

In this pleasant little volume, Mrs. Freshfield has described a portion of Switzerland which, if not absolutely unknown, is yet so rarely visited by Englishmen that we feel grateful to her for having paved the way, and for having given to the world this account of her summer holiday. At the same time it must be confessed that the greatest charm of these Alpine valleys consists in their seclusion, in the unspoiled and simple character of their inhabitants, and in the delight of getting beyond the throng of tourists, bent on "doing" every fine view or object of interest recorded in Murray. These charms they will soon no longer possess: when it once becomes known that the Engadine is but a day's journey from a railroad, and that day's journey one which is constantly accomplished by invalids, we doubt not that the rush to Samāden and Pontresina will equal that to Interlaken. Snowy peaks, glaciers, and mountain lakes are within short and easy excursions from either of these places; while Mrs. Freshfield assures us that the higher passes, and expeditions only attempted by good climbers, will reward by the magnificent views they disclose; which we can readily believe, judging from the coloured lithographs with which her volume is illustrated.

The Bernina is the principal mountain in this part of the Alps, and forms a remarkably fine object from many points of view; it is rather a mass of pinnacles than a single mountain, for which reason it has obtained the name of "the many headed Bernina." The principal summit, or Piz, as it is called in the dialect of the country, is 13,500 feet high, and many of the neighbouring peaks are not much inferior:—"It is seldom that so many summits exceeding 10,000 feet are congregated together so closely, and the variety of form and effect produced is very striking."

Many of the glaciers which descend from these snowy heights are exceedingly fine, and easily accessible, one of the largest, the Morteratsch, being within a few minutes' walk of the diligence route over the Bernina Pass. It is not, however, one of the most beautiful, for the immense amount of débris brought down by the central moraine, causes it from a distance to appear even dirtier than the appropriately named Zmutt glacier. Mrs. Freshfield was not satisfied with a distant view, but courageously undertook and accomplished a nine hours' excursion to its furthermost recesses, her reward being "a most magnificent view, with vast glaciers and snow fields on all sides, surmounted by rugged rocks and silvered summits. We were in the centre of an enormous bowl, encircled on the south-east by a line of colourless brilliancy, amidst which Piz Palèe rose up in resplendent beauty. . . Numerous glaciers hung pendent over the precipices around, and the whole line of the magnificent Morteratsch was extended above and beneath us, as it swept down from the Bernina, and stretched its length to the furthest limit of the valley, which it has so entirely usurped."

Mrs. Freshfield seems to be among the most undaunted of lady climbers; indeed she takes the lead on all occasions, the "Herr," as she invariably names her husband, being merely the nominal head of the party, and supporting a very subordinate rôle in the performances. Indeed we think the luncheon basket played on the whole the most conspicuous part, being most carefully considered in all the arrangements; while the al fresco meal is lovingly dwelt upon in the account of each expedition, and the success of the Ætna in preparing hot coffee or "portable soup, thickened with arrow-root," is duly recorded.

Starting from Pontresina the party made the tour of the Bernina, an expedition which required about five days to accomplish, and which does not seem to have presented any peculiar difficulties to good walkers amongst whom this lady and her companions may fairly claim to be classed. Neither do they appear to have had any difficulty in procuring tolerable accommodation. They took with them a guide from Pontresina, in addition to their Chamonix guide, Couttet, who seems to have accompanied them somewhat in the character of courier. Had he known the way, however, the former would still have been necessary to act as interpreter, for the Romaunsch language, which is that spoken throughout these districts, is quite unintelligible to a stranger. In the main valley of the Engadine, German is spoken in addition, and more rarely French; but there is intercourse with the outer world, as "post-wagen" traverse it daily in three directions. St. Moritz, indeed, is a place of great resort by Germans and Swiss, on account of its chalybeate spring, and the already large "Badhaus" is being supplemented by a still larger one now in course of erection. Even in winter the Post-wagen daily crosses from Chur to Samāden on sledges, the communication being only interrupted for a short time in spring, during the melting of the snows. During their long light months of winter, sledging, skating, and balls enliven the villages, and the inhabitants are so far from thinking their rigorous climate unenviable, that we were recently pitied for living in England where there was no sledging!

Perhaps Livigno is as primitive as any of the village in this district, and we will give Mrs. Freshfield's description of it, as it gives a fair idea of these out-of-the-world places:—"The valley was spread out before us in wide pastures, unbroken by any divisions, with scattered châlets showing a considerable population. The recently cut sward was like a soft green carpet beneath our feet, and the enjoyment of our walk was troubled only by the fear that the unexpected difficulty with our luggage might cause my husband lengthened detention. The dark, sun-burnt colour of the houses gave peculiar richness to the pastoral scene through which we passed; the remarkably small windows of these primitive dwellings quite justified the description of the queer old woman at La Rosa, and showed that in the precautions taken for protection from cold in this high region even the enjoyment of light was sacrificed to warmth. The amount of timber used in the construction of these buildings was evidently no matter of consideration; projecting ladders formed of rough logs added to their picturesque appearance, and gave access to an upper floor which, sheltered by far projecting eaves, must be even darker than the living rooms below. The village was in sight long before we crossed to the left bank of the Spol, and reached the first church, which is ornamented with brilliant frescoes. Rude paintings of the Virgin on the walls of some of the houses also reminded us that we had re-entered a Roman Catholic country, where the people have a common faith and language with the Valtelline. They are certainly a very peculiar, primitive-looking race, clothed in sad coloured garments of antiquated cut. The position of the first group of houses was very pretty, with the gaily decorated white church raising its tall steeple in the centre."

We must now take our leave of Mrs. Freshfield, hoping that she may on some future occasion introduce us to some more of the still untrodden byways of Switzerland. And if any of our readers should be meditating a tour, let them read this volume, and then they will certainly be tempted, if not to devote their whole excursion to the Grisons, at all events to include it in their intended route.

Ricerche sulla embriogenia della Canapa: Researches on the Embryogeny of Hemp, by G. Gasparrini. From the Proceedings of the Royal Academy of Physical and Mathematical Sciences of Naples. Part 1., May 1862.

It is now many years since the botanical world was surprised by the announcement that female plants of the Australian Cœlebogyne raised in Kew Gardens had produced perfect seeds, although no males had ever been in cultivation, nor could the most careful scrutiny disclose any male organs accidentally borne by the female individuals. This recalled the curious experiments of Spallanzani, tending to show that female flowers of Hemp frequently bore perfect seeds without previous fecundation, as well as analogous observations on the Fig, on Mercurialis, and on some other plants; and the existence of parthenogenesis in plants as well as in aphides and other insects became a recognised fact, attested by many eminent vegetable physiologists and observers, among whom it may suffice to mention the names of Naudin, Decaisne, A. Braun, and Radelkofer. A reaction however appears now to be setting in. Independently of the observations of Darwin, which, by exhibiting a variety of curious contrivances by which Nature effects apparently impracticable fertilisations, tend more than ever to show the fallacy of the conclusion that a thing is not because we do not see how it can be, Karsten and some others aver that anthers, or at least pollen-bearing organs, are occasionally borne by female Cœlebogynes in cultivation, although very difficult to find; and now Gasparrini throws doubts on the conclusions drawn from Spallanzani's experiments on Hemp. His present paper is an abstract only of a more elaborate memoir promised for immediate publication, and detailing the history of the embryo of Cannabis from the first formation of the ovule through the changes it undergoes in the course of development as well before fertilisation as by the action of the pollen-tubes, whose course he traces from the stigmatic glands to the nucleus itself. He can discover no signs of the development of the embryo without that previous action of the pollen-tubes so universal in the vegetable kingdom. He finds that when unusual climatological or other circumstances cause Hemp to flower out of season, the sexuality of the plant is frequently modified, males producing a few more or less perfect female flowers, or the females bearing a few male flowers, and he concludes that in those cases where a female plant or branch of Hemp had been isolated by Spallanzani, it was placed in still more exceptional conditions, and may have borne male flowers, so few indeed as to have escaped observation, but yet sufficient for the purpose of fecundation. As to Figs, he confesses that he still has doubts, a question which he promises to lay before the Academy on a future occasion.

Without therefore endorsing at once the conclusions of those who absolutely deny vegetable parthenogenesis, we must admit that it is as yet a case "not proven," at least with regard to the maturity and germinating power of unfecundated seeds. It may however, not impossibly turn out that a reproduction in the vegetable kingdom analogous to the parthenogenesis of aphides, must be sought rather in the almost universal power of multiplication by buds, than in any exceptional formation of seeds, so directly opposed to ordinary rules.

We are glad to see in the present paper evidence that such scientific researches as those of its eminent author are again encouraged by the renovated Academy of the city which had been the scene of his former labours, but from which we understand he had been excluded during the reign of political darkness.

British Conchology; or an account of the Mollusca which now inhabit the British Isles and the surrounding seas. Vol. I. *Land and Freshwater Shells.* By J. G. Jeffreys, F.R.S. Van Voorst. 8vo.

In the publication of this valuable book, Mr. Van Voorst has laid the British Naturalist under new obligations. We have now an accessible, readable, reliable work on landshells, alike adapted to the scientific inquirer and the amateur who is amused by collecting them. An author more competent to fulfil his task or more judicious in his mode of treating it could not have been found.

Mr. Jeffreys wisely rejects the notion of distinguishing shells, not by their own plain characters, but by the animals that inhabit them:—

"The shell of itself generally enables the conchologist to distinguish one species from another, without regard to the soft parts; and as the latter are seldom observable, the convenience of such a mode of distinction is obvious. It would be rather difficult for a malacologist to describe any particular kind of testaceous mollusk without noticing the shell; and for the same reason a crab or sea-egg would not be easily recognised by the description, if all mention of the carapace or test were omitted. The shell of the mollusk may be in some respects considered as a pseudo skeleton, serving not only to protect the soft and tender body, but also to keep the whole frame together, like the true skeleton of any vertebrate animal. There is, besides, an intimate connection between the shell and the tissues of the body, which is only dissolved by death or violence. The shell is (to use the words of Mr. Searles Wood) 'part and parcel of the animal itself.'"

He first treats of the structure and manner of life of the inhabitants of shells; he then examines the formation, shape, colour, and other attributes of shells themselves; next follows an account of their enemies and uses, of their presence in a fossil state and of the places they inhabit while alive; and finally he enters fully upon their genera, and species, and the main features of their classification. All this appears to be extremely well done, with one exception. We allude to the absence of any tabular arrangement, by which the student is enabled to contrast at a glance the characters of the classes, orders, families, and genera. Botanists have long since recognized the advantage, not to say necessity, of adopting this method, of which Bentham's *Handbook of the British Flora* affords a good example, and it is much to be regretted that zoologists should disregard it. There can be no doubt that it greatly facilitates the determination of the names of things, and to know names is the first step to be taken in Natural History. In saying this we do not intend to disparage minute descriptions, the importance of which we fully recognize; all we mean is that such descriptions should be preceded by brief, clear, *well contrasted* distinctions, whether in works for the multitude, or in those higher works that are for the use of the professional naturalist. How greatly the value of Westwood's *Introduction to the Classification of Insects* would have been enhanced had this been thought of; as it is, one of the most elaborate works in our language is almost useless to all except practised entomologists.

Perhaps the most interesting chapter in the work before us is that which relates to the organization and habits of these mollusca, from which we make a few extracts:—

"*Fecundity.*—The extreme fertility of some mollusks is not exceeded by that of fish. It has been estimated that the oyster spawns annually at least three millions. According to C. Pfeiffer the gills of a freshwater mussel of moderate size contain at least 400,000 eggs; and Jacobson has given a much higher figure (two millions) for the product of a large individual of this kind. If this rate of increase were unchecked, our seas and rivers would in a comparatively short time (reckoning geologically) be filled up with the remains of shell-fish.

"*Locomotion.*—The methods by which Mollusca move from place to place are exceedingly varied. Most univalves crawl on the lower part or disk of a large fleshy organ, which is the homologue of a foot and supports the body. The *Melampus* uses this organ in an unusual way, by first planting the front half, like a caterpillar, and then drawing up to it the other half, and repeating this alternate movement in a fashion called 'looping.' The celebrated French naturalist, Adanson, gave that genus the name of *Pedipes* on account of this peculiarity. Many of the aquatic univalves can swim, or rather creep underneath the surface of the water, the position of their bodies being reversed, with the point of the shell downwards. A few of the bivalves (*e.g.* species of *Lepton* and *Galeomma*) sometimes walk about with their valves spread out like the cover of a book when left on the table by an untidy person. The Cuttles and Pteropods swim as rapidly as fishes, but in a different manner—viz., by taking in and expelling by means of their mantle successive volumes of water, so as continually to propel them onwards. One kind of Cuttle is said even to possess the faculty of flying, and to dart for a considerable distance out of the water through the air like a flying-fish. Most of the *Acephala* or bivalves have a tongue-shaped organ of progression, which is muscular and extremely flexible. By means of this kind of foot the Cockle, Razor-fish (*Solen*), and other kinds burrow in sand and mud. The Scallop and *Lima* fill their bodies with water, and then, suddenly collapsing and closing their valves, execute a series of leaps or jerks, by which they can traverse a considerable distance, although in an irregular course. Certain small bivalves (*Sphærium* and *Kellia*), while floating on the surface of the water spin filaments which serve to moor them and prevent their being drifted about. Several kinds of slug secrete glutinous threads by which they suspend themselves from trees, and either remove from one branch to another or drop safely to the ground. Thus it will be seen that the Mollusca partake of all the modes of locomotion possessed by other animals—that they can walk like quadrupeds, fly like birds, crawl like serpents, swim like fishes, and even spin threads like spiders.

"*Occasional appearance and disappearance.*—Both sea and land furnish instances (some of which are difficult to explain) of the periodical appearance and disappearance of certain species of Mollusca in particular places. Their arrival and departure are often sudden and seemingly capricious. In the case of marine species, this phenomenon is probably the result of changes in the course of tidal and other currents, as well as of the migratory habits of fish. These currents, by accumulating or removing deposits of mud, sand, and gravel, which afford shelter and food to Mollusca, conduce greatly to their congregation or dispersal. When such deposits are rapidly formed, the shell-bed becomes covered up or silted; and the Mollusca are entombed alive for the benefit of future geologists. When their chief enemies, the fish, desert their former quarters and migrate to another feeding-ground, the Mollusca then increase and multiply, being un-thinned except by the tigers of their own kind, or occasionally by the curious conchologist, or by all-devouring death. The destruction of shell-beds by marine currents may account for the prevalent notion that some parts of our sea-coast (as for example South Devon), which used to yield such regular and plentiful harvests of shells to collectors, are now scarcely worth searching—it being said that the shells have 'deserted' the coast. The unexpected occurrence of some kinds of land and freshwater Mollusca in places where they had not been previously noticed is not unfrequent. Many a wonderful tale of a 'shower of snails' has helped to fill the pages of country newspapers, arising out of the sudden appearance in a limited area of *Helix virgata* and *Bulimus acutus*, which are abundant on most of our sandy downs and plains. This has been sometimes caused by a mere change of wind to the south-west, in consequence of which the air has become charged with moisture, and tempted all the snails to leave their retreat at the roots of Grass during the night, and to present themselves in the morning to the eyes of astonished rustics. It is not, however, so easy to account for some kinds of freshwater snails (*e.g.*, *Limnæa glutinosa*) being found in the same spots so abundantly some years, and scarcely at all in others, as has been noticed by Mr. Bridgman of Norwich. This is one of the minor, but numerous, problems in the present branch of Natural History which still remains to be worked out, and the solution of which will reward the diligent and observant conchologist."

Let us add that the volume is illustrated by some excellent figures of genera.

Garden Memoranda.

FULHAM PALACE, THE RESIDENCE OF THE BISHOP OF LONDON.—The gardens belonging to this interesting place have during the present Bishop's time undergone considerable improvement. A thicket of worn-out Rhododendrons on the north-east side of the house has been wholly cleared away, and a pretty little flower garden occupies its place. This has had the effect of opening up and improving the view, and of bringing the park with its picturesque groups of noble Elms, some of which are 16 feet in girth, and other trees, more immediately within sight of the windows. In the flower garden just mentioned bedding plants have been a blaze of floral beauty until within the last fortnight, when the late rains have somewhat impaired their brilliancy. In the centre is a terrace mound surmounted by a plant of the graceful Humea elegans, supported by Flower of the Day Geranium, with which the terraces are planted, each tier or flight being edged with Lobelia speciosa, whose myriads of little blue blossoms set off the whole to admirable advantage. Right and left of this centre piece, at proportionate distances apart, are four large vases filled with gay flowering plants, such as Geraniums, Calceolarias, and Lobelias, and around these are numerous beds chiefly filled with Verbenas, among which we noticed of *Purples* Purple King and Bishop's Purple, the last a showy sort with a white eye. Among *Scarlets* Robinson's Defiance, Géant des Batailles, Lady Victoria Scott, Evening Star, and Lord Clyde stood pre-eminent. *Rosy crimsons* consisted of Admiral Dundas and General Simpson. Of *Pinks* there were Bonny Dundee and Lucy Tait, the last one of the best of its class. *Lilacs* consisted of pulchella, an old sort seldom cultivated, but a really useful variety, and Impératrice Elizabeth, the last a neat growing kind, very suitable for small beds. Associated with these were beds of Flower of the Day and Lady Plymouth Geraniums, whose variegated leaves served to set off the more gay flowering plants to increased advantage. Orange and yellow beds consisted of Gazania splendens, a showy and effective dwarf Marigold-like plant; Œnothera prostrata and Calceolaria aurea floribunda. Little circles round the bases of standard Roses were very gay in June and July with Nemophila insignis, but that has now been cleared away. A good ribbon border was made as follows. In the centre was Perilla, on each side of which was Flower of the Day Geranium broadly edged with Blue Lobelia, which, as a margin, had a better appearance in connection with Grass than Variegated Alyssum.

Scarlet Geraniums in terra cotta vases appeared to be favourites, a row of them being placed along one side of the walk which passes round the house. Every autumn on the approach of frost these are cut well back and wintered in a cool house. When spring returns they are repotted and encouraged to grow; when fully in bloom they are replaced in their summer quarters out of doors; and owing to their number and brilliancy they produce a striking effect, which is increased by the addition of a few plants of Geranium Chistine, the soft rosy pink blossoms of which form an agreeable contrast with those of their more showy neighbours.

The most remarkable feature about the place is however its fine old trees, some of which are of great size, and vary in age from 180 to 200 years. Among them is a noble specimen of Cork tree, now falling into decay, but owing to the artistic manner in which its massive limbs are arranged and supported the appearance presented by it is highly pic-

turesque. An immense Hickory tree is also an object well worth notice. It has a trunk at least 16 feet in circumference, arising 15 feet without branches; it then divides into two great limbs, each of which must be at least 80 feet in height. A white Oak too is also a wonderful specimen of that variety. Its trunk at 3 feet from the ground is 12 feet in circumference. Its huge top however begins to show signs of decay. Evergreen Oaks are numerous, and there is an admirable specimen of Ailantus, a tree just now in great demand for the support of the Ailantus silkworm. Of Gleditschia horrida and triacanthos there are beautiful examples, as well as of Judas trees, Robinia Pseud-Acacia, Chesnuts and Beeches, the last not so remarkable for size as for fine form. Among Conifers we noticed some fine old Cedars of Lebanon, a thriving young tree of Wellingtonia, and a large good specimen of Cryptomeria japonica.

The kitchen garden is separated from the lawn, which is ample, well kept, and tastefully fringed with evergreens, by an ancient brick wall, against which the glass houses, consisting of Vineries and a small conservatory, are built in the form of a crescent. The borders are planted with Pears and Apples, on which are fair crops. On the walls Peaches and Nectarines are abundant; Apricots, too, have been an excellent crop, and Pine Apples in long lean-to houses, under Mr. Conningham's care, are in excellent health, and promise to yield some fine fruit.

Strawberries, both in quarters and borders, are reported to have been most productive this season. The first ripe was Cuthill's Black Prince, which was succeeded by Keen's Seedling, Sir Chas. Napier, La Constante, Eclipse, Ingram's Late Pine, and, last of all, red and white Alpine. These last are even now bearing freely, and will probably continue to do so for at least a month or six weeks yet to come. Wizard of the North has also borne well here this year. As regards vegetables, Advancer and Wonderful Peas are worthy of mention, both are good border varieties. The first is a dwarf wrinkled Marrow, and the second is also a good early sort, prolific and sugary. With respect to flavour Veitch's Eclipse Pea is however that which is most liked, and it is likewise a great bearer.

Around the garden is a quiet shrubbery walk, lined on both sides with evergreens, which grow as vigorously as if they were 50 miles from London. Here also is a Fernery on rockwork which adds considerably to the interest of this secluded part of the grounds; everywhere lawns were closely mown, soft and elastic to the tread, and the walks clean and neatly rolled. Everywhere, in short, the best of order and keeping were observable.

Miscellaneous.

The Age of English Trees.—Oaks and Yews, the most venerable of our trees, are, in several instances, so old that it is difficult to form an estimate of the time which has passed since they were planted. Several Oaks felled in Sherwood Forest, about a quarter of a century ago, exposed, on being sawn up, the date 1212, and the mark or cipher of King John; and it has been calculated that these trees must have been several centuries old at the time the marks were made. It is well known that the Oak which is said to have proved fatal

"To that red king, who, while of yore
Thro' Bolder-wood the chase he led,
By his loved huntsman's arrow bled,"

was standing, not long since, in the New Forest, in Hampshire: they who think this tree insufficient to record a fact of so ancient a date should be reminded that Sir Thomas Dick Lauder says, "Seven hundred years make no extraordinary period in the existence of an Oak: some Oaks blown down in Donnington Park were supposed by the interior rings to have been nearly 800 years old; and it is supposed, on good authority, that there still exist in England Oaks which were in existence at the commencement of the Christian era." A venerable Oak stood not long since at Tormond Wood, in Stirlingshire, under which, tradition says, William Wallace convened his followers. There are vestiges of the ancient Druids in the neighbourhood of this tree, which was 22 feet in circumference. There is another famous Scotch Oak called the Wallace Oak, at Elderslie, near the place where Wallace was born. There are other Oaks in Great Britain which are probably more than 1000 years old. The most useful age of this tree, for building and other purposes, is from about 50 to 70 years. The oldest known Elm is said to have been that at Checquers, Buckinghamshire, and is supposed to have been planted in the reign of King Stephen. The Elm does not seem to live so long in the vicinity of towns as in the pure country air. Queen Elizabeth is said to have planted an Elm with her own hands at Chelsea: this was felled in 1745, and sold for a mere trifle. There are some fine trees of this kind in St. James's Park and Hyde Park: many of them have within the last dozen years suffered much by decay, storms of wind, &c. One of the Elms planted by Sir Francis Bacon, in the year 1600, in Gray's Inn, was felled in 1725, in consequence of its commencing to decay; it was then more than 28 feet 6 inches in circumference near the root. The Elms in the vicinity of the metropolis are much worm-eaten. The Mulberry seems to have been chiefly introduced into England by King James I., who was anxious to establish the culture of silk in this country. The king caused 10,000 Mulberry plants to be purchased and distributed throughout the country. They were delivered in London at the rate of three farthings each. The Mulberry tree said to have been planted by Shakspeare, in New Place, was felled by the Rev. Francis Gastrell in 1756. Not longer than 15 or 16 years ago there were both Mulberry trees and Vines growing on the spot which had been used as the garden of the Priory of St. Bartholomew the Great, Smithfield. In the days gone by, before fire-arms had put out of fashion the use of the bow, the culture of the Yew was an important matter; but the growth of this tree was very slow, and the demand for wood of a tough, durable, and elastic nature, for bows was so great, that the home supply of Yew wood was found insufficient; and merchants were for a long time obliged by law to import four staves with every ton of goods coming from places where bow-staves could be brought, and 10 staves with every butt of Malmsey from Venice. When we consider the very slow growth of the Yew, and the large size to which some still in existence have grown, it seems probable that their age is not less than that of some of the famous British Oaks. Many have been recorded of the circumference of 26 feet, and there are some even larger than this. In Fotheringale churchyard, in Perthshire, is an old Yew, much shattered, and nearly dead, the trunk of which measures 56 feet 6 inches in circumference. The Maple, or Sycamore, often grows to a large size: one at Knowle, in Kent, was 12 or 14 feet in girth. The original plantations of Vauxhall and Marylebone Gardens were chiefly of the Great Maple. It is not considered to live to a great age; yet some have been noticed at Cambridge in a flourishing state at the age of 185 years. Before the use of crockery became so general as it is at present, the wood of the Maple-tree was common material for bowls and platters. It does not readily warp or splinter; it is, therefore, employed in making saddle-trees, founders' patterns, &c. It is said that the two first Lime trees which were planted in England (1590) are still growing at Halstead, in Kent. There is, however, much difference of opinion respecting the time of the introduction of this tree. This wood is much used by mould and other carvers. Gibbons, in the time of Charles II., decorated various important buildings with it. Many Lime trees are more than a century old. The Walnut tree grows rapidly in England. There is a record of one of those trees growing in Scotland in the year 1684. It was more valuable before the extensive introduction of mahogany and other foreign woods than it is now. During the French war, the great demand for musket and pistol stocks thinned the Walnut trees in this country. At that time so great was the demand for this timber, that a large sound tree has often been sold for 600*l.*, when cut into gun-stocks. *From the Builder.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Japan Lilies in pots will soon be coming into bloom, and should be neatly staked before the flowers get injured through being blown about. When removed to the conservatory they should be placed in a cool airy part of the house, shaded from bright sunshine, and liberally supplied with water, so as to preserve the beauty of the flowers as long as possible; for except they are properly cared for their blossoms are apt to be but short-lived. Continue to trim and regulate the growth of twiners, cutting out any shoots that have done flowering, which will tend to strengthen those left, and cause them to bloom later than would otherwise be the case. Maintain an active war against insects, and endeavour to get these thoroughly subdued before the damp cloudy weather of autumn sets in, when it will not be safe to use the engine with the same freedom as now.

FORCING DEPARTMENT.

Pineries.—Endeavour to afford plants swelling their fruit a high temperature with as little assistance from fire-heat as possible, which, as it tends to render the atmosphere dry, is not conducive towards obtaining large finely swelled fruit. Therefore economise the sun's influences as much as possible; shut up early on the afternoons of bright days after syringing the plants and moistening every available surface, and maintain a high temperature during the day, giving air sparingly. Fruit approaching maturity will however be improved in flavour by a moderate use of fire-heat, a freer circulation of air, and a dry atmosphere, and where there are no means of avoiding having plants swelling their fruit and those ripening it in the same compartment, then it will be advisable to keep the atmosphere rather dry and airy while the colouring process is going on, as size is of little importance unless combined with quality.

Vineries.—Give abundance of air on all favourable opportunities where the fruit is ripening, using fire-heat rather freely when the weather is damp and cloudy, and be careful to secure a dry state of the atmosphere where Grapes are ripe and expected to hang for any length of time, using a little fire-heat when necessary to dispel damp. Give every possible attention to Vines in pots intended for fruiting early next season, and endeavour to get the wood strong and thoroughly ripened as early as possible so as to allow an opportunity of giving the plants a fair season of rest. Keep Vines planted this season growing as freely as possible, and see that they are kept clear of insects, for as a house with the Vines in this stage is found very useful for growing plants, and is often used for that purpose, insects are apt to find their way off the plants upon the Vines and injure them. Therefore, if plants are grown under the Vines, see that they are not in a state to communicate black thrips or red spider to the Vines, for unless the foliage is kept in health there will be no possibility of getting the wood well ripened, or the Vines to break strongly next season.

FLOWER GARDEN AND SHRUBBERIES.

Early put-in cuttings should be potted off as soon as they are sufficiently rooted to bear the operation, placing them in a close pit or frame until they get fairly established, when they should be freely exposed to air, in order to induce short-jointed firm growth, which, with ordinary care, will be easily carried over the winter, whereas plants got up late in autumn in a close moist atmosphere will, notwithstanding every care and attention, be largely thinned before spring. Push forward the putting in of cuttings, and get the autumn propagation advanced as speedily as possible.

HARDY FRUIT AND KITCHEN GARDEN.

See that Strawberry plants for forcing are well cared for, since nothing but proper attention in preparing the plants will insure a good crop. Keep them regularly supplied with water, expose them fully to the sun, pinch off runners immediately they are perceived, and use every means to secure fine strong plants with bold crowns early in autumn, with which there will be no risk of failure next spring. If not already done, cover Morello Cherries with thin nets, to protect them from birds, without excluding the air; also, if not previously done, net up some of the latest keeping Gooseberries, to afford a late supply. The Red Warrington is one of the best to hang late on the trees, and is also of good quality. Gather early Apples and Pears as they become ripe, and before the greater portion is blown down and injured. Tomatoes must be kept thin of wood, checking all shoots, and exposing the fruit to the action of the sun's rays as much as possible. Take advantage of dry days to earth up early Celery, sprinkling a good dusting of quicklime or soot about the plants in the lines, and over the surface of the ground for some distance on each side, to destroy slugs, which generally do considerable damage to Celery, especially in wet seasons. The soot or lime should be applied two or three times before soiling up the plants, at intervals of a few days, and early in the morning, before the pests have returned to their hiding-places. Take up and dry Onions that have completed their growth.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Aug. 27, 1862, as observed at the Horticultural Gardens

August.	Moon's Age.	Barometer. Max.	Barometer. Min	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind	Rain.
Thurs. 21	26	29.901	29.825	78	53	65.5	63	60½	S.W	.01
Friday 22	27	29 928	29.834	74	37	55.5	63	61	W.	.00
Satur 23	28	30.102	29.870	73	36	54 5	63	61	W.	.00
Sunday 24	29	30.225	30.052	75	38	56.5	62	61	N.W.	.00
Mon. 25	●	30.242	29.967	76	45	60.5	61½	60½	E.	.00
Tues. 26	1	29 899	29.847	77	44	60.5	61½	60	E	.00
Wed. 27	2	29.957	29.820	78	41	59.5	62	60½	N.E.	.00
Average		30.036	29.745	75 8	42.0	58.9	62.3	60.6		.01

Aug. 21—Very fine; hot sun and dry air; slight rain.
— 22—Overcast, very fine; cold at night.
— 23—Heavy dew; very fine; fine but cold at night.
— 24—Heavy dew; clear and fine dry air, very fine; cool.
— 25—Slight haze, fine; very fine throughout.
— 26—Fine; slight haze; very fine.
— 27—Very fine; hot sun and dry air; fine.
Mean temperature of the week 2 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Sept. 6, 1862.

August. and Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 31 ..	71.1	47 7	59.4	15	1.31 in.	2	6	3	2	2	8	8	5
Mon. 1..	70.5	47.3	58.9	18	1.50	3	4	3	4	3	11	4	4
Tues. 2..	70.6	47.6	59 1	14	0.44	7	5	2	1	2	7	9	3
Wed. 3..	70.4	47 9	59.2	14	0.49	8	7	3	1	6	8	6	3
Thurs. 4..	70.3	46.8	58.6	15	0.58	5	7	4	4	1	7	3	5
Friday 5..	70.0	47.6	58 8	15	0.30	3	8	7	—	3	5	6	2
Satur. 6..	70.0	45.8	57.9	16	0.70	1	10	4	—	1	13	6	1

The highest temperature during the above period occurred on the 1st, 1843—therm. 85 deg.; and the lowest on the 6th, 1850—therm. 30 deg.

Notices to Correspondents.

Araucaria Rulei: *Messrs. Smith & Adamson.* Received. Many thanks. Presented to the R. Horticultural Society.

Bean Rust: *G W.* The rust on the Bean leaf is *Uredo Fabæ*, D.C. Another species differing in having stalked spores occurs on Bean leaves. In your plant the spores are stemless. *M. J. B.*

Charcoal: *Erpingham.* When broken into small bits this substance is valuable for all kinds of plants. Dig it into borders, mix it with earth for potting, use it by itself for striking cuttings, employ it for top dressing, when, where and how you please. You cannot well go wrong.

Cucumbers: *J. Cuthill.* Your Prince Albert, which you state is an enormous bearer, is an excellent medium-sized Cucumber apparently belonging to the Smyrna breed. It forms a good companion to your Black Spine, which is also one of the most useful of Cucumbers.

Green Tree Frogs: *J H.* Mr. Kennedy, of Covent Garden, has them we believe for sale.

Names of Plants: *G.* The fragments of a plant, said to grow from the crevices of *bare* lava on the Island of Ascension, belong to Psilotum triquetrum.—*T B B.* Torilis infesta, a very troublesome, but innocuous weed.—*Juniper.* Phacelia tripinnatifida. The Coleus is from the Malay Archipelago.—*C T.* 1, Galeopsis Tetrahit; 2, Salvia Verbenaca; 3, Rumex acetosa; 4, Teucrium Scorodonia.—*Axminster.* Cuscuta epithymum; what you call threads are the parasitical stems; look at the curious suckers with which the parasite draws the life-blood from its victim.—*J Y S.* 1 and 2, Lolium temulentum; 3, Arundo Phragmites.

Hallett's Pedigree Nursery Wheat.

JOHN GEORGE WAITE, SEED MERCHANT, ... High Holborn, London, W.C., begs to offer the above ... grown on his own Farm, from Seed purchased from ... Hallett last autumn, price 14*s.* per bushel. Having a large ... he is enabled to offer it at the above low figure to place ... the reach of all classes of agriculturists, in order that ... may give it a trial. September is the best time for sowing ... variety of Wheat.
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HALLETT'S PEDIGREE NURSERY WHEAT.—The Advertiser having grown the above fine and prolific ... seed obtained direct from Mr. Hallett of the ... Farm, Brighton, can supply a limited quantity at One ... Farm, Brighton ... This Wheat should be sown early. Guineas per bushel.
Quantity required, one to two pecks per acre.
Apply to Mr. H. COPLAND, Broomfield Place, Chelmsford.

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Samples and Quotations of all kinds of AGRICULTURAL ... and SEED CORN, sent post free on application.
Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality, at Market Prices.

MANGEL WURZEL SEED, in Red and Yellow, Long and Red, Yellow and Orange Globe varieties for Sale.—For price apply to the Grower,
Mr. S. A. DAINTREE, Fendrayton, St. Ives, Hunts.

Genuine Italian Rye-grass, produced from the Second Cut of Foreign Seed.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts., will again be able to supply the Trade with this article in the same fine quality as last season, and can deliver either now or in the spring at the purchaser's convenience.
Address for samples and prices as above, stating quantity required and time of delivery.

The Best Substitute for Vetches is TRIFOLIUM INCARNATUM.—This crimson Clover deserves to be generally cultivated. If sown in August either on fresh land or upon a Corn stubble, a heavier crop of Clover will be ready for mowing in May and June next than from common Clover sown the previous spring, and is highly valuable either for soiling or for hay. To insure success it is only necessary to obtain new Seed, and to sow in August or the first week of September.
SUTTON & SONS, Reading, can supply fine new Seed just threshed. As it is becoming scarce, early orders should be given. Samples with price may be obtained post free.
Royal Berkshire Seed Establishment, Reading.

WHEELER'S ORANGE GLOBE MANGEL,
WHEELER'S IMPERIAL SWEDE,
GRASS SEEDS for PERMANENT PASTURE,
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And all other Seeds of the same excellent quality which has rendered our Farm Seeds so celebrated.
We offer our Seeds at the lowest price consistent with their being good and pure, at the same time deliver them carriage free by rail, and allow 5 per cent. discount for cash.
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All the above being in the finest condition. They also continue to supply
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1862.

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Extract of Opinion from Mr. WAY, *January* 23, 1862.
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Extract of Opinion from Dr. VOELCKER, *January* 1862.
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The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1*s.* and 2*s.* per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.
NEAL'S PLANT SOAP,
1*s.* per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.
Both may be obtained of all principal Seedsmen.
Patentee: J. NEAL, Edward Street, Birmingham.

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GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.
This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.
Sold Retail by Nurserymen and Seedsmen in boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* each.
Wholesale by PRICE'S PATENT CANDLE CO., Limited.

FOWLER'S STEAM PLOUGHING, &c., APPARATUS.—Catalogues, with full details of Cost of Working, and Descriptions of TWO NEW Systems of Utilising the ORDINARY PORTABLE ENGINE, will be sent on application to
JOHN FOWLER, 28, Cornhill, London, E.C.; or Steam Plough Works, Leeds.

SMITH'S PATENT COMBINED MACHINE.—This Machine is admirably adapted for cultivating Light Land Wheat, Barley and Oat Stubbles, and Drilling in Stubble Turnips. Fifteen acres may be Cultivated and Drilled in one day; for Cultivating Light and Heavy Land Pea and Bean Stubbles, and Drilling in Wheat; and for cultivating Heavy Land Wheat Stubbles, and Drilling in Vetches. One operation will be enough for each crop, especially in wet seasons. It is warranted to do its work well.
For price and particulars, apply to WILLIAM SMITH, Woolston, Bletchley Station, Bucks.

Land Drainage, and other Agricultural Improvements.
MR. BAILEY DENTON, C.E., maintains a large staff for the execution of Land Improvements by a commission of 5*s.* per acre for Under Drainage, and a fixed charge for Outfall and other works.
For particulars apply to him, at 52, Parliament Street, Westminster, S.W.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5*s.* per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. HUMBERT, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

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WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.
Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.
No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.
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Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.
Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
TO LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &c. IN ENGLAND AND WALES AND IN SCOTLAND.
The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
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Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

MANCHESTER and LIVERPOOL AGRICULTURAL SOCIETY.—The FIFTEENTH ANNUAL SHOW of HORNED CATTLE, HORSES, SHEEP, PIGS, POULTRY, CHEESE, BUTTER, SEEDS, ROOTS, FRUIT, VEGETABLES, FLOWERS, IMPLEMENTS, MACHINERY, &c., will take place at Warrington, on WEDNESDAY and THURSDAY, Sept. 10 and 11, preceded by a preliminary Show of Implements only, on TUESDAY, Sept. 9.
A large amount of Premiums, including considerable Special Prizes, will be awarded on this occasion. Entries of Stock, &c., closed on the 16th instant.
The Show Yard will be open to the Public by Tickets sold on the spot, on Wednesday, September 10, from 10 to 6, at 2*s.* 6*d.* each, and on Thursday, September 11, from 8 to 4, (when the Show will finally close) at 1*s.* On Tuesday the charge will be 1*s.* each person. T. B. RYDER (Surveyor, &c.), Secretary
57A, Church Street, Liverpool, August 30.

WARWICKSHIRE AGRICULTURAL SOCIETY.—The GREAT ANNUAL EXHIBITION of HORSES, CATTLE, SHEEP, PIGS, IMPLEMENTS, WOOL, CHEESE, FRUIT, and FLOWERS, will be held at Aston Park, Birmingham, on SEPTEMBER 17, 18, and 19.
The Entries for Stock and Implements are closed.
The Entries for Fruit and Flower, must be made on or before September 8, to the Local Secretary, from whom Prize Lists and Forms of Certificates may be obtained.
JOHN B. LYTHALL, Local Secretary.
Offices, 14, Temple Street, Birmingham.

The Agricultural Gazette.

SATURDAY, AUGUST 30, 1862.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Sept. 2	}	Sparkenhoe Farmers' Club, at Leicester;
WEDNESDAY, — 3	}	and North Lancashire Agricultural
THURSDAY, — 4	}	Society, at Preston.

IF the so-called "Acclimatisation" Society want a subject for efforts whose success would confer a real and lasting benefit on agriculturists, we recommend the Wheat plant to their attention. It may be doubted, even if they should succeed in the acclimatisation of Tobacco, Rice, or Indian Corn, whether their success would be of much service to the English farmer. He already profitably grows Grass and roots and other green crops, Beans and Barley and other grain crops, and has no reason to complain of the profit derived from their average produce per acre. It is certain, on the other hand, that the growth of Tobacco is wasteful of the soil—there is no return from its consumption. And so long as our present grain crops yield satisfactory returns, no advantage can be expected from the substitution of others for them. This satisfactory return, however, we do not always have. If the temperature of May, June, and July falls below the average, or if the rainfall of these months exceeds the average, the produce of our Wheat invariably fails. What an advantage for the country, if by patient continuance in treatment, the constitution of the plant could be altered. It is not too much to say, that if by any means within the reach of the Acclimatisation Society the Wheat plant could be "hardened," so as to bear unaffected a fall of 5° Fahr. in the average temperature of soil and air during the summer months, it would in seasons like the present make all the difference to the country that there is between scarcity and abundance. Perhaps a doubt of the powers which the Society claim to possess may enter the minds of some of the members when they reflect that the deficiency of but 3 or 4° in the temperature of May, June, and July 1862, has produced a deficient Wheat crop this year, just as it has on all previous occasions.

What a singular thing that in the instance of the plant which produces the very staff of life all those efforts for improvement of constitution have failed, from which we have been promised such advantages in the case of plants of less importance. The Wheat plant is in no degree hardier now after successive seed sowings in our climate for many centuries than it was originally, and if we have no famines now arising out of its failure from weather which it cannot bear, that is not because the plant can endure inclement weather now better than it could—it is not because we have altered and improved our plant—it is because we have altered and improved our climate.

It is now understood that it is the inner climate of the soil quite as much as the external climate of the air by which the hardiness of a plant is tried—and the improvement of the former within the limits imposed by the latter is an operation quite within the power of agriculturists—one indeed, which by drainage and deep tillage has been largely carried out of late years, and to which with good cultivation generally our larger average crops are to be attributed.

The truth on this subject is well put in the opening essay of the Cyclopedia of Agriculture, from which the following passages are extracted:—

"Nothing seems to be more certainly made out, than that all plants demand a particular climate, that is to say, a peculiar combination of temperature, moisture, light, and atmospheric pressure, in order to arrive at perfection; and that all considerable disturbances of the proportion in which such combinations are naturally provided are prejudicial or fatal to the

health of plants. A particular temperature of the soil is required for germination; one seed will vegetate at 33°, and another requires 80°: a particular heat is requisite to healthy growth; the Almond will expand its flowers at 40°, the Horse-chesnut demands perhaps 60°: the temperature which is favourable to the growth of one plant is prejudicial to another, and fatal to a third; at 40° the Cabbage thrives, the Kidney Bean and Cucumber languish, the Sugar Cane dies. These well known facts lead to the conclusion, that plants have a specific constitution given them by nature, in order to adapt them to the places in which they are stationed; and it is believed, with reason, that such peculiarities explain the cause why plants have, in general, in so limited a degree the power of extending into foreign regions. By these means it is imagined that the geographical limits of vegetation are determined, and an effectual natural barrier opposed to all migrations of species. It must be obvious that if this is so, and no rational doubt can be entertained of the fact, the power of man in introducing the plants of one country into another must be determined by the similarity of climate in the two countries, and that no reasonable hope can be entertained of introducing the field crops of the hotter parts of the world into regions that are colder."

Dr. LINDLEY goes on in this essay to describe and criticise the instances in which sanguine cultivators have believed that plants have been hardened to our climate, and he concludes that part of his discussion as follows:—

"But if no good evidence can be produced of plants having become acclimated by repeated sowings of their seed, the facts on the other side are numerous and conclusive. The Peruvian annual called Marvel of Peru, or Mirabilis, the Common Indian Cress, or Tropæolum, the scarlet running Kidney Bean, the Tomato, the Mignonette, an African plant, the Palma Christi, or Ricinus, all natives of hot climates, have been annually raised from seeds ripened in this country, some of them for 200 generations; yet have in no appreciable degree acquired hardiness, but the earliest frost destroys them now as formerly. Potatoes, long as they have been cultivated from seeds, are in no degree more hardy than those which are now brought to us from Peru and Mexico; indeed some garden Potatoes, imported in 1846 from Lima, and planted in November, stood the severity of the succeeding winter, when the thermometer fell to 3° Fahr., rather better than the English varieties which had been obtained from repeated seed-sowing during a century.

The following, then, are the limits, as they are well described in the pages quoted from, within which our powers over the relation between plants and the climate in which they can be grown are confined:—

"While these facts compel us to withhold assent to the doctrine of acclimatising by means of seed-sowing for many successive generations, it by no means follows that therefore no other plants can be cultivated advantageously in the fields of this country, than those which now are found there. Although the constitution of plants may not itself be capable of much change, climate may certainly be improved within certain limits by raising the temperature of the soil, and removing superfluous moisture.

"The mere presence of superfluous water acts disadvantageously upon all plants, by causing them to form succulent spongy shoots, which, in the case of annuals, refuse to flower, and, in woody plants, never ripen before winter, and thus remain extremely susceptible of cold. Nothing is more certain than that plants which ripen their shoots late or imperfectly, suffer far more from a winter's cold than those in the opposite state; and hence it is that so little injury is sustained by exotic plants after a hot summer, however severe the following winter may become. A dry soil, in which no superfluous water remains, is therefore best adapted for tender plants, on that account alone: but it also acts beneficially because of its higher temperature. It is a great mistake to suppose that plants are affected only by the temperature of the air: they are perhaps more affected by that of the soil in which their roots are placed; and there can be no doubt that crops can bear with less inconvenience a warm soil and a cold air than a cold soil and a warm air. All experience shows this to be so. And it would even seem, that a small difference in the temperature of the soil, produces the most essentially different effects upon vegetation, even although it be healthy. Gardeners know, that although the common Nelumbium will grow in water at 65 or 70°, it will not flower and seed unless the temperature of the water rises to 85° or 90°, and yet the same temperature is prejudicial to kindred species. With ordinary field crops, a difference of a few degrees in the temperature of the soil causes a most material difference in the healthiness of vegetation, or the fitness of land for the cultivation of a given species. According to Mr. Ferguson's observations, the mean temperature of the soil near Edinburgh, at a foot below the surface, may be taken to be 52° during the summer months. But if it were to fall to 47° it is doubtful whether Wheat would ripen well, or at all.

"It is in this point of view that thorough drainage has a most important bearing upon the question of acclimatisation, because although it appears impossible to adapt the constitution of a plant to the unfitness of climate, it does by no means seem impossible to improve climate till it suits a crop which, in its unimproved condition, it would refuse to sustain."

—— A WEEK of magnificent weather has witnessed the accomplishment of a very great extent of harvest work in the Southern, Eastern, and Midland Counties. We hope that there are many among our readers who have borne in mind and will yet bear in mind the preservation of characteristic specimens in ear and grain of the various sorts of grain they have cultivated for exhibition at the Horticultural Society's October Show. The advertisement offers medals for the best collection of Wheats, (2) grown in any quarter, (29) grown in England, (30) grown in Scotland, (31) grown in Ireland—for the best sample (34) of white Wheat of any kind, for the best sample (35) of red Wheat of any kind—for the best collection (36) of Barley from any one quarter—for the best sample (38) of malting Barley—for the best collection (39) of Oats from any one quarter—for (41, 42, 43) black Oats, white Oats, and Rye.

The numbers given are those on the list of prizes offered for Cereals. The samples are to be "not less than a pint," and "both ear and sample are specially requested to be sent, but this is not imperative." We hope that a large collection of samples and varieties may be forthcoming. Among them we shall be glad to see samples of the produce of the Australian Wheat which we distributed during seed time; and if any of our correspondents can forward to us a report of their experience on this subject we shall be greatly obliged.

THE blights of Wheat are in themselves so interesting, and their importance so great in connection with our principal grain crop, that it is not to be wondered at that they should have been carefully studied by the naturalist. We know the species both of animals and plants which have been described under the term blight, but as all these species seldom occur together, we cannot but think that information brought up from year to year of the kinds or combinations of their attacks must ultimately lead to profitable results.

Among the affections of Wheat usually termed blight the following may be tabulated:—

VEGETABLE BLIGHTS.

1. *Cladosporium herbarum.*—Ear mildew.
2. *Puccinia graminis.*—Mildew of the leaves and stems.
3. *Uredo linearis.*—Red rust of leaves.
4. ,, *rubigo.*—Red rust of chaff and grains.
5. ,, *segetum.*—Smut.
6. ,, *caries.*—Bunt.

ANIMAL BLIGHTS.

7. *Cecidomyia tritici.*—Wheat midge.
8. *Butalis cerealella.*—The little corn-moth.
9. *Vibrio tritici.*—Wheat eel or purples.

1. Few who have looked into the Wheat fields of the present season but must have observed the frequent occurrence of dead straws and ears of corn, the latter containing at best a few very poor starved grains, but mostly without grain at all. On the chaff scale of such ears will be found a grayish looking mildew which the botanist has named *Cladosporium herbarum.* It is this year exceedingly abundant on cold clays, and especially in cases where some of the finer Wheats have been sown in an uncertain climate. We have lately seen a field on the Cotteswold Hills in which we should say that nearly one-fourth of the ears were affected in the manner described.

The evidence afforded by the unusual occurrence of this Fungus in deep soils is interesting, inasmuch as the positions in which we have previously observed it have been on light sandy soils, such as a seed-bed made from the new red sandstone or the silicious pebble drift of Worcestershire, but this year it has occurred mostly on clays, such as the Wealden clays, Oxford clays, Forest Marble clays, and Lias shales.

Now it appears to us that this season the affected plants were starved by the wet and cold, and general absence of sun, of the early spring and summer months, whilst the affection is observed on sands in seasons of drought. In both cases then the plants were killed from starvation; in the one from want of constitution, in the other from want of food. The Fungus then is not the cause of the mischief, but it has stepped in in its capacity of *scavenger* to appropriate the decaying elements of a plant which has been dead some time and is now undergoing decomposition.

2. Mildewed straw is by no means so abundant this season as we have heretofore observed it, a fact which we consider of great interest, for our experience leads to the inference that over feeding and too great luxuriance are much concerned in the production of *Puccinia graminis.* Our Wheats this year have hardly suffered, either from "winter pride" or the too bulky growth of leaf and straw which one ever observes on grain grown on a dung heap, where whatever the season mildew may always be found.

3 and 4. These species we think are often confounded under the name of the latter, but seeing that *Uredo linearis* (3) usually occurs "on the leaves and sheaths of corn and grasses," (Rev. M. J. Berkeley), and the *U. rubigo* (4) on the interior of the paleæ or chaff scales, and on the grain, and that this year the former is most abundant and the latter nearly absent, we must carefully keep them distinct.

The *U. linearis* is perhaps scarcely distinct from the Puccinia graminis, at least our own drawings show what we take to be a decided passage of the one into the other. The scarcity of this form, too, is coincident with that of the Puccinia, which seems to favour the view of their being connected.

The *U. rubigo* is the true red rust, and it is so common this year that scarcely a patch of Wheat, and more especially of the finer white kinds, or late sown examples, will be found to be free from it.

5. The *U. segetum* has been most active this year, but as usual to a greater extent in the Barley than in the Wheat crop. We have computed the loss by the blackened efflorescent ears in the Barley to the extent of 3 bushels to the acre, and we have seen many fields of Wheat nearly as much damaged.

6. The *U. caries* seems to be scarce this season, a fact of interest when we consider the difficulty of last season's Wheat-sowing, united with the coldness of spring. Still this pest seems now to be kept within moderate bounds by the use of sulphate of copper, arsenic, alkaline and other steeps.

7. The Wheat midge (*Cecidomyia tritici*) has been so destructive for the last two or three years, that every fact connected with its history ought to be of great interest. Curtis tells us that "In Scotland one-third of the crop was lost, and the farmers suffered severely in 1828 and the three following years," whilst "In Suffolk the yield of Wheat was one-third less in some districts in 1841 than was expected."

The presence or absence of this insect is so important as affecting the yield, that we now never fail to look for it in every crop upon which we would offer a judgment in this respect. It is easily detected in the larva state on opening some of the chaff scales of affected crops, as in the interior of these will be found some minute larvæ (maggots) of a bright yellow or orange colour. In the earlier period of the blossom these larvæ will be found about the stamens and pistils, later upon the grain, which is always shrivelled and lost where the attack has been made.

The colour of the maggots is so much like that of the red rust as often to be mistaken for it; the difference however between the bunches of minute granular Fungi, and living worms will be made apparent to the most careless observer by the assistance of a common pocket lens. We find two terms in use for these yellow appearances, namely red rust and red gum, and as we have so often found them employed indiscriminately we would restrict the former to the Fungus, thus:—

Uredo rubigo, red rust.

Cecidomyia tritici, red gum.

Our observations on the latter this year have chiefly been made in the counties of Sussex and Gloucester, in both of which we have seen this insidious enemy at work to an alarming extent—in the former county with a very limited extent of the red rust—in the latter the later and more delicate Wheats have both in the same crop, and the interest of the subject will be the more forcibly apprehended when we say that in some crops, which from a first glance at the straw and ears we should have put down as somewhere about 30 bushels per acre, we have after a more minute inspection of the ears estimated at less than 20 bushels; and indeed in one field which we have examined during the last week affected by the *Clodosporium*, *Uredo*, and *Cecidomyia*, there will scarcely be a yield in good grains of the amount of the seed sown.

8. *Butalis cerealella* is the name given to a small moth, the English of which is the Little Corn-moth. We have only this year made the acquaintance of this pest, but we have detected as many as half-a-dozen of the caterpillars in a single ear of Wheat. They do their mischief by eating out the flour of the grain in which the egg is laid, leaving simply the skin (bran) filled with the fattened worm surrounded by its excrement. This creature should be looked carefully after, as there is reason to believe that its attacks will increase. In all probability some of our smaller birds busy themselves about corn in search of these larvæ, and thus the entomological part of the subject, in so far as the farmer is concerned, will hardly be complete without the aid of the ornithologist. It is not, however, our object to enter into details concerning these creatures; we only now refer to it as a pest which we have found somewhat prevalent, and therefore likely to affect the corn yield of 1862, and upon which we shall hope for more information than as yet we have been able to collect.

9. *Vibrio tritici*, Wheat eel, was very prevalent in 1859; we have not seen it since. We should, however, expect to meet with it in poor cold districts. We take it for granted that our readers know the difference between the hard purple cockled grains of the Vibrio Wheat and those of the bunt which so readily crush under the finger. We would refer our readers to "CURTIS'S Farm Insects," p. 299, a work which should be in the hands of every intelligent farmer, for a copy of some drawings of the Wheat eel, &c., by F. BAUER, F.R.S.

And with this we conclude the present notice, in the hope that we shall have succeeded in exciting a greater degree of inquiry than heretofore into these interesting and useful subjects for the study of the agriculturist. *J. B.*

VARIETIES OF WHEAT.

Of the sorts known to English agriculture, we give a number of illustrations in the following columns. On their relative merits generally, the following remarks given in the Bath and West of England Agricultural Journal may be repeated here:—

Of the relative hardiness of sorts, as of their relative productiveness, there is difficulty in collating reports, arising out of the uncertainty of names; but it appears to be generally believed that red wheats are hardier than white, and that the rough-chaffed and the red-chaffed white are among the hardiest kinds of that colour. This they probably owe in some measure to the shortness of their straw, which hinders them from falling, where taller sorts would have been laid. This property they possess in common with the Fenton White, which is also highly spoken of. Mr. Blundell, of Bursledon, Southampton, reports thus of the ability of particular sorts of grain to cope with wet seasons:—

"It is generally admitted that the red varieties of Wheat are much less liable to sprout in a season like the past than the white sorts; but my experience, extending over a period of thirty-four years, enables me to say, that where the soil and climate is favourable, and the land in a good state of cultivation, the white Wheats pay best, and during the above-named period have not sprouted in the harvest field oftener than once in seven years; and I hold this to be an important point in the consideration of the subject, and I have thus never been deterred from sowing the best varieties of white Wheat upon farms where the soil and climate were favourable. Again, with regard to white Oats, the earliest sorts have the advantage in a wet season, being fit for the sickle fourteen days sooner than the ordinary black kinds—a matter of immense importance, when we find that all wet seasons are productive of late harvests, and the advantages of early cutting whilst the days are longest are obvious; and the same remark applies to the Wheat crop to a certain extent, as most of the white sorts are the earliest to ripen."

On this subject, Mr. Horswell, of Tavistock, also says:—

"The red-chaff kind among the white Wheats is the hardiest, but red Wheats bear wet weather better than white ones; any grain which when properly harvested weighs heaviest per bushel is the hardiest of the kind. Two kinds of red Wheat known in Devonshire by the names of 'Benjy' and 'Nursery' are of this description." Perhaps among the lessons of recent agricultural experience, I ought to name the increased growth of the April bearded red Wheat (Triticum æstivum), and the increased favour with which it is very generally regarded. Mr. Arkell, of Swindon, thus describes his experience of it:—

"I think my best crop of Wheat this year will be the Bearded April or Scotch Wheat; planted the 1st day of March, it stood the wet season well, and ripened kindly. I have grown it for many years, and have found it do best in moderately wet seasons."

1 Shirreff's Bearded Wheat. 2 Talavera. 3 Pringle's Bearded Wheat.

We now give a number of short descriptions of the sorts figured—for which let us here acknowledge our obligation to Messrs. Lawson, of Edinburgh, who kindly placed specimens at the disposal of Mr. Clarke, the artist by whom they have been drawn. No. 1 is an ear of Mr. Patrick Shirreff's new Bearded White Wheat, for which he has received the Highland Society's medal. It is one of several new Wheats, some of which are named farther on, for which we are indebted to Mr. Shirreff's patience in selection and perseverance in cultivation up from single ears, until a stock of sufficient quantity and of well-ascertained quality has been obtained. No. 1 resembles very much Pringle's White Bearded Wheat, represented at No. 3. It is difficult to distinguish the ears of the two sorts, but there is no

4 April Wheat. 5 Hallett's Pedigree Wheat. 6 Shirreff's Red Wheat.

difficulty in distinguishing their seeds. The grain of Shirreff's is short and rather small, white, transparent, and pearly looking. The grain of Pringle's is a little larger and longer than Shirreff's, shining and white with a rich creamy tinge. Both are new sorts of sufficiently well-ascertained merit to deserve representation here, but without a long established character such as other sorts possess.

No. 2 is the Talavera White Wheat, easily recognised by the distance between the sets of florets on the rachis of the ear. Col. le Couteur's Bellevue Talavera Wheat is one of our best sorts for spring sowing. It is a white Wheat of good quality, and sufficiently prolific. The straw, though short, is brittle; but it is stiff, and well adapted for cultivation on rich land.

No. 4 is another spring Wheat, a bearded red Wheat, commonly called April Wheat, from the time up to which it may be sown. It is a very productive sort, of fair quality; and justice is not done to it in the specimen selected for representation. It is referred to above as coming into more general adoption. This is especially the case on the chalky land of some of the southern counties.

No. 5 is Hallett's Pedigree Wheat, to which full reference has been already given in our pages.

No. 6 is Shirreff's Bearded Red, another sort due to Mr. Patrick Shirreff, of Haddington, who selected it about five years ago, and thus describes it. "It is an autumn variety, ripening early, tillering freely, not apt to lodge, and characterised by a long beard. This appendage seems to have been attached to the chaff of the original Wheat plant, as a great majority of the varieties over the globe are found to have beards. The strength and elasticity of the beard of this Wheat prevents the wind shedding the grains at the apex of the ear, and by admitting air into the sheaf, the sprouting of the grains is checked in wet seasons, and the hardening of them promoted in fine weather. Under no circumstances is the beard found to be injurious, and in the fickle climate of Britain it is highly advantageous."

In the figure containing these three sorts, No. 4 suffers by its neighbourhood to the fine ears of Hallett's and Shirreff's Wheats in Nos. 5 and 6. It is unquestionably inferior to either of them, for of Hallett's sort we have seen ears eight inches long, and containing 120 grains. The April Wheat shown on this figure appears to us, however, of less vigorous growth, not so bold, nor of such breadth of ear as it generally exhibits.

No. 7 is the common red Lammas Wheat, the original of a great many other sorts, most of which are barely distinguishable from it. Mr. Lawson describes it as having been originally from France. It yields grain of good quality and fair productiveness, and is probably at this moment more largely cultivated as a red Wheat than any other sort. Many sorts are hardly distinguishable from the red

Lammas except by name and local reputation. And as resembling it we may here name the so-called Nursery Wheat, a commonly cultivated sort of good quality.

No. 8 is the white Essex Wheat, of a white colour, transparent, and thin skinned; much approved by the miller; resembling many other kinds, as Uxbridge and Mungoswells (another of Mr. Shirreff's Wheats) in the form of its ear; somewhat long in straw, and not so early in ripening as some other kinds. These characteristics are taken from Lawson's account of it.

No. 9 is the Spalding Red Wheat, a coarse productive sort, strong and stiff strawed, and the original of a number of well-known sorts, among which we name Browick Red Wheat as one of the best. These are all tall, stiff-strawed Wheats, well adapted to the rich, fenny districts where they originated, of vigorous growth and productive. Spalding Wheat is said by Mr. Haxton to have often yielded eight quarters per acre in Fifeshire.

No. 10, Chiddam White Wheat, though represented in the drawing as almost equal in length and strength to the ear of Spalding, is rarely so long and fine. It is remarkable for the quality of its grain, which is white and starchy, round and heavy. It is well adapted to the lighter class of soils in the southern English counties, and is much cultivated on the chalk lands of Surrey.

The Mungoswells Wheat, No. 11, is another of Mr. Shirreff's sorts, resembling Hunter's in sample, but said to be somewhat earlier and to tiller more freely; but apparently not possessed of that fixity of character which has given Hunter's its reputation.

No. 12 is Hunter's, one of our oldest standard white Wheats, largely grown in Scotland, where it has been known for sixty or seventy years. In some of the earliest and most extensive comparisons of Wheats, Hunter's came out in quality and quantity together, with more per acre than any other kind, and while many of its rivals have possessed but a short-lived reputation, it retains the character with which it started. The following description of it is by Mr. Hope, of Fenton Barns:—

"It is a white Wheat, though in some seasons many of the grains are very high coloured, clear, and flinty, which might make those unacquainted with it imagine it was mixed with red. The straw is of moderate length, the ear medium-sized, the chaff smooth and thin, but with a short sharp awn, and the pickles are neither too closely nor too widely set. It possesses a hardy constitution, withstands well the winter's frost, tillers freely in spring, and is as little liable to disease as any variety I am acquainted with. For more than a dozen of years it formed the standard by which I tried all other varieties, and it still continues unquestionably the favourite Wheat with the great majority of farmers in the Lothians. I have tried against Hunter's various English Wheats, such as Taunton Dean, Tall Cluster and Dwarf Cluster, Kent White, and other varieties without any distinctive name; but though they sometimes grew of much finer quality the first year after they were imported, they rarely yielded so much grain, and always rapidly deteriorated. The Chiddam and Pearl Wheats, though fine in quality, never yielded within a quarter per acre as compared with Hunter's."

No. 13 is Hopetoun Wheat, a variety originated by Mr. Shirreff, of Haddington. It possesses a stiff, tall straw, a long ear, and is a productive sort, of good quality, perhaps not quite so hardy as some other kinds. It is a smooth chaffed white Wheat, and has a magnificent appearance when growing, and consequently

7 Lammas. 8 Essex. 9 Spalding. 10 Chiddam.

sometimes disappoints sanguine growers. It has been extensively sown both in Scotland and England, and does not appear to be losing favour.

No. 14 is an ear of Fenton White Wheat.

About eleven years ago a plant of Wheat bearing three ears on a remarkably stiff and short straw was pulled by Mr. George Hope, of Fenton Barns, E. Lothian, out of a quarry in his farm, on the débris of which it had accidentally grown. The grains which these ears contained on being sown for a few successive years produced enough to seed a field; and as the Wheat retained during that time the characters which distinguished it at first, Mr. Hope sent it into the market as a new variety, and the Fenton White Wheat accordingly is now known in every part of the country. It is characterized by a moderately large ear of even shape, on a straw not only remarkably short, but remarkably various in length. The consequence of this latter peculiarity is that its yield of grain generally exceeds the

11 Mungoswells. 12 Hunter's. 13 Hopetoun. 14 Fenton.

expectation formed of it by those who see it before harvest for the first time. Its performance has always exceeded its promise during the years that I have known it. This abundant yield is no doubt the result of the distribution of the ears through various heights above the land; there is not that crowding of them which there would be if they stood all on one level. And this one sort accordingly exhibits in itself a result which can be obtained in other cases only by mixing two or three sorts together which grow straw of various lengths. This illustrates the result of experiments in France and elsewhere on the productiveness of different grains as compared with that of a mixture of them all.

There can be no doubt that the productiveness of a crop is due, among other things, to the use it can make of air and sunshine; and many sorts of Wheat, the ears of which when mixed shall grow at different levels above the land will, just as Fenton Wheat is found to do, yield all the more abundantly from this one cause. And the practice which seems to be increasing, of using mixed Wheats for seed, may receive its justification in this way.

The Fenton Wheat has been described by Mr. Hope, who says:—"I think the heads of the Fenton Wheat are larger than the Hunter's and that it comes into ear a few days earlier; the grains, also, are rather more closely set; the straw is much firmer and shorter, and with the peculiarity of being different lengths from the same stem, which causes the sheaf to be a mass of heads, from the band upwards. It should be cut when the grains are soft, otherwise the appearance of the sample is impaired; but when cut green it has the clear and flinty look characteristic of Hunter's, so that it is scarcely possible to tell the one sample from the other. I confess the quality is more easily affected by the weather than some other kinds, as, when stacked damp, the grain gets dull and dingy. It is, however, by far the most prolific white Wheat that I ever tried, whether sown in autumn or spring. It is far from being a great crop in appearance; judging it when growing, or even after it is cut, you are apt to think little of it, and it is rarely that you feel satisfied, or that its superiority is manifested until it is put into the sacks. The weight of straw per acre is frequently as great as that of crops a foot taller. I have found from several experiments that the weight of the straw averages about one-fourth more than the weight of the grain, which is just about the ordinary proportion of other kinds of Wheat. What I esteem its chief qualification is its strength of straw; if *it* is lodged, most other kinds would be useless. It is, therefore, well adapted for high farming, which is happily now the order of the day, most farmers having discovered, that if manure is dear, land is still dearer, with its accompanying expenses. Six years ago, I sowed a 24 acre field, one half Hunter's Wheat, and the other half Fenton; the difference in favour of Fenton was fully two quarters an acre, from Hunter's being completely laid; since then I have entirely confined myself to the growing of Fenton, except an occasional acre or two of any new well recommended variety."

Besides the kinds thus named, we have among red Wheats Hickling's Prolific, Golden Drop, Kentish High Back—the two last resembling the Nursery Wheat, and the Blood-red Wheat—a long and stout-strawed, large-eared kind. Piper's thick-set Wheat is another red sort, easily recognised by its very short straw and close-set stout ear. Clover's red is of vigorous growth, straw long but thick, so that it is not likely to fall. It is a Cambridgeshire Wheat, and is there being preferred to the Burwell Red, a variety of the Golden Drop class.

Among white Wheats, again, the Velvet-eared (No. 17), a short-strawed sort, is of

remarkable quality and productiveness, and very extensively grown. Morton's red straw Wheat the best of a great number compared by Mr. John Morton, of Whitfield Farm, Gloucestershire, long cultivated there, and extensively grown elsewhere, a large and heavy grain of good quality, and characterised especially by a red-coloured straw, which becomes yellow on being dead ripe. The "Eclipse," a very long-eared sort, was another kind marked out as good by Mr. Morton's experiments, which were reported in the first volume of the English Agricultural Society's Journal.

In the figure we have, besides No. 17, the Velvet-eared White Wheat, one of our best sorts as regards quality of grain, two bearded Wheats of a coarser description of grain. The Cone or Rivet Wheat (No. 15—not a very characteristic ear) is a very productive, but coarse sort. The ears hang as they become ripe and lose their awns. It is later than other kinds and not extensively grown. It is, however, often chosen by allotment cultivators and cottagers, to whom a large brown loaf is of more consequence than a smaller white one.

No. 16, Egyptian Wheat, though strongly recommended by some writers as a productive sort, does not gain way in ordinary agriculture. The appearance of its ears would lead one to believe its productiveness per acre.

On the fixity of characters possessed by these varieties of Wheat, we quote the following remarks from Mr. Shirreff, whose name has been already often referred to. He speaks thus of the failures of attempts to alter the character of varieties:—

"In illustrating this it may be mentioned that a few seeds of the Fern or April Wheat, which is a summer variety, and a few seeds of two of my new bearded autumnal varieties, were put into the ground on March 15th, April 15th, and May 15th. The March seeding put forth ears and ripened in the usual way. In the case of seeding in April the summer variety eared well, while only two puny ears came forth from the autumn Wheats, the remainder being a tuft of leaves. With the May seeding the summer Wheat eared with rapidity, while the autumn varieties contained a cluster of Grass and did not ear until the following season. The non earing of autumn varieties when sown late in spring may be held to be the chief distinction between spring and autumn Wheats, and I have witnessed the non-earing alluded to in different parts of the world, and witnessed the loss of crops by the one kind of Wheat having been sown instead of the other. These two Wheats are so distinct in their natures that I believe human power cannot impart the earing habit to an autumn variety, and vice versâ. But while advocating the stability of the varieties of the Wheat plant, I have lately had satisfactory evidence of more than two kinds arising from the seeds of one ear. Such a result is to me both new and unexpected; and while announcing the fact no remark shall be hazarded without further experience. New varieties do most certainly arise from time to time, and are known as sports which have baffled investigation. The appearing of a new kind does not, however, materially affect the question of the stability of well-defined varieties, because both the old and new remain distinct, and it is only the addition of another sort without the old one being altered.

"The ear of the Wheat plant is presented in endless colours, textures, and forms. The chaff is the cradle and the clothing of the grain. The red and white, the thick and the thin, the rough and the smooth, and the bearded and the bald chaffs may all have admirers. But this diversity forms no guide whatever to the quantity and quality of the seeds. The notches on the ear also differ materially, and there is a popular and perhaps mistaken dislike to the notches being far apart. Viewing the process of evaporation, the lodging of the crop, and the beating or threshing of it by wind, a close-set or club shaped ear is manifestly disadvantageous. Provided the ear has a sufficient number of notches, perhaps the wider they are apart the better.

The beard or awn which characterizes some varieties of Wheat has also been the subject of popular and mistaken dislike, which doubtless arose from the Rivet Wheats having long been the only cultivated varieties with beards. But the Rivets are peculiar, having pith in the straw, a pendulous ear, and flour so coarse as to be chiefly used for dusting purposes. The beards also often disappear on the crop reaching maturity, in consequence of the pendulous ear swinging and rubbing on the elastic stalk. With other Wheats the case is different; the ears being upright and the beards projecting at an angle, form a strong spring, which is a considerable protection against wind, and is also the means of admitting air into the sheaf. In several places during the present season the effect of the beard lessening injury by wind was witnessed, and last year its drying property by admitting air made a difference of 9*s*. a quarter on the first day of new Wheat being exposed in the market of this place. While I am aware that the chaff and beards have no relation to the grain, it may be mentioned as a singular coincidence that on examining the grain of the present crop of a collection numbering about 150 kinds of British Wheat, excluding Rivets and curiosities, in every class the bearded varieties were found to have the finest quality of grain." *From Morton's Farmers' Calendar.*

Rivet. Egyptian. Velvet-eared.

THE SMALLPOX IN SHEEP.

At Allington, near Devizes, in the heart of Wiltshire, in the valley between Salisbury Plain and the Marlborough Downs, a malignant disease has broken out in a flock of sheep feeding for the market. The first outbreak was horrible in its symptoms, and very destructive. Hundreds perished. However, it was discovered to be smallpox, which sounds bad enough, but admits of ordinary treatment. The sick or suspected sheep were separated, and medically treated. The sound ones were inoculated, with comparative success. The actual loss has been reduced within moderate limits. But these precautions have not prevented the disease flying, nobody knows how, a mile or two, over a sound flock, to another with which there was no communication. It is only concluded that almost anything will carry the contagion—a dog, a shepherd, the wind, and certainly travelling over the road recently trodden by a diseased flock. Under such circumstances, if Wiltshire were in France, the Prefect of Salisbury or the Mayor of Devizes would immediately draw a cordon round the infected district, leaving the unhappy graziers to settle with their landlords for the payment of the Michaelmas rent as well as they are able.

An occasion, however, approaches which may possibly prove, in its results, that the system of non-interference has its disadvantages. In a few weeks some hundred thousand sheep will be assembled from Dorset, Hants, and Wilts, at the great annual fairs at Wilton, Weyhill, and Appleshaw. On these occasions the flocks of sheep are passing along the same roads in uninterrupted succession for hours and days, as everybody knows to his cost who happens to be driving or riding either with or against the stream. The surface of the hardest and smoothest road is picked up by the sharp feet of the silent, but brisk little travellers. For the night they occupy meadows, orchards, and churchyards, which they reduce in a few hours to the texture of a worn-out and faded Turkey carpet. As each meadow can only endure such a visitation once a year, it is not likely to communicate the contagion; but the foremost sheep of each flock are always busily employed in snatching what they can from the roadside, falling to the rear, when others take their place. Thus 50 flocks, numbering perhaps 30,000 sheep, will pass over the same road, the same turf, and the same banks in one day. Of course they drink at the same water. At the three fairs mentioned above they have to pass through one another to their pens; they remain for a day, or several days, in immediate contiguity, they are very closely packed, and must be continually breathing one another's breath. No doubt, too, as the fairs last several days, different flocks occupy the same pens in succession, rub against the same hurdles, and fall into the care of the same drovers and dogs. From these fairs the sheep pass onwards to Berks, Kent, Surrey, and Middlesex, and are spread over these and the adjacent counties. There can hardly be imagined circumstances more likely to convey, to communicate, to vivify, and to spread contagion. Yet it seems nothing can be done to prevent it. The most central road of Wiltshire, that from Devizes to Appleshaw and Weyhill, passes through the infected district. It is not to be expected that graziers, under existing circumstances, should be less anxious to part with their sheep than usual; and there seems almost a certainty that in the long columns of sheep which in a few weeks will be traversing this and the other roads converging on Weyhill there will be infected flocks.

Should the disease be really spread in this way in the metropolitan counties, it cannot but suggest some grave doubts as to our let-alone system. Nobody will be to blame, for every one will, of course, consult his own interest, and there are no authorities with competent power. Parliament has not been unwilling to grant special powers for special purposes, and no doubt if it were sitting now and if the danger could be proved, it would do something. There is an Act making it punishable to put a glandered horse into a market or a public stable; and some time since, when it was supposed that foreign cattle were introducing all kinds of diseases, an Act was passed, we believe, to empower an examination. But we are not aware of any power in the hands of our country magistrates to prevent diseased or suspected flocks from leaving a farm, travelling on a public road, and going to a fair. If there be any such power, now is the time to exercise it, if on inquiry the disease should be found spreading. We believe, however, there is no such power. This deficiency in our institutions is one of the penalties we pay for self-government, which, in many instances, means nothing but the want of any government whatever. *The Times.*

[The extension of the disease which is here alluded to has occurred not on the next farm to the originally infected flock, but at Etchelhampton on the farm of Mr. Harding, a mile and a half from Allington where Mr. Parry's flock had been attacked. By Prof. Simonds' advice the whole of Mr. Harding's flock have been now inoculated:—

"The medicines which have been used in the case of the Allington flock have been very simple, consisting chiefly of nitrate of potass, mingled with the water which is placed in the troughs, untill a subsidence of the fever takes place, after which sulphate of iron has been substituted. Where diarrhœa has come on—as it not unfrequently does in the latter stage of the malady, more particularly if the pox becomes confluent—opium is recommended as a valuable agent to arrest the attack, which, if not quickly stopped, very soon carries off the sheep.

"Nearly three weeks have now elapsed since Mr. Parry's flock were inoculated, and it is worthy of remark that out of 446 ewes in which the disease was thus artificially, as it were, produced, he has lost only 4; whilst of those which took the disease naturally the losses have already been 60 per cent., and there are numbers of other sheep of whose recovery there is little hope; indeed the total loss of those which have taken the disease in a natural way Mr. Parry estimates will not be much short of 65 per cent.: putting this therefore in contrast with the results after inoculation—which, under the most favourable circumstances, are not expected to average a mortality of more than 5 per cent.—the desirableness of inoculation immediately upon the appearance of the disease in a flock, is placed beyond doubt.

"We fear that the deaths in the Allington flock up to the present time cannot be reckoned at less than 400; but as the lambs were not inoculated for at least a week after the older portion of the flock, it is impossible to say what the ultimate result will be. One thing, however, is already apparent—that the lambs which are sickening are by no means so seriously affected as those which took the disease naturally, and there seems every reason to hope that the rate of mortality will be light even among this portion of the flock, although young sheep are, as a rule, always more susceptible to the influence of the disease than those of older growth."

Unfortunately we understand the powers of Mr. Labouchere's Act have expired, and Sir J. T. Tyrell

writes to the *Times* that there is a wretched controversy going on as to whether it is the duty of the Board of Trade or Home Office to revive the precautions enforced on the occasion of the last attack of the disease.]

MANUFACTURED CATTLE FOODS.

I should not have attempted to introduce the subject of concentrated or manufactured food, but from knowing that multitudes of the poor who keep a horse, cow, or pig, are paying a most outrageously high price for a material of less value than the ordinary food consumed by the animals, and that it is the duty of every one who has an opportunity to expose such a commercial bubble as drawing out of the pockets of the ignorant not less than 70 to 80 per cent. more than its cost prices. The worst feature in this new trade is that the imposition falls upon those who are least able to bear it. The intelligent agriculturist cannot be so gulled for any length of time, because he reads of, and inquires into, the article, which is costing him from 40*l.* to 50*l.* per ton, and the chemical analysis of the food at once tells him whether he is getting a reasonable value for his money. The following is a list of the articles used in one of the most celebrated manufactured foods; and as it so clearly shows the enormous profits of those who use it, I give it in full :—

Composition of Manufactured Food.

	Ordinary Price of Articles used.				Quantity of each in a Ton Weight.			Cost Price of a Ton to the Manufacturer.		
	£	s.	d.		Cwt.	qr.	lb.	£	s.	d.
Locust Beans finely powdered ..	6	0	0	per ton	6	0	0	1	16	0
Indian Corn, do. ..	7	0	0	"	9	0	0	3	3	0
Linseed cake, do. ..	10	0	0	"	3	0	0	1	10	0
Powdered Turmeric ..	0	0	6	per lb.	0	0	40	1	0	0
Sulphur	0	0	1½	"	0	0	40	0	5	0
Saltpetre	0	0	4½	"	0	0	20	0	7	0
Liquorice	0	0	10	"	0	0	27	1	2	6
Ginger	0	0	3	"	0	0	3	0	1	6
Aniseed	0	0	8	"	0	0	4	0	2	8
Coriander	0	0	8	"	0	0	10	0	6	8
Gentian	0	0	7	"	0	0	10	0	5	10
Cream Tartar	0	1	3	"	0	0	2	0	2	6
Carbonate Soda ..	0	0	4	"	0	0	6	0	2	0
Black Antimony ..	0	0	6	"	0	0	6	0	3	0
Common Salt	0	0	0¼	"	0	0	30	0	0	8
Peruvian Bark	0	3	0	"	0	0	1	0	12	0
Fenugreek (Trefoil) ..	0	7	0	"	0	0	22	0	12	10
					20	0	0	11	13	8

Voelcker, in speaking of this food in one of his reports says, "Independently of the slight colouring with Turmeric and flavouring with Liquorice, Coriander, Gentian, Ginger, &c., and the medicinal compounds as before set forth, the main bulk of these foods is composed of the Carob Bean, Indian Corn, and Linseed cake. These form 9-10ths of its substance, and it is worthy of note that of these by far the most valuable, in point of both price and feeding properties, is Linseed-cake, and this is used in the smallest proportion. If, however, the farmer chooses to pay three or four times as much as the intrinsic value of the article, it is, of course, at his option to do so; but, inasmuch as the main object of farming is a remunerative profit, it passes my comprehension to understand how that object can be gained by feeding animals on substances that cost from 40*l.* to 50*l.* per ton. The above ingredients, throwing aside the flavouring compounds, give, upon analysis, the following results :—

Water	13.01
Flesh forming substances ..	14.97
Fatty matters	5.78
Starch, sugar, &c.	54.40
Indigestible woody fibre ..	6.25
Mineral matter	5.59
	100.00

Such a mixture as the one represented by the foregoing analysis could be made by a mixture of Barley-meal, Beans, and oil-cake, at less than one-fourth of the price charged for the before-mentioned food. I am inclined to think their constant use is very questionable, and very likely to be productive of harm." It is true some of these men spend 12,000*l.* per year in advertising their foods, and, doubtless, many other incidental expenses help to detract from their enormous profits; but what astonishes me most are the elaborately and ingeniously written articles, highly recommending the use of these foods. We know that all animals live upon, or are fed by, various compounded substances or "proximate principles," which vegetables prepare, by combining and arranging, through their wonderful organism, the elements which they find in the earth and air. The principal flesh-forming compounds are fibrine, caseine, gluten, albumen, with fatty matters, starch, sugar, &c. We know, also, the elements of which these compounds are composed, but to form even one of them out of the simple elements is utterly beyond the power of man. If this is true, it is clear that no manufactured food can contain, weight for weight, more flesh-forming material than a mixture of ground Beans, Peas, and Linseed-cake. Since this fact has been proved, the vendors of these manufactured foods have applied a new term, and now style them condimental foods; and doubtless this is their proper name. The question then, for agriculturists to decide is—Do animals in a perfect state of health require condiments? My experience tells me that they do not; and by constant use they would destroy the only advantage that would be gained by them when animals are out of health. Thus, if you had a quantity of stock, young or old, who, from imperfect digestion, were not thriving so well as might be expected from the quantity of food taken, then condiments might be beneficial as a medicinal agent, by invigorating the system, and enabling the animal to digest a larger amount of food more perfectly and in a shorter space of time than without them, but by constant habituation, this good effect would be destroyed. But why incur the needless expense of this food when an equally efficient tonic and stomachic in the shape of a little salt, gentian, ginger, and carraway seeds is within your reach, and at infinitely less expense? But as direct evidence is more satisfactory than theoretical knowledge, I shall briefly quote the results and conclusions of one of our most scientific farmers, Mr. Lawes, of Rothamstead, who has experimented largely with condimental food. That gentleman says :—"My own experiments have been conducted with the greatest care, and without the slightest prejudice against condiments, and the result is, that giving cattle condiments leads to a great increase in the consumption of food, without a corresponding increase in the making of flesh." He further says, "that if the condiments had been given him for the cattle, it would have been better not to use them, as those eating it eat a greater amount of weight of food for a given weight of flesh than those not getting it." These statements he illustrated by conclusive experiments which, for want of time, I forbear to mention. Such a statement, from such a man, is of no little importance; and I consider that British agriculturists are deeply indebted to Mr. Lawes for the trouble he has taken in exposing one of the greatest bubbles which has gulled the public for the last few years. Doubtless, Mr. Lawes knew the important physiological fact, that it does not necessarily follow that, because an animal eats more food, he must lay on a proportionate quantity of flesh. You may, by the use of stomachics and tonics, create the desire to eat, but you cannot compel the system to assimilate all the nutriment you are sometimes disposed to give. Having noticed the leading features of digestion, and the principal articles of provender for the lower animals, I shall conclude my paper by a few further observations on the feeding and working of horses, more particularly those employed in pits. The kind and quantity of the food given should invariably be regulated by the amount of labour the animal has to perform. We know that the muscles of animals cannot be used as a locomotive power without being themselves consumed, and at every contraction of a muscle waste of muscular fibre takes place, and heat is developed, and the more violent the contraction the greater the waste of their substance, which must be replaced by the plastic material of the blood, or loss of bulk and leanness follows. It does not follow, however, that you must necessarily have assimilation carried on to the same extent as the waste of the tissues, because you give the animal all the food he can eat. If the weight he has to move is beyond his strength, the pace he has to travel faster than his constitution and breed justifies, and the length of hours greater under such circumstances than is reasonable, you produce such a depressed condition of the nervous system that healthy assimilation does not take place equal to the waste which is going on in the muscles, and your horses must lose flesh, not because they do not get sufficient food to eat, for I have seen places where the work has been so enormous that, although the horses were getting two bolls of good Scotch Oats per week, and as much good hay as they could eat, so emaciated were they as to be unable to stand a 12 hours' shift. As soon as you depress the nervous system below a certain standard by excessive labour, healthy digestion is arrested, and impure chyle is formed; nature cannot convert it into good blood, and when the plastic lymph is carried by the blood-vessels to all parts of the body for its nourishment and support, the system is not able to appropriate it in quantities equal to the enormous waste. The consequence of this false economy is the loss of a very large number of valuable animals, certainly 90 per cent. over the average, where a reasonable amount of work only is permitted, by which I mean a single shift of from 12 to 14 hours. Again, take a large stud of horses, and you will find that in the lower animals, as well as in man, some will have weaker constitutions than others, some will require a much larger supply of food, although not doing more work. Then comes the aged part of the stud, horses from 12 to 20 years old, which require much more food for the amount of work they do than younger animals. Conformation of body and temperament has also much to do with feeding horses, the quiet, docile-tempered animal with good broad chest, short legs, close coupled and broad quarters, will, upon an average, cost 2*s.* 6*d.* per week less for provender, while doing equal work with a horse of the opposite build. I wish to impress these facts upon your notice, because very much depends on these as to whether your whole stud is in equal satisfactory condition, or only a part of them; and much of the advantages gained in feeding depends upon good trustworthy horsekeepers, who will feed your animals as instructed; and whilst a careless fellow will have some animals in his stable as fat as a Baker Street show beast, others in his stable will more resemble Bewick's celebrated old mare; and yet at many collieries, a good man is so little appreciated that some old wasteman, who is past work, is put to horsekeeping, as a canny job for an old man—to do what? To feed and look after some 16 or 18 valuable horses, a money value of [illegible], or some of the most precarious and most difficult stock on the whole colliery, requiring an active, industrious, sober, sensible man to manage them. This false system of horsekeeping is only paralleled by the injudicious plan of over-working them, and especially new young animals, most of which are bought from dealers, with only just sufficient muscle to keep their bones together. And yet they are frequently put down the pit to work within a week, even when only three years old, and being put on to rich keep, which their systems cannot assimilate, their whole frame is deranged, and disease follows as a consequence—in most cases common distemper—which rapidly spreads to dozens of others, costing ten times more than the keep of a proper stock of animals to be drawn from when wanted. The hunting-field is not harder work, or more exhausting, than is the work in most pits; and yet the very men who would sanction the putting of animals in such condition to work, may be and often are accustomed to ride across country, and who would scarcely give the man credit for being sane, if he proposed that he should ride his horse, just out of a Grass-field, and wretchedly poor, for an hour's gallop with a pack of fox hounds. Why this difference? because, when his horse had gone for 20 minutes, he would see that the animal was all but exhausted; in the pit animal, the probability is he would not see, and therefore not know, but the results would be the same in both cases. I need not, however, confine my remarks to the hunting field. Let it be any other violent exercise, where the voluntary muscles of the body are the organs required, and the result must ever be the same. If an Oxford or a Cambridge man is going to row a match on the Thames, or if the pedestrian is going to run his 10-mile match, they would never for a single moment think of doing either the one or the other, without first training the muscular system, by long and similar exercise, taking only the most nutritious kind of food during the training. There is no other possible way of bringing the muscular structures of an animal's body in a condition for successive labour. Constant action of the muscles for several hours every day is essential for their full development. How is it, then, we may ask, that as a rule the owners of the large establishments of horses in the north of England act diametrically opposite to those laws of nature? There can be only one answer; they do not think about it, otherwise it would not be allowed to take place. I have not thought it necessary to speak more about the system of feeding as carried out at the South Hetton collieries, as the principles of that system were fully explained in my last paper: but I may, in conclusion, add the results of that plan, for six months, at the Backworth and West Cramlington collieries under the management of T. G. Hurst, Esq., where the South Hetton plan of feeding was commenced on the 1st July, 1861.

First half of 1861, ending June 30.	Second half-year, ending December 31, 1861.
The cost of each horse with the old plan of feeding, for six months, was 21*l.* 11*s.* 7*d.*, or 43*l.* 3*s.* 2*d.* per horse per annum.	The cost of each horse, with the South Hetton plan of feeding, for six months, was 18*l.* 9*s.* 2*d.*, or 36*l.* 18*s.* 4*d.* per horse per annum, or with 113 horses, to 705*l.* a-year.

Mr. Hunting, of South Hetton Collieries, before the Newcastle Farmers' Club.

PERUVIAN GUANO.

When the rise in price was announced, some assumed that the deposits on the Chincha Islands were nearly exhausted, and that the agents for the sale of the guano had acted wisely for all parties interested, in advancing the price, as with restricted supplies the interests of the bondholders as well as that of the Peruvian Government would be best secured by charging such a price as would realise a sum at least equal to that obtained from the sale of a more restricted quantity. Reports drawn up by parties who had visited the islands, stated that the deposits were in some places of the main island so reduced that the whole would be removed within a very limited period, and that recourse would require to be had to the inferior surface guanos which had hitherto been only sparingly shipped.

It appears, however, that the agents do not contemplate any diminution in the supplies for some years, or in the demand for the guano, as another Peruvian Loan has been announced last Thursday for the large sum of 5,500,000*l.* This loan represents the profits on the sale of nearly one million of tons of guano. The following appeared lately in the *Times*.

"PERUVIAN LOAN, 5,500,000*l.*

"Messrs. Heywoods, Kennards, & Co. beg to give notice that they have been authorised by his Excellency Senor Don Mariano Jose Sanz, Minister Plenipotentiary from the Republic of Peru to the Court of Her Britannic Majesty, to receive subscriptions for the above loan.

"The interest will be at the rate of 4½ per cent. per annum, payable half yearly on the 1st day of January and 1st day of July in each year, and will commence from the 1st of July, 1862, and will be paid as heretofore by Messrs. Anthony Gibbs & Sons.

"The sinking fund is fixed at 8 per cent. per annum, 4 per cent. to be applied each half year, the first application to be

... the 1st of January, 1863, and is accumulative—that is ... the interest on all bonds bought up by the action of ... sinking fund will be applied in further reduction of ... existing bonds:—

The price is 93l. for every 100l. of stock, and is payable as ...

... per cent. on application; 8 per cent. on allotment; ... per cent. on the 17th of September; 20 per cent. on the ... October: 20 per cent. on the 14th of November; 10 per ... on the 12th of December; and 10 per cent. on the 22d of December—total, 93l.

... and-a-half per cent. will be allowed on all cash payments in advance.

... receiving the existing bonds in part payment will ... absorb them, and will thus release the guano now ... pledged to them.

... addition to the general pledge of all the revenues of ... there is given as security for the due fulfilment of the ... engagements entered into by the Peruvian Government a ... hypothecation of the whole of the guano imported into ... Britain and her colonies, and also of that imported into ... Kingdom of Belgium.

... nature of the security will be best understood by the ... of the subjoined copy of an official letter from Messrs. ... Gibbs & Sons, the consignees of the guano, and ... agents of the Government:—

... the average sales of guano at 154,000 tons per annum, and the profit at an average of only ... per ton, the produce in cash is		£924,000
... of average sales in Belgium—say, 45,000 tons, at 6l. .. .. (... last year amounted to 52,000 tons)		270,000
		£1,194,000
Interest, 4½ per cent. on 5,500,000 =	£247,500	
Sinking fund, 8 per cent.	440,000	
		687,500
Leaving as surplus at disposal of Peruvian Government .. .. :		£506,500

"The bonds will be of a similar character to the existing ... with coupons attached, and will have all the beneficial ... that they contain."

Assuming that the consumptive demand for Peruvian guano ... continue the same as the amount stated by Messrs. ... Gibbs & Sons—viz., 199,000 tons annually imported ... Great Britain and her colonies, and also of that imported ... the Kingdom of Belgium—this quantity, independent of ... amount imported into France, Spain, Holland, &c., ... is a very large quantity available for shipment. As ... the guano imported into British and Belgium possessions ... be hypothecated, it is evident that the supplies are so ... as to be more than sufficient to meet the demands. ... calculations of the agents are to be taken as quite ..., it is to be inferred that the quantity of guano in the ... Islands still available to meet the European demand ... to something like 3,000,000 of tons. Whether ... remaining portions of the deposits on the islands ... equal in quality to the guano which has been brought to this county during the last 15 years may be open to question, as some of the more recent imports have been very variable in quality—some cargoes being above the average as regards the constituents yielding ammonia, while ... cargoes have been found to be very deficient in the percentage of ammonia, with large percentages of sand. It is very important, too, for purchasers to ascertain if it is now necessary to purchase by a guaranteed analysis. If this is refused, will it be essential to have an analysis of a sample taken from the bulk before a bargain is concluded? The confidence hitherto reposed in Peruvian guano, as regards its uniformity, has been shaken to a certain extent, and every case published of inferiority will farther weaken the belief that guano is so uniform in quality that it can always be depended upon for producing a crop. Apart, however, from the question of uniformity, there are other questions demanding the most serious consideration of farmers. If it is assumed that the recent advance in the price is ... maintained, which the holders of the bonds about to be issued might insist upon, is the guano at the increased price the cheapest fertiliser in the market? At the original price of ... 5s. per ton, it was established by numerous experiments ... it was a cheap fertiliser. With an advance in the price of about 50 per cent., can it still be applied to the same extent ... to the same crops with a profit? If this latter point is ... by the demand steadily increasing or even continuing ... same, will another advance in price not be insisted upon ... the agents acting for the Peruvian Government as soon as a ... opportunity arises for demanding another 20s. per ton ... ground guano?

It is for farmers to consider how far it is for their interests to purchase Peruvian guano to the same extent as they have ... hitherto. Those who purchase annually from 50 to 100 ... of guano have the subject pressed upon their attention by the increased sum so expended; and it is certainly the province of agricultural associations to induce members to ascertain, by experiment or otherwise, if other fertililisers cannot be substituted in whole or in part for Peruvian guano. *North British Agriculturist.*

Home Correspondence.

Automatic Sheaf Delivering Reaper.—In answer to the numerous inquiries made as to where and when my Automatic Sheaf Delivering Reaping Machine may be seen in operation, this is to say (in addition to previous notices) that it has been regularly entered for competition at the annual Lancashire trial, to take place on the 30th inst., and also at the annual trial of reapers to be made by the Farmers' Club in Northumberland, the day not yet known. It will be exhibited at the postponed trial of reaping machines at York, if arrangements can be made to do so after notice of the day fixed for it—having arrived in England too late for regular entry there; and an exhibition of it may be made in the county of Norfolk about the middle of this week, of which, if so, notice will be given in the *Times*, and perhaps other daily papers. It is also expected that one of these machines will operate during the harvest on the estate of the Duke of Athol in Scotland. *C. H. McCormick, Fenton's Hotel, St. James's Street*, Aug. 25.

Occasional Drainage.—I do not comment upon Mr. Bailey Denton's remarks in your last Number for the purpose of questioning the correctness of his views respecting the (so-called) system of "occasional" drainage, for my own experience justifies me in confirming much of what that gentleman states upon the subject, although I think the term he uses (with due deference) by no means a happy one, and that it may have caused considerable misunderstanding as to what is really meant by it. But Mr. Denton appears to refer to the system as if it was one that was generally disregarded by other drainage engineers, and as if the "gridiron" system (another peculiar nickname) were indiscriminately adopted, even where the former system would prove equally effectual and most economical. I hope you will allow me to explain, through your columns, that the parallel system has not been, by any means, uniformly adhered to by drainage engineers, and I could easily prove, by a very large extent of works carried out under my Company in the course of the last 18 years, that a very considerable proportion of the land they have drained has been effectually done at very various widths in the same fields, and that frequently large areas have been sufficiently drained by single drains of adequate capacity. As I remarked in your pages several years ago, no general uniform system of land drainage can be laid down, and successfully pursued in all cases. Each different description of soil, subsoil, and geological formation, and all the other affecting circumstances, should be looked at and duly weighed in every respective case; and such plans adopted as enlightened experience may suggest to be at the same time the most efficient, durable, and economical. These features appear to me to be the most important to study, and that, relatively, in the order in which they are named. *G. Thompson, 30, Parliament Street, London, Aug. 25.*

Mildew and Rust.—As far as I am able, I reflect upon what I see, and this has compelled me to come to the conclusion that nine-tenths or 19-twentieths of the bad crops of Wheat that are so prevalent throughout the country, this and most other years, are occasioned by shallow ploughing, over-thick seeding, and by the poverty of the soil. But is not Providence to be blamed? Has it not been the unpropitious season? My kind farming friends, for heaven's sake drop those vain, ungrateful—nay, do pardon me, or if not, I care not—wicked excuses. The faults are in yourselves, yes, in yourselves; thoroughly drain, thoroughly cultivate, as I have advocated for the last 50 years, seed rationally, and keep your lands free from weeds, and in good heart, and seldom or never during your whole lives will you possess, or even see or hear of a failing crop. But, I almost think I hear thousands of voices vociferating: "Can we avoid smut in Wheat, or bladders, or rust?" Yes, my friends, you can prevent all these, but not by that worthless quackery you yearly practise of making and plunging your seeds into lotions, embrocations, &c. called wettings, but by superior cultivation, and that alone. Yes, do not stare so, and show so much passion: your lotions, embrocations, wettings, &c., are quackeries only, and a disgrace to the enlightened age in which we live. Why, my friends, it is not many years back since your forefathers employed old women to charm their seed for them, and which was equally as efficacious in preventing diseases to their crops as are your modern wettings to yours; and as it would be much cheaper, and almost instantaneously done, and as one poor old creature in her dotage would be able to charm at once seed enough for a whole neighbourhood, ay, for the whole of this kingdom, and of the world besides, my advice is that you leave off your wetting quackeries, and adopt the equally valuable and equally ancient custom of charming, and I assure you, my friends, you will save yourselves much useless trouble, and some expense, and I will guarantee that your crops shall be the better, free from all maladies—if also, as I have said, you thoroughly drain, thoroughly cultivate, seed rationally, and keep your land clean. *G. Wilkins, Wix Parsonage.*

The Smallpox in Sheep.—[The following letter has been addressed to the *Times*]. We are threatened with a serious blow to our agricultural interest; and I hope you will allow me through your columns to draw attention to the danger, and to point out some of the more obvious remedies. You have already brought before the public the outbreak of smallpox among the flock at Allington, in Wiltshire, which has already spread to one or more flocks in the vicinity. The disease is a rare one in England, and few of the farmers or dealers, whose chief talk is about it, have any idea what it means if it spreads and gets full head on these densely stocked sheep hills. I, who have seen it raging in less favoured climes, and can remember the ruin it worked, and the rapidity with which it extended itself, am surprised at the apathy shown here, where so large a property is at stake. In Australia, had such a disease broken out, the flock would at once have been destroyed and burnt; and in all human probability, the plague would have been stayed. I cannot see why such a course should not be adopted here, the county paying the value, which will be saved a hundredfold if the neighbouring flockmasters escape. This is the more advisable if we consider the season of the year and the locality of the disease. The great autumn sheep fairs are drawing near, the chief of which are held at Wilton, Weyhill, and Appleshaw. At these fairs some hundreds of thousand sheep ordinarily change hands, brought together from all the sheep breeding districts of Dorset, Hants, and Wiltshire, and dispersed after sale through Berks, Kent, and the metropolitan counties. As Allington lies on the high road between Wilton and Weyhill, and is not five miles distant from either locality, the holding of these fairs this year in their accustomed places will simply bring together a multitude of animals from counties which are hitherto safe, and will keep them for a week in an infected atmosphere, in constant contact and in that excited state of body most apt to contract disease. When the mischief has been done the crowd will separate; the flocks which are sold will carry the infection into the Eastern counties, while those which return unsold will take back the plague to their homes. Under any but an English rule the remedy would be obvious. The Government would prohibit the holding of fairs during this year in the infected district. A cordon would be drawn round that district, and the sale of sheep from within it to parties residing beyond the line would be prohibited, and these precautions would be carried out under the surveillance of a proper officer. In free England nothing of this kind will be done, it being part of our freedom that my neighbour, being a fool, should have the power, by the free exercise of his folly, of ruining me, a prudent man, who has the misfortune to live next to him. We cannot hope for the interference of Government, even in the danger of one of our great national industries; but the flockmasters themselves can do something. I would urge them to lose no precious time, but at once in each county to form committees of the most influential farmers. Let them appeal to their neighbours for combined action, either to send no sheep to Wilton or Weyhill, or, if sent, to engage that they shall be sold, whatever the loss may be, and under no circumstances be brought back, to bring disease among the breeding flocks. Let all the large sheep dealers be informed of this resolution, and let the farmers engage that they will refuse for the future to deal with any man who shall bring back sheep from the tainted localities. Such action, adopted generally, would afford a hope of escaping a great misfortune, which, if checked till winter, will probably disappear upon the cold weather. My letter may make people think. A few words of endorsement from you in a leading article might produce immediate action, and save us from the evil of dear food and clothes. *Dorsetshire, Dorchester.*

Societies.

Isle of Man.—The fifth annual meeting of this Society took place last week at Douglas. We understand that the entries this year were slightly more numerous—and in some classes superior—to those at any of the previous exhibitions of the Society. There were—exclusive of extra stock—120 head of cattle, of which 39 were pure-bred Short-horns, the remainder being Ayrshires, Galloways, and cross-breeds; 112 farm horses or roadsters of various ages; 85 sheep, including all the principal breeds; and 14 pigs of the large and small breeds. Thirty-five animals were also exhibited as extra stock.

Bad weather however interfered with the number of spectators, so that the receipts at the yard amounted to only 144l. against 170l. last year.

The high appreciation in which the Society is held by the stock-breeders and agriculturists of this Island, is manifested by their continued support. In proof of this we would refer to the subjoined list of the number of entries in the various classes at the different exhibitions held by the Society since its commencement:—

	1858.	1859.	1860.	1861.	1862.
Cattle	54	110	94	103	102
Horses	44	63	83	96	112
Sheep	35	54	54	79	85
Pigs	17	16	9	16	14
Poultry	17	18	18	21	30
Butter	28	18	25	29	21
Cheese	7	8	9	8	6
Manx Grain	12	0	0	0	0
Turnips	13	0	0	0	0
Implements	11	47	34	36	28
Extra Stock	31	41	22	31	35
	269	375	348	419	443

From this comparative statement it appears that although in some of the classes, such as pigs, there has been this year a slight decrease, yet in the total number of entries there has been an increase of 24 upon last year; while in some of the more important classes, such as cattle, horses, and sheep, the numerical standard of 1861 was surpassed or at least well maintained.

Reviews.

Annual Report of the Yorkshire Agricultural Society, No. 24. Ridgway: 169, Piccadilly.

The report this year is especially interesting for its plans and reports of the extremely full competition for the liberal prizes offered last year for designs of cottages and farm buildings. There are here drawings and specifications enabling any one to carry out the designs which the Society's judges have pronounced the best. If any further explanation on the subject be desired by any of our readers, we recommend them to examine the publications of the Cottage Improvement Society, 37, Arundel Street, Strand, W.C., and especially to look at the model cottages erected by the Society opposite the Eastern Dome of the International Exhibition.

Calendar of Operations.

AUGUST.

Berwickshire Merse Farm: *August* 23.—After a cold and wet season we are at length favoured with a week of something like summer weather, and have actually seen the sun on several occasions. Barley is beginning to colour, and the earliest fields

may be ready in a fortnight, with sunny weather. Such fields as were sown in good order show a heavy crop a good deal laid; but the larger portion, having been poached with folded sheep, looks more like half a crop. Oats on free soils look corny, but not heavy; on clay they are stunted, and were thinned out by grub. The Wheat crop looks badly; not a head but has four or five grains destroyed by red gum, which alone accounts for a fifth of the produce. The gale of the night of 24th July caused great destruction, breaking some stalks entirely off, and bending the remainder, besides shaking off the bloom, to the certain diminution of produce. Spring Wheat, not being shot, escaped with less damage. We are still inclined to hope the best, but we may lay our account with having lost at least one-third of the crop. Beans are strong and pretty well podded, but suffered a good deal from the gale. Except Barley, everything is quite green, and we can only trust that these crops are "to follow" sooner or later. The first Swedes have grown rarely these three weeks, and even the White Turnips, though blanky and unequal, are improving. We never saw Turnips sown so late by a fortnight, yet if the season keep open they may come to something. In the meantime the weather is first-rate for horse and hand cleaning, and constant stirring keeps the plants growing. Fallows are rather dirty, and there is no time to clean them, now that the weather is suitable; we see that clay farmers have begun to give them the necessary seed furrow. Corn never was so thoroughly cleaned out of the country. A bag of Barley cannot be got, and Oats with difficulty. *J. T.*

Mid-Lothian.—The rainfall during the last fortnight has been excessive, and cold nights have not been unfrequent, with sunless days. The corn crops are slowly advancing to maturity, and as they do so Wheat does not improve; indeed, at present, from the prevalence of yellow gum, the quality must be poor and the yield defective, while the weight of straw is light. The earliest portions will only be fit for cutting by the 5th September. Barley is coming faster to maturity, with more favourable prospects as to produce and quality; Oats have improved greatly, and are generally very late; Beans are becoming attacked, especially where the crop is luxuriant and late, with the black fly—the leaves falling off, evidently produced by moisture. Hay is in process of being transferred from the large tramp rick in the fields to the purchasers stores near the city, at prices from 3*l.* 12*s.* 6*d.* to 4*l.* per ton. Potatoes are improving, especially late fields; the early sorts are a poor crop, disease has not appeared as yet. Turnips are also fast recovering their usual growth at this season, and may be a fair, if not an average crop. The harvest being so unusually late, the workpeople are now so employed that their labour is in a considerable degree unprofitable.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Aug. 27, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.										Inches.		
Thursday ..	21	29.96	64°	53°	S.W.	1	6	73°	55°	116°*	54°	..	63°	60½°
Friday ..	22	29.91	63	57	W.	2	8	75	54	113	53	..	63½	61
Saturday ..	23	30.17	61	55	W.	1	8	72	43	110	41	..	63½	61½
Sunday ..	24	30.29	63	56	W.	1	2	71	38	114	36	..	62½	61
Monday ..	25	30.26	64	55	E.	2	2	73	44	115	41	..	62	61
Tuesday ..	26	29.95	66	60	S.E.	1	2	74	50	115	47	..	62½	61
Wednesday.	27	29.99	64	59	N.E.	1	3	77	53	117	50	..	63½	61½

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Notices to Correspondents.

Farm Profits: *W. F.* Your question is one that admits of more than one answer. If you charge on the crop all that it takes out of the land, and credit it with whatever it puts into the land, then it will follow that in a rotation, so long as it yields an average produce, every crop is alike profitable or alike a loss. 28 to 36 bushels of Wheat, at 7*s.* 6*d.*; 40 to 50 bushels of Barley, at 4*s.* 6*d.*; 50 to 70 bushels of Oats, 3*s.*, may be the ordinary yield of crops under good farming. Potatoes may yield from 3 to 6 tons per acre.

Flax Growing. The following is the extent of Flax grown in Ireland in each of the following years:—1854, 151,403 acres; 1855, 97,075 acres; 1856, 106,311 acres; 1857, 97,721 acres; 1858, 91,646 acres; 1859, 136,282 acres; 1860, 128,595 acres; 1861, 147,957 acres; 1862, 149,889 acres. This last item has just been published.

Seed: *W. T.* If you order of your seed merchant Turnip Rooted Cabbage, by which you mean and everybody would understand Kohl Rabi, he is not justified in sending you something which he calls White Swede, which proves to be a "nondescript, a sort of bastard between Swede, Rape, and Kohl Rabi."

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, Orwell Works, Ipswich,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

TWO HUNDRED SETS
OF
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HAVE NOW BEEN SENT OUT BY
JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD.

Their NEW PATENT APPARATUS, price £200, has been greatly improved this season, and is the SIMPLEST AND MOST PERFECT YET PRODUCED.

Reports from purchasers, and full particulars, sent free on application. Also CATALOGUES of their CHAMPION PLOUGHS, HARROWS, HORSE RAKES, and HAYMAKERS.

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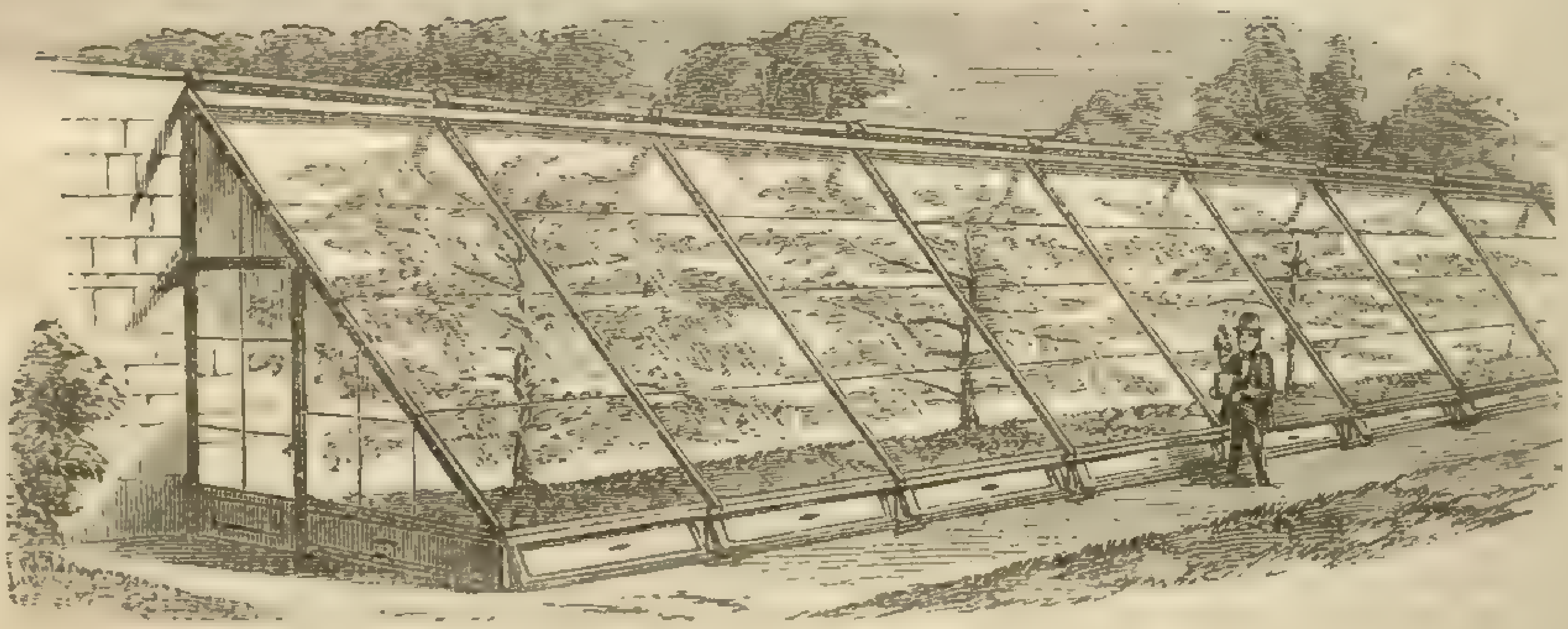

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Designed to meet the suggestions of James Scott, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

CONSERVATORIES	PINE and MELON PITS	BALCONIES	GATES
GREENHOUSES	VASES	IRON SASHES	TANKS
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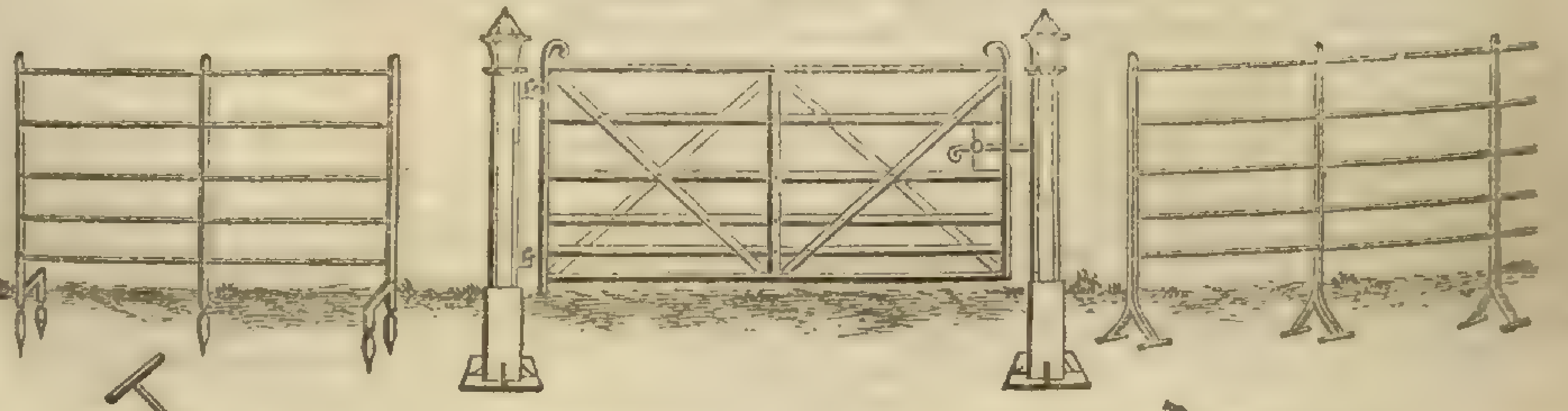
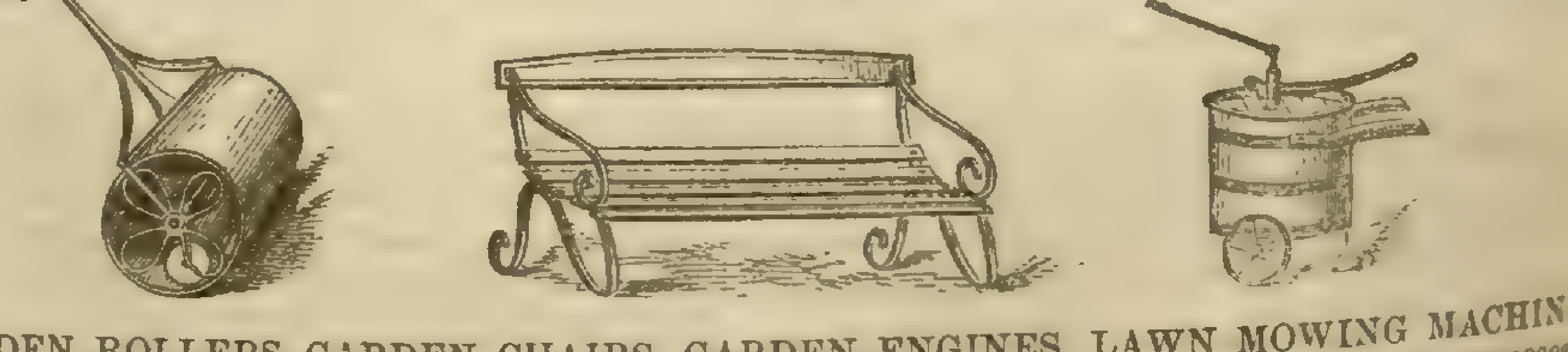
COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,
MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.
PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.





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LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THESE MACHINES were entered at the Royal Horticultural Society's Great Shows held at South Kensington, May 21, June 11, and July 2. They were the only Machines Highly Commended (no Prizes were given). They have carried off every Prize that has been given in all cases of Competition, and have just been awarded the Prize Medal of the Great International Exhibition, July 11, 1862.

GREEN'S PATENT LAWN MOWERS have attained the largest sale of any Machines extant, and are in constant use at the Royal Gardens, Windsor; the Royal Horticultural Society's Gardens, South Kensington; the Royal Botanic Gardens, Regent's Park; the Crystal Palace Company's Gardens, Sydenham; the Kensington Palace Gardens; the Hyde Park Gardens; and in most of the Nobility, Clergy, and Gentry's Parks, Squares, &c., throughout the Kingdom.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0 ...	... £8 15 0
To Cut 20 inches	8 0 0 ...	... 9 5 0

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To Cut 22 inches	£8 10 0 ...	... £ 9 17 6
To Cut 24 inches	9 0 0 ...	... 10 7 6

To Cut 10 inches. Suitable for a Lady.

This machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0 ...	... £21 10 0
To Cut 36 inches	23 0 0 ...	... 24 16 0
To Cut 42 inches	26 0 0 ...	... 28 2 0
To Cut 48 inches	29 0 0 ...	... 31 8 0

Leather Boots for Horse, per set, £1 4*s.*

Donkey and Pony Machines, including Box of Requisites & Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0 ...	... £12 10 0
To Cut 26 inches	12 10 0 ...	... 13 12 0
To Cut 30 inches	16 14 0 ...	... 18 0 0

Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

The above Machines are made from the best materials, and of superior workmanship; are delivered carriage free to all the principal Railway Stations and Shipping Ports in England; are warranted to give satisfaction, and if not approved of can be at once returned, if sent carriage free to Leeds.

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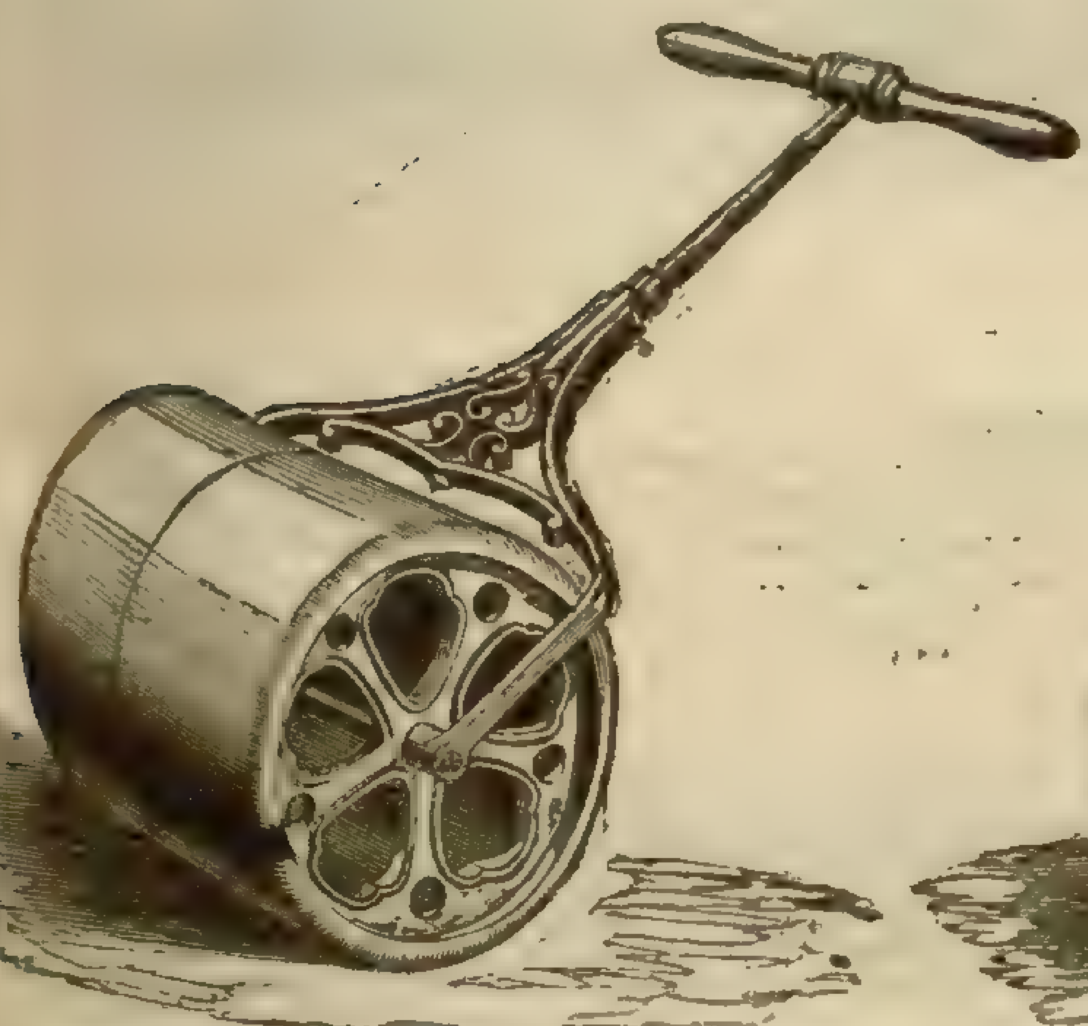
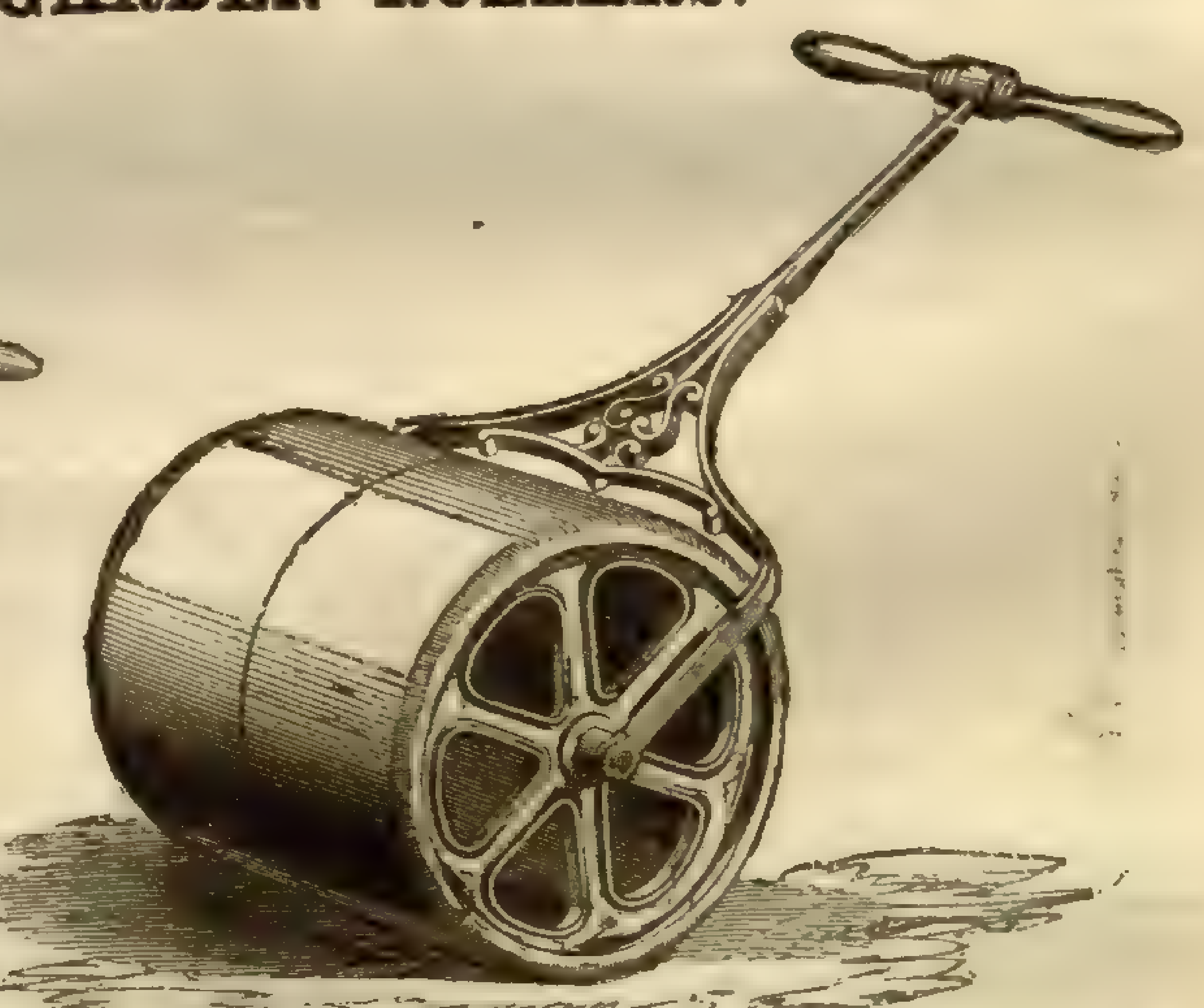


Diameter 20 inches, length 22 inches.... Price £3 5*s.*

Diameter 16 inches, length 17 inches.... Price £2 10*s.*



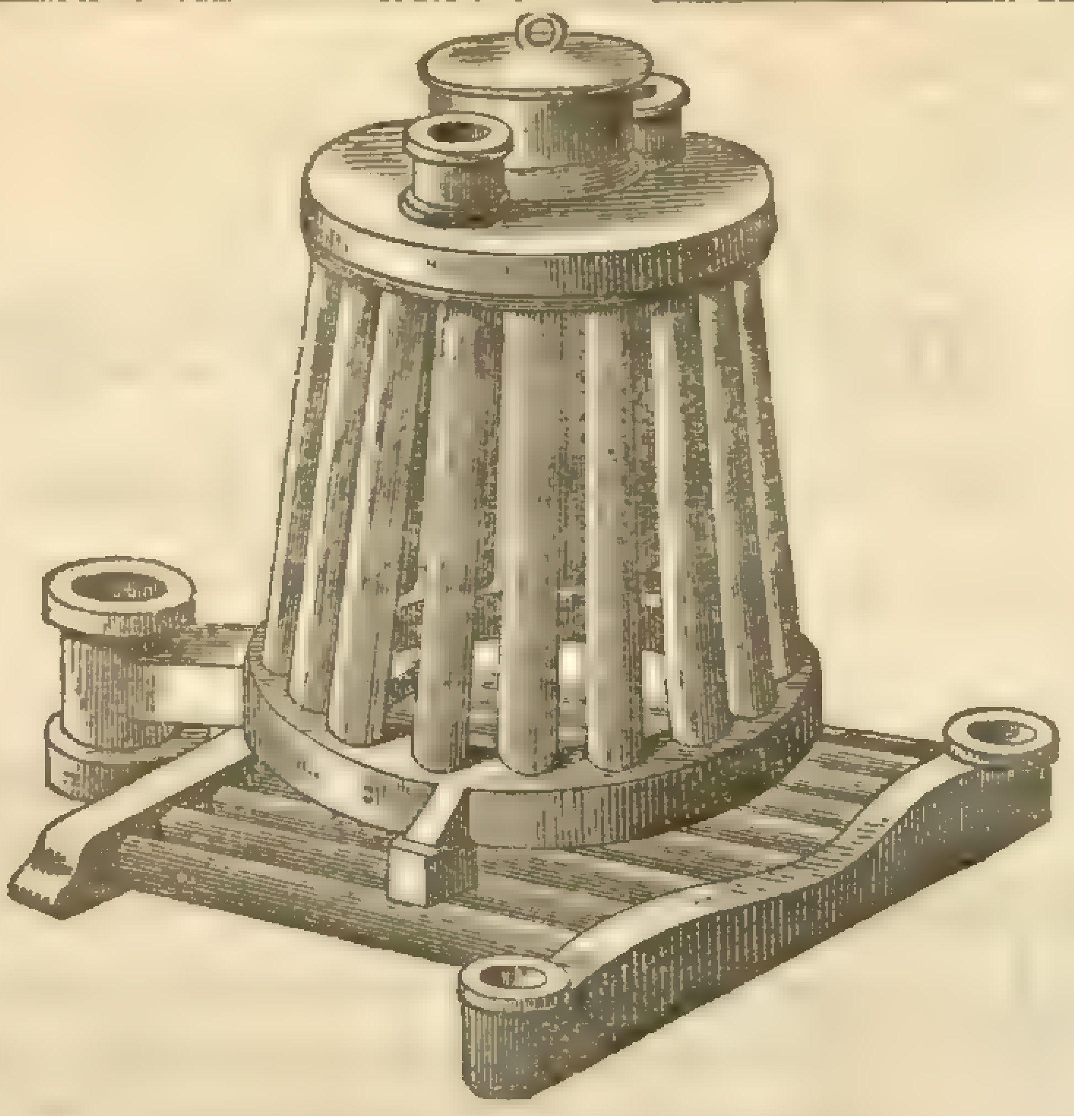
Diameter 24 inches, length 26 inches.... Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths,* and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

FIRST CLASS PRIZE MEDAL
FOR ORMSON'S CONSERVATORY.



FIRST CLASS PRIZE MEDAL
FOR ORMSON'S PATENT JOINTLESS TUBULAR BOILER.

ORMSON'S CONSERVATORY.

INTERNATIONAL EXHIBITION.

CLASS 9, OPEN COURT, EASTERN ANNEXE.

OPINIONS OF THE PRESS.—Extracts.

Gardeners' Chronicle.

"Mr. Ormson, King's Road, Chelsea, has set up the very elegant curvilinear-roofed Conservatory. This is a light and graceful building, and is constructed of wood and iron, with a good deal of light ornamentation. The merits claimed for it are novelty and beauty of outline, chasteness and elegance in detail, and strength and lightness of construction, and these qualities it seems to possess."

Journal of Horticulture.

"It is impossible to speak too highly of the fine specimen of conservatory architecture Mr. Ormson exhibits, and which is altogether novel in character as well as light and elegant in design. The ends consist of two half domes, and from the top of these extends the lofty, long, oval, dome-shaped centre supported by ornamental girders and arches springing from the top of elegant cast-iron columns; whilst the portion of roof between the base of the dome and the upright sides is formed on another curve, arching to meet the base of the girders. The structure thus formed affords abundance of light, and ventilation is amply provided for by every alternate sash at bottom being made to open; whilst in the upper portion there are two rows of sashes which can be opened for the escape of heated air."

Gardeners' Weekly Magazine.

"This is a grand promenade conservatory, with rectangular and curvilinear outlines, and of proportions adapted only for a great garden. The whole of the work is of the highest class, and the finish excellent. Mr. Ormson also shows his tubular boiler, which we know to be powerful and trustworthy, and they merit the inspection of all interested in such matters."

Illustrated London News.

"No object in the horticultural department attracts the eye sooner than the splendid conservatory erected by Henry Ormson, of King's Road, Chelsea; nor is there anything more deserving of attention than the structure and the varied designs for conservatories, greenhouses, hothouses, Orangeries, Heath and Orchid houses, Vineries, Pineries, and Cherry, Fig, Plum, Peach, and Apricot houses, which are displayed upon paper within it. The accompanying Engraving shows that the erection of conservatories may be considered the highest grade in horticultural architecture; it shows in fact that architecture has become the ally of horticulture, and is bent upon doing it honour. The central mass of roof is supported within upon fluted cast-iron pillars, with enriched capitals forming along each side six arches, corresponding with that which spans the apse at either end. The framework of this upper portion of the building, artistically cumulative in effect, is principally of iron. The details seem to be finished with great care. The employment of colour has been very judicious; a white ground is relieved by the palest of greens, and, gilt here and there to a terminal ornament, gives to the inside an air of wonderful grace. Aëration, light, and elegance are all here admirably provided."

Daily News.

"Henry Ormson, of Chelsea, shows a beautiful structure in glass and iron of large proportions, highly decorated, which is decidedly a model of horticultural architecture. The visitors went round it, and into it, and paced it, and asked about it, and only wished they had money to buy it, and have it sent home. The roof is in three divisions receding to the top. In the middle of each side are two recessed doorways, and at either end an apse with semi-dome. White, pale green, and gold are the prevailing tints. Within are to be found upon paper designs for all sorts of Greenhouses, Hothouses, and Conservatories, from the very humble to the very splendid.

"Under the same roof are to be found Ormson's well-known Jointless Tubular Boilers for the economic heating of horticultural buildings."

HENRY ORMSON, Horticultural Builder and Hot-Water Apparatus Manufacturer,
STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

HENRY J. MORTON AND CO.,
2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern

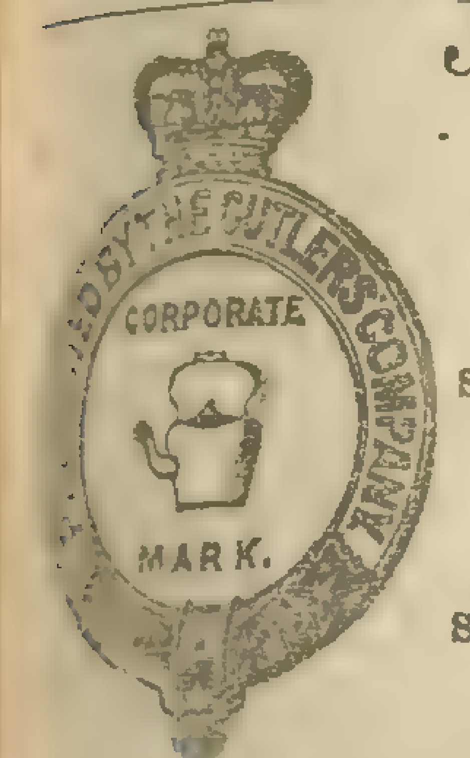
... Houses, &c, to contain 50 gallons, 26s.; 80 gallons, ... and 140 gallons, 37s., and fitted with tap, keeping ... perfectly sweet and clean; will not rust or corrode. ...

Galvanised Iron Pumps

... Manure or Domestic Use, 3 inches diameter, 30s. ... each; Tail Pipe for same at from 10d. per foot.

Galvanised Iron Swing Water Barrows

... or Farm use, containing about 20 gallons, entirely formed of iron, 35s. 0d. each.

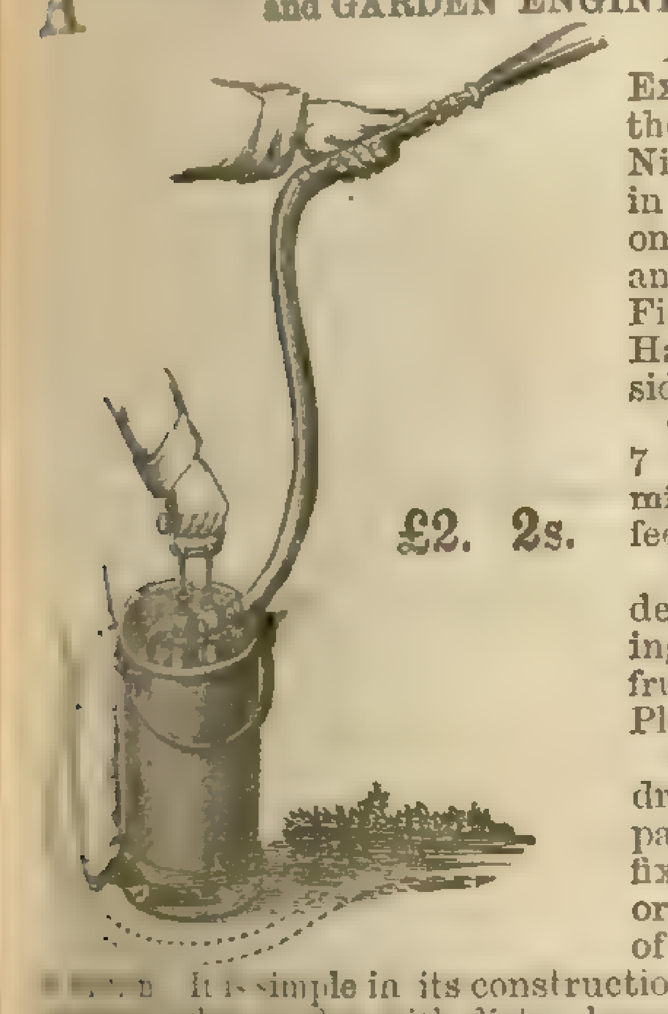


JOSEPH HAYWOOD AND CO.,
MANUFACTURERS OF
PRUNING and BUDDING
KNIVES,
SPORTSMAN'S, and all kind
of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.



£2. 2s.

An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.

One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.

It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.

It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length ... It is simple in its construction, having no suction ... valves to clog with dirt or leaves.

No Establishment, either private, commercial, or manufac... should be without one.

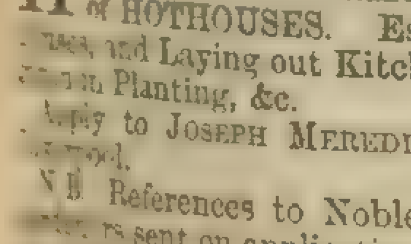
... feet of Flexible Suction, with Union and Suction Rose, ... extra, 12s. Longer lengths of Suction at 1s. 6d. per foot.

May be obtained of all Ironmongers and Seedsmen in Town ... Country, or of the Manufacturers,

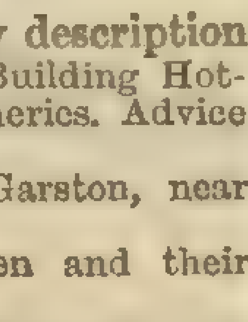
... WARNER & SONS, Crescent, Cripplegate, London, E.C.

FOR SALE, now standing on the Premises, at ... DENCH's, 152, King's Road, Chelsea, S.W., two very hand... CONSERVATORIES, one 22 by 18, and very ornamental; ... by 15; and one VINERY, 16 feet wide by 36 feet long. ... Sold a Bargain.

West of England, Ireland, and Wales.



VINCENT SKINNER (*late Partner with* J. WEEKS & Co.), HORTICULTURAL BUILDER and HOT-WATER APPARATUS MANUFACTURER. HEATING on the ONE-BOILER SYSTEM. Plans and Estimates on application.



VINCENT SKINNER, Bridewell Street, Bristol.

Card.

SAMUEL N. McGERROW,
GENERAL HORTICULTURAL BUILDER,
Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hot-houses, and Laying out Kitchen Gardens and Vineries. Advice ... Planting, &c.

Apply to JOSEPH MEREDITH, Vine Cottage, Garston, near Liverpool.

N.B. References to Noblemen and Gentlemen and their ... sent on application.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. ... and Cast-iron Boilers, Saddle, Conical, Cylinder, ..., and Elliptic, from 24s. each. Improved Boilers and ... Stands to use without brickwork, 50s. each. Valves from ... each. Beck's Patent Valves. Furnace Doors, Furnace ... Supply Cisterns, and Builders' Castings of every descrip... in stock, at

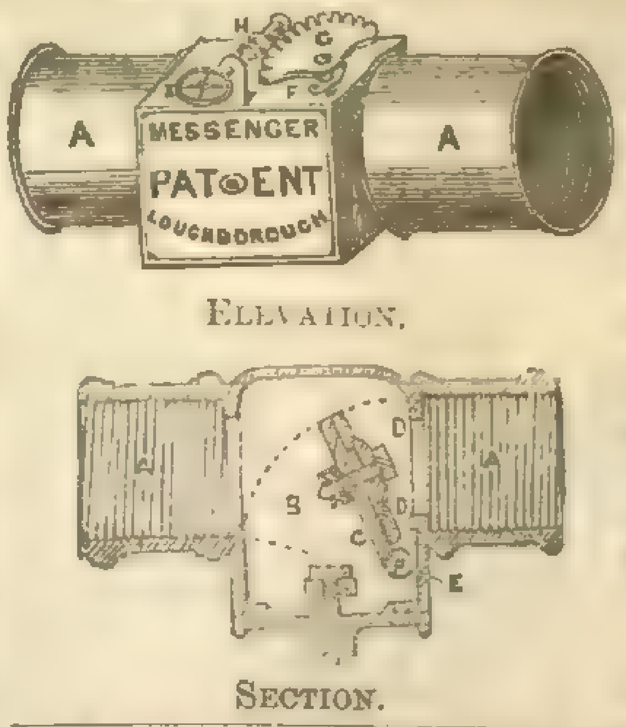
... WHITE's Iron Wharf, Upper Ground Street, Black-friars, London, S.

JOSEPH SMITH, HORTICULTURAL BUILDER, New Road, Hammersmith, W., has for SALE a quantity of ... and other LIGHTS, and five ready-made GREEN-HOUSES, viz.:—

	£	s.
... long 16 feet 6 inches wide for ..	47	10
... feet by 12 feet 6 inches	34	0
... with 21 oz. glass, 100 feet by 13 feet ..	100	0
..., 22 feet by 12 feet..	28	0
..., 12 feet by 7 feet	15	0
... Front Lights for a Lean-to House, 50 feet by ... square feet	30	0
... Roof Lights for Houses, 45 feet by 18 feet; ... square feet	31	0
... (10 feet 6 inches by 4 feet 2 inches) Lights,	35	0
..., 6 feet 10 inches by 4 feet 2 inches	20	0
... feet by 4-feet Lights, 15s. each, or the lot for ..	37	0

Houses made to order from 1s. per sq. foot; if Unglazed, 8d. ... Lights with 15-oz. Glass, 8d.; 21-oz., 9d. per foot.

. Estimates given for Heating by Hot Water.



ELEVATION.

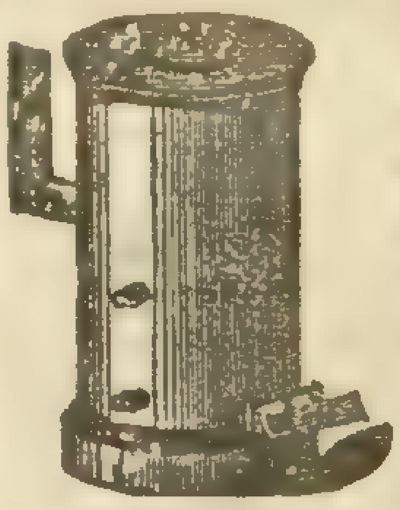
SECTION.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough, has recently patented a Valve which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under.

Two-inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s.

A liberal discount to the Trade.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3l. 10s.

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

Hothouses for the Million.

INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to S. HEREMAN, 7, Pall Mall East, London.

To Horticultural Builders and Others.

TO BE DISPOSED OF, an old-established HORTICULTURAL BUILDER'S BUSINESS, with the Lease, Goodwill, Machinery, Stock, &c. There is an extensive connection attached to the above, as having the patent right of manufacturing Patent Galvanised Iron Hot and Greenhouses, exclusive of the usual Iron and Wood Greenhouses manufactured by other Horticultural firms. The proprietor retiring from business.

For further particulars apply at 152, King's Road, Chelsea, S.W.

Lancashire.

TO BE LET, either for a Term or by the Year, "CARR SIDE FARM," situate in the township of Ince Blundell, about 9 miles from Liverpool. The Farm contains 181 acres, statute measure, viz.:—about 130 acres Arable, and the remainder Meadow and Pasture. There is a good House and first rate Outbuildings on the above.—Also, To be Let with the above (or alone), for a Term or by the Year, 755 STATUTE ACRES OF LAND, the greater part Tithe Free, situate in the township of Formby in the said county, and close to the Freshfield Station, on the Liverpool and Southport Line. Possession of the Land may be had on February 2 next, and of the Houses and Outbuildings on May 1 next.

For further Particulars, and to treat for same, apply to Mr. FISHER, Steward, Ince Blundell, Liverpool.

To Florists, Nurserymen, and Others.

TO BE DISPOSED OF, with possession at or before Michaelmas next, a well-established BUSINESS, including extensive Vineries in full bearing, and Dwelling House, &c., in the important and flourishing town of Cheltenham.

Apply to DANIEL EVANS & SON, Auctioneers, Valuers, and General Agents, Cheltenham.

South of Devon.

MR. ALEXANDER PONTEY, DECEASED.

TO NURSERYMEN, SEEDSMEN, AND OTHERS.

TO BE DISPOSED OF, by Private Contract, on advantageous Terms, with early possession, the Well-Established BUSINESS of a NURSERYMAN, SEEDSMAN, and FLORIST, which for very many years has been extensively and successfully carried on by Mr. ALEXANDER PONTEY, of Plymouth, Devon, and his predecessor, and is now to be disposed of only in consequence of his sudden death.

The Lease of the Business Premises and Stores, which are most conveniently situated near the Market, as well as the Leases of the Nurseries, which are most extensive and well-stocked, both at Plymouth and Vinstan (about Two Miles from Plymouth, on the Tavistock Road), have many years to run.

The Plant, which is of the most Modern construction, and the Stock, the most varied in the West of England, to be taken in the usual way, at a fair valuation.

For further particulars, application may be made to Messrs. SKARDON & SONS, Auctioneers, Bedford Street, Plymouth; or to Messrs. PHILLIPS & SON, Solicitors for the Executrix, Frankfort Lane, Plymouth.

Dated Plymouth, August 1, 1862.

TO BE DISPOSED OF, an Old Established NURSERY of about 8 acres, pleasantly and well situated, close adjoining a populous and improving town, the Greenhouses and Frames conveniently arranged, well supplied with water, and every convenience for carrying on an extensive trade. The Stock, Buildings, &c., may be taken at valuation or otherwise. Terms, Cash.

Address, G. M., Messrs. Cooper & Bolton, Seedsmen, 152, Fleet Street, E.C.

Sales by Auction.

Highly Important Sale of Established Orchids.

MR. J. C. STEVENS has been favoured with instructions to dispose of at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY and FRIDAY, September 18 and 19, at half-past 12 o'clock precisely without the least reservation, the first portion of the well known COLLECTION of ESTABLISHED ORCHIDS of G. REED, Esq. of Burnham, Somersetshire, who is giving up their culture. Many of the Plants have been exhibited and obtained First Prizes at the Crystal Palace, Chiswick, Regent's Park and other Shows. The collection comprises amongst other choice varieties the following:—

Aerides Fieldingi	Lælia Perrini
" Larpentæ	" superbiens
" Lindleyana	" flava
" Lobbii	" majalis
" maculosum	Lycaste Skinneri, best variety
" suavissimum	Masdevallia coccinea
" Schröderi	Odontoglossum nævium
" Warneri	Oncidium sessile
Anguloa Clowesi	Phalænopsis amabilis
" Ruckeri	" grandiflora
Angræcum eburneum	" rosea
Brassivola Digbyana	" new species
Cattleya Acklandiæ	Saccolabium Reedi
" elegans	" guttatum
" lobata	" Blumei
" Mossiæ superba	" retusum
" Mossiæ aurantiacum	" new species
" Skinneri	Vanda Batemani
Cypripedium barbatum superbum	" Cathcarti
" Farrieanum	" suavis (Veitch's)
" caudatum	" tricolor
" hirsutissimum	" gigantea
" species nova	" furva
Epidendrum prismatocarpum	Sobralia Ruckeri
Lælia purpurata, fine dark var.	Anæctochilus Lowii &c. &c.

May be viewed the Mornings of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

Important Sale of Plants at the Arboretum,

LEAMINGTON SPA, WARWICKSHIRE.

MR. J. C. STEVENS has been favoured with instructions from the Proprietor, John Hitchman, Esq., who is intending to erect a Hydropathic Establishment in the Arboretum, to SELL by AUCTION, on the Premises, on MONDAY, October 13, and five following days, at half-past 11 o'Clock each day, the Valuable and Extensive COLLECTION of SPECIMEN CONIFERS and other ORNAMENTAL PLANTS, consisting of upwards of 300,000, all of which have been well prepared for removal, having been frequently transplanted, and several hundreds of the choicer kinds, being grown in crates, including magnificent specimens (besides many others), of the following known kinds:—

Araucaria imbricata, 4 to 8 feet	Pinus tuberculata, 1 to 3 feet
Abies Douglasii, 6 to 9 feet	" ponderosa, 2 to 4 feet
" Menziesii, 5 to 8 feet	" Sabiniana, 1 to 3 feet
Cedrus atlantica, 4 to 6 feet	" Lambertiana, 1 to 4 feet
" Deodara, 4 to 10 feet	Picea amabilis, 1 foot
" Libani, 4 to 8 feet	" grandis, 1 foot
Cryptomeria japonica, 4 to 9 ft.	" Pinsapo, 1 to 7 feet
Cupressus Lambertiana, 2to3 ft.	" Nordmanniana, 1 to 4 ft.
" Lawsoniana, 1 to 4 feet	" nobilis, 1 to 4 feet
" McNabiana, 1 to 2 feet	Taxus ericoides, 1 to 4 feet
Cephalotaxus Fortuni, 1 to 3 ft.	" aurea variegata, 1 to 3 ft.
Juniperus excelsa, 1 to 5 feet	" elegantissima, 1 to 3 feet
" chinensis, 1 to 4 feet	" adpressa, 1 to 3 feet
" dealbata, 1 to 3 feet	Thuja gigantea, 1 to 3 feet
Libocedrus decurrens, 1 foot	" aurea, 1 to 2 feet
Pinus austriaca, 2 to 5 feet	Thujopsis borealis, 1 to 3 feet
" Benthamiana, 3 to 4 feet (In crates.)	Wellingtonia gigantea, 1 to 4 ft.
Pinus excelsa, 2 to 10 feet	Yews (Irish), 6 to 10 feet
" Jeffreyi, 1 to 3 feet	&c. &c.

Also various first-class Evergreens and Deciduous Trees and Shrubs of different sizes. Fine Dwarf-trained STANDARD and other FRUIT TREES, about 10,000 DWARF and STANDARD ROSES of the choicest named kinds, Rhododendrons, Camellias, Azaleas, Variegated and other Hollies, Portugal and Common Laurels, Forest Trees, and a variety of other Hardy and Greenhouse Plants.

May be viewed till the time of Sale, when Catalogues (1s. each, returnable to purchasers), may be had at the Nursery, at the principal Inns at Banbury, Oxford, Coventry, Birmingham, Manchester, Rugby, Leicester, Northampton, Stratford, Derby, Worcester, Burton-on-Trent, Stratford-on-Avon, Warwick, and at Mr. J. C. STEVENS's Auction Rooms and Offices, 38, King Street, Covent Garden, London.

Approved Bills at 3 months will be taken of Purchasers above 50l.

The Arboretum is within five minutes' walk of the Leamington Stations on the Great Western and North Western Railways, which offers great facilities for transmitting the Plants to every part of the country. Frequent trains run daily to and from Leamington, and cheap trains three times a week from most of the principal towns.

Buckland, near Faringdon.

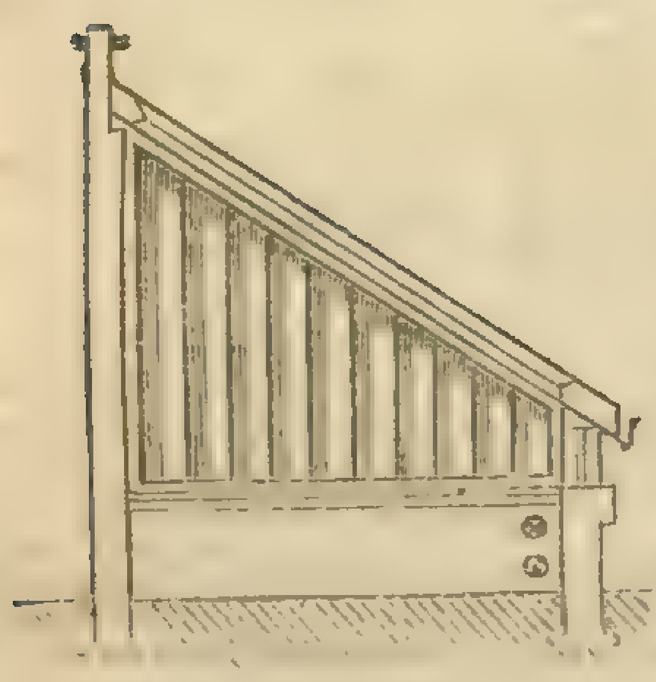
VERY IMPORTANT SALE OF FIRST CLASS SOUTHDOWN SHEEP, BERKSHIRE PIGS, SUFFOLK HORSES, CATTLE, &C.

MR. STRAFFORD has received Instructions from the Executors of the late Sir R. G. Throckmorton, Bart., to offer for SALE by AUCTION, without Reserve, on THURSDAY, September 4, at Buckland, the Splendid Flock of SOUTHDOWNS, consisting of about 500 Ewes and Ewe Lambs, with about 50 Rams and Ram Lambs; also the Choice Stock of BERKSHIRE PIGS, numbering about 70 head of Boars, Sows, and Young Pigs, including the First Prize animals at the recent Battersea Show, as well as some superior Suffolk and other HORSES, and the Dairy COWS, with a Short-horned BULL. The number of Prizes won by this Stock at the various meetings of the Royal Agricultural Society, Bath and West of England, Birmingham, and Smithfield Club, as well as the Gloucester and other local Shows, fully attest the high character of the same, and which are to be sold in consequence of the decease of their lamented owner.

Catalogues, with particulars, may be had on application to Mr. GEO. WILLIAMS, at Buckland, near Faringdon; or of Mr. STRAFFORD, 13, Euston Square, London, N.W.

J. JONES'S HOT-WATER APPARATUS.

No. 7.



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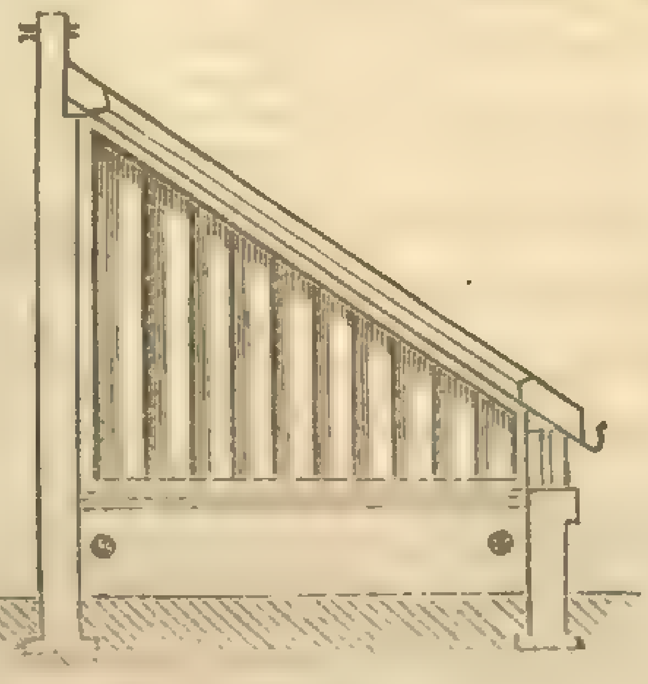

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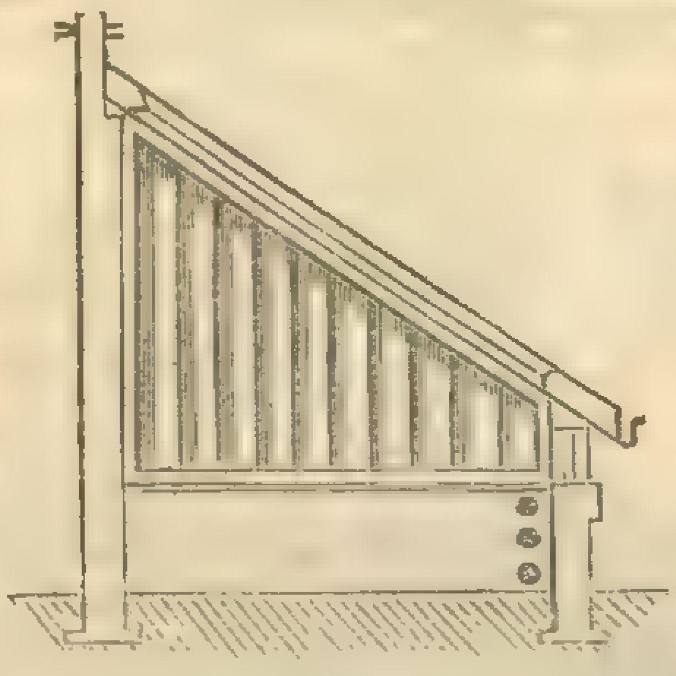

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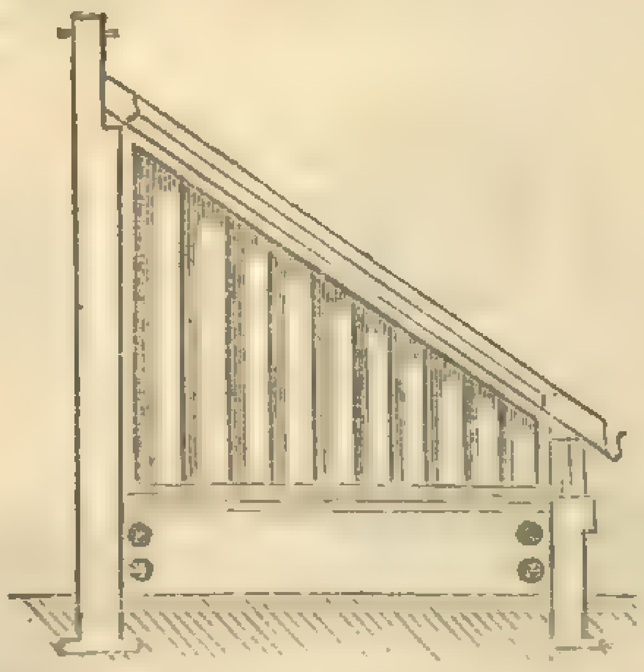

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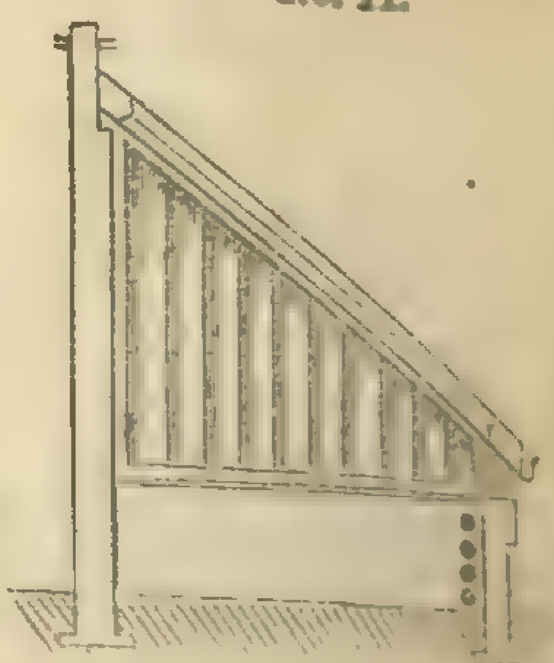
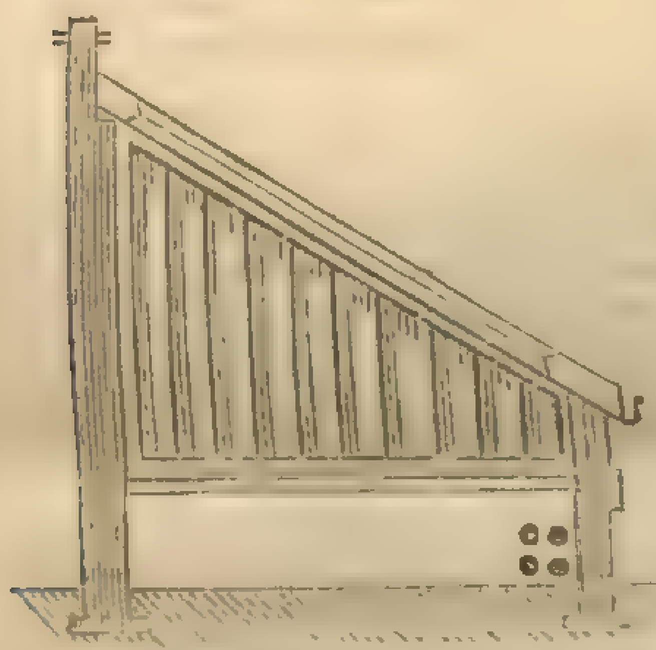


Size of House	No. 7 Price	No. 8 Price	No. 9 Price	No. 10 Price	No. 11 Price
20 by 10 ft.	£9 0 0	£9 0 0	£13 0 0	£14 0 0	£15 0 0
30 „ 12 „	12 0 0	12 0 0	17 0 0	19 0 0	21 0 0
40 „ 15 „	15 0 0	15 0 0	21 0 0	24 0 0	25 0 0
50 „ 15 „	18 0 0	18 0 0	24 0 0	28 0 0	29 0 0
60 „ 15 „	20 0 0	20 0 0	27 0 0	32 0 0	33 0 0
70 „ 15 „	22 0 0	22 0 0	30 0 0	36 0 0	37 0 0
80 „ 15 „	24 0 0	24 0 0	33 0 0	40 0 0	41 0 0
100 „ 15 „	26 0 0	26 0 0	36 0 0	44 0 0	45 0 0

No. 12.



Price Same as No. 11.

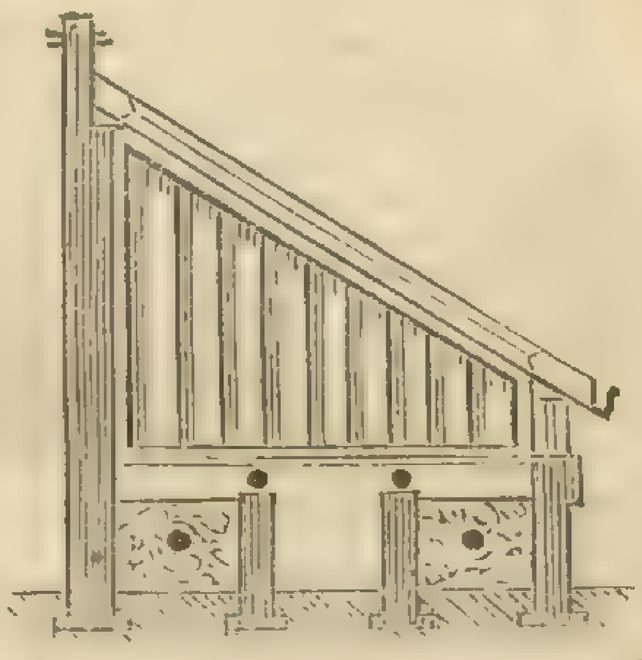
No. 13.

Price Same as No. 11.

No. 14.

Price Same as No. 11.

No. 15.



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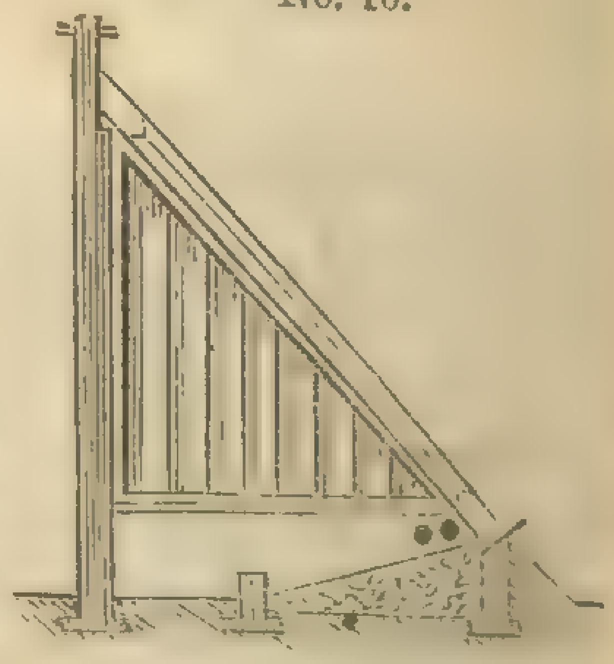

Price Same as No. 7.

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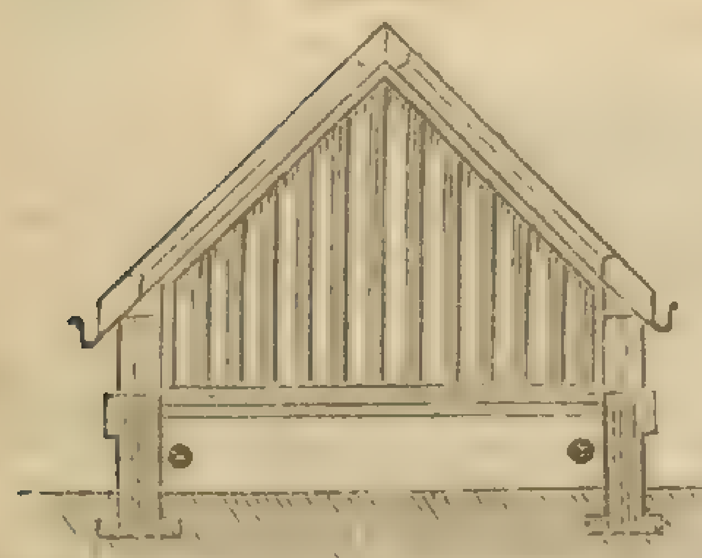

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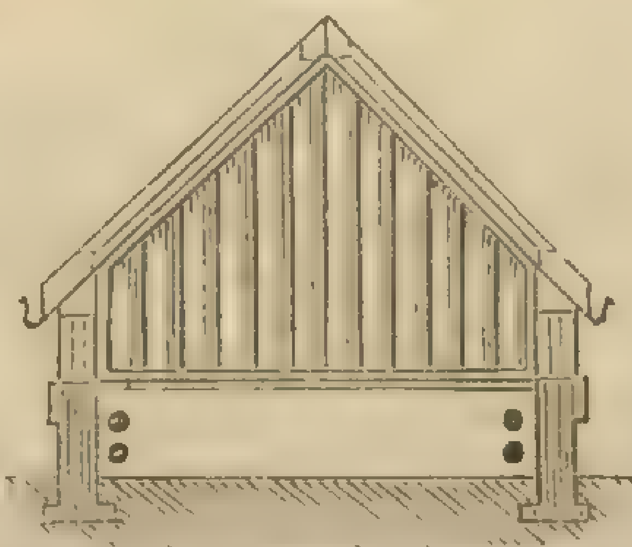

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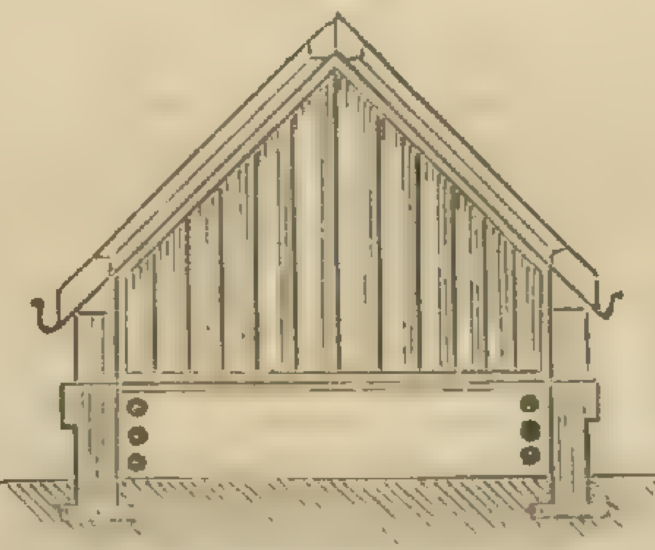

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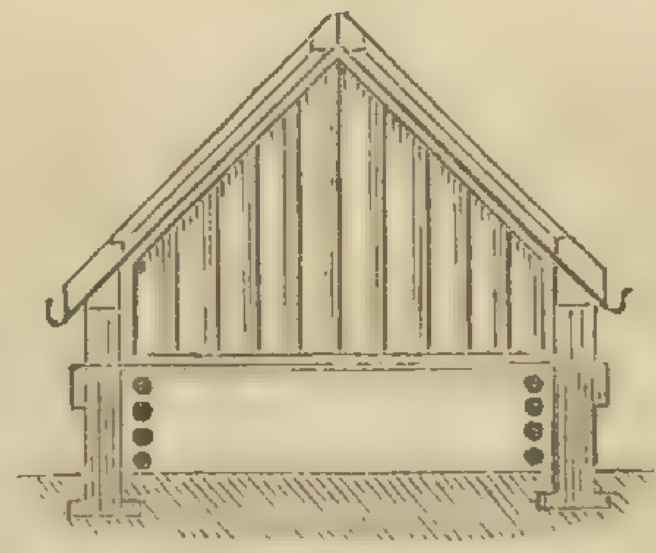
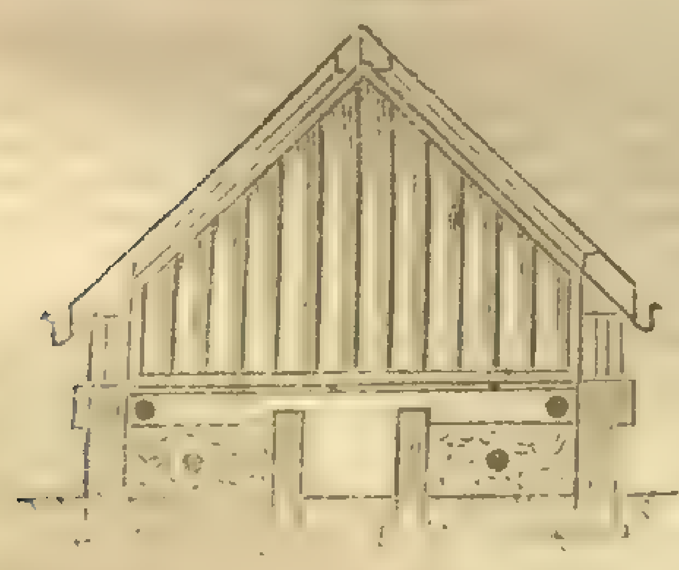


No. 21.

Size of House	No. 17 Price	No. 18 Price	No. 19 Price	No. 20 Price	No. 21 Price
20 by 10 ft.	£9 0 0	£14 0 0	£18 10 0	£23 0 0	£23 0 0
30 „ 12 „	12 0 0	19 0 0	24 0 0	30 0 0	30 0 0
40 „ 15 „	15 0 0	24 0 0	29 0 0	36 10 0	36 10 0
50 „ 15 „	18 0 0	28 0 0	34 0 0	42 10 0	42 10 0
60 „ 15 „	20 0 0	32 0 0	39 0 0	49 0 0	49 0 0
70 „ 15 „	22 0 0	36 0 0	44 0 0	56 0 0	56 0 0
80 „ 15 „	24 0 0	40 0 0	49 0 0	63 0 0	63 0 0
100 „ 15 „	26 0 0	44 0 0	54 0 0	70 0 0	70 0 0

No. 22.



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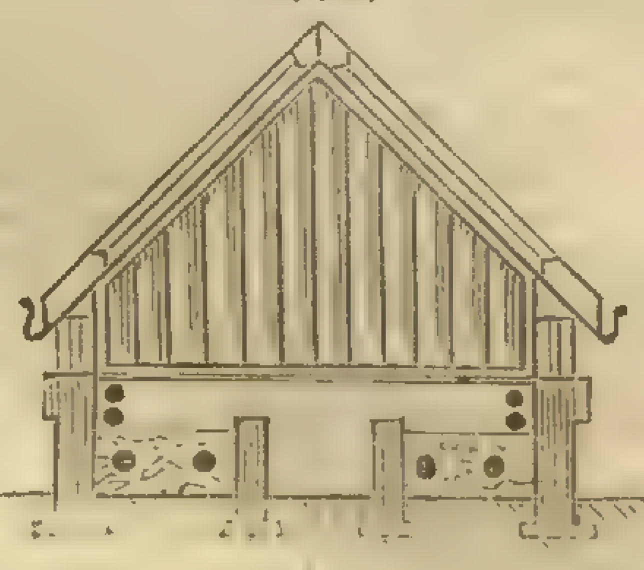
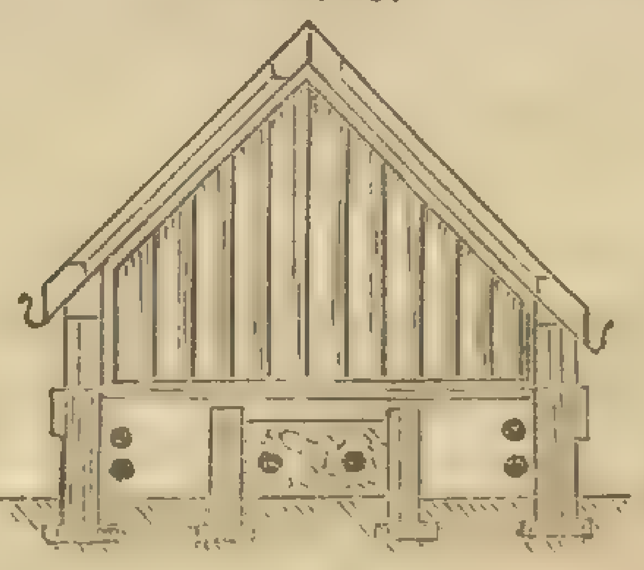
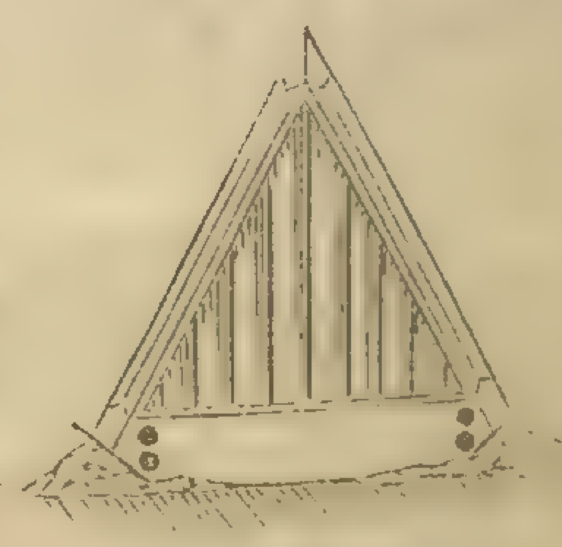


No. 24.

No. 25.



No. 26.



Size of House	No. 22 Price	No. 23 Price	No. 24 Price	No. 25 Price	No. 26 Price
20 by 10 ft.	£15 0 0	£25 0 0	£25 0 0	£18 10 0	£14 0 0
30 „ 12 „	21 0 0	32 0 0	32 0 0	25 0 0	19 0 0
40 „ 15 „	25 0 0	38 10 0	38 10 0	30 0 0	24 0 0
50 „ 15 „	29 0 0	44 10 0	44 10 0	35 0 0	28 0 0
60 „ 15 „	33 0 0	51 10 0	51 10 0	40 0 0	32 0 0
70 „ 15 „	37 0 0	58 0 0	58 0 0	45 0 0	36 0 0
80 „ 15 „	41 0 0	65 0 0	65 0 0	50 0 0	40 0 0
100 „ 15 „	45 0 0	72 0 0	72 0 0	55 0 0	44 0 0

J. Jones will be happy to supply HOT-WATER APPARATUS for HOUSES according to any of the above Plans, delivered Free to any Station in England at the prices named, which include strong CAST-IRON CYLINDER or SADDLE BOILER, FURNACE DOORS, FIRE BARS, SOOT DOORS, CISTERN and DAMPER, 4-inch HOT-WATER PIPES and CONNECTIONS, all of the best quality; or he will forward ESTIMATES for WORK erected complete, with WROUGHT or CAST-IRON BOILER of any sort, at a small addition to the above prices.

⁎ *The Black Circles on Sections of Houses show the arrangement of Pipes.*

Illustrated Catalogues and further particulars post free on application to

J. JONES, IRON MERCHANT AND HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 36.—1862.] SATURDAY, SEPTEMBER 6. {Price Fivepence. Stamped Edition, 6*d*.

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ROYAL HORTICULTURAL SOCIETY'S AUTUMN SHOW, WEDNESDAY NEXT, September 10, at South Kensington. Open at 1 o'clock. Bands of First Life Guards and Royal Engineers, commence at 2 o'clock. Tickets, [illegible] 6d. each, at the Garden, and at the principal Librarians, Music-sellers, &c.

AUTUMN SHOW of ROYAL HORTICULTURAL SOCIETY, SEPTEMBER 10. The Garden will be Open at 1 o'clock. Visitors cannot be admitted, either from the Exhibition to the Garden, or to the Exhibition through the Garden, before that hour.

HORTICULTURAL SHOW of AUTUMN FLOWERS, WEDNESDAY NEXT, September 10. The Garden will not be open till 1 o'clock.

Roses, &c.

PAUL AND SON respectfully invite attention to their ANNUAL SHOW of ROSES, GLADIOLI, HOLLYHOCKS, and ASTERS, now in FULL BLOOM at their establishment, one Mile from the Cheshunt Station of the Eastern Counties Railway.
Old Cheshunt Nurseries, Cheshunt, Herts.

Roses.

EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

Rose and Bulb Catalogues for 1862-3.

EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded gratis and post-paid on application.
Seed and Nursery Establishment, Tunbridge Wells, Kent.

WM. PAUL'S ROSES, HOLLYHOCKS, and HARDY ORNAMENTAL TREES are now in full beauty. Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.
Nurseries and Seed Warehouse, Waltham Cross, N.

GUERNSEY LILIES just arrived in fine condition, 5*s*. per dozen.
Apply to JAMES CARTER & Co., 237 & 238, High Holborn, London, W.C.

Calceolaria and Pansy Seed of the finest Strains.

GEO. WHEELER begs to announce that he is still sending out Seeds of his very superior CALCEOLARIA [illegible], 1*s*. 6*d*., and 2*s*. 6*d*. packets.
Choice PANSY from Prize Flowers, 1*s*. to 2*s*. 6*d*. per packet.
Nursery, Warminster, Wilts.

Fine Camellias and Azaleas.

F. AND A. SMITH have an immense stock of AZALEAS and CAMELLIAS well set with flower buds, of fine growth and in healthy condition, now offering at moderate prices, which may be had on application.
Dulwich, Surrey, S.

Cineraria and Calceolaria Seed.

F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*., free by post.
Dulwich, Surrey, S.

GNAPHALIUM LANATUM.—See *Cottage Gardener*, No. 74, page 420.—This splendid white Edging Plant is to be obtained at H. LANE & SON'S. Strong Plants 1*s*. 6*d*. each, or 12*s*. per dozen, for taking Cuttings from this Autumn. Directions for Propagating will be enclosed, if required, with each order.
Nurseries, Berkhampstead.

New Fuchsias of 1862.

B. W. KNIGHT, FLORIST, &c., 67, High Street, Battle, Sussex, is now sending out the NEW FUCHSIAS of 1862, at 12*s*. per dozen.
CATALOGUES sent on application.

New Verbenas of 1862.

B. W. KNIGHT, FLORIST, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4*s*. per dozen, securely packed in tin box, post free. CATALOGUES of the varieties sent on application.

SUTTON'S IMPROVED ITALIAN RYE-GRASS SHOULD NOW BE SOWN for very early Spring feed, after which it may be ploughed up, or if allowed to remain, it will produce three or four good cuttings every year.
Royal Berkshire Seed Establishment, Reading.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

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JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

Hyacinths, Crocuses, &c.

JAMES CARTER AND CO.'s first consignment of DUTCH BULBS has arrived in splendid condition. CATALOGUES free of charge on application to 237 and 238, High Holborn, London, W.C.

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BUTLER AND McCULLOCH can strongly recommend the following for immediate planting:—
12 HYACINTHS, in 12 select and distinct varieties, 9*s*., 12*s*., and 15*s*. per dozen.
BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

Hyacinths, Tulips, Narcissus, Crocus, &c.

BARR AND SUGDEN'S stock of the above is large and of prime quality. Early orders solicited.
BARR & SUGDEN, Seed Merchants, &c. (see large advertisement), 12, King Street, Covent Garden, W.C. (Opposite the Garrick Club).

Hyacinths, &c.

WM. PAUL'S DESCRIPTIVE CATALOGUE of HYACINTHS and other DUTCH BULBS, with Hints on Culture, is now ready. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Dutch Bulbs.

CHARLES TURNER'S CATALOGUE of a selection of the best in each class is now ready, and will be forwarded on application post free.
The Royal Nurseries, Slough.

Wm. Cutbush & Son's Dutch Bulb Catalogue.

WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE and PRICED CATALOGUE of HYACINTHS and other Dutch Flower Roots is now ready, post free, on application.
Highgate Nurseries, London, N.

Dutch Bulbs.

PAUL AND SON have received their annual importation of the above in good condition. Early Orders are solicited. CATALOGUES post free on application.
Old Cheshunt Nurseries, Cheshunt, Herts.

R. GREEN, Bedford Conservatories, Covent Garden Market, W.C., entrance Centre Avenue only.—DUTCH BULBS just arrived in fine condition. BUDGRIGARS, immense quantity, very handsome, 7*s*. 6*d*. and 10*s*. each. Cages and Aviaries, &c.; and at 154, Kingsland Road, N.E.

Dutch Bulbs (Large Size).

JAMES FAIRHEAD AND SON beg to state their HYACINTHS, CROCUSES, TULIPS, &c. have arrived in prime condition, and are now ready for delivery. Early orders solicited. Also extra large double SNOWDROPS, on offer.
CATALOGUES free on application.
7, Borough Market, London, S.E.

First Consignment of Dutch Flower Roots.

THOS. CHARMES, SEEDSMAN and FLORIST, 204, High Street, Exeter (one door above the Guildhall), has just imported the best varieties of HYACINTHS, TULIPS, NARCISSUS, and other Winter and Spring flowering Roots, in fine condition; and to secure good Bulbs early orders are respectfully solicited.
DESCRIPTIVE PRICE LIST free on application.

SUTTON'S SELECT LIST of EXHIBITION HYACINTHS, TULIPS, JONQUILS, &c. (post free), with prices and full description. This List contains all the Hyacinths necessary for competition at the Great Hyacinth Shows, and none are extravagant in price.
All Goods delivered carriage free.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Economy and Excellence.

H. BROWN'S PRICED DESCRIPTIVE CATALOGUE of HYACINTHS, GLADIOLI, and other BULBS for Show, &c., is now ready, post free. Collections from 10*s* and upwards, and large quantities, specially ordered, carriage free, on exceedingly moderate terms.
Seed Warehouse, 4, Commutation Row, Liverpool.

HYACINTHS, TULIPS, CROCUSES, and other DUTCH BULBS, just arrived in excellent condition. PRICED CATALOGUES on application to
S. PONSFORD, Loughboro' Park Nurseries, Brixton, Surrey, S.
N.B. CATALOGUES of GENERAL NURSERY STOCK will be ready at the end of this month.

Hyacinths, Tulips, Crocuses, &c.

BUTLER AND McCULLOCH'S DESCRIPTIVE CATALOGUE of BULBS, containing ample Cultural Directions, may be had free and post paid upon application.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

GUERNSEY and BELLADONNA LILIES, 5*s*. 6*d*. per dozen.
BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

WILLIAM HOLMES offers the following in fine Plants:—

NEW CHRYSANTHEMUMS	..	12*s*. per dozen.
NEW FUCHSIAS	..	12*s*. "
NEW VERBENAS	..	6*s*. "

Frampton Park Nursery, Hackney.

Good Seeds, Carriage Free, at Market Prices.

SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, 27, Great George Street, Westminster, S.W.

Agricultural Seeds for Autumn Sowing.

DELIVERED FREE AT NEAREST RAILWAY STATION.
PETER LAWSON AND SON. THE QUEEN'S SEEDSMEN. 27, Great George Street, Westminster, S.W.

Agricultural and Garden Seeds.

H. AND F. SHARPE SEED GROWERS and MERCHANTS, Wisbech.
Special PRICED LIST of NEW SEEDS on application.

Agricultural Seeds.

GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

New Fuchsias, Verbenas, Chrysanthemums, Petunias, &c., of 1862.

H. WALTON is now sending out the above at low prices. Lists of Prices on application for one stamp. The Trade liberally dealt with.
FUCHSIAS 9*s*. to 12*s*. per dozen.
Edgend, Marsden, Lancashire.

Strawberries.

CHARLES TURNER can still supply strong Plants for Fruiting next season of all the leading kinds. CATALOGUES may be had on application.
The Royal Nurseries, Slough.

Strawberries.

Now ready, free per post on application,
A DESCRIPTIVE CATALOGUE of STRAWBERRIES.
By THOMAS RIVERS, Nurseries, Sawbridgeworth.

VINES from EYES are now to be seen in splendid FRUITING CONDITION. Any one intending to plant Vines this season ought to see the thousands of fine strong Canes ready for Sale, at
H. LANE & SON'S, The Nurseries, Berkhampstead.

Vines in Pots.

PAUL AND SON invite gentlemen planting Vineries to inspect their fine Stock of the best varieties of Vines.
Old Cheshunt Nurseries, Cheshunt, Herts.

Grape Vines.

WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines.

J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.

TO BE SOLD, Cheap, 1800 close-jointed vigorous Plants, with Canes 6 to 12 feet long, all struck from Eyes this season.
Apply to the GARDENER, at J. Lewis's Horticultural Works, Stamford Hill, Middlesex, N.

Orchard House Culture.

MESSRS. THOS. RIVERS AND SON invite lovers of Fruit Tree Culture to an Inspection of their ORCHARD HOUSES and FRUIT TREES in POTS. The mode of culture, which is very simple, will be given if required. Harlow Station, where flies attend, is the most convenient for the Nurseries.
Sawbridgeworth, Herts.

FOR SALE, a large Collection of BRITISH and EXOTIC FERNS, at
J. ILLMAN'S Nursery, Wellington Place, Strood, Kent.

WANTED, from 30,000 to 40,000 BLACK THORN for Covert Planting,
Apply, stating price per thousand for height, 15, 18 to 24 inches, to O. BARTON, The Gardens, Oxton, near Southwell, Notts.

WALL-TRAINED FRUIT TREES.—Intending planters of Trained Fruit Trees are invited to an inspection of our WALL-TRAINED TREES. They are very clean, and many of them being of large size could be seen and marked with Fruit on.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

WELLINGTONIA GIGANTEA, superb specimens, all Seedling plants, from 6 to 12 feet high. Can be insured to be transplanted with safety to any distance.
Prices on application to WILLIAM BARRON, Elvaston Castle, Derby.—Sept. 6.

TAN GRATIS, in the immediate neighbourhood of Covent Garden Market.
Apply to ESSEX & SONS, 28, Stanhope Street, Clare Market, W.C.

REIGATE SILVER SAND.—First quality, 9*s*. per ton; Second quality, 6*s*. per ton of not less than 4 ton lots, put on the rail at Reigate Junction.
WILLIAM SHORT, Reigate Heath, Reigate, Surrey.

CAUTION.—THE BRIGHTON WHEAT HAS BEEN SELECTED FOR SEVERAL GENERATIONS MORE THAN THAT GROWN FROM WHEAT PURCHASED IN PREVIOUS YEARS, AND CAN BE OBTAINED OF MR. HALLETT ALONE, OR OF HIS AGENTS.

Particular attention is called to the above caution, as Wheat *bearing scarcely any resemblance whatever* to this has recently been exhibited with the following attached to it—"Hallett's Pedigree Wheat, price One Guinea a bushel."

If planted early as directed, this Wheat costs less per acre for Seed than Common Wheat.

THE TIMES.

Mr. HALLETT exhibits his wonderful examples of what he terms "Pedigree Wheat," and a more curious or a more instructive lesson than he offers in his samples is not to be found in the Exhibition.—*Wednesday, June* 18, 1862.

The curiosity of 1851 was Messrs. Raynbird's splendid sample of Wheat produced by artificially hybridising two first-class varieties; the wonder this year is the "Pedigree" Wheat of Mr. HALLETT, of Brighton. Taking a prime sort to begin with, by selection year after year this intelligent cultivator has developed a breed of Wheat now possessing an established pedigree—a Wheat producing vegetable offspring with certain fixed characteristics, just as a pedigreed race of cattle or sheep perpetuate their kind with its peculiar form, properties, and propensities. It is in fact the nature of this Wheat now to grow great ears and tremendous yields per acre, while at the same time preserving a fine kernel of beautiful flour.—*Wednesday, June* 25, 1862.

THE AGRICULTURAL GAZETTE.

Certainly there is no section of the show in which the English exhibitors are more clearly in advance of all foreign competition; nor are any of the classes more manifestly led by their respective maxima than in those of agricultural products and agricultural machinery. There is a wider interval between the leaders and the "ruck" in the race of competition here than in any other section; and in both it is the English exhibitor who wins. Mr. HALLETT's "Pedigree Wheat" may be named as the easy winner in the former class, and a large number of well-known English names come in abreast as winners on the latter course. In both these instances foreign competition is comparatively insignificant."—*Leading Article, Saturday, May* 3, 1862.

INTERNATIONAL EXHIBITION.

EASTERN ANNEXE, CLASS III.

HALLETT'S

PEDIGREE NURSERY WHEAT.

"BRED" ON THE SAME PRINCIPLE

OF

REPEATED SELECTION

WHICH HAS PRODUCED OUR

PURE RACES OF ANIMALS.

THIS WHEAT IS NOW READY FOR DELIVERY.

MARK LANE EXPRESS.

We have much pleasure in speaking to Mr. HALLETT's statements, they being fully borne out by the specimens he presented to our notice. Referring to the Advertisement in this journal, we can affirm that the engraving of the "Pedigree Wheat" is in no respect apocryphal or exaggerated.—*Leading Article.*

It may be well here to look to "the certain circumstances" which have led to any better state of things. It was only last week, then, that a correspondent of our own made this appeal:—"It would be a treat to me, as I am certain it would be to hundreds of your readers, if the gentleman who advertises his Wheat (an engraving of the size of the head of which appears in your paper) would inform me through your columns where I can see any field, at present growing, which bears out his engraving and advertisement. I should travel any distance to see it, and would confirm in your columns what I now hesitate to believe, viz., that such a phenomenon was in existence in 1862 as a field with such a head of Wheat as he represents." J. W. H. H. should have been with us on Friday last, when we walked over Mr. HALLETT's farm at Brighton, with the special object of judging for ourselves as to how his Wheats promised. We have strolled up to Kemp Town before now—have seen the selected ears blooming in the garden—have followed the experimentalist to his summer-house "study"—have listened and watched and wondered, as he displayed individual grains pasted on paper and encircled with mysterious lines in red and black ink—have heard their histories and pedigrees traced—their ultimate design foreshadowed—until, lost in a flow of energetic eloquence, we have asked ourselves, as we walked back to Brighton, whether any other man in the world would take so much trouble as this? and if the result would ever be worth his trouble in case he should do so? The practical answer is already before us. We have travelled from the garden ground to the farm itself, and there in large pieces, of many acres' extent, on the hill and in the valley, Mr. HALLETT can show by far the finest Wheat we have seen this season. Remarkably even in appearance, with a run of magnificent ears that really do "bear out the engraving and advertisement," there is a crop that looks like seven or eight quarters an acre. And this, let us bear in mind, on land anything but naturally good, and with much of it that has scarcely been done justice to, in the way of dressing.—*Leading Article, August* 4, 1862.

1861, ACTUAL SIZE AFTER FOUR YEARS' **REPEATED** SELECTION, STARTING FROM A **SINGLE GRAIN** IN EACH YEAR.

Price Two Guineas a Bushel, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order. Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

Man kann Bestellungen machen bei den Agenten Herrn KRELAGE und SOHN, Haarlem, Holland; und Francfurt-am-Main, Deutschland

A PRINTED PAPER, "HOW OUR WHEAT CROPS MAY BE DOUBLED," FORWARDED UPON APPLICATION, ENCLOSING TWO STAMPS

ROYAL BERKSHIRE SEED ESTABLISHMENT.

OFFICE AND WAREHOUSES, MARKET PLACE, READING.

SUTTON'S SELECT BULB LIST FOR 1862.

BULBOUS FLOWER ROOTS FOR BLOOMING DURING THE WINTER AND SPRING.

Carriage Free to all parts, except very small parcels.

SUTTON'S CHOICE COLLECTIONS for OPEN GROUND.

	£	s.	d.
A large and Choice COLLECTION of ANEMONES, HYACINTHS, CROCUSES, TULIPS, RANUNCULI, NARCISSI, SNOWDROPS, IRISES, GLADIOLI, &c.	2	2	0
Do. do., consisting of all the same kinds in reduced quantities	1	1	0
A small and choice do.	0	10	6

SUTTON'S CHOICE COLLECTIONS for POTS and GLASSES.

	£	s.	d.
No. 4. A splendid COLLECTION of HYACINTHS, JONQUILS, NARCISSI, EARLY TULIPS, new large CROCUSES, &c.	2	2	0
No. 5. The same, in reduced quantities	1	1	0
No. 6. A small and choice assortment	0	10	6

N.B. Any article above specified, if not required, will be excluded, and additional quantities of others included, according to the wish of the purchaser.

SUPERB DUTCH HYACINTHS FOR POTS AND GLASSES.

For Descriptive List and Prices of separate kinds of Hyacinths see our GENERAL AUTUMN CATALOGUE, just published.

SUTTON'S COLLECTIONS of HYACINTHS, Selected by Messrs. Sutton from choice named varieties, fresh imported:—

[illegible] very choice sorts, by name	£4 4 0
[illegible] ,, ,,	3 10 0
[illegible] ,, ,,	2 2 0
50 in 25 very choice sorts, by name	£1 15 0
25 in 25 ,, ,,	1 1 0
12 in 12 extra fine, by name	0 12 0
12 in 12 choice sorts, by name	£0 9 0
12 in 12 good sorts ,,	0 6 0
Early White Roman Hyacinths per doz.	0 3

MIXED HYACINTHS, FOR BEDS (FRESH IMPORTED).

	per 100. s. d.	doz. s. d.
Double Red	21 0	3 0
,, Blue	21 0	3 0
,, White	21 0	3 0
,, Mixed	21 0	3 0
Single Red	21 0	3 0
,, Blue	21 0	8 0
,, White	21 0	3 0
,, Mixed	21 0	3 0

DUTCH HYACINTHS, IN DISTINCT COLOURS FOR MASSING, BEDDING, RIBBON GARDENING, &c.

	per 100	doz.
Double Red	30 0	4 0
,, Rose	30 0	4 0
,, White, pure	30 0	4 0
,, ,, col'rd eyes	30 0	4 0
,, Dark Blue	30 0	4 0
,, Light Blue	30 0	4 0
Single Red	30 0	4 0
,, Rose	30 0	4 0
,, White	30 0	4 0
,, Dark Blue	30 0	4 0
,, Light Blue	30 0	4 0
,, Yellow	30 0	4 0

POLYANTHUS NARCISSUS.

	Each.	doz.
50 in 12 choice sorts		17 6
25 ,, 12 ,,		9 0
12 ,, 12 ,,		5 0
100 fine mixed		17 6
12 ,,		2 6
Apollo	0 6	5 0
Bathurst	0 6	6 0
Bazelman Major	0 9	8 0
Blanc de Neige	0 6	5 0
Czar de Muscovi	0 4	3 6
Double Roman	0 4	3 6
Florence Nightingale	0 6	5 0
General Windham	0 6	5 0
Gloriosa	0 6	5 0
Grand Monarque	0 4	3 6
Grand Primo	0 4	3 6
Groot Voorst	0 4	3 6
Juno	0 6	5 0
Lord Mayor	0 6	5 0
Lord Canning	0 6	5 0
Louis le Grand	0 6	5 0
Luna	0 4	3 6
Mazard Orientalis	0 4	3 6
Paper White	0 6	5 0
Queen Victoria	0 6	5 0
Queen of the Netherlands	0 6	5 0
Sir Isaac Newton	0 9	8 0
Soleil d'Or	0 4	3 0
Staten General	0 4	3 6

GARDEN NARCISSUS.

	per 100	doz.
100 in 6 sorts		8 0
50 ,, 6 sorts		4 0
Fine Mixed	7 6	1 0
Double White	9 0	1 3
Incomparable	7 6	1 0
Orange Phoenix	9 0	1 3
Pheasant Eye	7 6	1 0
Sulphur Kroon	9 0	1 3
Trumpet Major	7 6	1 0
Van Zion	7 6	1 0
Bulbocodium		4 0

JONQUILS.

	Each.	doz.
Largest double	0 3	2 6
Second size, ditto	0 2	1 6
Sweet-scented, single	0 2	1 9
Campernelle		1 0

RANUNCULUS.

	per doz.	p. 100
100 named varieties		20 0
50 ,,		10 0
25 ,,		5 0
12 ,,		3 0
Finest double, mixed	0 9	5 0
Fine mixed border vars.	0 6	3 6
Bella Donna	1 0	7 6
Fireball	0 9	5 0

RANUNCULUS.

	per doz. s. d.	per 100 s. d.
Lion d'Orange	0 9	5 0
Lupus	1 6	10 0
Prince de Galitzin	0 9	5 0
Queen of the Net'rlands	1 6	10 0
Scarlet Star	1 0	7 6
White Pearl	1 6	10 0

TURBAN RANUNCULUS.

	per doz.	per 100
1000 in 8 varieties		50 0
500 in 8 ,,		25 0
250 in 5 ,,		12 6
100 in 4 ,,		5 0
100 mixed		3 0
Scarlet	0 4	2 0
Yellow	0 6	3 6
Black	0 6	3 6
Citron	0 6	3 6
New Golden	0 6	3 6
Crimson	0 9	5 0
New White (Hercules)	2 0	15 0
,, Spotted (Souci dore)	1 6	10 0

ANEMONES.

	per 100.	doz.
100 named varieties		16 0
50 ,,		9 0
25 ,,		5 0
12 ,,		3 0
Finest new large double, mixed, large roots	6 0	1 0
Ditto, ditto, smaller roots	5 0	0 8
Finest single, many colours, large roots	4 6	0 8
Do. do. smaller roots	3 6	0 6
Single Scarlet	6 0	1 0
Double Scarlet	10 0	1 6
Duchess of Lotharingen	15 0	2 0
Harold	12 0	2 6
Josephine	20 0	3 0
L'Eclair	16 0	2 6
Lord Nelson	16 0	2 6
Preciosa	15 0	2 0
Prince Albert	20 0	3 0
Rose Mignonne	16 0	2 6
Scarlet, superb	15 0	2 6
Victoria Regina	15 0	2 0

SNOWDROPS.

Double flowering per 100	1 9
Single flowering ,,	1 9

WINTER ACONITE.

Price 6*d*. per dozen; 3*s*. 6*d*. per 100.

SCILLA PRÆCOX.

10*s*. 6*d*. per 100; or 1*s*. 6*d*. per dozen.

CROCUS, for OPEN GROUND.

	per 100
1000 in 8 varieties	18 6
500 in 8 ,,	10 0
250 in 5 ,,	5 6
100 in 5 ,,	2 3
Cloth of Silver	3 0
Cloth of Gold	2 0
Large Mixed	1 6
Large Blue	2 0
Large Purple	3 0
Large Striped	2 6
Large White	2 3
New Large Yellow	2 6
Versicolor	2 6
Yellow	2 0

CROCUS, for POTS.

	sorts	
1000 named Crocus, in	25	40 0
500 ,, ,,	25	21 0
250 ,, ,,	25	12 0
100 ,, ,,	10	5 0
50 ,, ,,	10	2 6
25 ,, ,,	5	1 4
12 ,, ,,	3	0 8

CROCUS, for POTS.

Albion	Lord Raglan
Antoinette	Mary Stuart
Argus	Mont Blanc
Bicolor	Mrs Beec. Stowe
Bride of Abydos	Ne plus ultra
Bride of Lammermoor	Orondatus
	Othello
Captain Cook	Prince Albert
David Rizzio	Queen of Sheba
Dorville	Queen Victoria
Elfrida	Sir John Franklin
Grande Vedette	Sir Robert Peel
Johanna	Sir Walter Scott
Lamplighter	Sky Blue
La Majestueuse	Van Speyk
Lord Byron	Vulcan

Any of the above 8*d*. per dozen, or 5*s*. per 100.

TULIPS, Early Varieties.

	per 100.	doz.
100 in 20 choice varieties		18 0
100 in 10 ,,		14 0
50 in 10 ,,		7 6
25 in 5 ,,		4 0
12 in 4 ,,		2 0
Double Tournesol	7 0	1 0
,, Duc Van Thol	3 6	0 6
Single ,,	5 0	0 9
Rose ,,	7 0	1 0
Yellow ,,		1 6
Scarlet ,,		2 6
Gold Striped ,,		5 0
White ,,		3 6
Alba Regalis		2 6
Alida Maria		3 6
Clarimond		6 0
Couronne Pourpre		2 6
Duc d'Orange		1 6
Duchess de Parma		1 6
Florentine		1 6
Kanarie Vogel		1 9
Keizer Kroon		3 6
La Belle Alliance		3 0
La Reine		1 6
Lac Van Rhein		2 6
Pottebakker, white		1 0
,, yellow		1 6
Samson		2 0
Standard Royal		1 9
Vermilion Brilliant		3 6
Finest mixed	10 6	1 0

LARGE DOUBLE TULIPS.

100 in 10 choice sorts	15 0
50 in 10 ,,	7 6
25 in 5 ,,	4 0
12 in 4 ,,	2 0
	per doz.
Admiral Kingsbergen	1 6
Blanc Borde Pourpre	1 6
Blue Flag	2 6
Duke of York	1 9
Gloria solus	1 0
Imperator rubrorum	3 6
La Candeur	2 6
Marriage de ma fille	2 0
Overwinnaar	2 6
Pæony roos	1 6
Purper kroon	1 6
Rex rubrorum	1 0
Yellow roos	1 6
Finest mixed, 100, 10*s*. 6*d*.	1 0

PARROT TULIPS.

Belle jaune	1 6
Constantinople	1 6
Mark graaf	1 6
Monstre rouge	1 9
Perfecta	1 6
Mixed	0 9

LATE SINGLE TULIPS.

Gesneriana	7 6	1 0
Finest mixed	12 6	1 6
Fine ,,	7 6	1 0

GLADIOLUS.

	£ s. d.
100 in 50 choice varieties	3 3 0
50 in 50 ,,	1 15 0
50 in 25 ,,	1 10 0
25 in 25 ,,	0 15 0
12 in 12 ,,	0 7 6

	per 100.	doz.
Finest mixed, very choice	40 0	6 0
Fine ditto, all good sorts	25 0	3 6

G. RAMOSUS HYBRIDS.

	each.	doz.
Alma	1 6	15 0
Aurora	1 0	10 6
Cardinalis	0 3	2 0
Colvilli	0 3	2 0
Crocata	1 0	10 6
Duchesse d'Orleans	0 6	5 0
Elegantissimus	0 6	5 0
Eminens	0 6	5 0
Formosissimus	0 4	3 6
Imperialis	0 9	7 6
Insignis	0 9	7 6
Jenny Lind	1 0	10 6
Koningen der Nederlanden	0 9	7 6
La Ville de Haarlem	0 4	3 6
Lady Gray	0 9	7 6
La plus Eclatante	0 9	7 6
Lindleyana	0 6	5 0
Lord Auckland	0 6	5 0
Multiflora	0 6	5 0
Prince Albert	1 0	10 6
Prince Alexander	0 9	7 6
Prince of Wales	1 0	10 6
Princess Alice	0 6	5 0
Pride of the Isles	0 9	7 6
Queen Victoria	0 6	5 0
Queen of England	1 0	10 6
Ramosus	0 4	3 6
Rosa mundi	0 4	3 6
Zenobia	0 6	5 0

G. GANDAVENSIS HYBRIDS.

	each.	doz.
Archimedes	0 9	7 6
Anna Paulownia	0 9	7 6
Bertha Rabourdin	3 6	—
Brenchleyensis	0 6	5 0
Canary	1 6	15 0
Ceres	—	—
Courantia fulgens	0 4	3 6
Don Juan	0 6	5 0
Dr. Audry	1 0	10 0
Endymion	1 0	12 0
Floribundus	0 3	2 6
Gandavensis	0 4	3 6
Goliath	1 0	10 6
Hebe	1 0	10 6
Helena	1 0	10 6
John Bull	1 0	10 6
Lord Granville	1 0	10 6
MacMahon	1 6	15 0
Magnificus	0 4	3 6
Marie	3 6	—
Mathilda de Landevo	2 0	—
Mons. Vinchon	1 0	10 0
Mrs. Binder	1 6	15 0
Napoleon III.	2 6	—
Ninon de l'Enclos	1 6	—
Osiris	1 6	—
Pegase	1 0	10 6
Penelope	1 0	10 6
Rebecca	1 6	15 0
Vulcan	2 6	—

IRIS.

	doz.
Fine English, by name	2 6
,, mixed	1 3
Fine Spanish, by name	1 9
,, mixed	0 6
Pavonia, or Peacock	2 6
Persian, for pots	1 9
Susiana, or Chalcedonian each	0 9

GLOXINIA

Choice sorts, by name, each, 1*s*. 6*d*. to 2*s*.; mixed, 1*s*. each, or 10*s*. 6*d*. per dozen.

IXORAS, SPARAXIS, BABIANAS, OXALIS, &c., as per CATALOGUE, to be had free on application.

N.B. In the above Select List columns are ruled on the left side of each article for the convenience of marking the quantities required. Orders thus marked and enclosed in a letter with instructions as to conveyance, &c., will receive prompt attention.

*** *All goods delivered Carriage Free, except very small parcels.*

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

Strawberry Plants—Ready.

CUTHILL'S SORTS, selected Plants for bearing in 1863, all one price, 7s. 6d. per 100. Early Black Prince, Early Princess Royal, Highland Mary, Richard II., Prince of Wales, and Newton Seedling, lasted in bearing this year 60 days. Strawberry Pamphlet, 1s.

Best MUSHROOM SPAWN, 5s. per bushel.

James Cuthill, F.R.H.S., Camberwell, London, S.

Strawberry Plants and Catalogue.

WILLIAM JAMES NICHOLSON has great pleasure in again offering fine laid Plants of his great Collection of STRAWBERRIES of more than 200 varieties, including all those New Sorts sent out since the publication of the Catalogue for 1860, and many others of great interest.

A new DESCRIPTIVE CATALOGUE of the above may be had about September 1, by applying to the Grower.

William James Nicholson, Egglescliffe, Yarm, Yorkshire.

STRAWBERRIES for AMATEURS.—Plants of the six most useful sorts, chosen to afford a long succession of fine fruit, one of each sort, or four plants of ECLIPSE, free by post, for 24 stamps. The sorts include ECLIPSE, new, pronounced first rate, both for Forcing and Out-doors, by the Royal Horticultural Society; PRINCESS, the finest of the very early sorts; SIR HARRY, SIR CHARLES NAPIER, WONDERFUL, the best for very rich soils; and ELEANOR, very fine and late; or OSCAR, if ordered.

Also very choice CAULIFLOWER and pure WHITE BAVARIAN CUCUMBER, 1s. per packet.

Address A. Moss, Jun., Chadwell Heath Mills, Essex, E.

Strawberries.

CHARLES KIMBERLEY can supply strong Plants of the following kinds. Most of them have been transplanted; if done well, will bring a fine crop next season.

	Per 100.—s. d.		Per 100.—s. d.
Admiral Dundas (Myatt's)	5 0	Elton Pine	3 6
British Queen (Myatt's) ex. strong	5 0	Filbert Pine (Myatt's) ..	5 0
Carolina superba (Kitley's)	5 0	General Havelock (Tiley's)	5 0
Comte de Paris	3 6	Oscar (Turner's)	3 6
Black Prince (Cuthill's) ..	3 6	Prince Arthur (Ingram's).	5 0
Bicton Pine..	3 6	Rival Queen (Tiley's) ..	5 0
Empress Eugenie (Knivett's)	5 0	Sir Chas. Napier (Smith's)	5 0
		Keen's Seedling	3 6
		Victoria (Trollope's) ..	3 6

PINLEY PINE (Kimberley's).—This is an improved Elton Pine; the fruit is much darker, larger, and much more prolific; by far the best late Strawberry we have. Plants will be ready in September next. Per 100, 10s. 6d.

Stoke Nursery, near Coventry.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.
2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

Thomas Jackson & Son, Nursery, Kingston, S.W.

DOUGLAS FIR.—This noble Tree is now proved to be amongst the most ornamental and valuable Timber Trees; and having stood at Elvaston the winter of 1860 with impunity, when both the Common Oak and Holly were severely injured, proves its hardiness.

Splendid plants, all from seed, with extraordinary roots, can be supplied as under. Those who wish to plant Park Groups or Avenues should order early before the stock is exhausted. 1 to 1½ ft., 50s. per 100; 2 ft., 75s. per 100; 3 ft., 100s. per 100.

William Barron, Elvaston Castle, Derby.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine Specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

JEAN VERSCHAFFELT, Ghent, Belgium, begs to announce he possesses a large stock of the following fine Plants with flower-buds, which he offers to the Trade as follows:

CAMELLIAS, extra fine sorts with buds, per 100 ..	£6 0 0
Ditto ditto large plants, per 100	10l. to 15 0 0
Ditto ditto extra size, each ..	5s. to 1 1 0
AZALEA INDICA, first-rate sorts, extra fine Plants for winter flowering, per 100, from	4l. to 6 0 0
Ditto ditto on stems 1½ to 2 feet high, with nice heads, per 100 ..	10 0 0
JASMINUM GRANDIFLORUM	6 0 0
CITRUS SINENSIS (Otaheite Oranges) with fruit, per 25	2 10 0

Arundo Donax variegata.

JEAN VERSCHAFFELT, Ghent, Belgium, has a nice stock of this beautiful hardy variegated ARUNDO (the finest known), which he begs to offer in strong plants at the following low terms, viz.:—

Strong plants grown in pots, per dozen	£1 5 0
Ditto ditto per 25	2 0 0

Lilium lancifolium speciosum.

JEAN VERSCHAFFELT, Ghent, Belgium, having an extra large stock of this splendid LILY, is now able to offer its varieties very cheap, viz:—

LILIUM LANCIFOLIUM (SPECIOSUM) RUBRUM, strong flowering bulbs, per 100	£2 0 0
Ditto ditto ALBUM, ditto, per 100 ..	1 16 0
Ditto ditto RUBRUM, extra strong bulbs, per 100	3 0 0
Ditto ditto ALBUM, ditto, per 100 ..	2 10 0
Ditto ditto PUNCTATUM, strong flowering bulbs, per 25..	2 10 0

AZALEA INDICA, extra fine plants, clean and bushy, first rate varieties, suitable for winter forcing, l. per 100; stronger plants, 6l. per 100.

Jean Verschaffelt's Nursery, Ghent, Belgium.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to 7s. 6d. each;

ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA, 21s. each.

A Select LIST of the most rare kinds will be forwarded Post Free on application.

Dorking Nursery.

New Verbena, Lord Craven.

DOWNIE, LAIRD, AND LAING have much pleasure in intimating that they will be prepared to execute all orders for the above Magnificent VERBENA in April, particulars of which will be duly announced. It was awarded a First-class Certificate at the Floral Meeting, South Kensington, August 26.

Stanstead Park Nursery, Forest Hill, S.E., and Edinburgh.

New Herbaceous Phloxes, Roses, Hollyhocks, Pentstemons, &c.

EDWARD WEBB, of the Gower Inn Rosery, Park Mill, near Swansea, Glamorganshire, respectfully informs his friends and the public generally that his magnificent collection of HERBACEOUS PHLOXES is now blooming in great perfection. Also his unrivalled collection of HOLLYHOCKS, PERPETUAL ROSES, PENTSTEMONS, &c., is now in full bloom. He respectfully solicits an early inspection.

New Plants of 1862.

JAMES DICKSON AND SONS, "Newton" Nurseries, Chester, have now ready Strong Plants, at Reduced Prices, of FUCHSIAS, CHRYSANTHEMUMS, PHLOXES, PETUNIAS, and VERBENAS of the most approved varieties of this season. The usual allowance to the Trade. Prices on application.

Also very strong VINES from Eyes for Immediate Planting of the leading varieties, and such as will give the utmost satisfaction. Prices moderate.

Mushroom Spawn.

JOSEPH MAY begs to inform his customers he has some of the best quality this season. Directions sent for growing them on the most simple plan.

Collections of DUTCH and other FLOWER ROOTS for greenhouse or outdoor culture, from 10s., 15s., 20s., and upwards.

15, Wellington Street, Strand, W.C.

Cucumber Seed! Cucumber Seed!

JOSEPH HAMILTON, Botcherby, Carlisle, can supply Seed of his improved Market Favourite CUCUMBER, post free for 12 postage stamps. See *Gardeners' Chronicle*, Jan. 6, 1862, where it was pronounced the best and handsomest of the whole collection of 81 varieties. Also Lord Kenyon's Improved and Carter's Champion, the best of the Syon House race, 1s. per packet.

CATTELL'S EARLY RELIANCE CABBAGE, CATTELL'S DWARF BARNES CABBAGE.

These two Cabbages have proved themselves for many years past to be the two best Early Spring Cabbages in cultivation. If sown as early as the middle of July, they will not run to seed the following Spring. They may be had as usual in packets containing half-an-ounce of the Reliance, and one ounce of the Dwarf Barnes. Free by post for 12 Penny Stamps for each packet.

John Cattell, Nursery and Seed Establishment, Westerham, Kent.

RAYNBIRD, CALDECOTT, AND BAWTREE, Seed Merchants and Growers, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E.C.

Samples and Quotations of all kinds of AGRICULTURAL SEEDS, and SEED CORN, sent post free on application.

Peruvian Guano, Lawes' Turnip Manures, Linseed Cakes, Cotton Seed Cakes, &c., of best quality, at Market Prices.

International Exhibition 1862.
Prize Medal, Great Exhibition 1851.
Prize Medal, "Excellent Seed Corn and Seeds," see Jury Award.

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Samples and quotations of all kinds of Agricultural Seeds, and Seed Corn, sent post free on application.

Peruvian Guano, Lawes's Manures for Turnips, Wheat, Barley, &c., Linseed Cakes, and Feeding Stuffs, at market prices.

SEED WHEAT from the CHALK.—Browick Red, Nursery, Rough Chaff, and all the most approved varieties of Wheat. Also Hallett's Pedigree Wheat, Shirreff's Bearded Red, &c., supplied by Raynbird, Caldecott, & Bawtree.

Winter Tares, Rye, Winter Barley, Winter Oats, Trifolium, &c. Samples and Prices post free on application.
Address, Basingstoke, or 89, Seed Market, Mark Lane, E.C.

SEED WHEAT, Delivered upon the Great Eastern or Great Northern Railways.

HALLETT'S PEDIGREE NURSERY, 80s. per Quarter.
SHIRREFF'S BEARDED RED, 72s. per Quarter.
GOLDEN DROP RED, 68s. per Quarter.
RED TALAVERA, 68s. per Quarter.
QUINTIN'S GIANT RED, 60s. per Quarter.

The two first varieties were purchased direct from Mr. Hallett and Mr. Shirreff last autumn, by the Grower, Mr. S. A. Daintree, of Fendrayton, St. Ives, Hunts, and any Orders or Enquiries addressed to him will have prompt attention.

Important to Farmers.—Hallett's Pedigree Wheat.

W. COOPER, Farmer, Fendrayton, St. Ives, Hunts, begs to inform Agriculturists that he has a large quantity of the above, which can be warranted as grown from seed of Mr. Hallett. Price 10s. 6d. per bushel, delivered on the Great Northern and Great Eastern Railways.

Also GIANT WHEAT at 9s. per bushel, delivered as above. New Sacks, 1s. 6d. each.

Hallett's Pedigree Nursery Wheat.

JOHN GEORGE WAITE, Seed Merchant, 181, High Holborn, London, W.C., begs to offer the above Wheat, grown on his own Farm, from Seed purchased from Mr. Hallett last autumn, price 14s. per bushel. Having a large stock, he is enabled to offer it at the above low figure to place it within the reach of all classes of agriculturists, in order that they may give it a trial. September is the best time for sowing this variety of Wheat.

John George Waite, 181, High Holborn, W.C., and Norbiton Park Farm, Kingston, Surrey.

Genuine Italian Rye-grass, produced from the Second Cut of Foreign Seed.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts., will again be able to supply the Trade with this article in the same fine quality as last season, and can deliver either now or in the spring at the purchaser's convenience.

Address for samples and prices as above, stating quantity required and time of delivery.

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD,

PATENTEES AND MANUFACTURERS OF

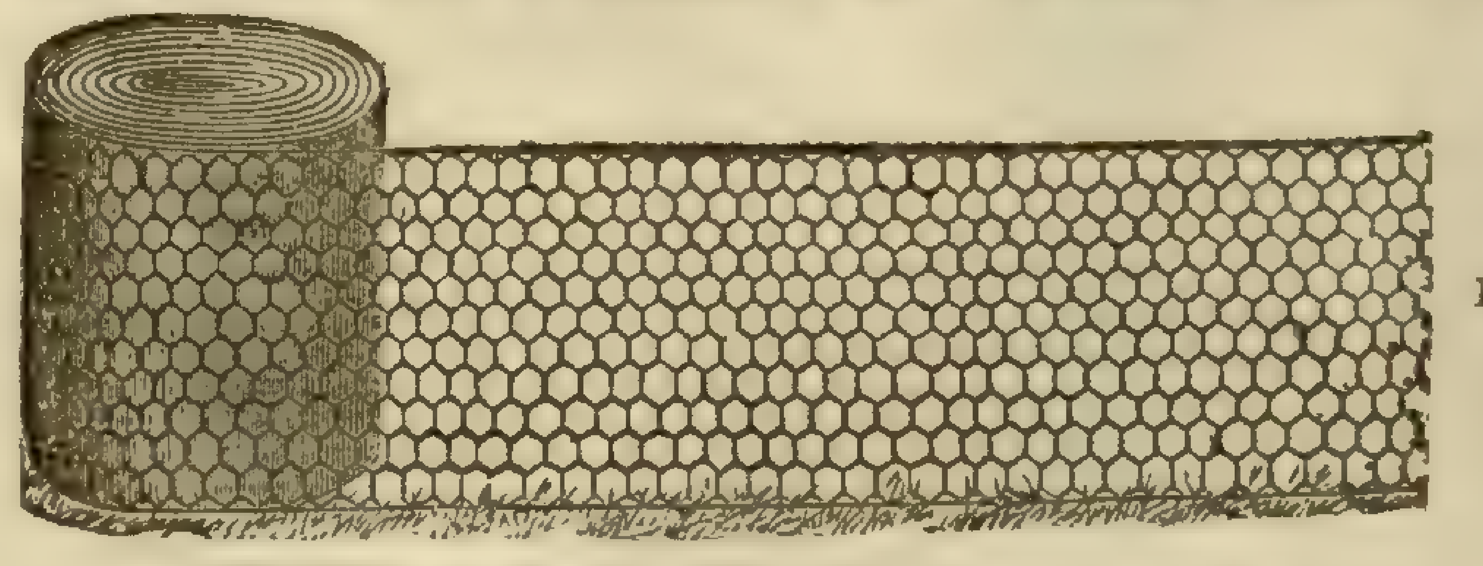
STEAM CULTIVATORS, STEAM PLOUGHS,

CHAMPION PLOUGHS, HARROWS, HORSE RAKES, AND HAYMAKERS.

CATALOGUES, with full particulars, sent free on application.

NEW IMPROVED PREMIUM WIRE NETTING.

GREAT IMPROVEMENT,



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PRICES per Lineal Yard, 24 inches high:—

Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra Strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
2¼ inch	Hares, Dogs, Poultry	3d.	4d.	3¾d.	5d.	4½d.	6d.	5½d.	7d.
2 inch	Game or Poultry Netting	3½d.	4¼d.	4d.	5d.	5d.	6½d.	6½d.	8d.
1⅝ inch	Small Rabbits, Hares, &c.	4d.	4¾d.	4¾d.	6d.	5½d.	7d.	7d.	9d.
1½ inch	Smallest Rabbits.................	5d.	6d.	5¾d.	7d.	7d.	9d.	9d.	11d.

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

*** *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged or may be returned unconditionally.*

J. B. BROWN & CO., 18, CANNON STREET, CITY, LONDON, E.C.

HOT-WATER PIPES

DELIVERED TO ANY STATION IN ENGLAND.

J. JONES

BEGS to state that he can now supply HOT-WATER PIPES and FITTINGS delivered Carriage Paid to any Railway Station in England, and that he has made very advantageous arrangements for delivery at the following Stations; and parties availing themselves of this offer will in many cases get their Pipes at a Country Station at a less price than would be charged in London.

- Alfreton
- Accrington
- Ashbourne
- Adlington
- Ashby-de-la-Zouch
- Atherstone
- Bradford (Yorks.)
- Barton
- Burnley
- Bolton
- Bingham
- Bulwell
- Beverley
- Bury
- Bedale
- Barnsley
- Barton
- Birkenhead
- Chesterfield

- Chester
- Chorley
- Chelford
- Crewe
- Cheadle
- Congleton
- Colwich
- Derby
- Dewsbury
- Doncaster
- Driffield
- Droitwich
- Dudley
- Edgebaston
- Eckington
- Farnworth

- Gainsborough
- Grantham
- Halifax
- Harrogate
- Ilkeston
- Kirkham
- Knapton
- Knaresborough
- Lancaster
- Leeds
- Liverpool
- Loughborough
- Leek
- Lichfield
- Leamington
- Leicester
- Lincoln

- Macclesfield
- Malton
- Manchester
- Mansfield
- Market Harboro'
- Marton
- Nottingham
- Normanton
- Northallerton
- Northampton
- Oakham
- Oldbury
- Oldham
- Ormskirk
- Oswestry
- Oundle
- Preston
- Pontefract

- Peterborough
- Penkridge
- Retford
- Richmond (Yorks.)
- Rotherham
- Rochdale
- Rugeley
- Rugby
- Redditch
- Shrewsbury
- Stafford
- Stourbridge
- Salford*
- St. Helen's
- Settle
- Skipton
- Stamford
- Sleaford
- Scarborough

- Selby
- Sheffield
- Tamworth
- Thirsk
- Tipton
- Trentham
- Thrapston
- Uttoxeter
- Ullesthorpe
- Worcester
- Wolverhampton
- Wellington (Salop)
- Wrexham
- Warrington
- Wigan
- Wakefield
- Worksop
- Wellingboro'
- York

Also to any Station in Derbyshire, Shropshire, Warwickshire, Cheshire, Lancashire, Yorkshire, Leicestershire, Worcestershire, Lincolnshire, and Staffordshire.

J. JONES will be happy to forward his ILLUSTRATED CATALOGUE of HOT-WATER PIPES, BOILERS, and FITTINGS, and PRICES for the same delivered Free to any Station; but parties requiring prices must state the quantities of Pipes, &c., required, and the Station to which they are to be delivered.

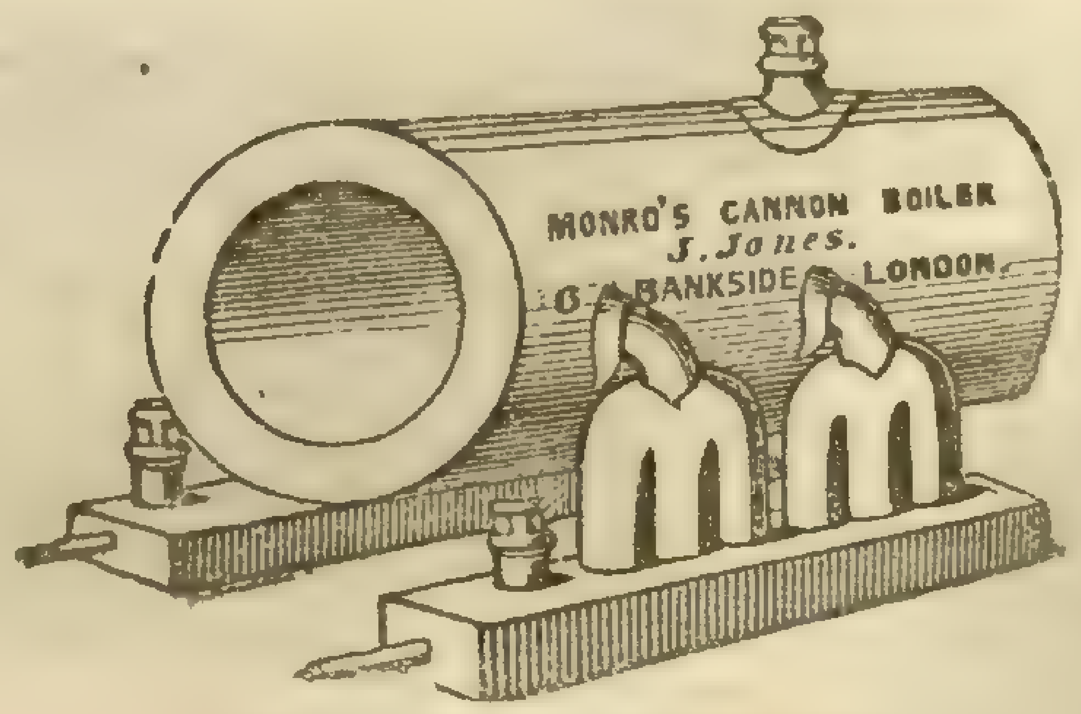
J. JONES,

IRON MERCHANT and HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

20-inch	Wrought Iron	£3 15 0
24-inch	"	6 10 0
30-inch	"	7 10 0
36-inch	"	8 10 0
48-inch	"	12 0 0
60-inch	"	20 0 0
72-inch	"	25 0 0



MONRO'S CANNON BOILER.

These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by J. JONES, 6, Bankside, Southwark, London, S.E.

Prices for HOT-WATER PIPES, ELBOWS, TEES, SYPHONS, VALVES, TROUGH PIPES, ORNAMENTAL COIL CASES, BECK'S PATENT VALVES, &c.; or ESTIMATES for HOT-WATER APPARATUS, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON, SADDLE, or CYLINDER BOILERS, will be sent, with an ILLUSTRATED CATALOGUE, free on application.

J. JONES,

HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, LONDON, S.E.

WILLIAM BULL, F.R.H.S., F.R.B.S., begs to announce that he can now supply the Beautiful and Rare POGONIA DISCOLOR and POGONIA NERVILIA; also CLEMATIS BRASILIENSIS. This new Clematis has been introduced by the Royal Horticultural Society. Their Collector, Mr. Weir, thus writes:—

"The Clematis is perhaps the most conspicuous object in the forest at present, after the Bougainvillæa, being completely covered with immense bunches of its long-awned seeds. It has the appearance of being clothed in—

"'A silken gown o' siller grey.'"

Vide Royal Horticultural Society's Transactions, page 44.

NEW ANTIRRHINUMS of 1862	12s.	per dozen
NEW CHRYSANTHEMUMS of 1862	30s.	,,
,, of 1861	9s.	,,
NEW FUCHSIAS of 1862	24s.	,,
NEW GLOXINIAS of 1861	24s.	,,
NEW PENTSTEMONS of 1862	24s.	,,
,, of 1861	9s.	,,
NEW PETUNIAS of 1862	18s.	,,
NEW PHLOXES of 1861	18s.	,,
NEW VERBENAS of 1862	12s.	,,

Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

AN OPPORTUNITY RARELY TO BE MET WITH.

WILLIAM BULL is about to convert one of his Vineries into a Plant House and wishes to dispose of the Vines; they are in the best possible condition, with stout strong rods about 20 feet long. For further particulars apply at WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

New Anæctochilus.

ANÆCTOCHILUS SCHÆLLERI, a New Species from Costa Rica, will be shortly sent out for the first time, from

WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

New Fern.

ADIANTUM FÉEI (syn. FLEXUOSUM, Hooker).—A beautiful Gleichenia-like New Species from Mexico, will be shortly sent out for the first time, from

WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

New Fern.

ASPIDIUM PINNATUM, a New Species from Brazil, will be shortly sent out for the first time, from

WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

New Azalea Indica.

AZALEA WILLIAM BULL.—This fine Azalea was raised in Belgium, and named by M. Ambroise Verschaffelt, from whom the stock for circulation in the United Kingdom has been purchased. It will be shortly sent out for the first time, from

WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London, S.W.

Exotic Nursery, Rouen, France.

TO THE TRADE ONLY.

J. WOOD respectfully informs the Trade that he has on Sale a great quantity of grafted EPIPHYLLUM TRUNCATUM, such as SPECTABILIS, ELEGANS, AURANTIACUM, MULTIFLORUM, RUCKERIANUM SUPERBUM, RUCKERIANUM RUBRUM, &c., on stout stems from 6 to 15 inches. These are the most beautiful of all winter flowering plants, the strongest heads capable of giving from 40 to 60 flowers.

Ten new and very superior varieties will be sent out as soon as the number (limited) of Subscribers is attained in two years grafts. Orders amounting to 5*l*. and upwards sent carriage paid to London. Prices on application.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned NEW and fine AZALEAS. For October next.

FLAG OF TRUCE.—The finest double white known; has obtained two Certificates and a Silver Medal for its superior merits, being the highest testimonial any Azalea has yet received, 21*s*. to 31*s*. 6*d*. each.

PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21*s*. to 31*s*. 6*d*. each.

CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very superior, 21*s*. to 31*s*. 6*d*. each.

LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10*s*. 6*d*. to 15*s*. each.

CRISPIFLORA ROSEA.—Fine bright rose; the flowers are waved or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10*s*. 6*d*. to 15*s*. each.

PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10*s*. 6*d*. and 15*s*. each.

Any of the above may be had in grafted plants, or on their own roots.

For full particulars see *Gardeners' Chronicle* of August 16, 1862, p. 758; or in CATALOGUES, which may be had gratis on application.

Dulwich, Surrey, S.

To Purchasers of Bulbs.

SUTTON'S SELECT BULB LIST, on page 231 of this day's *Chronicle*, contains all the most desirable sorts in cultivation. Marginal Columns are given for marking the quantities required.

Royal Berkshire Seed Establishment, Reading.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON AND CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

J. C. WHEELER AND SON, SEED GROWERS, Gloucester, have imported in excellent condition a large

COLLECTION of HYACINTHS,

including the extra fine varieties recommended by Dr. LINDLEY.

PRICED LISTS may be had gratis on application to the Importers,

Messrs. J. C. WHEELER & SON, Gloucester.

J. C. WHEELER AND SON Glo'ster

New Bulb Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce their BULB CATALOGUE for immediate circulation, a Copy of which will be forwarded postage free on application.

THE TITIEN STRAWBERRY.
FUCHSIA BIANCA MARGINATA (BANKS).
,, MARS.
,, MDLLE. TREBELLI.
SOLANUM CAPSICASTRUM VARIEGATUM.

Descriptions and prices of the above will be forwarded on application.

The SOLANUM CAPSICASTRUM VARIEGATUM, and the TITIEN STRAWBERRY, are now ready for sale. The FUCHSIAS will be sent out in October.

Wellington Nursery, St. John's Wood, London, N.W.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental Plants, Azalea indica, Conifers, Chrysanthemums, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, Hyacinths, Tulips, Gladioli, and other Bulbs, is now ready, and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

Bulbs and How to treat them.

HOOPER AND CO.'s CATALOGUE of HYACINTHS, and every other kind of Bulb, contains practical information for their successful cultivation, together with copious lists of the best varieties extent. Forwarded post free on application.

Collections of named HYACINTHS in 12 fine sorts, 6*s*., 7*s*. 6*d*. 10*s*., and 15*s*. All the Bulbs sound and of the best quality.

HOOPER & Co., Seedsmen, Central Avenue, Covent Garden Market, London, W.C.

Dutch and other Bulbs.

B. S. WILLIAMS'S AUTUMN CATALOGUE for 1862 is now ready, post free to all applicants, containing select lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladioli, Amaryllises, Caladiums, Gloxinias, and many other choice Bulbs, with Hints on their Culture for the guidance of Amateur growers. To which is added a SUPPLEMENTAL and DESCRIPTIVE LIST of NEW, BEAUTIFUL, and RARE PLANTS.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Choice Seeds, in Sealed Packets.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give satisfaction.

AMARYLLIS, saved from choice named varieties, 2*s*. 6*d*. per packet.

CALCEOLARIA, Herbaceous, finest mixed, 1*s*. 6*d*., 2*s*. 6*d*., and 3*s*. 6*d*. per packet.

CINERARIA CRUENTA, fine mixed seed from named flowers, 1*s*. 6*d*. and 2*s*. 6*d*. per packet.

PRIMULA SINENSIS FIMBRIATA, Red, White, or Mixed, very choice, 2*s*. and 3*s*. 6*d*. per packet.

For numerous Testimonials see BULB CATALOGUE, post free on application.

Just published, price 1*s*.

BARR AND SUGDEN'S ILLUSTRATED AUTUMNAL FLORAL GUIDE to WINTER and SPRING GARDENING. "There ought (says Lord Bacon) to be Gardens for all the Months of the Year, in which severally things of beauty may be had in season."

BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C. (Opposite the Garrick Club).

Published in 3 or 4 days.

BARR AND SUGDEN'S ILLUSTRATED AUTUMNAL FLORAL GUIDE to WINTER and SPRING GARDENING, a copy of which will be presented to each of their customers.

BARR & SUGDEN, Seed Merchants and Importers of Foreign Bulbs, 12, King Street, Covent Garden, W.C. (opposite the Garrick Club).

BARR & SUGDEN 12 KING ST. COVENT GARDEN

BARR & SUGDEN'S
ILLUSTRATED FLORAL GUIDE
AND
COLLECTIONS of BULBS for 1862

are so arranged as to enable their Patrons to carry out the idea of having "GARDENS FOR ALL THE MONTHS IN THE YEAR, in which, severally, things of beauty may be had in season."

No. 1. COLLECTIONS OF BULBS.

All Orders amounting to 21s. sent carriage paid,—See Special Notices, p. 829.

To those who are unacquainted with the names of the best and most easily cultivated varieties of Bulbs, we recommend the following Collections with the greatest confidence; they comprise such sorts only as are best adapted for the purposes specified.

As these Collections may not, in all cases, meet the prevailing tastes or convenience of those for whom they are intended, it will afford us much pleasure to make whatever alterations may be required; or, if we are favoured with a sketch of the garden, showing the relative position of beds and borders, with their dimensions, and the nature of the soil, we shall feel great pleasure in sending the Bulbs best suited, and such only as will produce the most brilliant display.

COLLECTIONS FOR IN-DOOR AND OUT-DOOR DECORATION.

	A. £5 5s.	B. £3 3s.	C. £2 2s.	D. £1 1s.	E. 15s. 6d.	F. 10s. 6d.
HYACINTHS, splendid varieties, for in-door decoration	60	40	25	20	15	12
,, ,, for out-door decoration	30	25	15	10	6	..
POLYANTHUS NARCISSUS, for in-door decoration	25	18	12	3	3	..
TULIPS, for in or out-door decoration	200	150	100	40	20	20
JONQUILS, for in-door decoration	20	12	12	3	3	..
IXIAS and SPARAXIS, for out or in-door decoration	30	20	12	6	..	..
CROCUS, for out-door decoration	400	300	200	100	100	100
ANEMONES, ,,	200	100	75	20	12	10
RANUNCULUS, ,,	200	150	100	50	25	20
SNOWDROPS, ,,	200	100	100	50	50	50
GARDEN NARCISSUS ,,	100	80	50	25	20	20
CROWN IMPERIALS ,,	6	6	6	..	..	..
IRIS, splendid English ,,	30	20	12	6	6	6
SCILLA SIBIRICA, for in or out-door decoration	18	12	9	6	..	..

HYACINTHS, 2*s*. 6*d*., 3*s*., 4*s*. 6*d*., 6*s*., 9*s*., and 12*s*. per dozen.
POLYANTHUS NARCISSUS, 3*s*., 3*s*. 6*d*., and 4*s*. 6*d*. ,,
TULIPS, 3*s*. 6*d*., 4*s*. 6*d*., 7*s*. 6*d*., and 10*s*. 6*d*. per 100.
CROCUS, 1*s*. 6*d*., 2*s*. 6*d*., and 3*s*. 6*d*. per 100.

To be Continued Weekly.

(For an Article by ALPHA on SPRING GARDENING, see ILLUSTRATED FLORAL GUIDE.)

BARR & SUGDEN,
SEED MERCHANTS & IMPORTERS of DUTCH, FRENCH, ITALIAN & CAPE FLOWERING BULBS,
12, KING STREET, COVENT GARDEN, W.C.
(OPPOSITE THE GARRICK CLUB.)

DUTCH AND OTHER FLOWER ROOTS.

HUGH LOW & CO.

are now ready for distribution their CATALOGUE of the above, which can be had on application.

The Trade supplied.

CLAPTON NURSERY, LONDON, N.E.

DUTCH FLOWER ROOTS.

JAMES VEITCH, JUN.,

ROYAL EXOTIC NURSERY, CHELSEA, S.W.,

Begs to announce that he has received his Annual Supply of BULBOUS ROOTS from Holland, and is pleased to say they are in EXCELLENT CONDITION.

CATALOGUES are now ready, and will be forwarded on application.

J. V., Jun., desires to impress upon those who patronise him the great advantage of giving him their ORDERS EARLY, as the successful Cultivation of Bulbs depends in a great measure upon their BEING PLANTED EARLY IN THE SEASON.—Sept. 6.

CHOICE GLADIOLUS.

YOUELL & CO.'S

COLLECTION of the above, extending over Three Acres, is NOW in BLOOM, and will continue some weeks.

The First Prize was awarded them on Wednesday last, Sept. 3, at the Crystal Palace, Open to All England and the Continent. We supply them at the following prices:—

No. 1 Collection contains 100 Bulbs, in 50 of the most choice and handsome kinds, with names ...			£5 0
No. 2 Collection contains 100 Bulbs, in 30	ditto	ditto ...	3 15
No. 3 Collection contains 100 Bulbs, in 25	ditto	ditto ...	2 10

Fine Selections will be supplied at 6s., 9s., 12s., 18s., to 30s. per dozen.

CATALOGUES will be forwarded on application.

ROYAL NURSERIES, GREAT YARMOUTH.

GLADIOLUS BRENCHLEYENSIS (True).

YOUELL & CO.

Beg to offer this season strong FLOWERING BULBS of the above at 3s. 6d. per dozen, 25s. per 100. Trade price on application, and when quantities are ordered a considerable reduction will be made.

The *Gardeners' Chronicle*, in the report, Sept. 8, 1861, speaks of it thus:—"It cannot be spoken of in terms of exaggeration; the robust habit and intensely bright scarlet flowers place it at the head of all the early flowers of the autumn." And again, August 23, 1862:—"The spikes you have sent us are magnificent. We have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."

CATALOGUES of their extensive Collection, for which the First Class Prize was awarded at the Crystal Palace Show on Wednesday last, Sept. 3, 1862, will be forwarded on application.

ROYAL NURSERIES, GREAT YARMOUTH.

NEW AND RARE PLANTS.

THOMAS JACKSON & SON

Having a good Stock of the undernamed BEAUTIFUL NEW PLANTS, respectfully offer them at very low prices:—

	Each.—s.	d.
ALOCASIA MACRORHIZA VARIEGATA	31	6
" METALLICA	31	6
ARALIA DUNCANII	5	0
CAMPYLOBOTRYS GHIESBREGHTII	2	6
" PYROPHYLLUS	3	6
CLERODENDRON THOMSONÆ	3	6
CORDYLINE HELICONIFOLIA	5	0
COSTUS VILLOSUS	3	6
IMPATIENS FLACCIDA	5	0
PHYLLAGATHIS ROTUNDIFOLIUS	7	6
POLLIA PURPUREA	5	0
RHYNCHOSIA ALBO NITENS	10	6
SCLEROSTEMA MARMORATUM	7	6
AGAVE SCHIEDIGERA	10	6
AZALEA KINGHORNII	3	6
" PRESIDENT	3	6
" MARS	3	6

	Each—s.	d.
DRACÆNA ERYTHRORACHIS	10	6
DASYLIRION ACROTRICHON	10	6
ERICA DOUGLASII	5	0
FICUS BEGONIFOLIA	7	6
LYCOPODIUM ULIGINOSUM	10	6
MACROZAMIA MACKENZII	31	6
PIMELEA ELEGANS	3	6
SEAFORTHIA ELEGANS	7	6
ARUNDO CONSPICUA	7	6
JUNIPERUS DRUPACEA	5	0
PICEA SPECIES, from Vancouver's Island, 1½ ft., in pots (This fine new Fir is quite hardy, specimens in our Nursery having withstood the two last winters.)	10	6
QUERCUS BAMBUSÆFOLIA	31	6
SERISSA FŒTIDA VARIEGATA	7	6
RETINOSPORA OBTUSA	10	6

NURSERIES, KINGSTON, S.W.

Autumn, Winter, and Spring Bedding Plants.

J. SCOTT, MERRIOTT NURSERIES, Somerset, begs to say that his DESCRIPTIVE CATALOGUE of DUTCH BULBS, Late Autumn, Winter, and Spring BEDDING PLANTS is now ready. It is arranged in Two Parts. 1st, Dutch and other Bulbs, in charming variety, imported direct from Holland. Part 2, How to Plant Autumn, Winter, and Spring Beds, with Copious Lists of all the best plants suited to garden ornamentation during the months of November and December to the beginning of May.

Prepaid application, enclosing two postage stamps.

RUGBY HORTICULTURAL SOCIETY. AWARDS.

The Open Prize of 5*l.* for the best 36 Dahlias was carried off by Mr. C. Turner, Slough; Mr. Thorneycroft, second; Mr. C. Kimberley, third; Mr. Perry, extra.

The Open Verbena Prize of 3*l.* was awarded to Mr. W. H Trun, Victoria Nursery, Rugby; Second Prize to Mr. C. J Perry, The Cedars, Castle Bromwich.

Rugby, Aug. 29. Mr. J. ROBINSON, Mr. WILLS, } Judges.

ROYAL HORTICULTURAL SOCIETY. AUTUMN SHOW, SEPTEMBER 10, 1862.—An Additional Prize of 10*l.* will be given for the Best Specimen of a CONSERVATORY TUB. There is no restriction as to material, size, form, or design. It may be of wood, slate, stone, pottery ware, Terra Cotta, or any other substance. It may be in one piece or in many, fastened or bound together. Fitness for its purpose, elegance of design, superiority of workmanship, and cheapness, will be the test of merit.

Letters to be addressed to Mr. G. EYLES, Garden Superintendent, South Kensington, W.

A PRIZE of 5*l.* is offered by one of the Fellows of the Royal Horticultural Society for the 12 best STANDARD PLANTS for the DECORATION of the DINNER TABLE, to be awarded at the Show of Autumn Flowers, on September 10.

The Plants must be ornamental, either for their foliage, flowers, or fruit, and must be grown in pots not exceeding 6 inches in diameter; the foliage, flowers, and fruit must not be less than 20 inches nor more than 24 inches clear from the bottom of the pot.

Elegance of form, slenderness of stem, and variety of colour, will be the tests of excellence.

The groups will be received as late as 10 o'clock, A.M., PROVIDED SPACE SHALL HAVE BEEN SECURED FOR THEM THE DAY BEFORE. Letters to be addressed to Mr. G. EYLES, Royal Horticultural Society's Garden, South Kensington, W.

ROYAL HORTICULTURAL SOCIETY Special PRIZES for the March Show in 1863.

10*l.* for the Three Best CAMELLIAS.

3*l.* for the Three Best TREE MIGNONETTES.

ROYAL HORTICULTURAL SOCIETY. FLORAL COMMITTEE.

The next MEETING of this Committee for the Exhibition of NEW PLANTS and SEEDLINGS will be held in conjunction with the Show of Autumn Flowers, which will take place in the Gardens of the Society on September 10.

A Sub-committee will adjudicate upon the subjects exhibited, which must be in the Gardens by 8.30 A.M., in accordance with the regulations for the Show, but may be entered without previous notice.

THOMAS MOORE, Secretary to the Committee.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 6, 1862.

MEETING FOR THE ENSUING WEEK.

WEDNESDAY, Sept. 10 { Royal Horticultural (Autumn Show) at South Kensington .. .. 1 P.M.

A FEW days since we received the following letter upon the important subject of PRUNING PEAR TREES IN SUMMER. Instead of giving an immediate answer to the writer's enquiry, we preferred referring it to one of the most experienced and skilful managers of the Pear tree, for which we think the writer and our readers will thank us. The writer, who dates from a small village in Wiltshire, says:—

"The question of summer pruning as respects Pear trees is being much canvassed in this neighbourhood. At p. 740 of your Number for August 9 you allude to Mr. Kay, of Finchley, now conducting his pruning on a "principle" which is indicated in a paper of his published 17 years ago, in which he objects to the "Summer Pruner's" "agreeable idea of cutting off branches for the better support of those which are left," and says it is an idea "diametrically opposed to all laws connected with vegetable physiology." Mr. Kay covers a wonderful extent of surface with the wood of young Vines and Peach trees, well cropped. It may be that the Pear tree requires different handling, and I beg to request some information on the subject. The rule laid down in your Paper for some years past has been to direct the spray of Pear trees to be merely shortened back in the summer, not all in one day but gradually, so as to avoid any violent check to the sap; close pruning to follow when the leaves are off. I confess, however, that my own trees so shortened, &c., are not prolific, but the reverse; while I have a neighbour across the valley, and at a higher elevation considerably, whose trees are at this date closely pruned, and have an abundant crop of all kinds of Pears. Though an amateur he is a very extensive and successful grower. I am writing now of his wall trees only. My friend lays great stress upon the necessity of pinching or snapping off the spray, not making a clean cut. He thinks that the rough severance causes a check which retards the breaking forth of second shoots, and promotes fruit buds. If any tree occasionally behaves otherwise, he root prunes in October, and this, he tells me, is the treatment required by my trees, which, whether pruned by clean cut, or broken, make a vigorous second growth.

My friend shortens to one or two eyes in June, and goes over the trees again in a month or six weeks, to see if any shoots have been overlooked or are becoming too prominent, and cuts them likewise close back. If you will favour us with your opinion as to the treatment I have described, and say whether you consider it exceptional, or a plan that may be generally followed with Pear trees, it would oblige many."

Upon these points our referee makes the following remarks, which we give in his own words:—

The writer states that his trees are not prolific, but the reverse, while his neighbour across the valley, and at a higher elevation considerably, whose trees are at this date closely pruned, have an abundant crop of all kinds of Pears. He root prunes any tree that occasionally behaves otherwise under his system of close summer pruning. In this case the circumstance of higher elevation must by no means be overlooked, for owing to it his neighbour's trees may be safe from frost in spring, whilst the dense frosty air settling in the valley may have killed the writer's blossoms and occasioned the loss of his crop, quite independently of any system of pruning. If this be so, attention to some slight protection of the blossoms may ensure his having quite as much fruit as there is on the trees situated higher, that is, presuming the unproductiveness of his trees is occasioned by cold.

But this, though probable, may not be the case. The trees are perhaps barren from not forming blossom buds; and this again may be owing to unequal distribution of the flow of sap. Get this equalised as much as possible, and fruitfulness will in most instances be the result. The question with many is, by what means can this be effected? In *summer pruning*, cut or pinch the stronger shoots closer and earlier in the season than the weaker. Encourage the latter; keep a vigilant eye on the former. You may expect them to break out from the strongest branches, or those which bore the greatest amount of foliage in previous years. On the weaker branches shoots may even be allowed to grow for a season without stopping at all. Branches acquire vigour in proportion to the quantity of shoots and foliage which they are permitted to bear. If we can regulate this, and it can be done, we shall be able to equalise the flow of sap throughout the respective branches of the tree—then it will be disposed to bear all over from top to bottom. If it do not, a little judicious root-pruning will have the desired effect. To this there is no objection, especially where the tree is in rich moist soil. But first, and above all things, let the flow of sap be rightly governed.

A SUBSTANCE called COCOA-NUT WASTE is now beginning to make its appearance in gardens, and as it is said to be of some importance, we have caused enquiry to be made about it, the result of which is embodied in the present article.

Few substances promise to prove more universally useful in gardening than this. As a mere mechanical agent for working into stiff soils, it bids fair to be valuable. It makes an excellent mulching material, and in the finer kinds of composts for potting, it will be found to form a good substitute for leaf mould.

It is sometimes called Cocoa-nut fibre; but that is a mistake. In reality it contains no fibre at all; it is the pulp or refuse from the outer husk of the Cocoa-nut after the fibre has been thoroughly separated from it by machinery for brush and mat making. At the Cocoa-nut Fibre Company's Works near Kingston-on-Thames, this refuse has been accumulating for years, and at the present time little mountains of it may be seen near the Works in question. When its value, however, shall have become more generally known, they will doubtless disappear. In short, when we saw them the other day, carts from our great metropolitan nurseries were being loaded at a cost of 3*s*. per one-horse load.

As regards the material itself, when partly decomposed by age it looks not unlike mahogany sawdust, or perhaps coffee grounds, and in this condition it is said to require very little earth mixed with it. When new it is of a paler hue, and for purposes of cultivation should have a more liberal admixture of soil. For mulching, the new is reported to be preferable to the old, and if so, the uses for which it is intended should always be stated by parties ordering it.

Practically its uses will be found to be the same as those of peat or leaf mould as far as gardening is concerned. Mixed with soil most kinds of plants grow in it with unusual vigour, and even in the light spongy material itself roots prove to be wonderfully active, filling every interstice of it with their little fibres. For Orchids it looks as if it might be useful, and for Ferns it is known to be suitable, as is proved by a case of them in the International Exhibition from the proprietor of the Works under notice. These are growing in Cocoa-nut refuse alone, firmly rammed down in the first instance and well watered; but elsewhere they are found to succeed best when peat is mixed with the refuse. Orange trees and Camellias nearly dead are stated to have recovered after being planted in mould of which it formed a part, and in soil for Rhododendrons and Azaleas it is likewise reported to be useful. It is also found to be an excellent material for surfacing tan beds, for although it does not furnish heat it retains it, and is a good medium for plunging pots in. Begonias, Gloxinias, and things of that description also grow in it freely. In short, as far as plants in pots are concerned, most things appear to thrive astonishingly in it; and when placed about a foot thick over hot-water pipes or tanks it maintains a very steady heat, cuttings of all kinds striking readily in it; even hard wood plants not before struck from cuttings have succeeded in it.

In the Kitchen Garden it is reported to be equally valuable. Potatoes grown in it turn out almost as clean as if washed, and an excellent crop, but not free from disease, which is now beginning to make havoc with Potatoes everywhere round London. For Asparagus, especially in stiff ground, it seems important; heads which came up crooked and deformed before now push through the superincumbent soil, lightened by its application, straight and marketable, while previously they were nearly valueless. For other crops it promises to be equally useful, especially where the ground is clayey or stiff.

As mulching for newly planted trees, both forest and fruit, it cannot fail to be extremely advantageous, and for putting between rows of Strawberries in spring to keep the fruit clean it may be found even better than stable litter. At Kew it has been applied as a mulching for bedding plants, and it has also been found useful there for other purposes. It parts with and absorbs heat very slowly, and is an excellent preventive of evaporation in hot weather. It keeps the surface of the ground cool; therefore is well suited for placing round newly planted plants in beds or borders.

For stuffing the interior of hollow wooden walls of cold pits, it has been found to be more efficient than sawdust, and if kept dry to resist a great amount of frost; in fact we have been informed that in pits thus constructed and well covered overhead, Geraniums were kept safe even during the severe winter of 1860-61. For this purpose however, short fibre or cuttings of mats are better than the refuse; but they are considerably dearer. The material also makes excellent drainage for flower pots, as it does not readily decay, and on that account keeps open and porous for a great length of time. In pots drained with this fibre and filled with compost into which Cocoa-nut refuse has been introduced, Hyacinths have been found to give the greatest satisfaction, growing with unusual freedom, and blooming in much beauty. Other bulbs in pots treated in the same way may also be expected to succeed, and as the season for potting them is at hand this hint may be worth attention. It might also be tried for covering spring flowering bulbs in pots, a use for which it appears peculiarly well adapted, as its light open texture would enable it to resist frost better than most of the materials used for that purpose.

As regards the sale of this refuse, it can be had in small bags at 1*s*. 6*d*. each, or coal trucks filled with it, each containing about 4 tons, are delivered at the Kingston Station at 35*s*. the load. For cartloads filled at the Works by the purchaser's men we have already given the price; we may state, however, that as much may be put on and trampled down as the cart will hold. It will, therefore, be seen that price need not prevent the extensive employment of this material.

*** The Editor hopes to be able next week to lay before his readers another coloured pattern of Mr. NESFIELD's beautiful Garden Embroidery.

—— WE hope to see at the show which is to take place in the new gardens of the Royal Horticultural Society on the 10th inst., that some considerable advance has been made in the culture of Phloxes in pots; and that the somewhat stubborn habit of the gaudy Gladiolus has been conquered by horticultural skill. There does not seem any good reason why Phloxes at least should not be brought into a dwarf and presentable condition, for Mr. EYLES has managed at Chiswick to grow a quantity of dwarf-habited and well bloomed plants, which are now in perfection. They are not grown in pots to be sure, but Mr. FRASER, who is a good authority in all that concerns plant-growing, has told us in the Proceedings of the Royal Horticultural Society, that these plants are as easily grown in pots as in the open ground; and that this is so, we hope some one will take the opportunity to show. We hear also that some of the new large-flowered Helichrysums to which we directed attention some time ago, may be expected; and with these and a good supply of potted Pompon Dahlias there will surely be no difficulty in giving some relief to the tameness which is so apt to prevail in exhibitions of cut flowers, even though the "noble" Dahlia is predominant.

New Plants.

DENDROBIUM NODATUM. (*See* p. 717.)

THIS plant was published by Prof. Reichenbach in the Botanische Zeitung of August 1, under the name of D. Aphrodite. The day after, viz. August 2, our name of D. nodatum came into the world. We must adhere to the latter, especially since we do not perceive the application of the name proposed by our learned friend.

SURFACE DRESSING OF ORCHARD HOUSE TREES.

MY Peach and Nectarine trees in pots have this season, in spite of the wet weather in June and July, made such luxuriant growth as to induce me to look into the "reason why." After some little inquiry I am inclined to attribute it entirely to the surface dressings given to them at the commencement of June, and again about the middle of July.

This surface dressing was manufactured as follows: Twenty-five bushels of horse-droppings were gathered from the road and laid in a heap for about 10 days till it fermented; I then had added to it 8 bushels of kiln-dust" from the malt-houses numerous in this village. Kiln dust I learn differs from "malt dust" in being mixed with the ashes from the fuel used in drying the malt, being in fact the smaller germs of the malt which sift through the kiln wires and fall on the floor of the kiln, and then swept up and sold mixed with the fine ashes, whereas "malt dust" consists of the germs of the malt quite pure and unmixed. This mixture of horse-droppings and kiln-dust was then saturated with from 40 to 50 gallons of powerful liquid manure from the tank into which the stable and house drains all run. This liquid if applied undiluted is so powerful that it would destroy any tree in a pot; but mixed with the compost it is carried down so gradually as to be highly beneficial. I may add that it lies about 2 inches above the rim of the pot, not heaped up round the stem, but slightly declining towards it, so as to form a shallow basin, the stem of the tree standing in the centre. I recommend this method of placing the compost above the rim of the pot because I have seen the evil of not having the pot full, so that too much water can be poured in; the pot then becomes "water logged," the leaves of the tree turn yellow, the roots rot, and the tree eventually "dies of drinking." If by any inadvertence a fruit tree in a pot has had too much water, the pot should at once be placed on two bricks about 6 inches asunder; the water which must be daily given in hot weather to keep life in the tree will then rapidly drain off, the leaves become green, and the tree healthy. I should add that powdered charcoal is sprinkled over the compost in order to deodorize it.

It is also good practice to place Peach and Nectarine trees on bricks as soon as their fruit begins to colour the drainage is then so rapid and perfect, and its influence on the fruit is remarkable. Does not this arise (the surface dressing being abundant) from the constant supply of food carried down to their roots gently and in digestible quantities, thus differing from liquid manure given injudiciously, which often brings on congestion and death? Peach and Nectarine trees in pots have borne finer fruits this season than those in the same house planted in the borders, owing as I take it to the weak sun heat, which, although powerful enough to heat the atmosphere of the house, thus surrounding the pots (standing on the surface) with warm air, did not penetrate the borders to a depth sufficient to benefit the roots of the trees.

I cannot close this article without adverting to the necessity of low lateral ventilation in orchard houses: Peach and Nectarine trees cannot be kept even in decent health without it. It is waste of time and money to attempt to cultivate them unless that horror of horrors to the forcing gardener, a thorough draught on a level from side to side of a span-roofed house, or from front to back of a lean-to house, can be established.

In all my orchard-houses under 18 feet in width, I have found a shutter on each side and from end to end, 1 foot in width, opening downwards, the hinges about 2 feet from the ground, perfectly efficient, without any ventilators in their fixed roofs, and in some of them even without any aperture under the gables at each end for the egress of the heated air. In these houses Peach, Nectarine, and Apricot trees are in the most vigorous health, so that it is difficult to find a diseased leaf on them. This I impute entirely to thorough

lateral ventilation at a low level, so that the cool air from without enters, rises gradually as it becomes heated, and allows every leaf to breathe fresh air. *T. R.*

Indoor Gardening.

The little German dishes of growing flowers ought to be better known and more widely popular. The Crocus porcupines and the yellow hedgehogs should not at all be taken as the correct view of them.

One great delight in these dishes is the long lastingness of the flowers. The earliest flowers begin to open not long before Christmas comes, and from that time forward they keep on gay for months. The bulbs that are used in them, moreover, are very inexpensive. Three, five, six, or seven miniature Hyacinths of some two pretty colours are arranged as a sort of star in the middle of a dish or plate, Scillas and Snowdrops or a set of Crocuses are then put to fill in round them.

The prettiest combination, perhaps, is of a white and a pink Hyacinth, with blue Scilla sibiricas, and a quantity of Snowdrops; this gives means of combining the pink and white and blue; but blue Hyacinths and white Crocuses are also pretty, pink and white Hyacinths and blue and white Crocuses are very pretty, while red Van Thol Tulips and blue and white Crocuses and even dishes formed of all sorts of bulbs, and mixed just anyhow, seem to have no power of being anything else but beautiful.

The *single* Hyacinths only are to be recommended. These are sold in about six varieties. Those from a dealer in Covent Garden I have grown for years and found very cheap and true to sort. It is *not* desirable to mix more than one sort of each colour in one dish.

These bulbs can all be grown readily in a quite shallow dish; the roots spread out sideways, and twist and interwine till the flowers rest on a network that makes them fully safe even without sand. The bulbs, however, sometimes are apt to rise up a little, standing as it were on their roots; it is, therefore, well for some reasons to give at first only water, or the least quantity of wet sand, so that when they begin to grow the bulbs may be kept down by the sand then added. The chief advantage in leaving the bulbs uncovered is, perhaps, the ease with which any decayed one can be removed; when covered also from the first with sand, there is an awkwardness in excavating underneath to allow a raised bulb to sink back.

An excessively pretty group may be formed in a glass milk pan, or in one of the rustic Fern-pans of the Staffordshire ware; the centre may be composed of three pink Hyacinths placed close together in a sort of trefoil. A white Hyacinth is placed at the point of each, and the space between filled closely up with blue Scillas, while a wreath of Snowdrops surrounds and mingles with all.

A still prettier arrangement has a white, or pink, or blue centre Hyacinth, with three more of the same colour and kind surrounding it, alternately with three of a different colour. Where a smaller group is wanted—in a soup plate for instance, the centre flower is surrounded by only four, two like itself, and two of a different colour. The blue Scillas of course do best with pink and white Hyacinths. From 6 to 12 Scillas and from 9 to 18 Snowdrops fill up these plates delightfully. I do not think it is well to place the bulbs close enough quite to touch each other. It may be done harmlessly when a dish is deep, but in a shallow plate there hardly is room enough for the numerous roots.

A foundation of charcoal, a layer of dampish sand, the bulbs arranged upon it as I have just described, and then the dishes are ready to follow the glasses to some dark recess, where they too may remain untouched for at least three weeks. At the end of that time perhaps a little water safely may be given, (being poured down the sides of the dish or plate), and if the bulbs are rising, dry silver sand may be poured over them so as to surround them at least half way up. It is a general mistake to press bulbs down in planting them before the soil or sand is added. Of course this tends to cause resistance to the roots that would penetrate easily the light and loose laid surface. The pressing down, if done at all, should be in the case of the soil or sand that covers the bulb to the point when they are thus planted. For my own part however I think that the weight of the mere silver sand is quite enough in itself, and I am always afraid of breaking roots by using any pressure, and in very bad cases of a bulb actually standing about two inches up and finally falling over I even prefer wetting the sand well, drawing the bulb quite out, and then trying if possible to make room below with a teaspoon before I curl in the terribly crisp roots, and fill up the vacancy with dry sand poured in through a funnel, or from a bottle. A piece of cardboard by the bye rolled round and gummed or sewed up the side, is handy in this way often to use amongst our bulbs. The further treatment generally resembles exactly that of the bulbs in glasses.

The Hyacinths in these dishes ought not to rise above four to six inches high. They are perfectly well shaped and excessively sweet and pretty; they also blossom generally in advance of the other sorts. I do not think I ever had any flower arrangement that gave me greater pleasure, or that looked more uncommon. It is something in winter to be able to arrange small flower-beds! and these great dishes do really give one quite large scope to work. The owners of Fern cases too would be quite delighted with the effect produced by a liberal supply of Scillas, Snowdrops and Van Thols, planted amidst the sand or moss or soil in which the Ferns are placed. They form a bright little undergrowth, which is really charming. And for all arrangements like those of the Belgian windows the hardy and gay bulbs which only require shelter and do not ask for heat are at once the easiest and the most pleasant plants to grow.

The bulbs (speaking generally of large and small Hyacinths) do not generally flower well a second year, when they are grown thus in sand or water; but their perfect uselessness has still been exaggerated, as I have certainly had *poor* but still tolerable flowers from them, treated in two ways.

By one means the vase or dish is filled up to the brim with water as soon as the flower is out and kept so till the leaves begin to fade, when (the flower stalk having been cut off as soon as it got shabby) the bulb is removed from the glass and laid in a heap of sand, there to dry off gradually. The bulbs thus treated have flowered a second time. I think that perhaps a spoonful of soot and pounded charcoal added to the water may have helped to render them strong enough to do so; but this is a mere guess, as I only know that I tried it once and it answered.

The other plan, especially in the country and for late blossomed Hyacinths, is a great deal more certainly successful; the bulbs are then, directly after blossoming, removed very carefully to a deep rich bed of soil (a box or large pot will do in town gardens), and if the leaves and roots are not injured and only the flower-stalks cut off, they will very generally give some nice small spikes next year. I imagine these to be however merely the same sort of smaller supplementary blossoms that sometimes put up the first season by the side of the greater flower. It certainly is however perfectly well worth trying. *E. A. M.*

Home Correspondence.

The New Horticultural Gardens.—"If the London public expect to see a flower garden in perfection in June, some other description of plants must be used than Verbenas and Scarlet Geraniums." So has written a correspondent of the "Florist and Pomologist," in a recent critique on the garden at South Kensington. But why should the London public, or at least that portion of it that patronizes London gardening, wait till June to see a flower garden in perfection? And why should a popular garden, where the Fellows at least have a right to expect everything done that can be done, be in such a plight at any time after the vernal equinox as to give the occasion which the *Times* has seized upon, to compare it with a cemetery? These are fair questions, when we hear so many country visitors to the metropolis express disappointment, not even alloyed in the height of summer, at the appearance of the costly garden of the Royal Horticultural Society. Not that all the disparaging criticisms one hears are really deserved. The new garden is bald they say, and so it is. It is overpowered they say, by the monster building which hems it in at one end, and spoiled by the unfinished masonry which flanks it on both sides, and to some extent both these criticisms are true. But then it is to be presumed that the arcades will be finished some day; the Exhibition building may vanish or diminish; and it is not altogether fair to charge baldness against a new garden, while there has not been time for trees to grow up. The two first of these criticisms moreover can scarcely be said to be questions of gardening at all, and are we know beyond the control of the Society and its managers. Making fair allowance on both sides, the fact seems to remain that the umbrage which no small portion of the visitors has taken at the unumbrageous character of the garden is not altogether without cause; and to this another fact may be added, namely, that even June is not soon enough to have the flower-beds bearing something like a gay aspect. More fast-growing broad-leaved trees are wanted, not Conifers which never will thrive enough to cast a shadow; and more flowers are wanted, say from the end of March onwards, especially through the early part of summer when they are not common everywhere. The time is fast coming on when both these questions should have serious attention, with a view to an improved appearance another season. What is there that can be done? Why clearly the present condition of things can be improved by planting more trees and providing spring flowers. If the common broad-leaved Plane is too plebeian, there is the Oriental Plane, which not only has breadth of foliage, but is not surpassed for beauty, while the Tulip trees and the Cedars might be banished to more congenial quarters. Then the beds might be swarming with bulbs, and neat potted evergreens of varied character, such as may be permanently cultivated for winter garniture. In this way even a London garden need not be charged with dreariness in winter, and may blaze forth in full beauty ere spring has departed. There are other trees too, besides the Oriental Plane, which would supply what is needed. Such are the broad-leaved Weeping Elm, which is a very characteristic plant, some of the Acers, and many more. Among flowers there are Hyacinths and Tulips and Crocuses of varied colours; there are the self-coloured bedding Pansies, like the Trentham Blue; there are Polyanthuses, and early Saxifrages, red and white; and there are Myosotises, Alyssums, and Arabises. In fact, there are flowers enough to be had, if the managers would but see that they ought to be there. And as for shrubs there is any amount of choice. The Holly alone, with its broad and narrow, its flat and prickly, its green and variegated forms, would go far to decorate a garden, to say nothing of Box, of Euonymus, of Aucuba, of Berberis, of Yews, of all the phalanx of new Japanese beauties, and of not a few other subjects already more familiar. With such materials as these, how easy it would be—having a plan well digested, as it would be sure to be in Mr. Eyles's hands—how easy it would be to look even brilliant on the first sunshiny enjoyable spring day. Let the beds near the Conservatory be filled tastefully with flowers alone, gay telling flowers in masses, such as blue and white and red Hyacinths. Let the great circular device on the middle terrace be freely filled with flowers in designs, allowing some of the beds to be made up of green or variegated shrubs, and let all these be arranged so that as they go off one set of the beds could be cleared and filled with other subjects for summer bloom, without breaking up the whole. Let the chief lines in the great shapeless groups below be marked out with flowers, and the centres be filled up with shrubs of different character and colour in lines. Let the beds near the arcades be treated in the same way. Only let this be done, and the garden will be set off at the very time it is most wanted to be gay, without prejudice to the summer display, because all these materials may be so arranged as to give place to summer flowers in some regular order, which need not break up the design. *F. R. H. S.* [We think the justice of these remarks must be admitted, to a great extent. But the defects referred to must have struck the Council as well as others, and they can scarcely fail to be remedied].

Miniature Hyacinths.—Many are at a loss to understand what these are. They are, however, I believe, well ripened bulbs of the same kind as the large ones, but not much larger than a very large Walnut. The flowers are perfectly well proportioned, but do not rise above 4 or 5 inches high (till just going out of bloom, when of course they get lanky). I have grown great quantities of them during the last several winters, and have always been delighted with them, as they make the most exquisite groups that I ever saw. They are too small, I think, to grow alone in glasses; they grow well enough so, only are insignificant. I have, however, had from 20 to 30 soup-plates and dishes and glass milk-pans full of them each winter, and every one who sees them is quite delighted with them. I find, however, a very considerable difference, both as to quality and price, in bulbs of this kind. I have bought a good many for trial at two or three shops, which seemed to me to be mere imitations of what they should be, chosen without any knowledge of the points to aim at. They have fine names, but do not turn out well; people must therefore try to get good sorts. I do not think these Hyacinths can ever answer well out of doors; they flower so very early (beginning about Christmas), and if planted very late are a good deal weakened. The Roman (white) Hyacinths I am now planting myself for the first time, but I am assured that in Paris these and the Parisian (pink) varieties blossom very early indoors, and are beautiful. I always grow my own in sand in water, and mix them with Scillas and Snowdrops. They are kept indoors, but with as little heat as possible—in a room without a fire, often, till just in blossom. The flowers are very sweet, and a single group lasts an immense time, as the smaller bulbs begin to blossom first. I feel quite sure that no one who grows them (getting proper bulbs) will be at all disappointed. I have told a good many people of them, and have constantly heard from them afterwards how much they were charmed with them. *E. A. M.*

Œnothera Lamarckiana.—I sowed seed of this Œnothera in a shallow pan some time in March last, and put into a Cucumber pit. The plants were hardened off and pricked out into my borders. Many of the spikes are now 3 feet high, showing a multitude of blooms. Several have opened and measure 4 inches across. This plant seems to like very rich ground; to what height the spikes or flower stems will grow to I cannot say, but a more luxuriant foliage and bloom I have never seen. *James Cuthill, Camberwell.*

Apricots in Orchard Houses.—I have again fruited the Montgumet Apricot on three trees. I find its character somewhat at variance with its description. It is a full sized Apricot (one weighed 4 oz.); the flesh a deep orange, shape very distinct, resembling the St. Ambroise, being rather pointed. The fruit is solid and heavy, not very juicy, less inclined to split than the Moor Park, and ripening about the same time or rather earlier. I have had great success with my orchard house this year in Figs, Plums, Pears, and Apricots; of the latter my crop has been over a thousand. They have been scarce all round. My neighbour's orchard house has been beautiful; five Pond's Seedling Plum weighed 1 lb., and were delicious as dessert fruit. *B. S., Bucks.*

Bougainvillæa glabra.—I have this day (Sept. 1) sent you specimens of this fine Bougainvillæa. My object in troubling you is to substantiate an opinion expressed by me in December last, that this variety

would prove a continuous bloomer, a fact which has been fully realised. The specimens sent were cut from a plant that commenced flowering here in September last in a pot, and it continued in bloom till the middle of December, when the flowers were all cut off and the plant turned out of the pot, and planted out at the coldest end of the stove, where the average temperature was not more than 50° during winter. It commenced to grow immediately, and by the end of January showed bloom, and from that time to the present it has been one mass of beautiful flowers. The plant now covers about 80 feet of the roof, and every shoot upon it is either in full bloom or bud, and it bids fair to continue in beauty all winter, as every shoot, both large and small, produces a terminal raceme of mauve-coloured inflorescence. There are numbers of small plants here in 48-sized pots full of bloom and bud. Also the notices in the *Gardeners' Chronicle* from two correspondents within the last few weeks bear ample testimony to the free habit of blooming of this variety. The plant at Headington Hill, near Oxford, was struck by me from a cutting in June, 1861; and the one at Redrice, near Andover, late in the autumn of 1861, and did not leave here till March 1862, so that the plant fully bears out all that has been said in its favour. *J. Daniels, Swyncombe Gardens, Henley-on-Thames.*

Mushrooms.—The largest Mushroom grown by me was picked on Friday, August 29. It weighed 1lb. 2oz., and was sound and good. This is 6 ounces heavier than any I have ever grown before. *James Cuthill, Camberwell.*

Societies.

Crystal Palace Horticultural Exhibition.—A Fruit and Dahlia show was held here on Wednesday and Thursday last, and was very well attended. The display of fruit was large, and in many instances excellent, especially in the case of Black Grapes, which were all that could be desired.

Of Miscellaneous Collections of 8 Dishes the best came from Mr. Henderson, gr. to the Duke of Sutherland at Trentham, who had most excellent examples of Black Hamburgh and Muscat Grapes, a Providence Pine Apple, a Trentham Hybrid White-fleshed Melon, Barrington Peaches, Violette Hâtive Nectarines, Morello Cherries, and very good Moor Park Apricots. From Mr. Dawson, gr. to Earl Cooper, Penshanger, Herts, came fair specimens of Williams's Bon Chrétien Pears, a small Queen Pine, Violette Hâtive Nectarines, Barrington and Noblesse Peaches, a Melon, and a good dish of Morello Cherries.

In the Class of 6 Dishes Mr. Henderson again carried off the first prize with beautiful bunches of Mill Hill Hamburgh and Muscat Grapes, a Montserrat Pine Apple, Trentham Hybrid Green-fleshed Melon, Violette Hâtive Peaches, and Elruge Nectarines. From Mr. Bailey, gr. to T. T. Drake, Esq., Shardeloes, came an Enville Pine Apple, Black Hamburgh and Muscat Grapes, Moor Park Apricots, Elruge Nectarines, and Red Magdalen Peaches. Mr. Turner, Royal Nursery, Slough, furnished Moor Park Apricots, a Melon called Eclipse, Brugnon Nectarines, Walburton Admiral Peaches, Williams's Bon Chrétien Pears, Black Hamburgh and Muscat Grapes, and a small Queen Pine Apple. Mr. Page, gr. to W. Leaf, Esq., Streatham, contributed a small Queen Pine, Black Hamburgh Grapes, a Melon, Noblesse Peaches and Greengage Plums. Mr. Roberts, gr. Hillingdon House, showed Black Hamburgh and Dutch Sweetwater Grapes, "Bonsell" Peaches, Elruge Nectarines, and Moor Park Apricots. From Mr. Lee, Eltham, came very good Williams's Bon Chrétien Pears, Royal George Peaches, and Red Roman Nectarines, Moor Park Apricots, a good Queen Pine Apple, two Melons, and Dutch Sweetwater and Black Hamburgh Grapes, the last badly coloured.

Among Pine Apples there was nothing very remarkable, with the exception of two Queens from Mr. Lewis Solomon, one of which weighed 7 lbs., and the other 6¾ lbs. These were small crowned, handsome, well ripened fruit. A good Queen was also shown by Mr. Chapman, of Streatham Common, and from Mr. Barnes, of Bicton, likewise came good fruit of this variety of Pine Apple. A beautifully ripened Antigua was furnished by Mr. Henderson, Trentham, and another specimen of the same sort came from Mr. Young, gr. to C. Bailey, Esq., M.P., Aberdare.

Of Grapes the best basket of 12 lbs. Black Hamburgh came from Mr. Meredith, Vine Cottage, Garston, near Liverpool. Mr. Hill, gr. to R. Sneyd, Esq., also contributed a good basket of 12 lbs., as did likewise Mr. Frost, gr. to E. L. Betts, Esq.; Mr. Harrison, Oatlands; and Mr. Morris of Southgate. These were all Black Hamburghs, well coloured, and otherwise fine examples of good Grape growing.

In the class of 3 bunches of Grapes the best came from Mr. Meredith, who had admirable specimens of Black Hamburgh, the united weight of the 3 bunches of which was 9 lbs. Mr. Hill made a good second in this class, and there were also excellent examples from Mr. Henderson, of Trentham, and Mr. Omant, Epsom. These were all Black Hamburghs, large both in bunch and berry, black as Sloes, and well covered with bloom. Mr. Henderson also showed three remarkably well-grown bunches of Lady Downes' Seedling.

Of Black Prince Grapes, three very fine bunches were contributed by Mr. Hill, the united weight of which was 6½ lbs.; Mr. Mead, gr. to R. Currie, Esq., Farnborough, also showed excellent specimens of this variety, three bunches of which were stated to weigh 7 lb. 8 oz. Of Bidwill's Seedling, a Grape something like Black Hamburgh, three bunches came from Mr. Hill, the united weight of which was 6½ lbs. Good West's St. Peter were also furnished by Mr. Penny, gr. to H. H. Gibbs, Esq., Regent's Park.

Muscats were, as usual, in many instances unripe. The best were contributed by Mr. Frost, gr. to E. L. Betts, Esq., Preston Hall, near Maidstone; and Mr. Penny also showed good fruit of this variety. Mr. Wills, gr. to Sir P. G. Egerton, Bart., M.P., Oulton Park, Tarporley, Cheshire, sent a capital example of Trebiana; and from Mr. Whiting, gr. to H. T. Hope, Esq., The Deepdene, near Dorking, came 3 bunches of Marchioness of Hastings, well grown, but apparently unripe. Mr. Turner sent Chasselas Musqué.

The first prize for the largest bunch of Grapes was awarded to Mr. Pottle, gr. to B. D. Colvin, Esq., Woodbridge, for a bunch of Trebiana, the weight of which was 4 lbs. 7 oz. A bunch of Barbarossa from Mr. Goldsmith obtained a second prize; and a third was awarded to Mr. Mead, for a bunch of Black Hamburgh, not well formed or well coloured, but stated to weigh 4 lbs. 14 oz.

Peaches and Nectarines were numerous. The best set of 4 dishes came from Mr. Henderson, Trentham. The sorts were Noblesse and Barrington Peaches, and Pitmaston and Violette Hâtive Nectarines. From Mr. Monro, Rabley Cottage, Barnet, came Gallande and Noblesse Peaches, and Newington and Red Roman Nectarines; and Mr. Hazel sent Royal George and Noblesse Peaches, and Elruge and Newington Nectarines.

In the class of single dishes of Peaches the first prize was again carried off by Mr. Henderson, who showed beautiful specimens of Violette Hâtive. From Mr. Broadway, gr. to Lady C. Ricardo, Ebury, Hants, came fine fruit of Noblesse.

The best dish of Nectarines was furnished by Mr. Monro, who sent Red Roman, large and fine. Mr. Broadway had Violette Hâtive; and good fruit of the last named variety was also shown by Mr. Meads.

Melons were plentiful. In the Green-fleshed class, Orion, from Mr. Webb of Reading, was found to be the best; and in the Scarlet-fleshed group, the best was Gem from Mr. Westbrook, Abingdon.

Of Figs, some good fruit of Brunswick and Brown Turkey were shown by Mr. Eman, and Mr. Grover, Hampstead.

Cherries consisted almost wholly of Morello, of which several fine dishes were shown. The only other kind we noticed was a dish of Florence.

Plums generally were good. The best came from Mr. Snow, Wrest Park, Silsoe, who had Jefferson, Kirke's, and Green Gage. From Mr. Bailey, Shardeloes, came Washington, Denyer's Victoria, and Prince of Wales; Mr. Simmonds sent Goliath, Washington, and Kirke's.

Apples, which were present in great numbers, were for the most part good and free from spots or other blemishes. The best exhibition of dessert varieties was furnished by Mr. Frost, who had beautiful fruit of Cornish Gilliflower, Duchess of Oldenburgh, Cox's Orange Pippin, Devonshire Quarrenden, and King of the Pippins. Mr. Harrington, Warwick Cottage, Hammersmith, sent Gravenstein, Cockle Pippin, Devonshire Quarrenden, Ribston, King of the Pippins, and Celine. From Mr. Newton, Enfield Chase, came Scarlet Nonpareil, Fearn's Pippin, Kerry Pippin, Scarlet Pearmain, Devonshire Quarrenden, and Ribston.

The best Kitchen Apples came from Mr. Heather, Ember Grove, near Kingston, who sent Blenheim Orange, Wellington, "Doctor Feathergut," Shepherd's Fame, Emperor Alexander, and Kentish Broading. From Mr. Frost came Wellington, Yorkshire Greening, Kentish Broading, Emperor Alexander, Blenheim Orange, and Tower of Glammis. Mr. Sanders furnished Wormsley Pippin, Mère de Ménage, Dutch Codlin, Alfriston, Hawthornden, and Hollandbury.

Of Dessert Pears, six dishes, Mr. Harrison, Oatlands, showed beautiful fruit of Beurré Diel, Marie Louise, Williams's Bon Chretien, Louise Bonne of Jersey, Hacon's Incomparable, and Beurré Clairgeau. From Mr. Sanders, gr. to Sir H. Meux, Bart., came Gansel's Bergamot, Marie Louise, Williams's Bon Chretien, Ambrosia, Duchesse d'Angoulême, and Brown Beurré. Mr. Nichols furnished Windsor, Marie Louise, Louise Bonne of Jersey, Calabase Bosc, and Williams's Bon Chrétien.

In the class of 3 dishes, the best were contributed by Mr. Harrison, who sent very fine fruit of Gratioli, Marie Louise, and Duchesse d'Angoulême. From Mr. Holder, Eton College, came Williams's Bon Chrétien, Louise Bonne of Jersey, and Marie Louise; and Mr. Heather sent Williams's Bon Chrétien, Marie Louise, and Louise Bonne of Jersey.

Of Pears for flavour, the best was Jargonelle from Mr. Harrison. Williams's Bon Chretien stood second in this class.

The heaviest Pears came from Mr. Frost, who showed fine specimens of Calabase.

Among Miscellaneous Fruits was a good dish of Cuthill's Black Prince Strawberries, and a collection of Grapes from Mr. Henderson, of Trentham, and Vines and other fruit trees in pots were shown in good condition from Messrs. Lane & Son, of Great Berkhampstead. Moor Park Apricots, and Red Currants came from Mr. Snow.

Of Dahlias there was a large display, and the blooms generally were in good condition; those from Messrs. Turner and Keynes especially were very fine indeed.

In the class of 48 blooms, Mr. Turner was first, and Mr. Keynes second. Among these we noticed beautiful examples of Lord Palmerston, Lady Franklin, Lady Popham, Goldfinder, Earl of Shaftesbury, Heroine, Commander, Hon. Mrs. Trotter, Madge Wildfire, Criterion, Hon. Sidney Herbert, Model, Captain Harvey, Cygnet, Chieftain, Lord Elcho, Lord Cardigan, J[illegible] Hope, Volunteer, Pioneer, Hugh Miller, Norah, [illegible], Lord Derby, Duchess of Wellington, Perfection, Sir George Douglas, Lord Eversley, Miss Pressley, Mr. Stocken, Mrs. Pigott, Mr. Boshell, Marquis of Beaumont, Chairman, Jenny Austin, Norfolk Hero, Mrs. H. Vyse, Cherub, Warrior, Juno, Lord Dundreary, Golden Drop, Umpire, Bob Ridley, Delicata, and George Brown.

In the class of 24 blooms the same exhibitors competed with similar success. These stands consisted of nearly the same varieties as those just named.

In Fancies, Mr. Keynes was first and Mr. Turner second. Among these we noticed fine blooms of Harlequin, Countess of Bective, Pauline, Starlight, Elegans, Queen Mab, Confidence, Lady Paxton, Miss Jones, Mrs. Crisp, Norah Creina, Madam Sherrington, Summertide, Fairy Queen, Mrs. C. Kean, Countess of Shelburne, and Gem.

In the Amateur's Class Mr. Corp, of Milford, near Salisbury, showed fine blooms, as did also Mr. Thornycroft, Floore, near Weedon. Among Fancies, Mr. Sladden of Ash had the best stand. Among these we noticed, in addition to the sorts just mentioned, blooms of Lilac Queen, Dr. Gully, Pre-eminent, Lord Taunton, Miss Watts, Midnight, Grand Master, Triomphe de Pecq, Dinorah, George Elliott, Hon. Mrs. Lindsay, D'Israeli, Duke of Roxburgh, Lord Clyde, Rosebud, Andrew Dodds, Pandora, Masterpiece, Malvina, Compacta, Touchstone, Mrs. Crichett, Lollipop, and others.

Various Seedlings were shown by Mr. Turner and others, but among them there was little different from what has been mentioned in previous reports.

Of Gladioli great quantities were shown. From Messrs. Youell, of Yarmouth, came a handsome collection in which the following were good and striking; viz., Brenchleyensis, scarlet; Achilles, red and white; Clemence, delicate pink striped with crimson; Comte de Morny, cerise with white throat; Egerie, rose striped salmon; Erato, bright rose; Isoline, delicate pink; John Bull, saffron veined white; Le Poussin, red with white throat; Linné, cerise, blotched with yellowish white; Madam Binder, carmine striped white; Ophir, purple spotted yellow; Penelope, creamy white; and Vesta, carmine spotted white. In a group from Mr. Standish of Bagshot, the best were Reine Victoria, Madam Standish, Ensign, Rev. Joshua Dix, W. F. Lane, Basil (large and showy), Rosenberg, Edith Dombrain, and Miss Howell, the last a good pink. From Mr. William Paul came a collection, and a large assortment was also furnished from Paris by M. Loise. The last, however, though in good condition, were small, and therefore by no means so showy as English grown specimens, of which some good examples came from Messrs. Carter, of Holborn.

Exhibitions of Asters, both French and German, were numerous and extremely interesting, and there were likewise some good spikes and single blooms of Hollyhocks. Verbenas were also plentiful, and there were a good many stands of cut Roses; the latter were not, however, so good as we have seen them at this season in previous years. Cut flowers of different kinds were also contributed by Mr. Grimbly, of Stoke Newington.

Among Miscellaneous Plants were two specimens of Lilium auratum in bloom, from Mr. Standish, the one differing from the other a little in the colour of the spotting. The same exhibitor also showed a plant of Lonicera reticulata, whose leaves are almost as handsomely veined and marked as those of an Anæctochilus. Kniphofia Uvaria came from Mr. Cutbush.

Notices of Books.

Genera Plantarum, &c., auct. G. Bentham et J. D. Hooker. [The Genera of Plants defined according to specimens principally preserved in the Herbaria of Kew. By George Bentham and Joseph Dalton Hooker. Vol. I., part 1. Containing the 56 orders of Polypetalous Dicotyledons: Ranunculaceæ to Connaraceæ.] Large 8vo., pp. 454. Pamplin; Reeve; Williams & Norgate.

It is now a hundred and twenty-six years since a young Swede, a poor shoemaker, devoted to Natural History, astonished the world of Botanists by the production of a small 8vo. volume, in which he cut down with unsparing hand the groups of plants held sacred by his predecessors, renaming them, reconstructing them, and concluding that, all told, not many more than 900 could be admitted into a rational System. This book he called his Genera Plantarum. It proved to be the corner stone of Systematical Botany, and the constant aim of the greatest Botanists since that time has been to improve and extend it. Rather more than half a century afterwards the task was undertaken by the great Jussieu, who, improving the characters of his predecessor, rearranging the materials, and adding many genera unknown to Linnæus, formed what has ever been one of the most important works

connected with Botanical classification. By degrees, however, materials for the study of the Vegetable ... were enormously increased by the exploration ... countries hardly if at all known even in the days of ... The din of war had ceased with all its ... and men everywhere took to writing, there ... fighting to engage their attention; botanical ... multiplied; all manner of people, capable or ... addressed themselves to publishing their ... among which we may be sure there was no ... errors, till by the year 1836 none but adepts ... pretend to say whether or not an exotic plant ... to some published genus. At this juncture Endlicher, a learned Austrian Botanist, stepped forward once more to reconstruct a classification of genera; and in the course of four years accomplished his task; not so much, however, by critically examining the statements of others, as by reducing to apparent order what he found in the works before him. In this way he produced a book in which something fewer than 7000 genera were brought together upon the credit of their respective authors. But it must be confessed that to the uninitiated Endlicher's book was little better than a riddle. So vast an accumulation of little facts, for genera are distinguished by little facts, looked like chaos in the absence of such analyses as Linnæus ... knew how to provide, and which so many modern naturalists of high attainments have fatally neglected. Of this perhaps the most signal instance has been Kunth's *Enumeratio Plantarum*, a book which defies the patience of the acutest reader. For ourselves, in the presence of this state of affairs, we began to believe that the details of Systematic Botany would become so hopelessly obscure that nothing less than Cimmerian darkness could be anticipated.

At length however a new sun has arisen, and Botany stands again in the light of day. The work at the head of this notice, prepared with conscientious care by two of the most experienced Botanical observers of the age, would have been worthy of Linnæus himself. It has all the lucid order, ... discrimination, and analytical perfection of that great man, combined with a knowledge of details to which no one could have pretended till within the last few years. Nor can any where be found more copious materials or a richer library than in the vast herbarium of Kew. The method followed by the authors is briefly this. In the first place we have a most careful comparative description of the mere distinctions or differences of the various series, "Cohorts" (Alliances), Natural Orders, and Tribes, included in Polypetalous Dicotyledons, to which this first part of the work is confined. This preliminary step introduces the reader to further details; each natural order is now fully described; and its genera receive their *differential* characters. Each genus is then described, its synonyms are pointed out, and when necessary the spurious genera placed near it in books or elsewhere are critically examined. In addition to this the unusual forms assumed by each order are pointed out, and where genera usually stationed in it are removed, the place to which they are transferred is carefully noted. Add to all a capital Index of above 2700 genera, good or bad, and we have what must be pronounced a commencement of the most perfect arrangement of genera since the days of Linnæus. Let future writers only work to this model, and no further Botanical confusion ought to be created.

This is not the place to criticise any peculiar views entertained by the learned authors; such an examination must be reserved for works of pure science. We content ourselves with indicating two or three points of general interest. When DeCandolle referred Escholtzia to Loasads, because its stamens grow from the upper rim of a cup, in his days called the tube of the calyx, he did so in compliance with the belief that all those cavities in which the parts of a flower are placed were really formed by the lateral adhesion of calyx leaves. More modern researches have however shown that the cup of the Rose, of Eschscholtzia, of the Apple, and Victoria herself are merely hollows formed at the end of a flower stalk, and are organically distinct from the calyx. Acting on this view we find Calycanths placed next Magnoliads, notwithstanding the great difference between the embryos of the two orders; and for the same reason we imagine the Vine and its allies are brought into contact with Rhamnus. The recurved valves of Berberids are regarded as of secondary importance, the Lardizabalads being included in that order as a separate tribe. Among ... the old Linnean distinction into Siliquose and Siliculose takes precedence of the cotyledonar peculiarities devised by DeCandolle, and there is quite a ... stampede among the genera, of which however 172 stand fast. Oranges and their allies are merged in Rueworts, to which we suppose nobody will object. ... stands next to Pelargonium on the edge of the little tribe of Limnanths. For these and other departures from the ordinary way of thinking the reader will of course refer to the volume, not the smallest merit of which consists in a vigorous onslaught upon the heaps of false genera which in these latter days have sprung up like Mushrooms, every little difference having become in the eyes of some botanists a generic distinction.

We believe that the next part of this great work—great in every sense—is in a forward state of preparation.

Books Received.—*Smith's Dictionary of the Bible*, Part 10 (Murray). Ending with Juttah and concluding the first volume.——*Britons robbed, tortured, and murdered in Peru*. By Captain Melville White, M.E., 3d Edition, a pamphlet (Hardwicke). A narrative of outrages committed by the Peruvian Government, which will well repay perusal.——*British Wild Flowers*, Part 17 (Van Voorst).——*The Annals and Magazine of Natural History*, Vol. X. No. 57 (Taylor & Francis), contains an account of the Xanthoxylums which furnish Chinese Pepper.——*The Technologist*, Vol. III. No. 25 (Kent & Co.), has useful articles upon the Cultivation of Tobacco in Turkey, and of Cotton in Italy.——*Van Houtte's Flore des Serres*, Vol. XV. Part 3, has excellent figures of Rhododendron Veitchianum; Polystachya carnea, a new African Orchid; Dracæna Aubryana; varieties of Rochea versicolor; the charming new Acanthad called Otacanthus cœruleus, and Cypripedium Dayanum.

Trade Lists Received.—*Vilmorin & Co.*, Paris, Catalogue of Flower Bulbs and Strawberry Plants, the latter a very rich collection. *Also* List of Flower Seeds for sowing in September and October.

Garden Memoranda.

Drayton Manor, the Seat of Sir Robert Peel, Bart., M.P.—Among the many newly built mansions and recently formed gardens of England, few are more worthy of notice than Drayton Manor, which is situated about two miles south of Tamworth, in Staffordshire. It is approached from the east by a carriage drive through the park, leading from the Tamworth and Coleshill Road, which forms the eastern boundary of the domain. At the entrance on this side is a neat stone-built lodge and iron gates; the drive through the park is bordered by some fine Oaks, and the surrounding scenery is well varied by clumps and belts of mixed forest trees. A drive of a quarter of a mile from the lodge brings us to the pleasure grounds and gardens—additions made by the present baronet. These consist of about 46 acres, and are divided from the park by an iron palisading 5 feet high, inside of which is planted a Yew hedge, now 6 feet in height, which completely shuts out any view of the palisading from the interior of the pleasure ground, which is entered from the park by elegant iron gates fixed on embossed stone pillars, supporting handsome white marble vases. The drive now sweeps through the Pinetum, whose closely shaven lawn and lovely Conifers strike the eye with admiration. Here are many fine Deodars and Araucarias, some noble plants of Picea grandis, Nordmanniana, Pinsapo and nobilis, the last named bearing two fine cones; there are also some beautiful examples of Pinus excelsa, Cembra, and many others; some fine Cryptomerias and Wellingtonias, together with Golden Yews whose foliage formed a beautiful contrast with that of the black Firs, that with masses of undershrubs and other trees formed an undulating boundary to the north side of this portion of the grounds.

The drive through the Pinetum sweeps into a circular opening near the front Hall entrance, gravelled and bordered by a rounded stone kerb, from which at distances of 20 feet apart rise stone pedestals bearing handsome marble vases.

The Manor House itself was completed about 24 years ago by the late Sir Robert Peel, and is built in the Elizabethan style, having the usual appendages of turrets, towers, and terraces. The building is of smooth ashlar freestone, and was built from designs furnished by the late Sir Richard Smirke.

The east frontage consists of a central entrance hall; a turreted corridor, beautifully covered with Ivy, joins the central building to the offices on the right, and the left wing consists of the picture gallery and conservatory, the latter a recent addition. On a border to the right of the circular frontage we noticed a bank of variegated Golden Hollies, having perfectly round heads, producing an effect as gay and lively as could be desired, even in a flower garden. A winding path from the drive leads to the conservatory, a costly and elaborate building, and certainly one of the most complete contrivances of its kind we have ever seen. Its curvilinear roofs and dome are supported by graceful iron columns, fluted, and painted green and white, and the caps and bands are gold and green. The conservatory forms a kind of nave and transept, in the centre of which stands a beautiful marble fountain and basin 14 feet wide. The ends of the transepts are occupied by groups of plants and volières containing many rare and beautiful plumaged birds, in one of which we noticed the little weaver bird, busy plying his trade. From the centre of the conservatory and other parts of the roof are suspended massive jardinières well filled with drooping and gay flowering plants, and four handsome coloured glass chandeliers are hung round the fountain. At each end of the nave are two costly inlaid stone tables, and large mirrors which prolong the views, and at each side of the conservatory and near the entrance to the Picture Gallery are grouped some healthy Date and Fan Palms, a beautiful Areca rubra, and some Caryotas.

Mr. Chalmers, Sir Robert's gardener, has invented an ingenious new stage for this conservatory; in front of each shelf is a rim or border 8 inches high, which is double and filled with soil; in the latter is planted Lycopodium denticulatum, which grows and covers not only the whole of the stage, but the pots which are placed upon it, and thus the plants have the appearance of growing out of a Mossy bank. Amongst plants in the conservatory we noticed some remarkable for fine foliage, but none so good in this respect as Farfugium grande, which was certainly the best mottled plant we have yet seen of this kind of Coltsfoot; some rock work covered with Ferns and other plants, in which the Farfugium again figured to advantage, with two white marble fonts at each side of entrance, formed a perfect *tout ensemble* of taste and elegant arrangement.

Leaving the conservatory let us turn to the flower garden. It is formed in a sunken panel, and is environed on the east, west, and south sides by a broad terrace promenade in Grass. The north boundary is a handsome Gothic terrace wall, furnished with correspondingly massive vases well filled with Scarlet Geraniums and other flowers. The terrace promenade just mentioned leads from the conservatory to the end of the western boundary of the flower garden, and has along the centre of the whole distance a beautifully worked arcade in iron and wire trellis work. This arcade is 12 feet wide and 14 feet high, having at the east and west corners circular pavilion-like domes 27 feet in height by 30 feet in diameter, of the same material as the arcade. The whole is rapidly being covered with climbing Roses, Ivy, Honeysuckle, Clematis, Aristolochia, Virginian Creeper, &c. The terrace promenade in question is about 30 feet broad, having on the outer boundary a low iron palisading, masked by a closely clipped Yew hedge, with a space of about 5 feet between the hedge and the arcade.

Near the wire pavilions mentioned at the east and west corners of the flower garden the terrace abuts into circular bays, round which the Yew hedge forms a circular green wall. These bays are 30 feet in diameter, and command views of the Pinetum, park, and distant village spires.

The flower garden would be square but for the circular abutments which carry the Grass terrace round the wire pavilions, and a semicircular bay at the end of the centre walk, which leads from the stone terrace, which bay is intended to receive a fountain; but at present it is occupied by a massive parterre, well planted and arranged with bedding flowers, the different tints blending with each other in a most perfect manner. From the Grass promenade descends a gentle slope 9 feet wide—on which in a chain is a beautiful festoon parterre, only broken by the Grass steps which descend from the promenade, and at the angles by massive beds filled with Flower of the Day Geranium, and Aurea floribunda Calceolaria. In the centre of each festoon are small oval beds, also filled with Flower of the Day Geranium. The festoons are planted with Tom Thumb Geranium, and a pillar-like bed, which descends between each festoon, is planted with blue Lobelia and Variegated Alyssum. A walk 12 feet wide is continued round the garden at the foot of this slope, and is bordered by parallel beds varying in length from 71 to 27 feet by 8 ft. wide; here one of the best effects in the garden is produced by planting these beds with a groundwork of the silvery white Cerastium, having circles 20 feet apart composed of Purple Zelinda Dahlia, Tom Thumb Geranium, yellow Calceolaria, and bands or chains of Purple King Verbena, interwoven the whole length of the beds. Similar beds run parallel with the centre walk which leads from the stone terrace before mentioned, but are planted in ribbons made of Variegated Alyssum, Blue Lobelia, Tom Thumb Geranium, and a broad band of Calceolaria aurea floribunda down the centre. These beds are as smooth and even as if they had been clipped with shears. The different kinds of plants touch and blend their colours and leaves, yet each maintain a distinct line; and as perfect a ribbon is produced as could come from a weaver's loom. The whole of these parallel beds are raised 15 inches above the Grass verges. The interior part of the garden is divided into eight Grass panels by a transverse walk, of the same width as those before mentioned, and again by two minor paths, which abut on two circular bays in the transverse path, which are equidistant from the central walk. Circular beds are formed in the centre of the bays mentioned, planted with Golden Chain Geranium, Blue Lobelia, Silver Queen Geranium, and Scarlet Geranium. In the centre circle is a grey marble pedestal, on which stand two beautifully sculptured marble statues. The eight panels contain geometrical beds, equally well planted as the other parts of the flower garden, but space will not admit of detail. Under the terrace wall, which forms the north boundary of the flower garden, is a noble border, 420 feet in length by 10 feet wide, planted in a ribbon of gay colours which relieve beautifully the massive masonry of the terrace wall. A beautiful spherical sun-dial stands in the centre of the flower garden, a pair of marble figures at the top of the central walk, and vases near the angles of the Grass panels. As I have before observed, this is certainly one of the most charming flower gardens we have ever seen.

Ascending the stone terrace steps from the flower garden we find ourselves on a broad smooth terrace

walk which leads from a door in the Picture Gallery, westward towards a distant mound, on the top of which is placed a finely sculptured Venus; this mound is intended to receive an architectural temple, or Chinese pagoda.

The terrace walk mentioned is 429 feet long by 18 wide and ends in a kind of terrace court, surrounded with vases of the same kind as those on the terrace wall, except on the west side of the court, where massive carved stone pillars rise, supporting gigantic vases of white marble; from the centre of the court descends a noble flight of steps, having square stone kerbs, pedestals of the same material, and marble vases. These lead to a circular stone basin 60 feet in diameter, with a massive stone edging or cornice 15 inches high by 24 inches broad; from the centre of the cornice rises a basket-like wire fence 2 feet high, intended to confine the rare ducks which float on the water; a fountain 20 feet high plays from the centre of the basin. The whole is encompassed by a walk 18 feet wide, round which the square stone kerb is continued, and from which, at every 14 feet, rise pedestals bearing marble vases. From the basin opposite to the steps just descended, another flight of steps ascends to the mound before mentioned.

The slopes of this mound are carefully planted with hardy Heaths, which produce an excellent effect. A broad walk winding from the south-west corner of the flower garden terrace, through shrubberies and well planted borders of American plants and Standard Roses, winds round the outer base of the mound mentioned, and is continued by another flight of massive steps into the arboretum or general pleasure grounds. Again a winding walk continues through groves and glades, having fine Oaks, noble Beeches, massive Portugal Laurels, Yews, Pines, and Cedars, and a lawn so smooth and gently undulated that Burke himself would have been charmed with its evenness.

Returning again by the Terrace Court and walk before mentioned, we arrive at the terraces on the south and west fronts of the mansion, the walls of which are highly decorated with beautiful white marble vases. On the panelled lawn at the south front are two circular stone parterres filled with gay coloured bedding plants, which lighten up wonderfully and give effect to these kind of terraces. A few steps descend to the west front terrace, which is 273 feet long by 63 feet wide, having a Grass panel down the centre 24 feet wide, divided in the middle by a walk from the library window (which is what the French term *fenêtre chaussée*, and serves likewise as a door); a few steps descend from this walk to a well kept smooth piece of lawn on which stands another beautifully worked massive stone fountain and basin, backed by noble Portugal Laurels and other trees before mentioned. A similar arrangement to the west front terrace is carried along a short upper north terrace to a wing which joins the tower to the main building.

Descending from the end of the west front terrace, we reach the great north terrace, upwards of 300 feet long by 150 wide; a broad walk, 24 feet wide, passes along the inside of the terrace wall, along which are planted quaint-looking Junipers and round-headed Portugal Laurels, and three massive clumps of Rhododendrons occupy the centre of the Grass lawn on this terrace. From the north terrace we command views of a well wooded deer park in which are some fine herds of deer. The park extends about a mile in this direction to the great North Road, and has here another handsome entrance lodge facing the Lichfield road. A fine sheet of water lies at the foot of a slope which falls from the north terrace wall, and abounds with swans, foreign geese, and ducks.

Leaving the north terrace we pass along to a sheet of water, near which is a fine American garden formed by Mr. Barron. This is planted in avenues with Pines, Araucarias, &c. There is also a Wellingtonia gigantea, 14 feet high, measuring nearly 36 inches in circumference at the base.

A wall divides the American ground from the kitchen garden, in which are Vineries, Pine stoves, Peach stoves, and various kinds of forcing pits, together with plant houses, containing numbers of new and rare plants. *P. W.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c. — Keep Begonias for winter display thin that their foliage may be kept as much as possible from injury. Plumbago capensis being almost indispensable for supplying cut flowers for autumn use must not be overlooked. Attend also to Chrysanthemums; water them freely with liquid manure; good specimens should be aimed at rather than a few fine blooms. The earliest winter flowering Heaths and Epacrises should now or soon be placed under cover, as it will forward their blooming; give air, however, freely. The potting of Hyacinths, for forcing, must soon occupy attention; in doing this do not forget to put in a few miniature ones, which are stated to bloom beautifully in proportion to their size; they form good outside rows to vasefuls of large flowered varieties, which should, of course, occupy the centre. About equal portions of good fibrous loam and decayed leaf-mould with silver sand will be the best soil for them if for forcing, but well-decomposed cow-dung must be substituted for the leaf-mould when the bulbs are intended for late flowering. After potting place them on a dry bottom and cover the pots 2 to 3 inches deep with old tan or ashes, preserving them at the same time as much as possible from heavy rains; under this treatment they will fill their pots with roots, and will be in readiness when wanted. Ixoras, which have bloomed and which it may be desirable to increase in size as fast as possible, should be cut back, re-potted if necessary, thoroughly cleaned, tied out, and placed in the warmest end of the house. These, if properly attended to, will make a fine growth before winter. Shake out and re-pot Pelargoniums that are sufficiently advanced after having been cut back, keeping them rather close and moist untill they strike into the new soil. Plants, however, that are fairly established after re-potting can hardly be too freely exposed to air or kept too cool. Let Cinerarias also be kept cool and moist, attending to re-potting such as require it, and fumigating immediately green fly appears on any of the plants. Primulas must also be carefully attended to, in order to encourage them to make rapid growth, particularly the double varieties, which are invaluable for winter work. Keep Tree Violets clear of their great enemy red spider by a liberal use of the syringe, and give them plenty of manure water, which will help to keep them in vigorous health.

FORCING DEPARTMENT.

PINERIES.—Let the soil about the roots and also the atmosphere be somewhat dry during the ripening of the fruit; therefore be careful not to over-water, and it will be advisable to use slight fires during dull weather. Endeavour to afford growing stock a steady bottom-heat of about 70°, and keep it well supplied with manure-water at the root, but avoid getting the soil too wet. As fire-heat will soon be necessary to a considerably larger extent than has been the case during summer, care must be exercised to secure a properly moist state of the atmosphere, keeping the evaporating pans or troughs regularly supplied with water, and moistening the floors, &c., frequently, as any sudden change from a moist to a dry state of the atmosphere would be most injurious to growing stock, and also to plants swelling their fruit. Be as sparing of fire-heat, however, as circumstances will permit, and shut up early on the afternoons of bright days. Where young stock is grown in dung-pits care [must be exercised after this season not to get the plants weakly through keeping them too close and warm, giving air freely on every favourable opportunity, and sufficient command of warmth should be secured from the linings to allow an opportunity of giving a little air at night and on warm cloudy days.

VINERY.—Remove all decayed or unhealthy berries from ripe Grapes, and keep the house well aired and free from moisture. Where the crop is cleared, the wood ripe, and the leaves beginning to decay, the sashes may be removed altogether.

MELONS.—Take advantage of the present bright weather to give the soil a good soaking with water where this is necessary, and also to trim the Vines, removing all useless laterals, &c., an operation which is best done in bright weather, as then there is little danger of the occurrence of canker. Where fruit is ripening, give air as freely as the state of the weather will permit, and keep the atmosphere as dry as possible. If late plants are infested with spider, syringe morning and afternoon as freely as can be done without injuring the leaves; in short use every means to get the plants perfectly clean, while water can be employed without danger of creating too much damp.

CUCUMBERS.—When a supply is required during winter, vigorous young plants should be secured at once, either from seed or cuttings, as plants that have been bearing through the autumn, however promising they may look, seldom answer well for winter fruiting.

FLOWER GARDEN AND SHRUBBERIES.

Propagation of all the more important bedding-out plants must now be pushed on as quickly as possible; late struck cuttings, as we have often remarked, are bad to keep through the winter through having an insufficient amount of roots and ill-matured wood. Let Scarlet and other Geraniums struck in the open ground be taken up and potted immediately they have made roots; they will require a close frame for a week or two, when they should be placed on a dry bottom in a southern exposure to harden them for the winter. For the same purpose Verbenas, Petunias, &c., struck in pans and intended to be kept in them through the winter, should be placed in a similar situation, at the same time stopping the points of the shoots. It should in fact be a point to keep them as hardy as possible by fully exposing them, until they are placed in their winter quarters. Mignonette for winter and spring flowering may yet be sown. Phloxes and other herbaceous plants will now be making a tolerably good show. If Auriculas are not already potted for the winter it should be done without delay. Remove suckers or offsets, and place them round the sides of the pots, which should be 6 inches across. Auriculas are impatient of rich compost during winter, turfy loam, river sand, and very rotten horse-dung—a small portion of the two latter will make a suitable compost. It is far better to give them a strong top-dressing in the spring than to have it of too forcing a nature for their winter food. As regards Tulips, in consequence of the weakness of some of the bulbs, it will be advisable to put a small portion of decayed manure and leaf soil about 2 or 3 inches beneath the offsets. It is argued that manure fouls the cups, and with some show of propriety. But as there are always exceptions to every rule, we would recommend a stronger diet, at all events, for the offsets in the coming season. The layers of Carnations and Picotees may be taken off and potted without delay, using compost as before directed. Many seedlings have missed blooming, and if not convenient to let them stand over the winter in their present situation, in consequence of the large spaces on the beds from whence the single ones have been removed, it will be advisable to prepare another bed of suitable compost, and carefully remove them, with balls of soil, into regular rows. Here they may stand the winter, and will bloom profusely next season. Look well to your composts, especially that for the blooming bed of Tulips, frequently turning it and picking out wire-worms and other insects.

HARDY FRUIT AND KITCHEN GARDEN.

If not already done, cut away all runners from Strawberry plants. Finish planting Broccoli and all Winter Greens as speedily as possible. Make the principal sowing of Cabbage for spring use; and plant out those sown last month for Coleworts. Sow Brown Cos and hardy Cabbage Lettuce towards the end of the month for spring use; plant out those sown last month in a warm situation; these will probably be useful in November. Water the late crops of Celery should the weather continue dry, and earth up those in a forward state. Sow Turnips and make a sowing of Early Dutch at the end of the month, for use in spring; also Early Horn Carrot—these should remain in the ground for winter use. Sow Tripoli Onion, also Prickly Spinach for winter and spring supply. Any Potatoes, in which symptoms of disease have appeared, should be taken up and used first. All herbs, if not gathered, should be cut immediately. Quick drying is proved the best mode, for the same reasons that quick hay-making exceeds a lingering process. The Sweet Basil should be bunched and hung in a hot kitchen: also the Sweet Marjoram. When thoroughly dry, let them be immediately packed close in boxes, so as to exclude all air; indeed, bottled herbs, sealed up after such a course of treatment, are very superior.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Sept. 3, 1862, as observed at the Horticultural Gardens

August and Sept.	Moon's Age.	Barometer. Max.	Barometer. Min	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep	Of the Earth 2 feet deep	Wind	Rain
Thurs. 28	3	30.122	29.985	79	41	60.0	62	60½	N.E	.00
Friday 29	4	30.091	29.987	70	38	54.0	62	60½	N.E	.00
Satur. 30	5	30.067	30.018	74	50	62.0	62	60	N.E	.00
Sunday 31	6	30.032	29.981	73	59	66.0	62	60	N.E.	.00
Mon. 1	☽	30.010	29.855	69	50	59.5	62	60	N.E	[illegible]
Tues. 2	8	29.757	29.622	73	45	59.0	62	59½	S.W	.21
Wed. 3	9	29.643	29.583	66	33	49.5	61½	60	S.W	.01
Average		29.960	29.861	72.0	45.1	58.5	61.9	60.1		.25

Aug. 28—Cloudless and very fine throughout
— 29—Uniformly overcast; cloudy; clear and cold.
— 30—Very fine; overcast at night.
— 31—Very fine throughout.
Sept. 1—Partially overcast; cloudy; overcast.
— 2—Slight rain; very fine; overcast; heavy rain with thunder in the night.
— 3—Windy; low white snow like clouds, nearly freezing at night.

Mean temperature of the week 1 1-5th deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Sept. 13, 1862.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 7..	69.5	47.5	58.5	17	0.55 in.	1	6	6	1	6	11	3	2
Mon. 8..	68.8	47.2	58.0	16	0.65	3	7	2	2	3	13	3	3
Tues. 9..	68.6	48.0	58.3	15	1.09	—	6	2	3	5	16	[illegible]	2
Wed. 10..	69.4	46.1	57.7	18	1.27	1	4	4	1	7	[illegible]	[illegible]	[illegible]
Thurs. 11..	68.3	44.7	56.5	10	0.68	2	7	1	2	5	8	9	4
Friday 12..	68.9	44.6	56.7	14	0.49	4	5	1	4	2	8	11	1
Satur. 13..	67.7	45.7	56.7	17	0.42	2	3	6	2	3	7	8	5

The highest temperature during the above period occurred on the 12th, 1858—therm. 86 deg.; and the lowest on the 7th, 1855, and 11th and 12th, 1860—therm. 28 deg.

Notices to Correspondents.

☞ CORRESPONDENTS are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

BOOKS: *W B S.* Kemp on How to Lay Out a Garden may possibly answer your purpose.

NAMES OF FRUITS: *E W.* Your Apples No. 1, 2, 3, and 4 are all the same sort—the Early Crofton.—*J L A.* Your Peach is the Walburton Admirable. Plum next week.

NAMES OF PLANTS: *X Y Z.* 1, Gomeza recurva; 2, Spiræa ariæfolia.—*M S.* Impatiens macrophylla.—*E B P.* Both are Sison Amomum.

ROYAL HORTICULTURAL SOCIETY: *Norwood.* We must refer you to Mr. Murray, the Assistant-Secretary at South Kensington, who will lay before the Council any statement you may wish to make. Allow us also to repeat that Dr. Lindley has nothing whatever to do with the monthly "Proceedings." We are unable to explain why the new name Tsuga Tsuja has been given to the Hemlock Spruce of Japan, previously called Tsuga Sieboldi. Fortunately the well recognised law of priority relieves us from the necessity of adopting so queer a name. Asplinium and Clilidonoides, they are evidently misprints.

THE CLASSICAL VACCINIUM, OR RATHER VACINIUM: *Trumpington.* No mistake can be greater than to accept the opinion that this old word was applied to our Bilberry or Whortleberry Du Molin has proved conclusively that it meant what is now called Iris germanica. As for the lines from Claudian—

"Sanguineo splendore Rosas, *Vaccinia* nigro
Induit, et dulci Violas ferrugine pingit,"

it is clear that flowers alone were alluded to by the poet. You are no doubt aware that the album ligustrum of Virgil was the larger Bindweed: Calystegia sepium.

TOBACCO: *P.* Very strange! We will enquire. If there is a mistake it is not ours.

THE LONDON MANURE COMPANY have now ready
PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
... MANURE for ditto.
SUPERPHOSPHATES of LIME, &c.
All the above being in the finest condition. They also continue to supply
GIBBS'S PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of known value.
E. PURSER, Secretary.
.., Fenchurch Street, E.C.

LAWES'S WHEAT MANURE for AUTUMN SOWING.
In consequence of the high price of Peruvian Guano, J. B. Lawes has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of J. B. Lawes, or through any of his appointed Agents. Price .. per ton at the Factories, Deptford and Barking Creeks.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.
Extract of Opinion from Mr. WAY, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. VOELCKER, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

FOWLER'S PATENT STEAM PLOUGH and CULTIVATOR may be seen at Work in every Agricultural County in England. Addresses of Farms (which are open to inspection), given on application, where the Machine has been at Work for three or four years.
The New Application of the ORDINARY PORTABLE ENGINE may also be seen at Work at any time.
Price, with Self-moving Anchor, Three-furrow Plough, and Five-tined Grubber, 285*l*.
For particulars apply to JOHN FOWLER, 28, Cornhill, London, E.C.; and Steam Plough Works, Leeds.

SMITH'S PATENT COMBINED MACHINE.—This Machine is admirably adapted for cultivating Light Land Wheat, Barley and Oat Stubbles, and Drilling in Stubble Turnips. Fifteen acres may be Cultivated and Drilled in one day; for Cultivating Light and Heavy Land Pea and Bean Stubbles, and Drilling in Wheat; and for cultivating Heavy Land Wheat Stubbles, and Drilling in Vetches. One operation will be enough for each crop, especially in wet seasons. It is warranted to do its work well.
For price and particulars apply to WILLIAM SMITH, Woolston, Bletchley Station, Bucks.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5*s*. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. HUMBERT, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by Loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &C. IN ENGLAND AND WALES AND IN SCOTLAND.
The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm Houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

EDINBURGH NEW VETERINARY COLLEGE.
AUTHORISED UNDER ROYAL SIGN MANUAL.
SESSION 1862-3
NOTICE.—The NEW VETERINARY COLLEGE has been transferred to the LOTHIAN ROAD, where extensive Premises, once built with Government aid for a Military and Naval School, have been recently secured for it.
INTRODUCTORY LECTURE on WEDNESDAY, November 5, 1862.
FREE STUDENTSHIP.—As an inducement to make good progress in the essential studies of Anatomy, Chemistry, and Physiology, all Students entering the New Veterinary College not later than NOVEMBER 5, 1862, will be afforded an opportunity to compete for a Free Studentship in April 1863.
For the Prospectus, and the conditions of the competition for the Free Studentship, apply to Professor JOHN GAMGEE, New Veterinary College, Edinburgh.

HIGHLAND and AGRICULTURAL SOCIETY.
AGRICULTURAL EDUCATION.
The Society's AGRICULTURAL DIPLOMA will be conferred on Candidates who shall have passed the Examination, and fulfilled the other conditions required by the Royal Charter and relative Bye-laws.
Examinations are held annually towards the close of the Winter Session of the Edinburgh University. Detailed information may be had by applying to Mr. HALL MAXWELL, No. 6, Albyn Place, Edinburgh.

HIGHLAND and AGRICULTURAL SOCIETY.
EDINBURGH VETERINARY COLLEGE.
The Committee of the Highland and Agricultural Society of Scotland, appointed to superintend the Veterinary College, hereby intimate that SESSION 1862-1863 will COMMENCE on WEDNESDAY, November 5, at 4 P.M.
The Course of Study embraces the following Classes:—

1. Zoiatrics, Veterinary Medicine, and Surgery	Professor DICK
2. Zootomy—comprising Veterinary Descriptive Anatomy, and Physiology	Mr. STRANGEWAYS, V.S.
3. Practical Anatomy, and Anatomical Demonstrations	Mr. STRANGEWAYS, V.S.
4. Chemistry, Theoretical and Descriptive, from commencement of Session till end of January	Dr. A. DALZELL
5. Veterinary Materia Medica and Pharmacy, from beginning of February till end of Session	Dr. A. DALZELL
6. Physiology and Histology, Physiological and Pathological	Dr. P. YOUNG
7. Practical Pharmacy and Clinical Instruction	Prof. DICK, assisted by Mr. WORTHINGTON, V.S.

Perpetual Fee for Attendance on all the Classes, 16*l*. 16*s*.
JN. HALL MAXWELL, Secretary.

MANCHESTER and LIVERPOOL AGRICULTURAL SOCIETY.—The FIFTEENTH ANNUAL SHOW of HORNED CATTLE, HORSES, SHEEP, PIGS, POULTRY, CHEESE, BUTTER, SEEDS, ROOTS, FRUIT, VEGETABLES, FLOWERS, IMPLEMENTS, MACHINERY, &c., will take place at Warrington, on WEDNESDAY and THURSDAY, Sept. 10 and 11, preceded by a preliminary Show of Implements only, on TUESDAY, Sept. 9.
A large amount of Premiums, including considerable Special Prizes, will be awarded on this occasion. Entries of Stock, &c., closed on the 16th instant.
The Show Yard will be open to the Public by Tickets sold on the spot, on Wednesday, September 10, from 10 to 6, at 2*s*. 6*d*. each, and on Thursday, September 11, from 8 to 4, (when the Show will finally close) at 1*s*. On Tuesday the charge will be 1*s*. each person. T. B. RYDER (Surveyor, &c.), Secretary
57A, Church Street, Liverpool, Sept. 6.

WARWICKSHIRE AGRICULTURAL SOCIETY.
BIRMINGHAM, 1862.
Under the Patronage of the Mayor and Corporation.
President.—The Right. Hon. the EARL of WARWICK.
The GREAT ANNUAL SHOW of HORSES, CATTLE, SHEEP, PIGS, IMPLEMENTS, CHEESE, WOOL, FRUIT, and FLOWERS, will be held in Aston Park, Birmingham, on WEDNESDAY, THURSDAY, and FRIDAY, September 17, 18, and 19, when Prizes to the amount of 1000*l*. will be awarded.
The GRAND DINNER, in a spacious pavilion on the ground, on THURSDAY, September 18, at 3 o'Clock, when the Committee hope Ladies will honour them with their presence. Dinner Tickets—Ladies, 2*s*. 6*d*.; Gentlemen, 3*s*. 6*d*.
Admission to the Public.—On Wednesday the Yard will open at 2 o'Clock, for the public judging and trial of Horses, 5*s*. On Thursday at 9 o'Clock, 2*s*. 6*d*. until 2 o'Clock; 1*s*. after that hour. On Friday, 6*d*. the whole day.
By permission of Colonel Wardlaw and the Officers of the Royal Dragoons, the splendid Band of the Regiment will attend on Thursday and Friday, and perform selections of Music.
STEAM PLOUGHS will be at work on Wednesday, admission 6*d*.
Railway Accommodation.—There will be Special Trains on all the principal railways.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 6, 1862.

MEETING FOR THE ENSUING WEEK.

WEDNESDAY,	Sept. 10	Manchester and Liverpool Agricultural Society at Warrington.
THURSDAY,	— 11	

THAT is a singular paragraph which has been going the round of the Papers as to the results of the recent Sewage Committee's labours. "As regards the value of town sewage," we are told—

"In reference to its ingredients, as compared with other manures, liquid and solid, the evidence proves that it contains the elements of every crop that is grown; it does not lose anything by evaporation; it comes into immediate action on the crop, and possesses an amount of heat which stimulates vegetation, and even its water is of great benefit for agricultural purposes. The Belgians consider the excretion of each person worth more than 1*l*. per ton. The sewage permanently improves the land, and has been applied most economically by hose and jet, with great advantage to common Grass, Italian Rye-grass, roots, and grain crops. The Grass so stimulated is grateful to cattle, improves their constitution, and increases the quantity and richness of the milk of cows, as the earth not only absorbs, but also deodorises it, if it be not applied in too large quantities. Indeed, to be profitably used it must be applied in slight dressings, and so employed it will supersede the use of guano and artificial manures. It may be applied at any time of the year, except during hard frosts, to every description of soil which is naturally or artificially drained; and the most profitable returns, as in the case of all other manures, will be obtained when it is applied to the best soil. There are in it matters of themselves injurious to vegetation, but they bear so small a proportion to the entire bulk as to be perfectly harmless. If applied as recommended—*i.e.* in slight dressings—no nuisance would be created by its use, the earth, as has been said, deodorising it; but it cannot with profit be manufactured into a solid manure."

It was hardly possible to write a paragraph which should more perfectly mislead the public. All the talk about the heat and water of the sewage is sheer nonsense—its Belgian valuation is evidently mistaken, and so is its assertion about the scanty application which it recommends. Town sewage is not a thing to apply in slight dressings with any prospect of advantage. It is so weak, and as our water supply increases it will become weaker, that except in large dressings it is almost worthless. The last sentence in the paragraph is no doubt correct—if applied in small dressings the earth will deodorize it, and it cannot with profit be manufactured into a solid manure. But experience hitherto has shown that its agricultural value is pretty fairly in proportion to the nuisance it creates, and that it must be applied in quantities which the sandy soils of easy percolation to which alone it is adapted cannot be expected to deodorize. From 3000 up to 30,000 tons of liquid must be applied per acre in order to success—and there are very few cases indeed where an application with hose and jet has been profitable. These are confined to instances where the sewage itself provides the force needed for its distribution, and where a very liberal supply has been laid on. There is no doubt that the examples of greatest success in the use of sewage manure have been where the supply has been excessive, and where in fact the land was treated with the foul water pretty much as an irrigated meadow.

It is in cases like this alone that anything like 2*d*. a ton has been made of the material—and this has been where the soil unquestionably has not deodorised the material used.

We believe that the true solution of the difficulty as to London sewage will be found when the whole of this so-called guano stream is carried into some waste land district, where there are sloping surfaces of poor sandy soil over which it may be poured —and where there are few people to be poisoned by the nuisance which it will unquestionably create. It will then grow luxuriant crops of Grass, and with the aid of cows will be profitably converted into milk.

Let us hope that the capital speech of the Earl of DERBY at Preston last week, of which we give a full report in another column, and which was mainly directed to the sewage question, may succeed in reviving the interest which the subject has till lately excited, and in directing the attention of capitalists and engineers, scientific men and agriculturists, to the solution of the difficulties which surround it.

WE have already named among the novelties introduced to English agriculturists in the International Exhibition the American cow-milking machine. This, as also the dairy furniture of Holstein, exhibited in the Danish department, appears to be especially worthy of examination by English dairymen.

The cow-milker receives the four teats of the cow in so many conical elastic cups connected with a very simple pumping apparatus, worked by two side handles, while below this, and attached to it, is the pail, which receives the milk as it is drawn. It has the advantage of being clean; no dirt can fall into the milk as soon as the apparatus is attached to the udder. It has the advantage also of being rapid in its action; it will remove the milk at the rate of 1 gallon per minute. It has the great advantage of needing no skill for its use. Every dairy farmer knows how possible it is to injure a young cow by putting it in the hands of an unskilful milker. "No one shall ever learn to milk at my cows" is a speech not without reason that we have often heard. Here you have a contrivance which enables any one to withdraw the milk more rapidly and more pleasantly to the cow than any milk maid could do it. The four teats of the cow are milked at once. The machine, pail included, weighs 6 lbs., and is as simple in its operation as a common hand bellows, and it is as readily cleaned in all its parts as an ordinary milk pail. Notwithstanding its cost, 2*l*. 10*s*., we do not doubt seeing it in general use. Any one wishing for further information should apply to the Cowmilking Machine Company, Lacteal Works! near Birmingham.

The other dairy apparatus to which we would call attention is the Holstein milk pan. In the Danish department, exhibited by Messrs. HARTWIG, HOLLER & Co., of Carlshütte, Rendsburg, Holstein the visitor will see a dairy milk shelf, about 6 or 7 feet wide, on which there are three iron milk pans, about 3 or 4 inches deep, 2 feet wide, and 6 or 7 feet long, standing side by side across this shelf: the vessels are of iron enamelled inside, and from 4 inches deep or thereabouts they thin off to nothing in the last foot of their length in front.

On the floor along the front of this shelf is a railway so to speak, on which a four wheeled carriage runs, which carries a bucket below and a trough above, the latter with a spout leading into the former. This trough is of the same length with the width of the milk pans. If it be desired to empty the milk pans altogether, they are lifted at the farther end by a winch for the purpose, and the milk after being skimmed empties itself into the trough and into the bucket and is removed.

It is however the simple milk skimmer that is one of the most ingenious parts of the arrangement. The skimmer is a thin wooden strip taking the whole width of the vessel at once. It is fastened, rake-fashion, to the end of a handle long enough to let you reach from the front to the further end of the vessel, and it is furnished with wheels at each end which run on the sides of the vessel. By elevating or depressing the handle you can place the edge of the wooden skimmer just as much below the surface of the milk as you please, and preserve it easily at a perfectly uniform depth throughout; and drawing it towards you the whole surface of the cream is dragged from the one end of the vessel to the other, pouring over the edge of the vessel (which may be raised a little at the farther end to help the process) into the trough and into the bucket below it. The carriage is then wheeled opposite the next vessel, and so off each in its turn the cream is very rapidly and easily taken. What a saving of labour for large butter dairies is thus effected may be easily imagined—as great as is effected by the American milker among the cows in the yard.

The exhibitors are represented in London by AUGUSTE BÜTEFISCH, 33, Great Winchester Street, London, E.C.

Both the milk-vessels and the cow-milker have received medals from the juries which inspected them.

—— THE following letters on THE SMALL-POX IN SHEEP have been received during the past week:—Mr. SPOONER, of Eling, writes thus:—

"The disease is confined to a few flocks in the immediate neighbourhood of its first outbreak, and it is to be hoped that flockmasters within a range of six or eight miles of this locality will refrain from sending their sheep to the large fairs. It is far better that they should keep them on, even at a great inconvenience, until some 20 days have elapsed from the last case of disease in their neighbourhood, than that they should risk the spreading of the calamity, or disturb the avocations of trade by causing alarm in other localities. Flockmasters in untainted neighbourhoods will probably as much as possible prefer selling their sheep at home, or at their local fairs, and if there are fewer buyers at the large fairs than usual there will probably be fewer sheep.

"It is natural that people should be impressed with the results of their own experience, and thus a writer in your columns speaks strongly against inoculation, believing that the disease by such means will be greatly spread, and that examination and separation alone of the diseased sheep will be all-sufficient. I can instance a case in 1847, where, in a flock of some hundreds, the disease was extremely violent, and in which, seeing that the sheep were dying fast, inoculation was resorted to throughout with very satisfactory results, and, although it existed naturally and artificially for a period of many weeks, and although the farm was surrounded by others on which large flocks were kept, by exercising proper vigilance not a single case occurred in the adjoining flocks. At the same time, as there are instances of the disease having been confined to a few cases, it is, I imagine, wise in the first instance to trust to daily examination of the whole flock. Where 10 or 12 cases occur, then inoculation should at once be adopted, and which may be practised with complete impunity so far as the neighbouring flocks are concerned. I will not trespass further than to suggest that all railway authorities should give instructions that cattle and sheep trucks should be sprinkled with chloride of lime and other disinfectant, and well washed out after each time of using. With these and other precautions which a better knowledge of the disease suggests there is no good reason why the fire of this infectious disease should not be trodden down, and effectually extinguished with 1-20th part of the injury to property which was sustained on its former occurrence."

Mr. FISHER HOBBS corrects the impression which prevailed that the powers given by an Act (11 & 12 Vict. cap. 107) having express reference to this disease, had expired:—

"It is in my opinion very evident that Mr. Labouchere's Act of 1848, 11 & 12 Vict. cap. 107, 'To prevent the Spreading of Contagious and Infectious Disorders among Sheep, &c., is still in operation, as I endeavoured to explain in my last letter. If you will be so good as to insert the Act of 1858, 21 & 22 Vict. cap. 65, which is very brief, it will explain the whole case. I cannot understand why there should be any doubt on this question. The only way in which I can at all account for it is that the Act of 1848, cap. 105, which was passed to prohibit the importation of foreign stock, was not continued in the Act of 1853 or 1858. This may have caused the 'wretched controversy' that Sir John Tyrell mentions in his letter, which appeared in the *Times* on the 29th inst. The disease which has appeared in Wilts was not introduced by foreign agency, therefore it is not necessary to prevent the importation of foreign sheep at the present time; but I believe the 4th clause of the Act of 1848, cap. 107, which gives power to Her Majesty's Privy Council to make such regulations from time to time as they may consider necessary, will be quite sufficient for that purpose. I hope the Press will set this matter right, that we may be prepared against any emergency; for to be 'forewarned is to be forearmed.'"

The following is the Act referred to:—

AN ACT TO CONTINUE CERTAIN ACTS TO PREVENT THE SPREADING OF CONTAGIOUS OR INFECTIOUS DISEASES AMONG SHEEP, CATTLE, AND OTHER ANIMALS.—[2d August, 1858.]

"Whereas an Act was passed in the Twelfth Year of the Reign of Her Majesty, Chapter One hundred and seven, for preventing until the First Day of *September* One thousand eight hundred and fifty, and to the End of the then Session of Parliament, the spreading of contagious or infectious Diseases among Sheep, Cattle, and other Animals: and whereas the said Act was by sundry Acts continued until the First Day of *September* One thousand eight hundred and fifty-three, and until the End of the then Session of Parliament: And whereas by an Act passed in the Session of Parliament held in the Sixteenth and Seventeenth Years of the Reign of Her Majesty, Chapter Sixty-two, the said first-recited Act was extended and further continued: And whereas by an Act passed in the Nineteenth and Twentieth Years of the Reign of Her Majesty, Chapter One hundred and one, the said first-recited Act was further continued and will remain in force until the End of the present Session of Parliament: And whereas it is expedient that the said first-recited Act, as the same is extended by the said second-recited Act, should be further continued: Be it therefore enacted by the Queen's most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the authority of the same, as follows:

"I. The said recited Act passed in the Twelfth Year of the Reign of her Majesty as the same is extended by the said recited Act passed in the Sixteenth and Seventeenth Years of the Reign of Her Majesty, shall continue and be in force until the First Day of *August* One thousand eight hundred and sixty-three, and to the end of the then next Session of Parliament."

To this we add a letter taken from the *Times* of Thursday, declaring the continued spread of the disease:—

"The disease in sheep is still spreading, and an incident occurred at Marlborough fair which should be a warning to purchasers elsewhere.

"Mr. NEATE, a large tenant farmer, sent for sale 200 sheep, which were purchased by Mr. LOUSELY. Mr. NEATE, on his return home, found that the small-pox had broken out in the unsold portion of his flock, and at once communicated the fact to the purchaser of the remainder. The purchase money was repaid, and the sheep were returned, but in the meantime they had been two nights with 500 other sheep also purchased at the fair, all of which are now probably infected.

"From the state in which Mr. NEATE found his flock when his attention was drawn to them, there is little doubt that the eruption was fully developed in the 200 sheep at the time of his taking them to the fair. The amount of infection communicated by a single case of this kind can scarcely be estimated, and when we consider that the value of our stock of English sheep is not below 100,000,000*l.* sterling, one is surprised that the Government cannot even take the precautions of the Act of 1848.

"Where the disease exists, it cannot be too widely known that inoculation has been very successful.

"Of Mr. Harding's flock, of 446 inoculated 400 lived, and of 500 lambs only two died. A neighbouring flockmaster has been equally successful. While where the disease was taken naturally 60 per cent. were lost."

We are glad to know that, thanks to the energy and public spirit of Mr. FISHER HOBBS, the English Agricultural Society is awake to the emergency. Their Veterinary Committee have been summoned for Tuesday next, and Professor SIMONDS, their veterinary officer, has been in the district throughout the week, attending meetings at Warminster and Salisbury of the flockmasters of Wiltshire, whose excitement and alarm have been allayed by his explanations, and will be, we hope, directed by them to the most prudent course of action which can be adopted.

RATING LANDS UNDER THE "LAND DRAINAGE ACT, 1861."

As this Act is coming into operation in different parts of the kingdom, and as uniformity in the system of rating the lands which will be brought within the scope of the drainage areas will be most important, and tend to its proper working, I venture now to bring the subject under the attention of your readers, in order that it may be discussed. In many parts of the country which are under the jurisdiction of Commissioners of Sewers and private drainage Acts of Parliament the system of rating is well understood; and although there may be a diversity in the *modus operandi*, still a principle prevails which, partly by custom, and partly by expediency, has been admitted to be fair and equitable, but in new districts formed under this Act the question has never arisen, and most likely a great variety of modes will at first be attempted.

The general system is to rate certain levels or districts, being parts of large jurisdictions, for works and expenses incurred within them, and to charge the whole jurisdiction with heavy outfall works which may be beneficial to all, and general expenses for management &c., with a separate rate.

It is probably understood generally that the Commissioners formed under the Act of 23d Henry VIII. cap. 22, have only jurisdiction on Seaboards and tidal rivers within the limits or level of ordinary high tides, and that the new "Land Drainage Act, 1861" gives powers to extend those limits to any distance or elevation, and to create new districts, such as in valleys of rivers subject to floods or requiring new and proper outfalls. So that the question of rating under this Act becomes a much larger one, and varied in its practice.

In Ireland, where arterial drainage was carried out upon the largest scale of any with which we are acquainted, although by the force of circumstances in a very extravagant and injudicious manner as regards the expenditure, the system of rating was carefully and impartially carried out, and that was upon the increase in the annual value of all lands respectively; thus, lands nearest the rivers subject to floods for six months in the year would be rated higher than lands of the same quality of soil which were subject to only three months' floods and not liable to autumnal floods, and these lands would be rated higher than lands of the same quality which were never flooded, but injured by reason of their own water being pent up in them, and this especially applies to the manner by which pipe drainage and field drains are affected for want of proper outfall at all times.

The mode of valuing was by examining the land previous to the drainage and again after the improvement had been effected, and the rate was fixed upon the improved value according to the different degrees of benefit conferred in each case. Rich alluvial soils for instance when freed from floods may be increased in value from 10*s.* to 20*s.* per acre, while moory poor soils on the same level as regards floods may not be increased in value more than from 2*s.* 6*d.* to 5*s.* per acre; the rating in all cases will be in the proportions based on these values.

This system, as adopted in Ireland, was no doubt the test for arriving at the improved value, but I should suppose that the two valuations would not be adopted in this country, but then it should be borne in mind that the rating was to pay for very extensive new works executed in districts in which in several instances the land was wholly valueless, and in others only of trifling value, so that some trouble was necessary to ascertain the exact improved value, more so perhaps than may be necessary in many cases in this country.

Under the "Land Drainage Act of 1861," I believe that some such system as that adopted in Ireland will be the best, that is, to rate those lands which are the most frequently flooded, higher than those which are not flooded but have the water retained in them, and I would in some cases adopt a higher level, which of course would be rated still lower, because the works necessary to straighten, deepen, and clear out rivers and streams must be calculated for the discharge of the water from such lands in greater quantities than previous to the alteration from pipe drainage or other means, and therefore they ought to contribute towards the additional cost.

These different levels or heights might be defined on the district plan by a line of frequent flood, another of less flood, another of no flood but of a given height above flood level, and another height if need be—which lines would be contour lines, and the areas could be easily ascertained within each level for the rate.

I should propose that the quality of soils in each level should be considered as an ingredient in the value.

Levels or districts should also be formed, so that each should bear the cost of its own improvements and expenses, and that a general rate should be made over the whole district; or over two or more districts, according as all or some of them are benefited by a general work, purchase or removal of obstructions, &c., and upon which all general expenses for management, &c., should be rated.

This principle is equally applicable to the maintenance and superintendence of the works, as for new works. *R. B. G., Sept.* 2.

STEAM CULTIVATION.

NORE, NEAR GODALMING.

THERE is not a more delightful neighbourhood than this. The country around Nore, and between it and Guildford, is as charming a specimen of rural beauty as can anywhere be seen. But a continual succession of hill and valley, deep lanes and roadways, steep and crooked fields, with a perpetual patchwork of pasture, ploughland, and plantation, through beautiful to look upon, and good for many country enjoyments, is not the best adapted for steam cultivation.

Mr. W. Cousens, who occupies about 650 acres of land in his locality, has, however, now had a year's experience of Howard's cultivator, and could write as follows of its use after a few months' trial of it. He said, in a letter written last November,

to Messrs. Howard:—"I may state that my neighbours all considered my farm ill adapted for cultivation by steam, being situated in one of the most hilly parts of the county, but having seen your apparatus at work when I visited Bedford, I purchased a set at once for the autumn cultivation, of which I so much approve. I have cultivated 157 acres since the middle of August, at a cost of 4s. per acre, less wear and tear, and I do not think my apparatus is any the worse for the use. My breakages have not been greater than might occur in horse tillage. I have dispensed with the working of nine oxen and three horses, but I do not consider the reduction in the number of horses, and the consequent saving of expense, to be of so much consequence as the extra and superior cultivation. This alone will compensate me for the outlay and trouble. I have been compelled hitherto to plough my hill land all one way, this I can now by the use of the steam cultivator, avoid. I have a large field now planted with Wheat after Beans, that was originally ridge and furrow, which was broken up with the cultivator, and planted without a plough, and which has given me the greatest satisfaction."

Wheat is not a good crop this year in the neighbourhood of Nore, nor indeed is it good anywhere else, but the field thus referred to, whose produce is now safely under thatch, has fairly maintained the promise which it held out in the autumn.

Having enjoyed some hours' ride over this property last week I am able to speak of some of the improvements effected on it due to Mr. Cousens' energy and enterprise before he purchased a steam cultivator, as well as of other improvements which will follow its adoption. The property, extending over nearly 2000 acres, belongs to Sir H. Austen, Bart. Two farms, the "Scotsland" and the "Nore," nearly touching one another, are occupied by Mr. Cousens. They extend over about 650 acres; of which 30 or 40 are in permanent pasture; in well watered and well shaded paddocks scattered here and there in the vallies, extremely convenient for the live stock of the farm; and the remainder is plough land, cultivated on the four-field course of cropping. It is for the most part a light soil, over some of the sand beds below the chalk formation—the subsoil is generally an incoherent sand sometimes hardened in layers and masses which project from the weathered surfaces of any deep cutting through it—and when they lie near the surface are liable to turn out the plough which strikes upon them. The soil though always hitherto ploughed, sideways, down hill, and thus gradually deteriorating at the top of the steep fields, exhibits less inferiority there than on any hill side land I know, which speaks for the good quality of the subsoil. It is however here, as elsewhere, one great advantage of steam cultivation, that it can be carried on up and down hill and in any direction that is desired without regard to the lie of the land.

Since Mr. Cousens' occupation on lease of this land, now 12 or 13 years ago, a great deal of improvement has been effected by good roads, removal of fences, enlargement of fields, and the drainage of the lower land. A considerable extent of heavier land which has needed this drainage lies below the house on the southern side of the property. This is good Wheat land, and carries this year good crops, also of Beans. These improvements are the work of an energetic tenant protected by a 21 years' lease. And the adoption of steam cultivation is but another development of the same character and circumstances; the other steps which had been taken having naturally led to it. A good deal of ingenuity has to be exercised in the use of the steam cultivator on land so steep and so irregular. The best plan is to place the engine and windlass on the highest land of the field, or the most prominent of its hills—for the hill and valley character of the district is exhibited on th surface of a 20 acre field just as it is on the larger scale. The rope thus when tightened pulls through the air, and does not rub over or cut into any of the hillocks which would intervene between the engine and the tool if the former were placed in a hollow. This lesson has been taught by an experience of the rapid wear of the wire rope which has followed a disregard of it—Mr. Cousens having, as he informs me, worn at least half his rope in cultivating about 400 acres. There is now much less friction; in fact the rope is often when at work 20 feet above the ground, and then of course suffers no waste by friction at all.

The cost of the operation may be estimated thus:—

Daily Wages,	Engineman	3s. 0d.
"	Windlass man	3 0
"	Ploughman	3 0
"	2 Anchormen	4 0
"	2 Boys	1 6
"	Water-cart boy	1 6
	Total ..	16 0

This amounts to from 2s. to 2s. 6d. per acre on the extent done in the time.

And this tallies very well with the record kept in the case of 205 acres accomplished before harvest this year, the wages paid during the time being 25l. 19s. or 2s. 6d. per acre. This it must be remembered however is for a first steam cultivation, which is always heavier than any subsequent operation.

The coals consumed by the 10-horse power engine may be put at 9 cwt. a day, or say 10s. on the ground, which at the same rate of performance will be 1s. 3d. to 1s. 6d. an acre. And here again we have a record of 6 tons 1 bushel of coal consumed in cultivating 107 acres, to corroborate this estimate. That quantity of coals would cost at 22s. a ton on the ground, 144s., or about 1s. 4d. per acre.

The work accomplished has been 157 acres last autumn, and 295 acres up till the present harvest. And a good deal of satisfactory and rapid work was done in the month of May. Thus, on May 1, they commenced a 21-acre field, on the 3d a 35-acre field, on the 10th a 24-acre field, on the 18th a 20-acre field. One hundred acres being thus accomplished in the first half of the month. In doing this the rope is estimated to have worn one half; the repairs otherwise are stated to have been not material.

	£	s.	d.
Putting the whole cost of rope, cultivator, and 10-horse power engine at 500l., the charge of 5 per cent. interest on capital is	25	0	0
10 per cent. for tear and wear on certain portions of the apparatus	30	0	0
And for the wear of rope	25	0	0
	£80	0	0

The sum of 80l. thus has to be divided over the 400 acres accomplished, or about 4s. an acre; thus making the cost of steam tillage rather less than 8s. per acre. As to the comparison of this with the cost of horse labour in such circumstances, it must suffice to say that horses could not have done it at all. The land is so steep that horses could not have worked it up and down at all, and the subsoil is occasionally so hard that it could not have been torn up except by steam power.

The immediate saving on the farm is in dispensing with three horses and nine oxen. The farm has hitherto kept 300 ewes, fatting them and their lambs off every year; the greater number of the latter being sold fat, at 4 to 7 months old. The dispensing with 9 oxen will enable the keeping of 70 or 80 additional sheep, yielding probably 70l. or 80l. profit; and the dispensing with 3 horses will be a saving of 100l. expenditure. Some 180l. a-year are thus saved or won, rather more than the sum estimated as annually spent. To the latter, however, we have not added the cost of actual repairs; these, however, have not been much. There has been no accident, and Mr. Cousens' report is that the repairs have not been greater than would have been incurred in the use of horse-drawn implements. The horses employed in cultivating 600 acres of arable land here, hitherto, have been about 18 or 19, chiefly in two-horse teams, and 9, or three teams, of oxen. The force employed now is 16 horses and a 10 horse-power engine. The latter is of course available for threshing out grain crops, and the hire of an engine for that purpose is saved as well as the cost of three horses and nine oxen. But besides this there can be little doubt that as the engine becomes more easily and regularly worked, a larger number of horses will be displaced and a greater saving will be effected.

Mr. Cousens' experience in steam cultivation, carried out as it has been on land which would at first be pronounced as extremely unfavourable for it, may be pronounced a success, and a proof of the adaptability of Mr. Howard's system to such circumstances.

It must be added that the apparatus employed is of the old-fashioned kind. The new *brake* for ensuring the tightness of the slack rope is however now about to be used; and there can be no doubt that a good deal of the wear of the rope will hereafter be saved.

NORTH PARK FARM, LEWISHAM.

The contrast to which we referred in the spring (see pages 217 and 338) between this and a neighbouring farm exists to the full in autumn. There were Oats standing last week shoulder high, a magnificent crop, on the one—and we walked across to see Oats knee high on the other. The former had been grown after a heavily manured green crop on thoroughly and deeply drained and well tilled soil. The latter had been grown after shallow and imperfect tillage on undrained land of naturally the very same quality.

At whatever season of the year indeed you visit Mr. Sheppard you see not only a contrast of the results which he has achieved, but a contrast of the means to which they are attributed. There is now a crop of Swedes upon the neighbouring farm of which there is not half a plant—the field as foul as it can be—three or four men with a hoe apiece fighting with its Couch and Thistles—and on the other there is the finest crop of Mangels we have this year seen, a full plant and already large and heavy. The soil between the rows is clean and soft and mellow, every cubic inch of it as full as it can hold of the white fibrous root of the plant,—acting at present as a rare feeding apparatus for the crop, and to act hereafter as a rare manuring for the crop which is to succeed it. The land in the one is hard and foul and doing nothing—in the other it treads light, is clean, and will yield a crop worth 30l. an acre.

We could not find, excepting where the Vetches were being cut and carried from day to day, and where the stubble had been just cleared of its corn, an acre of the land that was not being utilised.

Large extents of Broccoli had been planted after Vetches, or after a prolonged spring cultivation, the Mangels, a second cut of Clover, Vetches and Potatoes were the other green crops, and the rest of the land was in Oats and Wheat. The latter, like all Wheat crops everywhere this year, was not quite up to the average. Oats were magnificent, but the whole farm bears witness to the activity, energy, and consequent success of the tenant. The steam plough—worked by Fowler's 10-horse power engine and apparatus—is now ready to go to work again upon the stubbles. It will thoroughly break up and disintegrate the clay lands, which are to receive 20 loads or thereabouts of London dung per acre before the winter, which being cross ploughed in will with the aid of guano applied as a top-dressing, yield as heavy a crop of Mangel Wurzel next year, as similar treatment has produced this season. We do not know a better example than this farm affords of the advantage of thorough tillage, and therefore of steam power applied to the tillage implement—combined with deep drainage and liberal manuring.

Here are about 230 acres of what where undrained is called stiff soil, manured almost wholly from a distance with stable dung, requiring therefore a very great amount of carriage, cultivated with 7 horses and the steam cultivating apparatus—presenting a perfect specimen of vigorous and successful agriculture. *J. C. M.*

PEDIGREE NURSERY WHEAT.

1st. To judge from what is now to be seen in our International Exhibition, it would appear that the cereals are comparatively neglected by British agriculturists. Most extensive and valuable collections have been furnished by France, Austria, and many other countries, but the grains of Britain have been brought forward by private individuals, whose contributions form meagre and uninstructive collections, some of the few varieties exhibited being incorrectly named. But the state of knowledge and feeling regarding the cereals is indicated not only by the limited number of the specimens, but also by the character of some that are exhibited. The large ears and plants of the Pedigree Nursery Wheat contributed by Mr. Hallett are somewhat parallel to the case of the Cow Cabbage, which was brought into notice 30 or 40 years ago. The properties of this plant were puffed by chatterers in market-places, by leaders, paragraphs, and advertisements in newspapers. A woodcut represented a cow browsing under the shade of the gigantic Cabbage, and the wool-growing properties of the leaves were illustrated by exhibiting at the show of the Smithfield Club a sheep whose fleece had for years been unshorn. Seeds of so wonderful a forage plant sold readily in small quantities at most extravagant prices; but instead of the purchasers obtaining a valuable acquisition, they got the well-known Jersey Kale.

2d. Feeling at all times interested in the improvement of the Wheat plant, Mr. Hallett's contributions to the Exhibition particularly attracted my attention. The large ears, with long intervals between the notches, and more especially the plants in wooden tubs, with zig-zag stalks terminating in barren ears, betokened gross feeding of the plants; but in order to remove all doubt on this point, the Wheat crops growing on Mr. Hallett's farm were examined. The results of my observations and reflections convinced me that Mr. Hallett's plan of improving the cereals is erroneous in theory, a failure in practice, and entirely delusive.

3d. The Manor House Farm is situated at the east end of Brighton, on a gentle declivity which stretches towards the racecourse on the top of the Downs. The extent is considerable, embracing the rise from the town, as well as slopes in other directions; and the soil is incumbent on the chalk formation, moderately adhesive, and well adapted for Wheat growing. The surface is generally unenclosed, and intersected in all directions by roads and footpaths. The farm is under superior management, everything being neatly kept, and indicating high farming. Amongst the general luxuriance, a piece of Tartarian Oats, near the buildings, was the crowning crop of the season. The time of my visit was the early part of August, when the sun was bright, the breeze cool, and the Cereals approaching maturity. Under such favourable circumstances, I rubbed along miles of Mr. Hallett's waving crops without breaking down a single stalk, and afterwards extended my walk to the farms and allotments in the neighbourhood.

4th. Mr. Hallett's Wheat crops had evidently been sown at widely different periods of the season, but all of them were remarkable for length of ear and levelness of crop, and so genuine that, after a careful examination, I could only detect two or three spurious plants. The ravages of the insects and vegetable parasites which infest the Wheat plant were visible. There were many ears diminutive in size, and there were also many partially if not altogether unfruitful, while the chaff and straw bore unmistakable evidence of the excessive manurial condition of the soil. The characteristics of the Wheat crops on the Manor House are entirely owing to the mode of cultivation which is practised there. The ears being deceptive, and only large in appearance, I failed to discover any improvement which Mr. Hallett had effected on the Wheat plant, and believe that his Pedigree variety is identical with the common Nursery Wheat of the country.

5th. Contrasted with some of the best crops in the neighbourhood which came under my notice, the Wheat on the Manor House was late in ripening, while the chaff and straw were more diseased, and not so bright in colour. In quantity of grain, the yield of the respective crops may be set down as

doubtful; but in quality the Manor House will be inferior, and with quantity and quality combined it will not be superior in money value for milling purposes.

6th. To illustrate the deceptiveness of Mr. Hallett's long ears, let a spike of Wheat be denuded of chaff, and it will be seen that the ear is built upon a rachis or backbone, and that the spikelets or clusters of grain are attached to the notches of the backbone. As commonly grown on the farm, Wheat ears have two, three, and four grains on a notch, but occasionally more are to be found. With ample space and nourishment for the plant, the ears generally assume a long appearance by the lengthening of the spaces between the notches of the backbone, without the notches being always increased in number. Besides, an excess of manure tends to injure the quality, and also to lessen the number of grains, the chaff sometimes becoming empty hulls; so a long ear is often found to be less productive than one comparatively short. Two large fine-looking ears selected from the Manor House crop, the one measuring $6\frac{3}{4}$ of an inch, and the other 6 inches in length, having respectively 26 and 28 notches covered with chaff, produced 50 and 56 grains. Thus it appears that the shortest ear was the most productive, and that neither of them were very fruitful. A good ear taken from a field contiguous to Mr. Hallett's land measured $4\frac{3}{8}$ of an inch, having 20 notches on the ear, and 61 grains. The long ears of the Pedigree Nursery Wheat seen at the Exhibition, and generally those of the present crop on the Manor House, are remarkable for having few grains on a notch, the chaff being long, thick, and dark coloured, and often without grain of any kind; but these characteristics will disappear when a sufficient quantity of seed is sown on a moderately-fertile soil.

7th. In Mr. Hallett's exposition of his Pedigree Nursery Wheat, there is a woodcut of one of the original ears with ten fertile notches on the side, and, as the apex is also fertile, there must have been in all 21 fertile notches. Having this year examined Wheat crops in many parts of Britain, I found that a common sized ear has not more than 16 fertile notches. There is now before me an ear of Hopetoun Wheat,* five inches long, with 22 notches, bearing 100 grains; six of the notches have six, and eight have five, grains each. Mr. Hallett, therefore, by his own showing, started with an ear more than 25 per cent. above the average size—when the number of fertile notches and not the length is taken as the standard—and capable of containing the maximum number of grains. His Wheat ears of the present crop on the Manor House farm will not average 40 grains.

8th. Practically, there is little or no analogy between the propagating of Wheat and the breeding of animals. In the one case the male and female organs of generation exist in distinct individuals, whose union is necessary for the production of a new being; and by a judicious selection of breeding animals the farmer can materially modify the character of his stock. With Wheat the male and female organs of generation exist in the same individual, and in every perfect floret, but their union is spontaneous, and beyond the husbandman's control. Improvement may be effected by selecting and propagating new varieties which nature sometimes produces, but they can only be discovered amongst a growing crop, and not in a sample of grain, and are generally found to reproduce themselves with constancy. In some ears of Wheat the seeds are found to vary as much in size, shape, and quality as Apples from the same tree. At the apex of a spike, and at the apex of a good-sized spikelet, the seeds are so small, though fine in quality, that on actual trial I have found them not half the weight of seeds from the same ear. But all the seeds of the same Wheat plant containing a healthy embryo produce plants in all respects identical, provided they are grown under a parity of circumstances, the root buds or tillers, stalks, ears, and general development being regulated by the nutriment assimilated during growth. All such seeds have the same pedigree; but a large gross-fed Wheat plant is as incapable of transmitting coarseness to a successor as a prize cow of the Smithfield Club.

9th. The parallel between the Pedigree Nursery Wheat and the Cow Cabbage exists chiefly in their introduction to the farmers of Britain. From the one having been given out as a new plant, a repetition would not in all probability have been successful, but it is quite possible that the term "Pedigree" may at a future period be prefixed to other agricultural plants if farmers are credulous enough to purchase the seeds. *Patrick Shirreff, Haddington, August 26.*

Home Correspondence.

Seeds in the International Exhibition.—I see in the *Agricultural Gazette* of Aug. 23, some remarks from Messrs. Raynbird & Co. upon my notice of their collection in the International Exhibition. I am sorry if I have hurt the feelings of these gentlemen, as I hear that they are highly respectable, and I have no doubt that their collection and their case cost them no little time and trouble in arranging. So far as they go, which I maintain is a very little way, their collection may be a good one, but they repeat more than one of their samples, and fill up their spaces with other seeds, valueless as samples to the public eye. Their quantities are too minute, and had they not been arranged in a very tastily designed case, in my humble opinion they would never have received a medal. Again, I question very much, whatever Messrs. Raynbird may say, whether your general readers will recognise among Wheats Shirreff's Bearded, Prince Albert's, Crace's White, &c.; and among Barley, Nottingham, Hudson's Melon, Brewer's Delight, &c., however well they may be known in Messrs. Raynbird's locality, wherever that may be. As to the wisdom of Messrs. Raynbird showing grains of one kind of Wheat without ears, and ears of another kind without samples in grain, "as they intended should be the case," I leave you to judge. If Messrs. Raynbird are correct in saying that "hundreds of Englishmen are exhibiting foreign produce"—I presume they mean in the British department—and are rewarded for it, I ask of what earthly use is the international competition? They might as well have taken their tasteful case into the Italian department, or the Zollverein might as well have exhibited some of their treasures in the British. Surely Messrs. Raynbird must be mistaken—anything so contrary to common sense cannot knowingly have been allowed. The great aim of the whole scheme,* as I take it, is that each nation shall show in its own separate department, the produce, manufacture, or work of art which belongs alone to that nation, and anything found in any one of its collections which has been produced in another country should to all intents and purposes disqualify such collection from obtaining a prize. Unless such a common sense rule is adhered to, the whole international contest is a farce. For this reason my eye having caught "Lucerne" seed, which I don't think is ever found from British growth, in Messrs. Raynbird's case—and there may be some other foreign grain for what I know there—and seeing in other cases other things undoubtedly from abroad, I considered the collections disqualified from receiving the medal which has been awarded them. With regard to the competency of the Jury, however able and intelligent men they may be, and skilful as agriculturists, it is no disparagement to their abilities to say that foreigners generally are unacquainted with the varieties of corn grown in this country, and that many first-rate men of our own agriculturists know little of the distinguishing characteristics of Wheat, &c., grown in another part of the United Kingdom, distant from their own counties. I quite agree with Messrs. Raynbird, that it is a great pity that space could not have been provided for such collections as Messrs. Gibbs and Lawson showed at Battersea Park; as it is I do not see one worthy of the nation in the Exhibition. I regret that a people who stand so high and have made such progress in all farming operations should in this respect be so poorly represented. As to my name—it would be of little use to Messrs. Raynbird—as one of the public I wander about the Exhibition and have wondered more than once at the decisions of juries. Here I learn that a medal has been awarded for goods that have never been in the Exhibition — there that a firm which has been informed that their manufactures surpass all others, has received no medal at all; pieces of superior machinery passed over and inferior ones rewarded, and so on—though such will doubtless be the case in such a great and complicated affair as the Exhibition is, much as one may deplore and be astonished at such flagrant inconsistencies among selected bodies of eminent men. I jot down what I see and hear, and am not surprised that there is grumbling. As one fond of agricultural matters I wish Messrs. Raynbird joy of the medal; they are certainly more entitled to it than some others I see about them. If there is to be another International Exhibition in 1872 I trust that they will send in a case more worthy of our country and more deserving of a prize than I conceive their present one to be, and though it is a long time to look forward to I will add, "May we be there to see!" *Z.*

Societies.

THE SPARKENHOE FARMERS' CLUB AT LEICESTER.

On Tuesday, Wednesday, and Thursday, the great annual gathering of the above Society was celebrated in Leicester with great *éclat*. The Prize List reached the handsome sum of 1100*l.*, which, taking into consideration that the Society has only been established 10 years, and commenced with 70*l.*, shows great perseverence and energy on behalf of the working committee. Originally a Farmers' Discussion Club, the Society has grown by degrees to one of the leading provincial agricultural societies in the kingdom. We believe it was the first in the kingdom to invite ladies to its dinner, and this in no small degree helped its success. The annual show has until this year been held in most of the small market-towns in the neighbourhood, but last year it was decided to hold its next show in the county-town, Leicester. Steps were taken accordingly to make the affair successful; greater accommodation was provided for the show of stock, implements, &c., and every exertion used to render the success complete. It was decided to hold the show on the Leicester Racecourse, and about 40 acres of land were accordingly enclosed, and suitable sheds, &c., erected for the cattle, sheep, implements, &c. Great preparations, too, were made in the town to give the Society a hearty welcome. Triumphal arches were erected in most of the leading thoroughfares, and the streets wore quite a holiday appearance. The only drawback was the unfortunate wet state of the weather on the principal show day—Wednesday. On Tuesday the trial of steam cultivators and ploughs took place on land adjoining the show, at which Messrs. Howard, Fowler, and Smith were competitors. The merits of the ploughing being equal, 40*l.* was given to Mr. Fowler, and 30*l.* to Howard, instead of 50*l.* to the first, and 20*l.* to the second.

The Cattle Show included 85 animals. In Class 1, for the best fat Short-horn ox, for which a prize of 10*l.* was offered, Mr. R. Swinnerton, of Nuneaton, exhibited a very fine beast, bred by Mr. C. Clark; it gained the 1st prize. A very fine animal was also exhibited by the Right Hon. Earl Spencer, Althorp, Northamptonshire, which gained the 2d prize. In Class 2, for the best fat ox, for which a prize of 10*l.* was offered, the first honours were gained by Mr. John Shaw, of Hunsbury Hall, Northamptonshire. Mr. R. H. Chapman, of Upton, Nuneaton, also exhibited a remarkably well bred animal, which gained the 2d prize (5*l.*) In Class 3, 10*l.* was offered for the best Short-horn cow or heifer, and 5*l.* for the 2d best. There were 11 entries, Mr. Sneyd, Keele Hall, taking the 1st prize, and Lady Pigot, of Branches Park, Newmarket, the 2d. In Class 5, Short-horn bulls, the best were those of Mr. Jos. Robinson, Clifton Pastures, Newport Pagnell, which took the 1st prize; C. W. Packe, Esq., M.P., Prestwold Farm, Loughborough, who obtained the Leicester Licensed Victuallers' Cup; and that of the Rt. Hon. Earl Spencer, Althorp, Northamptonshire, which obtained the 2d prize. In Class 9, Mr. J. Lynn, Stroxton, Grantham, exhibited a neat and useful Short-horn cow in milk, which gained for him the 1st prize. S. Majoribanks, Esq., Bushey Grove, had a very useful animal, which gained the 2d prize, and Sir J. H. Crewe, Bart., of Calke Abbey, Derby, also exhibited a very fine beast.

The Sheep included about 70 entries. A fair show of Leicesters, the prizes going to Mr. J. Lynn, Mr. R. W. Cresswell, of Ravenstone; Mr. J. Shaw, of Hunsbury Hill; Mr. C. Bosworth, of Dishley, Loughborough; Mr. T. Bird, of Bilton, Rugby; and Mr. A. Guy, of Eaton, Grantham.

There were 52 entries of Pigs, and a very large show of Horses. The cart-horse class were numerously well represented, and some useful animals were exhibited. In the hunting class there were 21 entries.

The principal exhibitors of implements were Messrs. Hunt & Pickering, Johnson & Sons, Lee & Co., March & Co. of Leicester, Messrs. Page & Co. of Bedford, besides numerous others.

The tent in which the cheese was contained unfortunately blew down, so that it could not be inspected by visitors.

In the afternoon of Wednesday, about 900 persons dined together in a tent, the Chairman being Lord John Manners, M.P.

The toast of the evening, "Success to the Sparkenhoe Farmers' Club," was given by the Chairman, who referred them to a question of great political and agricultural interest. He said:—

Whether the sanguinary struggle now raging in America stopped or whether it went on, he could not but entertain the strongest doubts of the propriety of the steps which were now being taken with a view to secure future employment for our great manufacturing population, for the simple reason that he questioned very much whether they would prove effectual. It seemed to be generally assumed that, unless cotton could be found somewhere or other upon which to employ the skill and energy of our toiling population in the north, starvation, or, at least, relief by charity, must be their perpetual portion. Now, he owned that it struck him that this did not seem to be a sound or statesmanlike view of the question at all, or that it was absolutely necessary that we should be entirely dependent upon a fresh supply of cotton from wheresover it might come in order to meet the present emergency. A few years ago, when the Potato famine in Ireland threatened her toiling millions with starvation, a very different cry was raised; they were told of the insensate folly of depending entirely upon one source of supply for the food of the people, and every precaution was adopted which could tend to relieve Ireland from the necessity of depending in all future time upon that treacherous esculent. He would, therefore, while considering this great question of the distress of the population in Lancashire, venture to throw out one suggestion for the more practical consideration of others. Was it absolutely necessary that our toiling population in the north of England should in all time to come be absolutely and solely dependent for a livelihood upon the manipulation of Cotton? Was it not possible that two materials which could be produced in abundance by British farmers and Irish farmers—namely Flax and wool—could be so cultivated and increased in quantity as to render us in a great measure independent of the supply of American Cotton; and might not those two products hereafter give increased employment to the manufacturing population of the north? If that were so, he believed that the excellence of the Irish soil for the growth of Flax was beyond dispute, and that it would afford at once a guarantee for the employment of labour in the fact that there was no fear of a deficiency in the supply of the raw material, and he need not address to an assembly like the present any detailed argument to convince them of the great advantages which must result to the agricultural interest from the incentive which would be given to the cultivation of Flax and the growth of wool. Looking at the whole question in a general point of view, it was impossible to doubt that that State or community was in a position of considerable danger which depended for its sole prosperity, if not existence, upon one staple alone, and not only that, but upon the existence of one market alone for the supply of that all important staple. That undoubtedly had been to a great extent our case with respect to cotton supply, and it was to obviate any such necessity for the future that he threw out this suggestion. What, he asked, was one of the main reasons for the increased prosperity of the agricultural interest? Could any one fail to see that it was mainly owing to the greater variety as well

increased breadth of crops sown by the farmer, who did not now look solely to one great staple, like that of Wheat, to supply him with all the necessaries of life, but, on the contrary, by the introduction of a great variety of crops, if one should be low in the market, to neutralize the loss he sustained upon it by the increased value of another. He pointed with confidence to the list of prizes given at the present show for a proof of his assertion. There they found not only prizes for the chief products of agriculture, and for all kinds of modern inventions applicable to it, but it comprised prizes for cattle sheep, and pigs, poultry, rabbits, cheese, and even flowers. What was the result of the introduction of that variety into the culture of the farm—was it not this, that if a crop of Wheat failed, the farmer could make it up in some other kind of produce, so as to experience no great inconvenience when rent-day came round? It was to the increased energy and the increased skill of the British farmer that his present prosperity was owing, and if this Society had done nothing more than bring the farmers of three counties together once a year to show each other what new machines they had got, and what new improvements they had availed themselves of, the results of which were before them, they would have accomplished a most useful end, and have produced a most beneficial result to the community. But they had done much more, because they had knitted together still more closely the various classes which composed the great agricultural family of England. He knew hardly any great improvement which had taken place of late years in the social or moral condition of the agriculturists of this country which had not either originated or been promoted by the full, frank, and free discussions which characterised these agricultural meetings. Whether they looked at the improved condition of the cottagers, the increased comfort of their homes, their moral and intellectual advancement, or to the general employment of a more skilled labour than formerly and the consequent advancement of agriculture as a science, they saw alike the results of the operation of societies such as the present. He therefore spoke only the sentiments of his heart when he stated that his profound conviction was that the Sparkenhoe Farmers' Club was conducive to the best interests of the community at large.

NORTH LANCASHIRE AGRICULTURAL AT PRESTON.—The weather has been disastrous on the principal day of the meeting, and the large show, including 1000 entries of implements, was inspected amid great discomfort. The following is the number of the live stock shown:—Short-horned bulls, 47; milch cows and heifers, 64; cattle of any breed, 85; horses, 123; sheep, 91; pigs, 38; roots and seeds, 60; butter and cheese, 15; poultry, 143. All these entries were in competition for the Society's prizes. In addition to them, special Guild prizes were offered, for which the following entries were made:—Implements, 54; Short-horns, 51; horses, 44; sheep, 18; pigs, 11; cheese and roots, 10. The total number of entries was 1842.

The Dinner was held in a large yard in Chapel Walks, which was covered with canvas. Covers were laid for 1724 individuals. The chair was taken at 4 o'clock by the Right Hon. the Earl of Derby. The weather penetrated the roofing and the dinner was eaten under umbrellas.

The Chairman, The Earl of DERBY, proposed the toast of the evening, "Success to the Royal North Lancashire Agricultural Society." His lordship said:—

Although I do not know the precise number of implements and stock exhibited to-day, or the precise amount paid for admission, this I do know, that I am enabled to contrast safely enough the present meeting with the first meeting of the Royal North Lancashire Agricultural Society which I attended—I believe the first of its institution—15 years ago, in the year 1847. I will not trouble you with any detail of figures, but I would just mention that in the year 1847, the receipts of admission to the show yard were 63*l.* 18*s.* In 1861 the receipts were 375*l.*, and I am told that, notwithstanding the obstacles which were interposed by the state of the weather, the receipts to-day are expected to considerably exceed that amount. But when I say that the receipts in 1847 were only 63*l.* 18*s.*, I am bound, as an old member of the Society to say, that I think the show was very dear for the money. I recollect that upon that occasion the show was in a small field in the neighbourhood of Lancaster. The stock exhibited included a few very inferior brood mares, some very moderate hacks, and I doubt if there were any sheep. There was a very small and inconsiderable number of cattle, which belonged to the old long-horned and I may say long-haired, breed.—Few specimens of that almost unknown description of cattle, respecting which there was then great controversy, which is known as the Short-horn. That was the state with regard to the exhibition of stock in the year 1847, and I leave those who have had an opportunity of seeing the stock to-day to say how great is the progress which agriculture has made in this country. It is not in stock alone, but in every respect that within the last 20 or 25 years, agriculture has made a satisfactory progress which would vie with that made in any other description of free industry. It would be a very curious statistical problem to solve to ascertain how many acres of land, by the removal of unnecessary fences, have been gained to the county of Lancaster during these last 20 years, and how much addition has been made to the value of land by the comparatively small sums laid out in that all essential A B C of agriculture, namely, thorough drainage. Within the last few days I have seen districts of country which certainly would have been very much improved by the expenditure of a couple of hundred pounds in tile drainage. I must say the improvement is one highly creditable to the county generally, and I have no doubt highly remunerative both to the landlords and tenants of the county. While I speak of drainage and the improved value given to the land by it, let me also mention incidentally a matter which, perhaps, has not been so specially brought forward, but which is of the greatest importance. It is not only upon the arable lands of this country, but upon the pastures also that drainage must have a beneficial effect; and more especially upon those pastures devoted to sheep, the cultivation of which is greatly increased during the last few years; and it is found that the drainage of the land produces perhaps greater effect upon the feeding quality of Grass for sheep than it on any other description of produce. Lancaster has been a county in which it has been supposed sheep could not do good. I have been assured, on the contrary, that there have been exhibited a number of Leicesters and Shropshire downs which, for quality and value, would be a credit to any county. If there is any point in which agriculture has made greater progress than in drainage, it is in the extended application of machinery and sciences. I recollect not many years ago the late Sir Robert Peel was talking to me about the prejudices of farmers. He said he had announced upon one occasion that, as an agricultural prize, he would give an iron plough. He was surprised that there were not many competitors, and he called upon one of his own tenants for an explanation. He said, "Why, you see, Sir Robert, we farmers have a notion that iron ploughs breeds weeds." I am happy to say that, although agriculture in this country is not always spoken of in complimentary terms, even in the year 1847 we were not in that state of primitive ignorance. I wish to call the attention of this great meeting to the subject of irrigating the land by the sewage of great towns. It is now about 20 years ago since I pressed the subject at Manchester upon the attention of the Liverpool and Manchester Agricultural Society, and I made perhaps not a very scientific, but a lengthened statement, in which I dwelt upon the balance between production and consumption, and upon reproduction, compensation for waste, &c. When I sat down Mr. Mark Philips rose and said, "What the noble Lord has said is all very fine, and also very true, but all he has said amounts to this, 'Muck is money.'" If that be true, although, no doubt, there are many men who make ducks and drakes of their money, it is no reason why we should make ducks and drakes of our muck—why we should not merely waste what is for the benefit of our land, but abuse, for the deterioration of our streams and rivers, that which was intended materially to promote the agricultural production of the land. It is a subject which is attended with very great difficulty, but it is beginning to attract a great amount of attention. I only wish to remind my friends that the subject was not overlooked by me 20 years ago; and, if I should not be unduly trespassing on your time, I will venture to call your attention shortly to a practical exemplification of the benefit of attending to this subject which has come under my own observation. It may attach perhaps. additional interest to the observations I am about to make when I tell you that the novelty, if novelty there is in the discovery and application of the means, belongs not to me, nor to any man now living, but exclusively to the practical knowledge and experimental observation of his late lamented Royal Highness the Prince Consort. He had applied his eminently practical mind to this subject, among others, and had made various experiments upon it, the result of one of which I have had the opportunity of seeing, and noticing the important effects produced by it upon the herbage at Osborne, in the Isle of Wight. That to which I am about to call your attention is an experiment which has been recently carried on according to the plan of his Royal Highness, on a small scale certainly, at Wellington College. I must first tell you that the population of the College is about 300 souls, and there is attached to it a very large laundry for doing the washing of the whole establishment. I mention this not as an unimportant fact, because it is important to them. In this way a very large supply of water is obtained, and those who know anything about it, know that for the production of vegetables and the cultivation of flowers, there is nothing so good as the application of soapsuds and the refuse of washing. We have the usual cesspools at the College; and all we had to depend upon in our operations was the overflowing of the liquid manure from those cesspools. Following the plan of the Prince Consort we conducted this liquid a short distance from the College through pipes into a tank for the purpose of filtering it. It has been found in all former experiments in filtering that if the liquid is introduced at the top of the filtering bed the solid matter in it would in a short time form a cake and prevent the continuance of the process of filtration. The novelty introduced by the Prince Consort was that all came in, not at the top, but from the bottom of the filtering bed, and so, by its own force, the watery part made its way upwards through the bed, leaving the solid part at the bottom. The bed consisted of three separate wooden frames, each covered to the depth of 3 or 4 inches with burned bogsoil. The water gradually forced its way through the lowest frame to the second, and through that to the upper one. It then fell over a division separating the larger filtering bed from a smaller one, and dropped to the bottom of the second bed, in which it rose through three frames or trays of burned bogsoil as in the first instance. As each of the trays absorbed the manure it was removed, and a fresh tray was substituted. The original expense of the tank and pipes leading from it was 113*l.* In the course of nine months, during which the College has been open, we have collected from the bogsoil placed on the frames an amount equal to 96 tons of the best manure, equal, at 8*s.* a ton, to 38*l.* a year, or one third in the first year of the whole expense of the tank we established. That, however, was an object attained by the way. Our principal object was to obtain the liquid manure for the purposes of irrigation. To give you an idea of the soil at the College, when we purchased the land we gave 10*l.* an acre for the fee simple of it, and were told that we had given twice as much as it was worth. It is of the worst description of heath—a thin layer of worthless sand above a mass of gravel, utterly impenetrable by water. This is varied with swamp, and some bogsoil, and the lower land is a deep brick clay, which, when reclaimed, will be the more valuable portion. This land had never produced a blade of Grass before we took it in hand. By means of the small tank I have mentioned, we began an experiment last year, by irrigating the land with the surplus water from the tank. We obtained, in one year, eight cuttings of the finest Grass, beginning on the 7th of April to cut our first crop, and cutting it every six weeks for the next half year, and no crop that was cut was less than 1 foot in height. In addition to this, from the soil I have described we supplied the College with Potatoes and some of the finest vegetables I ever saw in my life. I ought to mention that the only expenditure attending the burning of the bogsoil and the cleaning out of the tank amounted to about 15*l.*, in return for which we are able to irrigate completely 9 acres of land, with the results I have mentioned. Of the produce raised on soil which never in the memory of man produced anything but Heath, moreover, so rich is the sewage we obtain that the tenant of the adjoining farm takes from us the waste which leaves our land and flows upon his, and applies it to his crops, and the owner in return allows us the use of a valuable spring of water. I hope I have not unnecessarily troubled you with these remarks. Although the experiment is but a small one, I think it will show what may be done when circumstances are equally favourable on a large scale. I know enough of the genius, talent, and application of my countrymen to believe that if men sedulously set to work to ascertain the means of solving this great national problem, they will succeed to a great extent, and, except in very adverse circumstances, with very beneficial results. For the purpose of making use of this irrigation it is necessary, at all events it is a great saving of expense, to have such a level as that the water may be fed by its own gravity. It is necessary to have a good supply of water; and if the land is intended for arable purposes it should be well ploughed and pulverised. The irrigation has a much greater effect on light than on heavy lands, and, moreover, I believe it has a much greater effect on Grass lands and vegetables than on arable land. To show you that I am not talking for the sake of talking, I will conclude my observations on this subject by saying that so firmly am I convinced of the importance of pushing this science (for such it will be) much further than it has been pushed hitherto, that I am ready to offer to give a premium of 100*l.* to the first person, or to the first company, which shall have successfully—by which I mean profitably to themselves, for otherwise it will not serve for an example—utilise the entire liquid sewage of a district comprising not less than 4000 inhabitants, in any districts within the North Lancashire or the Manchester and Liverpool Agricultural Society, if I should live so long, and should be so happy as to see it. If both those societies in the same year produce the desired results, I should not hesitate to give 100*l.* to each. I thank you very gratefully for the patient attention with which you have favoured me, while I have been speaking on a subject which has nothing but its intrinsic importance to recommend it. I call on you now to drink, with the same cordiality with which I propose it, "Prosperity to the Royal North Lancashire Agricultural Society." Pardon me for adding what I had forgot to mention, that I have me a more detailed statement by the gentleman who carried on this irrigating process, Mr. Menzies, the deputy surveyor of Windsor Park and Forest. I have two copies of the scheme and plans illustrating it, one of which I will place in the hands of the Secretary of this Society, for the inspection of any gentleman who may desire to see it, and to have a further explanation of the scheme, and the other copy I shall be happy to give to the gentlemen of the press.

[The pamphlet by Mr. Menzies was reviewed in our columns some months ago. It is published by Shaw & Sons, Fetter Lane.]

Reviews.

The Acclimatisation of Harmless, Useful, Interesting, and Ornamental Animals and Plants, &c, pp. 22. By George William Francis, Esq., F.H.S., Director of the Botanic Garden. Printed at the *Observer* Office, Grenfell Street, Adelaide.

This pamphlet reports an exceedingly interesting address read before the Adelaide Philosophical Society on the 13th of last May. While praising the objects of acclimatisation societies, it justly takes exception to the idea on which their name is founded:—

"The correct meaning of the word acclimatisation is evidently the process of rendering a plant or animal adapted to a climate different to that natural to it. If brought from a similar climate it may be introducing, domesticating, naturalising, but not strictly acclimatising.

"In this limited sense it is rather doubtful if such a thing as acclimatisation exists. Dr. J. Hooker and other scholars of eminence maintain that such cannot take place, and that all our efforts but show us what animals and plants are too tender to accommodate themselves to new circumstances, and what others are so robust as to live on in spite of change of air, of food, of heat, of drought, of shelter, and of habits. All the examples that now strike me bear out this opinion."

Among the instances then quoted is that of *Gynerium argenteum*, which was killed throughout England by the severe winter of 1860-61,—

"'Thus proving,' as Mr. Henderson, a well-known nurseryman near London, says, 'that it is not adapted for the climate of Britain.' It is true that better and more regular food may do much—cross-breeding, perhaps, more—in rendering an animal better adapted to our wants, more robust, swifter, more docile, of better flesh, of softer fleece; but this is not acclimatisation. I cannot but think that the word acclimatisation is not merely an inconvenient word, but a misnomer as applied to these societies. The word acclimation would be more English, and naturalisation or adaptation more correct."

Mr. Francis proceeds to enumerate and characterise the animals which it were desirable to introduce into Australia. His remarks on the Alpaca tend rather to tone down the confident anticipations of a successful introduction of that animal which have been entertained. The author says:—

"For my own part, I do not imagine that we shall in this colony obtain that success or derive that benefit which some have anticipated from the use of the alpaca. At any rate, experiments must first be made as to its breeding—as to the effect of the dry heat of our summer—hotter and drier than in Victoria or New South Wales; also whether our herbage will suit it, and what quantity it will consume as compared to sheep; whether the care of it, also, is more expensive. One great drawback certainly is, that as food it is far inferior to mutton. I speak here of the alpaca; the llama and vicuna are admittedly inferior. The llama has long coarse wool, the vicuna has short wool like beaver skin, for which it has been substituted; but the wool of the alpaca is fine, strong, silky, and from 9 to 12 inches long. The introduction of the alpaca to Melbourne and Sydney was through the means of Mr. George Ledger, who, after great losses, great toil, and many years of constantly recurring difficulties, succeeded in introducing a flock of these animals into Sydney."

The remark upon the ox ought to have agricultural influence here.

"Deferring for a few moments the consideration of the utility of the camel, allow me to call your attention to that sluggish and patient slave, the ox, which, with little intelligence and no gaiety, slowly and slothfully drags his load behind him—be it plough or dray—making his driver as slow and sluggish as himself. I have often grieved over the immense loss of time in employing our usual oxen, and still more in seeing boys thus acquiring a movement, which may last them through life, of two miles an hour."

The following excellent suggestion again is exclusively Australian.

"I trust I may here be allowed to say a word or two relative to cropping the interior of Australia—a fit and most valuable object for an acclimatisation society to pursue. Travellers into the central deserts speak sometimes of grassy and woody country, but rarely or never of objects fit for human food; they allude to no fruits, no roots, no pulse, no palatable esculent vegetable. It is reasonable to suppose that some success would attend the distribution of certain seeds. Travellers might take

Dates for food (and few things are more nourishing), and Tamarinds for physic (few things are better as a preventive of the scurvy, or which better keep off febrile symptoms), and scatter their seeds as they go along. For the same purpose they might take the seeds of all kinds of Melons, Oranges, Lemons, Guavas, Loquats. Gram, grain of many sorts—even slips of the Pine-apple and Banana might be carried 300 or 400 miles—and the Sugar-cane too. Cotton seed might be scattered; also Almonds, Peach and other fruit stones, and the seeds of Grapes. Celery, Lettuce, and some other things. might become deleterious when they grow wild—but Beetroot, and the Cabbage and Turnip never; and these will flourish in land somewhat salt, and if entirely of sand. Surely some of these things would grow and thrive, and perhaps preserve the life and conduce to the comfort of many a future traveller. Food for animals, in like manner, is not to be neglected; all the Acacias may be eaten by the camel, all pulse and grain by the horse. The same argument would hold good relative to plants natural to particular localities. Should one that is valuable be found, the discoverer should carry some seed of it to other localities on his journey, having reasonable hope that his horses as well as himself will derive a meal from it at a future time. Let all explorers do this, with or without authority, and good must come."

Farm Memoranda.

NORTHUMBERLAND FARM: *August.*—August on the whole has been favoured with delightful weather, which has had a most beneficial effect on both grain and green crops, the last two weeks especially being all that could be wished, although the heavy rain which fell on the 13th and 14th (4 inches in 48 hours), was sufficient to deluge a whole district, and lay flat any heavy crops—had there been any; however the sun which has so opportunely succeeded it has more than compensated for any injury which may have occurred, except in certain spots within water-mark of rivers. The damage done by the unfortunate winds of July 24 and 25 can only be realised when cut. Enough evidence however at present exists to show how fearful must be the loss, amounting in many known instances to hundreds of pounds.

Corn.—Harvest has not yet commenced here, though we anticipate a beginning about September 2 on a field of Wheat thus damaged by the above wind, which is consequently much broken down and straggled, and occurring at the period when it was in full bloom, we must naturally expect a good many unproductive heads. Winter Wheat is also suffering considerably from gum, but that later sown seems comparatively free from this pest, which must affect both the quality of grain and straw. Much spring Wheat in the neighbourhood is yet of a most verdant hue, and will I fear never come properly to perfection, especially as it must be liable to frost, which may now ere long be expected. Barley seems ripening very unequally, and can only be expected to attain a second rate malting quality; it will all be fit to cut by September 10. Oats are the most backward crop, and though the earlier sorts may be cut by the second week in September, the later kinds will require "October weather" to see them into the stackyards. As a crop however they have improved amazingly within the past six weeks, and in our strongest land even we may now look for an average yield.

Green Crops.—Our Swedes are now closed in the drill, and are fully an average prospect. The Yellows and Whites, though later and sadly checked in their growth at first, are growing away most luxuriantly, but owing to their lateness can scarcely be expected to be a full crop; yet much depends on the autumn. They were sadly "bratted" by the heavy rain on the 13th, but having been subsequently both horse and hand hoed, they have considerably expanded themselves within the last fortnight. Grass is still abundant, but the Clover fogs do not stand much eating this year. We have let one field of "fog" for lambs at 4*d.* per week.

Horse and Hand Labour have been jointly employed in the Turnip fields with good effect; with the former we use both the small ribbing ploughs with scuffling-arm attached, and also a Turnip scuffler (by Tinkler of Penrith), which was highly commended at Leeds last year; it is an excellent implement and well worthy the attention of farmers. Thistle cutting in our pastures as well as carting, spreading, and ploughing in manure on a bit of bare fallow for Wheat, has furnished employment for all hands. The horses are receiving Vetches at mid-day and lying out in old pastures at night; they also have a feed of Vetches when brought in in the morning.

Stock.—During this month some heifers have been sold off very fat at 8*s.* per stone, but great complaints are raised by butchers as to the unsatisfactory way in which cattle, as well as sheep, are dying. Our fat bullocks may be expected to go off next month, most of them in prime condition; any not quite prime will be kept on till Christmas. A lot of half-bred Irish bullocks, 3-years old, were purchased on the 26th at Carlisle at a little over 9*l.* a head. The sheep stock is scattered over the whole farm, according to their respective qualifications. The draught ewes and fat hoggets are on Clover fog, whilst keeping ewes are in old pasture; the lambs are also kept in good sweet old pasture, with the exception of the ram lambs, which are in Clover fog, receiving in addition Vetches and Corn. The shearling rams will be sold at Kelso on Sept. 12, being the most extensive sale of Leicester rams in existence. The ensuing month will be one of anxiety and activity in our harvest fields; but should the weather keep favourable, we may still—by the aid of reaping machines—be able to secure our crops in respectable condition. *J. W.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Sept. 3, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0-6	Amount of Cloud 0-10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	28	30.13	65	59	E.	1	1	76	43	125*	41	..	63½	61½
Friday ..	29	30.18	55	54	N.E.	1	7	74	50	118	47	..	64	62
Saturday ..	30	30.13	60	54	N.E.	1	2	71	44	111	41	..	63	62
Sunday ..	31	30.11	62	57	N.E.	3	5	74	44	116	41	..	63	61½
Monday ..	1	30.07	54	52	N.E	2	6	69	46	107	42	..	62	61½
Tuesday ..	2	29.82	56	55	N.W.	1	7	62	51	95	47	0.01	61	61
Wednesday.	3	29.63	57	52	S.W.	3	3	70	47	108	44	0.33	61	61

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 20° higher than an exposed blackened bulb.

Calendar of Operations.

AUGUST.

WESTER ROSS: *August* 25.—In the farmers' experience "there is much between the cup and the lip." Throughout the month of May the weather continued so favourable that, in the beginning of June, the crops were unusually advanced, and very promising, and the anticipations of the farmer were correspondingly bright; but ever since that time the weather has been cold and wet, and sunless, and has sadly blasted all these hopes. Previously our Wheat crop was the most promising, now it is quite disheartening to see it. From the long-continued wet and want of sun it is to an unusual extent affected with rust. No field has entirely escaped, whilst many crops appear damaged to the full extent of one-half. Having heretofore had no experience of a crop so largely diseased, we hesitate to express confidently an opinion on the subject: but valuators lately estimated a crop at some 12 bushels per acre less than they would have done had the crop been sound And besides, all our Wheat has a dark, unpromising appearance, and certainly will, when threshed, prove very unsatisfactory. Barley this year has not at any time been promising, and latterly it has not improved. It must now necessarily be late, and consequently the quality, in all likelihood, will not be first-class. Neither are Oats to be an average crop. On dry, early fields, they are heavy, and well advanced, but on fields low-lying or ill drained they are thin and short. In all the higher districts they are so late that a well-filled and a well-harvested crop is nearly hopeless; and the result is that the price of Oats has suddenly advanced from 24*s.* to some 32*s.* per quarter. We have this year on newly-improved and very poor land, a fine crop of Oats, grown with nitrate of soda, part of them measuring from 5 to 5½ feet in length. We have not as yet seen any diseased Potatoes, and very few blackened stems, although the crop would not be heavy should the disease remain altogether away. Never did they appear to thrive properly since the tremendous gale we had in July. Our Swedes and earlier sown common Turnips are now making good progress, but the later sowings are advancing so slowly that winter is certain to overtake them ere they be half grown, and consequently Turnips are now anxiously inquired after for sheep eating. We have some 6 acres of Barley that might be cut in a few days, but harvest will not be general earlier than from a fortnight to three weeks. The progress of the earlier Turnips has increased somewhat the demand for store cattle.

Notices to Correspondents.

A STEAM CULTIVATED MODEL FARM: *R.* You will hereafter in all probability see one, for we learn that the remaining portion of Lord Ashburnham's once fine Bedfordshire estate has been purchased by Messrs. J and F. Howard, with a view of making it into a large "Model Farm," to be cultivated by steam power.

SUBSOIL PLOUGH: *S* Read's (Circus, Piccadilly) as improved by Sleight of Edinburgh, is a good subsoil plough; Cotgreave's is a good trench plough (Ransomes, Ipswich); Parkes' of Birmingham drainage tools are as good as, any (Mapplebeck & Lowe); Denton's drainage level (52, Parliament Street, S.W)

To the Editor of the Agricultural Gazette.

SIR,—My Combined Machine will be worked by Mr. [illegible] of Whitfield, near Brackley, at the Brackley Farmers' [illegible] Meeting on the 16th Sept. inst. The trial field [illegible] one mile of Brackley Station.—I am, Sir, &c.,

WILLIAM SMITH

Woolston, Bletchley Station, Bucks, Sept 4.

Howard's Steam Cultivator.

To the Editor of the Agricultural Gazette.

SIR,—Our steam-cultivating apparatus can be seen at work daily, within a mile of Bedford Station. [illegible] improvements in our Cultivator we cut and [illegible] the ground at one operation, and this with [illegible] ture of power as it has taken to cut only a portion. [illegible] of a simple slack-rope apparatus and improved [illegible] carry the rope completely off the ground, thus [illegible] reducing the wear-and-tear, as well as loss of power. [illegible] invite intending purchasers to come and judge for themselves.

Your faithful servants,

JAMES & FREDERICK HOWARD.

Britannia Iron Works, Bedford, Aug. 16.

Sacks. Bags. Mats.

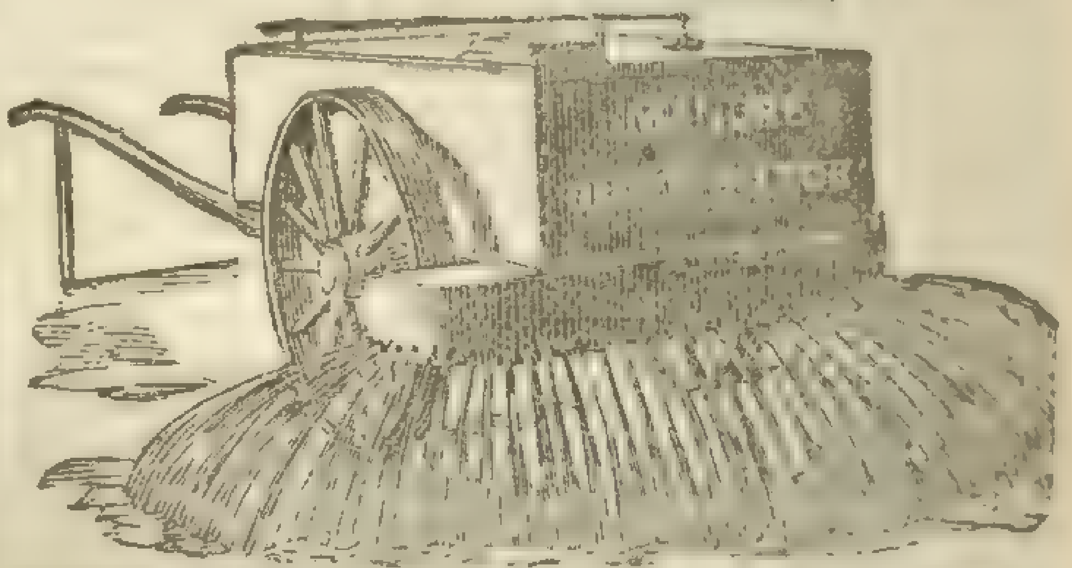
JAMES T. ANDERSON, SACK and BAG MAKER, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), supplies SEED BAGS at the following low prices:—

2 Bushel Bags..8*s.* 9*d.* per doz. | ½ Bushel Bags..4*s.* 9*d.* per doz.
1 Bushel Bags..6*s.* 3*d.* ,, | Peck Bags ....3*s.* 6*d.* ,,

Coarser Bags much cheaper.

ARCHANGEL and PETERSBURG MATS

Liquid Manure Distributor.



THE JUDGES of the Liverpool, Manchester, and Staffordshire Agricultural Shows, 1861, have each awarded the First Prize to I. JAMES, Tivoli Works, Cheltenham, for his LIQUID MANURE DISTRIBUTOR, making a total [illegible] Prizes. It is also well adapted for Watering Streets, supplying the Steam Plough, Irrigating, or for a Fire Engine. Also his last great improvement in WASHING MACHINES, which have been awarded several First Prizes, and will wash 20 Shirts in 20 minutes.

Patronised by H.R.H. the late Prince Consort.

GREENING AND CO.'S IRON WIRE FENCES, manufactured by Patent Machinery, possess the following advantages:—

1st. Are easily fixed by unskilled labourers.
2nd. Require few and inexpensive supports.
3rd. Are ornamental in appearance.
4th. Have increased strength from their peculiar construction.
5th. Are but half the price of similar hand-made Fences.

Upwards of 40 varieties are made, the principal ones being:—

No. 1 A variety.—Cattle and Sheep Fence, 3ft. 9in. high, 1*s.* per yard.
No. 7 B variety.—Sheep folding Fence, 3ft. high, 9*d.* per yard.
No. 4. variety.—Hare and Rabbit-proof Fence.
No. 11. variety.—Poultry and Chicken-proof Fence.
No. 16. variety.—Italian pattern Garden Fence.
No. 20. variety.—An admirable substitute for the old-fashioned wire netting.

G. & Co. will be happy to forward, without charge, an explanatory Circular of the principal varieties. Their enlarged Catalogue of Fences and Gates post free on receipt of three stamps.

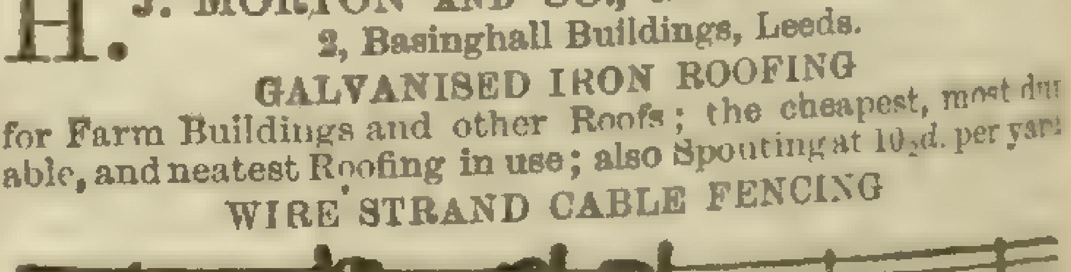
Address GREENING & COMPANY, Victoria Works, Oxford Street, Manchester.

Prices Reduced.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard.

WIRE STRAND CABLE FENCING



(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1*s.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.

Galvanised, 24 ins. wide, 2-inch mesh, 4*d.*, 4½*d.*, and 6¾*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 2¾*d.*, 3½*d.*, and 5½*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

HENRY J. MORTON & Co., 2, Basinghall Buildings, Leeds.

CARSON'S

ORIGINAL ANTI-CORROSION PAINT.

PATRONISED BY

THE BRITISH GOVERNMENT	THE LAMENTED PRINCE CONSORT	RAILWAY AND CANAL COMPANIES
THE FRENCH GOVERNMENT	MOST OF THE NOBILITY AND GENTRY	THE PRINCIPAL COLLIERIES
THE RUSSIAN GOVERNMENT	THE DOCK COMPANIES	MILL-OWNERS, IRON MASTERS, &c.

The Anti-Corrosion Paint is now used extensively for all kinds of

OUT-DOOR WORK,

and has been proved, after a practical test of 70 years, to surpass any other Paint. It is applicable to Wooden Houses, Farm and other Out-Buildings, Park Fencing, Gates, &c.; also Iron Roofing, and every description of Iron Work, while for

PUBLIC EDIFICES, MANSIONS, VILLA RESIDENCES,

and every kind of Brick, Stone, Compo, &c., it is unrivalled, presenting the appearance of fine cut stone, and will positively become harder than the same a few months after it is laid on. It is undoubtedly the only Paint that will stand on

CONSERVATORIES, GREENHOUSES, FRAMES, &c.,

and is in consequence largely used by the Nobility and Gentry, also many eminent Horticulturists, for such purposes.

The Anti-Corrosion is Lower in Price, and lasts twice as long as the Best White Lead; at the same time it is economical in application, as

ANY PERSON CAN LAY IT ON.

It is a powder, requiring neither grinding nor tinting, and will keep any length of time, and is sold in the following Colours:—

White	30s. per cwt.	Bright Red	26s. per cwt.
Light Stone	30s. per cwt.	Dark Do. (or Brick Colour)	26s. per cwt.
Drab or Portland Do.	30s. per cwt.	Light and Dark Chocolate	26s. per cwt.
Bath Do.	30s. per cwt.	Black	26s. per cwt.
Cream Colour	30s. per cwt.	Bright Green	44s. "
Lead Colour	26s. "	Deep Green	44s. "
Light and Dark Oak	26s. "	Blue (for Carts and Waggons)	44s. "

Five cwt. delivered Carriage Free to any Station in England and Wales, and by Water to most Ports in the United Kingdom.

TESTIMONIALS.

From Dr. Andrew Robertson, *Indigo, Tarland, Aberdeenshire, Commissioner to* His late R.H. The Prince Consort, *Balmoral Castle, Ballater, Aberdeenshire.*

"The Paint gave every satisfaction."

Extract of a letter from **His Excellency Baron Brunow,** ***Russian Ambassador, to the Russian Consul General in London.***

"In 1841 Mr. Walter Carson, Anti-Corrosion Paint Manufacturer, furnished the Imperial Ministry of War with 10 casks of Dry Paint. Those Colours, after a trial of 10 years, have given the most satisfactory results. They were used for painting Gun Carriages."

The Rev. T. B. Wright, *Broughton Rectory, Brigg.*

The Paint gives great satisfaction. Among other things, I used it in painting the light of a Greenhouse, the wood of which, from exposure to the sun, had become in places much cracked. The Paint filled up the cracks, and remains, apparently as hard as stone, effectually keeping out the wet; it has also been most useful in keeping the panes of glass in their place, and preventing them being shaken out, by the putty falling out.

From J. T. Brooks, Esq., *Flintwick Manor, Ampthill, per* Mr. C. P. Wynter.

The Paint answers the purpose very well for which it was intended—that is, as an impenetrable barrier to rain for Melon and Cucumber frames: and I have not the least doubt of its durability for years to come.

From the Rev. Thomas Philpotts, *Porthgwedden, Truro* (Mr. G. Austen, *Gardener*).

This is certainly the best Paint I have ever used for the sashes of Hot and Greenhouses. Previous to using it, we could find no kind of white lead to stand the attraction of the heat in summer, from the glass, which yours does perfectly.

T. Rant, Esq., *Chedeston Park, Halesworth.*

Allow me to express to you my entire satisfaction in using your excellent Paint. I can show some on this place, which has been done 16 years, and is now very sound.

The Rev. R. F. Meredith, *Sewcombe, Yeovil.*

My gardener, after 25 years' experience, states it to be the most lasting Paint he has ever met with, for out-door work, and quite superior to white lead for the outside of hothouses.

From Sir Edwyn Scudamore Stanhope, Bart., *Holme Lacy, Hereford.*

I have been in the habit of using your Anti-Corrosion Paint for outdoor work for upwards of 10 years, and have found it stand remarkably well, both on wood and iron; and if you think my testimony of any service, you are at liberty to add it to that of others.

From Messrs. R. R. Whitehead & Co., *Royal George Mills, near Manchester.*

We like the appearance of your Red Paint when applied to iron, and we think it will fully answer our expectations.

Subsequently—about 10 years since, we used some of your Paint on woodwork outside, and find it now perfectly good, though dirty.

From the Rev. W. C. Edgell, *Uggeshall Rectory, Wangford, Suffolk.*

It will be some satisfaction to Mr. C. to know that some of the woodwork, now about to be repainted, has not been touched since 1846 (11 years), when it was coated with the Anti-Corrosion Paint.

David Burton, Esq., *Cherry Burton, Beverley.*

About four or five years since, I applied your Paint to about 200 yards of my wire fencing; to the other parts of the fencing I used black varnish; the latter had another coat of the varnish two years since, and is now in many places rusty; the part covered with your Paint is still perfect.

John Candy, Esq., *Baliol Park, Bath.*

June 21st, 1858. Having in the years 1843 and 1851 used considerable quantities of your Anti-Corrosion Paint, both of which stands good now, &c.

The Rev. J. Seagram, *Aldbourne, Hungerford.*

About 15 years ago I painted a small Granary with your Anti-Corrosion Paint, which resisted the effects of the weather, though in a very exposed situation, till the present time, when I think it right to repaint it. I will, therefore thank you to send, &c.

H. Ambler, Esq., *Walkinsen Hall, Halifax.*

No better out-door Paint than Messrs. Walter Carson & Sons need be used, having used it for upwards of 11 years.

THE ORIGINAL ANTI-CORROSION PAINT IS ONLY TO BE OBTAINED OF

WALTER CARSON and SONS,

SUCCESSORS TO THE INVENTORS,

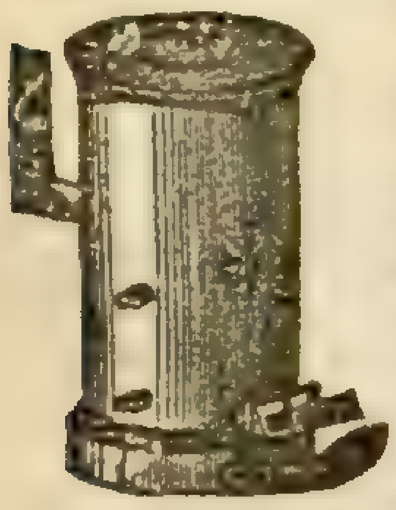
9, GREAT WINCHESTER STREET, OLD BROAD STREET, LONDON, E.C.

*** NO AGENTS.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, TUBULAR, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 12s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. LYNCH WHITE's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



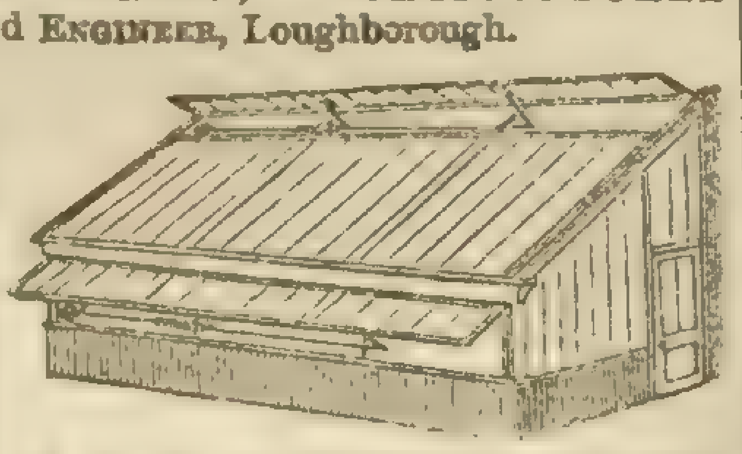
Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3l. 10s.

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough.



T. G. M.'s PATENTED BUILDINGS combine all the modern improvements, are well made of best seasoned red Deal, most effectually ventilated by means of his unequalled Apparatus, can be made either plain (and which are at the same time elegant in appearance), or of the most elaborate design. They can be fixed as permanent buildings, or made to be portable.

T. G. M.'s HEATING APPARATUS continues to give the greatest satisfaction for its heating qualities and small consumption of fuel.

ILLUSTRATED CATALOGUES of the above, Glazing without Putty, Garden Engines, &c., sent upon application.

GRAY'S OVAL TUBULAR BOILER.

INTERNATIONAL EXHIBITION,

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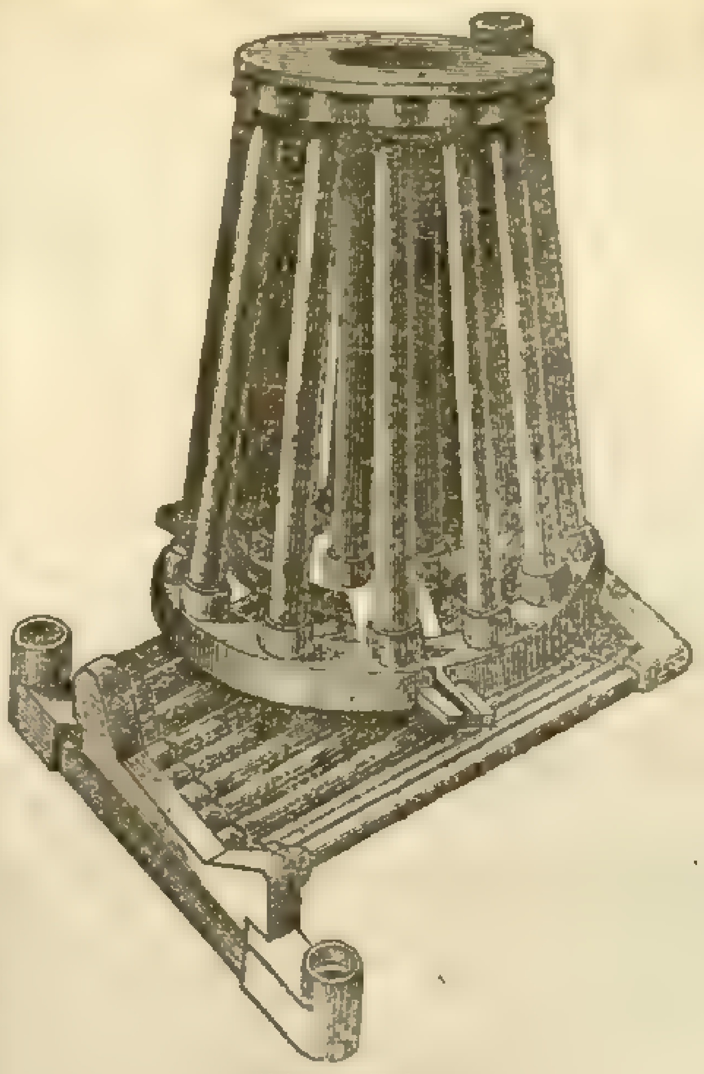
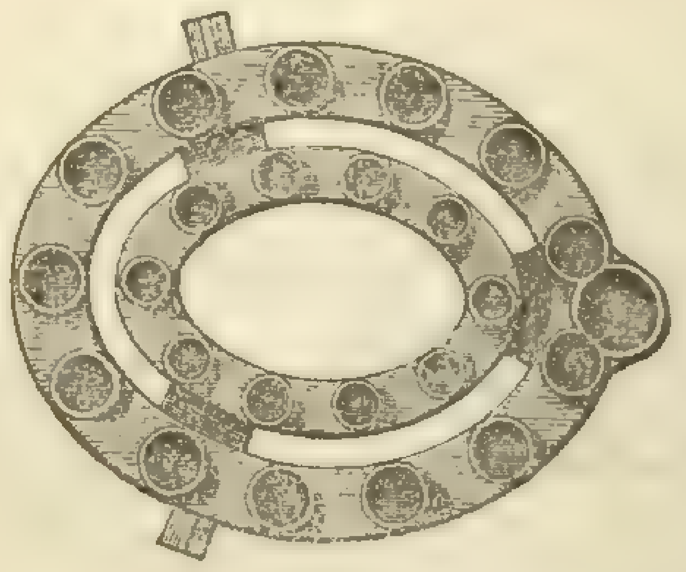


ELEVATION.



PLAN.

Mr. GRAY begs to call the attention of the Nobility, Gentry, Nurserymen, Gardeners, &c., to his

NEW OVAL TUBULAR BOILER,

acknowledged by practical judges to be a great improvement on every form of Tubular Boiler yet introduced. It has proved itself superior to all other Boilers for quickness of action and economy of Fuel, doing its work with one-third less the amount required by any other.

Extract from Report in Gardeners' Chronicle *of International Exhibition, May 24, page 476.*

"The upright form of Boiler is usually made on a circular plan, but the oval form given to Mr. GRAY's variety of it is said to be preferable in consequence of its bringing the tubes in closer contact with the fire. The usual form of a furnace being a parallelogram rather than a square, it seems feasible that the Boilers on the oval plan should bring the tubes more completely within range of the burning fuel; and this being so the change, though a slight one, is no doubt an improvement."

They are made of all sizes, which, with prices, may be had on application.

JAMES GRAY, HORTICULTURAL WORKS,

DANVERS STREET, PAULTON'S SQUARE, KING'S ROAD, CHELSEA, S.W.

A FIRST-CLASS PRIZE MEDAL HAS BEEN AWARDED TO J. WEEKS & CO. FOR THEIR SUPERIOR UPRIGHT TUBULAR BOILER AND GENERAL IMPROVEMENTS IN HEATING BY HOT WATER.

JOHN WEEKS & COMPANY,

HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS

TO

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HIS LATE R.H. THE PRINCE CONSORT	THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
HIS ROYAL HIGHNESS PRINCE DEMIDOFF	THE ROYAL BOTANIC SOCIETY, DUBLIN
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND	THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE GOVERNMENT OF GREAT BRITAIN	THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE TOWER OF LONDON	THE CRYSTAL PALACE, SYDENHAM

And NUMEROUS PUBLIC COMPANIES.

KING'S ROAD, CHELSEA, S.W.

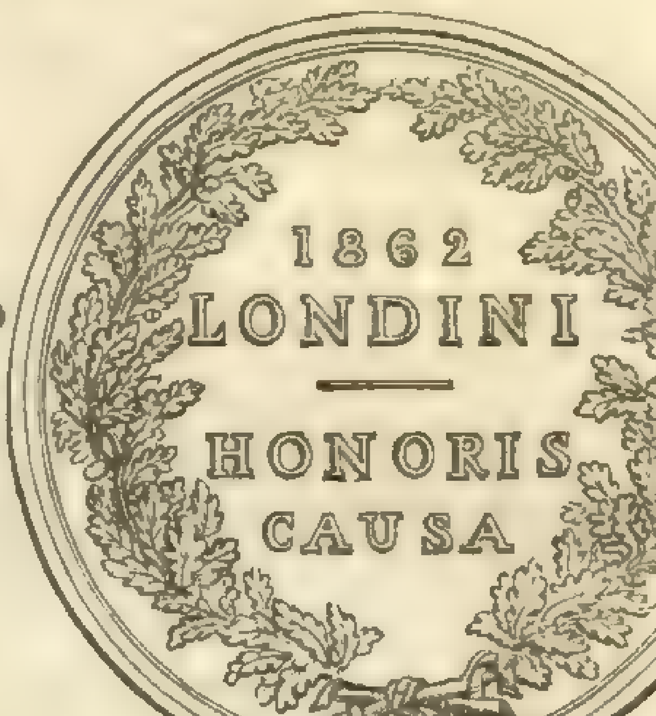
JOHN TAYLOR & SONS,

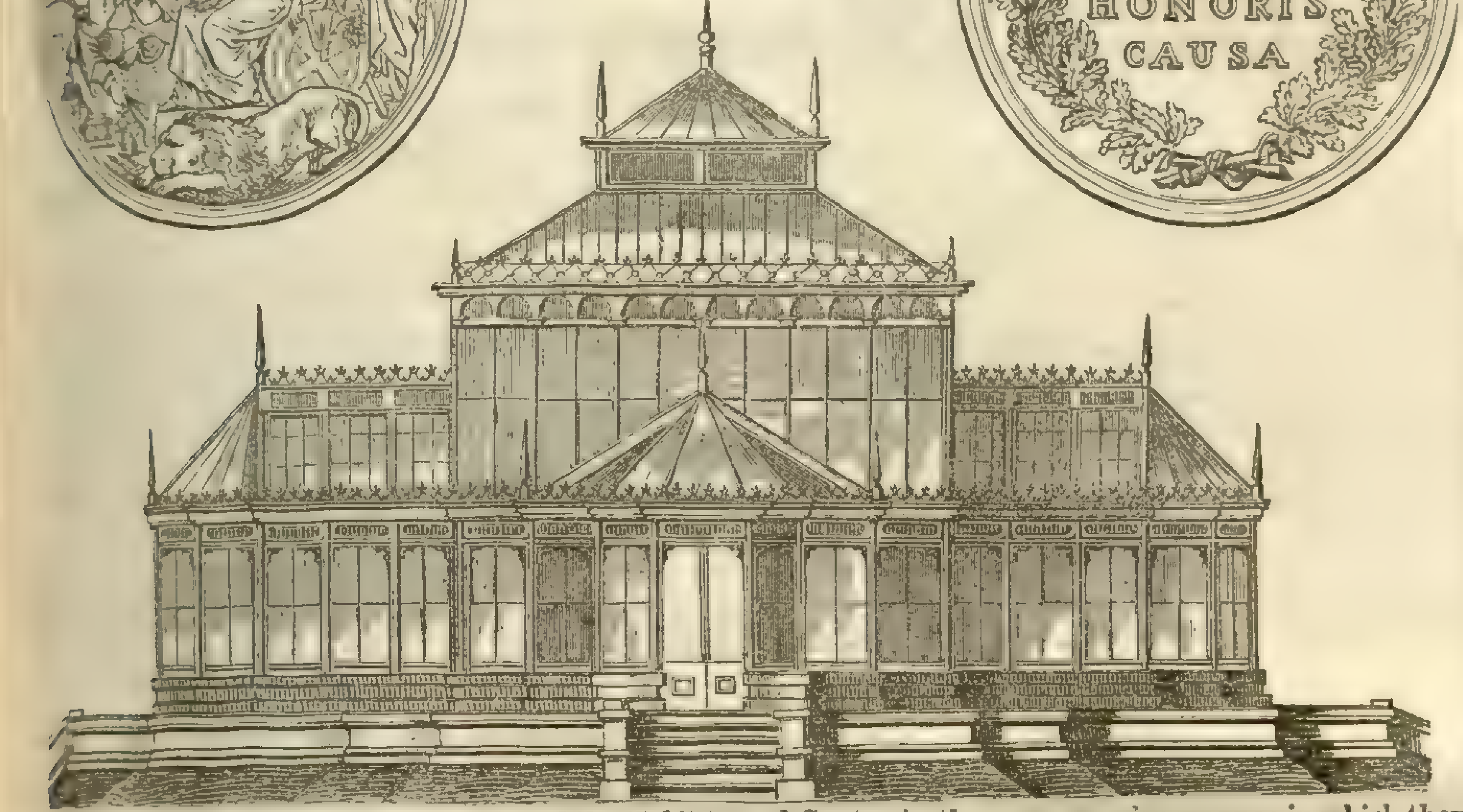
HORTICULTURAL BUILDERS AND ENGINEERS,

HARROW ROAD, LONDON, W.

INTERNATIONAL EXHIBITION,
CLASS IX., 2191.

PRIZE MEDAL
For CONSERVATORY,
DOUBLE CHAMBER CORRUGATED
and HORIZONTAL
TUBULAR BOILERS.





J. TAYLOR AND SONS call the attention of the Nobility and Gentry to the very superior manner in which they erect CONSERVATORIES, VINERIES, FORCING, FRUIT, and PLANT HOUSES of every description, combining the most modern improvements with elegance of design and durability of materials and workmanship.

Our VENTILATING APPARATUS for the Roofs and Fronts of Horticultural Buildings, &c., supersedes any now in use, as being the most simple and effective in its action.

Our system of HEATING APPARATUS for Churches, Public Buildings, Mansions, Schools, Offices, Baths, Horticultural Buildings, &c., is particularly worthy of notice, we having for many years devoted especial attention to this branch. The great variety of work which has passed through our hands has gained us such experience in the mechanical details as to insure success and entire satisfaction in any undertaking entrusted to our care.

The superiority of our DOUBLE-CHAMBER CORRUGATED and HORIZONTAL TUBULAR BOILERS has caused them to be acknowledged as the best now in use, being both powerful and rapid in action.

See CONSERVATORY, BOILERS, &c., exhibited at the International Exhibition, Class 9 (2191), Open Court, Eastern Annexe.

Card.

SAMUEL N. McGERROW, GENERAL HORTICULTURAL BUILDER, Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

Horticultural Works, 31, Margaretta Terrace, King's Road, Chelsea, S.W.

HENRY SMITH AND COMPANY, HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS, beg to inform the Nobility and Gentry that they can receive Estimates free for all kinds of Horticultural Building and Heating by Hot Water.

H. S. & Co. guarantee all work done by them to be of the best material and first-class workmanship.

H. S. & Co. having made an arrangement with an Architect, Gentlemen wishing to construct their own Buildings can have Drawing and Specifications, thereby saving at least 50 per cent.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.

Apply to JOSEPH MEREDITH, Vine Cottage, Garston, near Liverpool.

N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

JOHN KENSHOLE, Jun., BUILDER and CONTRACTOR, Heavitree, near Exeter, begs to inform the nobility, clergy, and gentry, that he is prepared to execute GREENHOUSES, CONSERVATORIES, VINERIES, &c., with dispatch, and on the most reasonable terms, combined with good seasoned material and workmanship. Estimates and Designs given.

JOSEPH SMITH, HORTICULTURAL BUILDER, New Road, Hammersmith, W., has for SALE a quantity of PIT and other LIGHTS, and five ready-made GREENHOUSES, viz.:—

	£	s.
Span Roof, 27 feet long 16 feet 6 inches wide for ..	47	10
Lean-to, 24 feet by 12 feet 6 inches	34	0
Ditto glazed with 21 oz. glass, 100 feet by 13 feet ..	100	0
Ditto ditto, 22 feet by 12 feet	23	0
Ditto ditto, 12 feet by 7 feet	15	0
Roof and Front Lights for a Lean-to House, 50 feet by 14 feet; 900 square feet	30	0
Also Roof Lights for Houses, 45 feet by 18 feet; 83½ square feet	31	0
20 extra stout (10 feet 6 inches by 4 feet 2 inches) Lights,	35	0
20 ditto, 6 feet 10 inches by 4 feet 2 inches	20	0
50 6-feet by 4-feet Lights, 15s. each, or the lot for ..	37	0

Houses made to order from 1s. per sq. foot; if Unglazed, 8d. Pit Lights with 15-oz. Glass, 8d.; 21-oz., 9d. per foot.

*** Estimates given for Heating by Hot Water.

FOR SALE, now standing on the Premises, at E. DENCH'S, 152, King's Road, Chelsea, S.W., two very handsome CONSERVATORIES, one 22 by 18, and very ornamental; one 25 by 15; and one VINERY, 16 feet wide by 36 feet long. To be Sold a Bargain.

WM. BLAKE'S DESCRIPTIVE and CULTURAL SEED POCKETS, GERMAN SEED ENVELOPES, &c.
Catalogues and Samples on application.
60—70, Howard Street, Glasgow.

HOTHOUSES FOR THE MILLION.

INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.

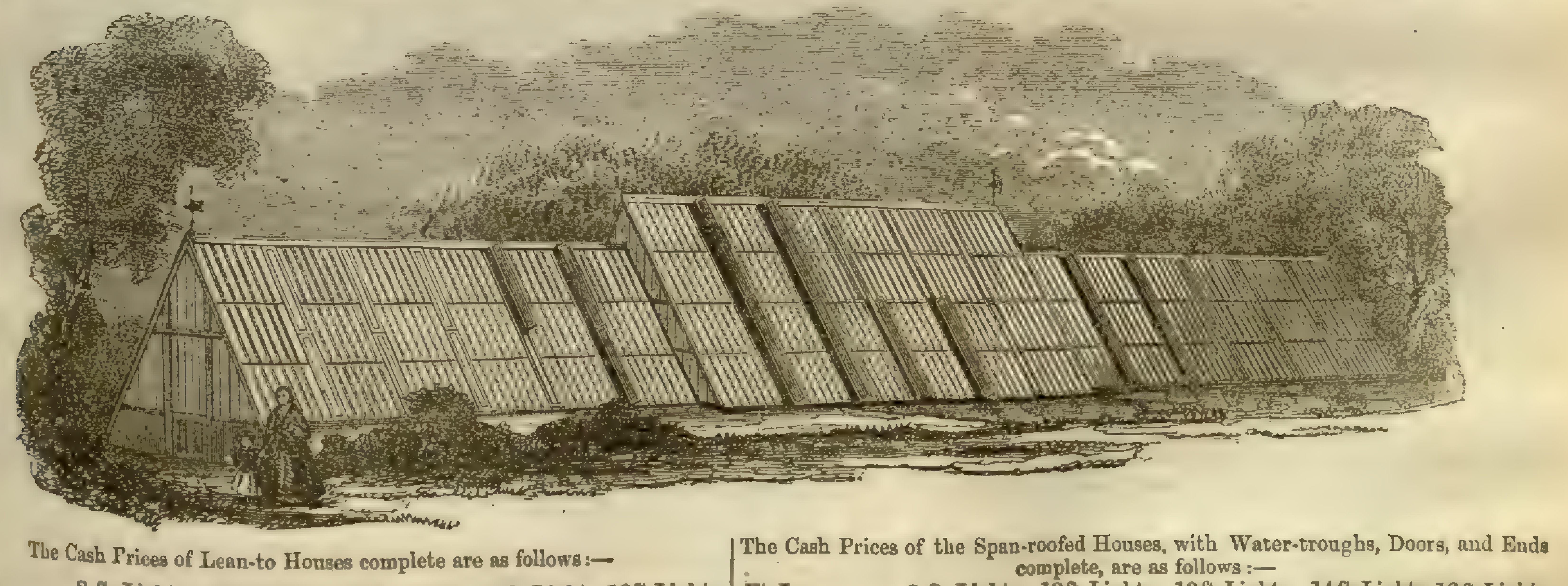
AWARDED A PRIZE MEDAL.

ON THE PRINCIPLE INVENTED AND PATENTED BY

SIR JOSEPH PAXTON, M.P.

COMBINING SIMPLICITY, CHEAPNESS, EXCELLENCE, AND DURABILITY,

BEING CAPABLE OF FULFILLING IN THE MOST PERFECT MANNER ALL THE REQUIREMENTS OF HORTICULTURE.



The Cash Prices of Lean-to Houses complete are as follows:—

Ft.	In.	8 ft. Lights			10ft. Lights			12ft. Lights			14ft. Lights			16ft. Lights		
20	7 in length	£12	0	0	£16	0	0	£21	0	0	£28	10	0	£34	5	0
31	3 in length	16	10	0	21	2	6	26	10	0	37	12	0	45	16	0
41	11 in length	20	18	0	26	18	6	33	7	6	46	14	0	57	7	0
52	7 in length	25	12	6	32	15	0	40	5	0	55	16	0	68	18	0
63	3 in length	30	6	0	38	10	0	47	2	6	64	18	0	80	10	0
73	11 in length	34	12	6	43	15	0	53	7	6	74	0	0	92	0	0
84	7 in length	39	6	0	49	11	6	60	5	0	83	2	0	103	11	0
95	3 in length	43	19	0	55	10	0	67	2	6	92	5	0	115	2	0
105	11 in length	48	17	6	60	12	6	73	10	0	101	10	0	126	13	0

The Cash Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are as follows:—

Ft.	In.	8 ft. Lights			10ft. Lights			12ft. Lights			14ft. Lights			16ft. Lights		
20	7 in length	£24	0	0	£32	0	0	£42	0	0	£57	0	0	£68	12	0
31	3 in length	38	0	0	42	5	0	53	0	0	75	4	0	91	1C	0
41	11 in length	41	16	0	53	17	0	66	15	0	93	8	0	114	14	0
52	7 in length	51	5	0	65	10	0	80	10	0	111	12	0	137	10	0
63	3 in length	60	12	0	77	0	0	94	5	0	129	16	0	161	0	0
73	11 in length	69	5	0	87	10	0	106	15	0	148	0	0	184	0	0
84	7 in length	78	12	0	99	3	0	120	10	0	166	4	0	207	2	0
95	3 in length	87	18	0	111	0	0	134	5	0	184	10	0	230	4	0
105	11 in length	97	15	0	121	5	0	147	0	0	203	0	0	253	6	0

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

The above prices do not include package, railway freight, heating apparatus, or erection.

Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

SAMUEL HEREMAN, 7, PALL MALL EAST, LONDON, S.W.

CHEAP DOMESTIC FLOUR MILLS, CHAFF CUTTERS, OAT BRUISERS, LATHES and all kinds of machinery.
LAWN MOWERS and all kinds of machinery repaired.
S. Smith, 204, High Holborn, London, W.C.

Paxton Works, Sheffield, Established 1738.

International Exhibition Prize Medal is just awarded to Saynor & Cooke for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR and COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.

Caution.—None are genuine unless marked Saynor. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.

£2. 2s.

An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.

One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.

It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.

It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.

No Establishment, either private, commercial, or manufacturing, should be without one.

Six feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12s. Longer lengths of Suction at 1s. 6d. per foot.

May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,

John Warner & Sons, Crescent, Cripplegate, London, E.C.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

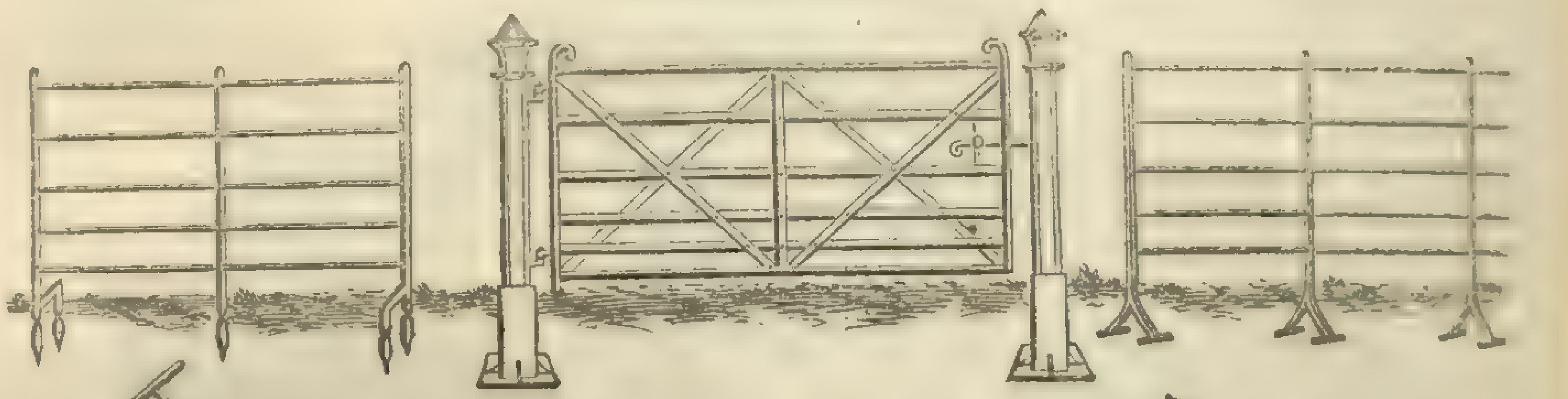
RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

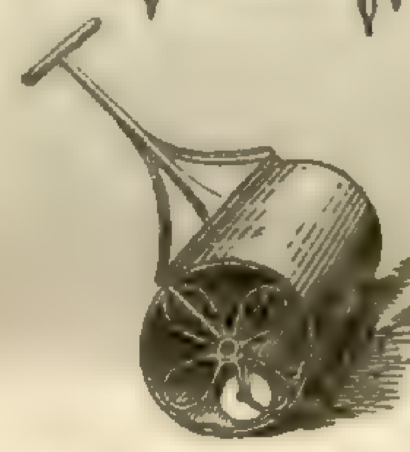
Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.





IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes.

VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.

The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to

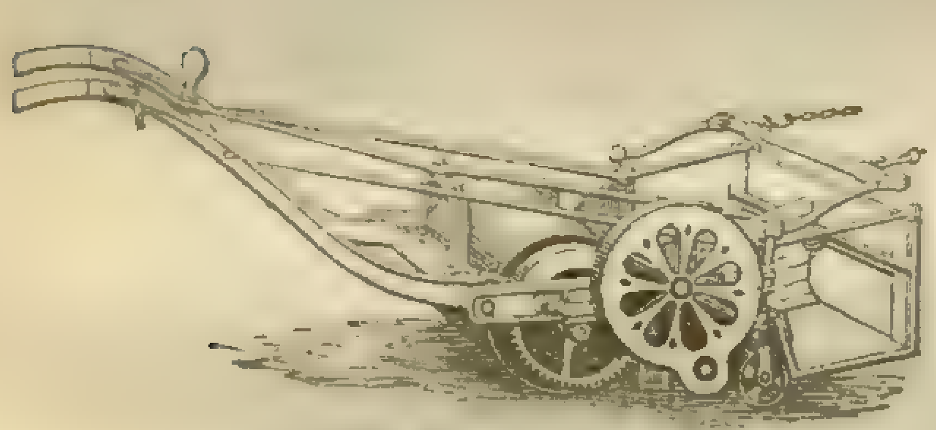
COTTAM & CO., ENGINEERS and IRON FOUNDERS,

2, WINSLEY STREET (Opposite the Pantheon), OXFORD STREET, LONDON, W.

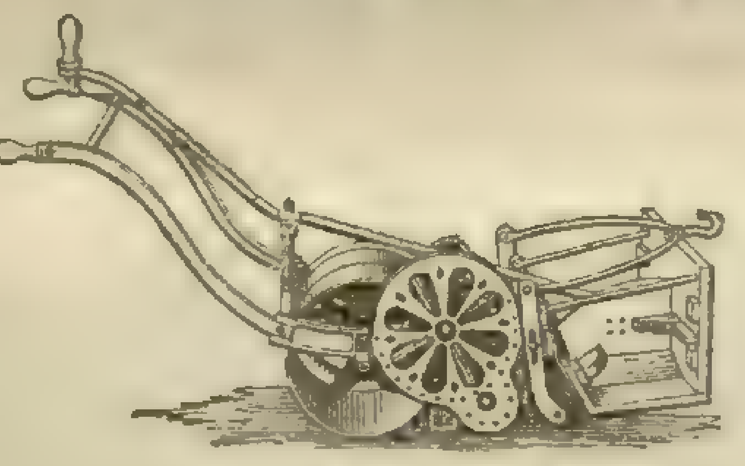
SHANKS' NEW IMPROVED PATENT
LAWN MOWING, ROLLING, COLLECTING, and DELIVERING MACHINE for 1862,

WITH SILENT MOTION IF SPECIALLY DESIRED.

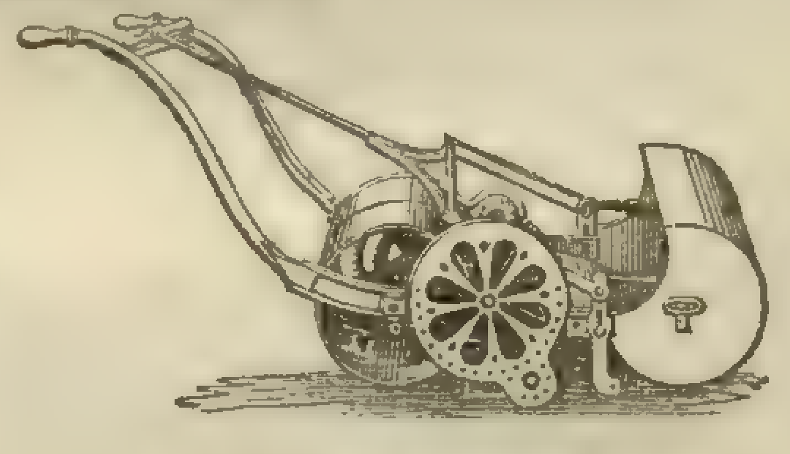
EXHIBITION PRIZE MEDAL AWARDED.



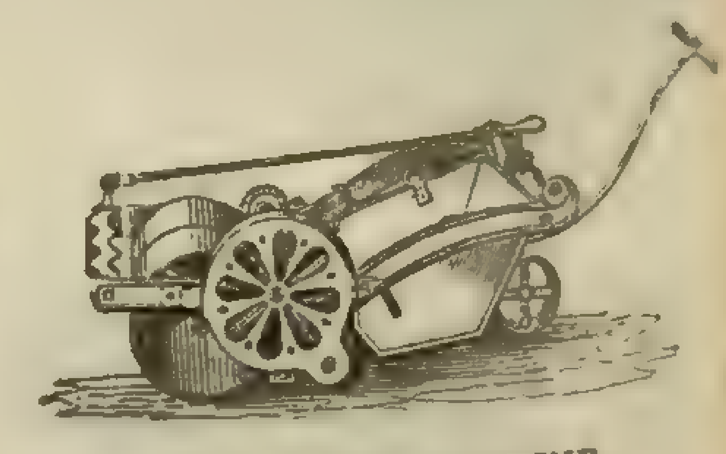
HORSE MACHINE.



PONY MACHINE.



NEW HAND MACHINE.



OLD HAND MACHINE.

PRICES.

Including Carriage to most of the principal Railway Stations and Shipping Ports in the Kingdom, and Directions for Use.

SHANKS' NEW PATENT HORSE MACHINE for 1862.

Width of Cutter.
No. 1.—48-inch Machine ... ... £28 0 0 } *Drawn by a Horse.*
No. 2.—42-inch Machine ... ... 26 0 0 }

Width of Cutter.
No. 3.—36-inch Machine ... ... £22 0 0 *Drawn by a Horse.*
No. 4.—30-inch Machine ... ... 19 0 0 *Drawn by a Horse or Strong Pony.*

Patent Delivering Apparatus for Nos. 1 and 2 Machines, 40s.; for Nos. 3 and 4 Machines, 30s.; Box, with complete Set of Tools, 10s.; Silent Movement, 20s.; Boots for Horses' Feet, 24s. per set.

SHANKS' NEW PATENT PONY and DONKEY MACHINE for 1862.

Width of Cutter. No. 5.—30-inch Machine, 15*l.* 15*s.*, *Drawn by a Pony.* | Width of Cutter. No. 6.—28-inch Machine, 14*l.* 10*s.*, *Drawn by a Pony.* | Width of Cutter. No. 7.—25-inch Machine, 12*l.* 10*s.*, *Drawn by a Donkey.*

Patent Delivering Apparatus for Nos. 5 and 6 Machines, 30s.; for No. 7 Machine, 25s.; Box, with complete Set of Tools, 7s. 6d.; Silent Movement, 12s. 6d.; Boots for Pony, 21s.; Donkey, 16s. per set.

SHANKS' NEW IMPROVED PATENT HAND MACHINE, for Pushing or Drawing Separately or Together.

Width of Cutter.
No. 8.—24-inch Machine ... ... £8 17 6 } *Easily Worked by Two Men.*
No. 9.—22-inch Machine ... ... 8 7 6 }
No. 10.—19-inch Machine ... ... 7 12 6 *Ditto by a Man and Boy*

Width of Cutter.
No. 11.—16-inch Machine ... ... £6 17 6 *Easily Worked by a Man.*
No. 12.—13-inch Machine ... ... 6 2 6 *Ditto by a Boy.*

The Patent Delivering Apparatus, if attached to the Hand Machines, 25s.; Box, with complete Set of Tools, 5s.; Silent Movement, 7s. 6d. extra.

SHANKS' NEW IMPROVED PATENT SMALL HAND MACHINE for 1862, for Pushing only.

Width of Cutter.
No. 16.—16-inch Machine ... £6 5 0 } *Easily worked by a Stout Lad.*
No. 17.—14-inch Machine ... 5 15 0 }
Silent Movement, 7s. 6d. extra.

Width of Cutter.
No. 18.—12-inch Machine ... ... £5 5 0 *Easily worked by a Lady.*
Silent Movement, 4s. extra.

*** *The Machines are warranted to give ample satisfaction, and if not approved of may be at once returned.*

The Prices, with a small charge for Packing, include Carriage to most of the Railway Stations and Shipping Ports in the Kingdom.

SOLE AGENTS FOR LONDON: J. B. BROWN & CO., 18, CANNON STREET, CITY, E.C.

Glass for Greenhouses.

JAMES PHILLIPS AND CO. beg to submit their prices as follows:—

[...]LISH GLASS, 16 ounces to the foot, in Sheets averaging [...], packed in Cases containing about 280 feet, 2¼d. and [...]

[...] GLASS, 16 ounces, packed in boxes of 100 feet each. Package included.

				3rds.	4ths.
[...] 9,	13 by 9,	14 by 9,	15 by 9	14s. 0d.	12s. 6d.
[...] 10,	13 „ 10,	14 „ 10,	15 „ 10		
[...] 11,	14 „ 11,	15 „ 11,	16 „ 11	16s. 0d. per 100 feet.	13s. 6d.
[...] 12,	15 „ 12,	16 „ 12,	17 „ 12		
[...] 12,	19 „ 12,	20 „ 12,	16 „ 13		
[...],	18 „ 13,	19 „ 13,	20 „ 13		
[...] 14,	17 „ 14,	18 „ 14,	20 „ 14		

Various other sizes.

GLASS FOR ORCHARD HOUSES,
As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
9 in. by 12 in.	Common	13s. 6d. ..	£0 18s.
9 in. by 13 in.	Superior do.	16 0 ..	1 3
9 in. by 14 in.	English Glass	18 0 ..	1 9
9 in. by 15 in.			

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11s. 6d.
8 „ 6	8½ „ 6⅝	9 „ 7	9½ „ 7½	
		10 „ 8	10½ „ 8½	12 6

Boxes 2s. each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.

16 oz. 4ths, 1¾d., 2d., and 2½d. 21 oz. 2¾d., 3d, and 3½d.
„ 3ds, 2d., 2½d., and 3d. „ 3d., 3½d, and 4d.

London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, London, E.C.

THOMAS MILLINGTON,
87, Bishopsgate Street Without, E.C.

HORTICULTURAL GOODS.

PROPAGATING GLASSES.

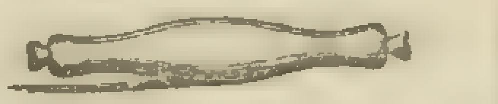
[...] ..	0s. 4½d. each.	12 inches ..	1s. 9d. each
[...] ..	0 5½ „	13 „ ..	2 0 „
[...] ..	0 6½ „	14 „ ..	2 6 „
[...] ..	0 8 „	15 „ ..	3 0 „
[...] ..	0 10 „	16 „ ..	3 6 „
[...] ..	1 0 „	17 „ ..	4 0 „
[...] ..	1 2 „	18 „ ..	5 0 „
[...] ..	1 4 „	19 „ ..	6 0 „
[...] ..	1 6 „	20 „ ..	7 0 „

HAND GLASSES.

[...]ches ..	6s. 0d. each	18 inches ..	9s. 0d. each
[...] ..	7 0 „	20 „ ..	10 0 „
[...] ..	8 0 „	24 „ ..	12 0 „

If open top, 1s. extra.

CUCUMBER GLASSES.
[...] 12 inches long and upwards, 1d. per running inch.



ROLLING PINS.
From 12 inches long, 1½d. per running inch.

Improved ANTI-CORROSION and other PAINTS.
GAS and LAMP GLASSES, GLOBES, &c.
CHIMNIES of every description.
Not accountable for Breakage.

PROTECTED BY THE CUTLERS COMPANY
CORPORATE
MARK.

JOSEPH HAYWOOD AND CO.,
MANUFACTURERS OF
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kind of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield

W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.
Manufactory: Newport, Salop.

Warranted the strongest and most durable Fence ever [...] corresponding prices. It is easily repaired if broken [...]dents; can be rolled up most compactly when not in [...] adapted for exportation, and can be had of [...] and mesh required at prices from 4d. to 1s. 6d. per [...] upwards.

For further particulars apply at the Manufactory, or of the [...] Agent, Mr. R. WINDER, 18, Abingdon Street, Westminster, S.W.

Gutta Percha Tubing for Watering Gardens.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following [...] from Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON [...]ALAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in [...] 100 feet each, with union joint, in use for the last [...] for watering these gardens, and I find it to answer [...] than anything I have ever yet tried. The pressure of [...]ter is very considerable, but this has not the slightest [...] the tubing. I consider this tubing to be a most [...] invention for Gardeners, inasmuch as it enables us to [...] gardens in about one-half the time, and with one-half [...] required."

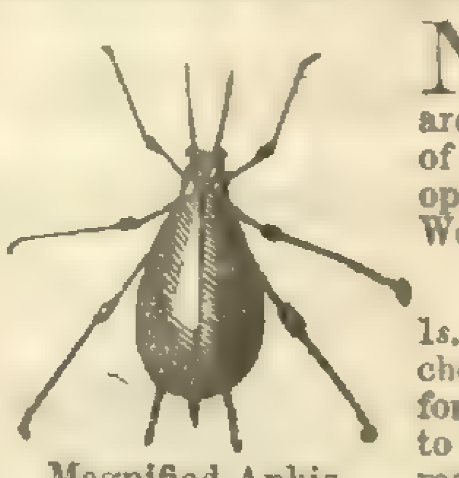
Manufactured by the GUTTA PERCHA COMPANY, Patentees, [...], Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

DUNN'S GARDENER'S PENCILS, Price 1s., will refill for 6d.
DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.

Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.

These pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.

N.B.—A liberal allowance to the Trade.



Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP,
1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. NEAL, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by
PRICE'S PATENT CANDLE CO., Limited.

MR. ALEXANDER PONTEY, Deceased.—All persons having any Claims or Demands against the Estate of the late MR. ALEXANDER PONTEY, of 21, Cornwall Street, Plymouth, Devon, Nurseryman, Seedsman, and Florist, are requested to forward particulars thereof to his Executrix, Mrs. MARY LYNE PONTEY, at 21, Cornwall Street, Plymouth, aforesaid, in order that the same may be examined, and, if found correct, discharged; and all persons Indebted to the said Estate are requested to pay the amount of their respective debts, without delay, to the said Executrix.

Mrs. PONTEY begs to offer her best thanks to the Friends and Customers of her late Husband for the kind and liberal support afforded him during his lifetime, and to inform them that it is her intention to continue the business until the same be satisfactorily disposed of.

Dated Plymouth, August 1, 1862.

South of Devon.

MR. ALEXANDER PONTEY, DECEASED.
TO NURSERYMEN, SEEDSMEN, AND OTHERS.

TO BE DISPOSED OF, by Private Contract, on advantageous Terms, with early possession, the Well-Established BUSINESS of a NURSERYMAN, SEEDSMAN, and FLORIST, which for very many years has been extensively and successfully carried on by Mr. ALEXANDER PONTEY, of Plymouth, Devon, and his predecessor, and is now to be disposed of only in consequence of his sudden death.

The Lease of the Business Premises and Stores, which are most conveniently situated near the Market, as well as the Leases of the Nurseries, which are most extensive and well-stocked, both at Plymouth and Vinstan (about Two Miles from Plymouth, on the Tavistock Road), have many years to run.

The Plant, which is of the most Modern construction, and the Stock, the most varied in the West of England, to be taken in the usual way, at a fair valuation.

For further particulars, application may be made to Messrs. SKARDON & SONS, Auctioneers, Bedford Street, Plymouth; or to Messrs. PHILLIPS & SON, Solicitors for the Executrix, Frankfort Lane, Plymouth.

Dated Plymouth, August 1, 1862.

To Horticultural Builders and Others.

TO BE DISPOSED OF, an old-established HORTICULTURAL BUILDER'S BUSINESS, with the Lease, Goodwill, Machinery, Stock, &c. There is an extensive connection attached to the above, as having the patent right of manufacturing Patent Galvanised Iron Hot and Greenhouses, exclusive of the usual Iron and Wood Greenhouses manufactured by other Horticultural firms. The proprietor retiring from business.

For further particulars apply at 152, King's Road, Chelsea, S.W.

To Seedsmen and Florists.

TO BE DISPOSED OF, the STOCK in TRADE and GOODWILL of an excellent and old-established SEED TRADE in one of the largest manufacturing towns. This would form a highly favourable opportunity for any gentleman who might have at command some 200*l*.

Apply in the first instance to G. G., Messrs. Marlborough & Co., 4, Ave Maria Lane, London, E.C.

Lancashire.

TO BE LET, either for a Term or by the Year, "CARR SIDE FARM," situate in the township of Ince Blundell, about 9 miles from Liverpool. The Farm contains 181 acres, statute measure, viz.:—about 130 acres Arable, and the remainder Meadow and Pasture. There is a good House and first rate Outbuildings on the above.—Also, To be Let with the above (or alone), for a Term or by the Year, 755 STATUTE ACRES OF LAND, the greater part Tithe Free, situate in the township of Formby in the said county, and close to the Freshfield Station, on the Liverpool and Southport Line. Possession of the Land may be had on February 2 next, and of the Houses and Outbuildings on May 1 next.

For further Particulars, and to treat for same, apply to Mr. FISHER, Steward, Ince Blundell, Liverpool.

Merino Rams of the Bourgignon Breed.

FOR SALE, a Limited Number of RAMS of this breed, which is in high favour amongst Australian Sheep Farmers, and obtained Prizes at the Paris Exhibition of 1860, and the International Exhibition of 1862, at Mons. GUICHARD'S Chateau de Jouaney, near the Gens Station on the Paris, Lyons, and Dijon Railway.

Highly Important Sale of Established Orchids.

MR. J. C. STEVENS has been favoured with instructions to dispose of at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY and FRIDAY, September 18 and 19, at half-past 12 o'Clock precisely, without the least reservation, the first portion of the well known COLLECTION of ESTABLISHED ORCHIDS of G. REED Esq. of Barnham, Somersetshire, who is giving up their culture. Many of the Plants have been exhibited and obtained First Prizes at the Crystal Palace, Chiswick, Regent's Park and other Shows. The collection comprises amongst other choice varieties the following:—

Aerides Fieldingi	Lælia Perrini
„ Larpentæ	„ superbiens
„ Lindleyana	„ flava
„ Lobbii	„ majalis
„ maculosum	Lycaste Skinneri, best variety
„ suavissimum	Masdevallia coccinea
„ Schröderi	Odontoglossum nævium
„ Warneri	Oncidium sessile
Anguloa Clowesi	Phalænopsis amabilis
„ Ruckeri	„ grandiflora
Angræcum eburneum	„ rosea
Brassavola Digbyana	„ new species
Cattleya Acklandiæ	Saccolabium Reedi
„ elegans	„ guttatum
„ lobata	„ Blumei
„ Mossiæ superba	„ retusum
„ Mossiæ aurantiacum	„ new species
„ Skinneri	Vanda Batemani
Cypripedium barbatum superbum	„ Cathcarti
„ Farrieanum	„ suavis (Veitch's)
„ caudatum	„ tricolor
„ hirsutissimum	„ gigantea
„ species nova	„ furva
Epidendrum prismatocarpum	Sobralia Ruckeri
Lælia purpurata, fine dark var.	Anæctochilus Lowii &c. &c.

May be viewed the Mornings of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

Important Sale of Plants at the Arboretum,

LEAMINGTON SPA, WARWICKSHIRE.

MR. J. C. STEVENS has been favoured with instructions from the Proprietor, JOHN HITCHMAN, Esq., who is intending to erect a Hydropathic Establishment in the Arboretum, to SELL by AUCTION, on the Premises, on MONDAY, October 13, and five following days, at half-past 11 o'Clock each day, the Valuable and Extensive COLLECTION of SPECIMEN CONIFERS and other ORNAMENTAL PLANTS, consisting of upwards of 300,000, all of which have been well prepared for removal, having been frequently transplanted, and several hundreds of the choicer kinds, being grown in crates, including magnificent specimens (besides many others), of the following known kinds:—

Araucaria imbricata, 4 to 8 feet	Pinus tuberculata, 1 to 3 feet
Abies Douglasii, 6 to 9 feet	„ ponderosa, 2 to 4 feet
„ Menziesii, 5 to 8 feet	„ Sabiniana, 1 to 3 feet
Cedrus atlantica, 4 to 6 feet	„ Lambertiana, 1 to 4 feet
„ Deodara, 4 to 10 feet	Picea amabilis, 1 foot
„ Libani, 4 to 8 feet	„ grandis, 1 foot
Cryptomeria japonica, 4 to 9 ft.	„ Pinsapo, 1 to 7 feet
Cupressus Lambertiana, 2 to 3 ft.	„ Nordmanniana, 1 to 4 ft.
„ Lawsoniana, 1 to 4 feet	„ nobilis, 1 to 4 feet
„ McNabiana, 1 to 2 feet	Taxus ericoides, 1 to 4 feet
Cephalotaxus Fortuni, 1 to 8 ft.	„ aurea variegata, 1 to 3 ft.
Juniperus excelsa, 1 to 5 feet	„ elegantissima, 1 to 3 feet
„ chinensis, 1 to 4 feet	„ adpressa, 1 to 3 feet
„ dealbata, 1 to 3 feet	Thuja gigantea, 1 to 3 feet
Libocedrus decurrens, 1 foot	„ aurea 1 to 2 feet
Pinus austriaca, 2 to 5 feet	Thujopsis borealis, 1 to 3 feet
„ Benthamiana, 3 to 4 feet (In crates.)	Wellingtonia gigantea, 1 to 4 ft.
Pinus excelsa, 2 to 10 feet	Yews (Irish), 6 to 10 feet
„ Jeffreyi, 1 to 3 feet	&c. &c.

Also various first-class Evergreens and Deciduous Trees and Shrubs of different sizes. Fine Dwarf-trained STANDARD and other FRUIT TREES, about 10,000 DWARF and STANDARD ROSES of the choicest named kinds, Rhododendrons, Camellias, Azaleas, Variegated and other Hollies, Portugal and Common Laurels, Forest Trees, and a variety of other Hardy and Greenhouse Plants.

May be viewed till the time of Sale, when Catalogues (1s. each, returnable to purchasers), may be had at the Nursery, at the principal Inns at Banbury, Oxford, Coventry, Birmingham, Manchester, Rugby, Leicester, Northampton, Stratford, Derby, Worcester, Burton-on-Trent, Stratford-on-Avon, Warwick, and at Mr. J. C. STEVENS'S Auction Rooms and Offices, 38, King Street, Covent Garden, London. Approved Bills at 3 months will be taken of Purchasers above 50*l*.

The Arboretum is within five minutes' walk of the Leamington Stations on the Great Western and North Western Railways, which offers great facilities for transmitting the Plants to every part of the country. Frequent trains run daily to and from Leamington, and cheap trains three times a week from most of the principal towns.

North Frith, near Tonbridge, Kent.

IMPORTANT SALE OF SHORT-HORNED CATTLE, SOUTHDOWN SHEEP, BERKSHIRE AND YORKSHIRE PIGS.

MR. STRAFFORD begs to announce that he has received instructions from EDWARD HALES, Esq., to offer for SALE by AUCTION, without reserve, on WEDNESDAY, September 24, at North Frith, near Tonbridge, his entire and select HERD of SHORT-HORNS, which have been purchased and bred from some of the best and most fashionable herds, such as Kirklevington, Fawsley, Cobham, Tortworth, and others of celebrity. Amongst the Short-horns will be found the famous heifer Moss Rose, and the bull Fourth Duke of Thorndale (17750), as well as some superior specimens of his produce, and others by Fourth Duke of Oxford, Duke of Cambridge, May Duke, Cardinal, &c. The Southdown Sheep and Berkshire Pigs are chiefly bred from the famed Buckland stock; the other Pigs are also of the best sorts.

Catalogues, with pedigrees and other particulars, may be had on application to Mr. HALES, at North Frith, near Tonbridge; or of Mr. STRAFFORD, 13, Euston Square, London, N.W.

Expiration of Lease—Nursery Stock.

TO THE NOBILITY, GENTRY, NURSERYMEN, FLORISTS, & OTHERS.

MR. KIRKE has been favoured with instructions from Mrs. Conway to SELL by AUCTION on the Premises, Earles Court Nursery, Old Brompton, S.W., on THURSDAY, Sept. 25, at 11 for 12 o'Clock, the ground being required for Building purposes immediately, comprising Standard, Dwarf, and Climbing Roses of sorts, Camellias, Azaleas, Mrs. Conway's celebrated Scarlet and other Geraniums, Fuchsias, Cacti, Myrtles, Yuccas, Cedrus Deodara, 3 to 4 feet, Rhododendrons, Pyrus japonica, Tree Box, Euonymus, Siberian and Chinese Arbor-Vitæ, Laurustinus, Irish Yews, Sweet Bay, Chrysanthemums, several thousand Lily of the Valley, Greenhouse and Herbaceous Plants, Vines in Pots, Laurels, Aucuba japonica, Limes, 8 to 10 ft.; Span-roofed Green and Forcing Houses, Pits, Lights, Boxes, Hand-glasses, Sheds, &c. About 500 yards of superior Box Edging. Nearly all in pots.

May be viewed two days prior to the Sale. Catalogues had on the Premises; and at the Offices of Mr. KIRKE, 19, Brompton Row, Brompton, S.W.

GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THESE MACHINES were entered at the Royal Horticultural Society's Great Shows held at South Kensington, May 21, June 11, and July 2. They were the only Machines Highly Commended (no Prizes were given). They have carried off every Prize that has been given in all cases of Competition, and have just been awarded the Prize Medal of the Great International Exhibition, July 11, 1862.

GREEN'S PATENT LAWN MOWERS have attained the largest sale of any Machines extant, and are in constant use at the Royal Gardens, Windsor; the Royal Horticultural Society's Gardens, South Kensington; the Royal Botanic Gardens, Regent's Park; the Crystal Palace Company's Gardens, Sydenham; the Kensington Palace Gardens; the Hyde Park Gardens; and in most of the Nobility, Clergy, and Gentry's Parks, Squares, &c., throughout the Kingdom.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0	£8 15 0
To Cut 20 inches	8 0 0	9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0	£9 17 6
To Cut 24 inches	9 0 0	10 7 6

To Cut 10 inches. Suitable for a Lady.

This Machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0	£21 10 0
To Cut 36 inches	23 0 0	24 16 0
To Cut 42 inches	26 0 0	28 2 0
To Cut 48 inches	29 0 0	31 8 0

Leather Boots for Horse, per set, £1 4*s.*

Donkey and Pony Machines, including Box of Requisites & Traces.

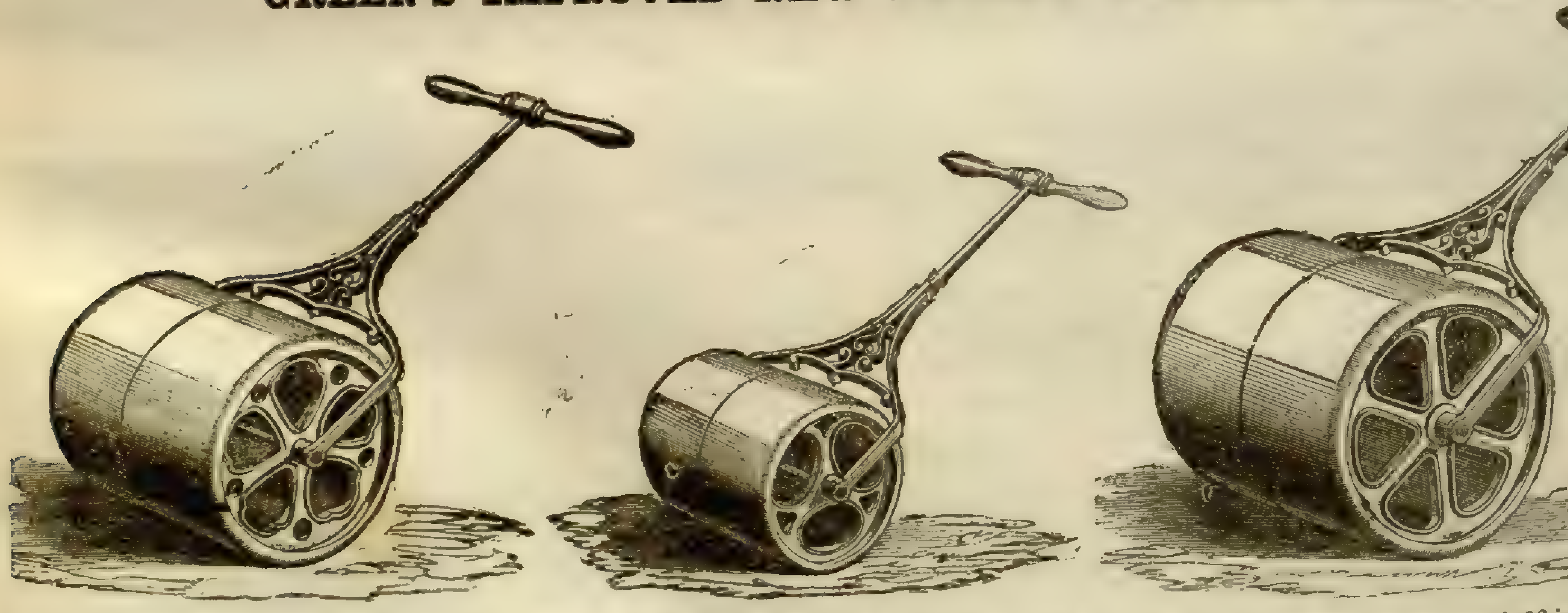
	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0	£12 10 0
To Cut 26 inches	12 10 0	13 12 0
To Cut 30 inches	16 14 0	18 0 0

Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

The above Machines are made from the best materials, and of superior workmanship; are delivered carriage free to all the principal Railway Stations and Shipping Ports in England; are warranted to give satisfaction, and if not approved of can be at once returned, if sent carriage free to Leeds.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length 22 inches.... Price £3 5*s.* | Diameter 16 inches, length 17 inches.... Price £2 10*s.* | Diameter 24 inches, length 26 inches.... Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 37.—1862.] SATURDAY, SEPTEMBER 13. {Price Fivepence. Stamped Edition, 6d.

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NOTICE TO ADVERTISERS. — *Advertisements should reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

Roses, &c.

PAUL AND SON respectfully invite attention to their ANNUAL SHOW of ROSES, GLADIOLI, HOLLYHOCKS, and ASTERS, now in FULL BLOOM at their establishment, one Mile from the Cheshunt Station of the Eastern Counties Railway.
Old Cheshunt Nurseries, Cheshunt, Herts.

Roses.

EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

Roses.

JAMES CRAWFORD has much pleasure in offering a very select Collection of best ROSES in 48 size Pots, fine healthy Plants now in Bloom.

Rose and Bulb Catalogues for 1862-3.

EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded gratis and post-free on application.
Seed and Nursery Establishment, Tunbridge Wells, Kent.

Rose Catalogue, 1862 and 1863.

JOHN CRANSTON begs to announce that his new ROSE CATALOGUE is now ready for distribution, and will be forwarded free on application. It contains full and faithful descriptions of nearly all the NEW ROSES of 1861, as well as the older kinds.
Nurseries, King's Acre, near Hereford.

WM. PAUL'S ROSES, HOLLYHOCKS, and HARDY ORNAMENTAL TREES are now in full beauty. Entrance from the Platform, Waltham Station (Eastern Counties Railway), half an hour's ride from London.
Nurseries and Seed Warehouse, Waltham Cross, N.

GUERNSEY and BELLADONNA LILIES, 5s. 6d. per dozen.
BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

PICEA NOBILIS.—Cones, carefully fertilised, to be had from the Forester, at Churchill, Verner's Bridge. Each Cone contains more than 600 seeds. Price One Guinea.

UNEQUALLED CALCEOLARIA SEED.
SOW AT ONCE.
Sealed packets, 1s. 6d., 2s. 6d., 3s. 6d., and 5s.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

Pelargonium and Bulb List.

J. DOBSON AND SONS' CATALOGUE is now ready. It contains several new things offered for the first time. Post free on application.
Woodlands Nursery, Isleworth, W.

NEW CINERARIA CONQUEROR.
The finest Crimson Self ever offered.
Fine strong plants, 5s. each.
J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

New Verbenas of 1862.

B. W. KNIGHT, FLORIST, &c., 67, High Street, Battle, Sussex, is now sending out the NEW VERBENAS of 1862 at 4s. per dozen, securely packed in tin box, [illegible] CATALOGUES of the varieties sent on application.

Calceolaria and Pansy Seed of the finest Strains.

GEO. WHEELER begs to announce that he is still sending out Seeds of his very superior CALCEOLARIA at 1s., 1s. 6d., and 2s. 6d. packets.
Choice PANSY from Prize Flowers, 1s. to 2s. 6d. per packet.
Nursery, Warminster, Wilts.

Fine Camellias and Azaleas.

F. AND A. SMITH have an immense stock of AZALEAS and CAMELLIAS well set with flower buds, of fine growth and in healthy condition, now offering at moderate prices, which may be had on application.
Dulwich, Surrey, S.

Cineraria and Calceolaria Seed.

F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1s., 1s. 6d., and 2s. 6d., free by post.
Dulwich, Surrey, S.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

Hyacinths, Crocuses, &c.

JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

Hyacinths, Crocuses, &c.

JAMES CARTER AND CO.'s first consignment of DUTCH BULBS has arrived in splendid condition. CATALOGUES free of charge on application to
237 and 238, High Holborn, London, W.C.

Hyacinths for Forcing.

BUTLER AND McCULLOCH can strongly recommend the following for immediate planting:—
12 HYACINTHS, in 12 select and distinct varieties, 9s., 12s., and 15s. per dozen.
BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

MINIATURE HYACINTHS.
12 in 12 choice varieties, 4s. and 6s. per dozen.
MINIATURE HYACINTH GLASSES, 4s. 6d. per dozen.
BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, W.C.

MINIATURE HYACINTHS.—The best sorts of Miniature Hyacinths by name at 5s. per dozen.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Hyacinths, Tulips, Narcissus, Crocus, &c.

BARR AND SUGDEN'S stock of the above is large and of prime quality. Early orders solicited.
BARR & SUGDEN, Seed Merchants, &c. (see large advertisement), 12, King Street, Covent Garden, W.C. (Opposite the Garrick Club).

Hyacinths, &c.

WM. PAUL'S DESCRIPTIVE CATALOGUE of HYACINTHS and other DUTCH BULBS, with Hints on Culture, is now ready. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Dutch Bulbs.

CHARLES TURNER'S CATALOGUE of a selection of the best in each class is now ready, and will be forwarded on application post free.
The Royal Nurseries, Slough.

Wm. Cutbush & Son's Dutch Bulb Catalogue.

WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE and PRICED CATALOGUE of HYACINTHS and other Dutch Flower Roots is now ready, post free, on application.
Highgate Nurseries, London, N.

Dutch Bulbs.

PAUL AND SON have received their annual importation of the above in good condition. Early Orders are solicited. CATALOGUES post free on application.
Old Cheshunt Nurseries, Cheshunt, Herts.

Dutch Roots.

JAMES CRAWFORD is very pleased to say that he has just received his DUTCH BULBS in fine condition.

R. GREEN, Bedford Conservatories, Covent Garden Market, W.C.; entrance Centre Avenue only. DUTCH BULBS just arrived in fine condition; British and Foreign FERNS, 3s. to 12s. per dozen; BUDGRIGARS, immense quantity, 7s. 6d. and 10s. each; Cages and Aviaries of every description, &c.; and at 154, Kingsland Road, N.E.

Dutch Bulbs (Large Size).

JAMES FAIRHEAD AND SON beg to state their HYACINTHS, CROCUSES, TULIPS, &c. have arrived in prime condition, and are now ready for delivery. Early orders solicited. Also extra large double SNOWDROPS, on offer.
CATALOGUES free on application.
7, Borough Market, London, S.E.

First Consignment of Dutch Flower Roots.

THOS. CHARMES, SEEDSMAN and FLORIST, 204, High Street, Exeter (one door above the Guildhall), has just imported the best varieties of HYACINTHS, TULIPS, NARCISSUS, and other Winter and Spring flowering Roots, in fine condition; and to secure good Bulbs early orders are respectfully solicited.
DESCRIPTIVE PRICE LIST free on application.

Economy and Excellence.

H. BROWN'S PRICED DESCRIPTIVE CATALOGUE of HYACINTHS, GLADIOLI, and other BULBS for Show, &c., is now ready, post free. Collections from 10s. and upwards, and large quantities, specially ordered, carriage free, on exceedingly moderate terms.
Seed Warehouse, 4, Commutation Row, Liverpool.

HYACINTHS, TULIPS, CROCUSES, and other DUTCH BULBS, just arrived in excellent condition. PRICED CATALOGUES on application to
S. PONSFORD, Loughboro' Park Nurseries, Brixton, Surrey, S.
N.B. CATALOGUES of GENERAL NURSERY STOCK will be ready at the end of this month.

Hyacinths, Tulips, Crocuses, &c.

BUTLER AND McCULLOCH'S DESCRIPTIVE CATALOGUE of BULBS, containing ample Cultural Directions, may be had free and post paid upon application.
BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

Good Seeds, Carriage Free, at Market Prices.

SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds for Autumn Sowing.

DELIVERED FREE AT NEAREST RAILWAY STATION.
PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN.
27, Great George Street, Westminster, S.W.

Agricultural and Garden Seeds.

H. AND F. SHARPE, SEED GROWERS and MERCHANTS, Wisbech.
Special PRICED LIST of NEW SEEDS on application.

Agricultural Seeds.

GEORGE GIBBS AND CO., SEEDSMEN,
26, Down Street, Piccadilly, London, W.

Azaleas.

JAMES CRAWFORD begs to offer 500 fine Plants in 48 size Pots, well set for Bloom.
High Beech, Essex, N.E.

MESSRS. ARTHUR HENDERSON AND CO. beg to state that they are now selling Strong Plants of the 12 Varieties of CALADIUMS which took the First Prize at the Royal Horticultural Society's Show, Sept. 10, 1862. Price of the Collection, 2l. 10s.
1, Pine Apple Place, Edgware Road, W.

Strawberries.

CHARLES TURNER can still supply strong Plants for Fruiting next season of all the leading kinds.
CATALOGUES may be had on application.
The Royal Nurseries, Slough.

VINES from EYES are now to be seen in splendid FRUITING CONDITION. Any one intending to plant Vines this season ought to see the thousands of fine strong Canes ready for Sale, at
H. LANE & SON'S, The Nurseries, Berkhampstead.

Vines in Pots.

PAUL AND SON invite gentlemen planting Vineries to inspect their fine Stock of the best varieties of Vines.
Old Cheshunt Nurseries, Cheshunt, Herts.

Grape Vines.

WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines.

J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.

JAMES CRAWFORD begs to inform his friends that he has a large stock of strong healthy Plants, which he offers at low prices.

Grape Vines.

TO BE SOLD, Cheap, 1800 close-jointed vigorous Plants, with Canes 6 to 12 feet long, all struck from Eyes this season.
Apply to the GARDENER, at J. Lewis's Horticultural Works, Stamford Hill, Middlesex, N.

Orchard House Culture.

MESSRS. THOS. RIVERS AND SON invite lovers of Fruit Tree Culture to an Inspection of their ORCHARD HOUSES and FRUIT TREES in POTS. The mode of culture, which is very simple, will be given if required. Harlow Station, where flies attend, is the most convenient for the Nurseries.
Sawbridgeworth, Herts.

WALL-TRAINED FRUIT TREES.—Intending planters of Trained Fruit Trees are invited to an inspection of our WALL-TRAINED TREES. They are very clean, and many of them being of large size could be seen and marked with Fruit on.
THOMAS JACKSON & SON, Nursery, Kingston, S.W.

WELLINGTONIA GIGANTEA, superb specimens, all Seedling plants, from 6 to 12 feet high. Can be insured to be transplanted with safety to any distance.
Prices on application to WILLIAM BARRON, Elvaston Castle, Derby.

WELLINGTONIA GIGANTEA.—The undersigned has to offer a very large and fine stock of healthy one year Seedling Plants established in single pots; also a few plants of larger sizes. Price per 100 or 1000 on application.
J. HENCHMAN, Edmonton, London, N.

FOR SALE, a large Collection of BRITISH and EXOTIC FERNS, at
J. ILLMAN'S Nursery, Wellington Place, Strood, Kent.

WANTED, FIMBRIATED PRIMULA SEED, best Red and White.
Apply A. B., 25, Bishopsgate Within, E.C.

WILLIAM HOLMES offers the following in fine Plants:—
NEW CHRYSANTHEMUMS .. .. [illegible]s. per dozen.
NEW FUCHSIAS .. .. [illegible] "
NEW VERBENAS .. .. [illegible] "
Frampton Park Nursery, Hackney.

Importation of Dutch Bulbs.
FLOWER ROOTS CARRIAGE FREE.

WM. WOOD AND SON have much pleasure in advising their friends of having received a very splendid lot of HYACINTHS, NARCISSI, JONQUILS, &c., in first-rate condition.
DESCRIPTIVE CATALOGUES may be had on application.
Prices as reasonable as any house in the Trade.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON AND CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.
Pine Apple Place, Edgeware Road, London, W.

Notice to Purchasers of Bulbs.

SUTTON'S SELECT BULB LIST, on page 831 of *Gardeners' Chronicle* of Saturday last, contains all the most desirable sorts in cultivation. Marginal Columns are given for marking the quantities required.
Royal Berkshire Seed Establishment, Reading.

HYACINTHS for EXHIBITION.
FRESH IMPORTED BULBS.
SUTTON'S SELECTION.

		per 100.	Dozen.
Finest sorts by name	..	£4 4s.	12s.
Very fine ditto	..	3 10	9
Good ditto	..	2 10	6

Good Hyacinths for Beds, Ribands, &c. in separate colours, (fresh imported), 21s. per 100.
Anemones, Crocuses, Tulips, Gladioli, &c., also very low in prices, as per CATALOGUE, which may be had gratis and post free.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

J. C. WHEELER AND SON, SEED GROWERS, Gloucester, have imported in excellent condition a large
COLLECTION of HYACINTHS,
including the extra fine varieties recommended by Dr. LINDLEY.
PRICED LISTS may be had gratis on application to the Importers,
Messrs. J. C. WHEELER & SON,
Gloucester.

New Bulb Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce their BULB CATALOGUE for immediate circulation, a Copy of which will be forwarded postage free on application.
THE TITIEN STRAWBERRY.
FUCHSIA BIANCA MARGINATA (BANKS).
" MARS.
" MDLLE. TREBELLI.
SOLANUM CAPSICASTRUM VARIEGATUM.
Descriptions and prices of the above will be forwarded on application.
The SOLANUM CAPSICASTRUM VARIEGATUM, and the TITIEN STRAWBERRY, are now ready for sale. The FUCHSIAS will be sent out in October.
Wellington Nursery, St. John's Wood, London, N.W.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.
Exotic Nursery, Tooting, Surrey, S.

Bulbs and How to treat them.

HOOPER AND CO.'s CATALOGUE of HYACINTHS, and every other kind of Bulb, contains practical information for their successful cultivation, together with copious lists of the best varieties extent. Forwarded post free on application.
Collections of named HYACINTHS in 12 fine sorts, 6s., 7s. 6d. 10s., and 15s. All the Bulbs sound and of the best quality.
HOOPER & Co., Seedsmen, Central Avenue, Covent Garden Market, London, W.C.

Autumn, Winter, and Spring Bedding Plants.

J. SCOTT, MERRIOTT NURSERIES, Somerset, begs to say that his DESCRIPTIVE CATALOGUE of DUTCH BULBS, Late Autumn, Winter, and Spring BEDDING PLANTS is now ready. It is arranged in Two Parts. 1st, Dutch and other Bulbs, in charming variety, imported direct from Holland. Part 2, How to Plant Autumn, Winter, and Spring Beds, with Copious Lists of all the best plants suited to garden ornamentation during the months of November and December to the beginning of May.
Prepaid application, enclosing two postage stamps.

Dutch and other Bulbs.

B. S. WILLIAMS'S AUTUMN CATALOGUE for 1862 is now ready, post free to all applicants, containing select lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladioli, Amaryllises, Caladiums, Gloxinias, and many other choice Bulbs, with Hints on their Culture for the guidance of Amateur growers. To which is added a SUPPLEMENTAL and DESCRIPTIVE LIST of NEW, BEAUTIFUL, and RARE PLANTS.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

BARR & 12 KING ST. SUGDEN COVENT GARDEN

BARR & SUGDEN'S
ILLUSTRATED FLORAL GUIDE
and COLLECTIONS of BULBS for 1862

are so arranged as to enable their Patrons to carry out the idea of having "GARDENS FOR ALL THE MONTHS IN THE YEAR, in which, severally, things of beauty may be had in season."

See last week's Advertisement for COLLECTIONS of BULBS A, B, C, D, E, F.

The PAXTONIAN COLLECTIONS, for the Ornamentation of the Spring Garden.
See above GUIDE for an Article on SPRING GARDENING, by ALPHA.

	G. £5 5s.	H. £3 3s.	I. £2 2s.	J. £1 1s.	K. 15s. 6d.	L. 10s. 6d.
HYACINTHS, of various colours	100	70	50	30	30	15
POLYANTHUS NARCISSUS, various colours	50	30	30	20	10	10
TULIPS, "	300	200	150	100	75	50
CROCUS "	500	300	200	100	100	100
ANEMONES, "	300	200	100	50	25	..
RANUNCULUS, "	300	250	200	100	100	50
SNOWDROPS, "	300	200	100	50	50	50
IRIS, splendid English, mixed colours	100	70	50	20	15	10
GARDEN NARCISSUS, various "	100	80	50	25	20	20
CROWN IMPERIALS, mixed "	12	6	6	3	..	..
IXIAS, " "	50	30	20	..	..	..
SCILLA SIBIRICA	18	12	9	6	..	..

HYACINTHS, 2s. 6d., 3s., 4s. 6d., 6s., 9s., and 12s. per dozen.
POLYANTHUS NARCISSUS, 3s., 3s. 6d., and 4s. 6d. "
TULIPS, 3s. 6d., 4s. 6d., 7s. 6d., and 10s 6d. per 100.
CROCUS, 1s. 6d., 2s. 6d., and 3s. 6d. per 100.

To be Continued Weekly.

(For an Article by "ALPHA" on SPRING GARDENING, see ILLUSTRATED FLORAL GUIDE.)

BARR & SUGDEN,
SEED MERCHANTS & IMPORTERS of DUTCH, FRENCH, ITALIAN & CAPE FLOWERING BULBS,
12, KING STREET, COVENT GARDEN, W.C.
(OPPOSITE THE GARRICK CLUB.)

SUTTON'S COLLECTIONS of BULBS
FOR
BLOOMING DURING THE WINTER AND SPRING.

THESE are every year becoming more popular, and the HYACINTHS, ANEMONES, TULIPS, &c., which we imported last season from the celebrated Dutch Florists, Messrs. de Boom, Veen, Byvoet, and others, having been so generally admired, we have imported from the same parties still more extensively. *As many of these sorts are at present unknown to English cultivators, we have considered it advisable to make up Collections* of the sorts which, after careful observation, we have found to be the best worthy of cultivation, being THE MOST SHOWY AND MOST CERTAIN TO THRIVE WELL under any ordinary treatment, and for which any good Garden soil (not particularly heavy) will be suitable.

Nos. 1, 2 and 3 are suitable for Out-door Decoration; and
Nos. 4, 5 and 6 contain those sorts best suited for growing in Pots and Glasses.

No. 1. Sutton's Collection of Bulbs for Open Ground, 42s.

24 FINE MIXED BORDER HYACINTHS
12 " POLYANTHUS NARCISSUS
25 PHEASANT'S EYE Do.
25 MIXED BORDER Do.
12 LARGE CAMPERNELLE JONQUILS
100 FINE MIXED DOUBLE RANUNCULUS
100 SCARLET TURBAN Do.
25 FINE MIXED DOUBLE ANEMONIES
25 " SINGLE Do.
300 FINE CROCUS, in sorts
100 DOUBLE SNOWDROPS
50 WINTER ACONITES
12 FINE MIXED GLADIOLUS
25 DUC VAN THOL TULIPS
12 REX RUBRORUM Do.
12 DOUBLE YELLOW Do.
12 FINE MIXED PARROT Do.
12 GESNERIANA Do.
50 FINE MIXED Do.
12 CHOICE ENGLISH IRIS
12 " SPANISH Do.
6 LILIES OF SORTS
6 TRITONIA AUREA
6 FERRARIA PAVONIA
6 ALSTRŒMERIA VAN HOUTTE
12 DOG'S TOOTH VIOLET

No. 2. Collection of all the same kinds in Reduced Quantities, 21s.

No. 3. A Small and Choice Collection, selected from the above, 10s. 6d.

No. 4. Sutton's Collection of Bulbs for Pots and Glasses, 42s.

24 FINE HYACINTHS, by name
12 POLYANTHUS NARCISSUS, Do.
12 LARGE DOUBLE JONQUILS
12 SINGLE SWEET-SCENTED Do.
12 " VAN THOL TULIPS
6 SCARLET Do. Do.
6 DUCHESSE DE PARMA Do.
6 KANARIE VOGEL Do.
6 VERMILION BRILLIANT Do.
6 DOUBLE TOURNESOL Do.
6 REX RUBRORUM Do.
12 SCILLA PRÆCOX
6 PERSIAN IRIS
6 PEACOCK Do.
100 FINE CROCUS, by name
12 CHOICE IXIAS, Do.
6 " SPARAXIS, Do.
6 ACHIMENES, Do.
6 FERRARIA PAVONIA
6 LACHENALIA TRICOLOR
1 CYCLAMEN PERSICUM
1 JACOBŒA LILY
1 LILIUM LANCIFOLIUM ALBUM
1 " " RUBRUM

No. 5. Collection of the same sorts in Smaller Quantities, 21s.

No. 6. A Small and Choice Assortment, 10s. 6d.

N.B. Any article above specified, if not required, will be excluded, and additional quantities of others included, according to the wish of the purchaser.

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

INTERNATIONAL EXHIBITION.

PRIZE MEDALS 1851 and 1862.

BUTLER & McCULLOCH, SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.

(ESTABLISHED UPWARDS OF A CENTURY.)

A.—Choice Collections of Bulbs for Greenhouse or Conservatory, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

B.—Choice Collections of Bulbs for Flower Garden only, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

C.—Choice Collections of Bulbs for Greenhouse and Flower Garden, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

A Specification of the above Collections is given at pages 50 and 51 of Messrs. BUTLER & McCULLOCH'S

CATALOGUE OR AMATEUR'S GUIDE,

which may be had free and post paid upon application.

☞ *All Orders amounting to 21s. and upwards sent Carriage Free.*

NEW AND RARE PLANTS.

THOMAS JACKSON & SON

Having a good Stock of the undernamed BEAUTIFUL NEW PLANTS, respectfully offer them at very low prices:—

	Each.—s.	d.
ALOCASIA MACRORHIZA VARIEGATA	31	6
" METALLICA	31	6
ARALIA DUNCANII	5	0
CAMPYLOBOTRYS GHIESBREGHTII	2	6
" PYROPHYLLUS	3	6
CLERODENDRON THOMSONÆ	3	6
CORDYLINE HELICONIFOLIA	5	0
CISTUS VILLOSUS	3	6
IMPATIENS FLACCIDA	5	0
PHYLLAGATHIS ROTUNDIFOLIUS	7	6
ELLIA PURPUREA	5	0
RHYNCHOSIA ALBO-NITENS	10	6
SPHÆROSTEMA MARMORATUM	7	6
AGAVE SCHIEDIGERA	10	6
AZALEA KINGHORNII	3	6
" PRESIDENT	3	6
" MARS	3	6
DRACÆNA ERYTHRORACHIS	10	6
DASYLIRION ACROTRICHON	10	6
ERICA DOUGLASII	5	0
FICUS BEGONIFOLIA	7	6
LYCOPODIUM ULIGINOSUM	10	6
MACROZAMIA MACKENZII	31	6
PIMELEA ELEGANS	3	6
SEAFORTHIA ELEGANS	7	6
ARUNDO CONSPICUA	7	6
JUNIPERUS DRUPACEA	5	0
PICEA SPECIES, from Vancouver's Island, 1½ ft., in pots (This fine new Fir is quite hardy, specimens in our Nursery having withstood the two last winters.)	10	6
QUERCUS BAMBUSÆFOLIA	31	6
SERISSA FŒTIDA VARIEGATA	7	6
RETINOSPORA OBTUSA	10	6

NURSERIES, KINGSTON, S.W.

CHOICE GLADIOLUS.

YOUELL & CO.'S

COLLECTION of the above, extending over Three Acres, is NOW in BLOOM, and will continue some weeks.

The First Prize was awarded them on Wednesday, Sept. 3, at the Crystal Palace, Open to All England and the Continent. We supply them at the following prices:—

No. 1 Collection contains 100 Bulbs, in 50 of the most choice and handsome kinds, with names ... £5 0

No. 2 Collection contains 100 Bulbs, in 30 ditto ditto ... 3 15

No. 3 Collection contains 100 Bulbs, in 25 ditto ditto ... 2 10

Fine Selections will be supplied at 6s., 9s., 12s., 18s., to 30s. per dozen.

CATALOGUES will be forwarded on application.

The First Prize was awarded to YOUELL & Co. by the Royal Horticultural Society on Wednesday last for best Collection of 24 Single Spikes; and the First Prize for the best 12 Spikes of Brenchleyensis colour.

ROYAL NURSERIES, GREAT YARMOUTH.

GLADIOLUS BRENCHLEYENSIS (True).

YOUELL & CO.

Beg to offer this season strong FLOWERING BULBS of the above at 3s. 6d. per dozen, 25s. per 100. Trade price on application, and when quantities are ordered a considerable reduction will be made.

The *Gardeners' Chronicle*, in the report, Sept. 8, 1861, speaks of it thus:—"It cannot be spoken of in terms of exaggeration; the robust habit and intensely bright scarlet flowers place it at the head of all the hardy flowers of the autumn." And again, August 23, 1862:—"The spikes you have sent us are magnificent. We have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."

CATALOGUES of their extensive Collection, for which the First Class Prize was awarded at the Crystal Palace Show on Wednesday, Sept. 3, 1862, will be forwarded on application.

The First Prize was awarded to YOUELL & Co. by the Royal Horticultural Society on Wednesday last for best Collection of 24 Single Spikes; and the First Prize for the best 12 Spikes of Brenchleyensis colour.

ROYAL NURSERIES, GREAT YARMOUTH.

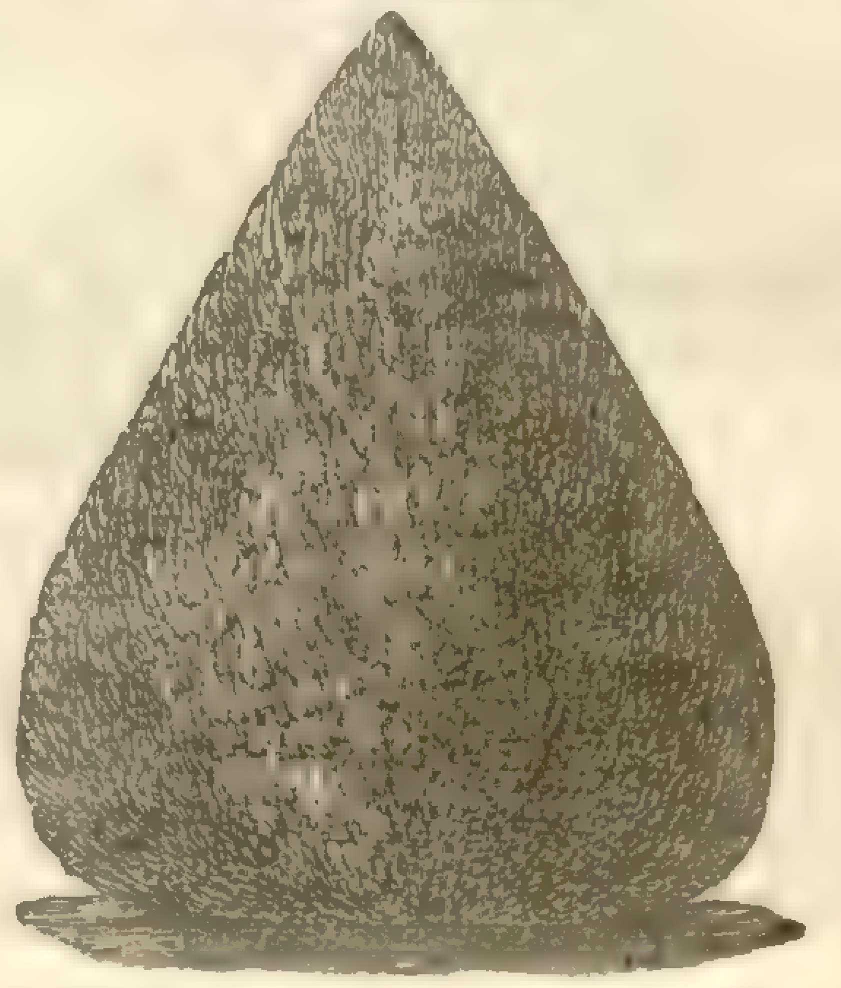
Variegated Geraniums.

GODWIN AND PADMAN, in order to reduce Stock, offer as under, in strong plants:—

	Per doz.—s.	d.
Alma	4	0
Bijou	4	0
Brilliant	2	6
Cloth of Gold	6	0
Countess of Warwick	4	0
Dandy	4	0
Fairy Nymph	3	0
Flower of the Day	2	6
Gold Edge	3	0
Gold Chain	4	0
Golden Tom Thumb	12	0
Jane	4	0
Julia	5	0
Mrs. Lennox	4	0
Perfection	4	0
Queen Victoria	2	6
Reine d'Or	12	0
Scarlet Gem	9	0
Silver Queen	3	0
The Bridal Wreath	9	0

CATALOGUES on application to GODWIN & PADMAN, Broadfield Nursery, Sheffield.

Thuja japonica.



JAMES WRIGHT AND CO. are again tempted to bring the above before the notice of the public, plants formerly sent out having given universal satisfaction. Plants from 3s. 6d. to 31s. 6d. each.

LAURUSTINUS, THUJA AUREA, THUJA LOBBII, and all other Evergreens in great variety.

To THE TRADE.—DWARF MOSS ROSES, good for potting. Price on application.

Stone Grove Nursery, Edgware, N.W.

The Best Substitute for Vetches is TRIFOLIUM INCARNATUM. —This crimson Clover deserves to be generally cultivated. If sown early either on fresh land or upon a Corn stubble, a heavier crop of Clover will be ready for mowing in May and June next than from common Clover sown the previous spring, and is highly valuable either for soiling or for hay.

SUTTON & SONS, Reading, can supply fine new Seed just threshed. Samples with price may be obtained post free.

Royal Berkshire Seed Establishment, Reading.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent, Belgium.—A. V. begs to announce that his NEW GENERAL CATALOGUE for Autumn 1862, and Spring 1863, is now ready, and contains a quantity of new, rare, and valuable Plants. The following are some of the NEW PLANTS:

	£	s.	d.
STOVE PLANTS.			
ARALIA GHIESBREGHTII	1	0	0
ARALIA THIBAUTII	1	0	0
CALADIUM CANNAERTII	1	0	0
GREENHOUSE PLANTS.			
AGAVE GHIESBREGHTII, splendid new species	4	0	0
AZALEA INDICA MADAME WAGNER	0	14	0
CAMELLIA SOUVENIR D'EMILE DEFRESNE, the finest dark vermilion Camellia, with pure white stripes, perfect imbrication	0	16	0
CAMELLIA VICOMTE DE NIEULAND, beautiful light rose, perfect imbrication	0	12	0
CAMELLIA COMTE DE TOLL, one of the finest Camellias of all for its beautiful perfect form, of a lightish rose colour, changing almost to white	0	12	0
CAMELLIA BARON DE VRIÈRE, beautiful rose and white in centre, perfect form	0	12	0
DIPLACUS GODRONI, " VERSCHAFFELTI, " SPLENDIDUS — Three splendid hybrids, which will be figured shortly in the "Illustration Horticole." The 3 varieties together for	0	10	0
GERANIUM QUADRICOLOR, obtained the first prize at the last show of the Royal Botanic Society of Ghent; will appear shortly in the "Illustration Horticole"	0	8	0
HARDY PLANTS.			
EUONYMUS RADICANS FOLIIS ARGENTEO-VARIEGATIS	0	5	0
EUONYMUS RADICANS FOLIIS ROSEO-VARIEGATIS	0	5	0
KERRIA JAPONICA FOLIIS ARGENTEO-VARIEGATIS	0	8	0
LONICERA BRACHYPODA FOLIIS AUREO-RETICULATIS	0	8	0
NEW PEAR, BEURRÉ DE GHÉLIN, obtained a first gold medal at the Royal Botanic Society of Tournay	0	4	0
NEW APPLE, CALVILLE GARIBALDI, first rate fruit, will be figured shortly	0	8	0
RHODODENDRON VERSCHAFFELTII, is said to be the finest hardy Rhododendron of all. Very fine large bouquets of a very light and delicate lilac, with enormous black spots, of a splendid effect. This remarkable variety can be distinguished amongst a thousand Rhododendrons. A correct drawing appeared in the August number of the "Illustration Horticole." Beautiful plants, 12s. Very fine plants with buds	1	0	0
NEW ROSE (Hybrid Climbing) SŒUR DES ANGES (OGER), very large flowers, of a tender rose changing to white; first rate Rose	1	0	0
SERISSA FŒTIDA FOL. AUREO-MARGINATIS	0	5	0

The "ILLUSTRATION HORTICOLE," published by AMBROISE VERSCHAFFELT, Ghent, Belgium, price 14s. 6d. a year, free. A Specimen Number can be obtained free by writing to the Editor.

N.B. Catalogues and Specimen Numbers of the above work may be obtained free at my Agents, Messrs. R. SILBERRAD & SON, 5, Harp Lane, Great Tower Street, London, E.C.

Early Sheep Feed.

SUTTON'S IMPROVED ITALIAN RYE-GRASS should now be Sown for very early Spring feed, after which it may be ploughed up, or if allowed to remain, it will produce three or four good cuttings every year.

Royal Berkshire Seed Establishment, Reading.

MANGEL WURZEL SEED, in Red and Yellow, Long and Red, Yellow and Orange Globe varieties, for Sale. For price apply to the Grower,

Mr. S. A. Daintree, Fendrayton, St. Ives, Hunts.

Hallett's Pedigree Nursery Wheat.

CHRISTMAS QUINCEY, Seedsman, Peterborough, begs to offer the above Wheat, grown by himself from Seed direct from Mr. Hallett, at 11s. per bushel, or 4l. 4s. per quarter. New sacks, 1s. 4d. each.

HALLETT'S PEDIGREE NURSERY WHEAT.—The Advertiser having grown the above fine and prolific Wheat from Seed obtained direct from Mr. Hallett, of the Manor Farm, Brighton, can supply a limited quantity at One Guinea per bushel. This Wheat should be sown early. Quantity required, one to two pecks per acre.

Apply to Mr. H. Copland, Broomfield Place, Chelmsford.

Hallett's Pedigree Nursery Wheat.

JOHN GEORGE WAITE, Seed Merchant, 181, High Holborn, London, W.C., begs to offer the above Wheat, grown on his own Farm, from Seed purchased from Mr. Hallett last autumn, price 14s. per bushel. Having a large stock, he is enabled to offer it at the above low figure to place it within the reach of all classes of agriculturists, in order that they may give it a trial. September is the best time for sowing this variety of Wheat.

John George Waite, 181, High Holborn, W.C., and Norbiton Park Farm, Kingston, Surrey.

SEED WHEAT from the CHALK.—Browick Red, Nursery, Rough Chaff, and all the most approved varieties of Wheat. Also Hallett's Pedigree Wheat, Shirreff's Bearded Red, &c., supplied by Raynbird, Caldecott, & Bawtree.

Winter Tares, Rye, Winter Barley, Winter Oats, Trifolium, &c. Samples and Prices post free on application.

Address, Basingstoke, or 89, Seed Market, Mark Lane, E.C.

International Exhibition.

Prize Medal, "Excellent Seed Corn and Seeds."

See Jury Award. Class III., 725.

RAYNBIRD, CALDECOTT, and BAWTREE, Seed Merchants and Growers, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E.C.

Samples and quotations of all kinds of Agricultural Seeds, and Seed Corn, sent post free on application. Peruvian Guano, Lawes's Manures for Turnips, Wheat, Barley, &c., Linseed Cakes, and Feeding Stuffs, at market prices.

Genuine Italian Rye-grass, produced from the Second Cut of Foreign Seed.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts., will again be able to supply the Trade with this article in the same fine quality as last season, and can deliver either now or in the spring at the purchaser's convenience.

Address for samples and prices as above, stating quantity required and time of delivery.

New Fuchsias, Verbenas, Chrysanthemums, Petunias, &c., of 1862.

H. WALTON is now sending out the above at low prices. Lists of Prices on application for one stamp. The Trade liberally dealt with.

FUCHSIAS, 9s. to 12s. per dozen.

Edgend, Marsden, Lancashire.

TAN GRATIS in the immediate neighbourhood of Covent Garden Market.

Apply to Essex & Sons, 28, Stanhope Street, Clare Market, W.C.

REIGATE SILVER SAND.—First quality, 9s. per ton; Second quality, 6s. per ton of not less than 4 ton lots, put on the rail at Reigate Junction.

William Short, Reigate Heath, Reigate, Surrey.

REIGATE SILVER SAND, best quality, 12s. per Ton or 1s. 3d. per Bushel, at Swan Place; delivered five miles, or to any London Wharf or Railway, 16s. per Ton, or 1s. 6d per Bushel. Kentish and Hampshire PEATS, YELLOW LOAM, LEAF-MOULD, and COCOA FIBRE REFUSE from Kingston. An inspection invited.—J. Kennard, Purveyor to Her Majesty, Swan Place, Old Kent Road, London, S.E.

THE LONDON MANURE COMPANY have now ready

PREPARED BONE MANURE for present use on PASTURES.

WHEAT MANURE for AUTUMN SOWING.

BLOOD MANURE for ditto.

SUPERPHOSPHATES of LIME, &c.

All the above being in the finest condition. They also continue to supply

GIBBS'S PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of known value. E. Purser, Secretary.

116, Fenchurch Street, E.C.

THE PURELY ANIMAL MANURE COMPANY, "Limited."

The Directors of this Company are prepared to supply for Autumn Crops their PURELY ANIMAL MANURE at 8l. per ton. Delivered in London in quantities not less than 2 tons.

Orders received by the Manager, at the Works, River Head, Pocklington, York; the Secretary, or any one of their Agents.

By Order of the Board,

R. S. Parker, Secretary.

76, King William Street, London, E.C.

40 to 45 per Cent. of Soluble guaranteed. 1862.

BURNARD, LACK and CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.

Extract of Opinion from Mr. Way, *January* 23, 1862.

"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."

Extract of Opinion from Dr. Voelcker, *January* 1862.

"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."

The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.

Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11l. 11s. per ton for cash.

Peter Lawson & Son, 27, Great George Street, Westminster.

LAWES'S WHEAT MANURE for AUTUMN SOWING.

In consequence of the high price of Peruvian Guano, J. B. Lawes has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of J. B. Lawes, or through any of his appointed Agents. Price 8l. per ton at the Factories, Deptford and Barking Creeks.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

American and other Cakes at market prices.

Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

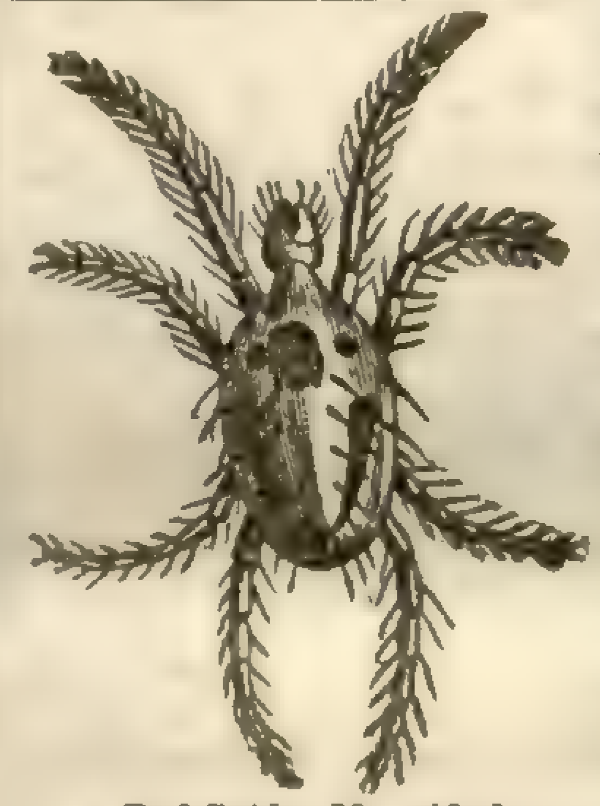
Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. Neal, Edward Street, Birmingham.



Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

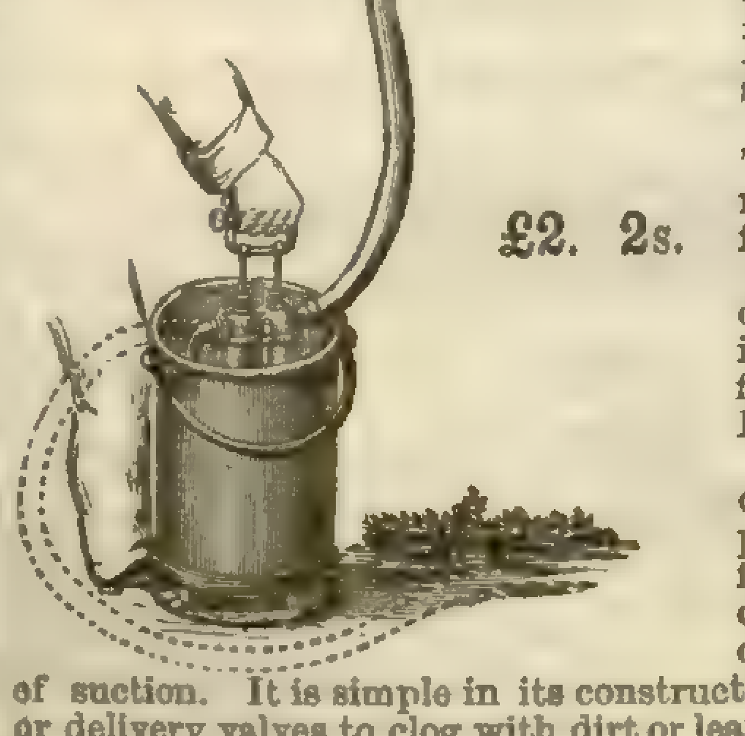
Wholesale by Price's Patent Candle Co., Limited.

MR. ALEXANDER PONTEY, Deceased.—All persons having any Claims or Demands against the Estate of the late Mr. Alexander Pontey, of 21, Cornwall Street, Plymouth, Devon, Nurseryman, Seedsman, and Florist, are requested to forward particulars thereof to his Executrix, Mrs. Mary Lyne Pontey, at 21, Cornwall Street, Plymouth, aforesaid, in order that the same may be examined, and, if found correct, discharged; and all persons Indebted to the said Estate are requested to pay the amount of their respective debts, without delay, to the said Executrix.

Mrs. Pontey begs to offer her best thanks to the Friends and Customers of her late Husband for the kind and liberal support afforded him during his lifetime, and to inform them that it is her intention to continue the business until the same be satisfactorily disposed of.

Dated Plymouth, August 1, 1862.

AMERICAN PORTABLE FIRE ANNIHILATOR and GARDEN ENGINE.



£2. 2s.

An efficient means of Extinguishing Fires at their commencement. Nine out of ten Fires in London are put out on their first appearance by the London Fire Brigade with Hand Pumps of considerably less power.

One man will throw 7 or 8 gallons per minute from 40 to 50 feet with it.

It is an effective Garden Engine for cleansing or syringing Wall-fruit or Rose Trees, Plants, or Vines.

It may be used to draw water from the pail in which it is fixed, or from a tank or pond by the addition of the required length of suction. It is simple in its construction, having no suction or delivery valves to clog with dirt or leaves.

No Establishment, either private, commercial, or manufacturing, should be without one.

Six feet of Flexible Suction, with Union and Suction Rose, &c., extra, 12s. Longer lengths of Suction at 1s. 6d. per foot.

May be obtained of all Ironmongers and Seedsmen in Town and Country, or of the Manufacturers,

John Warner & Sons, Crescent, Cripplegate, London, E.C.

Sacks. Bags. Mats.

JAMES T. ANDERSON, Sack and Bag Maker, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from 34, Lime Street), supplies SEED BAGS at the following low prices:—

2 Bushel Bags..3s. 9d. per doz. | ½ Bushel Bags..4s. 9d. per doz.
1 Bushel Bags..6s. 3d. „ | Peck Bags ....3s. 6d. „

Coarser Bags much cheaper.

ARCHANGEL and PETERSBURG MATS.

HENRY J. MORTON and CO., 2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern

for Cottage Houses, &c., to contain 50 gallons, 26s.; 80 gallons, 31s. each; and 140 gallons, 37s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

Galvanised Iron Pumps

for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.

Galvanised Iron Swing Water Barrows

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35s. 0d. each.

WM. BLAKE'S DESCRIPTIVE and CULTURAL SEED POCKETS, GERMAN SEED ENVELOPES, &c. Catalogues and Samples on application.

60—70, Howard Street, Glasgow.

THE MOST PERFECT DRAINAGE of FLOWER POTS is secured by the patent Bijou Drainer, which also ensures economy of space, time, and money; is everlasting, and dispenses with the "Crock" nuisance. Price of No. 1 size, 2s. per 100; No. 2, 2s. 6d.; No. 3, 3s. 6d.

To be had wholesale of the Inventor, Mr. Law, 16, Moorgate Street, and retail of all Nurserymen and Seedsmen.

SHAW'S TIFFANY.—The lightest, cheapest, and most durable of all materials for Shading Conservatories and Hot-houses is SHAW'S TIFFANY. As a protection from cold winds and scorching heat, nothing equal to SHAW'S TIFFANY. For effectually preserving Fruits and Seeds from the Attack of Birds, Wasps and Insects, use SHAW'S TIFFANY.

Sold by all Nurserymen and Seedsmen. Samples and Prices on application.

J. Shaw & Co., Oxford Street, Manchester.

MINTON and CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.

Manufactory: Stoke-upon-Trent.

Garden Border Edging Tiles.

F. and G. ROSHER, Cement, Brick, and Tile Merchants, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability. Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. Rosher, at their Premises as above.

BENJAMIN EDGINGTON'S Temporary Rooms, Lined, Boarded, and Decorated.

MARQUEES and TENTS of all dimensions, for Horticultural Shows, &c., on sale or hire.

FLAGS and BANNERS of every description, for sale or hire.

RICK CLOTHS, New and Second-hand, with Poles, &c., complete.

Address, Benjamin Edgington, 2, Duke Street, London Bridge, Southwark, S.E. No other Establishment.

FOWLER'S PATENT STEAM PLOUGH and CULTIVATOR may be seen at Work in every Agricultural County in England. Addresses of Farms (which are open to inspection), given on application, where the Machine has been at Work for three or four years.

The New Application of the ORDINARY PORTABLE ENGINE may also be seen at Work at any time.

Price, with Self-moving Anchor, Three-furrow Plough, and Five-tined Grubber, 285l.

For particulars apply to John Fowler, 28, Cornhill, London, E.C.; and Steam Plough Works, Leeds.

CHEAP DOMESTIC FLOUR MILLS, CHAFF CUTTERS, OAT BRUISERS, LATHES, and all kinds of Machinery.

LAWN MOWERS and all kinds of machinery Repaired.

S. Smith, 204, High Holborn, London, W.C.

Ironfounder and Whitesmith

By Special Appointment to her Majesty the Queen.

W. WALKER, Victoria Foundry, York, Manufacturer of Improved Hot-water Apparatus for Heating every description of Hothouses, Churches, &c. Improved Ventilating Apparatus for Horticultural Buildings, Improved Cattle Fencing, Poultry and Game Netting, Garden Chairs, Iron Pumps, Improved Yorkshire Cooking Ranges, Entrance Gates and Palisades. New Patent "Self Feeding" Tubular and other Hotwater Boilers.

Walker's Improved Iron Mangers and Racks for Hunting, Carriage, and Farm Horse stables.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the SCORCHING RAYS of the SUN. "FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.

Elisha Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C.; and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

Gutta Percha Tubing for Watering Gardens.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following *Testimonial from* Mr. J. Farrah, *Gr. to* Boswell Middleton Jalland, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joints, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THESE MACHINES were entered at the Royal Horticultural Society's Great Shows held at South Kensington, May 21, June 11, and July 2. They were the only Machines Highly Commended (no Prizes were given). They have carried off every Prize that has been given in all cases of Competition, and have just been awarded the Prize Medal of the Great International Exhibition, July 11, 1862.

GREEN'S PATENT LAWN MOWERS have attained the largest sale of any Machines extant, and are in constant use at the Royal Gardens, Windsor; the Royal Horticultural Society's Gardens, South Kensington; the Royal Botanic Gardens, Regent's Park; the Crystal Palace Company's Gardens, Sydenham; the Kensington Palace Gardens; the Hyde Park Gardens; and in most of the Nobility, Clergy, and Gentry's Parks, Squares, &c., throughout the Kingdom.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0	£8 15 0
To Cut 20 inches	8 0 0	9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0	£ 9 17 6
To Cut 24 inches	9 0 0	10 7 6

To Cut 10 inches. Suitable for a Lady.

This Machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0	£21 10 0
To Cut 36 inches	23 0 0	24 16 0
To Cut 42 inches	26 0 0	28 2 0
To Cut 48 inches	29 0 0	31 8 0

Leather Boots for Horse, per set, £1 4*s.*

Donkey and Pony Machines, including Box of Requisites & Traces.

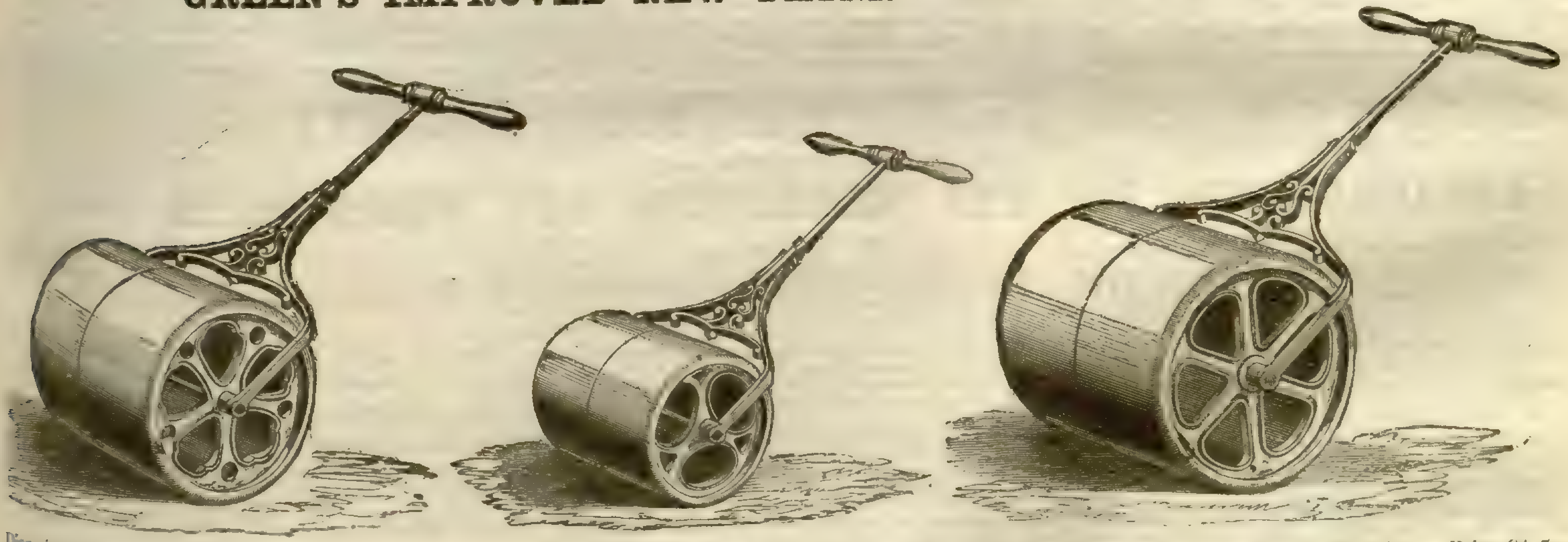
	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0	£12 10 0
To Cut 26 inches	12 10 0	13 12 0
To Cut 30 inches	16 14 0	18 0 0

Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

The above Machines are made from the best materials, and of superior workmanship; are delivered carriage free to all the principal Railway Stations and Shipping Ports in England; are warranted to give satisfaction, and if not approved of can be at once returned, if sent carriage free to Leeds.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length 22 inches.... Price £3 5*s.* | Diameter 16 inches, length 17 inches.... Price £2 10*s.* | Diameter 24 inches, length 26 inches.... Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths,* and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Strawberry Plants—Ready.

CUTHILL'S SORTS, selected Plants for bearing in 1863, all one price, 7s. 6d. per 100. Early Black Prince, Early Princess Royal, Highland Mary, Richard II., Prince of Wales, and Newton Seedling, lasted in bearing this year 60 days. Strawberry Pamphlet, 1s.

Best MUSHROOM SPAWN, 5s. per bushel.

JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

Strawberry Plants and Catalogue.

WILLIAM JAMES NICHOLSON has great pleasure in again offering fine laid Plants of his great Collection of STRAWBERRIES of more than 200 varieties, including all those New Sorts sent out since the publication of the Catalogue for 1860, and many others of great interest.

A new DESCRIPTIVE CATALOGUE of the above may be had by applying to the Grower,

WILLIAM JAMES NICHOLSON, Egglescliffe, Yarm, Yorkshire.

STRAWBERRIES for AMATEURS.—Plants of the six most useful sorts, chosen to afford a long succession of fine fruit, one of each sort, or four plants of ECLIPSE, free by post, for 24 stamps. The sorts include ECLIPSE, new, pronounced first rate, both for Forcing and Out-doors, by the Royal Horticultural Society; PRINCESS, the finest of the very early sorts; SIR HARRY, SIR CHARLES NAPIER, WONDERFUL, the best for very rich soils; and ELEANOR, very fine and late; or OSCAR, if ordered.

Also very choice CAULIFLOWER and pure WHITE BAVARIAN CUCUMBER, 1s. per packet.

Address A. MOSS, Jun., Chadwell Heath Mills, Essex, E.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.
2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

THOMAS JACKSON & SON, Nursery, Kingston, S.W.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned NEW and fine AZALEAS. For October next.

FLAG OF TRUCE.—The finest double white known; has obtained two Certificates and a Silver Medal for its superior merits, being the highest testimonial any Azalea has yet received, 21s. to 31s. 6d. each.

PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21s. to 31s. 6d. each.

CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very superior, 21s. to 31s. 6d. each.

LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10s. 6d. to 15s. each.

CRISPIFLORA ROSEA.—Fine bright rose; the flowers are waved or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10s. 6d. to 15s. each.

PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10s. 6d. and 15s. each.

Any of the above may be had in grafted plants, or on their own roots.

For full particulars see *Gardeners' Chronicle* of August 16, 1862, p. 758; or in CATALOGUES, which may be had gratis on application.

Dulwich, Surrey,

Choice Seeds, in Sealed Packets.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give satisfaction.

AMARYLLIS, saved from choice named varieties, 2s. 6d. per packet.

CALCEOLARIA, Herbaceous, finest mixed, 1s. 6d., 2s. 6d., and 3s. 6d. per packet.

CINERARIA CRUENTA, fine mixed seed from named flowers, 1s. 6d. and 2s. 6d. per packet.

PRIMULA SINENSIS FIMBRIATA, Red, White, or Mixed, very choice, 2s. and 3s. 6d. per packet.

For numerous Testimonials see BULB CATALOGUE, post free on application.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine Specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to 7s. 6d. each;

ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA, 21s. each.

A Select LIST of the most rare kinds will be forwarded Post Free on application.

Dorking Nursery.

New South Wales—Collections of Ferns.

M. GUILFOYLE begs to announce that he has made arrangements to execute Orders for Europe of COLLECTIONS of FERNS, selected from all the Australian Colonies and New Zealand by his Correspondents there, and also from the South Sea Islands, supplied by competent Collectors in New Caledonia, the New Hebrides, &c. Due care will be taken that none but well established plants in pots are sent out from his Nursery, and for such he has fixed the price of each case, containing at least 25 species of Australasian Ferns in duplicate, at 16l., (freight and case included), shipped by him for London to order. The Island Ferns, among which a constant succession of novelties may be expected for years to come, will be separately charged for, at prices extremely moderate.

M. GUILFOYLE will also be happy to execute Orders for Seeds, Bulbs, and Living Plants of all kinds from the Islands of the S. W. Pacific, especially including Orchids, Pines, &c.

Orders with remittances to be addressed to M. GUILFOYLE, Exotic Nursery, Double Bay, Sydney, N. S. Wales.

Exotic Nursery, Rouen, France.

TO THE TRADE ONLY.

J. WOOD respectfully informs the Trade that he has on Sale a great quantity of grafted EPIPHYLLUM TRUNCATUM, such as SPECTABILIS, ELEGANS, AURANTIACUM, MULTIFLORUM, RUCKERIANUM SUPERBUM, RUCKERIANUM RUBRUM, &c., on stout stems from 6 to 15 inches. These are the most beautiful of all winter flowering plants, the strongest heads capable of giving from 40 to 60 flowers.

Ten new and very superior varieties will be sent out as soon as the number (limited) of Subscribers is attained in two years grafts. Orders amounting to 5l. and upwards sent carriage paid to London. Prices on application.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING 1863, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

GNAPHALIUM LANATUM.—See *Cottage Gardener*, No. 74, page 420.—This splendid white Edging Plant is to be obtained at H. LANE & SON'S. Strong Plants 1s. 6d. each, or 12s. per dozen, for taking Cuttings from this Autumn. Directions for Propagating will be enclosed, if required, with each order.

Nurseries, Berkhampstead.

Best Picked Mushroom Spawn.

JAMES DICKSON AND SONS' stock of the above is large and of very best quality. Low price on application.

The Trade liberally supplied.

The "Newton" Nurseries, and 102, Eastgate Street, Chester.

To Nurserymen and Seedsmen.

SAMUEL CHEESE begs to inform his numerous patrons that his now MUSHROOM SPAWN is now quite ready and in first-rate condition. All gentlemen who wish for a good crop of Mushrooms ask for SAMUEL CHEESE'S Mushroom Spawn, which has stood unrivalled upwards of 70 years.

Direct 231, Oxford Street, W.

Notice to Nurserymen, Gentlemen's Gardeners, &c.

IN consequence of J. C. PADMAN Retiring from the Business carried on under the name of GODWIN & PADMAN, at Broadfield Nursery, Sheffield, the choice and valuable Stock of STOVE and GREENHOUSE PLANTS, TREES, &c. will be offered at considerably reduced prices.

LISTS on application to GODWIN & PADMAN, Broadfield Nursery, Sheffield.

Cheap Plants.

GODWIN AND PADMAN (owing to the intended Retirement of Mr. PADMAN) offer the undermentioned Plants at the following cheap rate:—

	Each—s.	d.		Each—s.	d.
Allamanda Neriifolia ..	1	0	Epiphyllum truncatum ..	1	0
Ardisia crenulata, per dozen, 6s. to	9	0	Gardenia citriodora ..	1	6
Aspidistra lurida variegata	1	0	,, florida	1	0
Begonia Duchesse de Brabant			,, Fortuneana ..	1	6
,, Baron de Oustenoff			Hoya bella	0	9
,, Eckhautei			,, Paxtoni	0	9
,, Marshalli			,, picta	1	6
,, Mine d'Argent			,, variegata	1	6
,, vittata			Imatophyllum miniatum	5	0
1s. each, 4s. 6d. the Six.			Lycopodium circinale ..	1	0
Canna coccinea vera ..	1	0	,, Wildenovi ..	1	0
Catesbæa spinosa ..	1	6	Monochætum ensiferum	0	9
Cœnopteris fœniculacea	1	0	Melastoma atropurpurea	1	0
Coleus Verschaffelti, per dozen, 6s. to	9	0	Mussænda frondosa ..	1	0
Dipteracanthus affinis ..	1	0	Pothos argyræa, 2 vars., 1s. 6d. to	2	6
Dracæna ferrea, per doz., 6s. to	9	0	Rhynchospermum jasminoides	1	0
,, terminalis, doz., 9s. to	12	0	Rhopala Skinneri, 3s. 6d.	5	0
			Vinca rosea	1	0

	Per doz.—s.	d.
CHRYSANTHEMUMS, finest named varieties, ...	4	0
,, ,, ,, ,, of 1862 ..	9	0
FUCHSIAS, of sorts .. .. per 100	20	0
,, new, of 1862	9	0
GERANIUMS, Zonale, 40 varieties	4	0
HOLLYHOCKS, finest named varieties, from	6	0
PHLOXES ,, ,, ...	4	0
PETUNIAS, new varieties of 1862	9	0
TROPÆOLUMS ,, ,, ...	9	0

Terms, Cash.

CATALOGUES on application to GODWIN & PADMAN, Broadfield Nursery, Sheffield.

ROYAL HORTICULTURAL SOCIETY.

REMAINING

ARRANGEMENTS FOR THE EXHIBITIONS AND MEETINGS IN 1862,

TO BE HELD AT

THE GARDEN, SOUTH KENSINGTON, W.

September 23, Tuesday. Fruit and Floral Committee.

October 8, Wednesday. Fruit and Floral Sub-Committee.

October 8, 9, & 10. GREAT INTERNATIONAL SHOW OF FRUIT, GOURDS, ROOTS, VEGETABLES, AND CEREALS. The Show of Gourds, Roots, and Cereals to continue until the 18th.

Nov. 7, Friday. Meeting for Election of Fellows.

,, 11, Tuesday. Fruit and Floral Committee.

Dec. 9, Tuesday. Fruit and Floral Committee.

*** At some period during the season it is hoped that the Memorial of the Exhibition of 1851 will be finished, and probably publicly uncovered.

ELECTION OF FELLOWS.

Gentlemen and Ladies wishing to become Fellows have to be proposed by some one already a Fellow, to whom they are personally known. The subscription is Two Guineas Entrance Fee, and Two Guineas or Four Guineas a year according to the privileges wished.

ADMISSION OF THE PUBLIC.

I. REMAINING HORTICULTURAL EXHIBITIONS.

October 8. FRUIT AND VEGETABLE SHOW .. .. .. 2s. 6d. | October 9. FRUIT AND VEGETABLE SHOW .. .. 1s. 0d. | October 10. FRUIT AND VEGETABLE SHOW .. .. 1s. 0d.

October 11-18. GOURDS, ROOTS, AND CEREALS .. .. 1s. 0d.

Admission by payment at the door, or by tickets previously purchased.

From 12th July to 18th October.

			s.	d.
Sundays		No admission by payment.		
Mondays .. (Band)	}	Gardens alone	1	6
Tuesdays .. (Band)	}	Gardens and Exhibition	1	6
Wednesdays (Band)	}	Gardens from Exhibition	0	6
Thursdays .. (Band)	}			
Fridays .. (Band) ..		.. ..	2	6
Saturdays .. (Bands) ..		.. ..	5	0

From 18th October to 31st December.

		s.	d.
Sundays	No admission by payment.		
Mondays	.. ..	0	6
Tuesdays	No admission by payment.		
Wednesdays	.. ..	2	6
Thursdays	No admission by payment.		
Fridays	ditto.		
Saturdays	.. ..	2	6

The Council have the pleasure to announce that Her Majesty's Commissioners for the Exhibition of 1851 have given their consent that until October 18 Visitors may be permitted to use a temporary roadway for admission from Kensington Gore leading to the back of the Conservatory. The Council sought this concession in order to abate the confusion which, without it, must be attendant on the number of carriages visiting the International Exhibition of 1862.

ROYAL HORTICULTURAL SOCIETY.
SHOW of AUTUMN FLOWERS, September 10.
AWARDS OF THE JUDGES.

Class 1.—48 CUT ROSES, 3 trusses, distinct kinds. (Nurserymen.)
1st prize, Mr. J. Mitchell, Piltdown, Maresfield, 4*l.*
2d, Messrs. Paul & Son, Cheshunt, 3*l.*
3d, Mr. B. P. Francis, Hertford, 2*l.*

Class 2.—24 CUT ROSES, 3 trusses, distinct kinds. (Amateurs.)
1st, Mr. J. T. Hedge, Reed Hall, Colchester, 4*l.*
2d, Dr. Cooper, The Limes, Slough, 3*l.*
3d, Mr. J. Hollingworth, Maidstone, 2*l.*

Class 3.—24 CUT ROSES, Single Blooms, distinct kinds. (Open.)
1st, Mr. C. Turner, Royal Nurseries, Slough, 2*l.*
2d, Messrs. Paul & Son, The Old Nurseries, Cheshunt, 1*l.*
3d, Mr. J. Wright, Ivy Lodge, Twickenham, 10*s.*

Class 4.—6 ROSES in POTS, not more than 2 of one kind. (Open.)
No competition.

Class 5.—12 HOLLYHOCKS, in Spikes, distinct kinds. (Open.)
1st, Mr. W. Chater, Nurseryman, Saffron Walden, 3*l.*
2d, Messrs. Downie, Laird, & Laing, Forest Hill, 2*l.*
3d, Mr. H. May, The Hope Nursery, near Bedale, 1*l.*

Class 6.—12 HOLLYHOCKS, Single Flowers, distinct kinds. (Open.)
1st, Mr. W. Chater, Nurseryman, Saffron Walden, 2*l.*
2d, Mr. H. May, The Hope Nursery, near Bedale, 1*l.*
3d, Mr. W. Bragg, Nurseryman, Slough, 15*s.*
Extra, Messrs. Minchin & Son, Hook Norton, Oxon, 10*s.*

Class 7.—24 GERMAN ASTERS, Quilled, distinct kinds. (Open.)
1st, Mr. R. H. Betteridge, Milton Hill, Berks, 2*l.*
2d, Mr. J. Betteridge, Steventon, Berks, 1*l.*
3d, Mr. C. Sandford, Gr. to T. Thomasset, Esq., Walthamstow, 15*s.*
Extra, Mr. C. Wyatt, Gr. to H. Willis, Esq., Epsom, 10*s.*

Class 8.—24 FRENCH ASTERS, Tasselled, distinct kinds. (Open.)
1st, Mr. R. H. Betteridge, Milton Hill, Berks, 2*l.*
2d, Mr. C. Sandford, Gr. to T. Thomasset, Esq., Walthamstow, 1*l.*
3d, Mr. C. Wyatt, Gr. to H. Willis, Esq., Epsom, 15*s.*
Extra, Mr. J. T. Hedge, Reed Hall, Colchester, 10*s.*

Class 9.—24 GLADIOLUS, Cut Spikes, distinct kinds. (Open.)
1st, Messrs. Youell & Co., Royal Nursery, Gt. Yarmouth, 2*l.* 10*s.*
2d, Mr. J. Standish, The Royal Nursery, Bagshot, 1*l.* 10*s.*
3d, Mr. W. Paul, Cheshunt Nurseries, Waltham Cross, 1*l.*
Extra, Messrs. Paul & Son, The Old Nurseries, Cheshunt, 15*s.*

Class 10.—12 GLADIOLUS, Cut Spikes, Brenchleyensis colour. (Open.)
1st, Messrs. Youell & Co., Royal Nursery, Great Yarmouth, 2*l.*
2d, Mr. J. Standish, The Royal Nurseries, Bagshot, 1*l.* 10*s.*
3d, Mr. J. Cattell, Nurseryman, Westerham, 1*l.*
Extra, Messrs. A. Henderson & Co., Pine-Apple Place, Edgware Road, 10*s.*

Class 11.—12 Pots of GLADIOLUS, distinct kinds, three in each Pot. (Open.)
1st, Messrs. Cutbush & Son, Nurserymen, Highgate, 3*l.*
2d, Mr. J. Cattell, Nurseryman, Westerham, 2*l.*

Class 12.—24 PHLOXES, Single Trusses, distinct kinds. (Open.)
1st, Mr. J. Standish, The Royal Nurseries, Bagshot, 2*l.*
2d, Mr. C. Turner, The Royal Nurseries, Slough, 1*l.*
3d, Mr. J. Salter, Versailles Nursery, Hammersmith, 15*s.*

Class 13.—12 DWARF PHLOXES, Perennial Upright kinds. (Open.)
1st, Mr. J. Cattell, Nurseryman, Westerham, 3*l.*

PRIZE OFFERED by DR. LINDLEY.
Class 14.—PHLOX, Dwarfest and best Perennial Upright Growing.
1st, Mr. C. Turner, The Royal Nurseries, Slough, 1*l.*

Class 15.—24 VERBENAS, 5 trusses of each, distinct kinds. (Open.)
1st, Messrs. Minchin & Son, Hook Norton, Oxon, 1*l.* 10*s.*
2d, Mr. G. Smith, Florist, Hornsey Road, 1*l.*
3d, Mr. C. Turner, The Royal Nurseries, Slough, 15*s.*
Extra, Mr. W. H. Treen, Victoria Nursery, Rugby, 10*s.*

Class 16.—48 DAHLIA BLOOMS, distinct kinds. (Nurserymen.)
1st, Mr. John Keynes, Salisbury, 5*l.*
2d, Mr. Charles Turner, Slough, 4*l.*
3d, Mr. H. May, The Hope Nursery, Bedale, 3*l.*

Class 17.—24 DAHLIA BLOOMS, distinct kinds. (Nurserymen.)
1st, Mr. C. Turner, Slough, 3*l.*
2d, Mr. J. Keynes, Salisbury, 2*l.*
3d, Mr. J. Cattell, Westerham, 1*l.*

Class 18.—18 DAHLIA BLOOMS, Fancies, distinct kinds. (Nurserymen.)
1st, Mr. J. Keynes, Salisbury, 3*l.*
2d, Mr. C. Turner, Slough, 2*l.*
3d, Mr. J. Cattell, Westerham, 1*l.*

Class 19.—24 DAHLIA BLOOMS, distinct kinds. (Amateurs.)
1st, Mr. J. T. Hedge, Reed Hall, Colchester, 5*l.*
2d, Mr. C. Fellowes, Shotesham Rectory, Norwich, 4*l.*
3d, Mr. C. J. Perry, The Cedars, Castle Bromwich, 3*l.*
Extra, Mr. W. Corp, Milford, Salisbury, 1*l.*

Class 20.—12 DAHLIA BLOOMS, distinct kinds. (Amateurs.)
1st, Mr. W. P. Barnard, Brook Cottage, Darlington, 3*l.*
2d, Mr. W. Corp, Milford, Salisbury, 2*l.*
3d, Mr. T. Charlton, Kibworth, Market Harborough, 1*l.*
Extra, Mr. J. Harris, Broomfield, Chelmsford, 15*s.*
Extra, Mr. R. Hopkins, Brentford, 10*s.*

Class 21.—12 DAHLIA BLOOMS, Fancies, distinct kinds. (Amateurs.)
1st, Mr. W. Corp, Milford, Salisbury, 3*l.*
2d, Rev. C. Fellowes, Shotesham Rectory, Norwich, 2*l.*
3d, Mr. C. J. Perry, The Cedars, Castle Bromwich, 1*l.*

Class 22.—12 BOUQUET DAHLIAS, in Pots.
No competition.

Class 23.—MISCELLANEOUS. For Flowers not specified. (Open.)
1st, Messrs. J. Veitch & Son, Collection of Fine Foliaged Plants, 4*l.*
2d, Messrs. J. & C. Lee, Collection of Fine Foliaged Plants, 3*l.*
3d, Mr. Wm. Bull, Collection of New and Rare Plants, 2*l.* 10*s.*
Extra, Messrs. A. Henderson & Co., 12 Caladiums, 2*l.*
Extra, Messrs. J. Ivery & Son, Collection of Hardy Ferns, 1*l.* 10*s.*
Extra, Messrs. Cutbush & Son, 12 Pots of Lilium lancifolium, 1*l.*
Extra, Mr. J. Cattell, 24 Pots of Helichrysums, 10*s.*
Extra, Monsieur Chantrier, Head Gr. to the Duke de Levis Vantadour, Noisiel, near Paris, for several Pine Apples of a new variety called Charlotte Rothschild, said to be an excellent Winter Pine, 1*l.* 10*s.*

STANDARD PLANTS for the DECORATION of the DINNER TABLE (Prize offered by a Fellow of the Society).
Messrs. J. Veitch & Son, Exeter & Chelsea, 5*l.*

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.
LIST OF AWARDS, September 10, 1862.

First-Class Certificate.
Verbena Rugby Hero, from Mr. W. H. Treen, Rugby
Adiantum Féei, from Mr. W. Bull, Chelsea
Latania Verschaffeltii, from Mr. W. Bull
Dahlia Patent, from Mr. Keynes, Salisbury
Athyrium Filix-fœmina Iveryanum, from Mr. Ivery, Dorking
Athyrium Filix-fœmina mucronatum, from Mr. Ivery
Pelargonium Lucy Grieve, from Messrs. E. G. Henderson & Son
Pelargonium Italia Unita, from Messrs. E. G. Henderson & Son
Aerides nobile, from Messrs. Veitch & Son, Chelsea & Exeter
Athyrium Filix-fœmina Parsonsæ, from Mr. Parsons, Welwyn

Second-Class Certificate.
Dahlia Charlotte Dorling, from Mr. Turner, Slough
Diplazium glaberrimum, from Mr. Bull, Chelsea
Araucaria sp. "Port Molle," from Mr. Bull, Chelsea
Dahlia Le Premier, from Mr. Keynes, Salisbury
Dahlia Serenity, from Mr. Rawlings, Bethnal Green
Dahlia The Bride, from Mr. Rawlings
Cattleya Dominiana alba, from Messrs. Veitch & Son, Exeter and Chelsea
Calanthe Dominii, from Messrs. Veitch & Son
Calceolaria ericoides, from Messrs. Veitch & Son
Rhapis flabelliformis variegata, from Messrs. Veitch & Son
Dahlia Bellona, from Mr. Harrison, Darlington

Thomas Moore, Secretary to the Committee.

ROYAL HORTICULTURAL SOCIETY.
FRUIT COMMITTEE.

A Meeting of the Fruit Committee will be held at the Rooms, South Kensington, on TUESDAY, September 23, for the Examination of such FRUITS and VEGETABLES as may then be submitted for judgment, and when, besides Certificates of Merit for Seedlings, the following Prizes will be awarded:—

Class A.—For the best Three Dishes of DESSERT APPLES, distinct kinds	20*s.* 10*s.*
Class B.—Ditto ditto PEARS	20*s.* 10*s.*
Class C.—Ditto ditto PLUMS	20*s.* 10*s.*
Class D.—Ditto ditto CHERRIES	20*s.* 10*s.*
Class E.—For the best MELON	42*s.*
Class F.—For the best Dish of GRAPES	20*s.* 10*s.*
Class G.—For the Dish of FIGS	20*s.* 10*s.*

*** All Packages and Communications must be received at the Rooms by 11 o'Clock on the day of Meeting, and addressed to
Robert Hogg, LL.D., Secretary of the Committee.

BRIGHTON and SUSSEX FLORICULTURAL and HORTICULTURAL SOCIETY.

The NINTH ANNUAL GRAND AUTUMN SHOW will be held on WEDNESDAY and THURSDAY, September 17 and 18, at the Royal Pavilion. Prizes to the amount of 350*l.* are offered for PLANTS, FRUITS, CUT FLOWERS, &c.

Schedules of Prizes can be had on application to the Secretary, 96, St. James's Street, or of E. Spary (General Superintendent of the Exhibition), Queen's Graperies, Brighton.

By Order of the Committee,
Brighton, Sept. 13. Edward Carpenter, Secretary.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 13, 1862.

Now that few things are astir in Horticulture except shows let us take a look into a matter that rather considerably concerns gardeners as well as the rest of the world, if not gardening itself. Nobody likes to be cheated, and gardeners as little as anybody. Nevertheless they are cheated, and pretty considerably too. We do not allude to the doings of the gentlemen with elastic consciences who mix dead seeds with live ones, kill Rape to manufacture Turnip seed, or infuse a supply of Cocksfoot grass into prime lawn mixtures. These things are pretty generally known to all whom they concern, and are easily guarded against. What we now allude to are frauds in articles of daily consumption, unsuspectingly swallowed by the simpleminded to the pleasant gain of rogues. Upon this matter a late report of the Commissioners of Inland Revenue throws a good deal of light that certainly should not be hidden under a Blue Book.

The Excise Office is charged, among other duties, with that of preventing fraud in such articles of consumption as are liable to the payment of duty. The object of the Inland Revenue is not only to secure the payment of duties by all exciseable articles, but to prevent substances which pay no duty being mixed with those which pay it, a practice that, if unchecked, would manifestly injure the Revenue. For this purpose they are armed with very extensive powers, under the Excise Acts, which subject fraudulent dealers to penalties so severe as to ruin them; and which, to tell the truth, the Commissioners of Excise, although merciful, are by no means slow to carry into execution. Happy we who live beneath so paternal a government. Left unprotected we should be devoured by Harpies.

In order to enable the necessary examination of excisable articles to be carried out fairly, and effectually, there has been established of late years at Somerset House what is called "The Laboratory," in which suspected articles are tested by competent examiners, at the head of whom is Mr. George Phillips, a very experienced officer, than whom no one more entirely competent to execute the duties confided to him could possibly be chosen. It is to his report to the Commissioners of Inland Revenue that we advert. To show the very extensive enquiries in which he has to engage, it is enough to say "that during the last three years nearly 32,000 samples of that limited class of articles which are subject to Revenue duties have been analysed in my department, any one of which might have given, and some of which did give, rise to prosecutions, whilst during the year just ended 11,431 samples were analysed, and 103 persons were, upon scientific evidence furnished by the Laboratory, prosecuted to conviction, the penalties imposed amounting to upwards of 3000*l.*" And it is to be remembered that these penalties represent but a small part of the cost which the convicted dealers have to support, penalties themselves being often mitigated, except in cases that admit of no excuse.

The first topic introduced by Mr. Phillips is *Tobacco*. Happily the day when the smoker was tenderly cared for by the Tobacconist is pretty nearly gone. He is no longer indulged in the luxury of consuming the leaves of Docks, Burdocks, Cabbages, Rhubarb, and miscellaneous refuse under the name of Tobacco. Dealers not only now know that punishment is nearly certain to follow detection, but they "feel that immunity from detection is very precarious." Mr. Phillips states that "during the year just ended two manufacturers in *Yorkshire* were discovered to be adulterating their Tobacco with Rhubarb leaves; they, together with the person who supplied them with the leaves, were convicted of the offence, heavy penalties being imposed upon them. The illicit use of Rhubarb leaves, although at one time common, is now but rarely attempted, as, since the general application of the microscope to Revenue purposes, the fraud cannot long escape detection. A few cases of the adulteration of roll Tobacco with Cabbage leaves have also been discovered in Scotland and Ireland." From this it would seem that Yorkshire continues to be highly distinguished in the art of fabricating spurious goods; whether Leeds maintains its reputation in that respect we are not told.

Snuff has received Mr. Phillips' attention. He tells us that England is not anything like so bad as it used to be, only 19 samples having been proved to be adulterated in 1861 against 110 in 1856. This would be good news for old women, if we were not assured that Irish "blackguard" practices are as rife as ever. "Some of the snuff manufacturers in Ireland have for years been more prone to adulterate their goods than have the manufacturers in other parts of the kingdom, and the readiness with which they have abandoned one adulterating ingredient when they found that its character was known to the Revenue, and have adopted another, which they no doubt, from an imperfect knowledge of the powers of the microscope, trusted could not be detected, has occasionally been baffling for a time to my department. The latest adulterant which has been employed is the ground acorn cups of Valonia Oak. This substance is, in appearance, exactly the same as high dried snuff, it being impossible, without chemical tests, or the aid of the microscope, to prove any difference between the two. During the past year six manufacturers in Ireland were convicted of adulterating their snuff with valonia, and heavy penalties were imposed upon them."

Then there is *Pepper*, which we ourselves have seen to be composed of Mustard skins, Capsicum refuse, Rice, and Oatmeal, or something of the sort. It is evident that it does not pay, as it once did, to play such tricks. Law is too strong for even pepper-rascals. Out of 44 samples seized in 1861, only 19 were fraudulent. "Thirteen of these samples were adulterated with ground Rice; in one instance to the extent of 60, and in another 40 per cent. Four samples contained carbonate of magnesia, and of these one also contained 5 per cent. of ground Coriander seeds. The two other samples were contaminated with about 11 per cent. of finely ground quartz." This news should be borne in mind by the worthy cooks who never can make anything peppery.

As to *Coffee* it continues to be mixed with Chicory to the extent of about a quarter in the shops of some dealers, but upon the whole it is pretty pure. Nor need it ever be purchased in an adulterated condition by those who have the means of grinding the Coffee bean themselves. That however is not the case with the poor, who are the principal victims of rascally grocers.

In *Tea* the frauds still committed are enormous. "Probably few articles are more generally adulterated than tea, particularly that which is sold as green tea. This sophistication, however, is, I believe, almost invariably effected before the

commodity is imported; and this circumstance renders the fraud, when committed in this country, very difficult to prove by a mere analysis, which can only furnish presumptive evidence, as the tea can be easily adulterated so as to make it impossible to determine, positively, whether the offence was committed here or in China. The modes in which the Chinese adulterate the teas brought to this country are both ingenious and varied. The black teas often contain a very undue quantity of stalks, or pieces of very fine twigs, and seared leaves; others are mixed with a large proportion of leaves, which from their exhausted state have no doubt been used and re-dried in China; others again are much loaded with a very fine sand; whilst a favourite mode of adulteration is the adding to the tea from 5 to 10 per cent. by weight of very small fragments of quartz, which, by their having been made black by a coating of plumbago, are proved not to be adventitiously present. It may be observed, that the last two forms of adulteration are more adverse to the interests of the dealer than to the consumer, as the illicit substances, from their heavy gravity, will nearly all fall to the bottom of the dealers' canisters." Upon this subject the *Times* has some observations that are well worth consideration. We quote from a leading article of August 15.

"The most inveterate of adulterations, however, is changing the appearance of black tea to green tea, by colouring it with the same colour the Chinese use on green tea; and upon this point the consciences of tea-dealers seem to be hopelessly callous. One of them addressed a letter to the Commissioners of Inland Revenue, which really deserves publicity. It was in these very words:—'London, April 29, 1862. Gentlemen, — A scarcity of green tea having taken place, while we have an abundant supply of black tea this season, I shall be much obliged by a reply to the following questions — Is it legally right to colour black tea of a green hue, or *vice versâ*, the tea having duly paid the legitimate duty?—Your most obedient servant, ——.' This is much the same as asking whether, there being a sad scarcity of sovereigns and a good supply of shillings, it is allowable to turn the latter into the former by the aid of a yellow wash; for the original cost of *low black* tea is only one-tenth as much as *fine green*. The Commissioners fear this use of green pigments, and the 'facing' of old tea leaves with Prussian blue and gum, have become 'a regular and recognised part of some tea-dealers' business.' This kind of fraud may receive a check by increased vigilance on the part of the public. The worst is, that the most subtle 'sophistication' of tea is effected in China, by mixing it with nodules made up of sand, gum, and dust, and 'blackened fragments of quartz.' It is high time that vigorous steps should be taken to stop this wholesale pollution of our favourite beverage. If all tea was from this time imported uncoloured, who then could get rid of 'nodules made up of sand, gum, and dust, and broken quartz?' Even old brown wintery leaves could not be longer disguised, and so made to counterfeit the finer descriptions. We cannot legislate against the Chinese, as our ancestors legislated against those at home who counterfeited tea; but Government might make such Custom House regulations as would teach our acute tea merchants that honesty is the best policy. Suppose all their importations of coloured tea to be forfeited, or even if they were charged double duty on the painted sorts, we should have no fear of their continuing to allow the Chinese to send adulterated tea."

It is much to be regretted that the name of the honest London tea-dealer, above referred to, is not published by the Commissioners.

The *Malt* trade, which used to be the great mine of cheats, is settling down into something like an honest occupation. A recent Act of Parliament, by defining better the legal meaning of the word Malt, has nonplused both maltsters and malt roasters, who find the trade of selling spoiled Barley for malt rather too dangerous. In 1856 out of 53 samples taken from malt roasters, 51 were fraudulent, containing "a mean of 71.6 per cent. of Barley, whilst in the financial year just closed only 13 illegal samples, containing a mean of 19.8 per cent. of ungerminated grain, have been analysed, and this difference is the more striking when the poor quality of the Barley of the year 1860 is considered."

Satisfactory as all this is when compared with the state of the fraud market seven years ago, it still discloses an amount of dishonesty which seriously affects the interests of consumers, especially of the poor, who are the chief sufferers. But we hope that the excellent staff of examiners now attached to the Board of Excise will gradually convince tradesmen that adulteration does not pay, and that more profit is to be got by fair dealing than by cheating.

—— A very large collection of Bedding Pelargoniums, green-leaved, zonate, and variegated, has been again planted at Chiswick, and is now in full bloom, so that gardeners who may be brought to London, either by the Flower Show, the International Exhibition, or by other inducements, will find it worth their while to devote a few hours to its inspection. It is seldom that so good an opportunity is afforded of comparing the colours and habits of the several varieties, and of ascertaining their fitness for particular objects. We are pleased to find that the tricolor-zoned varieties with golden margins, such as Sunset and Mrs. Pollock, not only make healthy and satisfactory progress as to growth, but that they also retain the brightly coloured markings which form their chief attraction. Of the other golden-leaved sorts, that named Cloth of Gold bears away the palm; while among those with silver-margined leaves, Jane is conspicuously pre-eminent, from its healthy growth, its clear brightly-marked foliage, and its bold, brilliantly-coloured flower-trusses.

THE INTERNATIONAL EXHIBITION.

Before leaving the British department there are a few more objects of interest to our readers remain to be mentioned in the classes devoted to clothing, furniture, and decorations.

In the former series, forming Class XXVII., Messrs. Foster, Son, & Duncum, 16, Wigmore Street (4842) exhibit a case of Artificial Flowers, some of which, considering the nameless things we too frequently see in use, deserve high commendation. The stand is a large one, and is fitted up like a small greenhouse or high Wardian case, and the artificial imitations consist of creepers and other ornamental plants, among which the most strikingly natural in appearance are the Stephanotis, skilfully imitated, two sorts of Epacris very well done, Mignonette in pots, and a Double White Camellia. Wherever artificial flowers are admissible, it is certainly better to have them natural than nondescript.

In Class XXX. we find from Mr. Andrews, Walworth (5651) some small and slight carved stands in wood, intended for cut flowers, &c., under bell glasses. Mr. Brunswick, Newman Street (5677) exhibits a Drawing-room Flower Stand of elegant construction, formed of black wood with brass or gilt ornamentation. It consisted of a table of oblong form with the ends rounded, the centre portion being raised and hollow, and lined with metal, to receive plants in pots. Somewhat similar in object are some stands from Messrs. Jackson & Sons, 49, Rathbone Place, (5752), but these are manufactured in "carton-pierre"—pasteboard-stone, which looks as if it might be a compound of papier-maché and marble cement. Some of the stands are table-like, others smaller and circular, and variously ornamented, metal linings being provided in all to prevent drip from the pots with which it is intended they should be filled. Messrs. Smee & Sons, 6, Finsbury Pavement (5820), have somewhat similar articles of drawing room furniture, manufactured in ornamental wood, with the sides of enamelled tiles. These form oblong boxes lined with metal, and the supports being furnished with castors, they are very convenient for the arrangement of flowering plants indoors. Another form of stand, large and elegant, richly gilt, 5 or 6 feet long, with a wire-work top, and lined with zinc, is shown by Messrs. Holland & Sons, 23, Mount Street, Grosvenor Square (5747).

Some very pretty Jardinières, Fern Stands, and Pedestals, in Byzantine mosaic set in marble cement, are produced by Mr. Stevens, 14, Smith Square, Westminster (5826). "This is an adaptation to modern requirements of the art of glass tesselature to be found in the churches of Italy, and of which a specimen occurs on the tomb of Henry III. in Westminster Abbey." These Jardinières, some of which are oblong, some square, and some octagonal, have the appearance of a framework of Parian marble, with the sides inlaid in various designs with small pieces of coloured glass. Others of circular form with domical glasses, form very elegant drawing-room stands for Ferns; one of these, about a foot and a half in diameter, is marked 5*l*. 5*s*. Some were small, to receive a single pot; such as these being priced 2*l*. 2*s*. A pedestal of about 4 feet high costs 20*l*. The Jardinières are lined with metal, and may be had with low feet when required. These mosaic decorations of the olden time are very suitable for the furniture of ornamental conservatories. According to Mr. Digby Wyatt, "the hexagon and the triangle, the square and the octagon, form the usual geometrical bases of most of the specimens of this ingenious art to be found in Italy. Descending into Sicily, patterns of accumulating intricacy arrest the attention, more especially at Palermo in the Capella Palatina, and in the Cathedral at Moreale. Scarcely any specimens of the art are to be found out of Italy. Mr. Hope mentions some which formerly existed in the Old Abbey of Clugny in France, now destroyed; and we may boast of two or three specimens in our own country of exceeding interest. The shrine of Edward the Confessor, which was finished under Henry III. bears an inscription recording it to have been erected in the year 1270; the tomb of the same monarch exhibits also some very beautiful specimens of this same process, though alas, in a wretched state of dilapidation." Mr. Wyatt further remarks:—"To all interested in the history of stained glass, an acquaintance with the peculiarities of Christian mosaic is highly important, the most interesting relations being found to subsist between the primitive expositions of both dramatic and purely conventional form, as set forth through the aid of both materials. To the enameller the study must be possessed of great charms, since the Greeks, who were for many centuries the chief, if not the only European labourers in that branch of the arts, merely reproduced upon a strictly Mosaic system of operation, and in a very minute form, in their enamels, those works which, on a larger scale, decorated the walls of their noblest buildings. To the architect Mosaic affords the most durable, and probably the most beautiful, means of adding to the charms of well-studied and varied form the graces of colour; it enables him to study the science of polychromy on the largest scale, and by the aid too of a series of the most fully developed experiments, it offers to him, in its simple geometrical character, a variety of design almost unparalleled in decorative resources, one that harmonizes alike with the severer forms of monumental style and the more free and graceful peculiarities of domestic and social requirement. When forming an almost imperishable lining to one of the principal chambers of the British Senate House, or inserted in a marble chimney-piece beneath a roof of even humble pretensions, if its history, conditions, and processes be but rightly studied by the designer, Mosaic will be found to constitute a beauteous embellishment and a graceful and harmonious addition."

Indoor Gardening.

When indoor gardeners have had their window flowers out for change of air, there will be a frequent difficulty as to bringing them in again, as even in pots they often root so much through and over—especially if the pots have not been hung between bricks. I have been thinking that another year it would be no bad plan to put a red drain pipe upright in the hole prepared in the ground and sink the pot in it. Drainage and no worms would thus be secured, with absence of temptation for the roots to travel downwards through the hole in the pot. However, for the present, we have to take things as they are. And half the Geraniums and all the Heliotropes are, are they not, unwieldly?

If they are favourite plants such as we really want to keep, the way that I managed mine for several years in the country was just to cut round the pot and under it, a few days before the time came for taking up, and if this was done in cloudy or rainy weather the plants did not flag so very much as they might have.

Some also that I wanted to keep very large used to be taken up with as much root as we could manage, and if they were already in a pot, the pot was broken as the best way of extricating the plant, which was then put into a rather larger pot with its own roots packed round it.

When we cannot accommodate all the roots, there is no question as to the propriety of keeping those at the surface rather than the long ones.

The plants being well watered are a great deal better left for some days in the open air in some shady and damp corner, against or behind a shrubbery. We had, I remember, a leaky water barrel behind a thick clump of Laurels, in a corner by the house, and there our newly potted things freshened up considerably before the time came to house them.

The plants I am speaking of were kept large for a greenhouse, but even for windows sometimes people will not be happy without preserving giants.

When however we are so reasonable as merely to desire to keep up our stock, the best way I know (ungrammatically) is to strike in the open air a few good sized pots (say 24's) filled with Geranium cuttings planted so as just not to touch each other round the outside of the pot. These pots should be drained some inches deep, and the soil should be then put in very firmly indeed. You can't press the soil to a cutting when it is made thus hard, but pouring in dry sand into the hole answers very well. Sweet-leaved, Ivy leaved, and Scarlet Geraniums answer perhaps best in this way, but the fine-flowering sorts also often do very well. These require a little heat to root in after they have been planted a few days.

In winter all these keep perfectly in a dry airy room, light but without any fire, and if they stand in boxes filled (the pots also covered) with dry Cocoa fibre they really may not need water once all the winter through. They are of course scarcely growing, and the solid earth, the porous pots, and the dry fibre seem to keep in so long what moisture they do possess. This supposes, however, that nothing happens to cause extra dryness in the room they are in. If they ever are watered it should be done, I think, by taking every

pot out of the box early some fine morning, standing each a short time in a saucer with an inch or so of tepid water in it, and letting them stand for an hour or two to drain before they go back to their box. It is wonderful, however, how seldom this treatment is required between November and February. Till the frost comes doubtless they want more moisture, for it is an object to get them well rooted before winter.

Verbenas, perhaps, do best in pots standing loose upon a shelf or table. They damp so easily, and require so much air and light, though they do not want more heat than just keeps out frost. They grow extremely well in the Cocoa refuse. These plants do very nicely for keeping in winter if some hard-filled, well-drained small pots are prepared and placed on a piece of tile or slate under the growing plants, a little shoot being fastened down on the top with a black hair pin.

These keep well in winter because they have no stem in the ground. At least I think that this must be the reason why. The old branches should be cut off nearly close as soon as the shoot has rooted, and these things should always be watered when requisite very early in the morning of a dry airy day. A place that is not sunny answers best for keeping them in, as sunshine causes steam about the leaves and always necessitates a great deal of extra watering. *E. A. M.*

TRADE MEMORANDA.

Can any one give information of the whereabouts of Mr. John Wallen, Florist, late of St. Peter's, Jersey? *Hep. Brewin, Manager of the Plymouth Seed and Manure Company, Plymouth.*

Home Correspondence.

Cocoa-nut Waste—In reply to inquiries respecting this allow me to state that I have only had it in use two or three months, I am therefore scarcely prepared as yet to give any very decided report upon it. We have two substances produced from the husk of the Cocoa-nut in use here, viz., firstly, the Cocoa-nut fibre itself; and secondly, the pulp or refuse, which consists of the cleaning or sifting from the fibre; the former is pure fibre, while the latter is the substance contained in the husk, which is cleaned and separated from the fibre. I have used the fibre by itself for Orchids as well as mixed with peat and Moss, and so far the plants appear to do very well in it. I am also trying the pulp for several kinds of terrestrial Orchids. The fibre possesses the following properties, viz.: 1st. It does not decay and become sour so soon as Moss. 2d. It allows water to run freely through it, which renders it well suited for this class of plants. 3d. No insects such as woodlice or cockroaches can live in it. 4th. It presents a very cleanly appearance. I have also used the fibre for mixing with potting soil, and I find that plants requiring an open and free soil are benefited by the mixture. We use the pulp or refuse for any of the ordinary purposes to which leaf-mould would be applied. So far as I have at present found, the result has been very satisfactory, plants seem to root freely into it and grow with an increased vigour. When I have used it sufficiently to be enabled really to judge of its properties, I shall be happy to give the result of my experience. I am rather anxious to see if when the fibre is becoming decomposed, it produces any kind of Fungi. Should it not do this I am very sanguine that it will become exceedingly useful in the cultivation of Orchids, and the pulp or refuse for plants generally. I am also trying experiments with it in my out of door nursery. *James Veitch, Royal Exotic Nursery, King's Road, Chelsea.*

Hand Plant. — Several notices have recently appeared in your columns relative to the flowering of this remarkable plant (Cheirostemon platanoides), but no one has as yet stated that a fine specimen of it has flowered in the Royal Botanic Gardens at Kew. I visited those gardens in June last and had the pleasure of seeing three or four blossoms fully expanded upon the tree in the architectural conservatory there. I was told that about 10 flowers had been produced, and there were several buds upon it then. This is, no doubt, the plant referred to by Sir W. J. Hooker, (in the Botanical Magazine, tab. 5135), as having been so long in the Royal Gardens, but without having produced flowers up to that time. It is 23 or 24 feet in height, and is quite as large as it could be grown under the present accommodation for such plants. It will indeed make a noble specimen when planted out in the immense new winter garden, which I was glad to see is so far advanced that some of the plants will no doubt find a home in the central part of the building this autumn. Those interested in the history of this curious tree will find much valuable information concerning it in the Magazine just mentioned. *C. W. C.*

Scotch Fir.—Is it not unusual for this Fir to make a second growth in one season? I have been more or less employed in plantations for these last 30 years, and I cannot remember that I have ever before observed a second growth on the Scotch Fir. This season however several young trees are pushing a second time shoots of which the length is already 2½ inches. *L., Worksop.*

Grapes, as they are to be seen at the Royal Horticultural Gardens at Chiswick.—There are men who are more competent than I am to express the pleasure they feel upon receiving a really valuable lesson in Grape growing, but there are none more anxious or willing than I am to benefit by such lessons. Facts tell their own tales very plainly, and to some of us they are, at times annoying and unpalatable. It is not my intention to speak of all the varieties of Grapes grown in that marvellous house at Chiswick, but to make a few observations upon such varieties as may be of interest to the general cultivator. Entering the house by the door which is approached from the walk intersecting the end of the ribbon border, I was for a minute perfectly paralysed by the lofty magnificence and uniqueness of the scene before me—Grapes, both black and white, clustering in such quantity, and of such quality, that I was almost inclined to doubt the declaration of Solomon, when he says that "there is nothing new under the sun." After gazing for a few minutes at the Vines and crop of fruit, as a whole, I began to examine them individually, and exactly over the door by which I entered are some magnificent bunches of the Barbarossa, with berries large and black, though the bunches still retain a few healthy green berries,—a sure indication of good colouring. This Vine, be it observed, is grafted upon a Hamburgh stock. To the left of this Vine is another Barbarossa, upon its own roots, and carrying an admirable crop. The difference, however, in the appearance of the fruit under the different circumstances is very striking; that of the Vine upon its own roots being altogether of a grizzly or brick-red colour, indicating that, however satisfactorily they may colour, they will not finish so well, or so soon, as those upon the Black Hamburgh stock. A few yards further down the house, and upon the same side, is a fine rod of that very excellent Vine, the Trentham Black. This Vine carries 16 beautiful bunches, black and bloomed like an autumn Sloe, a fact which ought to be enough to annihilate the common idea that this is a difficult Grape to manage—even if there were not the 'Trentham Black' house at Trentham, which bears yearly testimony of its great productiveness and superior flavour. Further down the house still, and upon the same side, we come to a Vine that has been, and still is, the object of much praise and much calumny, the Golden Hamburgh. That this Vine should be grafted upon a Black Hamburgh stock I am quite convinced, but here it is upon its own roots, and carrying such a crop, that for quantity and quality is enough to make its hardest cheeked defamer blush, and hide his face under a consciousness of his own incapacity. The Vine in question carries 18 or 19 fine bunches of fruit, which for colour and size of berry are unapproached by any White Grape in the whole house. All who do not succeed to their satisfaction with this Grape should see this Vine, and learn the lesson (however humiliating it may be) that not the Vine but practice is at fault. Those who are fortunate enough to be able to see this most wonderful house of Grapes, will not fail to notice the great superiority of the Frankenthal over all other Black Hamburghs cultivated within it. A new early white Grape was pointed out as the White Frankenthal, which Mr. Barron believes will surpass all other early white Grapes yet known; but of course time alone can determine this matter. *Z. Stevens.*

Drayton Manor.—Your correspondent, "P. W.," has conferred a great favour upon the inhabitants of this district in giving such a minute and glowing description of "Drayton Manor," which is almost a *terra incognita*, being considered a sealed book. In describing the approaches to the Manor he alludes to one entrance only. There are two other lodges in Watling Street. All three are locked and jealously guarded against the public, many of whom naturally are anxious to catch a glimpse of the residence of the late Sir Robert Peel. They however have the melancholy satisfaction of visiting the last resting place of this great man (Drayton Church), which has been restored and stands in the centre of the village. *A Constant Reader, Tamworth.*

Societies.

Royal Horticultural: *Sept.* 10 (*Autumn Exhibition*).—On this occasion there was an admirable display of Dahlias, Cut Roses, Gladioli, Hollyhocks, Asters, and Miscellaneous articles of great value and interest.

Dahlias, as might be expected, were shown in great numbers, and in excellent condition. In the Nurserymen's Class of 48 blooms, the best came from Mr. Keynes, of Salisbury, who furnished Lord Derby, Golden Drop, Imperial, Magnificent, Juno, John Harrison, Lilac Queen, Donald Beaton, General Jackson, Pandora, Cherub, Bob Ridley, Mrs. Dodds, Leopard, Hugh Miller, Chairman, Duke of Wellington, Pauline, Andrew Dodds, Lady Pennant, Baron Taunton, Mrs. Bush, Mr. Critchell, Peri, Lord Wiltshire, John Keynes, Earl of Shaftesbury, Oscar, King of Sweden, Black Prince, Perfection, Jenny Austin, Beauty of Hilperton, Model, Sir Geo. Douglas, Lord Palmerston, Charles Turner, Mrs. Trotter, Norfolk Hero, Pioneer, Goldfinder, Le Premier, Umpire, Souter Johnny, Lady Elcho, George Brown, Mrs. Waters, Criterion. From Mr. Turner, Royal Nursery, Slough, came Criterion, Hugh Miller, Mr. C. Walters, Umpire, Hope, Norfolk Hero, Pioneer, Peri, Captain Harvey, Lord Dundreary, Lord Derby, Chairman, Zebra, Disraeli, Pre-eminent, Princess of Prussia, Andrew Dodds, Jenny Austin, Bob Ridley, Volunteer, Pluto, Sir George Douglas, Cygnet, Mutabilis, Joy, Lord Palmerston, Golden Drop, Madge Wildfire, Lady Popham, Mr. Stocken, Commander, Seedling, Midnight, Chieftain, Earl of Shaftesbury, Lilac Queen, George Elliot, Charlotte Dorling, Sidney Herbert, Model, Flower of the Day, Duke of Wellington, Lady Elcho, Privateer, Delicata, Mrs Bush, George Brown, Beauty of Hilperton. Mr. May, of Bedale, sent Mr. C. Waters, Marquis of Beaumont, Lord Derby, Madge Wildfire, Donald Beaton, John Dorry, Mr. Stocken, George Brown, Beauty of Hilperton, Seedling, Juno, Andrew Dodds, Cygnet, Incomparable, Hugh Miller, John Keynes, Disraeli, Privateer, Delicata, Dinorah, Beauty of Slough, Oscar, Admiral Dundas, Warrior, Hon. Mrs. Trotter, Chieftain, Criterion, Bob Ridley, Miss Henshaw, Sidney Herbert, General Jackson, Lilac Queen, Magnificent, Flower of the Day, Lady D. Pennant, Earl of Shaftesbury, Model, Jenny Austin, Norfolk Hero, Seedling, Commander, Peri, Mauve, Chairman, Lord Palmerston, Lady Franklin, Pioneer, Golden Drop.

In the Class of 24 Dahlia Blooms, Mr. Turner sent Mutabilis, George Brown, Mrs. Bush, Model, Delicata, Earl of Shaftesbury, Umpire, Chairman, Mrs. Stocken, Beauty of Hilperton, Lilac Queen, Golden Drop, Lord Derby, Cygnet, Norfolk Hero, Lady Popham, Madge Wildfire, Captain Harvey, Hugh Miller, Peri, Sidney Herbert, Criterion, Chieftain, Lord Palmerston. Mr. Keynes furnished Golden Drop, Lord Palmerston, John Keynes, Jenny Austin, Peri, Pandora, Baron Taunton, Souter Johnny, Mrs. Waters, Hugh Miller, Duke of Wellington, Imperial, Chairman, Juno, Andrew Dodds, Lord Derby, Lord Wiltshire, Donald Beaton, Earl of Shaftesbury, Sir Geo. Douglas, Norfolk Hero, Lady Elcho, Beauty of Hilperton, Criterion. A third collection, from Mr. Cattell, Westerham, contained Golden Drop, Mr. Stocken, Cherub, Gen. Turr, Mrs. Bush, Lord Derby, Miss Watts, Hugh Miller, Queen, Mentor, Lollipop, Lord Palmerston, Goldfinder, Pioneer, Flower of the Day, Imperial, Lady Popham, Chieftain, Chairman, Triomphe de Pecq, Delicata, Preeminent, Mrs. Dodds, Lilac Queen.

In the Amateurs' Class, the first prize was awarded to J. T. Hedge, Esq., Reed Hall, Colchester, who sent fine blooms of Madame Guite, Mrs. Crawford, Heroine, Madge Wildfire, Cherub, Emperor, Juno, Commander, Alice Downie, Standard Bearer, Inaccessible, Admiral Dundas, Pandora, Lady Popham, Criterion, Lord Palmerston, Neville Keynes, Beauty of Hilperton, Norfolk Hero, John Keynes, and Chairman. From the Rev. C. Fellowes, Shottesham, near Norwich, came good blooms of Robert Bruce, Mrs. H. Vyse, Lady Elcho, Lady Popham, Preeminent, Fanny Keynes, Juno, Golden Drop, Earl of Shaftesbury, Mrs. Bush, Lord Palmerston, Andrew Dodds, Acme, George Elliott, Triomphe de Pecq, Chairman, Mrs. Dodds, Cygnet, Lord Derby, Norfolk Hero, Bob Ridley, and Village Gem. From Mr. Perry, Castle Bromwich, came a good third collection, consisting of Lord Palmerston, Cherub, Lilac Queen, Donald Beaton, Countess of Portsmouth, Lord Derby, Lord Bath, Golden Drop, Mrs. Bush, Jenny Austin, Beauty of Hilperton, Miss Watts, Lord Cardigan, Chairman, Bob Ridley, Model, Lady Popham, Midnight, Juno, George Brown and Delicata.

Of 12 Dahlias (Amateurs) the best stand was contributed by W. P. Barnard, Esq., Brook Cottage, Darlington, who showed Dinorah, Lilac Queen, Mrs. C. Waters, Marquis of Beaumont, Lady Popham, Beauty of Hilperton, Jenny Austin, Chairman, Mrs. P. Bailache, Lord Derby, Lady Pennant, and George Elliott. A second collection of 12 blooms came from Mr. Corp, Milford, near Salisbury, who sent Lord Palmerston, Chairman, Juno, Mrs. Boshell, Mrs. Bush, Goldfinder, Imperial, Jenny Austin, Hon. Mrs. Trotter, Hugh Miller, Andrew Dodds, and Mrs. C. Waters. Mr. Charlton and Mr. Harris, Broomfield, furnished among others Alice, Lilac Queen, Mrs. Church, Col. Wyndham, Lord Derby, Mrs. Picket, Lady Popham, Andrew Dodds, Baron Taunton, and Beauty of Hilperton.

In the Nurserymen's Class of 18 blooms of Fancy Dahlias, the best were produced by Mr. Keynes, who showed fine examples of Queen Mab, Conqueror, Carnation, Triomphe de Roubaix, Lady Paxton, Gem, Starlight, Mary Lauder, Pauline, Souter Johnny, Garibaldi, Le Premier, Patent, Confidence, Norah Creina, Harlequin, Baron Alderson, and Reliance. Mr. Turner was second with Harlequin, Empereur de Maroc, Countess of Shelburn, Lady Paxton, Summertide, Gem, Triomphe de Roubaix, Chas. Perry, Comet, The Cure, Mary Lauder, Jupiter, Starlight, Fancy Queen, Queen Mab, Pauline, Pluto. Mr. Cattell, Westerham, sent Harlequin, Summertide, Garibaldi, Lady Paxton, Norah Creina, Blondin, Unique, Mrs. Chas. Kean, Queen Mab, Elizabeth, Pluto, Marc Antony, Starlight, Triomphe de Roubaix, Gem, Elegans, Pauline, and Confidence.

In the Amateurs' Class the best Fancy Dahlias came from Mr. Corp, who sent among others Lady Paxton, Mary Lauder, Gem, Confidence, Garibaldi, Pauline, Wm. Corp, Queen Mab, Reliance, Elegans, and Harlequin. From the Rev. C. Fellowes, who was second, came Triomphe de Roubaix, Oliver Twist, Mary Lauder, Queen Mab, Harlequin, Jessie, Lady Paxton, Pauline, Flirt, and Splendida. From Mr. Perry came Summertide, Unique, Comet, Oliver Twist, Lady Paxton, Pauline, Gem, Starlight, Harlequin, Countess of Bective, and others.

Of Seedling Dahlias several were produced, among which the best were Charlotte Dorling (Turner), a

crimson tipped light variety; Bellona (Harrison), a medium-sized crimson; Patent and Le Premier (Keynes), the last a good crimson sort; Serenity and The Bride (Rawlings), both light flowers of good properties. In addition to these Charles Turner (Keynes) was shown in admirable condition, as were also Countess of Shelburn, Lord Dundreary, and one or two others from Mr. Turner.

Of Pompone Dahlias, a small collection came from Mr. Cattell, in which the best were Pearl, white; Dr. Webb, scarlet; Goldfinch, yellow, tipped with reddish brown; and Rosette, maroon.

The same exhibitor also showed 12 blooms of Double Zinnia, all fair specimens, but one especially good, being large, and beautifully symmetrical in shape.

Asters, though not very plentiful, were good, some of the beautifully quilled German sorts being nearly as large as the broad petalled flat French varieties. The best collections came from Mr. Betteridge; but Messrs. Sandford, Hedge and Wyatt, also had good blooms.

Hollyhocks were shown both in the shape of spikes and cut blooms. Of the latter, the best came from Mr. Chater, of Saffron Walden, whose sorts were Countess Russell, rosy salmon; Beauty of Walden, rose; Excelsior, salmon tipped yellow, or rather buff; Ne Plus Ultra, violet; Morning Star, crimson; Princeps, purplish rose; Governor General, crimson; Miss Lizzie King, yellow; Beauty of Mitford, delicate rose; Rose Celestial, rosy crimson; Imperator, salmon shaded buff; and Lady King, dark mulberry. From Messrs. Downie, Laird, & Laing came beautiful spikes of Lady Dacres, Prince of Hesse and Invincible, all different shades of salmon and yellow. From Mr. W. Paul also came a good exhibition.

Exhibitions of Gladioli were numerous, and being in good condition they made a striking display. In a group from Messrs. Youell & Co., of Great Yarmouth, were fine examples of Brenchleyensis, scarlet; Linné, carmine and white; Napoleon the Third, scarlet blotched with yellow; Ophir, yellow stained with purple; Le Poussin, in the way of Linné, but with a greater amount of white in it; and Madame de Vatry, white, streaked with purple. In a group from Mr. Standish, of Bagshot, came Dr. André, scarlet; Carnation; Lady Mary Hood, white, streaked with violet.

Of Phloxes in pots, dwarfed as required to compete for a prize offered on this occasion by Dr. Lindley, the only collection produced was one from Mr. Cattell, of Westerham. It contained compact well grown plants whose heights varied from 15 inches to 2 feet, and certainly they were an improvement on the same kinds furnished by Mr. Cattell last year. Skilful cultivation was, however, all they exhibited; no permanent improvement in the way of dwarfing appeared to have been effected. The varieties were Madame André, Madame Rendatler, Mdlle. Marie Lacroix, and Madame Marseaux, light sorts; and of dark kinds there were Alexandra, Ballet de Varennes, Madame Pigny, M. Aubin, Henri and Louis Lierval, M. Vilmorin, M. Le Boucher, and Victor Hugo. From Mr. Turner came Spenceri, a white-eyed lilac sort, compact and showy.

Of cut spikes of Phloxes there were one or two boxfuls of good specimens; we did not, however, remark among them anything new.

Roses were better than might have been expected, considering how unfavourable this autumn has been for late blooms, especially of the Tea-scented kinds. In collections of 48 blooms, the best came from Mr. Mitchell, of Piltdown, who had among others good examples of Jules Margottin, Wm. Griffiths, Madame Knorr, François I., Lord Raglan, Gen. Washington, Senateur Vaisse, Gloire de Dijon, and Madame Chas. Crapelet. Messrs. Paul & Son, and Mr. Francis, also showed good blooms.

In the Class of 24 Roses, the best came from Mr. Turner, who contributed among others very good specimens of La Ville de St. Denis, Eugène Appert, Souvenir d'un Ami, Chas. Lefevre, Narcisse, Comtesse de Chabrillant, Louis XIV., Duchess of Orleans, Madame Rivers, M. Vidot, Leon des Combats, La Reine, General Jacqueminot, and Victor Verdier. Messrs. Paul & Son also showed well in this class.

For 24 Blooms of Roses (Amateurs), the 1st prize was awarded to Mr. Hedge, who showed among others Evêque de Nimes, in good condition; La Reine, Gloire de Dijon, Madame Crapelet, and Triomphe de Rennes. Dr. Cooper of Slough, and Mr. Hollingsworth, also furnished good boxes of blooms.

Cut blooms of Verbenas were numerous. The best came from Messrs. Minchin and Sons, Hook Norton, Oxon. Among sorts the more striking were Mrs. Moore, bluish purple, with prominent white eye; Snowflake, pure white; Mr. Elphinstone, rosy purple, with a white eye; Foxhunter, scarlet, with a white eye; Géant des Batailles, scarlet; and Fairest of the Fair, white with pink eye. Other collections came from Mr. Smith, Hornsey, Mr. Turner and Mr. Treen. Among these the most remarkable were Miss Labouchere, purple with a white eye; Rugby Hero; and Ariosto Improved, purplish crimson.

A magnificent collection of fine foliaged and other plants was contributed by Messrs. Veitch of Exeter and Chelsea. It contained three great Tree Ferns, such as establishments like those from which they came alone could produce; the beautiful Alocasia macrorhiza variegata, with large white blotched foliage; grand examples of the singular looking bronzy leaved A. metallica, and the new A. zebrina, the last with long handsomely marbled leaf-stalks; also Dracænas of different sorts, both standard and otherwise; Cyanophyllums, Palms, Crotons, Caladium Veitchi, an admirable specimen; Lapageria rosea, and different varieties of Orchids, among which were the charming blue Vanda cœrulea, Cattleya elegans, Aerides suavissimum and nobile, and Odontoglossum grande. From the same firm also came some hybrid Orchids, consisting of Calanthe Dominiana, a variety in the way of C. Masuca; and Cattleya Dominiana alba. From Messrs. Veitch were likewise the beautiful orange-blossomed Chilian climber Mutisia decurrens, a finely variegated variety of Rhapis, and an upright growing Calceolaria from Chili, with small yellow flowers and Heath-like leaves, named C. ericoides.

A collection of finely grown and flowered Japan Lilies (L. lancifolium), was shown by Mr. Cutbush of Highgate. The sorts consisted of the white kind and finely spotted varieties of rubrum.

Mr. Ivery of Dorking had an interesting group of hardy Ferns, and from the same exhibitor came two new varieties of Athyrium Filix fœmina, one of which was named Iveryanum, and the other mucronatum. Athyrium Filix fœmina Parsonsæ was shown by Mr. Parsons.

A beautiful collection of Caladiums came from Messrs. A. Henderson & Co., Pine-apple Place. Among them were picturatum, Chantini, different varieties of bicolor, Wightii, Belleymei, in fine condition, the white spotting not being, as is sometimes the case, so great as to completely cover or nearly so the green ground colour. In the same collection were also C. Baraquini, Troubetskoi, and argyrites, the last a fine specimen and the handsomest of all, the green and white on its comparatively small leaves being in beautiful proportion to one another. The same establishment also furnished an admirable example of the rich chocolate coloured Coleus Verschaffelti.

From Mr. Bull, Nurseryman, King's Road, Chelsea, came Gomphia Theophrasta (what on earth is that?); Palms of different sorts; Araucaria Rulei, both in the shape of living plants and dried specimens; the rich velvety crimson leaved Gesnera refulgens; Ferns of various kinds, among which were Diplazium glaberrimum and Adiantum Feei, two handsome new sorts; Anthurium acaule, Dracænas, Alocasias, Latania Verschaffelti, and Crotons.

Among other interesting plants, Messrs. Lee furnished well grown specimens of Rhopalas, Caladiums, Alocasias, Ferns, Ardisias loaded with Holly-like berries; and Dracænas, of which they possess a rich collection.

Various little standard plants for the decoration of the dinner table were shown by Messrs. Veitch, Bull, Salter, and Macintosh. They were for the most part set in handsomely electro-plated stands or rather pot covers furnished by Elkington of Regent Street, and had therefore a somewhat attractive appearance. The kinds of plants used on this occasion were Capsicums in fruit, little Fuchsias, the variety of Tropæolum called Eclipse, the double flowered Petunia Inimitable; Myrtle-leaved Orange trees, Solanum capsicastrum in fruit, Aralias, yellow and red-fruited Ardisias, Heliotropes, Veronica Andersoni, Grevillia robusta, Eugenia Ugni and apiculata, Celosia coccinea, Coleus Verschaffelti, and the red leaved Dracæna terminalis. Of these the three last were the most showy, giving colour and life to a naked and poor collection.

Adcock & Co., of Princes Street, Cavendish Square, had some beautiful examples of Artificial Roses, Hollyhocks, and other flowers shown in bronze wire, and other baskets. Of the latter, one holding a square pan full of flowers was a perfect model of good taste in this kind of ornamentation. Adcock & Co. are capital artificial flower makers; but a Lapageria shown by them was a vile performance. From Mrs. Stoddart, Cloudesley Terrace, Islington, also came a good stand of artificial Dahlias, and other flowers.

Of Fruit, an extremely interesting collection of Grapes was shown from the Society's conservatory at Chiswick, of which some account was given the other day at p. 810. Among black sorts were Burchardt's Prince, Trentham Black, Morocco Prince, Esperione, Muscat Noir de Jura, Black Frontignan, Late Black (Armagh), Black Prince, Barbarossa, Black Monukka, a very large bunch; the little Currant Grape of the shops; Frankenthal, a fine bunch; Black Hamburgh, Strawberry Grape, a small variety; Lady Downe's Seedling, Oldaker's West's St. Peter, Blussard Noir, Rouge de Provence, Prune de l'Hérault, Black Morocco, Mill Hill Hamburgh, and Dutch Hamburgh. Of white varieties, the collection contained Royal Muscadine, Muscat of Alexandria, Cabral, Reeve's Muscadine, Cabul, Raisin de Calabre, Ahbec, Golden Hamburgh, a very fine bunch; White Frontignan; White Nice, Foster's Seedling, and Blussard Blanc. Of grizzly coloured varieties, there were Tokay des Jardins, De Candolle, Grizzly Frontignan, Chasselas Rose de Falloux, Violet Chasseles, and Gros Gromier du Cantal.

In reference to these Grapes we may mention that the bunch of Black Monukka, which weighed 4 lbs., was the admiration of everybody. It is an Indian Grape, said to be excellent in flavour, and its berries, which are oval, are invariably stoneless. The Frankenthal was also in all respects a beautiful bunch, as was also that of the Black Hamburgh. The former weighed 3½ lbs. and the latter 2¾ lbs. Barbarossa and Black Prince weighed respectively 2 lbs. 7 oz. and 1 lb. 15 oz., and the Morocco Prince 1 lb. 13 oz. Among white varieties the Golden Hamburgh stood conspicuous; its distinguishing points were fine form, both of bunch and berry, and its colour equalled that of a well ripened Muscat of Alexandria. It weighed 2 lbs. In short a finer or more instructive collection of Grapes than that under notice has never before that we can remember been submitted to public inspection.

Other fruit consisted of a Seedling Pear from Mr. Ingram, Royal Gardens, Frogmore; a Kitchen Apple from Messrs. Shaw & Causland; a yellow fleshed Peach from Mr. Rust, Broom House, Fulham; a twin Golden Perfection Melon, *i.e.* two fruit joined together, from J. C. Charlton, Esq., and two large Cashmere Melons, one of which weighed 7¼ lbs., from Mr. Miller, Coombe Abbey. A Peach and Nectarine, both growing on the same branch, were shown by Mr. Moore, Howick Hall, Northumberland.

Of Conservatory Tubs several were exhibited. Two came from Mr. Ormson, Stanley Bridge, King's Road, Chelsea. One was made of Pitch Pine, square, with corner posts, from which the sides could be readily separated. The other consisted of an Oak frame, holding together by means of screws and nuts Bretton Hall stone sides, over which was ornamental iron work. This was an expensive contrivance, suitable for first-class conservatory decoration. A third, from Mr. Forsyth, of Camden Town, was wholly of Oak, with carved panels, which could be separated from the four corner posts. The means for moving this tub were somewhat different from those usually employed; they consisted of strong hand-barrow like handles, from each of which projected two iron bolts placed so as to fit into two corresponding iron sockets in the posts on two sides of the tub. This was also a somewhat expensive contrivance. From Mr. Legg, of Edmonton, came a twelve sided oak tub of irregular outline, polished on the outside, and held together by copper hoops and brass headed bolts. Messrs Ransomes, of Ipswich, sent a tub made of their patent siliceous stone, heavy in appearance, octagon in shape, and with panels made to slide up and down for the purpose of examining the roots. By removing the cap round the top the whole could be readily taken to pieces. A round Oak tub, not unlike a large pail with a movable false inside bottom, furnished with upright handles so as to enable it to be lifted out, plant and all, at pleasure, was shown by Mr. Fletcher, of Brewers Court, St. Luke's. Round terra cotta tubs or rather large vases of burned bricklike appearance and ornamental outside, were exhibited by Mr. Knighton, of Sydenham Hill. These had moveable false bottoms with a cavity under them, so as to secure perfect drainage. Two useful square slate tubs were shown by Mr. Braby, Belvedere Road, Lambeth. These had galvanised iron handles, and were fixed together with nuts and screws. In price they varied from 12s. to 1l. Similar tubs, but furnished with oak frames, came from J. Allnutt, Esq., of Clapham. The latter were held together by means of moveable wooden topped corner pins let into the tops of the four corner posts, to which they formed appropriate ornaments. These could also be made cheaply, and were stated to be very durable. Finally we noticed one or two white terra cotta tubs from Mr. Pulham of Broxbourne, and others: also one low square box made of Roman cement. Mr. Pulham's tub was square, with semicircular projections on each side, the whole being held together with copper ties, nuts and screws. To none of these tubs was the prize awarded, the Judges considering that, although some of them undoubtedly possessed merit, they did not fulfil the conditions for which the prize was offered.

In a square wooden tub from Mr. Eyles, the Society's Superintendent, the mode of removing the panels may be worth notice. At the bottom of the latter were four pins which fitted into corresponding holes in the bottom of the tub; at top the panel was kept in its place by means of a flat bar of iron working on a pin at one side and falling into a "slot" on the other. In this way the two sides made to move were held firmly together or might be readily removed when required.

Some excellent Vases in pottery ware, as well as pots of different sizes, were shown by Mr. Phillips, of Weston-super-Mare.

Of rustic ornamental Pottery ware made to represent stumps and portions of trees, several very pretty examples came from Mr. Hooper of Covent Garden, and from Messrs. Barr & Sugden, of King Street, Covent Garden. The latter had also a specimen of hanging wire basket, the inside basin of which was furnished with a central tube about 4 inches in length for the collection of drainage from the plants. This could be emptied when required by means of a cork or plug; as the latter, however, seemed to be liable to stick fast or become so loose as to be lost, it was suggested that a little tap should be substituted for it; the introduction of the latter would, however, somewhat increase the expense.

Notices of Books.

The Orchid Grower's Manual. By B. S. Williams, F.R.H.S. Second Edition. Small 8vo. Chapman & Hall.

No country has produced so many thoroughly good books on practical gardening as this. There is hardly

a subject of any magnitude that has not been well treated by men willing and able to state honestly the truth, the *whole truth*, and *nothing but* the truth, concerning the methods by which they have achieved success. This is their great merit. They do not pretend to be learned, nor do they indulge in speculations concerning what may possibly happen; they are contented with what is, and leave horticultural dreams to others.

Among men of this class is the writer of the volume before us; when a gentleman's gardener one of the most successful winners of prizes at our great metropolitan shows of Orchids; and now as a nurseryman holding his own with greater distinction than ever. He here presents the public with his latest experience, regulated by many more years of daily intercourse with his favourites—our favourites—everybody's favourites; and it is no fault of Mr. Williams if every body cannot grow them as well as himself. *Liberavit animam suam*; he has made the whole public his confessor, and he has nothing more to reveal.

We observe full 50 pages more than in the first edition of this capital book, and many more heads of instruction, some of which relate to seedling Orchids, to "the spot," and to the best contrivances for constructing and heating Orchid houses. There are notices moreover of about a couple of hundred species not mentioned in the first edition.

Of course all growers will take care to provide themselves with a copy of the work, so that extracts are superfluous. Nevertheless we must give our readers one scrap which has a larger application than to Orchids:—

"*Spot in Orchids.*—A great deal has been said and written respecting this disease, which I have seen in several places, and in other plants as well as in Orchids. I have not experienced much of it myself, but I have given advice respecting its cure, and have found in most cases the plants to outgrow it.

"In 1860, a gentleman bought some Phalænopsis of me, which were the finest grown plants I had seen, and they did beautifully with him for some time, growing very fast, in fact too fast, for they got sappy, and their leaves became spotted, as did also some others he had. I went to see them, and he asked my opinion respecting them. Upon inquiring how they had been treated, he told me that he gave them a great deal of water over the leaves, and kept the roots wet; this was during winter. I went several times to see them the following spring, and advised him to treat them as recommended for Phalænopsis. (See p. 132.) These plants have quite outgrown the spot, and are now among the finest round London.

"When at Hoddesdon, I had two Phalænopsis which went in the same way; they got spotted in the winter. I cut off one of the leaves, and sent it to Dr. Lindley for his opinion as to the cause of the evil. His reply was, that the plants had been kept too moist during the cold dark days of winter,—a fact which I have never lost sight of. He was quite right, for it was a sharp winter, and I had kept these two plants wet, by placing the bottom of the block on which they grew in a pan of water to keep off cockroaches. In that way too much moisture crept to the roots, and, being in the winter time, doubtless caused the leaves to become spotted.

"However, by following the treatment recommended in my remark on Phalænopsis, the plants soon recovered; but if steps of that kind had not been taken in time the disease would have gone too far, and probably killed the plants. Much injury is done by keeping the plants too wet at the roots in dull weather; in fact, too much moisture in that way is injurious at any time, especially to those that grow on branches of trees, when they come to be confined in pots and baskets with a host of wet material about them, which is unnatural. My practice is to give but little water at the roots during winter, and not so much as many people in summer, because I have seen the ill effects of it. The treatment I recommended some years ago I still follow, and with uniform success.

"Some Orchid growers give more heat and moisture than I recommend, and the plants have done well for a time; but under such exciting management they are apt to became spotted, and get into a permanently bad state of health; in short, the least chill, after so high a temperature, is liable to induce disease. The great secret in the cultivation of these, as well as all other plants, is a proper house, sufficient ventilation, heat and moisture and good glass, without drip. Let the temperature throughout the whole year be in accordance with directions laid down in this book, which is the result of long experience and close observation."

On the Various Contrivances by which Orchids are Fertilised by Insects. By C. Darwin, Esq., F.R.S., &c. [Second Notice. See p. 789.]

Having examined in the utmost detail the method of fecundation in almost every British species of Orchid, Mr. Darwin directs his attention to the exotic forms, choosing prominent members of most of the great tribes as defined by Lindley. In this enquiry we recognise the same industry and care in mastering every point of structure, the same power of seizing upon every character of significance in a physiological point of view, and even greater fertility of resource in experimenting. The results, as might have been anticipated from flowers so grotesque, are often most curious and even startling, and his demonstration of the special objects for which some of the organs are fashioned into forms so misshapen as to be apparently useless, are in many cases marvellously sagacious. We can but direct attention *en passant* to Cattleya, which though fertilised in a very simple manner, differs in this respect from all British Orchids;—to Stelis, which so closes its flowers after fecundation that they cannot be distinguished externally from buds, but which opens them again when immersed in water!—to that Masdevallia whose flowers resemble a closed box with two windows, leading towards the reproductive organs, but which could not be fertilised by any means adopted;—to Bolbophyllum, whose stigmatic cavity is exactly fitted by *one* only of the two pollen masses, and whose stigma shuts up after the flower has been some time opened—facts observed in no other Orchid;—to Dendrobium, whose flowers may be fertilised by their own pollen, and the action of whose opening anther case is to scoop up the pollen and toss it into the air with so nicely graduated a force that it must fall on the stigma;—to the beautiful analysis of the various "movements of depression" exhibited by the pollinia of Vandeæ, and of other spontaneous movements, in every case ingeniously measured, and which vary in amount and direction with the elasticity, rigidity, viscidity, or contractility of the organs they affect;—to the mechanical arrangement in Calanthe, which obliges the fan-shaped pollinia to strike the stigma, and which fans are split up into darts projecting from that organ;—and to the unique case of Maxillaria ornithorhyncha, in which the pedicel of the pollinia is reflected.

The wonderful Angræcum sesquipedale now arrests our pen. What can Mr. Darwin make of this exaggeration of an Orchid?—can it too demand insect aid, and of what conceivable use can its enormous spur, all but a foot long, be to itself or to insects either? The answer is necessarily conjectural in a great degree, but every hypothetical step in his reasoning being shown to be founded on observation of what occurs in analogous forms of Orchids, we are compelled to acknowledge that the explanation is in the highest degree probable. That the plant wants insect aid is easily proved; of that no one who reads the description of its flower and looks at a specimen can doubt; then as moths are the known agents in similar cases, so are they presumably in this; gigantic moths abound in hot countries, and great moths have prodigious probosces. But the difficulty only began here; however long Mr. Darwin made his artificial proboscis, he failed to fertilise the flower, and he goes on to say that he could not for some time understand how the pollinia of this Orchid could be removed, until it occurred to him that the probosces of large moths are thick at the base, and that to drain the last drop of nectar, even the largest moth would have to force its proboscis as far down as possible; then in effecting this the proboscis must infallibly be forced into a certain cleft, which would result in the required depression of the rostellum, and in shortening the distance of the tip of the nectary from its orifice by a quarter of an inch: hence when he took a bristle fashioned at the base like the base of a moth's proboscis, and inserted it as a moth would, on its withdrawal the pollinia were in every case withdrawn firmly adhering. So too in depositing the pollen on the stigma of another flower it is shown that this also cannot follow, except the pollen is attached to the very base of the moth's proboscis.

Acropera presents a labellum so extraordinary in form as to baffle description, and it remained inexplicable till it occurred to Mr. Darwin that the plant was bisexual; this he proves to demonstration by a series of beautiful and curious observations. Catasetum is however the most extraordinary and complicated case in the whole order of Orchids, and whether as regards oddity of form, complexity of structure, diversity of sexes, or its exquisitely sensitive antennæ, this genus and its allies must rank amongst the greatest wonders of the vegetable kingdom. It would be impossible without occupying many columns to offer even an outline of the strange structures these plants present, and of the multiplicity of observations and experiments instituted to explain them. Fifty-eight pages are devoted to Catasetum, Myanthus, Mormodes, Monachanthus, and Cycnoches, literally teeming with curious and interesting matter, which alone would establish the reputation of its author as a master of scientific research. We shall endeavour to make two of his great points clear in as few words as possible, viz., the method of impregnation in Catasetum saccatum, and his explanation of Schomburgk's famous specimen presenting three genera on one spike, premising that to do this we have had great difficulty, so interwoven are the descriptions of their parts with comparisons of those of other species, and so difficult is the whole subject.

Of Catasetum saccatum, he says, "The flower stands more or less inclined, but with the lip downwards. The dull coppery and orange-coloured tints—the yawning chasm in the great fringed labellum—the one antenna stuck out, with the other hanging down, give to these flowers a strange, lurid, and reptilian appearance. * * * The cavity in the middle of the labellum does not secrete nectar, but its walls are thick and fleshy, and have a slightly sweet nutritious taste. I believe, as we shall hereafter see, that insects visit the flowers to gnaw these fleshy walls and crests The extremity of the left-hand antenna stands immediately over the cavity, and would almost certainly be touched by an insect visiting this part of the labellum for any purpose. These antennæ are the most singular organs of the flower, and occur in no other genus. They form rigid curved horns tapering to a point. In all the flowers I have examined they occupy the same position; but though otherwise alike they do not stand symmetrically. The extreme part of the left-hand antenna (which is excessively sensitive) bends upwards and a little inwards, so that its tip guards the entrance into the pit of the labellum. The right-hand antenna hangs downwards, with its tip turned a little outwards. It is almost paralysed and apparently functionless.

"Now for the action of the parts. When the left-hand antenna is touched, the edges of the upper membrane of the disc instantaneously rupture, and the disc is set free. The highly elastic pedicel then instantly flirts the heavy disc out of the stigmatic chamber with such force, that the whole anther and its pollinium are ejected with the viscid disc foremost. I imitated this action with a minute strip of whalebone, slightly weighted at one end, to represent the disc; and by bending it round a cylindrical object, gently holding at the same time the upper end under the smooth head of a pin, to represent the retarding action of the anther, I then let the lower end suddenly free, and the whalebone was pitched forward, like the pollinium of the Catasetum, with the weighted end foremost. Besides the spring from the straightening of the pedicel, elasticity in a transverse direction comes into play. If a quill be split lengthwise, and the half be forced longitudinally on a too thick pencil, immediately the pressure is removed the quill jumps off; and an analogous action takes place with the pedicel of the pollinium, owing to the sudden inward curling of its edges. These combined forces suffice to eject the pollinium to the distance of 2 or 3 feet.

"After trials made on 15 flowers of 3 species, I find that no moderate degree of violence on any part of the flower excepting the antennæ produces any effect, but when the right-hand antenna is touched the pollinium is instantly ejected. In C. tridentatum a touch from a bristle sufficed; in five specimens of C. saccatum the touch of a fine needle was necessary; in four others a slight blow was required, I measured the length of several cells in the tissue of the antennæ of C. tridentatum, and found that the stimulus must travel through 70 to 80 closed cells. I have stated that in C. saccatum the right-hand antenna does not hang down and is almost paralysed, and as this does not guard the labellum, which seems in all Orchids to be the part attractive to insects, its sensitiveness would be useless. * * * The viscid matter sets so firmly and the pedicel is so strong though only 1-20th inch broad at the hinge, that it supported for a few seconds a weight of 1262 grains. The utility of so forcible an ejection may be to drive the soft and viscid cushion against the hairy thorax of a large hymenopterous insect, or the sculptured thorax of a flower-feeding beetle. When attached assuredly no force that the insect could exert would remove the disc and pedicel, but the caudicles are ruptured without much difficulty, and the pollen would thus be left on the viscid stigma of a female flower."

After summing up his observations on the uses and positions of these wonderful sensitive antennæ of the Cataseta, Mr. Darwin says: "In every case notice will be given by them in an admirable manner when an insect visits the labellum, and the time has arrived at last for the ejection of the pollinium and for its transportal to the female plant."

(*To be continued.*)

The *Floral Magazine* for September has good figures of Azalea Brilliant, Two-coloured Bee Larkspur, some pallid varieties of Gloxinia, and a new Japanese Lily called Lilium (nova species). The Larkspur has nothing to do with what is called "The Bee," but is a very fine state of D. chinense, itself a variety of D. grandiflorum. As to the Lily, it is some species in a very ugly monstrous state—most likely L. Thunbergianum.

Routledge's Illustrated Natural History, Part 43, is now among Insects, and the Lepidoptera or Butterflies have supplied some gorgeous figures. But we must observe that the woodcuts in this Entomological Department are very inferior to those which preceded them; it would seem as if they could not proceed from any artist.

Garden Memoranda.

Royal Horticultural Society's Garden, South Kensington.—As promised last week we now furnish a coloured plan of one of the handsomest of the many beautiful examples of Mr. Nesfield's embroidery represented in this garden, the appearance of which, notwithstanding that the sear and yellow leaf begins to fall from the trees, is as gay as could well be expected at this season of the year. The plan in question represents a circular sunk panel in front of the central piece of water, at the head of which preparations are being made for the erection of the great commemorative monument of the Exhibition of 1851. In the middle is a stone vase 12 feet in diameter filled with flowering plants, and surrounded

by a broad edging of Grass, which forms a centre piece to a series of circular devices in Box and made up of gravels of different colours, and gay flowering plants. In this figure the larger beds, of which separate illustrations are given, are filled with Crystal Palace Tropæolum (T. Lobbianum elegans), Purple King Verbena, Calceolaria aurea floribunda, and Trentham Scarlet Geranium. The triangular drab coloured side pieces are occupied by Variegated Geraniums of different sorts, broadly edged with blue Lobelia (L. erinus speciosa). The small inner scroll-like figures consist of blue Lobelia and Box embroidery, the whole associated and so gracefully interspersed with coloured paths as to have a highly finished and charming appearance. Of the walks the red consists of pounded brick, the blue of Bangor slate, and the yellow and white of Derbyshire spar. In the vase in the centre is a tuft of Pampas Grass, round which are Scarlet Geraniums edged with Ivy-leaved varieties, which are not permitted to crop over the stone work so far as to hide it. Round the whole panel is a substantial edging of Seeley's artificial stone, and on the Grass above, at regular distances apart, are Standard Roses, backed up by two clumps of dwarf Yews, which may be seen in front of the water, coloured pale blue on the plan. In the latter, which is full of fish, are growing Calla æthiopica and white Water Lilies, the latter now in flower.

The two great triangular series of figures in front of this centre piece are also at present in excellent condition. The straight outside borders or ribbons contain in the middle Scarlet Geraniums, on each side of which are Purple King Verbena edged with Mangles' Geranium. These when neatly trimmed in, as they are, have a pleasing appearance, the colours associating and contrasting well together. In the interior are fine masses of Geranium Brilliant, Scarlet Nosegay, and Rose Queen, the last extremely showy and beautiful; Crystal Palace Tropæolum also makes a useful orange, and we noticed good beds of yellow Calceolaria and Scarlet Orach, the last a warm and telling colour in compositions of this description.

In the different friezes in front of the arcades, coloured plans of which have been given in our columns, are some admirable mixtures, one of the best of which is on the west side. It consists of Flower of the Day Geranium, Purple King Verbena, and Tropæolum Lobbianum elegans, so interwoven with each other as to have a chaste and charming effect, which is heightened by the little red, yellow, and white coloured paths which form the groundwork of the figure.

Round a circular clump of Dahlias we notice Cineraria maritima, a common plant well suited for such a position, its prettily divided silver-frosted leaves setting off the dress of its more sombre-looking associates to excellent advantage.

Vases, which are plentiful, as they ought to be in an architectural garden of this kind, were everywhere well filled with Trentham Scarlet and other kinds of Geranium edged with blue Lobelia, to which was added in some instances, and evidently with good effect, Tropæolums; the drooping character of the latter in some measure broke down formality and gave to the whole an easy graceful appearance.

Araucarias, Deodars, and other Conifers, both large and small, are now pushing satisfactorily, and all will be delighted to learn that the two Wellingtonias planted by her Majesty and H.R.H. the late Prince Consort may also be included in this remark. In fact Wellingtonia and Cupressus macrocarpa appear to be well suited for withstanding the deleterious influence of town smoke.

At the bottom of the garden, near the Great International Exhibition, the ground occupied in May and June by Messrs. Waterer & Godfrey's American plants is now planted with a collection of Chrysanthemums, contributed by Mr. Salter of Hammersmith. These are both upright in the form of bushes, and pegged down close to the banks; and being in considerable numbers, a gay display may be expected late in the season.

In the new Conservatory an American Aloe is now in full blossom. It has a stem about 25 feet in height, ornamented near the top with numerous candelabra-like arms, each terminating in a cluster of yellow flowers. The Cochineal insect may also be seen distributed over Cactus opuntia in little cottony-looking tufts, and on the platform on the top of the steps in the centre of the building are two South Sea Cotton trees (*Gossypium barbadense*), some 8 feet in height, covered with palmate leaves. Here in a glass case too is exhibited an interesting group of the new Ailantus silkworm. Tasteful masses of fine foliaged plants occupy the main body of the house, along the front and ends of which are handsome semicircular stages, full of Asters, the old fashioned but really useful Sedum Fabaria, and other plants in flower. The edges of these stages have neat wire ornamentations, inside of which is growing Lycopodium denticulatum, which gives a green and lively finish to the whole, not to be overlooked in houses of this description.

Miscellaneous.

Singular Attack.—An attack of a peculiar nature occurred the other day near Carmarthen. A young woman named Gwenllian Williams was proceeding across the fields homewards from market, when she was fiercely attacked by a rook. The bird flew at her face, flapping its wings and cawing in the most violent manner. The girl was frightened and took to her heels. The enraged bird, however, still kept up the chase, and was only induced to forego the attack still further by a countryman, who, happening to pass at the time, drove it away. On examination of the face of the young woman, who had fallen to the ground in a fainting state, it was found that her left eye had been pecked completely away. She was conveyed home, and proper surgical attendance procured. Her face was also scarred and marked to a considerable extent, part of her lip being pecked away. *Country Paper.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Whatever watering may be necessary here should be done early in the day so as to allow all superfluous moisture to be dried up before night, and later in the season if cold dull cloudy days should occur it will be advisable to use a little fire-heat with air during the day so as to secure a moderately dry state of the atmosphere before night. Use fire-heat very sparingly, however, and only when it may be necessary to prevent injury from damp, or to prevent the temperature falling below 40°, or where things are brought from warmer houses it will hardly be safe to allow the night temperature to fall much below 45°; but in houses containing a mixed collection of plants there is more danger to be apprehended from a high night temperature than from keeping it somewhat lower than may be suitable for some of the inmates. Azaleas which have ceased growing and which have set well for bloom, should now be kept as cool and hardy as possible. Dutch bulbs must be purchased and treated as recommended last week, and Chrysanthemums for early flowering well attended to with water, and otherwise encouraged to make good growth.

FORCING DEPARTMENT.

Pineries.— Plants swelling their fruit must be assisted with a warm moist atmosphere, for it is difficult to get Pines to swell properly after this season, unless the atmosphere can be kept warm and moist. Therefore use sufficient fire-heat to secure a night temperature of at least from 65° to 70°, and 75° by day, allowing it to rise considerably with sunshine, and admit a little fresh air during the day when the weather is mild, using sufficient fire-heat to allow of doing this without lowering the temperature; and if there is the means of admitting fresh air so as to bring it into contact with the pipes on its entrance into the house, a little may be admitted with advantage in all states of the weather, and in the case of houses which have to be kept warm in winter there should always be some contrivance for admitting fresh air under or against the heating apparatus so that it may get warmed before coming into contact with the plants, and with proper arrangements a moderate supply may be admitted constantly without requiring any extra amount of fuel to keep up the temperature. Also endeavour to secure a steady bottom-heat of about 85°, and endeavour to keep the soil about the roots in a properly moist state, giving clear, rather strong, manure-water when necessary; but if the atmosphere is kept properly moist the soil will not require much water for some time. It is very difficult however to get Queen Pines to swell properly after this season, and any plants of this variety showing now should, unless in cases where ripe Pines of any size or quality will be valuable early next spring be kept cool and dry as soon as they have done flowering, until the middle or end of January, and then be afforded a brisk moist temperature; and treated in this way, we have often found them to swell off exceedingly well, and where ripe Pines in winter are in demand, Cayennes, Black Jamaica, and Montserrats should be grown to furnish the supply from November to April, for those not only swell better in winter than Queens, and the larger sorts of black kinds, but are also less liable to be hard and inferior in quality.

Vineries.—Should the weather become damp use gentle fires in houses where the fruit is ripe, but only just sufficient to keep the atmosphere dry. Use brisk fires in houses where the fruit is not yet ripe, giving air freely and be careful to guard the foliage from insects, particularly where the fruit has to be kept for any length of time after it is ripe.

Peaches.—As the trees will now be freely exposed to air day and night, very little attention will be required here for the present. The foliage should, however, be kept clear of red spider, by an occasional washing with the engine where necessary, so as to preserve it in health until it has performed its functions and decayed naturally.

FLOWER GARDEN AND SHRUBBERIES.

While the present favourable weather continues, the beauty of the flower garden should be preserved unimpaired; but should a change for the worse take place tender plants from which cuttings are to be taken next spring, or which are to be used again next season, must be housed. Variegated Geraniums will not bear much frost, and where the plants have to be wintered in situations which are not very suitable for them they should be taken up before they are at all injured, as they will be much more liable to damp and die back in winter if the wood is at all touched by frost. Unless where there is a sufficient stock of these they should not be cut back, as is usually done with the old Scarlets, but should be kept over the winter just as they are lifted from the beds, and cut back early in spring after starting them into growth, when the cuttings will root very freely in heat, and in the case of Flower of the Day, or other free growers, will make useful sized plants by turning out time, and even the strongest growers of these do not cover a bed very quickly unless planted thick, and the plants should therefore be wintered in as large a state as the accommodation will permit. Rooted Verbenas, &c., must be well attended to, keeping them perfectly clear of green fly, and exposing them freely to air on every favourable opportunity, so as to prevent anything like growth after this season, and keep the plants hard, in which state they will be much less liable to fog off under a week or two's confinement in winter than if they were kept in a growing soft state until overtaken by severe weather. Things which are not sufficiently established must, however, be treated somewhat more kindly, and should have a gentle bottom-heat to encourage roots, but do not keep the atmosphere close or moist.

HARDY FRUIT AND KITCHEN GARDEN.

Look frequently over Pears and Apples ripening, and gather those that are fit for storing. Where Currants are closely netted up the trees should be uncovered occasionally on fine dry days, so as to expose the fruit thoroughly to air, in order to prevent injury from damp. Trim and dress Strawberry plantations; and take advantage of dry days, when the ground is in working order, to take up and store roots, stacking them in sand in a cool place where they will be conveniently got at when wanted for use. Onions must be stored in a dry state, or they will not keep.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Sept. 10, 1862, as observed at the Horticultural Gardens

Sept.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind	Rain.
Thurs. 4	10	29.755	29.713	71	36	53.5	61	59	N.W.	[illegible]
Friday 5	11	29.793	29.719	72	42	57.0	60	58	N.E.	[illegible]
Satur. 6	12	29.990	29.911	67	45	56.0	60	58	W.	[illegible]
Sunday 7	13	29.998	29.966	76	39	57.5	60	58	W.	[illegible]
Mon. 8	O	30.069	29.906	76	50	63.0	60	59	S.W.	[illegible]
Tues. 9	15	30.054	29.982	77	51	64.0	61	59	S.W.	[illegible]
Wed. 10	16	29.990	29.880	68	31	49.5	61	59	N.	[illegible]
Average		29.949	29.868	72.4	42.0	57.2	60.4	58.9		[illegible]

Sept. 4—Cold heavy dew; fine; dusky white clouds; fine; cold.
— 5—Foggy; very fine throughout.
— 6—Fine; dull and overcast; very fine.
— 7—Overcast; fine throughout; cool at night.
— 8—Hazy; overcast; mild and very fine.
— 9—Very fine throughout; rain in the night.
— 10—Rain; cloudy; fine; very fine, 1 deg. of frost at night.
Mean temperature of the week 1 deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Sept. 20, 1862

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 14	66.6	46.2	56.4	19	0.84 in	1	4	6	4	3	9	6	1
Mon. 15	67.0	46.5	56.7	18	0.63	1	5	5	2	7	4	6	5
Tues. 16	68.1	48.1	58.1	15	0.50	3	6	5	1	9	4	6	2
Wed. 17	68.8	46.4	57.6	14	0.90	1	5	6	2	2	12	4	4
Thurs. 18	66.5	44.5	55.4	17	0.84	3	7	3	1	2	9	6	5
Friday 19	66.6	45.2	55.9	18	0.60	4	9	3	1	5	7	4	3
Satur. 20	66.8	44.0	55.4	16	0.45	3	5	4	4	3	7	6	4

The highest temperature during the above period occurred on the 17th, 1843—therm. 84 deg.; and the lowest on the 17th, 1840—therm. 29 deg.

Notices to Correspondents.

Names of Plants: *A J.*—1. Spiræa trifoliata, often now called Gillenia; 2, Physostegia virginiana.—*A M E.* 1. Phalangium Liliago; 2. Vincetoxicum officinale.—*C. L. Paxtonia.* Cotyledon umbilicus formerly, now Umbilicus pendulinus. The specific name refers to the depression in the middle of the leaves.—*C. F.* We suppose the flowers belong to Cotyledon obliquus, a greenhouse succulent from the Cape of Good Hope.—*Thomas.* It looks like Punica nana, the dwarf Pomegranate, but as it has no flower we cannot speak positively.

Red Cedars: *E H L W.* The apparently sudden blight of your Red Cedars is not a solitary case. We have now under our eye two fine specimens of several years' growth which in spring seemed very flourishing and bore abundance of male blossoms, one of which is quite dead, and the other though still showing some signs of life will soon perish. There have been no aphides on the trees, and in the absence of an opportunity of minutely examining the stem, we believe that the evil dates from the winter of 1860; that vegetation was carried by a narrow strip of bark, and that this has suddenly become incapable of performing its functions, exactly as we see branches of Apricots full of fruit perishing from similar causes. Your specimens are covered with a thick growth of Cladosporium consequent on the attack of the aphides; but we believe that neither is the cause of death. Your only plan, if our view is correct, is to cut off the diseased portions of the tree which still shows vigour in some of its branches. *M J B.*

Seedling Apple: *Mr. Van Houtte* has sent us specimens of an admirable autumn Apple, quite new. It will be published next week under the name of the Evagil Pippin.

Seeds: *J N.* All the seeds from Barruckpore require a hot-house, with the exception of Cassia marilandica, Lagerstromia Reginæ, and Clitoria Ternatea, which will thrive in a greenhouse. It is a collection of fine things, but some are unsuitable to cultivation here, being great trees. You might try your skill on the creepers.

Tobacco: *P.* There must have been a mistake somewhere. Other letters of inquiry have reached their destination.

Vine Leaves: *Subscriber.*—Your leaves are covered with red spider, which we believe to be the principal if not the sole cause of evil. *M J B.*

Vines: *Halesowen.* It will be proper to cut back one year Vines planted last April, after the wood they have made this year has been ripened, either by sun heat, or by this assisted by fire heat. How far they should be cut back depends on circumstances. Strong shoots will likely push immediately below where the Vines are shortened; and it is desirable that one or more of these should be as low as they can be, yet so as not to be shaded by the front wall. It was well to apply heat, and plenty of it, provided you have at the same time given abundance of air so as to ensure a robust foliage. In using charcoal it is well to first saturate it with liquid manure. §

CIRCULAR COMPARTMENT.— ROYAL HORTICULTURAL SOCIETY.

W. A. Nesfield, del. Vincent Brooks, Lith.

SUPPLEMENT TO THE GARDENERS CHRONICLE & AGRICULTURAL GAZETTE, 13TH. SEPT. 1862.

To the Editor of the Agricultural Gazette.

SIR,—My Combined Machine will be worked by Mr. Bartlett, of Westfield, near Brackley, at the Brackley Farmers' Club Meeting on the 16th Sept. inst. The trial field will be within a mile of Brackley Station.—I am, Sir, &c.,

WILLIAM SMITH.

Woolston, Bletchley Station, Bucks, Sept. 4.

Howard's Steam Cultivator.

To the Editor of the Agricultural Gazette.

SIR,—Our steam-cultivating apparatus can be seen at work daily, within a mile of Bedford Station. By recent improvements in our Cultivator, we cut and move the whole of the ground at one operation, and this with as little expenditure of power as it has taken to cut only a portion. By means of a simple slack-rope apparatus and improved porters, we carry the rope completely off the ground, thus very materially reducing the wear-and-tear, as well as loss of power. We invite intending purchasers to come and judge for themselves.

Your faithful servants,

JAMES & FREDERICK HOWARD.

Britannia Iron Works, Bedford, Aug. 16.

SMITH'S PATENT COMBINED MACHINE.— This Machine is admirably adapted for cultivating Light Land Wheat, Barley and Oat Stubbles, and Drilling in Stubble Turnips. Fifteen acres may be Cultivated and Drilled in one day, for Cultivating Light and Heavy Land Pea and Bean Stubbles, and Drilling in Wheat; and for cultivating Heavy Land Wheat Stubbles, and Drilling in Vetches. One operation will be enough for each crop, especially in wet seasons. It is warranted to do its work well.

For price and particulars apply to WILLIAM SMITH, Woolston, Bletchley Station, Bucks.

WIRRAL AGRICULTURAL SOCIETY.— The FOURTH AUTUMNAL MEETING of the above Society for the SHOW of STOCK, PRODUCE, and IMPLEMENTS, will be held at Birkenhead, on WEDNESDAY, Sept. 17, when upwards of 250*l.* will be awarded in Prizes.

Admission to Yard at 10 o'clock, 2*s.* 6*d.*; at 12 o'clock, 1*s.*; at 3 o'clock, 6*d.*

WARWICKSHIRE AGRICULTURAL SOCIETY.
BIRMINGHAM, 1862.

Under the Patronage of the Mayor and Corporation.

President.—The Right. Hon. the EARL of WARWICK.

The GREAT ANNUAL SHOW of HORSES, CATTLE, SHEEP, PIGS, IMPLEMENTS, CHEESE, WOOL, FRUIT, and FLOWERS, will be held in Aston Park, Birmingham, on WEDNESDAY, THURSDAY, and FRIDAY, September 17, 18, and 19, when Prizes to the amount of 1000*l.* will be awarded.

The GRAND DINNER, in a spacious pavilion on the ground, on THURSDAY, September 18, at 3 o'Clock, when the Committee hope Ladies will honour them with their presence. Dinner Tickets—Ladies, 2*s.* 6*d.*; Gentlemen, 3*s.* 6*d.*

Admission to the Public.—On Wednesday the Yard will open at 2 o'Clock, for the public judging and trial of Horses, 5*s.* On Thursday at 9 o'Clock, 2*s.* 6*d.* until 2 o'Clock; 1*s.* after that hour. On Friday, 6*d.* the whole day.

By permission of Colonel Wardlaw and the Officers of the Royal Dragoons, the splendid Band of the Regiment will attend on Thursday and Friday, and perform selections of Music.

STEAM PLOUGHS will be at work on Wednesday, admission 6*d.*

Railway Accommodation.—There will be Special Trains on all the principal railways.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 13, 1862.

MEETING FOR THE ENSUING WEEK.

THURSDAY, Sept. 18 { Warwickshire Agricultural Society at Birmingham.

THE question which has arisen as to the existence of any legal power to attempt by police regulations to confine the attack of SMALL POX IN SHEEP within the limits of its first occurrence, is answered by the publication in the *London Gazette*, of September 10, of an Order in Council, which recites the powers given by the Act passed in the 11th and 12th years of HER MAJESTY'S reign; and then proceeds as follows:—

"And whereas a contagious or infectious disorder, known or described as the sheep pox, or variola ovina, now prevails among the sheep in some parts of the United Kingdom, and it is expedient to take measures for preventing such disorder from spreading.

"Now, therefore, the Lords of Her Majesty's Privy Council do hereby, in pursuance and exercise of the powers so vested in them as aforesaid, make and ordain the several orders and regulations following—that is to say:—

"I.—It shall not be lawful for any person to remove any sheep or lambs to or from any or either of the parishes and tythings following, all lying and being in the county of Wilts, and near to the town of Devizes—that is to say, the parishes or tythings of Horton, Bishop's Cannings, Allcannings, Etchilhampton, and Allington, or to drive or conduct any sheep or lambs through or by way of such parishes or tythings, or any or either of them, unless the person so removing, driving, or conducting such sheep or lambs shall first have obtained a certificate in writing, signed by some person who may have been authorised by two or more justices of the said county of Wilts to seize sheep or lambs infected with or labouring under the same disorders under the 1st section of the said Act, that such removal, driving, or conducting may take place without danger of spreading the said disease.

"II.—All sheep and lambs dying in any of the stages of the said disease, whensoever such death or deaths shall or may occur, shall forthwith be buried by the person or persons in whose possession such sheep or lambs may be at the time of death, with their skins on, in pits of not less than 5 feet in depth, and the carcases so buried shall be covered with quicklime.

"III.—All sheds and places whatsoever, and all railway trucks and other vehicles which may or shall have been used or occupied by sheep or lambs affected by the said disease, shall forthwith, after having been so used, be thoroughly cleansed with water, and immediately afterwards purified with chloride of lime by the person or persons in possession of such sheds, places, trucks, and vehicles respectively.

"IV.—Every person in possession of any sheep or lambs in or among which the said disease shall manifest itself shall forthwith give notice, in writing, of the fact to the Chief Constable, or Superintendent of Police, of the county or borough in which such sheep or lambs may be.

"V.—And it is further ordered that this order shall continue in force for three calendar months from and after the date hereof."

It is to be remembered that the Act inflicts penalties "not exceeding 20*l.*" for the infringement of any of these Orders.

The following letters have appeared on the subject during the last week:—

1. "Having seen in the London daily *Express* of this day's date that the small-pox has appeared in a virulent form among the sheep in the county of Dorset, we, the under signed breeders and flockmasters of the county, desire to give the most positive and unqualified contradiction to such a report, as, from our own knowledge and position, we can positively assert that not a single instance has yet occurred in any part of this county.

"JAMES BURGESS	JOHN TORY
HENRY FOOKES	JAMES TORY
T. H. MITCHELL	WILLIAM MARTIN
HENRY SYMONDS	RALPH CRESDER
CHARLES FLOWER	J. RAWLINS
JOHN MATTHEWS	W. FOOKES
GEORGE HARDING	T. SHETTLES
GEORGE KEYNES	JOHN PORTER
JOHN KEYNES	JOHN STRANGE."

"Corn Exchange, Blandford, Sept. 6."

2. "Every possible inquiry has been made in this and the adjoining counties of Hants and Dorset by the member of Council above mentioned, as well as by other persons, and the result is that not one single case of small-pox of sheep is known to exist except at Allington, north of Devizes, and the two parishes adjoining. I quite agree with you that the farmers ought to court every inquiry, as I am quite sure by that means the disease will be the sooner arrested, and when the true state of the case is made known the greater confidence will the dealers have in attending the fair at Wilton, which I am sure they may do without the slightest fear. At Mr. Marsh's sale of sheep, at Stratford, near Salisbury, held yesterday, very high prices were given by the numerous dealers and flockmasters who attended the sale, showing, I think, the feeling as to the disease in this part of the world.

"Bulford, Sept. 4." "F. S. LONG."

There are those who object, and on good grounds, to the misnomer small-pox in sheep, considering it important to distinguish the malignant eruptive fever in sheep now raging in Wiltshire from the human small-pox. And there are still those who fancy that it may be communicable to man; and one person addressing the medical profession has even suggested that there is now an ample supply of lymph from the sheep for the prevention of human small-pox. It is satisfactory to know that although we may suffer from the sale of diseased meat, we need not fear that our mutton will be contaminated by the prevailing disease.

If the law to check the spread of small-pox passed in the 12th year of HER MAJESTY'S reign is to be enforced, what will they do with the inoculated animals? Many hundreds of sheep are now suffering from the disease simply from inoculation, and if not killed they insure the propagation of the disease for at least a month to come. They will doubtless fall to be slaughtered and buried according to law, if at the present moment they are labouring from the disease in any form. Does not this at once put a stop to the practice of inoculation, which has been vigorously practised for a long time? Professor GAMGEE, who has been studying the subject in the neighbourhood of Devizes, attributes it to the easy opportunities of contagion which prevail in North Wilts. Extensive driftways exist on the downs, and there is an active traffic between Bristol and London as well as between other counties. Lawless drovers have not hesitated to march on the downs and feed diseased sheep on the pretext of travelling. The only cause for wonder is that the prevalence of the disease is not more extensive. There is no doubt however that it is spreading. Meanwhile it exists in eight different flocks. Of these only one is distant from Allington, the centre of the present outbreak. The distant farm has been visited by Professor GAMGEE, and a brief report in the *Times* mentions that Hillwood, near Aldbourne, where the lambs have been seized, is on the high road of traffic, and the flock of diseased sheep unfortunately sold by Mr. STEPHEN NEATE had been in the locality.

The facts of greatest importance at present are, firstly, that the great majority of sheep hitherto affected have had it by inoculation; secondly, that the latest natural outbreaks have implicated few of a flock, and rather mildly; thirdly, that no outbreak has occurred from the originally diseased flocks, except in the line of communication accidentally established; and lastly, that every effort is being made to check the further spread of the disorder.

At the public meeting held on Thursday last (Sept. 11) at Devizes, one of the resolutions, as originally worded, declared that the mutual insurance society, in which the flockmasters of North Wilts proposed to unite, should be based upon the understanding that any member having recourse to inoculation shall forfeit all claim on the society for any losses. This however was objected to by several speakers, Mr. J. PARRY, jun., Mr. T. FERRIS, and others, and it was ultimately resolved that "it shall be a standing rule to separate any suspected cases, and to bury unskinned and unshorn all sheep dying affected with smallpox, and not to inoculate any sheep or lambs but upon a certificate from five of the committee residing near the affected flock, and by the veterinary surgeon appointed by the inspector of the society. Any member having recourse to inoculation, without such certificate, shall forfeit all claims on the society. All disputes shall be referred to the committee, five of whom shall form a quorum, and whose decision shall be final." Professor GAMGEE, who was present, said the practice of inoculation tended to produce a mild form of the disease, but there was as much danger in putting an animal with the disease from inoculation amongst healthy sheep as there was in healthy sheep taking the disease from those which had it from natural causes. He had no hesitation in stating, that on the downs of Wiltshire the practice of inoculation was attended with the greatest danger. His experience had led him to the opinion, that it was desirable that a plan of diminishing, rather than of diffusing or extending the area over which the virus might be spread, was the more desirable course to pursue.

To this Mr. PARRY replied, that out of all the sheep which he had inoculated, he had only lost three. He had himself experienced such great benefit from inoculation, and he thought in many cases it was indispensable.

THERE is no one to whom the thanks of English corn growers are more due than they are to Mr. PATRICK SHIRREFF, of Haddington. We owe to him many excellent varieties of Wheat and Oats and Vetches, which have taken firm hold of the country, and are now generally cultivated. No one has a better right to speak with confidence on questions about the selection and improvement of our sorts of grain—for this during the whole of his long career as a practical tenant farmer has been the subject to which his mind has more especially been directed. The remarks which he has made on HALLETT'S Pedigree Wheat could not therefore come with greater force from any other pen than his, and it is with some diffidence accordingly that we venture to dispute their propriety and accuracy.

The drawing, which is advertised by Mr. HALLETT as the portrait of an actual ear, was accurately drawn, and therefore it is entirely unfair to speak in connection with it of the Cow Cabbage with the cow browsing in its shade—an old illustration of one of the leading frauds which the history of the seed trade has afforded. Having seen the crop on the Manor Farm at Brighton last year, examined whole sheaves of selected ears, and carefully inquired into the history of the process to which they are due, we felt justified in calling the attention of agriculturists to them as an instance in which unusual attention, care, and perseverance were being successfully directed to the improvement of the Wheat plant.

Mr. SHIRREFF throws the work of plant improvement entirely upon Nature, contending for the selection of naturally occurring sports or varieties as the only method by which farmers are ever to obtain better sorts than those now cultivated. But it is surely reasonable to adopt all the artificial appliances of good cultivation with the same end in view. How does he know but that the selected plant in which he detects the vigorous origin of a new stock of seed for the market may owe that vigour and those characteristics which he wishes to reproduce upon the larger scale to the "accidental" operation and occurrence of causes similar to those which Mr. HALLETT has purposely and perseveringly applied. That there are certain features in the character of a plant to which a degree of fixity may artificially and by continued cultivation be given is well known. The whole practice of changing seed—thus getting in one's own locality the advantage of a character acquired under happier circumstances, is based upon this well known truth. Mr. HALLETT has proceeded on the existence of the property in question—and to the extent of its acknowledged existence we believe in the force and propriety of the term "pedigree" as applied to plants.

We can certainly vouch with confidence for the enthusiasm, care, perseverance, patience, and attention, which have been brought to bear by Mr. HALLETT for several years on the improvement of the Wheat plant: and we have nowhere else seen such ears as he exhibits in proof of his success.

The price which he charges for his seed is his own affair and that of his customers. We have nothing to do with that, except to say that the

readers of our advertising columns will soon learn that competition always in the long run reduces price to the degree at which it becomes a fair reward for labour, time, and skill.

STEAM CULTIVATION.

HOLKHAM, NORFOLK.

Recent History.—It is now nearly a century (1776) since the late Lord Leicester came into possession of his estates in the neighbourhood of Wells. At that time we are told by Lord Spencer, that Wells and other small ports on the north coast of Norfolk, imported considerable quantities of Wheat. There has long since been a large export trade from these ports; and this, in spite of the largely increased population of the district, is a striking proof of the altered agricultural condition of the country. It is not so much that more acres are now in corn than formerly. If large tracts now yield grain crops which formerly were waste, yet the old arable land of the country grows fewer acres now than formerly. The contrast between the grain yield formerly and now is however almost as great in the case of the old ploughed land as anywhere. The altered rotation and altered rules of cultivation have produced a greater yield from fewer acres. Formerly three white crops in succession followed by broadcast Turnips was the system followed wherever the land was at all capable of yielding grain. No manure was purchased and little was made.

Almost driven to it by the low rents paid him for his land, Lord Leicester took large quantities of it into his own hands. Some of the land now within Holkham Park had let for 3*s*. an acre—and on the expiry of the lease it was offered to the former tenant for 5*s*. an acre. It was refused, and this became a portion accordingly of the Home Farm. It now yields ordinarily 4 quarters of Wheat per acre, and large crops of Barley and of Turnips. The "three Wheat crops in succession" were first reduced to two—the land was allowed to remain longer in Grass—Rape cake was used successfully as a top-dressing for corn crops—marl was dug from beneath to mix with the light surface soil; first the Leicesters, ultimately the South Downs in large flocks replaced the few old Norfolk sheep formerly fed on the land; the Suffolk pig, crossed with the Neapolitan, was fed in large numbers in yards and sties—and at length the district has become not only a great corn-growing but a great beef-producing country. There is perhaps no district in England where the feeding of beef on arable land is so largely practised.

To what is a change so extraordinary owing? The cause is partly strictly agricultural, partly social. Lord Leicester acquired the experience of a practical farmer; and by his frequent public gatherings of the most distinguished agriculturists of the day, he acquired the influence which practical experience, united with position, gave him over his neighbours. His own success enabled him to introduce covenants into leases which soon put a different aspect upon his estate; and his experience is the best proof we have of the power of a well-drawn lease during the transition period between inferior and superior cultivation.

It is however as an illustration of an almost purely artificial agriculture that the Holkham estates are so valuable. There was the machine, a light sandy soil, but it had nothing given it to operate upon. It has been greatly improved no doubt by the admixture of marl found at varying depths below, and this marl besides improving the machine supplies it with much of the raw material on which it operates. On the Holkham property, more perhaps than on any other, is agriculture an art and manufacture. Manures and imported cattle food are largely fed into the machine, and the crops are to a great extent manufactured out of purchased raw material. It is here that the names of Hudson, Overman, and others have become celebrated in the agricultural world as high tillage farmers; and the dictum—"It is the custom here to manure for every crop," so necessary to good agriculture, where it is pursued under artificial circumstances, took its rise at Castle Acre.

We have already described Mr. Hudson's liberal treatment of his crops grown there—10 tons of dung, $8\frac{1}{2}$ cwt. per acre of mixed guano superphosphate and common salt to all his Mangels; 10 tons of dung and 3 cwt. of superphosphate to all Turnips and Swedes; 8 tons of dung and $4\frac{3}{4}$ cwt. of mixed guano and nitrate of soda and common salt to all his Wheat; $4\frac{1}{4}$ cwt. of mixed guano and common salt to all his Barley; 10 tons of dung and 4 cwt. of mixed guano nitrate of soda and salt to all his Clover; besides 3000*l*. worth per annum of oilcake, &c., consumed on his farms generally, to the great enrichment of the farm-yard dung. Is not this a feeding in of rags at one end for the sake of the paper that comes out from the other? It is a true manufacture, and the soil is a true machine, depending for its productiveness on the quantity of raw material that can be passed through it in a given time. This is the history pretty generally of the fertility of this district. The soil has certainly been improved as a machine by the marling which it has received and continues to receive; but its productiveness is maintained by liberality in manuring. This fertility is now so great that the consequent growth of straw sometimes interferes with the produce of good grain. And accordingly the rigid rule of a four-course rotation is relaxed under good management. Barley is allowed to be taken after Wheat, then comes Clover or Sainfoin followed by Wheat, and that by Turnips: and thus a malting Barley can be obtained, which after Turnips fed upon the land by sheep could not be grown.

Steam Culture.—This account of the fertility of West Norfolk, owing to the direct addition of fertilising matters to the soil, is somewhat out of place as an introduction to an account of steam cultivation; for *its* fertilising influence on the other hand is derived from its power as a picklock, giving access to the natural treasures of the soil. The district however includes besides its sandy soils, localities where the land is of a stiffer character—and although as a general rule the tenants of West Norfolk if ever they adopt steam-culture will not be driven to it by the inefficiency of their present management, yet there are localities even here where it will in all probability ultimately be preferred.

Lord Leicester's estates are scattered over an immense tract of the county, upwards of 40,000 acres in extent; they lie 30 or 40 miles apart, and on the eastern side of them there is a good deal of cold clay land, where thorough drainage and steam tillage may yet create an alteration as great as marling and manuring have produced on the light lands towards the west.

At present the combination of the two is confined to an experiment on a large scale under the direct superintendence of the landlord. Within the past few years a tract of about 500 acres of "slob land" occupying the site of a former channel to the port of Holkham (from which in Elizabeth's time two ships of war were commissioned), has been enclosed from the sea. The visitor from Holkham must now walk a couple of miles before he reaches the shore; and as he walks towards Wells, which is the seaport now, there lies upon his left, and between him and the sand-hills which have been thrown up on the farther side of the old channel, a well-cultivated tract, 1000 yards or more in width, of recently reclaimed rich alluvial loam. An embankment 2000 yards in length has been thrown across the lower end of this tract, on the outer side of which high tides stand some 4 or 5 feet deep, and thus 500 acres of what, except just at its lower end, is as rich as any alluvial soil in the world, have been recovered at a cost of about 11,000*l*.

An immense expenditure was still required to level and bring into cultivation a surface broken up with creeks and channels wide and narrow, and 4 or 5 feet deep, and to displace the seaside growth by cultivated crops. In less energetic hands the thing would have been effected by mere lapse of time, and such annual management as a low rent would have secured from tenants; and thus ultimately an uneven surface of good sward worth most probably 40*s*. an acre, would have been obtained at the cost of a few thousands more spent in roads and fences, and arterial drainage. The Earl of Leicester has however, fortunately for the neighbourhood, and we have no doubt with ultimate profit to himself, taken a personal interest in this reclamation, and that which might have taken 20 years to accomplish slowly, has been effected in two or three. By moveable trams and carriages the work of levelling has been accomplished over the great part of the extent; the whole has been divided by wide and drained roadways—yards and sheds and farm-buildings, providing shelter for working and other cattle, have been erected, for the most part of rough slabs and other material provided by the estate—drainage at wide intervals into the open ditches beside the roads has been accomplished—and as the land has consolidated and become cultivable the steam plough has been employed in cultivating it.

Fowler's 12-horse-power engine has been employed here for two years; it is provided with the new clip drum apparatus in place of the figure-of-8 arrangement of pulleys underneath it, which was the former plan of pulling the wire-rope to and fro; the plough frame, however, is still without the apparatus for taking up the slack rope. The anchor, too, is unimproved. A good many of the more recent improvements in the apparatus have yet to be adopted; nevertheless a great deal of thorough work has been accomplished—more, probably, during the past summer than on any other farm of equal extent in the country—for several very large fields have been fallowed by its aid—and lie now in the best possible condition for next year's yield.

The difficulties of a first cultivation on the soft recently enclosed land have been of course excessive; being without roads, the engine had to pull itself along over rows of faggots, it has nevertheless been often almost bogged—anchors with insufficient hold in soft alluvium have had to be weighted and blocked to hinder dragging. Hereafter the engine will travel on the roads, which are furnished with sunken posts at intervals by which it can pull itself along; and as they are wide enough the plough will work the ground close up to their edge; the quantity of headland to be worked by horse-power will then be reduced to a minimum.

The cultivation hitherto, excepting the lands which have now been thoroughly fallowed, has been exceedingly rough and imperfect. After the rough levelling which has been done by trucks and shovel, the land has been ploughed once with the steam plough, and Oats have been sown and harrowed in. Heavy crops have thus been grown. The stubbles have been ploughed and harrowed, and Oats again sown, and a second crop has been generally better than the first—10 quarters per acre have thus been not unfrequently obtained. The Oat stubble has been ploughed once more, and Wheat has been taken, in several instances this summer after this cropping. In some cases Beans have been taken, and in others Peas after cropping of this kind.

The Peas have yielded admirably this year; the Beans have been blighted. Very heavy crops of Barley have been grown this year. The young Clovers are better under the Oats than the Barley. An exceedingly heavy crop of Coleseed has been cut and harvested, 360 bushels of seed have been threshed off 8 acres of land. A fair crop of Potatoes has been grown on some of the lighter land near the embankment. A good plant of Mangel Wurzel stands over a considerable extent of the land, and there is a promising piece of Carrots. A good deal of the deeper and more clayey part of the land was unable to receive a crop in 1861, owing to the exceedingly soft and sodden state in which 1860 had left it; it was accordingly worked several times with the steam plough, and subsoiled with Cotgreave's subsoil plough, by which two furrows in width and two in depth are thoroughly intermingled. Since then it has been limed, receiving 300 bushels per acre. It is now lying in a most perfectly tilled condition—thoroughly opened up to the atmosphere, sufficiently drained, and deeply stirred. Naturally as full of fertilising matter as it can hold, it has had these stores placed fully at the disposal of whatever crop may be grown. If Wheat is to be grown it will be sown towards the end of September, at the rate of about half a bushel per acre. It has been proposed, however, to grow Mustard seed, and there can be no doubt that an immense crop would be obtained, if fortunately there should be good harvest weather for it.

A great deal yet remains to be done within the embankment—a great deal even on that which has already been brought into cultivation—still more on the lower portion of the enclosed tract which is yet unlevelled. The drainage of the levelled portion is still imperfect. In place, however, of assisting it by a surface configuration of ridge and furrow, the Earl of Leicester prefers to assist it by deep subsoiling, and there cannot be a doubt that if the channels are sufficiently frequent the latter method is the more fertilising of the two. A great variety of soil exists; sheer sand occurs in patches, comparatively stiff clay occurs elsewhere, and the commixture of the two by cartage is being gradually effected. In other places deep ploughing and especially the use of Cotgreave's subsoil plough has brought up and mixed with the surface the stiffer layers which lie below. That all this can be done much more cheaply by steam-power than by horse is unquestionable. Whatever the first cost may have been, hereafter it need not be great—10*s*. 6*d*. spent in wages, viz., 3*s*. 6*d*. each to engine man and ploughman, 1*s*. apiece to two porter boys, and 1*s*. 6*d*. to the lad at the anchor, will with the aid of boy and water-cart plough from 3 or 4 acres of deep subsoiling up to nearly three times as much of 7- or 8-inch ploughing during a full summer's day. A most thorough breaking up of the land is thus cheaply effected. And on clay land especially it is an immense aid to the drainage of the land, and to its subsequent easy tillage by horse-power.

Of course the levelling and first tillage of land so rough and intractable and various has been most expensive. And the 400 or 500 acres, when thoroughly well tilled and equipped as a farm, will, embankment and all, have cost probably 50*l*. or 60*l*. an acre. It will, however, be worth at least 3*l*. an acre, and would, if in the Carse of Gowrie for instance, let for a good deal more; so that whether or not it has been the more economical plan thus by steam power to urge on the completion of the process, instead of letting time and improving tenants do the work with less outlay by the landlord, there can be no doubt that the land will have been cheaply bought when Lord Leicester's improvements are completed. Hitherto the tillage has been followed by enormous growth of straw, and no manure except upon the light sands and for Mangel Wurzel has been applied. The straw crops which may be grown successively upon the rich vegetable mould of the alluvial loamy portion of the estate, will, trod down by cattle fed on Mangels, other roots, and cake in yards, soon help the poorer portion of the estate; and the lessons of energetic agriculture, both that of fertility by tillage which the present Lord Leicester is teaching, and that of fertility by manuring which all West Norfolk teaches, and which the late Lord Leicester more especially taught, are well illustrated on the Wells enclosure.

Holkham Park and Home Farm.—Visitors to the Holkham property will, however, we imagine, still continue to look upon the latter of these two lessons as the most important lesson of the district, and great as the improvement of the alluvial clays of Wells may be, that of the light sandy soil of the county generally is the more remarkable of the two.

The Home Farm at Holkham, surrounding the central deer park around the mansion, is itself a good illustration of the improvement which the estate generally has thus exhibited.

A good set of farm buildings, erected from the plans of Mr. G. Dean, includes a central roof with gangway and yards on either side, the whole surrounded on three sides with wide roadway, and a roofing covers coach house and stables, bullock boxes, cow byres, and farm horse stables. There is a long established herd

of Devons on the farm, from which prize animals at the Smithfield Club's Show, and that of the Midland Counties Association at Birmingham have been annually shown. The cultivation of the arable land is in the four-course system—Red Clover, mixed seeds with Trefoil and Dutch Clover, and Sainfoin being taken in succession respectively at each return of the Clover crop on the course, so that each comes round once in twelve years. The farm yard dung made in yards from cake and Turnip-fed beasts is put in heaps with layers of marl, and covered over with marl, and the whole thrown up together is carried on the Clover for Wheat. Mr. Keary, who has been agent over the Holkham estates for many years, also undertakes the general direction of the land which is held in hand; he finds that a top-dresssing of mixed guano, nitrate of soda, and common salt—5, 4, and 1 stone respectively per acre—commands in general an increase of 6 bushels of Wheat.

The root crops, both Swedes and Mangel Wurzel, are this year very good. The latter have suffered considerably from the attack of the grub, but they will be a heavy crop notwithstanding.

The Park is noteworthy for its very evenly grazed condition, and for the entire absence of Thistles, which have been got rid of by perseverance in spudding. It is also note-worthy for the magnificence of its extent, the length of its avenues, the bold arrangement of wood and water in its landscapes, the extent and beauty of its mansion and surrounding terraced gardens, both in the Italian style.

Mr. Keary, who has long been agent for the Earl of Leicester, is about to leave the estate. Though coming to it when the great improvements introduced by the former owner were already in full operation, he has had much, especially in renewing farm buildings, to accomplish, and he leaves the estate in this way very much improved. We owe to Mr. Keary all the labour and results of a series of experiments lasting over several years, on which a very interesting report by Mr. Lawes on manures applied to the Barley crop has been published in the Journal of the English Agricultural Society.

The adoption of steam culture has, however, we understand, been exclusively Lord Leicester's act. It is unquestionably better adapted to the comparatively heavy and unenclosed lands where his lordship has adopted it than to the lighter lands of the Holkham estate, where a great deal of carriage of manure and marl to the field, and of Turnip from the field to the homestead, necessitates a larger stud of horses than is elsewhere needed, and where the lighter land suffers no injury by treading; but it is not improbable that, an example having been once set, the successful steam tillage of the heavier soil will result in the spread of the practice beyond the limits of the district to which it seems naturally confined. *J. C. M.*

LONG LEASES.

I have seen a great deal of the evils of short leases, and I have had several opportunities of seeing what has been accomplished when farmers knew that they were protected by a long lease. In 1805 or 1806 my late father took Nateby Hall Farm under lease. There was on the farm a great quantity of wild top moss land; nothing grew upon it but Heath, consequently it was of no value. The preceding farmer said it was not worth cultivating, and he did not attempt it. However, my father marled and ditched about 40 or 50 statute acres, and the result was that in two or three years' time there were good crops of Oats and afterwards Clover, and there have been crops on the land ever since. Land which was previously worth nothing became worth in a very short time from 25*s.* to 30*s.* per acre per year. The tenant on this farm, who preceded my father, paid 120 guineas rent, and made nothing out. My father took the farm at 400 guineas rent, with 30 or 40 acres less land, and made money. It would be difficult to mention a stronger argument than this in favour of ditching and marling under a long lease. Some of my forefathers took under a lease of 99 years 100 acres of Moss land in Out Rawcliffe, and brought them into a state of cultivation, and the result was that in 1805 or 1806, land which had never before produced anything but Heath or Ling yielded 12 loads of meal per customary acre, and this for 14 acres together, and in that year they had about 300 loads of Oatmeal, all from Moss land. I remember being in Leeds market some few years ago, and I there saw an exceeding fine sample of white Wheat which had been grown upon fen land. The merchants who had it to sell informed me that it was produced from land which an intelligent farmer had taken under a 21 years' lease. The value of the land before it was cultivated may be judged of from the fact that under the lease it was let for 5*s.* an acre, and here you see before the lease had expired the land grew some of the finest Wheat it was ever my pleasure to behold off this class of land. If any one wishes to see what is possible to be done in the way of reclaiming and benefiting Moss land, they cannot have a better opportunity than by visiting and inspecting the land, about 400 statute acres in the occupation of Messrs. James Jenkinson & Sons, Pilling; 200 or 250 statute acres of that land were formerly as bad and worthless as could well be imagined, and it now yields the finest crops of Wheat, Oats, Clover, Potatoes, &c. Several of his neighbours have also been successful in turning into good productive land what before only produced Ling or Heath, and could not be let at any rent. Any one acquainted with the locality knows that there is in Pilling, Stalmine, Winmarley, Cockerham, and St. Michael's several hundreds of acres of Moss land utterly unproductive. This ought to be brought into a state of cultivation by means of draining and marling. And the expense of doing so would be much less than by reclaiming land from the sea, as they do in many places. I reckon that the cost of reclaiming Moss land—that is, draining and marling, or claying it—before it is fit to receive a crop, is from 4*l.* to 6*l.* per statute acre, but, of course, all depends upon the distance marl has to be carted. Now, in order to complete this work three or four years are required, and unless a man is willing to pay for this work himself, farmers will not be found to do it without a long lease. I know an instance of a farmer in St. Michael's, who took about 100 statute acres of land, which, since Noah's flood, I suppose, never produced anything but Ling. He brought it into cultivation under a lease of 14 years, and it now produces excellent crops, and he is amply paid for, as it were, making the land. And then I have known an instance of a farmer being offered Moss land rent free for three years, but he would not undertake to reclaim, and I think he was right. They formerly had it free of rent for seven years. If farmers had the Moss land offered to them for 14 years at a low rent, say 5*s.* an acre, barren and unproductive land in our country would soon disappear. Were this plan adopted, landlords would be great gainers; for at the end of the term at the very least their land would let for 20*s.* per acre per year, whereas it now fetches no rent whatever. One good plan I conceive of reclaiming Moss land is to let it in small farms of from 30 to 60 acres, putting up buildings of an inexpensive but convenient description, and then leaving the farmer to push his way, which he will do, if he knows he is protected by a long lease. Another good plan is to add unreclaimed Moss land to adjacent farms of hard land. It will be found that this reclaimed Moss land is specially adapted for growing Potatoes free from disease, as numerous instances could be produced where crops of Potatoes on hard land have been seized with the disease, whilst those on the Moss land have escaped entirely. It is my firm conviction that in the townships I have already alluded to in this locality there is sufficient Moss land to yield annually 20,000 to 30,000 loads of Potatoes; that is, if the work of reclaiming were undertaken, besides what may be done with Moss lands in other parts of our country, such as Chat Moss, Farrington Moss, &c. Who cannot perceive that this would be a most important means of adding to the wealth of the country? In order to accomplish the cultivation of Moss land, good deep and wide water-courses and good roads are essentially requisite, and as an extra quantity of labourers are required, cottages should be erected in order to prevent the necessity of labourers having several miles to walk before they reach their day's labour. With respect to Grass lands I have to observe that if tanks for liquid manure were placed on each farm, they would prove of great value. These are expensive, and many farmers, although convinced of the usefulness of liquid manure, do not procure tanks, because their occupancy of their farms is so short and uncertain. It would only be fair and reasonable if landlords assisted the farmers in making manure tanks. If materials were found by the landlord, many farmers would gladly provide labour and carting. I have seen land made to produce double quantity of Grass, or more than that, by draining and manuring or boning, or by using a mixture of bones and guano. I know an instance which I can point to, in the neighbourhood of Garstang. The land was wet; it is now well drained. Bone manure was applied, and where formerly only one horse and five cows were able to graze, there is now sufficient for five horses and 20 cows. I venture to throw out a hint which may be beneficial; the idea appears to me to be founded upon reason. If a field were laid down for a permanent pasture with Grass seeds and a crop of grain, should the Grass entirely fail, I think leases should be so framed as to allow the farmer to plough up the field again and try it with another crop and Grass seeds, provided the farmer were willing to let another field be in Grass which was due for ploughing. As an instance of what may be done in Grass land, I may mention that my father drained a meadow in Aldcliffe, and after manuring it well for two or three times it produced four or five times as much Grass as it did before, and, what is of great importance, I may confidently state that the Grass was of much better quality. My father, who for many years was known in this neighbourhood as a successful farmer, believed firmly in the great advantages to be derived from draining and tilling. I have known him lay out in one year (at the commencement of a new term) almost as much money in tilling and draining as the rent amounted to. In 1825 he spent in this way about 300*l.*, and during a term of nine years I have known him spend from 700*l.* to 800*l.* in the work of draining and tilling. What was the return? Double crops of Wheat, Beans, Oats, Clover, &c., to what he had before. The beneficial results I have alluded to were wrought out under long leases, and farmers ought to have leases of 14 years, in order to stimulate them in cultivating their land properly. Seven years is too short a term; it takes three or four years to complete the work and get the land into proper order. Then, during the remaining seasons, there is not time to reap the advantages, especially if the seasons prove unfavourable. If a farmer should die during the time his lease is running, and his widow should be unable to carry on the farm, and the farm has to be re-let, there should be some arrangement made by which the children of the farmer should derive benefit from the additional rent which the farm would fetch in consequence of the money invested in tilling and improving during the early part of the term. I am firmly persuaded that if this mode of tilling and letting land were brought about, farmers would till their land with much more spirit than they do at present. I should much like to see our farmers sitting under 14 years' lease; then I am sure they would be better able to compete with their neighbours the Scotch farmers, and we should have much larger crops both of Grass and corn. What our farmers produce generally is better than what we import. We have had 12 years' free trade in corn and other farm produce, thereby giving a fair test of prices; and I do not see that farmers for the next 10 years may look for any better prices than they have had during the last 10. I have alluded to the evils of short leases. Just let me say that I have seen where a farmer in this neighbourhood, on a farm taken from year to year, put nearly all the manure his farm produced upon ploughed land—thus robbing his meadows until they became wretchedly poor. This ploughed land also became poor by his taking therefrom two white crops in succession. This farmer was succeeded by one having a seven years' lease. He manured and tilled and drained thoroughly; but at the end of seven years he was between 300*l.* and 400*l.* out of pocket, and unfortunately for him he did not succeed in getting his farm for a fresh term, thus obtaining no recompense for his expenditure and labour beyond a prize at an agricultural society for the best managed farm. Thus it will be seen that an enterprising farmer may bring ruin upon himself with a lease simply for seven years. In my opinion the remedy for this lies in leases not less than 14 years in duration. In conclusion, I beg to observe that I believe there is nothing more honest than land. If you do well to it, it will do well to you, or, as it is expressed in Proverbs, 28th chapter and 19th verse—"He that tilleth his land shall have plenty of bread." Let our farmers have fair play, and I believe they will till and do all that is requisite; but landlords should be reasonable, and grant long leases. [The above is taken from a paper on Leases, read by Mr. Lewtas, before a Lancaster Farmers' Club.]

PEDIGREE WHEAT.

In your Number of last week Mr. Patrick Shirreff, of Haddington, volunteered his opinion of my Wheat crops here, which he says, and no doubt believes, he inspected in the early part of August.

In the leading article of the *Mark Lane Express* of the 4th August, the writer (who visited me without notice, and upon his arrival declared himself "an avowed sceptic") gave a report of what he saw here on the previous Friday, August 1st. This report is too long to permit of my asking you to insert the whole of it, but the following extracts give the gist of it:—

"The practical answer is already before us. We have travelled from the garden ground to the farm itself, and there in large pieces, of many acres extent, on the hill and in the valley, Mr. Hallett can show by far the finest Wheat we have seen this season. Remarkable even in appearance, with a run of magnificent ears that really do 'bear out the engraving and advertisement,' there is a crop that looks like seven or eight quarters an acre. And this, let us bear in mind, on land anything but naturally good, and with much of it that has scarcely been done justice to, in the way of dressing. Mr. Hallett's secret may be simply selection—or early planting—or aëration—or thin seeding—or a certain combination of all these elements of success; but so it is, that he has got far away the best crops, where his immediate neighbours have only indifferent, and this without any heavy expenses in what is commonly known as 'preparation.'"

Were anything required to add force to such evidence from so high a quarter, it may be found in the circumstance that the writer was accompanied by one of our most eminent Sussex farmers, who years ago saw the very commencement of the selection. This gentleman, after having inspected all my fields, thus addressed me:—"Well, I always said, you know, that when you could show me practical results on a large scale throughout your farms, and not till then, I would sow your Wheat. You have now shown me such results and I will have some of your Wheat."

Again, in the *Mark Lane Express* of August 25th, another high agricultural authority gave in a long article, headed "My Observations at Brighton," and signed "F. R. S.," at least an equally favourable account of my crops. All the above evidence refers to precisely the time of which Mr. Shirreff speaks. You will remember that at this very time, too, I invited you to inspect my crops; but which, unfortunately for me, you were unable to do.

Thus much as to my own crops; but let me now refer to those who grow my Wheat, for, after all, that is the true test.

Mr. Shirreff, in the first and last paragraphs of his communication, pretty plainly insinuates that purchasers of my Wheat do not obtain what they pay for, and that it and its name are mere clap-trap. As

this, if not altogether groundless, would be a serious charge, I ask you as a simple act of justice to afford space for a few reports from growers of my Wheat this year, which as they have been printed within the last month in the public journals I am quite at liberty to reproduce.*

"I purchased last year of Mr. Hallett a bushel of his Pedigree Wheat. I dibbled on my Binten farm, in the month of September, about 3 acres as he directed. The field is a poor sandy field of 32 acres, and all of it is Wheat; but the part dibbled with Hallett's is conspicuously superior to the rest of the field, which was drilled in November, 2 bushels to the acre, in the old fashioned way. The ears are large, containing 14 and sometimes more corns in length, and four chests. I estimate the crop at nine sacks to the acre, but by others it has been estimated at 10 and 11 sacks to the acre.

"I cannot fix the precise date, but about November I dibbled about half an acre of the same Wheat on my farm at Aldershott, which is stiff land more suited to the growth of Wheat. My bailiff estimates this crop after the rate of 14 sacks to the acre. It has, like the Wheat on the sandy farm, generally 14 corns in length, sometimes more, and four-chested. The straw on both farms is higher and more of it than the commoner sorts of Wheat, which gives Hallett's Wheat an additional value to me. Ben. Nichols.

"Farnham, Aug. 6."

"Having read in the *Midland Counties Herald* of yesterday an article headed 'Pedigree Wheat,' in which one of your correspondents seems to doubt Mr. Hallett's description and drawing of this extraordinary cereal, and says he should not object to go some distance to see a head like the drawing; if he would venture as far as this locality I think I could satisfy him that it is possible to grow this Wheat elsewhere, besides the neighbourhood of Brighton. I have taken some interest in this description of Wheat, and planted an acre or two last autumn. I was with some friends examining it yesterday, and found stools containing 40 ears, and from 70 to 80 grains in each, and on placing some of them on Mr. Hallett's drawing found them as fine as his, and as long within about one-eighth of an inch. If your correspondent should pay a visit to this Brighton of Wales, I should be happy to show him my crop, though a small one. Apologising for thus troubling you, I remain, yours truly, W. F. Chapman.

"Tebed-Bryn-Maenol, Llandudno, Aug. 7."

B.

"I can now add my mite to the testimony in its favour from having had an opportunity of inspecting some of the crops produced from it in Norfolk during my stay in that county.

"The first of these I visited was that of the Rev. Mr. Govet, at Aldby, near North Walsham. He purchased some of the Wheat last autumn, and drilled it on a piece of Potato ground. It was, I believe, put in rather late in the season, which is a common practice in the neighbourhood; but it throve well, is a full plant, with large ears, having 12 and 13 sets on each side, with three and four grains to the sets. The crop is estimated by a judicious old farmer in the immediate neighbourhood, at from 8 to 10 quarter per acre, probably the latter, as there is no under corn, almost every stem being 5 feet 6 inches in height. The quantity of seed was only 1 peck per acre. Mr. Govet planted some of the same seed upon a piece of 'Alland,' only once ploughed; but it did not succeed, the land being very dry at the time of planting. There is no doubt that the more the soil is comminuted the more certainly the Wheat will succeed; and I believe this will apply to Wheat sowing in all cases where the land is dry, and rain does not fall soon after it is sown.

"The second crop was that of Mr. Rendle at Suffield. It was sown in November at the rate of 1 bushel per acre, and it appears to be an equally good crop with the former, and is estimated to yield quite as much, if not more than Mr. Govet's. Both these were sown without any dressing; the land was in a fair state of cultivation, and of good quality of soil: but no extraordinary means were employed to force the crop."

In the *Times* of Sept. 2, 1862, in a letter headed "Harvest Prospects," the following paragraph appears:—

"Between the English Channel and Middlesex Wheat on all land is late, badly filled, and of poor quality. I have 12 varieties on my own farm in Sussex, none of which are an average, although on highly farmed land, except a small trial lot of Hallett's, the seed of which I had from Messrs. Lawson, the Seedsmen, and which is good in quality and quantity—say 40 bushels an acre."

I could, with the permission of the writers, add many more such reports, some of them from millers. Mr. Shirreff says he found two ears of my Wheat containing 50 and 56 grains only, while in a neighbouring crop he found an ear containing 61 grains. Let us realise for a moment the curious spectacle presented by Mr. Patrick Shirreff, a grower and advertiser of Wheat for sale, trespassing over my farms eagerly searching for the very worst ears in my crops, in order to compare them with the very best ones on my neighbour's land, and crowning all by fixing the average contents of my Wheat ears at something under 40 grains, in evident ignorance that the usual number is only about 22 grains! He then proceeds to say that in an ear then before him he found 100 grains, &c., &c.

I now beg to forward for your inspection half a dozen ears of my Wheat grown this year out upon the farm, one of which contained 114 grains on 31 "fertile notches," the length of the ear being 6¼ inches, and its form as good as I can well wish for. The six ears average 106 grains in each. I also send you 2 quart samples of my Wheat, the one grown here on the chalk, the other on sandy loam, that you may judge of its quality.

Mr. Shirreff in his remarks upon the Wheat in "tubs" at the Exhibition, carefully keeps out of sight the facts, which were written upon them, that they were removed from where they grew, taken to Battersea merely to show the number of stems a single grain would produce, and that they have been unable to survive their removal.

The ears in the cases are now empty, the grains having been taken out, but they were all sent to you last year for inspection when full, and the average contents of each was 102 grains.

Had Mr. Shirreff come to me I should have had much pleasure in showing him everything upon my farms, his description of which convinces me that he has but very little idea of where they begin or end, and his want of courtesy in not doing so has led him into confounding "Mr. Hallett's land" with that in his own occupation. In conclusion, let me say that the tone of Mr. Shirreff's whole communication forces the conviction that the success of my Wheat has operated most inconveniently upon the sale of his own. *Frederick F. Hallett, The Manor House, Brighton, Sept.* 8.

* The letter marked B is a long one, and is signed "An Old Norfolk Farmer," Beccles, Suffolk, Aug. 15.

Home Correspondence.

Steam Cultivation.—According to your Paper I was a competitor for the steam plough prizes offered by the Sparkenhoe Farmers' Club, and got beat by both Fowler and Howard. This is a capital joke. Thrashed in my absence, for I was not present, neither did I enter or send implements to that show. The last time I worked publicly in the same field with Fowler's and Howard's tackle was at Bury St. Edmunds, where I thrashed them both, and well too, for the former's cultivating work on the Thursday was done so badly, that they ploughed it over to hide it from the eye of the public, and the latter was obliged to wind his ropes up without being able to do (after trying to do it three ways) a portion of his allotment. Yet at the Sparkenhoe Club I am to get thrashed whether I will or not. A week or so before the Show a secretary of that Club wrote to me asking me to send a set, as Howard had not entered. Yet at the show his tackle is there, and there is also there a set of mine without my authority, whether I will send or not. So in this way they manage to thrash me. Yet according to *Bell's Weekly Messenger* my No. 3 made excellent work. Here are *Bell's* words: "Mr. Smith's No. 3 did the work allotted to it in a very excellent manner, and we cannot precisely comprehend why the judges did not allow it to go on the second day." *Bell's Messenger* also shows that it was Mr. Terrell of Stockingford who showed my No. 3. It was contrived last year for this same Mr. Terrell to send one set of mine and one set of Howard's to enable the latter in a sham fight to thrash me. To do the job easily Howard's was placed to work upon a piece of nice working Bean stubble, and mine upon a rough hard Oat stubble, so in this way the Sparkenhoe Club manages to get rid of its money. So much for sham trials! Yet if we reflect for but one moment, seeing what Mr. Terrell did last year, we must see that he must have had an excellent opinion of my No. 3 to have entered it in open contest against the two great would-be champions, after he in a sham fight last year thrashed it himself with a mere hurdle, a mere makeshift, that can't do tough work at all, especially over unequal surfaces. In conclusion, I beg to state that I claim the privilege of defending myself by my pen when placed in an unfair position by any society or persons. *William Smith, Woolston, Bletchley Station, Bucks, Sept.* 9.

Mangel Wurzel Leaves affected by Caterpillars.—It is a matter of regret that a plant so valuable to the farmer as is Mangel Wurzel should have suffered so much of late in England as to lessen its culture where so much wanting. For over 40 years I have been cultivating this crop, and never but in one season did I see it attacked with the grub so much complained of in England. The year in which I saw it attacked was 1851, and if I mistake not the attacks were then severe in England also, and if I remember rightly have seen at the time the insect which produced the grub described by you. Be that as it may the insect that produced the grub on my plant was a small greenish butterfly that I have never seen before nor since that time. The grub was produced between the upper and lower cuticles of the leaves and ate its way through all the softer parts of them, leaving as it went the leaf as blanched as if it had been pulled off and blanched for a fortnight in the sun. When the leaf was attacked, the plant producing it ceased to grow, in as far as the attack was made by one or more of the grubs. In some plants but a few leaves were attacked, but in many others the whole were so. Those that were attacked but in one or two or a few leaves rallied again when the grub had run his course; those that were severely attacked never rallied, and the crop proved quite an abortion. Knowing from experience and oft repeated experiment, as well as from the theory of botany, the part which the leaves had to act in the formation of the bulb, I resolved on trying another experiment with those Mangel plants attacked. I selected one drill or ridgelet, the attacks on which appeared to be a fair average of the whole, and gave it up solely to the grubs, but still determined to destroy the leaves, and with them their enemy, before he could effect a retreat when having satisfied himself, or when having nothing more left to feed upon. This drill I shall call A. In another drill of the same character selected I had all the affected leaves taken off quite close to the stem; this I call B. In another I had the leaves cut off from just below wherever the grub appeared—C. Another drill I had treated thus with a garden scissors, had the parts of the leaves in which the grubs were located cut out, leaving the remainder of each leaf as much as possible uninjured—D. Watching the progress, or the absence of it on each drill, I soon perceived that D was taking the lead in growth of bulb; and as the plot of Mangels was at first but an experimental one compared to other feeding crops in my experimental ground, I had all the remaining drills treated as D, but too late to insure in them success alike to it, as the grub had made considerable ravages on them before the means I had employed for the purpose could fully arrest his progress. On taking up for storage the crop in October, I had carefully weighed the contents in bulbs of each of the forementioned drills, and the result in tons per statute acre stood nearly thus:—

		Tons	cwt.	qrs.
Drill A	produced	6	10	0
,, B	,, ...	4	18	3
,, C	,, ...	7	10	0
,, D	,, ...	10	15	0

Your scientific readers will now see how far I am justified in believing that the science of botany is an indispensable auxiliary in the education of an agriculturist, as it is comparatively speaking in that of a horticulturist. I feel I am justified in stating that to the absence of such a preliminary in an early education can be attributed many of the mistakes made by agriculturists in the ordinary pursuits of their profession. In the cultivation of few of our agricultural crops has the absence of such knowledge more fully shown itself than in that of the Mangel Wurzel, as shown not very long ago in your own Paper—the more to be wondered at, coming as it did from an establishment where there is and then was engaged as a lecturer one of the best practical botanists in her Majesty's dominions. More extraordinary still did it appear to your Irish readers that the report I allude to was revised, *ex cathedrâ*, by a learned professor of agriculture, who was, and I believe is, a much better botanist than a practical agriculturist. But the most extraordinary thing of all was, that that Professor had forgotten the many experiments tried on the stripping of Mangel Wurzel leaves some 25 years ago, and published in the periodical of which he was the joint editor. Yet in the Review I allude to he did not say, as you have so justly said, and as others had already said, "that as long as a Mangel leaf is in a fit state to be wholesome or useful as food for cattle, so long is it important to the well-being of the root." Without possessing much if any knowledge of botany, the merest plodding small farmer should understand this, if he but for a moment reasoned a little from the analogy that such a process bears to the damage that would be inflicted on his Potato or Cabbage plot by a run from his own or his neighbour's sheep on them whilst the leaves were in a growing state. But the evils consequent on an ignorance of this delightful and profitable science are not confined to the acts and mistakes of the working farmer, for we often see them manifested by witnesses in our law courts, by jurors in their divisions, by attorneys in preparing their briefs for counsel, by counsellors in their pleadings, direct and cross examinations; nay, by the very judges on the bench in their charges to juries. Nor should we forget how important this science is to land valuers, land agents in selling land, to land improvers (professionally employed as such), to those employed for the instruction of tenantry; nay, to the very lords of soil themselves in dealing with all those engaged in the management of their properties, as well as in improving their demesnes. Yet until lately this study was comparatively ignored, even in our highest educational establishments; the professors of botany may have delivered their courses there, but with little attention paid to them except by medical students alone, many of whom learned just as much as enabled them to pass their examinations. But now, thanks to the enlightenment of the age we live in, this species of education is, even in Ireland, brought home to the door of the poor man; and we can hope, to use the words of Sir Robert Kane, in speaking of the ages of industrial ignorance, "that time has passed away never to return." *Edward Carroll, Kilgreany Lodge, Clonegal, Aug.* 30.

Drainage of Land.—Mr. Bailey Denton, in your impression of the 23d inst., states that "a great national injury is being enacted at the present time by the indiscriminate application of the gridiron to these soils" ("free soils"), implying, I take it, that it is in his opinion the common practice at this time to drain with parallel and equidistant drains, without consideration for the alteration of soils from clay to "free soil" in a particular field. It is hard to believe that the writer intended to convey this, and yet after a careful perusal of his letter I can attach to it no other meaning. Amongst agriculturists there exist men who still elect to drain all soils with drains of no greater depth than 2 feet, and laid across the fall to intercept the water, and others there no doubt are who, having arrived as far as parallel drains laid with the fall, stop there. But the same class of agriculturists also continue to shoe their horses, to persecute their friends, and to use their manure, and to bleed and physic their horses and cattle and even also themselves in a manner equally unreasonable. And in the matter of drainage at all events they can individually contribute but little to the national loss. But the practice complained of is certainly not that of the drainage engineer of the present day. The principles of land drainage are now very well understood by many, and the landowner in selecting his adviser need be under little fear of contributing to the national injury by draining a field half clay and half gravel throughout with uniform parallel drains. He may safely leave himself in the hands of his adviser in this respect; but there is another point that better deserves the landowner's investigation, that is, the price he pays for his draining. In the case where it is found

necessary to drain but half a field, he should save half the tiles and half the cutting, and thus 2 acres may be drained at little more than the cost of one. This is a point well worthy of discussion, and it would be most interesting and instructive to see returns from all the landowners who have drained during the past two or three years, giving for each field drained the gross cost of the work, and the number of rods of drains laid in it, with their depth and a description of the pipes used. *Charles F. Humbert, Watford, Herts, Aug.* 30.

Occasional Drainage.—I am truly proud to find by the letter of Mr. Bailey Denton, which appeared in your last impression, that he intends soon to have a second and an improved edition of his work on drainage published. Never before was such a work more required for the benefit of all classes of the community, but of those of Ireland, and those in any manner dependent upon or in connection with her agricultural community more especially. You in England who know so little of Ireland can form but a very imperfect conception of the wants that exist for and the advantages to be derived from a thorough and a perfect system of land drainage to Ireland; and far less do you know of the many mistakes made and mischiefs perpetrated in the attempts hitherto made for effecting this all-important purpose. It is true the Legislature and Board of Works in Ireland have, by legal enactments and the carrying of them into operation, checked, if not fully arrested, some of those old abuses; but unfortunately in doing so they have opened up new sources of abuse a thousand to one worse in their effects, physically, socially, and morally, than those they sought to correct. I can scarcely trust myself to describe these abuses, even did not a sense of shame as an Irishman suggest the prudence of passing them over. But when I see, as all must have seen, the ruin brought on the old proprietors of the soil, the impositions practised on their successors, the fine country possessing such natural advantages lying comparatively waste, the people starving for food, both in England and Ireland, or flying to other countries, and to act under other Governments, to enrich and strengthen them; as a British subject, apart from my natural feelings as an Irishman, or my duty as a Christian, I should be unworthy of the name of either, did I miss an opportunity of entering my solemn protest against such neglect and abuse, and of offering the best advice I can in the hope, however imperfect the attempt, to remedy the one and counteract the effects of the other. At present I can conceive no better way of effecting both than by pressing on the attention of your readers, who are numerous even at this side the channel, the reception of Mr. Denton's views on this life and death subject. To you in England they are of great importance. To us in Ireland they are a hundred-fold more so, especially between this time and the next assemblage of the British Parliament, when it is to be hoped some comprehensive and practical measures will be adopted by the legislature for the thorough drainage of Ireland—of the poor man's little holding, as well as of the rich man's large one, or nobleman's demesne. Let this be done, and by giving employment to the people they will not only support themselves, but they will also hunt to the death the murderous assassin who is now allowed to escape because the people feel no interest in his detection, beyond despising and to some extent dreading him themselves as much as, if not more, than do those above them; for those high in authority have some protection afforded by the laws of the land, whilst the poor and small farmers, whether rightly or wrongly it is not for me now to say, believe in their very souls that for them there is no protection for them except what is afforded by the grave, the poor-house, or the emigrant ship. I repeat, let Mr. Denton's views be studied and acted upon by the Legislature, the landlords, the landholders generally; but by those in a position to till land rightly more especially. I have written up to this without knowing whether Mr. Denton's book can be published at a price within the poor Irishman's reach, or sufficiently tempting to induce the rising generation, "the young blood of Ireland," to read it. If on this head I could presume to offer a word of advice it would be to have, if possible, a cheap edition to be used as a school book; for though we have plenty of such cheap tracts published some years ago by many very intelligent writers, they all were on the "Smith—Parkes" system, which helped to place many Irish proprietors on "the gridiron," and who have since felt, and will long continue to feel, that "if you place an Irishman on the gridiron, you'll find another ready to roast him." *Edward Carroll, Kilgreany Lodge, Clonegal, Aug.* 27.

April Wheat.—Your observations on the sketch of the April Wheat are quite correct. The drawing does not give at all a fair idea of the Wheat ear. I enclose one from a field sown towards the middle of May—as you perceive it is very late and will not be ripe for a fortnight, but it promises well. The enclosed was taken quite at random; had I tried I could have sent you a finer ear. *John Thornhill Harrison.* [The April Wheat carries as bold an ear as Lammas—the Nursery perhaps rather looser and more chaffy. But the characteristic distinction is the awn. The specimen sent is a very fine one, and much larger than the one figured last week.]

Steam Cultivation.—I beg to thank "W. S., Guildford," for detailing his practice with my No. 3 steam cultivator over 20 acres of tough, rough work, which he rightly says represents considerable tracts of heavy land throughout the country, and when he attempts to compare it with horse culture I am in a position to help him, for I saw a piece of such land, a Bean stubble intended for Barley, ploughed last autumn with 4 horses, doing 3 roods per day; again in February with 4 horses; March was a wet month, so it was ploughed again in April, yet at the beginning of May it was found too rough, and brick-hard, to venture Barley upon it. Since then, besides harrowing, it has been ploughed three times, with 4 horses each time, and the last ploughing drew hard enough to skin them, for it cut up as raw as uncooked liver from one end of the land to the other. It is now by no means worthy of a comparison with work done by my No. 3, for if the subsoil is examined it will be found full of little bits of twitch, ready to plant it for another dead fallow and horse skinning operations. Another farmer told me that he had ploughed his dead fallows six times this year. Now for a moment let us look to my own little farm of 110 acres of ploughed land, and see whether there has been much horse skinning going on there this summer. After my combined machine cultivator had drilled in my Oats and Barley. 30 acres in all, I harrowed the land over three times with a one-horse harrow—this gave three days' employment to my three horses; they have since horse-hoed my 25 acres of roots over four times, doing three acres per horse, per day, each time—or say 11 days' work for my three horses, giving a total of 14 days' employment down to now. Now let us see whether they will get skinned this autumn. They will have to plough my light land Clover lea, 11 acres—say 12 days' work; cross cultivate 33 acres of Wheat and Oat stubbles, say 6 days' work; ridge up for roots 11 acres, say five days' work, and subsoil between the ridges, 5 days' work—and the whole year's work will be done, giving a total of 42 days' work for three horses for the year 1862; the rest of their work has been and will be mere jobbing. The working time of my engine has been in cultivating and planting six acres of Oats, nine hours; 12 acres of light-land Beans, 13½ hours; 8 acres of heavy-land Beans, 11 hours; 10 acres of heavy-land Barley, 1½ days; and 14 acres of light-land Barley, 17 hours; and the work to do this year will occupy my engine only 10 days. Now let us look at the results:—heavy land Barley per acre, 7 qrs; Beans, 45 bushels; Wheat, 45 bushels. The Swedes are half a crop, the fly had the other half. Light land Wheat, 50 bushels; Beans, 60 bushels; Oats, 80 bushels; and Barley, 70 bushels per acre. Roots eat with the fly; sowed a second time, an average crop, and Clover fed on. This, when I have added that all my stubbles and lands are as clean as a garden, is a fair estimate as to how matters stand here. Surely then there is some value in steam-cultivation upon the Woolston plan even without working the engine at a high pressure, such as Mr. Morton showed to be the case at York on light land, for you will recollect seeing my heavy land worked up last autumn 10 inches deep with my 8-horse engine at a pressure never over 45 lbs. Now let me state in conclusion that this is my seventh year's practice, and as I have never turned over anything but a bit of Clover lea, let the turn-over men think well of the matter; and as I never give but one steam operation for a crop, let horse farmers generally reflect over the few yet simple operations and results of my system before they again say that it is only large occupiers that can use steam power to agriculture. Four additional horses could not keep my farm in anything like the condition it is in, yet with them and without steam I must be content with over 100*l*. a-year less in the value of the produce. Thus I am effecting an annual saving of 100*l*. a-year in horse-keep, and a gain of over 100*l*. a-year in the value of produce—a total of over 200*l*. (the cost of a set of tackle) a-year on only 110 acres of land. Yes, and let writers on steam cultivation reflect over this before they again say that steam is an auxiliary to horse-farming. *William Smith, Woolston, Bletchley Station, Bucks.*

Societies.

Manchester and Liverpool: Warrington, *Sept.* 9.—The fifteenth annual meeting of this Society commenced to-day at Warrington. The Show-yard, by the London and North-Western Railway Station, is 8½ acres in extent. Seventy exhibitors of implements show about 1000 articles. Among them are Messrs. J. & H. Heyworth, Liverpool; Hornsby, Grantham; Pickslcy, Sims, & Co., Leigh; Richmond & Chandler, Salford; Messrs. Greening & Co., Manchester; Johnson & Whitaker, Leigh; Cornes, Nantwich, &c. Many serviceable steam engines, chaff cutters, corn crushers, pulpers, ploughs, harrows, drills, and grubbers, churns, washing machines, &c., are on the ground. In addition to the 1000 implements there are 75 entries of horned cattle, 119 horses, 93 sheep, 64 pigs, and 180 poultry; the rest of the entries being of cheese, butter, seeds, and roots, saddlery, fruit, vegetables, and flowers.

The following list names some of the successful exhibitors:—

Open to the United Kingdom.—For the best bull above two and not more than four years old, 10*l*: Henry Ambler, of Watkinson Hall, Halifax; bull, "Gamester." For the above, one and not more than two years old, 8*l*.: Henry Ambler, of Watkinson Hall, Halifax; bull, "Windsor Augustus." Bull calf, 4*l*: Thomas Atherton, of Chapel House, Speke, near Liverpool; white bull calf, aged 9 months and 21 days. The Society's District.—To the tenant farmer for the best bull of any breed, above two and not more than four years old, 10*l*; James Dickinson, of Balcony Farm, Upholland, Wigan; bull, "Duke of Wetherby," aged 3 years and 1 month. Open to the United Kingdom.—For the best cow or heifer of any breed, in milk or in calf, 6*l*.: Lady Pigot, of Branches Park, Newmarket; roan cow, in calf, "Pride of Southwike," aged 3 years and 6 months. For the best two-year-old heifer of any breed, 6*l*.; Solomon Ashton, of Manor Farm, Timperley, near Altrincham, Cheshire; heifer, "Fanny Fern," aged 1 year and 10 months. For the best yearling heifer of any breed, 4*l*.: Lady Pigot, of Branches Park, Newmarket; roan heifer, "Rosedale," of the Shorthorned breed, aged 1 year and 6 months. Competition confined to the Society's District.—To the tenant farmer for the best pair of two-year-old heifers of any breed, 6*l*.; Thomas Forrest, of Spurstow Hall, Tarporley: pair of heifers of the Short-horned breed, aged 2 years and 8 months, and 2 years and 8 months respectively. To the tenant farmer, for the best pair of one-year-old heifers of any breed, 6*l*. Thomas Forrest, of Spurstow Hall, Tarporley, pair of heifers of the Short-horned breed, aged 1 year and 6 months and 1 year and 5 months repectively.

The show of horses was not numerous; but for the prizes offered for draught horses, stallions, thoroughbreds, and hunters, there was a very spirited competition.

There were 93 sheep and 64 pigs entered for the various prizes, the whole of which were open to general competition. A larger number of animals than usual were marked by the judges as "commended" and "highly commended;" and this is a criterion, perhaps better than any other that could be given, of the character of the competition.

The competition for cheese and butter was very close, as might readily be supposed in the case of a show which includes Cheshire in the sphere of its competition. Some splendid cheeses were shown, but in some instances the verdict of connoisseurs was that they wanted age. The following were amongst the successful competitors:—

Cheese.—To the person who shall exhibit the best sample of cheese made on the exhibitor's farm—the cheeses to be four in number, and not less than 30 lbs. weight each, 8*l*. (open to the United Kingdom); William Whitlow, Lymm, near Warrington.

Butter.—To the exhibitor (being also the producer) of the best sample of butter, not less than 5 lb. weight, made up in half pounds, 3*l*.; John Rigby, of Lower Whitley, Northwich.

In addition to the above there were premiums offered for seeds and roots. Miss Glassford, Lostock, won the first prize for the best sample of white Wheat, this year's growth; and Mr. Robert J. Owen, Halewood, was awarded the second prize. For Red Wheat there was no competition. For white Oats the Earl of Derby was the successful competitor; for yellow Oats there was no competition; and for black Oats Mr. Henry Neild, of Worsley, won the prize. Mr. John Birch, of Orrell, carried off the whole of the prizes for Mangel Wurzel; and for Potatoes, of which there were splendid samples shown, Mr. J. Worrall, Ashton-under-Lyne; Mr. H. Neild, Worsley; and the Earl of Derby were the successful competitors. Mr. James Farrington, of Bickerstaffe, near Ormskirk, was awarded an extra prize.

The Dinner was provided in a spacious tent erected in the centre of the show-ground. About 300 persons sat down. Colonel Wilson Patten, M.P., presided; and there were also present Lord Stanley, M.P.; Lord Skelmersdale; Mr. W. J. Legh, M.P.; Mr. W. Greenall, M.P., and others. The Chairman proposed "Success to the Manchester and Liverpool Agricultural Society."

He had thought that he would have had to make an unfavourable report on some part of the proceedings, because, on looking over the reports of the Committee, he noticed a falling off in the number of claimants for prizes for draining. He saw it with regret, for if ever there was a year in which the importance of drainage was self-evident it was this year. Those who ran might read the effects of the want of drainage in every part of the county, and the results in those districts in which drainage had been carried into effect. A friend in Northumberland had written to him to the same purpose, namely, that in that county the undrained lands would prove most unprofitable this year; and that it was only on the well-drained lands that the farmer could expect a remunerative crop. But before hazarding a remark on the lack of claimants for the drainage prize, he referred to his friend Mr. White, and he was glad to find there were several satisfactory reasons for the omission he had noticed. Among those causes was the absolute increase in the amount of drainage accomplished, by means of public companies, by Acts of Parliament, and by landowners. Drainage was being effected now by companies and by landlords to a greater extent than was ever the case before. That, if really the reason, was a very good explanation of the falling off in the number of claimants for the draining prizes, and was a matter for congratulation rather than regret.

Mr. R. Neilson said he considered that drainage was no part of a tenant's duty. The tenant's capital and skill ought to be expended upon the cultivation of his farm, and the application of all the aids which chemistry and mechanical science offered to that cultivation. That cultivation included the cleaning of his land. The important process of weeding was sadly neglected. They might rest assured that weeds and Wheat would not flourish on the same soil. All permanent improvements, all those things which tended to benefit the property for a period far beyond that for which the tenant held his interest, ought to be provided for by the landlord. Yet, if they looked around in the two counties, they would find thousands of acres which, if drained, would give remunerative returns, but which, saturated as they were with water, defied all the efforts of skill, capital, and energy to make them profitable. At the same time, those farms were covered with buildings as disgraceful to the owners of the soil as they were disheartening to the tenant. There were many landlords who had made wonderful improvements on their estates; still the instances of the contrary were numerous. There could be no excuse in the present day for neglecting to improve estates. Acts of Parliament had been passed which enabled such improvements to be carried on without taking a farthing from the pockets of the landlords. He had had the opportunity of observing the good effects of the measures carried on by the Lands Improvement Company, and the General Lands Drainage Company. A landlord, desiring to improve his estate, would communicate his wants to one of those companies, and an efficient man would be sent down to make the plans for the buildings and the drainage. He would contract

for the work to be done in the neighbourhood; and the repayment of the expenditure of the Company would be by a rent charge, the annual payment of which was so trifling, compared with the advantages obtained, that no tenant, with the slightest intelligence, would hesitate for one moment to pay it. While it was a fact that there was so large an area undrained, and that the means of draining were so easily to be had, it was an equally sad fact that there were thousands of men now out of work to whom the work of draining would be a boon. The cost of draining 4 feet deep was about 5*l.* per statute acre, which would allow a payment of 2*d.* or 2½*d.* a yard for the digging of the drains. At that rate, men of ordinary strength could earn from 15*s.* to 21*s.* a week. All they would require were draining tools, which might be advanced by relief committees, their cost to be repaid by the men by small weekly instalments.

Farm Memoranda.

SOUTH HANTS FARM: *Report to the End of August.* —We have the satisfaction of recording one of the finest harvests we can ever recollect, and all kinds of grain have been stacked in the best condition in the South Hants district; we concluded our harvest operations within 29 days, without hindrance, and at comparatively less expense than usual; and this circumstance is to us of some advantage, particularly when the yield of Wheat is bad, and the price too low to be remunerative. We completed our Wheat carting on the 27th, and threshed a rick on the following day, the produce of 11 acres sown in December and January, and which to appearance was the best and most likely part of our crop to yield grain, all the early sown being so damaged at the root and storm-broken; we were, however, much disappointed with the produce, it being quite 10 bushels per acre under our last year's crop, which we called our average produce. The Wheat, however, is of capital quality, weighing nearly 65 lbs. per bushel. Our crops of white Oats are most abundant, and of fine quality, and may be estimated to weigh from 45 lbs. to 46 lbs. per bushel. We do not grow Barley, and have ceased to cultivate that crop for seven years past, and we think that upon many farms composed of what are termed Barley soils, that it would be advisable, if not to give up growing Barley altogether, to grow a less quantity, and only trust to early sowing and an alternation of the crop with Oats. In that case the land, being farmed upon the four-course system, would be cropped with Barley only once in eight years, and we think that this alternation with the Oats or spring Wheat crop, would do much towards the obtaining of Barley fit for malting purposes. This matter has been much complained of for some years past, and many parties farming good Barley soils are astonished to find that they do not grow the sample so good as formerly, some of whom blame the seasons; but we think it can clearly be traced to the constant repetition of the crop, and to late sowing induced by the late feeding of sheep on the land. We ask, why should we expect Barley to be an exception to other grain? besides which, it is well known that Barley for malting purposes must be a stout full bodied grain, and it fetches a price according to its quality, and we hold that Barley should not be grown unless care be taken by some such means as we have indicated, to insure, as far as cultivation, &c., can do so, the production of malting Barley. The Barley crop is much complained of in this district, and although we reported on the eve of harvest an average crop, we cannot now estimate it so much, and the quality will be generally very light, thin, and unfit for malting. The root crop is progressing favourably, but we fear that unless we get rain within a few days or a week, that Turnips and Swedes will be a light crop; not so, however with the Mangels, for they succeed best when the land is dry, and the temperature high. In alluding to the root crops reminds us of the period now arrived for purchasing sheep stock for the consumption of the root crops of the district; and we trust that the small-pox which has attacked several flocks in Wiltshire, and, by report, flocks in other counties also, may be confined to the districts where it commenced; but we fear it will require great care to prevent the spread of the disease, particularly if it should turn out that the starlings, birds which are continually passing from one flock to another, should carry contagion with them, for it would then be impossible to stay the plague, unless by destruction of the birds, which would be difficult, and take time too. This is, however, only one view of the case. The outbreak of the disease seems to be altogether mysterious. In 1847, when the last outbreak took place, it was clearly traced to imported animals; and having, too, appeared in the winter months, was the more easily stopped; but at this period, when the sale of sheep, and their transit to and from the large fairs of the southern and western counties, which take place during the next two months, it must prove (in case the disease becomes established) the means of propagating and extending it in an extraordinary manner. We therefore advise that the Farmers' Clubs and other agricultural Societies should immediately proceed to call special meetings of the members, to arrange and decide upon the best means for preventing the spread of the small-pox by contagion, and if need be, we recommend that the Royal Agricultural Society, and the Board of Trade also, be applied to for the purpose of enforcing any regulations whereby the disease may be arrested in its progress, and the statement in the *Times* newspaper of this day, Tuesday, Sept. 2, shows that disease has been communicated by sheep not known to be infected, but sold in a fair, and driven in a long distance with a drove of 700 sheep, no doubt to be distributed over many farms in different parts of the country, and delivered to parties for whom they were purchased; this appears to us the most serious part of the question, and the most difficult to deal with, for the result would be the same, whether the infected sheep were introduced into the fair either through ignorance or design, We cannot help following up this train of thought without allusion to the fatting of bullocks instead of sheep under present circumstances, for happily cattle in the south and south-western districts are reported at present free from disease of any infectious or fatal character, and from our experience of some years past, we should be quite prepared to consume a much larger portion of our root crops than usual with cattle of different ages, instead of sheep, with at least equal, if not with more profit. The work of the farm during the latter part of the month has consisted chiefly of securing the corn crops, the intervals however being filled up by sowing late Turnips after the corn crops, and when that work is completed, Trifolium must be sown, and the importance of this crop is now generally acknowledged, and rendered still further advantageous by having later kinds introduced, the seed of which is easily obtained. *J. B.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Sept. 10, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	4	29.84	61	56	N.W.	1	3	66	45	111*	41	0.09	60½	60
Friday ..	5	29.84	60	55	N.	2	3	67	44	106	40	..	60	60
Saturday ..	6	29.99	60	56	N.E.	1	2	70	48	120	44	..	60½	60
Sunday ..	7	30.03	68	59	S.W.	2	3	71	52	110	49	0.01	61	60
Monday ..	8	30.14	63	60	W.	1	6	73	53	111	48	..	61½	60
Tuesday ..	9	30.11	62	59	W.	1	6	73	54	105	50	..	61½	60
Wednesday.	10	29.98	52	51	N.	1	8	70	52	104	50	0.13	62	60

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Calendar of Operations.

SEPTEMBER.

BERWICKSHIRE MERSE FARM: *Sept. 6.*—One week of good weather has been followed by two of the previous sort, dull and sunless, and crops advance slowly. The 3d and 4th were wet days, and the rainfall of this week nearly reached an inch. Here and there light fields of Barley are to be seen in the stook; yet, though there is a strong desire to begin at the earliest moment, harvest cannot be general for four or five days. Even then there will be little work for the shoals of Irish who are roaming the country; and they will likely pass away to the south, as we have seen them do, before the bulk of the crop is ready. The fly has appeared on Beans, but probably will not affect the produce, as the later bloom has not set. The haulm is strong, but we doubt whether it will be corny The Potato shaws are very much diseased of late, but the tubers are sound as yet, and good to eat, though far from being fit to store. We have pulled the shaws off apart, and deeply moulded up the rest, except a few that we wish to try in store. Late Turnips are covering the ground well where not blanky, and the ploughing and second horse-hoeing will be done in a couple of days. The dry week cleaned the land wonderfully. August has been a singularly bad month for fly-blow, and it seems to have been aggravated by dipping the flock with a stuff from Manchester, which has been used by many for the first time, and will not be used again. The naphtha (or whatever it is) no doubt killed the vermin present on the occasion, but the greasy matter attracted the flies immediately after, and a lot of Tups advertised for sale could not be shown, their fleeces were so damaged. On Friday the 12th "all the world" come to Kelso to buy Leicester Tups of the border counties. *J. T.*

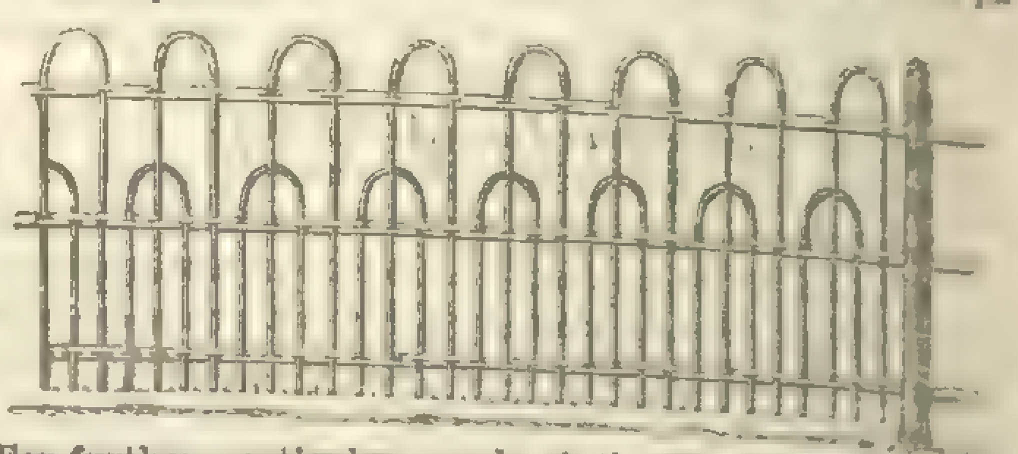
Notices to Correspondents.

POTATOES: *T B.* The sack of Potatoes is in general 3 heaped bushels—in some places it is 4 bushels, in some places it is 1½ cwt., in others 2 cwt., in others 240 lbs., in others, 280 lbs!

W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.

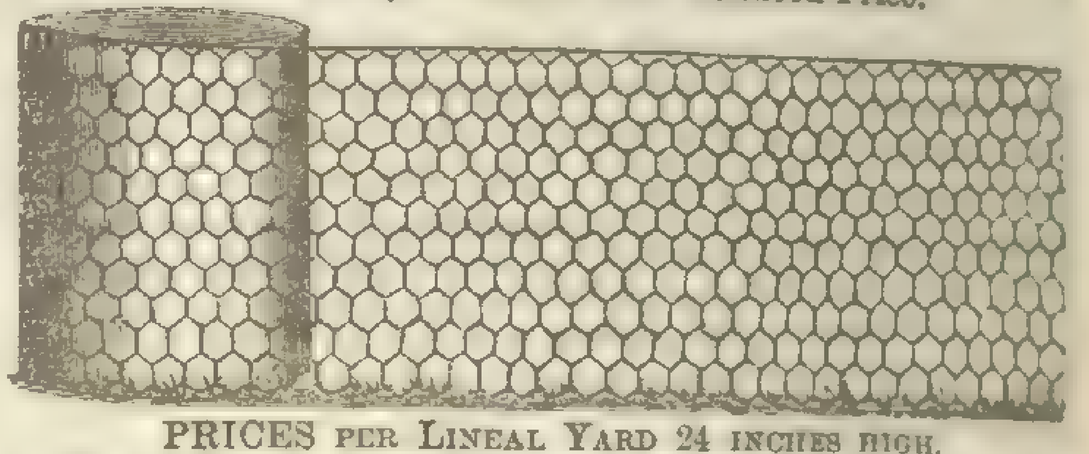
Manufactory: Newport, Salop.

Warranted the strongest and most durable Fence ever offered at corresponding prices. It is easily repaired if broken from accidents; can be rolled up most compactly when not in use, is admirably adapted for exportation, and can be had of any height and mesh required at prices from 4*d.* to 1*s.* 6*d.* per yard and upwards.



For further particulars apply at the Manufactory, or of the London Agent, Mr. R. WINDER, 18, Abingdon Street, Westminster, S.W.

NEW IMPROVED PREMIUM WIRE NETTING. Great Improvement with Reduced Price.



PRICES PER LINEAL YARD 24 INCHES HIGH.

Size of Mesh.	Mostly used for	Light. Jap	Light. Gal.	Medium Jap	Medium Gal	Strong. Jap	Strong. Gal	Extra Strong. Jap	Extra Strong. Gal.
2¼ in.	Poultry ..	3*d.*	4*d.*	3¾*d.*	5*d*	4½*d.*	6*d.*	5½*d.*	7*d.*
2 in.	Poultry ..	3½*d.*	4¼*d.*	4*d.*	5*d.*	5*d.*	6½*d.*	6½*d.*	[illegible]
1⅝ in.	Small Rabbits	4*d.*	4¾*d.*	4¾*d.*	6*d.*	5½*d.*	7*d*	7*d.*	9*d.*
1½ in.	Smallest Rabbits	5*d.*	6*d.*	5¾*d.*	7*d.*	7*d.*	9*d.*	9*d.*	11*d*

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

*** Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.

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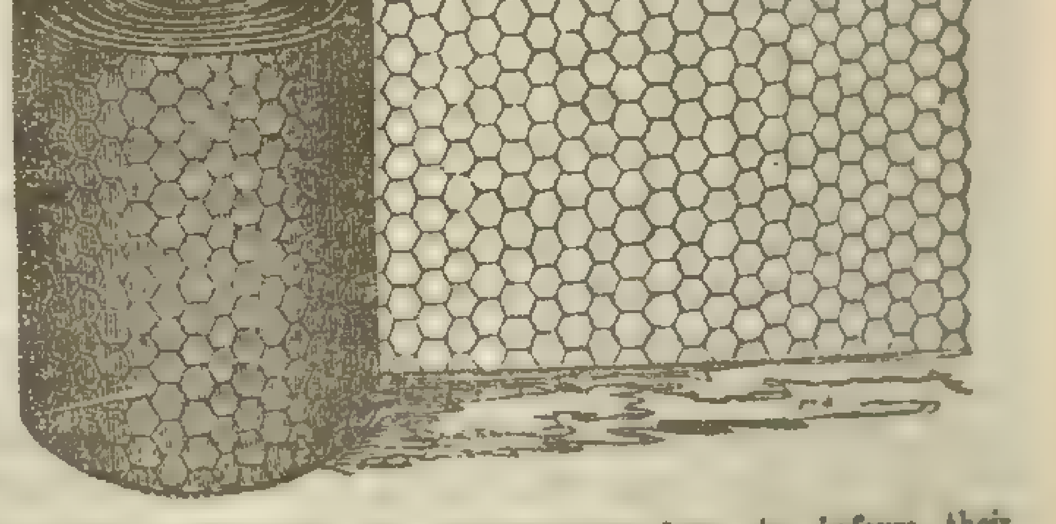
BARNARD, BISHOP, AND BARNARDS Norwich.

FURTHER REDUCTION in the PRICE of WIRE NETTING.—APRIL, 1861.



BARNARD, BISHOP, & BARNARDS beg to inform their friends and the public that they have made a further reduction in the prices of Machine made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch mesh, 24 inches wide..	No. 19	.. 4½*d.*	.. 3½*d.*
2-inch " " " .. "	18	.. 5	.. 4
2-inch " " " .. "	17	.. 6½	.. 5
2-inch " " " .. "	16	.. 8	.. 6½
1⅝-inch " " " .. "	19	.. 4¾	.. 4
1⅝-inch " " " .. "	18	.. 6	.. 4¾
1⅝-inch " " " .. "	17	.. 7	.. 5½
1⅝-inch " " " .. "	16	.. 9	.. 7

All the above kinds can be made any width (under 6 feet) at proportionate prices.

Strong Galvanised Poultry Netting, 7½*d.* per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11*d.* per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.

Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.

Five wires, 3 feet 6 inches high, pronged Standards, 3 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10*d.* per yard.

The same with Galvanised Wire Rope, 1*s.* per yard.

Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.

*** Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

Glass for Greenhouses.

JAMES PHILLIPS AND CO. beg to submit their prices as follows :—

ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging ... by ..., packed in Cases containing about 280 feet, 2¼d. and ...d. per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each. Package included.

				3rds.	4ths.
12 by 9,	13 by 9,	14 by 9,	15 by 9	14s. 0d.	12s. 6d.
12 ,, 10,	13 ,, 10,	14 ,, 10,	15 ,, 10		
13 ,, 11,	14 ,, 11,	15 ,, 11,	16 ,, 11	16s. 0d.	13s. 6d.
14 ,, 12,	15 ,, 12,	16 ,, 12,	17 ,, 12	per 100 feet.	
15 ,, 12,	19 ,, 12,	20 ,, 12,	16 ,, 13		
17 ,, 13,	18 ,, 13,	19 ,, 13,	20 ,, 13		
15 ,, 14,	17 ,, 14,	18 ,, 14,	20 ,, 14		

Various other sizes.

GLASS FOR ORCHARD HOUSES, As supplied by us to Mr. Rivers.

Sizes		16 oz.	21 oz.
... in. by 12 in.	Common	13s. 6d.	£0 18s.
... in. by 13 in.	Superior do.	16 0	1 8
... in. by 14 in.	English Glass	18 0	1 9
... in. by 15 in.			

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11s. 6d.
8 ,, 6	8½ ,, 6¾	9 ,, 7	9½ ,, 7½	
		10 ,, 8	10½ ,, 8½	12 6

Boxes 2s. each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.

16 oz. 4ths, 1¾d., 2d., and 2½d. 21 oz. 2¾d., 3d, and 3½d.
,, 3ds, 2d., 2½d., and 3d. ,, 3d., 3½d., and 4d.

London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

James Phillips & Co., 180, Bishopsgate Street Without, London, E.C.

Glass.

THOMAS MILLINGTON, Horticultural Warehouse, 87, Bishopsgate Street Without, London, E.C. Established 1750.

New Reduced Tariff.

SMALL SHEET SQUARES.

Best. 2nds. 3rds. 4ths. } Per 100 feet
20s. 16s. 12s. 6d. 11s.

6 in. by 4 in.	9½ in. by 7½ in.	14 in. by 10 in.
6½ ,, by 4½ ,,	10 ,, by 8 ,,	15 ,, by 10 ,,
7 ,, by 5 ,,	11 ,, by 9 ,,	12 ,, by 11 ,,
7½ ,, by 6½ ,,	12 ,, by 9 ,,	13 ,, by 11 ,,
8 ,, by 6 ,,	13 ,, by 9 ,,	13½ ,, by 11½ ,,
8½ ,, by 6½ ,,	12 ,, by 10 ,,	
9 ,, by 7 ,,	13 ,, by 10 ,,	

Best. 2nds. 3rds. 4ths. } Per 100 feet
23s. 18s. 6d. 14s. 6d. 12s. 8d.

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 ,, by 11 ,,	17 ,, by 12 ,,	22 ,, by 15 ,,
17 ,, by 11 ,,	18 ,, by 12 ,,	24 ,, by 15 ,,
18 ,, by 11 ,,	22 ,, by 12 ,,	20 ,, by 16 ,,
13 ,, by 12 ,,	17 ,, by 13 ,,	20 ,, by 17 ,,
14 ,, by 12 ,,	23 ,, by 13 ,,	20 ,, by 18 ,,
15 ,, by 12 ,,	22 ,, by 14 ,,	

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers & others.

	Best.	2nds.	3rds.	4ths.	
16 oz.	22s. 0d.	18s.	15s. 0d.	12s. 6d.	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

... in. by 12 in. | 20 in. by 13 in. | 20 in. by 14 in. | 20 in. by 15 in.

GLASS, cut according to size not on the List.
16 oz. 4ths. 1¾d. 2d. and 2½d. per foot.
,, 3rds. 2¼d. 2½d. and 3d. ,,
21 oz. 4ths. 2¾d. 3d. and 3½d. ,,
,, 3rds. 3½d. 4d. and 4½d. ,,

Various thicknesses of Sheet Glass to the foot.

Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.
Genuine White Lead, 32s. p. cwt | Linseed Oil Putty, 8s. per cwt.
Anti-corrosion Paint, 34s. ,, | Patent Dryers, 28s. to 42s. ,,
CRYSTAL GLASS SHADES. EBONY and GILT STANDS.
HARTLEY'S IMPROVED PATENT ROUGH PLATE.
*** Not accountable for breakage.
SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

JOSEPH HAYWOOD AND CO., Manufacturers of PRUNING and BUDDING KNIVES, SPORTSMAN'S, and all kind of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

Paxton Works, Sheffield, Established 1738.

International Exhibition Prize Medal is just awarded to Saynor & Cooke for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR AND COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Vendor and Maker.

Caution.—None are genuine unless marked Saynor. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

Card.

SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool.

Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.

Apply to Joseph Meredith, Vine Cottage, Garston, near Liverpool.

N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

FOR SALE, now standing on the Premises, at E. Dench's, 152, King's Road, Chelsea, S.W., two very handsome CONSERVATORIES, one 22 by 18, and very ornamental; one 25 by 15; and one VINERY, 16 feet wide by 36 feet long. To be Sold a Bargain.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection. Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, Tubular, and Elliptic, from 21s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 12s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. Lynch White's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

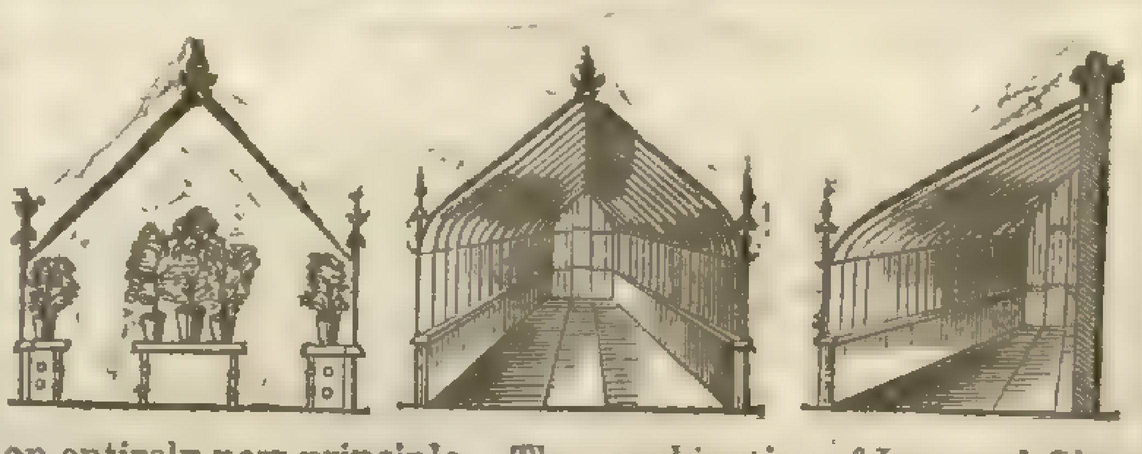
JOSEPH SMITH, Horticultural Builder, New Road, Hammersmith, W., has for SALE a quantity of PIT and other LIGHTS, and five ready-made GREENHOUSES, viz. :—

	£	s.
Span Roof, 27 feet long 16 feet 6 inches wide for ..	47	10
Lean-to, 24 feet by 12 feet 6 inches	34	0
Ditto glazed with 21 oz. glass, 100 feet by 13 feet ..	100	0
Ditto ditto, 22 feet by 12 feet	28	0
Ditto ditto, 12 feet by 7 feet	15	0
Roof and Front Lights for a Lean-to House, 50 feet by 14 feet; 900 square feet	30	0
Also Roof Lights for Houses, 45 feet by 18 feet; 832 square feet	31	0
20 extra stout (10 feet 6 inches by 4 feet 2 inches) Lights,	35	0
20 ditto, 6 feet 10 inches by 4 feet 2 inches	20	0
50 6-feet by 4-feet Lights, 15s. each, or the lot for ..	37	0

Houses made to order from 1s. per sq. foot; if Unglazed, 8d. Pit Lights with 15-oz. Glass, 8d.; 21-oz., 9d. per foot.

*** Estimates given for Heating by Hot Water.

DENNIS'S PATENT HORTICULTURAL BUILDINGS are made from the best Wrought Iron, upon

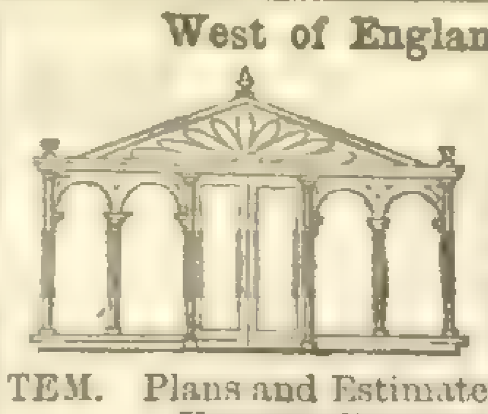


an entirely new principle. The combination of Iron and Glass under this patent is perfect; the possibility of fracture is prevented, and a permanently Water-tight Roof insured.

The leading practical advantages are extreme smallness of Framing, admitting a maximum of light and heat, great strength, durability, and perfect ventilation. They are speedily erected, partake of more desirable outline, and do not exceed the cost of a perishable wooden structure.

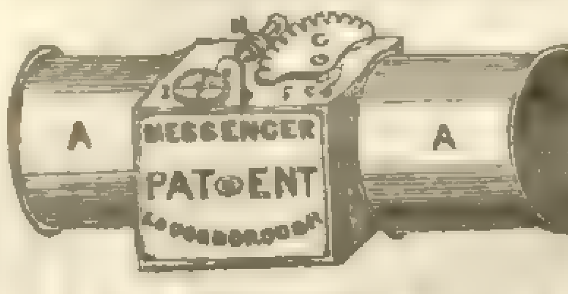
For Prospectus, &c., address T. H. P. Dennis, Horticultural Builder, Hot-Water Engineer, &c., High Street, Chelmsford, Essex; or No. 2105, Open Court, Eastern Annexe, International Exhibition, where a Small Model may be seen and attendance is given on the four last days of the week.

West of England, Ireland, and Wales.

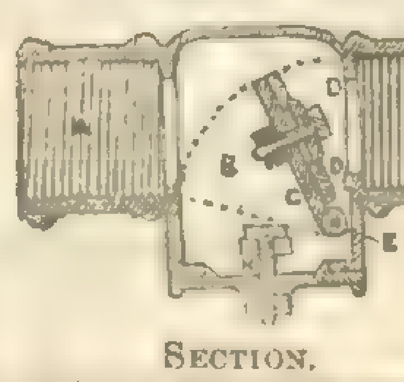


VINCENT SKINNER (late Partner with J. Weeks & Co.), Horticultural Builder and Hot-Water Apparatus Manufacturer. HEATING on the ONE-BOILER SYSTEM. Plans and Estimates on application.

Vincent Skinner, Bridewell Street, Bristol.



Elevation.



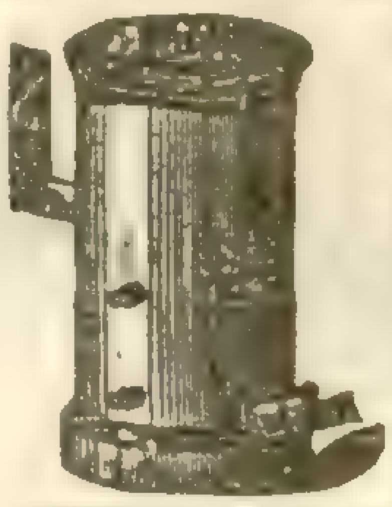
Section.

T. G. MESSENGER, Horticultural Builder and Engineer, Loughborough, has recently patented a Valve which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under.

Two-inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s.

A liberal discount to the Trade.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3l. 10s.

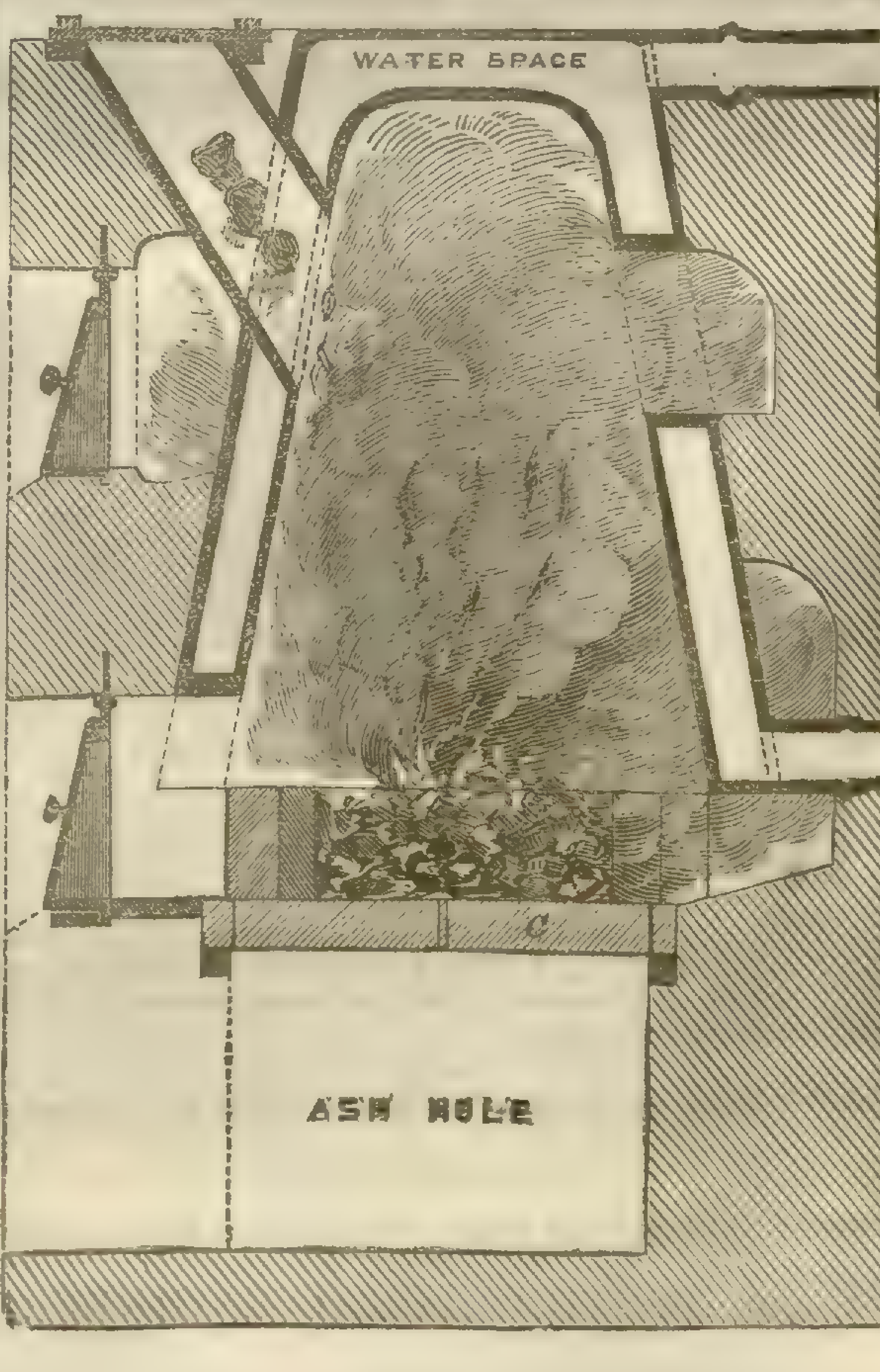
Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

Hothouses for the Million.

International Exhibition, Class 9, Open Court, Eastern Annexe.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to S. Hereman, 7, Pall Mall East, London.



THE IMPROVED

CONICAL BOILERS,

SOLELY MANUFACTURED BY

BURY & POLLARD

(SUCCESSORS TO JOHN R. PEILL, LATE STEPHENSON & PEILL),

HAVE attained a celebrity far surpassing any other Boilers ever invented. Of the many hundreds which have been fixed in this and foreign countries, not one single Boiler has ever proved defective, or failed to give the most complete satisfaction. They are connected with large ranges of Pipes (in some cases several thousand yards), at many Public Establishments, at the Crystal Palace, the Royal Botanical Gardens at Kew, and at the Regent's Park, as well as at most of the Nobility's Seats throughout the Kingdom.

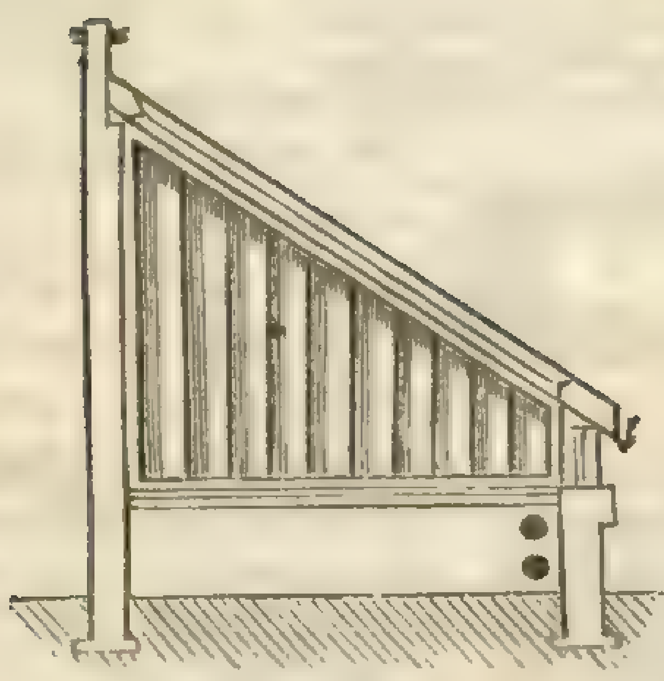
All particulars may be obtained on application to Bury & Pollard, Sole Manufacturers, Park Iron Works, New Park St., Southwark, S.

Price £4 10s. and upwards.

Every description of MATERIAL for HEATING BUILDINGS, supplied of the best description, with directions for putting up HOT-WATER APPARATUS.

J. JONES'S HOT-WATER APPARATUS.

No. 7.



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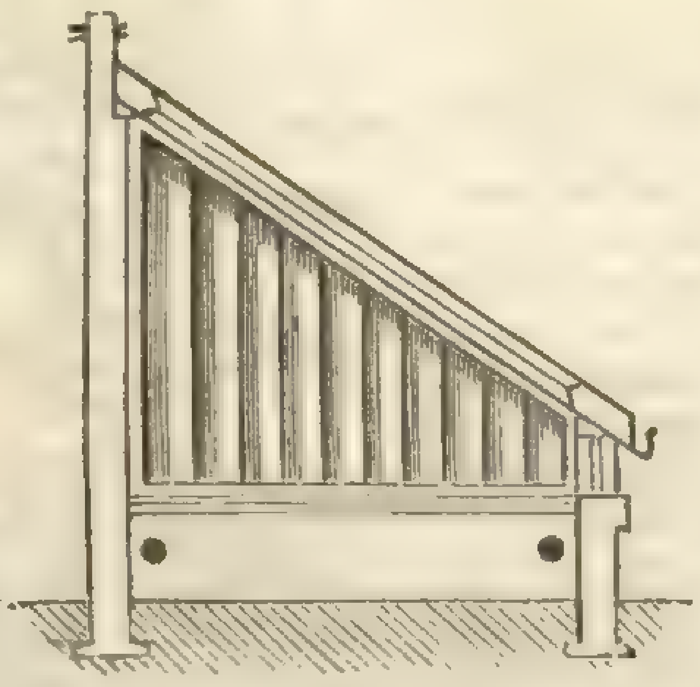

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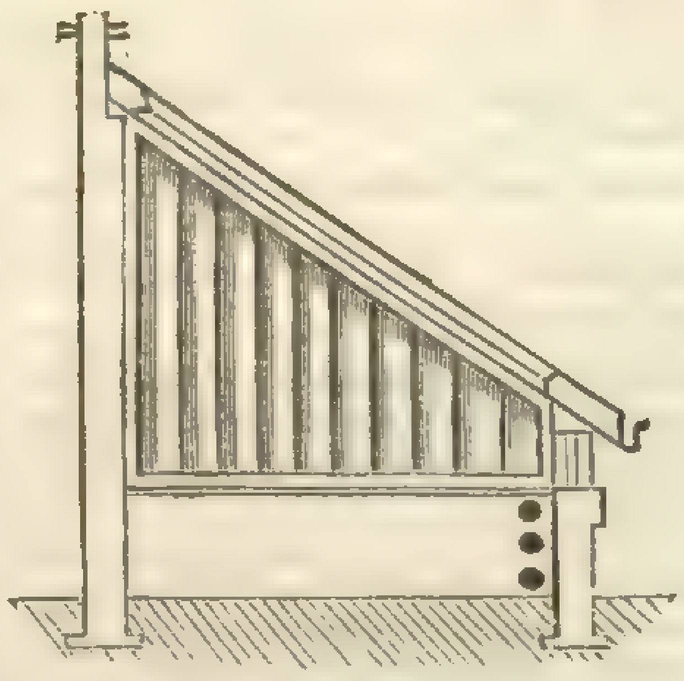

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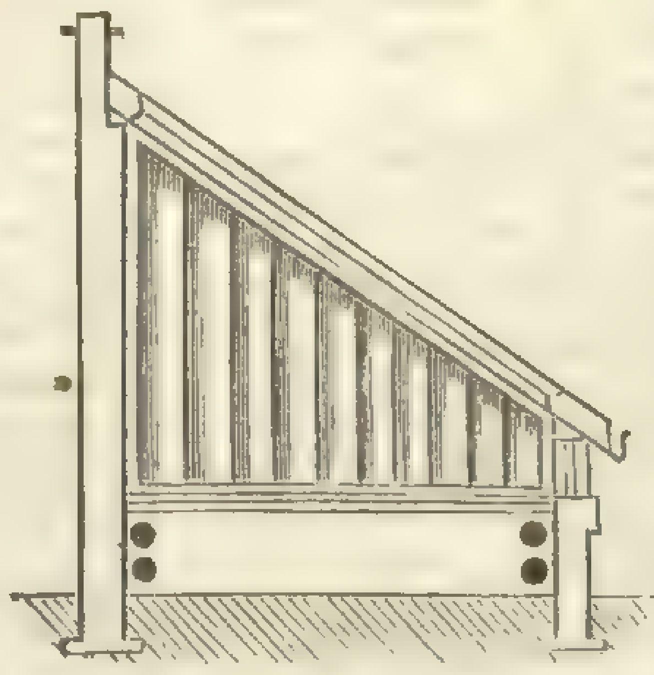

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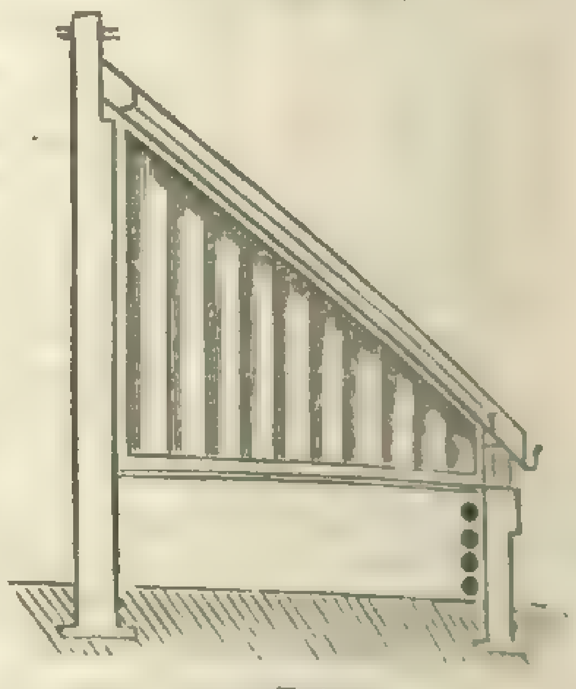
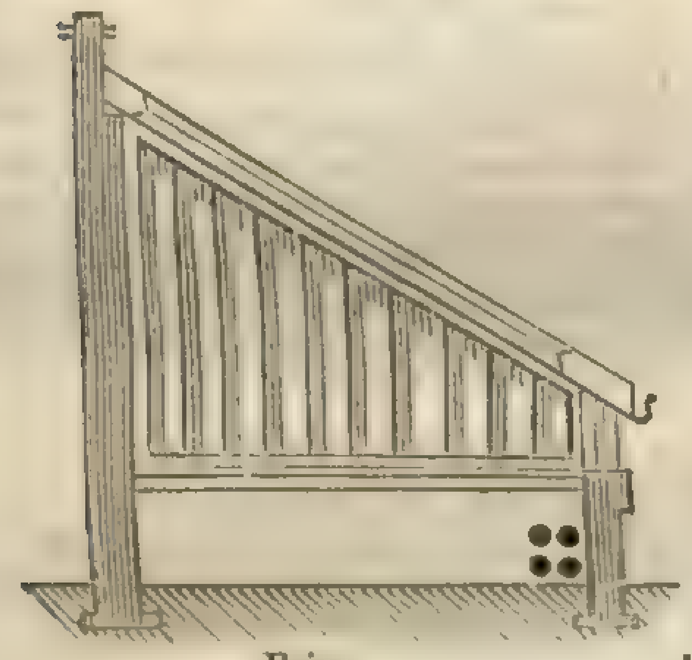


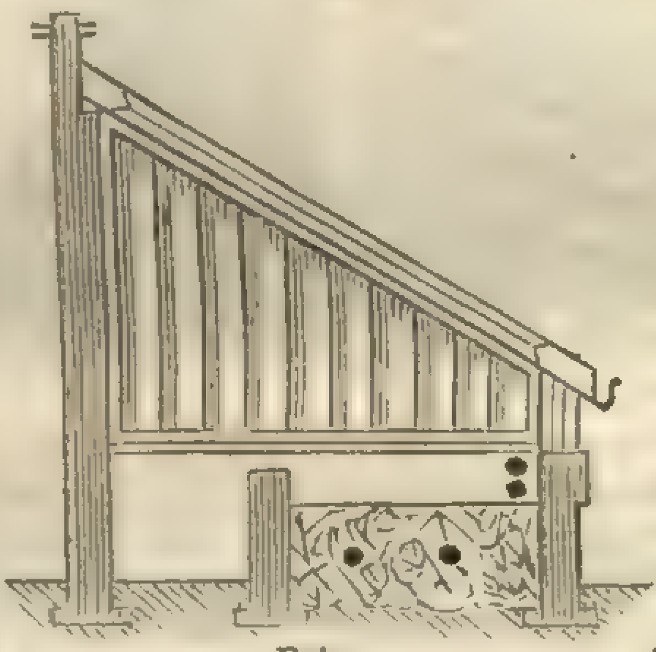
Size of House	Price	Price	Price	Price	Price
20 by 10 ft.	£9 0 0	£9 0 0	£13 0 0	£14 0 0	£15 0 0
30 „ 12 „	12 0 0	12 0 0	17 0 0	19 0 0	21 0 0
40 „ 15 „	15 0 0	15 0 0	21 0 0	24 0 0	25 0 0
50 „ 15 „	18 0 0	18 0 0	24 0 0	28 0 0	29 0 0
60 „ 15 „	20 0 0	20 0 0	27 0 0	32 0 0	33 0 0
70 „ 15 „	22 0 0	22 0 0	30 0 0	36 0 0	37 0 0
80 „ 15 „	24 0 0	24 0 0	33 0 0	40 0 0	41 0 0
100 „ 15 „	26 0 0	26 0 0	36 0 0	44 0 0	45 0 0

No. 12.



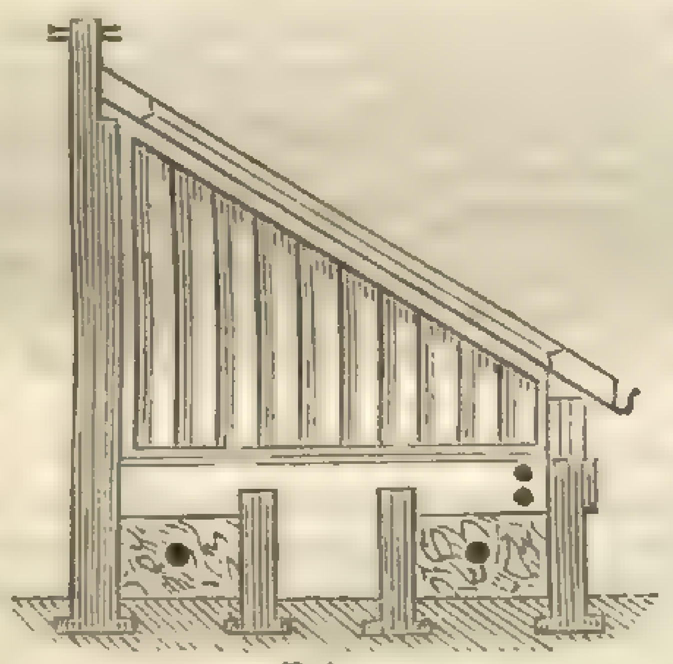
Price
Same as No. 11.

No. 13.



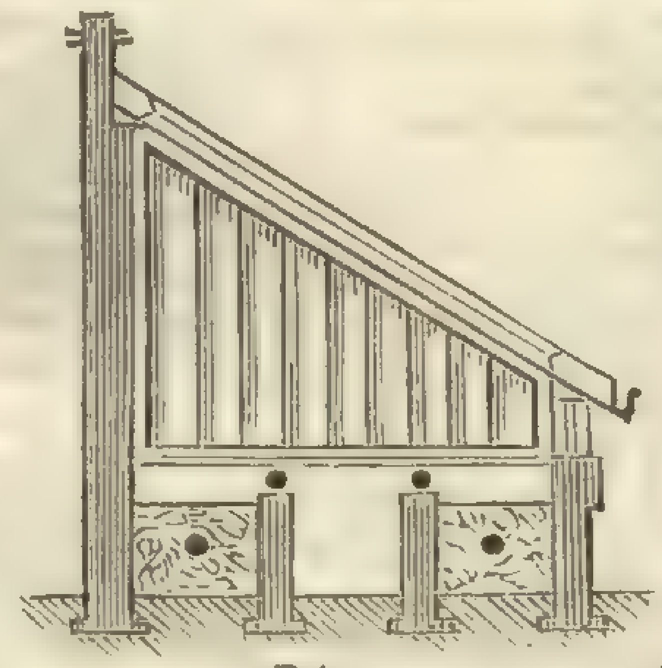
Price
Same as No. 11.

No. 14.



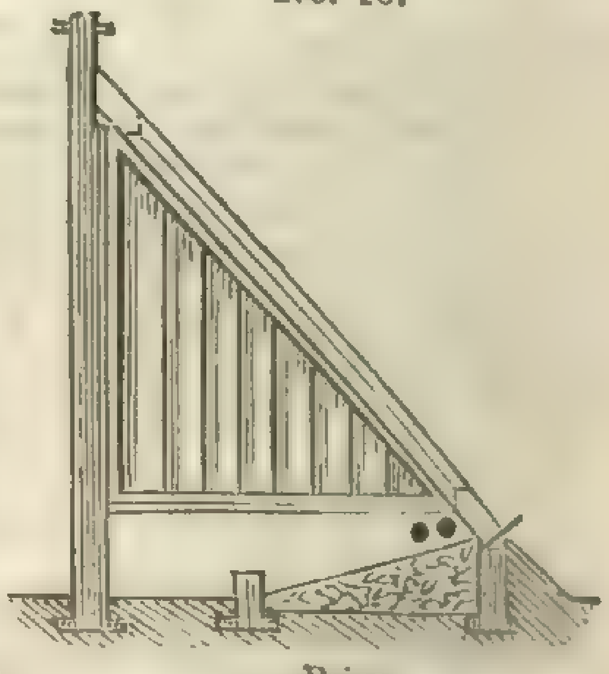
Price
Same as No. 11.

No. 15.



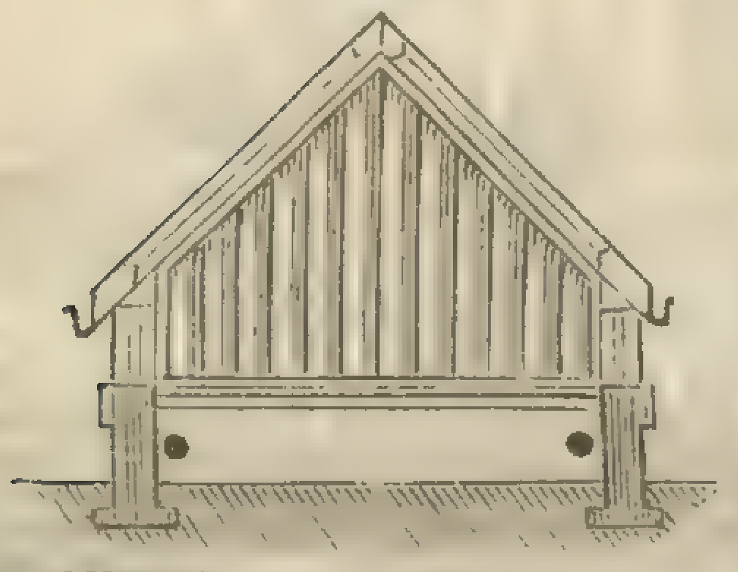
Price
Same as No. 11.

No. 16.



Price
Same as No. 7.

No. 17.



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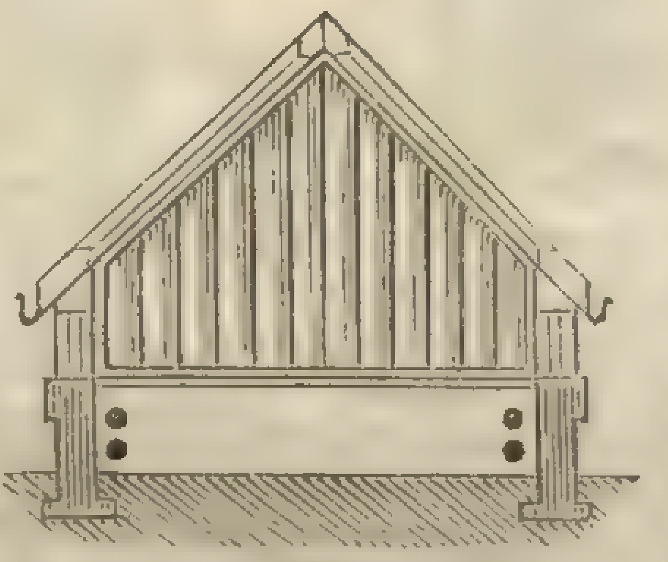

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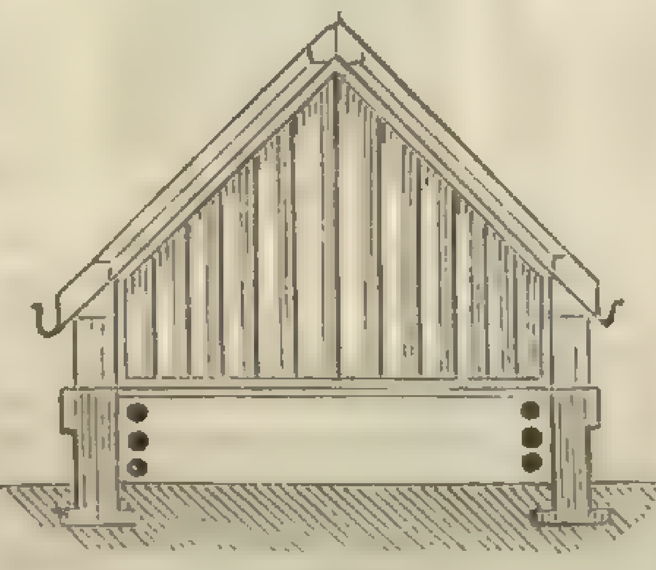

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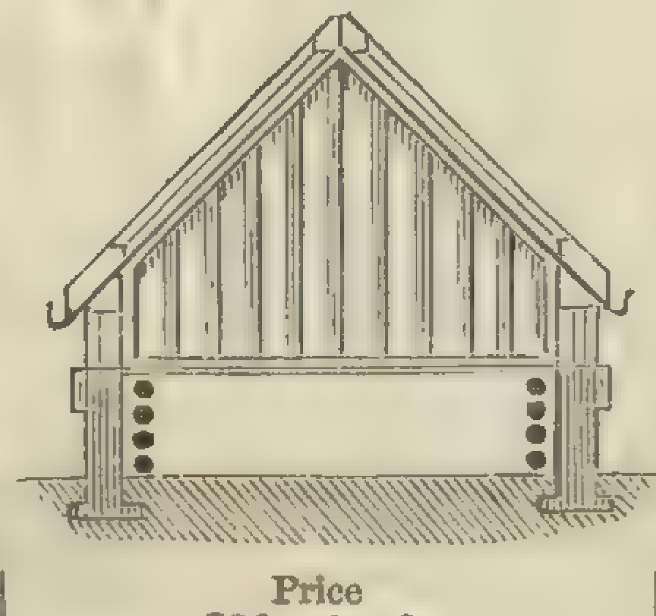
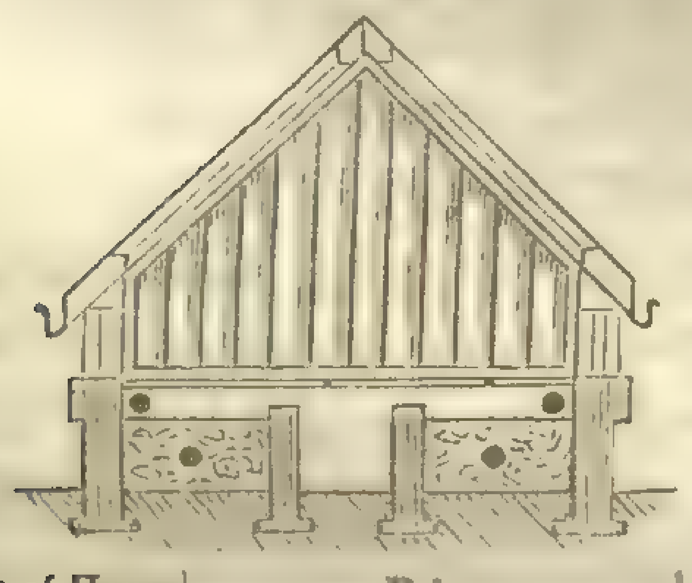


No. 21.

Size of House	Price	Price	Price	Price	Price
20 by 10 ft.	£9 0 0	£14 0 0	£18 10 0	£23 0 0	£23 0 0
30 „ 12 „	12 0 0	19 0 0	24 0 0	30 0 0	30 0 0
40 „ 15 „	15 0 0	24 0 0	29 0 0	36 10 0	36 10 0
50 „ 15 „	18 0 0	28 0 0	34 0 0	42 10 0	42 10 0
60 „ 15 „	20 0 0	32 0 0	39 0 0	49 0 0	49 0 0
70 „ 15 „	22 0 0	36 0 0	44 0 0	56 0 0	56 0 0
80 „ 15 „	24 0 0	40 0 0	49 0 0	63 0 0	63 0 0
100 „ 15 „	26 0 0	44 0 0	54 0 0	70 0 0	70 0 0

No. 22.



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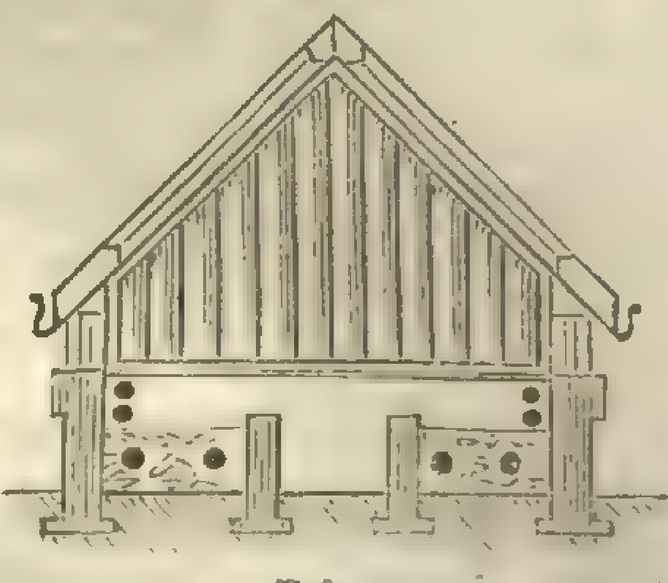

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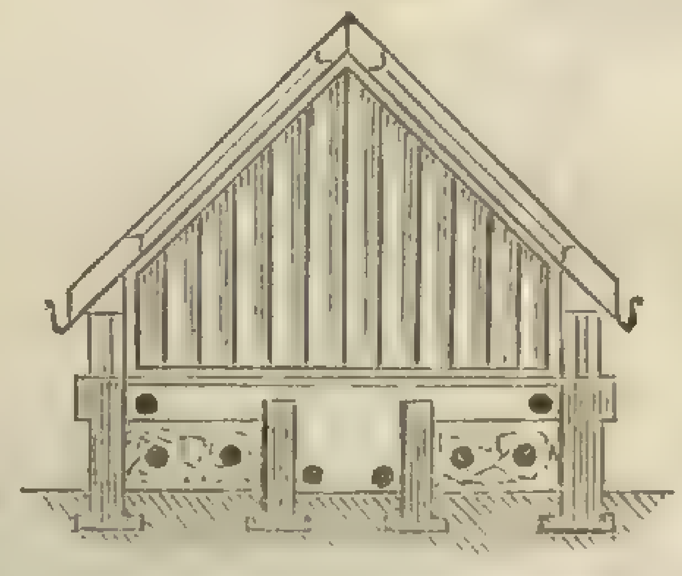

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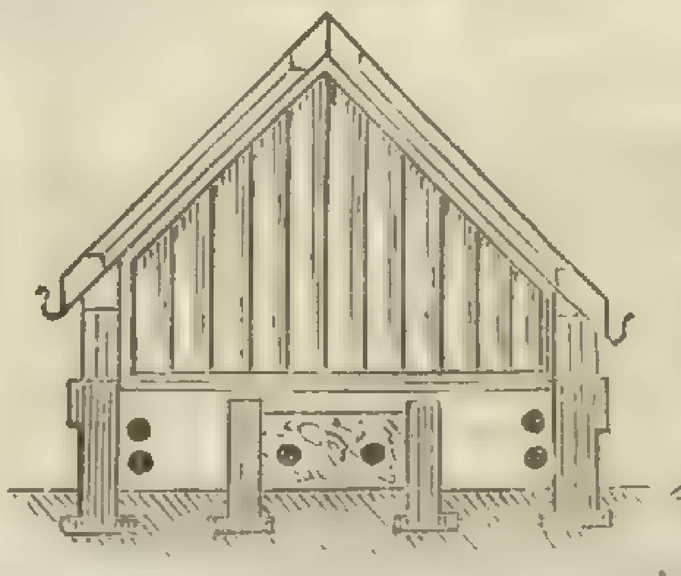

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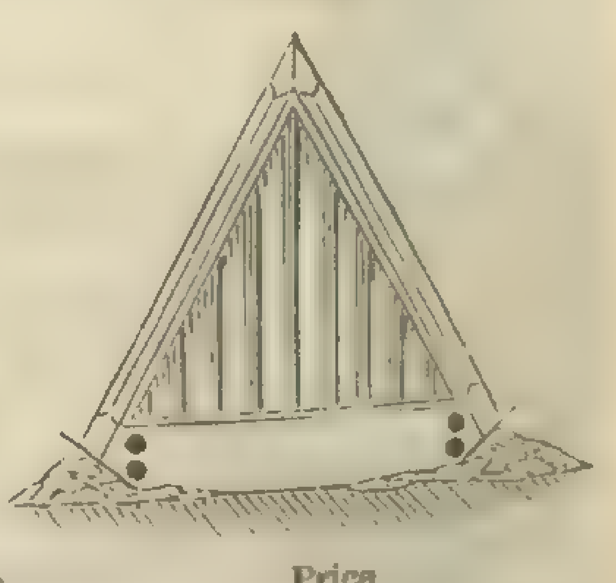


Size of House	Price	Price	Price	Price	Price
20 by 10 ft.	£15 0 0	£25 0 0	£25 0 0	£18 10 0	£14 0 0
30 „ 12 „	21 0 0	32 0 0	32 0 0	25 0 0	19 0 0
40 „ 15 „	25 0 0	38 10 0	38 10 0	30 0 0	24 0 0
50 „ 15 „	29 0 0	44 10 0	44 10 0	35 0 0	28 0 0
60 „ 15 „	33 0 0	51 10 0	51 10 0	40 0 0	32 0 0
70 „ 15 „	37 0 0	58 0 0	58 0 0	45 0 0	36 0 0
80 „ 15 „	41 0 0	65 0 0	65 0 0	50 0 0	40 0 0
100 „ 15 „	45 0 0	72 0 0	72 0 0	55 0 0	44 0 0

J. Jones will be happy to supply HOT-WATER APPARATUS for HOUSES according to any of the above Plans, delivered Free to any Station in England at the prices named, which include strong CAST-IRON CYLINDER or SADDLE BOILER, FURNACE DOORS, FIRE BARS, SOOT DOORS, CISTERN and DAMPER, 4-inch HOT-WATER PIPES and CONNECTIONS, all of the best quality; or he will forward ESTIMATES for WORK erected complete, with WROUGHT or CAST-IRON BOILER of any sort, at a small addition to the above prices.

**** The Black Circles on Sections of Houses show the arrangement of Pipes.*

Illustrated Catalogues and further particulars post free on application to

J. JONES, IRON MERCHANT and HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

FIRST CLASS PRIZE MEDAL
FOR ORMSON'S CONSERVATORY.

ORMSON'S CONSERVATORY.

INTERNATIONAL EXHIBITION.

CLASS 9, OPEN COURT, EASTERN ANNEXE.

FIRST CLASS PRIZE MEDAL
FOR ORMSON'S PATENT JOINTLESS TUBULAR BOILER.

From *BELL'S WEEKLY MESSENGER.*

"These reflections have been induced by the array of glass houses in the open court of the Eastern Annexe, but more especially by the magnificent conservatory manufactured and exhibited by Mr. Henry Ormson, of the Stanley Bridge Works, Chelsea. Structures of this kind may be taken as typical of the taste that is growing among the wealthy of the land; for so much skill and enterprise would not have been displayed, and so great an outlay of capital been made, by a manufacturer, unless there was a market for such buildings. We rejoice at this progress in these auxiliaries to the homes of the aristocracy, for we have great faith in flowers, and choice collections of plants, and all the means of raising and displaying them, as they tend to influence the mind, and tone down the passions of our nature. It requires some intellectual power to appreciate them at all, but much more to understand them, and to be able to direct their management. The former every ordinarily gifted being possesses; and, when the means are at hand for exercising the latter, attention to growing plants is so in unison with our instincts that we are insensibly led on till the whole work becomes easy and the practice of it a labour of love.

"As a first-class designer and manufacturer Mr. Ormson stands unrivalled. The conservatory at the International Exhibition is so elaborately planned and worked out that it is difficult to convey by words a faint impression even of the fair proportions of its general outlines and the elegance of its various points of detail. Its length along the centre line is 54 feet, and its width from door to door 36 feet, while the height from the plinth to the cornice is 11 feet. The framework of the upper portion of the building is mostly of iron. The weight of the roof is supported by cast-iron pillars, fluted and wreathed in the stem, and terminated with richly embellished capitals. The roof terminates in the form of three semi-domes at each end, and the house is similarly finished, so that there are three semi-circular spaces from the roof to the floor for the reception of flowers and hanging baskets of festooning plants. The colouring of these buildings, when permanently fixed, would of course have to depend on the position they would be in as to overhanging or adjacent trees and buildings. But the individual character of the present building is very beautiful; a white ground is picked out with very pale green, and the employment of an occasional line or edge of gilt imparts to the whole a chaste, elegant, and, we may say, fascinating appearance.

"As Mr. Ormson's system of heating is so well-known, no attempt at showing it is here made, but the method by which ventilation is obtained is very admirable. The openings at the top for the escape of heated and rarefied air are next to invisible, and are readily and easily raised and closed; while at the bottom every alternate sash is hung in the centre on pivots, so that each one opens at top and bottom simultaneously. Thus the heat of the house may be regulated so as not to produce a chill during the rawest weather, and when admissible a zephyr-like breeze can be thrown upon every plant to move and strengthen its stem, branches and foliage.

Mr. Ormson's manufactory at Chelsea is conducted on the most economical principles that division of labour and the employment of machinery will admit of. Steam power is employed where practicable, all the wood used being sawn on the premises, and the surface smoothed by a machine, the active part of which revolves 2000 times a minute. This apparatus is remarkable alike for the rapidity of its movement, and the beautiful style of work which it turns out. By changing its knives or cutters, grooves and lines can be cut or traced of any required form. A plank or strip of wood is rolled up to the revolver containing the cutters, of which there are four sets, so that with the 2000 revolutions a minute, the touch of each edge is less than a hair's breadth. Thus cornices and other ornamental parts are turned out with an accuracy not to be equalled by planing, and with a smoothness adapted for the reception of the finest paint or varnish. Two of these knife armed revolvers can be worked simultaneously, so that both sides of a plank or block of wood can be cut or figured by once passing through the machinery. Two engines of several horse-power each are required for preparing the wood for the great number of hands employed by Mr. Ormson in putting houses together for meeting his orders.

"Mr. Ormson's 'Jointless Tubular Boiler' is known by every gardener of position. Tubes without joints stand in the form of two-thirds of a cone; this construction rests on a tubular grating so that no surface where fire touches is without water under it. Fuel is simply dropped in at the top of the cone-like part, so that renewing the fire, or blocking it up, is on the simplest plan. The water rests in these tubes, when no fire is burning; but as it enters at the bottom of them and can pass out at the top, the effect of the heat is to keep up a constant circulation of heated water through the pipes attached, no matter how long or large they may be.

"The Stanley Bridge Works are situated on a basin of the Thames, so that timber, coal, iron, and other materials may be easily conveyed there, and manufactured articles returned for shipment to any part of the world. This happens to be particularly convenient just now, as Mr. Ormson's building at the International Exhibition has secured for him several orders for the Continent. His present orders, we understand, will take him over this year to execute. Mr. Ormson is farther fortunate, as far as transmitting goods is concerned, now that the business has almost overgrown his premises, for the Kensington Railway has a station within a few paces of his gate, and a tramway will run close up to his yard, so that he will be able to load a truck for going to any British station, without the necessity for shifting its contents."

HENRY ORMSON, Horticultural Builder and Hot-Water Apparatus Manufacturer,
STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, Orwell Works, Ipswich,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD,

PATENTEES AND MANUFACTURERS OF

STEAM CULTIVATORS, STEAM PLOUGHS,

CHAMPION PLOUGHS, HARROWS, HORSE RAKES, AND HAYMAKERS.

CATALOGUES, with full particulars, sent free on application.

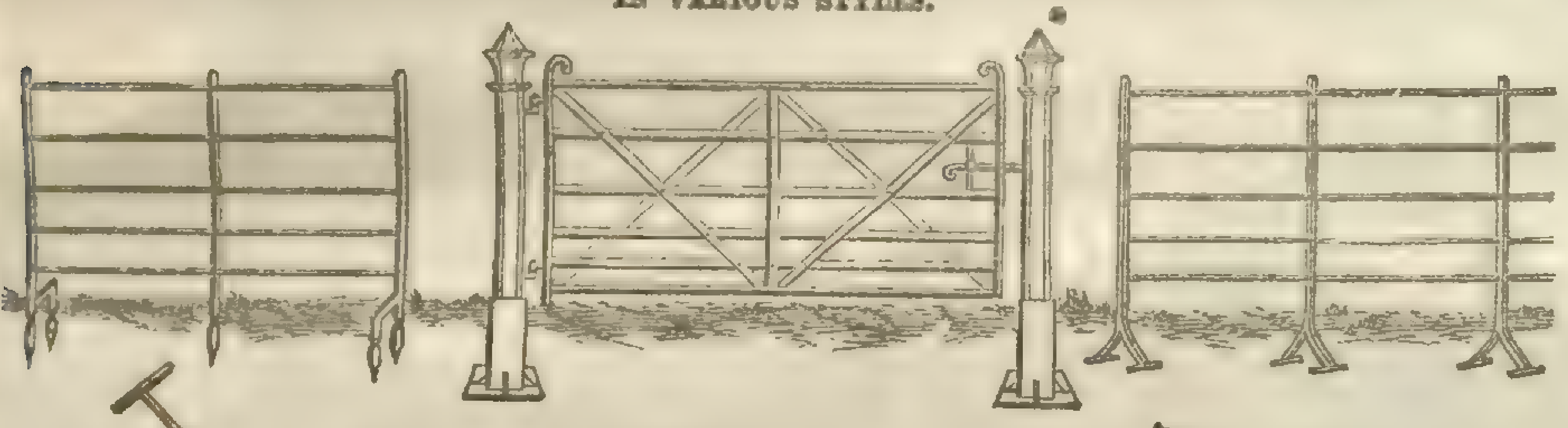
COTTAM'S

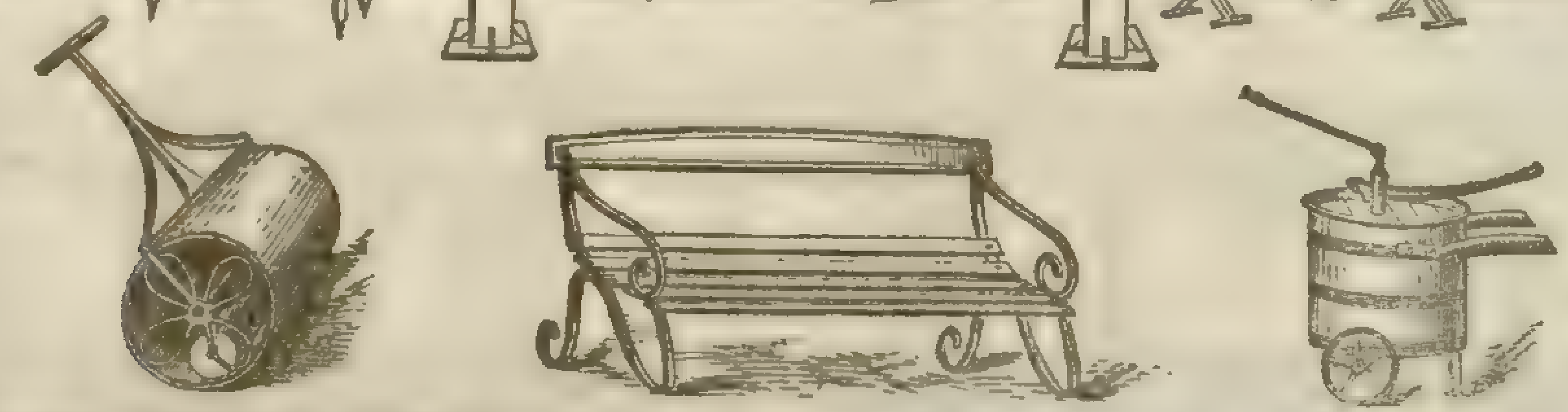
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED,

IN VARIOUS STYLES.





IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c. The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to

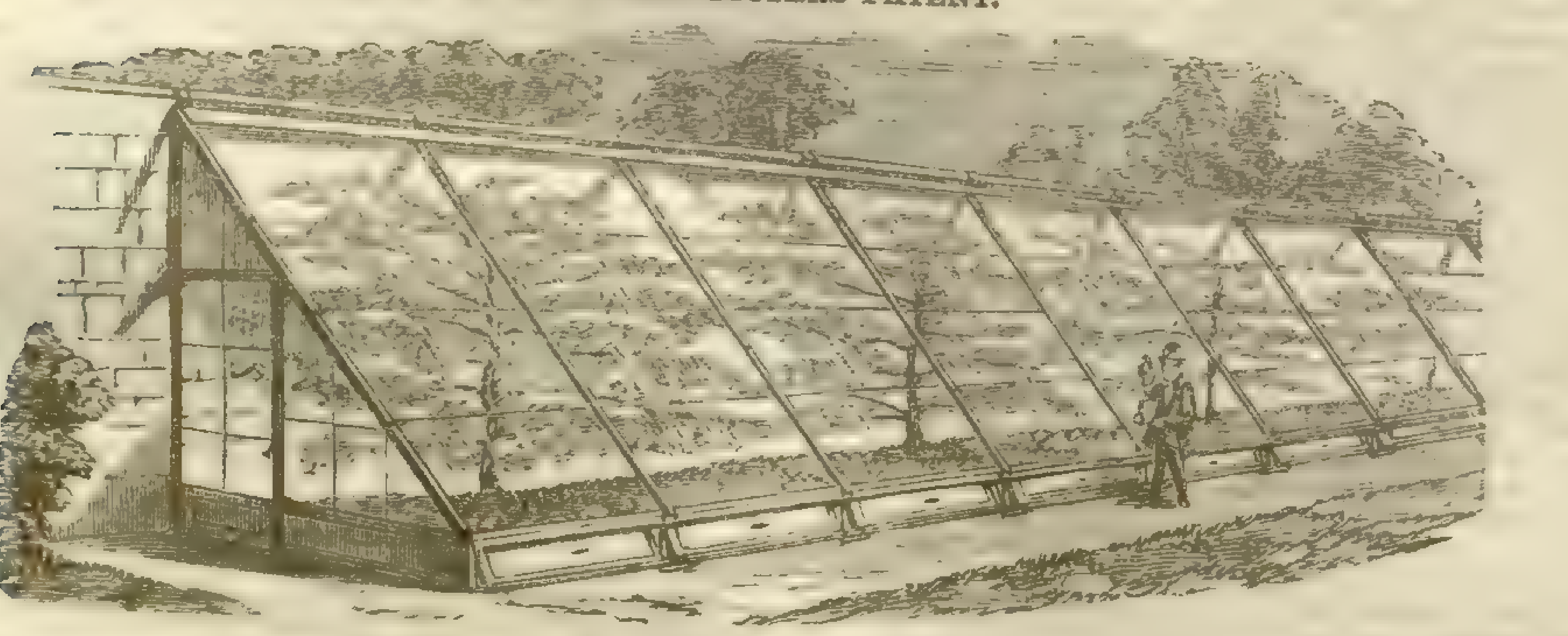
COTTAM & CO., ENGINEERS and IRON FOUNDERS,

2, WINSLEY STREET (Opposite the Pantheon), OXFORD STREET, LONDON, W.

ST. PANCRAS IRON WORKS COMPANY,

OLD ST. PANCRAS ROAD, LONDON, N.W.

BY ROYAL LETTERS PATENT.



SCOTT'S GLASS WALLS,

Designed to meet the suggestions of James Scott, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

CONSERVATORIES	PINE and MELON PITS	BALCONIES	GATES
GREENHOUSES	VASES	IRON SASHES	TANKS
HOTHOUSES	VERANDAHS	IRON HURDLES	HOT-WATER WORKS.

PATENT WROUGHT-IRON STABLE FITTINGS AND ENAMELLED MANGERS.

Every description of IRONWORK. *Lists Free.*

ST. PANCRAS IRON WORK COMPANY, OLD ST. PANCRAS ROAD, LONDON, N.W.

Notice.

MR. A. CHANDLER (of the late Firm of Chandler & Sons), HORTICULTURAL VALUER, begs to inform his friends and the public that he has removed from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

Saddlery.—Prize Medal 1851 and 1862.

BLACKWELL, 259, Oxford Street, W. INTERNATIONAL EXHIBITION, No. 4684, Class 3, and holder of the only First-class Medal for SADDLERY at the Paris Exhibition, begs to direct attention to his four Patents, for

GUTTA PERCHA JOCKEYS, for breaking horses easy mouthed and temperate, 60*s.*; hire, 2*s.* a week.
SAFETY SPRING DRIVING and RIDING REINS, 12*s.*
RUBBER SPRINGS for Girths, Rollers, &c., 2*s.*
SPRING HOOKS for Reins, Chains, &c., 1*s.*
ANTI CRIB-BITERS, 18*s.*

Furnish your House

WITH THE BEST ARTICLES

AT

DEANE'S

Ironmongery and Furnishing Warehouses.
DEANE and COMPANY, LONDON BRIDGE, E.C.
ESTABLISHED A.D. 1700.

DEANE'S TABLE CUTLERY, celebrated for more than 150 years, remains unrivalled for quality and cheapness. The Stock is most extensive and complete, affording a choice suited to the taste and means of every purchaser. The following are some of the prices for Ivory Handled Knives—each blade being of the best steel, bearing our name, and warranted.

	s. d.	s. d.	s. d.	s. d.	s.	s.	s.
Table Knives, per doz ..	14 0	16 0	19 0	23 0	25	29	33
Dessert ditto ,, ..	12 0	12 0	15 0	18 0	20	23	28
Carvers, Joint, per pair..	4 6	5 6	6 6	7 6	8	9	11

ELECTRO-PLATED SPOONS and FORKS.—The best manufacture, well finished, strongly plated. Every article stamped with our mark, and guaranteed.

	Fiddle.		Beaded.		King's.		Lily.
	Second quality.	Best.	Second.	Best.	Second.	Best.	Best.
	s. d.	s.	s.	s.	s.	s.	s.
Table Spoons, per doz.	33 0	40	44	58	54	66	58
Table Forks ,,	31 0	38	44	56	54	64	56
Dessert Forks ,,	23 0	29	32	40	37	46	40
Dessert Spoons ,,	24 0	30	32	42	37	48	42
Tea Spoons ,,	14 6	18	22	26	26	32	26

DEANE and CO.'S NEW ILLUSTRATED CATALOGUE and PRICED FURNISHING LIST may be had on application or post free. This List embraces the leading articles from all the various departments of their Establishment, and is arranged to facilitate purchasers in the selection of goods. It comprises Table Cutlery, Electro-plate, Lamps, Baths, Fenders, Fire-irons, Iron Bedsteads, Bedding, Britannia Metal, Copper, Tin, and Brass Goods, Culinary Utensils, Turnery, Brushes, Mats, &c.

Deane & Co., London Bridge, E.C.

FENDERS, STOVES, FIRE-IRONS, and CHIMNEY PIECES.—Buyers of the above are requested, before finally deciding, to visit William S. Burton's SHOW-ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, CHIMNEY-PIECES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments, 3*l.* 15*s.* to 33*l.* 10*s.*; Bronzed Fenders, with standards, 7*s.* to 5*l.* 12*s.*; Steel Fenders, 3*l.* 8*s.* to 11*l.*; ditto, with rich ormolu ornaments, from 3*l.* 8*s.* to 18*l.*; Chimney-pieces, from 1*l.* 8*s.* to 100*l.*; Fire irons, from 2*s.* 3*d.* the set to 4*l.* 4*s.* The BURTON and all other PATENT STOVES, with radiating hearth-plates.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 500 Illustrations of his illimited Stock of Sterling Silver and Electro Plate, Nickel Silver, and Britannia Metal Goods, Dish Covers, Hot Water Dishes, Stoves, Fenders, Marble Chimneypieces, Kitchen Ranges, Lamps, Gaseliers, Tea Trays, Urns, and Kettles, Clocks, Table Cutlery, Baths, Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Room Cabinet Furniture, &c., with Lists of Prices, and Plans of the 20 large Show Rooms, at 39, Oxford Street, W.; 1, 1A, 2, 3 and 4, Newman Street; 4, 5, and 6, Perry's Place; and 1 Newman's Mews, London, W.C.

Le Sommier Elastique Portatif.

HEAL and SON have patented a method of making a Spring Mattress portable. The great objection to the usual Spring Mattress is its being so heavy and cumbersome.

The SOMMIER ELASTIQUE PORTATIF is made in three separate parts, and when joined together has all the elasticity of the best Spring Mattress. As it has no stuffing of wool or horsehair, it cannot harbour moth, to which the usual Spring Mattress is very liable; the prices, also, are much below those of the best Spring Mattresses, viz.:—

3 feet wide by 6 feet 4 inches long	£2	5	0
3 feet 6 in. ,, ,, ...	2	10	0
4 feet ,, ,, ...	2	15	0
4 feet 6 in. ,, ,, ...	3	0	0
5 feet ,, ,, ...	3	5	0
5 feet 6 in. ,, ,, ...	3	10	0

The SOMMIER ELASTIQUE PORTATIF therefore combines the advantages of elasticity, durability, cleanliness, portability, and cheapness.

An Illustrated Catalogue of Bedsteads, Bedding, and Bedroom Furniture sent free by post.

Heal & Son, 196, Tottenham Court Road, W.

METCALFE, BINGLEY, and CO.'S NEW PATTERN TOOTH BRUSHES, Penetrating Unbleached Hair Brushes, Improved Flesh Brushes, genuine Smyrna Sponges, and every description of Brush and Comb and Perfumery for the Toilet. Metcalfe's celebrated Alkaline Tooth Powder, 2*s.* per box.

THE FAIRY BOUQUET; The OXFORD and CAMBRIDGE BOUQUET. In bottles, 2*s.*, 3*s.* 6*d.*, and 5*s.* each.

130 B, and 131, Oxford Street, W.

OLDRIDGE'S BALM of COLUMBIA, established upwards of 30 years, is the best and only certain remedy ever discovered for preserving, strengthening, beautifying, or restoring the Hair, Whiskers, or Moustaches, and preventing them turning gray.

Sold in bottles, 3*s.* 6*d.*, 6*s.*, and 11*s.*, by C. and A. Oldridge, 22, Wellington Street, Strand, London, W.C.; and all Chemists and Perfumers. For children and ladies' hair it is most efficacious and unrivalled.

PRIZE MEDAL to THRESHER AND GLENNY for very fine and superior Flannel Shirts, India Tweed Suits, and Gauze Waistcoats. Lists of Prices on application to THRESHER & GLENNY, General Outfitters, 152, Strand, W.C.

CHUBB & SON.—"For Perfection of Workmanship and Construction of Locks, also for the Manufacture of Iron Safes," Prize Medal awarded at International Exhibition.

CHUBB'S PATENT SAFES, the most secure against Fire and Thieves.

CHUBB'S FIRE PROOF STRONG ROOM DOORS; CHUBB'S PATENT DETECTOR LOCKS and STREET DOOR LATCHES; CHUBB'S CASH and DEED BOXES.

Illustrated Price List gratis and post free.

CHUBB & SON, 57, St. Paul's Churchyard, London, E.C.

Prize Medal 1862.

AWARDED BY THE JURORS OF CLASS II. FOR THE

GLENFIELD STARCH, being a confirmation by some of the most eminent scientific men of the age, of the superior qualities of this world renowned Starch. Sold in Packets at ½d., 1d., 2d., 4d., and 8d. each, by all respectable Grocers, Chandlers, Oilmen, &c.

WOTHERSPOON & Co., Glasgow and London.

SAUCE.—LEA AND PERRINS' WORCESTERSHIRE SAUCE.

Pronounced by Connoisseurs

"THE ONLY GOOD SAUCE."

See Name on Wrapper, Label, Bottle, and Stopper, and to avoid Counterfeits

ASK FOR LEA AND PERRINS' SAUCE.

*** Sold Wholesale and for Export, by the Proprietors, Worcester; Messrs. CROSSE & BLACKWELL; Messrs. BARCLAY & Sons, London, &c.; and by Grocers and Oilmen universally.

DINNEFORD'S PURE FLUID MAGNESIA has been during 25 years emphatically sanctioned by the medical profession, and universally accepted by the public, as the best remedy for acidity of the stomach, heartburn, headache, gout, and indigestion, and as a mild aperient for delicate constitutions, more especially for ladies and children.—It is prepared in a state of perfect purity and uniform strength only by DINNEFORD & Co., 172, New Bond Street, London, and sold by all respectable Chemists throughout the world.

KEATING'S PERSIAN INSECT DESTROYING POWDER.—Fleas in Dogs, Poultry, &c., are instantly destroyed, as also Bugs, Beetles, and every other Insect, by this Powder, which is perfectly harmless to animal life; sportsmen particularly, will, therefore, find it invaluable. Sold in Packets, 1s., 2s. 6d., and 4s. 6d. each, or post free for the treble size for 36 postage stamps, by THOMAS KEATING, Chemist, 79, St. Paul's Churchyard, London, E.C. Take notice each genuine packet bears the above name and address.

PARR'S LIFE PILLS will keep people in vigorous health, and make them cheerful and hearty. They are unrivalled for the cure of sick headache, indigestion, loss of appetite, impurities of the blood, disorders of the stomach, liver, or general derangement of the system.

PARR'S Life Pills may be obtained of any Medicine Vendor, in boxes 1s. 1½d., 2s. 9d., and in family packets, 11s. each.

Merino Rams of the Bourgignon Breed.

FOR SALE, a Limited Number of RAMS of this breed, which is in high favour amongst Australian Sheep Farmers, and obtained Prizes at the Paris Exhibition of 1860, and the International Exhibition of 1862, at Mons. GUICHARD'S Chateau de Jouaney, near the Gens Station on the Paris, Lyons, and Dijon Railway.

Atherstone Nursery,

Adjoining the Railway Station, about 20 miles from Birmingham, and 100 miles or thereabouts from London, Liverpool, or Manchester.

TO BE LET, the above capital NURSERY, consisting of about 13½ acres of excellent Soil, well stocked with Trees, Evergreens, Shrubs, Greenhouse Plants, Greenhouses, Pits; large Vinery, thoroughly stocked with prolific Vines in excellent bearing condition; five Cottages, Seed House, Stable, Sheds. The Nursery Stock and Effects to be taken at a valuation, and the Premises to be Let at about 200*l.* per annum.

For further particulars, apply to EDWARD JOHN PAYNE, Esq., Solicitor, 32, Great George Street, Westminster, S.W.; or to PROTHEROE & MORRIS, Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

To Horticultural Builders and Others.

TO BE DISPOSED OF, an old-established HORTICULTURAL BUILDER'S BUSINESS, with the Lease, Plant, Machinery, Stock, &c. There is an extensive connection attached to the above, as having the patent right of manufacturing Patent Galvanised Iron Hot and Greenhouses, exclusive of the usual Iron and Wood Greenhouses manufactured by other Horticultural firms. The proprietor retiring from business.

For further particulars apply at 152, King's Road, Chelsea.

To Seedsmen and Florists.

TO BE DISPOSED OF, the STOCK in TRADE and GOODWILL of an excellent and old-established SEED TRADE in one of the largest manufacturing towns. This would form a highly favourable opportunity for any gentleman who might have at command some 200*l.*

Apply in the first instance to G. G., Messrs. Marlborough & Co., 4, Ave Maria Lane, London, E.C.

South of Devon.

MR. ALEXANDER PONTEY, DECEASED.

To NURSERYMEN, SEEDSMEN, AND OTHERS.

TO BE DISPOSED OF, by Private Contract, on advantageous Terms, with early possession, the Well-established BUSINESS of a NURSERYMAN, SEEDSMAN, and FLORIST, which for very many years has been extensively and successfully carried on by Mr. ALEXANDER PONTEY, of Plymouth, Devon, and his predecessor, and is now to be disposed of only in consequence of his sudden death.

The Lease of the Business Premises and Stores, which are most conveniently situated near the Market, as well as the Leases of the Nurseries, which are most extensive and well-stocked, both at Plymouth and Vinstan (about Two Miles from Plymouth, on the Tavistock Road), have many years to run.

The Plant, which is of the most Modern construction, and the Stock, the most varied in the West of England, to be taken in the usual way, at a fair valuation.

For further particulars, application may be made to Messrs. SKARDON & SONS, Auctioneers, Bedford Street, Plymouth; or to Messrs. PHILLIPS & SON, Solicitors for the Executrix, Frankfort Lane, Plymouth.

Dated Plymouth, August 1, 1862.

Lancashire.

TO BE LET, either for a Term or by the Year, "CARR SIDE FARM," situate in the township of Ince Blundell, about 9 miles from Liverpool. The Farm contains 181 acres, statute measure, viz.:—about 130 acres Arable, and the remainder Meadow and Pasture. There is a good House and first rate Outbuildings on the above.—Also, To be Let with the above (or alone), for a Term or by the Year, 755 STATUTE ACRES OF LAND, the greater part Tithe Free, situate in the township of Formby in the said county, and close to the Freshfield Station, on the Liverpool and Southport Line. Possession of the Land may be had on February 2 next, and of the Houses and Outbuildings on May 1 next.

For further Particulars, and to treat for same, apply to Mr. FISHER, Steward, Ince Blundell, Liverpool.

Maida Hill West.

MR. SAMUEL BROWN DECEASED.

TO BE SOLD or LET on LEASE, the Old Established BUSINESS of a FLORIST and NURSERYMAN, carried on for many years by the late Mr. SAMUEL BROWN, at Clifton Nursery, Warwick Road. The situation is most valuable. The Plant and Hothouses are in good condition. A large trade has been carried on by the deceased. The Goodwill, Plants, and entire property may be purchased, or a long Lease will be granted, the Goodwill, Stock and Plant being purchased by the Tenant.

For further particulars apply to Mrs. BROWN upon the Premises; or to Messrs. WILLOUGHBY, COX, & LORD, Solicitors for the Executrix, 13, Clifford's Inn, Fleet Street, London, E.C.

Sales by Auction.

Hurst Rise, Abbey Wood.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, on the Premises, Hurst Rise, Abbey Wood, within 10 minutes' walk of the Abbey Wood Railway Station, on THURSDAY, Sept. 18, at 2 o'Clock precisely, by order of the Proprietor, who is leaving the neighbourhood, the whole of the GREENHOUSE PLANTS, including specimens of Azalea indica, and choice double Camellias, fine bushy plants well furnished with bloom-buds; large Roses in pots, and a variety of other Plants; also a Bee-hive and Stand, some Fowls and Pigeons, 2-light Box, Barrow, Grindstone, quantity of Garden Pots, and sundry effects.

May be viewed two days prior to the Sale. Catalogues may be had on the Premises; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

Preliminary Notice.

To NOBLEMEN, GENTLEMEN, NURSERYMEN, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are instructed to prepare for unreserved SALE by AUCTION, about the middle of OCTOBER, the whole of the valuable NURSERY STOCK at the Bower Nurseries, Maidstone, Kent, consisting of many thousands of Standard and Dwarf-trained, Untrained, and Pyramidal Fruit Trees, and upwards of 14,000 Maiden Apples, Pears, Plums, Cherries, &c. Also a large assortment of Ornamental and Forest Trees, Evergreens and Deciduous Shrubs, Conifers; quantity of Box edging, Quick, &c., of which full particulars will appear in future advertisements.

American Nurseries, Leytonstone, N.E.

Orchard House Trees.—Preliminary Notice.

MR. BROWNSON is honoured by instructions from an eminent Cultivator to offer by PUBLIC COMPETITION in OCTOBER next, about 400 splendid grown PEACHES, NECTARINES, APRICOTS, PEARS (on Quince Stocks), PLUMS, CHERRIES, &c., growing in 10 and 12-inch Pots, of most of the leading kinds, some of which are full of fine Fruit, and in vigorous health.

Particulars of day of Sale and Descriptive Catalogues in due course.—Railway Station, Ashbourne, Derbyshire.

Expiration of Lease—Nursery Stock.

To THE NOBILITY, GENTRY, NURSERYMEN, FLORISTS, & OTHERS.

MR. KIRKE has been favoured with instructions from Mrs. Conway to SELL by AUCTION on the Premises, Earles Court Nursery, Old Brompton, S.W., on THURSDAY, Sept. 25, at 11 for 12 o'Clock, the ground being required for Building purposes immediately, comprising Standard, Dwarf, and Climbing Roses of sorts, Camellias, Azaleas, Mrs. Conway's celebrated Scarlet and other Geraniums, Fuchsias, Cacti, Myrtles, Yuccas, Cedrus Deodara, 3 to 4 feet, Rhododendrons, Pyrus japonica, Tree Box, Euonymus, Siberian and Chinese Arbor-Vitæ, Laurustinus, Irish Yews, Sweet Bay, Chrysanthemums, several thousand Lily of the Valley, Greenhouse and Herbaceous Plants, Vines in Pots, Laurels, Aucuba japonica, Limes, 8 to 10 ft.; Span-roofed Green and Forcing Houses, Pits, Lights, Boxes, Hand-glasses, Sheds, &c. About 500 yards of superior Box Edging. Nearly all in pots.

May be viewed two days prior to the Sale. Catalogues had on the Premises; and at the Offices of Mr. KIRKE, 19, Brompton Row, Brompton, S.W.

Important Sale of First-class Short-horns,

AT BUSHEY GROVE FARM, NEAR WATFORD, HERTS.

MR. WETHERELL is honoured with instructions from Stewart Marjoribanks, Esq., of Bushey Grove, to SELL by AUCTION, on WEDNESDAY, October 1, his entire and very valuable HERD of SHORT-HORNS, comprising about 80 head of Bulls, Cows, and Heifers, of different ages. Amongst the Bulls are Great Mogul (14,651), and Whipper-in (19,139), both First Prize Winners at the Royal Society's and other great Shows, and Royal Butterfly 5th (18,756), descended from one of the best tribes in England. The Cows and Heifers include the Winners of many Prizes at the Royal, the Yorkshire, and other principal Shows; also the Dams of Harkaway, Rose of Bushey, and Whipper-in, successive Winners of First Prizes at the Royal Society's Meetings. The Herd is perfectly healthy, and breeding extremely well. The Cows and Heifers are served by Great Mogul (14,651), Royal Butterfly 5th (18,756), and Whipper-in (19,139), particulars of which will be given at the time of Sale. Mr. WETHERELL'S instructions are positive—every lot will be sold without reserve, as Mr. Marjoribanks is discontinuing the Breeding of Short-horns.

Also will be Sold, an excellent Two-wheel CATTLE VAN, nearly new, built for Mr. Marjoribanks, with Patent Axles, &c.

Catalogues are now ready, and may be had of Mr. TALLANT, Bushey Grove Farm, Watford; or of Mr. WETHERELL, Aldborough, Darlington.

The Stock can be seen any day previous to the Sale (Sundays excepted), on application to Mr. TALLANT, at the Farm.

Luncheon at 12; Sale to commence at 1 o'Clock.

By permission of the Directors of the North Western Company, Trains leaving Rugby 10.35 A.M., Blisworth 7.25 A.M., Euston 10.30 A.M., will, on October 1, stop at Bushey Station, in addition to the regular Trains which stop there. Trains leaving Euston 6.15 P.M. down, Watford 3.50 P.M. for London, Watford 6.55 P.M. for London, and Watford 7.41 P.M. for London, will also stop at Bushey Station for the convenience of persons leaving the sale. Bushey Grove Farm is only half a mile from Bushey Station.—Aldborough, Sept. 13.

Periodical Sale of Poultry and Pigeons

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street Covent Garden, London, W.C., on TUESDAY, September 30, at 12 o'Clock precisely, a Choice assortment of POULTRY, consisting of Cochins, Hamburghs, Polands, Dorkings, Spanish, Game, &c., from the yards of Mrs Fookes, Miss Milward, Dr. Douglas, and other well known Breeders; also about 160 Lots of valuable PIGEONS from Messrs. Hayne, Woodhouse, Everett, and others, comprising Carriers, Pouters, Dragons, Barbs, Magpies, Runts, Jacobins, Trumpeters, Fantails, Owls, Tumblers, &c.

On view the Morning of Sale, and Catalogues had of Mr. J. C. STEVENS, Auctioneer and Valuer, 38, King Street, Covent Garden, London, W.C.

Ferns, Conifers, Vines, Dutch Bulbs, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, London, W.C., on WEDNESDAY, September 24, at half-past 12 o'clock precisely, a choice Assortment of RARE PLANTS, comprising 20 Todea pellucida, 50 Dracæna australis, 50 Dracæna indivisa, Cyathea dealbata, Dixonia squarrosa, Dixonia Smithii, Wellingtonia gigantea, Cupressus Lawsoniana, Pinus Don Pedri, P. insignis, P. ponderosa, Cupressus macrocarpa, 50 Vines from Eyes, &c. Also a quantity of Hyacinths, Crocuses, Tulips, Anemones, Narcissus, &c.

On view the Morning of Sale, and Catalogues had.

Consignment of Plants from Ghent.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, October 4, at half-past 12 o'Clock precisely, 300 CAMELLIAS, with flower buds, 1 to 3 feet high; 300 INDIAN AZALEAS, bushy plants of the choicest varieties well set with flower buds; 300 HARDY RHODODENDRONS of the best named varieties; 200 bulbs of LILIUM UMBELLATUM ATROSANGUINEUM; 300 strong roots of ASCLEPIAS TUBEROSA; Standard and Dwarf LAURUSTINUS, &c.

On view the Morning of Sale and Catalogues had.

Highly Important Sale of Established Orchids.

MR. J. C. STEVENS has been favoured with instructions to dispose of at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY and FRIDAY, September 18 and 19, at half-past 12 o'Clock precisely, without the least reservation, the first portion of the well known COLLECTION of ESTABLISHED ORCHIDS of G. REED, Esq. of Burnham, Somersetshire, who is giving up their culture. Many of the Plants have been exhibited and obtained First Prizes at the Crystal Palace, Chiswick, Regent's Park and other Shows. The collection comprises amongst other choice varieties the following:—

Aerides Fieldingi	Lælia Perrini
,, Larpentæ	,, superbiens
,, Lindleyana	,, flava
,, Lobbii	,, majalis
,, maculosum	Lycaste Skinneri, best variety
,, suavissimum	Masdevallia coccinea
,, Schröderi	Odontoglossum nævium
,, Warneri	Oncidium sessile
Anguloa Clowesi	Phalænopsis amabilis
,, Ruckeri	,, grandiflora
Angræcum eburneum	,, rosea
Brassivola Digbyana	,, new species
Cattleya Acklandiæ	Saccolabium Reedi
,, elegans	,, guttatum
,, lobata	,, Blumei
,, Mossiæ superba	,, retusum
,, Mossiæ aurantiacum	,, new species
,, Skinneri	Vanda Batemani
Cypripedium barbatum superbum	,, Cathcarti
,, Farrieanum	,, suavis (Veitch's)
,, caudatum	,, tricolor
,, hirsutissimum	,, gigantea
,, species nova	,, furva
Epidendrum prismatocarpum	Sobralia Ruckeri
Lælia purpurata, fine dark var.	Anæctochilus Lowii
	&c. &c.

May be viewed the Mornings of Sale, and Catalogues had of Mr. J. C. STEVENS, 38, King Street, Covent Garden, W.C.

Important Sale of Plants at the Arboretum,

LEAMINGTON SPA, WARWICKSHIRE.

MR. J. C. STEVENS has been favoured with instructions from the Proprietor, JOHN HITCHMAN, Esq., who is intending to erect a Hydropathic Establishment in the Arboretum, to SELL by AUCTION, on the Premises, on MONDAY, October 13, and five following days, at half-past 11 o'Clock each day, the Valuable and Extensive COLLECTION of SPECIMEN CONIFERS and other ORNAMENTAL PLANTS, consisting of upwards of 300,000, all of which have been well prepared for removal, having been frequently transplanted, and several hundreds of the choicer kinds, being grown in crates, including magnificent specimens (besides many others), of the following known kinds:—

Araucaria imbricata, 4 to 8 feet	Pinus tuberculata, 1 to 3 feet
Abies Douglasii, 6 to 9 feet	,, ponderosa, 2 to 4 feet
,, Menziesii, 5 to 8 feet	,, Sabiniana, 1 to 3 feet
Cedrus atlantica, 4 to 6 feet	,, Lambertiana, 1 to 4 feet
,, Deodara, 4 to 10 feet	Picea amabilis, 1 foot
,, Libani, 4 to 8 feet	,, grandis, 1 foot
Cryptomeria japonica, 4 to 9 ft.	,, Pinsapo, 1 to 7 feet
Cupressus Lambertiana, 2 to 3 ft.	,, Nordmanniana, 1 to 4 ft.
,, Lawsoniana, 1 to 4 feet	,, nobilis, 1 to 4 feet
,, McNabiana, 1 to 2 feet	Taxus ericoides, 1 to 4 feet
Cephalotaxus Fortuni, 1 to 3 ft.	,, aurea variegata, 1 to 3 ft.
Juniperus excelsa, 1 to 5 feet	,, elegantissima, 1 to 3 feet
,, chinensis, 1 to 4 feet	,, adpressa, 1 to 3 feet
,, dealbata, 1 to 3 feet	Thuja gigantea, 1 to 3 feet
Libocedrus decurrens, 1 foot	,, aurea, 1 to 2 feet
Pinus austriaca, 2 to 5 feet	Thujopsis borealis, 1 to 3 feet
,, Benthamiana, 3 to 4 feet (In crates.)	Wellingtonia gigantea, 1 to 4 ft.
Pinus excelsa, 2 to 10 feet	Yews (Irish), 6 to 10 feet
,, Jeffreyi, 1 to 3 feet	&c. &c.

Also various first-class Evergreens and Deciduous Trees and Shrubs of different sizes. Fine Dwarf-trained STANDARD and other FRUIT TREES, about 10,000 DWARF and STANDARD ROSES of the choicest named kinds, Rhododendrons, Camellias, Azaleas, Variegated and other Hollies, Portugal and Common Laurels, Forest Trees, and a variety of other Hardy and Greenhouse Plants.

May be viewed till the time of Sale, when Catalogues (1s. each, or by post 14 stamps, containing upwards of 160 pages of printed particulars, may be had at the Nursery, at the principal Inns at Banbury, Oxford, Coventry, Birmingham, Manchester, Rugby, Leicester, Northampton, Stratford, Derby, Worcester, Burton-on-Trent, Stratford-on-Avon, Warwick, and at Mr. J. C. STEVENS'S Auction Rooms and Offices, 38, King Street, Covent Garden, London. Approved Bills at 3 months will be taken of Purchasers above 50*l.*

The Arboretum is within five minutes' walk of the Leamington Stations on the Great Western and North Western Railways, which offers great facilities for transmitting the Plants to every part of the country. Frequent trains run daily to and from Leamington, and cheap trains three times a week from most of the principal towns.

CAUTION.—THE BRIGHTON WHEAT HAS BEEN SELECTED FOR SEVERAL GENERATIONS MORE THAN THAT GROWN FROM WHEAT PURCHASED IN PREVIOUS YEARS, AND CAN BE OBTAINED OF MR. HALLETT ALONE, OR OF HIS AGENTS.

Particular attention is called to the above caution, as Wheat *bearing scarcely any resemblance whatever* to this has recently been exhibited with the following attached to it—"Hallett's Pedigree Wheat, price One Guinea a bushel."

If planted early as directed, this Wheat costs less per acre for Seed than Common Wheat.

THE TIMES.

"Mr. Hallett exhibits his wonderful examples of what he terms 'Pedigree Wheat,' and a more curious or a more instructive lesson than he offers in his samples is not to be found in the Exhibition."—*Wednesday, June* 18, 1862.

"The curiosity of 1851 was Messrs. Raynbird's splendid sample of Wheat produced by artificially hybridising two first-class varieties; the wonder this year is the 'Pedigree' Wheat of Mr. Hallett, of Brighton. Taking a prime sort to begin with, by selection year after year this intelligent cultivator has developed a breed of Wheat now possessing an established pedigree—a Wheat producing vegetable offspring with certain fixed characteristics, just as a pedigreed race of cattle or sheep perpetuate their kind with its peculiar form, properties, and propensities. It is in fact the nature of this Wheat now to grow great ears and tremendous yields per acre, while at the same time preserving a fine kernel of beautiful flour."—*Wednesday, June* 25, 1862.

THE AGRICULTURAL GAZETTE.

"Certainly there is no section of the show in which the English exhibitors are more clearly in advance of all foreign competition; nor are any of the classes more manifestly led by their respective maxima than in those of agricultural products and agricultural machinery. There is a wider interval between the leaders and the 'ruck' in the race of competition here than in any other section; and in both it is the English exhibitor who wins. Mr. Hallett's 'Pedigree Wheat' may be named as the easy winner in the former class, and a large number of well-known English names come in abreast as winners on the latter course. In both these instances foreign competition is comparatively insignificant."—*Leading Article, Saturday, May* 3, 1862.

INTERNATIONAL EXHIBITION.

EASTERN ANNEXE, CLASS III.

HALLETT'S

PEDIGREE NURSERY WHEAT.

"BRED" ON THE SAME PRINCIPLE

OF

REPEATED SELECTION

WHICH HAS PRODUCED OUR

PURE RACES OF ANIMALS.

THIS WHEAT IS NOW READY FOR DELIVERY.

MARK LANE EXPRESS.

"We have much pleasure in speaking to Mr. Hallett's statements, they being fully borne out by the specimens he presented to our notice. Referring to the Advertisement in this journal, we can affirm that the engraving of the 'Pedigree Wheat' is in no respect apocryphal or exaggerated."—*Leading Article.*

"It may be well here to look to 'the certain circumstances' which have led to any better state of things. It was only last week, then, that a correspondent of our own made this appeal:—'It would be a treat to me, as I am certain it would be to hundreds of your readers, if the gentleman who advertises his Wheat (an engraving of the size of the head of which appears in your paper) would inform me through your columns where I can see any field, at present growing, which bears out his engraving and advertisement. I should travel any distance to see it, and would confirm in your columns what I now hesitate to believe, viz., that such a phenomenon was in existence in 1862 as a field with such a head of Wheat as he represents.' J. W. H. H. should have been with us on Friday last, when we walked over Mr. Hallett's farm at Brighton, with the special object of judging for ourselves as to how his Wheats promised. We have strolled up to Kemp Town before now—have seen the selected ears blooming in the garden—have followed the experimentalist to his summer-house 'study'—have listened and watched and wondered, as he displayed individual grains pasted on paper and encircled with mysterious lines in red and black ink—have heard their histories and pedigrees traced—their ultimate design foreshadowed—until, lost in a flow of energetic eloquence, we have asked ourselves, as we walked back to Brighton, whether any other man in the world would take so much trouble as this? and if the result would ever be worth his trouble in case he should do so? The practical answer is already before us. We have travelled from the garden ground to the farm itself, and there in large pieces, of many acres' extent, on the hill and in the valley, Mr. Hallett can show by far the finest Wheat we have seen this season. Remarkably even in appearance, with a run of magnificent ears that really do 'bear out the engraving and advertisement,' there is a crop that looks like seven or eight quarters an acre. And this, let us bear in mind, on land anything but naturally good, and with much of it that has scarcely been done justice to, in the way of dressing."—*Leading Article, August* 4, 1862.

1861, ACTUAL SIZE AFTER FOUR YEARS' **REPEATED** SELECTION, STARTING FROM A **SINGLE GRAIN** IN EACH YEAR.

Price Two Guineas a Bushel, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order. Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

Man kann Bestellungen machen bei den Agenten Herrn Krelage und Sohn, Haarlem, Holland; und Francfurt-am-Main, Deutschland.

A Printed Paper, "HOW OUR WHEAT CROPS MAY BE DOUBLED," forwarded upon application, enclosing Two Stamps.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
Printed by William Bradbury, of 13, Upper Woburn Place, in the Parish of St. Pancras, in the Co. of Middlesex, and Frederick Mullett Evans, of No. 11, Bouverie St., in the Precinct of Whitefriars, City of London, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St Paul's, Covent Garden, in the said Co.—Saturday, September 13, 1862.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 38.—1862.] SATURDAY, SEPTEMBER 20. { Price Fivepence. STAMPED EDITION, 6*d*.

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☞ NOTICE TO ADVERTISERS. — *Advertisements should reach the Office by the* THURSDAY *in each week; and they should be written on one side of the paper only.*

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.

A MEETING of this COMMITTEE will take place on TUESDAY, September 23, at 12 o'Clock. The subjects to be examined must be at South Kensington for entry by 11 A.M.
THOS. MOORE, Secretary to the Committee.

ROYAL HORTICULTURAL SOCIETY.
FRUIT COMMITTEE.

A MEETING of the FRUIT COMMITTEE will be held at the Rooms, South Kensington, on TUESDAY, September 23, for the Examination of such FRUITS and VEGETABLES as may then be submitted for judgment, and when, besides Certificates of Merit for Seedlings, the following Prizes will be awarded:—

CLASS A.—For the best Three Dishes of DESSERT APPLES, distinct kinds	20*s*.	10*s*.
CLASS B.—Ditto ditto PEARS	20*s*.	10*s*.
CLASS C.—Ditto ditto PLUMS	20*s*.	10*s*.
CLASS D.—Ditto ditto CHERRIES	20*s*.	10*s*.
CLASS E.—For the best MELON	42*s*.	
CLASS F.—For the best Dish of GRAPES	20*s*.	10*s*.
CLASS G.—For the Dish of FIGS	20*s*.	10*s*.

*** All Packages and Communications must be received at the Rooms by 11 o'Clock on the day of Meeting, and addressed to ROBERT HOGG, LL.D., Secretary of the Committee.

New Rose Catalogue for 1862-63.

WM. WOOD and SON'S NEW CATALOGUES of ROSES, BULBS, and NURSERY STOCK are now ready for distribution, and will be sent free on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Rose Catalogue 1862-63.

WM. PAUL'S ROSE CATALOGUE is now ready for circulation. Free by post on application.
Superior STANDARD ROSES, 18*s*. per dozen and upwards.
" DWARF ROSES, 9*s*. per dozen and upwards.
All the NEW ROSES, 30*s*. to 60*s*. per dozen.
Nurseries and Seed Warehouse, Waltham Cross, N.

Roses.

EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled collection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

Roses.

JAMES CRAWFORD has much pleasure in offering a very select Collection of best ROSES in 48 size Pots, fine healthy Plants now in Bloom.
High Beech, Essex, N.E.

Rose and Bulb Catalogues for 1862-3.

EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded gratis and post-paid on application.
Seed and Nursery Establishment, Tunbridge Wells, Kent.

Rose Catalogue, 1862 and 1863.

JOHN CRANSTON begs to announce that his new ROSE CATALOGUE is now ready for distribution, and will be forwarded free on application. It contains full and faithful descriptions of nearly all the NEW ROSES of 1861, as well as the older kinds.
Nurseries, King's Acre, near Hereford.

UNEQUALLED CALCEOLARIA SEED.
SOW AT ONCE.
Sealed packets, 1*s*. 6*d*., 2*s*. 6*d*., 3*s*. 6*d*., and 5*s*.
J. DOBSON & SONS, Seedsmen, Isleworth, W.

Pelargonium and Bulb List.

J. DOBSON AND SONS' CATALOGUE is now ready. It contains several New things offered for the first time. Post free on application.
Woodlands Nursery, Isleworth, W.

NEW CINERARIA CONQUEROR.
The finest Crimson Self ever offered.
Fine strong plants, 5*s*. each.
J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

WANTED to PURCHASE, 100 dozen good strong CUTTINGS of TOM THUMB SCARLET GERANIUM. Apply, stating price and particulars, to S. T., *Gardeners' Chronicle* Office W.C.

JAMES CARTER AND CO.,
SEED MERCHANTS and NURSERYMEN,
237 and 238, High Holborn, London, W.C.

Hyacinths, Crocuses, &c.

JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

Hyacinths, Crocuses, &c.

JAMES CARTER AND CO.'s first consignment of DUTCH BULBS has arrived in splendid condition. CATALOGUES free of charge on application to 237 and 238, High Holborn, London, W.C.

MINIATURE HYACINTHS.— The best sorts of Miniature Hyacinths by name at 5*s*. per dozen.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Hyacinths for Forcing.

BUTLER AND McCULLOCH can strongly recommend the following for immediate planting:—
12 HYACINTHS, in 12 select and distinct varieties, 9*s*., 12*s*., and 15*s*. per dozen.
BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

Hyacinths, Tulips, Narcissus, Crocus, &c.

BARR AND SUGDEN'S stock of the above is large and of prime quality. Early orders solicited.
BARR & SUGDEN, Seed Merchants, &c. (see large advertisement), 12, King Street, Covent Garden, W.C. (Opposite the Garrick Club).

Hyacinths, &c.

WM. PAUL'S DESCRIPTIVE CATALOGUE of HYACINTHS and other DUTCH BULBS, with Hints on Culture, is now ready. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Dutch Bulbs.

CHARLES TURNER'S CATALOGUE of a selection of the best in each class is now ready, and will be forwarded on application post free.
The Royal Nurseries, Slough.

Wm. Cutbush & Son's Dutch Bulb Catalogue.

WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE and PRICED CATALOGUE of HYACINTHS and other Dutch Flower Roots is now ready, post free, on application.
Highgate Nurseries, London, N.

Economy and Excellence.

H. BROWN'S PRICED DESCRIPTIVE CATALOGUE of HYACINTHS, GLADIOLI, and other BULBS for Show, &c., is now ready, post free. Collections from 10*s*. and upwards, and large quantities, specially ordered, carriage free, on exceedingly moderate terms.
Seed Warehouse, 4, Commutation Row, Liverpool.

Dutch Roots.

JAMES CRAWFORD is very pleased to say that he has just received his DUTCH BULBS in fine condition.
High Beech, Essex, N.E.

Dutch Flower Roots.

JOHN BELL begs to announce the safe arrival of his Annual Importation of the above in fine condition.
CATALOGUES post free on application at his Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Dutch Bulbs (Large Size).

JAMES FAIRHEAD AND SON beg to state that their HYACINTHS, CROCUSES, TULIPS, &c. have arrived in prime condition, and are now ready for delivery. Early orders solicited. Also extra large double SNOWDROPS, on offer.
CATALOGUES free on application.
7, Borough Market, London, S.E.

First Consignment of Dutch Flower Roots.

THOS. CHARMES, SEEDSMAN and FLORIST, 204, High Street, Exeter (one door above the Guildhall), has just imported the best varieties of HYACINTHS, TULIPS, NARCISSUS, and other Winter and Spring flowering Roots, in fine condition; and to secure good Bulbs early orders are respectfully solicited.
DESCRIPTIVE PRICE LIST free on application.

Hyacinths, Tulips, Crocuses, &c.

BUTLER AND McCULLOCH'S DESCRIPTIVE CATALOGUE of BULBS, containing ample Cultural Directions, may be had free and post paid upon application.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

HYACINTHS, TULIPS, CROCUSES, and other DUTCH BULBS, just arrived in excellent condition. PRICED CATALOGUES on application to
S. PONSFORD, Loughboro' Park Nurseries, Brixton, Surrey, S.
N.B. CATALOGUES of GENERAL NURSERY STOCK will be ready at the end of this month.

Azaleas.

JAMES CRAWFORD begs to offer 500 fine Plants in 48 size Pots, well set for Bloom.
High Beech, Essex, N.E.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious Index of all their synonymes. Free by post for 12 postage stamps.
RICHARD SMITH, Nurseryman, Worcester.

Good Seeds, Carriage Free, at Market Prices.

SUTTON AND SONS,
SEED GROWERS and MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds for Autumn Sowing.

DELIVERED FREE AT NEAREST RAILWAY STATION.
PETER LAWSON AND SON,
THE QUEEN'S SEEDSMEN.
27, Great George Street, Westminster, S.W.

Agricultural and Garden Seeds.

H. AND F. SHARPE,
SEED GROWERS and MERCHANTS, Wisbech.
Special PRICED LIST of NEW SEEDS on application.

Agricultural Seeds.

GEORGE GIBBS AND CO.,
SEEDSMEN,
26, Down Street, Piccadilly, London, W.

Calceolaria and Pansy Seed of the finest Strains.

GEO. WHEELER begs to announce that he is still sending out Seeds of his very superior CALCEOLARIA in 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. packets.
Choice PANSY from Prize Flowers, 1*s*. to 2*s*. 6*d*. per packet.
Nursery, Warminster, Wilts.

Fine Camellias and Azaleas.

F. AND A. SMITH have an immense stock of AZALEAS and CAMELLIAS well set with flower buds, of fine growth and in healthy condition, now offering at moderate prices, which may be had on application.
Dulwich, Surrey, S.

Cineraria and Calceolaria Seed.

F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*., free by post.
Dulwich, Surrey, S.

Strawberries.

CHARLES TURNER can still supply strong Plants for Fruiting next season of all the leading kinds. CATALOGUES may be had on application.
The Royal Nurseries, Slough.

STRAWBERRIES.—Admiral Dundas, British Queen, Elton Pine, Eleanor and Wizard of the North, 15*s*. per 1000, 2*s*. per 100; Eliza, Black Prince, Prince of Wales, Princess Royal, Princess Alice Maud, Keen's Seedling, and Oscar, 2*s*. per 100, Trade price.
GEO. CORNWELL, Seedsman, &c., Barnet, Herts, N.

STRAWBERRIES. — A New DESCRIPTIVE CATALOGUE of more than 200 Varieties of STRAWBERRIES, free.
Good laid plants of nearly every variety can now be supplied by the Grower,
W. J. NICHOLSON, Egglescliffe, near Yarm, Yorkshire.

Grape Vines.

WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines.

J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.

JAMES CRAWFORD begs to inform his friends that he has a large stock of strong healthy Plants, which he offers at low prices.
High Beech, Essex, N.E.

FOR SALE, a large Collection of BRITISH and EXOTIC FERNS, at
J. ILLMAN'S Nursery, Wellington Place, Strood, Kent.

WANTED, in small or large quantities, BLACK THORN. Apply, stating quantity, price and height, to JOHN PERKINS, 52, Market Square, Northampton.

WELLINGTONIA GIGANTEA, superb specimens, all Seedling plants, from 6 to 12 feet high. Can be insured to be transplanted with safety to any distance.
Prices on application to WILLIAM BARRON, Elvaston Castle, Derby.

WELLINGTONIA GIGANTEA.—The undersigned has to offer a very large and fine stock of healthy one year Seedling Plants established in single pots; also a few plants of larger sizes. Price per 100 or 1000 on application.
J. HENCHMAN, Edmonton, London, N.

Early Sheep Feed.

SUTTON'S IMPROVED ITALIAN RYE-GRASS SHOULD NOW BE SOWN for very early Spring feed, after which it may be ploughed up, or if allowed to remain, it will produce three or four good cuttings every year.
Royal Berkshire Seed Establishment, Reading.

TAN GRATIS, in the immediate neighbourhood of Covent Garden Market.
Apply to ESSEX & SONS, 28, Stanhope Street, Clare Market, W.C.

REIGATE SILVER SAND.—First quality, 9*s*. per ton; Second quality, 6*s*. per ton of not less than 4 ton lots, put on the rail at Reigate Junction.
WILLIAM SHORT, Reigate Heath, Reigate, Surrey.

CAUTION.—THE BRIGHTON WHEAT HAS BEEN SELECTED FOR SEVERAL GENERATIONS MORE THAN THAT GROWN FROM WHEAT PURCHASED IN PREVIOUS YEARS, AND CAN BE OBTAINED OF MR. HALLETT ALONE, OR OF HIS AGENTS.

Particular attention is called to the above caution, as Wheat *bearing scarcely any resemblance whatever* to this has recently been exhibited with the following attached to it—"Hallett's Pedigree Wheat, price One Guinea a bushel."

If planted early as directed, this Wheat costs less per acre for Seed than Common Wheat.

THE TIMES.

"Mr. Hallett exhibits his wonderful examples of what he terms 'Pedigree Wheat,' and a more curious or a more instructive lesson than he offers in his samples is not to be found in the Exhibition."—*Wednesday, June* 18, 1862.

"The curiosity of 1851 was Messrs. Raynbird's splendid sample of Wheat produced by artificially hybridising two first-class varieties; the wonder this year is the 'Pedigree' Wheat of Mr. Hallett, of Brighton. Taking a prime sort to begin with, by selection year after year this intelligent cultivator has developed a breed of Wheat now possessing an established pedigree—a Wheat producing vegetable offspring with certain fixed characteristics, just as a pedigreed race of cattle or sheep perpetuate their kind with its peculiar form, properties, and propensities. It is in fact the nature of this Wheat now to grow great ears and tremendous yields per acre, while at the same time preserving a fine kernel of beautiful flour."—*Wednesday, June* 25, 1862.

THE AGRICULTURAL GAZETTE.

"Certainly there is no section of the show in which the English exhibitors are more clearly in advance of all foreign competition; nor are any of the classes more manifestly led by their respective marims than in those of agricultural products and agricultural machinery. There is a wider interval between the leaders and the 'ruck' in the race of competition here than in any other section; and in both it is the English exhibitor who wins. Mr. Hallett's 'Pedigree Wheat' may be named as the easy winner in the former class, and a large number of well-known English names come in abreast as winners on the latter course. In both these instances foreign competition is comparatively insignificant."—*Leading Article, Saturday, May* 3, 1862.

INTERNATIONAL EXHIBITION.

EASTERN ANNEXE, CLASS III.

HALLETT'S

PEDIGREE NURSERY WHEAT.

"BRED" ON THE SAME PRINCIPLE OF REPEATED SELECTION WHICH HAS PRODUCED OUR PURE RACES OF ANIMALS.

THIS WHEAT IS NOW READY FOR DELIVERY.

MARK LANE EXPRESS.

"We have much pleasure in speaking to Mr. Hallett's statements, they being fully borne out by the specimens he presented to our notice. Referring to the Advertisement in this journal, we can affirm that the engraving of the 'Pedigree Wheat' is in no respect apocryphal or exaggerated."—*Leading Article.*

"It may be well here to look to 'the certain circumstances' which have led to any better state of things. It was only last week, then, that a correspondent of our own made this appeal:—'It would be a treat to me, as I am certain it would be to hundreds of your readers, if the gentleman who advertises his Wheat (an engraving of the size of the head of which appears in your paper) would inform me through your columns where I can see any field, at present growing, which bears out his engraving and advertisement. I should travel any distance to see it, and would confirm in your columns what I now hesitate to believe, viz., that such a phenomenon was in existence in 1862 as a field with such a head of Wheat as he represents.' J. W. H. H. should have been with us on Friday last, when we walked over Mr. Hallett's farm at Brighton, with the special object of judging for ourselves as to how his Wheats promised. We have strolled up to Kemp Town before now—have seen the selected ears blooming in the garden—have followed the experimentalist to his summer-house 'study'—have listened and watched and wondered, as he displayed individual grains pasted on paper and encircled with mysterious lines in red and black ink—have heard their histories and pedigrees traced—their ultimate design foreshadowed—until, lost in a flow of energetic eloquence, we have asked ourselves, as we walked back to Brighton, whether any other man in the world would take so much trouble as this? and if the result would ever be worth his trouble in case he should do so? The practical answer is already before us. We have travelled from the garden ground to the farm itself, and there in large pieces, of many acres' extent, on the hill and in the valley, Mr. Hallett can show by far the finest Wheat we have seen this season. Remarkably even in appearance, with a run of magnificent ears that really do 'bear out the engraving and advertisement,' there is a crop that looks like seven or eight quarters an acre. And this, let us bear in mind, on land anything but naturally good, and with much of it that has scarcely been done justice to, in the way of dressing."—*Leading Article, August* 4, 1862.

1861, ACTUAL SIZE AFTER FOUR YEARS' REPEATED SELECTION, STARTING FROM A SINGLE GRAIN IN EACH YEAR.

Price Two Guineas a Bushel, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order. Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

Man kann Bestellungen machen bei den Agenten Herrn Krelage und Sohn, Haarlem, Holland; und Francfurt-am-Main, Deutschland.

A Printed Paper, "HOW OUR WHEAT CROPS MAY BE DOUBLED," forwarded upon application, enclosing Two Stamps.

Hallett's Pedigree Nursery Wheat.

CHRISTMAS QUINCEY, SEEDSMAN, Peterborough, begs to offer the above Wheat, grown by himself from Seed direct from Mr. Hallett, at 11s. per bushel, or 4l. 4s. per quarter. New sacks, 1s. 4d. each.

Noted Wheat for Seed.

HENRY RUCK purchased of F. F. Hallett, Esq., at the Smithfield Show, 1860, a sack of his wonderful Wheat, and will be pleased to spare from 250 to 300 sacks of WHEAT grown from that Seed. Price 10s. 6d. per bushel, delivered at the Cirencester Station on the Great Western. Not less than 20 bushels will be supplied. Cash required before any Wheat is forwarded. New sacks, 2s. each.

Apply to HENRY RUCK, Eisey, Cricklade, Wilts.

International Exhibition.

PRIZE MEDAL, "EXCELLENT SEED CORN AND SEEDS."
See JURY AWARD. CLASS III., 725.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E.C.
Samples and quotations of all kinds of Agricultural Seeds, and Seed Corn, sent post free on application. Peruvian Guano, Lawes's Manures for Turnips, Wheat, Barley, &c., Linseed Cakes, and Feeding Stuffs, at market prices.

SEED WHEAT from the CHALK.—Browick Red, Nursery, Rough Chaff, and all the most approved varieties of Wheat. Also Hallett's Pedigree Wheat, Shirreff's Bearded Red, &c., supplied by RAYNBIRD, CALDECOTT, & BAWTREE.
Winter Tares, Rye, Winter Barley, Winter Oats, Trifolium, &c.
Samples and Prices post free on application.
Address, Basingstoke, or 89, Seed Market, Mark Lane, E.C.

SEED WHEAT, Delivered upon the Great Eastern or Great Northern Railways.
HALLETT'S PEDIGREE NURSERY, 80s. per Quarter.
SHIRREFF'S BEARDED RED, 72s. per Quarter.
GOLDEN DROP RED, 68s. per Quarter.
RED TALAVERA, 68s. per Quarter.
QUINTIN'S GIANT RED, 56s. per Quarter.

The two first varieties were purchased direct from Mr. HALLETT and Mr. SHIRREFF last autumn, by the Grower, Mr. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts, and any Orders or Enquiries addressed to him will have prompt attention.

SEED WHEATS from the Chiltern Hills.—The BURGHFIELD EARLY WHITE, a Lammas Wheat of superior quality, noted for early maturity and length and stoutness of straw, ear and berry. Raised by the Advertiser from a single grain.
ESSEX ROUGH CHAFF, one of the best White Wheats. Straw stiff and short.
TRUMP, a well known productive White Wheat.
SHIRREFF'S BEARDED RED, a new variety, with red grain of first-class quality and plenty of straw.
BROWICK IMPERIAL RED, the best of the prolific Red Wheats.
Present prices 9s. per bushel, or in quantities of five quarters, 68s. per quarter, including new sacks and delivery to Henley Station. The above are warranted true to their kinds, clean, and in first-rate condition by the Grower,
Mr. R. C. M. YOUNG, Flint Hall, Hambleden, Henley-on-Thames. A remittance required with order.

Genuine Italian Rye-grass, produced from the Second Cut of Foreign Seed.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts., will again be able to supply the Trade with this article in the same fine quality as last season, and can deliver either now or in the spring at the purchaser's convenience.
Address for samples and prices as above, stating quantity required and time of delivery.

PARSNIP CHERVIL or CHÆROPHYLLUM BULBOSUM. New Seed of this year's harvesting, per packet, 1s. Sow from September 25 to October 25. A delicate and delicious vegetable.
ARTHUR HENDERSON & Co., Pine Apple Place, Edgware Road, W.

International Exhibition—Collection of Grasses.

SUTTON AND SONS, SEEDSMEN TO THE QUEEN, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe.
Messrs. SUTTON & SONS have been honoured with applications from THE SCIENCE and ART DEPARTMENT of the COMMITTEE of COUNCIL on EDUCATION; as also from Dr. Kirkpatrick on behalf of THE ALBERT NATIONAL AGRICULTURAL TRAINING INSTITUTION at Glasnevin, for their unique Collection of Grasses, at the termination of the International Exhibition.
Messrs. SUTTON & SONS have also been highly complimented on this Case of Seeds and Specimens by many eminent Agriculturists and Botanists who have visited the Exhibition. They also invite inspection of their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which, for want of space there, is erected at the Crystal Palace, Sydenham.
Royal Berkshire Seed Establishment, Reading.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to 7s. 6d. each;
ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA, 21s. each.
A Select LIST of the most rare kinds will be forwarded Post Free on application.
Dorking Nursery.

FERNS from NORWAY.—There are 36 different kinds of Fern in Norway, one of which (the Cystopteris montana), is found in no part of the world except on one spot in this country.
A box, containing Two Plants of each kind, in 36 pots of earth, well packed with Moss, will be delivered Free on board the Hull Steamer for 5l., which need not be sent until the box is received.
The NORWEGIAN ALPINE PLANTS can be sent, if wished, at a proportionate price.
T. BENNETT, Christiania.

Camellias, Azaleas, &c.

A. VAN GEERT, NURSERYMAN, Ghent, begs to inform the Trade that he can now supply good plants of CAMELLIAS, with flower buds, best varieties, at 6l. per 100.
INDIAN AZALEAS, with flower buds, best varieties, 4l. to 5l. per 100.

A. V. G. begs to offer also the following interesting plants:—
THUJA VERVAENEANA, a fine new golden striped Arbor-vitæ, 36s. per dozen.
ABIES APOLLONIS, 9s. per dozen.
,, PANACHAICA, 18s. per dozen.
THUJA ERICOIDES, very pretty, 18s. per dozen.
CUPRESSUS LAWSONI, 50s. per 100.
THUJA AUREA, fine, 42s. per 100.
THUJOPSIS BOREALIS, strong, 18s. per dozen.
PIMELEA SPECTABILIS, strong, 18s. per dozen.
,, DECUSSATA RUBRA, strong, 18s. per dozen.
INDIAN AZALEAS, for stocks, strong, 25s. per 100.
GLYCINE SINENSIS, 40s. per 100.
ASCLEPIAS TUBEROSA, 20s. per 100.
JASMINUM GRANDIFLORUM, 12s. per dozen.
OTAHEITE ORANGES, 12s. per dozen.
LILIUM LANCIFOLIUM RUBRUM, fine roots, 63s. per 100.
,, UMBELLATUM ATROSANGUINEUM, 25s. per 100.
ROEZLIA REGIA, fine ornamental, 7s. 6d. each.
GUNNERA SCABRA, 12s. per dozen.
BONAPARTEA GRACILIS (nearly hardy), fine strong plants, 36s. per dozen.

JEAN VERSCHAFFELT, Ghent, Belgium, begs to announce he possesses a large stock of the following fine Plants with flower-buds, which he offers to the Trade as follows

	£	s.	d.
CAMELLIAS, extra fine sorts with buds, per 100 ..	£6	0	0
Ditto ditto large plants, per 100 10l. to	15	0	0
Ditto ditto extra size, each .. 5s. to	1	1	0
AZALEA INDICA, first-rate sorts, extra fine Plants for winter flowering, per 100, from .. .. 4l. to	6	0	0
Ditto ditto on stems 1½ to 2 feet high, with nice heads, per 100 ..	10	0	0
JASMINUM GRANDIFLORUM	6	0	0
CITRUS SINENSIS (Otaheite Oranges) with fruit, per 25	2	10	0

Arundo Donax variegata.

JEAN VERSCHAFFELT, Ghent, Belgium, has a nice stock of this beautiful hardy variegated ARUNDO (the finest known), which he begs to offer in strong plants at the following low terms, viz.:—

	£	s.	d.
Strong plants grown in pots, per dozen	£1	5	0
Ditto ditto per 25	2	0	0

Lilium lancifolium speciosum.

JEAN VERSCHAFFELT, Ghent, Belgium, having an extra large stock of this splendid LILY, is now able to offer its varieties very cheap, viz:—

	£	s.	d.
LILIUM LANCIFOLIUM (SPECIOSUM) RUBRUM, strong flowering bulbs, per 100	£2	0	0
Ditto ditto ALBUM, ditto, per 100 ..	1	16	0
Ditto ditto RUBRUM, extra strong bulbs, per 100	3	0	0
Ditto ditto ALBUM, ditto, per 100 ..	2	10	0
Ditto ditto PUNCTATUM, strong flowering bulbs, per 25 ..	2	10	0

AZALEA INDICA, extra fine plants, clean and bushy, first-rate varieties, suitable for winter forcing, 4l. per 100; stronger plants, 6l. per 100.
JEAN VERSCHAFFELT'S Nursery, Ghent, Belgium.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent, Belgium.—A. V. begs to announce that his NEW GENERAL CATALOGUE for Autumn 1862, and Spring 1863, is now ready, and contains a quantity of new, rare, and valuable Plants. The following are some of the NEW PLANTS:

STOVE PLANTS.	£	s.	d.
ARALIA GHIESBREGHTII	1	0	0
ARALIA THIBAUTII	1	0	0
CALADIUM CANNAERTII	1	0	0
GREENHOUSE PLANTS.			
AGAVE GHIESBREGHTII, splendid new species ..	4	0	0
AZALEA INDICA MADAME WAGNER	0	14	0
CAMELLIA SOUVENIR D'EMILE DEFRESNE, the finest dark vermilion Camellia, with pure white stripes, perfect imbrication	0	16	0
CAMELLIA VICOMTE DE NIEULAND, beautiful light rose, perfect imbrication	0	12	0
CAMELLIA COMTE DE TOLL, one of the finest Camellias of all for its beautiful perfect form, of a lightish rose colour, changing almost to white	0	12	0
CAMELLIA BARON DE VRIÈRE, beautiful rose and white in centre, perfect form	0	12	0
DIPLACUS GODRONI / ,, VERSCHAFFELTI / ,, SPLENDIDUS } Three splendid hybrids, which will be figured shortly in the "Illustration Horticole." The 3 varieties together for	0	10	0
GERANIUM QUADRICOLOR, obtained the first prize at the last show of the Royal Botanic Society of Ghent; will appear shortly in the "Illustration Horticole"	0	8	0
HARDY PLANTS.			
ECONYMUS RADICANS FOLIIS ARGENTEO-VARIEGATIS	0	5	0
EUONYMUS RADICANS FOLIIS ROSEO-VARIEGATIS	0	5	0
KERRIA JAPONICA FOLIIS ARGENTEO-VARIEGATIS	0	8	0
LONICERA BRACHYPODA FOLIIS AUREO-RETICULATIS	0	8	0
NEW PEAR, BEURRÉ DE GHÉLIN, obtained a first gold medal at the Royal Botanic Society of Tournay	0	4	0
NEW APPLE, CALVILLE GARIBALDI, first rate fruit, will be figured shortly	0	8	0
RHODODENDRON VERSCHAFFELTII, is said to be the finest hardy Rhododendron of all. Very fine large bouquets of a very light and delicate lilac, with enormous black spots, of a splendid effect. This remarkable variety can be distinguished amongst a thousand Rhododendrons. A correct drawing appeared in the August number of the "Illustration Horticole." Beautiful plants, 12s. Very fine plants with buds	1	0	0
NEW ROSE (Hybrid Climbing) SŒUR DES ANGES (OGER), very large flowers, of a tender rose changing to white; first rate Rose	1	0	0
SERISSA FŒTIDA FOL. AUREO-MARGINATIS ..	0	5	0

The "ILLUSTRATION HORTICOLE," published by AMBROISE VERSCHAFFELT, Ghent, Belgium, price 14s. 6d. a year, free. A Specimen Number can be obtained free by writing to the Editor.
N.B. Catalogues and Specimen Numbers of the above work may be obtained free at my Agents, Messrs. R. SILBERRAD & SON, 5, Harp Lane, Great Tower Street, London, E.C.

Planting.

WM. PAUL (Son and Successor to the late A. PAUL) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.
Entrance from the platform, Waltham Station, Great Eastern Railway.
Nurseries and Seed Warehouse, Waltham Cross, N.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING 1863, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.
Woking Nursery, Surrey.

CAREY TYSO, FLORIST and SEEDSMAN, Wallingford, Berks, informs the lovers of RANUNCULUSES and ANEMONES that his stock of these flowers is unrivalled, and that he is prepared to supply assortments per post:—

	£	s.	d.
RANUNCULUSES, 100 good sorts named ..	£1	7	6
,, 100 finer quality	2	0	0
,, 100 mixtures from .. 5s. to	1	0	0
ANEMONES, 50 double varieties .. 10s. 6d. to	0	13	0
,, 50 double mixed .. .. 3s. 6d. to	0	5	0
,, 50 single mixed	0	2	6

A choice assortment of Home-grown and imported DUTCH BULBS for flowering early in Spring.
CATALOGUES gratis, one label for Postage.

Notice to Nurserymen, Gentlemen's Gardeners, &c.

IN consequence of J. C. PADMAN Retiring from the Business carried on under the name of GODWIN & PADMAN, at Broadfield Nursery, Sheffield, the choice and valuable Stock of STOVE and GREENHOUSE PLANTS, TREES, &c. will be offered at considerably reduced prices.
LISTS on application to GODWIN & PADMAN, Broadfield Nursery, Sheffield.

Variegated Geraniums.

GODWIN AND PADMAN, in order to reduce Stock, offer as under, in strong plants:—

	Per doz.—s.	d.		Per doz.—s.	d.
Alma	4	0	Golden Tom Thumb ..	12	0
Bijou	4	0	Jane	4	0
Brilliant	2	6	Julia	6	0
Cloth of Gold	6	0	Mrs. Lennox	4	0
Countess of Warwick ..	4	0	Perfection	4	0
Dandy	4	0	Queen Victoria	2	6
Fairy Nymph	3	0	Reine d'Or	12	0
Flower of the Day ..	2	6	Scarlet Gem	9	0
Gold Edge	3	0	Silver Queen	3	0
Gold Chain	4	0	The Bridal Wreath ..	9	0

CATALOGUES on application to GODWIN & PADMAN, Broadfield Nursery, Sheffield.

Cheap Plants.

GODWIN AND PADMAN (owing to the intended Retirement of Mr. PADMAN) offer the undermentioned Plants at the following cheap rate:—

	Each—s.	d.		Each—s.	d.
Allamanda Neriifolia ..	1	0	Epiphyllum truncatum ..	1	0
Ardisia crenulata, per dozen, 6s. to	9	0	Gardenia citriodora ..	1	6
Aspidistra lurida variegata	1	0	,, florida	1	0
Begonia Duchesse de Brabant			,, Fortuneana ..	1	6
,, Baron de Oustenoff			Hoya bella	0	9
,, Eckhautei			,, Paxtoni	0	9
,, Marshalli			,, picta	1	6
,, Mine d'Argent			,, variegata	1	6
,, vittata			Imatophyllum miniatum	5	0
1s. each, 4s. 6d. the Six.			Lycopodium circinale ..	1	0
			,, Wildenovi ..	1	0
Canna coccinea vera ..	1	0	Monochætum ensiferum	0	9
Catesbæa spinosa ..	1	6	Melastoma atropurpurea	1	0
Cœnopteris fœniculacea	1	0	Mussænda frondosa ..	1	0
Coleus Verschaffelti, per dozen, 6s. to	9	0	Pothos argyræa, 2 vars., 1s. 6d. to	2	6
Dipteracanthus affinis ..	1	0	Rhynchospermum jasminoides	1	0
Dracæna ferrea, per doz., 6s. to	9	0	Rhopala Skinneri, 3s. 6d.	5	0
,, terminalis, doz., 9s. to	12	0	Vinca rosea	1	0

	Per doz.—s.	d.
CHRYSANTHEMUMS, finest named varieties	4	0
,, ,, ,, ,, of 1862 ..	9	0
FUCHSIAS, of sorts .. .. per 100	20	0
,, new, of 1862	9	0
GERANIUMS, Zonale, 40 varieties	4	0
HOLLYHOCKS, finest named varieties, from	6	0
PHLOXES ,, ,, ...	4	0
PETUNIAS, new varieties of 1862	9	0
TROPÆOLUMS ,, ,, ...	9	0

Terms, Cash.

CATALOGUES on application to GODWIN & PADMAN, Broadfield Nursery, Sheffield.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned NEW and fine AZALEAS. For October next.
FLAG OF TRUCE.—The finest double white known; has obtained two Certificates and a Silver Medal for its superior merits, being the highest testimonial any Azalea has yet received, 21s. to 31s. 6d. each.
PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21s. to 31s. 6d. each.
CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very superior, 21s. to 31s. 6d. each.
LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10s. 6d. to 15s. each.
CRISPIFLORA ROSEA.—Fine bright rose; the flowers are waved or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10s. 6d. to 15s. each.
PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10s. 6d. and 15s. each.
Any of the above may be had in grafted plants, or on their own roots.
For full particulars see *Gardeners' Chronicle* of August 16, 1862, p. 755; or in CATALOGUES, which may be had gratis on application.
Dulwich, Surrey.

Choice Seeds, in Sealed Packets.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer the finest strains of the undermentioned Seeds, which cannot fail to give satisfaction.

AMARYLLIS, saved from choice named varieties, 2*s.* 6*d.* per packet.

CALCEOLARIA, Herbaceous, finest mixed, 1*s.* 6*d.*, 2*s.* 6*d.*, and 3*s.* 6*d.* per packet.

CINERARIA CRUENTA, fine mixed seed from named flowers, 1*s.* 6*d.* and 2*s.* 6*d.* per packet.

PRIMULA SINENSIS FIMBRIATA, Red, White, or Mixed, very choice, 2*s.* and 3*s.* 6*d.* per packet.

For numerous Testimonials see BULB CATALOGUE, post free on application.

New, Beautiful, and Rare Plants.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to inform his Customers and the Public in general who intend visiting the Great International Exhibition, that his Nursery is easy of access from any part of London, and invites inspection of his large and well assorted Collections of EXOTIC ORCHIDS, FERNS and LYCOPODS, MISCELLANEOUS STOVE and GREENHOUSE PLANTS, VARIEGATED and ORNAMENTAL FOLIAGED PLANTS, amongst which are some very fine Specimens.

Also a fine Stock of Azaleas, Rhododendrons, Roses, Fuchsias, Geraniums, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, &c.

A DESCRIPTIVE and PRICED CATALOGUE on application.

The "Favourite" Omnibuses from the London Bridge Railway Stations, by the Bank and Post Office, and from Westminster, Charing Cross, through the Strand, Holborn, and Islington, pass the Nursery every seven minutes. Omnibuses from the Exhibition to Islington (direct route to the Nursery) very frequently during the day.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

CHOICE NAMED HYACINTHS, 4*s.*, 6*s.*, and 8*s.* per dozen.

Mixed HYACINTHS, separate colours, 2*s.* 6*d.* per doz.; 17*s.* 6*d.* per 100.

CROCUS, fine bulbs, various colours, 10*s.* to 12*s* 6*d.* per 1000.

Superb Mixed TULIPS, 5*s.* per 100; 40*s.* per 1000.

LASTREA FILIX MAS CRISTATA, fine Crested British Fern, 6*s.* per dozen.

Named sorts of CINERARIAS in thumb pots, 20*s.* per 100.

Strong plants of CINERARIAS, to divide into 10 or 12 each, 6*s.* per dozen.

CATALOGUES gratis on application.

EDWARD TAYLOR, The Nurseries, Malton, Yorkshire.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to announce that his New GENERAL CATALOGUE of PLANTS is just published, and may be had on application to his Agents, Messrs. R. SILBERRAD & SON, 5, Harp Lane, Great Tower Street, London, E.C.

A. V. G. begs to offer nice young plants of—

LOMARIA DISCOLOR, at 24*s.* per dozen.

AGAVE SCHIEDIGERA, 60*s.* per dozen.

MR. ALEXANDER PONTEY, Deceased.—All persons having any Claims or Demands against the Estate of the late Mr. ALEXANDER PONTEY, of 21, Cornwall Street, Plymouth, Devon, Nurseryman, Seedsman, and Florist, are requested to forward particulars thereof to his Executrix, Mrs. MARY LYNE PONTEY, at 21, Cornwall Street, Plymouth, aforesaid, in order that the same may be examined, and, if found correct, discharged; and all persons Indebted to the said Estate are requested to pay the amount of their respective debts, without delay, to the said Executrix.

Mrs. PONTEY begs to offer her best thanks to the Friends and Customers of her late Husband for the kind and liberal support afforded him during his lifetime, and to inform them that it is her intention to continue the business until the same be satisfactorily disposed of.

Dated Plymouth, August 1, 1862.

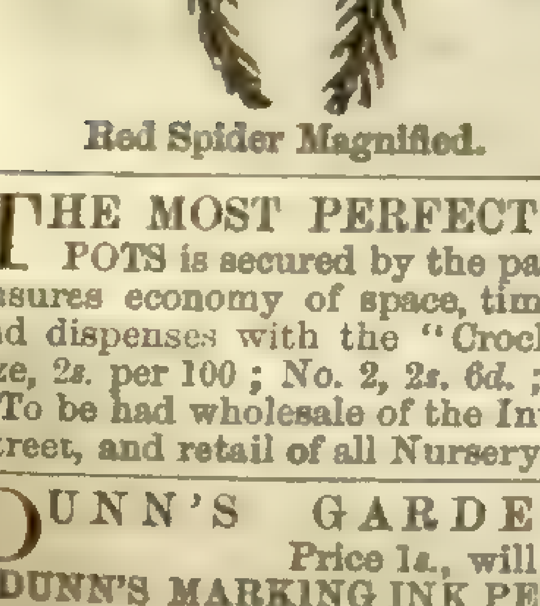
Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1*s.* and 2*s.* per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1*s.* per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. NEAL, Edward Street, Birmingham.



Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* each.

Wholesale by PRICE'S PATENT CANDLE Co., Limited.

THE MOST PERFECT DRAINAGE of FLOWER POTS is secured by the patent Bijou Drainer, which also ensures economy of space, time, and money; is everlasting, and dispenses with the "Crock" nuisance. Price of No. 1 size, 2*s.* per 100; No. 2, 2*s.* 6*d.*; No. 3, 3*s.* 6*d.*

To be had wholesale of the Inventor, Mr. LAW, 16, Moorgate Street, and retail of all Nurserymen and Seedsmen.

DUNN'S GARDENER'S PENCILS, Price 1*s.*, will refill for 6*d.*

DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.

Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.

These pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.

N.B.—A liberal allowance to the Trade.

BENJAMIN EDGINGTON'S TEMPORARY ROOMS, Lined, Boarded, and Decorated.

MARQUEES and TENTS of all dimensions, for Horticultural Shows, &c., on sale or hire.

FLAGS and BANNERS of every description, for sale or hire.

RICK CLOTHS, New and Second-hand, with Poles, &c., complete.

Address, BENJAMIN EDGINGTON, 2, Duke Street, London Bridge, Southwark, S.E. No other Establishment.

SHAW'S TIFFANY.—The lightest, cheapest, and most durable of all materials for Shading Conservatories and Hot-houses is SHAW'S TIFFANY. As a protection from cold winds and scorching heat, nothing equal to SHAW'S TIFFANY. For effectually preserving Fruits and Seeds from the Attack of Birds, Wasps and Insects, use SHAW'S TIFFANY.

Sold by all Nurserymen and Seedsmen. Samples and Prices on application.

J. SHAW & Co., Oxford Street, Manchester.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD,

PATENTEES AND MANUFACTURERS OF

STEAM CULTIVATORS, STEAM PLOUGHS,

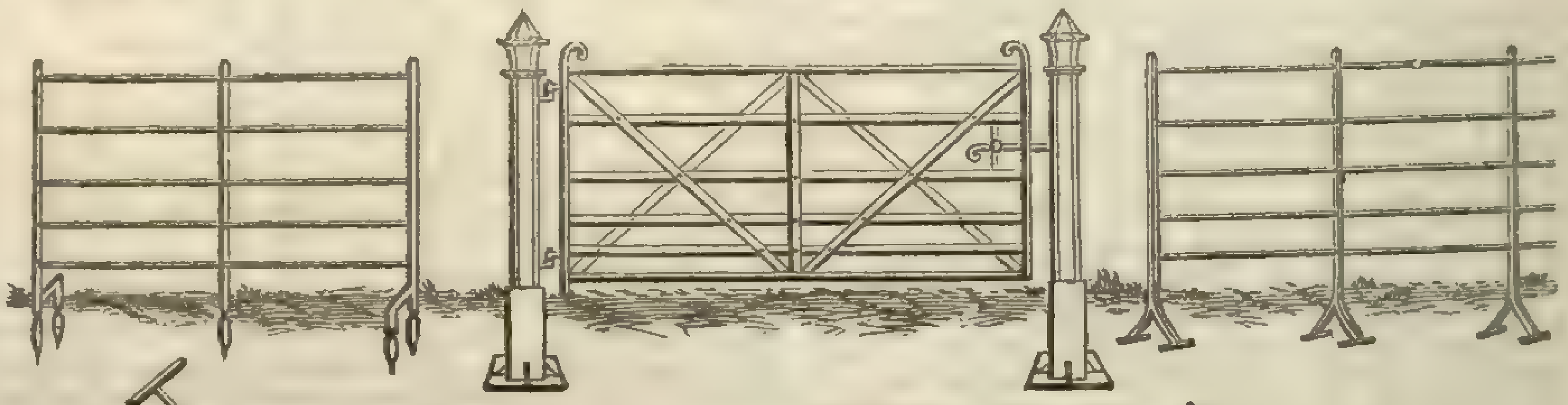
CHAMPION PLOUGHS, HARROWS, HORSE RAKES, AND HAYMAKERS.

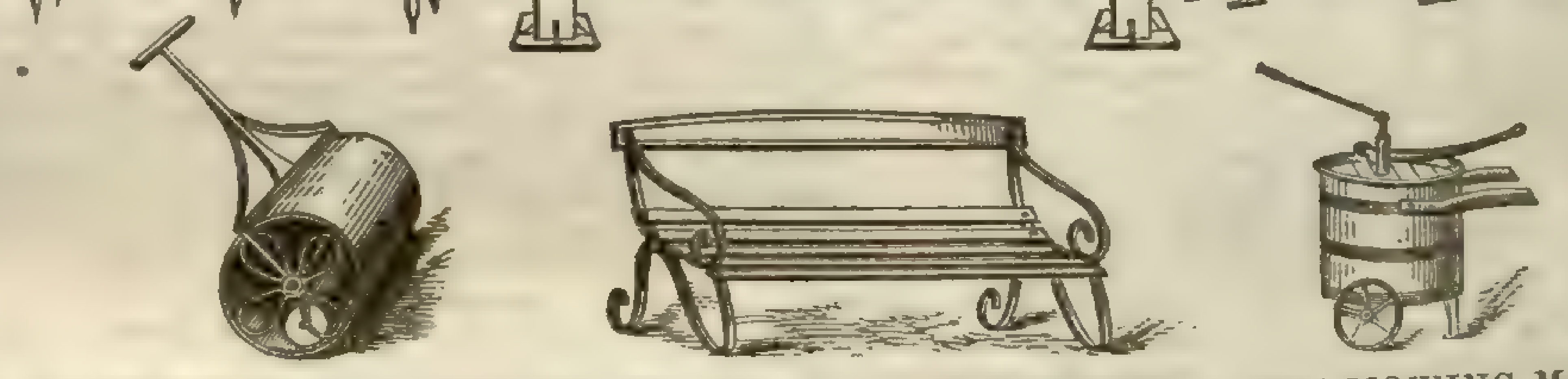
CATALOGUES, with full particulars, sent free on application.

COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.





IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c. The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

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COTTAM & CO., ENGINEERS and IRON FOUNDERS,
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ADOPTED VERY LARGELY BY HER MAJESTY'S GOVERNMENT.

CROGGON'S PATENT ASPHALTE ROOFING FELT,

Price 1*d.* per square foot.

INODOROUS FELT, for Damp Walls and for Damp Floors under Carpets and Floor Cloths, also for LINING IRON HOUSES to equalise the temperature. Price 1*d.* per square foot.

PATENT FELTED SHEATHING, for Covering Ships' Bottoms, &c.

DRY HAIR FELT, for deadening Sound and covering Steam Boilers, Pipes, &c., preventing the Radiation of Heat, thereby SAVING 25 PER CENT. IN FUEL.

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GALVANISED TINNED IRON, and every description of GALVANISED IRON WORK.

CROGGON & CO.'S
NOISELESS ELASTIC KAMPTULICON, or INDIA-RUBBER FLOOR CLOTH,

Impervious to Wet, Indestructible by Damp, Soft to the Tread, and Warm to the Feet, well adapted for Aisles of Churches, Public Offices, Rooms, Shops, &c., as well for its comfort as extreme durability.

Samples, Testimonials, and full particulars, free, on application to

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GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THESE MACHINES were entered at the Royal Horticultural Society's Great Shows held at South Kensington, May 21, June 11, and July 2. They were the only Machines Highly Commended (no Prizes were given). They have carried off every Prize that has been given in all cases of Competition, and have just been awarded the Prize Medal of the Great International Exhibition, July 11, 1862.

GREEN'S PATENT LAWN MOWERS have attained the largest sale of any Machines extant, and are in constant use at the Royal Gardens, Windsor; the Royal Horticultural Society's Gardens, South Kensington; the Royal Botanic Gardens, Regent's Park; the Crystal Palace Company's Gardens, Sydenham; the Kensington Palace Gardens; the Hyde Park Gardens; and in most of the Nobility, Clergy, and Gentry's Parks, Squares, &c., throughout the Kingdom.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0	£8 15 0
To Cut 20 inches	8 0 0	9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0	£9 17 6
To Cut 24 inches	9 0 0	10 7 6

To Cut 10 inches. Suitable for a Lady.

This Machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0	£21 10 0
To Cut 36 inches	23 0 0	24 16 0
To Cut 42 inches	26 0 0	28 2 0
To Cut 48 inches	29 0 0	31 8 0

Leather Boots for Horse, per set, £1 4*s.*

Donkey and Pony Machines, including Box of Requisites & Traces.

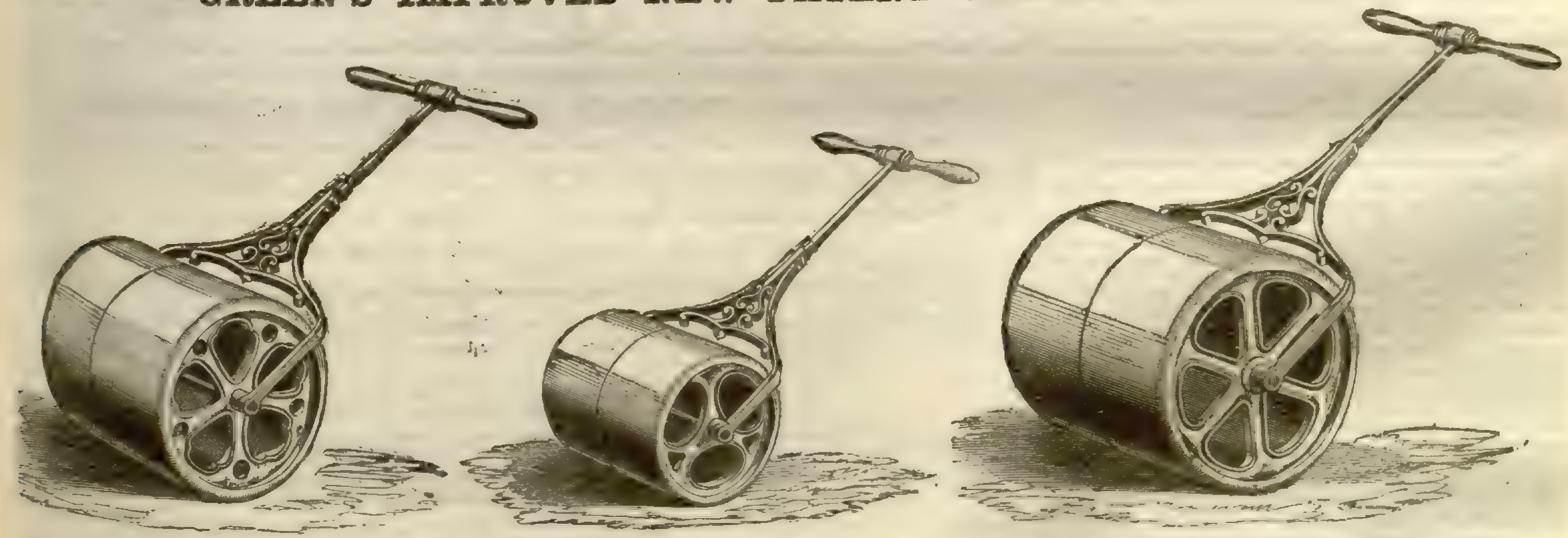
	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0	£12 10 0
To Cut 26 inches	12 10 0	13 12 0
To Cut 30 inches	16 14 0	18 0 0

Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

The above Machines are made from the best materials, and of superior workmanship; are delivered carriage free to all the principal Railway Stations and Shipping Ports in England; are warranted to give satisfaction, and if not approved of can be at once returned, if sent carriage free to Leeds.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length 22 inches.... Price £3 5*s.* | Diameter 16 inches, length 17 inches.... Price £2 10*s.* | Diameter 24 inches, length 26 inches.... Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Importation of Dutch Bulbs.

FLOWER ROOTS CARRIAGE FREE.

WM. WOOD AND SON have much pleasure in advising their friends of having received a very splendid lot of HYACINTHS, NARCISSI, JONQUILS, &c., in first-rate condition.

DESCRIPTIVE CATALOGUES may be had on application.

Prices as reasonable as any house in the Trade.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON AND CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

Notice to Purchasers of Bulbs.

SUTTON'S SELECT BULB LIST, on page 831 of *Gardeners' Chronicle*, contains all the most desirable sorts in cultivation. Marginal Columns are given for marking the quantities required.

Royal Berkshire Seed Establishment, Reading.

HYACINTHS for EXHIBITION.

FRESH IMPORTED BULBS.

SUTTON'S SELECTION.

	per 100.	Dozen.
Finest sorts by name ..	£4 4s.	12s.
Very fine ditto ..	3 10	9
Good ditto ..	2 10	6

Good Hyacinths for Beds, Ribands, &c. in separate colours (fresh imported), 21s. per 100.

Anemones, Crocuses, Tulips, Gladioli, &c., also very low in prices, as per CATALOGUE, which may be had gratis and post free.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

J. C. WHEELER AND SON, SEED GROWERS, Gloucester, have imported in excellent condition a large

COLLECTION of HYACINTHS,

including the extra fine varieties recommended by Dr. LINDLEY.

PRICED LISTS may be had gratis on application to the Importers,

Messrs. J. C. WHEELER & SON,
Gloucester.

New Bulb Catalogue.

MESSRS. E. G. HENDERSON AND SON respectfully announce their BULB CATALOGUE for immediate circulation, a Copy of which will be forwarded postage free on application.

THE TITIEN STRAWBERRY.
FUCHSIA BIANCA MARGINATA (BANKS).
" MARS.
" MDLLE. TREBELLI.
SOLANUM CAPSICASTRUM VARIEGATUM.

Descriptions and prices of the above will be forwarded on application.

The SOLANUM CAPSICASTRUM VARIEGATUM, and the TITIEN STRAWBERRY, are now ready for sale. The FUCHSIAS will be sent out in October.

Wellington Nursery, St. John's Wood, London, N.W.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded. post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

Bulbs and How to Treat them.

HOOPER AND CO.'s CATALOGUE of HYACINTHS, and every other kind of Bulb, contains practical information for their successful cultivation, together with copious lists of the best varieties extent. Forwarded post free on application.

Collections of named HYACINTHS in 12 fine sorts, 6s., 7s. 6d. 10s., and 15s. All the Bulbs sound and of the best quality.

Hooper & Co., Seedsmen, Central Avenue, Covent Garden Market, London, W.C.

Autumn, Winter, and Spring Bedding Plants.

J. SCOTT, MERRIOTT NURSERIES, Somerset, begs to say that his DESCRIPTIVE CATALOGUE of DUTCH BULBS, Late Autumn, Winter, and Spring BEDDING PLANTS is now ready. It is arranged in Two Parts. 1st, Dutch and other Bulbs, in charming variety, imported direct from Holland. Part 2, How to Plant Autumn, Winter, and Spring Beds, with Copious Lists of all the best plants suited to garden ornamentation during the months of November and December to the beginning of May.

Prepaid application, enclosing two postage stamps.

Dutch and other Bulbs.

B. S. WILLIAMS'S AUTUMN CATALOGUE for 1862 is now ready, post free to all applicants, containing select lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladioli, Amaryllises, Caladiums, Gloxinias, and many other choice Bulbs, with Hints on their Culture for the guidance of Amateur growers. To which is added a SUPPLEMENTAL and DESCRIPTIVE LIST of NEW, BEAUTIFUL, and RARE PLANTS.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

BARR & SUGDEN 12 KING ST COVENT GARDEN

BARR & SUGDEN'S

ILLUSTRATED FLORAL GUIDE
and COLLECTIONS of BULBS for 1862

are so arranged as to enable their Patrons to carry out the idea of having "GARDENS FOR ALL THE MONTHS IN THE YEAR, in which, severally, things of beauty may be had in season."

See last week's Advertisement for COLLECTIONS of BULBS G, H, I, J, K, L.

Orders amounting to 21s. and upwards sent Carriage paid.

AGENTS for TYE'S NEW HYACINTH GLASSES.

The SOUVENIR GLASSES of the GREAT EXHIBITION, 1862, are now ready to send out. They are exceedingly beautiful, especially The Prince, The Queen, Princess Royal, Prince Arthur, Princess Alice Maud, Prince of Wales, Prince of Orange, Princess of Denmark, 10s. 6d. per pair; Cologne, Salisbury, Milan, and May Queen, 12s. 6d. per pair.

The KENSINGTON GARDENS and CRYSTAL PALACE COLLECTIONS,

For Ornamenting the Winter Flower Garden.

	M. £5 5s.	N. £3 3s.	O. £2 2s.	P. £1 10s.	Q. £1 1s.	R. 10s. 6d.
HYACINTHS, named varieties ..	100	60	40	30	20	10
POLYANTHUS NARCISSUS ..	50	30	20	15	10	[illegible]
TULIPS, named varieties ..	200	150	100	70	40	20
JONQUILS, sweet scented ..	50	30	20	15	10	6
IXIAS ..	25	15	10	10	10	6
SPARAXIS ..	25	15	10	10	10	..
TRITONIAS ..	25	15	10	..	..	..
BABIANAS ..	25	15	10	..	..	..
CROCUS, Seedling ..	300	200	150	100	100	[illegible]
SNOWDROPS ..	200	150	100	100	100	[illegible]
SCILLA SIBIRICA ..	50	30	20	15	10	6

To be Continued Weekly.

HYACINTHS, 2s. 6d., 3s., 4s. 6d., 6s., 9s., and 12s. per dozen.
POLYANTHUS NARCISSUS, 3s., 3s. 6d., and 4s. 6d. "
TULIPS, 3s. 6d., 4s. 6d., 7s. 6d., and 10s. 6d. per 100.
CROCUS, 1s. 6d., 2s. 6d., and 3s. 6d. per 100.

(For an Article by "ALPHA" on SPRING GARDENING, see ILLUSTRATED FLORAL GUIDE.)

BARR & SUGDEN,

SEED MERCHANTS & IMPORTERS of DUTCH, FRENCH, ITALIAN & CAPE FLOWERING BULBS,

12, KING STREET, COVENT GARDEN, W.C.

(OPPOSITE THE GARRICK CLUB.)

CHOICE GLADIOLUS.

YOUELL & CO.'S

COLLECTION of the above, extending over Three Acres, is NOW in BLOOM, and will continue some weeks.

The First Prize was awarded them on Wednesday, Sept. 3, at the Crystal Palace, Open to All England and the Continent. We supply them at the following prices:—

No. 1 Collection contains 100 Bulbs, in 50 of the most choice and handsome kinds, with names ... £5 0
No. 2 Collection contains 100 Bulbs, in 30 ditto ditto ... 3 15
No. 3 Collection contains 100 Bulbs, in 25 ditto ditto ... 2 10

Fine Selections will be supplied at 6s., 9s., 12s., 18s., to 30s. per dozen.

CATALOGUES will be forwarded on application.

The First Prize was awarded to YOUELL & Co. by the Royal Horticultural Society on Wednesday last for best Collection of 24 Single Spikes; and the First Prize for the best 12 Spikes of Brenchleyensis colour.

ROYAL NURSERIES, GREAT YARMOUTH.

GLADIOLUS BRENCHLEYENSIS (True).

YOUELL & CO.

Beg to offer this season strong FLOWERING BULBS of the above at 3s. 6d. per dozen, 25s. per 100. Trade price on application, and when quantities are ordered a considerable reduction will be made.

The *Gardeners' Chronicle*, in the report, Sept. 8, 1861, speaks of it thus:—"It cannot be spoken of in terms of exaggeration; the robust habit and intensely bright scarlet flowers place it at the head of all the hardy flowers of the autumn." And again, August 23, 1862:—"The spikes you have sent us are magnificent. We have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."

CATALOGUES of their extensive Collection, for which the First Class Prize was awarded at the Crystal Palace Show on Wednesday, Sept. 3, 1862, will be forwarded on application.

The First Prize was awarded to YOUELL & Co. by the Royal Horticultural Society on Wednesday last for best Collection of 24 Single Spikes; and the First Prize for the best 12 Spikes of Brenchleyensis colour.

ROYAL NURSERIES, GREAT YARMOUTH.

Strawberry Plants—Ready.

CUTHILL'S SORTS, selected Plants for bearing in 1863, all one price, 7s. 6d. per 100. Early Black Prince, Early Princess Royal, Highland Mary, Richard II., Prince of Wales, and Newton Seedling, lasted in bearing this year [illegible] days. Strawberry Pamphlet, 1s.

Best MUSHROOM SPAWN, 5s. per bushel.

JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

STRAWBERRIES for AMATEURS.—Plants of the six most useful sorts, chosen to afford a long succession of fine fruit, one of each sort, or four plants of ECLIPSE, free by post, for 24 stamps. The sorts include ECLIPSE, new, pronounced first rate, both for Forcing and Out-doors, by the Royal Horticultural Society; PRINCESS, the finest of the very early sorts; SIR HARRY, SIR CHARLES NAPIER, WONDERFUL, the best for very rich soils; and ELEANOR, very fine and late; or OSCAR, if ordered.

Also very choice CAULIFLOWER and pure WHITE BAVARIAN CUCUMBER, 1s. per packet.

Address A. MOSS, Jun., Chadwell Heath Mills, Essex, E.

Grape Vines from Eyes.

JOHN BUTCHER has much pleasure in offering an unusually large Stock of fine healthy Plants fit for immediate planting, comprising the following sorts:—Black Hamburgh, Champion, West's St. Peter, Muscat Hamburgh, Lady Downes, Manukka, Ingram's Hardy Prolific, Trentham Black, Barbarossa, Frontignan, White Muscat of Alexandria, Cannon Hall Muscat, Charlesworth Tokay, Golden Hamburgh, Buckland Sweetwater, Bowood Muscat, Muscat Troveren, Trebbiano, Muscadine, Chasselas Musqué, Frontignan.

Royal Nursery, Stratford-on-Avon.

Extra Strong Vines.

GEORGE CLARKE has to offer very fine Plants from Eyes, two years old, with stout, well ripened, short jointed rods, which are warranted, under proper treatment, to produce a full crop of fruit next season. These Plants are well suited for planting a house or for pot culture, and include all the leading varieties. Price 10s. to 15s. each. Also smaller Plants equally well ripened, which will fruit the second season, [illegible]s. 6d. to 5s. each.

Nursery, Streatham Place, Brixton Hill, S.; and No. 4, Windsor Terrace, near the Victoria Railway Station, London.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.

2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

THOMAS JACKSON & SON, Nursery, Kingston, S.W.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 20, 1862.

MEETING FOR THE ENSUING WEEK.

TUESDAY, Sept. 23 { Royal Horticultural (Fruit and Floral Committees, at S. Kensington Noon

WHEN the time is ripe for the development of an idea, it often happens that it occurs simultaneously to many minds. This is now the case with International Horticultural Congresses or Exhibitions of fruit. This year no fewer than three are to be held in Europe, and had it not been for the unhappy war which is now devastating that unfortunate country, it is not improbable that another would have been held in North America. The principle of such intercourse has there been satisfactorily established for years, and much good has resulted from its Pomological and Horticultural meetings.

The International meetings which are to be held in Europe, are (taking them in the order of time) —1st, that of the Federation of the Horticultural Societies of Belgium, which is to be held at Namur on September 28; 2nd, a great exhibition by the Agricultural Society of Vienna, which is to be held at Vienna on October 4; and 3rd, the International Exhibition of Fruits, Roots, and Cereals, in the Royal Horticultural Garden at South Kensington on October 8.

Belgium has long occupied a first place among the nations which have developed and encouraged the different branches of Horticulture. Its eminence in this department dates back even further than the Tulip mania, which was about the year 1635. It imported Hyacinths from Syria in the 16th century. It possessed a Horticultural Society before Britain. The Horticultural Society of London, our oldest society, was founded in 1804, while the oldest society in Belgium was established amidst the turmoil of the first French Revolution. Since that time Horticultural Societies have gone on multiplying until now there are in Belgium at least 25 different societies or academies, belonging respectively to the districts of Brussels, Antwerp, Ghent, Liège, Tournay, Mons, Tirlemont, &c., whose special function is the promotion of Horticulture. In 1858 the Belgian Government, impressed with the importance of combined action, took the initiative, and offering substantial aid in the form of a subsidy proposed to the 25 societies to constitute themselves a federation which should hold a congress once or twice in each year at different places successively, where points of interest to Horticulturists should be discussed and decided upon. This proposal was unanimously adopted by the different societies, who thus, while they retain all their independence of action and preserve their funds and carry on their proceedings and publications as before, meet together twice a year in a general congress, like the meetings of the British Association and other similar bodies. When therefore the idea, broached this year by the Royal Horticultural Society, to hold an International Fruit Exhibition, also occurred to the Belgian Societies, they had all the machinery ready for summoning and holding such an International Congress. To this they have invited representatives of the most celebrated societies at home and abroad. A deputation of the chief officers of the Belgian Federation waited upon the Council of the Royal Horticultural Society this summer, and asked them not only to appoint a deputation to represent the Society at their meeting in Namur, but also to send for exhibition a named collection of the English fruits, especially Apples and Pears. With both of these requests the Council readily complied, and a collection of upwards of 400 English Apples and Pears will in a few days leave England for Namur. The Belgian practical gardener will thus have the opportunity of seeing and comparing with their own authentic specimens of the best known and most valued English kinds of fruit, and noting their names, an advantage with which no books or figures can compete. The embroilment in the synonomy, which is a source of loss and annoyance on both sides of the Channel, will thus to a certain extent be cleared up, and a foundation laid for a more extended and deliberate rectification of the nomenclature. The Congress will commence on Sunday, Sept. 28th, and will continue until the 1st of October; and it will be held in the Manége de Cavalerie, Rue Neuve, Namur.

The Agricultural Society of Vienna has in like manner solicited the good offices of the Royal Horticultural Society in relation to fruit and Grapes; and the Council have directed a collection of fruits similar to those sent to Namur, and of the finest specimens of English Grapes, to be prepared and forwarded to Vienna. The Exhibition commences on the 4th, and lasts until the 15th of October, and will be held in Prince LICHTENSTEIN's gardens at Vienna.

The Royal Horticultural Society's International Exhibition of Fruits, Roots, and Cereals promises to be one of the most interesting Exhibitions of fruit which has ever yet been held. No trouble has been spared by the Council to secure as fine a collection as possible. Communications were opened with the Consuls of every country from which it was possible that an envoy could arrive in time, and HER MAJESTY's Government kindly charged themselves with the transmission of the letters and packets, and added the weight of their indorsement to the Council's application. From some of these countries, as, for instance, the different States of America, they have (as might be expected) received apologies lamenting that the distracted state of the country would probably prevent any collection being sent. From others the neglect of horticulture prevented a favourable response. The Consul at Beyrout, for example, replies that there are neither nurserymen nor horticulturists at Beyrout, nor, so far as he knows, are there any in all Syria. But enough remains behind: a sufficient number of replies have been received from other countries to assure the success of the Exhibition.

The Belgian Federation undertakes to supply a carefully named collection of the Apples and Pears grown in Belgium, and as that country is celebrated for the number of new kinds which it raises and brings out, the interest and value of such a collection will be correspondingly great. In addition to this, the Federation offers grafts and cuttings of all kinds which the Society may wish to possess.

Holland is not behind Belgium. A large collection of the Apples and Pears which the Island of Walcheren produces is announced, and probably other collections will follow.

The Austrian Government has charged itself with forwarding a large collection both of fruits, roots, and cereals, drawn from all quarters of its dominions.

From Nice a collection of roots, Gourds, and cereals is promised.

In the north of Europe, both Sweden and Norway have intimated their intention to contribute. The Government of Sweden has taken on itself the expense of the transmission of the collections.

It is as yet doubtful whether Canada will be represented or not. One of the Canadian Societies has replied that the fruit will not be sufficiently ripe by the time at which it should be despatched. Notwithstanding this there is reason to expect that fruit, such as it is, will be forwarded, and that a further supply will be sent afterwards for exhibition at the Society's Fruit Committees, when it shall have been ripened so as to display the proper characters of the kind.

Venezuela has exerted herself to take a worthy place in the Exposition. Large cases, partly containing fresh fruit and partly representations of fruit, &c., have been advised as being on their way to this country.

Other countries have, on receipt of the Society's programmes, intimated their expectation that collections would be forwarded. Some of these will no doubt be realised; others may not; but it will be seen from what we have above said that the foreign element of the International Exhibition of Fruits is sufficiently provided for.

As to the home element, the numerous applications for schedules sufficiently attest the preparations which the cultivators in Britain are making to contest the premiums offered for them; one or more of the great British houses are understood to be occupied with preparations for the exhibition of entire collections of roots and Cereals.

The exhibition of Gourds will be very interesting. Chiswick alone will produce about 150 different kinds, some of them very beautiful; and taking into account the collections which may be expected from the Continent, there is little doubt that notwithstanding the unfavourable season an accumulation of Gourds will be exhibited which will astonish our London citizens.

The Show will (with the exception of the perishable fruits) continue open from the 8th to the 18th of October, the public being admitted at a cheaper rate (1s.) after the first day. *A. M.*

THERE were a few points in the Great Exhibition at South Kensington last Wednesday to which it seems desirable to revert.

Beyond all question the most important subject was that of the noble collection of GRAPES from the Garden at Chiswick. What the sorts were has been already stated. We venture to assert that such a collection was never before seen in this country; all beautiful specimens, admirably grown, and most skilfully produced. We only wish that the "pot Grapes" in the same establishment had remained in a state to be shown. Let us hope that, another year, gentlemen's gardeners will flock to see them. Of the sorts of Grapes actually present one called the Black Manukka is that to which we more especially wish to refer. This Black Manukka was received by the Royal Horticultural Society in 1849 from Mr. JOHNSTON, who had at that time the superintendence of the gardens and grounds at Hampton Court. Mr. JOHNSTON reported that the Vine had been brought by a gentleman from beyond Cabul where few Englishmen had ever been. The same traveller had also brought the "Yellow Cabul" Grape, which Mr. JOHNSTON likewise presented to the Society. The name Manukka appears, we believe, nowhere except in ROYLE's "Illustrations of the Botany of the Himalayan Mountains," p. 148, where he says—"The different kinds of Raisins called *Manukka Kishmish* and *Bedana* are brought chiefly from Istaulik. At Cabool, nearly in the same latitude, but more to the eastward than Cashmere, and elevated 6000 feet, the Grapes are described by Lieut. BARNES to be so plentiful as to be given for three months to cattle. They are also abundant at Bokhara, and in both places are converted into wine and dried as raisins." The fruit as produced here forms a very large lumpish bunch, with long seedless black berries, on which bloom appears sparingly. The flesh is between firm and tender. The juice is sweet, vinous, and extremely agreeable.

It will be remembered that the Council of the Society invited specimens of improved tubs for large conservatory plants. The terms of the offer were these—

"A Prize of 10*l*. will be given for the best specimen of a Conservatory Tub, to be awarded at the Autumn Show, September 10. There is no restriction as to material, size, form, or design. It may be of wood, slate, stone, pottery ware, Terra Cotta, or any other

substance. It may be in one piece or in many, fastened or bound together. Fitness for its purpose, elegance of design, superiority of workmanship, and cheapness, will be the test of merit."

A good many specimens that had been produced were submitted to the examination of 6 Judges, all of whom were gardeners, or had been, by whom the following verdict was delivered—

"The Judges are of opinion that the Conservatory Tubs exhibited do not fulfil the conditions upon which the Prize was offered, viz., not combining utility, elegance, and cheapness, and not being superior to the Tubs already in common use."

Without presuming to challenge this award, we may be allowed to remark that it was rather stern justice. It is true that the conditions were not fulfilled; but some of the tubs exhibited had good points which we should have liked to see recognized by a division of the prize among those whose plans deserved commendation. ORMSON'S "Pitch Pine" tub was novel as to its material, and cheap. FORSYTH'S mode of attaching handles to tubs was novel, and his tub good, and if without the ornamental carved work not dear. Then there were good points about a plan of Mr. EYLES, but of course he, as an officer of the Society, could receive no money reward. Perhaps the Judges were disgusted at some of the frightful things exposed to public astonishment; at all events we ourselves were. Let us hope that another year will produce something really deserving of praise *in all points*. If, indeed, we are not misinformed, a model by Mr. SYKES is in existence which promises to be all that is desired.

While speaking of tubs we may as well advert to some really good earthenware contrivances for plants in sitting-rooms exhibited by BARR & SUGDEN, and HOOPER & Co. Among many specimens which were not in good taste were others that deserve public favour; especially pans for bulbs from the first and window boxes from the second. They were well contrived, well designed, and burnt of the exact colour that best harmonises with leaves and flowers; that is to say the colour of earth after rain. We would suggest to others that it would be worth while to try that colour on tubs. It would certainly be an improvement upon the vile greens that are now in vogue. It might also improve the effect of Mr. ALLNUTT'S oak and slate boxes (by no means the worst exhibited) if applied to the slate.

We fear the noble specimens of Araucaria Rulei, sent over from Melbourne by SMITH & ADAMSON, Nurserymen in that city, were not so generally seen as could have been wished. A figure and description of this noble Conifer has been published at p. 868 of the *Gardeners' Chronicle* for 1861. On the late occasion some fine branches were exhibited in the Conservatory; and may still be seen in a glass case in the Board Room of the Society.

Three excellent specimens of Charlotte Rothschild Pine Apple, a useful winter variety, related to the Prickly Cayenne, were shown by M. CHANTRIER, gr. to the Duc DE LEVIS VANTADOUR, of Noisiel, near Paris. Of these the heaviest weighed 7½ lb., and the other two were nearly equally well grown; they arrived too late on the day of exhibition to be noticed in our report last week; by the list of awards, however, we see that they were awarded an extra prize.

IT has been recently stated in one of our best informed journals that an exhibition of Fruits is to take place at Vienna early in October, to which English growers have been invited to contribute. The Royal Horticultural Society is said to have *accepted the challenge*, and to be about to send over not only a magnificent display of English Grapes and wall-fruit, but *a deputation of eminent cultivators*. We are unable to say what has led to this mistake; but the fact is that no "challenge" has been received nor any "deputation of eminent cultivators" appointed.

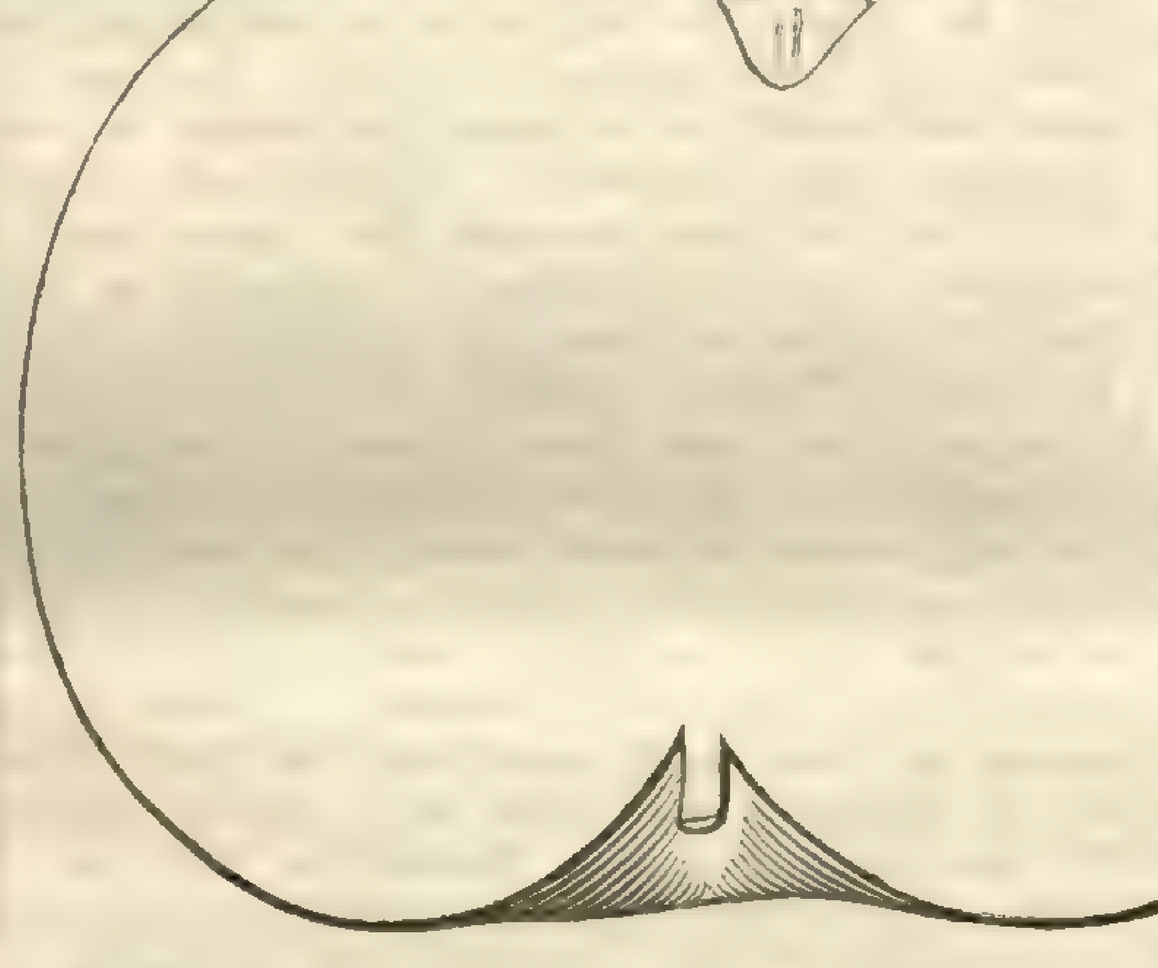
—— The TROPÆOLUMS of the Lobbianum breed are, some of them, amongst the most useful of bedding plants for the summer flower garden. One of them, called elegans, which has flowers of a very light but rather dull orange-tinted red, has been long a favourite on account of its excellent habit, being a free but not rank grower, a free bloomer, and throwing its blossoms well up, so that they are effective. A variety of similar habit, named Eclipse, has attracted a good deal of notice at South Kensington during the present year, where it has certainly won for itself one of the very highest positions among bedding plants of this class. Some samples which have been sent to us of another called Scarlet Gem, show it to be a variety of similar habit, having precisely the continuous blooming and other desirable characters of Lobbianum elegans, but very much brighter in colour. This Scarlet Gem as a pale scarlet, and Eclipse as a deep rich scarlet, appear to be the two best of the series, and they are really gems for bedding purposes. The variety Eclipse was raised by R. Headley, Esq., of Stapleford, and has been let out by Mr. Turner. The Scarlet Gem has been raised in the neighbourhood of Shipley, and is, we believe, in the hands of Mr. DEAN.

THE EVAGIL.

(A NEW APPLE, FROM GHENT).

WE have received the following from M. Louis Van Houtte:—

"Ghent, Sept. 3, 1862.—I herewith transmit you specimens of an Apple which appears to me to possess great merit. M. Bivort, to whom I sent two, writes that he has not found its equal in any work which he has consulted; that it has some resemblance to the Drap d'Or of Duhamel, but its flesh is more firm. It has, he says, a distinctive character, that of the eye or calyx being open instead of closed, as in the generality of Apples."



The specimens were received in good condition. Fruit rather large, of a very regular oblate form, hollow at the eye and stalk; the former is open, the latter very short; skin smooth, of a uniform pale orange colour, nearly like that of the Golden Noble, but rather deeper, and sprinkled with minute dots. Flesh tender, juicy, with a rich, brisk, flavour. Season, September and beginning of October.—An excellent dessert and probably also a good kitchen Apple. Said to be a seedling raised in the neighbourhood of Ghent.

There are two Apples known under the name of Drap d'Or, one of which is the same as the Reinette jaune Hâtive, quite different in appearance from the above; the other does resemble it in size and colour, but it ripens later, and is comparatively of very inferior quality to the really valuable variety now described.

Indoor Gardening.

I DO not know if many people will yet have set up window gardens in the way of balconies, of boxes, or of tiny glass frames; but for those who do in any way want to have hardy evergreens or flowers in spring, it will be advisable that they should make ready early. The pots of bulbs can hardly be planted too soon now. Three large Hyacinths of the same colour in a pot about 5 inches in diameter; 3 Van Thol Tulips double or single, or 3 Tournesols, in smaller 4 inch pots, and mixed white and purple Crocuses in pots of any sizes. The soil underneath the bulbs in these cannot, I think, be made much too light and sandy, while the covering, as far as the point of the bulb, can hardly be pressed too firm; but I try in doing mine to press all round rather towards the bulb than actually kneading downwards, to avoid the risk of hardening the soil that the roots must penetrate.

The pots should be covered deeply if they are to stand out of doors till they flower. Sand or ashes are a capital covering for them, and so I think is the dry Cocoa fibre.

Last winter I was disappointed however on the whole, in the result of the Cocoa stuff as applied for growing bulbs in. At first it seemed to me to answer very well, but afterwards I found that the large quantity of water that the bulbs required made the refuse get into an unpleasant state, and in other cases, where the fibre was mixed with soil and kept rather drier, it seemed to be not firm or close enough for the roots. I always theorize with much fear and trembling, but in this case I fancied that the porous succulent white roots of the bulbs could not bear any portion of their surface exposed to the action of air or dryness. The Cocoa fibre (and even the refuse when used very fresh) seemed to me to cause the soil to dry "hungrily;" the roots were not equally covered everywhere, some of them then turned yellow, and however it was, they did not do near so well as those I had in sand or soil alone. I also used the fibre to cover some dishes of bulbs in full blossom, and here again I soon found a good deal of trouble. The upper surface became dry very rapidly, but to my horror some of the stalks of the growing Hyacinths seemed to bend down unaccountably, and I found that they had fairly decayed where they joined the bulb. The fibre had sucked up a great deal of water from the sand it lay on, and though outside it never looked wet through, it lay like a wet blanket on the top of the flowering bulbs. The same thing happened in a good many dishes and pots, especially too with Tulips. This was the only thing that I ever knew the Cocoa fibre fail for. And even now it is difficult to believe that it was in fault, though after my disaster I advise people to use it carefully for this purpose.

Lilies of the Valley delight in a covering of the dry refuse, just filling the pot or covering the soil with it in its powdery state. And I think that for bulbs if it were made to mix up thoroughly and inseparably with silver sand it would most likely answer as well as I know it does, similarly used, for Ferns and other things. I have been using it thus for something or other constantly for two years and have never found a fault or failure in it when mixed with sand exclusively. I tried it mixed with mould, and then it failed sadly for my purpose, but I was using it in a way that gave warmth and damp, and hardly any air, and so it was not wonderful that little horrid white worms got into it. I believe they came out of the soil, and the whole concern had to be thrown away. At least I had to throw mine away, because I have an antipathy to all kinds of creeping animals, in which many indoor gardeners will heartily sympathise.

Mixed with sand entirely, and got dry from Kingston, I never knew however any insects get into it.

The plan that I would recommend for outside of windows now, in cases where they are to be kept filled, would be to have the box drained very thoroughly, well packed round the sides before frost comes with some dry fibre, and then two or three pretty evergreens can be dropped in, pot and all, and covered like a mulching with a little more dry fibre. The short bristly fibre does best I think low down, because water does not hold in it as it does in the sawdusty sort, and as they come into flower, pots of bulbs can be added. In a glazed balcony, quantities of plants like Myrtles and Rhododendrons would do most beautifully thus treated, and the Snowdrops and Scillas and the Crocuses and Tulips might in a good winter flower there all January. The Hyacinths and Tulips planted in pots and sunk in a box out of doors or in a shed, would come on more slowly; but for early flowers I think most people can find room in a sunny window in some unused room, whence the plants can be brought down as they get ornamental.

The sunken pots I have known take care of themselves quietly without water till the time had come when they could in their turn be promoted to the windows.

About half a dozen potsful planted every three weeks, or planted now, and some kept carefully dry, till every three weeks some might be started by a little damper treatment, would be quite enough to keep two windows or a little Belgian greenhouse very gay all winter. The Narcissus Bulbocodium is a charming little yellow flower that every one should grow. Larger Narcissuses I don't myself like in windows. They grow very tall, and few people when they are out can bear their scent in a room. They would however be very early flowers.

For indoor bulbs strictly speaking, for those that is which are meant for a table, and for a window stand, I advise window gardeners to use nothing but sand and charcoal, or charcoal and water (unless for an experiment they use dry Cocoa dust, separate from the fibre, mixed up completely with the aforesaid sand), for though soil is said to have many great advantages, I doubt if to amateurs it ever answers half so pleasantly and unfailingly as the simpler means. *E. A. M.*

Home Correspondence.

The Royal Horticultural Society's Exhibitions.—Can you tell us, Mr. Editor, where the future great Exhibitions of the Royal Horticultural Society are to be holden? It is a question of some moment, both to the Fellows of the Society, and to the exhibitors. Last year, the Conservatory with its adjacent arcades was pressed into service, but this was obviously a temporary expedient, and is not to be thought of except as a *dernier ressort*. This year, some hundreds of pounds have been 'shrouded' in canvas. What is to be the plan for next year? Those who think that exhibition plants and flowers never look so well as when placed under the influence of the subdued light of a canvas tent, will doubtless swear by Hemp. They will say that the mishap of this present 1862 was an accident; that the thing could be better done, and then would be all that could be wished; that another 1500*l*. with the additional percentage for securing its being really 'better done,' would be a wise and prudent outlay; that, in short, the experiment of this year should be tried over again with the necessary precautions which experience has suggested. But were this all

done, the result would be but a canvas tent after all; costly, not very durable, always liable to accident, and whenever the exhibition happened to fall on a rainy day (a circumstance hitherto of no rare occurrence) very little better than a shower bath, certainly a dew bath, for both plants and visitors. In a word, though enjoyable enough on a fine sunshiny day, it would be anything but enjoyable during a war of the elements, or even on those occasions when Pluvius was graciously disposed to shower his more genial favours o'er the earth. There is, over and above all, this further objection to a tent,—that is, if it be large enough for the purpose of an exhibition, such as the metropolitan floral exhibitions have now become,—that it must fill up the only broad open space left in the whole acreage of the garden, and this is an objection of no small weight. On the other hand those who have a lively recollection of the creature comforts at a flower show at the Crystal Palace, and think less of the flowers than of themselves, will doubtless swear by Glass. They will go in for a permanent structure for exhibition purposes, with at least a roof of glass: something in fact, like a railway terminus, from which too much light might be excluded by shading, and too much wind or draught could be shut out by means of canvas walls; ventilation in hot weather being provided to any extent by throwing down portions of these walls at pleasure. Such a structure would be perfectly suited to the object in view, and there does not appear to be any other objection to its erection than this, which also applies to tents—that it must occupy a large portion of the small remaining open space which the terraces and polychrome beds have left untouched. This objection is indeed intensified by the circumstance that such an erection must occupy its ground permanently, while the tents may be struck when not required. On the whole I cannot side with the advocates of glass, at least in so far as regards this application of it, and that for this one paramount reason, that I would not suffer one inch of the space which is now free and open for promenading, to be obstructed by anything whatsoever. Where then are the exhibitions to go, if there be no exhibition house, and no monster tent, if the Conservatory be not available, and if the few open glades are to be kept free? One solution of the problem, by no means a difficult one, points to the Arcades. Surrounding the whole garden, and affording an ample area for the purpose of an exhibition, they are at present utterly useless, except for the infliction of rheumatism. Designed as part and parcel of this "architectural" garden, they will no doubt when completed do something towards its embellishment, which it can hardly be said they do at present; but if they are still to remain as open arcades, their beauty, when it comes, will be their only merit. It is not, I think, open arcades, or arcades hung with darkening canvas curtains, that are wanted. In either form they seem to be totally unfit for exhibitions, as every one indeed must have seen on the occasions when they have hitherto been made use of. But let the front openings be closed up with glass, securing free ventilation at the top; let sufficient doorways for egress and ingress be provided, and let the necessary additional light be let in from the roof, and there will have been provided—what? Why, space enough for the most complete exhibition of plants and flowers ever likely to be brought together, and space which could be readily appropriated to make such an exhibition effective. The small portion used at the Azalea show last spring, though wanting in light, which could have been supplied from the roof, afforded abundant evidence of this. But supposing this to be done, something else would have been gained besides a fitting place for the exhibition. There would have been provided an agreeable and sheltered promenade for the Fellows and visitors during the winter and spring, a promenade which would be agreeable enough and appreciated merely as such, but could be made to any extent attractive by the introduction here and there of Evergreens and flowers. And this promenade would be worth the having. It is not very cheery as things are, for the garden visitors on a biting wintry day to have no alternative but to pace beneath the 'cold shadow' of the catacomb-like arcade, or to walk abroad with nothing to gaze on but the polychromes and the tombs of the departed vegetation, even though the many-coloured fragments may be glistening with a surfacing of silvery frosting. It would I imagine be necessary, at least on exhibition days, supposing suggestions like these to be carried out, to make for the general convenience arrangements as regards the movements of the crowd. There is ample width within the arcades for a good stand of plants, and for one stream of visitors, but not for two. To avoid confusion, it would seem to be desirable that all who enter should move to the right or to the left as might be determined on. The objects exhibited should, moreover, be made to occupy, more or less closely, the whole circuit of the arcades, and then no one would object to make the grand tour of the garden. Of course the southern arcade, temporarily swallowed up by the Great Exhibition, will be restored by another season, and then the promised promenade under shelter around the whole of the garden will be available. Without this perfect circuit it is evident the plan would not answer in bad weather; but with it the visitors would be as independent of the state of the weather as in the nature of things they very well could be. *F. R. H. S.*

Autumn the best time for Planting Potatoes.—In corroboration of this, my man dug up this day two "ramblers" (I suppose everybody understands this term to mean two Potatoes left in the ground at the last year's digging time); the Potatoes under each weighed over 6 lbs.—together 13 lbs. Three in one and four in the other weighed severally over 1 lb. The sort is called Late Fortyfold—not a diseased one amongst them. For the last 14 years the plan of autumn planting has been adopted in my garden. I have never suffered much from disease, and never so little as this year. My neighbours complain that theirs are more than half bad—my men found but one during one day's digging, and two small ones during another. I have 6 pecks to the perch of Flukes and Late Fortyfold. I plant in November 5 inches deep, in a little light litter. *A Subscriber, Trowbridge, Wilts.*

Drayton Manor.—Respecting the notice of the gardens at Drayton Manor in your impression of the 6th inst., by "P. W.," I was rather astonished at the ingenuity of the party who got it up to rob a man of his hard earned reputation. I allude to the statement toward the close of the report, where Mr. Barron is stated to be the designer of the American garden. I beg to state, for the better information of "P. W." and his friend Mr. Chalmers, that Mr. B. had nothing whatever to do with the formation of the garden in question; all he did was to furnish Sir Robert Peel with some plants of Pinus excelsa, a specimen Araucaria, and a few small examples of Abies nobilis. The garden alluded to was planned and carried out under the combined efforts of Sir Robert and myself, no third party having anything to do with it. Not only, however, was the above garden formed on what I may call the co-operative principle, but the greater portion of all the other extensive improvements between 1851 and 1859 were effected under the same system. It is rather unfortunate that "P. W." omitted to mention the successful removal and replanting of many fine ornamental forest and evergreen trees, especially the Horse Chesnut, some of which are of large dimensions, and flourishing amazingly. *John Wightman, late Gardener to Sir Robert Peel, Bart., of Drayton Manor.*

Orchard Houses.—The following is the result of one season's experience. Last autumn, having lost nearly all my wall fruit from the ravages of wasps, blackbirds and squirrels, I determine to build an orchard house, which I accordingly did. Hearing that a neighbour who for many years had had one at work wished to sell his bushes, I paid him a visit and became the purchaser of them, he at the time telling me his reason for parting with them was that he had been unsuccessful with them from the first. The trees had been potted in 1855, and had come from Mr. Rivers. I saw at a glance that they had not been well managed. When I got them home I took out as much of the earth from the pots as I possibly could, and in one or two cases I had not gone down above 3 inches before I came upon the Hertfordshire soil, showing that top dressings had not been liberal. I then put my trees, which are composed of Peaches, Nectarines, Apricots, and Plums, into the orchard-house. Whenever there was a frosty night during the winter I put on fire enough to keep the thermometer above 28°, and gave plenty of air when the weather was fine. These trees had always been washed in winter with Gishurst Compound, but I found that in all the orchard-houses I knew of where it was used, so surely had crops failed year after year; I therefore left my trees without it. In March, when the trees were coming into blossom, I pruned them. In the end of March and beginning of April, the trees were in bloom. The weather was dull, damp, and cold, I therefore fertilised my blossoms with a hair pencil, gave plenty of air, and put on a little fire if the night were frosty, to keep the thermometer at 33°. After the 15th April no fire was ever put on. The fruit on every tree set abundantly, Apricots and all. I watered the trees once a week in April, twice in May and June (the latter month being no warmer, and with far less sun than the former), and three times a week in July and August. I syringed night and morning, and shut the ventilators at night until the beginning of August, when, as the nights became warmer, I allowed them to remain open. I lifted the pots of those whose roots had penetrated the soil four times during the summer. The results have been far above my expectations, every tree having borne a large crop of fruit, with the exception of the Apricots and a Walburton Admirable Peach, which dropped all their fruit by degrees as the season advanced. I may here mention that in March my Peach and Nectarine trees lost almost all their leaf buds. I was in despair, thinking that I should have no fruit. When about to thin the fruit in early summer, I asked many experienced persons if they had ever known of fruit ripening on branches without a terminal leaf bud—all agreed they never had, the thing was impossible, and I should cut them off; the only person who did not give me this advice was my old gardener, who said he had often seen fruit ripen on such branches. If I had cut off all such fruit, I should have reduced my crop most seriously, and I therefore allowed them to remain; the result has been that only three fruit have dropped from these branches without ripening. I have had several dozens of excellent well ripened fruit, and have at this moment a Pitmaston Orange Nectarine with above 20 fine fruit on branches with no leaves or shoots on them whatsoever. I left off syringing on the 1st of August, and I have never had a red spider in the house. In the summer green fly and brown aphis made their appearance. I destroyed them by dipping the branches in a liquid composed of 2 ounces of Gishurst Compound and a handful of home-grown Tobacco leaves to the gallon of water. Some of my Peach trees have made few or no roots through the pots. These trees have borne delicious fruit, have made little short-jointed wood, and are already full of blossom buds for next year, while those that have made many roots through the pots have had to be pinched four or five times, and are still growing vigorously. I should therefore much like to have the opinion of Mr. Rivers or some other person of experience as to whether they think enlarging the hole at the bottom of the pot is necessary. As far as my experience goes, I think trees might be kept in perfect health in 13 or 15-inch pots with the usual hole not enlarged, and it would save people who like myself attend to their own orchard houses from the very warm operation of lifting the pots in June and July. It is the only piece of work in the orchard house that I dislike, and gave me a headache each time I did it. I cannot understand how many people fail in orchard house culture; such however is the case. I rarely go into one that either the gardener or proprietor tell me they cannot succeed. The use of too strong a solution of Gishurst Compound in the winter I am certain is at the bottom of a great many failures. I lately went to see the orchard house of a neighbour who has never succeeded; I found the bushes and pyramids the pictures of health and beautifully managed, some in pots and some planted in the ground. The crop of fruit consisted of three Peaches, a dozen or two Plums and four Pears. I asked the gardener who showed it to me, what he considered to be the cause of failure? He said: "I have always suspected, and now I am certain it is the Gishurst Compound with which my master washes the trees in winter, and I will soon prove it to you." He then took me into a lean-to house, on the back wall of which was an Easter Beurré Pear tree; one side was covered with fruit and the other had not a single Pear upon it. This was the gardener's experiment; he washed one side of this tree with the same Gishurst as his master had used in the orchard house, and such was the result. I do not mean by this to say that Gishurst Compound is not under certain circumstances a useful thing, but I should certainly recommend the amateur gardener not to wash his orchard house trees with it in winter—at least not the young wood. One of your correspondents lately said he did not believe that trees in pots would live for more than a year or two; mine that have borne so well this year are eight years old, and although they have not been well managed as to branch pruning, they certainly have not been allowed to run their roots into the soil during the summer, and then have their tap root cut off in autumn, nor have they been deluged with liquid manure. I am not the least surprised that people who treat their trees in this manner find them die after a few years. I feel certain that with a little care and common sense fruit trees in pots cannot fail to give satisfaction, with one exception, and that is the Apricot. That it occasionally bears good crops under glass I am well aware, but a crop cannot be depended upon. In cold climates and in high situations in the north of England or Scotland, where it is in many years necessary to give fire-heat at night during the blooming season, I would not recommend its cultivation, except perhaps the Breda, which I have seen bear abundantly in a forcing house. *Early York.*

Dinner Table Plants.—It is not enough to say that the show of standard plants for the dinner table prize at South Kensington on the 10th inst. disappointed the expectations of those interested in that mode of decoration. The plants were so utterly unworthy of the occasion, as to call forth a very general opinion that the judges erred in awarding the prize at all. Seeing that the terms of competition have been advertised long enough to allow of suitable plants being grown, it was not creditable to manufacture standards by trimming off the lower branches and leaves, in order to make up a collection! A good dinner table plant should have as little as possible to intercept the view up to the line of vision, while the foliage, &c., should be as close as possible above that line, and the plants should be compact, shapeable, and graceful in character. In fact, a young, slender, Tree Fern is the best model to be imitated. Everyone naturally thinks of the Fuchsia as one of the best plants for such a purpose, but strange to say there was not one well grown Fuchsia exhibited, while the varieties most suitable from their natural elegance of growth were not there at all. Again, the numerous tribe of elegant Creepers, Climbers, and other plants, which when grown over light wire domes would be most appropriate, were represented merely by a poor Petunia and a miserable Tropæolum. Grevillea robusta was the most graceful plant shown, and the contrast between its foliage and that of Coleus Verschaffelti was very effective; but the plants of the latter were not very creditable to the pruner, while the Grevilleas were too much drawn. Should this prize be offered again, as we hope it may be, exhibitors must remember that graceful laterals from a stunted primary axis will produce the best effect; and that, though flowers and fruit are perfectly admissible, it is elegant

foliage which is most wanted, since enough of gay colours are usually found in the cut flowers and fruit upon the table. *Diomma.*

Mushrooms.—I sent last week to the Royal Horticultural Society's Show the largest mass of Mushrooms I have ever grown. When it first appeared on the bed it was the size of a penny, and when I sent it it weighed nearly 6 lbs. The group measured 3 feet 6 inches in circumference, and consisted of 40 Mushrooms, every one of which was sound and free from insects. This makes the third year in which few or none have been obtained out of doors. *James Cuthill, Camberwell.*

Foreign Correspondence.

BRITISH COLUMBIA.—Extract of a letter from New Westminster, dated 18th of June, 1862.

"The country is getting on. Its richness in gold, in wide and paying quantities, is now proved, even to the satisfaction of our often deceived selves. The distance of the gold fields from the coast; the extraordinary difficulties of the intermediate country, making the carriage of provisions thither enormously dear and slow; the shortness of the season, four to five months, in which miners can work, are the real obstacles to our more rapid onward progress, but 'Chi va piano, va sano.'

"There is any amount of rich agricultural land in the colony, particularly above the Cascade Range, that would pay well to farm roughly—not scientifically. At present we pay here 2½*d.* a lb. for Potatoes, 5*d.* per lb. for Carrots, 5*d.* per lb. for Cabbages, 3*s.* a lb. for fresh butter, 6*d.* a quart for skimmed milk, and all other necessaries in proportion; Beef (poor), 1*s.* 3*d.* per lb. all round, Mutton from 1*s.* 3*d.* upwards, Pork the same.

"Servants of the most ordinary knowledge 35 dols. a month, equal to 84*l.* a year; a nice thing for fixed incomes you'll say. Groceries are at an enormous price. And last, not least, come charitable subscriptions of all kinds. As at home, the number of contributors is disproportionately small in comparison even to the population. Churches have to be built and endowed, clergymen's salaries provided, hospitals ditto; lots cleared and built on, stores and offices constructed, local taxes for common roads—and all these things, and any amount of similar matters, done, and all done at once, at one and the same time, by a population sparse and poor, who come without money to the country, and (from all external signs) seem to make but little.

"I see a Transit Company started in London—it's all a humbug. A friend of mine has had his name taken in vain, I see. What we want is direct and connected steam communication with England; a road (first waggon), then in a few years rail, across the Rocky Mountains by Tête jaune Câche, where the pass itself, the Governor (who has travelled over it many times) tells me, is to the eye 'as flat as this table,' *viâ* Saskatchewan, Winnipeg, and Red River, to Canada. We want an English population, and above all, women—women (virtuous, however rough, not workhouse girls though), so as to have something approaching to a decent proportion between the sexes, and induce settlement and the creation of homes.

"The great sin of the country is that (unlike Australia) those who come can get away from it too easily. It is the men who cannot get away who make a new country quickest. Drinking and gambling are (I may almost venture to say) the only amusements of successful gold-miners here, and what to me is so wonderful is that many men of high refinement, talent, and education, fall into these practices and become utterly debased.

"The rapidity of the declension is awful. They seem to forget that God is omnipotent. The Bishop and some first rate clergy are buckling in earnest to their work up among the miners in their very midst. They are made of the right stuff; earnest, bold, judicious, and talented. One gentleman has done more harm to the good cause here, by his garbling our excellent Bishop's letters home—'suppressio veri and suggestio falsi'—all which comes back here, than we shall get over in 50 years. The truth, the whole truth, and nothing but the truth, is the only thing which can permanently benefit us out here. I hate humbug.

"P.S. On running over my letter, which you will see is written 'currente calamo,' I see I have not mentioned the extraordinary exertions which the Governor is making to open up the communications. Fortunately for the country, we have a sagacious and resolute man at the head of affairs here who knows personally every inch of the country better than any dozen men in it. I am convinced his acts this year have saved the colony from a most awful collapse, and those who have come into it from an endless amount of suffering and misery.

"He has started a road from Lilloett (or Cayoosh), by Pavilion Mountain and Lake la Hâche and Williams Lake up to Fort Alexandria; another road from Yale to Chapman's Bar on the Fraser; another from Chapman's Bar through an awful place called Nicaragua Slide to Boston Bar; another from Boston Bar to Lytton; another from Lytton along the Thompson River (right bank proper), crossing the Buonaparte River, and bending westerly *viâ* Lake la Hâche and Williams Lake also to Alexandria; thus constituting two separate routes to the mines, and keeping down by competition extravagant cost of carriage. So that by the fall of the year (D.V.) the emigrant arriving at New Westminster could go in a day to Yale, thence to Alexandria in three or four days or from Douglas and Lilloett, over Pavilion Mountain, *viâ* Lake la Hâche as above, to Alexandria in the same time.

"A steamer now building at Alexandria will then carry him on along, and up the Fraser, a stream 500 yards broad in the smallest place, deep and smooth, with next to no current, over two insignificant rapids, up to Tête jaune Câche, whence he can cross the Rocky Mountains at the pass I have described to Jasper House—thence either by boat or road down the Saskatchewân, *viâ* Edmonton House, Winnipeg and Red River, to Lake Superior and Canada and the Atlantic.

"40,000*l.* is the official estimate of all it would cost to pave the way to individual enterprise to complete the road thoroughly for waggons. We have been on the subject for three years already. By far the most difficult and tedious part of it is done already—a regular Macadamised waggon road up to Alexandria.

"There is nothing the other side of the Rocky Mountains like the difficulties already conquered here—no real difficulty there.

"This account I give may be relied on."

Societies.

SKIRCOAT HORTICULTURAL: Halifax and its immediate neighbourhood has, in the north of England, a great reputation for plant growing, and the Skircoat, or as it is more familiarly called, King's Cross Flower Show, is held annually in August, and many thousands flock to see it. Skircoat is one of the environs of Halifax, and Major Edwards, M.P., very kindly allows the exhibition to be held in his beautiful park, and generously throws open the flower garden and houses for the inspection of visitors. This he has done for some years, and the visitors to the exhibition greatly appreciate his kindness. Pye Nest, Major Edwards's seat, is most beautifully situated, and commands some charming views. The grounds are spacious and well planted with shrubberies, and the flower garden is on an extensive scale and in first-rate order. Beds of Calceolaria aurea floribunda were masses of golden flowers, and a large bed of Rosy Gem Verbena, edged with Cerastium, gave a charming effect. Another great circular bed, which was exceedingly effective, was planted with a large centre of blue Ageratum, next yellow Calceolaria, then Scarlet Geranium, with an edging of variegated Alyssum. A long bed of Verbenas 7 feet wide, presented a pleasing appearance; the centre a row of white, next to it on either side scarlet, then a pair of rows of purple Verbena, the whole edged with the Silver leaf Cineraria.

There is a fine range of Pineries, Vineries, Stoves and Conservatories, erected a few years since by Mr. Weeks. These form a background to the flower garden, and constitute a fine range of glass. We noticed some fine Achimenes in suspended baskets, and they are certainly valuable decorative plants grown in this manner. Clematis lanuginosa, an exceedingly fine greenhouse creeper, was also in full bloom. Indeed the well kept grounds and houses are in themselves a flower show.

A tent 110 yards in length was fixed in the park near the mansion and devoted to the Exhibition, at which a great number of first class plants was produced.

In the Class for 12 Stove and Greenhouse Plants in flower, Mr. Sykes, gr. to W. H. Rawson, Esq., Haugh End, Halifax, was placed 1st, and in his collection were exceedingly well flowered examples of Phœnocoma proliferum and P. Barnesi, both highly coloured; a very fine Ixora javanica; a Dipladenia crassinoda, well grown and coloured, which had been grafted on D. urophylla, a robust growing species, which makes an excellent stock for the smaller kinds; a magnificent Odontoglossum hastatum, and a fine Oncidium flexuosum. Mr. Beilby, gr. to W. Holdsworth, Esq., Halifax, was placed 2d; he had a very even lot of plants in good condition, the best being a finely grown Phœnocoma proliferum, a fine Allamanda Aubletii, Saccolabium Blumei majus, Erica tricolor Wilsoni, Phalænopsis grandiflora, and a superbly flowered Ixora coccinea. Mr. John Clarke, gr. to Major Edwards, was placed 3d; this collection included a beautiful Rondeletia speciosa major, a very fine Pancratium fragrans, a large Gloriosa superba in great perfection, and good examples of Calanthe furcata and Cattleya Harrisoniæ.

In the Class for 6 Stove and Greenhouse Plants, Mr. Murdoch, gr. to W. H. Rawson, jun., Esq., Mill House, was placed 1st; his Erica ampullacea scotica, Erythrina Crista Galli, Rondeletia speciosa major, and Allamanda Aubletii, being particularly fine; 2d, Mr. Wheatley, gr. to Samuel Waterhouse, Esq., Halifax, with a collection consisting of a superb Lapageria rosea, beautifully flowered and very rich in colour; Achmea fulgens, and excellent examples of Ixora coccinea and I. crocata.

In the Class of Single Specimen Stove Plants, Mr. Wheatley obtained the 1st prize with one of the best bloomed examples of Ixora coccinea superba we have ever seen.

Mr. Murdoch contributed a very fine plant of Echites Harrisi, blooming like an Allamanda, and bearing a close resemblance to it in form, colour, and habit of flowering; the colour was a rich cream with a coloured centre. Mr. Murdoch grew this plant for eight years round a trellis, but found that he could not bloom it; this year, therefore, it was not repotted early, but was placed on a shelf and grown as a climber to a rafter, keeping it liberally supplied with water, and as soon as the flower buds appeared it was repotted. It will evidently be a free-blooming plant, this example showing six or seven panicles, each with from 30 to 40 flowers. It has good foliage, and the flowers are decidedly handsome. Another charming plant, Griffinia hyacinthina, also rarely seen at exhibitions, was contributed by Mr. Clarke. This is a lovely greenhouse bulbous plant, with light mauve small Amaryllis-like flowers with white markings in the upper segments. Mr. Beilby also sent Cattleya hybrida, one of Mr. Dominy's seedlings sent out by Messrs. Veitch, a pretty salmony pink-coloured fine kind, and quite distinct. Mr. Murdoch sent Eucharis amazonica, and a batch of Gladioli in pots. Some well grown examples of Campanula pyramidalis and Humea elegans were very ornamental amongst the other plants. In Petunias, Madame Ferguson and Maria Rendatler were very fine. Some healthy well grown Gloxinias were exhibited, and two plants of the crimson variety of Celosia pyramidalis proved this to be an excellent autumn blooming conservatory plant.

Prizes were offered for the three best Gloxinias and three best Achimenes shown together. Mr. Sykes took the lead with some unusually fine plants; the three varieties of Gloxinia—Adami oculata, light mauve and white; Virginalis, delicate pink and white throat, and Princess of Prussia, carmine with white margin, formed a good contrast to each other. Mr. Wheatley was 2d with some good plants. An interesting group of new and rare plants was contributed by Mr. W. Dean, Nurseryman, Shipley, not for competition; amongst them were good examples of Bertolonia margaritacea, having handsomely marked foliage, something like that of an Anæctochilus; Caladium Veitchi, one of the noblest ornamental plants grown; large pans of Selaginella Lobbi, Wallichi, and atroviridis; the new and beautiful Adiantum chilense, Gymnogramma Laucheana, a fine and distinct gold Fern; and other plants.

Variegated and fine-foliaged plants are very extensively grown in the North, and many fine specimens are frequently to be met with. At this exhibition a noticeable feature was the rarity of many of the specimens, several of them being equally as fine as any seen at the London shows, especially the six plants shown by Mr. Beilby, gr. to Wm. Holdsworth, Esq. These consisted of Aralia pulchra, a handsome Croton variegatum, an extremely well coloured plant of the handsome Alocasia macrorhiza variegata, a first-rate Croton pictum; Sabal Blackburniana and Seaforthia elegans, two noble Palms. In Mr. Murdoch's collection, placed 2d, were a magnificent Croton pictum, finely coloured; an excellent Bird's-nest Fern, a very fine Pandanus javanicus variegatus, a good Cibotium Verschaffelti, and a beautiful fine-foliaged plant, Dillenia speciosa, which is one of the handsomest grown. Mr. Wheatley had a well coloured Ananassa sativa variegata, Caladium Belleymei, with extremely fine foliage, a good Rhopala corcovadensis, a handsome young Cyanophyllum magnificum, and a good Croton pictum.

Some fine Ferns were also shown by Mr. Wheatley, whose collection took the 1st prize, and included very good examples of Pteris umbrosa, Adiantum curvatum, and A. trapeziforme. In the class for 4 Ferns, Mr. Murdoch was first with a beautifully grown Adiantum lunulatum, Neoptopteris australasica, and two others. Mr. Wheatley, who was placed 2d, had a very fine Neoptopteris nidus avis.

In the Cut Flower Department, Dr. Foster, Todmorden, obtained the 1st prizes for Picotees and Carnations; and Mr. W. Dean, Nurseryman, Shipley, contributed, not for competition, a collection of Gladioli, examples of the new giant large flowering German Stocks, which are really very fine, and some stands of Fancy and other Pansies. Some excellent Roses were also exhibited.

Some good fruit was contributed. A tray of very fine Peaches, Black Hamburgh Grapes, and Pears, not for competition, was sent from near Doncaster, and some good Figs by Major Edwards's gardener. Mr. Murdoch obtained the 1st prize in Melons for a handsome seedling, named Mill House Green-flesh, a large yellow netted variety of fine flavour. We also noticed some fruit of Emperor of China Melon, a prolific and finely flavoured handsome green-flesh kind, but it does not keep well. Mr. Wheatley exhibited an extremely good Providence Pine.

We noticed a fine tray of fruit, which was awarded an extra 1st prize, in which were two very fine fruit of the two Melons we have named, and some well-coloured Black Hamburgh Grapes from Vines lifted last autumn by Mr. Murdoch. We also noticed several dishes of fruit of a productive kind of Apple, Lord Suffield, which has a wide reputation in the Midland and Northern Counties, and is greatly used by exhibitors. It is a free bearing sort, generally producing fruit the second year from the graft, and is an excellent kitchen Apple.

Vegetables were numerous and good, and the cottagers' productions in many instances equal to the gardeners. A kind of Shallot, known in Yorkshire as the Russian Shallot, outdistances the old kind in size

and always beats it at the exhibitions. It is much larger and darker, but it does not seem to be known in the London trade. There was a fine display of Cucumbers, chiefly Kirklees Hall Defiance, and the fruits of that variety which took the 1st prize were very fine. Mr. W. Dean contributed, not for competition, a collection of new Potatoes, amongst which the Wonderful Early Red Kidney, a handsome smooth even-skinned kind, was most conspicuous, and is said to be very prolific and of excellent quality. Dean's Early Kidney, reported to be nearly as early as the Ashtop Kidney, and a much heavier cropper, and the new French Ashtop Kidney Potato, reported to be fully as early or even earlier than the common Ashtop, and a much better cropper, were also remarkable. Altogether the show was one of great excellence.

Notices of Books.

The Fruit Manual; containing the Descriptions and Synonymes of the Fruits and Fruit Trees commonly met with in the Gardens and Orchards of Great Britain, with Selected Lists of those most worthy of Cultivation. By Robert Hogg, LL.D. 12mo. Second Edition.

The favourable opinion which we gave of this little work on its first appearance about two years ago seems to have been confirmed by the public, and we have now to record the issue of a second edition, which we are inclined to think will meet with as cordial a reception from gardeners and others interested in the culture of fruits, as was given to its predecessor.

The author is well known as a pomologist, having for many years past devoted much of his time and attention to the study of that important branch of horticulture, and as Secretary to the Fruit Committee of the Royal Horticultural Society he has had the best opportunity for following his favourite pursuit, and making himself acquainted with the valuable collection of fruits that have been proved in the garden at Chiswick, as well as with the new varieties that have been sent from time to time for the opinion of the committee, and considered to be deserving of cultivation. Hence it may be inferred that few persons were better qualified than Dr. Hogg for undertaking the voluntary task of preparing such a work as the present, and the able manner in which it has been executed renders it indispensable as a handy book of reference to every nurseryman, and gardener, desirous of acquiring a knowledge of the fruits they cultivate, or have under their care.

The usefulness of such a manual is unquestionable and the want of it has been a subject of regret ever since it became known that the Horticultural Society's Catalogue of Fruits—long regarded as the standard of nomenclature—was out of print. In that work many varieties are enumerated, which on examination were proved to be worthless, but here, we are told, the object has been "to describe those only which either are in cultivation, or are worthy of being cultivated," and with the view of making this edition as perfect as possible, we learn that the Apples, Grapes, Plums, and Strawberries have been entirely re-written, and numerous additions made to the other sorts of fruits. The synonymes have also been carefully revised, and several errors that were detected in the first edition have been corrected.

If it is not to be expected that all gardeners should be botanists—neither is it to be supposed that they should all be pomologists—but they ought at least to possess such a knowledge of fruits as to be able to distinguish the varieties that are most esteemed for dessert, and those that are best adapted for culinary purposes. Some persons, indeed, who have had the opportunity of seeing large collections of fruit, will tell at a glance, and almost with unerring certainty, the names of a great many Apples and Pears when they see them together, but will hesitate about naming a single specimen apart from the others. This is attributable, no doubt, to the memory being unable to retain the faint impression made upon it by the slight marks of difference observable in the single specimen, from those which are peculiar to the varieties most nearly resembling it. In all such cases, therefore, this Manual will be of great assistance, care having been taken in the descriptions to point out the most striking and characteristic features by which the different varieties of each sort of fruit may be recognised. As an example of the manner in which this has been done, we extract the following account of a well-known Apple.

"Margil (*never fail*).—Fruit small, ovato-conical, slightly angular, and with ridges round the eye. Skin orange, streaked and mottled with red next the sun, slightly russety in the shade. Stalk short. Eye small, set in an irregular basin. Flesh yellow, firm, juicy, richly flavoured and highly aromatic.

"One of the finest flavoured of Dessert Apples, having the character of the Ribston Pippin and more tender flesh. November to March."

In this way are described about 200 varieties of Apples, 250 Pears, 100 Grapes, 92 Cherries, 60 Peaches, 25 Nectarines, 79 Plums and many other kinds of fruit with which we are familiar, such as Gooseberries, Currants, Raspberries, &c. To each of these classes (excepting the Apples and Pears), a synoptical arrangement of the different varieties is prefixed for the purpose of facilitating their identification. It is therefore of great importance that this should be carefully studied, as when rightly understood it will be valuable for a guide, if proper attention is paid to the several points of distinction on which the arrangement in each class is made to depend.

Another part of this little work is particularly worthy of notice—we mean, the numerous lists that are given of what are considered to be the most select varieties of the different kinds of fruit, with the situations and aspects best adapted for them—the purposes for which they are most suitable, whether for dessert or kitchen use—for training against walls or growing as standards, either in the garden or orchard—and for cultivating in hothouses for early or late crops. These and various other particulars of the like description will be useful to the gardener, as well as the amateur, and will enable them to make selections of the sorts of fruit that are most likely to succeed in the locality where they are intended to be grown.

Among Cherries we think there is a mistake deserving of notice; a variety is described under the name of Paramdam instead of *Barandam* as mentioned by Hitt, in his Treatise on Fruit Trees, 3d ed. p. 302. It is there stated that this Cherry derives its name from *Barandam*, near Sleaford, in Lincolnshire, where it grows wild, increasing itself by suckers like the Blackthorn, and bearing fruit on as small bushes.

We also note two small errors in the names of Pears, viz., Pengthley, instead of *Pengethley*; and Vingouleuse instead of *Virgouleuse*.

Marvels and Mysteries of Instinct, or Curiosities of Animal Life. By G. Garratt. Third Edition. Longman & Co.

Of a book which has reached its third edition, and which moreover backs itself with no fewer than seven quotations from admiring reviewers, what is to be said? Shall we not be deemed presumptuous if we venture to hint that it is worthless? The author laboriously strives to prove that instinct and reason have nothing whatever to do with each other; but his arguments we do not intend to follow, for in truth they are so feeble and unintelligible, that it is not worth while to make them out—"he merely performs a circle upon the waters, yet is quite satisfied that he has got safely over to the other side; for, being without chart or compass, he has nothing to convince him that he has made no head." When we add that the words which we have quoted are used by the author in speaking of Mr. Darwin, we have sufficiently proved his incompetence for the task he has set himself; indeed the book is almost beneath notice, did not its rapid sale prove that it must be read and approved. We can scarcely imagine its finding favour with intelligent persons, but rather suppose that it must be read by those who, knowing nothing of science, are readily taken in by the display of learning which it contains. The many anecdotes which enliven it no doubt also add largely to its attractions; but here again we can only praise the author's industry in collecting; scarcely one is new, and most of them have been reprinted a hundred times—indeed the largest number are taken from the Encyclopædia Britannica! Whether they be well authenticated or not is no matter; probable or improbable, all are alike implicitly believed by Mr. Garratt, and arguments are founded on the "facts" he has brought forward. The following will serve as a fair specimen of his reasoning. "Seeing, then, that those animals only which are adapted to serve man's immediate purposes are sufficiently intelligent to benefit by instruction, and that within very narrow and uniform limits, what, we ask, is the significance of the adaptation? Does it open to us any pathway by which we can approach the meaning of the Deity? If so, it throws a great light upon our road, for we may rest assured that whatever the Divine intention was, so, to all intents and purposes, the thing really is. His design was not surely that the animal should reason, or the power would not have been so defective and circumscribed. We see that there is just enough intelligence given for the animal to understand all the signs necessary to facilitate man's government over it, and not enough, as we take it, to produce the ability to reason. It serves all the purposes of the former, but gives several plain indications that the animal was not destined for the latter."

In conclusion we must express our regret at being compelled to speak so harshly of a conscientious and pains-taking man, but we conceive that this is precisely the kind of book calculated to do mischief; and we therefore feel ourselves bound to warn our readers to trust neither his facts nor his arguments.

Books Received: *Plantæ quædam niloticæ, &c.* By G. Schweinfurth, with 16 lithographic plates. Berlin, Reimer. This is a systematical account of some plants from the region of the Nile, collected for the late Baron de Barnim by Dr. R. Hartmann, his companion. The collection is not very interesting, consisting for the most part of well-known plants. One of the most remarkable statements is that the South American *Hippeastrum vittatum* grows wild in dry places of the valley of the Tacaze river in Abyssinia. Surely this is some mistake. There are also a Dorstenia (!) from Sennaar; and a Canna from the same country.——*The Helping Hand*, by Adelaide Alexander (Hogg & Co.) is a guide to the study of the New Testament illustrated by neat Maps and views of scenery. 12mo

Trade Lists Received.—Barr & Sugden's *Floral Guide to Winter and Spring Gardening*, 56 pages, full of useful information, in addition to lists of all sorts of Bulbs, and many other plants.——W. Wood & Son, Woodlands Nursery, Maresfield, *Catalogue of Roses, and General Catalogues of Ornamental Trees and Shrubs, Bulbs, Seeds, &c.*——Paul & Son, a *Catalogue of Select Bulbous Roots*, on Sale at "The Old Cheshunt Nurseries," Herts.——N. J. Nicholson, *Catalogue of Strawberries* cultivated at Egglescliffe, near Yarm, Sept. 1, 1862.——B. S. Williams, Paradise Nursery, Holloway, a *Descriptive Catalogue of Hyacinths and other Bulbous Roots*, together with a supplemental list of new and rare plants. A useful guide, interspersed with valuable cultural notes.——Butler & McCulloch, Covent Garden, *Autumn Catalogue*, containing a choice collection of Dutch and Cape Flowering Bulbs; also choice varieties of Achimenes, Gloxinias, Carnations, Picotees and Pinks—in all 50 pages, in which will be found, in addition to copious lists of varieties, many excellent hints on matters relating to cultivation.

Garden Memoranda.

Messrs. Waterer & Godfrey's, Knap Hill, near Woking, Surrey.—The glory of this nursery is undoubtedly its Rhododendrons, which when in bloom in May and June are unequalled for beauty and effect; but it also contains a most extensive collection of hardy plants of another description, and among other things a valuable assortment of Conifers, varying from handsome saleable plants to trees 30 and 40 feet in height. Of the latter sizes are various specimens of Douglas Fir, now covered with red cones; Araucaria imbricata, Taxodium sempervirens, Deodars, Abies nobilis, on which are multitudes of cones, now being gathered, and Pinus insignis. Large specimens of the last withstand the winters here uninjured; but small plants in some instances suffer considerably.

Of Pinus Cembra, macrocarpa, muricata, tuberculata, and radiata, we noticed many fine examples; also beautiful specimens of lasiocarpa, *alias* Abies amabilis, from 2 to 5 feet in height. The last in its native country, Northern California, is said to form a magnificent tree, not unfrequently as much as 200 feet in height. A fine specimen of Abies Menziesii is bearing cones; in an ornamental point of view this is not inferior to Douglas Fir, and it is said to be a tree of quicker growth. Of Abies Williamsoni, or Mertensiana, the Californian Hemlock Spruce, we noticed some beautiful plantations, in which were examples quite 10 feet in height; and than plants of Abies nobilis, Nordmanniana and Pinsapo, nothing in their way could possibly be handsomer. Of these there were thousands of plants, varying from 3 to 5 feet in height, bushy and beautifully symmetrical in form. In the light sandy soil of this district Araucaria imbricata and Deodars grow with wonderful rapidity and soon form handsome specimens, of which thousands are now offered at so cheap a rate that planters desirous of creating immediate effect are enabled to do so at inconsiderable expense. The same remark also applies to Chamæcyparis sphæroidea variegata, one of the prettiest of variegated plants, and one which is said to have been planted largely and with admirable effect at Elvaston. To the genus Chamæcyparis must also now be referred Thujopsis borealis; a plant about 3 feet in height in this nursery has borne cones, the examination of which leaves no doubt that it is the C. Nutkaensis of Spach. It is, we need not say, a plant of wonderful beauty, and in its native country, the north-west coast of North America, is said to attain a height of not less than 100 feet. Equally beautiful is Cupressus Lawsoniana, a graceful tree of rapid growth, and possessing Fern-like branches, the admiration of everybody. When young the leading shoots droop not unlike those of a Deodar. Of this Messrs. Waterer & Godfrey have many thousands of flourishing young plants, all raised from seed sent to them by Mr. Murray, from California, where he states that it was the handsomest tree seen during his whole expedition in that country. We also noticed a beautifully variegated variety of this Cypress. Among Junipers were many splendid examples of the Chinese variety, which for hardiness and general usefulness has few rivals, and we also noticed many handsome plants of the Irish sort, varying from 3 to 8 feet in height.

Among Yews the most important in an ornamental point of view is the golden variety, which when worked on the common and Irish kinds, as may be seen here, has an extremely fine appearance. For winter decoration, especially, combinations of this kind are wonderfully attractive; the great golden heads set on sombre pedestals, lighting up the shrubbery with sunny spots, when otherwise there would be little to interest. In short too much attention can hardly be paid to the selection of high coloured plants of this kind for winter gardening, a good exemplification of which occurs in a border here planted with skill as regards varying the different tints of hardy shrubs. In such plantations, too, Thuja aurea, gigantea, and Lobbi might be made to play useful parts; gigantea

has singularly deep green shining foliage, and of aurea it is impossible to speak in too high terms; specimens of it here, measuring from 2 to 10 and even 15 feet in circumference, form during spring perfect globes of gold.

Wellingtonia gigantea, we may mention, grows remarkably well in the light soil of this nursery, in which were several plantations of handsome young plants.

Of Abies clanbrasiliana and other dwarf varieties of Common Spruce there are some very fine examples, many of them 20 years old, and not more than from a foot to 18 inches high; of the Weymouth class of Pine, two, pumila and compacta, are very small and highly interesting varieties, which with lovers of miniature trees must be favourites.

Among ornamental trees, of Ailantus glandulosa, the silkworm tree, there is a fine specimen; it grows into a large size with great rapidity, a young tree stated to be not more than two years old being quite 10 feet in height, and bearing leaves 3½ feet in length. Purple, Weeping and other Beeches, are planted both in the shape of large and small specimens, and of Salisburia adiantifolia we noticed four or five of quite the dimensions of forest trees. Sophora japonica pendula is a determined Weeper, closer and handsomer than even the Weeping Ash itself.

Of gold striped Holly there are large plantations, the beauty of which it would be difficulty to overrate. They consist chiefly of half-standards with clean stems and finely formed heads. Nice specimens of other sorts of Holly are also plentiful, especially of a variety called Waterer's, a compact variegated kind, which on account of its uniform growth is well adapted for planting in pairs at corners or near entrances. Small plants of this and of the first named variety would make suitable material for filling flower beds in winter, and among other things for this purpose we might also name Ilex opaca, Aucuba japonica, Andromeda floribunda, Golden and Common Yews, small leaved and variegated Rhododendrons, Yuccas, Thuja aurea and dwarf plants of T. Wareana, Ledums, Azalea amœna, Berberis Darwinii and aquifolium, Laurustinus, Skimmia japonica, hardy Heaths and Menziesias; of the last the red, purple, and white sorts are now in bloom, the latter, from the abundance in which the flowers are produced, looking not unlike a plantation of Snowdrops.

Of standard Roses, we noticed an admirable quarter, in which the stems were remarkable for straightness. This was also a distinguishing characteristic with regard to other standards in this nursery.

Messrs. Lane's Nursery, Berkhampstead.—*Immense Crop of Grapes.*—A more unqualified success in the cultivation of Grapes without artificial heat was seldom, if ever, seen than the example now to be viewed in a long span-roofed house at this establishment. The house is principally planted with Black Hamburgh, Black Prince, and West's St. Peter; and so close together are the bunches upon the Vines that they may literally be said to swarm. As a white Grape, the Golden Hamburgh forms a very striking feature at the lower end of the house, and certainly would fully justify any one in the belief that this is the Queen of its class, as an early white Grape. A single rod across the house bears 24 very fine compact bunches, which must weigh from 1 lb. to 2 lbs. each, all of a most beautiful amber colour, and not a shanked berry to be observed. I have seen this variety in admirable condition at many places, but altogether Mr. Lane's example surpasses any of my previous knowledge, and ought to be seen by all who have any doubts about the merits of this Vine. *X. Y. Z.*

Miscellaneous.

The Wax Tree of Japan.—On this remarkable plant, the Rhus succedaneum of botanists, the *Bulletin de la Société d'Acclimatation* publishes an interesting paper by M. Eugène Simon, now at Nagasaki. The vegetable wax of Japan is one of the chief articles which that country exports. It is not exactly of the same nature as common wax, since it melts in summer at the common temperature; but this inconvenience is obviated in Japan by protecting the candles made with this wax by a coating of bees'-wax. It appears that in England a process has been discovered for increasing its consistency, since the demand for the article from that quarter has considerably increased of late. The tree itself might be easily acclimatised in the southern parts of France. It thrives on mountains and on stony and barren ground, unfit for other agricultural purposes. M. Simon has sent over about 20 kilogrammes of its seed for trial. The young trees are planted in Japan along the highways, when they are two years old, leaving a distance of about 3 feet between the stems; but if planted in squares, the distance must be double. The trees are kept low by lopping, and trimmed in the shape of pyramids. In the fifth year after planting each tree yields on an average 4 lb. of seeds; in the eighth year, 6 lb.; in the 10th, 18 lb.; in the 12th, 40 lb.; in the 15th, 60 lb.; in the 18th year the tree enters upon its decline; 400 lb. of seed yield 100 lb. of wax. At present 200 lb. of this wax are sold in London at the price of 5*l.*; so that a plantation of 10,000 trees in their prime may produce 4000*l.* The seed is gathered towards the end of autumn, threshed, and then left to dry for a fortnight, after which it is slightly roasted. It is next crushed under a millstone, and the produce exposed to the heat of steam in canvas bags; the wax is then obtained by the action of a screw press. This wax is of the third or lowest quality; to bleach it, it is rasped, rinsed in water, and then exposed to the action of the sun and dew for three days. A still higher quality is obtained by repeating this operation. *From the Times.* [We must once more enquire what this has to do with acclimatation. There should be plenty of young wax trees in this country from Fortune's seeds.]

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Be prepared with specimen plants in flower to supply the places of such as may be going out of bloom. If early Camellias are wanted let some of the strongest be placed in a rather close house, to forward them, giving them a regular supply of manure water; some of the earliest Epacrises might also soon be placed in a close part of the greenhouse, where they will likewise prove useful for early decoration; Daphnes and many other plants, provided their flower buds are prominent. Aim at keeping the atmosphere of plant houses rather dry, using just enough fire-heat on damp cold nights to allow an opportunity of giving sufficient air to keep the atmosphere in motion, so as to prevent damp being injurious. Twiners on the roofs of stoves should now be more than ever kept within bounds, cutting back all shoots that have done flowering, and tying the others so as to obstruct light as little as possible. Place specimens ripening their wood in the coolest part of the house, and water sparingly at the root. Achimenes, Gloxinias, and Gesneras that are properly ripened off may be stored away in any dry place where they will be secure from frost, but take care to place them where they will be free from damp, and they should not be exposed to a lower temperature than about 45° or 50°; many valuable plants of this kind have been lost through storing them in dry sheds, &c. Hard-wooded shrubs, such as Ixoras, that have not made wood after flowering, should be encouraged with a warm moist temperature, syringing them lightly overhead, and shutting up the house early in the afternoon. Get any growing plants that require more pot room shifted as soon as convenient, in order to get them well rooted into the fresh soil before winter.

FORCING DEPARTMENT.

Pineries.—Plants now showing fruit will require some attention. Let them be kept rather warm and dry until after blooming, when they will not be so readily injured by a damp or low temperature. Those who grow Pines in pots should gather all those showing fruit together, so as to be able to treat them more judiciously than can be done when they are scattered throughout the whole stock. Plants that have been kept cool and dry for some time past, in order to prepare them for fruiting, should now be placed in a brisk heat, taking care to thoroughly moisten the soil about their roots, so as to get the fruit fairly set and safe before November. Continue to afford young growing stock a warm moist temperature, with plenty of manure water at the root; but use fire heat sparingly, and avoid drawing the plants by a high night temperature. With proper management and convenience, 70° will be quite safe if the weather proves favourable. With modern facilities we ought to produce two crops of fruit in the time that was necessary to produce one under the old style of houses and heating; but this cannot be done by those who are afraid to keep their plants growing after the decline of the season. Growers, however, who have still to contend with the disadvantages of dung pits will do well to regulate the temperature so as to avoid weakly growth, and this must also be attended to under any circumstances.

Vineries.—Take advantage of the present dry weather to get the wood of young Vines well ripened; use moderate fires, with a free circulation of air, and where the object is to ripen the wood keep the atmosphere as dry as possible. Late Grapes not yet ripe should also be assisted with fire heat and a free circulation of air, in order to forward the ripening. Keep ripe fruit cool with plenty of air, to prevent injury from damp, and cut out any decaying berries directly they are perceived. Keep the outside borders covered with asphalte shutters or other material that will throw off wet. Houses in which the wood is thoroughly ripe can hardly be kept too cool, and the ventilators of these should be left open night and day in dry weather. This will prevent the continuance of growth, and is the best means of getting the Vines into a dormant state ready for pruning. The border of the early house should also be covered with something to protect it from wet; for although under ordinary circumstances there would be no immediate necessity for this, it will be better done now perhaps than later.

FLOWER GARDEN AND SHRUBBERIES.

Tender plants in borders must be taken up when there is the slightest appearance of frost. As has been often recommended, give careful attention to young stock, and recollect that sturdy, well-rooted plants are much easier to winter than large plants with long-jointed soft wood. Late rooted cuttings may still be potted off; but unless they are very thick in the cutting pots we would prefer wintering them in these to shifting, for they occupy much less space in the cutting pots, and having more space for their roots, they are frequently more healthy and require less attention in winter than those that are potted singly. Square pans 12 inches wide and 5 inches deep are very suitable for wintering cuttings of Verbenas, Lobelias, and other plants which can be kept in a small state. One of these will hold some 20 good plants, and with care, to prevent their being injured by damp, they will winter quite as well treated in this way as if potted singly in 4-inch pots, and a vast quantity may be stored in a small space. Where things of this kind have to be kept in cold frames or pits, the plants should be potted singly, as they would be very liable to damp off, notwithstanding every care that might be taken of them if placed thickly together in pans, and put where it may be impossible to give air for weeks together. Let us, however, protest against the system of wintering bedding stock in such unsuitable places. This practice is generally adopted from some mistaken notion of economy; but if a fair calculation of the time required to attend to plants wintered in this way could be made, and all the losses, &c., taken into account, it would be found to greatly overbalance the trifling cost of putting up a proper heating apparatus and furnishing a few bushels of coke or coal annually. Where alterations are projected or in hand, these should be proceeded with in the most expeditious manner.

HARDY FRUIT AND KITCHEN GARDEN.

Gather fruit and store it as it ripens. Take advantage of the present comparatively dry state of the ground to get Celery earthed up. On heavy soils it is sometimes necessary to surround the plants with sand or sifted ashes, to prevent their rotting off, which they are apt to do if surrounded with soil that holds much water. Thin growing crops before they become weakly and drawn through standing too closely together. Stir the surface of the soil deeply among them to admit air to the roots, and keep down weeds. Potatoes may be taken up as soon as the tops are dead, and let the diseased ones be separated from the sound. It is to be hoped that the late dry weather may be the means of arresting the progress of the evil.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Sept. 17, 1862, as observed at the Horticultural Gardens

Sept.	Moon's Age.	Barometer.		Temperature					Wind	Rain.
				Of the Air.			Of the Earth			
		Max.	Min	Max.	Min.	Mean	1 foot deep.	2 feet deep		
Thurs. 11	17	30.067	29.951	72	35	53.5	61	59	N.E	[illegible]
Friday 12	18	30.133	29.797	72	52	62.0	60	58½	N.E	[illegible]
Satur 13	19	30.046	29.911	70	54	62 0	61	59	[illegible]	[illegible]
Sunday 14	20	29.770	29.733	73	50	61.5	61	59	E.	[illegible]
Mon. 15	21	30.040	29.927	75	50	62.5	61	59	E.	[illegible]
Tues. 16	☾	30.188	30.159	71	41	56.0	61	59	N.E	[illegible]
Wed. 17	23	30.317	30.308	79	31	55.0	61	59	N E	[illegible]
Average		30.077	29.969	73.1	44.7	58.9	60.8	58.9		[illegible]

Sept. 11—Fine throughout; cool at night.
— 12—Foggy; fine; slight shower; overcast.
— 13—Fine; overcast; cloudy and fine.
— 14—Overcast; rain throughout the day.
— 15—Cloudy; fine; very fine; partially overcast.
— 16—Overcast; fine; very fine; dry air; fine.
— 17—Overcast; very fine; hot sun; cold at night.
Mean temperature of the week 2 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Sept. 27, 1862.

Sept.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 21 ..	64.9	45 0	55.0	19	0.50 in.	2	4	6	2	6	7	[illegible]	3
Mon. 22..	66.9	46.1	56.5	18	0.80	—	3	9	1	6	10	5	2
Tues. 23..	66.4	46.4	56 4	17	1.21	—	6	7	2	6	9	5	1
Wed. 24..	65.8	45 0	55.4	16	0.75	2	8	2	1	5	11	6	1
Thurs. 25..	65.6	44.0	54.8	17	0.30	2	4	3	3	6	11	6	1
Friday 26..	65.2	44.5	54.3	18	1.68	—	5	6	2	8	1	2	3
Satur. 27..	65.2	41.1	55.1	22	0.57	—	2	4	2	7	11	4	2

The highest temperature during the above period occurred on the 25th, 1832—therm. 82 deg.; and the lowest on the 26th, 1855—therm. 26 deg.

Notices to Correspondents.

Books. *A. D.* Williams on Ferns; do. on Orchids; Macintosh's Book of the Garden; Thompson's Gardener's Assistant.

Cotton Seed: *N B.* To send a ton of this to Queensland, in bulk, would be an experiment of very doubtful issue. We should put it into very coarse bushel bags, 3 pecks only in each bag, and cause them to be suspended somewhere between decks in dry well-ventilated places. In any other way large quantities would probably heat and perish.

Names of Fruits: *Anon.* "Exhibited by Mr. F——" was on the bit of card pinned to the fruit, a remarkably large specimen of that excellent Apple, either for kitchen or table, the Wormsley Pippin.—*Z L A.* Your Plum, a small black variety, was decayed and bruised out of all shape.—*Alpha.* Too much decayed for any opinion being given as regards the comparative merits of the Late Admirable and the "Seedling" from it, a melting yellow fleshed variety. You had better place a small bell glass over the fruit, and thus you may preserve it for the Fruit Committee.—*H B.* No. 1, Ne Plus Meuris; 3, Blenheim Pippin; 4, Uvedale's St. Germain. The Plum is the Ickworth Imperatrice, and most excellent it is.—*F B.* 1, Williams's Bon Chrétien; 2, Beurré Diel; 3, Catillac; 4, Uvedale's St. Germain.—*Capt. H H* 2, Passe Colmar; 3, a bad sort; 4, Chaumontel; 5, decayed, probably Williams's Bon Chrétien; 6, Comte de Lamy.

Names of Plants: *Questor.* Tamarix gallica.—*James.* Achillea Ptarmica, Sneezewort.—*J G.* Lolium tenue.

Nurserymen's Catalogues.—The Editor would be obliged by having sent him, as soon as convenient, all Catalogues and Trade Lists for the present and coming season.

Water: *J B C.* Whether or not lead pipes are fit to convey water for drinking depends upon the quality of the water. If very hard they may be used safely, but if pure, as is the case with perfectly clean rain water, they are dangerous. We should prefer strong vulcanised India Rubber lined with canvas.

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11*l.* 11*s.* per ton for cash.
Peter Lawson & Son, 27, Great George Street, Westminster.

LAWES'S WHEAT MANURE for AUTUMN SOWING.

In consequence of the high price of Peruvian Guano, J. B. Lawes has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of J. B. Lawes, or through any of his appointed Agents. Price ... per ton at the Factories, Deptford and Barking Creeks.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American and other Cakes at market prices.

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PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
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SUPERPHOSPHATES of LIME, &c.

All the above being in the finest condition. They also continue to supply

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The Directors of this Company are prepared to supply for Autumn Crops their PURELY ANIMAL MANURE at 8*l.* per ton. Delivered in London in quantities not less than 2 tons.

Orders received by the Manager, at the Works, River Head, Pocklington, York; the Secretary, or any one of their Agents.
By Order of the Board,
R. S. Parker, Secretary.
76, King William Street, London, E.C.

40 to 45 per Cent. of Soluble guaranteed.
1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.

Extract of Opinion from Mr. Way, *January* 23, 1862.

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Extract of Opinion from Dr. Voelcker, *January* 1862.

"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."

The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.

Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

Howard's Steam Cultivator.

To the Editor of the Agricultural Gazette.

Sir,—Our steam-cultivating apparatus can be seen at work daily, within a mile of Bedford Station. By recent improvements in our Cultivator, we cut and move the whole of the ground at one operation, and this with as little expenditure of power as it has taken to cut only a portion. By means of a simple slack-rope apparatus and improved porters, we carry the rope completely off the ground, thus very materially reducing the wear-and-tear, as well as loss of power. We invite intending purchasers to come and judge for themselves.

Your faithful servants,
James & Frederick Howard.
Britannia Iron Works, Bedford, Aug. 16.

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For price and particulars apply to William Smith, Woolston, Bletchley Station, Bucks.

FOWLER'S PATENT STEAM PLOUGH and CULTIVATOR may be seen at Work in every Agricultural County in England. Addresses of Farms (which are open to inspection), given on application, where the Machine has been at Work for three or four years.

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The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

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Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.

Gentlemen, Farmers, or others, desirous of practical knowledge in Chemical Analysis, or Assaying, may receive instruction at the College, where the extensive Laboratories give ample facility for pursuing their studies, and there is accommodation for a limited number of Resident Students.

Full particulars of terms will be forwarded on application.

STEAM CULTIVATION.—The Subscriber wishes to meet with an AGRICULTURAL ENGINEER or Manufacturer of Agricultural Implements who would co-operate with him in introducing important IMPROVEMENTS in STEAM CULTIVATION, whereby the cost of the apparatus is greatly reduced.—Alex. Leslie, Turriff, N.B.
[Not to be repeated.]

Merino Rams of the Bourgignon Breed.

FOR SALE, a Limited Number of RAMS of this breed, which is in high favour amongst Australian Sheep Farmers, and obtained Prizes at the Paris Exhibition of 1860, and the International Exhibition of 1862, at Mons. Guichard's Chateau de Jouaney, near the Gens Station on the Paris, Lyons, and Dijon Railway.

Lincolnshire Long-Wool Rams.

MR. JOHN CLARKE, of Long Sutton, has again the pleasure to inform his friends and the Breeders of Sheep generally, that he purposes showing, as usual, selections of his RAMS, as follows, viz., at

SPALDING FAIR, on THURSDAY, September 25.
LONG SUTTON FAIR, on FRIDAY, September 26.
WISBECH MARKET, on SATURDAYS, September 20, 27; and October 4.
PETERBOROUGH FAIR, on THURSDAY, October 2.
CORBY FAIR, on MONDAY, October 6.

Long Sutton, Lincolnshire.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 20, 1862.

MEETING FOR THE ENSUING WEEK.

Wednesday, Sept. 24 { Agricultural Association at Berkeley, Gloucestershire.

Our columns are this week full of the subject of Steam Cultivation, just as many of our readers are now fully occupied with it in the field. We hope for several weeks to come to treat it here as being what undoubtedly it is there at this season of the year—the leading agricultural topic. And in each succeeding Number of this Journal Fowler, Howard, and Smith shall be heard through the experience of one or other of their clients.

It is plainer every day to any one who studies the subject and inquires into its recent history over the scores of farms where it is now being illustrated, that the real contest which these rival makers have to wage is not with one another, but with agricultural *vis inertiæ*. We do not lament in the general interest that the rivalry exists, but it certainly is to be lamented that there should be any other contest than that which obtains among agricultural implement makers in general.

Mr. John Fowler, in partnership with a leading manufacturing firm in the north, is in a capital position for supplying his many clients. Mr. Smith ought to be in similar partnership on similar conditions. Mr. Howard manufactures—and no one has greater facilities or has had larger experience—for himself. Amongst them all, probably 200 or 300 sets may be or are on the point of being annually supplied. But the field is enormous. Twenty years ago the field for tillage implements was as large as now, but no one thought of the growth of such firms as Ransomes and Howard, because the supply had till then been met by local makers. Here, however, an enormous capital is required—no mere local manufacturers can supply these costly implements. The whole country will be in want of them, and there is ample room for many of the largest firms to engage at once in their manufacture.

What individually is most for the interest of these manufacturers, is not that their rivals should be defeated, but that the eyes of clay land cultivators, and of large tillage farmers generally, should be opened to the importance and real success of steam cultivation. Fowler is the better for the rivalry of Smith and Howard—each helps the other by every fresh proof that he can furnish of the successful application of steam power to the cultivation of the land; and there is variety enough in those circumstances of the land which cannot easily be altered, and variety enough in the circumstances of the tenant farmers of it to ensure that steam tillage being once granted to be a success, all the various forms in which it has been successfully carried out will be largely patronised.

Let it be understood, then, that our object in thus giving frequent pictures of what Howard's, Smith's, and Fowler's clients have been doing is not to advocate the preference of any one of them. Our object is that the readers of our papers on the subject may, by as full and accurate account of the experience of others as can be obtained, be enabled to form a preference for themselves, founded on their knowledge of their own case and of what has thus been done in similar cases elsewhere.

We go from farm to farm, receiving, readily and welcome, an account of what on each has been accomplished in steam tillage; and we reproduce the statement here, whether it be one of accident, and carelessness, and disaster—of expensive education into the proper working of the apparatus—or as it often is of unvarying success. Our object is to let agriculturists know exactly what others of their number are about.

A fine autumn with the steam plough will certainly be of unusual advantage this year to the country. On our clay lands especially, the effects even of 1860 are not yet obliterated. The fallows of that year were no fallows at all: the Wheats which succeeded them were necessarily foul; and now the Bean stubbles after the Wheat are fuller of all manner of filth than ever we have seen them. It has been impossible in the clay land districts of the country to keep the land clean; the horse power, which could alone have done it, would have more than eaten all the produce.

It is in such circumstances as this that the steam plough makers now come forward. The men whom they would supply have never been so conscious as now that the present system is both expensive and inefficient. Clay land farmers will listen more readily now than ever hitherto they have done to the offer of a substitute for horse power; and we are anxious to use the opportunity in earnest for urging the adoption of what is unquestionably the great agricultural improvement of the century.

On Wednesday next Mr. Strafford will dispose of a first-class herd of Short-horns, the property of E. Hales, Esq., at North Frith, 3 miles from the Tonbridge Station on the South Eastern Railway. Among the cows is *Charmer 5th*, one of Mr. Atkins' celebrated *Charmer* family, which gave a character to his sale at Milcote a few years ago. Several descendants of the *Cambridge Rose*, *Waterloo*, and *Duchess* families of Kirkleavington breeding—more than one of Mr. Troutbeck's *Gwynnes*, and several descendants of Lord Ducie's *Bessy* by Helicon. The bulls include the Fourth Duke of Thorndale, a son of *Duchess* 66, and one of the five bulls imported last year from Mr. Thorne's valuable herd; Duke of Kent, Second Duke of Kent, and Marmion, descended from *Cambridge Rose*. Many first-class tribes of the breed are thus well represented, and such an opportunity has not occurred for a very long time of acquiring animals of the very best pedigree in the country.

—— At Mr. Sanday's final sale of his Leicester flock last week, 37 rams averaged 12*l.* 12*s.*, 174 aged ewes averaged 5*l.* 18*s.*, 75 shearling ewes averaged 7*l.* 1*s.* The total sale amounted to 2215*l.* 10*s.*

—— At Mr. Rigden's annual letting and sale from his South Devon flock last Wednesday, bad weather interfered with the attendance. 115 ewes were sold at somewhat of an advance on last year's prices. Rams were let at from 57 guineas, the price of the winner of the Battersea Gold Medal sheep, downwards.

The precise extent to which the sheep pox has already manifested itself is not known; but many new facts have come to light in the course of the past week, and the excitement produced amongst the farmers in North Wilts by this subject is increasing instead of abating.

It has been reported in various papers that

Wilton Fair passed off without any indication of *Variola ovina* interfering with trade, but this is a mistake. The number of sheep at the fair last Friday was 45,000 less than usual, and as the dealers needed stock high prices were realised. Many of the sheep were examined for the disease, but how can such a mass be inspected, except by a regiment of veterinarians? and even then, how could those sheep be recognised which are, to use a common expression, "sickening for the disorder," or, in technical language, passing through the period of incubation?

As yet no further spread has to be recorded on the Avebury Down. Not so, however, with regard to the flocks east of Marlborough. Mr. CHURCH's flock is suffering severely, many fresh cases occurring during the last week amongst the lambs, and one amongst the ewes.

There is no doubt that we shall hear a great deal more about the matter in consequence of the numerous fairs; in consequence also of the fact that rams are now travelling to be placed amongst the ewes; and also because of the very general ignorance manifested as to the most common precautions calculated to check the spread of a contagious disease.

A good many deaths have to be recorded amongst the inoculated sheep. Farmers have not considered the extent to which a flock of a thousand sheep at this season of the year will be injured by the production amongst them even of a mild form of the disease.

STEAM CULTIVATION.

WOOLSTON, NEAR BLETCHLEY.

A WEEK or two ago a "model steam-cultivated farm" was announced—the purchase of an estate near Bedford on which steam power is to be employed in the tillage of the land, as well as in preparing its produce for the market. But there are many farms in the country to which the term already well applies; and to none is it more applicable than to the farm of Mr. Smith, at Woolston. Some years of experience here have proved the power of the steam-drawn cultivator to produce a clean and fertile tilth.

A good deal of his land is originally a very unkind clay—some of it is the richest loam in the country—a little is comparatively light Barley land. Over all, excepting where Clover is ploughed up for Wheat, the steam cultivator is annually drawn—sometimes only once, to be cross-cultivated by horse-power, occasionally both ways by steam-power. The land is remarkably clean, and the stubbles are wonderfully strong; while almost everywhere around the farm you have only to look over the hedge, and you will see foul and weak stubbles on similar land, the labour on which has been threefold what Mr. Smith has spent.

Till within the last year Mr. Smith has been remarkable both among his rivals and among his followers, for the comparatively small extent to which as an original and enthusiastic steam ploughman he advocated the application of steam-power for cultivation. He did not work his steam engine more than 14 days in the year in order to do the heavy cultivation needed over about 110 acres, for the most part of heavy clay land. A first deep stirring or smashing up was nearly all that was then accomplished. He needed three horses for the carriage of his crops and his manure, and he was not going to let them lie idle while he burnt fuel and incurred tear and wear, and ran the risk of breakage, and paid extra wages in order to do that by steam-power which they could do almost as well at no increase of expense. The cross-cultivation, the ploughing, the harrowing, the "bouting" and subsoil ploughing between the rows thus "bouted" up, were done by horse-power. This season, however, Mr. Smith has introduced a combined cultivator and drill, and he is thus the first to apply steam-power to sow the seed of his crops, as well as to break up the ground for its receipt. From being among the first to apply it to cultivation, but then confining it only to the roughest work, he is now the first to apply it to the sowing machine, thus bringing it to bear on the last as well as on the first operation of cultivation. Certainly the immense crops of Beans upon the land, the heavy produce of Barley, the great strength and cleanliness of the Wheat stubble, and the cleanliness of the land in general, speak well for the operation both of the cultivator and the drilling machine.

Having last week walked through the fields I can speak to all this with confidence. From the old-fashioned comfortable farmhouse, and through one of the best bits of pasture in the county, you come on to the low lying, level, rich loamy arable fields.

1st. A Bean crop standing out on 12 acres after Wheat; 10 tons of dung carted over it in autumn, and the whole smashed up by steam-power 7 or 8 inches deep, cross-cultivated by horses, left till February, and then planted and cultivated at one operation by the steam drill; since hand-hoed three times for 11*s*. per acre. This crop is exceedingly heavy, and the land is very clean.

2nd. Swedes and Mangel Wurzels, 18 acres after Wheat; manured in autumn with 10 tons of dung; smashed up by steam-power; cross-cultivated, ridged up in 3 feet 'bouts,' subsoiled between the rows, all by horse-power, and the seed drilled on the top of the rows. A magnificent growth of both Swedes and Mangels now upon the land.

3d. Wheat and Oats (two pieces) 11 acres after Beans and Oats respectively. The latter was sown and cultivated in one operation upon the former stubble by Mr. Smith's new steam-drawn cultivating drill, and has yielded well.

The 4th field is now a very strong Wheat stubble (12 acres) after Clover, ploughed by horse-power. The 5th field is Clover lea after Wheat, 12 acres. The 6th is a very heavy Barley crop standing in stooks upon the land, a remarkably heavy crop of fine Chevalier Barley after Turnips two thirds fed off. The fold was finished one day, and on the next, without any other preparation whatever, the steam-drawn cultivating drill was put to work, and 14 acres of land were seeded and cultivated at one operation in 17 hours.

The heavy land on the hill side, 38 acres, is cultivated in four fields. First, 8 acres of Wheat after Beans, smashed up by steam-power, sown broadcast with 14 bushels of Wheat, and cross-cultivated in with horses. A very strong, stiff, and clean stubble. No. 2. Beans after Wheat, smashed up in autumn after a dressing with 10 tons of dung; cross-cultivated with horses, and then planted with the steam-drawn cultivating drill—as bulky, heavy, well podded, clean a crop as any one would wish to see.

3d. Swedes, 12 acres, half a plant, cultivated just as the crop of Swedes and Mangels already described on the lighter land; but manured with 2 cwt. of guano sown broadcast.

4th. A very heavy crop of Barley (10 acres), after roots which had been for the most part fed upon the land with cattle. Put in with the steam-drawn drill and cultivator in 1½ day. Close by on a neighbour's land is a very inferior crop lying in swathe, which had been well put in on land where a heavier crop of roots had been fed off with sheep, the land being afterwards ploughed and drilled in the usual way.

There is certainly enough in the appearance of Mr. Smith's Bean crops and his neighbours' to give a very decided impression of the superiority of his mode of cultivation. His land is drained 60 yards apart, 4 feet deep, with 6-inch tiles upon the lighter land; 8 yards apart, 4 feet deep, with 2-inch tiles upon the stiffer land. It has now for six or seven years been thoroughly steam cultivated. A single steam smashing up to a full depth in the autumn seems to ensure a thorough fallowing of the land. No bare fallow is needed. Close by bare fallow is the rule once in every five or six years, and half a dozen ploughings with 4-horse teams are then given, with great waste of labour. The Wheat after such a costly tillage is nowhere so stiff, strong, and bulky as on the Woolston fields, and somehow or other the Beans after the Wheat after this costly tillage are nothing like so strong nor yet so clean. It is an extraordinary thing that the fields round Woolston should still be worked after the old fashion of laborious horse tillage, when the simpler, quicker, cheaper, better plan has been now for so many years successfully in operation close by.

2. *Loughton, near Woolston.*—There are, however, many of Mr. Smith's neighbours who are giving up the plan of a costly fallow by horse cultivation, followed by a gradual relapse to the need of another, which under horse tillage seems to be unavoidable—and he is a prophet not altogether without honour even in his own country.

Since April 1 he has sold 58 sets of his apparatus into different parts of the country, and the use of them is spreading round himself. There are sets on hire which are constantly at work; there are sets, engine and all complete, worked by some tenant farmers; and there are sets of apparatus purchased by others who hire an ordinary threshing engine to work them. Thus Mr. Bignell, of the Rectory Farm, Loughton, close by Woolston, has a set on this plan, which seems very well adapted to cases where the tenant does not desire materially to increase the investment of capital in the work. The engagement with the owner of the threshing engine is that it is to be at Mr. Bignell's command on whatever days he may desire it—a price somewhat above the ordinary hire being agreed upon in consideration of the right of priority of hire, which is a necessary feature in all such arrangements.

The engine is thus forthcoming at an annual cost, without any expenditure of capital, which is confined to the 200*l*. needed to buy the cultivator, rope, snatch blocks, and rope porters—a sum not much more than is generally spent on the horses which may be thus displaced.

In addition to this the tenant benefits by letting out his apparatus for hire, whenever it is not employed at home, so that there can be no doubt whatever of his finding it a direct profit, as well as of his finding the benefit of cheap and thorough cultivation by its use at home.

The farm is nearly 300 acres in extent, of which upwards of 220 are plough land. It is for the most part a heavy soil, occasionally lighter by the admixture of gravel, but it is nowhere land which would under ordinary management be capable of Turnip cultivation. It is not perfectly drained. Nearly 100 acres have been this year in Wheat, 30 in Barley, 26 in Beans [illegible] Oats, 26 in Swedes, Turnips, and Mangel Wurzel, [illegible] Clover, and 12 in Vetches. The fields vary [illegible] 40 acres in extent—a good size for steam cultivation, and a good deal of improvement has been [illegible] throwing fields together for this purpose.

The land is managed with six horses [illegible] one. It used to be worked by 10 or 11. [illegible] the horses were over-worked, and they were [illegible] expensive to keep good. Now, the heavy work [illegible] taken out of their hands, and they are kept [illegible] expense and in much better condition. There cannot be a doubt of the reality of this contrast. It is [illegible] merely the number of the horses kept which determines the expenditure in horse cultivation. Costly feeding and still heavier expense in keeping the horse stock [illegible] to its value, made the cost of each horse formerly much heavier than it is when the horses have been reduced in number, having had all the heavy work taken from them by the steam engine.

Mr. Bignell has worked his apparatus on only 1[illegible] acres of his farm during the past year, but he has done a good deal for hire. He gets over about [illegible] acres a day for an expenditure of 15*s*. 6*d*. in wages, 5*s*. 6*d*. in coals, and say 8*d*. in oil. When the engine is stationed near a pond, of course the water-cart costs nothing. If the water has to be carted it will cost probably 3*s*. 4*d*. daily more. And the whole money cost is 25*s*. daily, or 5*s*. an acre. In addition to this there is the cost of the engine, which is 1*l*. a day, and to this must be also added the tear and wear of rope and apparatus, and the cost of repairs, all of which depends on the quantity of work done in the year; besides the interest on capital which is a fixed annual charge. These items vary under the different circumstances of soil and management. But the sums fairly chargeable on an average are very much what Mr. Smith himself declared after the Chelmsford meeting in 18[illegible]. On the 13th of November that year, in a letter to the *Mark Lane Express*, he declared that an ordinary 7-horse-power engine was strong enough to work his apparatus—that 6 inch cultivation of his Bean stubble for Wheat was accomplished at the rate of 5 acres a-day, including all waste of time in shifting from field to field, at an average cost of 5*s*. 2*d*. an acre, including fuel, wages, cost of horses for water and for shifting; while 8-inch cultivation would average 3 acres a day, at a cost of 8*s*. 8*d*. for the same items. To this [illegible] added 1*s*. 6*d*. an acre, as outside of the truth, for the cost of tear and wear of rope and apparatus. This, if it is to include all manner of charges, such as interest of capital as well as tear and wear and repair, is probably insufficient—except after years of experience, when the best management of everything comes naturally and by custom to those employed. Any one commencing steam ploughing must expect to spend more than 1*s*. [illegible] an acre in these particulars during the first two or three years; but the whole statement is a singular illustration of the good judgment which has guided Mr. Smith from the beginning, so that no changes have been made in his machinery or in his opinions since his original first start some 6 years ago.

Mr. Bignell's crops bear out the efficiency of [illegible] management. He has 26 acres of Turnips, Swedes, [illegible] Wurzel after Wheat; part of the stubble [illegible] Swedes and Wurzel was manured in autumn from the yard, and the whole was then 'smashed up' by steam power. It was cross-cultivated by steam, ridged up with horses at 30 inch intervals; farm-yard dung was put in the drills, and it was covered by the ridgelets being split by horse power. The land is covered with a splendid crop. Over a portion of the field 2 cwt. of superphosphate was the only dressing. It is a very stiff soil for Turnip culture. The Barley has been a good crop after Beans and Peas; the stubble was smashed up and then cross ridged at yard wide intervals by horses—horses scuffled between the ridges in spring, and the whole was then drilled across. A good deal of Wheat has been taken after steam tillage of a Bean and Peas stubble, and one field is after bare fallow. The crops all bear witness to the efficiency of the cultivation, and the whole farm is a capital illustration of the energy and good judgment of the tenant.

HAINAULT FARMS, NEAR ILFORD.

A large tract of land was disafforested here some years ago, enclosed, furnished with farm buildings, divided by good roads, drained, and fenced, and let to Messrs. Alison on a long lease. One of the brothers now retains the lease of 1900 acres. The land is arranged in three farms, and over the largest of them, under Mr. McRonald's management, I last week had the pleasure of walking. The farms generally are managed on the system carried on at North P[illegible] Farm, Lewisham; everything here grown is for sale—horses are almost the only stock on the farm—manure accordingly is purchased in large quantities.

Of 800 acres in Mr. McRonald's hands 100 are in Clover, 25 in Beans, 80 in Peas (Turnips after 20 of them), 30 are in Swedish Turnips (15 of them after Vetches), 12 in Mangel Wurzel, 90 in Potatoes (20 of them followed by Turnips), 15 are in Carrots, 70 in Oats, and no less than 320 have been in Wheat, and 50 or 60 acres are pasture. All the green crops, about 150 acres, receive 20 to 25 tons of purchased stable

[illegible] per acre, which is brought by barge within a few [illegible] the farm. Swedes and Mangels are all put [illegible] the water drill, with 4 cwt. of superphosphate [illegible] acre. This enables them to sow a fortnight [illegible] great advantage when they are taken after [illegible] crop, such as Peas. A considerable quantity of [illegible] stubble is manured for Wheat. So many [illegible] and so much of the straw as are needed for [illegible] are used at home, but all the rest of [illegible] is sold. Clover is cut, made into hay: a [illegible] is sold, perhaps green, on the land, to be [illegible] in a given time, at 5*l.* to 5*l.* 5*s.* per acre. [illegible] are consumed at home, Peas are sold green, [illegible] followed by Turnips, sold on the land for from 6*l.* [illegible] an acre. Potatoes are dug, sorted, weighed [illegible] baskets in the field, for 5*s.* a ton, carried into the [illegible] market and sold at 4*l.* to 4*l.* 10*s.* per ton. [illegible] fine crop (8 tons per acre) of 'Rocks' is now [illegible]. The carriage of this crop is the heavy [illegible] of the season. A three-horse team takes [illegible] in a waggon, leaving at 10 or 11 P.M., and [illegible] about 10 to 12 A.M.; the man then going [illegible] his waggon loaded, and finally at 2 or 3 P.M. [illegible] home to bed—to resume his heavy work at [illegible]. They receive 15*s.* a week, and 1*s.* a journey, [illegible] 1*s.* a load from the salesman—so that the wages [illegible].

[illegible] farm requiring such an enormous quantity of carriage employs 31 horses; they are worked in pairs [illegible] plough, grubber, and harrow—and three horses to a [illegible] waggons. The quantity of labour on the farm [illegible] 2000*l.* a year are paid in wages.

The fields are for the most part of large size. On [illegible] side of one of the ridge lines in which the land [illegible] some 220 acre lie now in Clover, Peas, stubble in [illegible] of fallow, Turnips, Mangel Wurzel, and [illegible], which will be all in Wheat—a field to be worth [illegible] at next year. The sorts grown are the white [illegible] ear and the Morton's red straw white, both of [illegible] good and productive kinds—the latter the [illegible] white Wheat that withstood the blight [illegible] prevalent this year. The land has been [illegible] a very rough state, and still retains much of its [illegible] character, owing to dead roots lying hitherto [illegible], and old water ways and ditches imperfectly [illegible]. There is a good deal of rough tillage still [illegible]—a great deal of clay-burning doing and to [illegible]—a great deal of land drainage still to be accomplished. The drainage by drawing in tiles behind a [illegible], which was to a large extent carried out some years ago, has not been found to answer; that was done at the Crown's expense, and the tenant is finding it answer his purpose to redrain it by hand labour at his own expense.

The soil is of various quality—a brownish yellow clay subsoil with occasional calcareous veins makes a [illegible] soil and is greatly improved by drainage and deep tillage. A good deal of poorer, lighter soil exists which answers perfectly with heavy manuring for the growth of Carrots and Potatoes. The farm buildings are almost exclusively stabling and granary and threshing barn around the four sides of a square; a comfortable residence for the farm manager standing [illegible].

It was on this farm, when under Mr. D. Greig's management, that the balance plough was devised several years ago, by which Mr. Fowler's system of steam cultivation has been carried out; and now, during the present year, Mr. Alison has adopted it as an aid to cultivation. It has not been safe to adopt it earlier on account of the many land-fast obstacles, which land newly enclosed from the forest contains. Time has been allowed for roots to rot and disappear under gradually improving tillage; but even still, with the deeper tillage which has been possible by steam power, these land-fast roots have proved an expensive nuisance.

The 12 horse power engine with clip drum wire rope and anchorage and porter, and the 4-furrow balance [illegible] have been at work at intervals now for several [illegible]. Breakages have been too frequent owing to the landfast obstacles, and it has been impossible thus to keep the machinery constantly at work; 70 acres have been ploughed since harvest time, and about 100 acres were done before harvest. From 5 to 7 acres are done daily. The wages are 11*s.* a day of 10 hours, with over-payment for over-time; the engineer receives 3*s.*; the anchorman and ploughman, 2*s.* 6*d.* each; [illegible] boys, 1*s.* each, and a water-cart and boy may be charged about 3*s.* a day in addition. The coals burned are 12 to 14 cwt., or 12*s.* to 14*s.* daily. The whole cost is thus about 27*s.* for 6 acres, or 4*s.* 2*d.* an acre for the daily outgoings. Repairs, which have been costly; wear and wear, of which a sufficient experience has not yet been obtained; and interest of capital, are additional to this.

The purchase and use of the steam plough has not yet resulted in the displacement of any horses, in fact, it was resolved to go into steam ploughing rather than increase the number of horses which would otherwise have been necessary. The farm is still so far in a transition state that extra power [illegible] given to the means of tillage will be a profitable advantage. The plough was at work last [illegible] when I walked over the farm. The stubble [illegible] which it was crossing had been laid out in wide ridges, and in crossing the deepest furrow the last plough was apt to jump out of its work, and so create a 'balk,' which reproduced itself next time of passage. Over a great extent however which was preparing for Wheat, there will be a furrow 400 yards long without any of these water furrows to hinder perfectly even and uniform ploughing; and it will be hardly possible to conceive better circumstances for efficient and easy steam cultivation than a great part of the farm affords. Drainage, manuring, liming (for 30 waggon loads are being applied per acre piece by piece over all the land), steam tillage, and vigorous management generally, are thus well illustrated over the Hainault farms. The large stud of horses which are employed upon them may be needed for carriage work as much as heretofore, but the steam engine will enable an immense extent of autumn cultivation to be done which the horses engaged in carrying Potatoes and other produce to market during September and October could not overtake.

The whole district in the hands of Mr. Alison is a first-rate specimen of laborious, energetic land management and improvement, and the neighbourhood partakes of the advantage which will we hope accrue to himself. The substitution of constant well paid employment is gradually obliterating the half gipsy character which the neighbourhood of the forest had created.

BROOMFIELD, NEAR CHELMSFORD.

There are in this parish two farms on which Howard's steam cultivators have been worked by Clayton & Shuttleworth's double cylinder 10-horse power engine since June, 1861. They are both of them instances in which the tenants have previously owned movable steam engines and let them out for hire for threshing corn; and where accordingly there have been men upon the premises accustomed to the management of the machinery. They are also instances in which abundant energy has been shown in other ways in the management of business. The agricultural circumstances of the farms, soil, size of fields, &c., do also especially fit them for the adoption of steam cultivation, though that after all is of less importance as an explanation of its adoption where you have character and habit both tending in that direction.

1. Mr. William Impey occupies in this parish a farm of about 480 acres, 440 of which are arable in large open fields, some of them 30 and 40 acres apiece. It is, over one-third of its extent, a comparatively light gravelly soil, on which the four or five-course system of cropping is adopted—the former being converted into the latter by taking an extra crop of Barley or Oats after Wheat. Over two-thirds of its extent it is stiffer soil, on which the six years rotation is in use; Beans and Wheat being taken after the fourth (Clover) crop of the 4-year course. One-fourth, one-fifth, or one-sixth only of the land is thus in Clover, and the same extent is in Turnip and Mangel Wurzel and Cabbages. A bare fallow is very rarely taken. A great deal of tillage work thus falls to be done.

For Mangels, which occupy most of what may be called the fallow break, the stubble is under horse cultivation deeply ploughed, and cross-ploughed twice, before winter, being thoroughly cleaned between-times by scarifier and harrow. It is then "balked," *i. e.*, ploughed into drills from 30 inches to 3 feet wide, and left for winter; the dung is carted on and covered by splitting the ridglets—the seed is drilled in April and May. The crop is carried off and pitted in October and November.

A very great deal of horse-labour thus falls to be done during the year, and a large number of horses accordingly were kept. Twenty to 22 farm horses were employed—they were worked, except during heavy ploughing, two horses to a team—one man to four being employed as horse keeper in the stable. There was however, and still is, a great deal of extra work upon this farm in carriage. Mr. Impey keeps a large herd of cows and sells milk. It has to be carried ($2\frac{1}{2}$ miles off) to the station twice daily. He also has a large milk-selling establishment in town, dealing between the farmer who sends milk up to town and the various milkmen who supply local milk-walks.

The labour of carriage upon the farm is very considerable, and horse labour has been very expensive.

The 20 to 22 horses which were the former stud, cost per annum :—

	£	s.	d.
10 men, averaging 10*s.* 6*d.* per week, cost	£273	0	0
22 horses-keep cost*	220	0	0
10 per cent. interest on the value of horses and harness for maintenance of value, at 35*l.*	77	0	0
10 per cent. for maintenance of value of implements at 1*l.* per acre	48	0	0
Horse-shoeing	12	0	0
5 per cent. for interest of capital in horses, harness, and implements, say	62	10	0
Total cost of horse labour	£692	0	0

To this must be added the bill for repair of implements, which may be as much as 40*l.* or 50*l.* additional, but which remains nearly the same under steam cultivation, as the more perishable implements are employed as much now as formerly. The cost for horses is thus very nearly 32*l.* apiece.

Mr. Impey has since reduced his horses to 14, sold seven or eight last autumn, and will gradually reduce his number still, fully expecting it to be ultimately down to 12. At present therefore, at 32*l.* a horse, he avoids an annual cost of 256*l.*, and he expects to effect an annual saving of 320*l.* by steam cultivation.

What has it cost him to do this? He has been a large employer of steam engines in threshing for hire, so that in point of fact he had but to buy Howard's cultivator, windlass, rope porter, and rope, for about 200*l.* Putting him however in the position of a new beginner, he had to spend 500*l.* in purchasing his engine and cultivating apparatus.* It costs him as follows for a week's work :—

	£	s.	d.
Coals, 3 tons, at 20*s.* on the ground	£3	0	0
Wages: Engineer, 21*s.*; windlass man, 15*s.*; ploughman, 15*s.*; two anchor men at 11*s.*; 2 porter lads at 4*s.*; 6*d.* an acre extra, say 15*s.*	4	16	0
Oil, 1 gallon	0	4	0
Water is in almost every case provided in ponds			
	£8	0	0

The average performance, including all removals is 30 acres in the week, which thus costs 5*s.* 4*d.* per acre in actual weekly payments. The annual cost in addition to this is—

Interest of capital, 5 per cent. on 200*l.*	£10
Maintenance of value 10 per cent. on 200*l.*	20
Maintenance of rope†, probably	25
Repairs (qy.) say	25
	£80

The machinery has been employed in all during the first year 20 weeks, so that 4*l.* a week, or 2*s.* 8*d.* per acre, must be added to the cost. The engine, costing 330*l.*, may be charged at 5 per cent. for interest, 5 per cent. for maintenance of value, and 15*l.* a year for repairs, or 45*l.* per annum. It is used for threshing as well as ploughing, probably 40 weeks in the year; the weekly charge on this account is therefore not much more than 22*s.* 6*d.*, or about 10*d.* per acre. The total cost of cultivating thus comes out 8*s.* 10*d.* per acre under an average performance of 5 acres a day.

That it is not so much is plain from the fact, that Mr. Impey and his neighbour Mr. Bott do a great deal of work for hire at 1*l.* per acre for the double operation, and the profit certainly is much greater than the difference between 10*s.* and 8*s.* 10*d.* The expense, too, will be reduced as men become accustomed to the work—as the tear and wear of rope is reduced, which no doubt it will by the use of the new slack rope apparatus for retaining a certain tightness in paying out the slack—and above all as the machinery is kept in more constant employment; thus allotting a greater number of acres against the annual charges, which will then amount to a smaller charge per acre.

Mr. Impey had done 274 acres one way between June, 1861, and the end of the season. Since then and up till the present harvest he has done 200 acres for hire, and 124 acres at home; in all, about 600 acres in the year. He has accomplished 92 acres already since harvest, and will no doubt accomplish much more than he did last autumn before the coming winter. A very large extent of land on the farm is already by the aid of the steam cultivator completed and ready for the spring tillage of Mangel Wurzel—already thoroughly stirred and cleaned and "bouted" up in drills for the manure. A good deal of Wheat stubble is all tilled and ready for Barley and Oats, and one field is drilled with Rye for spring keep for cows and horses. The work is 6 to 10 inches deep, and there cannot be a doubt, that while a saving in the past year of 256*l.* has been effected by an expenditure of less than 200*l.* (taking no account of the profits on the machinery let for hire), the real advantage to the tenant lies in his power thus early and effectually to get the tillage of his land accomplished in the dry.

Mr. Impey's farm is interesting also for his management of cows. A large herd of cows is kept good by the purchase of newly-calved cows or of in-calvers, being fatted off as they come to yield unprofitably. They are receiving now a bushel of grains mixed with straw chaff, which is cut by Maynard's chaff cutter and trampled down a houseful at a time when the Barley is threshed. Sometimes a little hay is fed into the chaffcutter at the same time. They also get a bushel of Cabbages daily. They yield daily on an average nearly one barn gallon (17 pints) a day throughout the year.

The farm I may add is let on lease. Thatched cow-houses—much the most comfortable sort—are provided with conveniences for ventilation and for the provision of food and water; and a considerable butter dairy is maintained for dealing with unsold milk; large zinc milk pans are provided with warm-water coats, and a large quantity of butter is sometimes made. The whole farm is a capital illustration of intelligent and vigorous management.

2. Mr. Impey's neighbour, Mr. William Bott, also occupies 400 acres close by, joining him in the letting out of engine and steam cultivating apparatus for hire. His land is stiffer than Mr. Impey's, and lies in rather smaller fields. There may be 375 acres of plough land in about two dozen fields. He is under

* They receive $2\frac{1}{2}$ bushels of Oats, or $1\frac{1}{2}$ of Oats and 1 of Beans weekly during three months on an average, with hay and straw chaff, and $1\frac{1}{2}$ bushels of Oats weekly during other four months of the year. They get cut Vetches or second cut of Clover during the rest of the year.

* Mr Impey for some time adopted and still occasionally uses Eddington's arrangement for ploughing, viz., Fowler's balance plough worked to and fro by engines mounted on travelling windlasses at both sides of the field.

† This has been a large item on this farm, partly owing to a defective rope first issued, which has been met by the manufacturer supplying a new one at half-price.

no restriction as to cropping. Some 60 acres are in Mangel Wurzel and Turnips, 45 being of the former; 13 or 14 are Tares, only 30 are Clover, 140 Wheat, 20 or 30 Beans, and the remainder Barley and Oats. The work has been done by 18 horses—now 14 are in use. A smaller number has been thus displaced by the steam cultivator, but a less quantity of work has been done by it on this farm—not much more than 300 acres having been here accomplished in the year.

The horses are perhaps kept more expensively here than on the other farm; 2 bushels of Oats and 3 trusses of hay weekly being the autumn allowance; and 1½ bushel of Oats with Bean straw being the winter food. During summer they are kept on cut Vetches and Clover. About 110 acres have been done for hire with the machine—in addition to the 300 acres done at home.

In addition however to this cultivating, the engine has been a good deal employed during winter in mole ploughing. On clay soils the mole is drawn 30 inches deep every 10 feet wide, Eddington's moveable engine and windlass being the apparatus used—no pipes are drawn in behind the mole, but the work is so efficient that the land can immediately be cultivated flat without any risk of injury, which undrained land of the kind here cultivated cannot be.

Both Mr. Impey and Mr. Bott speak highly of Howard's cultivator, which I saw at work upon a Barley stubble in preparation for Rye. The practice for this purpose is to cultivate one way deeply, and then to cross it, dragging a heavy harrow beside it, which thus at once reduce it to perfect tilth.

Heavy crops of straw are grown on these farms, and heavy dressings of dung for Mangels, and on young Clovers. Guano and superphosphate too are used in considerable quantity for the Mangel and Turnip crops.

Broomfield is well worth a visit from any one who wishes to inquire into the probability of steam cultivation being likely to answer his purpose. *J. C. M.*

THIN SOWING—PEDIGREE WHEAT.

Mr. Hallett has rendered a great service to agriculture by teaching farmers the advantage of thin sowing and clean hoeing—that is his principal merit; for I agree with Mr. Shirreff that Mr. Hallett's quantity per acre (1 peck per acre, the land being kept perfectly clean ,with a sufficiency of manure) would develop in many other sorts of Wheat similar results, both in yield and in size of the ear, to those of Mr. Hallett's own Wheat. I know of a case in Suffolk (some 16 or 17 acres) where Hallett's Wheat and the Kessingland Wheat were grown side by side in competition, and no difference in the yield occurred. The crop was an excellent one—5½ quarters per acre, and the quantity of seed drilled at 9 inches apart 1 peck per acre. The seed was sown in October.

The same person informs me that he last week drilled 40 acres in the same way and with the same quantity of seed, considering that his crop would have been still larger by early sowing.

The Wheat was regularly hoed by Garrett's horse-hoe; the land by no means first-rate. With regard to the selection of Wheat and choice of weighty kernels there can be hardly two opinions. I either dress my Wheat several times, or throw the Wheat so as to obtain those kernels having the greatest weight. The main question raised by Mr. Hallett is decidedly that of thin sowing. On this point I have long insisted and practically acted. For years I have drilled 1 bushel of Wheat per acre as my general quantity, and the effect of this comparatively moderate seeding is to produce such large ears that I am frequently asked what Wheat it is, and how the ears become so large. The fact is that millions of money are lost to the farming interest by over-thick seeding. This year particularly has been a most unfortunate one for thick sowers. I know of many instances where the crops went down early, and have yielded a shrivelled kernel and miserable crop. Those who grudge the money for hoeing, or do not believe in the profit of keeping corn crops perfectly free from weeds, sow thick to smother the weeds. Altogether the question of a proper quantity of seed wants thoroughly ventilating.

When corn was broadcasted much larger quantities were necessary, so much being consumed by birds, or otherwise rendered unavailable; but the accurate drill in well-cultivated soil gives to every perfect kernel the opportunity of growing.

Diminished quantities of seed have become established customs by accidental circumstances. A friend in Warwickshire told me they used always to sow 3 bushels of Wheat per acre, broadcast, when the drill was first introduced. My friend, having to leave home for half the day, desired his man to put in plenty of seed; when he returned he found to his dismay that they had only got in, on half the field, 6 pecks per acre; great was the consternation, but the other half of the field received its usual 3 bushels. The result at harvest was 2 quarters more per acre on the 6 peck side than on the 3 bushel side.

From that time forward 6 pecks became the quantity of that district. One would have thought that some further comparative experiments with still further diminished quantities would have been carried out, but such was not, I believe, the case; and I do complain that farmers will not, by small comparative trials, arrive at sounder conclusions. Of course it would be dangerous to lay down any fixed rule for varying soils and climate, because the question of harvest time is involved in their sowing. Poor, undrained, and unimproved land only half manured is naturally behind with its seed time, and harvest, and has not power enough to compel the plant to tiller. The reverse of all this takes place on well-farmed and improved land. Elevation and mean temperature must also be considered. Let every man try and compare, as I have done on a moderate scale, and so arrive at sound conclusions.

The question of proper seeding stands at present very discreditably for British Agriculture. Mr. James Caird gives statistics showing how miserably we mismanage this affair. According to his statement, which I believe to be an impartial one, we only get an increase of 8 for 1—say, eight kernels for one, eight bushels for one, eight quarters for one. Now I will defy any one to put in a good kernel of seed, and obtain from it so small an increase as that—a single ear would produce at least 50 for 1; but when we consider that Wheat will branch or tiller on well-farmed land, we must conclude that to produce so small a result as 8 for 1, the plants while growing destroy each other by competition.

I have before me now a well-verified case where a single grain produced 57 stems, containing 4500 kernels, and I have produced occasionally myself results nearly similar. It is not always a question of insufficient food that causes the plants to destroy one another, but a want of air and light. Let me illustrate this by a larger vegetation, I mean trees. Wherever you see two trees growing close to each other, no branches are formed between them, or if they attempt to do this, the branches wither, diminish, and perish; they turn from each other in disgust, and throw out their branches to the open air. It is air and light they desire. The same by your Wheat plants: like a crowded plantation of Fir-poles unable to get air and light around them, their only chance of doing so is by rushing up vertically.

The result we all know—weak stems, and top heavy heads. So down they go unless supported by their neighbours, who are generally as weak as themselves. The question of sufficient space according to time, climate, and fertility, applies alike in degree to all plants, and every bungler knows that a mass of seed dropped from a drill or collected by a mouse can never come to maturity any more than an unthinned and unhoed Turnip-field or plantation. My own crop of Wheat this year represents an increase of nearly 40 bushels for 1, on a bushel of seed drilled per acre. *J. J. Mechi, Tiptree Hall, September* 16, 1862.—P.S. My remarks will apply in degree to Oats and Barley, of which absurd quantities are sown to the detriment of the crops. My own quantity is 6 pecks of Barley, and 8 pecks of Oats. Those thickly sown crops are seldom even either in appearance or quality.

I give the following practical illustration of thin sowing. Some kind friend (Mr. Hallett I believe) sent me 40 grains of Wheat. My man dibbled it at intervals of 8 inches among a crop of bearded Rivett Wheat. I have had it accurately weighed to-day by a chemist, who gives the annexed Table, showing a net increase of 287 for 1. The rest of the field, which was Wheat after Wheat (11 acres) will probably yield 40 for 1, one bushel having been sown per acre. Both these results cast a great stigma and strong censure on the average increase of the kingdom, merely 8 for 1:—

40 Corns weigh 32.8 grains.
The total weight is 9420 grains.

Grains.		Corns.		Grains.		Corns.
32.8	:	40	: :	9420	:	11.487

or 287 for 1.

AGRICULTURAL PROGRESS AND IMPROVEMENT.

[Mr. MacLagan, of Pumpherstone, West Lothian, was recently entertained at dinner by a large number of Scottish landowners and tenant farmers in the neighbourhood of Edinburgh, in testimony of the high esteem in which he is personally held, as well as of the gratitude due to him for his services as an agriculturist and agricultural improver. We extract from Mr. MacLagan's speech the following remarks on the agricultural progress of late years.]

You have alluded to the improvements that have been effected on my farm. I can only say that I have taken many a leaf out of other people's books, and I make others most welcome to take as many out of mine as they choose. In such a profession as farming, we all require assistance from one another. I will add that I was most fortunate in the workmen who carried out my improvements, most of whom have been with me nearly since I commenced farming, and the one who laid the most of my tiles now occupies a small farm on my property. I have said that we all require assistance from one another. Notwithstanding the extraordinary progress that has been made in agriculture of late years, every step I take in advance I feel the more conscious of the little that has been done, and of the immense field of labour before us to be accomplished. We stand yet but on the threshold of agriculture, from which we see the entrance to the chambers to be explored, and the passages leading to them. To enable us to make any advance we require the aid of the light of science with the steady co-operation of practice. There are those who deny that science has been, or ever can be, of any benefit to agriculture. I have been told by some otherwise intelligent farmers that 40 years ago they or their fathers grew as good crops as are grown now, and that there is little difference in the style of farming save in the application of guano and other auxiliary manures. Now, while I deny that as large a produce was obtained from the same soil 40 years ago as now, I am ready to admit that formerly there were as large crops of particular plants, such as Oats, grown in many instances. But there was less exercise of skill in producing these crops, for they were grown on soil less exhausted than it is now. In the intervening years crop after crop has been removed from the soil without, perhaps, due attention being paid to restoring to it the elements of fertility removed by the crop, and a comparatively exhausted soil has been handed down to the farmers of the present day. What was the father's gain, has in such a case been the son's loss. I will be told that the value of manure was as much recognised then as now. True, our fathers knew that manure increased the crop, and so did the ancients 2000 years before; but they could not tell the rationale of it, and they could not therefore find a substitute for it, and hence immense labour was spent—I may say lost—in carting manure often 20 miles out of towns to particular farms, and a great part of the land of the country was left uncultivated from the want of manure. The system pursued 40 years ago would have utterly failed with the present high rents, present prices, the increased demand, and the great competition with which farmers have now to contend. But the man of science stepped in. He resolved the plant into its simple elements, he analysed the manure, he noted the effects of bones, guano, and other auxiliary manures; he analysed them, and compared the elements of different plants with the elements of the manures which produced the best crops of them; he suggested substitutes for them to be found treasured up in all the kingdoms of nature. His investigations have not been confined to manures; they have been extended also to the substances used for the feeding of animals. The results of the application of science to agriculture have been most wonderful during the last 20 years. Three new trades have sprung up as a part of these results—viz., those of the cattle food manufacturer, the manure manufacturer, and the cattle food and manure dealer. A large number of our mercantile navy are employed for the transport of substances required by the farmers, and the same materials help to swell the traffic returns of our railways. The results in agriculture have been as wonderful. Soils considered unproductive—or, at all events, unprofitable to be cultivated—have been brought into regular cultivation. The growth of Turnips and other roots has been quadrupled in many instances, the number of animals kept has been consequently largely increased, and the extent and acreable produce of our crops augmented. The increase in landlords' rents and farmers' profits is also due in some measure to the aid which science has afforded to practice, and yet we are told that science has done nothing for agriculture. The progress of agriculture, unaided by science, must necessarily be slow. An experiment cannot be performed but once in the year, and years must elapse before a single proposition can be established, or a single step taken safely in advance. But let the men of science co-operate with the practical man; let him perform his hundred experiments in the laboratory while the farmer is performing his single one in the field; let him quietly work out his investigations in his study; let but a single scientific principle be discovered or applied, and the progress of practical agriculture becomes rapid—it advances by bounds rather than by steps. To this, and the efficient agricultural press now in existence for disseminating the views of both scientific and practical men—we must attribute in a great measure that rapid progress made by agriculture during the last 20 years, which is equal to, if it does not surpass, that made during a century before.

Home Correspondence.

Australian Wheat.—You desire to know the result of sowing the Wheat you were kind enough to give away last year. Mine was dibbled upon part of a land in the centre of a field drilled with Wheat at the same time, and entirely failed, though the drilled Wheat, a red variety, was a good crop; several varieties of White and Red Wheat were also dibbled upon the same land and also failed; a splendid crop of Vetches is now growing upon the same ground, the soil is clay, the Wheat was not steeped; we fancied it was eaten by birds, though we could not see any traces of them. I have now a small quantity of the finest Australian Wheat I ever saw, weighing 68 lbs. to the bushel, and after our disappointment last year, am very anxious as to the result of this seed time. The spring is recommended, but Wheat does not succeed with us sown so late. The only method seems to be to sow it in the centre of a fallow field on the same day as the whole field is sown, or drilled, with Wheat. It was impossible to take greater pains than I did to procure good varieties last year, and yet the sample this season is very inferior to our usual fine Wheat, though the crops appeared when cut as good as any in England. The varieties are Giant, Browick, Golden Drop, and Hunter's White. I have nevertheless a high opinion

of the system practised by Mr. Hallett, if not carried too far. *Wheatear.*

Occasional Drainage.—I am indeed pleased that the publication of a part of my address to the foremen under my direction on the occasion of their recent visit to the International Exhibition should have elicited the remarks which have appeared in your columns, for nothing could be more profitable to agriculture than an investigation into what we have been doing for the last 15 or 16 years in the way of drainage. No one disputes now-a-days the advantages of draining, nor the power of water to penetrate clay, but there are few, comparatively, of those who are practising under-draining who recognise in the term "Systematic Drainage," anything else but parallel drains at different widths. It has always been an object with me to avoid personal allusions and particular instances, and therefore I will only say in reply to Mr. Thompson and Mr. Humbert, that I am happy in having their testimony to the fact that parallel drainage, though applicable to the "clay," *i.e.*, the retentive soils, is not applicable as a rule to the "free," *i.e.*, the percolative soils. Both my friends have had considerable experience, and I can testify to some excellent work executed by the former, though I have not had the advantage of seeing the performances of the latter. They will excuse me however if I confine my remarks to the general question and its national aspect. Whatever may be the views of individual practitioners, it is an undoubted fact that—owing to the prevalence of uniform rules and the influence of the doctrine that "parallel drains at regular distances, carried throughout the whole field without reference to the wet and dry appearance of portions of the field," provides the best means "for the water rising from below and falling on the surface to pass freely and completely off"—parallel drains 4 feet deep are adopted in nine out of ten cases. In perhaps half the number it may be right and economical to adopt this method or arrangement of drains, because the lands are retentive clays, but in the remainder, which will be found to be percolative soils, such an arrangement is as erroneous as draining clay lands with bushes 18 inches deep! All drains do some good, and it is because such is the fact that the country is content to go on spending millions in under-draining without troubling itself with distinctions. But it will not be many years before the whole question will force itself on the Government or the legislature, for the effect of extending under-drainage is telling its tale upon the arterial channels, and the inappropriate drainage of the free soils will be found to be the cause of evils which might be averted with immense gain to the nation if the matter in all its details were investigated, and the difference between the action of percolation through "free soils," and the motion of permeation through "clays" fully appreciated. The difference recognised by the careful drainer in his practice is shown by the "test hole" which he adopts when dealing with percolative soils, and rejects when operating upon those that are only permeable; and if our agricultural authorities would condescend to study this said "test hole," and the lessons to be learned from it, we should not in future have lands with free subsoil and irregular surfaces drained by a parallel system of drains of one uniform depth, a *modus operandi* which may be excused in individual practice, but when sanctioned by the country at large should be repudiated as a profound absurdity. *J. Bailey Denton, Woodfield, Stevenage.*

Topdressing Grass Land.—As the season for top-dressing Grass land is approaching, I should esteem it a favour if you or some of your readers would give the result of their experience in the use of various kinds of tillage for Grass upon a clay soil, distinguishing between those that can and cannot be used upon undrained land. Some time ago a mixture called nitro-sulpho-cyanic or gas clay was introduced in Yorkshire and extensively used—not the cyanic manure, the use of which is deprecated in Morton's Farmer's Almanack. The gas clay was applied by hand at the rate of from a ton to a ton and a half per acre in the autumn or before Christmas; it was also used upon arable land. A mixture with the following proportions was also recommended:—15 cwt. of gas clay, 2 bushels of bones, 4 stone of Epsom salts, at about 4*s.* 6*d.* per cwt.; 12 stone of common salt, all mixed well together. The gas clay is said to be improved by this addition. My drained Grass land has not derived the benefit I expected from the bones put on last autumn; my chief object is to have an early crop of Grass, the spring being always very late; would it be advisable to sow the best guano in October? Unfortunately it is very expensive; nothing more has been said about the "large quantity" found in Newfoundland. *Ediva.* [Ammoniacal manures are best for Grass, and if you want an immediate return. Bonedust is good for the more permanent improvement of the pastures. Newfoundland guano will partake more of the nature of the latter than of the former. Apply 1 cwt. of mixed sulphate of ammonia and nitrate of soda per acre towards March—if your land is drained. All manures will waste on undrained land in proportion to their solubility.]

Guano.—In your Paper of the 2nd inst., which is now before me, I have read a communication from Mr. Jenkins, Coventry, under the head o 'Home Correspondence' upon Guano, its excessively high price, fast failing quantity, not omitting its quality—wherein he says that it behoves the farmer who has relied chiefly upon it to seek some other substitute at a much less cost. I have long foreseen what would be the result, and have experimentalised accordingly with Lawes', Adams', Matthews', Procter's, &c., and have not found *one* that has answered so well for all crops and every description of soil as that sold under the name of the Purely Animal Manure, and at so fair and moderate a price. It is not so forcing as guano, but it continues to feed and nourish the roots of plants so long as a piece remains the size of a pin's point. The character of the soils commonly met with favours the growth of a particular crop; whereas a complete soil (rarely met with) is one that will produce with almost equal luxuriance every kind of crop. It is therefore the object of the farmer to alter and improve these defective soils by perseverance in the employment of suitable and judicious application of manures, and to gain that end I strongly advise a single trial of the concentrated farm-yard manure, sold under the name of purely animal manure. Should you think this communication worthy of your notice you are at liberty to make use of it. *G. Duncan, Abbey Wood, Essex.*

Sewage Manure.—I have read with much surprise your comments on the report of the sewage committee in reference to the value of sewage or liquid manure, and as I have hitherto reposed confidence in the truth of many of your articles on agricultural and horticultural questions, I cannot pass over in silence your (in my judgment) erroneous opinions on the above question. I therefore trouble you with a little illustration of my experience, as contradictory in the extreme to the conclusions which you have drawn of the comparative worthlessness of such an element as sewage for manure. The practicability and success of the test is perhaps the surest index to determine the matter at issue between us. I am not going to discuss the point as to whether a profit is to be realised or not by manufacturing the sewage of our drains into a solid manure, although I fully believe that such a process would be rewarded with the most beneficial and profitable results. Many gentlemen have constructed on their own estates manure tanks or wells to receive the entire sewage of the house, and which they have used for manure both in the liquid and the sediment with the most advantageous returns. If therefore the value is realised in so limited an area, *a fortiori* must the estimate be proportionate where the means and opportunity are illimitable. First then, in reference to its value for agricultural purposes we may select for example the tanks which the late Prince Consort constructed at Osborne to receive the whole sewage of the establishment. His late Royal Highness tried it as an experiment to improve the condition of the poor land that constitutes the Park. For this purpose he constructed a sewer to carry off the entire refuse from the house, which sewer extended for half a mile, and then emptied itself into large tanks, from whence the liquid was drawn out for irrigation, and the sediment for a solid manure. The value of the sewage was soon apparent, as the pasture, which was previously worthless, soon afforded a rich and luxuriant herbage, while the sediment was found equally advantageous as a dressing for the arable lands. The value of such a compost for the farm as you can there see and judge for yourself, cannot be overestimated. For horticultural purposes the same process has been adopted, and in no garden or fruit houses can a more convincing proof be afforded of the value of sewage water than in those localities where the experiment has had a fair trial. In fact no species of manure that I have ever known has established any comparison in the result equal to that which has been effected in the fruit houses of Thomas White, Esq., on the Manor House, Wrathersfield, in the county of Essex. Upon the same principle as that already alluded to, with the exception of the well or tank being permanently covered, Mr. White has constructed a sewer from his house to the kitchen garden, over which well a pump is placed, and from which the sewage is continually drawn both for moisture and manure to the Peach, Pear, Figs, Vines, and other forcing houses in which he grows such almost unparalleled quantities of these choicest fruits. No other manure or liquid is applied to them but that which comes from the tank, and he may fairly challenge all England in every class of these fruits both for quantity and quality, while the trees manifest a healthy luxuriance such as I have never witnessed in any gardens in this or any other county that I have visited. Mr. White gave away in one week no less than 186 dozen of Peaches gathered from one house. This fact will say something for the value of sewage manure. The earth will of itself deodorize the compost, and a little charcoal scattered on the surface will the more speedily and effectually suppress the pungency of the ammonia, which otherwise would be so unpalatable to the olfactories of susceptible amateurs in the garden, the Vinery, or the Peach house. *Testis, September* 10.

Wheats.—I herewith enclose you samples of Australian Wheat grown at Hilpertborpe, also ears of the following Wheats. No. 1, Victoria Wheat: This Wheat has done well. It is quite as healthy as English Wheats, and will prove itself to be a good sort. No. 2, South Australia Wheat: This Wheat shows a great tendency to blight and dust. Many of the ears are very poor, and only have a few grains in them. [Neither of these are good ears.] No. 3. Creeping Wheat: This is considered one of the best Wheats grown in the East Riding. It is generally clear of blight and dust, and always turns out well when threshed. Is this the same Wheat as what is called "Nursery Wheat" in the south of England? [Resembles Nursery Wheat.] No. 4. Pringle's White: A variety received from Mr. P. Shirreff, Haddington. This Wheat and the two following have proved themselves to be clearer of blight than all the other Wheats I have grown this year. It was sown in separate grains, 9 by 9 inches apart, and while some other Wheats sown the same distance apart are nearly worthless, these three Wheats are all first-class samples. No. 5. Shirreff's Bearded White: not quite so free a grower as No. 4. No. 6. Shirreff's Bearded Red: A good hardy kind, very clear of blight. No. 7, April Wheat: This Wheat was sown on the 28th of April, and has done remarkably well. Two or three other varieties of Wheat (one of them Talavera) sown the same day, have not yet come into ear. All Wheats are very much blighted, especially where sown thin. My best Wheat is where I drilled 3 bushels to the acre the first week in October. Thin seeding requires a warmer climate than the Yorkshire Wolds. *Wm. Lovel.*

Societies.

WARWICKSHIRE. — A very successful meeting is being held at Birmingham as we are going to press. A liberal prize list has attracted breeders from long distances, and there is a capital show of all kinds of stock. The show-yard, too, is full of a very large and excellent show of implements. The implement judges have issued the following report of the cow-milking machine.

"We have this day witnessed the practical operation of the cow-milking machine, and we certify that it worked effectually without any inconvenience or distress to the cow during its work, in one-half the time taken by hand labour. Cleanliness is obtained by this machine. (Signed) Edward Wortley, John Hichen, *Judges of Implements*; Walter J. B. Scott, *Steward.*"

Among the prize-takers for Short-horns are Mr. Lane, of Barton Mills, Cirencester; Mr. Holland, M.P.; Mr. Wm. Hewer, Mr. Robinson, of Clifton Pastures; Mr. George Garne, Mr. E. Lythall, Mr. Marjoribanks.

The principal Hereford prize-takers are Mr. T. Duckham and Mr. J. M. Read. Mr. T. Horley, Mr. Holland, M.P.; Mr. W. O. Forster, Mr. J. H. Bradburne, and others, take the prizes for Shropshire sheep.

Reviews.

Canada East at the International Exhibition. By H. H. Miles, M.A., Commissioner for Canada. Stanford, Charing Cross. (A Pamphlet.)

The western districts of Canada have of late years been so prominently introduced to the notice of Europeans as desirable homes for emigrants, that men have begun to forget the existence of the older parts of our great North American Colony. Professor Miles has therefore conferred a very important service on this country as well as his own by the publication of the extremely interesting pamphlet at the head of this notice, in which we have ample information concerning those Eastern townships that lie to the south of the River St. Lawrence, and are bounded by the northern frontier of the United States.

"The earliest European settlements in Canada were distributed in the vicinity of the Gulf and River St. Lawrence, more especially where the cities of Quebec and Montreal now stand, and in the splendid and extensive valley of that great river. In this valley, to the south of the St. Lawrence, the most prosperous settlements were permanently established, and there, to this day, the great bulk of their descendants flourish, constituting the majority of the French Canadian population of Lower Canada.

"Further south of the St. Lawrence, beyond the French settlements, and lying eastwards of Montreal, an extensive tract is included under the designation of 'The Eastern Townships.' It is a tract of about one-sixth the size of England, if we take in all the portions of territory which is comprehended in the Government Surveys. A full 'township' should enclose a surface of ten miles square, or 100 square miles, and there are between 90 and 100 such divisions; so that the Eastern Townships may be spoken of summarily as a region comprising nearly six millions of acres.

"The settling of the Eastern Townships, now occupied by what may be called an English speaking Protestant community, may be stated to have begun about the beginning of the present century. Many of the earlier occupants of the territory were royalists from the neighbouring New England States, persons of indomitable energy, who accomplished by their self-reliance, industry, perseverance, and skill, a conquest more or less complete, in various directions, over the obstacles presented by nature. These have for the most part passed away, after stamping deeply upon the character both of their descendants and of the emigrants who joined them from other parts of the world, the impress of their own enterprising and virtuous dispositions."

Great rivers, the Chaudière, the St. Francis, the Yamaska and the Richelieu, flow through the province and empty themselves into the mighty St. Lawrence. The surface, says our author, "is everywhere intersected by other smaller streams, running for the most part

into those which have been already named, and which, with many rivulets, beautiful lakes, and innumerable springs of the purest water gushing out of the ground, render the Eastern Townships one of the most picturesque and best watered regions in North America. It is this circumstance—the abundance of running water, with the diversified character of the scenery and surface throughout the Eastern Townships—conjoined with excellence of soil for agricultural purposes, that, physically speaking, confers so great an advantage upon them over all the rich alluvial tracts in the far West, which have of late years been so sedulously held up to view for emigration from the old world. The population of the Eastern Townships in the year 1862 may be stated at about 200,000. A great number of them are as yet but very sparsely inhabited. The most populous, as well as those longest settled, and most advanced, are the townships of Orford and Ascot, Compton, Eaton, Melbourne, Shipton, and upwards of twenty other townships included in the counties of Stanstead, Missisquoi, and Shefford."

The greater part of the inhabitants are engaged in Agriculture, but we are assured that no section of country in North America is more amply provided by nature with the fundamental requisites for establishing profitably manufactures of all kinds. Some progress has indeed been already made in that direction. In proportion to the inhabitants, other occupations are duly followed: Law, Medicine, Education, Commerce, engaging the services of a considerable number of persons. Professor Miles especially mentions, in speaking of the population generally, and as a happy circumstance, when the Eastern Townships are compared with the new settlements in the far West, that a numerous and efficient body of ministers of religion of various Christian denominations lives amongst the people.

We learn that in these Eastern Townships, "Of persons dependent on agriculture alone, at least 20,000 additional families possessing small capitals, and industriously disposed, might at once locate themselves, and enter upon a career of comfort and usefulness which in England or Scotland, as small farmers, they can have no reasonable prospect of attaining. For agriculturists in a larger way, and possessing capitals from 1000*l.* and upwards, there is no section of country in North America which holds out a more certain prospect of success. And, as regards families with moderate independent incomes, to whom, in Great Britain, the present is so commonly embittered by thinking of the future, and by the feeling that while they have quite enough to live upon economically, they are quite unable to educate and start in life their children according to their wishes, a settlement in the Eastern Townships would at once give a new and agreeable turn to their prospects, relieving their minds immediately of all doubt and embarrassment."

How far the soil and climate are favourable to agricultural operations will be seen from the few passages we now quote.

"There are about 150 fine clear days annually, and from 90 to 100 more upon which we should call the weather fair. During some years (as in 1861, an exceptional year in this respect,) it has rained on upwards of 100 days; but in general, and including the continuously rainy, showery, and foggy days, as well as those upon which snow falls, the average number scarcely exceeds 100. About 41 inches of water falls in the form of rain, and 11 inches more in that of snow, making a total of about 52 inches."

"Thunder-storms occur from 12 to 15 times a year, and do not last long. Occasional severe cold is experienced in the months of December, January, February, and March; but when the temperature is lowest the air is usually clear, as well as conducive to good health and spirits. A moderately low temperature, accompanied with wind, is far less grateful to the feelings than those beautiful bright days for which the climate of Eastern Canada is celebrated, but upon which, judging by the thermometer alone, an European might be led to imagine the weather intolerably cold. Winter may be said to set in generally about the latter part of November, commencing with a snow-storm and an easterly wind. The fall of snow is from 7 to 8 feet for the whole winter, which has usually disappeared from the clearings by the second week in April. It is not uncommon, however, to find the snow later in coming, and the weather not unfit for outdoors farming operations, such as ploughing, &c., up to the close of November. Sometimes the ordinary gardening processes may be begun in the first week of April."

"As respects salubrity and general suitableness for agricultural purposes, the climate of the townships is probably superior to that of any other part of Canada. In page 95 of the "Colonisation Circular," it is stated: —'The climate of Canada East, like that of the Lower Provinces, is unquestionably the most healthy in North America. Disease is unknown among the usual population, except that caused by inequality of diet or imprudent exposure to atmospheric changes. The dryness of the air is shown by the roofs of houses covered with tin remaining so long bright, and by a charge of gunpowder remaining for weeks uncaked in a gun. . . . If the real excellence of a climate depends upon the earth yielding in perfection and abundance the necessaries of life, or those which constitute the principal articles of food for man and the domestic animals, then Canada East may compare favourably with any part of the world. The steadiness and the uniformity of the summer heat causes all grains and fruits to mature well and with certainty.'"

"In the average, the Township farmers raise 40 or 50 bushels of Oats per acre, sometimes 80 bushels, or more; from 200 to 300 bushels of roots, such as Potatoes, &c.; 40 to 60 bushels of Maize or Indian Corn; and excellent Grass year after year from the same fields from 1 to 1½ tons per acre. The climate and soil are excellently adapted for the cultivation of Hops and Flax. Of the last named article, Flax, it may be confidently stated, that in no part of the world could it be grown of a better quality and to better advantage. The region abounding in pure water—so necessary for the processes by which the fibre is separated from the straw, and on the careful attention to which the quality so mainly depends—with a climate and soil especially adapted for its growth, it is not unlikely that the Eastern Townships may become a great Flax-growing country in the course of the next few years, stimulated by the extraordinary and increasing demand for fibre of a fine quality for the Leeds, Dundee, and Belfast markets. The early settlers of the Townships were in the habit of sowing small patches solely as a means of supplying themselves with household linen. The separation of the fibre, and the spinning and weaving, were effected by comparatively rude processes, although a very excellent quality of linen was often produced. The domestic manufacture has, however, decreased much of late years. But the old doctrine that flax-growing impoverishes the soil having been exploded, and replaced by the admission that under a proper system of rotation of crops and attention to ordinary requirements, the land is actually improved in its capabilities for every agricultural purpose, it is believed that advantage will now be taken of the opportunities offered in this direction. Flax is known to be one of the most valuable crops that can be raised, the return per acre being greatly in advance of that for Wheat or any other cereal. Recently, a 'flax association' has been formed in the Townships, under the auspices of R. W. Henneker, Esq., Commissioner of the British American Land Company, aided by some of the most influential farmers—the main object being to encourage this branch of agriculture by disseminating useful information about the cultivation of flax and its preparation for market.

"In the Townships farming is carried on upon every variety of scale—from the clearing of 12 or 15 acres with small loghouse as a homestead up to magnificent farms of several hundreds of acres with substantial dwelling-houses and out-buildings. Uncleared lands can be bought at 2*s.* or 3*s.* per acre in some parts, and at from 5 up to 25 or 30 dollars per acre for fine large farms, according to extent and situation. The steady persevering cultivator of the soil having a little capital to begin with, can with prudence and tolerable management secure not merely a livelihood but also a comfortable competence, which has indeed, in hundreds of instances, been acquired by persons who had at first no pecuniary funds to start upon."

Mr. Miles speaks in high terms of the British American Land Company, whose offices are at 35½, New Broad Street, where we should advise all intending emigrants to apply for information. In the meanwhile we may quote Professor Miles's account of the principles on which this Company's operations are conducted:—

"In the sale of their lands, 'the terms vary according to circumstances, the principal object being to secure an industrious and thrifty class of settlers. A small payment at the time of sale is usually demanded to insure that the application is made in good faith; and time is given for the payment of the balance of the purchase-money. The price of land varies from 10*s.* to 20*s.* per acre, but the average price of good farming land is about 12*s.* 6*d.* per acre. Improved farms, with buildings complete, may be purchased in any part of the Eastern Townships, at from 200*l.* to 750*l.* for a lot of 200 acres. Town lots, in Sherbrooke Town, for trade or manufacturing purposes, may be obtained at from 30*l.* to 50*l.* per quarter-acre, building lots or rented, with water power for manufacturing purposes.' The terms of the Company for water power are very much more favourable to the lessee than those customarily afforded throughout Massachusetts and in New England. The foregoing statement about the British American Land Company, as a township institution, would be essentially defective if the writer neglected to refer to its co-operation, through its officials, in all efforts for advancing the educational, social, and religious welfare of the inhabitants. The Commissioner is a trustee of the local university, and exercises a most useful influence upon its counsels. Assistance in money and donations of land have been contributed by the Company in order to promote religious worship in the settlements."

To conclude, we give one other passage, in which Mr. Miles closes his case in favour of Canada East.

"It will be seen from the incidental remarks made and the character of the information furnished that the writer has by no means solely in view the classes of emigrants chiefly referred to in the publications issued by Companies and by the Government authorities. In addition to capitalists with large means for embarking in manufactures and mining, private gentlemen of moderate fortune, as well as the better class of British farmers, under any inducement whatever for emigrating, will infer that the country is quite in a state of preparedness to meet their views also. Leaving Britain these need not dread that they are putting behind them for ever the refinements and other concomitants of civilized life. On the contrary, the writer feels able to assure such that in all probability they would for the most part enjoy the change on various accounts, but chiefly because of the extended sphere of usefulness in which they would be placed amongst a people thoroughly in earnest in their appreciation of the blessings of civil and religious liberty, and who under their free government and with their valuable municipal privileges have already achieved a good start in the occupation of the avenues leading to a well-grounded state of social happiness."

Let us add that the really good woodcuts of buildings interwoven with the text give a most favourable idea of social comfort, and show that all the inhabitants of flourishing Canada east do not live in log huts, and are not all bears and peasants.

Farm Memoranda.

COLLEGE FARM, CIRENCESTER.—The weather has on the whole been very favourable both for harvest operations and for ripening the late corn. The result is that samples come to market in good condition and of a better quality than at one time seemed possible; the yield is however sadly deficient. Unfavourable as the evidence collected by the *Agricultural Gazette* was, I do not think it exaggerated the truth; indeed I am inclined to think the deficiency was under estimated in many instances. This deficiency results from several causes, principally perhaps from the excessive rains in March and May, and the very low temperature consequent on those rains. Mildew and Red Rust were the consequence; very unsettled weather during flowering, in some districts perfect hurricanes of wind; red gum in the ear, and the ravages of a moth, the caterpillar of which, Butalis Cerealella, eats about one-third to half of each grain it attacks. Curtis describes it as very seriously affecting grain crops in France. Ear cockle has also been seen on wet undrained land. The deficiency of this country may I think fairly be estimated at one quarter of grain. Straw about an average.

Barley, which early in the season looked very un-promising, has recovered surprisingly, and will now if well got in come nearly to an average on dry healthy soils. The ripening is however unequal, and the quality cannot be fine. The best Barleys are from the gravel, but the yield on such soils is said to be light.

Whilst so much public attention is occupied with Pedigree Wheats, which are certainly unsuited for poor soils, it is a pity that a more careful selection of seed Barley should be comparatively overlooked. It is of very great importance that our seed should be perfectly even, and such as will germinate together. If we have two growths, we shall have two ripenings. Some most valuable remarks on this subject were made by Mr. W. Woodward at the annual crop dinner at Tewkesbury, and our own experience fully endorses his statements.

The early sown Wheats were ready for the scythe by the middle of August; being much scrawled, most was cut by hand, instead of by machine. The winter and spring sown Wheats are stronger in straw, and more fruitful in the head. These have ripened slowly, and required much field room; indeed the corn has been unusually soft, even where the straw is thoroughly dry and withered. Our experimental plots have been hand reaped, and are still in the field. Without going into particulars or hazarding an opinion, we may mention that the ¼ acre unmanured has 13 stooks, or 130 sheaves; the best looking plot manured has 18 stooks, or 180 sheaves; an increase of 200 sheaves per acre.

Root crops of all kinds have greatly improved, and although in many cases backward, we have the promise of a fair crop.

On the 19th August we commenced working Samuelson's patent sheafing reaper; we have cut all our Wheat since, except about 5 acres, with the machine, and save a slight accident from carelessness in allowing one of the fans to come in contact with a tree, we have not had the slightest cause of stoppage. The corn has been well cut, regularly laid in sheaves. The size of sheaves can be very suitable for tying. The size of sheaves can be regulated by altering the adjustment of cog wheels, by which the arms are driven so as to make them revolve more or less rapidly. When the corn lays from the machine, it is difficult to lay straight. The heads from their weight and position have a tendency to fall back over the fans, instead of being pushed off the platform in front of them. This we obviated by widening the fans; a piece of strong iron wire was fixed to the upper side of the rake fans, and thus the heads were brought forwards or rather backwards more completely. The cutting of a laid crop is better than with most machines, as the fans enter the Wheat low, and so hold it up as it were to the action of the knife. With an upstanding crop, or when meeting a laid crop, the work is exceedingly good.

The knife being smooth and not serrated is no

improvement. The principal advantages are in draught, lightness of implement, which can be backed by the horses without any trouble, small size and economy in binding; our labourers are quite contended to tie after it for 1s. an acre less than after the old machine. We regret that Mr. McCormick did not fulfil his intention of sending his new automatic reaper for trial; a comparison between the two would have been very interesting.

Sheep have been well supplied with keep; green and never looked better. Our lambs are still on seeds; we shall shortly separate the fatting from the stock sheep, place the former on Turnips, and let the latter run over the young seeds. We still give a small quantity of nut meal, which promotes a healthy, thriving condition.

We have ploughed up and rolled down our leas on the light land, believing it to be of the utmost importance to secure a firm seed bed, which can only be done by having the Clover thoroughly rotten. With favourable weather we shall commence planting on such land in about a month. *John Coleman, Sept.* 9.

Miscellaneous.

Malignant Sore Throat.—The Registrar-General for Scotland reports that in the second quarter of this year ulcerated sore throats and diphtheria were remarked in scattered localities, and that in Mid and South Yell (Shetland) the sore throats were accompanied by an affection of the hands, which raises the suspicion that sore throat and diphtheria in the human subject is but a variety of that epidemic disease in cattle known by the name of murrain or epizootic aphtha, characterised in them by the aphthous and ulcerated mouth and sore feet. An intelligent veterinary surgeon has brought under notice a few cases, in which it was clearly established that the milk of cows affected with murrain caused aphthous mouths and diphtheria in children, and fatal aphthæ, terminating in ulcerous affections of the mouth, throat, and windpipe, in the case of pigs.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Sept. 17, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level. Inches.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground. Inches.	Temperature of the Earth. 1 foot deep.	2 feet deep.
Thursday	11	30.14	55°	52°	S.E.	1	1	66°	34°	111°*	34°	..	60½°	60°
Friday	12	30.19	60	54	S.W.	2	3	65	37	105	33	..	59¾	60
Saturday	13	30.00	58	55	S.W.	2	4	65	48	93	43	..	59½	60½
Sunday	14	29.77	58	61	S.	1	7	70	55	104	52	0.02	59½	60
Monday	15	30.00	52	56	N.E.	1	7	61	53	70	50	0.21	59¼	60
Tuesday	16	30.26	55	53	N.E.	1	6	72	53	114	52	..	60	60
Wednesday	17	30.39	56	54	N.E.	2	6	66	44	114	30	..	60	59

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Notices to Correspondents.

Poultry: *Intending Farmer.* Your question never reached us; please to repeat it.

Ploughing: *Young Farmer.* The niceties of this subject are no longer of the importance which they once possessed. Well drained land should be "smashed up"—*that* is the proper way to treat it. If you want to know all the mysteries of the subject as it used to be practically carried out—perhaps still in some districts—consult Stephens's "Book of the Farm. The whole vocabulary of this once tedious subject has become obsolete; and in place of 'gathering up, crown and furrow ploughing, casting or yoking or coupling ridges, casting ridges with gore furrows, cleaving down ridges, cleaving down ridges with or without gore furrows, ploughing two-out-and-two-in, ploughing in breaks, cross-furrowing, angle-ploughing, ribbing, paring, &c.,' all that the land needs, in order to efficient culture, is, according to Mr. Smith of Woolston, a 'smashing up;' and it is to land drainage, as permitting a deep, rough tillage before winter, and to steam ploughs and steam cultivators, as enabling it, that the most striking lesson of recent agricultural experience in land cultivation is due.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the SCORCHING RAYS of the SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 0d. per yard run.

Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.

Elisha Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

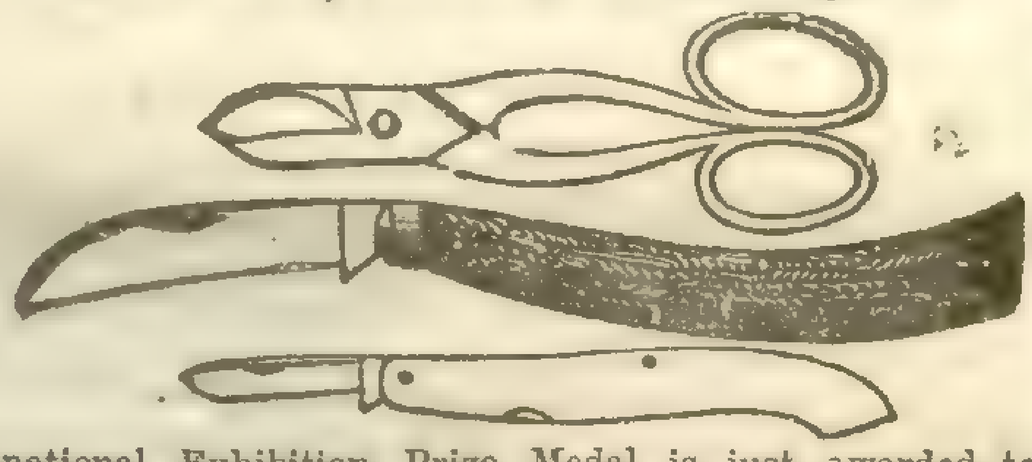
"It is much cheaper than Mats as a covering."

JOSEPH HAYWOOD AND CO., Manufacturers of PRUNING and BUDDING KNIVES, SPORTSMAN'S, and all kind of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

Paxton Works, Sheffield, Established 1738.



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SAYNOR and COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.

Caution.—None are genuine unless marked Saynor. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

Prices Reduced.

H. J. MORTON and CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

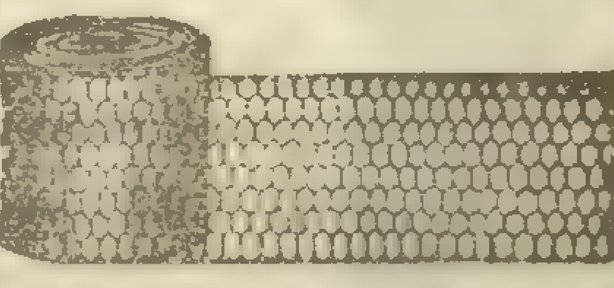
for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.

WIRE STRAND CABLE FENCING

(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1s. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 4d., 4½d., and 6¾d. per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 2¾d., 3¾d., and 5½d. per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.

Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS

of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

Henry J. Morton & Co., 2, Basinghall Buildings, Leeds.

J. T. WILLMER, Horticultural Agent, Auctioneer and Valuer, Springfield Nursery, Sunbury, Middlesex, S.W.

SAMUEL PITMAN, Horticultural Builder and Hot Water Apparatus Manufacturer, 7 years with Weeks & Co., 4 years with Gray & Ormson.

S. P. begs to inform the Nobility and Gentry that he works himself and that he has several apprentices, consequently can execute every description of Hothouse much cheaper than a larger Firm.

Plans and Estimates on application to S. Pitman, 30, Lower Church Street, Chelsea, S.W.

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HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.

Apply to Joseph Meredith, Vine Cottage, Garston, near Liverpool.

N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

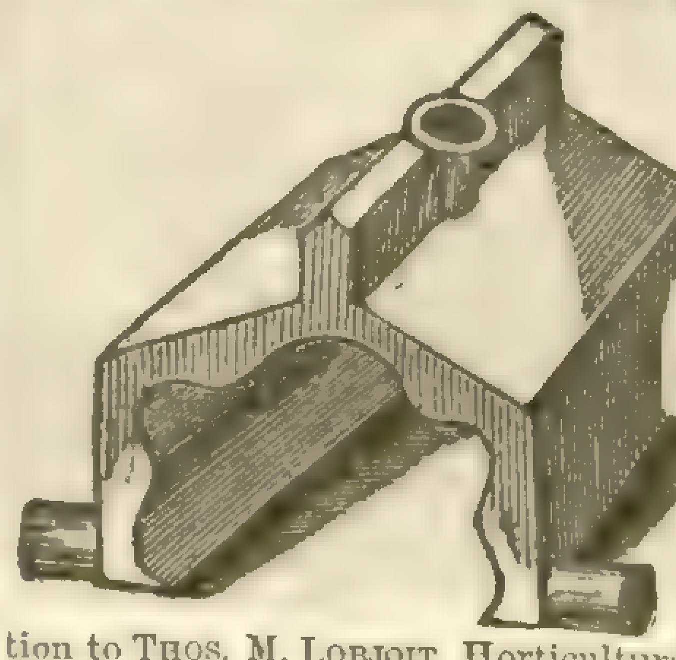
DENNIS'S PATENT HORTICULTURAL BUILDINGS are made from the best Wrought Iron, upon

an entirely new principle. The combination of Iron and Glass under this patent is perfect; the possibility of fracture is prevented, and a permanently Water-tight Roof insured.

The leading practical advantages are extreme smallness of Framing, admitting a maximum of light and heat, great strength, durability, and perfect ventilation. They are speedily erected, partake of more desirable outline, and do not exceed the cost of a perishable wooden structure.

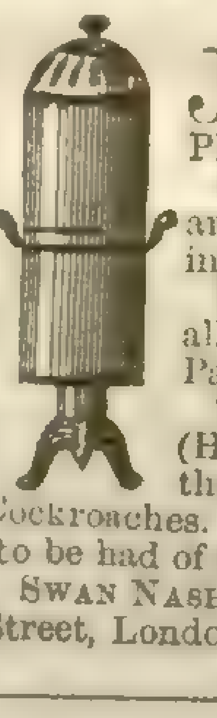
For Prospectus, &c., address T. H. P. Dennis, Horticultural Builder, Hot-Water Engineer, &c., High Street, Chelmsford, Essex; or No. 2105, Open Court, Eastern Annexe, International Exhibition, where a Small Model may be seen and attendance is given on the four last days of the week.

T. M. LOBJOIT'S PATENT HOT-WATER BOILERS are acknowledged by all who have them in use to be the most powerful Boilers now known, and are the most economical, requiring less fuel and attention than any other. They are made of various sizes, suitable for heating the smallest Greenhouse to the largest Conservatory, Churches, and Buildings of all descriptions.



Testimonials forwarded on application to Thos. M. Lobjoit, Horticultural Builder and Hot-Water Apparatus Manufacturer, Turnham Green, W., and at Acton, Middlesex, W.

The only Stove without a Flue.



JOYCE'S PATENT, for Warming Chapels, Halls, Shops, Conservatories, and all other Places. Price from 12s. 6d. each.

JOYCE'S STOVES are Portable and Economical, and burn 12 hours with one supply of fuel, requiring no attention.

STOVES for GREENHOUSES are made to burn all the Winter. Temperature always the same. Patent Fuel, 2s. 3d. per Bushel.

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Walker's Improved Iron Mangers and Racks for Hunting, Carriage, and Farm Horse stables.

JOSEPH SMITH, Horticultural Builder, New Road, Hammersmith, W., has for SALE a quantity of PIT and other LIGHTS, and five ready-made GREENHOUSES, viz.:—

	£	s.
Span Roof, 27 feet long 16 feet 6 inches wide for ..	47	10
Lean-to, 24 feet by 12 feet 6 inches	34	0
Ditto glazed with 21 oz. glass, 100 feet by 13 feet ..	100	0
Ditto ditto, 22 feet by 12 feet..	28	0
Ditto ditto, 12 feet by 7 feet	15	0
Roof and Front Lights for a Lean-to House, 59 feet by 14 feet; 900 square feet	30	0
Also Roof Lights for Houses, 45 feet by 18 feet; 833 square feet	31	0
20 extra stout (10 feet 6 inches by 4 feet 2 inches) Lights,	35	0
20 ditto, 6 feet 10 inches by 4 feet 2 inches	20	0
50 6-feet by 4-feet Lights, 15s. each, or the lot for ..	37	0

Houses made to order from 1s. per sq. foot; if Unglazed, 8d. Pit Lights with 15-oz. Glass, 8d.; 21-oz., 9d. per foot.

*** Estimates given for Heating by Hot Water.

Greenhouse.

WANTED, a good Second-hand LEAN-TO GREENHOUSE, about 15 feet by 12.

Apply by letter to E. P., 27, Finsbury Pavement, E.C.

FOR SALE, now standing on the Premises, at E. Dench's, 152, King's Road, Chelsea, S.W., two very handsome CONSERVATORIES, one 22 by 18, and very ornamental; one 25 by 15; and one VINERY, 16 feet wide by 36 feet long. To be Sold a Bargain.

TO BE SOLD, a CONSERVATORY, 40 feet by 20 feet, with semicircular ends and domed roof. The building is iron and the sash bars copper, fitted with Hot-water Pipes, Boiler, &c., complete. The Conservatory has attached to it a semicircular Alcove, fitted with mahogany and cane seats.

For price and to view, apply to George Clarke & Son, Bodorgan, near Bangor.

HOTHOUSES FOR THE MILLION.

INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.

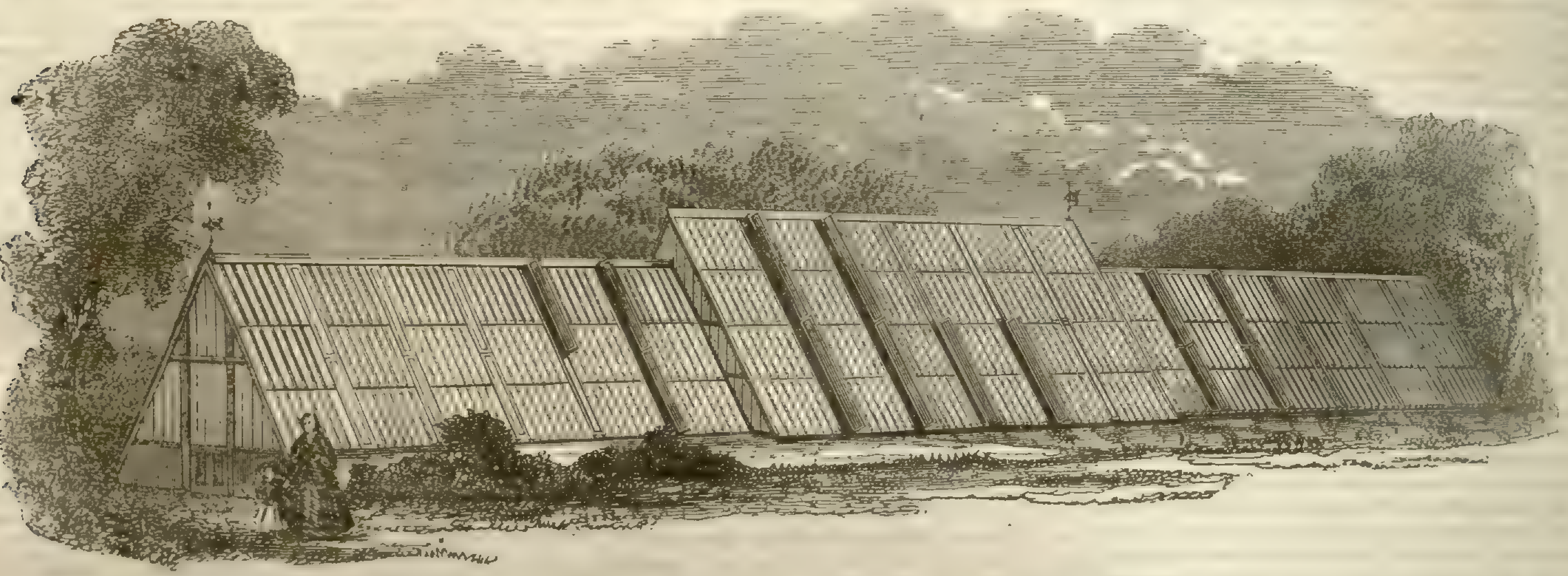
AWARDED A PRIZE MEDAL.

ON THE PRINCIPLE INVENTED AND PATENTED BY

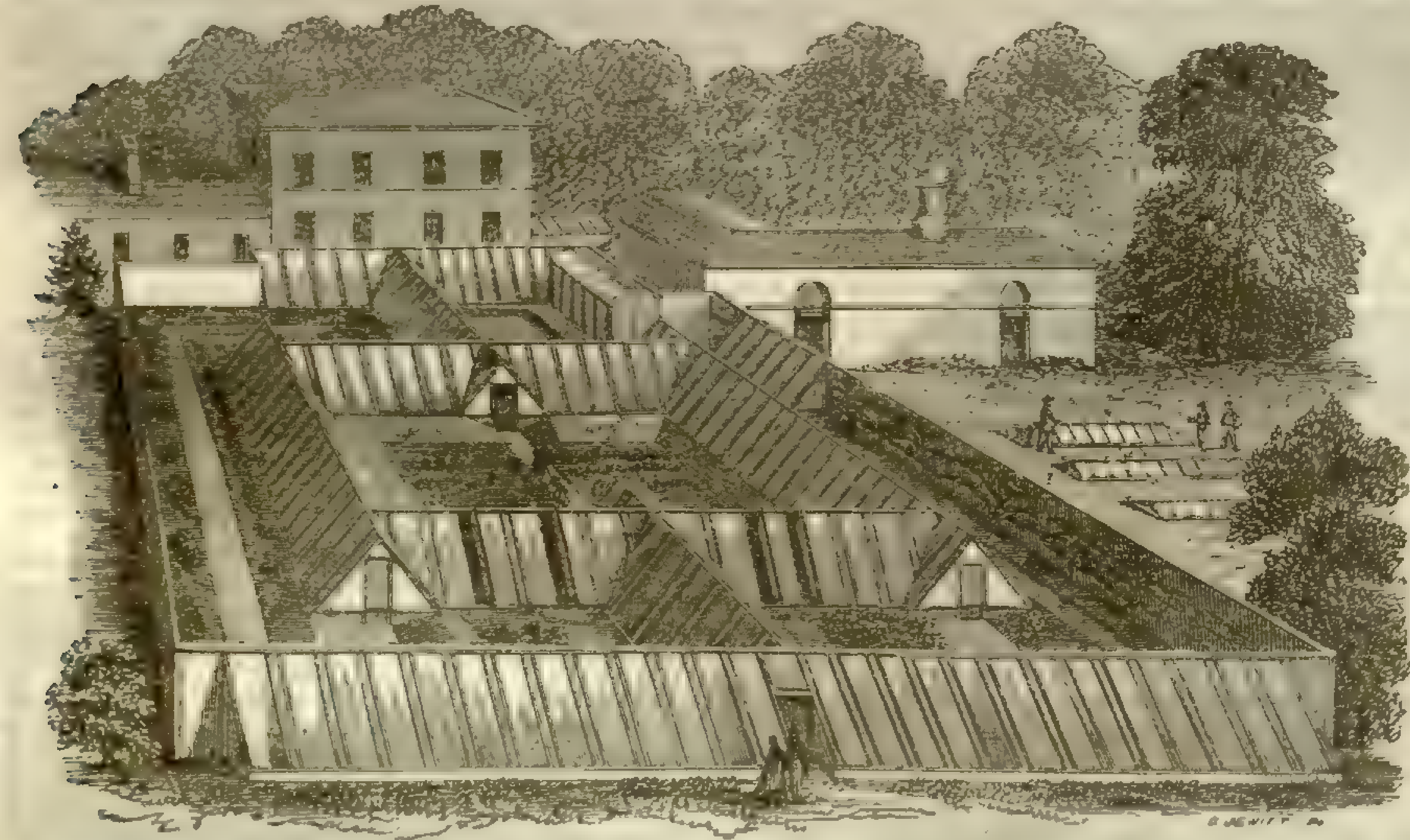
SIR JOSEPH PAXTON, M.P.

COMBINING SIMPLICITY, CHEAPNESS, EXCELLENCE, AND DURABILITY,

BEING CAPABLE OF FULFILLING IN THE MOST PERFECT MANNER ALL THE REQUIREMENTS OF HORTICULTURE.



These PATENT GLASS HOUSES are composed of simple parts, and may be lengthened and arranged to form the boundaries of Gardens; they cost less than Brick Walls, and insure a certain crop of Fruit. As Portable Structures they may be removed and refixed at little expense; and though calculated for Gardens of the highest order, they are, from their cheapness, desirable for Market Gardens, where they may be made to cover any extent, as also for Suburban Villas and Cottage Gardens.



This figure shows a large connected Winter Garden, which has been erected for R. L. CHANCE, Esq., at Summerfield House, Birmingham, consisting of Span Roofs of 14 feet sashes, with Lean-to Roof against the wall, so arranged as to form an extensive promenade of several hundred feet in length. Fruit Trees are planted at intervals near the side of the walks of the Span Roofs, and Grapes hang overhead from Vines trained under the Glass. Various and rare Fruits grown in pots occupy different parts; Vegetables, Early and Late, fill up all the available space, and form an important feature during the whole of the winter and early spring.

The Cash Prices of Lean-to Houses, with Water-troughs, Doors and Ends complete, are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£12 0 0	£16 0 0	£21 0 0	£28 10 0	£34 5 0
31 3 in length	16 10 0	21 2 6	26 10 0	37 12 0	45 16 0
41 11 in length	20 18 0	26 18 6	33 7 6	46 14 0	57 7 0
52 7 in length	25 12 6	32 15 0	40 5 0	55 16 0	68 18 0
63 3 in length	30 6 0	38 10 0	47 2 6	64 18 0	80 10 0
73 11 in length	34 12 6	43 15 0	53 7 6	74 0 0	92 0 0
84 7 in length	39 6 0	49 11 6	60 5 0	83 2 0	103 11 0
95 3 in length	43 19 0	55 10 0	67 2 6	92 5 0	115 2 0
105 11 in length	48 17 6	60 12 6	73 10 0	101 10 0	126 13 0

The Cash Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are as follows:—

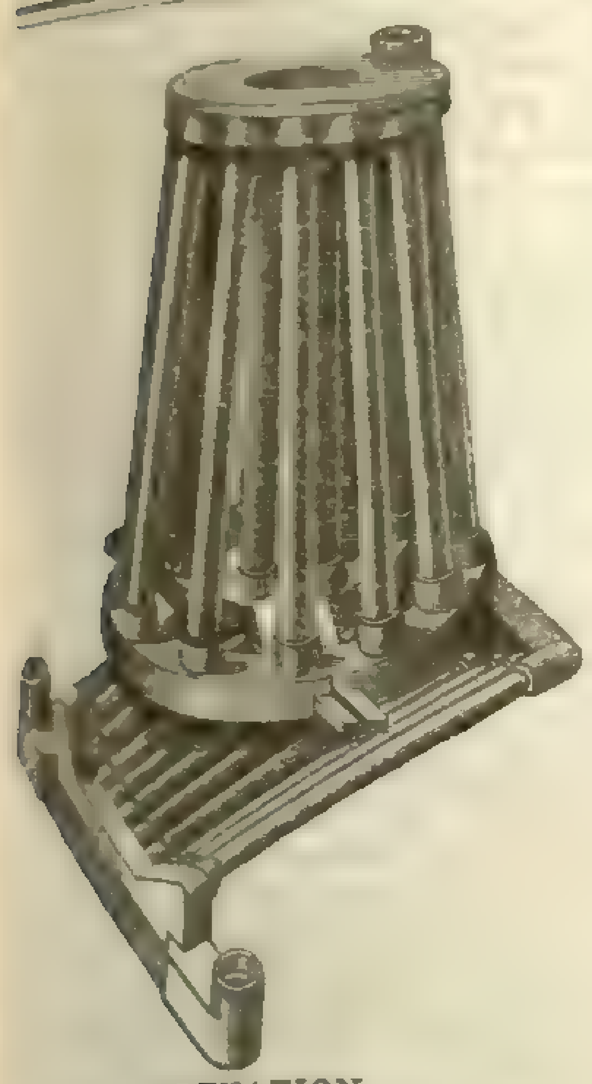
Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£24 0 0	£32 0 0	£42 0 0	£57 0 0	£68 12 0
31 3 in length	33 0 0	42 5 0	53 0 0	75 4 0	91 10 0
41 11 in length	41 16 0	53 17 0	66 15 0	93 8 0	114 14 0
52 7 in length	51 5 0	65 10 0	80 10 0	111 12 0	137 10 0
63 3 in length	60 12 0	77 0 0	94 5 0	129 16 0	161 0 0
73 11 in length	69 5 0	87 10 0	106 15 0	148 0 0	184 0 0
84 7 in length	78 12 0	99 3 0	120 10 0	166 4 0	207 2 0
95 3 in length	87 18 0	111 0 0	134 5 0	184 10 0	230 4 0
105 11 in length	97 15 0	121 5 0	147 0 0	203 0 0	253 6

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

SAMUEL HEREMAN, 7, PALL MALL EAST, LONDON, S.W.

A HANDBOOK of VINE and FRUIT TREE CULTIVATION, as adapted to the above Patent Hothouses, may be had of Mr. HEREMAN, price 1s.; post free, 1s. 1d.

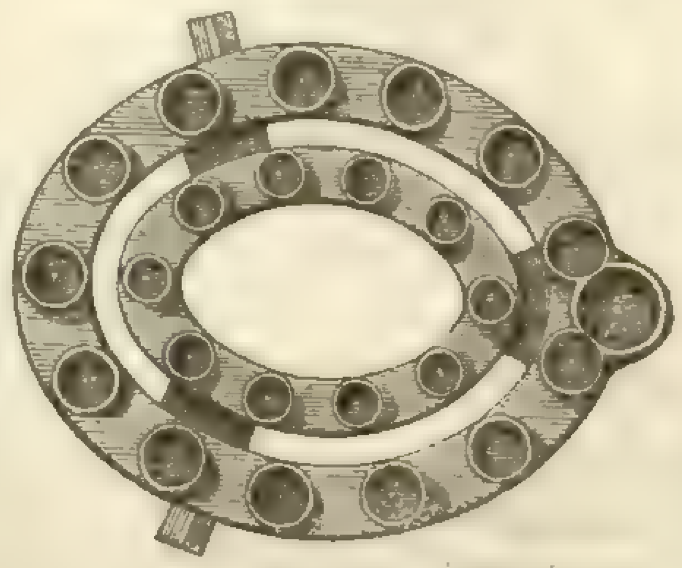


ELEVATION.

GRAY'S OVAL TUBULAR BOILER.

INTERNATIONAL EXHIBITION,

Class IX., No. 2119.



PLAN.

Mr. GRAY begs to call the attention of the Nobility, Gentry, Nurserymen, Gardeners, &c., to his

NEW OVAL TUBULAR BOILER,

acknowledged by practical judges to be a great improvement on every form of Tubular Boiler yet introduced. It has proved itself superior to all other Boilers for quickness of action and economy of Fuel, doing its work with one-third less the amount required by any other.

Extract from Report in Gardeners' Chronicle *of International Exhibition, May 24, page* 476.

"The upright form of Boiler is usually made on a circular plan, but the oval form given to Mr. GRAY's variety of it is said to be preferable in consequence of its bringing the tubes in closer contact with the fire. The usual form of a furnace being a parallelogram rather than a square, it seems feasible that the Boilers on the oval plan should bring the tubes more completely within range of the burning fuel; and this being so the change, though a slight one, is no doubt an improvement."

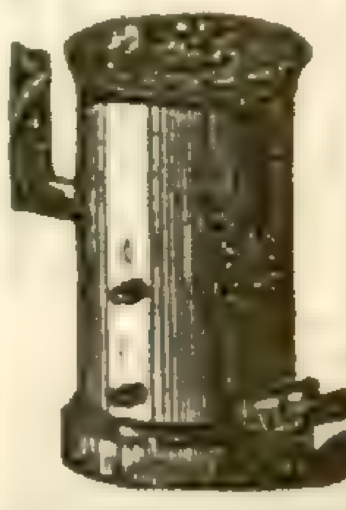
They are made of all sizes, which, with prices, may be had on application.

JAMES GRAY, HORTICULTURAL WORKS,
DANVERS STREET, PAULTON'S SQUARE, KING'S ROAD, CHELSEA, S.W.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection, Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder TUBULAR, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 12s. 6d each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. LYNCH WHITE's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



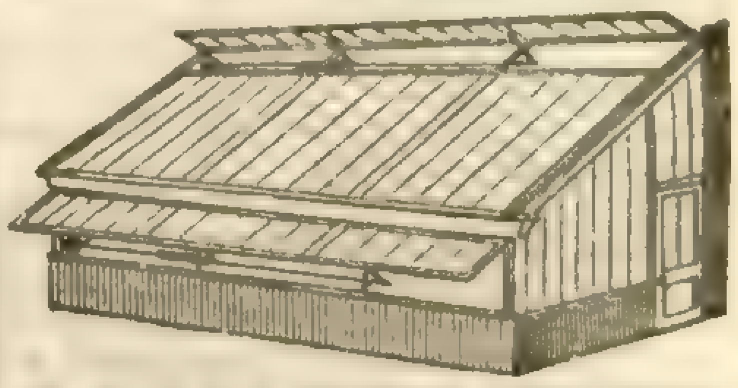
Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3l. 10s.

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough.



T. G. M.'s PATENTED BUILDINGS combine all the modern improvements, are well made of best seasoned red Deal, most effectually ventilated by means of his unequalled Apparatus, can be made either plain (and which are at the same time elegant in appearance), or of the most elaborate design. They can be fixed as permanent buildings, or made to be portable.

T. G. M.'s HEATING APPARATUS continues to give the greatest satisfaction for its heating qualities and small consumption of fuel.

ILLUSTRATED CATALOGUES of the above, Glazin without Putty, Garden Engines, &c , sent upon application.

A FIRST-CLASS PRIZE MEDAL HAS BEEN AWARDED TO J. WEEKS & CO. FOR THEIR SUPERIOR UPRIGHT TUBULAR BOILER AND GENERAL IMPROVEMENTS IN HEATING BY HOT WATER.

JOHN WEEKS & COMPANY,

HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS

TO

HER MAJESTY THE QUEEN
HIS LATE R.H. THE PRINCE CONSORT
HIS ROYAL HIGHNESS PRINCE DEMIDOFF
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND
THE GOVERNMENT OF GREAT BRITAIN
THE TOWER OF LONDON

THE ROYAL HORTICULTURAL SOCIETY, LONDON
THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
THE ROYAL BOTANIC SOCIETY, DUBLIN
THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE CRYSTAL PALACE, SYDENHAM

And NUMEROUS PUBLIC COMPANIES.

KING'S ROAD, CHELSEA, S.W.

Glass for Gardens.

JAMES PHILLIPS AND CO.

beg to submit their prices as follows:—

PROPAGATING GLASSES.

	Each—s.	d.		Each—s.	d.
2 inches diameter ..	0	3½	12 inches diameter ..	1	9
3 " " ..	0	4½	13 " " ..	2	0
4 " " ..	0	5½	14 " " ..	2	6
5 " " ..	0	6½	15 " " ..	3	0
6 " " ..	0	8	16 " " ..	3	6
7 " " ..	0	10	17 " " ..	4	0
8 " " ..	1	0	18 " " ..	5	0
9 " " ..	1	2	19 " " ..	6	0
10 " " ..	1	4	20 " " ..	7	0
11 " " ..	1	6			

HAND GLASSES.

	Each—s.	d.		Each—s.	d.
12 inches ..	6	0	18 inches ..	9	0
14 " ..	7	0	20 " ..	10	0
16 " ..	8	0	24 " ..	12	0

Painted and Glazed with 16 oz. Sheet Glass.
If Open at Top, 1s. extra.

HYACINTH and FLOWER DISHES.
6 ins. diameter, 1s. each; 9 ins. diameter, 1s. 6d. each.
12 ins. diameter, 2s. 6d. each.

LACTOMETERS, for TESTING the QUALITY of MILK.
Four Tubes, 4s. 6d.; Six Tubes, 6s. 6d., with Stands complete.

London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans and every description of Glass for Horticultural purposes.

JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, London, E.C.

WM. BLAKE'S DESCRIPTIVE and CULTURAL SEED POCKETS, GERMAN SEED ENVELOPES, &c.

Catalogues and Samples on application.
66—70, Howard Street, Glasgow.

W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.

Manufactory: Newport, Salop.

Warranted the strongest and most durable Fence ever offered at corresponding prices. It is easily repaired if broken from accidents; can be rolled up most compactly when not in use, is admirably adapted for exportation, and can be had of any height and mesh required, at prices from 4d. to 1s. 6d. per yard and upwards.

For further particulars apply at the Manufactory, or of the London Agent, Mr. R. WINDER, 18, Abingdon Street, Westminster, S.W.

THOMAS MILLINGTON,

87, Bishopsgate Street Without, E.C.

HORTICULTURAL GOODS.

PROPAGATING GLASSES.

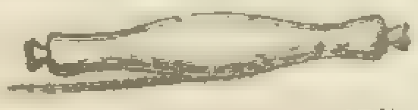
3 inches ..	0s. 4½d. each.	12 inches ..	1s. 9d. each.
4 " ..	0 5½ "	13 " ..	2 0 "
5 " ..	0 6½ "	14 " ..	2 6 "
6 " ..	0 8 "	15 " ..	3 0 "
7 " ..	0 10 "	16 " ..	3 6 "
8 " ..	1 0 "	17 " ..	4 0 "
9 " ..	1 2 "	18 " ..	5 0 "
10 " ..	1 4 "	19 " ..	6 0 "
11 " ..	1 6 "	20 " ..	7 0 "

HAND GLASSES.

12 inches ..	6s. 0d. each	18 inches ..	9s. 0d. each
14 " ..	7 0 "	20 " ..	10 0 "
16 " ..	8 0 "	24 " ..	12 0 "

If open top, 1s. extra.

CUCUMBER GLASSES.
From 12 inches long and upwards, 1d. per running inch.



ROLLING PINS.
From 12 inches long, 1½d. per running inch.

Improved ANTI-CORROSION and other PAINTS.
GAS and LAMP GLASSES, GLOBES, &c.
CHIMNIES of every description.
Not accountable for Breakage.

Sacks. Bags. Mats.

JAMES T. ANDERSON, SACK and BAG MAKER, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from Lime Street), supplies at the lowest possible prices:—

SEED BAGS, of a first-rate quality,
SACKS,
ARCHANGEL and PETERSBURG MATS.

MINTON AND CO. have REMOVED from A[illegible] Place, Blackfriars, to 50, Conduit Street, Regent

ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.

Manufactory: Stoke-upon-Trent.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and LIME MERCHANTS, beg to invite attention to their Stock of Ornamental GARDEN BORDER-EDGING TILES, Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Dairies, Larders, Kitchen Ranges, &c. Grooved Terro [illegible] and other Stable Paving Bricks of great durability, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

Gutta Percha Tubing for Watering Gardens.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from MR. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

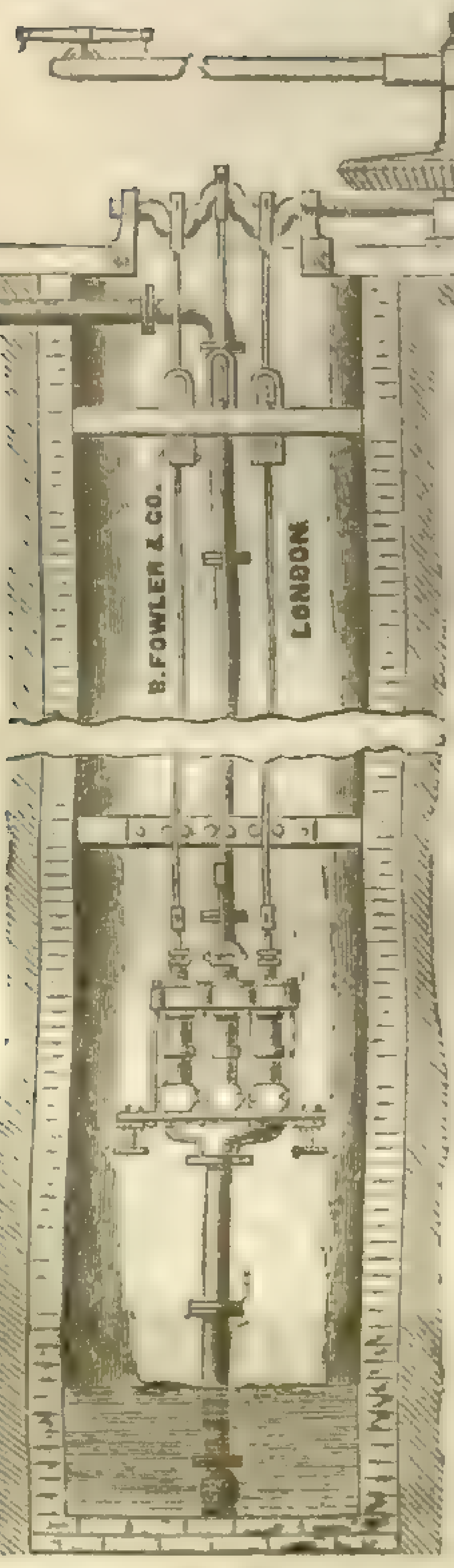
Manufactured by the GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

BENJAMIN FOWLER & CO.,

MANUFACTURERS OF PUMPS AND HYDRAULIC MACHINERY,

WHITEFRIARS STREET, FLEET STREET, LONDON, E.C.

THE accompanying Sketches show some useful forms of apparatus in general demand for Raising and Forcing Water or Liquid Manure. The Landscape Sketch shows the adaptation of Fowler's Improved Hydraulic Rams for the supply of Mansions, Farms, &c. A large number of these simple Self-acting Machines are in use, giving great satisfaction. Their adoption is not confined to positions as shown below, as they are suited to any situation where a few feet fall can be obtained from a spring, brook, or stream; they will force to an elevation equal to ten or more times the number of feet of fall, and to any distance.



No. 37.

No. 4.

No. 38.

No. 37. FOWLER's Improved Simple HORSE GEAR for raising water from deep wells with double or treble pump
B. F. & Co. also make and fix Deep Well Pumps of all descriptions for hand power.

No. 4. FOWLER's CAST IRON BORED PUMPS of all sizes, with improved brass valves for Garden and Farm use, from 1l. 5s. each.

No. 38. FOWLER's Galvanized Portable LIQUID MANURE PUMPS, with flexible suction hose. Price, with 10 feet of pipe and strainer, 4l. 5s.

No. 138. FOWLER's Improved DOUBLE ACTION FORCE PUMP in frame. These excellent pumps are largely used and much approved.

No. 46a. FOWLER's Superior DOUBLE-ACTION PORTABLE FORCE PUMPS and simple FIRE ENGINES for Water or Liquid Manure. Prices, 5l. 15s., and 7l. 10s.

No. 50. FOWLER's Improved (Holman's Patent) DOUBLE-BARREL PUMPS, FARM FIRE ENGINES, and IRRIGATING PUMPS. Prices, from 12l. 10s.

No. 49. FOWLER's Improved GARDEN ENGINES of all sizes, in Oak and Galvanized Iron Tanks, from 50s. each.

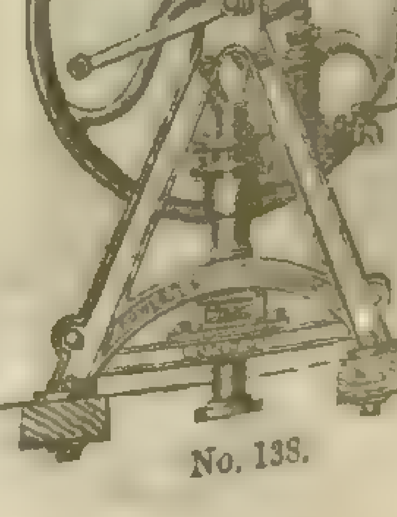
No. 49A. FOWLER's Improved SWING WATER CARRIERS, holding 24 and 35 gallons. Prices, 42s. 6d., and 50s.

No. 49.

No. 46a.

No. 50.

No. 49 A.


No. 138.

FURTHER PARTICULARS, ESTIMATES, AND ILLUSTRATED PRICE LISTS ON APPLICATION.

Notice.

MR. A. CHANDLER (of the late Firm of Chandler & Sons), HORTICULTURAL VALUER, begs to inform his friends and the public that he has REMOVED from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

Landscape and Ornamental Gardening.

MR. J. W. CHAPMAN offers his services to the nobility and gentry in Forming or Altering GARDENS and PLEASURE GROUNDS, and the General Improvement of Estates. He is happy to be able to refer (among recent works) to the New Public Garden at Abingdon, Berks, now in course of formation.

Plans and Drawings for the above purposes are furnished, and the works superintended during their progress.

Hermitage Road, Richmond, Surrey, S.W.

GARDEN ALTERATIONS, or other Estate Improvements Superintended or carried out per Contract or otherwise, by John Gribbin, many years under Mr. ... The handsome Coloured Plan in the *Gardeners'* ... of September 13th was carried out by him for the ... Horticultural Society. Reference given to work executed in all parts of England.—Address, care of Mr. Newton, 30, ...rne Terrace, Paddington.

AGRICULTURAL IMPLEMENTS.—Steam Engines, Threshing Machines, Mills for Hand and Power, Carts, Waggons, Ploughs, Harrows, Turnip Cutters and Pulpers, Chaff Cutters, &c.

Burgess & Key, 95, Newgate Street, E.C.

To Horticultural Builders and Others.

TO BE DISPOSED OF, an old-established HORTICULTURAL BUILDER'S BUSINESS, with the Lease, ..., Machinery, Stock, &c. There is an extensive connexion attached to the above, as having the patent right of manufacturing Patent Galvanised Iron Hot and Greenhouses, ...e of the usual Iron and Wood Greenhouses manufactured by other Horticultural firms. The proprietor retiring from business.

For further particulars apply at 152, King's Road, Chelsea.

TO BE LET, a NURSERY (the Proprietor going abroad), comprising a 7 roomed Dwelling House, a Greenhouse, Pit Erections, and one quarter of an acre of Walled-in ..., situated in the vicinity of Five Parks. A good Trade ... reasonable offer refused. Six and a half years' lease.

C. R., 8, Edward's Place, Balls Pond, N.

Lancashire.

TO BE LET, either for a Term or by the Year, "CARR SIDE FARM," situate in the township of Ince Blundell, about 9 miles from Liverpool. The Farm contains ...4 acres, statute measure, viz.:—about 130 acres Arable, and the remainder Meadow and Pasture. There is a good House and first-rate Outbuildings on the above.—Also, To be Let with the above (or alone), for a Term or by the Year, 755 STATUTE ACRES of LAND, the greater part Tithe Free, situate in the ... of Formby in the said county, and close to the Freshfield Station, on the Liverpool and Southport Line. Possession of the Land may be had on February 2 next, and of the House and Outbuildings on May 1 next.

For further Particulars, and to treat for same, apply to Mr. ..., Steward, Ince Blundell, Liverpool.

Nursery and Seed Business for Sale.

TO BE DISPOSED OF PRIVATELY, the long-established NURSERY and SEED BUSINESS carried on ... by Messrs. M. & J. Brown. The Business has been established about 70 years, and is only now being disposed of in consequence of the death of one of the Partners, and of the remaining Partner retiring. The Nursery at Haghill is within a short distance of town, in high cultivation, and contains a ... assortment of excellent Stock. A Lease at a moderate rent can be obtained, if desired, and also an extension of the Nursery Grounds. The Seed Business is carried on at 29, Glassford Street, Glasgow. Either Business may be disposed of privately if wished. This is an opening rarely to be met with, and is also well worthy the attention either of any established firm, or of parties commencing business wishing to form a connection in the West of Scotland.

For particulars apply to Messrs. Brown & Dunlop, 49, Virginia Street, Glasgow.

South of Devon.

MR. ALEXANDER PONTEY, DECEASED.

To Nurserymen, Seedsmen, and Others.

TO BE DISPOSED OF, by Private Contract, on advantageous Terms, with early possession, the Well-established BUSINESS of a NURSERYMAN, SEEDSMAN, and ..., which for very many years has been extensively and successfully carried on by Mr. Alexander Pontey, of ..., Devon, and his predecessor, and is now to be ... only in consequence of his sudden death.

... of the Business Premises and Stores, which are conveniently situated near the Market, as well as the ... the Nurseries, which are most extensive and well-... at Plymouth and Vinstan (about Two Miles from ... the Tavistock Road), have many years to run.

... Plant, which is of the most Modern construction, and ... the most varied in the West of England, to be taken ... way, at a fair valuation.

... particulars, application may be made to Messrs. ... & Sons, Auctioneers, Bedford Street, Plymouth; or Messrs. Phillips & Son, Solicitors for the Executrix, Frankfort Lane, Plymouth.

Dated Plymouth, August 1, 1862.

Sales by Auction.

North Frith, near Tonbridge, Kent.

... Sale of Short-horned Cattle, Southdown Sheep, Berkshire and Yorkshire Pigs.

MR. STRAFFORD begs to announce that he has received instructions from Edward Hales, Esq., to offer for SALE by AUCTION, without reserve, on WEDNESDAY, ... 24, at 1 o'Clock, at North Frith, near Tonbridge, his ... select HERD of SHORT-HORNS, which have been ... and bred from some of the best and most fashionable ... such as Kirklevington, Fawsley, Cobham, Tortworth, ... of celebrity. Amongst the Short-horns will be the famous heifer Moss Rose, and the bull Fourth Duke ... (17,7..), as well as some superior specimens of ..., and others by Fourth Duke of Oxford, Duke of ..., May Duke, Cardinal, &c. The Southdown Sheep ... Berkshire Pigs are chiefly bred from the famed Buckland ... the other Pigs are also of the best sorts.

..., with pedigrees and other particulars, may be had ... to Mr. Hales, at North Frith, near Tonbridge; or Mr. Strafford, 13, Euston Square, London, N.W.

Old Ford, Bow.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, on the Premises, Roman Road, Old Ford, Bow, N.E., opposite the Roman Arms, on THURSDAY, September 25, at 1 o'Clock, by order of Mr. Nay, the lease having expired, the whole of the GREENHOUSE PLANTS, also 5 Greenhouses, Garden Pots, Barrows, Tools, and sundry effects.

May be viewed prior to the Sale. Catalogues may be had on the Premises; of the principal Seedsmen in London; and of the Auctioneers, American Nursery, Leytonstone, N.E.

Shacklewell.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION on the Premises, Ebenezer Place, near the Queen's Printing Office, Shacklewell, N.E., on TUESDAY, Sept. 30, at 1 o'Clock, by order of the Proprietor, who is going abroad, the whole of the GREENHOUSE PLANTS, including the usual assortment, two Span-roof Greenhouses, Pits, and Sundry Effects.

May be viewed prior to the Sale. Catalogues may be had on the Premises; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

High Beech, Essex.

To Gentlemen, Nurserymen, Florists, and Others.

MESSRS. PROTHEROE and MORRIS are directed by Mr. James Crawford to SELL by AUCTION, on the Premises, opposite the King's Oak, High Beech, Essex, on TUESDAY, Oct. 7, at 11 o'Clock, about 10,000 Choice GREENHOUSE PLANTS, including fine Azalea indica from 1 to 2 feet, and Double Camellias, 3 to 8 feet, beautifully set with bloom-buds; Ericas, Epacris, Coronillas, Pulteneas, Genistas, Fairy Roses; Show, Fancy, and Scarlet Geraniums; Fuchsias, Lycopodiums, 600 choice Ferns, Persian Cyclamen, Weigela, 8000 choice named Roses in pots, Cinerarias, Chrysanthemums, Deutzia gracilis; 700 strong VINES from Eyes, comprising the most approved named varieties; 1000 choice GOOSEBERRIES and CURRANTS; JASMINUM, sorts, &c.

May be viewed four days prior to the Sale. Catalogues may be had on the Premises; at the Eagle, Snaresbrook; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

Preliminary Notice.

To Noblemen, Gentlemen, Nurserymen, and Others.

MESSRS. PROTHEROE and MORRIS are instructed to prepare for unreserved SALE by AUCTION, about the middle of OCTOBER, the whole of the valuable NURSERY STOCK at the Bower Nurseries, Maidstone, Kent, consisting of many thousands of Standard and Dwarf-trained, Untrained, and Pyramidal Fruit Trees, and upwards of 14,000 Maiden Apples, Pears, Plums, Cherries, &c. Also a large assortment of Ornamental and Forest Trees, Evergreens and Deciduous Shrubs, Conifers; quantity of Box edging, Quick, &c., of which full particulars will appear in future advertisements.

American Nurseries, Leytonstone, N.E.

Preliminary Notice of an Important Sale

At Milford Nurseries, near Godalming, Surrey.

MESSRS. PROTHEROE and MORRIS are instructed by the Executors of the late Mr. William Young, to Submit to an unreserved SALE by AUCTION, on the Premises, Milford Nurseries, near Godalming, Surrey, and within 10 minutes walk of the Milford Station, on the South Western Railway, early in OCTOBER, a portion of the valuable NURSERY STOCK, consisting of choice Conifers and large Evergreens, &c., including magnificent specimen Cedars of Lebanon, Cedrus Deodara, Abies Douglasii, Menziesii; Picea Pinsapo, 6 to 8 feet. Nordmanniana; Pinus excelsa, insignis, Cembra, austriaca, Benthamiana, &c.; Chinese and other Arbor-vitæ, 1000 very fine Araucaria imbricata, from 1½ to 6 feet; 1000 Irish Yews, 1000 English Yews, 6 to 11 feet, many of which are beautifully fanned; 300 magnificent Lucomb Oaks, the best variety; handsome Weeping Ash, Fern-leaved Beech, and other Ornamental Trees.

This Stock (which will be more fully described in future advertisements) is well worthy the attention of Noblemen, Gentlemen, and the Trade requiring handsome symmetrical-formed Conifers and other magnificent specimens for immediate effect.

May be viewed prior to the Sale; and Catalogues when ready may be obtained on the Premises; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

Orchard House Trees.—Preliminary Notice.

MR. BROWNSON is honoured by instructions from an eminent Cultivator to offer by PUBLIC COMPETITION in OCTOBER next, about 400 splendid grown PEACHES, NECTARINES, APRICOTS, PEARS (on Quince Stocks), PLUMS, CHERRIES, &c., growing in 10 and 12-inch Pots, of most of the leading kinds, some of which are full of fine Fruit, and in vigorous health.

Particulars of day of Sale and Descriptive Catalogues in due course.—Railway Station, Ashbourne, Derbyshire.

Expiration of Lease—Nursery Stock.

To the Nobility, Gentry, Nurserymen, Florists, & Others.

MR. KIRKE has been favoured with instructions from Mrs. Conway to SELL by AUCTION on the Premises, Earles Court Nursery, Old Brompton, S.W., on THURSDAY, Sept. 25, at 11 for 12 o'Clock, the ground being required for Building purposes immediately, comprising Standard, Dwarf, and Climbing Roses of sorts, Camellias, Azaleas, Mrs. Conway's celebrated Scarlet and other Geraniums, Fuchsias, Cacti, Myrtles, Yuccas, Cedrus Deodara, 3 to 4 feet, Rhododendrons, Pyrus japonica, Tree Box, Euonymus, Siberian and Chinese Arbor-Vitæ, Laurustinus, Irish Yews, Sweet Bay, Chrysanthemums, several thousand Lily of the Valley, Greenhouse and Herbaceous Plants, Vines in Pots, Laurels, Aucuba japonica, Limes, 8 to 10 ft.; Span-roofed Green and Forcing Houses, Pits, Lights, Boxes, Hand-glasses, Sheds, &c. About 500 yards of superior Box Edging. Nearly all in pots.

May be viewed two days prior to the Sale. Catalogues had on the Premises; and at the Offices of Mr. Kirke, 19, Brompton Row, Brompton, S.W.

Ferns, Conifers, Vines, Dutch Bulbs, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, London, W.C., on WEDNESDAY, September 24, at half-past 12 o'clock precisely, a choice Assortment of RARE PLANTS, comprising 20 Todea pellucida, 50 Dracæna australis, 50 Dracæna indivisa, Cyathea dealbata, Dicksonia squamosa, Cyathea Smithii, Wellingtonia gigantea, Cupressus Lawsoniana, Pinus Don Pedri, P. insignis, P. ponderosa, Cupressus macrocarpa, 50 Vines from Eyes, &c. Also a quantity of Hyacinths, Crocuses, Tulips, Anemones, Narcissus, &c.

On view the Morning of Sale, and Catalogues had.

Valuable Rare Ferns and Cordylines.

MR. J. C. STEVENS begs to announce that he will include in his Sale at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, Sept. 24, at half-past 1 o'Clock precisely, VALUABLE FERNS, &c., comprising specimens of Todea pellucida, fronds 20 to 30 inches long; Cyathea Smithii, 5 feet in the stem, the finest ever offered for public competition; Dicksonia squamosa, Cyathea dealbata, Cyathea medullaris, 3 to 4 feet in the stem; 100 Plants of Dracæna australis, 2 feet; and 6 Plants of Cordyline indivisa.

On view the Morning of Sale, and Catalogues had.

To Noblemen and Gentlemen engaged in Ornamental Planting, and Others.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, Sept. 27, at half-past 12 o'Clock precisely, 400 to 500 Bushes of HYDRANGEAS, a large quantity of Irish and Common YEWS, ARAUCARIAS, CEDRUS DEODARAS, WELLINGTONIAS, TREE BOX, AUCUBAS, ARBOR VITÆS, RED CEDARS, PHILLYREAS, HOLLIES, &c.

On view the Morning of Sale, and Catalogues had.

Importation just received from Holland.

In fine Condition, and Lotted to suit Private Buyers and the Trade.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, October 1, at half-past 12 o'Clock precisely, 65,000 Choice named DUTCH FLOWER ROOTS and BULBS, consisting of 10,000 Double and Single Hyacinths, 600 Double and Single Tulips, 400 Polyanthus Narcissus, 18,500 Crocuses, 17,000 New Double and Single Anemones, 6000 Ranunculuses, 2000 Gladiolus, 1500 Snowdrops, 3000 Iris, 400 Jonquils, &c.

On view the Morning of Sale, and Catalogues had.

Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on FRIDAY, October 3, at half-past 12 o'Clock precisely, about 100 Plants of LÆLIA PURPURATA in good condition, and some CATTLEYAS, stated to be new.—On view the Day prior and Morning of Sale; and Catalogues had.

Consignment of Plants from Ghent.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, October 4, at half-past 12 o'Clock precisely, 300 CAMELLIAS, with flower buds, 1 to 3 feet high; 300 INDIAN AZALEAS, bushy plants of the choicest varieties well set with flower buds; 300 HARDY RHODODENDRONS of the best named varieties; 200 bulbs of LILIUM UMBELLATUM ATROSANGUINEUM; 300 strong roots of ASCLEPIAS TUBEROSA; Standard and Dwarf LAURUSTINUS, &c.

On view the Morning of Sale and Catalogues had.

Important Sale of Established Orchids.

MR. J. C. STEVENS begs to announce that he will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, London, W.C., on THURSDAY, October 2, instead of the 9th, as previously announced, without the least reservation, the second and concluding portion of ESTABLISHED ORCHIDS, of G. Reed, Esq., of Burnham, Somersetshire, who is giving up their culture, comprising amongst many others the following choice and well-known sorts:—

Aerides Fieldingi	Dendrobium moniliforme
,, virens	,, densiflorum
,, crispum	Lælia superbiens
,, affine	Lycaste Skinneri
,, Warneri	Phalænopsis amabilis, 9 plants
Angræcum species	,, grandiflora, 18 plants
Cymbidium giganteum	Saccolabium Reedi
,, eburneum	,, præmorsum
Cattleya Leopoldi	Vanda Batemani
,, Mossiæ	,, suavis (Veitch's)
,, intermedia	,, tricolor
,, guttata	,, teres
,, labiata	,, cœrulea
Cypripedium venustum	,, gigantea
Dendrobium Farmeri	Sobralia Ruckeri, &c.

Also the large Van used for taking Plants to the Exhibition.

On view the Morning of Sale, and Catalogues had.

Important Sale of Plants at the Arboretum,

Leamington Spa, Warwickshire.

MR. J. C. STEVENS has been favoured with instructions from the Proprietor, John Hitchman, Esq., who is intending to erect a Hydropathic Establishment in the Arboretum, to SELL by AUCTION, on the Premises, on MONDAY, October 13, and five following days, at half-past 11 o'Clock each day, the Valuable and Extensive COLLECTION of SPECIMEN CONIFERS and other ORNAMENTAL PLANTS, consisting of upwards of 300,000, all of which have been well prepared for removal, having been frequently transplanted, and several hundreds of the choicer kinds, being grown in crates, including magnificent specimens (besides many others), of the following known kinds:—

Araucaria imbricata, 4 to 8 feet	Pinus tuberculata, 1 to 3 feet
Abies Douglasii, 6 to 9 feet	,, ponderosa, 2 to 4 feet
,, Menziesii, 5 to 8 feet	,, Sabiniana, 1 to 8 feet
Cedrus atlantica, 4 to 6 feet	,, Lambertiana, 1 to 4 feet
,, Deodara, 4 to 10 feet	Picea amabilis, 1 foot
,, Libani, 4 to 8 feet	,, grandis, 1 foot
Cryptomeria japonica, 4 to 9 ft.	,, Pinsapo, 1 to 7 feet
Cupressus Lambertiana, 2 to 3 ft.	,, Nordmanniana, 1 to 4 ft.
,, Lawsoniana, 1 to 4 feet	,, nobilis, 1 to 4 feet
,, McNabiana, 1 to 2 feet	Taxus ericoides, 1 to 4 feet
Cephalotaxus Fortuni, 1 to 3 ft.	,, aurea variegata, 1 to 3 ft.
Juniperus excelsa, 1 to 5 feet	,, elegantissima, 1 to 3 feet
,, chinensis, 1 to 4 feet	,, adpressa, 1 to 3 feet
,, dealbata, 1 to 3 feet	Thuja gigantea, 1 to 3 feet
Libocedrus decurrens, 1 foot	,, aurea, 1 to 2 feet
Pinus austriaca, 2 to 5 feet	Thujopsis borealis, 1 to 3 feet
,, Benthamiana, 3 to 4 feet (In crates.)	Wellingtonia gigantea, 1 to 4 ft.
Pinus excelsa, 2 to 10 feet	Yews (Irish), 6 to 10 feet
,, Jeffreyi, 1 to 3 feet	&c. &c.

Also various first-class Evergreens and Deciduous Trees and Shrubs of different sizes. Fine Dwarf-trained STANDARD and other FRUIT TREES, about 10,000 DWARF and STANDARD ROSES of the choicest named kinds, Rhododendrons, Camellias, Azaleas, Variegated and other Hollies, Portugal and Common Laurels, Forest Trees, and a variety of other Hardy and Greenhouse Plants.

May be viewed till the time of Sale, when Catalogues (1s. each, or by post 14 stamps, containing upwards of 160 pages of printed particulars, may be had at the Nursery; at the principal Inns at Banbury, Oxford, Coventry, Birmingham, Manchester, Rugby, Leicester, Northampton, Stratford, Derby, Worcester, Burton-on-Trent, Stratford-on-Avon, Warwick; and at Mr. J. C. Stevens's Auction Rooms and Offices, 38, King Street, Covent Garden, London. Approved Bills at 3 months will be taken of Purchasers above 50*l*.

The Arboretum is within five minutes' walk of the Leamington Stations on the Great Western and North Western Railways, which offers great facilities for transmitting the Plants to every part of the country. Frequent trains run daily to and from Leamington, and cheap trains three times a week from most of the principal towns.

HOT-WATER PIPES

DELIVERED TO ANY STATION IN ENGLAND.

J. JONES

BEGS to state that he can now supply HOT-WATER PIPES and FITTINGS delivered Carriage Paid to any Railway Station in England, and that he has made very advantageous arrangements for delivery at the following Stations; and parties availing themselves of this offer will in many cases get their Pipes at a Country Station at a less price than would be charged in London.

Alfreton
Accrington
Ashbourne
Adlington
Ashby-de-la-Zouch
Atherstone

Bradford (Yorks.)
Burton
Burnley
Bolton
Bingham
Bulwell
Beverley
Bury
Bedale
Barnsley
Barton
Birkenhead

Chesterfield
Chester
Chorley
Chelford
Crewe
Cheadle
Congleton
Colwich

Derby
Dewsbury
Doncaster
Driffield
Droitwich
Dudley

Edgebaston
Eckington

Farnworth

Gainsborough
Grantham

Halifax
Harrogate

Ilkeston

Kirkham
Knapton
Knaresborough

Lancaster
Leeds
Liverpool
Loughborough
Leek
Lichfield
Leamington
Leicester
Lincoln

Macclesfield
Malton
Manchester
Mansfield
Market Harboro'
Marton

Nottingham
Normanton
Northallerton
Northampton

Oakham
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Oldham
Ormskirk
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Oundle

Preston
Pontefract
Peterborough
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Rochdale
Rugeley
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Stafford
Stourbridge
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St. Helen's
Settle
Skipton
Stamford
Sleaford
Scarborough
Selby
Sheffield

Tamworth
Thirsk
Tipton
Trentham
Thrapston

Uttoxeter
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Worcester
Wolverhampton
Wellington (Salop)
Wrexham
Warrington
Wigan
Wakefield
Worksop
Wellingboro'

York

Also to any Station in Derbyshire, Shropshire, Warwickshire, Cheshire, Lancashire, Yorkshire, Leicestershire, Worcestershire, Lincolnshire, and Staffordshire.

J. JONES will be happy to forward his ILLUSTRATED CATALOGUE of HOT-WATER PIPES, BOILERS, and FITTINGS, and PRICES for the same delivered Free to any Station; but parties requiring prices must state the quantities of Pipes, &c., required, and the Station to which they are to be delivered.

J. JONES,
IRON MERCHANT and HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

20-inch Wrought Iron	... ...	£3 15 0
24-inch "	... ...	6 10 0
30-inch "	... ...	7 10 0
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48-inch "	... ...	12 0 0
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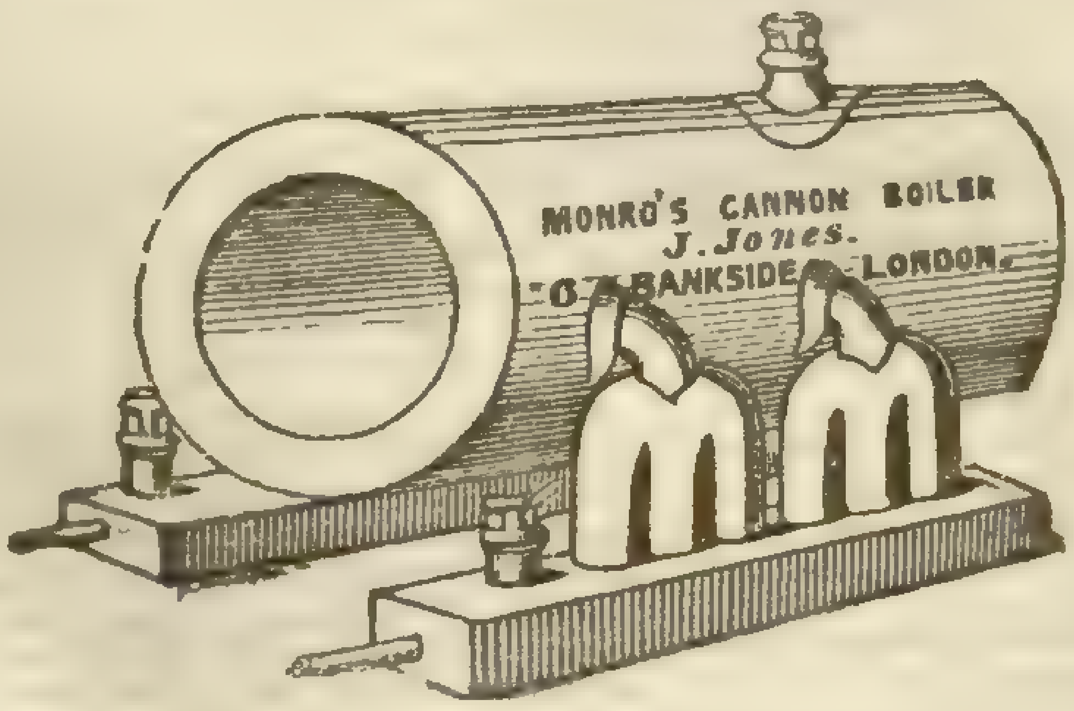
72-inch "	... ...	25 0 0



MONRO'S CANNON BOILER.

These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by J. JONES, 6, Bankside, Southwark, London, S.E.

Prices for HOT-WATER PIPES, ELBOWS, TEES, SYPHONS, VALVES, TROUGH PIPES, ORNAMENTAL COIL CASES, BECK'S PATENT VALVES, &c.; or ESTIMATES for HOT-WATER APPARATUS, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON, SADDLE, or CYLINDER BOILERS will be sent, with an ILLUSTRATED CATALOGUE, free on application.

J. JONES,
HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, LONDON, S.E.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 39.—1862.] SATURDAY, SEPTEMBER 27. {Price Fivepence. STAMPED EDITION, 6*d*.

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ROYAL HORTICULTURAL SOCIETY.—The GREAT INTERNATIONAL SHOW commences OCTOBER 8.

ROYAL HORTICULTURAL SOCIETY'S INTERNATIONAL SHOW of FRUIT, VEGETABLES, [illegible] CEREALS and GOURDS, OCTOBER 8 to 18. [illegible] can be had on application to Mr. EYLES, Garden [illegible], South Kensington, W.

GREAT INTERNATIONAL FRUIT, VEGETABLE, ROOT, CEREAL, and GOURD SHOW, at the ROYAL HORTICULTURAL SOCIETY'S GARDEN, South Kensington, OCTOBER 8, 9 and 10. The Roots, Cereals, and Gourds will remain on Exhibition until the 18th.
Admission on October 8, Half-a-Crown; on October 9, 10, 11, [illegible], One Shilling each day.

New Rose Catalogue for 1862-63.

WM. WOOD and SON'S NEW CATALOGUES of ROSES, BULBS, and NURSERY STOCK are now [illegible] distribution, and will be sent free on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

PAUL AND SON'S TRADE LIST of ROSES and GENERAL STOCK is now ready, and may be had on application, enclosing card.
Old Nurseries, Cheshunt, Herts.

Rose Catalogue.

PAUL AND SON'S DESCRIPTIVE PRICED CATALOGUE is now ready, and will be forwarded by post on application.
Also a fine collection of EVERGREENS and FLOWERING SHRUBS, FRUIT and FOREST TREES of all descriptions.
Old Nurseries, Cheshunt, Herts.

Rose Catalogue, 1862-63.

WM. PAUL'S ROSE CATALOGUE is now ready for circulation. Free by post on application.
Superior STANDARD ROSES, 18*s*. per dozen and upwards.
" DWARF ROSES, 9*s*. per dozen and upwards.
All the NEW ROSES, 30*s*. to 60*s*. per dozen.
Nurseries and Seed Warehouse, Waltham Cross, N.

ROSES.—The DESCRIPTIVE CATALOGUE of ROSES for the Autumn, by THOS. RIVERS, is now ready. It is so arranged as to be a safe guide to the purchaser. Free per post on application.
Nurseries, Sawbridgeworth.

Roses.

EDWIN HOLLAMBY has much pleasure in announcing to his numerous Patrons that his unrivalled selection of the above is NOW in BLOOM, and begs to state that they are in the finest possible condition. A visit to the Nurseries is respectfully solicited.
Tunbridge Wells, Kent.

Rose and Bulb Catalogues for 1862-3.

EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded gratis and post-paid on application.
Seed and Nursery Establishment, Tunbridge Wells, Kent.

Rose Catalogue, 1862 and 1863.

JOHN CRANSTON begs to announce that his new ROSE CATALOGUE is now ready for distribution, and will be forwarded free on application. It contains full and faithful descriptions of nearly all the NEW ROSES of 1861, as well as the older kinds.
Nurseries, King's Acre, near Hereford.

Camellia Stocks.

W. H. ROGERS, Red Lodge Nursery, Southampton, offers the above in single pots, fit for immediate working, at 40*s*. per 100.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, [illegible] popular and botanical names, derivations, description, [illegible], colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious Index of all their synonymes. Free by post for 12 postage stamps.
RICHARD SMITH, Nurseryman, Worcester.

EVERGREENS, &c.—Every description of EVERGREENS, of the most suitable ages and sizes for [illegible] Planting, all having been removed within the last two [illegible] years, and are full of roots, grown upon exposed land. [illegible] is considered the best and safest time to transplant. Sizes and prices on application.
JAMES DICKSON & SONS, the "Newton" Nurseries, Chester.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

Hyacinths, Crocuses, &c.

JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

Hyacinths, Crocuses, &c.

JAMES CARTER AND CO.'s first consignment of DUTCH BULBS has arrived in splendid condition. CATALOGUES free of charge on application to 237 and 238, High Holborn, London, W.C.

MINIATURE HYACINTHS. 12 in 12 choice varieties, 4*s*. and 6*s*. per dozen.
MINIATURE HYACINTH GLASSES, 4*s*. 6*d*. per dozen.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, W.C.

MINIATURE HYACINTHS. The best sorts of Miniature Hyacinths by name at 5*s*. per dozen.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Hyacinths, Tulips, Narcissus, Crocus, &c.

BARR AND SUGDEN'S stock of the above is large and of prime quality. Early orders solicited.
BARR & SUGDEN, Seed Merchants, &c. (see large advertisement), 12, King Street, Covent Garden, W.C. (Opposite the Garrick Club).

Hyacinths, &c.

WM. PAUL'S DESCRIPTIVE CATALOGUE of HYACINTHS and other DUTCH BULBS, with Hints on Culture, is now ready. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Dutch Bulbs.

CHARLES TURNER'S CATALOGUE of a selection of the best in each class is now ready, and will be forwarded on application post free.
The Royal Nurseries, Slough.

Wm. Cutbush & Son's Dutch Bulb Catalogue.

WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE and PRICED CATALOGUE of HYACINTHS and other Dutch Flower Roots is now ready, post free, on application.
Highgate Nurseries, London, N.

Economy and Excellence.

H. BROWN'S PRICED DESCRIPTIVE CATALOGUE of HYACINTHS, GLADIOLI, and other BULBS for Show, &c., is now ready, post free. Collections from 10*s*. and upwards, and large quantities, specially ordered, carriage free, on exceedingly moderate terms.
Seed Warehouse, 4, Commutation Row, Liverpool.

Dutch Flower Roots.

JOHN BELL begs to announce the safe arrival of his Annual Importation of the above in fine condition. CATALOGUES post free on application at his Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Hyacinths, Tulips, Crocuses, &c.

BUTLER AND McCULLOCH'S DESCRIPTIVE CATALOGUE of BULBS, containing ample Cultural Directions, may be had free and post paid upon application.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

HYACINTHS, TULIPS, CROCUSES, and other DUTCH BULBS, just arrived in excellent condition. PRICED CATALOGUES on application to
S. PONSFORD, Loughboro' Park Nurseries, Brixton, Surrey, S.
N.B. CATALOGUES of GENERAL NURSERY STOCK will be ready at the end of this month.

Hendon Park Nurseries, N.W.

PANSIES.—All the newest and best; one of the largest Stocks in England. Selection left to E. S., 6*s*. per dozen; finest Seed, 1*s*. to 2*s*. 6*d*. per packet.
EDWARD SHENTON.

Calceolaria and Pansy Seed of the finest Strains.

GEO. WHEELER begs to announce that he is still sending out Seeds of his very superior CALCEOLARIA in 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*. packets.
Choice PANSY from Prize Flowers, 1*s*. to 2*s*. 6*d*. per packet.
Nursery, Warminster, Wilts.

FOR SALE, a large Collection of BRITISH and EXOTIC FERNS, at
J. ILLMAN'S Nursery, Wellington Place, Strood, Kent.

WANTED, in small or large quantities, BLACK THORN. Apply, stating quantity, price and height, to JOHN PERKINS, 52, Market Square, Northampton.

To the Trade.

GREEN HOLLIES, 2 and 3 years old, Seedlings and Transplanted, 1 to 1½ foot, 1½ to 2 feet, and 2 to 3 feet. Price on application.
JAMES DICKSON & SONS, "Newton" Nurseries, Chester.

WELLINGTONIA GIGANTEA, superb specimens, all Seedling plants, from 6 to 12 feet high. Can be insured to be transplanted with safety to any distance.
Prices on application to WILLIAM BARRON, Elvaston Castle Derby.

WELLINGTONIA GIGANTEA.—The undersigned has to offer a very large and fine stock of healthy one year Seedling Plants established in single pots; also a few plants of larger sizes. Price per 100 or 1000 on application.
J. HENCHMAN, Edmonton, London, N.

Good Seeds, Carriage Free, at Market Prices.

SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds for Autumn Sowing.

DELIVERED FREE AT NEAREST RAILWAY STATION.
PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, 27, Great George Street, Westminster, S.W.

Agricultural and Garden Seeds.

H. AND F. SHARPE, SEED GROWERS and MERCHANTS, Wisbech. Special PRICED LIST of NEW SEEDS on application.

Agricultural Seeds.

GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

Strawberries.

CHARLES TURNER can still supply strong Plants for Fruiting next season of all the leading kinds. CATALOGUES may be had on application.
The Royal Nurseries, Slough.

STRAWBERRIES.—Admiral Dundas, British Queen, Elton Pine, Eleanor and Wizard of the North, 15*s*. per 1000, 2*s*. per 100; Eliza, Black Prince, Prince of Wales, Princess Royal, Princess Alice Maud, Keen's Seedling, and Oscar, 2*s*. per 100, Trade price.
GEO. CORNWELL, Seedsman, &c., Barnet, Herts, N.

STRAWBERRIES.—A New DESCRIPTIVE CATALOGUE of more than 200 Varieties of STRAWBERRIES, free.
Good laid plants of nearly every variety can now be supplied by the Grower,
W. J. NICHOLSON, Egglescliffe, near Yarm, Yorkshire.

Grape Vines.

WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines.

J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.

B. S. WILLIAMS begs to intimate that he has a fine and healthy stock of the above from Eyes, including all the best varieties for Fruiting in Pots and Planting Out. Prices on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Hurst House Seedling Pine.

J[illegible] S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer good plants of this choice Pine [illegible] 10*s*. 6*d*., 15*s*., 21*s*. each.
[illegible] plant is of dwarf robust habit, producing heavy fruit of [illegible] best flavour.
[illegible] Stock of PRICKLY and SMOOTH CAYENNE PINES.

[illegible]NE SUCKERS.—Five hundred QUEEN [illegible]UCKERS, more or less, to be sold cheap. Warranted [illegible]nd healthy, and from plants which never had the Scale. [illegible]y by letter to C. C., Mr. McGregor, Seedsman, Merthyr [illegible]

Fine Camellias and Azaleas.

F. AND A. SMITH have an immense stock of AZALEAS and CAMELLIAS well set with flower buds, of fine growth and in healthy condition, now offering at moderate prices, which may be had on application.
Dulwich, Surrey, S.

Cineraria and Calceolaria Seed.

F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*., free by post.
Dulwich, Surrey, S.

REYNOLDS'S PERPETUAL BEARING CUCUMBER, the best winter forcing Cucumber in cultivation. Packets containing five seeds, at 2*s*. 6*d*. per packet, can be had of HURST & SON, 6, Leadenhall Street, London; or of GEORGE EDWARD, 1, King Street, Castlegate, York.

CABBAGE PLANTS.—Fine Early Sorts, grown in light soil, at 3*s*. 6*d*. per 1000, packed; 1100 to the 1000 prepaid orders, by
THOMAS WELLAND, Surrey Gardens, Godalming, Surrey.

Early Cabbage Plants.

W. VIRGO AND SON, Wonersh Nursery, Guildford, have a large quantity of strong, healthy plants of the following sorts to offer for Sale at 3*s*. 6*d*. per 1000, viz.:—
EARLY YORK, | NONPAREIL, and
BARNES. | BATTERSEA.

MANGEL WURZEL SEED, in Red and Yellow, Long and Red, Yellow and Orange Globe varieties, for Sale. For price apply to the Grower,
Mr. S. A. DAINTREE, Fendrayton, St. Ives, Hunts.

SEED WHEATS from the Chiltern Hills.—For names, description and particulars see Advertisement in *Gardeners' Chronicle* of 20th September, 1862, or apply to the Grower, Mr. R. C. M. YOUNG, Flint Hall, Hambleden, Henley-on-Thames.

CHOICE HARDY CONIFERS

ARAUCARIA IMBRICATA, 1 year, strong, p. doz.	6s.	0d
CUPRESSUS LAWSONIANA, 1 year, strong, ,,	3	0
,, MACROCARPA, 6 inches .. ,,	3	0
PICEA NORDMANNIANA, 1 year .. .. ,,	12	0
PINUS DON PEDRI, 1 foot .. .. .. ,,	9	0
,, INSIGNIS, 6 inches .. .. .. ,,	3	0
,, PONDEROSA, 6 inches .. .. .. ,,	6	0
THUJA ELEGANS or LOBBII, 1 foot .. ,,	6	0
WELLINGTONIA GIGANTEA, 1 year, strong ,,	12	0
,, ,, in 48 pots, 8 ins. ,,	24	0
,, ,, in 32 pots, 1 ft., fine ,,	42	0

The above are all healthy seedling plants in pots, ready for immediate planting out.

J. HENCHMAN, Edmonton, London, N.E.

JOSEPH BAUMANN, NURSERYMAN, Ghent, Belgium, begs to offer:—

	£	s.	d.
100 AZALEA INDICA, with flower-buds .. 4l. to	6	0	0
100 GHENT AZALEAS, with flower buds .. 5l. to	6	0	0
100 CAMELLIAS, named, best sorts, without flower-buds	4	0	0
100 RHODODENDRONS, best sorts, without flower-buds, strong plants	8	0	0
100 Ditto ditto, with flower-buds .. 12l. to	16	0	0
100 ASCLEPIAS TUBEROSA	1	0	0
100 LILIUM LANCIFOLIUM ALBUM .. 2l. to	3	0	0
100 Ditto ditto RUBRUM .. .. 2l. to	3	0	0
100 VIBURNUM MACROCEPHALUM .. 3l. to	5	0	0
100 WELLINGTONIA GIGANTEA, 1 foot	4	0	0
100 Ditto ditto 1½ ,, ...	6	0	0
100 Ditto ditto 2 ,, ...	16	0	0
100 Ditto ditto 3 ,, ...	40	0	0
100 ROSES, best sorts, 4 feet high .. .. 5l. to	6	0	0
100 PEACHES, 1-year grafted .. ,, .. 2l. to	4	0	0
100 APRICOTS, 1-year grafted .. .. .. 3l. to	4	0	0

12 of a sort of the following AZALEA INDICA, 9s.:—Duc de Nassau, Princess Adelaide de Nassau, Schöne Mainzerin, Bernhard Andrieux, Mdme. A. Verschaffelt, Dr. Livingstone, Lion Belge, Roi Leopold, Quentin Durward, Roi des Doubles, Duc de Malakoff, Comte de Hainault, Teutonia, Thusnelda, Rhenansa, Lorely, Etoile de Gand, President Claus, Alexander II., Insignis, Pauline Mardner, Prinz Franz Joseph, Charles Enke, Duc d'Aremberg, Dieudonné Spae.

Camellias, Azaleas, &c.

A. VAN GEERT, NURSERYMAN, Ghent, begs to inform the Trade that he can now supply good plants of CAMELLIAS, with flower buds, best varieties, at 6l. per 100.

INDIAN AZALEAS, with flower buds, best varieties, 4l. to 5l. per 100.

A. V. G. begs to offer also the following interesting plants:—
THUJA VERVAENEANA, a fine new golden striped Arbor-vitæ, 36s. per dozen.
ABIES APOLLONIS, 9s. per dozen.
,, PANACHAICA, 18s. per dozen.
THUJA ERICOIDES, very pretty, 18s. per dozen.
CUPRESSUS LAWSONI, 50s. per 100.
THUJA AUREA, fine, 42s. per 100.
THUJOPSIS BOREALIS, strong, 18s. per dozen.
PIMELEA SPECTABILIS, strong, 18s. per dozen.
,, DECUSSATA RUBRA, strong, 18s. per dozen.
INDIAN AZALEAS, for stocks, strong, 25s. per 100.
GLYCINE SINENSIS, 40s. per 100.
ASCLEPIAS TUBEROSA, 20s. per 100.
JASMINUM GRANDIFLORUM, 12s. per dozen.
OTAHEITE ORANGES, 12s. per dozen.
LILIUM LANCIFOLIUM RUBRUM, fine roots, 63s. per 100.
,, UMBELLATUM ATROSANGUINEUM, 25s. per 100.
ROEZLIA REGIA, fine ornamental, 7s. 6d. each.
GUNNERA SCABRA, 12s. per dozen.
BONAPARTEA GRACILIS (nearly hardy), fine strong plants, 36s. per dozen.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent, Belgium.—A. V. begs to announce that his NEW GENERAL CATALOGUE for Autumn 1862, and Spring 1863, is now ready, and contains a quantity of new, rare, and valuable Plants. The following are some of the NEW PLANTS:

STOVE PLANTS.	£	s.	d.
ARALIA GHIESBREGHTII	1	0	0
ARALIA THIBAUTII	1	0	0
CALADIUM CANNAERTII	1	0	0
GREENHOUSE PLANTS.			
AGAVE GHIESBREGHTII, splendid new species ..	4	0	0
AZALEA INDICA MADAME WAGNER	0	14	0
CAMELLIA SOUVENIR D'EMILE DEFRESNE, the finest dark vermilion Camellia, with pure white stripes, perfect imbrication	0	16	0
CAMELLIA VICOMTE DE NIEULAND, beautiful light rose, perfect imbrication	0	12	0
CAMELLIA COMTE DE TOLL, one of the finest Camellias of all for its beautiful perfect form, of a lightish rose colour, changing almost to white	0	12	0
CAMELLIA BARON DE VRIÈRE, beautiful rose and white in centre, perfect form	0	12	0
DIPLACUS GODRONI, ,, VERSCHAFFELTI, ,, SPLENDIDUS } Three splendid hybrids, which will be figured shortly in the "Illustration Horticole." The 3 varieties together for	0	10	0
GERANIUM QUADRICOLOR, obtained the first prize at the last show of the Royal Botanic Society of Ghent; will appear shortly in the "Illustration Horticole"	0	8	0
HARDY PLANTS.			
EUONYMUS RADICANS FOLIIS ARGENTEO-VARIEGATIS	0	5	0
EUONYMUS RADICANS FOLIIS ROSEO-VARIEGATIS	0	5	0
KERRIA JAPONICA FOLIIS ARGENTEO-VARIEGATIS	0	8	0
LONICERA BRACHYPODA FOLIIS AUREO-RETICULATIS	0	8	0
NEW PEAR, BEURRÉ DE GHÉLIN, obtained a first gold medal at the Royal Botanic Society of Tournay	0	4	0
NEW APPLE, CALVILLE GARIBALDI, first rate fruit, will be figured shortly	0	8	0
RHODODENDRON VERSCHAFFELTII, is said to be the finest hardy Rhododendron of all. Very fine large bouquets of a very light and delicate lilac, with enormous black spots, of a splendid effect. This remarkable variety can be distinguished amongst a thousand Rhododendrons. A correct drawing appeared in the August number of the "Illustration Horticole." Beautiful plants, 12s. Very fine plants with buds	1	0	0
NEW ROSE (Hybrid Climbing) SŒUR DES ANGES (OGER), very large flowers, of a tender rose changing to white; first rate Rose	1	0	0
SERISSA FŒTIDA FOL. AUREO-MARGINATIS ..	0	5	0

The "ILLUSTRATION HORTICOLE," published by AMBROISE VERSCHAFFELT, Ghent, Belgium, price 14s. 6d. a year, free. A Specimen Number can be obtained free by writing to the Editor.

N.B. Catalogues and Specimen Numbers of the above work may be obtained free at my Agents, Messrs. R. SILBERRAD & SON, 5, Harp Lane, Great Tower Stree London, E.C.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

(OPPOSITE THE GARRICK CLUB.)

BARR & SUGDEN'S ILLUSTRATED FLORAL GUIDE
and COLLECTIONS of BULBS for 1862

are so arranged as to enable their Patrons to carry out the idea of having "GARDENS FOR ALL THE MONTHS IN THE YEAR, in which, severally, things of beauty may be had in season."

Section 1.—Collections of Bulbs for In and Out-door Decoration.

A, £5 5s.; B, £3 3s.; C, £2 2s.; D, £1 1s.; E, 15s. 6d.; F, 10s. 6d.

For particulars of these Collections see our "FLORAL GUIDE," or the *Gardeners' Chronicle*, September 6.

Section 2.—Paxtonian Collections of Bulbs for the Ornamentation of the Spring Flower Garden.

G, £5 5s.; H, £3 3s.; I, £2 2s.; J, £1 1s.; K, 15s. 6d.; L, 10s. 6d.

For particulars of the Paxtonian Collections see our "FLORAL GUIDE," or the *Gardeners' Chronicle*, Sept. 13.

Section 3.—Kensington Gardens and Crystal Palace Collections of Bulbs for Ornamenting the Winter Flower Garden.

M, £5 5s.; N, £3 3s.; O, £2 2s.; P, £1 10s.; Q, £1 1s.; R, 10s. 6d.

For particulars of the Kensington Gardens and Crystal Palace Collections, see our "FLORAL GUIDE," or the *Gardeners' Chronicle*, September 20.

Barr & Sugden, The London Agents for Tye's New Registered Souvenir Hyacinth Glasses.

The following we have had specially got up as SOUVENIRS of the INTERNATIONAL EXHIBITION of 1862:

The Prince, The Queen, Princess Royal, Princess of Denmark, Prince of Wales, Princess Alice Maud, Prince Arthur, Prince of Orange (*these are beautifully enamelled*), 10s. 6d. per pair; Cologne, Milan, Salisbury, May Queen, Alhambra, Eugenie, Victoria, and Lily of the Valley (*these are painted in beautiful soft colours*), 12s. 6d. per pair.

For other kinds of HYACINTH GLASSES, from 4s. 6d. to 10s. 6d. per dozen, see "FLORAL GUIDE".

BARR & SUGDEN, SEED MERCHANTS,
IMPORTERS of FRENCH, DUTCH, ITALIAN and CAPE FLOWERING BULBS,
12, KING STREET, COVENT GARDEN, W.C. (OPPOSITE the GARRICK CLUB).

CHOICE GLADIOLUS.

YOUELL & CO.'S

COLLECTION of the above, extending over Three Acres, is NOW in BLOOM, and will continue some weeks.

The First Prize was awarded them on Wednesday, Sept. 3, at the Crystal Palace, Open to All England and the Continent. We supply them at the following prices:—

No. 1 Collection contains 100 Bulbs, in 50 of the most choice and handsome kinds, with names	£5	0
No. 2 Collection contains 100 Bulbs, in 30 ditto ditto	3	15
No. 3 Collection contains 100 Bulbs, in 25 ditto ditto	2	10

Fine Selections will be supplied at 6s., 9s., 12s., 18s., to 30s. per dozen.

CATALOGUES will be forwarded on application.

The First Prize was awarded to YOUELL & Co. by the Royal Horticultural Society on September 10, for best Collection of 24 Single Spikes; and the First Prize for the best 12 Spikes of Brenchleyensis colour.

ROYAL NURSERIES, GREAT YARMOUTH.

GLADIOLUS BRENCHLEYENSIS (True).

YOUELL & CO.

Beg to offer this season strong FLOWERING BULBS of the above at 3s. 6d. per dozen, 25s. per 100.
Trade price on application, and when quantities are ordered a considerable reduction will be made.

The *Gardeners' Chronicle*, in the report, Sept. 8, 1861, speaks of it thus:—"It cannot be spoken of in terms of exaggeration; the robust habit and intensely bright scarlet flowers place it at the head of all the hardy flowers of the autumn." And again, August 23, 1862:—"The spikes you have sent us are magnificent. We have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."

CATALOGUES of their extensive Collection, for which the First Class Prize was awarded at the Crystal Palace Show on Wednesday, Sept. 3, 1862, will be forwarded on application.

The First Prize was awarded to YOUELL & Co. by the Royal Horticultural Society on September 10, for best Collection of 24 Single Spikes; and the First Prize for the best 12 Spikes of Brenchleyensis colour.

ROYAL NURSERIES, GREAT YARMOUTH.

CAUTION.—THE BRIGHTON WHEAT HAS BEEN SELECTED FOR SEVERAL GENERATIONS FURTHER, AND WILL PRODUCE 10 PER CENT. MORE THAN THAT GROWN FROM WHEAT PURCHASED IN PREVIOUS YEARS, AND CAN BE OBTAINED OF MR. HALLETT ALONE, OR OF HIS AGENTS.

HALLETT'S PEDIGREE NURSERY WHEAT,

"BRED" ON THE SAME PRINCIPLE OF REPEATED SELECTION WHICH HAS PRODUCED OUR PURE RACES OF ANIMALS.

1861, ACTUAL SIZE AFTER FOUR YEARS' **REPEATED** SELECTION, STARTING FROM A **SINGLE GRAIN** IN EACH YEAR.

Price Two Guineas a Bushel, delivered at the **Brighton Railway** Station, with **Printed Directions** for **Planting**, on receipt of **Cheque** or **Post Office Order**, which must in all cases accompany the Order. **Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.**

APPLY TO FREDERIC F. HALLETT, F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

Man kann Bestellungen machen bei den Agenten Herrn Krelage und Sohn, Haarlem, Holland; und Francfurt-am-Main, Deutschland.

A Printed Paper, "HOW OUR WHEAT CROPS MAY BE DOUBLED," and COPIES of LEADING ARTICLES from the *TIMES, AGRICULTURAL GAZETTE*, and *MARK LANE EXPRESS*, FORWARDED UPON APPLICATION, ENCLOSING TWO STAMPS.

Hallett's Pedigree Wheat.

W. COOPER, Farmer, Fen Drayton, St. Ives, Hunts, begs to inform Agriculturists that he has a quantity of the above, warranted grown from seed supplied by Mr. Hallett. Price 10s. 6d. per bushel. Also some GIANT RED, at 9s. per bushel.

Delivered on the Great Northern and Great Eastern Railways. New Sacks charged 1s. 6d. each.

SEED WHEAT.—Imperial BROWICK RED from the Original Grower. This Wheat has been repeatedly selected and improved by me, and the Wheat I have for Seed this year is the produce of One Ear of very recent selection. Price at Wymondham Station, 9s. per Bushel; stout Sacks, 1s. 6d. each.

All Orders must contain remittances, or satisfactory references, and must not be for less than One Quarter.

Robert Banham, Browick, Wymondham, Norfolk.

SEED WHEAT from the CHALK.—Browick Red, Nursery, Rough Chaff, and all the most approved varieties of Wheat. Also Hallett's Pedigree Wheat, Shirreff's Bearded Red, &c., supplied by Raynbird, Caldecott, & Bawtree.

Winter Tares, Rye, Winter Barley, Winter Oats, Trifolium, &c. Samples and Prices post free on application.

Address, Basingstoke, or 89, Seed Market, Mark Lane, E.C.

Noted Wheat for Seed.

HENRY RUCK purchased of F. F. Hallett, Esq., at the Smithfield Show, 1860, a sack of his wonderful Wheat, and will be pleased to spare from 250 to 300 sacks of WHEAT grown from that Seed. Price 10s. 6d. per bushel, delivered at the Cirencester Station on the Great Western. Not less than 20 bushels will be supplied. Cash required before any Wheat is forwarded. New sacks, 2s. each.

Apply to Henry Ruck, Eisey, Cricklade, Wilts.

International Exhibition.

Prize Medal, "Excellent Seed Corn and Seeds."
See Jury Award. Class III., 725.

RAYNBIRD, CALDECOTT, and BAWTREE, Seed Merchants and Growers, Basingstoke, Andover' and 89, Seed Market, Mark Lane, London, E.C.

Samples and quotations of all kinds of Agricultural Seeds, and Seed Corn, sent post free on application. Peruvian Guano, Lawes's Manures for Turnips, Wheat, Barley, &c., Linseed Cakes, and Feeding Stuffs, at market prices.

Genuine Italian Rye-grass, produced from the Second Cut of Foreign Seed.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts., will again be able to supply the Trade with this article in the same fine quality as last season, and can deliver either now or in the spring at the purchaser's convenience.

Address for samples and prices as above, stating quantity required and time of delivery.

PARSNIP CHERVIL or CHÆROPHYLLUM BULBOSUM.—New Seed of this year's harvesting, per packet, 1s. Sow from September 25 to October 25. A delicate and delicious vegetable.

Arthur Henderson & Co., Pine Apple Place, Edgware Road, W

International Exhibition—Collection of Grasses.

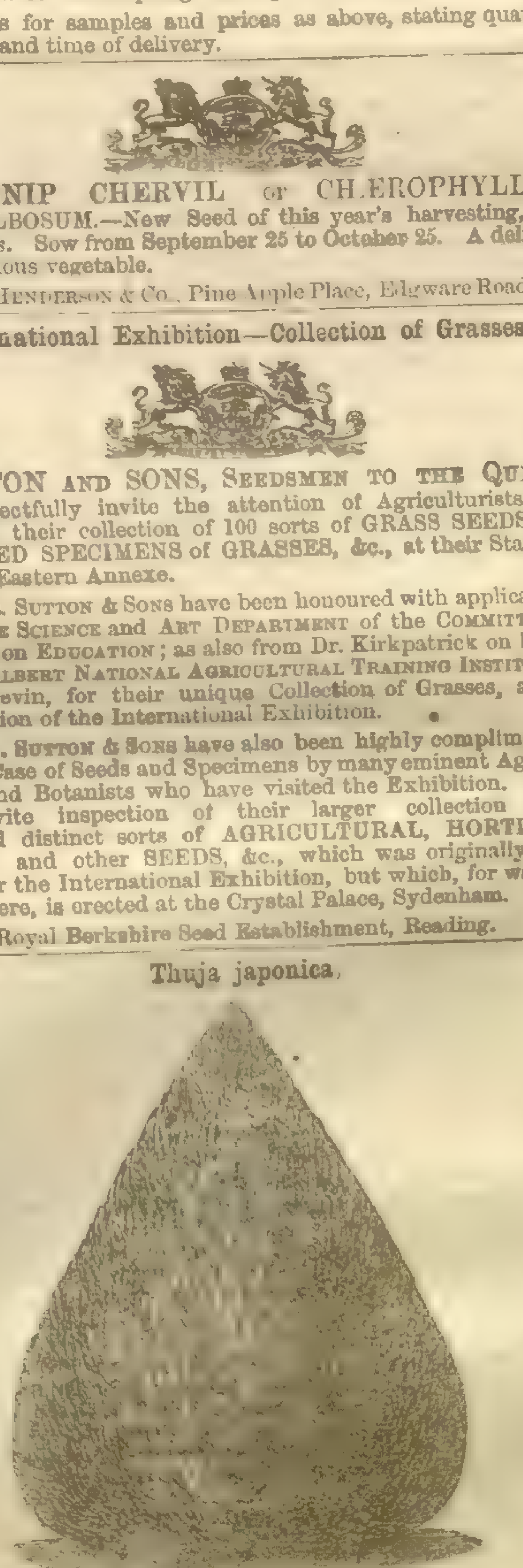
SUTTON and SONS, Seedsmen to the Queen, respectfully invite the attention of Agriculturists and others to their collection of 100 sorts of GRASS SEEDS and 100 DRIED SPECIMENS of GRASSES, &c., at their Stand in Class 3, Eastern Annexe.

Messrs. Sutton & Sons have been honoured with applications from The Science and Art Department of the Committee of Council on Education; as also from Dr. Kirkpatrick on behalf of The Albert National Agricultural Training Institution at Glasnevin, for their unique Collection of Grasses, at the termination of the International Exhibition.

Messrs. Sutton & Sons have also been highly complimented on this Case of Seeds and Specimens by many eminent Agriculturists and Botanists who have visited the Exhibition. They also invite inspection of their larger collection of a thousand distinct sorts of AGRICULTURAL, HORTICULTURAL, and other SEEDS, &c., which was originally prepared for the International Exhibition, but which, for want of space there, is erected at the Crystal Palace, Sydenham.

Royal Berkshire Seed Establishment, Reading.

Thuja japonica.



JAMES WRIGHT and CO. are again tempted to bring the above before the notice of the public, plants formerly sent out having given universal satisfaction. Plants from 3s. 6d. to 31s. 6d. each.

LAURUSTINUS, THUJA AUREA, THUJA LOBBII, and all other Evergreens in great variety.

To the Trade.—DWARF MOSS ROSES, good for potting. Price on application.

Stone Grove Nursery, Edgware, N.W.

Strawberry Plants—Ready.

CUTHILL'S SORTS, selected Plants for bearing in 1863, all one price, 7s. 6d. per 100. Early Black Prince, Early Princess Royal, Highland Mary, Richard II., Prince of Wales, and Newton Seedling, lasted in bearing this year 60 days. Strawberry Pamphlet, 1s.

Best MUSHROOM SPAWN, 5s. per bushel.

JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

STRAWBERRIES for AMATEURS.—Plants of the six most useful sorts, chosen to afford a long succession of fine fruit, one of each sort, or four plants of ECLIPSE, free by post, for 24 stamps. The sorts include ECLIPSE, now, pronounced first rate, both for Forcing and Out-doors, by the Royal Horticultural Society; PRINCESS, the finest of the very early sorts; SIR HARRY, SIR CHARLES NAPIER, WONDERFUL, the best for very rich soils; and ELEANOR, very fine and late; or OSCAR, if ordered.

Also very choice CAULIFLOWER and pure WHITE BAVARIAN CUCUMBER, 1s. per packet.

Address A. MOSS, Jun., Chadwell Heath Mills, Essex, E.

An Opportunity rarely to be met with.

WILLIAM BULL, F.R.H.S., F.R.B.S., is about to convert one of his Vineries into a Plant House, and wishes to DISPOSE of the VINES. They are in the best possible condition, having only been planted three years. They have stout strong rods about 20 feet long.

A large assortment of all the best VINES in pots.

For further particulars apply at WILLIAM BULL'S Establishment for New and Rare Plants, King's Road, Chelsea, London.

Extra Strong Vines.

GEORGE CLARKE has to offer very fine Plants from Eyes, two years old, with stout, well ripened, short jointed rods, which are warranted, under proper treatment, to produce a full crop of fruit next season. These Plants are well suited for planting a house or for pot culture, and include all the leading varieties. Price 10s. to 15s. each. Also smaller Plants equally well ripened, which will fruit the second season, 3s. 6d. to 5s. each.

Nursery, Streatham Place, Brixton Hill, S.; and No. 4, Windsor Terrace, near the Victoria Railway Station, London.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.
2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

THOMAS JACKSON & SON, Nursery, Kingston, S.W.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

Planting.

WM. PAUL (Son and Successor to the late A. PAUL) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.

Entrance from the platform, Waltham Station, Great Eastern Railway.

Nurseries and Seed Warehouse, Waltham Cross, N.

TAN GRATIS in the immediate neighbourhood of Covent Garden Market.

Apply to ESSEX & SONS, 28, Stanhope Street, Clare Market, W.C.

To the Trade, and others engaged in Planting, &c.

TO BE SOLD, Cheap, for Cash on delivery, several Millions of 1, 2, and 3 years' QUICK. Samples and prices sent on application. Also a large stock of ENGLISH OAKS and HAZEL.

STEPHEN SHILLING, North Warnborough Nursery, near Odiham, Hants.

To Gentlemen, Nurserymen, Florists, and Others.

TO BE SOLD, on the Premises, the Lease having expired, the whole of the Valuable NURSERY STOCK of EVERGREENS and ORNAMENTAL TREES, consisting of American and English Shrubs, Dwarf and Standard Roses and Forest Trees, &c.; also 500 Bushels of MUSHROOM SPAWN.

Apply to Mrs. PATCHING, Carlton Nursery, Carlton Road, Kilburn, N.W., or Wellington Nursery, Wellington Road, Hounslow, W.

To Nurserymen, &c.

LIVERPOOL CEMETERY, Anfield Park, Walton. —TENDERS are required by the BURIAL BOARD for the Parish of Liverpool for SUPPLYING a large number of TREES and SHRUBS and also a quantity of GRASS SEEDS to the above Cemetery. A list of the plants wanted, with a specification of the conditions to be observed, may be obtained at the Offices of the Burial Board, 12, Clayton Square, Liverpool, on and after Sept. 25, 1862. Tenders, in conformity with the list and specification, must be delivered at the offices abovenamed on or before Saturday, October 11, addressed to the Chairman of the Executive Committee, and endorsed "Tender for Trees and Shrubs, &c." The Board will not bind itself to accept the lowest or any Tender, and no one whose grounds are situated to the south of Birmingham need compete.

By order,
EDWARD KEMP, Landscape Gardener }
GEORGE TURVEY, Clerk } To the Board.
12, Clayton Square, Liverpool, Sept. 27.

BUDGRIGARS, or SHELL PARROQUETS, 15s. and 20s. per pair; COCK CANARIES, 4s. each; Hens, 1s. 6d.; and all kinds of Foreign Birds and Cages. HYACINTHS, finest named vars., 6s. per dozen; mixed, 3s. and 4s. per dozen; all other Bulbs equally cheap. BRITISH and FOREIGN FERNS, immense variety.

R. GREEN, 154, Kingsland Road, N.E., and the Bedford Conservatories, Covent Garden Market, W.C. Entrance Centre Avenue only.

Notice.

B. S. WILLIAMS begs to intimate that the following DESCRIPTIVE and PRICED CATALOGUES may be had post free on application.

GENERAL CATALOGUE, including Exotic Orchids, Ferns, and Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c.

BULB CATALOGUE contains Select Lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladioli, Amaryllis, and many other choice Bulbs, with Hints on their Culture; to which is added a SUPPLEMENTAL LIST of New, Beautiful, and Rare Plants.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

New Crimson Bedding Shrubby Calceolarias.

MESSRS. JOHN AND CHARLES LEE having purchased the Stock of SEEDLING CALCEOLARIAS raised by Mr. Watson, of St. Albans, intend to offer them for SALE in the SPRING of 1863. All the varieties are decidedly shrubby, and vary in colour from bright orange to scarlet, crimson and deep purple. The flowers are large and conspicuous, and the habits very dwarf and spreading.

Nursery and Seed Establishment, Hammersmith, London, W.

New Pansies, 1862-63.

DICKSONS AND CO. will be prepared to offer, on and after October 1, the following NEW PANSIES, which they can with confidence recommend as first-class Show Flowers:—

ANDROMEDA, M.B.—White, with fine purple belt and top petals, style of Invincible, but heavier blotch, quite constant, and a fine show flower. 5s.

CONCORD, M.B.—Yellow, with beautiful shaded maroon belt and top petals, blotch large and fine; this is a flower of perfect form, fine substance, and very constant. 5s.

HAMLET.—A rich dark purple self, with a very fine shade of blue round the eye; a flower of the finest form and texture, quite distinct—a quality too little sought after in this class. 5s.

NAOMI, B.B.—Creamy white, and fine bluish purple belt and top petals, ground colour clear and well defined, very constant and fine. 5s.

LE ROI, M.B.—Gold, and very rich maroon belt and top petals, beautiful blotch and eye, very constant and fine. 5s.

LA REINE, B.B.—Pure white, with very dark purple belt and top petals, blotch dense and large; a remarkably constant flower, in character at all seasons. 5s.

The usual discount to the Trade.

1, Waterloo Place, Edinburgh.—Sept. 27.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned NEW and fine AZALEAS. For October next.

FLAG OF TRUCE.—The finest double white known; has obtained two Certificates and a Silver Medal for its superior merits, being the highest testimonial any Azalea has yet received, 21s. to 31s. 6d. each.

PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21s. to 31s. 6d. each.

CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very superior, 21s. to 31s. 6d. each.

LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10s. 6d. to 15s. each.

CRISPIFLORA ROSEA.—Fine bright rose; the flowers are waved or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10s. 6d. to 15s. each.

PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10s. 6d. and 15s. each.

Any of the above may be had in grafted plants, or on their own roots.

For full particulars see *Gardeners' Chronicle* of August 16, 1862, p. 758; or in CATALOGUES, which may be had gratis on application.

Dulwich, Surrey,

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail in London or Liverpool, at 11l. 11s. per ton for cash.

PETER LAWSON & SON, 27, Great George Street, Westminster.

LAWES'S WHEAT MANURE for AUTUMN SOWING.

In consequence of the high price of Peruvian Guano, J. B. LAWES has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of J. B. LAWES, or through any of his appointed Agents. Price 8l. per ton at the Factories, Deptford and Barking Creeks.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

American and other Cakes at market prices.

Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

THE LONDON MANURE COMPANY have now ready

PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
BLOOD MANURE for ditto.
SUPERPHOSPHATES of LIME, &c.

All the above being in the finest condition. They also continue to supply

GIBBS'S PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of known value.

E. PURSER, Secretary.

116, Fenchurch Street, E.C.

THE PURELY ANIMAL MANURE COMPANY, "LIMITED."

The Directors of this Company are prepared to supply for Autumn Crops their PURELY ANIMAL MANURE at 5l. per ton. Delivered in London in quantities not less than 2 tons.

Orders received by the Manager, at the Works, River Head, Pocklington, York; the Secretary, or any one of their Agents.

By Order of the Board,
R. S. PARKER, Secretary.

76, King William Street, London, E.C.

40 to 45 per Cent. of Soluble guaranteed.
1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.

Extract of Opinion from MR. WAY, *January* 23, 1862.

"This material contains in round numbers 44 per cent (44) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."

Extract of Opinion from DR. VOELCKER, *January*, 1862.

"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a percentage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."

The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.

Analyses, with opinions by the late and present Chemists of the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & CO., Plymouth.

COCOA-NUT REFUSE.—In this there are Ferns, Begonias, &c., growing at the bottom of a Case (with Cocoa-nuts on the top outside) in the Eastern Annexe, International Exhibition. Read notices of its uses in *Gardeners' Chronicle*, June 28, p. 597; Sept. 6 and 13, pp. 836 and 861. *Journal of Horticulture*, March 25, pp. 514, 519; July 8, pp. 272, 281. Refuse delivered in City of London at 1s. 6d. per bag of 3 bushels. Larger quantities on lower terms on application to the PATENT COCOA FIBRE COMPANY, Kingston-on-Thames, S.W.

SHORT FIBRE for Orchids and for Drainage, 20s. per cwt.

Postage Stamps or Post-office Orders payable to "J. BARSHAM & Co."

BARSHAM'S BRUSHES and MATS are the best and most economical of any that are made, and are sold in every town in the kingdom.

CAUTION.—See that every Brush is stamped "J. BARSHAM'S Patent, Kingston-on-Thames."

AUTUMN SOWING.

THE PATENT

NITRO-PHOSPHATE OR BLOOD MANURE COMPANY

(LIMITED), CONSISTING OF

TENANT FARMERS occupying upwards of 30,000 ACRES of LAND.

TRUSTEES.

ABEL SMITH, Esq., M.P., Wood Hall, Watton, Herts | EDWARD BALL, Esq., M.P., 8, Belgrave Road, Pimlico
CHARLES DIMSDALE, Esq., Essendon Place, Herts | General HALL, Weston Colville, Linton, Cambridge
JOHN BRADY, Esq., M.P., Warwick Terrace, Belgrave Square.

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Chairman—JONAS WEBB, Babraham, Cambridgeshire.
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OFFICES: 109, FENCHURCH STREET, LONDON. MANUFACTORY: PLAISTOW MARSHES, ESSEX.

This Manure has been in use for upwards of 10 years, and has given great satisfaction to consumers. It is specially prepared for Autumn Sowing, and on most soils proves as effective as the best Peruvian Guano.

Orders may be sent to the Company's Agents throughout the country, or direct to C. T. MACADAM, Secretary.

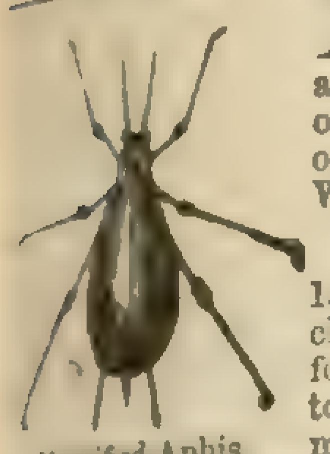
Price £7 10s. per Ton, delivered at any Railway or Wharf in London.

OFFICES: 109, FENCHURCH STREET, LONDON, E.C.

To Nurserymen, Gardeners, and Seedsmen.

ALDERSON'S TOBACCO PAPER, of surpassing quality, prepared by a process in which the necessary ... is concentrated. It possesses the essential oil of ..., and warranted the most effectual remedy for the ... of the Green Fly. References to the most eminent gardeners can be given. Goods to the Trade at wholesale prices, ... free.

Address JAMES ALDERSON, 30, Nelson Street, Leeds.



Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1*s.* and 2*s.* per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of GEO. GLENNY, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP,

1*s.* per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. NEAL, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* each.

Wholesale by PRICE'S PATENT CANDLE CO., Limited.

JOSEPH DOBSON, COAL DEALER and COMMISSION AGENT, Gallowgate, Newcastle-on-Tyne.

Notice.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), HORTICULTURAL VALUER, begs to inform his friends and the public that he has REMOVED from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

Landscape and Ornamental Gardening.

MR. J. W. CHAPMAN offers his services to the nobility and gentry in Forming or Altering GARDENS and PLEASURE GROUNDS, and the General Improvement of Estates. He is happy to be able to refer (among recent works), to the New Public Garden at Abingdon, Berks, now in course of formation.

Plans and Drawings for the above purposes are furnished, and the works superintended during their progress.

Hermitage Road, Richmond, Surrey, S.W.

MR. ALEXANDER PONTEY, Deceased.—All persons having any Claims or Demands against the Estate of the late Mr. ALEXANDER PONTEY, of 21, Cornwall Street, Plymouth, Devon, Nurseryman, Seedsman, and Florist, are requested to forward particulars thereof to his Executrix, Mrs. MARY LYNE PONTEY, at 21, Cornwall Street, Plymouth, aforesaid, in order that the same may be examined, and, if found correct, discharged; and all persons Indebted to the said Estate are requested to pay the amount of their respective debts, without delay, to the said Executrix.

Mrs. PONTEY begs to offer her best thanks to the Friends and Customers of her late Husband for the kind and liberal support afforded him during his lifetime, and to inform them that it is her intention to continue the business until the same be satisfactorily disposed of.

Dated Plymouth, August 1, 1862.

SHAW'S TIFFANY.—The lightest, cheapest, and most durable of all materials for Shading Conservatories and Hot-houses is SHAW'S TIFFANY. As a protection from cold winds and scorching heat, nothing equal to SHAW'S TIFFANY. For effectually preserving Fruits and Seeds from the Attack of Birds, Wasps and Insects, use SHAW'S TIFFANY. Sold by all Nurserymen and Seedsmen. Samples and Prices on application.

J. SHAW & Co., Oxford Street, Manchester.

FOWLER'S STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD,

PATENTEES AND MANUFACTURERS OF

STEAM CULTIVATORS, STEAM PLOUGHS,

CHAMPION PLOUGHS, HARROWS, HORSE RAKES, AND HAYMAKERS.

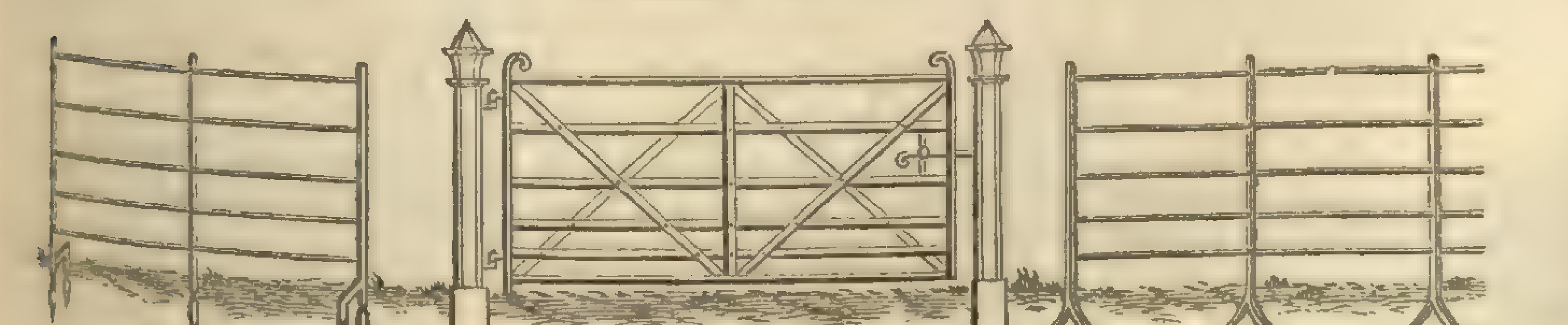
CATALOGUES, with full particulars, sent free on application.

COTTAM'S

CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.



IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c. The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to

COTTAM & CO., ENGINEERS and IRON FOUNDERS,

2, WINSLEY STREET (OPPOSITE THE PANTHEON), OXFORD STREET, LONDON, W.

New Registered Hyacinth Glasses.

BARR AND SUGDEN, London Agents for TYE'S new "SOUVENIR" HYACINTH GLASSES, The Prince, The Queen, Prince of Wales, Princess of Denmark, Prince Arthur, Princess Alice Maud, Prince of Orange, Princess Royal, 10*s.* 6*d.* per pair, beautifully enamelled.

12, King Street, Covent Garden, W.C., opposite the Garrick Club.

Glass for Gardens.

JAMES PHILLIPS AND CO. beg to submit their prices as follows:—

PROPAGATING GLASSES.

	Each—s.	d.		Each—s.	d.
2 inches diameter ..	0	3½	12 inches diameter ..	1	9
3 ,, ,, ..	0	4½	13 ,, ,, ..	2	0
4 ,, ,, ..	0	5½	14 ,, ,, ..	2	6
5 ,, ,, ..	0	6½	15 ,, ,, ..	3	0
6 ,, ,, ..	0	8	16 ,, ,, ..	3	6
7 ,, ,, ..	0	10	17 ,, ,, ..	4	0
8 ,, ,, ..	1	0	18 ,, ,, ..	5	0
9 ,, ,, ..	1	2	19 ,, ,, ..	6	0
10 ,, ,, ..	1	4	20 ,, ,, ..	7	0
11 ,, ,, ..	1	6			

HAND GLASSES.

	Each—s.	d.		Each—s.	d.
12 inches	6	0	18 inches	9	0
14 ,, ...	7	0	20 ,, ...	10	0
16 ,, ...	8	0	24 ,, ...	12	0

Painted and Glazed with 16 oz. Sheet Glass.

If Open at Top, 1*s.* extra.

HYACINTH and FLOWER DISHES.

6 ins. diameter, 1*s.* each; 9 ins. diameter, 1*s.* 6*d.* each. 12 ins. diameter, 2*s.* 6*d.* each.

LACTOMETERS, for TESTING the QUALITY of MILK. Four Tubes, 4*s.* 6*d.*; Six Tubes, 6*s.* 6*d.*, with Stands complete.

London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans and every description of Glass for Horticultural purposes.

JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, London, E.C.

Glass.

THOMAS MILLINGTON, HORTICULTURAL WAREHOUSE, 87, Bishopsgate Street Without, London, E.C. ESTABLISHED 1750.

NEW REDUCED TARIFF.

SMALL SHEET SQUARES.

Best. 2nds. 3rds. 4ths. — 20*s.* 16*s.* 12*s.* 6*d.* 11*s.* } Per 100 feet

6 in. by 4 in.	9½ in. by 7½ in.	14 in. by 10 in.
6½ ,, by 4½ ,,	10 ,, by 8 ,,	15 ,, by 10 ,,
7 ,, by 5 ,,	11 ,, by 9 ,,	12 ,, by 11 ,,
7½ ,, by 5½ ,,	12 ,, by 9 ,,	13 ,, by 11 ,,
8 ,, by 6 ,,	13 ,, by 9 ,,	13½ ,, by 11½ ,,
8½ ,, by 6½ ,,	12 ,, by 10 ,,	
9 ,, by 7 ,,	13 ,, by 10 ,,	

Best. 2nds. 3rds. 4ths. — 23*s.* 18*s.* 6*d.* 14*s.* 6*d.* 12*s.* 8*d.* } Per 100 feet

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 ,, by 11 ,,	17 ,, by 12 ,,	22 ,, by 15 ,,
17 ,, by 11 ,,	18 ,, by 12 ,,	24 ,, by 15 ,,
18 ,, by 11 ,,	22 ,, by 12 ,,	20 ,, by 16 ,,
13 ,, by 12 ,,	17 ,, by 13 ,,	20 ,, by 17 ,,
14 ,, by 12 ,,	23 ,, by 13 ,,	20 ,, by 18 ,,
15 ,, by 12 ,,	22 ,, by 14 ,,	

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers & others

	Best.	2nds.	3rds.	4ths.	
16 oz.	22*s.* 0*d.*	18*s.*	15*s.* 0*d.*	12*s.* 6*d.*	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

20 in. by 12 in. | 20 in. by 13 in. | 20 in. by 14 in. | 20 in. by 15 in.

GLASS, cut according to size not on the List.

16 oz. 4ths. 1¾*d.* 2*d.* and 2½*d.* per foot.

,, 3rds. 2¼*d.* 2½*d.* and 3*d.* ,,

21 oz. 4ths. 2¾*d.* 3*d.* and 3½*d.* ,,

,, 3rds. 3½*d.* 4*d.* and 4½*d.* ,,

Various thicknesses of Sheet Glass to the foot.

15 oz. 26 oz. 21 oz. 32 oz.

Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.

Genuine White Lead, 32*s.* p. cwt | Linseed Oil Putty, 8*s.* per cwt.
Anticorrosion Paint, 34*s.* ,, | Patent Dryers, 28*s.* to 42*s.* ,,

CRYSTAL GLASS SHADES. EBONY and GILT STANDS.

HARTLEY'S IMPROVED PATENT ROUGH PLATE.

*** Not accountable for breakage.

SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

Gutta Percha Tubing for Watering Gardens.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following *Testimonial from* Mr. J. FARRAH, *Gr. to* BOSWELL MIDDLETON JALLAND, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the SCORCHING RAYS of the SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. .. 1*s.* 6*d.* per yard run.
Four yards wide .. .. .. 3*s.* per yard.
An improved make, 3 yards wide, 2*s.* 6*d.* per yard run.

Also "Frigi Domo" Netting, 2 yards wide, 1*s.* 4*d.* per yard run.

ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

20,000 Hyacinths, 20,000 Tulips, 10,000 Snowdrops, and 100,000 Crocus and Narcissus.

J. H. BIRD, F.R.H.S., Nurseryman, Stoke Newington, the largest Grower of the above in England. J. H. B. has just Purchased, for ready money, in Holland, in addition to his usual Large Stock, the above Surplus Stocks of some very large growers, which he now offers at unheard of Low Prices. The following Roots for 1*l.* :—50 Hyacinths in twenty-five splendid sorts; 150 Early Tulips, sorts; 200 Crocuses, mixed; 50 Snowdrops, and 12 very large noble Narcissuses. Half the above quantity for 10*s.* 6*d.*

HYACINTHS, in 10, 20, 30, 40, or 50 splendid Varieties, at One Guinea per 100. Less by the 1000.

LILIUM LANCIFOLIUM RUBRUM (true), large roots, 1*s.* each, 10*s.* per dozen, 3*l.* 5*s.* per 100, or 30*l.* per 1000.

N.B.—To save trouble all Orders to be prepaid.

Importation of Dutch Bulbs.

Flower Roots Carriage Free.

WM. WOOD and SON have much pleasure in advising their friends of having received a very splendid lot of HYACINTHS, NARCISSI, JONQUILS, &c., in first-rate condition.

DESCRIPTIVE CATALOGUES may be had on application.

Prices as reasonable as any house in the Trade.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

First Consignment of Dutch Flower Roots.

THOS. CHARMES, Seedsman and Florist, 204, High Street, Exeter (one door above the Guildhall), has just imported the best varieties of HYACINTHS, TULIPS, NARCISSUS, and other Winter and Spring flowering Roots, in fine condition; and to secure good Bulbs early orders are respectfully solicited.

DESCRIPTIVE PRICE LIST free on application.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON and CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

Notice to Purchasers of Bulbs.

SUTTON'S SELECT BULB LIST, on page 831 of *Gardeners' Chronicle*, contains all the most desirable sorts in cultivation. Marginal Columns are given for marking the quantities required.

Royal Berkshire Seed Establishment, Reading.

HYACINTHS for EXHIBITION.

Fresh Imported Bulbs.

SUTTON'S SELECTION.

		per 100.	Dozen.
Finest sorts by name	..	£4 4*s.*	12*s.*
Very fine ditto	..	3 10	9
Good ditto	..	2 10	6

Good Hyacinths for Beds, Ribands, &c. in separate colours (fresh imported), 21*s.* per 100.

Anemones, Crocuses, Tulips, Gladioli, &c., also very low in prices, as per CATALOGUE, which may be had gratis and post free.

Sutton & Sons, Royal Berkshire Seed Establishment, Reading.

J. C. WHEELER and SON, Seed Growers, Gloucester, have imported in excellent condition a large

COLLECTION of HYACINTHS,

including the extra fine varieties recommended by Dr. Lindley.

PRICED LISTS may be had gratis on application to the Importers,

Messrs. J. C. Wheeler & Son,

Gloucester.

New Bulb Catalogue.

MESSRS. E. G. HENDERSON and SON respectfully announce their BULB CATALOGUE for immediate circulation, a Copy of which will be forwarded postage free on application.

THE TITIEN STRAWBERRY.
FUCHSIA BIANCA MARGINATA (Banks).
" MARS.
" MDLLE. TREBELLI.
SOLANUM CAPSICASTRUM VARIEGATUM.

Descriptions and prices of the above will be forwarded on application.

The SOLANUM CAPSICASTRUM VARIEGATUM, and the TITIEN STRAWBERRY, are now ready for sale. The FUCHSIAS will be sent out in October.

Wellington Nursery, St. John's Wood, London, N.W.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

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Autumn, Winter, and Spring Bedding Plants.

J. SCOTT, Merriott Nurseries, Somerset, begs to say that his DESCRIPTIVE CATALOGUE of DUTCH BULBS, Late Autumn, Winter, and Spring BEDDING PLANTS is now ready. It is arranged in Two Parts. 1st, Dutch and other Bulbs, in charming variety, imported direct from Holland. Part 2, How to Plant Autumn, Winter, and Spring Beds, with Copious Lists of all the best plants suited to garden ornamentation during the months of November and December to the beginning of May.

Prepaid application, enclosing two postage stamps.

DUTCH FLOWER ROOTS.

JAMES VEITCH, Jun.,

ROYAL EXOTIC NURSERY, CHELSEA, S.W.,

Begs to announce that he has received his Annual Supply of BULBOUS ROOTS from Holland, and is pleased to say they are in excellent condition.

CATALOGUES are now ready, and will be forwarded on application.

J. V., Jun., desires to impress upon those who patronise him the great advantage of giving him their orders early, as the successful Cultivation of Bulbs depends in a great measure upon their being planted early in the season.—Sept. 27.

HYACINTHS AND OTHER DUTCH BULBS.

WM. CUTBUSH & SON'S

CELEBRATED

COLLECTIONS OF CHOICE BULBS FOR FORCING OR OPEN AIR CULTURE

are now ready for delivery at 21s., 42s., 63s., 105s.

For details, see APPENDIX to their CATALOGUE, post free on application.

Their own selection of the FINEST HYACINTHS can be supplied at 9*s.*, 12*s.*, 15*s.*, and 18*s.* per dozen.

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INTERNATIONAL EXHIBITION.

PRIZE MEDALS 1851 and 1862.

BUTLER & McCULLOCH, Seed Merchants,

COVENT GARDEN MARKET, W.C.

(ESTABLISHED UPWARDS OF A CENTURY.)

A.—Choice Collections of Bulbs for Greenhouse or Conservatory, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

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A Specification of the above Collections is given at pages 50 and 51 of Messrs. Butler & McCulloch's

CATALOGUE OR AMATEUR'S GUIDE,

which may be had free and post paid upon application.

☞ *All Orders amounting to 21s. and upwards sent Carriage Free.*

HUGH LOW & CO.

HAVE PLEASURE IN OFFERING

CAMELLIAS, ERICAS, AZALEAS, JASMINUMS, ORANGES, EPACRIS, GENISTAS, ACACIAS,

and many other WINTER and SPRING FLOWERING PLANTS, all of good quality.

The Stock is of very great extent, and an inspection is respectfully invited.

CLAPTON NURSERY, LONDON, N.E.

AUSTRALIAN TREE FERNS.

HUGH LOW & CO.

Respectfully solicit an inspection of their fine and extensive stock of the above, comprising DICKSONIA ANTARCTICA and ALSOPHILA AUSTRALIS, on stems varying from 2 feet to 6 feet in height, and from 18 inches to 3½ feet in circumference.

These Trees are admirably adapted for Conservatory decoration, and amongst them are specimens of unusual size and beauty.

CLAPTON NURSERY, LONDON, N.E.

BRAZILIAN ORCHIDS.

HUGH LOW & CO.

HAVE PLEASURE IN NOTIFYING THE ARRIVAL OF SEVERAL LARGE CONSIGNMENTS OF

CATTLEYAS, LÆLIAS, BURLINGTONIAS, SOPHRONITIS,

forwarded by their Collector Mr. Henry Blunt. The plants are in very fine condition, and the quantity being large, H. L. & Co. are prepared to offer to purchasers unusual advantages.

Of LÆLIA PURPURATA the stock consists of upwards of Six Hundred Plants, varying in size, and having from 5 to 30 pseudo-bulbs on each plant. Inspection invited.

CLAPTON NURSERY, LONDON, N.E.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to [illegible];

ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA. 21s. each.

A Select LIST of the most rare kinds will be forwarded Post free on application.

Dorking Nursery.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING [illegible], comprising Fruit Trees of all the leading kinds, new and [illegible], named Roses, fine varieties of American Plants, Choice and New Conifers, Evergreen and Deciduous Trees and Shrubs, [illegible] Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to announce that his New GENERAL CATALOGUE of PLANTS is just published, and may be had on application to his Agents, Messrs. R. SILBERRAD & SON, Harp Lane, Great Tower Street, London, E.C.

A. V. G. begs to offer nice young plants of—
LOMARIA DISCOLOR, at 24s. per dozen.
AGAVE SCHIEDIGERA, 60s. per dozen.

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.

LIST of AWARDS, SEPTEMBER 23, 1862.

FIRST CLASS CERTIFICATE.

[illegible] excelsa aurea, from Messrs. J. & C. Lee, Hammersmith
[illegible] Lowii, from Messrs. Low & Co., Clapton
[illegible]podium Stonii, from John Day, Esq., Tottenham
[illegible] Barkeri, from Mr. Barker, Godalming
[illegible] nobilis, from Mr. Bull, Chelsea
[illegible] capsicastrum variegatum, from Messrs. E. G. Henderson & Son, St. John's Wood.

SPECIAL CERTIFICATE.

To Mr. Turner, for a fine collection of Dahlias, "sent out" by himself.

PRIZES for CHRYSANTHEMUMS.

The following Prizes will be offered at the Meeting of the Floral Committee on November 11:—

Class
1. Six plants, large flowered, distinct varieties (open), 3l., 2l.
2. Three plants, large flowered, distinct varieties (amateurs), 2l., 1l.
3. Six plants, Pompons, distinct varieties (open), 3l., 2l.
4. Three plants, Pompons, distinct varieties (amateurs), 2l., 1l.
5. Twelve cut blooms, distinct varieties (open), 1l., 10s.
6. Miscellaneous collection of cut blooms (open), 1l. 10s., 1l.

N.B. The Prizes will be given for the best cultivation. The plants must be grown from single stems. Any person may compete. THOS. MOORE, Secretary to the Committee.

The Gardeners' Chronicle.

SATURDAY, SEPTEMBER 27, 1862.

To be eaten? or not to be eaten? That is the question. Is it for their prickles that Cucumbers are grown? or for their ribs? or the bloom upon them? Or may it not rather be for their flesh, and its pleasant flavour? To judge from the angry reproaches addressed to us by an "indignant Cucumber grower," complaining of the few civil words we lately addressed to a correspondent who sent us a Smyrna Cucumber for approval, one would think that the look of this esculent is the only thing to be considered, and that its eatable value is quite beside the question. Since this is a practical question it seems worth a little examination.

There are two distinct races of Cucumbers; the Smyrna which has no bloom, no spines, no ribs, and is of bright green colour; the Prickly which has a bloom like a Plum, spines either black or white, in the majority of cases longitudinal elevations or ribs, and is of a black green. The first has a delicate flavour, and is a sure bearer with everybody. The second, whatever its variety, and there are many, is less prolific, unless we exclude the degenerate "Sandy" and its kindred, and is coarser. It is however the favourite in Cucumber Societies, because we presume it is so easy to get "a big un," as well as because when well grown it is certainly the handsomer of the two. We therefore admit its merit for showing, for if a man means to win a half crown prize he has a better chance with a "Prickly" than with a Smyrna. But whereas ninety nine gardeners in a hundred grow Cucumbers for the use of a family, and whereas such Cucumbers are usually brought to table sliced, we are unable to see what great advantage is derived from the prickles that are so much admired by the "fancy." For this reason we venture to hope that we stand justified in refusing to speak ill of Mr. CUTHILL's Smyrna specimen called Prince Albert. What is more we are presumptuous enough to recommend a trial next year of Smyrnas *v.* Pricklies, with a strong belief that the verdict of the Jury will be for the plaintiff.

It is time indeed to dismiss the prejudices that have been fostered by those who care for nothing that cannot be EXHIBITED for the sake of getting money by it. For the existence of this feeling we admit that the worthy public is mainly to blame; for of late years all fruits seem to be valued by their size. The biggest Melon, the biggest bunch of Grapes, the biggest Apple, the biggest Pear, the biggest Pine Apple, are triumphant. Fruit growers seem indeed to have infected the ladies and even nations. To-day the biggest petticoat is the object of admiration; a few days before it was the biggest bonnet; to-morrow it may be the biggest sleeve; and so, with our worthy cousins "on the other side of sundown," the biggest war, the biggest debt, or even the biggest "skedaddle," if we may indulge in Yankee elegance, are admired by that intelligent and independent people.

Let us be more reasonable, and recognise once more the possibility of little things being better than big ones. Surely a little Beechwood or greenfleshed Melon is better than a huge Cantaloupe; one little ugly Kaisha Apricot is worth a basketful of Red Romans; huge Magnum Bonums cannot be compared to little Greengages, any more than dropsical Lancashire Gooseberries to little Rough reds. In saying this we by no means wish to insinuate any thing uncivil about the "Heavies." A fruit is not necessarily bad because it is big, any more than necessarily good because it is small. It is however a fact, we think, that in table fruits the small are for the most part better than the big. Nor is the reason far to seek. Bigness in fruit is caused by excess of water. For ourselves we prefer water apart from fruit.

IT seems to be a general fact that in modern times all men and things much superior to others are sure to be well abused before their value is admitted. On the other hand those men and things that suddenly become famous as rapidly sink into obscurity and are cast aside. That Horticulture should fall within this general rule was only to be expected, and some instances now before the world thoroughly exemplify the social law. Of these cases none has been more noteworthy than the GOLDEN HAMBURGH GRAPE. That it is one of the finest and best white Grapes known is an indisputable fact, the proof of which is to be found at this moment in the Great Conservatory at Chiswick, in the nursery of Mr. LANE of Berkhampstead, and in the mouths of all who have been fortunate enough to possess themselves of a ripe berry. Nor is its appearance equalled by anything except the best ripened Muscat. Nevertheless it has been declared to be an imposture; not to be a seedling (as if that mattered), not to have been raised by BUSBY (as if that mattered), to be a bad setter, tender, ill-flavoured, a shy bearer, ugly, and not worth planting! And yet it is so exactly the reverse of all these that we now know it to be as indispensible as the Black Hamburgh itself. What it may be in the hands of the incapable we cannot say; very likely, like Orchard Houses, another famous example of our rule, it will not answer with them. There are men, calling themselves gardeners, whose abilities do not rise above those of a labourer, nor indeed so high as an intelligent labourer's, who find it a hard job to grow Mushrooms, make nothing of Asparagus unless the bed is made for them, and then don't know when or how to cut it, have no notion how to use a knife, can't train a fruit tree, or sow seeds smaller than Windsor Beans, or gather a nosegay, and whose Vines in pots bear bunches about as fine as red Currants—such gentlemen as these may decry the Golden Hamburgh as they decry other novelties, but the conclusive evidence now within everybody's reach has placed it beyond doubt that this magnificent Grape ranks with the highest of its class.

—— IT is not the least of the recommendations of the GLADIOLUS as an ornamental plant that it proves to be very accommodating as to the soil in which it is grown. That it will flourish in poor sand, and still better if the sand be enriched, is evident from the success which every one knows has been met with by Mr. STANDISH at Bagshot; but the notion which has been spreading that such deep sandy soils are necessary to it, is by no means confirmed by experience. We are now referring to the Gladioli of modern times, the glorious varieties which we owe in great part to the blood of *Gandavensis*, and which prove so ornamental when growing in the garden, and still more so, if possible, when cut for indoor decoration. These varieties, which have great constitutional vigour, grow well in soils of which Bagshot sand is a type, but they also flourish admirably in beds made up of the compost which accumulates from the emptyings of flower pots wherever a considerable collection and variety of pot plants is cultivated. Moreover they grow to perfection in deep loamy soils, provided they are well drained, and the staple is rendered friable and open by the admixture of decayed manure in a condition suitable to exert a mechanical action on the mass. Mr. WILLIAM PAUL has rendered this latter fact evident in his new and admirably arranged nursery at Waltham Cross, where—the soil being a rather heavy loam—we have seen these Gladioli in a most thriving state, and whence have been derived the specimens with which, though as yet but a limited grower of these flowers, Mr. PAUL has won a very respectable position on the exhibition table, and a place in the prize lists. No one, therefore, need hesitate to plant them from any difficulty as to soil.

The question how these Gladioli can be best brought to lend their beauties in aid of the general effect at our autumnal flower shows, is one which begins to require consideration and determination now that the growers and exhibitors of them are increasing in number. They do not appear to be quite suitable for pot-culture: at least, when exhibited in this form they have as yet proved too lanky, and the plants have not borne a sufficiently furnished appearance. They are admirable flowers for cutting, and in this form doubtless they will be found best suited for exhibition tables. But then how are they to be set up? Are some exhibitors to show single spikes, and others bouquets of each kind, or are bouquets to be required to the exclusion of single spikes? We should say decidedly not, for this would be to give an undue advantage to quantity over quality. Besides, the managers of horticultural exhibitions, besides catering to please their visitors, should at least take care that every part of the institution entrusted to their control should tend to improvement in cultivation; and how can this be the case, if bouquets of the several varieties be permitted to compete with and overpower by mere bulk the single spikes grown by others who are probably more careful if not more skilful cultivators, but who possess less extensive means, or less comprehensive collections. Like a Hyacinth, the beauty of a Gladiolus depends in great measure on its well-furnished spike, and the size and perfect form of its flowers; but how can these points be expected to tell when a bunch is shown? Nothing, in fact, is well brought out that way but colour, and the sacrifice made by bunch-showing in respect to the other qualities referred to is much greater than is compensated for by any gain in respect to a gaudy display of colour. Therefore, we say, single spikes should be shown in competitive collections.

But how should they be set up? To begin with, they don't look well to our eyes in ordinary stands and boxes, which do well enough for Roses and Dahlias, but don't seem to suit the Gladiolus. We infinitely prefer the truss set up singly in one of TYE's dwarf Hyacinth bottles, which may be had plain or ornamented, as may be desired; though we imagine those of plain colours would be most appropriate. Then again, the cut spike of a Gladiolus, which, be it remembered, looks better of moderate than of excessive length, provided it is well bloomed, is bare and wanting in relieving foliage. Several attempts have been made to supply this deficiency: the group as a whole has been bordered by various broad-leaved plants to form a background and margin, but broad leaved plants don't associate well with grassy leaved monocotyledons like the Gladiolus; they look foreign to it, and seem out of place; a few of its own leaves have been sometimes used, as well as sprigs of some of the larger leaved Grasses such as Poa aquatica, Phragmitis communis and the common striped Ribbon-grass of gardens; of the Grasses, the best is the Poa, but none of them produce so good an effect, at least in our opinion, as the natural foliage of the Gladiolus itself.

The result of our own observation and consideration of this subject then is this:—That for exhibition purposes, Gladioluses should be shown in the form of cut spikes; that the spikes should be of moderate and tolerably proportionate length, but above all well bloomed, not with two-thirds or more of their length undeveloped; that they should be set up singly, one spike of each variety; that they should be placed separately in TYE's Hyacinth glass; and that each spike should be accompanied only by a dressing of three or four natural Gladiolus leaves nearly as long as itself.

—— A novelty which promises to become a very useful plant for autumnal flowering in cool greenhouses, from its apparent capability of being grown into handsome and well furnished dwarf bushes, is the Chilian CALCEOLARIA ERICOIDES, shown the other day by Messrs. VEITCH & SON, by whom it has been imported. A true Slipper-wort, and with flowers more truly slipper-like than in many other species, this plant has a marvellous similarity to some yellow-flowered Heath of fastigiate growth. A number of erect shoots emerge from the crown, and grow up to about a couple of feet in height, their sides being clothed with short branchlets bearing linear semiterete leaves quite like those of a Heath in general appearance. The upper branchlets bear the flowers, which thus clothe the pyramidal ends of the stems. The yellow flowers are individually narrowly-oblong and bent double about the middle, so that the face of the lower lip is close pressed against that of the upper one. The flowers are abundant enough to give the plant a gay appearance.

—— Some months ago (see p. 456) an excellent translation of GUÉRIN DE MÉNEVILLE's pamphlet on the new AILANTHUS silkworm was published by Lady DOROTHY NEVILL. We are glad to be able to announce that Lady DOROTHY's own experience now fully confirms her anticipations of the fitness of this Moth for producing silk in England.

In a note from Dangstein her Ladyship writes—" I

found the little birds, wrens, tomtits, &c., very troublesome with my worms; I think they were more so because the trees were planted in the middle of the kitchen garden, surrounded by Peas and all kinds of fruit. I at last netted over three dozen moderate sized Ailanthus trees, and put on them the beginning of August 500 worms. I have just gathered the cocoons, and have got altogether upwards of 480, which is a good crop. The trees would have afforded food for 500 more had we had them. I have now some worms three weeks old in the open air; at present they do very well, although the nights are very sharp and frosty. I sell the cocoons with the live chrysalis inside at 3*d.* each. This is the best way of keeping them till the spring, when they come forth and lay eggs." If the worms will thrive in this bad summer, what may they not do in a better? We may as well add that Lady DOROTHY has a great many cocoons and specimens of silk now exhibiting in the Royal Horticultural Garden, South Kensington.

Why should not the children of the peasantry take to rearing this moth? Any quantity of Ailanthus plants may be had of the trade, and will grow anywhere.

—— A very important SALE OF CONIFEROUS and other plants is advertised to take place at Leamington in the middle of October. Of the former, something like 300,000 are offered, including as the Auction Catalogue announces it, "magnificent specimens" of

	FEET.		FEET.
Araucaria imbricata	4 to 8	Cryptomeria japonica	4 to 9
Abies orientalis	1 to 3	Cupressus Lambertiana	2 to 3
,, Douglasii	6 to 9	,, Lawsoniana	1 to 4
,, Menziesii	5 to 8	,, McNabiana	1 to 2
,, canadensis	4 to 6	Cephalotaxus Fortuni	1 to 3
,, atlantica	4 to 6	Juniperus excelsa	1 to 5
,, Deodara	4 to 10	,, chinensis	1 to 4
,, Libani	4 to 8	,, dealbata	1 to 3
,, amabilis	1 foot	,, recurva	2 to 3
,, grandis	1 foot	,, hibernica	2 to 3
,, Pinsapo	1 to 7	Libocedrus decurrens	1 foot
,, Nordmanniana	1 to 4	Taxus ericoides	1 to 4
,, nobilis	1 to 4	,, aurea variegata	1 to 3
Pinus austriaca	2 to 5	,, elegantissima	1 to 3
,, Benthamiana	2 to 4	,, adpressa	1 to 3
,, excelsa	2 to 10	,, Dovastoni	1 to 4
,, Jeffreyi	1 to 3	Thuja gigantea	1 to 3
,, tuberculata	1 to 3	,, aurea	1 to 2
,, ponderosa	2 to 4	Thujopsis borealis	1 to 3
,, Sabiniana	1 to 3	Wellingtonia gigantea	1 to 4
,, Lambertiana	1 to 4	Yews (Irish)	6 to 10

The Sale is to last six days, and there are 1333 lots, filling 158 pages of Mr. STEVENS' Catalogue.

THE HYACINTH.

BY MR. WM. PAUL, NURSERIES, WALTHAM CROSS.

OF the many candidates for popular support in the present extended list of garden favourites there are few receiving more attention at the present time than the Hyacinth. Its beauty, fragrance, and variety are so many separate points of attraction, and the season at which it blooms is worthy of especial consideration. By the appearance of the Hyacinth winter is driven from its last strongholds, and the garden suddenly rejoices in all the brilliancy of a summer parterre. Then the plant is of such easy culture, that while the highest attainments in the art may be reserved for the patient exercise of skill and industry, the "prentice hand" in gardening may reasonably expect to attain to fair and satisfactory results. In a word, the plant is more manageable than many of its compeers, and hence there is less fear of failure from the oversight of any of those little kindnesses and attentions which the skilled horticulturist knows so well when and how to apply. In treating of the culture of the Hyacinth three separate points occur to me:—1. The possession of good bulbs; 2. The season of planting; 3. After culture: and these I shall proceed to discuss separately.

1. GOOD BULBS.—The best Hyacinths are imported from Holland. A more beautiful sight could scarcely be conceived than the gardens in and around Haarlem in the spring and early summer months, with their acres of ground, radiant with millions of Crocuses, Tulips, Hyacinths, blue, white, red, and yellow, of the richest and most varied hues, the more grateful to the eye, and the more impressive, because following so closely on the footsteps of winter. As is well known, the culture of the Hyacinth and its allies is a specialty in Holland. I do not see why it should not be the same here, as the differences in some localities, climates, and soils of England appear to me insufficient to account for it not being so. Perhaps our horticulturists are too much occupied with other matters, and certainly it would be commercially unwise to enter the field against such skilful and indefatigable contemporaries without first acquiring a thorough knowledge of so distinct a branch of the art of gardening. We may, and I believe do grow and bloom them as well here as there. But the question remains, can we bring bulbs *of our own growth* into the market of the same quality and at the same price? The answer is, not at present. We can, in the present state of our knowledge and practice, buy and sell cheaper than we can produce.

The Hyacinth being a bulbous plant, the sources of supply, at least during the early stages of growth, depend on the nutriment stored up in the bulb the year before. Thus it will be inferred that it is as important to obtain good bulbs as to grow them well when obtained. And I would here caution the cultivator against placing too much confidence in large bulbs. True, if a bulb is sound, solid, weighty, and well stored with eliminated food, the larger the better; but there are many large, showy, frothy bulbs sold every year in Holland and in England which fail before these tests, and which it requires a practised eye and hand to apply. Then again, there are some beautiful sorts of Hyacinths—of which Grootvorst is a familiar example—which seldom produce large handsome bulbs. On the other hand, there are some indifferent kinds which generally produce bulbs of great size and beauty. But further, bulbs of the same kind differ in value in the hands of different cultivators. In proof of it we need only adduce one fact—and whether it be attributed to the greater skill of the cultivator or to the superiority of his soil, the fact remains—that there is a difference of 20 per cent. in the prices of the different growers, and the highest priced stock always commands the readiest market. Having laid the foundation of a successful culture by the acquisition of good bulbs, let us pass to the next point.

2. THE SEASON OF PLANTING.—The natural period of rest for the Hyacinth is from June to October. If planted before the latter month, the shortening of the natural period of rest diminishes the vigour of growth and the beauty of the flowers. So if the planting be delayed far beyond that period, however well the bulbs may be kept, growth commences, the bulb feeds on the deposit of the previous year contained within itself without the means of recruiting the supply, and a loss of power is the consequence. Plant, then, in the month of October, applying a greater or less degree of heat, according to the season or seasons at which the flowers are wanted. If a very early, a very late, or a long succession of bloom be required, some should be planted earlier, and some later; but the month recommended above is the best, if the finest possible bloom is required, without regard to any definite period.

3. AFTER CULTURE.—The culture of Hyacinths falls naturally under three heads:—1, In pots. 2, In glasses. 3, In the open ground.

1. *Hyacinths in Pots.*—It is a matter of no small importance to secure a suitable soil, for although the plant in the first instance feeds on itself, the roots once in action, draw largely from the soil in order to replace the nourishment withdrawn from the bulb. A sandy loam should form the bulk of the soil, but such being usually poor, it must be enriched by a plentiful addition of manure. Cow-dung is the best of manures for the Hyacinth, and it is a good plan to obtain it in a fresh state, mixing it with the loam six months before required for use, turning the whole over two or three times in the interval, that the different substances may be well mixed together. When planting, place the bulb in the middle of the pot, setting it quite upright on a small bed of sand, and so that the apex of the bulb may be half an inch above the level of the soil. Soak the soil with water, and when well drained place the pots, in the first instance, out of doors on solid ground that worms may not enter. Surround the sides of the pots with cinder ashes, and cover the top with about six inches of the same material. In about two months remove the pots to a cold frame, covering with a mat for five or six days, to avoid a sudden transition from darkness to light. When the mats are withdrawn, give more or less air, according to the season at which the bulbs are wanted to flower, bearing in mind that the more air given the better, provided the frost be completely excluded. The long drooping leaves which we see with some cultivators is due to a too warm or too close atmosphere. So soon as the flower-spike rises, a stiff wire should be passed between the bells the whole length of the spike, the lower end bent outwards till it reaches the circumference of the pot, winding it round the outside of the pot beneath the rim to keep the spike upright and steady. Plenty of water should be given from the time the leaves begin to grow till the flower shows symptoms of decay, when a gradual diminution should take place. When the leaves turn yellow, water should be entirely withheld, and the bulb should be taken from the pot at the end of July, and stowed away in a dry place for planting in beds the following year. The same bulbs can scarcely be recommended for planting in pots or glasses a second year, but are very good for planting out of doors. Masses of Hyacinths may be planted in ornamental pots or baskets, forming the whole mass of one colour, or the centre and circumference of different colours; and thus ordered, they are at once elegant and effective.

2. *Hyacinths in Glasses.*—Under this form of culture we have in the Hyacinth the most beautiful of house plants in winter and early spring, arriving at the same degree of perfection in town and country. The single kinds, to my eye always the most beautiful, are especially preferable for glasses, on account of their greater earliness and hardihood. Soundness of bulb, at all times important, is more than commonly important here. Set the bulb in the glass so that the lower end, whence the roots are emitted, is almost, but not quite, in contact with the water. Use rain or pond water. Keep the glasses filled up as the water sinks by the feeding of the roots and evaporation. It is a general practice to place Hyacinths in glasses in a dark cupboard or some other place where the light is excluded, and a very good practice it is, for the roots feed more freely in the dark, and thus the system of the plant becomes better stored with food. They may remain in this situation for one or two months, according to the temperature in which they are placed, and should not be too suddenly transferred to the light. Here, as with Hyacinths in pots, when the flowering is over, the bulbs may be brought gradually into a state of rest by a diminution of the supply of water. This done, dry them, store them away, and in due season plant them in beds out of doors to bloom there the following year.

3. *Hyacinths in the open Ground.*—I have never yet seen so much done with the Hyacinth as an out-of-door plant, as I conceive might be done on principles similar to those which have been so admirably carried out in regard to "bedding plants." We have here red, white, and blue—to say nothing of the so-called yellow—of innumerable shades. Surely there is ample material for a more extended application of these principles, especially if the aid of the Tulip be called in. The Tulip gives an abundance of yellow, a colour deficient in the Hyacinth. By the combination of these two flowers, a gorgeous and complete flower-garden may be had in spring, as well as in summer, and neither a repetition of the other, but each a change. The Hyacinth is an admirable spring flower. It suffers less from wind and snow, from sleet and hail, than many hardy spring flowers; indeed, almost less than any other. To-day the snow falls, and the plant is hidden and frozen; to-morrow the sun shines, and it is as erect and bright as ever.

Hyacinths out of doors should also be planted in the autumn (November). Let the apex of the bulb be placed four inches beneath the surface of the soil, and after the soil is put on, add two inches of decomposed manure as a security against severe frost. In February, when all fear of severe frost is gone, the manure may be removed. The same soil as that recommended for pot-culture is suitable for Hyacinths out of doors. But it may not be generally convenient to remove and replace soil in the flower garden. Well, this is by no means a *sine quâ non* of success. We recommend it, but do not insist on it. The convenience of the cultivator must determine the matter. But if a soil be unusually light and poor, it should be enriched and watered abundantly; if close and heavy, it should still be enriched, and will usually be improved by mixing with it a good proportion of clean road or river sand. *Extracted from Proceedings of the Royal Horticultural Society.*

THE VALUE OF FOOD.

ABUNDANT, nay superfluous evidence has been furnished to prove that no one principle of food will alone suffice for nutrition; but clear and unequivocal evidence is still wanting to show how far each principle of food is essential to life and health, provided all else save that one be sufficiently supplied. This is a very different question. Again, ever since Liebig's famous classification of food into plastic or nutritive and respiratory or calorifacient, some most important questions in connection with it have engaged the attention of physiologists. Amongst them are these:—Is any food destined to the production of heat without being concerned in the repair of the tissues—that is, is any portion of the food directly burnt in the blood? Is any portion of albuminous food directly calorifacient, that is, burnt in the blood without forming tissue?—— Experiments were performed upon rats and a hawk. The animals were fed upon different diets, and the experiments may be divided into three classes accordingly. In one class the diet was a non-nitrogenous one, consisting of equal parts by weight of arrowroot, sago, tapioca, lard, and suet; for this mixture was found upon analysis to yield only ·22 per cent. of nitrogen. In another class the diet was a nitrogenous one. It consisted of lean veal from which every visible particle of fat had been carefully removed. This yielded upon analysis only 1·55 per cent. of fat. In the third class the diet was a mixed one. It consisted of a combination of the two former diets.——From these experiments the following conclusions are drawn:—Nitrogenous materials are not only calorifacient, but, at least under some circumstances, sufficiently so to maintain alone the requisite temperature. It is in the highest degree probable that, under certain circumstances, nitrogenous materials may prove directly calorifacient without forming tissue. Non-nitrogenous substances are, at least under some circumstances, directly calorifacient without entering into the composition of tissue of any kind. While non-nitrogenous food only is taken, all the nitrogen which is excreted in the urine, and more, may be accounted for by the disintegration of the original tissues, without assuming that any fraction is assimilated from any other source. While life cannot be maintained without nitrogenous food, even though every other kind be abundantly supplied, death in this case being due to loss of tissue, life and even health and the normal temperature can be maintained, at least for a long period, upon a diet almost exclusively nitrogenous, with proper inorganic substances in which there exist only a small fraction of non-nitrogenous matter. Such a minute proportion of fat must be but a poor representative of non-nitrogenous food. Moreover in these experiments some of the rats sustained a loss of weight

considerably above 50 per cent.——When their temperature is maintained from external sources, or when they are freely supplied with calorifacient food, warm blooded animals may die rather from waste than loss of temperature, as perhaps is the case with cold-blooded animals when they are starved. Lastly, in these experiments the significant fact appeared, that while the weight, strength and general condition of the animals varied very widely under the different diets to which they were subjected, no considerable fluctuation was observed in their temperature. Even the slight variation from time to time recorded seemed rather to result from other causes than to depend directly on the food. *W. S. Savory, in Proceedings of Royal Society.*

GLEICHENIAS.

A CONSIDERABLE amount of confusion and misconception appears to exist in reference to the names of the garden Gleichenias, which are such favourites with cultivators and Fern fanciers generally, that it may be worth while to devote a little space to the elucidation of the subject. We more especially allude to the group of small-leaved species, among which the names rupestris, Speluncæ, microphylla, hecistophylla, dicarpa, scandens, semivestita, &c., may be seen variously applied in different collections.

We must set out with the proposition that this array of names, though it represents in our gardens so many forms more or less different, and to which cultivators we therefore apply distinct epithets, yet is by no means to be taken as an index of the number of species of this group actually existing either in cultivation or in a state of nature. The fact is, that as with other Ferns with which in this country we are more familiar, varieties occur amongst these Gleichenias, and in certain cases differences of name indicate very little difference in botanical character. A recent examination of the subject has led us to the conclusion that the names above quoted represent but four species instead of seven.

Foremost amongst these in interest if not in beauty stands G. rupestris, a noble plant, of stout and vigorous habit, which is as yet rare as a garden Fern. It is distinguished by its stout stiffly branched, smooth or nearly smooth stipes and rachides, and by the firm thick texture of the glaucous blunt-ended almost quadrangular segments, which are ranged along both sides of its branchlets, and have thickened margins, and sunken sori. It is readily known at first sight by its habit, and is no doubt a well-marked and distinct species.

Somewhat resembling this, and also of stoutish habit though less sturdy than rupestris, is G. Speluncæ, which has a smooth stipes and rachis, thickish pinnules, glaucous beneath, and of a rounded or ovate figure, and the sori sunk in little cavities. Thus while it approaches G. rupestris it differs in its less coriaceous texture, and in its more ovate segments. The true plant is not the G. Speluncæ of the gardens, which appears however to be a variety (glandulosa) marked by having a somewhat hairy rachis, and by having the under surface of the segments sprinkled with sessile glands. This latter is a very free-going plant under cultivation, and soon forms a handsome specimen.

Then comes G. circinata, which under the name of microphylla is now tolerably abundant in Fern houses. This is more slender than either of the foregoing, and is a tolerably free-growing plant. It has a hairy rachis, smallish ovate thin flat segments having scarcely any revolute tendency at the margin and not glaucous, and bearing its sori on the surface, not in sunken cavities; sometimes the under surface is quite smooth, and sometimes very slightly downy, but we do not find any other distinctions in the two forms. G. semivestita is very little different from this. It is perhaps rather more vigorous in habit and somewhat larger in size, but the differences are scarcely more than occur in circinata itself, as it is developed from different and wide separate localities. This being so, we think it best regarded as a mere variety.

The most graceful of all is G. dicarpa, from which hecistophylla cannot be separated, as they are absolutely identical. This species has a hairy rachis, and long pendent branches, the segments of which are saccate, that is, their edges are so much recurved and drawn in that when seen from the under side as strung along the rachis they look like a row of watch-pockets. There is a certain amount of similarity in appearance between this species and microphylla, but irrespective of the more graceful character which the present usually assumes, it may at once be known by this pouch-shaped form of the segments when seen from beneath, the spore-cases, few in number, lying in the opening of the pouch. The hecistophylla met with in cultivation, is rather to be considered a larger form of dicarpa than as the true hecistophylla, which, as we have already mentioned, is not distinguishable from dicarpa itself. Hence for garden purposes it may be considered as a variety (major) of larger growth, but without other obvious differences. A third garden plant, which occurs under the name of scandens (of Loddiges), is clearly to be referred to this saccate-leaved dicarpa, but it is a well-marked variety, and may bear the name of glauca, on account of the glaucous under surface, which is one of its most obvious characteristics. It is also, especially in the young state, a good deal clothed on the stipes and rachides by a felt of cobwebby hair-scales. In some respects it resembles unusually large examples of the variety called alpina.

According to this view, we have in cultivation of the small-leaved group of Gleichenias the following species and varieties:—

- *G. rupestris.*
- *G. Speluncæ*, and var. *glandulosa* (= Speluncæ of gardens).
- *G. circinata* (= microphylla), and var. *semivestita* (= semivestita).
- *G. dicarpa* (= hecistophylla), and vars. *major* (= hecistophylla of gardens), and *glauca* (= scandens of gardens).

One word in reference to a plant of another type of Gleichenia, namely G. dichotoma. Of this we now and then meet with a well-managed and good-looking example, but this species is far too often seen in a drawn up straggling condition, bearing evidence of having been subjected to too much heat. When established the plants throw up young stems very freely, and we should therefore recommend those who have them in the condition just indicated to cut them down, or thin out the old stems severely, and to allow the young growth to be developed in a cool house. They would thus very much improve the appearance of their plants for which a high stove temperature is by no means necessary.

As desiderata for our gardens the following species of this "aristocratic" genus deserve to be looked after:—*G. Mathewsii*, of Peru; *G. pedalis*, of Chili; *G. pectinata*, *G. revoluta*, and *G. simplex*, of tropical America; and *G. umbraculifera*, of Natal. The very handsome New Zealand *G. Cunninghamii* is, we believe, or at least was a short time since, already in the country. *M.*

Indoor Gardening.

I WISH that I had thought sooner of the Chinese Primroses. Sometimes one does for awhile utterly forget a plant, and that has been my case this year with regard to this. I have not a single seedling coming on of Primroses, and have quite forgotten to remind other people of them. The young plants, however, are now to be bought (as seedlings) at Covent Garden, and for any one who is filling a window in a cool room (not made hot by fires, that is, in autumn), I cannot tell any plant that would be more attractive. The leaves are themselves so pretty, and have about them such a pleasant smell of hedge-rows, that even while not in blossom the little plants become pets; and though they do not often grow so large in rooms as those which are bought in winter all ready grown at a florist's, the home-grown plants are generally a great deal the most compact, and their flowers are thicker and more lasting looking.

These things do too most beautifully in the plant cases, which are a little warmed, and which give moist sheltered air; for though sensitive of extra damp these plants cannot bear dryness. In the warm dry air of a drawing room they always seem to dwindle or to die very soon, but in one of the plant cases I have had them for many weeks blossoming most delightfully, and in a cool sitting room, like a morning room not much used, they would thrive very well if they could have light enough.

These flowers are now of such very lovely shades, and of such large size, that the fringed single sorts seem to me far prettier than the double, and ten times more easily grown. One very great point indeed is to pot them high enough.

I know indeed well the misery of not being able to water anything without an instant overflow, and it is undeniable that in such cases things sometimes seem to run unaccountably short of water, since the gardener must stand by so patiently while it soaks in little by little. Still, for the good of the plants, a tolerably firm-built cone of which they form the summit is the best thing I know; of course the rise is most slight. I call it a cone to make the object clear, but a slightly raised surface, to keep the root above the pot-rim, is really all that is wanted. The thing is that the Primroses all go off from the centre (unless a leaf is bent down against another pot, when it damps quickly too), but I have known a plant look healthy and green and proper, and yet have found out unexpectedly that it was all decayed through at the stem. The plant was potted low, damp had collected about the surface, and the ends of cut off leaves had decayed and spread decay. The same thing happens sometimes in all very juicy plants. I have been wondering whether being touched with collodion in the way recommended for some kinds of cuttings would prevent the escape of sap and the disaster that often follows; but I know for certain that charcoal and sulphur dusted on does a great deal of good, if it can be managed nicely, without spoiling the looks of the other leaves. The grand thing is not to have to cut off leaves. They are very brittle and liable to decay; still, in this case, forewarned ought to be forearmed, and a little care will avoid having broken leaves or allowing growing ones to touch other plants or to rest against other pots. The fresh velvety healthy green of these large crumply leaves is indeed one of the great charms of the plant, and this is greatly injured by the standing spots of wet, which cause a brown decay, as well as by the accidents that I have already mentioned.

A year or two ago I had a charming stock of these seedlings. Early in April the seed was sown in common garden saucers, well drained with charcoal, and the seeds lightly covered, the soil being fairly firm. The young plants were kept in a frame covered with glass, and some of them in a window, and as they got four leaves were potted off separately into "small sixties" by the aid of an ivory pin. The chief difficulty in the transplanting is to keep the soil closely round their roots in the new quarters. They are so very brittle, and it does not do to break leaves or roots, or to leave them shaking. And I don't myself like for Primroses using too much sand. It seems to me to keep wet to them too closely; or else in most arrangements of this kind pouring on dry sand fills up every crevice. This same filling can hardly be too much thought of by window gardeners. I speak feelingly because I have seen plants, "potted off properly," with large gaping holes all round the shrivelled roots, and a thin superstructure of soil just serving to hide the mischief which a post-mortem examination finally revealed.

The plants don't at any time bear standing out in pots in exposed situations. When they are fairly rooted they delight in air and plenty of light without hot sunshine, but a slight gust of wind would twist them about distressingly.

Sandy leaf-mould suits Primroses well. A covering of the dry Cocoa-fibre does too very well for covering the soil, only then a little trench should be made round the edge of the pot, and the watering should be performed by filling it with warm water.

The leaves delight in being washed, but this work needs care, as they tear very easily.

The young plants raised from seed last spring, or bought about this time, should soon be potted into 4-inch pots. High potting of course gives a good deal of extra root room, and pots of this size are the largest that need be used.

People must remember to cover the drainage with well pressed down Moss, and to put in the soil rather firmly, or else they soon will find their hillock become a well.

Primroses have a way of growing with the roots rather anchoring about than fairly in the ground, and it is an object to keep them just steady while still not covering the collar of the plant at all. In buying or arranging seedlings I have always found it safe to choose the dark green leaved plants without the least touch of red, as those that will have white flowers. Ever so little a tinge of purple or red about the leaves or stalk seems to me to indicate the pinkish or lilac flowers.

The plants should never get very dry, but stagnant wet and closeness seem almost as injurious. A very light airy place is that which they delight in, with daily slight warm waterings, and no water left in the saucer.

Home Correspondence.

Golden Hamburgh Grape.—From what certain people are pleased to say about this Grape, one might be led to suppose that it was utterly useless, and therefore object to buy it, which would be a great pity, for as far as our experience goes we have proved it to be a great acquisition, in fact quite a gem. If any one will pay our nursery at Berkhampstead a visit, they will find an orchard house 130 ft. long and 24 ft. broad, containing a specimen of each sort of Black Grape which we consider worthy of cultivation, and at the further end the Golden Hamburgh, with 26 splendid bunches on it, which would, we are of opinion, convince the most sceptical as to the intrinsic value of this variety. It is not the first time that it has fruited so well with us; it has done the same each year since it has been planted, bearing of course according to the size of the Vine. During the whole time we have not observed one berry to shank, even in a house which gets no heat except from the sun; this is surely very satisfactory. The fruit will be fit to cut in a week or so, some bunches are sufficiently ripe already to test their quality, which we think would please the most fastidious. As for red spider, it will puzzle any one to find that pest on any of its leaves; we have never found it liable to be infested with that plague. It is in short a sterling Grape, of excellent quality, and one which succeeds admirably with us. *H. Lane & Son.*

Exhibitions of British Plants.—The Brighton Horticultural Society certainly does more harm than good to the cause of British botany by offering prizes for collections of wild flowers. At its show held on Wednesday last there were four or five competitors for the prizes in this class, each having done his best to clear the country for miles around of its choicest gems. I observed bunches of Gentiana pneumonanthe, pulled up by the roots, and many other rare things, for which doubtless many a loved locality had been robbed. Moreover, were no evil consequences to attend the practice, a flower show is scarcely the place to exhibit British plants, surrounded as they are by the gorgeously coloured flowers of sunnier climes, and where they are not likely to be admired except by those who have known them previously, and who, like myself, must be pained to see such wholesale destruction. *William Robinson, 12, Ernest Street, N.W.*

Iron Glass Houses.—May I trespass upon your space in the hope of gaining from some of your practical

readers a few observations as to the merits or demerits of greenhouses, hothouses, and Pineries constructed of iron, and to learn from those best acquainted with the result of this metal's test, since its application to this purpose by architects, whether it answers or not. Many of your readers may have made critical observations, and formed a preference either for iron or wood; their ideas therefore would doubtless be interesting to many. *A Constant Reader.*

Pampas Grass.—Some of your Correspondents may have this Grass now in bloom; I should therefore like to hear of any that could beat one specimen I have. It is about four years old, and has 70 spikes now in full beauty; some of the spikes I should say are 9 feet high. It is situated in rather a damp place. Some younger plants I have near are at present also in flower; they have from 12 to 18 spikes on them. *John Hollingworth, Turkey Mills, Maidstone.*

Societies.

ROYAL HORTICULTURAL: *Sept.* 5.—S. H. Godson, Esq., in the chair. The following new members were elected, viz.:—

Alderman Challis, E. Disney, Esq.; Major General Dunn, Mrs. Henry A. Hunt, Hon. Spencer Lyttelton, Henry Vaughan, Esq.; William Wiffin, Esq.; Mrs. Edward Foxe White, and Mrs. Peers Williams.

Sept. 23 (*Floral Committee*).—Messrs. Low contributed on this occasion a plant of Caladium Lowii, a fine kind with large shining deep green leaves, prominently veined with white. The same firm also furnished Cypripedium Stonii, a creamy white and reddish purple flowered kind, with narrow pendulous tails about 4 inches long, drooping something like those of C. caudatum. From Messrs. Lee came examples of Gold and Silver Spruce Firs, the former of a beautiful golden yellow hue; the latter not so ornamental. Mr. Barker, of Godalming, sent a Weeping Cypress, called Cupressus Barkeri, a variety apparently related to C. Goveniana. The same exhibitor also contributed cut flowers of upwards of a dozen charming varieties of 'perpetual-flowered' Tropæolum, varying from rich golden yellow to brilliant scarlet. Messrs. E. G. Henderson furnished a pretty variegated variety of Solanum capsicastrum, the beauty of which when covered with round bright orange scarlet fruit has often been the subject of remark in our columns. From Mr. Bull came various white and purple flowered Petunias, and Doryopteris nobilis, a handsome new Fern, each of whose leaves is ornamented with a stripe of white up the centre. Mr. Knight, of Battle, showed cut flowers, among which were some very pretty kinds of Tropæolum and Verbena. A promising crimson Rose called Turenne, and a white called Louise Darzaus, were shown by Mr. Wm. Paul, and a pink-flowered Rose in bad condition came from Mr. Torbron. Mr. Wm. Paul also furnished a fine deeply glaucous form of Abies nobilis. Various Seedling Dahlias were exhibited by Mr. Turner and others; but none of them received any award. In a collection of older kinds of Dahlias from Mr. Turner were remarkably fine blooms of the following: viz., Lord Derby, Princess of Prussia, Lord Dundreary, Madge Wildfire, Charlotte Dorling, Preeminent, Chieftain, Bob Ridley, Model, Cygnet, Chairman, Mrs. Bush, Norfolk Hero, Earl of Shaftesbury, Criterion, Mr. Stocken, Pioneer, Lord Palmerston, Pauline, Umpire, Beauty of Hilperton, and Delicata.

Sept. 23 (*Fruit Committee*).—Fruit was somewhat plentiful, especially Apples, among which were several seedlings, apparently kitchen sorts, the examination of which was deferred till another occasion. Among named varieties the best came from Mr. Cunningham, gr. to the Bishop of London, whose kinds were Yellow Ingestre, Early Nonpareil, and a seedling from the Ribston Pippin, which promises to be an acquisition. The best Pears came from Mr. Spivey, gr. to J. A. Houblon, who sent Flemish Beauty, Gansel's Bergamot, and Jersey Gratioli. Mr. Swinerd, Minster Abbey, showed Gratioli, Williams's Bon Chrétien, and Royal Somerset. Marie Louise, and others, though good fruit, were unripe. Of Plums the best came from Mr. Bousie, of Stoke Park, near Slough, who sent beautiful fruit of Coe's Golden Drop, and Reine Claude de Bavay. From Mr. Bailey, gr., Shardeloes, came Prince of Wales, a variety like Goliath, Magnum Bonum, and Coe's Golden Drop. Mr. Kaile, gr. to Lord Lovelace, contributed Coe's Golden Drop, and the yellow and red varieties of Magnum Bonum. A good dish of Morello Cherries was shown by Mr. Tillery, of Welbeck, and a late sort of Bigarreau came from Mr. Rivers, who also exhibited several seedling Peaches, the best of which was said to have been obtained from the Pitmaston Orange Nectarine! This was a medium-sized Peach, not unlike a Royal George in appearance. Salway and one or two other yellow-fleshed Peaches were shown; but they were not at all good. Among Melons the best was Golden Perfection from Mr. Bousie; and Mr. Whiting, gr. at the Deepdene, and Mr. Bailey, also furnished good fruit of the same variety. Mr. Turner had a good Orion. Among Figs the best was White Ischia from Mr. Pottle; there were also fine examples of Brunswick and Lee's Perpetual from other exhibitors. From Mr. Graham, of Cranford, came a small but good seedling Pear, and specimens of a white Grape which resembled the Chasselas Musqué. Melville's seedling Grape was also shown, but not in good condition. When in perfection it is, however, reported to be a valuable variety.

Notices of Books.

On the Various Contrivances by which Orchids are Fertilised by Insects. By C. Darwin, Esq., F.R.S., &c. [Third Notice. See p. 863.]

After fully detailing the structure and mode of fecundation in Catasetum, Mr. Darwin proceeds to read the riddle first propounded by Sir R. Schomburgk, who found three distinct genera, Catasetum tridentatum, Monachanthus viridis, and Myanthus barbatus, all growing on the same plant. All these he proves are sexual forms of one species, arguing from the following considerations. In no Catasetum is the stigmatic surface ever viscid (as in all other Orchids except Cypripedium), which viscidity is indispensable for securing the attachment of the pollen by rupturing their caudicles; the ovary is short, smooth, and narrow; the funicles are very short, the ovules quite imperfect, and the utricular tissue of the stigmatic surface different from that of other Orchids; further, Sir R. Schomburgk never saw Catasetum tridentatum producing seed; on the other hand the sensitive antennæ, staminal organs, and pollinia are perfect. It may hence be concluded that Catasetum tridentatum is a male flower exclusively.

In Monachanthus viridis again the antennæ are entirely absent, the pollen-masses rudimentary, there are no traces of pedicel or viscid disc; the utriculi of the stigmatic surface are different from the male form; the ovarium is longer, thicker at the base, more furrowed, the funicles long, and ovules as in other Orchids; furthermore Sir R. Schomburgk found it seeding abundantly; hence it is almost certain that this is a female plant.

In Myanthus barbatus the antennæ are present, but not so long as in the Catasetum; the stigmatic chamber is intermediate in size between those of Monachanthus and Catasetum; the utriculi are as in other Orchids; the ovary is straight, well furrowed, twice as long as in Monachanthus, but not so thick at the end; the ovules not so numerous, but perfect; the pollinia are small but perfectly developed, and have a well developed disc and pedicel; from all which circumstances Myanthus barbatus may be pronounced a hermaphrodite plant, of which Catasetum is the male and Monachanthus the female.

Still more beautiful and interesting, though not so complex sexually, is the Mormodes ignea, the crowning case of all cited in this remarkable book: this we have read and re-read, fascinated by the marvellous example it affords of the infinity of the resources at the disposal of an all-wise Creator, when he sees fit to adapt the most useless-looking organs to the highest purposes of the plant; we know of nothing in the whole range of botanical literature that can compare with this as an episode in a plant's life: no point seems to be overlooked; the most trifling deviation which Mormodes ignea presents from the ordinary structure of its allies, even to the exact amount of the twist of the pedicel, and direction of each flower on each side of the spike, has a special purpose, and proves to be a most exquisite adaptation of structure to function, failing which all the rest is useless. It takes, however, fully 16 pages to render it clear, and as we have already far exceeded our limits, the work itself must be consulted.

Cypripedium is the last genus described by Mr. Darwin. Its general structure is too well known to be repeated here, and, as might be anticipated, its method of fertilization differs widely from that in all other Orchids. The grains of pollen are coated by and immersed in a viscid fluid, so glutinous that it can be drawn into threads (a unique case), and it is impossible that the pollen can reach the stigma without mechanical aid. The stigma again is not viscid, as it is in all other Orchids, and is convex instead of concave. There is no nectar proper, but the inside of the lip of all the species examined is studded with glandular hairs, which secrete a viscid fluid. The explanation of the operation of fecundation is hypothetical, but otherwise in all respects satisfactory, and is as follows. Two narrow passages, one on each side of the column, lead to the cavity of the labellum; an insect inserting its proboscis into the cavity to reach the glandular secretion within the labellum, would infallibly get the proboscis smeared with the glutinous pollen, and pushing it still further, especially if through a little notch outside the anther, would deposit some of it on the convex stigma of its own flower, or that of another flower, as the case may be.

The remainder of Mr. Darwin's volume is occupied with general considerations, viz., the secretion of nectar, a curious and complicated subject; the homologies of Orchid flowers, worked out with great ability and lucidly explained—especially interesting are the parts relating to the rostellum and development of the pollen; genealogical affinities of Orchids, a very speculative and seductive discussion; the mechanism of the movements of the pollen; uses of the petals; production of seed. Here (apropos, we suppose, of his favourite Malthusian doctrine) he informs us that supposing every seed of Orchis maculata germinated and seeded during four generations, "*the great grandchildren of a single plant would nearly clothe with one uniform green carpet the entire surface of the land throughout the globe.*" The infinite resources of Nature, the hopelessness of any attempt to entertain any adequate conception of their multiplicity, and the illimitable diversification of forms that slight changes effect *in cumulo*, are then eloquently discussed; the importance of the most trifling details of structure is strongly insisted upon, and the perfection of the contrivances for fecundation is shown to be unintelligible if the closest attention be not paid to these details; and the work concludes with a statement (by way of application and warning), of the author's views as to the eligibility of crossing, and injurious effects of marriage between near relations.

It remains to say a very few words as to the general impressions left on the mind by Mr. Darwin's book: his main point, that kept most prominently in view throughout—that Orchids are fertilised almost exclusively by insects, and that their flowers, though hermaphrodite, are fertilised by the pollen of others, is abundantly proved, and the whole subject, under every one of its multitudinous phases, admirably worked out. His secondary object, "to show that the study of organic beings may be as interesting to an observer who is fully convinced that the structure of each is due to secondary laws, as to one who views every trifling detail of structure as the result of the direct interposition of the Creator," he has also more than established; for no author hitherto, let his views be what they may, has written a book relating to vegetable physiology to compare with Mr. Darwin's in point of engrossing, fascinating interest. Whether, however, his third object, that of supporting his hypothesis of the origin of species by natural selection, is attained, will no doubt lead to much diversity of opinion. Upon this point we have earnestly and assiduously laboured to arrive at an unprejudiced opinion, feeling pretty well assured that this great subject must be treated in Mr. Darwin's forthcoming volumes very much as it is here, and that in the present state of our knowledge it admits of no very different method of treatment, nor more powerful advocacy. We find, then, that Mr. Darwin has, in the case of the natural order of Orchideæ, shown that there is an astonishing range of variation in each organ; that a trifling difference in structure between two organs homologically the same, may lead to inconceivable differences in the offices each performs, differences too that materially change the relations of other organs to one another and to their prior purposes, and change too the relations of the species to the organic (especially the insect) and inorganic worlds around; differences, hence, which natural selection cannot fail to take advantage of and intensify, leading rapidly, as it would appear, and infallibly, to that loss of resemblance between the offspring of a common ancestor, which is often the equivalent of generic as well as of specific differences. Of this Catasetum and its sexual forms is the most obvious example, but though more obvious it is not a whit more suggestive than very many others. In so far then, that is in all that relates to structure, the hypothesis gains in every way by a study of Orchideæ. It has, however, been argued that though there is no limit to the ratio in which structural differences may accumulate in an organising progeny, and that hence the origination of species and genera thereafter by natural selection is so philosophical a conception as to demand assent in the absence of any other equally good, there is a physiological rule which is never transgressed, according to which different species are infertile inter se. This argument the study of Orchideæ does not solve, nor indeed could it be expected to do so, but it certainly alters its aspect; it shows, as in the case of Habenaria bifolia and chlorantha, how trifling a structural difference (one far within that ordinarily assigned to variation) will present an insuperable obstacle to fecundation. And this physiological element confounds our ideas of species rather than the contrary, for if Catasetum and Monachanthus are shown to be structurally different genera but physiologically the same species, and Habenaria chlorantha and bifolia are to be considered structurally the same species, but physiologically distinct ones, we may naturally suppose that the infertility of two forms *inter se* is simply the effect of the differences induced between their reproductive organs by variation and natural selection. If these differences are accompanied by others in other organs, the forms are acknowledged to be species by all; if not the question is still a moot one, for one party insists on the positive argument that they are never known to breed together, and are therefore species; and the other must be content to demand proof of the negative, that they never did breed together and never will.

The last Number of the *Botanical Magazine* (September) contains figures of the undermentioned subjects:—*Agave glaucescens*, a remarkable species received at Kew, from Galeotti, as a native of Mexico. It is a large growing plant, with a stem 3 to 4 feet high, and thick fleshy leaves 2 to 3 feet long, and producing from the centre a cylindical scape 8 feet long, terminating in a caudate deflexed spike of densely packed green flowers having much protruded stamens." It flowered in the autumn of 1861 for the first time, and was a very attractive object during the whole winter, for the

[illegible] of the innumerable flowers on the long and [illegible] decurved spike was very gradual, and now [illegible] the spike still remains with a few imper[illegible] capsules and an immense quantity of young plants germinating on the rachis." *Philadelphus hirsutus*, a pretty N. W. American shrub, under which it is remarked:—"The common Philadelphus or Mock [Orange] of the gardens has long been known by the [name] of 'Syringa,' and it is the Syringa alba seu [Phil]adelphus Athenæi of Bauhin and other old classical [botanical] writers. Syringa vulgaris is the botanical [name], as is well known, of the common Lilac, and this circumstance led Mr. Curtis to quote (Bot. Mag. t. 183) under the common Lilac a passage from old Gerard [relating] to the peculiar odour of the flowers of Philadelphus coronarius:—'They have a pleasant sweete [smell], but in my judgement they are too sweete, [troubling] and molesting the head in a very strange manner. I once gathered the flowers and laid them in my chamber window, which smelled more strongly [after] they had lien together a few howers, with such [a] poutiche and unacquainted savor, that they [awakened] me from sleepe, so that I could not take my rest until I had cast them out of my chamber." [Curtis] afterwards corrected this error, but suggested to [prevent] similar mistakes in future to cease applying the term Syringa to the Philadelphus altogether; but this is more easily said than done. It is supposed that in both cases the name was derived from συριγξ, a [pipe], from the use made of the long straight stems for pipe tubes. The odour of the common Mock Orange is [said] very powerful, by some compared to fresh [cucumber], by others to that of smelts. Of P. hirsutus, the smell, especially in the dried state, is that of [Violet]." *Ourisia coccinea*, a beautiful dwarf perennial [from] the Chilian Andes, and introduced to our gardens by Messrs. Veitch & Son. It is a herbaceous plant, [with] cordate crenately lobed radical leaves, and a [scape] a foot long, bearing the long pendent tubular [scarlet] flowers in opposite pairs; the limb is prettily streaked on the face with crimson, a feature which Mr. [Fitch's] otherwise admirable figure does not show. *[Epi]dendrum prismatocarpum*, a peculiar-looking and [rather] pretty Central American species said to be grown [in some] gardens under the name of E. Uro-Skinneri; the flowers are greenish, finely spotted with purple, and the lip small and rose-coloured; a singular feature is the three-winged condition of the ovary, which has sharp projecting angles not unlike what occurs in some [Begon]ias. *Dimorphotheca Barberiæ*, a very pretty herbaceous composite from Kaffraria, a good deal like the common Cape Marigold in its general features, but with the ray florets of a brilliant purple instead of [white].

The *Florist and Pomologist* for September contains excellent illustrations of Mr. Veitch's Japanese *Lilium cordatum*, and Mr. Standish's Japanese *Lonicera brachypoda*, here called *aureo-reticulata*, which are un[doubted]ly two of the finest novelties of the current [year]. Amongst the literary contributions, Mr. D. [Th]omson endorses the statement which had been made by one correspondent and objected to by [an]other, that the Smooth Cayenne Pine Apple is as [good] as a Queen in summer, and much better than that variety in winter. "F. R. H. S." continues the [review] of a "Florist" on the subject of the Horticultural Society and Florists' flowers, and we may perhaps [notice] his remarks in another place. The Rev. G. [Jeans], writing on Strawberries from Alford, observes that *there* Sir Harry is excellent in every [way]—except to eat; while Omar Pacha is the [best] of the British Queen family; and the [Frog]more Late Pine and Rifleman, two new sorts, [prove] to be among the highest flavoured, very [hardy] and great croppers. The Late Pine, which, [though] commencing to ripen early, well deserves its name, he considers likely to be the most useful variety [introduced] since the old and not yet obsolete Keens' [Seedling]. A "Country F.R.H.S." has some criticisms [on] what he calls the 'gingerbread style of flower gardening,' and suggests that the simpler way of carrying [out] the 'polychrome' system of bedding would be to have the patterns printed on oil-cloth and [pegged] down where required. He moreover thinks, [and] we agree with him in this, that no public [or] private garden of any pretensions can be complete without plenty of spring flowers, massed [for] effect, commencing with the bulbs in March, and [keeping] up a good display till the Pelargoniums and [other] subjects take their place in the summer months. [A. F.] directs attention to the great value of the [Douglas] Fir for commercial purposes; and after [alluding] to the vigour with which it grows amongst [the débris] of the slate rocks of North Wales, points [out] that there are thousands upon thousands of acres [in] Wales, the North of England, and Scotland, which [would] suit the growth of this tree admirably. [Mr. ...] says that he has had an opportunity of seeing the Golden Hamburgh Grape every season since [it] came out, and in every instance it has proved [worthless]. Finally, there is a notice of two new [seedling] Grapes, the Champion Hamburgh, and the "[Duke]ss of Buccleuch's," both of which seem to be [acquisitions].

[The Gossip] of the Garden contains articles on Phloxes, [Hyacin]ths, Erythrinas, Pentstemons, drooping plants [for] baskets, and part of a series of notes on the economical management of small gardens, which series will be found to contain a good deal of sound and useful instruction for those cultivators whose garden operations are conducted on a small scale, and who have not had much practical experience of the subject.

Trade Lists Received.—Ambroise Verschaffelt, Ghent, *Catalogue No. 71 for the Autumn of* 1862, *and the Spring and Autumn of* 1863. We here find the new golden-veined Honeysuckle from Japan, offered at 10 fr. under the name of "Lonicera brachypoda, foliis aureo-reticulatis."——Dobson & Sons, Woodlands Nursery, Isleworth, *Descriptive List of New Pelargoniums, &c.*——Wm. Paul, Waltham Cross, N., *Descriptive Catalogue of a Selection of Roses.*——H. Brown, 4, Commutation Row, Liverpool, *Descriptive Priced Catalogue of Dutch and other Flowering Bulbs.*——H. Lane & Son, *Descriptive Catalogue of American Plants, Conifers, Deciduous and Evergreen Trees and Shrubs*, cultivated for sale at their Nursery, Great Berkhampstead, Herts.——Edw. Taylor, Malton, Yorkshire, *Catalogue of Dutch and Flower Roots, new Fuchsias, Cinerarias, &c.*; also other new and choice plants.——Wm. Bull, King's Road, Chelsea, a *Retail Catalogue of new, beautiful, and rare Plants*, containing information respecting novelties.

Garden Memoranda.

Mr. Bull's Nursery, King's Road, Chelsea.—In the show houses here there has been an excellent crop of Grapes; but a considerable portion of them is now cut. Enough, however, remains to indicate that the bunches have been of fair size and well coloured. Of Marchioness of Hastings, a large white Grape, there are still fine samples not yet arrived at maturity; Golden Hamburghs have all been cut; some of the bunches of this variety are, however, reported to have weighed upwards of 2 lb. each, and the berries to have been large and of a rich golden yellow colour. Vines, of which there is altogether a fine stock, are planted in other houses besides those just named; but it is in the latter they are seen to best advantage; owing to the principal show house being large, and constructed for the accommodation of plants rather than of Vines, the mode of planting the latter differs somewhat from that usually followed. The centre of the house is lofty and span-roofed, and against each side has been placed lean-to compartments; under the latter the Vines are trained both up the rafters and over an arched trellis under them, and, although greatly shaded they produce well coloured bunches. Those planted to furnish the centre area of the building necessarily possess great length of rod; nevertheless they bear well from top to bottom, and colour satisfactorily even down near the ground.

It is for plants, however, that these houses are chiefly required, and the Vines overhead form a leafy shade which is useful and agreeable to look at in summer, and in winter the leaves being off no impediment is offered to the introduction of light. The value of the fruit too must not be overlooked.

With regard to plants, the show-houses are stocked chiefly with things remarkable for the beauty of their foliage. On both sides as one enters are nicely arranged masses of such plants set off in front with rows of the little variegated Agathæa cœlestis, and of the rich mulberry-coloured Coleus Verschaffelti. Of the latter, some interesting standards with straight stems about 3 feet in height, and good bushy heads, were intermixed with green plants, such as Tree Ferns, Dracænas, Aralias, and the prettily divided leaved Grevillea robusta, with good effect. Associated with these were thriving young specimens of Variegated Aloes and Yuccas, Alsophila australis, Cibotium princeps, and plants of that description.

In a span-roofed stove were Alocasia metallica with great bronzy leaves; the white and green foliaged A. macrorhiza variegata; the pretty deep green Anthurium acaule and A. leuconeurum, the last a variegated species from South America, with thick waxy heart-shaped leaves deep green in colour, veined and spotted with grey. Among other plants in this stove were Gesnera refulgens, of which we observed a large stock of young plants. It makes a valuable addition to the class to which it belongs, for besides being a useful winter flowering plant its leaves are covered with multitudes of red hairs, which give the foliage a rich crimson velvety appearance, rendering the plant ornamental even when out of bloom. Variegated Begonias are also plentiful, as are likewise Caladiums, among which Belleymei and argyrites were conspicuous. Cyperus alternifolius variegatus is also a pretty plant, each of its reed-like stems being surmounted by a tuft or whorl of drooping grassy green leaves, charmingly striped with white.

Among new Ferns, Asplenium flabellulatum is a pretty species, as is also A. rachirhine, a charming Brazilian kind. Adiantum Feei makes a useful addition to that genus, and in gold and variegated Ferns the collection is unusually rich. Among the latter were multitudes of small seedling plants of Pteris tricolor, P. argyræa, and P. cretica albo-lineata. Pteris rubro-nervia is also a pretty variety, and of the Irish Fern, Trichomanes speciosum, a large Wardian case was completely full. We also noticed one or two pretty varieties of Lady Fern.

Of Orchids there is a small collection, and among variegated kinds one or two good plants were observable. Pine Apples, both succession and fruiting plants, were also abundant.

Geraniums, Verbenas, and other soft-wooded plants are numerous, as are also Petunias, among which the following are good kinds, viz.:—Acme, white, striped and veined with bluish purple; Dazzle, rich crimson with black centre, excellent in form and good in substance; Excellent, deep pink, shaded with violet, and veined with crimson over the entire surface; Guido, broadly margined with white, striped with red and dark crimson in the centre; Monarch, large and full double flower, rich crimson, and a free flowerer; Nonesuch, bright rose mottled with white, throat pure white; Palatial, French white, each petal strikingly rayed with bright violet crimson; Review, crimson, broadly margined with rose, throat violet; Ruby, crimson, veined and striped with black, throat dark violet; Special, a bold flower of excellent form, margined with rose, and beautifully marbled; Suffusion, double delicate pink, veined with purplish red; Sultana, blush, striped with purple; and Inimitable, the last still one of the best and most showy double varieties.

Camellias, which are this year well set with flower-buds, are still out of doors, as are likewise Azaleas. We also noticed some handsomely shaped standard Bays and Laurustinus, forming a group near a fountain and basin, in which white Water Lilies are growing and flowering beautifully.

Miscellaneous.

Fucus vesiculosus (Sea-Oak, Sea-Lettuce), and its Use in Obesity.—A decoction of the Fucus vesiculosus is prepared, which has a pungent and marshy taste. This is taken by some persons without reluctance, but more generally the reverse is the case. It may be taken between or during meals. I prescribe the Fucus generally in the form of pills. My first experiments were made with the powder: but for more than a year I have thought it better to substitute the hydro-alcoholic extract, from which I obtain more rapid and regular results. Each pill hitherto employed by me has contained 0.05* of the extract; but the quantity may, without inconvenience, be tripled, or even raised still further. This remedy is best taken in the morning, fasting. I have repeatedly proved that those persons who use at the same time the decoction and the pills obtain a favourable result. Its use requires no change in the ordinary diet. I have always allowed persons to eat according to their desire; and, apart from too much farinaceous food, beer, prolonged baths, and a too sedentary life, which it is always necessary to avoid, I never impose serious privations. The action of the Fucus on the system is very easily proved. After using it some time the patient feels lighter, more active, the stomach acts with more rapidity, and the hour of repast is more impatiently looked for. Flatulency diminishes, and then disappears, with those who have habitually been accustomed to it. The act of digestion is no longer accompanied by flushings of the face, by fulness, weight in the epigastric region, and fits of heat towards the heat. These different phenomena show us then in the Fucus vesiculosus a real stimulant of the absorbent system, concentrating principally its action on the fatty globules. The thinness which it determines is not always produced in a uniform manner; I have seen it limited to certain isolated parts, which are then almost always those where the fatty tissue accumulates in the greatest abundance. Thus, with one it is the chest, with another the abdomen, and with a third the nape of the neck and the upper part of the shoulders. But the destruction of fatty matters is not all that the resolving properties of the Fucus is capable of accomplishing; for many observations seem to prove that the same properties may become useful in certain diseases, as cutaneous infiltration, passive dropsy, atonic gout, &c. We should always be careful in anticipating those therapeutic results which are still undetermined, and which repeated experiments, carried on with the most scrupulous care, can alone demonstrate and substantiate. It will suffice at present to recognise in the Fucus a resolvent property of incontestable energy, one which has hitherto escaped the notice of observers, and the application of which is the more valuable and easy from the fact of its existing in a well-known and common plant, of but little cost, and which requires no modification when it is employed, either in the diet or general habits of the patients. There is another point to be mentioned, which relates to the choice of the Fucus, and which is here of great importance. We know that the Fucus vesiculosus belongs to a family which contains hundreds of species; that many of these are almost inactive, and the greater number of the others perfectly useless as remedial agents; hence it is absolutely necessary not to lose sight of the botanical characters of the true Fucus vesiculosus. The neglect of this has given rise to daily deceptions, and I have seen many persons from the same cause lose their time in lengthened and useless experiments. It was thus also that a patient who complained of having

* We presume the author means 0.05 of a gramme (that is, about ¾ of a grain troy). There is much indistinctness in the subsequent remarks of the author as to the doses given by him, hence we forbear quoting them. The communication of Dr. Godefroy on the same subject, further on, is more explicit. Ed. Ph. J.

taken for three months, without any result, large quantities of the Fucus which I had prescribed for him, and which, upon being brought to me, I found to be the common Grass or Sea-wrack (Zostera marina), which is used by upholsterers to stuff mattresses. I am not ignorant of the difficulty which is experienced, even in Paris, in procuring the true Fucus vesiculosus; because I have had repeatedly offered to me under that name, by justly celebrated houses, the Fucus nodosus, which is far from possessing the same activity, and when analysed furnishes scarcely the twentieth part of the products obtained from a like proportion of the Fucus vesiculosus. The author experimented with this substance upon himself. He gathered the Fucus at St. Malo, where it is very abundant, and had made of it an hydro-alcoholic extract. This extract, he says, is hygrometric; and thus, if it be desirable to administer it in the form of pills, it is expedient to prepare a small number only at a time, to silver them, and to preserve them in a large quantity of some absorbent powder. "I am," says Mr. Godefroy, "57 years old; I am 1m.74 in height (about 5 feet 6 inches); my bones are small, my obesity principally seated about the belly. On the 6th of March, previous to any treatment, I weighed 76 kil. 500 (about 11 stones 10 lbs.) From the 6th of March, I took, as uniformly as possible, every day, 3 pills, each of which contained 30 centigrammes (about 4½ grains) of the hydro-alcoholic extract of the Fucus vesiculosus, the first at 6 o'clock in the morning, the second at 10 o'clock in the morning, and the third at 5 o'clock in the evening, at the commencement of each of my meals, and without making any change in my ordinary mode of living. Under the influence of this remedy, my urine became more abundant, more coloured, and more odorous than usual. This was the only phenomenon which I noticed during its use. On the 10th of April, after having taken 90 pills, I was weighed; I had then lost 1 kil. 500 (nearly 3¼ lbs.) From the 10th to the 20th of April, I took about two pills daily, one at 6 o'clock in the morning, and the other at 5 o'clock in the evening; at this period, I resumed taking three pills a day until the 18th of May, at which time, having taken a further number of 90 pills, I was again weighed—taking care to do so at the same hour of the day, and in the same clothing as before. I had then lost 1 kilogramme more, thus weighing at that period not more than 74 kilogrammes. I had thus lost from the 6th of March to the 18th of May, 2 kil. 500 (about 5½ lbs.), without any change in my diet or general habits, and without having experienced any inconvenience from the use of this remedy."—*Revue de Thérapeutique Médico-chirurgicale, et Journal de Pharmacie et de Chimie. Translated in the Pharmaceutical Journal.*

Sale of Orchids.—The first portion of a large collection of Orchids belonging to G. Reed, Esq., of Burnham, Somerset, was sold by auction the other day by Mr. Stevens, and realised the following prices, viz.:—Cypripedium villosum, 75*l.* For this, which was stated to be one of the finest plants of the kind in the country, there was keen competition, chiefly between Messrs. Veitch and Mr. Williams, the former becoming the purchaser. C. Fairieanum fetched 11*l.*; hirsutissimum, 15*l.*; C. barbatum superbum, 10*l.*; C. caudatum, 3*l.* 15*s.*; Odontoglossum nævium fetched 32*l.*; O. citrosmum, 11*l.*; Vanda Batemani, a fine plant, 23*l.*; V. Cathcarti, 21*l.*; V. suavis, 7*l.* 10*s.*; Cattleya elegans, a finely grown plant, 22*l.*; others from 3*l.* to 12*l.*; Lælia purpurata, 19*l.*; L. Lawrenceana, 11*l.* 10*s.*; L. superbiens, 5*l.* 10*s.*; Aerides quinquevulnerum, 12*l.*; other kinds from 1*l.* to 13*l.* 10*s.*; Oncidium sessile, 13*l.*; other Oncidiums from 11*s.* to 2*l.* 10*s.*; Phalænopsis grandiflora and amabilis, from 1*l.* to 5*l.*; Anguloa Clowesi, 10*l.*; Epidendrum prismatocarpum, 8*l.* 10*s.*; Uropedium Lindeni, 13*l.* 10*s.*; Brassavola Digbyana, 4*l.* 10*s.*; Dendrobium Farmeri, 5*l.* 15*s.*; D. moniliforme, 4*l.*; D. aggregatum, 2*l.* 2*s.*; other sorts from 18*s.* to 2*l.*; Saccolabium Reedii, 4*l.* 15*s.*; other sorts from 1*l.* to 4*l.*; Arpophyllum giganteum, 2*l.* 15*s.* Other lots, of which there were in all 350, fetched from 10*s.* to 3*l.* per lot; the entire proceeds of the sale amounted to 1040*l.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Summer flowering twiners, which usually become unsightly about this season, should be cut back rather freely, as also any others that will bear this treatment. Shade can now well be dispensed with; therefore not a spray that can be spared should be left to obstruct the light. Acacias, and other winter-flowering plants having been subjected to a period of comparatively dry treatment, to ensure their blooming profusely, should now be pretty liberally supplied with water at the root, in order to get them into flower during the dull season, when they will be much more esteemed than in spring, when flowers are plentiful. Manure water, if it can be used, should be given frequently to Chrysanthemums. Give air freely on favourable opportunities, avoiding cold draughts against plants that have been brought from a warm house, and guard against damp by using gentle fires with a little top air on wet days. Let pot specimens in bloom be frequently re-arranged, so as to make the most of them, for the finest specimens become too familiar to be interesting when allowed to remain too long in one place. Be careful not to over-water things brought from the stove, and also to use the water in a tepid state. Use weak liquid manure for Salvia splendens, so as to preserve the plants in a vigorous state, and keep them blooming as long as possible. Give attention to securing a plentiful succession of things for maintaining the gaiety of the house during winter.

FORCING DEPARTMENT.

PINERIES.—As has been frequently mentioned, plants swelling their fruit should be assisted with a brisk temperature, say from 65° to 75° at night, regulating this according to the state of the external temperature, keeping the house rather close on sunny days and allowing the thermometer to rise to 80° or 85° before giving air freely. Also endeavour to proportion the moisture to the temperature, for a high dry temperature is not favourable to the swelling of the fruit, and there is no chance of getting well swelled heavy fruit without plenty of warmth and moisture. Maintain a steady bottom-heat of about 85°, and use every care to keep the soil in a healthy state as to moisture. When watering is necessary, use clear manure-water, and give sufficient to moisten the whole of the soil, and avoid frequent dribblings, for when this system of watering is practised it is nearly impossible to keep the under soil in a healthy state. Use the syringe sparingly, and only to dew the plants, as heavy syringings after this season are apt to keep the surface soil so moist as to render it difficult to judge as to when water should be given. Any young plants growing in pots which may require re-potting should be seen to at once so as to allow an opportunity of getting them established in fresh pots, while they can be kept moderately warm. See that the balls are in a proper state as to moisture before repotting, as neglect of this is a frequent cause of young stock fruiting prematurely. Keep moist and rather warm for a time after shifting, so as to encourage the formation of fresh roots.

VINERIES.—Before wet weather sets in we would again advise covering the borders of the early house with dry stable litter, fern, or whatever can be obtained most conveniently that will answer the purpose of keeping the border dry. Nothing answers better for this purpose than clean straw, provided the border has a proper slope from the front of the house; in that case it is easily thatched so as to throw off the wet entirely. But the straw is too valuable in most parts of the country to be used for this purpose, and wooden shutters or tarpauling would be found cheaper in the end. It will also be advisable to cover the borders of houses in which it is intended to keep ripe Grapes for any length of time, so as to prevent the soil getting saturated about the roots. Look over ripe Grapes frequently, particularly in damp weather, cutting out any tainted berries immediately they are perceived, and keep the atmosphere as dry as possible, using gentle fires when necessary with a free circulation of air; but a warm temperature is nearly as injurious as damp, therefore use no more fire-heat than may be absolutely necessary.

FLOWER GARDEN AND SHRUBBERIES.

The principal work in this department for the present will be mowing and clearing up; and if anything like neatness is to be maintained, sweeping up of leaves will soon require daily attention; also see to getting gravel walks thoroughly cleared of weeds and Moss; roll them frequently when wet, to keep the surface hard and smooth. Continue to afford young plants in pits and frames the most careful attention, and endeavour to get them well rooted and strong without keeping them so close or warm as to render them soft and liable to fog off on the first approach of wintery weather. Therefore admit air freely to all plants that are sufficiently rooted to bear it without flagging. Newly potted-off things should, however, be placed on a gentle bottom heat, which will impart a little warmth to the soil and encourage the formation of roots, but sufficient air should be given to prevent anything like weakly growth. Cuttings of Calceolarias, Scarlet Geraniums, &c., may still be put in where the stock is deficient. Scarlet Geraniums will root almost anywhere, but Calceolarias are not quite so accommodating, as cuttings taken from plants in the open ground are very liable to damp off in heat; these will be found to do very well, however, in a close pit or frame where there is the means of applying a little warmth when necessary to dispel damp. See to securing as many cuttings as possible of any scarce plants which it may be desirable to increase while there is a fair chance of rooting them, and also be prepared to protect Scarlet Geraniums and other things which it may be intended to take up and winter, for we may expect frost any time after this season, and if such things can be protected so as to prevent the foliage and young wood from being much injured they are much more easily wintered. Where Annuals have sown themselves on borders, let them if possible be retained; they will bloom early and strongly in spring, especially the Californian kinds, and may then be transplanted if desired to other situations.

HARDY FRUIT AND KITCHEN GARDEN.

As formerly recommended, look over fruit remaining out of doors frequently, and gather it as it becomes fit. Also examine that stored in the fruit room, as there will occasionally be found a few decaying for a few weeks after housing, and these should be removed as soon as perceived. Keep the fruit room cool and airy, in order to allow of the escape of moisture given off by the fruit, which is considerable for a few weeks at first. Where it is intended to make fresh plantations of fruit trees this season, the ground should be prepared at the earliest convenience, and any fresh soil to be used for planting should be thoroughly exposed to the action of the weather so as to have it in a mellow state when wanted for use. If not already done, clean and dress Strawberry plantations, clearing away all useless runners, giving a good dressing of manure when necessary, but be careful to select that which is thoroughly decayed, and which can be covered without the necessity of digging deep or injuring the roots. The principal crop of Celery should now be kept rather closely earthed up, using quick lime and soot freely to destroy slugs. Give every attention to autumn Broccolies, also to autumn and winter Lettuce, as to watering with liquid manure to make them crisp, and tying in regular succession. Blanch Endive and cut away all superfluous shoots from Tomatoes. Brown and Bath Cos Lettuce, as well as Hammersmith Cabbage, for early spring work, should now be pricked out; more especially if getting what is technically termed proud.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Sept. 24, 1862, as observed at the Horticultural Gardens

Sept.	Moon's Age.	Barometer.		Temperature					Wind.	Rain
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep	2 feet deep		
Thurs. 18	24	30.356	30.261	71	41	56.0	60	59	N.E.	[illegible]
Friday 19	25	30.324	30.230	74	50	62.0	60	58½	N.E.	[illegible]
Satur 20	26	30.221	30.131	72	55	63.5	60	59	E.	[illegible]
Sunday 21	27	30.254	30.201	62	50	56.0	61	58½	N.E.	[illegible]
Mon. 22	28	30.194	30.099	60	31	45.5	59½	59	N.E.	[illegible]
Tues. 23	●	30.068	29.961	68	46	57.0	59	58	E.	[illegible]
Wed. 24	1	29.923	29.792	63	51	57.0	58½	57½	E.	[illegible]
Average		30.191	30.096	67.1	46.3	56.7	59.7	58.[illegible]		[illegible]

Sept. 18—Cloudy; very fine throughout.
— 19—Fine; very fine; dry air; fine.
— 20—Fine; very fine; densely overcast at night.
— 21—Overcast; fine; very fine; densely overcast.
— 22—Overcast; clear and cold at night; one degree of frost.
— 23—Foggy; fine; clear at night,
— 24—Foggy; overcast, slight rain; fine; rain at night
Mean temperature of the week 1 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Oct. 4, 1862.

Sept. and October.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 28	64.5	44.5	54.5	19	0.80 in.	1	4	4	1	[illegible]	[illegible]	[illegible]	[illegible]
Mon. 29	65.2	44.7	54.9	23	0.46	2	3	3	3	[illegible]	[illegible]	[illegible]	[illegible]
Tues. 30	64.7	43.7	54.2	21	0.58	3	2	[illegible]	4	5	[illegible]	[illegible]	[illegible]
Wed. 1	63.5	45.0	54.3	18	0.53	2	2	2	[illegible]	[illegible]	[illegible]	4	[illegible]
Thurs. 2	64.4	43.7	54.1	17	0.48	2	3	1	—	[illegible]	[illegible]	[illegible]	[illegible]
Friday 3	63.7	44.2	54.0	16	1.01	2	3	1	1	[illegible]	1	[illegible]	[illegible]
Satur. 4	64.2	43.7	53.9	18	1.06	—	6	—	3	7	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 4th, 1859—therm. 80 deg.; and the lowest on the 2d, 1853—therm. 17 deg.

Notices to Correspondents.

☞ CORRESPONDENTS are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

BOOKS: *W M.* No new edition of either is contemplated at present.

FIGS: *Faber.* The probable cause of your Figs bursting at the extremity before being quite ripe, is too much moisture in the atmosphere, or at the root after dryness.

INSECTICIDE-VICAT.—The agents for the sale of this preparation announce that "contact with even the very smallest particle of it destroys all kinds of insects. Twenty-two reports from the Academy of Medicine, the Board of Public Health and other learned societies, warrant that it does not contain an atom of poison, or any ingredient injurious to man, vertebrated animals, plants, fruits, woollens and furs, and certify its efficiency as an insect-killing powder." The agents having favoured us with a box for puffing the powder and a supply of the article, we have to report that we cannot persuade insects to die beneath its influence. A number of Rose aphides, the easiest of all creatures to destroy, were moving about among the powder after 48 hours contact. Ants, flies, and spiders run away from it, and probably don't like it, but die they won't.

INSECTS: *G W.* Apion flavifemoratum.—*W C T.* The young Lithobius forcipatus, generally considered to be beneficial, by feeding upon subterranean soft-bodied insects and worms—are you satisfied that *they* eat the spongioles of the roots of the Pine Apples?—*Miss L T.* The knots of the shoots of your Gilead Firs do not contain any insect, but are the result of wounds made earlier in the year in the soft fresh shoots by some aphis or allied insect. Careful examination will detect the insect at work, and if the trees are sufficiently small they might be covered with a linen bag and fumigated with tobacco smoke. We found no insects in the Japan Lilies. *W.*

LANDSCAPE GARDENING: *Plymouth.* You will find an advertisement by Mr. Chapman in last week's *Gardeners' Chronicle*, and there are plans of his, very clever ones, at the International Exhibition. You cannot have a more competent adviser.

MELONS: *Torquay.* You may know good seeds by their colour and plumpness; they are a very pale Wheat straw colour; the bad ones are similar, but are whiter, and collapse when pressed by the forefinger. Floating is uncertain; for many and sometimes all the, good seeds will float.

NAMES OF FRUITS: *G W.* 1, A sour White Crab; 2, Crimson Queening; 3, Holland Pippin; 4, Beauty of Kent; 5, Kirke's or New Golden Pippin.—*C R.* Apples:—1, Alexander; 3, Beauty of Kent; 4, Flower of Kent; 5, Northern Greening; 6, 8, correct to their names; 9, Lamb Abbey Pearmain. Pears:—1, Bon Chrétien Fondante; 2, Ne Plus Meuris. The Plum appears to be the Nectarine.—*G F, Walthamstow.* Large Apple, Shepherd's Seedling; small one indeterminable in its present state.

NAMES OF PLANTS: *R T.* Nicandra physaloides.—*Exon.* Physalis peruviana.—*W B.* Bromus sterilis, starved.

OAK DISEASE: *H W B.* It is a very curious case, which we will notice again when we have studied it sufficiently.

SEEDLING STRAWBERRIES: *Yorick.* Your Alpine Strawberries sown in the end of May, and now filling large sixty pots should bear early next spring by gentle forcing. They should now be shifted into 48-sized pots, and kept in a greenhouse temperature. In order to have pot-Vines ripe in January they ought to break their buds 20 weeks previous.

Howard's Steam Cultivator.

To the Editor of the Agricultural Gazette.

... our steam-cultivating apparatus can be seen at ... within a mile of Bedford Station. By recent ... in our Cultivator, we cut and move the whole of ... at one operation, and this with as little expendi-... as it has taken to cut only a portion. By means ... slack-rope apparatus and improved porters, we ... rope completely off the ground, thus very materially ... the wear-and-tear, as well as loss of power. We ... intending purchasers to come and judge for themselves.

Your faithful servants,

JAMES & FREDERICK HOWARD.

... Iron Works, Bedford, Aug. 16.

Smith's Patent Combined Machine.

MR. SMITH will Cultivate and Drill in the Wheat on his No. 2 Heavy Land Bean Stubble at One Operation. ... who would like to see this operation performed may ... by sending to him a directed envelope for a card, stating ...

Woolston, Bletchley Station, Bucks,

AGRICULTURAL IMPLEMENTS.—Steam Engines, Threshing Machines, Mills for Hand and Power, ... Waggons, Ploughs, Harrows, Turnip Cutters and ... Chaff Cutters, &c.

BURGESS & KEY, 95, Newgate Street, E C.

Land Drainage, and other Agricultural Improvements.

MR. BAILEY DENTON, C.E., maintains a large staff for the execution of Land Improvements by a ... of 5s. per acre for Under Drainage, and a fixed ... for Outfall and other works.

For particulars apply to him, at 52, Parliament Street, Westminster, S W.

MR. JAMES BLACK, late Factor to Sir Norman Macdonald Lockhart, Bart., and other gentlemen, now ... in London as LAND AGENT and DRAINAGE ENGINEER, from a thorough practical knowledge in all such ... most respectfully solicits the patronage of noblemen and gentlemen. Mr. BLACK undertakes the VALUING of ESTATES and SALE of Ditto, adjusting Landlords' and Tenants' rights, the superintendence of all Agricultural Improvements, Draining, &c., also the Valuing of Timber, and ... of the most economical and best adapted Farm Steadings and Buildings. The usual Commission charged.

Offices: 20, Great George Street, Westminster, S.W.

N.B. Several valuable Estates for Sale in Scotland, and a few first-rate Farms to Let. Money required in several large sums, from 4 to 5 per Cent., on good Freehold and Leasehold Property.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. ..., Land Agent and Surveyor, Watford, Herts, and ... Works can, if desired, be entirely executed under powers ... by special Acts of Parliament, by Money raised by ... and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

WEST of ENGLAND and SOUTH WALES LAND DRAINAGE and INCLOSURE COMPANY.

ESTABLISHED 1844.

The Right Hon. the EARL of DEVON, *Chairman.*

Lands Drained and Improved without recourse to the private funds or moneys of the Proprietors. This Company's ... not requiring Proprietors to liquidate the cost, the amount ... remain a permanent charge on the lands, or be paid off ... convenient, or be made redeemable over any term of years. The works are undertaken by the Company, or Proprietors might avail themselves of the powers of the Act only, and get the works executed by Agents or other parties. Outfalls through adjoining lands are obtainable under the Company's Act. Works are also executed by the Company for parties advancing their own capital, or not requiring to obtain the money under the Company's Act.

FREDERICK BRODIE, Secretary.

Offices: Exeter, and 30, Parliament Street, London.

Land Drainage.

WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.

Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.

No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making and Farm Buildings are executed in a similar manner.

Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.

Applications to be made to WILLIAM CLIFFORD, the Secretary at the Offices of the Company, 52, Parliament Street, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.

2, Old Palace Yard, Westminster, S W

LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &c IN ENGLAND AND WALES AND IN SCOTLAND.

The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm Houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any ... or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans or execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

AGRICULTURAL and CHEMICAL COLLEGE, 37 and 38, Lower Kennington Lane, London, S. ASSAYS and ANALYSES promptly attended to by J. C. NESBIT, LANSDELL & Co.

AGRICULTURAL and CHEMICAL COLLEGE, KENNINGTON.—Manufacturers and others engaged in making Artificial Manures may obtain every necessary instruction for their economical and efficient preparation by applying to J. C. NESBIT, LANSDELL & Co., 37 and 38, Lower Kennington Lane, London, S.

Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.

Gentlemen, Farmers, or others, desirous of practical knowledge in Chemical Analysis, or Assaying, may receive instruction at the College, where the extensive Laboratories give ample facility for pursuing their studies, and there is accommodation for a limited number of Resident Students.

Full particulars of terms will be forwarded on application.

SMITHFIELD CLUB FAT CATTLE SHOW. The ANNUAL CHRISTMAS SHOW of FAT CATTLE, SHEEP and PIGS, will be held at the Agricultural Hall, Islington, on MONDAY, December 8, and four following days.

In addition to Prizes to the amount of 1820*l*., the following Cups will be offered:—

A Silver Cup, value 40*l*., for the best Steer or Ox in any of the Classes.

A Silver Cup, value 40*l*., for the best Heifer or Cow in any of the Classes.

A Silver Cup, value 20*l*., for the best Pen of Leicesters, Cotswolds, Lincolns, Kentish, or other Long-woolled Breed in any of the Classes.

A Silver Cup, value 20*l*., for the best Pen of 1 year old Southdowns, Hampshire or Wiltshire Downs, Shropshire or other Short-woolled Breed in any of the Classes.

A Silver Cup, value 20*l*., for the best Pen of any other Breed of Sheep (not specified above) in any of the Classes.

The Prize Sheet now contains distinct Classes under the following heads:—

CATTLE.

Devons	Norfolk or	Scotch Polled
Herefords	Suffolk Polled	Irish
Short-horns	Long-horns	Welsh
Sussex	Scotch-horned	Cross or Mixed

SHEEP.

Leicesters	Southdowns	Oxfordshire
Cotswolds	Hampshire or	Mountain
Lincolns	Wiltshire Downs	Cross Breeds
Kentish, or	Shropshire	(Long and Short-woolled)
Romney Marsh, and other Long Wools	Other Short Wools	

PIGS.

Classes according to age up to 18 months old.

The Entries for Live Stock close on November 1.

The ENTRIES for AGRICULTURAL IMPLEMENTS, ROOTS, SEEDS, &c., CLOSE on OCTOBER 1.

Prize Sheets and full particulars can be obtained on application to B. T. BRANDRETH GIBBS, Hon. Sec., Corner of Half Moon St., Piccadilly, London, W.

N.B.—It is absolutely necessary that all communications on the Club's business should have the words SMITHFIELD CLUB outside, to distinguish them from private letters. If this be neglected, there will be risk of delay and inconvenience.

The Agricultural Gazette.

SATURDAY, SEPTEMBER 27, 1862.

MEETING FOR THE ENSUING WEEK.

WEDNESDAY, October 1—Royal Bucks at Aylesbury.

WE hope that many of our readers have borne in mind the great show of cereals and roots which is to be held the week after next at the Royal Horticultural Society's Garden, Kensington; and that a complete suite of specimens will be forthcoming from many corn-growing districts to illustrate the great variety of Wheats, Oats, and Barleys, as well as of Turnips, Mangel Wurzel, Potatoes, Carrots, &c., cultivated by the English farmer.

—— The great sale of Short-horns which took place last Wednesday, under Mr. STRAFFORD, at North Frith, near Tonbridge, the herd of Mr. HALES, consisting of 26 cows, heifers, and cow calves, and 10 bulls of all ages, realised a total sum of 2389*l*. 16*s*., and an average price of 66*l*. 7*s*. 8*d*. per head; the females averaging 56*l*. 16*s*. 5*d*., the males 91*l*. 4*s*. 11*d*. each. Among the highest priced animals were *Moss Rose*, a 4-year-old cow, bought a calf at Mr. HARVEY COMBE'S sale for 260 guineas, now sold for 245; and her son MARMION, a nine weeks calf, got by 4th DUKE OF THORNDALE, sold for 155 guineas. His sire, the American bull, realised 410 guineas. The three go to Mr. BETTS, the Marquis of EXETER, and Mr. DAVIES respectively.

—— On Wednesday next Mr. WETHERALL sells the entire herd of Mr. MARJORIBANKS at Bushey Grove, near Watford. Of 70 or 80 head of stock then to be disposed of, about 25 are by GREAT MOGUL and 18 by ROYAL BUTTERFLY 5th. The catalogue contains a long list of the prizes and other distinctions won by the herd during the past few years. No name has been better known in this way than that of Mr. MARJORIBANKS.

—— The agricultural statistics of Ireland, just published for the current year, show a decrease in the live stock of the country since 1861 by nearly 10,000 horses, 220,000 cattle, and 100,000 sheep. Pigs have increased 50,000. The value of the live stock is on the whole less by 15,00,000*l*. This is attributed to the distress consequent on scarcity, which has induced excessive sales. The average in grain of all kinds is less by 72,000 acres, and in grain crops of all kinds by 74,000, that in Potatoes alone being less by 116,000 acres. We shall give details next week.

THE gradual extension of the circle within which the fatal small-pox in sheep prevails serves to keep up public excitement on a subject in which the interests of agriculturists are so intimately mixed up. An Order in Council has been issued, very properly forbidding the exportation of sheep from certain infected parishes, but it came too late to operate on Wilton Fair, where sheep were brought not actually in a state of disease, but from an infected farm in the immediate neighbourhood, and also some that were penned at Marlborough Fair. And all this time what is our great Society about? With the exception of a few active members of its Veterinary Committee, whose exertions whether sanctioned by authority or not are greatly commendable, the Royal Agricultural Society is asleep, and no one attempts to disturb its peaceful slumbers. If the country were threatened with an invasion, would the enemy be politely requested to stay proceedings till Parliament assembled, or till the Ministers had finished their shooting—or would not the furloughs be all called in and a council of war assembled?

It is not so, however, in our agricultural commonwealth; although a vigorous enemy in the shape of a pestilent disease storms at the very door, and bids fair to inflict a vast amount of injury on our flockmasters, as well as on the public at large, the great Society which is enthroned by and for the interests of agriculture is in a state of *hybernation*, and no one has the hardihood to break through the rules of etiquette and wake the *Royal* slumberer. The members of the Society may well ask how it is that a weekly council has not been hitherto convened for the purpose of ascertaining the extent to which the disease has spread, and the best further methods to arrest its progress. Is it to be supposed that amongst its widely spread members, no one knows anything about the disease, or that we are all so young as not to have witnessed its visitation in 1847 and 1848? Nay, it has even been stated that the disease prevailed in 1853 amongst the flocks of leading agriculturists, if not members of the Council in Cambridgeshire, and that vaccination was employed successfully. Yet the Council makes no sign.

False reports are spread as to its existence in Dorsetshire and Hampshire, which though repeatedly contradicted are yet still believed and propagated as much as ever; and now, in addition to its positive existence in some half dozen flocks in North Wiltshire, and its probable although not clearly proved importation into a flock in Berkshire, we have the startling paragraph going the rounds of the papers stating that it is raging in the Deepings of Lincolnshire. This we are fortunately able to contradict on the authority of a Correspondent near Spalding. But a Council meeting, which we expected ere this to have seen called, would have established the facts, dispelled the errors, collected the experience of those acquainted with the disease, and disseminated the best information on the subject.

As it is we have a sort of paper war or controversy going on as to the advisability of inoculating or otherwise with a view of staying the progress of the disease. The advocates of either course hold opinions ranging through many degrees of modification; one extreme altogether repudiating the practice under all circumstances, whilst the other recommending the measure to be adopted as a precaution, should even a neighbour's flock become affected with the disease. As is usually the case, the force of the arguments of the one side is due to the extreme views of the other, whilst the truth will be found to lie between the two extremes. Had we not had some experience of the disease, and sufficient opportunities for studying its nature, we should not venture to express the opinions which, in the interests of flockmasters, we now advance.

We consider that it is erroneous to state that inoculation necessarily extends the poison and spreads the disease. We have adopted it with impunity and advantage, although the scene of its visitation was surrounded on every side by other farms and flocks, to none of which did it extend. The duration of the disease is so greatly limited, and the inoculated cases so very much milder, that the danger of spreading is diminished instead of increased by the practice. The danger of infection from an inoculated case is certainly less

than from an average natural case—there is far less animal poison generated and therefore diffused. The practice of inoculating as a preventive because the disease is at hand we strongly condemn. If this practice were generally adopted the disease would be sure to extend throughout the kingdom. Under no consideration would we inoculate unless some portion of the flock were affected, but would act rather like the stern old London tradesman in the time of the plague, who closed his house, cut off his approaches, and weathered the storm. The course we recommend is simple and precise.

Let us suppose a flock is affected, but that (as is usually the case) only one, two, or three cases exhibit tokens of the disease. Would we at once inoculate the whole flock? No; for it is just possible the disease may extend no further. We would inoculate two healthy sheep from the flock, carefully removing these as well as the affected cases into some stable or paddock. By the time the inoculated sheep are affected so as to afford lymph, it will be ascertained whether a fresh batch of cases are affected naturally. If there are none we may justly decline to inoculate the flock. Common sense dictates that the shepherd should have nothing to do with the diseased sheep, which should be handed over to the care of the carters. The question of inoculation or otherwise thus practised is rather one that affects the pocket of the individual flockmaster than his neighbours; it is a balance of risks, and of advantages and disadvantages, rather than a question of the spread of infection. In 1848 we tried vaccination, but it totally failed; Professor Simonds also tried it, as well as D'Arboval, with the same result; but it is now stated that in other hands it has been successful.

The flock must be turned and examined frequently, if not daily, so as to separate at once any animal that may be affected the moment the disease shows itself; and this vast labour must be continued until we determine to inoculate the whole. Unless the disease affects one or more neighbouring flocks, we should not be disposed to inoculate the whole, if there are less than 10 natural cases, but should not hesitate if the numbers range from 12 to 20. By inoculation we very much limit the duration of the disease, so that as the utmost vigilance can be enforced for a short period there is less danger of spreading than if separation alone is relied on, and fresh batches of cases appear from time to time. Supposing that Mr. Parry's flock was the first source of the disease, there is little doubt that it could have been limited to his flock had he been informed at an early stage of the true character of the disease. *W. C. S.* [We are happy to say that no new case of small-pox has been heard of during the last 12 days in the North Wilts district.]

PREVENTION BETTER THAN CURE.

[The following remarks, relating especially to pleuro-pneumonia, especially apply, nevertheless, to small-pox in sheep; and we extract them therefore from Mr. Gamgee's lately published work.*]

The great essential in attempting to mitigate losses amongst stockowners is to study the means of prevention. On this point we have been very deficient in Great Britain, not only as regards the epizootic lung disease, but other forms of cattle murrain.

These imported plagues in poorer countries than ours, lead governments to establish *cordons militaires*, to slaughter and bury diseased animals, and to compensate individuals for their loss. The whole country is under careful inspection, and persons are bound to report the appearance of a contagious disease, or submit to the infliction of a severe penalty. Such measures would not find favour here; but are we to fly to the other extreme, to continue from one year's end to the other without perceptible abatement in the mortality amongst our cattle, and not only to manifest the greatest carelessness regarding the presence of contagious disorders, but to favour their spread by permitting frauds of the vilest description?

A farmer goes to the market and buys a lot of lean cattle; shortly after purchase pleuro-pneumonia breaks out, and as the condition of the animals prevents a good price being obtained from the butcher, he sends the whole to the market again, knowing them to be unsound, and either the lot is transferred to another farm, or sold to a number of purchasers. I have been asked, when the disease has broken out amongst a lot of yearlings, whether they should be sold at once or chanced. The law takes no cognizance of such a case, the practice is advocated and carried out by those who, in ordinary transactions, are scrupulously honest, and yet if you probe the matter you cannot but admit that the person selling a lot of lean cattle affected with a spreading malady, though perhaps only in the stage of incubation, is defrauding the purchaser and the nation. Some may find relief under the absurd supposition that diseases are not catching; but if any such individual is cross-questioned it will be found that he would not have sold the cattle had he not believed that the whole were in imminent danger, and that the majority must die.

It is evident that such a practice is totally opposed to the nation's best interests; but in reality the public interest is made up by the sum of private interests involved; and although at first sight the individual threatened with loss thinks he had better clear out his bad stock, he may, at his next purchase, be not a whit better off, from the very practice he has encouraged and followed out. I have satisfactorily found, in numerous cases, that it is unadvisable to clear out a farm stock, and local means can be adopted to check mortality with the greatest success.

But there is another way in which the owner of diseased animals is permitted to spread contagion. He is allowed to send them by railway, to entrust them to a salesman, and to expose them amongst healthy cattle that are to be transferred to different parts of the country for grazing purposes. Fat or not fat, they are exposed without restriction, and any amount of good stock may be contaminated. A dairyman in town has a cow taken seriously ill. A number of hungry fleshers are ready for her at a good sum, but in order to cause keen competition, the poor animal is walked into the public market, and stands with a number like herself amongst store animals. Such a practice is as reckless and horrible, as if a patient with small-pox were placed amongst a lot of non-vaccinated people for hours together; and the healthy cows just fresh from the country are especially prone to imbibe a deadly virus.

I am conversant with another evil demanding instant suppression. A cow-dealer may buy a fine lot of healthy cows for the town. They are trucked, and somewhere near their destination a truck, containing diseased animals, is attached to the train. I knew an instance of a dealer, who, with three large trucks full of fine English cows, had, on reaching Carstairs, to submit to their being placed behind a lot of three suffering from the lung disease. Imagine how favourable the breeze and the proximity of those animals to spread contagion! It should be a standing rule that every cattle-truck should be washed thoroughly, and sprinkled with an antiseptic substance, before other cattle are exposed in it. There are animal poisons, such as that of epizootic aphtha, which may be found to adhere to places, and spread disease with the greatest certainty.

The home trade in diseased cattle is sufficient to keep up for an indefinite period of time pleuro-pneumonia in a country like our own, but I have specially alluded, in the "Edinburgh Veterinary Review," to the necessity for legislation to prevent the constant importation of diseased cattle from foreign lands. In the June number for the current year, I state:—Free trade may have its disadvantages. The impetus it gave 25 years ago to the cattle trade led to the introduction of much disease on British soil, and unless some influential men will take an interest in this subject and exert themselves for the common good, we shall continue to import disease, and lose millions by such importations. In an article on pleuro-pneumonia in Holland, which appeared in our last number, and the facts of which were gleaned from a blue-book, it is shown how extensively that country is swept by cattle-plagues, whence we chiefly obtain foreign store cattle for our dairies or for feeding purposes. If our imports of live cattle vary from 30,000 to 60,000 per annum, it is evident that there is a wide field for the contamination of our home stock, and this is facilitated, 1stly, By the wants of the country throughout its whole length and breadth; 2ndly, By the totally unchecked trade in diseased animals; 3rdly, By the absence of all proper means to detect and counteract disease. If thousands of men were landed from countries infected by yellow fever or other pestilence, and systematically communicated these amongst us, vigorous efforts would soon be made, and even quarantine enforced for our own protection; but we observe precisely such an occurrence as affecting our cattle, and as the country is wealthy enough not to be destroyed by it, the loss is tolerated, and no attention paid to the consequences of a most pernicious traffic.

Free trade is surely not incompatible with an enlightened inquiry as to the countries which are clear of cattle-plagues, and those that are suffering from them. We need not court a trade with that part above all others in Europe, which is overrun with pleuro-pneumonia, and as fat cattle ready to slaughter are needed by us more than lean cattle and cows, which we can breed in such enormous numbers, and better than our neighbours, we do not see why some restrictions on the importation of cattle to be exposed amongst healthy stock here, should not be enforced.

Can a Member not be found in Parliament to move in this matter? The subject is worthy the most anxious and careful study. It has been well proved that epizootics, like epidemics, disappear if permitted to do so, and if they are not encouraged by facilitating contagion, &c. It is also easily demonstrated that the United Kingdom is naturally the most healthy portion of Europe, and in which cattle plagues are only seen as the result of importation. The very diseases which prove so destructive now visited us last century, but trade was not so active, importations were few, and the disorders disappeared.

The veterinary profession in this country has not hitherto turned its attention to the great questions which affect our national prosperity, and which are purely veterinary in their nature. We must do more than learn how to physic, blister, and operate we must study prevention. This is the great field for future workers and for men of science, trained to the investigation of laws governing health and disease.

* Our Domestic Animals in Health and Disease. Second division.—Organs of Circulation and Respiration. By John Gamgee, Principal of the New Veterinary College, Edinburgh; Author of "Dairy Stock;" "The Veterinarian's Vade-mecum," &c., &c. With numerous illustrations. Edinburgh: Thomas C. Jack, 92, Princes Street. London: Hamilton, Adams, & Co.

STEAM CULTIVATION.

[Let us first correct an oversight committed last week in calculating the expense of Mr. Impey's Steam Cultivation at Bromfield Hall, Chelmsford. At page 891 (col. b) the horse keep is put down at 220*l*. The food had been calculated to cost 20*l*. a year a-piece, but somehow or other the keep of 22 horses appears in the account at 220*l*. Of course readers have at once detected the error, and corrected it throughout the whole story.

The food is 2½ bushels of Oats, or 1½ of Oats and 1 of Beans weekly during 3 months of the year, or from 7*s*. to 9*s*. a week, say 13 weeks at 8*s*.	£5 4 0
1½ bushel of Oats weekly during other 20 weeks	4 10 0
Hay and straw chaff during 7 months at 1 cwt. of the former per week, 30 weeks at 3*s*. ..	4 10 0
Green food 22 weeks at 6*s*.	6 12 0
Total cost per annum	£20 16 0

Perhaps it would have been better to charge 21*l* than 20*l*. as the price per horse. Mr Impey, however, informs us that the opinion is that the horse costs under this management from 25*l*. to 30*l*. as the cost of keep per annum and attendance in stable.

To this we add the sum needed to keep the horse of its original value, say 10 per cent. on 35*l*.	£3 10 0
The interest of capital on horse and harness (40*l*.) 2*l*.; on the implements worked by them, say 1*l*. per acre over 50 acres to every pair, 1*l*. 5*s*.	3 [illegible] 0
The cost of shoeing and blacksmith's work on plough, 3*l*. per pair	1 10 0
The cost of repairs of harness	0 10 0
Repairs and tradesmen's bills connected with implements, say 2*s*. an acre over 50 acres per pair	2 10 0
Wages (half the wages of a man per pair) ..	13 18 0
Total cost per horse	£45 19 0

Mr. Impey has sold eight of his horses and thus got rid of at least 360*l*. a year, by his use of the steam engine in tillage operations. This is a very large direct saving obtained in addition to the great advantages of superior cultivation.]

SELLING, NEAR FAVERSHAM.

In the country around Faversham we have one of the head-quarters of Hop culture. Everywhere in low lying hollows on the deepest soil, sheltered by plantations or by the mere lie of the land, scattered here and there, stand Hop grounds, in plots rarely more than a few acres a piece—at present, with their clustering bloom and leaf, one of the characteristic beauties of the Kentish landscape—hereafter, with their bare bleak surface and conical piles of empty poles, one of its characteristic blots. This however is only during the winter time, when we do not look for loveliness in rural scenery. Nothing can exceed the beauty of the plant in summer time and autumn when in luxuriant health and abundant yield, as it is on the farms of Messrs. Neame this year—nor the picturesqueness of the active scene which during the fine weather of the present Hop picking their Hop grounds have presented. Upwards of 100 acres of scattered Hop plantations have employed nearly 1000 hands of all ages during the past three weeks. They are generally lodged in extemporised cottages, in barns and sheds, and shelter excavated in the chalk pits—but on Mr. Neame's farms there is unusually good provision for them, owing to the number of cottages on the land, the former Poor-house of the parish having been purchased for the estate, and converted into accommodation for labourers.

As a general rule, where the land is let in small farms, and every bit of manure made on them is taken to the single Hop ground, and the whole hope of a return for the year's labour hinges on the produce of that one plot, nothing can be more mischievous either to the general agriculture of the district, or to the condition of all classes dependent upon it. But when carried out upon a large scale, backed by adequate capital—the Hop grounds being but one part of a general system of vigorous management extending over many hundreds of acres—the farm management generally seems to partake of the liberality and enterprise which are needed more especially in the Hop plantation. Mr. Neame and his sons occupy several large farms, the property of Lord Sondes and others. The whole district is on the lower chalk formation, the pits showing the massive character of the rock and the comparative absence of flints. Excepting here and there plantations for Hop poles, and here and there the Hop plantations themselves, the land lies in large open fields, generally of a light and not very deep calcareous soil—occasionally a deep calcareous loam in the highest condition to which tillage and manure can bring it for Hop cultivation—more rarely brick earth and even stiff clay. The admirable growth of Hawthorn fences shows the natural fertility of the land. And the general cleanliness and excellence of the crops show that here it is well managed. The rotation is either 4, 5, or 7 course—generally the two latter—being on the lighter soils. 1, a fallow crop, as Mangels, Swedes, or Rape; 2, Barley or Oats; 3, Clover; 4, Wheat; 5, Oats or Barley; and on the heavier soils, Beans and Wheat, following one another between the fourth and fifth

... of the former series. Besides the arable farms ... a considerable extent of marsh-land is ... Large numbers of Kentish sheep, and Sussex, ... and other oxen are fed on the green crops of the ... during winter, and fattened on the marshes ... summer. The excellent promise of the ... and Swedes and Rape upon the land now, ... strength of the stubble, shows that there is ... quantity of food and litter provided for ... and that a large quantity of farm-yard dung is ... every year upon the farm. And of course ... a large purchase of artificial manure annually ... so that however severe the rotation, and ... much the Hop-grounds rob the dung heaps, ... the fertility of the land is easily maintained. ... cost of labour is very great. Mr. Neame estimates a four-horse team to cost 200*l.* a year. Each ... would cost 65*l.* a year in wages. The food ... horse may cost 22*l.* a year, for it receives ... of Beans and 1 bushel of Oats weekly ... of the year, besides 1½ truss of hay a week ... six months and cut green food during summer. ... keep it at its value (40*l.*), and to pay interest of ... will take at least 6*l.* a year; and the cost of ... and repairs of harness and implements will be ... other 3*l.* We have thus for a team of 4 ... an expenditure of 189*l.* a year, according to this calculation, which comes sufficiently near to the estimate just named.

Now, since December 1859, Messrs. Neame & Co. have worked a 12-horse power engine and Fowler's apparatus, with his 3-furrow balance plough, and have ... upon their farms with 6 horses till then ... It was the first engine sent out by Messrs. ... & Hewitson, of Leeds, which Messrs. Neame purchased; and it has no doubt had to bear the brunt which all first made things incur, of inexperienced manufacture. Heavy bills for repairs, new rope, &c., have accordingly been paid, and putting all that it has ... against the actual payments out of hand on its account, added to the loss of value on the apparatus ... its purchase, very likely the work accomplished by ... would prove to have been excessively expensive; ... indeed, what by horse-power it would have ... Nevertheless some of its performances prove that it can do in instances what horse-power could not accomplish at all; while certainly the saving of horse labour on the whole is such as ought under future management to make its annual work both better and much cheaper than horse work generally is.

It has been let for hire, and to do such work as that ... hirer has been willing to give 22*s.* an acre for ... mere use of the apparatus, paying all coals and ..., &c., in addition. This was for 7 and 8-inch ... on land which horses could not touch. In ... instances 18*s.* has been paid over and above the ... of fuel and of wages. The general charge for work ... for hire has been 9*s.* an acre and fuel and wages. ... daily wages are 2*s.* 4*d.* each for engineer and ploughman, 2*s.* 4*d.* apiece for the two rope-porter men, and ... for anchorman, besides 5*s.* a day for a boy and ... for water. Fourteen shillings a week is the ordinary pay of men in this neighbourhood, and Mr. Neame employs only men with his apparatus. Besides all this, amounting to 16*s.* 8*d.* a day, 6*d.* an acre is paid to engineer, and 3*d.* an acre to the ploughman as an extra piece-work payment. Of course this is a very handsome addition to their wages—more than doubling it in the case of the engineer, adding more than 50 per cent. to that of the ploughman, *provided* they can keep the apparatus going. And a very good way it is of keeping these men alert. It is on them that the speed and success of the whole performance depends, and their wages are thus made to depend on the avoidance of accident or delay.

Between December, 1859, and October, 1860, only 334 acres of work were done, some of it for hire. Between October, 1860, and September 6, 1861, 339 acres of work were done, some of it for hire. Between Sept. 6, 1861, and September 20, 1862, 340 acres were ...ished, some of it for hire.

A thousand yards of wire rope were originally obtained with the apparatus three years ago, since then 500 additional yards have been purchased, and now another 500 yards have been just procured. Excepting portions ... as headland ropes, &c., 1000 yards have thus ... entirely worn out in doing 850 acres. Mr. ...'s estimate of his expenditure on rope is rather ... 2*s.* an acre.

It is however of very little service to say that so many ... have been ploughed at such and such an expenditure ... in rope, in wages, in repairs, &c., unless we could describe the nature of the soil and its condition before ... steam plough was put to work. What some of it was ... gathered from the prices which, when the machine ... were willingly paid for the use of it. But there ... so much uncertainty as to the present value of the ..., that Mr. Neame says that his charge when he ... a neighbour hire it is quite a speculation on his ... And whether when as generally he charges 9*s.* an ... for the use of it—for the tear and wear, and risk of ..., and interest of capital—he is receiving less or ... than what is just enough to replace the money he ..., he does not know.

The usual performance under average circumstances has been 6 or 7 acres daily with the 3-furrow plough—7 and 8 and in one instance 10 acres have been accomplished in a long summer's day; and in very difficult work an acre per furrow has not been exceeded; and sometimes two ploughs and even one alone have been drawn to and fro by the engine.

The engine is of the original form, with the figure-of-8 arrangement of pulleys underneath it in place of the new clip drum, and the plough is without the apparatus for taking up the slack rope. One of the costly but necessary alterations of the engine since its purchase was the addition of Aveling's gear for making it self moving. Formerly great loss of time was frequently incurred on soft land in moving from field to field. Now with the wider wheels and Aveling's self acting gear it travels easily, carrying all its apparatus with it in a train, and marches off either miles away to where it is being hired, or from field to field at home without much difficulty. Mr. Neame, whose sons and nephew are now the active owners and managers of the whole large establishment—farms, Hop grounds, steam ploughs, &c., and who has himself had upwards of 50 years experience of country life—nowhere more energetic, enterprising, or enjoyable than in Kent—declares as the result of his experience of it up till now, that were he now to sell his apparatus and close his account he would find that he had been a considerable loser by steam cultivation. Whether valuing his apparatus not by its money worth at a public sale, but by its intrinsic worth to the fortunate man who should purchase it at such a sale, he would still be a loser does not appear—but it seems plain with the experience of it and accustomedness to it which both labourers and their employers have now acquired, its cost will be less and its performance greater year by year. And we do not doubt that even with the great expenses on its head which it has incurred till now, and the comparatively small quantity of work which it has yet accomplished—perseverance in its use will prove profitable not only from year to year, but including all the items of expenditure from the original first start.

Mr. Neame was among the first to purchase a portable steam engine and travelling machine for threshing corn. Starting with this in 1850, and charging 35*s.* a day for its use, and working close on 200 days a year—it cleared itself in three years, and has been profitable ever since. There has been no such immediate success in the case of the steam plough, but of its being profitable in the long run though retaining its original and unimproved form I do not in the least doubt.

Among the facts interesting to Hop-growers which I learned last Friday at Woodlands, was the advantage of dipping the Hop poles in creosote. The 3000 poles per acre which are needed for a Hop plantation last under ordinary management only five or six years; 500 or 600 poles are needed annually per acre to keep them good. When creosoted, however, the ground end lasts if anything longer than any other part of it, and the expenditure for new poles has been almost nothing.

Another point of more general agricultural interest, especially just now, was the occurrence of the small pox on the last occasion of its visit to this country several years ago—in a single sheep, which was marked the same as a human being. There was no explanation of its happening, except the general one which is sometimes offered, that it may have been brought by starlings from an infected flock elsewhere. But that one case remained solitary; it was placed in quarantine at once, and recovered after constant nursing, being fed several times a day with gruel for some days, and made very good mutton at last, no other happening in the flock or neighbourhood.

LOWER BEEDING, NEAR HORSHAM.

Two thousand acres in this neighbourhood, formerly the property of the Beauclerk family, were some years ago purchased by Mr. Egerton Hubbard. The estate has been for nearly 30 years in the management of Mr. John Kay, who retained his stewardship after the death of Mr Beauclerk, during the administration of the property by the Court of Chancery, and since its sale by the trustees to its present owner. He has seen during his superintendence of it very great alterations in its condition. Lying for the most part on the Hastings sand formation in a district of small fields, large plantations, and very rough fences—a poor country divided into small farms, and in the hands generally of a tenantry without capital—its agriculture and condition generally was as backward as could be.

Two farms have been held in the hands of the proprietor since its purchase. The Eastland Farm in the parish of Slaugham includes about 400 acres, of which 300 are arable. The Park Farm at Lower Beeding includes 600 acres, of which 320 are arable and 90 are orchard—the remainder of both being pasture land.

Within the past 15 years no less than 500 acres of woodland have been grubbed. The wood has been sold, and the subsequent grubbing has cost about 5*l.* an acre. Drainage when needed has been accomplished. There is a tilery on the estate turning out very capital goods—pipes and tiles of various sizes.

The land is for the most part a poor soil—in some places clayey, but more generally of so fine a sand that it runs together and forms a very hard surface after rain. If reduced to a fine tilth by cultivation it thus soon consolidates. Like the expenditure on all farms held by owners, the cost of labour here is extremely difficult to separate into its two divisions on the "estate" and the "farm" respectively. Thus no fewer than three moveable steam engines are employed—one being almost constantly engaged in the work of sawing, grinding, &c. An 8-horse power engine of Hornsby's manufacture was bought in 1856, another in 1857, and a 10-horse power engine by the same maker was bought in 1861. Smith's grubber and windlass and apparatus generally were bought of Mr. Howard in 1859, and Mr. Howard's own windlass and grubber was purchased in 1861. No other rope than what was supplied originally has been purchased.

The original 1400 yards sent out by Howard in the spring 1859, with Smith's grubber and windlass, I saw last Saturday hard at work upon a hard and somewhat grassy stubble. It had been brought to the field—apparently a 15 acre piece—that morning, and the apparatus had been laid out and the grubber was travelling to and fro at 11 o'clock, having already made several journeys to and fro along the rough headland some 250 yards long in the valley below—two men holding it as it went over the rough surface and was jerking along evidently through some very hard uneven land. I did not go down to it, but standing by the windlass I could see the rope as it came in and went out. And it appeared certainly nothing like half worn. It had already accomplished upwards of 2500 acres of grubbing since its purchase, and I could compliment Mr. Kay on having incurred on his soil and under his management less expenditure in tear and wear of apparatus, than any steam cultivator I had yet met with. The whole apparatus, plough and windlass, seemed as good as new. Mr. Kay considers the cost of rope on the farm to have been not above 6*d.* an acre, and the cost of moving from field to field he considers to amount to about 6*d.* an acre of the work accomplished, when from one position the engine first cultivates and then cross-cultivates the field at once. The week's work costs for wages as follows:—Engineer, 20*s.*, windlassman, ploughman, and 2 anchormen 12*s.* apiece; 2 boys, 5*s.* apiece; and boy and horse for water about 20*s.*—in all about 5*l.* in wages. Two tons of coal (for 6 cwt. a day is the ordinary expenditure; so after many inquiries I was assured) at 25*s.* a ton on the field may cost other 50*s.* Now 6 days' work, including the two moves from field to field, will amounts to 30 acres, with Smith's 3-tined grubber. The work thus costs 5*s.* an acre for fuel, water, and wages. I saw Howard's grubber at work, crossing a horse-ploughed Bean stubble, and shaking up the soil most thoroughly at the same time, digging an inch or two deeper into the subsoil below the previous ploughing. Mr. Kay considers the two implements equally good as tillage implements, giving the preference rather to the latter for steady and uniform removal of the whole soil to a given depth, and also for its capability of being guided perfectly when the soil is at all sideland; but giving it as the impression both of himself and of the men at the engine that Smith's tool is rather lighter to draw. This, however, is not vouched for by any observation with the dynamometer. While 5 acres a day are stated as an average performance with the 8-horse power engine, 9 acres have been done and were done last week in a day of 12 hours; and when the 10-horse power engine is employed, 7 and 8 acres are often got over in a day of nine working hours.

The land lies for the most part in large fields, varying in size from 10 to 40 acres. About 80 acres of grubbing had been done up till last week since harvest, and both sets of apparatus are now constantly at work. Repairs have been very trifling indeed. And the wear of rope has been exceedingly small. The land is cultivated for the most part on the four years' course of cropping—catch crops being however taken occasionally. Thus a field which last year was Wheat had been sown to Rye, eat off by sheep, this spring; it had then been ploughed up for late sown Oats; and now Trifolium is sown upon the clean stubble, to be cut green in its turn, and it will be then ploughed for Turnips, which will be fed off and sown to Barley.

Twenty horses are employed on the two farms, but these like the three engines are used for estate work as well as for cultivation, and it is difficult to separate the two. Both farms are well equipped with farm buildings. There is ample accommodation for feeding cattle and farm horses in boxes, stalls, and yards—central boiling-house and commodious piggeries—threshing barns and food houses—cart sheds, and granaries. Bentall's pulper, and Amies and Barford's steaming apparatus are in use.

A flock of 450 Southdown ewes is kept. Rams of Jonas Webb's, Rigden's, Lindsay's, and the Duke of Richmond's have been used for many years, and good prices are now obtained for lambs. A herd of Shorthorn cows is also in course of formation. Mr. Rich, of Didmarton, has supplied the original materials of the herd, and one of his bulls is still used. Both these farms are, we understand—or rather *either of them is*, to let. Though in a country such as an agriculturist would not generally like, they have been now placed in circumstances where systematic, energetic management is possible—in large open fields, and both of them supplied with good buildings; though naturally of poor soil, there ought to be no difficulty in procuring good tenants for them.

WANBOROUGH, NEAR GUILDFORD.

THERE stretches westward from Guildford, towards Farnham, a chalk ridge so symmetrical and abrupt—standing independently in the midst of the surround-

ing country—that it has acquired the name of the Hog's Back. The main road from London to Portsmouth runs along the top of it for several miles, and a landscape of remarkable beauty and extent stretches on either side of it.

To the north the slope is uniform; the contour lines being everywhere nearly straight and parallel with the ridge at top. At first steep, it gradually subsides into the level of the almost unbroken plain which lies three or four miles wide between it and the Aldershot and Bagshot hills. At first a thin chalk soil full of flints, it becomes deeper and more loamy near the foot of the hill, where the chalk becomes covered with the clays of what is called by the geologist the London basin.

On the southern side of the ridge the country is much more broken, and hill and valley and plantation, meadow land and ploughed fields are mixed up most beautiful to look upon. Godalming lies in one of these valleys, and beyond it lies Nore, the farm of Mr. Cousens, which has been already described here. About four miles from Guildford, half-way along the Hog's Back, and on its northern slope, lies Wanborough, a part of the estate of Mr. Ross Mangles, now in the occupation of Mr. W. Simmonds. It is 600 acres in extent, bounded by the straight ridge line of the hill upon its south, and by straight lines at right angles to it straight down the hill upon the east and west. Its northern boundary is irregular, lying generally beyond the line of contact between the chalk and clay, and thus including a portion of the stiff soil below. Some of the fields down here are pasture; and there is on the deeper loamy soil where the chalk and upper bed approach each other a Hop ground 12 acres in extent, the crop of which, most promising a few weeks ago, has been sadly struck with the blight. The farm house, a massive square building with double gables, apparently of Elizabethan date, stands near the old-fashioned extensive homestead, with its large barns and open yards. Just at the foot of the slope, and midway between the east and western edges of the farm, and close by, a magnificent spring of water pours out of the chalk over the edge of the overlying clay, furnishing an admirable water supply, not only to the Wanborough farm, but to another farmery at some distance, formerly retained in hand by the owner of the property, and managed by Mr. Finnie, the agent of the trustees.*

Mr. Simmonds works his land for the most part on the Norfolk or four-course rotation of crops—Wheat following Clover, Peas, or Beans, or Vetches, and being followed by Turnips and Mangel Wurzel, and these by Barley. The arable land was formerly about 420 acres in extent, and it was worked by 12 horses in two or three-horse teams according to the nature of the land, a man and boy being kept to every four horses—their wages, at 12*s.* a week and a cottage for the man, with 2*l.* extra at harvest time, and 4*s.* or 5*s.* a week for the boy, amounting in the whole to about 180*l.* a-year. The horses receive during five or six months of the year 2 bushels of Oats and 2¼ trusses of hay besides straw chaff *ad lib.* weekly, and during the remainder a diminishing (ultimately altogether disappearing) supply of Corn with cut Vetches and Clover brought to them in yards or stalls. The cost, upon the whole, of food for 12 horses, at 60 bushels of Oats and 2 tons of hay apiece, besides cut food, cannot be less than 240*l.* per annum; and if we add 2*s.* an acre for repair of implements, and 5*l.* a horse for maintenance of value, annual cost of shoeing, harness, &c., we have another 100*l.* to add on this account. The interest of capital invested in implements, say 420*l.*, and horses say 480*l.* over the farm in its original size at 5 per cent., is 45*l.* Adding all these items together, we have the cost of horse labour on the farm amounting to 565*l.*, or about 27*s.* an acre. Now Mr. Simmonds has lately increased his farm—he has added 130 acres, nearly one third of its former extent, to it, and had he continued over the whole the management till then adopted, he would have had to increase his expenditure in horse labour by about 175*l.* a year.

He has not however added anything to his horse labour or expenditure at all. Instead of it he has bought and used Mr. Smith's grubber, windlass, and apparatus generally, working them with a 10-horse power Clayton & Shuttleworth's engine. The whole machinery, engine and all, cost 550*l.* early in the spring of this year. It has since then smashed up about 100 acres—there has been no accident, and the blacksmith's bill connected with the apparatus has not exceeded 3*l.*

The wages spent are 16*s.* daily, viz., engineer, 3*s.*; windlass man, 2*s.* 6*d.*; two anchormen and ploughmen, 2*s.* 6*d.* each; and three boys, 1*s.* Besides this a boy and horse bring water—and ½ a ton of coals costs 10*s.* The whole may be put down at an expenditure of about 30*s.* a day. And during that time 7 acres on an average of Turnip fallow—which is the work chiefly done hitherto—has been crossed with the grubber to the full depth of the former ploughing. This has thus cost 4*s.* 6*d.* an acre for mere daily outgoings. Some of the work has been much heavier, and was of course done more slowly. Among other pieces of very heavy work, a Vetch stubble on heavy flinty clay fed off with sheep has been effectually broken up, which would have cost an immense labour to have done by horse labour. Last week when I walked over the ground the engine and tackle were engaged upon a Pea stubble, tearing it effectually up with Smith's 3-tined grubber, going below the depth of the former cultivation, as was evident from the yellow clay subsoil which was occasionally brought to the surface. It was working a furrow upwards of 300 yards long, on a piece about 15 acres in extent, which it bid fair to accomplish by the second day.

The land at Wanborough lies extremely well for steam culture, the greater part of it being in large open fields, but one great source of expenditure in carrying it out, the tear and wear of rope, will probably be above the average here, owing to the great quantity of flints in and on the soil. There has not however been sufficient use of the apparatus yet either to know what the annual cost of it will be, or to know to what extent it will yet displace the horse labour of the farm. That depends on the number of days during which Mr. Simmonds may be able to employ it. The 100 acres smashed up as yet is a small performance for the time it has been in the possession of the tenant. It is however now in full operation, and a great deal of work will no doubt be done this autumn.

Of the *quality* of the work there is one piece of evidence in the shape of an exceedingly heavy crop of late sown Barley taken after the sheep fold, the land having been smashed up by the steam-drawn grubber.

At present the results actually accomplished are not sufficient to enable any one inquiring into the history of the management at Wanborough to form a very trustworthy opinion of the ultimate cost of steam cultivation there. It is perhaps safer to take the opinion which Mr. Simmonds has himself formed upon it. This he has already given in our columns (see p. 797). And it is plain from what he there says that he believes the heavy work of tillage will now be done more cheaply and effectually than hitherto.

* R. A. Finnie, Esq., author of a very suggestive and useful book, "Hints to Landowners and Farmers."

THE SMALL POX IN SHEEP.

I HAVE read the observations made at the great gathering on the 11th inst. at Devizes. So great a difference of opinion as to what measures should be taken, perhaps never agitated any assembly. Professors Simonds and Gamgee were as opposed in their views in this respect as were the farmers, and, to my mind, the final resolutions which were ultimately passed, amidst much dissension of opinion, are anything but a guarantee of safety.

The point on which the meeting was most divided seems to be the propriety of inoculation, and it must be confessed it is a most difficult question to solve. We all know that by such a process the virulence of the disease is mitigated; but, on the other hand, as urged by Mr. Gamgee, the area of contagion is widely and rapidly increased, and upon this very ground the act of inoculating a human subject is rendered penal by our laws. Is it not, then, worthy of deeper consideration than has yet been given to it, whether such a desperate alternative should be permitted? Great, nay, absolutely ruinous, as the losses of individuals would doubtless be in many cases, were the malady to be taken by contagion, or break out spontaneously, unless compensation were to be given in some way, shall not the question yet be further agitated how this may be provided, before license goes forth to the whole kingdom to propagate a plague, which, dear and precious as human life is, would tend more to the permanent injury of the commonwealth than all the fearful visitations of the cholera.

While there is yet time, and before the insidious foe has crossed the borders of Hampshire, let me earnestly call upon the leading men of the county to summon the flockmasters to a conference, whereat this most serious danger may be discussed. From long experience in the management of sheep, from the utter failure which I have witnessed of all medicines, even when administered by my own hand, to produce any effect on the system of a sheep, although powerful enough on the human frame, I am disposed to place more confidence in what modes of treatment, adopted by breeders, have done, than what professors tell us their nostrums may do. First of all, I want to be convinced that this disease is of the same nature as what we know as the smallpox of humanity. The following facts make me very sceptical on that point: in the year 1853, a near relative of mine purchased 200 Spanish sheep in Smithfield market; the seller would not warrant them free from infection, the so-termed smallpox having prevailed amongst many lots about that time; they were two-shear sheep, and the price given was 1*l.* per head without warranty. They were sent down to Beaurepaire Park, near Basingstoke, belonging to Mr. Oldfield, the feed of which was hired for the season. A few days after their arrival the owner, accompanied by my son, went to see how they were getting on, and found many doing very badly,—backs set up, drooping heads, wool open, and deadened in colour—the usual symptoms of ill health. The keep was luxuriant, but they fed little; their walk being also cramped and stiffened, it was resolved to examine them, when on the inward parts of the thighs and the forelegs, which are always free from wool, a thick eruption of white headed pustules, with a red base of inflammatory appearance, was found on all which appeared to be suffering. The idea of "shab" or mange first suggested itself, but there was no biting or tucking of the wool, the invariable accompaniments of mange. Being puzzled as to the nature of the complaint, it was resolved to dip them in the usual arsenical solution, now universally practised for the destruction of ticks and other vermin, immediately after which operation the whole flock began to mend, and every symptom of the disease vanished, the speculation turning out a most profitable one.

The first impression made on the owner and my son was that it might be the much dreaded small-pox. Had it been, and that of the same nature as that known to us as such, would not the arsenical dipping have been instant death? And if these eruptions, as described, could be produced by other affections in 1853, may they not be so accounted for in 1862? I only moot the question in order to raise discussion and to induce the trial of the dipping trough on some half-dozen sheep in the first stages of the now prevailing malady.

If this process should prove fatal or unavailing to check its progress, and it should turn out to be the small pox in reality, as the professors unhesitatingly proclaim it to be, why not try that at least mitigating agent, vaccination? No possible harm could arise from it, and surely it is worth a trial before spreading so fearful a scourge as the small pox through the whole kingdom by inoculation. Let it be tried on a small scale. Any local medical man with a spark of patriotism in his heart will supervise the operation, and when it has passed the stage at which the system of the animal has become thoroughly impregnated, let half a dozen sheep, from three or four different owners, be sent into as many flocks in Wiltshire where the disease is raging. If they escape unscathed or but slightly affected, a grand point will be gained; if on the other hand, they sicken and die, the loss is but a fleabite, for which compensation might be guaranteed by the neighbouring agriculturists, before sending the sheep. *J. T. Twynam, Land Agent, Winchester, September* 18, 1862. [We have been unwillingly forced by the pressure of other matter in our columns to abridge the communication which Mr. Twynam has this week made to the agricultural papers.]

PEDIGREE WHEAT.

I HAVE to thank my friend, Mr. Mechi if he will allow me to call him so, for the courteous tone of his communication to you last week respecting my Wheat.

I am sure that no one would regret it more than he, should the expression of his opinion, to which such weight is justly attached, by concentrating attention upon the single point of "thin seeding," cause the great principle to be overlooked which is the very essence of my system of Wheat culture, and to which the quantity of seed employed is merely incidental and variable according to the time of planting.

The principle alluded to is that of the continued selection of the best parent plants (as proofs of the best grains), which selection, for the sake of brevity, I call "Pedigree."

The most vigorous parents can be ascertained only when all have free play for the full development of their powers, or, in other words, when each grain has allotted to it all the space which it can possibly require. Hence the absolute necessity upon the selecting plots, and there only, of a mode of planting which some people choose to term "thin seeding."

The practical value of "pedigree" consists in its offering the only possible means of increasing the produce of the cereals, and in its universal applicability to all cereals in all countries wherever they are grown.

It is this great principle which I wish to keep prominently in view, of which my Wheat is only an illustration. The value of this principle is to be measured, not by even the most triumphant success of my Wheat in competition with other varieties, but by its successful competition, after selection, with itself in its original state, and in its various stages of selection.

Let us supply this test of what pedigree has effected, both upon a small scale and a large one.

First, then, upon the selecting plots, where the land, the mode of planting, the seed, and the absence of any special preparation have been the same throughout, In five years only the length of the ears has been doubled, their contents nearly trebled, and the tillering power of the plant increased eightfold.

Here it is absolutely impossible to suggest any cause other than selection for this enormous increase.

In 1861, when I grew the common Nursery Wheat for the last time, I had a practical proof afforded me upon a large scale of the value of "Pedigree."

Two fields of the Pedigree Wheat, the one planted at the end of October with one peck of seed per acre, the other drilled Nov. 20, 1860, with 6 pecks of seed per acre, produced respectively 57 bushels of Wheat with 140 trusses (36 lb.) of straw, and 54 bushels of Wheat with 112 trusses of straw, while upon no single acre of all my other common Nursery Wheat (the very same except as regards selection), had I as much as 32 bushels.

I may mention, that although the Nursery Wheat is in the greatest favour with the millers, its cultivation in this country is being abandoned on account of its diminished productiveness.

I know no more striking practical illustration of the

existence of "pedigree," or of the minutest characteristics, even of grains, being transmitted, than that of the variety of Wheat known as "Grace's White." Take a sample of this Wheat, and every grain will be found to have across the centre of its back a mark or indentation, as if a string had been tied and left round it when in a soft state; this curious mark is more or less distinct, but is never entirely absent, and actually affects its commercial value to the miller.

On the other hand, for practical illustration of the want or absence of pedigree we need only refer to the recent public discussions upon the state of our Barley crops, which have become so mixed, and the grains of such different germinating powers, as to attract the most serious attention of the maltsters, whose interests are thereby considerably affected.

The description of the "truest" field of Barley found during a recent public tour of inspection is absolutely ludicrous, and convinces me more than ever of the importance of the principle of selection, which I am applying to this cereal also.

Mr. Mechi speaks of obtaining upon a large scale a production of 40 for 1 of seed, and upon a very small one of 287 for 1, which he very fairly compares with that ordinarily obtained, which he states as 8 for 1, but which is really 14 for 1.

I have grown 500 for 1 upon an acre of land, and ... for 1 upon a small plot of 700 square feet.

I quite agree with Mr. Mechi that all Wheat is kept down by the absurd quantity of seed employed, and that it would at once increase somewhat in contents of ear if planted singly, but the progressive results obtained upon my selecting plots given above, must convince him how untenable is the opinion that they have been produced merely by "thin seeding."

That he may have an opportunity of convincing himself that there is such a thing as "pedigree" in my Wheat, and that its value increases with its length, I have begged his acceptance of a bushel of the latest selection of my Wheat such as I am now sending out, to be tried against an earlier selection of the same Wheat—in fact against any not sent from here this year —he may procure from other growers of it; both to be planted in the same way in each trial, but in no case shall the seed be thicker than one bushel per acre. If that I send him do not considerably exceed the other in produce per acre, I will pay 20*l.* to the Agricultural Benevolent Institution.

I shall be quite glad to have this trial made by one who, while he cannot be suspected of any bias in favour of "pedigree," is far too earnest a well-wisher to agriculture to permit the trial to be other than a fair one. *Frederic F. Hallett, The Manor House, Brighton, Sept.* 23.

Home Correspondence.

Steam Cultivation at Sparkenhoe.—In your Paper lately Mr. Smith accused me of taking his steam-tackle to a sham fight at Sparkenhoe. Let me tell your readers there is no truth in Mr. Smith's statement. My object in sending two sets of tackle was to win both prizes offered by the Club, and to oblige some of the gentlemen of the committee. As to my being a show man, Messrs. Howard never knew till a day or two before the show that I was going to send. When they found I was, and that Mr. Fowler was coming with his two sets and own men, they sent me down a new set and a plough, only the day before the show. I did not know of it, and had got both of my sets there. It did not matter to me which won—Mr. Smith's or Messrs. Howards'. I had nothing to do in choosing the ground. This was done by the judges. One had just as good a chance as the other; but unless Mr. Smith improves, he will be beaten at more places than Sparkenhoe. I have no interest in Mr. Smith or Messrs. Howard; and I think it is too bad of Mr. Smith to attack me as he has done. *Leonard Terrell.*

Mangel Wurzel.—I have no doubt that Edward Carroll's remarks upon the grub which has now for many years fed upon the Mangel, will elicit criticisms from more able pens than mine; but for fear they should not I must beg him, while as an Irish agriculturist he glories in the knowledge of Botany now diffused through Ireland (at which I sincerely rejoice), not to neglect its almost equally useful sister science, Entomology. You, many years since, told us, if I remember, that the insect in question is not the caterpillar of a butterfly but the maggot of a fly—an Anthrax I think, but I have no books with me here to refer to. I should be greatly obliged to Edward Carroll for a specimen of the small greenish butterfly, but I fear he did not secure any the only year he saw it. I well remember the year this pest first occurred in Cheshire—I imagined at the time from foreign seed. As soon as I had examined the habitat of the grub, which, as E. C. says, is between the two cuticles of the leaves, it became evident that no outward application could reach it, and nothing remained but to nip off the young leaf which contained it. A crop left to itself will lose half its weight if attacked by the grub—but as far as my experience goes, if it is watched from the first, and the small leaf is wholly nipped off, or better still only the part which contains the grub, the crop suffers but little. As Mangel is always grown in drills with a wide interval, it is done much more quickly than one would suppose before trial. I hope this subject being ... may cause those who have tried experiments upon Mangel and its present enemy, to state the result. Very high cultivation will also enable the plant to overcome its leach. We have grounds for hope, inasmuch as the grub which some years since universally injured Celery crops, and which is of the same genus as the Mangel one, has with us quite died off. *W. D. Fox, Rhyl.*

Occasional Drainage.—Under the title "Occasional Drainage," Mr. Bailey Denton warns agriculturists against a practice which is unfortunately still too common, though I think Mr. Humbert need not fear that it should be charged against him or any one who knows the value of scientific knowledge. I say advisedly the practice is too common; tiles are given to the tenant, who is content to bury them in the furrow, often scarcely 2 feet deep, without any reference to the real requirements of the soil. I ventured to say "that if there be a division of the expense of draining it would be better that the landlord should find the labour and the tenant the tiles, as the tenant has not an interest in the labour equal to that of the landlord, because labour is the element in drainage which gives permanence to the improvements," and of the soundness of this suggestion I am more and more convinced. It seems very strange that agriculturists will not see that draining is a science, and requires some scientific knowledge in those who execute it. I tried to illustrate the theory of drainage in general, and deep draining in particular, in a short paper printed in 2d Part of Vol. VI. of the Royal Agricultural Journal in 1845. I refer to it with confidence because the late Mr. Pusey told me that "after reading it he had no difficulty in drainage," and I see that the diagrams with which it is illustrated have been copied by others, though the source from whence they were taken was not acknowledged; and furthermore I believe it gives the first published example of trial holes. Speaking of the level assumed by the water in the soil under the action of drainage, it is said "if a drain be dug at (a given point) *a*, the level will assume an inclination: the angle at which it declines being greater or less in proportion as the soil is pervious to or retentive of water; in this as in other cases of subterranean water flowing to a vent, the inclination which its surface assumes will represent the amount of friction or resistance which the water encounters in its passage through the soil. Thus in the various chalk strata, through the fissures of which water flows with considerable freedom, this inclination is found to vary from 15 to 80 feet per mile; in other materials, such as sand or gravel, though loose, it is usually much greater, and in retentive clays will be much greater still; it is with reference to the amount of this angle of inclination that all drainage operations must be conducted. This I conceive to be the great scientific law of drainage; for the particulars I refer to the article from whence it is quoted. I quite agree with Mr. Denton, that the waste of money by unscientific drainage is a national loss. *J. C. Clutterbuck, Long Wittenham, Sept* 17.

Small Pox in Sheep: Inoculation v. *Separation.*—Much controversy exists as to the advantages of inoculating the whole flock of sheep when a few of its members have exhibited symptoms of small pox. In all animals used for food the great aim is not to allow them to lose flesh, as it costs both time and money to put it on again; ever so slight an attack of small pox renders the animals that recover of less value than before, in the case of dry sheep from loss of flesh, and in breeding ewes injury to themselves and lambs together. By inoculating the whole flock, even supposing none of the cases terminate fatally, there must be a considerable loss per head as above stated; a few of the inoculated will also die, although not so many as when the disease is taken naturally. In separation every animal is examined as often as possible, those showing the least symptom of disease are removed and treated, the worst cases kept by themselves; in a flock in which this method was adopted on a former visitation of this disease the losses were not very great after its true character had been discovered (a large proportion of the animals that imported the disease died), and the animals not diseased at all were not deteriorated in value excepting by the unenviable prestige of the flock. It is therefore a question whether it is better to actually lose rather more sheep, have a few only deteriorated and the rest not injured—or to have less actual deaths but the whole deteriorated by the disease, although given in the mildest form by inoculation. The latter system incurs the expense of inoculation and of treatment afterwards, a greater danger of spreading the disease (perhaps in a milder form) to other flocks, as more flies and birds will communicate with many sheep than with few. On the whole there appears to be a greater loss in money by inoculating the flock than by separating the diseased animals from those in health. *M. R. A. C.*

The Art of Agriculture.—

"Ischomachus then said to Socrates, 'Do you wish me to teach you at once the very art of agriculture itself?' 'Assuredly,' said Socrates, 'for it is an art which renders those who understand it rich, and leaves those who do not understand it, however much they may labour in it, to live in poverty.'" *Xenophon.*

Should you think the enclosed worthy a place in the *Agricultural Gazette* will you insert it? and next week I will send you for the information of your readers the grounds upon which I have come to the conclusions I expressed in the articles of mine you have already published, and especially in that in your Number for Aug. 30, p. 823. I need not inform your classical readers, nor your readers in general, I hope, that this extract is taken from an assumed dialogue on the art of land-cultivation and domestic economics as they were practised by the Greeks between 2200 and 2300 years since; and probably, much before. The dialogue is, as your readers know, between two of the wisest, most learned and philosophically-minded men the world has produced; or they will know it, when I inform them that Ischomachus, the instructor, is no other than the philosopher Xenophon himself, and his disciple is the world-renowned Socrates, who, as all learned, wise and good men in ancient civilized nations likewise did, wished to understand, in order that he might practise it, the Art of Agriculture. I wish your space would permit me, for then I would make such extracts from this valuable dialogue as would prove to a demonstration, that neither the knowledge of land tilling, nor the practice of it, has, in any particular, increased for the immense length of time I have above stated. If I am in error in this statement, and I admit it is a bold one, I ask some of your learned classical readers, impartially and calmly, to refute what I write, and put me right. I ask them, in the first place, to take a view of what is known of the ancient agriculture of Egypt, China, Hindostan, Persia, Greece and Rome, and to show to me that as much corn was not grown on given quantities of land in all or most of those countries, and as many people supported by it, as is produced at this day, with all our mechanical improvements, in our own or any other nation of the world? And, having taken this view, I ask them, again, to lay before them the work I have above quoted from, that is, "The Œconomics, or Treatise on the Management of a Farm and Household," by Xenophon the Greek; also "The Idyllia" of Theocritus, the Syracusan; the "Agriculture and Gardening" of Columella, the Spaniard, and the Georgics of Virgil, the Roman, and I might name, but these are enough, more; but if any gentlemen, I repeat, will take this trouble, and why may I not write pleasure, also, as it would be to me, and compare what is recorded of the practice of those countries, and what has been written in the works I have referred to, they will find that agricultural practice has made little or no advances, in those very many centuries; and, *O pudor*, for I am compelled to add, for my pen will write nothing but the truth, it has in some cases stood still, and in others the movement has been the contrary way. I am aware that your readers, both in towns and the country, read with surprise that I have written, that modern ploughing is not cultivation; but I ask them to examine particularly the tillage of a market garden and compare it with field-ploughing, and they will find that in the garden the tillage is, at least, 12 inches deep and often more, and the soil comminuted, whilst the ploughing is not more than three or four inches deep, and, in general, not even an apology for tillage; but, is not such a garden a small farm? And ought not a farm to be a large garden? Why not? Do, some friend, enlighten me, if such be not the case. To the depth of 10 or 12 inches, at the least, wherever it can be done, ought all lands, whether called gardens or farms, to be cultivated; but ploughing is not cultivation, it is merely cutting the epidermis of the soil into thin slices, and turning them first one way and then another over, and often but one turning, and then the seed is either dropped into holes nearly in handsful—yes, nearly in handsful, for I have examined many of such holes and found 12, 16, 20, and, O shame again! nearly 30 grains in a hole, or it is thrown by cupsful into shallow furrows by a drill! But can land thus seeded bring crops to perfection? Must not many of them fail? They must, and it is impossible, without the direct interference of Providence, to prevent their failing, as has been the case with thousands of Wheat crops this and other years, but especially this. The plants of all delicate kind of crops, such as those of Talavera and other white Wheat crops, must under such circumstances grow up so thin and weak that as soon as they reach a certain height, and the ears are formed, down they fall, flat on the ground, like a carpet in a room, as very many did this year, and then, we hear the ungrateful cry, that it has been the season; either too much heat or too much cold, or too much wet, or too much dry has been given—in truth, any excuse that the brains of men can invent, rather than acknowledge the right and only one, as in the case of Eve, who threw the blame of her sin on the Serpent, and of Adam, who threw his upon Eve; and so the world moves on! But I must not intrude upon your space this week further, but, with your permission, renew the subject next week; but, in now concluding, I will again emphatically and advisedly repeat, that 19-20ths of the painful failures in the Wheat crops this year were the results entirely of a want of cultivation and rational seeding. As a proof of this, I inform your patient readers, that this year some of the finest Wheat crops have been produced that ever were grown in this country, and from the very system I have here and so long advocated, and, *O, pudor* again! one of them has been on the farm of a highly-accomplished, learned and excellent lady. And, I add further, that since I last wrote, Mr. Thompson, M.P. for Whitby, has stated, at an important meeting of an Agricultural Society of which he is the President, that in nothing has farming advanced for the last 25 years; and if not in this time, certainly not before it, for, as I have shown, for nearly 25 hundreds of years. *Geo. Wilkins, The Parsonage, Wix, Sept.* 2.

Societies.

TEVIOTDALE: *The Payment of Hinds and Shepherds.*—Mr. SCOTT, Burnhead, said—Having been in business most of my life in Hawick, the people I employed were all paid in money wages, either weekly or monthly, so when I took to farming, and hired hinds, &c., I was both astonished and puzzled at the way their wages had to be paid. I will just give a statement of the wages of the first I hired for a year as first hind, or working steward, viz:—10*l.* in money, 5 bolls Oatmeal, 3½ bolls Barleymeal, ½ boll flour, 1 boll Peasemeal, ½ boll light Wheat, a fallen sheep or 1*l.* 5 cartloads of coals at hill price, a cow's keep, free house and garden, 750 yards Potatoes and seed for them, also 2*l.* 10*s.* for half Potatoes (that is in lieu of 750 yards more), a month's food at harvest, and supper Barley—the hind to provide a woman as out-worker, I to pay her 6s. per week. The above had to be provided just as he needed it. I found it troublesome, and thought it would be better to pay in money wages, and am inclined to think so still. However, perhaps he should have a cow's keep, as a hind's family cannot do well without a cow. I am not saying at all that these wages are too high, for I believe many good hinds and other workers are underpaid. I know that the present mode of payment has been use and want in this locality for a very long time, and that it is difficult to effect changes; but if the change be for good, the sooner the better. I have said nothing about shepherds' wages, but expect some of our friends among the stock farmers will speak on that point.

Mr. PATERSON, Chapelhill, while approving of money payments, thought the cow's keep should form part of the farm-servant's wages, as the family could not do well without the cow. Some remarks had been made at last meeting as to the difficulties which arise regarding the cow's keep, and particularly the difficulty which some men had in purchasing the cow, but these, he thought, could be got over, and the farmer could lay out the money and receive it back by instalments.

Mr. AMOS thought the payment should, as far as possible, be in money, both with hinds and shepherds. Difficulties were continually arising under the present system, but there could be no question about the value of a 20s. note. A distinct bargain could be made by both parties in a money transaction, and the other mode of paying frequently caused disputes. On farms partly arable, for instance, a portion of the shepherd's pack of sheep were allowed to be on Turnips and young Grass, and it was sometimes found that they had a much larger number on than they should have. Again, with regard to meal, he had heard its weight objected to, and it was complained that it was not so good as at Kelso, though he had only agreed to give such Barley as the farm produced. On the other hand, it was sometimes said that unless a shepherd had his pack of sheep he had not the same inducement to look after his master's stock, nor the same interest in being attentive to his duty. It was quite true, certainly, that when there was a chance of one of his own flock being found awled, or dead in a drain, he would be more careful in looking over the hirsel, but a respectable man, who was paid a fair money wage, would surely consider it his duty to look properly after the property intrusted to his charge.

Mr. PATERSON, Greenbanks, said that so far as the farmer was concerned, a money payment was undoubtedly the best, for it saved him a great deal of trouble, but it was different with the servants, and in endeavouring to show this he would confine his remarks to hinds—the class with which he was most familiar. He did not think the hind could spend his money to the same advantage as if he were paid in kind. He would have to go to the miller himself whenever he wanted meal, and he had not the opportunities of doing so which his master had, while he ran a great risk of getting inferior material to that which his master could supply. He thus laboured under a great disadvantage, and his money would not go so far as his master's in purchasing this article. As to the remark that had been made about complaints of the weight of Barley, his plan was, when the Barley was really lighter than they could buy in the market, to give a little more than the quantity stipulated for—perhaps half a boll in addition to the three. There was certainly a deal of trouble involved in the system of payment in kind, but that system was clearly most advantageous to the servants.

Mr. SCOTT, Timpendean, while admitting that much trouble would be saved to the farmer by the adoption of a system of money payments, felt certain that it would prove a great loss to the hinds. A friend of his, who had the whole of his servants to engage this year, went to the market and endeavoured to engage for money payments, but found no one who would accept service in that way, and he was forced to engage them on the old system. As to depriving shepherds of their packs, he considered farmers would suffer great loss by such a change, and he trusted he would never see the day when shepherds wanted sheep of their own. The presence of their own gave them an interest in the whole stock on the farm, and such a means of ensuring diligence and attention was invaluable, especially on lands where the farmer was not personally present to look after them.

Mr. GRIEVE, Borthwickbrae, said the payment of wages in kind was almost the only remnant of the old-fashion system of barter. Ministers were formerly paid in kind, and vassals paid in the same way to their feudal superiors. Such payments had now been commuted into money, to the benefit of all parties concerned, and a similar change regarding the wages of farm servants was only a matter of time. Farm servants were quite as qualified to lay out their earnings as their masters, and they should be put upon a level with their neighbours. As to the keep of cows, that might be advantageously dispensed with and an allowance of milk given by the farmer instead.

The CHAIRMAN, while considering money payments the best, believed there would be great difficulty in getting shepherds to part with their sheep. The present system was most troublesome for the farmer, as there was great difficulty attending the calculations when sheep went away, and, on the other hand, when the shepherd had some personal interest in the well being of the stock, he was more ready to venture out in severe weather and in lambing time. In the north, shepherds were paid in money, and the sum was not large. He had lately engaged some to go north for 18*l.* They generally had two cows in the north. The adoption of money payments might bring in an inferior class of men, for those who possessed some property were undoubtedly the most valuable servants. He had no doubt, however, that money payments would in course of time be adopted.

Reviews.

On the Establishment and Management of Cottage Improvement Societies. A paper read in the Fifth Department of the National Association for the Promotion of Social Science, in the Guildhall, London, June 9, 1862. By W. A. Greenhill, M.D. Oxon. Longmans. Pp. 16.

Dr. Greenhill writes from Hastings, where a most successful Cottage Improvement Society has for some years been in operation. This pamphlet does not describe its operations, but it gives advice founded upon an experience of its proceedings, and is thus perfectly trustworthy.

The following are among the recommendations of the writer, more especially adapted, it is frankly stated, to the circumstances of a town than of a country population:—

"At the first establishment of the Society it will be advisable to curtail the preliminary expenses to the very utmost, and really it is quite possible in most cases to reduce them to a mere trifle, by avoiding the employment of architects and lawyers (especially the latter) unless absolutely necessary, and by steadily rejecting all extravagant follies in the way of printing, advertising, stationery, and the like. As it is important to pay the shareholders a dividend as soon as possible, in order to prove that the new Society is worthy of some degree of public confidence, it is better to begin by purchasing old houses that require improvement, but are nevertheless inhabited, rather than by building new ones. In the former case, the revenue begins to come in as soon as the purchase is completed, and the first dividend may be paid within six or nine months after the capital has been contributed. In the latter case, much time is spent in the erection of the new houses, and the getting them fully occupied, so that it is generally not till the end of the second year after the establishment of the Society that the first dividend is paid. Whether in the end it is more economical to renovate old houses or to build new ones may be doubtful, seeing that the expenses for current repairs have been reckoned in the former case at about double what they are in the latter; but, for the reason above given, whenever suitable property can be procured, it is certainly advisable to commence in this way, and indeed to continue the same plan, until the Society is sufficiently firmly established to be able to bear without inconvenience the smaller immediate profits that generally come from new houses.

"It is also generally advisable for a new Society to begin with a small amount of capital, which may be increased from time to time as it is wanted, rather than to get together at first a larger sum of money than is needed for immediate use. The surplus, even if it be not swallowed up by unnecessary 'preliminary expenses,' is a loss to the Society, as being so much unproductive capital, on which a dividend is being paid. In the same way it will be better to let the first purchase of property be small, or of moderate size; if blunders are made, they will be less expensive to the Society, and when you have learned to manage thoroughly a small property, you will be better fitted to undertake a large one. Again, if you determine to begin by renovating old property, it will be better not to increase your difficulties (which will always at the outset, even under the most favourable circumstances, be quite enough) by making your first experiment with a block of houses so ruinous as to require an unusual amount of expensive repairs, or situate in such a neighbourhood that you cannot get respectable people to take them, while you will not suffer the existing tenants to remain. This advice may at first appear to be not only selfish, but also almost unintelligible; for 'is not the physical and moral purification of such a block of houses the very object for which the Society has been established?' Certainly it is, but not of this block only; and it is in order that the Society may have the opportunity of doing away with the physical and moral filth of many such blocks of houses hereafter, that the above advice has been given. If you cannot pay your shareholders a fair dividend, you will find it difficult to increase your capital; and if you are not able to increase your capital, your sphere of usefulness will be limited to one single block of houses, instead of spreading over the whole district."

We must refer our readers to the pamphlet itself for the many detailed instructions and recommendations which Dr. Greenhill gives, founded upon a large and successful experience, which will we hope be extensively realized elsewhere.

Farm Memoranda.

SOUTH HANTS FARM: *Report to Sept.* 14.—Since our last report we have had some fine rains and without excess; it has been precisely the weather for encouraging the growth of the different root crops, for the temperature still continues high for the time of year; indeed this is often the case after a dark and cold summer. The harvest is now nearly completed throughout the South Hants district; the yield of Wheat is still much complained of, but the quality is fine, and the grain heavy, some reaching 66 lbs. per bushel; we hear, too, that the millers are well satisfied with the Wheat of this year's growth, and it is said to yield more flour than for many years past. The Barley crop is spoken of as being better than was expected, both in quantity and quality. The Oat crop has not yet been tested (within our knowledge) by threshing, but is considered the best crop of all the cereals in the present season. Potatoes are a good crop, and show but few diseased tubers as compared with former seasons.

The work of the farm has been the completion of sowing stubble Turnips, and preparing land for Trifolium. This is done by scarifying, harrowing, rolling, &c., so as to clear off all the weeds and Grass, and burn on the land whilst the weather is dry enough, but in case of damp weather it is best to cart the weeds and stubble off the land, in order that the seed may be sown as early as possible; for the successful culture of Trifolium depends upon early sowing in a great measure, and the only enemy it has seems to be the slug, which is always more destructive as the season advances and the nights get longer: in fact Trifolium is never sown too early. We have often had the crop early enough to feed with sheep in the month of November, and this can be done without any injury to the plant if the weather is not frosty. It is however best not to pen the sheep close, but to allow them to range the field and take off the forward stems only; but in this way it furnishes a good deal of feed. In cultivating Trifolium we never sow less than 25 lbs. of seed per acre, and if sown rather late, not less than 30 lbs. per acre, nor do we like ploughing the land, for the crop appears to delight in a fine pulverised seed bed, with a firm bottom.

The men and women have been employed during the past 10 days chiefly in hoeing the stubble Turnips, and we have now completed hoeing about two-thirds of our breadth, which is considerable, about 25 acres, the whole of which has proved a regular plant; we never saw them grow faster, and they promise to become this season a more important crop than usual, and upon our system of mixed culture we find this crop a great assistance in keeping our ewes and lambs; it is, however, a crop which cannot be taken with advantage upon farms sown on the four-course system, except upon that portion of the land intended for Mangels in the following spring.

This month and the past are the two most difficult months to provide green food for cattle under cover. We however still continue cutting Clover for the fatting and store bullocks. After finishing our second cutting of Clover about 10 days ago, we have since been cutting Clover in the Wheat stubbles, which in many parts furnish a fair swathe, and this will last for same time yet, and until the third cutting of Clover on the lea ground is ready, for that portion where the second cut was removed early bids fair for a useful third cutting; the cattle, however, receive a portion daily of Yellow Bullock Turnips cut and mixed with cake-meal. Our Mangel crop of last year is now gone, and in the course of a fortnight the new crop will be available. We never hesitate to use them at any period of the year, nor have we ever suffered loss thereby; we however at the commencement feed with other roots or Clover at the same time, and at all times with moderation, and herein consists the value and advantages of Mangels, and we assert that they are as safe as any other root for both cattle and sheep at any period, if used with judgment and discretion. We are now experimenting upon the growth of the black Spanish Radish, having them drilled side by side with stubble Turnips manured in the same way, and sown at the same time; we have also sown some broadcast with Turnips, without manure. We have often seen them very large, up to 1 lb. each, when cultivated in the garden. If a large number of plants per rod can be grown at ½ lb. each plant, they would outweigh an ordinary crop of stubble Turnips. It is, however, imagined by some that being so hard the sheep would not eat them, and being too so hot and high flavoured, but we cannot help thinking when cut and mixed with Mangel they would answer

... the only question at present which we ... to prove is the comparative crop between them ... stubble Turnips, and in case we succeed in obtaining ... the crop, we shall go on with the experiment as to ... feeding value. *J. B.*

Calendar of Operations.

SEPTEMBER.

... LOTHIAN FARM, *Sept.* 15.—Harvest is now in full progress ... what with reaping machines and shearing, the ... as soon as they ripen are being cut down. The crops ... very slow to come to maturity this season; indeed ... a harvest has not been experienced since 1836. On ... in this county no corn will be cut until the 22d, ... not until 1st October. However, as frost is now ... increased severity, it is likely that premature ... may take place from this cause, the hoar-frost having ... until 7 A.M. on the 15th. As cutting proceeds ... thin but not very much below average bulk. The ... and the yield must be below average. The ... the Barley is short, and the colour of some of ... too dark. The yield promises fair. The Oats ... a true crop in the early land, as they usually ... such wet seasons. The Beans have become black, and ... although not thoroughly filled. Potatoes are ... yet the tubers are unaffected. This however ... if close moist weather succeed; indeed this ... at present is in a very doubtful condition. It is small in ... and in the next there never were more black spots ... the leaves any year. The desire to have self-delivering ... machines being very great among farmers, several ... been tried with more or less success, such as Samuelson's ... It is yet premature to say with certainty that they ... in forming sheaves with sufficient accuracy without ... the grain. From 500 to 600 Leicester and other rams ... in Edinburgh by auction on the 10th, at from 2*l.* 10*s.* ... chiefly for crossing Cheviot and blackfaced ewes.

... LINCOLNSHIRE: *Sept.* 11.—The heavy rain on the ... the 9th has put a stop to the leading of corn for a ... which had got in excellent condition from the ... of the 4th inst. Good progress has been made in ... neighbourhood these last two or three weeks; a great ... of good Wheat has been secured in sound condition, ... large proportion in a fit state to bring to market for ... in consequence of frequent rains. I should say ... of the Wheat crop is still in the fields, and the ... proportion of Barley and Oats. Our crops have cut up ... better than we at one time anticipated, and I ... be about an average, the quality good. The nice ... have done good service to the Turnip crop, which ... to be very good. Mangel very bad, and must go out ... in this part of the country. Pastures continue ... but the late rains have rather improved their appearance. Fat cattle have all gone off in consequence of the good ... of the Turnip crop, and mutton being a good price ... sheep maintain a good price. Lambs up to 36*s.* each. ... cultivator has again got to work upon Wheat ... for root crop next year, having gone three times ... acres of seed land for Wheat. The five men work ... and earn 1*s.* a day extra. We do not intend the cultivator to stop until all our fallow break is gone twice through, ... we hope to accomplish by the 20th of October. We average fully 7 acres per day with No. 3 implement, and 10 with No. 4. We intend to cultivate a little deeper this year, ... a new 10-horse engine. *S.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Sept. 24, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	18	30.46	56	53	N.E.	2	8	64	36	90*	33	..	60	58
Friday ..	19	30.39	63	68	N.E.	2	8	68	44	114	39	..	58½	58½
Saturday ..	20	30.30	59	66	N.E.	2	9	71	46	117	40	..	58½	58½
Sunday ..	21	30.29	56	54	N.E.	2	7	69	54	117	50	..	60	57½
Monday ..	22	30.27	56	50	N.E.	2	6	60	49	75	47	..	58½	57½
Tuesday ..	23	30.10	60	51	E.	2	8	60	35	80	31	..	58	58
Wednesday.	24	29.96	59	56	S.E.	2	6	60	47	101	42	..	57	58

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20 to 30° higher than an exposed blackened bulb.

Notices to Correspondents.

... : *X. Z.* Youatt on Sheep, Spooner on Sheep, Article on ... in Morton's Farmer's Encyclopædia, and articles in ... *Agricultural Gazette* last year by W. C. S.

... IN LAMBS: *B M F.* We think it is now quite safe to ... the lambs as breeding stock. *W C S.*

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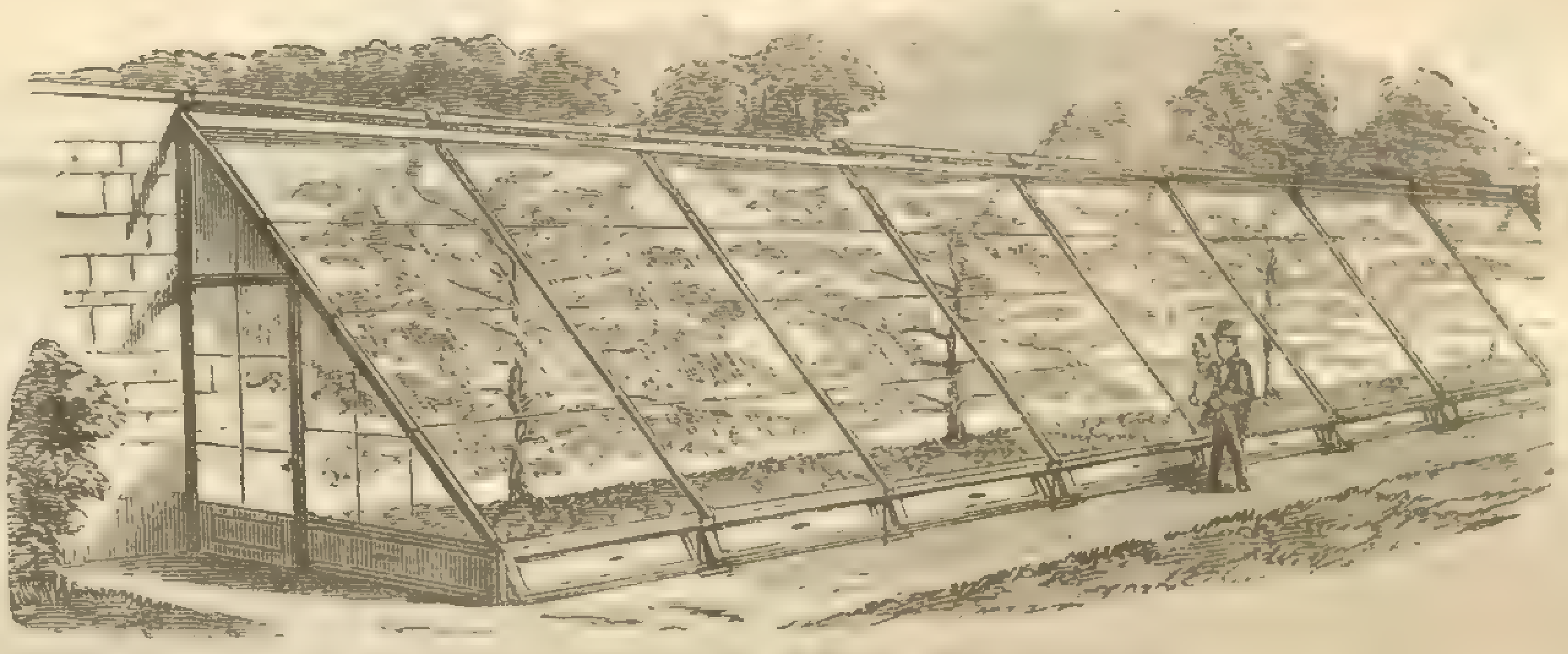

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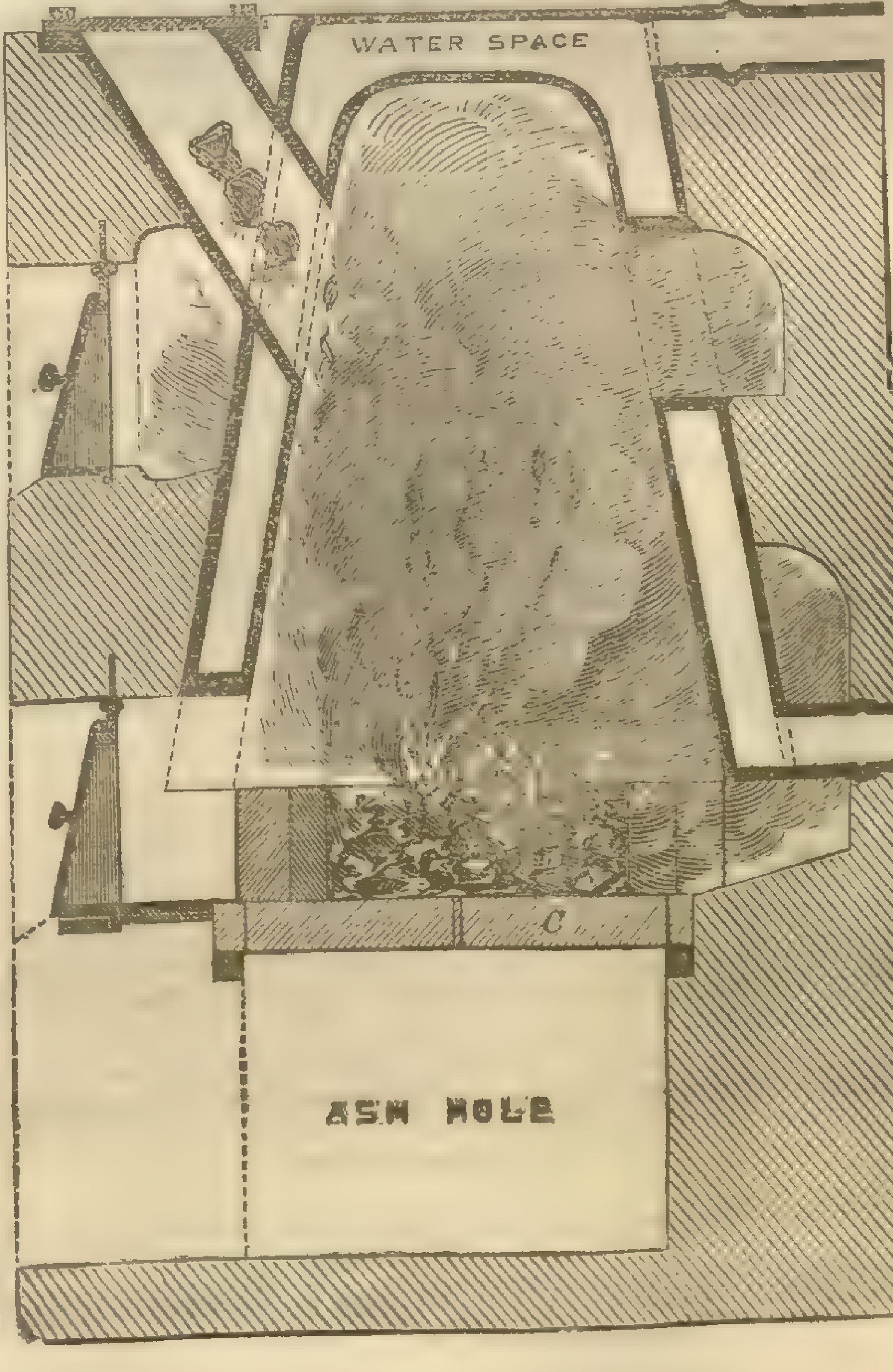

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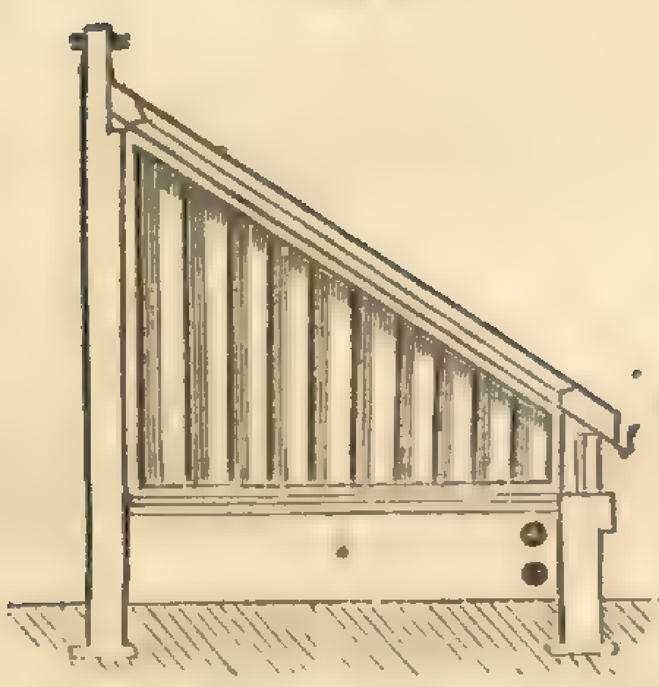

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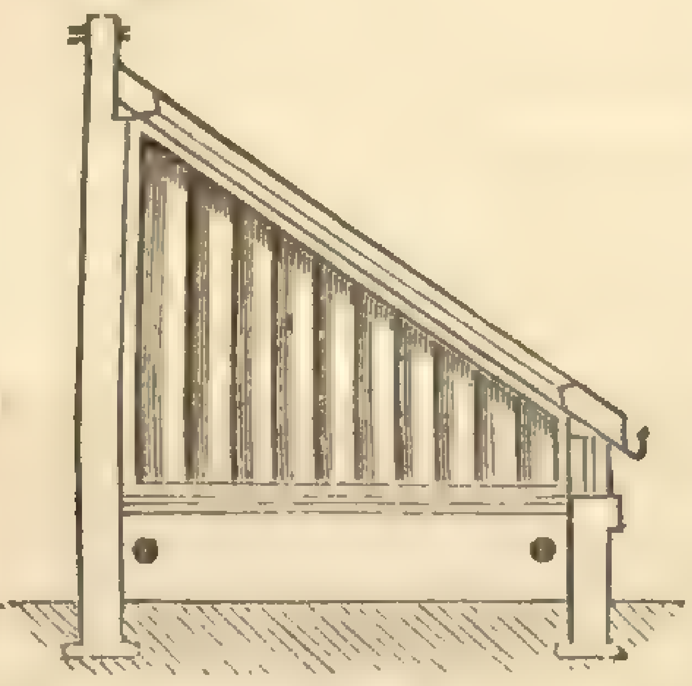

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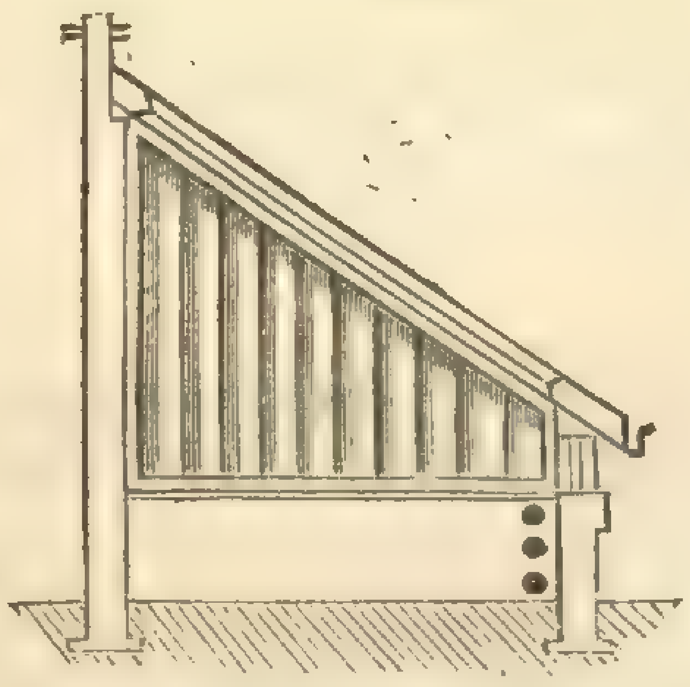

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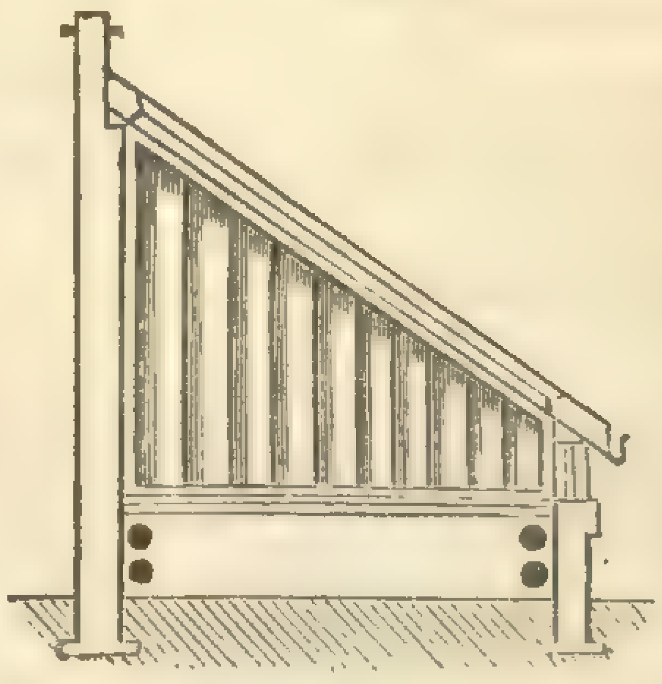

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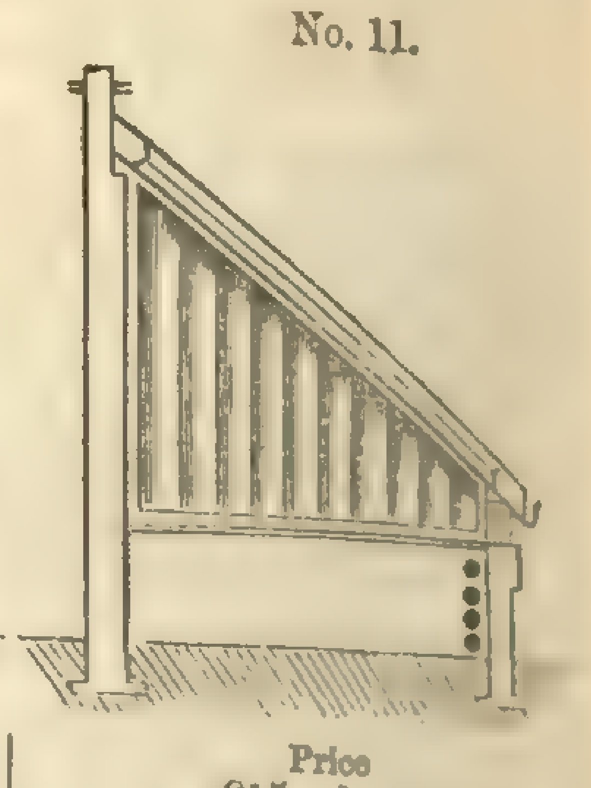

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40 „ 15 „	15 0 0	15 0 0	21 0 0	24 0 0	25 0 0
50 „ 15 „	18 0 0	18 0 0	24 0 0	28 0 0	29 0 0
60 „ 15 „	20 0 0	20 0 0	27 0 0	32 0 0	33 0 0
70 „ 15 „	22 0 0	22 0 0	30 0 0	36 0 0	37 0 0
80 „ 15 „	24 0 0	21 0 0	33 0 0	40 0 0	41 0 0
100 „ 15 „	26 0 0	26 0 0	36 0 0	44 0 0	45 0 0

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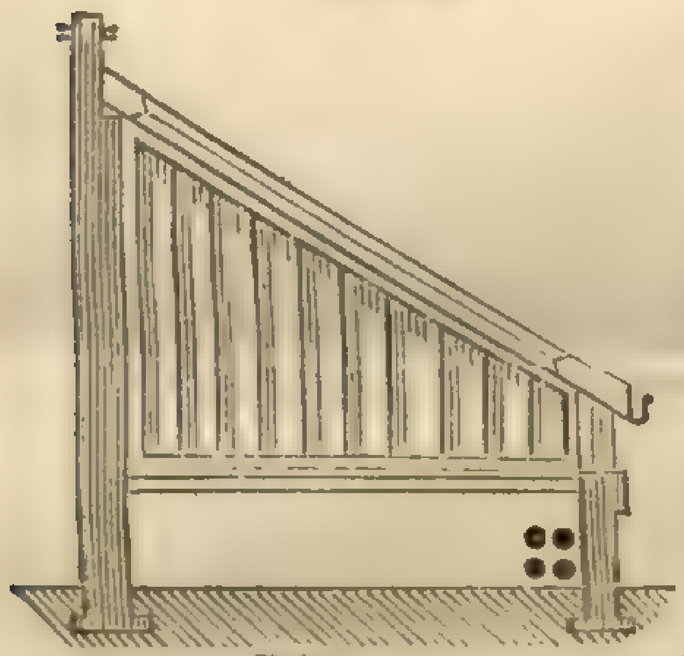

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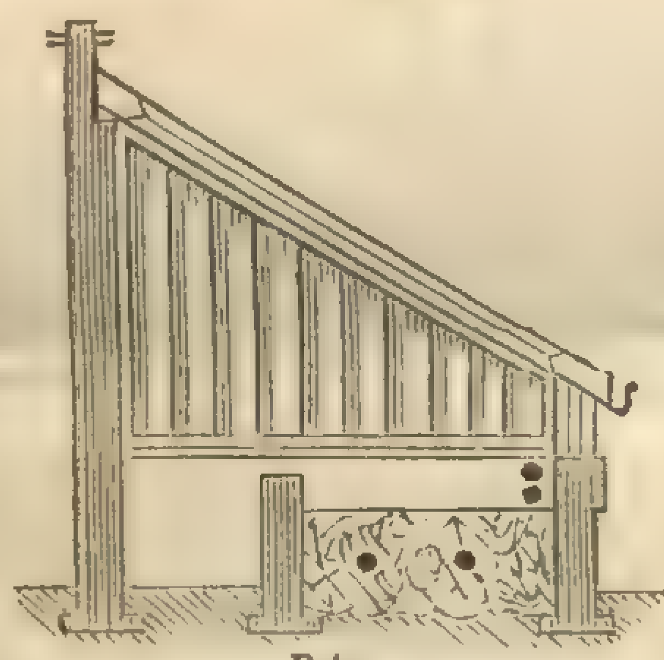

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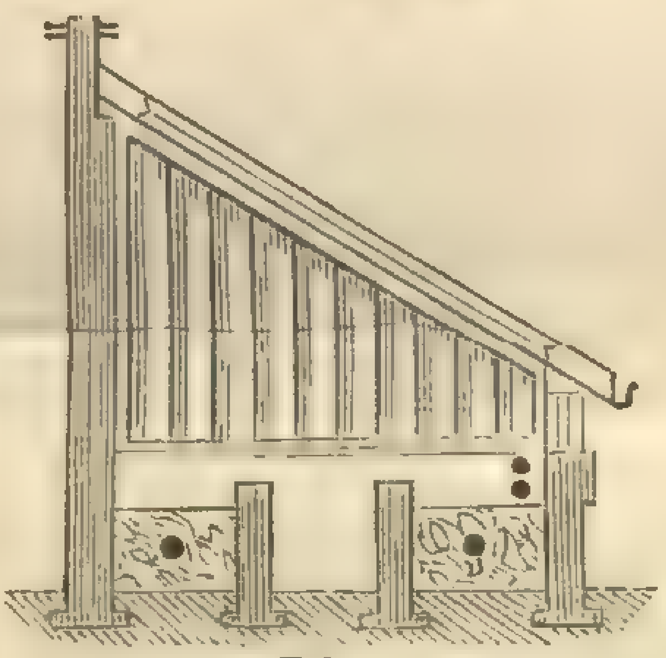

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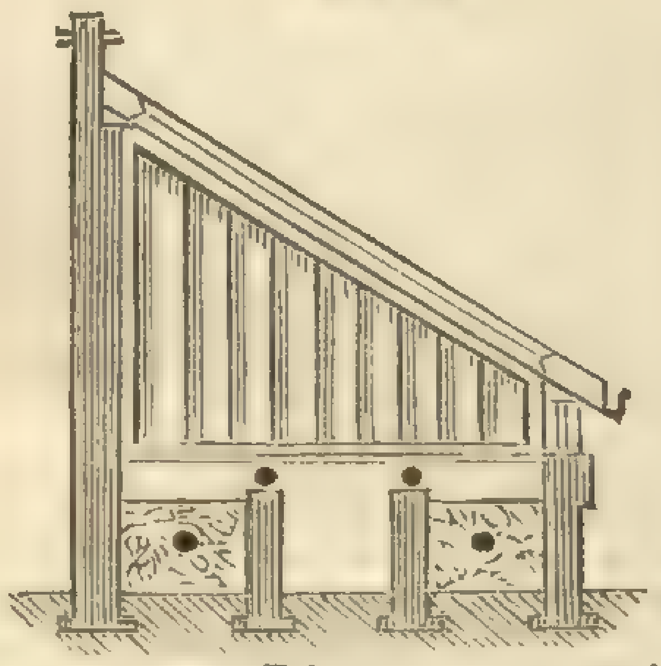

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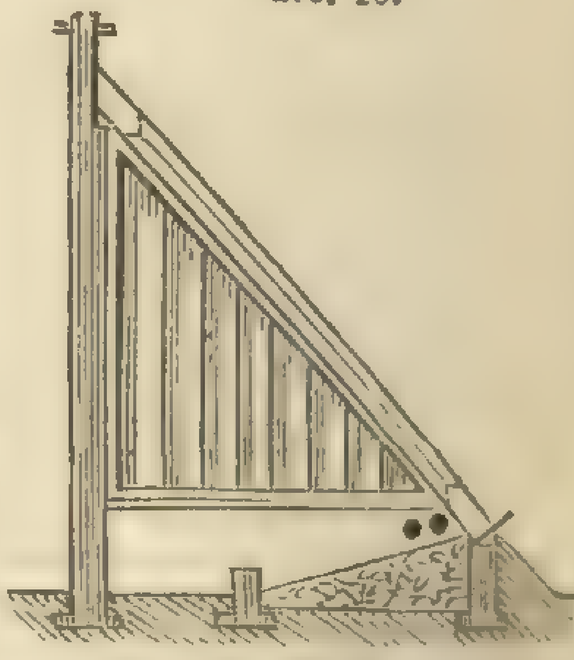

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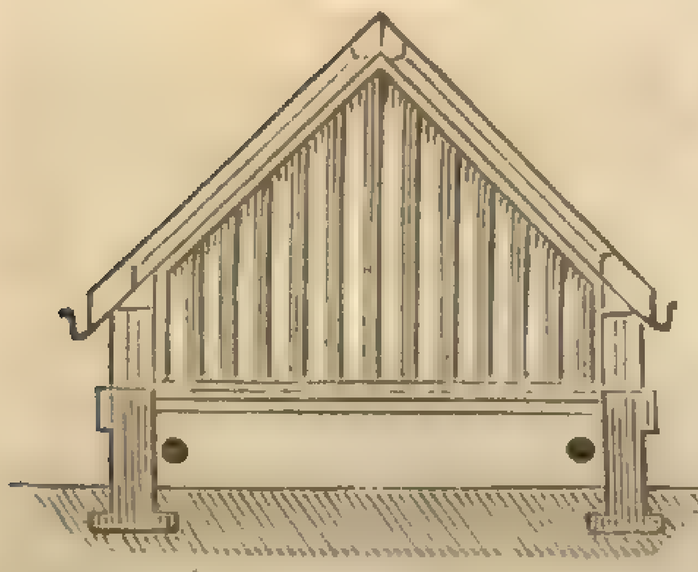

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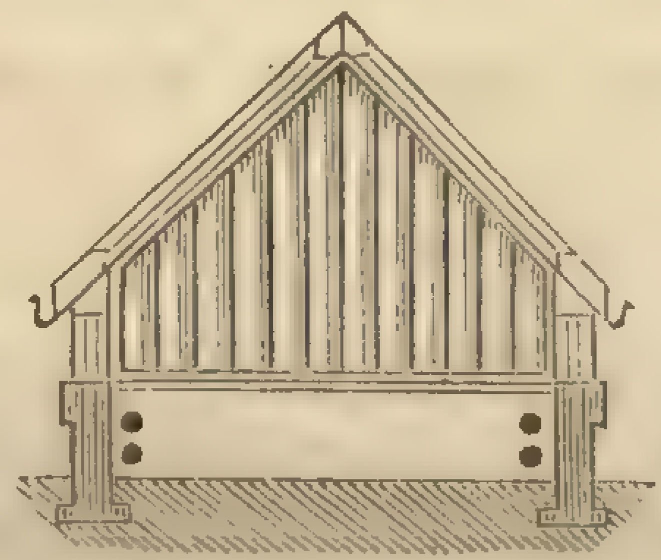

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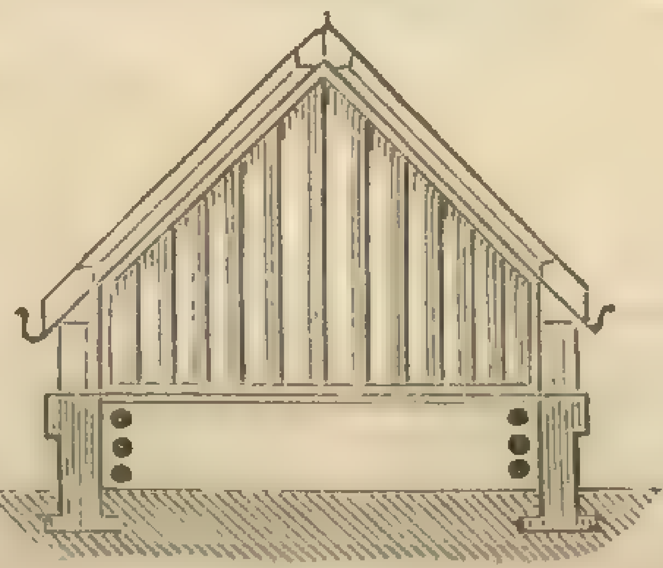

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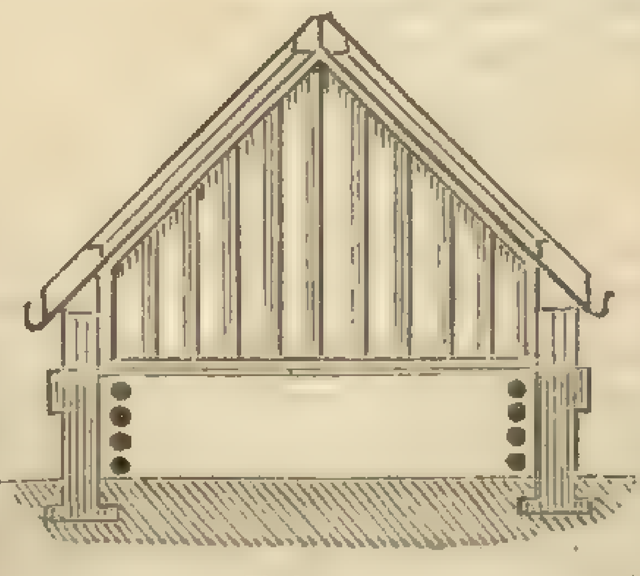

No. 21.

Size of House	No. 17 Price	No. 18 Price	No. 19 Price	No. 20 Price	No. 21 Price
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30 „ 12 „	12 0 0	19 0 0	24 0 0	30 0 0	30 0 0
40 „ 15 „	15 0 0	24 0 0	29 0 0	36 10 0	36 10 0
50 „ 15 „	18 0 0	28 0 0	34 0 0	42 10 0	42 10 0
60 „ 15 „	20 0 0	32 0 0	39 0 0	49 0 0	49 0 0
70 „ 15 „	22 0 0	36 0 0	44 0 0	56 0 0	56 0 0
80 „ 15 „	24 0 0	40 0 0	49 0 0	63 0 0	63 0 0
100 „ 15 „	26 0 0	44 0 0	54 0 0	70 0 0	70 0 0

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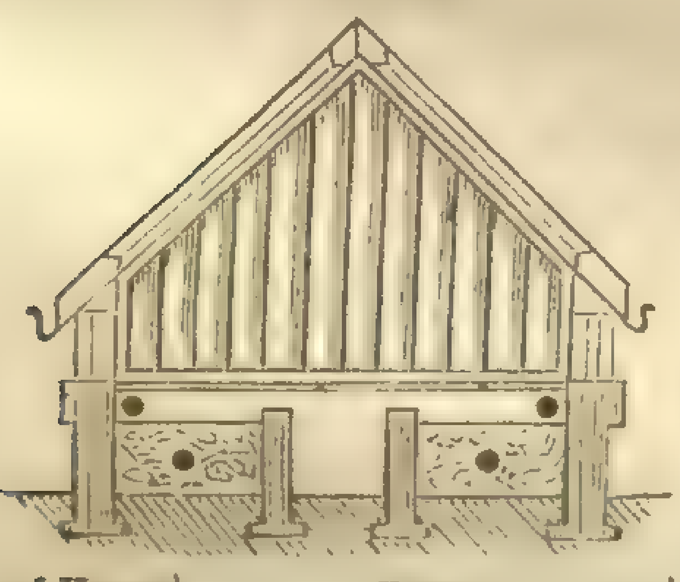

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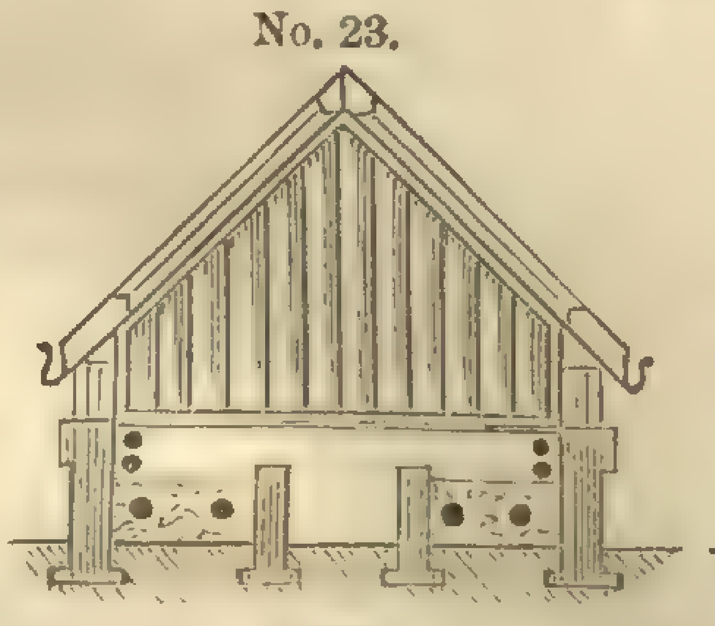

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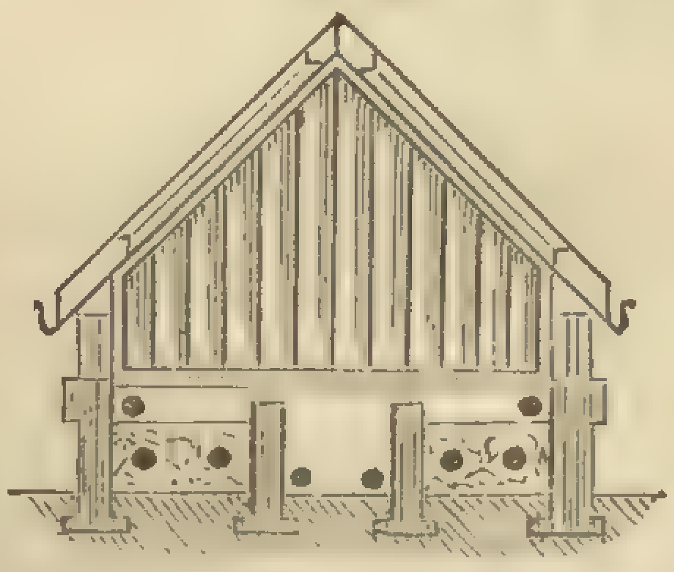

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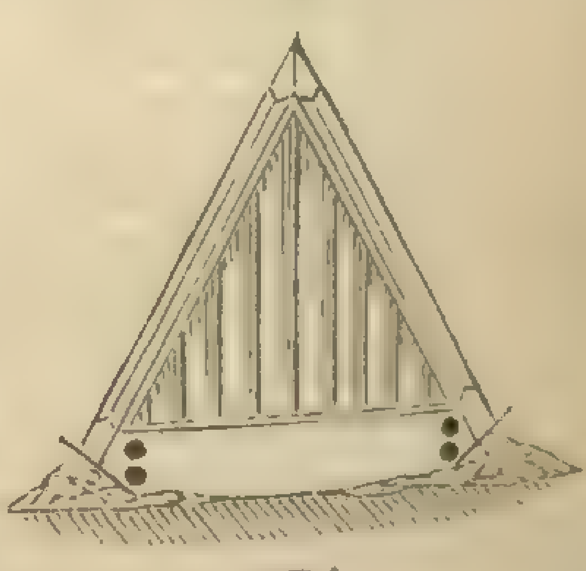

Size of House	No. 22 Price	No. 23 Price	No. 24 Price	No. 25 Price	No. 26 Price
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30 „ 12 „	21 0 0	32 0 0	32 0 0	25 0 0	19 0 0
40 „ 15 „	25 0 0	38 10 0	38 10 0	30 0 0	24 0 0
50 „ 15 „	29 0 0	44 10 0	44 10 0	35 0 0	28 0 0
60 „ 15 „	33 0 0	51 10 0	51 10 0	40 0 0	32 0 0
70 „ 15 „	37 0 0	58 0 0	58 0 0	45 0 0	36 0 0
80 „ 15 „	41 0 0	65 0 0	65 0 0	50 0 0	40 0 0
100 „ 15 „	45 0 0	72 0 0	72 0 0	55 0 0	44 0 0

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FROM *BELL'S WEEKLY MESSENGER.*

"These reflections have been induced by the array of glass houses in the open court of the Eastern Annexe, but more especially by the magnificent conservatory manufactured and exhibited by Mr. HENRY ORMSON, of the Stanley Bridge Works, Chelsea. Structures of this kind may be taken as typical of the taste that is growing among the wealthy of the land; for so much skill and enterprise would not have been displayed, and so great an outlay of capital been made, by a manufacturer, unless there was a market for such buildings. We rejoice at the progress in these auxiliaries to the homes of the aristocracy, for we have great faith in flowers, and choice collections of plants, and all the means of raising and displaying them, as they tend to influence the mind, and tone down the passions of our nature. It requires some intellectual power to appreciate them at all, but much more to understand them, and to be able to direct their management. The former every ordinarily gifted being possesses; and, when the means are at hand for exercising the latter, attention to growing plants is so in unison with our instincts that we are insensibly led on till the whole work becomes easy and the practice of it a labour of love.

"As a first-class designer and manufacturer Mr. ORMSON stands unrivalled. The conservatory at the International Exhibition is so elaborately planned and worked out that it is difficult to convey by words a faint impression even of the proportions of its general outlines and the elegance of its [illegible] points of detail. Its length along the centre line is [illegible], and its width from door to door 36 feet, while the [illegible] from the plinth to the cornice is 11 feet. The frame[illegible] the upper portion of the building is mostly of [illegible]. The weight of the roof is supported by cast-iron [illegible], fluted and wreathed in the stem, and terminated [illegible] richly embellished capitals. The roof terminates in the [illegible] of three semi-domes at each end, and the house is similarly finished, so that there are three semi-circular spaces from the roof to the floor for the reception of flowers and hanging baskets of festooning plants. The colouring of these buildings, when permanently fixed, would of course have to depend on the position they would be in as to overhanging or adjacent trees and buildings. But the individual character of the present building is very beautiful; a white ground is picked out with very pale green, and the employment of an occasional line or edge of gilt imparts to the whole a chaste, elegant, and, we may say, fascinating appearance.

"As Mr. ORMSON's system of heating is so well-known, no attempt at showing it is here made, but the method by which ventilation is obtained is very admirable. The openings at the top for the escape of heated and rarefied air are next to invisible, and are readily and easily raised and closed; while at the bottom every alternate sash is hung in the centre on pivots, so that each one opens at top and bottom simultaneously. Thus the heat of the house may be regulated so as not to produce a chill during the rawest weather, and when admissible a zephyr-like breeze can be thrown upon every plant to move and strengthen its stem, branches and foliage.

Mr. ORMSON's manufactory at Chelsea is conducted on the most economical principles that division of labour and the employment of machinery will admit of. Steam power is employed where practicable, all the wood used being sawn on the premises, and the surface smoothed by a machine, the active part of which revolves 2000 times a minute. This apparatus is remarkable alike for the rapidity of its movement, and the beautiful style of work which it turns out. By changing its knives or cutters, grooves and lines can be cut or traced of any required form. A plank or strip of wood is rolled up to the revolver containing the cutters, of which there are four sets, so that with the 2000 revolutions a minute, the touch of each edge is less than a hair's breadth. Thus cornices and other ornamental parts are turned out with an accuracy not to be equalled by planing, and with a smoothness adapted for the reception of the finest paint or varnish. Two of these knife armed revolvers can be worked simultaneously, so that both sides of a plank or block of wood can be cut or figured by once passing through the machinery. Two engines of several horse-power each are required for preparing the wood for the great number of hands employed by Mr. ORMSON in putting houses together for meeting his orders.

"Mr. ORMSON's 'Jointless Tubular Boiler' is known by every gardener of position. Tubes without joints stand in the form of two-thirds of a cone; this construction rests on a tubular grating so that no surface where fire touches is without water under it. Fuel is simply dropped in at the top of the cone-like part, so that renewing the fire, or blocking it up, is on the simplest plan. The water rests in these tubes, when no fire is burning; but as it enters at the bottom of them and can pass out at the top, the effect of the heat is to keep up a constant circulation of heated water through the pipes attached, no matter how long or large they may be.

"The Stanley Bridge Works are situated on a basin of the Thames, so that timber, coal, iron, and other materials may be easily conveyed there, and manufactured articles returned for shipment to any part of the world. This happens to be particularly convenient just now, as Mr. ORMSON's building at the International Exhibition has secured for him several orders for the Continent. His present orders, we understand, will take him over this year to execute. Mr. ORMSON is farther fortunate, as far as transmitting goods is concerned, now that the business has almost overgrown his premises, for the Kensington Railway has a station within a few paces of his gate, and a tramway will run close up to his yard, so that he will be able to load a truck for going to any British station, without the necessity for shifting its contents."

HENRY ORMSON, HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,
STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

Card.

SAMUEL N. McGERROW, GENERAL HORTICULTURAL BUILDER, Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

E. DENCH'S HORTICULTURAL WORKS, 152, King's Road, Chelsea, S.W., Manufacturer of every description of HORTICULTURAL BUILDINGS, either in Wood or Iron, or Patent Galvanised Iron, Glazed with Putty or without.
HOT WATER APPARATUS Manufacturer.

GEORGE COWELL, No. 14, Crescent, Salford, Manchester, HORTICULTURAL BUILDER and HOT-WATER APPARATUS MANUFACTURER, will be happy to furnish PLANS and ESTIMATES upon application. TUBULAR BOILERS capable of heating from 100 to 10,000 feet of 4-inch pipe, and apparatus adapted for efficiently and economically warming every description of Building, either Public, Private, or Horticultural.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.
Apply to JOSEPH MEREDITH, Vine Cottage, Garston, near Liverpool.
N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection; Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, TUBULAR, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 12s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at
Mr. LYNCH WHITE's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

Hothouses for the Million.
INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.
Illustrated Circulars, with Lists of Prices, can be had on prepaid application to S. HEREMAN, 7, Pall Mall East, London.

DENNIS'S PATENT HORTICULTURAL BUILDINGS are made from the best Wrought Iron, upon

an entirely new principle. The combination of Iron and Glass under this patent is perfect; the possibility of fracture is prevented, and a permanently Water-tight Roof insured.
The leading practical advantages are extreme smallness of Framing, admitting a maximum of light and heat, great strength, durability, and perfect ventilation. They are speedily erected, partake of more desirable outline, and do not exceed the cost of a perishable wooden structure.
For Prospectus, &c., address T. H. P. DENNIS, Horticultural Builder, Hot-Water Engineer, &c., High Street, Chelmsford, Essex; or No. 2105, Open Court, Eastern Annexe, International Exhibition, where a Small Model may be seen and attendance is given on the four last days of the week.

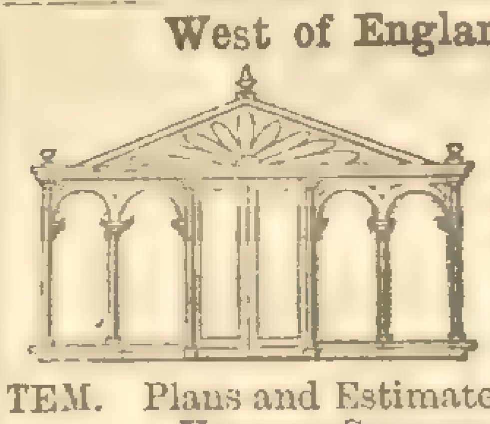
The only Stove without a Flue.

JOYCE'S PATENT, for Warming Chapels, Halls, Shops, Conservatories, and all other Places. Price from 12s. 6d. each.
JOYCE'S STOVES are Portable and Economical, and burn 12 hours with one supply of fuel, requiring no attention.
STOVES for GREENHOUSES are made to burn all the Winter. Temperature always the same. Patent Fuel, 2s. 3d. per Bushel.
The PRUSSIAN VERMIN EXTERMINATOR (HOWELL'S) is the only safe and effective remedy for the destruction of Rats, Mice, Beetles, Ants, and Cockroaches. Sold in Stone Jars, 1s. and 2s. 6d. each, with Testimonials, &c. (to be had of all Chemists).
SWAN NASH, Patentee, 253, Oxford Street, and 119, Newgate Street, London, E.C.
Illustrated Catalogues post free.

Ironfounder and Whitesmith
BY SPECIAL APPOINTMENT TO HER MAJESTY THE QUEEN.

W. WALKER, VICTORIA FOUNDRY, York, Manufacturer of Improved Hot-water Apparatus for Heating every description of Hothouses, Churches, &c. Improved Ventilating Apparatus for Horticultural Buildings, Improved Cattle Fencing, Poultry and Game Netting, Garden Chairs, Iron Pumps, Improved Yorkshire Cooking Ranges, Entrance Gates and Palisades. New Patent "Self Feeding" Tubular and other Hotwater Boilers.
WALKER's Improved Iron Mangers and Racks for Hunting, Carriage, and Farm Horse Stables.

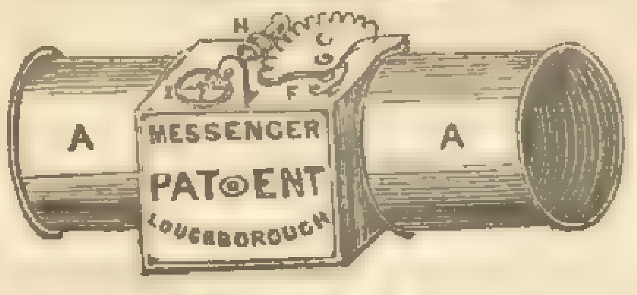
West of England, Ireland, and Wales.



VINCENT SKINNER (late Partner with J. WEEKS & Co.), HORTICULTURAL BUILDER and HOT-WATER APPARATUS MANUFACTURER. HEATING on the ONE-BOILER SYSTEM. Plans and Estimates on application.

VINCENT SKINNER, Bridewell Street, Bristol.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.
Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the
Patentee's Warehouse, 155, Cheapside, London, E.C.
Price complete from 3l. 10s.
Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

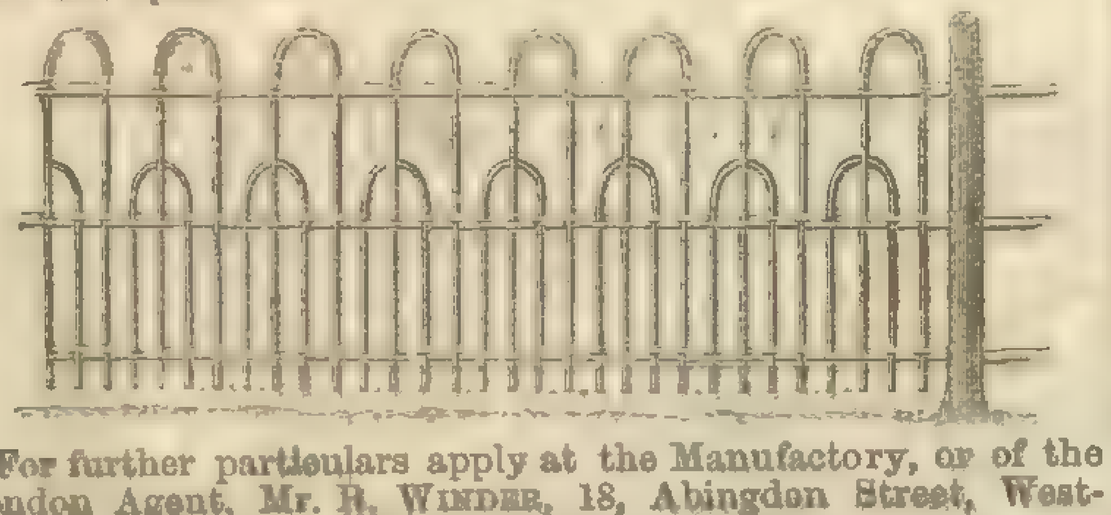


ELEVATION.

SECTION.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough, has recently patented a Valve which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under.
Two-inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s.
A liberal discount to the Trade.
These Valves can be obtained in London of Mr. J. JONES, 6, Bankside, S.E.

W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.
Manufactory: Newport, Salop.
Warranted the strongest and most durable Fence ever offered at corresponding prices. It is easily repaired if broken from accidents; can be rolled up most compactly when not in use, is admirably adapted for exportation, and can be had of any height and mesh required, at prices from 4d. to 1s. 6d. per yard and upwards.



For further particulars apply at the Manufactory, or of the London Agent, Mr. R. WINDER, 18, Abingdon Street, Westminster, S.W.

BARNARD, BISHOP, AND BARNARDS, Norwich.
FURTHER REDUCTION in the PRICE of WIRE NETTING.—APRIL, 1861.

BARNARD, BISHOP, & BARNARDS beg to inform their friends and the public that they have made a further reduction in the prices of Machine made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch mesh, 24 inches wide..	No. 19	4½d.	3½d.
2-inch ,, ,, ,, ..	,, 18	5	4
2-inch ,, ,, ,, ..	,, 17	6½	5
2-inch ,, ,, ,, ..	,, 16	8	6½
1⅝-inch ,, ,, ,, ..	,, 19	4¾	4
1⅝-inch ,, ,, ,, ..	,, 18	6	4¾
1⅝-inch ,, ,, ,, ..	,, 17	7	5½
1⅝-inch ,, ,, ,, ..	,, 16	9	7

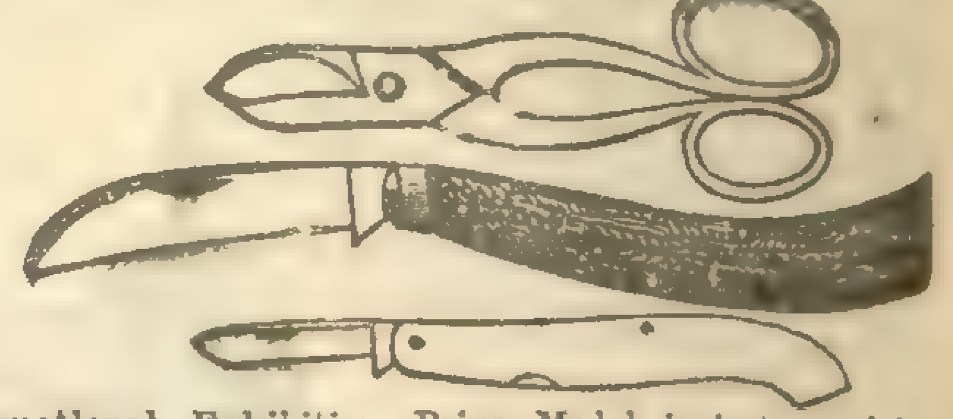
All the above kinds can be made any width (under 6 feet), at proportionate prices.
Strong Galvanised Poultry Netting, 7½d. per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11d. per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.

Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.
Five wires, 3 feet 6 inches high, pronged Standards, 8 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10d. per yard.
The same with Galvanised Wire Rope, 1s. per yard.
Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.
** Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

WM. BLAKE'S DESCRIPTIVE and CULTURAL SEED POCKETS, GERMAN SEED ENVELOPES, &c.
Catalogues and Samples on application.
60—70, Howard Street, Glasgow.

JOSEPH HAYWOOD AND CO.,
MANUFACTURERS OF PRUNING and BUDDING KNIVES, SPORTSMAN'S, and all ... of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield.

Paxton Works, Sheffield, Established 1738.



International Exhibition Prize Medal is just awarded to SAYNOR & COOKE for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR AND COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., to be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.
CAUTION.—None are genuine unless marked SAYNOR. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.
Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.
Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

HAY'S PATENT WATERPROOF GLUE and INDIA RUBBER VARNISH.—The WATERPROOF GLUE is most useful to Unite or Coat Wood, Iron and Stone, or Stucco, so as to make them Waterproof. The VARNISH is an excellent covering for Roofs, Fencing, Walls, Canvas, &c., and when applied to damp walls will enable them to be immediately papered or painted over.
Copy of a Letter from Mr. H. HARDING, *Builder, Southsea.*
"I beg to testify that a room in one of the most exposed and damp positions coated by me with the Varnish made by the Patent Waterproof Glue Company, Chandos Street, Landport, is perfectly dry, and the paper has stood well on it for months, and is likely to stand; and this where neither paper, paint, or colour would stand before."
To be had of all Wholesale Ironmongers, Oil and Colourmen, &c.
Manufactory: Chandos Street, Portsmouth, Mr. GEO. WEBB, Manager. GEO. C. WARDEN & Co., General Agents, 19, Lower ... Street, London, E.C.; where specimens of its application ... be seen.

Merino Rams of the Bourgignon Breed.

FOR SALE, a Limited Number of RAMS of this breed, which is in high favour amongst Australian Sheep Farmers, and obtained Prizes at the Paris Exhibition of 1856, and the International Exhibition of 1862, at Mons. GUICHARD, Chateau de Jouaney, near the Gens Station on the Paris, Lyons, and Dijon Railway.

South of Devon.
MR. ALEXANDER PONTEY, DECEASED.
TO NURSERYMEN, SEEDSMEN, AND OTHERS.

TO BE DISPOSED OF, by Private Contract, on advantageous Terms, with early possession, the Well-Established BUSINESS of a NURSERYMAN, SEEDSMAN, and FLORIST, which for very many years has been extensively and successfully carried on by Mr. ALEXANDER PONTEY, at Plymouth, Devon, and his predecessor, and is now to be disposed of only in consequence of his sudden death.
The Lease of the Business Premises and Stores, which are most conveniently situated near the Market, as well as the Leases of the Nurseries, which are most extensive and well stocked, both at Plymouth and Vinstau (about Two Miles from Plymouth, on the Tavistock Road), have many years to run.
The Plant, which is of the most Modern construction, and the Stock, the most varied in the West of England, to be taken in the usual way, at a fair valuation.
For further particulars, application may be made to Messrs. SKARDON & SONS, Auctioneers, Bedford Street, Plymouth; or to Messrs. PHILLIPS & SON, Solicitors for the Executrix, Frankfort Lane, Plymouth.
Dated Plymouth, August 1, 1862.

Lancashire.

TO BE LET, either for a Term or by the Year, "CARR SIDE FARM," situate in the township of Ince Blundell, about 9 miles from Liverpool. The Farm contains 181 acres, statute measure, viz:—about 130 acres Arable, and the remainder Meadow and Pasture. There is a good House and first rate Outbuildings on the above.—Also, To be Let with the above (or alone), for a Term or by the Year, ... ACRES of LAND, the greater part Tithe Free, situate in the township of Formby in the said county, and close to the Freshfield Station, on the Liverpool and Southport Line. Possession of the Land may be had on February 2 next, and of the Houses and Outbuildings on May 1 next.
For further Particulars, and to treat for same, apply to Mr. FISHER, Steward, Ince Blundell, Liverpool.

Maida Hill West.

MR. SAMUEL BROWN, DECEASED.

TO BE SOLD, or LET on LEASE, the old established BUSINESS of a FLORIST and NURSERYMAN, [illegible] many years by the late Mr. Samuel Brown, at [illegible] Warwick Road. The situation is most valuable. [illegible] and Hothouses are in good condition. A [illegible] been carried on by the deceased. The Goodwill [illegible] entire property may be purchased, or a long [illegible] granted, the Goodwill, Stock, and Plant being [illegible] the Tenant.

[illegible] particulars apply to Mrs. BROWN, upon the Premises; [illegible] Messrs. WILLOUGHBY, COX, & LORD, Solicitors for [illegible], Clifford's Inn, Fleet Street, London, E.C.

Nursery and Seed Business for Sale.

TO BE DISPOSED OF PRIVATELY, the long-established NURSERY and SEED BUSINESS carried on [illegible] Messrs. M. & J. Brown. The Business has been [illegible] about 70 years, and is only now being disposed of [illegible] of the death of one of the Partners, and of the [illegible] Partner retiring. The Nursery at Haghill is within [illegible] distance of town, in high cultivation, and contains a [illegible] of excellent Stock. A Lease at a moderate [illegible] obtained, if desired, and also an extension of the [illegible] Grounds. The Seed Business is carried on at 29, [illegible] Street, Glasgow. Either Business may be disposed [illegible] if wished. This is an opening rarely to be met [illegible] is also well worthy the attention either of any [illegible] firm, or of parties commencing business wishing to [illegible] connection in the West of Scotland.

[illegible] particulars apply to Messrs. BROWN & DUNLOP, 49, Virginia Street, Glasgow.

Sales by Auction.

To Gentlemen and Nurserymen requiring Stock for Autumnal Planting.

MR. ROSS CHRISTOPHERSON will SELL by AUCTION on TUESDAY, September 30, commencing [illegible] at 10 o'Clock, to finish before Market, the Choice [ORNA]MENTAL and FOREST TREES, SHRUBS, ROSES, [and] EVERGREENS, now standing upon that part of the [illegible] Arboretum, which is about to be resumed by [the Bo]ard of Health for the purpose of Improvements. [The Auc]tioneer would direct particular attention to the [illegible], which number upwards of 3000 fine bushy Plants, [illegible] 5 feet high (frequently removed); also to a quantity [illegible] Sweet Chesnuts with straight clean stems from 10 [illegible] feet high, well adapted for Avenue or Park planting. Arrangements may be made with competent persons to take [up], pack, and deliver any of the lots at a moderate cost. One [illegible] the day of Sale allowed for removal.

[Further] particulars in Catalogues to be had of the AUCTIONEER, [illegible] Office, 35, Queen Street, Ipswich.

SALE THIS DAY.

To Noblemen and Gentlemen engaged in Ornamental Planting, and Others.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., [on S]ATURDAY, Sept. 27, at half past 12 o'Clock precisely, [illegible] Bushes of HYDRANGEAS, a large quantity of [illegible] Common YEWS, ARAUCARIAS, CEDRUS DEODARAS, WELLINGTONIAS, TREE BOX, AUCUBAS, ARBOR [VITÆ]S, RED CEDARS, PHILLYREAS, HOLLIES, &c.

[On] view the Morning of Sale, and Catalogues had.

Importation just received from Holland.

[I]N CONDITION, AND LOTTED TO SUIT PRIVATE BUYERS AND THE TRADE.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., [on W]EDNESDAY, October 1, at half-past 12 o'Clock precisely, [illegible] named DUTCH FLOWER ROOTS and BULBS, [consist]ing of 10,000 Double and Single Hyacinths, 600 Double [illegible] Tulips, 400 Polyanthus Narcissus, 18,500 Crocuses, [illegible] New Double and Single Anemones, 6000 Ranunculuses, [illegible], 1500 Snowdrops, 3000 Iris, 400 Jonquils, &c.

[On] view the Morning of Sale, and Catalogues had.

Imported Orchids.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., [on] FRIDAY, October 3, at half-past 12 o'Clock precisely, about [illegible] of LÆLIA PURPURATA in good condition, and [illegible] CATTLEYAS, stated to be new.

[On view] the Day prior and Morning of Sale; and Catalogues had.

Exhibition Plants.

MR. J. C. STEVENS begs to announce that he will SELL by AUCTION at his Great Room, 38, King Street, [Covent] Garden, W.C. on FRIDAY, October 3, at 3 o'Clock [illegible] the entire Stock of SPECIMEN PLANTS of [SPO]TTED and FANCY PELARGONIUMS of Messrs. [illegible] & Sons, Isleworth, who are giving up exhibiting, [illegible] an opportunity to Exhibitors, &c., seldom to be met [with]. Many of the plants have attained the enormous size of [illegible] feet in diameter. The Plants are in fine condition.

[O]n view the Morning of Sale, and Catalogues had.

Valuable and Rare Orchids.

MR. J. C. STEVENS begs to announce that he will [inclu]de in his Sale, at his Great Room, 38, King Street, [Covent] Garden, on FRIDAY, October 3, 30 fine Plants of the [inv]aluable CATTLEYA SUPERBA, very strong, many [illegible] showing bloom; 25 strong flowering Plants of [illegible]NIA CRISTATA, equally rare and beautiful; also [illegible] specimens of ONCIDIUM LANCEANUM SUPERBUM, [O]NCIDIUM LURIDUM GUTTATUM, IONOPSIS [illegible]CLATA SUPERBA, &c.

[O]n view the Morning of Sale, and Catalogues had.

Consignment of Plants from Ghent.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., [on S]ATURDAY, October 4, at half-past 12 o'Clock precisely, [C]AMELLIAS, with flower buds, 1 to 3 feet high; 800 [INDI]AN AZALEAS, bushy plants of the choicest varieties [illegible] flower buds; 500 HARDY RHODODENDRONS [illegible] named varieties; 200 bulbs of LILIUM UMBELLATUM [illegible]ATROSANGUINEUM; 300 strong roots of ASCLEPIAS [TU]BEROSA; Standard and Dwarf LAURUSTINUS, &c.

[On] view the Morning of Sale and Catalogues had.

[Dutch] Bulbs, Azaleas, Camellias, Pampas Grass, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., [on WE]DNESDAY, October 8, at half past 12 o'Clock precisely, [illegible] of Choice Hyacinths, Tulips, Crocuses, Iris, [illegible], Ranunculus, Anemones, Gladiolus, Scillas, Ixias, [illegible], Tritomas, Oxalis, Jonquils, &c. Also some fine [illegible] Azaleas, Camellias, Begonias, Hydrangeas, [Orange] [and Le]mon Trees, Isolepis, Cytisus, Myrtles, Pampas Grass, [illegible], Forsythias, Veronicas, &c.

On view the Morning of Sale, and Catalogues had.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, September 30, at 12 o'Clock precisely, a choice assortment of POULTRY, consisting of Cochins, Hamburghs, Polands, Dorkings, Spanish, Game, &c., from the yards of well-known breeders; also about 160 lots of VALUABLE PIGEONS, from Messrs. Hayne, Woodhouse, Everett, and others, comprising Carriers, Pouters, Tumblers, &c.

On view the Morning of Sale, and Catalogues had.

Important Sale of Established Orchids.

MR. J. C. STEVENS begs to announce that he will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, London, W.C., on THURSDAY, October 2, instead of the 9th, as previously announced, without the least reservation, the second and concluding portion of ESTABLISHED ORCHIDS, of G. REED, Esq., of Burnham, Somersetshire, who is giving up their culture, comprising amongst many others the following choice and well-known sorts:—

Aerides Fieldingi	Dendrobium moniliforme
„ virens	„ densiflorum
„ crispum	Lælia superbiens
„ affine	Lycaste Skinneri
„ Warneri	Phalænopsis amabilis, 9 plants
Angræcum species	„ grandiflora, 18 plants
Cymbidium giganteum	Saccolabium Reedi
„ eburneum	„ præmorsum
Cattleya Leopoldi	Vanda Batemani
„ Mossiæ	„ suavis (Veitch's)
„ intermedia	„ tricolor
„ guttata	„ teres
„ labiata	„ cœrulea
Cypripedium venustum	„ gigantea
Dendrobium Farmeri	Sobralia Ruckeri, &c.

Also the large Van used for taking Plants to the Exhibition.

On view the Morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS begs to announce that he will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on FRIDAY, October 3, the Collection of ESTABLISHED ORCHIDS, the property of a gentleman, comprising—

Aerides affine	Dendrobium Devonianum
„ roseum superbum	„ moniliforme
Cattleya granulosa	„ Farmeri
„ Leopoldi	„ densiflorum
„ labiata	Lælia purpurata
„ intermedia	„ superbiens
Cypripedium barbatum	„ anceps
„ insigne	„ autumnalis
Saccolabium Blumei	Oncidium Lanceanum
Tricopilia suavis	„ papilio
„ coccinea	Phalænopsis grandiflora
„ tortilis	Vanda cœrulea

&c., &c.

On view the Morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY, October 9, at half-past 12 o'Clock precisely, a choice assortment of RARE and VALUABLE ORCHIDS, comprising healthy Established Plants of the following well-known sorts:—

Aerides affine superbum	Cattleya lobata
„ crispum	„ Lemoniana
„ Fieldingii	„ maxima superba
„ Larpentæ	„ quadricolor
„ nobile	„ labiata picta
„ quinquevulnerum album	Lælia præstans
„ Veitchii	Cymbidium eburneum
Anguloa Ruckeri	Cypripedium Fairrieanum
„ uniflora	„ Veitchii
Vanda cristata	Lælia elegans
Burlingtonia candida	Saccolabium guttatum superbum

&c., &c.

On view the Morning of Sale, and Catalogues had.

Important Sale of Plants at the Arboretum,

LEAMINGTON SPA, WARWICKSHIRE.

MR. J. C. STEVENS has been favoured with instructions from the Proprietor, JOHN HITCHMAN, Esq., who is intending to erect a Hydropathic Establishment in the Arboretum, to SELL by AUCTION, on the Premises, on MONDAY, October 13, and five following days, at half-past 11 o'Clock each day, the Valuable and Extensive COLLECTION of SPECIMEN CONIFERS and other ORNAMENTAL PLANTS, consisting of upwards of 300,000, all of which have been well prepared for removal, having been frequently transplanted, and several hundreds of the choicer kinds, being grown in crates, including magnificent specimens (besides many others), of the following known kinds:—

Araucaria imbricata, 4 to 8 feet	Pinus tuberculata, 1 to 3 feet
Abies Douglasii, 6 to 9 feet	„ ponderosa, 2 to 4 feet
„ Menziesii, 5 to 8 feet	„ Sabiniana, 1 to 3 feet
Cedrus atlantica, 4 to 6 feet	„ Lambertiana, 1 to 4 feet
„ Deodara, 4 to 10 feet	Picea amabilis, 1 foot
„ Libani, 4 to 8 feet	„ grandis, 1 foot
Cryptomeria japonica, 4 to 9 ft.	„ Pinsapo, 1 to 7 feet
Cupressus Lambertiana, 2 to 3 ft.	„ Nordmanniana, 1 to 4 ft.
„ Lawsoniana, 1 to 4 feet	„ nobilis, 1 to 4 feet
„ McNabiana, 1 to 2 feet	Taxus ericoides, 1 to 4 feet
Cephalotaxus Fortuni, 1 to 3 ft.	„ aurea variegata, 1 to 3 ft.
Juniperus excelsa, 1 to 5 feet	„ elegantissima, 1 to 3 feet
„ chinensis, 1 to 4 feet	„ adpressa, 1 to 3 feet
„ dealbata, 1 to 3 feet	Thuja gigantea, 1 to 3 feet
Libocedrus decurrens, 1 foot	„ aurea, 1 to 2 feet
Pinus austriaca, 2 to 5 feet	Thujopsis borealis, 1 to 3 feet
„ Benthamiana, 3 to 4 feet (In crates.)	Wellingtonia gigantea, 1 to 4 ft.
Pinus excelsa, 2 to 10 feet	Yews (Irish), 6 to 10 feet
„ Jeffreyi, 1 to 3 feet	&c. &c.

Also various first-class Evergreens and Deciduous Trees and Shrubs of different sizes. Fine Dwarf-trained STANDARD and other FRUIT TREES, about 10,000 DWARF and STANDARD ROSES of the choicest named kinds, Rhododendrons, Camellias, Azaleas, Variegated and other Hollies, Portugal and Common Laurels, Forest Trees, and a variety of other Hardy and Greenhouse Plants.

May be viewed till the time of Sale, when Catalogues (1s. each, or by post 14 stamps, containing upwards of 160 pages of printed particulars, may be had at the Nursery; at the principal Inns at Banbury, Oxford, Coventry, Birmingham, Manchester, Rugby, Leicester, Northampton, Stratford, Derby, Worcester, Burton-on-Trent, Stratford-on-Avon, Warwick; and at Mr. J. C. STEVENS'S Auction Rooms and Offices, 38, King Street, Covent Garden, London. Approved Bills at 3 months will be taken of Purchasers above 50*l*.

The Arboretum is within five minutes' walk of the Leamington Stations on the Great Western and North Western Railways, which offers great facilities for transmitting the Plants to every part of the country. Frequent trains run daily to and from Leamington, and cheap trains three times a week from most of the principal towns.

Shacklewell.

TO GENTLEMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION on the Premises, Ebenezer Place, near the Queen's Printing Office, Shacklewell, N.E., on TUESDAY, Sept. 30, at 1 o'Clock, by order of the Proprietor, who is going abroad, the whole of the GREENHOUSE PLANTS, including the usual assortment, two Span-roof Greenhouses, Pits, and Sundry Effects.

May be viewed prior to the Sale. Catalogues may be had on the Premises; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

High Beech, Essex.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. James Crawford to SELL by AUCTION, on the Premises, opposite the King's Oak, High Beech, Essex, on TUESDAY, Oct. 7, at 11 o'Clock, about 10,000 Choice GREENHOUSE PLANTS, including fine Azalea indica from 1 to 2 feet, and Double Camellias, 3 to 8 feet, beautifully set with bloom-buds; Ericas, Epacris, Coronillas, Pultenæas, Genistas, Fairy Roses; Show, Fancy, and Scarlet Geraniums; Fuchsias, Lycopodiums, 600 choice Ferns, Persian Cyclamen, Weigela, 8000 choice named Roses in pots, Cinerarias, Chrysanthemums, Deutzia gracilis; 700 strong VINES from Eyes, comprising the most approved named varieties; 1000 choice GOOSEBERRIES and CURRANTS; JASMINUM, sorts, &c.

May be viewed four days prior to the Sale. Catalogues may be had on the Premises; at the Eagle, Snaresbrook; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

Preliminary Notice of an Important Sale

AT MILFORD NURSERIES, NEAR GODALMING, SURREY.

MESSRS. PROTHEROE AND MORRIS are instructed by the Executors of the late Mr. William Young, to Submit to an unreserved SALE by AUCTION, on the Premises, Milford Nurseries, near Godalming, Surrey, and within 10 minutes walk of the Milford Station, on the South Western Railway, early in OCTOBER, a portion of the valuable NURSERY STOCK, consisting of choice Conifers and large Evergreens, &c., including magnificent specimen Cedars of Lebanon, Cedrus Deodara, Abies Douglasii, Menziesii; Picea Pinsapo, 6 to 8 feet, Nordmanniana; Pinus excelsa, insignis, Cembra, austriaca, Benthamiana, &c.; Chinese and other Arbor-vitæ, 1000 very fine Araucaria imbricata, from 1½ to 6 feet; 1000 Irish Yews, 1000 English Yews, 6 to 11 feet, many of which are beautifully fanned; 300 magnificent Lucomb Oaks, the best variety; handsome Weeping Ash, Fern-leaved Beech, and other Ornamental Trees.

This Stock (which will be more fully described in future advertisements) is well worthy the attention of Noblemen, Gentlemen, and the Trade requiring handsome symmetrical-formed Conifers and other magnificent specimens for immediate effect.

May be viewed prior to the Sale; and Catalogues when ready may be obtained on the Premises; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

Maidstone.

IMPORTANT SALE OF FRUIT AND OTHER TREES, EVERGREENS, AND SHRUBS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION on the Premises, the Bower Nurseries, Maidstone, Kent, on MONDAY, October 13, and following days, at 11 o'Clock, by order of the Proprietor, the land being taken for other purposes, the whole of the valuable NURSERY STOCK, extending over seven acres, and in a fine healthy condition, comprising many thousands of Standard and Dwarf-trained, Untrained, and Pyramidal Fruit Trees, and upwards of 14,000 Maiden Apples, Pears, Plums, Cherries, Apricots, &c.; also a large assortment of Ornamental and Forest Trees, consisting of Limes, Weeping and other Ash, Thorns, Laburnums, Acacias, Willows, Chestnuts, Birch, Maple, Planes, Sycamore, Beech, Cypress, Elms, Poplars, Oaks, &c.; Evergreens, Conifers, and Deciduous Shrubs, ranging all sizes (all of which will remove safely, having been only two years transplanted), including Variegated and Green Holly, Irish and Fan Yews, Portugal and Common Laurel, Chinese and other Privet, Aucuba, Cotoneaster, Arbor-vitæ, Euonymus, Phillyreas, Bays, &c.; handsome Cedrus Deodara, Libani, Libocedrus, Pinus sorts, Picea, Taxus adpressa, Thuja, Wellingtonia gigantea, Thujopsis borealis, &c.; Deutzia, Spiræa, Syringa, &c.; together with about 2000 very fine Standard and Dwarf Roses, several thousand Quick, Larch, Box Edging, &c.

May be viewed prior to the Sale. Catalogues may be had, 6*d*. each, returnable to purchasers, on the Premises; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

Important Sale of First-class Short-horns,

AT BUSHEY GROVE FARM, NEAR WATFORD, HERTS.

MR. WETHERELL is honoured with instructions from Stewart Marjoribanks, Esq., of Bushey Grove, to SELL by AUCTION, on WEDNESDAY, October 1, his entire and very valuable HERD of SHORT HORNS, comprising about 89 head of Bulls, Cows, and Heifers, of different ages. Amongst the Bulls are Great Mogul (14,651), and Whipper-in (19,139), both First Prize Winners at the Royal Society's and other great Shows, and Royal Butterfly 5th (18,756), descended from one of the best tribes in England. The Cows and Heifers include the Winners of many Prizes at the Royal, the Yorkshire, and other principal Shows; also the Dams of Harkaway, Rose of Bushey, and Whipper-in, successive Winners of First Prizes at the Royal Society's Meetings. The Herd is perfectly healthy, and breeding extremely well. The Cows and Heifers are served by Great Mogul (14,651), Royal Butterfly 5th (18,756), and Whipper-in (19,139), particulars of which will be given at the time of Sale. Mr. WETHERELL'S instructions are positive—every lot will be sold without reserve, as Mr. Marjoribanks is discontinuing the Breeding of Short-horns.

Also will be Sold, an excellent Two-wheel CATTLE VAN, nearly new, built for Mr. Marjoribanks, with Patent Axles, &c.

Catalogues are now ready, and may be had of Mr. TALLANT, Bushey Grove Farm, Watford; or of Mr. WETHERELL, Aldborough, Darlington.

The Stock can be seen any day previous to the Sale (Sundays excepted), on application to Mr. TALLANT, at the Farm.

Luncheon at 12; Sale to commence at 1 o'Clock.

By permission of the Directors of the North Western Company, Trains leaving Rugby 10.35 A.M., Blisworth 7.25 A.M., Euston 10.30 A.M., will, on October 1, stop at Bushey Station, in addition to the regular Trains which stop there. Trains leaving Euston 6.15 P.M. down, Watford 3.50 P.M. for London, Watford 6.55 P.M. for London, and Watford 7.41 P.M. for London, will also stop at Bushey Station for the convenience of persons leaving the sale. Bushey Grove Farm is only half a mile from Bushey Station.—Aldborough, Sept. 27.

GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES

FOR THE PRESENT SEASON 1862,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

THESE MACHINES were entered at the Royal Horticultural Society's Great Shows held at South Kensington, May 21, June 11, and July 2. They were the only Machines Highly Commended (no Prizes were given). They have carried off every Prize that has been given in all cases of Competition, and have just been awarded the Prize Medal of the Great International Exhibition, July 11, 1862.

GREEN'S PATENT LAWN MOWERS have attained the largest sale of any Machines extant, and are in constant use at the Royal Gardens, Windsor; the Royal Horticultural Society's Gardens, South Kensington; the Royal Botanic Gardens, Regent's Park; the Crystal Palace Company's Gardens, Sydenham; the Kensington Palace Gardens; the Hyde Park Gardens; and in most of the Nobility, Clergy, and Gentry's Parks, Squares, &c., throughout the Kingdom.

Suitable for One Person.

To Cut 12 inches	£5 0 0
To Cut 14 inches	5 10 0

Suitable for One Man or Two Boys.

To Cut 16 inches	£6 10 0

Suitable for One Man and Boy.

		With Patent Delivery Box.
To Cut 18 inches	£7 10 0	£8 15 0
To Cut 20 inches	8 0 0	9 5 0

Suitable for Two Men.

		With Patent Delivery Box.
To Cut 22 inches	£8 10 0	£9 17 6
To Cut 24 inches	9 0 0	10 7 6

To Cut 10 inches. Suitable for a Lady.

This Machine will be securely packed, and forwarded, carriage paid, to any principal Railway Station or Shipping Port in England, on receipt of Post-office Order or Cheque for 3*l.* 10*s.* If not approved of, and sent back at once, the money will be returned.

All Hand Machines have the Patent Self-Cleaning and Self-Sharpening arrangements, and require no Box of Requisites.

Prices of Horse Machines, including Box of Requisites and Traces.

	With Collecting Box.	With Patent Delivery Box.
To Cut 30 inches	£20 0 0	£21 10 0
To Cut 36 inches	23 0 0	24 16 0
To Cut 42 inches	26 0 0	28 2 0
To Cut 48 inches	29 0 0	31 8 0

Leather Boots for Horse, per set, £1 4*s.*

Donkey and Pony Machines, including Box of Requisites & Traces.

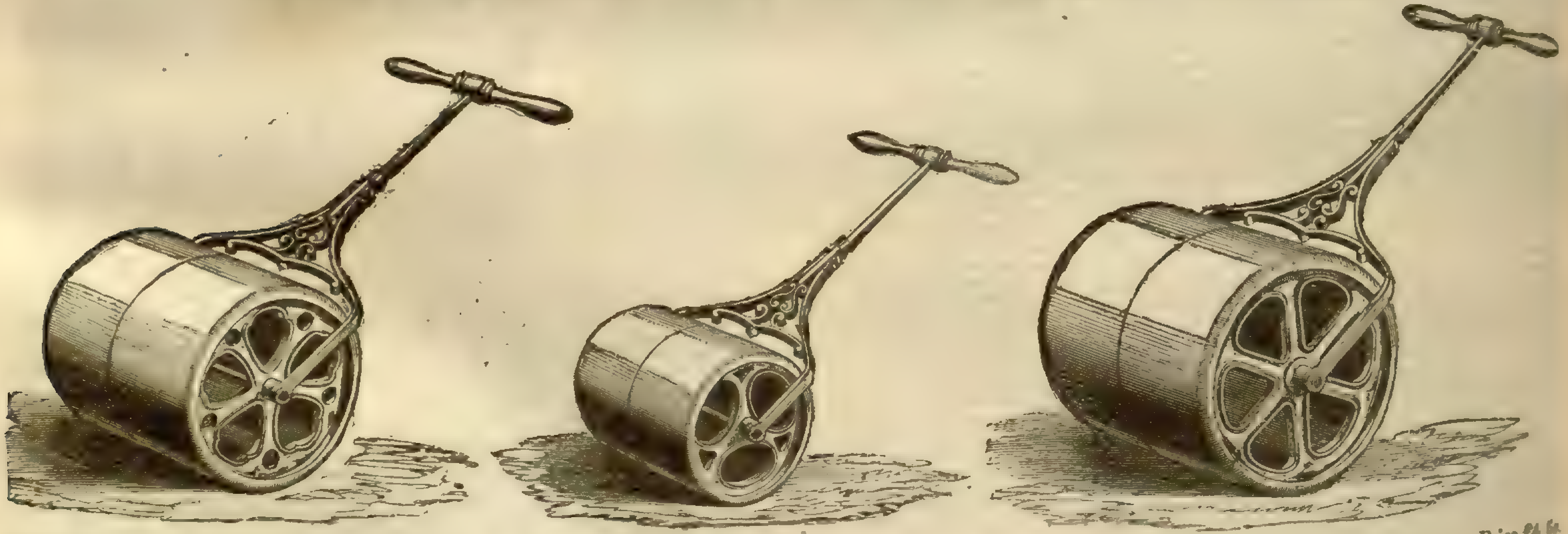
	With Collecting Box.	With Patent Delivery Box.
To Cut 24 inches	£11 10 0	£12 10 0
To Cut 26 inches	12 10 0	13 12 0
To Cut 30 inches	16 14 0	18 0 0

Leather Boots for Donkey, 16*s.*; for Pony, 20*s.*

The above Machines are made from the best materials, and of superior workmanship; are delivered carriage free to all the principal Railway Stations and Shipping Ports in England; are warranted to give satisfaction, and if not approved of can be at once returned, if sent carriage free to Leeds.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.



Diameter 20 inches, length 22 inches.... Price £3 5*s.* | Diameter 16 inches, length 17 inches.... Price £2 10*s.* | Diameter 24 inches, length 26 inches.... Price £4 5*s.*

Delivered Carriage free to all the principal Railway Stations and Shipping Ports in England.

T. GREEN in introducing the above is well aware that the extremely simple character of this Implement cannot admit of any very radical change, yet he is confident that the Improvement just effected (and secured by Letters Patent) is a real one, and is strikingly apparent when compared with any other Garden Roller. In previous Rollers a limit was always set to weight in consequence of marks being left on the gravel, and the power required to work them, but the present one is nearly double the ordinary weight, yet is considerably easier to turn in consequence of the Roller being divided in two parts, and the outer edges being rounded off or turned inwards, thus avoiding the *unsightly marks* left by all others hitherto in use. They can be used by the most unskilful with the greatest certainty of producing a beautifully even surface, either on *Lawns or Gravel Paths*, and for the *Bowling Green and Cricket Field are really indispensable.* They are manufactured of the best materials, and got up in a manner surpassing any ever yet brought out.

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C. Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, in the Parish of St. Pancras, in the Co. of Middlesex, and FREDERICK MULLETT EVANS, of No 11, Bouverie St., in the Precinct of Whitefriars, City of London, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St Paul's, Covent Garden, in the said Co.—SATURDAY, September 27, 1862.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 40.—1862.] SATURDAY, OCTOBER 4. {Price Fivepence. STAMPED EDITION, 6d.

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An Edition of the GARDENERS' CHRONICLE *and* AGRICULTURAL GAZETTE *is published on Monday Afternoon at 4 o'Clock, containing full Reports of the Mark Lane and Cattle Markets, written expressly for the Paper.*

ROYAL HORTICULTURAL SOCIETY'S INTERNATIONAL FRUIT, CEREAL, &c., SHOW will commence on WEDNESDAY NEXT, October 8.

GREAT INTERNATIONAL FRUIT, VEGETABLE, ROOT, CEREAL, and GOURD SHOW, at SOUTH KENSINGTON, OCTOBER 8, 9 and 10. The Roots, Cereals, and Gourds will remain on Exhibition until the 18th.
Oct. 8.—Doors open at 1 o'Clock. Bands at 2 o'Clock. Admission, Half-a-Crown.
Oct. 9, 10, 11, 13 to 18.—Doors open at 9 o'Clock. Bands at 2 o'Clock. Admission, One Shilling daily.

ROYAL HORTICULTURAL SOCIETY'S GREAT INTERNATIONAL FRUIT, VEGETABLE, ROOT, CEREAL and GOURD SHOW, OCTOBER 8.
By direction of the Council, the following articles have been added to the Schedule, for the best collection of which respectively a Bronze Medal will be given:—Class 53, Peas; Class 54, Beans; Class 55, Clover and Grass Seeds; Class 56, Miscellaneous Seeds not included in any other class.

INTERNATIONAL EXHIBITION and ROYAL HORTICULTURAL GARDEN.
GREAT FRUIT, &c., SHOW, OCTOBER 8.
The Garden will be open at 1 o'Clock. Visitors cannot be admitted, either from the Exhibition to the Garden or to the Exhibition through the Garden, before that hour.

HORTICULTURAL GREAT SHOW, WEDNESDAY NEXT, October 8. Doors open at 1 o'Clock. Royal Artillery and Scots Fusilier Guards' Bands at ... o'Clock. Admission, Half-a-Crown.

New Rose Catalogue for 1862-63.
WM. WOOD and SON'S NEW CATALOGUES of ROSES, BULBS, and NURSERY STOCK are now ready for distribution, and will be sent free on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

PAUL AND SON'S TRADE LIST of ROSES and GENERAL STOCK is now ready, and may be had on application, enclosing card.
Old Nurseries, Cheshunt, Herts.

Rose Catalogue.
PAUL AND SON'S DESCRIPTIVE PRICED CATALOGUE is now ready, and will be forwarded by post on application.
Also a fine collection of EVERGREENS and FLOWERING SHRUBS, FRUIT and FOREST TREES of all descriptions.
Old Nurseries, Cheshunt, Herts.

Rose Catalogue, 1862-63.
WM. PAUL'S ROSE CATALOGUE is now ready for circulation. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

ROSES.—The DESCRIPTIVE CATALOGUE of ROSES for the Autumn, by THOS. RIVERS, is now ready. It is so arranged as to be a safe guide to the purchaser. Free by post on application.
Nurseries, Sawbridgeworth.

Rose and Bulb Catalogues for 1862-3.
EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded gratis and post-free on application.
Seed and Nursery Establishment, Tunbridge Wells, Kent.

Roses.
EDWARD PARKE FRANCIS'S NEW and DESCRIPTIVE CATALOGUE of ROSES for 1862 and 1863 is now ready, and will be forwarded gratis on application.
E. P. F. has 50,000 DWARF ROSES in the finest state of cultivation on the Manetti Stock.
Rose Nurseries, Hertford.

Royal Nursery, Great Yarmouth.
YOUELL AND CO.'S New CATALOGUE of GREENHOUSE PLANTS, Rare and Hardy CONIFERÆ, ROSES, GLADIOLI, &c., is ready, and will be forwarded on application.

JAMES CARTER AND CO.,
SEED MERCHANTS and NURSERYMEN,
237 and 238, High Holborn, London, W.C.

Hyacinths, Crocuses, &c.
JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

Hyacinths, Crocuses, &c.
JAMES CARTER AND CO.'s first consignment of DUTCH BULBS has arrived in splendid condition. CATALOGUES free of charge on application to
237 and 238, High Holborn, London, W.C.

MINIATURE HYACINTHS.
The best sorts of Miniature Hyacinths by name at 5s. per dozen.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

MINIATURE HYACINTHS.
12 in 12 choice varieties, 4s. and 6s. per dozen.
MINIATURE HYACINTH GLASSES, 4s. 6d. per dozen.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, W.C.

Hyacinths, Tulips, Narcissus, Crocus, &c.
BARR AND SUGDEN'S stock of the above is large and of prime quality. Early orders solicited.
BARR & SUGDEN, Seed Merchants, &c. (see large advertisement), 12, King Street, Covent Garden, W.C. (Opposite the Garrick Club).

Wellington Road Nursery, St. John's Wood, London.
MESSRS. E. G. HENDERSON AND SON'S BULB CATALOGUE is forwarded post free on application.

Hyacinths, &c.
WM. PAUL'S DESCRIPTIVE CATALOGUE of HYACINTHS and other DUTCH BULBS, with Hints on Culture, is now ready. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Dutch Flower Roots.
JOHN BELL begs to announce the safe arrival of his Annual Importation of the above in fine condition.
CATALOGUES post free on application at his
Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Dutch Bulbs.
CHARLES TURNER'S CATALOGUE of a selection of the best in each class is now ready, and will be forwarded on application post free.
The Royal Nurseries, Slough.

Wm. Cutbush & Son's Dutch Bulb Catalogue.
WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE and PRICED CATALOGUE of HYACINTHS and other Dutch Flower Roots is now ready, post free, on application.
Highgate Nurseries, London, N.

Hyacinths, Tulips, Crocuses, &c.
BUTLER AND McCULLOCH'S DESCRIPTIVE CATALOGUE of BULBS, containing ample Cultural Directions, may be had free and post paid upon application.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

HYACINTHS, TULIPS, CROCUSES, and other DUTCH BULBS, just arrived in excellent condition.
PRICED CATALOGUES on application to
S. PONSFORD, Loughboro' Park Nurseries, Brixton, Surrey, S.
N.B. CATALOGUES of GENERAL NURSERY STOCK will be ready at the end of this month.

DUTCH BULBS, HYACINTHS, 3s., 4s., and 6s. per dozen; CROCUS and SNOWDROPS, 1s. 6d. per 100. Catalogues on application. British and Foreign FERNS, FERN CASES and AQUARIUMS in immense variety. Real Sea Water, 6d. per gallon.
R. GREEN, 154, Kingsland Road; and Bedford Conservatories, Covent Garden Market. Entrance, Centre Avenue only.

Camellia Stocks.
W. H. ROGERS, Red Lodge Nursery, Southampton, offers the above in single pots, fit for immediate working, at 40s. per 100.

WELLINGTONIA GIGANTEA, superb specimens, all Seedling plants, from 6 to 12 feet high. Can be insured to be transplanted with safety to any distance.
Prices on application to WILLIAM BARRON, Elvaston Castle, Derby.

WELLINGTONIA GIGANTEA.—The undersigned has to offer a very large and fine stock of healthy one year Seedling Plants established in single pots; also a few plants of larger sizes. Price per 100 or 1000 on application.
J. HENCHMAN, Edmonton, London, N.

Agricultural Seeds.
GEORGE GIBBS AND CO.,
SEEDSMEN,
26, Down Street, Piccadilly, London, W.

Early Cabbage Plants.
W. VIRGO AND SON, Wonersh Nursery, Guildford, have a large quantity of strong, healthy plants of the following sorts to offer for Sale at 3s. 6d. per 1000, viz.:—

EARLY YORK,	NONPAREIL, and
BARNES,	BATTERSEA.

SEED WHEATS from the Chiltern Hills.—For names, description and particulars see Advertisement in *Gardeners' Chronicle* of 20th September, 1862, or apply to the Grower, Mr. R. C. M. YOUNG, Flint Hall, Hambleden, Henley-on-Thames.

Good Seeds, Carriage Free, at Market Prices.
SUTTON AND SONS,
SEED GROWERS and MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds for Autumn Sowing.
DELIVERED FREE AT NEAREST RAILWAY STATION.
PETER LAWSON AND SON,
THE QUEEN'S SEEDSMEN.
27, Great George Street, Westminster, S.W.

Agricultural and Garden Seeds.
H. AND F. SHARPE,
SEED GROWERS and MERCHANTS, Wisbech.
Special PRICED LIST of NEW SEEDS on application.

Strawberries.
CHARLES TURNER can still supply strong Plants for Fruiting next season of all the leading kinds.
CATALOGUES may be had on application.
The Royal Nurseries, Slough.

STRAWBERRIES.—Admiral Dundas, British Queen, Elton Pine, Eleanor and Wizard of the North, 15s. per 1000, 2s. per 100; Eliza, Black Prince, Prince of Wales, Princess Royal, Princess Alice Maud, Keen's Seedling, and Oscar, 2s. per 100, Trade price.
GEO. CORNWELL, Seedsman, &c., Barnet, Herts, N.

STRAWBERRIES.—A New DESCRIPTIVE CATALOGUE of more than 200 Varieties of STRAWBERRIES, free.
Good laid plants of nearly every variety can now be supplied by the Grower,
W. J. NICHOLSON, Egglescliffe, near Yarm, Yorkshire.

Grape Vines.
WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines.
J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines from Eyes.
LUCOMBE, PINCE AND CO. have a fine healthy stock of strong VINES, from 6 to 10 feet long, of all the choicest sorts, fit for immediate planting, propagated from Eyes taken from their own experimental Vinery, which enables them to warrant each kind true to name.
LISTS of Sorts and prices may be had on application.
Exeter Nursery, Exeter.

Grape Vines.
B. S. WILLIAMS begs to intimate that he has a fine and healthy stock of the above from Eyes, including all the best varieties for Fruiting in Pots and Planting Out. Prices on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Hurst House Seedling Pine.
B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer good plants of this choice Pine Apple, 10s. 6d., 15s., 21s. each.
The plant is of dwarf robust habit, producing heavy fruit of the richest flavour.
A large Stock of PRICKLY and SMOOTH CAYENNE PINES.

PINE SUCKERS.—Five hundred QUEEN SUCKERS, more or less, to be sold cheap. Warranted clean and healthy, and from plants which never had the Scale.
Apply by letter to C. C., Mr. McGregor, Seedsman, Merthyr Tydvil.

FOR SALE, good PINE APPLE PLANTS, of various kinds.
Particulars on application to Mr. ROSS, Stockwood, Luton, Beds.

FRUIT TREES.—The DESCRIPTIVE CATALOGUE of FRUITS for 1862, by THOS. RIVERS, will be ready for delivery about the 12th inst.
Nurseries, Sawbridgeworth.—October 4.

WANTED, a Standard ORANGE TREE, about 4½ feet in the stem, with nice head, not less than 3½ feet through.
Apply by letter, stating price, &c., to Messrs. ARTHUR HENDERSON & Co., Plant and Seed Merchants, Pine-Apple Place, Edgeware Road, W.

WANTED, in small or large quantities, BLACK THORN. Apply, stating quantity, price and height, to JOHN PERKINS, 52, Market Square, Northampton.

Black Thorn Wanted
WANTED to PURCHASE, Seedling and Transplanted BLACK THORN.
Apply, stating average size, quantity, and price of each per 1000, to FRANCIS & ARTHUR DICKSON & SONS, "Upton" Nurseries, Chester.

FOR SALE, a large Collection of BRITISH and EXOTIC FERNS, at
J. ILLMAN'S Nursery, Wellington Place, Strood, Kent.

TO THE TRADE.—We beg to offer Transplanted THORN, CRAB, BEECH, HORNBEAM, OAK, ALDER, LARCH, and SILVER FIRS, and are in want of several articles that our friends may have to offer. Early communications will oblige.
JOSEPH TREMBLE & SONS, Penrith.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.
Exotic Nursery, Tooting, Surrey, S.

Autumn, Winter, and Spring Bedding Plants.

J. SCOTT, MERRIOTT NURSERIES, Somerset, begs to say that his DESCRIPTIVE CATALOGUE of DUTCH BULBS, Late Autumn, Winter, and Spring BEDDING PLANTS is now ready. It is arranged in Two Parts. 1st, Dutch and other Bulbs, in charming variety, imported direct from Holland. Part 2, How to Plant Autumn, Winter, and Spring Beds, with Copious Lists of all the best plants suited to garden ornamentation during the months of November and December to the beginning of May.
Prepaid application, enclosing two postage stamps.

20,000 Hyacinths, 20,000 Tulips, 10,000 Snowdrops, and 100,000 Crocus and Narcissus.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, the largest Grower of the above in England. J. H. B. has just Purchased, for ready money, in Holland, in addition to his usual Large Stock, the above Surplus Stocks of some very large growers, which he now offers at unheard of Low Prices. The following Roots for 1*l.* :—50 Hyacinths in twenty-five splendid sorts; 150 Early Tulips, sorts; 200 Crocuses, mixed; 50 Snowdrops, and 12 very large noble Narcissuses. Half the above quantity for 10*s.* 6*d.*

HYACINTHS, in 10, 20, 30, 40, or 50 splendid Varieties, at One Guinea per 100. Less by the 1000.

LILIUM LANCIFOLIUM RUBRUM (true), large roots, 1*s.* each, 10*s.* per dozen, 3*l.* 5*s.* per 100, or 30*l.* per 1000.

N.B.—To save trouble all Orders to be prepaid.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON AND CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.
Pine Apple Place, Edgeware Road, London, W.

Notice to Purchasers of Bulbs.

SUTTON'S BULB LIST, post free, contains all the most desirable sorts in cultivation, and at low prices.
Royal Berkshire Seed Establishment, Reading.

SEEDSMEN BY APPOINTMENT
Sutton AND Sons

HYACINTHS for EXHIBITION.
FRESH IMPORTED BULBS.
SUTTON'S SELECTION.

	per 100.	Dozen.
Finest sorts by name ..	£4 4*s.*	12*s.*
Very fine ditto ..	3 10	9
Good ditto ..	2 10	6

Good Hyacinths for Beds, Ribands, &c. in separate colours (fresh imported), 21*s.* per 100.

Anemones, Crocuses, Tulips, Gladioli, &c., also very low in prices, as per CATALOGUE, which may be had gratis and post free.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

J. C. WHEELER AND SON

Glo'ster

J. C. WHEELER AND SON, SEED GROWERS, Gloucester, have imported in excellent condition a large

COLLECTION of HYACINTHS,

including the extra fine varieties recommended by Dr. LINDLEY.

PRICED LISTS may be had gratis on application to the Importers,

Messrs. J. C. WHEELER & SON,
Gloucester.

New Crimson Bedding Shrubby Calceolarias.

MESSRS. JOHN AND CHARLES LEE having purchased the Stock of SEEDLING CALCEOLARIAS raised by Mr. Watson, of St. Albans, intend to offer them for SALE in the SPRING of 1863. All the varieties are decidedly shrubby, and vary in colour from bright orange to scarlet, crimson and deep purple. The flowers are large and conspicuous, and the habits very dwarf and spreading.
Nursery and Seed Establishment, Hammersmith, London, W.

Hardy Scarlet and other Choice Rhododendrons.

JOHN WATERER'S CATALOGUE of the above popular plants, as exhibited by him at the Royal Botanic Gardens, Regent's Park, is now published, and will be forwarded to all applicants.

It describes faithfully the colours of all the Rhododendrons, thereby rendering every facility for making selections.

It likewise contains an abridged List of really Hardy Conifers, with their heights and prices.
The American Nursery, Bagshot, Surrey.

Cupressus Lawsonia variegata.

JOHN WATERER has the pleasure to announce that he is prepared to execute orders for the above New and desirable CYPRESS. It is a Seedling of his own, raised from imported seed, of golden variegation, quite equal to Chamæcyparis variegata.

Its habit is more bushy than Lawsonia, with a greater tendency to a drooping form.

It has been exhibited at the Royal Botanic Society's Exhibition, and was awarded the highest Prize for New and Rare Plants.

Good plants, 21*s.* each. | Good larger plants, 31*s.* 6*d.* each.
A few extra large plants, 42*s.* each.
The usual allowance to the Trade.
The American Nursery, Bagshot, Surrey.

Notice.

B. S. WILLIAMS begs to intimate that the following DESCRIPTIVE and PRICED CATALOGUES may be had post free on application.

GENERAL CATALOGUE, including Exotic Orchids, Ferns, and Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c.

BULB CATALOGUE contains Select Lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladioli, Amaryllis, and many other choice Bulbs, with Hints on their Culture; to which is added a SUPPLEMENTAL LIST of New, Beautiful, and Rare Plants.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING 1863, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.
Woking Nursery, Surrey.

Fine Camellias and Azaleas.

F. AND A. SMITH have an immense stock of AZALEAS and CAMELLIAS well set with flower buds, of fine growth and in healthy condition, now offering at moderate prices, which may be had on application.
Dulwich, Surrey, S.

Cineraria and Calceolaria Seed.

F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1*s.*, 1*s.* 6*d.*, and 2*s.* 6*d.*, free by post.
Dulwich, Surrey, S.

CHOICE HARDY CONIFERS.

		s.	*d.*
ARAUCARIA IMBRICATA, 1 year, strong,	p. doz.	6	0
CUPRESSUS LAWSONIANA, 1 year, strong.	,,	3	0
,, MACROCARPA, 6 inches ..	,,	3	0
PICEA NORDMANNIANA, 1 year	,,	12	0
PINUS DON PEDRI, 1 foot	,,	9	0
,, INSIGNIS, 6 inches	,,	3	0
,, PONDEROSA, 6 inches	,,	6	0
THUJA ELEGANS or LOBBII, 1 foot ..	,,	6	0
WELLINGTONIA GIGANTEA, 1 year, strong	,,	12	0
,, ,, in 48 pots, 8 ins.	,,	24	0
,, ,, in 32 pots, 1 ft., fine	,,	42	0

The above are all healthy seedling plants in pots, ready for immediate planting out.
J. HENCHMAN, Edmonton, London, N.E.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, [illegible] price, popular and botanical names, derivation, [illegible] form, colour, foliage, growth, timber, [illegible] country and size there, situation, soil, and [illegible] with copious Index of all their synonymes. [illegible] 12 postage stamps.
RICHARD SMITH, Nurseryman, Worcester.

50 LARGE GREENHOUSE and other PLANTS for 8*l.*; 10 large CAMELLIAS, 5 to 6 feet; [illegible] AZALEAS, large bushy plants, sorts; ACACIAS, EPACRISES, HEATHS, CACTI, several worked and other Plants of sorts, [illegible]
Apply to Mr. SURMAN, Nurseryman, Lavender [illegible] Wandsworth, S.W.

3000 DEODARS, 1000 CUPRESSUS LAWSONIANA, 1000 C. MACROCARPA, [illegible] THUJA LOBBII. The above are offered very cheap. [illegible] Deodars are handsome well grown plants, from [illegible] and have been transplanted every autumn for [illegible] years. The others are fine healthy plants varying from [illegible] feet high.

Prices on application to J. SCOTT, Merriott, Crewkerne, Somerset.

Gladiolus Brenchleyensis (True).

YOUELL AND CO. beg to offer this season strong Flowering BULBS of the above, unequalled by any other for its brilliancy of colour, at 3*s.* 6*d.* per dozen; or [illegible] Trade price on application, and when quantities are [illegible] a considerable reduction will be made.

The *Gardeners' Chronicle* of August 23, 1862, says:—"The spikes you have sent us are magnificent. We have [illegible] nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."

CATALOGUES of their extensive Collection, for which [illegible] First Class Prize was awarded at the Crystal Palace Show, Sept. 3, 1862, and two First Class Prizes at the Royal Horticultural Society's Show, South Kensington, Sept. 10, 1862, will be forwarded on application.
Royal Nurseries, Great Yarmouth.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs to announce that his New GENERAL CATALOGUE of PLANTS is just published, and may be had on application to his Agents, Messrs. R. SILBERRAD & SON, 5, Harp Lane, Great Tower Street, London, E.C.

A. V. G. begs to offer nice young plants of—
LOMARIA DISCOLOR, at 24*s.* per dozen.
AGAVE SCHIEDIGERA, 60*s.* per dozen.

HYACINTHS AND OTHER DUTCH BULBS.

WM. CUTBUSH & SON'S

CELEBRATED

COLLECTIONS OF CHOICE BULBS FOR FORCING OR OPEN AIR CULTURE

are now ready for delivery at 21s., 42s., 63s., 105s.

For details, see APPENDIX to their CATALOGUE, post free on application.

Their own selection of the FINEST HYACINTHS can be supplied at 9*s.*, 12*s.*, 15*s.*, and 18*s.* per dozen.

HIGHGATE NURSERIES, LONDON, N.

SUTTON'S

SEEDSMEN BY APPOINTMENT
Sutton AND Sons

UNRIVALLED COLLECTIONS OF

BULBOUS FLOWER ROOTS,

FOR BLOOMING DURING THE WINTER AND SPRING.

SEEDSMEN BY APPOINTMENT
Sutton AND Sons

THESE are every year becoming more popularly cultivated, and the HYACINTHS, ANEMONES, TULIPS, &c., which we imported last season from the celebrated Dutch Florists, Messrs. de Boom, Veen, Byvoet, and others, having been so generally admired, we have imported from the same parties, and still more extensively. *As many of these sorts are at present unknown to English cultivators, we have considered it advisable to make up Collections* of the sorts which, after careful observation, we have found to be the best worthy of cultivation, being THE MOST SHOWY AND MOST CERTAIN TO THRIVE WELL under any ordinary treatment, and for which any good Garden soil (not particularly heavy) will be suitable.

SUTTON'S COLLECTION of HARDY FLOWER ROOTS for OPEN GROUND.

	£	*s.*	*d.*
No. 1. A large and Choice Collection of ANEMONES, HYACINTHS, CROCUSES, TULIPS, RANUNCULI, NARCISSI, SNOWDROPS, IRISES, GLADIOLI, &c.	2	2	
No. 2. Ditto ditto, consisting of all the same kinds, in Reduced Quantities	1	1	
No. 3. A Small and Choice ditto	0	10	6

SORTS for FLOWER POTS and GLASSES.

	£	*s.*	*d.*
No. 4. A splendid Collection of HYACINTHS, JONQUILS, NARCISSI, EARLY TULIPS, New large CROCUSES, &c.	2	2	
No. 5. The same in Reduced Quantities	1	1	
No. 6. A Small and Choice Assortment	0	10	6

N.B. A complete LIST of the above may be had post free, and any article specified, if not required, will be omitted, and additional quantities of others included.

The very low charges now made for the above Choice Collections of Flower Roots will, it is believed, insure a continually increasing demand.

Early Orders are requested before the more scarce kinds are all sold.

SUTTON'S AUTUMN CATALOGUE,

Containing Descriptive Lists of the best varieties of HYACINTHS, GLADIOLI, ANEMONES, CROCUSES, and other Bulbous Roots, Choice STOVE and GREENHOUSE PLANTS, FERNS, AMERICAN PLANTS, ROSES, CARNATIONS, and other Florists' Flowers, FRUIT TREES, New GARDEN SEEDS, &c., may be had gratis and post free on application.

All Goods sent Carriage Free.

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

SEED REQUIRED IN OCTOBER: FIRST HALF, ONE BUSHEL ON THREE ACRES; LAST HALF, ONE BUSHEL ON TWO ACRES.

CAUTION.—THE BRIGHTON WHEAT HAS BEEN SELECTED FOR SEVERAL GENERATIONS FURTHER, AND WILL PRODUCE 10 PER CENT. MORE THAN THAT GROWN FROM WHEAT PURCHASED IN PREVIOUS YEARS, AND CAN BE OBTAINED OF MR. HALLETT ALONE, OR OF HIS AGENTS.

HALLETT'S PEDIGREE NURSERY WHEAT,

"BRED" ON THE SAME PRINCIPLE OF **REPEATED** SELECTION WHICH HAS PRODUCED OUR PURE RACES OF ANIMALS.

"This year's seed is, from longer continued selection, so superior in 'pedigree' power and in 'sample' to any he has ever before sent out, that Mr. Hallett will disclaim the results of any trials made in 1862-3, unless the seed] have been obtained this year direct from him, or his authorised Agents."

Extract from a Letter just received:—"Your Wheat produced the finest ears and the largest produce ever seen in Western Australia."

1861, ACTUAL SIZE AFTER FOUR YEARS' **REPEATED** SELECTION, STARTING FROM A **SINGLE GRAIN** IN EACH YEAR.

Price Two Guineas a Bushel, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order. Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

Man kann Bestellungen machen bei den Agenten Herrn Krelage und Sohn, Haarlem, Holland; und Francfurt-am-Main, Deutschland.

A Printed Paper, "HOW OUR WHEAT CROPS MAY BE DOUBLED," and COPIES of LEADING ARTICLES from the *TIMES, AGRICULTURAL GAZETTE*, and *MARK LANE EXPRESS*, FORWARDED UPON APPLICATION, ENCLOSING TWO STAMPS.

Hallett's Pedigree Wheat.

W. COOPER, Farmer, Fen Drayton, St. Ives, Hunts, begs to inform Agriculturists that he has a quantity of the above, warranted grown from seed supplied by Mr. Hallett. Price 10s. 6d. per bushel. Also some GIANT RED, at 9s. per bushel.

Delivered on the Great Northern and Great Eastern Railways. New Sacks charged 1s. 6d. each.

SHIRREFF'S BEARDED WHITE WHEAT, which for bright straw, handsome ear, and fine grain, may be considered the most beautiful of British Wheats, is now being delivered. Price of selected parcels, 80s. per quarter. Quantities under half a quarter, 12s. per bushel.

Haddington, October 3. Patrick Shirreff.

Noted Wheat for Seed.

HENRY RUCK purchased of F. F. Hallett, Esq., at the Smithfield Show, 1860, a sack of his wonderful Wheat, and will be pleased to spare from 250 to 300 sacks of WHEAT grown from that Seed. Price 10s. 6d. per bushel, delivered at the Cirencester Station on the Great Western. Not less than 20 bushels will be supplied. Cash required before any Wheat is forwarded. New sacks, 2s. each.

Apply to Henry Ruck, Eisey, Cricklade, Wilts.

SEED WHEAT.—Imperial BROWICK RED from the Original Grower. This Wheat has been repeatedly selected and improved by me, and the Wheat I have for Seed this year is the produce of One Ear of very recent selection. Price at Wymondham Station, 9s. per Bushel; stout Sacks, 1s. 6d. each.

All Orders must contain remittances, or satisfactory references, and must not be for less than One Quarter.

Robert Banham, Browick, Wymondham, Norfolk.

SEED WHEAT from the CHALK.—Browick Red, Nursery, Rough Chaff, and all the most approved varieties of Wheat. Also Hallett's Pedigree Wheat, Shirreff's Bearded Red, &c., supplied by Raynbird, Caldecott, & Bawtree.

Winter Tares, Rye, Winter Barley, Winter Oats, Trifolium, &c. Samples and Prices post free on application.

Address, Basingstoke, or 89, Seed Market, Mark Lane, E.C.

SEED WHEAT, Delivered upon the Great Eastern or Great Northern Railways.

HALLETT'S PEDIGREE NURSERY ..	per bushel, 16s.
SHIRREFF'S BEARDED RED	" 8s.
GOLDEN DROP RED	per quarter, 68s.
RED TALAVERA	per bushel, 8s.
QUINTIN'S GIANT RED	" 7s.

The two first varieties were purchased direct from Mr. Hallett and Mr. Shirreff last autumn, by the Grower, Mr. S. A. Daintree, of Fendrayton, St. Ives, Hunts, and any Orders or Enquiries addressed to him will have prompt attention.

Genuine Italian Rye-grass, produced from the Second Cut of Foreign Seed.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts., will again be able to supply the Trade with this article in the same fine quality as last season, and can deliver either now or in the spring at the purchaser's convenience.

Address for samples and prices as above, stating quantity required and time of delivery.

International Exhibition.

Prize Medal, "Excellent Seed Corn and Seeds." See Jury Award. Class III., 725.

RAYNBIRD, CALDECOTT, and BAWTREE, Seed Merchants and Growers, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E.C.

Samples and quotations of all kinds of Agricultural Seeds, and Seed Corn, sent post free on application. Peruvian Guano, Lawes's Manures for Turnips, Wheat, Barley, &c., Linseed Cakes, and Feeding Stuffs, at market prices.

PARSNIP CHERVIL or CHÆROPHYLLUM BULBOSUM.—New Seed of this year's harvesting, per packet, 1s. Sow from September 25 to October 25. A delicate and delicious vegetable.

Arthur Henderson & Co., Pine Apple Place, Edgware Road, W.

To Seed Growers.

WANTED, about 100 quarters of ITALIAN RYE GRASS, and 2 tons of FOREIGN ITALIAN in 2-cwt. bales, English growth; also large quantities of PERMANENT RYE-GRASS, 14, 16, 18, 20, 22, 24, 26 lbs. to the bushel. Also NATURAL GRASSES in vars., and MANGELS, SWEDES, TURNIPS, and CARROTS, at lowest Trade price for "immediate cash."

Address S. C. L. P., *Gardeners' Chronicle* Office, W.C.

JEAN VERSCHAFFELT, Ghent, Belgium, begs to announce he possesses a large stock of the following fine Plants with flower-buds, which he offers to the Trade as follows:

CAMELLIAS,	extra fine sorts with buds, per 100	..	£6 0 0
Ditto	ditto large plants, per 100	10l. to	15 0 0
Ditto	ditto extra size, each ..	5s. to	1 1 0
AZALEA INDICA, first-rate sorts, extra fine Plants for winter flowering, per 100, from	.. ..	4l. to	6 0 0
Ditto	ditto on stems 1½ to 2 feet high, with nice heads, per 100	..	10 0 0
JASMINUM GRANDIFLORUM	.. ..	..	6 0 0
CITRUS SINENSIS (Otaheite Oranges) with fruit, per 25	.. .. ..	..	2 10 0

Arundo Donax variegata.

JEAN VERSCHAFFELT, Ghent, Belgium, has a nice stock of this beautiful hardy variegated ARUNDO (the finest known), which he begs to offer in strong plants at the following low terms, viz.:—

Strong plants grown in pots, per dozen	.. ..	£1 5 0
Ditto ditto per 25	..	2 0 0

Lilium lancifolium speciosum.

JEAN VERSCHAFFELT, Ghent, Belgium, having an extra large stock of this splendid LILY, is now able to offer its varieties very cheap, viz:—

LILIUM LANCIFOLIUM (SPECIOSUM) RUBRUM, strong flowering bulbs, per 100		.. ..	£2 0 0
Ditto	ditto	ALBUM, ditto, per 100 ..	1 16 0
Ditto	ditto	RUBRUM, extra strong bulbs, per 100 ..	3 0 0
Ditto	ditto	ALBUM, ditto, per 100 ..	2 10 0
Ditto	ditto	PUNCTATUM, strong flowering bulbs, per 25 ..	2 10 0

AZALEA INDICA, extra fine plants, clean and bushy, first-rate varieties, suitable for winter forcing, 4l. per 100; stronger plants, 6l. per 100.

Jean Verschaffelt's Nursery, Ghent, Belgium.

Strawberry Plants—Ready.

CUTHILL'S SORTS, selected Plants for bearing in 1863, all one price, 7s. 6d. per 100. Early Black Prince, Early Princess Royal, Highland Mary, Richard II., Prince of Wales, and Newton Seedling, lasted in bearing this year 60 days. Strawberry Pamphlet, 1s.

Best MUSHROOM SPAWN, 5s. per bushel.

James Cuthill, F.R.H.S., Camberwell, London, S.

STRAWBERRIES for AMATEURS.—Plants of the six most useful sorts, chosen to afford a long succession of fine fruit, one of each sort, or four plants of ECLIPSE, free by post, for 24 stamps. The sorts include ECLIPSE, new, pronounced first rate, both for Forcing and Out-doors, by the Royal Horticultural Society; PRINCESS, the finest of the very early sorts; SIR HARRY, SIR CHARLES NAPIER, WONDERFUL, the best for very rich soils; and ELEANOR, very fine and late; or OSCAR, if ordered.

Also very choice CAULIFLOWER and pure WHITE BAVARIAN CUCUMBER, 1s. per packet.

Address A. Moss, Jun., Chadwell Heath Mills, Essex, E.

STRAWBERRIES.—Fine well rooted Plants for Fruiting next season, of the following sorts, can now be supplied:—Sir Harry, Comte de Paris, Prince Arthur, British Queen, Keens' Seedling, and Goliah, 3s. 6d. per 100; Magnum Bonum, Eleanor, Ajax, Filbasket, Alice Maude, Oscar, 2s. 6d. per 100.

Carriage free within 50 miles of London. A liberal allowance to the Trade.

Thomas Henry Hardy, Stour Valley Nursery and Seed Grounds, Bures, near Colchester, Essex.

Extra Strong Vines.

GEORGE CLARKE has to offer very fine Plants from Eyes, two years old, with stout, well ripened, short jointed rods, which are warranted, under proper treatment, to produce a full crop of fruit next season. These Plants are well suited for planting a house or for pot culture, and include all the leading varieties. Price 10s. to 15s. each. Also smaller Plants equally well ripened, which will fruit the second season, 3s. 6d. to 5s. each.

Nursery, Streatham Place, Brixton Hill, S.; and No. 4, Windsor Terrace, near the Victoria Railway Station, London.

Grape Vines from Eyes.

JOHN BUTCHER has much pleasure in offering an unusually large Stock of fine healthy Plants fit for immediate planting, comprising the following sorts:—Black Hamburgh, Champion, West's St. Peter, Muscat Hamburgh, Lady Downes, Manukka, Ingram's Hardy Prolific, Trentham Black, Barbarossa, Frontignan, White Muscat of Alexandria, Cannon Hall Muscat, Charlesworth Tokay, Golden Hamburgh, Buckland Sweetwater, Bowood Muscat, Muscat Troveren, Trebbiana, Muscadine, Chasselas Musqué, Frontignan.

Royal Nursery, Stratford-on-Avon.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.

2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

Thomas Jackson & Son, Nursery, Kingston, S.W.

Fine Trained Fruit Trees.

LUCOMBE, PINCE, and CO. invite attention to their remarkably fine, healthy, well-rooted Stock of FRUIT TREES, trained as Espaliers and Pyramids, in a bearing state, of all the best sorts, amongst which they can especially recommend

HUYSHE'S BERGAMOT and VICTORIA PEARS,

as being two of the finest varieties in cultivation, specimens of which covered with fruit may be seen in their Nursery.

L., P. & C. have also well established in pots some very fine PEACHES and NECTARINES,

set with fruit buds, fit for Orchard House culture.

A DESCRIPTIVE PRICED CATALOGUE may be had on application.

Exeter Nursery, Exeter.

FRUIT TREES, Root Pruned.

PEARS, in 200 sorts, Pyramids from 2 to 12 feet high, mostly bearing trees.

APPLES, 200 sorts, Standards, Pyramids, Dwarf Bushes, or Dwarf-trained.

PLUMS, 70 sorts, Standards, Dwarf Bushes or Dwarf-trained.

PEACHES, NECTARINES, APRICOTS, and CHERRIES, fine Dwarf-trained trees.

MAIDEN PEACHES and NECTARINES in quantity to offer to the Trade.

For prices, &c., apply to J. Scott, Merriott Nurseries, Crewkerne, Somerset.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

Planting.

WM. PAUL (Son and Successor to the late A. Paul) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.

Entrance from the platform, Waltham Station, Great Eastern Railway.

Nurseries and Seed Warehouse, Waltham Cross, N.

To the Trade, and others engaged in Planting, &c.

TO BE SOLD, Cheap, for Cash on delivery, several Millions of 1, 2, and 3 years' QUICK. Samples and prices sent on application. Also a large stock of ENGLISH OAKS and HAZEL.

Stephen Shilling, North Warnborough Nursery, near Odiham, Hants.

To Gentlemen, Nurserymen, Florists, and Others.

TO BE SOLD, on the Premises, the Lease having expired, the whole of the Valuable NURSERY STOCK of EVERGREENS and ORNAMENTAL TREES, consisting of American and English Shrubs, Dwarf and Standard Roses and Forest Trees, &c.; also 500 Bushels of MUSHROOM SPAWN.

Apply to Mrs. Patching, Carlton Nursery, Carlton Road, Kilburn, N.W., or Wellington Nursery, Wellington Road, Hounslow, W.

Dwarf Tea Roses.

EDWIN HOLLAMBY begs to announce that he has a large and healthy Stock of the above, comprising some of the finest Yellows, and other leading varieties, in the best possible condition.

Price on application.

Nurseries and Seed Warehouse, Tunbridge Wells, Kent.

Rose Catalogue, 1862 and 1863.

JOHN CRANSTON begs to announce that his new ROSE CATALOGUE is now ready for distribution, and will be forwarded free on application. It contains full and faithful descriptions of nearly all the NEW ROSES of 1861, as well as the older kinds.

Nurseries, King's Acre, near Hereford.

New Roses.

JOHN HARRISON begs to announce that he has a splendid stock of nearly all the NEW ROSES of the present season, at from 30s. per dozen. Superior STANDARDS, of the leading varieties, 18s. to 30s. per dozen; DWARFS, exceedingly fine, of which his stock this season far surpass any he has ever before seen, both on their own roots and worked on the Manetti, 9s. to 18s. per dozen; MANETTI STOCKS, 1-year from cuttings, 60s. per 1000; 1-year bedded 2-year old, very fine, 80s. per 1000.

Nursery, Darlington.—Oct. 4.

NEW ROSES of 1862.—1000 very extra strong plants, the finest varieties of the last season, in 6 and 8-inch pots, are now ready, price 42s. per dozen, with the usual discount to the Trade.

Fine STANDARDS, of the older varieties, 24s. & 30s. per doz.

DWARFS, 12s. and 18s. per dozen, all of the finest varieties in cultivation. Every attention paid to package, and compensation for carriage.

New CATALOGUES ready.

John Keynes, Nurseryman, Salisbury.

The New Rose, John Hopper.

ROBERT WARD has much pleasure in announcing that he has a large stock of fine plants of his celebrated SEEDLING ROSE, and will commence sending it out this autumn. Strong Dwarf plants, 5s.; Standards, 7s. 6d. each.

See DESCRIPTIVE CIRCULAR, free by post on application.

On receipt of 13 postage stamps, a beautiful illustration by Andrews.

The following Nurserymen have already ordered it in quantities:—

Ballantyne & Sons, Dalkeith
Bell, J., Norwich
Burbury, J., Kenilworth
Barnes, T., Stowmarket
Barratt, W., Wakefield
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Cant, B. R., Colchester
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Draycott, W., Humberstone
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Daft, G. S., Nottingham
Davis, W. H., Newbury
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Ewing, J. W., Norwich
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Francis, E. P., Hertford
Frewer, J., Stowmarket
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Gilbert, J., Ipswich
Harrison, J., Darlington
Henderson & Son, E. G., St. John's Wood, London
Henderson & Co., A., Edgeware Road, London
Hollamby, E., Tunbridge Wells
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Hussey, W., Norwich
Jackman & Son, Woking
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Jenkinson, H., Newcastle
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Knights, W., Hailsham
Lucombe, Pince & Co., Exeter
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Lovely, W., Whitton
Mitchell, J., Piltdown
Marsh & Perkins, Northampton
Milman, W., Shrewsbury
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Osborn & Sons, Fulham
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Smith, R., Worcester
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Wood & Son, W., Maresfield
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Wheeler & Son, Gloucester
Waterer & Godfrey, Knap Hill
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Whitham, B., Clough
West, J., Stoke Newington, London
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The usual discount to the Trade if not less than six plants are taken, and up to 50, when a still further discount is allowed.

Ipswich Rosery, Suffolk.

Green Hollies.

CORNELIUS WHITEHOUSE, Brenton Nursery, Rugeley, Staffordshire, has to offer many hundred thousands Transplanted HOLLIES from 6 to 9 inches, 9 to 12 inches, 1 to 1½ feet, 1½ to 2 feet, 2½ to 3 feet, 3½ to 4 feet; also 2 and 3 years Seedling. The whole are clean grown and healthy, and have excellent roots, and the smaller sizes in splendid condition for working. As the stock is so large the prices will be low. Trade price on application.

To Noblemen, Gentlemen, and Others engaged in Planting.

GEORGE BAKER begs to invite attention to the following superb specimens, which are in the finest condition:—

ARAUCARIA IMBRICATA, 6 feet, 9 feet, 14 feet
ABIES DOUGLASII, 10 feet, 14 feet, 20 feet
ARBOR-VITÆ (Siberian), 6 feet, 8 feet
CEDRUS DEODARA, 6 feet, 8 feet, 10 feet, 12 feet, 20 feet
CUPRESSUS LAWSONI, 5 feet
„ DISTICHA, 8 feet, 12 feet
CEDRUS LIBANI, 8 feet, 10 feet
CHINESE JUNIPER, 5 feet, 6 feet
IRISH YEWS, 6 feet, 8 feet
JUNIPERUS RECURVA, 8 feet
„ BEDFORDIANA, 5 feet, 6 feet
PICEA CEPHALONICA, 11 feet
PINUS CEMBRA, 7 feet, 10 feet
„ EXCELSA, 10 feet, 15 feet
TAXODIUM SEMPERVIRENS, 10 feet, 12 feet
THUJA GIGANTEA, 6 feet
WELLINGTONIA GIGANTEA, 5 feet
KALMIA LATIFOLIA, Standards, fine
RHODODENDRONS, „ „
PORTUGAL LAURELS, „ „

G. B. in offering the above perfect specimens feels assured that whoever may favour him with their kind orders, their hopes will be fully realised. Prices on application.

American Nursery, Windlesham, Bagshot, Surrey.

To Nurserymen, &c.

LIVERPOOL CEMETERY, Anfield Park, Walton.—TENDERS are required by the BURIAL BOARD for the Parish of Liverpool for SUPPLYING a large number of TREES and SHRUBS and also a quantity of GRASS SEEDS to the above Cemetery. A list of the plants wanted with a specification of the conditions to be observed, may be obtained at the Offices of the Burial Board, 12, Clayton Square, Liverpool, on and after Sept. 25, 1862. Tenders, in conformity with the list and specification, must be delivered at the offices above named on or before Saturday, October 11, addressed to the Chairman of the Executive Committee, and endorsed "Tender for Trees and Shrubs, &c." The Board will not bind itself to accept the lowest or any Tender, and no one whose grounds are situated to the south of Birmingham need compete.

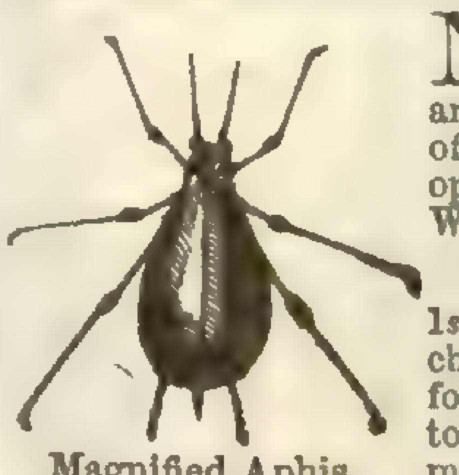
By order,

Edward Kemp, Landscape Gardener } To the Board
George Turvey, Clerk }

12, Clayton Square, Liverpool, Sept. 27.

EXTRA STRONG TOBACCO PAPER, at a low price to the Trade

Apply to H. Brown, Seedsman, Liverpool.



Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. Neal, Edward Street, Birmingham.

Landscape Gardening, &c.

WILLIAM SHORT begs to announce that he undertakes the Direction of Ornamental Works and Planting. Designs and Plans prepared.

Reigate Heath, Surrey.

Landscape and Ornamental Gardening.

MR. J. W. CHAPMAN offers his services to the nobility and gentry in Forming or Altering GARDENS and PLEASURE GROUNDS, and the General Improvement of Estates. He is happy to be able to refer (among recent works), to the New Public Garden at Abingdon, Berks, now in course of formation.

Plans and Drawings for the above purposes are furnished, and the works superintended during their progress.

Hermitage Road, Richmond, Surrey, S.W.

Notice.

MR. A. CHANDLER (of the late Firm of Chandler & Sons), HORTICULTURAL VALUER, begs to inform his friends and the public that he has removed from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

J. T. WILLMER, Horticultural Agent, Auctioneer and Valuer, Springfield Nursery, Sunbury, Middlesex, S.W.

ESTATES, DRAINAGE, GARDEN, VENTILATION, and WARMING IMPROVEMENTS carried out. Plans with details prepared for gentlemen, &c., by

Mr. Newton, 30, Eastbourne Terrace, Paddington, W.

MR. JAMES BLACK, late Factor to Sir Norman Macdonald Lockhart, Bart., and other gentlemen, now practising in London as LAND AGENT and DRAINAGE ENGINEER, from a thorough practical knowledge in all such matters most respectfully solicits the patronage of noblemen and gentlemen. Mr. Black undertakes the VALUING of ESTATES and SALE of Ditto, adjusting Landlords' and Tenants' rights, the superintendence of all Agricultural Improvements, Draining, &c., also the Valuing of Timber, and the planning of the most economical and best adapted Farm Homesteads and Buildings. The usual Commission charged.

Offices: 20, Great George Street, Westminster, S.W.

N.B. Several valuable Estates for Sale in Scotland, and a few first-rate Farms to Let. Money required in several large sums, from 4 to 5 per Cent., on good Freehold and Leasehold Property.

To Cow Keepers and Others.

JOSEPH DOBSON, Cow Dealer and Commission Agent, Gallowgate, Newcastle-on-Tyne.

WM. BLAKE'S DESCRIPTIVE and CULTURAL SEED POCKETS, GERMAN SEED ENVELOPES, &c. Catalogues and Samples on application.

60—70, Howard Street, Glasgow.

Gutta Percha Tubing for Watering Gardens.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following *Testimonial from* Mr. J. Farrah, *Gr. to* Boswell Middleton Jalland, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the SCORCHING RAYS of the SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.

Elisha Thomas Archer, Whole and Sole Manufacturer, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD,

PATENTEES AND MANUFACTURERS OF

STEAM CULTIVATORS, STEAM PLOUGHS,

HAMPION PLOUGHS, HARROWS, HORSE RAKES, AND HAYMAKERS.

CATALOGUES, with full particulars, sent free on application.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, and GATES.

The PROPRIETORS of the ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON,

WERE AWARDED THE

ILVER MEDAL of the ROYAL AGRICULTURAL SOCIETY for their IRON HURDLES and GATES, hich, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30s. to 500l.

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

PROFESSOR VARNELL'S ENAMELLED and WROUGHT-IRON STABLE FITTINGS.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the yal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the yal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their Horses. They can be had Plain, Galvanised, or Enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized Stalls and Loose Boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS, ST. PANCRAS IRON WORKS,

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ADOPTED VERY LARGELY BY HER MAJESTY'S GOVERNMENT.

CROGGON'S PATENT ASPHALTE ROOFING FELT,

Price 1d. per square foot.

INODOROUS FELT, for Damp Walls and for Damp Floors under Carpets and Floor Cloths, also for LINING IRON HOUSES to equalise the temperature. Price 1d. per square foot.

PATENT FELTED SHEATHING, for Covering Ships' Bottoms, &c.

DRY HAIR FELT, for deadening Sound and covering Steam Boilers, Pipes, &c., preventing the Radiation of Heat, thereby SAVING 25 PER CENT. IN FUEL.

CROGGON & CO.,

ZINC MERCHANTS AND PERFORATORS,

GALVANISED TINNED IRON, and every description of GALVANISED IRON WORK.

CROGGON & CO.'S

NOISELESS ELASTIC KAMPTULICON, or INDIA-RUBBER FLOOR CLOTH,

Impervious to Wet, Indestructible by Damp, Soft to the Tread, and Warm to the Feet, well adapted for Aisles of Churches, Public Offices, Rooms, Shops, &c., as well for its comfort as extreme durability.

Samples, Testimonials, and full particulars, free, on application to

2, GOREE PIAZZAS, LIVERPOOL; or 2, DOWGATE HILL, LONDON, E.C.

Glass for Gardens.

JAMES PHILLIPS AND CO. beg to submit their prices as follows:—

PROPAGATING GLASSES.

	Each—s. d.		Each—s. d.
2 inches diameter	0 3½	12 inches diameter	1 9
3 " "	0 4½	13 " "	2 0
4 " "	0 5½	14 " "	2 6
5 " "	0 6½	15 " "	3 0
6 " "	0 8	16 " "	3 6
7 " "	0 10	17 " "	4 0
8 " "	1 0	18 " "	5 0
9 " "	1 2	19 " "	6 0
10 " "	1 4	20 " "	7 0
11 " "	1 6		

HAND GLASSES.

	Each—s. d.		Each—s. d.
12 inches	6 0	18 inches	9 0
14 "	7 0	20 "	10 0
16 "	8 0	24 "	12 0

Painted and Glazed with 16 oz. Sheet Glass.
If Open at Top, 1s. extra.

HYACINTH and FLOWER DISHES.
6 ins. diameter, 1s. each; 9 ins. diameter, 1s. 6d. each.
12 ins. diameter, 2s. 6d. each.

LACTOMETERS, for TESTING the QUALITY of MILK.
Four Tubes, 4s. 6d.; Six Tubes, 6s. 6d., with Stands complete.
London Agents for Hartley's Improved Patent Rough Plate.
Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.
Milk Pans and every description of Glass for Horticultural purposes.

JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, London, E.C.

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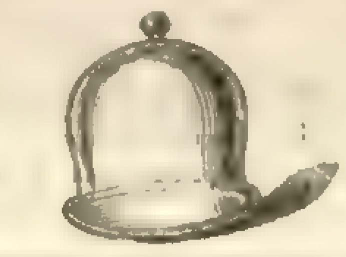
HORTICULTURAL GOODS.



PROPAGATING GLASSES.

3 inches	0s. 4½d. each.	12 inches	1s. 0d. each.
4 "	0 5½ "	13 "	2 0 "
5 "	0 6½ "	14 "	2 6 "
6 "	0 8 "	15 "	3 0 "
7 "	0 10 "	16 "	3 6 "
8 "	1 0 "	17 "	4 0 "
9 "	1 2 "	18 "	5 0 "
10 "	1 4 "	19 "	6 6 "
11 "	1 6 "	20 "	7 0 "

HAND GLASSES.

12 inches	6s. 0d. each	18 inches	9s. 0d. each
14 "	7 0 "	20 "	10 0 "
16 "	8 0 "	24 "	12 0 "

If open top, 1s. extra.

CUCUMBER GLASSES.
From 12 inches long and upwards, 1d. per running inch.

ROLLING PINS.
From 12 inches long, 1½d. per running inch.

Improved ANTI-CORROSION and other PAINTS.
GAS and LAMP GLASSES, GLOBES, &c.
CHIMNIES of every description.
Not accountable for Breakage.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability. Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

These Machines have carried off every Prize that has been given in all cases of competition, and have been awarded the PRIZE MEDAL at the INTERNATIONAL EXHIBITION of 1862.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.

For Illustrated Price Lists, with full particulars, address

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Wellington Road Nursery, St. John's Wood, London.

MESSRS. E. G. HENDERSON AND SON are now prepared to offer BANKS's finest NEW FUCHSIAS, namely—
BIANCA MARGINATA | MDLLE. TREBELLI
MARS
Also SOLANUM CAPSICASTRUM VARIEGATUM, and the TITIEN STRAWBERRY.

Excellence and Economy.

H. BROWN has imported a very large Stock of HYACINTHS, CROCUSES, and other BULBS, including the best varieties for exhibition and decoration. Collections at very moderate prices, carriage free.
See PRICED DESCRIPTIVE CATALOGUE, post free.
Seed Warehouse: 4, Commutation Row, Liverpool.

FINE NAMED CINERARIAS, in 3-inch pots, 20s. per 100.
CROCUS, various colours, 10s. to 12s. 6d. per 1000.
ANEMONES, Single or Double, scarlet or mixed colours, 30s. to 40s. per 1000.
EDWARD TAYLOR, The Nurseries, Malton, Yorkshire.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to 7s. 6d. each;
ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA, 21s. each.
A Select LIST of the most rare kinds will be forwarded Post Free on application.
Dorking Nursery.

Superb New Pinks.

CHARLES SCHOFIELD has great pleasure in offering the following splendid NEW PINKS, raised by Mr. Hart of Swillington. They are first-class, being large, fine in form and petal, and constant in lacing. See Editor's remarks in "Gossip of the Garden" for August.
MARY ELIZABETH (HART).—A most splendid variety, rosy purple lacing, beautifully laid on, form and petal first-rate, 5s. per pair.
BLACK PRINCE (HART).—Rich dark purple lace, large and constant, a very fine variety, 5s. per pair.
ROBIN HOOD (HART).—A very fine flower in the way of John Ball, but very distinct; a first-class show flower, 5s. per pair.
PURPLE GEM (HART).—Dark purple lace, very constant and beautiful, 5s. per pair.
One pair of each (strong plants) of the above set for 15s.
Strong Plants Now Ready.
Knostrop, near Leeds, Yorkshire.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned NEW and fine AZALEAS.
FLAG OF TRUCE.—The finest double white known; has obtained two Certificates and a Silver Medal for its superior merits, being the highest testimonial any Azalea has yet received, 21s. to 31s. 6d. each.
PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21s. to 31s. 6d. each.
CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very superior, 21s. to 31s. 6d. each.
LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10s. 6d. to 15s. each.
CRISPIFLORA ROSEA.—Fine bright rose; the flowers are waved or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10s. 6d. to 15s. each.
PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10s. 6d. and 15s. each.
Any of the above may be had in grafted plants, or on their own roots.
For full particulars see *Gardeners' Chronicle* of August 16, 1862, p. 758; or in CATALOGUES, which may be had gratis on application.
Dulwich, Surrey.

THE PRIZE MEDAL,
INTERNATIONAL EXHIBITION, 1862.

JAMES CARTER & CO.,
SEED FARMERS AND NURSERYMEN,
237, 238, & 261, HIGH HOLBORN, LONDON, W.C.

Collections of HYACINTHS, CROCUSES, TULIPS, NARCISSUS, IRIS, LILIES, &c., from 20s. to £5. Al[so]
PURE AGRICULTURAL and GARDEN SEEDS for AUTUMN SOWING.

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WILLIAM PAUL'S

COLLECTIONS of HYACINTHS, which have obtained several Prizes from the Royal Horticultural and Royal Botanic Societies of London during the last two years, are now ready for delivery. The Bulbs are of first-rate quality and moderate in price.

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ROYAL HORTICULTURAL SOCIETY.

REMAINING

ARRANGEMENTS FOR THE EXHIBITIONS AND MEETINGS IN 1862,

TO BE HELD AT

THE GARDEN, SOUTH KENSINGTON, W.

October 8, Wednesday. Fruit and Floral Sub-Committee.

October 8, 9, & 10. GREAT INTERNATIONAL SHOW OF FRUIT, GOURDS, ROOTS, VEGETABLES, AND CEREALS. The Show of Gourds, Roots, and Cereals to continue until the 18th.

Nov. 7, Friday. Meeting for Election of Fellows.
" 11, Tuesday. Fruit and Floral Committee.
Dec. 9, Tuesday. Fruit and Floral Committee.

*** At some period during the season it is hoped that the Memorial of the Exhibition of 1851 will be finished, and probably publicly uncovered.

ELECTION OF FELLOWS.

Gentlemen and Ladies wishing to become Fellows have to be proposed by some one already a Fellow, to whom they are personally known. The subscription is Two Guineas Entrance Fee, and Two Guineas or Four Guineas a year according to the privileges wished.

ADMISSION OF THE PUBLIC.

I. REMAINING HORTICULTURAL EXHIBITIONS.

October 8. FRUIT AND VEGETABLE SHOW .. .. .. 2s. 6d. | October 9. FRUIT AND VEGETABLE SHOW .. .. 1s. 0d. | October 10. FRUIT AND VEGETABLE SHOW .. 1s. 6d.
October 11-18. GOURDS, ROOTS, AND CEREALS .. .. 1s. 0d.

Admission by payment at the door, or by tickets previously purchased.

From 12th July to 18th October.

			s.	d.
Sundays		No admission by payment.		
Mondays	(Band)	Gardens alone	1	0
Tuesdays	(Band)	Gardens and Exhibition	1	6
Wednesdays	(Band)	Gardens from Exhibition	0	6
Thursdays	(Band)			
Fridays	(Band)		2	6
Saturdays	(Bands)		5	0

From 18th October to 31st December.

		s.	d.
Sundays	No admission by payment.		
Mondays		0	6
Tuesdays	No admission by payment.		
Wednesdays		2	6
Thursdays	No admission by payment.		
Fridays	ditto.		
Saturdays		2	6

The Council have the pleasure to announce that Her Majesty's Commissioners for the Exhibition of 1851 have given their consent that until October 18 Visitors may be permitted to use a temporary roadway for admission from Kensington Gore leading to the back of the Conservatory. The Council sought this concession in order to abate the confusion which, without it, must be attendant on the number of carriages visiting the International Exhibition of 1862.

To Agriculturists, Botanists, and Others.

ROYAL HORTICULTURAL SOCIETY'S INTERNATIONAL ROOT SHOW.

A very interesting Collection of upwards of 100 sorts of GRASSES may be seen at Messrs. SUTTON'S STAND in the Eastern Corridor, all of which have been recently gathered from their Trial Grounds at Reading. As also extensive collections of TURNIPS, MANGELS, and other Agricultural Roots. Above 100 sorts of GOURDS, &c.

Royal Berkshire Seed Establishment, Reading.

ROYAL HORTICULTURAL SOCIETY. FLORAL COMMITTEE.

The next MEETING of this Committee for the Exhibition of NEW PLANTS and SEEDLINGS will be held in conjunction with the Great International Exhibition of Fruits, &c., which will take place in the Gardens of the Society on October 8. A Sub-committee will adjudicate.

All subjects for examination must be in the Gardens by 10 A.M., and will be subject to the general arrangements for the conditions of the Show; but may be entered without previous notice. Any person may exhibit.

PRIZES for CHRYSANTHEMUMS.

The following Prizes will be offered at the Meeting of the Floral Committee on November 11:—

Six plants, Large-flowered, distinct varieties (open), 3*l*., 2*l*.
Three plants, Large-flowered, distinct varieties (amateurs), 2*l*., 1*l*.
Six plants, Pompons, distinct varieties (open), 3*l*., 2*l*.
Three plants, Pompons, distinct varieties (amateurs), 2*l*., 1*l*.
Twelve Cut Blooms, distinct varieties (open), 1*l*., 10*s*.
Miscellaneous Collection of Cut Blooms (open), 1*l*. 10*s*., 1*l*.

N.B. The Prizes will be given for the best cultivation. The plants must be grown from single stems. Any person may compete. THOS. MOORE, Secretary to the Committee.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 4, 1862.

MEETINGS FOR THE ENSUING WEEK.

WEDNESDAY, Oct. 8 to SATURDAY, Oct. 18	Royal Horticultural (Great Exhibition of Fruit, Vegetables, Gourds, Roots, &c., at South Kensington).
WEDNESDAY, Oct. 8	Royal Horticultural (Fruit and Floral Committees) at S. Kensington Noon

BELGIUM has just passed through the usual access of febrile excitement which attacks her annually in the last days of September. As in America, the anniversary of the achievement of her independence is then celebrated by commemorative rejoicings. On the present occasion these have been characterized by an unusual degree of enthusiasm. The good old King, whose recovery was until within a few days back rather hoped and prayed for than expected, has been preserved to his people, and on the 24th of September made his first public entry into Brussels since his restoration to health. In the exuberance of their joy fêtes were accumulated upon fêtes with lavish prodigality. Every district and every city sent forth crowds to take part in the pageantry. Each branch of industry brought out its time-honoured symbols and flags. No society was satisfied which had not a share in the ceremonial and did not contribute to the festivities—and amongst others, as might be expected, Horticulture occupied a conspicuous place. Two large Horticultural meetings were held, the one at Brussels on September 24th, an exhibition of fruits, flowers, and agricultural products. (We are obliged to pick our words here, or we should omit a portion of the Exhibition, cheese, whose presence it was impossible to ignore.) As a flower show it had nothing remarkable to boast of. With the exception of a few good plants, chiefly contributed by M. LINDEN, the Brussels Nurseryman, there was nothing which would have done credit to a third rate show in England. One interesting collection of young plants consisted of 70 kinds of oak trees; and a rather droll examplification of the often repeated statement that good sward is to be found nowhere but in England, and of the anxiety of our neighbours to possess it, was given by the exhibition of a square yard of tolerable turf shown by the agent for GREEN'S mowing machines as the result of the use of these machines—an application of the principle of *post hoc propter hoc* to advertising which deserves credit for its ingenuity.

The other great Horticultural meeting was of more importance. It was the International Congress of Pomology held by the Federated Horticultural Societies of Belgium at Namur on September the 29th. Delegates from 1 Dutch, 1 English (the Royal Horticultural), 21 French, 10 German, and 45 Belgian Societies attended the Congress; and of these 13 German, 10 French, 12 Belgian, and the English Royal Horticultural Society sent collections of fruit for exhibition.

The great object proposed by the Congress was the rectification of the synonymy and improvement of the nomenclature of fruits, the recognition of good kinds and elimination of bad, and encouragement in the search after new kinds. With this view the members attending it divided themselves into four sections, occupying themselves respectively with the nomenclature of Pears, Apples, Grapes, and stone fruit, the number of sections happily corresponding with that of the great nations represented in the Congress, from each of whom a Vice-President was elected (Mr. ROYER being President), and the Vice-President chosen for England being Mr. BLANDY, of Reading, who holds a similar office in the Council of the Royal Horticultural Society.

The mode in which the practical results of this Congress are to be worked out is this. The Committees will each prepare a list of the names of the fruit adopted by them. These will be sent to the different societies represented, who will add any kinds which appear to them to have been omitted, and return the list to the Secretary of the Congress. The additions, rectifications, and amendments will then be again considered—and in course of time the present chaos will assume something like order. Grafts of all the kinds which the Royal Horticultural Society may request are promised them.

The collections of fruit sent by so many different societies, and from so widely separated countries, have furnished a means of comparing names which has never yet been possessed, and the results of the labours of these sections cannot fail to prove of real value. It may be satisfactory to mention that the deputation from the Royal Horticultural Society have succeeded in making arrangements by which the greatest part of this extraordinary accumulation of collections will be brought over to the International Exhibition of Fruits, Roots, and Cereals, to be held at the Royal Horticultural Society's Garden at South Kensington on the 8th of October and following week. The fruit sent by the Royal Horticultural Society did it no discredit. There were 12 bunches of Grapes of enormous size (nine from Chiswick and three sent by Mr. INGRAM, gardener to Mr. BLANDY), which struck the assembly with amazement. No encomiums seemed strong enough to express the admiration which these elicited. Besides this the Society sent named examples of 201 kinds of Apples and 174 kinds of Pears, a number greater than that forwarded by any other Society—the next largest number being that sent from the Royal Gardens of Hanover, which consisted of 160 kinds of Apples and 100 kinds of Pears. But if England bore away the palm for number, her inferiority there in quality and size was incontestable. The finest examples of Apples and Pears shown were grown at a place called Namich, near Namur, by M. MONCHŒUR, and are destined for South Kensington. His garden lies sloping to the sun, backed by white cliffs of limestone rocks, which reflect the sun with redoubled force; the Meuse rolls past its feet, and, exhaling moisture, tempers the heat and refreshes the soil. What chance has the climate of England against such odds?

Some little time ago, a good deal of interest was excited by the discussion in our pages of the system of budding the flower-buds of fruit trees on other stocks, with a view to their producing unusually large fruit, by drawing an unnaturally large portion of the sap to the bud. A very good example of the effect of this was shown by M. LEPERE of Montreuil, who exhibited some large Pears and Apples produced in this way. He also has kindly promised to forward these to London, and the public may recognise some of the Pears so grown by their bearing in a paler hue on their rosy cheeks, the words Leopold I., and Duchesse de Brabant, the inscription having been thus "negatived" by pasting paper letters on the fruit so as to preserve the portion covered from the sun.

The most extraordinary feature in the whole Exhibition, however, was a collection of 108 new Pears raised from seed by M. GREGOIRE-NELIS, and to this the highest honour which the Congress could bestow was awarded by acclamation. M. GREGOIRE-NELIS is well known for the success which has attended his experiments in raising new fruits from seed. He has been occupied with these for 32 years, during which time he has raised about 150 new kinds of Pears of quality sufficiently good to be worth preserving, and part of 108 of these was now shown. Of course also thousands of bad ones have been raised by him and thrown away, but here were the select band chosen from the rest and taking rank among the best of the old kinds, whether for beauty or for excellence. These also will appear at South Kensington.

There were other newly reared kinds exhibited by other cultivators, but everything failed before Mr. GREGOIRE-NELIS' collection. That gentleman has done the Royal Horticultural Society the honour to offer to present them with a complete set of grafts of all these new kinds in Spring.

The remark already made on the flowers and plants exhibited at Brussels, equally applies here. The exhibition of these was to an English eye unquestionably inferior. Not that there were wanting interesting specimens and new plants, but it is seldom that a better exhibition is not seen at the monthly meetings of the Floral Committees of the Royal Horticultural Society than was here shown, if abstraction be made of the common and ordinary greenhouse decorations which are thought too common in England to be worthy of a place at a public exhibition. The taste and effect with which these common materials were displayed was however exquisite. The really good things exhibited were chiefly new introductions by M. LINDEN and M. VERSCHAFFELT. Of M. LINDEN'S, the most interesting was a new Orchid (*Vanda Guiberti*), a new *Anæctochilus* from Java, without any of the characteristic venation, a dull velvety pale brownish buff; *Palicourea discolor*, with a dark velvety green leaf with a pale pink midrib; and an enchanting little Fern (*Asplenium myriophyllum*) from Chiapas, with a good deal of the effect of the Parsley Fern, but its fronds a thousand times more feathery. Among M. VERSCHAFFELT'S novelties were two very curious *Agaves* with the edges of the leaves toothed like a shark (*Agave cucullata* and *Agave horrida*) from Mexico, and a number of variegated plants; *Lonicera brachypoda aureo-reticulata*, a charmingly variegated-leaved Honeysuckle from Japan; *Neottia argenteo-lineata*, from Mexico; a variegated-leaved *Musa* (*M. vittata*), and some of the variegated plants already introduced from Japan: and Mr. MAKOY exhibited a Sedum with a curious flat variegated leaf from Japan (*Sedum Sieboldi*). Besides these there were some good Dahlia blooms, a good group of Lantanas, and some tolerable Roses. There was also a collection of Phloxes, but not a good kind among them. One curious fabrication was attempted among the horse-shoe leaved Geraniums; one or two had their leaves glittering with a fine metallic coppery lustre, which, however, was found to rub off on being handled. They had been dusted with copper gilding powder. Whether they were really intended to pass muster as a new variety, or it was merely an attempt to paint the Lily, did not appear, but either the morality or the taste was in fault.

A number of fine Gourds was exhibited; also some excellent Potatoes; one remarkably fine lot, which gained a medal, had been raised from seed, and was said to have proved entirely free from the Potato disease. Some of these will be exhibited in London. The well-known *Arracacha esculenta*, from the colder regions of the mountains of Columbia, was successfully exhibited by M. LINDEN. The foliage resembled that of Celery, but was smaller, and had thinner stalks, and the root consists of one large tuberous mass. The collection of legumes and vegetables was very good, and a few bunches of Cereals were also exhibited; but we have said enough to satisfy the reader that this has been one of the most important horticultural meetings of modern times, and must refer him for further details to the official accounts which will no doubt be afterwards published.

A part of the project of the Congress is to constitute a new international pomological association, to be called the "European Pomological Society," something of the nature of the Belgian federation, but more extended; but at the moment we write this project has not yet come on for consideration, and we shall not anticipate.

AGAIN and again we are obliged to revert to the "old, old story," though not exactly in the sense of the Poets. But there is no harm in this if at last, though at the risk of wearying our readers, we accomplish our end, and the point we have been striving to enforce is considered as an acknowledged fact.

For example, we have for years been insisting on the necessity of Grape growers looking to the condition of their Vine roots, and have shown repeatedly that more than half the spotting, shanking, leaf-fading, yellowing, &c., are attributable to this single cause, and the consequence is that we now have rarely in comparison a question put to us concerning the nature of these maladies, for every Grape grower knows that he cannot secure good Grapes without attention to this point.

As a good example of its importance, Mr. W. INGRAM has lately shown to us a curious instance of the advantage of rather superficial planting, in the produce of two Vines, the one a Black

Hamburgh of 30 years' growth, deeply planted, the other of only 3 years' growth, but with the roots near the surface. There was no comparison in point of flavour between the two, the colour also of the latter as well as the aroma being far superior, though the size was less. And this is the more remarkable, because young Vines do not always acquire their proper flavour on first coming into bearing, and in consequence many a comparatively new variety is rejected as worthless, though a little patience would have shown that it had merits of its own which would make its possession desirable.

This is not however the especial point we have in view at the present moment, but a quære from one of our correspondents, as to mischief amongst his Apricot and Plum trees, induces us once more to call attention to the disastrous effect of old roots remaining in the soil upon new plantations. We have at this moment in our own garden a curious instance, commencing with the death of a fine Mountain Ash, whose roots have spread the fungous poison first to two Lombardy Poplars, and then to a Lilac tree between them, and we have little doubt that other trees and shrubs will soon follow, as we have not the means of eradicating the evil.

In making new plantations, however, of fruit trees in gardens where old trees have formerly stood, it is an act of folly or recklessness to leave the old roots in the ground. Without the most careful trenching it is quite a lottery whether the new trees are not arrested in their growth after a few years, and just as they are ready to come into full bearing their health often fails, and after a few more hopeless seasons of repeated disappointment, the new plantation follows in the wake of the old.

Our correspondent remarks: "I have two Apricot trees 15 or 20 years old. They flower well, but never set fruit. I have laid the roots bare and find them covered with Fungus. I send you a part of the root. What must I do? I have several Orleans Plums and Greengages in the same condition, but have not examined their roots."

If the case admits of remedy, it can only be by carefully cutting away every particle of the root which is affected, and tracing out carefully the old roots from whence it is derived. This treatment was completely effectual at Kew in the case of a Deodara which had been planted over an old Cherry root, and if the evil is not too far advanced, it may probably be successful in that of our correspondent's Apricots. There is little doubt that these as well as his Plums have succeeded old trees, whose roots were never removed, for this is the secret of trees so often failing on old walls, and not any exhaustion of the soil.

The fungous evil is of far wider extent than cultivators often imagine. In our gardens it not only proves destructive to trees and shrubs, but to Strawberry plants where the old stock has been dug in. In this case we are convinced it is a frequent cause of blight, and other maladies which consist in a depressed state of vitality which does not allow the plant to arrive at perfection.

Let the cultivator be very careful then never to dig in anything which is sufficiently woody to produce fungous spawn. Let him avoid leaf-mould which has not entered into a thorough state of decomposition, so that the component parts cannot be recognised, and above all let him abhor the bottoms of old faggot ricks, which are a very frequent cause of mischief in the conservatory.

A friend lately consulted us as to the propriety of digging in some spent bark into a clay border with a view to alter its texture, but we should as soon use arsenic to fine wine, a practice not wholly unknown, and which in a case which came under our notice produced serious mischief to a large party. The hazard of such a practice is manifest enough in every hothouse, as no substance more readily produces a quantity of mycelium, and we believe almost any mycelium coming in contact with healthy roots has a tendency to depress vitality. *M. J. B.*

A few weeks since we called attention to a peculiar growth in the Common Yew, arising from the dark ungenial season, in which the development of the young shoots was not only altogether different from that which is in general so characteristic, but the cellular tissue was so weak that the leaves were unable to stand the least pressure of cold or heat.

We have however lately, during a month's sojourn on the Deeside, witnessed a somewhat similar appearance in Larch and Scotch Fir, but especially in the former, on a very extensive scale, whole districts exhibiting a rusty appearance, as if the trees were dying, and the terminal shoots in most instances having altogether perished. This was particularly the case in a large plantation at the entrance of Glen Tanar, a native forest glen 12 miles in length, but it was also visible on the hill sides, not only where the trees had been planted, but where they were natural seedlings. In the Scotch Fir the mischief was less, as it was confined principally to the tips of the leaves, the terminal shoots having suffered materially in a few cases only. The evil was not confined to any particular aspect, but was perhaps more virulent where the trees were exposed to the south. During the last week in July the condition of the trees was such, that the prospect for the growth of the following season was extremely unfavourable. Towards the end of August, however, a week's almost constant rain, in a district naturally far from wet, the rainfall averaging about 28 inches, induced the formation of new shoots, and if the weather is favourable enough to make their tissues firm and capable of enduring cold, which is the more probable as the soil, consisting almost entirely of decomposed granite, is peculiarly dry, the ultimate mischief may be far less than at one time could have been expected.

The Conifers apparently were not the only trees which had suffered from the peculiarity of the season, but a hail storm on the 10th of June had injured the young foliage of the Oaks and other deciduous trees to such an extent that it was very difficult to judge how much might be due to the hail, and how much to the season. In some cases the tips only of the leaves had suffered, and were perfectly dead; and this could scarcely be owing to the hail, as in neighbouring trees the whole surface of the leaves was blotched with decayed spots from the action of the hailstones.

As we have no means of ascertaining the precise climatic conditions of the district where the evil took place, it would be useless to attempt to account exactly for the peculiar appearances presented by the trees. The fact, however, is worth recording amongst others, and has at any rate a passing interest. *M. J. B.*

—— We would direct the attention of growers of the Chrysanthemum to an advertisement which appeared in our columns last Saturday, announcing certain prizes for these useful autumn flowers, at one of the meetings of the Royal Horticultural Society's Floral Committee. We understand that the Council, acting on a suggestion made to it, has placed a small sum in the hands of this Committee to be distributed in prizes of moderate amount at the meeting which takes place on the 11th of November next, it being understood that there will be no metropolitan Chrysanthemum show on a large scale this season. The prizes are to be given for six plants and three plants of the large-flowered varieties, and for six plants and three plants of the Pompones, all these being required to be grown from single stems. The season is too far advanced to permit of the size of the pots being limited, but the best cultivation is to win. There will also be prizes for cut blooms in dozens, and for miscellaneous collections of blooms. The seedlings, if any, which may make their appearance, will come in for the Committee's Certificates, if they prove sufficiently meritorious.

—— A Correspondent informs us that the Rev. Henry Moule, Vicar of Fordington, has recently discovered a mode of supplying without aid from horse-dung, tar, or pipes, and contracted flues, a *moist bottom-heat* to frames and hot-houses. It is effected by the combined action of smoke and steam sent into separate chambers. He says that the stove used is likely to be inexpensive, and that the consumption of fuel, especially because of the remarkable retention of the heat, is very small. He adds that steps have been taken to secure a patent, and that if the contrivance be all that gardeners who have seen Mr. Moule's frames say of it, this mode of heating must supersede the several existing systems.

NEW GARDEN FERNS.

Adiantum tinctum, *T. M.*

Fronds ovato-deltoid, somewhat prolonged, rather lax, bipinnate; pinnules roundish-rhomboidal, thin and papery, more or less lobate, the sterile ones denticulate; sori sunk in a deep sinus at the apex of the lobes, the indusium entire orbicular-reniform; stipes and rachides ebeneous, slender.

This Peruvian Maidenhair, introduced by Messrs. Veitch & Son, seems to be distinct from any described species. In some respects it approaches *A. concinnum*, but it appears to be never more than bipinnate, and the habit of the plant is also very different; it wants moreover one very marked peculiarity of that species, namely the regularly-placed basal pinnule overlying the main rachis. The fronds in the present plant instead of arching out from the centre are scarcely able to bear their own weight from the slender character of the stipes. It is a pleasing addition to our greenhouse basket Ferns, and is especially remarkable for the lively rose-red tint of the young fronds. The fronds themselves have something the appearance of those forms of *A. Capillus-veneris* which have larger and rounder pinnules than ordinary, but the fructification is totally different. We venture to distinguish it under the name of tinctum in allusion to the rich red tint of its young fronds, a feature not indeed confined in this genus to the present species, but one which is here well marked, and which adds very greatly to the beauty of the plant.

Litobrochia (Doryopteris) nobilis, *T. M.*

Fronds very large, coriaceous, pedately bipinnatifid, that is, pinnatifid with the basal divisions again deeply pinnatifid on the posterior side (sometimes slightly lobed on the anterior), the divisions attenuately acuminate, with a broad rounded open sinus; earlier fronds cordate or hastate, with a grayish band along the costa; sori marginal continuous; stipes not proliferous, and as well as the principal ribs on the back of the lamina chestnut brown; caudex short, decumbent.

Messrs. Veitch & Son, by whom this very fine pteroid Fern has been brought into public notice, and by whom it was shown at South Kensington, where a Silver Banksian Medal was awarded to it under the name of Doryopteris sp., state that it was introduced to England from Rio de Janeiro, by J. Wicks, Esq., by whom the stock was transferred to their hands. The plant most nearly resembles *L. palmata*, but is two or three times its size, and does not produce bulbils at the top of the stipes in the basal sinus of the lamina as that plant does. In all the younger stages of growth the costa is marked out by a distinct band of gray, which is nearly lost in the mature state. The caudex is decumbent, slowly advancing laterally, and producing numerous fronds, which measure, when mature, upwards of 2 feet in height including the stout rigid light brown (not brown black) stipes. The lamina, measuring from the top of the stipes to the apex, is 11 inches long in the specimen before us (which is only of average size), or including the posterior lobes of the lower segments about 15 inches long, while the breadth across the centre is also about 15 inches. The upper part of the frond is cut into several long narrow ascending segments, the sinuses extending to within about half an inch of the costa, thus leaving an undivided central portion of about an inch in breadth. These details of the dimensions of the plant will show that it is a noble addition to the group of palmated net-veined Pterids, to which the name of Doryopteris has been sometimes given, but one with which the species already known will not for a moment compare. The large parent plant was shown at the June exhibition of the Royal Horticultural Society; and is noticed in the report of that meeting in the Society's Proceedings (ii., 451) under the name of *Litobrochia grandis*, a name which however proves to be pre-occupied, and for which that of *nobilis* is now substituted.

Indoor Gardening.

There is one class of plants which recommends itself to window gardeners by the almost impossibility that there is of killing the members of its tribe—I mean the succulents, warranted to stand hard usage. Returning home, for instance, after a six weeks' absence, to find all one's other plants dry and dead, these wrinkled shrivelled things seem still full of vitality—in about a week they look very much as usual.

I don't know that as a rule they are the most attractive plants, though certainly a fine Cactus is a resplendent flower, and the trailers of the pink Sedum, too, are extremely pretty; but some people like queer plants, and they would be delighted with some of these odd things—a Sempervivum arachnoideum, for instance. One day I unpacked one, complaining bitterly of the seedsman every time I saw it for sending out plants in "such a state." I kept forgetting utterly that from those very cobwebs it derived its spidery name. Aloes too have something attractive to many people. I believe that children like to obtain young plants, in the hope of seeing them blossom after a hundred years: which shows at least a laudable amount of patience. However, such things as Cactuses, Mesembryanthemums, and Sedums are well worth the growing, and they afford at least the sight of something green.

Sometimes really one sees in a cottage window, or in a kitchen, such splendid plants of Cactus as very few gardens boast. I remember such an one, all one blaze of scarlet, and another lovely one with its long pink tubes. These plants were kept through the winter, one in a warm pantry, the other in a kitchen, while they were but very little watered, although sometimes sponged and sprinkled to prevent great shrivelling. In spring they were placed for a time, one in a warm vinery, the other in a Cucumber bed, and certainly they turned out beautiful. They were more watered of course during the growing time, but even then the moist steamy atmosphere of the vinery or the hotbed was what they chiefly lived by. These plants when in flower do not like a damp atmosphere, and at no time should they be exposed to the influence of cold rains or of cold water in any shape.

The Sedums and such like things will grow quickly from mere leaves. I have often had a handful of plants brought in from the ash pit, with an inquiry if I meant to throw them away. I threw away leaves, and they had been and grown!

The Mesembryanthemums blossom in the winter

the drier or resting time of course is changed, as in such it must be the season following shortly after flowering.

The Japan Lilies now in blossom will require constant watering, and very often, in pots, a slight top-dressing is good for them. Top-dressings of the kind that simply feed the roots by dissolving and washing down to them, are for window gardens perfectly inapplicable. The kind however required by Japan Lilies is rather a good light stuff into which they can root easily. The most decayed sort of Cocoa refuse suits them to perfection—covering the bulbs and hiding the fringes of upper roots that are apt to stick out round the stem in the air.

A great terra-cotta pan of an exceedingly pretty shape—wide and shallow, with a sort of crossed cord pattern for ornament and handles, was given to me in the spring as a charming thing to grow Ferns in—but I could not resist planting my Lilies there, and they have filled it beautifully, and really are looking lovely. There was a layer of charcoal, then a layer of Moss, then a compost of soil and sand and Cocoa stuff, planted with 9 Lilies. They seem very much to like being kept moist at the roots, though they do not root down much, and the most successful plants stand generally in pans of water, or upon a surface of dampish soil or sand.

Small pots seem to me however to suit these Lilies best. If one has then bad foliage, it can thus be taken off and sent to bloom elsewhere. In the small pots too the leaves and flowers are finest. A 32-pot containing two for instance, that has stood out on a London "border" all the summer and been watered there, is a perfect picture of health at the present time, thoroughly clean and bright looking. Next year I mean to plant some in quite small pots, each bulb separately; obtaining the effect of a group by sinking in the great pan.

That said great pan has now to do double duty; for the moment the Lilies are out (put into pots of earth), it will be filled with a mass of bulbs that are coming on, Hyacinths, Tulips, Scillas, and Snowdrops, and dotted over the surface, scraps of Lycopodium, which before the bulbs are in blossom, will cover it over charmingly. *E. A. M.*

Home Correspondence.

Gladioli.—You may perhaps like to consider the following plan for exhibiting the Gladiolus, as it seems to meet the views expressed in your leading article last week. On a piece of lead about three inches square place a high thick piece of common potter's clay ready for working; this is damp, soft, yet very firm. Cut your stem of Gladiolus and as many of its own leaves as you think becoming (qy., the whole nearly). If you wish to have the full height, you can strengthen and steady the stem, should it be necessary, by a stick entering into your lead, and standing up through the clay, tying up your stem as if it still grew in the garden. You can build up the noble flower and its leaves (sticking them in like manner in the clay) to look exactly as if it were still growing; and place it, taking very little space, among any other plants, growing in their pots or otherwise, which will group with it gracefully, finishing off with Moss or common Ferns. The clay will give moisture and nourishment for some days. The idea originated in a Roman studio, where a distinguished sculptor always places any flower brought in to live for a long time in the clay from which he is modelling. I may remark that a larger lump of clay would make lead unnecessary. You can obtain from any common pottery works as many pounds of their common clay as you may desire. If I were exhibiting largely I think I should send for some hundred weight, and use it for many of my flowers, as it would save much time and trouble. With a cloth kept wet, and wrapped round such clay, many flowers will live in it as long as if growing. It gives little trouble to keep the cloth wet with a painter's brush dipped in water. *Monk Coniston, Ambleside.*

Phalænopsis Lowii.—I have this new species in bloom at the present time. The foliage is distinct in colour and form from that of others in the genus. The flower is about $1\frac{1}{4}$ inch across, as beautifully symmetrical as P. amabilis, and far superior to P. rosea in colour; the sepals and petals rosy lilac, fading towards their edges; the labellum as deep and clean in hue as Aerides Schröderi, with a little yellow at the base, and very curiously formed. The spike has only some two flowers, but if larger plants should produce more, this new Orchid will prove one of the most elegant in cultivation. *Walter Beck, Worton Cottage, Isleworth.*

Ferns.—A gentleman having an avenue of trees in his park, wishes to have some of the common large Ferns to cover the ground under the trees; the extent of the ground to cover will be a few acres. Will you please to give your opinion as to the method of covering it, and the name of the Fern to be employed? *A Subscriber.*

Morus Cedrona.—All who are acquainted with the production of silk acknowledge that this is the best Mulberry for the worms to feed on. To this is to be attributed the high character of silk produced in districts near the Lake of Como, which hold an undisputed supremacy in that respect over those of the whole of Upper Italy. Good nourishment is highly favourable to the successful breeding of the silkworm, and particularly to the quality of the silk. If silkworms have therefore not thriven quite satisfactorily in Germany the fault lies principally in their feeding being confined to the White Mulberry, the leaves of which are not nourishing enough to afford a good harvest of cocoons. The advantages of Morus Cedrona over the White Mulberry are the following: M. Cedrona is equally hardy and at the same time much more vigorous in growth than the white kind. It therefore sooner attains the size of a tree, and bears a heavier crop of leaves than Morus alba; they are also more fleshy and juicy, and much larger. Advantages like these must surely therefore recommend Morus Cedrona to the notice of all interested in the production of silk. Experience proves that this variety of Mulberry comes wonderfully true from seed, and even small plants of it yield more foliage than Morus alba. *W., Erfurt.*

Gishurst Compound.—Your correspondent "Early York" hits Gishurst so very hard that perhaps you will allow a few words on the other side; I would venture first to direct attention to "Early York's" statement, that *his* trees were *not* washed with Gishurst Compound, and yet that in "March" his "Peach and Nectarine trees lost almost all their leaf-buds." In your Number of 9th August last was a letter from me, at the end of which it was stated that after experimental intentional overdoses of Gishurst, some of my trees lost a number of buds, which I laid to the door of Gishurst, possibly unjustly, as it now appears that "Early York's" trees, though innocent of Gishurst, also lost buds. I believe the fact to be that very strong solutions of Gishurst, when applied (without a subsequent water washing) to trees not completely at rest, will injure some buds, but that if trees be completely at rest, such solutions do unalloyed great good. From experience derived from my own trees, which as above stated were intentionally overdosed, the buds which fell off left such vigour for those which stopped on, that the crops were good, the fruit especially fine, and the trees a picture of health. I send you photographs, showing different sorts of the over-dosed trees; they were taken rather too late, after the fruit had begun to fall. I was out of England when much of the fruit ripened, but sufficient went to good judges to establish the fact of fine flavour, and notwithstanding heavy distributions among friends and neighbours, a cupboard of Nectarine, Peach, and Golden Drop jams remains to tell a tale of abundance. *George Wilson, Belmont, Vauxhall.* [We have seen letters from Australia which speak very favourably of the use of Gishurst Compound in that part of the world. Messrs. Lang & Co., nurserymen, writing from Ballarat in June last, report that they and their customers have found it an inestimable boon. By means of it Cabbages, Turnips, and such plants have been in a great measure relieved from the ravages of their great enemy, the Aphis Brassicæ, which often threatens the entire destruction of summer crops of these esculents; not only however is it found to be useful in keeping down the fly in question; it also tends, they say, to keep in check insects of all kinds. Messrs. Law & Co., seedsmen, Melbourne, state that all the Cabbage tribe suffers most severely at certain seasons from the effects of fly, and that Apple trees are frequently dreadfully affected with American blight. They have, however, found Gishurst to be a complete cure for these evils as well as for other kinds of insect. In another letter just received from Melbourne, Mr. Carson states that owing to the mildness of the climate of Victoria, insects become a perfect plague, especially to Apple trees, the cultivation of which had in consequence got to so low an ebb that trees could be bought for 6*d*. apiece. Gishurst, he states, has, however, this year worked a wonderful change, for the price now asked and obtained is 2*s*. and 10*s*. each for yearling trees. So much faith, indeed, have the Melbourne cultivators in Gishurst as a remedy for blight, that those who had given up the culture of Apple trees as hopeless, are now busy planting. In a Melbourne paper called the *Yeoman*, we find the following letter from one of its correspondents: "The best cure and preventive ever produced for blight is Gishurst compound. Tobacco, sulphur, or soft-soap is comparatively harmless to either American blight, red spider, or mildew—not so Gishurst. A neighbour of mine last year syringed his Vines, which were badly affected with Oïdium, and it caused a complete cure. I have used it for my Apple trees with the most perfect success, and also with Cabbage, where the blight was bad, with similar results." In the *Farmers' and Gardeners' Chronicle*, another Melbourne paper, is a long article on the cultivation of Orange trees in Victoria, and among other things the writer says: "The brown scale, so destructive to Orange trees in this colony, may be easily eradicated, on trees especially, with a solution of Gishurst compound, say from 6 to 8 ounces dissolved in one gallon of water, and the parts affected immersed in this solution for a few seconds. I have found this mixture to effectually eradicate the scale without the least injury to the trees; for green fly and other aphides, I find a solution of two ounces to the gallon of water, applied with some force with a syringe, to be an effectual remedy."]

Portland Cement.—Have any of your readers experience of this cement for jointing hot-water pipes? It forms an excellent joint, which is very quickly made, but will it stand the variation of temperature to which it would be subjected? In making the joint I drive in about an inch of oakum, make the Portland cement with water to the consistence of putty, and press it in with the fingers. I then smooth it off, and in 24 hours it is quite hard; I had two elbows jointed six months ago, and boiling water was filled in; it has remained in ever since, and the joint is still quite sound. Red lead and oakum are very disagreeable to use, and iron cement bursts the sockets. *N.*

Cocoa-nut Refuse.—The very full description of this refuse, which is sometimes called pulp, in your Paper of the 6th and 13th Sept. leaves but little more to be said on the subject. We have still, however, numerous inquiries about the Ferns, &c., in the International Exhibition, and about the best way of using the refuse. Many imagine that is a rich manure, equal to guano. Some spread it on the surface of flower borders, while others pot bulbs and plants in it alone, without mixing any soil with it or furnishing sufficient drainage. Our reason for not mixing loam with the refuse in the case of Ferns, &c., alluded to, was to give the public a fair opportunity of forming a correct opinion regarding its value. The bottom of the case in question is perforated with holes and covered with a thick layer of fibre for drainage. These Ferns have been watered only three times since the opening of the Exhibition; nevertheless that has been sufficient to keep the refuse moist. It is however better and perhaps more economical, until further experiments shall have been made with the refuse, to use it as a substitute for peat and leaf-mould, and in employing it to thoroughly mix loam with it. The best plan of doing this is to rub both together with the hands, or to pass both through a coarse sieve. We have seen Hyacinths, Gladioli, and Lilium lancifolium growing luxuriantly in a compost containing about one-third its bulk of refuse. If the loam is very stiff more of the refuse should be used, and perhaps a little sand. We were told, however, that the pots were thoroughly drained with one bit of crock over the holes, and that plenty of fibre (not refuse) was pressed down on the bottom. The bulbs were kept nearly dry until they commenced growing. On the same page of your Paper on which the refuse is noticed are some excellent remarks on surface dressing of orchard house trees, and on the beneficial influence on fruit of rapid and perfect drainage. There can be no doubt that the Cocoa-nut refuse would be a valuable substitute for the malt kiln dust recommended in the article in question; and there is nothing so durable and efficient for drainage as the fibre. In your Paper of September 13, Mr. Veitch says that he has used the fibre by itself as well as mixed with peat and Moss for Orchids, and he speaks highly of both the fibre and the refuse; he adds however that he is anxious to see whether or not Fungi will spring up when the fibre shall have become decayed. For this he will, we suspect, have to wait some years, for the fibre is almost as imperishable as horse hair. We certainly have never seen any signs of Fungi either on fibre or refuse which have been exposed in heaps on our premises for 10 or 12 years; and from what others say we may infer that Fungi will not be produced. The refuse, mixed with loam, has been found to be excellent for Ferns, Orange trees, Camellias, Begonias, Azaleas, and Gloxinias, and we daily receive letters expressing satisfaction with its results. With respect to other things, the fibre which we recommend for Orchids and drainage is short and light and by no means dear. One cwt. of it can be had for 20*s*., and as it will last for many years, the same piece may be used over and over again. *Patent Cocoa Fibre Company, Kingston-on-Thames.*

Pampas Grass.—As regards size of plants of this Grass (see p. 910), I beg to inform your Correspondent that there is a specimen here, in I think its fifth year, having at this moment 75 spikes of bloom, the highest being 11 feet from the ground. In 1863 the same plant had 79 spikes. We have also during the last few days measured a large Araucaria here, and as it may interest some of your readers I send the measurement. I should add that the tree is feathered down to the ground. Its height is 37 feet, girth of bole close to the ground, 7 feet; ditto, 1 foot from the ground, 5 feet 7 inches; width of tree and branches, 21 feet. *W. R. F., South Lytchett, Poole.*——The remarks on the Pampas Grass by your Correspondent led me to examine some 30 plants growing here, which I thought were the best in the county. They have been planted some seven years and have never been checked by frost. The graceful appearance of plants growing so luxuriant as ours can scarcely be described. The best, growing on the banks of a small lake about 15 inches above the level of the water, have leaves from 10 to 14 feet long; the spikes are just showing flower, and many of them are 10 feet high, and very strong; many of the plants are much the same size; one, but not the largest, shows 55 spikes, the others vary from 20 to about that number. *John Strachan, Foaty Island, Cork.*

Golden Hamburgh Grape.—Incapacity, with her thousand tongues, first assailed, then tortured, and ultimately did her best to crush the good qualities of this Grape, leaving us nothing but utter worthlessness to remember. All the hubbub, all the insinuations, and all the denunciations we have been accustomed to read and hear about, are I fear not the result of direct personal experience. The cry of repudiation arose and was wafted abroad upon the wings of incompetency; the sound echoed and re-echoed upon the ear of this and that person, like any other calumny, till the true character of this fine fruit was all but extinguished.

Years ago I have alluded to this matter, and again I take the opportunity of asserting what I did then, that the Golden Hamburgh is a Grape of first-rate quality, equalled by none in the class to which it belongs, requiring no more care in cultivation than a Black Hamburgh. We have it in a mixed house, on its own bottom, planted in an outside border, subject to the same treatment as that of Black Hamburghs, growing vigorously and producing from year to year magnificent bunches and berries, without ever having shown the least symptom of shanking or shrivelling. Under pot culture the same success has been acquired, but the fruit was not so large. Mr. Hunt, gardener to Lord Fitzharding at Berkley Castle, took a first prize with this Grape at the July meeting of the Gloucester Horticultural Society; and again, at the September meeting of the Stroud Society, J. W. Hallewell, Esq., produced unimpeachable bunches which carried off a first prize. Mr. Hallewell is only an amateur, but what he does is done well. It is most satisfactory to learn how well the merits of this variety have been vindicated at Chiswick; surely nothing more is required to change the current of adverse opinion, especially where that opinion has been formed in ignorance. *A. Cramb, Tortworth Court.*

Wintering Bedding Plants.—I have a small garden a few miles from London, gay just now with Nasturtiums, Marigolds, Phloxes, Calceolarias, Geraniums, &c. Of course many of the flowers are mere annuals, but I don't like the idea of seeing my beautiful variegated Flower of the Day, Golden Chain, and Tom Thumb, Ivy-leaved and Sweet-scented Geraniums, Calceolarias and Verbenas all killed. I have no greenhouse to keep them in, but have I been told that if I hang up my Geraniums in a dry cellar by the heels they will live. But another leading Nurseryman tells me to try cutting them down and placing them in a box of dry sand. Can any of your readers recommend any improvement on either of these modes, and which is best? Should all light and air except such as comes through the sides of the door be excluded from the cellar? What should be the treatment for Calceolarias, Fuchsias, and Verbenas? I have a chance of sending them to a glass house where the temperature is occasionally 70° in winter. Would that be best or worst of all for them? A hint would greatly oblige *A Cockney.*

Societies.

Brighton Horticultural. — The ninth annual autumn exhibition of this Society took place the other day in the Pavilion, and was well attended. The display of Orchids, Stove and Greenhouse plants, Ferns, Geraniums, Fuchsias, Achimenes, Begonias, Gloxinias, and Balsams was all that could be desired, and contributions of cut flowers in the shape of Dahlias, Hollyhocks, Roses, Verbenas, Gladioli, and Asters were equally satisfactory. Fruit too was plentiful and for the most part good.

On the centre table in the saloon were groups of three stands each of fruit and flowers for the decoration of the dinner table. The test of merit was the most beautiful arrangement, for which the Railway Cup, value 10*l.* was awarded. The competitors were Mr. Parsons, Messrs. Balchin and Nell, Mr. A. M'Kenzie, and Mr G. Young, gr. at Lee Park, Hants. The competition was very close between Mr. Parsons and Messrs. Balchin and Nell, but the light, graceful, and beautifully arranged centre stand in Mr. Parson's group carried off the first prize. The centre stand in the group exhibited by Messrs. Balchin and Nell was a little too heavy at the top. The arrangement of the two small stands in each of these two groups was exceedingly graceful. The group exhibited by Mr. A. M'Kenzie was also beautifully arranged, but too heavy compared with the other two. This interesting feature of the show was highly attractive and commanded great attention.

In the entrance hall were the collections of Plants remarkable for fine foliage. Mr. G. Young, gr. to W. H. Stone, Esq., exhibited a very fine collection, amongst which were Hippomane spinosa, Rhopala corcovadensis, and Aralia reticulata. Mr. Harding, Dulwich, Surrey, had in his collection excellent specimens of Stangeria paradoxa, Cycas revoluta, Chamærops excelsa, and Dracæna umbraculifera. The beautiful stove and greenhouse plants shown by Mr. Atkins, gr. to Viscount Gage, attracted universal attention on account of the freshness of their lovely blossoms, excellent training, and large size. Little inferior were some plants shown by Mr. Parsons.

The latter had also a fine plant of Impatiens Jerdoniæ. Torenia asiatica was likewise a fine specimen as was also Balsamina latifolia alba, shown by Mr. Huggett, gr. to Dr. Jeffery. Mr. Hudson, gr. to F. Barchard, Esq., exhibited four beautiful plants—Rondeletia speciosa major, Stephanotis floribunda, and Dipladenia splendens. Mr. Cameron, gr. to the Duke of Richmond, showed fine plants of Statice Holfordii, and the curious Mussænda frondosa, always attractive, on account of its large leaf-like white bracts. From Mr. Chilman, gr. to Mrs. Smith, Epsom, were Dipladenia crassinoda and Vinca oculata; and Mr. T. Gilbert, gr. to E. L. M'Murdo, Esq., exhibited some good specimens of stove and greenhouse plants.

Orchids were well represented. Those shown by Mr. Cameron were magnificent. Amongst them were Miltonia Clowesiana, Vanda cœrulea, Oncidium luridum, and a magnificent Cattleya Harrisoniæ. Mr. H. Chilman exhibited a lovely Vanda cœrulea, with large beautiful spikes of delicate sky-blue flowers. Mr. Hudson, gr. to F. Barchard, Esq., showed Oncidium papilio, also excellent plants of Phalænopsis grandiflora, Vanda tricolor, Cattleya Harrisoniæ, and Oncidium flexuosum. Mr. Young, and Mr. Carter, gr. to Mr. Kent, also showed Orchids.

A table in the centre of the room was appropriated to Roses. The collection of 50 varieties of three trusses each, shown by Mr. Mitchell, Piltdown, was exquisitely beautiful, and carried off the first prize. Mr. Mitchell also received an extra prize for 100 varieties. Messrs. Paul & Son, Cheshunt, likewise exhibited a beautiful collection, and Mr. W. Knight received an extra prize for a collection of 60 varieties.

The Dahlias shown by Mr. Keynes, Salisbury, were superb. Among the best varieties were Beauty of Hilperton, a noble purple flower; Criterion, rose; Andrew Dodds, very dark; Juno, clear, delicate lilac; Peri, white, tipped with lavender; John Keynes, deep red; Baron Taunton, lilac; Lady Elcho, light salmon; Goldfinder, yellow; Lord Derby, bright rosy crimson; Miss Henshaw, Bob Ridley, Delicata, Jenny Austin, Chairman, Golden Drop, Umpire, Model, Imperial, Norfolk Hero, Hugh Miller, Cherub, and Empress of India. Mr. John Cattell, Westerham, exhibited also some very fine blooms, particularly the Empress of India, Andrew Dodds, Hugh Miller, John Dory, Delicata, Mr. C. Walters, &c.

Hollyhock blooms were exceedingly fine, particularly those shown by Mr. Chater. Messrs. Downie, Laird & Laing also exhibited some beautiful varieties.

The fruit in both drawing rooms was highly attractive, as were also the Grapes in the music room. There were Pine Apples, Melons, Peaches, Nectarines, Pears, Apples, Plums, Cherries, and Figs in abundance, and in high perfection. Currants, both red and white, were also very fine for the season; but the most attractive feature was the Grapes, particularly three bunches of Black Hamburgh exhibited by Mr. J. Bristow, gr. to G. Orme, Esq., and the box of 12 lbs. of white Muscat, shown by Mr. A. M'Kenzie, Bristol Nurseries, Brighton.

The spikes of the various varieties of Gladioli were much admired. Some were exceedingly well grown specimens, particularly those exhibited by Messrs. Paul & Son, but for variety and glowing colours, although the spikes of flowers were small, none were more beautiful than those shown by Mr. Cattell.

Specimen plants were magnificent. The Ericas were gigantic in growth, and in one mass of bloom; these were shown by Mr. T. Gilbert, Hastings, and Mr. H. Chilman. Mr. R. Atkins, gr. to Viscount Gage, exhibited Aphelandra aurantiaca, with beautiful rich scarlet feather-like spikes of inflorescence. Associated with this was also a fine plant of Pandanus utilis.

The Fuchsias were magnificent, particularly those exhibited by Messrs. Balchin & Nell; Mr. J. Winton, gr. to H. Catt, Esq.; Mr. W. Miles, gr. to O. Smith, Esq.; and Mr. Kemsley, gr. to C. Catt, Esq. At the back of these were the Ferns, arranged to form a beautiful grove throughout the whole length of the booth. The effect was delightful. The exotic Ferns exhibited by Mr. H. Lavey, and Messrs. Ivery & Son, nurserymen, Dorking, were greatly admired for the beauty of their large graceful fronds. Mr. Lavey had British Ferns in excellent perfection, and amongst them were several exceedingly interesting specimens. In the competition of eight varieties of exotic Ferns, excellent specimens were shown by Mr. C. Hudson, Mr. Thompson, gr. to R. Hawkins, Esq.; Mr. Berkshire, gr. to the Rev. G. S. Shiffner; Mr. Cackney, and Mr. T. Gilbert. Mr. Lavey showed some fine plants of Selaginella, with beautiful Moss-like fronds. The German and French Asters were beautifully represented. The German sorts especially were in perfection, and greatly admired; as were also the pans of cut Verbenas.

Mr. Fowler, Chestham, exhibited some very beautiful Zinnias, and Mr. Hugh Saunders, Keymer, presented three plates of beautiful Passion-flowers. In the centre of this division was a large beautifully arranged model flower garden by Mr. Hobden, gr. to T. Attree, Esq., Brighton Park. It received the third prize. Mr. H. Lavey exhibited a very prettily arranged mixed Italian and Dutch model flower garden, in which the beds were well laid out and judiciously planted in order to blend colours for harmonious effect.

In the central booth on the east side were the wild flowers concerning which some remarks were made last week. Those shown by Messrs. Heyler and Edwards deservedly received attention. They reflected great credit on their collectors, and their knowledge of many of the rarest and most interesting species found in the country. The committee would do well however to make a specified number of species to be exhibited, which would relieve collections of very common plants too often shown. The arrangement of the collection by the boys of Arundel House School was exceedingly good, and did them great credit.

The design for a flower garden by Mr. Quelch, nurseryman, Brighton, was a beautifully arranged geometrical Dutch flower garden, well laid out, and practically planted. It was admired by every one. A very curious mosaic but pleasingly arranged winter garden by Mr. French, Bristol Gardens, received great attention. An extra prize was awarded to it.

In the south booth of the three facing the Pavilion were some interesting plants shown by Mr Green, gardener to Mrs. Borrer, Henfield, amongst which was Brunsvigia Josephinæ in full bloom, but in travelling the flowers had got damaged. Mrs. Green also exhibited an Echeveria from Mexico, and the curious bramble called Rubus australis.

Celosia pyramidalis and a Cotton plant were shown by Mr. Martin, Shermanbury, and were much admired. The pods of Cotton were very fine. Lantanas came from Mr. Winton, and spikes of Gladioli from Messrs. Youell & Co., Great Yarmouth. An American Aloe was shown by Mr. G. Young, and Coleus Verschaffelti (in flower) by Messrs. Balchin & Nell.

Notices of Books.

Illustrations of the Nueva Quinologia of Pavon; with Coloured Plates by W. Fitch, F.L.S., and Observations on the Barks described. By John Eliot Howard, F.L.S., &c. Reeve & Co. Imp. Folio.

The sumptuous folio whose title heads this notice, and which has been frequently noticed by us as its parts continued to appear, is a munificent contribution to Botanical and Pharmaceutical Science, by one of the most accomplished manufacturing chemists of the day. Like the magnificent Orchidaceous work of Mr. Bateman, and the "Illustrations of the Genus Carex" of Dr. Boott, this has been produced at the cost of the author, regardless of any expense that could render it worthy of its subject, and has been distributed largely to scientific institutions and individuals. Such books, originating as they do in a pure zeal for science and a desire for its diffusion, and from no love of fame or popularity, are noble monuments, no less to their authors' liberality than to their good taste.

Now that the experiment of introducing the Quinine yielding trees into our Indian and tropical Colonial possessions is being pushed forward so vigorously by Government, it is of no small moment to have these efforts supplemented by an authority of such high standing as Mr. Howard, who is certainly better acquainted than any other individual with the history, commercial value, and appearances of the various barks used in medicine. Mr. Howard has chosen the most effective form for his purpose; he has taken for the foundation of his work, an original M.S. of Don Jose Pavon, describing 41 species of Cinchona, chiefly discovered in Peru and in various provinces of Quito by himself, Don H. Ruiz, and their disciple Don Juan Tafalla; he has illustrated these species by beautiful coloured folio plates, taken by Fitch from the original specimens preserved in the Museum of Madrid; he has added descriptions of the Barks, also from Pavon's Collection, and which correspond to the descriptions; he has carefully collated these with the materials in the Herbaria of Kew and the British Museum, Paris and Berlin; and he has arranged the whole in order, adding numerous valuable observations on the synonymy and variation of the species of Cinchona. The result is 27 plates, comprising 31 species or forms of Cinchona, 3 plates of microscopical analyses of the tissues of the bark, and 150 pages of letterpress.

The species of Cinchona appear to be exceedingly variable, insomuch that Mr. Howard concludes that the "various species and subspecies, and varieties of the Cinchona form a continuous series, passing by degrees from those which form the central points of the group, to those which lie on the very outskirts, and almost insensibly intermingle with the kindred genera, so that there is no more [illegible] division between these outlying Cinchonæ and the Cinchonaceous Landenbergieæ than between [illegible] the proximate species of their own genus." The discussion which follows, relating to the bearings of this fact (so strongly stated) upon Mr. Darwin's hypothesis is a very curious one; leaving hypothetical views as to the origin of the species which he considers so intimately connected, he endeavours to show that these varieties are constant, and continues: "whatever may have been the history of the *past* there can be no question of the absolute permanence of all the forms of Cinchonæ which meet our view in the well [illegible] *present.* It is also interesting to observe the exact way in which every minute feature of the barks gathered by Pavon nearly a century since are reproduced in those now brought from the same districts. And again, "It seems to me, consequently, that every form, in this sense permanent, which can be distinguished by well marked characteristics from every other, is best treated as a distinct species rather than as a variety; since in describing Nature we have to record that which is actually before us, without being compelled to rest our classification on hypothetical conjectures as to the past." We must confess our inability to follow this line of argument, or to conceive how *permanent* forms are to be recognised amongst a few imperfect dried specimens of a genus whose various species, sub-species, and varieties are said to form a continuous series, &c., as quoted above: still less can we understand how these are to be practically distinguished if, with Mr. Howard, we are to credit Mr. Karsten's assertion, that the bark-trees will produce so very differently according to the exposure of their locality, that of three specimens of the same species from different declivities of one and the same mountain ridge, the first gave 1½ per cent. of Cinchonine, the second no alkaloid at all, and the third a very little quinine! Mr. Howard's feeble argument in favour of permanence, drawn from the minute features of a bark remaining unchanged during [illegible] brief century, must fail in its application under such evidence of change as this, upon which he thus comments:—"From this it follows that the variation [illegible] alkaloidal contents does not altogether depend on the individual peculiarities of the plants, but that the [illegible] or the influences of the climate (on which the nourishment of the plant depends) call these into existence."

We have noticed this apparent inconsistency less in censure than as a warning. If the plants are so variable not only as to structural characters but as to properties, what surety have we that the experiment now conducted on so large a scale in India is in [illegible] scope a wise one? It is stated on good authority that the Digitalis purpurea, when cultivated in the Himalaya, flourishes vigorously, but that its foliage is medicinally inert. Let us hope it may not prove so with the Cinchona trees.

The first species described in Mr. Howard's work is a crown bark, called C. chahuarguera, and is very interesting, as being that which is believed to be the original one that was sent in 1638 to Count Chinchon Viceroy of Peru, and which led to the discovery of the other sorts; 11 pages are devoted to its history, &c., and contain much curious and valuable matter.

The description of C. micrantha, or Grey Bark, is especially interesting, that being a species now abundantly introduced into India, and growing freely in many localities. In this, as in other cases, the value of the bark depends greatly on the locality, some trees being absolutely rejected by the bark collectors.

C. succirubra occupies 23 pages; it is also extensively introduced into India, and is regarded by Mr. Howard as the most promising in point of the value of its yield of drug: it is the Red Bark of the English markets. Though one of the most temperate species it appears to be endowed with a singularly pliant constitution, for in its adopted country it grows well both at Calcutta, and 6000 feet high in the Himalaya.

C. Pahudiana is notable as being the species now chiefly cultivated in Java, and which, it is stated, is a very poor bark in regard to the amount of alkali it yields. It has been introduced into the Himalaya through the liberality of the Dutch Government, and appears to grow vigorously: the introduction of a sort of such poor repute has been censured by some, but we are inclined to think the experiment a wise and prudent one, seeing how dependent all the species are on locality for the value of their yield of alkali.

There is an old saying, that "the mouth of a gift horse should not be looked into," and in the present

Were it not that this noble contribution to science can well afford it, we should have been loth to indicate its few defects: the chief of these are, the nomen adopted for some of the species; thus, one long figured and well known plant now appears under the published name of Pavon, and in another case we find the specific term *decurrentifolia* given to a plant whose leaves are not at all decurrent; in some instances we are left in doubt as to the specific distinctness or otherwise of the plants described and figured. The want of consecutive numbering of the plates and text is also a serious drawback, and a still greater one is that the figures are for the most part coloured from imagination. In a work of such high scientific and commercial value, this is indeed a pity; happily (in one sense) the defect is apparent, for the colours of the plates are sometimes conspicuously at variance with the descriptions opposite them. Apart from these blemishes Mr. Howard's work is a most creditable one to its author, and will be invaluable to the investigator of Peruvian Barks.

A plain and easy Account of British Fungi: with descriptions of the Esculent and Poisonous Species, details of the principles of Scientific Classification, and a Tabular Arrangement of Orders and Genera. By M. C. Cooke, with 24 coloured plates. Robert Hardwicke.

Fungi form one of the most numerous and widely dispersed families of plants in the vegetable kingdom. There is scarcely a place to be found where some of its members do not exist, or a substance on which they do not, some time or other, make their appearance and eventually devour. Unseen, their little dust-like seeds or spores as they are termed by botanists, float in the air and spring into life wherever they meet with the conditions that are favourable to their development. Indeed, the part which Fungi play in the economy of Nature is so wonderful as almost to exceed belief. While a few, like the Mushroom, the Truffle, and the Morel, are well known as esculents and highly esteemed for their peculiar qualities, by far the larger number are despised and regarded as poisonous and dangerous pests. "When our beer becomes mothery, the mother of the mischief is a Fungus; if pickles acquire a bad taste, or ketchup turns ropy and putrifies, Fungi have a finger in it all. Their reign stops not here, they even prey on each other. The close cavities of nuts occasionally afford concealment to some species; others like leeches stick to the bulbs of plants and suck them dry; and some pick timber to pieces like Oakum. Hop-mildew, Vine disease, Turnip mildew, bunt, smut, ergot, Potato-murrain, Pea and Wheat mildew, may all be traced to Fungi as the fertile source of mischief." They grow with amazing rapidity, but very quickly decay. In form, size, and colour they are extremely variable, as well as in smell, which in some is agreeable, while in others it is very unpleasant.

As autumn is the season when Fungi are most abundant, we think this little work will be acceptable, not only to the botanical student, but to those who are residents in the country, and have a desire to become acquainted with the esculent members of this highly curious family. To the former it will be useful by exhibiting the position and relation of the several parts of structure in Fungi that are necessary to be observed in order to determine the group to which any particular species may belong; while to the general reader it will convey instruction, and be the means of paving the way to a better knowledge of such "common things" as Toad-stools—especially of those which have been recommended as edible, and deserving of more attention than they have hitherto received. The figures and descriptions appear to have been prepared with care and a due regard to the heavy responsibility that must always rest upon those who undertake the difficult task of teaching how to distinguish with certainty the esculent from the poisonous kinds of Fungi. For this purpose no general rules can be given, but we think a pretty safe guide is here offered to such persons as will only take the trouble to study the drawings, and attentively consider the accounts that accompany them. As an example we submit the following relative to Agaricus dealbatus.

"A very elegant little Fungus is occasionally found in dense clusters on Mushroom-beds, and more often on the ground in Fir plantations. It is of a clear ivory whiteness, especially when young, and the upper surface of the pileus, which is depressed and ultimately cup-shaped, has a satin-like appearance. The gills are crowded, thin, and white, and the stem is fibrous, thin, and equal throughout its length. The margin of the pileus is commonly waved and folded, and the whole appearance of the plant is exceedingly elegant. In our plate (pl. 10, a.) the lower figure represents a young specimen when the pileus is little depressed; the upper a portion of a group fully matured.

"We can speak from recent experience of the wholesome qualities of this species. The whole substance is less watery than the common Mushroom, and if old specimens are mixed in the dish, or any of them are not cooked carefully and slowly for some time, the result will prove very unsatisfactory, for they will become as tough as leather; but a dish of young individuals will make a most excellent stew with the usual accompaniment of sweet herbs, pepper, and salt."

In like manner other kinds of esculent Fungi are placed before us, and various recipes given for dressing them; but notwithstanding all that is stated in their favour, we suspect it will take a long time to remove the deep rooted prejudice that exists against them in this country, and teach our rustic population how to know those that are harmless with as much certainty as they do the common Mushroom, and one or two other sorts that are esteemed as "costly dainties." If anything is likely to effect this object we think it is such a work as the present, which from its cheapness is placed within the reach of every one. After seeing the figures in plate 14, and reading the following description, who can fail to recognise the species to which it refers?

"The little Fairy-ring Champignon (Marasmius oreades) is one of the privileged few that enjoy a good reputation; but even in this instance the reputation is but local. In the dried state they are available for culinary purposes, whilst thousands of them annually rot on the pastures where they grow without a hand to gather them. There is very little difficulty in recognising the Champignon, which is found growing in rings, and the pileus at first is of a brownish ochre, becoming paler as it grows older, until it fades into a rich cream colour. Another species is occasionally mixed with it, which might by carelessness be mistaken for it, but not if the two are compared. The taste of Marasmius urens, the latter species, is acrid, and the gills yellowish or brownish, and narrower than in the true Champignon; the stem of both is alike solid, but in the spurious kind clothed with a white down at the base, whilst in the edible kind it is quite naked. A third allied species (Marasmius peronatus) is sometimes found in woods, but this is generally larger, and has the base of the stem clothed with yellow stiff hairs or bristles (pl. 14, lower figure). As we should not search for the true Champignon in woods, there is less fear of mistaking this species. There is scarcely a more delicious Fungus than the Champignon, and the chance of confounding other species with it is more imaginary than real. The evidence of the Rev. M. J. Berkeley is strongly in its favour. When of a good size and quickly grown, it is perhaps the best of all Fungi for the table, whether carefully fried or stewed with an admixture of finely minced herbs and a minute portion of Garlic. It is at the same time tender and easy of digestion, and when once its use is known and its characters ascertained, no species may be used with less fear. It is so common in some districts that bushels may be gathered in a day." An interesting account then follows of the origin of these fairy-rings, and of the manner in which they go on increasing in diameter year after year until some cause interrupts their further progress.

Nothing, however, will excite more surprise than what is stated respecting the giant Puff-ball (Lycoperdon giganteum) which is by no means uncommon in some parts of the country, often making its appearance in a wonderful manner, and attaining the size of a Pumpkin in the course of a night. "In the earlier stages of its growth it is of a dirty whitish colour, becoming browner by age, in which later condition, if broken, it emits a cloud of snuff-coloured unpalatable dust. Very few persons are aware that, when in its young and pulpy condition, this Lycoperdon is excellent eating, and indeed has but few competitors for the place of honour at the table. It is especially esteemed in Italy, and would be with us, not only on account of the impossibility of confounding it with other species, on which account the repast may be enjoyed without fear, but also for its own intrinsic value. Unfortunately it deteriorates very speedily after gathering, and should be discarded if, when cut, any yellow marks or stains are visible, for then it is too old. When the cut surface of the Puff-ball is white as snow, then cut it up into slices of half an inch in thickness and fry it in fresh butter, adding according to your taste a sprinkling of pounded sweet herbs, pepper, and salt; the result will be a delicious dish, much lighter and more digestible than egg-omelettes, and surpassing them in richness and delicacy of flavour."

From these extracts it will be seen that the author is a thorough mycophagist, well acquainted with the peculiar features by which the most remarkable of the edible kinds of Fungi may be known. Not content with the opinion of others respecting their good or bad qualities, he judges for himself and gives us the result of his experience. With a praiseworthy feeling he recommends that the greatest caution should be exercised by persons experimenting upon the esculent qualities of Fungi which may be unknown to them, or which have not been pointed out as safe. "It is not advisable," he says, "to venture upon such as have a decidedly acrid or unpleasant taste in the raw state." If only such species are employed as are figured and described as edible in this little work there need be no fear of any unpleasant consequences; but on no account should an indiscriminate mixture of unknown kinds be handed over to the cook.

A tabular arrangement is given of the orders and genera of British Fungi, with the number of species in each, and a good Index completes the work, which to the young gardener, we think, will be useful as a guide to the knowledge of other kinds of esculent Fungi besides the common Mushroom, and possibly lead to their successful cultivation.

Miscellaneous.

De Gasparin.—We have to record the loss of M. de Gasparin, who died at Orange on the 7th ult., in his 80th year. He was one of the most ardent and enlightened agricultural philosophers of our day.

Soldiers' Gardens.—In the late encampment at Chalons, which has been broken up during the past week, we learn that the soldiers have been encouraged to rear and cultivate vegetable gardens all around the camp, on a plan tried experimentally on a limited scale some two years back. So successful have the present arrangements proved that they are to be forthwith followed out in all the garrison towns of France. It is computed that there are certainly 100 towns where there is a military depôt, and accordingly the order has gone forth for the establishment of 100 vegetable gardens for military use. Under the direct superintendence of the Minister of War adequate preparations to execute this order are to be commenced immediately. From the experience of this season at Chalons the superficies of a vegetable garden "is five acres for each regiment, and each allotment has this year produced vegetables to the value of 60*l.* in four months." We certainly trust that these trite but important details will have been noticed and pondered over by our own military authorities. Five acres are reported to yield 300 hectolitres of Potatoes, at 4*s.* the hectolitre—a measure which is about equivalent to 22 gallons; and, of course, there are Cabbages, Onions, and Carrots in proportion. From a distribution by the Commissariat Department of 60,000 Cabbage plants there was raised produce enough for 24,000 men, calculating the supply of 100 Cabbages daily for each regiment; and the entire cost for seed and labour did not exceed 2*l.* for each regiment. Certainly such a positive addition to the soldier's comforts as that of fresh vegetables, with their infinite varieties throughout the different seasons of the year, ought to be adopted by us, who are behind no people on either side of the equator for the fertility of our soil and the enterprise and industry which evoke it. We claim to be the foremost agricultural producers on the face of the globe; our prizes for the best and richest growth of fruits and vegetables excite the competition of our most distant colonies, and such a homely matter-of-fact suggestion as this introduction of vegetable grounds for the use of our soldiers, to be cultivated and cared for by them in their leisure, ought to have been adopted long ere this. But we have feared to indulge the soldier. Any addition to his diversions or employment when off duty has till very lately been regarded as a hurtful infringement of his military career, and likely to make him something more than a mere soldier. Within the last few years we have built libraries, reading rooms, even a theatre here and there, and gymnastic schools for the use of the regiments in certain garrisons; but such a grateful and pleasant resource as this proposed vegetable garden for many of the men, who must have in early years followed an agrestial occupation, has been altogether ignored. In one of the reports issued by the R. Horticultural Society we counted no less than 61 varieties of Cabbage, grown in the garden during the summer of the present year, and the minute description which is there afforded of the superior excellence of the "True Fulham" is quite affecting from its earnestness. Will the Council of this useful institution consider it out of place, or beneath their legitimate functions, if we ask them to assist in the introduction of "vegetable gardens" in our camps and garrisons, and show the sincerity of their sympathy with such a good work by offering a prize, amongst their numerous premia, for excellence and superiority of cultivation, to the regiment which can boast the best tended and most fertile "vegetable garden?" *Standard.*

Paper.—Among the botanical specimens sent over from Japan to the Société d'Acclimatation by M. Eugene Simon, there are a few young trees out of the bark of which the Japanese make very good and strong paper. In China the bark of the Broussonetia papyrifera, a kind of Mulberry tree, is used; that of Japan is a variety of the same species, to which Von Siebold has given the name of Broussonetia Kaminoki. Considering the daily-increasing difficulty of meeting the demand for rags, which are sold at about 2*l.* per cwt., the bark of this tree, imported from Japan, would prove extremely valuable to the paper trade, inasmuch as it would not cost more than half that price. The Broussonetia Kaminoki might be easily acclimatised in various parts of Europe; it prefers a stony soil, especially of a calcareous nature, and should be planted at intervals not exceeding 3 feet; otherwise the branches would extend, whereby the bark would become full of knots, causing much loss of substance in the manufacture. The soil is not manured until the second year; in the autumn of that year the plant is lopped close to the root, and this operation, as well as that of manuring slightly, is repeated every second year; 100 lb. of branches thus obtained, stripped of their leaves, yield 10 lb. of bark. The branches, on arriving at the manufactory, are put into hot water for half an hour; the bark can then be easily stripped off with the hands, and is afterwards left in the sun to dry. It is next macerated for three days in river water, and bleached in the sun. These operations having been several times repeated, the bark is at last boiled in a lye of ashes for the space of three hours, then manipu-

lated for some time to separate any epidermis that may have remained, and lastly, when dry, the mass is pounded fine and made into a pulp with water, to which a glutinous liquid, extracted from a shrub called *Nebooriko*—probably the *Acacia Nemu*—is added, in the proportion of about two pints per cwt. of pulp. The latter is then made into sheets much in the usual way. *Daily Paper.*

Gardening in the North American Provinces.—The Floral and Horticultural Society of New Brunswick held their first show of native flowers, fruits, and vegetables, on August 27 last, in the Fisherman's Hall, St. John. It was attended by a large number of citizens of all classes, and elicited universal admiration. Towards the close of the exhibition, Chief Justice Sir Francis Brady, the President of the Society, addressed the assemblage, and in the course of a very neat speech, declared it as his opinion that in no part of her Majesty's dominions could the excellency of the various products exhibited be excelled.

Bird's Nesting, and Bird Destroying.—"If a bird's nest chance to be before thee in the way, in any tree, or on the ground, whether they be young ones, or eggs, and the dam sitting upon the young, or upon the eggs, thou shalt not take the dam with the young: thou shalt in any wise let the dam go, and take the young to thee, that it may be well with thee, and that thou mayest prolong thy days." *2nd Deuteronomy*, v. 6.

Sponges.—M. Lamiral, whose departure for the coast of Syria with a view to obtain sponges for transplantation we mentioned in April last, has now returned, and presented a detailed report of his proceedings to the Société d'Acclimatation. M. Lamiral distinguishes three kinds of sponges for which there is a demand—the fine and soft sponge, called *abiand*; the fine and hard sort, called *achmar*; and lastly, the common sort, called *cabar* by the Arabs. These sponges are found in the Levant within the 36th and 33d degrees of latitude—that is, between Alexandretta and Saida. It is now universally acknowledged that sponges belong to the animal kingdom, and are an aggregate of cellules built up by gelatinous polypi similar to those which construct madrepore, porites, and other polypifers. When the sponge is first gathered at the bottom of the sea, it is covered with a black but transparent gelatinous substance, resembling vegetable granulations, among which microscopic white and oviform bodies may be distinguished. These are the larvæ destined to perpetuate the species. When arrived at maturity, they are washed out by the sea water which incessantly flows through the sponge; they then swim along, by the aid of the vibrating cilia or hairs with which they are provided, until they reach a suitable rock, to which they attach themselves, and there commence a new life. This emigration of the larvæ from the parent sponge occurs about the end of June and beginning of July. The fine qualities of sponges are chiefly found at a depth of 15 fathoms or thereabout; the common sponge lies at depths varying between 20 and 30 fathoms. At Tripoli (on the coast of Syria, not of Africa) M. Lamiral engaged some divers, who commenced operations on the 21st of May. The sponges gathered were immediately placed in boxes, through which a stream of sea-water was constantly made to flow, the animal matter being, of course, left on them, and protected from injury. These sponges arrived at Marseilles on the 17th of June; thence they were taken to Toulon and the islands of Hyères, where stone troughs, with five sponges in each, were sunk in different places. The success of the experiment will not, of course, be known until next season. *Times.* [We again ask why the term acclimatizing continues to be thus abused.]

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Hyacinths and other Dutch bulbs, if not already got, should be procured and potted without delay. Orange trees meant for forcing in winter for the decoration of this house should also now be attended to. These and Daphnes are invaluable for winter blooming, and should be largely grown for that purpose. Also see to having plenty of Salvia splendens, which is useful for mixing among Chrysanthemums. It is a good practice to place the largest plants of Salvias in a shady situation out of doors for a few weeks in autumn; plants so treated will be found to bloom more strongly, and last longer in beauty than others run up in a warm house. Look carefully after the watering of large specimen hard-wooded plants in pots, especially Heaths, which are soon injured by being either over or under-watered. Examine the specimens often and carefully, and where they are found to be dry water thoroughly, so as to moisten the whole of the ball; also look sharply after mildew on soft-wooded Heaths, and dust the plant with sulphur directly the enemy is perceived. Get Azaleas tied into form as soon as can be done, in order to give them a neat appearance. Also attend to the staking and training of other things as leisure time can be found. Look carefully after red spider on Bossiæas, Chorozemas, and anything else found to be liable to that pest, and see that it is eradicated before the plants get disfigured. Red spider is easily got rid of by laying the affected plant on its side, and well washing the under sides of the leaves with the engine, applying the water with as much force as the foliage will bear. Repot strong growing Pelargoniums; plants that are fairly established after repotting can hardly be kept too cool. Also keep Cinerarias as cool and moist as is consistent with safety, and attend to repotting such as require it. Primulas must also be carefully attended to, in order to encourage them to make rapid growth, particularly double varieties. Keep Tree Violets clear of their great enemy, red spider, by a liberal use of the syringe, and give them plenty of manure water, which will assist in keeping them in vigorous health. Van Thol Tulips for forcing may be potted. Place them on coal ashes, or where it can be had Cocoa-nut refuse, and cover them as recommended for Hyacinths, and early in November remove them into heat.

FORCING DEPARTMENT.

Pineries.—Any plants which may appear to require repotting should be examined and shifted at once, if this is found necessary, in order that the roots may get hold of the fresh soil before dull weather sets in, when it will not be safe to encourage free growth. And any necessary re-arrangement of plants growing in the open bed should also be effected as soon as possible. Encourage plants expected to show fruit next January to make vigorous growth, for these should be sufficiently advanced by the beginning of next month to allow of keeping them rather cool and dry, so as to check and thoroughly ripen their growth, for unless this is attended to there will be considerable risk about getting them to show fruit at that season. Plants which have been prepared for fruiting, and which it is desired to get up at once, should be encouraged with a moist warm atmosphere, keeping the soil about their roots in a healthy state as to moisture. Some have a dread of applying water at the root in the case of plants that have been kept dry for a time to check growth, and withhold it until the fruit is perceptible; but this is a mistake, causing loss of time as well as injuring the plants, as unless root action is encouraged, plants cannot be expected to start freely. If artificial treatment must be resorted to in order to get the plants to fruit at the desired time, there is no method so certain or so little injurious as keeping them cool and dry for a month, and then affording them a moist warm temperature and a brisk bottom-heat, giving sufficient water at the root to properly moisten the soil. Take off and pot, or plant out suckers at short intervals as they can be obtained of sufficient strength, for having a regular succession of plants is the most likely way to secure a regular supply of fruit.

Vineries.—Give air freely whenever the weather is dry in houses where the ripening of the wood is an object, and if a little fire-heat is used with the air, this will be much more efficacious now than later. But except in the case of young Vines with a very gross habit it will hardly be necessary to use fireheat if the weather is dry.

Figs.—Where any are ripening keep the atmosphere as dry as can conveniently be done, and also let the trees be on the side of dryness at the root, but avoid such a degree of drought as would be likely to injure the foliage or the bearing wood for next crop. Keep the shoots thin and neatly tied in, so as to expose them fairly to light and air, but avoid stopping at this season. Keep the atmosphere moist where the fruit is swelling, giving the foliage a good washing with the syringe frequently to prevent red spider, and give plants in pots or tubs a liberal supply of manure water.

FLOWER GARDEN AND SHRUBBERIES.

Cuttings should be carefully looked over to see that nothing has been omitted, and that a sufficient quantity of everything is in a promising state for making nice plants before winter; it should be borne in mind that things which are at all difficult to winter rooted after this season may be considerably thinned before spring, and also that they will not be sufficiently strong to furnish many cuttings for spring propagation; consequently a larger quantity than would have been necessary had the cuttings been put in a month ago, should be provided. But if there is a reserve stock of strong plants in pots, which is a safe practice where there is a large quantity of bedding stuff required, and proper convenience for growing them and propagating in spring, these will furnish a large quantity of cuttings next March, which, as has been formerly stated, will form equally good plants by turning out time as cuttings put in now. In the case of such things as Ageratums, Heliotropes, and dwarf Lobelias, it is useless wintering young stock, as these grow so freely in heat, and are so easily propagated from soft cuttings that a few good-sized old plants which require but little room or attention in winter will furnish a very large quantity of plants by bedding-out time. Attend to the potting of cuttings sufficiently rooted, and give every after attention to these in order to get them well established. Persevere with leaf-sweeping and other routine work.

HARDY FRUIT AND KITCHEN GARDEN.

Pay every attention to getting the wood of Peaches and Apricots well ripened, by exposure, shortening, &c. Most kinds of Apples may be gathered during the present month. Late Pears should be left on the trees while the weather continues favourable to their ripening. Prepare for planting all kinds of fruit trees, by getting the ground in good order for the different kinds. On cold stiff soils it is advisable to plant on hillocks, 1 foot or 18 inches higher than the surrounding surface. The trees will not grow so fast in consequence, and will require more attention in summer in the way of mulching, but they will form short-jointed, well [illegible] fruitful wood, which is the best preventive of [illegible] gum, &c., and will save the labour of re-sorting [illegible] root-pruning. No opportunity should now be [illegible] getting Potatoes that are ripe out of the ground [illegible] stored in a dry condition. Potatoes may [illegible] kept in narrow pits, with a little dry earth [illegible] among them, or in airy dark sheds. Before [illegible] however, take care to separate the bad ones from [illegible] that are sound. Use Cauliflower before it gets [illegible] large, and prepare a shed or pit to plant a quantity [illegible] the first approach of frost. French Beans may [illegible] a slight protection at night. Plant out Lettuces and Endive for spring use. If planted on the sloping [illegible] of wide ridges they will stand better, damp being quite as destructive as frost. Take the precaution [illegible] securing a quantity of both in pits or frames, or [illegible] the means of protection in readiness. Remove the leaves from Rhubarb and Seakale, that you intend forcing very early, and keep a look-out for slugs and weeds.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Oct. 1, 1862, as observed at the Horticultural Gardens.

Sept. and October.	Moon's Age.	Barometer.		Temperature					Wind.	Rain.
				Of the Air.			Of the Earth			
		Max.	Min	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Thurs. 25	2	29.860	29.818	68	44	56.0	59	57½	[illegible]	[illegible]
Friday 26	3	29.859	29.829	70	52	61.0	61	58	[illegible]	[illegible]
Satur. 27	4	29.876	29.834	67	53	60.0	61	58	[illegible]	[illegible]
Sunday 28	5	29.881	29.799	68	55	61.5	61	58	[illegible]	[illegible]
Mon. 29	6	29.783	29.672	69	53	61.0	61	58½	[illegible]	[illegible]
Tues. 30	☽	29.809	29.775	73	37	55.0	61½	59	[illegible]	[illegible]
Wed. 1	8	30.088	29.993	67	47	57.0	61½	59	[illegible]	[illegible]
Average		29.879	29.817	68.8	48.7	58.7	60.8	58.3		[illegible]

Sept. 25—Rain; overcast; fine at night.
— 26—Light clouds, and fine; overcast and fine.
— 27—Foggy; hazy; overcast and mild.
— 28—Foggy; overcast; rain; very heavy rain. Between 8 a.m. 28th and 8 a.m. 29th more rain fell than in any 24 hours during the last 36 years.
— 29—Rain with slight fog; overcast; heavy rain.
— 30—Fine; low dusky white clouds, with hot sun at intervals, cold at night.
October 1—Clear; very fine; overcast; large halo round the moon, cold.
Mean temperature of the week 3 7-10th deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Oct. 11, 1862.

October.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.							
						N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 5..	63.2	41.4	52.3	18	0.82 in	1	3	2	1	6	[illegible]	[illegible]	[illegible]
Mon. 6..	61.7	44.2	53.0	20	0.78	1	4	5	3	[illegible]	[illegible]	[illegible]	[illegible]
Tues. 7..	62.7	44.3	53.5	18	0.58	1	6	[illegible]	2	4	4	[illegible]	[illegible]
Wed. 8..	61.2	41.8	51.5	19	0.63	1	5	[illegible]	4	[illegible]	[illegible]	[illegible]	[illegible]
Thurs. 9..	60.2	42.7	51.4	20	0.52	—	6	[illegible]	1	[illegible]	14	[illegible]	[illegible]
Friday 10..	61.2	43.8	52.5	21	0.68	3	[illegible]	4	—	[illegible]	[illegible]	[illegible]	[illegible]
Satur. 11..	61.7	42.7	52.2	19	0.34	2	5	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 6th, 1834—therm. 79 deg.; and the lowest on the 11th, 18[illegible]—therm. 25 deg.

Notices to Correspondents.

Books: *W B.* We strongly advise you to study the instructions in Thompson's Gardener's Assistant. The author is one of the best practical pruners living.——*W W.* There is no such book or chart. *Study* Lindley's School Botany and Descriptive Botany. Work hard at this branch of the subject and all the rest is easy.

Insects: *E E.* Your Grass is attacked by young grubs of the common cockchaffer. They will do much more damage if not checked, and we know no other means of doing this than turning up the turf and exposing the grubs, which are greedily eaten by ducks, or which may be collected by hand and destroyed.—*T S P.* Margaritia fuscalis or longipe[illegible], but the colours in your figure are surely much too bright.—*Ibid.* There is no single work such as you ask for; Stephens' Manual of British Beetles will do for the Coleoptera, and there are works on detached families, as Kirby on Bees, Shuckard on Sand Wasps. Dallas's Introduction would be found useful *W.*

Lucifer Matches: *Eboracum.* The great danger from using these is so notorious that we wonder they should be kept now that Bryant & May's patent safety matches can be had at the same price. Nothing is more probable than that the fire in your frame ground broke out in consequence of one of these having ignited among the straw.

Names of Fruits: *A B.* 1, Beaufinette; 4, Golden Noble; Verte Longue Panachée; 6, Beurré Rance; 7, Passe Colmar.—*F D.* 1, 4, Marie Louise; 2, Williams's Bon Chrétien; [illegible] Beurré Duval; 5, St. Germain; 6, Beurré de Capiaumont; 6, Passe Colmar; 8, perhaps Easter Beurré—specimens not perfect. ||

Names of Plants: *O M H.* Plants without flowers can seldom be named. All that we can say is, that 1 is some Melaleuca; 2, a Dryandra; 3, a Banksia, perhaps a young grandis; [illegible] not identifiable.—*Tamar.* Polypogon monspeliensis.—*[illegible] combe.* Cochlearia anglica, Valerianella olitoria, and Lemna trisulca; they were not numbered.—*Crom [illegible].* A, Elymus arenarius; B, Carex arenaria; C, Poa compressa, not, we think, a coast plant.—*H W C.* Beech.—*F D, P[illegible].* Polystichum angulare *v.* acutum dissectum.—*W P.* [illegible] some Opuntia, perhaps ferox; *b.* Epiphyllum truncatum; *c.* Cereus speciosissimus.—*A D B.* Quercus rubra.—*B[illegible] Teignmouth.* A broad leaved Quercus pedunculata. By no means approaching Q. sessiliflora.—*S W J.* Crataegus punctata.

Oak Disease: *H W B.* The "burrs" are very curious and [illegible] usual. They have probably been caused by the attack of Cocci or aphides, or some such insects. Have you at all watched their appearance and progress?

Pear Leaf Disease: *Pyrus.* Your Pear trees are affected with *Rœstelia cancellata.* We fear it is too late to do anything now, as the fungus has discharged its spores, ready for an attack next year. Root pruning will do you no good. You are right in removing the superficial soil and burning the leaves. Next year if you are attacked pick off the diseased leaves before the fungus is matured. *M. J. B.*

Pelargoniums: *W F.* Your leaves are affected with "spot," a disease which arises, we believe, from bad draining combined with occasional drought. Many of the roots in the first instance die from neglect, and then in turn the soil gets water-logged. The tissues are weak from the first cause, and unable to bear any sudden accession of moisture, and then, under the low temperature which accompanies bad draining, they are ill calculated to maintain their vitality. ‡

Rose of Jericho: *F C P.* Grow it in damp river sand containing a *little* loam, and keep it in a warm atmosphere. If you have the means put a bell glass over the plants until they are old enough to be placed in a warm greenhouse. If managed well it will flower, produce its seeds, and roll up again quite naturally; only when the pods are ripening the plants should be kept dry as well as warm.

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11*l.* 11*s.* per ton for cash.
Peter Lawson & Son, 27, Great George Street, Westminster.

LAWES'S WHEAT MANURE for AUTUMN SOWING.
... consequence of the high price of Peruvian Guano, J. B. ... manufactured a WHEAT MANURE for the present ... will be found very suitable for that crop. A ... is now ready for delivery, and it can be obtained of ... Lawes, or through any of his appointed Agents. Price ... at the Factories, Deptford and Barking Creeks. ... Peruvian Guano direct from Messrs. Gibbs; Nitrate ... Sulphate of Ammonia, and other Chemical Manures. ... and other Cakes at market prices.
... John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

THE LONDON MANURE COMPANY have now ready
PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
... MANURE for ditto.
SUPERPHOSPHATES of LIME, &c.
... the above being in the finest condition. They also con... supply
... PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of ... value.
E. Purser, Secretary.
..., Fenchurch Street, E.C.

THE PURELY ANIMAL MANURE COMPANY, "Limited."
The Directors of this Company are prepared to supply for ... Crops their PURELY ANIMAL MANURE at 3*l.* per ... Delivered in London in quantities not less than 2 tons. ... Orders received by the Manager, at the Works, River Head, ...ington, York; the Secretary, or any one of their Agents.
By Order of the Board,
R. S. Parker, Secretary.
..., King William Street, London, E.C.

Autumn Sowing.

THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY (Limited), consisting of Tenant Farmers occupying upwards of 30,000 Acres of Land.
Chairman.—Jonas Webb, Babraham, Cambridgeshire.
Managing Director.—James Odams.
Secretary.—C. T. Macadam.
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex.
This Manure has been in use for upwards of 10 years, and ... given great satisfaction to consumers. It is specially pre... for Autumn Sowing, and on most soils proves as effective ... best Peruvian Guano.
Orders may be sent to the Company's Agents throughout the ..., or direct to C. T. Macadam, Secretary.
Price 7*l.* 10*s.* per Ton, delivered at any Railway or Wharf in London.
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40 to 45 per Cent. of Soluble guaranteed.
1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.
Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. Voelcker, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you ... resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a percentage of Soluble Phosphate and proportionate small quantity of ...phate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of ... and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., ... on application to Burnard, Lack & Co., Plymouth.

COCOA-NUT REFUSE.—In this there are Ferns, Begonias, &c., growing at the bottom of a Case (with Cocoa-nuts on the top outside) in the Eastern Annexe, International Exhibition. Read notices of its uses in *Gardeners' Chronicle*, June 28, p. 597; Sept. 6 and 13, pp. 836 and 861. *Journal of Horticulture*, March 25, pp. 514, 519; July 8, pp. 272, ... Refuse delivered in City of London at 1*s.* 6*d.* per bag of ... bushels. Larger quantities on lower terms on application to the Patent Cocoa Fibre Company, Kingston-on-Thames, S.W. SHORT FIBRE for Orchids and for Drainage, 20*s.* per cwt. Postage Stamps or Post-office Orders payable to "J. Barsham & Co."
Barsham's BRUSHES and MATS are the best and most economical of any that are made, and are sold in every town in the kingdom.
Caution.—See that every Brush is stamped "J. Barsham's Patent, Kingston-on-Thames."

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Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S W
To Landowners, the Clergy, Estate Agents, Surveyors, &c. in England and Wales and in Scotland.
The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
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No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

AGRICULTURAL and CHEMICAL COLLEGE, 37 and 38, Lower Kennington Lane, London, S.
ASSAYS and ANALYSES promptly attended to by J. C. Nesbit, Lansdell & Co.

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Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.
Gentlemen, Farmers, or others, desirous of practical knowledge in Chemical Analysis, or Assaying, may receive instruction at the College, where the extensive Laboratories give ample facility for pursuing their studies, and there is accommodation for a limited number of Resident Students.
Full particulars of terms will be forwarded on application.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5*s.* per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. Humbert, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

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The Right Hon. the Earl of Devon, *Chairman.*
Lands Drained and Improved without recourse to the private funds or moneys of the Proprietors. This Company's Act not requiring Proprietors to liquidate the cost, the amount might remain a permanent charge on the lands, or be paid off when convenient, or be made redeemable over any term of years. The works are undertaken by the Company, or Proprietors might avail themselves of the powers of the Act only, and get the works executed by Agents or other parties. Outfalls through adjoining lands are obtainable under the Company's Act. Works are also executed by the Company for parties advancing their own capital, or not requiring to obtain the money under the Company's Act.
Frederick Brodie, Secretary.
Offices: Exeter, and 30, Parliament Street, London.

IMPROVED BERKS PIGS, from Prize Stock, suitable for Breeding or for Exportation. Price moderate.
For particulars, apply to Mr. H. Nash, 4, Upper Weymouth Street, Portland Place, W.

SMITHFIELD CLUB FAT CATTLE SHOW.
The ANNUAL CHRISTMAS SHOW of FAT CATTLE, SHEEP, and PIGS, will be held at the Agricultural Hall, Islington, on MONDAY, December 8, and four following days.
In addition to Prizes to the amount of 1820*l.*, the following Cups will be offered:—
A Silver Cup, value 40*l.*, for the best Steer or Ox in any of the Classes.
A Silver Cup, value 40*l.*, for the best Heifer or Cow in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of Leicesters, Cotswolds, Lincolns, Kentish, or other Long-woolled Breed in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of 1-year old Southdowns, Hampshire or Wiltshire Downs, Shropshire or other Short-woolled Breed in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of any other Breed of Sheep (not specified above) in any of the Classes.
The Prize Sheet now contains distinct Classes under the following heads:—

CATTLE.

Devons	Norfolk or Suffolk Polled	Scotch Polled
Herefords	Long-horns	Irish
Short-horns	Scotch-horned	Welsh
Sussex		Cross or Mixed

SHEEP.

Leicesters	Southdowns	Oxfordshire
Cotswolds	Hampshire or Wiltshire Downs	Mountain
Lincolns	Shropshire	Cross Breeds (Long and Short-woolled)
Kentish, or Romney Marsh, and other Long Wools	Other Short Wools	

PIGS.
Classes according to age up to 18 months old.
The ENTRIES for LIVE STOCK CLOSE on NOVEMBER 1.
The Entries for Agricultural Implements, Roots, Seeds, &c., Closed on October 1.
Prize Sheets and full particulars can be obtained on application to B. T. Brandreth Gibbs, Hon. Sec., Corner of Half Moon St., Piccadilly, London, W.
N.B.—It is absolutely necessary that all communications on the Club's business should have the words Smithfield Club outside, to distinguish them from private letters. If this be neglected, there will be risk of delay and inconvenience.

The Agricultural Gazette.

SATURDAY, OCTOBER 4, 1862.

MEETING FOR THE ENSUING WEEK.

Wednesday,	Oct.	8	Great Show of Roots and Grain, &c., at the Royal Horticultural Society's Gardens, South Kensington.
Thursday,	—	9	
Friday,	—	10	

There is perhaps no more trustworthy instance of success in the history of steam cultivation than one to which we now call attention so prominently, because it has been due to the independent judgment of the tenant farmer who has realised it. He has not placed himself in the hands of Howard, Smith, or Fowler, and having concluded that any of them could do better than by horse and ox had hitherto been done upon his land, treated the firm thus chosen as an outfitter who would supply him with what in their opinion was adapted to his case—but he has acted for himself.

Knowing the circumstances of his farm by long experience better than any other man can do; and knowing the difficulties with which tillage implements have to deal as well as any one, for a tract of many hundred acres of very various soil cannot occupy the sole attention of an energetic man for a quarter of a century without teaching him pretty nearly all there is to learn on plough-land cultivation—he believes that the farmer quite as much as the engineer is needed to perfect the success of steam cultivation, and that each taking counsel of the other can do what either by himself must fail of accomplishing.

We do not obtain from him details of his experience, but he has had so long an acquaintance with steam-power in various ways upon the farm—and he has in everything so entirely confined himself to what was for his interest solely as the tenant of that farm to undertake, that his opinion is unusually valuable. His opinion is that, considering the advantage which it gives of accomplishing a great extent of tillage work at certain seasons of the year when such work is especially needed and especially efficient, the use of steam power for tillage purposes is a great advantage to the former.

Eighteen years ago he had formed a similar opinion of the advantages of steam-power, and especially of the moveable steam engine, for threshing and other work of that kind upon the farm; and he then became the purchaser of one of the first of such engines that were made—having bought one from Mr. Cambridge, then of West Lavington, near Devizes, in the year we believe 1844. His adoption of steam-power as an auxiliary for the cultivation of his land dates from midsummer 1861. He uses the Woolstone arrangement for applying it—and Fowler's three-furrow balance plough, and Howard's cultivator or broadshare and harrow as the cultivating tools. But neither so did he simply place himself in the hands of the implement makers. The cultivator did not at first answer his purpose, it sometimes missed its work, did not evenly and thoroughly move all the land, sometimes *choked*—"a word that is all very well in the dictionary, but never ought to be applicable in the field." The shares of the cultivator were altered at his suggestion—the framework of the grubber was raised. And it now does thorough work and is perfectly successful. There are many other details both of construction and arrangement (and it is on such details that success or failure hinges), where his experience in the field has resulted in useful suggestions and directions by which the working of the apparatus has been improved.

This then is the case of a farm where everything that has been carried out has been simply with the view of improving or economising the management at home. There is no letting out the apparatus for hire—no urging (in fact rather the other thing) a successful example on others. The tenant hires extra steam-power for threshing rather than stop his own engine in the field. He does not profess to give details of extent of work accomplished or of the cost of time and wages, tear and wear, repairs, &c. It is evidently 'against the grain,' even that such information as he can confidently give is allowed this publication. A farmer solely occupied in the home management of a large occupation, he is certainly not unwilling that his opinion should be known; but as to learning from him the details of acreage or time or total expenditure in wages or repairs—of these he has no record, and so various is his land and so variable from day to day is the work that he can accomplish, that on all this he is unable to inform us. We learn enough, however, during our visit to understand how it is that the general opinion in favour of steam cultivation which he confidently expresses has been formed.

The land occupies the whole of a fan-shaped valley, almost closed in by its steep approaching sides at the lower end where it enters the wider flat and tidal strath below, opening upwards in the other direction into flatter uplands, which stretch on and beyond to the downs above.

Nowhere impeded by hedgerows—laid out in tracts some 350 to 400 yards wide—conveniently supplied with roads and driftways and farm buildings—yielding under good cultivation admirable crops of Clover, Turnips, Mangel Wurzel, all of which we saw last Saturday, as well as of grain crops, Wheat and Oats, and Peas,—the whole of it over chalk, much of it shallow flinty land, sometimes hard and clayey, some of it a deeper calcareous loam, and occasionally a heavy and laborious soil—formerly cultivated by many teams of horses and oxen—there is scope enough for the employment of a power which wants merely open surface for its operation, and which on such a scale as this can dispense with a large

number of draught animals, and yet leave enough to do all the carriage work of the different seasons of the year.

We understand that the ox teams of the farm have been dispensed with since the adoption of steam culture, and that thus a large and profitable addition has been possible to the other live stock of the farm; but the principal fact in our opinion to which the tenant's favourable opinion of steam cultivation here is due lies in the fact that the engine is constantly employed throughout the year. Excepting weather so wet as to hinder out-door work, or so hard as to have bound the land in frost (and then it is engaged in threshing corn)—excepting certain busy harvest times when carrying hay and corn—the engine is constantly at work in the field. How many days it has been employed in cultivation since its purchase we could not learn—but the greater part of the land is such that this general statement of constant employment can be true, and a great deal of the profitableness of its operation is thus accounted for.

As to details, although we have few figures to illustrate them, yet it is upon attention here that much of the success has also hinged. The 10-horse power engine (Clayton & Shuttleworth's) consuming a very small quantity of fuel daily compared with what it was accomplishing (6 cwt. a day the engineer repeatedly informed us) had been set to work on Wednesday at midday upon a tract of gradually rising land extending about 390 yards in width right across the flat upland valley. It had with Fowler's 3-furrow balance plough turned over about 6 inches deep very evenly and truly 150 yards in width of this tract by 1 P.M. on Friday. This was therefore done at the rate of about 6 acres a day: but it has frequently ploughed an acre per hour. The engine had then been shifted, as in Howard's and Smith's system is necessary, further up the bank beyond the road which here crosses the land, and it had started work on Saturday morning again, using Howard's cultivator as a broadshare, and most perfectly moving the whole surface about 2 inches deep. We saw it finish up to the roadway a piece 120 yards wide, and therefore about 9¼ acres in extent, about half-past five on Saturday afternoon. The field was flinty, and great pains were taken to carry the rope. Along 400 yards at the upper end of the field, where the rope remains stationary through the day, it was carried by 4 high porters and 20 low rollers, besides 8 pieces of wood where the intervals were great, for the rope to touch on instead of on the soil.

It is by such care, by such constant employment, and in such circumstances of extent and soil as are here exhibited, that steam cultivation, whether on Fowler's or Howard's plan, will receive its most successful illustration. We have called attention thus prominently to this specimen of it, both because of the independent prosecution of the work by the tenant, and because the rival manufacturers have all contributed to his success.

On Wednesday last, at Bushy Grove Farm, near Watford, Mr. Wetherall disposed of the celebrated herd of pure bred Short-horns, by which the name of Mr. Stewart Marjoribanks has long been known to English agriculturists. Fifty-eight cows and cow calves sold for 4542 guineas, or 82*l.* 4*s.* 6*d.* apiece. Twenty-two bulls and bull calves realised 1110 guineas, or 52*l.* 19*s.* 6*d.* each. The whole herd averaged 74*l.* 3*s.* 8*d.*—a very large price indeed. Among the higher priced animals were *Vesta*, a six-year-old cow, "highly commended" at the Warwick and Canterbury meetings, bought for 200 guineas by Mr. Stirling of Keir; *Rose of Bushy*, the first prize heifer calf at Leeds, and decorated at many subsequent meetings, now a 2-year-old heifer, bought by Lord Spencer for 205 guineas; *Blushing Bride*, commended at the Leeds show, bought by the Earl of Aylesford for 170 guineas; *Beauty of Bushy*, own sister to Harkaway, winner of the first prize in his class at the Canterbury show, an 18-months heifer, bought for 185 guineas by Baron A. Rothschild; *Winning Witch*, a 15-months heifer, bought for 180 guineas by Mr. Stirling of Keir.

Among the bulls, Whipper in, two years old, was bought by the Duke of Richmond for 160 guineas; Great Mogul, now close on six years old, after a distinguished career, winning prizes on almost every field, is sold for 52 guineas; Royal Butterfly 5th, of highly distinguished descent, fetched 71 guineas from Mr. C. Moreland, of Kent. The sale was well attended, and must be reckoned among the few principal events of the kind in the history of the breed.

VARIETIES OF WHEAT.

Having had the honour to receive from you three samples of Australian Wheats last season, we now, in accordance with your expressed wish, beg to transmit to you the result of our trials with them, and also several other sorts tried at the same time. We inclose samples of ears and grain; they were grown side by side, on strong land (sample sent herewith), which is far better adapted for the growth of red than white Wheats. The ears sent are neither the largest nor smallest, except the Pedigree Wheat, which are as large as any found of that sort. You will observe that the seeds sown last season of the Pedigree were obtained from extra [illegible] ears, and three of the other sorts from ordinary [illegible] ones. We also find that the awned Wheats [illegible] condition in much less time than others devoid of the appendage. In this locality all Wheats suffered [illegible] fully from the severe storms of wind and rain in the early part of summer; consequently, the samples of grain are coarse and inferior in colour to those grown in more favourable seasons. Our experiments have been conducted throughout with great care and impartiality. *Triticum.*

Name.	When planted.	Distance apart single Grains.	Number of Ears on finest stool.	Number of Grains from finest stool.	Remarks.
Hallett's Pedigree..	Sept. 9, 1861	Inches. 12 × 9	83	1596	Two large ears were received from Mr. Hallett, they contained 82 and 94 corns respectively. The crop suffered very [illegible] indeed from red gum and blighted ears—by 'blighted ears' [illegible] mean those that ripened prematurely and did not contain good grains; on the whole, the ears were not good, three [illegible] each stool being large, and the others below average [illegible] grain in comparison is very coarse, neither Red nor White, [illegible] inferior in quality. Several very ordinary quality Wheats, [illegible] "Quentin's Giant," were found to be quite equal in both [illegible] and quantity to the Pedigree.
Pringle's Bearded White ..	Sept. 14, 1861	12 × 9	55	3626	An ordinary sized ear and a few grains were received from Mr. P. Shirreff. The crop wonderfully large, and infested very little with red gum, and not any blighted ears; all the [illegible] were large, some wonderfully large; the grain is tolerably [illegible] and of superior quality; the straw strong and very [illegible] also an excellent variety to tiller, most of the stools having [illegible] and more ears.
Shirreff's Bearded Red ..	Sept. 14, 1861	12 × 9	63	2712	An ordinary sized ear and a few grains were received from Mr. P. Shirreff. The crop very large, scarcely any red gum upon it, and not a single blighted or deaf ear could be seen; the straw was also brighter and cleaner than any other [illegible] The grain is a decided red, of excellent quality. This is a very good variety to tiller, and of an erect habit of growth.
Shirreff's Bearded White ..	Sept. 14, 1861	12 × 9	74	3324	An ordinary sized ear and a few grains were received from Mr. P. Shirreff. The crop remarkably large, very little infested with red gum, and only a few blighted ears; the ears are moderately large and uniform in size. The tillering power extra large, most of the stools having 60 and more ears. Habit of growth very erect and close. Grain transparent, white, of very superior quality.
First prize, Victoria ..	Sept. 23, 1861	12 × 9	83, exceptional	4600	Received from you. The crop large, a few of the ears infested with red gum, but only a very few blighted; the ears moderately large, and very regular in size; a very good variety to tiller; straw very bright, clean, and of moderate length; the grain white and of very good quality. One fault of this variety is having too much chaff, which might cause it to sprout in wet weather; this may probably prove to be Chiddam White
First prize, South Australian, & 2d, Victoria	Sept. 23, 1861	12 × 9	..	..	These two proved to be alike: received from you. The crop bad, almost a failure, very much infested with red gum, and much blighted; only a few ears good; grain moderately [illegible] and good quality. This may be much better on further trial; it will probably prove to be Talavera.

SMALL POX IN SHEEP.

After due inquiry from reliable parties I am happy to say that rumours have exceeded facts, in nearly all the cases excepting Mr. Parry's, of Allington, which was the first flock affected. His loss has been heavy, close on 500. This may, in some measure, be accounted for, owing to the disease having been allowed to have gone so far before it was discovered. Mr. Neate, of Allcannings, is the next largest sufferer, having lost about 40. The above remark will also apply in his case, as lambs in many instances had reached the second and third stages before it was known that they were attacked. Mr. Church, in this parish, has had about 20 cases, out of which he has lost only three, two of which were ordered by Professor Gamgee to be killed. There is another flock in Berkshire, at Hampstead Norris, which I have heard have it badly; but the general report is certainly more favourable within the last few days, and a greater degree of confidence is felt by the flockmasters. Several large meetings have, as you have seen by the papers, been held at Devizes and other places, which have resulted in the formation of a society for the purpose of preventing as far as possible the further spread of the disease, and for the mutual insurance of the flocks of the members. This already has done much good, by causing a strict examination of the several flocks, and where any suspicious symptom develops itself, by removing the suspected animals to a distant part of the form. A considerable difference of opinion exists among the farmers as to the propriety of inoculating the sheep, which has arisen from the opposite statements and practises of the two great veterinary professors who have been inspecting the flocks as well as delivering lectures at the markets within the infected districts, Mr. Simonds being an advocate for its adoption and Mr. Gamgee as strongly condemning it. This feeling has been carried so far as to cause the withdrawal of some very influential names from the committee.

Inoculation appears to have been very successful in the flocks which were first attacked, where the disease was rapidly spreading all through them; but the general opinion runs counter to that system of treatment, unless under cases of extreme virulence, which where proper supervision and inspection of the sheep is practised we firmly believe will not be at all requisite if separated immediately. The report that Mr. Dark's sheep have been affected is by many considered to be erroneous.

Although this malady has been the all-absorbing topic of conversation amongst scientific men, as well as the farmers, I cannot hear that any satisfactory idea has been given as to the promulgation of it or as to the extent of the contagion. On the latter part of the subject the evidence appears very conflicting. As regards Mr. Church, it was supposed from the fact that Mr. Neate's lambs lay in a yard of his (Mr. C.'s) which was but a short distance from his fold, and that a few days subsequently Mr. Church had a lamb die with small pox, they must have caught the infection from Mr. Neate's from having travelled on the same road; others hinted that the contagion might have been conveyed by the shepherd's clothes, as he had been walking through Mr. Neate's lambs and from thence went at once to his own flock, which, as before mentioned, was adjoining, within a couple of furlongs. So far the evidence seems in favour of contagion. *Per contra* Mr. Lousley, the purchaser of Mr. Neate's lambs at Marlbro' fair, sent them with 500 more that he had also bought at Marlbro', to his farm at Seven Barrows, Lambourne. As soon as Mr. Neate found his diseased he hastened to overtake them, which was not till they had been together two days and a night. They were then parted; and are now pronounced clean. *Thos. Chandler, Aldbourne, Hungerford, Sept.* 25.

It is with great pleasure I inform you that no new case of small pox has been heard of the last 12 days in our neighbourhood, at Avebury. A neighbour had two sheep diseased with small pox. After it was known something was the matter they were taken from the flock with four others; they remained together for three days, not knowing what was the matter. Professor Gamgee's attention was called to them, when he pronounced them to have the small-pox. They were immediately killed. The other four are still living by themselves, no disease has made its appearance [illegible] now 12 days since. Sincerely do I hope the contagion is at an end; the Order in Council, with the assistance of the magistrates by appointing inspectors, will render great assistance in stopping its progress. *George Brown, Avebury, Chippenham, Sept.* 25.

To-day is Spalding Fair. I have had every opportunity, in accordance with your desire, of inquiring relative to the truth of the report that the small-pox had broken out amongst the flocks in the "two [illegible] ings" (the adjoining parishes to Spalding). I am very gratified to find and to be able to say that there is no foundation whatever for such a report, except that a highly respectable farmer had put some sheep to an unfavourable change of food and had experienced some loss in his flock in consequence, but not a shadow of the

… disease is known. Every precaution is and will be … to prevent its introduction, and as the breeds of … here are so different from those of the infected … I think no great danger will arise from sheep … purposes being brought so far, but this is … case in the short-woolled districts, and really … present season it would be greatly for the … of flock-masters there, for once to decline … to buy stock ewes from those districts already … Too much care cannot be taken. There are … of reckless dealers who would not scruple to … in such flocks, nor would railway companies … to bring such stock in their trucks. The … is only with the breeders. Don't buy the … Only think of the spreading and loss it will … It was an awful visitation some few years ago, … may occur again, but for the care and precautions … every flock-master must use. *John Clarke, Long … Lincolnshire, Sept.* 25.

…ICULTURAL STATISTICS, IRELAND, 1862.

The following are the results as regards the area … crops in 1862 compared with those for the previous year:—

ABSTRACT OF CEREAL CROPS.

	1861.	1862.	Increase.	Decrease.
	Acres.	Acres.	Acres.	Acres.
…t	401,243	857,816	..	43,427
.. ..	1,999,160	1,974,737	..	24,423
… .	198,955	192,407	..	6,548
…and Rye ..	11,582	12,157	575	..
…and Peas ..	14,017	15,106	1,089	..
	2,624,957	2,552,223	1,664	74,398

Net Decrease in Cereal crops in 1862, 72,734 acres.

The area under green crops is stated in the following tables:—

ABSTRACT OF GREEN CROPS.

	1861.	1862.	Increase.	Decrease.
	Acres.	Acres.	Acres	Acres.
Potatoes	1,133,504	1,017,317	..	116,187
Turnips	334,104	377,149	43,045	..
Mangel Wurzel and Beet Root ..	22,949	23,245	296	..
Cabbage	30,020	30,511	491	..
Carrots, Parsnips, and other green crops ..	19,559	17,633	..	1926
Vetches and Rape	31,280	30,776	..	504
Total	1,571,416	1,496,631	43,832	118,617

Net decrease on green crops in 1862 .. 74,785 acres.

The following is a summary of the variations in the acreage under Cereals, Green Crops, Meadow, and Flax, between 1861 and 1862:—

GENERAL SUMMARY.

	Acres.	Acres.
Decrease in Cereal crops	72,734	147,519
Do. green crops	74,785	
Increase in meadow and Clover ..	6,623	8,678
Do. Flax	2,055	
Total decrease in the extent of land under crops in 1862		138,841

Of the decrease in land under crops this year—138,841 acres—117,832 would seem to have merged into Grass, 1066 were returned as under Woods and Plantations, and 870 went to increase the Fallow, leaving an area of 19,073 acres, used for grazing in 1861, which appear to have been unstocked at the time of the last enumeration, but are available for Pasture when required.

THE TOTAL EXTENT UNDER EACH CROP FOR THE LAST FIVE YEARS—1858—1862, IS GIVEN IN STATUTE ACRES IN THE SUCCEEDING TABLE:—

Crops.	1858.	1859.	1860.	1861.	1862.
	Acres.	Acres.	Acres.	Acres.	Acres.
…	546,964	464,175	466,415	401,243	857,816
…	1,981,241	1,982,662	1,966,304	1,999,160	1,974,737
…	190,768	177,894	181,099	198,955	192,407
…and Rye	16,472	13,198	12,734	11,582	12,157
…and Peas	12,935	14,851	12,832	14,017	15,106
…	1,159,707	1,200,247	1,172,079	1,133,504	1,017,317
…	338,202	322,137	318,540	334,104	377,149
…and Beet root	29,731	27,054	32,124	22 949	23,245
…	33,132	31,680	22,785	30,020	30,511
…, Parsnips, and other green crops	23,399	21,971	21,633	19 559	17,633
…and Rape	33,360	33,243	40,481	31,280	30,776
…	91,646	136,282	128,595	147,957	150,012
…and Clover	1,424,495	1,437,111	1,594,518	1,546,206	1,552,829

As regards the different descriptions of Live Stock, the following Summaries exhibit the changes which have taken place in their number and value between 1855 and 1862, and between 1861 and 1862:—

TOTAL NUMBER OF LIVE STOCK IN IRELAND, IN EACH YEAR, FROM 1855 TO 1862, INCLUSIVE.

Years.	Number of Horses.	Number of Cattle.	Number of Sheep.	Number of Pigs.
…	556,287	3,564,400	3,602,342	1,177,605
…	573 408	3,587,858	3,694,294	918,525
…	599,782	3,620,954	3,452,252	1,255,186
…	611,321	3,667,304	3,494,993	1,109,883
…	629,075	3,815,598	3,592,804	1,265,751
…	619,811	3,606,374	3,542,080	1,271,072
…	614,232	3,471,688	3,556,050	1,102,042
…	604,443	3,250,396	3,455,887	1,151,785
Difference in Numbers between 1855 and 1862	Increase. 48,156	Decrease. 314,004	Decrease. 146,455	Decrease, 25,820
Difference in Numbers between 1861 and 1862	Decrease. 9,789	Decrease. 221,292	Decrease. 100,163	Increase. 49,743

TOTAL VALUE OF LIVE STOCK IN IRELAND IN EACH YEAR, FROM 1855 TO 1862, CALCULATED ACCORDING TO THE RATES ASSUMED BY THE CENSUS COMMISSIONERS OF 1841, VIZ.:—For Horses, 8*l.* each; Cattle, 6*l.* 10*s.*; Sheep, 22*s.*; and Pigs, 25*s.* each

Years.	Horses.	Cattle.	Sheep.	Pigs.	Total Value.
	£	£	£	£	£
…	4,450,296	23,168,600	3,962,576	1,472,006	33,053,478
…	4,587,264	23,321,077	4,063,723	1,148,156	33,120,220
…	4,798,256	23,536,201	3,797,477	1,568,982	33,700,916
…	4,890,568	23,837,476	3,844,492	1,762,354	34,334,890
…	5,032,600	24,801,387	3,952,084	1,582,188	35,368 259
…	4,958,488	23,441,431	3,896,288	1,588,840	33,885,047
…	4,913,856	22,565,972	3,911,655	1,377,552	32,769,035
…	4,835,544	21,127,574	3,801,476	1,439,731	31,204,325
Difference in value between 1855 and 1862 ..	Increase. £385,248	Decrease. £2,041 026	Decrease. £161,100	Decrease. £32,275	Decrease. £1,849,153
Ditto, between 1861 and 1862 ..	Decrease £78 312	Decrease. £1,438,398	Decrease. £110,179	Increase. £62,179	Decrease. £1,564,710

With reference to the reduced acreage under crops … year, I believe that, independent of the growing … position for pasture land which is observable, it may … very much attributed to the unfavourable seasons of the last few years, owing to which the yield of the … was considerably under the average, and the … of the farmer greatly diminished, so that the … usually applicable for the cultivation of the soil were consequently lessened—and capital encroached … for the payment of rent and other demands which under favourable circumstances are paid out of the annual produce of the land. *William Donnelly, Registrar-General.*

THE "OXFORD" FAMILY OF SHORT-HORNS.

The late Mr. Bates was an enthusiastic votary of Short-horns, but exclusively partial to those which he had himself possessed for a long period. His Duchess family, especially, he regarded as indisputably at the head of the bovine race. But as it is scarcely practicable to carry on a single strain without resorting to the alliance of other families, so Norfolk (2377) was used as a cross for some of the Duchesses, and afterwards Belvidere (1706) more extensively. So highly did Mr. Bates esteem this celebrated scion of the Princess family that he put him to his own daughter, and thus produced the Duke of Northumberland (1940), a bull whose equal he, in his own words, "defied the world to produce." He appeared completely satisfied with the success of this measure, as, in addition to the direct cross of Belvidere in most of the Duchess's cows and bulls, we find that of the Duke of Northumberland or his brothers.

I have stated that Mr. Bates regarded the blood of his own stock as greatly superior to that of other herds. A striking proof of the sincerity of this conviction was afforded by his absolutely refusing t part with any cows or heifers of his principal families, or to sell even bulls, except for prices which, in those days, were considered prohibitory. But as it is easy, and, indeed, by no means uncommon, for a breeder to entertain a high opinion of his own stock, let us inquire in what light it was regarded by others. A significant indication of this is afforded by the fact that at the first meeting of the Royal Agricultural Society at Oxford four out of the five premiums offered for Short-horns were awarded to animals exhibited by Mr. Bates. The cow which on this occasion was pronounced to be the best which the kingdom could produce was the Oxford premium cow, by Duke of Cleveland (1937), dam Matchem cow by Matchem (2281), got by Young Wynyard (2859). I have no information respecting her pedigree to give beyond this, which is found in the "Herd Book." Making every allowance for the fallibility of the judge's decision on this occasion, there can be no doubt that she must have been a Short-horn in the highest sense of the word. The bull Cleveland Lad (3407), whose name we meet with so frequently about this time, and his brother, were out of the same cow.

Now, I would ask, not whether it is likely, but whether it is possible or conceivable, that a man with Mr. Bates's enthusiasm for the pure blood of his own Short-horns should have introduced, not once or as an experiment, but deliberately and throughout his whole herd, the cross of this Matchem cow's descendants, unless he had evidence which satisfied his mind not only that she was a well bred Short-horn in a technical sense, but that she was purely bred in accordance with his own ideas? Is it to be imagined that this veteran breeder should be taken, like a novice, by a good looking cow with a couple of crosses, but w ose grand-dam was bought at a fair? So exclusive were Mr. Bates's partialities, so violent his antipathies, that if a friend proposed to him to send one of his Duchesses to a bull of other blood, however good, his expression was, "I had rather cut her throat." An interesting illustration of how far he carried this feeling is afforded in an anecdote related to me by Mr. Robert Bell, who resided with him, and managed his herd until the time of its disposal. It happened that in passing from the field to the shed, a cow of the Duchess family was accidentally served by Lord Barrington, a bull belonging to Mr. Robert Bell. I am unable to give his reference to the "Herd Book," but it is sufficient to state that he belonged to the celebrated Barrington family, of which both cows and bulls have subsequently been sold for very long prices. When Mr. Bates was informed of the occurrence he doomed the offspring to death, whatever might be its sex. In due time it turned out to be a fine heifer calf, of which, however, the good looks had no effect in causing Mr. Bates to relent. The most earnest entreaties were fruitless, until at length he consented to give it to Mr. Bell, on condition that it should be removed from among his own stock. I may mention that the little creature grew up, and that I saw her some years ago with one of the handsomest bull calves imaginable; but both, I believe, are now dead. Here, then, we find Mr. Bates refusing to allow the blood of the Duchesses to be intermingled with even so well-bred a family of Short-horns as the Barringtons. Does it not appear incredible that a man characterised by a spirit thus exclusive should have recklessly crossed his favourites with animals which possessed only three nominal crosses of Short-horned blood, unless he was certain that they had, in addition, a descent on the dam's side from blood of unquestionable purity? To act thus would be to evince more than want of judgment; it would resemble insanity rather than caprice. To breed from a *cow* which has only three crosses of blood, and which we know reverts in ordinary parentage, is one thing; but to use a *bull* descended from her for a herd of pure-bred Short-horns is quite another matter. In the first instance, we have only her own descendants to look to, which are there for what they are worth. In the second case, we contaminate the whole herd with blood which is probably worthless. Every Short-horn breeder will, I am sure, agree with me that the effects of such a course would speedily be evident in the deteriorated quality of the herds in which it was adopted.

Let us proceed with our examination into the opinions held by others respecting Mr. Bates's stock. The average price realised by the sale of his herd in 1850, consisting of 68 animals, was 69*l.* 15*s.* 7*d.* It might have been supposed that the fact of Mr. Bates having refused to part with cows or heifers had something to do with the eagerness of the public to purchase on that occasion, and accounted in some measure for stock being sold for a price unusual at that day. So far, however, from this being the fact, this average was more than doubled at Lord Ducie's sale, which took place in 1853. The stock here was principally composed of animals bred by Mr. Bates or their descendants, and the average was 151*l.* each. If some seven or eight animals, either doubtful breeders or descended from other blood, are deducted, the average would have been much higher. It is worthy of remark, that the first decidedly high price attained was by Oxford 6th, a cow eight years old, only two descents removed from the Matchem cow, which made 205 guineas. This was double the price of Minstrel, the preceding lot, a cow descended

from one of the most illustrious families of Short-horns in existence. We have next Duchess 59th, by 2d Duke of Oxford, a son of Cleveland Lad, which reached 350 gs. After some half-dozen other animals had been disposed of, Duchess 64th, also by 2nd Duke of Oxford, was sold for 600 gs., to Mr. Thorn. Immediately afterwards Mr. Tanqueray bought another Oxford cow for 250 gs. The culminating point of the sale was, however, reached when that lovely heifer, Duchess 66th, was sold to Colonel Morris and Mr. Becker for the unprecedented sum of 700 gs. Never shall I forget the contagious excitement of that moment. Passing over the remaining Duchess and Oxford heifers, all sold for prices proportionately high, we arrive at Duchess 70th, a calf of six weeks old, purchased by Captain Gunter for 360 guineas. Every one of these had the Cleveland Lad cross largely intermingled with their other blood, and the Oxfords were descended directly from the Matchem cow. That the public must have thought them good is sufficiently evinced by the eager competition on that occasion. It is unnecessary further to notice this sale than to point to the purchase of the bull calf, 5th Duke of Oxford, by that excellent judge Lord Feversham, which afterwards won the highest honours which the agricultural societies of England have to bestow. But the public testimony in favour of the Oxfords was pronounced still more strikingly two years afterwards at Mr. Tanqueray's sale, where Oxford 11th and Oxford 16th more than doubled their price at Earl Ducie's sale, the former being bought by Captain Gunter for 500 gs. Among the bulls on this occasion, 6th Duke of Oxford fetched 200 gs.; the Duke of Cambridge, by Grand Duke, 280 guineas; and Barrington, with four or five crosses of the Bates blood, 200 guineas. Contrast these figures with the highest prices obtained by a bull of other blood, namely, 60 guineas for Governor, descended from Mason's herd. In fact, speaking in general terms, the animals of Bates's pedigree may be said, both here and at Lord Ducie's sale, to have fetched high prices, and nearly all others moderate ones. Since that time seven years have elapsed, and we have now witnessed the surprising and hitherto unprecedented occurrence of bulls, the offspring of the Duchess and Oxford animals, which were bought by Americans at the prices noticed above, being re-imported into this country, where they have been purchased by several of the most eminent breeders of the kingdom. At the Leeds show, Capt. Gunter's Duchess heifers readily won the first places, and were, as your Short-horn contributor informs us, admitted to be good, even by the partisans of other blood. It may safely be averred that, not even at the time when Mr. Bolden sold his two Grand Dukes for 1000 guineas each did the Bates' Short-horns stand higher in public opinion than at the present day.

Admitting, then, for argument sake, that Mr. Bates had been mistaken in adopting the Oxford cross, and that Lord Ducie shared this delusion, is it possible that the eminent breeders, who eagerly competed at the sale of the latter for both males and females of the Duchess and Oxford tribes, were also victims to it? Is it within the bounds of credibility that the desire to possess these animals would have continued unabated after they had passed into so many hands, unless they had been distinguished by merit of the highest order? Or is it likely that judges, selected by the agricultural societies no less for their impartiality than their skill, would so repeatedly have awarded prizes to these animals, unless they had been matchless specimens of their race, carrying the impress of high pedigree stamped upon them beyond the possibility of mistake? Lastly, can it be a mere coincidence which has given celebrity to so many bulls in which the Bates blood has been mingled with that of other families, as in Grand Turk (12,969), Gloucester (12,950), Grand Duke of York (12,966), Cherry Duke 2d (14,265), Marmaduke (14,897), and innumerable others? Granting freely in all these cases the excellence of the blood on the dam's side, it is evident that the sire has been no drawback from it.

There is no surer indication of well-bred animals than the faithfulness with which they reproduce their own likeness in their offspring. Judged by this test, and accepting the lesson of facts, the Oxford family must be held to have established its claim, not only to individual excellence, but to the authenticity confirmed by high descent. He who denies this can scarcely deem the name Hubback to be illustrious, until he has discovered those of his ancestors. Acknowledging, as I do, all the value of long lines of recorded pedigree, that value has its limits. Your worthy and well-informed Short-horn contributor has admirably disposed of the fallacy that the merit of a Short-horn is in proportion to the number of ggd's before its name. We must never forget the possibility (which is, indeed, of everyday occurrence) of 12 of these being very good, but completely spoiled by the 13th. Let us first look to the animal, and then scan his antecedents.

In conclusion, I trust it will be observed that I have been treating one special subject. I have endeavoured to prove, not by any statement of my own opinions, but by the eloquence of facts, in the first place, that the Oxford family is excellent in itself; and secondly, that so far from causing any prejudicial influence on those families with which it has been most largely allied, it has rather recruited and sustained the valuable qualities for which they have long been celebrated. I am fully sensible of the excellence of other families of Short-horns, and of the deservedly high place they occupy in public estimation. *Willoughby Wood, Holly Bank, Burton-on-Trent.—Bell's Messenger.*

SWALLOW HOLES.

It is a matter of regret that notwithstanding all that has been written by tourists and spoken by philanthropists regarding the wilder poverty-stricken regions of Ireland, but little is yet practically known by tourist writers of the real condition and capabilities of those districts, of adding to the wealth and strength of the nation by producing an increase in the food of man.

For the first time I have seen a short account of the tour of a man through Connemara who is as free from all the prejudices above alluded to as any human being can be. Need I say I mean our distinguished countryman, the venerable and venerated Martin Doyle, whose letters I have read, as indeed all impartially-minded men must have read, with deep interest. Yet not without regret that his tour was so hastily made, and that his acquaintance with other localities had not been made, or even better made with those he has passed through. I am quite sure he will not be displeased with me if now, with your permission, I attempt to supply to some extent in detail what he has so graphically sketched but in outline. I feel at no loss with what to begin where so much has been left undone. The beginning of agricultural improvements, especially in the vast districts of country glanced over, is drainage, arterial and occasional.

With the indispensable necessity of arterial drainage and its mode of accomplishment all practical and scientific men are respectively acquainted. But the case is somewhat different with occasional drainage, especially in such places as I am considering. In this, thanks to Martin Doyle and Professor Skilling, there is what must appear to many of your readers a novel and an important means of procuring an outlet for drainage in the enormous limestone districts of the Midland, West, and South of Ireland. What I allude to is the Gulf or "swallow hole" outlet discovered by Professor Skilling, from whose merit I by no means wish to detract when I say that this is by no means a novel affair in Mayo, at least where Nature has been so tempting to man to assist in his efforts at improvement. In using those "swallow holes," gulfs, and caverns, as outlets for water, there will sometimes, and not unfrequently either, be required more engineering skill than at first sight may appear necessary to the mere practical man. Before trusting to those "swallow-holes" as outlets, the drainer must be able to calculate, first, the capacity of each to receive without obstruction the water to be drawn off from a given area or basin to be drained; second, the fall from the source to the confluence of such cavern, the more difficult to be ascertained, as such confluence may be miles away from the source, beyond some high hill or mountain, or far under the surface, or at the bottom of some deep lake; nay, perhaps hidden in the bed of a deep river. In ascertaining the capacity of a cavern to receive the water being drained off, the eye can be readily deceived by supposing that because it is capable of receiving and carrying off the streams that continuously flow into it, delayed on their way to it by their tortuous windings and by their contents having to filter through undrained land, it will be equally effective when the water comes in far greater abundance, being less obstructed in its course when liberated from the land. The danger of obstruction at the source or at some winding within the cavern will be further augmented if the water comes through a flowing sand carrying with it large quantities of silt, and liable to become an impenetrable concrete when having settled down in sediment. The danger from this can only be guarded against by the vigilant supervision of a man possessing both practical and scientific knowledge. In ascertaining the fall between the entrance and outlet of the cavern the best engineer may be severely tested from his difficulty in finding the outlet which, as already said, may be miles off and out of view, and even when having found an outlet it may not be the one he requires to find, but one coming from some other "swallow hole" or series of holes miles off in some other direction. And if the outlet or confluence be in the bottom or deep down on the side of some lake or river he may not be able to find it at all, in which case the danger may be augmented during heavy rains or high floods, when the waters in such lakes or rivers may rise so high from a great supply and higher sources as to refuse the admission of water from the drained land in question.

Not only that, but by the high rise of water in such lake it may soon force much water back against the current, producing a double derangement in the cavern as a main drain, and in its tributaries farther back. I hope I have made myself understood by those unacquainted with those now valueless, but if drained, most valuable lands. Permit me now to tell your readers of a simple, but in one case novel, means of finding such outlets, which I have found adopted by some of those unsophisticated, and often unjustly censured Connaughtmen, in finding such outlets. At a place called Doo Castle, in the county of Sligo, the residence of the late Joseph Myles MacDonnell, Esq., M.P. for that county, the outlet of a large cavern was discovered some miles away from its source, by throwing chaff into the "swallow hole," which chaff was found some time after driven up to the surface of a lake, thus indicating the outlet. Again, on Lord Dillon's property in Mayo, a dog was thrown into a "swallow hole" who several days after made his appearance at the outlet, some miles away beyond a high hill; yet so tortuous and uncertain are these caverns, like the catacombs of Rome, that when you find yourself at the mouth of one, and fancy you have its outlet, you may discover other mouths and outlets equally puzzling to you, and endangering to your drainage operations. For example, a miller living on Lord Dillon's property in Mayo, whose water-wheel was a turbine of a most primitive kind, called time immemorial "A Gig Wheel," wishing to increase his mill power, erected "an overshot" wheel, but in doing so "overshot his mark" in his water supply, which was from one of those outlets dammed up. By raising the dam a few feet higher the water ceased to flow there, but accumulated to a great extent in a lake some miles distant, till it found a vent in another side of it, and flowed off in a different direction, deluging a district which had never before suffered to any considerable extent from water during the highest floods. The foregoing are but a few, though the chief obstacles to successful land drainage through such outlets as the Irish "swallow holes." But they all can be removed by one simple process, a thorough arterial drainage, whose effects will be sufficiently understood without further waste of your space by descriptive particulars from me.

Until such arterial drainage will be effected, some of the finest lands in Leinster, Munster, and Connaught must remain exposed to the periodical losses consequent on wet seasons, such as those we have passed, and are passing through; and the cries of poverty and hunger will be heard from a greater number of districts than are now appealing to the charitable all over the New as well as the Old World. But as such a system of arterial drainage, judging from past events, is not likely soon to be in force, much in the meantime can be done in the hilly districts by simple and inexpensive means, to which those "swallow holes" can be made subservient. *Edward Carroll, Kilgreany Lodge, Clonegal.*

Home Correspondence.

Thin Seeding.—I have been amused, and so I should think have most of your readers, on reading the articles in your and other journals on thin seeding. But what is modern thin seeding, or rather what is thick seeding? One gentleman writes that 1 peck of seed is sufficient for an acre of ground, if the seed be bought of him; but I believe not otherwise: and another, my esteemed friend Mr. Alderman Mechi, writes that he uses 4 pecks of Wheat, 6 of Barley, and 8 of Oats, and this the worthy Alderman calls thin seeding, or rather thin sowing; but surely this was a slip of the pen or a clerical error, as it may be called. But Mr. John Coleman some time since wrote, and published also, that he put in 12 pecks an acre, and that he used for the purpose an implement to which he has given the name of "Drag;" the implement, I conclude, or one made from the pattern of it, which was brought to this country in 1851 from Taboo or Timbuctoo, in Central Africa, or some place of a name like one of these, and was exhibited by an Arab under a tent, as many of my readers will recollect, at the great International Exhibition of the above date. It was a very primitive implement, and had the appearance of having been a pre-Adamite one; and had the renowned Mr. Darwin seen it, he would doubtless have concluded that it was the embryo tool for putting seeds into the ground from which all others—dibbles, droppers, drills, &c., had developed themselves. At the conclusion of the Exhibition I sought out the Arab exhibitor of the tool with the intention of purchasing it, with the other pre-Adamites which were shown with it, tent and all, as curiosities for a museum; but they had all been sold, and though I made many diligent inquiries, I could not learn to whom, until I read the article by Mr. John Coleman, who is now using it, or one made from the model of it, he informs us, on the farm of the far-famed Agricultural College. I forget the name which the intelligent Arab exhibitor said the learned farmers of Taboo or Timbuctoo gave it; but the euphonical British one of "Drag" seems singularly appropriate; and doubtless, henceforth Drag will be the name by which it will be generally known, and that it will supersede all other dibbles, droppers, drills, &c., there can be no doubt. That the implement is perfect in all its parts is proved from what it is doing at the College that has adopted it for the guidance of its students, and that in this enlightened age it will get into general use in this and all other countries there can be no doubt, as Mr. John Coleman informed the world he was enabled to put into the ground by it the enormous quantity of 3 bushels, or 12 pecks of seed per acre, and that the crop by it in the spring grew up a fine jaundiced or golden hue, a colour so cheering to the sight of the intelligent farmer, and

especially as it showed itself, whilst the crops of those who had not used the drag, nor half so fine a quantity of seed, exhibited nothing but a common green, and might have been taken for fields of growing Grass. In all probability, also, not only 12 pecks could be dragged into the ground by the pre-Adamite Drag, but also 24 or 48, or any amount of quantity that the learned professors of agricultural colleges may choose. All hail then to the pre-Adamite Drag! all hail to the introducers of it into modern agriculture! all hail to so great a boon to the thick sowers! all hail to the lovers of jaundiced crops! all hail again and again to the pre-Adamite Drag! But, Mr. Editor, how wonderful it is that the oldest implements of all kinds, like the oldest literature, should be the best! How wonderful it is that whilst scientific men have been for very many years racking their brains to discover a machine the most effectually to seed land with corn, that there should have been all the time the one preserved and used in the centre of Africa, by a people whom we look upon as miserable savages, that was used by Adam and his immediate descendants, or by the laudated race of philosophers, who, according to modern discoveries, lived some millions of years preceding him! Wonderful to me at least is all this, but then the wise Solomon informs us there is nothing new under the sun—and hence the pre-Adamite Drag. But to return, and, my patient readers, do bear with me a little longer whilst we examine some examples of seeding land by other means, and not by the pre-Adamite drag. Mr. Hallett, whom I wish all the success that a spirited individual can obtain, though I fear he will not achieve it, informs the world that one peck of seed is amply sufficient in skilful hands for an acre of ground, and that if his seed be used the most astonishing crops will be produced: ears so full, plump, and heavy, that it would require Hop-poles to support them, as no hollow straw is sufficient for ears 9½ inches long and full of grain, unless it be thin indeed; but still I most heartily wish Mr. Hallett complete success in every respect and undertaking. But my worthy friend Mr. Alderman Mechi writes that he is a thin sower; but it is evident that himself or the printer has committed what is called a clerical error, and that he wrote or intended to write thick and not thin sower; for of Wheat he puts in, he says, 4 pecks, and I say often 6; of Barley 6, and of Oats 8; and if this be not thick sowing, or thick seeding in some way, I know not where it is to be found, except at the Royal Agricultural College Farm, whereat it appears the object is to grow beautifully yellow growing crops, and not abundant yields; and so double the quantity of seed Barley is put in, as Mr. John Coleman, the Professor, writes, with the drag, to produce the yellow-bladed growing crops. But the finest crops of Wheat I saw this last year were from one peck of seed per acre, and one was a large field of it, the property, and under the cultivation, of an accomplished and scientific lady. Of course, as the crop has not been threshed, I cannot tell the yield; but so thick, rather too thick, was the crop on the ground, and so full and heavy were the ears, that I would back it against any field seeded with 4 bushels per acre in this country. But, Mr. Editor, and my readers, as most of you know, I am a thin, a real thin seeder, or I think I ought to be so considered, and for more than 40 years I have never exceeded 2 pecks of seed for either Wheat, Barley, or Oats per acre; and of Wheat I have grown 13 coombs 3 bushels an acre, and grown it four years in succession, and often with 1 peck per acre, when the average was 44 bushels per acre for the four years; and of Barley I have grown from 2 pecks, 7⅞ quarters per acre, and which sold at the highest price of the market, and the maltster who bought it said it was the finest Barley he had ever seen, and he kept it for a stock for seed. Of Oats I have had enormous crops, but as I have threshed them as I wanted them, I cannot give the precise yields; but when I go to town I will carry a sheaf fairly cut to your office for your inspection, and I think you will say, as all say, that you never before saw such Oats, so fine and good, the straw being as large and strong as reeds, and not of a jaundice colour, like the Barley at the renovated and prosperous College, but of a beautiful golden hue such as all amateurs whether of corn or money love to look upon. But this year I had some Barley, Wheat, and Oats, all put in in the spring, Wheat and all, and below 1 peck per acre; and the Barley and Wheat were as thick in the ground as they could stand; and the roots, all from single grains of seed, averaging more than 40 ears each, and the yield of each upwards of 1500 fold. Yes, readers, should you be sceptical, there are plenty of respectable witnesses to this statement, who before were as sceptical as you can be; still the Wheat did not please me, but then the seed was put in late in the spring; but from single grains of Wheat I put in with my drill I have grown upwards of 4500 fold, and a man in the dark or blindfolded could pull up root after root having more than 2000 fold. But this year my best crop was of Oats, and from 1 peck, and was the wonder and excited the astonishment of all who saw it. But in conclusion, shall I ask Mr. Coleman what is the capacity of a sheaf? He grew, he said—but cautiously adds "without going to particulars or hazarding an opinion"—13 stooks, or 130 sheaves on a quarter of an acre. Now, some sheaves are four times or more larger than others. Some are so light that the wind blows them off the fork of the labourer, and some so heavy that he can with difficulty pitch them on the waggon; and so, what is the capacity of a sheaf? I myself cannot even guess at what the quarter of an acre of Barley from the 3 pecks of seed produced, nor what it was like, only so far as Mr. John Coleman's information goes, that is, that in the spring it was very yellow—in fact, had the jaundice, as of course so accomplished a professor of the pre-Adamite drag-husbandry intended it should have. Mr. Editor, as you know, and every wise man knows, it is not the quantity of seed but the skill by which it is put into the ground on which the result depends; but we must have no drags. *G. Wilkins, Parsonage, Wix, Sept. 29.*

Steam Cultivation.—[We have received from Mr. Smith of Woolston a reply to Mr. Terrell's letter of last week, in which the disparaging remarks made by that gentleman on the performance of the Woolston Steam tackle at the meeting of the Sparkenhoe Farmers' Club, are answered first by the words of commendation passed upon it by the reporter of *Bell's Weekly Messenger*, and next by words of commendation passed upon it on a previous occasion by Mr. Terrell himself. Mr. Smith then speaks as follows of the real test which his apparatus is receiving on many farms throughout the country:—] What are the facts? Let me refer you to your report on Mr. Hubbard's Lower Beeding Farm; there you show that the set of tackle ordered by Mr. Hubbard of me and supplied under my directions by my agents, "seemed," to use your own words, "as good as new;" that you "saw the rope as it came in and went out, and it appeared certainly nothing like half worn: it had already accomplished upwards of 2500 acres—that two men held the implement as it went over the rough surface, and was jerking along evidently through some very hard uneven land." This lets me know that it must have been a rough tough job that was being done, or my implement would not have required the aid of two men to have managed it, for it would have gone steady; for I have long since seen it going over land as steadily as a boat over water, and completely under the management of my wife, who sat upon it to guide it; and it also proves to me the correctness of what you have said, "that the ropes were nothing like half worn," for it is that jerking tough work that will test them if anything can; and it proves something further, viz., that the tackle has been well managed, and that the apparatus is such that it could be well managed, and also that the ropes were good at starting. They were made by the Messrs. Glass & Elliot, of 10, Cannon Street, London, of whom I have all the ropes I supply, and are sent out under my own direction. There is Mr. P. Kerr, of North Cheam, Surrey, who has done, as I am informed, some 2500 acres with my tackle with one set of ropes, and I have other customers who have done about as much; all these go to support the truth of the impression of both Mr. Kay and his engineer that my implements are of light draught, for I know from practice that ropes cannot stand the working of heavy draughts—see Messrs. Neame & Co.'s result from the working of a 12 horse-power engine. Then what is the good of a judge prejudging my tackle, upon no data other than seeing a few things that please the eye for the moment, such as rope-porters with wheels upon them, that are generally useless in practice, for unless they have constant attendance the ropes cannot be kept upon them; or the wasteful tight rope practice, that damages the rope more than any other band over which it passes, as well as the increased power required to work it. To cap all, I have this very morning agreed to grant a licence to Mr. Terrell and a neighbour of his to use a second set of my implements. This will let you know what the practical farmers, even near the Sparkenhoe judges, think of my implements. So much for prejudgment. *William Smith, Woolston, Bletchley Station, Bucks, Sept. 29.*

Land Drainage.—We have observed in your recent Numbers several articles on the subject of drainage, which appear to us calculated to cast somewhat of discredit on the practice of thorough drainage. We have and always have had a salutary dread of committing ourselves to print, nevertheless we do not like to sit idly by and see an art for which we entertain so high a respect in any way lightly spoken of, more especially as we believe that when Mr. Smith of Deanston instituted the practice of "furrow," or in our day "thorough drainage," he conferred on the agricultural interest the greatest boon which it has ever yet received at the hands of any one individual, as there can be no doubt that to that movement and the introduction of artificial manures, agriculture is mainly indebted for the gigantic strides it has made of late years. Now we do not for a moment suppose that the worthy gentlemen who have taken part in the discussion intend to cast disrespect on the art, as we know some of them to be masters of their profession, but some of these remarks appear to us to have a tendency that way. Moreover we should wish to deprecate any return to that system of partial drainage so ably presided over by "Tom Hodges the drainer," who used "to take a drain up this way, and then a drain across that way," leaving greater part of the land *in statu quo*, and greatly puzzling ourselves and no doubt the gentleman above alluded as to whether we should be wasting our client's money by entirely ignoring the said "Tom Hodge's" work or pay some regard to it, and run chance of a blot on our professional escutcheon by leaving after us incomplete work. As regards the test hole, we are happy to give it our unqualified approbation; but we do not suppose that of late years it has been so much disregarded as some of the remarks would lead us to imagine. For our part we have never yet gone out with any of her Majesty's Inspectors who did not consider it his duty to examine carefully as to the nature of the subject on which he was about to report, and for ourselves we would as soon think of starting on a voyage to Japan without chart or compass as break upon unknown lands without first ascertaining what they were made of. As a practical illustration of the excellence of this custom, it is but a few days since we had occasion to go over the lower part of a Welsh property on which we have been engaged for some time; the subsoil of the upper part of the estate is a stony clay, and has been drained 4 feet deep, and at 10 and 11 yard intervals, but we had reason to suppose that we should find gravel in the lower portion, though our foreman thought not; the test hole was made and 4 feet cut out without the appearance of anything but stiff clay; 4 feet 6 inches and 4 feet 10 inches were reached without other result, but the next spit brought up the gravel we expected, so that land is being done not at 10 or 11 yards, but considerably wider, and 5 feet deep; nevertheless we have no intention of departing from what they are pleased to term the "gridiron system." We mention this circumstance merely as a proof of the practical excellence of the test hole, as no doubt that land would have been drained 15 or 20 years ago, 2 or 3 feet deep, with very little result; whereas, following up the experience of those who have gone before us, we hope now to make a perfect job of it; this however is an exceptional case. As we think articles like this should have some practical point, we write these few lines merely to reassure those gentlemen who have had their lands drained on the thorough system, and to satisfy them that, if the work has been well executed and to sufficient depth, they will in 9 cases out of 10 have no cause to regret their outlay, or to think they could have spent their money to greater advantage. *James Girdwood.*

Occasional Drainage.—I should not trouble you again upon this question, but that, from Mr. Bailey Denton's remarks in your Number of the 20th ult., there appears to be the same misunderstanding as to the cause of my making the comments I ventured to do. It was not at all in consequence of any address by that gentleman to his foremen, for I have not had the pleasure and advantage of seeing one, but entirely through his own invitation in your columns of August 23, combined with a very natural desire to correct what might otherwise (inadvertently, doubtless) have produced an erroneous impression generally. And nothing could be further from my thoughts than the slightest idea of making the question an opportunity for "personal allusions," or the publication of "particular instances." I have to acknowledge Mr. Denton's high compliment as to the works I have been permitted to conduct, which is one I am happy to have an opportunity of heartily reciprocating with reference to his own operations. The advantages of frequent "test holes" I can thoroughly confirm; indeed, it has often been to me a mystery how so much drainage has been conducted without them, for the longer my experience, the more convinced I become that they are an indispensable preliminary to the proper drainage of any description of soil. *G. Thompson.*

Hallett's Pedigree Wheat.—To J. J. Mechi, Esq.—I beg you will believe that in the request which I am about to make to you I am actuated by a sincere conviction of the national and even universal importance of the selection of the parents of our Cereals, which conviction I am anxious you should share. From the opinions expressed in your letter to the *Agricultural Gazette* of last Saturday I infer that at present you believe the results obtained by my Pedigree Wheat to be due to "thin seeding" alone, but I think you will not continue to hold that opinion after perusing the table of progressive increase shown on the accompanying paper, where the seed, the land, the mode of planting, and the absence of preparation were the same throughout. The request I have to make is that you will do me the favour to accept a bushel of my Wheat (which I send you this day) of the latest selection, such as I am sending out this year, and try it against the same Wheat of an earlier selection, which you can procure from any of those growers of it who purchased of me last year. In each trial (of which there might be several at different times, with varying quantities of seed) both the "selections" of Wheat to be planted of course at the same time and in the same manner with the same quantity of seed. The only conditions I would impose are that the Wheat to compete with that I now send you shall really be an earlier selection, *i.e.*, shall not have been procured from here this year; that the maximum of seed in any trial shall not exceed the rate of 1 bushel per acre; and that in one of the trials at least an acre of each shall be planted immediately in accordance with the accompanying printed directions, viz.:—9 inches between the rows, and 4½ inches between the grains in the rows, which is equal to about 1 bushel on 3 acres. If the produce of that I now send you do not considerably exceed that of the earlier "selection," I will pay 20*l.* towards the funds of the Agricultural Benevolent Institution. I do not doubt that the result of these trials will convince you not only of the real existence of "Pedigree" in my Wheat, but that, as in other cases, its value increases with its length. I am willing also that the trials should embrace other kinds of Wheat, and to pay the 20*l.* if that I now send be beaten in any one instance; but this does not touch the question of the value of "Pedigree" in Wheat. I need not say that whatever your disbelief in selection, I have the fullest confidence that you will make it a point of honour to see that the trial be a fair one. *Frederic J. Hallett, Manor House, Brighton.*

Societies.

WEST-LOTHIAN: *Aug. 22. Rotation of Cropping.*—Mr. THOMSON, of Echline, South Queensferry, said:—The few remarks which I have to make on this subject

must be confined to the north and eastern portions of the county with which I am best acquainted. I think that when a good plant of pasture Grass is obtained, it should be allowed to lie as long as it is good or convenient. Upon clay lands, I believe the best rotation to be the seventh shift—viz., green crop (or in very thin, poor clay, plain fallow may be advantageously resorted to), Wheat or Barley, two years' Grass, Oats, Beans, Wheat. As it may often happen that a Turnip or Potato crop is more valuable than Beans, they may to some extent be substituted for the latter; and in the case of Turnip, in particular, the crop can be raised with guano alone, and the whole or part of the crop consumed by sheep on the ground, without its deterioration, or depriving the other portions of the farm of their proper quantity of home manure. Upon light soils, the fifth shift may be most advantageous—viz., green crop, Wheat or Barley, two years' Grass, and Oats. But where the land is thoroughly drained, and we have the command of guano and other foreign manures which can be applied at a comparatively small cost, I do not see the necessity of adhering so strictly to rotation; and I have no doubt that, with the advance of agricultural improvement, many of the restrictive clauses in leases will be omitted, but which, if persisted in, will, next to want of sufficient capital, tend more than any other influence to hamper the skill and energy of the farmer.

Mr. DAVIDSON, of Walton, said:—In determining the course of rotation most suitable for any farm, the nature of the soil is obviously the first thing to consider.

From the relatively high price of butcher's meat, the great matter now is to keep as much stock as possible. This involves the necessity of increasing as much as possible the quantity of keep, or, in other words, the extension of the green-crop system. I some years ago formed the opinion that cold-bottomed clay soils do not pay nor improve lying for one or two years in pasture, having almost invariably found the Oat crop as good, and often better, after hay than after pasture. I, therefore, for such land would recommend a rotation which will admit of the land being under fallow or green crop twice in the six or seven years, arranging the divisions so that the Turnip crop may be repeated on the same ground at as long intervals as practicable. The rotation for stiff lands, say Oats, fallow or Beans, Wheat, Turnip, Barley, hay (or hay once cut and grassed for another year). The lighter fields on the farm could be under a five course shift—say Oats, green crop, Wheat or Barley, hay or pasture, pasture. In the latter rotation Beans should not take the place of a green crop. Fallow is now pretty much discarded; but I rather think on stiff, thinnish soils it is necessary to have a portion. It is questionable if the return from the green crop is always an equivalent for the advantages derived from fallowing.

Mr. BROCK, Overton, said:—There were numerous circumstances to be taken into consideration relative to the cropping of every particular farm, such as the nature of the land—whether free, medium, or heavy soil; its condition—whether in good heart, or otherwise; its position—whether upland or lowland; and its distance from a railway station or large town. Generally—but more especially in the eastern district of the county—fallow had given place to green crop, and Grass in a great measure to hay. It is unnecessary to comment on the profitable nature of green cropping, Potatoes paying directly, Turnips indirectly. On substituting hay for grazing, where the red Clover plant can be successfully grown, it has been proved that the succeeding Oat crop is as good, if not better than after one or two years' grazing. Research has shown the cause. The roots of the red Clover plant grow in proportion as the stems grow upwards, or in other words a much larger crop of roots is left to form manure for the following crop after cutting than after Grass. Laying down a rotation for the county has no advocate in me. Each farmer, knowing the peculiarities of his own farm, must exercise his own judgment, or he is unworthy of his calling. Allow me (concluded Mr. Brock) one more remark, although it may be partly out of place. We may advance opinions, but leases are our guides. High rents and the then necessary restrictive clauses are not the best systems for any county. Where good fruit is expected, selection is necessary; so every landlord should grant liberal leases only to those in whose enterprise and energy they have every confidence. The landlords would then have reason to feel proud of their tenantry; and while the tenantry would themselves be encouraged, the peasantry would be more flourishing, and agriculture advanced as a science.

Mr. MILLER, Niddrie Mains, said:—I will endeavour to offer what I consider the most suitable rotation of cropping for this county, and also to point out what I consider wrong in the system of leases generally extended for the tenantry. In my opinion the best security for a farm being properly managed is for the landlord to select a tenant of acknowledged integrity and worth, and let him have his own way; for if he does well for himself, he can never do ill for the proprietor or the farm.

I consider it perfectly necessary that a written lease should exist, and for the last five years have a certain rotation laid down, so that no undue advantage may be taken of the farm, by leaving it in an exhausted state either to offer to the old tenant or to the public for a new lease. Most of the existing leases are drawn out on what is termed the five-course shift—a system, in my opinion, very inapplicable to West-Lothian, from the circumstance that so much second year's Grass must be kept. Let me take the case of cultivation of a farm of 250 acres, so that there must be 50 acres of each lot—which must be 50 acres green crop, 50 acres Wheat or Barley, 50 acres Oats, 50 acres young or first year's Grass, and 50 acres second year's Grass. I think few farms in this county adapted to such a rotation; for it is now well known from experience that better Oats are had after hay than after two years' pasture, and no doubt I will be told that the succeeding crops must be better after two years' pasture—of which I have great doubts—for if land is not enriching itself by pasture it must be falling off. Well, let it be so, but I again say that a more liberal application of light manure will make up for it, and it will not do to take a year of 50 acres of land where all the disadvantage of a want of Grass can be supplied by a more liberal application of manure to the succeeding crops. I have spoken of the loss of the 50 acres of land by second year's Grass—an expression I consider I am perfectly justified in using—for from having a little experience in grazing, I confess I don't know the farm in this county where I would be justified in offering the rent of the land for the second year's pasture. I have very great doubts if the first year's grazing is even justifiable in many cases; for, if the Grass is well planted, and with a top-dressing, so much more money is obtained by making it hay, with half of the year for pasture after the hay is removed; and if it will cut, so much the better—a great deal more good is got of the land to the tenant, and of course to the country. In regard to the grazing the first year, as a grazier I confess I put very little value upon the pasture. In the first place it is unmanageable. You have a rush of Rye-Grass, which, if eaten down as it should be, soon leaves the pasture too bare for feeding purposes, unless a fine sole of Clover exists; and if the Rye-grass is not eaten and made use of, and an absence of Clover, you have only a description of Grass which is worthless for feeding, and if cattle are to be kept feeding on it, an allowance of cake must be given. On my own farm I have two fields of pasture this season, one first and the other second year's, from which I believe I will not make the rent of the land. Mine I don't think an exceptional case in regard to the first year's Grass, for none of the young Grass has done well this season, which I can only account for by the Grass being bitten and exposed to the cold, which has been so prevalent. Last season, second year's was most luxuriant, but the Grass has gone out of it this year; and with the cake I had to allow, and disease among the cattle, I regard it as the loss of the use of a field of land for this year, and give it as an instance that most land in this county will not graze to advantage a second year. I may be asked how I am to dispose of the 50 acres that is so unproductive in second year's Grass. Well, I can easily do so by telling you that 50 acres of green crop is far too little; and surely if a stringent lease is insisted upon, no proprietor will object to getting fully a half more green crop, and the other half of the 50 acres made Barley after the Wheat—a rotation I have found from experience to be the best preparation for a good plant of Grass. Objectionable as it may be to those who dislike a second white crop, this latter rotation is sometimes allowed in leases, but generally clogged with some conditions of dunging and giving guano, &c., in spring, which interfere so largely with spring work as to be wholly inapplicable, when nearly a third of the farm is to be made green crop. For the Barley after Wheat, I would never advise it to be attempted without a spring furrow, not deep, and bones and guano given—not too much of the latter, as I would prefer the Barley rather a light crop than otherwise for the sake of the Grass. If a fixed rotation is to be prescribed at all, I believe some such one as I have hinted at will be found most applicable for this county.

THE LEICESTERSHIRE AND WALTHAM AGRICULTURAL SOCIETY'S INAUGURAL EXHIBITION AT MELTON MOWBRAY.—This newly formed Society commenced its operations on Friday last by holding its first show, a complete success, in Egerton Park, the seat of Lord Wilton, near the town of Melton. This Society was formed out of the old County Association, and the one usually held in the village of Waltham. These societies, although useful in their way and very flourishing when they were first commenced, have since the establishment of other clubs on the nomadic principle been but poorly supported, and it was thought advisable by the two committees that one joint society should be formed which should hold its meetings annually at the different towns in the county. Melton, being the town nearly midway between Waltham and Leicester, was chosen as the first place. The very handsome sum of 650*l*. was offered in prizes, and the gay "little hunting metropolis" in its palmiest days never presented a livelier aspect. Flags were flying in all the principal streets; triumphal arches were erected near the railway station and show ground, and every accommodation was made for visitors. Large numbers of the aristocracy were present, including his Grace the Duke of Rutland, Lord and Lady Berners, Lord John and Lady Manners, Sir F. Fowke, Bart., Lady Adeliza Norman, W. W. Heygate, Esq., M.P., E. B. Hartopp, Esq., M.P., and many of the leading families in the northern division of the county. The Show itself was well filled with stock, and occupied about 30 acres of ground; suitable sheds and tents were provided for the sheep, pigs, cattle, implements, flags, &c. In the stock department there were about 50 entries, the leading exhibitors being Earl Howe, who took the 1st prize, 15*l*., for the best ox; Earl Spencer, C. H. Packe, Esq.; T. Miles, Esq. (Keyham); Mr. John Lynn (Stroxton), and others. In the class for Sheep there were about 60 entries, amongst which we noticed the names of Mr. C. J. Bradshaw (Burley-on-the-Hill); Mr. Lawrence Willmore, of Leicester, and other noted breeders. There was also a very large and superior show of Pigs, Mr. G. Beale (Molesworth), and Mr. W. Benskin (Rearsby) exhibiting some remarkably well-bred animals. The show of Horses, both in the heavy and hunting kinds, was also large, about 100 animals being shown. The exhibition of Roots was but small and very inferior. The Poultry classes were well filled, but no birds were exhibited calling for any particular mention. Capt. Buckley (Desford), Mr. W. Chamberlain (Desford), and Mr. J. Buck (Leicester) took the majority of the prizes. In the flower tent some very fine fruit was shown; the plants too are worthy of commendation.—In the Cheese only two prizes were offered, one for Stilton and the other for Gloucestershire cheese. Mr. Terwitt, of Market Bosworth, gained the head prize for Leicestershire Cheese, and Mr. Taylor, of Netter Broughton, the head prize for Stilton. Mr. Emberlin, of Leicester, took the 2d prize in this class. The show of Implements was not large; the leading exhibitors were Messrs. Hunt and Pickering, of Gl[illegible] took the head prize at the Sparkenhoe me[illegible] Sharman, of Melton, who exhibited in co[illegible] Messrs. Johnson and Son, of Leicester, M[illegible] and Ashby, of Stamford, and Mr. Garner [illegible] chester, of Melton. The prize, 10*l*., fell to M[illegible] man. All these gentlemen had a plentif[illegible] engines, ploughs, cultivators, rakes, &c., on the g[illegible] some of which were in motion. Some very fine [illegible] gigs, carts, &c., were exhibited by Messrs. K[illegible] Gloucester, Mr. W. Tyler, of Melton, and [illegible] carriage-builders. Altogether the exhibit[illegible] eminently successful, and the management and [illegible] modation everything that could be desired. The [illegible] dinner took place at 3 o'clock in the Corn Ex[illegible] where accommodation has been made for about [illegible] ladies and gentlemen. The Duke of Rutland presi[illegible] supported on the right and left by the noblem[illegible] gentlemen mentioned at the commencement of this [illegible] After the usual loyal toasts the Chairman, Lord J[illegible] Manners, and Lord Berners congratulated those pr[illegible] on the success of the show, and alluded to the [illegible] distress in Lancashire. The Duke took the opp[illegible] of referring to the practice of putting wire fen[illegible] occupations; he said the practice was danger[illegible] to those who enjoyed hunting, and he hoped [illegible] would not be persevered in. He also referred to the vexed question of administering rewards to labourers. He said he quite agreed with the remarks of Mr. Disraeli at Buckingham upon the subject, and differ[illegible] from those of Mr. Walter at Wokingham. He thought they did quite right in giving them. Lord J[illegible] Manners was of the same opinion. The Duke [illegible] Rutland also suggested the propriety of asking the Loughboro' Society to join this association, and [illegible] form one good united county association. The other toasts were merely of a local character, the princi[illegible] speakers being the Rev. G. E. Gillett, E. B. Hart[illegible] Esq., W. W. Heygate, Esq., J. C. Benzley, Esq., W. Inett, Esq., Mr. Towne and others. The proceedings terminated about 8 o'clock. We believe the Society will hold its next meeting at Lutterworth, although [illegible] is not yet finally decided. We have not heard the amount of receipts, but we should fancy about 4[illegible] persons paid for admission; probably the receipts w[illegible] realise 300*l*. Great numbers of persons went by train from Leicester for one fare; but the complaints against the Company for not having run a "special" were l[illegible] and well deserved.

Reviews.

A Lecture on Superphosphates. By Alfred Sibson, F.C.S., of 9, Douro Cottages, St. John's Wood, N.W. Published by the Author.

Mr. Alfred Sibson, whose name is well known in connection with the Cirencester Laboratory, and also with a widely circulated book on Agricultural Chemistry published by Routledge, of which he is the author, has resigned his appointments in the Royal Agricultural College, in order that he may give his attention to commercial analyses. He has here published a very instructive lecture on the leading artificial manure of the day. We take the following extract from its pages, both for the usefulness of the information and advice it gives, and also as an illustration of a very well written and valuable pamphlet.

"The question now naturally arises—is it advisable for the farmer to make the superphosphate he requires for his own use? I should say, except under peculiar circumstances, certainly not, and for the following amongst other reasons: because it is impossible that it can be made so well on the small scale, by persons unaccustomed to the work, as on a large one by skilled hands; or with the simple apparatus the farmer is able to provide, or to extemporise on the spot, as with the machinery and appliances found by experience to economise labour and improve the result. Again, in places where bones are to be had cheap, acid will generally be dear; indeed, the carriage of vitriol in small quantities is so expensive in consequence of the almost prohibitory rates charged by most of the railway companies for this article, that it can seldom be procured by farmers with advantage.

"At the present time especially, when so many excellent manures are to be purchased at reasonable prices, the practice of dissolving bones, formerly very common amongst farmers, has now greatly fallen off. If, however, any farmer out of curiosity should desire to try his hand at superphosphate making, the following directions may be followed, but it must be understood that I by no means recommend this process to manufacturers for the making of superphosphate generally.

"For a ton of bones, which should be ground small and boiled to extract as much as possible of the fat, the following quantities of acid and water may be used, viz.: 740 lb. white oil of vitriol, or 850 lb. brown acid; this is about equivalent to 41 gallons of the former and 50 gallons of the latter.

"1000 lb., or about 100 gallons of water, are divided equally, one part being used to moisten the bones and the other to dilute the acid. The latter operation should be carefully performed in a large bucket or tub—pouring the acid in a small stream into the water—the latter being well stirred meanwhile. The bones should be thoroughly moistened with water

[illegible] garden watering can, and left for two or three [illegible] or longer, to get well soaked. The mixing [illegible] be made in a wooden trough or large tub; if a [illegible] large vessel cannot be had to receive all the [illegible] at once, it may be done in a smaller one, [illegible] successive and proportionate quantities of [illegible] and acid: or the mixture may be made, [illegible] well, on the ground (with a hard clay [illegible] if possible), a ring being made with ashes [illegible] or red, about equal in weight to the water [illegible] to prevent the liquid flowing away. The acid [illegible] be gradually added to the bones, the whole [illegible] well stirred with a wooden rake to insure [illegible] admixture. As soon as the acid is all added [illegible] the mixing completed, the greater part of the [illegible] may be thrown over the mass, and the whole [illegible] to stand for some days. The heap may then [illegible], and the whole of the ashes well incorporated [illegible] the mass being then allowed to stand again [illegible] week or so, and if not then sufficiently dry may [illegible] up again and re-made into a heap, with thin [illegible] of fresh dry ashes. By this means a Super-[illegible] may be got perfectly dry and manageable—[illegible] large addition of ashes being of course no great [illegible] when, as we are supposing, it is to be con-[illegible] on the farm where made.

A Superphosphate made in this way, with the first [illegible] of ashes mentioned, was found to contain [illegible] per cent. of soluble phosphate, and nitrogen equal to 2·07 of ammonia.

[illegible] Worcestershire Farmer's Account Book. Letts, Son & Co., London.

This is a thin quarto of ruled pages, with printed [illegible] to pages and columns; containing forms and [illegible] enough to contain all the entries which an [illegible] of 100 to 300 acres is likely to make during [illegible] year, either in the form of memoranda, or of [illegible] of payments and receipts. There are 52 [illegible] folios for labour, 8 or 10 pages of cash account, [illegible] pages for memoranda of stock, grain, &c., [illegible]; room for accounts of miscellaneous payments, tradesmen's bills, corn threshed and sold, sales of other produce, valuation and balance sheet. The book has [illegible] advertised for several weeks in our columns, and [illegible] be recommended as providing a sufficiently simple and easily worked plan for keeping with accuracy the year's accounts of a small farm.

Miscellaneous.

Horse-shoeing at Berkeley.—At the request of the [illegible] who has so kindly offered these prizes, and [illegible] an art so important to the safety of the [illegible] and the comfort of the horse, I am induced to [illegible] you some plain practical remarks on what, in my [illegible], is the true principle of shoeing. The first [illegible] I advocate is the elevated toe, and my reasons [illegible] doing are these:—In the present popular shoe [illegible] will admit that the toe wears out in ordinary cases [illegible], and that when the toe is worn out the shoe is done [illegible]; and that very often there is almost as much horn [illegible] at the quarters and the heels as when the shoe is [illegible] applied to the foot. Now, to reduce the friction in [illegible] part I take the shoe that has come off the foot, and shape my new shoe in precisely the same form as [illegible], and by so doing I get the wear more general and the quarters of the shoe worn as much as the toe; consequently a less amount of iron will suffice, and last a month, which is the limit generally allowed for the shoe to remain on. In addition to this, which is certainly a great point gained, you reduce the resistance offered, which the form of the ordinary flat shoe occasions, and consequently relieve the animal of a portion of the exertion he is put to in progression. I will offer you a familiar instance of it in ourselves. You what what clogs are (shoes with wooden soles). There is no flexibility in those, so what does the clogger do? Why elevates the toe, as I want you to do the horse's shoe. If you had a flat piece of board on the bottom of your shoes, instead of the ordinary shaped one, you would be hardly able to walk; and if you did, only with great stress on your back tendons. I will adduce another instance. With how much more ease can we push a barrel forward than we can a box! How much more resistance the angles of the box offer than the circular form of the barrel! The foot presents the segment of a circle, during action, the heel coming to the ground first, the toe leaving it last. Look at the foot of a cow or a sheep, you will see they have elevated toes, and the surface where the greatest bearing is—is on the quarters. The next point I must draw your attention to is the preparation of the foot for the shoe. Let that be all done from the ground surface. Lower your walls and toe with the rasp, whilst the foot is held between your knees, ready for the shoe I have previously described to you, and you will find your toe will need no shortening from the front. Punch your nail holes as coarse as you can, and pitch the nail holes well out, so as to get a broad but low hole in the crust. The farther you drive your nails up towards the coronet, the weaker the horn is. And now let me impress upon you the great importance of not carping the outer surface of the crust. Nature always furnishes her most exposed parts with the greatest proportions; and the outer layer of the horn of the foot performs a similar office as the skin does to the other parts of the body, and if you remove that outer layer, which is almost invariably done by the rasp in finishing a foot to make it look what they think neat, you expose the softer and more delicate structures beneath, which are not so capable of resisting the effects of changes in temperature, of wet and dry, heat and cold, and lay the foundation of shelly feet, seedy toes, and other diseases. Moreove, you diminish the capability of the horn of holding the clenches. After running your rasp under the clenches, to what we call let it in, it is knocked down, and then the rasp applied to it on the top, until, what with one thing or another, you reduce the clench to the thickness of writing-paper, and the first time the hunter hits the heel of his forefoot with his hind in deep ground, away go those weak clenches, and the shoe is lost. Now, what I want you to do is this: twist off the ends of your nails, and turn down your clenches the whole thickness of the nail; should there be a little bit of horn turned down with your clench, remove it with an old knife; don't touch it with your rasp; and if your crust is not previously ruined by rasping, hammer your clench down flush with the crust, and you then not only have got a good strong clench the whole thickness of the nail, but you have it in the densest and toughest portion of the hoof. And now, let me impress upon you, the less you use the knife to the horse's foot the better it will be. *Mr. Hunt, V. S., reported in the Mark Lane Express.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Oct. 1, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0-6	Amount of Cloud 0-10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
		29.90										0.33		
Thursday	25	29.91	60	57	W.	2	6	65	51	75*	50	..	57½	58
Friday	26	29.92	61	59	S. W.	2	6	69	52	98	48	0.05	58	57½
Saturday	27	29 95	63	60	S.	1	6	70	53	107	48	0.02	58½	58
Sunday	28	29.83	60	59	S.	1	7	67	53	82	51	0.04	59	58
Monday	29	29.83	62	60	S.	1	6	69	58	87	55	0.35	60	58½
Tuesday	30	30.08	62	58	S. W.	2	8	71	53	98	49	0 10	60½	58½
Wednesday	1		54	50	W.	2	3	67	43	105	38		59½	58½

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Notices to Correspondents.

[illegible]: *J B.* Unless you are a member of either of the [illegible] Agricultural Societies, whose chemists will there [illegible] you the information you seek on the less costly pub-[illegible] charges, the expense of a complete analysis of a [illegible] or soil may be from 2 or 3 guineas up to 10*l.* 10*s.* [illegible] Dr. Voelcker charges 7*s.* 6*d.* for an opinion of the [illegible] of a guano or bone dust; 2*l.* 2*s.* for the complete [illegible] of guano, nitrates, or bone ash; 1 2*l.* 2*s.* to 5*l.* 5*s.* for [illegible] an artificial manure; 5*l.* 5*s.* to 10*l.* 10*s.* for that of [illegible]

[illegible] Milk: *The Dairy Maid.* It is common in Glouces[illegible] to take a large milk vessel, holding perhaps 80 or [illegible], carried on a pair of wheels and without springs, [illegible] the field, and milk the cows there, carrying the milk per-[illegible] a mile to the dairy. Some such plan must be adopted [illegible]

[illegible] of Wheat: *H V F.* It is not possible to state absolutely what is the average produce of Wheat for soils of given annual value to rent, because a soil which will not grow Wheat at all (so to speak) may yet have a considerable agricultural value for other purposes. Still less is it possible to state the farm produce of such land for any one year, because two fields of equal value to rent may be affected the one favourably and the other unfavourably, by such a summer as we had this year. Nevertheless, taking the case of land neither heavy nor light, we should be inclined to say that if worth 30*s.* an acre to rent, it ought to yield 30 to 32 bushels of Wheat; if worth 25*s.* it ought to yield 24 to 26 bushels of Wheat; if worth 20*s.* it may yield 18 to 22 bushels; if worth 15*s.* per acre only you can hardly expect to grow Wheat on it at all.

Name: Will *J. T.* of the Berwickshire Merse Farm, communicate (if he pleases) with Mr. G. Frost, of the Nurseries, Brushford, Tiverton, about the sheep dipping stuff which he lately condemned.

Howard's Steam Cultivator.

To the Editor of the Agricultural Gazette.

Sir,—Our steam-cultivating apparatus can be seen at work daily, within a mile of Bedford Station. By recent improvements in our Cultivator, we cut and move the whole of the ground at one operation, and this with as little expenditure of power as it has taken to cut only a portion. By means of a simple slack-rope apparatus and improved porters, we carry the rope completely off the ground, thus very materially reducing the wear-and-tear, as well as loss of power. We invite intending purchasers to come and judge for themselves.

Your faithful servants,

James & Frederick Howard

Britannia Iron Works, Bedford, Aug. 16.

Smith's Patent Combined Machine.

MR. SMITH will Cultivate and Drill in the Wheat on his No. 2 Heavy Land Bean Stubble at One Operation. Gentlemen who would like to see this operation performed may do so by sending to him a directed envelope for a card, stating the day.

Woolston, Bletchley Station, Bucks.

SMITH'S PATENT COMBINED MACHINE.—This Machine is admirably adapted for cultivating Light Land Wheat, Barley and Oat Stubbles, and Drilling in Stubble Turnips. Fifteen acres may be Cultivated and Drilled in one day; for Cultivating Light and Heavy Land Pea and Bean Stubbles, and Drilling in Wheat; and for cultivating Heavy Land Wheat Stubbles, and Drilling in Vetches. One operation will be enough for each crop, especially in wet seasons. It is warranted to do its work well.

For price and particulars apply to William Smith, Woolston, Bletchley Station, Bucks.

AGRICULTURAL IMPLEMENTS.—Steam Engines, Threshing Machines, Mills for Hand and Power, Carts, Waggons, Ploughs, Harrows, Turnip Cutters and Pulpers, Chaff Cutters, &c.

Burgess & Key, 95, Newgate Street, E.C.

FOWLER'S PATENT STEAM PLOUGH and CULTIVATOR may be seen at Work in every Agricultural County in England. Addresses of Farms (which are open to inspection), given on application, where the Machine has been at Work for three or four years.

The New Application of the ORDINARY PORTABLE ENGINE may also be seen at Work at any time.

Price, with Self-moving Anchor, Three-furrow Plough, and Five-tined Grubber, 285*l.*

For particulars apply to John Fowler, 28, Cornhill, London, E.C.; and Steam Plough Works, Leeds.

Oil Paint no longer Necessary.

HILL and SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which Hill & Smith will forward on application.

Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon paid to any station in the kingdom.

Apply to Hill & Smith, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

GEORGE COWELL, No. 14, Crescent, Salford, Manchester, Horticultural Builder and Hot-Water Apparatus Manufacturer, will be happy to furnish PLANS and ESTIMATES upon application. TUBULAR BOILERS capable of heating from 100 to 10,000 feet of 4-inch pipe, and apparatus adapted for efficiently and economically warming every description of Building, either Public, Private, or Horticultural.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.

Apply to Joseph Meredith, Vine Cottage, Garston, near Liverpool.

N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection; Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, Tubular, and Elliptic, from 24*s.* each. Improved Boilers and Iron Stands to use without brickwork, 50*s.* each. Valves from 12*s.* 6*d.* each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. Lynch White's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

VENTILATING STOVES, cheap, simple, efficient, and durable.—Thousands have been sold and universally approved. They are suitable for Halls, Warehouses, Conservatories, and every situation where a close Stove is required. The large sizes are extensively used in Churches, Chapels, and Public Buildings with great effect and economy. Prices 50*s.*, 60*s.*, 70*s.*, 90*s.*, and 120*s.* Prospectus with engravings gratis and post free. In operation daily. The Trade supplied.

Deane & Co., opening to the Monument, London Bridge, E.C.

Notice.

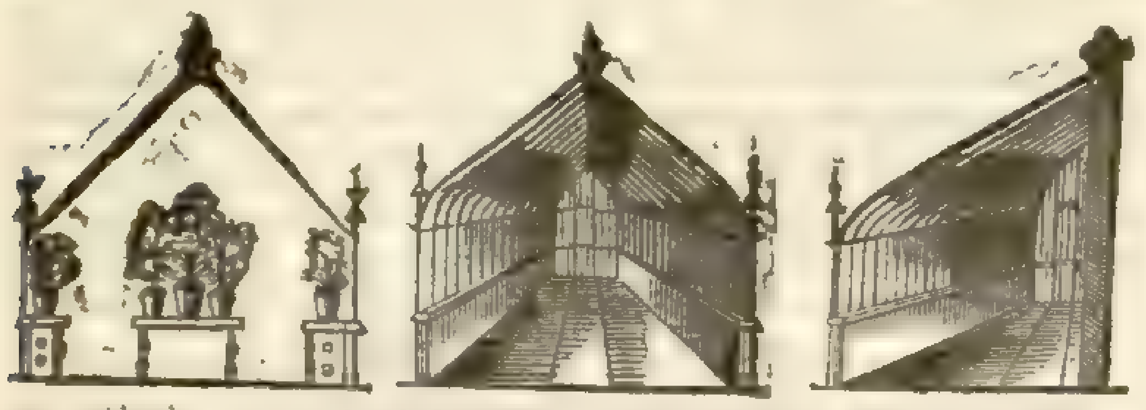
WILLIAM SHAKESPEAR, in thanking his numerous Customers for their patronage during the 10 years he has carried on the business of a HOT-HOUSE BUILDER, &c., at 55, Lionel Street, Birmingham, begs to inform them and the Public generally, that he has this day DECLINED the SAME, solely in consequence of Mr. Thomas Clark, the Owner of the Premises, (from whom W. S. purchased the business,) having refused to renew the Lease, in order to put his own Son into the Trade.

All Accounts rendered will be received by W. S., and all Persons having any Claim for Goods supplied to his order, are requested to send full particulars of the same addressed to him, care of Messrs. Wright & Hill, Accountants, 2, Temple Row West, Birmingham, when, if found correct, they will be paid forthwith.—Birmingham, Sept. 29, 1862.

FOR SALE, TWO GREENHOUSES, one 21 feet by 11 feet, and one 15 feet by 9 feet; and a quantity of PIT and other LIGHTS, size of do. 7 feet by 4 feet, 6 feet by 4 feet, and 5 feet by 3 feet 2 inches. GARDEN FRAMES always ready for use.

Address to James Smith, Carpenter, &c., near the Creek, King Street, Hammersmith, W.

DENNIS'S PATENT HORTICULTURAL BUILDINGS are made from the best Wrought Iron, upon

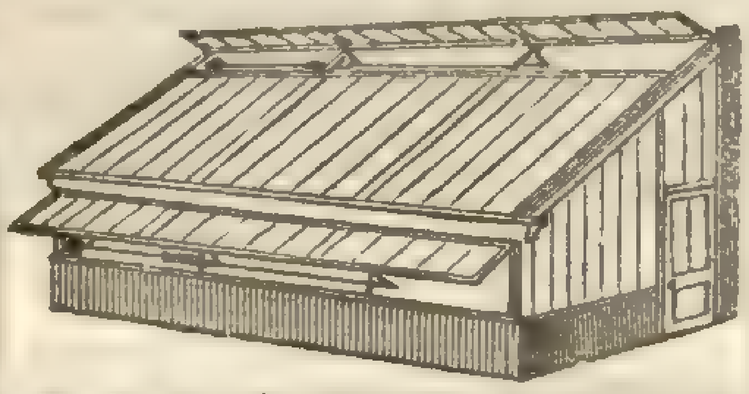


an entirely new principle. The combination of Iron and Glass under this patent is perfect; the possibility of fracture is prevented, and a permanently Water-tight Roof insured.

The leading practical advantages are extreme smallness of Framing, admitting a maximum of light and heat, great strength, durability, and perfect ventilation. They are speedily erected, partake of more desirable outline, and do not exceed the cost of a perishable wooden structure.

For Prospectus, &c., address T. H. P. DENNIS, Horticultural Builder, Hot-Water Engineer, &c., High Street, Chelmsford, Essex; or No. 2105, Open Court, Eastern Annexe, International Exhibition, where a Small Model may be seen and attendance is given on the four last days of the week.

T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough.



T. G. M.'s PATENTED BUILDINGS combine all the modern improvements, are well made of best seasoned red Deal, most effectually ventilated by means of his unequalled Apparatus, can be made either plain (and which are at the same time elegant in appearance), or of the most elaborate design. They can be fixed as permanent buildings, or made to be portable.

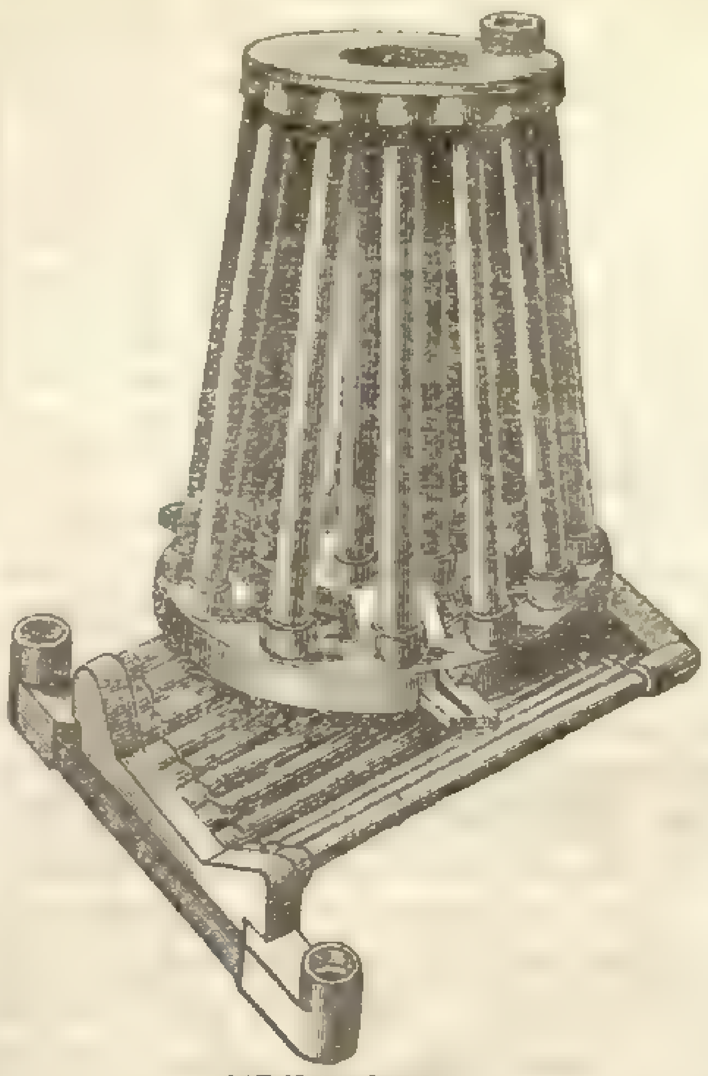
T. G. M.'s HEATING APPARATUS continues to give the greatest satisfaction for its heating qualities and small consumption of fuel.

ILLUSTRATED CATALOGUES of the above, Glazing without Putty, Garden Engines, &c., sent upon application.

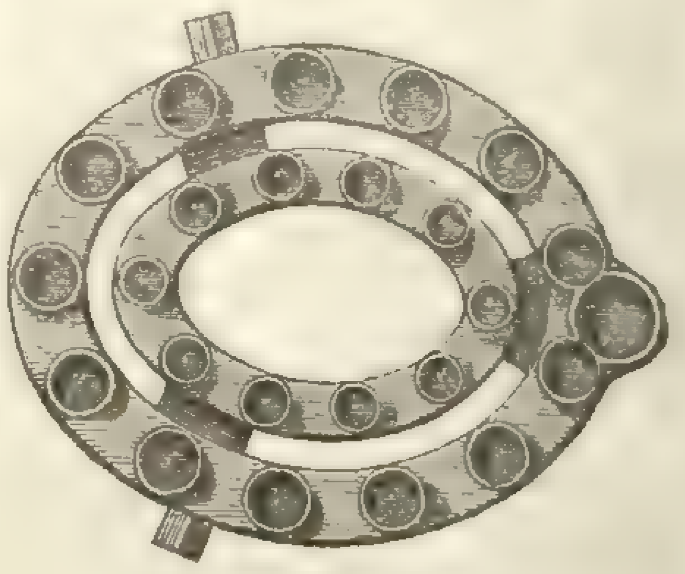
GRAY'S OVAL TUBULAR BOILER.

INTERNATIONAL EXHIBITION,

Class IX., No. 2119.



ELEVATION.



PLAN.

Mr. GRAY begs to call the attention of the Nobility, Gentry, Nurserymen, Gardeners, &c., to his

NEW OVAL TUBULAR BOILER,

acknowledged by practical judges to be a great improvement on every form of Tubular Boiler yet introduced. It has proved itself superior to all other Boilers for quickness of action and economy of Fuel, doing its work with one-third less the amount required by any other.

Extract from Report in Gardeners' Chronicle *of International Exhibition, May 24, page 476.*

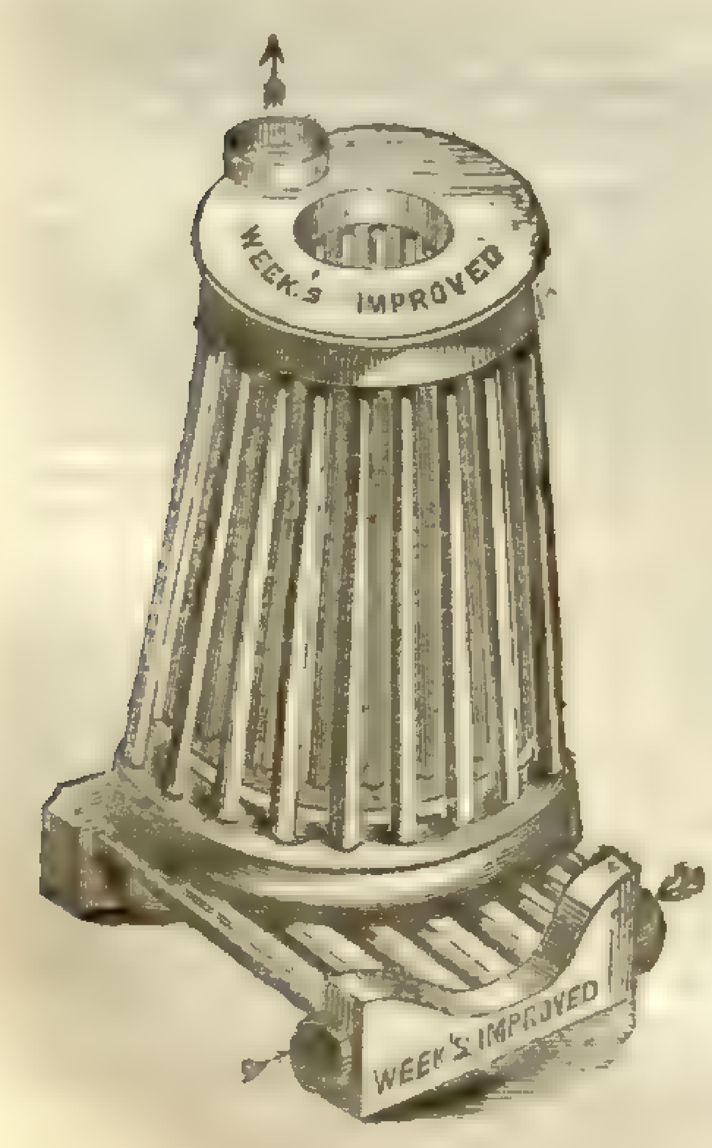
"The upright form of Boiler is usually made on a circular plan, but the oval form given to Mr. GRAY's variety of it is ... to be preferable in consequence of its bringing the tubes in closer contact with the fire. The usual form of a furnace being a parallelogram rather than a square, it seems feasible that the Boilers on the oval plan should bring the tubes more completely within range of the burning fuel; and this being so the change, though a slight one, is no doubt an improvement."

They are made of all sizes, which, with prices, may be had on application.

JAMES GRAY, HORTICULTURAL WORKS,
DANVERS STREET, PAULTON'S SQUARE, KING'S ROAD, CHELSEA, S.W.

A FIRST-CLASS PRIZE MEDAL HAS BEEN AWARDED TO J. WEEKS & CO. FOR THEIR SUPERIOR UPRIGHT TUBULAR BOILER AND GENERAL IMPROVEMENTS IN HEATING BY HOT WATER.

JOHN WEEKS & COMPANY,
HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS



TO

HER MAJESTY THE QUEEN	THE ROYAL HORTICULTURAL SOCIETY, LONDON
HIS LATE R.H. THE PRINCE CONSORT	THE ROYAL BOTANIC SOCIETY, REGENT'S PARK, LONDON
HIS ROYAL HIGHNESS PRINCE DEMIDOFF	THE ROYAL BOTANIC SOCIETY, DUBLIN
HER MAJESTY'S COMMISSIONERS OF WORKS, IRELAND	THE ROYAL BOTANIC SOCIETY, LIVERPOOL
THE GOVERNMENT OF GREAT BRITAIN	THE ROYAL ZOOLOGICAL SOCIETY, LONDON
THE TOWER OF LONDON	THE CRYSTAL PALACE, SYDENHAM

And NUMEROUS PUBLIC COMPANIES.

KING'S ROAD, CHELSEA, S.W.

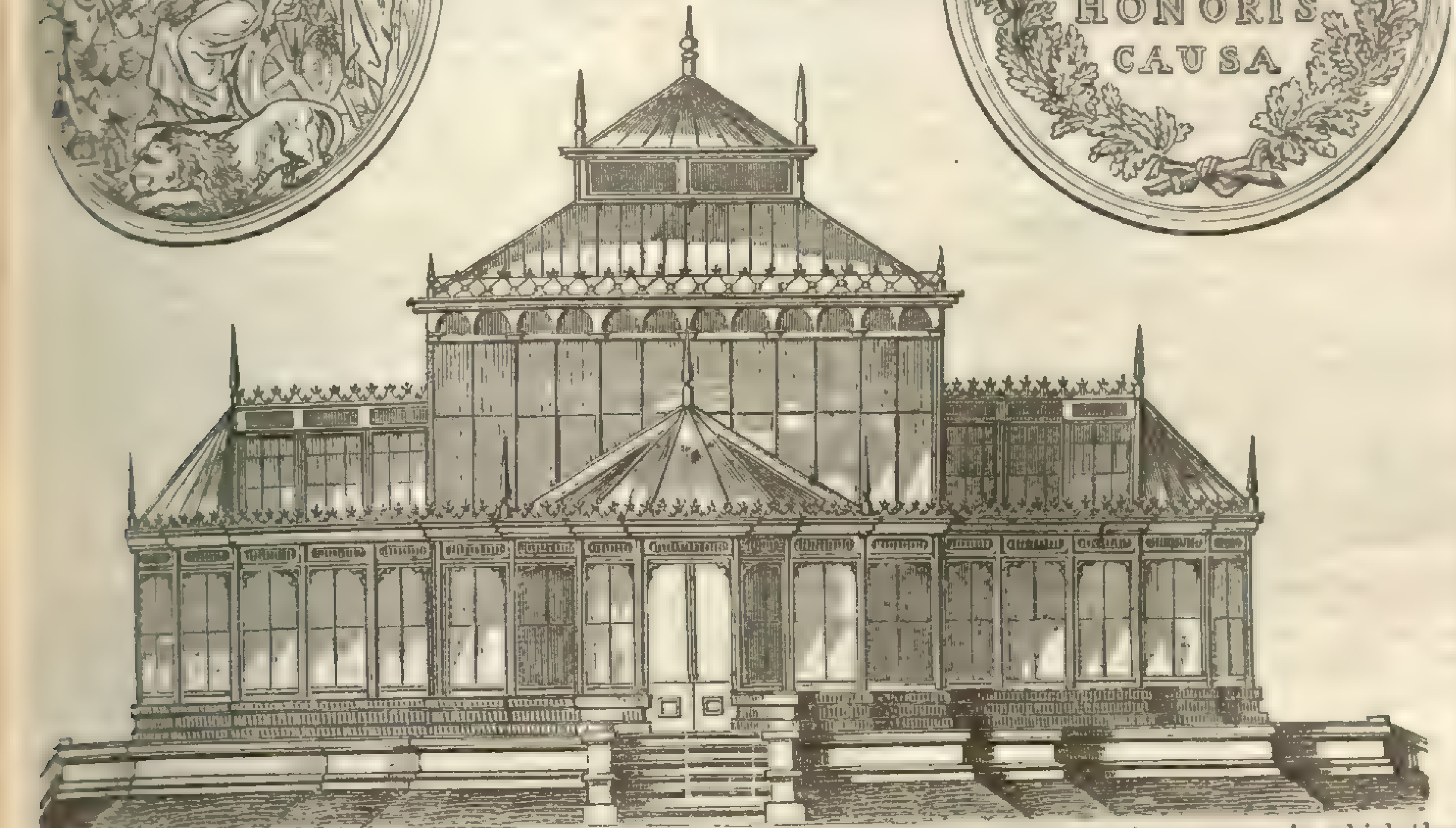
JOHN TAYLOR & SONS,

HORTICULTURAL BUILDERS AND ENGINEERS,

HARROW ROAD, LONDON, W.

INTERNATIONAL EXHIBITION,
Class IX., 2191.

PRIZE MEDAL
For CONSERVATORY,
DOUBLE CHAMBER CORRUGATED
and HORIZONTAL
TUBULAR BOILERS.



J. TAYLOR and SONS call the attention of the Nobility and Gentry to the very superior manner in which they erect CONSERVATORIES, VINERIES, FORCING, FRUIT, and PLANT HOUSES of every description, combining the most modern improvements with elegance of design and durability of materials and workmanship.

Our VENTILATING APPARATUS for the Roofs and Fronts of Horticultural Buildings, &c., supersedes any now in use, as being the most simple and effective in its action.

Our system of HEATING APPARATUS for Churches, Public Buildings, Mansions, Schools, Offices, Baths, Horticultural Buildings, &c., is particularly worthy of notice, we having for many years devoted especial attention to this branch. The great variety of work which has passed through our hands has gained us such experience in the mechanical details as to insure success and entire satisfaction in any undertaking entrusted to our care.

The superiority of our DOUBLE-CHAMBER CORRUGATED and HORIZONTAL TUBULAR BOILERS has caused them to be acknowledged as the best now in use, being both powerful and rapid in action.

See CONSERVATORY, BOILERS, &c., exhibited at the International Exhibition, Class 9 (2191), Open Court, Eastern Annexe.

Card.

SAMUEL N. McGERROW,
General Horticultural Builder,
Knotty Ash, near Liverpool.

Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

Ironfounder and Whitesmith

By Special Appointment to her Majesty the Queen.

W. WALKER, Victoria Foundry, York, Manufacturer of Improved Hot-water Apparatus for Heating every description of Hothouses, Churches, &c. Improved Ventilating Apparatus for Horticultural Buildings, Improved Cattle Fencing, Poultry and Game Netting, Garden Chairs, Iron Pumps, Improved Yorkshire Cooking Ranges, Entrance Gates and Palisades. New Patent "Self Feeding" Tubular and other Hotwater Boilers.

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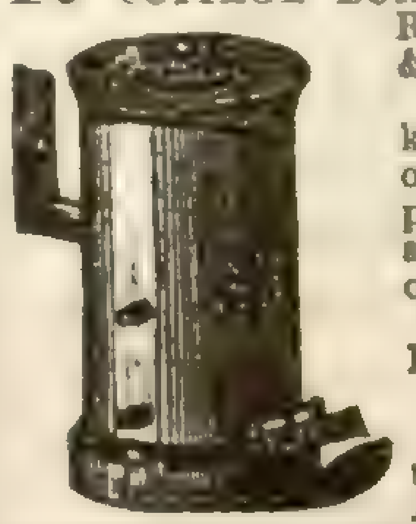
RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 8*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

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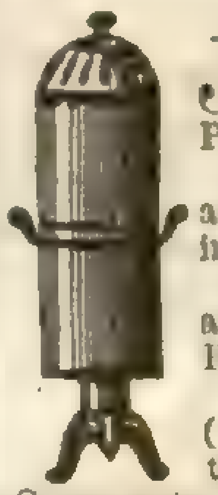

JOYCE'S PATENT, for Warming Chapels, Halls, Shops, Conservatories, and all other Places. Price from 12*s.* 6*d.* each.

JOYCE'S STOVES are Portable and Economical, and burn 12 hours with one supply of fuel, requiring no attention.

STOVES for GREENHOUSES are made to burn all the Winter. Temperature always the same. Patent Fuel, 2*s.* 3*d.* per Bushel.

The PRUSSIAN VERMIN EXTERMINATOR (Howell's) is the only safe and effective remedy for the destruction of Rats, Mice, Beetles, Ants, and Cockroaches. Sold in Stone Jars, 1*s.* and 2*s.* 6*d.* each, with Testimonials, &c (to be had of all Chemists).

Swan Nash, Patentee, 253, Oxford Street, and 119, Newgate Street, London, E.C.

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W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.
Manufactory: Newport, Salop.

Warranted the strongest and most durable Fence ever offered at corresponding prices. It is easily repaired if broken from accidents; can be rolled up most compactly when not in use, is admirably adapted for exportation, and can be had of any height and mesh required, at prices from 4*d.* to 1*s.* 6*d.* per yard and upwards.

For further particulars apply at the Manufactory, or of the London Agent, Mr. R. Winder, 18, Abingdon Street, Westminster, S.W.

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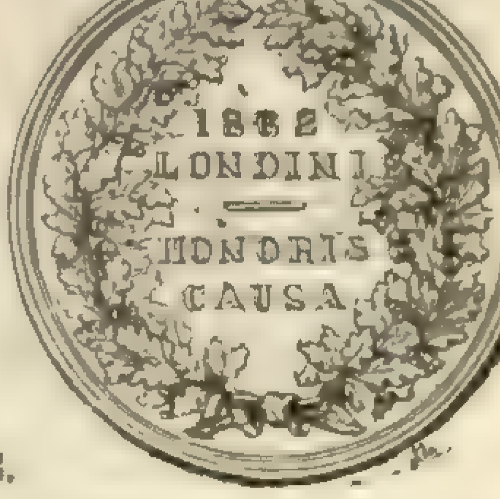

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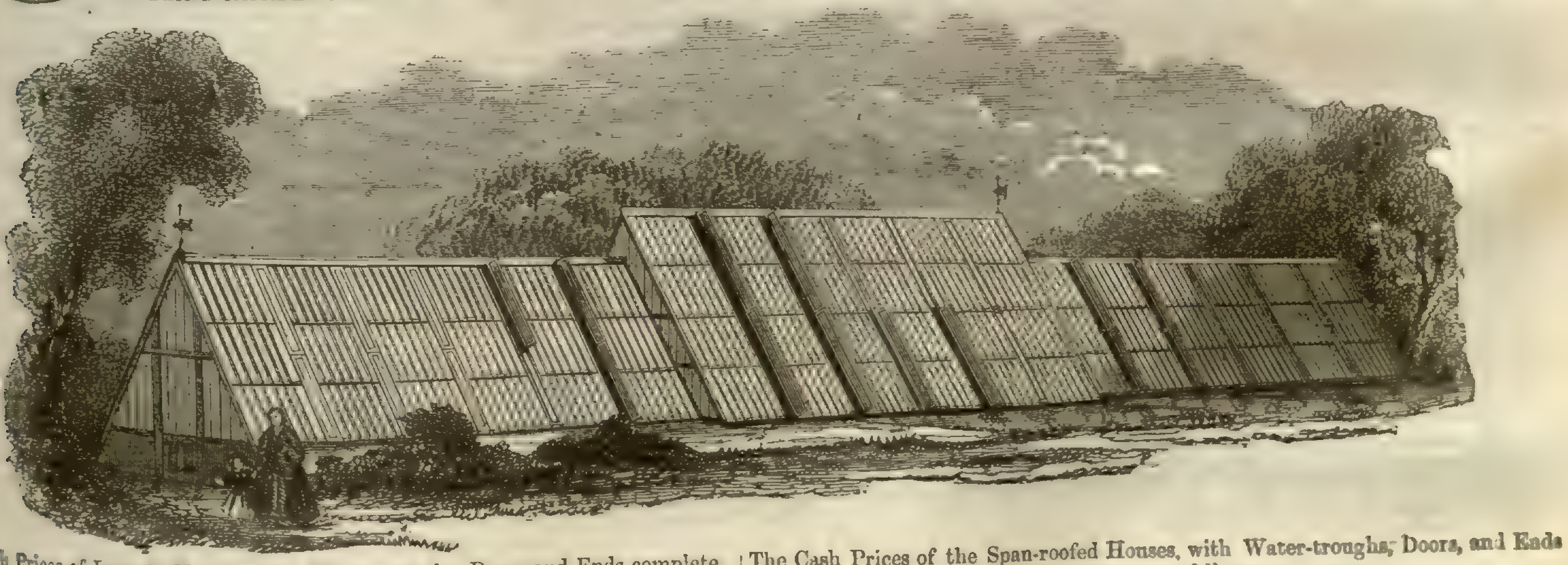
SIR JOSEPH PAXTON, M.P.

COMBINING SIMPLICITY, CHEAPNESS, EXCELLENCE, AND DURABILITY,

BEING CAPABLE OF FULFILLING IN THE MOST PERFECT MANNER ALL THE REQUIREMENTS OF HORTICULTURE.



The Cash Prices of Lean-to Houses, with Water-troughs, Doors and Ends complete, are as follows:—

Ft. In.		8 ft. Lights			10ft. Lights			12ft. Lights			14ft. Lights			16ft. Lights		
20	7 in length	£12	0	0	£16	0	0	£21	0	0	£28	10	0	£34	5	0
31	3 in length	16	10	0	21	2	6	26	10	0	37	12	0	45	16	0
41	11 in length	20	18	0	26	18	6	33	7	6	46	14	0	57	7	0
52	7 in length	25	12	6	32	15	0	40	5	0	55	16	0	68	18	0
63	3 in length	30	6	0	38	10	0	47	2	6	64	18	0	80	10	0
73	11 in length	34	12	6	43	15	0	53	7	6	74	0	0	92	0	0
84	7 in length	39	6	0	49	11	6	60	5	0	83	2	0	103	11	0
95	3 in length	43	19	0	55	10	0	67	2	6	92	5	0	115	2	0
105	11 in length	48	17	6	60	12	6	73	10	0	101	10	0	126	13	0

The Cash Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are as follows:—

Ft. In.		8 ft. Lights			10ft. Lights			12ft. Lights			14ft. Lights			16ft. Lights		
20	7 in length	£24	0	0	£32	0	0	£42	0	0	£57	0	0	£68	12	0
31	3 in length	33	0	0	42	5	0	53	0	0	75	4	0	91	10	0
41	11 in length	41	16	0	53	17	0	66	15	0	93	8	0	114	14	0
52	7 in length	51	5	0	65	10	0	80	10	0	111	12	0	137	10	0
63	3 in length	60	12	0	77	0	0	94	5	0	129	16	0	161	0	0
73	11 in length	69	5	0	87	10	0	106	15	0	148	0	0	184	0	0
84	7 in length	78	12	0	99	3	0	120	10	0	166	4	0	207	2	0
95	3 in length	87	18	0	111	0	0	134	5	0	184	10	0	230	4	0
105	11 in length	97	15	0	121	5	0	147	0	0	203	0	0	253	6	0

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

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A HANDBOOK of VINE and FRUIT TREE CULTIVATION, as adapted to the above Patent Hothouses, may be had of Mr. Hereman, price 1*s.*; post free, 1*s.* 1*d.*

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For samples and prices apply to
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Sacks. Bags. Mats.

JAMES T. ANDERSON, Sack and Bag Maker, 15, Sherborne Lane, King William Street, City, London, E.C. (removed from Lime Street), supplies at the lowest possible prices:—
SEED BAGS, of a first-rate quality,
SACKS,
ARCHANGEL and PETERSBURG MATS.

DUNN'S GARDENER'S PENCILS, Price 1s., will refill for 6d.
DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.
Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.
These pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.
N.B.—A liberal allowance to the Trade.

JOSEPH HAYWOOD AND CO.,
Manufacturers of
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kind of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield.

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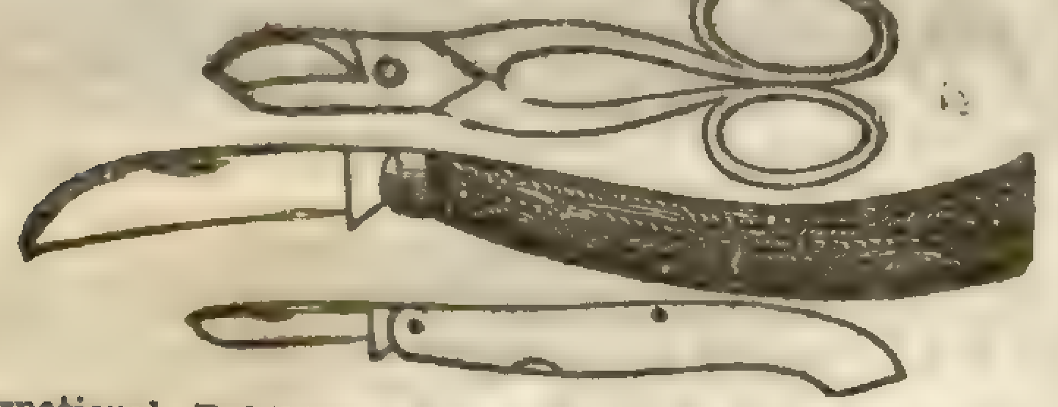
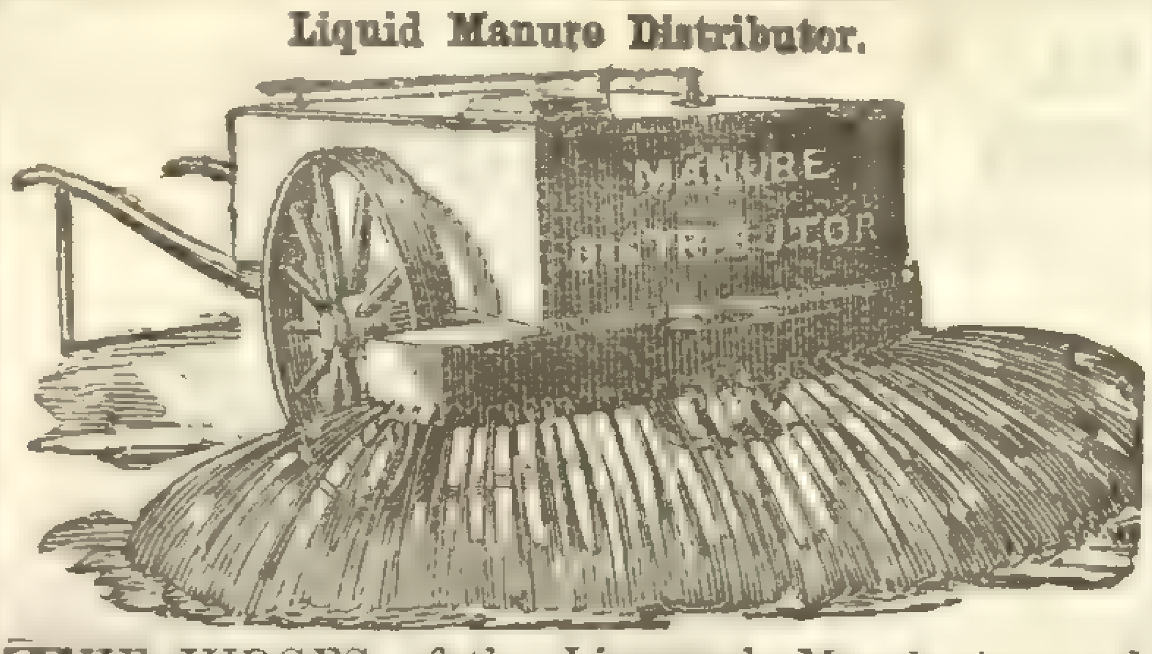


International Exhibition Prize Medal is just awarded to Saynor & Cooke for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR and COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.
Caution.—None are genuine unless marked Saynor. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

Liquid Manure Distributor.



THE JUDGES of the Liverpool, Manchester, and Staffordshire Agricultural Shows, 1861, have each awarded the First Prize to I. James, Tivoli Works, Cheltenham, for his LIQUID MANURE DISTRIBUTOR, making a total of 17 Prizes. It is also well adapted for Watering Streets, supplying the Steam Plough, Irrigating, or for a Fire Engine. Also his last great improvement in WASHING MACHINES, which have been awarded several First Prizes, and will wash 20 Shirts in 20 minutes.

Prices Reduced.

H. J. MORTON and CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.
GALVANISED IRON ROOFING
for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.
WIRE STRAND CABLE FENCING

(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1s. per yard.
This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.
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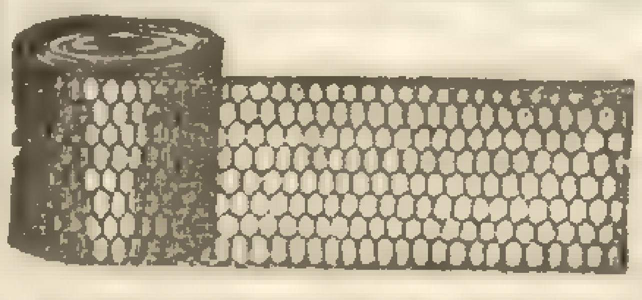

Galvanised, 24 ins. wide, 2-inch mesh, 4d., 4½d., and 6¾d. per yard.
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GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.
Strong CATTLE HURDLES from 2s. per yard.
PATENT IMPROVED GAS WORKS
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STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, Orwell Works, Ipswich,

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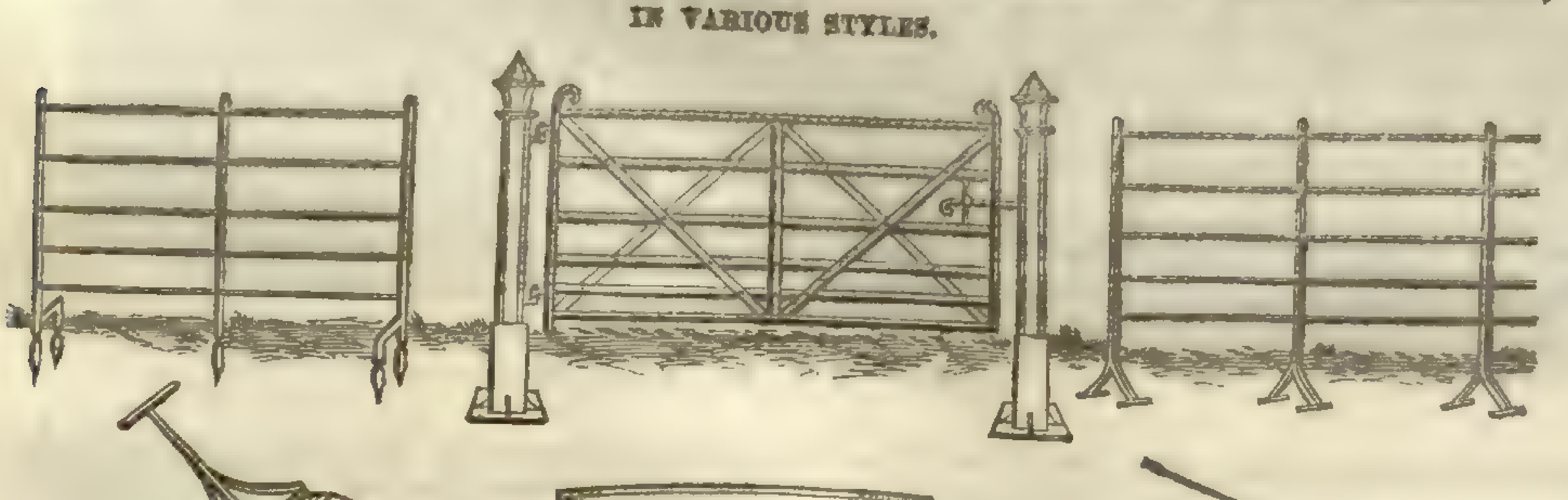
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.
PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.



IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c. The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to
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MINTON and CO. have REMOVED from A... Place, Blackfriars, to 50, Conduit Street, Regent S... ENCAUSTIC and other PAVEMENTS, EARTHEN... and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.

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"I beg to testify that a room in one of the most exposed ... damp positions coated by me with the Varnish made by ... Patent Waterproof Glue Company, Chandos Street, Land... is perfectly dry, and the paper has stood well on it for months, and is likely to stand; and this where neither paper, paint, or colour would stand before."
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HAIR RESTORED, preserved, and beautified, by the use of ROWLAND'S MACASSAR OIL.—It prevents hair from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, pliable, and glossy. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d., 7s., 10s. 6d. (equal to four small), and 21s. per bottle.
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SAUCE.—LEA AND PERRINS' WORCESTERSHIRE SAUCE.
Pronounced by Connoisseurs
"THE ONLY GOOD SAUCE."
See Name on Wrapper, Label, Bottle, and Stopper, and to avoid Counterfeits
Ask for Lea and Perrins' Sauce.
*** Sold Wholesale and for Export, by the Proprietors, Worcester; Messrs. Crosse & Blackwell; Messrs. Barclay & Sons, London, &c.; and by Grocers and Oilmen universally.

DINNEFORD'S PURE FLUID MAGNESIA has been during 25 years emphatically sanctioned by the medical profession, and universally accepted by the public ... the best remedy for acidity of the stomach, heartburn, head... ache, gout, and indigestion, and as a mild aperient for delicate constitutions, more especially for ladies and children.—It is prepared in a state of perfect purity and uniform strength only by Dinneford & Co., 172, New Bond Street, London, and sold by all respectable Chemists throughout the world.

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Twenty-third Year of Publication.

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ADVERTISEMENTS cannot be received after October 11, and must be sent direct to the Publisher,

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[illegible]'S WORCESTERSHIRE FARMER'S ACCOUNT BOOK, by means of which the Farmer is [illegible] keep his Accounts, with much less trouble, and [illegible] than by any other system of the kind extant. [illegible] contains distinct columns for the purpose, every entry [illegible] with the least possible trouble.

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JOURNAL of the ROYAL AGRICULTURAL SOCIETY of ENGLAND, Vol. XXIII., No. XLIX., containing:

Statistics:—Meteorology; Public Health; Price of Provisions; Weekly Average of Wheat.

[illegible] the Economical application of the Liquid Manure of a Farm. By JAMES T. BLACKBURN.

Experiments with different Top-Dressings upon Wheat. By Dr. [illegible] VOELCKER.

[illegible] Experiments made at Rodmersham, Kent, on the [illegible] Wheat by different descriptions of Manure, for [illegible] years in succession on the same Land. By J. B. [illegible], F.R.S., F.C.S., and Dr. J. H. GILBERT, F.R.S., F.C.S.

[illegible] Manure. By J. B. LAWES, Esq., F.R.S., F.C.S.

[illegible] Improvements in Haymaking. By T. BOWICK.

The Rot in Sheep: its Nature, Cause, Treatment, and Prevention. By JAMES BEART SIMONDS.

The Comparative Advantages of Fixed and Moveable Steam-power, and of Single or Double Dressing Threshing Machines. By R. VALLENTINE.

[illegible] Experiments. By Dr. AUGUSTUS VOELCKER.

[illegible] Report of Experiments on the Feeding of [illegible] By J. B. LAWES, F.R.S., F.C.S., and Dr. J. H. [illegible], F.R.S., F.C.S.

[illegible] Mode of Getting in the Harvest in a bad Season. [illegible] EDDISON.

[illegible] Corn. By PETER LOVE.

[illegible] Economy of Carting. By PETER LOVE.

[illegible] Insects and the Immense Utility of Birds. By FREDERIC DE TSCHUDI.

[illegible] the Management of a Home Farm. By T. BOWICK.

On Portable Manures and their Home Manufacture. By ARCHIBALD SMITH MAXWELL.

[illegible] Commercial Value of Artificial Manures. By Dr. [illegible] VOELCKER.

[illegible] the French Experimental Farm at Vaujours. By [illegible] FRERE.

[illegible] the Employment of Flemish Manure (Night Soil). [illegible] by P. H. FRERE.

[illegible] Wear and Tear of Agricultural Steam Engines and [illegible] Machines, whether Fixed or Portable. By HENRY [illegible].

[illegible] State of the Sewers and Water Supply of Paris. [illegible] H. FRERE.

[illegible] Cheese. By Dr. AUGUSTUS VOELCKER.

[illegible] Feeding of Cattle. By J. COLEMAN.

[illegible] of the Soil. By M. P. BORTIER.

Report of Two Experiments in Sheep Feeding, undertaken by the Partington Tenants' Club, near Leeds.

[illegible] the Specific Gravity of Swede Turnips. By GILBERT [illegible].

[illegible] Live Stock and Dead Meat for Consumption in [illegible] Metropolis. By ROBERT HERBERT.

[illegible] of the Stewards of Stock at the Battersea Show.

Stewards' Report on the Implements Exhibited at the [illegible] Meeting, and on the Steam Trials at Farningham.

[illegible] Report of Agricultural Discussions.

[illegible] Agricultural Patents.

[illegible] Awards, &c., of the Judges of Live-Stock: Battersea [illegible].

[illegible] Governors and Members.

London: JOHN MURRAY, Albemarle Street.

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FOR SALE, PORTLAND NURSERY, Kilmarnock, consisting of upwards of Six Imperial Acres, partly [illegible] with a general Nursery Stock with Greenhouse, [illegible] House, Frames, &c., according to Inventory and [illegible] which can be seen in the hands of the Subscriber. [illegible] healthy, soil good, and the Nursery advantageously [illegible]. To an enterprising person with a moderate capital, [illegible] above is an excellent opportunity for entering into a profitable and established business.

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For particulars apply to Messrs. BROWN & DUNLOP, 49, Virginia Street, Glasgow.

To Nurserymen and Market Gardeners.

TO BE LET IMMEDIATELY, a SIX ROOMED HOUSE with Stable, Shed, Piggery, and nearly two acres of Land. Rent 24l. a year, lease 12 years. There are two Greenhouses which could be taken at a valuation.

Apply to J. ELLIS, 4, Albert Cottages, near the Prince Albert, Chingford, Essex.

TO BE LET or SOLD, a NURSERY, with capital House on the Ground, a few miles from Regent's Park. Apply by letter to J. SMITH, Nightingale Place, Hornsey, N.

Sales by Auction.

Dutch Bulbs, Azaleas, Camellias, Pampas Grass, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, October 8, at half past 12 o'Clock precisely, a quantity of Choice Hyacinths, Tulips, Crocuses, Iris, Narcissus, Ranunculus, Anemones, Gladiolus, Scillas, Ixias, Watsonias, Tritomas, Oxalis, Jonquils, &c. Also some fine Plants of Azaleas, Camellias, Begonias, Hydrangeas, Orange and Citron Trees, Isolepis, Cytisus, Myrtles, Pampas Grass, Weigelas, Forsythias, Veronicas, &c.

On view the Morning of Sale, and Catalogues had.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on THURSDAY, October 9, at half-past 12 o'Clock precisely, a choice assortment of RARE and VALUABLE ORCHIDS, comprising healthy Established Plants of the following well-known sorts:—

Aerides affine superbum	Cattleya lobata
„ crispum	„ Lemoniana
„ Fieldingii	„ maxima superba
„ Larpentæ	„ quadricolor
„ nobile	„ labiata picta
„ quinquevulnerum album	Lælia præstans
„ Veitchii	Cymbidium eburneum
Angulos Ruckeri	Cypripedium Fairrieanum
„ uniflora	„ Veitchii
Vanda cristata	Lælia elegans
Burlingtonia candida	Saccolabium guttatum superbum

&c., &c.

On view the Morning of Sale, and Catalogues had.

Important Sale of Plants at the Arboretum,

LEAMINGTON SPA, WARWICKSHIRE.

MR. J. C. STEVENS has been favoured with instructions from the Proprietor, JOHN HITCHMAN, Esq., who is intending to erect a Hydropathic Establishment in the Arboretum, to SELL by AUCTION, on the Premises, on MONDAY, October 13, and five following days, at half-past 11 o'Clock each day, the Valuable and Extensive COLLECTION of SPECIMEN CONIFERS and other ORNAMENTAL PLANTS, consisting of upwards of 300,000, all of which have been well prepared for removal, having been frequently transplanted, and several hundreds of the choicer kinds, being grown in crates, including magnificent specimens (besides many others), of the following known kinds:—

Araucaria imbricata, 4 to 8 feet	Pinus tuberculata, 1 to 3 feet
Abies Douglasii, 6 to 9 feet	„ ponderosa, 2 to 4 feet
„ Menziesii, 5 to 8 feet	„ Sabiniana, 1 to 3 feet
Cedrus atlantica, 4 to 6 feet	„ Lambertiana, 1 to 4 feet
„ Deodara, 4 to 10 feet	Picea amabilis, 1 foot
„ Libani, 4 to 8 feet	„ grandis, 1 foot
Cryptomeria japonica, 4 to 9 ft.	„ Pinsapo, 1 to 7 feet
Cupressus Lambertiana, 2 to 3 ft.	„ Nordmanniana, 1 to 4 ft.
„ Lawsoniana, 1 to 4 feet	„ nobilis, 1 to 4 feet
„ McNabiana, 1 to 2 feet	Taxus ericoides, 1 to 4 feet
Cephalotaxus Fortuni, 1 to 3 ft.	„ aurea variegata, 1 to 3 ft.
Juniperus excelsa, 1 to 5 feet	„ elegantissima, 1 to 3 feet
„ chinensis, 1 to 4 feet	„ adpressa, 1 to 3 feet
„ dealbata, 1 to 3 feet	Thuja gigantea, 1 to 3 feet
Libocedrus decurrens, 1 foot	„ aurea, 1 to 2 feet
Pinus austriaca, 2 to 5 feet	Thujopsis borealis, 1 to 3 feet
„ Benthamiana, 3 to 4 feet (In crates.)	Wellingtonia gigantea, 1 to 4 ft.
Pinus excelsa, 2 to 10 feet	Yews (Irish), 6 to 10 feet
„ Jeffreyi, 1 to 3 feet	&c. &c.

Also various first-class Evergreens and Deciduous Trees and Shrubs of different sizes. Fine Dwarf-trained STANDARD and other FRUIT TREES, about 10,000 DWARF and STANDARD ROSES of the choicest named kinds, Rhododendrons, Camellias, Azaleas, Variegated and other Hollies, Portugal and Common Laurels, Forest Trees, and a variety of other Hardy and Greenhouse Plants.

May be viewed till the time of Sale, when Catalogues (1s. each, or by post 14 stamps, containing upwards of 160 pages of printed particulars, may be had at the Nursery; at the principal Inns at Banbury, Oxford, Coventry, Birmingham, Manchester, Rugby, Leicester, Northampton, Stratford, Derby, Worcester, Burton-on-Trent, Stratford-on-Avon, Warwick; and at Mr. J. C. STEVENS'S Auction Rooms and Offices, 38, King Street, Covent Garden, London. Approved Bills at 3 months will be taken of Purchasers above 50l.

The Arboretum is within five minutes' walk of the Leamington Stations on the Great Western and North Western Railways, which offers great facilities for transmitting the Plants to every part of the country. Frequent trains run daily to and from Leamington, and cheap trains three times a week from most of the principal towns.

Highly Important Sale of Specimen, Stove, and Greenhouse Plants,

THE PROPERTY OF A GENTLEMAN WHO HAS RANKED AMONGST THE MOST SUCCESSFUL EXHIBITORS DURING PAST YEARS.

MR. J. C. STEVENS is honoured with instructions to submit to PUBLIC COMPETITION, without the least reservation, during this Month, the Collection of Specimen Plants of AZALEAS, ERICAS, EPACRIS, POLYGALAS, BORONIAS, and other Stove and Greenhouse Plants, of R. Headley, Esq., Stapleford, near Cambridge.

More detailed Particulars, with the day of Sale, will be given in next Advertisement.

Preliminary Notice—Orchard House Trees.

MR. BROWNSON has received instructions from an eminent cultivator to offer by PUBLIC COMPETITION, on OCTOBER 23, at the Rosarium, adjoining the Railway Station, Ashbourne, Derbyshire, about 400 splendid grown FRUIT TREES in POTS, consisting of Peaches, Nectarines, Apricots, Pears (on Quince), Plums, Cherries, &c., most of them in a bearing state, clean, and in vigorous health; also 6000 to 7000 fine-grown EVERGREENS, YEWS, RHODODENDRONS, SCARLET THORNS, &c.

Descriptive Catalogues on application to the Auctioneer, after October 6.—Ashbourne.

High Beech, Essex.

TO GENTLEMEN, NURSERYMEN, FLORISTS, AND OTHERS.

MESSRS. PROTHEROE AND MORRIS are directed by Mr. James Crawford to SELL by AUCTION, on the Premises, opposite the King's Oak, High Beech, Essex, on TUESDAY, Oct. 7, at 11 o'Clock, about 10,000 Choice GREENHOUSE PLANTS, including fine Azalea indica from 1 to 2 feet, and Double Camellias, 3 to 8 feet, beautifully set with bloom-buds; Ericas, Epacris, Coronillas, Pultenæas, Genistas, Fairy Roses; Show, Fancy, and Scarlet Geraniums; Fuchsias, Lycopodiums, 600 choice Ferns, Persian Cyclamen, Weigela, 8000 choice named Roses in pots, Cinerarias, Chrysanthemums, Deutzia gracilis; 700 strong VINES from Eyes, comprising the most approved named varieties; 1000 choice GOOSEBERRIES and CURRANTS; JASMINUM, sorts, &c.

May be viewed four days prior to the Sale. Catalogues may be had on the Premises; at the Eagle, Snaresbrook; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

Maidstone.

IMPORTANT SALE OF FRUIT AND OTHER TREES, EVERGREENS, AND SHRUBS.

MESSRS. PROTHEROE AND MORRIS are instructed to SELL by AUCTION on the Premises, the Bower Nurseries, Maidstone, Kent, on MONDAY, October 13, and following days, at 11 o'Clock, by order of the Proprietor, the land being taken for other purposes, the whole of the valuable NURSERY STOCK, extending over seven acres, and in a fine healthy condition, comprising many thousands of Standard and Dwarf-trained, Untrained, and Pyramidal Fruit Trees, and upwards of 14,000 Maiden Apples, Pears, Plums, Cherries, Apricots, &c.; also a large assortment of Ornamental and Forest Trees, consisting of Limes, Weeping and other Ash, Thorns, Laburnums, Acacias, Willows, Chestnuts, Birch, Maple, Planes, Sycamore, Beech, Cypress, Elms, Poplars, Oaks, &c.; Evergreens, Conifers, and Deciduous Shrubs, ranging all sizes (all of which will remove safely, having been only two years transplanted), including Variegated and Green Holly, Irish and Fan Yews, Portugal and Common Laurel, Chinese and other Privet, Aucuba, Cotoneaster, Arbor-vitæ, Euonymus, Phillyreas, Bays, &c.; handsome Cedrus Deodara, Libani, Libocedrus, Pinus sorts, Picea, Taxus adpressa, Thuja, Wellingtonia gigantea, Thujopsis borealis, &c.; Deutzia, Spiræa, Syringa, &c.; together with about 2000 very fine Standard and Dwarf Roses, several thousand Quick, Larch, Box Edging, &c.

May be viewed prior to the Sale. Catalogues may be had, 6d. each, returnable to purchasers, on the Premises; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

Important Sale at Milford Nurseries,

NEAR GODALMING, SURREY.

MESSRS. PROTHEROE AND MORRIS are directed by the Executors of the late Mr. Wm. Young, to Submit to an unreserved SALE by AUCTION, on the Premises, The Milford Nurseries, near Godalming, Surrey, and within 10 minutes walk of the Milford Station, on the South Western Railway, on MONDAY, October 27, and following days, at 11 o'Clock each day, a portion of the valuable NURSERY STOCK (which is well worthy the attention of Noblemen, Gentlemen, Public Companies, and the Trade requiring matchless symmetrical-formed Conifers and other desirable specimens for effective purposes), consisting of 1700 Araucaria imbricata, from 1 to 6 feet; 2000 Cedrus Deodara, from 2 to 8 feet; 100 Cedars of Lebanon, 2 to 8 feet; some very handsome Picea Pinsapo, 6 to 8 feet; Nordmanniana, 3 feet; nobilis, 1 to 2 feet; Thuja gigantea, 3 to 4 feet; pendula, Lobbii, aurea; upwards of 500 Abies Douglasii, 4 to 8 feet; Menziesii, 3 to 6 feet; orientalis, 3 feet; Clanbraziliana, 1 to 2 feet; canadensis, 6 to 10 feet; 300 nigra, 3 to 8 feet; Pinus excelsa, 4 to 8 feet; Cembra, 3 to 8 feet; monticola, 3 to 4 feet; Lambertiana, 2 to 3 feet; pyrenaicum, 3 to 4 feet; austriaca, 3 feet; uncinata, 3 feet; Benthamiana; fine Cryptomeria japonica, 4 to 8 feet; Taxodium sempervirens, 6 to 8 feet; large Irish and Chinese Junipers, 4 to 8 feet, &c., also about 400 large specimen Green and Variegated Hollies from 6 to 10 feet; 3000 English and Irish Yews, 2 to 8 feet; 300 Chinese and Siberian Arborvitæ, from 5 to 8 feet; quantity of Purple, Fern leaved and Weeping Beech, Weeping Ash, Worked Thorns, Birch, Norway Planes, Sycamore, Lucomb Oaks, Standard Apples and Pears, about 1000 choice named Scarlet and other Rhododendrons (bushy plants) 2 feet, 500 Hardy Azaleas, an assortment of fine Standard Roses, &c. Special attention is invited to the fact that the whole of the specimens have been carefully prepared for removal, being transplanted last spring and the previous autumn, and can be transmitted to any part of the country from the Milford Station without changing trucks, and Purchasers may make arrangements to have their lots delivered on the Railway at a moderate charge.

May be viewed previous to the Sale; Catalogues had (6d. each, returnable to Purchasers) on the Premises; at the principal Hotels in Guildford, Farnham, Alton, Petersfield, Dorking, Midhurst, Reigate, Winchester, Basingstoke; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, without the least reserve, at the Auction Mart, Bartholomew Lane, E.C., on WEDNESDAY, October 29, at 12 o'Clock, a choice and valuable COLLECTION of TULIPS, the surplus stock of Mr. C. Williams, (not having room to grow them, since his removal from Tottenham). Among the ROSES are Groom's Fleur de Marie, Duchess of Sutherland, Miss E. Seymour, Princess Mary of Cambridge, Countess of Clanwilliam, Goldham's Ellen, Delaforce's Meteor, Dixon's Queen Anne, Mrs. Dixon, Scarnell's Bijou, Periam's Louisa, Crook's Fanny, Williams's Elizabeth Williams, Ellen Williams, Mary Clifton.—Arlette, Brilliant, Anastasia, Lady Lilford, Lady C. Gordon, Naomi, Brulante Eclatante, Dutch Ponceau, true, &c., &c., &c. Among the BYBLOMENS, are Norman's Mrs. Norman, Mr. Smith, Groom's Victoria Regina, Homer, Eurydice, Goldham's Chas. Kemble, Lord Byron, John Kemble, Prince Napoleon, Lawrence's Don Pedro, Byzantium, Lady Exeter, Achmet, Ellis's Lord Bloomfield, Gibbon's Venus, Walker's Duchess of Sutherland.—Queen of the North, Mrs. Lymbery, Pandora, Goude Parfait, Thalia, Violet Alexander, Eliza, new, &c. Among the BIZARDS, are Goldham's Julius Cæsar, Norman's Captain Dacre, Admiral Dundas, Earl of Derby, Sir Robert Peel, Peter Rolt, Groom's Dr. Horner, Lord Raglan, Lord Sandon, Marquis of Bristol, Mr. F. Perkins, Orpheus, Pizarro, Rubini, Duke of Cambridge, Lord A. Harvey, Delaforce's King, Perfection, Lawrence's George Haward, Marcellus, Glory of Abingdon, Crook's Amateur, Periam's Prince Albert, Strong's King, Willison's King, Sander's Brunswick.—Saint Neots, Apelles, Sir Joseph Paxton, Eldorado, Truth, Rival, Lalla Singh, Gold Cup, Leander, Metropolitan, Everard, Sunbeam, Mayor of Manchester, Colbert, Ethelstone, Mount Hecla, Steady Boy, &c. Besides many fine Old Show Flowers of the best Strains.

Catalogues may be obtained upon application to the Auctioneers, Leytonstone, N.E.; and at the Auction Mart, Bartholomew Lane, E.C.

HOT-WATER PIPES

DELIVERED TO ANY STATION IN ENGLAND.

J. JONES

BEGS to state that he can now supply HOT-WATER PIPES and FITTINGS delivered Carriage Paid to any Railway Station in England, and that he has made very advantageous arrangements for delivery at the following Stations; and parties availing themselves of this offer will in many cases get their Pipes at a Country Station at a less price than would be charged in London.

Alfreton
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Ashbourne
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Bradford (Yorks.)
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Bulwell
Beverley
Bury
Bedale
Barnsley
Barton
Birkenhead

Chesterfield
Chester
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Chelford
Crewe
Cheadle
Congleton
Colwich

Derby
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Doncaster
Driffield
Droitwich
Dudley

Edgebaston
Eckington

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Gainsborough
Grantham

Halifax
Harrogate

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Kirkham
Knapton
Knaresborough

Lancaster
Leeds
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Loughborough
Leek
Lichfield
Leamington
Leicester
Lincoln

Macclesfield
Malton
Manchester
Mansfield
Market Harboro'
Marton

Nottingham
Normanton
Northallerton
Northampton

Oakham
Oldbury
Oldham
Ormskirk
Oswestry
Oundle

Preston
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Retford
Richmond (Yorks.)
Rotherham
Rochdale
Rugeley
Rugby
Redditch

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Settle
Skipton
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Worcester
Wolverhampton
Wellington (Salop)
Wrexham
Warrington
Wigan
Wakefield
Worksop
Wellingboro'

York

Also to any Station in Derbyshire, Shropshire, Warwickshire, Cheshire, Lancashire, Yorkshire, Leicestershire, Worcestershire, Lincolnshire, and Staffordshire.

J. JONES will be happy to forward his ILLUSTRATED CATALOGUE of HOT-WATER PIPES, BOILERS, and FITTINGS, and PRICES for the same delivered Free to any Station; but parties requiring prices must state the quantities of Pipes, &c., required, and the Station to which they are to be delivered.

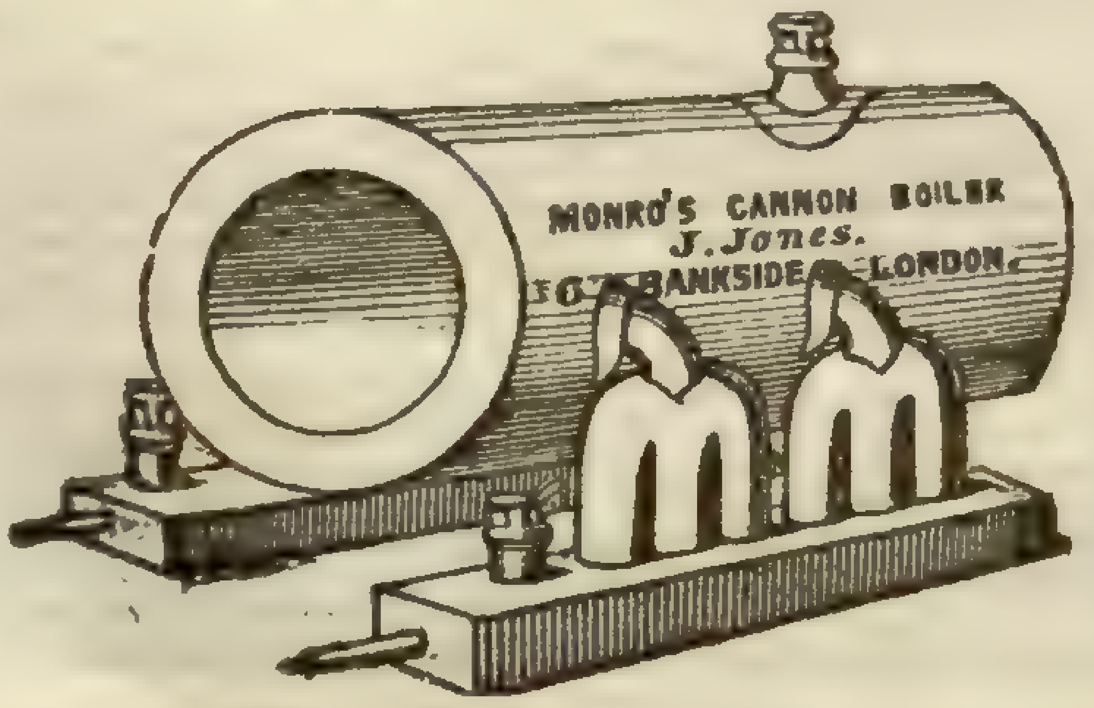
J. JONES,

IRON MERCHANT and HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

20-inch Wrought Iron	... ...	£3 15 0
24-inch ,,	... ...	6 10 0
0-inch ,,	... ...	7 10 0
36-inch ,,	... ...	8 10 0
48-inch ,,	... ...	12 0 0
60-inch ,,	... ...	20 0 0
72-inch ,,	... ...	25 0 0



MONRO'S CANNON BOILER.

These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by J. JONES, 6, Bankside, Southwark, London, S.E.

Prices for HOT-WATER PIPES, ELBOWS, TEES, SYPHONS, VALVES, TROUGH PIPES, ORNAMENTAL COIL CASES, BECK'S PATENT VALVES &c.; or ESTIMATES for HOT-WATER APPARATUS, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON, SADDLE, or CYLINDER BOILERS, will be sent, with an ILLUSTRATED CATALOGUE, free on application.

J. JONES,

HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, LONDON, S.E.

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THE GARDENERS' CHRONICLE AND AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 41.—1862.] SATURDAY, OCTOBER 11. {Price Fivepence. STAMPED EDITION, 6*d*.

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An Edition of the GARDENERS' CHRONICLE and AGRICULTURAL GAZETTE *is published on Monday Afternoon at 4 o'Clock, containing full Reports of the Mark Lane and Cattle Markets, written expressly for the Paper.*

ROYAL HORTICULTURAL SOCIETY'S INTERNATIONAL FRUIT, CEREAL, &c., SHOW will ...e open until October 18.

GREAT INTERNATIONAL FRUIT, VEGETABLE, ROOT, CEREAL, and GOURD SHOW at ... Kensington until October 18.
...s open at Nine o'Clock; Bands at Two o'Clock. ...ion One Shilling daily; or from the Exhibition with ... Ticket, Sixpence.

BRISTOL and CLIFTON HORTICULTURAL FÊTES.
...e two SHOWS for the Season 1863 will be held at the ...' Gardens, Clifton, as usual, on THURSDAY, May 21, ...THURSDAY, August 27.
...ules will be ready for delivery on and after February 1, ...y be obtained on personal application to the Superin...t at the Gardens; or by letter addressed to the Hon. ...tary, R. COLES, Esq., 2, Lower Harley Place, Clifton.

New Rose Catalogue for 1862-63.
WM. WOOD and SON'S NEW CATALOGUES of ROSES, BULBS, and NURSERY STOCK are now ...dy for distribution, and will be sent free on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

PAUL AND SON'S TRADE LIST of ROSES and GENERAL STOCK is now ready, and may be had on ...tion, enclosing card.
Old Nurseries, Cheshunt, Herts.

Rose Catalogue.
PAUL AND SON'S DESCRIPTIVE PRICED CATALOGUE is now ready, and will be forwarded by ... application.
...a fine collection of EVERGREENS and FLOWERING ...BS, FRUIT and FOREST TREES of all descriptions.
Old Nurseries, Cheshunt, Herts.

Rose Catalogue, 1862-63.
WM. PAUL'S ROSE CATALOGUE is now ready for circulation. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

ROSES.—The DESCRIPTIVE CATALOGUE of ROSES for the Autumn, by THOS. RIVERS, is now ready. ...arranged as to be a safe guide to the purchaser. Free ...post on application.
Nurseries, Sawbridgeworth.

Rose and Bulb Catalogues for 1862-3.
EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the ...are now ready, and will be forwarded gratis and post-...on application.
...and Nursery Establishment, Tunbridge Wells, Kent.

Roses.
EDWARD PARKE FRANCIS'S NEW and DESCRIPTIVE CATALOGUE of ROSES for 1862 and 1863 is ...ready, and will be forwarded gratis on application. ...E. P. F. has 50,000 DWARF ROSES in the finest state of ...on the Manetti Stock.
Rose Nurseries, Hertford.

THE NEW ROSE, JOHN HOPPER.
Strong plants of this celebrated New Rose.
DWARFS, 5*s*. | STANDARDS, 7*s*. 6*d*.
A DESCRIPTIVE CIRCULAR free by post on application. ...receipt of 13 postage stamps, a beautiful Illustration.
ROBERT WARD, Ipswich Rosery, Suffolk.

Dwarf Tea Roses.
EDWIN HOLLAMBY begs to announce that he ...a large and healthy Stock of the above, comprising ...the finest Yellows, and other leading varieties, in the ...condition
Price on application.
Nurseries and Seed Warehouse, Tunbridge Wells, Kent.

Rose Catalogue, 1862 and 1863.
JOHN CRANSTON begs to announce that his new ...SE CATALOGUE is now ready for distribution, and ...forwarded free on application. It contains full and ...descriptions of nearly all the NEW ROSES of 1861, as ...the older kinds.
Nurseries, King's Acre, near Hereford.

JAMES CARTER AND CO., SEED MERCHANTS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

Hyacinths, Crocuses, &c.
JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

MINIATURE HYACINTHS. 12 in 12 choice varieties, 4*s*. and 6*s*. per dozen. MINIATURE HYACINTH GLASSES, 4*s*. 6*d*. per dozen.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, W.C.

MINIATURE HYACINTHS.—The best kinds of Miniature Hyacinths true to name at 3*s*. per dozen.
HOOPER & Co. Seedsmen, Central Avenue, Covent Garden Market, London, W.C.

Hyacinths, Tulips, Narcissus, Crocus, &c.
BARR AND SUGDEN'S stock of the above is large and of prime quality. Early orders solicited.
BARR & SUGDEN, Seed Merchants, &c., 12, King Street, Covent Garden, W.C. (Opposite the Garrick Club).

Hyacinths, &c.
WM. PAUL'S DESCRIPTIVE CATALOGUE of HYACINTHS and other DUTCH BULBS, with Hints on Culture, is now ready. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Dutch Flower Roots.
JOHN BELL begs to announce the safe arrival of his Annual Importation of the above in fine condition. CATALOGUES post free on application at his Seed Warehouse, 10 and 11, Exchange Street, Norwich.

Dutch Bulbs.
CHARLES TURNER'S CATALOGUE of a selection of the best in each class is now ready, and will be forwarded on application post free.
The Royal Nurseries, Slough.

Wm. Cutbush & Son's Dutch Bulb Catalogue.
WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE and PRICED CATALOGUE of HYACINTHS and other Dutch Flower Roots is now ready, post free, on application.
Highgate Nurseries, London, N.

Hyacinths, Tulips, Crocuses, &c.
BUTLER AND McCULLOCH'S DESCRIPTIVE CATALOGUE of BULBS, containing ample Cultural Directions, may be had free and post paid upon application.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

HYACINTHS, TULIPS, CROCUSES, and other DUTCH BULBS, just arrived in excellent condition. PRICED CATALOGUES on application to
S. PONSFORD, Loughboro' Park Nurseries, Brixton, Surrey, S.
N.B. CATALOGUES of GENERAL NURSERY STOCK now ready, gratis.

Special to the Trade.
GEORGE BAKER begs to inform his numerous customers that his PRICED LIST is now ready, and may be had on application free per post.
American Nursery, Windlesham, Bagshot, Surrey.

To the Trade.
DOUBLE SNOWDROPS, YELLOW AND MIXED CROCUS.
JAMES FAIRHEAD AND SON have a large quantity of the above on offer. Prices on application.
7, Borough Market, London, S.E.

Royal Nursery, Great Yarmouth.
YOUELL AND CO.'S New CATALOGUE of GREENHOUSE PLANTS, Rare and Hardy CONIFERÆ, SHRUBS, GLADIOLI, &c., is ready, and will be forwarded on application.

Tritoma Uvaria glauca.
JAMES KITLEY begs to offer fine large blooming plants of the above at the very low price of 6*s*. per dozen, and fine plants at 4*s*. per dozen. The Trade supplied. Also NARCISSUS POETICUS, 10*s*. per 1000.
Lyncombe Vale Nursery, Bath.

Scilla præcox and Single Jonquils.
WANTED, a quantity of the above.—Write, stating price, &c., to JAMES CARTER & Co., 237, 238, High Holborn, London, W.C.

Black Thorn Wanted
WANTED to PURCHASE, Seedling and Transplanted BLACK THORN.
Apply, stating average size, quantity, and price of each per 1000, to FRANCIS & ARTHUR DICKSON & SONS, "Upton" Nurseries, Chester.

To Nurserymen.
WANTED, 8000 LARCH, 3 to 4 feet; 7000 SPRUCE, 2 to 3 feet; 5000 SCOTCH, 2 to 3 feet. All clean and well rooted.
Address, with cash price, to J. JEFFRIES & SON, Seed Merchants and Florists, Woodbridge, Suffolk.

FOR SALE, about 50 bushels True PURPLE-TOP SWEDE TURNIP, fine stock, growth 1862.
For price and particulars apply to W. BROWN, Seed Merchant, Stamford.

MANGEL WURZEL SEED, in Red and Yellow, Long and Red, Yellow and Orange Globe varieties, for Sale. For price apply to the Grower,
Mr. S. A. DAINTREE, Fendrayton, St. Ives, Hunts.

Good Seeds, Carriage Free, at Market Prices.
SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

Agricultural Seeds for Autumn Sowing.
DELIVERED FREE AT NEAREST RAILWAY STATION.
PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN. 27, Great George Street, Westminster, S.W.

Agricultural and Garden Seeds.
H. AND F. SHARPE, SEED GROWERS and MERCHANTS, Wisbech.
Special PRICED LIST of NEW SEEDS on application.

Agricultural Seeds.
GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

New and Genuine Garden and Agricultural Seeds.
SPECIAL PRICES ON APPLICATION TO
JAMES FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, 7, Borough Market, London, S.E.

Strawberries.
CHARLES TURNER can still supply strong Plants for Fruiting next season of all the leading kinds. CATALOGUES may be had on application.
The Royal Nurseries, Slough.

STRAWBERRIES.—For Sorts and Price see *Gardeners' Chronicle*, October 4.
GOOSEBERRIES.—Crown Bob, Whitesmith, and Warrington; strong fruiting bushes at per dozen or 100.
GEO. CORNWELL, Seedsman, &c., Barnet, Herts, N.

STRAWBERRIES.—A New DESCRIPTIVE CATALOGUE of more than 200 Varieties of STRAWBERRIES, free.
Good laid plants of nearly every variety can now be supplied by the Grower,
W. J. NICHOLSON, Egglescliffe, near Yarm, Yorkshire.

Grape Vines.
WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines.
J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.
B. S. WILLIAMS begs to intimate that he has a fine and healthy stock of the above from Eyes, including all the best varieties for Fruiting in Pots and Planting Out. Prices on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Hurst House Seedling Pine.
B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer good plants of this choice Pine Apple, 10*s*. 6*d*., 15*s*., 21*s*. each.
The plant is of dwarf robust habit, producing heavy fruit of the richest flavour.
A large Stock of PRICKLY and SMOOTH CAYENNE PINES.

PINE SUCKERS.—Five hundred QUEEN SUCKERS, more or less, to be sold cheap. Warranted clean and healthy, and from plants which never had the Scale.
Apply by letter to C. C., Mr. McGregor, Seedsman, Merthyr Tydvil.

Catalogue of Fruits gratis on application.
THOMAS RIVERS has a few Copies left of his last DESCRIPTIVE CATALOGUE of FRUITS (October, 1861), much at the service of his friends.
Nurseries, Sawbridgeworth.

Forest Trees, Evergreens, &c.
H. AND R. STIRZAKER will have pleasure in forwarding, on application, their TRADE CATALOGUE of the above, which is now ready.
The Nurseries, Skerton, Lancaster.

WELLINGTONIA GIGANTEA, superb specimens, all Seedling plants, from 6 to 12 feet high. Can be insured to be transplanted with safety to any distance.
Prices on application to WILLIAM BARRON, Elvaston Castle, Derby.

WELLINGTONIA GIGANTEA.—The undersigned has to offer a very large and fine stock of healthy one year Seedling Plants established in single pots; also a few plants of larger sizes. Price per 100 or 1000 on application.
J. HENCHMAN, Edmonton, London, N.

Delamere Forest.
FOR SALE, CEDRUS DEODARA PLANTS.—Several thousand handsome specimens of the above plants, varying in height from 2 to 4 feet.
For further particulars apply to Mr. LINNELL, Delamere Forest, Kelsall, near Chester.

Early Cabbage Plants.
W. VIRGO AND SON, Wonersh Nursery, Guildford, have a large quantity of strong, healthy plants of the following sorts to offer for Sale at 3*s*. 6*d*. per 1000, viz.:—
EARLY YORK, | NONPAREIL, and
" BARNES, | BATTERSEA.

New Roses of 1862.

JOHN KEYNES has to offer 1000 very extra strong plants the finest varieties of the last season, in 6 and 8-inch pots, are now ready, price 42s. per dozen, with the usual discount to the Trade.

Fine STANDARDS, of the older varieties, 24s. & 30s. per doz. DWARFS, 12s. and 18s. per dozen, all of the finest varieties in cultivation. Every attention paid to package, and compensation for carriage.

New CATALOGUES ready.

John Keynes, Nurseryman, Salisbury.

New Roses.

JOHN HARRISON begs to announce that he has a splendid stock of nearly all the NEW ROSES of the present season, at from 30s. per dozen. Superior STANDARDS, of the leading varieties, 18s. to 30s. per dozen; DWARFS, exceedingly fine, of which his stock this season far surpass any he has ever before seen, both on their own roots and worked on the Manetti, 9s. to 18s. per dozen; MANETTI STOCKS, 1-year from cuttings, 60s. per 1000; 1-year bedded 2-year old, very fine, 80s. per 1000; 1-year disbudded MANETTI, 80s. per 1000; do. 2-year old and disbudded, 5l. per 1000.

Nursery, Darlington.—Oct. 11.

Standard and Dwarf Roses.

BENJAMIN R. CANT will be happy to forward on application his DESCRIPTIVE CATALOGUE of ROSES.

As a guarantee of the value of his collection, B. R. C. begs to state that he has this year obtained 17 First Prizes for Cut Roses at the principal Shows.

Very fine vigorous plants of the choicest sorts will be supplied at the following prices:—

Standard Roses .. .. .. 18s., 24s., and 30s. per doz.
Half Standard Do. .. .. 18s. and 24s. per doz.
Dwarf Do. .. .. .. 9s. to 18s. per doz.

The NEW ROSES of 1862, Dwarf plants, 3s. 6d. to 5s. each; or, if 12 or more varieties are taken, 30s. per doz.

St. John's Street Nursery, Colchester.

N.B.—B. R. C.'s Catalogue contains nothing but the best varieties; all indifferent and worthless sorts are excluded.

Now Ready,

J. DOBSON and SONS' New and Splendid SHOW and SPOTTED PELARGONIUMS. CATALOGUES free. The Trade supplied liberally.

Woodlands Nursery, Isleworth, W.

Now Ready,

J. DOBSON and SONS' New and Splendid CINERARIAS, including Conqueror, the finest of all the crimson selfs. CATALOGUES free.

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DOBSON'S Splendid New PELARGONIUM QUEEN of WHITES, 31s. 6d., the most beautiful variety ever offered.

The Trade liberally supplied.

J. Dobson & Sons, Woodlands Nursery, Isleworth, W.

Now Ready, all the Leading

CINERARIAS, including the varieties with which we obtained nine First Prizes in the spring of 1862. The plants are strong. Price moderate. CATALOGUES free.

J. Dobson & Sons, Woodlands Nursery, Isleworth, W.

Now Ready, Post free,

J. DOBSON and SONS' CATALOGUE of all the Leading PELARGONIUMS, Show, Spotted, and Fancy; CINERARIAS, FUCHSIAS, VERBENAS, &c., at greatly reduced prices.

Woodlands Nursery, Isleworth, W.

MESSRS. BROWN and CO. offer the following Selection of CHOICE PLANTS, which they will forward to any part of the kingdom:—

	s.	d.
25 AZALEAS, new hardy Belgian varieties, one of a sort, on their own roots, by name	20	0
25 AZALEAS, hardy American varieties, do. do...	15	0
12 Hardy RHODODENDRONS, one of a sort, including Scarlet, White, and Rose colour	12	0
Hardy HEATHS, LEDUMS, and KALMIAS, per doz.	6	0
ROSES, best sorts, Standards and Half Standards, per dozen, 12s. to	15	0
CLIMBING ROSES of best sorts, rapid growers, per dozen	[illegible]	0
DWARF ROSES for beds or forcing, including Bourbons, Teas, and Perpetuals, per dozen ..	12	0
Choice Hardy PINUS and other CONIFERÆ. Cheap Price List by post.		
Greenhouse AZALEAS, fine varieties, per doz., 10s. to	15	0
CAMELLIAS, best double varieties, per dozen ..	28	0
TREE CARNATIONS, winter flowering, per dozen	12	0

CHOICE FRUIT TREES.

Fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Apples, Plums, and Pears, 2s. 6d. each, or 24s. per dozen.

Dwarf Plants of all the above kinds, grown especially for pot culture in Orchard Houses, &c., 18s. per dozen.

Filberts, Gooseberries, Currants, and Raspberries, p. doz., 2s.

Hyacinths, Tulips, Crocuses, and other Dutch Bulbs cheap for early forcing, &c.

American Nurseries, near Farnham, Surrey.—Oct. 11.

J. C. WHEELER and SON, Seed Growers, Gloucester, have imported in excellent condition a large COLLECTION of HYACINTHS, including the extra fine varieties recommended by Dr. Lindley.

PRICED LISTS may be had gratis on application to the Importers,

Messrs. J. C. Wheeler & Son, Gloucester.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON and CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

Autumn, Winter, and Spring Bedding Plants.

J. SCOTT, Merriott Nurseries, Somerset, begs to say that his DESCRIPTIVE CATALOGUE of DUTCH BULBS, Late Autumn, Winter, and Spring BEDDING PLANTS is now ready. It is arranged in Two Parts. 1st, Dutch and other Bulbs, in charming variety, imported direct from Holland. Part 2, How to Plant Autumn, Winter, and Spring Beds, with Copious Lists of all the best plants suited to garden ornamentation during the months of November and December to the beginning of May.

Prepaid application, enclosing two postage stamps.

20,000 Hyacinths, 20,000 Tulips, 10,000 Snowdrops, and 100,000 Crocus and Narcissus.

J. H. BIRD, F.R.H.S., Nurseryman, Stoke Newington, the largest Grower of the above in England. J. H. B. has just Purchased, for ready money, in Holland, in addition to his usual Large Stock, the above Surplus Stock of some very large growers, which he now offers at unusually Low Prices. The following Roots for 1l.:—50 Hyacinths in twenty-five splendid sorts; 150 Early Tulips, sorts; Crocuses, mixed; 50 Snowdrops, and 12 very large Narcissuses. Half the above quantity for 10s. 6d.

HYACINTHS, in 10, 20, 30, 40, or 50 splendid Varieties, at One Guinea per 100. Less by the 1000.

LILIUM LANCIFOLIUM RUBRUM (true), large roots, each, 10s. per dozen. 3l. 5s. per 100, or 30l. per 1000.

N.B.—To save trouble all Orders to be prepaid.

Excellence and Economy.

H. BROWN has imported a very large Stock of HYACINTHS, CROCUSES, and other BULBS, including the best varieties for exhibition and decoration. Collections at very moderate prices, carriage free.

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BUTLER & McCULLOCH, Seed Merchants,

COVENT GARDEN MARKET, W.C.

(ESTABLISHED UPWARDS OF A CENTURY.)

A.—Choice Collections of Bulbs for Greenhouse or Conservatory, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

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A Specification of the above Collections is given at pages 50 and 51 of Messrs. Butler & McCulloch's

CATALOGUE OR AMATEUR'S GUIDE,

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INTERNATIONAL EXHIBITION, 1862.

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SEED FARMERS AND NURSERYMEN,

237, 238, & 261, HIGH HOLBORN, LONDON, W.C.

Collections of HYACINTHS, CROCUSES, TULIPS, NARCISSUS, IRIS, LILIES, &c., from 20s. to £5. Also PURE AGRICULTURAL and GARDEN SEEDS for AUTUMN SOWING.

The Twenty-Seventh Annual Issue of the "Guide for Autumn Gardening" forwarded free of charge on application to

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HYACINTHS AND OTHER DUTCH BULBS.

WM. CUTBUSH & SON'S

CELEBRATED

COLLECTIONS OF CHOICE BULBS FOR FORCING OR OPEN AIR CULTURE

are now ready for delivery at 21s., 42s., 63s., 105s.

For details, see APPENDIX to their CATALOGUE, post free on application.

Their own selection of the FINEST HYACINTHS can be supplied at 9s., 12s., 15s., and 18s. per dozen.

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HYACINTHS AND OTHER BULBS.

WILLIAM PAUL'S

COLLECTIONS of HYACINTHS, which have obtained several Prizes from the Royal Horticultural and Royal Botanic Societies of London during the last two years, are now ready for delivery. The Bulbs are of first-rate quality and moderate in price.

Extracts from the Press:—

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"Silver Medal to Mr. William Paul, Waltham Cross, for a large collection of Hyacinths, consisting of most of the finer sorts now grown, shown in excellent condition."—*Royal Botanic Society's Report of Spring Show, March 26.*

"Mr. Paul's Hyacinths were very attractive."—*Standard.*

PRICED CATALOGUE free by post.

NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS, N.

SEE A LARGE SHEAF OF THE GROWTH OF 1862 AT THE ROYAL HORTICULTURAL SOCIETY'S SHOW, OCTOBER 8 TO 12.

SEED REQUIRED IN OCTOBER:—FIRST HALF, ONE BUSHEL ON THREE ACRES; LAST HALF, ONE BUSHEL ON TWO ACRES

CAUTION.—THE BRIGHTON WHEAT HAS BEEN SELECTED FOR SEVERAL GENERATIONS FURTHER, AND WILL PRODUCE 10 PER CENT. MORE THAN THAT GROWN FROM WHEAT PURCHASED IN PREVIOUS YEARS, AND CAN BE OBTAINED OF MR. HALLETT ALONE, OR OF HIS AGENTS.

HALLETT'S PEDIGREE NURSERY WHEAT,

"BRED" ON THE SAME PRINCIPLE OF **REPEATED** SELECTION WHICH HAS PRODUCED OUR PURE RACES OF ANIMALS.

"This year's seed is, from longer continued selection, so superior in 'pedigree' power and in 'sample' to any he has ever before sent out, that Mr. HALLETT will disclaim the results of any trials made in 1862-3, unless the seed have been obtained this year direct from him, or his authorised Agents."

Extract from a Letter just received:—"Your Wheat produced the finest ears and the largest produce ever seen in Western Australia."

1861, ACTUAL SIZE AFTER FOUR YEARS' **REPEATED** SELECTION, STARTING FROM A **SINGLE GRAIN** IN EACH YEAR.

Price Two Guineas a Bushel, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order. Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

Man kann Bestellungen machen bei den Agenten Herrn KRELAGE und SOHN, Haarlem, Holland; und Francfurt-am-Main, Deutschland.

A PRINTED PAPER, "HOW OUR WHEAT CROPS MAY BE DOUBLED," and COPIES of LEADING ARTICLES from the *TIMES*, *AGRICULTURAL GAZETTE*, and *MARK LANE EXPRESS*, FORWARDED UPON APPLICATION, ENCLOSING TWO STAMPS.

Hallett's Pedigree Nursery Wheat.

CHRISTMAS QUINCEY, SEEDSMAN, Peterborough, has of his own growing from seed direct from Mr. HALLETT, a few qrs. at 72*s*. per qr., or 10*s*. per bushel. New Sacks, 1*s*. 6*d*. each. Remittances to accompany Orders.

Hallett's Pedigree Wheat.

W. COOPER, FARMER, Fen Drayton, St. Ives, Hunts., begs to inform Agriculturists that he has a quantity of the above, warranted grown from seed supplied by Mr. Hallett. Price 10*s*. 6*d*. per bushel. Also some GIANT RED, at 9*s*. per bushel.

Delivered on the Great Northern and Great Eastern Railways. New Sacks charged 1*s*. 6*d*. each.

SHIRREFF'S BEARDED WHITE WHEAT, which for bright straw, handsome ear, and fine grain, may be considered the most beautiful of British Wheats, is now being delivered, and now weighing 64½ lbs. per imperial bushel. Price of selected parcels, 80*s*. per quarter. Quantities under half a quarter, 12*s*. per bushel.

Haddington, October 11. PATRICK SHIRREFF.

Noted Wheat for Seed.

HENRY RUCK purchased of F. F. Hallett, Esq., at the Smithfield Show, 1860, a sack of his wonderful Wheat, and will be pleased to spare from 250 to 300 sacks of WHEAT grown from that Seed. Price 10*s*. 6*d*. per bushel, delivered at the Cirencester Station on the Great Western. Not less than 20 bushels will be supplied. Cash required before any Wheat is forwarded. New sacks, 2*s*. each.

Apply to HENRY RUCK, Eisey, Cricklade, Wilts.

SEED WHEAT from the CHALK.—Browick Red, Nursery, Rough Chaff, and all the most approved varieties of Wheat. Also Hallett's Pedigree Wheat, Shirreff's Bearded Red, &c., supplied by RAYNBIRD, CALDECOTT, & BAWTREE.

Winter Tares, Rye, Winter Barley, Winter Oats, Trifolium, &c. Samples and Prices post free on application.

Address, Basingstoke, or 89, Seed Market, Mark Lane, E.C.

SEED WHEAT.—Imperial BROWICK RED from the Original Grower. This Wheat has been repeatedly selected and improved by me, and the Wheat I have for Seed this year is the produce of One Ear of very recent selection. Price at Wymondham Station, 9*s*. per Bushel; stout Sacks, 1*s*. 6*d*. each.

All Orders must contain remittances, or satisfactory references, and must not be for less than One Quarter.

ROBERT BANHAM, Browick, Wymondham, Norfolk.

Genuine Italian Rye-grass, produced from the Second Cut of Foreign Seed.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts., will again be able to supply the Trade with this article in the same fine quality as last season, and can deliver either now or in the spring at the purchaser's convenience.

Rates to Liverpool, 30*s*. per ton, in 4 ton lots.

Address for samples and prices as above, stating quantity required and time of delivery.

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PRIZE MEDAL, "EXCELLENT SEED CORN AND SEEDS."

See JURY AWARD. CLASS III., 725.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E.C.

Samples and quotations of all kinds of Agricultural Seeds, and Seed Corn, sent post free on application. Peruvian Guano, Lawes's Manures for Turnips, Wheat, Barley, &c., Linseed Cakes, and Feeding Stuffs, at market prices.

PARSNIP CHERVIL or CHÆROPHYLLUM BULBOSUM.—New Seed of this year's harvesting, per packet, 1*s*. Sow from September 25 to October 25. A delicate and delicious vegetable.

ARTHUR HENDERSON & Co., Pine Apple Place, Edgware Road, W.

NEW PELARGONIUMS, CINERARIAS, &c.—Arcturus, Celeste, Kettledrum, Lord Chancellor, Mrs. Hoyle, Prince of Hesse, Princetta, new spotted Cyrax, Fair Rosamond. The above 3*s*. 6*d*. each, or 30*s*. the set.

FINE EXHIBITION VARIETIES.—Admirable, Agnes, Ajax, *Angelina, Annette, Apollo, Argo, Ariel, Autocrat, Bacchus, Beauty of Reading, Bride, Bridesmaid, *Carlos, Candidate, Competitor, Czar, *Desdemona, Douglas, Emperor, Etna, Euphemia, Fair Ellen, Fairest of the Fair, Garibaldi, Hesperus, Lady Canning, Larkfield Rival, *Leviathan, Lord Clyde, Magnet, Mars, Marvellous, Minnie, Modesty, Monarch, Mrs. Benyon, Mrs. Hoyle, Mulberry, Norma, Perdita, Pet of the Flock, *Prince of Wales, Richard Benyon, Rosa Bonheur, Rosalie, *Rose Celestial, Roseleaf, Roseum, *Saracen, Serena, Satanella, Seraskier, *Sir C. Campbell, Symmetry, The Belle, The Lady of Quality, The Gem of Roses, Transcendent, Viola, Wonderful.

SPOTTED PELARGONIUMS.—* Beadsman, * Jung Bahadoor, * King of Purples, King of Spots, Mammoth, Mazeppa, Peacock, * Sanspariel, Spotted Gem, Thirza.

FANCY PELARGONIUMS.—*Acme, Amy Sedgwick, * Beauty of Slough, Bridesmaid, Clara Novello, Crimson King, * Cloth of Silver, * Evening Star, King, Lady Craven, * Madame Rougière, Madame S. Dolby, * Mrs. Turner, Musjid, Negro, Omega, Princess Royal, * Queen of Roses, * Rosabella, * Sarah Turner, * Lucy.

Purchasers selecting from any of the above not priced, Show, Spotted, or Fancy, 12*s*. per dozen.

Those marked (*) are the sorts with which HENRY MAY carried the First Prize at the Great Yorkshire Gala at York, June 1862.

NEW CINERARIAS.—Amazon (Smith), Ariel (do.), Beauty of Surrey (do.), David (do.), Distinction (do.), Duchess of Sutherland (do.), Fire Queen (do.), Géant des Batailles (do.), Glory of Dulwich (do.), Goliath (do.), Incomparable (do.), Indian Chief (do.), Magnificent (do.), Magnum Bonum (do), Miss Smith (do.), Rosy Morn (do.), Volunteer (do.). Any of the above, 12*s*. a dozen.

OLDER CINERARIAS.—Adam Bede, Brilliant (Lidgard), Brilliant (Smith), Captain Schrieber, Constancy, Crimson Gem, Duke of Cambridge, Fascination, Incomparable, Mr. Marnock, Mrs. Livingstone, Mrs. Hoyle, Mr. Dix, Midshipman, Mrs. Dawson, Mrs. Fison, Magenta, Perfecta, Queen Victoria, Refulgens, Semi Duplex, Sir C. Napier, Solferino. Any of the above, 6*s*. per dozen.

HENRY MAY'S AUTUMN CATALOGUE is now ready, and will be sent free on application. It contains all the best Pelargoniums, Cinerarias, Hollyhocks, Phloxes, and Roses; also his LIST of FRUIT TREES can be obtained on application.

Address, HENRY MAY, The Hope Nurseries, near Bedale, Yorkshire.

STRAWBERRIES for AMATEURS.—Plants of the six most useful sorts, chosen to afford a long succession of fine fruit, one of each sort, or four plants of ECLIPSE, free by post, for 24 stamps. The sorts include ECLIPSE, new, pronounced first rate, both for Forcing and Out-doors, by the Royal Horticultural Society; PRINCESS, the finest of the very early sorts; SIR HARRY, SIR CHARLES NAPIER, WONDERFUL, the best for very rich soils; and ELEANOR, very fine and late; or OSCAR, if ordered.

Also very choice CAULIFLOWER and pure WHITE BAVARIAN CUCUMBER, 1s. per packet.

Address A. Moss, Jun., Chadwell Heath Mills, Essex, E.

STRAWBERRIES.—Fine well rooted Plants for Fruiting next season, of the following sorts, can now be supplied:—Sir Harry, Comte de Paris, Prince Arthur, British Queen, Keens' Seedling, and Goliah, 3s. 6d. per 100; Magnum Bonum, Eleanor, Ajax, Fillbasket, Alice Maude, Oscar, 2s. 6d. per 100.

Carriage free within 50 miles of London. A liberal allowance to the Trade.

Thomas Henry Hardy, Stour Valley Nursery and Seed Grounds, Bures, near Colchester, Essex.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.

2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

Thomas Jackson & Son, Nursery, Kingston, S.W.

Grape Vines from Eyes.

LUCOMBE, PINCE and CO. have a fine healthy stock of strong VINES, from 6 to 10 feet long, of all the choicest sorts, fit for immediate planting, propagated from Eyes taken from their own experimental Vinery, which enables them to warrant each kind true to name.

LISTS of Sorts and prices may be had on ap lication.

Exeter Nursery, Exeter.

Grape Vines.

JAMES CARTER and CO. have now ready for sending out a splendid Collection of thoroughly ripened Canes of the above from Eyes and two-year-old, true to name, for fruiting in pots, or planting out; to which they respectfully wish to draw attention.

For full DESCRIPTIVE LIST of same see AUTUMN GUIDE, sent free by post, on application to 237 and 238, High Holborn, W.C.

Pine Plants and Vines.

T. PAPE can supply PROVIDENCE, RIPLEY QUEEN, MONTSERRAT, and BLACK PRINCE Plants, all sizes. Also a large stock of strong VINES, including all the best varieties for Fruiting in Pots or planting out, all at moderate prices.

Undercliffe Gardens, Bradford, Yorkshire.

Fine Trained Fruit Trees.

LUCOMBE, PINCE, and CO. invite attention to their remarkably fine, healthy, well-rooted Stock of FRUIT TREES, trained as Espaliers and Pyramids, in a bearing state, of all the best sorts, amongst which they can especially recommend

HUYSHE'S BERGAMOT and VICTORIA PEARS,

as being two of the finest varieties in cultivation, specimens of which covered with fruit may be seen in their Nursery.

L., P. & Co. have also well established in pots some very fine PEACHES and NECTARINES, set with fruit buds, fit for Orchard House culture.

A DESCRIPTIVE PRICED CATALOGUE may be had on application.

Exeter Nursery, Exeter.

FRUIT TREES, Root Pruned.

PEARS, in 200 sorts, Pyramids from 2 to 12 feet high, mostly bearing trees.

APPLES, 200 sorts, Standards, Pyramids, Dwarf Bushes, or Dwarf-trained.

PLUMS, 70 sorts, Standards, Dwarf Bushes or Dwarf-trained.

PEACHES, NECTARINES, APRICOTS, and CHERRIES, fine Dwarf-trained trees.

MAIDEN PEACHES and NECTARINES in quantity to offer to the Trade.

For prices, &c., apply to J. Scott, Merriott Nurseries, Crewkerne, Somerset.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

Planting.

WM. PAUL (Son and Successor to the late A. Paul) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.

Entrance from the platform, Waltham Station, Great Eastern Railway.

Nurseries and Seed Warehouse, Waltham Cross, N.

Hardy Scarlet and other Choice Rhododendrons.

JOHN WATERER'S CATALOGUE of the above popular plants, as exhibited by him at the Royal Botanic Gardens, Regent's Park, is now published, and will be forwarded to all applicants.

It describes faithfully the colours of all the Rhododendrons, thereby rendering every facility for making selections.

It likewise contains an abridged List of really Hardy Conifers, with their heights and prices.

The American Nursery, Bagshot, Surrey.

Cupressus Lawsonia variegata.

JOHN WATERER has the pleasure to announce that he is prepared to execute orders for the above New and desirable CYPRESS. It is a Seedling of his own, raised from imported seed, of golden variegation, quite equal to Chamæcyparis variegata.

Its habit is more bushy than Lawsonia, with a greater tendency to a drooping form.

It has been exhibited at the Royal Botanic Society's Exhibition, and was awarded the highest Prize for New and Rare Plants.

Good plants, 21s. each. | Good larger plants, 31s. 6d. each.

A few extra large plants, 42s. each.

The usual allowance to the Trade.

The American Nursery, Bagshot, Surrey.

CALADIUM LOWI.

HUGH LOW & CO.

Have much pleasure in offering the above named magnificent addition to the class of Ornamental Foliaged Plants.

The subjoined extract from the *Journal of Horticulture*, No. 79, p. 510, will enable Amateurs who have not seen the plant to form an idea of its great beauty:—

"Royal Horticultural Society, Sept. 23.—(*Floral Committee.*)—There was a most beautiful Caladium from Borneo, from the Messrs. Low & Co. of Clapton, named Lowi, to which a First-class Certificate was unanimously awarded. The form of the leaf is the same as that of Alocasia metallica, or between that and Caladium Veitchi. The midrib and strong veins are whitish, and there is a metallic lustre in the bright green of the blade of the leaf. This is much the best of the Caladiums."

Plants are now ready for sale, price 31s. 6d. each.

CLAPTON NURSERY, LONDON, N.E.

CYPRIPEDIUM STONI.

HUGH LOW & CO.

Have now ready for Sale Plants of the above-named fine NEW CYPRIPEDIUM.

The subjoined extract is from the *Journal of Horticulture*, No. 79, p. 510, following description of Caladium Lowi. H. L. & Co. take the liberty to add that three flowers have bloomed on one spike, and they are of opinion that well-established plants will produce a still larger number of flowers on the spike.

Report of *Journal of Horticulture* on Floral Committee of Royal Horticultural Society, Sept. 23:—

"The same firm sent an exquisitely beautiful new Cypripedium, also from Borneo, within the last few weeks; this also had a unanimous award—a First-class Certificate. There were two flowers on the scape, the one above the other; the leaves are plain green, 6 or 8 inches long, and of great substance. The flowers are remarkably gay, and much more so than any yet known in the genus. The pouch, or slipper is purplish in front, shading to pure white and some yellow towards the bottom, the two side petals are long, curved, and twisted, with a bright orange ground colour stained with rich purple, and the two back sepals are broad, erect, and with a broad band of white all round within the margin, the centre being deeply stained with purple, but lighter on the inner surface. It is named Stoni, after Mr. Stone, Gardener to J. Day, Esq., of Tottenham, who first bloomed the plant."

Price 105s. to 126s.

CLAPTON NURSERY, LONDON, N.E.

NEW AND BEAUTIFUL PLANTS.

WILLIAM BULL, F.R.H.S., F.R.B.S.,

NURSERYMAN AND NEW PLANT MERCHANT,

KING'S ROAD, CHELSEA, LONDON, S.W.,

Will send out the following NOVELTIES for the first time on and after the 13th inst.:—

NEW FUCHSIAS, 7s. 6d. each.

The following varieties are the result of most careful selection, each possessing sterling merit, distinctness of character, good habit, and a free blooming disposition:—

ADELINE.—Red tube and sepals, beautifully reflexed, and of unusual length; double purple corolla of an irregular shape, some petals being long and others short; very peculiar.

HERO.—Light red tube and sepals, the latter reflexed and unusually wide and long; lake corolla; an immense flower, very striking.

MONARCH.—Crimson tube and sepals, the latter beautifully reflexed; large double corolla, peculiarly formed; large, showy, and attractive.

SPECIAL.—Broad bright red sepals, reflexing back to the tube; beautiful, large, stiff, and smooth, bright blue corolla, marked with red at the base; excellent habit.

TRIUMPHANT.—Crimson sepals, with double purple plum corolla, flaked with crimson at the base; fine form.

NEW PETUNIAS, 3s. 6d. each.

The following are confidently offered as superior to any previously in cultivation; they have been raised at my establishment by the most careful hybridisation, and are a small selection made from many thousand seedlings:—

BASILISK.—Glossy crimson, with rich violet throat, very smooth, fine form.

BRIDESMAID.—Bright pink, with large white centre.

CUPID.—Double, mauve, blotched in the centre with pure white, distinct.

ENSIGN.—Violet pink, blotched and margined with pure white.

GOOD THING.—Rich crimson, veined and striped with black; black throat.

HERO.—Double, bright red, distinctly blotched with violet, novel.

MARMION.—French white, reticulated and veined with violet, very delicate, semi-double.

SENSATION.—Bright rose, rayed with violet, violet centre and light throat, very attractive.

SILVER SPOT.—Bright crimson, blotched with white.

STANDARD.—Clean bright crimson, large and very double, a fine noble flower.

STARTLER.—Double, bright crimson, blotched with pure white.

UNDINE.—Deep rose, rayed and barred with crimson, dark throat.

AZALEA WILLIAM BULL.

This fine Azalea was raised in Belgium, and named by M. Ambroise Verschaffelt, from whom the stock for circulation in the United Kingdom has been purchased. The flowers individually are of unusual size and substance, and well formed; colour crimson and violet richly spotted; a really superb variety. 21s. each.

ANÆCTOCHILUS SCHÆLLERI.

A new and very distinct species from Costa Rica. 63s. each

ASPIDIUM PINNATUM.

A new and elegant Fern from Brazil. 31s. 6d. each

W. B. has also a fine Stock of the following

NEW and RARE PLANTS.

ALOCASIA METALLICA, 31s. 6d.
CALADIUM LOWI, 31s. 6d.
" VEITCHI, 31s. 6d.
CLEMATIS BRASILIENSIS, 10s. 6d.
DRACÆNA VEITCHI, 21s.
" FERREA VARIEGATA, 63s. and 105s.
FUCHSIA HER MAJESTY, 3s. 6d.
" INTERNATIONAL, 3s. 6d.
GESNERIA REFULGENS, 10s. 6d. and 15s.; GESNERIA VELUTINA, 7s. 6d. and 10s. 6d. — Highly ornamental foliage, and beautiful winter blooming varieties.
GYMNOGRAMMA LAUCHEANA, 5s. The best of the Gold Ferns, excellent habit
HELIOTROPE SURPRISE, 2s. 6d.
PHLOX ADMIRATION, 3s. 6d. Grows only 1 foot high, with Hydrangea-like heads of carmine blossom
PRIMULA SINENSIS FIMBRIATA NIVEA PLENO, 7s. 6d. and 10s. 6d.
PRIMULA SINENSIS FIMBRIATA RUBELLA PLENO, 7s. 6d. and 10s. 6d.
PHALÆNOPSIS AMABILIS, 105s.
" GRANDIFLORA, 63s.
SERISSA FŒTIDA MARGINATA, 5s
SELAGINELLA TRIANGULARIS, 7s. 6d.
The three Variegated FERNS, 18s. per dozen. — PTERIS ARGYRÆA, " CRETICA ALBO-LINEATA, " TRICOLOR.
LITOBROCHIA NOBILIS, 10s. 6d. and 15s.—A new variegated Fern.
TYDÆA VENOSA, 3s. 6d.—The best of the family.

NEW DIPLACUS, 3s. 6d. Each.

Three very pretty, easily cultivated, free flowering, and green wooded house plants.

AURANTIACUS.—Bright orange, light throat.

INGELRELSTI.—Bright red, light throat.

SPLENDIDUS.—Orange shaded with carmine, light throat.

A large assortment of all the best VINES in pots.

A fine lot of healthy, vigorous, and clean PINE APPLE PLANTS to be Sold Cheap, as the room is required for other Stock.

ESTABLISHMENT FOR NEW AND RARE PLANTS,
KING'S ROAD, CHELSEA, LONDON, S.W.

Fine Camellias and Azaleas.

F. AND A. SMITH have an immense stock of AZALEAS and CAMELLIAS well set with flower buds, of fine growth and in healthy condition, now offering at moderate prices, which may be had on application.
Dulwich, Surrey, S.

Cineraria and Calceolaria Seed.

F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, ... and ..., free by post.
Dulwich, Surrey, S.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to ... each;
ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA, 21s. each.
A ... LIST of the most rare kinds will be forwarded Post free on application.
Dorking Nursery.

New Crimson Bedding Shrubby Calceolarias.

MESSRS. JOHN AND CHARLES LEE having purchased the Stock of SEEDLING CALCEOLARIAS raised by Mr. Watson, of St. Albans, intend to offer them for SALE in the SPRING of 1863. All the varieties are decidedly shrubby, and vary in colour from bright orange to scarlet, crimson and deep purple. The flowers are large and constant, and the habits very dwarf and spreading.
Nursery and Seed Establishment, Hammersmith, London, W.

Notice.

B. S. WILLIAMS begs to intimate that the following DESCRIPTIVE and PRICED CATALOGUES may be had post free on application.
GENERAL CATALOGUE, including Exotic Orchids, Ferns, Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c.
BULB CATALOGUE contains Select Lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladioli, Amaryllis, and many other choice Bulbs, with Hints on their Culture; to which is added a SUPPLEMENTAL LIST of New, Beautiful, and Rare Plants.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Gladiolus Brenchleyensis (True).

YOUELL AND CO. beg to offer this season strong Flowering BULBS of the above, unequalled by any other in its brilliancy of colour, at 3s. 6d. per dozen; or 25s. per 100. Trade price on application, and when quantities are ordered a considerable reduction will be made.
The *Gardeners' Chronicle* of August 23, 1862, says:—"The spikes you have sent us are magnificent. We have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."
CATALOGUES of their extensive Collection, for which the First Class Prize was awarded at the Crystal Palace Show, Sept. 6, 1862, and two First Class Prizes at the Royal Horticultural Society's Show, South Kensington, Sept. 10, 1862, will be forwarded on application.
Royal Nurseries, Great Yarmouth.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned NEW and fine AZALEAS.
FLAG OF TRUCE.—The finest double white known; has gained two Certificates and a Silver Medal for its superior ..., being the highest testimonial any Azalea has yet received. 21s. to 31s. 6d. each.
PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21s. to 31s. 6d. each.
CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very ..., 21s. to 31s. 6d. each.
LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10s. 6d. to 15s. each.
CRISPIFLORA ROSEA.—Fine bright rose; the flowers are waved or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10s. 6d. to 15s. each.
PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10s. 6d. and 15s. each.
Any of the above may be had in grafted plants, or on their own roots.
For full particulars see *Gardeners' Chronicle* of August 16, page 763, or in CATALOGUES, which may be had gratis on application.
Dulwich, Surrey

New Fern, Pteris nemoralis variegata.

WILLIAM COLE, Fog Lane Nursery, Withington, Manchester, the raiser of this beautiful and distinct NEW FERN, will be ready to supply good plants on and after November 1, and all orders will be executed in rotation.
It has been well described in the *Gardeners' Chronicle* of July 5, p. 620, where the writer speaks of it as "a curious and novel form of Variegated Pteris."
It was also reported on in the *Gardeners' Chronicle* of May 24, as follows:—"Among new Ferns, of which several were shown, was one from Mr. Cole, Nurseryman, Manchester, belonging to the Variegated Class, and as regards position, is intermediate between argyræa and tricolor, and is apparently a free grower."
W. COLE has great confidence in recommending it, and in stating that it is really a beautiful Fern, and one which will become exceedingly popular.
Price (very liberal terms to the Trade for 12, 50, or 100) on application.

CHOICE HARDY CONIFERS.

ARAUCARIA IMBRICATA, 1 year, strong, p. doz.		6s.	0d.
CUPRESSUS LAWSONIANA, 1 year, strong,	,,	3	0
,, MACROCARPA, 6 inches	,,	3	0
PICEA NORDMANNIANA, 1 year	,,	12	0
PINUS DON PEDRI, 1 foot	,,	9	0
,, INSIGNIS, 6 inches	,,	3	0
,, PONDEROSA, 6 inches	,,	6	0
THUJA ELEGANS or LOBBII, 1 foot	,,	6	0
WELLINGTONIA GIGANTEA, 1 year, strong	,,	12	0
,, ,, in 48 pots, 8 ins.	,,	24	0
,, ,, in 32 pots, 1 ft., fine	,,	42	0

The above are all healthy seedling plants in pots, ready for immediate planting out.
J. HENCHMAN, Edmonton, London, N.E.

AN AVENUE of WELLINGTONIAS.—Gentlemen wishing to plant an avenue of this GLORY OF THE FOREST would do well to inspect the Stock at the Sunningdale Nursery. They may select from thousands.

RHODODENDRONS of every hue, Scarlet, White, Crimson and Purple.—Gentlemen about to plant would consult their interest by an inspection of the Stock of Rhododendrons at the Sunningdale Nursery. They may select from hundreds of thousands.

COVER PLANTING.—Gentlemen about to plant for Cover would find the following plants worth a trial:—BERBERIS JAPONICA, COTONEASTER MICROPHYLLA, and RHODODENDRONS. A visit to the Sunningdale Nursery would not be uninteresting.

ROSES, Standards and Dwarfs, a very fine selection, in the most vigorous health, may be seen at the Sunningdale Nursery.

ROSES for FORCING, specially prepared, and calculated to give an abundant supply of Flowers during winter. All the finest kinds may be selected at the Sunningdale Nursery.

CONIFERS.—A fine Stock of well grown Plants of all the most interesting and really hardy Conifers, Evergreens, &c., may be seen at the Sunningdale Nursery, Sunningdale Station, S. W. R.
CHARLES NOBLE.

To Noblemen, Gentlemen, and Others engaged in Planting.

GEORGE BAKER begs to invite attention to the following superb specimens, which are in the finest condition:—
ARAUCARIA IMBRICATA, 6 feet, 9 feet, 14 feet
ABIES DOUGLASII, 10 feet, 14 feet, 20 feet
ARBOR-VITÆ (Siberian), 6 feet, 8 feet
CEDRUS DEODARA, 6 feet, 8 feet, 10 feet, 12 feet, 20 feet
CUPRESSUS LAWSONI, 5 feet
,, DISTICHA, 8 feet, 12 feet
CEDRUS LIBANI, 8 feet, 10 feet
CHINESE JUNIPER, 5 feet, 6 feet
IRISH YEWS, 6 feet, 8 feet
JUNIPERUS RECURVA, 8 feet
,, BEDFORDIANA, 5 feet, 6 feet
PICEA CEPHALONICA, 11 feet
PINUS CEMBRA, 7 feet, 10 feet
,, EXCELSA, 10 feet, 15 feet
TAXODIUM SEMPERVIRENS, 10 feet, 12 feet
THUJA GIGANTEA, 6 feet
WELLINGTONIA GIGANTEA, 5 feet
KALMIA LATIFOLIA, Standards, fine
RHODODENDRONS, ,, ,,
PORTUGAL LAURELS, ,, ,,
G. B. in offering the above perfect specimens feels assured that whoever may favour him with their kind orders, their hopes will be fully realised. Prices on application.
American Nursery, Windlesham, Bagshot, Surrey.

Opposite the Garrick Club.

THE GREAT INTERNATIONAL EXHIBITION of GOURDS at the Royal Horticultural Society's Garden, Kensington, W.—Our SARDINIAN CORRESPONDENT has been awarded three First Prizes and one Second for the above. His Collections are the most varied, curious, beautiful, and interesting exhibited. As we shall have seeds from these to offer in Spring, we invite those visiting the International Exhibition to inspect them.
PRICED LIST of GOURDS free on application. He had also a First Prize for the most beautiful Collection of MAIZE.
BARR & SUGDEN, Seed Merchants, and Importers of Dutch, French, and Italian Bulbs, 12, King St., Covent Garden, W.C.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING 1863, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.
Woking Nursery, Surrey.

HOLLAND AND BAYLEY are now sending out for the first time their superb yellow-ground PICOTEES, raised by the late Mr. Richard Smith, of Witney, near Oxford. They are far in advance of any ever before offered, and have been awarded the principal Prizes wherever exhibited. For description and price, see CATALOGUE, which may be had on application.
Bradshaw Gardens, Chadderton, Manchester.

HOLLAND AND BAYLEY'S DESCRIPTIVE CATALOGUE of FLORISTS' FLOWERS, FRUITS, &c., is now ready and may be had on application. It contains well selected Lists of Carnations, White and Yellow-ground Picotees, Pinks, Pansies, Belgian Pansies, Auriculas, Polyanthuses, Phloxes, Ferns, and Miscellaneous Plants. Also Apples, Lancashire Show Gooseberries, Currants, &c.
Bradshaw Gardens, Chadderton, Manchester.

Notice.—American Plants.

WATERER AND GODFREY'S CATALOGUE is now ready, and will be sent on application; it gives a fair price and description of all the Rhododendrons and other American Plants worth growing, as well as a general summary of the most extensive Nursery Stock in Europe.
The Exhibition of American Plants in the Royal Horticultural Society's Garden, South Kensington, were supplied by WATERER & GODFREY, Knap Hill, near Woking.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious Index of all their synonymes. Free by post for 12 postage stamps.
RICHARD SMITH, Nurseryman, Worcester.

Green Hollies.

CORNELIUS WHITEHOUSE, Brenton Nursery, Rugeley, Staffordshire, has to offer many hundred thousand Transplanted HOLLIES from 6 to 9 inches, 9 to 12 inches, 1 to 1½ feet, 1½ to 2 feet, 2½ to 3 feet, 3½ to 4 feet; also 2 and 3 years Seedling. The whole are clean grown and healthy, and have excellent roots, and the smaller sizes in splendid condition for working. As the stock is so large the prices will be low. Trade price on application.

3000 DEODARS, 1000 CUPRESSUS LAWSONIANA, 1000 C. MACROCARPA, 500 THUJA LOBBII. The above are offered very cheap. The Deodars are handsome well grown plants, from 2½ to 5 feet, and have been transplanted every autumn for the last five years. The others are fine healthy plants varying from 2 to 5 feet high.
Prices on application to J. SCOTT, Merriott, Crewkerne, Somerset.

To the Trade, and others engaged in Planting, &c.

TO BE SOLD, Cheap, for Cash on delivery, several Millions of 1, 2, and 3 years' QUICK. Samples and prices sent on application. Also a large stock of ENGLISH OAKS and HAZEL.
STEPHEN SHILLING, North Warnborough Nursery, near Odiham, Hants.

FOR SALE, Cheap, NURSERY STOCK, the Ground being taken for Building, consisting of Evergreen Privet, from 2 to 6 ft.; Dwarf Honeysuckle, Ribus sanguineum, Jessamine, White and Red Dutch Currants, Poplars, Lilac, fine Picotees, Pinks, &c.
Apply at the Chapel Nursery, Battersea Fields, near Nine Elms, S.W.

FOR SALE.—Just arrived, per Ship "Johannes Christiaan," from the Cape of Good Hope, a large and superior assortment of SOUTH AFRICAN TREES, PLANTS, and BULBS, all in first-rate condition and with the names. Several of the plants are unknown in Europe and newly discovered. The whole have been collected at considerable expense and trouble by a Naturalist of great experience, and include about 100 different sorts of Seeds of the most beautiful Shrubs and Plants of South Africa.
For further particulars and orders to view apply to ADAMSON & RONALDSON, 1, Leadenhall Street, E.C.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.
They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.
N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.
Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.
To be obtained of F. & G. ROSHER, at their Premises as above.

NEW AND DISTINCT FERNS.

MESSRS. VEITCH & SON

Have much pleasure in now offering the following FINE FERNS, which, from their beauty and distinct character, will, they feel confident, become general favourites:—

ADIANTUM TINCTUM (Moore).

This is a very charming species of this popular genus. It is of dwarf and elegant habit, and the fronds in their young state ... a deep rosy pink, render it at once a distinct and lovely addition to this genus. It has received Prizes both from ... Royal Horticultural and Royal Botanic Societies during the past season. Introduced by us from Peru. 10s. 6d. each.

DORYOPTERIS (LITOBROCHIA) NOBILIS (Moore).

... very fine and really distinct Fern was exhibited by us at the June Show of the Royal Horticultural Society, from whose report of it the following description is copied:—
"A noble Stove Fern, of the Doryopteris group of netted veined Pterides, and having the aspect of a gigantic Litobrochia ... The fronds, many of them, measured a foot across the lamina, which was palmately bipinnatifid. It had black stipites, ... when young the fronds have the central ribs of a grayish white, but this marking seems to become less distinct as the ... grow older. At this Show it was awarded a SILVER BANKSIAN MEDAL, and has also received a FIRST CLASS CERTIFICATE ... the Royal Botanic Society. 10s. 6d. each.

The usual allowance to the Trade.

Full and detailed descriptions of both these Ferns will be found in the *Gardeners' Chronicle* of October 4, page 932, where, as will be seen, they are most favourably spoken of.

ROYAL EXOTIC NURSERIES, EXETER and CHELSEA.

ROYAL HORTICULTURAL SOCIETY.

GREAT INTERNATIONAL SHOW OF FRUITS, GOURDS, VEGETABLES, AND CEREALS, OCTOBER 8, 9, and 10, 1862.

AWARDS OF THE JUDGES.

Class A.—COLLECTION of FRUITS. (Fruiterers only.)
1st Prize, Mr. Lewis Solomon, Covent Garden Market, 5*l.*
2d, Messrs. M. Webber & Co., Covent Garden Market, 3*l.*

Class B.—COLLECTION of FRUITS. (Private Growers.)
1st, Mr. G. Tillyard, Gr. to J. Kelk, Esq., Stanmore, 6*l.*
2d, Mr. A. Henderson, Trentham, 4*l.*
3d, Mr. W. Kaile, Gr. to the Earl of Lovelace, Ripley, 3*l.*

Class C.—PINE APPLE, QUEENS.
1st, Mr. W. Green, Gr. to Mrs. Honeywood, Kelvedon, 2*l.*
2d, Mr. G. Young, Gr. to W. H. Stone, Esq., Havant, 1*l.* 10*s.*
3d, Mr. E. Robinson, Gr. to R. Benyon, Esq., Reading, 1*l.*

Class D.—PINE APPLE, any kind except QUEENS.
1st, Mr. Thos. Ingram, Royal Gardens, Windsor, 2*l.*
2d, Monsieur Chantrier, Head Gr. to the Duke de Levis Vantadour, Noisiel, near Paris, 1*l.* 10*s.*
3d, Mr. H. Bwye, Gr. to R. T. Crawshay, Esq., Merthyr Tydvil, 1*l.*

Class E.—GRAPES, WHITE MUSCAT, 6 bunches.
1st, Mr. W. Hill, Gr. to R. Sneyd, Esq., F.R.H.S, Keele Hall, 4*l.*
2d, Mr. G. Tillyard, Gr. to J. Kelk, Esq., F.R.H.S., Stanmore, 3*l.*
3d, Mr. J. Meredith, Garston, Liverpool, 2*l.*
Extra, Mr. Thos. Frost, Gr. to E. L. Betts, Esq., Aylesford, 1*l.*

Class F.—GRAPES, WHITE MUSCAT, 3 bunches.
1st, Mr. J. Drummond, Gr. to J. S. Smith, Esq., Tunbridge Wells, 2*l.* 10*s.*
2d, Mr. G. Tillyard, Gr. to J. Kelk, Esq., F.R.H.S, Stanmore, 2*l.*
3d, Mr. J. H. Potts, Gr. to M. Phillips, Esq., Stratford-on-Avon, 1*l.*

Class G.—GRAPES, any White kind except MUSCAT, 3 bunches.
1st, Mr. E. Sage, Gr. to Earl Howe, F.R.H.S., Atherstone, 2*l.* 10*s.*
2d, Mr. A. Ingram, Gr. to J. J. Blandy, Esq., V.P.R.H.S., Reading, 2*l.*
3d, Mr. J. Meredith, Garston, Liverpool, 1*l.*

Class H.—GRAPES, BLACK HAMBURGH, 6 bunches.
1st, Mr. A. Henderson, Gr. to the Duke of Sutherland, Trentham, 4*l.*
Equal 2d, Mr. J. Meredith, Garston, Liverpool, 3*l.*
Equal 2d, Mr. W. Hill, Gr. to R. Sneyd, Esq., F.R.H.S., Keele Hall, 3*l.*
3d, Mr. A. Ingram, Gr. to J. J. Blandy, Esq., V.P.R.H.S. Reading, 2*l.*

Class I.—GRAPES, BLACK HAMBURGH, 3 bunches.
1st, Mr. J. Drummond, Gr. to J. S. Smith, Esq., Tunbridge Wells, 2*l.* 10*s.*
2d, Mr. A. Henderson, Gr. to the Duke of Sutherland, Trentham, 2*l.*
3d, Mr. J. Omant, Gr. to J. Lurck, Esq., Epsom, 1*l.*

Class J.—GRAPES, any Black kind except HAMBURGH, 3 bunches.
1st, Mr. J. Drummond, Gr. to J. S. Smith, Esq., Tunbridge Wells, 2*l.* 10*s.*
2d, Mr. J. Meredith, Garston, Liverpool, 2*l.*
3d, Mr. W. Hill, Gr. to R. Sneyd, Esq., F.R.H.S., Keele Hall, 1*l.*

Class K.—PEARS, Dessert, 12 dishes, distinct kinds.
1st, Mr. J. C. Dwerrihouse, Heckfield, 4*l.*
2d, Mr. T. Ingram, Royal Gardens, Windsor, 3*l.*
3d, Mr. J. Morris, Gr. to T. White, Esq., Wethersfield, 2*l.*
Equal 3d, Mr. T. Frost, Gr. to E. S. Betts, Esq., Aylesford, 2*l.*

Class L.—PEARS, Dessert, 6 dishes, distinct kinds.
1st, Mr. S. Snow, Gr. to Countess Cowper, Wrest Park, Beds, 3*l.*
2d, Mr. J. Ford, Watton, Herts, 2*l.*
3d, Mr. G. Tranter, Gr. to Hon. G. D. Ryder, Hemel Hempstead, 1*l.*
Extra, Mr. A. Bousie, Gr. to Lord Taunton, Slough, 15*s.*
Extra, Mr. J. Stroud, Gr. to the Hon. Mrs. Finch, Great Berkhampstead, 15*s.*

Class M.—PEARS, Dessert, 3 dishes, ripe fruit, distinct kinds.
1st, Mr. T. Ingram, Royal Gardens, Windsor, 1*l.* 10*s.*
2d, Mr. D. Lumsden, Gr. to Lady Hamilton, Sleaford, 1*l.*
3d, Mr. T. Frost, Gr. to E. L. Betts, Esq., Aylesford, 10*s.*

Class N.—PEARS, Dessert, single dish, ripe fruit, any kind.
1st, Mr. T. Ingram, Royal Gardens, Windsor, 1*l.*
2d, Mr. W. Bain, Gr. to A. Perkins, Esq., Hounslow, 15*s.*
3d, Mr. W. Culverwell, Bedale, Yorkshire, 10*s.*

Class O.—PEARS, Kitchen, single dish, any kind.
1st, Mr. S. Snow, Gr. to Countess Cowper, Wrest Park, 1*l.*
2d, Mr. J. Willimot, Gr. to Mrs. Crompton, Roehampton, 15*s.*
3d, Mr. S. Ford, Gr. to W. E. Hubbard, Esq., Horsham, 10*s.*

Class P.—PEARS, heaviest 5 fruits, Dessert.
1st, Mr. T. Frost, Gr. to E. L. Betts, Esq., Aylesford, 1*l.*
2d, Mr. J. Ford, Watton, Herts, 15*s.*
3d, Mr. J. Morris, Gr. to T. White, Esq., Wethersfield, 10*s.*

Class Q.—APPLES, Dessert, 12 dishes, distinct kinds.
1st, Mr. A. Bousie, Gr. to Lord Taunton, Slough, 4*l.*
2d, Mr. J. B. Whiting, Gr. to H. T. Hope, Esq., F.R.H.S., The Deepdene, 3*l.*
3d, Mr. T. Frost, Gr. to E. L. Betts, Esq., Aylesford, 2*l.*
Extra, Mr. T. Ingram, Gr. to the Royal Gardens, Windsor, 1*l.*

Class R.—APPLES, Dessert, 6 dishes, distinct kinds.
1st, Mr. W. Hall, Gr. to Capt. Tyrrell, R.N., Ealing Common, 3*l.*
2d, Mr. G. Lane, St. Mary Cray, 2*l.*
3d, Mr. A. Simpson, Gr. to Lady Molyneux, Slough, 1*l.*
Extra, Mr. J. Willimot, Gr. to Mrs. Crompton, Roehampton, 10*s.*

Class S.—APPLES, Dessert, 3 dishes, ripe fruit, distint kinds.
1st, Mr. J. Wright, Gr. to Mrs. Ramsden, Twickenham, 1*l.* 10*s.*
2d, Mr. J. Newton, Gr. to G. J. Graham, Esq., Enfield Chase, 1*l.*
3d, Mr. J. Widdowson, Gr. to C. A. Barnes, Esq., Rickmansworth, 10*s.*
Extra, Mr. A. Simpson, Gr. to Lady Molyneux, Slough, 7*s.* 6*d.*

Class T.—APPLES, Dessert, single dish, ripe fruit, any kind.
1st, Mr. G. Grover, Hammersmith, 1*l.*
2d, Mr. W. Salmon, West Ham Abbey, 15*s.*
3d, Mr. J. Barnett, Gr. to R. Botfield, Esq., M.P., Shiffnal, 10*s.*
Extra, Mr. J. Ford, Gr. to W. E. Hubbard, Esq., Horsham, 7*s.* 6*d.*

Class U.—APPLES, Kitchen, 12 dishes, distinct kinds.
1st, Mr. J. Butterfield, Basingbourne, 4*l.*
2d, Mr. J. Cox, Gr. to W. Wells, Esq., F.R.H.S., Redleaf, 3*l.*
3d, Mr. A. Moffat, Gr. to Viscount Maynard, Dunmow, 2*l.*
Extra, Mr. A. Bousie, Gr. to Lord Taunton, Stoke Park, Slough, 1*l.*

Class V.—APPLES, Kitchen, 6 dishes, distinct kinds.
1st, Mr. S. Snow, Gr. to Countess Cowper, Wrest Park, Beds., 3*l.*
2d, Mr. A. Moffatt, Gr. to Viscount Maynard, Dunmow, 2*l.*
3d, Mr. D. Ayres, Ranelagh House, Fulham, 1*l.*
Extra, Mr. F. Rutland, Gr. to Capt. Peploe, Hereford, 10*s.*

Class W.—APPLES, Kitchen, 3 dishes, distinct kinds.
1st, Mr. S. Snow, Gr. to Countess Cowper, Wrest Park, Beds., 1*l.* 10*s.*
2d, Mr. G. Scrymger, Gr. to R. Palmer, Esq., Holme Park, Reading, 1*l.*
3d, Mr. D. Ayres, Ranelagh House, Fulham, 10*s.*
Extra, Mr. J. Pring, Gr. to Hon. Mrs. Vernon Harcourt, Royston, 7*s.* 6*d.*

Class X.—APPLES, Kitchen, single dish.
1st, Mr. S. Snow, Gr. to Countess Cowper, Wrest Park, Beds, 1*l.*
2d, Mr. W. Culverwell, Bedale, Yorkshire, 15*s.*
3d, Mr. W. Lee, Gr. to Viscount Combermere, F.R.H.S., Combermere Abbey, Salop, 10*s.*
Extra, Mr. W. Hall, Gr. to Capt. Tyrrell, R.N., Ealing Common, 7*s.* 6*d.*

Class Y.—APPLES, Kitchen, heaviest 5.
1st, Mr. S. Snow, gr. to Countess Cowper, Wrest Park, Beds, 1*l.*
2d, Mr. W. Green, gr. to Mrs. Honeywood, Kelvedon, 15*s.*
3d, Mr. J. Willimot, gr. to Mrs. Crompton, Roehampton, 10*s.*
Extra, Mr. A. Parsons, Danesbury, Welwyn, 7*s.* 6*d.*

Class Z.—ORANGES, LEMONS, &c., collection of 1 dish of each.
1st, Mr. H. Baker, gr. to J. Harrison, Esq., Leicester, 3*l.*

Class AA.—4 ORANGE TREES, bearing fruit, in pots or boxes.
Prizes withheld.

Class BB.—MELONS. Single fruit, any kind.
1st, Mr. J. Alliston, gr. to M. Portal, Esq., Overstone, 1*l.* 10.
2d, Mr. John Johnson, gr. to the Duke of Wellington, Strathfieldsaye, 1*l.*
Extra, Mr. H. Muggleton, gr. to W. Cubitt, Esq., Andover, 10*s.*

Class CC.—PLUMS. Single dish, any kind.
1st, Mr. G. Tillyard, gr. to J. Kelk, Esq., F.R.H.S. Stanmore, 1*l.*
2d, Mr. A. Bousie, gr. to Lord Taunton, Stoke Park, Slough, 15*s.*
3d, Mr. S. Snow, gr. to Countess Cowper, Wrest Park, Beds., 10*s.*

Class DD.—STRAWBERRIES. Single dish.
1st, Mr. G. Masters, gr. to the Earl of Macclesfield, Tetworth, 2*l.*
2d, Mr. S. Snow, gr. to the Countess Cowper, Wrest Park, Beds., 1*l.*
3d, Mr. D. Cunningham, gr. to the Bishop of London, Fulham, 1*l.*

Class EE.—CURRANTS. Single dish.
1st, Mr. G. Terry, gr. to L. Ames, Esq., St. Albans, 10*s.*
Extra, Mr. E. Bennett, gr. to G. S. Foljambe, Esq., Worksop, 7*s.* 6*d*
Extra, Mr. S. Ford, gr. to W. E. Hubbard, Esq, Horsham, 7*s.* 6*d.*
Extra, Mr. W. Earley, gr. to F. Pryor, Esq., Welwyn, 7*s.* 6*d.*

Class FF.—RASPBERRIES. Single dish.
1st, Mr. A. Parsons, Danesbury, Welwyn, 15*s.*
2d, Mr. G. Tranter, Gr. to the Hon. G. D. Ryder, Hemel Hempstead, 10*s.*

Class FF.—Extra Prize.
Mr. F. W. Park, Gr. to G. H. Vernon, Esq., Retford, 7*s.* 6*d.*
Mr. W. Kaile, Gr. to the Earl of Lovelace, Ripley, 7*s.* 6*d.*

Class GG.—MISCELLANEOUS.
1st, Mr. J. Meredith, Garston, Liverpool, Grapes, 2*l.*
1st, Mr. G. Young, Gr. to W. H. Stone, Esq., Havant, Pine Apples, 2*l.*
1st, M. Chantrier, Paris, Pears and Melon, 2*l.*
2d, Messrs. Lane & Son, Great Berkhampstead, Grapes, &c., in Pots, 1*l.* 10*s.*
2d, Messrs. Lane & Son, Great Berkhampstead, Cut Grapes, 1*l.* 10*s.*
2d, Mr. W. Tillery, Welbeck, Notts, Grapes, 1*l.* 10*s.*
2d, Mr. H. Bwye, Merthyr Tydvil, Grapes, 1*l.* 10*s.*
3d, Mr. R. Webb, Culham House, Reading, Nuts, 1*l.*
Extra, Mr. G. Tillyard, Gr. to J. Kelk, Esq., Stanmore, Cherries, 10*s.*
3d, Mr. G. Moore, Redland Lodge, Bristol, 6 Pine Apples, 1*l.*
Extra, M. Kramer, Hamburg, Vanilla Fruit, 10*s.*

GOURDS.

Class I.—The FINEST COLLECTION, Eatable Ripe. (Foreign Growth.)
1st, Mr. E. Stuart, Villa Stuart, Nice, 3*l.*
2d, a Collection of Gourds from Namur, 2*l.*
Extra, a Collection of Gourds from Hamburgh and Altona, 1*l.*

Class II.—The FINEST COLLECTION, Eatable Ripe. (Home Growth.)
1st, Mr. J. Cattell, Westerham, 3*l.*
2d, Mr. J. August, Beddington, 2*l.*

Class III.—The HEAVIEST SINGLE SPECIMEN, ditto. (Home Growth.)
1st, Mr. A. Fryer, Chatteris, Cambridgeshire, 3*l.*

Prizes offered by Dr. Lindley.

Class IV.—The HEAVIEST SINGLE SPECIMEN, ditto, (Foreign Growth.)
1st, Messrs. Veitch & Son, Exeter and Chelsea, 3*l.*
2d, Mr. E. Stuart, Villa Stuart, Nice, 2*l.*

Class V.—The MOST EXTENSIVE COLLECTION of ORNAMENTAL.
1st, Mr. A. Crambe, Gr. to Earl of Ducie, Tortworth Court, 3*l.*
2d, Mr. Theodor Ohlendorff, Hamburgh and Altona, 2*l.*
Equal 2d, Mr. G. Pragnell, Gr. to G. D. W. Digby, Esq., Sherborne Castle, 2*l.*
Equal 2d, Messrs. Veitch & Son, Exeter and Chelsea, 2*l.*

Prizes offered by Mr. Wilson Saunders.

Class VI.—6 ORNAMENTAL, Eatable or not.
1st, Mr. E. Stuart, Villa Stuart, Nice, 3*l.*
2d, Mr. A. Ingram, Gr. to J. J. Blandy, Esq., Reading, 2*l.*

GARDEN ROOTS and VEGETABLES.

Class I.—POTATOES, collection of.
1st, Mr. S. Robinson, Shaw House, 3*l.*
2d, Mr. J. Choyce, Atherstone, 2*l.*
Extra, Rev. T. Stevens, St. Andrew's College, Reading, 1*l.*
Extra, Mr. H. Baker, Gr. to J. Harrison, Esq., Leicester, 10*s.*

Class II.—POTATOES, 6 kinds of Kidneys, 12 tubers of each.
1st, Mr. E. Bennett, Gr. to G. S. Foljambe, Esq., Worksop, 1*l.*
2d, Mr. T. Westbrook, Abingdon, 15*s.*
Extra, Mr. J. Choyce, Atherstone, 7*s.* 6*d.*
Extra, Mr. R. Dye, Store Asylum, Aylesbury, 7*s.* 6*d.*

Class III.—POTATOES, 6 kinds, "Rounds," 12 tubers [illegible]
1st, Mr. E. Bennett, Gr. to G. S. Foljambe, Esq., Wor[illegible]
2d, Mr. R. Dye, Store Asylum, Aylesbury, 10*s.*
Extra, Mr. J. B. Whiting, Gr. to H. T. Hope, Esq., The Deepdene, 7*s.* 6*d.*

Class IV.—POTATOES, Kidneys, 12 tubers.
1st, Mr. J. Choyce, Atherstone, 15*s.*
2d, Mr. W. Green, Gr. to Mrs. Honeywood, Kelvedon, 10*s.*
Extra, Mr. J. B. Whiting, Gr. to H. T. Hope, Esq., The Deepdene, 7*s.* 6*d.*

Class V.—POTATOES, any kind except KIDNEYS, 12 tubers.
1st, Messrs. Hendry & Peters, Eynsford, Kent, 15*s.*
2d, Mr. E. Bennett, Gr. to G. S. Foljambe, Esq., Worksop, 10*s.*
Extra, Mr. R. Dye, Aylesbury, 7*s.* 6*d.*

Class VI.—ONIONS, 12.
1st, Mr. J. B. Whiting, Gr. to H. J. Hope, Esq., The Deepdene, 15*s.*
2d, Mr. S. Snow, Gr. to Countess Cowper, Wrest Park, 10*s.*

Class VII.—CARROTS, 12.
1st, Mrs. Sweetlove, Mote Road, Maidstone, 15*s.*
2d, Mr. T. Westbrook, Abingdon, 10*s.*

Class VIII.—PARSNIPS, 12.
1st, Mr. J. Choyce, Atherstone, 15*s.*
2d, Mrs. Sweetlove, Mote Road, Maidstone, 10*s.*

Class IX.—GLOBE ARTICHOKES, 12.
1st, Mr. A. Sievewright, Gr. to Lady Walsh, Bracknell, 15*s.*
2d, Mr. J. Stroud, Gr. to the Hon. Mrs. Finch, Great Berkhampstead, 10*s.*

Class X.—PARSNIP CHERVIL, 12.
No Entry.

Class XI.—BEET, 6 roots.
1st, Mr. A. Henderson, Edgware Road, 15*s.*
2d, Mr. J. Cattell, Westerham, 10*s.*

Class XII.—TURNIPS, 3 kinds, 6 of each.
1st, Mr. J. Choyce, Atherstone, 1*l.*
2d, Messrs. J. Ivery & Son, Dorking and Reigate, 10*s.*

Class XIII.—TURNIPS, 6 of one kind.
1st, Mr. J. Choyce, Atherstone, 15*s.*
2d, Mr. S. Ford, Gr. to W. E. Hubbard, Esq., Horsham, 10*s.*

Class XIV.—SALSAFY, 12 roots.
1st, Mr. W. Kaile, Gr. to the Earl of Lovelace, Ripley, 15*s.*
2d, Mr. W. Earley, Gr. to F. Pryor, Esq., Welwyn, 10*s.*

Class XV.—SCORZONERA, 12 roots.
Prizes withheld.

Class XVI.—PEAS, 1 dish.
1st, Mr. H. Bwye, Gr. to R. T. Crawshay, Esq., Merthyr Tydvil, 15*s.*
2d, Mr. J. Williams, Alton, 10*s.*

Class XVII.—BRUSSELS SPROUTS, 3 plants.
1st, Mr. G. Scrymger, Gr. to R. Palmer, Esq., Reading, 15*s.*
2d, Mr. J. B. Whiting, Gr. to H. T. Hope, Esq., Dorking, 10*s.*

Class XVIII.—BORECOLES, 6 kinds, 2 of each.
1st, Mr. J. Cattell, Westerham, 15*s.*
2d, Messrs. J. Ivery & Sons, Dorking and Reigate, 10*s.*

Class XIX.—BROCCOLI, 6 heads.
1st, Mr. C. Frisby, Gr. to H. Chaplin, Esq., Blankney Hall, 15*s.*
2d, Mr. W. Horley, Toddington, Beds, 10*s.*

Class XX.—CABBAGE, SAVOYS, 6 heads.
1st, Mr. J. B. Whiting, gr. to H. T. Hope, Esq., The Deepdene, 15*s.*
2d, Mr. J. Cattell, Westerham, 10*s.*

Class XXI.—CABBAGE, any kind except SAVOYS, 6 heads.
1st, Mr. J. Choyce, Atherstone, 15*s.*

Class XXII.—YAMS, Chinese, 6.
1st, Messrs. J. Ivery & Son, Dorking and Reigate, 15*s.*
2d, Mr. G. Tillyard, gr. to J. Kelk, Esq., Stanmore, 10*s.*

Class XXIII.—CELERY, Red, 6 heads.
1st, Mrs. Sweetlove, Mote Road, Maidstone, 15*s.*
2d, Mr. C. Lidyard, Hammersmith, 10*s.*

Class XXIV.—CELERY, White, 6 heads.
1st, Mr. C. Lidyard, Hammersmith, 15*s.*
2d, Mr. C. Howse, Chalvey, Slough, 10*s.*
Extra, Mr. W. G. Pragnell, gr. to G. D. W. Digby, Esq., Sherborne Castle, 7*s.* 6*d.*

Class XXV.—ENDIVE, 6 heads.
1st, Mr. W. Earley, Gr. to F. Pryor, Esq., Hammersmith, 15*s.*
2d, Mr. W. Sawkins, Gr. to G. Brassy, Esq., Bromfield, 10*s.*

Class XXVI.—CARDOONS, 4 heads.
1st, Mr. J. Pottle, Gr. to B. D. Colern, Esq., Woodbridge, 15*s.*
2d, Mr. J. Field, Dorking, 10*s.*

Class XXVII.—MUSHROOMS, dish.
1st, Mr. W. Young, Gr. to R. Barclay, Esq., Highgate, 15*s.*
2d, Mr. R. Dye, Store Asylum, Aylesbury, 10*s.*

Class XXVIII.—MISCELLANEOUS.
1st, Mr. J. Wainwright, Gr. to W. C. C. Thornhill, Esq., Kettering, for dish of Truffles, 1*l.*
2d, Mr. R. Halls, Colchester, for Cucumbers, 15*s.*

AGRICULTURAL ROOTS & VEGETABLES.

Class 1.—MANGEL WURZEL, Long Red, 3 roots.
Mr. J. Heath, Winchester, Bronze Medal
Mr. J. Perkins, Northampton, Commended

Class 2.—MANGEL WURZEL, Long Yellow, 3 roots
Messrs. Sutton & Sons, Reading, Bronze Medal

Class 3.—MANGEL WURZEL, Yellow Globe, 3 roots
Messrs. Sutton & Sons, Reading, Bronze Medal

Class 4.—MANGEL WURZEL, Red Globe, 3 roots.
Mr. J. Perkins, Northampton, Bronze Medal
Messrs. Sutton & Sons, Reading, Commended

Class 5.—BEET, White Sugar, 3 roots.
The Rev. Thos. Stevens, St. Andrew's College, Reading, Bronze Medal

Class 6.—CARROTS, White Belgian, 6 roots.
His Grace the Duke of Portland, Clipstone Park, Bronze Medal
Mr. J. Pottle, Gr. to B. D. Colern, Esq., Woodbridge, Commended

Class 7.—CARROTS, Altringham, 6 roots.
His Grace the Duke of Portland, Clipstone Park, Bronze Medal

Class 8.—CABBAGE, Cattle. The largest head of.
Mr. J. Robinson, Shaw House, Bronze Medal.

Class 9.—TURNIPS, Swedes, 6 roots.
Mr. J. Robinson, Shaw House, Bronze Medal.
The Duke of Norfolk, Arundel, Commended.

ROYAL HORTICULTURAL SOCIETY'S LIST OF AWARDS—(*Continued*).

CLASS 10.—TURNIPS, Yellow, 6 roots.
Messrs. Sutton & Sons, Reading, Bronze Medal.

CLASS 11.—TURNIPS, White, 6 roots.
Messrs. Ivery & Son, Dorking and Reigate, Bronze Medal.

CLASS 12.—KOHL RABI, 6 roots.
Messrs. Sutton & Sons, Reading, Bronze Medal.

CEREALS.

CLASS 1.—GENERAL COLLECTION of WHEATS from all quarters.
Mr. P. L. Simmonds, 8, Winchester Street, S.W., Bronze Medal.

CLASS 2.—COLLECTION of WHEATS from any one quarter.
Messrs. H. Raynbird & Co., Basingstoke, Bronze Medal.

CLASS 3.—COLLECTION of WHEATS from the Baltic. No Entry.

CLASS 4.—COLLECTION of WHEATS from the Black Sea. No Entry.

CLASS 5.—COLLECTION of WHEATS from any part of Russia. No Entry.

CLASS 6.—COLLECTION of WHEATS grown in France. No Entry.

CLASS 7.—COLLECTION of WHEATS grown in Holland. No Entry.

CLASS 8.—COLLECTION of WHEATS grown in Belgium. No Entry.

CLASS 9.—COLLECTION of WHEATS grown in Denmark. No Entry.

CLASS 10.—COLLECTION of WHEATS grown in Sweden or Norway. No Entry.

CLASS 11.—COLLECTION of WHEATS grown in Prussia. No Entry.

CLASS 12.—COLLECTION of WHEATS grown in Austria. No Entry.

CLASS 13.—COLLECTION of WHEATS grown in Bavaria. No Entry.

CLASS 14.—COLLECTION of WHEATS grown in Wurtemberg. No Entry.

CLASS 15.—COLLECTION of WHEATS grown in North Germany. No Entry.

CLASS 16.—COLLECTION of WHEATS grown in Italy. No Entry.

CLASS 17.—COLLECTION of WHEATS grown in Spain. No Entry.

CLASS 18.—COLLECTION of Wheats grown in Portugal. No Entry.

CLASS 19.—COLLECTION of WHEATS grown in Turkey, Egypt, or Tunis. No Entry.

CLASS 20.—COLLECTION of WHEATS grown in Algeria. No Entry.

CLASS 21.—COLLECTION of WHEATS grown in Southern Africa. No Entry.

CLASS 22.—COLLECTION of WHEATS grown in Lower Canada.
Mr. B. Chamberlin, 15, Fulham Place, Maida Hill, Bronze Medal.

CLASS 23.—COLLECTION of WHEATS grown in Upper Canada.
Mr. C. J. Dixon, 15, Fulham Place, Maida Hill, Bronze Medal.

CLASS 24.—COLLECTION of WHEATS grown in Northern States of America. No Entry.

CLASS 25.—COLLECTION of WHEATS grown in Southern States of America. No Entry.

CLASS 26.—COLLECTION of WHEATS grown in California. No Entry.

CLASS 27.—COLLECTION of WHEATS grown in Victoria or Vancouver's Island. No Entry.

CLASS 28.—COLLECTION of WHEAT grown in Australia.
The Commissioners for the Colony of Victoria, Australia, Bronze Medal

CLASS 29.—COLLECTION of WHEATS grown in England.
Messrs. H. Raynbird & Co, Basingstoke, Bronze Medal.

CLASS 30.—COLLECTION of WHEATS grown in Scotland. No Entry.

CLASS 31.—COLLECTION of WHEATS grown in Ireland. No Entry.

CLASS 32.—COLLECTION of WHEATS sold in London Markets.
Messrs. J. Wrench & Sons, London Bridge, Bronze Medal.

CLASS 33.—COLLECTION of WHEATS sold in Liverpool Market. No Entry.

CLASS 34.—Sample of WHITE WHEAT of any kind.
Mr. W. Dixon, Canadian Court, International Exhibition, Bronze Medal.
The Commissioners for the Colony of Victoria, Australia, Commended.

CLASS 35.—Sample of RED WHEAT of any kind.
Messrs. H. Raynbird & Co., Basingstoke, Bronze Medal

CLASS 36.—COLLECTION of BARLEY from any one quarter.
Messrs. J. Wrench & Sons, London Bridge, Bronze Medal

CLASS 37.—GENERAL COLLECTION of BARLEY from all quarters.
Messrs. H. Raynbird & Co., Basingstoke, Bronze Medal

CLASS 38.—MALTING BARLEY.
Messrs. H. Raynbird & Co., Basingstoke, Bronze Medal

CLASS 39.—COLLECTION of OATS from any one quarter.
The Commissioners for the Colony of Victoria, Australia, Bronze Medal
Mr. J. Hurlburt, Canadian Court, International Exhibition, Highly Commended

CLASS 40.—GENERAL COLLECTION of OATS from all quarters.
Mr. D. Honeyman, pro Mr. Gisborne, Commissioner for Newfoundland, Bronze Medal

CLASS 41.—BLACK OATS.
Mr. J. Choyce, Atherstone, Bronze Medal
Mr. D. Honeyman, Commissioner for Prince Edward's Island, Bronze Medal
Mr. T. Daniel, Commissioner for New Brunswick, Bronze Medal

CLASS 42.—WHITE OATS.
The Commissioners for the Colony of Victoria, Australia, Bronze Medal
Messrs. J. Wrench & Sons, London Bridge, Highly Commended
Mr. R. W. A. Dixon, 15, Fulham Place, Maida Hill, Highly Commended.

CLASS 43.—RYE.
Mr. R. W. A. Dixon, 15, Fulham Place, Maida Hill, Bronze Medal

CLASS 44.—RICE grown in North America. No Entry.

CLASS 45.—RICE grown in South America. No Entry.

CLASS 46.—RICE grown in the East Indies. No Entry.

CLASS 47.—COLLECTION of RICE from all Quarters.
Mr. P. L. Simmonds, 8, Winchester Street, S.W., Bronze Medal

CLASS 48.—HEAD of MAIZE, or INDIAN CORN, of any kind.
Mr. W. Dixon, Canadian Court, International Exhibition, Bronze Medal.

CLASS 49.—COLLECTION of different kinds of MAIZE, in Heads, best quality.
Mr. E. Stuart, Villa Stuart, Nice, Bronze Medal.

CLASS 50.—COLLECTION of MAIZE, most numerous in kinds
Mr. P. L. Simmonds, 8, Winchester St., S.W., Bronze Medal.

CLASS 51.—Newly introduced or rare CEREALS.

CLASS 52.—CEREALS of any kind, not included in the above.
Mr. J. B. Lawes, Rothamsted, St. Albans, Silver Medal
Mr. A. Dixon, Port Dalhousie, Canada West, Highly Commended

CLASS 53.—OATS.
Mr. D. Honeyman, Nova Scotia Court, International Exhibition, Bronze Medal
Mr. E. W. Thompson, Toronto, Canada West, Bronze Medal

CLASS 54.—BEANS.
Mr. D. Honeyman, Nova Scotia Court, International Exhibition, Bronze Medal
Mr. L. N. Sicotte, St. Hyacinthe, Canada East, Bronze Medal

CLASS 55.—CLOVER and GRASS SEEDS.
Messrs. Sutton & Sons, Reading, Bronze Medal

MISCELLANEOUS.

CLASS A.—COLLECTION of FRUITS, modelled in Wax.
Signora Guadaloupe Novel (exhibited by Mr. F. H. Hemming, Commissioner for Venezuela), Large Bronze Medal
Mr. G. Sponer, 1, Portsea Place, Edgware Road, Large Bronze Medal

CLASS B.—COLLECTION of ROOTS, modelled in Wax. No Award.

CLASS C.—COLLECTION of VEGETABLES, modelled in Wax. No Entry.

CLASS D.—COLLECTION of VEGETABLES, modelled in any other material.
The Commissioners for the Colony of Victoria, Australia (Models in Plaster), Large Bronze Medal
Sir W. Holmes, British Guiana (Models in Papier Maché), Large Bronze Medal

CLASS E.—GENERAL COLLECTION, embracing the whole or part of the subjects in the above International Show.
Messrs. Sutton & Sons, Reading, Silver Medal
Society for "Norges Vel," Christiana, Norway, Silver Medal
M. E. F. Wœrn, Commissioner of Sweden, Silver Medal
M. Theodor Ohlendorff, Society for Practical Gardening, Hamburg and Altona, Silver Medal
The Colonial Committee, Vancouver's Island, Bronze Medal

FOREIGN COLLECTIONS.

Messrs. Burdin Ainé & Co., Turin, collection of 822 sorts of Grapes. Silver Medal.
Messrs. Burdin Ainé & Co., Turin, Collection of 170 sorts of Pears. Large Bronze Medal.
Messrs. Burdin Ainé & Co., Turin, Collection of 91 sorts of Apples. Large Bronze Medal.
M. Muller, Strasburg, Collection of 128 sorts of Apples. Large Bronze Medal.
M. Jahn, Meiningen, Collection of 86 sorts of Apples. Bronze Medal.
M. Konzelman, Hohenheim, Collection of 109 sorts of Apples. Large Bronze Medal.
M. Borcher, gr. to the King of Hanover, Collection of 173 sorts of Apples, and a Collection of 78 sorts of Pears. Silver Medal.
M. Monchœur, Nameche, Collection of Apples and Pears. Silver Medal.
Societé Agricole et Forestière, Namur, Collection of 72 sorts of Potatoes. Large Bronze Medal.
M. Van de Putte, Middleburgh, Collection of 75 sorts of Pears. Large Bronze Medal.
M. Van de Putte, Middleburgh, Collection of 81 sorts of Apples. Large Bronze Medal.

DENMARK.—M. F. Wendt, Roeskilde, Zealand, 60 kinds of Potatoes. Large Bronze Medal.
Mr. Friesenette, Copenhagen, Fruits and Vegetables. Large Bronze Medal.
Mr. G. V. Knifschildt, Preserved Asparagus. Bronze Medal.
M. Beauvais, Preserved Asparagus. Bronze Medal.
Baron Zutphen Alder, Apples, Pears, Roots, and Cereals. Large Bronze Medal.
The Horticultural Society of Copenhagen, Grapes, Apples, Pears, and Vegetables. Bronze Medal.
M. Westergaard, Petersdal-Amak, Vegetable Roots. Bronze Medal.
Royal Agricultural College, Copenhagen, Roots and Vegetables. Bronze Medal.
M. Westenholz, Grass Seeds, Grains of Cereals, and Pulse. Large Bronze Medal.
M. E. Tesdorff, Ourupgaard, Falster, 7 Bags of Cereals. Bronze Medal.

NORWAY.—C. Gulbransen, Holmestrand, Apples, Pears, and Plums. Bronze Medal.
H. H. Formann, Stedje in Son, Apples, Pears, and Plums. Large Bronze Medal.
Mrs. Strom, Christiana, Apples. Bronze Medal.
O. Pihl, Christiana, 13 Apples. Bronze Medal.
The Bishop of Christiana, Apples, Pears, and Apricots. Bronze Medal.
J. L. Aga, Hardanger, Apples Bronze Medal.
C. A. Dybwad, Christiana, Apples and Pears. Large Bronze Medal.
A. Hansen, Christiana, Apples, Pears, and Plums. Bronze Medal.
N, Young, Christiana, Apples. Bronze Medal.

SWEDEN: No. 1.—11 kinds of Apples. Bronze Medal.
No. 2.—18 kinds of Apples. Bronze Medal.
No. 4.—10 kinds of Apples. Bronze Medal.
No. 8.—24 kinds of Pears. Bronze Medal.
Royal Agricultural Academy of Stockholm, 66 kinds of Potatoes. Large Bronze Medal.
Agricultural College of Alnarp, 25 kinds of Potatoes. Large Bronze Medal.

HAMBURGH and ALTONA.—Theodor Ohlendorff, 28 dishes of Apples. Large Bronze Medal.
Theodor Ohlendorff, 23 dishes of Pears. Large Bronze Medal
Theodor Ohlendorff, 1 Melon. Bronze Medal.
Theodor Ohlendorff, 82 kinds of Potatoes. Large Bronze Medal.
Theodor Ohlendorff, Collection of Vegetables. Large Bronze Medal.

NAMUR, HORTICULTURAL SOCIETY.—M. Monchœur, Nameche, Fruit. Bronze Medal
M. Muller, Strasburg, Fruit. Bronze Medal
M. Gregoire, Fruit. Bronze Medal
M. Jahn, Meiningen, Fruit. Bronze Medal
M. Borchers, Gr. to the King of Hanover, Fruit. Bronze Medal

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.
LIST OF AWARDS, October 8, 1862.

FIRST-CLASS CERTIFICATE.
Phalænopsis Lowii, from Messrs. Low and Co., Clapton
Araucaria Cunninghamii glauca, from Mr. W. Bull, Chelsea
Gleichenia "glauca"? from Messrs. Veitch & Son, Exeter and Chelsea.
Drynaria diversifolia (Hillii), from Messrs. Veitch & Son
Pentstemon Mrs. Steans, from Messrs. Downie, Laird, & Laing

SECOND-CLASS CERTIFICATE.
Dahlia Lord Russell, from Mr. T. Leslie, Broadstairs
Anæctochilus Schalleri, from Mr. Bull
Pentstemon compactum, from Mr. Wemyss, Kelso
"Selaginella"? sp. India, from Messrs. Veitch & Son
Eugenia "hybrida," from Messrs. Veitch & Son

COMMENDATIONS.
Saccharum violaceum, from Mr. W. Bull
Astrocaryum mexicanum, from Mr. W. Bull
Pentstemon Blue Beauty, from Messrs. Downie, Laird & Laing.
Pentstemon Princeps, from Messrs. Downie, Laird & Laing

SPECIAL CERTIFICATES.
To Messrs. Veitch & Son, for Collection of New and Rare Plants
To Messrs. E. G. Henderson & Son, for Collection of Pompon Dahlias; and also for Collection of Tree Carnations
To Messrs. Paul & Son, for Collection of Cut Roses

The Gardeners' Chronicle.

SATURDAY, OCTOBER 11, 1862.

MEETING FOR THE ENSUING WEEK.

SATURDAY, Oct. 11 to SATURDAY, Oct. 18	Royal Horticultural (Great Exhibition of Fruit, Vegetables, Gourds, Roots, &c., at South Kensington).

ABOUT thirteen hundred entries were made last Wednesday for the Great Autumn FRUIT, ROOT, and CEREAL EXHIBITION at South Kensington open to all comers and all nations. When we say that in addition to Great Britain and our own North American and Australian Colonies, great collections of produce came from France, Italy, Spain and Portugal; Denmark, Sweden, Norway and even Lapland; Belgium, Hanover, Holland, Hamburgh, Wurtemberg and Russia; Greece, Syria, Turkey and Tunis; and even from Mexico, British Guiana and Venezuela, we shall have indicated in even this dry enumeration of countries how varied and interesting a gathering was thus brought together. As a first attempt at collecting the vegetable riches of such different countries, each having its own peculiarities of climate, the Royal Horticultural Society was eminently successful; conferring a real benefit upon the intelligent portion of the visitors, who resorted to the garden, not for the sake of a great spectacle, but in search of practical knowledge. Intending emigrants here saw in one picture the agricultural capabilities of our various colonies, thus learning what productions could be obtained in each by settlers. They saw the quality of the corn of Canada, Nova Scotia, and New Brunswick, and could conveniently contrast it with the far famed grain of Australia. Vancouver, by the exhibition of excellent Wheat, Barley, and Oats, to say nothing of good Garden produce, gave the lie to the reckless assertions of lazy disappointed libellers. And the Scandinavian countries proved by their orchard fruit and excellent roots that they are as rich as ourselves in such natural resources. As for garden productions, strong as were Belgium, France, and Italy in their display of Apples, Pears, and Grapes, and most interesting as were their great collections, they also taught the English gardener that he at least has nothing to fear from Continental rivalry.

Ample details upon all these subjects will be found in other columns of this and next week's impressions—Gardening in the *Gardeners' Chronicle*—Farming in the *Agricultural Gazette*. We can only select in this place a few points for special comment.

Few plants were shown, but among them was an exquisite new Phalænopsis from Messrs. Low of Clapton, with flowers richly tinted with violet. It occurs in a collection of dried specimens and drawings sent to Sir WM. HOOKER from Moulmein from the Rev. Mr. PARISH, who calls it Ph. proboscidioides, a barbarous name that cannot be allowed. The plant exhibited was labelled Ph. Lowei, but we do not find that name in any printed work or manuscript communication. It is a great acquisition.

Fruits and roots were the main subjects of the show. With the former the Great Conservatory was filled, and a more admirable exhibition of English horticultural skill was never witnessed. The great man of the day was DRUMMOND, gardener to Mr. SMITH of Tunbridge, whose Muscat and Hamburgh Grapes were unsurpassable. The former were yellower than we ever saw them. He was however closely run by Mr. KELK'S

gardener, TILLYARD, whose Muscats were to our mind finer, but they were inferior in colour, always a great point with Fruit Judges. Next in interest was a large and good display of orchard house fruit trees bearing in pots, from Mr. LANE, of Berkhampstead. They consisted of Pears and Vines chiefly, and we trust were appreciated by the Know-nothings who can't manage orchard houses. Among foreign contributions of fruit the most striking was a collection of Italian Grapes, Apples and Pears from BURDIN & Co., of Turin—322 sorts of the first, 95 of the second, and 200 of the third. They formed a capital illustration of Vineyard and Orchard produce in the North of Italy. Although many of the Grapes were too small for the admirers of big things, yet we think it would be desirable to test their qualities in English hands in an English Vinery, especially for pot culture, for which several of the smaller sorts appeared well adapted. Among other points of interest in this great collection was the colour which Black Grapes acquire in the open air in a fine climate.

Tropical fruits could of course be shown only as models. Of these a collection in *papier maché* from British Guiana was supplied from the International Exhibition Building, in part arranged on silver stands, with great taste, we believe by Lady HOLMES. That, however, which attracted most attention was a display of Venezuelan produce by Mr. Consul HEMMINGS. Of these we must especially commend the Coffee tree and Cotton plant, capitally modelled in wax by Señora GUADALUPE NOVEL. A great number of things in spirits also appeared from Dr. RENÉ DE GROSOURDY, among which must have been much of interest; but they were so unskilfully set up in bottles that nothing could be made of them.

That wax models should be admitted to an exhibition of this kind where distance or climate renders it impossible to produce the originals is desirable. But on no other pretence whatsoever should they be received. And we cannot but express our surprise that the very able managers on this occasion should have permitted the tables to be disfigured by a hideous glass hexagon case filled with wax fruit, executed in the lowest conceivable style of art.

We cannot but believe that the public will so much appreciate the value of this admirable assemblage of horticultural and agricultural produce, as to enable the Council to repeat the exhibition next autumn, aided by the invaluable experience that will have been gained on the present occasion.

IF books were to be valued by their size, a recent production* by a young lady must be placed among the lowest, for it is a tiny pamphlet; if by their utility, it will stand among the best. If high price were the true standard of excellence, then it must be pronounced worthless, for it costs but twopence. There are however better tests of value, and tried by them the tiny twopenny pamphlet rises into considerable importance. It is addressed to the poor and the lowly, to the sick and the suffering, the aged and infirm, whose horticultural wants it seems to us to meet perfectly. It tells them how to manage their window so as to make it ever gay by their own unassisted work, with the smallest possible expenditure of money; and this sort of teaching we venture to think as important in its way as all that the great masters of high cultivation have to say.

The authoress is a young lady enthusiastically attached to flowers, but unfortunately a helpless invalid who has not been able for many a weary year to escape from one sick room. Her windows are therefore her garden, her sole enjoyment the pleasure of filling them, and tending them, and watching the everchanging forms of her plants as their beauties unfold from day to day. Like the prisoner of Fenestrella the amusement of the sick lady consists in directing her attention to the transformations of her plants, to the way in which they are affected by food or air, to the secrets of their growth, the mysteries of their existence. In this way she has learned to be a skilful gardener, as those who have been admitted into her solitary apartment know full well; and now that she tells in her simple and affecting language the little history of her successes and her failures, she has converted her personal misfortune into a public benefit.

There is a something in window gardening, even where exuberant health abounds, and the most free enjoyment of liberty is possessed, that it is difficult to explain. In decorating a room with living growing plants there is an undefinable charm which is felt by the lowliest occupant. Even mighty dames who possess parterres glowing with colour, and conservatories filled with the most exquisite forms of nature, still require a garden in their window. As for the dwellers in cities you may always know where gentle natures reside in it is to be hoped happy homes by the well kept flowers next the street.

"Few things are pleasanter in passing along a street than to see a window all filled with blooming flowers. The appearance of such a window strikes one as so bright, that the whole place gathers from it a more cheerful aspect. It is rather interesting for those who are fond of flowers, to watch the way in which they spread through a set of windows. Often there is a flower brought up perhaps from the country, or a little Musk-plant bought in the street in spring,—it stands in the window, and perhaps it wants more light, and then, in the dingiest window, and in the narrowest street, its loving owner brushes up a pane or two, and then the plant grows so pretty that it really deserves being seen; and so all the window-sill begins to be put straight and the plant-row grows, and two or three more plants come to stand on either side, and so by quick degrees the window becomes so pretty that people come home saying what a lovely window they passed in such a place. It is very pleasant to see these pretty windows; when I could go out, I always liked exceedingly to pass through streets noted for them, and now that for a long time my walks have been at an end, I have found out the pleasure that there is in hearing of them even second-hand, and there are many windows that I know quite well by hearsay. My kind maid comes in and tells me of such or such a plant—one day perhaps it is the Marvel of Peru, and another day there are tall white Arum Lilies, and then again she says she has seen a window all veiled with white Convolvuli, or the common annuals such as Candytuft and pink Stocks have been making a brilliant box; or perhaps in the winter there are some cottage windows with their Crocuses, and Snowdrops, and Hyacinths, and red Tulips, which run mine very hard, and make me quite in a fright lest they should be behindhand."

Our little book tells how window gardens are to be kept in health, and how to be managed when the purse is at the lowest; and this in so plain and simple a way that the most inexperienced may understand how to succeed. Our fair authoress says most truly, "there are very few things indeed *necessary* in plant growing," of which a striking instance is now before us in the case of a clever careful housemaid who has contrived to keep a pretty group, with Roses and Chinese Primroses in beauty, on a kitchen table near the window. It is not every "gardener" that can get the last to form flowers tier above tier during a whole season, even until summer has departed.

Now that we are in the season for Bulbs let us see what our authoress says about them:

"If I were now first beginning gardening, especially in a town and in a window-sill, I should certainly confine myself for the first offset to bulb growing, with perhaps a little fresh green Moss about them, and an evergreen or two and an Arum, to make a pretty centre and corners to my window. The bulbs are in fact a sort of ready-made window garden. The little leaves and flowers are all prepared already in the bulb, and we have only to give them light and water, preserving them from much cold, to have a beautiful show and a delightful scent just at the time of year when we want them most.

"There is only one secret about growing bulbs—and it applies to all that are grown indoors—They must be kept in a perfectly dark cool place till the roots have made a fair start at growing.

"I hardly ever heard of great failure with them but what they had been in either 'a nice warm cupboard,' or 'just where a little chink of light, that could not signify, came.' The horrid hot cupboard set the things growing up as long and weak as could be, and the chink of light, which did signify, drew the plants most frightfully. Out of doors of course the soil that covers the roots keeps them from the light. Indoors also they must begin in the dark."

Can any thing be better put, considering the persons to whom the advice is given? We all know how true is the statement; the maxim has been repeated thousands of times, but by the inexperienced or careless is as often unheeded. The little chink "that could not signify" is found every where; it is just a little bit of neglected advice that brings on half the failures of gardeners, as well as others. A man is told to remove from his ground every morsel of dead wood, whether roots or sticks, or even tough-skinned leaves. He does so, all except "just a few that can't signify," and mildew follows its neglect. He is told to weed out every plant of Groundsel or Sowthistle, and so he does except "just one or two that can't signify," and lo! in a few weeks he has as many weeds as ever.

Let us hope that this young lady's book will do something towards eradicating the notion that small beginnings may be disregarded. The "just a little that don't signify" is quite as dangerous in gardening as in morals.

* *Flowers for Window Gardens in Town or Country. What to grow, and how.* Printed and published by EMILY FAITHFULL, Great Coram Street; and SHAW & SON, Paternoster Row. *Price Twopence.*

A FEW weeks since (p. 716) we took cognizance in our capacity of journalists, and with a view to further their discussion and adjustment, of the flying rumours of smouldering dissatisfaction on the part of the Florists at some fancied ill treatment they were supposed to have received at the hands of the Royal Horticultural Society. The whole matter was so indefinite and mysterious, that we ventured to think the grievance was either very shallow or confined within very narrow limits. Indeed, at that time, the only tangible expression which had been given to the complaint, as far as we know, was that the fraternity had been "snubbed" by the high-handed Society, a general accusation, which the two simple facts, (1) that the Society had established a tribunal for new flowers, in which the florists were themselves invited to take part, and (2), that above half the amount of prizes distributed for plants and flowers were allotted to subjects which the florists claim as their own, were sufficient to refute.

We have since heard it whispered that one definite phase of this "snubbing" has consisted in the Society having offered a higher rate of prizes for Orchids than for Azaleas, and in having offered prizes at all for certain of what are called foliage plants, while sundry familiar flowers—Pansies, Ranunculuses, Pinks, and Carnations to wit, have none specially set apart for them. These are distinct counts, upon which both sides may have something to urge; and they are worth discussing before next year's schedules are prepared.

No doubt the Azaleas make up a strong case for the "other" side, for they are the glory of a May show; and generally form no inconsiderable feature in all shows which take place up to the middle of June. The argument put forward is, we believe, this:—that Azaleas being the prominent and distinctive feature of the shows at the season we have indicated; being even more showy, attractive, effective, than the "aristocratic" Orchids; and being far more costly to bring out on account of their bulk, should therefore net higher rewards. There seems to be some reason in the points thus urged. It certainly appears right at first sight that the one subject which is pre-eminent, and is virtually the crowning feature of the show, should also stand foremost in respect to the amounts offered for prizes. It is also true that specimen Azaleas are expensive things to move about from place to place; and no doubt we should regret the absence of those great "sensation" bushes which light up the whole scene. All this being admitted, we readily agree further that they should have their reward.

But how stands the matter as a question of fact? We turn to the Royal Horticultural Society's schedule of 1862, and we find offered in May for 20 Orchids, 20*l.*; and for 10 Orchids, 10*l.*—exactly 1*l.* apiece; the leading prizes for Azaleas being 9 Azaleas, 12*l.*; 6 Azaleas, 6*l.*—that is, the smaller class has the same proportionate amount as Orchids, viz., 1*l.* apiece, and the larger class one-fourth more. Then for nurserymen, the schedule says:—12 Orchids, 10*l.*—less than 1*l.* apiece; 9 Azaleas, 9*l.*—just 1*l.* apiece. In both cases therefore the Azaleas actually take higher proportionate prizes. But then it is said that notwithstanding this, the Orchid man has the advantage, for he may bring his 12 plants at half the cost, or less than half the cost, attending the transport of the nine Azaleas, and will bag nearly an equal sum, 10*l.* against the other's 12*l.* There is some truth in this, but let us hear the other side; first, however remarking, that excepting here and there a superb exception, Orchids are not exhibited now so finely as they used to be, even though tempting prizes are offered for them. It must be admitted that good Orchids are always among the best of exhibition plants. The Orchid grower may also urge that his plants are often excessively rare, sometimes unique, generally very costly, as witness the 75*l.* paid at an auction the other day for a specimen of Cypripedium villosum; costly, too, as to the means required for their cultivation, and, at least at the season when they come into competition with Azaleas, very liable indeed to suffer serious and sometimes fatal injury from exposure. These are important considerations, which influence the amount of prize money offered for their production. On the whole, the case is not, we think, satisfactorily made out on behalf of Azalea against Orchid. Perhaps if numbers were reduced in the classes of Orchids, we might see a larger proportion of them brought in the form of really fine specimens, such for example as Mr. Leaf's magnificent Lælia, shown during the summer of the present year.

The other question, Foliage plants *versus* Pansies and others, though one of smaller proportions, has a more direct bearing on florists' flowers, but we fail to see how the fact of not offering prizes for the latter can be fairly called "snubbing" those who cultivate them. Obviously, prizes cannot be given for everything, and those who have the management of such matters must be regulated in their selection by their own judgment, which can hardly be expected to please everybody. It is a stupid insinuation to say that such omissions as those in question spring out of hostility to any class of men, more especially when it appears that that class has a fair share in the general competition. These questions should always be looked at in a Catholic spirit; unworthy motives should not be too hastily imputed; and instead of growling and grumbling there should be hearty and disinterested co-operation. Perhaps the exhibition of foliage plants has been overdone; certainly the plants have been grown on till they have become in many cases quite unwieldy, but it has been a popular fancy of late years that has found or is finding its level, which nothing tends more surely to bring about than public competition. So of Begonias and similar subjects, introduced for variety's sake, and to try their effect; they will henceforth be estimated by their merits. And then, as the wheel revolves, Pansies, Ranunculuses, and Pinks may take their turn again. Carnations and Picotees don't fit in as to season with any of the ordinary shows, but as a suggestion that a few prizes should be distributed among Chrysanthemums at one of the ordinary meetings was readily acceded to in order that this flower might not be altogether neglected in its season, it is not an improbable inference that a similar suggestion would do as much by and by for Carnations. Auriculas, Pansies, and Fancy Pansies, come in with the spring shows, and no doubt will be taken into consideration in their turn. But neither at these spring meetings is there room for every object which one's fancy might select; and the real problem is to find out those subjects which most completely convert the flower-show into a cheerful-looking and pleasant gathering, as well as an encouragement to meritorious cultivation.

CULTURE OF GLADIOLI.

The large amount of attraction produced every season by these splendid flowers, at our great metropolitan and provincial shows, fully entitles them to be placed at the head of plants usually grown for autumnal decoration. A few words therefore on the best mode of growing them may not be unacceptable to your readers, and in doing this I will confine my remarks chiefly to the proper management of the different varieties of Gandavensis, these being in my opinion the most showy and best suited for beds or borders.

The first thing is to properly prepare the bed for the reception of the bulbs next year, and in doing this I would proceed as follows:—Furnish to begin with a good layer of well rotted manure, which must be dug in at least 1 foot or 18 inches in depth, turning up the ground as roughly as possible. This operation should always be done in the autumn, in order that the frost of the succeeding winter may act well upon the soil, pulverising it and in some measure freeing it from insects. When the ground is frozen hard it is also an excellent plan with a three pronged fork to remove all large lumps to each side of the bed. In this way the next frost will penetrate still further into the ground, and will thus cause the mould to be well broken up. I now allow my bed to lay untouched until February, when I give it another slight dressing of manure, and well turn it in with a fork (twice at least) mixing the soil and manure well together: the bed is now ready to receive the bulbs, and the season is also at hand in which they should be planted; for this I find the second week in March the best time; but if you wish to have an earlier bloom, plant in February in a sheltered situation, and if you wish for a later display you must of course regulate the time of planting accordingly. If a succession is desired, plant the last week in February, second week in March, and the first week in April. In this way you will have them in bloom for at least a period of three months.

In planting I am very particular—perhaps more so than is necessary, but that is my plan, and I have never experienced failure. I first make the holes for the bulbs about 9 inches apart one way and a foot asunder the other; in each hole I then put a small portion of sand, which enables one at taking up time to get them out clean. I then insert the bulb 3 inches in depth. I now cover with the soil in the bed already well prepared for the purpose, rake neatly, and the operation is done. The ground being properly prepared and the bulbs skilfully planted, they soon begin to show above the surface and to look vigorous; and at this stage of growth a small hoe run between the rows will be found a great acquisition, especially after a shower; do this, and you will find your plants grow inch by inch until the flowering season commences, when the result will doubtless be most satisfactory, provided the season is at all favourable. You must however strictly adhere to the rules just laid down. If all goes on well the colours will be fine, the flowers large, and the spikes splendid.

I do not recommend watering if it can be avoided. If the weather is very dry when in bloom one good watering will do no harm, but not more.

Let us now imagine that we have arrived at the middle or latter end of October, when the bulbs of the earliest kinds should be taken carefully up, and put away in some airy place to get well dried; when you think they are fit for storing, put them in paper bags and hang them up in a dry situation where no frost can reach them. In this way you will find your roots in good order for the following spring when I am sure you will willingly go through the same ordeal again, as you cannot possibly be unsuccessful if you adhere to the advice just given.—*Philo.*

Indoor Gardening.

I am greatly obliged to "A Cockney" for giving me some excuse for my this week's scrap. One well might be ashamed of writing week after week on subjects which after all must be worn pretty thread-bare. Still people are so kind as to keep one somehow in countenance by inquiries, week after week, about things that are not quite new. In the present case, I must say that if some good-natured person will kindly repeat such inquiries every week for a month I shall be intensely grateful (I hope the Editor backs me), for of all months perhaps October is the stupidest to find subjects for. The bulbs are all written up and ought to be in their pots; the cuttings are disposed of, or had better be; and this well-timed query—what to do with our bedding plants—is thus a perfect catch. Of course I seize on it. I do indoor gardens; and plant keeping without glass *must* belong to my province! However, it is really true that I have a few things to repeat here, for I do know many examples of simply storing plants that have both failed and answered.

First as to the plan of storing old Geraniums, hung by the heels in cellars. This certainly does answer sometimes as regards all sorts of Scarlets, and some of the hardiest and woodiest florists' kinds. It never does for the Fancies, and I think not for Golden Chain and its like. We had some years ago an exceedingly dry dark cellar half filled with our garden stock—a quantity hung up, a quantity more in a sand heap, and a few moreover stowed away just as they were, in their flower pots. But then the *darkness was total.* When the spring came round the plants were put in the earth of a cool hotbed, and very quickly indeed they put up abundant shoots. Our chief mistake was that we did not then thin enough or check the growth by potting; the plants planted out in free ground in the borders seemed inclined to run too much to shoots and leaves. They grow however, most of them, treated in all three ways—the pot plan on the whole perhaps seeming safest for all but Scarlets. I do not think however Golden Chain will do without light; the variegated plants generally seem to me to need care on this point.

Then comes the question of a little light. After our first success, we decided of course to do the same thing each year. The clearance of the greenhouse was an immense relief.

But alas, we had been "improving," and had provided a small window, the faintest of glimmerings, but still it was some light. No doubt we all are acquainted with Potatoes kept in a very dim twilight cellar—a few feet of white shoots or so trailing along the floor? There you have 'our poor plants' under that arrangement. In covering up things since, to keep in stables for instance (as a friend of mine did successfully a great many plants in pots), the far greater object has seemed to exclude all light than frost. If damp keeps off they do thus very well, and of course the less closely that they are packed the better.

Any heat beyond keeping frost fairly out is of course a bad thing, as it only could set things growing. But in dry weather with no frost a thorough airing does good. I believe myself these extemporised methods answer better than cold pits and turf pits made on purpose, if the building we use is sufficiently substantial. Of course the plants are not watered standing on a stone floor or ash bed. The whole thing to aim at is *plenty* of light or *none*, the greatest dryness possible without heat, and the largest amount of air-giving possible to be had without admitting either damp or frost.

I believe that this is really safe for all the commoner Fuchsias, scarlet and very hard wooded Geraniums, and for some woody Heliotropes, cut down to the hard wood. For Golden Chain and Flower of the Day I can't speak with certainty, but I know they are more touchy. I have kept them in a spare room without any fire at all to March, but then their tender's absence ended in saturation, dryness, the death of plants, and dismay!

However, sweet-scented Geraniums, Ivy-leaved kinds, and so far those I have named, do thoroughly well kept thus in cold, light, airy rooms, unwatered and unshortened, but with blinds and shutters in cold frosty nights. Many degrees of frost must often have come to mine, but it is wonderful what they will bear when the roots are dry. I suppose too the frost does not quickly penetrate the pots of dry earth they stand in. My pots in such times do best in wooden boxes emptied and well dried, strewed with sand, and then stuffed with fibre. But this has never been a favour granted to all. The pots have then just stood on shelves, or stands, or tables.

A room over a kitchen, or over a sitting room even, is invaluable for Verbenas. The beautiful tables, covered with 4-inch pots, I have seen in such a room! Drawing away from the window during a cold night, and putting close back next morning, was all that they required. It was a north window. I cannot remember now if these especial plants I have just now in my mind were planted alone or in threes. I rather think that there were 3 or 4 in each pot. An old schoolroom table about 4 feet by 3 contained the whole Verbena stock, and the beds that they filled next year really were very creditable to their wintering.

Calceolarias, I have been told, are wintered in first-rate style in pits filled with dry sawdust, which heats very slightly and with as much light and air as possible. This must have succeeded to perfection in some cases, but I have not tried it, as I have no knack for these flowers, and mine always die. *E. A. M.*

Home Correspondence.

Masters' Prolific Cucumber.—Seed of this was purchased by a neighbour of mine in spring from Mr. Veitch's establishment, and the produce well deserved the name "Prolific," which is truly no misnomer. In a low span-roofed pit as late as the third week in September I saw a prodigious crop of fruit hanging, not unfrequently two at a joint. This is not one of your "big un's," its length being from 10 to 14 inches, smooth, and beautifully green. It is short in the neck; in fact it lacks none of those properties which constitute a good table Cucumber, and if equally good for winter work it will be all the more valuable. *John Edlington, Gr. to the Earl of Erne, Crom Castle, Ireland.*

Ferns.—I would recommend your "Subscriber," who wishes to cover the ground under his trees with Ferns, to plant Polystichum angulare, Osmunda regalis, Pteris angularis, Scolopendrium vulgare, and Polypodium vulgare. These all grow luxuriantly on the forest here. *James Crawford, Nurseryman, High Beech.*

Pampas Grass.—There is a plant of this at Vaenor Park, Montgomeryshire, on which there are 84 spikes of flowers, 11 feet high; there is also another near it on which there are 58 spikes, but not so high as those of the former. Both plants are growing on the side of a terrace in rather a dry situation. *Joseph Barnett.*

Sappy Rose Trees.—Your readers may have heard people say that Rose plants died after the severe winter, so long to be remembered, from being sappy. I believe this to be an error, and that sap is a non-conductor both of heat and cold. The former is proven by the use, in smelting countries, of green boughs to stir the liquid ore, in preference to dry sticks. The latter was proven here. The greatest spissitude of sap is about two parts out of three up a Rose twig. There life remained longest, even after the base of the twig showed symptoms of death. The extreme end of twigs died, not from being sappy, but from the skin and texture of the twig being unhardened. The winter jumped upon the back of the summer without an intervening autumn, and of course did mischief, and, I trust, taught us the wisdom of placing autumn between summer and winter, as also that of dividing winter and summer with an intervening spring. Long continued rains did great mischief where drainage was not free, and gave efficacy to the frost. If the texture and skin of a Rose twig is hardened, I believe that the more sappy it is the better will it resist frost. With regard to the two last winters and two last springs I believe the case to stand thus. The winter of 1860, though most severe, was followed by an early and good genial spring and summer, and the winter of 1861, very severe here and unaccompanied by the coverture of snow, was followed by a late, wet, sunless spring and summer. In a word we had a wet March, which is of all things the most destructive, for the soddened earth was never dried at all. An early spring and dry March are the riches of the garden and the farm. Since the 1st of August to the present moment, we have had most glorious weather, and Rose plants fresh foliaged have given me a noble fall bloom. I sent 93 Roses (30 yellows, Solfaterre, Gloire de Dijon, Triomphe de Rennes, and Célestine Forestier, all of them as good as could be grown) to the Dorchester Rifle Bazaar on the 24th of September, to please the lady stall-keepers. At one time I anticipated many deaths, but I shall lose hardly any. I have examined some of my sick plants, and find that they are making abundant roots, which, I hope, will send up plenty of sap, which I say is a non-conductor both of heat and cold. *W. F. Radclyffe, Rushton, Dorset.*

The Cuckoo-Spit.—I cannot find that this frequent intruder into our greenhouses and gardens has attracted any very close observation. Mr. Hardy has lately given some particulars of its economy, and it is to be wished that some of your intelligent correspondents would furnish more. The young cuckoo-spit is first seen in March, and is then about 1-16th of an inch in length; in colour a yellowish green. It has a general resemblance to a minute frog, though at this stage of growth the jumping power is wanting. Eyes two, compound, with many lenses; legs six; feet armed with two claws for climbing (which when not in use retract at the sides), and with bristles pointing forwards to aid in a steep descent; the proboscis, enclosed in ample sheath, is carried

beneath the body, as in the genus Cimex. It is a blower of bubbles, under cover of which it lives. The proboscis with its two saws is thrust into a juicy stem or leaf vein; the sap is drawn into the body by a powerful pump fixed between the eyes; at first the sap is allowed to flow over the body to form a base of attraction for the bubbles; air is supplied through two tubes opening below the eyes. The bubbles are thrown off from a short tube at the tail, and accumulate until the body is covered. The blowing tube occupies the entire length from the head to the tail, where it terminates in a pipe slanting upwards and backwards. The little creature is now at home, and supplies at leisure a bubble now and then to make up for losses. It seems to find nourishment too in the sap, part of it, perhaps, being diverted into the intestines; and it is remarkable upon how great a variety of plants it subsists; none seem to come amiss which are sappy enough; even the Peach tree and the Poppy do not escape. It seems instinctively to avoid the secreting glands of such plants, and to draw only the true sap; for the froth has but little, if any, of their peculiar scent or flavour. And here let me say in its apology that it instils no poison, and no swelling follows its puncture. Its attacks, if not always harmless, are in most cases very nearly so. It continues in its larva state about three months, growing to one-fourth of an inch in length; its body becomes gradually more opaque; short hairs appear on the head and thorax, and thicken into a dense pile; the wing covers and a pair of gauzy wings which have been forming beneath the tender skin are at last freed, and the perfect insect, looking like a little brown mottled moth, finally quits its froth to sun itself on the leaves. In this state it sometimes throws a bubble into the air as if in sport. When alarmed it escapes by a short flight, springing into the air with a jerk of the hind legs. The male is smaller than the female, and differs besides in having the wing cases shorter than the abdomen. They associate in October. I have no further traces. When and where are the eggs laid? Is the insect at any period of its generations viviparous? Do any individuals survive till the following spring? It may be so surmised, as some are furnished with a double set of piercing instruments, and so provided for a longer existence than others. The second set in these cases is coiled away immediately behind the first. The young larva is interesting to the microscopist. The circulation of the boat-shaped blood corpuscules, the motion of the intestines, and the constant heaving of the blowing tube, are visible under a strong light. When feeding, the action of the sucking pump may be seen; the springs rising and falling with its contraction and dilation. The pump is a muscular sac placed in a horny case between the eyes; the muscles of the sac are aided by springs embedded in their substance and articulated into a bony ring at their lower extremities; when in action they twist into a spiral form. A small parasite preys on this insect. How unique the provision for this tiny creature, which too often excites disgust, instead of moving, as it may well do, our interest and admiration. *S. S., Brighton.*

Douglas Fir.—I have read with interest the articles upon this Fir which have appeared from time to time in your columns, and after seeing the sections of the noble specimen of it from Vancouver's Island in the International Exhibition, together with the flagstaff at Kew, I have been induced to send you a few particulars regarding some trees of it which we have at Corehouse. I may, however, remark at once that all the trees we have here have been raised from one parent plant by means of cuttings, as up to this time I have been unable to find any perfect seeds upon them. The original plant was sent us by the Royal Horticultural Society about 30 years ago, and was planted out about two years after, making it about 28 years since it was exposed to the vicissitudes of our northern climate. I took more than a common interest in it from the first, as poor Douglas was personally known to me. The circumference of the parent tree I give at 3 feet from the ground, the others at 6 inches; this may seem to some rather odd, but when I commenced taking measurement of them they were so very small I was induced to take the largest girth, and I have since continued at the same height as they have been measured from time to time. I commenced propagating these trees from cuttings 23 years ago, and planted them out as they attained sufficient strength to be exposed. The following is a statement respecting eight plants removed in December, 1849, at which time their height and girth were taken, and upon comparing them with their present measurements, will show how rapid their progress has been.

	December, 1849.				October, 1862.			
	Height.		Circumference.		Height.		Circumference.	
No.	ft.	in.	ft.	in.	ft.	in.	ft.	in.
1	7	2	0	6	42	0	3	6½
2	5	5	0	4	37	6	3	4
3	7	2	0	5	39	9	3	7
4	7	3	0	5½	41	0	3	10
5	5	6	0	4	38	6	3	6
6	10	6	0	6	44	6	3	8
7	18	0	0	7	47	2	3	2
8	14	5	1	1	45	8	5	5

I may state that their growth has not been so great these two years past, which I attribute partly to the severity of the winter of 1860-61, and partly to the indifferent summers we have had since that winter. In that winter many of them lost their leading shoot or rather bud, as the shoots were not injured in the slightest degree; this caused them to throw up a side shoot to form a leader, but this has occasionally happened all along, though the trees have not been in the least affected in general health by the severity of the weather. The loss of the leading buds I have always thought was caused by the vigorous growth they make preventing this bud from being properly matured before winter. I may also state that our elevation above the level of the sea is 500 feet, yet many of these trees have made a growth of 3 feet, some 3 feet 6 inches, in one year. One tree I had to pass daily during that period of the year when it was making the most exuberant growth, struck me owing to the way in which its top was bent over every other day, now to one side then to another. I had the curiosity to watch its progress daily, and found by actual measurement that in 10 days it made 8 inches of growth. The following is a tabular statement respecting the sizes of others growing here:—

	Height.		Circumference.			Height.		Circumference.	
No.	ft.	in.	ft.	in.	No.	ft.	in.	ft.	in.
9	35	10	2	10	30	39	2	3	2
10	44	3	4	2	31	12	6	1	3
11	40	3	3	7	32	21	9	1	3
12	37	9	4	11	33	30	7	2	1
13	27	2	2	6½	34	38	6	3	2
14	42	0	4	7	35	17	3	1	2
15	39	9	3	2	36	31	0	2	5
16	44	4	4	7	37	31	4	2	1
17	31	3	2	7¼	38	25	3	1	4
18	39	6	3	6¾	39	38	6	3	4
19	43	2	3	6½	40	33	3	2	10
20	38	3	3	6	41	35	6	3	0
21	48	10	3	8	42	42	8	4	1
22	46	6	3	6	43	35	6	3	5
23	42	7	3	7	44	33	10	1	9
24	27	0	2	1	45	33	6	2	7
25	23	0	1	9	46	34	0	2	4
26	36	0	3	0	47	32	10	3	1
27	43	0	2	10	48	31	0	3	1
28	35	0	2	10	49	11	10	0	7
29	39	6	2	9					

The parent plant is 49 feet high and 6 feet 5 inches in girth, the branches extend 40 feet, and those of many of the others from 20 to 30. I ought to have mentioned that the original tree has lost its leader several times, which is the cause of its not having attained that height that it otherwise would have done. *James Napier, Corehouse.*

Bird-nesting.—I cannot find the passage you have quoted in your columns relating to bird-nesting and bird-destroying, in the 2d chapter of Deuteronomy and the 6th verse, as is there stated. Perhaps you will correct that error. *John Carpenter, Homesdale, Lewisham.* [The quotation came from a correspondent.]

Societies.

ROYAL HORTICULTURAL: *Great Exhibition of Fruit, Vegetables, Gourds, Roots, &c.*—This wonderful exhibition was held in the Society's new Conservatory and adjoining Arcades, all of which were crammed full of Horticultural produce, both English and Foreign. Never before have we seen so extensive and interesting a display, and as a considerable portion of the exhibition will remain open until the 18th inst., no one who has an opportunity should miss seeing it.

The Gourds especially are well worth inspection, occupying as they do three stages of a table many yards in length, and the Cereals, Potatoes, and other Vegetables are equally numerous and fine.

As the English grown fruit is that which is to be removed first, we will now devote attention to that.

Among miscellaneous collections of Fruit, the best came from Mr. Tillyard, gr. to J. Kelk, Esq., Stanmore. It contained beautiful bunches of Muscat and Black Hamburgh Grapes, Brown Turkey and White Marseilles Figs, admirable Coe's Golden Drop and Ickworth Imperatrice Plums, Red and White Currants, Raspberries, Morello Cherries, Moorpark Apricots, beautiful Chaumontel and Glou Morceau Pears, Cox's Pomona Apple, Frost's green-fleshed and Scarlet Gem Melons, and Walburton Admirable Peach. An excellent second collection came from Mr. Henderson, gr. to the Duke of Sutherland at Trentham, in which were two good Antigua and Montserrat Pine Apples, Trentham Hybrid Green and White-fleshed Melons, very fine White Tokay, Black Hamburgh and Black Prince Grapes, Walburton Admirable Peaches, Elruge Nectarines, Red and White Currants, fruit of Eugenia Ugni, Coe's Golden Drop and Diamond Plums, White Ischia and Brown Turkey Figs, Lord Suffield and White Calville Apples, and Louise Bonne and Williams's Bon Chrétien Pears. Mr. Kaile, gr. to Lord Lovelace, and Mr. Allen, gr. to J. B. Glegg, Esq., Congleton, Cheshire, also showed in this class. In these collections were good Black Hamburgh and Muscat Grapes, Morello Cherries, Coe's Golden Drop and Imperatrice Plums, Beurré Clairgeau and other Pears, King of the Pippins and Fearn's Pippin Apples, one or two Pine Apples, Red and White Currants, Mulberries, one or two kinds of Peaches, and a dish of Hautbois Strawberries.

In the class set apart for fruiterers Mr. Lewis Solomon of Covent Garden showed a magnificent collection, the distinguishing points of which were the great size and brilliant colours of the Apples and Pears it contained; as well as the size of the Pine Apples, among which were some wonderfully fine Cayennes and Queens, [illegible] unfortunately they were unripe. This group occupied a large portion of a raised central table, and formed one of the most prominent and conspicuous portions of the show. Among Pears it contained charming large examples of Uvedale's St. Germain, Beurré Diel, Crassane, Duchesse d'Angoulême, Easter Beurré, Glou Morceau, Calebasse, Brown Beurré, and Winter Doyenné. Among Apples were the White Calville, the Lady Apple or Pomme d'Api of the French, and Ribston Pippin. It also contained fine bunches of Muscat and Black Hamburgh Grapes, and some remarkably fine specimens of Pomegranate. Another excellent collection was contributed by M. Webber & Co., in which were four Black Jamaica and two Queen Pine Apples; two Orion and one Beechwood Melon, Black Hamburgh and Muscat Grapes, Oranges and Lemons, White Calville and other Apples; Cocoa, Monkey and other nuts, including Brazil nuts in their outer pod or shell; and the following Pears: Doyenné d'Hiver, Crassane, [illegible] Chrétien d'Hiver, Beurré Clairgeau, Beurré Diel, Duchesse d'Angoulême, Monsieur le Curé, Catillac, Gansel's Bergamot, Marie Louise, Glou Morceau, Beurré d'Aremberg, Bon Chrétien d'Espagne, Uvedale's St. Germain, and Poire d'Auch.

Pine Apples were not numerous; but among them were some very fine fruit. The best Queens came from Mr. Green, gr. to Mrs. Honeyman, Kelvedon, and Mr. Kaile, gr. to Lord Lovelace. The first of these weighed 6 lbs. 1 oz. Some good Queens were also exhibited by Mr. Young, gr., Leigh Park; Mr. Moore, Bristol, and Mr. Robinson. Mr. Wright, gr., Ringwood, Hants, showed a handsome fruit not unlike an Enville. An admirable Black Prince, but damaged, and others [illegible] imperfect, came from Mr. Windsor, gr., Norton Priory, Cheshire; and some handsome Smooth-leaved Cayennes were furnished by Mr. Ingram, gr. to her Majesty at Frogmore; one of these weighed 6 lbs. 7 oz. From Mr. Chantrier also came an extremely good Smooth-leaved Cayenne. A Providence or two were shown; but they were not remarkable either for size or weight.

Among Grapes were some magnificent exhibits, especially of Black varieties, which were in general good. The best six bunches of Black Hamburgh came from Mr. Henderson, gr. to the Duke of Sutherland at Trentham, whose fruit was beautifully coloured and in every way excellent. Mr. Hill, gr. to R. Sneyd, Esq., Keele Hall, Staffordshire, also showed well in this class, as did likewise Mr. Drummond, gr. to J. S. Smith, Esq., Tunbridge Wells, a new exhibitor, but one who bids fair to stand in the first rank in the list of Grape growers. The variety shown by Mr. Drummond appeared to be what is called Welmot's Black Hamburgh, a kind with very large hammered-looking berries. From Mr. Hill, gr. to R. Sneyd, Esq., also came beautiful bunches of Black Hamburgh. The last exhibitor likewise furnished admirable examples of Lady Downe's Seedling; Black Prince and Lady Downe came from Mr. Bwye, gr. to J. Crawshay, Esq., Caversham. Mr. Tillyard showed beautiful West's St. Peter. From Mr. Drummond came three bunches of Barbarossa, as compact and beautiful as those of the best cultivated Black Hamburgh, to which indeed they bore considerable resemblance. Mr. Bwye likewise furnished good fruit of this variety of Grape. Than Kempsey's Alicante, shown by Mr. Meredith, nothing in its way could possibly be finer. It was beautifully coloured and covered with a fine bloom. Other specimens of this variety came from Mr. Cox, of Worcester; but they were not so ripe nor nearly so well coloured as Mr. Meredith's specimens. Messrs. Holmes, Ingram, and Turner also showed good Black Grapes.

Foremost among White Grapes were the admirable bunches of Muscat shown by Mr. Drummond and Mr. Tillyard, to which allusion is made in another column. Mr. Frost, gr. to E. L. Betts, Esq., also showed some very good Muscats; as did also Mr. Ingram, gr. to J. J. Blandy, Esq., of Reading. From Mr. Meredith and Mr. Hill came, moreover, some admirable Muscats; three bunches from the latter weighed 10¼ lbs.; they were, however, hardly ripe. Very perfect examples of The Muscat also came from Mr. Drewett, gr. at The Denbies, near Dorking. Mr. Tillery and others also showed in this class, which was on this occasion extremely well supported. From Mr. Hill came Marchioness of Hastings, three bunches of which weighed 13½ lbs. Of Trebbiana, various bunches were exhibited, and good specimens of White Tokay.

From the garden of the Society came an interesting collection of Grapes, among which were bunches of Frankenthal weighing 4 lbs. each; Barbarossa, 4 lbs.; Dutch Hamburgh, 3 lbs. 2 oz.; Black Manukka, 3¼ lbs.; Raisin de Calabre, 2¾ lbs.; Black Prince, 1 lb. 12 oz.; Trebbiana, 1 lb. 10 oz; Burchardt's Prince, of similar weight; Golden Hamburgh, 1 lb. 6 oz.; Royal Muscadine, a variety with long finger-like berries, similar to those of Black Manukka but white, Reeve's Muscadine, the little Currant Grape of the shops, and others.

From Mr. Meredith also came a collection of Grapes, among which were some good bunches, especially of Kempsey's Alicante, an oblong-berried variety, of which Mr. M. speaks in highly favourable terms, and of Snow's Muscat Hamburgh.

Messrs. Lane showed Vines in pots, well furnished with fruit, as well as good examples of other orchard produce.

In the class of 12 Dessert Pears there was keen competition; the best came from Mr. Dwerrihouse, gr. to ... Eversley, at Heckfield. His varieties were ... Beurré, Beurré Diel, remarkably fine examples ... Beauty, Louis d'Orleans, Beurré Rance, ... Winkfield, Easter Beurré, Gansel's Bergamot, ... Nelis, Ne Plus Meuris, Beurré de Capiaumont, ... Marie Louise. A collection scarcely inferior was exhibited by Mr. Ingram from the Royal Gardens at Frogmore. It contained Knight's Monarch, King... Duchesse d'Angoulême, Chancellor, Beurré ... Prince Albert, Beurré Rance, a Californian Pear of medium size and inviting appearnce; Van Mons Leon le Clerc, Chaumontel, Conseiller de la Cour, and Beurré de Capiaumont. These were in every way worthy of the fine garden from which they came. From Mr. Morris, gr. to T. White, Esq., Wethersfield, came fine fruit of Esperione, Leon le Clerc de Laval, Knight's Monarch, Beurré Bachelier, Urbaniste, Duchesse d'Angoulême, Bonne d'Ezée, Beurré Bosc, Suffolk Thorn, Josephine d'Enghien, Louise Bonne of Jersey, and Beurré Diel. An equally good collection came from Mr. Frost, gr. to E. L. Betts, Esq., Preston Hall, Maidstone, in which were well coloured and finely grown fruit of Soldat d'Esperen, Beurré Clairgeau, Beurré Rance, Glou Morceau, Beurré Superfin, Marie Louise, Comte de Flandres, Grosse Calebasse, Duchesse d'Angoulême, Van Mons Leon le Clerc, and Beurré Diel. In a collection from Mr. Lovesay, gr. to J. T. Fry, Esq., were very fine specimens of Gansel's Bergamot. Mr. ...ders, gr. to Sir Henry Meux, Bart., had good fruit, especially of Van Mons Leon le Clerc. From Mr. Harrison, Oatlands, were fine examples of Chaumontel and White Doyenné; Mr. Lumsden, gr. to Lady Hamilton, of Sleaford, sent very high coloured fruit of Flemish Beauty, from a wall with an east aspect in that part of Lincolnshire, and of Welbeck Bergamot, from an espalier. From Stoke Park near Slough, Mr. Bousie sent extremely large and fine specimens of Gansel's Bergamot; Mr. Gale furnished from the neighbourhood of Hammersmith, clean looking beautiful fruit of Marie Louise, Louise Bonne, and Beurré de Capiaumont, together with other well grown Pears, all from standards; Mr. Muggelton, gr. to W. Cubitt, Esq., Andover, exhibited large examples of Van Mons Leon le Clerc, smooth and beautifully grown Brown Beurré, and Hacon's Incomparable; Mr. Gilbert sent from Ipswich a collection possessing fine colour, in which were well-grown fruit of Colmar d'Aremberg, and of Triomphe de Jodoigne; and finally Mr. Ingram, gr. to J. J. Blandy, Esq., Reading, sent high coloured and beautiful specimens of Louise Bonne of Jersey.

In the class of six Dessert Pears, Mr. Snow, gr. Wrest Park, Beds., exhibited fine fruit of Marie Louise, Beurré d'Anjou, Maréchal de la Cour, Van Mons Leon le Clerc, Glou Morceau, and Beurré Diel. From Mr. Ford, gr., Walton, Herts., came Marie Louise, Glou Morceau, Beurré Diel, B. Rance, Easter Beurré, and Duchesse d'Angoulême. Mr. Tranter, gr. to the Hon. G. D. Ryder, sent Marie Louise, Brown Beurré, Bergamot d'Esperen, Beurré Bretonneau, Beurré d'Aremberg, and B. Diel. Mr. Stroud, Berkhampstead, furnished Easter Beurré, Marie Louise, Duc d'Orleans, Beurré Rance, Hacon's Incomparable, and Louise Bonne of Jersey. From Mr. Bousie came Hacon's Incomparable, Van Mons Leon le Clerc, Beurré Clairgeau, B. Diel, Duchesse d'Angoulême, and B. Rance. From Mr. Frost came very fine specimens of Louise Bonne and Grosse Calebasse. Large fruit of Duchesse d'Angoulême came from Mr. Pomfret, of Windsor. Mr. Webb, of Reading, had Buchanan's Spring Beurré and Gansel's Bergamot, in good condition, and Mr. Nichols sent highly coloured specimens of Beurré Bosc.

In the class of three dishes of Dessert Pears the best came from Mr. Ingram, gr. to her Majesty at Frogmore. The sorts consisted of Golden Russet and British Queen, two highly coloured Seedling Pears raised by Mr. Ingram; both have a smooth golden yellow skin, and in that respect somewhat resemble each other, but the latter is considerably the larger of the two, and is stated to possess excellent flavour; the third dish in this collection was Gansel's Bergamot. From Mr. Lumsden, gr. to Lady Hamilton, Sleaford, came Marie Louise, from a south wall; and Beurré Bosc and Gansel's Bergamot, both from an east aspect. Mr. Frost, gr. to E. L. Betts, Esq., contributed excellent dishes of Seckel, Gansel's Bergamot, and large and highly coloured specimens of Beurré Clairgeau. Mr. Newton, gr., Enfield Chase, sent handsome fruit of Gansel's Bergamot; Mr. Harrison of Oatlands, highly coloured specimens of Seckel; and Mr. Bousie fine fruit of Marie Louise, Beurré Bosc, and Urbaniste, misnamed Triomphe de Jodoigne. Had it not been for this mistake, these would doubtless have obtained the second prize, to which they were well entitled. From Mr. Baldwin, Turnham Green, came large well coloured specimens of Beurré de Capiaumont, and a similar remark is also applicable to a dish of Louise Bonne from Mr. Ingram, gr. to J. J. Blandy, Esq., of Reading. From Weybridge, Mr. Wilson sent large green fruit of Beurré de Jodoigne, B. d'Anjou and B. de Fais; and from Mr. Tillery, gr. to the Duke of Portland, at Welbeck, came good Beurré d'Amanlis, and Beurré Panaché.

Of Pears shown in a ripe state, the best came from Mr. Ingram, Frogmore, who showed a beautiful dish of British Queen, a variety of which we have already spoken in favourable terms. The next in point of merit was Seckel, fine fruit of which came from Mr. Bain, gr. to A. Perkins, Esq., Hanworth Park; and Hacon's Incomparable, from Mr. Culverwell, gr., Thorp Perrow, Bedale, stood third.

In the class of Kitchen Pears, shown for weight, the best were Uvedale's St. Germain, from Mr. Snow; the second best, Catillac, from Mr. Wilmot, gr. to Mrs. Crompton, Roehampton, and the third, Uvedale's St. Germain, from Mr. Ford, Horsham.

A miscellaneous collection of Pears, very fine fruit, was also exhibited by Mr. Snow, of Wrest Park, Beds.

Apples were numerous, large, and fine. The best collection of 12 dishes came from Mr. Bousie, who furnished admirable examples of Clark's Pippin, Cockle Pippin, Beauty of Wilts, Rosemary Russet, King of Pippins, Ribston Pearmain, Court Pendu Plat, Formosa Nonpareil, large and beautiful fruit of Gravenstein, Benwell's Pearmain, Devonshire Quarrenden, and Cox's Orange Pippin, the last one of the best flavoured of all table Apples. From Mr. Whiting, gr. to T. H. Hope, Esq., the Deepdene, Surrey, came Franklin's Golden Pippin, Adam's Pearmain, King of the Pippins, Ashmead's Kernel, Sweeney Nonpareil, Blenheim Pippin, Herefordshire Pearmain, Ribston and Eldon Pippins. Mr. Frost sent Carel's Seedling, Cornish Gilliflower, Irish Peach, Court Pendu Plat, King of the Pippins, Scarlet Nonpareil, Ribston and Cox's Orange Pippins, Fearn's Pippin, Sykehouse Russet, Court of Wick, and Duchess of Oldenburgh. From Frogmore Mr. Ingram contributed Old Golden Pippin in beautiful condition; Claygate Pearmain, King of the Pippins, Nugget, a small bright golden yellow variety; Blenheim and Cox's Orange Pippins, Downton Nonpareil, Old Nonpareil, Scarlet Russet, Small's Golden Pippin, Court Pendu Plat, and Rosemary Russet. From Mr. Grover, of Hammersmith, came rich red fruit of Kirke's Incomparable, Fearn's Pippin, and Fair Maid of Taunton. Mr. Rose, of Newbury, sent very fine examples of Scarlet Pearmain, a large showy variety, and especially well suited for purposes of exhibition. From Mr. Cox, of Redleaf, came high-coloured fine fruit of King of the Pippins, Fearn's and Kerry Pippins.

In the class of six dishes of Dessert Apples, the best came from Mr. Hall, gr. to Captain Tyrrell of Ealing, who showed beautiful examples of Ribston, Court Pendu Plat, large and fine fruit of King of the Pippins, and of Blenheim Orange, Fearn's Pippin, and Braddick's Nonpareil. From Mr. Lane, St. Mary Cray, whose fruit was second in point of merit, came Forge's Seedling, a striped red Apple; Carrey Pippin, Ruck's Nonesuch, a showy variety, Cornish Gilliflower, King of the Pippins, and Bull's Golden Reinette. Mr. Simpson, gr. to Lady Molyneaux, Stoke Farm, Slough, sent Ribston Pippin, Gravenstein, King of the Pippins, Formosa Nonpareil, and Cox's Orange Pippins. Mr. Wilmot, gr. to Mrs. Crompton, contributed Fearn's and Ribston Pippins, King of Pippins; very fine Golden Reinette, Downton Pippin, and Odegrove Pippin. Mr. Cox, Redleaf, sent bright skinned beautiful examples of Golden Winter Pearmain, Golden Reinette, and Ribston and Kerry Pippins. From Mr. Kaile, gr. to Lord Lovelace, came fine Fearn's Pippins, King of the Pippins and Lound's Pearmain. Mr. Small, Colnbrook, sent Fearn's Pippin and Pomona, the last a large showy Apple.

Among three dishes the best came from Mr. Wright, gr. to Mrs. Ramsden, at Twickenham, who sent Golden Russet, King of Pippins, and Duchess of Clarence. Mr. Newton, Enfield Chase, furnished Margil, Ribston, and Scarlet Nonpareil. Mr. Widdowson, Rickmansworth, sent King of Pippins, Ribston and Golden Reinette. From Mr. Simpson, Slough, came Ribston and Cox's Orange Pippins, and Gravenstein.

Of single dishes of ripe Apples, the best came from Mr. Grover, Hammersmith, who showed brilliant red beautiful specimens of Kirke's Incomparable. The next in point of merit were extremely well grown Cornish Gilliflowers from Mr. Salmon, West Ham. Mr. Barnet, of Shifnal, sent Golden Reinette, and King of Pippins came from Mr. Ford, Horsham.

Of Kitchen Apples, there was an enormous display, and the fruit generally was large in size, and free from specks or other blemishes. The best collection of 12 came from Mr. Butterfield of Basingbourne, who sent Cat's Head, Blenheim Orange, Normanton Wonder, Nelson's Codlin, Emperor Alexander, Kentish Broading, King's Pippin, Norfolk Beefing, Waltham Abbey Seedling, Bedfordshire Foundling, Royal Russet and Golden Noble. From Mr. Cox, Redleaf, came Waltham Abbey Seedling, Yorkshire Greening, Wellington, Celine, Dutch Codlin, Emperor Alexander, Poor Man's Profit, Gloria Mundi, Royal Russet, Claude, Norfolk Beefing, and Blenheim Orange. A third collection was furnished by Mr. Moffatt, Dunmow, Essex, who showed Manx Codlin, Minchall Crab, Blenheim Orange, Northern Greening, Flanders Pippin, Reinette du Canada, Wellington, Glory of Kent, Old Hawthornden, Magnum Bonum, and Wilson's Defiance. Among Mr. Bousie's fruit were Celine, Golden Noble, Grenadier, Wellington, Fillbasket, Emperor Alexander, Alfriston, Hollandbury, Small's Admirable, and Halkust.

Among groups of 6 dishes of Kitchen Apples, the best came from Mr. Snow, who exhibited Bull's Golden Reinette, Wellington, Blenheim Pippin, Reinette du Canada, Gloria Mundi, and Alfriston. From Mr. Moffatt, Dunmow, who was second, came Wellington, Blenheim Orange, Old Hawthornden, Reinette du Canada, Wilson's Defiance, and Magnum Bonum. Mr. Ayres, Fulham, sent Reinette du Canada, Lewis's Incomparable, Baltimore, Emperor Alexander, and French and English Codlins. From Mr. Rutland, Hereford, came, among others, good fruit of Emperor Alexander, Greenup Pippin, English Codlin, Northern Greening, and Blenheim Orange. Among kitchen Apples in other collections were remarkably fine fruit of Norfolk Beefing, Hollandbury, Cat's Head, and Emperor Alexander.

For the dish of largest Apples the 1st prize was awarded to Mr. Snow, who had magnificent specimens of Alfriston. More showy by far however was Mère de Ménage, a brilliant red Apple, of which fine fruit was shown by Mr. Lee, gr. to Lord Combermere; and Mr. Hall showed good specimens of Beauty of Kent.

A Collection of Apples and Pears was shown by the Derby Local Committee of the Royal Horticultural Society, and among them were some fair specimens; as a whole, however, they were inferior in size to similar productions from more southern counties.

Exhibitions of Plums were chiefly confined to Coe's Golden Drop, of which beautiful fruit was shown by Mr. Tillyard, Mr. Bousie, and others.

Currants, both White and Red, were good. The best were shown by Mr. Bennett, of Worksop.

Of Strawberries, the best came from Mr. Masters, gr. to the Earl of Macclesfield, and consisted of Keens' Seedling, gathered from plants that had been turned out into the open ground after having been forced in spring. Mr. Snow had British Queen, and some good Alpines were shown by Mr. Cunningham, gr. to the Bishop of London.

Raspberries came from Mr. Parsons, of Welwyn, and others.

Of Melons the best were M'Ewen's Green-fleshed, Heckfield, and Scarlet Gem.

Among Miscellaneous Fruit were Oranges, Lemons, and Nuts, the last from Mr. Webb, of Reading.

Plants consisted chiefly of what were required by the Floral Committee. From Messrs. Veitch came a new Eugenia, with berries much larger than those of Ugni. It was stated to have been raised between Myrtus americana and Eugenia apiculata, by Mr. Isaac Anderson Henry of Edinburgh. From the same firm also came the blue-flowered Vanda, the white variety of Lapageria, nicely in flower; Alocasia zebrina, and other interesting plants. Some good varieties of Pentstemon were shown by Messrs. Downie, Laird, and Laing. Mr. Bull had a glaucous variety of Araucaria Cunninghami, Caladium Hardi, Ferns, Palms, and the new Anæctochilus Schœlleri. Messrs. Low had the valuable Phalænopsis mentioned in another column, and Mr. Williams sent a large mauve-coloured Achimenes. Boxfuls of cut Rose blooms came from Messsrs. Paul & Son; among them the best were General Jacqueminot, Mrs. Charles Wood, Vicomtesse Decazes, Gloire de Dijon, Niphetos, and Reine des Violets, which appears to bloom better now than in summer. Round this display the ladies crowded all day like bees at the entrance to their hive. Mr. Barker, Godalming, had boxfuls of charming varieties of Tropæolum Lobbianum, both for conservatory and out-door decoration. Their colours were bright and attractive, and varied from brilliant scarlet to golden yellow, richly blotched with crimson.

Of Foreign Produce there was a large display, as well as grand collections of Gourds of all shapes, sizes, and colours, but for remarks on these as well as on horticultural Roots and Vegetables room cannot be found this week.

A list of Prizemen on this occasion will be found in our advertising columns.

Notices of Books.

On the Germination, Development, and Fructification of the Higher Cryptogamia, and on the Fructification of the Coniferæ. By Dr. W. Hofmeister. Translated by Frederick Currey, M.A., F.R.S., Sec. L.S. London: published for the Ray Society, 1860. 8vo, pp. xviii. and 506. Tab. Lith. 65.

Some years ago we gave a detail of the discoveries of Hofmeister in the higher Cryptogams, and of the analogy which is presented by the peculiar mode of fructification in the naked seeded Phænogams, but more especially the Conifers. Dr. Hofmeister has since that period zealously continued his researches, and as the published results are widely dispersed in various journals, he has been induced by the Ray Society to give a digest of the whole, which is here presented under an English version, prepared with his usual skill by Mr. Currey. The appearance of the volume will be hailed with pleasure by all who penetrate beneath the mere surface of Botany, and can scarcely fail to strengthen a Society which already stands on a firm basis.

The mode of development (in its first stage at least) of the germinal vesicle situated at the base of the embryo-sacs, or pitcher-shaped cysts known under the name of the Archegones, in the two great classes of leafy Cryptogams generally recognised as Mosses and Ferns, is singularly uniform, though the ultimate result in the two is totally different. In the former the spore

when germinating gives rise first to a scale-like expansion or a mass of threads, which after a time produces the true plant, whether leafy or leafless, and on this the male and female organs are produced, the result of impregnation being a capsule, which yields the proper reproductive spores. In the other the spore gives rise to a scale or solid mass of cells which bears the sexual organs, and the result of impregnation is a distinct embryo with an ascending and descending axis, and which does not fall off till it is developed into the proper plant, which at a later period, sometimes after several years only, bears the capsules.

In Conifers, if the embryo-sac, or at least that body which in its position and order of production answers to the embryo-sac of ordinary Phænogams, be considered as a single spore, the series of processes by which a perfect seed is at length formed, is almost identical with that which obtains in Club Mosses or more especially in the genus *Isoetes*, with the exception that impregnation, so far as is at present known, does not take place by means of active spiral bodies resembling the spermatic animalcules of the animal kingdom, but by the development from the pollen, as in other Phænogams, of a tube which penetrates to the true embryo-sacs, which correspond exactly with the archegones of Cryptogams.

All this is shown in the most complete detail and in a variety of examples, for the particulars of which those who wish for better information must be referred to the book itself, which abounds in illustrations that with common patience and attention cannot fail to make the student completely master of a most difficult and complicated subject. The author's observations, however, are not confined to the development of the fruit. The mode of growth of the several parts is worked out most carefully, and we know of no work in which the origin of complicated structures from a simple cell is more accurately and satisfactorily traced.

Besides this, information on other points is thrown out incidentally, which are interesting to the more general reader. Of these we have selected two as showing the sort of matter to be found in the volume, in addition to the drier scientific details.

Speaking of *Platycerium alcicorne*, the curious Stag's-horn Fern, which is a favourite in the Fern house, our author writes:—

"The first frond of the germ plant is erect and fleshy, having the shape of a spatula and being slightly bent over behind. It is clothed with the stellate hairs characteristic of the plant, and has but few scales. The latter are more abundant on the young stem, and are remarkable for their rapid development, especially in thickness, even in the early youth of the plant. The fronds which follow the first frond differ remarkably in form, direction and structure. Their outline is circular or reniform; they are developed in a horizontal direction, bending backwards and downwards to such an extent from the point of attachment that they touch the base of the plant. When the plant has attained a certain amount of vigour, erect fronds are again formed, which hang over gracefully, and exhibit slightly spreading forks upon which sporangia sometimes appear. After six or eight such fronds have been produced, a pair of simple fronds is developed, one on the right, and the other on the left of the stem.

"It is not difficult to conjecture the part which the thick recurved fronds play in the economy of the plant. They prevent the drying up of the place of growth. The thick covering which they form causes that portion of the bark of the trunk of the tree upon which the fern grows to be retentive of moisture. Those species of the same genus whose fronds spread over the surface of the ground—thus forming a wide covering over the places of attachment of the older fronds and the ground beneath, as in *Platycerium grande*, are entirely devoid of the irregularly shaped fleshy recurved fronds."

Again, speaking of *Marattia*, he says:—"It is generally known amongst gardeners that fragments of the fleshy adventitious fronds of the Marattiaceæ can be used to produce new individuals. In *Marattia cicutæfolia* this mode of reproduction can be practised with exceeding facility. The stipules, even of the most slender fronds, of specimens grown in the same manner only a few months previously, may be employed for the experiment. If these stipules be cut into pieces about half an inch square, and simply placed in a stoppered bottle, adventitious buds, produced at some of the numerous vascular bundles, will be seen in 10 or 12 weeks to break through the bark of the fragments. The first fronds of these shoots have no lamina; they are entirely stipulæform."

It is curious that all the researches which have been made respecting the development of those Club Mosses which have spores of uniform size, such as the true Lycopodia, have at present been without result. It is probable that some of these give rise ultimately to spermatozoids, but there has hitherto been no proof of the fact.

It may be remarked of all the Cryptogams which have come under the author's notice, that the presence of water at the period of impregnation is essential. The spermatozoids move about freely in fluid, but it is highly probable that they cannot exercise their proper functions in a dry atmosphere. Hence in diœcious Mosses fruit is extremely rare, where the male plants grow at a distance from the female. It does not appear that the spermatozoids are readily wafted through the air in a condition fit for impregnation, and in consequence, though the females may produce abundant embryo-sacs, not a single one is fertilised.

Our limited space prevents our adverting to other topics of interest, but we can conscientiously advise the purchase of the volume, as one which cannot fail to prove satisfactory.

Miscellaneous.

Iron formed by Animalcules.—The *Journal de l'Instruction Publique* contains a curious article by M. Oscar de Watteville, in which he announces the fact, not generally known, that in the lakes of Sweden there are vast layers or banks of iron, exclusively built up by animalcules, not unlike those that have laid the foundations of large islands in the ocean, by silently and for ages cementing matter with matter, so as to create those beautiful forms known as madreporæ, milleporæ, corals, &c. The iron thus found is called in Sweden "lake-ore," distinguished, according to its form, into gunpowder, pearl, money, or cake-ore. These iron banks are from 10 to 200 metres in length, from 5 to 15 broad, and from a fourth to three-fourths of a metre and more in thickness. In winter the Swedish peasant, who has but little to do in that season, makes holes in the ice of a lake, and with a long pole probes the bottom, until he has found an iron bank. An iron sieve is then let down, and with a sort of a ladle, conveniently fashioned for the purpose, the loose ore is shovelled into the sieve, which is then hoisted up again. The ore thus extracted is of course mixed with a quantity of sand and other extraneous matter, which is got rid of by washing it in a cradle, like that used by gold-diggers. A man may get out a ton of iron ore per day by this process. *Morning paper.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—As has been formerly stated, summer-flowering twiners, which usually get unsightly at this season, should be cut back freely, as should also any others that will submit to that kind of treatment. In the case of cold pits, the time has now arrived for getting straw shutters or whatever else it may be intended to use for coverings for them put in readiness for use without delay. Straw shutters if well made are expensive in the first instance, but are considered by many to be the most efficient of any kind of covering in use; and taking into account the time they last, they are perhaps as cheap as any. Expose the stock in such pits freely to air on every favourable opportunity, so as to check growth and get the wood firm. Little water will be required at the root, but look over the plants every few days, withholding water until it is absolutely necessary, and then giving a moderate soaking. Heaths and other things subject to the attacks of mildew must be closely watched, and sulphur applied the moment the enemy is perceived.

FORCING DEPARTMENT.

PINERIES.—The trying period for those who have to winter their young stock in pits heated by fermenting materials may be expected soon to arrive, for with short days and cold nights it is a difficult matter to preserve Pines in a healthy state, where warmth must be accompanied by excessive moisture. Keep the linings sufficiently strong to maintain the temperature at about 65°, which will allow of giving air rather freely on fine days, and a little must also be given in all states of the weather, when doing so does not cause the thermometer to sink under 55°. There should be no attempt made at inducing growth, but the linings should be kept rather strong, so as to be prepared against the setting in of severe weather, and also to allow of giving sufficient air to prevent excess of moisture. See that efficient coverings are prepared, and endeavour to keep the bottom-heat steady at about 75°, and the soil in a rather dry state. This system of Pine growing is now, however, but little practised, and it would be economy on the part of those who adopt it to supersede it at once by means of a hot-water apparatus.

VINERIES.—Where very early Grapes are required, the first house must soon be started; the night temperature to begin with should range about 50°, raising it to 60° by day, or a little more with the assistance of the sun. Also endeavour to secure a little warmth for the roots in the outside border, and if fermenting materials be used watch these narrowly, and endeavour by timely additions and frequent turnings to secure a regular gentle warmth of 60° or 65° at a foot below the surface of the soil. If fermenting materials are employed, there will be a great saving of labour, &c., by thatching them with a good coat of something to throw off wet, and preserve them from the weather.

FLOWER GARDEN AND SHRUBBERIES.

Chrysanthemums are now beginning to occupy attention; let them be tied out so as to display their blossoms to the best advantage, and where too thick, thin out the buds. Protecting materials must soon be got ready for such plants as require to be covered up in winter; where dry Fern can be had it answers the purpose perfectly. Choice sorts of Hollyhocks may soon be taken up, potted, and wintered in a cold pit; they will be exceedingly useful for furnishing cuttings, and these if got in early in spring will make good plants for next season. Be careful to secure the planted things against wind, especially large plants, which should never be left until they are properly staked or otherwise made fast, for when this is neglected it frequently happens that the roots get injured through the tops being rocked about. Get spare ground intended to be planted early next season trenched and ridged up so as to expose it as much as possible to the weather, putting in plenty of good rotten manure, especially where strong growing plants, such as Hollyhocks or Dahlias, are to stand, for these require a deep rich soil.

HARDY FRUIT AND KITCHEN GARDEN.

The weather hitherto has been tolerably favourable to the ripening of late fruits. Continue therefore gathering both Apples and Pears, most varieties of which will now be fit. Nonpareils should be among the last gathered, and the same may be said of Glout Morceau, Beurré Rance, and Easter Beurré Pears. Coe's Golden Drop Plums be carefully gathered, wrapped singly in thin paper after remaining some days in a dry airy room, and then packed in small boxes, they will keep a long time, and so will the Imperatrice and the Ickworth Imperatrice, the latter being the more preferable Plum of the two. It cannot be too often repeated that all choice fruit should be gathered when perfectly dry, and in storing, wherever an extensive surface of fruit is exposed, air must be admitted freely, for at this period exhalations are most abundantly given out, and more especially by the early varieties on their becoming fit for use. These, in fact, ought to be in the same apartment with the more valuable late-keeping sorts. Look frequently over the fruit room, and remove at once any fruit that appears to be unsound. Prepare ground for planting. Where there is room to spare in the Mushroom house, a little Seakale if wanted may be forced. The roots should be placed on a slight bed of warm dung, filling up the spaces between them with old tan or with the soil and manure mixed from an old Mushroom bed, giving a good watering to wash it in amongst the roots. The bottom heat should not exceed 70°, as too much heat is not favourable to securing strong growth. Take advantage of wet days for making fresh Mushroom beds, and clearing out those that are spent; also collect and prepare droppings for forming fresh beds by spreading them in a shed and turning them every day until they are sufficiently dried to prevent excessive fermentation after putting up. Carefully examine Onion stores, and remove any in which there are any symptoms of decay. The Celery maggot is reported to be very troublesome this autumn; the best remedy is perhaps picking off the affected leaves and burning them.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Oct. 8, 1862, as observed at the Horticultural Gardens.

October.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind	Rain
Thurs. 2	9	30.093	30.088	73	56	64.5	61	58½	S.W.	[illegible]
Friday 3	10	30.267	30.260	72	45	58.5	61	59	W.	[illegible]
Satur. 4	11	30.397	30.383	64	45	54.5	61	59	N.W.	[illegible]
Sunday 5	12	30.380	30.343	66	45	55.5	60½	59	N.E.	[illegible]
Mon. 6	13	30.043	29.929	71	48	59.5	60	58½	[illegible]	[illegible]
Tues. 7	○	29.960	29.947	58	49	53.5	60	58	[illegible]	[illegible]
Wed. 8	15	30.200	30.266	65	50	57.5	59½	58	N.E.	[illegible]
Average		30.191	30.171	67.0	49.7	58.3	60.4	58.5		[illegible]

Oct. 2—Overcast; cloudy; slight rain at night; mild.
— 3—Uniformly overcast; exceedingly fine.
— 4—Hazy; uniformly overcast; fine.
— 5—Hazy; cloudy; very fine; slight shower; fine.
— 6—Foggy; fine; cloudy; rain; overcast.
— 7—Clear; cloudy; showery; overcast.
— 8—Cloudy; overcast; cold and dry; fine; cloudy.
Mean temperature of the week 5 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Oct. 18, 1862.

October.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 12..	60.3	42.2	51.3	20	1.00 in	2	2	3	1	[illegible]	[illegible]	[illegible]	[illegible]
Mon. 13..	60.4	42.4	51.4	18	0.33	2	4	4	1	5	[illegible]	[illegible]	[illegible]
Tues. 14..	59.7	41.3	50.0	17	0.50	2	5	4	1	[illegible]	[illegible]	[illegible]	[illegible]
Wed. 15..	58.4	40.9	49.0	17	1.04	2	2	4	1	10	5	[illegible]	[illegible]
Thurs. 16..	58.6	40.2	49.4	16	0.56	—	6	5	1	4	[illegible]	[illegible]	[illegible]
Friday 17..	58.1	41.1	49.6	15	0.31	—	5	5	—	2	[illegible]	[illegible]	[illegible]
Satur. 18..	58.1	41.6	49.8	17	0.85	3	3	4	1	3	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 12th, 1847—therm. 72 deg.; and the lowest on the 15th, 1860—therm. 24 deg.

Notices to Correspondents.

CAMELLIAS: *I N E N.* Wet at the roots and cold have done the mischief.

DOUBLE-BLOSSOMED PEACH-TREES: *Jason Dennis.* These occasionally produce fruit, and bad enough it is. It is, however, fit for preserving or making into tarts.

FUCUS VESICULOSUS: *W C T.* It is one of the commonest of plants on every sea coast.

GOLDEN HAMBURGH GRAPE: *Audi alteram partem.* Next week.

NAMES OF PLANTS: *The Writer.* It is not at all like the Cape Gooseberry, but is the Alke-Kengi, or Nicandra physaloides. —*C F.* Anomatheca cruenta.—*E G.* Bryophyllum calycinum. The flowers are green.—*J C.* No opinion can be formed of a plant in such a damaged shrivelled state, and you do not say what country it comes from.—*J W B.* It seems to be an old worn out piece of Echium vulgare.—*E S.* The common Noli me tangere or Touch-me-Not.

MESEMBRYANTHEMUMS.—Can anybody assist one to get the true Night-scented Mesembryanthemum, M. noctiflorum, and stramineum.

MISC.: *A Correspondent* writes, Is Chamærops Fortuni the same as Ch. Martiana? and Ch. Sieboldi as Ch. excelsa? and what is *really* Roezlia? is it not Agave yuccæfolia?

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11*l.* 11*s.* per ton for cash.
[Henry] Lawes & Son, 27, Great George Street, Westminster.

LAWES'S WHEAT MANURE for AUTUMN SOWING.
In consequence of the high price of Peruvian Guano, J. B. Lawes has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of Mr. Lawes, or through any of his appointed Agents. Price ... at the Factories, Deptford and Barking Creeks.
... Peruvian Guano direct from Messrs. Gibbs; Nitrate ... Sulphate of Ammonia, and other Chemical Manures.
... and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

THE LONDON MANURE COMPANY have now ready
PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
... MANURE for ditto.
... PHOSPHATES of LIME, &c.
... the above being in the finest condition. They also continue to supply
... PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of known value.
E. Purser, Secretary.
..., Fenchurch Street, E.C.

THE PURELY ANIMAL MANURE COMPANY, "Limited."
The Directors of this Company are prepared to supply for ... Crops their PURELY ANIMAL MANURE at 8*l.* per ... Delivered in London in quantities not less than 2 tons.
Orders received by the Manager, at the Works, River Head, ...ington, York; the Secretary, or any one of their Agents.
By Order of the Board,
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Autumn Sowing.

THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY (Limited), consisting of Tenant Farmers occupying upwards of 30,000 Acres of Land.
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Managing Director.—James Odams.
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Manufactory: Plaistow Marshes, Essex.
... Manure has been in use for upwards of 10 years, and ... great satisfaction to consumers. It is specially prepared for Autumn Sowing, and on most soils proves as effective as the best Peruvian Guano.
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1862.

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Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. Voelcker, *January* 1862.
"Your firm, I believe, first introduced this Manure to the ... the Agriculturist, and the composition, dry and finely ... condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a percentage of Soluble Phosphate and proportionate small quantity of Phosphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, ... less cost than the manufacturer; nor is he called ... pay for unnecessary packages, or for the hauling of ... and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., forwarded on application to Burnard, Lack & Co., Plymouth.

AGRICULTURAL and CHEMICAL COLLEGE, ... and 38, Lower Kennington Lane, London, S.
ASSAYS and ANALYSES promptly attended to by J. C. Nesbit, Lansdell & Co.

AGRICULTURAL and CHEMICAL COLLEGE, Kennington.—Manufacturers and others engaged in making Artificial Manures may obtain every necessary instruction for their economical and efficient preparation by applying to J. C. Nesbit, Lansdell & Co., 37 and 38, Lower Kennington Lane, London, S.
Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.
Gentlemen, Farmers, or others, desirous of practical knowledge in Chemical Analysis, or Assaying, may receive instruction at the College, where the extensive Laboratories give ... facility for pursuing their studies, and there is accommodation for a limited number of Resident Students.
Full particulars of terms will be forwarded on application.

Land Drainage.

MR. THOS. SCOTT has now made his arrangements for the season, and is prepared to PLAN and EXECUTE DRAINAGE to any extent, either by Contract or ... Commission. Loans obtained from Government or Drainage Companies, and the money advanced to carry out the ... under Government inspection.
... has Drained upwards of 20,000 Acres of Land within ... years, and is prepared to introduce the most recent improvements; also to erect his Syphon Drinking Troughs for ..., which have received "Honourable Mention" in the ... International Exhibition.
..., Parliament Street, Westminster, S.W.

MR. JAMES BLACK, late Factor to Sir Norman Macdonald Lockhart, Bart., and other gentlemen, now ... in London as LAND AGENT and DRAINAGE ENGINEER, from a thorough practical knowledge in all such ... respectfully solicits the patronage of noblemen ... gentlemen. Mr. Black undertakes the VALUING of ESTATES and SALE of Ditto, adjusting Landlords' and ... rights, the superintendence of all Agricultural Improvements, Draining, &c., also the Valuing of Timber, and ... Planning of the most economical and best adapted Farm Steadings and Buildings. The usual Commission charged.
Offices, 20, Great George Street, Westminster, S.W.
N.B. Several valuable Estates for Sale in Scotland, and a few first-rate Farms to Let. Money required in several large sums, from 4 to 5 per Cent., on good Freehold and Leasehold Property

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THE BIRMINGHAM CATTLE and POULTRY SHOW, DECEMBER, 1, 2, 3, and 4.—It having been determined to ERECT a GALLERY in BINGLEY HALL, the Council will have additional SPACE at their disposal for the EXHIBITION of IMPLEMENTS and MACHINERY, and are prepared to receive Applications for the same.
Plans of the Hall, showing situation of space, and terms, may be obtained from the Secretary.
The ENTRIES CLOSE NOVEMBER 1.
John B. Lythall, Secretary.
Offices, 14, Temple Street, Birmingham.

THE BIRMINGHAM CATTLE and POULTRY SHOW, 1862.
The FOURTEENTH GREAT ANNUAL EXHIBITION of FAT CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, ROOTS, BARLEY, and IMPLEMENTS, will be held in Bingley Hall, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4, when Prizes—Cups or other Articles of Silver Plate, and Gold and Silver Medals—to the amount of 1835*l.*, will be awarded in the following divisions, viz.:—

FAT CATTLE	£715	15
FAT SHEEP..	239	5
FAT PIGS	56	15
BREEDING ditto	63	0
ROOTS	56	14
BARLEY	10	10
POULTRY and PIGEONS	682	15

The ENTRIES CLOSE on NOVEMBER 1.
Prize Lists and Certificates may be obtained from the Secretary.
John B. Lythall, Secretary.
Offices, 14, Temple Street, Birmingham.

SMITHFIELD CLUB FAT CATTLE SHOW.
The ANNUAL CHRISTMAS SHOW of FAT CATTLE, SHEEP, and PIGS, will be held at the Agricultural Hall, Islington, on MONDAY, December 8, and four following days.
In addition to Prizes to the amount of 1820*l.*, the following Cups will be offered:—
A Silver Cup, value 40*l.*, for the best Steer or Ox in any of the Classes.
A Silver Cup, value 40*l.*, for the best Heifer or Cow in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of Leicesters, Cotswolds, Lincolns, Kentish, or other Long-woolled Breed in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of 1-year old Southdowns, Hampshire or Wiltshire Downs, Shropshire or other Short-woolled Breed in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of any other Breed of Sheep (not specified above) in any of the Classes.
The Prize Sheet now contains distinct Classes under the following heads:—

CATTLE.

Devons	Norfolk or	Scotch Polled
Herefords	Suffolk Polled	Irish
Short-horns	Long-horns	Welsh
Sussex	Scotch-horned	Cross or Mixed

SHEEP.

Leicesters	Southdowns	Oxfordshire
Cotswolds	Hampshire or	Mountain
Lincolns	Wiltshire Downs	Cross Breeds
Kentish, or	Shropshire	(Long and Short-
Romney Marsh, and	Other Short Wools	woolled)
other Long Wools		

PIGS.
Classes according to age up to 18 months old.
The ENTRIES for LIVE STOCK CLOSE on NOVEMBER 1.
The Entries for Agricultural Implements, Roots, Seeds, &c., Closed on October 1.
Prize Sheets and full particulars can be obtained on application to B. T. Brandreth Gibbs, Hon. Sec., Corner of Half Moon St., Piccadilly, London, W.
N.B.—It is absolutely necessary that all communications on the Club's business should have the words Smithfield Club outside, to distinguish them from private letters. If this be neglected, there will be risk of delay and inconvenience.

The Agricultural Gazette.

SATURDAY, OCTOBER 11, 1862.

MEETING FOR THE ENSUING WEEK.
Monday, Oct. 13 } Herefordshire Agricultural Society at
Tuesday, — 14 } Hereford.

The lately published Number of the English Agricultural Society's Journal is unquestionably one of the best which has appeared for several years. It contains an unusually large number of short and useful papers in which information capable of being turned to practical account is given in simple and intelligible language. And the reports of the discussions during the past spring which took place at the weekly meetings of the Society, form one of the most valuable contributions to its pages. There is still evidence in its contents, a little too obvious, that the work is useful rather as a record of past experience than as suggesting practical improvements—rather as belonging to a library for consultation than as arming its readers for the difficulties which threaten or surround them. If Mr. Bowick's excellent paper on haymaking and those by Mr. Love on corn harvesting had appeared in the previous Number of the Journal they would have been more immediately useful; and if in place of Professor Simonds on the sheep-rot, we had had Professor Simonds on the sheep-pox, his pages would be more likely to be cut open than they are. The Editor ought to have had in this volume a report on the novelties in the agricultural department of the International Exhibition. It would have been interesting to have had reports from a score of dairies throughout the country on the practical value of the cow-milking machine. We ought to know what the facts are as to recent improvements in self-acting reaping machines. And there is by this time a large body of evidence which ought to be collected and collated on the subject of steam cultivation.

On all this the Journal is silent. On the other hand we have excellent papers on top-dressings by Dr. Voelcker and by Mr. Lawes; on cheese-making by Dr. Voelcker; on the home farm management, and on haymaking, by Mr. Bowick; on the home manufacture of manure, by Mr. Maxwell; on the cost of portable steam engines, by Mr. Valentine and Mr. Evershed; besides many other papers of practical utility. And the Journal Committee may be congratulated on the issue of what is on the whole a satisfactory Number.

Profitable cultivation depends not only on the treatment we give the soil, but upon our regard to the habits of the plants we cultivate. Dr. Parkin* seems to think that vegetable produce depends wholly on the manure we apply to the land. Wheats contain nitrogen in direct proportion to the nitrogen in the manure on which they have been fed—they vary not only in quality but in quantity of produce as well in just the same proportion. Wheat without manure produces threefold the seed from which it springs; with cow-dung it yields seven-fold its seed; with human urine 14 times its seed! It is plain that all these quotations from old experimental records are untrustworthy for any useful purpose. Horny shrivelled grain contains more gluten and nitrogen per cent. than plump well ripened corn—and the proportion of the produce to the seed depends more on the quantity of seed sown over a given extent than even upon the fertility of the land, and in neither case is the assertion that so many fold the seed has been produced of the smallest practical significance or importance. Tenfold the seed, when so extravagant a quantity as 8 bushels of Oats have been sown per acre, is a better crop than twenty-fold the seed when only 3 bushels have been sown per acre. We do not recommend 8 bushels of Oats as the seeding of an acre, but it is plain that both the seed sown and the manure applied, and every other circumstance in the cultivation of our crops, must depend not on theoretical considerations of the composition of manures and soils, but on practical experience of the kind of treatment which the crop requires. To say, therefore, that the waste of London—or of 3,000,000 of persons—is enough to manure 3,000,000 acres of ground, because so much food has been consumed by them, and so much waste containing so much nitrogen must proceed from them, equal in composition to close on half a million tons of guano, is to contend for a mere speculation. The most that is made of sewage water anywhere we know is in the case of the Lochend and Craigentinny Meadows, Edinburgh. Probably 1½*d.* per ton is there realised from it, and that is where the waste of about 300 persons pours over every acre! The dilution of this waste may spoil it for many agricultural uses that might be made of it, but it is of great importance as enabling its conveyance to a distance. And it is, we believe, more for the interest of great towns like London to use this quality for the purpose of carrying it to thinly populated waste places at a distance, than to seek by concentration of the fertilising ingredients to render them usefully applicable as manure in more limited quantity per acre, with great risk of increasing the nuisance near at hand which they will then create.

The show of roots and cereals which was opened on Wednesday last at the Royal Horticultural Society's Gardens is not equal to our expectations. We had hoped to have seen sheaves and samples such as any of our leading seedsmen could have gathered from their customers, representing all the varieties of Wheat, Barley, and Oats grown in all the different agricultural districts of Great Britain. Instead of that we have scattered along perhaps 100 yards of table and of wall a motley, and at first sight apparently unclassed, if not unclassifiable collection, the result of placing alongside of one another about 180 contributions, shown in every variety of form and want of arrangement.

About 60 sets of various roots are shown at one end of the row: Mangel Wurzels, very fine, though various; Swedish Turnips, tolerably good; Kohl Rabi, remarkably good; Cattle Cabbage—extremely large; the finest (Robinson's Champion) being labelled "not for competition!" common Turnips apparently large and good, but proving unsound when cut through. These made up the show of roots.

Among the Cereals there is one "general

* *The Utilisation of the Sewage of Towns*, pp. 60. By John Parkin, M.D. J. Churchill, New Burlington Street.

collection of Wheats from all quarters," for which a medal is awarded to Mr. P. L. Simmonds —one collection "from any one quarter," shown by Messrs. Raynbird & Co., to which a medal is also awarded—collections from Lower and Upper Canada, receiving medals—three collections of Australian Wheats, the medal going to the Commissioners for Victoria—one collection of Wheats grown in South England, for which Messrs. Raynbird receive another medal. A collection of very fine Chiddam, Roughchaff White, Suffolk White, Talavera, Marsden, Taunton Dean, and Hunter's, all fine white Wheats; Old Kent, Browick, April, Rivets, Golden Drop, Spalding Red Burwell, Nursery, and Kissingland, most of them coarser red Wheats, for which a medal is most properly awarded, is shown by Messrs. Wrench, of London Bridge. There are 14 samples of "white Wheat of any kind" shown in Class 34, in which Canada carries off the prize—10 samples of "red Wheat of any kind," in which Messrs. Raynbird received the prize—seven "collections of Barleys from any one quarter," in which Messrs. Wrench are successful —seven "collections of malting Barley," the prize going to Messrs. Raynbird. The prizes for Peas and Beans go to Montreal. That for "newly introduced cereals" is not awarded. Among the competitors in this last class are Messrs. Raynbird, with their hybrid Wheat, which can hardly now be called newly introduced, having been announced so long ago as 1857, and thus having had ample time for proving its then anticipated merit, if it had been really of the excellence which it was believed to possess. Mr. Hallett also shows a magnificent sheaf of selected ears, but the grain is coarse; and there did not appear to the jury who inspected it sufficient evidence in the mere exhibition of a sheaf that it properly comes under the designation of the class in which it is shown.

In Class 52, "Cereals of any kind," Mr. Lawes shows by far the most interesting collection on the ground. A suite of specimens of Wheat, Barley, and Beans, from his experimental plots, which have each received a constant manuring of a particular kind for a long series of years. These specimens are of the present harvest. And the effect of mere atmospheric nourishment (no manure), of ammoniacal manures (sulphate of ammonia or nitrate of soda) alone, or combined with phosphates and alkalies, is most obviously exhibited in the varying length of straw and vigour of growth of the specimens presented. A silver medal is awarded by the Jury to this collection, notwithstanding that no such offer has been made by the Council of the Society, who will, however, we cannot doubt, confirm the award.

The Society's Silver Medal is also most worthily awarded to Messrs. Sutton of Reading, for their magnificent collection of roots, grain, and Grasses, by far the finest thing of its kind in the Gardens. Their Grasses and Clovers had been also entered in a class by themselves, but no award of a separate medal was made on their account, as it was understood that they contributed to the success of the exhibitors in the higher award which had been made.

The colonial contributions to the show are very interesting. Vancouver sends excellent white Wheat, Barley of good colour and plump berry, excellent Oats and Peas, a capital sample of Timothy Grass seed, specimens of Potatoes and of Barley in the ear—and a medal is awarded for the collection. New Brunswick shows bottles of Wheat, Black and White Oats, Maize and Buckwheat. Newfoundland sends long bottles of Wheat and Barley. Prince Edward's Island sends collections of Wheat, Barley, and Peas. Nova Scotia also sends an excellent collection.

Very large and complete collections, embracing fruit and culinary vegetables, as well as grain and roots, are shown by Sweden, Norway, and Hanover. And to these the Agricultural Jury recommended that silver medals should be awarded. The samples of Oats from Norway are extraordinarily fine—their Turnips too are quite equal to the English, generally superior in point of quality, and almost equal as regards size. Sweden shows good Kohl Rabi, inferior Swedish Turnips, notwithstanding that it is the home of that variety; pretty good common Turnips, inferior Cabbage, good samples of grain, and a large collection of Potatoes. Among the curiosities of the show are two large Radish roots weighing many pounds, shown in the collection from Hanover, and produce of remarkable excellence from the high latitudes of some of the Norwegian exhibitors.

Of course our remarks in criticism of the collections are confined exclusively to the agricultural classes. The exhibition of fruit is magnificent, as readers of the *Gardeners' Chronicle* will find reported; and the large and curious show of Gourds is surrounded by crowds of gratified spectators.

STEAM CULTIVATION.

Overtown, near Swindon.—It is unnecessary to repeat the description already given in our last year's volume of the level highlying district of calcareous clayey loam stretching northwards from the foot of the Chalk down towards Swindon. It is on the northern edge of this plateau, overlooking the clay valley between it and the market town of Swindon, that Mr. T. H. Redman occupies a farm of about 600 acres—its near side, as you approach it from the railway, overlooking the valley, and its further side stretching nearly half way to the hills. The farm includes 410 acres of arable land and about 190 acres of pasture. Till within the last few years it had been cultivated with 13 horses and 13 oxen—4 teams of horses and an odd horse with 3 teams of oxen and an odd ox. The easist way in which to form a rough estimate of the cost of draught animals on the farm till then, is to charge 100*l.* a team for the horses, and to suppose that 13 cows, easily letting for 12*l.* a head, might have been kept had the oxen been dispensed with. A man and a boy, averaging 12*s.* a week for 40 weeks, must be added to this per team, as the cost of attending to the oxen, over and above that of attending to the cows, making the total cost of the former 18*l.* apiece per annum. The horses must thus have cost 430*l.*, and the oxen (13 at 18*l.*) 234*l.*—in all 664*l.*

So long ago as the Chester meeting of the English Agricultural Society (*i.e.*, in July, 1858), Mr. Redman became the purchaser of a set of Mr. Fowler's apparatus. Both engine and tackle had been used at various shows throughout the country, and it came to Overtown already somewhat worn. An account of its work in the autumn of that year, with all the delays and accidents attending it, was published in the winter. Some 200 acres had been ploughed, at a cost, including wages, material, time, repairs, &c. (not, however, including interest of capital) of about 10*s.* an acre. Since then a new 12 horse-power engine, with new gear of all kinds, has been procured. The average annual performance is about 700 acres of ploughing, and the engine is worked about 150 days. Thirteen oxen have been dispensed with, and two horses. Ten horses are a set for drilling and harrowing, and one horse is kept constantly for the engine. At present, therefore, the cost of draught labour on the farm may be put at—

8¾ teams horses	£366	0	0
Add for a team of oxen which has been again brought into work with advantage to the farm during certain months of the year—4 oxen for a few months at 18*l.* a year	34	0	0
	£400	0	0

There is thus an annual saving of 264*l.*

The expenditure on the engine may be estimated as follows:—

Per diem: Engineer, 3*s.* 6*d.*; ploughman, 3*s.*; anchorman, 2*s.*; 2 porter lads at 1*s.* 3*d.* (boy and horse with the water cart already estimated in the horse labour of the farm)—in all for wages..	0	11	0
Coals, 12 to 14 cwt., at 17*s.* or 18*s.* a ton upon the ground	0	12	0
Total daily cost	£1	3	0
One hundred and fifty days work thus cost ..	172	0	0
To this must be added the cost of rope. Now a full length of plough rope, 400 yards, is not wanted every year. It will generally plough 800 to 1000 acres, and then it does to cut up into the shorter lengths forming that part of the circuit in Mr. Fowler's system which goes to and fro without passing through the clip drum. Charge for rope, 400 yards per annum, about	40	0	0
Charge for other repairs of all kinds, probably ..	20	0	0
Charge for interest of money, 5 per cent. on 800*l.*	40	0	0
Making the total cost..	£272	10	0

There is thus fully as much expenditure in working the farm by steam as by horses. For to this should be added a sum sufficient to keep the apparatus of its original value, or to rebuy it when it has become worn out. What this sum should be it is very difficult to say. There are engines in the locality 8 and 10 and 15 years old, which after so many years of work and of repair are essentially as good as new; and it will not be until steam ploughing is older, that we shall be able to estimate this point aright.

If the cost of ploughing per acre be desired, then to the daily cost 23*s.* already estimated we must add the cost of a boy and horse, about 4*s.*, for carrying water and fuel—and put 27*s.* a day over 150 days against the annual performance. This amounts to 202*l.* 10*s.*; add for rope, repairs and interest of capital 100*l.*; and put the sum 302*l.* 10*s.* thus arrived at against 700 acres done, and you find that it has cost about 8*s.* 8*d.* an acre. But neither here is there anything added on account of maintenance of the capital sum. If 10 per cent. be added for this, there will be another sum of 80*l.* to divide over 700 acres, bringing the whole cost of the ploughing to 11*s.* an acre.

The value of a thing however is not what it costs, but what it is *worth*. Mr. Head, a young engineer of Swindon, has lately purchased a set of Fowler's tackle, and is letting it out in the neighbourhood. He charges 12*s.* an acre for ordinary ploughing in the spring and summer time, undertaking to provide the apparatus and the labour only. He now charges 16*s.* an acre for the same, and has a great deal more to do than he can overtake. Latterly he has been working overtime even into the night! Moonlight is sufficient to enable ploughmen and the rope porters to work, and the signals to the engineman are worked by lanterns. He finds that taking all the labour of moving from locality to locality into account, and all the difficulties of land not laid out especially for steam cultivation, 100 acres a month are a good performance. But his experience is mentioned here as showing what in the estimation of agriculturists in the neighbourhood is the value of the ploughing thus accomplished. It costs Mr. Redman at most 11*s.* an acre—it costs the customers of Mr. Head 16*s.* *plus* coals and water, which must be at least 4*s.* an acre more. But it is not even yet that we have reached its *value*—that must be greater than what it costs or the system would not pay. And it is more and more the judgment of all men who have persevered and overcome the preliminary difficulties, that steam cultivation is now a necessary and most profitable part of their management; the subsoil being left in a much more porous condition after steam cultivation than when ploughed by a string of horses walking in and treading the furrow in the ordinary way.

In the management of these calcareous clayey soils over the lower chalk little attention is paid to rotations. Perhaps as a general rule Wheat is taken every other year, the exception being as common where two green crops are taken in succession as where two grain crops follow one another. Some 30 acres of Swedes are grown annually on the farm of 410 acres arable, and the Swedes are invariably followed by a second green crop; these, then, are followed by Wheat, and fourth by Oats. Some 10 or 15 acres of Italian Rye-grass are grown, and as much Hop Clover for early spring feed for sheep and lambs when the Swedes are done; 50 or 60 acres of Vetches are annually grown; 40 or 50 acres of broad Clover, and 30 acres of Turnips. Except the first light ploughing of the Clovers, which is broken up after the second cut has been taken—all the ploughing on the farm is done by steam. And a great deal of grubbing and cultivating is also thus accomplished.

On last Tuesday when I walked over the farm, the apparatus was at work upon a large field which had been Vetches in the spring, and was now preparing for Wheat. It had received three steam ploughings during the summer, and the last operation then going on was a grubbing and a harrowing at one and the same time. The common balance plough frame had grubbing tines screwed on to it, and they were moving the whole land 5 or 6 inches deep in first rate style. A slide bar projecting on the ploughed side of the frame carried a ring and chain by which a heavy drag harrow was dragged each time over the land which had been stirred during the last journey of the implement. The drag being double the width of the cultivator, it gives it a double harrowing.

Mr. Redman has his land laid out now in large square tracts of 30 or 40 acres. One piece of about 160 acres is thus divided by cross driftways for the engine, and it is impossible to imagine neater or more perfect work more completely up to the very edge of the roadways or more thorough throughout the whole extent of the field than I witnessed last Tuesday. The land is clean and in good order, much above the condition of land of a similar quality that I have lately seen, where the wet and difficult season of 1860 has left its mark for a longer time on the condition of the soil. The stubbles are clean and strong, and very good crops have this year been grown. The Wheat this year is considered scarcely up to the average. Spring corn has yielded well. Mr. Redman is one of the oldest steam-plough men in the country, and he has had the satisfaction of seeing his example followed by a good many of his neighbours. A great many of Fowler's apparatus are at work in various directions round Swindon, and to some of these attention will be hereafter directed. *J. C. M.*

THE SMALL-POX OF SHEEP.

[The following letters have appeared during the past week:—]

1. I feel it my duty to request you will, through the medium of your valuable journal, convey to those who are suffering from the effects and apprehension of this dreadful disease, that in 1853 we had the disease prevalent in this locality. A Mr. Ramsey, a medical gentlemen of Shelford, in this county, took a deep interest in the matter, and a great deal of trouble and expense to test the efficacy of vaccination as a preventive to the spread of this dreadful scourge or malady. I bought a lot of upwards of 200 crone ewes from Norfolk, and soon after I had them home the small-pox broke out amongst them. I had on my farms a large flock of ewes and lambs, and several other lots of Sheep. I kept the infected lot as far separated from the others as possible. I had the disease so bad amongst the lot from Norfolk that I lost upwards of 70. I made the man who attended them keep a spade and mattock in the field, and as soon as

sheep died it was buried in a deep hole on the spot whole with the skin on, just as it died. I think the man who may stop you on the highway and demand your money or your life, is a far more honourable and honest man than the person who, knowing his sheep to be infected, can, for the sake of a few pounds, not only defraud his neighbour by selling him infected sheep, but also endanger many other flocks by such a transaction. I sent Mr. Ramsey some sound lambs to try experiments upon. He had them vaccinated with sheep sent by some of my neighbours, and placed with diseased sheep also sent him, and in no case did the vaccinated lambs catch the disease. I had some of my ewes, which had been vaccinated, put in with the diseased sheep, and not one of them caught the infection. By great care in keeping the flocks as distant as possible from the infected lot, I prevented the spreading of the disease, and it was thus kept entirely to the lot of diseased ones. I hope and trust that those who have the disease in their flocks will at once test the effects of vaccination. The experiment is attended with no risks and little expense, and I feel no doubt they will be well pleased at the result. *Samuel Jonas, Chrishall Grange, Oct. 4.*

2. Finding that small-pox was raging in this district some nine or ten years since (but I am not quite certain what year), and that Mr. Allen Ramsey, of Stanford, was interesting himself respecting vaccination, as a preventive among sheep, and that he was holding correspondence with the late Mr. Henry Overman, of Weasingham, Rougham, Norfolk, then a celebrated breeder of Southdown rams and ewes, and that gentleman having written to me respecting Mr. Ramsey, the result was that I believe both Mr. Overman and myself had our rams vaccinated—at all events my own rams were, and I well remember Mr. Overman was here to see Mr. Ramsey vaccinate mine. It appeared a slow process, there being great difficulty in procuring vaccine fresh enough. Some of my cows which were vaccinated did not take at all; they had doubtless taken the disease in a natural way. Hence the difficulty which Mr. Ramsey experienced in obtaining vaccine as fresh as he wished. He, however, did ultimately vaccinate all, I believe, and I did not lose one of them. I sent the rams out, when the season arrived for doing so, into some flocks which doubtless had small-pox earlier in the season, or at the time, but I did not lose a ram, and am not aware that any one of them ever took small-pox—if it did it was in so mild a form that I never was aware of it. At all events, not one of them had any pock marks about them, or any visible sign, although hundreds of sheep, of various markets, shewed strong pock marks on their faces for years afterwards. One of my neighbours, the late Mr. ...es, of Great Abingdon, lost a very heavy percentage of his flock through small-pox at the time alluded to. *Jonas Webb, Church Farm, Babraham.*

3. It was in the year 1848 that we suffered in our county from small-pox in sheep, when my late father vaccinated all his sheep, and with very great success. My father wrote in the papers upon the subject, and was at first laughed at, but many soon wished they had followed his example. He was the only man in the neighbourhood that did vaccinate, and he had but one case, and that so mild the animal soon recovered. Our neighbours lost hundreds; some had it naturally, and others by the foolish and ignorant practice of inoculation. From what I saw then I think a man is mad to be gulled into inoculation. My father sent vaccinated sheep to his neighbours for the purpose of testing the safety of their mixing with diseased animals; not one died; some took it, but had it in a very mild form, others were never attacked. Mr. Allen Ramsey heard of my father vaccinating through Mr. Jonas Webb, my father having advised Mr. Webb to do the same, as he was sending rams to all parts of the kingdom. My father went over to Mr. Webb's to meet Mr. Ramsey, and the result was that Mr. Webb had his sheep vaccinated. I am very certain that no man in this county that inoculated in 1848 will ever do the same thing again. I recollect a person about 30 miles distance from us coming and taking lymph from our sheep for the purpose of vaccinating, and he succeeded very well. I think it highly necessary that an Act should be passed to prevent inoculation in sheep, thereby preventing the disease being perpetuated in animals as it is in the human being. *Henry Overman, Weasenham, Rougham, Norfolk.*

[Meetings have been held in Oxfordshire and Wiltshire for the formation of mutual insurance societies among flockmasters, so as to distribute among the whole body any losses that may ensue.]

PEDIGREE NURSERY WHEAT.

In replying to what appeared in the *Agricultural Gazette* of the 16th ult., in connection with my name and Pedigree Nursery Wheat, the statements of the raiser of this variety shall be first noticed.

Mr. Hallett alleges that I trespassed over his farm, searching for the very worst ears of Wheat, to compare them with the best of his neighbours'; that, in alluding to the Wheat plants in tubs at the Exhibition, I carefully kept out of sight what was written upon them; and that my communication forces the conviction that the success of his Wheat has most inconveniently operated on the sale of mine.

By referring to my letter in the *Gazette* of the 9th September, it will be seen that the ears which I selected from Mr. Hallett's crops were of the largest size; and that I ought not to be called a trespasser for travelling along roads and footpaths in common with hundreds of people during the week of the Brighton races. The plants in the Exhibition had written upon tickets suspended to them the number of stalks upon each, "showing the vital energy of the seed," and to have noticed such foolish writing would have been unfavourable to Mr. Hallett. He surely cannot be serious in believing that the success of his own Wheat has prevented the sale of mine; or that I envy either the wealth or the notoriety which he has acquired as a Wheat improver.

The improvement of our cereals being of considerable importance, persons who honestly devote time and attention to this object are not undeserving of respect, whatever may be the measure of their success. But a writer in the editorial columns of the *Agricultural Gazette* has not clearly stated the question on which we differ. My remarks did not embrace plant-improving generally, but were meant to be confined to our cereals. While the writer in question advocates improvement of cereals by adopting all the artificial appliances of good cultivation, I contend that cultivation has not been found to change well defined kinds, and that improvement can be best attained by selecting new and superior varieties, which nature occasionally produces, as if inviting the husbandman to stretch forth his hand and cultivate them.

It has been my fortune to have raised either from single seeds or ears no less than seven varieties, which are extensively grown in many parts of Britain. Besides these, I have selected and grown in the same manner about 200 varieties, personally planting, hoeing, administering nourishment, reaping, and performing all the other manipulations necessary to their growth and the reproduction of a succeeding race, without having observed any tendency towards improvement. I have also walked thousands of miles through waving Wheat fields in ear, enjoying the beauty and diversity which such crops not unfrequently present. Grain samples without number have come under my notice, yet I may with safety say that I have never seen grain which has either been improved or degenerated by cultivation, so as to convey the change to the succeeding crop. The meaning of the word cultivation must, however, be limited to the application of substances to the soil, and the ordinary acts of husbandry, but excluding the artificial impregnation of florets. Should the cerealia ever become broken or inconstant, as many domesticated plants are, something may then perhaps be done in giving fixity to a property.

While believing the improvement of the Wheat plant by mere cultivation to be a dream, I admit that an attempt to investigate this subject may be praiseworthy, as it is most certainly harmless. But it was a mistake to assume that the dream had been realised by Mr. Hallett with Pedigree Nursery Wheat, and a still greater error to use time after time the editorial columns of so high an authority to spread the mistake. It may be consoling for the writer to state that he saw the crops on the Manor Farm at Brighton last year, and examined whole sheaves of selected ears; but this is equivalent to admitting that he has been deluded by Mr. Hallett.

Before concluding, a mistake shall be corrected which I made by stating that Pedigree Nursery Wheat was identical with the common Nursery Wheat of the country. At the time of my visit, none of the crop had been reaped; and from the immature state of the seeds, it was difficult to determine the variety. Mr. Pawlett and others have proved satisfactorily that Mr. Hallett's Wheat is not the nursery variety, and without this discovery the parallel of the Cow Cabbage and Pedigree Nursery Wheat would have been incomplete. *Patrick Shirreff, Haddington, Sept. 29th, 1862.*

Thin Seeding: Pedigree Wheat.—I still think that thin sowing has quite has much or more to do with a large production than pedigree, although I cannot, in justice, deny to Mr. Hallett the merit of discovering (if it be so) that continued selection from selected ears increases the acreable produce. But it must never be forgotten that thin sowing is the parent or first cause of large and vigorous ears to select from :on this point there can be no mistake, seeing that thick sowing has an exactly reverse effect, diminishing and crippling the growth of the ear, until, with extreme quantities, there is scarcely a good kernel or good ear. Therefore in order to get good ears to select from, we must sow moderately. It would be a very dangerous experiment to sow generally so small a quantity of seed as one peck per acre. In highly cultivated warm mellow soils free from weeds and in good heart, where harvest is ready by the 1st of August or earlier, such small quantities may be sown, provided the sowing is done early, but we must ask ourselves how much, or rather how little, of the land of this kingdom is in the state I have described. One kernel in a hole, at intervals of 9 inches by 4, would under favourable circumstances be ample, and produce much more than if 4 times that number were sown, but then we have rooks, French partridges, birds, mice and wire-worm to contend with. The latter may be easily got rid of by sowing or ploughing in rape cake, with or without salt, the latter to be commended. Light land men would be astonished to see our cold tenacious bird-lime-like seed beds in a wet seed time, even where well drained and deeply cultivated. The seeding of friable manageable soils cannot be compared with such a state of things. Besides, the time of harvesting depends upon the quantity of seed sown, and the period at which it is sown.

It is all very well to talk of sowing in September, but in many districts this year all hands were then employed in harvesting, and in late districts seed time will probably be November and December. On my own farm experience has taught me the danger of so small a quantity as one peck per acre, and I know of some cases this year where one peck of Mr. Hallett's Wheat on one acre has been found to produce only three quarters of inferior quality per acre on land which generally produces five or six quarters. Parties who have been thus unsuccessful, should, equally with those who are successful, communicate their results for the information and guidance of their brother farmers.

Absurd quantities of seed continue to be sown as a general practice, but I would advise my brother agriculturists to feel their way down to a proper minimum quantity, suited to their soil and climate by small experiments in their fields. I see so many farms where weeds are allowed to luxuriate and perfect their seeds almost undisturbed, in competition with the cereal crops, that in these it would be the height of folly to attempt thin sowing. There they must sow thick to pre-occupy the ground and smother the weeds, as they will not clean hoe. Thin sowing to be successful demands, like a thinned Turnip crop, a frequent use of the hand and horse hoe, to which much of the land of this kingdom is still a stranger.

In conclusion, Mr. Hallett well deserves our best thanks and good wishes. His Pedigree Wheat is the beginning of a thorough reform in our cultivation of the cereals, I mean as regards keeping the land clean and free from weeds. There is ample scope for such a reform. Let us not forget that the Rev. Mr. Smith, of Lois-Weedon, and Mr. Hewitt Davies, have set us a bright example of thin sowing and clean cultivation, happily and profitably combined.

If I understand Mr. Hallett rightly, he selects the best ears and then the best kernels from those ears. Let others do likewise, and we should then see a great increase of produce. The selection becomes now a positive necessity if we are to keep our stock pure, for the portable threshing machines generally carry about from farm to farm a considerable remnant of kernels from the previous threshing. There is nothing like the flail for purity of stock unless very great care be taken to remove every previous kernel from the threshing machine, which is very difficult to accomplish.

On the Cotswold Hills, and other soils where frosts easily penetrate and destroy the roots of the Wheat, it becomes necessary to sow thick early so that the surface growth of leaves may protect the roots. A successful farming friend, who grows very heavy crops, flags his Wheat, Barley, and Oats, to admit air and prevent the top heavy weight of ribbon or leaf from throwing down the crop too early. Perhaps, taking all circumstances into consideration, the safer way would be, when assured of a plant in the spring, to hoe out of the rows the surplus plants, as in Turnip hoeing, taking especial care to do this before the Wheats begin to tiller and make their surface roots.

I shall certainly try an acre in this way for a comparison. Liebig truly says that there is no greater enemy to a Wheat plant than another Wheat plant, or to a Turnip than another Turnip. The real desideratum is ample, but not superfluous, space for vigorous root development without unduly delaying harvest. Since writing the foregoing I have received the bushel of Wheat so kindly sent by Mr. Hallett.

The farmer who sells my Wheat assures me that this is not the Nursery Wheat of our county, but the White Chaff Red, and that it is not worth so much as the Nursery Wheat (which I grew this year) by 4*s.* per quarter. A friend of mine in Suffolk, who also grew Mr. Hallett's Wheat side by side with what he calls Kessingland or Norfolk, said he could see no difference, and I infer that the Kessingland Wheat is another local name for our White Chaff Red. Mr. Hallett will, no doubt, satisfy himself upon this point. I have also just read with much delight my talented friend Wilkins' amusing criticisms on the thick sowers. He is right in principle where the circumstances are favourable, but he must not ride his hobby too hard and expect his advice to be applicable to ordinary circumstances; weeds and grasses will grow among a very thin crop, as my friend knows from his own experience, but then they will not do much mischief if care be taken to prevent their flowering and seeding, although their green appearance offends the farmer's eye and leads to unpleasant assumptions and criticisms. I have also seen that very interesting and valuable table of trials of various Wheats by "Triticum." The results confirm my opinion that Mr. Hallett's Wheat owes its success more to thin sowing than to selection.

I observe that in that table of trials the time of sowing was the middle of September. That is about the natural time when Wheat would be self sown or shed from its ears, if not harvested, and, of course, the most proper time to plant it. But then our Clover leas should be prepared long before, and it would be hardly possible to have the Bean land ready so soon.

However, steam cultivation will tend very much to an earlier preparation of the soil, so that we may hope ultimately, to see 1 or 2 pecks per acre considered to

be seed enough, thus saving millions of quarters of corn annually to be food for man and beast, with an increased acreable yield. *J. J. Mechi, Tiptree, Oct.* 8.

Thin Sowing: Pedigree Wheat.—It is now nearly 30 years since I first drew attention "to the injury and waste of corn from too thickly sowing." I proved by my practice of many years upon 2000 acres of land, that, with good cultivation, heavier and finer crops of Wheat were to be grown from a bushel of seed per acre than from a greater quantity; and farmers in their thick sowing were worse than throwing away an amount of corn (equal in many cases to half the rent of their land), productive of a loss to the nation of millions per annum, and I supported my practice by showing that a bushel of Wheat per acre generated in the first instance many more plants than the space of ground would admit to reach maturity, and that if more seed were sown than the space afforded room for the plants to continue to grow and develope up to harvest, disease after a time must be the consequence, very prejudicial to the yield and quality of the grain at harvest, a fact well understood by gardeners, and carefully met in their practice by their hoeings, prunings, and thinnings, in the infant stages of growth. Mr. Mechi has only repeated what may more fully be found in my Farming Essays, and I may say has adopted the comparatively small proportions of seed that I recommended 20 years ago, namely a bushel of Wheat, 6 pecks of Barley, and 8 of Oats per acre—quantities that I have since seen reduced with advantage, although they were little more than a third of what was then customary to sow. And with respect to the improved quality of grain to be gained from thin seeding, I may say that there is much to be done, and I am not surprised to find Mr. Hallett exhibiting his fine ears of Wheat from thin seeding. Are not show fruit, roots, and plants gained in the same way? Having seen year after year how much finer was the produce from what was then thin seeding, I thought there was much to be done by combining careful selection with it. I had seen what in this way had been done in Strawberry growing. Thirteen years ago I set two women in a Wheat barn, immediately after harvest, and had the top sheaves of Wheat thrown to them off the bays, for them to draw out the finest ears. The grains from these selected ears I had carefully cleaned and made up, so as to leave only the finest and heaviest grains. In this way I collected a bushel of extraordinary fine seed, which I had drilled by itself in a corner of a field, a foot apart and 2 pecks to the acre. In the spring it was twice hoed by Garrett's hoe and carefully hand-weeded, and kept perfectly clean up to harvest. The ears from this seed grew higher and were larger than the remainder of the field sown a bushel to the acre; there was more straw at harvest and the grains were finer, and I at once saw an opening for farther improvement, but as I relinquished my farming that year, I have never had the opportunity of carrying out my views, although convinced that much was to be done in this way. In going round the Exhibition I have been struck with the beautiful samples of grain that are exhibited in some of the foreign stalls. What an opportunity is there offered for selecting and originating new varieties! I hope some of my friends will recal my practice, and be induced to make trials of them. Let them get their land freely worked down and well consolidated, and drill 12 inches wide one half the quantities I used, as early as possible, and they will come out powerful competitors in the race now commencing in establishing Pedigree seed. There are also several descriptions of grain and Grasses wholly unknown to the English farmer, which might probably be introduced with advantage into this country. *Hewitt Davies, Oct.* 3, 1862.

Home Correspondence.

The Small Pox in Sheep.—As the question already stands, the most valuable food that England produces is brought at once into suspicion and discredit, and no adequate remedy having appeared, I am induced to trouble you with a few observations tending to quiet the public mind if not to elucidate the difficulty, for the proposal of inoculation would I apprehend only augment the panic. Every one must be sensible of the incalculable benefit of that remedy in the human body, but its judiciousness has been questioned, and its success is not invariable. I should recommend then for mutton—certainly not inoculation, still less interment —but patience, warm and dry feet, and fresh air, and separation from the diseased animals, a drink of tar and salt-water (the same ingredients may be applied as an unguent externally) at morning to the diseased, and salt to the healthy. *R.*

Carrots.—The kind I have is White Belgian. In one plot many of the best roots seem to be all eaten out, as if by some internal canker, a crack in the skin of the root appears, and on inspection the inside is all gone. Is over-manuring likely to be the cause of this? They are on a dry loamy soil, and many of the roots are very fine. Another plot on a clay soil, from the same seed, from which I expected less, though not furnishing such large roots, seems to produce them in a more healthy state, as I find no diseased roots in the latter. Both were sown about the middle of April. My present inquiry is however mainly when they should be drawn from the ground, and how stored and treated so as to last longest. *H. A.* [Draw them just before the top gets yellow and too weak to enable you to pull them. Store them in pits as Mangels, covering them with straw only, for a week before putting earth over all.]

Seeding Time: A word on Thin and Early Sowing, as they are inseparable.—Thin seeding implies early sowing, and early sowing dictates thin seeding. The objects in early and thin sowing on heavy land are sixfold, namely, a good seed time; greater tillering; a vigorous plant to stand against the changes of the weather; economy of seed—from 7*s.* 6*d.* to 10*s.* an acre; an early harvest, and a greater produce of straw and yield of corn. With the land deeply cultivated, clean, in good condition, and a good season for the reception of the seeds, the above results must inevitably ensue, and equally so must a failure be inevitable, provided the land be poor, thinly cultivated, and foul; for with early sowing and thin seeding poor land will produce but little; early and thick sown on highly cultivated land will have a similar or worse result, for in nine cases out of ten it will become what is termed root fallen, but what this term means I cannot exactly understand; if it were termed "thick sown fallen," or "thin ploughed fallen," I could understand such terms, but "root fallen" I certainly do not. The cause of what is termed root fallen is nothing more nor less than that all heavy crops, on shallow ploughed lands, must when the ear becomes heavy have a tendency to fall, because the root cannot penetrate the soil sufficiently deep so that it may counteract the weight of the ear when driven by the wind. You will find that Dame Nature has given to every tree not only a root in accordance with the bulk and formation of the tree, but that the roots enter the earth deeply and take such a course as is best adapted to the resistance of the blast; now shallow ploughing or scratching (more properly speaking) prevents the roots taking their natural course for the protection of the ear when it becomes heavy; how much more so must scratching and thick sowing combined act injuriously upon the root for the protection of the ear, for in this case they are so intimately interwoven that they become a mass of mere radicles, without a single vigorous root to support the plant in its proper position, consequently so choke each other and thereby weaken the base of the straw that so soon as the ear becomes at all weighty down it goes, and this is termed "root fallen," whereas the plant falls for the want of a healthy and vigorous root, which it is impossible to obtain in this thick and matted state. Again, early sowing, or indeed late, implies early ploughing so that the land may become consolidated, (not impenetrably so, as it is when not mixed), that the young plant may have a firm hold of the ground as it extends its roots, and as it were grasp the soil; and this cannot be obtained on a fresh or newly turned furrow, not even if it be pressed, so well as Dame Nature will accomplish it. Early and thick sowing is a clear case of insanity, for you sow early to get a thick and vigorous tillering, which is impossible with thick sowing, and this common sense ought to teach us. Why speak of the narrow profits on farming so long as you wantonly throw away your 7*s.* 6*d.* or 10*s.* an acre in over seeding, which is in many instances half the amount of your rent per acre. Land farm-yard manured, deeply and early ploughed, thinly and early sown, upon a clean and stale furrow, will at all times bring forth a good result, and the contrary of these must ultimately be a losing game. Result of thick and thin sowing: 3 acres 2 roods 20 poles of very poor, strong, undrained clay; no manure. Three acres of it were seeded the last week in October with 6 bushels of Wheat—produce, 52 bushels and 168 trusses of straw. The other 2 roods 20 poles were seeded the beginning of the third week in September with 2 quarts of Wheat—produce 10½ bushels and 30 trusses of straw; which is equal to 50 bushels, 3 gallons of Wheat and 144 trusses of straw, provided there had been 3 acres of it. But in this case the thick seeding had infinitely the best of it, because, as we all know, thin seeding has a poor chance on poor, undrained, and unmanured land. To have seeded 3 acres as the 2 roods 20 poles were, would have taken 10 quarts 1 pint, hence a saving of 5 bushels 3 gallons of seed, or in money 1*l.* 15*s.* 5*d.*, or 11*s.* 9*d.* per acre; this is a case of extreme thin seeding, as one-half of the ground was dibbled 1 foot square and the other half 9 inches with only one corn in a hole. *S. G. F., Guildford.*

Cattle Condiments.—There are opportunities of obtaining information on various subjects within the reach of all who are inclined to take advantage of cheap and useful publications; nevertheless, knowledge made easy on every day questions of home economy is too often neglected, and men throw away money which might be profitably employed. Mr. Hunting's letter in the *Gardeners' Chronicle* of August 30, will surely open the eyes of the cultivators of the soil as to the real value of advertised compositions for fatting animals. The flesh and fat-producing properties of all descriptions of vegetables and grain, whether grown in the garden or field, are pretty well known; and may be mixed at home in proportions suited to animals put up for the market, without calling in the assistance of a third party, who requires an enormous per-centage for doing what a farmer ought to be able to accomplish on his own premises. Compounds to produce a false appetite, will, if continued for any length of time, cause feverish symptoms in animals, from an overloaded stomach, and convert what should be wholesome meat into a soft puffy substance which will waste in cooking. The natural desire for food in a well bred healthy animal will enable it to consume a sufficient quantity to cover its frame, without the aid of tonics. Diseases require medical treatment, but these are few where warm sheds and sufficient nourishment are provided. Many ailments in the stable and farm-yard may be traced to want of ventilation, dry and unwholesome diet. No animals are naturally filthy in their habits, they become so by neglect. That much abused quadruped the pig is held up as an example of everything that is unclean, but give it nourishing food and dry straw, and it will contradict the stigma attached to its character. Bean, Barley, and Oatmeal are always to be had at the market price. Take 1 cwt. of each of these, add 3 bushels (pulped) of either Swedes, small Potatoes, or white Belgian Carrot; mix them well together, and pour on sufficient boiling water to form into a paste, cover over to keep in the steam, and when cool it will be fit for use. Let this compound be tried on pigs of the same litter, against any "patent condiment," and the result reported in the *Chronicle*, with a Dr. and Cr. account *pro bono publico.* The expense of the above in a dry state would not exceed 10*l.* per ton previous to adding the crushed vegetables. *Falcon.*

Societies.

Royal Horticultural: *Oct.* 8.—The following is the award in the Agricultural Classes of this great Show, to which reference has been made in a leading article:—

AGRICULTURAL ROOTS and VEGETABLES.

Mangel Wurzel: Long Red, three roots.—Mr. J. Heath, Winchester. Bronze Medal.

Mangel Wurzel: Long Yellow, three roots.—Messrs. Sutton & Sons, Reading. Bronze Medal.

Mangel Wurzel: Yellow Globe, three roots.—Messrs Sutton & Sons, Reading. Bronze Medal.

Mangel Wurzel: Red Globe, three roots.—Mr. J. Perkins, Northampton. Bronze Medal.

Beet: White Sugar, three roots.—The Rev. T. Stevens, St. Andrews' College, Reading, Bronze Medal.

Carrots: White Belgian, six roots.—His Grace the Duke of Portland, Clipstone Park. Bronze Medal.

Carrots: Altringham, six roots.—His Grace the Duke of Portland, Clipstone Park. Bronze Medal.

Turnips: Swedes, six roots.—Mr. S. Robinson, Shawhouse. Bronze Medal.

Turnips: Yellow, six roots.—Messrs. Sutton & Sons, Reading. Bronze Medal.

Turnips: White, six roots.—Messrs. J. Ivery & Son, Dorking and Reigate. Bronze Medal.

Kohl Rabi: Six roots.—Messrs. Sutton & Sons, Reading. Bronze Medal.

CEREALS.

General Collection of Wheats from all quarters.—Mr. P. L. Simmonds, 8, Winchester Street, S.W. Bronze Medal.

Collection of Wheats from any one quarter.—Messrs. H. Raynbird & Co., Basingstoke. Bronze Medal.

Collection of Wheats grown in Lower Canada.—Mr. B. Chamberlin, 15, Fulham Place, Maida Hill. Bronze Medal.

Collection of Wheats grown in Upper Canada.—Mr. C. J. Dixon, 15, Fulham Place, Maida Hill. Bronze Medal.

Collection of Wheats grown in Australia.—The Commissioners for the colony of Victoria. Bronze Medal.

Collection of Wheats grown in England.—Messrs. H. Raynbird & Co., Basingstoke. Bronze Medal.

Collection of Wheats sold in London Market.—Messrs. J. Wrench & Sons, London Bridge. Bronze Medal.

Sample of White Wheat of any kind.—Mr. W. Dixon, Canadian Court, International Exhibition. Bronze Medal. The Commissioners for Victoria, Australia. Commended.

Sample of Red Wheat of any kind.—Messrs. H. Raynbird & Co., Basingstoke. Bronze Medal.

Collection of Barley from any one quarter.—Messrs. J. Wrench & Sons, London Bridge. Bronze Medal.

General Collection of Barley from all quarters.—Messrs. H. Raynbird & Co., Basingstoke. Bronze Medal.

Malting Barley.—Messrs. H. Raynbird & Co., Basingstoke. Bronze Medal.

Collection of Oats from any one quarter.—The Commissioners for the colony of Victoria, Australia. Bronze Medal. Mr. J. Hurlburt. Canadian Court, International Exhibition. Highly Commended.

Black Oats.—Mr. J. Choyce, Atherstone. Bronze Medal.

White Oats.—The Commissioners for the colony of Victoria, Australia. Bronze Medal.

Rye.—Mr. E. W. A. Dixon, 15, Fulham Place, Maida Hill. Bronze Medal.

Collection of Rice from all quarters.—Mr. P. L. Simmonds, 8, Winchester Street, S.W. Bronze Medal.

Head of Maize, or Indian Corn, of any kind.—Mr. W. Dixon, Canadian Court, International Exhibition. Bronze Medal.

Collection of different kinds of Maize, in heads, best quality.—Mr. E. Stuart, Villa Stuart, Nice. Bronze Medal.

Collection of Maize: most numerous in kinds.—Mr. P. L. Simmonds, 8, Winchester Street, S.W. Bronze Medal.

Cereals of any kind, not included in the above.—Mr. J. B. Lawes, Rothamstead, St. Albans. Silver Medal.—Mr. A. Dixon, Canada West (Buckwheat). Highly Commended.

Peas.—Mr. D. Honeyman, Nova Scotian Court, International Exhibition. Bronze Medal.—Mr. E. W. Thompson, Toronto, Canada West—Bronze Medal.

Beans.—Mr. D. Honeyman, Nova Scotian Court, International Exhibition. Bronze Medal.—Mr. L. V. Sicotte, St. Hyacinthe, Canada East—Bronze Medal.

GENERAL COLLECTION.

Messrs. Sutton & Sons, Reading—Silver Medal.

Farmers' Clubs.

Bearwood: *Steam Cultivation.*—At a recent agricultural fête given by Mr. Walter, M.P., Messrs. Fowler and Howard exhibited their machinery for cultivating the land by steam power in operation, and spoke at the dinner subsequently given as follows:—

Mr. Walter, M.P., proposed "the health of Mr. Fowler and Mr. Howard, and success to their enterprise."

Mr. Fowler said: Mr. Walter, in his observations at an earlier part of the proceedings, had given a definition of agri-

which gave it a scope as wide as the world, and so was the field of operations over which steam cultivation would extend its influence. Nothing would be more gratifying than the social changes it was likely to bring about. The difference in the rates of wages to the skilled and unskilled labourer, as compared with the unskilled, would be at once modified. Not long since he could point to the time when the rate of wages of the best men on a farm did not vary 1s. per week, but with the introduction of the threshing machines and the steam plough the rates of wages would vary 5s. a-week between the best and the worst. Then again, the great question of negro slavery must be most materially affected by steam cultivation. With a slave worth 300*l.*, one could not reckon, as in the Southern States, his labour at less than 10s. a week; but the contest became a very different matter, competing with a pair of good horses doing an acre and a quarter a day, and with such a labourer employed in the mere brutal work of scratching over the top of the soil. Where he did work three inches deep the steam plough, at far less cost, would work a foot deep. And so surely as the sun would rise on the morrow, so surely must slavery succumb before the more mighty but silent change which this application of mechanical skill would effect. Already South Australia, Egypt, Cuba, and South America were commencing the work, and only on the previous day he received an order for Porto Rico, as the first step in the progress which he hoped they would all live to see.

Mr. Howard said:—Ploughing by steam was now the great question with the agricultural public; that it was an established fact could no longer be doubted, but the question raised was how far the steam engine could be profitably and economically employed in the tillage and cultivation of the soil. It was now some seven years since he first saw a steam plough in operation, and though the attempt was feeble it was enough to convince him that his own particular craft was in danger; he had, therefore, since that period devoted much time to the subject. Great strides had been made during the last three or four years, and much of the mist and doubt that surrounded the subject had been cleared away. At the present time some 200 or 300 farmers bore testimony, if not to the absolute perfection of the means employed, to the fact that land could be cultivated better and cheaper by steam than by horse-power; and, further, that larger crops could be grown by the deeper cultivation which steam enabled the farmer to obtain. That this new power in agriculture was destined to work great changes, no thinking man could doubt. To the steam engine, principally, we owed our manufacturing and commercial greatness. The steam engine has given us an enormous wealth and the means of supporting an abundant population, and he thoroughly believed it was to the same powerful agent we must look for a great impetus to agriculture, and as the means of enabling us to produce food for our ever-increasing population.

Notices of Books.

The Journal of Agriculture, and the Transactions of the Highland and Agricultural Society of Scotland, for October, 1862. W. Blackwood & Sons.

The current Number of this periodical is noteworthy chiefly for the very interesting paper by Mr. Sanderson, from which we extract the following account of recent agricultural improvements in Berwickshire and Roxburghshire:—

"The following farms, in the best-farmed districts, are chiefly noticed to show the general character of the farming in different districts:—Leaving the town of Kelso by the north road, the large farm-house and steading of Harrietfield farm, about 1½ mile distant from the town, at once from its elevated situation attracts the eye. On entering the farm lands, the well-trimmed hedgerows and handsome and well-hung gates demand attention. In keeping with these are the well-kept approaches to, and lawns surrounding, the farm-house, which augur well for a highly-farmed farm. Being during the summer season when the writer visited this farm, the cattle-boxes and courts—which annually in spring turn out from 60 to 80 of the best-fattened cattle in Roxburgh and Berwick—were empty, but they nevertheless evinced careful supervision. No manure wasting from evaporation, or from surface-waters carrying off its liquid, filled the courts, but these and all they contained were cleaned as carefully as the best kept farm kitchen. And so also the other places. No straw or mud was visible in the approaches to stable or byre, but everywhere carefully kept; and ploughs, carts, and all implements of husbandry, well arranged in their proper places. Leaving the steading for the even more inviting fields, the first enclosure entered, which was in the first year's Grass, well deserved inspection. Its thickly-planted and dark-hued Clover and Grasses, its level and furrowless surface, and the entire absence of Couch-Grass, bore evidence of superior management. Nor were the sheep which depastured the field less attractive: these consisted of pure Leicester shearlings, intended for the great ram sale at Kelso. Their large frames, abundance of wool and evident aptitude to fatten from their high condition, warranted them first-class sheep. All the cereal crops on the farm—Wheat, Oats, and Barley, were singularly equal and quite above average, and no Docks, Thistles, or weeds of any description, were to be seen among the grain. One field of Oats only was cut, the stubble of which was the cleanest the writer ever witnessed. The Turnip crop, too, with the exception of a small portion of headlands, was exceedingly equal and promised to be above average. Forty cattle, intended for fattening during winter, and lately purchased, were browsing on a field of old pasture; they were high-class cattle, and worth from 20*l.* to 25*l.* each. On a neighbouring field of two years' old Grass was a large flock of Leicester ewes—some of them mothers of the shearling rams. The farm contains 600 acres of arable land, and is partly in Roxburgh and partly in Berwick. The soil is only of medium quality, but the use of a large quantity of artificial foods and manures have rendered it productive, and each department, green and grain crops, sheep and cattle, is in keeping with one another, and all skilfully managed.

"In the same district, and in a somewhat elevated situation, is a first-class managed clay farm of about 700 acres. The change which this farm has undergone since the commencement of the present lease in 1854 is remarkable. Open boundary ditches have been filled up, irregular fences made straight, vacant ground occupied, and stiff cold clays rendered warm and friable. The luxuriant crops of every description on this farm this season conspicuously evinced the change. A field of young Grasses, sown down without a crop, was remarkably luxuriant, and maintained an immense number of stock. Besides having driven carriages for an excellent steading, the present tenant has expended on drainage 4040*l.*, exclusive of putting a tile in and filling up all the open ditches; 5076*l.* on lime, and has expended annually from 300*l.* to 400*l.* on artificial manures. The whole of these sums were paid out of the tenant's pocket, with the exception of an abatement of 200*l.* allowed on rent per annum for five years. Besides all the farm manure being applied, which is a very large quantity, from a great number of cattle being annually fattened, the tenant of this farm paid for artificial manures this year 323*l.*, and in addition used 800 cart loads of town dung.

"Mr. Bruce entered the farm of Easter Langlee in 1853. This farm contains nearly 600 acres, chiefly of a clay soil. During the first four summers of the lease the tenant, at his own expense, and with his own horses, laid on the farm 4800 tons of lime; 20,000 roods of drains were executed in five years. Two-thirds of these were filled to the depth of 15 inches with stones, and one-third with tiles. The results of these respective modes prove, what has elsewhere often been proved, that drains well executed with stones operate as efficiently, and preserve an unimpeded current longer than tiles. Mr. Bruce produces extraordinary crops of Wheat; and indeed is very successful with all his crops.

"The farm of Woodend, Dunse, is a singular—it might be said unprecedented—example of expeditious improvements. The farm contains 900 arable acres, and the soil is chiefly of a loamy character. The fields vary from 20 to 60 acres, and are well laid out with straight fences. The farm is exceedingly well managed, and for Turnip culture especially the tenant, Mr. Logan, is not surpassed. Mr. Logan entered on a new lease of the farm at Whitsuntide 1859, little more than two years since. During the first year he limed 700 acres, at a total cost of 3500*l.* In the same year he drained 600 acres—the drains 3 feet deep and 30 feet apart, at a cost of 2520*l.* Simultaneously with these operations Mr. Logan was engaged in driving carriages for two steadings, which cost the proprietor 1000*l.* Mr. Logan intends to complete the whole drainage and liming of the farm this season."

"The name of Mr. Scott, late of Timpendean, must not be omitted in this paper; for whether as regards the extent to which Mr. Scott farmed, his rapid success as a farmer, and the stimulus which his well-ordered mode of husbandry imparted to others, there have been few, if any, farmers who have done so much to advance Border agriculture. From the humble position of a farm servant, Mr. Scott, by great energy of purpose, unwearied industry, singular shrewdness, skilful direction of labour, and the strictest economy concerning all matters, whether business or domestic, raised himself to that of the largest arable farmer in Scotland. Having at the age of 31 saved a little money, Mr. Scott leased, in 1817, the farm of Harrietsfield, which extends to nearly 300 acres, and which at that time was in a state of nature, and covered with Heath and Furze. Mr. Scott, with great energy, entered on the process of reclamation, and by drainage, liming, and efficient tillage, soon became the occupant of an excellent arable farm. Through the improvements which Mr. Scott effected on the farm of Harrietsfield, it has recently been let at a rise of 100 per cent. In 1832 Mr. Scott took the farm of Timpendean, and in 1839 the farm of Broombaulk, and in 1842 the farm of Newton. In 1844 Mr. Scott bought the estate of Samieston, extending to about 600 acres, for which he paid 9000*l.* In 1846 Mr. Scott took the farm of Whitton; in 1853 he took the extensive pastoral farm of Chatto, and the large arable farm of Frogden. With the exception of Harrietsfield, Mr. Scott held all the farms named at the period of his decease in 1853. These farms maintain upwards of 7000 half Leicester sheep, and employ upwards of 60 work horses, and extend to nearly 8000 acres, of which upwards of 3000 are arable. Of the latter Mr. Scott had reclaimed from upland pastures upwards of 1000 acres. Rental of these farms, 5200*l.*

"It may be mentioned that the sons of Mr. Scott are carrying out their father's system. Since his death they have taken four additional farms, and are now reclaiming a large area of land. They now hold upwards of 10,000 acres, which carry 10,000 sheep, and employ 80 work-horses; rental 8000*l.*"

Hints to Landlords and Tenants. By S. G. Finney. Ward & Lock.

We called some months ago the attention of our readers to this very instructive and suggestive volume—decidedly the most suggestive, instructive, and stimulant of a considerable number of similar works by other authors which have been lately published.

A new edition has now appeared, containing a chapter on steam cultivation, to which the following reference is made in the Preface.—

"I also direct especial notice to the cultivation of the land by steam. Well may this country be called the 'old land;' but that is simply to distinguish it from newly-discovered countries; still the term is well applied to British farming. I say frankly that there is too much old land in England. Farmers need not cross the ocean to find new. It is to be found in this country by ploughing, instead of scratching; by carefully studying the means which Providence has laid before us, and using them with skill. I offer my practical experience with confidence, because it has been tested by the safest guide—Results."

The following is the wise advice with which Mr. Finney closes his remarks on the subject:—

"We must bear in mind that steam is at present only in its infancy, and that it is put into the hands of tenants and bailiffs who are perfectly ignorant of its mechanism, what it is capable of doing, and of the resistive power it has to encounter in the soil. Regardless of all this, the masters tell their bailiffs to have it put to work, accompanying that order by saying 'It is 8, 10, 12, or 14-horse power, it can do anything—break up the most tenacious clay, 12 or 14 inches deep, with ease; so I will have it done!' The 'Infant' is then dropped into the hands of a lower class of men, with the same directions, without any instruction or watchfulness, simply because the masters and bailiffs do not like to display their own blameless ignorance in the matter. The labourer goes to work as directed, declares he will turn the land up 12 inches deep—so here goes! The tenacious clay is up, or the tackle is broken, and in nine cases out of ten the latter takes place; delays occur, coals are wasted, men's time is lost, and a great expense is incurred; the master scolds the bailiff, the bailiff pitches into the men; so at last it ends in all three abusing the machine and its maker, forgetting that their own ignorance has caused the loss of tackle, coals, and time. Prejudice, added to legitimate ignorance, for mechanism is new to all, does its best to make the child not only very expensive but bandy, with the hope of crippling it for life. It is in deep cultivation that steam-power has so great an advantage over horse-power.

"I would strongly advise every gentleman and farmer, who intends to adopt steam, to send his bailiff or head man to the engine maker, from whom he intends to have his steam power, for two, three, or four months, to be taught the principle on which the entire tackle is made, and the use of it. For if this plan was adopted, the failures would be very few, and a great expense saved."

Let us take as a last extract his Rules and Regulations for the Bailiff—

"Think Before You Act.

"BAILIFF.

"The following and similar foolish expressions, never to be used:—

"'Can't;' 'Don't know;' 'Never saw it done;' 'So and So does it;' 'I thought.'

"1. The first and principal duty of the bailiff is to see that the rules and regulations laid down by the master be fully carried out.

"2. To enter every man's name and hour of coming to work in the Time Book.

"3. To set out each man's work the previous night, taking care to provide for either wet or dry weather.

"4. To enter what each man has done during the day, and on what ground he has been working, in the Labour Book.

"5. To see that the carts and implements of every description be in working condition, and to take especial care to be provided with all sorts of tools, nuts, screws, harrow tines, skim ploughknives, skim colters, shares, carpenter's rough tools, various sorts of nails, hooks, and staples, in short, duplicates of all minor utensils, should be at hand in case of accident.

"6. To see that each and every description of stock has its full allowance of food, and that they are kept thoroughly cleaned and ventilated—and especially to inspect the horses morning and evening, and to be always provided with medicines for all common cases.

"7. To see that there is always a sufficient supply of food ready for the stock.

"8. To take an account of whatever stock, corn, cake, meal or other matter, that is brought on, bred on, or taken off the premises, and to enter the same in the Stock and Provision Book.

"9. To report to the master all accidents, illness, or other mishaps that may occur on the farm within four hours of its occurrence.

"10. To have the blacksmith's and wheelwright's books put before the master every Friday, and every man's labour entered in the Labour Sheet at the end of each day.

"11. The bailiff should see the men start to work in the morning, leave and return to their work at dinner time, and leave their work at night."

This will sufficiently illustrate the terse and pithy style in which the author has here conveyed the observations and advice of an observant and experienced man.

Miscellaneous.

Trial of Samuelson's Self-delivering Reaper at Woolmet.—Yesterday, one of Samuelson's self-delivering machines was tried on a field of Wheat on the farm of Mr. Gibson, Woolmet. Considerable rain had fallen

during the night, so that the crop—a full average one of spring Wheat (Fenton)—was not in a fit condition for cutting until mid-day; and, indeed, even then it was rather wet in the bottom, there being a vigorous and thick undergrowth of Alsike and red Clover—many of the stems of the former being about 30 inches in length. The machine commenced operations shortly after 1 o'clock. In some parts the crop was strong, laid, and considerably twisted; nevertheless the reaper cut round and round the field, making excellent work, except in the very worst places where the grain lay crosswise to the machine. There the knife left a rough stubble, and the rakes a rather tangled sheaf; but the cutting even there was certainly not worse than would have been made by the best manual-delivery machines, or the sheaves more straggling than the common run of rakers-off make them. The portion of the field operated upon was at first fully 1150 yards round, and the first circle was made in eight and a half minutes, the width of the cut on the average being about four feet six inches. This was at the rate of an acre in 24 minutes, but the speed was much too severe on the horses to be continued long. At an ordinary pace, however, the horses cut 1100 yards in 11 minutes, which is equal to one acre in 33 minutes. At this speed they continued to work throughout the whole of the day, and apparently without being at all oppressed. Indeed, one of the most noticeable features about Samuelson's machine is its lightness of draught and easy motion. This is one of the best tests that this machine has had in Scotland. The crop—especially a bit in which it was tried shortly after 3 o'clock, and in which it did fully better work than in any other portion of the field—was heavier than any in which we have seen it, while it was more laid and tangled. The sheaves, also, which were throughout too small at Haddington, were considered by Mr. Gibson to be large enough. All who were present expressed themselves highly satisfied with the working of the machine, several acknowledging that it had succeeded greatly beyond their expectations. The only objection that we heard taken was that the sheaves were laid a little too angular, not so square at the end as is desirable, but the binders did not seem to experience any difficulty whatever in tying them. *Scottish Farmer.*

Fowler's Steam-plough in East-Lothian.—One of Mr. Fowler's 10-horse engines, with steam grubber and four-furrow ploughing apparatus, has arrived at Drem Station for Mr. Sadler, Ferrygate, who has ventured, after mature consideration, to adopt steam cultivation upon his farm, which is laid out in ten fields, averaging forty acres each, and thus well suited for Mr. Fowler's system, which is most economically worked with 400 or 450 yards of furrow. One-half of the farm consists of a light soil, and the other half is of a heavy nature, with part very stiff, and a few boulders. An opportunity will thus present itself of finding out upon what description of soil the effects of steam are most beneficial. At present there are 14 horses employed upon the farm of Ferrygate, six of which are intended to be dispensed with, leaving eight for the carting of corn, roots, and horse-hoeing, &c., and these horses retained are expected to be easily kept, as the hard work on the farm will be done by the engine. Much of the land in the neighbourhood being flat and strong, and well adapted for steam cultivation, we may congratulate Mr. Fowler in getting his plough introduced into the Dirleton district. We have made arrangements for a careful report of the career of this apparatus, and we hope to present our readers from time to time with an account of the work performed, the expense, &c. *Scottish Farmer.*

Steam Ploughing.—The machinery of Messrs. Savery, of High Orchard Works, Gloucester, created immense interest at the recent exhibition of the Gloucestershire Agricultural Society. The means which they employ are very simple and effective. They employ two steam-engines, to each of which a drum or barrel is applied, which revolves round the horizontal part of the boiler, for the purpose of winding on the rope, thus combining the engine and windlass in one machine, which has very considerable advantages over any other system in requiring no preparation for fixing windlass, anchors, and other appliances previous to commencing work. This is a very great advantage, as the time occupied in fixing these anchors is highly detrimental to the progress of steam ploughing. Being provided with propelling gear and steering motion they travel themselves, one to each side of the field, taking with them plough and porters, and commence ploughing immediately. As we have previously stated they laboured under considerable disadvantage in being confined to a small space, yet we were astonished at the rapidity and ease with which the ploughing of three furrows 10 or 12 inches deep was accomplished, the engines being complete masters of the work. After ploughing the field from side to side, the engines moved one to each end (one having to traverse the newly ploughed ground, which it did in capital style) and ploughed up the headland, which was at a considerable angle. To comment upon the numerous advantages of this system of ploughing requires more space than we can allot, but they were clearly seen by the spectators. We may, however, mention a few of them: 1st, requiring few attendants, one man to each engine, one ploughman, and one or two boys for rope porters; 2nd, being able to work in foggy weather, each engine drawing the plough towards it; 3rd, having the minimum amount of rope in work, there being only one rope across the field; 4th, the rope being wound on a drum of large diameter, capable of taking on 500 yards at one lap, and having a motion to guide it on true, it does not chafe and injure it, as on a small drum with each lap of rope pressing against the other; 5th, the engines are well adapted for any purposes to which an ordinary portable engine can be attached, and by having a threshing machine to each engine employment could be found for them when the ploughing season is over; the engines would propel themselves and draw the machines with them.

The Scottish Farmer.—Were I asked to sketch the character of the Scotch farmer, I would say that he was a man of genial hospitality, of warmth of affections, of shrewd intelligence, of great perseverance, of independent spirit, of honesty of purpose, of staunch patriotism, a lover of political order, and a God-fearing man. *Mr. MacLagan, of Pumpherstone, near Edinburgh.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Oct. 8, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	2	30.14	61	59	S.W.	2	5	63	52	105	48	0.02	58½	58½
Friday ..	3	30.32	64	61	S.W.	1	4	65	59	80	56	..	59	58
Saturday ..	4	30.46	60	57	W.	1	6	70	46	103	40	..	59½	58½
Sunday ..	5	30 45	58	53	N.E.	1	1	67	51	90	46	..	59½	58½
Monday ..	6	30.12	57	55	E.	1	7	67	49	111	43	..	59½	58½
Tuesday ..	7	30.09	52	48	N.W.	2	3	65	45	84	42	0.08	59	58½
Wednesday .	8	30 31	54	52	N.E.	2	3	60	48	91	44	..	58½	58½

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Notices to Correspondents.

Growing Flax.—The following is the extent of Flax grown in Ireland in each of the following years:—1854, 151,403 acres; 1855, 97,075 acres; 1856, 106,311 acres; 1857, 97,721 acres; 1858, 91,646 acres; 1859, 136,282 acres; 1860, 128,595 acres; 1861, 147,957 acres; 1862, 149,889 acres. This last item has just been published.

Samples of Wheat.—We shall be extremely obliged to any of our correspondents for samples not exceeding two oz. each of the sorts of Wheat grown in their respective neighbourhoods, labelled with the names by which the sorts are known, and the several places from which they are sent. A report will next year be published of the experiments to which they will contribute.

Sewage—a Nuisance: *X.* Can any of our readers give the details of an action brought against some one within the past few years for using town sewage for agricultural purposes in respect to its being a nuisance.

Subsoil: *F Stokes.* It is impossible to give advice founded upon a mere examination by the eye of a handful of the soil. We can only urge as general truths, that the drainage of land when water stagnates, the marling of sands, the addition of lime when no calcareous matter, or when an excess of organic matter exists, are all profitable operations.

Wheats: Triticum.—We owe many apologies for the delay of a report on the beautiful series of samples you have sent. The box containing them has for the present gone astray. It will be recovered next week.

Wild Barley: *Hordeum* encloses us a specimen of Wild Barley (Hordeum murinum) with the following query:—"Can you tell me the effect of cultivation upon it, and would it become like the common Barley or Bere in time, and when should it be sown?" Now, from having experimented very largely upon subjects of this nature, we are enabled to say that the effects of cultivation upon wild Barley are decidedly to make the seeds as much as twice the size that they usually are in the wild state, but we have never seen any change that would warrant us in assuming that it would ever become a cereal Barley. In carrying out experiments of this kind, the subjects should be subjected to what we have termed cultivative processes, among which will be—1, Collecting the seed; 2, Storing it; 3, Sowing it in spring in a prepared bed in drills; 4, Weeding, Hoeing, &c.; 5, Top-dressings; 6, Selection of the results for carrying on the experiment; 7, Change of soil and situation. Attention to these points in the hands of any one who can give the necessary time to the matter will, we are assured, produce results for which even our most accomplished naturalists are scarcely prepared.

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Magnified Aphis.

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NEAL'S PLANT SOAP. 1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be ... to destroy all Insects. Each ... makes one Gallon of Wash.

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GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved ... hours before use.

This gets rid of smell, and ... the solution be decanted, prevents any staining of foliage. A strength of from 1 to ... to the gallon of water is recommended for growing Plants; one from 8 to 16 ... for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, ..., 3s., and 10s. 6d. each.

Wholesale by Price's Patent Candle Co., Limited.

COCOA-NUT REFUSE.—In this there are Ferns, Begonias, &c., growing at the bottom of a Case (with Cocoa-nuts on the top outside) in the Eastern Annexe, International Exhibition. Read notices of its uses in *Gardeners' Chronicle*, June 28, p. 597; Sept. 6 and 13, pp. 836 and ...; *Journal of Horticulture*, March 25, pp. 514, 519; July ... 281. Refuse delivered in City of London at 1s. 6d. per bag of 3 bushels. Larger quantities on lower terms on application to the Patent Cocoa Fibre Company, Kingston-on-Thames, S.W.

SHORT FIBRE for Orchids and for Drainage, 20s. per ...

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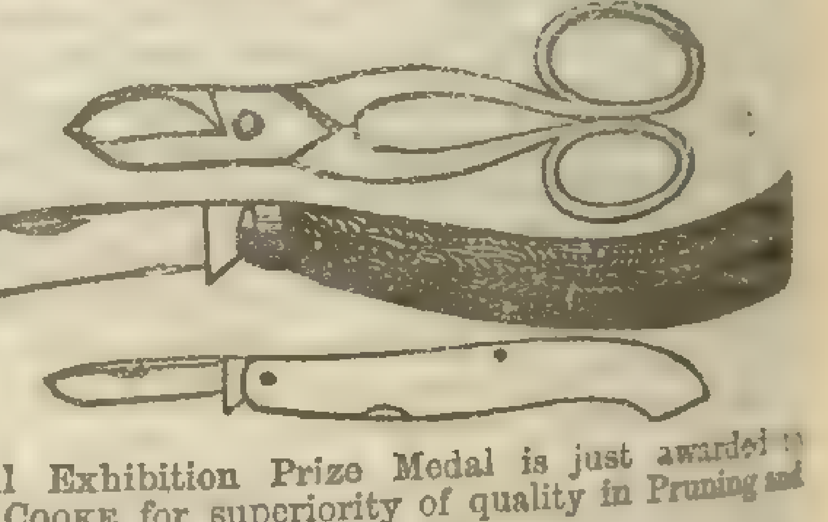

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Price, with Self-moving Anchor, Three-furrow Plough, and Five-tined Grubber, 285l.

For particulars apply to John Fowler, 28, Cornhill, London, E.C.; and Steam Plough Works, Leeds.

SMITH'S PATENT COMBINED MACHINE.—This Machine is admirably adapted for cultivating Light Land Wheat, Barley and Oat Stubbles, and Drilling in Stubble Turnips. Fifteen acres may be Cultivated and Drilled in one day; for Cultivating Light and Heavy Land Pea and Bean Stubbles, and Drilling in Wheat; and for cultivating Heavy Land Wheat Stubbles, and Drilling in Vetches. One operation will be enough for each crop, especially in wet seasons. ... warranted to do its work well.

For price and particulars apply to William Smith, Woolston, Bletchley Station, Bucks.

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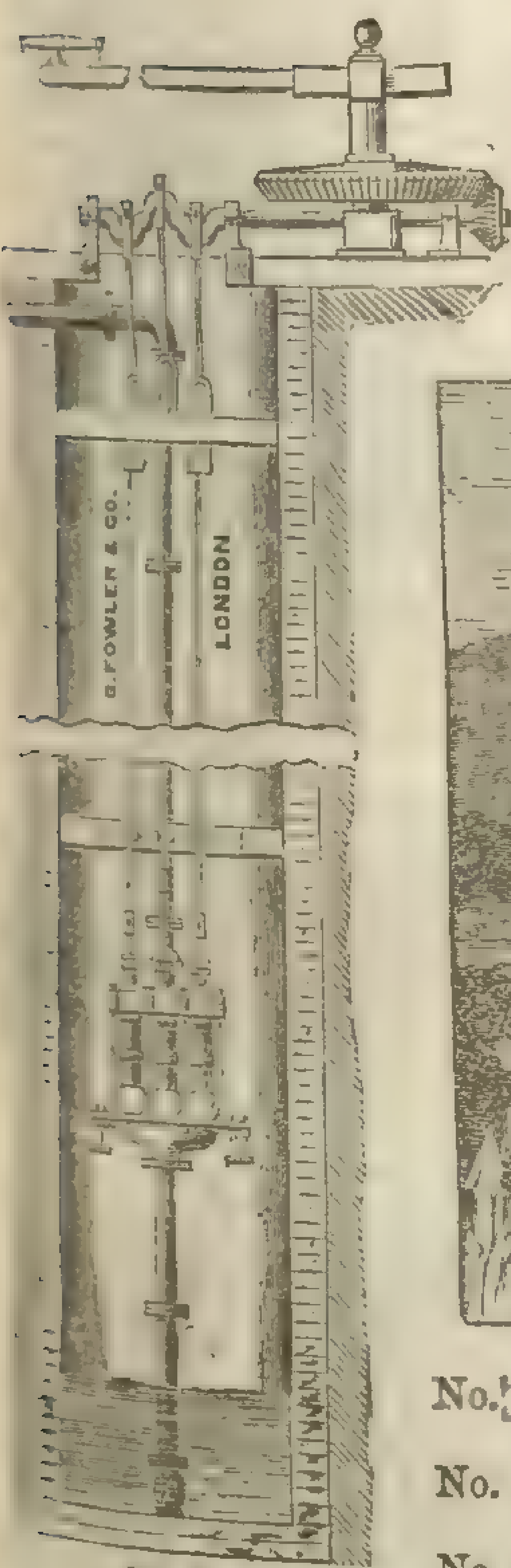

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THE accompanying Sketches show some useful forms of apparatus in general demand for Raising and Forcing Water or Liquid Manure. The Landscape Sketch shows the adaptation of Fowler's Improved Hydraulic Rams for the supply of Mansions, Farms, &c. A large number of these simple Self-acting Machines are in use, giving great satisfaction. Their adoption is not confined to positions as shown below, as they are suited to any situation where a few feet fall can be obtained from a spring, brook, or stream; they will force to an elevation equal to ten or more times the number of feet of fall, and to any distance.

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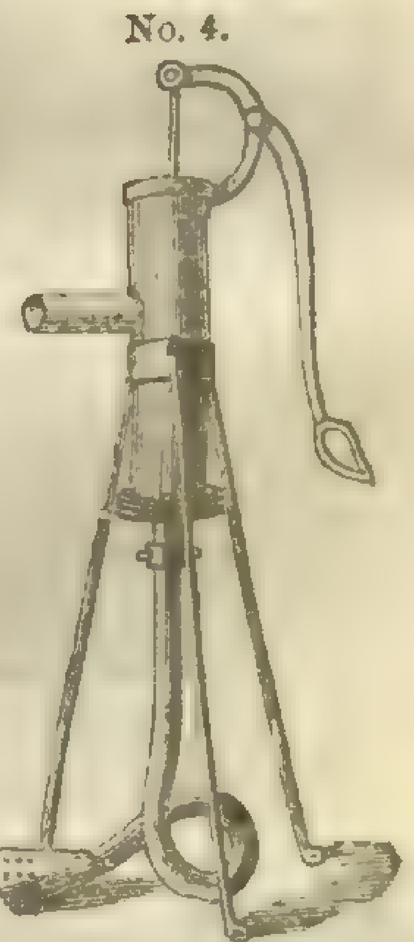
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No. 38. FOWLER'S Galvanized Portable LIQUID MANURE PUMPS, with flexible suction hose. Price, with 10 feet of pipe and strainer, 4*l*. 5*s*.

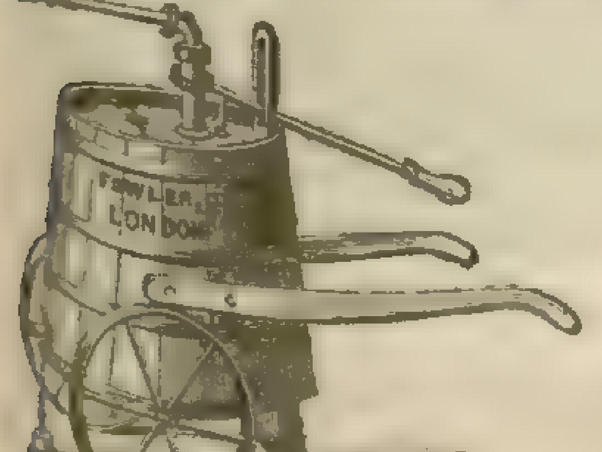
No. 138. FOWLER'S Improved DOUBLE ACTION FORCE PUMP in frame. These excellent pumps are largely used and much approved.

No. 46*a*. FOWLER'S Superior DOUBLE-ACTION PORTABLE FORCE PUMPS and simple FIRE ENGINES for Water or Liquid Manure. Prices, 5*l*. 15*s*., and 7*l*. 10*s*.

No. 50. FOWLER'S Improved (Holman's Patent) DOUBLE-BARREL PUMPS, FARM FIRE ENGINES, and IRRIGATING PUMPS. Prices, from 12*l*. 10*s*.

No. 49. FOWLER'S Improved GARDEN ENGINES of all sizes, in Oak and Galvanized Iron Tanks, from 50*s*. each.

No. 49A. FOWLER'S Improved SWING WATER CARRIERS, holding 24 and 35 gallons. Prices, 42*s*. 6*d*., and 50*s*.



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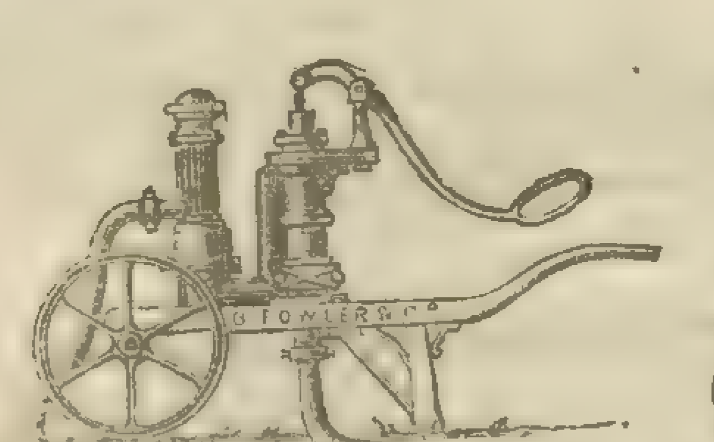
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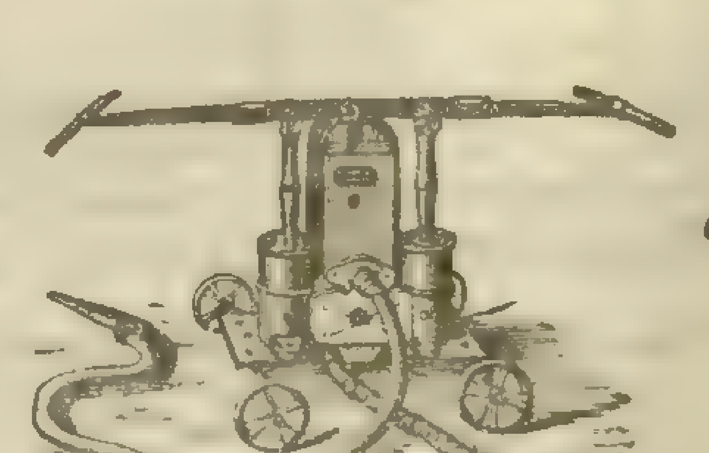
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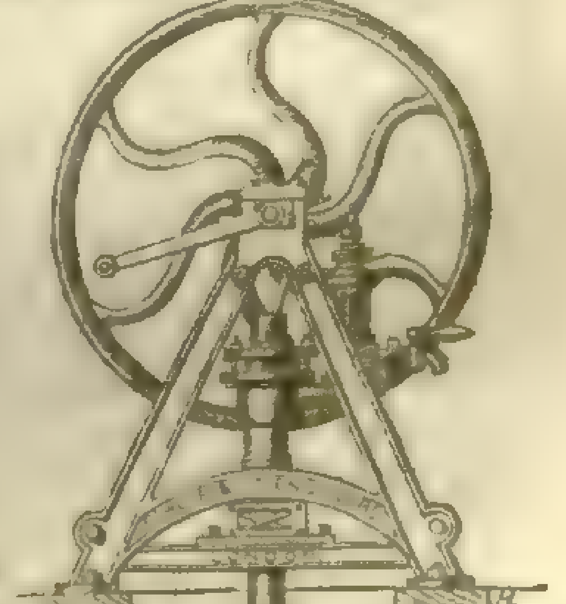
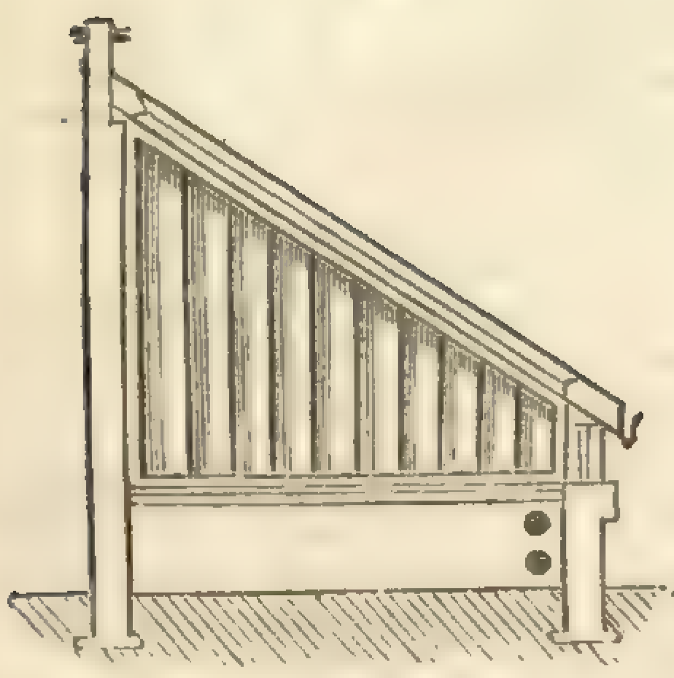
No. 49 A.


No. 138.

FURTHER PARTICULARS, ESTIMATES, AND ILLUSTRATED PRICE LISTS ON APPLICATION.

J. JONES'S HOT-WATER APPARATUS.

No. 7.



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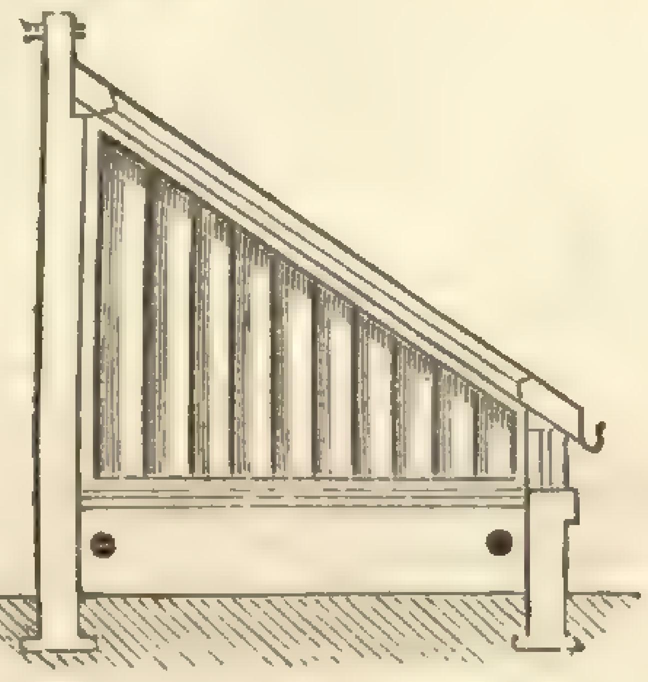

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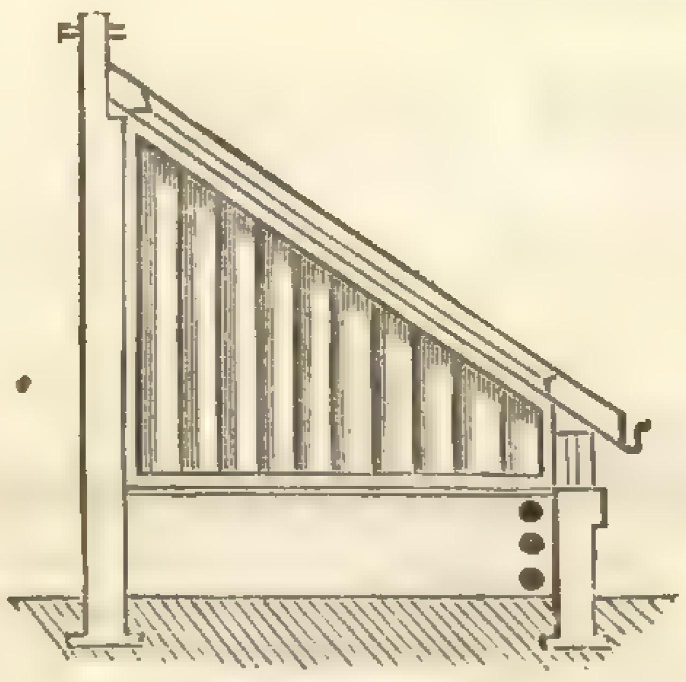

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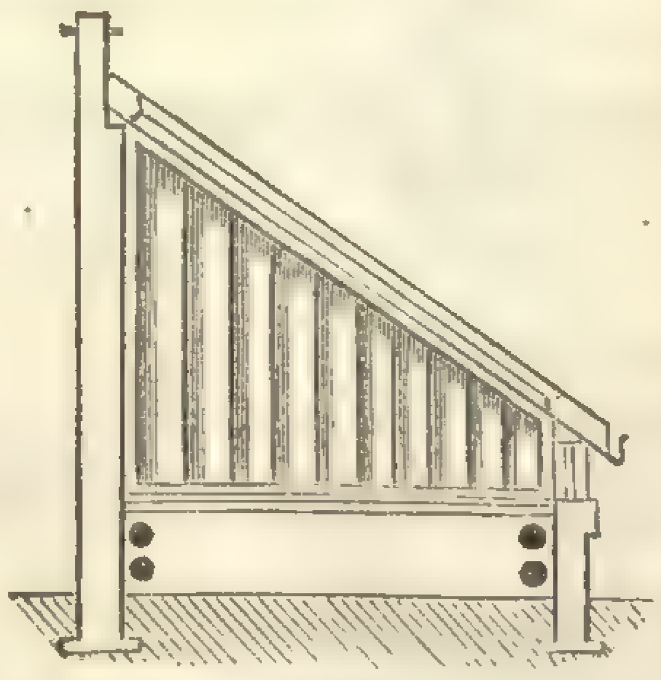

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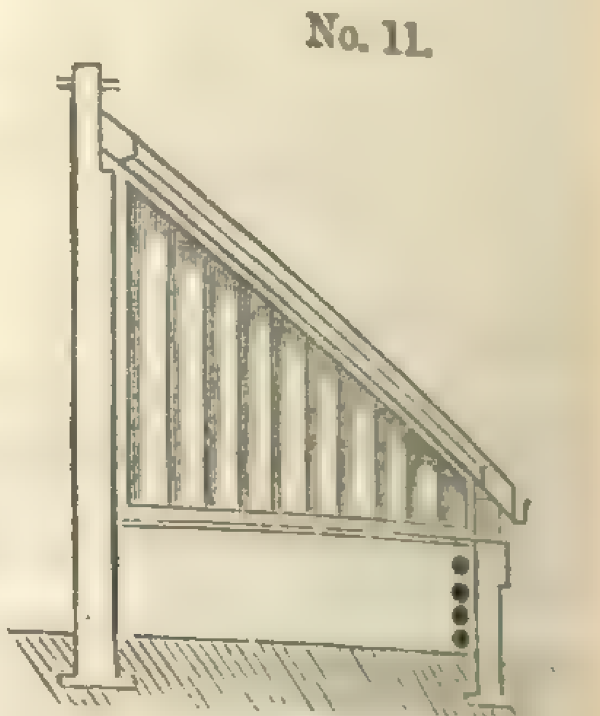
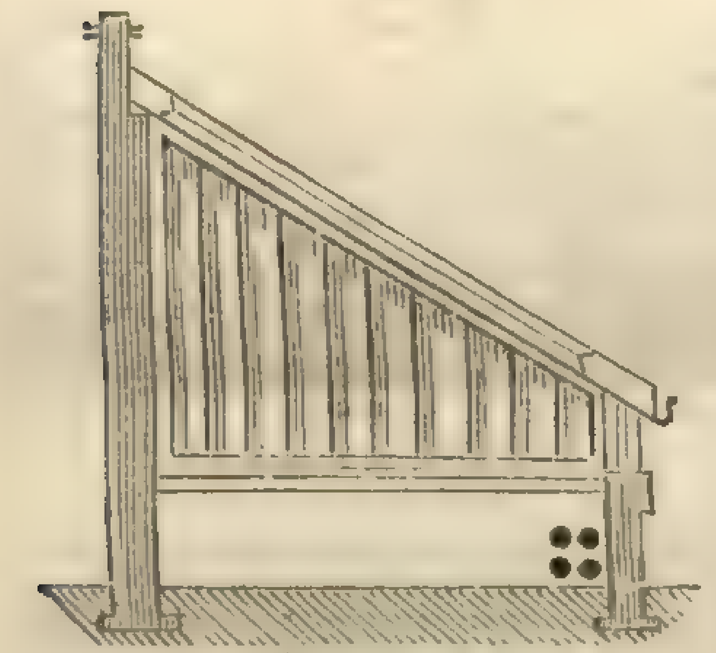


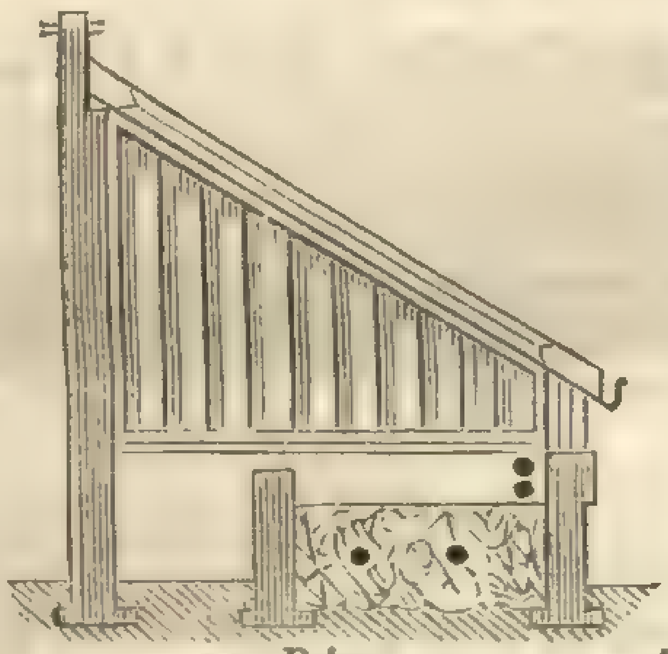
Size of House	Price (No. 7)	Price (No. 8)	Price (No. 9)	Price (No. 10)	Price (No. 11)
20 by 10 ft.	£9 0 0	£9 0 0	£13 0 0	£14 0 0	£15 0 0
30 „ 12 „	12 0 0	12 0 0	17 0 0	19 0 0	21 0 0
40 „ 15 „	15 0 0	15 0 0	21 0 0	24 0 0	25 0 0
50 „ 15 „	18 0 0	18 0 0	24 0 0	28 0 0	29 0 0
60 „ 15 „	20 0 0	20 0 0	27 0 0	32 0 0	33 0 0
70 „ 15 „	22 0 0	22 0 0	30 0 0	36 0 0	37 0 0
80 „ 15 „	24 0 0	24 0 0	33 0 0	40 0 0	41 0 0
100 „ 15 „	26 0 0	26 0 0	36 0 0	44 0 0	45 0 0

No. 12.



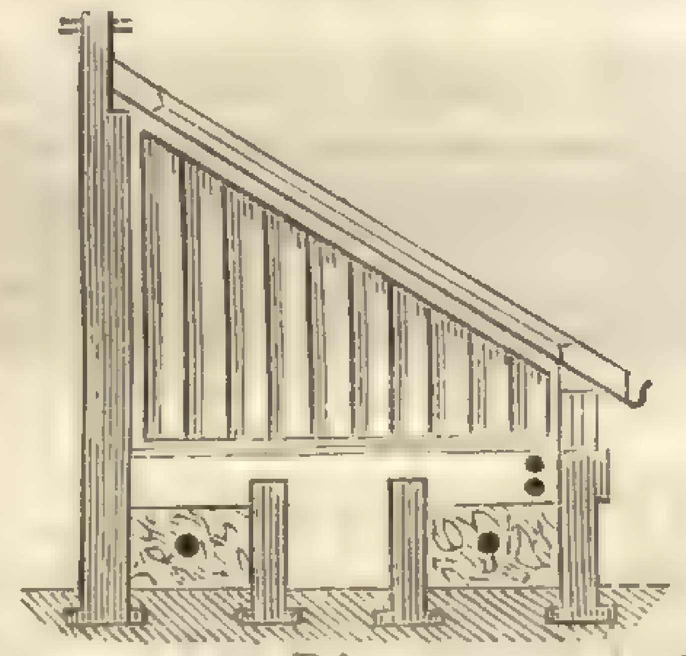
Price
Same as No. 11.

No. 13.



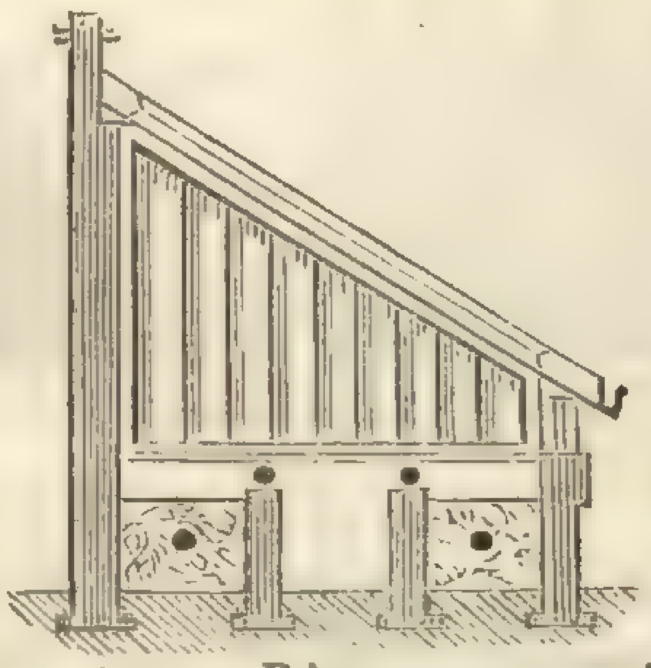
Price
Same as No. 11.

No. 14.



Price
Same as No. 11.

No. 15.

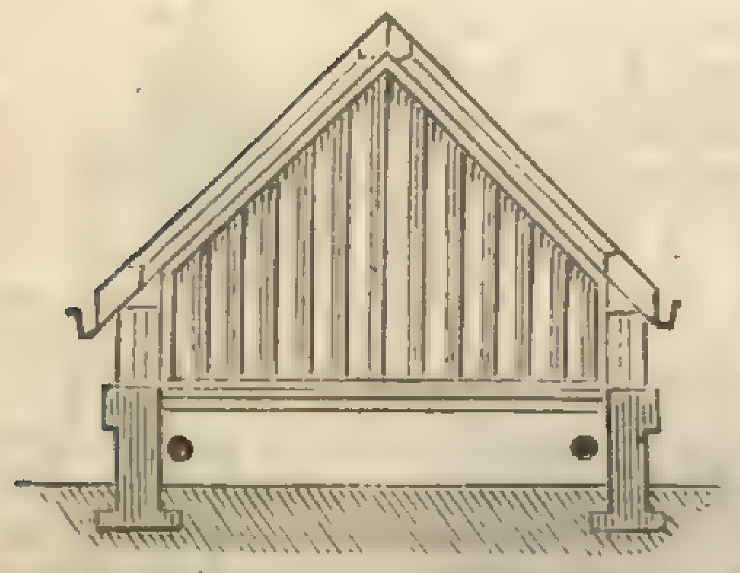


Price
Same as No. 11.

No. 16.

Price
Same as No. 7.

No. 17.



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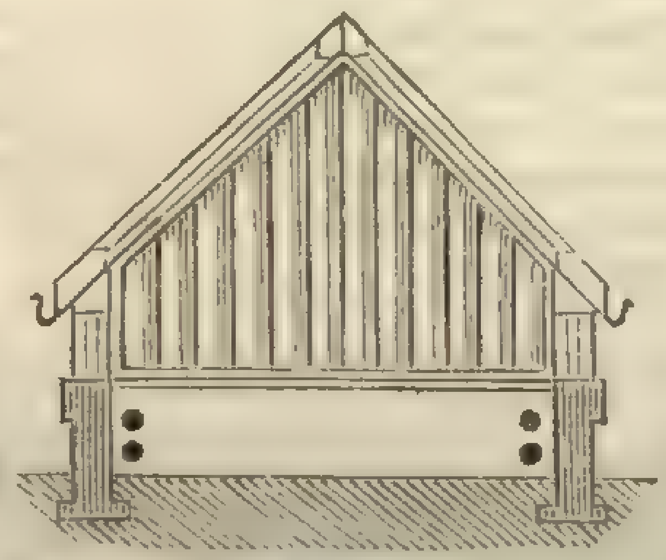

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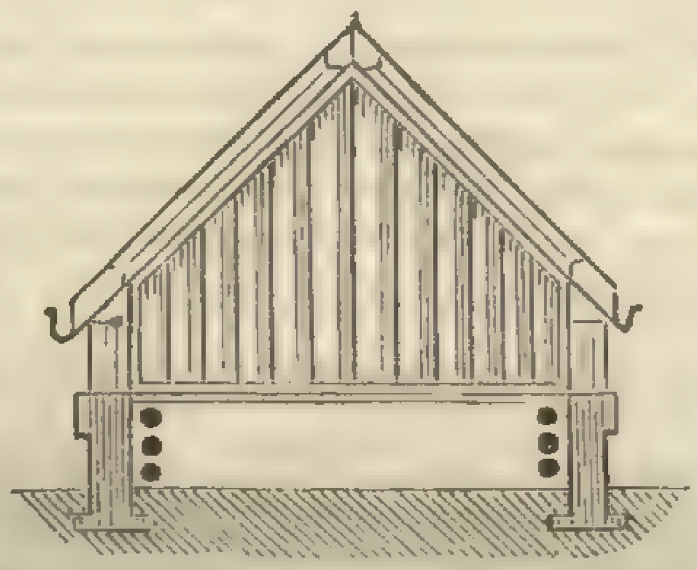

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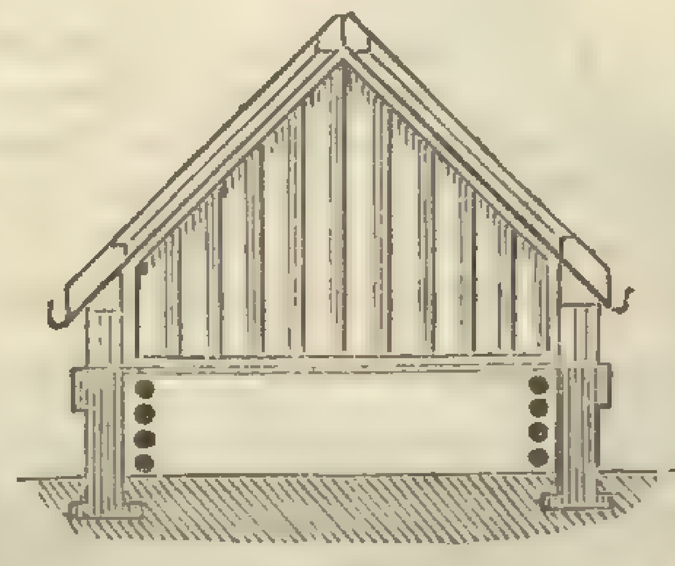
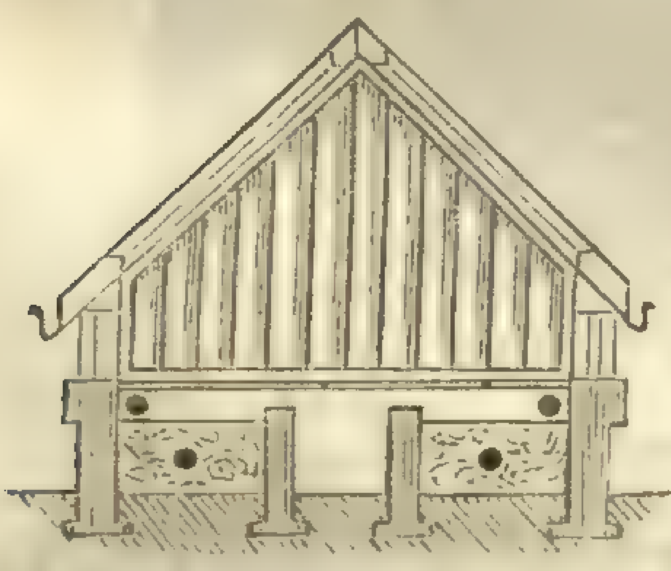


No. 21.

Size of House	Price (No. 17)	Price (No. 18)	Price (No. 19)	Price (No. 20)	Price (No. 21)
20 by 10 ft.	£9 0 0	£14 0 0	£18 10 0	£23 0 0	£23 0 0
30 „ 12 „	12 0 0	19 0 0	24 0 0	30 0 0	30 0 0
40 „ 15 „	15 0 0	24 0 0	29 0 0	36 10 0	36 10 0
50 „ 15 „	18 0 0	28 0 0	34 0 0	42 10 0	42 10 0
60 „ 15 „	20 0 0	32 0 0	39 0 0	49 0 0	49 0 0
70 „ 15 „	22 0 0	36 0 0	44 0 0	56 0 0	56 0 0
80 „ 15 „	24 0 0	40 0 0	49 0 0	63 0 0	63 0 0
100 „ 15 „	26 0 0	44 0 0	54 0 0	70 0 0	70 0 0

No. 22.



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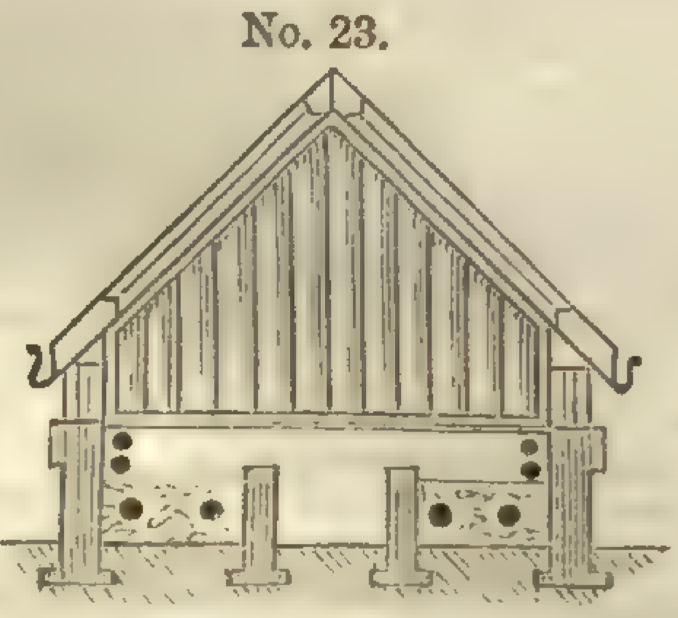
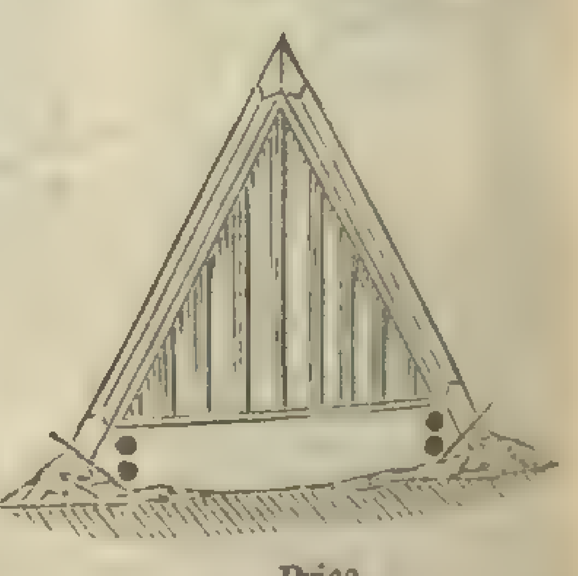


No. 24.

No. 25.

No. 26.



Size of House	Price (No. 22)	Price (No. 23)	Price (No. 24)	Price (No. 25)	Price (No. 26)
20 by 10 ft.	£15 0 0	£25 0 0	£25 0 0	£18 10 0	£14 0 0
30 „ 12 „	21 0 0	32 0 0	32 0 0	25 0 0	19 0 0
40 „ 15 „	25 0 0	38 10 0	38 10 0	30 0 0	24 0 0
50 „ 15 „	29 0 0	44 10 0	44 10 0	35 0 0	28 0 0
60 „ 15 „	33 0 0	51 10 0	51 10 0	40 0 0	32 0 0
70 „ 15 „	37 0 0	58 0 0	58 0 0	45 0 0	36 0 0
80 „ 15 „	41 0 0	65 0 0	65 0 0	50 0 0	40 0 0
100 „ 15 „	45 0 0	72 0 0	72 0 0	55 0 0	44 0 0

J. Jones will be happy to supply HOT-WATER APPARATUS for HOUSES according to any of the above Plans, delivered Free to any Station in England at the prices named, which include strong CAST-IRON CYLINDER or SADDLE BOILER, FURNACE DOORS, FIRE BARS, SOOT DOORS, CISTERN and DAMPER, 4-inch HOT-WATER PIPES and CONNECTIONS, all of the best quality; or he will forward ESTIMATES for WORK erected complete, with WROUGHT or CAST-IRON BOILER of any sort, at a small addition to the above prices.

*** *The Black Circles on Sections of Houses show the arrangement of Pipes.*

Illustrated Catalogues and further particulars post free on application to

J. JONES, IRON MERCHANT and HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

Card.

SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool.
[Reference] permitted to the Nobility and Gentry throughout [Great Br]itain and Ireland.

Ironfounder and Whitesmith

[BY SPEC]IAL APPOINTMENT TO HER MAJESTY THE QUEEN.

W. WALKER, Victoria Foundry, York, Manufacturer of Improved Hot-water Apparatus for every description of Hothouses, Churches, &c. [Heating and] Ventilating Apparatus for Horticultural Buildings, [Iron and] Cattle Fencing, Poultry and Game Netting, Garden [Engines,] Iron Pumps, Improved Yorkshire Cooking Ranges, [Entrance] Gates and Palisades. New Patent "Self Feeding" [Saddle] and other Hotwater Boilers.

[Walker]'s Improved Iron Mangers and Racks for Hunting, [Carriage], and Farm Horse Stables.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hot-[houses], and Laying out Kitchen Gardens and Vineries. Advice [given] in Planting, &c.

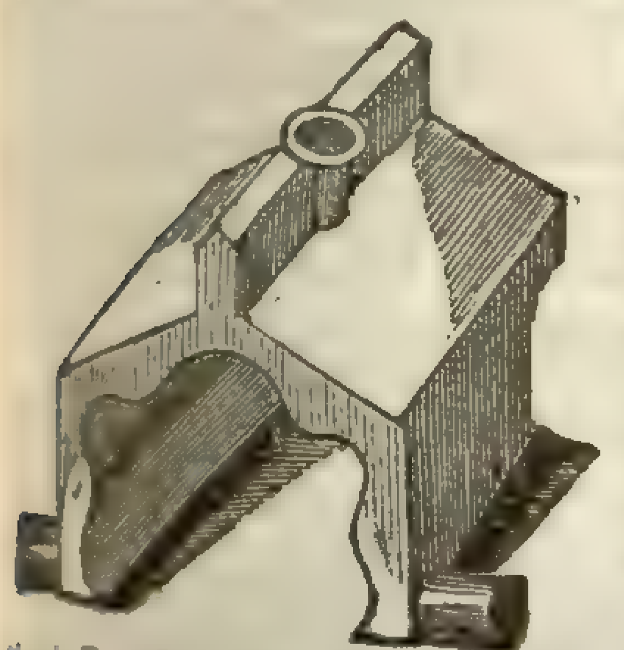
[Apply] to Joseph Meredith, Vine Cottage, Garston, near [Liverpool].

N.B. References to Noblemen and Gentlemen and their [Gardeners] sent on application.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection; [Wrought] and Cast-iron Boilers, Saddle, Conical, Cylinder, [Tubular] and Elliptic, from 24s. each. Improved Boilers and [Stands] to use without brickwork, 50s. each. Valves from [...] each. Beck's Patent Valves. Furnace Doors, Furnace [Bars,] Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. Lynch White's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

T. M. LOBJOIT'S PATENT HOT-WATER BOILERS are acknowledged by all who have them in use to be the most powerful Boilers now known, and are the most economical, requiring less fuel and attention than any other. They are made of various sizes, suitable for heating the smallest Greenhouse to the largest Conservatory, Churches, and Buildings of all descriptions.

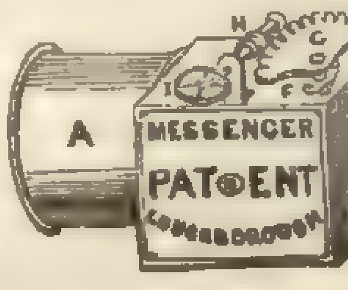


Testimonials forwarded on application to Thos. M. Lobjoit, Horticultural Builder and Hot-Water Apparatus Manufacturer, Turnham Green, W., and at Acton, Middlesex, W.

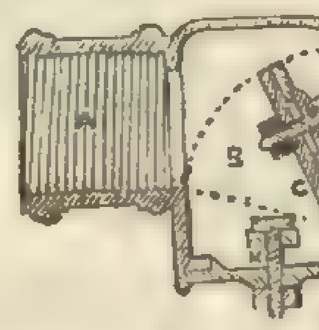
West of England, Ireland, and Wales.

VINCENT SKINNER (late Partner with J. Weeks & Co.), Horticultural Builder and Hot-Water Apparatus Manufacturer. HEATING on the ONE-BOILER SYSTEM. Plans and Estimates on application.

Vincent Skinner, Bridewell Street, Bristol.



Elevation.



Section.

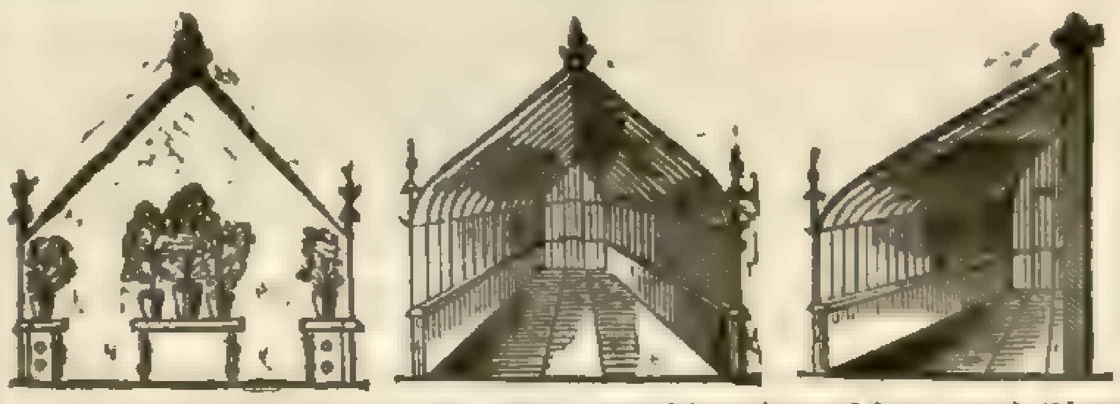
T. G. MESSENGER, Horticultural Builder and Engineer, Loughborough, has recently patented a Valve which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under.

Two-inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s.

A liberal discount to the Trade.

These Valves can be obtained in London of Mr. J. Jones, 6, Bankside, S.E.

DENNIS'S PATENT HORTICULTURAL BUILDINGS are made from the best Wrought Iron, upon



an entirely new principle. The combination of Iron and Glass under this patent is perfect; the possibility of fracture is prevented, and a permanently Water-tight Roof insured.

The leading practical advantages are extreme smallness of Framing, admitting a maximum of light and heat, great strength, durability, and perfect ventilation. They are speedily erected, partake of more desirable outline, and do not exceed the cost of a perishable wooden structure.

For Prospectus, &c., address T. H. P. Dennis, Horticultural Builder, Hot-Water Engineer, &c., High Street, Chelmsford, Essex; or No. 2105, Open Court, Eastern Annexe, International Exhibition, where a Small Model may be seen and attendance is given on the four last days of the week.

WANTED, a LEAN-TO GREENHOUSE, New or good Second-hand; size, 20 to 30 feet, with 12 to 15 feet Lights.

Address, stating lowest cash price, G. W. M., 314, Oxford Street, corner of Harewood Place.

Greenhouses, Orchard-houses, and Conservatories.

H. FREEMAN'S Horticultural Works, Triangle, Hackney, N.E. Established 20 years.
Good substantially made GREENHOUSES, glazed, ready for fixing, 42 feet by 13 feet, 50l.; 21 feet by 13 feet, 28l.; 12½ feet by 10 feet, 15l. ORCHARD-HOUSES, 10 per cent cheaper. A handsome CONSERVATORY, 46 feet by 19 feet, for Sale. Estimates given.

Notice.

WILLIAM SHAKESPEAR, in thanking his numerous Customers for their patronage during the 10 years he has carried on the business of a HOT-HOUSE BUILDER, &c., at 55, Lionel Street, Birmingham, begs to inform them and the Public generally, that he has this day DECLINED the SAME, solely in consequence of Mr. Thomas Clark, the Owner of the Premises, (from whom W. S. purchased the business,) having refused to renew the Lease, in order to put his own Son into the Trade.

All Accounts rendered will be received by W. S., and all Persons having any Claim for Goods supplied to his order, are requested to send full particulars of the same addressed to him, care of Messrs. Wright & Hill, Accountants, 2, Temple Row West, Birmingham, when, if found correct, they will be paid forthwith.—Birmingham, Sept. 29, 1862.

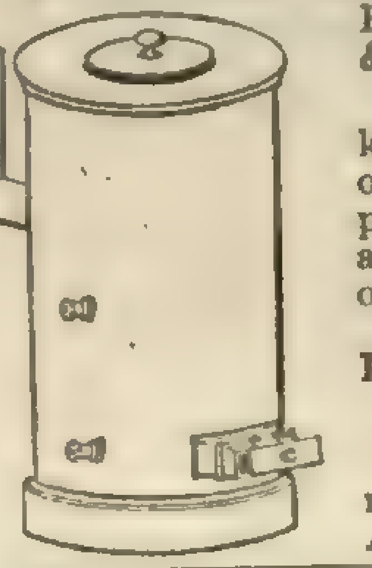
Hothouses for the Million.

International Exhibition, Class 9, Open Court, Eastern Annexe.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to S. Hereman, 7, Pall Mall East, London.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

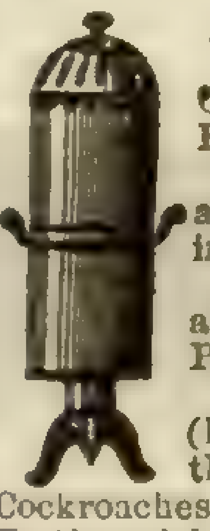


Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3l. 10s.

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

The only Stove without a Flue.



JOYCE'S PATENT, for Warming Chapels, Halls, Shops, Conservatories, and all other Places. Price from 12s. 6d. each.

JOYCE'S STOVES are Portable and Economical, and burn 12 hours with one supply of fuel, requiring no attention.

STOVES for GREENHOUSES are made to burn all the Winter. Temperature always the same. Patent Fuel, 2s. 3d. per Bushel.

The PRUSSIAN VERMIN EXTERMINATOR (Howell's) is the only safe and effective remedy for the destruction of Rats, Mice, Beetles, Ants, and Cockroaches. Sold in Stone Jars, 1s. and 2s. 6d. each, with Testimonials, &c. (to be had of all Chemists).

Swan Nash, Patentee, 253, Oxford Street, and 119, Newgate Street, London, E.C.

Illustrated Catalogues post free.

VENTILATING STOVES, cheap, simple, efficient, and durable.—Thousands have been sold and universally approved. They are suitable for Halls, Warehouses, Conservatories, and every situation where a close Stove is required. The large sizes are extensively used in Churches, Chapels, and Public Buildings with great effect and economy. Prices 50s., 60s., 70s., 90s., and 120s. Prospectus with engravings gratis and post free. In operation daily. The Trade supplied.

Deane & Co., opening to the Monument, London Bridge, E.C.

FOR SALE, TWO GREENHOUSES, one 21 feet by 11 feet, and one 15 feet by 9 feet; and a quantity of PIT and other LIGHTS, size of do. 7 feet by 4 feet, 6 feet by 4 feet, and 5 feet by 3 feet 2 inches. GARDEN FRAMES always ready for use.

Address to James Smith, Carpenter, &c., near the Creek, King Street, Hammersmith W.

WANTED, a CONSERVATORY, about 30 feet long by 20 feet wide, modern build, and in good preservation, and so constructed as to be easily removed.

Apply by letter, stating lowest price, F. A. H., Post Office, Birmingham.

HENRY J. MORTON and CO., 2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern

for Cottage Houses, &c.; to contain 50 gallons, 26s.; 80 gallons, 31s. each; and 140 gallons, 57s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

Galvanised Iron Pumps

for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.

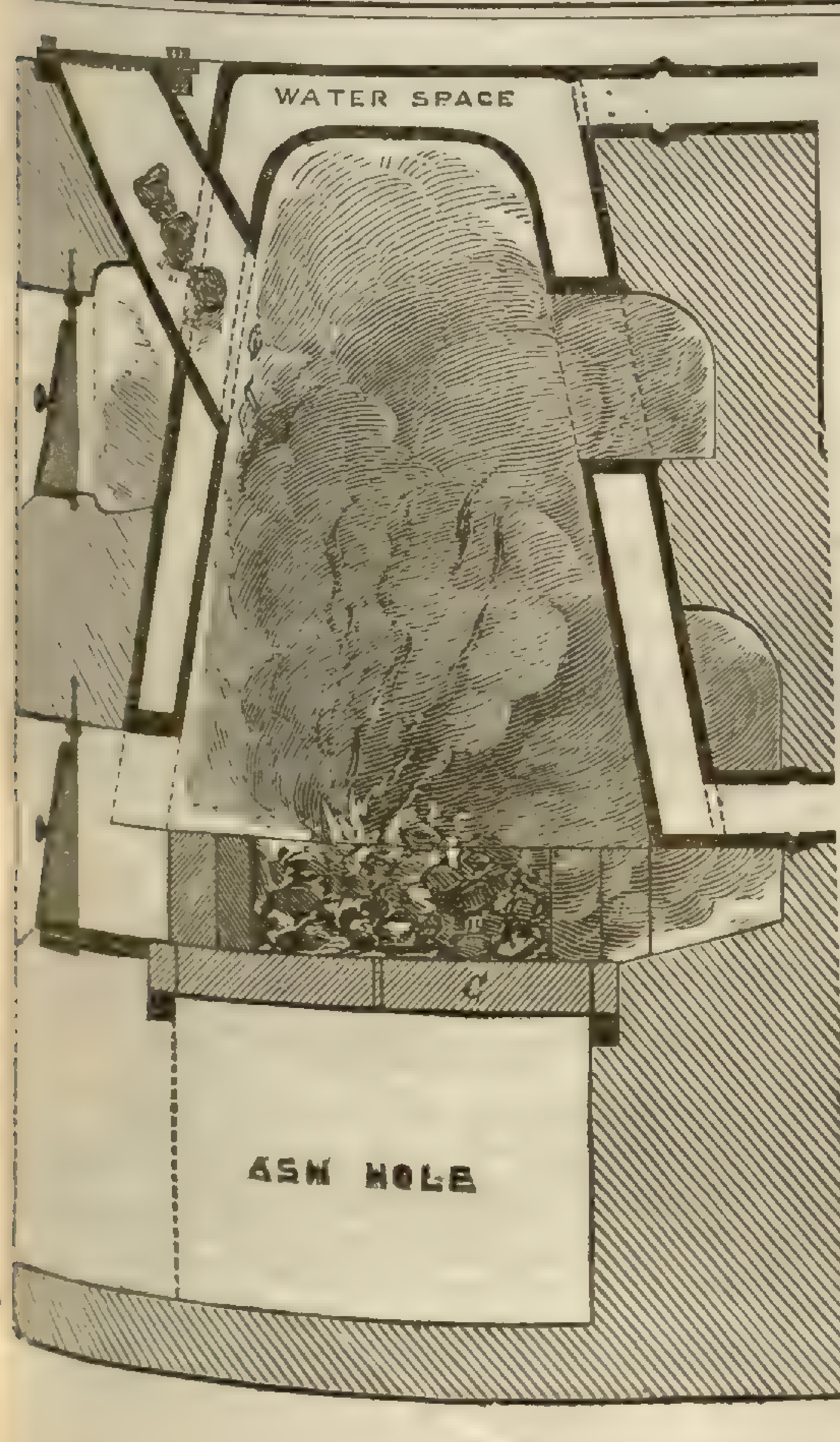
Galvanised Iron Swing Water Barrows

for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35s. 0d. each.

FOWLER'S STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, Orwell Works, Ipswich,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.



THE IMPROVED

CONICAL BOILERS,

SOLELY MANUFACTURED BY

BURY & POLLARD

(SUCCESSORS TO JOHN R. PEILL, LATE STEPHENSON & PEILL),

HAVE attained a celebrity far surpassing any other Boilers ever invented. Of the many hundreds which have been fixed in this and foreign countries, not one single Boiler has ever proved defective, or failed to give the most complete satisfaction. They are connected with large ranges of Pipes (in some cases several thousand yards), at many Public Establishments, at the Crystal Palace, the Royal Botanical Gardens at Kew, and at the Regent's Park, as well as at most of the Nobility's Seats throughout the Kingdom.

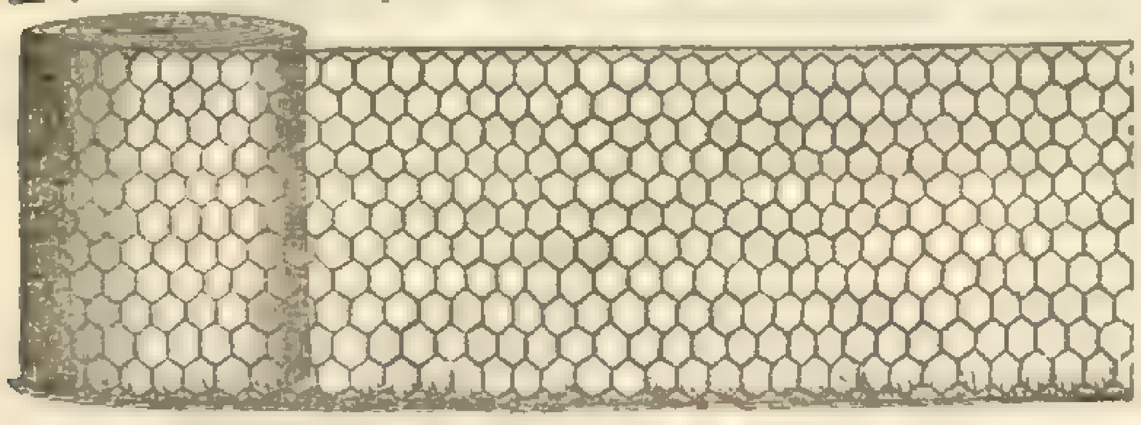
All particulars may be obtained on application to Bury & Pollard, Sole Manufacturers, Park Iron Works, New Park St., Southwark, S.

Price £4 10s. and upwards.

Every description of MATERIAL for HEATING BUILDINGS, supplied of the best description, with directions for putting up HOT-WATER APPARATUS.

NEW IMPROVED PREMIUM WIRE NETTING

Great Improvement with Reduced Price.



PRICES per Lineal Yard 24 inches high.

Size of Mesh.	Mostly used for	Light. Jap	Light. Gal.	Medium. Jap	Medium. Gal.	Strong. Jap	Strong. Gal	Extra Strong. Jap	Extra Strong. Gal.
2 in.	Poultry	3½d.	4½d.	4d.	5d.	5d.	6½d.	6½d.	8d.
1⅝ in.	Small Rabbits ..	4d.	4¾d.	4¾d.	6d.	5½d.	7d.	7d.	9d.

The above can be made any width (under 6 feet), at proportionate prices.

Strong GALVANISED POULTRY NETTING, 7½d. per yard, 3 feet wide. GALVANISED SPARROW-PROOF NETTING for PHEASANTRIES. 11d. per yard, 2 feet wide. WIRE NETTING of every mesh from half an inch to 6 inches.

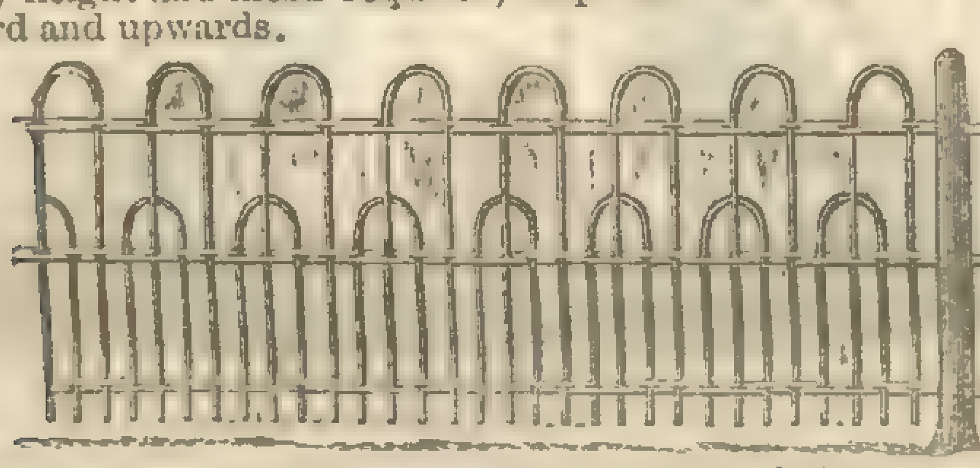
*** Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.

J. B. Brown & Co., 18, Cannon Street, City, London, E.C.

W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.

Manufactory: Newport, Salop.

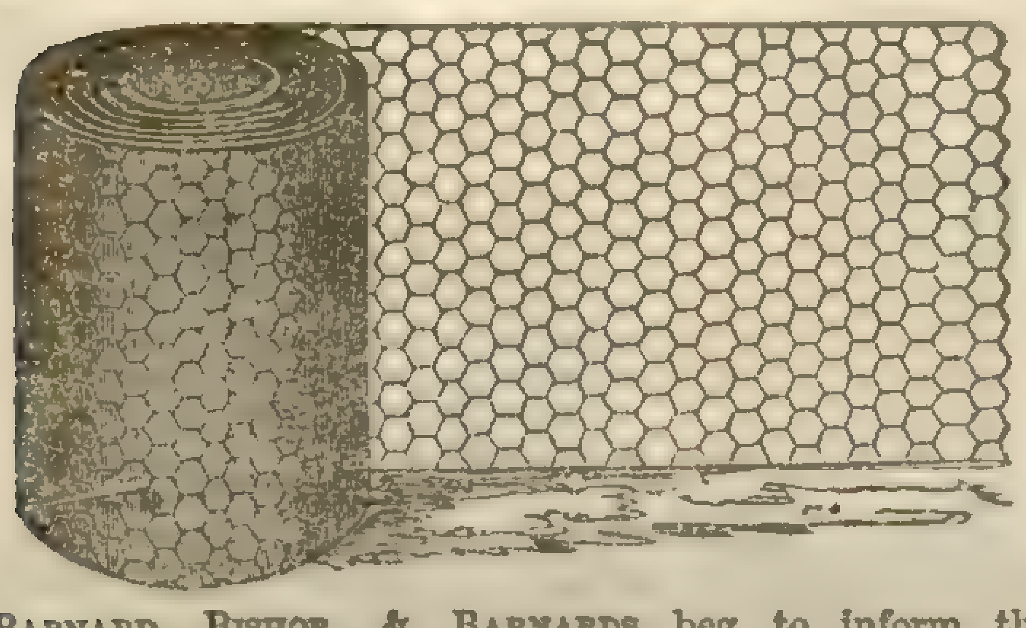
Warranted the strongest and most durable Fence ever offered at corresponding prices. It is easily repaired if broken from accidents; can be rolled up most compactly when not in use, is admirably adapted for exportation, and can be had of any height and mesh required, at prices from 4d. to 1s. 6d. per yard and upwards.



For further particulars apply at the Manufactory, or of the London Agent, Mr. R. Winder, 18, Abingdon Street, Westminster, S.W.

BARNARD, BISHOP, and BARNARDS, Norwich.

FURTHER REDUCTION in the PRICE of WIRE NETTING.—April, 1861.



Barnard, Bishop, & Barnards beg to inform their friends and the public that they have made a further reduction in the prices of Machine made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

		Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch	mesh, 24 inches wide..	No. 19	.. 4½d.	.. 3½d.
2-inch	,, ,, ,, ..	,, 18	.. 5	.. 4
2-inch	,, ,, ,, ..	,, 17	.. 6½	.. 5
2-inch	,, ,, ,, ..	,, 16	.. 8	.. 6¼
1⅝-inch	,, ,, ,, ..	,, 19	.. 4½	.. 4
1⅝-inch	,, ,, ,, ..	,, 18	.. 6	.. 4½
1⅝-inch	,, ,, ,, ..	,, 17	.. 7	.. 5½
1⅝-inch	,, ,, ,, ..	,, 16	.. 9	.. 7

,, All the above kinds can be made any width (under 6 feet), at proportionate prices.

Strong Galvanised Poultry Netting, 7½d. per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11d. per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.

Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.

Five wires, 3 feet 6 inches high, pronged Standards, 8 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10d. per yard.

The same with Galvanised Wire Rope, 1s. per yard.

Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.

*** Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

Gutta Percha Tubing for Watering Gardens.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following *Testimonial from* Mr. J. Farrah, *Gr. to* Boswell Middleton Jalland, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

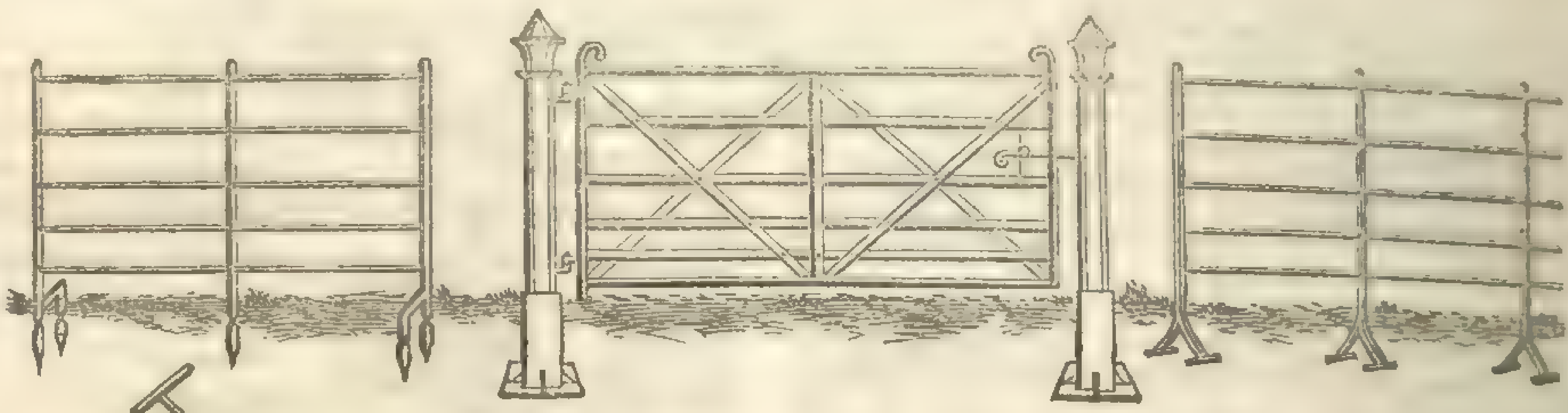
Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

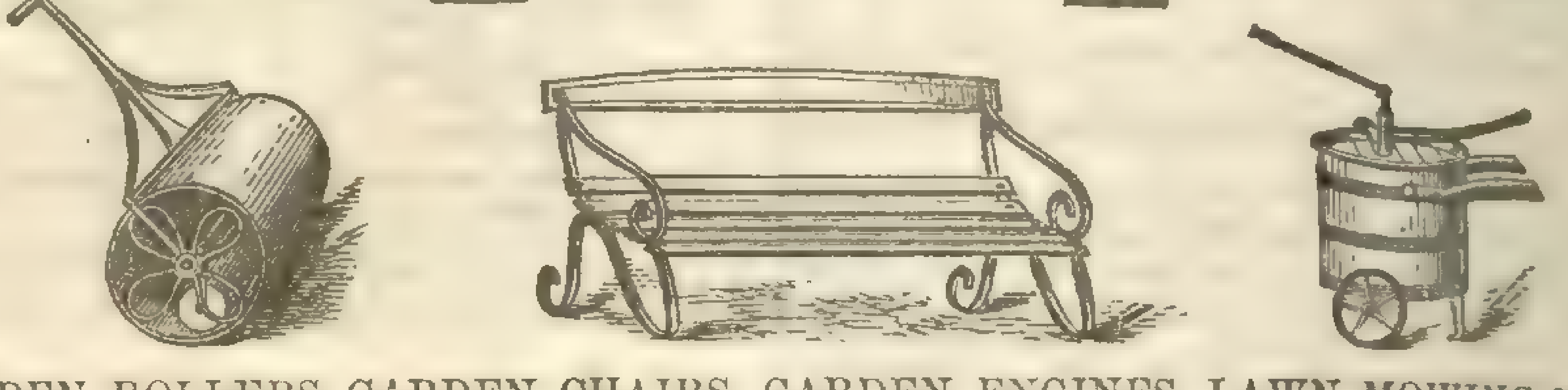
COTTAM'S

CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.





IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c. The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to

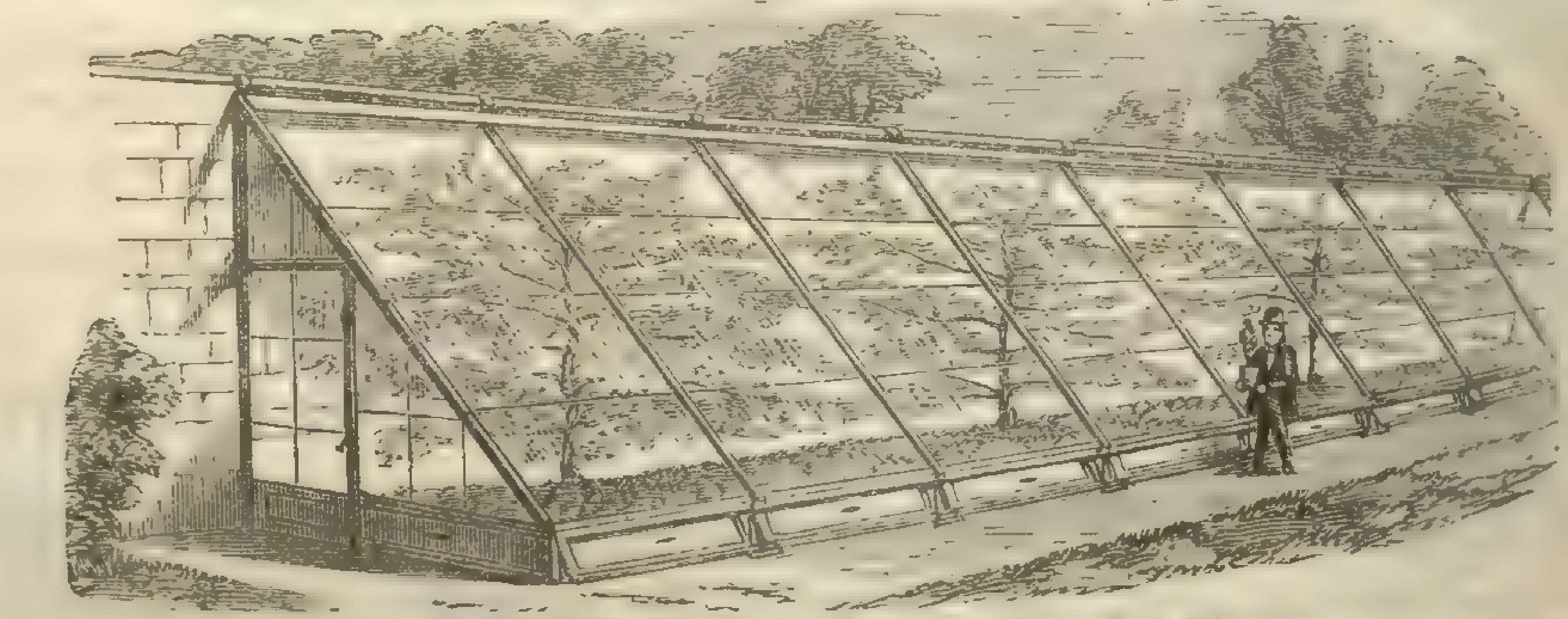
COTTAM & CO., ENGINEERS and IRON FOUNDERS,

2, WINSLEY STREET (Opposite the Pantheon), OXFORD STREET, LONDON, W.

ST. PANCRAS IRON WORKS COMPANY,

OLD ST. PANCRAS ROAD, LONDON, N.W.

BY ROYAL LETTERS PATENT.



SCOTT'S GLASS WALLS,

Designed to meet the suggestions of James Scott, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

CONSERVATORIES GREENHOUSES HOTHOUSES	PINE and MELON PITS VASES VERANDAHS	BALCONIES IRON SASHES IRON HURDLES	GATES TANKS HOT-WATER WORKS

PATENT WROUGHT-IRON STABLE FITTINGS AND ENAMELLED MANGERS.

Every description of IRONWORK. *Lists Free.*

ST. PANCRAS IRON WORK COMPANY, OLD ST. PANCRAS ROAD, LONDON, N.W.

ADOPTED VERY LARGELY BY HER MAJESTY'S GOVERNMENT.

CROGGON'S PATENT ASPHALTE ROOFING FELT,

Price 1d. per square foot.

INODOROUS FELT, for Damp Walls and for Damp Floors under Carpets and Floor Cloths, also for Lining Iron Houses to equalise the temperature. Price 1d. per square foot.

PATENT FELTED SHEATHING, for Covering Ships' Bottoms, &c.

DRY HAIR FELT, for deadening Sound and covering Steam Boilers, Pipes, &c., preventing the Radiation of Heat, thereby saving 25 per cent. in Fuel.

CROGGON & CO.,

ZINC MERCHANTS AND PERFORATORS,

GALVANISED TINNED IRON, and every description of GALVANISED IRON WORK.

CROGGON & CO.'S

NOISELESS ELASTIC KAMPTULICON, or INDIA-RUBBER FLOOR CLOTH.

Impervious to Wet, Indestructible by Damp, Soft to the Tread, and Warm to the Feet, well adapted for Aisles of Churches, Public Offices, Rooms, Shops, &c., as well for its comfort as extreme durability.

Samples, Testimonials, and full particulars, free, on application to

2, GOREE PIAZZAS, LIVERPOOL; or 2, DOWGATE HILL, LONDON, E.C.

T. ARCHER'S "FRIGI DOMO."—Patronised by Her Majesty the Queen, the Duke of Northumberland, his Grace the Duke of Devonshire for Chiswick House, Professor Lindley for the Horticultural Society's Gardens, Sir Joseph Paxton for the Crystal Palace, Royal Botanical Society, late Mrs. Lawrence of Ealing Park, &c. PROTECTION from the SCORCHING RAYS of the SUN. "FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

... yards wide .. .. .. 1s. 6d. per yard run.
... yards wide .. .. .. 3s. per yard.
Improved make, 3 yards wide, 2s. 6d. per yard run.
"Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.
... Thomas Archer, Whole and Sole Manufacturer, 7, ... Lane, Cannon St., City, E.C., and of all Nurserymen ... throughout the kingdom.
"... is much cheaper than Mats as a covering."

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used on the grounds at Windsor Castle, Kew Gardens, and at those of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which Hill & Smith will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.

... to Hill & Smith, Brierley Hill Iron Works, near ... and 76, Cannon Street, E.C., from whom only it can be obtained.

HAY'S PATENT WATERPROOF GLUE and INDIA RUBBER VARNISH.—The WATERPROOF GLUE is most useful to Unite or Coat Wood, Iron and Stone, or Stucco, so as to make them Waterproof. The VARNISH is an excellent covering for Roofs, Fencing, Walls, Canvas, &c., and when applied to damp walls will enable them to be immediately papered or painted over.

Copy of a Letter from Mr. H. Harding, *Builder, Southsea.*

"I beg to testify that a room in one of the most exposed and damp positions coated by me with the Varnish made by the Patent Waterproof Glue Company, Chandos Street, Landport, is perfectly dry, and the paper has stood well on it for months, and is likely to stand; and this where neither paper, paint, or ... would stand before."

To be had of all Wholesale Ironmongers, Oil and Colourmen.

Manufactory: Chandos Street, Portsmouth, Mr. Geo. Weeks, Manager. Geo. C. Warden & Co., General Agents, 12, London Street, London, E.C.; where specimens of its application can be seen.

TO BE LET, a small, compact, and Old Established NURSERY. Stock in first-rate condition, with ... and every thing requisite.

... W., Britannia Nursery, Whally Range, Manchester.

To Fruit Growers, &c.

TO BE LET, with immediate possession, a very productive FRUIT GARDEN, near Gravesend, containing about 4½ acres, with one or more Cottages if required. The whole is well covered with Standard and Dwarf Trees, of the best marketable sorts; they are in a fine bearing state, a large and valuable crop having been taken from them this season. Rent moderate.

For particulars apply to Mrs. Collett, 6, Kensington Park Terrace North, Notting Hill, W., on and after Monday, Oct. 13.

Hucclecote Gardens, 2½ Miles from Gloucester.

TO BE LET, with immediate possession, the above ... walled-in GARDENS, containing about 4 acres, ... House, Farm-yards, Buildings, Orchard, and Land ... containing in the whole 16 acres, with Greenhouses, Forcing Houses, Vineries, Pits, &c. Extent of glass 5770 ...

For particulars apply to Messrs. Bruton & Knowles, ..., King Street, Gloucester.

TO BE DISPOSED OF, a SEED and FRUIT BUSINESS, in a Large and Manufacturing Town, with a ... district, the entire Stock and Goodwill, or either ..., upon very reasonable terms. Can be entered upon immediately, the present proprietor having other engagements requiring his attention.

A. B. C., *Gardeners' Chronicle* Office.

Nursery Business.

FOR SALE, PORTLAND NURSERY, Kilmarnock, consisting of upwards of Six Imperial Acres, partly ... with a general Nursery Stock with Greenhouse, ... House, Frames, &c., according to Inventory and ..., which can be seen in the hands of the Subscriber. ... is healthy, soil good, and the Nursery advantageously ... To an enterprising person with a moderate capital, ... is an excellent opportunity for entering into a profit... established business.

... will be received till October 24, by the Subscriber, ... Wallace, Accountant, 11, King Street, Trustee on ... P...ock's Estate.—Kilmarnock, October 4.

To Noblemen, Gentlemen, and Others.

MR. TIPPET, Auctioneer, will SELL on the 16th inst., at Penventon, Redruth, Cornwall, a rare and valuable COLLECTION of ORCHIDS, in the finest possible condition, of between 20 and 30 years' growth, comprising—

Vanda cœrulea	Aerides virens
" suavis	" quinquevulnerum
" tricolor	Lælia purpurata
" Roxburghia	" acuminata
... retusum	" anceps,
" guttatum	and many others.

Also a large Collection of rare FERNS, and STOVE and GREENHOUSE PLANTS.

Sales by Auction.

Preliminary Notice—Orchard House Trees.

MR. BROWNSON has received instructions from an eminent cultivator to offer by PUBLIC COMPETITION, on OCTOBER 23, at the Rosarium, adjoining the Railway Station, Ashbourne, Derbyshire, about 400 splendid grown FRUIT TREES in POTS, consisting of Peaches, Nectarines, Apricots, Pears (on Quince), Plums, Cherries, &c., most of ... in a bearing state, clean, and in vigorous health; also ... fine-grown EVERGREENS, YEWS, RHODODENDRONS, SCARLET THORNS, &c.

Descriptive Catalogues on application to the Auctioneer, ... October 6.—Ashbourne.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, October 21, at 12 o'Clock precisely, upwards of 260 PENS of CHOICE POULTRY and PIGEONS, consisting of Cochins, Brahmas, and most of the other known varieties, from the yards of Mr. Fookes, and other Fanciers. Also a splendid lot of Pigeons from Mr. Bellamy of Holloway, and others.

On view the Morning of Sale, and Catalogues had.

Specimen Camellias and Azaleas, Fuchsias, Cacti, &c. Also a choice Lot of Dutch Bulbs, Fruit Trees, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, October 22, at half-past 12 o'Clock precisely, a choice Collection of GREENHOUSE PLANTS, the property of a gentleman, comprising specimen Plants of Camellias and Azaleas, from 2 to 5 feet high; fine Fuchsias and Cacti, &c.; also some Fruit Trees, and a consignment just received from Holland, consisting of Hyacinths, Crocuses, Tulips, Narcissus, Ranunculus, Anemones, &c., all very fine and sound bulbs.

On view the Morning of Sale, and Catalogues had.

Important to Nurserymen, and Others.

Extensive Sale of Evergreens.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, on SATURDAY, October 25, at half-past 12 o'Clock, precisely:—

5000 Common LAURELS, 1 to 3 feet high.
1000 GOLDEN and VARIEGATED HOLLIES, 1 to 2 feet.
1000 AUCUBAS, 1 to 3 feet.
1000 TREE BOX, 1 to 2 feet.
1000 BERBERIS AQUIFOLIA, 1 to 3 feet.
1000 Common YEWS, 1 to 3 feet.
250 IRISH YEWS, 2 to 5 feet.
250 ARBOR-VITÆS of sorts.
250 COTONEASTERS.
1000 MANETTI ROSE STOCKS.
All very healthy and well grown plants.

On view the Morning of Sale and Catalogues had.

Stapleford, near Cambridge.

Highly important Sale of Specimen Stove and Greenhouse Plants of R. Headly, Esq., who has ranked amongst the most successful exhibitors during past years.

MR. J. C. STEVENS has been favoured with instructions to submit to PUBLIC COMPETITION without the least reservation, at the Gardens, Stapleford, near Cambridge, on TUESDAY, October 28, at 12 o'clock precisely, the very choice and valuable COLLECTION of SPECIMEN PLANTS, consisting of Azaleas, Epacris, Ericas, Polygalas, Boroneas, and other Stove and Greenhouse Plants. All beautifully grown and in fine health.

On view the day before and Morning of Sale (by Catalogues only, 6d. each—by post for 7 Stamps) which can be had at Stapleford; at the principal Inns at Cambridge; and of Mr. J. C. Stevens, 38, King Street, Covent Garden, W.C.

Shelford Station, on the Great Eastern Railway, is close to Stapleford. The Train leaving Shoreditch at 8 o'clock arrives there at 10.

Important Sale of Plants at the Arboretum,

Leamington Spa, Warwickshire.

MR. J. C. STEVENS has been favoured with instructions from the Proprietor, John Hitchman, Esq., who is intending to erect a Hydropathic Establishment in the Arboretum, to SELL by AUCTION, on the Premises, on MONDAY, October 13, and five following days, at half-past 11 o'Clock each day, the Valuable and Extensive COLLECTION of SPECIMEN CONIFERS and other ORNAMENTAL PLANTS, consisting of upwards of 800,000, all of which have been well prepared for removal, having been frequently transplanted, and several hundreds of the choicer kinds, being grown in crates, including magnificent specimens (besides many others), of the following known kinds:—

Araucaria imbricata, 4 to 8 feet	Pinus tuberculata, 1 to 3 feet
Abies Douglasii, 6 to 9 feet	" ponderosa, 2 to 4 feet
" Menziesii, 5 to 8 feet	" Sabiniana, 1 to 3 feet
Cedrus atlantica, 4 to 6 feet	" Lambertiana, 1 to 4 feet
" Deodara, 4 to 10 feet	Picea amabilis, 1 foot
" Libani, 4 to 8 feet	" grandis, 1 foot
Cryptomeria japonica, 4 to 9 ft.	" Pinsapo, 1 to 7 feet
Cupressus Lambertiana, 2 to 3 ft.	" Nordmanniana, 1 to 4 ft.
" Lawsoniana, 1 to 4 feet	" nobilis, 1 to 4 feet
" McNabiana, 1 to 2 feet	Taxus ericoides, 1 to 4 feet
Cephalotaxus Fortuni, 1 to 3 ft.	" aurea variegata, 1 to 3 ft.
Juniperus excelsa, 1 to 5 feet	" elegantissima, 1 to 3 feet
" chinensis, 1 to 4 feet	" adpressa, 1 to 3 feet
" dealbata, 1 to 3 feet	Thuja gigantea, 1 to 3 feet
Libocedrus decurrens, 1 foot	" aurea, 1 to 2 feet
Pinus austriaca, 2 to 5 feet	Thujopsis borealis, 1 to 3 feet
" Benthamiana, 3 to 4 feet (In crates.)	Wellingtonia gigantea, 1 to 4 ft.
Pinus excelsa, 2 to 10 feet	Yews (Irish), 6 to 10 feet
" Jeffreyi, 1 to 3 feet	&c. &c.

Also various first-class Evergreens and Deciduous Trees and Shrubs of different sizes. Fine Dwarf-trained STANDARD and other FRUIT TREES, about 10,000 DWARF and STANDARD ROSES of the choicest named kinds, Rhododendrons, Camellias, Azaleas, Variegated and other Hollies, Portugal and Common Laurels, Forest Trees, and a variety of other Hardy and Greenhouse Plants.

May be viewed till the time of Sale, when Catalogues (1s. each, or by post 14 stamps, containing upwards of 160 pages of printed particulars, may be had at the Nursery; at the principal Inns at Banbury, Oxford, Coventry, Birmingham, Manchester, Rugby, Leicester, Northampton, Stratford, Derby, Worcester, Burton-on-Trent, Stratford-on-Avon, Warwick; and at Mr. J. C. Stevens's Auction Rooms and Offices, 38, King Street, Covent Garden, London. Approved Bills at 3 months will be taken of Purchasers above 50l.

The Arboretum is within five minutes' walk of the Leamington Stations on the Great Western and North Western Railways, which offers great facilities for transmitting the Plants to every part of the country. Frequent trains run daily to and from Leamington, and cheap trains three times a week from most of the principal towns.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at the Mart, on FRIDAY, Oct. 17, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 300 very handsome Standard, Half Standard, and Dwarf ROSES, selected AMERICAN PLANTS, well set with Bloom Buds, &c.

On view the Morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nurseries, Leytonstone, N.E.

Maidstone.

Important Sale of Fruit and other Trees, Evergreens, and Shrubs.

MESSRS. PROTHEROE and MORRIS are instructed to SELL by AUCTION on the Premises, the Bower Nurseries, Maidstone, Kent, on MONDAY, October 13, and two following days, at 11 o'Clock, by order of the Proprietor, the land being taken for other purposes, the whole of the valuable NURSERY STOCK, extending over seven acres, and in a fine healthy condition, comprising many thousands of Standard and Dwarf-trained, Untrained, and Pyramidal Fruit Trees, and upwards of 14,000 Maiden Apples, Pears, Plums, Cherries, Apricots, &c.; also a large assortment of Ornamental and Forest Trees, consisting of Limes, Weeping and other Ash, Thorns, Laburnums, Acacias, Willows, Chestnuts, Birch, Maple, Planes, Sycamore, Beech, Cypress, Elms, Poplars, Oaks, &c.; Evergreens, Conifers, and Deciduous Shrubs, ranging all sizes (all of which will remove safely, having been only two years transplanted), including Variegated and Green Holly, Irish and Fan Yews, Portugal and Common Laurel, Chinese and other Privet, Aucuba, Cotoneaster, Arbor-vitæ, Euonymus, Phillyreas, Bays, &c.; handsome Cedrus Deodara, Libani, Libocedrus, Pinus sorts, Picea, Taxus adpressa, Thuja, Wellingtonia gigantea, Thujopsis borealis, &c.; Deutzia, Spiræa, Syringa, &c.; together with about 2000 very fine Standard and Dwarf Roses, several thousand Quick, Larch, Box Edging, &c.

May be viewed prior to the Sale. Catalogues may be had, 6d. each, returnable to purchasers, on the Premises; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

Stoke Newington Road.

To Gentlemen, Nurserymen, Florists, and Others.

MESSRS. PROTHEROE and MORRIS are directed by Mr. Rawlins to SELL by AUCTION on the Premises, Caledonian Nursery, Stoke Newington Road, N., on WEDNESDAY, October 15, at 12 o'Clock, the Lease having expired, the whole of the NURSERY STOCK, comprising the usual assortment; also the GREENHOUSE PLANTS, including choice Azalea indica, well set with bloom buds; Ericas, Show and Scarlet Geraniums, Fuchsias, Veronicas, &c., with three capital Greenhouses, Pits, Staging, 1 and 2 Light Boxes, quantity of Bricks, Manure and Compost, Garden Roller, Wheelbarrows, Tools, and sundry effects.

May be viewed prior to the Sale; Catalogues may be had on the Premises; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nurseries, Leytonstone, Essex, N.E.

Important Sale at Milford Nurseries,

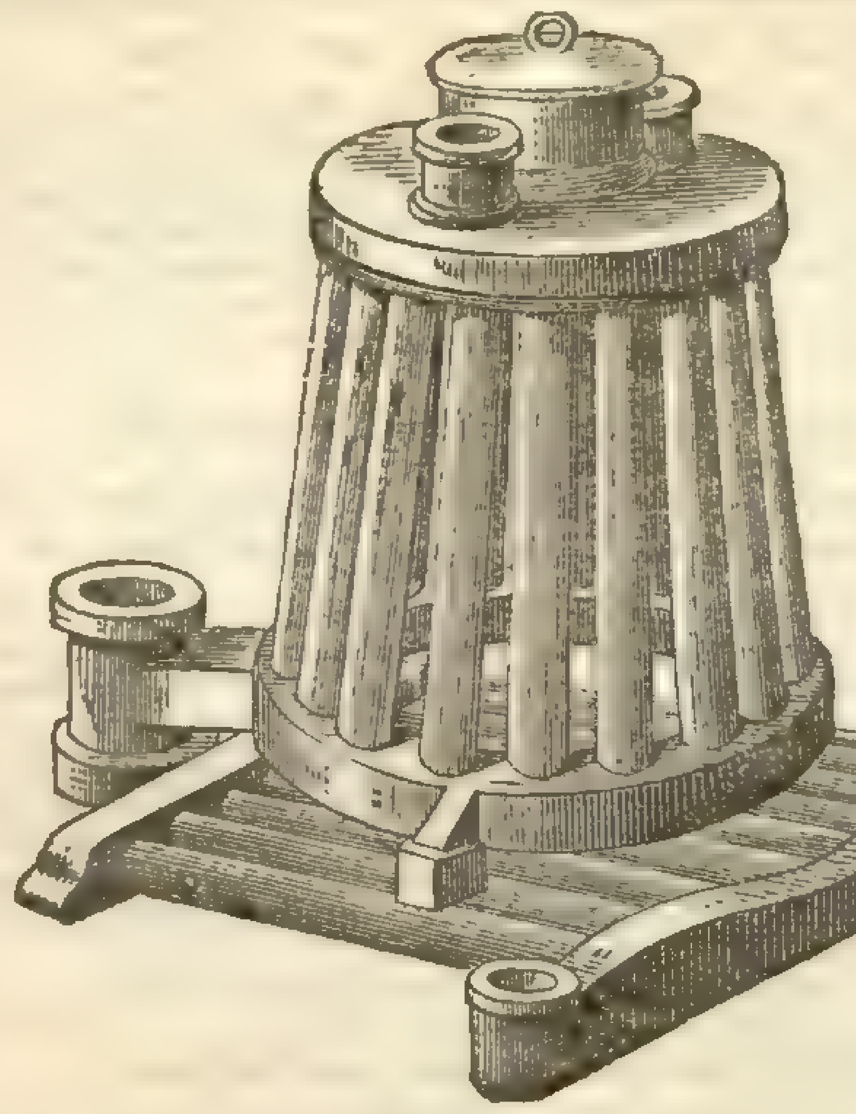
Near Godalming, Surrey.

MESSRS. PROTHEROE and MORRIS are directed by the Executors of the late Mr. Wm. Young, to Submit to an unreserved SALE by AUCTION, on the Premises, The Milford Nurseries, near Godalming, Surrey, and within 10 minutes walk of the Milford Station, on the South Western Railway, on MONDAY, October 27, and three following days, at 11 o'Clock each day, a portion of the valuable NURSERY STOCK (which is well worthy the attention of Noblemen, Gentlemen, Public Companies, and the Trade requiring matchless symmetrical-formed Conifers and other desirable specimens for effective purposes), consisting of 1500 Araucaria imbricata, from 1 to 6 feet; 2000 Cedrus Deodara, from 2 to 8 feet; 100 Cedars of Lebanon, 2 to 8 feet; some very handsome Picea Pinsapo, 6 to 8 feet; Nordmanniana, 3 feet; nobilis, 1 to 2 feet; Thuja gigantea, 3 to 4 feet; pendula, Lobbii, aurea; upwards of 500 Abies Douglasii, 4 to 8 feet; Menziesii, 3 to 6 feet; orientalis, 3 feet; Clanbrasiliana, 1 to 2 feet; canadensis, 6 to 10 feet; 300 nigra, 3 to 8 feet; Pinus excelsa, 4 to 8 feet; Cembra, 3 to 8 feet; monticola, 3 to 4 feet; Lambertiana, 2 to 3 feet; pyrenaicum, 3 to 4 feet; austriaca, 3 feet; uncinata, 3 feet; Benthamiana; fine Cryptomeria japonica, 4 to 8 feet; Taxodium sempervirens, 6 to 8 feet; large Irish and Chinese Junipers, 4 to 8 feet, &c.; also about 400 large specimen Green and Variegated Hollies from 6 to 10 feet; 3000 English and Irish Yews, 2 to 8 feet; 300 Chinese and Siberian Arborvitæ, from 5 to 8 feet; quantity of Purple, Fern-leaved and Weeping Beech, Weeping Ash, Worked Thorns, Birch, Norway Planes, Sycamore, Lucomb Oaks, Standard Apples and Pears, about 1000 choice named Scarlet and other Rhododendrons (bushy plants) 2 feet, 500 Hardy Azaleas, an assortment of fine Standard Roses, &c. Special attention is invited to the fact that the whole of the specimens have been carefully prepared for removal, being transplanted last spring and the previous autumn, and can be transmitted to any part of the country from the Milford Station without changing trucks, and Purchasers may make arrangements to have their lots delivered on the Railway at a moderate charge.

May be viewed previous to the Sale; Catalogues had (6d. each, returnable to Purchasers) on the Premises; at the principal Hotels in Guildford, Farnham, Alton, Petersfield, Dorking, Midhurst, Reigate, Winchester, Basingstoke; of the principal Seedsmen in London; and of the Auctioneers and Valuers, American Nursery, Leytonstone, Essex, N.E.

MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, without the least reserve, at the Auction Mart, Bartholomew Lane, E.C., on WEDNESDAY, October 29, at 12 o'Clock, a choice and valuable COLLECTION of TULIPS, the surplus stock of Mr. C. Williams, (not having room to grow them, since his removal from Tottenham). Among the ROSES are Groom's Fleur de Marie, Duchess of Sutherland, Miss E. Seymour, Princess Mary of Cambridge, Countess of Clanwilliam, Goldham's Ellen, Delaforce's Meteor, Dixon's Queen Anne, Mrs. Dixon, Scarnell's Bijou, Periam's Louisa, Crook's Fanny, Williams's Elizabeth Williams, Ellen Williams, Mary Clifton.—Arlette, Brilliant, Anastasia, Lady Lilford, Lady C. Gordon, Naomi, Brulante Eclatante, Dutch Ponceau, true, &c., &c., &c. Among the BYBLOMENS, are Norman's Mrs. Norman, Mr. Smith, Groom's Victoria Regina, Homer, Eurydice, Goldham's Chas. Kemble, Lord Byron, John Kemble, Prince Napoleon, Lawrence's Don Pedro, Byzantium, Lady Exeter, Achmet, Ellis's Lord Bloomfield, Gibbon's Venus, Walker's Duchess of Sutherland.—Queen of the North, Mrs. Lymbery, Pandora, Goude Parfait, Thalia, Violet Alexander, Eliza, new, &c. Among the BIZARDS, are Goldham's Julius Cæsar, Norman's Captain Dacre, Admiral Dundas, Earl of Derby, Sir Robert Peel, Peter Rolt, Groom's Dr. Horner, Lord Raglan, Lord Sandon, Marquis of Bristol, Mr. F. Perkins, Orpheus, Pizarro, Rubini, Duke of Cambridge, Lord A. Harvey, Delaforce's King, Perfection, Lawrence's George Haward, Marcellus, Glory of Abingdon, Crook's Amateur, Periam's Prince Albert, Strong's King, Willison's King, Sander's Brunswick.—Saint Neots, Apelles, Sir Joseph Paxton, Eldorado, Truth, Rival, Lalla Singh, Gold Cup, Leander, Metropolitan, Everard, Sunbeam, Mayor of Manchester, Colbert, Ethelstone, Mount Hecla, Steady Boy, &c. Besides many fine Old Show Flowers of the best Strains.

Catalogues may be obtained upon application to the Auctioneers, Leytonstone, N.E.; and at the Auction Mart, Bartholomew Lane, E.C.



FIRST CLASS PRIZE MEDAL
FOR ORMSON'S CONSERVATORY.

FIRST CLASS PRIZE MEDAL
FOR ORMSON'S PATENT JOINTLESS TUBULAR BOILER.

CLOSING OF THE INTERNATIONAL EXHIBITION.

ORMSON'S CONSERVATORY FOR SALE.

CLASS 9, OPEN COURT EASTERN ANNEXE.

OPINIONS OF THE PRESS.—EXTRACTS:—

Gardeners' Chronicle.

"Mr. ORMSON, King's Road, Chelsea, has set up the very elegant curvilinear-roofed Conservatory. This is a light and graceful building, and is constructed of wood and iron, with a good deal of light ornamentation. The merits claimed for it are novelty and beauty of outline, chasteness and elegance in detail, and strength and lightness of construction, and these qualities it seems to possess."

Journal of Horticulture.

"It is impossible to speak too highly of the fine specimen of conservatory architecture Mr. ORMSON exhibits, and which is altogether novel in character as well as light and elegant in design. The ends consist of two half domes, and from the top of these extends the lofty, long, oval, dome-shaped centre supported by ornamental girders and arches springing from the top of elegant cast-iron columns; whilst the portion of roof between the base of the dome and the upright sides is formed on another curve, arching to meet the base of the girders. The structure thus formed affords abundance of light, and ventilation is amply provided for by every alternate sash at bottom being made to open; whilst in the upper portion there are two rows of sashes which can be opened for the escape of heated air."

Gardeners' Weekly Magazine.

"This is a grand promenade conservatory, with rectangular and curvilinear outlines, and of proportions adapted only for a great garden. The whole of the work is of the highest class, and the finish excellent. Mr. ORMSON also shows his tubular boiler, which we know to be powerful and trustworthy, and they merit the inspection of all interested in such matters."

Illustrated London News.

"No object in the horticultural department attracts the eye sooner than the splendid conservatory erected by HENRY ORMSON, of King's Road, Chelsea; nor is there anything more deserving of attention than the structure and the varied designs for conservatories, greenhouses, hothouses, Orangeries, Heath and Orchid houses, Vineries, Pineries, and Cherry, Fig, Plum, Peach, and Apricot houses, which are displayed upon paper within it. The accompanying Engraving shows that the erection of conservatories may be considered the highest grade in horticultural architecture; it shows in fact that architecture has become the ally of horticulture, and is bent upon doing it honour. The central mass of roof is supported within upon fluted cast-iron pillars, with enriched capitals forming along each side six arches, corresponding with that which spans the apse at either end. The framework of this upper portion of the building, artistically cumulative in effect, is principally iron. The details seem to be finished with great care. The employment of colour has been very judicious; a white ground is relieved by the palest of greens, and, gilt here and there as a terminal ornament, gives to the inside an air of wonder and grace. Aeration, light, and elegance are all here admirably provided."

Daily News.

"HENRY ORMSON, of Chelsea, shows a beautiful structure of glass and iron of large proportions, highly decorated, which is decidedly a model of horticultural architecture. The visitors went round it, and into it, and paced it, and asked about it, and only wished they had money to buy it, and have it at home. The roof is in three divisions receding to the top; in the middle of each side are two recessed doorways, and at either end an apse with semi-dome. White, pale green, and gold are the prevailing tints. Within are to be found paper designs for all sorts of Greenhouses, Hothouses, and Conservatories, from the very humble to the very splendid.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

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☞ *An Edition of the* GARDENERS' CHRONICLE and AGRICULTURAL GAZETTE *is published on Monday Afternoon at 4 o'Clock, containing full Reports of the Mark Lane and Cattle Markets, written expressly for the Paper.*

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PHLOX ADMIRATION, 3s. 6d. Grows only 1 foot high, with Hydrangea-like heads of carmine blossom
PRIMULA SINENSIS FIMBRIATA NIVEA PLENO, 7s. 6d. and 10s. 6d.
PRIMULA SINENSIS FIMBRIATA RUBELLA PLENO, 7s. 6d. and 10s. 6d.
PHALÆNOPSIS AMABILIS, 105s.
" GRANDIFLORA, 63s.
SERISSA FŒTIDA MARGINATA, 5s.
SELAGINELLA TRIANGULARIS, 7s. 6d.
The three Variegated FERNS, 18s. per dozen. { PTERIS ARGYRÆA, " CRETICA ALBO-LINEATA, " TRICOLOR.
LITOBROCHIA NOBILIS, 10s. 6d. and 15s.—A new variegated Fern.
TYDÆA VENOSA, 3s. 6d.—The best of the family.

NEW DIPLACUS, 3s. 6d. Each.

AURANTIACUS.—Bright orange, light throat. } Three very pretty, easily cultivated, free flowering, wooded green house plants.
INGELRELSTI.—Bright red, light throat. }
SPLENDIDUS.—Orange shaded with carmine, light throat. }

A large assortment of all the best VINES in pots.

A fine lot of healthy, vigorous, and clean PINE APPLE PLANTS to be Sold Cheap, as the room is required for other Stock.

ESTABLISHMENT FOR NEW AND RARE PLANTS,
KING'S ROAD, CHELSEA, LONDON, S.W.

Grape Vines from Eyes.

LUCOMBE, PINCE AND CO. have a fine healthy stock of strong VINES, from 6 to 10 feet long, of all the choicest sorts, fit for immediate planting, propagated from Eyes taken from their own experimental Vinery, which enables them to warrant each kind true to name.

LISTS of Sorts and prices may be had on application.

Exeter Nursery, Exeter.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the old Queen.

Good plants, 10s. 6d., and 15s.

2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

THOMAS JACKSON & SON, Nursery, Kingston, S.W.

STRAWBERRIES.—Fine well rooted Plants for Fruiting next season, of the following sorts, can now be supplied :—Sir Harry, Comte de Paris, Prince Arthur, British Queen, Keens' Seedling, and Goliah, 3s. 6d. per 100 ; Magnum Bonum, Eleanor, Ajax, Fillbasket, Alice Maude, Oscar, 2s. 6d. per 100.

Carriage free within 50 miles of London. A liberal allowance to the Trade.

THOMAS HENRY HARDY, Stour Valley Nursery and Seed Grounds, Bures, near Colchester, Essex.

CURRANT PLANTS for immediate bearing.—Large Red Grape and Nettle Leaf White, at the nominal price of 15s. per 100, or 5l. per 1000.

Also a few Tons of LAPSTONE KIDNEY POTATO SEED, in excellent condition.

Apply to T. MITTON, Lampton, near Hounslow, W.

Fine Trained Fruit Trees.

LUCOMBE, PINCE, AND CO. invite attention to their remarkably fine, healthy, well-rooted Stock of FRUIT TREES, trained as Espaliers and Pyramids, in a bearing state, of all the best sorts, amongst which they can especially recommend

HUYSHE'S BERGAMOT and VICTORIA PEARS,

as being two of the finest varieties in cultivation, specimens of which covered with fruit may be seen in their Nursery.

L., P. & Co. have also well established in pots some very fine PEACHES and NECTARINES,

set with fruit buds, fit for Orchard House culture.

A DESCRIPTIVE PRICED CATALOGUE may be had on application.

Exeter Nursery, Exeter.

FRUIT TREES, ROOT PRUNED.

PEARS, in 200 sorts, Pyramids from 2 to 12 feet high, mostly bearing trees.

APPLES, 200 sorts, Standards, Pyramids, Dwarf Bushes, or Dwarf-trained.

PLUMS, 70 sorts, Standards, Dwarf Bushes or Dwarf-trained.

PEACHES, NECTARINES, APRICOTS, and CHERRIES, fine Dwarf-trained trees.

MAIDEN PEACHES and NECTARINES in quantity to offer to the Trade.

For prices, &c., apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

Fruit Trees.

RICHARD SMITH has no hesitation in saying, that he possesses by far the largest Stock of FRUIT TREES in the kingdom, consisting of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, in Maiden Trees, Dwarfs, Bushes, Pyramids, Half-Standards, and Standards ; Dwarf-trained Half-Standard, Standard, and Horizontally-trained Trees, of the finest sorts, and in the best possible condition. DESCRIPTIVE PRICED LISTS on application.

RICHARD SMITH, Nurseryman, Worcester.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c. ; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length ; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

Magnificent Dwarf-Trained Fruit Trees.

WM. WOOD AND SON have the greatest satisfaction in referring their friends to their very superior Stock of the above, which are in the finest possible health, and in point of training the trees are perfect pictures of successful cultivation.

The Stock comprises PEARS, PLUMS, CHERRIES, PEACHES, &c., &c.

CATALOGUES free on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Planting.

WM. PAUL (Son and Successor to the late A. PAUL) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.

Entrance from the platform, Waltham Station, Great Eastern Railway.

Nurseries and Seed Warehouse, Waltham Cross, N.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious Index of all their synonymes. Free by post for 12 postage stamps.

RICHARD SMITH, Nurseryman, Worcester.

3000 DEODARS, 1000 CUPRESSUS LAWSONIANA, 1000 C. MACROCARPA, 500 THUJA LOBBII. The above are offered very cheap. The Deodars are handsome well grown plants, from 2½ to 5 feet, and have been transplanted every autumn for the last five years. The others are fine healthy plants varying from 2 to 5 feet high.

Prices on application to J. SCOTT, Merriott, Crewkerne, Somerset.

Quick, Scotch and Spruce Firs, &c.

SAML. ROBINSON, Shaw House, Melbourne, Derbyshire, has a large quantity of fine 2, 3, and 4-year old Bedding and Transplanted QUICKS to dispose of. Also a quantity of SPRUCE and SCOTCH FIRS, the former from 18 in. to 3 feet, the latter 2 to 4 feet, very bushy and suitable for ornamental planting.

He has also to offer a quantity of his CHAMPION OX CABBAGE and MELBOURNE SWEDE TURNIP SEED. From these stocks the First Prize Medals in their Class have been awarded to him at the Great International Show this month. With the same kind of Cabbage he has also been winner at the Birmingham Show for the last seven years, and at the Crystal Palace Show in the early part of this year.

Seed (or plants in the spring) on application.

LARCH FIR, twice Transplanted, 3 to 5 ft. ; English OAK, 3 to 5 ft. ; BEECH, 1 to 3 ft. ; SPIRÆA CALLOSA on offer. All first-rate stuff. For cash only.

WANTED, Transplanted SCOTCH FIR, 6 to 12 inches ; 2 year SEEDLING LARCH, OAK, SYCAMORE, and SPANISH CHESTNUT.

Apply to G. FROST, The Nurseries, Brushford, Tiverton.

RHODODENDRON PRÆCOX is the hardiest Evergreen known ; is of dwarf bushy habit, with dark green Myrtle-like leaves ; flowers most profusely about April in the open ground, and from Christmas to March in-doors. Certainly the best of Forcing Plants. Price of Flowering plants, 5s., 7s. 6d., and 10s. 6d. each. May be obtained at most of the leading Nurseries, or direct from the Raiser,

ISAAC DAVIES, Larkfield Nursery, Wavertree, near Liverpool.

To the Trade.

ISAAC DAVIES can supply the following in large quantities at reduced prices :—RHODODENDRON præcox, Edgeworthii, ciliatum, virgatum, glaucum, Gibsonii, aureum superbum, and atrovirens ; also the GHENT AZALEA rosea grandiflora, SKIMMIA JAPONICA, and TEA and CHINA ROSES in pots.

Larkfield Nursery, Wavertree, near Liverpool.

To the Trade, &c.

GENISTA (Cytisus fragrans), ERICA gracilis autumnalis, Erica hybrida, Erica regerminans, Erica Wilmoreana, Erica Wilmoreana purpurea, CORONILLA GLAUCA, fine plants in 48's, well set for bloom.

RHODODENDRON ARBOREUM, strong plants in large 60's, suitable for working.

Prices on application to S. W. TALBOT, Waltham Abbey, N.

WANTED, Six or Eight good ORANGE or CITRON TREES, about 4 feet high. State size and price to D., Mr. BINGHAM, News Office, 84, Mount Street, Grosvenor Square, W.

To the Trade.

WANTED, GOLD and SILVER, and GREEN HOLLIES, Purple Beech, Tree Box, Irish and Swedish Junipers, Pinus Lambertiana and Hamiltonii, &c., Wellingtonia gigantea, Maiden and Standard Plums, &c. State size and price.

JOSEPH TREMBLE & SONS, Penrith.

FOR SALE, the property of a gentleman, 21 CAMELLIAS, from 5 feet by 3 feet downwards, promising well for bloom ; three ORANGES, fair size ; two FICUS, large ; six CACTUS, large. All fine healthy plants.

To be seen at Messrs. HENDERSON & Co.'s, Pine-apple Nursery, Edgware Road, W.

FOR SALE, Cheap, NURSERY STOCK, the Ground being taken for Building, consisting of Evergreen Privet, from 2 to 6 ft. ; Dwarf Honeysuckle, Ribus sanguineum, Jessamine, White and Red Dutch Currants, Poplars, Lilac, fine Picotees, Pinks, &c.

Apply at the Chapel Nursery, Battersea Fields, near Nine Elms, S.W.

TO BE DISPOSED OF, with immediate possession, at Maidstone, a small and select collection of EVERGREENS, CONIFERS, FLOWERING SHRUBS, HERBACEOUS PLANTS, GREENHOUSE PLANTS, &c. The Grounds and House, two Greenhouses and Frames, are the property of the landlord, who will let them to a respectable tenant ; the Nursery Stock contains a few extra sized Conifers that have been frequently removed.

For particulars apply to Mr. WM. MASTERS, Canterbury.

Cineraria and Calceolaria Seed.

F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit ; numerous testimonials have been received of its excellence. In packets, 1s., 1s. 6d., and 2s. 6d., free by post.

Dulwich, Surrey, S.

Notice.

B. S. WILLIAMS begs to intimate that the following DESCRIPTIVE and PRICED CATALOGUES may be had post free on application.

GENERAL CATALOGUE, including Exotic Orchids, Ferns, and Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c.

BULB CATALOGUE contains Select Lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladioli, Amaryllis, and many other choice Bulbs, with Hints on their Culture ; to which is added a SUPPLEMENTAL LIST of New, Beautiful, and Rare Plants.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Cucumbers.

CUTHILL'S EARLY PRINCE ALBERT.—Very hardy, dark green, great bearer ; length 10 to 15 inches, seedless and solid, fine flavour, 1s. 6d. 10 seeds. HIGHLAND MARY, BLACK SPINE, and LONG WHITE, 1s. each packet. Trade supplied.

Superior MUSHROOM SPAWN, 5s. per Bushel.

J. C.'s. Pamphlets always on sale.

JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

"THE STUDENT" PARSNIP.—The FIRST PRIZE for PARSNIPS at the INTERNATIONAL SHOW of the Royal Horticultural Society, South Kensington, was awarded to Mr. Choyce, for "The Student," raised from Seed obtained of Messrs. Sutton & Sons, Reading.

The flavour of this Parsnip is far more agreeable than that of other kinds.

The specimens to which the First Prize was awarded were very large and finely formed.

Those exhibited on Messrs. Sutton's Stand having been sown very late in the season were of more moderate size, and are thus described by the reporter for the *Gardeners' Weekly Magazine* :—"But the subject of most interest to the gardeners was a lot of roots of the Student Parsnip, a new sort raised by Professor Buckman by successive improvements of the wild Parsnip. The distinctness of this variety is perceptible in a moment ; the roots are of moderate size, regularly tapering, and with a clean yellowish skin, without trace of canker.

SUTTON & SONS are now prepared to offer New Seed of this popular new Vegetable, in packets, 6d., 1s., 2s. 6d. each. Also to the Trade in larger quantities on liberal terms.

The undermentioned Seed Merchants have engaged a supply of Seed from Messrs. Sutton & Sons :—

Beck, Henderson, & Child, Adelphi Terrace, Strand, London
Cooper & Bolton, 152, Fleet Street, London
Carter & Co., High Holborn, London
Charlwood & Cummins, Tavistock Row, Covent Garden, London
Cattell, John, Westerham
Dicksons & Brown, Corporation Street, Manchester
Dickson & Sons, 102, Eastgate Street, Chester
Drummond & Sons, 58, Dawson Street, Dublin
Dickson, Hogg, & Robertson, 22, Mary Street, Dublin
Ernst & Von Spreckelsen, Hamburg
Gibbs, Thomas, & Co., Corner of Half Moon Street, Piccadilly, London
Garraway & Co., Durdham Down, Bristol
Hurst & Son, 6, Leadenhall Street, London
Perkins, John, 52, Market Square, Northampton
Toole & Co., Westmoreland Street, Dublin
Turner, Charles, The Royal Nurseries, Slough
Veitch, James, jun., King's Road, Chelsea
Wrench, Jacob, & Son, London Bridge
Wheeler, J. C. & Son, Gloucester
Wood & Son, Maresfield, near Uckfield

Early orders are requested, and will have the preference if the Stock of Seed should prove insufficient to meet the demand.

Address SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

JEAN VERSCHAFFELT, Ghent, Belgium, begs to announce he possesses a large stock of the following fine Plants with flower-buds, which he offers to the Trade as follows :

CAMELLIAS, extra fine sorts with buds, per 100 ..	£6	0	0
Ditto ditto large plants, per 100 10l. to	15	0	0
Ditto ditto extra size, each .. 5s. to	1	1	0
AZALEA INDICA, first-rate sorts, extra fine Plants for winter flowering, per 100, from .. .. 4l. to	6	0	0
Ditto ditto on stems 1½ to 2 feet high, with nice heads, per 100 ..	10	0	0
JASMINUM GRANDIFLORUM	6	0	0
CITRUS SINENSIS (Otaheite Oranges) with fruit, per 25	2	10	0

Arundo Donax variegata.

JEAN VERSCHAFFELT, Ghent, Belgium, has a nice stock of this beautiful hardy variegated ARUNDO (the finest known), which he begs to offer in strong plants at the following low terms, viz. :—

Strong plants grown in pots, per dozen	£1	5	0
Ditto ditto per 25	2	0	0

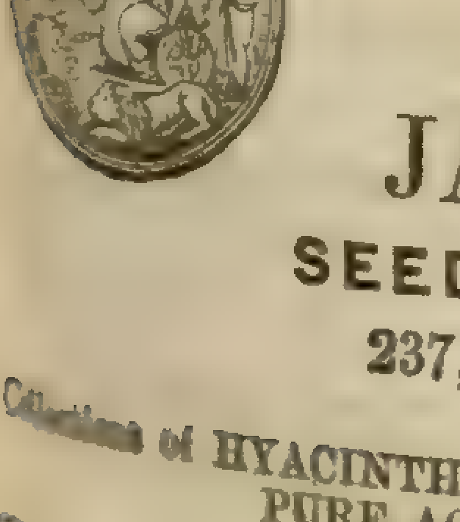
Lilium lancifolium speciosum.

JEAN VERSCHAFFELT, Ghent, Belgium, having an extra large stock of this splendid LILY, is now able to offer its varieties very cheap, viz :—

LILIUM LANCIFOLIUM (SPECIOSUM) RUBRUM, strong flowering bulbs, per 100	£2	0	0
Ditto ditto ALBUM, ditto, per 100 ..	1	16	0
Ditto ditto RUBRUM, extra strong bulbs, per 100	3	0	0
Ditto ditto ALBUM, ditto, per 100 ..	2	10	0
Ditto ditto PUNCTATUM, strong flowering bulbs, per 25 ..	2	10	0

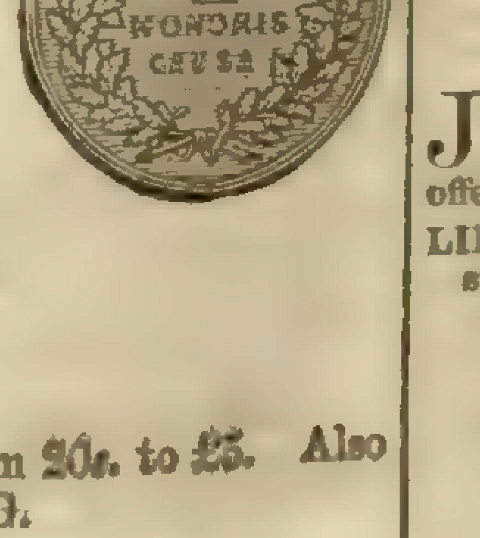
AZALEA INDICA, extra fine plants, clean and bushy, first-rate varieties, suitable for winter forcing, 4l. per 100 ; stronger plants, 6l. per 100.

JEAN VERSCHAFFELT'S Nursery, Ghent, Belgium.



THE PRIZE MEDAL,

INTERNATIONAL EXHIBITION, 1862.



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SEED FARMERS AND NURSERYMEN,

237, 238, & 261, HIGH HOLBORN, LONDON, W.C.

Collections of HYACINTHS, CROCUSES, TULIPS, NARCISSUS, IRIS, LILIES, &c., from 20s. to £5. Also PURE AGRICULTURAL and GARDEN SEEDS for AUTUMN SOWING.

The Twenty-Seventh Annual Issue of the "GUIDE for AUTUMN GARDENING" forwarded free of charge on application to

JAMES CARTER & CO., 237 & 238, HIGH HOLBORN, LONDON, W.C.

IMPROVEMENTS. — Gentlemen wishing to make Alterations or Improvements in PLEASURE GARDEN, KITCHEN GARDEN, LAWN, or PARK, would do well to consult H. Lane & Son's

ROSE CATALOGUE | FRUIT CATALOGUE, and

TREE and SHRUB CATALOGUE, &c.,

which may be had on application at the Nurseries, Berkhampstead, Herts. An inspection of their Stock is earnestly requested.

(The finest and largest quantity of ARAUCARIA IMBRICATA in Europe.)

CHOICE HARDY CONIFERS

ARAUCARIA IMBRICATA, 1 year, strong, p. doz.		6s.	0d.
CUPRESSUS LAWSONIANA, 1 year, strong,	„	3	0
„ MACROCARPA, 6 inches ..	„	3	0
PICEA NORDMANNIANA, 1 year	„	12	0
PINUS DON PEDRI, 1 foot	„	9	0
„ INSIGNIS, 6 inches	„	3	0
„ PONDEROSA, 6 inches	„	6	0
THUJA ELEGANS or LOBBII, 1 foot ..	„	6	0
WELLINGTONIA GIGANTEA, 1 year, strong	„	12	0
„ „ in 48 pots, 8 ins.	„	24	0
„ „ in 32 pots, 1 ft., fine	„	42	0

The above are all healthy seedling plants in pots, ready for immediate planting out.

J. Henchman, Edmonton, London, N.E.

Magnificent Specimens of Coniferæ.

LUCOMBE, PINCE, and CO., have to offer this season a very large Stock of symmetrically grown specimens of CHOICE HARDY CONIFERS, all of which have had great care and attention paid to their roots, and having been regularly transplanted, can without feeling any check be removed with perfect safety to any part of the Kingdom.

Noblemen, Gentlemen, and Landscape Gardeners, requiring large well grown specimens of Conifers, will find this collection especially deserving attention.

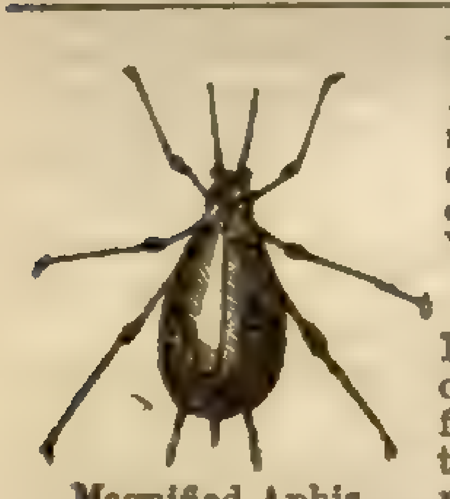
Prices sent post free on application, and will be found exceedingly moderate.

ARAUCARIA IMBRICATA, 4 to 5 ft., 6 to 8 ft., 9 to 12 ft.
ABIES DOUGLASII TAXIFOLIA, 5 to 6 ft., 7 to 9 ft., 10 to 12 ft.
CEDRUS DEODARA, 5 to 6 ft., 8 to 14 ft.
„ LIBANI, 6 to 8 ft., 10 to 12 ft.
PICEA NORDMANNIANA, 3 ft. 6 in. to 4 ft. 6 in., 6 to 8 ft.
„ PINSAPO, 2 to 3 ft., 7 to 8 ft.
THUJA GIGANTEA, 3 to 4 ft.
WELLINGTONIA GIGANTEA, 3 to 4 ft., 5 to 6 ft.

Exeter Nursery, Exeter. Established 1720.

EXTRA STRONG TOBACCO PAPER, at a low price to the Trade.

Apply to H. Brown, Seedsman, Liverpool.



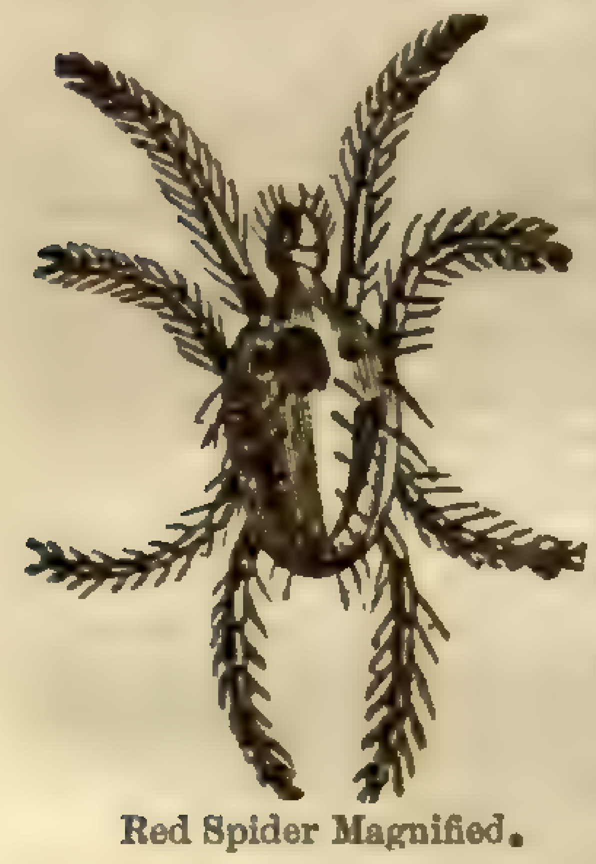
Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. Neal, Edward Street, Birmingham.



Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by Price's Patent Candle Co., Limited.

Gutta Percha Tubing for Watering Gardens.

THE GUTTA PERCHA COMPANY have the pleasure to acknowledge the receipt of the following

Testimonial from Mr. J. Farrah, *Gr. to* Boswell Middleton Jalland, Esq., *of Holderness House, near Hull.*

"I have had 400 feet of your Gutta Percha Tubing, in lengths of 100 feet each, with union joint, in use for the last 12 months for watering these gardens, and I find it to answer better than anything I have ever yet tried. The pressure of the water is very considerable, but this has not the slightest effect on the tubing. I consider this tubing to be a most valuable invention for Gardeners, inasmuch as it enables us to water our gardens in about one-half the time, and with one-half the labour required."

Manufactured by the Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C., and sold by their Wholesale Dealers in town and country.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the SCORCHING RAYS of the SUN.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.

Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.

Elisha Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

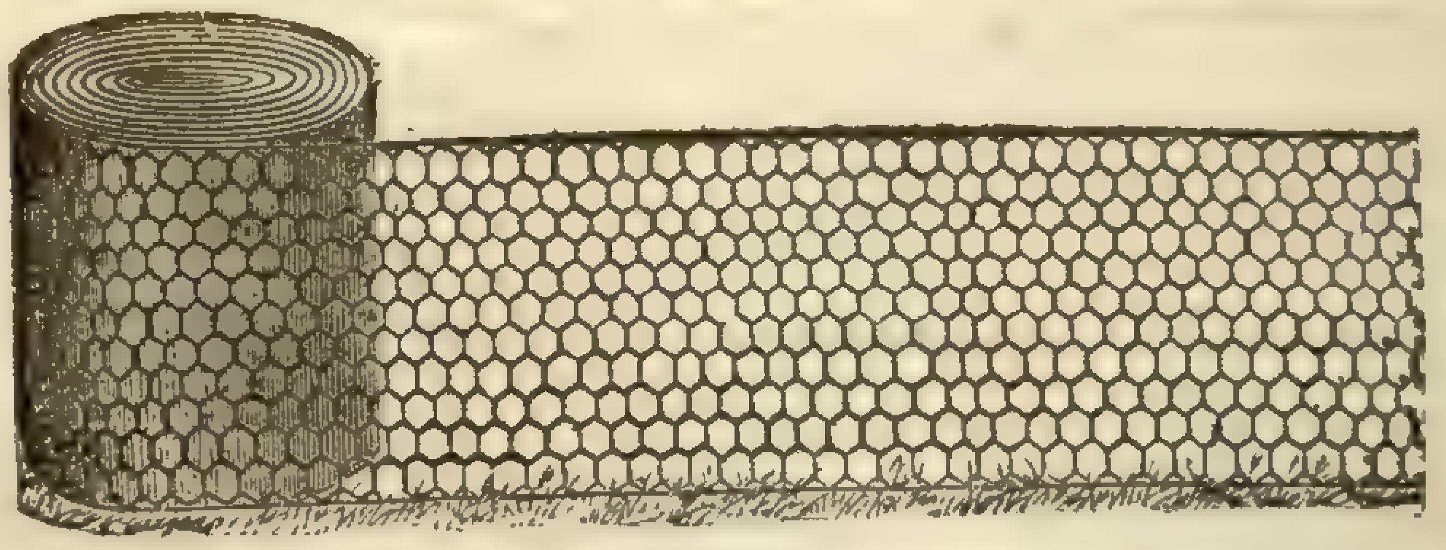
FOWLER'S STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, Orwell Works, Ipswich,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

NEW IMPROVED PREMIUM WIRE NETTING.

GREAT IMPROVEMENT,



WITH REDUCED PRICE.

PRICES per Lineal Yard, 24 inches high:—

Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra Strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
2¼ inch	Hares, Dogs, Poultry	3d.	4d.	3¾d.	5d.	4½d.	6d.	5½d.	7d.
2 inch	Game or Poultry Netting	3½d.	4¼d.	4d.	5d.	5d.	6½d.	6½d.	8d.
1⅝ inch	Small Rabbits, Hares, &c.	4d.	4¾d.	4¾d.	6d.	5½d.	7d.	7d.	9d.
1½ inch	Smallest Rabbits.................	5d.	6d.	5¾d.	7d.	7d.	9d.	9d.	11d.

Quantities of 100 yards or upwards delivered free at nearly all the principal Railway Stations and Shipping Ports in England; and 200 yards or upwards delivered free to most parts of Scotland and Ireland.

*** *Every description of Netting warranted to give satisfaction, and if not approved will be exchanged or may be returned unconditionally.*

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ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, and GATES.

The PROPRIETORS of the ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, WERE AWARDED THE SILVER MEDAL of the ROYAL AGRICULTURAL SOCIETY for their IRON HURDLES and GATES, which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30s. to 500l.

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

PROFESSOR VARNELL'S ENAMELLED and WROUGHT-IRON STABLE FITTINGS.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their Horses. They can be had Plain, Galvanised, or Enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized Stalls and Loose Boxes are erected for inspection at St. Pancras Iron Works.

Address—THE MANAGERS, ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, N.W., Opposite Old St. Pancras Church.

ADOPTED VERY LARGELY BY HER MAJESTY'S GOVERNMENT.

CROGGON'S PATENT ASPHALTE ROOFING FELT,

Price 1d. per square foot.

INODOROUS FELT, for Damp Walls and for Damp Floors under Carpets and Floor Cloths, also for Lining Iron Houses to equalise the temperature. Price 1d. per square foot.

PATENT FELTED SHEATHING, for Covering Ships' Bottoms, &c.

DRY HAIR FELT, for deadening Sound and covering Steam Boilers, Pipes, &c., preventing the Radiation of Heat, thereby saving 25 per cent. in Fuel.

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ZINC MERCHANTS AND PERFORATORS,

GALVANISED TINNED IRON, and every description of GALVANISED IRON WORK.

CROGGON & CO.'S

NOISELESS ELASTIC KAMPTULICON, or INDIA-RUBBER FLOOR CLOTH,

Impervious to Wet, Indestructible by Damp, Soft to the Tread, and Warm to the Feet, well adapted for Aisles of Churches, Public Offices, Rooms, Shops, &c., as well for its comfort as extreme durability.

Samples, Testimonials, and full particulars, free, on application to

2, GOREE PIAZZAS, LIVERPOOL; or 2, DOWGATE HILL, LONDON, E.C.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.

Manufactory : Stoke-upon-Trent.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes of various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.

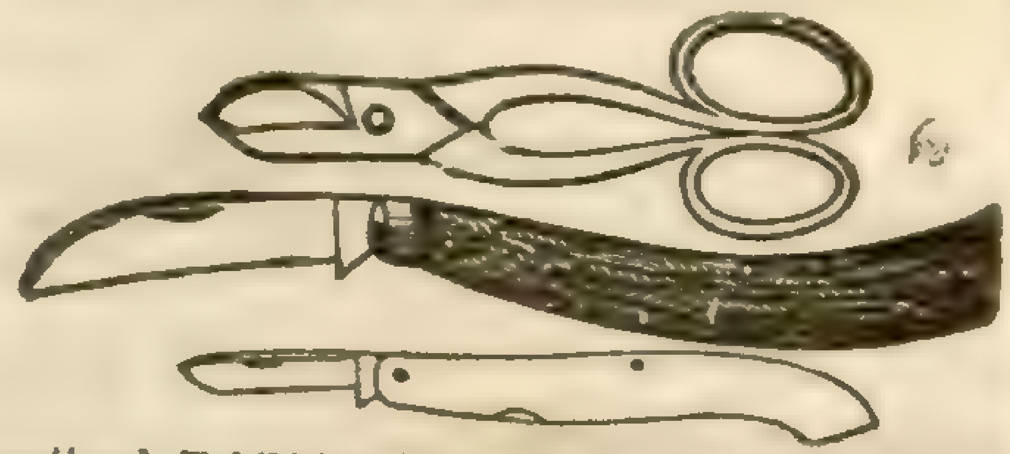
Archangel Mats.

JAMES T. ANDERSON begs to announce that he is now open to supply, at a low price, and in any quantity, ARCHANGEL MATS, the finest in London of this season's importation, and solicits an inspection of them by Nurserymen and Seedsmen.

SACKS, SEED BAGS, &c.

15, Sherborne Lane, King William Street, London, E.C.

Paxton Works, Sheffield, Established 1738.



International Exhibition Prize Medal is just awarded to SAYNOR & COOKE for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR AND COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.

CAUTION.—None are genuine unless marked SAYNOR. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

Glass, Glass, Glass.

H. B. LITTLE begs to draw the attention of Gentlemen, Gardeners, and Nurserymen to the following low prices of GLASS:—

Packed in boxes containing 100 feet superficial.

4 by 3 5 by 3 5½ by 3½ .. .. .. 8s. per 100 feet sup.
6 by 4 7 by 5 8 by 6 7 by 7 .. 10s. "

Other sizes in proportion.

H. B. LITTLE, Builder, Baker's Buildings, Liverpool Street, City, London, E.C.

Glass for Greenhouses.

JAMES PHILLIPS AND CO., beg to submit their prices as follows:—

ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 280 feet, 2¼d. and 2½d. per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each.

Package included.	3rds.	4ths.
12 by 9, 13 by 9, 14 by 9, 15 by 9 12 ,, 10, 13 ,, 10, 14 ,, 10, 15 ,, 10	14s. 0d.	12s. 6d.
13 ,, 11, 14 ,, 11, 15 ,, 11, 16 ,, 11 14 ,, 12, 15 ,, 12, 16 ,, 12, 17 ,, 12 18 ,, 12, 19 ,, 12, 20 ,, 12, 16 ,, 13 17 ,, 13, 18 ,, 13, 19 ,, 13, 20 ,, 13 16 ,, 14, 17 ,, 14, 18 ,, 14, 20 ,, 14	16s. 0d. per 100 feet.	13s. 6d.

Various other sizes.

GLASS for ORCHARD HOUSES,
As supplied by us to Mr. Rivers.

Sizes		16 oz.	21 oz.
20 in. by 12 in. 20 in. by 13 in. 20 in. by 14 in. 20 in. by 15 in.	Common	13s. 6d.	£0 18 0
	Superior do.	16 0	1 3 0
	English Glass	18 0	1 9 0

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11s. 6d.
8 ,, 6	8½ ,, 6½	9 ,, 7	9½ ,, 7½	
		10 ,, 8	10½ ,, 8½	12 6

Boxes 2s. each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.

16 oz. 4ths, 1½d., 2d., and 2½d. 21 oz. 2½d., 3d., and 3½d.
,, 3ds, 2d., 2½d., and 3d. ,, 3d., 3½d., and 4d.

London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, London, E.C.

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD,

PATENTEES AND MANUFACTURERS OF

STEAM CULTIVATORS, STEAM PLOUGHS,

CHAMPION PLOUGHS, HARROWS, HORSE RAKES, AND HAYMAKERS.

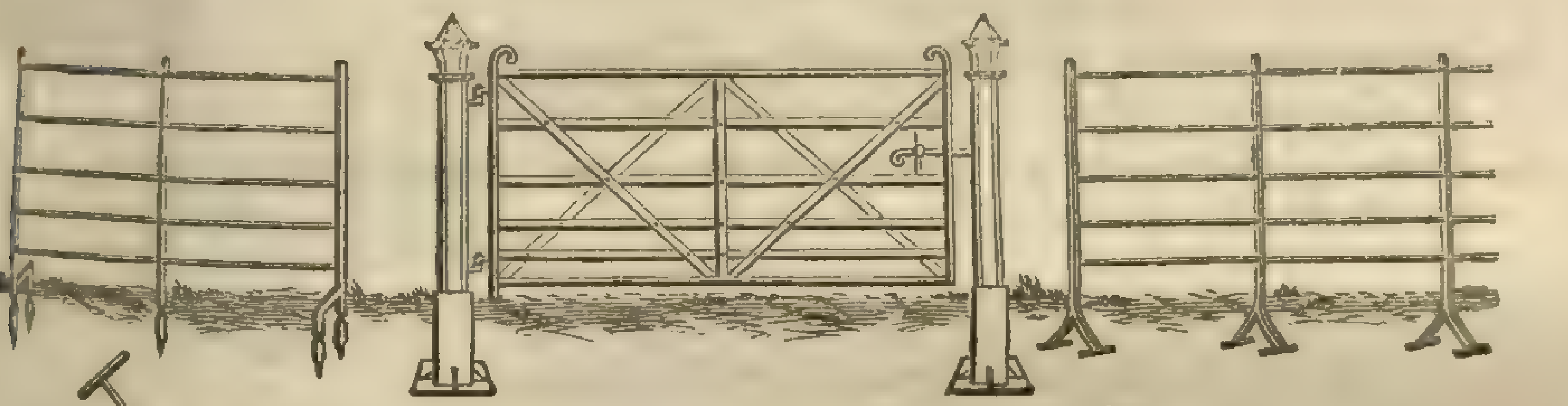
CATALOGUES, with full particulars, sent free on application.

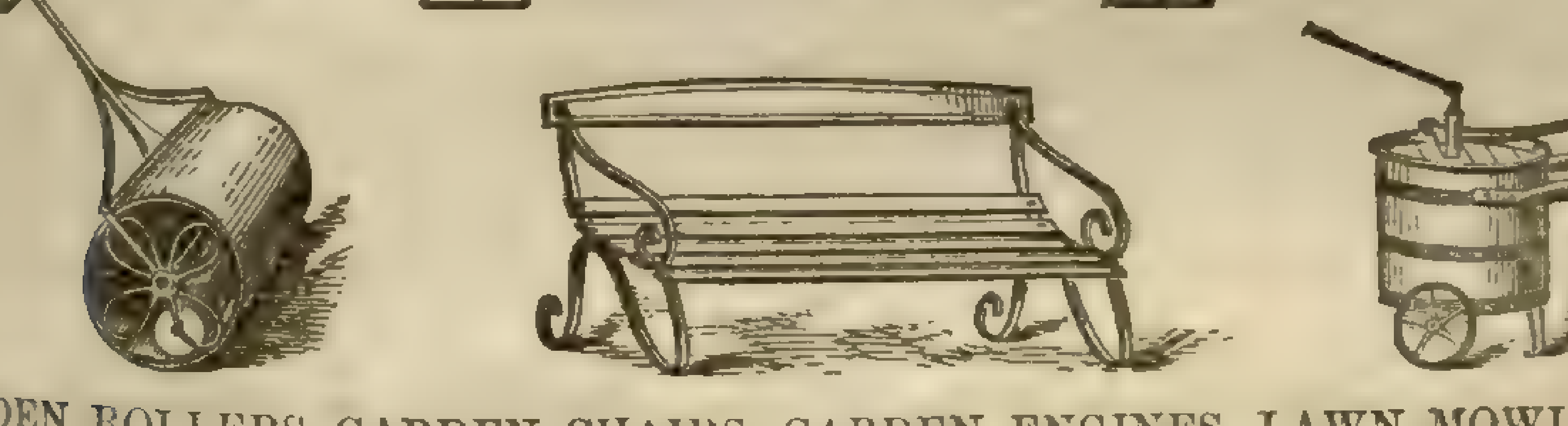
COTTAM'S

CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.





IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES
WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes.
VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.
The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to

COTTAM & CO., ENGINEERS and IRON FOUNDERS,

2, WINSLEY STREET (OPPOSITE THE PANTHEON), OXFORD STREET, LONDON, W.

THOMAS MILLINGTON,
87, Bishopsgate Street Without, E.C.

HORTICULTURAL GOODS.

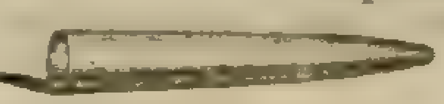
PROPAGATING GLASSES.

3 inches ..	0s. 4½d. each.	12 inches ..	1s. 9d. each.
4 ,, ..	0 5½ ,,	13 ,, ..	2 0 ,,
5 ,, ..	0 6½ ,,	14 ,, ..	2 6 ,,
6 ,, ..	0 8 ,,	15 ,, ..	3 0 ,,
7 ,, ..	0 10 ,,	16 ,, ..	3 6 ,,
8 ,, ..	1 0 ,,	17 ,, ..	4 0 ,,
9 ,, ..	1 2 ,,	18 ,, ..	5 0 ,,
10 ,, ..	1 4 ,,	19 ,, ..	6 0 ,,
11 ,, ..	1 6 ,,	20 ,, ..	7 0 ,,

HAND GLASSES.

12 inches ..	6s. 0d. each	18 inches ..	9s. 0d. each
14 ,, ..	7 0 ,,	20 ,, ..	10 0 ,,
16 ,, ..	8 0 ,,	24 ,, ..	12 0 ,,

If open top, 1s. extra.



CUCUMBER GLASSES. From 12 inches long and upwards, 1d. per running inch.

ROLLING PINS. From 12 inches long, 1½d. per running inch.

Improved ANTI-CORROSION and other PAINTS.
GAS and LAMP GLASSES, GLOBES, &c.
CHIMNIES of every description.

Not accountable for Breakage.

DUNN'S GARDENER'S PENCILS, Price 1s., will refill for 6d.

DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.

Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.

These pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.

N.B.—A liberal allowance to the Trade.

GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

These Machines have carried off every Prize that has been given in all cases of competition, and have been awarded the PRIZE MEDAL at the INTERNATIONAL EXHIBITION of 1862.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.

For Illustrated Price Lists, with full particulars, address

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

50,000 Dwarf Roses in Pots on their own Roots.

STANDARD, HALF-STANDARD, AND DWARF BUDDED ROSES, ON THE BRIAR AND MANETTI STOCK, IN ENORMOUS QUANTITIES AND IN THE MOST VIGOROUS HEALTH.

WILLIAM WOOD AND SON have much pleasure in directing especial attention to their very extensive and well-grown stock of ROSES, CATALOGUES of which may be had gratis on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses of 1862.

JOHN KEYNES has to offer 1000 very extra strong plants, the finest varieties of the last season, in 6 and 8-inch pots, now ready, price 42*s.* per dozen, with the usual discount to the Trade.

Fine STANDARDS, of he older varieties, 24*s.* & 30*s.* per doz. DWARFS, 12*s.* and 18*s.* per dozen, all of the finest varieties in cultivation. Every attention paid to package, and compensation for carriage.

New CATALOGUES ready.

JOHN KEYNES, Nurseryman, Salisbury.

Standard and Dwarf Roses.

BENJAMIN R. CANT will be happy to forward on application his DESCRIPTIVE CATALOGUE of ROSES. As a guarantee of the value of his collection, B. R. C. begs to state that he has this year obtained 17 First Prizes for Cut Roses at the principal Shows.

Very fine vigorous plants of he choicest sorts will be supplied at the following prices:—

Standard Roses	18*s.*, 24*s.*, and 30*s.* per doz.
Half Standard Do.	18*s.* and 24*s.* per doz.
Dwarf Do.	9*s.* to 18*s.* per doz.

The NEW ROSES of 1862, Dwarf plants, 3*s.* 6*d.* to 5*s.* each; or, if 12 or more varieties are taken, 30*s.* per doz.

St. John's Street Nursery, Colchester.

N.B.—B. R. C.'s Catalogue contains nothing but the best varieties; all indifferent and worthless sorts are excluded.

Superb New Pinks.

CHARLES SCHOFIELD has great pleasure in offering the following splendid NEW PINKS, raised by Mr. Hart of Swillington. They are first-class, being large, fine in form and petal, and constant in lacing. See Editor's remarks in "Gossip of the Garden" for August.

MARY ELIZABETH (HART).—A most splendid variety, rosy purple lacing, beautifully laid on, form and petal first-rate, 5*s.* per pair.

BLACK PRINCE (HART).—Rich dark purple lace, large and constant, a very fine variety, 5*s.* per pair.

ROBIN HOOD (HART).—A very fine flower in the way of John Ball, but very distinct; a first-class show flower, 5*s.* per pair.

PURPLE GEM (HART).—Dark purple lace, very constant and beautiful, 5*s.* per pair.

One pair of each (strong plants) of the above set for 15*s.*

Strong Plants Now Ready.

Knostrop, near Leeds, Yorkshire.

To the Trade.

GEORGE T. FOX offers good Roots of the following HARDY BULBS, true to name:—

		s.	d.
SCILLA SIBIRICA	per 1000	50	0
„ ESCULENTA (CAMMASSIA) ..	per 100	10	0
„ AMŒNA	„	10	0
WHITE GRAPE HYACINTH	„	8	0
BLUE „ „ two varieties	„	5	0
WHITE DENS CANIS	„	10	0
RED „ „	„	5	0
YELLOW AMERICAN Do.	„	15	0
LILIUM BULBIFERUM	„	10	0
„ TIGRINUM	„	10	0
„ POMPONIUM..	„	10	0
NARCISSUS MINOR	„	10	0

The Nurseries, Wetley Rock, near Leek.

P.S. Cash or reference from unknown correspondents.

To Noblemen, Gentlemen, and Others engaged in Planting.

GEORGE BAKER begs to invite attention to the following superb specimens, which are in the finest condition:—

ARAUCARIA IMBRICATA, 6 feet, 9 feet, 14 feet
ABIES DOUGLASII, 10 feet, 14 feet, 20 feet
ARBOR-VITÆ (Siberian), 6 feet, 8 feet
CEDRUS DEODARA, 6 feet, 8 feet, 10 feet, 12 feet, 20 feet
CUPRESSUS LAWSONI, 5 feet
„ DISTICHA, 8 feet, 12 feet
CEDRUS LIBANI, 8 feet, 10 feet
CHINESE JUNIPER, 5 feet, 6 feet
IRISH YEWS, 6 feet, 8 feet
JUNIPERUS RECURVA, 8 feet
„ BEDFORDIANA, 5 feet, 6 feet
PICEA CEPHALONICA, 11 feet
PINUS CEMBRA, 7 feet, 10 feet
„ EXCELSA, 10 feet, 15 feet
TAXODIUM SEMPERVIRENS, 10 feet, 12 feet
THUJA GIGANTEA, 6 feet
WELLINGTONIA GIGANTEA, 5 feet
KALMIA LATIFOLIA, Standards, fine
RHODODENDRONS, „ „
PORTUGAL LAURELS, „ „

G. B. in offering the above perfect specimens feels assured that whoever may favour him with their kind orders, their hopes will be fully realised. Prices on application.

American Nursery, Windlesham, Bagshot, Surrey.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned NEW and fine AZALEAS.

FLAG OF TRUCE.—The finest double white known; has obtained two Certificates and a Silver Medal for its superior merits, being the highest testimonial any Azalea has yet received, 21*s.* to 31*s.* 6*d.* each.

PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21*s.* to 31*s.* 6*d.* each.

CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very superior, 21*s.* to 31*s.* 6*d.* each.

LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10*s.* 6*d.* to 15*s.* each.

CRISPIFLORA ROSEA.—Fine bright rose; the flowers are waved or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10*s.* 6*d.* to 15*s.* each.

PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10*s.* 6*d.* and 15*s.* each.

Any of the above may be had in grafted plants, or on their own roots.

For full particulars see *Gardeners' Chronicle* of August 16, 1862, p. 758; or in CATALOGUES, which may be had gratis on application.

Dulwich, Surrey.

HYACINTHS AND OTHER DUTCH BULBS.

WM. CUTBUSH & SON

Beg to inform their Patrons that the best time for planting the above is during the next three weeks. Their celebrated selections of HYACINTHS can be supplied at 9*s.*, 12*s.*, 15*s.*, and 18*s.* per dozen.

DESCRIPTIVE PRICED CATALOGUE free by post.

The FIRST PRIZES have been awarded to our COLLECTIONS of HYACINTHS, &c., by the Royal Horticultural and Royal Botanic Societies of London in every instance for the last seven years.

HIGHGATE NURSERIES, LONDON, N.

HYACINTHS AND OTHER BULBS.

WILLIAM PAUL'S

COLLECTIONS of HYACINTHS, which have obtained several Prizes from the Royal Horticultural and Royal Botanic Societies of London during the last two years, are now ready for delivery. The Bulbs are of first-rate quality and moderate in price.

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"Silver Medal to Mr. WILLIAM PAUL, Waltham Cross, for a large collection of Hyacinths, consisting of most of the finer sorts now grown, shown in excellent condition."—*Royal Botanic Society's Report of Spring Show, March 26.*

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NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS, N.

INTERNATIONAL EXHIBITION.

PRIZE MEDALS 1851 and 1862.

BUTLER & McCULLOCH, SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.

(ESTABLISHED UPWARDS OF A CENTURY.)

A.—Choice Collections of Bulbs for Greenhouse or Conservatory, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

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A Specification of the above Collections is given at pages 50 and 51 of Messrs. BUTLER & McCULLOCH'S CATALOGUE or AMATEUR'S GUIDE, which may be had free and post paid upon application.

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NEW, BEAUTIFUL, AND RARE PLANTS.

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PARADISE NURSERY, HOLLOWAY, LONDON, N.,

Has much pleasure in offering the following choice and valuable selection of NEW and RARE PLANTS:—

		s.	d.
CYPRIPEDIUM STONEI	105*s.* to	126	0
PHALÆNOPSIS SCHILLERIANA ..	210*s.* to	420	0
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„ GRANDIFLORA		63	0
„ „ (Borneo variety) ..		63	0
CALADIUM LOWII		31	6
„ VEITCHII	31*s.* 6*d.*,	63	0
ALOCASIA METALLICA		31	6
„ MACRORHIZA VARIEGATA		31	6
CORDYLINE INDIVISA		31	6
YUCCA CONCAVA		63	0
CLERODENDRON THOMSONÆ		3	6
SERISSA FŒTIDA MARGINATA		5	0
CLEMATIS BRASILIENSIS		7	6
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ADIANTUM SCABRUM		10	6
CHEILANTHES MYSURENSIS		7	6

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„ PRINCESS ALICE		10	6
„ TRICOLOR		5	0
„ CARNATION		5	0
„ CLAPHAM BEAUTY		21	0
„ DUKE of CAMBRIDGE		5	0
„ PRINCE of ORANGE		21	0
„ SIR J. OUTRAM..		5	0
„ PROFESSOR LEMAIRE		5	0
CAMELLIA LEOPOLD 1st		21	0
„ QUERCIFOLIA..		31	6
„ COUNTESS of DERBY		10	6
„ COMTE DE GOMER		10	6
„ LAVINIA MAGGI		10	6
RHODODENDRON BARON DE CROESER		5	0
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„ NEIGE ET CERISE		7	6
ROSE JOHN HOPPER		5	0
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ARTHUR HENDERSON AND CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.
Pine Apple Place, Edgeware Road, London, W.

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SUTTON'S BULB LIST, post free, contains all the most desirable sorts in cultivation, and at low prices.
Royal Berkshire Seed Establishment, Reading.

HYACINTHS for EXHIBITION.
FRESH IMPORTED BULBS.
SUTTON'S SELECTION.

		per 100.	Dozen.
Finest sorts by name	..	£4 4s.	12s.
Very fine ditto	..	3 10	9
Good ditto	..	2 10	6

Good Hyacinths for Beds, Ribands, &c. in separate colours (fresh imported), 21s. per 100.
Anemones, Crocuses, Tulips, Gladioli, &c., also very low in prices, as per CATALOGUE, which may be had gratis and post free.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

J. C. WHEELER AND SON, SEED GROWERS, Gloucester, have imported in excellent condition a large
COLLECTION of HYACINTHS,
including the extra fine varieties recommended by Dr. LINDLEY.
PRICED LISTS may be had gratis on application to the Importers,
Messrs. J. C. WHEELER & SON,
Gloucester.

Excellence and Economy.

H. BROWN has imported a very large Stock of HYACINTHS, CROCUSES, and other BULBS, including the best varieties for exhibition and decoration. Collections at very moderate prices, carriage free.
See PRICED DESCRIPTIVE CATALOGUE, post free.
Seed Warehouse: 4, Commutation Row, Liverpool.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.
Exotic Nursery, Tooting, Surrey, S.

30,000 Hyacinths, 20,000 Tulips, 10,000 Snowdrops, and 100,000 Crocus and Narcissus.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, the largest Grower of the above in England. J. H. B. has just Purchased, for ready money, in Holland, in addition to his usual Large Stock, the above Surplus Stocks of some very large growers, which he now offers at unheard of Low Prices. The following Roots for 1l.:—50 Hyacinths in twenty-five splendid sorts; 150 Early Tulips, sorts; 200 Crocuses, mixed; 50 Snowdrops, and 12 very large noble Narcissuses. Half the above quantity for 10s. 6d.
HYACINTHS, in 10, 20, 30, 40, or 50 splendid Varieties, at One Guinea per 100. Less by the 1000.
LILIUM LANCIFOLIUM RUBRUM (true), large roots, 1s. each, 10s. per dozen. 3l. 5s. per 100, or 30l. per 1000.
N.B.—To save trouble all Orders to be prepaid.

Hardy Ornamental Trees and Shrubs.

LUCOMBE, PINCE, AND CO. invite the attention of those engaged in planting, to their unrivalled Stock of HARDY ORNAMENTAL TREES and SHRUBS, all of which have been regularly transplanted, so that they can be removed to any distance with perfect success. Any one desirous of producing an immediate effect has an opportunity, rarely offered, of selecting from an exceedingly large and well grown stock, at very moderate prices, every variety of Tree or Shrub that can be required. Particulars and prices forwarded on application.
N.B. Compensation for carriage will be taken liberally into consideration.
Exeter Nursery, Exeter. Established 1720.

Hardy Scarlet and other Choice Rhododendrons.

JOHN WATERER'S CATALOGUE of the above popular plants, as exhibited by him at the Royal Botanic Gardens, Regent's Park, is now published, and will be forwarded to all applicants.
It describes faithfully the colours of all the Rhododendrons, thereby rendering every facility for making selections.
It likewise contains an abridged List of really Hardy Conifers, with their heights and prices.
The American Nursery, Bagshot, Surrey.

Cupressus Lawsonia variegata.

JOHN WATERER has the pleasure to announce that he is prepared to execute orders for the above New and desirable CYPRESS. It is a Seedling of his own, raised from imported seed, of golden variegation, quite equal to Chamæcyparis variegata.
Its habit is more bushy than Lawsonia, with a greater tendency to a drooping form.
It has been exhibited at the Royal Botanic Society's Exhibition, and was awarded the highest Prize for New and Rare Plants.
Good plants, 21s. each. | Good larger plants, 31s. 6d. each.
A few extra large plants, 42s. each.
The usual allowance to the Trade.
The American Nursery, Bagshot, Surrey.

Elymus glaucescens (syn.) sabulosus.

B. S. WILLIAMS begs to call the attention of noblemen and gentlemen to the above ORNAMENTAL GRASS; it is perfectly hardy, having proved it for several years, and can with confidence recommend it as being superior to the Pampas Grass as an under cover for Game, &c.
B. S. W. being convinced of its utility, has provided a large Stock, which he begs to offer at the following low prices:—6s. per dozen; 40s per 100.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Notice.—American Plants.

WATERER AND GODFREY'S CATALOGUE is now ready, and will be sent on application; it gives a fair price and description of all the Rhododendrons and other American Plants worth growing, as well as a general summary of the most extensive Nursery Stock in Europe.
The Exhibition of American Plants in the Royal Horticultural Society's Garden, South Kensington, were supplied by WATERER & GODFREY, Knap Hill, near Woking.

Gladiolus Brenchleyensis (True).

YOUELL AND CO. beg to offer this season strong Flowering BULBS of the above, unequalled by any other for its brilliancy of colour, at 3s. 6d. per dozen; or 25s. per 100. Trade price on application, and when quantities are ordered a considerable reduction will be made.
The *Gardeners' Chronicle* of August 23, 1862, says:—"The spikes you have sent us are magnificent. We have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."
CATALOGUES of their extensive Collection, for which the First Class Prize was awarded at the Crystal Palace Show, Sept. 3, 1862, and two First Class Prizes at the Royal Horticultural Society's Show, South Kensington, Sept. 10, 1862, will be forwarded on application.
Royal Nurseries, Great Yarmouth.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given, that an ELECTION of TWO PENSIONERS on the Funds of this Institution, will take place in JANUARY next.
Persons desirous of becoming Candidates are required to send in their testimonials and certificates to the Secretary, on or before November 10 next. Printed forms of application may be obtained of the Secretary.
Preference will be given to those applicants who may have been Subscribers for upwards of 15 years, but should there not be a sufficient number of applicants of that class to fill up the vacancies, then the applications of those who may not have subscribed so long, or not at all, will be considered.
By Order of the Committee,
EDWARD R. CUTLER, Secretary.
14, Tavistock Row, Covent Garden, W.C.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 18, 1862.

AN application for preferment was made to a late LORD CHANCELLOR, to which he was inclined to accede. To justify the appointment, however, he was anxious to know something of the antecedents of the applicant. "Do not, however," said he, "send me testimonials, for the greatest rogue in Newgate can get testimonials." There is in fact no nostrum, however absurd, or article of trade however inferior, which cannot for the expected honorarium, or even without it, obtain a passport. No person of any kindness of heart likes to give a bad character, and few have strength of mind enough to refuse one altogether. Unless something of this amiable weakness had influenced the parties present at the meeting at Manchester to consider the merits of Mr. HARBEN'S proposed substitute for Cotton, we cannot conceive how deputies from some of the most influential houses in London could certify that the fibre of *Zostera marina* is available for extensive use in manufactures, without possessing a particle of information as to the possibility of extracting it in any quantity, or the price at which it could be supplied. Nor indeed, if the words of the certificate are to be taken for what they imply, do the reporters seem to have had a notion what part of the plant might be expected to yield good fibre.

Without some information of this kind, it is worse than useless to ventilate opinions, or more properly speaking assertions, which can lead only to disappointment. Hundreds of plants may yield a fibre as good as that from the Zostera, and yet be perfectly useless as regards the Cotton question, unless the fibre could be obtained in such quantities and at such a rate as might effectually come in aid of the present deficiency. We have nothing to say against the Zostera fibre itself, which seems to be, as far as we can judge, intrinsically good, though till it is obtained in quantity, it is impossible for the most experienced head to tell how it will work.

The fibre in question is the produce of a plant which is extremely common on low shores and at the mouths of estuaries, and which is often thrown up in immense quantities by the waves, so as to form a long unbroken roll towards high water mark. The dry and often bleached leaves are collected for stuffing beds, for packing and other purposes, and are sold under the name of Alva marina. Dutch toys and glass often come over from the continent packed with this substance, which from its elasticity and flexibility is admirably adapted for the purpose. The plant is botanically known as *Zostera marina*, and belongs to a small natural order, Sea Wracks or Zosteraceæ of LINDLEY, which consists of marine vegetables resembling sea weeds, with thin grassy sheathing leaves, and differs essentially from neighbouring orders in having delicate wormshaped pollen grains, besides other important characters.

The genus Zostera itself consists of a few species only, which at present have not been sufficiently studied. Nothing can be more variable than the breadth and length of their leaves, and the number of nervures; and if good characters exist, they will be found probably in the nuts, which differ considerably in shape. The characters of the vegetation alone are not worthy of much dependence. Three species have been distinguished by botanists on our own coasts—*Z.* marina, angustifolia, and nana, but we have great doubts as to their validity. In the southern hemisphere a species of Zostera occurs abundantly at the Cape of Good Hope and in Tasmania, but though the stem is much straighter and the internodes in general longer, without fruit it cannot be satisfactorily separated. Dr. HOOKER has therefore referred it doubtfully to *Z. marina* in the Flora of Tasmania, with the observation that "there is probably but one species which is found in all seas."

If the leaves are torn asunder transversely, a multitude of little fibres project not only from the main nerves out from the delicate intermediate parallel veins, and are so loosely packed that instead of forming a close bundle as in most plants, the individual bast-cells are detached from each other, a circumstance which would be of no little importance could the fibre be obtained in abundance. The cylindrical threads are, however, extremely slender, and the quantity which could be obtained from a given weight of the Alva would bear a very slight proportion to it, especially if it is taken into consideration that, like other aquatic plants, it shrinks considerably in drying.

As regards the method of obtaining the fibres we are in complete ignorance, as no maceration is likely to be of any avail. Few plants are so indestructible. It has long been used as a material for thatching, and when properly applied will last a hundred years, a fact which is illustrated most curiously by the report of PALLAS, that in some of the ancient tombs in the South of Russia it is found as a packing to pottery. It is partly owing to this property also that it forms such a useful material for filling up breaches in embankments, for which purpose many shiploads are annually used in Holland,* though the sailors who collect the Wrack are subject, from some unknown cause, to distressing attacks of ophthalmia.

Could the fibre be extracted, and did it bear any available ratio to the leaves, for the stems cannot be expected to yield anything but short and brittle threads from the shortness of the internodes, there would be no difficulty in obtaining it in any quantity, but we are convinced that the case is quite hopeless.

In another direction Alva is available as a substitute for Flax and Cotton. When thrown up on the shore, and particularly when bleached, it makes a good material for paper, and is employed largely for that purpose in several parts of Europe, but especially in Italy. We are afraid that we must be content with these qualities. As a substitute for Cotton in weaving, we believe it to be as little available as gossamer. *M. J. B.*

—— WE find that the beautiful new PHALÆNOPSIS exhibited by Mr. Low under the name of *P. Lowi* (see p. 955), has been so called by the younger REICHENBACH, in a late number of the *Botanische Zeitung*, which we have only just seen.

ROYAL HORTICULTURAL SOCIETY'S GREAT FRUIT SHOW, OCTOBER 8-10, 1862.

[*From a Practical Gardener of 40 Years' Standing.*]

IT was a happy thought of the individual who first suggested to the Council of the Royal Horticultural Society the propriety of having a great International Show of Fruit, Vegetables, Cereals, and Gourds, as a fitting conclusion to the series of grand horticultural displays for which the present year will be long remembered. None but those who had the pleasure of seeing the exhibition of last week can form a correct idea of its magnitude, or of the great variety and excellence of the

* We are informed by Mr. LOUDON that Zostera is used a Yarmouth to resist the encroachments of the sea. He also tells us that the rush-like envelopes of Italian liquor-flasks are prepared from the same plant, but he probably refers to *Posidonia oceanica*. A broad-leaved variety of *Z. marina* however, occurs at Yarmouth, though far more abundant on the extreme northern coasts of Scotland. This note is the more necessary as LOUDON'S report has been circulated extensively as quoted in a work of HUGH MILLER'S.

different productions of which it was composed. Societies, like men, are progressive, and the gradual improvement that has been made in everything relating to horticulture may be traced to the spirit of emulation which their exhibitions are calculated to excite. It is only a few years ago a sensation was created by the first great fruit show that was held in Willis's Rooms. The second, held in St. James's Hall, was on a larger scale, and far surpassed the former one, but neither of these, with all their attractions, could be compared with the grand display at Kensington, which, as a whole, we consider to have been one of the most interesting and important exhibitions that has ever been held by the Horticultural Society. Fortunately the weather was favourable, and many were thereby induced to visit the Garden and enjoy the scene, enlivened as it was by the military bands that attended during the three days of the Exhibition, and performed some favourite music every afternoon.

The principal focus of attraction was the large Conservatory, in which the finer sorts of fruit were arranged on three wide tables, extending its whole length, with a smaller table at each end. The eastern arcade contained the miscellaneous contributions for which no room could be found in the conservatory, while in the lower portion of this arcade were the various productions that had been sent from Denmark and Norway Hamburgh and Altona, Vancouver's Island, and Nova Scotia. The western arcade was devoted to the show of roots and other garden vegetables, as well as to the Gourds, which of themselves formed one of the most remarkable features of this vast exhibition. The upper part of this arcade contained the various collections of Agricultural produce, such as Carrots, Turnips, Mangel Wurzels and other roots used for the feeding of stock; also samples of a great variety of cereals, among which we noted an interesting collection of 15 sorts of Wheat grown in Australia, exhibited by F. S. Dutton, Esq., Commissioner for South Australia. The most popular Wheats in the London market, with samples of White, Black, and Polish Oats, Chevalier and other sorts of Barley, Rye, Clover, and other agricultural seeds, were shown by Messrs. Wrench & Sons, London Bridge. The largest exhibitors in this department were Messrs. Sutton & Sons, Reading, and the numerous articles shown by them were not only finely grown but arranged in such a way as to be seen to the best advantage. Besides their specimens of agricultural produce, they had about 100 different sorts of Gourds, 75 kinds of Grass seeds, and specimens of nearly 150 Grasses.

Mr. Edwin Stuart, of Nice, exhibited a fine collection of different sorts of Maize, and though last on our list, not the least interesting and instructive was the collection of specimens of Barley and Wheat, grown in the same ground year after year, without manure, and with different kinds of manure, exhibited by J. B. Lawes, Esq., of Rothamstead, Herts.

From this brief outline some idea may be formed of the plan upon which the exhibition was arranged; we will therefore proceed to the conservatory and have a closer inspection of its contents. In the centre of the middle table a raised circular stand contained the collections shown by fruiterers, which of itself formed one of the most attractive objects of the exhibition. It was indeed a "trophy" of which the contributors to it had just reason to be proud. The whole of the specimens were remarkable for size, and for the richness and delicacy of the tints with which they were more or less coloured, affording a proof that they had been grown in a more sunny clime, and under a brighter sky than we have been favoured with during the past season. In the collection from Mr. Lewis Solomon were some fine Pines, Black Hamburgh Grapes, Melons, Cherries, and magnificent specimens of some well known Pears, such as Duchesse d'Angoulême, Glou Morceau, Bon Chrétien d'Espagne, Easter Beurré, Calebasse, St. Germains, and huge examples of Uvedale's St. Germain shown under the name of Belle Angevine, by which it is known in France. The Ribston Pippins and White Calville Apples were nearly half as large again as we are accustomed to see them. The Pomegranates were equally large and fine. At the top of the trophy were several plants in pots of the Smooth-leaved Cayenne Pine Apple, with unripe but handsome fruit. The samples of Cardoon, a vegetable little grown in this country, were in keeping with the other articles in this collection, as were likewise the Purple Aubergines, and the basket of Tomatoes.

The collection from Mrs. Margaret Webber and Co., which filled the other half of the "trophy," was similar to the one just noticed. It contained several handsome Black Jamaica and Queen Pines, excellent Hamburgh Grapes, one Beechwood and two Orion Melons; large specimens of Easter Beurré, Glou Morceau, Duchesse d'Augoulême, Beurré Diel, Beurré d'Aremberg, Beurré Clairgeau, and other dessert Pears; also a basket of the beautiful Pomme d'Api, and some large Reinette Blanche d'Espagne, and Reinette du Canada Apples, together with fruit of the Litchi, the Juvia, or Brazil Nut, and immense Walnuts.

On either side of this "trophy" were ranged the Pines, Melons, Grapes, and dessert Pears. For the prizes offered for collections of fruit from private growers there were five competitors. Their productions were all of great excellence, every dish being in the highest degree of perfection. The first prize was gained by Mr. Tillyard, gr. to John Kelk, Esq., The Priory, Stanmore, beating Mr. A. Henderson, gr. to the Duke of Sutherland, at Trentham, and Mr. Kailes, gr. to the Earl of Lovelace, Ripley. Besides the fruit usually seen in such collections, we remarked a nice dish of finely coloured berries of the Eugenia Ugni, from Mr. Tillyard, and another of the same from Mr. Henderson, perfectly ripe, but much paler in colour. Although the plant is too tender for our severe winters, yet we consider it to be admirably adapted for growing in an orchard-house. The fruit is small, but in our opinion it is unsurpassed for flavour.

In Mr. Kailes' collection were several of Queen Ann's Pocket Melon, and a remarkably fine dish of large Mulberries. Mr. Young, gr. to W. Stone, Esq., Havant, showed in his collection a nice dish of large American Cranberries.

The Pine Apples comprised Queens, Montserrats, Black Jamaicas, Providences, Envillès, and Cayennes. They were all handsome fruit, but one or two were evidently past their best, and would have stood no chance of obtaining a prize, provided flavour had been the criterion by which their respective merits were to be determined. The Queen of 6 lb. 1 oz., from Mr. Green, gr. to Mrs. Honeyman, Kelvedon, was a remarkably fine specimen of that variety; another from Mr. Moore, gr. to J. C. Wall, Esq., Bristol, weighed 5lbs.; and one from Mr. Robinson, gr. to R. Benyon, Esq., Englefield House, Reading, weighed 4 lb. 15 oz.

A large and handsome fruit of the Smooth-leaved Cayenne weighing 7lb. 12oz. was shown by M. Chantrier, gr. to the Duc de Levis Vantadour, Paris; and another of the same variety, weighing 6 lb. 7 oz., came from Mr. Ingram, Royal Gardens, Frogmore, and a Prickly Cayenne of 6 lbs. 9 oz. from Mr. Johnson, gr. to the Duke of Wellington, Strathfieldsaye. The only Providence we noticed was one of 6 lbs. 3 oz. from Mr. Bwye, gr. to R. T. Crawshay, Esq., Merthyr Tydvil.

Of Melons there were upwards of 50 exhibitors. They consisted of white, green, and red-fleshed varieties; none of them were large, but neat, round, beautifully netted or warted specimens. M'Ewen's Green-fleshed, Heckfield Hybrid, and Scarlet Gem were selected as the best.

While the fruiterer's trophy of huge Pears and Apples, with other foreign productions, excited surprise, and afforded a convincing proof of the great difference that exists between the climate of the continent and this country, the magnificent display of home-grown Grapes was looked upon with even more astonishment, from its being the result of that care and skill for which English gardeners are distinguished as cultivators. At no former exhibition do we remember to have seen such a collection of splendid Grapes as was brought forward on this occasion. The Muscats were unusually fine. The three bunches from Mr. Drummond, gr. to J. Scott Smith, Esq., Tunbridge Wells, were perfection, not only in the size and form of the bunch and berry, but in ripeness and colour, which was a fine rich amber with a delicate bloom. Mr. Hill, gr. to R. Sneyd, Esq., contributed some noble bunches, six of them weighing 17½ lbs. Mr. Tillyard's Muscats were also fine specimens; as were those of Mr. Thomas Frost, gr. to E. L. Betts, Esq., Preston Hall, Kent; Mr. Drewett, gr. to Mrs. Cubitt, The Denbies, Dorking; and Mr. Bwye; the latter showed three fine bunches of Tottenham Park Muscat, but unfortunately not ripe. Nor must we omit to notice the other white Grapes, among which were fine examples of Trebbiana from Mr. Sage, gr. to Earl Howe, Atherstone; Mr. Bwye; and Mr. Ingram, gr. to J. J. Blandy, Esq., Reading. One of the bunches shown by Mr. Sage weighed 7½ lbs.

The competition among Black Grapes was even more spirited than among the Muscats, and so nearly equal in merit did many of the collections appear to be, that the judges must have had some difficulty in making their awards. They were truly admirable specimens of good culture. Here again Mr. Drummond's fruit was in fine condition, the bunches were large and handsome, with berries as black as Sloes, and nicely bloomed, but the best Hamburghs were undoubtedly those shown by Mr. Henderson, of Trentham, and scarcely inferior to them were the collections from Mr. Hill and Mr. Meredith, Garston, Liverpool.

Besides Black Hamburghs, there were several good specimens of other Black Grapes exhibited, among which we particularly noticed Lady Downes' Seedling from Mr. Hill, West's St. Peter from Mr. Tillyard, and Black Barbarossa from Mr. Bwye and Mr. Hutcheson, gr. to H. B. Cotton, Esq., Margate. The most remarkable Grape however in this class was one shown by Mr. Meredith and Mr. Cox, gr. to C. H. Royds, Esq., Worcester, under the name of Kempsey Alicante, the berries of which are very large, long, and oval, and in Mr. Meredith's specimen more resembled a closely packed dish of Plums, than a bunch of Grapes.

The Society's Garden at Chiswick furnished a collection of about 60 different sorts, among which were good examples of Dutch Hamburgh, Barbarossa, Raisin de Calabre, Burchardt's Prince, and Black Manukka. The latter has large oblong berries in the way of the Kempsey Alicante, and is said to be an excellent Grape. The finest specimens in this collection were those of the Frankenthal, of which there was a large basketful, that vied in size both of bunch and berry as well as in bloom with any in the exhibition. They were altogether highly creditable to the cultivator, and to the Society.

In the several classes of Pears for which prizes were offered there was great competition. Some idea may be formed of this when we state that there were no less than 24 competitors for the 12 dishes of distinct kinds, 48 for 6 dishes, 38 for 3 dishes, 60 for the best single dish, and 33 for the 5 heaviest dessert fruit, while for the single dish of Kitchen Pears there were 37 entries. A more extensive or finer display of choice Pears was probably never before collected together, or seen to greater advantage. It is, however, worthy of remark, that notwithstanding the number of exhibitors, we believe the sorts exhibited did not exceed 40 or 50, but were chiefly confined to fruit of about 20 of the comparatively old Flemish Pears, and 10 or 12 kinds of more recent introduction that are universally esteemed for their excellent qualities.

The greatest exhibitor in the class of Pears, perhaps, was Mr. Ingram, Royal Gardens, Frogmore, whose collections contained some extremely handsome fruit of Prince Albert, Knight's Monarch, Beurré Diel, Kingsessing (large pale green), Duchesse d'Angoulême, Chaumontel, and other well-known varieties.

In the collection of Mr. Frost we noted fine specimens of Marie Louise, Calebasse Grosse, Van Mons Leon le Clerc, Count de Flandres, Beurré Rance, and Beurré Clairgeau. Mr. Dwerrihouse, gr. to Viscount Eversley, Heckfield, had some splendid examples of Beurré Diel, Gansell's Bergamot, Vicar of Winkfield, and Flemish Beauty.

From Mr. C. F. Harrison, Oatlands, were remarkably fine specimens of Vicar of Winkfield, Glou Morceau, Chaumontel, Marie Louise, and Beurré Diel. Mr. Culverwell, Bedale, Yorkshire, sent some excellent samples of Hacon's Incomparable. Dunmore, Seckle, and Swan's Egg. We considered this collection a very interesting one, as showing the difference between fruit grown in the north, and that grown in the south of England. The five heaviest dessert Pears were those of Calebasse Grosse, 5 lb. 10 oz., from Mr. Frost; Beurré Diel, from Mr. Morris, gr. to T. White, Esq., Wetherfield; and Duchesse d'Angoulême, from Mr. Ford, Watton, Herts.

Of novelties among the Pears of this class, we noted a very handsome fruit of the "Queen," from Mr. Ingram, Royal Gardens, Frogmore. It somewhat resembles the Beurré de Capiaumont in form, and is of a rich, russety yellow colour.

Baking Pears are comparatively few in number, and those most esteemed for this purpose are the Catillac and Uvedale's St. Germain. Of the latter Mr. Snow and Mr. Ford, Horsham, showed very large and fine fruit, and Mr. Wilmot, gr. to Mrs. Crompton, Roehampton, equally good specimens of the Catillac.

Of Apples for the dessert, and for kitchen use, there was an immense supply, the whole of the table at the back of the Conservatory, and half of the one along the front, being completely loaded with fruit of the finest description. Among the collections for dessert we noted some very beautiful specimens from Mr. Bousie, gr. to Lord Taunton, Stoke Park, Slough. These were Court-pendu Plat, Cox's Orange Pippin, Formosa, Nonpareil, Gravenstein, Ribston Pippin, and Beauty of Wilts. In another collection furnished by Mr. Ingram, Frogmore, were admirable examples of Cox's Orange Pippin, King of the Pippins, Nonpareil, Scarlet Russet, and the old Golden Pippin. Mr. Hall, gr. to Captain Tyrell, Ealing, sent very fine specimens of Ribston Pippin, King of the Pippins, Blenheim Orange, Court pendu Plat, Braddick's Nonpareil, and Fearn's Pippin. From Mr. Whiting, gr. to H. T. Hope, Esq., The Deepdene, Dorking, were remarkably handsome fruit of Sweeny Nonpareil, King of the Pippins, Braddick's Nonpareil, and Mickleham Pearmain: and from Mr. J. Wright, gr. to Mrs. Ramsden, Twickenham, were three beautiful dishes of Golden Reinette, King of the Pippins, and Duchess of Clarence.

Among Kitchen Apples we noted noble specimens of Catshead, Blenheim Orange, and Royal Russet, in the collection from Mr. J. Butterfield, Basingbourne,; and in the one from Mr. Snow, gr. to the Countess Cowper, Wrest Park, were Reinette du Canada, Gloria Mundi, and Wellington. From the same exhibitor were five fruits of the Alfriston that weighed 5½ lbs.; and Mr. E. Smith, gr. to — Wyatt, Esq., Enfield, furnished five of the Tower of Glammis, that weighed 4 lbs. 6 oz. As a novelty in this class of fruit we observed some very perfect specimens of the French Crab, the growth of 1861, from Mr. Sidney Ford, St. Leonard's Lodge, Horsham.

Of Plums there were several exhibitors, and Coe's Golden Drop was shown in great perfection by Mr. Bousie and Mr. Tillyard. There was also a nice dish of Reine Claude de Bavay from Mr. Simpson, gr. to Lady Molyneux, Slough.

The show of Strawberries and Raspberries was not remarkable for anything beyond exhibiting a few dishes of each, as a rarity at this late period of the year. For a late Strawberry none is better than the red or white Alpine, and of the latter a nice dish was shown by Mr. Cunningham, gr. to the Bishop of London.

Of Red and White Currants there were several dishes in good condition. The best were those from Mr. Terry, gr. to L. Ames, Esq., St. Albans.

A large collection of Apples and Pears from the Derby Local Committee of the Royal Horticultural

...ety filled a table along the western end of the Conservatory, and was interesting as showing the relative effect of climate on the size and colour of several well known varieties.

The remaining space in the Conservatory was occupied with some of the foreign contributions of fruit, consisting of a vast collection of Apples and Pears from the Royal Horticultural Society of Namur; another small collection of the same from M. Muller, of Strasbourg; 150 sorts of Apples from M. Konzelman, Esslingen, Wurtemberg; a large collection of Apples and Pears from M. Bocheres, of Hanover; and an immense collection from M. Burdin, Maggiore, & Co., Turin, comprising 200 sorts of Pears, 95 sorts of Apples, and 322 sorts of Grapes. Among the latter we remarked some promising and very beautiful varieties, which in the hands of English cultivators may prove valuable. The following are the names of a few that attracted our attention:—Grignolino bianca, amber coloured; Las bianca, round, rich amber; Grignolino rosatta, amber; Corvalletto, pale, grizzly; Scottione, pale green, inclining to amber; Seros bianco, large, white; Madonna, nearly white; Argentino, round, golden inclining to amber; Erbaluce, rose, bright grizzly, beautiful; Albarola, large, round, black; Cardona, round, large bunch, black; Damascina, large, pale black; San Fendente, round, black; Bonarda, round, black; Grosse Œillade, round, black; Morettone, round, black; Fresia grossa, round, black. Two of the most remarkable in this collection were the Pizzatello and Galetta bianca, the berries of each being very long, tapering to both ends, and of a pale green tinged with amber. As a curiosity the Switte deserves notice on account of having black and pale amber-coloured berries on the same bunch.

We will now proceed to look over the articles arranged in the higher part of the eastern arcade adjoining the Conservatory. Here we found more collections of fruit, both of home and foreign growth. In one of the latter, from M. Chantrier, Paris, consisting of 36 kinds of Pears, were some beautiful specimens, among which we remarked Doyenné d'hiver, Bon Chrétien d'hiver, St. Germain, Curé (our Vicar of Winkfield), and Beurré Clairgeau. The Société Agricole et Forestière, of Namur, also contributed an extensive collection, and another, consisting of 81 sorts of Apples and 75 sorts of Pears, from the Island of Walcheren, was shown by M. Van de Putte, of Middleburg, Holland. About 50 sorts of Gourds were exhibited by M. Auguste Limstette, of St. Jervais, Namur, among which we noted the variegated Patisson, said to be excellent, Green Spanish, White, and Corfu Pumpkins—the last-named variety was large and prettily mottled. Casts of fruits and vegetables grown in the colony of Victoria, were shown by the Victorian Commissioner. A collection of tropical fruits modelled in papier maché, and a series of flours, starch, and farinas, the produce of roots and fruits grown in British Guiana and Trinidad, were furnished by Sir Wm. Holmes, the Commissioner. Among these were samples of arrowroot, starch, flour from Caladium esculentum, and a species of Dioscorea; and Sago, from the bitter Cassava. M. Kramer of Flotbeck, Hamburgh, exhibited several fine pods of the Vanilla aromatica, the produce of 1861, as well as of the present year. Few of the visitors to this part of the exhibition suspected that they were indebted to these long, narrow, brown pods, for the delightful perfume with which the air around them was so strongly impregnated.

One of the most attractive objects here, however, was the display of various sorts of Grapes, Peaches, and Pears in pots from Messrs. Lane & Son, Great Berkhampstead. The Grapes were West's St. Peter, Black Hamburgh, Buckland Sweetwater, and others. Beurré de Capiaumont Pears, and the Salway Peach. The Grapes were well swelled, and the whole was admirably calculated to show what may be expected from an Orchard-house when properly managed.

From Mr. R. Webb, Reading, there were some good samples of Filberts; the best appeared to be the Cosford; Daviana, a seedling; Close-headed Prolific, and Kentish Cob. A bunch of the fruit of Musa Cavendishii was shown by Mr. C. E. Flower, Stratford-on-Avon, and some good specimens of the Quince by Mr. W. Pearce, gr. to C. Dobson, Esqr., Keston.

Messrs. Paul & Son exhibited a beautiful collection of Roses, and Messrs. Downie & Laird a nice assortment of Pompone Dahlias. Mr. Barker, of Godalming, had some choice and showy varieties of Tropæolum Lobbianum, and a few plants were sent by Messrs. Veitch and Mr. Bull, Chelsea, and Messrs. Low, Clapton, for the opinion of the Floral Committee. Of these, the one which most attracted our attention was a hybrid raised by Mr. J. Anderson Henry, of Edinburgh, between Myrtus americana and Eugenia apiculata. It formed a nice bush loaded with berries, somewhat larger than those of Eugenia Ugni; and we think will be valuable as a plant for orchard-house cultivation.

We now descend to the lower part of the eastern arcade, where the extensive collections from the northern countries are displayed. The first which meet our eye are those from Sweden, consisting of numerous varieties of Apples and Pears, among which we noticed fair examples of Beauty of Kent, Alfriston, and Golden Reinette Apples, and a variety named Rosenhager, stated to be the best and most common Apple in Sweden. The climate would seem to be too cold for Pears, although the Windsor and Black Achan, one of the most common dessert Pears in Scotland, have attained a tolerable size; yet the other kinds known to us, such as Gansel's Bergamot and White Doyenné, are scarcely more than half the size we are accustomed to see them. Plums are better and much larger in proportion to the Pears. The best varieties shown are the Greengage and Jefferson's Plum. Peaches and Grapes were injured by carriage, but the little we saw told us they were creditable, for that country, to those who sent them. Of vegetables there was a large supply, consisting chiefly of Potatoes, Cabbages, Carrots, Onions, Ruta baga and other Turnips. They were all of fair size, except the Potatoes, which were small.

From Denmark there was a large exhibition, especially of vegetables. Among these were some large Cabbages, Kohl-Rabi, Turnips and Ruta-bagas, also white Carrots and Parsnips, and a nice-looking variety of small garden Turnip called the Long Yellow Bortsfield, having considerable resemblance to the Teltow, but thicker. Among the fruit we noticed some specimens of the true Danish Gravenstein, a nice-looking Apple, and stated to be the national dessert Apple of that country.

From Norway the exhibition of Vegetables was much the same as that of Sweden—Cabbages, Carrots, Parsnips and Turnips appearing to be the most cultivated, and of the utmost value in those countries, on account of their hardiness and capability to withstand the severe cold to which they are exposed in winter. The specimens shown were of a good size, although it was stated that the past summer had been very unfavourable for vegetation in Norway, and that the different samples had been taken up several weeks earlier than usual in order to send them for exhibition. Among fruit were some small specimens of Apricots, Greengage, Yellow Egg, and Blue Egg Plums. We also noticed an interesting collection of Cereals and Agricultural Seeds from Dr. F. C. Schubeler, of Christiana.

The Society of Practical Gardeners in Hamburgh and Altona exhibited a very large collection of Apples and Pears, samples of Red and White Currants, a great variety of Gourds, French Beans, and some Cucumbers. They also sent a large supple of vegetables, consisting of Cauliflower, Brussels Sprouts, Black Radish, Sugar Beet, Cardoons, Red Cabbage, and numerous sorts of Potatoes.

From Vancouver's Island were cereals and field seeds. Of the former the Wheat was stated to weigh 64 lb. per bushel; Barley, 54 lb.; and Oats, 35 lb. per bushel; and the appearance of the samples was such as fully to confirm the statement.

From Nova Scotia were samples of various cereals and other seeds, with several glass jars, containing the following preserved fruits, viz.:—Pears, Quinces, Gloria Mundi, Gilliflower, Seek-no-Further, and Bishop's Pippin Apples.

But perhaps the most remarkable feature in this great horticultural exhibition, and which on account of its novelty attracted a larger share of attention than it otherwise might have done, was the vast display of vegetables and Gourds, which nearly filled the lower portion of the western arcade. We believe it is the first attempt that has been made at any thing of the kind, but from the interest that was taken in it, we are led to think it will be repeated on a larger scale another season, and be attended with equal success. Indeed it was hardly possible for any one who looked upon the fine collections of Gourds brought forward on this occasion, not to feel surprise, or express their admiration at seeing such a variety of curious productions—some of which were no less remarkable for their size and singular appearance, than others were for their elegant form and great beauty.

The most extensive collections were those exhibited by Mr. Cramb, gr. to the Earl of Ducie, Tortworth Court, Gloucestershire, and Messrs. Veitch and Son. Another large collection was shown by Mr. Pragnall, gr. to G. W. Digby, Esq., Sherbourne Castle, Dorset. In the collection of 100 varieties from Mr. Tranter, gr. to the Hon. H. D. Ryder, Hemel-Hempstead, were many pretty varieties, among which we noticed the striped Apple and striped Pear-shaped, Queen Mab, Bijou, Fairy, and a Mammoth of 103½ lbs. Mr. Tillery, gr. to the Duke of Portland, Welbeck, furnished some good specimens, such as Marmorata superba, Zebrina superba, General Turr, Napoleon III., and a small variety of the Pear Gourd called Eugenie; altogether this collection contained about 130 different sorts. From Mr. Ingram, gr. to J. J. Blandy, Esq., were some very handsome fruit of Bunton's Imperial Mammoth, Valparaiso, Mammoth Squash, Turk's Cap, Malabar, and the Miniature Gourd. Mr. J. Cattell, of Westerham, Kent, showed a large collection, among which we particularly noticed Eclipse, Loveliness, Little Gem, Warted Lemon, Ear Drop, Swan's Egg, The Lady's Jewel, and Marmalade Marrow, with a jar of marmalade that had been made from this variety of Gourd. The largest exhibitor in this class was Edwin Stuart, Esq., of Nice, in whose collections there were some highly curious and beautiful specimens. From the Society's Garden at Chiswick upwards of 200 varieties were shown, of all sizes, shapes, and colours. Here were the Gooseberry, the Onion, the Turnip, the Bottle, the Snake (nearly 8 feet long), the Aubergine, the Variegated Orange, and two specimens of the huge Mammoth, each of which weighed 100 lbs. Indeed, we may safely say that a better idea of the various forms which the freaks of nature allows the different kinds of Gourds to assume could not have been conceived than was so admirably represented by this interesting group.

The exhibition of vegetables was remarkably good, and, as may be supposed, the samples brought forward were the very best that could be produced by the several competitors. For Potatoes alone there were nearly 100 entries, and the specimens shown afforded a gratifying proof that the disease had not yet deprived us of this most valuable root. The varieties were numerous, but those that appeared to be most esteemed by cultivators were the Lapstone, Fluke, Red Regents, Ormskirk, and Wellington. Turnips were good, and of a nice size for dressing. Onions were fine samples, especially those of the Reading and Portugal varieties. Beets appeared to us to be small, and some roots of great promise were found of indifferent quality on being cut. For Peas the season is late, but there were several exhibitors. The best sample was furnished by Mr. Bwye, gr. to R. T. Crawshay, Esq. Among the Cabbage tribe, the largest contributor was Mr. Cattell of Westerham, who showed some good Borecoles and Savoys. Of the latter, the best were from Mr. Whiting, gr. to H. T. Hope, Esq. A variety of Buda Asparagus Kail was shown, but although at one time recommended as a substitute for Asparagus, we believe it has not been much cultivated. Of Celery, both red and white, there were some fine examples shown by Mr. C. Lidyard, Hammersmith. Cardoons were furnished by several exhibitors, among which we noted a good sample from Mr. Field, Dorking, and another from Mr. J. Pottle, gr. to S. D. Colvin, Woodbridge. Mushrooms were not remarkable; the best were from Mr. W. Young, gr. to R. Barclay, Esq., Highgate.

A very fine dish of Truffles was shown by Mr. J. Wainwright, gr. to W. C. Thornhill, Rushton Hall, Kettering, and was admired by all who know the value of this remarkable species of Fungus in cookery.

Plants in fruit of the Texan Tomato and Scarlet Egg plant were shown by Messrs. Arthur Henderson & Co., Edgeware Road.

Roots of the Chinese Yam were furnished by Mr. Tillyard, Mr. Ivery of Dorking, and others. Mr. Ivery likewise had an old root of large size that had been preserved in Moss, and appeared as if it had been recently taken out of the ground. This is unquestionably a valuable root, but we fear our climate is not warm enough for cultivating it with advantage.

In concluding our remarks and comparing the past with the present, we cannot but observe with feelings of pleasure the great progress which has been made in everything relating to gardening. For this we are mainly indebted to the exertions of the Horticultural Society. Its exhibitions have been the means of widely diffusing a taste for horticulture, as well as of encouraging and rewarding merit. Long may they continue to do so, and annually terminate as successfully as those of 1862.

IMPERIAL HORTICULTURAL SOCIETY OF VIENNA.

This Society held its annual meeting for the exhibition of horticultural and agricultural produce, wines, machines, &c., in the conservatories and grounds of the uninhabited summer palace of Prince Lichtenstein, situated in the Rossau, on the west side of the city of Vienna. The conservatories are on each side of an imposing looking edifice, which served as offices during the Prince's residence there. They are about 150 feet long each by 18 feet wide, and about 20 feet high. They have dark roofs, glass only being used for the front; these are again divided, each having a centre about 20 feet long and as much wide, supported upon eight columns, and containing a fountain and figure in a recess at the back.

The conservatory on the north side of the office was devoted to fruit, the south side to plants, and the central portion under the steps leading to the office, to wines, implements, &c. On the north side a table about 3 feet wide was placed along the front for the exhibition of Apples and Pears, and above this was a row of small wine Grapes suspended to a string, and drawings of Grapes and leaves were fastened to the upright rafters of the house. At the end was a stage with many tiers of shelves holding an interesting collection of fruit, consisting principally of Apples and Pears from the Hungarian estates of Prince Esterhazy. At the back were placed five tables, three of which were flat, and two with five tiers of shelves arranged in a conical form. The latter contained a miscellaneous collection of fruit, consisting of Apples, Pears, Pomegranates, Medlars, Walnuts, Hickory Nuts, Chesnuts, &c., together with Grapes, hung all round the edges of the shelves. The flat tables contained Apples and Pears only. Tall greenhouse plants were arranged along the back, which served to screen the high wall.

In the central portion was a device in Grapes. A large frame-work of conical form was covered with varieties of various colours made to represent one huge bunch; this was drawn up to the ceiling, and festoons of Vines furnished with leaves and fruit radiated from the centre to the four corners of the room. Had the Vine leaves been fresh this would have had a good effect. Underneath this was placed the table for the fruits sent by the Royal Horticultural Society, consist

ing of 200 kinds of Apples, 150 of Pears, together with Grapes and Pines. The size of the two latter kinds of fruit very much astonished the good people of Vienna. This second portion of the conservatory was decorated with fruit similar to the first, but not so abundantly. In examining these collections I found we had all the best kinds in England, and I found many of their finest examples with English names partially converted into German.

There was not, I should think, half the quantity of fruit "at the Vienna show" that was exhibited in the conservatory at the Royal Horticultural Society's Gardens on Wednesday last.

A lobby leading to the exhibition of wines, &c., was filled with cereals, Hops, &c., and around the walls were hung drawings of the different methods of training fruit trees; also a series of photographs of the Conservatory and Gardens of the Royal Horticultural Society at South Kensington. Beyond this and under the steps of the office was a large place very much resembling a cellar. This was devoted to the exhibition of wines, and many examples of the various kinds made in Germany were produced; also a large assortment of implements and contrivances used in the manufacture of wines. Further on was a large assortment of horticultural and agricultural implements, amongst which was a curious machine for pressing Apples; with this exception I did not observe anything that I had not seen in England. Passing onwards we entered the south conservatory, which was filled entirely with plants; many very tall conservatory plants were used at the back, and to form the centres of some of the large groups. A sinuous line was carried along the front, and alternate groups of flowering and fine-foliaged plants and Conifers were formed; in the recesses were placed vases containing one or more ornamental plants; all the plants exhibited were much the same as those in use for decorating a conservatory at home. You look in vain for the fine specimen plants so common at our own floral gatherings. The floor wherever it could be seen was covered with Hypnum or toothed Lycopod, upon which the pots were placed, giving to the whole a neat appearance. One or two large plants of Pampas Grass in flower were introduced with the plants, with very good effect. At the end of the conservatory, amid a profusion of foliage, were placed the busts of the Emperor and Empress of Austria.

On the fruit shelf were arranged alternately groups of flowering and fine-foliaged plants of a similar character to those on the floor. Two large glass cases, containing an interesting collection of tropical fruits, Orchids, &c., were placed upon the front shelf. Viewed as a whole the aspect was that of a nicely arranged conservatory, but it fell infinitely short of our English notions of a flower show.

On the Grass in front of the conservatory were shown the different methods of training Vines in Austria; the one which is claiming considerable attention now is similar to what we term the one-rod system. A rod of 10 or 12 feet long is chosen in preference to pruning close to the ground, as is usual in Vineyards; but from what I could learn the new system is not favourably received by the large growers.

A span-roofed house, about 50 feet long, devoted to the exhibition of vegetables, made up the remainder of the show. Amongst these I noticed fine Celeriacs, with bulbs as large as a moderate sized Turnip, also very fine Cardoons and Gourds of various kinds and sizes; upon the whole there was a good assortment of esculents and of good quality. *E.*

Home Correspondence.

The Golden Hamburgh Grape.—You have spoken so strongly in a leading article lately on the subject of the Golden Hamburgh Grape, and have admitted letters praising it in such unqualified terms, that did I not know how evenly you hold the balance, and how readily you admit into your columns the discussion of any subject so long as it is fairly argued, I should almost fear that the testimony of my experience would fail of obtaining a hearing. I have grown this Grape, from the first year of its being sent out to the present time, in a hothouse, an intermediate house, and in pots, and have had some very fine bunches—enough to prove that when well ripened it is a very superior Grape. But these have been rare exceptions; the rule has been a failure. It is possible that this failure has been the result of "incapacity," or "incompetency," as Mr. Cramb suggests; nevertheless I have successfully fruited Bowood Muscat, Chasselas Musqué, and various others not to be grown from eyes in one year without high culture, and my Black Hamburghs this year would have held their own against any shown at South Kensington. I do not mention this as a boast, but to give additional force to the question—why is it that whilst under various treatments I am successful with so many kinds of Grapes, the Golden Hamburgh alone fails. I have no wish to decry the Grape; it is so excellent when well ripened that I should only be too thankful to any one who would teach the incapables how it may be fruited. You state in your leader of September 27, that there is conclusive evidence at Chiswick, now within everybody's reach, that this Grape ranks with the highest of its class. Allow me to say that I went to Chiswick some weeks ago for the one purpose of seeing the Vines, and that the evidence was all the other way. I met there Mr. Barron, who has the care of the large conservatory, and he went through it with me, pointing out every Grape, and explaining the different qualities of each. When we came to the Golden Hamburgh I found the bunches, with the exception of a few quite at the top of the Vine, exactly in the same condition as my own. I compared notes with Mr. Barron, and our experience was the same. In most cases only some of the berries come to maturity; the rest turn brown and flabby, and become intensely acid. In his estimation the Grape was "worthless" on account of its "bad constitution." Instead, then, of its merits having been vindicated at Chiswick, its demerits have been proved, and any one who has seen the beautiful health and careful training of the Vines in the great conservatory will feel quite sure that having failed there, the Golden Hamburgh has but poor chance of success elsewhere. *Audi alteram partem.* [Mr. Barron states that our correspondent must have misunderstood what he said in reference to this Grape. He could not possibly, he says, have asserted that it was "worthless," when ample evidence to the contrary was before his eyes. What he did say was that the Golden Hamburgh appeared to be somewhat delicate in constitution, and that the main stalks of some of the bunches on the lower part of the rod decayed. The Vine in question is in an outside border, and on its own roots. If it were worked on the Black Hamburgh he believes that nothing of the kind would happen. The fault complained of does not occur in fruit of this variety gathered from Vines grown in pots, and the noble bunches of it shown by the Society at Vienna, and Namur, as well as at South Kensington, were perfectly sound. He therefore could not, as we just stated, have asserted what our correspondent understood him to say. Fruit stalks of the Mill Hill Hamburgh under similar circumstances decay in the same way. Yet no one will presume, we imagine, to say that that is a worthless Grape.]

Bird's Nesting.—Your correspondent has given you a wrong reference. If Mr. Carpenter will look at Deuteronomy, chap. xxii., ver. 6, he will find these words:—"If a bird's nest chance to be before thee in the way in any tree, or on the ground, whether they be young ones, or eggs, and the dam sitting upon the young, or upon the eggs, thou shalt not take the dam with the young, &c." *Philornithissa.*——Your correspondent who cannot find in Deuteronomy the passage referring to bird's nesting, quoted at page 936, might have done so, had he searched for it, in less time than he must have occupied in writing to you on the subject. If he has since ventured to make the attempt, and has by great ill luck not been successful, let him turn to Deut. xxii., 6, 7, of our translation, and he will there find the passage with only a very unimportant verbal difference. *M. C.*

Cynips Kollari (Hartig); C. Quercus petioli (Linn.)—The galls caused by this insect have become abundant in this neighbourhood, and I find that after the galls have been gathered from the trees, the enclosed insects will mine their way out, and of course reproduce their species on other trees. I should have been inclined to adopt the plan for their extirpation which you quote from Dr. Fitch (*Gardeners' Chronicle*, 1860, p. 72), "destroy, by fire, the galls, before the dangerous insects escape," but I find in another part of your Journal, 1856, p. 662, that these galls contain about one-third of the quantity of gallic acid which is contained in the best Aleppo galls. Now I find that the best galls are known in the trade as black, green, and blue galls, and are much heavier and more astringent than (what are known to the trade as white galls) those from which the insect has escaped. I presume some artificial mode of drying is resorted to in Syria, by which the insect is killed and its escape prevented from the best galls. This would prevent the increase of the insect equally well with the destruction of the gall itself by fire, and the galls thus harvested would probably have some value for the chemist or the dyer. Will any of your correspondents inform us of the treatment which the galls receive after being gathered in Syria? *Diss.*

Pears at South Kensington.—I attended the Fruit Show on the 8th inst., and cannot help expressing my disappointment at the comparatively small size and mean appearance of the Pears, both of English and Belgian growth. It appears to me that this has arisen from the neglect of proper thinning when the fruit was young. My practice for many years past has been to use a pair of scissors and to cut off all but two on every spur, as I fully believe that you obtain the same weight in fruit of very superior size and appearance as when all are left. Of course I leave on the tree those young fruit which promise to be the finest. I imagine that when the fruit was fairly set that I cut off considerably more than I left on the tree. The result every season has been that my fruit has been remarkably fine and of exquisite flavour; there are no pigmies among the Pears, as they all reach a nearly uniform size. About 40 years ago I planted a Pear stock against my house, which has a south-eastern aspect, and I subsequently budded it with a Crassane which never bore more than a few dozen fruit. Being dissatisfied with this result, and having had the offer of some grafts of Glou Morceau (*i. e.* tit bit), Marie Louise, Beurré Rance, and Williams's Bon Chrétien from a Fellow of the Horticultural Society, I grafted the four leading branches with them, and now obtain fruit ripe at four different seasons. The Crassannes were occasionally gritty at the core, but I find nothing of the kind now that the tree has been doubly worked. If I had been aware what kind of fruit I had to compete with, I should have certainly sent some specimens to the show. I have been a practical gardener all my life, and beg to call the attention of your readers to the beneficial results of budding H. P. Roses on seedling Dog Roses close to the ground. Some which I budded a year ago are growing with extraordinary vigour. *Glyd White, Wallingford.*

Zostera marina.—I would beg to call attention to large fields of this singular plant on the Cromarty Frith, particularly towards the upper reaches of the Frith. In the autumn of 1856, I saw there an amazing quantity of seed of the Zostera; it contains a farinaceous, useful-looking substance. Those who may try experiments would do well to get the seed analysed, which may prove more valuable than the Grass-wrack itself. The Zostera is not the brittle substance some of the scientific speakers at Cambridge assert it to be; it possesses in a natural dried state considerable toughness; it is often used to stuff beds, &c., and some years ago it was highly recommended for that purpose in hospitals. *Charles Donald, Woodstock Park, Mistiage.*

Pampas Grass.—We have a plant of this with 1[illegible] flower stems on it. Last year it had 63. The plant is about 33 feet in circumference. It received no stimulant this season, with the exception of one watering of suds from the laundry. *John Keanes, Archhall Gardens, Navan, Meath, Ireland.*

Fruit Show at South Kensington.—At the great International Show of Fruits, &c., held on the 8th inst. my collection of three dishes of ripe Pears in Class M was disqualified through one of the varieties being wrongly named. I would have taken no notice of the matter, but as it was the only collection branded with the words "incorrect nomenclature" in the whole exhibition, people might imagine that it really was the only instance of wrong naming that occurred on that occasion. If the schedule warrants a disqualification of one collection containing a misnamed fruit, I think that the rule should be followed out in all; but it appears that the judges of Apples took a different view of the rule, "that all fruits must be correctly named," for to several collections were prizes awarded containing misnamed fruits. The variety of Pear wrongly named in my collection was one of three received from the Horticultural Society under the name of Triomphe de Jodoigne, but which has been designated by Mr. Thompson Urbaniste, a decision with which the description in his "Gardeners' Assistant" entirely agrees; but on referring to Dr. Hogg's "Fruit Manual," I find a different account of Urbaniste. Now, when two such authorities differ in their descriptions of a variety of fruit, I think a little leniency should have been shown. The first prize in Class M. was awarded to a collection in which two of the dishes contained 8 fruits—now the schedule states that 6 is the number required. It should, I think, be taken into consideration that some exhibitors come a great distance to exhibit, and that entirely at their own expense; surely therefore such one-sided justice is not calculated to increase the Society's supporters. *Archibald Bousie, Gardener to Lord Taunton, Stoke Park, near Slough.* [Supposing this statement to be correct, it is clear that the judges are bound in fairness to reconsider their verdict.]

Societies.

Royal Horticultural: (*First Supplementary Report—Gourds*).—The display of Gourds was as varied and extensive as could well have been desired. The collection from the Society's Garden was considerably the largest and most interesting. Of large kinds it contained Netted Melon Gourd, a reddish-skinned variety, about 2 feet in diameter, covered with pale network; Mammoth Green Marrow, an egg-shaped dark green kind; Giraumon splendens, a reddish-yellow coloured sort, about 2 feet through; Scarlet Cwt, a dark green kind; a Marrow from the Mediterranean, something like a Mammoth Gourd, and weighing 81 lbs.; Courge de Chypre, a dark green sort streaked with white; Boston Marrow, a warm reddish-yellow coloured variety, some 2 feet in diameter; Courge de l'Ohio Blanche, an irregular shaped yellow kind, decorated with pale stripes; Potiron Gris d'Espagne, a dark green sort with conspicuous flakes of a paler colour; P. Jaune Gros, a beautiful orange-yellow specimen covered with pale network, and weighing 100 lbs.; a reddish-yellow coloured variety of P. Gris; Gros Potiron Rouge, a reddish-orange oval sort ornamented with pale stripes; Gros Potiron Gris d'Espagne, a netted flattened round kind some 18 inches in diameter; a grey South American kind; an example of Potiron Jaune Gros Pointu, weighing 101 lbs.; and P. Turban Rouge, 67 lbs. The following were also Gourds of considerable size, viz., Courge de Farina du Brésil, a ribbed golden yellow variety about 2 feet in length; Great Bipedal Vegetable Marrow, 2 feet or more long and 1 in diameter; Cucumis Pepo bipedalis, a lemon-coloured sort, upwards of 2 feet in length and 18 inches in diameter; Courge de Patagonie, like a Vegetable Marrow, but very deep green, in short, nearly black; Norfolk Island Vegetable Marrow, an obovate, slightly furrowed, pale yellow sort, of which there are more than one variety; Orange Pumpkin, a bright reddish-orange skinned kind, furnished with

... of a paler tint; Chesnut Pumpkin, reddish-yellow streaked with white; Pine Apple Gourd, a ...ted reddish buff sort; different varieties of Turbans, ... yellow South American Gourd.

At the head of long varieties stood the Snake ..., of which there was a specimen some 8 feet in ...; Pod longa, about 3 feet in length, dark green ... with white; Trichosanthes sanguinea, an orange-... sort 2 feet in length; Massue, a green cylin-... variety about 8 inches in diameter, flat at the ..., becoming narrower towards the stalk; Cucumis ... longissima, like that just named, but paler; ..., long necked Club Gourd; Massue d'Hercule, a ...green kind, striped and slightly mottled with a paler ... of the same colour; Shark Gourd, a greenish ...k kind rather prettily mottled with paler green.

Among forms of another kind were the Black ...r; the flat Bottle Gourd of Egypt; Powderhorn, ... green sort; Pear-formed Variegated and Long ..., very handsome dark green Gourds, striped and ... with white; and the Chamois jaune flaconneux, a pale yellow upright variety with flat top.

Conspicuous among small curiosities in this way were the Gooseberry Gourd, a sort scarcely so large as a good ...d Gooseberry, green in colour and spiny; the Squirting Gourd; small Golden Drop, faintly orna-...ted with paler stripes; Little Rock and Plate ...s, both bright golden kinds; Golden Nugget; ... Onion; Orange and Pear Gourds, both pretty ...al sorts; Petite Poire Rayée, striped bright orange-yellow; Golden Globe; Cucurbita Pepo verrucosa, a round orange kind slightly warted; bicolor and Bell Handle, both yellow with green tops; round Apple and Pear Gourds; Bishop's Head, and others.

Among larger varieties of highly ornamental character, may be named Cucurbita melanosperma, a green oval kind, handsomely mottled and striped with white; in other collections this was named Malabar.

Warted varieties consisted of Cucumis Pepo calciformis, bright orange; Courge Polk, summer Crooknecked Squash; new Artichoke Marrow, a flat shaped kind belonging to the Custard breed; Coloquinte ... and Lion Gourd.

From Messrs. Barr & Sugden came an exhibition from the warm climate of Sardinia, and distinguished for high colour, especially the Turk's Caps, the brilliancy of whose tints was the admiration of everybody. The collection contained a fine specimen of Bottle Gourd, and two charming other varieties — one, Princess ...trice, a round flat white kind, striped with yellow, and having a circular crown piece, striped with green and white; the other, which was unnamed, was egg-shaped, orange striped with paler yellow, and having a charming green and yellow striped top. Besides these there were Clotilde, one-half of which was yellow mottled with orange, and the other mottled dark green; Queen of Beauties, a pretty orange-yellow ribbed sort; and Amber Warted, a cream-coloured kind.

From Mr. Cattell, of Westerham, came a fine collection, most of which were stated to be eatable when ripe. Among others it contained a long white Vegetable Marrow; another called Prince Albert Marrow, an oval ...th white kind; Marmalade Marrow, Mammoth Gourd, and other kinds with popular names, such as Lord and Lady Palmerston, D'Israeli, Lady Peel, Ear..., white mottled with green; Custard Marrow, Cinderella, and Queen of the Pumpkins, the last a large ...en yellow variety. Specimens of Gourd Jam of excellent flavour also accompanied this collection; but we did not learn from what variety it was made. Mr. August, Beddington, also showed Gourds.

In the Class of six Ornamental Gourds, Messrs. Veitch had a nice collection, as had also Mr. Pragnell, gr., Sherborne Castle. Among kinds from the latter, Spotted Melon, dark green, mottled with yellow; Striped Melon, dark green, mottled with white; and Striped Apple, dark green, striped with pale yellow, ... pretty varieties. From Mr. Ingram, gr. to J. J. ..., Esq., High Grove, Reading, came Little Miniature, a small yellow Pear, with a green top, striped with white; some Turk's Cap and Mammoth Gourds; and the pretty kind called Malabar, but Cucurbita melanosperma in the Society's collection. Mr. Tranter, gr. to the Hon. H. D. Ryder; Mr. Tillery, gr. to the Duke of Portland; and Higgs, Putney Heath, also showed in this class.

In a collection from Mr. Fleming, gr. to the Duke of Sutherland, at Cliveden, we noticed Fireball, a flame-coloured kind mottled with green; a small specimen of Potiron Jaune; Malabar; Green and Gold Warted, a ... looking kind; a white sort called Le Grand ...arque; and Big Ben—all large kinds. Among ... varieties in this group were Melon Gourd, a ...some round yellow sort with prominent green ...; Lemon, a smooth golden yellow sort; Nugget, a ...undly warted Pear-shaped variety; Ostrich Egg, ... oval white kind; and Golden Drop and Golden ..., both pretty sorts.

Mr. Cramb, gr. to Earl Ducie at Tortworth, sent a collection from that part of Gloucestershire, in which ... good examples of Bishop's Head; Custard Marrow; Connecticut Field Gourd, a bright orange red kind; ... Louise, and others, all in good condition and of comparatively large size.

Of Mammoth Gourds the largest was shown by Mr. ...er of Cambridge, whose specimen weighed 176 lbs. Mr. Veitch sent one the weight of which was 154 lbs.; and Mr. Rowe of Watford, and Mr. Tranter, gr. to the Hon. H. D. Ryder, both sent specimens upwards of 100 lbs. in weight. A large crescent-shaped reddish yellow eatable Gourd came from Messrs. Barr & Sugden, who also had specimens of club shaped varieties 6 feet in length, and some brilliant examples of Turk's Cap and Portmanteau Gourd. It is not a little remarkable that in this huge gathering there was not a single specimen of the true Egg Gourd, the best of all for *purée*.

Next week we hope to complete what we have to say respecting other departments of this great show. In the meantime we must correct a mistake which we inadvertently committed at p. 955. Let honour be given where honour is due. We find we were in error in assigning to Lady Holmes the beautiful arrangement of articles from British Guiana. They were in reality displayed by Miss Light, her Ladyship's sister.

Notices of Books.

The *Botanical Magazine* for October opens with a figure of the now famous *Lilium auratum*, to which a folding plate is worthily devoted. The only novel information respecting this fine introduction is an announcement, on the authority of the *Gardeners' Monthly Advertiser*, published at Philadelphia, that "the Lily had been received in Massachusetts by Mr. Parkman, of Jamaica Place, the preceding year, from Japan, and produced its gorgeous blossoms, equal in size with those which have appeared in England." The Number also contains *Acanthonema strigosum*, a little Streptocarpus-like plant from Western Tropical Africa, forming a new genus of Cyrtandraceæ. It produces a solitary prostrate hairy leaf, with a short panicle of small tubular flowers, having the face of the limb of a blood-purple. The filaments of two lower of the fertile stamens are forked at the end, one fork forming a short horn or spine beside the anther—hence the generic name.—*Botrychium subcarnosum*, or as Sir W. Hooker prefers to call it, B. daucifolium, a tropical Moonwort which has been introduced from Ceylon to Kew, and was in great perfection there in a temperate stove in June, 1862. It is a fine Indian species, and has deltoid bipinnatifid sterile fronds, with rather long and sharp-pointed segments. There is no doubt this is the B. subcarnosum of Wallich's own herbarium, in which the name daucifolium does not occur, nor in the catalogue deposited with it.—*Monochætum tenellum*, "a very lovely Melastomaceous plant, with copious rich purple-coloured flowers, and Myrtle-shaped leaves," a native of Guatemala, and obtained at Kew from the nursery of Messrs E. Henderson & Son.—*Waitzia Steetziana* (printed also W. tenella) a very pretty Swan River Composite, raised by Mr. W. Thompson, of Ipswich. It is one of the "everlastings," and is likely to prove ornamental in our flower-gardens; the flower-heads are drooping, of a bright lively but palish yellow, and hemispherical, the involucral scales being scarcely as long as the yellow florets which occupy the disk. The genus Waitzia is synonymous with Morna, under which name some of the species have been previously introduced.

The *Florist and Pomologist* gives figures of the two new species of Rhodanthe, *R. maculata* and *R. atrosanguinea*, which have been introduced recently from Swan River by Mr. Thompson, both of which are very desirable additions, the former having very large rosy flower-heads with a dark spotted ring around the disk, and the latter Magenta-coloured flower-heads with a purple disk. Of *Mitchelson's Plum*, which is proved to be invaluable as a market fruit, there is also a capital figure. Mr. Radclyffe recommends strongly of the new Roses of 1862—Alexandre Dumus, Prince Camille de Rohan, Duc de Rohan, Beauty of Waltham, Comtesse de Seguieur, Maurice Bernardin, Gloire de Chatillon, and M. Boutin. The first four are specially commended. The Duc de Rohan is to be a great favourite; but Mr. Radclyffe maintains that up to this time Senateur Vaisse is *the* great Rose of the day. There is a good paper on Hyacinths, in which are recommended as "good cheap showy sorts, fit to grow in quantities for general decoration, either in pots or glasses," the following sorts:—Lady Sale, Robert Steizer, Duchess of Richmond, Sultan's Favourite, Prince Albert, Baron Van Tuyll, L'Unique, Queen of the Netherlands, Madame Van der Hoop, Grandeur à Merveille, Norma, Grand Lilas. Any one who has not yet obtained a supply cannot be far wrong in growing these. "M. S." gives further reasons for rejecting the Smooth Cayenne Pine, amongst which one of the strongest is that it won't keep. All large Pines, he observes, are notoriously bad keepers, and the Cayennes are as bad as any. The fruit may sometimes be kept sound for three weeks, but not always, especially if the weather be hot and close, under which circumstances however the Ripley Queen will keep sound and good for six weeks. The Black Jamaica "M.S." has always been found to keep twice as long as the Cayenne, and this question of keeping, he argues, is of great importance both to private and commercial growers. To sum up, he decides that "in very large collections it may be desirable to grow a few Cayennes, Providences, Envilles, Otaheites, Trinidads, &c., for size and variety; but for general use and quality there are none better than the Ripley Queen in summer, and Black Jamaica in winter." Mr. N. H. Pownall of Redcliffe-on-Trent, in reference to the statement made last year that the crop of Apples was being bought up to be used in calico-printing, reports in the language of an operative, that "there is not an atom of truth in the assertion that the juice is used for the fixing of colours, or used in any way thereto." "It was simply a hoax upon the public to make a rise in Apples."

Gossip of the Garden continues its hints on the Economical management of Small Gardens, manure forming the subject matter on this occasion. There are also papers on winter flowers in rooms, Normandy Pippins, Fancy Pansies, &c.

The Highway Acts, by William Foote, Attorney-at-Law. Third Edition (Crockford).

This little work, which has reached a third edition, is accompanied by good practical notes and indexes, and will be found useful by country gentlemen as well as lawyers. The Highway Act of last session is included in it.

The Union Assessment Act, 1862, by Thos. Wm. Saunders, Esq., Recorder of Bath (Crockford), is a convenient edition of the Act in question, and has an index.

A Flora of the County of Surrey is preparing for publication by the Holmesdale Natural History Club, which has purchased the collection of Surrey plants formed by the late J. D. Salmon, Esq., with the Manuscripts relating to the Flora of the county of Surrey, prepared by him for the press, and on which he was for many years engaged. The manuscripts and collection of plants have been placed in the hands of Mr. J. A. Brewer, their Honorary Secretary. The Flora will be arranged on the natural system, and the nomenclature and classification will correspond, as far as practicable, with those of the fifth edition of the "London Catalogue of British Plants," on which the manuscripts of Mr. Salmon are based. The known localities of each species will be given (except in the very common ones that are generally distributed), followed, in all cases, by the initials or name of the person on whose authority they are inserted, unless the compiler has himself observed the plant.

Miscellaneous.

Death of Mr. Curtis.—Our old and excellent contributor, "Ruricola," is dead. John Curtis died at his residence, in Belitha Villas, Islington, on the 6th inst., at the age of 70. "As an entomological artist, Mr. Curtis became distinguished early in life by the drawings and engravings which he executed for Kirby and Spence's 'Entomology,' M. Leay's 'Horæ Entomologicæ,' and especially for Kirby's famous 'Century,' in the Transactions of the Linnean Society. He subsequently commenced his great work, 'British Entomology,' forming a series of about 800 plates, each containing a figure of a distinct genus of insects, with the characteristic dissections of anatomical details. This work extended to 16 volumes and occupied as many years in its completion. He also published a Catalogue of British Insects (founded upon that of the late J. F. Stephens), and was for many years engaged in investigating the habits and economy of the different species of insects injurious to garden and farm produce. These he published in detached memoirs in the *Gardeners' Chronicle*, under the signature of 'Ruricola,' and in the 'Journal of the Royal Agricultural Society.' At a subsequent period they were collected into a single volume and published under the title of 'Farm Insects.' It was chiefly on account of the value of these articles that Mr. Curtis was awarded a pension from the Civil List, which was augmented about three years since on account of the sad lost of sight which he experienced." This much we borrow from the *Athenæum*. Let us add that although an imperfect education rendered his scientific dissertations less valuable than they would have been, yet as an accurate observer of the forms and habits of insects Curtis was surpassed by few, and as an entomological draughtsman equalled by none.

On the Genus Cynips.—The genus Cynips is specially interesting to physiologists because, though the species are numerous and the individuals innumerable, no Entomologist has yet found any male representative of the group. In the Phil. Trans. for 1858, Mr. Lubbock has described and figured the development of the ova in Cynips Kollari, then known (though as it appears erroneously) under the name of C. lignicola, a species which lives on the Oak, and makes round hard galls about as large as a nut. It presents in addition an interesting example of a change in geographical distribution. Unknown in this country until within the last few years, it then appeared in the south-west of England, whence it gradually spread eastward. Mr. Frederick Smith, President of the Entomological Society, at the July meeting of the Society, stated that about three years ago it appeared in the woods near London, especially on the north side, in very large numbers; but in the second year of its appearance the tomtits had discovered that each gall contained a fine fat grub, and the result was that it was now difficult to obtain a perfect gall. Mr. Walker corroborated Mr. Smith's account, both of the appearance and the approximate extermination of the species in the woods near Highgate; and Professor Westwood expressed a hope that the fact would be made known as widely as

possible, since it afforded an additional argument to the many already produced in opposition to the indiscriminate slaughter of small birds. *Natural History Review.*

Celery Blight.—The *Nottingham Journal* reports that a severe blight has fallen on the Celery at East Retford, where it is extensively grown for the Sheffield market. Within the last week or two the crops, which were looking most promising, appear to have been smitten all at once, and large flats have now the appearance of dried Furze. At first this state of things was attributed to a few early frosts which it was thought had caught the plant in its earlier stage, but on examination it was found to have been caused by a small green maggot or grub, which is so neatly embedded between the folds of the leaf as at first to be scarcely distinguishable. The grub, when at its full growth, is about half an inch in length, of a pure green colour in the main, with a neat dark brown stripe half way up the vertebræ from towards the bottom of the body; the remaining part of the vertebræ being covered with hair up to the commencement of its narrow pointed head. It is exceedingly voracious. It has been found by experiment that it can bury itself in a fresh leaf so as scarcely to be visible in something less than 50 minutes. It is said that a solution of soda and sulphur has been found of considerable use in the extirpation of this pest. *Post.*

Plants and the Food they want. — The beautiful Orchidaceous plant, the Ladies' Slipper, grows over all parts of the Swiss Fore Alps, where the soil is formed of the alpine limestone; it accompanies the whole Suabian Muschelkalk, and disappears suddenly when we come to the sand of the Jura and Keuper formations on this side of the Danube. It next makes its appearance on the Muschelkalk of Thuringia, and comes down with that on the Werra as far as the neighbourhood of Gottingen, then leaps over the Bunter sandstone of the Lower Eichsfeld, the granite of the Upper Hartz, and again gladdens the eye of the wanderer on the calcareous formations eastward of the Brocken. It is sought in vain over all the clay and sand formation of the northern German plains, till in the extreme north it again shows itself at Rügen, where the chalk rocks of Arkona and Stubbenkammer lift their heads. On the western coast of France grow various insignificant looking shore plants, species of Salsola and Salicornia, which the inhabitants there use to obtain soda from the ashes. When we travel from thence towards the east, we everywhere miss these little plants, even when searching most carefully, and merely one or other of them makes its appearance in such places where the soil is moistened by some salt spring. At last we arrive at the Great Steppes of the south-east of Russia, which in summer are often covered with a thick crust of salt, showing themselves to be the ancient bottom of some dried-up sea, and here these plants are found growing in the same abundance and luxuriance as in the west of France. On the northern coast of Germany the little pale red Maiden-Pink grows upon the arid sand dunes, and is universally distributed over the sandy plains of northern Germany; but these are succeeded by the granite, clay, slate, and gypsum of the Hartz, the porphyry and muschelkalk of Thuringia, and our little Pink is not met with again till we arrive at the Keupar sand plains, on the further side of the Maine, surrounding the venerable city of Nuremberg. It extends farther south, through the Palatinate, till the muschelkalk of the Suabian Alps again sets a limit to it; but it leaps over these and the whole Alpine region, and at last appears on the sandy soils of northern Italy. How is it that these plants everywhere disdain the richest soils in their range of geographical distribution, and are confined to perfectly determinate geognostic formations? Must not the lime, salt, and sand (or silex) have a most distinct influence in the matter? *Schleiden.*

Leaf Moths.—The larvæ of the Tortricidæ frequently reside within leaves, and either roll them up in the manner which has just been described, or get into the middle of a bud or cluster of leaves, and draw them together with their silken nets. The leaves of the Willow are very liable to the attacks of these insects. A very pretty and well known species of these moths is the Oak-leaf Roller (*Tortrix viridina*), a moth of a beautiful apple-green upon the upper wings. In some places these moths swarm to a fearful extent, stripping whole trees of their leaves. I have known the Oaks to be surrounded with whole clouds of these moths, fluttering about like gnats, and forming an exhaustless banquet to the empis-flies, which were catching them by thousands, embracing them in their long legs, and flying about with their prey, sucking their juices like so many winged vampires. Other species live beneath the bark of trees, or even burrow into the wood, while others are hatched in the interior of fruits, and live unsuspected in their retreats until they are on the point of changing to the pupa form, when they eat their way out, and leave a round hole as a memento of their presence. The Codling Moth is one of the commonest of these tiresome insects, living in the middle of the fruit from which it takes its name, and giving rise to the condition which is termed "maggoty." The larva is a round, fat, white grub, which may too often be found in the interior of an apparently sound and ripe apple, and which gives to every part which it has touched a very bitter and nauseous flavour, like that of a worm-eaten nut. None of the Tortricidæ are of very brilliant colours, the Oak-leaf Roller being one of the most conspicuous. The fore wings are dark greyish brown, striped transversely with a darker tint. On the outer part of each wing there is a dark brown space streaked with golden bars. The hind wings are simple dusky brown. The Rose suffers sadly from the ravages of several of these moths, some of which feed within the bud, and others tie the young leaves together and feed upon the interior.

The Tallow Tree.—Among the trees which have of late been extensively distributed in the North-Western Provinces of India and Punjab is the Tallow Tree of China—Stillingia sebifera. In China it is largely cultivated, and it is said that by its produce alone the taxes are paid in the district of Hong Kong. It grows equally well on low alluvial plains, on the rich mould of canals, in sandy soils, and on the acclivities of mountains. From its seeds tallow and oil are procured, which are extensively used in China. Its wood is hard and durable, and its leaves yield a black dye. It is now thriving well in India. The tallow and oil are easily procured from the seeds. The tree, therefore, is well worthy of attention. *Times.*

A Remedy for Small Pox.—Dr. Frederic W. Morris, resident physician of the Halifax Visiting Dispensary, N.S., has written a letter to the *American Medical Times*, in which he states that the Sarracenia purpurea, or Indian cup, a native plant of Nova Scotia, is the remedy for small pox in all its forms in 12 hours after the patient has taken the medicine. That "however alarming and numerous the eruptions, or confluent and frightful they may be, the peculiar action of the medicine is such that very seldom is a scar left to tell the story of the disease. If either vaccine or varirious matter is washed with the infusion of the Sarracenia, they are deprived of their contagious properties. So mild is the medicine to the taste, that it may be largely mixed with tea and coffee and given to connoisseurs in these beverages to drink without their being aware of the admixture. The medicine has been successfully tried in the hospitals of Nova Scotia, and its use will be continued. *Daily Paper.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory.—Climbers, at least some of the most rambling, will now want a smart dressing where they obstruct light in any material degree. Such as flower on the young wood, and which are now in a ripening state, or approaching a state of rest, may be pruned in exceedingly close. Such as the late-blooming Passifloras, Combretums, Echites, Ipomœas, Stephanotis, Thunbergias, Mandevillas, &c., which are still thriving, must be regulated with a more gentle hand; cutting away merely barren shoots, and drawing the remainder into somewhat closer festoons, in order to throw sunlight into the interior of the house. Chysanthemums will soon be the chief feature of attraction, and where these are largely grown they will require some attention. They are very impatient of a close rather warm atmosphere, and if the house contains plants requiring this treatment, the Chrysanthemums should as far as practicable be placed in the coolest part, where air can be given freely on every favourable opportunity; for except they can be rather freely exposed to air their foliage soon gets attacked and disfigured by mildew, especially if the plants are bushy and well grown. See also that they are kept well watered at the root. Use fire-heat only when absolutely necessary either to prevent the temperature from falling too low or to dry the atmosphere. If such things as Geraniums, Cinerarias, and Calceolarias must be wintered in the same house with Heaths and other hard-wooded plants, they should be kept as much as possible by themselves, as they will require a somewhat closer temperature than hard-wooded plants, but where circumstances admit of it these should occupy a house or pit by themselves. Cinerarias and Geraniums intended for late flowering will do very well in a cold pit if the weather should not prove unfavourable, but those intended for flowering early should be placed where fire-heat can be used so as to be able to preserve the foliage from damp. Roses for early forcing must soon be pruned and placed where they will at least be safe from heavy rains.

FORCING DEPARTMENT.

Pineries.—Plants expected to show early next year will be benefited by being kept in a comparatively dry state for a few weeks previous to subjecting them to a warm moist temperature. The atmosphere should be kept dry, also allow the soil about the roots to become as dry as can be done with safety; do not, however, subject the plants to a very low temperature, but keep this at from 60° to 65° by means of fire-heat, for although the plants will bear a considerably low temperature without any apparent injury, those not subjected to any unnecessary extremes will produce the finest fruit; and a short period of comparatively dry treatment will ripen the growth and just as effectually induce a tendency to show fruit as checking the energies of the plant by an unnaturally low temperature, and without any of the ill effects of the latter method. Little dependence can be placed on the weather after this season, therefore see to plants in pits with insufficient means of heating being well protected by means of covering at night, and maintain the command of a rather high temperature by frequently renewing the linings, &c., so as to be prepared for any sudden decrease of heat; avoid anything approaching excess of atmospheric moisture among young stock, whether in pits heated by linings, or in better arranged structures; it only tends to promote a too free rate of growth for the amount of light.

Vineries.—Where early forcing is to be carried out attend to previous directions as to keeping the atmosphere moist, as there will be some difficulty in getting Vines to break freely except this is attended to. If circumstances allow of having a bed of fermenting manure inside the house, this will be found the best means of keeping the atmosphere regularly moist, but if this cannot be used the house must be sprinkled with the syringe frequently, and the evaporating troughs kept full. Also see that the roots are afforded a steady gentle warmth, until the buds are fairly swelled; keep the temperature about 50° by fire-heat at night, and 60° by day, letting it rise to 70° on sunny days.

FLOWER GARDEN AND SHRUBBERIES.

Alterations of grounds and planting of Evergreens should now be carried on with dispatch, but on no account attempt planting where the soil is not in good condition; the drier mould is when placed round the roots of newly planted shrubs (provided they are judiciously watered in) the sooner they will emit fresh roots. Mulching is, however, requisite to keep out frost, and earlier in the season to prevent evaporation. Where it can be had Cocoa-nut refuse will doubtless be found useful for this purpose. As tree leaves are always in request either as a fermenting material or for leaf soil, they should be carefully collected. If they are required only as manure they may be stowed away in any bye place and left to rot; but if, as is generally the case, they are in demand as a cheap mode of furnishing bottom-heat to Pines as well as for forcing different kinds of vegetables, some pains should be taken to keep them dry. For this purpose they should be stacked up in some back place or behind the garden walls, where access can be had to them at all times, and after allowing time for them to settle, put on a coat of thatch to effectually secure them from rain. By these means they will be found in a state fit for use for a twelvemonth to come.

HARDY FRUIT AND KITCHEN GARDEN.

Look over fruit stores frequently to see that all is keeping well, and remove any fruit that may show symptoms of decay, so as to prevent the mischief from spreading; attend to gathering fruit as formerly directed. A good stock of Lettuce fit for use should be put into cold frames or turf pits, where they can be protected during frost by means of straw mats or some other efficient covering; also take care to secure a good supply of Endive for winter use. Cauliflowers coming in must be frequently examined; those not wanted for use should be taken up and stored till wanted. Take advantage of the present favourable weather to get manure wheeled on quarters where it will be wanted, and get all ground trenched and ridged as soon as it gets cleared of summer crops.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Oct. 15, 1862, as observed at the Horticultural Gardens.

October.	Moon's Age.	Barometer. Max.	Barometer. Min	Temperature of the Air. Max.	Min.	Mean	Of the Earth 1 foot deep.	2 feet deep	Wind.	Rain.
Thurs. 9	16	30.180	30.136	73	41	57	59	57½	[illegible]	[illegible]
Friday 10	17	30.031	29.952	75	43	59	59	57½	[illegible]	[illegible]
Satur. 11	18	29.823	29.804	69	49	59	59	57½	[illegible]	[illegible]
Sunday 12	19	29.727	29.457	68	46	57	58½	57½	[illegible]	[illegible]
Mon. 13	20	29.785	29.769	63	47	55	58½	57½	[illegible]	[illegible]
Tues. 14	21	29.800	29.698	71	45	58	8	57½	[illegible]	[illegible]
Wed. 15	☾	29.762	29.599	74	44	59	59	57		[illegible]
Average		29.872	29.773	70.4	45.0	57.7	58.7	57.4		[illegible]

Oct. 9—Fine and dry.
— 10—Foggy; fine; rain; very heavy rain at night.
— 11—Rain; fine; very fine; clear at night; rain.
— 12—Rain; boisterous with rain; heavy showers.
— 13—Fine; very fine; densely overcast; rain.
— 14—Cloudy; fine; overcast at night.
— 15—Exceedingly fine; overcast; rain in afternoon.
Mean temperature of the week 6½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Oct. 25, 1862.

October.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 19	59.5	39 8	54.7	17	0.61 in.	2	3	6	3	6	[illegible]	[illegible]	[illegible]
Mon. 20	59.3	40.1	49.2	15	0 34	—	6	1	3	[illegible]	[illegible]	[illegible]	[illegible]
Tues. 21	58.3	39.5	48 4	15	0.64	3	6	3	4	5	[illegible]	[illegible]	[illegible]
Wed. 22	58.8	43 1	50.4	20	0.96	2	1	4	1	10	9	[illegible]	[illegible]
Thurs. 23	58.0	40.6	49.3	20	0.56	3	2	1	3	4	13	[illegible]	[illegible]
Friday 24	56.1	39.9	47.5	16	0.88	1	3	4	—	10	11	[illegible]	[illegible]
Satur. 25	55.[illegible]	38.6	51.7	17	0.80	4	6	5	3	4	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 21st, 1831—therm. 73 deg.; and the lowest on the 23d, 1859—therm. 17 deg.

Notices to Correspondents.

Books: *H W C.* We must enquire.—*G E H.* Ditto.

Conifers: *Exmouth.* We are sorry we cannot oblige you. It is an invariable rule not to recommend one nurseryman rather than another, unless what is wanted is known to be in the trade in the hands of one firm only.

Names of Plants; *L W.* Acer tataricum and Tristania [illegible] phylla.—*W W R.* Some Salsola, very near S. australis. [illegible] a curious thing.—*Sigma.* Certainly a Gleditschia, and, as far as can be judged from a leaf, G. brachycarpa.—*J S.* Populus candicans, the Ontario Poplar; to be had of all the principal Nurserymen.—*Moss.* We cannot undertake to name Cryptogamic plants having no relation to cultivation. Maples and Sycamores are propagated by layering.

Pampas Grass: *W.* A very fine male.

Seeds: *A A.* Guilandina Bonduc; the Nicker tree.

Variegated Geranium: *T R.* Send it for an opinion to the Floral Committee of the Royal Horticultural Society.

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11*l.* 11*s.* per ton for cash.
PETER LAWSON & SON, 27, Great George Street, Westminster.

LAWES'S WHEAT MANURE for AUTUMN SOWING.
In consequence of the high price of Peruvian Guano, J. B. LAWES has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of Mr. LAWES, or through any of his appointed Agents. Price ... per ton at the Factories, Deptford and Barking Creeks.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

THE LONDON MANURE COMPANY have now ready
PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
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SUPERPHOSPHATES of LIME, &c.
All the above being in the finest condition. They also continue to supply
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E. PURSER, Secretary.
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THE PURELY ANIMAL MANURE COMPANY, "LIMITED."
The Directors of this Company are prepared to supply for Autumn Crops their PURELY ANIMAL MANURE at 8*l.* per ton. Delivered in London in quantities not less than 2 tons. Orders received by the Manager, at the Works, River Head, Pocklington, York; the Secretary, or any one of their Agents.
By Order of the Board,
R. S. PARKER, Secretary.
76, King William Street, London, E.C.

Autumn Sowing.

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Secretary.—C. T. MACADAM.
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex.
This Manure has been in use for upwards of 10 years, and has given great satisfaction to consumers. It is specially prepared for Autumn Sowing, and on most soils proves as effective as the best Peruvian Guano.
Orders may be sent to the Company's Agents throughout the country, or direct to C. T. MACADAM, Secretary.
Price 7*l.* 10*s.* per Ton, delivered at any Railway or Wharf in London.
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40 to 45 per Cent. of Soluble guaranteed.
1862.

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Extract of Opinion from Mr. WAY, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. VOELCKER, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a percentage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & CO., Plymouth.

COCOA-NUT REFUSE.—In this there are Ferns, Begonias, &c., growing at the bottom of a Case (with Cocoa-nuts on the top outside) in the Eastern Annexe, International Exhibition. Read notices of its uses in *Gardeners' Chronicle*, June 28, p. 597; Sept. 6 and 13, pp. 836 and 861. *Journal of Horticulture*, March 25, pp. 514, 519; July 8, pp. 272, &c. Refuse delivered in City of London at 1*s.* 6*d.* per bag of 4 bushels. Larger quantities on lower terms on application to the PATENT COCOA FIBRE COMPANY, Kingston-on-Thames, S.W. SHORT FIBRE for Orchids and for Drainage, 20*s.* per cwt. Postage Stamps or Post-office Orders payable to "J. BARSHAM & Co."
BARSHAM'S BRUSHES and MATS are the best and most economical of any that are made, and are sold in every town in the kingdom.
CAUTION.—See that every Brush is stamped "J. BARSHAM'S Patent, Kingston-on-Thames."

W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.
Manufactory: Newport, Salop.
Warranted the strongest and most durable Fence ever offered at corresponding prices. It is easily repaired if broken from accidents; can be rolled up most compactly when not in use, is admirably adapted for exportation, and can be had of any height and mesh required, at prices from 4*d.* to 1*s.* 6*d.* per yard and upwards.
For further particulars apply at the Manufactory, or of the London Agent, Mr. R. WINDER, 18, Abingdon Street, Westminster, S.W.

HAY'S PATENT WATERPROOF GLUE and INDIA RUBBER VARNISH.—The WATERPROOF GLUE is most useful to Unite or Coat Wood, Iron and Stone, or Stucco, so as to make them Waterproof. The VARNISH is an excellent covering for Roofs, Fencing, Walls, Canvas, &c., and when applied to damp walls will enable them to be immediately papered or painted over.
Copy of a Letter from Mr. H. HARDING, *Builder, Southsea.*
"I beg to testify that a room in one of the most exposed and damp positions coated by me with the Varnish made by the Patent Waterproof Glue Company, Chandos Street, Landport, is perfectly dry, and the paper has stood well on it for months, and is likely to stand; and this where neither paper, paint, or colour would stand before."
To be had of all Wholesale Ironmongers, Oil and Colourmen, &c.
Manufactory: Chandos Street, Portsmouth, Mr. GEO. WEEKS, Manager. GEO. C. WARDEN & Co., General Agents, 12, London Street, London, E.C.; where specimens of its application can be seen.

AGRICULTURAL IMPLEMENTS.—Steam Engines, Threshing Machines, Mills for Hand and Power, Carts, Waggons, Ploughs, Harrows, Turnip Cutters and Pulpers, Chaff Cutters, &c.
BURGESS & KEY, 95, Newgate Street, E.C.

FOWLER'S PATENT STEAM PLOUGH and CULTIVATOR may be seen at Work in every Agricultural County in England. Addresses of Farms (which are open to inspection), given on application, where the Machine has been at Work for three or four years.
The New Application of the ORDINARY PORTABLE ENGINE may also be seen at Work at any time.
Price, with Self-moving Anchor, Three-furrow Plough, and Five-tined Grubber, 285*l.*
For particulars apply to JOHN FOWLER, 28, Cornhill, London, E.C.; and Steam Plough Works, Leeds.

SMITH'S PATENT COMBINED MACHINE.—This Machine is admirably adapted for cultivating Light Land Wheat, Barley and Oat Stubbles, and Drilling in Stubble Turnips. Fifteen acres may be Cultivated and Drilled in one day; for Cultivating Light and Heavy Land Pea and Bean Stubbles, and Drilling in Wheat; and for cultivating Heavy Land Wheat Stubbles, and Drilling in Vetches. One operation will be enough for each crop, especially in wet seasons. It is warranted to do its work well.
For price and particulars apply to WILLIAM SMITH, Woolston, Bletchley Station, Bucks.

AGRICULTURAL and CHEMICAL COLLEGE, 37 and 38, Lower Kennington Lane, London, S.
ASSAYS and ANALYSES promptly attended to by J. C. NESBIT, LANSDELL & Co.

AGRICULTURAL and CHEMICAL COLLEGE, KENNINGTON.—Manufacturers and others engaged in making Artificial Manures may obtain every necessary instruction for their economical and efficient preparation by applying to J. C. NESBIT, LANSDELL & Co., 37 and 38, Lower Kennington Lane, London, S.
Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.
Gentlemen, Farmers, or others, desirous of practical knowledge in Chemical Analysis, or Assaying, may receive instruction at the College, where the extensive Laboratories give ample facility for pursuing their studies, and there is accommodation for a limited number of Resident Students.
Full particulars of terms will be forwarded on application.

ESTATES, DRAINAGE, GARDEN, VENTILATION, and WARMING IMPROVEMENTS carried out. Plans with details prepared for gentlemen, &c., by
Mr. NEWTON, 30, Eastbourne Terrace, Paddington, W.

Land Drainage.

MR. THOS. SCOTT has now made his arrangements for the season, and is prepared to PLAN and EXECUTE DRAINAGE to any extent, either by Contract or on Commission. Loans obtained from Government or Drainage Companies, and the money advanced to carry out the work under Government inspection.
Mr. S. has Drained upwards of 20,000 Acres of Land within the last 10 years, and is prepared to introduce the most recent improvements; also to erect his Syphon Drinking Troughs for Cattle, which have received "Honourable Mention" in the present International Exhibition.
18, Parliament Street, Westminster, S.W.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5*s.* per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. HUMBERT, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

WEST of ENGLAND and SOUTH WALES LAND DRAINAGE and INCLOSURE COMPANY.
ESTABLISHED 1844.
The Right Hon. the EARL OF DEVON, *Chairman.*
Lands Drained and Improved without recourse to the private funds or moneys of the Proprietors. This Company's Act not requiring Proprietors to liquidate the cost, the amount might remain a permanent charge on the lands, or be paid off when convenient, or be made redeemable over any term of years. The works are undertaken by the Company, or Proprietors might avail themselves of the powers of the Act only, and get the works executed by Agents or other parties. Outfalls through adjoining lands are obtainable under the Company's Act. Works are also executed by the Company for parties advancing their own capital, or not requiring to obtain the money under the Company's Act.
FREDERICK BRODIE, Secretary.
Offices: Exeter, and 30, Parliament Street, London.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &c. IN ENGLAND AND WALES AND IN SCOTLAND.
The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm Houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

THE NATIONAL EXHIBITION of SPORTING and other DOGS.
The THIRD GREAT ANNUAL EXHIBITION of SPORTING and other DOGS will be held at Birmingham on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4.
Copies of the Prize Lists, Regulations, and Certificates of Entry, with the Statement of Receipts and Expenditure and List of Subscribers for 1861, may be had on application to the Secretary.
The ENTRIES CLOSE on NOVEMBER 1.
F. BRAILSFORD, Secretary.
Offices: Castle Chambers, High Street, Birmingham.

THE BIRMINGHAM CATTLE and POULTRY SHOW, DECEMBER, 1, 2, 3, and 4.—It having been determined to ERECT a GALLERY in BINGLEY HALL, the Council will have additional SPACE at their disposal for the EXHIBITION of IMPLEMENTS and MACHINERY, and are prepared to receive Applications for the same.
Plans of the Hall, showing situation of space, and terms, may be obtained from the Secretary.
The ENTRIES CLOSE on NOVEMBER 1.
JOHN B. LYTHALL, Secretary,
Offices, 14, Temple Street, Birmingham.

THE BIRMINGHAM CATTLE and POULTRY SHOW, 1862.
The FOURTEENTH GREAT ANNUAL EXHIBITION of FAT CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, ROOTS, BARLEY, and IMPLEMENTS, will be held in Bingley Hall, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4, when Prizes—Cups or other Articles of Silver Plate, and Gold and Silver Medals—to the amount of 1835*l.*, will be awarded in the following divisions, viz.:—

	£	s.
FAT CATTLE	£715	15
FAT SHEEP..	239	5
FAT PIGS	56	15
BREEDING ditto	63	0
ROOTS	56	14
BARLEY	10	10
POULTRY and PIGEONS	682	15

The ENTRIES CLOSE on NOVEMBER 1.
Prize Lists and Certificates may be obtained from the Secretary.
JOHN B. LYTHALL, Secretary.
Offices, 14, Temple Street, Birmingham.

SMITHFIELD CLUB FAT CATTLE SHOW.
The ANNUAL CHRISTMAS SHOW of FAT CATTLE, SHEEP, and PIGS, will be held at the Agricultural Hall, Islington, on MONDAY, December 8, and four following days.
In addition to Prizes to the amount of 1620*l.*, the following Cups will be offered:—
A Silver Cup, value 40*l.*, for the best Steer or Ox in any of the Classes.
A Silver Cup, value 40*l.*, for the best Heifer or Cow in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of Leicesters, Cotswolds, Lincolns, Kentish, or other Long-woolled Breed in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of 1-year old Southdowns, Hampshire or Wiltshire Downs, Shropshire or other Short-woolled Breed in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of any other Breed of Sheep (not specified above) in any of the Classes.
The Prize Sheet now contains distinct Classes under the following heads:—

CATTLE.

Devons	Norfolk or Suffolk Polled	Scotch Polled
Herefords	Long-horns	Irish
Short-horns	Scotch-horned	Welsh
Sussex		Cross or Mixed

SHEEP.

Leicesters	Southdowns	Oxfordshire
Cotswolds	Hampshire or Wiltshire Downs	Mountain
Lincolns	Shropshire	Cross Breeds (Long and Short-woolled)
Kentish, or Romney Marsh, and other Long Wools	Other Short Wools	

PIGS.
Classes according to age up to 18 months old.
The ENTRIES for LIVE STOCK CLOSE on NOVEMBER 1.
The Entries for Agricultural Implements, Roots, Seeds, &c., Closed on October 1.
Prize Sheets and full particulars can be obtained on application to B. T. BRANDRETH GIBBS, Hon. Sec., Corner of Half Moon St., Piccadilly, London, W.
N.B.—It is absolutely necessary that all communications on the Club's business should have the words SMITHFIELD CLUB outside, to distinguish them from private letters. If this be neglected, there will be risk of delay and inconvenience.

The Agricultural Gazette.

SATURDAY, OCTOBER 18, 1862.

MEETING FOR THE ENSUING WEEK.
MONDAY, Oct. 20—Ross, Herefordshire.

WE have received from Mr. SMITH, of Woolston, too late for this week's Paper, an announcement that his combined seed machine and cultivator is to be at work upon his farm on Tuesday, Oct. 21; together with an account of its performances, which we shall give next Saturday.

OUR attention has been directed to a great failure in TURNIP CROPS throughout many of the midland counties, caused, as it is believed, by a small green aphis closely resembling that of the Rose, and illustrative specimens have been submitted to our examination. Those, however, before us show no indication of any attack from insects, but on the contrary they are covered with a white mould, which is very common on Turnips in autumns like the present, and is often extremely destructive, though not to so great a degree this year as in some former seasons. The affection is, however, entirely independent of insects, which have doubtless accomplished their own end of destruction on myriads of plants, and occurs on individuals which have never been attacked by a single aphis. It is by no means confined to

Turnips, but occurs on other culinary plants of the same group, and especially on the Asparagus Kale, which resembles the Swedish Turnip so closely in its foliage. The greater part of the mould consists of an Oïdium, which is undoubtedly a peculiar form of some Erysiphe, capable of propagating the species to any extent, though it may never assume its most perfect form, exactly as is the case with the Oïdium of the Vine, the perfect condition of which has not yet been gathered. The white mould is accompanied by the common Macrosporium, which is quite colourless when young, but acquires as it grows old a brownish tint, giving a grey shade to the white patches. The Macrosporium, however, is a mere consequence of incipient decay, while the Oïdium is the true cause of evil, and is capable where virulent of destroying the most healthy plants. If, however, those roots are examined whose leaves are only slightly affected, the flesh will be found perfectly free from taint, while in exact proportion to the virulence of the disease the vessels will be found clogged up with dark matter, and in those cases where all the leaves have fallen a sacrifice, the whole root will exhibit more or less strongly decided symptoms of decay. Unfortunately it is quite impossible to arrest the evil, as the spores of the mould are wafted everywhere by the air, and germinate at once if the atmospheric conditions are favourable wherever they find a resting place suited to their development.

Besides these affections, produced by Aphides and moulds, there is another far more insidious disease, as there are at first scarcely any outward indications of its presence, and no outward parasite to whose influence it can be ascribed. The leaves exhibit perhaps a very slight tinge of yellow, yet scarcely such as to make one suspicious of evil, and even when the root is drawn, the skin appears quite perfect, and yet when it is cut asunder every vessel seems gorged with black matter, while one or more cavities exist in the surrounding cellular tissue, the walls of which are discoloured and rough with shreds of diseased vessels. The disease however does not complete its progress with these indications, but presently the cellular tissue itself is mottled with brown spots, and after a time the whole passes into a loathsome putrescent mass proceeding from the crown of the root downwards. This is one of those mysterious affections whose cause is entirely unknown, for it may occur in land, whether in the garden or field, which has never known the presence of a particle of guano, and where manure has been very scantily supplied.*

While on the subject of decay, it may be well to call attention to another crop which has been affected most seriously by a parasitic mould during the early part of the season, while the weather was wet, the Turnip mould being rather a Fungus of a dry than a moist atmosphere. Every one was complaining in early summer that the Onion crop was going off, and it was scarcely possible to pass through the parts of Bedfordshire where Onions are grown so largely in the fields, both for bulbs and seed, without noticing large gaps, or where the crop had not entirely vanished a most unhealthy condition of the foliage and stems. As the Onions themselves began to swell, the leaves gave still more unequivocal marks of disease, and at last the stem became pulpy, and the bulbs either partially or entirely decayed. The affection moreover was not confined to Onions, but Garlic, Shalots, and other species of the same genus were indiscriminately attacked. Where Onions were grown for seed, sometimes one side only of the stem was affected, becoming ultimately of a decided yellow, while the rest remained green, so that it was enabled to perfect a small proportion of its capsules. In every case alike the evil was distinctly traceable to a little pinkish grey mould, *Peronospora destructor*, very closely allied to that which produces one form of the Potato Murrain. The spawn of the Fungus runs deeply amongst the cellular tissue, and effects its destruction with greater or less speed according to the condition of the weather. As it is one of those moulds in which every spore gives rise to a multitude of particles, moving about like many of the infusorial animals by means of lash-like appendages, which it can exercise only when immersed in water, it is easy to conceive how rainy weather must facilitate its dispersion; and as it is one of those moulds which live at the expense of the internal tissues, unlike the Turnip mould mentioned above, which affects the cuticle only, it is able when the leaves are constantly dripping with moisture to make its way through the breathing pores, from whence it will soon issue in the shape of fertile spore-bearing threads. It is possible, as the Onion crop is more manageable than that of Turnips, that the progress of the disease may be arrested if remedial measures are taken the moment it makes its appearance, but even were there any efficient remedy, in the majority of cases it would never be applied, as it requires an observant eye to detect the first inroads of the evil, and a few days' delay would render any application useless. An intelligent gardener, with a common lens in his hand, may detect the little mould scattered over the leaves in the form of a delicate greyish down, and if he is clear as to its presence, he should try the effect of the Gishurst Compound, or some of the other applications which are capable of arresting the growth of Fungi, wherever they can come in contact with them, without destroying the mother plant. It is a fair subject for experiment, and requires nothing more than ordinary powers of observation. *M. J. B.*

* The roots shown at the great meeting of the Royal Horticultural Society during the past week furnished many illustrations of this.

The value of Harvest Statistics is the subject of a capital letter recently addressed to the *Times* by Mr. Wren Hoskyns, who loses no opportunity of enforcing its importance. During the past season especially, as he declares, "the continued rains of the spring and early summer operating with unequal effect upon soils of different character, and upon similar soils, drained or undrained, and in different conditions of tillage and acquired fertility, have presented varieties and degrees of contrast which, striking as they are even to the traveller, who, after all, can form but a guesswork estimate, would have exhibited on a well tabulated sheet a series of results more remarkable and instructive than at any period in my memory.

"To a farmer harvesting the splendid Wheat crops I have seen upon the calcareous description of soils, the meagre returns seen upon the light sandy loams, usually so productive, would seem startling, while to the amphibious toiler in the furrows of the undrained clays the sight of the abundant sheaves lying like a golden wake in the level path of Burgess & Key's reaper, 4 feet above the well laid drain-tiles, must have preached open-air sermons never to be forgotten.

"But these are only large-scale differences, obvious to the most uninstructed eye. The smaller sub-varieties brought into profile, never more noticeably than during this remarkable year, would have given an interest, a tale of its own, to every district in the kingdom, as curious to itself as to others. If water is the surest leveller, it may really be said, from this year's experience, to be also the most critical discriminator; for the degree of rainfall is in this climate the very test and practical exponent both of the soil and its husbandry."

Mr. Hoskyns proceeds to urge that no real objection would be felt by the intelligent farmers of the kingdom to a simple and practical measure for collecting the annual statistics of our harvests. And on the great scale of our food supply now-a-days, which has been extraordinarily illustrated by the market returns since harvest time, he declares:—

"Nor is this merely a national question. The country that does not collect the statistics of its produce is a sort of secessionist from the body corporate of nations; for every country collects such facts at a disadvantage proportioned to the narrowing of the basis caused by the refusal of its neighbour; just as much in the agricultural as in every other branch of business or of science.

"I hope the day is gone by when this argument would be despised. We use the produce of our neighbours in an inevitable ratio with the deficiency of our own; and we do in fact already read and speculate on their harvest reports (I have the statistical tables of several States before me) with a care and interest which ought to form a cogent argument for collecting that knowledge which lies at our own feet neglected for all accurate purposes."

STEAM CULTIVATION.

BROAD HINTON, NEAR SWINDON

On the farms here lying above and below the edge of the chalk, near Wootton Basset, Wilts, and extending between the downs on the south and the clay lands in the vale upon the north, Messrs. Stratton hold about 1100 acres of arable land and 800 acres of pasture. They used to be worked with 27 horses in 9 teams, and 16 oxen in 4 teams, at a cost probably of about 900*l.* for horses, and upwards of 200*l.* for oxen. This is upon the estimate that a team of 3 horses costs 100*l.* a year, and that a milch cow can be kept in the place of every draught [illegible].

A 12-horse power engine has been employed [illegible] with Fowler's apparatus since the autumn of [illegible]. More than one of the long ropes has been bought [illegible] then per annum. Besides an annual purchase of [illegible] yards, and the cutting up of the old rope thus [illegible] placed into the shorter ropes which were also needed, there has been an occasional purchase of a [illegible]-yard rope as well. The principal expenditure however has been in remodelling the engine and draught apparatus. This was done this spring after two years' experience of the original form. No doubt whatever is felt of its having been a profitable thing thus to lay out the [illegible] or thereabouts, needed to add the self-moving gear and the clip drum, and to provide a new plough. A balance scarifying implement has also been obtained, and has proved thoroughly efficient. Formerly a great deal of time and horse labour were expended in shifting the apparatus from one part of the farm to another. Now, all *that* is done by the engine itself, to the great advantage of the work, and the great saving of time.

The expenditure in wages is 10*s.* 6*d.* a day, excluding boy and water cart—viz., engineer, 3*s.* 6*d.*; ploughman, 3*s.* 6*d.*; two porter lads, 1*s.* 2*d.* each; anchorman, 2*s.* If to this we add about 3*s.* 6*d.* for boy and water cart, and 10*s.* for coals, there will be an expenditure of 24*s.* a day in direct outlay. The average day's work is 7 acres for ploughing, and 1[illegible] acres for scarifying—the former thus costing 3*s.* 6*d.*, and the latter less than 2*s.* an acre in direct outlay. The latter is unquestionably a capital operation, and performed with wonderful rapidity and cheapness.

Since Ladyday this year, 776 acres have already (Oct. 7) been worked, of which upwards of 500 have been ploughed, and about 260 scarified. This work has occupied less than 100 days, and it has cost therefore less than 120*l.* in coals and wages. The work of the farm is now done with 24 horses at a cost of about 800*l.* So that in mere weekly outlay the expenditure must be less than 1000*l.* a year in horses and engine now, against 1100*l.* formerly, in horses and oxen. Of course to the former sum must be added a good deal for rope and for repairs, and for tear and wear and interest of capital. And to the latter must be added a good deal for blacksmith's and tradesmen's bills, and for the maintenance of the value of the draught animals, &c. And it is possible that, as with the hand labour of the farm, so with that of horses and steam, no diminution has taken place in the annual cost by the adoption of steam-power. But there cannot be a doubt that the advantage of rapid and efficient work, of doing the tillage well, and making the full use of those periods when it *can* be done well, is enough to have fully justified the Messrs. Stratton in their enterprise.

THE THORNE, SIDLEY, NEAR BATTLE.

This is one of a great number of instances in the county of Sussex where steam cultivation has been adopted and persevered in with various degrees of success under extremely difficult and untoward circumstances. The whole country within the district called the Weald is divided in the most irregular way by copsewood, lanes and hedgerows, into small and awkward fields. There is a great deal of irregular plantation about everywhere. The surface is most uneven. Little wooded ravines not 10 or 20 yards in width often serve as the divisions of the arable land—and a short furrow is often up and down more than once in the course of its length. A country of frequent plantation, small fields, crooked hedgerows, and awkward access by roads, is about the least likely of any for steam tillage, and yet we have on the Woolston system a great many examples of its skilful and successful adoption. The home farms of Mr. Lyon Thurlow, of Baysham Park, near Horsham, and of Mr. Hubbard, of Lower Beeding, to the latter of which we have already introduced our readers, are instances; and that of Mr. Morgan, near Battle, is another. This farm is a fair characteristic specimen of a large district. Recently purchased, out of condition, without farm buildings or a residence, its present proprietor has acquired it both as in itself a good investment, for it has been cheaply bought, and as giving occasion for further profitable investment in the various departments of what may be called the permanent improvement of a property.

The estate is high lying and healthy, and a residence has been erected; farm buildings are in course of erection, such a plan being adopted as admits of the extension of every one of its parts without interference with any other. A great deal of tedious and difficult fallowing has been accomplished in order to bring the land into fair condition. Drainage, roads, and fences have been attended to. Wide hedgerows have been grubbed—copsewood has been fenced and trimmed—manures have been purchased and applied—a tank has been built for the liquid waste of the farm buildings, which is being successfully applied to Italian Rye-grass near the homestead.

The estate is 270 acres in extent, of which 30 or 40 are copsewood and plantation, 20 or 30 are permanent pasture, and the rest is arable land. The soil, lying on what is known to geologists as the Hastings Sand, is of so fine and impalpable a character as to cause it to

unite the difficulties of both sorts of land without possessing the richness of the stiffer. It becomes as hard and intractable as a clay if drought follows rain upon it when reduced to tilth, and then, if still full of the weeds of sandy soils, these are not destroyed as those of clay-soils are by a breaking up. Like the east clays described by the inimitable Miss Graham of Edinburgh, it "girns (grins) a' simmer and greets (weeps) a' winter."

Unlike clays, however, the clods into which with great labour the hardened soil is broken up do not readily moulder in the weather, and the land itself, till how you may, is poor.

Among other steps early taken by Mr. Morgan, was the purchase of Mr. Howard's cultivator, windlass, wire-rope, &c., and with these the 10-horse power double cylinder steam engine by Clayton & Shuttleworth, which is sent out to work them. The foul, rough, and uneven land, nowhere very far from growing trees, and therefore filled with tree roots, has led and still leads to frequent breakages of the wire-rope, and on one occasion the frame of the cultivator itself was twisted by a sudden stoppage against an obstacle of this kind, but beyond this no disaster of any kind has happened. It is impossible to estimate what has been saved by the application of steam-power in this way. Seven horses are now employed on the estate, but a great deal of haulage and other work connected with the buildings and drainage of the land has been to be done—so that what number would have been needed if all the cultivation had been done by horse power, is hard to say. A great deal of tillage has been done, and at no great cost. The engineman receives 4s. a day, the windlass man and ploughman, and two anchor men, 2s. each, the payment for overtime making the wages about 2s. 6d. a day on an average; two boys at the rope porters cost 1s. each. The whole weekly cost in wages is thus about 4l. 12s., and coals, 8 cwt. a day at 1s. a cwt., cost 2l. 8s. a week, or 7l. a week in all, during which time about 30 acres are cultivated at a cost, therefore, of less than 5s. an acre, for one-way cultivation, excepting wear of apparatus and use of capital.

The machine has been on the farm since Jan. 1 of this year. The engine man has kept a memorandum book, in which I read :—

"*Wednesday, Jan.* 1.—Left Bedford by the Midland Rail, arrived at Bexhill in the evening.

Thursday, Jan. 2.—Arrived at the Thorne, and found the engine and tackle in the waggon shed, had it drawn out to Flat field, and set for work in the Lodge field, ready for next morning.

Friday, Jan. 3.—Began to cross the Lodge field, it having been ploughed previously: very wet at the bottom of the field, and very slow work."

The following is the result upon the whole of the work during this year and up till Michaelmas day:—"The fire of the steam engine has been lighted 180 days, and on about 10 days rain impeded the working, so that we may say the apparatus was at work 175 whole days. The result of the work appears to be that 660 acres have been once crossed with the cultivator; 260 acres harrowed a single time; 48 acres have been clod crushed; 32 acres have been cultivated for a neighbour; 32 acres have been harrowed for the same; in all 1032 acres of the various tillages, or between 5 and 6 acres per diem. These quantities include the boundary hedges. Some of the cultivating has been performed 'a double time,' and an acre thus worked is estimated as two acres."

This bears out sufficiently well the estimate of 30 acres a week, at a cost of 7l. a week for wages and coals. And for such hard work, as much of it has been, this has not been a costly expenditure. Even if rope should cost 1s. 6d. an acre (and 1s. an acre generally well covers its expense), and 15 per cent. be charged for tear and wear and interest of capital, and the expense of repair be reckoned in, there cannot be a doubt that the total is much within the cost of similar work by horse power.

The following extracts from the log-book of the engineer illustrate the speed and actual experience of the work:—

Monday, April 28.—Moved to *High Knoll*, and began to cultivate (5 acres 0 roods 20 perches).
Tuesday, 29.—Finished once; began to cross it.
Wednesday, 30.—Finished crossing.
Thursday, May 1.—Harrowed *High Knoll* twice in a place.
Friday, 2.—Clod-crushed *High Knoll*.

Mr. Morgan adapts both harrows and clod-crushers to his steam windlass.

Saturday, 3.—Began to cultivate *High Knoll* over again (15 hours overtime in the week).
Monday, 5.—Finished *High Knoll* 9 A.M., began harrowing at 10 A.M., finished harrowing at night.
Tuesday, 6.—Began to crush and cultivate up again.
Wednesday, 7.—Crushing and cultivating up to half-past 11 o'clock—set in rain, a very wet afternoon—done about half the field by 4 P.M.
Thursday, 8.—Moved to 10 *acres*—began with three broad-shares.
Friday, 9.—Finished once over—began to cross at 6 P.M.
Saturday, 10.—Finished crossing 7 P.M. (10 hours overtime this week).

This fortnight's work thus includes 52 acres of cultivation, 16 acres of double harrowing, and 16 acres of clod crushing without an accident—with 25 hours overtime, and with only one removal; a great deal for only 14l. paid out of hand in wages and coals. Other extracts of almost similar successful records might be taken.

Thus in the week ending July 12, *Kate High Field*, a mowed Clover lea, was cultivated and cross-cultivated—16 acres twice done by 3 P.M. on the Saturday, and the tackle was set to harrowing, which was begun. Again, here is the cultivation of the *Hop Garden* field, on which I saw the other week a capital braird of Italian Rye-grass, promising splendidly for next year.

Monday, 21 July.—Finished *Kiln* field: moved the engine into *Old Hop Garden*, 12 o'clock: began to break up the *Hop Garden* field at 2 P.M.—a Grass lea, very dry, but worked well (6 a. 3 r. 18 p.) *Tuesday*, 22.—Cultivating. *Wednesday*, 23.—Finished breaking up and began to cross it, 8 A.M. a showery morning. *Thursday*, 24.—Finished crossing, and began over again 3 P.M. *Friday*, 25.—Cultivating. *Saturday*, 26—Finished crossing, 7 A.M.; began to harrow (6 hours overtime this week). *Monday*, 28—Finished harrowing three times in a place by noon; began to harrow the first part up to opposite barn again. *Tuesday*, 29.—Finished the harrowing, began to clod-crush 9 A.M. *Wednesday*, 30.—Finished clod-crushing 12 noon, began to cultivate it up again. *Thursday*, 31.—Finished once, began to cross it 3 P.M. *Friday, May* 1.—Finished cultivating the *Hop Garden* field.

This again represents a successful time of work. Seven acres of difficult land were four times cultivated, once clod-crushed, and three times harrowed in 10 days. The whole record is interesting as showing the constant employment given to the apparatus, the little time lost in removals, notwithstanding their frequency, owing to the size of the fields. The entry is not unfrequently "finished 6 P.M." one day, and the next "moved to —— field, and commenced cultivating at 10.30 A.M." There are occasional entries of broken rope, and of course a good deal of time was occasionally lost in adapting new machinery, harrows, and clod-crushers, &c., to the rope. Thus on Monday, May 19, we understand that they were "crushing until noon—done about 5 acres—*conguring and experimentizeing*" (whatever that may mean) "all the afternoon." The total labour accomplished—about 1000 acres in 175 days—is, however, a fact which may be depended on; and it will, I think, be admitted that this is a very great performance for a first season's experience on a farm which is certainly by no means specially adapted to steam cultivation.

THE OUTBREAK OF SMALL-POX IN SHEEP.

In the course of his introductory address last week, on opening the winter session of the Veterinary College, Camden Town, Professor Simonds thus referred to the recent outbreak of small-pox in sheep. He said:—

"As small-pox was unhappily still so familiar and deadly among the population of this kingdom, the youngest tyro in medicine was in some measure acquainted with the disease. The allied disease in sheep was less familiarly known, but it was more fatal. Before the year 1847 the malady had never, during the present generation, been observed among the flocks of this kingdom. It had long, however, been prevalent and well known in several of the great sheep districts of the Continent. In some districts the affection was, so to speak, naturalised; in others it had shown itself from time to time in wide and disastrous outbreaks. Within historic periods the disease had probably never appeared among healthy flocks unless there had been prior communication immediately or recently with animals suffering from the affection. One sheep would infect a flock; a flock would infect a district; and in this way the malady would be spread over the area of a vast country. So it had happened once and again in France, Germany, and Central Europe. But while the communication of sick with healthy animals might be said to be an essential element in the propagation of small-pox, yet it was seen that this could not be the sole element. For now the disease had been observed to break out in one or two scattered instances, and then would break out with a malignity which almost set control at defiance. At one time the flocks showed a higher susceptibility to the disease than at another. This consideration entered largely into the question of prevention. In the case of the human small-pox, we possessed a simple, efficacious, and an almost harmless means of prevention in vaccination; but it was not so in the case of small-pox in sheep. Vaccination afforded them no protection. Where the separation of the affected animals from the healthy ones proved insufficient to stay the disease, there remained only inoculation to be had recourse to. Nothing was more efficacious than this for securing the ultimate welfare of the flock. He could well understand why so great an authority as Dr. Copeland should, on account of the greater protective power of inoculation, express something like a regret that in this country it was prohibited for man. Dr. Copeland apparently doubted the greater value of vaccination as a protection against small-pox. Of the justness of this doubt he (Professor Simonds) expressed no opinion; but he thought it well that it should be alluded to at a time when the events in Wiltshire had led to so much discussion on the question, and when the fact of the prohibition of inoculation for man had been used as an argument for prohibiting it in the case of sheep. It had been forgotten by the objectors that in the case of sheep we had no option between vaccination and inoculation. Wide and extended experience had shown that vaccination was valueless as a protection against small-pox in sheep. Wider and more extended experience had on the other hand shown the great value of inoculation in mitigating the severity of the disease."

After quoting at great length Dr. Copeland's argument in favour of inoculation, Professor Simonds went on to say that small-pox first appeared among the flocks of England in 1847.

"It had been introduced by foreign sheep sold in Smithfield Market. The disease spread rapidly and committed frightful ravages in several counties during the years 1847-48-49 and 1850. Since 1850 the malady had not been heard of among our flocks until the month of July last, when it broke out at Allington, near Devizes. The disease soon spread, and neither the shepherds nor the proprietors were satisfied as to its real nature until his (the Professor's) aid had been sought, and at that time many animals had been lost. The introduction of the disease into Mr. Parry's flock was still left in uncertainty. This point might, however, be in some degree at least cleared up by subsequent investigations. The important thing to be noted was, that the disease quickly spread to neighbouring flocks, and subsequently extended to Berkshire. At the present moment there was good hope, thanks to the preventive measures adopted, that the malady had been stayed in the vicinity where it had first showed itself; but as yet it would be premature to express any decided opinion on the probable further course of the outbreak. The nature of the disease and the period of the year alike forbade a hasty conclusion in the matter. He trusted that the malady was stayed, but he could not conceal from himself the probability—a probability taught by bitter experience—that the disease might still spread more widely, and that our flocks might ultimately suffer from as calamitous a visitation as that which befel them in 1847-50."

The Professor then, at some length, discussed the economical and social aspects of the question.

"Premising that the value of the flocks of this country amounted to many millions sterling, he said the loss by death ranged from one-fifth to one-half, or even more, of an infected flock. This, however, was but one part of the loss which the farmer had to suffer. He had to bear the effects of the disease on the breeding and rearing of lambs, the fattening of stock, &c. Grave as was the loss to individuals, it was not less grave to the whole community. There was the detriment of a diminished supply of mutton, and of its consequent increase in price. We could not suffer any diminution of a staple article of food without suffering for it. The loss might not tell upon us at the moment; but sooner or later it would render its account, in weakening our powers of resistance against the insidious onslaughts of some fatal epidemic. The rising of butchers' meat to the extent of a penny or a halfpenny a pound, would as surely tell a fatal story in the Registrar General's returns of mortality, as shot or shell on a field of battle. A large portion of our population at the best lived but a shade or two above the point of starvation. A still larger portion were insufficiently fed, and the outbreak of a malady in sheep might often make the differential element in the outbreak or not of epidemic disease among those persons in the next coming year. Hence it was that outbreaks of disease, such as had occurred in Wiltshire, involved questions of national importance. It was from this point of view that they could obtain the most just ideas of the true dignity of veterinary science. It was from this point of view also that they obtained the most accurate views of the veterinary practitioner's duties, for it was upon the progress of veterinary science and the skilful exercise of the veterinary art that a community had to depend for its chief safety from the evils arising from diseases like that which had appeared in Wiltshire."

Home Correspondence.

Pedigree Wheat and Thin Seeding.—That the discussion which has been going on in the *Agricultural Gazette*, in regard to the possibility of imparting to Wheat or other grain the same valuable qualities which breeding does to the animal, should have taken a turn in the direction of thin seeding before the points first taken up were more than fully stated, and before any evidence was adduced in support of the truth or falsehood of the views promulgated, seems to me to be unfortunate. If it is possible so to grow corn that it becomes inherently capable of producing a larger yield and finer quality than before passing through the improving process it was capable of doing, surely a step in advance has been made which should not be allowed so quietly to slip past unnoticed. I write for information, and ask if Mr. Hallett or any other Wheat improver has produced a variety of grain which will resist the effects of inferior climates or of untoward seasons better than any of the older varieties; or has that gentleman or others merely selected a variety, which under similar circumstances and equally favourable conditions with those under which the seed itself was grown simply, afford similar results. If the first case mentioned be attained, Mr. Hallett deserves to be encouraged, and I for one shall pay him all he asks for what seed I may require. Should the last case only be what he has attained to, then, I say, what has he done more than others. This season in the Lothians many fine sorts of English Wheats are yielding poor returns in comparison with the native sorts. These poor crops were produced from most beautifully formed seed-corn; the soil was in excellent condition for carrying a large produce, and lest the thin seeders may say this arose from too much seed being sown, universally the thinnest crops are those most damaged with rust, yellow gum, or mildew. From all I have yet read and seen, I think the position taken up by Mr. Shirreff has never been demolished, and it will require far stronger facts than those hitherto adduced to prove that it is possible so to treat seed corn that it becomes capable, like the improved Shorthorn, of continuing the same valuable qualities under other circumstances than those in which it was reared. Of course I do not consider that the most careful selection and the most thorough cleaning has anything to do whatever with the new doctrine of pedigree. That is the old system, and I maintain the only system worth following. Not a few farmers I know have raised their Oats and Barley and Wheat from a bushel or two of each picked out of many quarters; but who ever heard of any such ever attributing to grain so raised and kept up the same properties which pedigree in cattle confers. The most I ever heard said was that the seed was clean, true to kind, and of fine form and colour. Now, as to thin seeding, it would appear there are still people in the agricultural world of England who think they alone have only eyes and understandings. Poor Alderman Mechi surely deserves better at Mr. Wilkins's pen than to be pulled to pieces for presuming to say that he is a thin seeder. After reading Mr. Wilkins's last production, had it not been for the serious conclusions to which he betakes himself, it looks more like some half-earnest raillery at the College Farm of Cirencester than any sober attempt to prove that one peck of seed, say the tenth part of what is usually sown in the Lothians, is more than sufficient seeding for any acre of land. I have no wish to dispute the accuracy of that gentleman's statement, or to take advantage of the want of authority for his assertion. But I merely wish to remind him that because in a soil and with a climate suitable in such small quantities of seed for producing full crops, it is too much in him to expect that in all climates such results if the cultivation is suitable will follow. Any one

knows that thin seeding makes late shearing, and late shearing in many thousands of acres means no harvest. A neighbour of mine tried a field of Oats with different quantities of seed, from a bushel and a half to four. They were drilled in, afterwards hoed; the result is that the bushel and a half portion of the field is quite green yet; the 2½ bushel lot greenish and uncut; the 4 bushel lot, ripe and in stook for a week, being the best crop in point of bulk, and three times the value of the 1½ bushel lot. *M., Mid-Lothian, Oct.* 6.

"*Tom Hodges, the Drainer.*"—Though I bear the despised name of "Tom Hodges the Drainer," I cannot let your Correspondent of last week, who writes under the honoured name of Girdwood, have his joke at my expense without a word or two in reply. It is more than 20 years ago since I, Tom Hodges, was acting side by side with that enlightened friend of agriculture, James Smith of Deanston, and doing my best as his disciple to bring about the "thorough drainage" of wet lands; and I am not ashamed to admit that after 20 years' experience, I do not go the same way to work now as I did then to gain the object we both espoused, though I still look upon "thorough draining" as meaning the same thing—which, to be explicit, I do not interpret as "furrow" draining, but as systematic drainage on the best principles. In 1842, Mr. Smith looked upon every description of wet land in the same light as clays, and in the most straightforward manner prescribed "frequent drains" as the panacea by which they could all alike be cured. Now, in 1862, though the parallel arrangement is admitted by me—Tom Hodges—and every one else to be the proper mode of draining tenacious soils, and indeed other soils which are homogeneous in subsoil and regular in surface, neither I nor any person who has had experience in saturated free soils, and are unfettered by rule, can adopt it when draining them. In spite of ridicule we think that appropriate deep drains taken "up this way and across that way" are much more reasonable because they are more effective and less costly on the whole, and they improve instead of depreciating the water economy of the country. Mr. Bailey Denton calls these drains "occasional" drains, and I see no "occasion" to quarrel with the term, for I assure you my endeavour is only to place my drains where there is "occasion" for them, which would not be the case were I to run parallel straight lines over the whole surface, crossing the "humps" and "slacks" and dry places and wet places alike. The saturated free soils form a large proportion of the wet lands of the country. They prevail in those districts which have been brought into their present shape by the agency of water and the deposit of the *debris* of higher grounds. Several millions of acres of these saturated free soils exist in the valleys and lower slopes of the "Alpine ranges" of Wales and Scotland, and of the Devonian and Cambrian hills of the West and North-west, and are designated by us draining men "uncommon good percolating stuff, which will draw like mad if you follow below ground the courses Dame Nature has marked above." It is in such lands—not in "clays"—that more money is being thrown away by the adoption of what Mr. Denton has somewhat unceremoniously called the "lazy gridiron system," than ever such men as I, poor Tom Hodges, could have dreamt of spending when laying-out my drains "up this way and across that way." In the midst of all the ridicule that is being cast upon my practice, I have the satisfaction of observing one thing which speaks well for the future. All rising authorities of the day recognise the advantage of the test-hole. But let me ask those gentlemen who use them how they study them. Do they mark and apply the information they give when the effect of their drains is compared with the fall of rain on the surface? If they do not, there is no wonder that they do not understand "occasional drainage." The most useful accompaniments of the drains are the rain gauge and the test-hole staves. If your correspondents will favour me with their company I will show them how I have utilized the information they give in sundry works in Wales and elsewhere, though I subscribe myself their despised friend *Tom Hodges, the Drainer, Oct.* 7.

Societies.

Stoke Edith: *Oct.* 9.—*Annual Inspection of the Lady Emily Foley's Estates.*—The party started from the Home Farm at 10 o'clock, and visited the hill farms in the earlier portion of the day, calling at Monkbury Court at two, where Mr. Moore, the taker of the first prize last year, had prepared an excellent luncheon, of which the party, then numbering from 50 to 60 horsemen, partook. Mr. Mason took the chair, and luncheon over, he proposed "The Health of Mr. and Mrs. Moore," and thanked them for their hospitality, in reply to which Mr. Moore made some pertinent remarks on the difficulty of farming so high as to be certain of winning a prize at one of these annual inspections.

The other farms were then gone over, and the party dined at her ladyship's table at Stoke Edith at half-past 5 o'clock. The company were honoured by her ladyship, the Countess of Powis, Lord William Graham, M.P., the Rev. W. Lambert, and others. In the course of the evening the judge presented his report, in which he stated that neither in Herefordshire nor any county in England was there an estate better farmed than that of Stoke Edith. The prizes were then awarded as follows:—1st, 20*l*., Mr. W. Taylor, of Showle Court; 2d, Mr. Richard Sexty, of Hoarhouse.

Lady Emily presented Mr. Taylor and Mr. Sexty with the prizes, accompanying each with congratulatory observations.

In the course of the evening Mr. Matthews, the judge of the farm, said it had hitherto been the custom upon these annual gatherings to have a little agricultural chat. He had no doubt but that upon previous occasions they had thought him a bit of a bore, and that he pushed matters a little to the extreme, when he talked to them of early planting, and of manuring and clearing pasture land, which he was glad to see was now being done. On the last occasion he talked a great deal upon the cultivation of root crops, and he was pleased to see that a great improvement had taken place in the cultivation of Turnips; he saw the fields cleaner, and he did not see any stubbles. He, however, also saw, and that he might observe he saw everywhere, a rather superabundant crop of what they call Twitch, but what he always used to call "Couch-grass." He should say a few words about Couch-grass, because a great deal of good agriculture depended upon it. Now, in speaking upon this subject, he did not intend his observations to apply to Mr. Taylor, Mr. Pitt, Mr. Morris, and others, who it would appear did not know the meaning of such a thing—it was with them a thing that had gone by. The question was whether there was any probability of their growing two crops on the land at the same time—whether they would have a crop of Couch-grass or a crop of Swedes, or whether they would try to grow both, which it appeared some people endeavoured to do. Now there were some plants that would grow in one particular situation, and another plant that would grow in another particular situation; but he did not know of any situation where Couch-grass would not grow. The north was not too cold for it, and the south was not too warm for it. It luxuriated in light soil, and bore fruit in any other soil. But the great difficulty was the best mode to get rid of it. When he saw a lot of Twitch go into the earth with the stubble out of sight, he was led to think that the farmer said "There, you are buried out of sight, and I shall not see you again." But when the spring came round it rose again, and then they could not get rid of it, and it robbed them, because by it they lost a large portion of their crop. It was not good farming to plough it in. Couch-grass was apt to occupy a good deal of space, and it was not good husbandry to let it flower and then seed, and then to get it up. Well, what was the best plan? Here they found that year after year it would come up, let them make the fallow look as clean as they could, and when the crops came up one-half of the land was occupied by that Couch-grass. Mr. Vevers acted upon a judicious plan; he sent his servant round with a fork and got the weeds up, and there was an end of it. Other people were contented with skimming it; they got the Twitch together and disposed of it in the autumn, and thus they got rid of a great deal of it; but he saw gentlemen who would turn it in with the plough and bury it, but they did not get rid of it by such a system. It was to the smaller classes of farmers that he wished to address himself; men who thought it proper to keep this Couch-grass for sheep meat. They turned the sheep into the field, which ate a portion of it up, and then they afterwards, believing they had been doing a very capital thing, ploughed it in. He would readily admit that in wet seasons, soil like this was extremely difficult to be kept clean; but he thought a great deal of the difficulty could be got over by good management. He hoped he should not have to call attention again to Couch-grass, but that they would all adopt the best mode of eradicating and destroying it, so as to benefit themselves and do a great service to those who were their neighbours.

Mr. Taylor said that Mr. Matthews had spoken relative to Couch-grass. Now, he did not think the thing troubled him much, and he thought the best way was to get rid of it as soon as possible, and in the most efficient way. He thought the best way was to fork it out. Then Mr. Matthews had spoken of the desirability of the early planting of Turnips; now, he had sown his Turnips twice over, and, he thought that was an answer to his not sowing earlier. He was once invited by a gentleman in this county to see him grow two crops at the same time—Beans and Turnips. He replied, "Why, you grow three crops; the Beans are very bad, the Turnips are bad, and the Couch-grass is abundant." With respect to Couch-grass, he did not think there was a better plan in the county than to fork it out.

Mr. M'Cann said he had never seen a better lot of Turnips in his life than he had seen that day, and the farming upon the estate was not only a credit to the landlady and her tenantry, but redounded to the honour of the whole county. A man might journey east, west, north, and south, and not witness what they had seen upon the Stoke Edith estate that day. He was very sorry to see the disease amongst cattle so prevalent as it appeared to be in that neighbourhood, which he thought would not have been the case if a little pains had been taken to get rid of it at the commencement. He pointed out that it was a disease that spread itself as it grew in intensity, but that it was to be got rid of by a little perseverance, careful attention, and good management. It should, however, be at once attacked, and not allowed to get into the feet of the animal, as he had seen it that day. He had 50 head of cattle down at one time, but now they were reduced to two or three. Mr. M'Cann proceeded to point out that properly cleaning the feet of the animal affected, and bathing them with a lotion composed of equal quantities of water and vinegar, with a small quantity of salt put on with a piece of rag or a sponge, would be found efficacious. It was an inexpensive means of cure, under which the disease would succumb in four or five days. He dressed his own cattle with it, and had the highest veterinary opinion in Worcester to the effect that it was the best remedy that could be adopted. Mr. M'Cann then explained the method adopted by him in curing his pigs of the foot disease; he got three pieces of board, made a trough, put the same proportions of liquid, only a larger quantity, into it, and having placed the trough against a wall, put a hurdle on the one side, and made the animals wade through it. This was a certain cure in three days.

Hertford: *Oct.* 9.—In the course of an eloquent address by Sir E. B. Lytton, M.P., at the annual meeting here of the local Agricultural Association, the Rt. Honourable gentleman made the following excellent remarks.

1. *On Fancy Farming:*—

"There is a great distinction between what is commonly called fancy farming and practical husbandry, and that distinction will be found in the balance-sheet. I recollect rather an amusing anecdote of a certain nobleman, who was a great farmer, and also a great epicure. He kept a famous prize ox, and he kept also a famous French cook. Once on a time he invited some distinguished friends to accompany him from London to his country seat, and he sent his French cook on a few days before to prepare for the entertainment. As soon as my lord arrived, naturally anxious to show his friends the prize ox, he carried them off at once to the farm-yard, but as soon as he came to the stall in which the ox was kept, lo and behold! the ox was gone. He called the herdsman and said, "Where is my great prize ox?" "Well, please your lordship," said the man, "the French cook came the other day to look at the ox, and very greatly admired it, and since that day the ox has disappeared." The nobleman, astonished, and a little alarmed, hurried home to obtain an explanation from the cook. He found that gentleman in a private room near the kitchen; and said, "What is this story that I hear about my prize ox?" "Oh, my lord," said the French cook, "I have him here safe and sound;" and so saying he opened the cupboard and showed to my lord a jar, and pointing to the jar he said, "There, your lordship, he is; he was a little too tough for a roast, and so I stewed him down" (laughter). Well, I am sometimes reminded of this anecdote when some fine, fancy gentleman farmer takes me over his model farm. One sees there much to admire—very expensive nicknacks, very clever and expensive contrivances—but when one comes to inquire into it, what is the state of the balance-sheet? I think that any gentleman who is acquainted with practical husbandry, when he looks at the results of fancy farming, must be astonished to see how many solid pounds of substance can be scientifically stewed down in that description of cultivation.".

2. *On the Sewage of Towns:*—

"I remember when I held the Colonial Seals the toil and trouble that it cost to get a very scanty supply of guano from some distant island, while all the time close at hand a few of the sewers of London alone were casting into the Thames more than half a million sterling worth of manure more valuable for the general purposes of agriculture than that guano which ships were fitting out to bring home, in order that it should be retailed at a price which rather fitted it for the dealing of an apothecary than for the fields of a farmer. I say that at least half a million was thus thrown away in some of the sewers of London, and I believe that to be very narrow estimate of the real waste that is constantly taking place; for I find that in Flanders, where I was the other day, the value of the sewage is estimated according to the numerical population in towns at so much a head—viz., 1*l*. 7*s*. per head; and in Belgium it is estimated still higher, so, that taking the population of London at 2,000,000, there is at least 2,700,000*l*. of the national wealth exclusively devoted to poison the waters of the Thames and to add to the diseases of her Majesty's metropolitan subjects. We might upon this question take a lesson from China. Every one knows the extraordinary rapidity with which the Chinese bring the very worst soil into cultivation, and the enormous crops which they take from, comparatively speaking, a handful of land has been the wonder and the admiration of all travellers in that country. What is the secret of the Chinese? Why, their main secret consists in the utilisation of the sewage, and the proverbial fertility of Belgium is attributable to the same cause. It is, however, not only in the metropolis that this waste goes on, but also in the rural towns, though I can say, without compliment, that there are in the rural towns a greater amount of energy and a more just and intelligent desire to find a remedy for the evil than seems to be manifested by city aldermen or metropolitan boards. Considering the great number of populous towns which there are in this country, I do saw that I wish we could find a few enlightened and enterprising Englishmen to enrich its population by manures which the towns would gladly sell, and the farmers manures which they would gladly purchase. Until some such system is adopted we must fall back on our old friend farm-yard dung. I suppose we must agree that Professor Liebig is right on the whole when he says that the art of all real reproductive husbandry is in the skilful application of manure. I recollect that David Hume, the philosopher, says, in one of his essays, all the vast apparatus of our Government has ultimately no other object or purpose than the distribution of justice, or, in other words, he says, than the support of the 12 judges. Well, in the same manner we might say that the whole of the vast apparatus of our farms has ultimately no other object or purpose than the distribution of justice to the land, or, in other words, in the application of that manure which may give back to the soil the nutriment that it takes from it, or supply those nourishing properties which nature has neglected to restore. Eight hundred years ago there was a very learned dispute whether or not the earth was an animal; but I think we have now discovered that the earth is so far animal that it requires to be fed, and will not bear to be starved."

3. *On the Relations of Landlord and Tenant:*—

"The fertility of the soil depends on the nourishment bestowed on it. Therefore, I ask, can there be any stronger argument than this for maintaining the confidence and friendship which ought always to exist between landlords and tenants? I hope the tenant may never be checked in his enterprise by the fear that he may not

... fair share of the profits, for it is perfectly clear to me that in the long run no farmer can enrich himself unless he does justice to the land; and so, on the other hand, no landlord can in the long run permanently benefit his estate unless he does justice to the farmers. The healthiest condition of any business, whether it be with respect to the smallest retail trade, or with respect to a farm, will be that which will attract to the cultivation of that particular branch of industry, capital and intelligence, and attract them by means of the reasonable expectation of an adequate profit. Now, as far as I can foresee, there are causes at work which may tend to insure and improve the position of the agriculturist, whether the owner of land or the occupier of the soil. Looking to the great and rapid increase of population—looking at the new towns that spring suddenly up in the neighbourhood of railway stations—looking to the tendency which I see with respect to cottages in rural towns, whenever there is any convenience for railway accommodation and communication; and, above all, looking at the vast and continuous and progressive influx of gold, all these things must tend to increase the value of land, to widen the demand for its products, and to sustain the standard of its remunerative prices."

South Bucks: *On Rewards to Labourers.*—At the late annual meeting of this Society, Mr. Disraeli, M.P., spoke as follows on this subject:—

"So far as these agricultural associations are concerned, my opinion upon them has long been well known to you, and the experience of every year has convinced me that the opinions I have expressed, and in which you all share, are just. I think it is unnecessary any longer to vindicate their constitution or general practice. Public opinion and the voice of society have decided that they are highly beneficial to the country and have fulfilled the great objects they proposed to themselves, and have really practically and completely brought all classes of the agricultural world together, much for the advantage of each of those classes. I may be allowed to say that what has been seen in the ploughing-field to-day was of a very satisfactory character. I think the field was one of which South Buckinghamshire may be proud. There were 52 ploughs at work, and the furrows, whether straight or curving, could not be well matched in any part of England; certainly they could not be excelled. Another part of the proceedings of to-day which I viewed with great satisfaction was the produce of the cottage garden which obtained the first prize. I was not surprised that it was obtained by an inhabitant of Beaconsfield, because I have observed for a long time that the allotment gardens there are managed on principles sounder, and regulated by discipline more accurate, than prevail in any other part of the country. These associations are very popular in England, and particularly popular in the county of Buckingham. There may be many in this room who are aware of the considerable number of these agricultural societies now in existence. They are in fact fast cropping-up. Almost every year witnesses the institution and establishment of a new one. Well, that is very satisfactory on the surface, but it is of the greatest importance that in establishing those societies they should not be so numerous that the area of competition may be dangerously diminished. That is a point which should not be absent from our consideration. So far as I can observe, and so far as I can hear, no ill consequences of that character have yet appeared. The local spirit is so great, the immediate advantages in the reward and encouragement of the labourer in every district, however limited, are so obvious and so considerable, that I may fairly say that hitherto the advantages have greatly counterbalanced any possible disadvantage that may hereafter occur. But this we must not forget—that if the spirit of comptition in a district does not really exist, it is impossible in the long run to keep the association alive. Therefore I would recommend you to look with anxiety and some jealousy when you find prizes for which there are very few entries, or where you see constantly the same names—or only a limited number of names—obtaining the same prizes year after year. I repeat that, generally speaking, I believe that all ill consequences have been averted because the local spirit has sustained these associations; but I am of opinion myself that it is of great importance that periodically—at least every five or six years—the various agricultural associations of this county should meet at some central point and enter into general competition. I am sure it wourd stimulate the skill and develop the spirit of the county generalily; and by meeting together in that way the champion ploughmen of different districts would encounter their match, and would return, not abashed and beaten, to their locality, but with a determinati on of increasing their skill and making renewed exertions to arrive at that excellence which they ought always to have before them. I hope that this suggestion may obtain some countenance and encouragement from those present. I have mentioned it on more than one occasion privately, and even once publicly, and it appears to me that the most judicious opinions are in favour of it. I am quite certain that, if developed, it will have a beneficial effect upon the character of this county, and will help to maintain that reputation for agricultural skill which Buckinghamshire may now lay a very just claim to, and that general spirit among the people which it is of as much importance to maintain as agricultural skill."

East Lothian: *Oct.* 3.—At this meeting several speakers referred to the success of the Battersea show. Mr. Hope, of Fenton Barns, who presided, said he had gone down to Farningham to see the exhibition of steam-ploughs, and he might say that he was more interested in seeing that than the International Exhibition. He was delighted with the way in which Mr. Fowler's plough went through its work, and the speed and correctness it exhibited were surprising. Mr. Howard's engine was not so powerful—it did not go so rapidly, and he did not think it was to be compared to Mr. Fowler's; but he must say that Mr. Howard's tackle had some things about it to recommend it very strongly. When he took his engine to the field it rested there, and did not move till the field was finished. In fact, it might be in the next field and do the work required, or it might stand in a corner adjoining four fields, and plough the whole of them. He was not really prepared to say which of the two he would prefer. In regard to Mr. Fowler's machine, they were aware that Mr. Sadler had brought the first into this county, and it was soon to be exhibited at work at Ferrygate, and all would have an opportunity of judging of its merits.

Mr. Gaukroger wished to say a word with reference to the Yorkshire breeds of sheep mentioned by Mr. Hope. The sheep, in the district where they were kept, were called "lonks." They had no doubt seen an article in the *Scottish Farmer*, urging farmers in mountainous districts to introduce this class of sheep. They were found in York to be exceedingly profitable, both as regarded mutton and wool. He did not know whether he had been the first to introduce this class of sheep into Scotland, but he had had the curiosity when in Yorkshire, to bring up 60 or 70 of them. They had been killed by some people in Haddington, and the mutton and wool had been spoken of very highly by people who had seen them. They were 4-year-old wethers he got, and no class of sheep had ever paid him so well.

Mr. Scot Skirving said he regretted that there was such a mere fragment of the Club present, which he attributed to the unusually late harvest. Nevertheless, they had had two good practical speeches. There had been considerable controversy in England as to the good of prizes for agricultural subjects, and as to the use of societies. But had it not been for the great national meeting in England, they might not have heard of this valuable class of sheep of which Mr. Gaukroger had spoken. The moment he saw them he thought that they were finer animals than our blackfaced sheep, and on inquiry he found that they came from Wales, that they were fed in highland districts, and that they paid well, and did well. He could not speak practically as to the value of these sheep, but he thought it was a great proof of the use of national societies that they brought this out-of-the-way class of sheep into view. The great use of these societies was not only to award prizes to one or two breeds of sheep, cattle and horses, that were universal all over the country, but to bring particular breeds into view. He therefore thought they were indebted to the Society for bringing these blackfaced sheep under their notice. He observed that some of the newspapers were discussing Mr. Disraeli's dreadful attempt to defend the giving of prizes to agricultural labourers on account of their morals. He thought it a fair subject for newspaper criticism; and their criticism, on the whole, was perfectly right. If labourers were to get prizes for the way they brought up their children, it would certainly be for the fattest children. As for giving prizes for moral conduct, the whole thing was abominable. He went to Kent to see the show of steam-ploughs, and he had not seen them at work for 10 minutes till he became convinced of the fact that a new field was opened up for the agriculturist, and that an important and a great power had offered itself to the assistance of the farmer. There was no earthly doubt about the way they cultivated those chalky and flinty soils that were hard and not easily penetrated by the common plough, and there was no doubt that the way they turned up the soil was much better than any horse could have done it. His only regret at the time was that there were so many competing implements to bewilder one. After referring to the manner in which the owners of the competing machines underrated the merits of the machines which were competing with their own, which rendered it impossible to get sound information from that source, he said that in present circumstances the machine which struck him as being the best was that of Mr. Fowler. There was one exhibited by Mr. Coleman, which he thought, from its cheapness, lightness, and simplicity, would likely be a very good implement. Bell's and Burgess and Key's heavy reapers did their work best at first, but afterwards the lighter machines, which were not so expensive and were more easily managed, surpassed them; and he had some hope that after the experience of those enterprising gentlemen who had introduced steam ploughing into the county, they might perhaps be able to imitate their example and get the same thing cheaper, because, while he admitted that the steam plough ploughed land better—particularly clay land—than any horse could do, his objection to these machines was, that he could not see how they were to do in a farm without the same number of horses as before. Granting that they ploughed four-fifths of their land by the steam plough, it was perfectly evident that there was a great many of the absolutely necessary purposes of the farm that all went on at once. They must cart their grain and root crops home, or to the railway station, and they must cart their manure to the fields; and unless they adopted the English principle of a locomotive steam-engine and threshing-mill, and threshed the grain in the fields, they could not do with fewer horses than they had at present. His great difficulty was, that there were a great number of agricultural operations that required to be done at one and the same time. But for himself, as an agriculturist, he hoped that the steam-plough would become common; and he felt much indebted to Mr. Sadler for having introduced one into this country.

Mr. Sadler, Ferrygate, said he thought a great deal of the Battersea meeting, and he particularly admired the foreign stock, and the horses sent by the Duke of Hamilton in particular. He thought it was in the columns of the *Scottish Farmer* that it was suggested some time ago that some of their hill farmers should give these blackfaced sheep a trial, and he was glad to hear that Mr. Gaukroger had some of them. He was not aware that they had ever been in Scotland. They seemed to him to be fine animals; they were almost as big as calves, and their wool appeared to be very good. With regard to the implements, in which he always took a great deal of interest, he was glad to find the progress that had been made, especially in steam-ploughs. The competition at Farningham was a very interesting sight indeed. He remarked the steam-ploughs to which Mr. Scot Skirving alluded, and he thought that there was a great deal of ingenuity and simplicity in Coleman's system. In light land he thought it would never do. He was convinced, however, that steam would do a great deal of good to the farmer, and cheapen labour.

The Chairman then said that since Mr. Sadler had been so public-spirited and enterprising as to introduce a steam-plough into this county, they ought not to separate without drinking his good health and success. For himself, he believed that they should profit by the experience of Mr. Sadler, and that the steam-plough would be a great success. He had no doubt as to the capabilities of the implement—his only difficulty was as to the kind of land on which it was to be used. Where there were rocks cropping up to the surface, as on some of his own fields, he did not think that the land was suitable for such an implement, and was rather inclined to hesitate a little before using it on such land. He concluded by proposing health and success to Mr. Sadler.

Mr. Sadler briefly acknowledged the toast.

Farm Memoranda.

Northumberland Farm: The past month has most providentially been characterised by sunshine and fair weather, which has been most favourable for the ripening of our grain crops, though an absence of drying breezes has somewhat retarded the process of stacking. Harvest operations have been diligently pursued without intermission during the latter part of this month, commencing on the 6th with winter Wheat, which was all in stack and thatched by the 29th. The Barley and early Oats were finished carting on the 30th and now all that remains are the Beans, and a small breadth of late Oats which are being cut at present. On the whole, crops are cutting up more satisfactorily than was at one time anticipated, yet Wheat must still be far below an average in yield as well as deficient in weight—a small quantity already thrashed not weighing more than 60 lbs. per bushel. Barley and Beans are a large crop, though the former is wanting in quality; and Oats—especially on the lighter lands—are above an average, and I believe this will represent the general appearance of the crops in this county. Weather permitting, we hope to finish cutting Beans (46 acres) by the 10th of Oct. The harvest of 1862, though favourable, has been slow and tedious, and much annoyance and trouble has been caused by premature carting, in many places involving the necessity of re-stacking; such, however, has not been our case here—thanks to swathe-delivery; a fact in itself sufficient to prove the superiority of this over the sheafing system in a difficult harvest, as well as to remind the votaries of the sheaf "that corn is far from being safe when sheafed and stooked at once, as some seem to imagine, and is only properly harvested when stacked in good condition." In support of the above, I may mention that I am perfectly aware that corn has this year in several instances been carted many days earlier and in much superior condition when cut and delivered in swathe than when delivered in a sheaf and stooked at once. Our entire crops, with the exception of 4 acres of Oats on a bog and a small breadth of Beans, have been cut with a Burgess & Key's machine to our entire satisfaction, though, owing to the effects of the late winds, we have seldom been able to cut all round, and consequently a smaller number of acres per day have been accomplished than in previous years. This is the fifth season for this machine, which has now cut nearly 1500 acres, with very slight repairs—a sufficient test of its material and manufacture. The corn is all taken up by women using long-teethed rakes, with a child preceding them to make bands, and a man following to bind and stook, and in this way about $1\frac{1}{2}$ acre is accomplished per diem. Our stacks are made of a round form, and contain about 12 cart loads of about 10 stooks (of Wheat) each.

Stock.—Grazing cattle have improved amazingly during this month, some of which, both steers and heifers, have been sold off at prices varying from 7*s.* to 8*s.* per stone; but prices are now beginning to fall, for numbers are being pushed into the market as the season closes. Sheep have kept their price, and ewes for breeding may be quoted fully 2*s.* a head higher than last year. Some few ewes were put to the tup early in the month, the rest will follow about the 8th of October. The excessive supply of Leicester rams caused the sales at Kelso to be somewhat duller than last year, though Lord Polworth realised 18*l.* a head, a price exceeding that of previous years. More stock has been bought in at Darlington and other fairs, but the prospect of a fair crop of Turnips is having a tendency to raise the prices of all descriptions of lean cattle as well as sheep. *J. W.*

South Hants Farm: *Report to the end of September.*—Summer-like weather still continues, and the rains when we get them prove very moderate, but quite sufficient for the well doing of all root crops. Turnips and Swedes, although very late sown, will be a fine crop generally, and the quality and feeding value will be better than usual. All the late sown Turnips being so good a crop is producing a great competition amongst the graziers in their purchases of sheep and bullocks. All the fairs for sheep held during the last fortnight have been higher for store sheep of all kinds. The

numbers of sheep at all the fairs held lately have been very short, many parties preferring to sell their sheep at home; and this method of sale is better for both buyer and seller, because the animals are driven direct to the farms where they are required for winter feeding, and are not so likely to take the infectious disorder now prevalent as when driven to and from the fairs, where they cannot avoid coming in contact with numerous flocks from different parts of the country.

Sheep stock being now very dear will make it advantageous for those parties who held over a portion of their ewes from last season, taking a second produce of lambs from them, and when the stock is selected with care and judgment they often prove more valuable for rearing early lambs than in the previous season, or indeed than can usually be purchased. It was our practice for upwards of 20 years to hold over one-half of the ewes, and breed from them again the next season, and we selected them in the following manner; all the earliest lambing ewes were put to high feeding and sold with the lambs fat in the spring. The late lambing portion of the flock were kept in good stock condition, and held over for breeding during the following year. There are several advantages in this practice, the ewes (speaking of horned ewes) that do not lamb until after the middle of the month of November, do not pay for high and costly feeding, and we have found by experiment that the ewes which lamb early will always get fat whilst suckling their lambs; but those which lamb late and after the time stated above, will not prove fat and fit for sale when their lambs leave them, although the food they may have consumed shall have been of the same kind, quantity and quality, and for the same number of weeks, as the early lambing ewes. It is therefore not desirable or advantageous to feed the late ewes with cake or corn and other costly food, but to keep them only in such a state as to furnish a good supply of milk for their lambs; it is however the best plan when ewes are kept over to have them all early to lamb, which is easily done by removing the rams away from the ewes at a given time. The foregoing observations will apply also to down ewes, except that the time of lambing will always be about six or seven weeks later, and in that case the down ewes to be fatted with their lambs at side should finish lambing before the middle of January.

The work of the farm proceeds without delay, the rains being only sufficient to make the land work freely; we still continue to use the scarifier, preparing and clearing the land for various crops, for Winter Tares to be put in shortly, and for the Potato crop of next spring. We have done nothing as yet towards preparing the Wheat land, nor do we intend to do so for several weeks, unless the weather should become too wet for autumn tillage, for we find it of far more consequence to scarify and clean all the land requiring it, than it is to till and sow the Wheat land early, because in the majority of seasons where the land is in a high state of cultivation, Wheat succeeds best sown rather late than otherwise, say from the 1st of November to the middle of December.

It is now a good time to purchase cattle for box feeding, the roots are now becoming available for feeding. We have recently purchased our stock of Devon steers, intending to feed them in boxes for about 20 weeks. We prefer to purchase Devons because we can obtain them well bred, but we cannot in this district find any good bred Short-horned steers, nor do we think that the latter are to be preferred to the former for box feeding, except that to rear the animals and feed them for the butcher at 22 months, the Short-horns in such case are far before the Devons, particularly if the calves are obtained from good Short-horned cows by a "Pedigree" bull. We are now rearing a set of calves obtained somewhat in this way, and have done so for some years past, the animals, both heifers and steers, attaining heavy weights at from 22 to 24 months old.

We have just now commenced pulling the bullock Turnips, a valuable green-topped hybrid variety, and for early feeding of cattle in the boxes we like them better than Swedes or common Turnips; we however, now mix them with Mangels, in this way, although we know it is unusual to feed so early with Mangel, yet the cattle of different ages are doing remarkably well. We have sold the whole of our crop of Potatoes in the land, indeed the early sort is cleared, and the land ready to lay out the manure for Wheat; the early sort proves the best crop this year. Taking both sorts together however, they make a good price, and in our opinion are a far more paying crop than corn—it being also a preparatory crop for the Wheat. *J. B.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Oct. 15, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	9	30.31	58	55	N.E.	2	8	63	48	101*	39	..	58	58
Friday ..	10	30.12	55	53	E.	1	7	64	48	101	42	..	57½	58
Saturday ..	11	29.87	56	55	W.	1	7	70	53	99	50	0.22	58	57½
Sunday ..	12	29.74	61	60	S.W.	2	7	65	52	97	49	0.24	58	57½
Monday ..	13	29.85	55	52	S.W.	2	6	64	48	71	44	0.17	58	57½
Tuesday ..	14	29.89	63	59	S.W.	2	4	64	52	88	50	0.03	57½	57½
Wednesday.	15	29.64	64	60	S.	1	6	66	57	86	54	..	58	57½

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Miscellaneous.

M'Cormick's New Reaper.—The *North British Agriculturist* gives an interesting account of the working of M'Cormick's new reaper in the neighbourhood of Stirling—first on the farm of Borough Meadow, secondly, on the farm of Taylorton, both tenanted by Mr. Alexander. The reaper attracted a good deal of attention from the agriculturists in the district, several of whom gave orders to Mr. M'Cormick for one. Nearly all the agriculturists round Stirling use a reaping machine, some of them having two and even three on their farms. "The machine," says the *North British Agriculturist*, "was working in a heavy field of Oats, and in the course of the day 14 acres were cut down. Three horses were employed at the work, and Mr. Alexander informs us that the work was easier and better done with the three horses than in any of his other machines with four. The machine, like all other reaping machines now in use, has the serrated knife for cutting, and the sheaves are delivered at the side instead of behind. The side delivery is effected by a very simple contrivance. The grain is, of course, gathered into the knife by a reel having four fans. Three of these fans have a uniform vertical rotatory motion, but the fourth, which acts as a rake as well as a fan, has for a fourth part of its motion a horizontal sweep. It is this horizontal sweep that lays off the sheaf; and while this is being done, the three remaining fans on the reel bring the grain to the knife, and by the time the fourth or rake-fan comes to its place three-fourths of the sheaf is cut. When the rake-fan reaches the knife, the sheaf is wholly cut, and then the rake-fan being relieved from its vertical motion, the horizontal sweep takes place and the sheaf is laid out on the field with almost geometrical exactness. The mechanism by which this is effected is exceedingly simple, consisting merely of two small rods, with universal joints, fastened at one end to the arm of the rake-fan and at the other to the axle of the reel. The work so performed is exceedingly clean and neat, leaving a clean stubble with not so much as a single straggling straw. Another improvement connected with this machine is the motion, on turning a corner, of the left-hand wheel. When a turn has to be made, this wheel comes out of the line of draught, and shoots away at right angles from the body of the machine. By this simple process all choking is prevented, and the machine can be turned on a point not larger than a crown piece. Besides this, or rather what gives value to this, is the fact that the machine can cut round and round a field whatever may be the lie of the grain. Yesterday the Oats were laid and very much twisted, but notwithstanding this the sheaf was laid out with very little less neatness than when the grain was standing.

Notices to Correspondents.

Champion Cabbages at the Horticultural Show. *Mr. Robinson, Melbourne, Derbyshire.* You showed three Cabbages, and of these the best had and has the words "not for competition" written on it. That was all we said. They are of extraordinary size and excellent quality.

Thin Seeding. We have received a letter from Mr. Coleman, of Cirencester, just too late for appearance this week.

Victoria Wheat: *Triticum.* Will our kind correspondent in town be good enough to communicate with Messrs. Thomas Gibbs & Co., corner of Half-Moon Street, Piccadilly, about this variety of Wheat. They want two or three sacks of this kind.

Notice.

Mr. A. CHANDLER (of the late Firm of Chandler & Sons), HORTICULTURAL VALUER, begs to inform his friends and the public that he has removed from Priory Road, Wandsworth Road, to No. 1, De... Terrace, Fulham Road, S.W.

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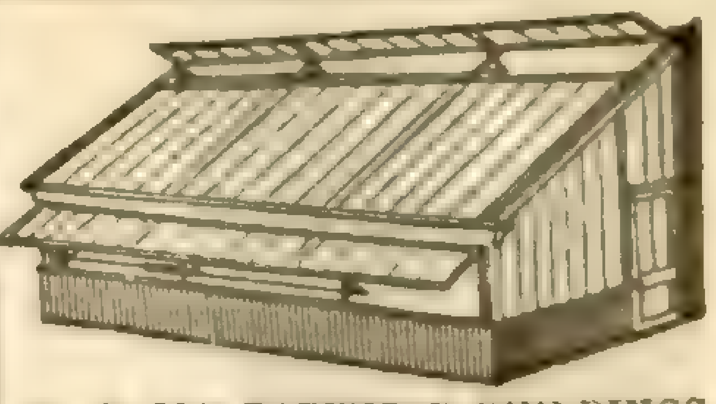

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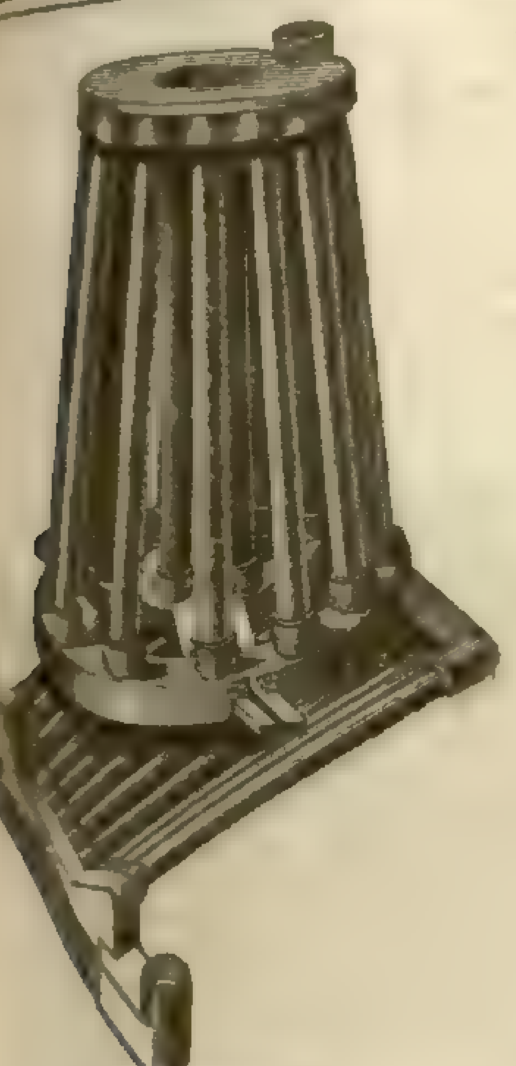
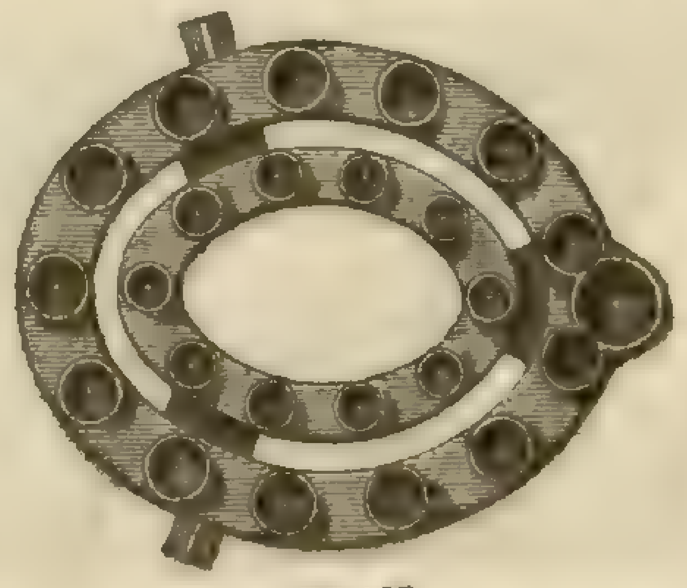
GRAY'S OVAL TUBULAR BOILER.



ELEVATION.

INTERNATIONAL EXHIBITION,

Class IX., No. 2119.



PLAN.

Mr. GRAY begs to call the attention of the Nobility, Gentry, Nurserymen, Gardeners, &c., to his

NEW OVAL TUBULAR BOILER,

acknowledged by practical judges to be a great improvement on every form of Tubular Boiler yet introduced. It has proved itself superior to all other Boilers for quickness of action and economy of Fuel, doing its work with one-third less the amount required by any other.

Extract from Report in Gardeners' Chronicle *of International Exhibition, May 24, page 476.*

"The upright form of Boiler is usually made on a circular plan, but the oval form given to Mr. GRAY'S variety of it is said to be preferable in consequence of its bringing the tubes in closer contact with the fire. The usual form of a furnace being a parallelogram rather than a square, it seems feasible that the Boilers on the oval plan should bring the tubes more completely within range of the burning fuel; and this being so the change, though a slight one, is no doubt an improvement."

They are made of all sizes, which, with prices, may be had on application.

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DENNIS'S PATENT HORTICULTURAL BUILDINGS are made from the best Wrought Iron, upon

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Ironfounder and Whitesmith

BY SPECIAL APPOINTMENT TO HER MAJESTY THE QUEEN.

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of chaste design and elaborate finish, 320 feet long by 130 feet wide. Its temporary erection will take place in the early part of next year at their

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IN FULLEST OPERATION.

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ON THE PRINCIPLE INVENTED AND PATENTED BY

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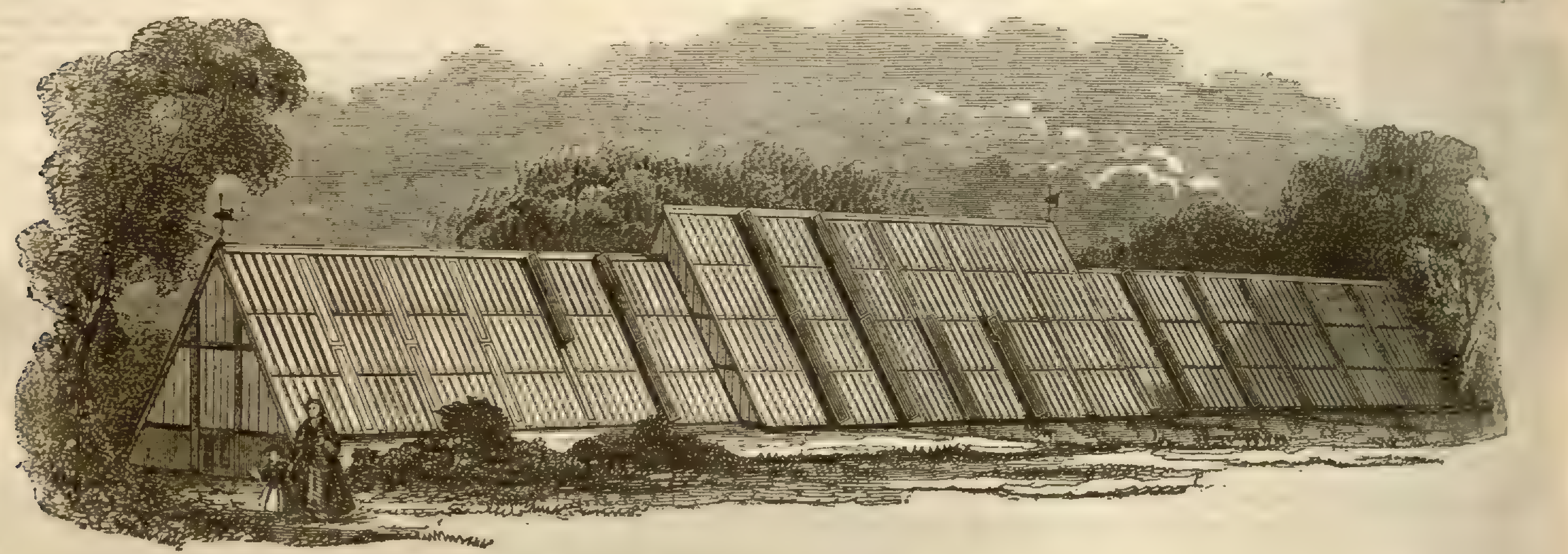
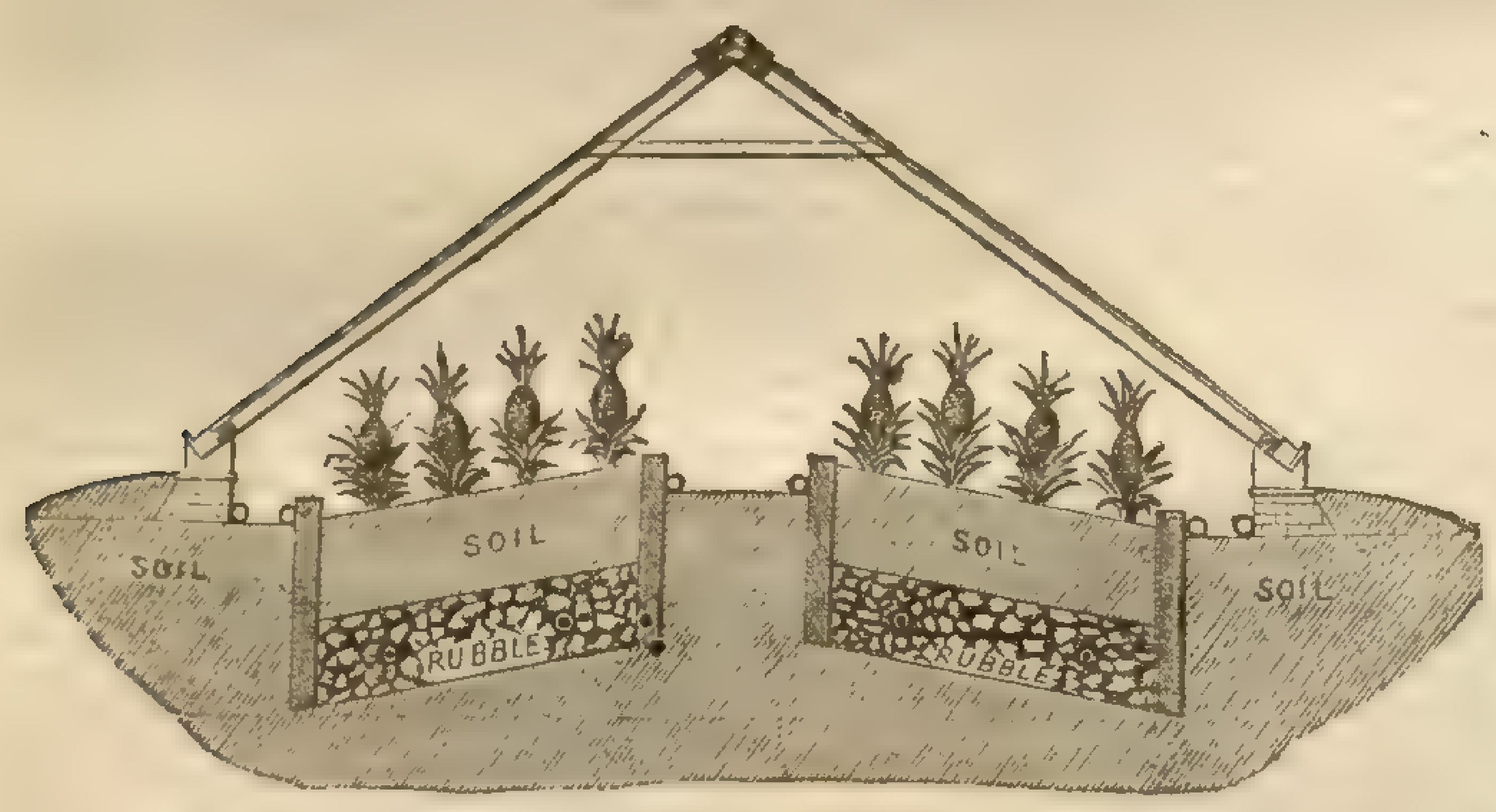
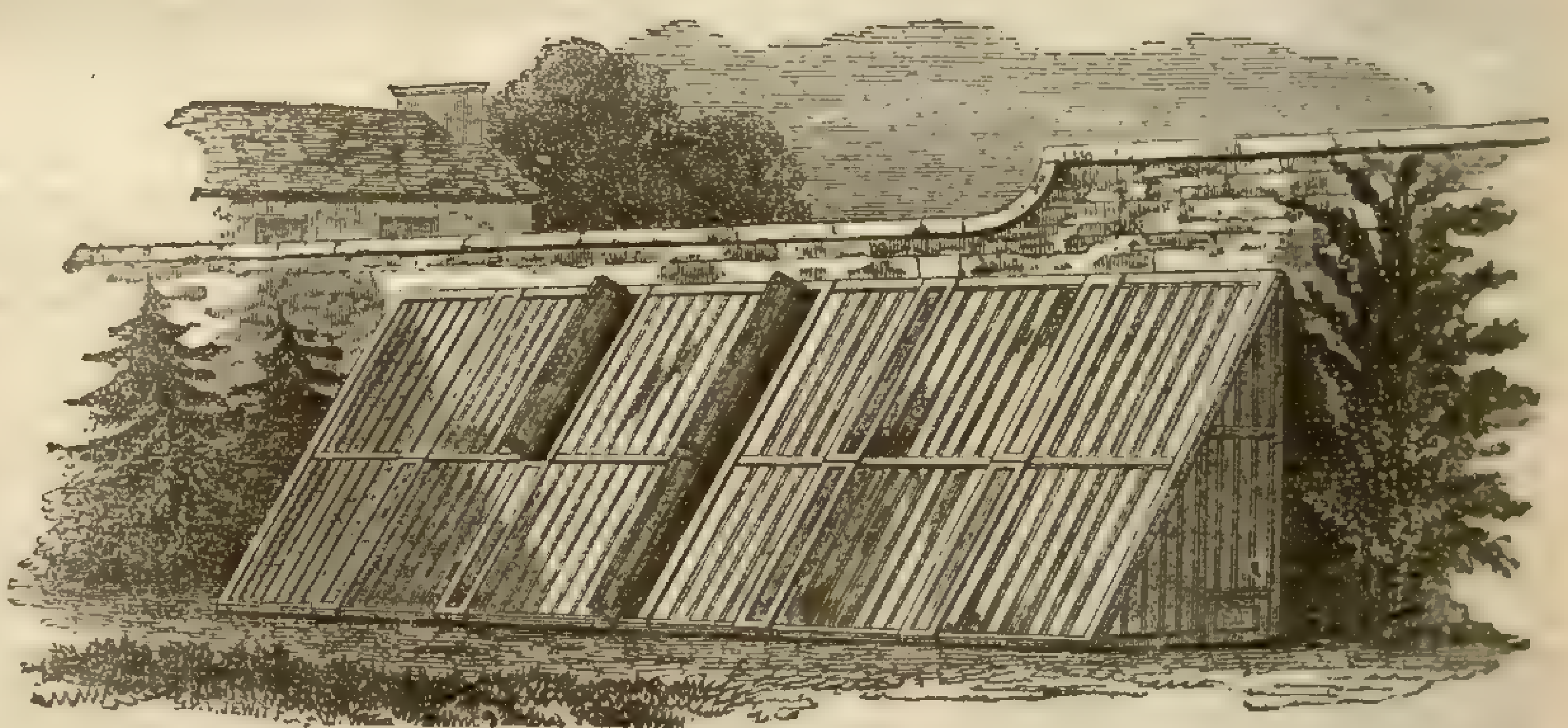
BEING CAPABLE OF FULFILLING IN THE MOST PERFECT MANNER ALL THE REQUIREMENTS OF HORTICULTURE.







These PATENT GLASS HOUSES are composed of simple parts, and may be lengthened and arranged to form the boundaries of Gardens; they cost less than Brick Walls, and insure a certain crop of Fruit. As Portable Structures they may be removed and refixed at little expense; and though calculated for Gardens of the highest order, they are, from their cheapness, desirable for Market Gardens, where they may be made to cover any extent, as also for Suburban Villas and Cottage Gardens.

This figure shows a large connected Winter Garden, which has been erected for R. L. CHANCE, Esq., at Summerfield House, Birmingham, consisting of Span Roofs of 14 feet sashes, with Lean-to Roof against the wall, so arranged as to form an extensive promenade of several hundred feet in length. Fruit Trees are planted at intervals near the side of the walks of the Span Roofs, and Grapes hang overhead from Vines trained under the Glass. Various and rare Fruits grown in pots occupy different parts; Vegetables, Early and Late, fill up all the available space, and form an important feature during the whole of the winter and early spring.

The Cash Prices of Lean-to Houses, with Water-troughs, Doors and Ends complete, are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£12 0 0	£16 0 0	£21 0 0	£28 10 0	£34 5 0
31 3 in length	16 10 0	21 2 6	26 10 0	37 12 0	45 16 0
41 11 in length	20 18 0	26 18 6	33 7 6	46 14 0	57 7 0
52 7 in length	25 12 6	32 15 0	40 5 0	55 16 0	68 18 0
63 3 in length	30 6 0	38 10 0	47 2 6	64 18 0	80 10 0
73 11 in length	34 12 6	43 15 0	53 7 6	74 0 0	92 0 0
84 7 in length	39 6 0	49 11 6	60 5 0	83 2 0	103 11 0
95 3 in length	43 19 0	55 10 0	67 2 6	92 5 0	115 2 0
105 11 in length	48 17 6	60 12 6	73 10 0	101 10 0	126 13 0

The Cash Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£24 0 0	£32 0 0	£42 0 0	£57 0 0	£68 12 0
31 3 in length	33 0 0	42 5 0	53 0 0	75 4 0	91 10 0
41 11 in length	41 16 0	53 17 0	66 15 0	93 8 0	114 14 0
52 7 in length	51 5 0	65 10 0	80 10 0	111 12 0	137 10 0
63 3 in length	60 12 0	77 0 0	94 5 0	129 16 0	161 0 0
73 11 in length	69 5 0	87 10 0	106 15 0	148 0 0	184 0 0
84 7 in length	78 12 0	99 3 0	120 10 0	166 4 0	207 2 0
95 3 in length	87 18 0	111 0 0	134 5 0	184 10 0	230 4 0
105 11 in length	97 15 0	121 5 0	147 0 0	203 0 0	253 6 0

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

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Adlington	Crewe	Harrogate	Mansfield	Richmond (Yorks.)	Thirsk
Ashby-de-la-Zouch	Cheadle	Ilkeston	Market Harboro'	Rotherham	Tipton
Atherstone	Congleton	Kirkham	Marton	Rochdale	Trentham
Bradford (Yorks.)	Colwich	Knapton	Nottingham	Rugeley	Thrapston
Burton	Derby	Knaresborough	Normanton	Rugby	Uttoxeter
Burnley	Dewsbury	Lancaster	Northallerton	Redditch	Ullesthorpe
Bolton	Doncaster	Leeds	Northampton	Shrewsbury	Worcester
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Also to any Station in Derbyshire, Shropshire, Warwickshire, Cheshire, Lancashire, Yorkshire, Leicestershire, Worcestershire, Lincolnshire, and Staffordshire.

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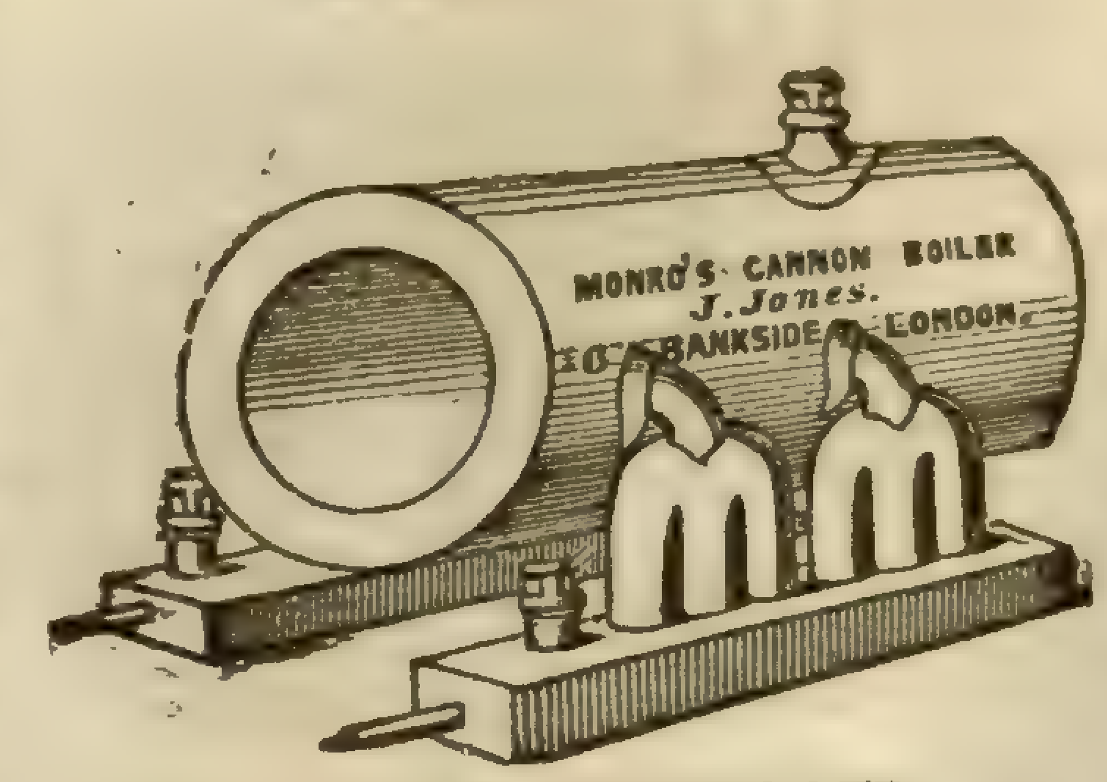
[illegible]-inch "	... ...	6 10 0
[illegible]-inch "	... ...	7 10 0
[illegible]-inch "	... ...	8 10 0
[illegible]-inch "	... ...	12 0 0
[illegible]-inch "	... ...	20 0 0
[illegible]-inch "	... ...	25 0 0



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These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by J. JONES, 6, Bankside, Southwark, London, S.E.

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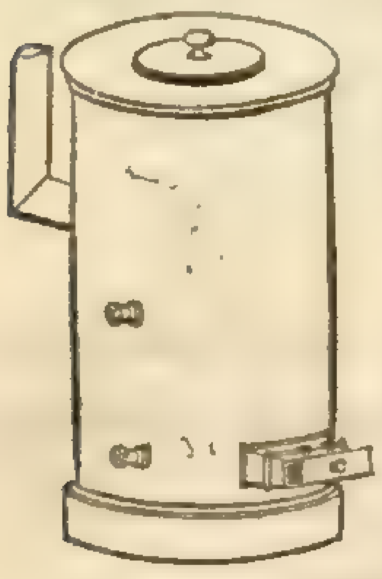

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Corresponding Member of the Caledonian and Maryland Horticultural Societies, and Co-Editor of *The Journal of Horticulture, &c.*

London: JOURNAL of HORTICULTURE and COTTAGE GARDENER OFFICE, 162, FLEET STREET.

THE USEFUL GARDEN ALMANACK for 1863 will be published on October 1st. Price One Penny each, or 3s. 6d. per 100 where not less than 1000 are taken. Very useful for enclosing in Retail Seedsmen's parcels, stitching up with Trade Lists, &c.

Robert Edmund Taylor, Horticultural Printer and Publisher, Seacoal Lane, Skinner Street, Snow Hill, London, E.C.

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Horticultural Printing Offices, Seacoal Lane, Skinner Street, Snow Hill, London, E.C.

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FOR SALE, PORTLAND NURSERY, Kilmarnock, consisting of upwards of Six Imperial Acres, partly stocked with a general Nursery Stock with Greenhouse, Forcing House, Frames, &c., according to Inventory and Valuation, which can be seen in the hands of the Subscriber. The stock is healthy, soil good, and the Nursery advantageously situated. To an enterprising person with a moderate capital, the above is an excellent opportunity for entering into a profitable and established business.

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Sales by Auction.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, October 21, at 12 o'Clock precisely, upwards of 200 PENS of CHOICE POULTRY and PIGEONS, consisting of Cochins, Brahmas, and most of the other known varieties, from the yards of Mr. Fookes, and other Fanciers. Also a splendid lot of Pigeons from Mr. Bellamy of Holloway, and others.

On view the Morning of Sale, and Catalogues had.

Specimen Camellias and Azaleas, Fuchsias, Cacti, &c. Also a choice Lot of Dutch Bulbs, Fruit Trees, &c.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, October 22, at half-past 12 o'Clock precisely, a choice Collection of GREENHOUSE PLANTS, the property of a gentleman, comprising specimen Plants of Camellias and Azaleas, from 2 to 5 feet high; fine Fuchsias and Cacti, &c.; also some Fruit Trees, and a consignment just received from Holland, consisting of Hyacinths, Crocuses, Tulips, Narcissus, Ranunculus, Anemones, &c., all very fine and sound bulbs.

On view the Morning of Sale, and Catalogues had.

Important to Nurserymen, and Others.

EXTENSIVE SALE OF EVERGREENS.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, on SATURDAY, October 25, at half-past 12 o'Clock, precisely:—

5000 Common LAURELS, 1 to 3 feet high.
1000 GOLDEN and VARIEGATED HOLLIES, 1 to 2 feet.
1000 AUCUBAS, 1 to 3 feet.
1000 TREE BOX, 1 to 2 feet.
1000 BERBERIS AQUIFOLIA, 1 to 2 feet.
1000 Common YEWS, 1 to 3 feet.
250 IRISH YEWS, 2 to 5 feet.
250 ARBOR-VITÆS of sorts.
250 COTONEASTERS.
1000 MANETTI ROSE STOCKS.

All very healthy and well grown plants.

On view the Morning of Sale, and Catalogues had.

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Highly important Sale of Specimen Stove and Greenhouse Plants of R. Headly, Esq., who has ranked amongst the most successful exhibitors during past years.

MR. J. C. STEVENS has been favoured with instructions to submit to PUBLIC COMPETITION without the least reservation, at the Gardens, Stapleford, near Cambridge, on TUESDAY, October 28, at 12 o'clock precisely, the very choice and valuable COLLECTION of SPECIMEN PLANTS, consisting of Azaleas, Epacris, Ericas, Polygalas, Boroneas, and other Stove and Greenhouse Plants. All beautifully grown and in fine health.

On view the day before and Morning of Sale (by Catalogues only, 6d. each—by post for 7 Stamps) which can be had at Stapleford; at the principal Inns at Cambridge; and of Mr. J. C. Stevens, 38, King Street, Covent Garden, W.C.

Shelford Station, on the Great Eastern Railway, is close to Stapleford. The Train leaving Shoreditch at 8 o'clock arrives there at 10.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at the Mart, on FRIDAY, Oct. 24, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 300 very handsome Standard, Half Standard, and Dwarf ROSES, selected AMERICAN PLANTS, well set with Bloom Buds, &c.

On view the Morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nurseries Leytonstone, N.E.

Important Sale at Milford Nurseries,

NEAR GODALMING, SURREY.

MESSRS. PROTHEROE AND MORRIS are directed by the Executors of the late Mr. Wm. Young, to Submit to an unreserved SALE by AUCTION, on the Premises, The Milford Nurseries, near Godalming, Surrey, and within 10 minutes' walk of the Milford Station, on the South Western Railway, on MONDAY, October 27, and three following days, at 11 o'Clock each day, a portion of the valuable NURSERY STOCK (which is well worthy the attention of Noblemen, Gentlemen, Public Companies, and the Trade requiring matchless symmetrical-formed Conifers and other desirable specimens for effective purposes), consisting of 1500 Araucaria imbricata, from 1 to 6 feet; 2000 Cedrus Deodara, from 2 to 8 feet; 100 Cedars of Lebanon, 2 to 8 feet; some very handsome Picea Pinsapo, 6 to 8 feet; Nordmanniana, 3 feet; nobilis, 1 to 2 feet; Thuja gigantea, 3 to 4 feet; pendula, Lobbii, aurea; upwards of 500 Abies Douglasii, 4 to 8 feet; Menziesii, 3 to 6 feet; orientalis, 3 feet; Clanbraziliana, 1 to 2 feet; canadensis, 6 to 10 feet; 300 nigra, 3 to 8 feet; Pinus excelsa, 4 to 8 feet; Cembra, 3 to 8 feet; monticola, 3 to 4 feet; Lambertiana, 2 to 3 feet; pyrenaicum, 3 to 4 feet; austriaca, 3 feet; uncinata, 3 feet; Benthamiana; fine Cryptomeria japonica, 4 to 8 feet; Taxodium sempervirens, 6 to 8 feet; large Irish and Chinese Junipers, 4 to 8 feet, &c, also about 400 large specimen Green and Variegated Hollies from 6 to 10 feet; 3000 English and Irish Yews, 2 to 8 feet; 300 Chinese and Siberian Arborvitæ, from 5 to 8 feet; quantity of Purple, Fern-leaved and Weeping Beech, Weeping Ash, Worked Thorns, Birch, Norway Planes, Sycamore, Lucomb Oaks, Standard Apples and Pears, about 1000 choice named Scarlet and other Rhododendrons (bushy plants) 2 feet, 500 Hardy Azaleas, an assortment of fine Standard Roses, &c. Special attention is invited to the fact that the whole of the specimens have been carefully prepared for removal, being transplanted last spring and the previous autumn, and can be transmitted to any part of the country from the Milford Station without changing trucks, and Purchasers may make arrangements to have their lots delivered on the Railway at a moderate charge.

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MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, without the least reserve, at the Auction Mart, Bartholomew Lane, E.C., on WEDNESDAY, October 29, at 12 o'Clock, a choice and valuable COLLECTION of TULIPS, the surplus stock of Mr. C. Williams, (not having room to grow them, since his removal from Tottenham). Among the ROSES are Groom's Fleur de Marie, Duchess of Sutherland, Miss E. Seymour, Princess Mary of Cambridge, Countess of Clanwilliam, Goldham's Ellen, Delaforce's Meteor, Dixon's Queen Anne, Mrs. Dixon, Scarnell's Bijou, Periam's Louisa, Crook's Fanny, Williams's Elizabeth Williams, Ellen Williams, Mary Clifton.—Arlette, Brilliant, Anastasia, Lady Lilford, Lady C. Gordon, Naomi, Brulante Eclatante, Dutch Ponceau, true, &c., &c., &c. Among the BYBLOMENS, are Norman's Mrs. Norman, Mr. Smith, Groom's Victoria Regina, Homer, Eurydice, Goldham's Chas. Kemble, Lord Byron, John Kemble, Prince Napoleon, Lawrence's Don Pedro, Byzantium, Lady Exeter, Achmet, Ellis's Lord Bloomfield, Gibbon's Venus, Walker's Duchess of Sutherland.—Queen of the North, Mrs. Lymbery, Pandora, Gonde Parfait, Thalia, Violet Alexander, Eliza, new, &c. Among the BIZARDS, are Goldham's Julius Cæsar, Norman's Captain Dacre, Admiral Dundas, Earl of Derby, Sir Robert Peel, Peter Rolt, Groom's Dr. Horner, Lord Raglan, Lord Sandon, Marquis of Bristol, Mr. F. Perkins, Orpheus, Pizarro, Rubini, Duke of Cambridge, Lord A. Harvey, Delaforce's King, Perfection, Lawrence's George Haward, Marcellus, Glory of Abingdon, Crook's Amateur, Periam's Prince Albert, Strong's King, Willison's King, Sander's Brunswick.—Saint Neots, Apelles, Sir Joseph Paxton, Eldorado, Truth, Rival, Lalla Singh, Gold Cup, Leander, Metropolitan, Everard, Sunbeam, Mayor of Manchester, Colbert, Ethelstone, Mount Hecla, Steady Boy, &c. Besides many fine Old Show Flowers of the best Strains.

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SEED REQUIRED IN OCTOBER:—FIRST HALF, ONE BUSHEL ON THREE ACRES; LAST HALF, ONE BUSHEL ON TWO ACRES

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"This year's seed is, from longer continued selection, so superior in 'pedigree' power and in 'sample' to any he has ever before sent out, that Mr. Hallett will disclaim the results of any trials made in 1862-3, unless the seed have been obtained this year direct from him, or his authorised Agents."

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Price Two Guineas a Bushel, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order. Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

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W. COOPER, Farmer, Fen Drayton, St. Ives, Hunts., begs to inform Agriculturists that he has a quantity of the above, warranted grown from seed supplied by Mr. Hallett. Price 10s. 6d. per bushel. Also some GIANT RED, at 9s. per bushel.

Delivered on the Great Northern and Great Eastern Railways. New Sacks charged 1s. 6d. each.

Noted Wheat for Seed.

HENRY RUCK purchased of F. F. Hallett, Esq., at the Smithfield Show, 1860, a sack of his wonderful Wheat, and will be pleased to spare from 250 to 300 sacks of WHEAT grown from that Seed. Price 10s. 6d. per bushel, delivered at the Cirencester Station on the Great Western. No less than 20 bushels will be supplied. Cash required before any Wheat is forwarded. New sacks, 2s. each.

Apply to Henry Ruck, Eisey, Cricklade, Wilts.

SEED WHEAT from the CHALK.—Browick Red, Nursery, Rough Chaff, and all the most approved varieties of Wheat. Also Hallett's Pedigree Wheat, Shirreff's Bearded Red, &c., supplied by Raynbird, Caldecott, & Bawtree.

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All Orders must contain remittances, or satisfactory references, and must not be for less than One Quarter.

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SHIRREFF'S BEARDED RED	"	8s.
GOLDEN DROP RED	"	8s.
RED TALAVERA	"	[illegible]
QUINTIN'S GIANT RED	"	7s.

The two first varieties were purchased direct from Mr. Hallett and Mr. Shirreff last autumn, by the Grower, Mr. S. A. Daintree, of Fendrayton, St. Ives, Hunts, and any Orders or Enquiries addressed to him will have prompt attention.

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1st ditto for Long Yellow Mangel ..	The Bronze Medal
1st ditto for Yellow Flesh Turnips ..	The Bronze Medal
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1st ditto for a Collection of Clover and Grass Seeds	The Bronze Medal

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Woking Nursery, Surrey.

Printed by William Bradbury, of 13, Upper Woburn Place, in the Parish of St. Pancras, in the Co. of Middlesex, and Frederick Mullett Evans, of No. 11, Bouverie Street, in the Precinct of Whitefriars, City of London, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington Street, Parish of St Paul's, Covent Garden, in the said Co.—Saturday, October 18, 1862.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 43.—1862.] SATURDAY, OCTOBER 25. {Price Fivepence. Stamped Edition, 6*d*.

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To the Seed Trade.

THE STUDENT PARSNIP. See *Gardeners' Chronicle* of October 18, page 975. For wholesale terms apply to Sutton & Sons, Reading. The List of Agents will be repeatedly advertised, with the additional names, in the order they are received.

Italian Rye-grass.

J. DIXON is offering (and will until April) ITALIAN SEED to the Trade. Samples and Prices sent on application.
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Kendal, Oct. 25.

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Grape Vines.

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A large Stock of PRICKLY and SMOOTH CAYENNE PINES.

Peach Trees in Pots for Forcing.

MESSRS. THOMAS RIVERS and SON offer very fine PEACH TREES, from 3 to 5 years old, with well ripened shoots, full of blossom buds, varying in price from 5s. to 10s. 6d. each, carriage paid to London.
Nurseries, Sawbridgeworth.

FOR SALE, 20 Choice PEACH, NECTARINE, and APRICOT TREES, 7 feet high and 6 feet through. Fine for Orchard-houses.
J. Illman's Nurseries, Wellington Place, Strood, Kent.

FRUIT TREES.—The DESCRIPTIVE CATALOGUE of FRUITS for the present Season, by Thomas Rivers, is now ready for delivery. Gratis and Post free to customers; for six stamps to unknown correspondents.
Nurseries, Sawbridgeworth.

Nursery Stock.

WOOD and INGRAM'S NEW DESCRIPTIVE CATALOGUE, including Seedling and Transplanted Forest Trees, Ornamental Trees and Shrubs, Evergreens, Roses, Fruit Trees, &c. is now ready and will be sent on application.
Nurseries, Huntingdon.

New Rose Catalogue for 1862-63.

WM. WOOD and SON'S NEW CATALOGUES of ROSES, BULBS, and NURSERY STOCK are now ready for distribution, and will be sent free on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Rose Catalogue, 1862-63.

WM. PAUL'S ROSE CATALOGUE is now ready for circulation. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Rose and Bulb Catalogues for 1862-3.

EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded gratis and post-paid on application.
Seed and Nursery Establishment, Tunbridge Wells, Kent.

Roses.

EDWARD PARKE FRANCIS'S NEW and DESCRIPTIVE CATALOGUE of ROSES for 1862 and 1863 is now ready, and will be forwarded gratis on application. E. P. F. has 50,000 DWARF ROSES in the finest state of cultivation on the Manetti Stock.
Rose Nurseries, Hertford.

RICHARD SMITH'S Stock of STANDARD, HALF STANDARD, and DWARF ROSES, combines superior quality with a larger selection than any other Nursery.
DESCRIPTIVE PRICED LISTS on application.
Richard Smith, Nurseryman, Worcester.

THE NEW ROSE, JOHN HOPPER. Strong plants of this celebrated New Rose, DWARFS, 5s. | STANDARDS, 7s. 6d.
A DESCRIPTIVE CIRCULAR free by post on application.
On receipt of 13 postage stamps, a beautiful Illustration.
Robert Ward, Ipswich Rosery, Suffolk.

Dwarf Tea Roses.

EDWIN HOLLAMBY begs to announce that he has a large and healthy Stock of the above, comprising some of the finest Yellows, and other leading varieties, in the best possible condition.
Price on application.
Nurseries and Seed Warehouse, Tunbridge Wells, Kent.

Rose Catalogue, 1862 and 1863.

JOHN CRANSTON begs to announce that his new ROSE CATALOGUE is now ready for distribution, and will be forwarded free on application. It contains full and faithful descriptions of nearly all the NEW ROSES of 1861, as well as the older kinds.
Nurseries, King's Acre, near Hereford.

Roses, Fruit Trees, Coniferæ, &c.

CHARLES TURNER'S CATALOGUE of the above is now ready.
The Royal Nurseries, Slough.

Cinerarias, Carnations, Picotees, Pinks, &c.

CHARLES TURNER'S CATALOGUE, containing a selection of the best only of the above, is now ready.
The Royal Nurseries, Slough.

New Pelargoniums.

CHARLES TURNER'S DESCRIPTIVE CATALOGUE of the fine New Varieties, which obtained Forty Certificates last season, is now ready.
The Royal Nurseries, Slough.

Chrysanthemums. Chrysanthemums.

J. H. BIRD, Nurseryman, Stoke Newington, begs to inform his friends and the Public that his beautiful Collection of the above is NOW in BLOOM, and can be seen Gratis every day between the hours of 10 and 4 o'clock, Sundays excepted.

Royal Nursery, Great Yarmouth.

YOUELL and CO.'S New CATALOGUE of GREENHOUSE PLANTS, Rare and Hardy CONIFERÆ, SHRUBS, GLADIOLI, &c., is ready, and will be forwarded on application.

Superb Double Hollyhocks.

WILLIAM CHATER'S NEW LIST is now ready, and may be had on application by enclosing one postage stamp.
Nurseries, Saffron Walden.
P.S. A LARGE STOCK of PLANTS also ready.

Primula sinensis fimbriata.

B. S. WILLIAMS begs to offer strong Plants of the above, Red or White, raised from his choice Seed (see testimonials in Catalogue). Price per dozen, 12s.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Tritoma Uvaria glauca.

JAMES KITLEY begs to offer fine large blooming plants of the above at the very low price of 6s. per dozen, and fine plants at 4s. per dozen. The Trade supplied. Also NARCISSUS POETICUS, 10s. per 1000.
Lyncombe Vale Nursery, Bath.

Black Thorn Wanted

WANTED to PURCHASE, Seedling and Transplanted BLACK THORN.
Apply, stating average size, quantity, and price of each per 1000, to Francis & Arthur Dickson & Sons, "Upton" Nurseries, Chester.

WELLINGTONIA GIGANTEA.—The undersigned has to offer a very large and fine stock of healthy one year Seedling Plants established in single pots; also a few plants of larger sizes. Price per 100 or 1000 on application.
J. Henchman, Edmonton, London, N.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON and CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.
Pine Apple Place, Edgeware Road, London, W.

Notice to Purchasers of Bulbs.

SUTTON'S BULB LIST, post free, contains all the most desirable sorts in cultivation, and at low prices.
Royal Berkshire Seed Establishment, Reading.

HYACINTHS for EXHIBITION.
FRESH IMPORTED BULBS.
SUTTON'S SELECTION.

		per 100.	Dozen.
Finest sorts by name	..	£4 4s.	12s.
Very fine	ditto ..	3 10	9
Good	ditto ..	2 10	6

Good Hyacinths for Beds, Ribands, &c. in separate colours (fresh imported), 21s. per 100.
Anemones, Crocuses, Tulips, Gladioli, &c., also very low in prices, as per CATALOGUE, which may be had gratis and post free.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

J. C. WHEELER AND SON, SEED GROWERS, Gloucester, have imported in excellent condition a large
COLLECTION of HYACINTHS,
including the extra fine varieties recommended by Dr. LINDLEY.
PRICED LISTS may be had gratis on application to the Importers,
Messrs. J. C. WHEELER & SON, Gloucester.

Excellence and Economy.

H. BROWN has imported a very large Stock of HYACINTHS, CROCUSES, and other BULBS, including the best varieties for exhibition and decoration. Collections at very moderate prices, carriage free.
See PRICED DESCRIPTIVE CATALOGUE, post free.
Seed Warehouse: 4, Commutation Row, Liverpool.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.
Exotic Nursery, Tooting, Surrey, S.

20,000 Hyacinths, 20,000 Tulips, 10,000 Snowdrops, and 100,000 Crocus and Narcissus.

J. H. BIRD, F.R.H.S., NURSERYMAN, Stoke Newington, the largest Grower of the above in England. J. H. B. has just Purchased, for ready money, in Holland, in addition to his usual Large Stock, the above Surplus Stocks of some very large growers, which he now offers at unheard of Low Prices. The following Roots for 1l.:—50 Hyacinths in twenty-five splendid sorts; 150 Early Tulips, sorts; 200 Crocuses, mixed; 50 Snowdrops, and 12 very large noble Narcissuses. Half the above quantity for 10s. 6d.
HYACINTHS, in 10, 20, 30, 40, or 50 splendid Varieties, at One Guinea per 100. Less by the 1000.
LILIUM LANCIFOLIUM RUBRUM (true), large roots, 1s. each, 10s. per dozen, 3l. 5s. per 100, or 30l. per 1000.
N.B.—To save trouble all Orders to be prepaid.

Hardy Scarlet and other Choice Rhododendrons.

JOHN WATERER'S CATALOGUE of the above popular plants, as exhibited by him at the Royal Botanic Gardens, Regent's Park, is now published, and will be forwarded to all applicants.
It describes faithfully the colours of all the Rhododendrons, thereby rendering every facility for making selections.
It likewise contains an abridged List of really Hardy Conifers, with their heights and prices.
The American Nursery, Bagshot, Surrey.

New Hardy British Ferns.

J. IVERY and SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to 7s. 6d. each;
ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA, 21s. each.
A Select LIST of the most rare kinds will be forwarded Post Free on application.
Dorking Nursery.

New Fern, Pteris nemoralis variegata.

WILLIAM COLE, Fog Lane Nursery, Withington, Manchester, the raiser of this beautiful and distinct NEW FERN, will be ready to supply good plants on and after November 1, and all orders will be executed in rotation.
It has been well described in the *Gardeners' Chronicle* of July 5, p. 620, where the writer speaks of it as "a curious and novel form of Variegated Pteris."
It was also reported on in the *Gardeners' Chronicle* of May 24, as follows:—"Among new Ferns, of which several were shown, was one from Mr. Cole, Nurseryman, Manchester, belonging to the Variegated Class, and as regards position, is intermediate between argyræa and tricolor, and is apparently a free grower."
W. COLE has great confidence in recommending it, and in stating that it is really a beautiful Fern, and one which will become exceedingly popular. 10s. 6d. each.
Price (very liberal terms to the Trade for 12, 50, or 100) on application.

INTERNATIONAL EXHIBITION.

PRIZE MEDALS 1851 AND 1862 AWARDED FOR SUPERIORITY AND GENERAL EXCELLENCE.

BUTLER & McCULLOCH, SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.
(ESTABLISHED UPWARDS OF A CENTURY.)

A.—Choice Collections of Bulbs for Greenhouse or Conservatory, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

B.—Choice Collections of Bulbs for Flower Garden only, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

C.—Choice Collections of Bulbs for Greenhouse and Flower Garden, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

A Specification of the above Collections is given at pages 50 and 51 of Messrs. BUTLER & McCULLOCH'S CATALOGUE or AMATEUR'S GUIDE, which may be had free and post paid upon application.

☞ *All Orders amounting to 21s. and upwards sent Carriage Free.*

WANTED to PURCHASE, FEATHER GRASS.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN
(OPPOSITE THE GARRICK CLUB.)

THE PRIZE GOURDS AND MAIZE,

From our "SARDINIAN CORRESPONDENT," will be removed from the Royal Horticultural Society's Gardens and exhibited at our Establishment while the International Exhibition continues open, that visitors may have the opportunity of inspecting the most valuable, beautiful, and varied Collection of Ornamental and Edible Gourds ever seen in this country.

"There should be Gardens for all the months in the year, in which severally things of beauty may be had in season."

Collections of Bulbs for Conservatory and Out-door Decoration.
"A," £5 5s.; "B," £4 4s.; "C," £3 3s.; "D," £1 1s.; "E," 15s. 6d.; "F," 10s. 6d.

Paxtonian Collections of Bulbs for Ornamenting the Spring Garden.
"G," £5 5s.; "H," £4 4s.; "I," £3 3s.; "J," £2 2s.; "K," 15s. 6d.; "L," 10s. 6d.

The Kensington Garden and Crystal Palace Collections for Winter Gardening.
"M," £5 5s.; "N," £3 3s.; "O," £2 2s.; "P," £1 10s.; "Q," £1 1s.; "R," 10s. 6d.

For full particulars of the sorts and quantities contained in the above Collections, see our "ILLUSTRATED FLORAL GUIDE," or the *Gardeners' Chronicle* of September 13th and 20th.

London Agents for TYE'S New REGISTERED SOUVENIR HYACINTH GLASSES, 10s. 6d. per pair.
For further particulars see our "ILLUSTRATED FLORAL GUIDE," or *Gardeners' Chronicle*, Sept. 13th and 20th.

BARR & SUGDEN, SEED MERCHANTS,
12, KING STREET, COVENT GARDEN, W.C. (OPPOSITE the GARRICK CLUB.)

NEW, BEAUTIFUL, AND RARE PLANTS.

B. S. WILLIAMS,

PARADISE NURSERY, HOLLOWAY, LONDON, N.,

Has much pleasure in offering the following choice and valuable selection of NEW and RARE PLANTS:—

		s.	d.
CYPRIPEDIUM STONEI	105s. to	126	0
PHALÆNOPSIS SCHILLERIANA	210s. to	420	0
" AMABILIS	84s. to	147	0
" ROSEA	84s. to	147	0
" GRANDIFLORA		63	0
" " (Borneo variety)		63	0
CALADIUM LOWII		31	6
" VEITCHII	31s. 6d.,	63	0
ALOCASIA METALLICA		31	6
" MACRORHIZA VARIEGATA		31	6
CORDYLINE INDIVISA		31	6
YUCCA CONCAVA		63	0
CLERODENDRON THOMSONÆ		3	6
SERISSA FŒTIDA MARGINATA		5	0
CLEMATIS BRASILIENSIS		7	6
GESNERIA REFULGENS		10	6
LONICERA AUREO RETICULATA		7	6
AMARYLLIS UNIQUE	31s. 6d.,	42	0
GLEICHENIA DICARPA	21s.,	31	6
" DICHOTOMA		10	6
" FLABELLATA	21s.,	42	0
GYMNOGRAMMA WETENHALLIANA		7	6
" LAUCHEANA		5	0
ADIANTUM SCABRUM		10	6
CHEILANTHES MYSURENSIS		7	6

LITOBROCHIA NOBILIS	[illegible]
ADIANTUM TINCTUM	[illegible]
ATHYRIUM FILIX FŒMINA FRIZELLIÆ	[illegible]
" " " FIELDIÆ	10s. 6d. [illegible]
AZALEA ELEGANTISSIMA	[illegible]
" FLAG of TRUCE	[illegible]
" PRINCESS ALICE	[illegible]
" TRICOLOR	[illegible]
" CARNATION	[illegible]
" CLAPHAM BEAUTY	[illegible]
" DUKE of CAMBRIDGE	[illegible]
" PRINCE of ORANGE	[illegible]
" SIR J. OUTRAM	[illegible]
" PROFESSOR LEMAIRE	[illegible]
CAMELLIA LEOPOLD 1st	[illegible]
" QUERCIFOLIA	[illegible]
" COUNTESS of DERBY	[illegible]
" COMTE DE GOMER	[illegible]
" LAVINIA MAGGI	[illegible]
RHODODENDRON BARON DE CROESER	[illegible]
" SOUVENIR DE JEAN EYLS	[illegible]
" NEIGE ET CERISE	[illegible]
ROSE BEAUTY of WALTHAM	[illegible]
" L'ENFANT TROUVE	[illegible]

PARADISE NURSERY, SEVEN SISTERS AND HORNSEY ROADS,
HOLLOWAY, LONDON, N.

NONE IS GENUINE UNLESS THE FOLLOWING TRADE [PEDIGREE] MARK IS UPON THE BAG. TO IMITATE THIS IS FORGERY.

SEED REQUIRED IN OCTOBER:—FIRST HALF, ONE BUSHEL ON THREE ACRES; LAST HALF, ONE BUSHEL ON TWO ACRES.

CAUTION.—THE BRIGHTON WHEAT HAS BEEN SELECTED FOR SEVERAL GENERATIONS FURTHER, AND WILL PRODUCE 10 PER CENT. MORE THAN THAT GROWN FROM WHEAT PURCHASED IN PREVIOUS YEARS, AND CAN BE OBTAINED OF MR. HALLETT ALONE, OR OF HIS AGENTS.

HALLETT'S PEDIGREE NURSERY WHEAT,

"BRED" ON THE SAME PRINCIPLE OF **REPEATED** SELECTION WHICH HAS PRODUCED OUR PURE RACES OF ANIMALS.

This year's seed is, from longer continued selection, so superior in 'pedigree' power and in 'sample' to any he has ever before sent out, that Mr. HALLETT will disclaim the results of any trials made in 1862-3, unless the seed have been obtained this year direct from him, or his authorised Agents."

Extract from a Letter just received:—"Your Wheat produced the finest ears and the largest produce ever seen in Western Australia."

1861, ACTUAL SIZE AFTER FOUR YEARS' REPEATED SELECTION, STARTING FROM A **SINGLE GRAIN** IN EACH YEAR.

Price Two Guineas a Bushel, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order. Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

Man kann Bestellungen machen bei den Agenten Herrn KRELAGE und SOHN, Haarlem, Holland; und Francfurt-am-Main, Deutschland.

A PRINTED PAPER, "HOW OUR WHEAT CROPS MAY BE DOUBLED," and COPIES of LEADING ARTICLES from the *TIMES*, *AGRICULTURAL GAZETTE*, and *MARK LANE EXPRESS*, FORWARDED UPON APPLICATION, ENCLOSING TWO STAMPS.

Hallett's Pedigree Wheat.

W. COOPER, FARMER, Fen Drayton, St. Ives, Hunts., begs to inform Agriculturists that he has a quantity of the above, warranted grown from seed supplied by Mr. Hallett. Price 10s. 6d. per bushel. Also some GIANT RED, at 7s. per bushel.

Delivered on the Great Northern and Great Eastern Railways. New Sacks charged 1s. 6d. each.

Seed Wheat.

HALLETT'S PEDIGREE, Third from Generation 1861, 10s. per bushel; Superior ROUGH-CHAFFED DWARF EARLY WHITE, 8s. per bushel; PIPER'S or SMOOTHY'S IMPROVED DWARFY THICKSETTED RED, 8s. per bushel; Sacks 1s. 3d., Bags 9d. each. Terms: Remittances on orders by Cheques, or Post-Office Orders on Maldon. Free of Carriage to London, or to any Station North or East of London.

Apply to ABRAHAM HARDY & SON, Seed Growers and Merchants, Maldon, Essex.

NOTICE.—This Advertisement will not be repeated.

Noted Wheat for Seed.

HENRY RUCK purchased of F. F. Hallett, Esq., at the Smithfield Show, 1860, a sack of his wonderful Wheat, and will be pleased to spare from 250 to 300 sacks of WHEAT grown from that Seed. Price 10s. 6d. per bushel, delivered at the Cirencester Station on the Great Western. Not less than 20 bushels will be supplied. Cash required before any Wheat is forwarded. New sacks, 2s. each.

Apply to HENRY RUCK, Eisey, Cricklade, Wilts.

SEED WHEAT from the CHALK.—Browick Red, Nursery, Rough Chaff, and all the most approved varieties of Wheat. Also Hallett's Pedigree Wheat, Shirreff's Bearded Red, &c., supplied by RAYNBIRD, CALDECOTT, & BAWTREE.

Winter Tares, Rye, Winter Barley, Winter Oats, Trifolium, &c. Samples and Prices post free on application.

Address, Basingstoke, or 89, Seed Market, Mark Lane, E.C.

International Exhibition.

PRIZE MEDAL, "EXCELLENT SEED CORN AND SEEDS." See JURY AWARD. CLASS III., 725.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E.C.

Samples and quotations of all kinds of Agricultural Seeds, and Seed Corn, sent post free on application. Peruvian Guano, Lawes's Manures for Turnips, Wheat, Barley, &c., Linseed Cakes, and Feeding Stuffs, at Market Prices.

Genuine Italian Rye-grass, produced from the Second Cut of Foreign Seed.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts., will again be able to supply the Trade with this article in the same fine quality as last season, and can deliver either now or in the spring at the purchaser's convenience.

Rates to Liverpool, 30s. per Ton, in 4 ton lots.

Address for samples and prices as above, stating quantity required and time of delivery.

PARSNIP CHERVIL or CHÆROPHYLLUM BULBOSUM.—New Seed of this year's harvesting, per packet, 1s. Sow from September 25 to October 25. A delicate and delicious vegetable.

ARTHUR HENDERSON & CO., Pine Apple Place, Edgware Road, W.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned NEW and fine AZALEAS.

FLAG OF TRUCE.—The finest double white known; has obtained two Certificates and a Silver Medal for its superior merits, being the highest testimonial any Azalea has yet received, 21s. to 31s. 6d. each.

PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21s. to 31s. 6d. each.

CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very superior, 21s. to 31s. 6d. each.

LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10s. 6d. to 15s. each.

CRISPIFLORA ROSEA.—Fine bright rose; the flowers are waved or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10s. 6d. to 15s. each.

PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10s. 6d. and 15s. each.

Any of the above may be had in grafted plants, or on their own roots.

For full particulars see *Gardeners' Chronicle* of August 16, 1862, p. 758; or in CATALOGUES, which may be had gratis on application.

Dulwich, Surrey

MESSRS. BROWN AND CO. offer the following Selection of CHOICE PLANTS, which they will forward to any part of the kingdom:—

	s.	d.
25 AZALEAS, new hardy Belgian varieties, one of a sort, on their own roots, by name	20	0
25 AZALEAS, hardy American varieties, do. do..	15	0
12 Hardy RHODODENDRONS, one of a sort, including Scarlet, White, and Rose colour	12	0
Hardy HEATHS, LEDUMS, and KALMIAS, per doz.	6	0
ROSES, best sorts, Standards and Half Standards, per dozen, 12s. to	15	0
CLIMBING ROSES of best sorts, rapid growers, per dozen	6	0
DWARF ROSES for beds or forcing, including Bourbons, Teas, and Perpetuals, per dozen ..	12	0
Choice Hardy PINES and other CONIFERÆ. Cheap. Price List by post.		
Greenhouse AZALEAS, fine varieties, per doz., 18s. to	15	0
CAMELLIAS, best double varieties, per dozen ..	28	0
TREE CARNATIONS, winter flowering, per dozen	12	0

CHOICE FRUIT TREES.

Fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Apples, Plums, and Pears, 2s. 6d. each, or 24s. per dozen.

Dwarf Plants of all the above kinds, grown especially for pot culture in Orchard Houses, &c., 18s. per dozen.

Filberts, Gooseberries, Currants, and Raspberries, p. doz., 3s.

Hyacinths, Tulips, Crocuses, and other Dutch Bulbs cheap for early forcing, &c.

American Nurseries, near Farnham, Surrey.—Oct. 25.

Grape Vines.

JAMES CARTER AND CO. have now ready for sending out a splendid Collection of thoroughly ripened Canes of the above from Eyes and two years old, true to name, for fruiting in pots, or planting out; to which they respectfully wish to draw attention.

For full DESCRIPTIVE LIST of same see AUTUMN GUIDE, sent free by post, on application to 237 and 238, High Holborn, W.C.

Grape Vines from Eyes.

LUCOMBE, PINCE AND CO. have a fine healthy stock of strong VINES, from 6 to 10 feet long, of all the choicest sorts, fit for immediate planting, propagated from Eyes taken from their own experimental Vinery, which enables them to warrant each kind true to name.

LISTS of Sorts and prices may be had on application.

Exeter Nursery, Exeter.

Strong Grape Vines from Eyes.

R. GLENDINNING begs to announce that his Stock of GRAPE VINES, comprising all the old and new varieties worthy of cultivation, is unusually fine this season. It consists of a number of extra-strong well-ripened Canes, grown for fruiting in pots, and a quantity of fine healthy Vines for planting out.

PRICED LISTS on application.

Chiswick Nursery.—Oct. 25.

New White Grape "Chavoush."

CHARLES TURNER can still supply strong plants of this superior White Grape. For description and particulars see former Advertisement or Catalogue, which may be had on application. Price for strong plants, 21s. A few extra strong plants in large pots, which will bring a crop next year, will be charged 42s.

The Royal Nurseries, Slough.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.

2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

THOMAS JACKSON & SON, Nursery, Kingston, S.W.

CURRANT PLANTS for immediate bearing.—Large Red Grape and Nettle Leaf White, at the nominal price of 15s. per 100, or 5l. per 1000.

Also a few Tons of LAPSTONE KIDNEY POTATO SEED, in excellent condition.

Apply to T. MITTON, Lampton, near Hounslow, W.

FRUIT TREES, ROOT PRUNED.

PEARS, in 200 sorts, Pyramids, from 2 to 12 feet high, mostly bearing trees.

APPLES, 200 sorts, Standards, Pyramids, Dwarf Bushes, or Dwarf-trained.

PLUMS, 70 sorts, Standards, Dwarf Bushes or Dwarf-trained.

PEACHES, NECTARINES, APRICOTS, and CHERRIES, fine Dwarf-trained trees.

MAIDEN PEACHES and NECTARINES in quantity to offer to the Trade.

For prices, &c., apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

Fruit Trees.

RICHARD SMITH has no hesitation in saying, that he possesses by far the largest Stock of FRUIT TREES in the kingdom, consisting of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, in Maiden Trees, Dwarfs, Bushes, Pyramids, Half-Standards, and Standards; Dwarf-trained, Half-Standard, Standard, and Horizontally-trained Trees, of the finest sorts, and in the best possible condition.

DESCRIPTIVE PRICED LISTS on application.

RICHARD SMITH, Nurseryman, Worcester.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

Magnificent Dwarf-Trained Fruit Trees.

WM. WOOD AND SON have the greatest satisfaction in referring their friends to their very superior Stock of the above, which are in the finest possible health, and in point of training the trees are perfect pictures of successful cultivation.

The Stock comprises PEARS, PLUMS, CHERRIES, PEACHES, &c., &c.

CATALOGUES free on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Fine Trained Fruit Trees.

LUCOMBE, PINCE, AND CO. invite attention to their remarkably fine, healthy, well-rooted Stock of FRUIT TREES, trained as Espaliers and Pyramids, in a bearing state, of all the best sorts, amongst which they can especially recommend

HUYSHE'S BERGAMOT and VICTORIA PEARS,

as being two of the finest varieties in cultivation, specimens of which covered with fruit may be seen in their Nursery.

L., P. & Co. have also well established in pots some very fine PEACHES and NECTARINES, set with fruit buds, fit for Orchard House culture.

A DESCRIPTIVE PRICED CATALOGUE may be had on application.

Exeter Nursery, Exeter.

FINE PYRAMIDAL FRUITING PEARS on QUINCE:—

	s.	d.
12 fine named sorts, with buds	18	0
50 " "	60	0
12 " APPLES, with buds	12	0
12 plants May's large VICTORIA CURRANT ..	3	0
100 " "	14	0
50 plants heaviest LANCASHIRE GOOSEBERRIES	10	0
50 plants good useful sorts ditto	6	0

HENRY MAY'S CATALOGUE OF FRUIT TREES is now ready, and will be forwarded free.

The Hope Nurseries, near Bedale, Yorkshire.

SHRUBS.—A Gentleman having 15 acres of CHOICE SHRUBS, from 6 to 12 years old, has a few hundred for Sale, consisting of Weeping Trees, all kinds of worked Chestnuts, Double Mays, and Acacias of all sorts, Copper Beech, Rhododendrons, Bays, Laurustinus, Laurels, Portugal Laurels, Boxes of all kinds, Cedars, Lilacs, and an assortment of Specimen Plants seldom seen, and unequalled in this country.

Apply to Mr. WRIGHT, 22, Ely Place, Holborn, W.C.

Hardy Ornamental Trees and Shrubs.

LUCOMBE, PINCE, AND CO. invite the attention of those engaged in planting, to their unrivalled Stock of HARDY ORNAMENTAL TREES and SHRUBS, all of which have been regularly transplanted, so that they can be removed to any distance with perfect success. Any one desirous of producing an immediate effect has an opportunity, rarely offered, of selecting from an exceedingly large and well rooted stock, at very moderate prices, every variety of Tree or Shrub that can be required. Particulars and prices forwarded on application.

N.B. Compensation for carriage will be taken liberally into consideration.

Exeter Nursery, Exeter. Established 1720.

Orchard House Trees.

MESSRS. THOMAS RIVERS beg to offer the largest stock known of the following kinds of FRUIT TREES in Pots. To save expense they can be taken from their pots, and packed with their balls of earth in crates or baskets.

APRICOTS,—Standards, 7s. 6d.; half standards, 5s. to 7s. 6d.; Pyramids, 5s.; Dwarf bushes, largest trees five years old, 7s. 6d; ditto, 3s 6d. and 5s. all full of blossom buds.

ALMONDS.—Thin shelled and large fruited, 3s. 6d.

APPLES.—Fine American and other sorts, mostly Pyramids, on the Paradise stock, 2s. 6d.

CHERRIES.—Pyramids, fine bearing trees, 3s. 6d. to 5s.

FIGS, from Eyes, with short clean stems, bearing trees, 3s. 6d. to 5s.

MULBERRIES.—2 to 3 feet, 5s.

NECTARINES.—Bushes, fine bearing trees, 3s. 6d. to 7s. 6d.

ORANGES. — Tangerin, St. Michael's, and Maltese Blood Orange, 5s. to 7s. 6d.

PEACHES.—Standards for lofty Orchard houses, 7s. 6d.; Half Standards, 5s. to 7s. 6d.; Pyramids, remarkably handsome and well furnished with blossom buds, 5s.; bushes, very fine trees, 3s. 6d. to 7s. 6d.; miniature trees in 6-inch pots, 3s. 6d.

PEARS.—Handsome Pyramids, on the Quince, full of blossom buds, 3s. 6d. to 5s.

PLUMS.—Pyramids and bushes, 3s. 6d.; a few of extra size, 5s.

VINES, from Eyes, 3s. 6d. to 7s. 6d.

Carriage paid to London. Large collections, if required in their pots, packed in trucks and sent through by any line of railway.

Nurseries, Sawbridgeworth.

Planting.

WM. PAUL (Son and Successor to the late A. PAUL) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.

Entrance from the platform, Waltham Station, Great Eastern Railway.

Nurseries and Seed Warehouse, Waltham Cross, N.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious Index of all their synonymes. Free by post for 12 postage stamps.

RICHARD SMITH, Nurseryman, Worcester.

To the Trade.

ISAAC DAVIES can supply the following in large quantities at reduced prices:—RHODODENDRON præcox, Edgeworthii, ciliatum, virgatum, glaucum, Gibsonii, aureum superbum, and atrovirens; also the GHENT AZALEA rosea grandiflora, SKIMMIA JAPONICA, and TEA and CHINA ROSES in pots.

Larkfield Nursery, Wavertree, near Liverpool.

To the Trade.

GEORGE R. DAVIDSON offers to the Trade One Million of FOREST TREES, twice transplanted, in rows 14 inches apart; THORN QUICKS, One Million 1-year olds in beds; Two Million 3-year olds in beds; One Million 3-year olds, transplanted. A large stock of COMMON LAUREL.

Samples and Prices on application. Conveyance per rail or steam to all parts of the Kingdom.

The Nurseries, Newry, Ireland.

3000 DEODARS, 1000 CUPRESSUS LAWSONIANA, 1000 C. MACROCARPA, 500 THUJA LOBBII. The above are offered very cheap. The Deodars are handsome well grown plants, from 2½ to 5 feet, and have been transplanted every autumn for the last five years. The others are fine healthy plants varying from 2 to 5 feet high.

Prices on application to J. SCOTT, Merriott, Crewkerne, Somerset.

WM. IVERY respectively invites an inspection of EVERGREENS and DECIDUOUS SHRUBS.

EVERGREEN OAKS, fine, from 6 to 8 feet.
PHILLYREAS, 4 to 5 feet, fine and bushy.
CHINESE ARBORVITÆ, 5 feet and upwards.
CEDRUS DEODARA, 4 to 5 feet.

Also large AUCUBAS, LAURUSTINUS, ARBUTUS, and all other varieties in the finest condition, will move with the greatest safety, with good balls. Also a fine collection of hardy CLIMBERS in pots. FRUIT TREES of all the best approved varieties at reasonable prices.

Hanover Nursery, Peckham.

To Gentlemen engaged in Planting, and the Trade.

GREEN HOLLIES, extra Transplanted and well rooted, from 1 to 3 feet.

YEWS, very fine, transplanted and well rooted, from 1½ to 3½ feet.

COMMON LAUREL, from 1 to 3½ feet.

SIBERIAN ARBOR-VITÆ, fine formed plants, from 2 to 3½ feet.

Berberis aquifolia, Pinus austriaca, Portugal Laurel, Scotch Fir, Spruce, Larch, Hazel, Elm, Oak, Mountain Ash, Horse Chesnut, &c., &c., of various sizes.

For prices (which will be found very low) apply to WILLIAM BOOSEY, Nurseryman, Middlewich, Cheshire.

To Nurserymen, Railway Contractors, &c.

ANDREW G. DALY, Newry, Ireland, is prepared to deliver (free of freight) in Liverpool or Glasgow:—

2,000,000 of 2 and 3 years Transplanted THORN QUICKS, fit for Railway fences. Also

3,000,000 of 2-years SEEDLING THORNS, one year bedded. Good stout finely rooted stuff, best for lining out.

20,000 upright IRISH YEWS, from 1 to 6 feet, often removed, trained to one stem, finely rooted, and well clothed.

The above will be offered at very moderate prices on account of an alteration in part of the Nursery Ground.

MESSRS. WATERER & GODFREY

INVITE ATTENTION TO THE FOLLOWING

LIST of DESIRABLE PLANTS,

WHICH ARE ALL IN THE

FINEST HEALTH, WELL GROWN, and WELL-ROOTED.

ARAUCARIA IMBRICATA,
18 inches, 30s per doz, or 10l. to 12l. 10s. per 100.
2 feet, 3s. 6d. to 5s. each; 15l. per 100.
3, 4, 5, 6, 7, 8, 10, 12, 15 feet.

We have many thousands of these. The larger sizes are very fine and should be seen, as prices on paper convey no idea of the plant.

CEDRUS DEODARA,
handsome plants, 2½ to 3 feet, 20s. per doz., 10l. per 100.
" " 3 to 4 feet, 36s. to 42s. per doz., or 15l. per 100.
" " 4 to 5 feet, 42s. to 60s. per [illegible] per 100.
" " 5, 6, and 7 feet, 5s., 7s. 6d., and 10s. 6d. each; larger, 10, 12, and 15 feet.

Purchasers may select from a stock of not less than 20,000 Deodars, and they are as handsome as plants can well be.

Of LEBANON, a fine lot of plants for avenues, 4, 6, 7, and 8 feet, 7s. 6d. to 20s. each.

CUPRESSUS LAWSONI,
1½ to 2 feet, 24s. per dozen.
2½ to 3 feet, 2s. 6d. to 3s. 6d. each; 12l. 10s. per 100.
4 to 5 feet, 5s. to 7s. 6d. each; 60s. to 84s. per doz.
6, 7, and 8 feet, 21s. to 42s. each.

As this will doubtlessly be extensively planted, [illegible] to state our stock of it is raised entirely from seed, [illegible] contains many thousands of by far the finest plants [illegible] found in any nursery in Great Britain.

CHAMÆCYPARIS SPHÆROIDEA VARIEGATA,
(The variegated White Cedar.)
A vast number of plants, 2, 3, and 4 feet, [illegible] to 84s. per doz.

PICEA NOBILIS,
3-year seedlings, 6 inches, 42s. per dozen.
" 9 to 12 inches, 84s. per dozen.
" 1½ foot and wide, 21s. to 31s. 6d. each.
2, 3, 4, and 5 feet, 31s. 6d. to 105s. each.

Of this, the most beautiful of the Fir tribe, we ha[illegible] finest stock in existence, for we believe except these (and those sent from here), all the plants in the Trade are grafted and comparatively worthless. We have raised large quantities, and have at this moment many hundred specimens 2, 3, 4, and 5 feet high, and such as cannot be matched in any other nursery. None are grafted.

PICEA NORDMANNIANA,
3-years Seedlings, 42s. per dozen.
Ditto 9 to 12 inches, 84s. per dozen.
Handsome specimens, 3, 4, 5, 6, 7, 8, and 10 feet, [illegible], 84s., 105s., 210s. each, and upwards.

This is another Fir of which there are vast [illegible] of grafted plants to be had, and of course at [illegible] prices than ours. All Seedlings, and as handsome as plants can well be.

PICEA PINSAPO, hundreds of fine plants, 2, 3, 4, 5, 6, 7, 8, 10, and 12 feet, from 7s. 6d., 21s., to 105s. and upwards, each.

Any one requiring fine specimens should see [illegible] plants, they are magnificent.

JUNIPER, CHINESE, 3, 4, 6, 10, and 12 feet, [illegible] 10s. 6d., 21s., and upwards, each.

Purchasers may select from many hundreds [illegible] fine plant.

JUNIPER, IRISH, 3 to 4 feet, 21s. to 30s. per dozen.
" 5, 6, 7, and 8 feet, 3s. 6d. to 21s. each.

YEWS, ENGLISH, many thousands, 2, 3, 4, 5, 6, 7, 8, 10, and 12 feet high.

These large Yews will be found invaluable when immediate effect or a blind is sought. Every [illegible] been recently removed.

YEWS, IRISH, handsome plants,
5 to 6 feet, 3s. 6d. to 7s. 6d. each.
7, 8, and 10 feet, 10s. 6d. to 63s. each, and upwards.

These Irish Yews will be found on inspection [illegible] beyond the ordinary style usually seen in nurseries.

YEWS, GOLDEN, ditto ELEGANTISSIMA, worked on C[illegible] and Irish Yews of all heights, from 1½ to [illegible] having from 3 to 4, 5, 6, and 7 feet of gold, [illegible] in price from 10s. 6d. to 105s. each.

The day is not far distant when this will be[illegible] important feature in all well planted places. W[illegible] many thousands, and say without fear of [illegible] tion, no such plants are to be found in any [illegible] Nursery.

THUJA AUREA,
2, 3, 4, and 5 feet high, and measuring many of them from 12 to 15 feet in circumference, per[illegible] globes, 7s. 6d. to 14s. each.

This plant originated in this nursery, and our stock of it comprises a large number of very much finer plants than are to be met with elsewhere.

THUJA GIGANTEA,
Fine from seed, 3, 4, 5, 6, and 7 feet high, 7s. 6d. to [illegible] each.

WELLINGTONIA GIGANTEA,
Stout seedling plants in pots, at 18s. per dozen; larger, 2, 3, 4, and 5 feet, 7s. 6d. to 63s. each.

THUJOPSIS BOREALIS,
by the hundred, 2, 3, 4, 5, 6, and 7 feet high, [illegible] to 31s. each.

HOLLY,
COMMON GREEN, a large quantity of very fine plants, 5, 6, 7, and 10 feet, and bushy in proportion.
" WATERER'S (Variegated), a very compact [illegible] kind, which originated at Knap Hill; many hundred specimens, 3 and 4½ feet high, and measuring 8 and 10 feet in circumference, 21s. to 42s. each and upwards.
" GOLD STRIPED.—The best variety or Queen Holly. [illegible] chasers of this variety may see in our N[illegible] many hundred fine plants, 2, 3, 4, and 5 [illegible]
Other varieties of Striped and Green Hollies in [illegible] quantities and of all sizes, up to 6 and [illegible] feet.

As well as the above, Messrs. WATERER & GODFREY [illegible] that they hold one of the most extensive general Nursery Stocks in existence. Evergreens especially are grown [illegible] large extent, and any one who will take the trouble to [illegible] the Nursery, (40 minutes from Waterloo to Woking) [illegible] satisfy themselves that the statements in this advertisement are in accordance with facts.

Goods can be now sent through from Woking to almost any Station in England without change of truck.

CATALOGUES free on application.

Knap Hill Nursery, Woking, Surrey.

Magnificent Specimens of Coniferæ.

LUCOMBE, PINCE, AND CO., have to offer this ... very large Stock of symmetrically grown ... CHOICE HARDY CONIFERS, all of which have ... care and attention paid to their roots, and having ... transplanted, can without feeling any check be ... perfect safety to any part of the Kingdom. ... Gentlemen, and Landscape Gardeners, requiring ... specimens of Conifers, will find this collection ... attention ... free on application, and will be found ... moderate.

...IA IMBRICATA, 4 to 5 ft., 6 to 8 ft., 9 to 12 ft.
...GLASII TAXIFOLIA, 5 to 6 ft., 7 to 9 ft., 10 to 12 ft.
...DEODARA, 5 to 6 ft., 8 to 14 ft.
...LIBANI, 6 to 8 ft., 10 to 12 ft.
...NORDMANNIANA, 3 ft. 6 in. to 4 ft. 6 in., 6 to 8 ft.
...PINSAPO, 2 to 3 ft., 7 to 8 ft.
...GIGANTEA, 3 to 4 ft.
...INGTONIA GIGANTEA, 3 to 4 ft., 5 to 6 ft.

Exeter Nursery, Exeter. Established 1720.

To Noblemen, Gentlemen, and Others engaged in Planting.

GEORGE BAKER begs to invite attention to the following superb specimens, which are in the finest ...

...CARIA IMBRICATA, 6 feet, 9 feet, 14 feet
...DOUGLASII, 10 feet, 14 feet, 20 feet
...RAITE (Siberian), 6 feet, 8 feet
...US DEODARA, 6 feet, 8 feet, 10 feet, 12 feet, 20 feet
...RESSUS LAWSONI, 5 feet
DISTICHA, 8 feet, 12 feet
... LIBANI, 8 feet, 10 feet
...ESE JUNIPER, 5 feet, 6 feet
... YEWS, 6 feet, 8 feet
...ERUS RECURVA, 5 feet
BEDFORDIANA, 5 feet, 6 feet
... CEPHALONICA, 11 feet
... CEMBRA, 7 feet, 10 feet
EXCELSA, 10 feet, 15 feet
...DIUM SEMPERVIRENS, 10 feet, 12 feet
...IA GIGANTEA, 6 feet
...LINGTONIA GIGANTEA, 5 feet
...MIA LATIFOLIA, Standards, fine
...ODENDRONS, " "
...GAL LAURELS, " "

... offering the above perfect specimens feels assured ... ever may favour him with their kind orders, their ... be fully realised. Prices on application.

American Nursery, Windlesham, Bagshot, Surrey.

FOR SALE, just arrived per ship "Johannes Christian," from the Cape of Good Hope, a large ... of SOUTH AFRICAN TREES, PLANTS, and ... all in first-rate condition, and with their names. ... of the plants are unknown in Europe, and newly discovered. The whole have been collected at considerable ... and trouble by a naturalist of great experience, and ... 100 different sorts of Seeds of the most beautiful ... Plants of South Africa.

For further particulars and orders to view apply to ... & RONALDSON, No 1, Leadenhall Street, E.C.

N.B. Mr. T. T. PROOM, Botanist, will attend daily at 59, ..., between the hours of 10 and 2, to furnish particulars ... show the collection.

Superb Double Hollyhocks.

WILLIAM CHATER has an immense stock of PLANTS ready for immediate SALE.

Seedlings unbloomed, 18s., 25s., or 30s. per 100.
Large plants, with colors, 25s., 30s., or 40s. per 100.
Named varieties, in pots, 12s., 20s., or 40s. per dozen, &c.

Nurseries, Saffron Walden.

Myatt's Early Prolific Ash-leaved Kidney Potatoes.

H. AND F. SHARPE are now taking orders for the above, which has this season proved itself to be the ... and most prolific Potato in cultivation, and as fine in ... as any of the Early Kidney varieties. Having a good ... they can offer them at a low price to the Trade.

Also JACKSON'S ASH-LEAVED KIDNEY, WALNUT-LEAVED KIDNEY, and all the early Round varieties at ... low prices, which may be had on application.

Seed Growing Establishment, Wisbech.

Landscape Gardening, &c.

WILLIAM SHORT begs to announce that he undertakes the Direction of Ornamental Works and ... Designs and Plans prepared.

W. SHORT'S Herbarium contains upwards of 300 select and ... species and varieties of HARDY TREES and SHRUBS.

... tions of Plants selected and forwarded to order.

REIGATE SILVER SAND on Sale.

Reigate Heath, Surrey.

BUDGRIGARS, a great quantity, 20s. per pair; GERMAN CANARIES in full song, and all kinds of Foreign Birds and Cages; DUTCH BULBS, immense quantity at very low prices, Catalogues on application. British and Foreign FERNS, FERN CASES, AQUARIUMS, RUSTIC BASKETS, &c., of every description, GOLD and SILVER ...

...EN, 154, Kingsland Road, N.E., and the Bedford ...atories, Covent Garden Market. Entrance, Centre ...ly.

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11*l.* 11*s.* per Ton for cash.

... LAWSON & SON, 27, Great George Street, Westminster.

LAWES'S WHEAT MANURE for AUTUMN SOWING.

... consequence of the high price of Peruvian Guano, J. B. ... has manufactured a WHEAT MANURE for the present ..., which will be found very suitable for that crop. A ... is now ready for delivery, and it can be obtained of ... LAWES, or through any of his appointed Agents. Price ... at the Factories, Deptford and Barking Creeks.

... the Peruvian Guano direct from Messrs. Gibbs; Nitrate ..., Sulphate of Ammonia, and other Chemical Manures. ...nean and other Cakes at market prices.

... JOHN BENNET LAWES, 1, Adelaide Place, London ..., E.C.; and 22, Eden Quay, Dublin.

THE LONDON MANURE COMPANY have now ready

...PARED BONE MANURE for present use on PASTURES.
...AT MANURE for AUTUMN SOWING.
... MANURE for ditto.
...ERPHOSPHATES of LIME, &c.

... above being in the finest condition. They also continue to supply

...'S PERUVIAN GUANO, NITRATE of SODA, ...PHATE of AMMONIA, and every Artificial Manure of ... value.

..., Fenchurch Street, E.C. E. PURSER, Secretary.

Autumn Sowing.

BLOOD MANURE, for Wheat, Barley, &c., 7*l.* 5*s.* per Ton; ANIMAL MANURE, for Wheat, Barley, &c., 7*l.* per Ton, Cash, in Bags. PREPARED BONE MANURE for Grass, &c.; NITRO and SUPERPHOSPHATES, &c.

All the above, being in fine condition, will be sent to any of the Railway Stations between Hull and London. Carriage paid. RICHARD STEPHENSON, Sculcoates Blood Manure Works, Hull.

N.B. The Blood and Animal Manures are specially recommended to Florists and Horticulturists for Vegetables, Standard and other Fruit and Flower Trees, &c., being the best Manures known for those purposes.

Autumn Sowing.

THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY (LIMITED), consisting of Tenant Farmers occupying upwards of 30,000 Acres of Land.

Chairman.—JONAS WEBB, Babraham, Cambridgeshire.
Managing Director —JAMES ODAMS.
Secretary. – C. T. MACADAM.

Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex.

This Manure has been in use for upwards of 10 years, and has given great satisfaction to consumers. It is specially prepared for Autumn Sowing, and on most soils proves as effective as the best Peruvian Guano.

Orders may be sent to the Company's Agents throughout the country, or direct to C. T. MACADAM, Secretary.

Price 7*l.* 10*s.* per Ton, delivered at any Railway or Wharf in London.

Offices: 109, Fenchurch Street, London, E.C.

40 to 45 per Cent. of Soluble guaranteed. 1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.

Extract of Opinion from Mr. WAY, *January* 23, 1862.

"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."

Extract of Opinion from Dr. VOELCKER, *January* 1862.

"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."

The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.

Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark Lane, E.C., on MONDAY, November 3, at 2 o'Clock precisely, 1000 TONS BOLIVIAN GUANO, containing 67 per cent. of Phosphate of Lime, just landed *ex* "Alboni," in the Victoria Docks.

Catalogues, with analysis and sample, may be had of J. A. RUCKER & BENCRAFT, Brokers, 37, Mincing Lane, E.C.

COCOA-NUT REFUSE.—In this there are Ferns, Begonias, &c., growing at the bottom of a Case (with Cocoa-nuts on the top outside) in the Eastern Annexe, International Exhibition. Read notices of its uses in *Gardeners' Chronicle*, June 28, p. 597; Sept. 6 and 13, pp. 836 and 861. *Journal of Horticulture*, March 25, pp. 514, 519; July 8, pp. 272, 281. Refuse delivered in City of London at 1*s.* 6*d.* per bag of 3 bushels. Larger quantities on lower terms on application to the PATENT COCOA FIBRE COMPANY, Kingston-on-Thames, S.W.

SHORT FIBRE for Orchids and for Drainage, 20*s.* per cwt.

Postage Stamps or Post-office Orders payable to "J. BARSHAM & Co."

BARSHAM'S BRUSHES and MATS are the best and most economical of any that are made, and are sold in every town in the kingdom.

CAUTION.—See that every Brush is stamped "J. BARSHAM'S Patent, Kingston-on-Thames."

EXTRA STRONG TOBACCO PAPER, at a low price to the Trade.

Apply to H. BROWN, Seedsman, Liverpool.

Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1*s.* and 2*s.* per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of GEO. GLENNY, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1*s.* per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. NEAL, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* each.

Wholesale by PRICE'S PATENT CANDLE Co., Limited.

MARQUEES for SALE, for Horticultural Societies, &c., very Cheap.—One, 120 ft. by 40 ft, 60*l.* complete; 160 ft. by 40 ft., 80*l.*; 80 ft. by 40 ft., 40*l.*; 100 ft. by 40 ft., 50*l.*; 40 ft. by 20 ft., 18*l.*; 44 ft. by 20 ft., 20*l.*; and a great many smaller Tents and Marquees, the whole quite complete for use, to be sold at a sacrifice. They are very clean and in good condition, and the large ones are 8 ft. high at the sides and 80 ft. high in centre.

Apply R. RICHARDSON, 99, Euston Road, London.

Notice.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), HORTICULTURAL VALUER, begs to inform his friends and the public that he has REMOVED from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

Glass for Greenhouses.

JAMES PHILLIPS AND CO., beg to submit their prices as follows:—

ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 200 feet, 2¼*d.* and 2½*d.* per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each. Package included.

				3rds.	4ths.
12 by 9,	13 by 9,	14 by 9,	15 by 9	14*s.* 6*d.*	12*s.* 6*d.*
12 ,, 10,	13 ,, 10,	14 ,, 10,	15 ,, 10		
13 ,, 11,	14 ,, 11,	15 ,, 11,	16 ,, 11	16*s.* 0*d.*	13*s.* 6*d.* per 100 feet.
14 ,, 12,	15 ,, 12,	16 ,, 12,	17 ,, 12		
18 ,, 12,	19 ,, 12,	20 ,, 12,	16 ,, 13		
17 ,, 13,	18 ,, 13,	19 ,, 13,	20 ,, 13		
16 ,, 14,	17 ,, 14,	18 ,, 14,	20 ,, 14		

Various other sizes.

GLASS for ORCHARD HOUSES, As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.			
20 in. by 13 in.	Common	13*s.* 6*d.* ..	£0 18 0
20 in. by 14 in.	Superior do.	16 0 ..	1 3 0
20 in. by 15 in.	English Glass	18 0 ..	1 9 0

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11*s.* 6*d.*
8 ,, 6	8½ ,, 6⅜	9 ,, 7	9½ ,, 7½	
		10 ,, 8	10½ ,, 8½	12 6

Boxes 2*s.* each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.

16 oz. 4ths, 1¾*d.*, 2*d.*, and 2½*d.* 21 oz. 2½*d.*, 3*d.*, and 3½*d.*
,, 3ds, 2*d.*, 2½*d.*, and 3*d.* ,, 3*d.*, 3½*d.*, and 4*d.*

London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, London, E.C.

Glass.

THOMAS MILLINGTON, HORTICULTURAL WAREHOUSE, 87, Bishopsgate Street Without, London, E.C. ESTABLISHED 1750.

NEW REDUCED TARIFF.

SMALL SHEET SQUARES

Best. 2nds. 3rds. 4ths. 20*s.* 16*s.* 12*s.* 6*d.* 11*s.* Per 100 feet

6 in. by 4 in.	9½ in. by 7½ in.	14 in. by 10 in.
6½ ,, by 4½ ,,	10 ,, by 8 ,,	15 ,, by 10 ,,
7 ,, by 5 ,,	11 ,, by 9 ,,	12 ,, by 11 ,,
7½ ,, by 5½ ,,	12 ,, by 9 ,,	13 ,, by 11 ,,
8 ,, by 6 ,,	13 ,, by 9 ,,	13½ ,, by 11½ ,,
8½ ,, by 6½ ,,	12 ,, by 10 ,,	
9 ,, by 7 ,,	13 ,, by 10 ,,	

Best. 2nds. 3rds. 4ths. 23*s.* 18*s.* 6*d.* 14*s.* 6*d.* 12*s.* 8*d.* Per 100 feet

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 ,, by 11 ,,	17 ,, by 12 ,,	22 ,, by 15 ,,
17 ,, by 11 ,,	18 ,, by 12 ,,	24 ,, by 15 ,,
18 ,, by 11 ,,	22 ,, by 12 ,,	20 ,, by 16 ,,
13 ,, by 12 ,,	17 ,, by 13 ,,	20 ,, by 17 ,,
14 ,, by 12 ,,	23 ,, by 13 ,,	20 ,, by 18 ,,
15 ,, by 12 ,,	22 ,, by 14 ,,	

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers & others

	Best.	2nds.	3rds.	4ths.	
16 oz.	22*s.* 0*d.*	18*s.*	15*s.* 0*d.*	12*s.* 6*d.*	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

20 in. by 12 in. | 20 in. by 13 in. | 20 in. by 14 in. | 20 in. by 15 in.

GLASS, cut according to size not on the List.

16 oz. 4ths. 1¾*d.* 2*d.* and 2½*d.* per foot.
,, 3rds. 2¼*d.* 2½*d.* and 3*d.* ,,
21 oz. 4ths. 2¾*d.* 3*d.* and 3½*d.* ,,
,, 3rds. 3¼*d.* 4*d.* and 4½*d.* ,,

Various thicknesses of Sheet Glass to the foot.

15 oz. 26 oz.
21 oz. 32 oz.

Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.
Genuine White Lead, 22*s.* p. cwt | Linseed Oil Putty, 8*s.* per cwt.
Anticorrosion Paint, 34*s.* ,, | Patent Dryers, 28*s.* to 42*s.* ,,

CRYSTAL GLASS SHADES. EBONY and GILT STANDS.

HARTLEY'S IMPROVED PATENT ROUGH PLATE.

, Not accountable for breakage.

SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

HAY'S PATENT WATERPROOF GLUE and INDIA RUBBER VARNISH. The WATERPROOF GLUE is most useful to Unite or Coat Wood, Iron and Stone, or Stucco, so as to make them Waterproof. The VARNISH is an excellent covering for Roofs, Fencing, Walls, Canvas, &c., and when applied to damp walls will enable them to be immediately papered or painted over.

Copy of a Letter from Mr. H. HARDING, *Builder, Southsea.*

"I beg to testify that a room in one of the most exposed and damp positions coated by me with the Varnish made by the Patent Waterproof Glue Company, Chandos Street, Landport, is perfectly dry, and the paper has stood well on it for months, and is likely to stand; and this where neither paper, paint, or colour would stand before."

To be had of all Wholesale Ironmongers, Oil and Colourmen, &c.

Manufactory: Chandos Street, Portsmouth, Mr. GEO WEEKS, Manager. GEO. C WARDEN & Co., General Agents, 12, London Street, London, E.C.; where specimens of its application can be seen.

50,000 Dwarf Roses in Pots on their own Roots.
STANDARD, HALF-STANDARD, AND DWARF BUDDED ROSES, ON THE BRIAR AND MANETTI STOCK, IN ENORMOUS QUANTITIES AND IN THE MOST VIGOROUS HEALTH.

WILLIAM WOOD AND SON have much pleasure in directing especial attention to their very extensive and well-grown stock of ROSES, CATALOGUES of which may be had gratis on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses of 1862.

JOHN KEYNES has to offer 1000 very extra strong plants, the finest varieties of the last season, in 6 and 8-inch pots, now ready, price 42s. per dozen, with the usual discount to the Trade.
Fine STANDARDS, of the older varieties, 24s. & 30s. per doz.
DWARFS, 12s. and 18s. per dozen, all of the finest varieties n cultivation. Every attention paid to package, and compensation for carriage.
New CATALOGUES ready.
JOHN KEYNES, Nurseryman, Salisbury.

SUPERB STANDARD ROSES.—The finest plants of Standard Roses to be found in the Trade.

12 plants, in 12 sorts	..	18s.
12 ,, extra fine	..	24
50 ,, ,,	..	60
12 ,, Dwarf budded	..	12
12 ,, ,, extra	..	18

HENRY MAY'S CATALOGUE of ROSES is now ready, and will be forwarded free on application.
The Hope Nurseries, near Bedale, Yorkshire.

Standard and Dwarf Roses.

BENJAMIN R. CANT will be happy to forward on application his DESCRIPTIVE CATALOGUE of ROSES.
As a guarantee of the value of his collection, B. R. C. begs to state that he has this year obtained 17 First Prizes for Cut Roses at the principal Shows.
Very fine vigorous plants of the choicest sorts will be supplied at the following prices:—
Standard Roses .. .. 18s., 24s., and 30s. per doz.
Half Standard Do. .. .. 18s. and 24s. per doz.
Dwarf Do. .. .. 9s. to 18s. per doz.
The NEW ROSES of 1862, Dwarf plants, 3s. 6d. to 5s. each; or, if 12 or more varieties are taken, 30s. per doz.
St. John's Street Nursery, Colchester.
N.B.—B. R. C.'s Catalogue contains nothing but the best varieties; all indifferent and worthless sorts are excluded.

Perpetual Standard Roses, &c.

A. VAN GEERT, NURSERYMAN, Ghent, Belgium, begs respectfully to offer fine STANDARD PERPETUAL ROSES, of the choicest varieties, at 5l. per 100.
A. V. G. has also a fine Stock of PERPETUAL ROSES, on own roots, strong plants, at 63s. per 100.
HARDY RHODODENDRONS, fine named varieties, with three to four branches, 5l. per 100.
GHENT AZALEAS, with flower buds, fine named varieties, 63s. to 84s. per 100.
ASCLEPIAS TUBEROSA, strong flowering roots, 21s. per 100.
N.B. A reference required from unknown correspondents. Orders and small payments may also be addressed to my Agents, Messrs. R. SILBERRAD & SON, 5, Harp Lane, Tower Street, London, E.C., who will forward my new CATALOGUE on application.

IMPROVEMENTS. — Gentlemen wishing to make Alterations or Improvements in PLEASURE GARDEN, KITCHEN GARDEN, LAWN, or PARK, would do well to consult H. LANE & SON'S
ROSE CATALOGUE | FRUIT CATALOGUE, and
TREE and SHRUB CATALOGUE, &c.,
which may be had on application at the Nurseries, Berkhampstead, Herts. An inspection of their Stock is earnestly requested.
(The finest and largest quantity of ARAUCARIA IMBRICATA in Europe.)

Now Ready,

J. DOBSON AND SONS' New and Splendid SHOW and SPOTTED PELARGONIUMS. CATALOGUES free.
The Trade supplied liberally.
Woodlands Nursery, Isleworth, W.

Now Ready,

J. DOBSON AND SONS' New and Splendid CINERARIAS, including Conqueror, the finest of all the crimson selfs. CATALOGUES free.
Woodlands Nursery, Isleworth, W.

Now Ready,

DOBSON'S Splendid New PELARGONIUM QUEEN of WHITES, 31s. 6d., the most beautiful variety ever offered.
The Trade liberally supplied.
J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

Now Ready, all the Leading

CINERARIAS, including the varieties with which we obtained nine First Prizes in the spring of 1862. The plants are strong. Price moderate. CATALOGUES free.
J. DOBSON & SONS, Woodlands Nursery, Isleworth, W.

Now Ready, Post free,

J. DOBSON AND SONS' CATALOGUE of all the Leading PELARGONIUMS, Show, Spotted, and Fancy; CINERARIAS, FUCHSIAS, VERBENAS, &c., at greatly reduced prices.
Woodlands Nursery, Isleworth, W.

RHODODENDRON PRÆCOX is the hardiest Evergreen known; is of dwarf bushy habit, with dark green Myrtle-like leaves; flowers most profusely about April in the open ground, and from Christmas to March in-doors. Certainly the best of Forcing Plants. Price of Flowering plants, 5s., 7s. 6d., and 10s. 6d. each. May be obtained at most of the leading Nurseries, or direct from the Raiser,
ISAAC DAVIES, Larkfield Nursery, Wavertree, near Liverpool.

Andromeda formosa.

W. H. ROGERS, Red Lodge Nursery, Southampton, holds a fine Stock of the above very beautiful hardy Shrub, which produces immense corymbs of blossom like Lilies of the Valley, and evergreen foliage like Arbutus, and is admirably adapted for Lawns, Shrubberies, and American Grounds. Strong bushy plants, 1 foot, 1s. 6d.; 2 feet, 2s. 6d.; and 3 feet, 5s. each; or 15s., 24s., and 42s. per dozen.
RHODODENDRONS, ROSES, FRUIT and FOREST TREES, beautiful specimens of CONIFERÆ, and every other description of Nursery Stock, extending over 60 acres, CATALOGUES of which may be had on application.

Gladiolus Brenchleyensis (True).

YOUELL AND CO. beg to offer this season strong Flowering BULBS of the above, unequalled by any other for its brilliancy of colour, at 3s. 6d. per dozen; or 25s. per 100. Trade price on application, and when quantities are ordered a considerable reduction will be made.
The *Gardeners' Chronicle* of August 23, 1862, says:—"The spikes you have sent us are magnificent. We have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."
CATALOGUES of their extensive Collection, for which the First Class Prize was awarded at the Crystal Palace Show, Sept. 3, 1862, and two First Class Prizes at the Royal Horticultural Society's Show, South Kensington, Sept. 10, 1862, will be forwarded on application.
Royal Nurseries, Great Yarmouth.

To the Seed Trade.—Rhodanthe maculata.

W. THOMPSON, Tavern Street, Ipswich, respectfully announces that he has appointed Messrs. ARTHUR HENDERSON & Co., Pine Apple Place, Edgeware Road, his Wholesale London Agents for the distribution of the above Seed, of whom scale of Prices may be obtained on prepaid application.
The crop being very limited, and a considerable part of it already subscribed for, only early orders can be guaranteed execution.

CHOICE HARDY CONIFERS.

ARAUCARIA IMBRICATA, 1 year, strong, p. doz.		6s.	0d.
CUPRESSUS LAWSONIANA, 1 year, strong,	,,	3	0
,, MACROCARPA, 6 inches ..	,,	3	0
PICEA NORDMANNIANA, 1 year	,,	12	0
PINUS DON PEDRI, 1 foot	,,	9	0
,, INSIGNIS, 6 inches	,,	3	0
,, PONDEROSA, 6 inches	,,	6	0
THUJA ELEGANS or LOBBII, 1 foot ..	,,	6	0
WELLINGTONIA GIGANTEA, 1 year, strong	,,	12	0
,, ,, in 48 pots, 8 ins.	,,	24	0
,, ,, in 32 pots, 1 ft., fine	,,	42	0

The above are all healthy seedling plants in pots, ready for immediate planting out.
J. HENCHMAN, Edmonton, London, N.E.

Cupressus Lawsonia variegata.

JOHN WATERER has the pleasure to announce that he is prepared to execute orders for the above New and desirable CYPRESS. It is a Seedling of his own, raised from imported seed, of golden variegation, quite equal to Chamæcyparis variegata.
Its habit is more bushy than Lawsonia, with a graceful tendency to a drooping form.
It has been exhibited at the Royal Botanic Society's Exhibition, and was awarded the highest Prize for New and Rare Plants.
Good plants, 21s. each. | Good larger plants, 31s. 6d. each.
A few extra large plants, 42s. each.
The usual allowance to the Trade.
The American Nursery, Bagshot, Surrey.

NEW and CHEAP PLANTS.—
The following in Strong Plants by Post or in Pots, &c.
12 NEW FUCHSIAS of 1862.
12 NEW VERBENAS of 1862.
6 NEW ANTIRRHINUMS of 1862.
2 LOBELIA SPECIOSA KERMESINA of 1862.
LISTS of above post free.
100 HARDY HERBACEOUS PLANTS in 50 Varieties, true to name, for 20s. Post Office Orders on Castle Hedingham.
WILLIAM DILLISTONE, Munro Nursery, Sible Hedingham, Essex.

Notice.

B. S. WILLIAMS begs to intimate that the following DESCRIPTIVE and PRICED CATALOGUES may be had post free on application.
GENERAL CATALOGUE, including Exotic Orchids, Ferns, and Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c.
BULB CATALOGUE contains Select Lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladioli, Amaryllis, and many other choice Bulbs, with Hints on their Culture; to which is added a SUPPLEMENTAL LIST of New, Beautiful, and Rare Plants.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

HYACINTHS AND OTHER DUTCH BULBS.

WM. CUTBUSH & SON

Beg to inform their Patrons that the best time for planting the above is during the next three weeks. Their celebrated selections of HYACINTHS can be supplied at 9s., 12s., 15s., and 18s. per dozen.

DESCRIPTIVE PRICED CATALOGUE free by post.

The FIRST PRIZES have been awarded to our COLLECTIONS of HYACINTHS, &c., by the Royal Horticultural and Royal Botanic Societies of London in every instance for the last seven years.

HIGHGATE NURSERIES, LONDON, N.

THE PRIZE MEDAL FOR GENERAL EXCELLENCE OF SEEDS,

INTERNATIONAL EXHIBITION, 1862.

JAMES CARTER & CO.,

SEED FARMERS AND NURSERYMEN,

237, 238, & 261, HIGH HOLBORN, LONDON, W.C.

Collections of HYACINTHS, CROCUSES, TULIPS, NARCISSUS, IRIS, LILIES, &c., from 10s. 6d. to £5. Also PURE AGRICULTURAL and GARDEN SEEDS for AUTUMN SOWING.

The Twenty-Seventh Annual Issue of the "GUIDE for AUTUMN GARDENING" forwarded free of charge on application to

JAMES CARTER & CO., 237 & 238, HIGH HOLBORN, LONDON, W.C.

ROSES, NEW AND OLD.

WILLIAM PAUL

(SON AND SUCCESSOR TO THE LATE A. PAUL),

Can supply all the best ROSES, New and Old, and respectfully solicit early orders to insure good plants.

The following statement will show the number of FIRST and SECOND PRIZES awarded to him at the London Flower Shows during the present year:—

March	19.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
,,	26.	Royal Botanic Society	Cut Roses	FIRST PRIZE
April	2.	Royal Botanic Society	Cut Roses	FIRST PRIZE
,,	9.	Royal Horticultural Society ...	Cut Roses	FIRST PRIZE
		Royal Horticultural Society	Beauty of Waltham	SPECIAL CERTIFICATE
		(A First Class Certificate having been previously awarded for this Seedling.)		
May	21.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
		Royal Horticultural Society	Pot Roses	SECOND PRIZE
,,	24.	Crystal Palace	Cut Roses	FIRST PRIZE
		Crystal Palace	Pot Roses	SECOND PRIZE
,,	28.	Royal Botanic Society	Collection Ditto	FIRST PRIZE
		Royal Botanic Society	Cut Roses	FIRST PRIZE
		Royal Botanic Society	10 Pot Roses	SECOND PRIZE
June	11.	Royal Horticultural Society ...	Cut Roses	FIRST PRIZE
		Royal Horticultural Society ...	12 Pot Roses	SECOND PRIZE
,,	18.	Royal Botanic Society	50 Cut Roses	FIRST PRIZE

PRICED DESCRIPTIVE CATALOGUE free by post.

NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS, N.

Cucumbers.

CUTHILL'S EARLY PRINCE ALBERT.—Very hardy, dark green, great bearer; length 10 to 15 inches, [illegible] and solid, fine flavour, 1s. 6d. 10 seeds. HIGHLAND [illegible]ARY, BLACK SPINE, and LONG WHITE, 1s. each packet. Trade supplied.
Superior MUSHROOM SPAWN, 5s. per Bushel.
J. C.'s Pamphlets always on sale.
[illegible] CUTHILL, F.R.H.S., Camberwell, London, S.

Elymus glaucescens (syn.) sabulosus.

B. S. WILLIAMS begs to call the attention of [illegible] and gentlemen to the above ORNAMENTAL [illegible], it is perfectly hardy, having proved it for several [illegible] with confidence recommend it as being superior [illegible] Grass as an under cover for Game, &c.
[illegible] W. being convinced of its utility, has provided a large [illegible] he begs to offer at the following low prices:— [illegible]; 4s. per 100.
[illegible] Nursery, Seven Sisters and Hornsey Roads, [illegible], London, N.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING [illegible] Fruit Trees of all the leading kinds, new and [illegible] Roses, fine varieties of American Plants, Choice and [illegible], Evergreen and Deciduous Trees and Shrubs, [illegible] Stock of Transplanted Forest Trees, &c., can be had [illegible] application.
Woking Nursery, Surrey.

Notice.—American Plants.

WATERER AND GODFREY'S CATALOGUE is now ready, and will be sent on application; it gives a [illegible] description of all the Rhododendrons and other [illegible] Plants worth growing, as well as a general summary [illegible] extensive Nursery Stock in Europe.
The Exhibition of American Plants in the Royal Horticultural Society's Garden, South Kensington, were supplied by WATERER & GODFREY, Knap Hill, near Woking.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given, that an [illegible] of TWO PENSIONERS on the Funds of this [illegible] will take place in JANUARY next.
[illegible] desirous of becoming Candidates are required to [illegible] their testimonials and certificates to the Secretary, on [illegible] November 10 next. Printed forms of application [illegible] obtained of the Secretary.
[illegible] will be given to those applicants who may have [illegible] Subscribers for upwards of 15 years, but should there [illegible] sufficient number of applicants of that class to fill up [illegible], then the applications of those who may not have [illegible] so long, or not at all, will be considered.
By Order of the Committee,
EDWARD R. CUTLER, Secretary.
[illegible] Tavistock Row, Covent Garden, W.C.

The Gardeners' Chronicle.

SATURDAY, OCTOBER 25, 1862.

SINCE our last two very remarkable foreign collections of garden produce have been received by the Royal Horticultural Society, and are now on show at South Kensington. One is from Turkey and one from Nova Scotia.

The former, which is for the most part agricultural, contains beautiful specimens of the Apple of Amassia, which is probably the Italian Mal Carle, the finest Apple of the Mediterranean, but only ripening well in better climates than ours.

That from Nova Scotia consists chiefly of Apples distinguished for size and the brilliancy of their colours. Among them are Gravenstein, a Danish Apple of the highest excellence for both table and the kitchen—beautiful specimens, far finer than those sent the other day from Denmark and Germany; Blue Pearmain, an excellent variety, not unlike the King of the Pippins in shape, but three times as large, and prettily mottled all over with reddish spots, giving the whole Apple a warm brown aspect. (Of this there is also an example among the wax models of Apples shown from Tasmania.) In the Nova Scotian collection are moreover wonderfully fine fruit of Emperor Alexander Apple, brilliant in colour, and possessing more clearness of skin than it ever attains in this country; King of the Pippins, bright orange yellow, but not larger than English-grown fruit of that variety; Hawthornden, with a blush of red on the sunny side; Corn Apple, a middle-sized bright red variety not unlike the Red Autumn Calville; Golden and American Russets; finely ripened Ribston Pippins; Gloria Mundi, red on one side and singularly speckled with white; Catshead, true; Calkin's Pippin, a variety resembling the Wellington; Morning Star, apparently the same as Pomme de Neige; Nova Scotia Codlin, a large pale yellow Apple; and the American Golden Pippin, a comparatively small yellowish white oval variety, bearing no resemblance whatever to any Golden Pippin grown in this country. Among other Apples were the Baldwin, Early Bough, a yellow fruit, and Esopus, the last a small brilliant red sort. *All these were from open standards.*

Beautiful, however, as these varieties must be admitted to be, that which seemed to possess the greatest interest in the eyes of visitors who inspected them was a sort called Chebucto, the Indian name for Halifax Harbour, a round Apple above the medium size, possessing a skin as white and even more transparent than that of the Pomme de Neige of the French, charmingly flaked and mottled with red. Than this, nothing in its way could possibly be handsomer: associated with it was another carnation-striped variety of smaller size called Nova Scotia Seedling; but though more strikingly flaked than that just named, it is by no means so brilliant or attractive.

Taking into account the badness of Nova Scotian springs, this must be regarded as a marvellous collection, and notwithstanding the distance it has travelled, part of its contents are as fresh, and in as good condition as if they had just been brought from the nearest fruit-room; the Apples came in boxes consisting of little compartments for each variety, which was packed in bran.

Of Pears there are several dishes, but they are much decayed; they are stated to have been packed in moss, the worst possible material.

Grapes are confined to a few bunches of Sweetwater, marked "from the open air; Concord and Isabella, two indifferently-flavoured American kinds, White Nice, Black Hamburgh, and one or two other sorts—fair specimens if cut from Vines out of doors.

Of Gourds there are some good examples; also several dishes of large but coarse Potatoes; very fine specimens of Tomatoes and Onions; good Beet, Mangel Wurzel, Carrots, Turnips, Kohl Rabi, Oats, Wheat, and Indian Corn.

Among other things the collection also contains bottled fruits, consisting of Apricots, Peaches, and Plums, extremely well preserved, apparently in syrup.

What gives this collection especial interest is the example it affords of the excellence of the climate of a Colony which half the world believes to be dismally dreary. Such Apples as these are, and such Pears, Plums, and Apricots as these were, can only come from a country at least as genial as our own. We cannot but wonder indeed that the English markets are not supplied with Nova Scotian fruit; for it is far finer than most of that imported from the United States. Such Gravensteins, such Blue Pearmains, such Chebuctos are rarely, if ever, seen in Covent Garden, where they would make a fruiterer's fortune. Now that such results of climate are before us, it is as well to state what that climate really is. For that purpose we borrow a few passages from Mr. KNIGHT'S Prize Essay on the Colony and its resources, printed in Mr. HALIBURTON'S remarkably good Catalogue of the Nova Scotian department in the International Exhibition.

"The climate of Nova Scotia, though at certain seasons extremely cold as compared with that of England and Ireland, or the south of Scotland, is nevertheless remarkably salubrious. The winter, in its greatest severity, is less uncomfortable than the humid atmosphere of this season in Britain. This is found to be the experience of colonists who have passed the winter months in the mother country.

"While Nova Scotia may boast of its comparative dryness, and the more constant serenity of its sky, it must be acknowledged that it lacks the early genial spring and protracted summer which characterise the climate of Great Britain. The most important points in which the climate of Nova Scotia differs from that of Great Britain are, its higher summer temperature, and the shortness of this season (which, however, is compensated to some extent by a remarkable rapidity in the process of vegetation), and the lower temperature of its winter. The severity and the length of its winter are also compensated by the unexampled mildness and beauty of its autumn, which is frequently protracted to the early part of December.

"The following table will show the annual mean temperature of various localities in Europe as compared with Halifax:—

Latitude.		Fahrenheit.
44° 40′	Halifax, Nova Scotia	43.8
53 23	Dublin	49.1
52 31	Berlin	47.5
49 39	Cherbourg	52.1

MEAN SUMMER TEMPERATURE.

Halifax, Nova Scotia	62.0
Greenwich	60.9
Berlin	63.2
Cherbourg	61.9

"The annual quantity of rain which falls is about 41 inches, of which about 6½ inches fall in the form of snow, making the annual depth of snow about 8½ feet. There are about 114 days of rain, and 60 days of snow, on the average, in each year.

"Spring in Nova Scotia commences in the latter part of March or the beginning of April. This season, it has been already remarked, is neither so pleasant nor so protracted as that of Britain; being characterised by frequent and sudden transitions of temperature. A prominent cause of these changes is the proximity of the masses of ice floating southward from the Arctic, and the Gulf of St. Lawrence, often attended by squalls of snow. The fogs, too, though scarcely extending any distance inland, sensibly influence the atmosphere. Agricultural operations commence in April, and the 'seed time' continues throughout May and part of June. The summer, which comprises the next three months, is moderately warm. Vegetation is rapid—so much so, as to admit of the crops being harvested in August. The autumn season, throughout, is unsurpassed for its healthful, exhilarating atmosphere. There invariably occurs in the autumn a continuance of from one to two weeks of peculiarly mild weather, known as the 'Indian Summer,' which partakes more of the mildness and serenity of the summer season. The winter in Nova Scotia may be said to comprise nearly four months of the year. It usually commences in the beginning or the middle of December, and continues till the end of March. December is sometimes an autumnal, sometimes a winter month. January is remarkable for a thaw; February, for the lowest depression of the atmosphere and the heaviest falls of snow; March, though cold, variable and blustering, frequently affords more days of clear sunshine than April. The winters, however, are variable; sometimes moderate and open; and again cold with less frequent changes. The mean temperature of the spring is 49°; of the summer, 62°; of the autumn, 35°; and of the winter, 22°.

"The Secretary of the Nova Scotia Commission informs us in his Catalogue, sent to the Exhibition, that 'the climate of Nova Scotia is particularly suitable to the growth of the Apple tree. Crop is generally sure and large. Sorts which in England require a wall or espaliers will here grow and thrive in the open orchards as standards. Fruit attains an enormous size; a specimen of 'Gloria Mundi,' sent to England, measured from 15 to 17 inches in circumference.' He states that 'hardy sorts of Grapes will, in the Western Counties, do well in the open air, and even Black Hamburgh and White Cluster have, during the past year, ripened their fruit in the open air. All the best sorts will (under glass, without artificial heat) grow most luxuriantly, and bear better than in England under the same treatment. Mr. Justice Wilkins for several years most successfully ripened Black Hamburgh at Windsor on a stone wall, and in the last year raised on two Vines not more than seven years old, 33 pounds of Grapes, of quite equal flavour to those ripened in a hot-house. The Vines, of course, required careful covering in winter. Mr. Downing, the eminent American authority on horticulture, in a communication addressed to Judge Wilkins, expressed his great surprise at the adaptation of Nova Scotia for the growth of the Grape, and stated that the Black Hamburgh, with similar treatment, would only ripen one year in six at his gardens at Newburg, on the Hudson. The Pear grows vigorously, is very productive, and sorts such as Marie Louise, Williams's Bon Chrétien, Louise Bonne of Jersey, Knight's Monarch, Flemish Beauty, Passe Colmar, Vicar of Winkfield, and other hardy sorts, will, as standards, do exceedingly well—crop constant."

We think this evidence conclusive as to the excellence, instead of badness, of the little known Nova Scotian climate.

THE recent fluctuation in the price of foreign fibres, as for example a rise of 50 per cent. in the price of JUTE and as rapid a fall, added to the excitement at Manchester caused by the supposed discovery on our own coasts, without culture, of a plant which could supply to any amount a substitute for Cotton, has made the subject of fibrous substances, and especially of those which are derived from India, a subject at the present moment of some interest.

We have already stated what we believe to be the sober estimate of the chances or rather the impossibility of any supply from Alva, and we now purpose to consider in order the three principal kinds of Indian fibre known as Jute, Sunn, and Ambaree. They are imported without any very definite distinctions as Bengal Hemp, Brown Hemp, &c., though in fact they have no immediate relation to Hemp proper, which is little cultivated in India except as a drug. Jubbulpore Hemp is the produce of *Crotalaria tenuifolia*, the Dunchee of Bengal of *Æschynomene cannabina*, and varieties of the three principal fibres have occasionally slightly different names when shipped from Bombay or the Madras Presidency. Many other native fibres are collected for particular purposes, as that of *Marsdenia tenacissima* or Jetee for the bowstrings of Rajmahl, while the Patwa or Mawal fibre exhibited in 1851 was supplied by *Bauhinia racemosa*. The three, however, mentioned at first are almost the only ones which are cultivated extensively, and mainly for their fibre, though the plant or plants which produce the Ambaree and both the species which supply the Jute of commerce are also valuable for their esculent properties.

Now it may be said of these fibres in general, that though they may come in aid of the paper manufacturer, they can never without some chemical change be substitutes for Cotton.

All the fibre in the world, unless capable of being worked as Cotton, would not alleviate the present sad condition of the cotton districts; for supposing linen to be manufactured in sufficient quantity to make up for the deficiency, the Flax could not be spun with the same machinery, and therefore as far as cotton spinning goes there could be no immediate relief. If, indeed, Claussen's proposition of splitting up short lengths of Flax fibre by suddenly generating within the bast cells of which it is composed, carbonic acid gas, had been successful, there would have been an important succedaneum. But as that has failed, at any rate for the present, the suggestions of Monsieur C. De Bernard, in a late letter to the Editor of the *Daily News*, to apply the same or some analogous process to Jute and other fibres, are, we fear, unlikely to lead to any speedy good result. If the case were more hopeful, perhaps no fibre would be more likely to succeed than Jute, as from the great length to which it runs it could easily be divided at pleasure.

Jute is the produce of two species of Corchorus, *C. capsularis* and *C. olitorius*, a genus belonging to the same natural order as the Lime tree, which affords the Russian bass or bast. Both these, but especially the latter, are cultivated in India as potherbs, the leaves and tender shoots yielding when boiled a substance like Spinach. As the latter has long been used by the Jews, the vegetable bears the familiar name of Jew's Mallow. The two plants differ very materially in the shape of the capsules, the former having a subglobose or slightly wheel-shaped fruit, while the latter has one extremely elongated, besides which there are strong partitions between the numerous seeds, while in the former the seeds are few, and the partitions imperfect. The cultivation is extremely simple. The seed is thickly sown in the rainy season, and when the plant is up the weeds are simply removed, as thinning would induce branching, which would injure the fibre, and make it difficult to strip. Where pulse is mixed with the Corchorus, as is sometimes the case, the fibre is always of inferior value. When the flowers are expanded, before the ripening of the capsule, the wands are cut off from the base, bound in bundles, and immersed for a few days in water; the bundles being weighted with lumps of mud. The strength and goodness of the fibre depend upon the exact moment being seized when the bark can be easily removed, as the hemp readily passes into decomposition, and though the fibres are more separated from each other, intrinsic value is sacrificed to mere outward glossiness. The strips of bark are washed from their impurities, and after they have been thoroughly squeezed out, hung on lines to dry. A portion is always cut off from the base, which supplies an excellent material for paper making, and it has even been employed in the manufacture of a spirit resembling whisky, by treatment with sulphuric acid.

The worst quality of Jute is that it is so susceptible of injury from damp, under the influence of which a sort of slow chemical combustion takes place which materially damages the colour and tenacity. The rods after the bark is stripped are beautifully white, and supply an admirable material for basket making, and are employed very extensively for the formation of the little hurdles or flakes which are so important in tropical cultivation, and are more especially used to shade the Betel pepper, which would suffer much from the direct rays of the sun.

Jute is so extensively cultivated in some parts of India that there is scarcely a cottage in which it is not hung up ready to be spun at every odd moment, while the labourers carry their distaff on their way to and from the field. The home consumption of the fibre is immense, and in addition to what is exported in the raw state, an enormous quantity is consumed in the formation of the gunny bags which are sent in various directions for holding sugar and cotton. The spent Jute bags are in this country extensively used for paper making. The quality of the Jute has, however, of late years deteriorated much from its original standard; the covetousness of the cultivators inducing them to carry on the process of steeping so long, that a dangerous fermentation takes place, and the fibre loses its toughness. When mixed with Flax or Hemp in the manufacture of sail cloth, as is sometimes the case, the canvas is very inferior, and the whole of the Jute may be removed by boiling the cloth under high pressure, the other fibre remaining behind uninjured.

In its own province Jute is a valuable fibre, but we are firmly convinced that it can never form a substitute for Cotton, or even for the manufacture of a sound serviceable linen, though it may be usefully employed in some coarse manufactures, or for cordage where no great strength is required. It is impossible to say what its quality might be if subjected to Claussen's process, and experiments in that direction are certainly desirable. No greater boon could be afforded to our country, not only for the present distress, but for making us more independent of a supply from the United States, which must always be precarious, and which as in the present instance might fail us at any moment, than the preparation from Flax or other Hemp-like fibres of a substance which might be worked alone or in combination with Cotton, with one and the same machinery. *M. J. B.*

THE NEW ROSES OF 1862.

I have, out of the 80 or 100 new Roses, 34 plants in 24 sorts; 12 of them were presents, the fruits of Rose information, which is always read with interest by the Rose-loving British public. Indeed, I believe that no other floral subject will tend so much to increase the circulation of a floral work. Go to any flower show, and observe where the masses stand. It is round the national flower. Excuse an Harrovian for attempting once more the exercises of youth—

"The Rose, the wild Rose of the hedges, charms the eye,
Much more the Rose attended by man's ministry.
At every gathering of the people, see
How Britons gaze upon its glorious beauty.
How gladly they inhale its delicious fragrance,
Whilst they admire its unsurpass'd elegance.
What other flower is worthier of our care
Than that which blooms so well, so often in the year?
The emblem of our nation let us ne'er disown,
Nor Him who won for us an Amaranthine crown!"

1. *Duc de Rohan* is the A 1 of all that I have yet bloomed. It is clear red and vermilion shaded, without confusion of colours, very bright, velvety, globular, deep, and smooth petalled. A superb Rose.

2. *Prince Camille de Rohan* is rich dark velvety maroon touched with red. It is thick petalled, well folded, an easy bloomer, and sufficiently full. A superb Rose.

3. *Beauty of Waltham* is a deep, smooth-edged beautiful rosy crimson, or, in dry weather, scarlety crimson. A superb Rose.

4. *Alexandre Dumas* is not so large as the above Roses, but is very neat. Its colour is dark crimson, or blackish purple towards the edges. It dies well, a blue black, and is unique. Every shoot has a Rose at the end.

5. *M. Clemence Joigneaux.*—I have two plants of this, so different in foliage—the leaves of one being dense green and the leaves of the other being light—that I can only say (as the dark foliaged one has not bloomed) that the blooms of the other were large, well formed, and splendid. They were red, lighter at the edges, and globular. Further inquiry had better be made.

6. *M. Boutin* is a neat, flat, compact, bright cherry red, lasting in colour, not large here. It shows no eye. It is good.

7. *Comtesse de Seguier* is an abundant and easy bloomer. It is well formed, smooth in petal, and velvety. Its colour is rich red. It wears well, and dies off with pretty venous congestion, called tinted with violet.

8. *Emile Dulal* is a large, handsome, well-formed, flat-cupped Rose, very dazzling. It is scarletised-rose in colour. It will not be a great or late bloomer, but I think it will be "one of the best." I speak of one bloom only of 6 and 8.

9. *Gloire de Chatillon* is a lighter and brighter red than M. Masson, subject like its parent to stain. It is said by some to be the same as M. M. In humid weather they are much the same, but not so in dry. In form and size it is always like M. M.; it is 4 inches in diameter when expanded; I think its habit will be better. I have formed the estimate of it by comparing its blooms with those on five trees of M. Massin, which bloomed synchronously. It is a fine Rose.

10. *Adolphe Noblet* shows an eye, or it would be very good. It is red, full-sized, well-formed, not globular as said, but with incurved petals.

11. *Alphonse Darmaizin* is a medium-sized, full, well-formed scarlety red Rose; an abundant and continuous bloomer, and A 1 for growth and foliage. Though not full sized it will stop in the catalogue.

12. *M. Bernardin* is a globular full Rose, well formed, but it came out in bad weather. It will be a good bearer. Its colour, said to be deep vermilion, was, from the wet, almost maroon. Another year will bring it out in its true form.

13. *Notre Dame de Fourvières*, smooth in wood, is now out. It is a large silvery salmon blush. It is handsome, but from blooming so late the centre is not full, nor are the petals regularly disposed.

14. *M. C. Wood* is a fine red Rose, with deep, large, velvety and smooth-edged outer petals, but she has not yet been quite right in her centre. The reverse of her petals is lighter. It is worth a place.

15. *Robert Fortune* had some beautiful red buds, but something destroyed them. Mr. Turner says it and M. Julie Duran are promising.

16. *L'Eblouissante*, clear red, is deep and smooth in petal (centre did not fill), and promising.

17. *Pourpre d'Orleans* is not purple but purplish red. It came out in bad weather, and I decline to pronounce upon it.

18. *Souvenir de Comte Cavour* (*Margottin*), is a fine deep crimson, darker shaded. The blooms were not good, but when got upon stronger stocks I think it will be very striking, and probably very good. The plants of this and Seguier suffered from mildew, till dressed with blue vitriol and water, which stopped it in every case here, and kept it off others. The proper quantum is 2 oz. to a stable bucket of water. Sulphur out of doors is a farce.

These are all that have bloomed yet. Archevêque de Paris and Richard Smith will bloom some time this month. They are in clean bud, are good growers, and beautiful for foliage. M. Julie Daran and Professor Koch are also beautiful for growth and foliage, but will not bloom this year.

Such, then, is the bill of fare of Roses planted out May 1 in this severe year, and no one can hurt himself much by selecting from the above Roses, which may even please the crotchety and inconsistent man, so well described by Martial in his epigram:—

"Difficilis, facilis, jucundus, acerbus et idem,
Nec tecum possum vivere, nec sine te."

Or,

"In all thy humour, whether grave or mellow,
Thou'rt such a touchy, testy, pleasant fellow,
Hast so much wit and mirth and spleen about thee,
There is no living with thee, nor without thee."

W. F. Radclyffe, Rushton, Oct. 9.

BRITISH ASSOCIATION AT CAMBRIDGE.

We find little more to interest the readers of the *Gardeners' Chronicle* in the recent proceedings at Cambridge. The following however are suited to our columns:—

"On the Zoological Significance of the Brain and Limb Characters of Man, with Remarks on the Cast of the Brain of the Gorilla," by Prof. Owen.—Prof. Owen exhibited two casts, one of the human brain, which had been hardened in spirits, and had therefore not preserved its exact form; but to all intents and purposes it would serve as an illustration of the human brain. The other cast was taken from the interior of the cranium of the gorilla. From an examination of these, the difference between the brain of man and that of monkeys was at once perceptible. In the brain of man, the posterior lobes of the cerebrum overlapped, to a considerable extent, the small brain, or cerebellum; whereas in the gorilla, the posterior lobes of the cerebrum did not project beyond the lobes of the cerebellum. The posterior lobes in the one were prominent and well marked; in the other, deficient. These peculiarities had been referred to by Todd and Bowman. From a very prolonged investigation into the characters of animals, he felt persuaded that the characters of the brain were the most steadfast; and he was thus induced, after many years of study, to propose his classification of the mammalia, based upon the differences in the development of their brain structure. He had placed man—owing to the prominence of the posterior lobes of his brain, the existence of a posterior cornu in the lateral ventricles, and the presence of a hippocampus minor in the posterior cornu,—in a distinct sub-kingdom, which he had called Archancephala, between which and the other members of the mammalia the distinctions were very marked, and the rise was a very abrupt one. The brain, in his estimation, was a far better guide in classifying animals than the foot; but the same difference that existed between their brains was observable between their feet. The lecturer referred to a diagram which represented the feet of the aye-aye, the gorilla and man, pointing out the chief differences in the structure of the skeleton. These differences he considered sufficiently great to elevate man from the sub-kingdom to which the monkeys belonged, and to place him in a distinct sub-kingdom by himself.

Prof. Huxley observed that the paper just laid before the Section appeared to him in no way to represent the real nature of the problem under discussion. He would therefore put that problem in another way. The question was partly one of facts, and partly one of reasoning. The question of fact was, what are the structural differences between man and the highest apes?—the question of reasoning, what is the systematic value of those differences? Several years ago Prof. Owen had made three distinct assertions respecting the differences which obtained between the brain of man and that of the highest apes. He asserted that three structures were "peculiar to and characteristic" of man's brain—these being the "posterior lobe," the "posterior cornu," and the "hippocampus minor." In a controversy which had lasted for some years, Prof. Owen had not qualified these assertions, but had repeatedly reiterated them. He (Prof. Huxley), on the other hand, had controverted these statements; and affirmed, on the contrary, that the three structures mentioned not only exist, but are often better developed than in man, in all the higher apes. He (Prof. Huxley) now appealed to the anatomists present in the Section whether the universal voice of Continental and British anatomists had not entirely borne out his statements and refuted those of Prof. Owen. Prof. Huxley discussed the relations of the foot of man with those of the apes, and showed that the same argument could be based upon them as on the brain; that argument being, that the structural differences between man and the highest

ape are of the same order and only slightly different in degree from those which separate the apes one from another. In conclusion, he expressed his opinion of the futility of discussions like the present. In his opinion, the differences between man and the lower animals are not to be expressed by his toes or his brain, but are moral and intellectual.—Prof. ROLLESTON said he would try and supply the Members of the Association with the points of positive difference between the human and the ape brain. For doing this we had been abundantly shown that the hippocampus minor and the posterior lobe were insufficient. As differentive, they must be given up at last. But as much had recently been done for the descriptive anatomy of the brain by Gratiolet and others as had been done for astronomy by Stokes and Adams, for language by Max Müller, and that this had been ignored in this discussion was little creditable to British science. This analysis of the brain's structure had established as differentive between man and the ape four great differences—two morphological, two quantitative. The two quantitative are the great absolute weight and the great height of the human brain; the two morphological, the multifidity of the frontal lobes corresponding to the forehead, usually, popularly, and, as this analysis shows, correctly, taken as a fair exponent of man's intelligence, and the absence of the external perpendicular figure. This had been abundantly shown by Gratiolet. No reference to these most important matters had been made by Prof. Owen; and this omission could not fail to put the British Association's repute for acquaintance with the works of foreign fellow-labourers at great disadvantage in the eyes of such foreigners as might be present. Prof. Rolleston concluded by saying that if he had expressed himself with any unnecessary vehemence, he was sorry for it; but that he felt there were things less excusable than vehemence, and that the laws of ethics and love of truth were things higher and better than were the rules of etiquette or decorous reticence.—Mr. W. H. FLOWER, looking at the subject solely in the anatomical view and as a question of fact, stated that the result of a considerable number of dissections of brains of various monkeys was that the distinction between the brain of man and monkeys did not lie in the posterior lobe or the hippocampus minor, which parts were proportionately more largely developed in many monkeys than in man, and that if these parts were used in the classification of man and the monkeys the series would be,—first, the little South America marmosets; then would follow the baboons, the cercopithea, macaque; then man must be placed, followed by the anthropoid apes, the orang-outang, chimpanzee and gorilla; and last, the American howling monkey.—Prof. OWEN replied, that Prof. Rolleston had led the meeting to conclude that he had not paid any attention to the convolutions of the brain of mammals, and that the investigation of this subject was the exclusive property of the German anatomists; whereas he might be permitted to state that almost at the very time that Leuret wrote his memoir on this subject, he had delivered a course of lectures on the convolutions of the brain, which, he regretted, had not been published, owing to the pressure of other labours; but the diagrams were still in existence, as his successor could testify, in the Museum of the Royal College of Surgeons.

"A Journey to Harran in Padan-Aram and thence over Mount Gilead into the Promised Land," by Dr. C. T. Beke. In December 1861, Dr. Beke, accompanied by his wife, undertook a journey to Harran, the residence of the Patriarch Terah and his descendants, and thence over Mount Gilead into the Promised Land, by the road taken by the patriarch Jacob, in his flight from his father-in-law Laban. Harran is a village situate at the eastern extremity of the plain of Damascus,—the land of Uz of the Book of Job. At the entrance from the west is a draw-well of great antiquity, which Dr. Beke identifies with the well at which Abraham's steward, Eliezer of Damascus, met Rebekah. Some of the water has been analysed at the Royal School of Mines, by direction of Sir Roderick I. Murchison, and found to contain upwards of 100 grains of solid matter in the gallon. The water of a second well near the former is so impure as to be no longer fit for use, and at the present day the inhabitants obtain their chief supply of water through an artificial canal from the river Barada—the Abana of Scripture. On the first day of the present year, the travellers left Harran on their way to Mount Gilead. They first came to the river Awaj, the ancient Pharpar, forming with the Barada or Abana, the two "Rivers of Damascus," the capital of Aram or Syria; which rivers gave to Aram Naharam, or "Aram of the Two Rivers," its distinguishing appellation. This district, though not incorrectly called "Mesopotamia of Syria," has been supposed to be the Mesopotamia of Assyria, between the two rivers Euphrates and Tigris, whence have arisen considerable errors in Scripture geography and history. When, according to the Scripture narrative, Laban set "three days' journey" between his flocks and those of his son-in-law Jacob, it is reasonable to infer that the latter led his flocks in the direction best adapted for his contemplated flight from Padan-Aram; that is to say, up the left bank of the Awaj. The spot where he so crossed the river would consequently have been at or near Kiswe, a town on the great pilgrim road between Damascus and Mekka; and thence he would have proceeded south over the plains of Hauran. This is the road taken by Dr. Beke; and certainly nothing could so graphically describe it as the few simple words of Scripture :—"He passed over the river, and set his face towards the Mount Gilead." A traveller, however much unacquainted with the country, has only to proceed along the high-road, running straight from north to south over an almost level plain, without a mountain intervening to lead him astray, and he soon sees before him the summit of Gilead, standing out separately and distinctly, and towards it he "set his face." The distance travelled by Jacob before Laban "overtook him in the Mount Gilead" is stated to have been "seven days' journey." Travelling much quicker than the patriarch could have done, it was on their fifth day from Harran that Dr. and Mrs. Beke ascended the side of Gilead, where they soon came to some delicious springs of water in the midst of luxuriant pasturage. At such a spot the Patriarch Jacob, with his wearied flocks and herds, would naturally have stopped and pitched his "tent in the Mount," where he was overtaken by Laban. A few minutes more brought the travellers to the summit of Gilead, where they enjoyed an extensive view over the Promised Land, embracing Mount Tabor, Nazareth, Cana, Tiberias, and other places rendered ever memorable by Our Lord's ministry and miracles. After the reconciliation between Laban and Jacob, it is said that "Jacob went on his way, and the angels of God met him, . . and he called the name of the place Mahanaim." Close to where Dr. Beke crossed the summit of Gilead is a ruin called Mahneh, which may be looked on as representing the spot where the patriarch, on his first coming within sight of his native country after an absence of 20 years, was favoured with this manifestation of the Divine presence. Shortly after leaving the pass of the mountain Dr. and Mrs. Beke came to a cromlech; in form and appearance it is almost identical with Kits-Coty House, in Kent. Thence proceeding down Wady Ajlun, they reached the Ghor, or plain, of the Jordan, not far to the north of Wady-Zerka, the river Jabbok of Scripture, over which the Patriarch Jacob crossed before meeting his brother Esau, and where "there wrestled a man with him until the breaking of the day; . . . and Jacob called the name of the place Peniel." After his meeting with his brother, Jacob, professing to accompany him, journeyed to Succoth, "leading on softly"; and there stopped to "build him an house, and make booths for his cattle;" whilst "Esau returned that day on his way unto Seir." Succoth is generally supposed to be on the west side of Jordan, a few miles to the north of the Jabbok; but the whole context shows that the patriarch, in order to get free from his brother, pretended to be going on with him towards Seir, but stopped all at once, as if weary, at Succoth, whilst Esau unsuspectingly continued his journey. Succoth is accordingly placed by Dr. Beke at a short distance to the south of the Jabbok, on the east side of Jordan, and most probably near the ford of that river, on the high-road between Es-Salt and Nablûs, where is now the ruined bridge known as Gisr Damieh. Crossing here the Jordan, the patriarch would have entered the mouth of Wady Fār'a, where it joins the Jordan from the west, and continuing up the valley, he at length "came to Shalem, a city of Shechem, which is in the land of Canaan, when he came from Padan Aram, and pitched his tent before the city." *From the Athenæum.*

Indoor Gardening.

THE time of year has come when indoor gardens are altogether necessary, and if we have indoor gardens, we ought to have Indoor Plant Cases. Till the present time I have felt rather shy of writing of these cases as strongly as I wished to do, because having been so foolish as to take out a patent for them, I have always since been afraid of praising my own wares. This fear however no longer weighs upon me, as Mr. Gray has been good enough to take the whole affair off my hands, and now I may really write happily of my hobby.

I mentioned as long ago as the spring before last, the experiments that had been made about this sort of warmed plant case: last winter the arrangement at its then best was patented, and now Mr. Gray is giving it the advantages of real good construction, and of many improved details, which I hope will add very much to its popularity.

I, of course, claim my own right of having a great deal to say about it, because I have had the start in so many experiments, and have tried its success for so many purposes. These cases indeed seem to me to meet a great want in plant culture. They have themselves grown up from such wants; and my own experience of them makes me feel quite sure of their real success in supplying the wants of others. It is not for a day or two, or a month or two, that they are useful, but in seed raising and cutting-striking, for growing Ferns and for preserving flowers, and last not least, as the pleasantest of forcing-houses, they really are quite delightful. Many plants will live in them happily year by year. Sometimes we may be doing even different things at once in them, and always we can readily cause them to suit their warmth, &c., to their inmates' wants. Their main principle is the arrangement of a cool and of a heated end. Hardy or greenhouse plants last long in flower at one end in the cool; stove plants and forced flowers come on beautifully in the heat. Are all our plants hardy—then we give no heat. Do our Ferns or flowers, though not wanting heat, damp off—we give heat just for a time to change the air entirely. Are our drawing rooms dried to the highest degree by clear hard frosts and bright fires—we give just a little moist heat, and the dry air knot is cut.

I am forced to be at home always amongst my plants, and seeing daily difficulties, one comes to devise daily remedies, so that I think in the plant case matter my facts are quite reliable.

Of course the adaptations to new plants are incessant: one has to watch and find out what groups will do well together, being fairly similar as to their need of air and moisture; and plants that will not do once, one has to try again till they do. At present my list is a tolerably large one; and for a winter garden the help such cases give seems to me incalculable.

The forcing especially is one of the most thoroughly nice amusements—the very most charming because everything comes so quickly. The Lilies of the Valley, the Sweetbriars, the Wood Ruffe, the Tea Roses, the Hyacinths and bulbs of all sorts and colours, have been my delight to force each year from December to February. My ambition this year is to have Lilies on Christmas Day, and those who saw the great snowy pan of Lilies that was one of Mr. Veitch's "group of spring flowers" last spring at South Kensington, will be quite aware in what style such forced Lilies *may* be. A flower that is every one's favourite is nice to have in perfection, and I suppose the humid air and the shady nooks in which these flowers grow wild may perhaps predispose them to flourish in the cases in the way they do. I calculate on five weeks from the time the points begin to rise till they flower, and then they last for many weeks in their own perfect beauty. There is however no flower I believe, so very difficult to obtain flowering roots of, and out of three dozen pots full I grow some years ago, I had just three blossoms; but I believe that on Mr. Veitch's system the average number of blossoms in each is about 14! It would be well, if only one pot at a time is wanted, to put them to force at intervals of a fortnight or even more. Last year I kept my stock in a cold plant case in a north window, only slightly watered, and from thence I brought them on, one by one, as they were wanted.

The grand thing at present is to fit up a case with green enough. Then you are ready for whatever gems may turn up in the way of flowers, from grand white Camellias to glowing Vermilion Brilliant, (a Tulip most entirely deserving of its name), and from the little Scillas to the delightful Lilies.

I like in the cases anything that connects the group well together. Nothing does better thus than a few well grown climbers; and indeed there is one climber growing in mine quite rampantly, which I am assured does better for growing in rooms than anything. This is the Cissus antarcticus, which I find is the Kangaroo Vine so beautiful in Australia, and so "hard to kill." It is really a most luxuriant and invaluable room plant. In Mr. Veitch's conservatory I am told that it is growing up the ropes of the ventilators, and its large bright green leaves with their sharply serrated edges have been growing most happily in my four feet plant case too. It seems to me indeed a most contented plant, thriving with warmth or without, with much or little air, and not at all particular as to amount of watering. One of these creepers, an Ivy, and a good sized Lycaste Skinneri or some other spreading leaved plant, give masses enough for the standing stock of a plant case the size of mine. Three or four Ferns besides (especially Pteris tremula) and some Lycopodium is enough green, for green's sake. Half a dozen pots at a time of flowers, then make the whole thing brilliant. I must leave till next week the selection of plants for *now*; to-day I must only mention the bulbs that should be potted to come into flower from Christmas time to Easter. Lilies of the Valley, Tulips, including La Candeur, white; Vermilion Brilliant, beautiful rose-scarlet; and for scent the little single Van Thols, should be put in in quantities, to be brought on hereafter in detachments of two or three. Scillas too (precox and sibirica); Crocus (Celestial, pale blue; and David Rizzio, dark purple; with Queen Victoria and La Neige, snow white); and a great many Snowdrops, should at once be potted or placed in sand, in total darkness, to begin to root. Six pots of each kind of Tulip, about 12 of Hyacinths, and six or eight of Lilies of the Valley, Crocuses and Snowdrops, will be found quite enough for three months' winter flowers.

The bulbs in each pot should be all of one colour, and the pots no larger than will just hold the bulbs. I often have three or four Tulips in 4-inch pots, and three Hyacinths in those of about the next size. *E. A. M.*

Home Correspondence.

Vine Pruning.—I have read with much pleasure the second edition of Mr. Thomson's treatise on the Culture of the Grape Vine, but I very much regret that he has been totally silent on two points which appear to me not only the most important and the first which should be decided, but on which the opinion of one with so great an experience as Mr. Thomson would be of the greatest value. The points to which I allude are, first,

which of the two systems of Vine pruning, namely, the rod or the short spur (for I believe the long spur is almost abandoned) is the best, and if, as I expect, the correct answer would be that one is best for some kinds of Grape, and the other for different sorts, then it would be a great desideratum to gardeners and amateurs to have these different sorts pointed out, as being best cultivated some on the rod and others on the spur system. These published in your columns would soon elicit much valuable information, of which we are at present wholly in the dark, each gardener relying not upon ascertained facts, but on his individual experience. The second point is, assuming that the spur system should be decided to be the best—how should the Vines be trained? and although Mr. Thomson gives some valuable information as to the best mode of preparing beds, he is silent on the important point whether it is better to plant one Vine to each rafter, or let the same Vine branch at the bottom and supply its own and one or two rafters on each side. Now, 90 Vineries out of 100 have a separate Vine to each rafter, and it has often occurred to me that such a system is directly opposed to the natural physiology of the Vine, which we know is never more luxuriant, or bears better Grapes, or requires less care, than when both its roots and branches, as in Hungary, Italy, and Greece, have unlimited room. We have also splendid examples in this country of Vines bearing excellent fruit and abundant crops where they have an extensive range, both for branches and roots, one Vine occupying the whole house, the best of which within my own knowledge is that at Sunning Hill; the Grapes of this are far superior to those on the celebrated Vine at Hampton Court. I have heard of many other single Vines covering a whole house, and had an excellent Muscat in my earliest Vinery, which covered the whole of the back wall above 30 feet long; one year it bore 270 bunches, the greater part of good size. In making one Vine serve for three or five rafters, as may be considered best, independent of the point whether such training is not more in uniformity with the natural habits of the Vine, a great advantage would be gained by the roots of each Vine not interlacing with each other, which is invariably the case where one is trained to each rafter, rendering root examination very difficult. My Vineries are lean-to's, and on the back walls are grown excellent crops of Peaches, Nectarines, and Figs, but in the early forced house the back wall should have two or three Vines, instead of the other fruits, and there should be a brick wall underground running the length of the house to separate the roots of those on the back from those on the front. There should also be a brick wall separating the roots of those in front; on these brick walls wood should be laid of sufficient strength to bear a wooden spar floor, which is not only clean and pleasant to walk upon, but prevents the bed being trampled, thus keeping the roots to the surface. *R. W.*

Grape Failure.—Permit me to state my disappointment with respect to my Grape crop. My Vines were not forced until they naturally began to break; there was much bloom, which set well with the promise of a large crop; all went on well till after colouring commenced—and now, when the crop ought to be ripe, many Grapes are sour, others of imperfect flavour, and all shrivelling. I thought the border might be in fault and examined it a month ago, but I found it perfectly dry (too dry as I thought), and the roots running into the ground 3 feet deep. I gave water, but no improvement. The kinds are White Tokay, Black Prince, and Hamburgh; early kinds in a greenhouse did well, and so did Tarner's Hardy under a glass coping. What is the matter? Can any of your correspondents say? *Henry.* [Running into the ground *three feet deep!!* Pro-di-gi-ous. *D. S.*]

Epping Forest Inclosures.—May I beg the favour of your insertion of the enclosed notice of motion by Mr. Torrens, M.P., for an enquiry into this subject, which appears on the notice paper of the House of Commons for next session:—"Mr. Torrens.—Woods, Forests, and Land Revenues.—To call attention to the reports of the Commissioners of Woods, Forests, and Land Revenues for the years 1856, 1857, 1858, 1859, 1860, and 1861, reporting that the Commissioners had sold the rights of the Crown in various parcels of land, situate within the forests of Epping, Woodford, Waltham, and Wanstead; and to move for a Select Committee to inquire what steps either have been or ought to be taken to preserve the rights of recreation and resort to the forests exercised from time immemorial by the inhabitants of the eastern parts of the metropolis, as well as the rights of the poorer foresters, which they have long enjoyed, of pasture, cutting wood, recreation or other rights; and with the view of obtaining compensation (either from the Crown or from those persons who have benefited by the possession or purchase of the various lots particularised in the reports of the Commissioners), for those who had enjoyed or have been deprived of rights of the kind referred to, also for those officers of the forests who by the sale of the rights of the Crown within the forests have been deprived of any emolument or perquisite." *Justitia.*

Bignonia radicans.—Under this name two very distinct species are cultivated in our gardens, distinct in every particular, even the seeds, but I have never been able to get hold of fresh specimens of both at the same time, and should feel very much obliged if any of your Correspondents would enable me to compare them by sending me specimens of what goes in the gardens as Bignonia (Tecoma) radicans and Bignonia radicans minor or major. *Berthold Seemann, 22, Canonbury Square, N.*

Portland Cement.—Permit me to inform your correspondent "N." that in heating a range of houses in my last situation I employed this cement for making joints, and although somewhat doubtful of its durability, I must confess that while I had the charge of the houses in question, after some months of hard firing I never detected the least fracture in any of the joints. At this place we have one range of 10 houses, heated by hot water, but the joints are made with red lead and oakum; these pipes have been in work for some years, and are apparently as sound now as the first day they were put together; it is not always that which is done quickest that is best! Let us, however, hear what others may have to say on the subject. *John Edlington, Crom Castle, Ireland.*

Golden Hamburgh Grape.—The merits of this Grape having been so ably vindicated of late, it is like carrying coals to Newcastle to say anything more in its favour; but having two Vines of it, grafted upon the Black Hamburgh three years ago, I can, from experience, bear full testimony to Mr. Barron's suggestion, that grown in this way—with me at least—it is entirely free from the demerits ascribed to it in your last week's Paper by "*Audi alteram partem.*" The two Vines just mentioned are growing in an early Vinery, along with Black Hamburghs, and receive exactly the same treatment as is usually given in all good gardens, to have Black Hamburghs ripe by the first week in May. The Vines are planted in an outside border, thoroughly protected from cold and wet, and by such means, for the last two years, I have had a first-rate crop of Golden Hamburgh Grapes, the bunches being large, plump, and well-shaped, and averaging over 2 lb. each—several weighed over 4 lb.; the berries were large, of a fine amber colour, and in flavour as good as a Black Hamburgh; in fact, the Golden Hamburgh is a first-class Grape, and the admiration of all who saw and tasted it here during these last two years. *D. E.*

Theophrasta Jussieui.—In looking over some specimens I found a skeleton leaf of this which for years had been mislaid, and which I have long intended sending to you for investigation. In its structure there is a peculiarity which I have observed in no other plant or leaf, nor do I find any reference to it in any works to which I have access. You will perceive that from the midrib in the centre of the leaf there is the ordinary reticulated venation; then there is both over and under another venation of almost a vascular character running transversely from the midrib, the whole being covered by a strong cuticle. The midrib is also covered or made up of masses of long fibre. The fact of the leaves striking root even when cut in half, and ultimately making plants, goes a long way in support of Linnæus's distinction between leaves and fronds. To me the matter seems to rest between a leaf and a flattened branch. *Benjamin B. Billington, Roy Towers, Belmullet, Mayo.* [See Lindley's "Introduction to Botany," 4th edition, i. 254.]

Societies.

Royal Horticultural: (*Second Supplementary Report—Vegetables.*)—The vegetable department of the late great Exhibition having been commented upon by a correspondent at p. 981, it is not necessary for us to be very diffuse on that subject. Amongst the great number of Potatoes exhibited, although several of the kinds were in appearance excellently adapted for a gentleman's table, which is of course the prime object of all garden produce, yet the majority of exhibitors evidently imagined that size, even when combined with coarseness, was of more importance than good quality, and it must be admitted that the Judges in their decision upon the round Potatoes appeared to favour that view of the matter. We allude to this because in some other classes, Onions and Beet for example, the awards must have been made upon an exactly opposite principle; and because further, if these great and instructive gatherings of garden produce are to be successfully repeated, it is most desirable to give the exhibitors as little just cause of complaint as possible.

Class 6 (Onions) was very well filled. The 1st prize was given to Mr. Whiting, of the Deepdene, for large and handsome bulbs of the White Spanish variety; the second went to Mr. Snow, of Wrest Park, for much heavier autumn-sown Onions marked "Globe," but which were evidently the same kind as those imported from Spain every autumn, to which these were in every way equal.

Carrots and Parsnips were poorly represented. It is too early in the year for large Parsnips, and the Carrot crop is in many places a failure, a small grub having preyed upon the roots when the plants were quite young. We are informed, too, that other crops, especially Parsley, were much injured by the same insect.

For Artichokes the time of holding the show was rather too late, consequently most of those exhibited, both of the green and the brown varieties, were too old for use.

Beet was plentiful, though with the exception of three or four lots it was certainly indifferent. Messrs. A. Henderson & Co., and Mr. Cattell carried off the prizes with roots that could not be called more than half grown.

Turnips were numerous and good. Mr. Choyce of Atherstone was first in both classes, and Mr. Ivery of Dorking, and Mr. S. Ford of Horsham, won the 2d prizes. The sorts preferred were the American Red-topped Stone, Green-topped Stone, Orange Jelly, and Snowball; the last the prettiest Turnip of all.

Salsafy and Scorzonera had not come to maturity. Mr. Kaile and Mr. Early sent some shapely roots of the former, and of the latter there were also some good examples.

The Peas exhibited were very good for the middle of October. The best were the produce of Mr. R. T. Crawshay's garden in Wales.

The Cabbage tribe was not so well represented as might have been expected. There were, however, some respectable Brussels Sprouts from Mr. Scrymgeour and Mr. Whiting, and Borecole from Mr. Cattell and Mr. Ivery. Most of the specimens in these two classes were potted for the occasion, a method which not only showed the plants off to better advantage but also kept them much fresher. Savoys generally were not good; those to which the 1st prize was given, were, however, a very even well-matched lot of the Victoria variety, seed of which was distributed last spring by the Society. The only noticeable Cabbages of other kinds were a fine lot of the Red variety from Mr. Choyce.

Chinese Yams had not nearly attained their full growth; nevertheless, fair-sized specimens were exhibited by Mr. Ivery and Mr. Tilyard.

In Celery Mr. Lidgard, of Hammersmith, was the most successful exhibitor. Both the present and the last seasons have been particularly unfavourable for the growth of this esculent, the small maggot which preys upon its leaves having been unusually prevalent. A dwarf flat-stemmed Celery, originally introduced from France by the Society, and which has acquired the name of "Incomparable" in this country, is now cultivated by many gardeners in preference to the taller kinds.

Endive was not largely shown, probably because Lettuce is yet the chief ingredient in salads; and we heard some surprise expressed that the Society had not offered prizes for Lettuces.

Cardoons were not good. This vegetable, like the Yam, requires a genial summer to bring it to perfection, and it has besides, it is said, an unaccountable tendency to run to flower this year. The best were disqualified through being deficient in number.

Mr. Young, of Highgate, sent a basket of good Mushrooms, in the growth of which he is always most successful.

In the Miscellaneous Class was a remarkably fine dish of Truffles, sent from Kettering by Mr. J. Wainwright, gr. to W. C. C. Thornhill, Esq., concerning the production of which we would be glad of some information. Will Mr. W. kindly say how they were obtained? There were also some good Cucumbers. Egg plants and Tomatoes, growing in pots, were likewise exhibited by Messrs. E. G. Henderson. The Tomato was said to be a new sort; in the fruit, however, it was not materially different from the common variety.

A specimen of the famous Arracacha, the Parsnip of Peru and Bolivia, was shown by Mr. Linden, who does not, however, seem to have been more successful than others in its cultivation. The experiments with this root in the Chiswick garden, 30 years ago, led to the conclusion that it could not be cultivated to any useful purpose in Europe; and the new attempt in Brussels confirms the opinion.

Entomological: *September* 1.—J. Lubbock, Esq., F.R.S., Vice-President, in the chair. Mr. F. Bond exhibited Sphinx Nerii, taken at Hastings on August 2; Tortrix (Spilonota) oppressana, *Tr.*, taken on Poplars near London in June last; and Tinea confusella or nigripunctella, a species new to Great Britain. Mr. Stainton exhibited a living specimen of Zelleria hepariella, one of the Tineidæ, showing its remarkable attitude when at rest, the hind legs being elevated at the sides of the body. He commented on the confused synonymy of the species, and likewise furnished a list of the entomologists of Canada, 36 in number. Miss Ffarington communicated a note on the habits of Ptinus hololeucus, which had occurred in prodigious numbers in an old grocer's shop in Preston during the present year, infesting the furniture and eating holes in the clothes of the inhabitants. Sir J. B. Hearsey exhibited a variety of rare Indian insects. Mr. Lubbock gave an account of the movements of Polynema fuscipes, a minute Hymenopterous insect of the family Mymaridæ, which he had taken with a net, swimming by means of its wings in a pond beneath the surface of the water. Another species of the genus was known to be parasitic in the eggs of the common white butterfly. Mr. G. R. Waterhouse exhibited seven species of minute Staphylinidæ, belonging to the genus Homalota, new to this country; and the Rev. Hamlet Clark described four new species of Hydroporus, one from Spain and three British. Professor Schaum, of Berlin, read the description of a magnificent new species of Scaritidæ from Laos (Siam), under the name of Scaritarchus Midas.

October 6.—F. Pascoe, Esq., F.L.S., in the chair. Mr. S. Stevens exhibited specimens of the blind beetle, Adelops Wollastoni, which he had taken in considerable

numbers under dead leaves of Rhubarb, at Hammersmith; but only in those spots where a species of Iulus was also found. A similar circumstance had also been observed by the Chairman. Mr. Desvignes exhibited a very remarkable variety of the painted lady butterfly, taken on the sands at Margate in July. Prof. Westwood gave an account of the state of the Turnip crop in Oxfordshire, and various other Midland counties, where the leaves had to a great extent died off, owing, as was alleged, to the attacks of myriads of small green flies (Aphides), and which had been succeeded by a minute white Fungus, which had spread over the foliage. He also exhibited portion of a collection of specimens formed by Mr. S. Stone, of Brighthampton, and presented to the Oxford University Museum, illustrating the habits of many species of insects of different orders which mine within the leaves of different trees and plants. Mr. F. Moore exhibited a specimen of the Kolsarra silk moth of the Deccan reared in this country; also drawings of the transformations of the remarkable moth Epicopeia polydora, communicated by Captain Hutton from Mussooree. General Sir J. B. Hearsey exhibited a case of Homopterous insects from Darjeeling in the Himalayas. Mr. Newman read some notes upon the ravages of the larva of Zenzera Æsculi upon Ash plants used for Hop poles in Kent. Dr. Baly stated that Pachyta collaris was also very destructive to Hop poles, and Professor Westwood had reared Clytus Arietis from Hop poles communicated by Captain Cox. Mr. Stainton sent some notes on a species of Micropteryx reared from Hazel leaves by Herr Kaltenbach. Professor Westwood made some remarks on the misapplication of the rule of priority in nomenclature in the case of insufficient or inaccurate descriptions, and also on the value of typical specimens in collections, and the advantages as well as duty of consulting them, where practicable, by subsequent describers. Major F. Parry read descriptions of a number of new species of Lucanidæ, and the Rev. Hamlet Clarke described various new species of Haliplidæ and Hydroporidæ.

Notices of Books.

Three Cities in Russia. By Prof. C. Piazzi Smyth, F.R.S. Lovell Reeve & Co., 1862. In 2 vols.

This is a very disappointing book; all the more so that it bears the name of one who ranks so high amongst scientific men, that we can but regret that he should have wandered from his proper sphere to undertake a task in which we must in honesty say he has failed. The "three cities" he has described are St. Petersburgh, Moscow (or Moskva, as he prefers to spell it) and Novgorod; and our impressions respecting each remain much what they were before commencing these volumes. What new information he gives us is so mixed up with digressions on politics, history, geology, astronomy, &c., that it was with a feeling of relief that we closed the last page; while the ponderous, semi-jocose, semi-Carlylean style is both wearisome and irritating, and tempts us to enquire the author's meaning of the following passage:—

"Not though, if we had the gift, would we attempt it in that light and jocular style which would tend to make the whole affair look over easy or falsely amusing, and something contemptible also; for we are happy to assume that our readers, whatever may be their special walks or occupations in life, have souls as desirous as our own can be for truth and fact; and are as capable of appreciating scientific principles and results, when divested of the numerous professional technicalities by which they were first discovered, and confident are we too, looking to the large amount of subject in the matter before us, that if only some kindly indulgence be extended for a time to our imperfect attempt at narration, the reader's graceful act will be found not altogether unrewarded in the end."

Had Prof. Smyth been less ambitious, his book would have been better: had he given us a short account of what he saw and did in Russia, interspersed with a few of the photographs of which he speaks so much, we could well have dispensed with the long extracts from Russian history, and the wearisome discussions on uninteresting topics, which unavoidably suggest the idea of having been introduced (if not manufactured) to swell the volumes to the required length.

Probably those who understand anything of astronomy, will find an interest in those portions which relate to that science, as it is naturally there that Prof. Smyth is most at home, and he endeavours to give his readers an insight into the methods employed by the Russian astronomers, showing wherein they excel or fall short of our own. On the whole, he gives great praise both to their instruments and to their mode of using them; considering them to be in some respects decidedly in advance of ourselves. Perhaps the following example of their superiority is as good as any, especially as it possesses the merit of brevity: but although quoting it as it stands, we cannot refrain from hinting that the speech of M. Struve must have been composed after the event, since iron-plated frigates were unknown at the time of the Russian war!

"Now M. Struve's own distance-measuring instrument depended on no such varying and distant base line as that just described, but on its own length, which was a constant, evidently capable of being determined with the greatest precision: and its action was thus:—When you looked at any object transversely through one end of the instrument, certain reflectors gave you a view of the same object as seen from the other end also. Hence resulted optically, two images of everything you looked at; and these images were always separated by a quantity precisely equal to the apparent length of the instrument itself, as it would be seen from the place of the object under observation. The measure, therefore, of the separation of these optical images became equal, on a certain scale, to a measure of the distance of the object from the observer; and thus, this desired result of distance was quickly arrived at, and without any assumption of the nature or size of the object observed: while the method was equally applicable by night and by day, if only a spark of light, or anything with a definite edge, or portion of an edge, were visible in the field of view.

"Such then was the distance-measurer, devised and constructed by the Russian astronomer, for improving the accuracy of fire in the guns at Cronstadt.

"But was it used there?

"Well, thereby hangs a tale. The inventor urged the employment of the new instrument on the war-office of his country, but was always told that present methods were good enough, and no others were wanted. He pressed the authorities therefore with the case of an enemy's ship, holding her men concealed, and coming up slowly with designs of mischief, to one of the forts; how would they then, at any particular instant, determine the distance?—Oh, they would fire a shell or two and find out by the drop.

"'Why, the expense of one firing,' returned the astronomer, 'from one of your large guns would supply every fort in Cronstadt with a distance-measurer! And will one firing be enough? Can you always see where your balls go to, say at night, when you want to pitch your shot just into the ports of an iron plated frigate: and when, if you don't succeed in sending them into those small openings, all your expenditure will do her no harm, and your country no good.'

"Then the astronomer followed up that reply by getting one of the officers out to the Observatory on a dark night, and there showing him in a telescope, pointed to that straight road we have so often mentioned as leading right away to St. Petersburg, a single distant carriage light, with the request, 'Will you oblige me by telling me the distance of that light?' But such a question was declared to be absurd: for a single light, of unknown size and intensity, just seen looming through the darkness and snowy haze, without anything to compare it with, gave no recognised means of mensuration. 'Then you shall see,' responded the astronomer, 'how easily my distance-measurer will solve the problem,' and in half a minute the distance was stated in national sajenes; and in a few minutes more, by a second and third measure, it was proved which way the carriage was moving, to or from the observers." It remains to be stated that M. Struve's ingenious invention was not adopted, for the following amusing reason:—"They began by laying down the dogma, that any really good modern invention in Russia must have long since been discovered in England; and if discovered there would, as an equal matter of course, have been brought into use by the British Admiralty. They had then, therefore, only to inquire whether any instrument like M. Struve's was presently employed in English men-of-war; and having found on inquiry that no such apparatus was now-a-days known there, they considered themselves to have arrived, logically as well as commendably, at an undeniable proof that the distance-measurer of the astronomer of Pulkova was not, and could not be, a good or useful invention." The Grand Duke Constantine had, however, a higher opinion of the genius of his countryman; and on hearing of the invention, took the matter up, and after due investigation, "at once empowered the astronomer to construct a large number of his absolute distance-measurers for use in Cronstadt."

But the adjustment of a transit, or the separation of a double star, probably not being of peculiar interest to ordinary readers, we will leave the astronomical chapters to the tender mercies of scientific judges, and endeavour to find something more generally attractive. Perhaps the following description of a Russian Hotel may prove amusing:—

"Towards the street was a large façade of plastered wall, pierced with rows of well-formed windows; while below and on one side was a carriage gateway, cut apparently through the house, and leading by an uneven granite-boulder pavement, assisted by two stout wooden rails for carriage wheels, to an inner court. Here we were received by a tall Russian man in a long green great-coat, the 'Suisse' of the establishment, as he was expressly stated to be by an inscription on the door of the little side-room that formed his abiding place when off guard—'Suisse,' though he could not speak a word of anything but Russ. A waiter, however, with some French, was discovered before long—a garçon of 65 years of age, and the hotel-proprietor condescended to come with German; so arrangements were soon made, and we were presently ushered through the court-yard, a deeply-enclosed place, with lodging-rooms all round, and a block of lodgings in the middle; led on we were over the paved and puddly surface of one part, and skirting other puddles by treading along the planked side-path in another part of the court, scaring flocks of beautiful doves, and at last into an open doorless doorway, up two flights of broad staircase constructed of the soft greasy limestone from the south; then through long passages, angular, dark, and smelling atrociously of tom-cats; and finally, doubly unlocking a door with lever brass handles, and then another, we debouched into a little suite of rooms, the whole of which was to be ours. . . . Left alone for awhile, we looked round, and were well pleased with our quarters, consisting of an entrance and passage, a sitting room, and a bed-room, both of them well lighted, airy, and tall. The furniture of the sitting room was tasty, for besides rosewood chiffoniers and lofty mirrors, there were both silk-stuffed arm-chairs and a high-backed sofa, combining more elegance of form, in their well carved wood-work, with substantial comfort, than almost any specimens of such things we remember to have seen at home. The floor was carpetless as usual in Russia, but clean, painted, and polished; all the tables and chairs on castors; and each room, and the passage too, were supplied with Russian stoves—huge built-up affairs, like young martello towers."

How Prof. and Mrs. Smyth learnt Russ, bought a Samovar, and further solved the difficult problem of living economically in St. Petersburg, we have not space to quote; we prefer rather to extract a notice of an article of food, more largely used on the Continent than with us; namely, Mushrooms. "These, kept often in huge glass jars, sometimes in immense barrels, while rather revolting to look at, are most worthy of a moment's attention. How we had rejoiced, while staying at certain houses here, whenever Mushrooms were introduced at dinner; they were food fit for an emperor, and were served out without stint. In England the mere mention of Mushrooms brings up the idea of a wealthy gourmand making researches in theoretical gastronomy to please an over-indulged palate; but in Russia, while equally good, they are in such prodigious quantities as to form a great part of the food of the whole people. An accurate return of the total quantity of these plants annually consumed in Russia would be a startling and important document, but is not likely to be procured, for the greater part is eaten by the same peasants who gather them, and who, besides feasting on them all through the season, pickle, salt, and dry them on strings against the winter period; when fried with a little Hemp oil, and eaten with Rye-bread, they supply well the place of animal food; but if, with a little more art they be fried in sunflower oil, then there are some 'Mushroom cutlets' which look and taste very much like the same preparation of chicken. The acquisition of this most notable stock of nutritive human food depends not on Russia being richer in species of Agarics than Great Britain, for it is the contrary—but in the extraordinary skill of Russian peasants in knowing how, when, and where, to look for them, how to distinguish the edible from the non-edible, and how to cook them when procured. This skill is a something handed down traditionally from parent to child; and if it could be written in words, would prove a valuable addition to what scientific botanists yet know in the matter; for many Mushrooms never ventured on in this country are daily used by all classes in Russia, and others which are really so bad that they cannot be eaten, and some actually poisonous, are yet occasionally employed to profit in furnishing an aromatic alcohol."

We have not alluded to the Professor's object in visiting Russia, for it is only slightly noticed as being of a scientific nature; neither have we attempted to give any account of his travels; seeing that they only consisted of a railway journey to Moskva, and a similar one, varied by performing part of the way by steamboat, to Novgorod. Indeed both travels and book are of the slightest, and we can only hope that the author's scientific gains outweigh in value the more general information he has communicated to his readers.

Select Orchidaceous Plants. By R. Warner. Part II. Lovell Reeve, folio.

The present Number of this fine pictorial work contains the following plants:—*Trichopilia crispa marginata*; *Lælia gigantea*, a very superb species from Brazil; *Odontoglossum nævium majus*; and *Cattleya Warneri*, a most beautiful plant, exquisitely drawn by Fitch, but certainly a mere variety of *Cattleya labiata*.

Trade Lists Received.—Charles Turner's *Catalogue of Fruit Trees, Roses, Coniferæ, Hardy Trees, Shrubs, Climbing Plants, &c.*; also his Select Lists of Pelargoniums, Cinerarias, Azaleas, Carnations, Picotees, Pinks, Auriculas, &c., cultivated at the Royal Nurseries, Slough, and Salt Hill.

Miscellaneous.

Mackenzie River Foxes.—Foxes are very shy animals and difficult to tame, indeed when old they appear to pine away in confinement; when young they are playful, but at all times rather snappish. They are far from sociable and generally burrow alone, although it is not uncommon for the members of one family to live together. The fox-burrow or den is often many yards in length, with various ramifications and side galleries to it, in the centre of which an excavation

rather wider than the passages, serves for the sleeping apartment. To this there are always two entrances and often more. The den is kept very clean, and in some dozen which I have opened, I found neither bones of animals nor offal of any kind. To dig out a fox, a flat piece of iron called an earth-chisel, is tied to a stout wooden handle, the trapper inserts a long slender pole of willow, or other flexible wood into the entrance, having stopped up any other that exists, to find the direction in which the passage runs. He then digs another hole and inserts his pole, finding with its point whether any other passage exists, and if so, marking the direction. In this manner he proceeds till he digs to where the fox is, who is generally killed in one of the side galleries, or close to one of the closed entrances. This method of killing a fox entails a large amount of labour, as it often takes a whole day to unearth the animal. Of all the natural gifts of the fox, the most remarkable is his exquisite sense of smell. When the fox finds a piece of meat or fish he almost invariably hides it, and returns to eat it at some future period. I have remarked this trait even in cubs which I have reared in confinement, and which used, previous to eating, to dig holes in the snow to bury their food, pushing the snow with their noses to cover it. During the commencement of summer he will lay up a store of the eggs of wild-fowl, for his winter's consumption; these he deposits in holes dug in the sand bars of the river, or in beds of moss, and at the expiration of several months will, when pressed by want, visit his *caches*. Even when there are several feet of snow on his deposit, he will readily distinguish the place by scenting his urine, with which a fox invariably sprinkles in a liberal manner all his secret hoards. This animal is by no means choice in his food; mice, birds, hares, fish, carrion, all come alike to him, and he will even make a meal of a fellow fox, if he find one dead in a trap. In summer a great number of young water-fowl are killed by him, and when musk-rats are, by the freezing up of their houses, driven to migrate in the winter, he devours them without mercy. *Canadian Naturalist*, vol. vi., p. 17.

Wash for Aphides.—Take ½ lb. of the strongest smoking Tobacco, boil it in 2 quarts of water, until it is reduced to 1½, then dilute it with 9 quarts of water in which soot has been previously mixed. Then add about a quarter of a peck of quicklime, stir it daily for eight days with a wisp of straw, strain it through a piece of canvass (not too thick); this will render the fluid so clear, that when used, it will pass through the finest watering-pot without choking up the rose. I have used it for Pelargoniums, Verbenas, Roses, and Calceolarias, without their being in the slightest degree injured by it. *From the Verhandlungen des anhaltischen Gartenbau-Vereins in Dessau.*

Venomous Flies.—Cases have lately been frequently cited in the French papers of persons becoming exceedingly ill, and even dying in consequence of the stings of venomous flies, the venomous quality being contracted by the insect from putrid substances on which it has settled. Near Soissons a shepherd lately died in four days in consequence of one of these bites or stings. He took no heed of the first inflammatory symptoms, and when he applied to a doctor it was too late. Two other persons in the same neighbourhood were similarly attacked, the symptoms being great swelling and inflammation, but fatal results were not anticipated. Some of the French provincial papers have published strong recommendations to all persons who may be stung by suspicious flies or insects to resort at once to a medical man, who alone is able to judge how far the apparently trifling injury may be serious. The propriety of burying all carrion and putrid substances is also strongly urged as the surest means of obviating such dangers. *Times.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Plants getting past their best should be replaced at once by something of a more showy character. When the principal collection of Chrysanthemums comes into bloom a selection should be made of the best and most useful sorts, for there are many worthless varieties in cultivation, and it is better to grow duplicates of really good kinds than to retain such as are but indifferent, merely for the sake of having a long list of names. Give timely attention to providing a succession of bloom with which to keep this house gay, and avoid as far as possible the expense of forcing, which is injurious to most plants. Be careful not to let things in bloom suffer for want of water, giving weak clear manure water to Chrysanthemums, Salvias, Camellias, &c., and use every means to preserve the beauty of specimens in bloom as long as possible. Damp and mildew are the great enemies to be guarded against at present in conservatories and greenhouses, and these must be sharply looked after, especially in the case of plants that have not ripened their growth well, and are in a rather soft state. If damp is troublesome it must be got rid of by means of free ventilation on mild days, using a little fire-heat at the same time, and for mildew a dry airy atmosphere is the best preventive, but the plants should be frequently examined, applying sulphur on the first appearance of the evil. Very little water will be required here at present, but the plants should be carefully looked over about twice a week, so as to make sure that nothing is allowed to feel the want of it. If not already done, get plants tied into proper form with the least possible delay, for it is difficult to tie a plant so that it will not look somewhat stiff and unnatural, and the sooner all this kind of work is done the better the specimens will look when in bloom. If Mignonette to stand the winter has not yet been sown, that operation had better now be deferred till spring, when a little put in early will bloom nearly as soon as that sown now, and the difficulty of wintering it will thus be obviated.

FORCING DEPARTMENT.

Pineries.—Plants in bloom will require very careful management to prevent their being injured by damp, and the atmosphere must be kept dry, with a rather brisk temperature, admitting a little fresh air on every favourable opportunity; and if there is, as there should be, a proper ventilating apparatus or the means of admitting air over the pipes, so that it may get warmed before coming in contact with the plants, a little should be admitted constantly. Plants in bloom should also be near the glass, and where they will catch every ray of sunshine. It is nearly impossible to get fruit to swell anything like properly at this season, therefore unless a succession of ripe fruit is indispensable, and cannot be secured except by driving plants that bloomed late, these had better be kept rather quiet until spring. Where an attempt must be made at present to get fruit to swell, a moist warm temperature of about 70° at night and 75° by day must be maintained, allowing it to rise to 80° with the assistance of sunshine, and the bottom-heat must be kept regular at about 85°, taking care to keep the soil in a healthy state as to moisture. But it is difficult to get the fruit to make much progress at present, and a little time lost now will be easily overtaken in spring, when the plants will enjoy a high moist temperature, and the fruit will increase more in weight in one month then than in two at present.

Vineries.—As soon as the early house is closed for forcing, be careful to secure a thoroughly moist state of the atmosphere by frequently sprinkling the floors and every available surface, but as observed previously, a regular moist state of the atmosphere is most effectually secured by means of a slight bed of fermenting materials in the house, which will also afford a little warmth, and the moisture from this is much more congenial to vegetation than anything that can be effected by the most careful use of the syringe or evaporating pans.

FLOWER GARDEN AND SHRUBBERIES.

The weather is still favourable for executing alterations; and where these are in hand they should be prosecuted with the greatest possible despatch. Planting, or the removal of large evergreens, cannot be finished too soon; for it is of the utmost importance that the plants should be afforded some chance of making fresh roots before the trying winds of March set in. See to even small plants being secured against wind; for these are often greatly injured by being blown about after planting, which a small stake and a few minutes' work would prevent. Get in a stock of Briars for budding upon as soon as the leaf is down. Let the roots be well trimmed, cutting back closely the strong ones; for these, if left, will be of little use except to furnish an endless supply of suckers. Choice things in the parterre can no longer be depended on as to display; it is therefore desirable at this period to look over the masses and beds and see if there be any choice article of a tender character which it is desirable to secure for next year; such may be potted with balls and wintered in a cold pit. As the winter approaches, protection of some kind should be provided for plants and shrubs of tender character; almost any material is eligible, provided it will, in a considerable degree, throw off wet. Canopies for this purpose should be so contrived as to admit of one or two sides being opened at pleasure. If only one, it should be placed on the north or west side—certainly not on the south; as the excitement occasioned by fits of sunshine is apt to prove very prejudicial. The covering, or canopy, should by no means be allowed to touch the plant; and the greater the space allowed between it and the plant the better will it afford protection. It is bad practice to bundle the shoots together like a broom in order to make them occupy a more limited space; such may save trouble and material, but is a most injurious proceeding. More injury is occasioned by confined damp, in a majority of cases, than by lowness of temperature. Hoodings of straw, so formed as to overlap the protecting material beneath, are very good and simple protectors, and if rightly contrived, may be removed with as much facility for ventilation, as the top of an ordinary handglass. Oil-cloth will make a good protection also, formed into a kind of cone, on the sides of which a small flap or two may be made to open without admitting rain. Before the application of any top-covering, we would advise an inch or two of the surface soil around the collar to be removed, and replaced with dry cinder siftings—the newer the better, or where it can be had, Cocoa-nut refuse. This last should be piled as high up the stem as the plant will admit, taking care not to choke too many of the lower leaves, and if the canopy is so contrived as to overlap this mound, the covering will be complete. The only thing that remains is to give air in favourable opportunities, avoiding particularly cutting winds, which in all probability do more harm than frosts. Planting of Bulbs must now occupy attention. For Gladioli choose a warm thoroughly-drained situation, work the soil well by deep digging, and add plenty of rotted manure, elevate the bed or patch a few inches above the general level, plant the bulbs 5 or 6 inches deep, and 6 inches apart, surrounding them with 1 inch of sand before covering with mould; protect, during the winter, against excessive wet and frost, with a thick layer of sawdust, old tan, dry litter, an old carpet, thatched frame, or tarpaulin; the three latter coverings must be removed during favourable weather, and the former coverings entirely cleared off when the plants appear. In small gardens, where the ground is required for spring flowering bulbs, plant two or three in a 6 or 8-inch pot, and treat as recommended for Liliums; immediately the beauty of the spring flowers is over, prepare for the reception of the Gladioli; in planting out, great care must be exercised in removing them from the pots, not to disturb the roots. In wet, cold soils, the bulbs would be safer if stored in pots during the winter, and planted out in May. When done blooming, the bulbs may either be lifted in patches, potted and treated, during the winter, as already recommended, or allowed to remain in the ground, and protected as described above; established patches produce a finer display than the bulbs would if annually disturbed and broken up.

HARDY FRUIT AND KITCHEN GARDEN.

If any transplanting or root pruning of fruit trees has to be done let this be attended to as soon as the leaves are off, and see that those exposed to wind are securely staked before leaving them. Also get the ground prepared for fresh plantations. Give air freely to Lettuce and Cauliflower plants under glass; indeed, the sashes should merely be used to throw off rains, for the plants will do all the better for being kept hard. A sowing of Peas on a well sheltered dry border may soon be made, and do not spare the seed, for it will be some time exposed to the depredations of mice. Take advantage of the first sunny day that may occur with the ground in a dry state to earth up Celery. The Mushroom beds, made as directed in September, will now be bearing; it is a good plan to sprinkle or syringe the surface of the bed, a week or so before the Mushrooms make their appearance; more especially in Mushroom houses where a fire may have been used occasionally: this is far better than watering after the Mushrooms are through. The water, however, must not be allowed to penetrate the manure—merely to soften the soil.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Oct. 22, 1862, as observed at the Horticultural Gardens

October.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep	Of the Earth 2 feet deep	Wind	Rain
Thurs. 16	23	29.972	29.886	62	41	51.5	59	[illegible]	S.W	[illegible]
Friday 17	24	29.603	29.452	61	48	54.5	58	57½	S.W	[illegible]
Satur 18	25	29.654	29.451	51	32	41.5	57	58	W	[illegible]
Sunday 19	26	29.759	28.855	62	42	52.0	55	55	S.W	[illegible]
Mon. 20	27	29.467	29.202	51	36	43.5	54	54	S.W	[illegible]
Tues. 21	28	29.811	29.689	58	43	50.5	54	54	S.W	[illegible]
Wed. 22	29	29.502	29.386	58	44	51.0	55	54	S.W.	[illegible]
Average		29.667	29.421	57.5	40.8	49.2	56.0	55.7		[illegible]

Oct. 16—Clear; fine; clear and fine.
— 17—Boisterous with rain; fine; clear at night.
— 18—Overcast; very heavy rain; clear and cold.
— 19—Overcast; boisterous; very boisterous at night; heavy rain.
— 20—Clear; quite cloudless; boisterous; heavy shower; fine, lightning at night.
— 21—Overcast; heavy shower; fine in afternoon; overcast.
— 22—Boisterous with rain; fine; very boisterous at night.
Mean temperature of the week ½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Nov. 1, 1862.

October and Nov.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 26 .	55.3	36.6	45.9	14	0.52 in.								
Mon. 27..	55.1	38.8	46.9	22	0.02								
Tues. 28..	54.6	36.6	45.6	21	1.06								
Wed. 29..	53.8	35.1	44.5	16	0.63								
Thurs. 30..	55.2	38.2	46.7	17	0.98								
Friday 31..	54.9	38.3	46.6	19	0.88								
Satur. 1..	54.4	38.0	46.2	20	0.38								

The highest temperature during the above period occurred on the 29th and 30th, 1833, 31st, 1854, and 28th, 1860—therm. 67 deg., and the lowest on the 29th, 1843, and 26th, 1859—therm. 23 deg.

Notices to Correspondents.

Ailantus glandulosus: *J R N.* This great tree is a native of China, is perfectly hardy, bears pruning without suffering, and may be had of any nurseryman.

Chinese Seeds: *China.* We are not Chinese interpreters and are quite incapable of translating the Chinese labels of your seeds. They are probably of no sort of value or importance.

Glass Walls: *X.* That in the Chiswick Garden has proved a complete failure and is now pulled down, its glass having been used for an orchard house in front of an old brick wall.

Labour: *X.* The usual allowance is a man to an acre. But circumstances govern this, as it does all other such rules.

Names of Plants: *A V.* The berries called Chequers at Folkstone are the fruit of the Wild Service tree, *Pyrus torminalis.*

The Golden Hamburgh Grape: *J Manchester.* We have nothing to add—nothing to recal. In our opinion the statements to its prejudice, where sincere, are absurd. The Frontignans might for the very same reason be condemned. If people can't grow it we cannot help it. We shall only say that what one gardener *can* do another *ought* to be able to do, unless he is prepared to lose caste.—*Audi alteram partem* will, we hope, forgive us for saying that discussion is carried far enough, until some *new* point is raised.

Window Bulbs: *Amy.* Plant those first which flower latest, and *vice versâ*, taking care that the intervals between planting them correspond with the differences in their degree of excitability.

MESSRS. WAY AND EVANS, ANALYTICAL CHEMISTS, have REMOVED their LABORATORY from 8, Welbeck Street, Cavendish Square, to 106, Leadenhall Street, E.C., where all Letters and Samples for Analysis should in future be addressed.—Oct. 25.

AGRICULTURAL and CHEMICAL COLLEGE, 37 and 38, Lower Kennington Lane, London, S.

ASSAYS and ANALYSES promptly attended to by J. C. NESBIT, LANSDELL & Co.

AGRICULTURAL and CHEMICAL COLLEGE, KENNINGTON.—Manufacturers and others engaged in the Artificial Manures may obtain every necessary instruction for their economical and efficient preparation by applying to J. C. NESBIT, LANSDELL & Co., 37 and 38, Lower Kennington Lane, London, S.

Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.

Gentlemen, Farmers, or others, desirous of practical knowledge in Chemical Analysis, or Assaying, may receive instruction at the College, where the extensive Laboratories give every facility for pursuing their studies, and there is accommodation for a limited number of Resident Students.

Full particulars of terms will be forwarded on application.

Land Drainage.

MR. THOS. SCOTT has now made his arrangements for the season, and is prepared to PLAN and EXECUTE DRAINAGE to any extent, either by Contract or Commission. Loans obtained from Government or Drainage Companies, and the money advanced to carry out the work under Government inspection.

Mr. S. has Drained upwards of 20,000 Acres of Land within the last 10 years, and is prepared to introduce the most recent improvements; also to erect his Syphon Drinking Troughs for Cattle, which have received "Honourable Mention" in the recent International Exhibition.

18, Parliament Street, Westminster, S.W.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. HUMBERT, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

WEST of ENGLAND and SOUTH WALES LAND DRAINAGE and INCLOSURE COMPANY.
ESTABLISHED 1844.
The Right Hon. the EARL of DEVON, *Chairman.*

Lands Drained and Improved without recourse to the private funds or moneys of the Proprietors. This Company's Act not requiring Proprietors to liquidate the cost, the amount might remain a permanent charge on the lands, or be paid off when convenient, or be made redeemable over any term of years. The works are undertaken by the Company, or Proprietors might avail themselves of the powers of the Act only, and get the works executed by Agents or other parties. Outfalls through adjoining lands are obtainable under the Company's Act. Works are also executed by the Company for parties advancing their own capital, or not requiring to obtain the money under the Company's Act.

FREDERICK BRODIE, Secretary.
Offices: Exeter, and 30, Parliament Street, London.

Land Drainage.

WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.

Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.

No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.

Applications to be made to WILLIAM CLIFFORD, the Secretary at the Offices of the Company, 52, Parliament Street, S.W.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S W
To LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &c. IN ENGLAND AND WALES AND IN SCOTLAND.

The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm Houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

SMITH'S PATENT COMBINED MACHINE.—This Machine is admirably adapted for cultivating Light Land Wheat, Barley and Oat Stubbles, and Drilling in Stubble Turnips. Fifteen acres may be Cultivated and Drilled in one day, for Cultivating Light and Heavy Land Pea and Bean Stubbles, and Drilling in Wheat; and for cultivating Heavy Land Wheat Stubbles, and Drilling in Vetches. One operation will be enough for each crop, especially in wet seasons. It is warranted to do its work well.

For price and particulars apply to WILLIAM SMITH, Woolston, Fenny Stratford, Bletchley Station, Bucks.

RUGBY and DUNCHURCH CATTLE SHOW, THURSDAY, November 27.
A Prize of 15*l.* 15*s.* is open to All England for the best FAT BEAST of any description, the property of the Exhibitor for Six Months prior to the Show.
Entrance 10*s.*, to close on November 11. For form of certificate, &c., apply to Messrs. W. & E. HARRIS, Secretaries, Rugby.
N.B.—Covered sheds will be provided for the Beasts shown for the above Prize

THE NATIONAL EXHIBITION of SPORTING and other DOGS.
The THIRD GREAT ANNUAL EXHIBITION of SPORTING and other DOGS will be held at Birmingham on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4.
Copies of the Prize Lists, Regulations, and Certificates of Entry, with the Statement of Receipts and Expenditure and List of Subscribers for 1861, may be had on application to the Secretary.
The ENTRIES CLOSE on NOVEMBER 1.
F. BRAILSFORD, Secretary.
Offices: Castle Chambers, High Street, Birmingham.

THE BIRMINGHAM CATTLE and POULTRY SHOW, DECEMBER 1, 2, 3, and 4.—It having been determined to ERECT a GALLERY in BINGLEY HALL, the Council will have additional SPACE at their disposal for the EXHIBITION of IMPLEMENTS and MACHINERY, and are prepared to receive Applications for the same.
Plans of the Hall, showing situation of space, and terms, may be obtained from the Secretary.
The ENTRIES CLOSE on NOVEMBER 1.
JOHN B. LYTHALL, Secretary,
Offices: 14, Temple Street, Birmingham.

THE BIRMINGHAM CATTLE and POULTRY SHOW, 1862.
The FOURTEENTH GREAT ANNUAL EXHIBITION of FAT CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, ROOTS, BARLEY, and IMPLEMENTS, will be held in Bingley Hall, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4, when Prizes—Cups or other Articles of Silver Plate, and Gold and Silver Medals—to the amount of 1835*l.*, will be awarded in the following divisions, viz.:—

FAT CATTLE	£715	15
FAT SHEEP..	239	5
FAT PIGS	56	15
BREEDING ditto	63	0
ROOTS	56	14
BARLEY	10	10
POULTRY and PIGEONS	632	15

The ENTRIES CLOSE on NOVEMBER 1.
Prize Lists and Certificates may be obtained from the Secretary.
JOHN B. LYTHALL, Secretary.
Offices: 14, Temple Street, Birmingham.

SMITHFIELD CLUB FAT CATTLE SHOW.
The ANNUAL CHRISTMAS SHOW of FAT CATTLE, SHEEP, and PIGS, will be held at the Agricultural Hall, Islington, on MONDAY, December 8, and four following days.
In addition to Prizes to the amount of 1820*l.*, the following Cups will be offered:—
A Silver Cup, value 40*l.*, for the best Steer or Ox in any of the Classes.
A Silver Cup, value 40*l.*, for the best Heifer or Cow in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of Leicesters, Cotswolds, Lincolns, Kentish, or other Long-woolled Breed in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of 1-year old Southdowns, Hampshire or Wiltshire Downs, Shropshire or other Short-woolled Breed in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of any other Breed of Sheep (not specified above) in any of the Classes.
The Prize Sheet now contains distinct Classes under the following heads:—

CATTLE.

Devons	Norfolk or	Scotch Polled
Herefords	Suffolk Polled	Irish
Short-horns	Long-horns	Welsh
Sussex	Scotch-horned	Cross or Mixed

SHEEP.

Leicesters	Southdowns	Oxfordshire
Cotswolds	Hampshire or	Mountain
Lincolns	Wiltshire Downs	Cross Breeds
Kentish, or	Shropshire	(Long and Short-woolled)
Romney Marsh, and other Long Wools	Other Short Wools	

PIGS.
Classes according to age up to 18 months old.
The ENTRIES for LIVE STOCK CLOSE on NOVEMBER 1.
The Entries for Agricultural Implements, Roots, Seeds, &c., Closed on October 1.
Prize Sheets and full particulars can be obtained on application to B. T. BRANDRETH GIBBS, Hon. Sec., Corner of Half Moon St., Piccadilly, London, W.
N.B.—It is absolutely necessary that all communications on the Club's business should have the words SMITHFIELD CLUB outside, to distinguish them from private letters. If this be neglected, there will be risk of delay and inconvenience.

The Agricultural Gazette.

SATURDAY, OCTOBER 25, 1862.

WE beg to announce that as usual the first of November is the last day on which entries of live stock can be made for the show of the Smithfield Club. It is to be held in the new Agricultural Hall in December, when a magnificent collection of stock will, we believe, for the first time in the history of the Club, be worthily housed.

WE were extremely startled at receiving this week, from Mr. W. C. SPOONER, of Southampton, a packet containing some ears of Wheat almost entirely destroyed by a Fungus, new* to this country, and of a totally different type from any which has hitherto affected our crops. In a field of seven acres, a fourth of the Wheat was diseased to such a degree that many of the ears were altogether abortive, while in the best there were only two or three tolerable grains. Of the conditions of the sounder ears we can say nothing at present, but there can be little doubt that the whole produce was more or less affected in quality.

The disease commenced, or at least it was first observed, when the straw was still green. Of the intermediate states we have no information, but the ears now before us present a very curious appearance. The two or three glumes at the base of the spike, or sometimes more, are tolerably perfect, while the top looks as if it had been pinched up into a point when young and afterwards charred. On a close inspection the rachis of the ear, or in other words the axis to which the grains are attached, and sometimes the glumes themselves are converted into a white fleshy substance resembling Ergot. The outer coat, however, is black and glossy, studded here and there with minute punctures, surrounded like a little eyelet hole with a white border which leads down to a subglobose cell, the walls of which are clothed with a white or greyish gelatinous mass, which is resolvable under the microscope into myriads of spores radiating in every direction from the walls. These spores are of a most singular form. The main body is oblong or cylindrical, either extremity being terminated with about three pellucid bristles, forming a little crest, which are either straight or slightly curved, forming a most interesting object under the compound microscope. The exact mode in which these spores are attached has not yet been ascertained, as it is almost impossible to detect them seated on the cell from which they spring. The Fungus is the Dilophospora graminis* of DESMAZIÈRES, a species which abounds on some parts of the Continent on species of Alopecurus, Agrostis, Holcus, and occasionally on Rye, though it has hitherto escaped notice in this country. It occurs on the sheaths of the upper leaf and on the spike, which is always more or less deformed. The spores resemble in some degree, as far as the crest is concerned, those of *Pestalozzia Guepini*, a foreign Fungus which was accidentally introduced into this country a few years since with some Italian Camellias, to the destruction of many valuable plants, though happily, as far as we have heard, it has not been permanently established, our cold winters probably having destroyed the stock. It is to be hoped that the same fate may await the present parasite, which might prove a most serious plague if it once gained full possession of our Wheat.

Our figure represents a small spike, almost destroyed by the Fungus; a vertical section showing one of the cells containing the spores magnified, and two of the spores highly magnified.

It would be interesting to ascertain what was the origin of the seed Wheat, whether exotic or otherwise. At any rate it would be well to take precautions that the parasite may not spread. The grain might be boiled for cattle with a view to destruction of any spores which might adhere to the seeds, and the straw burnt.

Before closing our remarks we must indulge ourselves with a little more strictly botanical matter. It is probable that the parasite before us is not the most perfect condition of the species. It is well known that many Fungi assume two or more forms producing fruit by which the species may be propagated, though not the most perfect form of fructification. The Hop mildew, for example, appears under several conditions, while the Vine mildew is known only under the form of an Oïdium, though the perfect condition is undoubtedly an Erysiphe. In like manner the Dilophospora exhibits in all probability a peculiar condition of some Sphæria, the perfect state of which is at present unknown. The specimens before us are so well developed that we at first hoped that we n[illegible] the higher condition before us, but we find nothing save the crested spores, whereas the true fruit ought to be contained in linear sacs. The same remark will apply to the little parasite *Septoria nodosum*, which occurs sometimes on the joints of nearly ripe Wheat stalks; the perfect state of which, however, is probably not a Sphæria, but an Hypocrea, and may possibly be that which forms the curious orange-coloured cylindrical

* It does not appear in Berkeley's "Outlines of British Fungology," but we are not quite certain whether it has not been gathered since 1860.

* It is the *Sphæria Alopecuri* of the Elenchus of FRIES, who received his specimens from GUÉPIN.

bodies which replace the spikes of several of our Grasses in damp seasons.* *M. J. B.*

"THE thing for you gentlemen to do, who write in the hope of benefiting agricultural readers, is to urge upon them constantly the importance of the lease for a term of years in all land-letting." This was the utterance of a good practical farmer —who had improved his farm, grubbed up wide and useless hedgerows, drained his land, adopted steam cultivation, and gone with great spirit and success into his work—protected by such a lease as he was advocating. And while over large districts, chiefly of Grass land, wealthy and intelligent tenantry—a pride to any owner of large property —are to be found occupying the same farms from year to year, and even from generation to generation, at the mere will of the landed proprietor; yet it is rare indeed that we find intelligence and enterprise united in order to cultivate with spirit, except where the land is leased for a term of years—securing to the tenant the return from his outlay which is his due, and for which he ought not to be in any degree beholden to the forbearance of another. In the case of grazing or dairying the tenant is generally but little hurt by a notice to quit—he drives his stock to market, and so at once recovers his capital. In tillage lands the case is different; money has been invested in drainage and manures, in liming, marling, &c., and many years must elapse before he is repaid. Where land requires operations of this kind to the full realising of its value, and it is expected of the tenant to do them, he must be protected by a lease or they will not be done. Choose the right sort of tenant—an energetic man possessing capital and intelligence, and protect him by a lease, and the thing *will* be done. How many instances of this could be related! How many instances where a lease has encouraged a tenant to improve the property which is leased to him—how many where a lease has *saved* a tenant on a change of the ownership during its continuance; how many where the general adoption of a lease has directed a whole body of tenantry to the great advantage of both the landlord and the occupying farmer!

Let us give instances of all these:—There is in the new Number of the Journal of the Highland Society a very interesting account of the agriculture of Roxburghshire, by Mr. SANDERSON, of Westminster. In it a number of examples are described of recent improvements within the district, and in particular the history of a Mr. SCOTT and his sons is given—men who, commencing as farm labourers, are now in the occupation of land paying a rental of 8000*l*. or 10,000*l*. a-year, and whose extraordinary success as agriculturists is to be attributed to the influence of the lease in securing to them the fruits of their enterprising and well-judged labours. It has been, we believe, chiefly in the reclamation of new lands that their profits have arisen—in taking lands upon the edge of the moors and extending the bounds of cultivation—bringing drainage and liming to bear upon wet waste land.

Not very long ago Mr. LEWTAS read before the Lancaster Farmers' Club a paper on long leases, in which he described instances of a similar kind. In 1805 his father had taken the Nateby Hall Farm under lease. There was on it a great deal of wild Moss land, growing Heath and little else. The previous tenant had said it was not worth cultivation. Protected by his lease the new tenant marled and ditched 40 or 50 acres, and in two or three years there were good crops of Oats and Clover, and there have been good crops on the land ever since. The former tenant of the farm paid 120 guineas rent and made nothing. The new tenant with his lease paid 400 guineas a year for 30 or 40 acres less, and made money. Mr. LEWTAS said:—

"I remember being in Leeds market some few years ago, and I there saw an exceeding fine sample of White Wheat which had been grown upon fen land. The merchants who had it to sell informed me that it was produced from land which an intelligent farmer had taken under a 21 years' lease. The value of the land before it was cultivated may be judged of from the fact that under the lease it was let for 5*s*. an acre, and here you see, before the lease had expired, the land grew some of the finest Wheat it was ever my pleasure to behold off this class of land. I know an instance of a farmer in St. Michael's who took about 100 statute acres of land, which, since Noah's flood, I suppose, never produced anything but Ling. He brought it into cultivation under a lease of 14 years, and it now produces excellent crops, and he is amply paid for, as it were, making the land. And then I have known an instance of a farmer being offered Moss land rent free for three years, but he would not undertake to reclaim, and I think he was right. They formerly had it free of rent for seven years. If farmers had the Moss land offered to them for 14 years at a low rent, say 5*s*. an acre, barren and unproductive land in our country would soon disappear. Were this plan adopted, landlords would be great gainers; for at the end of the term at the very least their land would let for 20*s*. per acre per year, whereas it now fetches no rent whatever. One good plan I conceive of reclaiming Moss land is to let it in small farms of from 30 to 60 acres, putting up buildings of an inexpensive but convenient description, and then leaving the farmer to push his way, which he will do, if he knows he is protected by a long lease."

The object of this collection of examples was not only to illustrate the advantage of long leases, but to show the evils of short leases.

"The beneficial results alluded to were wrought out under long leases, and farmers ought to have leases of at least 14 years, in order to stimulate them in cultivating their land properly. Just let me say that I have seen where a farmer in this neighbourhood, on a farm taken from year to year, put nearly all the manure his farm produced upon ploughed land —thus robbing his meadows until they became wretchedly poor. This ploughed land also became poor by his taking therefrom two white crops in succession. This farmer was succeeded by one having a seven years' lease. He manured and tilled and drained thoroughly; but at the end of seven years he was between 300*l*. and 400*l*. out of pocket, and unfortunately for him he did not succeed in getting his farm for a fresh term, thus obtaining no recompense for his expenditure and labour beyond a prize at an agricultural society for the best managed farm. Thus it will be seen that an enterprising farmer may bring ruin upon himself with a lease simply for seven years. In my opinion the remedy for this lies in leases not less than 14 years in duration. In conclusion, I beg to observe that I believe there is nothing more honest than land. If you do well to it, it will do well to you, or, as it is expressed in Proverbs, 28th chapter, and 19th verse —'He that tilleth his land shall have plenty of bread.' Let our farmers have fair play, and I believe they will till and do all that is requisite; but landlords should be reasonable, and grant long leases."

A man engaging in agriculture wants a home as well as a mere field for the investment of capital when he takes a farm. And a lease is a security for the former as well as for the latter. We know the example of a tenant protected by a lease, who has greatly improved his land, distinguished himself as a breeder of stock, and gone vigorously into cultivation by steam-power— whose land has been sold to a new proprietor. The new owner and the tenant do not agree on the subject of game, and in other ways; and there cannot be a doubt that the occupier will have notice to quit on the very earliest opportunity. Fortunately for him the earliest possible opportunity is 12 years hence. Had it been six months hence, his investment in drainage, steam cultivation, deep tillage, and other expensive items would be lost; and his experience thus contributes a most magnificent example of the value of the lease to the tenant.

But are there no examples of its value to the owner? How else is the landed proprietor to secure for his property and for the dwellers on it the immense advantage of abundant farm capital? It is on this that rent and wages both ultimately depend, and landowners as well as labourers benefit by a wealthy energetic tenantry.

The conditions on which land should be let form a subject by themselves. They depend on the present condition of the land, and the quality of the tenant who proposes to undertake its cultivation. Light lands require specified conditions of cultivation more urgently than clayey soils. They are more easily injured by "cross-cropping." But take a case when proved ability and character exist in the tenant, and as against *him*, the landlord needs no protection. This sentence may, however, be read by some one who will insist on transposing the words "tenant" and "landlord" in it. And it seems only fair that *on both sides* provision should be made for the altered circumstances which time always eventually creates. What that provision should be must be considered hereafter.

STEAM CULTIVATION.

STRATTON, NEAR SWINDON.

WE last year directed attention to Mr. Pocock's experience as a steam cultivator. Since October, 1859, he has worked Mr. Fowler's apparatus. He has 350 acres of arable land and 50 acres of pasture at Stratton, near Swindon, and 160 acres arable and 400 acres pasture at Bourton, near Shrivenham. The farm at Stratton is thus considerably extended since the date of our last report. There were at that time about 250 acres of plough land in all, and 40 acres of pasture.

The extremely stiff land of Bourton involved so much labour that 15 to 20 horses and several teams of oxen, taken up at certain seasons of the year, were employed, at a cost in food, extras, repairs, and wages, of about 420*l*. a year. The 10 horse-power engine and apparatus had cost 740*l*., and the annual cost of ploughing 600 acres a year or thereabouts in interest of capital, maintenance of value, rope and repairs (30*l*. a year) Wages, including water-cart (14*s*. 6*d*. a day) and fuel, (18*s*. a ton, and 8 cwt. burned per diem) was 256*l*. And the following addendum was appended to this statement:—

The annual cost of horse-labour was put at 419*l*. 11*s*. 6*d*. And even if that be reduced by one-half the charge for food for horses (234*l*. per annum), as they were at work during only about six months, and were then put up to [illegible] even then the cost of the horse-power (displaced by [illegible]) per annum spent upon the engine and apparatus) would [illegible] 300*l*.—so that there is a direct annual saving to Mr. P[illegible] the employment of steam-power in cultivation, by [illegible] has annually ploughed and grubbed at least [illegible] or not much more than 8*s*. an acre. [illegible] this the ploughing and grubbing of such heavy land [illegible] done by horses every farmer knows. It is customary, in the extremely heavy land of that county, to require six [illegible] every 100 acres of plough land—and the trampling of [illegible] teams in the furrow, altogether saved by steam-[illegible], cannot but exert a most mischievous effect.

But instead of 600 acres annual work thus estimated, Mr. Pocock last year ploughed 318 acres, and cultivated 390 acres at a depth of from 6 to [illegible] inches, working the machinery 131½ days, paying 7[illegible] in wages, and 19*l*. 14*s*. 6*d*. for carriage of water and fuel, this being charged at 3*s*. a-day. The coals [illegible] consumed cost 52*l*. 12*s*., and the cost of repairs was 9*l*. This last item, however, does not include interest of money or tear and wear. The actual payments [illegible] of hand thus amounted to 4*s*. 4*d*. per acre. During the current year, *i. e.*, from the latter part of A[illegible] 1862, and up till Oct. 7, there had been ploughed by steam-power on the Stratton farm, 253 acres, and on the Bourton farm 123½ acres, and there had been scarified once, 358 acres on the Stratton farm and 129 acres on the Bourton farm—in all 376 acres of ploughing and 4[illegible] acres of grubbing up to Oct. 7. These were done at the rate of 5 or 6 acres a day of ploughing (it is only a 3-furrow plough) and 8 or 9 acres of double grubbing, using a scarifier which takes 6 ft. width at once, and which is shifted only half its width at a time.

Mr. Pocock is one of the most successful steam-ploughers in the country. He may be quoted with quite as much propriety as the farmer whose circumstances and experience were recently discribed in a leading article—as a capital example of the success which follows on a patiently worked out resolution to succeed. It was he who declared to me when I first saw his farms:—"I have had no accident nor breakage to speak of, but then *I never left the engine while the fire was lighted for a month after I had purchased it.*"

His experience in the matter of rope is as favourable as in other items. He was furnished at starting in Oct. 1859, with 800 yards, and he has had since then 850 yards additional, viz. 400 yards last year and 450 yards of the strongest rope in use this summer.

He uses still the old figure-of-8 arrangement of pulleys for drawing the plough to and fro; and managing it as he does, he has not yet seen it to be his interest to be at the expense of displacing it by the clip drum.

Mr. Pocock manages his engine well and in that a great deal of the economy of the operation consists. He does his day's work with a 10 horse-power engine, consuming 8 cwt of coals a day. I have seen 12-horse power engines consuming 13 and 14 cwt. a-day in consequence of the pistons not being packed, or in consequence of some other waste of expensively made steam. This was 4*s*. or 5*s*. worth of coal per diem more than necessary.

There was lately at the Coleshill annual meeting a novelty in the history of ploughing matches—a prize was awarded to the best steam-ploughed land. Plots of 2 acres each were set apart. The engine was to come into the field, set out its rope and tackle, set to work, finish its plot and pack up and be off—the time being noted. Mr. Moore, of Coleshill, and Mr. Pocock, of Bourton, were the two competitors, both with Fowler's apparatus, and Mr. Pocock carried off the 1st prize. The 2 acres were ploughed in three hours and 42 minutes after being commenced, and the whole apparatus was packed up and steamed off in another quarter of an hour!

The Stratton farm is of a lighter soil than that at Bourton, adapted for Turnip culture, and for sheep farming generally. A large extent of Swedes and Turnips put in with the water drill, with 2 or 3 cwt. per acre of superphosphate, were very forward, growing, and already a heavy crop. The estate has been greatly improved since Mr. Pocock's occupancy by grubbing up hedgerows and enlarging fields and otherwise adapting it for steam culture.

The farm of Bourton, on the other hand, is a dairy farm; from 120 to 150 cows have been milked, and dairying carried out on the plan practised in North Wilts. This year Mr. Pocock has given up dairying, and converted it into a grazing farm, for which it is also well adapted. The reasons for the change have included not only the labour and drudgery of dairy work, which is a very sufficient one, but the growing difficulty of procuring the services of good makers, without which both dairy cows and dairymen will soon be ruined. If the cow-milking machine shall prove a success, in all probability the Bourton farm may return to dairying. Mr. Pocock is not so troubled with prejudice as to let an advantage, of the kind which this will give him, remain unproved for want of a trial. *J. C. M.*

THE ART OF SEEDING.

"'But,' said Socrates to his instructor Ischomachus, 'as to spreading the seed over the ground, is there any artful way of doing that?'—'Yes,' replied Ischomachus, 'for some men can spread it evenly and others cannot * * * In this respect the hand requires exercise like the players on the harp, that it may obey the mind.'"—*Xenophon on Husbandry.*

THE essence of this passage is contained in the few short words "spread it evenly," that is, spread the seed you put into the ground, of whatever kind it may

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* M. J. B. would be obliged to the gentleman who sent the specimens for a further supply, including a few of the ears which are only slightly affected or perfectly free. They may be directed to M. J. B., King's Cliffe, Northamptonshire.

[illegible] evenly; and it is as clear from other learned and practical agricultural writers of the same date, as well as from the philosopher Xenophon himself, that such was the practice of seeding ground in Greece, and other ancient civilized nations. It is clear, also, that in the putting the seed into the ground the farmers of those nations surpassed those of all modern ones, and grew more corn from much less seed, and hence their 30, 60, and 100-fold as referred to by the Saviour in the Holy land, and double those quantities in other lands; and hence again the secret of the populous nations and cities [illegible] liberally supported and supplied with food without importations by commerce from other countries. And hence, again, the books of the writers on agriculture of the polished nations of antiquity as the source whence the best and most popular modern writers on the art have obtained the chief of their knowledge—Tusser, Tull, &c.; and hence the old monks of our country, who studied and followed the ancient guides, carried agriculture to such perfection as they did. In England at the present day writers and speech-makers laud up agriculture as if it excelled all that was known of the art and practice of it in all former times. But what are the facts? Examine them and see. Some years since I took great pains and trouble, and went to some expense, to ascertain the annual increase of the crops over the quantity of seed sown to produce them, and I found it to be between 11 and 12-fold only, or between 11 and 12 quarters of produce for one quarter of seed sown. Mr. Mechi has just published that the increase is not more than 8-fold; but Mr. Hallett, again, says it is 14-fold. But admitting it to be [illegible], for argument only, is this what it might be, or what it ought to be, and especially with all the mechanical and chemical knowledge at the command of land cultivators of our day? No, certainly not, but it ought at least to be 200-fold, and so it would be if we could raise those ancient farmers from their graves and give them our lands to cultivate; they would very soon put a stop to our enormous importations of grain, and feed England with the produce of England, as they fed their own countries with the produce of their own countries.

But come, my attentive readers, "let us reason together" calmly on this all-important subject, and let us drop a little of our national and modern prejudice. Last year I had a plot of Wheat, another of Barley, and another of Oats, which many people of intelligence saw. They were seeded by me with a drill that I myself made and invented, and the increase over the seed drilled was upwards of 1500 fold, and the Oats were the finest I ever saw, or that any one who saw them ever saw, but I did not count the increase, but it was enormous. But for the Wheat and Barley each seed on an average produced 40 ears, and the ears of Wheat averaged more than 40 grains, the ears of Barley 35 grains, and hence the general average was upwards of 1500-fold. And the Wheat and Barley stood on the ground as thickly as they could to come to perfection.

Now there was no mystery in this; no superior skill; any lady or gentleman who has land, a field, or a garden may do the same, and much more if she or he would take the trouble—trouble did I write?—why with me it is a pleasure, and so it would be to ladies and gentlemen (and 10 times greater if they would enter into it) than their budding Roses, and hybridising Heartseases, Daffy-downdillies, &c., and I know not what besides, for after all the old Moss and Cabbage Roses are still the best, the sweetest, and most beautiful that are grown.

But further, I have grown upwards of 4500-fold, and from seeds put in with my drill and never touched after they were dropped from the drill. Nay further, my doubting friends, I have had a crop or crops of Wheat in my field into which any man might go in the dark or blind-folded and pull up root after root from single grains of seed having to each upwards of 2000-fold. Of course my land was good, well drained, and cultivated, and full of the pabula that Wheat loves to feed upon; and, above all, my seed, as the ancient philosopher [illegible] his was, and that of all philosophers of [illegible] Greece, was evenly, seed after seed, dropped on the ground, or all my other labours would have failed, and I should have had, like the rest of mankind, my 11 or 12 grains only for one, instead of my averaging near [illegible]-fold or quite.

But how is it, how can it be, that farmers, for many of them are good and wise and intelligent men, how is it that they as a body, it may reasonably be asked, produce so little for their seed whilst such wonderful quantities may be produced, and probably at the same expense?

My inquiring friends, farmers, both landowners and tenants, are as wise and intelligent as are other men; but down to the present day lands of farms have nowhere been cultivated, nor has there been scarcely an [illegible] for cultivation; and as to seeding it I venture to say, with no fear of refutation, that in the darkest age of the world ground for cereal crops was not more [illegible] philosophically seeded than the land of England is at the present time. My friends, however I may by this assertion have discomposed the general equanimity of your minds, I am prepared to prove what I state, for my pen is not guided without thought, and I have no doubt whatever, if a jury of 12 or 24, or even 48 scientific men were empannelled to hear me, but I should gain a unanimous verdict in my favour.

Seed, said the wise Greek, seed says common sense, seed says nature, seed says every gardener, nay, seed says every lady who has a flower garden, should be evenly spread, seed from seed, so that no two should be together, or the plants from them will be puny and weak, and not one come to perfection. But do modern drills, those heavy, clumsy, complicated machines in common use, do this? Oh no, but the reverse exactly. In some places they throw one seed, in some two, in some 10, and even within two or three inches full 20; and the dibbling is, if possible, still worse.

But to sum up the whole in a few words: to make England what it might and ought to be, the lands by some means should be cultivated, wherever the depth of soil will admit of it, full twice or three times deeper than they now are turned over with the plough; they must also be thoroughly drained, be kept in good heart, and the seed "spread evenly" on, or put evenly into it, and wherever this is done, more than 2 pecks of seed for Wheat of any kind, and 3 for Barley and Oats, will injure the crop, and uselessly impoverish the soil. *George Wilkins, Parsonage, Wix, Oct.* 6.

P.S. Will you kindly cause two or three errors in the printing of my last paper to be corrected, but I observe they were very likely to be made. 1. For "laudated" race of philosophers, it should have been "caudated," from *cauda*, a tail. 2. For "4 bushels" correct thus, with "4 pecks" per acre. 3. For "renovated" and prosperous college, correct "renowned" and prosperous college.

I will just add that though in my letter of Sept. 29 I expressed my doubt of Mr. Hallett's success, yet no one can be more anxious that he should succeed than I myself have all along been. But the grounds of my fears are these:—1. Hollow straw, in my opinion, will not support ears so long and heavy as Mr. Hallett's Wheat ears appear to be, if they should be full of plump grain. The straw of the Egyptian Wheat is solid, and not hollow, but if it were not, as Salmet observes, it would not support the large ears that grow upon it, though those ears are not larger nor fuller than Mr. Hallett writes that his Pedigree Wheat ears are. 2. That cereals may be improved by selecting the best seeds does not, I think, admit of a doubt, but it is also my opinion it is better to grow, for example, 2000 grains of Wheat from, again say, 34 straws than from 17 only, or better to have 34 ears if the straw be hollow than 17 only. 3. But another thing against Mr. Hallett is this: in a short time, if his Wheat be a superior kind, thousands will sell it as well as himself, as it is now, or will be, grown all over the country, and hence the price will become too low to remunerate Mr. Hallett for his expenses. I hope, Mr. Editor, I shall be wrong in these opinions and forebodings, as no one can be more anxious for Mr. Hallett's success than I myself am, as I believe no one more deserves it, as his articles are the best on Wheat cultivation I have before read, and should he succeed he will accomplish much good. *G. W.*

NOTES ON WEEDS.

CHICKWEEDS.

LAST year we commenced a series of articles on the more prominent families of weeds, having given accounts of the Ranunculaceæ (Buttercups) and the Cruciferæ (Mustards, &c.) We now continue our papers on this truly practical subject, with notes on the Caryophyllaceæ (Chickweeds, &c.), and shall hope to go forward with the subject with greater regularity than heretofore.

The natural order Caryophylleæ may be described as green herbaceous plants with cylindrical stems and opposite leaves. The flowers have five sepals, more or less united into a tube; a corolla of five petals, the limb of which is usually notched; the stamens are sometimes the same in number as the petals, at others double the number; pistils two to five; capsule more or less horny, opening with five teeth; seeds very numerous, many of them beautifully reticulated.

Of this order we have somewhere about 60 species, many of them, as the wild Pinks and Catchflys, being highly ornamental plants; others, such as the Stitchworts, Chickweeds, and Mouse-ears, being insignificant weeds which only annoy the farmer from their rapid multiplication and quick growth. The list of plants of this natural order, which may fairly be considered to be objectionable or interesting as "weeds," will be as follows:

1. *Saponaria officinalis.*—Soap-wort.
2. *Silene inflata.*—Bladder Campion.
3. „ *anglica.*—English Catchfly.
4. *Lychnis dioica.*—Red or White Campion.
5. „ *floscuculi.*—Ragged Robin.
6. *Agrostemma Githago.*—Corn Cockle.
7. *Spergula arvensis.*—Corn Spurry.
8. *Stellaria media.*—Chickweed.
9. *Arenaria serpyllifolia.*—Thyme-leaved Sandwort.
10. *Cerastium viscosum.* Narrow-leaved Mouse-ear.

This enumeration includes about a sixth part of the order in the weed list, but it will be seen presently that not all of these are serious as pests, some of them by their position assuming an interest apart from that of being in the way, as thus:—

1. The Saponaria is frequently found on banks beneath old walls or choking up the hedge row. It is in this latter position that it should be guarded against, as if it grows in the hedges it assumes a much greater height than elsewhere, and its large leaves and thick herbage are especially mischievous in young Quicks, and it is to be noted that in all probability the Soapwort is an escape from the garden. So then, in places where alterations have not been long carried out, and new hedges formed, the Quicks are often totally ruined in a short time. The best plan to keep it under is to pull it up when it makes its appearance in spring, for though it will often come again, as we have been told, "three stems for one," yet we have always found them so much weakened that another pulling about the middle of August will finish them for that year; and two years of such treatment are usually sufficient for their eradication.

2. The genus Silene offers some plants with very pretty flowers, especially the S. acaulis of the mountain, and the S. maritima of the sea-side. The latter, indeed, is sometimes in such quantity in fields by the sea that it really becomes quite a weed pest, but this may soon be got rid of, as its seed is not usually sown to any extent in the different processes of cultivation. Not so, however, the S. inflata, which is a common weed, especially in the arable cultivation of light or thin soils, especially those on limestones. It is well distinguished by its bladder-like calyx and silver white corollas, and usually occurs in large bunches. On the oolite limestones it is very frequent, and especially does it grow unchecked in the Barley crop. In thin "seeds" this plant makes great head, and in fact it is with them that its seed is frequently sown, and when once introduced its eradication is difficult, seeing that a single plant may in one year yield as many as 24,000 seeds.

3. The second species of Silene on our list, the S. anglica, seldom occurs in quantity; it is a denizen of sandy soils, and is here introduced on account of the interest attached to it in the locality in which we first observed it growing. This was in Wilts, on an isolated knoll of the Kelloway sands of the Oxford clay. This sand is the only bit of true silicious soil for miles away, and here in a Turnip crop were found the plants in question, viz., Silene anglica, Spergula arvensis, and Scleranthus annua, all three sand lovers, and all scarcely, if at all known among the limestones and clays of the upper oolites of Gloucester and Wilts, and even in this rising sand knoll in the parish of Ashton-Keynes in the latter county, only occurring as introduced arable weeds. Now, another point of interest about these sand lovers is this, that when we observe them to be weeds of a district we may look to have Anbury in the Turnip crop, and so the finding of such plants in our arable land is an indication that lime may be safely introduced as an ameliorator of the soil.

4. The White and Rose-coloured varieties of the Lychnis are both common at the margins of fields in the hedgerows and in the garden, and as they have running root stocks and a quantity of underground buds, they soon make a plantation by stolons wherever a plant is established. But, besides this, it is a plant which seeds most abundantly. In one example which came before us, we made out 25 capsules, in each of which were an average of 137 seeds, giving the sum of 3425 seeds for a single plant; we need not wonder then at such large colonies occasionally making their appearance, and so suddenly as to lead to a conviction in some mind's that the turning over of a new piece of ground has exposed long hidden seeds. The plant, like many others of a like kind, is soon destroyed, and it does not readily come again, if we have not sown the seeds or let any of them ripen. But we do sow it often, especially in Clover seeds, and it therefore behoves us to look carefully at our seed before sowing it.

5. The Ragged Robbin is the scarlet pink-like plant that occurs so frequently in damp meadows, where its presence in any quantity is a certain indication that some extent of draining is necessary. The Lychnis-floscuculi, like the L. dioica, is innocuous, but it is such a diluent in the meadow that we do not wonder that hay on which it is abundant, should be said to have but "little proof in it." Drainage soon lessens this pest.

6. Agrostemma Githago, Cockle or "Popple"—probably a corruption of *purple* from the colour of its flowers—is a tall handsome purple-flowered plant of this order, which is usually seen more or less abundantly topping the Vetch crop—in which its stout upright stems and large foliage sometimes adds so much to the weight of the Londoner's bundle of Vetches as to render them next to useless. It is found in other crops, though not usually to the same extent, yet sufficient to be a troublesome weed, as for example the other day we saw a sample of Barley in which were estimated as many as 15,000 Cockle seeds to the bushel. Of course to have these seeds in grain is altogether carelessness, but in Vetches where the flowers of the plant and the weed are alike in colour, and where the seeds, albeit very different in shape and size, are still dark in both, it is not so wonderful that they should pass unquestioned.

We once examined a sample of Vetch seed in which were made out the following weeds:—

			Seeds per Bushel.
Galium tricorne } Cleaver	..	=	39,680
„ aparine }			
Agrostemma Githago, Cockle	..	=	7,560
Total of weeds	..		47,240

But the worst sample we ever saw came before us last year, in which at least a sixth part of the whole was Cockle. But as the difference in the seed is very obvious, it only wants to be once looked at to be ever apparent. Vetch seed is kidney-shaped, smooth externally, but with a mottled seed covering, whilst the Cockle seed is flattened on one side, pitted all over, and

of an uniform purplish black colour. In size the Cockle seed is smaller than the Vetch, so that in the sample referred to we could easily separate the former from the latter with a sieve, and we are happy to say that it is possible to get Vetches free from this weed, as we happen to have seen a sample this day quite free from the cockle.

7. The Corn Spurry, Spergula arvensis, is a denizen of sand, and though, unlike the former, it is a prostrate weed with small fine leaves, yet on the new red sandstone soils in parts of Worcestershire we have seen this plant so thick in the Turnips as to completely smother the crop. Like Chickweed it occurs everywhere, but is especially well to do in manured crops on sand, where it harbours in the rows of the Wheat, and seeds enough to be a pest in the successive crop; it then follows in the Barley, and if "seeds" succeed it is only a mercy if some fresh seeds are not introduced with the Clovers to an already teeming soil. Other soils however are almost entirely free from this weed, so that it is quite an indicator of the nature of the land. It is perhaps a greater pest in the Carrot crop than elsewhere, as it is difficult at first to separate, and where the early days of the plant are so fine in leaf and slow in growth, a weed equally fine in its parts but infinitely quicker in its development can only be productive of mischief.

Spurry has been employed as a green soiling crop plant, but with what success we have had no experience in determining; we should however conclude that even if innocent it would be entirely useless.

8. Chickweed, Stellaria media — Who amongst farmers or gardeners does not know this weed. It tracks cultivation everywhere, for so fast is its growth that it may ripen from two to three crops of seed every year. It is called a surface weed, and the hoe is considered the best instrument for its eradication, but the use of this in the Wheat field for example is usually commenced just in time to effectually sow the first spring crop of the pest, and in these well-to-do samples, we have estimated as many as 5000 seeds to a single plant. In the field one is so constantly introducing the plant by sowing it with small seeds or in manure, that it is difficult to eradicate it in manured crops. In the garden, however, as our own will show, we can effectually keep it under with the hoe and the hand.

9. The Sandworts as a genus are very mischievous surface weeds, but the Arenaria serpyllifolia, the Thyme-leaved Sandwort, may be justly considered as the worst of the tribe. It is a frequent pest in "seeds," in which may be seen whole patches of this weed. As usual with the weeds of this order sown with the Clovers, it sometime, makes such head that the crop has no chance, and once established it increases by seed so quickly and to such an extent that sometimes yards of ground may be found bare of Clover but occupied with the Sandwort. Spots of this and its congener the Chickweed, with surface weeds of other natural orders, should be gone over in the first year of "seeds," as although it would cost a trifle to weed with the hoe or spade, yet we happen to know from long experience that it is amply repaid. In fact we feel quite sure that we have frequently seen seed hay yielding its 15 cwt. per acre which should have been from 25 to 30 cwt. with only a judicious expenditure of no more than 1*s.* or 1*s.* 6*d.* per acre in weeding.

10. The Cerastium viscosum, the Mouse-ear Chickweed, is well distinguished by its hairy dark green leaves, and spreading habit of growth. It is a very common plant in "seeds" on light and thin soils; Dutch Clover is often choked out by its presence. It is another of the agrarian surface weeds that requires the hoe to keep under its first growth, otherwise its spread is sometimes wonderfully rapid. It is a very variable plant, sometimes seen with short stunted stems, yet full of flowers, and succeeding in ripening many seeds. At other times it has long spreading branches which are even more prolific. An estimate of the fecundity of a single plant was made from a specimen gathered in a field of "seeds" (Clovers, &c.,) on the great oolite rock, it was as follows:—500 capsules × 35 seeds in each capsule = 18,500. From this estimate then it is not to be wondered at that some of the samples of Dutch Clover seed should have such a variable quantity of weed seeds of the Cerastium and its congeners. The following is an estimate of the admixture of the small seeds, mostly of this natural order, that we have made out in a parcel of Dutch Clover seed: and other Clovers are usually foul with these, but being larger not to the same extent.

1. White Dutch, 16,000 weeds to the pint.
2. do. do. 26,560 do.
3. do. do. 28,800 do.
4. do. do. 70,400 do.

After reading these estimates, few but must conclude that farmers sow their weeds; and indeed those of the natural order now described, when examined in their details, perhaps will point out this fact more prominently than almost any others. *J. Buckman, Royal Agricultural College.*

FATTENING CATTLE ON ARABLE LAND.

[A condensed report was given some weeks ago of a paper read by Mr. Blundell of Southampton before the Royal Agricultural Society. We now publish the paper in full.]

Mr. Blundell said he had much pleasure in bringing before the Society a practical subject on which he had endeavoured, he hoped successfully, to inform himself. That subject was, the most profitable method of fatting bullocks on arable farms.

Although the subject had been made a matter for discussion at various times at the different farmers clubs and other meetings, yet up to the present time there seemed to exist an under-current of feeling and ideas, inducing the belief that bullocks did not pay for fattening; and that, were it not for the sake of turning the straw produce of arable farms into good manure, it would not answer the purpose. It seemed to him that, having to consider on the present occasion the most profitable method of fatting bullocks on arable farms, they ought to entertain the question in two aspects—viz., the economy of feeding the animals, and the economy of making the manure. In connection with the former the points which should engage attention were:—the sort or breed of animals; the best age to begin fattening; the condition at the commencement of fattening; the preparatory or probationary state of the animals; the kind of food; the quantity of food; the time of feeding, and state of the food; and the accommodation most likely to insure the health and well-doing of the animals. Under the latter division, that of the economy of making manure, the points seemed to be—the value of the manure, having regard to the food the animals received, and the accommodation for making and preserving it.

In order that the consideration of this subject might lead to some useful and practical result, he had prepared the following statement, based upon practice of cattle feeding upon his own farm, containing the result of feeding 37 head of bullocks, of different ages during the last three years, and which he had extracted from his farming account book:—

	£	s.	d.
Dr.			
15 oxen and steers purchased at	£220	15	0
8 cows valued at	102	0	0
14 heifers and steers, average age 17 months, valued at	171	0	0
To balance increased value	435	5	0
	£929	0	0
Cr.			
15 oxen and steers sold for	£408	10	0
8 cows sold for	184	15	0
14 heifers and steers, sold for	335	15	0
	£929	0	0

In analysing the above account he was enabled to furnish some interesting results, calculated to show the comparative advantages of fattening stock of different ages.

	£	s.	d.
14 oxen and steers, being kept on an average of eight weeks' summer feeding in a preparatory state, increased in value 7*s.* per week	£39	4	0
23 oxen, steers, and cows kept 20 weeks each, winter feeding, in a fatting state, increased in value 10*s.* per week	230	0	0
14 heifers and steers, kept 20 weeks each, winter feeding, in a fatting state, increased in value 11*s.* 9*d.* per week	164	0	6
	£433	4	6
Deduct the summer and preparatory feeding for 14 bullocks	39	4	0
	£394	0	6
The actual increased value of 37 bullocks during 20 weeks each, winter feeding, being	396	1	0
The general average of weekly increased value 10*s.* 8*d.*	£394	13	4

He would now lay before them his account of feeding in two ways—viz., the preparatory or summer feeding, and the fatting or winter feeding:—

1.—Account of keeping a bullock in a preparatory state by summer feeding.

	s.	d.
Dr.		
To 3 lbs. of oilcake per day, or 21 lbs. per week, at 12*l.* per ton	2	3
To 80 lbs. of Clover per day, at 9*d.* per rod, the rod weighing 120 lbs.	3	6
To 15 lbs. of litter straw per day, or 140 lbs. per week, at 15*s.* per ton	0	11
To attendance per week	0	6
To interest on capital and gain	1	2
	8	4
Cr.		
By increased value of bullock per week	7	0
By value of manure per week	1	4
	8	4

2. Account of keeping a bullock in a fatting state by winter feeding.

	s.	d.
Dr.		
To 4 lbs. of oilcake per day, or 28 lbs. per week, at 12*l.* per ton	3	0
To 1 lb. of Bean meal per day at 12*l.* per ton	0	9
To 64 lbs. of Mangel per day, or 448 lbs. per week, at 10*s.* per ton	2	0
To 20 lbs. of Oat straw fodder per day, or 140 lbs. per week, at 30*s.* per ton	1	10
To 20 lbs. of straw litter per day, at 15*s.* per ton	0	11
To attendance per week	0	6
To interest on capital and gain	3	0
	12	0
Cr.		
By increased value of bullocks per week	10	8
By value of manure per week	1	4
	12	0

These tables required some explanation, and the first that suggested itself was, how he had arrived at this quantity of food? Well, it had been a matter of practical experience with him for some years past, that to adopt a moderate system of feeding was best calculated to yield a profit; and he objected *in toto* when persons keeping bullocks called them mere manure-making machines, and said that a profit was not to be made out of them. If his practice were not gainful, he certainly would not continue it, but he was satisfied that it was profitable to him. The 4 lbs. of oilcake-meal per day in the last-mentioned table was the quantity he regularly gave, unless he kept the animals for exhibition, and then he added a pound of Bean-meal per day, so that the amount of corn and cake never exceeded in value 3*s.* 9*d.* per day. With regard to the 64 lbs. of Mangel per day, or 448 lbs. per week, he might observe that he had to thank this Society for having taught him, through the pages of its Journal, that a far less quantity of roots was sufficient than he had at one time supposed. In 1854 an essay, by Mr. Chas. Lawrence, was published in the Journal, in which it was stated that 50lb. were sufficient for an animal, and would still leave a considerable gain. It was that statement which first called his particular attention to the subject. He had been told right and left that if he gave Mangel he would ruin his stock. Nevertheless, he had continued to feed sheep and bullocks for years upon it; and had ceased to cultivate Swedes for the simple reason that he liked eighteen pence better than a shilling; that he could grow 30 tons of Mangel where he could grow but 20 tons of Swedes, and that 64lb. of Mangel were in his judgment, equal to 75lb. of Swedes. This, at all events, was the result of his experience. With regard to the 20lb. of Oat-straw fodder, he had never yet seen the bullock that gave a profit by being fed upon hay; but he had been informed of numerous instances to the contrary. The reasons were, first, that the hay was too costly a material; and next, that the animal would not continue to eat his other food so heartily as when he was supplied with straw. When he ate straw he came to his food with the greatest zest and appetite; but when he ate hay, he often refused his food; the hay having a cloying effect upon the stomach, particularly when roots were given in large quantities. He never grew hay, therefore, but cut up his Clover, and fed his beasts under cover, in the preparatory state of summer feeding, believing that they thereby made as much meat again, as well as produced a valuable manure. As a physiological question, ruminating animals required a large amount of straw to distend the stomach and maintain the process of rumination and digestion. He believed he was also right in allowing 20 lb. of straw litter per day during the winter feeding. In placing the increased value of the bullock at 10*s.* 8*d.* per week, he might be told that, measured by the actual number of pounds weight in a week, that was too large a sum; but he must repeat once more that he was now giving them the results of three years' feeding of stock of various ages; and he had shown that, to get at this 10*s.* 8*d.*, his younger stock paid better than stock of full age. Under the head "economy of feeding," he had mentioned the subject of the sort of animals to be kept; and he thought that the old established breeds, recognised by the Royal Agricultural Society at their annual shows—the Short-horns, Herefords, Devons, and Scots—must also be recognised by the farmer. At the same time he must not despise the crosses, which, however, should be derived from the pure breeds. For rearing he liked the Short-horns best; and he always brought up his calves under cover from the time of calving up to their being 22 or 24 weeks old. The best age at which to commence fatting he took to be from 18 to 24 months. Some of his stock, which he sold in April last, commenced feeding on the 1st of November preceding. Two of them were 17 months old when they began feeding, and the average weight of the beasts when sold was 98 st. odd pounds. There was one point worthy of notice in reference to animals that had been purchased after being driven about the country or taken from roaming about their own pastures. It was not reasonable to suppose that these would get immediately used to the circumstances of their new life upon being placed in boxes, and without delay do full justice to the amount of food supplied to them. He held that they were not justified in taking such animals and putting them on high feeding at once. Hence his adoption of what he termed a preparatory state of feeding. As to the condition of the animal at the commencement of his feeding, his opinion was that it should always be fleshy. Six or eight weeks were sufficient to detect the bad doers among purchased animals. He was feeding his young stock, calves, yearlings, and various ages, on Clover at this time. After the Mangel was gone he commenced with Trifolium, Clover, and the greens of Carrots and Turnips. With regard to the times of feeding, he fed only twice a-day with roots, and had the Mangels cut with a gardener's cutter, the same as for sheep. He did not like pulping; and preferred feeding twice a-day to three times, because the animals come to the trough with a better appetite, and between the periods of feeding were induced to consume a larger quantity of straw than if they were fed oftener. The straw was not made into chaff. He objected to so low priced a commodity as straw being cut. It did not pay for cutting, and the only use of cutting was to mix it with other food. With reference to the second division of his subject, the economy of making manure, that would include the value of the manure, having regard to the food the animals received; and the accommodation for making and preserving it. There was no question, he thought, that an animal would make a much larger

[amount] of meat from the material it consumed if it [could] lie down comfortably; and he contended that a [well-arranged] box, carefully littered with straw, as [nature] dictated, was the best accommodation it [could] have. An animal which lay upon boards, must [be in] a distressed and unnatural condition. But one [that lay] upon earth lay comfortably; on that ground, [therefore], he preferred an earthen to a wooden floor. [This] he asserted as the result of his own personal [experience]. In regard to the value of the manure, he [believed] it could not be obtained at anything like the [same] value by any other system than that of box feeding. It accumulated rapidly; and at the same time [every atom], both liquid and solid, was preserved in the [best possible] form. In no way could they attain such [satisfactory] results from the food consumed as by box [feeding]. As to the health and well-doing of the [animals] during the three years that he had been carrying on his system of feeding, he had never lost a single [animal] or had one out of health of any age, calf, yearling, or ox; though when he used to feed on hay his [bullocks] were constantly out of health, and some days [they] would not eat a bit of cake, their stomachs were [clogged] and cloyed. The quantity of straw should [not be] less than 20 lb. a day, which would give a ton of [dung] per month.

UNBRANNING OF WHEAT.

In a report on the alleged grievances of the journeymen bakers, just made by Mr. H. Seymour Tremenheere to the Secretary of State of the Home Department, a process of unbranning Wheat is described, which seems likely to exercise an important bearing on the supply of food. Messrs. Hadley, of the City [flour] mills, states to Mr. Tremenheere as follows:—

"We have been making experiments for some time [in the] mode of unbranning Wheat, invented by Mr. [Bentz] about the year 1846, in America, and subsequently patented. The object of this process is to [separate] the outer cuticle, which is wholly innutritious, [from] an interior section of the Wheat-berry, which [contains] mostly nitrogenous matter, and which has [hitherto] been lost as human food.

"There are two leading advantages in this process. First, the cleanliness of the flour produced. In grinding by the ordinary process it is impossible to render the flour entirely free from dust and dirt. After putting the Wheat through two or three processes of cleaning in the common way, there will still be some dirt [remaining] in it. All flour always contains more or less [of this] dust. There is also a portion of the beard of the Wheat, a kind of fibrous appendage, which is [always] ground up with it; no process hitherto known [has] been able to get rid of it.

"By Mr. Bentz's process, as the exterior cuticle is entirely removed previously to grinding, the flour is necessarily perfectly clean, and free both from dust and this fibrous down.

"Secondly, by the ordinary mode of grinding, the [result] obtained is 76 per cent. of flour for human use. By the new process we find, after a series of very careful experiments, extending over several months, that we obtain about 86 per cent. of the whole berry available to make bread.

"The money value of this increase of 10 per cent. is subject to a deduction of about one-half in consideration of the lessened quantity of offal, the value of which we may take at half of that of the flour if used as human food. The offal is used for many purposes, which give it a value larger than would at first sight be conjectured.

"In addition to this net increase of 5 per cent. in [value of] flour available for human food, the flour made by this process, containing all the nitrogenous or nutritious matter existing in the berry hitherto lost, yields a large increase in the number of loaves per sack. From the trials which we have ourselves made, we are satisfied that that increase may be safely stated at 20 lbs. of bread per sack of flour. This, taking the common average yield of a sack of flour at 90 four-pound loaves, or 360 lbs. of bread, amounts to an increase of upwards of 5 per cent. on the bread (18 lbs. would be exactly 5 per cent.)

"The aggregate gain in flour and bread may therefore safely be stated at 10 per cent.

"There is also another source of gain in a national point of view, in the increased nutritive value of the whole mass of the flour made by this process."

Dr. Dauglish, whose paper descriptive of his process of making aerated bread was read before the Society of Arts, in reference to this method of unbranning states as follows:—

"The invention was brought under the notice of the French Emperor, who caused some experiments to be made in one of the French bakeries, to test its value. The experiments were perfectly satisfactory, so far as the making of the extra quantity of fine flour was concerned, but when this flour was subjected to the ordinary processes of fermentation, and made into bread, much to the astonishment of the parties conducting the experiments, and of the inventor himself, the bread was brown instead of white. The consequence of course has been that the invention has never been brought into practical operation. But about four years ago a French chemist, M. Mége Mouriès, directed his attention to the subject of baking, for the purpose of white bread-making, the nutritious substances ordinarily thrown away with the bran, and the results of his inquiries were communicated in a memoir to the Academy of Sciences, on the 9th June, 1856, and have since been reported on by MM. Dumas, Pelouze, Payen, Peligot, and Chevreul.

"These results explain most satisfactorily the cause of failure of the flour prepared by the American method to make white bread.

"Before the publication of M. Mouriès' researches, the nutritious substance attached to the bran was considered by chemists to be a portion of the gluten of the grain, but it now proves not to be gluten at all, but chiefly a new nitrogenous body, analogous to gluten, which the discoverer has named 'cerealine,' with a portion of another well-known nitrogenous body —'vegetable caseine.'

"Among the properties of this body, cerealine, M. Mouriès gives the following:—

"It is soluble in water, and insoluble in alcohol. It acts as a ferment on starch, dextrine, glucose, or grape sugar. It alters gluten extremely, and gives to the altered matter a brown colour. Its peculiar action, when brought into contact, in the process of fermentation, with the ordinary constituents of fine white flour, is the true cause of the dark-brown colour imparted to the bread made from flour in which the cerealine was retained.

"M. Mouriès having satisfied himself as to the properties of cerealine, adopted a method by which its peculiar action was neutralised, and then made bread by the ordinary process of fermentation, in which the whole of the bran contained in the internal coat of the grain was allowed to remain. The result was a loaf having merely an orange colour, but none of that dark brown colour which always results when the bran contained in the internal coat of the grain is used in bread made by the ordinary method.

"In like manner, by my process, in which the fermentative changes are never allowed to take place, bread made from wheaten meal, from which only the coarse bran has been separated, is so free from the dark-brown colour that it is difficult to persuade people that it is made from wheaten meal at all." *Journal of Society of Arts.*

Home Correspondence.

Expenses of Steam Cultivation at the Thorne, Sidley, Battle.—I think that you have understated the daily cost of steam cultivating. I estimate the cost per day of 10 hours to be—

	£	s.	d.
Engine driver	0	4	0
Four men	0	8	0
Two boys	0	1	8
8 cwt. Coals at 20s. per ton, carriage 3s. per ton	0	9	3
Oil	0	1	0
Two-thirds of the time of Horse and Boy, Water, and Coal carting and hauling up rope	0	3	0
	£1	6	11

but as the length of the days will average 11½ hours, I think that 30s. per diem, or 9*l*. per week, is the actual cost. I do not think that it is right that the daily cost should be understated, and I trust you will re-consider this part of your paper. I am very anxious that steam cultivation may be successful, but at present I am only solving the problem and have not arrived at the finis, q. e. d. One thing is certain, that I am at last forward with my work, and I have 44 acres of Wheat and 23 acres of Barley, Tares, and Rye-grass cropped for the next year, and even stubble broken up. *George Morgan.*

Mr. Smith's Combined Steam Cultivator and Seed Machine.—I have been practising with my combined machines two days this week in order to have it in good trim for showing it publicly at work on Tuesday October 21, on my No. 2 heavy land, but somehow or other the public are not ready to see it, for I have only received three applications in answer to my advertisement published two weeks in the three leading agricultural papers. Perhaps if you will kindly allow me to tell the public what I have done in these two days, some few of them may make it convenient to come and see for themselves. To do what I can to make it convenient to them, I will fix for the Thursday following, namely October 23. Whether any of the public come or not I should be glad if you would either come yourself or send some one else to see and test every thing I do for you and thus send all the facts you can to the public. On Monday morning I sent my tackle out, including my combined machine and seed Wheat, to my No. 1 light land, a Bean stubble containing 12 acres. At 10 A.M. the machine was started, and on Tuesday evening it had cultivated and drilled the whole field. Monday afternoon was very wet, and to some extent hindered the working of the machine. The headlands were all done, one a very crooked one, and a great many short pikes—indeed it is such a plot that no other mode of application could have done it at all. Exactly 12 bushels of Wheat were drilled on the 12 acres of land, every seed was planted on the ridge and at the furrow at a regular depth, and was well covered in a well worked soil, such a seed bed for Wheat I never saw before. My 8 horse engine, driven from a three feet pulley, never worked it over 50 lb. pressure. This is a record of the first field cultivation and drilled Wheat at one operation by steam power. Should I be able to complete my No. 2 heavy land field (which in some respects is a less difficult one) in a similar style, I do think it would repay you and any of the public who would like to see it done for coming. I ask the publication of this upon public grounds, because it can make but little difference to me personally as to whether any one comes or not for I have at the most only to remain here a few years longer and then get buried; yet I feel bound as an Englishman, so long as I may be permitted to remain, to do my duty to my country. *William Smith, Woolston, Bletchley Station, Bucks, Oct. 16.*

Ransomes' Automaton Reaper.—In justice to Messrs. Ransome and for the benefit of the public at large, I feel bound to give all the information I can respecting their newly invented reaper and self deliverer. It not only does the work as well, but far exceeds my expectations both in cutting and delivering. I cut 5 acres of Wheat in less than 5 hours (straw 4 loads to the acre). I then cut 41 acres of Wheat in 35½ hours; 11 acres of Barley in 9 hours; and 8 acres of Oats (on a very uneven piece of land with deep furrows) in 7 hours. *James Allen, Stone Hill Green.*

Societies.

FERRYGATE, EAST LOTHIAN.—We abridge from the *Scottish Farmer* an account of the day's proceedings on this farm last week, when Mr. Sadler, the enterprising tenant, invited a number of the farmers of East Lothian to witness the operation of Fowler's steam plough.

The field in which the plough was at work was a Barley stubble, the character of the soil being a rich deep loam, with a slight clayish mixture to give it consistency. The field was generally level, its length about 230 yards, and on the average the plough traversed this distance, making four furrows, in 3½ minutes. The furrows were each 11 inches in breadth, so that the work performed was at the rate of an acre an hour. The amount of this work, however, was reduced by the stoppages at the ends, which in each case amounted to about 20 seconds on the average. The quantity really ploughed was thus about ten-elevenths of an acre per hour. The field had been previously dunged with farm-yard manure, which necessarily had some effect in retarding the speed of the plough, while the existence of stones rendered caution necessary. It should also be remembered that there are incidental delays attending on public exhibitions which do not occur on ordinary occasions when only those employed are present. The extent of tillage performed by Fowler's plough may therefore be safely set down at fully one acre per hour, including all stoppages, while with the grubber an acre and a-half per hour can be thoroughly smashed up. The depth of the ploughing on Saturday would be nearly 8 inches. The width of the furrow made the depth look less than it actually was, and several present thought it not more than 5 or 6 inches. Carefully measuring the furrows at many places along their whole length, we found the depth to vary from 5½ to 9½ inches. The smallest depth was very uncommon, and 7½, 8, and 8½ inches were very frequent. Altogether, a fair average would seem to be from 7½ to 8 inches—nearer the latter mark than the former. This, it was thought by some, was not deep enough for steam-ploughing, but we dare venture to say it is considerably deeper than most farmers get with the two-horse plough—at all events when they are not in the field themselves. A greater depth could easily have been obtained however, and would have been, but for the presence of stones, which, as we have mentioned, also lessened the speed. About a dozen large stones were detected in the course of about an hour's ploughing, a fact which would appear to demonstrate clearly enough that Saturday's work, for all it was not considered deep enough, was beyond the depth that had been reached in previous years. The pressure at which the engine wrought during the day, as registered on the gauge, was about 85 lb. to the square inch. The rope was on the whole well carried off the ground, but an extra rope-porter would have better secured this important point—important both as to the saving of wear and tear of the rope and the saving of power; and the attendants at the porters might have lessened the friction by allowing the plough to come nearer to the pulleys before removing them from under the rope. To inexperienced persons, however, there is danger in permitting the plough to approach too closely before withdrawing the porters, and it is best to err on the safe side; but we have no doubt that a few weeks constant practice will enable Mr. Sadler's hands to discover the point at which the minimum of friction is obtained with freedom from risk.

In the afternoon the diggers were attached to the plough frame. The work performed by this implement resembles in some measure that accomplished by a gardener with a spade, and is very effective in heavy clay lands, the soil being so thoroughly cut up in pieces and thrown over as to allow the free play of the air through and below it. Some present did not like this operation so much as the ploughing; but it has been proved to be a very excellent mode of cultivation. After subjection to the winter's frost, it yields readily, we are told, to the action of the harrow. On the whole, the most of those who were present were greatly satisfied with the work they saw, and fully recognised the value of steam as applied to the cultivation of the soil.

The Luncheon.—At about 3 o'clock, upwards of 150

of the gentlemen who had been present at the trial adjourned to Dirleton Gardens, where the Right Hon. Nesbit Hamilton, Mr. Sadler's landlord, had erected a spacious marquee, in which he had an elegant luncheon. Mr. Nesbit Hamilton occupied the chair, supported by Mr. Cobden and several other distinguished guests, while Mr. Sadler discharged the duties of croupier.

The CHAIRMAN was proud to say that he had on his property two gentlemen, Mr. Sadler and Mr. Begbie, who had become owners of steam-ploughs, and he commended them highly for the spirit of enterprise which had induced them to introduce these expensive articles. He concluded by proposing "The Health of Mr. Sadler and the Tenantry of East-Lothian."

Mr. SADLER, in reply, stated the difficulty he had felt in choosing which of the various systems of steam farming is the one most advisable to adopt. He said:—

"I shall endeavour to tell you why I chose Fowler over the others, for it is now several years—viz., at the Exhibition of the Royal Agricultural Society of England at Salisbury in 1857—since I felt convinced that we must have steam to our fields in order to have them fairly stirred up. I went into the Fowler country, also into Howard's, and spent weeks in trying to find out which was the best system of steam ploughing. I daresay most of you are aware that there are two great systems of steam cultivation before us. The one has a moving engine, and requires water and coal to follow it. This is the one you saw to-day—viz., Fowler's; and in the other—viz., Howard's—the engine plants itself down by the side of a well, which may be either outside of the gates or in the middle of the field, and it does not move until the whole is completed. Of course this latter system has much more rope out, and several anchors—one in each corner of the field; the two at the corners, when the implement is at work, have constantly to be moved near the engine as the work progresses. Now, these claw anchors will not hold in light soil, or even medium, and that is the simple reason which has led me to prefer Mr. Fowler's implement. I have the highest authority in the country for knowing that Howard's system is found the cheapest when all the circumstances are adapted, but I should advise gentlemen who think of trying it to see that they are possessed of these circumstances.

"I have been asked very frequently with reference to my steam-plough, the question, 'Will it pay?'

"Now that depends on a variety of circumstances. For example, very frequently when coming on stones the 'skifes' are broken, and as every one of these costs 9s. 6d., to replace a large number of breakages would become a very heavy charge on the working. But eventually, and especially when our lands get cleared of stones, I believe it will pay, and that handsomely. You know what the expense of horses is. True, you cannot dispense with them altogether; but what are left on the farm are easier kept, for the hard work is done by the engine. A question which I think has been very generally overlooked with regard to these steam-ploughs, and which I think will give us here a great lift in working them economically, is the price of coals. In the south, in many cases I believe, they pay 23s. per ton for their coals. I have just contracted with Mr. Deans for his best Pencaitland coal to be delivered on the farm at 9s. per ton. The introduction of steam must lead to the improvement of the labourer. No fewer of them are required, and as it is skilled labour it must be paid for accordingly. There is much to say on the question of expense; but I mean to have no secrets; if Mr. Fowler puts an implement into my hands which does not pay, I cannot afford to work it, nor do I think the many owners of steam-ploughs would continue to do so. But what do you say to a farmer with his two 14-horse Fowlers? I met such a gentleman lately, and a more hospitable and better man does not exist. I refer to Mr. Ruck of Castle Hill, Gloucestershire. You should go there and see a square mile, 640 acres, laid out into nine fields of 70 acres; and what a saving would it not be to us all if we had our steadings in the centres of the farm. This is an important subject, and one which deserves the attention of the factors whom I see around me. In the Gloucester and Wilts counties there are so many Fowlers that people walk and drive past without so much as stopping to look at the work. The secret of steam-farming I should say is, 'work when dry, or when no horses can do the work;' that is the time when steam tells. If you want to see good crops (steamed Wheat) go to Bedford and visit Mr. Pike of Stevington; there you will see the effect of Howard. Talk of threshing and ploughing with an engine. Mr. Pike tried that, but said, I soon found it did not pay to fetch it from a large 60 acre and thresh out a stack, so I bought a second. It is a great question with those agriculturists in the south whether the land should be ploughed or grubbed. Many of them prefer grubbing or 'smashing up,' and if this practice should succeed then the cultivator and not the plough will become the order of the day."

The CHAIRMAN then said that the next toast he would propose was the health of "The Strangers," coupled with the name of Mr. Cobden, who was at present the guest of Mr. Hope, Fenton Barns.

Mr. COBDEN, in acknowledging the toast, said:—

"What is it that constitutes the prosperity of agriculture, as of any other pursuit? Is it to have a flourishing, rich, and increasing number of good customers. Without that no business can prosper, and in agriculture, above all things, you must have a constantly increasing number and a constantly increasing wealth of your customers—the manufacturing, mining, and industrial population of this country. Above all things, you want a prosperous community that can purchase your cattle and your stock; because, I need not tell you, who are so advanced in the science of agriculture, that that which lies at the very foundation of all scientific agriculture, is a large and constantly increasing production of these manure-producing animals—cattle and sheep, which you raise on your land. But you cannot find customers for that stock which is so necessary to advanced agriculture, unless you have a flourishing manufacturing, mining, and industrial population. You cannot send these articles abroad. I can understand that you might grow some commodities, such as Hops and other articles, that you might send: but cattle and sheep and the other animal life that exists on your farms must be sent to your near neighbours the manufacturing and industrial population. The course I took, and the policy I advocated, was to create a rich and prosperous community at your door, who would be customers for your commodities. I think we may now say that we have succeeded in that. You have a constantly increasing development of wealth—a constantly increasing export of manufactures, and a constantly increasing demand for your cattle, sheep, and wool. These have been the foundations of your prosperity. I have always thought that both landowners and farmers took a very unworthy and ignoble view of their own interest, when they measured the value of the land by the price which they got for their Wheat. Wheat is a barbarous measure of the value of land. Wheat was the sole dependence of your grandfathers when living here and paying one-fourth of the rent you are now paying, and not enjoying half the prosperity which you now enjoy with your fourfold rents. Therefore, I say, that in introducing a policy which has improved the condition of your customers, I have been advocating your interests. I could not improve their condition without improving yours; and your prosperity will go on increasing so long as your customers go on prospering, and your prosperity will begin to decline whenever they begin to decay. I am sorry that for a time we have had great depression in that manufacturing interest with which I have been particularly connected. I hope it will only be temporary. I hope it will not last so long as to be felt by you in your pursuits. I hope it will not be sufficient to check the onward progress of which we have received a grand manifestation in what we have witnessed on Mr. Sadler's land to-day. I hope you will go on increasing in the application of steam to the cultivation of the soil. That will be the next step in the progress of agricultural improvement. You must dispense as much as possible with the old-fashioned horse—the horse of flesh and muscle—and take the iron horse as a substitute, which consumes nothing when not at work, and will do far more work—whose coals will be less costly than Oats, and which will be less liable to derangement and accident than your live animals. I should hope that the prosperity of agriculture will enable you to go on increasing and multiplying your instruments of steam power. Gentlemen, I am extremely obliged to you for the honour you have done me on this occasion. It is a pleasure I never had before of addressing a body of agriculturists, meeting together to consult and to enjoy themselves in the midst of their own particular pursuits; but I feel myself highly honoured, and not out of my place in any way in being here to-day."

Farmers' Clubs.

WATCHFIELD: *Ploughing Match.*—The ploughing match, under the auspices of the committee of the Faringdon Agricultural Library, was held lately on land in the occupation of Mr. Giles, West Mill, Watchfield.

The ground was well adapted for the purpose, the only drawback being the dryness of the soil, which considerably increased the difficulty of the work. The weather was all that could be desired, and a large number of visitors were present; among them the Right Hon. the Earl of Radnor, Viscount Eversley, President of the Royal Agricultural Society, Lord Barrington, the Hon. E. P. Bouverie, Mr. F. Hanbury (Highworth), Mr. H. Tucker (Bourton), Mr. Murray (Shrivenham House), and most of the leading agriculturists of the neighbourhood.

The entries were numerous, including 24 for horse ploughs, four for ox teams, two for the Farmers' Sons' Prize, and two steam ploughs. The latter were entered by Mr. Moore (Coleshill), and Mr. Pocock (Bourton), the former being a 12 and the latter a 10-horse power. The task assigned to each was two acres, and Mr. Pocock completed his work in a quarter of an hour less time than his antagonist, and we heard one of the most competent judges we know express an opinion that he had never seen better ploughing in his life.

The judges were Mr. Thos. Arkell, Mr. Empson, and Mr. Wm. Hewer. The following is the—

AWARD OF PRIZES.

Ploughing with Horses.—1st prize, 3*l.*, to the best Ploughman within the district, to Wm. Barrett, recommended by Mr, Moore—Hornby's plough. 2d, 2*l.*, to the second best Ploughman within the district, to H. Hedges, recommended by Mr. Jos. Humphreys—Hornsby's plough. 3d, 1*l.*, to the third best ploughman within the district, to Richard Miles, recommended by Mr. Hanbury—Ransome's plough.

Ploughing with Oxen.—A prize of 2*l.*, by special subscription, to the best Ploughman within the district, to William Cox, recommended by Mr. Tombs—Ball's plough.

Farmers' Sons.—A Silver Cup, value 5*l.*, by special subscription, to the best Ploughman being the son of a farmer: Mr. Tombs—Ball's plough.

Steam Ploughing.—Prize to Mr. Pocock, Bourton.

At 3 o'clock the prizes were distributed by Mr. Moore, who expressed his opinion that the work generally had been done exceedingly well. He added that the judges had adopted a plan of deciding on the merits of the work by means of marks, allowing so many for the striking out, the ploughing, closing, &c., and awarding the prizes to the man who had the largest total. Thanks were awarded to the committee, to the judges, and to Mr. Moore, and the proceedings terminated. We should not omit to state that Mr. Giles liberally entertained his friends and numerous visitors during the day.

Farm Memoranda.

COLLEGE FARM, CIRENCESTER.—Harvest was finished on the 22d September, having occupied just seven weeks. This comparatively long period was owing to the slow ripening of the corn. Much of the Wheat was cut rather green and required an unusual amount of field room, and even then, though perfectly straw dry, the corn was soft and damp. Although the weather on the whole was fine, the atmosphere was not dry for sufficiently long periods to thoroughly condition the corn. However, if this was unfavourable for harvest operations, it just suited the root crops, which continued to grow rapidly with hardly a check; the consequence is that where scarcity was apprehended from the backward sowings and rough nature of the fallow, plenty now prevails. This prospect, together with abundant Grass, has had its effect upon the trade, and stock animals have been bought in at high figures, which preclude much profit for feeding. Wether lambs (Cotswolds) have reached as high as 50*s.*, whilst stock ewes have ranged from 50*s.* to 70*s.* a head. Horned stock has been proportionately high. The existence of small-pox in an adjoining county, and the possibility that infected sheep might come into our monthly market, have stimulated the farmers of this neighbourhood to form themselves into an assurance association, and to take vigorous measures to ward off, and if necessary combat with the disease. Two veterinary inspectors have been appointed, every lot of suspicious sheep were closely examined before being admitted into the market. At present we are quite [illegible], and as the reports from the infected neighbourhood are every week improving, we may hope that the disease will shortly disappear. Not so I trust the Association which it has been the means of [illegible]. We know not how soon another attack may come, and it will be of the greatest importance if [illegible] measures can be taken to prevent its spread. The teams and hands were principally occupied in harvest work; a few acres of Wheat stubble have been [illegible] and ploughed for a first sowing of Vetches, and the first ploughed Wheat land was dragged down preparatory to cultivation with the Coleman's [illegible], as from long exposure the surface had become green in spots.

The steam plough has been pretty constantly at work ploughing up a neighbour's fallows; the average work being between 5 and 6 acres a day. We rejoice to see from the reports in the *Gazette* that the statements as to the cost of working and the quantity of work performed by steam cultivators, are this season of a more trustworthy character than formerly. The good cause was then we feared in great danger from its friends. Calculations based partly upon facts as to work done, and partly upon estimate of wear and tear and cost of repairs, have now been corrected by actual experience, and we see that 11*s.* to 12*s.* an acre for stiff land seems about the correct estimate. The advantage of steam-cultivation will not be in the actual saving over horse or bullock labour, but in the immensely superior nature of the work; even on our comparatively light soils we see the effects—how much more on strong clays!

With regard to the amusing letter from your correspondent on thin seeding, in which Mr. Wilkins tries to raise a laugh against the farming of the Royal Agricultural College, I have merely to say that his statements are so completely based upon mis-representation of the actual facts, that I can only suppose that his love of "sensation" writing must have got the better of his love of truth.

Having been a constant reader of the *Gazette* for the past 15 years, I am tolerably conversant with the learned gentleman's effusions, and have often derived amusement if not profit from their perusal. Mr. Wilkins makes great fun about a pre-Adamite implement called "a drag, supposed to have come from Timbuctoo," with which according to his reading I put in my corn, and which must henceforth "supersede all other drills, dibbles, &c." The sentence which gave rise to this amusing tirade forms part of my report which appeared in the *Gazette* of June 14, and is as follows:—"Barley sowing was finished May 8. The last piece of 11 acres being hilly was sown 'broadcast,' 3 bushels per acre well worked in with the drags and lighter harrows."

The learned gentleman's ignorance in confounding a drag harrow with a drill, if unintentional, almost leads one to suppose that his farming operations are confined to a small area; possibly his kitchen garden. And now a word or two as to this question of thin seeding. Mr. Wilkins has been writing on the subject for the last 15 years, apparently without much effect. May this not arise from his riding his hobby a little unreasonably? His want of success reminds one of a quack doctor, who, having found out a specific for a certain form of disease, advocates its use for every case, however dissimilar; the result is that the medicine loses credit for even the only virtue it possesses.

The exact proportion of grain to the acre that may be considered to constitute thick or thin sowing must vary according to soil, climate, and condition as to cleanness, and any one who would lay down a specific rule shows his ignorance of the subject.

I should consider 6 pecks of Wheat on our exposed shallow soils as quite thin planting, and that a less quantity could not be depended upon to produce a crop. Dibbling 1 to 2 pecks per acre, however successful it may prove on rich soils in warm dry climates, utterly fails here; we have great growth of straw, which invariably blights. The explanation appears simple. The thin sowing induces a very luxuriant growth, and all goes well so long as the soil can supply food; by-and-by the demand exceeds the supply, disease appears, and the seed cannot be matured. We hope to begin planting the first week in October. The land is hilly, and we have three qualities of soil—in the valley a deep good loam, on the brow very thin poor soil, and on the top something between the two. It would be as unwise in us to sow the same quantity all over the field, as we deem it in the learned gentleman to advocate extreme thin sowing regardless of circumstances. We shall put 6 pecks in the valley, 8 on the brow, and 7 on the top. If we plant in November we should increase the quantity to 7 pecks on level land, and in mid-winter or quite early spring we frequently sow 9 to 10 pecks. Last season we planted on the 6th of February 10 pecks of a winter Wheat after roots, and the crop yields 40 bushels, with a strong straw. So much for thin seeding.

Further on in his letter Mr. Wilkins refers to my comparison of the number of sheaves on two exper-

[illegible] Wheat plots, which he confuses with the thick [illegible] and yellow Barley; indeed, it is clear throughout that his mind is so occupied with one idea, that he [entirely] mistakes the tenor of my remarks. [Mr. [illegible] refers, we think, to a letter by Mr. Coleman, [illegible] on the estimation of the crop by threshing [illegible] percentage of the sheaves.]

[illegible] experimental plot of 2 acres was divided into [illegible], all hand-reaped by a careful workman. The [illegible], therefore, were uniform, and so correct an [illegible] of the difference in crop did they afford, that on [illegible] the two plots in question, that unmanured, [which] contained 130 sheaves, yielded at the rate of [illegible] bushels per acre, whilst the other, dressed with [illegible] of soda and salt, which contained 180 sheaves, [yielded] at the rate of 44 bushels 48 lbs. per acre, [giving] a clear profit of 3*l.* 0*s.* 7*d.* per acre. *John [illegible], Royal Agricultural College, Cirencester.*

Calendar of Operations.

OCTOBER.

[illegible]: *Oct.* 20.—We have had one of the finest [illegible], and no doubt the land will be greatly benefited by [illegible] has been turned up. Some have not done much [illegible], thinking it too hard, and the lea ground has not [illegible] up very neatly; but it has been exposed well to the [illegible] and some of the stubble land has been ploughed up deeply, [illegible] lies in fine order for the winter. There has not been [illegible] Wheat put in yet, and we have had such a decided [illegible] from very dry to excessive wet that we must wait a [few] days before we can sow; the past four days have been [illegible], and a great quantity of rain has fallen. There has [been] a good deal of Wheat threshed out, and the yield is likely to be better than was expected, but it is said not to make good flour; there is not much difference between the price of good new and old—from 52*s.* to 56*s.* for fair samples. There is a fair quantity of Barley showing, but not much good, and I do not think that there will be a great supply of good malting Barley; it appears to turn out worse than was expected. All kinds of stock are dear, especially sheep; Down ewes from the west (notwithstanding the alarm caused by the small-pox) are fetching a very high price, from [4]0*s.* to 50*s.* each, and there does not appear to be much fear of disease on the part of buyers. Lean cattle are also dear and not a large supply here. The root crops are now doing well. Mangel will not be heavy, but it has made up a good deal during the past four weeks. Swedes showed signs of mildew before the rain came, but they will now be safer. All late Turnips [are doing] well; so that there is a prospect of plenty of food. [illegible] soon to get on sowing, and the Mangel must soon [come] up; it is hardly safe after this month; and then the [remainder] of the stubbles have to be turned up, so that all our heavy land may be exposed to the frosts as long as possible. *G. S.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Oct. 22, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	16	30.00	52	49	S.W.	2	1	65	43	84*	39	0.02	57½	57½
Friday ..	17	29.57	54	53	S.W.	4	8	60	44	95	41	0.22	56	57
Saturday ..	18	29.66	48	46	S.W.	1	7	60	41	89	38	0.13	55	56½
Sunday† ..	19	29.78	49	46	S.W.	2	6	50	38	58	35	0.74	53	56
Monday ..	20	29.29	45	42	S.W.	3	4	57	41	63	37	0.63	52½	54½
Tuesday ..	21	29.74	49	46	S.W.	2	6	51	40	85	36	0.01	51½	54
Wednesday.	22	29.48	56	54	S.W.	1	7	56	45	86	42	0.12	51½	53½

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb. † Barometer at 9 A.M. [illegible]

Notices to Correspondents.

[illegible]: White's Farriery.

[illegible] WHEAT: *J Fryer.* If you crush one of the grains and [illegible] it, and let it lie for a few hours and then examine it [under a] microscope, you will find it a mass of moving eel-[like] [illegible]. They are the *Vibrio tritici*, and the disease [is] [illegible] called Pepper brand.

[illegible]: *E A* asks for the experience of our readers who use [illegible], as to times of cutting, mode of crushing, [illegible] in which the food is offered to cattle, and quantities [illegible], and as to its fitness for sheep, cattle, and horses, [respectively].

[illegible] FARM: *Geo. W.* Next week.

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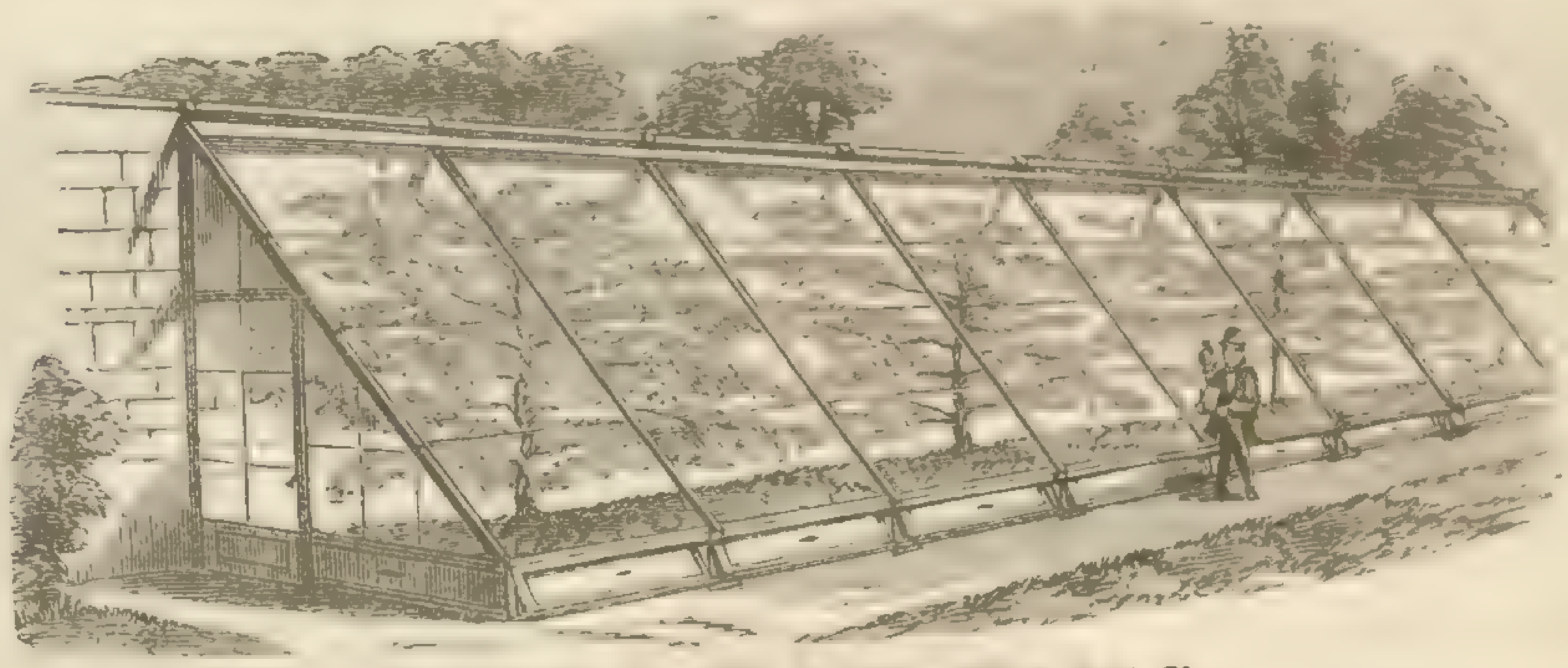

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for Cottage Houses, &c., to contain 50 gallons, 26*s*.; 80 gallons, 31*s*. each; and 140 gallons, 37*s*., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.
Galvanised Iron Pumps
for Liquid Manure or Domestic Use, 3 inches diameter, 30*s*. and 32*s*. 6*d*. each; Tail Pipe for same at from 10*d*. per foot.
Galvanised Iron Swing Water Barrows
for Garden or Farm use, containing about 20 gallons, entirel formed of iron, 35*s*. 0*d*. each.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.

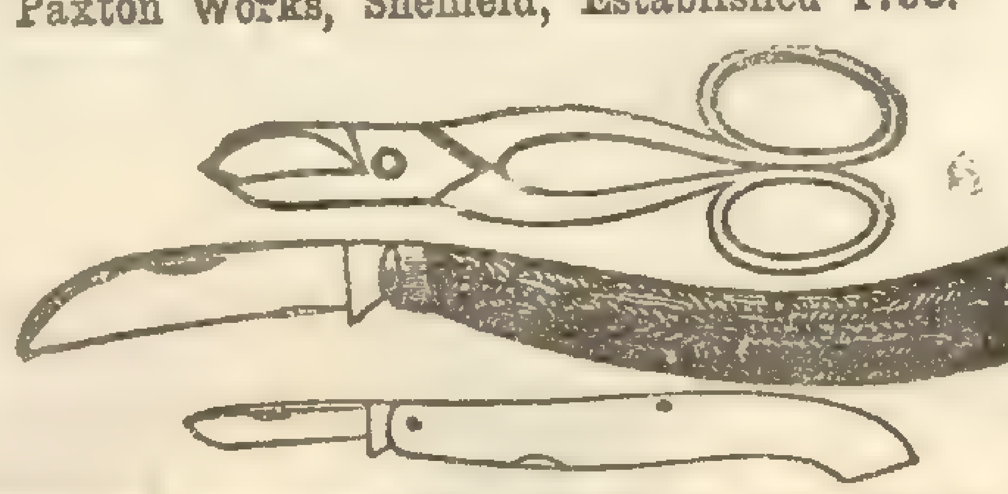
Garden Border Edging Tiles.

F. AND G. ROSHER, Cement, Brick, and Tile Merchants, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.
They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.
N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.
Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.
To be obtained of F. & G. Rosher, at their Premises as above.

JOSEPH HAYWOOD AND CO.,
Manufacturers of
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kind of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield.

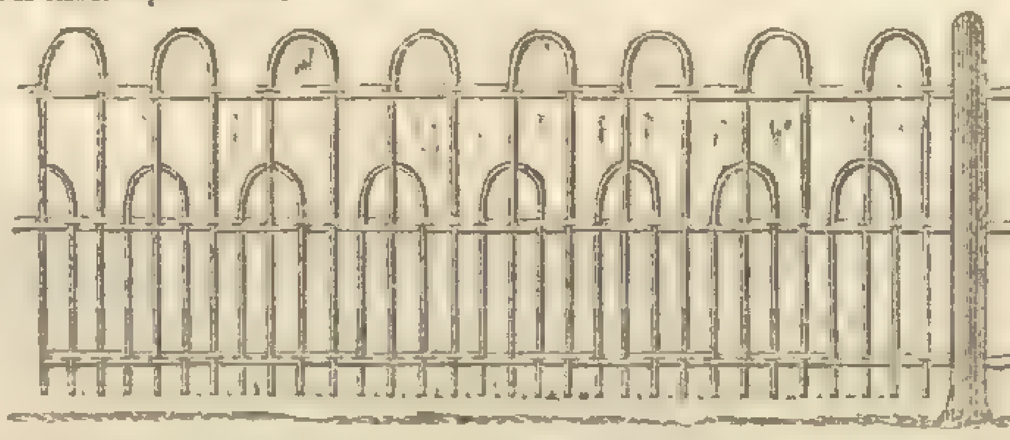
Paxton Works, Sheffield, Established 1738.



International Exhibition Prize Medal is just awarded to Saynor & Cooke for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR AND COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.
Caution.—None are genuine unless marked Saynor. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.
Manufactory: Newport, Salop.
Warranted the strongest and most durable Fence ever offered at corresponding prices. It is easily repaired if broken from accidents; can be rolled up most compactly when not in use, is admirably adapted for exportation, and can be had of any height and mesh required, at prices from 4*d*. to 1*s*. 6*d*. per yard and upwards.



For further particulars apply at the Manufactory, or of the London Agent, Mr. R. Winder, 18, Abingdon Street, Westminster, S.W.

AGRICULTURAL IMPLEMENTS.—[illegible] Engines, Threshing Machines, Mills for Hand and Power, Carts, Waggons, Ploughs, Harrows, Turnip Cutters and Pulpers, Chaff Cutters, &c.
Burgess & Key, 95, Newgate Street, E.C.

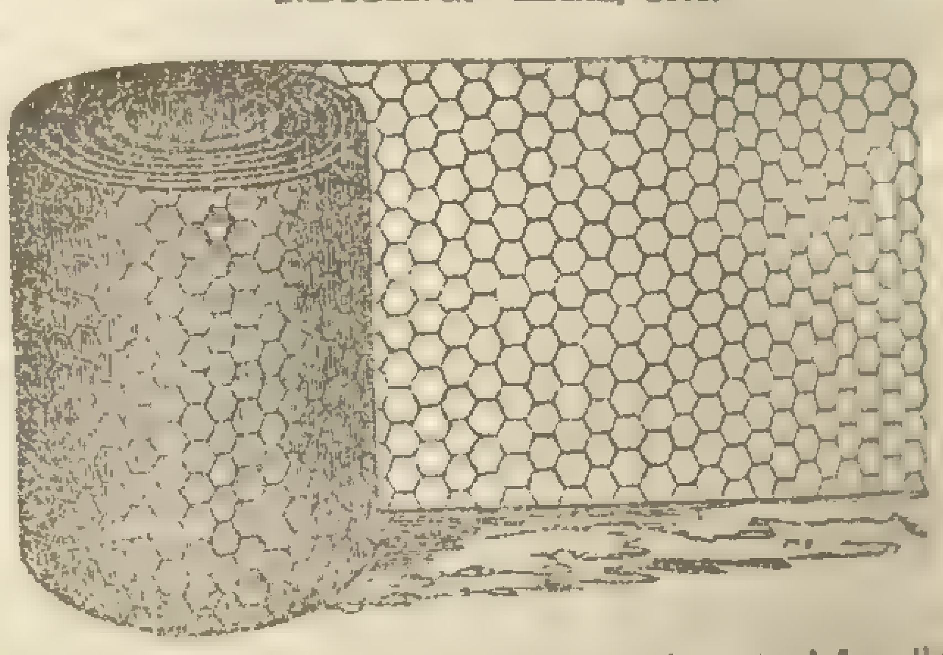
FOR SALE, a lot of useful PIT and other Lights.—Size and price of ditto, 7 feet by 4 feet, [illegible] by 4 feet, 16*s*; 5 feet by 3 feet 2 in. 11*s*. 6*d*. each [illegible] built GREENHOUSE, 21 feet by 11 feet, for [illegible] plete. The whole is glazed with good strong glass.
James Smith, Carpenter, Joiner, Blind M[illegible] house Builder, near the Creek, King Street, [illegible]

FOR SALE, TWO IRON BUILDINGS, [illegible] with Wood, 60 ft. by 15 ft., and 10 ft. high; [illegible] each. Also a Wood Building same size, 8[illegible]*l*., now erected [illegible] Rooms, 30 ft. by 15 ft., 50*l*. each; Iron lined with W[illegible] Shop, 12 ft. square, 35*l*. A Tent, 16 ft. square, with [illegible] sides and floor, 15*l*. An ornamental Wood Room, [illegible] 18*l*. Any of the above will be erected by the Advertiser [illegible] very small additional cost.
Apply, R. Richardson, 99, Euston Road, London, N.W.

Gutta Percha Tubing for Watering Gardens.

THE GUTTA PERCHA COMPANY have [illegible] pleasure to acknowledge the receipt of the following
Testimonial from Mr. J. Farrah, *Gr. to* Boswell Mid[illegible] Jalland, Esq., *of Holderness House, near H*[illegible]
"I have had 400 feet of your Gutta Percha Tubing [illegible] lengths of 100 feet each, with union joint, in use for the [illegible] 12 months for watering these gardens, and I find it to [illegible] better than anything I have ever yet tried. The pressure [illegible] the water is very considerable, but this has not the s[illegible] effect on the tubing. I consider this tubing to be [illegible] valuable invention for Gardeners, inasmuch as it enables [illegible] water our gardens in about one-half the time, and with [illegible] the labour required."
Manufactured by the Gutta Percha Company, Pat[illegible] 18, Wharf Road, City Road, London, E.C., and sold by the Wholesale Dealers in town and country.

BARNARD, BISHOP, AND BARNARDS, Norwich.
FURTHER REDUCTION in the PRICE of WIRE NETTING.—April, 1861.



Barnard, Bishop, & Barnards beg to inform their friends and the public that they have made a further reduction in the prices of Machine-made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard
2-inch mesh, 24 inches wide..	No. 19	4½*d*.	3½*d*.
2-inch " " " ..	" 18	5	4
2-inch " " " ..	" 17	6¾	5
2-inch " " " ..	" 16	8	6½
2-inch " " " ..	" 19	4¾	4
1⅝-inch " " " ..	" 18	6	4¾
1⅝-inch " " " ..	" 17	7	5½
1⅝-inch " " " ..	" 16	9	7
1⅝-inch " " " ..	"		

All the above kinds can be made any width (under 6 feet), at proportionate prices.
Strong Galvanised Poultry Netting, 7½*d*. per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11*d*. per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.

Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.
Five wires, 3 feet 6 inches high, pronged Standards, [illegible] apart, one wrought iron straining post and straining [illegible] to each 100 yards of Fencing, 10*d*. per yard.
The same with Galvanised Wire Rope, 1*s*. per yard.
Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.
*** Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.
RANSOMES & SIMS, ORWELL WORKS, IPSWICH,
Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD,
PATENTEES AND MANUFACTURERS OF
STEAM CULTIVATORS, STEAM PLOUGHS,
CHAMPION PLOUGHS, HARROWS, HORSE RAKES, AND HAYMAKERS.
CATALOGUES, with full particulars, sent free on application.

GREEN'S
LATEST IMPROVEMENTS IN
LAWN MOWING, ROLLING, and COLLECTING MACHINES,
FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.
These Machines have carried off every Prize that has been given in all cases of competition, and have been awarded the PRIZE MEDAL at the INTERNATIONAL EXHIBITION of 1862.
GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.
For Illustrated Price Lists, with full particulars, address
T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

FIRST CLASS PRIZE MEDAL
FOR ORMSON'S CONSERVATORY.

CLOSING of the INTERNATIONAL EXHIBITION.

ORMSON'S CONSERVATORY

FOR SALE.

CLASS 9, OPEN COURT, EASTERN ANNEXE.

FIRST CLASS PRIZE MEDAL
FOR ORMSON'S PATENT JOINTLESS TUBULAR BOILER.

FROM *BELL'S WEEKLY MESSENGER.*

"These reflections have been induced by the array of glass houses in the open court of the Eastern Annexe, but more especially by the magnificent Conservatory manufactured and exhibited by Mr. HENRY ORMSON, of the Stanley Bridge Works, Chelsea. Structures of this kind may be taken as typical of the taste that is growing among the wealthy of the land; for so much skill and enterprise would not have been displayed, and so great an outlay of capital been made, by a manufacturer, unless there was a market for such buildings. We rejoice at this progress in these auxiliaries to the homes of the aristocracy, for we have great faith in flowers, and choice collections of plants, and all the means of raising and displaying them, as they tend to influence the mind, and tone down the passions of our nature. It requires some intellectual power to appreciate them at all, but much more to understand them, and to be able to direct their management. The former every ordinarily gifted being possesses; and, when the means are at hand for exercising the latter, attention to growing plants is so in unison with our instincts that we are insensibly led on till the whole work becomes easy and the practice of it a labour of love.

"As a first-class designer and manufacturer Mr. ORMSON stands unrivalled. The Conservatory at the International Exhibition is so elaborately planned and worked out that it is difficult to convey by words a faint impression even of the fair proportions of its general outlines and the elegance of its various points of detail. Its length along the centre line is 34 feet, and its width from door to door 36 feet, while the height from the plinth to the cornice is 11 feet. The framework of the upper portion of the building is mostly of iron. The weight of the roof is supported by cast-iron pillars, fluted and wreathed in the stem, and terminated with richly embellished capitals. The roof terminates in the form of three semi-domes at each end, and the house is similarly finished, so that there are three semi-circular spaces from the roof to the floor for the reception of flowers and hanging baskets of festooning plants. The colouring of these buildings, when permanently fixed, would of course have to depend on the position they would be in as to overhanging or adjacent trees and buildings. But the individual character of the present building is very beautiful; a white ground is picked out with very pale green, and the employment of an occasional line or edge of gilt imparts to the whole a chaste, elegant, and, we may say, fascinating appearance.

"As Mr. ORMSON's system of heating is so well-known, no attempt at showing it is here made, but the method by which ventilation is obtained is very admirable. The openings at the top for the escape of heated and rarefied air are next to invisible, and are readily and easily raised and closed; while at the bottom every alternate sash is hung in the centre on pivots, so that each one opens at top and bottom simultaneously. Thus the heat of the house may be regulated so as not to produce a chill during the rawest weather, and when admissible a zephyr-like breeze can be thrown upon every plant to move and strengthen its stem, branches and foliage.

Mr. ORMSON's manufactory at Chelsea is conducted on the most economical principles that division of labour and the employment of machinery will admit of. Steam power is employed where practicable, all the wood used being sawn on the premises, and the surface smoothed by a machine, the active part of which revolves 2000 times a minute. This apparatus is remarkable alike for the rapidity of its movement, and the beautiful style of work which it turns out. By changing its knives or cutters, grooves and lines can be cut or traced of any required form. A plank or strip of wood is rolled up to the revolver containing the cutters, of which there are four sets, so that with the 2000 revolutions a minute, the touch of each edge is less than a hair's breadth. Thus cornices and other ornamental parts are turned out with an accuracy not to be equalled by planing, and with a smoothness adapted for the reception of the finest paint or varnish. Two of these knife armed revolvers can be worked simultaneously, so that both sides of a plank or block of wood can be cut or figured by once passing through the machinery. Two engines of several horse-power each are required for preparing the wood for the great number of hands employed by Mr. ORMSON in putting houses together for meeting his orders.

"Mr. ORMSON's 'Jointless Tubular Boiler' is known by every gardener of position. Tubes without joints stand in the form of two-thirds of a cone; this construction rests on a tubular grating so that no surface where fire touches is without water under it. Fuel is simply dropped in at the top of the cone-like part, so that renewing the fire, or blocking it up, is on the simplest plan. The water rests in these tubes, when no fire is burning; but as it enters at the bottom of them and can pass out at the top, the effect of the heat is to keep up a constant circulation of heated water through the pipes attached, no matter how long or large they may be.

"The Stanley Bridge Works are situated on a basin of the Thames, so that timber, coal, iron, and other materials may be easily conveyed there, and manufactured articles returned for shipment to any part of the world. This happens to be particularly convenient just now, as Mr. ORMSON's building at the International Exhibition has secured for him several orders for the Continent. Mr. ORMSON is farther fortunate, as far as transmitting goods is concerned, now that the business has almost overgrown his premises, for the Kensington Railway has a station within a few paces of his gate, and a tramway will run close up to his yard, so that he will be able to load a truck for going to any British station, without the necessity for shifting its contents."

HENRY ORMSON, HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

Card.

SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

Greenhouses, Orchard-houses, and Conservatories.

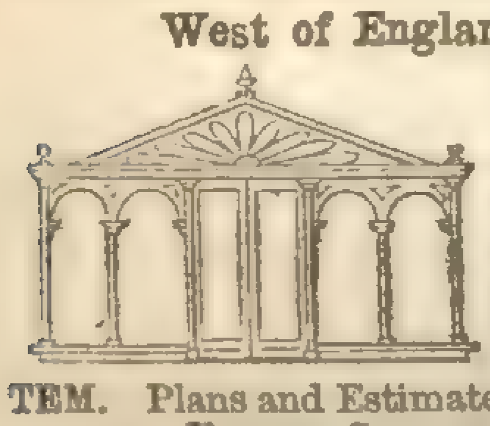
H. FREEMAN'S Horticultural Works, Triangle, Hackney, N.E. Established 20 years.
Good substantially made GREENHOUSES, glazed, ready for fixing, 42 feet by 13 feet, 50*l.*; 21 feet by 13 feet, 28*l.*; 12½ feet by 10 feet, 15*l.* ORCHARD-HOUSES, 10 per cent. cheaper. A handsome CONSERVATORY, 46 feet by 19 feet, for Sale. Estimates given.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection; Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, Tubular, and Elliptic, from 24*s.* each. Improved Boilers and Iron Stands to use without brickwork, 50*s.* each. Valves from 11*s.* 6*d.* each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at
Mr. Lynch White's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.
Apply to Joseph Meredith, Vine Cottage, Garston, near Liverpool.
N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

West of England, Ireland, and Wales.



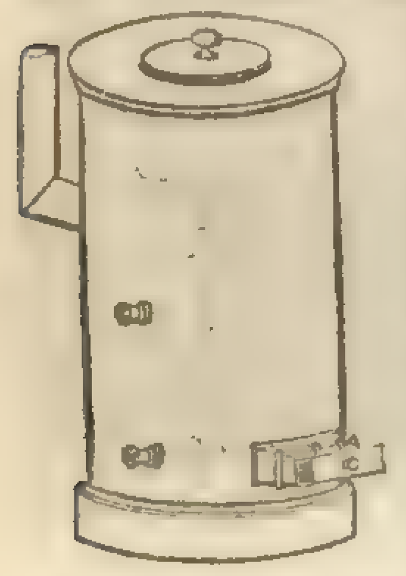
VINCENT SKINNER (*late Partner with* J. Weeks & Co.), Horticultural Builder and Hot-Water Apparatus Manufacturer. HEATING on the ONE-BOILER SYSTEM. Plans and Estimates on application.
Vincent Skinner, Bridewell Street, Bristol.

Exhibition Prize Medal, 1862.

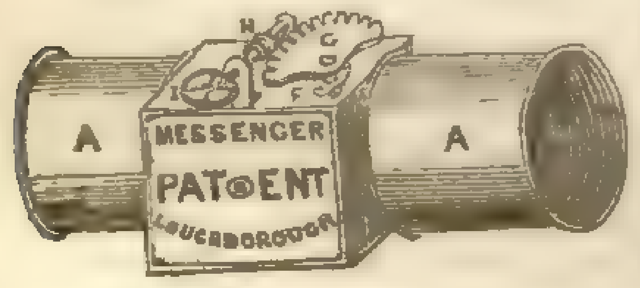
MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of Warming a large Apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.
It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.
Particulars and prices post free on application to Musgrave Brothers, Ann Street Iron Works, Belfast.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the
Patentee's Warehouse, 155, Cheapside, London, E.C.
Price complete from 3*l.* 10*s.*
Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

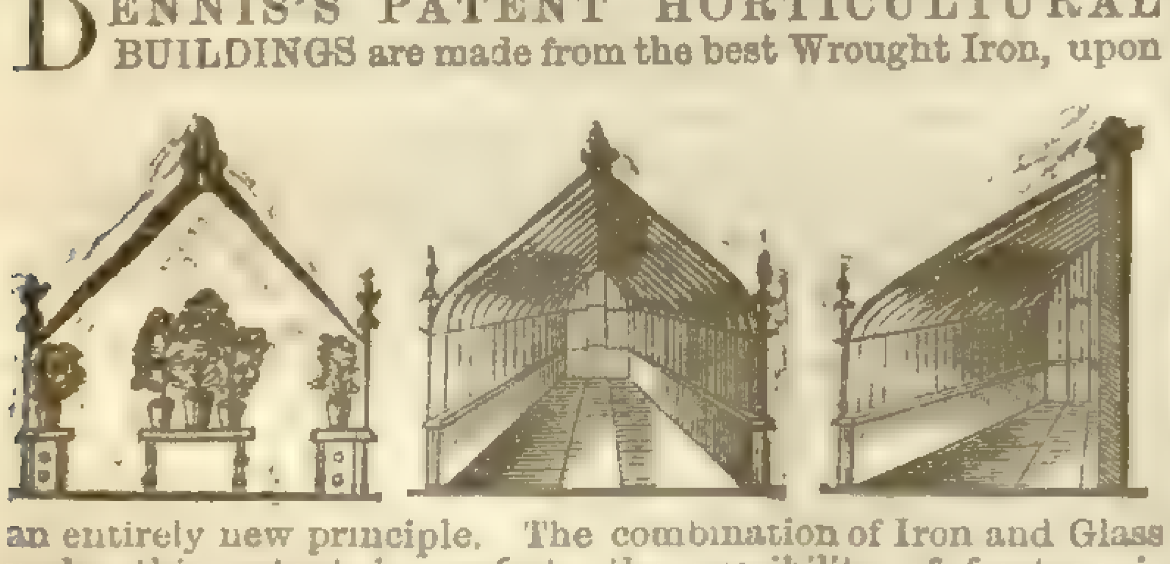


Elevation.

Section.

T. G. MESSENGER, Horticultural Builder and Engineer, Loughborough, has recently patented a Valve which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under.
Two-inch, 17*s.* 6*d.*; 3-inch, 23*s.*; 4-inch, 28*s.*
A liberal discount to the Trade.
These Valves can be obtained in London of Mr. J. Jones, 6, Bankside, S.E.

DENNIS'S PATENT HORTICULTURAL BUILDINGS are made from the best Wrought Iron, upon



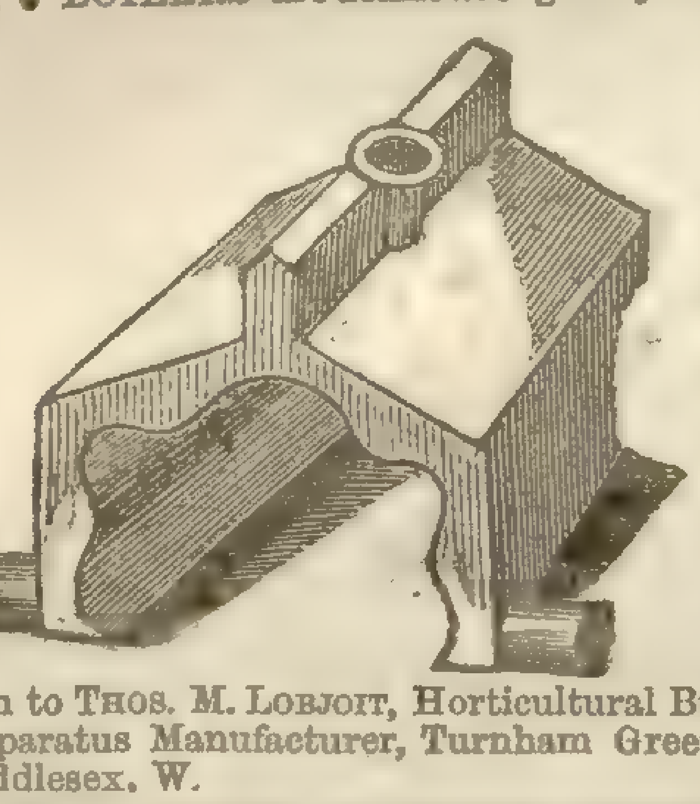
an entirely new principle. The combination of Iron and Glass under this patent is perfect; the possibility of fracture is prevented, and a permanently Water-tight Roof insured.
The leading practical advantages are extreme smallness of Framing, admitting a maximum of light and heat, great strength, durability, and perfect ventilation. They are speedily erected, partake of more desirable outline, and do not exceed the cost of a perishable wooden structure.
For Prospectus, &c., address T. H. P. Dennis, Horticultural Builder, Hot-Water Engineer, &c., High Street, Chelmsford, Essex; or No. 2105, Open Court, Eastern Annexe, International Exhibition, where a Small Model may be seen and attendance is given on the four last days of the week.

W. J. HOLLANDS, Iron Merchant, 31, Bankside, London, S.E.
HOT WATER PIPES, from Stock, per yard:—2-inch, 1*s.* 2*d.*; 3-inch, 1*s.* 10*d.*; and 4-inch, 2*s.* 4*d.* BENDS, from stock, 1*s.* 7*d.*, 2*s.* 6*d.*, and 3*s.* 3*d.* each.
Other Connexions at equally low prices, and all goods of first-class manufacture.

Hothouses for the Million.
International Exhibition, Class 9, Open Court, Eastern Annexe.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17*l.* SPAN ROOFS, 30 feet in length, for 33*l.*; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.
Illustrated Circulars, with Lists of Prices, can be had on prepaid application to S. Hereman, 7, Pall Mall East, London.

T. M. LOBJOIT'S PATENT HOT-WATER BOILERS are acknowledged by all who have them in use to be the most powerful Boilers now known, and are the most economical, requiring less fuel and attention than any other. They are made of various sizes, suitable for heating the smallest Greenhouse to the largest Conservatory, Churches, and Buildings of all descriptions.



Testimonials forwarded on application to Thos. M. Lobjoit, Horticultural Builder and Hot-Water Apparatus Manufacturer, Turnham Green, W., and at Acton, Middlesex, W.

The only Stove without a Flue.

JOYCE'S PATENT, for Warming Chapels, Halls, Shops, Conservatories, and all other Places. Price from 12*s.* 6*d.* each.
JOYCE'S STOVES are Portable and Economical, and burn 12 hours with one supply of fuel, requiring no attention.
STOVES for GREENHOUSES are made to burn all the Winter. Temperature always the same. Patent Fuel, 2*s.* 3*d.* per Bushel.
The PRUSSIAN VERMIN EXTERMINATOR (Howell's) is the only safe and effective remedy for the destruction of Rats, Mice, Beetles, Ants, and Cockroaches. Sold in Stone Jars, 1*s.* and 2*s.* 6*d.* each, with Testimonials, &c. (to be had of all Chemists).
Swan Nash, Patentee, 253, Oxford Street, and 119, Newgate Street, London, E.C.
Illustrated Catalogues post free.

VENTILATING STOVES, cheap, simple, efficient, and durable.—Thousands have been sold and universally approved. They are suitable for Halls, Warehouses, Conservatories, and every situation where a close Stove is required. The large sizes are extensively used in Churches, Chapels, and Public Buildings with great effect and economy. Prices 50*s.*, 60*s.*, 70*s.*, 90*s.*, and 120*s.* Prospectus with engravings gratis and post free. In operation daily. The Trade supplied.
Deane & Co., opening to the Monument, London Bridge, E.C.

FOR SALE, a GREENHOUSE, a Bargain.—28 feet 9 inches long, 12 feet 3 inches wide, 2 feet 6 inches high in front, with glass and door at both ends, roof half span with improved ventilation, glazed with 21 oz. sheet glass, the front and ends with 15 oz. do. painted three coats of best oil colour. Price 33*l.*
To be seen at John Overall's, Horticultural Builder, 16, Shacklewell Lane, Kingsland, London, N.E.

JAMES PULHAM'S NOVEL CONSERVATORY TUBS at the International Exhibition. The best exhibited in Terra Cotta at the Royal Horticultural Gardens Show.
One in S.E. Transept, a model made in eight pieces, rebated into a bottom held together by a copper hoop and screws. Price, 2 feet over, 2*l.* 2*s.* If made in one piece, with a rising bottom, 32*s.*
No. 2 is in the nave, made in four pieces, rebated into a base held together by two copper ties. Price, 2 feet 9 inches over, 4*l.* 4*s.*
No. 3 is similar and same size, but plainer, price 3*l.* 3*s.*; this is in the Gardens.
All these may be taken to pieces, (or one piece out only), and put together in a few minutes, and when full can be moved by two men, on a peculiar truck of J. P.'s invention.
Other patterns, rectangular, one of which was at the Exhibition 1851. One of Slate and Terra Cotta, also round with rising bottoms, to be able to force the tree out; made in this most suitable material for its extreme hardness, durability, sufficient porosity, and of red or of warm stone colour, to harmonise best with the foliage, by James Pulham, Broxbourne, Herts, who had the Prize Medals of 1851 and 1862, for Terra Cotta Garden Decorations, and notice of sound and durable material; also of artistic merit in the ornamental work.
The Hebe Fountain and Cupid Fountain, and Pulham's Novel Ferndelabum, are objects of great attraction at the Exhibition; one is engraved in the "Art Journal," and one will be in the "Masterpieces of the Exhibition."

MISS MALING begs to state that Mr. Gray, Horticultural Builder, Danvers Street, Chelsea, is now the Sole Proprietor and Manufacturer of her PATENT INDOOR PLANT CASES.

SAUSAGE and MINCING MACHINE.—The Guinea one of Burgess & Key's is the best. It is simple, easily cleaned, and quicker in operation than any other.
Burgess & Key, Makers, 95, Newgate Street, E.C.
Illustrated particulars free on application.

HANCOCK'S PATENT PRIZE BUTTER MACHINE, as used in the Royal Dairy.
The Right Hon. Lord Portman has forwarded the following gratifying Testimonial of the merits of our Butter Machine, to which we add that of Sir Warwick Morshead.
"Branstone, Blandford, Aug. 28, 1862.
"My Dairy managers highly approve of your Butter Machine; they consider it the most efficient and useful addition to the utensils in the Dairy that I have ever procured for them.
(Signed) "Portman."
"Messrs. J. & F. Hancock,
Pulveriser Plough Works, Tipton.'
"Forest Lodge, Binfield, Berks, Sept. [illegible]
"Sir,—Your Butter Machine has been in constant use since it arrived here, and my dairy woman is much pleased with it. It certainly improves the quality of the butter very much. I am, Sir, yours obediently, "Warwick Morshead.
"To Messrs. Hancock."
"Sutton Park, St. Neots, Aug. 25, 1862.
"Sir John Burgoyne finds his butter made better in using the Machine, and it saves the labour."
No. 1 Machine, for private use, 2*l.* 2*s.*; No. 2 Machine, for dairy use, 2*l.* 12*s.* 6*d.*; sent on receipt of Post Office Order, payable to J. & F. Hancock, Tipton, where illustrated sheets may be had of their celebrated Pulveriser Plough.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.
PROTECTION from the COLD WINDS & MORNING FROST.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide	1*s.* 6*d.* per yard run.
Four yards wide	3*s.* per yard.
An improved make, 3 yards wide,	2*s.* 6*d.* per yard run.

Also "Frigi Domo" Netting, 2 yards wide, 1*s.* 4*d.* per yard run.
Elisha Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

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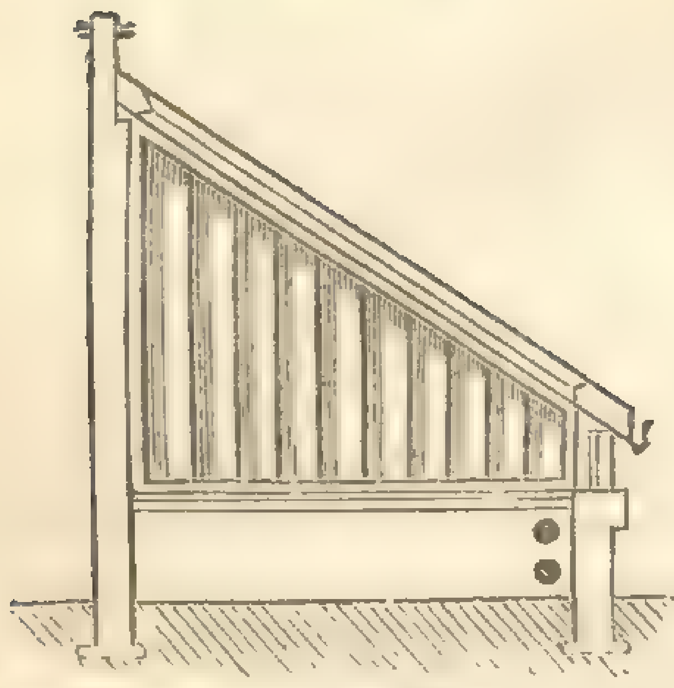

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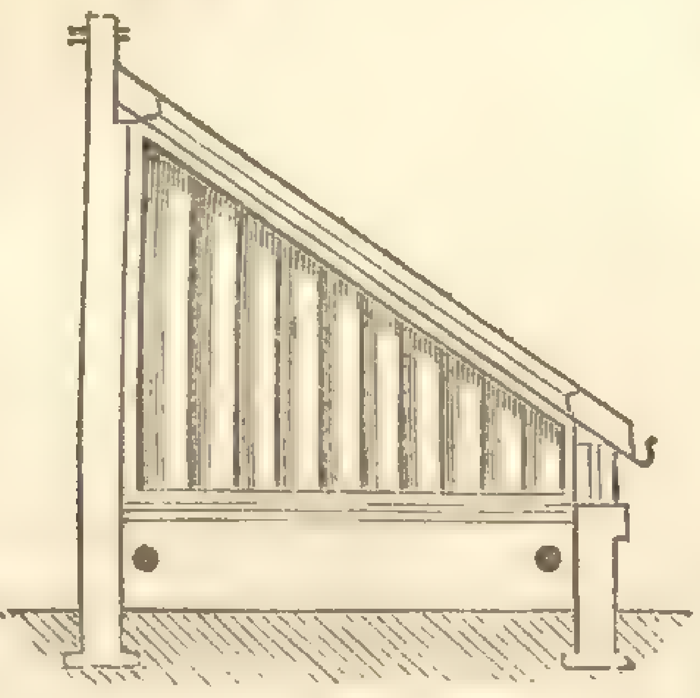

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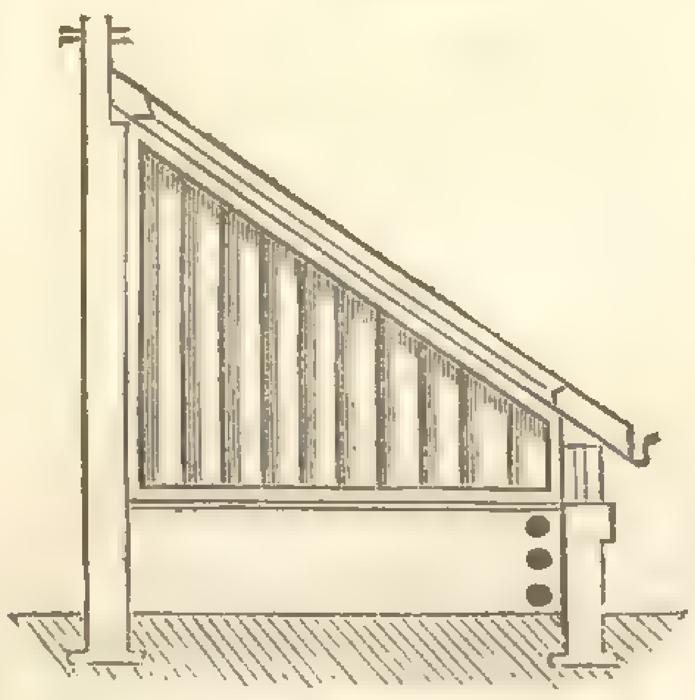

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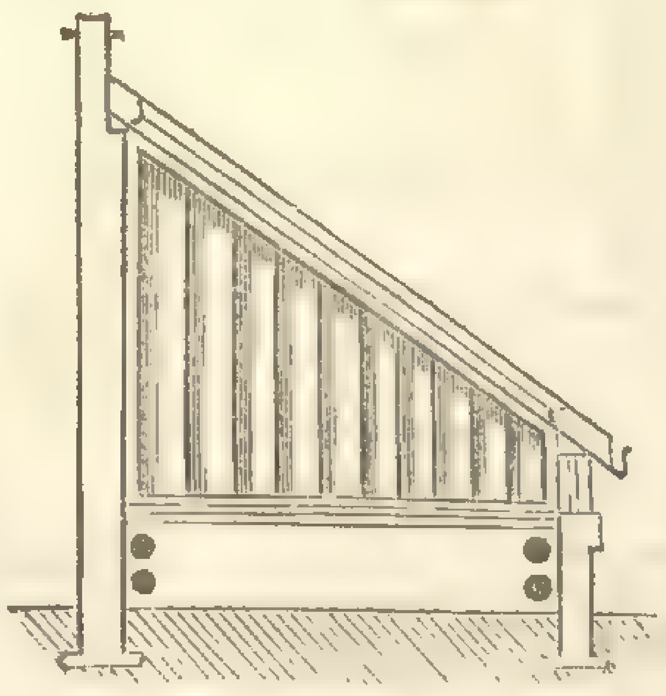

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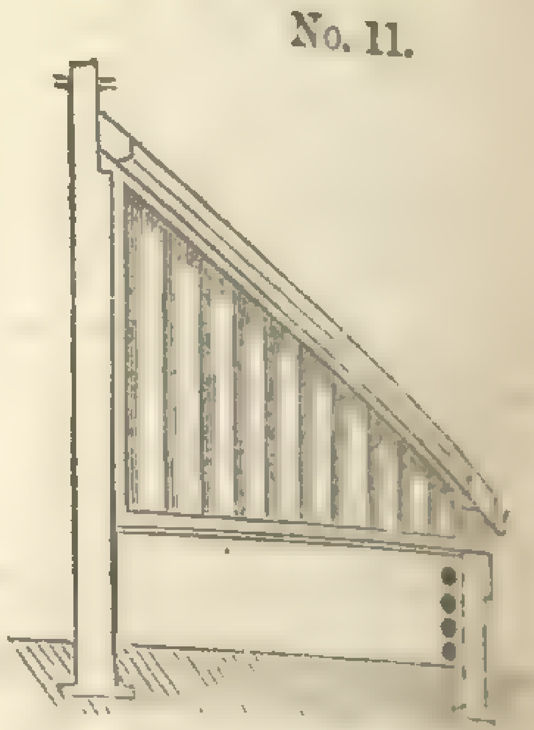

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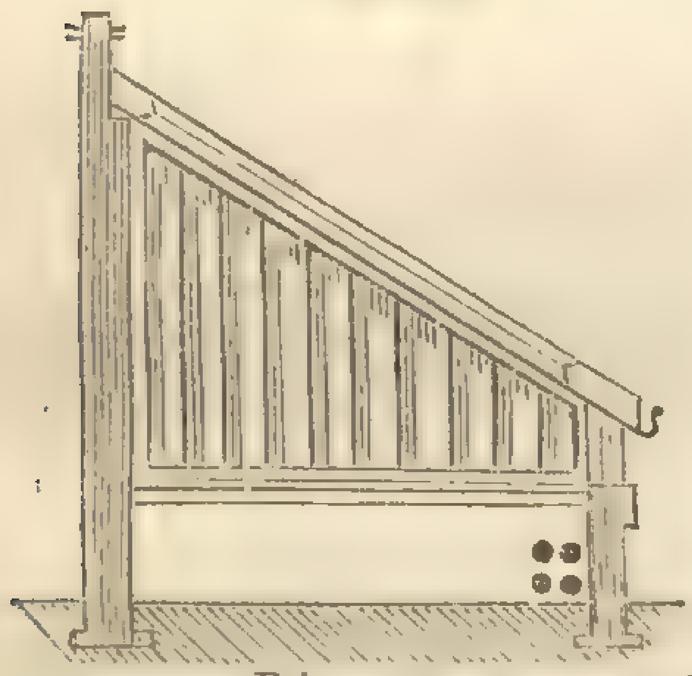

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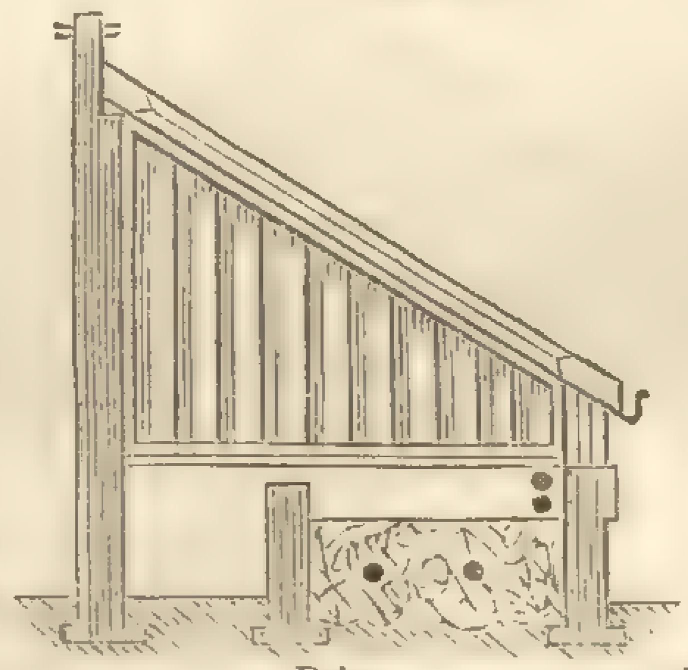

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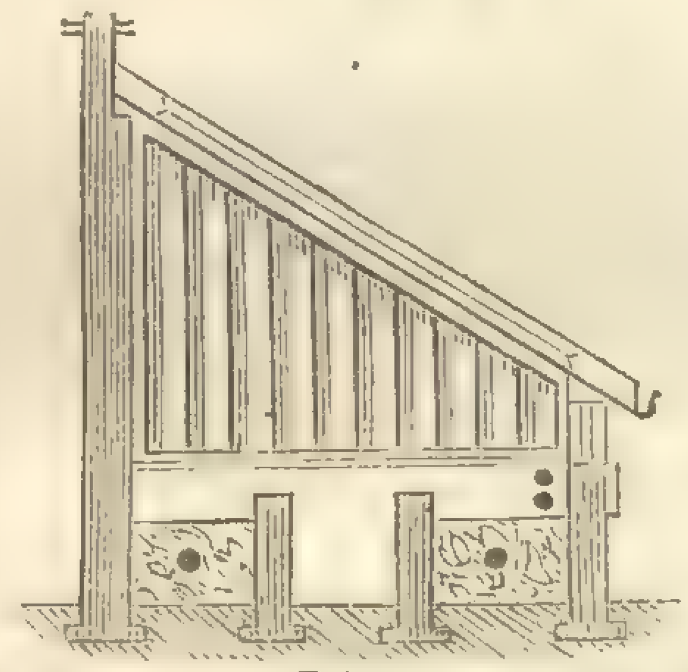

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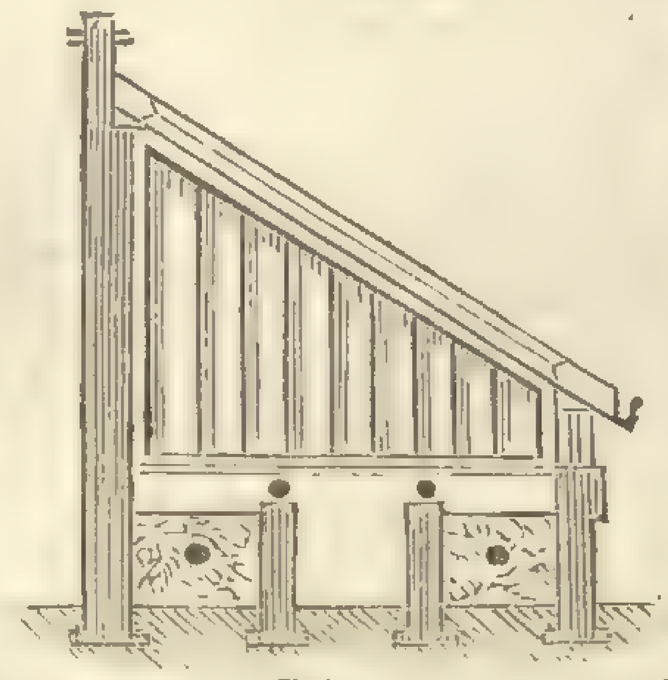

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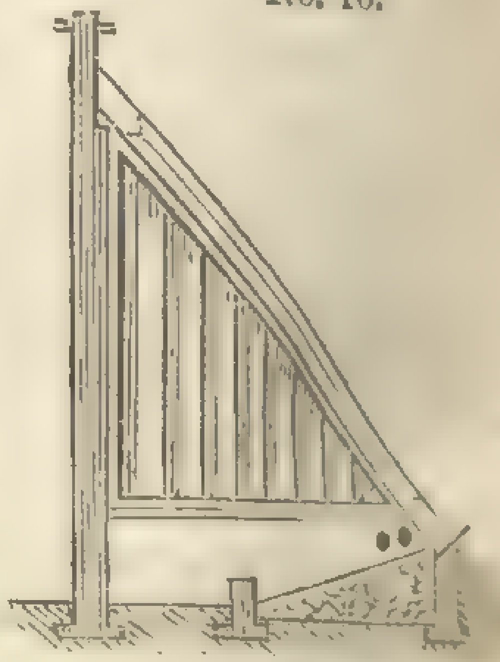

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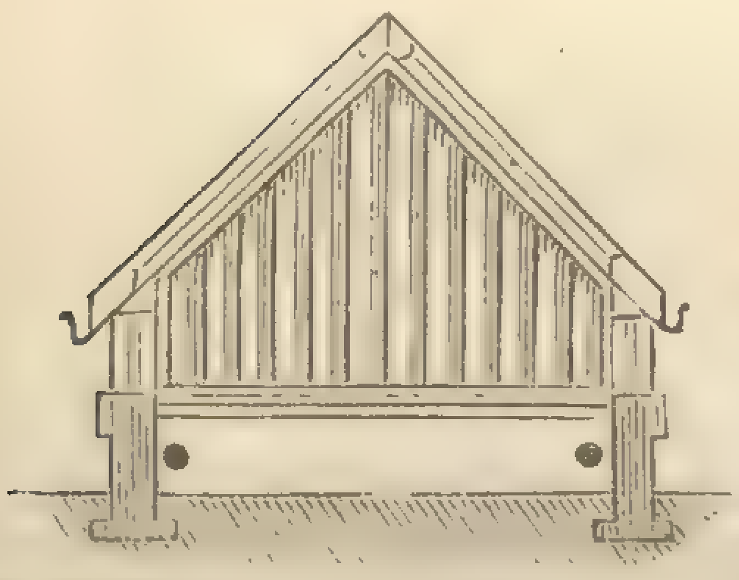

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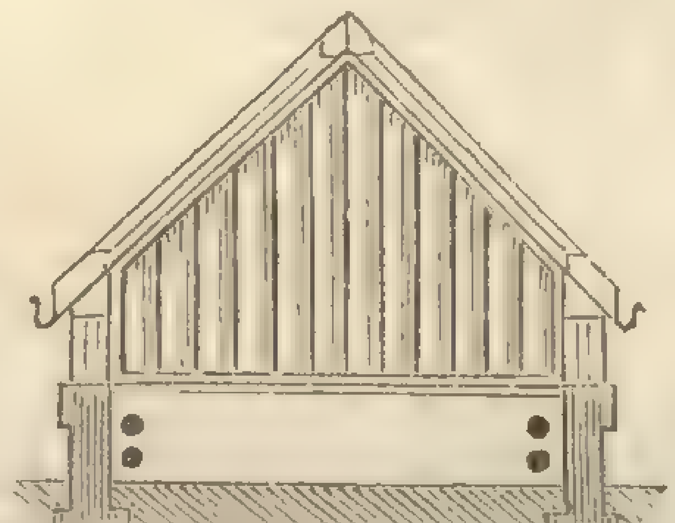

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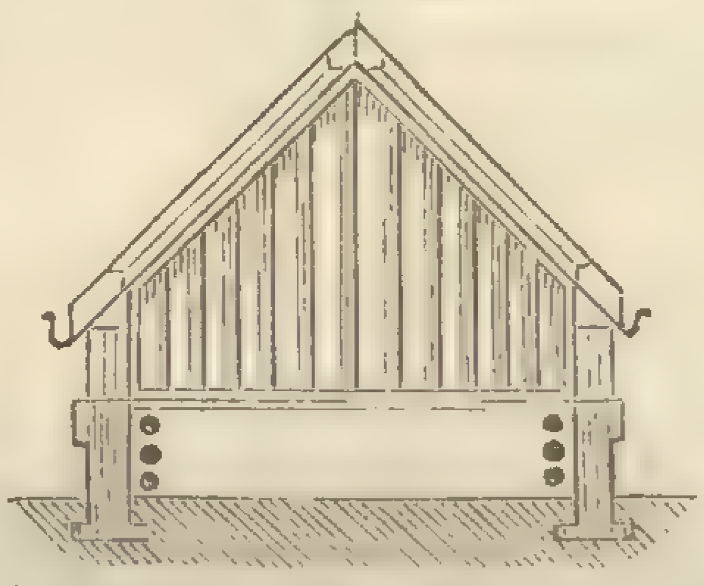

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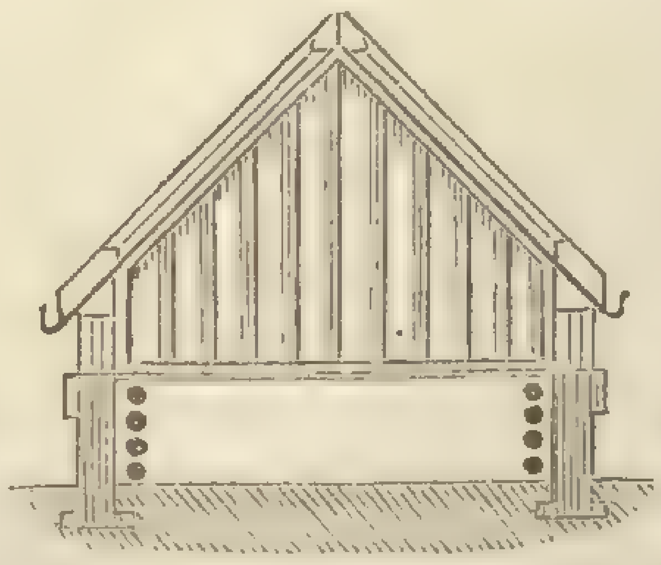

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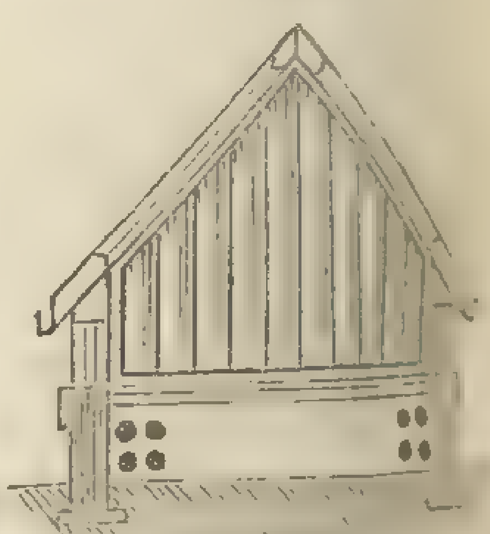
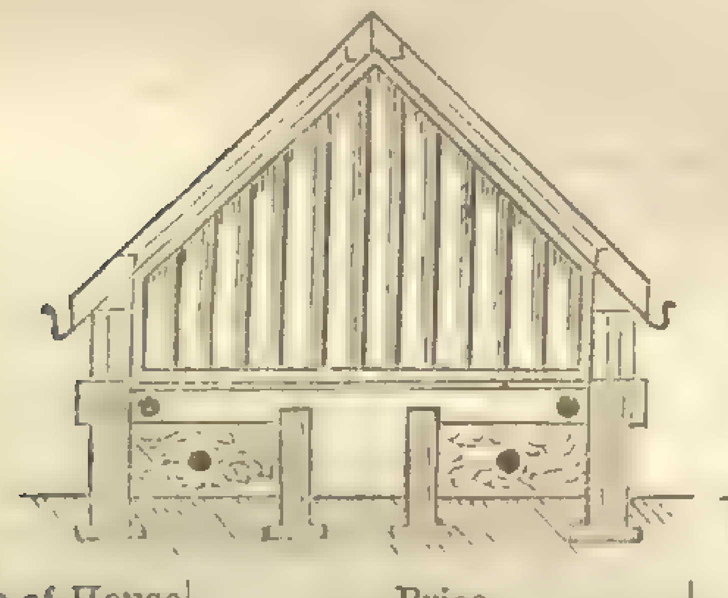
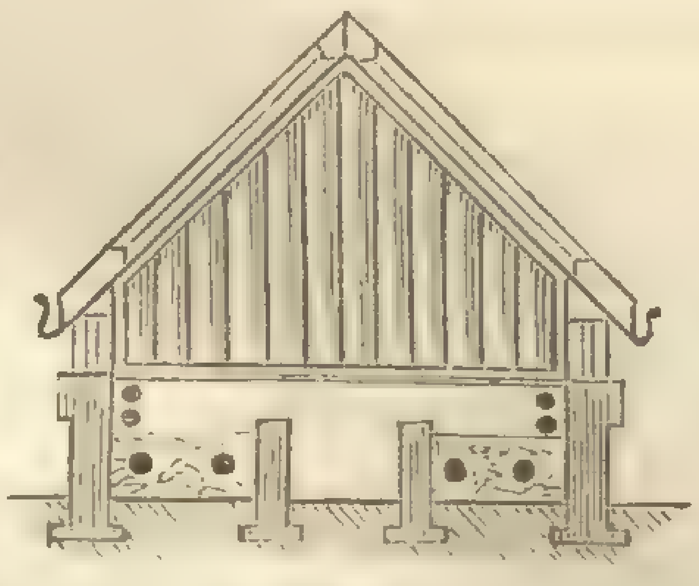


Size of House	No. 17. Price	No. 18. Price	No. 19. Price	No. 20. Price	No. 21. Price
20 by 10 ft.	£9 0 0	£14 0 0	£18 10 0	£23 0 0	£23 0 0
30 ,, 12 ,,	12 0 0	19 0 0	24 0 0	30 0 0	30 0 0
40 ,, 15 ,,	15 0 0	24 0 0	29 0 0	36 10 0	36 10 0
50 ,, 15 ,,	18 0 0	28 0 0	34 0 0	42 10 0	42 10 0
60 ,, 15 ,,	20 0 0	32 0 0	39 0 0	49 0 0	49 0 0
70 ,, 15 ,,	22 0 0	36 0 0	44 0 0	56 0 0	56 0 0
80 ,, 15 ,,	24 0 0	40 0 0	49 0 0	63 0 0	63 0 0
100 ,, 15 ,,	26 0 0	44 0 0	54 0 0	70 0 0	70 0 0

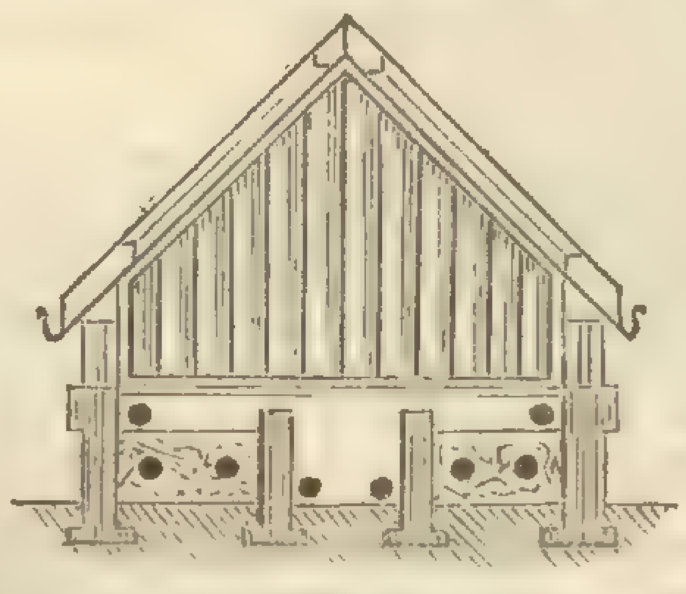
No. 22.



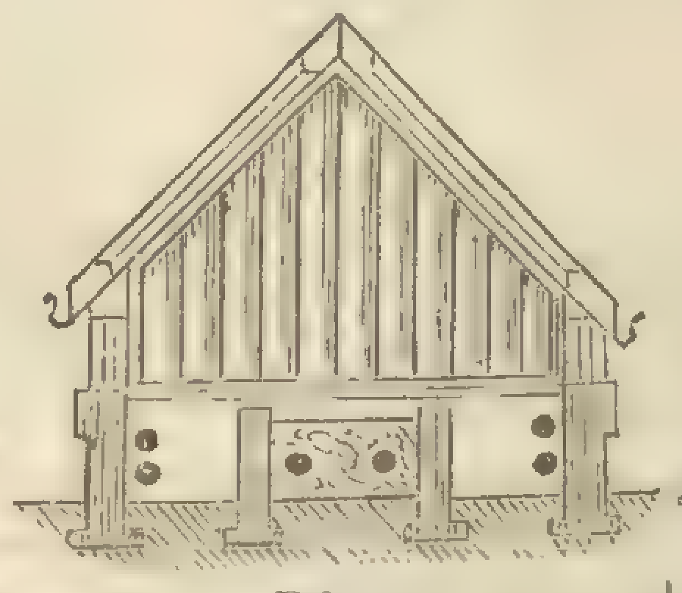
No. 23.



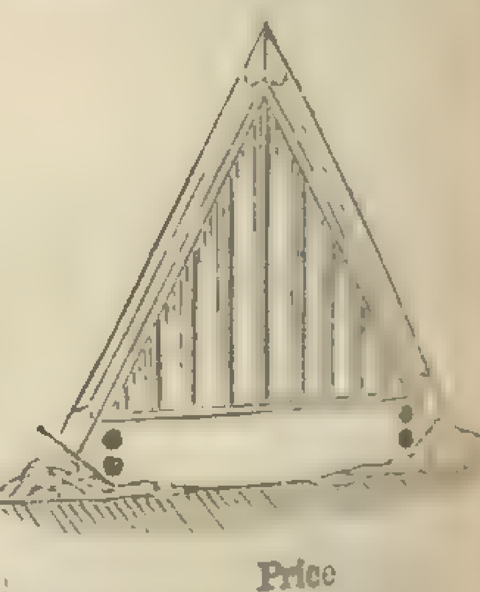
No. 24.



No. 25.



No. 26.



Size of House	No. 22. Price	No. 23. Price	No. 24. Price	No. 25. Price	No. 26. Price
20 by 10 ft.	£15 0 0	£25 0 0	£25 0 0	£18 10 0	£14 0 0
30 ,, 12 ,,	21 0 0	32 0 0	32 0 0	25 0 0	19 0 0
40 ,, 15 ,,	25 0 0	38 10 0	38 10 0	30 0 0	24 0 0
50 ,, 15 ,,	29 0 0	44 10 0	44 10 0	35 0 0	28 0 0
60 ,, 15 ,,	33 0 0	51 10 0	51 10 0	40 0 0	32 0 0
70 ,, 15 ,,	37 0 0	58 0 0	58 0 0	45 0 0	36 0 0
80 ,, 15 ,,	41 0 0	65 0 0	65 0 0	50 0 0	40 0 0
100 ,, 15 ,,	45 0 0	72 0 0	72 0 0	55 0 0	44 0 0

J. Jones will be happy to supply HOT-WATER APPARATUS for HOUSES according to any of the above Plans, delivered Free to any Station in England at the prices named, which include strong CAST-IRON CYLINDER or SADDLE BOILER, FURNACE DOORS, FIRE BARS, SOOT DOORS, CISTERN and DAMPER, 4-inch HOT-WATER PIPES and CONNECTIONS, all of the best quality; or he will forward ESTIMATES for WORK erected complete, with WROUGHT or CAST-IRON BOILER of any sort, at a small addition to the above prices.

*** *The Black Circles on Sections of Houses show the arrangement of Pipes.*

Illustrated Catalogues and further particulars post free on application to

J. JONES, IRON MERCHANT and HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 44.—1862.] SATURDAY, NOVEMBER 1. Price Fivepence. STAMPED EDITION, 6*d.*

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☞ *An Edition of the* GARDENERS' CHRONICLE *and* AGRICULTURAL GAZETTE *is published on Monday Afternoon at 4 o'Clock, containing full Reports of the Mark Lane and Cattle Markets, written expressly for the Paper.*

ROYAL HORTICULTURAL SOCIETY
FRUIT COMMITTEE.

A MEETING of the Fruit Committee will be held at the Rooms, South Kensington, W., on TUESDAY, November 11, for the Examination of such FRUITS and VEGETABLES as may then be submitted for judgment, and when, besides Certificates of Merit for SEEDLINGS, the following Prizes will be awarded:—

CLASS A.—For the best three dishes of any variety of DESSERT APPLE, distinct kinds	20*s.*	10*s.*
„ B.—Ditto ditto PEARS	20*s.*	10*s.*
„ C.—Ditto dish of WHITE GRAPES	20*s.*	10*s.*
„ D.—Ditto ditto BLACK	20*s.*	10*s.*

*** All Packages and Communications must be received at the Rooms by 11 o'Clock on the day of Meeting, and addressed to ROBERT HOGG, LL.D., Secretary of the Committee.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK, N.W.
EXHIBITIONS of SPRING FLOWERS.

The days appointed for the FOUR SPRING EXHIBITIONS next Season are WEDNESDAYS, March 25, April 8, April 22, and May 6. Admission by Tickets, 2*s.* each.

Alterations are contemplated which are intended to enlarge the space for these Exhibitions.

By Order of the Council. J. DE C. SOWERBY, Secretary.

Open to all England.

THE STOKE NEWINGTON CHRYSANTHEMUM SOCIETY will hold its SIXTEENTH ANNUAL EXHIBITION at the Manor Rooms, Church Street, Stoke Newington, on WEDNESDAY and THURSDAY, November 12 and 13. Doors open at 12 o'clock on the First Day, and 10 o'clock on the Second Day. Admission: First Day, 1*s.*, Second Day, 6*d.*

W. T. HOWE, Hon. Sec.

The Bible Office, Shacklewell, N.E.

New and Genuine Garden and Agricultural Seeds.

SPECIAL PRICES ON APPLICATION TO
JAMES FAIRHEAD AND SON,
SEED GROWERS and MERCHANTS,
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Choice Agricultural and Garden Seeds now Harvested.

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Union Road, Plymouth, Devon.

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GEORGE GIBBS AND CO.,
SEEDSMEN,
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Agricultural and Garden Seeds.

H. AND F. SHARPE,
SEED GROWERS and MERCHANTS, Wisbech.
Special PRICED LIST of NEW SEEDS on application.

Genuine Garden and Agricultural Seeds.

JAMES CARTER AND CO.,
SEED FARMERS and NURSERYMEN,
237 and 238, High Holborn, London, W.C.

Agricultural Seeds for Autumn Sowing.

DELIVERED FREE AT NEAREST RAILWAY STATION.
PETER LAWSON AND SON,
THE QUEEN'S SEEDSMEN.
27, Great George Street, Westminster, S.W.

Good Seeds, Carriage Free, at Market Prices.

SUTTON AND SONS,
SEED GROWERS and MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

ANDRÉ LEROY'S NURSERIES, at Angers, the largest and richest in France.
CATALOGUES sent on application.

Superb Double Hollyhocks.

WILLIAM CHATER'S NEW LIST is now ready, and may be had on application by enclosing one postage stamp.

Nurseries, Saffron Walden.
P.S. A LARGE STOCK of PLANTS also ready.

MINIATURE HYACINTHS. 12 in 12 choice varieties, 4*s.* and 6*s.* per dozen.
MINIATURE HYACINTH GLASSES, 4*s.* 6*d.* per dozen.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, W.C.

Hyacinths, Tulips, Crocuses, &c.

BUTLER AND McCULLOCH'S DESCRIPTIVE CATALOGUE of BULBS, or AMATEUR'S GUIDE, may be had free and post paid upon application.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

Hyacinths, Tulips, and other Dutch Bulbs.

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Collections of Bulbs for the Winter and Spring Garden.

SENT CARRIAGE PAID, SEE LARGE ADVERTISEMENT, p. 1027.

BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.
PAXTONIAN COLLECTIONS of BULBS for Spring Gardening, 10*s.* 6*d.* to 5*l.* 5*s.*
KENSINGTON GARDEN and CRYSTAL PALACE COLLECTIONS of BULBS for Winter Gardening, 10*s.* 6*d.* to 5*l.* 5*s.*
London Agents for TYE'S New SOUVENIR HYACINTH GLASSES.

Wm. Cutbush & Son's Dutch Bulb Catalogue.

WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE and PRICED CATALOGUE of HYACINTHS and other Dutch Flower Roots is now ready, post free, on application.
Highgate Nurseries, London, N.

HYACINTHS, TULIPS, CROCUSES, and other DUTCH BULBS, just arrived in excellent condition. PRICED CATALOGUES on application to
S. PONSFORD, Loughboro' Park Nurseries, Brixton, Surrey, S.
N.B. CATALOGUES of GENERAL NURSERY STOCK now ready, gratis.

STRAWBERRIES.—Admiral Dundas, British Queen, Elton Pine, Eleanor and Wizard of the North, 15*s.* per 1000; Eliza, Black Prince, Prince of Wales, Princess Royal, Alice Maud, Keen's Seedling, Oscar and Duc de Malakoff, 2*s.* per 100. GOOSEBERRIES: Crown Bob, Whitesmith, &c.
GEO. CORNWELL, Seedsman, &c., Barnet, Herts, N.

Lancashire Show Gooseberries.

HOLLAND AND BAYLEY are now sending out strong 3 and 4 years old plants of the heaviest and best flavoured, at 6*s.* per dozen. CATALOGUE of FLORISTS' FLOWERS, FRUITS, &c. may be had on application.
Bradshaw Gardens, Chadderton, Manchester.

Grape Vines.

WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines.

J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.

B. S. WILLIAMS begs to intimate that he has a fine and healthy stock of the above from Eyes, including all the best varieties for Fruiting in Pots and Planting Out. Prices on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Hurst House Seedling Pine.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer good plants of this choice Pine Apple, 10*s.* 6*d.*, 15*s.*, 21*s.* each.
The plant is of dwarf robust habit, producing heavy fruit of the richest flavour.
A large Stock of PRICKLY and SMOOTH CAYENNE PINES.

WANTED, some good QUEEN PINES and BLACK JAMAICAS, from 2 lbs. to 2½ lbs. each, to be delivered on FRIDAY, November 7.
Letters prepaid, to M. WEBBER & Co., the Centre Avenue, Covent Garden Market, W.C., stating quantity and price.

Peach Trees in Pots for Forcing.

MESSRS. THOMAS RIVERS AND SON offer very fine PEACH TREES, from 3 to 5 years old, with well ripened shoots, full of blossom buds, varying in price from 5*s.* to 10*s.* 6*d.* each, carriage paid to London.
Nurseries, Sawbridgeworth.

FOR SALE, 20 Choice PEACH, NECTARINE, and APRICOT TREES, 7 feet high and 6 feet through. Fine for Orchard-houses.
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FRUIT TREES.—The DESCRIPTIVE CATALOGUE of FRUITS for the present Season, by THOMAS RIVERS, is now ready for delivery. Gratis and Post free to customers; for six stamps to unknown correspondents.
Nurseries, Sawbridgeworth.

WELLINGTONIA GIGANTEA.—The undersigned has to offer a very large and fine stock of healthy one year Seedling Plants established in single pots; also a few plants of larger sizes. Price per 100 or 1000 on application.
J. HENCHMAN, Edmonton London, N.

RICHARD SMITH'S Stock of STANDARD, HALF STANDARD, and DWARF ROSES, combines superior quality with a larger selection than any other Nursery.
DESCRIPTIVE PRICED LISTS on application.
RICHARD SMITH, Nurseryman, Worcester.

Rose and Bulb Catalogues for 1862-3.

EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded gratis and post-paid on application.
Seed and Nursery Establishment, Tunbridge Wells, Kent.

Roses.

EDWARD PARKE FRANCIS'S NEW and DESCRIPTIVE CATALOGUE of ROSES for 1862 and 1863 is now ready, and will be forwarded gratis on application. E. P. F. has 50,000 DWARF ROSES in the finest state of cultivation on the Manetti Stock.
Rose Nurseries, Hertford.

THE NEW ROSE, JOHN HOPPER.
Strong plants of this celebrated New Rose,
DWARFS, 5*s.* | STANDARDS, 7*s.* 6*d.*
A DESCRIPTIVE CIRCULAR free by post on application.
On receipt of 13 postage stamps, a beautiful Illustration.
ROBERT WARD, Ipswich Rosery, Suffolk.

Dwarf Tea Roses.

EDWIN HOLLAMBY begs to announce that he has a large and healthy Stock of the above, comprising some of the finest Yellows, and other leading varieties, in the best possible condition.
Price on application.
Nurseries and Seed Warehouse, Tunbridge Wells, Kent.

New Rose Catalogue for 1862-63.

WM. WOOD and SON'S NEW CATALOGUES of ROSES, BULBS, and NURSERY STOCK are now ready for distribution, and will be sent free on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Rose Catalogue, 1862-63.

WM. PAUL'S ROSE CATALOGUE is now ready for circulation. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Rose Catalogue, 1862 and 1863.

JOHN CRANSTON begs to announce that his new ROSE CATALOGUE is now ready for distribution, and will be forwarded free on application. It contains full and faithful descriptions of nearly all the NEW ROSES of 1861, as well as the older kinds.
Nurseries, King's Acre, near Hereford.

Roses, Fruit Trees, Coniferæ, &c.

CHARLES TURNER'S CATALOGUE of the above is now ready.
The Royal Nurseries, Slough.

Cinerarias, Carnations, Picotees, Pinks, &c.

CHARLES TURNER'S CATALOGUE, containing a selection of the best only of the above, is now ready.
The Royal Nurseries, Slough.

New Pelargoniums.

CHARLES TURNER'S DESCRIPTIVE CATALOGUE of the fine New Varieties, which obtained Forty Certificates last season, is now ready.
The Royal Nurseries, Slough.

Chrysanthemums. Chrysanthemums.

J. H. BIRD, NURSERYMAN, Stoke Newington, begs to inform his friends and the Public that his beautiful Collection of the above is NOW in BLOOM, and can be seen Gratis every day between the hours of 10 and 4 o'clock, Sundays excepted.

Royal Nursery, Great Yarmouth.

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Nurseries, Huntingdon.

Tritoma Uvaria glauca.

JAMES KITLEY begs to offer fine large blooming plants of the above at the very low price of 6*s.* per dozen, and fine plants at 4*s.* per dozen. The Trade supplied. Also NARCISSUS POETICUS, 10*s.* per 1000.
Lyncombe Vale Nursery, Bath

CAULIFLOWER PLANTS.—Extra fine plants of the best WALCHEREN CAULIFLOWER at 1*s.* per 100.
Apply to WOOD & INGRAM, Huntingdon.

Italian Rye-grass.

J. DIXON is offering (and will until April) ITALIAN SEED to the Trade. Samples and Prices sent on application.
N.B. No "Long Firms" need write.
Kendal.—Nov. 1

WEBB'S PRIZE COB, FILBERTS, and other COB NUTS as exhibited at the INTERNATIONAL FRUIT and FLOWER SHOW, Kensington. Trees of these splendid varieties of Filberts may be had by application to
RICHARD WEBB, Calcot Gardens, Reading.

WEBB'S IMPERIAL KIDNEY POTATOES.—No Potato like it for quantity, quality, beauty and [illegible] at 12*s.* per bushel, on application to
RICHARD WEBB, Calcot Gardens, Reading.

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ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

Excellence and Economy.

H. BROWN has imported a very large Stock of HYACINTHS, CROCUSES, and other BULBS, including the best varieties for exhibition and decoration. Collections at very moderate prices, carriage free.

See PRICED DESCRIPTIVE CATALOGUE, post free.

Seed Warehouse: 4, Commutation Row, Liverpool.

Superb Double Hollyhocks.

WILLIAM CHATER has an immense stock of PLANTS ready for immediate SALE.

Seedlings unbloomed, 18s., 25s., or 30s. per 100.

Large plants, with colors, 25s., 30s., or 40s. per 100.

Named varieties, in pots, 12s., 20s., or 40s. per dozen, &c.

Nurseries, Saffron Walden.

Elymus glaucescens (syn.) sabulosus.

B. S. WILLIAMS begs to call the attention of noblemen and gentlemen to the above ORNAMENTAL GRASS; it is perfectly hardy, having proved it for several years, and can with confidence recommend it as being superior to the Pampas Grass as an under cover for Game, &c.

B. S. W. being convinced of its utility, has provided a large Stock, which he begs to offer at the following low prices:—6s. per dozen; 40s per 100.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Notice.

B. S. WILLIAMS begs to intimate that the following DESCRIPTIVE and PRICED CATALOGUES may be had post free on application.

GENERAL CATALOGUE, including Exotic Orchids, Ferns, and Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c.

BULB CATALOGUE contains Select Lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladioli, Amaryllis, and many other choice Bulbs, with Hints on their Culture; to which is added a SUPPLEMENTAL LIST of New, Beautiful, and Rare Plants.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

NEW and CHEAP PLANTS.—The following in Strong Plants by Post or in Pots, for 10s.
12 NEW FUCHSIAS of 1862.
12 NEW VERBENAS of 1862.
6 NEW ANTIRRHINUMS of 1862.
2 LOBELIA SPECIOSA KERMESINA of 1862.
LISTS of above post free.

100 HARDY HERBACEOUS PLANTS in 50 Varieties, true to name, for 20s. Post Office Orders on Castle Hedingham.

WILLIAM DILLISTONE, Munro Nursery, Sible Hedingham, Essex.

To the Seed Trade.—Rhodanthe maculata.

W. THOMPSON, Tavern Street, Ipswich, respectfully announces that he has appointed Messrs. ARTHUR HENDERSON & Co., Pine Apple Place, Edgeware Road, his Wholesale London Agents for the distribution of the above Seed, of whom scale of Prices may be obtained on prepaid application.

The crop being very limited, and a considerable part of it already subscribed for, only early orders can be guaranteed execution.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING 1863, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application. Woking Nursery, Surrey.

Notice.—American Plants.

WATERER AND GODFREY'S CATALOGUE is now ready, and will be sent on application; it gives a fair price and description of all the Rhododendrons and other American Plants worth growing, as well as a general summary of the most extensive Nursery Stock in Europe.

The Exhibition of American Plants in the Royal Horticultural Society's Garden, South Kensington, were supplied by WATERER & GODFREY, Knap Hill, near Woking.

Andromeda formosa.

W. H. ROGERS, Red Lodge Nursery, Southampton, holds a fine Stock of the above very beautiful hardy Shrub, which produces immense corymbs of blossom like Lilies of the Valley, and evergreen foliage like Arbutus, and is admirably adapted for Lawns, Shrubberies, and American Grounds. Strong bushy plants, 1 foot, 1s. 6d.; 2 feet, 2s. 6d.; and 3 feet, 5s. each; or 15s., 24s., and 42s. per dozen.

RHODODENDRONS, ROSES, FRUIT and FOREST TREES, beautiful specimens of CONIFERÆ, and every other description of Nursery Stock, extending over 60 acres, CATALOGUES of which may be had on application.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned NEW and fine AZALEAS.

FLAG OF TRUCE.—The finest double white known; has obtained two Certificates and a Silver Medal for its superior merits, being the highest testimonial any Azalea has yet received, 21s. to 31s. 6d. each.

PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21s. to 31s. 6d. each.

CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very superior, 21s. to 31s. 6d. each.

LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10s. 6d. to 15s. each.

CRISPIFLORA ROSEA.—Fine bright rose; the flowers are waved or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10s. 6d. to 15s. each.

PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10s. 6d. and 15s. each.

Any of the above may be had in grafted plants, or on their own roots.

For full particulars see *Gardeners' Chronicle* of August 16, 1862, p. 758; or in CATALOGUES, which may be had gratis on application. Dulwich, Surrey, S.

50,000 Dwarf Roses in Pots on their own Roots.

STANDARD, HALF-STANDARD, AND DWARF BUDDED ROSES, ON THE BRIAR AND MANETTI STOCK, IN ENORMOUS QUANTITIES AND IN THE MOST VIGOROUS HEALTH.

WILLIAM WOOD AND SON have much pleasure in directing especial attention to their very extensive and well-grown stock of ROSES, CATALOGUES of which may be had gratis on application.

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New Roses of 1862.

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Fine STANDARDS, of the older varieties, 24s. & 30s. per doz.

DWARFS, 12s. and 18s. per dozen, all of the finest varieties in cultivation. Every attention paid to package, and compensation for carriage.

New CATALOGUES ready.

JOHN KEYNES, Nurseryman, Salisbury.

SUPERB STANDARD ROSES.—The finest plants of Standard Roses to be found in the Trade.

12 plants, in 12 sorts	.. ..	18s.
12 „ extra fine	.. ..	24
50 „ „	.. ..	60
12 „ Dwarf budded	.. ..	12
12 „ „ extra	.. ..	18

HENRY MAY'S CATALOGUE of ROSES is now ready, and will be forwarded free on application.

The Hope Nurseries, near Bedale, Yorkshire.

Standard and Dwarf Roses.

BENJAMIN R. CANT will be happy to forward on application his DESCRIPTIVE CATALOGUE of ROSES.

As a guarantee of the value of his collection, B. R. C. begs to state that he has this year obtained 17 First Prizes for Cut Roses at the principal Shows.

Very fine vigorous plants of the choicest sorts will be supplied at the following prices:—

Standard Roses	18s., 24s., and 30s. per doz.
Half Standard Do. ..	18s. and 24s. per doz.
Dwarf Do.	9s. to 18s. per doz.

The NEW ROSES of 1862, Dwarf plants, 3s. 6d. to 5s. each; or, if 12 or more varieties are taken, 30s. per doz.

St. John's Street Nursery, Colchester.

N.B.—B. R. C.'s Catalogue contains nothing but the best varieties; all indifferent and worthless sorts are excluded.

IMPROVEMENTS. — Gentlemen wishing to make Alterations or Improvements in PLEASURE GARDEN, KITCHEN GARDEN, LAWN, or PARK, would do well to consult H. LANE & SON'S

ROSE CATALOGUE | FRUIT CATALOGUE, and TREE and SHRUB CATALOGUE, &c.,

which may be had on application at the Nurseries, Berkhampstead, Herts. An inspection of their Stock is earnestly requested.

(The finest and largest quantity of ARAUCARIA IMBRICATA in Europe.)

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON AND CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

Notice to Purchasers of Bulbs.

SUTTON'S BULB LIST, post free, contains all the most desirable sorts in cultivation, and at low prices.

Royal Berkshire Seed Establishment, Reading.

HYACINTHS for EXHIBITION.
FRESH IMPORTED BULBS.
SUTTON'S SELECTION.

		per 100.	Dozen.
Finest sorts by name	..	£4 4s.	12s.
Very fine	ditto ..	3 10	9
Good	ditto ..	2 10	6

Good Hyacinths for Beds, Ribands, &c. in separate colours (fresh imported), 21s. per 100.

Anemones, Crocuses, Tulips, Gladioli, &c., also very low in prices, as per CATALOGUE, which may be had gratis and post free.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

J. C. WHEELER AND SON SEED GROWERS, Gloucester, have imported in excellent condition a large

COLLECTION of HYACINTHS,

including the extra fine varieties recommended by Dr. LINDLEY.

PRICED LISTS may be had gratis on application to the Importers,

Messrs. J. C. WHEELER & SON, Gloucester.

DUTCH BULBS in fine condition: HYACINTHS, named varieties, 6s. per dozen; ditto mixed, 3s. and 4s. per dozen, 20s. per 100; CROCUS, all colours, mixed, 1s. 6d. per 100, 14s. per 1000; DUC VAN THOL TULIPS, 3s. per 100; GLADIOLUS BRENCHLEYENSIS, 4s. per dozen; and all other Bulbs equally cheap. British and Foreign FERNS, immense variety; Ficus elastica, Begonias, and all other Greenhouse and Stove Plants; the largest stock in London of Evergreens; Foreign Birds and Cages of every description; Sea water, 6d. per gallon; Fern Cases and Aquariums, Rustic Baskets, Wire Work, &c.

R. GREEN, 154, Kingsland Road, N.E., and the Bedford Conservatories, Covent Garden Market, W.C., entrance Central Avenue only.

Hardy Scarlet and other Choice Rhododendrons.

JOHN WATERER'S CATALOGUE of the above popular plants, as exhibited by him at the Royal Botanic Gardens, Regent's Park, is now published, and will be forwarded to all applicants.

It describes faithfully the colours of all the Rhododendrons, thereby rendering every facility for making selections.

It likewise contains an abridged List of really Hardy Conifers, with their heights and prices.

The American Nursery, Bagshot, Surrey.

Cupressus Lawsoniana variegata.

JOHN WATERER has the pleasure to announce that he is prepared to execute orders for the above New an desirable CYPRESS. It is a Seedling of his own, raised from imported seed, of golden variegation, quite equal to Chamæcyparis variegata.

Its habit is more bushy than Lawsoniana, with a greater tendency to a drooping form.

It has been exhibited at the Royal Botanic Society's Exhibition, and was awarded the highest Prize for New and Rare Plants.

Good plants, 21s. each. | Good larger plants, 31s. 6d. each.

A few extra large plants, 42s. each.

The usual allowance to the Trade.

The American Nursery, Bagshot, Surrey.

Early Spring Flowers.

WEBB'S GIANT POLYANTHUS; ditto COWSLIP; Florist's Flower, POLYANTHUS, Roots or Seed; also SCARLET PRIMROSE—Double Crimson, Double Purple, Double White, Double Yellow, and Double Lilac ditto. COWSLIP from the Himalayas; DOUBLE POLYANTHUS; and other varieties, all of which may be had on application to

RICHARD WEBB, Calcot Gardens, Reading.

Fine Camellias and Azaleas.

F. AND A. SMITH have an immense stock of AZALEAS and CAMELLIAS well set with flower buds, of fine growth and in healthy condition, now offering at moderate prices, which may be had on application.

Dulwich, Surrey, S.

Cineraria and Calceolaria Seed.

F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1s., 1s. 6d., and 2s. 6d., free by post.

Dulwich, Surrey, S.

AN AVENUE of WELLINGTONIAS.—Gentlemen wishing to plant an avenue of this GLORY OF THE FOREST would do well to inspect the Stock at the Sunningdale Nursery. They may select from thousands.

RHODODENDRONS of every hue, Scarlet, White, Crimson and Purple.—Gentlemen about to plant would consult their interest by an inspection of the Stock of Rhododendrons at the Sunningdale Nursery. They may select from hundreds of thousands.

COVER PLANTING.—Gentlemen about to plant for Cover would find the following plants worth a trial:—BERBERIS JAPONICA, COTONEASTER MICROPHYLLA, and RHODODENDRONS. A visit to the Sunningdale Nursery would not be uninteresting.

ROSES, Standards and Dwarfs, a very fine selection, in the most vigorous health, may be seen at the Sunningdale Nursery.

ROSES for FORCING, specially prepared, and calculated to give an abundant supply of Flowers during winter. All the finest kinds may be selected at the Sunningdale Nursery.

CONIFERS.—A fine Stock of well grown Plants of all the most interesting and really hardy Conifers, Evergreens, &c., may be seen at the

Sunningdale Nursery, Sunningdale Station, S. W. R.

CHARLES NOBLE.

Wellingtonia gigantea.

TO BE SOLD, Cheap, one of the finest Plants in the country. Can be safely removed, having been planted in rough peat and loam. Height, 10 ft. 8 in.; Stem, two inches from the ground, 2 ft. 8 in. in circumference; at one foot, 2 ft. 2 in.; at two feet, 1 ft. 9 in. Branches cover a circumference of 28 ft. This Tree is now growing in the gardens late the property of the late Colonel Baker, of Salisbury, Wilts. If proper care is taken in its removal, W. Dodds, who has purchased it, will charge nothing if it does not grow.

For Price apply to Mr. KEYNES, Nurseryman, Salisbury.

JEAN VERSCHAFFELT, Ghent, Belgium, begs to announce he possesses a large stock of the following fine Plants with flower-buds, which he offers to the Trade as follows:

CAMELLIAS, extra fine sorts with buds, per 100 ..	£6 0 0
Ditto ditto large plants, per 100	10l. to 15 0 0
Ditto ditto extra size, each ..	5s. to 1 1 0
AZALEA INDICA, first-rate sorts, extra fine Plants for winter flowering, per 100, from	4l. to 6 0 0
Ditto ditto on stems 1½ to 2 feet high, with nice heads, per 100 ..	10 0 0
JASMINUM GRANDIFLORUM	6 0 0
CITRUS SINENSIS (Otaheite Oranges) with fruit, per 25	2 10 0

Arundo Donax variegata.

JEAN VERSCHAFFELT, Ghent, Belgium, has a nice stock of this beautiful hardy variegated ARUNDO (the finest known), which he begs to offer in strong plants at the following low terms, viz.:—

Strong plants grown in pots, per dozen	£1 5 0
Ditto ditto per 25	2 0 0

Lilium lancifolium speciosum.

JEAN VERSCHAFFELT, Ghent, Belgium, having an extra large stock of this splendid LILY, is now able to offer its varieties very cheap, viz:—

LILIUM LANCIFOLIUM (SPECIOSUM) RUBRUM, strong flowering bulbs, per 100	£2 0 0
Ditto ditto ALBUM, ditto, per 100 ..	1 16 0
Ditto ditto RUBRUM, extra strong bulbs, per 100	3 0 0
Ditto ditto ALBUM, ditto, per 100 ..	2 10 0
Ditto ditto PUNCTATUM, strong flowering bulbs, per 25..	2 10 0

AZALEA INDICA, extra fine plants, clean and bushy, first-rate varieties, suitable for winter forcing, 4l. per 100; stronger plants, 6l. per 100.

JEAN VERSCHAFFELT'S Nursery, Ghent, Belgium.

Hallett's Pedigree Wheat.

W. COOPER, FARMER, Fen Drayton, St. Ives, Hunts., begs to inform Agriculturists that he has a ... of the above, warranted grown from seed supplied by ... Hallett. Price 10s. 6d. per bushel. Also some GIANT ... per bushel.

Delivered on the Great Northern and Great Eastern Railways. New Sacks charged 1s. 6d. each.

Noted Wheat for Seed.

HENRY RUCK purchased of F. F. Hallett, Esq., at the Smithfield Show, 1860, a sack of his wonderful Wheat, and will be pleased to spare from 250 to 300 sacks of WHEAT grown from that Seed. Price 10s. 6d. per bushel, ... at the Cirencester Station on the Great Western. Not ... bushels will be supplied. Cash required before any ... is forwarded. New sacks, 2s. each.

Apply to HENRY RUCK, Eisey, Cricklade, Wilts.

SEED WHEATS from the Chiltern Hills.—The Burghfield Early White, Trump, Essex Rough Chaff, ... Bearded Red, and Browick Imperial Red. Present ... per bushel, in quantities of not less than 20 bushels, new sacks included. Remittance with order.

Apply to the Grower, Mr. R. C. M. YOUNG, Flint Hall, ...den, Henley-on-Thames.

SEED WHEAT from the CHALK.—Browick Red, Nursery, Rough Chaff, and all the most approved varieties of Wheat. Also Hallett's Pedigree Wheat, Shirreff's Bearded Red, &c., supplied by RAYNBIRD, CALDECOTT, & BAWTREE.

Winter Tares, Rye, Winter Barley, Winter Oats, Trifolium, &c. Samples and Prices post free on application.

Address, Basingstoke, or 89, Seed Market, Mark Lane, E.C.

Prize Medal Seed Wheat.—International Cereal Show.

THE PRIZE MEDAL WAS AWARDED TO

MESSRS. RAYNBIRD, CALDECOTT, AND BAWTREE, for the BEST SAMPLE of RED WHEAT, ... their sample of RED NURSERY WHEAT, by a jury consisting of some of the most eminent Corn Factors from Mark Lane and Agriculturists of the day.

This Wheat is remarkable for its fine quality, weight, and hardiness, and is one of the most productive upon poor soils and in exposed situations; it may be sown at any time from ... to March.

... of similar fine quality to the Prize sample, for cash ..., at 80s. per Quarter.

Address, Basingstoke.

International Exhibition.

PRIZE MEDAL, "EXCELLENT SEED CORN AND SEEDS."
See JURY AWARD. CLASS III., 725.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover, ..., Seed Market, Mark Lane, London, E.C.

Samples and quotations of all kinds of Agricultural Seeds, and Seed Corn, sent post free on application. Peruvian Guano, Lawes's Manures for Turnips, Wheat, Barley, &c., Linseed Cakes, and Feeding Stuffs, at Market Prices.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts, has for Sale, grown entirely upon his several ...rations, and delivered upon the Great Northern and Great Eastern Railways.

GENUINE ITALIAN RYE-GRASS, grown from second-cut Foreign Italian.

MANGEL WURZEL SEED, in several varieties.

"GOLDEN DROP" RED WHEAT, the best variety for late sowing, combining strength, quantity, and quality.

HALLETT'S PEDIGREE, SHIRREFF'S BEARDED RED, and other varieties, at very moderate rates.

"DAINTREE'S EARLIEST" SEEDLING POTATO, which is proved by numerous reports to be the most prolific and earliest round Potato in cultivation.

Apply for price and particulars as above, stating quantity required and time of delivery.

PRIZE GOURDS and MAIZE.—Removed from the Horticultural Society's Garden and now on Exhibition ... Establishment, that visitors may have the opportunity of inspecting the most valuable, beautiful, and varied Collection of Ornamental and Edible GOURDS ever seen in this country. See Large Advertisement, p. 1027.

BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

PARSNIP CHERVIL or CHÆROPHYLLUM BULBOSUM.—New Seed of this year's harvesting, per packet, 1s. Sow from September 25 to October 25. A delicate and delicious vegetable.

ARTHUR HENDERSON & Co., Pine Apple Place, Edgware Road, W.

To the Seed Trade.

THE STUDENT PARSNIP.

See *Gardeners' Chronicle* of October 18, page 975.

For wholesale terms apply to SUTTON & SONS, Reading.

The List of Agents will be repeatedly advertised, with the additional names, in the order they are received.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDLÆ at 5s. to 7s. 6d. each;

ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;

OSMUNDA REGALIS CRISTATA, 21s. each.

A Select LIST of the most rare kinds will be forwarded Post Free on application.

Dorking Nursery.

New Fern, Pteris nemoralis variegata.

WILLIAM COLE, Fog Lane Nursery, Withington, Manchester, the raiser of this beautiful and distinct NEW FERN, will be ready to supply good plants on and after November 1, and all orders will be executed in rotation.

It has been well described in the *Gardeners' Chronicle* of July 5, p. 626, where the writer speaks of it as "a curious and new form of Variegated Pteris."

It was also reported on in the *Gardeners' Chronicle* of May 24, as follows:—"Among new Ferns, of which several were shown, was one from Mr. Cole, Nurseryman, Manchester, belonging to the Variegated Class, and as regards position, is intermediate between argyræa and tricolor, and is apparently a free grower."

W. COLE has great confidence in recommending it, and in stating that it is really a beautiful Fern, and one which will become exceedingly popular. 10s. 6d. each.

Price (very liberal terms to the Trade for 12, 50, or 100) on application.

FOSTER'S SEEDLING GRAPE.

MESSRS. JOHN & CHARLES LEE

Have to offer Mr. Foster's stock of this fine NEW GRAPE, which can be confidently recommended for general cultivation in cool Vineries. It has borne an abundant crop in the large Conservatory of the Royal Horticultural Society at Chiswick, the bunches being large, with medium sized berries of a pale amber colour. The flavour of Foster's Seedling is most luscious, equalling the richness of its twin sister Lady Downe's, and as far as can be seen, partaking of the same quality of hanging well without shrivelling.

Canes for planting, 7s. 6d. each. A few Fruiting Canes at 21s. each.

ROYAL VINEYARD NURSERY AND SEED ESTABLISHMENT,
HAMMERSMITH, LONDON, W.

ROSES, NEW AND OLD.

WILLIAM PAUL

(SON AND SUCCESSOR TO THE LATE A. PAUL),

Can supply all the best ROSES, New and Old, and respectfully solicits early orders to insure good plants.

The following statement will show the number of FIRST and SECOND PRIZES awarded to him at the London Flower Shows during the present year:—

March 19.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
" 26.	Royal Botanic Society	Cut Roses	FIRST PRIZE
April 2.	Royal Botanic Society	Cut Roses	FIRST PRIZE
" 9.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
	Royal Horticultural Society	Beauty of Waltham	SPECIAL CERTIFICATE
	(A First Class Certificate having been previously awarded for this Seedling.)		
May 21.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
	Royal Horticultural Society	Pot Roses	SECOND PRIZE
" 24.	Crystal Palace	Cut Roses	FIRST PRIZE
	Crystal Palace	Pot Roses	SECOND PRIZE
" 28.	Royal Botanic Society	Collection Ditto	FIRST PRIZE
	Royal Botanic Society	Cut Roses	FIRST PRIZE
	Royal Botanic Society	10 Pot Roses	SECOND PRIZE
June 11.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
	Royal Horticultural Society	12 Pot Roses	SECOND PRIZE
" 18.	Royal Botanic Society	50 Cut Roses	FIRST PRIZE

PRICED DESCRIPTIVE CATALOGUE free by post.

NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS, N.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, and GATES.

The PROPRIETORS of the ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON,

WERE AWARDED THE

SILVER MEDAL of the ROYAL AGRICULTURAL SOCIETY for their IRON HURDLES and GATES, which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30s. to 500l.

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

PROFESSOR VARNELL'S ENAMELLED and WROUGHT-IRON STABLE FITTINGS.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their Horses. They can be had Plain, Galvanised, or Enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized Stalls and Loose Boxes are erected for inspection at St. Pancras Iron Works.

ADDRESS—THE MANAGERS, ST. PANCRAS IRON WORKS,
OLD ST. PANCRAS ROAD, LONDON, N.W., OPPOSITE OLD ST. PANCRAS CHURCH.

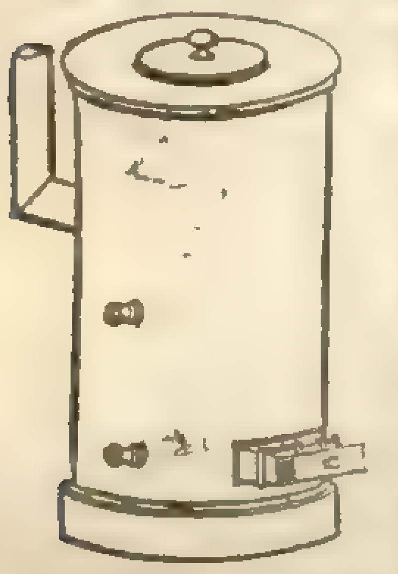
Card.

SAMUEL N. McGERROW, GENERAL HORTICULTURAL BUILDER, Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

Greenhouses, Orchard-houses, and Conservatories.

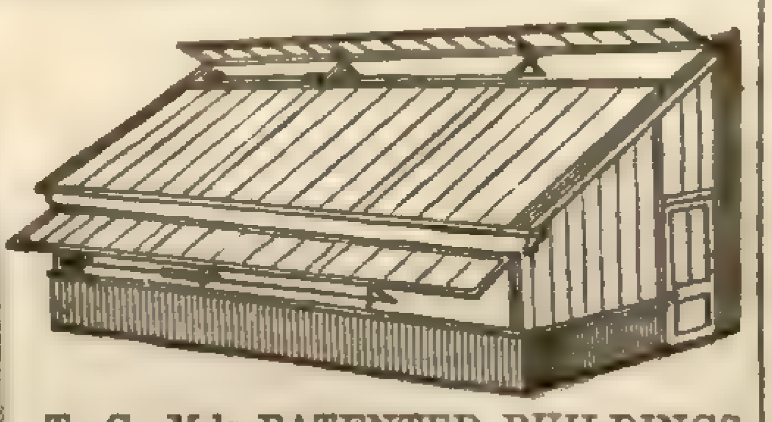
H. FREEMAN'S HORTICULTURAL WORKS, Triangle, Hackney, N.E. Established 20 years.
Good substantially made GREENHOUSES, glazed, ready for fixing, 42 feet by 13 feet, 50*l.*; 21 feet by 13 feet, 28*l.*; 12½ feet by 10 feet, 15*l.* ORCHARD-HOUSES, 10 per cent. cheaper. A handsome CONSERVATORY, 46 feet by 19 feet, for Sale. Estimates given.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the Patentee's Warehouse, 155, Cheapside, London, E.C.
Price complete from 3*l.* 10*s.*
Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

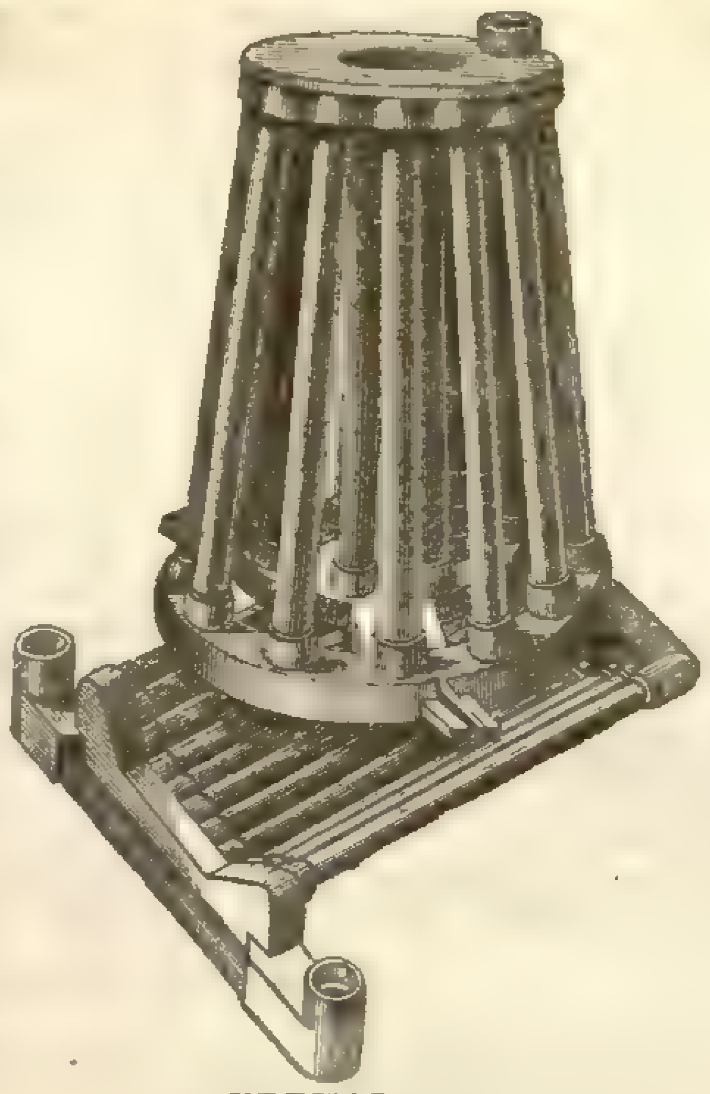
T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough.



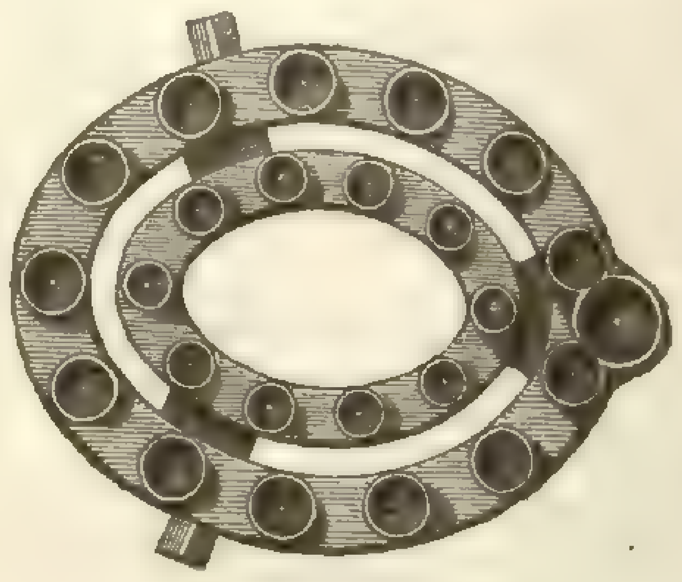
T. G. M.'s PATENTED BUILDINGS combine all the modern improvements, are well made of best seasoned red Deal, most effectually ventilated by means of his unequalled Apparatus, can be made either plain (and which are at the same time elegant in appearance), or of the most elaborate design. They can be fixed as permanent buildings, or made to be portable.
T. G. M.'s HEATING APPARATUS continues to give the greatest satisfaction for its heating qualities and small consumption of fuel.
ILLUSTRATED CATALOGUES of the above, Glazing without Putty, Garden Engines, &c., sent upon application.

GRAY'S OVAL TUBULAR BOILER.

INTERNATIONAL EXHIBITION,
Class IX., No. 2119.



ELEVATION.



PLAN.

Mr. GRAY begs to call the attention of the Nobility, Gentry, Nurserymen, Gardeners, &c., to his

NEW OVAL TUBULAR BOILER,

acknowledged by practical judges to be a great improvement on every form of Tubular Boiler yet introduced. It has proved itself superior to all other Boilers for quickness of action and economy of Fuel, doing its work with one-third less the amount required by any other.

Extract from Report in Gardeners' Chronicle *of International Exhibition, May* 24, *page* 476.

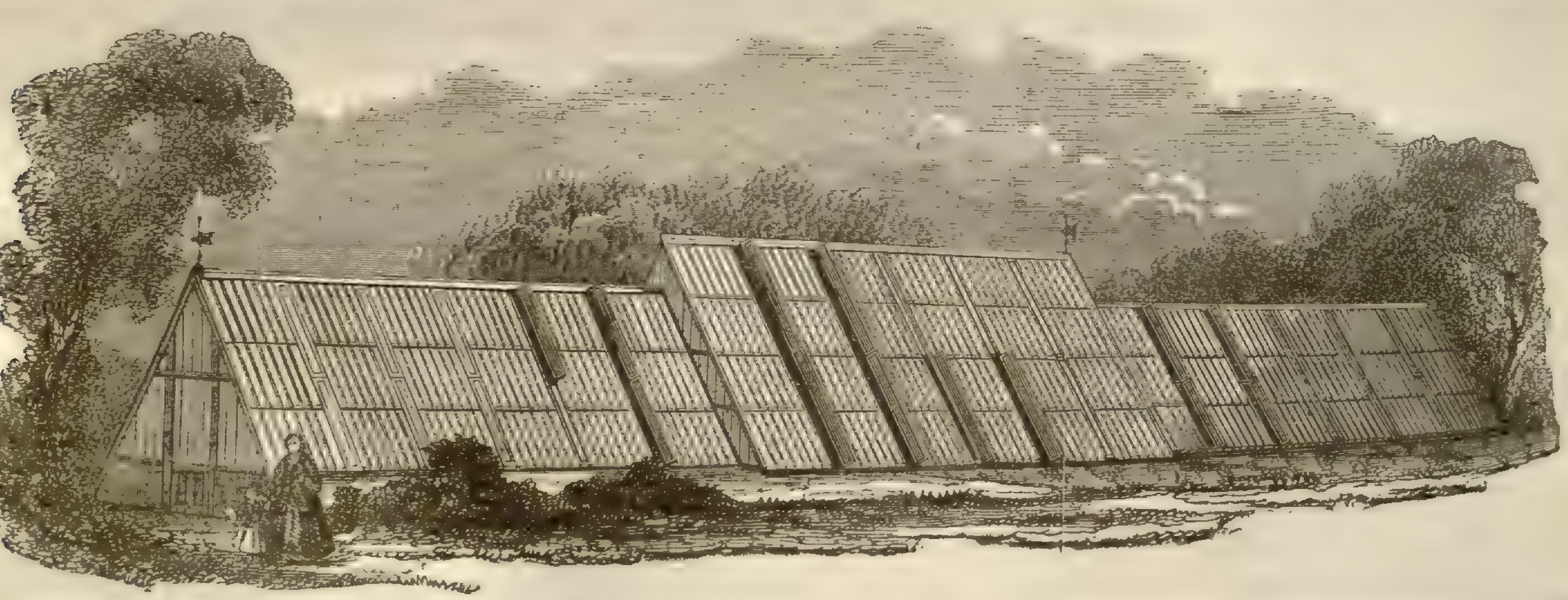
"The upright form of Boiler is usually made on a circular plan, but the oval form given to Mr. GRAY'S variety of it is said to be preferable in consequence of its bringing the tubes in closer contact with the fire. The usual form of a furnace being a parallelogram rather than a square, it seems feasible that the Boilers on the oval plan should bring the tubes more completely within range of the burning fuel; and this being so the change, though a slight one, is no doubt an improvement."

They are made of all sizes, which, with prices, may be had on application.

JAMES GRAY, HORTICULTURAL WORKS,
DANVERS STREET, PAULTON'S SQUARE, KING'S ROAD, CHELSEA, S.W.

HOTHOUSES FOR THE MILLION.

INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.
AWARDED A PRIZE MEDAL.
ON THE PRINCIPLE INVENTED AND PATENTED BY
SIR JOSEPH PAXTON, M.P.
COMBINING SIMPLICITY, CHEAPNESS, EXCELLENCE, AND DURABILITY,
BEING CAPABLE OF FULFILLING IN THE MOST PERFECT MANNER ALL THE REQUIREMENTS OF HORTICULTURE.



The Cash Prices of Lean-to Houses, with Water-troughs, Doors and Ends complete, are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£12 0 0	£16 0 0	£21 0 0	£28 10 0	£34 5 0
31 3 in length	16 10 0	21 2 6	26 10 0	37 12 0	45 16 0
41 11 in length	20 18 0	26 18 6	33 7 6	46 14 0	57 7 0
52 7 in length	25 12 6	32 15 0	40 5 0	55 16 0	68 18 0
63 3 in length	30 6 0	38 10 0	47 2 6	64 18 0	80 10 0
73 11 in length	34 12 6	43 15 0	53 7 6	74 0 0	92 0 0
84 7 in length	39 6 0	49 11 6	60 5 0	83 2 0	103 11 0
95 3 in length	43 19 0	55 10 0	67 2 6	92 5 0	115 2 0
105 11 in length	48 17 6	60 12 6	73 10 0	101 10 0	126 13 0

The Cash Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£24 0 0	£32 0 0	£42 0 0	£57 0 0	£68 12 0
31 3 in length	33 0 0	42 5 0	53 0 0	75 4 0	91 10 0
41 11 in length	41 16 0	53 17 0	66 15 0	93 8 0	114 14 0
52 7 in length	51 5 0	65 10 0	80 10 0	111 12 0	137 10 0
63 3 in length	60 12 0	77 0 0	94 5 0	129 16 0	161 0 0
73 11 in length	69 5 0	87 10 0	106 15 0	148 0 0	184 0 0
84 7 in length	78 12 0	99 3 0	120 10 0	166 4 0	207 2 0
95 3 in length	87 18 0	111 0 0	134 5 0	184 10 0	230 4 0
105 11 in length	97 15 0	121 5 0	147 0 0	203 0 0	253 6 0

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

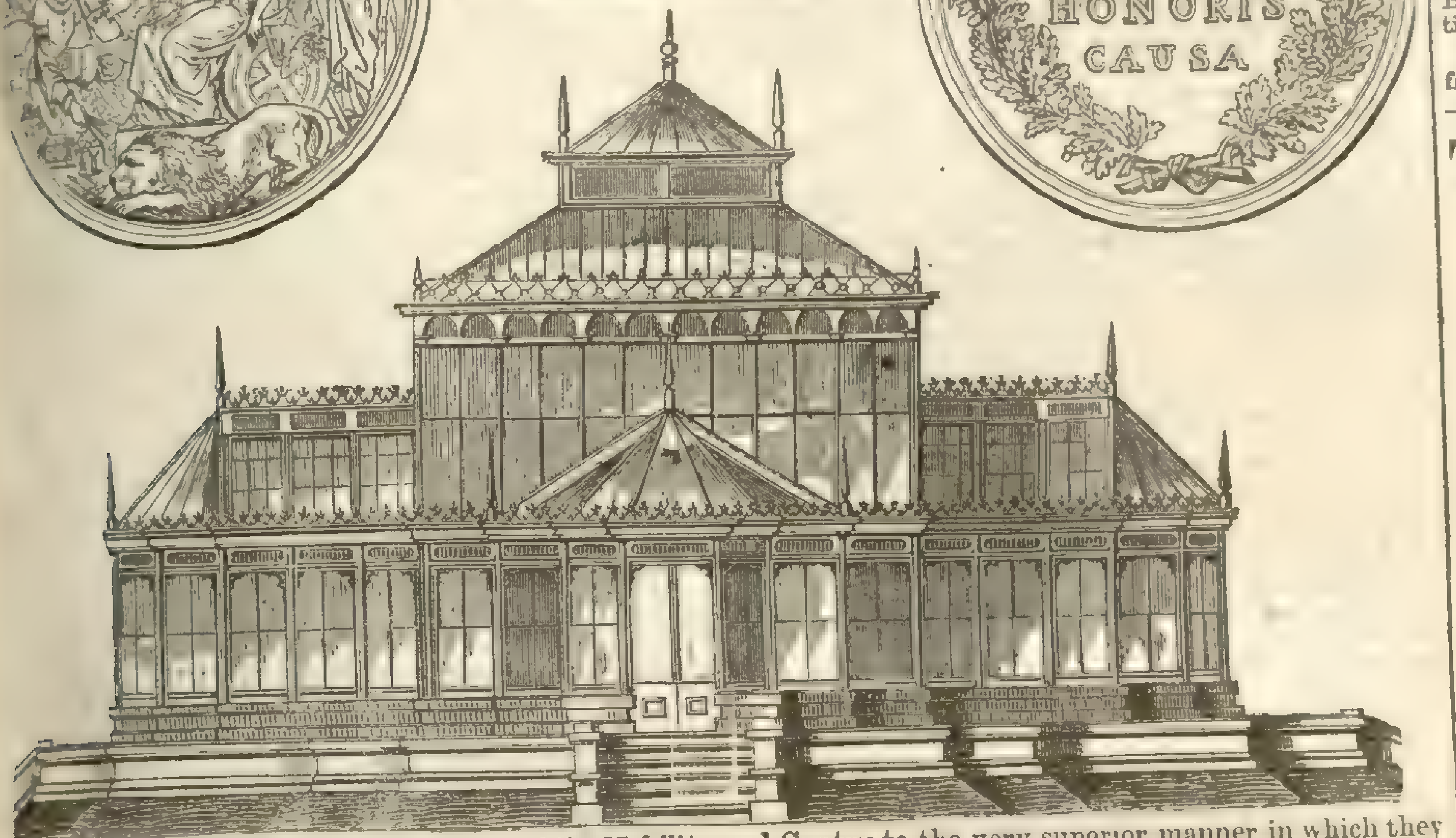
SAMUEL HEREMAN, 7, PALL MALL EAST, LONDON, S.W.

A HANDBOOK of VINE and FRUIT TREE CULTIVATION, as adapted to the above Patent Hothouses, may be had of Mr. HEREMAN, price 1*s.*; post free, 1*s.* 1*d.*

JOHN TAYLOR & SONS,
HORTICULTURAL BUILDERS AND ENGINEERS,
HARROW ROAD, LONDON, W.

INTERNATIONAL EXHIBITION,
CLASS IX., 2191.

PRIZE MEDAL
For CONSERVATORY,
DOUBLE CHAMBER CORRUGATED
and HORIZONTAL
TUBULAR BOILERS.



J. TAYLOR AND SONS call the attention of the Nobility and Gentry to the very superior manner in which they erect CONSERVATORIES, VINERIES, FORCING, FRUIT, and PLANT HOUSES of every description, combining the most modern improvements with elegance of design and durability of materials and workmanship.

Our VENTILATING APPARATUS for the Roofs and Fronts of Horticultural Buildings, &c., supersedes any now in use, as being the most simple and effective in its action.

Our system of HEATING APPARATUS for Churches, Public Buildings, Mansions, Schools, Offices, Baths, Horticultural Buildings, &c., is particularly worthy of notice, we having for many years devoted especial attention to this branch. The great variety of work which has passed through our hands has gained us such experience in the mechanical details as to insure success and entire satisfaction in any undertaking entrusted to our care.

The superiority of our DOUBLE-CHAMBER CORRUGATED and HORIZONTAL TUBULAR BOILERS has caused them to be acknowledged as the best now in use, being both powerful and rapid in action.

See CONSERVATORY, BOILERS, &c., exhibited at the International Exhibition, Class 9 (2191), Open Court, Eastern Annexe.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.

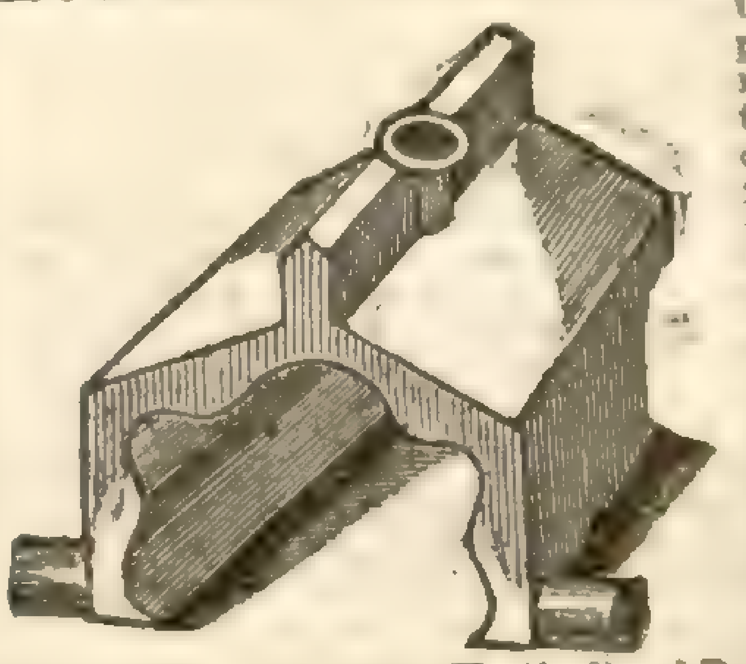
Apply to JOSEPH MEREDITH, Vine Cottage, Garston, near Liverpool.

N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection; Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, TUBULAR, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 11s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

T. M. LOBJOIT'S PATENT HOT-WATER BOILERS are acknowledged by all who have them in use to be the most powerful Boilers now known, and are the most economical, requiring less fuel and attention than any other. They are made of various sizes, suitable for heating the smallest Greenhouse to the largest Conservatory, Churches, and Buildings of all descriptions.



Testimonials forwarded on application to THOS. M. LOBJOIT, Horticultural Builder and Hot-Water Apparatus Manufacturer, Turnham Green, W., and at Acton, Middlesex, W.

The only Stove without a Flue.

JOYCE'S PATENT, for Warming Chapels, Halls, Shops, Conservatories, and all other Places. Price from 12s. 6d. each.

JOYCE'S STOVES are Portable and Economical, and burn 12 hours with one supply of fuel, requiring no attention.

STOVES for GREENHOUSES are made to burn all the Winter. Temperature always the same. Patent Fuel, 2s. 3d. per Bushel.

The PRUSSIAN VERMIN EXTERMINATOR (HOWELL'S) is the only safe and effective remedy for the destruction of Rats, Mice, Beetles, Ants, and Cockroaches. Sold in Stone Jars, 1s. and 2s. 6d. each, with Testimonials, &c. (to be had of all Chemists).

SWAN NASH, Patentee, 253, Oxford Street, and 119, Newgate Street, London, E.C.

Illustrated Catalogues post free.

HIS HIGHNESS THE VICEROY OF EGYPT.

JOHN WEEKS & COMPANY

HAVE GREAT PLEASURE IN ANNOUNCING THE HONOUR OF BEING ENTRUSTED WITH THE COMMANDS OF HIS HIGHNESS TO

CONSTRUCT A MAGNIFICENT CONSERVATORY,

of chaste design and elaborate finish, 320 feet long by 130 feet wide. Its temporary erection will take place in the early part of next year at their

STEAM-POWER WORKS, CHELSEA,

when the Nobility and Gentry will have an excellent opportunity of witnessing

WEEKS'S IMPROVED METHOD OF VENTILATION

IN FULLEST OPERATION.

JOHN WEEKS AND COMPANY,

HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS ENGINEERS,

KING'S ROAD, CHELSEA, S.W.

Grape Vines from Eyes.

LUCOMBE, PINCE AND CO. have a fine healthy stock of strong VINES, from 6 to 10 feet long, of all the choicest sorts, fit for immediate planting, propagated from Eyes taken from their own experimental Vinery, which enables them to warrant each kind true to name.

LISTS of Sorts and prices may be had on application.

Exeter Nursery, Exeter.

Grape Vines.

JAMES CARTER AND CO. have now ready for sending out a splendid Collection of thoroughly ripened Canes of the above from Eyes and two years old, true to name, for fruiting in pots, or planting out; to which they respectfully wish to draw attention.

For full DESCRIPTIVE LIST of same see AUTUMN GUIDE, sent free by post, on application to 237 and 238, High Holborn, W.C.

Strong Grape Vines from Eyes.

R. GLENDINNING begs to announce that his Stock of GRAPE VINES, comprising all the old and new varieties worthy of cultivation, is unusually fine this season. It consists of a number of extra-strong well-ripened Canes, grown for fruiting in pots, and a quantity of fine healthy Vines for planting out.

PRICED LISTS on application.

Chiswick Nursery.—Nov. 1.

New White Grape "Chavoush."

CHARLES TURNER can still supply strong plants of this superior White Grape. For description and particulars see former Advertisement or Catalogue, which may be had on application. Price for strong plants, 21*s*. A few extra strong plants in large pots, which will bring a crop next year, will be charged 42*s*.

The Royal Nurseries, Slough.

TO ALL about to PLANT or FORCE the VINE.—A large Grape Grower, who has long been astonished at the prices charged for Vines, has raised from Eyes this year, and grown in pots No. 24, 1000 Young Vines of the following varieties, most of which he has proved. It will be observed that several New sorts are included.

Black Hamburgh	Black Prince
Champion do.	Royal Muscadine
Golden do.	Prolific Sweetwater
Muscat do.	Buckland do.
Muscat of Alexandria	Trentham Black
Bowood Muscat	West's St. Peter

Well established Plants, 3*s*.; Fruiting do., 5*s*. each.

Address Mr. GEORGE OWEN, Teddington, S.W.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10*s*. 6*d*., and 15*s*.

2-year old Successions, 21*s*. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

THOMAS JACKSON & SON, Nursery, Kingston, S.W.

CURRANT PLANTS for immediate bearing.—Large Red Grape and Nettle Leaf White, at the nominal price of 15*s*. per 100, or 5*l*. per 1000.

Also a few Tons of LAPSTONE KIDNEY POTATO SEED, in excellent condition.

Apply to T. MITTON, Lampton, near Hounslow, W.

FINE PYRAMIDAL FRUITING PEARS on QUINCE:—

	s.	d.
12 fine named sorts, with buds	18	0
50 " " "	60	0
12 " APPLES, with buds	12	0
12 plants May's large VICTORIA CURRANT ..	3	0
100 " " " ..	14	0
50 plants heaviest LANCASHIRE GOOSEBERRIES	10	0
50 plants good useful sorts ditto	6	0

HENRY MAY'S CATALOGUE of FRUIT TREES is now ready, and will be forwarded free.

The Hope Nurseries, near Bedale, Yorkshire.

Fine Trained Fruit Trees.

LUCOMBE, PINCE, AND CO. invite attention to their remarkably fine, healthy, well-rooted Stock of FRUIT TREES, trained as Espaliers and Pyramids, in a bearing state, of all the best sorts, amongst which they can especially recommend

HUYSHE'S BERGAMOT and VICTORIA PEARS,

as being two of the finest varieties in cultivation, specimens of which covered with fruit may be seen in their Nursery.

L., P. & Co. have also well established in pots some very fine PEACHES and NECTARINES,

set with fruit buds, fit for Orchard House culture.

A DESCRIPTIVE PRICED CATALOGUE may be had on application.

Exeter Nursery, Exeter.

Magnificent Dwarf-Trained Fruit Trees.

WM. WOOD AND SON have the greatest satisfaction in referring their friends to their very superior Stock of the above, which are in the finest possible health, and in point of training the trees are perfect pictures of successful cultivation.

The Stock comprises PEARS, PLUMS, CHERRIES, PEACHES, &c., &c.

CATALOGUES free on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

FRUIT TREES, ROOT PRUNED.

PEARS, in 200 sorts, Pyramids, from 2 to 12 feet high, mostly bearing trees.

APPLES, 200 sorts, Standards, Pyramids, Dwarf Bushes, or Dwarf-trained.

PLUMS, 70 sorts, Standards, Dwarf Bushes or Dwarf-trained.

PEACHES, NECTARINES, APRICOTS, and CHERRIES, fine Dwarf-trained trees.

MAIDEN PEACHES and NECTARINES in quantity to offer to the Trade.

For prices, &c.; apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

Fruit Trees.

RICHARD SMITH has no hesitation in saying, that he possesses by far the largest Stock of FRUIT TREES in the kingdom, consisting of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, in Maiden Trees, Dwarfs, Bushes, Pyramids, Half-Standards, and Standards; Dwarf-trained, Half-Standard, Standard, and Horizontally-trained Trees, of the finest sorts, and in the best possible condition. DESCRIPTIVE PRICED LISTS on application.

RICHARD SMITH, Nurseryman, Worcester.

Planting.

WM. PAUL (Son and Successor to the late A. PAUL) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.

Entrance from the platform, Waltham Station, Great Eastern Railway.

Nurseries and Seed Warehouse, Waltham Cross, N.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

Hardy Ornamental Trees and Shrubs.

LUCOMBE, PINCE, AND CO. invite the attention of those engaged in planting, to their unrivalled Stock of HARDY ORNAMENTAL TREES and SHRUBS, all of which have been regularly transplanted, so that they can be removed to any distance with perfect success. Any one desirous of producing an immediate effect has an opportunity, rarely offered, of selecting from an exceedingly large and well rooted stock, at very moderate prices, every variety of Tree or Shrub that can be required. Particulars and prices forwarded on application.

N.B. Compensation for carriage will be taken liberally into consideration.

Exeter Nursery, Exeter. Established 1720.

Orchard House Trees.

MESSRS. THOMAS RIVERS beg to offer the largest stock known of the following kinds of FRUIT TREES in Pots. To save expense they can be taken from their pots, and packed with their balls of earth in crates or baskets.

APRICOTS,—Standards, 7*s*. 6*d*.; half standards, 5*s*. to 7*s*. 6*d*.; Pyramids, 5*s*.; Dwarf bushes, largest trees five years old, 7*s*. 6*d*.; ditto, 3*s*. 6*d*. and 5*s*. all full of blossom buds.

ALMONDS.—Thin shelled and large fruited, 3*s*. 6*d*.

APPLES.—Fine American and other sorts, mostly Pyramids, on the Paradise stock, 2*s*. 6*d*.

CHERRIES.—Pyramids, fine bearing trees, 3*s*. 6*d*. to 5*s*.

FIGS, from Eyes, with short clean stems, bearing trees, 3*s*. 6*d*. to 5*s*.

MULBERRIES.—2 to 3 feet, 5*s*.

NECTARINES.—Bushes, fine bearing trees, 3*s*. 6*d*. to 7*s*. 6*d*.

ORANGES.—Tangerin, St. Michael's, and Maltese Blood Orange, 5*s*. to 7*s*. 6*d*.

PEACHES.—Standards for lofty Orchard houses, 7*s*. 6*d*.; Half Standards, 5*s*. to 7*s*. 6*d*.; Pyramids, remarkably handsome and well furnished with blossom buds, 5*s*.; bushes, very fine trees, 3*s*. 6*d*. to 7*s*. 6*d*.; miniature trees in 6-inch pots, 3*s*. 6*d*.

PEARS.—Handsome Pyramids, on the Quince, full of blossom buds, 3*s*. 6*d*. to 5*s*.

PLUMS.—Pyramids and bushes, 3*s*. 6*d*.; a few of extra size, 5*s*.

VINES, from Eyes, 3*s*. 6*d*. to 7*s*. 6*d*.

Carriage paid to London. Large collections, if required in their pots, packed in trucks and sent through by any line of railway.

Nurseries, Sawbridgeworth.

To the Trade.

JAMES GARAWAY AND CO. have large quantities to offer of

ASH	OAK
BEECH	SPRUCE FIR

Prices and Sizes on application.

Durdham Down Nurseries, Bristol.

To the Trade only.

SAMUEL FINNEY AND CO. offer fine furnished Plants of the following. They were all transplanted last Autumn, and will remove with safety:—

HOLLY, SILVER-STRIPED, 1 ft.,		5*s*. per doz.,	35*s*. per 100
" " "	1 to 1½ ft.,	5*s*. 6*d*. "	40*s*. "
" " "	1½ to 2 ft.,	6*s*. "	45*s*. "
" ROUND-LEAVED GREEN	1 ft.	5*s*. per doz.	
" POINTED-LEAVED GREEN	1 to 1½ ft.	5*s*. 6*d*. "	
" YELLOW-BERRIED	1½ to 2 ft.	6*s*. "	
" BROAD-LEAVED AMERICAN			

Gateshead Nursery, Newcastle upon Tyne.

CHOICE HARDY CONIFERS.

		s.	d.
ARAUCARIA IMBRICATA, 1 year, strong,	p. doz.	6	0
CUPRESSUS LAWSONIANA, 1 year, strong,	"	3	0
MACROCARPA, 6 inches	"	3	0
PICEA NORDMANNIANA, 1 year	"	12	0
PINUS DON PEDRI, 1 foot	"	9	0
" INSIGNIS, 6 inches	"	3	0
" PONDEROSA, 6 inches	"	6	0
THUJA ELEGANS or LOBBII, 1 foot ..	"	6	0
WELLINGTONIA GIGANTEA, 1 year, strong	"	12	0
" " in 48 pots, 8 ins.	"	24	0
" " in 32 pots, 1 ft., fine	"	42	0

The above are all healthy seedling plants in pots, ready for immediate planting out.

J. HENCHMAN, Edmonton, London, N.E.

To Noblemen, Gentlemen, and Others engaged in Planting.

GEORGE BAKER begs to invite attention to the following superb specimens, which are in the finest condition:—

ARAUCARIA IMBRICATA, 6 feet, 9 feet, 14 feet
ABIES DOUGLASII, 10 feet, 14 feet, 20 feet
ARBOR-VITÆ (Siberian), 6 feet, 8 feet
CEDRUS DEODARA, 6 feet, 8 feet, 10 feet, 12 feet, 20 feet
CUPRESSUS LAWSONIANA, 5 feet
" DISTICHA, 8 feet, 12 feet
CEDRUS LIBANI, 8 feet, 10 feet
CHINESE JUNIPER, 5 feet, 6 feet
IRISH YEWS, 6 feet, 8 feet
JUNIPERUS RECURVA, 8 feet
" BEDFORDIANA, 5 feet, 6 feet
PICEA CEPHALONICA, 11 feet
PINUS CEMBRA, 7 feet, 10 feet
" EXCELSA, 10 feet, 15 feet
TAXODIUM SEMPERVIRENS, 10 feet, 12 feet
THUJA GIGANTEA, 6 feet
WELLINGTONIA GIGANTEA, 5 feet
KALMIA LATIFOLIA, Standards, fine
RHODODENDRONS, " "
PORTUGAL LAURELS, " "

G. B. in offering the above perfect specimens feels assured that whoever may favour him with their kind orders, their hopes will be fully realised. Prices on application.

American Nursery, Windlesham, Bagshot, Surrey.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious Index of all their synonymes. Free by post for 12 postage stamps.

RICHARD SMITH, Nurseryman, Worcester.

SPECIMEN EVERGREEN SHRUBS, including HOLLY, 6 to 8 feet; ARBOR-VITÆ, 5 to 7 feet; LAUREL, 6 feet by 4 feet dia.; LAURUSTINUS, fine, 2 feet by 3 feet diameter; and various others. A few extra large LIMES. All can be depended upon for safe transplanting.

CHAS. SOUTHBY, Nurseryman, Clapham.

SHRUBS.—A Gentleman having 15 acres of CHOICE SHRUBS, from 6 to 12 years old, has a few hundred for Sale, consisting of Weeping Trees of all kinds, Worked Chestnuts, Double Mays, and Acacias of all sorts, Copper Beech, Rhododendrons, Bays, Laurustinus, Laurels, Portugal Laurels, Boxes, Cedars, Lilacs, and an assortment of Specimen Plants seldom seen and unequalled in this country. Carriage Free to any Railway Station in England or Wales.

Apply to Mr. WRIGHT, 22, Ely Place, Holborn, W.C.

To the Trade.

GEORGE R. DAVIDSON offers to the Trade One Million of FOREST TREES, twice transplanted, in rows 14 inches apart; THORN QUICKS, One Million 1-year olds in beds; Two Million 3-year olds in beds; One Million 3-year olds, transplanted. A large stock of COMMON LAUREL.

Samples and Prices on application. Conveyance per rail or steam to all parts of the Kingdom.

The Nurseries, Newry, Ireland.

3000 DEODARS, 1000 CUPRESSUS LAWSONIANA, 1000 C. MACROCARPA, 500 THUJA LOBBII. The above are offered very cheap. The Deodars are handsome well grown plants, from 2½ to 5 feet, and have been transplanted every autumn for the last five years. The others are fine healthy plants varying from 2 to 5 feet high.

Prices on application to J. SCOTT, Merriott, Crewkerne, Somerset.

Magnificent Specimens of Coniferæ.

LUCOMBE, PINCE, AND CO., have to offer this season a very large Stock of symmetrically grown specimens of CHOICE HARDY CONIFERS, all of which have had great care and attention paid to their roots, and having been regularly transplanted, can without feeling any check be removed with perfect safety to any part of the Kingdom.

Noblemen, Gentlemen, and Landscape Gardeners, requiring large well grown specimens of Conifers, will find this collection especially deserving attention.

Prices sent post free on application, and will be found exceedingly moderate.

ARAUCARIA IMBRICATA, 4 to 5 ft., 6 to 8 ft., 9 to 12 ft.
ABIES DOUGLASII TAXIFOLIA, 5 to 6 ft., 7 to 9 ft., 10 to 12 ft.
CEDRUS DEODARA, 5 to 6 ft., 8 to 14 ft.
" LIBANI, 6 to 8 ft., 10 to 12 ft.
PICEA NORDMANNIANA, 3 ft. 6 in. to 4 ft. 6 in., 6 to 8 ft.
" PINSAPO, 2 to 3 ft., 7 to 8 ft.
THUJA GIGANTEA, 3 to 4 ft.
WELLINGTONIA GIGANTEA, 3 to 4 ft., 5 to 6 ft.

Exeter Nursery, Exeter. Established 1720.

WM. IVERY respectively invites an inspection of EVERGREENS and DECIDUOUS SHRUBS.

EVERGREEN OAKS, fine, from 6 to 8 feet.
PHILLYREAS, 4 to 5 feet, fine and bushy.
CHINESE ARBORVITÆ, 5 feet and upwards.
CEDRUS DEODARA, 4 to 5 feet.

Also large AUCUBAS, LAURUSTINUS, ARBUTUS, and all other varieties in the finest condition, will move with the greatest safety, with good balls. Also a fine collection of hardy CLIMBERS in pots. FRUIT TREES of all the best approved varieties at reasonable prices.

Hanover Nursery, Peckham.

To Nurserymen, Railway Contractors, &c.

ANDREW G. DALY, Newry, Ireland, is prepared to deliver (free of freight) in Liverpool or Glasgow—

2,000,000 of 2 and 3 years Transplanted THORN QUICKS, fit for Railway fences. Also

8,000,000 of 2-years SEEDLING THORNS, one year bedded. Good stout finely rooted stuff, best for lining out.

20,000 upright IRISH YEWS, from 1 to 6 feet, often removed, trained to one stem, finely rooted, and well clothed.

The above will be offered at very moderate prices on account of an alteration in part of the Nursery Ground.

CHARLES DALY AND SON will SELL 1-year's TRANSPLANTED THORNS, 4*s*. per 1000; 2-year ditto, 8*s*. per 1000; COMMON LAUREL, 1 to 1½ feet, 15*s*. per 100; SWEET BAYS, PORTUGAL ditto, 1 to 1½ feet, 4*s*. per 100; Irish Yews, Aucuba japonica, 1 to 2 feet, in pots, 6*d*. each. Variegated Holly, Evergreen Privet, Forest Trees and Seedling ditto, cheap for Cash.

LIST of PRICES free by Post.

Coleraine, Ireland.

Notice.

TO BE SOLD, at extraordinary low prices, in consequence of the land being taken for other purposes, the following Clean, Healthy, Well-growing PLANTS, only two years since transplanted:—

50 to 100,000 2 and 3 years' transplanted QUICKS.

20,000 3-year old LARCH.

1000 fine ORNAMENTAL TREES—Oaks, Maple, Limes, Elms, Poplar, &c., 4*s*. to 9*s*. per dozen.

2000 deciduous SHRUBS, 2*s*. to 6*s*. per dozen.

1000 PINUS AUSTRIACA, ABIES SMITHIANA, &c., very fine bushy stuff, 6*s*. to 9*s*. per dozen.

1000 CHINESE and AMERICAN ARBOR-VITÆ, all sizes, 6*s*. to 12*s*. per dozen.

10,000 clean, handsome-grown APPLE TREES—Dwarf, Half-standards, and Standards—of the leading and best kinds, 4*s*. to 12*s*. per dozen.

5000 ditto, ditto, ditto PLUMS, 4*s*. to 18*s*. per dozen.

5000 ditto, ditto, ditto PEARS, 4*s*. to 18*s*. per dozen.

3000 ditto Dwarf CHERRIES, very handsome and bushy, 6*s*. to 9*s*. per dozen.

2000 Dwarf-trained PEACHES, NECTARINES, and APRICOTS, not to be equalled, 2*s*. to 3*s*. 6*d*. each.

2000 trained PEARS, PLUMS, CHERRIES, and APPLES, of the newest and best kinds, handsome trees, 1*s*. 6*d*. to 2*s*. 6*d*. each.

6000 fine Double HOLLYHOCKS, 2*s*. per dozen.

1000 of the very best kinds of Standard ROSES, large and handsome heads, 12*s*. to 18*s*. per dozen.

5000 of very strong EVERGREENS, PRIVETS, 6*s*. to 8*s*. per 100.

☞ The Trade liberally dealt with. Inspection of the Stock is requested.

W. J. EPPS, Nursery and Seed Establishment, Maidstone.

HYACINTHS AND OTHER DUTCH BULBS.

WM. CUTBUSH & SON

Beg to inform their Patrons that the best time for planting the above is during the next three weeks. Their celebrated selections of HYACINTHS can be supplied at 9*s*., 12*s*., 15*s*., and 18*s*. per dozen.

DESCRIPTIVE PRICED CATALOGUE free by post.

The FIRST PRIZES have been awarded to our COLLECTIONS of HYACINTHS, &c., by the Royal Horticultural and Royal Botanic Societies of London in every instance for the last seven years.

HIGHGATE NURSERIES, LONDON, N.

THE PRIZE MEDAL FOR GENERAL EXCELLENCE OF SEEDS,

INTERNATIONAL EXHIBITION, 1862.

JAMES CARTER & CO.,

SEED FARMERS AND NURSERYMEN,

237, 238, & 261, HIGH HOLBORN, LONDON, W.C.

Collections of HYACINTHS, CROCUSES, TULIPS, NARCISSUS, IRIS, LILIES, &c., from 10*s*. 6*d*. to £5. Also PURE AGRICULTURAL and GARDEN SEEDS for AUTUMN SOWING.

The Twenty-Seventh Annual Issue of the "GUIDE for AUTUMN GARDENING" forwarded free of charge on application to

JAMES CARTER & CO., 237 & 238, HIGH HOLBORN, LONDON, W.C.

INTERNATIONAL EXHIBITION.

PRIZE MEDALS 1851 AND 1862

AWARDED FOR SUPERIORITY AND GENERAL EXCELLENCE TO

BUTLER & McCULLOCH, SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.

(ESTABLISHED UPWARDS OF A CENTURY.)

A.—Choice Collections of Bulbs for Greenhouse or Conservatory, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

B.—Choice Collections of Bulbs for Flower Garden only, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

C.—Choice Collections of Bulbs for Greenhouse and Flower Garden, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

A Specification of the above Collections is given at pages 50 and 51 of Messrs. BUTLER & McCULLOCH'S CATALOGUE or AMATEUR'S GUIDE, which may be had free and post paid upon application.

☞ *All Orders amounting to 21s. and upwards sent Carriage Free.*

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

(OPPOSITE THE GARRICK CLUB.)

THE PRIZE GOURDS AND MAIZE,

From "our SARDINIAN CORRESPONDENT," have been removed from the Royal Horticultural Society's Gardens, and are now on exhibition at our Establishment, that visitors may have an opportunity of inspecting the most valuable, beautiful, and varied Collection of Ornamental and Edible Gourds ever seen in this country.

"There should be Gardens for all the months in the year, in which severally things of beauty may be had in season."

Orders amounting to 21s. sent Carriage paid.

Collections of Bulbs for Conservatory and Out-door Decoration.
"A," £5 5*s*.; "B," £4 4*s*.; "C," £3 3*s*.; "D," £1 1*s*.; "E," 15*s*. 6*d*.; "F," 10*s*. 6*d*.

Paxtonian Collections of Bulbs for Ornamenting the Spring Garden.
"G," £5 5*s*.; "H," £4 4*s*.; "I," £3 3*s*.; "J," £2 2*s*.; "K," 15*s*. 6*d*.; "L," 10*s*. 6*d*.

The Kensington Garden and Crystal Palace Collections for Winter Gardening.
"M," £5 5*s*.; "N," £3 3*s*.; "O," £2 2*s*.; "P," £1 10*s*.; "Q," £1 1*s*.; "R," 10*s*. 6*d*.

For full particulars of the sorts and quantities contained in the above Collections, see our "ILLUSTRATED FLORAL GUIDE," or the *Gardeners' Chronicle* of September 13th and 20th.

London Agents for TYE'S New REGISTERED SOUVENIR HYACINTH GLASSES, 10*s*. 6*d*. per pair. For further particulars see our "ILLUSTRATED FLORAL GUIDE," or *Gardeners' Chronicle*, Sept. 13th and 20th.

BARR & SUGDEN, SEED MERCHANTS,
12, KING STREET, COVENT GARDEN, W.C. (OPPOSITE the GARRICK CLUB).

Royal Horticultural Gardens, South Kensington.

JOHN SALTER has the pleasure to announce that his magnificent COLLECTION of CHRYSANTHEMUMS is NOW on VIEW at the above Gardens, in the space occupied by the Rhododendrons last spring, and will continue in perfection during the month of November.

The plants in the Winter Garden of the Nursery are also in BLOOM.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Exhibition of Chrysanthemums.

JOHN SALTER, F.R.H.S., invites the Public to visit his unrivalled COLLECTION of these beautiful FLOWERS, which are NOW in FULL BLOOM. The Winter Garden alone contains several thousands of Plants, and presents a *coup d'œil* unique in this or any other country. The Gardens are open every day except Sunday. Admission free.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Notice is hereby given, that an ELECTION of TWO PENSIONERS on the Funds of this Institution will take place in JANUARY next.

Persons desirous of becoming Candidates are required to send in their testimonials and certificates to the Secretary, on or before November 10 next. Printed forms of application may be obtained of the Secretary.

Preference will be given to those applicants who may have been Subscribers for upwards of 15 years, but should there not be a sufficient number of applicants of that class to fill up the vacancies, then the applications of those who may not have subscribed so long, or not at all, will be considered.

By Order of the Committee,
EDWARD R. CUTLER, Secretary.

14, Tavistock Row, Covent Garden, W.C.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 1, 1862.

MEETING FOR THE ENSUING WEEK.

FRIDAY, Nov. 7 { Royal Horticultural (General Meeting) at S. Kensington .. .. 2 P.M.

Two or three weeks since our columns contained sundry suggestions as to the way in which the success of bulbs to be forced in water or earth was to be ensured; and it was agreed upon all hands that this was only to be effected by so covering the bulbs with sand or some similar substance as to render the access of even a glimmer of light impossible. There was nothing new in this, although nine tenths of the buyers of Hyacinths and Tulips knew nothing about it. The precaution was familiar enough to gardeners, without perhaps their being always aware of the reason why it is so indispensible; and more especially without their perceiving how important the rule is in cases with which bulbs have nothing to do. Let us then return to a question which has a much larger practical application than is supposed.

A prophet is not wanted to declare that what thing soever has to be made to grow must have some means of feeding, that is to say of imbibing the matter out of which growth has to come. We omit all comparison with the animal kingdom and refer only to that of plants, and the unsuspected analogies between organs of vegetation apparently most dissimilar. The seed is the type of every growing part—that must be conceded. The power of growth does not reside in the skin or husk of the seed, but in a little white fleshy body lodged within it, named the embryo. When the embryo is called upon to grow, the *first* thing which happens is the production of a root, which dips down into the soil where food is to be found. There it fixes itself and begins to feed, which power secured, then, and not before, a young stem, the beginning of the future plant, makes its appearance. If from any accident the embryo root in which the feeding power resides is destroyed, then the young stem, finding nothing to nourish it, perishes. Thus we see that if a young plant is to grow, it must in the very beginning have parts wherewith to feed; and this is as true in the case of a bulb, or a cutting, or newly transplanted plant as of a seed.

But what is the common way, among the unskilled, of treating a bulb, when grown in water? A Hyacinth glass, as transparent as possible, is filled with water, and placed at a window, or on a mantelpiece, and then the bulb is dropped into its place, touching the water or not as the case may be. Observe the effect. While a few roots are struggling into existence and before any considerable action can be established in them, the bud, stimulated by light, its great vivifier, pushes upwards and takes to itself the food stored in the bulb for the formation of all the new organs. But the force of development being much greater in the leaves than in the roots, the former rapidly extract from the bulb the food which Nature has stored therein, and the sprouting roots are starved. Then comes the mischief. The bulb contains only a limited quantity of food, and of itself can form no more; what it had is soon exhausted by the growing leaves, which then begin to suffer from the starvation of the roots, or feeders, by whose

action, if in a vigorous state, an ample supply of fresh food would have been extracted from the air and water. From this time forward all goes wrong; the ends of the leaves wither, the young flowers shrivel, the very bulb becomes offensive, and the plant is only fit to be thrown away. It is obvious that the failure will have arisen from leaves being allowed to sprout before roots were provided to feed them. This was brought about by exposure to light. The remedy is the complete exclusion of light until roots have formed in such abundance as to be able to supply the leaves with whatever amount of fresh food may be required. In darkness, and in a cool place, roots will form abundantly, but leaves will be dormant until light is admitted to them.

This matter may be thought to have been sufficiently discussed in former Numbers of our *Chronicle;* but the failures in bulb-growing in sitting rooms, of which Correspondents are so continually complaining, tell us the contrary. For this reason we have endeavoured on the present occasion to put the question in a somewhat new light. If we shall have succeeded in making the subject intelligible, it will be seen that bulbs grown in waterglasses only follow the laws that produce growth in other plants. Let us give a few examples.

A. An evergreen is transplanted in the days of Autumn. Buds are inactive, leaves are amply fed by what already exists in the branches; the soil is warm, and the action of roots suffers no diminution, so that long before fresh food is needed for the leaves the roots have provided it in abundance. The evergreen does not "miss the moving."

B. An evergreen is transplanted in the month of May. Buds are pushing under the influence of increasing light; young leaves are fed at first by what already exists in the branches; but the roots are torpid, the soil too cold to excite their feeding power, and the branches are exhausted before the food that has been consumed by the leaves can be replaced. The evergreen dies.

C. A deciduous tree is transplanted in full leaf in November. The leaves as usual supply themselves with food from the branches; but the ground is cold, and the roots torpid and incapable of feeding. The branches are exhausted by the action of leaves, and the roots replace nothing. The branches shrivel; the plant dies.

D. A deciduous tree is transplanted after the fall of the leaf. There being no leaves the branches are not exhausted and require no fresh food. In the meanwhile, injured roots heal, and new roots form slowly during winter, keeping the branches turgid with sap; so that when new leaves form they are in contact with food, and there is no chance of a deficient supply. The deciduous tree does not "miss the moving."

A little consideration will show that the question really turns upon demand and supply. Leaves demand, roots supply. Supply being sufficient to meet the demand of leaves, vegetation proceeds and is healthy. If not—not. This is the true theory of transplantation, and Hyacinth growing is nothing else.

IN speaking of Indian fibres last week we omitted any mention of Flax, though many efforts have been made to raise good Flax in India. The plant which produces it is cultivated in many parts for the sake of its seed, but it is too much branched and too rigid to yield good fibre, and even where the seed harvest has not been the principal object, the quantity and quality of the fibre are in general so small as not to make the culture remunerative. It is possible indeed that some districts might be found where experiments might be more successful, but those which have hitherto been undertaken are for the most part far from encouraging. Of Hemp proper we shall have to speak presently, but however good the quality may be in some colder parts of India, as objects of general culture we must look to the three belonging to the genera Corchorus, Crotalaria, and Hibiscus, whose character has been long established in the country.

Next to Jute, the fibre called SUNN is that perhaps which is most frequently produced in India. In point of antiquity it may almost contend with Jute, for if the plant which produces Jute is mentioned in Job, Sana is spoken of in the Institutes of Menu:—"The sacrificial thread of a Brahmin must be of Cotton, so as to be put over his head in three strings; that of a Cshatriya, of Sana thread only; that of a Vaisya, of woollen thread." Some authorities, however, believe that Sana may be synonymous with the Ambaree, to be noticed presently. Strange as it may seem at first sight, our English word Hemp is a strict derivative, by a series of curious etymological changes, from the Sanscrit Sana.*

Sunn is derived from a leguminous plant somewhat similar to Broom, with straight wandlike stems, yellow flowers, and hoary leaves. It may easily be raised from seed in a common hotbed, and in the course of a few weeks produces its pretty blossoms under very ordinary cultivation, though it is too tender for open air growth in this climate. The seeds are produced in swollen pods, in which they rattle when ripe like those of the Bladder Senna, and from this circumstance the name of the genus is derived. Other species produce good fibre, but Crotalaria juncea is the one which is almost exclusively cultivated.

The plant is annual and of quick growth. The seed is sown in May or June during rainy weather, and the crop is ready for gathering in August. The earlier it is cut, the finer and softer the fibre, though where great strength is required, it must have longer time, and be allowed to perfect its pods or even to ripen its seed. The rods are laid in bundles till the leaves fall, and are then steeped, but this process requires even more attention than in the preparation of Jute, as its threads are much injured by over steeping. The fibre is not merely stripped off as in Jute, but the wands are broken across in the hand, and then beaten against the water, which soon leaves the fibre free. Sometimes they are previously dried in the sun, but this is considered a bad practice, though most obstinately adhered to by some of the natives. Like the Jute it must be thoroughly cleaned, and every drop of moisture squeezed out, and then hung up on lines to dry. It is frequently sent over without any further dressing, though it is obvious that its value might be greatly increased, and the freight might be less, as the process of heckling would take considerably from the weight. It cannot bear competition with good Russian Hemp, to which it stands, when of first-rate quality, in point of strength, in the ratio of 2 to 3, or rather less. It does not seem to suffer so readily from damp as Jute, nor does it attain nearly so great a length. In general it is stronger. It varies however extremely in quality. The plant does not afford an article of food like the Jew's Mallow or Corchorus, though it is said to make excellent fodder for cattle, for which purpose it is sometimes expressly cultivated, being cut two or three times until it perishes.

The fibre when fine answers all the purposes of Flax, while coarse samples make excellent cordage. It is believed that careful preparation would make it the most useful of Indian fibres; as it is it generally bears a higher commercial value than Jute.

The third source of Indian Hemp is from *Hibiscus cannabinus*, the fibre of which bears the name of AMBAREE or Deckanee Hemp, and is often known simply as Brown Hemp. Like the plant which supplies Jute and Sunn, it is an annual of rapid growth, with a straight stiff stem, 3 to 7 feet high. It bears heart-shaped 3-5-lobed leaves, and large handsome yellow flowers with a deep purple eye. It is not known in a wild state, but is generally, though not very extensively, cultivated, partly for its acid leaves, as well as its fibrous bark. The plant is generally mixed with some kind of pulse or low growing grain, and is therefore thinly sown, a point which is not of so much consequence as in Jute, since it has not a tendency to become branched. In about three months, if the season is sufficiently damp, for otherwise the time of year is not important, it is fit for cutting, and the stems are then steeped and stripped much after the manner of Sunn.

In some districts *Hibiscus sabdariffa* is substituted, its thick fleshy highly ornamental sepals being used to make the Roselle jelly, which is one of the best Indian preserves.

The fibre of both is rather coarse, and used principally for cordage or common fabrics, such as sackcloth. It varies of course in value according to the preparation, but it seldom attains the price of good Sunn. A multitude of other species of Hibiscus, Sida, and neighbouring genera, produce excellent fibre, which is collected from several indigenous plants, though they are not general objects of cultivation.

True HEMP when cultivated for medicinal purposes in India, in which country it seems to be indigenous, becomes so woody from its being planted very thin and again transplanted, that it does not produce good fibre. But if sown more thickly after the European fashion there is no reason why it should not yield a useful fibre, if not so good as that of the North of Europe. In the Himalayas it has long been an object of cultivation by the natives, who use it both for cordage and coarse cloths, and experiments tend to prove that its cultivation might be extended with considerable advantage. Recent changes in India and the construction of railroads will in all probability make the supply of fibrous materials from that country so much improved in quantity and quality as to render us in great measure independent of the United States. We doubt, however, whether India will ever produce a first-rate Cotton, though we expect immense improvement. Recent communications from Dr. LIVINGSTONE point out Africa as the land of promise, and there is great reason to believe that we shall have even better qualities from that country and Australia, than we have ever had from the Sea Islands or New Orleans. *M. J. B.*

* Sana, in the Madras dialect Shanapam or Janapa, hence Canapa, Hampa, Hennip, Hamp, and finally Hemp.

REPORT TO THE QUEENSLAND GOVERNMENT ON THE BRISBANE BOTANIC GARDEN. 1861, 1862.

By WALTER HILL, DIRECTOR.

I HAVE the honour of transmitting to you my Report on the progress and condition of this establishment during the past year. I take the opportunity of also furnishing a brief outline of some of the operations which I purpose for the ensuing season.

Amongst the improvements effected in connection with the cultivated land, I may state that two plantations of the Thea Bohea (Black Tea), consisting of several hundred plants, have been formed on each side of the ridge in the vicinity of the Director's residence; heretofore there had been but a few isolated and scattered specimens of this valuable plant in different parts of the garden. These plantations were formed with a view of furnishing an example of the cultivation of this product on a large scale, and also for the purpose of making an experiment to ascertain the position best adapted for the growth of the plant, as this is a disputed question. One of the plantations referred to is exposed to the east, and in the other the plants have a western aspect. In both situations the plant thrives admirably, and there is no perceptible difference in the progress of the two plantations.

This experiment in connection with the cultivation of the Tea plant is the largest which has been made in any of the Australian colonies. The result proves the perfect adaptation of our soil and climate for the successful cultivation of this product.

Several rows of timber trees indigenous to this colony have been planted in part of the border at the south-west side of the grounds. These trees will prove highly ornamental. A collection of this kind should form a prominent feature in any Botanical Garden. Future visitors to these grounds will have an opportunity of examining in the Museum specimens of the timber of this colony, worked up and polished by the hands of the artizan, and also of viewing in the garden, specimens of the trees from which such timber is procured. For the sake of ornament a row of Laurus australis (Native Laurel) has been planted in front of these trees. A pleasing effect will thus be produced when the trees attain a more mature growth.

A vacant space at the western end of the Pinetum has been planted with 25 new species of this order.

About half an acre of ground in proximity to the Tea Plantations has been planted with Bananas, with a view to the suppression of the growth of that noxious weed, the Cyperus Hydra (Nut Grass). A similar experiment was made in different portions of the garden with successful results on a previous occasion.

In my last Report I alluded to the complete drainage of the grounds as a matter of the greatest importance. In accordance with a suggestion conveyed in that Report, I have caused a main drain to be commenced, and this work is now almost finished. I may also here state that the increased rate of wages for the men employed in the grounds, which was granted by the Legislature last year, has enabled me to command the services of more skilled and better workmen than I could formerly procure.

The cultivation of the Cotton plant continues to be attended with the most satisfactory results. An experiment has been made (as in the cultivation of the Tea tree above referred to) in order to ascertain the position best adapted for the growth of the Cotton plant. Several varieties have been planted in the low flat ground, and several in the higher and undulating ground.

The result is, that the plants situated on the undulating ground are much healthier, and yield a larger and stronger fibre than those grown in the low ground. The cultivation of the Peruvian variety of this plant has been unsuccessful, and the result of experience indicates that this variety cannot be cultivated with profit in the district.

The *Coffea arabica* (Coffee Tree), raised from seed obtained from a plant at Newstead, and planted four years ago, is now in a flourishing condition. This plant did not at first thrive so well as could be desired owing to the unfavourable situation in which it was placed. About 18 months ago it was replanted and placed on the side of a ridge sheltered from the westerly winds. In this new position the plant has flourished well. The berry is fine and well flavoured, and at the present time the plant is bearing about 2 lbs. weight of fruit. This experiment in Coffee cultivation fully proves that the soil and climate of the colony are admirably adapted for the growth of this production.

The plantations of Vines, Oranges, Pine Apples, and Bananas, which have been formed with a view of determining what varieties are best adapted to the soil and climate, are in a most thriving condition. But it will require the experience of one or two seasons to ascertain with certainty which are the special varieties of these fruits that can be cultivated here with the greatest amount of profit to the grower.

The cultivation of fibre-yielding plants has attracted of late years a considerable amount of attention in Great Britain and elsewhere. Several species yielding valuable fibre, such as the Manilla Hemp, the Jute, the China Grass, the African Hemp, &c., have been introduced into our gardens and thrive well. One of our commonest weeds, however, which grows in profusion in this district, viz., the Sida retusa, will, I am certain, eventually be cultivated as a valuable fibre-yielding plant in preference to any of the species above named. This now disregarded plant will in course of time be ranked in this respect as one of the valuable products of the colony. A small sample of the fibre prepared in a rough way has appeared amongst the contributions of Queensland to the Great Exhibition of 1862.

Several new and valuable plants, for the cultivation of which the colony is admirably adapted, have been added to the garden during the past year. Among them is a Cinchona Calisaya, one of the trees yielding Quinine. The introduction

of the genus Cinchona into the East Indies and our tropical ... is now being attempted on an extensive scale. I ... be enabled to cultivate this product in our garden ... I purpose to make arrangements shortly to ... from Great Britain, plants of the Cinchona succirubra, ... valuable of the species which yield the red bark of ... Amongst the other plants introduced I may direct ... more particularly to the following:—Urania speciosa, ... Palm-like plant, whose seeds yield an essential ... are said to be edible; Xanthochymus pictorius (Gam- ... the juice of which produces the brightest of yellow ... the Indigo (Indigofera indica), the leaves of which ... the valuable dye of that name.

... been indebted for some of the most valuable contri- ... the kindness of the following gentlemen, viz.:— ... Director of the Ceylon Botanic Garden; the Director of the Melbourne Botanic Garden; the Director of the Sydney Botanic Garden; the Honourable L. Hope, Kilcoy; Mr. James Veitch, ... Exotic Nursery, London: and James Warner, Esq., ... Point, Brisbane.

... of 8000 plants and 700 papers of seed furnished from ... gardens have been distributed in the course of the past ... to cultivators in different parts of the colony. Among the ... thus distributed are 1600 Tea, 200 Coffee, 30 Cinnamon, ... Tamarind, 34 Custard Apple, 4 Mango, 3 Alligator Pear, 3 ... 160 roots Ginger, and 2000 Sugar Cane. The success ... experiments hitherto made in the cultivation of the ... product has drawn the attention of private growers in ... direction, and there can be no doubt that cultivation on a ... extended scale than hitherto would be attended with ... and profitable results. It will be seen from the ... given above, that the plants chiefly in demand are ... which have not hitherto been cultivated here to any ... and the successful cultivation of which would be a ... of profit to the growers and add to the productions of ... The demand for plants of this character it may ... expected will daily increase, as the adaptability of the soil ... climate for such productions are made apparent by experiment.

... purpose in the course of the next season to form planta- ... of the Coffee tree and the Cinnamon, similar to those ... formed of the Tea-tree and Sugar-cane, with the view ... furnishing cultivators with proof that Coffee and Cinnamon may be cultivated with results as successful as those of the ... products referred to.

Several new walks are being formed in the Garden and the Queen's Park. These will be gravelled in the course of the next season.

Frequent applications are made to me for advice by newly arrived immigrants as to the selection and cultivation of ... in the agricultural reserves or of other lands open for ... I need scarcely state that I have much pleasure in ... endeavouring to assist the applicants in the manner indicated, ... as lies in my power. These calls upon my time, together with the superintendence of the hard labour men who were employed in the Queen's Park and the Domain, have prevented me from taking any botanical excursions during the past season. As the Government of Queensland was one of the first to promise to lend assistance to the completion and publication of the work on the Australian Flora, by Mr. G. Bentham, President of the Linnean Society, London, I shall deem it my duty to devote a portion of my time, at as early a date as possible, to the collection of materials for this great and useful undertaking.

Indoor Gardening.

There is one arrangement of Indoor Gardening which seems specially appropriate to the winter months, when we may want to have bright and scented flower-stands made up of materials that are not singly valuable—I mean a sort of adaptation of flower-beds to window-stands. There is something that strikes one as purposeless in a stand of plants which do not suit each other, and which have evidently been placed together merely for show while flowering. I am, myself, so fond, on the contrary, of getting up a group, the plants in which interweave and knot into one another. For this reason it is that climbers seem so valuable, because they wind about so gracefully and give such an air of stability. I think it was Mr. Flemming who introduced first a pretty style of flower-box, with an Ivy grown trellis; the Ivy, of course, going on undisturbed through all the changes of the flowering plants in the boxes.

Now it is something of this kind that I think would be so pretty and so peculiarly suitable for our bulbs and common flowers in winter. The expense of such a set out indeed might almost be reckoned in pence.

The only flowers requisite need be Snowdrops, Scillas, Crocuses (purple and white), Hyacinths, and Van Thol Tulips. Lycopodium denticulatum and a few small leaved Ivies would be all we should want besides. The bulbs named can be had in flower, with a little care in choosing late and early sorts, in three colours, from the 1st of December to May, and the Ivies are I think always to be had in all sorts of variety, from the gold and silver kinds to the dark hardy green.

The bulbs would be planted either in small pots or in zinc trays made to fit all round the stand. This is a very useful and very pretty plan, either for Moss edgings or borders of one small flower; as they can thus of course be changed and re-changed without disturbing the centre group, which in its turn again forbears to encroach on them. Suppose a long wide box, or tray, or a square sort of basket, or a stand of the sort of ware which so exactly resembles wood, to require arranging. Say it is four feet by two (which is a convenient size for me to describe, as being that of a stand I have), the general difficulty in filling it will be how to break the surface, and how to make a bed of flowers without its seeming a *flat* bed. The easiest way of effecting this seems to me to be that of placing in the centre a climber trained in a diminutive parasol style. The support it requires for the upright part of the stem is exceedingly slight, a very slender Fuchsia or Hazel stick with the bark on would scarcely be seen at all with leaves and branches twined round it. Then at the four corners, or where corners would be if they were not rounded off, there should be four little climbers of the same style as the centre one, though not necessarily, by any means, the same sort. These are easily trained with the very slightest help in the way of wire or silk, to catch the trailing branches of the centre plant, thus making a sort of trellising or arch over the flowers, and their long drooping branches can anywhere hang down, destroying quite the monotony of the group. People can't tell, till they try doing these things on a small scale, how much may be done by merely linking long branches together. They are often so wiry that by giving greater length, and then working two leaves together, a perfect curve is obtained quite naturally. The arrangement with little Fir-trees grouped here and there is also very charming. The Spruce Firs and little Cedars or Arborvitæs look very pretty thus. This is a German fashion, a sort of small garden ground planted with "Christmas tree" kind of Firs and dotted about with flowers. When trees are used, the result of a great many groupings that I tried last winter seems to point out that they should be in one group, only with broken edges that the gayest flowers run up into. The corner creepers then are a disturbance of the harmony of the group, the moss and flowers alone best fill up the tray.

I have often thought, however, how very pretty some little frame-like edging might be made running all round the box, and covered with Ivy leaves, the frame leaning rather outwards. This would be charming also in summer for Ipomœas.

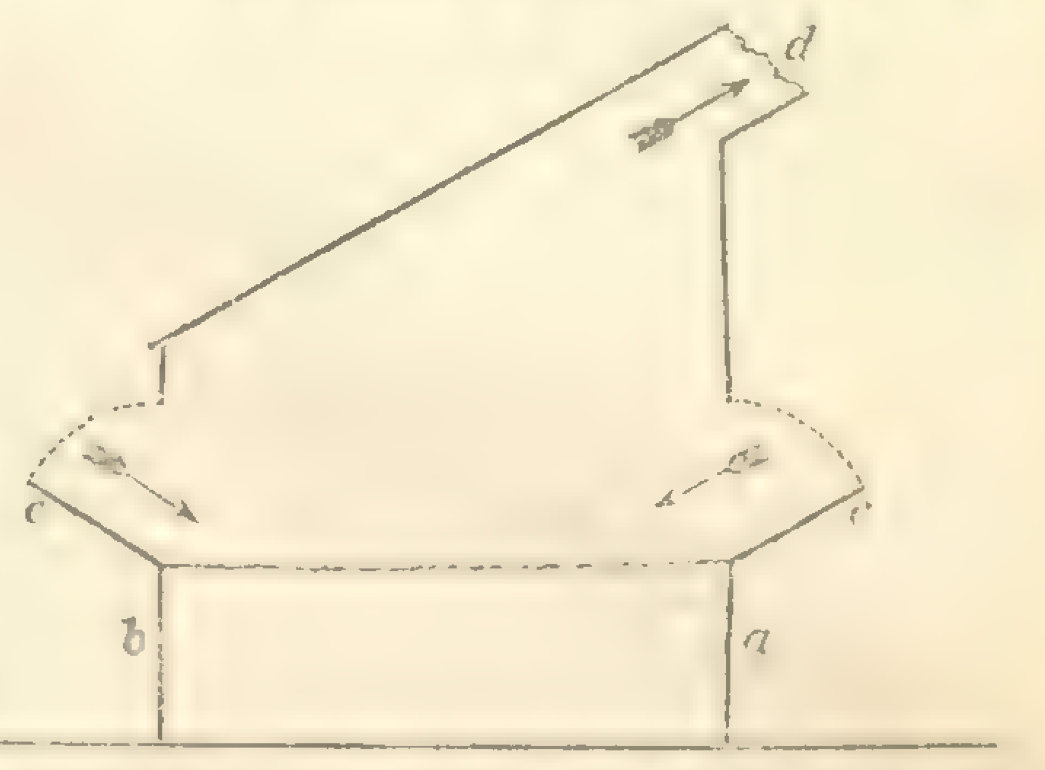
Such a stand as this, placed in a bay window where it would get light enough, really might be made lovely. A great point would be to give it sufficient height. I mean to let the centre tree be nearly as high if possible as the group is long, or at least two-thirds as high. Ivies, Firs, &c., do beautifully even in dusty rooms—particularly well I should say, because dust involves much washing. However, for the flowers it is well to keep it out, and in carrying out such a plan it will be found that a long slender stick just stuck in at each corner, or even one in the centre, will support a light gauze covering that can shade the whole at night. The tray would of course be filled with sand or fibre or moss, and the pots of bulbs would be merely dropped in to places prepared for them. *E. A. M.*

Home Correspondence.

Wormeaten Timber.—In repairing my parish church some of the timbers of the old oak roof (which was ceiled) were found to be eaten away to a considerable extent by an insect, said to be a beetle. A new open roof has now been substituted, but the best of the old timbers have been used again in its restoration, and, in spite of pruning and planing, there are here and there parts of it which still show the depredations of the beetle, though to a slight extent, and which are otherwise perfectly sound and good. I send a specimen of a decayed portion of the old roof. Some say the animal has been dead many years—others that the constant exposure of the new roof to the atmosphere will stop the evil. But I shall be much obliged by your opinion as to whether there are reasonable grounds for apprehension of the continuance of the depredations of the insect in the new roof. The specimen sent was cut off one of the old timbers some months ago. *Salopiensis.* [This timber is completely honeycombed by some wood-boring insect, all specimens of which have escaped. We should fear that the insect may reappear; and a sharp look-out should be kept for it. Cannot it be found at night?]

Material for Paper.—I have long been a popular and useful member of the community as far as eating goes, although I have shown some symptoms of age and decay; but I hope to survive many long years to come, and it has come into my mind that I might be useful in a new shape. I do not think that I could hope, like some other unpromising personages, to be spun into cotton, which is so much wanted, but it seems to me possible that my skin might be converted into paper, and that of smooth and fine quality. My skin is of a very fine and smooth texture, and my outer garment, although thin, has a very considerable tenacity. It cannot be called a fibre, but it would seem that it might be bleached and converted into a fine pulp, with adhesive tendencies, which I believe is a condition to which all materials must be reduced before they are converted into paper. If in these respects I am not overrating my own merits, I have the undoubted qualification that I exist in very large quantity, and that I am at present good for nothing—so that if I can be made into good paper I shall take rank among vegetable substances higher than I have hitherto enjoyed. I should be cheap under any circumstances, and if I can be useful I shall be treated with more respect than I have hitherto deserved, and shall be quite contented with whatever position may be assigned to me in the scale of merit. I shall acquire a new existence, and may even hope to associate with the Lords and Commons of England in the shape of Blue Books, and to go forth in the conveyance of intelligence to all parts of the world. *Potato.*

Orchard House Building.—I have reason to believe from long and close observation that failures in orchard house cultivation are more frequently from the fault of the builder than the gardener, who has to bear all the blame. The former, anxious only to build a smart-looking house, is inclined to pooh pooh any rules laid down as being necessary to the keeping of trees in health and fruitfulness. I happen to know that a large number of orchard houses are now being built, and I am therefore tempted to strongly impress on those who are building them the necessity of low lateral ventilation; it is indeed a matter of unavoidable necessity, if success in orchard house cultivation be wished for or expected—a *sine quâ non*; perhaps these three little words will do more than a long paragraph. To make this kind of ventilation more easy to be understood I annex a rough sketch of the two walls of a



lean-to house:—*a*, the back wall; *b*, the front; *c c*, the ventilating shutters for the admission of air; *d*, a shutter at the top of the wall for the egress of the heated air. If the house be 12 or 14 or even 16 feet wide, these shutters should be 1 foot wide. If from 18 to 24 or 30 feet wide, they should be 18 inches, exactly at the same level, and 2 feet from the ground. If the house be a lean-to, 12 or 14 feet wide, the shutter in front should be continous, opening downwards; the back wall may have sliding shutters 1 foot wide and 3 feet in length and 3 feet apart; these may be sashes or made of wood—it is not the material but the principle that must be rigidly adhered to. If the house be span-roofed the ventilators should be continuous on each side, and they may be either of wood or sashes on pivots, as taste dictates. I only again earnestly repeat that the ventilators must be at a low level and opposite to each other, so that when the sun shines two large currents of cool air enter. The only egress required for the heated air in span-roofed houses are two apertures under the gable, one at each end, 18 inches deep. In lean-to houses of the width mentioned above, sliding shutters 1 foot wide, 3 feet long, and 3 feet apart, will be amply sufficient even in the dog days. *T. R.*

Vine Pruning.—I observe in your Paper under this heading, the following remarks from "R. W."—"I have read with much pleasure the second edition of Mr. Thomson's treatise on the Grape Vine, but I very much regret that he has been totally silent on two points, which appear to me not only the most important but the first that should be decided, and on which his opinion would have been of value. The points which I allude to are, first, which of the two systems of Vine pruning, namely, the rod or the short spur, is the best." For a reply to this I must refer him to page 40 of the edition he has, where he will read: "The only bud left to produce fruit the following season is the one at the base of the lateral shoot." In the next paragraph he will read, "Though the young wood be regularly cut back to one eye, in the course of years the spurs will become long and unsightly. The best way to remedy this is to cut down a rod annually, beginning at one end of the house, running up a young rod in its stead till all have been renewed. By continuing this practice the length or size of the spurs will never become an objection to the system." From this he will see that I most distinctly recommend what is known as the "short spur system." "R. W." then says: "The second point is, assuming that the spur system should be decided to be the best — how should the Vines be trained? and although Mr. Thomson gives some valuable information as to the best mode of preparing beds, he is silent on the important point, whether it is better to plant one Vine to each rafter, or let the same Vine branch at the bottom, and supply its own and one or two rafters on each side." For a reply to this I refer "R. W." to page 29, where he will read—"I prefer, as will have been observed, that two rods should run up from one plant." At page 32 he will further read—"Select the two shoots that are to form the leading growths from each Vine, and let them be trained to the wires, not closer than $2\frac{1}{2}$ feet, and tie them to the wires carefully by means of soft matting, as they progress." It is quite true that I have entered as little as possible into the discussion of vexed questions about Grape growing, I have simply given such directions as I have proved in my own practice to be sound. There are many systems of pruning and training which, in the hands of experienced gardeners, will produce perfectly satisfactory results, and I have nothing to say against them; all I need say of the one I recommend is, that I never found it to fail with any variety of Vine. *W. Thomson.*

Grape Failure.—The account of your Correspondent "Henry," as to the state of his Grapes, induces me to make the following remarks:—I have now amused myself for 12 years with three Vineries, which are entirely under my own management; beginning in a state of ignorance, the knowledge I now possess as to Grape growing has been acquired by correcting mis-

takes, for I never could learn anything from the advice of others. Among the foremost maxims is this: "Keep your Vine borders dry." Of course I followed it as closely as I could, and like "Henry," year after year had all my Grapes shanked. This led me to ask, why should the Vine, the most greedy feeder of all plants, flourish in a dry border? With me the gravel is within 3 feet of the surface, and therefore my borders are well drained. For several years past I have watered my borders copiously between the setting of the Grapes and the colouring, taking care that the water is as near the temperature of the atmosphere as I can accomplish. The result has been that I have had healthy well-filled bunches, with no more shanking than will sometimes occur in all Vineries from causes which cannot be assigned. I say, therefore, keep your Vine borders drained, but don't keep them dry—or how should the Vine have the power of filling the berries? Test the matter thus: take two Vines in well drained pots, water one copiously, keep the other comparatively dry. The result will be that almost every berry on the latter will be shanked. Is not this consistent with common sense? *G. L.*

Cucumbers.—I have inclosed a brace of my winter Cucumbers for your opinion. They represent the average size of the fruit from now until the end of February, but in the summer the length is from 15 to 18 inches. It is a very free bearer, generally showing two or three fruit from each joint, and bears constantly through the winter, but it is a very shy seeding variety. *T. J.* [These were very nice fruit: apparently a cross between the Smyrna and some Prickly sort.]

Esparto (Lygeum Spartum, *Lœfl.*) is a Grass common to the shores of the Mediterranean, and has of late years assumed great commercial importance for paper-making. A city broker assures me that in the course of this year not less than from 10,000 to 12,000 tons will be imported into England alone. Nearly every coal ship returning from the Mediterranean to England brings a cargo of this Grass, the demand for which is constantly increasing, and it is stated that some of our largest daily newspapers are entirely printed on paper made of the Esparto. Of all substitutes for rags this fibre seems about to carry off the palm. It is procurable in any quantity both on the European and African shores of the Mediterranean, where it grows on land otherwise unproductive, on arid, rocky soil, having a basis of silica and iron. It is indigenous to Portugal, Spain, Sicily, Naples, Algiers, and, judging from a specimen in the British Museum collection, also in the Island of Crete. But we have hitherto chiefly imported it from Spain and Algeria. On the spot it fetches from 42s to 50s. per ton, but in England at the present time 4*l.* 10*s.* from the ship's side. So readily is this valuable fibre converted into paper that a cargo which arrived in the Thames in the morning was made into paper in the evening—at least so a city merchant assures me. Botanists have long been familiar with this Grass. Pliny, to go no further back, has much to tell about the innumerable uses to which it is applied in the Iberian peninsula, and Ray, many centuries later, reported that the inhabitants of that country did the same in his time, and it may be added that there has been no change in this respect till our own days. Mats, baskets, ropes, brushes, are manufactured of Esparto by the Spaniards and Portuguese as of yore, and even a coarse kind of paper was made of it in Spain. In Algeria it is known by the name of Alfa, and the attention of the French Government has for years past been directed to it as a substitute for rags; and in the London Exhibition of 1851 samples of Alfa, as well as paper made from it, were shown in the Algerian section of French products. In consequence, however, of the difficulty of transport and the imperfect methods then employed in its preparation, little progress was made in spreading its fame amongst the commercial communities of this country. But the recent legislative enactments in England respecting paper, and the increasing price of rags abroad, have caused manufacturers to pay more attention to this Grass, and not only established its superiority to straw, but its perfect adaptability to making paper, either by itself, or when mixed with straw, rags, or other material. The Rev. H. Tristam, in his book called "The Great Sahara," says that the Esparto is "the principal dependence of both horse and camel for forage during a journey." I should think they find it rather tough, for tough the plant certainly is. Its chemical constituents are said to be: yellow colouring matter, 12.0; red matter, 6.0; gum and resin, 7.0; salts forming the ashes of the Esparto, 1.5; paper fibres, 73.5. The Esparto grows naturally in tufts or clumps, but, to quote a broker's circular, only such leaves and stalks as have come to maturity and are full of sap, ought to be gathered. If collected too green, Esparto produces a transparent fibre which is mere waste; if, on the other hand too ripe, the constituent elements of silica and iron are with difficulty removed. The proper months in Africa are therefore from April to June. It must be gathered by hand, and left to dry for a week or 10 days before being removed for packing. From the green to the dry state it loses 40 per cent. of its weight, but even in this latter form it is so cumbersome, that when shipped in loose bundles it occupies from 4 to 5 tons space to 1 ton weight. When placed under an hydraulic machine however, it can be packed into pressed bales with iron hoops, and reduced to half the above volume, as far as space is concerned, each bale weighing about 2½ cwt., and 10 bales weighing about 1¼ ton. Reduced to this volume, the Esparto fibre can be transported not only with greater facility, but this method of packing (resembling in fact bales of pressed hay) keeps the fibre clean, and renders it of easy stowage. Indeed, could such a method have been adopted formerly, Pliny's regret that its great bulk unfortunately prevented so valuable a fibre from being carried a greater distance than about 30 leagues, would have been impossible. *Berthold Seemann.*

Truffles.—In your Paper of the 25th inst., information is requested as to how the Truffles exhibited at South Kensington were obtained. The greater portion of the specimens in question were found at the base of a bank overhung by Oak, Elm, and Whitethorn, and having a western aspect; the soil a rather strong loam. The remainder were found on different parts of the pleasure grounds under Beech, Lime, Oak, and Elm trees; the soil varying from a dark sandy loam resting on limestone, to a poor red soil resting on ironstone brash. The Rev. M. J. B. first drew my attention to the existence of Truffles at Rushton some 14 or 15 years back, since which time they have been annually found in greater or less numbers, growing under Beech, Hornbeam, Oak, Lime, Whitethorn, and Scotch and Spruce Firs. They have never yet to my knowledge been discovered growing under the Horse Chestnut or Ash, nor until the present season under the Elm. What have been gathered hitherto, have been found on the pleasure grounds only, but I have no doubt Truffles are to be found in the park and on other parts of the estate. *John Wainwright, Rushton Hall Gardens, Kettering.*

A Flower Gardener's Difficulty.—I am the owner of a small flower garden, which beguiles most pleasantly many an hour of my retired life; it rewards me pretty well for the care and labour it costs me, and it always returns smile for smile when sunshine invites the flowers to raise their sweet faces for a kiss, and they look so modest and gentle that their mute appeal is irresistible. So I foster them as well as I can, and I gather a portion when they are plentiful. But there is a drawback to the attractive features of my little garden—a rather fine Purple Beech, which I cannot dispense with, forbids the growth of everything which I plant beneath its shade; it really seems to wage quiet, but determined, war against all that is introduced to its neighbourhood, and I am aweary of the alternate hopes and disappointments that attend my labour under the Purple Beech. Now, I want to know if you, or any of your many Correspondents, can inform me what I can plant with any prospect of success; if you or others can help me I shall be grateful, for the blank space is a blemish to what is otherwise certainly far from despicable. *A Searching Reader.*

Eugenia Ugni has found its use at last, thanks to the appearance of a new hybrid form, raised by Mr. Anderson Henry, and exhibited the other day at Kensington by Messrs. Veitch & Son. The delicate aromatic flavour of the pulpy juicy berries of this Eugenia hybrida suggested to one F.R.H.S., who tested them officially, the employment of the Ugni fruit as a novel and refined agent for flavouring confectionery; and arrangements were thereupon made to give it an impartial trial. Anon, a "committee of taste" assembled in the city of London; and thenceforth the concoction of an Eugenia ice had become *un fait accompli.* Still further, Eugenia ices, as we can testify, proved to be very palatable and agreeable preparations, and quite new in flavour. It is stated by M. Gay, that with the fruit of the Ugni, which the Indians call Uñi, and the country people Murtillo, the inhabitants of Chili make very agreeable and aromatic preserves; but we have not previously heard of its employment for the purpose of flavouring in the preparation of the more refined viands of European use. The perfumed and refined flavour of the fruits of this species of Eugenia is, however, just of that class which might be expected to come out well in such preparations as ices and soufflets. As a matter of fact it is found to class with that of Vanilla for such purposes as those we have indicated: less powerful, perhaps, than Vanilla itself, (though, as the quantity experimented on was limited, this may not be really so), but certainly possessing a *recherché* and delicately perfumed aroma of a similar character. The actual flavour as it comes out in this way is not readily described, but it was formulated by a member of the "committee" aforesaid, as being compounded of a dash of Pineapple and Strawberry, with a breath of the aroma of Myrtles intimately blended. The merits of the fruit as a flavouring agent being thus attested, we may expect to see Eugenia beds planted to supply the demands of the confectionery department. As, moreover, in the new hybrid form to which we have already alluded, some advance seemed evident in respect to succulency, we must repeat the advice given in 1858, namely to grow the plant on and on, generation after generation, from seeds, selecting from each series the most juicy and aromatic forms as starting points for further improvement. The economics of this Eugenia cultivation we must leave to be worked out by those who engage in it. *C.*

Trade Advertisements.—It is quite legitimate for commercial men to give their goods the best possible character when advertising in your columns, not so when they do so to the disparagement of others. Surely my worthy friends Messrs. Waterer and Godfrey must have trusted the getting up of their advertisement of the 25th inst. in young hands. I regret much for their sake the following note which appears in the *Gardeners' Chronicle* of last Saturday in connection with P. nobilis, p. 1000:—"Of this, the most beautiful of the Fir tribe, we hold the finest stock in existence, for we believe except these, (and those sent from here), all the plants in the trade are grafted and comparatively worthless." Now in justice to myself and my brethren in the trade, I beg to say that I have been raising Picea nobilis from seed for the last ten years, viz., from 1852, and that most of the leading Nurserymen have purchased from me during that time, and my Knap Hill friends have been purchasers of seedlings from me, to a considerable extent, more than once. How then can all the other plants in the trade be "grafted and worthless?" Perhaps they will explain this. *William Barron, Elvaston.*

Societies.

SUDBURY COTTAGERS' VEGETABLE SHOW.—This very interesting exhibition took place in the spacious Corn Exchange of Sudbury, Suffolk, on Tuesday, October 21. It is in connection with an Association for rewarding the good conduct, industry, and skill of the agricultural peasantry of the neighbourhood. The President is N. C. Barnardiston, Esq., of The Ryes, near Sudbury, and the Honorary Secretary is the Rev. Edward Sidney, Rector of Cornard Parva. A series of tables surrounded the Exchange, those on the right and front being devoted to the produce of cottage gardens, and those on the left contained specimens of agricultural roots thought worthy of attention. The tables were quite insufficient to contain the specimens of cottage industry, and long rows of bushel baskets of the finest imaginable Potatoes, Onions, and mixed vegetables and flowers were arranged in front of them. They were regarded by all who saw them as of singular excellence, and would have attracted no small attention had they been exhibited at the recent International show at the Horticultural Gardens. The privilege of showing is strictly limited to the working poor, and no market or other regular gardeners can receive a prize. The extent and value of the prizes and extra prizes, the latter consisting of the various implements of the garden, are so considerable that a great emulation is excited, and the result was a display that would have done great credit to the best gardens in the land. A number of baskets, prettily arranged by the poor men's wives, formed an agreeable feature in the show, and they generally contained bouquets of Dahlias, Fuchsias, and other autumnal flowers, mixed with Gourds, Squash, Cucumbers, Grapes, Apples, Pears, Broccoli, Celery, Peas, Kidney Beans, Radishes, Turnips, Carrots, Parsnips, and other common vegetables. The bouquets of flowers were very prettily arranged, and frequently peeped out from a bed of fine Lettuces or Endive, or Brussels Sprouts. They did great credit to the simple taste of the poor people. There were some exceedingly fine Apples, which it is most desirable to encourage in cottage gardens as a comfort in the winter and affording them a variety in their food. The Savoys were quite giants for size, and as sound and firm as possible, and the Broccoli was of fair size and delicately white, but many of the heads had rather begun to open too much for beauty. The heads of Celery were justly admired, and the little heaps of Green Peas and Kidney Beans scattered here and there amongst the other things, are pleasant indications of refinement in these rural plots of garden. The Parsnips and Carrots were very fine indeed, and were sent nicely clean. Probably a finer set of baskets of English Onions was never seen; all who examined them praised them in the highest terms. Potatoes were really noble specimens, and were in great variety, and the cottagers generally sell their bushels for seed after the show at a high rate. At 3 o'clock the recipients of all the prizes, the ploughmen, the servants, the shepherds, the horsemen, and others, with the rural gardeners, were led up to the President by the Rev. E. Sidney, who mentioned in due terms the particular merits of each. On each side of the President were many ladies and gentlemen, and farmers, all watching the proceedings as their head promoters. Included in these were Sir William and Lady Parker, the family of the President, S. J. Burke, Esq., of the Auberies, near Sudbury, and family, several clergymen, the mayor of Sudbury, and the donors of many of the prizes. It was pleasant to notice the demeanour of these poor deserving people, and the humble triumph with which they carried off the spades, watering-pots, forks, rakes, hoes, and other implements they had so creditably won. Though the great object of the day is the encouragement of the poor, it is deserving of notice that some of the roots shown, and over which waved large and lofty stems of Pampas Grass, were, for the season, remarkably fine, especially some Green round Turnips, and a variety of Mangel Wurzel, and a considerable selection of fine Swedes and other Turnips and roots from the nursery grounds of Mr. S. Brown, of Sudbury, as well as some grown under treatment of blood manure supplied by Messrs. Higgs & Co. Some large long Mangel Wurzel was shown by a shopkeeper recently turned farmer, which were amusingly labelled "from an apron-string farmer," the apron-string having been exchanged

the plough trace. Mr. Brown's roots were in great quantity, and generally handsome specimens. There were also exhibited a great many different sorts of vegetables, as if the growers were desirous to follow the example of the metropolitan show. Altogether it was a most interesting spectacle, and the encomiums bestowed upon it by the officers of the Society and the members and visitors evidently gratified the poor exceedingly. The manner and conduct of the latter were strikingly grateful and respectful, and any doubter as to the benefit of such societies would, it is to be believed, have had his scruples removed by what he would have witnessed had he been present. It was stated at the dinner by Mr. Mumford, who manages the finances of the Association, that during the 15 years of its existence it had paid in regular prizes no less a sum than upwards of 1250*l.*, to say nothing of the sums expended by generous friends on the extra prizes. The Rev. E. Sidney also assured the company that he had seen the happy moral effect on the poor, in which the President and others entirely concurred. It is most desirable to connect with the improvement of the cottages of the rural poor, a pride in their occupants of having them surrounded by small but well-cultivated gardens, stocked with profitable vegetables and mingled with flowers. Cottage window gardening also has much increased in this district, and it is very seldom that a cottage thus adorned does not exhibit corresponding comfort within its walls. Christian education, provident habits, pride in the humble dwelling, love of the garden and its attractive occupations, are producing happy effects amongst the labourers in our rural districts; and were such emulation as is shown in the exhibition we have briefly described general throughout the country, its promoters would reap a great and a lasting reward.

Notices of Books.

Catalogue of Contributions transmitted from British Guiana to the London International Exhibition of 1862. Printed for the Committee of Correspondence of the Royal Agricultural and Commercial Society of British Guiana. 8vo. George Town, Demerara. 1862.

Amongst the tangible proofs of the great value of such periodic exhibitions as the great building at South Kensington now presents, none rank higher than some of the descriptive works which accompany the collections there gathered together; and of the more remarkable of these few seem to us better drawn up, or more full of excellent general matter, than the one whose title heads this article. This is, indeed, an admirable work and will, long after the Exhibition has passed away, retain its full value as a text-book, not only of the products of the magnificent colony whose industry it describes, of its natural history, climatology, and physical geography, but of the processes used in its manufactures, of its commercial development, and its future prospects. It bears no author's name, and is, no doubt, like others of its class, more or less a joint performance; but it is easy to recognise in it, on the one hand, the zealous encouragement of an enlightened Governor, and on the other a talented editor, gifted with remarkable skill in sifting, arranging, and condensing a mass of valuable materials contributed by an intelligent body of colonists.

The work commences with the official proceedings connected with the formation of, the opening, and the closing of the British Guiana collection as a local exhibition in George Town, and is heralded by corresponding speeches from his Excellency the Governor, Francis Hincks, Esq., remarkable for their sound sense and discrimination. This is followed by a preface containing a short account of British Guiana, and its geographical character, history, and productions, together occupying 100 pages; to which succeed another 100 pages devoted to a catalogue of the articles exhibited, including descriptive notes of the more remarkable of them. There are, further, two excellent maps of British Guiana (by Sir Robert Schomburgk), and a diagram of its temperature, rain-fall, and atmospheric pressure.

Guiana is a generic term, including as species Venezuelan, British, Dutch, French, and Brazilian, extending from the Oronoco mouths to those of the Amazons, and containing 690,000 square miles. Its chief geographical feature is its water-system, that not only forms a net over the whole area, but might with a little trouble be connected with the water-system of Buenos Ayres and the Pacific!

British Guiana again includes the once separated colonies of Berbice, Demerara, and Essequibo, now forming as many counties, and embracing about 76,000 square miles. The surface of the land presents extensive forests, savannahs, and enormous areas of alluvium of great depth, and apparently exhaustless fertility, for "the same land has been cropped annually during half a century without rest, without change of crop, and without manure, and to the last yielded remunerative returns."

The population of the colony in 1861 amounted to 148,917, of whom 93,861 were natives, 1482 European, and 43,627 immigrants, chiefly from Calcutta. Its chief commercial products are sugar, rum, molasses, and timber, yielding upwards of 2,000,000*l.* in duties to the Imperial Treasury. The annual consumption of English imports amounts to 5*l.* 6*s.* 8*d.* per head; and the post-office returns show a total annual amount of 133,134 letters in 1861, which is an increase of 21,532 over 1860. The best test of the progress of the colony is afforded by the balance of deposits at the savings banks, of which the Demerara and Essequibo branches alone show upwards of 82 million dollars in 1861.

In conclusion the committee recommend eight most important steps to be taken towards the future development of the Colony, such as settling its geographical limits, and the limits of existing claims on the land; establishing forest laws and plantations, utilising such physical force and intelligence as the indolent aborigines possess; giving oral, &c., instruction to the colonists; establishing agencies for purchase and shipment of products, and forming agricultural associations.

Then follows a description of the chief products, and the methods employed in collecting and preparing them, under the heads of sugar, rum, rice, coffee, Bananas and Plantains, starches, Cassava, Cocoa, Cotton, chemical and pharmaceutical products (including caoutchouc), and lastly a goodly list of splendid timber.

It is impossible in our limits to do more than indicate the above heads, under all which a vast amount of valuable matter will be found, and all excellently arranged; but we would indicate the pages devoted to the Sugar Cane as especially full and interesting.

Such a manual as this should be in the hands of every tropical colonist, and we earnestly hope that so important a publication will attract the attention of the enlightened ministers at the heads of our colonial and Indian departments, and that they will encourage its diffusion in all our tropical possessions by a distribution of copies to their public libraries. It is only proper to add that although no editor's name appears, the work to which we are referring has been published under the authority of Sir William Holmes, the Commissioner of the Colony in this country.

TRADE LISTS RECEIVED. — VAN HOUTTE, Ghent: *Second Part* (*No.* 94) *of the Novel and other Plants offered for sale in the present season*, pages 87 to 158. We here find, among other things, a very large collection of good hardy herbaceous plants.——*Catalogue of Fruit Trees* for 1862, and *Descriptive Catalogues of Roses and Strawberries* for the same year, by THOMAS RIVERS, Sawbridgeworth.

Garden Memoranda.

IMPERIAL GARDENS AT SCHÖNBRUNN.—These highly celebrated gardens are attached to the Palace of Schönbrunn, the summer residence of the Emperor of Austria. They are about 2 miles from Vienna, and as the public are allowed to promenade in them at all times, they form a favourite resort of the citizens of Vienna. The site occupied by the Palace and Gardens is nearly flat, but there are high hills at the back beautifully clothed with trees. The gardens containing the plant houses are on the west side of the Palace, and the first portion of the latter is placed on three sides of a large pleasure ground. They for the most part have dark roofs, glass roofs being the exception. The first range commences with a house about 20 feet by 15 feet, which is filled principally with Conifers, "the majority of which are hardy in England." Many of these are now from 20 to 30 feet high, tall, slender specimens. The principal object seems to be to get a great number of plants into a small space.

The second house, which is about 70 feet long and 30 feet wide, contains a large number of stove plants, amongst which is a splendid specimen of Pandanus sylvestris, full 30 feet high, and branched up the stem with as much regularity as a candelabrum. One would have hardly thought it possible to have grown so fine a plant in a house with a dark roof. Many other examples of Paudanus of various kinds and sizes, together with Aralias, Crotons, Palms, and Ferns, and a miscellaneous collection of fine-foliaged plants, fill the house.

The next forms the centre of the range; it is a house of hexagon shape, and ornamental in its construction. About 8 feet from the front is a row of stone columns to support the roof, which cannot be less than 35 feet high; between these columns is a glass partition; there is glass also on the outside, leaving a corridor 8 feet wide, through which you may pass from or to the houses on either side without going through the centre. The latter is crammed full of greenhouse plants, which stand as thickly as the pots can stand, and in the centre tubs are placed one upon another, so as to form with the plants a compact cone of foliage reaching nearly to the top of the house. The corridor is also filled on one side in the same way, leaving a foot-path 3 feet wide.

The fourth house, which is 70 feet long and 30 feet wide, is filled principally with Ferns, Dracænas, Cycads, Fourcroyas, &c., and but for the leaves turning toward the light, one would hardly have perceived that they were growing under a dark roof.

A small house similar to the first completes this range. It is filled with Hollies, Oaks, and a goodly collection of New Zealand plants. The greenhouse plants have just been transferred to their winter quarters. They are placed out under shady hedges during summer, and brought into the houses again in October; like other things, they are also placed so close together that they form a complete bank of green, and viewed as a whole they cannot fail to present a very cheering aspect in winter in a country where comparatively few evergreens are hardy.

A second range comprises a small stove at each end, and a greenhouse, about 200 feet long and 18 feet wide, in the centre. The houses at the end are devoted to the culture of the different varieties of Pothos, Scindapsus, Philodendron, Dieffenbachia, Begonia, and trailing Ferns. Oak and Spanish Chesnut poles, about 6 inches in diameter, from 10 to 20 feet high, are let into the ground in the form of an amphitheatre, and to these the plants are fastened; they are in the best possible health, and trained in this way they have an exceedingly good appearance; the toothed Lycopod, with Cyanotis vittata, cover the floor, and where necessary Moss is tied to the upright poles, many of which are completely covered with the foliage of the various plants. This method of treating such plants is well worth the attention of English cultivators.

In the central house is a large collection of New Holland plants.

On turning to the right is a house about 100 feet long and 25 feet wide, filled with Mesembryanthemums, Agaves, Bonapartea, Aloes, and a great number of succulents of different kinds. This is succeeded by a stove 150 feet long and 25 feet wide, where there are large plants of Musas, Astrapæas, Aralias, Caladiums, Bamboos, Araucaria Cunninghami and Brasiliensis, many plants of Coffea arabica, and Yucca aloefolia, some of which cannot be less than 30 feet high, all looking healthy and clean. These houses are heated by flues passing under the pathways.

Beyond this is a stove, about 100 feet long, devoted almost entirely to Aroideæ, many of which are trained to poles similar to those previously described. Poles are also placed in front of the house about 8 feet apart, covered with trailing plants quite to the top, and the effect is excellent.

In the next house, which is about 100 feet long and 25 feet wide, is a bark bed filled with Palms, amongst which are some admirable specimens: Sabal umbraculifera is 30 feet high, Latania borbonica and Caryota urens nearly the same height; Arenga saccharifera, a fine specimen with leaves 25 feet long, and many other Palms of smaller growth, the whole looking healthy and well, so much so indeed that one could scarcely have believed that such plants could be grown in a house with a dark roof and under the old flue system of heating.

Another stove for Palms, about the size of the last, completes this range. The plants here are all smaller than those in the last house, but it contains a large collection. Pipers and Begonias cover the end wall, and complete this fine range of stovehouses.

In the second square garden is a range of span-roofed houses, in which the south side is glazed, and the north dark; the first of these is filled with Orchids, a second house contains Billbergias, Heliconias, Dyckias, &c.; a third, Dryandras, Banksias, &c.; and the fourth and last in this range is filled with Heaths; tall plants are placed at the back, and shorter ones in front. These house are each about 30 feet long and 15 feet wide. A series of pits for propagation, &c., make up the remainder of the glass in this portion of the garden.

Passing from this point to the Palace, through one of the high avenues for which this garden is so famous, about half way down is a recess containing a large pond of water, upon which a number of pelicans may be seen swimming, along with swans and other water fowl.

Farther on is a menagerie containing a good collection of wild beasts, together with a very imposing building in the centre for parrots and similar birds, the whole having a very pretty appearance when viewed from the front of the Palace. Between this and the latter is a reserve garden where great numbers of plants are grown for supplying cut flowers; this garden cannot be less than 3 or 4 acres, and slopes a little to the south.

The Victoria regia is growing here in a house of the most humble pretensions, the roof of which is a span, half glass and half wood; inside it is whitewashed at the back and over the dark part of the roof; the sash bars are heavy and of the rudest make. A large tub resembling a beer vat, and about 10 or 12 feet in diameter, is placed in the centre of the house, and in it is a tub about 4 feet diameter, in the middle of which the Victoria is planted, and growing and flowering under what English gardeners would term the most adverse circumstances. An open boiler or copper is placed in one corner of the house for heating water, and out of this the latter is put into the large tub containing the Victoria. This operation is performed twice a day, and is the only means of heating employed. The plant is of moderate size; its leaves are about 4 feet in diameter, and are hanging over the side of the tub; it is showing flower and has been flowering for some time. Farther on is a second tub, somewhat smaller than the first, filled with Nelumbiums, Pontederias, and the Indian Duckweed (Pistia Stratiotes) completely covering every vacant portion of the surface of the water—all are in good healthy condition, but not so fine as in England. There are several pits here of the same construction for wintering plants for the flower garden.

Passing on down one of the majestic avenues of Elm and Hornbeam, the sides cut straight up to the height of 40 or 50 feet on the inner side, and forming an alcove on the outer side, under which on each side of the avenue is an agreeable shady walk, you come to the beautiful fountain Schöne Brunnen, which gives its name to the Palace. The basin is straight in front and semicircular at the back. On the top is a very spirited group of four sea-horses with four men holding them; both horses and men have fishes' tails. Below this is another group of Neptune and Nymphs. Neptune stands in the centre with his prong, and a fine female figure with boy and shell on each side. Two large jets are placed on the level of the water, and considerably below the figures above mentioned, which throw the water to a great height; water also issues from the figures placed in the middle and top of the basin, and falling down forms a beautiful cascade. On each side is a large healthy tree of the Weeping Willow, pleasantly reflecting their drooping forms in the waters beneath; the back of the fountain is also covered with trees, and the water well stocked with fish; behind this and at the top of the high range of hills which skirts the city of Vienna is a temple called the Gloriette, and from this a commanding view is obtained of the city and country around for many miles.

The garden in front of the Palace is in the form of a parallelogram bounded by hedges 40 feet high on either side, and in these niches are cut at regular distances for statues.

A walk down the centre and one across the middle divides this parallelogram into four parts; in the centre of each is a large circular bed filled with Hollyhocks, Dahlias, and many old tall growing herbaceous plants; Marvel of Peru, and the red Castor Oil plant are also used largely for the outsides; at the corners and down the sides are circular beds of smaller dimensions, containing Begonia semperflorens and Fuchsioides, Cannas, Dwarf Dahlias and Geraniums, Fuchsias, and other flower-garden plants. The Begonias are flowering remarkably well, also the Cannas, and the Castor Oil plant is fruiting on all sides—facts proving that the summer in Austria is much warmer than with us.

From the front of the Palace are four avenues with high clipt hedges, and some beautiful object at the end of the vista—a fountain or obelisk or ornamental pavilion; and in the centre the fountain and Gloriette Temple before described. The garden, viewed from this point, is really a worthy adjunct to an imperial residence.

A short distance from the Palace, and on the east side, is the Orangery. This structure is about 500 feet long at the least, and 25 feet wide and 25 high, with dark roof and double glass front; above 600 large Orange trees and many hundreds of smaller ones are kept here during winter, and removed into the garden in front of the Orangery during summer. Many of the trees are trained as espaliers; they are arranged in half circles with the tall Orange trees at the back, smaller ones in front, and many thousands of greenhouse plants, principally from New Holland, in front of these again, bringing the line of green down to the floor. A little rockwork laid in Moss serves as an edging to hide the pots, and as a finish to the group. Entering the house at the end, and seeing from 20 to 30 of these noble groups newly arranged, and plants and house scrupulously clean and scarcely a leaf out of place, forms a sight truly imposing and not soon to be forgotten. Unfortunately the Orange trees are not in good health, or the picture would be complete. *E., Oct.* 21, 1862.

Mr. Bird's Chrysanthemums.—The display of fine blooms now on view at Mr. Bird's place, Green Lanes, Stoke Newington, is this season quite equal to what it has been in former years. His largest house, especially, is of itself well worth inspection; and others, including a new one 90 feet in length, just put up, are also crammed full of fine specimens of this charming autumn flower. The show-house, which is 90 feet in length and 30 feet in width, is at present one dense mass of plants, each of which is loaded with blooms remarkable for their brilliancy of colour, size, and beauty. Its most striking feature is the glorious examples which it contains of the kind called Jardin des Plantes, a yellow of the brightest description, and with blooms as large and double as those of Queen of England. Of the latter and of its yellow variety we also noticed some magnificent specimens. Dupont de l'Eure and Cassandra were likewise numerous and particularly fine—the former as compact and round as a cricket ball, and the latter equally satisfactory in shape, white, with beautiful broad petals, delicately tinged with rose. Lady Hardinge is a flower which no collection can be complete without, and among other kinds were Little Pet, a medium-sized variety, lovely in form and white in colour, with a tinge of blush towards the base; of Golden Hermione there were large and fine blooms; charming specimens of Yellow and White Formosum, and of General Hardinge, the last one of the best petalled flowers in cultivation. Princess Marie has compact deep lilac blossoms of fine form, and on Triomphe du Nord and Pandora were some unusually showy blooms, remarkable for their large size. Vesta, a pure white, is grown extensively for the purpose of furnishing cut flowers. Alma and Beauté du Nord are also both showy and valuable kinds, as are likewise Rifleman and Amazon, the last rosy purple shaded on the under sides of the petals with violet. Alfred Salter, a large variety, has bloomed in excellent order here this season, as has likewise Madame Poggi, many of the blossoms on which measure at least 6 inches in diameter. Of Nil Desperandum and Prince Albert we noticed some beautiful examples. Lady St. Clair is a showy white, in shape not unlike Queen, from which it is stated to be a sport. Others, including all the finest of the leading kinds, are also in excellent condition. They are intermixed with specimen Camellias and Azaleas, which are planted out and grown expressly for the purpose of furnishing cut blooms for market. Successional Chrysanthemums brought in from other houses will keep up the gaiety of the principal house for some weeks yet to come, but at no time can it be seen to better advantage than at present.

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

Conservatory, &c.—Next to Camellias, Azaleas are perhaps the most showy plants that can be had in bloom early in the season, and where there is a good stock to select from, some of the most forward plants should be placed in heat soon, moistening them overhead two or three times a day. Unless, however, plants can be had which made their growth and set their buds early, they need hardly be expected to flower so finely as under more natural circumstances in spring, and unless the buds are plump there will be some danger of the plants starting into growth instead of into flower. Dutch bulbs should be largely cultivated where a fine display is required, and where hardy shrubs are forced for the decoration of this house, these should be got ready for the purpose.

FORCING DEPARTMENT.

Pineries.—If circumstances should render it necessary to subject a portion of the stock intended for fruiting to a brisk temperature at once to induce it to start, the most promising plants should be very carefully selected, and placed in a small house or pit by themselves; and, where anything like a regular supply of ripe fruit is required, several houses, or separately heated compartments, should be at command; and without this convenience no gardener can reasonably be blamed for having too many ripe at one time and none at others. It is not by any means desirable to start more plants into fruit at this early season than may be absolutely necessary, for they will produce finer fruit later in the season than can possibly be obtained from them now; and where a separate house cannot be commanded for those which must be subjected to a high temperature, we would advise that the plants selected for fruiting should be placed in the warmest part of the house at command, filling the rest of the compartment with young stock. The former should be afforded a bottom-heat of about 85°, and the latter about 10° or 15° lower; the atmosphere should range from 68° to 75° by fire-heat, allowing it to rise 5° with the assistance of sunshine, keeping the young plants near the glass, and properly supplied with water at the root. This temperature will be considerably too high for young stock, but we have seen this system practised with considerable success; and although the young plants may get somewhat drawn, they will gain strength as light increases, and the evil will be less than running the risk of starting at this early period the greater portion of the plants required for keeping up the supply throughout the summer.

Vineries.—Where early forcing is contemplated, until the buds are fairly broken the points of the shoots should be kept nearly on a level with the lowest part of the Vine; and if this should not be found sufficient to induce the buds to start equally throughout the length of the Vine, the rods should be bent so as to bring the most forward buds to the lowest level, elevating those that are backward. Maintain a thoroughly moist atmosphere by frequently sprinkling the floor and passages, &c.; and syringe the Vines lightly at least twice a day until the leaves begin to appear, when the amount of moisture must be moderated. Give every attention towards securing a gentle warmth for the roots: turning the litter, and addin g fresh as may be requisite, and keeping all well protected from the effects of heavy rains and severe weather. Be satisfied with a moderate night temperature until the buds begin to push, when it may gradually be raised to 60° by the time that the leaves fairly begin to open.

FLOWER GARDEN AND SHRUBBERIES.

Chrysanthemums will now be approaching perfection in most places; therefore take every means to preserve their beauty as long as possible. For some of the very tenderest kinds of Roses some protection will soon be necessary. Also get in, as previously recommended, the stock of Briars for budding upon next year, for unless these are planted before spring they seldom furnish strong shoots for early budding. With weather like the present all new work should be pushed forward with vigour, and if the soil has been properly prepared by draining, where necessary, as should always be done before planting, there will be much fewer failures from planting Evergreens now, even late as it is, than if the work is delayed until March. Where, however, the ground to be planted is of a harsh clayey nature, and in an unkind state at present, it will undoubtedly be better to defer planting [illegible] spring. Roll walks and lawns occasionally, [illegible] to keep them firm and smooth. There will [illegible] comparatively little to be done in the flower garden at present, except sweeping and [illegible], and any spare time will be well spent in going over [illegible] stock of plants in pits for next season's use, remov[illegible] every decaying leaf, and where the surface soil has [illegible] green, removing this and top-dressing with sandy loam. There is nothing so unfavourable to these plants at this season as damp, therefore take every opportunity [illegible] can of admitting fresh air.

HARDY FRUIT AND KITCHEN GARDEN.

Look over fruit and other stores frequently in order to see that all is safe and sound. Standard trees which have been root-pruned must be firmly secured against injury from winds, also get any root-pruning to be done this season executed as soon as possible. Endeavour as far as circumstances will permit to have a good supply of Parsley under safe protection; for there is generally a large demand for this, and in the event of a severe winter it is difficult to save it by the ordinary protection of hoops and mats. Lettuces and Cauliflowers in frames should be freely exposed on all favourable occasions. Be careful also of any Broccoli that may be fit for use or turning in.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON

For the Week ending Oct. 29, 1862, as observed at the Horticultural Gardens.

October.	Moon's Age.	Barometer. Max.	Barometer. Min	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind	[illegible]
Thurs. 23	●	29.325	29.209	59	34	46.5	54	54	S.W.	
Friday 24	1	29.723	29.659	59	27	43.0	53	53	W.	
Satur 25	2	29.901	29.733	56	50	53.0	53	53	S.W.	
Sunday 26	3	29.798	29.548	60	39	49.5	51½	52	S.W.	
Mon. 27	4	29.923	29.776	57	47	52.0	52	52	S.W.	
Tues. 28	5	29.767	29.746	50	40	45.0	52	52	S.	
Wed. 29	☽	29.967	29.885	53	25	39.0	51	51½	S.	
Average		29.772	29.651	56.2	37.4	46.8	52.3	52.5		

Oct. 23—Partially overcast, and boisterous; clear and ditto, [illegible]
— 24—Fine; very fine in forenoon; clear, frosty at night
— 25—Partially clouded, boisterous at night, rain.
— 26—Rain; fine; rain at night.
— 27—Overcast; cloudy; boisterous; drizzly.
— 28—Uniformly overcast; drizzly; rain at night.
— 29—Overcast; partially overcast and fine, clear, frost [illegible]

Mean temperature of the week equal to the average.

RECORD OF THE WEATHER AT CHISWICK

During the last 36 years, for the ensuing Week, ending Nov. 8, 1862.

November.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds.
Sunday 2 ..	54.3	37.8	46.0	16	0.61 in.	[illegible]
Mon. 3 ..	53.2	36.3	44.8	18	0.82	[illegible]
Tues. 4 ..	51.3	36.6	44.0	19	0.44	[illegible]
Wed. 5 ..	53.1	38.4	45.7	17	0.69	[illegible]
Thurs. 6 ..	53.1	38.4	45.8	18	0.76	[illegible]
Friday 7 ..	52.6	37.5	45.0	17	1.02	[illegible]
Satur. 8 ..	51.1	34.8	43.0	16	0.58	[illegible]

The highest temperature during the above period occurred on the 2d, 1857—therm. 64 deg.; and the lowest on the 3d, 1861—therm. 19 deg.

Notices to Correspondents.

☞ Correspondents are requested to write on one side only of their paper.

Books: *G E H.* Mills's Treatise on the Culture of the Pine.—*A W C.* Hogg's Fruit Manual.||

Cucumber Leaves: *J R D.* They are suffering from damp and bad ventilation.

Farfugium: *E C.* You may keep it alive through the winter, if in well drained ground, by covering it with leaves, and or cinder ashes.

Fungi: *Agaricus.* Your Fungus is very curious, and we believe undescribed. It is nearly allied to *A. pudicus*, but differs in the decurrent gills and other points. It is also allied to *A. cylindraceus*, but that, as the name implies, has an [illegible] stem, and different gills. You do not say on the [illegible] what kind of tree you found it. It does not appear [illegible] esculent as far as we can judge from the taste, though [illegible] allied species are eaten in the south of France under the name of *Pivoulade. M J. B.*

Herbarium: *P C.* Let each specimen be glued, not [illegible] a half sheet of strong white paper. Cartridge paper has a bad colour, but is otherwise unobjectionable.

Names of Fruits: *L H.* 1, Easter Pippin; 2, Scarlet Nonpareil; 3, Kirke's Lord Nelson; 12, Alfriston; 13, Golden R[illegible]; 15, Boston Russet; 18, Early Nonpareil; 20, Minchall Crab; 22, Good Year Pippin; 23, Court of Wick; 1, Passe Colmar; 2, Glou Morceau; 8, Doyenné Blanc; 9, Napoleon; 15, Beurré Rance; 16, Doyenné Blanc.—*Bet.* 1, Norfolk Beaufin; 2, Dumelow's Seedling; 3. Beauty of Kent; 4, [illegible] Aromatic; 5, Lamb Abbey Pearmain; 6, Northern Greening; 7, Herefordshire Pearmain; 8, Ne Plus Meuris; 9, [illegible] Golden Drop; 10, Blenheim Pippin.—*J W.* Louise Bonne [illegible] Hacon's Incomparable. Numbers obliterated by the [illegible] from one of the Pears decayed, so that we cannot refer [illegible] them.—*G J.* The King Apple (not King of the Pippins) has probably another name, but we are not certain about it at present.—*G W, Rochford.* The Apple called Summer Orange is like a highly coloured King of the Pippins.—*W G G.* 1, Golden Reinette; 3, Bedfordshire Foundling.—[illegible] 1, 2, Forelle; 3, Thompson's; 4, Althorp Crassane.—[illegible] Not known; a sweet perfumed Apple, but its appearance is against it.—*Rusticus.* We do not know an Apple [illegible] the name of Golden Ducket.—*T H.* 1, Nonesuch; 2, King of the Pippins; 7, Flat Nonpareil; 9, not known, a [illegible] Crab; 10, Downton; 13, Reinette du Canada; 15, [illegible] Town; 16, Beurré Bosc; 18 (Bruised); 19, Beurré [illegible] Alexander; 21, Hollandbury; 22, Winter Nelis; [illegible] Napoleon.—*T M L.* 1, Fearn's Pippin; 2, Blenheim Pippin; 3, London Pippin; 4, Dutch Mignonne.||

Names of Plants: *G S S.* No. 1 is not Aspl. fontanum, but a very pretty variety of A. Trichomanes, very near to if not identical with the var. Harovii. It has not as far as we know been gathered in Great Britain. Are your fronds from British? No. 2 is a seedling plant of some [illegible] Polystichum angulare, too young to determine whether it is different from the normal state.—*Thomas.* 1, Cheilanthes formosa; 2, Asplenum cicutarium; 3, Gymnogramma chrysophylla; 4, Pteris flabellata.

Pine Apples: *G L R.* Your fruit is rotting from excessive moisture and insufficient sun. Since you cannot increase the latter diminish the former.

Working Plans: *H M F.* Your letter has been sent to Mr Nesfield.

MESSRS. WAY AND EVANS, ANALYTICAL [illegible], have REMOVED their LABORATORY from [illegible] Street, Cavendish Square, to 106, Leadenhall [illegible], E.C., where all Letters and Samples for Analysis should [illegible] addressed.—Nov. 1.

AGRICULTURAL and CHEMICAL COLLEGE, [illegible] and 38, Lower Kennington Lane, London, S.
ASSAYS and ANALYSES promptly attended to by J. C. [illegible], LANSDELL & Co.

AGRICULTURAL and CHEMICAL COLLEGE, KENNINGTON.—Manufacturers and others engaged in [illegible] Artificial Manures may obtain every necessary instruction for their economical and efficient preparation by applying to J. C. NESBIT, LANSDELL & Co., 37 and 38, Lower Kennington Lane, London, S.

Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other [illegible], are executed with accuracy and despatch.

Gentlemen, Farmers, or others, desirous of practical knowledge in Chemical Analysis, or Assaying, may receive instruction at the College, where the extensive Laboratories give ample facility for pursuing their studies, and there is accommodation for a limited number of Resident Students.

Full particulars of terms will be forwarded on application.

Land Drainage, and other Agricultural Improvements.
MR. BAILEY DENTON, C.E., maintains a large staff for the execution of Land Improvements by a commission of 5s. per acre for Under Drainage, and a fixed charge for Outfall and other works.

For particulars apply to him, at 52, Parliament Street, Westminster, S.W.

ESTATES, DRAINAGE, GARDEN, VENTILATION, and WARMING IMPROVEMENTS carried out. Plans with details prepared for gentlemen, &c., by
Mr. NEWTON, 30, Eastbourne Terrace, Paddington, W.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. [illegible], Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by [illegible] and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

WEST of ENGLAND and SOUTH WALES LAND DRAINAGE and INCLOSURE COMPANY.
ESTABLISHED 1844.
The Right Hon. the EARL of DEVON, *Chairman.*
Lands Drained and Improved without recourse to the private funds or moneys of the Proprietors. This Company's [illegible] requiring Proprietors to liquidate the cost, the amount [illegible] remain a permanent charge on the lands, or be paid off [illegible] convenient, or be made redeemable over any term of [illegible]. The works are undertaken by the Company, or Proprietors might avail themselves of the powers of the Act only, and get the works executed by Agents or other parties. Outfalls through adjoining lands are obtainable under the Company's Act. Works are also executed by the Company for parties advancing their own capital, or not requiring to obtain the money under the Company's Act.
FREDERICK BRODIE, Secretary.
Offices: Exeter, and 30, Parliament Street, London.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, W
To LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &c. IN ENGLAND AND WALES AND IN SCOTLAND.
The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm Houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any [illegible] or general works of drainage or other improvements, [illegible] borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

AGRICULTURAL IMPLEMENTS.—Steam Engines, Threshing Machines, Mills for Hand and Power, Carts, Waggons, Ploughs, Harrows, Turnip Cutters and Pulpers, Chaff Cutters, &c.
BURGESS & KEY, 95, Newgate Street, E.C.

FOWLER'S PATENT STEAM PLOUGH and CULTIVATOR may be seen at Work in every Agricultural County in England. Addresses of Farms (which are open to inspection), given on application, where the Machine has been at Work for three or four years.
The New Application of the ORDINARY PORTABLE ENGINE may also be seen at Work at any time.
Price, with Self-moving Anchor, Three-furrow Plough, and Five-tined Grubber, 285*l.*
For particulars apply to JOHN FOWLER, 28, Cornhill, London, E.C.; and Steam Plough Works, Leeds.

SMITH'S PATENT COMBINED MACHINE.—This Machine is admirably adapted for cultivating Light Land Wheat, Barley and Oat Stubbles, and Drilling in Stubble [illegible]. Fifteen acres may be Cultivated and Drilled in one day; for Cultivating Light and Heavy Land Pea and Bean Stubbles, and Drilling in Wheat; and for cultivating Heavy Land Wheat Stubbles, and Drilling in Vetches. One operation [illegible] enough for each crop, especially in wet seasons. It is warranted to do its work well.
For price and particulars apply to WILLIAM SMITH, Woolston, Bletchley Station, Bucks.

RUGBY and DUNCHURCH CATTLE SHOW, THURSDAY, November 27.
A Prize of 15*l.* 15*s.* is open to All England for the best FAT BEAST of any description, the property of the Exhibitor for Six Months prior to the Show.
Entrance 10*s.*, to close on November 11. For form of certificate, &c., apply to Messrs. W. & E. HARRIS, Secretaries, Rugby.
N.B.—Covered sheds will be provided for the Beasts shown for the above Prize.

THE BIRMINGHAM CATTLE and POULTRY SHOW, 1862.
The FOURTEENTH GREAT ANNUAL EXHIBITION of FAT CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, ROOTS, BARLEY, and IMPLEMENTS, will be held in Bingley Hall, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4, when Prizes—Cups or other Articles of Silver Plate, and Gold and Silver Medals—to the amount of 1835*l.*, will be awarded in the following divisions, viz.:—

FAT CATTLE	£715	15
FAT SHEEP	239	5
FAT PIGS	56	15
BREEDING ditto	63	0
ROOTS	56	14
BARLEY	10	10
POULTRY and PIGEONS	682	15

The ENTRIES CLOSE on NOVEMBER 1.
Prize Lists and Certificates may be obtained from the Secretary.
JOHN B. LYTHALL, Secretary.
Offices: 14, Temple Street, Birmingham.

SMITHFIELD CLUB FAT CATTLE SHOW.
The ANNUAL CHRISTMAS SHOW of FAT CATTLE, SHEEP, and PIGS, will be held at the Agricultural Hall, Islington, on MONDAY, December 8, and four following days.
In addition to Prizes to the amount of 1820*l.*, the following Cups will be offered:—
A Silver Cup, value 40*l.*, for the best Steer or Ox in any of the Classes.
A Silver Cup, value 40*l.*, for the best Heifer or Cow in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of Leicesters, Cotswolds, Lincolns, Kentish, or other Long-woolled Breed in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of 1-year old Southdowns, Hampshire or Wiltshire Downs, Shropshire or other Short-woolled Breed in any of the Classes.
A Silver Cup, value 20*l.*, for the best Pen of any other Breed of Sheep (not specified above) in any of the Classes.
The Prize Sheet now contains distinct Classes under the following heads:—

CATTLE.

Devons	Norfolk or Suffolk Polled	Scotch Polled
Herefords	Long-horns	Irish
Short-horns	Scotch-horned	Welsh
Sussex		Cross or Mixed

SHEEP.

Leicesters	Southdowns	Oxfordshire
Cotswolds	Hampshire or Wiltshire Downs	Mountain
Lincolns	Shropshire	Cross Breeds (Long and Short-woolled)
Kentish, or Romney Marsh, and other Long Wools	Other Short Wools	

PIGS.
Classes according to age up to 18 months old.
The ENTRIES for LIVE STOCK CLOSE on NOVEMBER 1.
The Entries for Agricultural Implements, Roots, Seeds, &c., Closed on October 1.
Prize Sheets and full particulars can be obtained on application to B. T. BRANDRETH GIBBS, Hon. Sec., Corner of Half Moon St., Piccadilly, London, W.
N.B.—It is absolutely necessary that all communications on the Club's business should have the words SMITHFIELD CLUB outside, to distinguish them from private letters. If this be neglected, there will be risk of delay and inconvenience.

The Agricultural Gazette.

SATURDAY, NOVEMBER 1, 1862.

MEETING FOR THE ENSUING WEEK.

MONDAY, November 3 { London Farmers' Club .. 6 P.M. (Mr. Anderson, of Leeds, on Lustre Wools.)

WE have during the greater part of the past week been travelling with Mr. COLVIN, the inventor of the American Cow-milker, introducing him and his machine upon a number of Gloucestershire dairies with which we are acquainted. And we hope next Saturday to relate the experience thus acquired of the efficiency of his instrument in the very unfavourable circumstances under which at this season of the year it is necessarily tried. There is also a great deal of interesting matter to relate of other novelties which have of late years been introduced into Gloucestershire dairy management.

THE question is asked—How small a farm may profitably be worked by the steam plough? Probably the right way to answer it would be to consider how large a capital may be profitably employed on any farm in question. Considering the facilities for disposing of its produce, and the best possible mode of turning its productive powers to account—what is the sum which may be the most profitably employed in its cultivation? This would decide the question whether such an addition to the capital employed upon a farm as steam cultivation necessarily involves, is consistent with farm profits.

But there is another point which materially affects the answer such a question should receive; for, supposing it determined that steam-cultivation shall be adopted, its profitableness or otherwise depends more than any other thing on the possibility of working the apparatus pretty constantly throughout the year. We know of one example where 30 or 40 working oxen have been dispensed with by the use of a 10-horse power engine in cultivation, and where, therefore, unquestionably a direct saving has followed its adoption. This is where the soil is so dry and easily worked that, except when heavy rain is actually falling, or the land is covered with snow or bound up in frost, the cultivator could be kept constantly employed throughout the year. In other cases we know of the engine having been employed in cultivation with a comparatively small displacement of animal power, and where, nevertheless, the tenant is perfectly satisfied with his enterprise. This on the other hand is where the soil is so stiff and difficult to work, that the advantage is derived especially from the superior quality of the work accomplished on it.

There is a limit placed upon the diminution which steam tillage effects in the horse power of the farm by the quantity of other work—carriage, &c.—which remains to be done. Where a great deal of this has to be accomplished, as in a case we know of, where 30 or 40 acres of Mangel Wurzel are carried to the homestead every winter, and where 20 loads of dung per acre upon perhaps 80 acres of a farm of 200 acres have to be carried from the homestead every winter—where the market town is 14 miles off, and so on—it is plain that, taking the work of the farm alone into account, it will not pay to procure the service of a steam plough except by way of hire. This the tenant has done to his great advantage as he believes, notwithstanding that he has paid from 10*s.* to 20*s.* an acre for its work, together with all the coals consumed in the operation. He had 40 acres of Wheat stubble ploughed in this way with FOWLER's apparatus last year, and notwithstanding that we have known the farm all our farming days, ever since, 20 years ago, it was broken out of Grass, yet we have never seen a better crop of Mangel Wurzel, Swedes, and Turnips than there is upon those 40 acres now. Another quarter of the farm had been steam ploughed the previous year, where Turnips had been fed off and where Mangels had been drawn, and first-rate crops of Barley, Wheat, and Oats had been taken. The seeds sown with the two former crops had yielded more green food and hay over 30 acres than the tenant had previously known upon the whole 50 belonging to that quarter of the estate. The Oat stubble, which, being somewhat foul, had not being sown with Clover, was ploughed by steam last autumn, and a crop of Peas, the like of which was never seen upon the farm before, was grown there this year.

The tenant declares that the straw was 8 feet long, and podded more heavily than any sticked Peas in a garden; he fully expects 8 quarters per acre. It is certain that he has found it profitable to *hire* the steam plough, notwithstanding the heavy charges for it. And indeed, notwithstanding the limited extent of the land in his occupation, he would, did the means at his disposal allow his doing so, purchase the apparatus even for the 200 acres of plough land to which he is confined.

A farmer must have horses enough to do the carriage of his farm; and he must have horses enough to work a drill and do the harrowing before and after it. To be sure Mr. SMITH, of Woolston, has a combined cultivator and drill which is worked very efficiently by steam-power. But apart from this, the sowing of the land, its harrowing, and the carriage of manure and produce will generally remain to be done by horses. Let any tenant consider how many horses he may dispense with, retaining enough for this, and he will soon learn what saving will be made by the adoption of steam culture. To that he must add whatever advantage he may obtain by letting out his apparatus on hire, and far more than this, the advantage which, especially if his land be stiff and clayey, he will derive from the superior quality of cultivation done by the steam-driven apparatus—and he will then be able to determine for himself the probability of steam cultivation answering his purpose. FOWLER, SMITH, and HOWARD all compete on very even terms as to mere cost of apparatus for the custom of the really small arable farms, to which steam cultivation is thus profitably applicable; and, without attempting to state the precise circumstances under which a given acreage will or will not yield a satisfactory interest upon an investment in steam cultivation, it seems plain that a much smaller extent of arable land will in most cases pay for the expense than is now generally imagined.

THE ART OF SEEDING.

I think I ought to put my friends right as to my opinions and advocacy of seeding land for grain crops, as much misapprehension on this subject seems to prevail among them; and as I am almost daily receiving a letter or two on the subject, I think, if you will be so kind as to publish it, as others as well as those who have written to me may be under the same erroneous impression, one letter may suffice for all; and further, I am anxious to set myself right. I have never represented that 1 peck of seed Wheat for an acre of ground as a general rule was sufficient, but on the contrary, as soon as I read and heard that several farmers last year had sown, or dibbled, or drilled 1 peck only, I strongly expressed to all I saw on the subject and talked to, that the practice was a dangerous one, and that it was going from one extreme to another. To show how wonderfully cereals would tiller, I have stated, that on land well drained, thoroughly and deeply cultivated, and in good heart, 1 peck of seed Wheat—if, as Xenophon, the ancient Greek, explained to his philosophical pupil Socrates, the seed was "evenly spread" over the ground—would produce an astonishing crop, and under such circumstances perhaps better than more seed; but as a general rule, I have never advocated less than 2 pecks. Nor have I ever recommended a uniform quantity of seed of any kind, but the reverse exactly. For example, on good land and well cultivated, and when the seed is put in very early, I have said a much smaller quantity of it should be used than when the seeding was late, and on poor, hungry, impoverished, and badly cultivated land. Long-strawed kinds of Wheat I also said should be thinner seeded than short-strawed kinds, as tall garden Peas should be thinner seeded than short or dwarf kinds; but as an average for Wheat crops I have always maintained that 2 pecks are about the right quantity, but I care not, if on poor half cultivated land, how much more be used, even to 3 pecks an acre; but whatever quantity I have said, let it be put in evenly. This, Mr. Editor and my readers, has been my advocacy, and this has been my practice; and let me here most emphatically state that I have put in all quantities, from half a peck to 3 pecks, and the 2 pecks on my land, which was good, produced the best crops, heavier weights of straw on the same quantities of land, and heavier—for this is the test—weight of grain than the 3 pecks did; but let it be also borne in mind, that, like the Greek philosopher's seed, mine was put into the ground evenly, and until my opponents put theirs also so into the ground, by whatever means for doing it they adopt, they may write what they like against my system, but I shall heed it not—no more than I should the chattering of so many parrots. No one has a more high opinion than I have of my most excellent friend the worthy London alderman; and my belief is that no man now in existence has done so much benefit as he has to agricultural improvement, nor deserves so well the universal esteem of his fellow-countrymen, and especially of agriculturists, both landlords and tenants, who ought to be truly proud of him; and I now state if he will thoroughly steam cultivate his lands, and allow me to seed them for him, he shall indeed have fine crops, or, if he likes not the whole, say a few acres of Wheat only; and should he do this, I will guarantee him a yield such as he may challenge all England to produce a better—that is, a better quality of grain, or more of it, better straw, or a heavier weight of it—and I go farther, and say, a more profitable crop of corn and straw.

But come, my attentive readers, ay, and you sceptical doubters, let us reason together. You are farmers and you say to me, be you who you will, "Thin seeding will not do on our land," and this is the stereotyped conventional reply you all make, be your lands what they will, and wherever situated; and I reply to you as my worthy friend Mr. Mechi once replied to an out-and-out thick seeder, who was railing violently against me. "Sir," said my worthy friend, in his calm and philosophical manner, "did you ever try thin seeding?"—"No," was the reply, "and I never will." And this is the reply I receive from ninety-nine farmers, landlords and tenants, out of every hundred; but the time is come when it will do no longer. Steam, mighty steam, has entered the fields, and it will teach men to think—it will show them that what they have called tillage and cultivation, has been neither; and that they have been injuring their crops or ruining them, as thousands were injured and ruined last year, and all years, by over-seeding. But come again, my readers, and do not take me for a wild enthusiast, for I am considered just the reverse by all who know me intimately; you are farmers—"Yes, we are, and we farm 10 or a 100 times more land than you do." Well, I grant you do; but, my friends, how many grains of Wheat of any kind, large grained or small, will a bushel or peck measure contain? "How many grains will a bushel or a peck measure contain?" Yes, that is my question; and having giving me an answer, I ask you again, how many seeds of it a bushel or a peck will put into every square foot of an acre of ground, and having again given me an answer to this, I ask you how many a thoughtful and wise man would put into a square foot of ground? You do not know, I know you do not, and, my friends, until farmers do know this, they will keep on growing their 8 bushels of crop only for 1 bushel of seed; but until they do know this, and it is so simple that a child, boy or girl, could ascertain it in 10 minutes, farming will remain in the very wretched state it now is, requiring 8 bushels of seed to produce 8 quarters of crop; but if ever the time should come, and it must come, when British farmers will spread their seed evenly, and ascertain before they put it in, how many seeds ought to go to a square foot of ground, and how many a bushel or peck will contain—until they know these simple preliminaries, if they have the least candour in them, they will not continue railing against those that do, and act upon it.

But, Mr. Editor, in drawing to a conclusion, the best crops of Wheat I have grown have been from below four seeds to a square foot of ground, and 2 pecks of Wheat will, if evenly spread, put in six or seven at the least; but let us put in, as I have always said, on an average of kinds and seasons 2 pecks, and if this be properly done, I assert, and with no fear of refutation, that not only eight-fold will be produced, but at least 12 times eight, or 96 fold; and if any lady or gentleman doubt this, let her or him just try it for once, if it be only on an acre or two, and she or he will doubt no longer.

But I almost hear, as I have heard, hundreds of farmers ask, how I can count the grains in a bushel of Wheat? My friends, each of you bring a bushel into my study, and one of our Union school-boys shall in 10 minutes tell you, and exactly, how many seeds the bushel shall put into every square foot of an acre of ground; and, my friends, if I could not show a boy this in 10 minutes, you would never have seen my name in print. *G. Wilkins, Wix Parsonage, Oct. 20.*

NEW METHOD OF MAKING BUTTER.

This invention is the production of a lady of the name of Whitehead, of Whitehead's Grove, Chelsea, who has for some time past turned her attention to the making of butter by the aid of filtration. The process is effected in the following ingenious and scientific manner. A piece of common calico cloth, 2 feet square, is spread upon an apparatus formed of a series of upright fibres of bass or broom cut to an even surface. The cream is placed upon the calico, and the centre of the apparatus (which has a hinge-joint in it), is then raised so as to form two inclined planes, which can be so regulated that the cream can rest upon them, without running down to their lower edges. In this position the watery particles of the cream become separated from the fatty ones, in the course of from two to four hours, and the residuum left upon the cloth will consist of a concentrated mass resembling cream cheese, which is quite ready for the churning operation.

One advantage of the arrangement above described is that the thinnest creams can be used, as the inclined planes can be made to suit the angle of repose of the cream in proportion to its thickness. The amount of filtering surface is about one superficial foot of calico to a quart of cream.

The churn consists of a rectilinear box oscillating upon trunnions and worked by a crank, which gives an alternate motion to a wooden connecting-rod, attached to a presser or piston which goes quite home to the end of the box at each stroke of the crank, and by the action of which the butter-milk is completely pressed out of the cream, and butter is made in less than three minutes. The piston works horizontally, and by the means of a series of inclined corrugated lines at each end of the churn, air cells are formed in the butter which thrust it from the end of the churn and force it over the piston in readiness to be carried back to the other end of the churn. In this way 5 lbs of butter can be produced in a churn less than 10 inches square; and from an ounce and a half to two ounces or more of butter can be obtained from a quart of cream than can be obtained by the ordinary mode of churning.

One recommendation of the process is, that the butter can be thoroughly washed and pressed in the machine, so that it need never be touched by the hand. The specific gravity of the butter is also greatly increased by it, and consequently the butter will keep as long without any salt in it, as many of our fresh butters do which come to market with a portion of salt in them.

It need hardly be remarked, that the increased weight obtained from every quart of cream by this process will make in the aggregate an increase of many tons in our London market alone; and that the cream obtained from 10 cows will yield as much butter to the farmer as he now gets from the cream of 11 cows, independently of the superior quality of the butter, and of its being produced with certainty in so much shorter a space of time than that occupied by the common mode, and with one tenth of the labour. *Henry Grafton, C. E.*

THE MEAT CONSUMPTION OF LONDON.

Notwithstanding that the Metropolitan Cattle Market has been extensively supplied with beasts during nearly the whole of the past six months, and that prices have fluctuated to some extent, the beef trade has continued in a healthy state. Our prices, however, do not appear to have met the views of the breeders of stock on the Continent, as we find that only 6195 beasts were received from abroad in the period here indicated, against 12,422 head in the corresponding period in 1861. The fact appears to be that, owing to the enormous drain made in the two previous years, both live-stock and dead meat are now very dear in Holland, and that, consequently, there is little or no profit on shipments to this country. Whilst the foreign importations have fallen off, home-supplies have increased considerably; indeed, we are justified in saying that fully ⅘ths of the beasts derived from Norfolk and Scotland since the 1st of January have been considerably above average quality. And these remarks may be applied not only to the crosses, but, likewise, to the pure breeds. The improvement in the weight and condition of the beasts, whilst it has considerably checked an upward movement in the prices, has enabled the poorer classes to obtain prime meat at a moderate outlay. Even those who purchase on Government account have intimated that, for some time past, they have only bought prime animals, having found them much cheaper than those of a second-class character. That the consumption in London has been enormous—especially since the opening of the International Exhibition—is evident; and had it not been for the great distress which unhappily prevails in the manufacturing districts, arising from the Cotton famine, prices would have risen much higher. The increase in the supplies shown in the great cattle-market has, in some measure, arisen from a portion of the stock originally destined for the Manchester and Leeds markets having been forwarded to London. From the same cause Ireland has sent more beasts to London than during the last three years, and the receipts from various parts of England show an excess of nearly 3000 beasts.

It is satisfactory to observe that very few losses have been sustained from disease in any parts of England. In some districts some of the stock have suffered from lameness; but, with very few exceptions, the hoofs have been preserved. The great abundance of Grass has, no doubt, been a most important feature in cattle-grazing and sheep-feeding; whilst the large quantity of hay secured last year, though in many instances in inferior condition, has checked a large outlay for artificial food. In noting particularly the Irish supplies, we may observe that about one-third of them have shown signs of crossing with some of our best breeds; nevertheless, their weight and condition have fallen short of some previous years, and they are a little out of favour. Scotland—the arrivals from which have amounted to 9794 head—has forwarded about 4000 crosses and nearly 5000 pure Scots—the former in wonderfully fine condition, quite as good as in most former seasons. The commencement of the period for the receipt of stock from Lincolnshire, Leicestershire, and Northamptonshire, has been marked by the arrival of about 1500 Short-horns, and it is stated that large numbers will reach us in the course of the year. It is admitted, however, that the supplies ready for transmission are comparatively moderate, many of the graziers having kept their stock in the fields somewhat longer than usual, owing to the great abundance of keep. The following return shows the quarters from whence London derived its supplies of beasts in the first six months of the present and five previous years:—

"District" Bullock Supplies.

	1857.	1858.	1859.	1860.	1861.	1862.
Northern Districts ..	..	4,000	4,000	4,000	[illegible]	[illegible]
Eastern Districts ..	60,500	66,890	7,460	68,520	[illegible]	[illegible]
Other parts of England	14,490	14,560	19,090	21,420	[illegible]	[illegible]
Scotland	8,860	8,456	10,030	5,033	8,712	[illegible]
Ireland	2,700	4,820	2,217	1,477	[illegible]	[illegible]
Foreign	9,238	5,649	7,580	9,058	12,422	[illegible]

Amongst the foreign beasts exhibited were about 500 from Spain. Although large and of good symmetry, they have "died" badly, or, in other words, they have yielded only a limited quantity of internal fat. The prices realised for them varied from 19*l.* to 26*l.* per head, which, after allowing for freight, charges, &c., may have left little or no profit for the shippers. It may therefore be doubted whether we shall draw any large quantity of stock from Spain for some time, especially as France is still a large buyer in that country.

Both as regards number and quality the arrivals of home-fed sheep have been considerably on the increase. The weight of most breeds has, too, been in excess of 1861; and the result is, that prices have given way. They are, nevertheless, somewhat high—the best Downs being now worth 5*s.* per 8 lb., though this is 6*d.* per 8 lb. less than last year; but the fall in the inferior breeds had been confined to 2*d.*—a proof that the supplies have not been much, if anything, in excess of the demand. Foot-rot has been by no means general, but the damp state of the pastures, caused by the excessive rainfall of the last two months, is unfavourable for the sheep. The arrivals from Holland, taken as a whole, have not equalled those of 1860 or 1861. A few of them have realised good prices, but the inferior stock have sold on lower terms. At one period there was a decided improvement in the imports of sheep from Germany *viâ* Hamburgh. Most of them had been crossed with our Downs and Leicesters, and the whole were readily disposed of at from 27*s.* to 35*s.* each. But the cross-breeding had evidently been limited in extent, for the sheep lately received from Germany have been in poor condition, and the rates obtained for them have ranged from 19*s.* to 25*s.* each, chiefly for grazing purposes. Our statistics of sheep and lambs show an increase in number compared with 1861 of 27,022; but a decrease of 30,358 head compared with 1860, and of

7,000 compared with 1859. We understand, however, that greatly increased supplies of dead meat have been received both from Scotland and various parts of England at Newgate and Leadenhall markets.

The low range in the value of rough fat, viz., 2*s.* 4½*d.* and 2*s.* 5*d.* per 8 lb., consequent upon the inactive state of the tallow trade, has, of course, had considerable influence upon the prices of live-stock. In 1860 rough fat was worth as much as 3*s.* 2½*d.*, and last year it realised 2*s.* 8*d.* per 8 lb. The decrease in the price must be chiefly attributed to the increased consumption of gas, naphtha, &c., in this country; and our impression is—seeing that about 110,000 casks of tallow will be shipped from St. Petersburgh this year, and that both beasts and sheep are likely to reach us in good condition—that there is very little prospect of fat becoming much dearer than it now is.

The clip of wool has proved the largest and best on record—not only in England, but also in Ireland and Scotland. This is an important matter for the flockmasters, but it may be doubted whether wool will rise in value, because the demand for continental use is inactive, and enormous quantities of colonial wool, expected to comprise about 80,000 bales, are now on hand for the next public sales. As yet, very little of the new clip has changed hands.

The past has been by far the most profitable lamb-season ever known. Although the market has been well supplied with lambs from various parts of the country, the trade has been active and the price good. At one period the best Down breeds were worth as much as 9*s.*, and until recently they have commanded 8*s.* per 8 lbs. At present, however, the inquiry is heavy, at from 5*s.* to 6*s.* 4*d.* per 8 lbs. The number of lambs exhibited has been rather more than an average. Down, half-bred, and Dorset lambs have mostly appeared in good saleable condition. The lambs received from abroad—about 3600—have been poor in condition, and sold at low rates. The veal-trade has ruled very quiet, at prices ranging from 4*s.* to 5*s.* 6*d.* per 8 lbs. The imports of calves from abroad have never exceeded 7000; consequently, only about 1200 English have been shown. There has been a steady demand for both English and foreign pigs, at full quotations. Those from the Continent have been very deficient in quality, but those from Ireland have improved in condition.

Supplies of each kind of Meat Exhibited and Sold during the First Six Months of the following Years:—

	1857.	1858.	1859.	1860.	1861.	1862.
Beasts ..	112,309	111,592	113,373	114,702	109,812	116,735
Cows ..	2,682	2,917	2,977	2,904	3,005	3,054
Sheep & Lambs.	536,790	588,758	668,702	662,030	604,650	631,672
Calves ..	8,429	8,878	7,272	9,515	6,560	8,259
Pigs ..	13,240	13,096	14,869	14,201	15,952	17,407

Average Prices of Beef and Mutton.

	1857.	1858.	1859.	1860.	1861.	1862.
Beef.—	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Inferior	3 2	3 0	3 2	3 6	3 4	3 0
Middling	4 0	3 10	4 0	4 6	4 4	4 0
Prime	5 0	4 6	5 0	5 6	5 0	4 8
Mutton.—						
Inferior	3 10	3 2	3 4	3 10	3 8	3 6
Middling	5 0	4 2	4 8	5 2	5 0	4 6
Prime	6 0	5 2	5 10	6 2	5 10	5 4

The dead markets have been well supplied with each kind of meat, in which a good business has been transacted. Beef has sold at from 2*s.* 8*d.* to 4*s.* 6*d.*; mutton, 3*s.* 6*d.* to 4*s.* 10*d.*; lamb, 4*s.* 8*d.* to 7*s.* 4*d.*; veal, 4*s.* to 5*s.*; and pork, 3*s.* 10*d.* to 5*s.* 4*d.* per 8 lbs. by the carcase.

As regards the future course of the trade a few observations are necessary. That the country has recovered from the effects of a great scarcity of stock (in 1860) must be obvious from a perusal of our statistics; nevertheless, and although the consumption of meat in the manufacturing districts is likely to be small during the continuance of the Cotton famine, it is not equally clear that production is in advance of consumption. We are of opinion, therefore, that prime stock will command steady currencies for some time; but, on the other hand, there appears to be room for a decline in the value of inferior beasts and sheep. There are, however, two features in favour of firm quotations, viz., the great abundance of money for commercial purposes, and the healthiness of most branches of trade, except those connected with the production of Cotton goods.

4, Argyle Square, St. Pancras, London.

HOME MANUFACTURE OF PORTABLE MANURES.

In now laying before the reader the ordinary method and practice of preparing manures, I do not wish it to be understood that the farmer can make as cheaply as those extensively engaged in the trade, for quantity must always influence the cost of production; but I am of opinion that they can make at a cheaper rate than the others sell, or in other words, that the difference of the cost of production in the two cases is not equal to the profits of the trade, ranging as these do from 15 to 20 per cent. The manufacturer may not have all this himself: agents' commission (5 per cent.—I have known 10 per cent. and even more paid), must be provided for; but the farmer pays for the whole.* Manures are now so numerous, and sold under so many different names, that it would fill a page to enumerate the half of them, to say nothing of many that are bought from some noted maker and again sold (at a good profit) as the buyer's own make. It is, however, satisfactory to observe a marked improvement in manufactured manures generally of late years, which I believe in a great measure to arise from the demand which is now made for an analysis.

Bones and their products for Manure.—The various materials from which superphosphate of lime is derived, such as bones, English or Foreign, bone-ash, animal charcoal, apatite, and coprolites, differ in value according to the proportion of bone earth which they contain. This proportion will vary from 46 per cent. in raw bones, to 50 and 60 per cent. in boiled bones or coprolites, and 60 to 80 per cent. and upwards in bone-ash, apatite, and some other foreign substances. We see, then, how wide a range is included in the value of these materials.

				Per ton.—£	*s.*
Assuming bone-ash containing 60 per cent., to be worth				4	5
The proportionate price for 65 per cent. would be			..	4	15
,,	,,	70	,, ...	5	5
,,	,,	75 to 85	,, ..	6*l.* to 6	15

The value of the superphosphate is, however, estimated by the source from whence they are derived, as well as by the percentage of soluble and insoluble phosphates they yield. Superphosphates made from coprolites and apatite, although they may contain the same percentage of soluble and insoluble phosphates as from ground bones and bone-ash, do not command the same price, being of less value: hence the practice of most manufacturers is to make a distinction between the two—bone superphosphate (commonly called dissolved bones) being usually sold "warranted free of any admixture of coprolites."

It is unnecessary here to enter into the details of the machinery at present in use in a large manufactory for the preparation of superphosphates, where the object is the production of the greatest quantity in the shortest time at the smallest cost. It is enough to know that costly machinery is not required for home manufacture, all that is requisite being simply a pit or two of the following dimensions and materials, with sufficient storage accommodation.

Having dug out a space large enough for a pit 10 feet long, 6 feet wide, and 2½ feet deep, inside measurement, level the bottom and lay down 3 inches of mill-wrought puddle, upon which place fire-brick flue-covers to form the sole of the pit; build the sides and ends with common bricks (a brick and a half thick), using no cement or plaster; puddle outside and pack with fine sand. After the pit has been once used for dissolving, the interstices between the bricks will be filled up. A pit of this size is capable of holding 2 tons of ground bones. Pits may of course be made of smaller dimensions, if preferred. Strong wooden vats or tubs will suit equally well. In preparing superphosphate, first throw into the pit the substance it is intended to dissolve; pour over this one-fourth its weight of water, stirring and mixing well with a wooden rake or pole; then add sulphuric acid, which may be twice the weight of the water or half the weight of the substance to dissolve; stir and mix the mass as before. Take, for example, 2 tons of bone-ash, containing 75 per cent. of phosphates, 10 cwt. or 112 gallons water, 1 ton sulphuric acid,† and allow to remain 48 hours in the pit: the above would yield 46 per cent. of phosphates, of which there would be 24 per cent. soluble, at an average cost of 5*l.* 5*s.* to 5*l.* 10*s.* per ton.

Superphosphate made by dissolving coprolites, apatite, or bone-ash, contains no ammonia, of which there is an appreciable quantity in superphosphate made from fresh (unboiled) bones.‡ Ammonia, when wanted, is generally supplied by the addition of sulphate of ammonia.

Ground bones and coprolites require more acid to make the phosphates soluble than bone-ash. The finer bones are reduced the less acid will be required, and their division being more minute, more soluble phosphates will be obtained.

When superphosphate of lime is removed from the pits, it is unnecessary to employ any drying substance to take up the redundant moisture; for if allowed to remain in a heap for a sufficient time, the moisture will evaporate by the heat generated in the mass, and although losing in weight according to the time it remains in the heap (under cover), there will be an increase in the percentage of soluble phosphates. If required for application shortly after preparation, care must be taken that calcareous matters (chalk or lime) are not used as drying materials, which would to a certain extent neutralise the acid, and consequently reduce the solubility of the phosphates. Dry bone-ash or bone-meal will suit the purpose well. Having thus arrived at the basis from which most of the best manures are made, what remains to form a compound manure is a very simple affair, because, as far as the farmer is concerned, according to the quantity of ammonia added, a manure will be formed rich or poor as the maker may choose. To derive the full effect from phosphoric acid, it must be conjoined with ammonia. Now, for agricultural purposes genuine Peruvian guano is the cheapest source of ammonia; therefore a mixture of pure bone superphosphate and Peruvian guano (proportioned according to the crop and soil for which it is intended), will form a phospho-Peruvian guano or manure (call it what you like) of money value equal to any manure sold, and infinitely superior to the greater portion of compound manures in the market. The mixture improves the power of each, the free acid of the superphosphate fixing the ammonia in the guano, which is besides presumed by some chemists to exert an influence in decomposing mineral ingredients in the soil. Should at any time a difficulty occur in procuring a supply of suitable materials for making superphosphate, then purchase genuine South American or other good phosphatic guano, of which take 3 tons and mix with 1 ton of Peruvian guano, and the result in ordinary cases, when applied to root-crops, will equal 4 tons of Peruvian *per se.* The proportions can be varied according to circumstances. Peruvian guano alone in a very dry season like 1859, has proved in many places nearly a failure in comparison with this mixture, and inferior in promoting the growth of Turnips to South American guano unmixed.

There is another substance which farmers might turn to account for the home manufacture of manure, viz. the ammoniacal liquor from gas-works, but that in most places the entire supply is purchased by contract by the manufacturers of sulphate of ammonia. This ammoniacal liquor is of considerable value as a fermenting agent in dissolving bones. After being once distilled it contains 20 per cent. of ammonia, chiefly in the state of a carbonate, in which form it is liable to escape; and in order to check the evaporation, sulphuric acid should be mixed with it. The difficulty of procuring this liquor, as already mentioned, must interfere with its extended use on the farm. It is generally admitted that the use of nitrogenous manures alone for top-dressing cereals promotes too rapid growth, rendering the stem succulent, and thereby inducing in the crop a tendency to lodge. Many substances have been recommended to counteract this tendency, without impairing the properties of the manure employed. Salt has hitherto been most generally used with Peruvian guano: the complaint, however, against this article is, that while it stiffens the straw it lessens its bulk. Sulphate of soda is now coming into use to mix with nitrate of soda and sulphate of ammonia, and with good effect. As the question is asked occasionally where nitrate of soda is made, it may not be altogether out of place to state that the greater portion, if not the whole used in agriculture, is imported from South America, East Indian nitrate of soda being employed in the manufacture of nitrate of potash (saltpetre), in which state it comes to this country.

Fermented Bones.—Several substances may be employed to ferment bones: ashes of wood, peat, and coal, sawdust, droppings from the stable, brewery refuse, shoddy, or any substance that will, when mixed with ground bones, induce fermentation: these, if moistened with the drainings from the dunghill, urine, gas-liquor, &c., when reduced to a crumbling state, will furnish a manure of considerable fertilising properties. The heap having been made up with sufficient moisture, is left to ferment, the operation being performed in a covered shed. As a general rule, bones as a manure are better adapted for light gravelly soils than for stiff land.

Carcases.—Horses and cattle that die on the farm through disease, accident, or age, are in general buried; as, being of no further use, that is the best resource for putting them out of the way. I shall point out what should be done with such carcases, whereby they may be turned to some useful and economical purposes. First skin the animal, as done in a slaughterhouse; sprinkle well the skin with salt on the fleshy side to preserve it from putrefaction, then roll it up, when it may be kept till a convenient opportunity for disposal to a tanner. The carcase is then cut up into pieces of ½ cwt., put into a boiler with water and boiled for 28 hours, by which time the flesh will have so softened that the bones can be taken out. Before doing so, whatever grease there is will float on the top; this, when skimmed off, will be found superior to any other grease for lubricating machinery and cart-axles. The boiled flesh may be cut up and mixed with the farmyard manure; and the liquor or soup might be used to ferment bones, or run into the liquid-manure tank. The quantity of each ingredient depends entirely upon the size and condition of the animals. Taking an ordinary-sized farm horse, in working condition, weighing 15 or 16 cwt., the following may be assumed as the approximate value of the products:—

Skin, present value 10*s.* 6*d.*, average		8*s.* 6*d.*
Grease, 28 lbs., at 6*d.* per lb.	14	0
Bones, dry, 56 lbs., at 4*s.* per cwt.	2	0
Flesh and liquor for manure	2	6
	£1 7	0

(84 lbs. is the greatest weight of dry bones the largest horse will yield.)

We cannot too forcibly impress upon farmers the importance of being assured that the articles they

* It is a common practice to weigh in the bags, making no allowance for Tare.

† Brown sulphuric acid (called unconcentrated) 1.7 specific gravity, or of 140° (by Twaddel's hydrometer), as being the cheapest, is best suited for the purpose of dissolving bones, the price ranging from 4*l.* to 4*l.* 15*s.* per ton.

‡ From 4 to 4.5 per cent. in unboiled bones, and from 2 to 3 n boiled bones.—P. H. F.

purchase are genuine; the absolute necessity, therefore, of buying only by a guaranteed analysis, and of proving the correctness of the same by a check analysis of a sample taken from the bulk delivered. By this means any difference in value may be adjusted before application, and disputes avoided; for it is hopeless to look for redress afterwards, on the ground that the results did not come up to expectation. Makers of chemical manures buy the materials they use by analysis: were this precaution neglected, the manufacture of manures would be a thing of chance instead of calculation and science. Why should farmers be less alive to their own interests? The trouble is little and expense as nothing compared with the interests at stake.

There are, however, some farmers who expect too much from the use of portable manures. It is absurd to suppose that these alone can keep the land at all times in good heart; they ought rather to be employed as stimulants or auxiliaries, than as a complete substitute for farmyard manure. *Mr. A. S. Maxwell in the Journal of the Agricultural Society.*

ENGLISH CATTLE SHOW AT BATTERSEA.

Turning from the Foreign and Scottish to the English part of the Show, we find it opened by an array of 250 Short-horns,—138 males and 112 females. Perhaps there were not so many "plums" among them as at Leeds (where Captain Gunter's "Duchesses" were so prominent), but the female classes contained a greater amount of average excellence. The subdivision of the Aged Bull class was successful in every way, as the 3-year-old bulls formed one of the most interesting classes, and the two included 53 entries as against 38 last year. In the Aged Bull class, the second and third at Leeds only shared the general commendation, and a highly-commended one now took second honours. "As a lot, they had fewer rough points, but still there was not one tip-top bull" to give character to the class. Though not what is technically termed "a show bull," the American-bred "Lord Oxford" had some grand points about him; and the filling-in of the fore-ribs of "Cœur de Lion," who girthed 9 feet 7 inches, was worthy of the last Smithfield Gold Medal ox. The Scottish luck began with Mr. Stirling's "Forth," in the 3-year-old Bull class; and two firsts, a second, and a third, constituted their share of the Short-horn prizes. It was also specially observable that the owners of small or more recently established herds contended very successfully with some of the most formidable exhibitors of bygone years. Still the peculiar feature of this part of the Show was the winning of the gold medal for the best male animal in the classes by a bull calf, "whose wonderful maturity and careful preparation have perhaps never been equalled."

Of the Bull classes, one of the Judges reports thus:—

"In Class I. there was certainly nothing very good, but there was a great improvement in this respect, that none of the class were unable to work. Mr. Wood's 'Lord Adolphus,' to which we awarded the first prize, although rather flat on his sides, and thin across his shoulders, was by far the best in quality, and in my opinion best adapted to produce good stock either for breeding or the butcher. The second, Mr. Langston's 'Lord of the Harem,' was a very useful bull, and more compact, but not of such good quality as the first; the third, Messrs. Hosken's 'Prince Frederick,' being older, was well finished, but deficient in quality and hair. The class altogether was useful, and none of them were overfed."

With respect to this decision, which was unanimous, another Judge writes:—

"We were not to take into consideration the present value of the animals to the butcher, but the Society's object of promoting the cheapened production of the best meat, regard being had to those animals in a breeding state most calculated for that object. 'Lord Adolphus' had the best head and best forequarters in the class, that point of all others being most difficult to get in all male breeding animals, and his forequarters, which were the type of what they should be in a breeding animal, were worth a shilling per stone more as a carcase than those of any other bull in the lot."

The first report proceeds thus:—

"Class II. was a very good class generally; Mr. Stirling's 'Forth,' which got the first prize, was, if anything, too fat, which rather put him out of shape; the second, Mr. Ambler's 'Gamester,' was a particularly nice bull, but short of condition; and the third, Mr. Balfour's 'Great Seal,' useful, but nothing particular as to quality. In the remainder of the class there were many useful bulls. In Class III. there was nothing very good. The first prize, Mr. Marjoribank's 'Whipper-in,' had bad hind legs, but a little better quality, though not such good symmetry, as the s cond, Colonel Townley's 'Royal Butterfly 10th;' and the third, Mr. Ambler's 'Windsor Augustus,' was a neat bull, short of condition. Class IV. was by far the best, as Mr. Jonas Webb's 'First Fruit' was the richest specimen I ever saw at the age, both as regards symmetry and quality. Mr. Pawlett's 'Hopewell,' and Mr. Robinson's 'Jericho,' which received the second and third prizes, were good, and there were at least 10 more fit to take a prize."

In the female classes, Mr. Richard Booth had the good fortune to win two first prizes and the Gold Medal with the only animals he brought to Battersea. His gold-medal cow "Queen of the Ocean," sister to "Queen of the May," "Queen Mab," and "Queen of the Vale," is "a short-legged, well-formed, and useful animal, and by far the best female Short-horn in the yard, with shoulders and hocks as near perfection as possible. Lady Pigot's 'Pride of Southwicke' was second, easily enough," this being the third time in succession that her ladyship has gained one of the cow prizes; and Mr. Jonas Webb's "Lady Elizabeth Yorke," "not a good one, and overfed," came third. In point of massiveness and breeding qualities, this gentleman showed a remarkable lot of five in this class. Their united ages were under 24 years, yet, without any twins to swell the number, they had bred 14 calves: one was within three and another within seven weeks of calving; two had calved in April, and the time of the fifth was up in September. "Maid of Athelstane," "Wood Rose," and "Claret"—all winners at the Society's meetings—were now unnoticed, and no commendations of any kind were bestowed. One of the Judges thus speaks to the point:—

"With the exception of Mr. Booth's cow, I did not think there were any really first-class ones, and in many instances they were very objectionable in one very important point, I mean as regards their milking. I do not find fault with the small quantity of milk they were likely to give, but a great many otherwise good animals had udders of such ugly shapes that a milch-cow dealer would not have them at any price. Now, in my opinion, a cow with an udder that appears to be full of large stones cannot be the proper animal to breed from. It is a pity that the breeding animals should be shown so very fat, and I hope it was noticed by the public that the very fat ones did not in all cases obtain prizes, but only when, in our opinion, they would have done so had they been less covered with flesh."

He adds:—

"We may decidedly call the show of Short-horn females good, especially as regards the younger heifers; the cows were not so good, two-year-olds about the same, and yearling heifers better than at Leeds. The Duke of Montrose's 'May Morn,' the winner in the two-year-old heifer class, is a good Short-horn in style and quality; Mr. Lane's 'Maid of Athens' (the second prize) is a nice even-grown heifer, and Mr. Douglas's highly commended 'Queen of Athelstane' has good flesh, deep ribs, and a beautiful loin, but is overfed, and with bad shoulders.

"In the yearling heifer class, Mr. Atherton's 'Lady Barrington 6th,' a nice level heifer, which looks older, and would look very different if she was poor, was highly commended, and eight others out of the 44 were commended. In this fine class, Colonel Towneley, with his 'Frederick's Faithful' was second to Mr. Booth's 'Queen of the May 2d,' a real Short-horn, but not so good as she might be in the foreribs and shoulders. Lord Feversham's 'Barefoot,' the winner of the third prize, has good quality, but not a nice head, and looks like making a cow; and the flesh of Mr. Marjoribanks' 'Winning Witch' was too coarse for a female. There were several nice animals in the class, but too many of them over-fed and without nice quality; and, moreover, one or two of the best had not the hair of a Short-horn."

The winner in the calf class, Mr. Middleborough's "Lady," was "on a high leg, and looks like making a cow; but is long in the face and not very good in the shoulders." The second prize calf, Mr. Douglas's "Pride of Athelstane," "had nice quality of flesh as well as two good ends, but was hollow in the loins;" and the Judges pondered long before they could decide to prefer Mr. Robinson's "Claret Cup" for the third prize to Lady Pigot's "Castianira," which was highly commended. Others in this class are judicially mentioned as "having capital coats, with flesh too coarse for heifer calves, and unnaturally fed."

Of the Herefords, a Judge writes: "I consider that as a whole they showed well, and the cows and yearling heifers were the best I have ever seen at a Royal show;" and another: "I consider them superior to those at Leeds in quality as well as in number, especially in the classes for 2-year old bulls, bull calves, cows, yearling heifers, and heifer calves." This important class showed in stronger force than at any previous meeting of the Society, which gives, we trust, a good earnest for the next year. The largely increased area over which they now extend was mentioned in the Leeds Report, and this year we can congratulate the breeders on a still further extension, and the marked success which has attended the efforts of distant exhibitors to compete with the great local herds. Thus the Gold Medal for the best bull in the classes went into Shropshire, and that for the best female into Dorsetshire; the first prize for aged bulls and yearling heifers to the Prince Consort's Flemish Farm in Berks; that for 2-year old heifers into Gloucestershire; and for heifer Calves to Warwickshire; two prizes only being left for the county from which the breed takes its name. With only two exceptions, all the animals presented that uniform appearance in colour and marks which popularly characterises the pure-bred Hereford. The spots on the face and legs of "Maximus," the winner in the aged bull class, as well as his general appearance, tell that he is closely allied in blood to the Tomkin's mottle-faced Hereford; and he seems from the Herd Book to have a dash of Tully Grey, as well as red with white face—an amalgamation to be found, as in former years, in nearly all the animals shown, and particularly in the winners of prizes. It is also worthy of remark that eight winners out of the 24 were either bred by or directly descended from the herd of the late Lord Berwick, who crossed his "Knight Greys" with red and white-faced bulls from the herds of Messrs. Hewer, Longmore, Carpenter, Williams, &c. The gold-medal bull, Mr. Hill's "Milton," and a third prize bull, Mr. Duckham's "Victor" (who gave 11 months in his class), were both by sons of his lordship's "Cherry 7th," by "Hotspur." Mr. Read's first-prize 2-year-old heifer "Theora," and his second prize heifer calf "Miss Southam," were both daughters of the same cow; "Ada," "Adela," and "Adelina," winners of a third and two first prizes, were of his lordship's Silver tribe; and Mr. Naylor's second-prize "Heiress" was also bred by his lordship, but from a different tribe. The Cow class, which was headed by Mr. Coate's gold-medal winner "Matchless," was universally commended, as were those for two-year-old bulls, yearling heifers, and heifer calves. Mr. Hill's "Milton," and "Adela," from the Prince Consort's Flemish Farm, were both first prize winners at Leeds last year (although the latter was disqualified from a misdescription); and "Adela's" half sister, Mr. Baldwin's "Adelina," from "Agnes," now takes the first heifer calf prize.

The Devons "were the best I have ever seen, and I have attended 11 Royal meetings: the cows, heifers, and yearling heifers especially were very superior." Mr. James Davey, of Flitton, sent five animals, and won four firsts and a second (against one of his own), besides taking both gold medals with "Duke of Flitton" and "Temptress," neither of which had been in a show-yard before. The Messrs. Quartly were not exhibitors; but the "Duke of Flitton" and Mr. Newberry's "Bonaparte," which was second to him in his class, were by Mr. James Quartly's "Napoleon;" and Messrs. Palmer's "Lord Cary," the third in the same class—Mr. Bodley's "Champion," the second in the 2-year-old bull class—and "Crown Prince," from the Prince Consort's Norfolk Farm, the first in the yearling class—were of pure Quartly blood. Mr. Farthing's "Viscount," who took the first prize in the Yearling class, at Leeds, was first in his class again; and "Crown Prince" was alike promoted from the head of the bull calves to that of the yearlings, his place of last year being taken by "Prince Alfred," of the Prince Consort's blood on both sides, making the fourth first prize taken this year by animals from the Prince Consort's Norfolk and Flemish Farms. Of the 11 in the Cow class, one of which did not come, no less than five were commended, and one highly commended; and Mr. G. "Turner's "[illegible]lomini" earned second honours, as at Leeds last year. The winner, "Temptress" (whose Pink blood has been in the Davy family for upwards of a century), was drawn out for the gold medal with the same owner's first prize yearling heifer "Princess Alice," who was the first heifer calf at Leeds; and all the heifer and heifer-calf classes were commended.

One of the Judges speaks of Mr. Davy's

"'Duke of Flitton' as being a capital type of the North Devon, with a rare level back, an astonishing loin, a good fore-quarter, the best of texture, and with all his points in good keeping, but with not so pleasant a head. Mr. Newbery's 'Bonaparte' was useful, but not so level and symmetrical; and Messrs. T. & J. Palmer's 'Lord Cary' was nice and level and of good texture, but of diminutive size. Mr. Farthing's 'Viscount' is a very meaty animal, of immense size for his age, but of a very different style and touch to the pure North Devon, and far too much loaded with fat for breeding purposes; 'Crown Prince' was useful, but deficient in mellowness and depth of flesh. 'Temptress' was a splendid specimen of a North Devon, with a lovely head, and gracefully-laid shoulders and arms, forming one of the finest fronts ever seen; she was, perhaps, the most perfect type of an animal in the yard. '[illegible]' was also a surpassingly good cow; and the third cow, Mr. J. A. Smith's 'Rachel,' a very neatly formed animal of exceeding good quality. Mr. Paull's two-year-old first prize heifer, 'Young Hebe' (bred by Lord Portman), was all that could be desired, with a fine touch and nice even frame of large size. Two such yearlings as Mr. Davy's 'Princess Alice' and 'Young Empress' have been seldom seen in one man's possession, but I am inclined to think that the latter will make the better of the two, as she is younger, and promises to have more size and commanding appearance, with quite as good quality. His first-prize heifer calf, 'Lady Fortune,' was also remarkably neat. Mr. James Merson, a very steady supporter of these classes, showed some beautiful animals, and took two prizes."

The Sussex cattle were, "as a whole, good, and I should say decidedly improved. There were two very useful old bulls and two or three very good cows; but the younger animals were hardly equal to the older ones. They had fine deep flesh, and quite maintained the improvement which they have shown of late years at Smithfield." Experience has proved them to be as hardy if not hardier on poor cold clays than any other breed. The classes were very fairly filled, and three out of the five firsts were awarded to Messrs. Heasman, who found themselves alone with a cow and a bull in these classes last year.

Only 14 Long-horns were entered in the six classes, and of these "the breeding cows were good, but the bulls had nothing to recommend them." The first prize in the cow class was won by Mr. Warner's "[illegible]," Lieutenant-Colonel Inge being second with his "[illegible]pail," and first with his aged bull "Tom." Mr. Burbery, whose blood dates back as far as the beginning of the Wroxton herd in 1756, had the first and second prizes for yearling heifers, and also bred Mr. Davis's first prize yearling bull. Although they are generally looked upon as relics of a bygone age, there are several herds of this breed in the Midland Counties and elsewhere, varying from 15 cows and upwards. Their "milking" talent (which is well indicated by the conventional milking-marks) admits of no doubt; and although the young stock are put on the poorest pastures and sadly spoiled thereby, they retain the faculty of fattening at a great age.

The "blood-red dairies" of Norfolk and Suffolk mustered nearly as strong as those of Sussex, and "presented several specimens of great merit, size, and symmetry, with good flesh and constitution and [illegible] of lean to the fat,—all qualifications for making as much good beef at the least possible cost from a given quantity of food as any breed in the yard." Another Judge says, "They were of great merit, and I observed in them great advances in the three very desirable acquirements of size, symmetry, and quality; and in improving the two latter the former has not, as is too often the case, been sacrificed, but rather increased. In both these classes I observed improvement in the young over the elder branches of their respective families, and these breeds have been under my

[in]spection before." Careful crossing seems to have done much towards correcting their great tendency to be high on the tail. There is evidence of the existence of the breed in the Eastern Counties for upwards of a century and a half. It is thought that they derive their origin from the Poll Angus or Galloway (large quantities of which are still sent to graze in Norfolk and Suffolk) crossed with a red native breed. They are not styled "useful" unless they give their 20 quarts a day when in full milk; and although feeding is not their forte, bullocks, if well done to, will weigh their ... stone of 14 lbs. at three years old. From the favourable impression they created, it is hoped that perhaps in future they, as well as the Sussex, may have classes of their own. Lord Sondes and Sir Edward Kerrison each won first prizes, and Mr. Samuel Welton another.

Of the five classes assigned to North Wales four did not fill, and the two cows which came "had but little to recommend them." South Wales, or rather Mr. Clare Sewell Read of Norfolk on its behalf, had a pair of cows among the nine in the classes, which "were, in length, size, and flesh, the best I ever saw." The Kerry entries were very short, and the judges considered them "indifferent." Black is the orthodox colour, but some of the experienced breeders consider the deep red to be the best milkers. They fatten well in a short time when they have had some nine months to recover themselves after coming from the mountains of Kerry; and their weight when fat may be estimated at from 3¾ to 5¼ cwt. Their cost when just taken off the mountain varies from 2*l.* 10*s.* to 5*l.*, and with good management few herds return a better profit from the pail.

Of the Cattle from the Channel Islands, Colonel le Couteur thus writes: "Although they did not come in very great numbers, some very beautiful animals were shown. I was pleased to see that stock bred in England could be continued pure, though in some cases a cross with the Short-horn was perceivable. Such should not fairly come into competition with the pure breeds of the two islands, and a certificate of purity should be demanded if the Judges deem it right." Of the 14 prizes 9 went to the Channel Islands, the Jersey men being beaten twice for first place and the Guernsey once. About 1200 head are annually imported, of which two-thirds come from Jersey and not 20 from Alderney, which is now so much built over.

The Guernseys are the larger breed of the two, but the Jerseys are generally more choice. The blue and grey are perhaps the hardiest, but pale fawn and white and smoky fawn and white have always been preferred, as giving the richer quality of milk.—*Official Report in the Journal of the Agricultural Society.*

Societies.

Worcester.—At the Annual Agricultural Meeting here the other day, Lord Lyttelton said he believed it was owing to a want of capital more than any other cause that agriculture made such slow progress, and that there was really no ground for complaint of want of intelligence on the part of the farmers. On his own estate want of capital was shown in the fewness of live stock, but in many respects improvement was perceptible. If good buildings and complete drainage were provided, he had never found tenants who would not fully avail themselves of what had been done. The abstract question of leases had been sufficiently discussed, and he was only about to express his opinion, that where long leases were given there should be the least possible restriction put upon the processes of cultivation. It had been generally the custom for landlords when drawing up leases to believe that at the moment of doing so they were fully cognisant of what was and what would be for 14 or 21 years to come the very best system of cultivation for the land, and therefore a minute system of rotation of crops and other processes of agriculture was laid down in those leases Every lease necessarily contained a great number of restrictions, but he thought they should not relate so much to a system of cultivation year after year as to the protection of the landlord against wilful waste or alteration of the character of his estate, such as changing it from arable to pasture, or *vice versâ*. During the last three or four years of a lease, a tenant (if aware that he was about to leave) would perhaps be tempted to abandon the proper system of cultivation, and to exhaust the land so as to get all he could from it. To meet such a contingency it would always be necessary to lay down the most careful restrictions, but, as to the proper mode of cultivation from year to year, the less restriction was made the better. He had caused his own leases to be prepared on that plan, simply on the ground that agriculture was a progressive science. A landlord might be able to tell what in his opinion was good cultivation now, but how could he tell what it might be some 14 or 21 years hence! He therefore had laid down in his leases no specific system of cultivation to be followed, but simply bound the tenant to the common rules of good husbandry for the time being. At any time, therefore, it would be open to the landlord to show that his farms were not being cultivated according to the rules of the existing mode of good husbandry, and open to the tenant to show the contrary. Such cases should be referred to competent private arbitration, and not to be decided by inflexible and obsolete rules. This view of the question had struck him very strongly, and he was anxious that landowners generally should give it their consideration.

Farm Memoranda.

South Hants Farm: *October.*—A decided change in the weather having taken place on the 11th, autumn cultivation, which had been continued, was suddenly stopped by the heavy rain which occurred on that day. The preparation of land for Wheat must now engage our attention; many parties advocate the sowing of Wheat before this period (Oct. 14), but in the South Hants district, where the land is in a good state of cultivation, we prefer carrying out autumn tillage for next year's crops until the periodical rains peculiar to the month of October set in, which not only puts a stop to the cleaning of the land, but brings it into a heavy and fitting state for the sowing of Wheat. It is a rule with us to plough and sow the lea ground first, and the lea ground should be ploughed a considerable time before sowing, which allows the land time to settle and become firm. The quantity of seed Wheat required per acre is still a vexed question, and it will probably continue so, as the soil and preparation as well as climate, and the period of sowing, must all influence the question as to quantity of seed. The selected Wheat introduced by Mr. Hallett has again opened up the question of thin seeding and early sowing, and there is no doubt but any sort of Wheat selected and treated in cultivation, as done by Mr. Hallett, would greatly improve in the size of the ear and the produce per acre, but the quality of the grain would vary very much with the season, because thin seeded Wheat is always more liable to blight, which damages the grain. Upon many farms the early sowing of the Wheat crop would produce much inconvenience and derangement of the usual mode of culture; for instance, if all the Wheat were to be sown or planted in the month of September, how could any autumn cultivation for root crops be effected?—how could the various crops preparatory for Wheat be cultivated, such as Potatoes, Turnips, Rape, &c., which are in process of digging, feeding off by sheep, &c., during the months of October and November. What are the advantages of saving a bushel of seed per acre, or even more than a bushel, as compared with the advantages of taking crops of Potatoes which pay more than the Wheat crop itself, although it is preparatory—and what the advantage of saving the seed compared with the requirements of large flocks of sheep and their benefit to the land as a preparation for the Wheat crop? We will however readily concede the point of selecting Wheat and cultivating upon Mr. Hallett's plan, upon a limited scale, and in case a portion on every farm was treated thus by the selection of those kinds of Wheat best adapted to the farm, there is no doubt but it would answer a good purpose, and every farmer may then obtain more readily a supply of good Wheat for seed, adapted to soil and climate. This is now the period when the farms of this district are stocked with ewes for producing early lambs, and they are this year very costly, being from 5*s.* to 6*s.* per head over last year's prices. Lambs and wethers are also dear, but wether sheep in particular; indeed, poor wether sheep have not sold higher during the past twenty years. The horned ewes have ranged in price at the late fairs from 50*s.* to 60*s.* per head; West Country Downs, at from 38*s.* to 48*s.* per head; lambs from 30*s.* to 50*s.*, and wethers from 40*s.* to 55*s.* These are high figures to begin with, and unless the price of mutton ranges very high during the spring and summer, there can be little or no profit in feeding sheep this season. Store bullocks are not so high in proportion as sheep, and at the present time half fat beasts are to be purchased to pay for the feeding better than sheep. The dairy cows now demand attention, for after the middle of October the Grass becomes short and deficient in quality; we now begin to give them Cabbages on the pastures, and we find them do well without decreasing their milk; they must however soon be brought to their sheds at night, and receive some sweet well harvested Oat straw. Dairy cows will not answer to receive hay during the winter, they being out of profit at that time. As soon, however, as they drop their calves they get hay, that being the commencement of the period of profit, and the better they are kept the more they will pay. We do not fat many pigs for sale, as we think they do not pay so well as bullocks. Our mode of feeding, however, is to mix with meal, pulped Mangel, at the commencement using the proportion of two-thirds Mangel to one-third of Barley meal gradually during the process of fatting, increasing the quantity of meal, and finishing off by two or three weeks feeding with meal only. The roots in use now for feeding the cattle of all ages are hybrid Turnips, which we pull daily from the land where Potatoes are being dug. The Potatoes are a good crop; the Turnips also are fine, having been much benefitted by the late rain. The Turnips are stacked away for winter feeding, except those required for daily use; the greens are used for feeding sheep on the pastures, young cattle of different ages, under cover, and also breeding sows and store pigs in their pens. Our forwardest Devon oxen get a portion of Mangels daily, cut and mixed with the Turnips, and it is quite requisite for those animals intended for sale at Christmas. Our in lamb ewes, both Horns and Downs, are breaking down very fast with the epidemic lameness, and require to be looked over daily, and when they show lame they are dressed the second day, our remedy being complete, only reduces it to a matter of daily attention. *J. B.*

Chatteris, Isle of Ely.—Our report is later than we intended, but a pressure of duties during the last few weeks has compelled us to be in arrear. Latterly we have had a good deal of stormy weather. Frequent showers have fallen, and the temperature has generally been high. The broken weather has to some extent impeded farm operations, and some little time has been lost, but the frequent rains have made a fine seed-bed for the Wheat. We are now busily engaged in preparing the land for this crop, and have commenced sowing. Our breadth of land for Wheat this year is 320 acres, 250 of which we have already ploughed, and 140 are sown. The varieties of Wheat we sow are the Nursery, a white Wheat raised by Mr. John Marriage, of Moulsham Lodge, near Chelmsford, from a few ears selected from a field of Taunton Dean, and Hallett's Pedigree Wheat. The quantities are 184, 120, and 16 acres respectively. The quantity of seed per acre we use is 8 and 9 pecks, regulated by the straw-producing character of the lands. The Nursery Wheat has been very successfully grown upon our fen lands for the last few years, and although producing a small ear and a small berry, yields very well and affords a fine quality. Some very good crops have been grown this year, yielding from 4 to 5½ or 6 quarters per acre, and weighing from 18 stone 4 lbs. to 18 stone 10 lbs. per coomb. From statements I had heard and read respecting Mr. Hallett's Pedigree Nursery Wheat last year, I was induced to give it a trial. I accordingly purchased 3 bushels of Mr. Hallett at 2*l.* 2*s.* per bushel, and afterwards bought 4 bushels more at 15*s.* per bushel of a neighbour, who had had it from Mr. Hallett the year before. These two lots I sowed in the middle of a 17-acre field, having selected the best part of the field, and also having given it a heavier dressing of manure. Mr. Hallett's 3 bushels of Wheat were sown on about 3 acres, and the other 4 bushels on about 3 acres; both were put in on the 5th November. On the following day the remainder of the field was sown with common Nursery, 8 pecks per acre. In the spring the plots of Pedigree Wheat had a couple of hoeings more than the remainder of the field received; and at harvest selected men were sent to reap these two plots, and 4*s.* per acre additional price was paid for the work, that it might be better and cleaner done. The straw was very stout, and the ears appeared very large. They were afterwards put into the barn, one lot being consigned to one mow, and the other to the other mow. The remainder of the field was also stacked at the same time. They have all been since threshed, and the following is the result. Mr. Hallett's Wheat yielded just over 3 quarters per acre, and weighed a little under 17½ stone per coomb: the other lot of Pedigree yielded 3½ quarters per acre, and weighed 17 st. 10 lb. per coomb; the common Nursery yielded 4½ qrs. per acre, and weighed 18 st. 10 lb. per coomb. The two lots of Pedigree are a very coarse quality, have no resemblance whatever to the Nursery, and are worth 6*s.* to 8*s.* per quarter less money. We compared them the other day with samples of Kessingland, which they appeared very much to resemble, and it was difficult to detect the difference. We should have sown them earlier last year, but the land was too dry to vegetate the seed, in consequence of the long continued drought of last autumn. The white Wheat we sow, from Essex, we put upon our best gravelly lands, and it produces a fine quality and good quantity in fair seasons. We threshed 10 acres of it the other day from these lands, and got nearly 6 qrs. per acre, 18 st. nett. As we have before stated we are sowing 16 acres of Pedigree Wheat this season. Five acres are already sown in the middle of a 21 acre field, the remainder being sown with Nursery at the same time, and the same quantity of seed per acre. The other 11 acres is a field of high land. If we fail this year, we must abandon it, and we much fear this will be the result.

Early in November we are preparing to start steam cultivation. We have purchased one of Howard's cultivators, and have also instructed that firm to make us a plough for breaking up the fallows on our gravelly fen lands. It is to take two furrows, 16 inches wide each, and from 12 to 18 inches deep, as the subsoil may be. There is also to be some provision for paring 2 or 3 inches in depth the full width of the furrows, and depositing the same in the bottom of the furrow. This will be an implement different to anything yet constructed, we conceive. But we think it will be valuable on these soils, as deep ploughing is attended with very advantageous results. We have been accustomed to do this work with horses, having one horse in the top plough to skim the surface, and four or five horses in the bottom plough, breaking up the land altogether to the depth of 12 inches. This year we have 120 acres of this work to do, which would take 10 or 12 horses for 10 weeks. This appeared more than we could well manage, especially as we have 27 acres on our black peaty bottom, lands which we want to plough 18 inches deep, and which will take 8 or 10 horses to do an acre

per day. We therefore determined, as we have a 10-horse engine, to make it an auxiliary, and to let it do some of this hard work. Our present impression is that by this arrangement we shall be able to spare six horses, and the remainder will cost less keeping during the winter. We must defer till our next report all other particulars. *A. S. R., Oct.* 17.

Miscellaneous.

Crops in Herefordshire.—As a particular instance, fully examined, often furnishes more real information than any number of estimates founded on loose and general statements derived from several farmers and in different districts, we can state the comparative results of the Wheat crop of this year and former years on a farm, consisting of strong loam, well drained and in good condition, situated on the southern border of Hertfordshire. For six years prior to 1860 the Wheat yielded from 36 to 46 bushels to the acre, giving very nearly an average of 40 bushels per acre for the whole period. In 1860 there was a yield rather over 30 bushels per acre, but the condition from the wet harvest was bad. In 1861 the Wheat was scarcely 24 bushels to the acre, the plant having been thin and the straw scanty, but the quality was very good, the price obtained being 60*s.* per quarter for Red Wheat. In the autumn of 1861 the Wheat was sown early—great part in October, and the rest about 20th November—and up to the second week of June, 1862, presented the most promising appearance. One piece alone, being on newly-broken-up land, appeared to be too luxuriant. On this piece many ears were fully shot on the 1st of June, and the straw was strong though very lengthy, for, notwithstanding the rough winds and storms of June and July, the crop was not extensively lodged. From the second week in June the progress of the Wheat was most unsatisfactory. During the blooming period wind and rain prevailed, and there was a total absence of sun. The ears came out small, and both the bottom and top of each ear were either without any grain, or contained only small defective corns. Then followed symptoms of blight, and it became evident some time before harvest that the yield could only be a moderate one in proportion to straw, though it was hoped, from the abundance of straw, that the acreable yield might not be very bad. A week or two before harvest the weather improved, and sunshine having stopped the progress of blight, the ears were considerably developed in bulk, but the period had gone by at which the number of grains in the ears could be increased. A portion of the Wheat had been cut and was standing in the field during the wet week, but the whole was ultimately stacked in dry and good condition, with the exception of a small piece of white Wheat, which was a little but not much grown. All has now been threshed and sold, and the produce was exactly $3\frac{1}{2}$ quarters, or 28 bushels to the acre. Now, taking the lowest quantity grown on this farm any year prior to 1860, viz. 36 bushels to the acre, as the average yield, we have a deficiency of 8 bushels or 1 quarter to the acre. But in fact 39 or 40 bushels per acre will be more nearly the average yield previously to 1860, which would give a deficiency of 12 bushels per acre. This we believe, from observation and inquiry, to be about the measure of the deficiency on well managed farms in the particular district referred to. The farm we mention is better drained and in better condition than most of the land in the neighbourhood, and the proportionate deficiency is probably less than that of most neighbouring farms. *Economist.*

Bots.—This belongs to the family of the Œstridæ, and is popularly known by the name of Bot-fly. All these insects are parasitic in or upon animals. The larva of this Bot-fly resides in the interior of horses, and is conveyed there in a very curious manner. The parent fly deposits her eggs upon the hairs near the shoulders of the horse, where the animal is sure to lick them, in order to rid itself of the unpleasant feeling caused by agglutinated hairs. The eggs are thus conveyed to the stomach, to the coats of which organ the larvæ cling, and there remain until they have attained their full growth. They then loosen their hold, are carried, together with the food, through the interior of the animal, fall to the ground, and immediately begin to burrow. They remain underground until they have undergone their metamorphoses, and then emerge in the shape of the perfect insect. They do not seem to inflict any damage upon the animal from whose bodies they have drawn their nourishment, and some veterinary surgeons believe that they are rather beneficial than injurious. Another kind of Bot-fly (*Œstrus bovis*) resides in the cow, but instead of being taken into the stomach, it burrows into the skin, and there forms large tubercles, that are popularly called worbles or wurbles. An aperture is always left on the top of the tubercle, and the larva breathes by means of keeping the two principal spiracles opposite to the orifice. When full grown, they push themselves out of the aperture, fall upon the ground, and there burrow and undergo their transformations. *Routledge's Illustrated Natural History.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Oct. 29, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of: Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0-6	Amount of Cloud 0-10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	23	29.81	50	47	S.W.	4	4	60	44	76*	40	0.12	52	53
Friday ..	24	29.70	47	43	W.	2	1	54	38	82	34	0.01	51½	53
Saturday ..	25	29.97	44	42	S.W.	2	3	54	31	86	27	0.08	50½	53
Sunday ..	26	29.61	55	53	W.	2	6	55	44	83	42	0.30	50½	52½
Monday ..	27	29.97	50	47	W.	3	6	59	42	91	38	0.01	51	52
Tuesday ..	28	29.82	46	44	W.	1	7	57	44	71	41	0.02	51½	52
Wednesday.	29	29.97	42	41	N.W.	1	4	50	39	57	37	0.09	51	52

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Calendar of Operations.

NOVEMBER.

BERWICKSHIRE MERSE FARM, *Oct.* 25.—Our late and lagging harvest is at length brought to a close; but the unusual tale of heated stacks will continue to offend the eye and the pocket for a time. The weather was at first dull and close, without any air to win Clovery Barley and green cut Oats; impatience got the better of prudence, and hence the melancholy results of turning stacks, carting out again, or letting them heat unheeded. Latterly there has been wind enough, and heavy rains to match; but the air being cold, no damage has accrued to those who could wait their time. Of the winter Wheat most is rubbish, but spring sown is a fair lot. Barley yields pretty well, but is very high coloured. Oats are a good crop, but soft, and the price consequently has quickly fallen 3*s.* or 4*s.* a quarter. Beans are mostly a-field yet. Turnips still look vigorous, and with a month of open weather may still be a fair crop. None, however, are fit for storing, and few for immediate use; yet the price of lean stock is extravagant, owing to a demand for the south. Potato lifting is the work of the day, and a sad tale it tells. The disease attacked the haulms just three months after planting, arresting their growth, and the result is a miserable crop of "second" size, much diseased. It is decidedly worst where the haulm was pulled before harvest, while the drills that earliest got the second moulding up are the best crop. This season will, in all points, be a bad one for the farmer. *J. T.*

Notices to Correspondents.

POULTRY: *Mortality in Turkeys.* We will give our querist the best information we can on the subject. Turkeys are chilly birds, and always liable to suffer from damp; they have but little courage, and when attacked with cold seem to give up at once. At this time they should be old enough to be free from the disorders of youth, and the swelling of the head and neck is one of them. Whether young or old, the treatment is the same, and it is the only one we ever use for these birds—it is the administration of active stimulants; that which would take two or three days to get into the system, and to make strength, is too slow in its action, and we therefore always use the strongest ale we have, soaking stale bread in it; we give this twice, and sometimes three times per diem, always with good effect. It is, however, absolutely necessary that while under this treatment they should be kept warm and dry — a loose box, the bay of a barn, any place where there is no draught, and where they are dry. No bird in after life is so influenced by its bringing up as a turkey. It would seem that strength or constitution in them depends entirely on the treatment when young. A hen turkey is a sorry mother, and but a poor caterer for her brood. She belongs to the "can't help it," "better luck next time," school. If not confined, she will start at early dawn, when the Grass is white with frost, or wet with icy dew, and wander with her little ones across 10 or 12 acres to the place where they dusted themselves at 12 o'clock the day before. She does not count her following, and cares not that four out of the 13 have stopped in the wet Grass. This is repeated day after day, till *five out of the nine are paid.* The four survivors pipe about, their heads are large for their bodies, and they are large jointed. They live on, but are ill at every change of the weather. In order to be of use next year, we advise you always to keep the hen turkey under a roomy crate, never to allow her to go out till the sun is up, and the Grass is dry. The young can run in and out as they will, and should be fed with meal, mixed with green Onion tops and crushed pepper. We have found meal made of Oats, Barley, and a few Peas ground together, excellent feeding.

SUBSOIL: *G R A.* It is impossible to give advice founded upon a mere examination by the eye of a handful of the soil. We can only urge as general truths, that the drainage of land when water stagnates, the marling of sands, the addition of lime when no calcareous matter, or when an excess of organic matter exists, are all profitable operations.

WORCESTERSHIRE FARMERS' ACCOUNT BOOK: *R, Norfolk.* It was advertised in our columns for several weeks, as for sale by "Deighton & Son, Worcester; Letts & Co., London, and all other booksellers."

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11*l.* 11*s.* per Ton for cash.
PETER LAWSON & SON, 27, Great George Street, Westminster.

LAWES'S WHEAT MANURE for AUTUMN SOWING.
In consequence of the high price of Peruvian Guano, J. B. LAWES has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of J. B. LAWES, or through any of his appointed Agents. Price 8*l.* per ton at the Factories, Deptford and Barking Creeks.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

THE LONDON MANURE COMPANY have now ready
PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
BLOOD MANURE for ditto.
SUPERPHOSPHATES of LIME, &c.
All the above being in the finest condition. They also continue to supply
GIBBS'S PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of known value. E. PURSER, Secretary.
116, Fenchurch Street, E.C.

Autumn Sowing.

THE PATENT NITRO-PHOSPHATE OR BLOOD MANURE COMPANY (LIMITED), consisting of Tenant Farmers occupying upwards of 80,000 Acres of Land.
Chairman.—JONAS WEBB, Babraham, Cambridgeshire.
Managing Director.—JAMES ODAMS.
Secretary.—C. T. MACADAM.
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex.
This Manure has been in use for upwards of 10 years, and has given great satisfaction to consumers. It is specially prepared for Autumn Sowing, and on most soils proves as effective as the best Peruvian Guano.
Orders may be sent to the Company's Agents throughout the country, or direct to C. T. MACADAM, Secretary.
Price 7*l.* 10*s.* per Ton, delivered at any Railway or Wharf in London.
Offices: 109, Fenchurch Street, London, E.C.

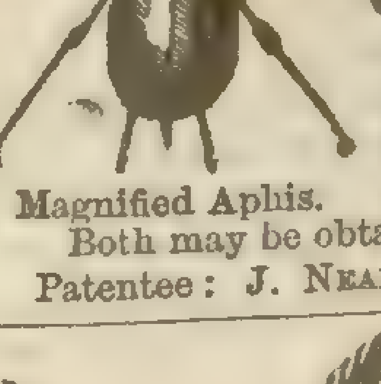
40 to 45 per Cent. of Soluble guaranteed. 1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.
Extract of Opinion from Mr. WAY, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c.) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. VOELCKER, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a percentage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

FOR PUBLIC SALE, at the New Corn Exchange Tavern, Mark Lane, E.C., on MONDAY, November 3, at 2 o'Clock precisely, 1000 TONS BOLIVIAN GUANO, containing 67 per cent. of Phosphate of Lime, just landed ex "Alboni," in the Victoria Docks.
Catalogues, with analysis and sample, may be had of J. A. RUCKER & BENCRAFT, Brokers, 37, Mincing Lane, E.C.

REIGATE SILVER SAND.—Best quality, 12*s.* per Ton, or 1*s.* 3*d.* per Bushel, at Swan Place; delivered 5 miles, or to any London Wharf or Railway, 16*s.* per Ton, or 1*s.* 6*d.* per Bushel (Sacks at cost price). Kentish and Hampshire Peats, Yellow Loam, Leaf Mould, and Cocoa Fibre Refuse; also Cocoa Fibre for Orchids.
J. KENNARD, Swan Place, Old Kent Road, London, S.E.

EXTRA STRONG TOBACCO PAPER, at a low price to the Trade.
Apply to H. BROWN, Seedsman, Liverpool.


Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1*s.* and 2*s.* per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of GEO. GLENNY, Esq., in his Works on Gardening, &c.
NEAL'S PLANT SOAP, 1*s.* per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.
Both may be obtained of all principal Seedsmen.
Patentee: J. NEAL, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.
This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.
Sold Retail by Nurserymen and Seedsmen in boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* each.
Wholesale by PRICE'S PATENT CANDLE CO., Limited.

Glass for Greenhouses.

JAMES PHILLIPS AND CO.,
beg to submit their prices as follows:—
ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging [illegible] by 30, packed in Cases containing about 280 feet, 2¼d. and [illegible] per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each. Package included.

				3rds.	4ths.
12 by 9,	13 by 9,	14 by 9,	15 by 9	14s. 0d.	12s. 6d.
12 „ 10,	13 „ 10,	14 „ 10,	15 „ 10		
13 „ 11,	14 „ 11,	15 „ 11,	16 „ 11	16s. 0d.	13s. 6d.
[illegible] „ 12,	15 „ 12,	16 „ 12,	17 „ 12	per 100 feet.	
[illegible] „ 12,	19 „ 12,	20 „ 12,	16 „ 13		
[illegible] „ 13,	18 „ 13,	19 „ 13,	20 „ 13		
[illegible] „ 14,	17 „ 14,	18 „ 14,	20 „ 14		

Various other sizes.

GLASS for ORCHARD HOUSES,
As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
[illegible] by 12 in.	Common	13s. 6d.	£0 18 0
[illegible] by 13 in.	Superior do.	16 0	1 3 0
[illegible] by 14 in.	English Glass	18 0	1 9 0
[illegible] by 15 in.			

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

[illegible] by 4	6½ by 4½	7 by 5	7½ by 5½	11s. 6d.
[illegible] „ 6	8½ „ 6⅝	9 „ 7	9½ „ 7½	
		10 „ 8	10½ „ 8½	12 6

Boxes 2s. each, returnable at full price.

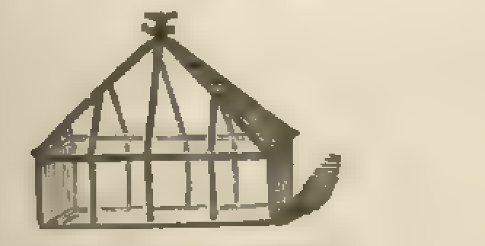
SQUARES CUT TO SPECIAL SIZES.
[illegible] 4ths, 1¾d., 2d., and 2½d. 21 oz. 2¾d., 3d, and 3½d.
„ 3ds, 2d., 2½d., and 3d. „ 3d., 3½d., and 4d.

[illegible] Agents for Hartley's Improved Patent Rough Plate. [illegible] Oil, Genuine White Lead, Carson's Paints, Paints [illegible] colours ground ready for use.
[illegible] Pans, Propagating Glasses, and every description of [illegible] Horticultural purposes.
[illegible] PHILLIPS & Co., 180, Bishopsgate Street Without, [illegible], E.C.

THOMAS MILLINGTON,
87, Bishopsgate Street Without, E.C.
HORTICULTURAL GOODS.

PROPAGATING GLASSES.

[illegible] inches ..	0s. 4½d. each.	12 inches ..	1s. 9d. each.
[illegible] „ ..	0 5½ „	13 „ ..	2 0 „
[illegible] „ ..	0 6½ „	14 „ ..	2 6 „
[illegible] „ ..	0 8 „	15 „ ..	3 0 „
[illegible] „ ..	0 10 „	16 „ ..	3 6 „
[illegible] „ ..	1 0 „	17 „ ..	4 0 „
[illegible] „ ..	1 2 „	18 „ ..	5 0 „
[illegible] „ ..	1 4 „	19 „ ..	6 0 „
[illegible] „ ..	1 6 „	20 „ ..	7 0 „



HAND GLASSES.

[illegible] inches ..	6s. 0d. each	18 inches ..	9s. 0d. each
[illegible] „ ..	7 0 „	20 „ ..	10 0 „
[illegible] „ ..	8 0 „	24 „ ..	12 0 „

If open top, 1s. extra.

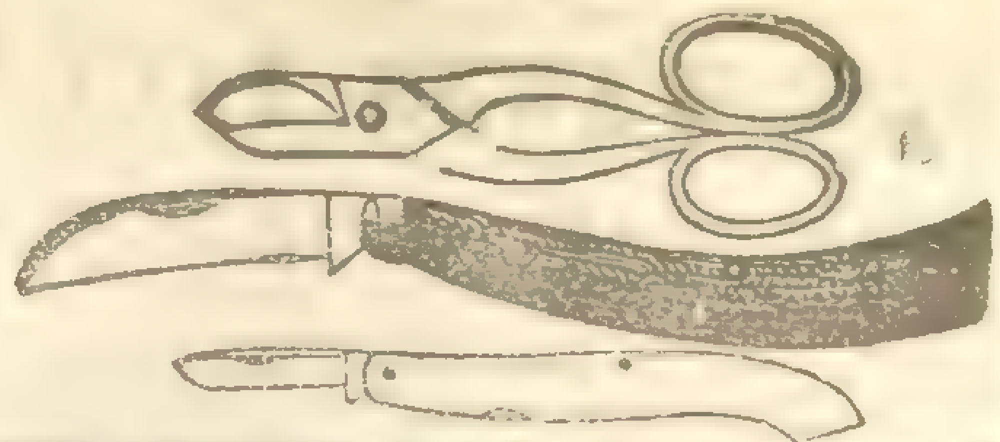
CUCUMBER GLASSES.
From [illegible] inches long and upwards, 1d. per running inch.

ROLLING PINS.
From 12 inches long, 1½d. per running inch.

Improved ANTI-CORROSION and other PAINTS.
GAS and LAMP GLASSES, GLOBES, &c.
CHIMNIES of every description.
Not accountable for Breakage.

W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.
Manufactory: Newport, Salop.
Warranted the strongest and most durable Fence ever [illegible] at corresponding prices. It is easily repaired if broken [illegible] accidents; can be rolled up most compactly when not in [illegible] admirably adapted for exportation, and can be had of [illegible] height and mesh required, at prices from 4d. to 1s. 6d. per [illegible] upwards.
[illegible] further particulars apply at the Manufactory, or of the [illegible] Agent, Mr. R. WINDER, 18, Abingdon Street, Westminster, S.W.

Paxton Works, Sheffield, Established 1738.



International Exhibition Prize Medal is just awarded to SAYNOR & COOKE for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR AND COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.

CAUTION.—None are genuine unless marked SAYNOR. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

Liquid Manure Distributor.

THE JUDGES of the Liverpool, Manchester, and Staffordshire Agricultural Shows, 1861, have each awarded the First Prize to I. JAMES, Tivoli Works, Cheltenham, for his LIQUID MANURE DISTRIBUTOR, making a total of 17 Prizes. It is also well adapted for Watering Streets, supplying the Steam Plough, Irrigating, or for a Fire Engine. Also his last great improvement in WASHING MACHINES, which have been awarded several First Prizes, and will wash 20 Shirts in 20 minutes.

Prices Reduced.

H. J. MORTON AND CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

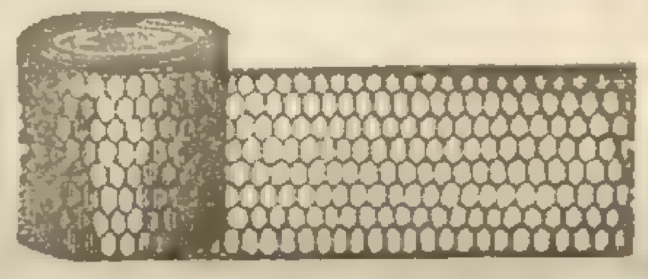
GALVANISED IRON ROOFING
for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½d. per yard.

WIRE STRAND CABLE FENCING

(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1s. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 4d., 4½d., and 6⅞d. per yard.
Galvanised, 24 ins. wide, 3-inch mesh, 2¾d., 3¾d., and 5¼d. per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.
Strong CATTLE HURDLES from 9s. per yard.

PATENT IMPROVED GAS WORKS
of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to
HENRY J. MORTON & Co., 2, Basinghall Buildings, Leeds.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke upon-Trent.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.

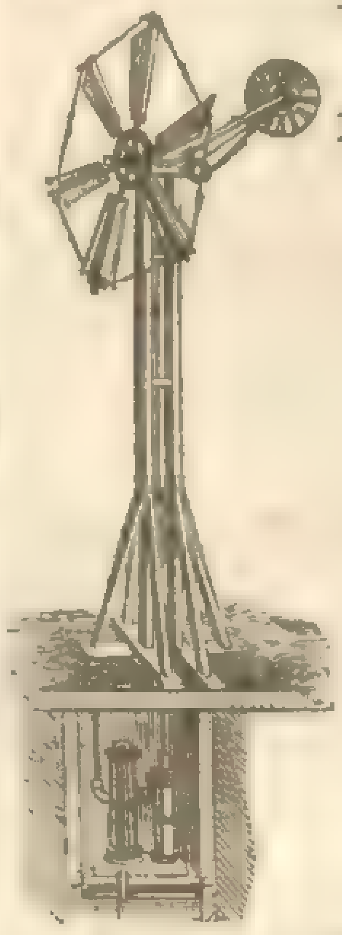
They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability. Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, at their Premises as above.



WIND ENGINE.
Patent Self-Regulating.
For Pumping, Oat Crushing, Grinding, Chaff Cutting, Sawing, or Driving other Machines.

Costs nothing to work.
Works day and night.
Requires no watching.
Not easily injured.
Erection simple and cheap.

Apply to
BURY AND POLLARD,
SOLE MANUFACTURERS,
PARK IRON WORKS,
New Park Street, Southwark, London,
Where a Wind Engine, in full work, may be inspected.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.

The GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the COLD WINDS & MORNING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.

Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.

ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

JAMES PULHAM'S NOVEL CONSERVATORY TUBS at the International Exhibition. The best exhibited in Terra Cotta at the Royal Horticultural Gardens Show.

One in S.E. Transept, a model made in eight pieces, rebated into a bottom held together by a copper hoop and screws. Price, 2 feet over, 2l. 2s. If made in one piece, with a rising bottom, 32s.

No. 2 is in the nave, made in four pieces, rebated into a base held together by two copper ties. Price, 2 feet 9 inches over, 4l. 4s.

No. 3 is similar and same size, but plainer, price 3l. 3s.; this is in the Gardens.

All these may be taken to pieces, (or one piece out only), and put together in a few minutes, and when full can be moved by two men, on a peculiar truck of J. P.'s invention.

Other patterns, rectangular, one of which was at the Exhibition 1851. One of Slate and Terra Cotta, also round with rising bottoms, to be able to force the tree out; made in this most suitable material for its extreme hardness, durability, sufficient porosity, and of red or of warm stone colour, to harmonise best with the foliage, by JAMES PULHAM, Broxbourne, Herts, who had the Prize Medals of 1851 and 1862, for Terra Cotta Garden Decorations, and notice of sound and durable material; also of artistic merit in the ornamental work.

The Hebe Fountain and Cupid Fountain, and PULHAM'S Novel Ferndelabum, are objects of great attraction at the Exhibition; one is engraved in the "Art Journal," and one will be in the "Masterpieces of the Exhibition."

ADOPTED VERY LARGELY BY HER MAJESTY'S GOVERNMENT.

CROGGON'S PATENT ASPHALTE ROOFING FELT,

Price 1d. per square foot.

INODOROUS FELT, for Damp Walls and for Damp Floors under Carpets and Floor Cloths, also for LINING IRON HOUSES to equalise the temperature. Price 1d. per square foot.
PATENT FELTED SHEATHING, for Covering Ships' Bottoms, &c.
DRY HAIR FELT, for deadening Sound and covering Steam Boilers, Pipes, &c., preventing the Radiation of Heat, thereby SAVING 25 PER CENT. IN FUEL.

CROGGON & CO.,

ZINC MERCHANTS AND PERFORATORS,
GALVANISED TINNED IRON, and every description of GALVANISED IRON WORK.

CROGGON & CO.'S

NOISELESS ELASTIC KAMPTULICON, or INDIA-RUBBER FLOOR CLOTH,
Impervious to Wet, Indestructible by Damp, Soft to the Tread, and Warm to the Feet, well adapted for Aisles of Churches, Public Offices, Rooms, Shops, &c., as well for its comfort as extreme durability.

Samples, Testimonials, and full particulars, free, on application to
2, GOREE PIAZZAS, LIVERPOOL; or 2, DOWGATE HILL, LONDON, E.C.

HOT-WATER PIPES

DELIVERED TO ANY STATION IN ENGLAND.

J. JONES

BEGS to state that he can now supply HOT-WATER PIPES and FITTINGS delivered Carriage Paid to any Railway Station in England, and that he has made very advantageous arrangements for delivery at the following Stations; and parties availing themselves of this offer will in many cases get their Pipes at a Country Station at a less price than would be charged in London.

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Accrington
Ashbourne
Adlington
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Atherstone

Bradford (Yorks.)
Burton
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Bingham
Bulwell
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Bedale
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Crewe
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Congleton
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Derby
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Doncaster
Driffield
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Edgebaston
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Farnworth

Gainsborough
Grantham

Halifax
Harrogate

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Kirkham
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Nottingham
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Preston
Pontefract
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Retford
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Rotherham
Rochdale
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Rugby
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Shrewsbury
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Settle
Skipton
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Scarborough
Selby
Sheffield

Tamworth
Thirsk
Tipton
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Uttoxeter
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Worcester
Wolverhampton
Wellington (Salop)
Wrexham
Warrington
Wigan
Wakefield
Worksop
Wellingboro'

York

Also to any Station in Derbyshire, Shropshire, Warwickshire, Cheshire, Lancashire, Yorkshire, Leicestershire, Worcestershire, Lincolnshire, and Staffordshire.

J. Jones will be happy to forward his ILLUSTRATED CATALOGUE of HOT-WATER PIPES, BOILERS, and FITTINGS, and PRICES for the same delivered Free to any Station; but parties requiring prices must state the quantities of Pipes, &c., required, and the Station to which they are to be delivered.

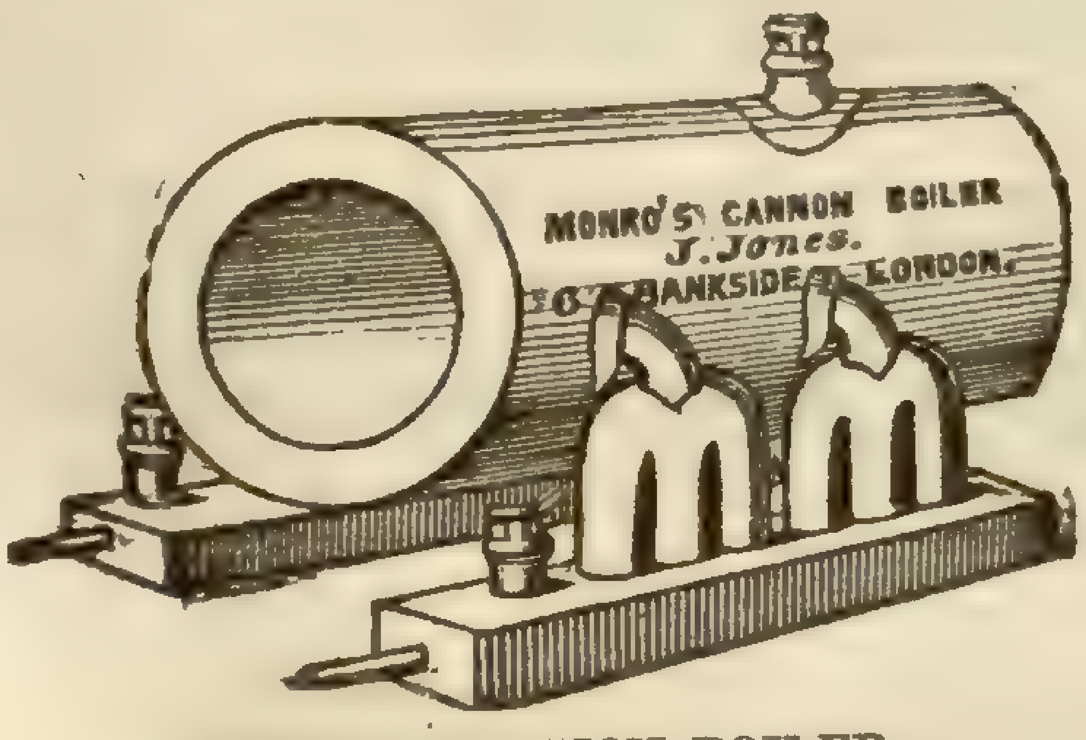
J. JONES,

IRON MERCHANT and HORTICULTURAL ENGINEER, 6, BANKSIDE, LONDON, S.E.

J. JONES'S HOT-WATER APPARATUS.

PRICE.

20-inch Wrought Iron	£3 15 0
24-inch "	6 10 0
30-inch "	7 10 0
36-inch "	8 10 0
48-inch "	12 0 0
60-inch "	20 0 0
72-inch "	25 0 0



MONRO'S CANNON BOILER.

These Boilers are now acknowledged by all who have used them to be the best Boilers at present invented. They are both economical in their first cost, and also in the consumption of fuel. They require but little space to fix them in, and when set the total height of brickwork need not be more than 3½ feet, consequently they can be fixed in many places where it would be impossible to set an Upright Boiler. These Boilers are now made of various sizes, suitable to heat from 500 feet to 3000 feet of 4-inch pipe, and are kept in stock and sold only by J. Jones, 6, Bankside, Southwark, London, S.E.

Prices for HOT-WATER PIPES, ELBOWS, TEES, SYPHONS, VALVES, TROUGH PIPES, ORNAMENTAL COIL CASES, BECK'S PATENT VALVES, MESSENGER'S PATENT VALVES, &c.; or ESTIMATES for HOT-WATER APPARATUS, delivered Free to any Railway Station, or erected complete in any part of the country, with CANNON, SADDLE, or CYLINDER BOILERS, will be sent, with an ILLUSTRATED CATALOGUE, free on application.

J. JONES,

HOT-WATER APPARATUS MANUFACTORY, 6, BANKSIDE, LONDON, S.E.

FIRST CLASS PRIZE MEDAL
FOR ORMSON'S CONSERVATORY.

CLOSING of the INTERNATIONAL EXHIBITION.

ORMSON'S CONSERVATORY

FOR SALE.

CLASS 9, OPEN COURT, EASTERN ANNEXE.

FIRST CLASS PRIZE MEDAL
FOR ORMSON'S PATENT JOINTLESS TUBULAR BOILER.

FROM *BELL'S WEEKLY MESSENGER.*

"These reflections have been induced by the array of glass houses in the open court of the Eastern Annexe, but more especially by the magnificent Conservatory manufactured and exhibited by Mr. HENRY ORMSON, of the Stanley Bridge Works, Chelsea. Structures of this kind may be taken as typical of the taste that is growing among the wealthy of the land; for such skill and enterprise would not have been displayed, and so great an outlay of capital been made, by a manufacturer, unless there was a market for such buildings. We rejoice at the progress in these auxiliaries to the homes of the aristocracy, for we have great faith in flowers, and choice collections of plants, and all the means of raising and displaying them, as they tend to influence the mind, and tone down the passions of our nature. It requires some intellectual power to appreciate them at all, but much more to understand them, and to be able to direct their management. The former every ordinarily rational being possesses; and, when the means are at hand for exercising the latter, attention to growing plants is so in unison with our instincts that we are insensibly led on till the whole work becomes easy and the practice of it a labour of love.

"As a first-class designer and manufacturer Mr. ORMSON stands unrivalled. The Conservatory at the International Exhibition is so elaborately planned and worked out that it is difficult to convey by words a faint impression even of the proportions of its general outlines and the elegance of its many points of detail. Its length along the centre line is 60 feet, and its width from door to door 36 feet, while the height from the plinth to the cornice is 11 feet. The framework of the upper portion of the building is mostly of wood. The weight of the roof is supported by cast-iron columns, fluted and wreathed in the stem, and terminated with richly embellished capitals. The roof terminates in the form of three semi-domes at each end, and the house is similarly finished, so that there are three semi-circular spaces from the roof to the floor for the reception of flowers and hanging baskets of festooning plants. The colouring of these buildings, when permanently fixed, would of course have to depend on the position they would be in as to overhanging or adjacent trees and buildings. But the individual character of the present building is very beautiful; a white ground is picked out with very pale green, and the employment of an occasional line or edge of gilt imparts to the whole a chaste, elegant, and, we may say, fascinating appearance.

"As Mr. ORMSON'S system of heating is so well-known, no attempt at showing it is here made, but the method by which ventilation is obtained is very admirable. The openings at the top for the escape of heated and rarefied air are next to invisible, and are readily and easily raised and closed; while at the bottom every alternate sash is hung in the centre on pivots, so that each one opens at top and bottom simultaneously. Thus the heat of the house may be regulated so as not to produce a chill during the rawest weather, and when admissible a zephyr-like breeze can be thrown upon every plant to move and strengthen its stem, branches and foliage.

"Mr. ORMSON'S manufactory at Chelsea is conducted on the most economical principles that division of labour and the employment of machinery will admit of. Steam power is employed where practicable, all the wood used being sawn on the premises, and the surface smoothed by a machine, the active part of which revolves 2000 times a minute. This apparatus is remarkable alike for the rapidity of its movement, and the beautiful style of work which it turns out. By changing its knives or cutters, grooves and lines can be cut or traced of any required form. A plank or strip of wood is rolled up to the revolver containing the cutters, of which there are four sets, so that with the 2000 revolutions a minute, the touch of each edge is less than a hair's breadth. Thus cornices and other ornamental parts are turned out with an accuracy not to be equalled by planing, and with a smoothness adapted for the reception of the finest paint or varnish. Two of these knife armed revolvers can be worked simultaneously, so that both sides of a plank or block of wood can be cut or figured by once passing through the machinery. Two engines of several horse-power each are required for preparing the wood for the great number of hands employed by Mr. ORMSON in putting houses together for meeting his orders.

"Mr. ORMSON'S 'Jointless Tubular Boiler' is known by every gardener of position. Tubes without joints stand in the form of two-thirds of a cone; this construction rests on a tubular grating so that no surface where fire touches is without water under it. Fuel is simply dropped in at the top of the cone-like part, so that renewing the fire, or blocking it up, is on the simplest plan. The water rests in these tubes, when no fire is burning; but as it enters at the bottom of them and can pass out at the top, the effect of the heat is to keep up a constant circulation of heated water through the pipes attached, no matter how long or large they may be.

"The Stanley Bridge Works are situated on a basin of the Thames, so that timber, coal, iron, and other materials may be easily conveyed there, and manufactured articles returned for shipment to any part of the world. This happens to be particularly convenient just now, as Mr. ORMSON'S building at the International Exhibition has secured for him several orders for the Continent. Mr. ORMSON is farther fortunate, as far as transmitting goods is concerned, now that the business has almost overgrown his premises, for the Kensington Railway has a station within a few paces of his gate, and a tramway will run close up to his yard, so that he will be able to load a truck for going to any British station, without the necessity for shifting its contents."

HENRY ORMSON, HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

VENTILATING STOVES, cheap, simple, efficient, and durable.—Thousands have been sold and universally approved. They are suitable for Halls, Warehouses, Conservatories, and every situation where a close Stove is required. The large sizes are extensively used in Churches, Chapels, and Public Buildings with great effect and economy. Prices 50*s.*, 60*s.*, 70*s.*, 90*s.*, and 120*s.* Prospectus with engravings gratis and post free. In operation daily. The Trade supplied.
DEANE & Co., op ening to the Monument, London Bridge, E.

DUNN'S GARDENER'S PENCILS, Price 1*s.*, will refill for 6*d.*
DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.
Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.
These pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.
N.B.—A liberal allowance to the Trade.

PROTECTED BY THE CUTLERS COMPANY — CORPORATE MARK.

JOSEPH HAYWOOD AND CO.,
MANUFACTURERS OF
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kind of POCKET CUTLERY.

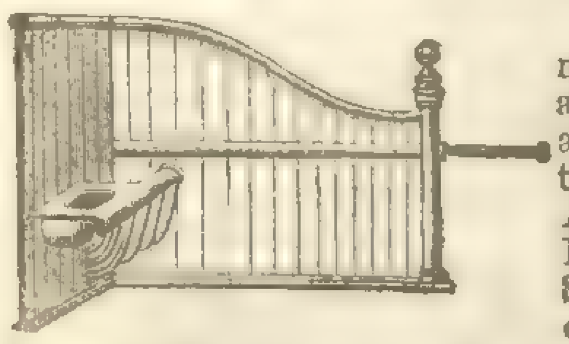
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

SHAW'S TIFFANY.
For samples and prices apply to
J. SHAW & Co., 29, Oxford Street, Manchester.

Exhibition Prize Medal 1862.

MUSGRAVE'S PATENT STABLE FITTINGS and HARMLESS LOOSE BOXES, PATENT IRON COW HOUSE FITTINGS, and IRON PIGGERIES.



These inventions are recommended as possessing numerous advantages not to be found in anything hitherto made. At the late Meeting of the Royal Agricultural Society at Leeds, MUSGRAVE BROTHERS received a Silver Medal, and two Awards of "Highly Commended," being the only Prizes conferred on any competitor in this class.
Particulars sent on application to the Inventors and Makers, MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

These Machines have carried off every Prize that has been given in all cases of competition, and have been awarded the PRIZE MEDAL at the INTERNATIONAL EXHIBITION of 1862.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.

For Illustrated Price Lists, with full particulars, address

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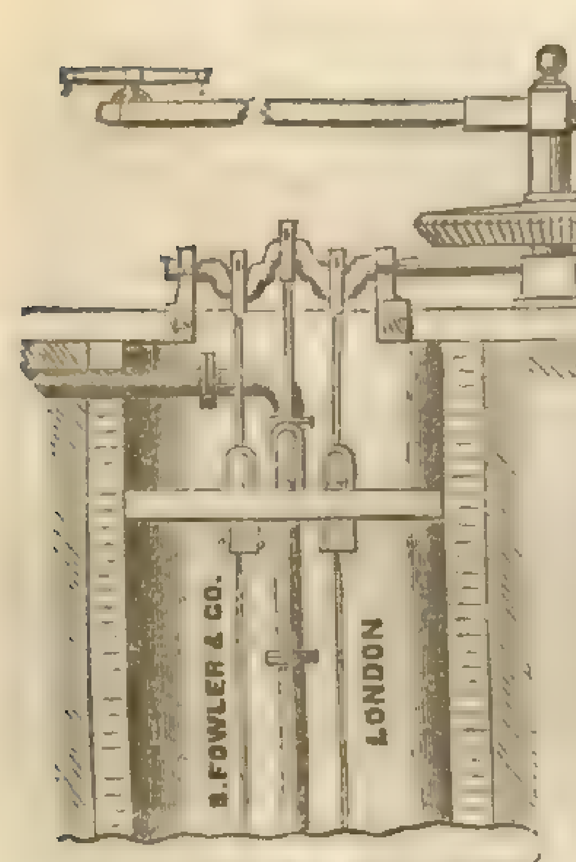
BENJAMIN FOWLER & CO.,

MANUFACTURERS OF PUMPS AND HYDRAULIC MACHINERY,

WHITEFRIARS STREET, FLEET STREET, LONDON, E.C.



No. 37.

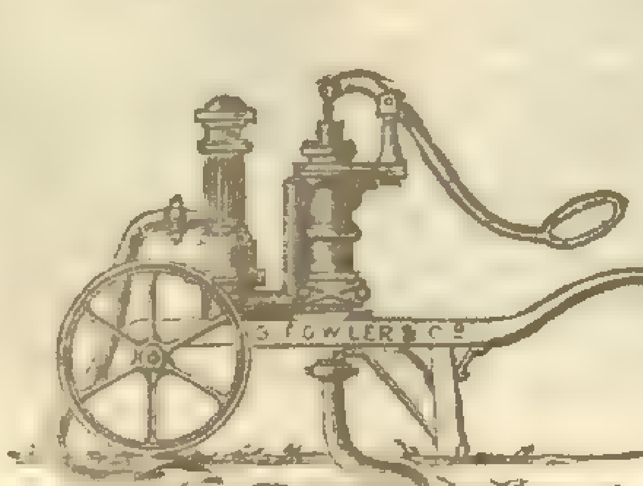
THE accompanying Sketches show some useful forms of apparatus in general demand for Raising and Forcing Water or Liquid Manure. The Landscape Sketch shows the adaptation of Fowler's Improved Hydraulic Rams for the supply of Mansions, Farms, &c. A large number of these simple Self-acting Machines are in use, giving great satisfaction. Their adoption is not confined to positions as shown below, as they are suited to any situation where a few feet fall can be obtained from a spring, brook, or stream; they will force to an elevation equal to ten or more times the number of feet of fall, and to any distance.

No. 4.

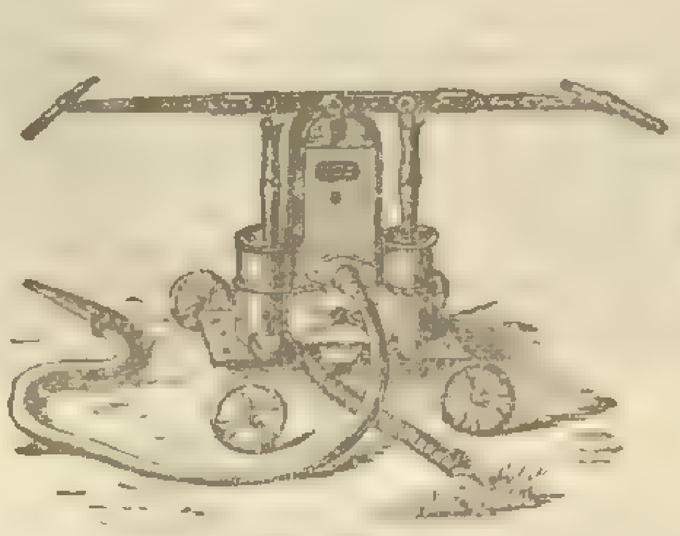
No. 38.

No. 37. FOWLER'S Improved Simple HORSE GEAR for raising water from deep wells with double or treble pump. B. F. & Co. also make and fix Deep Well Pumps of all descriptions for hand power.
No. 4. FOWLER'S CAST IRON BORED PUMPS of all sizes, with improved brass valves for Garden and Farm use, from 1*l.* 5*s.* each.
No. 38. FOWLER'S Galvanized Portable LIQUID MANURE PUMPS, with flexible suction hose. Price, with 10 feet of pipe and strainer, 4*l.* 5*s.*
No. 138. FOWLER'S Improved DOUBLE ACTION FORCE PUMP in frame. These excellent pumps are largely used and much approved.
No. 46*a*. FOWLER'S Superior DOUBLE-ACTION PORTABLE FORCE PUMPS and simple FIRE ENGINES for Water or Liquid Manure. Prices, 5*l.* 15*s.*, and 7*l.* 10*s.*
No. 50. FOWLER'S Improved (Holman's Patent) DOUBLE-BARREL PUMPS, FARM FIRE ENGINES, and IRRIGATING PUMPS. Prices, from 12*l.* 10*s.*
No. 49. FOWLER'S Improved GARDEN ENGINES of all sizes, in Oak and Galvanized Iron Tanks, from 50*s.* each.
No. 49A. FOWLER'S Improved SWING WATER CARRIERS, holding 24 and 35 gallons. Prices, 42*s.* 6*d.*, and 50*s.*

No. 49.



No. 46*a*.



No. 50.

No. 49 A.

No. 138.

FURTHER PARTICULARS, ESTIMATES, AND ILLUSTRATED PRICE LISTS ON APPLICATION.

UNDER THE PATRONAGE OF HER MAJESTY.

CLARK & HOPE

(LATE CLARK),

HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS,

55, LIONEL STREET, BIRMINGHAM.

ESTABLISHED A.D. 1818.

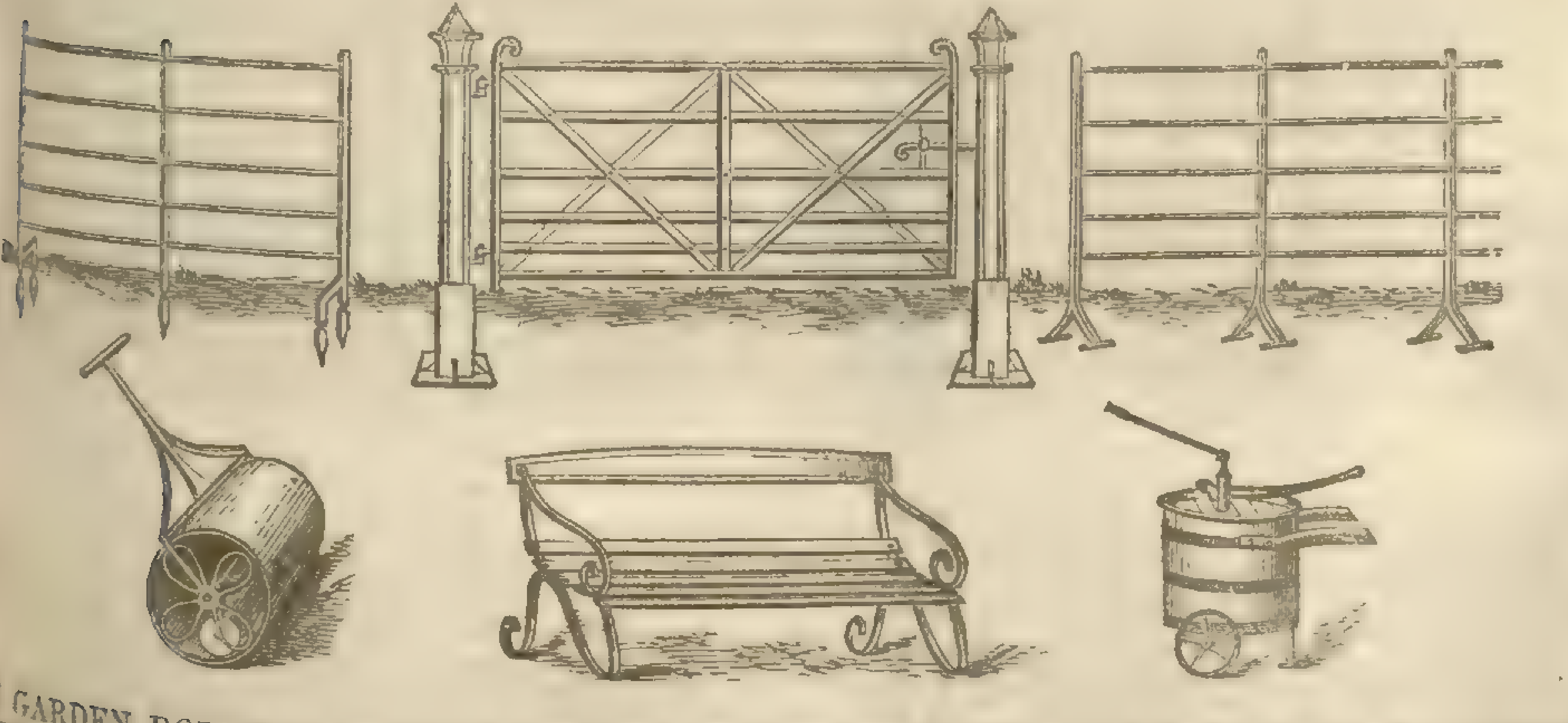
As a sample of the Work executed at this Establishment, C. & H. beg to refer to the extensive range of Horticultural Buildings in the Royal Gardens, Windsor.

COTTAM'S

CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.



…N GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c. The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to

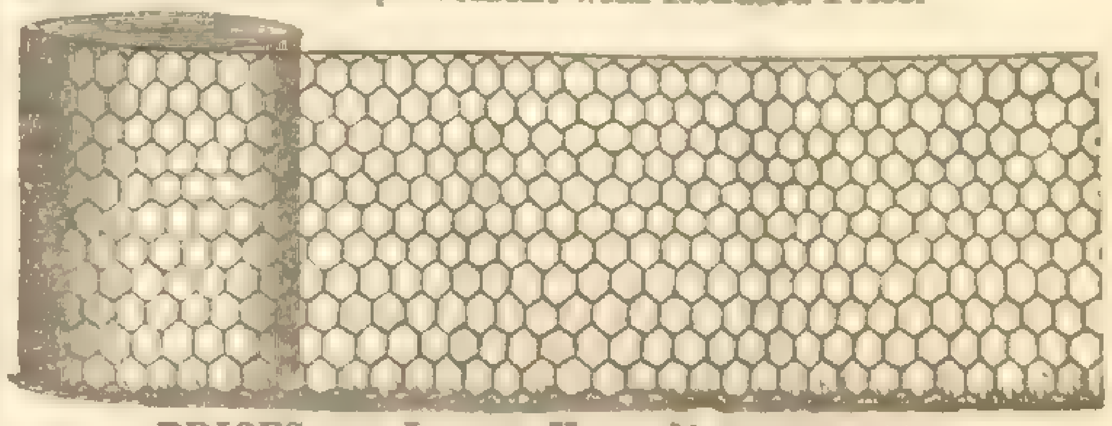
COTTAM & CO., ENGINEERS and IRON FOUNDERS,
2, WINSLEY STREET (OPPOSITE THE PANTHEON), OXFORD STREET, LONDON, W.

W. J. HOLLANDS, IRON MERCHANT, 31, Bankside, London, S.E.

HOT WATER PIPES, from Stock, per yard :—2-inch, 1s. 2d. ; 3-inch, 1s. 10d. ; and 4-inch, 2s. 4d. BENDS, from stock, 1s. 7d., 2s. 6d., and 3s. 3d. each.

Other Connexions at equally low prices, and all goods of first-class manufacture.

NEW IMPROVED PREMIUM WIRE NETTING.
Great Improvement with Reduced Price.



PRICES PER LINEAL YARD 24 INCHES HIGH.

Size of Mesh.	Mostly used for	Light.		Medium.		Strong.		Extra Strong.	
		Jap	Gal.	Jap	Gal.	Jap	Gal	Jap	Gal.
2 in.	Poultry	3½d.	4½d.	4d.	5d.	5d.	6½d.	6½d.	8d.
1⅝ in.	Small Rabbits ..	4d.	4¾d.	4¾d.	6d.	5½d.	7d.	d	9d

The above can be made any width (under 6 feet), at proportionate prices.

Strong GALVANISED POULTRY NETTING, 7½d. per yard, 3 feet wide. GALVANISED SPARROW-PROOF NETTING for PHEASANTRIES, 11d. per yard, 2 feet wide. WIRE NETTING of every mesh from half an inch to 6 inches.

*** Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.

J. B. BROWN & Co., 18, Cannon Street, City, London, E.C.

South of Devon.
MR. ALEXANDER PONTEY, DECEASED.
TO NURSERYMEN, SEEDSMEN, FLORISTS, AND OTHERS.

TO BE SOLD by TENDER, in One Lot, the Well-Established BUSINESS and BUSINESS PREMISES of a NURSERYMAN, SEEDSMAN, and FLORIST. The Business has for many years been extensively and successfully carried on by Mr ALEXANDER PONTEY of Plymouth, Devon, and his predecessor, and is now to be disposed of only in consequence of his sudden death. The Plant, which is of the most modern construction, and the Stock, the most varied in the West of England, to be taken in the usual way at a valuation. The Premises can be viewed any day except Sundays.

The respective Leases of the Premises, as also the Policy of Life Assurance, or Copies thereof, may be inspected between the hours of 10 A.M. and 6 P.M. on application to Messrs. PHILLIPS & SON, Solicitors, Frankfort Lane, Plymouth.

The Conditions of Sale and further particulars may be obtained at the Offices of Messrs. SKARDON & SONS, Auctioneers, Bedford Street, Plymouth; or of the said Messrs. PHILLIPS & SON.

Tenders will be received at the Office of the said Messrs. PHILLIPS & SON, on or before Thursday, November 13. All applications must be post paid, and state the Address of the parties. N.B.—The Vendor does not bind herself to accept the highest or any Tender.

Sales by Auction.

Periodical Sale of Poultry and Pigeons.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, November 4, at 12 o'Clock precisely, a Choice lot of POULTRY from the yards of Mrs. H. Fookes, Mrs. L. C. Stowe, T. H. D. Bayley, Esq., and others, consisting of Cochins, Spanish, Game, Bantams, Dorkings, Hamburghs, Polands, &c. ; also some good PIGEONS, consisting of Carriers, Pouters, and others, from Mr. Fulton and other well-known Fanciers.

On view the Morning of Sale, and Catalogues had.

Orchids, Fruit Trees, and Dutch Bulbs.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, Nov. 5, at half-past 12 o'Clock precisely, a choice Collection of ESTABLISHED ORCHIDS, consisting of Cypripediums, Oncidiums, Cattleyas, Lælias, Aerides, Vandas, Dendrobiums, Barkerias, Saccolabiums, Phalænopsis, &c., all very fine varieties and good Plants. About 400 fine large DWARF TRAINED TREES, consisting of Plums, Pears, Apples, Peaches, Nectarines, and Apricots; also some Dutch and Cape Bulbs, &c.

On view the Morning of Sale, and Catalogues had.

To Tulip Fanciers.

MR. J. C. STEVENS begs to inform Growers of Tulips that he will have the pleasure of SELLING by AUCTION in MAY next, when in Bloom, a BED of TULIPS, nearly all Seedlings, raised by Mr. Headly, of Stapleford, which will be sold without reserve.

To Gentlemen, Florists, and Others.

MR. J. WILLMER begs to announce that he will submit to PUBLIC AUCTION, at the Auction Mart, Bartholomew Lane, on THURSDAY, November 6, 1862, at 12 o'Clock, Two Cases of DUTCH BULBS, comprising single and double Hyacinths, Tulips, Crocus, &c., also a choice assortment of STANDARD and HALF STANDARD ROSES.

On view the Morning of Sale. Catalogues at the Mart, and of the Auctioneer, Springfield Nursery, Sunbury, S. W.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at the Mart, on FRIDAY, Nov. 7, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c. ; also a fine assortment of 300 very handsome Standard, Half Standard, and Dwarf ROSES, selected AMERICAN PLANTS, well set with Bloom Buds, &c.

On view the Morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nurseries, Leytonstone, N.E.

Preliminary Notice.
NURSERY GROUNDS, STRATFORD, ESSEX.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. G. H. Bunney, to submit to an unreserved SALE by AUCTION on the Premises as above, about the end of NOVEMBER, in consequence of the Ground being required for other purposes, a portion of the Valuable NURSERY STOCK, consisting of many Thousands of fine Evergreens of all sizes, &c.

Further particulars will be given in future Advertisements.
American Nursery, Leytonstone, Essex.

NONE IS GENUINE UNLESS THE FOLLOWING TRADE **PEDIGREE** MARK. IS UPON THE BAG. TO IMITATE THIS IS FORGERY.

THROUGHOUT NOVEMBER, ONE BUSHEL PER ACRE DRILLED WILL PRODUCE UNDER ORDINARILY FAVOURABLE CIRCUMSTANCES, SIXTY BUSHELS PER ACRE.

CAUTION.—THE BRIGHTON WHEAT HAS BEEN SELECTED FOR SEVERAL GENERATIONS FURTHER, AND WILL PRODUCE 10 PER CENT. MORE THAN THAT GROWN FROM WHEAT PURCHASED IN PREVIOUS YEARS, AND CAN BE OBTAINED OF MR. HALLETT ALONE, OR OF HIS AGENTS.

HALLETT'S PEDIGREE NURSERY WHEAT,

"BRED" ON THE SAME PRINCIPLE OF **REPEATED** SELECTION WHICH HAS PRODUCED OUR PURE RACES OF ANIMALS.

This year's seed is, from longer continued selection, so superior in 'pedigree' power and in 'sample' to any he has ever before sent out, that Mr. Hallett will disclaim the results of any trials made in 1862-3, unless the seed have been obtained this year direct from him, or his authorised Agents."

Extract from a Letter just received:—"Your Wheat produced the finest ears and the largest produce ever seen in Western Australia."

1861, ACTUAL SIZE AFTER FOUR YEARS' **REPEATED** SELECTION, STARTING FROM A **SINGLE GRAIN** IN EACH YEAR.

Price Two Guineas a Bushel, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order. Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

Man kann Bestellungen machen bei den Agenten Herrn Krelage und Sohn, Haarlem, Holland; und Francfurt-am-Main, Deutschland.

A Printed Paper, "How our Wheat Crops may be Doubled," and Copies of Leading Articles from "*The Times*," "*Agricultural Gazette*," "*Mark Lane Express*," "*Illustrated London News*," and Australian Journals, forwarded upon application, enclosing Two Stamps.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C. Printed by William Bradbury, of 13, Upper Woburn Place, in the Parish of St. Pancras, in the Co. of Middlesex, and Frederick Mullett Evans, of No. 11, Bouverie St., in the Precinct of Whitefriars, City of London, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington St., Parish of St Paul's, Covent Garden, in the said Co.—Saturday, November 1, 1862.

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 45.—1862.] SATURDAY, NOVEMBER 8. { Price Fivepence. STAMPED EDITION. 6*d*.

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☞ *An Edition of the* GARDENERS' CHRONICLE *and* AGRICULTURAL GAZETTE *is published on Monday Afternoon at 4 o'Clock, containing full Reports of the Mark Lane and Cattle Markets, written expressly for the Paper.*

ROYAL HORTICULTURAL SOCIETY.
FRUIT COMMITTEE.

A MEETING of the Fruit Committee will be held at the Rooms, South Kensington, W., on TUESDAY, November 11, for the Examination of such FRUITS and VEGETABLES as may then be submitted for judgment, and when, besides Certificates of Merit for SEEDLINGS, the following Prizes will be awarded:—

CLASS A.—For the best three dishes of any variety of DESSERT APPLE, distinct kinds	20*s*.	10*s*.
B.—Ditto ditto PEARS	20*s*.	10*s*.
C.—Ditto dish of WHITE GRAPES	20*s*.	10*s*.
D.—Ditto ditto BLACK	20*s*.	10*s*.

All Packages and Communications must be received at the Rooms by 11 o'Clock on the day of Meeting, and addressed to ROBERT HOGG, LL.D., Secretary of the Committee.

Choice Agricultural and Garden Seeds now Harvested.
THE PLYMOUTH SEED COMPANY, Union Road, Plymouth, Devon.

Agricultural Seeds.
GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

Agricultural and Garden Seeds.
H. AND F. SHARPE, SEED GROWERS and MERCHANTS, Wisbech.
Special PRICED LIST of NEW SEEDS on application.

Genuine Garden and Agricultural Seeds.
JAMES CARTER AND CO., SEED FARMERS and NURSERYMEN, 237 and 238, High Holborn, London, W.C.

Agricultural Seeds for Autumn Sowing.
DELIVERED FREE AT NEAREST RAILWAY STATION.
PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN.
[illegible] Great George Street, Westminster, S.W.

Good Seeds, Carriage Free, at Market Prices.
SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

New and Genuine Garden and Agricultural Seeds.
SPECIAL PRICES ON APPLICATION TO
JAMES FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, 7, Borough Market, London, S.E.

ANDRÉ LEROY'S NURSERIES, at Angers, the largest and richest in France.
CATALOGUES sent on application.

Vines, Fruit and Ornamental Trees and Shrubs.
PAUL AND SON would invite attention to their unequalled stock of VINES, trained PEACHES, NECTARINES, APRICOTS, and other Fruit Trees. Ornamental Trees, Shrubs and Evergreens, and General Nursery Stock.
Old Cheshunt Nurseries, Herts.

Excellence and Economy.
H. BROWN has imported a very large Stock of HYACINTHS, CROCUSES, and other BULBS, including the best varieties for exhibition and decoration. [illegible] at very moderate prices, carriage free.
See PRICED DESCRIPTIVE CATALOGUE, post free.
Seed Warehouse: 4, Commutation Row, Liverpool.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, popular and botanical names, derivations, description, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious Index of all their synonymes. Free by post for [illegible] postage stamps.
RICHARD SMITH, Nurseryman, Worcester.

Wm. Cutbush & Son's Dutch Bulb Catalogue.
WM. CUTBUSH AND SON beg to announce that their DESCRIPTIVE and PRICED CATALOGUE of HYACINTHS and other Dutch Flower Roots is now ready, post free, on application.
Highgate Nurseries, London, N.

Hyacinths, Tulips, and other Dutch Bulbs.
JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

Collections of Bulbs for the Winter and Spring Garden.
SENT CARRIAGE PAID, SEE LARGE ADVERTISEMENT, p. 1049.
BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.
PAXTONIAN COLLECTIONS of BULBS for Spring Gardening, 10*s*. 6*d*. to 5*l*. 5*s*.
KENSINGTON GARDEN and CRYSTAL PALACE COLLECTIONS of BULBS for Winter Gardening, 10*s*. 6*d*. to 5*l*. 5*s*.
London Agents for TYE'S New SOUVENIR HYACINTH GLASSES.

MINIATURE HYACINTHS, 12 in 12 choice varieties, 4*s*. and 6*s*. per dozen.
MINIATURE HYACINTH GLASSES, 4*s*. 6*d*. per dozen.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, W.C.

Hyacinths, Tulips, Crocuses, &c.
BUTLER AND McCULLOCH'S DESCRIPTIVE CATALOGUE of BULBS, or AMATEUR'S GUIDE, may be had free and post paid upon application.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

HYACINTHS, TULIPS, CROCUSES, and other DUTCH BULBS, just arrived in excellent condition. PRICED CATALOGUES on application to S. PONSFORD, Loughboro' Park Nurseries, Brixton, Surrey, S.
N.B. CATALOGUES of GENERAL NURSERY STOCK now ready, gratis.

RASPBERRIES, Trade price:—Cornwell's Seedling, 14*s*.; Carter's Prolific, 12*s*.; Fillbasket, 10*s*.; Autumn fruited, 8*s*.; and Yellow Antwerp, 8*s*. per 100, or 2*s*. per dozen.
GOOSEBERRIES: Crown Bob, Warrington, Whitesmith, fine strong bearing plants, suitable for Market Growers.
GEO. CORNWELL, Seedsman, &c., Barnet, Herts, N.

Lancashire Show Gooseberries.
HOLLAND AND BAYLEY are now sending out strong 3 and 4 years old plants of the heaviest and best flavoured, at 6*s*. per dozen. CATALOGUE of FLORISTS' FLOWERS, FRUITS, &c. may be had on application.
Bradshaw Gardens, Chadderton, Manchester.

Grape Vines.
WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines.
J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.
B. S. WILLIAMS begs to intimate that he has a fine and healthy stock of the above from Eyes, including all the best varieties for Fruiting in Pots and Planting Out. Prices on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Hurst House Seedling Pine.
B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer good plants of this choice Pine Apple, 10*s*. 6*d*., 15*s*., 21*s*. each.
The plant is of dwarf robust habit, producing heavy fruit of the richest flavour.
A large Stock of PRICKLY and SMOOTH CAYENNE PINES.

Peach Trees in Pots for Forcing.
MESSRS. THOMAS RIVERS AND SON offer very fine PEACH TREES, from 3 to 5 years old, with well ripened shoots, full of blossom buds, varying in price from 5*s*. to 10*s*. 6*d*. each, carriage paid to London.
Nurseries, Sawbridgeworth.

FOR SALE, 20 Choice PEACH, NECTARINE, and APRICOT TREES, 7 feet high and 6 feet through. Fine for Orchard-houses.
J. ILLMAN'S Nurseries, Wellington Place, Strood, Kent.

WANTED, a few good, clean, STANDARD PLUMS: Orleans, Greengage, Victoria, &c.
Apply, stating price, to J. WOODS & SON, Nurseries, Woodbridge, Suffolk.

TO BE SOLD, cheap, about 30 large ORANGE TREES in Tubs, from 7 to 10 feet.
Apply to PROTHEROE & MORRIS, Auctioneers and Valuers, American Nurseries, Leytonstone, Essex, E.C.

TRUE KENTISH and WEBB'S COB FILBERT TREES, handsome formed Trees, 4*s*., 6*s*., and 9*s*. per doz.
EPPS' Nursery and Seed Establishment, Maidstone.

18,000 Strong 3-year old QUICKS, lowest price for Cash.
Apply to Y. STRACHAN, Nurseryman and Seedsman, 37, High Street, Wrexham.

Rose and Bulb Catalogues for 1862-3.
EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded gratis and post-paid on application.
Seed and Nursery Establishment, Tunbridge Wells, Kent.

Roses.
EDWARD PARKE FRANCIS'S NEW and DESCRIPTIVE CATALOGUE of ROSES for 1862 and 1863 is now ready, and will be forwarded gratis on application.
E. P. F. has 50,000 DWARF ROSES in the finest state of cultivation on the Manetti Stock.
Rose Nurseries, Hertford.

THE NEW ROSE, JOHN HOPPER.
Strong plants of this celebrated Rose, 5*s*. each.
A DESCRIPTIVE CIRCULAR free by post on application.
On receipt of 13 postage stamps, a beautiful Illustration.
ROBERT WARD, Ipswich Rosery, Suffolk.

Dwarf Tea Roses.
EDWIN HOLLAMBY begs to announce that he has a large and healthy Stock of the above, comprising some of the finest Yellows, and other leading varieties, in the best possible condition.
Price on application.
Nurseries and Seed Warehouse, Tunbridge Wells, Kent.

New Rose Catalogue for 1862-63.
WM. WOOD and SON'S NEW CATALOGUES of ROSES, BULBS, and NURSERY STOCK are now ready for distribution, and will be sent free on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Rose Catalogue, 1862-63.
WM. PAUL'S ROSE CATALOGUE is now ready for circulation. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Rose Catalogue, 1862 and 1863.
JOHN CRANSTON begs to announce that his new ROSE CATALOGUE is now ready for distribution, and will be forwarded free on application. It contains full and faithful descriptions of nearly all the NEW ROSES of 1861, as well as the older kinds.
Nurseries, King's Acre, near Hereford.

RICHARD SMITH'S Stock of STANDARD, HALF STANDARD, and DWARF ROSES, combines superior quality with a larger selection than any other Nursery.
DESCRIPTIVE PRICED LISTS on application.
RICHARD SMITH, Nurseryman, Worcester.

Roses, Fruit Trees, Coniferæ, &c.
CHARLES TURNER'S CATALOGUE of the above is now ready.
The Royal Nurseries, Slough.

Cinerarias, Carnations, Picotees, Pinks, &c.
CHARLES TURNER'S CATALOGUE, containing a selection of the best only of the above, is now ready.
The Royal Nurseries, Slough.

New Pelargoniums.
CHARLES TURNER'S DESCRIPTIVE CATALOGUE of the fine New Varieties, which obtained Forty Certificates last season, is now ready.
The Royal Nurseries, Slough.

Royal Nursery, Great Yarmouth.
YOUELL AND CO.'S New CATALOGUE of GREENHOUSE PLANTS, Rare and Hardy CONIFERÆ, SHRUBS, GLADIOLI, &c., is ready, and will be forwarded on application.

Nursery Stock.
WOOD AND INGRAM'S NEW DESCRIPTIVE CATALOGUE, including Seedling and Transplanted Forest Trees, Ornamental Trees and Shrubs, Evergreens, Roses, Fruit Trees, &c. is now ready and will be sent on application.
Nurseries, Huntingdon.

Tritoma Uvaria glauca.
JAMES KITLEY begs to offer fine large blooming plants of the above at the very low price of 6*s*. per dozen, and fine plants at 4*s*. per dozen. The Trade supplied. Also NARCISSUS POETICUS, 10*s*. per 1000.
Lyncombe Vale Nursery, Bath.

Fine Camellias and Azaleas.
F. AND A. SMITH have an immense stock of AZALEAS and CAMELLIAS well set with flower buds, of fine growth and in healthy condition, now offering at moderate prices, which may be had on application.
Dulwich, Surrey, S.

Cineraria and Calceolaria Seed.
F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1*s*., 1*s*. 6*d*., and 2*s*. 6*d*., free by post.
Dulwich, Surrey, S.

A SURPLUS STOCK of Bushy LAUREL and LAURUSTINUS, also a large Stock of strong THORN and BEECH for Hedges.
Apply to S. BALES, Westacott Nursery, Barnstaple.

WELLINGTONIA GIGANTEA.—The undersigned has to offer a very large and fine stock of healthy one year Seedling Plants established in single pots; also a few plants of larger sizes. Price per 100 or 1000 on application.
J. HENCHMAN, Edmonton London, N.

Grape Vines.

JAMES CARTER AND CO. have now ready for sending out a splendid Collection of thoroughly ripened Canes of the above from Eyes and two years old, true to name, for fruiting in pots, or planting out; to which they respectfully wish to draw attention.

For full DESCRIPTIVE LIST of same see AUTUMN GUIDE, sent free by post, on application to 37 and 238, High Holborn, W.C.

Strong Grape Vines from Eyes.

R. GLENDINNING begs to announce that his Stock of GRAPE VINES, comprising all the old and new varieties worthy of cultivation, is unusually fine this season. It consists of a number of extra-strong well-ripened Canes, grown for fruiting in pots, and a quantity of fine healthy Vines for planting out.

PRICED LISTS on application.
Chiswick Nursery.—Nov. 8.

New White Grape "Chavoush."

CHARLES TURNER can still supply strong plants of this superior White Grape. For description and particulars see former Advertisement or Catalogue, which may be had on application. Price for strong plants, 21s. A few extra strong plants in large pots, which will bring crop next year, will be charged 42s.

The Royal Nurseries, Slough.

Foster's Seedling Grape.

MESSRS. JOHN AND CHARLES LEE have to offer Mr. Foster's stock of this fine NEW GRAPE, which can be confidently recommended for general cultivation in cool Vineries. It has borne an abundant crop in the large Conservatory of the Royal Horticultural Society at Chiswick, the bunches being large, with medium sized berries of a pale amber colour. The flavour of Foster's Seedling is most luscious, equalling the richness of its twin sister Lady Downe's, and as far as can be seen, partaking of the same quality of hanging well without shrivelling.

Canes for planting, 7s. 6d. each. A few Fruiting Canes at 21s. each.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Strong Fruiting Vines.

GEORGE CLARKE invites the attention of intending Planters to his very superior stock of the above. They embrace all the leading varieties, have clean and well ripened rods 8 to 10 feet long, and remarkably short jointed. They were stopped to this length as early as June, rendering them equally stout and good the entire length; they are therefore very suitable for planting a house, or for growing in pots, where a crop of fruit could under proper treatment be obtained the first season.

The prices are—1 year old, 10s. 6d. each; 2 year old (extra size), 15s. Smaller plants, also from Eyes, and equally well ripened, which will produce fruit the second year, 3s. 6d. to 5s. each.

Specimens can be seen at the Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill, S.

PINES and VINES.—A large quantity of extremely healthy finely rooted QUEEN PINES in all sizes from a stock that never had scale. Also fine short jointed HAMBURGH VINES, from 12 to 16 feet, with their pots full of healthy roots.

Apply to M. ROCHFORD, Market Gardener, Page Green, Tottenham, N.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.
2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

THOMAS JACKSON & SON, Nursery, Kingston, S.W.

Large Mulberry Trees.

W. DENNIS, FLORIST, &c., of the King's Road, Chelsea, S.W., has still left a few very fine fruit-bearing MULBERRY TREES, with clean stems, 6 to 8 feet, with large fruit-bearing heads. Likewise a quantity of smaller trees from 15s. to 50s. per dozen.

Also, as the ground must be cleared for immediate building, a large quantity of GERANIUMS and other Greenhouse Plants, in fine condition for flowering next spring, 12s., 15s., to 20s. or 50s. per 100.

Magnificent Dwarf-Trained Fruit Trees.

WM. WOOD AND SON have the greatest satisfaction in referring their friends to their very superior Stock of the above, which are in the finest possible health, and in point of training the trees are perfect pictures of successful cultivation.

The Stock comprises PEARS, PLUMS, CHERRIES, PEACHES, &c., &c.

CATALOGUES free on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

FRUIT TREES, ROOT PRUNED.

PEARS, in 200 sorts, Pyramids, from 2 to 12 feet high, mostly bearing trees.

APPLES, 200 sorts, Standards, Pyramids, Dwarf Bushes, or Dwarf-trained.

PLUMS, 70 sorts, Standards, Dwarf Bushes or Dwarf-trained.

PEACHES, NECTARINES, APRICOTS, and CHERRIES, fine Dwarf-trained trees.

MAIDEN PEACHES and NECTARINES in quantity to offer to the Trade.

For prices, &c., apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

Fruit Trees.

RICHARD SMITH has no hesitation in saying, that he possesses by far the largest Stock of FRUIT TREES in the kingdom, consisting of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, in Maiden Trees, Dwarfs, Bushes, Pyramids, Half-Standards, and Standards; Dwarf-trained, Half-Standard, Standard, and Horizontally-trained Trees, of the finest sorts, and in the best possible condition. DESCRIPTIVE PRICED LISTS on application.

RICHARD SMITH, Nurseryman, Worcester.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

MESSRS. WATERER & GODFREY

INVITE ATTENTION TO THE FOLLOWING

LIST of DESIRABLE PLANTS,

WHICH ARE ALL IN THE

FINEST HEALTH, WELL GROWN, and WELL-ROOTED.

ARAUCARIA IMBRICATA,
18 inches, 30s per doz., or 10l. to 12l. 10s. per 100.
2 feet, 3s. 6d. to 5s. each; 15l. per 100.
3, 4, 5, 6, 7, 8, 10, 12, 15 feet.

We have many thousands of these. The larger sizes are very fine and should be seen, as prices on paper convey no idea of the plant.

CEDRUS DEODARA,
handsome plants, 2½ to 3 feet, 30s. per doz., 10l. per 100.
" " 3 to 4 feet, 36s. to 42s. per doz., or 15l. per 100.
" " 4 to 5 feet, 42s. to 60s. per doz., or 20l. per 100.
" " 5, 6, and 7 feet, 5s., 7s. 6d., and 10s. 6d. each; larger, 10, 12, and 15 feet.

Purchasers may select from a stock of not less than 20,000 Deodars, and they are as handsome as plants can well be.

Of LEBANON, a fine lot of plants for avenues, 5, 6, 7, and 8 feet, 7s. 6d. to 20s. each.

CUPRESSUS LAWSONI,
1½ to 2 feet, 24s. per dozen.
2½ to 3 feet, 2s. 6d. to 3s. 6d. each; 12l. 10s. per 100.
4 to 5 feet, 5s. to 7s. 6d. each; 60s. to 84s. per doz.
6, 7, and 8 feet, 21s. to 42s. each.

As this will doubtlessly be extensively planted, we beg to state our stock of it is raised entirely from seed, and contains many thousands of by far the finest plants to be found in any nursery in Great Britain.

CHAMÆCYPARIS SPHÆROIDEA VARIEGATA,
(The variegated White Cedar.)

A vast number of plants, 2, 3, and 4 feet, 30s. to 84s. per doz.

PICEA NOBILIS,
3-year seedlings, 6 inches, 42s. per dozen.
" 9 to 12 inches, 84s. per dozen.
" 1½ foot and wide, 21s. to 31s. 6d. each.
2, 3, 4, and 5 feet, 31s. 6d. to 105s. each.

Of this, the most beautiful of the Fir tribe, we hold the finest stock in existence, for we believe except these (and those sent from here), all the plants above 2 feet high in the Trade are grafted and comparatively worthless. We have raised large quantities, and have at this moment many hundred specimens 2, 3, 4, and 5 feet high, and such as cannot be matched in any other nursery. None are grafted.

PICEA NORDMANNIANA,
3-years Seedlings, 42s. per dozen.
Ditto 9 to 12 inches, 84s. per dozen.
Handsome specimens, 3, 4, 5, 6, 7, 8, and 10 feet, 63s., 84s., 105s., 210s. each, and upwards.

This is another Fir of which there are vast numbers of grafted plants to be had, and of course at much lower prices than ours. All Seedlings, and as handsome as plants can well be.

PICEA PINSAPO, hundreds of fine plants, 2, 3, 4, 5, 6, 7, 8, 10, and 12 feet, from 7s. 6d., 21s., to 105s. and upwards, each.

Any one requiring fine specimens should see these plants, they are magnificent.

JUNIPER, CHINESE, 3, 4, 6, 10, and 12 feet, 3s. 6d., 5s., 10s. 6d., 21s., and upwards, each.

Purchasers may select from many hundreds of this fine plant.

JUNIPER, IRISH, 3 to 4 feet, 21s. to 30s. per dozen.
" 5, 6, 7, and 8 feet, 3s. 6d. to 21s. each.

YEWS, ENGLISH, many thousands, 2, 3, 4, 5, 6, 7, 8, 10, and 12 feet high.

These large Yews will be found invaluable when immediate effect or a blind is sought. Every one has been recently removed.

YEWS, IRISH, handsome plants,
5 to 6 feet, 2s. 6d. to 7s. 6d. each.
7, 8, and 10 feet, 10s. 6d. to 63s. each, and upwards.

These Irish Yews will be found on inspection far beyond the ordinary style usually seen in nurseries.

YEWS, GOLDEN, ditto ELEGANTISSIMA, worked on Common and Irish Yews of all heights, from 1½ to 10 feet, and having from 3 to 4, 5, 6, and 7 feet of gold, varying in price from 10s. 6d. to 105s. each.

The day is not far distant when this will become an important feature in all well planted places. We have many thousands, and say without fear of contradiction, no such plants are to be found in any other Nursery.

THUJA AUREA,
2, 3, 4, and 5 feet high, and measuring many of them from 12 to 15 feet in circumference, perfect globes, 7s. 6d. to 14s. each.

This plant originated in this nursery, and our stock of it comprises a large number of very much finer plants than are to be met with elsewhere.

THUJA GIGANTEA,
Fine from seed, 3, 4, 5, 6, and 7 feet high, 7s. 6d. to 63s. each.

WELLINGTONIA GIGANTEA,
Stout seedling plants in pots, at 18s. per dozen; larger, 2, 3, 4, and 5 feet, 7s. 6d. to 63s. each.

THUJOPSIS BOREALIS,
by the hundred, 2, 3, 4, 5, 6, and 7 feet high, 2s. 6d. to 31s. each.

HOLLY,
COMMON GREEN, a large quantity of very fine plants, 5, 6, 7, and 10 feet, and bushy in proportion.
" WATERER'S (Variegated), a very compact growing kind, which originated at Knap Hill; many hundred specimens, 3 and 4½ feet high, and measuring 8 and 10 feet in circumference, 21s. to 42s. each and upwards.
" GOLD STRIPED.—The best variety or Queen Holly. Purchasers of this variety may see in our Nursery many hundred fine plants, 2, 3, 4, and 5 feet high.

Other varieties of Striped and Green Hollies in large quantities and of all sizes, up to 6 and 8 feet.

As well as the above, Messrs. WATERER & GODFREY believe that they hold one of the most extensive general Nursery Stocks in existence. Evergreens especially are grown to a very large extent, and any one who will take the trouble to visit the Nursery, (40 minutes from Waterloo to Woking), will satisfy themselves that the statements in this advertisement are in accordance with facts.

Goods can be now sent through from Woking to almost any Station in England without change of truck

CATALOGUES free on application.
Knap Hill Nursery, Woking, Surrey.

Orchard House Trees.

MESSRS. THOMAS RIVERS beg to offer the largest stock known of the following kinds of [illegible] TREES in Pots. To save expense they can be taken [illegible] their pots, and packed with their balls of earth [illegible] baskets.

APRICOTS.—Standards, 7s. 6d.; half standards, [illegible] Pyramids, 5s.; Dwarf bushes, largest trees [illegible] 7s. 6d; ditto, 3s 6d. and 5s. all full of blossom buds.
ALMONDS.—Thin shelled and large fruited, [illegible]
APPLES.—Fine American and other sorts, mostly [illegible] on the Paradise stock, 2s. 6d.
CHERRIES.—Pyramids, fine bearing trees, 3s. 6d. [illegible]
FIGS, from Eyes, with short clean stems, bearing trees, 3s. 6d. to 5s.
MULBERRIES.—2 to 3 feet, 5s.
NECTARINES.—Bushes, fine bearing trees, 3s. 6d. to 7s. 6d.
ORANGES.—Tangerin, St. Michael's, and Maltese Blood Orange, 5s. to 7s. 6d.
PEACHES.—Standards for lofty Orchard houses, 7s. 6d. [illegible] Standards, 5s. to 7s. 6d.; Pyramids, remarkably [illegible] and well furnished with blossom buds, 5s.; bushes [illegible] trees, 3s. 6d. to 7s. 6d.; miniature trees in 6-inch pots, [illegible]
PEARS.—Handsome Pyramids, on the Quince, full of blossom buds, 3s. 6d. to 5s.
PLUMS.—Pyramids and bushes, 3s. 6d.; a few of extra size [illegible]
VINES, from Eyes, 3s. 6d. to 7s. 6d.

Carriage paid to London. Large collections, if required in their pots, packed in trucks and sent through by any line of railway.

Nurseries, Sawbridgeworth.

Planting.

WM. PAUL (Son and Successor to the late A. PAUL) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.

Entrance from the platform, Waltham Station, Great Eastern Railway.

Nurseries and Seed Warehouse, Waltham Cross, N.

WM. IVERY respectively invites an inspection of EVERGREENS and DECIDUOUS SHRUBS.
EVERGREEN OAKS, fine, from 6 to 8 feet.
PHILLYREAS, 4 to 5 feet, fine and bushy.
CHINESE ARBORVITÆ, 5 feet and upwards.
CEDRUS DEODARA, 4 to 5 feet.

Also large AUCUBAS, LAURUSTINUS, ARBUTUS, and all other varieties in the finest condition, will move with the greatest safety, with good balls. Also a fine collection of hardy CLIMBERS in pots. FRUIT TREES of all the best approved varieties at reasonable prices.

Hanover Nursery, Peckham.

CHARLES DALY AND SON will SELL 1-year's TRANSPLANTED THORNS, 4s. per 1000; 2-year ditto, 8s. per 1000; COMMON LAUREL, 1 to 1½ feet, 15s. per 1000; PORTUGAL ditto, 1 to 1½ feet, 4s. per 100; SWEET BAYS, 1 to 2 feet, in pots, 6d. each. Irish Yews, Aucuba japonica, Variegated Holly, Evergreen Privet, Forest Trees and Seedling ditto, cheap for Cash.

LIST of PRICES free by Post.
Coleraine, Ireland.

CHOICE HARDY CONIFERS.

ARAUCARIA IMBRICATA, 1 year, strong,	p. doz.	6s.	[illegible]
CUPRESSUS LAWSONIANA, 1 year, strong,	"	8	[illegible]
" MACROCARPA, 6 inches ..	"	8	[illegible]
PICEA NORDMANNIANA, 1 year	"	12	[illegible]
PINUS DON PEDRI, 1 foot	"	9	[illegible]
" INSIGNIS, 6 inches	"	3	[illegible]
" PONDEROSA, 6 inches	"	6	[illegible]
THUJA ELEGANS or LOBBII, 1 foot ..	"	6	[illegible]
WELLINGTONIA GIGANTEA, 1 year, strong	"	18	[illegible]
" " in 48 pots, 8 ins.	"	24	[illegible]
" " in 32 pots, 1 ft., fine	"	42	[illegible]

The above are all healthy seedling plants in pots, ready for immediate planting out.

J. HENCHMAN, Edmonton, London, N.E.

Planting Season.

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, BUILDERS, AND PUBLIC COMPANIES ENGAGED IN PLANTING.

PROTHEROE AND MORRIS most respectfully invite the Public to inspect their valuable NURSERY STOCK, extending over 30 Acres, and in the finest state of cultivation, consisting of FRUIT, FOREST, and ORNAMENTAL TREES of every description and in considerable quantities; also a large and rich assortment of AMERICAN PLANTS; fine EVERGREENS, all sizes, including [illegible] magnificent specimens, which will give immediate effect, [illegible] from the adhesive nature of the soil, and being continually transplanted, incur no risk from removal. The following include a portion of their Stock:—

These are fine bushy plants, and well set with bloom buds.
30,000 RHODODENDRONS, Scarlet, Catawbiense, Ponticum, and others.
20,000 Ghent and other AZALEAS.
4,000 KALMIA LATIFOLIA.
3,000 ANDROMEDA FLORIBUNDA.

EXTRA FINE FRUIT TREES.

8,000 PEACHES, NECTARINES, and APRICOTS, Dwarf trained and very handsome.
6,000 Standard APPLES, of the best sorts, many of which have large fruiting heads, and will come into bearing at once.

Also,

2,000 fine DOUBLE CAMELLIAS, and
3,000 AZALEA INDICA, best kinds, beautifully set with bloom buds.

A large variety of ORNAMENTAL and FOREST TREES, including—

7,000 LIMES, 5 to 12 feet; Laburnums, Chesnuts, [illegible] Maples, Poplars, Mountain Ash, Acacias, Thorns, &c.
10,000 fine STANDARD ROSES, including the newest and most approved varieties, with clean straight stems, fibrous roots, and full bushy heads.
50,000 LAURELS, 1 to 10 feet.
3,000 handsome FAN YEWS, 3 to 12 feet high, and [illegible] wide (magnificent plants).
12,000 bushy AUCUBAS, 1 to 5 feet; Green and Variegated Hollies, Box Trees, Cedrus Deodara, Cedar of Lebanon, Pinus excelsa, Hemlock Spruce, Araucaria in [illegible] Picea Pinsapo, Nordmanniana and nobilis; Cupressus Lawsoniana, Thujopsis borealis, Laurustinus, Sweet Bays, Phillyreas, Irish Yews, Privet, Arbor-vitæ, Berberis, Chinese Privet, &c.

LISTS and PRICES forwarded on application.

The Nursery is accessible by Railway in 20 minutes from Fenchurch and Bishopsgate Streets, whence Trains [illegible] twelve times daily to Leytonstone Station, which adjoins the Nurseries.

American Nurseries, Leytonstone, Essex, N.E.

NONE IS GENUINE UNLESS THE FOLLOWING TRADE PEDIGREE MARK IS UPON THE BAG. TO IMITATE THIS IS FORGERY.

THROUGHOUT NOVEMBER, ONE BUSHEL PER ACRE DRILLED WILL PRODUCE UNDER ORDINARILY FAVOURABLE CIRCUMSTANCES SIXTY BUSHELS PER ACRE.

So much Seed being now required, Mr. HALLETT *will, in order to bring the cost per acre within a reasonable sum, sell the remainder of his Wheat at* **ONE GUINEA A BUSHEL,** *but only on payment accompanying the order.*

HALLETT'S PEDIGREE NURSERY WHEAT.

1861, ACTUAL SIZE AFTER FOUR YEARS' REPEATED SELECTION, STARTING FROM A SINGLE GRAIN IN EACH YEAR.

ice **ONE GUINEA A BUSHEL,** including bag sewed up and sealed, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order.

Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, ESQ., F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

Hallett's Pedigree Wheat.

W. COOPER, FARMER, Fen Drayton, St. Ives, Hunts., begs to inform Agriculturists that he has a quantity of the above, warranted grown from seed supplied by Mr. Hallett. Price 10s. 6d. per bushel. Also some GIANT RED, at 8s. per bushel.

Delivered on the Great Northern and Great Eastern Railways. New Sacks charged 1s. 6d. each.

SHIRREFF'S BEARDED WHITE WHEAT, the produce of a cold season in a Northern climate, and weighing 65½ lbs. per imperial bushel, is being delivered.

Price 80s. per quarter, cash.

PATRICK SHIRREFF, Haddington.

SEED WHEAT from the CHALK.—Browick Red, Nursery, Rough Chaff, and all the most approved varieties of Wheat. Also Hallett's Pedigree Wheat, Shirreff's Bearded Red, &c., supplied by RAYNBIRD, CALDECOTT, & BAWTREE.

Winter Tares, Rye, Winter Barley, Winter Oats, Trifolium, &c. Samples and Prices post free on application.

Address, Basingstoke, or 89, Seed Market, Mark Lane, E.C.

Prize Medal Seed Wheat.—International Cereal Show.

THE PRIZE MEDAL WAS AWARDED TO

MESSRS. RAYNBIRD, CALDECOTT, AND BAWTREE, for the BEST SAMPLE of RED WHEAT, for their sample of RED NURSERY WHEAT, by a jury consisting of some of the most eminent Corn Factors from Mark Lane and Agriculturists of the day.

This Wheat is remarkable for its fine quality, weight, and hardiness, and is one of the most productive upon poor soils and in exposed situations; it may be sown at any time from October to March.

Bulks of similar fine quality to the Prize sample, for cash only, at 80s. per Quarter.

Address, Basingstoke.

International Exhibition.

PRIZE MEDAL, "EXCELLENT SEED CORN AND SEEDS."
See JURY AWARD. CLASS III., 725.

RAYNBIRD, CALDECOTT, AND BAWTREE, SEED MERCHANTS and GROWERS, Basingstoke, Andover, and 89, Seed Market, Mark Lane, London, E.C.

Samples and quotations of all kinds of Agricultural Seeds, and Seed Corn, sent post free on application. Peruvian Guano, Lawes's Manures for Turnips, Wheat, Barley, &c., Linseed Cakes, and Feeding Stuffs, at Market Prices.

MR. S. A. DAINTREE, of Fendrayton, St. Ives, Hunts, has for Sale, grown upon his several Farms, and delivered upon the Great Northern and Great Eastern Railways.

GENUINE ITALIAN RYE-GRASS, from second-cut Foreign.
MANGEL WURZEL and KOHL RABI SEED, in varieties.
"GOLDEN DROP" RED WHEAT, the best variety for late sowing, combining strength, quantity, and quality.
HALLETT'S PEDIGREE, 10s. per bushel.
"DAINTREE'S EARLIEST" SEEDLING POTATO, which is proved by numerous reports to be the most prolific and earliest round Potato in cultivation.

Apply for price and particulars as above, stating quantity required and time of delivery.

PRIZE GOURDS and MAIZE.—Removed from the Horticultural Society's Garden and now on Exhibition at our Establishment, that visitors may have the opportunity of inspecting the most valuable, beautiful, and varied Collection of Ornamental and Edible GOURDS ever seen in this country. See Large Advertisement, p. 1049.

BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

Myatt's Early Prolific Ash-leaved Kidney Potatoes.

H. AND F. SHARPE are now taking orders for the above, which has this season proved itself to be the earliest and most prolific Potato in cultivation, and as fine in quality as any of the Early Kidney varieties. Having a good stock they can offer them at a low price to the Trade.

Also JACKSON'S ASH-LEAVED KIDNEY, WALNUT-LEAVED KIDNEY, and all the early Round varieties at equally low prices, which may be had on application.

Seed Growing Establishment, Wisbech.

"THE STUDENT" PARSNIP.—The FIRST PRIZE for PARSNIPS at the INTERNATIONAL SHOW of the Royal Horticultural Society, South Kensington, was awarded to Mr. Choyce, for "The Student," raised from Seed obtained of Messrs. Sutton & Sons, Reading.

The flavour of this Parsnip is far more agreeable than that of other kinds.

The specimens to which the First Prize was awarded were very large and finely formed.

Those exhibited on Messrs. Sutton's Stand having been sown very late in the season were of more moderate size, and are thus described by the reporter for the *Gardeners' Weekly Magazine*:—"But the subject of most interest to the gardeners was a lot of roots of the Student Parsnip, a new sort raised by Professor Buckman by successive improvements of the wild Parsnip. The distinctness of this variety is perceptible in a moment; the roots are of moderate size, regularly tapering, and with a clean yellowish skin, without trace of canker."

SUTTON & SONS are now prepared to offer New Seed of this popular new Vegetable, in packets, 6d., 1s., 2s. 6d. each. Also to the Trade in larger quantities on liberal terms.

The undermentioned Seed Merchants have engaged a supply of Seed from Messrs. Sutton & Sons:—

Beck, Henderson, & Child, Adelphi Terrace, Strand, London
Cooper & Bolton, 152, Fleet Street, London
Carter & Co., High Holborn, London
Charlwood & Cummins, Tavistock Row, Covent Garden, London
Cattell, John, Westerham
Dicksons & Brown, Corporation Street, Manchester
Dickson & Sons, 102, Eastgate Street, Chester
Drummond & Sons, 58, Dawson Street, Dublin
Dickson, Hogg, & Robertson, 22, Mary Street, Dublin
Ernst & Von Spreckelsen, Hamburg
Gibbs, Thomas, & Co., Corner of Half Moon Street, Piccadilly
Garraway & Co., Durdham Down, Bristol
Hurst & Son, 6, Leadenhall Street, London
Perkins, John, 52, Market Square, Northampton
Toole & Co., Westmoreland Street, Dublin
Turner, Charles, The Royal Nurseries, Slough
Veitch, James, jun., King's Road, Chelsea
Wrench, Jacob, & Son, London Bridge
Wheeler, J. C. & Son, Gloucester
Wood & Son, Maresfield, near Uckfield
Henry Pope, Great Heath Nursery, near Birmingham
L. Van Houtte, Ghent, Belgium

Early orders are requested, and will have the preference if the Stock of Seed should prove insufficient to meet the demand.

Address SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

Andromeda formosa.

W. H. ROGERS, Red Lodge Nursery, Southampton, holds a fine Stock of the above very beautiful hardy Shrub, which produces immense corymbs of blossom like Lilies of the Valley, and evergreen foliage like Arbutus, and is admirably adapted for Lawns, Shrubberies, and American Grounds. Strong bushy plants, 1 foot, 1s. 6d.; 2 feet, 2s. 6d.; and 3 feet, 5s. each; or 15s., 24s., and 42s. per dozen.

RHODODENDRONS, ROSES, FRUIT and FOREST TREES, beautiful specimens of CONIFERÆ, and every other description of Nursery Stock, extending over 60 acres, CATALOGUES of which may be had on application.

SPECIMEN EVERGREEN SHRUBS, including HOLLY, 6 to 8 feet; ARBOR-VITÆ, 5 to 7 feet; LAUREL, 6 feet by 4 feet dia.; LAURUSTINUS, fine, 2 feet high by 3 feet diameter; and various others. A few extra large LIMES. All can be depended upon for safe transplanting.

CHAS. SOUTHBY, Nurseryman, Clapham.

To the Trade.

JAMES GARAWAY AND CO. have large quantities to offer of

ASH	OAK
BEECH	SPRUCE FIR

Prices and Sizes on application.

Durdham Down Nurseries, Bristol.

To Nurserymen, Railway Contractors, &c.

ANDREW G. DALY, Newry, Ireland, is prepared to deliver (free of freight) in Liverpool or Glasgow:—

2,000,000 of 2 and 3 years Transplanted THORN QUICKS, fit for Railway fences. Also

3,000,000 of 2-years SEEDLING THORNS, one year bedded. Good stout finely rooted stuff, best for lining out.

20,000 upright IRISH YEWS, from 1 to 6 feet, often removed, trained to one stem, finely rooted, and well clothed.

The above will be offered at very moderate prices on account of an alteration in part of the Nursery Ground.

To the Trade only.

SAMUEL FINNEY AND CO. offer fine furnished Plants of the following. They were all transplanted last Autumn, and will remove with safety:—

HOLLY, SILVER-STRIPED, 1 ft.,	5s. per doz.,	35s. per 100	
" " "	1 to 1½ ft., 5s. 6d.	" 40s.	"
" " "	1½ to 2 ft., 6s.	" 45s.	"
" ROUND-LEAVED GREEN	1 ft.	5s. per doz.	
" POINTED-LEAVED GREEN	1 to 1½ ft. 5s. 6d.	"	
" YELLOW-BERRIED	1½ to 2 ft. 6s.	"	
" BROAD-LEAVED AMERICAN			

Gateshead Nursery, Newcastle upon Tyne.

To Noblemen, Gentlemen, and Others engaged in Planting.

GEORGE BAKER begs to invite attention to the following superb specimens, which are in the finest condition:—

ARAUCARIA IMBRICATA, 6 feet, 9 feet, 14 feet
ABIES DOUGLASII, 10 feet, 14 feet, 20 feet
ARBOR-VITÆ (Siberian), 6 feet, 8 feet
CEDRUS DEODARA, 6 feet, 8 feet, 10 feet, 12 feet, 20 feet
CUPRESSUS LAWSONIANA, 5 feet
" DISTICHA, 8 feet, 12 feet
CEDRUS LIBANI, 8 feet, 10 feet
CHINESE JUNIPER, 5 feet, 6 feet
IRISH YEWS, 6 feet, 8 feet
JUNIPERUS RECURVA, 8 feet
" BEDFORDIANA, 5 feet, 6 feet
PICEA CEPHALONICA, 11 feet
PINUS CEMBRA, 7 feet, 10 feet
" EXCELSA, 10 feet, 15 feet
TAXODIUM SEMPERVIRENS, 10 feet, 12 feet
THUJA GIGANTEA, 6 feet
WELLINGTONIA GIGANTEA, 5 feet
KALMIA LATIFOLIA, Standards, fine
RHODODENDRONS,
PORTUGAL LAURELS,

G. B. in offering the above perfect specimens feels assured that whoever may favour him with their kind orders, their hopes will be fully realised. Prices on application.

American Nursery Windlesham Bagshot Surrey.

Notice.

TO BE SOLD, at extraordinary low prices, in consequence of the land being taken for other purposes, the following Clean, Healthy, Well-growing PLANTS, only two years since transplanted:—

50 to 100,000 2 and 3 years' transplanted QUICKS.
20,000 3-year old LARCH.
1000 fine ORNAMENTAL TREES—Oaks, Maple, Limes, Elms, Poplar, &c., 4s. to 9s. per dozen.
2000 deciduous SHRUBS, 2s. to 6s. per dozen.
1000 PINUS AUSTRIACA, ABIES SMITHIANA, &c., very fine bushy stuff, 6s. to 9s. per dozen.
1000 CHINESE and AMERICAN ARBOR-VITÆ, all sizes, 6s. to 12s. per dozen.
10,000 clean, handsome-grown APPLE TREES—Dwarf, Half-standards, and Standards—of the leading and best kinds, 4s. to 12s. per dozen.
5000 ditto, ditto, ditto PLUMS, 4s. to 18s. per dozen.
5000 ditto, ditto, ditto PEARS, 4s. to 18s. per dozen.
3000 ditto Dwarf CHERRIES, very handsome and bushy, 6s. to 9s. per dozen.
2000 Dwarf-trained PEACHES, NECTARINES, and APRICOTS, not to be equalled, 2s. to 3s. 6d. each.
2000 trained PEARS, PLUMS, CHERRIES, and APPLES, of the newest and best kinds, handsome trees, 1s. 6d. to 2s. 6d. each.
6000 fine Double HOLLYHOCKS, 2s. per dozen.
1000 of the very best kinds of Standard ROSES, large and handsome heads, 12s. to 18s. per dozen.
5000 of very strong EVERGREENS, PRIVETS, 6s. to 8s. per 100.

☞ The Trade liberally dealt with. Inspection of the Stock is requested.

W. J. EPPS Nursery and Seed Establishment, Maidstone.

To Gentlemen, Nurserymen, Florists, Market Gardeners, and Others.

BULSTRODE PARK.—EXPIRATION OF LEASE.

TO BE SOLD, in large or small quantities (in consequence of the Duke of Somerset requiring the ground), several thousands of Hook's celebrated SEEDLING and COB-NUT TREES, the former a free and very early bearer, the latter the handsomest Nut grown; an immense number of 2-years' old BLACK CURRANT TREES of the very best sorts; a very large quantity of some thousand yards of LILIES of the VALLEY, suitable for Forcing or Planting out; Pheasant-Eye, Sweet-scented, and Double NARCISSUS; Velvet-coloured POLYANTHUS (a beautiful variety), FORGET-ME-NOTS, and other Flowering Bulbs and Plants; and a great number of ROSES, Moss and other kinds.

Apply to Mr. WILLIAM HOOK, Bulstrode, Gerrard's Cross; or to Mr. W. T. ATWOOD, Land Agent, Mortlake, S.W.

Hardy Scarlet and other Choice Rhododendrons.

JOHN WATERER'S CATALOGUE of the above popular plants, as exhibited by him at the Royal Botanic Gardens, Regent's Park, is now published, and will be forwarded to all applicants.

It describes faithfully the colours of all the Rhododendrons, thereby rendering every facility for making selections.

It likewise contains an abridged List of really Hardy Conifers, with their heights and prices.

The American Nursery, Bagshot, Surrey.

DOBSON'S for NEW PELARGONIUMS.
DOBSON'S for SHOW PELARGONIUMS.
DOBSON'S for FANCY PELARGONIUMS.
DOBSON'S for SPOTTED PELARGONIUMS.
DOBSON'S for NEW CINERARIAS.
DOBSON'S for PRIZE CINERARIAS.
DOBSON'S for PANSIES.
CATALOGUES Free.

J. DOBSON & SONS, Woodlands Nursery, Isleworth.

NEW and CHEAP PLANTS.—The following in Strong Plants by Post or in Pots, for 10s.
12 NEW FUCHSIAS of 1862.
12 NEW VERBENAS of 1862.
6 NEW ANTIRRHINUMS of 1862.
2 LOBELIA SPECIOSA KERMESINA of 1862.
LISTS of above post free.

100 HARDY HERBACEOUS PLANTS in 50 Varieties, true to name, for 20s. Post Office Orders on Castle Hedingham.

WILLIAM DILLISTONE, Munro Nursery, Sible Hedingham, Essex.

Larch, Quicks, &c.

GEORGE CHIVAS, Chester, offers FOUR MILLIONS of TRANSPLANTED LARCH, from 1½ to 4½ feet, of very superior quality. FOUR MILLIONS of TRANSPLANTED THORNS of various sizes, a large portion of which are exceedingly strong. Orders for 10,000 of either, delivered free at any Railway Station. A Sample Bale, containing 100 of each, 5 sizes of Larch, 22s. 9d., and of Quicks, 15s., will be forwarded on receipt of a Post-office Order from unknown Correspondents.

A General PRICED LIST on application.

3000 DEODARS, 1000 CUPRESSUS LAWSONIANA, 1000 C. MACROCARPA, 500 THUJA LOBBII. The above are offered very cheap. The Deodars are handsome well grown plants, from 2½ to 5 feet, and have been transplanted every autumn for the last five years. The others are fine healthy plants varying from 2 to 5 feet high.

Prices on application to J. SCOTT, Merriott, Crewkerne, Somerset.

Gladiolus Brenchleyensis (True).

YOUELL AND CO. beg to offer this season strong Flowering BULBS of the above, unequalled by any other for its brilliancy of colour, at 3s. 6d. per dozen; or 25s. per 100. Trade price on application, and when quantities are ordered a considerable reduction will be made.

The *Gardeners' Chronicle* of August 23, 1862, says:—"The spikes you have sent us are magnificent. We have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."

CATALOGUES of their extensive Collection, for which the First Class Prize was awarded at the Crystal Palace Show, Sept. 3, 1862, and two First Class Prizes at the Royal Horticultural Society's Show, South Kensington, Sept. 10, 1862, will be forwarded on application.

Royal Nurseries, Great Yarmouth.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to 7s. 6d. each;
ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA, 21s. each.

A Select LIST of the most rare kinds will be forwarded Post Free on application.

Dorking Nursery.

New Fern, Pteris nemoralis variegata.

WILLIAM COLE, Fog Lane Nursery, Withington, Manchester, the raiser of this beautiful and distinct NEW FERN, will be ready to supply good plants on and after November 1, and all orders will be executed in rotation.

It has been well described in the *Gardeners' Chronicle* of July 5, p. 620, where the writer speaks of it as "a curious and novel form of Variegated Pteris."

It was also reported on in the *Gardeners' Chronicle* of May 24, as follows:—"Among new Ferns, of which several were shown, was one from Mr. Cole, Nurseryman, Manchester, belonging to the Variegated Class, and as regards position, is intermediate between argyræa and tricolor, and is apparently a free grower."

W. COLE has great confidence in recommending it, and in stating that it is really a beautiful Fern, and one which will become exceedingly popular. 10s. 6d. each.

Price (very liberal terms to the Trade for 12, 50, or 100) on application.

MESSRS. BROWN AND CO. offer the following Selection of CHOICE PLANTS, which they will forward to any part of the kingdom:—

	s.	d.
25 AZALEAS, new hardy Belgian varieties, one of a sort, on their own roots, by name	20	0
25 AZALEAS, hardy American varieties, do. do. ..	15	0
12 Hardy RHODODENDRONS, one of a sort, including Scarlet, White, and Rose colour	12	0
Hardy HEATHS, LEDUMS, and KALMIAS, per doz.	6	0
ROSES, best sorts, Standards and Half Standards, per dozen, 12s. to	15	0
CLIMBING ROSES, of best sorts .. per dozen	6	0
PILLAR ROSES, new sorts .. .. "	9	0
DWARF ROSES for beds or forcing, including Bourbons, Teas, and Perpetuals, per dozen ..	12	0
Choice Hardy PINUS and other CONIFERÆ. Cheap. Price List by post.		
Greenhouse AZALEAS, fine varieties, per doz., 10s. to	15	0
CAMELLIAS, best double varieties, per dozen ..	28	0
TREE CARNATIONS, winter flowering, per dozen	12	0

CHOICE FRUIT TREES.

Fine Standard and Dwarf-trained Peaches, Nectarines, Apricots, Cherries, Apples, Plums, and Pears, 2s. 6d. each, or 21s. per dozen.

Dwarf Plants of all the above kinds, grown especially for pot culture in Orchard Houses, &c., 18s. per dozen.

Filberts, Gooseberries, Currants, and Raspberries, p. doz., 8s. Hyacinths, Tulips, Crocuses, and other Dutch Bulbs cheap for early forcing, &c.

American Nurseries, near Farnham, Surrey.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned NEW and fine AZALEAS.

FLAG OF TRUCE.—The finest double white known; has obtained two Certificates and a Silver Medal for its superior merits, being the highest testimonial any Azalea has yet received, 21s. to 31s. 6d. each.

PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21s. to 31s. 6d. each.

CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very superior, 21s. to 31s. 6d. each.

LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10s. 6d. to 15s. each.

CRISPIFLORA ROSEA.—Fine bright rose; the flowers are waved or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10s. 6d. to 15s. each.

PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10s. 6d. and 15s. each.

Any of the above may be had in grafted plants, or on their own roots.

For full particulars see *Gardeners' Chronicle* of August 16, 1862, p. 758; or in CATALOGUES, which may be had gratis on application. Dulwich, Surrey, S.

Extra Strong Seakale for Forcing or Planting.

GEORGE CLARKE has to offer some very fine clean SEAKALE, quite equal to that which he sent out last season, and which gave such great satisfaction. The diameter of the roots is 2 to 3 inches, and for forcing it cannot be surpassed. Prices forwarded on application.

Samples can be seen at his Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill, S.

COCOA-NUT REFUSE, as used for FERNS, BEGONIAS, &c., grown in the International Exhibition, delivered at any Booking Office in the City at 1s. 6d., or within 2½ miles of Charing Cross, at 2s. per bag of 3 bushels. Larger quantities on lower terms on application to the PATENT COCOA FIBRE COMPANY, Kingston-on-Thames, S.W.

Also SHORT FIBRE for Orchids and Drainage in pots.

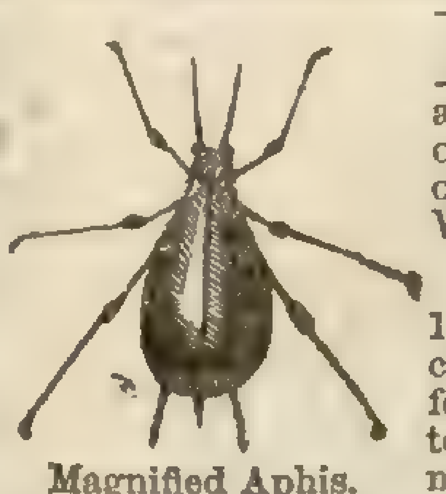
Postage Stamps or Post-office Orders payable to J. BARSHAM & Co.

BARSHAM'S BRUSHES and MATS are the best and most economical of any that are made, and are sold in every town in the kingdom.

CAUTION.—See that every Brush is stamped "J. BARSHAM'S Patent, Kingston-on-Thames."

EXTRA STRONG TOBACCO PAPER at a low price to the Trade.

Apply to H. BROWN, Seedsman, Liverpool.



Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of GEO. GLENNY, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. NEAL, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by PRICE'S PATENT CANDLE CO., Limited.

Notice.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), HORTICULTURAL VALUER, begs to inform his friends and the public that he has REMOVED from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

SAMUEL CALLEY, Bingham, Devon, Manufacturer of the celebrated TORBAY IRON ORE PAINTS, in various colours, and of TORBAY METALLIC OCHRES.

These Paints, celebrated for their durability, have been fully tested for several years, and it has been proved that 62 lb. of these Paints will effectually cover as much surface as 112 lb. of either genuine White or Red Lead Paints.

Also Manufacturer of Patent Compositions for Ship's Metal Sheathing, for Iron and Wood Ships, and other surfaces.

Manufactory, New Road, Bingham, where Plans and Testimonials may be obtained.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

Royal Horticultural Gardens, South Kensington.

JOHN SALTER has the pleasure to announce that his magnificent COLLECTION of CHRYSANTHEMUMS is NOW ON VIEW at the above Gardens, in the space occupied by the Rhododendrons last spring, and will continue in perfection during the month of November.

The plants in the Winter Garden of the Nursery are also in bloom.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Exhibition of Chrysanthemums.

JOHN SALTER, F.R.H.S., invites the Public to visit his unrivalled COLLECTION of these beautiful FLOWERS, which are NOW in FULL BLOOM. The Winter Garden alone contains several thousands of Plants, and presents a coup d'œil unique in this or any other country. The Gardens are open every day except Sunday. Admission free.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Elymus glaucescens (syn.) sabulosus.

B. S. WILLIAMS begs to call the attention of noblemen and gentlemen to the above ORNAMENTAL GRASS; it is perfectly hardy, having proved it for several years, and can with confidence recommend it as being superior to the Pampas Grass as an under cover for Game, &c.

B. S. W. being convinced of its utility, has provided a large stock, which he begs to offer at the following low prices:—6s. per dozen; 40s per 100.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Notice.

B. S. WILLIAMS begs to intimate that the following DESCRIPTIVE and PRICED CATALOGUES may be had post free on application.

GENERAL CATALOGUE, including Exotic Orchids, Ferns, and Lycopods, Miscellaneous Stove and Greenhouse Plants, Variegated and Ornamental Foliaged Plants, Azaleas, Rhododendrons, Roses, Hardy Variegated Plants, Herbaceous and Alpine Plants, Conifers, Fruit Trees, Shrubs, &c.

BULB CATALOGUE contains Select Lists of Hyacinths, Tulips, Crocuses, Narcissus, Gladioli, Amaryllis, and many other choice Bulbs, with Hints on their Culture; to which is added a SUPPLEMENTAL LIST of New, Beautiful, and Rare Plants.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

AN AVENUE of WELLINGTONIAS.—Gentlemen wishing to plant an avenue of this GLORY OF THE FOREST would do well to inspect the Stock at the Sunningdale Nursery. They may select from thousands.

RHODODENDRONS of every hue, Scarlet, White, Crimson and Purple.—Gentlemen about to plant would consult their interest by an inspection of the Stock of Rhododendrons at the Sunningdale Nursery. They may select from hundreds of thousands.

COVER PLANTING.—Gentlemen about to plant for Cover would find the following plants worth a trial:—BERBERIS JAPONICA, COTONEASTER MICROPHYLLA, and RHODODENDRONS. A visit to the Sunningdale Nursery would not be uninteresting.

ROSES, Standards and Dwarfs, a very fine selection, in the most vigorous health, may be seen at the Sunningdale Nursery.

ROSES for FORCING, specially prepared, and calculated to give an abundant supply of Flowers during winter. All the finest kinds may be selected at the Sunningdale Nursery.

CONIFERS.—A fine Stock of well grown Plants of all the most interesting and really hardy Conifers, Evergreens, &c., may be seen at the Sunningdale Nursery, Sunningdale Station, S. W. R.

[CHARLES NOBLE.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON AND CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

Notice to Purchasers of Bulbs.

SUTTON'S BULB LIST, post free, contains all the most desirable sorts in cultivation, and at low prices.

Royal Berkshire Seed Establishment, Reading.

HYACINTHS for EXHIBITION.

FRESH IMPORTED BULBS.

SUTTON'S SELECTION.

	per 100.	Dozen.
Finest sorts by name ..	£4 4s.	12s.
Very fine ditto ..	3 10	9
Good ditto ..	2 10	6

Good Hyacinths for Beds, Ribands, &c. in separate colours (fresh imported), 21s. per 100.

Anemones, Crocuses, Tulips, Gladioli, &c., also very low in prices, as per CATALOGUE, which may be had gratis and post free.

SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

J. C. WHEELER AND SON, SEED GROWERS, Gloucester, have imported in excellent condition a large

COLLECTION of HYACINTHS,

including the extra fine varieties recommended by Dr. LINDLEY.

PRICED LISTS may be had gratis on application to the Importers,

Messrs. J. C. WHEELER & SON, Gloucester.

DUTCH BULBS in fine condition: HYACINTHS, named varieties, 6s. per dozen; ditto mixed, 3s. and 4s. per dozen, 20s. per 100; large Golden Yellow CROCUS, 1s. 3d. per 100, 10s. per 1000; DUC VAN THOL TULIPS, 3s. per 100; GLADIOLUS BRENCHLEYENSIS, 4s. per dozen; and all other Bulbs equally cheap. British and Foreign FERNS, an immense variety; Ficus elastica, Begonias, and all other Greenhouse and Stove Plants; the largest stock of Evergreens in London; Foreign Birds and Cages of every description; Sea water, 6d. per gallon; Fern Cases and Aquariums, Rustic Baskets, Wire Work, &c.

R. GREEN, 154, Kingsland Road, N.E., and the Bedford Conservatories, Covent Garden Market, W.C., entrance Central Avenue only.

ROYAL HORTICULTURAL SOCIETY

SOUTH KENSINGTON.

FLORAL COMMITTEE.

The following PRIZES for CHRYSANTHEMUMS will be open to competition at the Meeting to be held on NOVEMBER 11:—

CLASS

1. Six plants, Large-flowered, distinct varieties (Open), 3l., 2l.
2. Three plants, Large-flowered, distinct varieties (Amateurs), 2l., 1l.
3. Six plants, Pompons, distinct varieties (Open), 3l., 2l.
4. Three plants, Pompons, distinct varieties (Amateurs), 2l., 1l.
5. Twelve Cut Blooms, distinct varieties (Open), 1l., 10s.
6. Miscellaneous Collection of Cut Blooms (Open). 1l. 10s., 1l.

The Prizes will be given for the best cultivation. The plants must be grown from single stems. Any person may compete, but notice must be given to Mr. Eyles (R.H.S. Garden, South Kensington) by November 8, stating the amount of space required. No Exhibitor can have two Prizes in the same class. The plants and flowers must be at the Garden not later than 9 A.M., and the setting-up must be completed before 10 A.M., when the Committee will assemble. All other subjects exhibited at this Meeting must conform to the foregoing regulation. The plants, &c., must be brought in by the Gore Lane entrance, and may be removed at 4 o'clock.

THOS. MOORE, Secretary to the Committee.

Open to all England.

THE STOKE NEWINGTON CHRYSANTHEMUM SOCIETY will hold its SIXTEENTH ANNUAL EXHIBITION at the Manor Rooms, Church Street, Stoke Newington, on WEDNESDAY and THURSDAY, November 12 and 13. Doors open at 12 o'clock on the First Day, and 10 o'clock on the Second Day. Admission: First Day, 1s., Second Day, 6d.

W. T. HOWE, Hon. Sec.

The Bible Office, Shacklewell, N.E.

HANDSWORTH HORTICULTURAL SOCIETY.—The GREAT CHRYSANTHEMUM, CAMELLIA, FRUIT, and GOURD SHOW will be held in the Town Hall, Birmingham, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4.

The Classes for Chrysanthemums, Camellias, and Primulas are open to Members only. The Classes for Fruits and Gourds are Open to all the World, without Entrance Fees.

Notice of Entries and the space required must be given by all Competitors in the Open Classes on or before November 20.

Lists of Prizes may be obtained from either of the Secretaries on application.

CHAS. JAS. PERRY, Castle Bromwich, } Hon.
GEORGE P. TYE, Handsworth, Birmingham, } Secs.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

(OPPOSITE THE GARRICK CLUB.)

THE PRIZE GOURDS AND MAIZE,

From "our SARDINIAN CORRESPONDENT," have been removed from the Royal Horticultural Society's Gardens, and are now on exhibition at our Establishment, that visitors may have an opportunity of inspecting the most valuable, beautiful, and varied Collection of Ornamental and Edible Gourds ever seen in this country.

"There should be Gardens for all the months in the year, in which severally things of beauty may be had in season."

Orders amounting to 21s. sent Carriage paid.

Collections of Bulbs for Conservatory and Out-door Decoration.

"A," £5 5s.; "B," £4 4s.; "C," £3 3s.; "D," £1 1s.; "E," 15s. 6d.; "F," 10s. 6d.

Paxtonian Collections of Bulbs for Ornamenting the Spring Garden.

"G," £5 5s.; "H," £4 4s.; "I," £3 3s.; "J," £2 2s.; "K," 15s. 6d.; "L," 10s. 6d.

The Kensington Garden and Crystal Palace Collections for Winter Gardening.

"M," £5 5s.; "N," £3 3s.; "O," £2 2s.; "P," £1 10s.; "Q," £1 1s.; "R," 10s. 6d.

For full particulars of the sorts and quantities contained in the above Collections, see our "ILLUSTRATED FLORAL GUIDE," or the *Gardeners' Chronicle* of September 13th and 20th.

London Agents for TYE'S New REGISTERED SOUVENIR HYACINTH GLASSES, 10s. 6d. per pair. For further particulars see our "ILLUSTRATED FLORAL GUIDE," or *Gardeners' Chronicle*, Sept. 13th and 20th.

BARR & SUGDEN, SEED MERCHANTS,
12, KING STREET, COVENT GARDEN, W.C. (OPPOSITE the GARRICK CLUB).

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 8, 1862.

MEETING FOR THE ENSUING WEEK.

TUESDAY, Nov. 11 { Royal Horticultural (Fruit and Floral Committees) at S. Kensington Noon

THE question whether SMALL BIRDS do more good than harm, has been frequently discussed in the *Gardeners' Chronicle*, and many interesting communications on the subject will be found recorded in its columns, but notwithstanding all the arguments which have been brought forward in favour of the feathered tribe, we regret to say a deep rooted prejudice is still entertained against them in some parts of the country; where, from ignorance, they are persecuted and destroyed by every possible means.

We cannot too strongly condemn this wholesale destruction of small birds. It says little for those who ruthlessly commit such ignorant mischief, and casts a stigma on the districts where it is encouraged or allowed to be carried on. Even admitting that birds are often very troublesome and do injury, they are certainly not so destructive as has been represented. That they disturb and plunder the seed beds of the gardener in spring, if unprotected, and occasionally embrace opportunities to taste his fruit as it approaches maturity, are facts which cannot be denied; but the damage they do in this way is trifling in comparison to the benefits we derive from their continued labour in search of the various insects which are known to constitute their principal food, and on this ground we think they ought not to be treated as enemies, but regarded as friends, entitled to our protection.

We have been led to make these remarks by the perusal of a small tract on the subject that has been recently published, under the title of "Bird Murder, or Good Words for Poor Birds, by a Country Clergyman." To this little production we invite the attention of our readers, and of those who are anxious to check the insensate desire of exterminating some of the creatures which enliven our fields and gardens, and contribute so much to our enjoyment.

Those who have studied the natural history and habits of birds are convinced that their destruction is a great mistake. Of this we have a striking example in what occurred to our neighbours in France. After some years of warfare against the birds, it was found that for want of them their corn fields and Vineyards became so infested with vermin that the agriculturists and others petitioned the Government to have the destruction of birds prevented by law, and means taken for their preservation and increase. In the report

on this subject that was laid before the Senate, it is said, "The providential mission of birds was for a long time considered an exaggeration; now it ranks as one of the best proofs of science. Yet man, by a strange blindness, shows himself the most terrible enemy of these gentle and useful creatures. More cruel than the kite, or hawk, which kills to feed, he destroys them for the simple love of destruction. The amount of mischief is incalculable. The smaller species of birds are rapidly diminishing, insects are increasing in proportion, to the great detriment of agriculture. Prompt and energetic measures are required." This is the language of the dear-bought experience of the French, and ought to be a warning for us not to fall into a similar error.

The birds which annoy the gardener are the sparrow, the bullfinch and others of that family, the blackbird, and the tomtit. Of these the sparrow is the most numerous and daring of any. They forage and provide for themselves and their offspring with great perseverance, and, with the bullfinch and tomtit, require to be sharply looked after in spring, on account of the character they bear for destroying the tender buds and blossom of the fruit trees they frequent in search of food. That they do commit serious mischief, unless precautions are taken to prevent it, is not to be denied—but on the other hand there is good reason to suppose that the quantity of insects they destroy fully compensate for the damage they may cause, either in the garden or the field; and therefore we think their misdeeds are not so great as to deserve the severe punishment with which they are often visited. The same remark applies to the starling and the rook, which are persecuted as enemies by the farmer, although in reality they are among his best friends. The starlings assemble in large flocks, and are most useful in digging up the grubs of the daddy long-legs from pasture land, and devouring the wire-worm they detect in ground newly broken by the plough. Rooks perform similar good offices, but occasionally treat themselves with a little new sown corn in spring, and a taste of the Potato crop in autumn. For these depredations they are condemned, and that COWARDLY and VILLANOUS invention of poisoned Wheat is employed for their destruction. This is, indeed, bird murder, and ought not to be tolerated. It is with the view of preventing this wholesale destruction of the birds which are of real utility to man, that the little pamphlet we have referred to has been prepared. We trust it will be widely circulated, and that every friend of humanity will use his influence to dissuade individuals from committing such stupid acts, and expose to public scorn the asses who are guilty of them.

MOST APPLE GROWERS are beginning to be aware of the fact that the produce of the present season is decaying very rapidly. Many a crop which seemed to be in admirable condition when gathered is now dreadfully spotted, and beneath each dark spot there is a little depression exhibiting unequivocal symptoms of decay. Unhappily all that we can do is to point attention to the cause, being completely powerless, as in so many other instances of attack from minute parasites, as regards any remedy.

Most of our readers must have observed in early summer, as soon as the leaves were pretty well expanded, a very unhealthy look in the foliage. The leaves themselves scarcely attained their full size, and had a dirty grey tint, the sure forerunner of some extensive evil. After a short time the cause of mischief was clear enough. The leaves were attacked by *Cladosporium dendriticum*, a Fungus which begins its career beneath the true cuticle, through which it makes its way in the form of little branched or radiating dark lines, which rapidly increase in size, and exhibit the perfect parasite with its short dark thick threads and large brown spores. This peculiar habit of taking its origin beneath the true cuticle makes it a very insidious enemy, and accounts for the fact of the fruit which was clear and bright when gathered, being now more or less patched with round at length confluent spots. If these spots, as is often the case in more favourable years, remained inert, the cuticle alone being affected, the Apples would be blemished, but would still retain much of their value, but in the present year the evil extends to the surrounding tissue, and in the end the whole mass is more or less affected. If the mould attacked only a few of the branches, measures might be taken to pick off the diseased leaves, but in the present year, it was frequently impossible to find a single leaf which was not more or less occupied by the fungus. *M. J. B.*

THE present season has not been particularly famous for NEW DAHLIAS. We write, indeed, chiefly from observation of those which have appeared at the metropolitan shows and meetings; but as it is no doubt true of flowers as of most other things, that the best find their way to London, there is probably not much to be expected beyond the varieties which have thus appeared, the more especially so, when it is remembered that the two great champions, KEYNES and TURNER, both ever on the watch for a promising seedling, are amongst the most constant of the exhibitors of novelties at the London shows.

Glancing over the reports of the Floral Committee, which is the most severe tribunal before which these new sorts can appear, we find the undermentioned awards have been made:—

1st Class Certificate—	Caractacus	Mr. TURNER.
"	Charles Turner	Mr. KEYNES.
"	Countess of Shelburne	Mr. TURNER.
"	Patent	Mr. KEYNES.
2d Class Certificate—	Bellona	Mr. HARRISON.
"	Charlotte Dorling	Mr. TURNER.
"	Le Premier	Mr. KEYNES.
"	Lord Dundreary	Mr. TURNER.
"	Lord Russell	Mr. LESLIE.
"	Serenity	Mr. RAWLINGS.
"	The Bride	Mr. RAWLINGS.

It thus appears that the sum total of the awards to New Dahlias by the Floral Committee amounts only to four first-class Certificates and seven second-class Certificates for the whole season; and this out of some 52 varieties which we understand have been exhibited before that body. Still, though first-class sorts have not been very numerous, those which have appeared may be regarded as acquisitions.

The class of flowers which has made the most decided advance, and which has as it were set its mark upon the year 1862, is that of the red-tipped yellows. Out of the eleven certificates above referred to, four have been awarded to varieties of this character, and others of the same set have been shown which have only just failed—perhaps by some chance of cultivation—to gain any reward. Of the four which have been thus certificated, two have received a first-class, namely Charles Turner and Caractacus; these, therefore, bear vouchers of technical excellence, while they have in addition all that pleasant gaiety of colouring which will be certain to commend them to the favour of persons who are outside the fancy. The latter sort, Caractacus, was shown early in the season, and we did not fall in with it again; then it was all that could be desired in respect to form and general properties, of medium size, the colour a buff-tinted yellow beautifully tipped with deep crimson. The former of the two, Charles Turner, was brought out in the height of the Dahlia season, and is to our mind *the* flower of the year, taking all points into consideration; its blooms are of about average size, and possess the necessary technical merits to secure the favour of connoisseurs, in addition to which its charming colour, which is a bright yellow, boldly tipped with crimson, must win over all those who would be quite callous to the excellences indicated by 'shell petals,' 'symmetry,' 'depth,' 'high centre,' and 'perfection of build,' all which merits, and probably many more which we are not learned enough to set forth, are concentrated in this fortunate flower. Occupying then the first rank as show flowers, these two sorts, and especially the last, if their habit of growth is suitable—on which point we have no information—must also come into the foremost rank amongst decorative varieties. Lord Dundreary, which falls into the second rank, has at least the merit of persistency, for it has been shown, and that without any appreciable difference of character, through the whole season. Though of the same class as the sorts already noticed, it is quite different in colour, being of a buff yellow heavily tipped with deep lilac-rose, or purplish-rose; its one deficiency as a show flower is the "sunken eye," but paradoxical as the words may read it has at the same time such a cheery, pleasant, healthful bloom on its cheek and "shoulder," that it is quite open to the highest honours amongst decorative sorts—habit permitting; it must be a remarkably free bloomer, or it could not have been shown in such abundance everywhere. Lord Russell, which though shown by Mr. LESLIE, was raised by Mr. SILVER, is very similar in quality, and has a certain distinctness of colouring, being a "deep primrose heavily tipped with carmine." This yellow-tipped group may be expected to show itself in great glory next year.

Of altogether another class, and perhaps disputing with Charles Turner the place of honour among the novelties of 1862, is the variety called Patent. This is one of what are called—why we know not—"fancies;" it is a noble flower, quite an acquisition, and being possessed of every technical merit looked for in a Dahlia bloom—set up for show it raises the question whether there can be any meaning in retaining either for purposes of classification or exhibition the present group of fancies—whether, that is to say, there is any more reasonable ground for separating from the selfs what are now recognised as 'fancies' than for separating the 'tipped' or as we should prefer to call them the 'laced' sorts—pale grounds that is, with dark margins, which no one ever thinks of showing separate or of erecting into a distinct group. We may probably follow out this train of thought a little further on some early day, in the hope of suggesting a more intelligible mode of classing these flowers. Whatever in the mean time may be said on this question, there can be no doubt that Patent is a flower in every way first-rate, but it is almost hopeless to attempt to convey an idea of its colour; the tone of the ground colour may however be compared to that of white paper after it had been lightly stained with red wine; the actual tint however in this case has a salmony cast, but is also more or less suffused or dashed with purple, while at the tips of the florets come in a golden tinge, the whole being thickly striped and flecked with full purple crimson.

A very pretty and well favoured Dahlia is that called Countess of Shelburne, which however, serves further to illustrate the unmeaningness of separating from the 'show' varieties the present 'fancy' group, for the experts in 'Dahliaology' have decided that this lady has the *entrée* to both. To the small neat, perfect, abundant and symmetrically built florets, and the high or full centre which it has in perfection, this novelty adds a somewhat unusual style of colouring, the ground tint is a French white, but just the tips of the florets are very slightly and unequally flaked with purple, the markings collectively forming a kind of motley tip; thus instead of a lacing of solid colour, which is the usual condition of "tipped" florets, this variety has a flaked lacing. The Bride, also, a flower of second class rank, presents a novel mode of colouring; it is of a creamy white in the centre, and blush at the outside; but here and there a floret is blotched with purple, so as to give it a singular irregularly variegated character, while sometimes several contiguous florets are wholly changed to purple. Charlotte Dorling, one of the "tipped" class, white with bright tips of rosy purple, has proved a gay, and at the same time constant sort, only just below the line which marks first-rate merit; its deficiency lies in the centre, which is not "well up." Bellona, a rather coarse dull ruby; Le Premier, a maroon-crimson, with light tips; and Serenity, a creamy white, slightly tipped at the back with purple, all respectable mediocrities, make up the remaining certificated flowers.

Among the non-successful sorts, Paragon from Mr. PERRY, a yellow, tipped with red; Lord Wiltshire, from Mr. KEYNES, a large crimson-scarlet, looking a little coarse, but perhaps only showing evidence of Mr. KEYNES' high feeding; and Mauve Queen, from Mr. PERRY, a large mauve-lilac, might, perhaps, either on account of their quality or novelty, be added, without much presumption, to the second-class group. At any rate we should not be surprised to see them occupying a position equivalent there another year.

Of BEDDING DAHLIAS, a variety which is to be called Gem of the Dwarfs, and which is in the hands of Mr. DEAN of Shipley, appears likely to be an acquisition in its way. It is a crimson-red tipped with white; and is said to be the dwarfest bedding variety yet seen, the plants never exceeding and seldom attaining so much as 18 inches in height. The variety has proved constant to this habit for three seasons, and is described as a most profuse bloomer, looking amazingly bright and showy in a bed. The blooms we have seen, lead us to believe that it really deserves this good character.

FRUIT TREE CULTURE, OLD AND NEW.

I WAS much interested a short time since on visiting The Hasells, Bedfordshire, the seat of Thomas De La Rue, Esq., to see the great change made by adopting the modern method of fruit tree culture. In 1860 the two walled in gardens devoted to some kitchen garden crops and fruit trees were pictures of desolation, owing to neglect and bad management; the walks lined with old cankered espalier fruit trees, ugly and barren; the walls covered (with a few exceptions) with trees of the like nature; the quarters in the centre of the gardens planted with ancient Currant and Gooseberry bushes and Raspberries—the whole looking stale and unprofitable.

On my recent visit I found the change most marvellous, and as it may illustrate what can be done with an old and apparently worn out fruit tree garden, I will attempt to describe what I saw and so much admired. Mr. De La Rue is a passionate lover of fruit, and finding that his walls gave him but a very small quantity, he at once commenced to build orchard houses, building lean-to houses 216 feet long and 10 feet wide, against a wooden fence, about 8 feet in height, made of feather-edged boards, at so small an outlay as to be almost incredible.

The fence forming the back wall is covered with galvanised wire netting, the meshes very large; to this the trees, mostly Peaches and Nectarines, are trained, and owing to the constant percolation of air through the crevices of the boards the trees are in a most admirable state of health, forming a beautiful wall of verdure. In spring, while the trees are in blossom, a covering of canvas or some other material will be placed at the back of the fence outside, or the ventilation in a spring frost may be too free. Close to the back wall is the path, and in front a border, 7 feet wide, occupied by trees in pots, mostly Plums, Cherries,

Apples, and Pears, all managed with the most perfect skill. I have never yet seen Plum trees in so vigorous a state: some leaves on a tree of the Oulins' Golden Gage measured 8 inches by 4 inches, and the fruit when ripe in August were like large golden Nectarines. Other kinds of Plum trees were covered with such large and vigorous leaves as scarcely to be recognised when compared with the same kinds under ordinary culture; these had all borne large crops. One Pear tree, the Beurré Bachelier, was, when I saw it (Oct. 30), bearing a crop rarely to be witnessed, for there were 17 Pears on it, the largest weighing more than 1 lb., and the remainder nearly as large; so that this small pyramidal tree, only 3 feet high, and in common with all the orchard house trees in a 13 inch pot, was bearing 16 lbs. of fruit in a cubic foot of earth—the tree is on a Quince stock. Mr. De La Rue is inclined to think the excessive vigour of his potted trees is owing to their having a stratum of inch bones, about 2 inches thick, placed at the bottom of each pot over the pieces of broken pots first placed there for drainage. I can only say that I never before saw such vigour in fruit trees in our climate. The pyramidal Cherries in pots are equally vigorous, and gave large crops of fruit in summer. The American Apples have also given finer fruit than any Newtown Pippins imported, and the Italian Apples Mela Carla look as if they came from their own sunny land. The number of trees in pots in the front borders of this long range of houses is something to wonder at. In the centre of the eastern garden a span-roofed house, 86 by 24 feet, was built in 1861; this has a central border 7 feet wide and two paths. In the central border are half-standard Peaches in 13-inch pots, plunged to their rims in the soil, which is sandy and light in the extreme. These trees are marvels of beauty and successful cultivation; they all bore large crops the past season, and the fruit they gave was so large and of such excellent flavour that some of them were taken to France to compare with the famous Montreuil Peaches. They were found to be larger and much finer in flavour. This was a great triumph for orchard house culture, and a surprise to those who visited The Hasells under the impression that only small Peaches could be produced from trees in pots. This great success Mr. Dean, the gardener, imputes to two surface dressings of sheep's manure which the trees had in summer. He much prefers strong surface dressings to liquid manure.

I found here a novelty, to me at least, in orchard house culture—a large number of fine Gooseberry trees in 13-inch pots. These were of the same luxuriant habit as all the other potted trees, and like them they had bones to feed on. I found on inquiring of Mr. Dean, who is full of observation, that orchard house Gooseberries were held in great esteem, not for their ripe fruit, but for giving young Gooseberries in spring a fortnight before they were ready in the open air, and that as soon as the fruit was gathered the trees were turned out to make room. The roof of the large span-roofed house is supported by pillars, a row on each side; to these are trained Vines, and the effect is very good. They have only just commenced to bear.

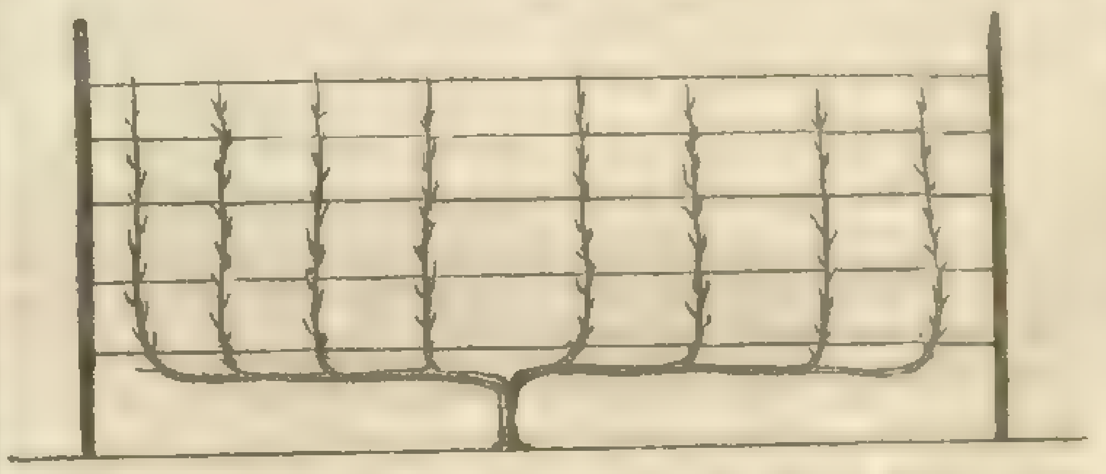
I was much interested in looking over this large collection of potted trees to find so little tendency in them to root through into the borders on which they were standing, even the Peach trees in the large house. The pots plunged had made only a few slender fibrous roots through the holes at the bottom of the pots; they were lifted once in July and again after the fruit was gathered. The trees were so abundantly fed at the surface that they had not to seek for food; this seems almost instinct, and reminds one of a like seemingly instinctive feeling by which a starved tree will sometimes put forth a long root in search of food. This occurs occasionally among ruins and in rocky places.

In a house in which gentle heat is kept up are Tangierine Oranges full of fruit just commencing to colour. These would ripen in about six weeks; they had been in the large orchard house all the summer, and much retarded by the cool weather in June and July. The trees are in 10-inch pots, and from 3 to 4 feet in height. Their extraordinary health and vigour I impute to the 2 inches of "inch bones" over the drainage at the bottom, and to the rich surface dressings of sheep manure they had had in summer. Some large trees of common sorts of Oranges in the large orchard house are equally vigorous, and loaded with large worthless fruit. These trees are to be grown grafted with some good edible sorts, such as the St. Michael's. In the house with the Tangierine Oranges I found some White Ischia Figs, young trees which had been retarded; the old trees had ripened their two crops, and were bare, but the young trees were full of fruit, just commencing to ripen, and most delicious—there is, in fact, no Fig so rich as this sort, but it requires being grown under glass and in gentle heat.

The fruit-tree culture in the open air is quite as perfect as the orchard-house culture. In the autumn of 1860 the two old gardens I have mentioned at the commencement of this article were as I have described them; they were then cleared of the greater portion of their old, decayed inhabitants, the soil manured, trenched, and planted with a collection of pyramidal Pears (on the Quince stock), Apples, Plums, and Cherries on the Mahaleb stock, all planted 6 feet apart, row from row, and 6 feet in the rows, the Pears in one department, the Apples and Cherries in another, but all planted methodically, and not mixed. The trees all bore a crop the past season, have all been pinched in by the indefatigable Mr. Dean, and are really pictures of good management. They are to be root-pruned this autumn, on the alternate method, *i. e.* digging a semicircular trench to each tree, and pruning half its roots, completing the circle in November, 1863, and pruning the remaining roots. In every season this is the best of all methods of root pruning, as the tree receives but little check.

Between each row of pyramidal trees is a row of Strawberries, most vigorous; these are to be covered with glass ridges, the same that are employed to form ground Vineries. It is found here that these most convenient appendages to a garden give Strawberries in the highest perfection a fortnight before those in the open air. They are also used for Lettuces for late in autumn and early in spring; it is quite interesting to see here thousands of Lettuces thus under glass, and so crisp and tender compared to those in open air—apropos of Lettuces I may add, that the borders in the lean-to orchard house are planted with them in great abundance. An orchard house Lettuce in early spring would make even a French salad-master elevate his eyebrows, so crisp and delicate is it. I had nearly forgotten to mention the Vines under the ground Vineries; they have just commenced to bear, and are in a fine healthy state.

In the fruit garden appropriated to pyramidal trees are Gooseberry trees trained as upright "cordons," thus—



to a trellis formed of galvanised iron wire 4½ feet high formed with fine wires; these go through slight iron flat standards with a pointed end, which is driven into a block of wood 3 inches in diameter and 9 inches long, driven into the ground; the standards are 5 feet apart. This Gooseberry trellis when covered with ripe fruit in summer, was described to me as one of the prettiest things ever seen in fruit gardening. Currants are now about to be trained in the same manner round the other fruit garden.

Mr. De La Rue has lived at The Hasells some years, and much to his disappointment had but little fruit from his garden under the old system; in the autumn of 1860 he commenced building his orchard houses and stocked them with fine bearing trees; in 1861 he still had reason to feel discontented, for owing to the trees being badly managed, many of them being regularly drenched with water whether they wanted it or not, till their leaves turned yellow and their fruit perished; he had no good fruit. In the autumn of 1861, the present gardener Mr. Dean took charge of the garden, and under his rule every tree and plant has prospered, so that in one year the change is quite marvellous. Strawberries were in abundance from March till the end of September, and all kinds of choice fruit from the orchard houses in like profusion. The Strawberries, about 2000 in 6-inch pots, for next season, are perfect specimens of good culture, their leaves being so large and vigorous. They were potted in rather a light sandy loam and manure, and the compost rammed down as firmly as possible. The whole of the fruit culture at this old and interesting place is as perfect as it can be. *T. R.*

DESTRUCTION OF APPLE TREES BY SAPERDA CANDIDA, IN DISTRICTS SURROUNDING QUEBEC. By W. Couper, Quebec.

[We print this as a warning to those who import trees from North America.]

I have been frequently told that Apple trees will not prosper in the districts surrounding Quebec; the reason is stated to be long, severe winters. "In ascending the flank of the hill (St. Hilaire), fine orchards of Apple trees were once more observed on the poor granitic gravels, and many of the trees were loaded with fruit. The Apple trees do not thrive on the clay soils of the flats of the St. Lawrence, in consequence, I suppose, of their tenacious nature, while good orchards are met with throughout the island of Montreal, where the soil rests upon the limestone, and is more friable."—*N. America, its Agriculture and Climate, by R. Russell.*

I have quoted the above to show how conflicting opinions are published without proper investigation. I know little regarding the chemical properties of the clay soils or flats of the St. Lawrence, but am informed that Apples were at one time produced in large quantities in the Quebec districts.

I have taken the following extract from the Montreal correspondent of the Toronto *Globe*, June 13:—

"I regret to say that there is a poor prospect of fruit this year. Apple, Pear, and Plum trees are decaying, as they have been for three years back, caused, it is alleged, by severe frost, and the caterpillars swarm in the orchards."

In my entomological excursions into these districts, I captured the insect which is considered the chief cause, and lost no time in visiting several gardens to examine the trees. The gardeners informed me that the trees were invariably imported from the United States, hence the insect has been introduced within the young trees from our neighbours' nurseries. I rest satisfied regarding the introduction into Canada of this tree-borer, and will state one reason, that during a residence of seventeen years in Toronto, I never captured the insect; nor will it fill a place in the Upper Canada fauna while they depend on their own nurseries for young trees.

In a garden on the north side of the Beauport road, upwards of twelve trees contained the insect, and had to be taken up, thus affording me an opportunity of cutting them up to obtain their destroyers. In doing so, I discovered what I think is new in entomology, *i. e.*, that in trees containing males no opposite sex were found, and those that contained females had that sex only.

"The borer of the Apple tree, a white worm or grub, devours the fragments of wood it gnawed in making its cylindrical path within the trunk of the tree, and pushes the undigested refuse out of the hole by which it has entered. When fully grown it becomes a pupa, which, like the door-bug, exhibits short folded legs, wings and horns, of no use to it while within its burrow. Early in June the pupa-skin is ruptured, and the insect emerges from the tree by gnawing through the thin covering of bark that protects the upper extremity of the hole. Upon issuing into the air it is found to be a beetle, white beneath, and longitudinally striped with brown above. In this, its perfect state, it lives only upon the young and tender leaves of the Apple and other allied trees." —T. W. Harris, *in N. E. Farmer*, vol. ii. 1833.

The above is all that was known of this borer when Mr. Harris wrote in 1833, yet his knowledge of the insect was sufficient to cause the Apple growers at that time to look out and prevent its extension. It is from carelessness and inattention that this insect is now found in every Apple-growing State in the Union. In 1825 an orchard in the neighbourhood of Troy was injured by this *Saperda* to the extent of two thousand dollars.

The Natural History of New York, vol. v., p. 120, states that the *Saperda candida* is three years in coming to maturity. I have reason to doubt the length of metamorphosis here given by Mr. Emmons, who is not considered an entomological authority—the above book being full of errors. From my own observations, the metamophoses are gone through annually, that is to say, the *larva* casts its skin periodically for 12 months, the insect appearing in June, and the *ova* deposited in June. The fact of the beetle being "more abundant some years than others," as stated by Emmons, is conclusive evidence that the deposition of the eggs was attended with congenial weather. Any person who has studied the habits of forms constituting the Longicorn family, will hold with me as to the strong parasitical attachment of the parent insects to their favourite plants, while propagating their species; and we have hundreds of instances where insects only take a few weeks to complete their stages, being some years scarce, while at other times so common as to overrun the country.

The *Saperda candida* or Apple-tree borer becomes perfect in the neighbourhood of Quebec on the 9th of June, and continues to issue from the trees up to the 12th or longer; therefore, the trees should be carefully examined and protected as hereafter specified, during the whole of the above month. The insect invariably deposits its eggs at the base of the tree, where it enters the earth; the larva cuts its way obliquely upwards, cross-cutting the circulation of the sap, and depriving it of its nourishment.

The following instructions should be carried out to ensure success in exterminating the borer:—

1. Import no more young Apple trees from the United States, without a thorough examination for the larva. It would be preferable to obtain them from the Upper Canada nurseries, where the insect does not occur.

2. Mix an earth-mortar or clay such as is used for grafting purposes, and with it surround the lower part of the tree, say 1½ or 2 feet. It should have a thickness of 1½ or 2 inches, and made to adhere closely to the earth where the trunk enters it. Apply it also from the 1st of June to any of the attacked trees showing symptoms of life. If there are any perfect insects to issue, escape will be cut off, and much good done in this way. It is useless to use solutions of any kind, as the larva ascend the tree and will remain untouched.

3. It would be advisable to use the same precaution with Pear trees during this period, as the Apple-borer may select them when deprived of its more congenial tree.—*Canadian Naturalist.*

THE HUE AND CRY.

So many plants have absconded or are missing, even within my own recollection, that it would really seem to be desirable, with a view to their recovery, to proclaim them in a portion of your Paper, specially set

apart for the purpose, under some such heading as that which I have ventured to select. As a beginning I will take a comparatively recent case, that of a species of Rubus, which is thus described in Paxton's Flower Garden, Vol. 3, p. 163.

1. "*Rubus japonica, Veitch.*—A hardy shrub, with broad bright green leaves, white flowers and yellow fruit. Introduced by Messrs. Veitch and Co. Planted against a wall it proves to be almost evergreen."

I had myself the pleasure of seeing this Rubus in the Exeter Nursery about 14 years ago, and was so much struck with its beauty that I carried off a young plant, which in due course was placed against a south wall, where it grew vigorously, withstood without any protection whatever the severity of at least three winters, and attracted universal admiration. The fourth year it produced some large handsome well-flavoured fruit of a rich yellow colour, but after the fruit was gathered it suddenly withered and died! On examination the plant was found to have been undermined by rats, which had forced a passage from a neighbouring drain straight through its roots! I immediately wrote to Messrs. Veitch for another plant, and received from them what professed to be the same thing, though in reality it was an entirely different species. Two years however passed before its identity was called in question, for the plant was young and weak; but when at length it became obvious that a mistake had been made, I again applied to Messrs. Veitch, explaining the circumstances, and minutely describing the Rubus that I had had before, and which I was so anxious to have again, but, strange to say, not a trace of it could be found! As it is probable that the Messrs. Veitch may have sold other plants of the true Rubus japonica, besides the one that came to me, I am not without hopes that the publication of this singular history may lead to the rediscovery of a truly beautiful plant.

2. *Asparagus Potato.*—Under this name about the year 1830 or 1831 I received from the Horticultural Society a few tubers of most remarkable form, as well as singular excellence. They came, I believe, from Peru, and appeared to be as hardy and prolific as the ordinary Potato. After growing them for two years I had sets enough to plant half a rood of ground, but a wet season supervening the crop was almost entirely destroyed, and the very few weakly tubers that were saved from the wreck disappeared altogether the following year, though tended with the utmost care. I presume the same causes led to the same results in other quarters, as I have never been able of late years to gain any tidings of these extraordinary things, but they certainly ought to be procured again if possible. The tubers were quite straight and at least 6 inches long, though no thicker than the finger. They were waxy, and served as an *entremet* — quite irreproachable! *J. B., Biddulph Grange.*

Indoor Gardening.

THE ways of filling plant cases for the present time are numerous enough to please many different tastes, although there is not now the amazing wealth of blossom which so often leads us to crowd our summer stands. Some people will insist on having some dozen plants, of which each individual is in some way rare or striking, and they have a wide range of beautiful things to select from.

The Maranta has been for long, with its beautiful velvety leaves, the centre of one plant case. The beautiful Caladiums give brightness quite like flowers, with their exquisitely-shaped leaves—and Gesneras and Dracænas, and Begonias and Ferns, make up an assorted group that do well in a heated case, warmth and slight moisture without violent change of temperature being highly agreeable to them.

In such an arrangement the Caladiums, Dracænas, Marantas, Gesneras, and climbing Fern (the Lygodium scandens, which has long grown so nicely in the "room-ward" corner at the warmer end of my case) should be grouped on the warmest side; and it is a point quite to be remembered that in the centre a slight support, such as a 4-inch flower pot, will steady pots that are only half on the heated case, and the warm air surrounding them will make theirs the warmest place.

Hardier Ferns, Adiantums, Pteris serrulata, Davallias (these Hare's-foot Ferns are especially to be recommended), Begonias, Ivies, &c., do delightfully in the cooler part, and pots of Lycopodium placed all along the room side, will grow by degrees towards the window and make a lovely carpet, such as can be moved aside to admit a plant, and easily replaced.

I think for all these things the chief thing is, while giving water enough to keep them crisp and fresh, never to let the stagnant moisture of the atmosphere rest upon them. They do very well in an occasional vapour, which refreshes them, but drops of water standing on their leaves, or faces of leaves resting on dewed glass, on damp mosses, or vapour condensing on them when the heat diminishes—all these things lead to blotches, and damped and flabby foliage.

The Dracæna terminalis is a plant that ought to be grown in such a case as this by way of a thermometer. If the warmth is sufficient to keep it in thriving health, its long narrow leaves will be streaked more with red than green. I have frequently had it with the leaves more than one-half crimson, and some of my friends I know grow it thus for their dinner table.

This arrangement, however, though beautifully coloured, is devoid of flowers. For myself I don't care how much green I have, only I do like to have in it three or four pots of flowers, and I think if they are absent the coloured leaves rather aggravate me. My especial delight is in a case full of greenery, with a few flowers set in it just to shine there like jewels. It is for this sole reason that the telling glowing colours of one hue alone are with me such favourites. I cannot imagine anything more beautiful than the carved waxen look that the white flowers wear here, whether they be Camellias or Orchids, Snowdrops or white Hyacinths—all these having equally the massive look of white marble. The pearly translucent petals of many other white flowers are different in their style, but equally lovely still. But of all pearly flowers I don't know any pearlier than an Ivy Geranium bloomed in a case like this.

The white Chinese Primrose is another great pet of mine, because of its velvety leaves and its innocent-looking flowers. And then the Camellias and Azaleas are invaluable in their lastingness, as well as so delightful for their beautiful dark green leaves.

Just now I am delighting greatly in an Ivy plant, a common, small-leaved Ivy, which looks dark and "woody," growing up amidst Ferns. Myrtles, too, are most thriving, now and then washed in a shower; and the lovely Crowea saligna is a little gem that lasts long. Begonia leaves may be depended on now for crimson, for that is the colour which seems just at present most rare. Begonia Ingrami and some others are too in blossom, and a little of such Begonia blossom goes a long way for light. My own temptation is, though, when one has not scarlet enough for all, to take this time for having a group made of blue and white mixed up with the pinkish mauve of flowers like the Crowea, and with little Heaths when air can be given daily, keeping the top glass off. In a case filled thus, and with only the usual green, I do not find it essential by any means to heat frequently at this time of year. I shall only warm my own at present if foggy damp weather comes, or if I find the forcing can no longer be delayed. Already I have a pot or two of Lilies half hid amidst the Moss, and as the next month goes on, ambition will most likely stir me up to force them.

Rose trees and tree Carnations are also to be thought of, and I don't know yet whether they do best grown all along in the case, or only put in before blooming. Accordingly I am now trying both ways to find out. *E. A. M.*

Home Correspondence.

Peas.—Will any one learned in Peas have the kindness to tell me whether Knight's Tall Blue and White Marrows were raised by Knight himself? If so, I presume that they are the offspring of the crosses described by him in the Philosophical Transactions for 1799. I find that the name "Knight" tacked to a Pea is not a guarantee that the sort was of his production. I will beg permission to ask one other question. Has any one who has saved seed Peas grown close to other kinds observed that the succeeding crop came up untrue or crossed? This certainly occurs rarely if ever; yet from what I have observed on the manner of fructification of the Pea, I should have expected that such crossing would occasionally happen, as in the case of Dwarf Kidney Beans, of which fact I gave a striking example in your Paper of October 25, 1857. *Charles Darwin, Down, Kent.*

Grapes.—I have a small Vinery in which I have grown Black Hamburghs, and indeed Muscat Hamburghs, with the assistance of a little fire heat in the spring only, very successfully. When I planted the rest, that is about four years ago, I put in on Mr. Rivers's recommendation a plant of the Chasselas Vibert, a white Grape. The plant is uncommonly strong and healthy, but the fruit is not satisfactory. The crop is well enough, but most of the berries are very small, with a few very large amongst them, and a ragged looking bunch always. I want to ask whether you would advise me to graft or inarch some other sort upon it, and if so, what sort? or would it be better to remove it and plant another sort in its place? The plant is in the best place in the house, and where a good sort is sure to flourish. I should like further to ask about something which has affected a few of the bunches of the Black Hamburghs. During the early part of the summer a few here and there, but in no particular place, were touched with a sort of leathery streak on the skin. It is of a brown colour, and prevents the berry swelling regularly in shape, but otherwise does not affect the flavour. Can you suggest any cause or remedy for this? *An Old Subscriber.* [1. Regraft with a Golden Hamburgh. 2. The leathery streak arises from cold air striking the berries before the skin is fully formed.]

Spring felled Timber.—On May 2, 1839, while passing along the Long Walk at Windsor, I found a fine Elm just felled—a week as the workmen told me. They were squaring it, although so wet that the sap was dashed out at every blow of the axe. Can any one say what the fate of that Elm log has been? *Acinaces.*

Queen Wasps and Worm-eaten Timber.—It has often been matter of surprise where the queen wasps which appear in such numbers early in spring, [illegible] themselves in winter. Neither frost nor wet seem to hurt them, as if the weather is fine and favourable they make their appearance however ungenial the weather may have been. The dismantling of the ancient church at King's Cliffe during the last week or two has revealed at least one place of retreat. When the lead was rolled off from the subjacent boards some hundreds of queen wasps were found collected in little groups of six or eight nestling snugly between them, and in such a torpid state that they might be pushed about with perfect impunity. Not a single wasp of the other sex was intermixed. The same dismantling gave an opportunity of examining the conditions under which the oak beams were bored with insects. The sapwood, whether dry or not, had in most cases been reduced to dust. In the few cases in which it had escaped, there is little doubt that the wood had been winter felled, as in an old roof in Bedfordshire, the sapwood in every case is quite as sound as the heart wood, and there is reason to believe that this is entirely owing to winter felling. In every case where the heart wood was bored, there had clearly been a penetration of moisture, without which in all probability the larvæ could not have penetrated. Though we examined the old beams carefully, we did not find a single instance in which either larva or insect was present, nor was there any indication of any very recent attack, a circumstance which is the more surprising as on several of the beams where moisture had recently gained admittance there were young and perfectly formed Fungi belonging to the genera Polyporus and Corticium. Almost the only insect that appeared in the church except spiders was the common Blaps mortisaga. Had any wood boring insect been present it could hardly have escaped our notice, as we were carefully looking out for any information which the old decayed beams could give us, as well as for archæological treasures. *M. J. B.*

Roses for Window Gardens.—I have read in page 956 what has been said about window flowers, and I agree with the observation, "Few things are pleasanter in passing along a street than to see a window well filled with blooming flowers. The appearance of such a window strikes one as so bright, that the whole place gathers from it a cheerful aspect." This being so, and as no flower is so beloved by the English people as the Rose, I beg to suggest a few in different colours suitable to such a situation. *White:* Devoniensis, Mrs. Bosanquet. *Yellow:* Gloire de Dijon, Safrano. *Rosy Crimson:* Beauty of Waltham. *Scarlety Red:* Alphonse Damaizin. *Brilliant Dark Red:* Marie Portemer, Cardinal Patrizzi, Jean Bart. *Brilliant Red:* Senateur Vaisse, M. C. Crapelet, Gen. Jacqueminot, Buffon, Vainqueur de Solferino. *Scarlet Crimson:* Géant des Batailles, Lord Raglan, Eugène Appert. *Dark Plum:* François Arago. *Rich dark velvety Maroon and Red:* Princesse Mathilde, Prince Camille de Rohan, M. Melanie, not quite full. *Dark Blood Crimson:* Duc de Cazes. *Blush:* Malmaison, Comtesse de Barbantanne. *Rich bright Vermilion Red:* Duc de Rohan. *Bright Crimson:* Pauline Lansezeur. *Lustrous Velvety Red:* Comtesse de Seguier. *Pink:* Comtesse de Cecile Chabrillan. *Scarlet:* Monsieur Ravel, Madlle. Haiman. *Bright Carmine:* Jules Margottin, Victor Verdier. *Rose:* Catherine Guillot, Parmentier, M. Place. No one can make a bad selection. Where only one Rose is named, it is good; and where more are named, the first I suppose would be the best. Pauline Lansezeur is the type of what a pot Rose should be. Senateur Vaisse and Cecile Chabrillan are the types of what Roses should be. *W. F. Radclyffe, Rushton Rectory.*

Progress of Gardening.—In my younger days I was given to gardening in all its branches. Since then, however, having been knocked about the world for some 25 years, I have lacked time and opportunity for such pursuits. Now, however, ample leisure allows me to return to my old loves. I have erected greenhouses, Vineries, pits, and I have once again begun to take in the *Gardeners' Chronicle*, but alas! I have grown rusty; the knowledge I once possessed has evaporated, and the little that remains is, I am told, entirely out of date and useless; that the books of my youth now only mislead, and that a thousand things have been found out since they were written; that in short whilst I have been standing still the world has been progressing. All this is very likely, and I can well believe it. Being painfully conscious of my shortcomings, I should be truly obliged to any one who would have the charity to tell me in what books I shall find reliable information and instruction. Get a good gardener, some will no doubt say. Well, I have got a gardener, but whether he is a good one or not I cannot tell; that is precisely one main point on which I am anxious to form a judgment, if possible, before it is too late, and all my things are spoilt by a course of ill usage. It has moreover never been my habit through a tolerably successful life to trust to the knowledge of subordinates, or to allow the servant to guide and direct the master. Pray give me your advice and assistance. *Fogey.* [Get Thompson's Gardeners' Assistant.]

Fruit Judging at South Kensington.—I am one of those who think that Mr. Bousie has just cause of complaint against the judgment at the recent fruit show at South Kensington, but I also think that some of his neighbours have quite as much reason to be dissatisfied. Mr. Simpson, Stoke Farm, exhibited a collection of six sorts of capital Apples, the only drawback being that one of

... was the Gravenstein, which, although a good Apple, is not considered in this country a first class dessert fruit, and therefore is hardly admissible in a small collection. Mr. Simpson's Apples were placed third. The second prize collection was decidedly inferior to them in quality, and moreover it contained a well-known cider Apple under the name of Forge's Seedling, which is largely cultivated as the Forge Apple for the purpose of grinding in parts of Sussex and Surrey. It is rather a favourite with cottagers for making dumplings, and no doubt it is now and then eaten by hungry schoolboys, but as a dessert variety this was certainly its first appearance in public. Look again at the single dishes of ripe dessert Apples. Mr. Simpson and Mr. Turner showed very nice specimens of Cox's Orange Pippin, which is well known to be one of the very best of our table Apples; there were also some good-looking Ribston Pippins, a sort which everybody knows to be excellent; and yet the prize was given to one of those smooth-skinned high-coloured Apples that are invariably inferior in quality, and which I will venture to say not one of the judges had ever tasted. The second prize was given to a nice dish of Cornish Gilliflower, one of the highest-flavoured sorts in cultivation; and an Apple named Bull's Golden Reinette, which looked like a bad Blenheim, was distinguished by a prize. Now this is not exactly the way that things ought to be done by the Royal Horticultural Society of London: such at any rate is the opinion of *A Young Man from the Country.*

Strawberries.—I have perused with much interest the "Notes relating to Strawberries," in last Number of the "Florist and Pomologist," from the pen of my friend, the Rev. W. F. Radclyffe, and I have no doubt that Fragarians generally will feel thankful to him for the useful information he furnishes as regards his manner of cultivating this delicious fruit. I beg, however, leave of Mr. Radclyffe to add a few observations of my own concerning the selection of choice varieties. After having devoted more than 15 years of my life purely to the culture of this, my favourite fruit, I think that the following will be read with interest. I will begin with the Alpines, or more properly the "Perpetuals" or "4 seasons" Strawberries, inasmuch as from this tribe, under proper management, fruit can be obtained throughout the whole year. Mr. Radclyffe is perfectly right in saying that their size (and I may add, fruitfulness) depends in a great measure upon frequent raising from seed. In France the best cultivators never allow their plants to stand more than two years, and then raise fresh plants from seed, propagating only from such as show blossoms at a very early stage, destroying all the others. There are, properly speaking, only four varieties of the perpetual tribe, viz:—The common red and white, with runners, to which belong Gallande, Reine des Quatre Saisons, Gloire de St. Genis Laval, and others. Quatre saisons à gros fruit brun de Gilbert, probably the best flavoured of all, with very dark fruit, having also the foliage of a much darker green than the preceding. To this sort is given the preference by all real amateurs in France. La Meudonnaise, or Lettuce-leaved, a very handsome plant with fruit a good deal larger than the others, and of equally good flavour. Lastly, the red and white Bush Alpines, or Gaillon Strawberry, for borders and edges, throwing out no runners. These are exceedingly pretty and useful, producing abundantly in the open air till very late in the season. They require to be divided every second year to maintain their fruitfulness. The red variety of this sort comes true from seed, whilst the white often degenerates in plants with runners. On growers of the Alpine sorts, I urge the necessity of keeping off all runners and of disbudding until the beginning of June. A most abundant crop will thus be insured for the end of summer and throughout the autumn. Last year a nurseryman of Orleans raised a new sort of the white runner Alpine, called Blanche d'Orleans. There is no doubt that this is a descendant from the common white, but I can assure growers that it is much superior as regards fruitfulness and size to any other white I have ever seen. 2. The "Hautbois," or "Musky" tribe, here called "les Capronniers." Of these the Black Hautbois is the finest of all, and when properly grown quite as large as Belle Bordelaise. I say this not only after 15 years' experience, but from what I have seen at different friends' places who did not mind the little extra trouble the Hautbois tribe requires. I am convinced if my worthy friend had bestowed on his plants the same care he gives to other sorts, that he would never have sacrificed them! The Black Hautbois, when fully ripe, becomes a very dark colour, nearly black,—darker than any other Strawberry known, and at that stage of maturity it is extra delicious. The Hautbois ought to be gathered only when quite ripe, and requires much water after the fruit is set. The runners of these ought also to be removed carefully, if large fruit is expected. Monstrous Hautbois here is larger than Belle Bordelaise, and likewise produces a second crop in autumn, both from the mother plants and early planted runners. We have still another excellent variety, called the Large Flat Hautbois, if I recollect right introduced some 12 or 15 years ago by my esteemed friend Madame Vilmorin. I now come to the Pine class, of which of course, the Queen stands first, but who can grow her well? In France there are to my knowledge scarcely two persons out of a hundred who succeed; one of them is my good friend Dr. Nicaise, at Chalons sur Marne. Not being possible generally to grow the Queen, we must necessarily turn our eyes to other kinds which are of the same race. Magnum Bonum, Hendries, Carolina superba, and La Châlonnaise are all four quite as good and less particular as to soil and climate. Were I to give the preference to one of these four, it would certainly be Carolina superba, one of the best if not the best of all Strawberries in cultivation. I wish Mr. Radclyffe had taken the trouble to join me in one of my Strawberry excursions; for instance at Dr. Roden's, and he would have bebeld a "glorious sight" of C. superba, and been able to compare it with Mr. Rivers's "Eliza" and many others. The latter as a plant and for quality is certainly very good, but I firmly believe none of the great and skilful Strawberry growers in England, such as Mr. May, of Blandford, Dr. Roden, of Kidderminster, or Mr. Nicholson, of Egglescliffe, would pronounce it the "all in all" of Strawberries! It is true, in Mr. Radclyffe's garden I have noticed Eliza several times a splendid plant and a good cropper, but I am sure that many other sorts, which are not such "clumps of leaves," would have given the rev. gentleman quite as much satisfaction, and have probably modified his judgment, if he had taken the trouble to exterminate the immense number of blackbirds, which devour his Strawberries in detail before they are quite ripe. Mr. May, at Blandford, traps these hosts, and finds himself benefited by it. Filbert Pine is a noble sort, where it succeeds, but I think it does not exactly belong to the Queen race. Victoria is a great cropper, as a plant as hard as iron, and its fruit very handsome, but we seek in vain flavour or sugar, and it will not keep four hours after being gathered. Wonderful —the same as Myatt's Prolific—is a tremendous cropper, but its berries scarcely ever ripen to the extreme point, which I consider a great fault. Empress Eugenie is one of the most useful Strawberries we have, and for an extra large sort very good. I recollect very well what Mr. Doubleday said of her a little time ago. La Constante is now acknowledged by all who have tried it to be a desideratum; even the Americans, generally exceedingly partial to their own, pronounce it to be "grand," and win the first prizes with it. It will be the same with Emma, La Grosse Sucrée, Lucas, and some other seedlings of the same raiser, when they became known to the public. When in Brussels in 1861, and again in last June, I saw all these in great perfection, and I am convinced that they as well as the new splendid seedlings which, through the kindness of Mr. Powell, I admired at the Royal Gardens Frogmore last summer, will throw the bulk of older sorts out of cultivation. Amongst English novelties I have a very good opinion of Eclipse, and of course of Frogmore Late Pine and Rifleman, all three decided acquisitions. Culverwell's Sanspareil, although fine strong plants, was here a very shy bearer, and the fruit ill-shaped, though of good flavour. *Frederick Gloede, Les Sablons, near Moret, France, November* 3.

Grapes.—On comparing the description of the Royal Muscadine Grape and Sarbelle Muscadine (Muscat de Sarbelle), I find the following difference in their description in Hogg's Fruit Manual, second edition, and Rivers's Catalogue of 1862:—

Hogg's Manual.	*Rivers's Catalogue*, 1862.
Sarbelle Muscadine (Muscat de Sarbelle). Bunch medium sized, &c.; berries round, &c.; skin thin but tough, assuming a pale *amber tinge* when ripe; flesh firm and crackling, like a Muscat, rich, sugary, and very highly flavoured, but without *any Muscat* flavour.	Class 2.—The varieties in this class, to which the colour is not added, have deep purple berries.
In Index of Grapes.—B. *not* Muscats, berries round.	Sarbelle Muscat (Muscat de Sarbelle).—Berries round, medium size; flesh juicy, with a very rich and high *Muscat* flavour, an early and excellent sort, a great bearer, the best *hardy Muscat* Grape known.
Royal Muscadine. — Flesh tender and juicy, sweet and richly flavoured.	Class 3.—Royal Muscadine. —Berries round and large; flesh juicy, sweet, and excellent, with the *aroma* peculiar to this class fully developed.

I should be glad to know how the public is to be guided if there is so much discrepancy in the descriptions of these Grapes. *H. Martin Holman, M.D., Hurstpierpoint.*

Plants that will Grow under Trees.—I can inform "A Searching Reader" that I have seen during many a spring the ground under the dense shade of a Copper Beech, where a blade of Grass would not grow, a sheet of beautiful and diversified colours, from several varieties of Crocus, with Snowdrops. The soil was sandy. *C. D.*——Your Correspondent should plant Saxifraga hypnoides, Mossy Saxifrage, or Ladies' Cushion, under his Beech. I find it to answer better than anything under trees, and where Box and Grass will not grow. The fact is, it seems at home under trees, and looks always green. *R. D., Sunderland.*

Gourds.—I have grown this year a quantity of ornamental Gourds. Is there any way of telling those that are catable except by cooking and tasting? Are they in any way likely to be injurious to those eating them? *A. B.* [All that are in any degree bitter are injurious, all free from bitterness harmless.]

Shanking of Grapes.—With respect to "G. L.'s" remarks relating to the keeping of Vine borders dry, I must say that the important part of good Grape growing consists in keeping off all heavy rains, especially where Grapes are required to hang long. Vine roots naturally run and seek food in moist places. But what is the result?—roots feeding under such conditions cause a superfluous supply of sap to rise; berries in consequence never colour well—but with regard to shanking, I must differ from "G. L." I do not attribute that evil to either wet or dry borders, but to imperfect fertilisation at the time when the Grape is in flower, owing to the want of a free circulation of air to diffuse the pollen. If you open a shanked Grape, you will only find one stone or seed, while in a perfect berry there are three and sometimes four; this at once tells one that the evil occurs when the Grape is in flower. *John Royle, Alderly Park.*

Trade Advertisements.—We regret exceedingly that the accidental omission of two or three words in our advertisement of Picea nobilis should have given our friend Mr. Barron so much trouble. The omission was "above 2 feet high," after the word plant. With this addition the advertisement will be about correct, and we hope satisfactory to Mr. B. We may add that if we had received a proof, for which we asked, but for which it appears there was not time, the omission would have been seen and corrected, as it was the moment it was read by us. *Waterer & Godfrey, Knap Hill, near Woking.*

Foreign Correspondence.

BRITISH COLUMBIA:—*New Westminster, Sept.* 6, 1862:—

There has been less done this year so far in the way of prospecting new fields of gold, than in the year (1861) previous; for the reason that the unexpected throng of people arriving at the diggings after an unusually prolonged winter—which killed nearly all the mules and pack animals in the country, and before provisions could possibly arrive there, from the state of communications—was enormous, so that what grub did reach or was câched there during the winter rose to a frightful price, and crowds flowing upwards faster than provisions, kept up these awful prices, and miners willing to do so could not go away and prospect for fear of being starved. More gold however than last year has been dug out, and claims commenced last year are turning out fabulously rich, often as much as 200 ounces and over to four men in a day. The roads, on which most wisely the whole weight of the Government has been concentrated, and liabilities incurred in the early spring for advances (repayable out of tolls) in aid of construction to the full tether of this year's anticipated income, will make all the difference next year on prices.

One route opened is from New Westminster by steam to Douglas, thence *viâ* Lilloett and Pavilion Mountain to the east end of Lake la Hâche, through a good farming country. Thence north-westerly by Williams Lake to Alexandria; thence to Quesnel; thence into Cariboo, Antler, Keithley's, Williams, Lightning, and other Creeks, in a space of about 100 miles square. Another and the best route is from New Westminster by steam to Yale; thence without unpacking more than once (instead of eight or nine times, as on the Douglas route), along a level road by waggon to Lytton; thence by waggon road *viâ* the Thompson and Buonaparte Rivers, and Grave Creek to join the Douglas Lilloett Road this side (S.) of Lake la Hâche (Axe Lake), and on by Williams Lake, and Alexandria, to Cariboo. The waggon road only goes to Alexandria. From Alexandria the Fraser is a fine broad open stream with very little current, of an average breadth of 300 yards, and navigable for vessels or steamers for several hundred miles up to Tête Jaune Câche just this (W.) side of the Rocky Mountains.

A steamer has been built this year, for next, to ply from Alexandria to Tête Jaune Câche. From Tête Jaune Câche over the Rocky Mountains. A friend who has travelled over it many times tells me, the Pass is to the eye, though of course not in reality, "as flat as this table." It is the lowest pass and most accessible to across the Rocky Mountains. From Tête Jaune Câche to Jasper House is little over 100 miles, and can readily and cheaply be made passable by waggons, and of course hereafter by rail. From Jasper House (a reliable old H. B. Co.'s man called M tells me) to Edmonton, is level but wooded where the present road or horse trail runs, and five or six days journey, at about 20 miles a day on foot or horseback, would easily accomplish it. M. whose account is confirmed by any number of H B Co.'s' voyageurs, has gone from Jasper House by canoe to and over Assiniboin Portage 90 miles to Edmonton. This can therefore be done by land or water. From Edmonton to Red River settlement, M. has gone in barges all the way (and steamers could also consequently go that route), down the Sascatchewan River and Lake Winnepeg, with one change at the Great or Grand Rapid at Lake Winnepeg. If the traveller chooses he could leave the Sascatchewan River at Carlton, a H. B Co.'s Fort, whence carriages or waggons heavily laden have for years occasionally but readily gone to Fort Garry (Red River), traversing a fine rich level country, in a comparatively temperate climate, and well adapted for agricultural pursuits.

The great difficulty of an overland route has always been from Alexandria down the Fraser, and this by December 1 in this year of grace, 1862, will have been thoroughly accomplished and may be considered done. If the communications from Tête Jaune Câche were completed for waggons, which could be roughly done for under 100,000*l.* (perhaps half that sum, or even less, perhaps 40,000*l.*), a man could go then—

From New Westminster to Yale in	1 day	(steamer)
From Yale to Lytton	2 days	(stage)
From Lytton to Alexandria	4 days	(stage)
From Alexandria to Tête Jaune Câche ..	5 days	(steamer)
That is to say in 12 days, or even less, but say 12 to be safe.		
From Tête Jaune Câche to Jasper House, say 100 to 140 miles or less	5 days	(waggon
From Jasper House to Edmonton, 200 to 220 miles	7 days	(waggon)
I have put extreme distances here and time, for they are less, as is well ascertained, and steamers on the Athabasca will reduce it still more.		
From Edmonton to Red River, 220 miles ..	7 days	(waggon)
The same remark applies here with still greater force.	—	
	31 days	

From Red River to Lake Superior we know by Professor Hind's survey that a level road can readily be made to Lake Superior, whence the passage to the Atlantic by steam is unbroken, and this for HEAVY GOODS. Any one can calculate for himself with what ease and rapidity a pony express would traverse this route, or lightning flash electric words. Moreover, it is to be borne in mind that it is not, or one day will not, be necessary to leave the land at all for the lakes and canals to reach the Atlantic, where a rail or other road is carried along the height of land to the north of Lake Superior.

As you are aware, I have myself examined carefully, and more than once, the north shore of Lake Superior, and from the explorations then made in places inland at various points, I am thoroughly convinced that the rough and mountainous nature of that north shore is confined to the shore of Lake Superior, where the mountain gorges are hollowed out by the torrents flowing into the lake after rain storms, as they are most appropriately termed there, and would create the necessity for endless and difficult expensive bridging. Further

inland this is not the case; the only fear there would be going into level swampy ground and not taking the middle between swampy and (shall I coin a word?) gorgy land. I have used the expression 'mountain,' but really it should be 'hill.' In British Columbia we have had mountains to blast our roads through; in Canada West they are more fortunate, though I have heard Canadians themselves sigh "Oh! for a hill!" This level land runs along the north shore of the lake, and doubtless connects in a level "railroady" manner with the Government surveys of Lake Huron and the Canadian railroads. In this I am confirmed by a civil engineer who surveyed from Lake Huron westward, in that direction, and arrived at exactly the same conclusion which I see is also indicated by late Canadian surveys. However, this is for some years immaterial. The point to reach is Lake Superior; thence the descent to salt water is as easy as that of Avernus!

Towards this most vitally important object for these colonies, all the energies of our sagacious and resolute Governor have for several years been bent. No difficulties have been sufficient to make him falter for a second in carrying this plan into execution, and difficulties and responsibilities that would have frightened any other man have vanished at his touch.

His knowledge of the country of British Columbia is something wonderful. With a retentive memory and over 40 years intimacy with the country, and a marvellous facility at his age of adapting himself and his measures to the ever varying circumstances of a new country, and that a gold one, it is the less remarkable that he is always learning. I have heard it frequently remarked by persons ordinarily considered well acquainted with the geography of British Columbia, that after being brought into contact with him, "Governor Douglas had forgotten more than ever they knew about it." (*Jam fit tritum in sermone proverbium*). I am full of this road overland route just now, as a Canadian gentleman is here on a voyage of discovery—*on dit*, with a view of meeting our road efforts by similar approaches on the Canadian side.

I must conclude my notes on this subject by a few general remarks. 1. Such a route will follow the now fast settling route of traffic and settlement through the most important part of British Columbia, in the direction I have sketched. 2. Passes through a friendly country under our own flag. 3 Crosses the mountains at a much better and more level pass than the Coutanais recommended by Palliser, and through a more valuable country. 4. Follows a route that even Uncle Sam's army of 700,000 men would find it mighty difficult to interfere with, and presents many other geographical advantages besides. 5. Being ready to hand, so that Nature itself, now that the British Columbia roads are on the very eve of completion, seems to point the direction which the Great American Interoceanic Road will ere long necessarily take.

It is very odd that folks at home think that we Colonists, from constant contact with savage life, are degenerating in our tastes, and that "anything will do for the colonies;" what is not fit for the "Chamber of Horrors" will sell out there—why, it's 22,000 miles from England. They must gape, and swallow, is their practical reasoning. Whereas the reverse is the case, though manners become insensibly rougher to a certain degree, the longings and aspirations of the colonist are always tending to the improvement of his taste, and urge him continually to an earnest struggle afterwhat shall widen the distinction between the educated man and the savage.

Many Yankee tools are infinitely better, cheaper, stronger, handier than our; and in many small mechanical appliances to save labour they beat us out and out. It would be an easy task for English wares if good and reasonable, to command if not monopolize the markets of these colonies. But what do we see?—shiploads of rubbish arrive.

Englishmen strong in love of home buy because it is English, once or twice, and then finding them so worthless turn in despair to American goods, which only profess cheapness (and are cheap.) It gives a bad opinion of our mercantile genius to the Yankees. A few English houses here do however supply excellent goods.

I do not mean by these observations to create a prejudice against any house, but merely to illustrate my text that folks at home if they wish to secure this country as an enormous mart for English wares, should not mistake the colonists for fools, but by supplying a good article at a fair price and being content with moderate profits, work all other competitors, as they easily can do, out of the field; react most beneficially on productions at home, and so attach the Colonies to their mother by the additional ties of commerce.

Societies.

BOTANICAL OF CANADA.—His Excellency the Right Hon. Viscount Monck, Governor General of British North America, has been making a State tour through Upper Canada, and has met with an enthusiastic reception from all classes of the people. His Excellency visited Kingston, C.W., on Tuesday, October 7, when, among other entertainments and ceremonies, formal addresses were presented by public bodies in the City Hall. The Botanists of Canada were represented on the occasion by Prof. George Lawson, LL.D., who read the following address:—

"TO HIS EXCELLENCY VISCOUNT LORD MONCK, GOVERNOR GENERAL OF BRITISH NORTH AMERICA, &C.

"May it please your Excellency,—We, the members of the Botanical Society of Canada, desire with feelings of loyalty and respect to approach your Excellency as the representative of our Sovereign, and as the patron of our Society. We are labouring to develope a knowledge of the vegetable productions of this fertile land, and our efforts are not in vain. While our scientific investigations have been carried out with vigour and success, we have also introduced useful plants to the province, and have spread much valuable information. We have likewise succeeded, in no slight degree, n promoting among the youth of Canada a taste for the science of Botany, which is calculated to afford gratifying results, and especially to promote the industrial welfare of the country, so largely dependent upon the productions of the field and forest. It is true that the existence of our Society has not been recognised by the legislature. The Botanical Society of Canada is of spontaneous growth; it has grown up without State care or culture, spreading its branches over the length and breadth of the land, and fostering by its genial shade the growth of knowledge. Yet your Excellency will perceive that its fruits are not inferior in extent or quality to those of richly endowed Societies that have been more tenderly reared. In our fatherland, Botany has its discriminating patrons in the Royal family of England, with whom the science is known to be a favourite study. In Canada we recognise in your Excellency a patron whose personal interest in the advancement of useful knowledge is calculated to prove a blessing to the people and a comfort to the followers of science."

His Excellency the Governor-General read the following Reply:—

"To the Members of the Botanical Society of Canada—Gentlemen.—It affords me much pleasure to receive an Address from your Society, feeling as I do that your labours tend to accomplish two most desirable ends—the advancement of useful knowledge, and the refinement and education of the taste of the people.

"I rejoice to hear of your prosperity, and I trust that the Botanical Society of Canada may thrive and flourish with the same vigour and luxuriance that characterise, in so remarkable a manner, all the vegetable productions of this fertile country."

Notices of Books.

A Manual of Botanic Terms, by M. C. Cooke. 12mo, pp. 90, 27 plates.

A useful little book, intended principally for the use of students who are not acquainted with Greek, but containing many good definitions, which may occasionally be available to more practised botanists, especially where words are used with unusual significations. As may be supposed the index is far from perfect, but an attempt to define every word used by botanists would have greatly increased the bulk of the work, and would have consequently added to the expense, a point which the author was especially anxious to avoid. It would be easy to point out omissions, and minor defects, but these detract very little from the utility of the work, of which we are glad to possess a copy ourselves, as we have already consulted it with advantage, notwithstanding the modesty of its pretensions.

Journal of the Proceedings of the Linnean Society, Vol. VI., No. 24.

This number, which has been just issued, contains some capital Zoological and Botanical papers, and moreover the annual address to the Fellows, by Mr. Bentham, the distinguished President of the Society. We must content ourselves with a solitary extract from the latter document, which is a model of good sense and quiet criticism.

"The field of the science (Botany) is so extensive, and its surface so varied, that we must take separately the salient points from which we can penetrate into its depths. I do not allude to the divisions of the science according to the groups of animals or plants treated of; but in each department the attention of zoologists or botanists may be separately directed to general systems and classification, monographs, floras or faunas, descriptions of individual collections, animal and vegetable physiology, including homology of organs and comparative anatomy and biology—if that name may be applied to the history of animal and vegetable life—independently of organic chemistry, palæontology, practical zoology and botany, and other branches which only partially come within the limits assigned to us.

"Upon general systems and classification the few words I should have to say would be more in terms of deprecation than of encouragement. The great groups into which animals and plants have been distributed have been gradually established and characterised by the combined genius and lifelong labours of the most eminent naturalists, and no modifications can be accepted until their effects shall have been tested in all their details. All these systems are no doubt susceptible of improvement, and the investigation of characters to be derived from organs hitherto neglected, either from their minuteness or from other causes, might be of great importance, and would always be a legitimate object of our researches. Well-digested series of observations on the position of the ovule, the direction of its raphe and micropyle, considered with reference to their constancy or variability in large groups of plants, verifying and following up those which have been already published by one of our most careful observers, Mr. Benjamin Clarke,—on the constancy in genera or orders of those various forms of pollen, which have been described in detail by Mohl, Schacht and others as prevalent in large groups, but some of which Mr. Darwin has recently shown to be individual differences in different flowers of the same species—on the conformity of anatomical structure of the stem with other characters on which large groups are formed, which has chiefly occupied the attention of French botanists—and any similar researches would be valuable contributions to our publications, provided their authors do not, by attaching an undue or, at any rate, premature importance to characters they have thus brought to light, proceed at once to generalisation, remodelling the whole system of classification, and throwing everything into confusion by new names and new combinations which can never be safely adopted without re-examining and testing in detail that complication of characters upon which the old ones had been gradually established. Tabular arrangements of classes, orders, and minor groups, regularly defined by new characters, are tempting to make, and may look well on a black board; but if we have hitherto refused a place in our Transactions to those which have been offered to us, and if I do not here allude in particular to any of those which we are continually receiving, it is because we have seen no evidence of their being more than theoretical speculations, untested by a study of the innumerable exceptions which Nature offers to all our systems. And on this head I cannot resist applying to our own Transactions and Proceedings the words of Cuvier, prefixed to the Nouvelles Annales du Muséum, in 1832:—'L'expérience leur a appris, que ce qui dans des recueils de ce genre conserve un intérêt durable, ce que les savants consultent longtemps encore après la publication, ce sont les descriptions exactes et les bonnes figures d'espèces nouvelles, les caractères nouveaux découverts dans les espèces anciennes et propres à en rendre la distribution plus naturelle, ou la détermination plus précise, les faits nouveaux bien constatés dans leur histoire, les détails positifs et bien décrits de leur anatomie . . . . enfin tout ce qui, une fois consigné par écrit, demeure comme une partie intégrante de la science. Chacun peut s'apercevoir, au contraire, que les pures conceptions de l'esprit, les dissertations théoriques, les hypothèses variables au gré de l'imagination que les crée, en se renversant l'un l'autre d'année en année, quelqu'éclat qu'elles puissent jeter, quelque bruit qu'elles puissent faire au moment où elle paraissent, tombent bientôt dans le même oubli où sont tombées les hypothèses et les théories qui les avaient précédées, et qu'après quelque temps, les écrits où on les a exposées ne sont plus recherchés que par les curieux qui ne veulent ignorer aucun trait de l'histoire des sciences, laquelle n'est que trop souvent l'histoire des aberrations de l'esprit humain.'"

Garden Memoranda.

IMPERIAL WINTER GARDEN, VIENNA.—This garden, which is attached to the Palace of the Emperor of Austria, and extends from the Royal residence to the fortifications with which the city was once guarded, is about 3 acres in extent, and is laid out in the gardenesque style; it abounds with curved walks and Chesnut trees, which are planted chiefly for shade; there are also a great many masses of deciduous flowering shrubs at the different points where walks intersect each other. Summer houses are placed here and there for shade and retirement; this garden is a private one. On the side adjoining the Palace is the winter garden properly so called. It is in a lofty structure with a dark roof, and is about from 250 to 300 feet long, and 30 feet wide. In coming from the Palace one enters a noble vestibule or ante-room, plants are introduced here merely to fill up the corners, but among them are specimens from 20 to 25 feet high. From this point the winter garden is entered under a lofty arch; a sinuous walk pervades it throughout, with here and there an oval group of plants in the centre, dividing the walk, and thereby adding much to the general effect. The larger specimens are planted in the ground; the smaller ones are in pots. The latter are placed so thickly together that it is impossible to see through them without removing some of the foliage, and as a whole they look very pretty, but singly they must be very lanky indeed. The plants for the most part are New Holland kinds intermixed with some Dracæuas, Rhododendrons, Camellias, Palms, &c. There are large specimens of Acacias of various kinds, also of Leptospermum, Eucalypti, Eugenia myrtifolia, Clethra arborea, Pittosporums, Magnolias, and many of our common hardy evergreens, together with large examples of Araucaria excelsa and Cunninghami, Dacrydiums, Phyllocladus, &c. The whole is bordered with rockwork or toothed Lycopod; the walk is formed of cement, which is now being renewed, and the heating is effected by means of common flues. In the centre is a large room, at present empty, but used for arranging the flowering plants in spring; for this purpose a great number is provided. A circle of large dimensions in the centre of the gardens is used for plunging bulbs for forcing in; these are potted in 60-sized pots, and one bulb only, whether Tulips, Narcissi, or Hyacinths, is put into each pot; the smallness of the pots doubtless favours the plan of placing the plants close together.

In front of the conservatory is a wide gravel walk, and many borders, chiefly of circular form, are cut out upon the Grass for summer flowers. A small house on the north-east side of the garden is used as a reserve for the conservatory, and probably for forcing spring flowers. The portion of fortification attached to this garden will doubtless, ere long, be all that will remain; for the greater part of that ancient safeguard is already demolished. At a short distance from, and in a line with this is the Volksgarten, which was laid out and handed over to the public by the late Emperor. It is well planted with trees for shade and furnished with numerous walks. There are also a restaurant and two coffee houses in the east end; called the Paradiesgarten; in the centre is a handsome temple copied from that of Theseus at Athens, under which is placed Canova's beautiful group of Theseus killing a Centaur.

On the north side of Vienna is another Imperial garden called the Augarten. This is something like that of Schönbrunn, but upon a small scale. On entering from the Augarten Strasse is a good kitchen and fruit garden where vegetables are grown for the Emperor, this we should think was about 2 acres in extent · proceeding down towards the Palace, which is very small, the garden is entered by a gate on the left side; a broad walk is carried along the front of the building and through an avenue of clipped trees 30 or 40 feet high. In the centre of the building is a large square of lawn with a broad walk through the middle: this is also carried through an avenue of clipped trees, and the Hungarian mountains are seen to good effect in the distance. The Grass is again divided by a cross walk, and in the centre of each panel is a large group of plants consisting of Dahlias, Cannas, Caster Oil plants, &c. and at each corner and at the sides are circular beds of Geraniums, Calceolarias, Begonias and similar plants; on three sides of this square are high trees of Elm, Lime, &c., and walks are made in all directions under their shade. It is much in the

same style as that of Kensington Gardens, but is quite flat.

A short distance from this is the Prater or Hyde Park of Vienna; it consists of a series of low and partly wooded islands formed by arms of the Danube, and is sometimes during heavy floods nearly covered with water. There are several avenues here for walking and driving, numbers of places of amusements and for refreshments, but nothing in the way of decorative gardening is attempted. *E.*

Temple Garden Chrysanthemums.—These are perhaps scarcely so fine individually as we have seen them in more favourable seasons, but viewed as a whole they have a very pretty effect, especially Mr. Broome's best border, which is under the shelter of canvas, and about 75 yards in length. Some of the blossoms indeed, such as may be found on Nil Desperandum, a new kind of excellent properties; Queen of England, and its yellow variety, Dupont de l'Eure, Anaxo, Fabius, Don Quixote, Julia Grisi, Cassandra, Rifleman, Ariadne, Little Harry, Etoile Polaire, Lady Harding, Jardin des Plantes, Novelty, Progne, Astrolabe, Globe, Nonpareil, Hermione, Vesta, Sarah, and Alfred Salter, have seldom hitherto been surpassed even in these gardens either for size or beauty, and numbers of others, all at present finely in bloom, make up an exhibition which is well worth seeing, being the only bright spot in the floral way which the heart of London can boast of during such foggy miserable weather as we are now experiencing. A row of Pompones, too, along the front, in which are General Canrobert, Florence, Mustapha, Argentine, Model, King of the Chesnuts, Cedo Nulli, and a new sport from it, also adds considerably to the beauty of this border. Open beds along the upper portion of the lawn are likewise gay and beautiful in form, the plants being skilfully arranged as to size, and held in their places by means of a stout stake in the centre and cross bands of strong twine passed from that to outside supports, the whole being concealed under charming masses of flowers. This is the fourth crop which these beds have produced this year; the first was bulbs, the next annuals, then bedding plants, and lastly Chrysanthemums.

In the Middle Temple Mr. Dale has also a fine display, especially of large kinds, on a wall under protection. Here many of the blooms are of unusually large size, some of those on Queen, Beauty, Nonpareil, Wonderful, Madame Poggi, Yellow Queen of England, Jardin des Plantes, and Orlando, measuring as much as 5 and even 6 inches in diameter. Arigena, Dupont de l'Eure, and Cherub, the last a good new kind, are also in excellent condition, as well as numbers of other varieties, the names of which are familiar to all growers of this useful flower. Pompones bedded out are likewise as brilliant as could be expected under such unfavourable weather, and they serve to show how valuable a plant the Pompone Chrysanthemum is for this kind of decoration, and how well it is calculated to render even our London outdoor gardens attractive long after the beauty of summer bedding plants has fled. This portion, therefore, of the gardens is also well worth inspection.

Mr. Salter's Nursery, Hammersmith.—In this establishment there is now an admirable display of bloom, and lovers of this useful autumnal flower will do well to inspect the collection at once. Under glass, in what is called the Winter Garden (a lean-to building some 85 feet long, in the form of a T), the plants are in clumps, surrounded by winding paths neatly edged with Box, an arrangement which is far more pleasing than unbroken masses of gaudy colours. With a view to heighten the effect, fine plants, remarkable for the size and beauty of their leaves, such as Canna zebrina and discolor, Caladium esculentum, Wigandia caracasana, Yucca variegata, Centaurea candidissima and gymnocarpa, Orange trees, Camellias, and Araucarias have been stationed among the Chrysanthemums at points where they have the best appearance. In the principal bank of large flowers (running the entire length of the house) are some thousands of expanded blooms, and the brilliancy and variety of colours are charming.

Of new varieties the following are among the best, viz., General Slade, Sparkler (a perfect gem), Miss Slade, pale sulphur; Cherub, golden amber, incurved; Draco, fiery red; Dido, sulphur white, incurved, dwarf, and fine in habit; Lord of the Isles, incurved rosy orange, very high centre; Saint George, golden yellow; Duchess of Wellington, White Christine, a sport from Christine, and valuable as a specimen plant; White Themis, a sport from that variety; and White Queen of England, also a sport.

Among new flowers of this year, the most remarkable at present in bloom are, Her Majesty, beautiful incurved blush; Margaret Vatcher, a blush Anemone kind of the most promising description; Daphne, sulphur; Rev. J. Dix, Golden Amber, Lord Palmerston, claret tipped with silver; Duchess of Buckingham, white; Princess Alexandra, peach, with yellow centre; Latona, white; and Cardinal Wiseman, blood red.

Among new Pompones we noticed Acis, Capella, dark chesnut; Citronella; Lucinda, rose and lilac; and Pyramidalis, amber and gold. These are in the shape of dwarf bushy plants covered with well-formed flowers. Other groups contained all the best varieties in general cultivation, among which the most conspicuous were Alfred Salter, large and fine; Aimée Ferrière, delicate silvery white with rose tip; Arigena, large incurved amaranth; Ariadne, cream and rose; Caractacus, large incurved carmine; Cassandra, fine white; Carissima, finely formed blush; Golden Queen of England, a splendid variety, large yellow; Hermione, yellow blush; Ion, snow white; Jardin des Plantes, splendid large bright yellow; Julia Grisi, very pretty peach; Julie Lagravière, dark crimson; Lord Ranelagh, reddish orange, most perfect in form; Lady Harding, lovely rose pink, beautifully incurved; Leon Leguay, large rosy lilac; Le Trouvère, delicate peach; Little Harry, bright golden amber, one of the most perfect flowers in cultivation; Marechal Duroc, rose; Mr. Fleurien, finely-formed blush; Mr. Murray, bright violet purple; Mrs. W. Holborn, large white; Pandora, rosy nankeen; Prince Albert, fine large crimson; Progne, very dark crimson; Queen of England, and the various fine sports that have sprung from it; Rifleman, fine dark ruby; Sulphureum superbum, sulphur yellow. Of these there were numbers of beautiful examples, and being neatly arranged they had an excellent effect.

In the Royal Horticultural Society's Garden at South Kensington there is also a plantation of Chrysanthemums, made by Mr. Salter. It occupies the site on which Messrs. Waterer & Godfrey's show of American plants was held, and containing as it does all the leading kinds now in cultivation, it is well worth inspection. The plants, though put in late, have bloomed in excellent condition. Among them are beautiful examples of Gluck, still a valuable Anemone-flowered yellow; Rifleman, orange-red; Bixio, brilliant crimson; Mount Etna, bright orange red; Saccoivera, an incurved pink, of good properties; La Belle Blonde, a good white; Madame Camerson, reddish orange; Luteum formosum, Dupont de l'Eure, Sulphureum superbum; Trilby, one of the best in the collection; Etoile Polaire; Temple of Solomon, yellow; Chevalier Domage; Prince Albert, crimson scarlet, a very handsome variety; Cassy, still one of the best of its class; Alma, large purplish crimson; Diadem, white; General Slade, red and gold; Sylphide, blush, tipped with yellow; Little Harry, golden yellow; Dr. Brock, incurved brown and gold; and Bossuet, purplish crimson.

The above are under canvas; but in the open air are some nice beds of Pompones, among which Eugene Domage, white; Marabout, Mr. Astie, yellow, with a brown centre; Aurora Borealis, brownish red; Satanella; General Canrobert, yellow; and Arabella, blush with a dark centre, are conspicuous. Plants pegged down on banks to form dwarf masses are not yet in flower, but altogether the display, as it is at present, is very beautiful.

Miscellaneous.

On the Unicorn of the Ancients. By the Rev. W. Haughton, M.A., F.L.S.

Few subjects of zoological interest have from time to time given risen to more discussion than that which relates to the question as to what animal is denoted by the "Unicorn" of the ancients. Various reports have been given by travellers, that an animal still exists in some parts of the world which bears a marked resemblance to the one-horned animal under consideration; and although scientific men have no hesitation in regarding the Unicorn as a fabulous animal, yet from time to time travellers write home that they are on the track of the veritable creature itself; and I only read the other day that Dr. Baikie, the African traveller, now in charge of the Niger Expedition, is in pursuit of the animal, and thinks that he may be able to discover it in some of the unexplored wastes of Central Africa! He learned from two informants that they had seen the bones of such an animal, and states that they accurately describe the long, straight, black horn, and carefully distinguish between the one-horned Rhinoceros and the supposed Unicorn! Dr. Baikie gives a list of native names by which this unknown animal is called in various African dialects, and is quite disposed to believe that its non-existence is by no means proved.

What are the chances of our seeing a specimen of the Unicorn brought home to this country, and forming the grand object of attraction to all the world? Why should not a one-horned animal exist such as we see depicted on the royal arms? Father Lobo, in his "History of Abyssinia," actually describes the Unicorn as a beautiful horse; and Barrow, in his "Travels in Southern Africa," gives the figure of a head of a Unicorn which he saw drawn on the sides of a cavern, and appears to entertain no doubt that such an animal exists. No traveller, however, has as yet succeeded in obtaining a specimen; and I venture to affirm very positively that the like result will attend Dr. Baikie's search. But let us take a brief survey of what the ancients have recorded of the Unicorn, or rather Unicorns, for there are at least three, if not more, one-horned animals mentioned by them.

And first of all, there is the Unicorn of the Bible. Pages upon pages have been written on this subject. Some have said it must have been the Antelope (Oryx leucoryx) of North Africa, Syria, &c., that the horns, seen in profile, appear as one, and hence the mistake of regarding it as a one-horned animal; others have no hesitation in referring the Unicorn to the one-horned Rhinoceros (R. unicornis) of Asia; this is the opinion generally entertained at this day. Now, all attempts to discover a one-horned animal that shall represent the Unicorn of our English Bible are beyond the mark entirely, and for this simple reason: the so-called Unicorn is no Unicorn at all; the Hebrew word (*R'êm*) denotes a two-horned animal, beyond a shadow of a doubt. The "Unicorn" of our English Bible owes its origin to the Septuagint and Vulgate versions. In the 17th verse of Deut. xxxiii., which contains a portion of Joseph's blessing, it is said, "His horns are like the horns of a *R'êm*." Our translators, seeing the contradiction involved in the expression, "horns of the *Unicorn*," have rendered the Hebrew singular noun as if it were a plural form in the text, though they give the correct translation in the margin. The two horns of the *R'êm* are "the ten thousands of Ephraim and the thousands of Manasseh," and represent the two tribes which sprang from one (viz. Joseph), just as two horns spring from one head. The Unicorn of the Bible, therefore, may be dismissed at once as being a very unhappy translation of the Hebrew two-horned *R'êm*, the animal denoted being, there cannot be much doubt, some species of "wild ox," as appears pretty evident from a comparison of the different passages where the word occurs in Holy Scripture. The *R'êm* was two-horned; it is almost always mentioned with bovine animals; it is said to push with its horns; it must have been frequently seen by the ancient Hebrews roaming on the hills of Palestine or in the woods of the Jordan valley, as is evident from the numerous allusions to it. It is true there is no wild ox at present known to exist in Palestine; but this is no reason why, in early times, some mighty species allied perhaps to the Urus which Cæsar saw in the Hercynian Forest, should not have existed in that country. Lions were certainly not uncommon in Palestine and Syria in Biblical times, as is clear from the numerous allusions to them in Holy Writ; and it is interesting to note, as an additional proof, that the late Dr. Roth discovered bones of the lion in gravel near the Jordan; it is, therefore quite probable that future investigations in Palestine may result in the discovery of the bones of Bos primigenius or Bison priscus or some other once formidable ox. All readers will remember the beautiful description of the *R'êm* in the Book of Job; now let us compare with it the account Cæsar gives of the fierce Urus, which in his time frequented the great Hercynian Forest:—"These Uri are scarcely less than elephants in size, but in their nature, colour, and form are bulls. Great is their strength, and great their speed, nor do they spare man or beast when once they have caught sight of him. The hunters are most careful to kill those which they take in pitfalls, while the young men exercise themselves by this sort of hunting, and grow hardened by the toil; those of them who kill most, receive great praise when they exhibit in public the horns as trophies of their success. These Uri, however, even when they are young, cannot be habituated to man and made tractable. The size and shape of their horns are very different from those of our oxen."

The indomitable nature ascribed to these wild Uri exactly agrees with the description of the *R'êm* as given in chapter xxxix. of the Book of Job; and the apparently implied contrast which is made between the domestic ox and the wild Urus finds an analogue in the above extract from Cæsar. The same remark may be made with respect to the great size and strength of the Scriptural *R'êm* when contrasted with the domestic oxen of Palestine, the ancient inhabitants of which land would naturally draw the same comparison between their domestic cattle and the mighty *R'êm* as Cæsar's legions did between their cattle (Bos longifrons) and the great Hercynian wild bulls (Bos primigenius), whose bones are now occasionally found, together with those of the elephant, hyæna, &c., in the Tertiary deposits of this country.

It is time, however, to turn our attention to the Unicorns which are mentioned in the writings of the ancient Greeks and Romans.

The earliest record of the existence of a one-horned quadruped is to be found in Ctesias's Treatise on India (Ἰνδικά), of which we possess an abridgement in Photius and a much more complete edition by Bähr. Ctesias lived in the time of Xenophon (circ. B.C. 400), and resided for many years in Persia as physician at the court of King Artaxerxes Mnemon. It was while he was there that he collected materials for the above named treatise, which consists mainly of a description of the natural history of the north-west part of India: it must be borne in mind that his account of the natural history of that country was derived second hand, for Ctesias was never himself in India. He must therefore be understood simply to give the Persians' own accounts of their various animals, which were doubtless often mixed with fable. Aristotle regarded Ctesias as a man utterly unworthy of credit—rather a harsh judgment, it is true, but probably not very far from the mark. However, under the name of ὄνοι ἄγριοι (wild asses) Ctesias describes his Unicorns. He says, "They are as large as horses, and even larger, with white bodies, red heads, blue eyes, and have each on their foreheads a horn a cubit and a half long, the base of which is white, the upper part red, the middle part black. Drinking-cups are formed of these horns; and those who drink out of them are said to be subject neither to spasm nor epilepsy, nor to the effects of poison. Other asses have no astragalus; but these have one, as well as a gall-bladder. The astragalus I have seen myself: it is beautifully formed, in shape like that of an ox, and very heavy and red throughout. The animal is so swift that no horse can overtake it, and so strong and fierce that it is with difficulty destroyed by arrows and javelins. It begins its running slowly, but gradually increases its speed; it shows great attachment to its young, which it defends against its pursuers, fighting with horn, teeth, and heels. The flesh is so bitter that it is not eaten; but men set a high value on the horns and astragali."

Aristotle simply mentions this Unicorn under the name of ὄνος ἰνδικός (Indian Ass). "We have never seen," he says, "a solidungulous animal with two horns; and there are only a few solidungulous animals with one horn, such as the Indian Ass and the Oryx (ὄρυξ). Of all animals with a solid hoof the Indian Ass alone possesses an astragalus."

Pliny's account of the Indian Ass is much the same as Aristotle's. "It is the only solidungulous animal that has an astragalus; the Oryx is one-horned, but it is cloven-footed." Pliny, it will be seen, here differs from Aristotle, who represents the Oryx as solidungulous. Here, then, it is evident we have two Unicorns—the solidungulous Indian Ass with an astragalus, and the Oryx. But it appears there is still another one-horned animal, viz., the Monoceros. "The Orsæan Indians," says the Roman naturalist, "hunt a very fierce animal, called the Monoceros, which has the body of a horse, the head of a stag, the feet of an elephant, and the tail of a wild boar; it utters a deep lowing noise, and has a single horn, two cubits long, projecting from the middle of its forehead. They say this animal cannot be taken alive."

Ælian, who lived long subsequently to any of the above-named writers, mentions the ὄνοι ἄγριοι (the description of which is every word borrowed from Ctesias), and the Monoceros, which he says the natives of the interior of India call Carcazonon; "it is the size of a full grown horse, with a mane and yellow woolly hair, of extreme swiftness, with feet like the elephant, and the tail of a wild boar; it has a black horn growing between the eyebrows, which is not smooth, but with natural convolutions, and is very sharp at the point; it emits loud discordant sounds; it lives peaceably with other animals, but quarrels with those of its own kind, the males even destroying the females, excepting at the breeding-season, at which time the animals are gregarious, but at other times they live in solitude in barren tracts. The Monoceros is endued with great strength, and is armed with an invincible horn."

The whole of the accounts of these Unicorns are so evidently deeply tinged with fable that it is a matter of surprise how any persons should ever have supposed it possible that such animals might still be existing in unexplored countries. Major Latter, however, some years ago, was very sanguine of being able to find a veritable Unicorn in the interior of Tibet; he was informed by a native that he had frequently seen these animals, which "were fierce and exceedingly wild, and seldom taken alive, but frequently shot;" and that they are frequently to be met with on the borders of the great desert, about a mile from Lassa. From a drawing which accompanied Major Latter's communication,

the presumed Unicorn was something like a horse, but with cloven hoofs, a long curved (?) horn growing out of the forehead, and a boar-shaped tail.

Mr Campbell's "discovery of the Unicorn in Africa" was nothing more than that of some species of rhinoceros, which he identifies with the *R'êm* of the Hebrew Scriptures.

The animal which Mr. Rüppell was told by a native existed in Africa, and which had a long straight horn growing from its forehead (?), was also doubtless a rhinoceros.

Under the head of "Unicorns in Asia," in the "Asiatic Journal" (vol. ii. new ser. 1830), a writer revives the opinion of the existence of veritable Unicorns, such as were reported to Major Latter; the animal in question was of the deer kind, having a single horn at the top of the head; it was known by the name of Seru. The Editor of the "Asiatic Journal" makes the following wise remark hereupon:—"When we consider that eight years have elapsed since Major Latter's account was given, and that, notwithstanding increased opportunities with Tibet, no fact has since transpired which supplies a confirmation of that account, excepting the obtaining a supposed horn of the supposed Unicorn, we cannot participate in these renewed hopes."

In vol. ii., p. 250, of the same Journal we read:—"Vertoman gives the following account of two Unicorns in Arabia:—In the other part of the temple of Mecca are parks or places enclosed, where are seen two Unicorns, and these are shown to the people for a wonder; the one of them, which is much higher than the other, is not much unlike a colt of two and a half years old; in the forehead grows one horn, straight forward, of the length of 3 cubits. The other is much younger, and like a colt one year old. The horn of this is of the length of 4 spans. The beast is of the colour of a horse, of a weasel-colour, with a head like a hart, but no long neck, a thin mane hanging only on one side. The legs of both are thin and slender, like a fawn or hind; the hoofs of the four feet are divided in two, much like the feet of a goat; the outer part of the hind feet is very full of hair. They seemed wild and fierce. They are sent to the Sultan of Mecca from the King of Ethiopia!"

There are other reports as to the existence of real Unicorns, such as those of Sparrmann, Lobo, Thenet (who asserted he had hunted Unicorns with the King of Monomotopa), Garcias, and others; but where a veritable animal is meant by the term, that animal is unquestionably some species of Rhinoceros: for all attempts to obtain a specimen of a quadruped with a single horn on its forehead have failed, and the accounts of the existence of such animals are very vague, and entirely unsupported by anything approximating to satisfactory evidence.

The one-horned animal of which Ctesias speaks is in all probability the Rhinoceros unicornis, exaggerated accounts of which would perhaps have been given him by the Persians, while his own love of the marvellous added the remainder. From Ctesias's *one* single-horned animal, in process of time there came to be at least *three* Unicorns, namely the ὄρυξ, the ὄνος ἄγριος or ἰνδικὸς, and the μονόκερως, no living representatives of any of which animals can be supposed to have any existence in nature. Naturalists are, we believe, agreed upon the point that the so-called Unicorn is a fabulous animal from beginning to end. It has merely been my object in this paper to show how utterly groundless is the foundation on which the whole superstructure rests. We cannot, therefore, participate in the slightest degree in the hope that Dr. Baikie will be more successful than his predecessors. *Annals of Natural History.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c. — During weather like the present, this structure will require very careful management. The best plan is to keep as low and dry a temperature as can possibly be permitted, say from 40° to 45° at night, allowing it to rise a little in the daytime. In mixed greenhouses see that the young stock of Heliotropes, Pelargoniums, Cyclamens, and other flowers, grown especially for winter, have nice light situations and regular attention as regards watering. The forcing-pit must provide at the proper season such things as Rhododendrons, Azaleas, Persian Lilacs, Sweet Briars, Moss and other Roses, Sedums, Kalmias, Daphnes, Anne Boleyn Pinks, Dutch Bulbs, &c. If the heat is furnished by means of fermenting materials, keep down accumulating damp and mouldiness by an almost constant ventilation, increasing the linings in order to raise the necessary temperature. Those who possess pits warmed by hot water will of course pursue a somewhat different course. Look well to pits and frames containing stores for next summer, and have efficient protecting material always in readiness, with which to cover them whenever the weather is unfavourable. Bedding plants, however, must have attention, for in all likelihood many things are suffering from damp, and such plants as appear to suffer most should be removed to other quarters where a drier temperature is kept. Keep store stock well ventilated and the surface soil of the pots frequently stirred. Dust with sulphur Verbenas and similar plants attacked with mildew. Be particular in keeping the interior of pits containing plants of the above description as dry as circumstances will permit. Do not forget when there is an opportunity to introduce in gentle heat a good batch of Roses for succession, choosing the most promising plants of Teas, Bourbons, and Hybrid Perpetuals, which are the best kinds for winter flowering; a gentle bottom-heat will be of service to these as well as to most other plants subjected to heat in order to get them into flower early, and a moist state of the atmosphere must be secured, admitting a little air freely on every favourable opportunity. In greenhouses damp or insects soon do irreparable injury to soft-wooded plants at this season, and these must be attended to if the plants are to be wintered in first-rate condition. Pelargoniums should be kept rather cool and dry, giving whatever water may be necessary on the mornings of fine days, so that the superfluous moisture may be dried up before the evening, avoiding the use of fire-heat except when necessary to prevent the temperature falling below 40°, or to dispel damp when this cannot safely be done by giving air. Calceolarias require very similar treatment, except that they are subject to the attacks of thrips, unless afforded a moist atmosphere; they must therefore be narrowly watched, and fumigated lightly two or three evenings successively if this pest makes its appearance, keeping the atmosphere moist and giving air on every favourable opportunity to prevent the foliage from flagging. Cinerarias for late blooming must also be kept cool and airy, and should not be allowed to suffer from want of pot room. These must not be trusted in cold pits after this season, for they cannot endure much frost. Plants intended to flower early should be encouraged with a gentle heat, keeping them near the glass and admitting air whenever it can be done.

FORCING DEPARTMENT.

PINERY.—Water plants in pots as little as possible at this season; where the general stock is grown in this manner it is a good plan to cover the pots over 2 or 3 inches with the plunging material; where the bottom-heat will permit that to be done it obviates the necessity of watering so frequently.

VINERIES.—Employ fire-heat sparingly in houses where ripe fruit is still hanging, but sufficient must be used if the weather should become frosty to prevent the moisture of the atmosphere being frozen to the glass inside the house, for if this is allowed to happen the moisture on thawing is liable to drop upon the bunches, injuring the bloom and causing the berries to decay. Admit air on every favourable opportunity, and examine the bunches often and carefully, so as to make sure of removing decaying berries the moment it can be perceived they are affected. Where forcing is commenced be careful to maintain a properly moist state of the atmosphere, and this must be especially attended to in the event of severe weather, particularly when the buds are bursting. The evaporating troughs must be kept constantly supplied with water, and the paths, bed, &c., should be frequently syringed. If fermenting material is used for warming the border, this must be well covered with dry litter, and turned occasionally, adding some fresh as may be necessary to keep the heat in the border regular. It will be advisable, however, to have some dung and leaves thrown up to heat, as there would be some danger of chilling the bed by turning it in the event of frosty weather, and mixing it with the dung or leaves which had not commenced fermenting. Houses which it is intended to commence forcing the beginning of next month should also have some fermenting materials placed on the borders so as to encourage the roots a little before the Vines are excited, which will be of great service towards getting the buds to push strongly and without loss of time.

FLOWER GARDEN AND SHRUBBERIES.

Examine pillar and trellis Roses, and if the weather is favourable see if the soil wants renewing or the kinds changing. For choice sorts roomy holes should be made capable of containing three or four barrowloads of well prepared soil. Turfy loam of good quality is the chief thing; to this add a portion of rich rotten manure, and, if at hand, a little sandy peat or leaf-mould. Crocuses may be planted whenever the weather is favourable; they like a deep, light, rich sandy soil; but will thrive in any ordinary soil or situation. In planting, the bulbs should be covered from 2 to 3 inches with fine mould; and if an effective display during the first season is desired, plant thickly —not more than 2 inches apart. For edging borders and beds, the Crocus is also exceedingly useful; and, where planted in lines along the margin of walks, or in clumps of 3, 6, 12, or more bulbs each, and allowed to remain in the ground for several years, the effect of the masses of flower which they produce is all that can be desired. We have seen a very effective display in a flower garden in March, produced by each bed having a broad edging of Crocus, the colours being nicely arranged and contrasted. This may be secured without interfering with either the spring or summer occupants; for the bulbs may be planted close to the outside of the bed, where they will scarcely be in the way, either in digging or in planting. Unless the bulbs become too numerous, and the leaves spread over more space than it may be desirable to have covered with them, they should not be disturbed, as they bloom more profusely when well established. Care must be exercised, however, to protect them from mice, which are exceedingly partial to Crocuses, especially in winter. For blooming in-doors, either in pots or in any of the various contrivances that are used instead of pots, strong bulbs should be selected, planting them in succession, and keeping the crowns slightly under the surface of the soil; place them in any dark cool situation, for three or four weeks, to allow of their making roots, before exciting them into growth. If pots are used—and these are doubtless the best, if not the most ornamental—use good rich, sandy soil, and secure perfect drainage; for a liberal supply of water is required during the blooming period; and if the drainage is defective, the soil is very apt to become sodden by injudicious watering. While the bulbs are kept in a dark place, very little water need be given, merely sufficient to keep the soil, moss, or sand from becoming too dry. When the roots have made some progress, the crowns will soon make their appearance; and, as soon as these are observed, remove to the greenhouse; or where this is not convenient, a cold frame or pit will answer perfectly; they will also do exceedingly well in a sitting-room window. All that is requisite is to allow them all the light and air possible on mild days, giving water as may be necessary, to keep the mould, &c., in a moist state.

HARDY FRUIT AND KITCHEN GARDEN.

Trench, dig, and ridge every spare inch of ground whenever the weather will permit these operations to be advantageously performed. This is particularly to be observed in gardens the soil of which is of a clayey nature. Prepare a plot of ground directly for the earliest Peas by thorough digging and manuring; they may be sown now while the weather is favourable. A few Mazagan Beans may also be planted at the same time. Seakale should now be introduced to a bottom-heat for the earliest supply; those who force it where it grows may apply some hot manure round a few pots. Let all Carrots be taken up and stored away, likewise Beet; a few Parsnips for present use may be taken up; they will, however, keep well in the ground, and thus circumstanced they may have a coat of manure spread over them for the next crop, and trenched out as wanted. It is a good plan to cut the head of the Carrots completely off below the neck, thus checking their tendency to grow. They may then be put in pits like Potatoes, raising a sharp ridge over them to keep out wet. It is time to think of forcing a little early Asparagus; the principles applied to the forcing of Seakale, &c., are in the main applicable to this, except that the Asparagus requires abundance of air when growing through the soil. Proceed with pruning fruit trees as soon as the leaves are fallen; let nothing of this sort remain till spring, which will bring its own labours. Get all superfluous nails and shreds drawn soon, in order to furnish in-doors work in bad weather. Men do little good working out under such circumstances. Sometimes much harm, both to themselves and the land, by closing and hardening its surface.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.

For the Week ending Nov. 5, 1862, as observed at the Horticultural Gardens

October and Nov.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind.	Rain.
Thurs. 30	7	29.810	29.718	51	43	47.0	51	51½	E.	[illegible]
Friday 31	8	29.743	29.659	55	40	47.5	51	52	E.	[illegible]
Satur 1	9	29.830	29.792	55	49	52.0	51	53	E.	[illegible]
Sunday 2	10	29.950	29.886	60	42	51.0	51½	52	N.W.	[illegible]
Mon. 3	11	30.027	29.981	57	34	45.5	52	52	S.	[illegible]
Tues. 4	12	29.989	29.955	58	40	49.0	52	52	S.	[illegible]
Wed. 5	13	29.986	29.979	51	33	42.0	51	51½	N.W.	[illegible]
Average		29.905	29.853	55.3	40.1	47.7	51.2	52.0		[illegible]

Oct. 30—Foggy; overcast; foggy; rain at night.
— 31—Hazy; foggy; fine; clear at night.
Nov. 1—Foggy throughout; drizzly at night.
— 2—Foggy; very fine; slight fog; fine.
— 3—Hazy; fine; cold at night.
— 4—Foggy; overcast; rain at night.
— 5—Rain; rain and fog; hazy and drizzly.

Mean temperature of the week 2 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK

During the last 36 years, for the ensuing Week, ending Nov. 15, 1862

November.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 9	50.6	34.7	42.7	14	0.40 in.	3	4	3	3	5	9	3	[illegible]
Mon. 10	50.6	35.4	43.0	21	0.67	3	6	3	2	8	9	2	[illegible]
Tues. 11	51.0	35.5	43.2	15	1.02	3	5	6	1	[illegible]	[illegible]	5	2
Wed. 12	50.5	34.5	42.5	16	0.50	3	4	7	3	3	7	[illegible]	2
Thurs. 13	49.8	35.8	42.8	20	1.16	2	9	4	2	6	4	5	4
Friday 14	48.0	34.0	41.0	19	1.24	6	5	4	5	2	6	4	4
Satur. 15	48.5	34.3	41.4	16	0.34	2	5	5	3	4	10	5	2

The highest temperature during the above period occurred on the 12th, 1841—therm. 63 deg.; and the lowest on the 9th, 1854, and 15th 1848—therm. 18 deg.

Notices to Correspondents.

CAMELLIA RETICULATA: *J A H.* It has always been the practice of this species, from the first year of its introduction, to produce variegated leaves. There is a notion that all variegated plants are diseased, but in our opinion a man may as well assert that all piebald horses are diseased, or all black and white cats. The truth is that the real cause of variegation is unknown.

FUNGI: *Sigma.* Your fungi are Bulgaria sarcoide and Cantharellus cinereus. The latter is the more interesting because it has not been found since Bolton's days, if indeed Bolton's plant be the same. *M J B.*

GALVANISED IRON NETTING: *J P M.* We do not apprehend any injurious effects from the use of galvanized wire netting as a trellis for the training of Peach trees.

GRAPES: *S R.* What! Keep the Vinery very close, and cut the leaves off!! Let your gardener go on in this way and you will soon have no Vines; the practice is that of a most ignorant man, who should be advised to turn his hand to any thing except gardening.

NAMES OF FRUITS: *N K.* 1. Gansel's Bergamot; 2, Brown Beurré; 3, Swan's Egg; 5, Marie Louise; 6, Thompson's; 8, Autumn Bergamot.—*W B.* 2, Dutch Hamburgh.—*J E.* Not known.—*J M P.* Appears to be the Black Morocco.—*Anon.* labelled with edges of a postage stamps sheet: 1, 16, Louise Bonne; Marie Louise; 3, 4, Beurré Diel; 10, 12, Howthornden; 19, Hacon's Incomparable; 20, Williams's Bon Chrétien.

THE HYDROPULT: *A Jeans.* This is a handy engine for small work in which a very forcible stream is not required. But you must take great care to have the engine thoroughly *tested* before purchasing it.

TRANSCENDENTAL BOTANY: *Æggerhius.* Don't run after meteors.—What is natural history but a collection of facts?—What is classification but an arrangement of facts?—On what can an arrangement of facts, if it is to convey available information, possibly depend, except upon things manifest to the senses? Visions, opinions, speculations, imaginations do not relate to things manifest to everybody; they are of necessity confined to the individual who forms them. Therefore, all that kind of Natural History which is visionary, speculative, imaginary, is not entitled to the name it is made to bear. People may call it philosophy if they will; but to the name of Natural History it has no title. In short all branches of Natural History, whether Zoology in its many departments, or Botany, are positive sciences, not speculative. What is called transcendental Natural History belongs to the region of Dreamland.

WORMS ON LAWNS: *Highwood.* Water the lawn with fresh made lime water, when quite clear. We regret to say we fail to understand the question about turf.

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11*l.* 11*s.* per Ton for cash.
Peter Lawson & Son, 27, Great George Street, Westminster.

LAWES'S WHEAT MANURE for AUTUMN SOWING.
In consequence of the high price of Peruvian Guano, J. B. Lawes has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of J. B. Lawes, or through any of his appointed Agents. Price per ton at the Factories, Deptford and Barking Creeks.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address John Bennet Lawes, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

THE LONDON MANURE COMPANY have now ready
PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
BLOOD MANURE for ditto.
SUPERPHOSPHATES of LIME, &c.
All the above being in the finest condition. They also continue to supply
GIBBS'S PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of known value.
E. Purser, Secretary.
116, Fenchurch Street, E.C.

Autumn Sowing.

BLOOD MANURE, for Wheat, Barley, &c., 7*l.* 5*s.* per Ton; ANIMAL MANURE, for Wheat, Barley, &c., 7*l.* per Ton, Cash, in Bags. PREPARED BONE MANURE, for Grass, &c.; NITRO and SUPERPHOSPHATES, &c.
All the above, being in fine condition, will be sent to any of the Railway Stations between Hull and London, Carriage paid.
Edward Stephenson, Sculcoates Blood Manure Works, Hull.
N.B. The Blood and Animal Manures are specially recommended to Florists and Horticulturists for Vegetables, Standard and other Fruit and Flower Trees, &c., being the best Manures known for those purposes.

Autumn Sowing.

THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY (Limited), consisting of Tenant Farmers occupying upwards of 30,000 Acres of Land.
Chairman.—Jonas Webb, Babraham, Cambridgeshire.
Managing Director.—James Odams.
Secretary.—C. T. Macadam.
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex.
This Manure has been in use for upwards of 10 years, and has given great satisfaction to consumers. It is specially prepared for Autumn Sowing, and on most soils proves as effective as the best Peruvian Guano.
Orders may be sent to the Company's Agents throughout the country, or direct to C. T. Macadam, Secretary.
Price 7*l.* 10*s.* per Ton, delivered at any Railway or Wharf in London.
Offices: 109, Fenchurch Street, London, E.C.

40 to 45 per Cent. of Soluble guaranteed. 1862.

BURNARD, LACK and CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.
Extract of Opinion from Mr. Way, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. Voelcker, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to Burnard, Lack & Co., Plymouth.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5*s.* per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. Humbert, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.
To Landowners, the Clergy, Estate Agents, Surveyors, &c. in England and Wales and in Scotland.
The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.
1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm Houses and other buildings for farm purposes.
Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

MESSRS. WAY and EVANS, Analytical Chemists, have REMOVED their LABORATORY from 15, Welbeck Street, Cavendish Square, to 106, Leadenhall Street, E.C., where all Letters and Samples for Analysis should in future be addressed.—Nov. 8.

AGRICULTURAL and CHEMICAL COLLEGE, 37 and 38, Lower Kennington Lane, London, S.
ASSAYS and ANALYSES promptly attended to by J. C. Nesbit, Lansdell & Co.

AGRICULTURAL and CHEMICAL COLLEGE, Kennington.—Manufacturers and others engaged in making Artificial Manures may obtain every necessary instruction for their economical and efficient preparation by applying to J. C. Nesbit, Lansdell & Co., 37 and 38, Lower Kennington Lane, London, S.
Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.
Gentlemen, Farmers, or others, desirous of practical knowledge in Chemical Analysis, or Assaying, may receive instruction at the College, where the extensive Laboratories give ample facility for pursuing their studies, and there is accommodation for a limited number of Resident Students.
Full particulars of terms will be forwarded on application.

Land Drainage.

WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.
Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent. of annual charge to the circumstances of the tenants.
No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.
Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.
Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.
Applications to be made to William Clifford, the Secretary at the Offices of the Company, 52, Parliament Street, S.W.

THE BIRMINGHAM CATTLE and POULTRY SHOW, 1862.
The FOURTEENTH GREAT ANNUAL EXHIBITION of FAT CATTLE, SHEEP, PIGS, DOMESTIC POULTRY, ROOTS, BARLEY, and IMPLEMENTS, will be held in Bingley Hall, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4, when Prizes—Cups or other Articles of Silver Plate, and Gold and Silver Medals—to the amount of 1835*l.*, will be awarded in the following divisions, viz.:—

	£	s.
FAT CATTLE	715	15
FAT SHEEP	239	5
FAT PIGS	56	15
BREEDING ditto	63	0
ROOTS	56	14
BARLEY	10	10
POULTRY and PIGEONS	682	15

The ENTRIES CLOSED on NOVEMBER 1.
Prize Lists and Certificates may be obtained from the Secretary.
John B. Lythall, Secretary.
Offices: 14, Temple Street, Birmingham.

The Agricultural Gazette.

SATURDAY, NOVEMBER 8, 1862.

—— A second warning has within the past week been published from Baron Liebig of the eventual exhaustion of English soil. He is "fully conscious that nearly all practical agriculturists insist upon the implicit correctness of their methods, and that they are all filled with a belief in the permanent fertility of their estates." He warns them nevertheless that the deterioration of English soil would have been obvious enough long before now, if it had not "like a vampire been hanging on the breast of Europe, and even of the world."—"Great Britain deprives all countries of the conditions of their fertility." That is, her merchants buy guano, bones, &c., paying the full value for them, to which value these despoiled countries can turn to better account than they can their refuse which we buy.

Though however Baron Liebig thus condemns our management and foresees our ruin, just as another philosopher foretells the eventual exhaustion of our coal fields without raising the price of fuel—whatever theoretical truth there may be in either predictions—there cannot be a doubt that our present sewage waste is reckless; or that we must eventually adopt the means which Liebig indicates for restoring to the soil the natural return from the food which it produces.

We are reluctantly obliged to postpone Baron Liebig's letter for a week.

A good many of our columns are this day occupied with a report on a number of Gloucestershire dairy farms, and on trials of the American Cow-milker at several of them. It is only fair towards Mr. Colvin, the inventor of the machine, who was good enough to accompany our reporter on this short tour, to say that November is not the month in which to introduce a milking machine to a cow. At this time of the year a cow only tolerates being milked, in the summer time she is glad to be milked. At this time of the year the milking is *all* "stripping;" there is but little reserve in the udder, and the teats fill slowly if at all. In November, moreover, the cows have had 6 or 7 months accustomedness to hand-milking. On every ground, therefore, any novelty introduced in November has small chance of a favourable reception from the cow. The same maid or man, in the same dress, with the same sort of vessel (wood or tin) to which for seven months she has been accustomed, is the only apparatus she will allow—and even that, as we have said, is but *tolerated* now. Introduce these machines just after her calf has been taken from her in the spring, when she is full of milk and anxious to be rid of it, and after a few days of that apprenticeship which the cow, as well as the milker, needs to get accustomed to it, both will be delighted with the rapidity of the process. And as it is the most rapid milking which is the best for the cow, and which comes most satisfactorily to an abrupt conclusion—so we may be sure that a machine pumping half-a-pint at every blow, from an udder which has been accustomed to give it down at a rate so rapid, will perfectly clear the contents of the vessel which it is thus engaged in emptying.

It is now six years since Mr. Colvin first determined to contrive an instrument which should imitate the calf. In his first experiments he employed a bottle, to the mouth of which he affixed a cup to grasp the teat. A rude piston filled the bottle which had had its bottom broken off, and on pulling down this piston he had the satisfaction of seeing the milk flow from the teat.

The history of the steps by which the inventor achieved the wide interval between his present implement and its first rudiment is a remarkable illustration of both great ingenuity of resource and great tenacity of resolution.

The mode by which the pumping action is effected—the formation of a cup which should act as the tongue of the calf does when wrapped around the teat—the intermittent process of alternate suction and swallowing, which is witnessed perfectly in both the natural and artificial machine, are all instances of difficulties discovered, understood, and overcome; so that now, after six years constant thought and experiment, and alternate failure and success, a cow-milker has been produced, which when cow and dairymaid are both accustomed to its use will be a great relief to both.

Let us describe it, and some of the objections it has received at the hands of Gloucestershire dairymen:—In the first place, there is a tin vessel holding 12 quarts, and capable of receiving 10 quarts milked into it.

"But there are cows which will give more than 10 quarts at a meal, and at best you must empty at every milking. At present a man milks his cow—the pail resting on the ground, and merely tilted towards its work. And he can take it to two or three cows in succession before he needs to carry it to the dairy."

It would, however, certainly be very easy to arrange everywhere, as it already is in some dairies, that at the milking time one man shall go from milker to milker, and receive the milk from the machine or pail, and do all the carrying to the dairy himself, leaving the milkers to their proper work of milking. As for the other difficulty, that in this machine a full vessel of 10 quarts has to be carried half resting between the knees, and half lifted by the handles, which involves a great and unusual labour to the milker—if necessary it would be very easy to arrange a strap to go over the shoulder and buckle on to the edges of the vessel, and so take a portion of the weight. But in practice we understand that an accustomed operator properly placed receives the weight where he is very well able to bear it.

One half the top of this tin vessel is covered over with a fixed lid, and beyond it on that side a neck extends which receives the pumping apparatus. When the handles are off, this pumping apparatus is easily lifted out of this neck, and easily fixed in. On the top of this pumping apparatus are four elastic cups of vulcanised india-rubber, which ought to be large enough to receive the full-sized teat. The vulcanised rubber contains within the substance of its material a spiral spring, and the whole is made so that when air is pumped out the teat is first sucked in, then the cup closes on it at top, and gradually lower down, the suction overcoming the elasticity in just the proper way and order for bringing pressure to bear on the teat to the complete expulsion of its contents. The pump on each side deals in this way with the two teats on each side. The formation of an elastic cup which should just answer its purpose was a very great puzzle and difficulty, which has at length been solved and overcome. Each pump is worked by a handle. These handles hook into the centres

of two disc valves, and then embrace upright arcs which serve as the fulcrum on which they respectively hinge. These arcs are fixed upon the top of the vessel, and enable the handles to have considerable play up and down at the same time that they are working to and fro. The pumps are india-rubber caps covering trumpet-shaped conical mouths (truncated cones opening outwards) on each side of the machine. They fit tightly on to the edge of each trumpet-shaped mouth, and each is furnished with a metallic disc fitting closely to the bottom of the truncated cone. When drawn outwards, as it is by the handle which hooks on to this disc, it leaves a vacuum, if the joints be all tight: the elastic cups connect with the space thus left empty, and so when thus drawn outwards milk flows into the space. There is in the bottom of each a hanging india-rubber flap, which closes on a hole when the valve is thus drawn outwards, and when pushed in again yields, letting the milk which has been drawn fall outwards into the neck of the vessel, and so down into the vessel itself.

You therefore sit down to the cow, holding your machine with your right hand, by its handle fixed on the middle of its lid; with your left hand you place two teats on that side in the elastic cups which belong to them, and pump them in; holding the machine with the left hand, you use your right to place and pump in the teats on that side. In order to do this perfectly and easily, the teats should be wetted first. Then, holding the machine with the two handles, its weight pulling it down till the handles work each around its fulcrum at the top of the short arc around which they hinge, you lift the machine to the udder while separating the handles; then you let it hang upon the udder, while, pressing the hands together, you pump the milk out of it. The machine thus alternately lifted and allowed to drop has its weight all the while for the most part borne between the knees of the operator, and it alternately sucks and swallows the milk just as a calf would do. It may be that for cows with very large teats, cups of extra size would be needed; and it is certain that for all cows, patience and perseverance for a few days will be necessary in order to the ultimate perfect satisfaction of all parties with it. It is in the meantime certain that when the cup has fairly grasped the teat, the machine does in a manner very easy indeed to both the operator and the cow extract the contents of it. That is all that is required to insure that when both are fairly accustomed to it, the whole work of milking will be easily and effectively accomplished. Seven or eight cows to the hour, and perhaps 10 cows to a milker, are the usual allowance: when this machine is in use each milker may be expected to manage 15 or 16 cows within the hour. And there can be no doubt that a great saving of labour and of temper, and, as we believe, of milk, will be achieved.

The machine includes 14 parts. There are the two handles, the two cap valves, and a double disc screwing through each, furnishing the hook to which the handle is attached; there are the two inner flap valves regulating the exit of the milk; the four elastic cups, easily detached, which receive the teats, and the head consisting of two conical reception chambers, into which the milk is drawn, and whence it flows into the vessel below, on to which the whole is easily attached. The whole is most ingeniously and compendiously packed together—the only wearing part is the oscillating cap valve, which is drawn in and out, and they are to be bought for 5*d.* apiece. The whole is easily cleaned. First, the four cupsare put under the surface of the water in a bucket, and with the handles cold water is pumped through them, and the vessel is swilled out: the whole is then taken to pieces, thrown into boiling water, and wiped dry. The price is 2*l.* 10*s.* No doubt much more than half of this is royalty and profit. The thing for the manufacturer in fixing on the price, was to determine what the machine was worth—not what it cost. We quite believe that in the spring season of the year, it will be generally and successfully introduced into English dairies.

THE ROYAL AGRICULTURAL COLLEGE.

In reference to the causes of dissension between the Principal and Professors of the College, it will be recollected that the Chairman of the Council promised a full and impartial inquiry.

That inquiry is concluded. The manner of its conduct, its results, and the last steps taken by the authorities, form together a history so remarkable, and include proceedings so manifestly unjust, that an appeal to the public is now rendered imperative.

During the vacation which immediately followed the time when Dr. Voelcker and myself tendered our resignations on the ground of general absence of cordiality, the Chairman of the Council, in pursuance of his expressed intention of investigating the whole matter, asked, and after some little discussion obtained, from each Professor a written statement of his complaints. Those complaints in general terms referred to the Principal's interference in every department, and his want of a conciliatory spirit.

With the evidence in his possession the Chairman proceeded to investigate. In what manner, the public may inquire? Of course he appointed two or three unprejudiced and competent men, unconcerned with the College in any way, gave them full power to examine into the truth of the charges, received their report, laid it before the Council, and made public their decision. Nothing could have been more just and reasonable than such a course of procedure; and nothing more opposite than the plan which was adopted. The Chairman, according to his own statement, "went carefully through" the complaints with Mr. Langton, at Sarsden, on August 20, and arrived at the following conclusions, which were communicated to the several Professors at different times up to the end of September.

The Principal, it was determined, had in no way exceeded his authority; a Professor is a subordinate, and whether he approves or not of changes in his department, is in duty bound to submit to them, and even to assist in carrying out the orders of his superior. Complaints referring to the Principal's want of courtesy are to be deprecated as "sad examples of animosity and ill-will."

While I pen these statements I am prepared for a sceptical reception of them. People must perforce conclude, that I give my own version, and as an aggrieved subject, a garbled version; nevertheless I am honestly conscious that I have stated "bare facts," nor have I yet reached the crowning point.

On the receipt of the decision from the Chairman I felt strongly the injustice with which I and my colleagues (excepting Dr. Voelcker, who has everything that he required conceded to him, and rightly so) had been met. I made no comment, but determined to remain perfectly passive for the present, until the resignation which I had withheld at the Chairman's request during the investigation might be again tendered by me at the end of the present session, with which intent all my arrangements have been made. No cause of complaint has arisen since I received from the Council the expression of their opinion. My correspondence with the Chairman since that time has been but brief, and of the most friendly character.

On Thursday last, October 23, before I had well time to acknowledge Mr. Holland's last note, I received a letter from him requesting me on behalf of the Council, under threat of dismissal, to "send in my resignation as I intended at the end of the session," on the ground that "any hopes of a restoration of good feeling were not likely to be realised so long as I remained attached to the staff." Astonished at a change of tone so inexplicable, and conscious that I had done nothing to deserve it, I wrote for an explanation, and received a note containing a repetition of the clause above quoted. Failing thus to obtain any satisfaction from one tribunal, I appeal to the highest, the bar of public opinion, and before that bar I cite my accusers to appear. When I am informed of the nature of the charge against me, I shall make my defence; at present, in my ignorance I have nothing to urge. My friends say, "You will get no redress. The College is in the hands of two or three gentlemen who have nothing but their own wishes to consult. To whom are they responsible?" My answer is at hand: those gentlemen, under whatever name they present themselves, "Council or Trustees," exist in such capacity, as does the institution they represent, only by the consent of the public, who will not suffer them to outrage every principle of justice with impunity.

It is probably unnecessary for me to add, that the request made to me to resign under threat of dismissal, will not be acceded to. It remains therefore for the authorities to execute their threat. *George T. Brown, Professor of Veterinary Surgery.*

P.S.—Since the above was written I have received from the Principal a communication containing the following instructions from the Council:—

"Oblige me upon the receipt of this, by sending to Professor Brown a cheque in advance, in lieu of notice, intimating to him at the same time, on the part of the Council, that his future attendance at the College is inadmissible. (Signed) Ed. Holland."

THE AMERICAN COW MILKER.

Having lately been spending some days among my friends in the Vale of Berkeley, it occurred to me to propose to the Cow-milking Machine Company, Birmingham, to send to me one of their implements with a person able to use it, whom I might introduce to a number of the Vale farmers; thus giving both him and myself an opportunity of seeing how it acquitted itself in the eyes of the Gloucestershire dairymen. Mr. Colvin, the inventor of the machine, very kindly himself responded to my invitation, and we spent two or three days together on the home farm (late the Whitfield example farm) of the Earl of Ducie; on the farms of his tenants Mr. Hewitt of Tortworth, and Mr. G. Limbrick of Charfield; on the neighbouring farm at Falfield, occupied by Mr. C. Bennett; on Mr. Richard Stratton's farm, at Walls Court, near Bristol; with Mr. Harrison, of Frocester Court, near Stonehouse, and with Mr. Samuel Butcher, of Standish Park farm. The ordinary Gloucester dairy management is carried out on the farms of Mr. Butcher, Mr. Bennett, and Mr. Limbrick; Keevil's machine is used by Mr. Hewitt; Cockey's machine, and the Cheddar management generally, is adopted by Mr. Stratton, whose herd is moreover interesting as one of pure bred Short-horns, and first class reputation; and Frocester Court Dairy is remarkable for the detailed record which has been kept of quantity and produce, as well as for many interesting dairy experiments which have been made in it under the superintendence and direction of Mr. Harrison and of Dr. Voelcker. Apart therefore from the performance of the cow-milker, there was enough in our short tour to furnish matter for a great deal of interesting and instructive observation.

And Mr. Colvin is himself a most agreeable companion. Having already achieved good fortune, though but 26 years of age, he could relate with fresh enthusiasm the history of his invention. How, when still a lad, his father, then owning a farm of some 300 or 400 acres at Cincinnatus, Courtland co., New York, and managing a dairy of 40 cows, had returned, after a visit to his former home in Pennsylvania, with tidings that the tenant of the old home, Mr. Harrison Whitman, had been trying his hand on a cow-milker which should imitate the action of the human hand; a succession of rings in place of fingers closed in succession on the teat, the uppermost first and the others in their order thus squeezing out the contents of the teat—how he had at once perceived that the thing to be imitated in any machine which should succeed was not the squeeze of the dairymaid's hand, but the suction of the calf—how experiments described elsewhere, and their gradually increasing success, had fascinated him, so that at school and college his mind was still always engaged on the subject—so that at length, towards the end of his college course, while his friend had got "shunted off into the war," he had got "switched" on to an altogether different line, which had at length led him to the terminus of a great success. For the patent in which he as inventor and another who has assisted him throughout are interested has been sold to a company for 5000*l.* together with a certain Royalty upon the sale. This includes patent rights in England and other European countries. And the sale of 1500 machines which has been already effected seems to proclaim that the speculation is to be successful.

Whitfield Farm.—This was the first farm to which we directed our steps. Formerly exclusively arable, when Wheat and beef, mutton and bacon were the sole exports—it is now to some extent a dairy farm. A number of cows are kept, and heifer calves reared and sold at three years old, either in calf or with calves beside them. A Southdown breeding flock is also kept—the wether tegs are fattened off and sold naked at 13 or 14 months old—and a number of cattle and pigs are fattened. To fit the occupation for this altered management, some of the thinner arable land on the eastern side of the valley is let off, and a considerable extent of Grass land, together with the whole of the Tortworth Park, has been added. The plough land is cultivated, not in alternate 10-acre pieces of grain and green crops as formerly—but in four quarters, and the Norfolk rotation is for the most part followed. Very heavy and clean crops of Mangel Wurzel and Swedes this year cover one quarter; a capital plant of Clover occupies another quarter; a third quarter lay (a Clover stubble and Pea stubble) ploughed up ready for the Wheat seed, waiting till a dry week should enable it to be put in. And the fourth quarter, a Wheat stubble, was three-fourths cultivated against winter—portions being in Rye and Trifolium; and another part waiting till weather should enable the completion of the work of autumn tillage.

The steam plough had been hired for two years on this farm with great advantage, as Mr. Cobban, Lord Ducie's resident agent, informed us. Extraordinary crops of Peas had been taken this year after a heavy Oat crop of 1861, both of them owing their luxuriance of growth to the deep and thorough tillage which Fowler's plough had given them. Samples of Peas, equal to anything shown at S. Kensington the other day, and of Canadian Oats, weighing 46 lb. per bushel, had just been threshed out, and promised a very large yield indeed per acre. The farm buildings have been somewhat altered since I knew them. They consist of three ranges, running north and south, abutting on a higher cross range at the northern end. This higher range includes granaries, threshing and straw barns, food house and stable; and it thus shelters from the north the two large yards lying in the spaces between the three lines of buildings just named.

Of these the eastern one was a cartshed. The open shed is now built up and forms a range of feeding stalls.

The central one is widened so as to include a range of sties, as well as of feeding boxes. A new cart shed is built on the southern side of the farmery; a manure

house is built near the stable tank; and poultry houses are built by the bailiff's cottage. The 6-horse power fixed engine erected by Fairbairn, of Manchester, years ago, is still as good as ever, and drives threshing machinery, mills, crushers, pulpers, &c.

For the accommodation of the dairy stock on the added Grass land, the capital cowshed from the old Tortworth Court, which used to accommodate the late Lord Ducie's celebrated Shorthorn herd, has been moved. And it was here that Mr. Colvin first showed us the cow-milker in operation. Two cows had been kept from the previous night unmilked until noon on the following day. They yielded their milk pretty freely to the machine at first, but in neither case was the cow milked out. A hand-milker with the pail in both cases obtained a considerable quantity after the machine had obtained all that the cow would give to *it*. The cows did not seem disturbed by the novelty of their treatment, Mr. Colvin sat down to them, milked by hand into the tin pail of the machine a few times to accustom the cow to himself as a stranger, wetted the teats with the milk, turned the pail round, placed the two teats in the two elastic cups on one side, and by one blow of the pump on that side, sucked them in; did the same on the other side, and then, partly supporting the vessel between his knees, partly carrying it by the handles, he alternately lifted it to the udder while separating his hands, and lowered it letting it draw upon the udder while bringing his hands together, and thus pumping the air out of the cups. At first, at every lift of the machine, when the hands are abruptly separated and the milk flows down to the vessel from the pump into which it has been drawn, probably a quarter of a pint at each movement came down. But very soon the cow refused to give any more. The handles, pressed hard towards each other, did not yield as they do when milk follows the suction; and therefore separating them so that they no longer have any hold by suction on the teats, Mr. Colvin detached his implement, saying—"There is milk in her udder yet, but she refuses it to me." The man to whom she was accustomed then sat down to her, and got probably another quart—two quarts having been previously drawn by the machine. One of the two cows yielded her milk pretty freely, the other not so readily.

Those who had expected to see the new machine, thus introduced as an entire novelty, at once strip the last drop from an unwilling cow, were disappointed by this trial. Those who knew that cows are during the last month of their time unwilling to be milked at all, and moreover that at any time an unaccustomed novelty will offend them, and make them exercise that power which undoubtedly they have of stopping the flow of milk from the udder to the teat, were satisfied with the proof which had been given that the four teats were completely emptied of their contents by every blow of the pump handles when once placed fairly within the cups—the machine being lifted before each blow, so that the top of the cups should touch the udder, and thus embrace the teats at the very top of them.

Mr. Hewitt's Farm, Tortworth.—We came here the same afternoon, and a number of the dairy farmers of the neighbourhood had assembled to meet Mr. Colvin. The Earl of Ducie also came down from the Court, and saw him operate. The cows had all been brought into the yard for the evening's milking, and four had been tied up. Two of these were milked by Mr. Colvin, and gave their milk down pretty freely; in both cases, however, they were afterwards stripped by hand. Mr. Colvin then tried on two in the yard, one of which was brought into the shed and kept in a corner for the purpose; the other was chosen by himself from the pack in the yard, and was milked readily enough without any one standing by to keep her quiet. She was an awkward-tempered cow too, so we were told, and her willingness to stand and be milked by a stranger, and in a strange manner too, was a convincing proof that there will be no difficulty in introducing the machine generally into a herd, provided it be done at the right season of the year. This cow was milked by the machine better than any that had yet been tried, but they all gave additional milk on being stripped by hand.

Mr. Hewitt's farm is of the average size of dairy farms in this neighbourhood, including 200 acres of pasture and 30 acres arable. He now milks 44 cows, the usual number is about 50. He rears 9 or 10 calves each year, and parts with or fats off as many old or inferior cows each year. They come to the pail at 3 years old. The calves that are chosen to be reared are allowed to suck their mothers until five weeks old. The stock of the farm, besides pigs and a few sheep, is thus 50 cows in milk, and 30 young heifers—viz., 10 or thereabouts at this season of the year in calf, 10 yearlings, and 10 calves.

Mr. Hewitt has for the last few years adopted Keevil's cheese-making machine, and after a year or two's comparative failure with it, now succeeds perfectly in turning out a first-class cheese. It was mainly for the saving of labour that it was originally adopted, and it has answered that purpose perfectly. The whey runs off from the curd when properly used, much clearer than it does under ordinary circumstances: only 6 or 8 lbs. of whey butter being made from a dairy of 40 or 50 cows, which is a very small quantity indeed for that number of cows.

The following is the practice of the dairy:—The evening's milk is set in dishes and lightly skimmed next morning. This may be done closely or otherwise. The usual practice in this dairy is to make in this way from 40 to 60 lbs. of butter a week during the summer from the milk of 40 or 50 cows. But if skimmed harder no doubt much more could be made. The morning's milk is poured into the machine, a tin cylindrical vessel holding about 160 gallons.

A portion of the skimmed evening's milk is heated in a milk warmer in the boiler, so that on the whole being added it comes up to the temperature of fresh drawn cow milk, about 80°. In some of these machines a double coat is given to the vessel, and steam is allowed to traverse the space between the coats, and in this way the temperature of the milk is raised as much as is desired.

The rennet is prepared by placing 10 or 12 calves' vells (the prepared stomach of the calf) along with eight sliced lemons, with a strong brine, in a 3-gallon jar. Half Irish and half English vells are used—the one sort is pickled with saltpetre, the other has no saltpetre in it. Three such jars are in use, filled in this way before winter, and as fast as each is emptied it is filled with whey from the presses (eight fresh vells being put in), and allowed to stand until the other jars are emptied. Using perhaps a pint of rennet a day on an average, when the cows are in full milk, the jars come into use about every three months, the rennet being thus two or three months old.

Half a pint is sufficient for the day's milk of 40 cows at this time of the year, when half a cwt. of cheese is the most that can be expected. But a pint or more is needed in the summer time.

The rennet is put in, and in an hour's time the curd should be ready. The machine, besides the cylindrical vessel, has an upright axis in the middle of it, working in centres, the one in the bottom of the vessel, the other in an iron beam stretching from side to side, and clamped to the edge of the vessel at either end. And on this axis a frame occupying the full width and depth of the vessel is slung, consisting of upright tinned knife edges on one side of it, and horizontal knife edges on the other side of it; so that when it has completed one revolution the whole mass of curd in which it has revolved is cut into dice of about half an inch cube. Previous, however, to being thus moved round, the dairy-maid takes a long-bladed knife and cuts the curd slowly, hither and thither, at intervals of about 2 inches, lest the frame on being first moved instead of cutting through the curd should carry it round with it. Two or three revolutions of the frame are then slowly performed. The whole is then allowed to settle for 10 minutes. A skimming dish or small, open work, tinned, handshovel is used, to clean curd from the sides of the vessel, and the cutter is again worked more rapidly. After again standing awhile, the curd is lifted and pushed with the hand and shovel very slowly towards one side of the vessel in the midst of its whey from the strainer, which is a wire-cloth stave as it were in the side of the vessel, extending from top to bottom and delivering the whey which passes through it by a cock at the bottom, whence it runs into the pigs' food tank.

The curd is now gradually dug out by the shovel, and piled up in the middle, and the whey allowed entirely to drain off. A cloth is then laid over it and tucked in under the edges of it—the cutting frame having been taken out—and a circular disc nearly filling the vessel is laid atop of the curd; a strong upright bar standing on it and screwing through the middle of a beam laid across the vessel, and clamped as before to its edges, is turned round and round by a handle, thus forcing the disc down upon the curd and squeezing out the whey. This whey is not sent to the pigs, but stands and throws up a cream from which a small quantity, about ¼ lb. of butter per cow per week, is made. The press is removed (wound out of the way by a windlass), the cloth is taken up, and the curd cut into large pieces, and turned over, and piled up, and again pressed in the same way. On the second removal of the press the curd is cut with the knife rapidly into pieces of about the size into which soap is cut for use.

When the curd is cool enough it is ground by the curd mill into the vats. The curd mill is placed over the edges of the machine across the vessel; a girl turns the handle while the dairy woman puts the curd in, and it drops ground into a vat. When each is about half full, a handful of salt is put into the mill with the curd, and the grinding continued until the vat is filled. Another is placed over it and filled in like manner, and so on until the whole are full and lying one atop of another. Each is then taken in turn, the overlapping edge of the curd in each is cut round and *out*, inside the vat, and piled in the middle and pressed a bit with the hand; then a clean cloth is put over and the curd is emptied into it by overturning the vat. The cheese is then placed the other side up in a vat washed clean with a little hot whey, the cloth wrapped over it, hot whey at this season of the year is thrown over it; and they are placed, each in its turn, one over the other under the press. They are taken out in half an hour after being subjected to pressure, which squeezes out a good deal more whey, all of which is preserved for its cream. A fresh cloth is put on. It is returned to the press, and in two hours it is taken out, rubbed over with a little salt, and returned to the press till evening. The cheeses are changed in the press from day to day for about three days, and then placed on shelves and turned daily; and ultimately on the floor of the cheese loft, and are ready for sale in about 6 or 8 weeks. Mr. Hewitt does not use paint either inside or outside his cheese—no annatto is used, and no American red.

During his first year's use of the machine, and until his dairymaid had got fairly into the way of employing the machine, some inferior cheese was made; now it makes as good as any of the hand-made cheese in the market. And making it only once a day, and then doing that with little labour which has heretofore been most laborious, it reduces the drudgery one-half, and is especially an advantage on the Sundays. A good many of these machines are in use on dairy farms in Gloucestershire on both sides of the Severn.

The same evening we met another party of dairy farmers at Mr. Limbrick's, of Underwood Farm Chalford, another of Lord Ducie's tenants, and Mr. Colvin again showed his machine at work. The impression left no doubt was that unless the stripping was effectually done by the machine it would be useless for dairy purposes. But it was admitted that even a strange hand-milker would not get all the milk from a lot of cows to which he was new: and that, especially at this season of the year, it was impossible to expect that an entire novelty could do that which, had it been introduced at the beginning of the season, it would no doubt effect.

Mr. C. Bennett's Farm, Falfield, near Berkeley.—On the following morning we came at the morning's milking here. Mr. Bennett's farm is about 270 acres, of which 20 are arable. He milks about 50 cows, and parts with about a quarter of them annually, fattening all those which are inferior to the others, or fail in any way. About 12 heifer calves are annually reared, and as many 3-year old heifers brought into the herd. He thus keeps his herd young and of good quality—both important considerations in order to the quantity and quality of the cheese which they yield. The milking was nearly over when we arrived, about half-past 6, but two or three cows had been set apart for Mr. Colvin. One of them, a short and small-teated cow, was milked dry by the machine, and nothing followed the after stripping by hand; another was pretty fairly milked, though some was obtained by hand-stripping afterwards.

Mr. Bennett tried the machine himself, and found it perfectly easy of management, though the cow on which he tried it refused to let so much of her milk down to it as the other had done. On the whole the impression produced by the machine on those who saw it at work was more favourable here—and this I believe to have been owing more to the fact that there were very few looking on than to any other cause. In the other cases a number of gentlemen had assembled, and the cows were frightened. Here only Mr. Bennett, Mr. Colvin, and myself were present, and there was nothing unusual to the cows to disturb them.

It is in the case of the small short-teated cows that hand-milking is most tedious and laborious, and the fact that it is just such cows as these that are the most easily milked by the machine is so much in its favour.

The cheese making here is carried on in the old-fashioned Gloucestershire manner—and Mr. Bennett is well-known to cheesemongers for the good quality of his dairy.

An 80-gallon cheese tub is used for a dairy of 50 cows—making twice a day during summer, only once now. The milk at this season of the year is so much richer than in the height of the season that as rich a cheese is made now as then, notwithstanding that the evening's milk is now skimmed before it is added to the morning's. About seven cheeses, sometimes more (eight to the cwt.), are made daily during summer. The number now is only four.

The evening's milk is lightly skimmed; a portion is warmed and added with the rest to the morning's milk, raising the whole to about 80°. The rennet, prepared as in Mr. Hewitt's dairy, is added, enough to make it set in an hour. Then for half an hour it is slowly cut up and down with a framework of knives arranged sieve-fashion and put at the end of a pole. After being thoroughly cut in this way it is left to settle for 20 minutes, and the curd is then pushed on one side; part of the whey is baled out and the rest drawn off by a tap. The curd is then piled up and pressed by hand, cut into a few pieces and turned, put into vats and squeezed for 10 minutes in the press; taken out again, cut open and into bits, and hot whey (85°) is poured over it. This has the effect of hardening the curd. It is not needed in the summer time, when it hardens naturally sufficiently, but now, and as winter approaches, it is required. The hot whey has not the effect which might be feared of dissolving the butter out of the curd—the whey which drips away from it is not the richer for this use of it—the only effect seems to be the firmer coagulation of the curd. And the thicker the cheese that is being made the greater the need of this scalding. Where "double Gloucester"

cheese (4 to the cwt.) is made, then the scalding is necessary, or the cheeses would not preserve their shape. The broken cheese is then squeezed together and allowed to lie for a bit in a heap in the bottom of the tub. It is then broken by hand into the vats placed one above the other, as already described. No salt is put with the curd here; but after an hour's pressing in the press, the cheese is taken out, wrapped in a dry cloth and returned to the press, and in two hours it is again taken out, well covered with powdered salt and returned to the press. In this way it has salt rubbed into it morning and evening, till the second evening, after which an interval of 24 hours is allowed; then the cloth is taken off and it is salted and put naked into the press, and after the fourth day it is taken to the loft, where it is turned daily for 14 days. It is then scraped if necessary and painted and turned occasionally for a month or more, after which it is ready for sale.

Mr. Bennett uses annatto; a large table spoonful to 70 gallons of milk is sufficient to give the colour that is desired. When in full work, about 15 to 20 lbs. of milk butter and 40 lbs. of whey butter are made from a dairy of 50 cows. The whey stands 6 inches deep in leads for 36 hours before being skimmed; what milk is allowed to yield cream for butter, stands only 12 hours before skimming. The whey of 50 cows' keeps 20 pigs feeding, and several sets are thus fattened in the course of the season.

Comparing the ordinary with the machine-made cheese on these two farms, it will be seen that very little more butter is made on Mr. Hewitt's farm than on Mr. Bennett's; the greater proportion in the former, however, is milk butter, and in the latter whey butter. The milk butter fetches a higher price, and this has therefore to be added to the great saving of labour as one of the advantages of Keevil's cheese-making apparatus.

Wall's Court, near Bristol.—We drove over to Wall's Court on the evening of this day. And as soon as Mr. Strattons cow's were brought in for milking, Mr. Colvin tried his machine on two or three, one of which was pronounced to have been milked clean. I had never milked a cow in my life until here I sat down to one with the machine, and she too was pronounced milked clean. In the case of most of those which had been tried hitherto, stripping remained to be done by hand. In the case of a cow on which elsewhere I tried my hand, a large-teated animal for which the cups were evidently too small—and which, though a good tempered animal, had been bothered by the new fangled attempt to get her milk—the accustomed milker sat down to milk her by hand, and after a bit he got up, saying, "She has not given so much by two quarts as she would have done if she had not been plagued with that machine." Thus even to the hand the cow may refuse her milk at this season of the year. A tin pail in place of a wooden one, a man in a coat instead of a man in a smock, will make a deal of difference to her—much more a pumping machine in place of the familiar tugging to which, now in November, for seven months she has been accustomed. This is, I am persuaded, a sufficient answer to the good-humoured protest of Mr. Stratton at parting—"How about this stripping?—we must not lose the last quart, you know!"

Mr. Stratton has long been one of our best known Short-horn breeders. He has been an exhibitor at local shows since 1837, and of late years at the Smithfield and Birmingham shows, and at those of the Royal Agricultural Society of England. The prizes which have been awarded to him in the course of all these years now amount to close on 4000*l*. His herd now numbers about 100 cows. Of course, managing his herd as he does for the sake of their valuable produce, which are sold as calves and yearlings, and sometimes older, to all parts of the world, his dairy is not of that first-rate consideration that so large a herd would otherwise make it. He uses a Cockey's machine, a large cylindrical vessel holding some 280 gallons, with a false bottom, under which steam or hot water may be laid when it is desired to heat the milk. And it is provided with a revolving cutting frame, as in the case of Keevil's machine, used by Mr. Hewitt. In the height of the season the day's milk remaining from the calves does not exceed 200 gallons. And of course the quantity is much smaller now. The butter made in the height of the season does not exceed 1 lb. per cow per week. The cheese-making is in the morning, the morning's and evening's milk being put together, and the whole heated by the hot bottom up to 80° before the rennet (about 1½ pint to 200 gallons) is added. It sets in an hour. The rennet used in this dairy is made from the following receipt:—Slice half of a lemon, sprinkle it with about 6 oz. of salt, then pour on it one quart of boiling water; cover the vessel to retain the steam. When cold put into the liquid one fresh vell; cover the whole to stand for two days, then strain the liquid through a fine cloth, and the rennet is ready for use." Prepared in this method, and carefully strained off from the sediment which makes its appearance in the course of some days, rennet keeps sweet and efficient for several months. The first operation is to delve over the surface of the curd, turning the creamy top under the surface. The revolving cutter is then slowly worked round, and it is left for 10 minutes. The whole is again warmed up to 80°, and after a second more rapid cutting it is left for 20 minutes. Some of the whey is then let off, and the whole is heated up to 100°, and cut and stirred again. The hot water is then let off from the false bottom to cool it, and the whey all allowed to leave it. The curd is then piled up in the middle, and cut in pieces and left for half an hour. It is then taken out on to the leaden cooler. When I was there in the afternoon the morning's curd was lying on the cooler, torn asunder in fragments, not yet considered ready for the grinder until it had acquired a certain smell of sourness, which on a cold day it is long of doing. They were shapeless, tough-looking, fibrous masses, apparently torn asunder, and about the size of so many steaks or cutlets. As soon as ready, these fragments are passed through the curd mill—1 lb. of salt is added in the grinding to every ½ cwt. of cheese. The vats, holding from 56 lb. to 84 lb. each, are placed in the press—and the cheeses are pressed and changed daily for three days, then taken out, bandaged round with a calico bandage, and placed on the shelves in the loft, which is kept at a temperature of about 65° for a month or two until ready for sale. Several members of the family who manage the dairy here for Mr. Stratton undertake to give instructions in the Cheddar cheese making.*

Wall's Court Farm had been in the occupation of Mr. Proctor, of Bristol, and the Lias clay of which it chiefly consists had been drained when he was tenant. The farm is one of the best in the county for its accommodation, both as to the house for the tenant and as to the buildings for the stock. Both were erected from the designs of Mr. Godwin, the architect. The buildings consist of three parallel rows of shedding, with intervening yards provided with gangways and rails for feeding the stock; and connected at the end with a cross gangway and railway with turntables where required. Barns and food stores, stabling, &c., are close by. The inner accommodation for stock has been a good deal altered since it has come into Mr. Stratton's hands. And large roomy boxes with most substantial fittings are now provided, both for fatting and store cattle. The farm is on the estate of His Grace the Duke of Beaufort.

Frocester Court Farm.—The Bristol and Gloucester Railway brought us to the Frocester station at 9 o'clock the same evening. The Frocester Court Farm has been already described in these columns. It lies on the lias and marlstone of the lower oolite, at the foot and on the side of the Cotteswold range. Of the 480 acres of which it consists, 130 acres are arable.

Of the pasture land 110 to 120 acres are mown each year, and about 15 acres of Clover are also mown twice. Wood's mowing machine is used, and the whole labour of mowing, haymaking, ricking and thatching does not exceed 9*s*. an acre. The stock includes about 80 dairy cows, 30 calves being reared annually, 30 yearlings and as many two-year olds being thus included in the herd. The dairy herd is gradually increasing, and if all go well it will include nearly 100 cows next year. A flock of 150 to 200 Southdown ewes is also kept—70 or 80 lambs being fattened, and the remainder either fattened or brought into the flock. Some five or six sows are kept, 60 bacon hogs were fattened, and 20 pigs sold as store last year.

The principal feature in the management of the farm is the dairy. Nowhere is there a more exact account kept of dairy proceedings and dairy produce. The following are some of the figures to which this record leads, beginning with 1855. In 1857 the centrifugal drying machine was applied to the separation of the whey from the curd. It was worked by a small turbine. Mr. Harrison then milked 55 cows; the quantity of milk made into cheese was 31,728 gallons, or 577 gallons per cow, besides the milk expended in weaning 43 calves:—

The actual return for cheese was	£615	0	0
,, ,, butter was	182	6	10
,, ,, milk sold and used was	6	0	0
,, ,, whey: 220 hogsheads at, say 6*s*. ..	66	0	0
,, ,, rearing 43 calves was	43	0	0
	£912	6	10

or about 16*l*. 10*s*. per cow.

The following are the returns of other years, including the same particulars:—

	Dairy cows.	Per cow.	Cheese per cow.	Butter per cow.
For		£ s.	cwt.	lb.
1855	30	15 0	3.23	62
1856	45	16 0	3.78	64
1857	55	16 10	4.1	62
1858	52	12 5	3.46	38
1859	60	13 5	3.27	39
1860	66	16 4	3.97	37
1861	71	15 0	4.06	34

It is proper to remark that the management of the farm has been in a transition state of late, from grazing to dairying, and that the increased produce per cow of late years is no doubt partly owing to the best pastures and the best winter food, formerly kept for grazing, being now available for the dairy herd.

In 1858 and 1859 they could use the machine only about two months for want of water. The diminished yield in these two years is attributed in a great measure to the excessive dryness of the seasons; other circumstances affecting the cows likewise contributed to the result. In 1858 the price of cheese was not so good and the quality was inferior, especially that made during the autumn. Again, as to the last two years during which the drying machine has been abandoned, and the usual method adopted, there was 10*s*. per cwt. difference in the value of cheese in both and 1861—the latter the lower. A correct account was kept these two years of the quantity of milk consumed by the calves, and charging the new milk at 6*d*., and the skim at 4*d*. per gallon,

30 calves in 1860 drank 72*l*. worth,
33 ,, 1861 ,, 76*l*. ,,

When the value of the calf when dropped, and the hay, oilcake, and Beans are added, it shows calf rearing to be very expensive, and only to be adopted with the view of improving the stock, at least on rich dairy farms.

The quantity of milk per cow was in 1860, 522 gallons; 1861, 550 gallons.

The Frocester Court dairy has been the scene of experiments superintended and directed by Dr. Voelcker, and described in the last Number of the Journal of the English Agricultural Society.

In three trials the machine-made cheese weighed less than the hand-made cheese, from the same quantity of milk. Some of the difference was owing no doubt to the thoughtlessness of the dairy maid, who added to the latter some of the surplus curd of the previous day's milk to fill up her vat, not thinking of the comparison of weights that was being made; some also was owing to the fact since ascertained by pouring measured water into the two tubs respectively, that about 3 more gallons of milk were subjected to the hand process than were subjected to the machine. There is nevertheless a good deal of unexplained difference yet to be accounted for; I hope next week to give some detailed account of the Frocester Court Dairy, and of the detailed records which Mr. Harrison has kept for several years of his experience here.

In the morning Mr. Colvin tried his machine upon several of the cows. Mr. Harrison and one of his men also tried it. The short-teated cows were more easily milked than those with long and slender teats. One which was pronounced a hard milker, was afterwards hand milked; and in illustration of the fact that a cow will yield milk almost immediately after being milked, whether by hand or by machine—her teats were shown to be full of milk by Mr. Colvin after the man had left her. This was by way of rejoinder to the assertion by some of the men that the machine did not strip the cows. The fact is that a cow may be got into any sort of habit as to giving down her milk. A slow milker may sit and strip and strip away at a cow as long as he chooses, and the cow will always yield the so-called *last* drop to his patience. But a cow ought to be milked rapidly, and if she is got into that habit, her milk will end abruptly as soon as her udder is thus emptied. The machine will get cows into a habit of more rapid pouring down their milk than any hand milking can get it. A half-a-pint or more will come with every pump, and Mr. Colvin assured me that he had even got 3 gallons out of a cow that was a very great milker, and had been long accustomed to be machine-milked in one minute and 45 seconds.

Standish Park Farm, Stonehouse.—The stranger who visits an average specimen of the dairy farm in the Vale of Gloucester will probably come away disappointed, on account of the dirty and poor accommodation, and the state of muddle in which buildings, yards, cattle ponds, &c., for the most part seem to be. There is rarely much system, not to say taste, displayed in the arrangement or lack of arrangement; and he will be surprised to learn that many of the dairy farmers living in such homely style are men of large property.

At Standish Park Farm, the property of the Earl of Sherbourne, occupied by Mr. Samuel Butcher, in whose family as tenant farmers it has been for several centuries, we have a marked exception to the general rule, an instance of great practical skill and success, united with cleanness, neatness, elegance, and taste. As you approach the substantial and comfortable farmhouse, you find roads in capital repair, hedges trim and neat,* yards as clean as a gravelled walk, gardens well planted, walls covered with fruit trees, arbour, rockwork, shrubberies—everything showing that a man of taste, and in love with order, is master of the situation. Within the dairy it is just the same.

A central jet of water within a large and shallow table cistern was adorned with Fern leaves—everything as cool, and neat, and clean, and elegant as possible. The cheese-making going on in the old-fashioned style, but resulting in the very best of produce.

Cheese is made twice a day during the summer, and then no cream whatever is taken from the milk. At this season it is made only in the morning, the 50 cows yielding enough to make only half a cwt. of cheese (four 8s.) The evening's milk stands in slate

* The address is Mrs. Brown, at Wall's Court, near Bristol.

* *Lord Sherbourne to his Tenant*:—"How in the world do you manage to get that Thorn fence to grow so perfectly under those trees close by your house?" *Mr. Butcher in reply*:—"I will tell you exactly how that is, my lord. I take care to clean that little bit of fence twice every year *myself*; and if you want a thing thoroughly well done, I think your Lordship will agree with me you must not trust it to any other person."

... and is lightly skimmed, before being added to the morning's milk. The process is much the same as already described on Mr. Bennett's farm. Mr. Butcher has, however, invented and used a different cutter—a ...-shaped frame of horizontal knives, which is first down to the bottom of the tub, and then moved from side to side through the curd. This saves a good deal of the labour of cutting. The whey is baled out, and the subsequent work of cutting and pressing is just the same as already described.

Streatley Park Farm occupies the whole of a short valley, extending from the height of the Cotswold ... down into the vale—the lower part of it exceedingly rich land. A large number of calves are reared every year, and as many cows and other beasts are fattened every season. A breeding flock of Cotswold sheep is also kept. Nowhere is there a more beautifully situated estate, or a more desirable residence in everything which can be wished for on a farm. It is about 500 acres in extent, of which some 40 or 50 are arable. It is everywhere well watered, drained where necessary, supplied here and there with sheds and yards, and with a capital homestead and farm house.

In conclusion, we may leave our own department for the horticultural, it is worth while noticing that Mr. Butcher is a capital gardener. His Peach and Apricot wall has this year been covered with fruit, and thousands of ripe fruit having been gathered, while the gardens of more wealthy neighbours have been this year blank.

The whole affair is his own management. The wall was built at his own expense, and is provided with iron brackets at top to carry a 10 inch board, which ... under the projecting coping and casts the drip off the tree. If the trees have proved too luxuriant in their shoots at this season, they are taken up and root pruned, nothing but fine fibrous root being suffered to remain, and these being in the replanting kept well up to the surface of the ground, which is mulched over with strawy dung lest a dry season should try them. In every case the trees are unnailed from the wall before winter, and a few only of the main branches slightly nailed back, after being well padded with bunches of straw here and there, to keep them from the wall. This hinders the early spring sun from hastening the blossom in spring. As late as possible in spring with safety to the blossoms which have already begun to form, the pruning is done, and the whole tree nailed to its place.

The blossom has been late in forming; it is kept dry by the overhanging coping, and thus what slight frosts may happen in a late spring do not act so mischievously as they would, and the consequence is very great and very uniform success. *John C. Morton, Streatley, near Reading, Nov. 6.*

THE RIPENING OF CEREALS IN SCOTLAND.

The chief peculiarity of the climate of Scotland, with regard to the cultivation of the corn crops, consists in the mean summer temperature being within two degrees of the minimum temperature required for the perfect maturing of the Wheat and Barley crops. Hence the bad effects which the occurrence of a colder summer than usual has on the Wheat crop over the whole country, but particularly in the north and higher districts, both of which approach still nearer to the limits beyond which its successful cultivation cannot be carried. On this circumstance chiefly depend the interest and practical importance which are attached to all inquiries of this nature.

The Wheat-growing districts of Scotland include the whole of the eastern and inland parts of the country as far north as Ross-shire, together with the west coast south of the Firth of Clyde. It is not grown at all in Shetland and Orkney; and only to a very limited extent in the Western Isles, and in the north and west of the country as far south as the Firth of Clyde. In Dumfries, Kirkcudbright and Dumbarton the breadth sown is considerably under the average of the other grain crops. The height at which it may be grown under ordinary circumstances is about 500 feet in the south, gradually diminishing with the latitude, till, on the extreme north of the country, the limits of its successful cultivation may be considered to be confined to places but little elevated above the sea, and enjoying a southern, genial exposure. In a few localities, where situation and other circumstances are highly favourable to its growth, superior samples have been produced at elevations considerably about 500 feet. Thus at Danskine farm, in Haddingtonshire, belonging to the Marquis of Tweeddale, Wheat is successfully cultivated at a height of 750 feet above the sea. It is necessary, however, to state that the land, in addition to being completely drained, is subjected to the peculiar deep culture which is so very successfully practised on his lordship's farms at Yester. The remarkable result is, that at a height of 750 feet, Wheat was produced in 1862 weighing 66¼ lbs. per bushel, being thus able to compete with the best samples grown in any part of East Lothian. This is in accordance with a remarkable result arrived at in the "Essay on Climate" published in the Society's last Report. It was there shown, that though the mean temperature of the year falls 1°.0 for every 300 feet of elevation, the mean temperature of the seasons does not follow the same law; but that in valleys at considerable elevation there is sufficient summer heat for maturing and ripening the crops, provided they sustain no damage from the frosts which occur occasionally in spring and early summer. The great advantage of deep culture is, that it enables the roots of the Wheat to penetrate to greater depth than the frost ordinarily reaches; and hence the young plants are better preserved, and are in a position to benefit by the first genial weather in spring.

The superior kinds of Barley require a summer temperature nearly as high as Wheat; but the coarser lots, along with Oats and Rye, grow and ripen in Shetland, and at the greatest heights to which cultivation is carried in Scotland. Oats are cultivated in Dumfriesshire and among the Pentland Hills, at 1250 feet above the sea; in Aberdeenshire, at Tomantoul and Cairnside, 1500 feet; in Glen Lui, 1600 feet; and in Strathdon, 1570 feet, and Barley in Strathdon, 1400 to 1500 feet. The greater height to which cultivation is successfully carried in Aberdeenshire, as compared with the rest of Scotland, may be explained by the greater length of the day—by the higher and more extensive platform of the hills, and the consequent higher summer temperature of the incumbent air—and by the greater dryness and clearness of the atmosphere, arising from the circumstance that the south-west winds, before reaching the Aberdeen hills, must necessarily be deprived of much of their moisture by the hills lying to the south-west, over which they had previously passed.

According to M. Boussingault, Wheat requires 8248° Fahrenheit, and barely 6969°, from the time they begin to grow in spring, in order to bring them to perfection. This heat must be so distributed as to secure for Wheat a mean summer temperature 58.0° on the continent of Europe. In Scotland, however, a lower mean summer temperature is sufficient, because, owing to its higher latitude, the days are longer. The mean summer temperature of Scotland as far north as the Moray Firth ranges between 58°0 and 57°·0; on the Pentland Firth it is only 56°·9; and as agricultural returns show that the cultivation of Wheat has reached its northern limit there, we may infer that Wheat will ripen in Scotland, provided the mean temperature be 56°·0.

It is difficult to fix precisely the time when Wheat begins to grow in spring; but considering that little growth can take place as long as the temperature falls repeatedly to the freezing point or below it, it may be assumed that Wheat will not begin to grow till the mean daily temperature of the air be 40°·0 to 42°·0. In the spring of 1861 this happened about the 16th of March; and as confirming this view, the reports made by the Society's observers show that vegetation began to make decided advances about that time. In the following table, the days Wheat took to ripen are reckoned from the 16th of March to the date of 'cutting: and Barley and Oats from the period of 'brairding." The gross amount of the degrees of heat have been found by adding the means of the mean temperature of the days. It may be remarked that the observations were confined to one field of each kind of crop, and that the temperature is deduced from observations made with protected thermometers; it is therefore the temperature of the air that is given, and not that to which the crops were actually exposed.

Table showing Temperature required to Mature Crops of Wheat and Barley.

Stations.	Crops.	Appeared above Ground.	When Cut.	Degrees of heat received.	Days in ripening.
Culloden ..	Wheat	Nov. 22, 1860	Aug. 29, 1861	8188	156
	Barley	April 22, 1861	,, 19, 1861	6560	119
	Oats ..	,, 20, 1861	,, 21, 1861	6767	123
East Linton	Wheat	Nov. 18, 1860	Aug. 23, 1861	8362	159
	Barley	April 6, 1861	,, 13, 1861	6900	129
	Oats ..	,, 5, 1861	,, 16, 1861	7125	133

These results entirely corroborate the views of M. Boussingault regarding the amount of heat required to ripen Wheat and Barley,—the amounts for Culloden and East Linton being identical with those contained in his list of places, the means of which are given above. In addition to these, it will be observed that the amount of heat required for ripening of Oats is about 7000°. The suitableness of Oats for cold climates, therefore, is not that they require a less amount of heat to ripen them than Barley, but that less heat requires to be concentrated on the crop between the dates of flowering and ripening. This remarkable fact appears from the table, that a less amount of heat and fewer days were required to ripen each of the three crops at the northern than at the southern station. The explanation is probably to be found in the circumstance, that, as their mean summer temperature is nearly equal, less time and less heat, as ordinarily estimated, is required to ripen the crops at Culloden, owing to the higher latitude, and consequently longer summer sunshine of that place. The short periods within which crops ripen in high latitudes may be adduced as confirmatory of this view. Not that a less absolute amount of heat is really required, but the day being longer, its higher temperature is extended over a proportionally longer period; and thus a part of the heat is not accounted for by the ordinary method of estimating mean temperatures—by taking the mean of the highest and lowest.

It may be noticed that, in the case of the Barley and Oats, where the difference is greatest, part is probably due to the earlier sowing at East Linton; for the intervening periods of low temperature which characterise our backward springs, represent accessions of temperature which have little or no effect in ripening the crops.

The observations with exposed thermometers do not enable us to draw up a similar table, giving, not the temperature of the air, but the actual amount of heat received during the growth and ripening of the crops. This arises from the circumstance already explained, that as the observations with exposed thermometers were all made 4 feet above the ground, they therefore only represent the temperature to which the crops were exposed from the flowering to the ripening; they cannot be held as representing the temperature of the crops before that period, owing to the great differences of temperature between the surface of the ground and 4 feet above it, and at intermediate heights. The problem of finding the whole amount of heat received by the crops, could only be solved either by a series of thermometers fixed at various heights above the ground, or by moving the thermometers gradually, so as to keep them always on a level with the crops. We must therefore confine our attention to the period between the flowering and the ripening. The following table contains, for four of the stations, the degrees of heat and the days which were required to ripen the crops in 1861 after being fully shot. None of the grain crops are cultivated in the immediate neighbourhood of North Esk Reservoir or Chapelhope, and no returns on these points have been received for 1861 from Sandwick and Millport.

Table showing Time required for Ripening different Crops after being fully shot.

Stations.	Crops.	When fully shot.	When cut.	Degrees of Heat received by exposed meter.	Days in Ripening.
Culloden ..	Wheat	July 1	Aug. 20	2987	50
	Barley	July 1	Aug. 19	2927	49
	Oats ..	July 6	Aug. 21	2759	46
Baldinnies ..	Wheat	July 14	Sept. 10	3465	58
	Barley	No date	Sept. 19	.	..
	Oats ..	No date	Sept. 11	..	..
East Linton	Wheat	July 3	Aug. 23	3112	51
	Barley	June 27	Aug. 13	2990	47
	Oats ..	June 29	Aug. 16	2942	48
Otter House	Wheat	Not grown	..	..	..
	Barley	July 20	Aug. 28	2487	39
	Oats ..	July 13	Aug. 28	2832	46

The difficulty of fixing exactly the time when the several crops were fully shot, will partly account for the slight differences to be observed in these results. The greater number of degrees and longer time required to ripen the crops at the southern, as compared with the northern stations, have been already referred to. The high day temperature at Otter House, and the low night temperature at Baldinnies, as shown in the Tables, may serve to account for the differences between these two places. At Culloden and East Linton, Wheat ripened in 50 days with a mean temperature of 61.0 degs. by the exposed thermometer; and at Baldinnies, in 58 days, with a temperature of 58.6 degs. This would give for. Baldinnies a mean summer temperature of about 56.0 degs. by the protected thermometer, which accords with the circumstance that Wheat is cultivated only on the lower parts of the farm. Taking the mean of Culloden and East-Linton, it appears that with an exposed temperature of 61.0 degs. Wheat will ripen after it is fully shot in 50 days, Barley in 48 days, and Oats in 47 days. *From the Report of the Scottish Meteorological Society.*

OXFORD versus EDINBURGH ON THE EDUCATION OF "THE FARMER."

An article appeared some weeks since in the *Agricultural Gazette*, quoted from the *Oxford Journal*. It commenced thus:—"A young man fresh from the University, who had taken cordially to the position of a country gentleman—and, among other occupations, had adopted that of agriculturist—was riding round his land one morning with a neighbour of long experience and well-proved practical ability and judgment as a farmer. He listened with docility and good-will to the instruction and advice that were given to him; and, struck at length by the wisdom and good sense of his companion's discourse, he at length exclaimed, 'Ah, Mr. ——, I wish I knew as much as you do.'—'Make yourself perfectly easy on that score, my dear fellow,' was the reply—'*You never will.*' The one was fresh from the schools, and the other had spent all his life in the fields, and yet there was neither mock-modesty in the speech of the one, nor arrogance in the answer of the other. Let us hear Mr. —— finish his reply:—'I have been accustomed,' he said, 'to be amongst plants and animals, constantly riding or walking on the soil which supports them both, since I was a child. Ever since I can remember I have had to do with the tillage of the land, the cultivation of crops, the management of live stock. There is not an aspect of weather, land, or life, so far as the live stock of the farm are concerned, which I have not habitually witnessed, realised, and studied—that of which instances and striking cases may be observed by you is foreseen and

recognised by me in its first beginnings almost as an instinct. Long familiarity with the details of my occupation, beginning, too, with the mind of a child which has hardly any other impressions on it to weaken the sensitiveness with which its early knowledge is received, gives me almost unconsciously, and without the effort of any special attention such as you must exercise, those intimations of fitness or of unfitness, of quality and condition, whether of soil, or crop, or animal, on which the right direction of our business of course depends.' Mr. —— was perfectly correct; it is an immense advantage to an agriculturist as to the follower of any other occupation, to learn that occupation young." The article proceeded to criticize a book written with the intention of carrying out the idea of Mr. ——, and of impressing agricultural truths upon the mind when young. Mr. Wallace Fyfe, whose book was thus referred to, was criticized somewhat severely on the ground that instead of a familiar talk of air and earth, and plant and animal, it was a formal treatise, in which truth is stated, not as observed in the field, but as it exists in the mind of a philosopher. "The value and importance of the study of agriculture"—"the limits and capabilities of cultivation"—"the manner in which agriculture is advanced by science"—and so on, which are the subjects of Mr. Fyfe's opening chapters, are, it was stated, topics on which a *Senatus Academicus*—a Board of Agriculture—or even a Farmer's Club—may interest themselves, but which are not the points to which the attention of a child should be directed. The aim of the book is admirable, and it is directed towards an object which well deserves the effort needed for the attainment of it—an object useful, desirable, and to a great extent attainable; but the plan of the book is, as we believe, essentially mistaken, and its style is adapted rather for educated men than for the ignorant children for whom it is intended.

The following reply was addressed by Mr. Wallace Fyfe to the *Oxford Journal*, on the Education of the Farmer. We have been reluctantly obliged somewhat to curtail the reply:—

"Feeling far more obliged than otherwise for the strictures of the *Oxford Journal* on my 'Catechism of Agricultural Science as applied in Practice' (the main title and purport, however, of which publication—'for teaching Agriculture in the face of Nature, by means of a Farm Calendar, &c., appears to have been studiously concealed, for the sake of favouring the writer's onslaught)—will you, nevertheless, allow me to state that the whole article is founded in error and sustained by misrepresentation, as you may readily enough judge from the discussion of 'the education of the farmer' being treated by the writer as if it were that of children still maundering in books and words of 'two syllables.' Apart from any sense of his injustice, the Oxonian will have done me a favour if his objections should lead to an investigation of that part of the educational question for which it seems to be the most difficult to obtain attention. There is at the same time nothing in his objections which I have not already striven to clear away myself as a preliminary to the entertainment of my plan. No one can be more alive than I am to the startling nature of the proposal to instil science into the rustic mind. And if my critic had only looked into my short paper, read before the Adult Educational Congress, and reprinted as an introduction to my system of teaching in the face of nature, he would have seen that I contend not only that in accordance with our advanced knowledge and practice this must be done, but that I attempt to show how it can be done. In a paper which I subsequently read before the Social Science Congress, you will find that I have still more explicitly brought out and illustrated my object, which is to teach agriculture 'scientifically' in common schools. One of the practical illustrations—that of the analysis of soils—there quoted from my 'Catechism,' will I think convince the most sceptical that means may be found of conveying to any set of scholars out of the horn-book, some idea of these most abstruse and difficult points and processes in the philosophy of agriculture.

"One great mistake the *Oxford Journal* has committed, I know not how, in assuming that my 'Catechism' has been published. No doubt, it had to be put into a form resembling publication, with my friends Messrs. Groombridge's name upon it, in consequence of having been got up for the International Exhibition, and for this purpose I judged that the readiest plan of throwing off just so many copies as might be required, and no more, would be to stereotype it—particularly as the copyright is offered for sale in this country, and the right of translation abroad. But it is NOT a published work; it is a mere trial piece, full of imperfections, capable of many extensions, and avowedly contented with suggesting to the teacher the supply of minute and detailed explanations, instead of pretending to carry them out within an impossible compass; and I would, without hesitation, melt down the plates did I conceive it to be so little calculated to advance the object of invading that dense throng of rustic ignorance which hopelessly hems in our scientific agriculture, as the *Oxford Journal* would have the world believe. But instead of the Catechism on which my critic comments being the prime feature of my system—it is on the contrary the Farm Calendar, which will be found exhibited in large size on the staircase of Class 29, which may be termed the pivot and central point on which it all turns. The Catechism is simply a fresh edition of my former text book for farmers, 'Agricultural Science Applied in Practice' (Groombridge), thrown into the form of question and answer, with some important leading hints for the teacher to follow up, under the name of 'Improvements on the lessons,' and anything recent in agriculture superadded throughout to bring down the work to the present state of our information. No man can have a greater horror of the jargon of science than I have; I have always denounced and endeavoured to evade it. But it must be obvious that where real and subtantial, however elementary, knowledge is to be conveyed, this must have its limits; and that words of two syllables will no longer do—I hardly could have expected them to be so much in vogue at Oxford. To compress even a cursory outline of eight or nine sciences, as applied in agriculture, within the ordinary limits of a book of instruction is no easy task; but excluding technicalities, it would certainly be hopeless, and, let me add, useless. One of the sciences so treated by me for example is Botany; in the course of five large-type pages I have endeavoured to convey an explanation of the leading terms of this science; and I challenge all Oxford to say that it is unintelligible, and if they should, I invite the world to pity the University. It is easy to select passages from such a treatise therefore in which 'lime' may be described as an 'alkaline earth.' Honestly, however, the captious critic ought to have recollected that the learner had passed through a course of information, in which it would be the teacher's duty to tell him what 'alkaline' and earth, too, implied, geologically and chemically. This is the use of the recommendation which the *Oxford Journal* sneers at, of first of all occupying YEARS in school in furnishing an idea of the nature of the sciences; for I cannot help asking what would be the use of going upon the farm as I propose 'to teach agriculture in the face of nature' (the very thing my critic asserts I do not essay!) without knowing these things first of all? He proposes simply to invert the order of this sort of instruction; and, like many men more conscious of their powers than conscientious in the application of them, seeks to upset my case by an isolated and exceptional anecdote which rests only on his own authority. Very well, we have admittedly been long enough at work in his way. My argument precisely is that all an unassisted observer, living in the country and intending to follow rural pursuits, can already know of what my critic calls air and earth, and plant and animal—the rustic population (for he mistakes in thinking that I want to instruct children at all, unless where the previous foundations of ordinary education have been laid, and there I admit I would rather take them young than otherwise)—all that a countryman or youth engaged in farming occupations can already know—he knows—and likely it is a good deal more than may be known to 'a young man from the university.' It is true therefore that he should be taken through the more 'formal treatise' of which my friend complains, 'in which truth is stated not as it is observed in the field, but as it exists in the mind of the philosopher.'

"Field instruction follows. I have penned a farm calendar for the "senior class" which my critic does me not the honour to notice, but on which I have heard publicly the testimony of such men as the hon. member for Nottingham, Mr. Charles Paget, M.P., who has, in fact, practically carried out a half-time system of work alternated with instruction amongst the boys on his estate at Ruddington; Mr. J. T. Hoyt, editor of the *Wisconsin Farmer*, and secretary of the State Agricultural Society there; the Rev. H. Fearm, rector of All Saints, Loughborough (a keen agriculturist)—and last, not least, Mr. J. C. Buckmaster, of the Department of Science and Art, South Kensington, himself a farmer's son, and who not only approved of my proposals at Guildhall in June, but stated that his department was ready and willing to examine and certificate schoolmasters in that the same as in any other branch. Copies of my unpublished 'Catechism' and 'Farm Calendar' have been lodged in the Government Museum, and I hold the formal vote of thanks of the Lords of the Privy Council for Education for them. This farm calendar, and not the catechism, contains the germ of my proposed practical teaching. My assailant omits to state that I have not even recommended the teacher to rely entirely on my own class books, but have distinctly referred him to 'Morton's Farm Calendar' (Arthur Young's modernised) and 'Stephens' Book of the Farm,' framing my School Farm Calendar in the order of these works accordingly. I take up the first farming month, and thence go on to the last, noting down everything each is calculated to illustrate, whether in field operations or their mechanism, in the in-door occupations of farming and their arrangement, or in any other walk of rural economy; I ask the teacher to exhibit these things minutely to those he may be instructing—men or boys, I care not, but not two-syllable children—and I assume, because it is necessary to their thoroughly understanding them, that so much of the information in the books (for there are two—the teacher's text book and the scholar's catechism, which nearly correspond however) as may relate to these things may be conveyed to, and indeed have been previously mastered by them. Thus, instead of 'a Primrose by the river's brim' being as heretofore 'a yellow Primrose' to them and nothing more, it and the most ordinary object and operation of farm life will come to possess in the minds of these persons a scientific meaning and intelligence. Without this they would go about heedless and unobservant of the real bearings of their actual work as before. But I have no objections to their being already familiar with things as they exist. I hardly can conceive, unless their time were otherwise taken up from the moment they could master "two syllables," how it could be otherwise; it is the foundation of my whole idea, indeed, that already these parties have become familiarised with farm operations, appliances, and phenomena, and that they simply want to be put in possession of the *rationale* of them. My critic, therefore, has totally misrepresented me without succeeding in differing from me. No two projectors could be more completely at one than Edinburgh (for my plan dates from thence, where I attempted to carry it out in the School of Arts, but was called away by other duties) and Oxford—only Edinburgh has put into a tangible shape what Oxford, to use its own words, never will, at least if adherent to the childish fancy of teaching agriculture, or anything else, in words of two syllables. Could anything be more contemptible than for a writer to proclaim in this boasted age of advancement, that whilst mechanics are studying everywhere the complications of mechanism, the strength of materials, and constructive problems of the most stupendous kind, agriculturists are to be shut up from the correet mechanical knowledge of the tools and implements which they wield, the proper meaning of the processes they pursue, the truths and lessons of an art of which more has become known within the last half or quarter of a century, through the medium of science, than had previously been developed in the course of nearly 6000 years of my Oxford friend's mode of teaching. "W. WALLACE FYFE."

WHEAT SEEDING.

My apology for troubling the Editor of the *Agricultural Gazette* with the following observations, is the importance of the subject. As I am now greatly debarred from out of doors occupation by delicate health, I will try and say something in relation to Wheat seeding, a subject which has lately occupied the columns of the *Agricultural Gazette*. I know that nothing is taken so ill as advice, because it in some measure seems to say that the adviser is superior to those advised; but I can assure the reader that I feel no sense of superiority whatever. Much has been said of late on the subject of thin seeding, especially as regards Wheat. To this cereal, then, I will direct my observations. As the crop must be according to the nature of the seed sown, so also the success of the crop much depends upon circumstances, which are various in different localities.

The chief dependence is, of course, the Supreme Being; but success subordinately depends also upon the time of seeding, the quality of the seed, the nature of the land, and the quality of the land. Thick or thin seeding are terms which may mean anything. What may be thick seeding in one locality may be thin in another. Much depends upon the condition and cleanness of the land, and the size of the seed corn. I think 6 pecks of Wheat per acre too little for the general lands of England under usual circumstances, or even under high and clean cultivation. The quantity which I use is 2 bushels or 8 pecks per acre; and though, under some circumstances, a lesser quantity might be used, I should myself be sorry to trust to a lesser quantity. The high farming of the present day, and the safer and more uniform deposition of seed by the drill, render less seed necessary now than formerly; but still there are so many enemies to Wheat, and the disaster is so great if plant should fail from any cause, that I repeat a less quantity of seed than 2 bushels would not be safe for England generally, nor for any land continuously, even where high cultivation exists. Let us see what are some, only, of the destroyers of plants. Supposing a farmer to begin Wheat-sowing the 10th of October, and to finish his winter-sown Wheat as near to the 10th of November as he can (in some cases he cannot finish before Christmas). As soon as the seed is sown demolition begins; small birds, driven by hunger, and rooks in search of corn or worms, do much mischief, which is especially felt in small fields. There is also a liability to loss of plant by the severity of winter; moreover in some lands, and in some seasons, Wheats do not tiller as much as in others. Let us then suppose that from some cause or other there is a loss of or inadequacy of plant. What will be the certain consequences? The flags of highly cultivated thin Wheat will be honey-dewed, the straw will be speckled and reedy, and the ears will be mildewed and light. The plant being thin, in go the hares, which amuse themselves all summer in eating off the first knot for its succulence; next in go the rooks and pigeons, which help the farmer to his rent; next in goes the reaper, who tells you that he would rather cut a thick piece of Wheat than this thin, green, unripe stuff; next in goes yourself, and when you lift a sheaf down goes the butt end, and the long straight, light ears go into your already afflicted eye; lastly, in goes the landlord and asks, where is my rent? Barring the gaol, this is the terminus of loss of plant. As regards Wheat, I should be truly sorry to hear that, under any circumstances, the lands of England had been sown with less than 2 bushels of seed to the acre. It should be remembered that now so much stock is kept and so many Turnips are required, we cannot finish our Turnips preceding Wheat much before Christmas. What chance, then, would such modicums of Wheat seed, as I see recommended by some in the *Agricultural Gazette*, have against the various enemies of Wheat, of which I have only mentioned a few. I fancy that those who sow such ridiculous quantums, will, sooner or later, sing for their harvest song—

"The effect was great, because the dose was small;
"'Twould have been greater, had there been none at all."

And what will be the harvest song of the credulous British public? Will it not be

"Bone and Skin, two seeders thin,
Would starve us all, or near it,
But, be it known to Skin and Bone,
That flesh and blood can't bear it."

My land is about the middle land of England and is highly cultivated, which indeed I may say is the case with my neighbours; and yet I repeat again, I should be sorry for them or for me to trust to less than 8 pecks per acre. There is of course a difference between a fancy or garden farmer, and a stock-keeping farmer who cannot afford to gobble up his Turnips or draw, cart and stack them in order to save a little seed by earlier sowing. There is also a great difference between a stock-keeping farmer and a mere fancy farmer—I had nearly said a "caudated philosopher," who in his calculations substitutes figures for facts. There is also a great difference between arguing for victory and arguing for truth. There is also a great difference between the experience of one year and the experience of the average of seven years. There has been of late a great desire on the part of some to obtain agricultural statistics; but I believe that there are no statistics more fallacious. A man counts the stalks and corns of one Wheat plant, then calculates how many there should be at certain distances on the acre, and then arrives at a conclusion which is erroneous and enormous. If the Government have to depend for corn statistics upon such calculators, they will be wiser without the calculators than with them. A man multiplies a wrong unit, and of course the oftener he multiplies it the farther is he off from the truth. As regards the motives of such calculators, I am persuaded that they are not connected with any desire to deceive, but flow from a sanguine nature striving for a favourite theory, believing it to be beneficial to the public.

I must now conclude these lengthy observations, which but for the importance of the subject would else be unpardonable, and I will hope that they will be read with the same generous feelings as have originated them. *John Ford, Jun., Rushton, Blandford, Dorset, Oct.* 27, 1862.

Home Correspondence.

Seed Sowing by Steam.—In your article on steam cultivation in your Paper of Saturday last, you, after giving a passing remark on my combined machine, write thus: "The sowing of the land . . . will generally remain to be done by horses." Now this very much reminds me of my position at Chelmsford in 1856,

…the Royal Agricultural Society would scarcely …at either me or my tackle, yet condemned No. 3 …, as they said, it did not comply with their con…. The *Mark Lane Express*, in its report on … meeting, wrote thus:—"Mr. Smith does not …, neither does he attempt to thoroughly invert …, and in this respect he certainly does not … with the Society's conditions, and can hardly … have expected the prize. . . We cannot judge … how much cost he could perform ordinary …, or some similar work likely to be employed … farming." The general cry of that anti-… body of men, the great agricultural implement …, was, and has been, "Wait, wait, wait; we have … something better coming." Now I have 188 direct …, who have sets of my tackle, and you know that … Messrs. Fowler and Howard's customers are all … upon my system—the system that I showed at …ford. Then what is the good of an opinion at … sight, or I might say rather of prejudgment, … that not only the Royal Agricultural Society, … all other great (said to be) authorities have been …—then what is your opinion worth about horses … all the sowing? You have seen the results, … you have never seen the machine actually in …. The two fields of Beans, the two fields of …, and the one field of Oats, planted by it on … farm last year, all surpassed the general expecta… in cost of planting and of produce. The two … of Wheat planted by it on my farm this autumn … than convinces me that in the end the planting … generally be done by steam power. My two reasons … that the cost of the seed bed with planting is not … cheapest but best, and that the produce is and will … the greatest. To test this I am ready to cultivate … plant the half of any field in England of, say … acres in extent (roots fairly fed on the land this …, next spring with Barley against horses on the … half, on either horse or steam cultivated land for …, the cost of planting, and the produce to decide the … of the cost of conveying my tackle to and from the spot, the whole of the conveyance of men, their daily pay, board and lodgings, as well as coal and water for the engine, with horses and implements for any after operation that I may require, to be found and paid … by any one who will accept this challenge. I offered … to back an opinion based upon practice; I may be … that if steam wins I shall not have proved my …. True; but the complete victory that steam will … over horse cultivating and drilling will go a long way … induce that class of men who have been singing …—wait, wait!—so long, to rub open their eyes and … another even if it be an older one. You know … I have all along set my face dead against making a toy or plaything of an engine, by doing light cross …ivation, simple drilling, and harrowing that cost … a trifle to be done with horses, and cost more than double when done by steam, and the … not a bit better; but now, from the practice I have had with my new machine, finding that the two operations can be done well at one and the same time, by which a saving of time and seed is effected—that a good crop is certain to follow on so beautiful a seed bed—that it gives thus an increased produce may be relied upon. My Wheat put in by it … weeks ago yesterday and to-day is now coming … strong and well, and although only a bushel of seed per acre was planted, it speaks out plain already that I may expect a good crop, and what is more, that I shall have clean land when the crop comes off, …, so convinced am I of the efficiency of this machine, both in cost, produce and cleanliness, that I would rather that my horses should have more … days in the year than they now have than they would have any thing to do with the planting of my Barley, Beans, and Bean stubble Wheat, beyond harrowing or some light after operation. It may be … that I am an interested man—true, but let me tell you, and I tell you it truthfully too, that I will do what I can for my country if I never get a farthing. *…m Smith, Woolston, Bletchley Station, Bucks.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

MONTHLY COUNCIL: *Wednesday, November 5.*—Present: Viscount Eversley, President, in the Chair; the Earl of Powis, Lord Berners, Lord Feversham, Lord Portman, Lord Tredegar, the Hon. W. Cavendish, M.P.; the Hon. Major General Hood, Sir E. Kerrison, Bart., M.P.; Sir A. Macdonald, Bart.; Sir J. V. Shelley, Bart., M.P.; Mr. Acland, Mr. Raymond Barker, Mr. …ston, M.P.; Mr. Cantrell, Colonel Challoner, Mr. …, M.P.; Mr. Druce, Mr. Brandreth Gibbs, Mr. Fisher Hobbs, Mr. Wren Hoskyns, Mr. Lawrence, Mr. Milward, Mr. Pope, Mr. Randell, Mr. Rigden, Mr. Robert Smith, Mr. Torr, Mr. Thompson, M.P., Mr. …, Mr. Burch Western, Mr. Wilson, Professor Wilson, Mr. Frere, Professor Simonds, and Dr. Voelcker.

The Earl of Londesborough, Grimston, Tadcaster, was elected a Governor

The following new members were elected:—

Abercorn, Marquis of, Chesterfield House, South Audley Street, W.
…, Arthur, Cold Aston, Northleach
…, Charles, Tyfield, Lechlade
Barton, Charles, Coln Rogers, Gloucester
Barton, John, Westleigh Lodge, Leigh, Lancashire
Baldwin, Wm. Henry, Caledonian Street, Leeds
Ballard, Philip, Leighton Court, Hereford
Baxter, Thomas, Acton Grange, Warrington, Chester
Bichford, Joseph, Oxley, Wolverhampton.
Bowley, William, Cirencester
Cherry, Geo. Charles, Denford, Hungerford
Clarkson, Thos., Playford Hall, Ipswich
Coote, Geo. Cosens, Tortington, Arundle
Devas, Thomas, Mount Ararat, Wimbledon, S.W.
Earle, Frederic W., Edenhurst, Prescot, Lancashire
Fletcher, John, Merton, S.
Ford, George, Barlaston, Stone, Staffs.
Godwin, Robert, Water Eaton, Cricklade, Wilts
Green, E. Whitaker, Flint House, Holcombe, Stratton-on-Foss, Bath
Guerrier, Wm. Geo. 17, Crescent, Camden Road Villas, N.W.
Head, John, Orwell Works, Ipswich
Houghton, S. F., Yacht Tavern, Greenwich, S.E.
Huddleston, Ferdinand, Swanston Hall, Cambridge
Hyde, John Thomas, M.A., Island of Herm, Guernsey
Juckes, Mrs. Mary, Cotwall, Wellington, Salop
Kimberley, John Parrier, City of Gloucester
Langdale, Lady, Eywood, Kington, Herefordshire
Lord, John P., Hallow Park, Worcester
Morris, Abiathar, Pendeford, Wolverhampton
Newdigate, F. W., Byrkley Lodge, Burton-on-Trent
Owen, Thomas, The Hague, Chesterfield
Parkinson, Robert, Dutton Lodge, Preston Brook, Chester
Parry, Joseph, Jun., Allington, Devizes
Perkins, Henry, Thriplow Place, Royston
Powis, Benjamin, Newnham, Tenbury
Richardson, E., Jun., Chemical Manure Works, Blaydon on Tyne
Sharp, Granville, Dean Scales, Cockermouth
Shillingford, George William, Eynsham, Oxford
Smith, Henry John, Emsworth, Hants
Taylor, Francis Howard, Burntwood Hall, Barnsley
Teleki, the Countess, Eywood, Rington, Herefordshire
Turner, Frederick, Palmer's Green, Southgate, N.
Turner, John William, Hopton, Mirfield, Normanton
Westmoreland, Earl of, Apthorpe, Wandsford
Whitford, Richard, Avon Side, Evesham
Wilmot, Robert C., Woolley Park Farm, Wakefield
Wybergh, Francis, Isel Vicarage, Cockermouth

FINANCES.—The Hon. General Hood, Chairman of the Committee, presented the report, from which it appeared that the Secretary's receipts during the past three months had been examined by the Committee, and by Messrs. Quilter, Ball, & Co., the Society's accountants, and were found correct. The balance in the hands of the bankers on the 31st October was 3362*l.* 16*s.* 11*d.* The Committee deemed it advisable that the sum of 1000*l.* stock in the New Three per Cents. be sold out. The balance-sheet for the quarter ended 30th Sept., and the statement of subscriptions and arrears, were laid upon the table; the amount of arrears then due being 807*l.* They recommended that a circular be sent by the Secretary to those members in arrear of their subscriptions in 1860 and 1861, amounting to 255*l.* This report was adopted.

JOURNAL.—Mr. Thompson, M.P., Chairman, presented the report, and the President having opened the sealed motto paper, declared the successful competitor for the prize of 20*l.* offered by the Society for the best essay on land valuing, Class VII. 1862, to be Mr. P. D. Tuckett.

The Committee having requested the Council to decide whether there should be a discussion at the Council on Wednesday the 10th December, the question was decided in the negative.

The Committee recommended that the Society's Journal be given to Monsieur Barral in exchange for his "Journal d'Agriculture pratique." The Council determined not to approve the recommendation that a certificate of membership on parchment be given to all life members, English and Foreign.

VETERINARY.—Mr. T. Raymond Barker, Chairman, stated that Professor Simonds had attended during the month of August at Warminster and Salisbury to give such information as the flockmasters of those districts required in reference to the small pox in sheep, and that the Committee approved of the step taken by Mr. Pain and Mr. Fisher Hobbs in this matter, and recommended that the Professor's expenses so incurred be paid by the Society. The Professor had stated that he had received instructions from the Privy Council to investigate the disease, with a view to arrest its progress. A deputation from this Committee had waited on the authorities, for the purpose of pressing on Government the desirableness of enforcing the Act of 11 & 12 Vict. cap. 107, as confirmed by the 21 & 22 Vict. cap. 62. Professor Simonds said he was happy to be able to say that this disease was declining, indeed almost extirpated by the energetic measures used, and that the Government had ordered the purchase of 200 sheep, in order that he might carry out experiments with the view of ascertaining whether vaccination is or is not effective in remedying the disease.

GENERAL WORCESTER COMMITTEE.—The Earl of Powis reported that a supply of Wheat and Barley had been purchased for the trial of the machinery at the next County Meeting.

Mr. Milward having moved that the preliminary Veterinary Surgeon's Examination be dispensed with, the motion was seconded by Mr. Torr, but negatived on a division by 13 Noes to 12 Ayes. An amendment having been moved by Sir E. Kerrison and seconded by Sir John Shelley, viz., that the subject be referred to a Select Committee to inquire in what way unsound horses may be best kept out of the Showyard of the Society, was carried.

Professor Wilson reported that he had obtained specimens of seeds, cereals, and Grasses from almost all the Northern counties represented in the International Exhibition.

Farmers' Clubs.

LONDON: *Nov. 3.—Lustre Wools.*—A very interesting paper by Mr. Anderton, of Bradford, was read on this subject, in which the history of English wool and the present state of its production, and of the demand for it, was given in detail. We have room for only a few extracts:—"In February, 1861, a circular was issued, entitled "Address of the Wool-supply Association of the Bradford and Halifax Chamber of Commerce, to all Parties interested in the Growth of Colonial and other Foreign Wools."

"In this document they again speak of an inadequate supply of long-wool. The wool required should, they say, have a staple from 4 to 7 inches in length, of uniform quality throughout its whole length, and bright and lustrous in appearance. In addressing foreign growers they point to the fact that "the flocks" should be pastured as much as possible upon succulent Grasses, similar to those grown in Great Britain; the object being to get a bright lustrous wool. Your attention having been drawn to the demand for this particular kind of wool, the home supply of which you have been informed is outgrown by the demand for home consumption, besides our having customers from France and Germany, the question arises—Does this demand for a national staple assume a character and dimensions sufficiently interesting to farmers to justify them in considering whether wool may not be a product more and more worthy of attention as the means to the end of rendering their operations more profitable?

"I have been much impressed by some remarks made by Mr. Cobden, upon the occasion of a trial of steam ploughs which recently took place in the Lothians.

"I need not tell you, who are so far advanced in the science of agriculture, that that which lies at the very foundation of all scientific agriculture is the large and constantly increasing production of the manure-producing animals—the cattle and sheep which you rear on your land: hence it becomes a question whether, with the present increased consumption of wool in England, and also the increased consumption of mutton and beef in some districts, it would not be more profitable to the farmers to turn their attention more to the growth of wool, mutton, and beef, which under certain conditions of soil, &c., might be more profitable than Wheat, particularly as the foreign markets for Wheat are extensively open to us; and may I not here remark, that Wheat, possessing a character (by a merciful dispensation of Providence) adapting it for cultivation in all climes where civilised man becomes resident, it can therefore be almost universally grown, and is as a product of land, contrasted with wool, less under the influence of climate, and therefore open to more general growth. I think we have no fear of any want of cereal produce; but unless the English agriculturist bestirs himself, we may justly apprehend the scarcity of English long-wools; and as they have not yet been grown in any other country to the same perfection, arising, as we have evidence, partly from the pasturage, partly from the breed, and also (generally) from the care taken of long-wools, I do think the agriculturist will not think me intrusive in urging the consideration of this question upon him."

"An intelligent farmer resident in Yorkshire kindly furnished me with the following: The lustrous condition of wool depends much on cleanliness, and here attention is required from the shepherd. Such attention would be highly remunerative. Another writes:—

'This wool, the lustre, is grown both from Lincolns and Leicesters, and also a cross between the two from hoggets, and a great deal depends upon the cleanness of the sheep and the land they are grazed and fed upon, more than upon the breed of long-woolled sheep. When it is bright-haired and glossy, we can always sell it for more money. The best class of hogg's wool about Ripon generally commands the best price in this district, but I think it is chiefly owing to the land they feed upon.' A gentleman from Leicestershire, whose operations are devoted exclusively to sheep, has given me some interesting particulars bearing upon the subject. Being totally unacquainted with the causes which led to the demand for the particular kind of wool now in great request, he spoke of the increased value of wool generally, and said that his profits were incident alone and dependent entirely upon the production of mutton and wool. Beef was a simple addendum, not particularly note-worthy in a mercantile point of view, inasmuch as on his farm the fleece alone paid his rent. Taking him with his estimate of profits, I asked him whether there was not an indirect element overlooked? and he ultimately admitted that, apart from the mutton and wool, there was an indirect profit incident to the fact that the manure-producing animal gave back to the soil as much as, if not more than, was taken from it. I think the landlords will notice this assertion. This statement, to my mind, as a mere man of commerce, appeared anomalous; but he fortified his declaration by saying that a soil but slightly prolific became abundantly fertile through the droppings of sheep; in other words, that which gave but poor pasturage to the sheep this year became, when disintegrated in the stomach of the sheep, a source of fertilization, which made the pasturage of the next year infinitely more abundant. He gave me other facts well worthy of notice. These were, that a Leicester flock taken by him to Ireland degenerated rapidly; and in answer to the inquiry whether this might not be attributed to crosses, he assured me that both the ewes and tups of this degenerated flock were pure Leicesters. Emphatically he said their wool became no longer the covering as it were of sheep, but like that of the goat—I use his own language—not forgetting the physiological fact that the goat's covering is hair, whilst that of the sheep is wool.

"All this shows that climate and soil are the causes which enable the agriculturist of England to grow lustre wool.

"The large quantity of wool which is imported from India is a very useful wool for blanket and carpet manufacture, but it does not compete with our long English wools. The same may be said of our Australian colonies, the whole coming from there being adapted for clothing, except the longer staples, which compete with our Down wools and German wools. There are hopes that at some time we may get from New Zealand a long staple Wool; but at present the wool of that colony lacks the lustre which is a distinguishing feature of our long wools.

Calendar of Operations.

NOVEMBER.

WESTER ROSS: *November* 4.—We commenced harvest this year on the 8th September, and with the exception of a field of spring sown Wheat, the whole crop was in the stackyard on the 7th October. On Monday the 20th October, we cut that field of late Wheat amidst heavy showers of sleet and snow, which were carried along by a tremendous wind, and on the 1st November the crop was carted home in good condition.

Our harvest was thus perhaps the most protracted we ever had, and yet the whole crop was secured undamaged, and in excellent condition. The breadth under Wheat, Barley, Oats, and Rye, was about 180 acres, and these were cut in 15½ days by eight scythemen, each hand accomplishing about 1½ acre per day. The Wheat being unusually bulky, and a good deal laid, 1½ acre of it afforded sufficient employment for each man, but when the crop was light a good hand would cut about 2 acres. The scythe men received 3*s.* per day; binders 2*s.* 6*d.*; women for gathering, 1*s.* 9*d.*; and rakers, 1*s.* 2*d.* All the usual half-year servants were constantly engaged in the work, but their wages are not included. The whole sum expended for cutting, binding, stacking, and thatching, was 44*l.*, or somewhat less than 5*s.* per acre. From the protracted nature of the harvest, the expense is somewhat more than it otherwise would have been. From the beginning of the harvest until about the 18th October, the weather continued particularly fine, and on many of the earlier farms the harvest was completed with scarcely any interruption; but for some 10 days thereafter the weather was so unsettled—the equinoctial gales blew so violently and the rain fell so continuously, that harvest work was very much suspended. Well it is that with a harvest so late, the weather becomes so cold that sprouted grain is seldom seen. We have again had a few fine days, and the remainder of the crop is hurriedly finding its way to the stackyard. In a few of the higher districts, however, cutting is not completed, and unless the weather be better than might be anticipated, the carting home will be accomplished in midwinter. Our Wheat, although bulking well in the stackyard, is the most deficient in yield we have ever seen. From 4 to 8 bushels an acre will be no uncommon return. We know of 60 bulky stooks having been threshed, and the yield was under 4 bushels. It is nearly unnecessary to say that the quality also is unusually bad, some of it weighing about 50 lbs. per bushel. Of Barley we have had no experience as yet, but it is expected to be deficient in quantity and of inferior quality. Oats, although somewhat deficient in weight, are threshing out satisfactorily. We have been busy preparing for Wheat, and have sown 25 acres, with over 3 bushels of seed per acre.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Oct. 29, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.										Inches.		
Thursday ..	30	29.95	32°	31°	N.W.	1	9	53°	29°	80°*	25°	..	50°	52°
Friday ..	31	29.72	49	48	S.E.	1	8	50	31	56	31	0.05	49	51½
Saturday ..	1	29.90	51	50	S.E.	1	7	55	48	61	43	0.02	50	51
Sunday ..	2	29.97	51	50	S.W.	1	6	52	48	55	46	..	51	51
Monday ..	3	30.10	44	43	S.E.	1	2	57	40	80	36	..	51	51½
Tuesday ..	4	30.04	50	40	S.W.	1	4	60	48	91	38	0.01		
Wednesday.	5	30.12	45	44	N.W.	1	8	59	43	70	42	0.22	51	51½

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Notices to Correspondents.

CHICORY FOR GRAZING: *X Y Z.* The soil should be prepared by thorough cleaning early in spring and a good coat of rotten dung applied. Drill 4 lbs. of seed per acre in March in rows 9 inches apart. Single them out when 5 inches high to 6 inches apart. The crop will continue luxuriant under good management for six or eight years. After full growth is obtained cut it down before flowering and carry it to stock in the house. It may also be depastured with sheep, but the other is the more productive use of it.

GRASS SEED: *Eion.* The seed is probably that of the Aira caryophyllea, Silvery-hair Grass, but we shall sow some to test the accuracy of this opinion as it is difficult to decide in this ease from seed alone. The motion when put on the palm of the hand is caused by the uncoiling of the slightly twisted awn acted upon by the moisture. If placed upon a dry warm surface, viz., a hot plate, it writhes and jumps in a most eccentric manner, a result which is due to the awns rapidly coiling up.

POTATOES AND PEAS: *G A.* There is no identifying Potatoes by their names, and the Lemon Kidney and Early Top are both unknown to us. Perhaps some readers may supply us with their experience of these, and also of "Bishop's last and best agricultural Pea." The Potatoes we should recommend would be the Soden's Early Oxford, so known in the neighbourhood of Reading, a good early sort—and the Axbridge Kidney, a late Kidney of excellent quality till late in the season.

FOWLER'S PATENT STEAM PLOUGH and CULTIVATOR may be seen at Work in every Agricultural County in England. Addresses of Farms (which are open to inspection), given on application, where the Machine has been at Work for three or four years.
The New Application of the ORDINARY PORTABLE ENGINE may also be seen at Work at any time.
Price, with Self-moving Anchor, Three-furrow Plough, and Five-tined Grubber, 285*l.*
For particulars apply to JOHN FOWLER, 28, Cornhill, London, E.C.; and Steam Plough Works, Leeds.

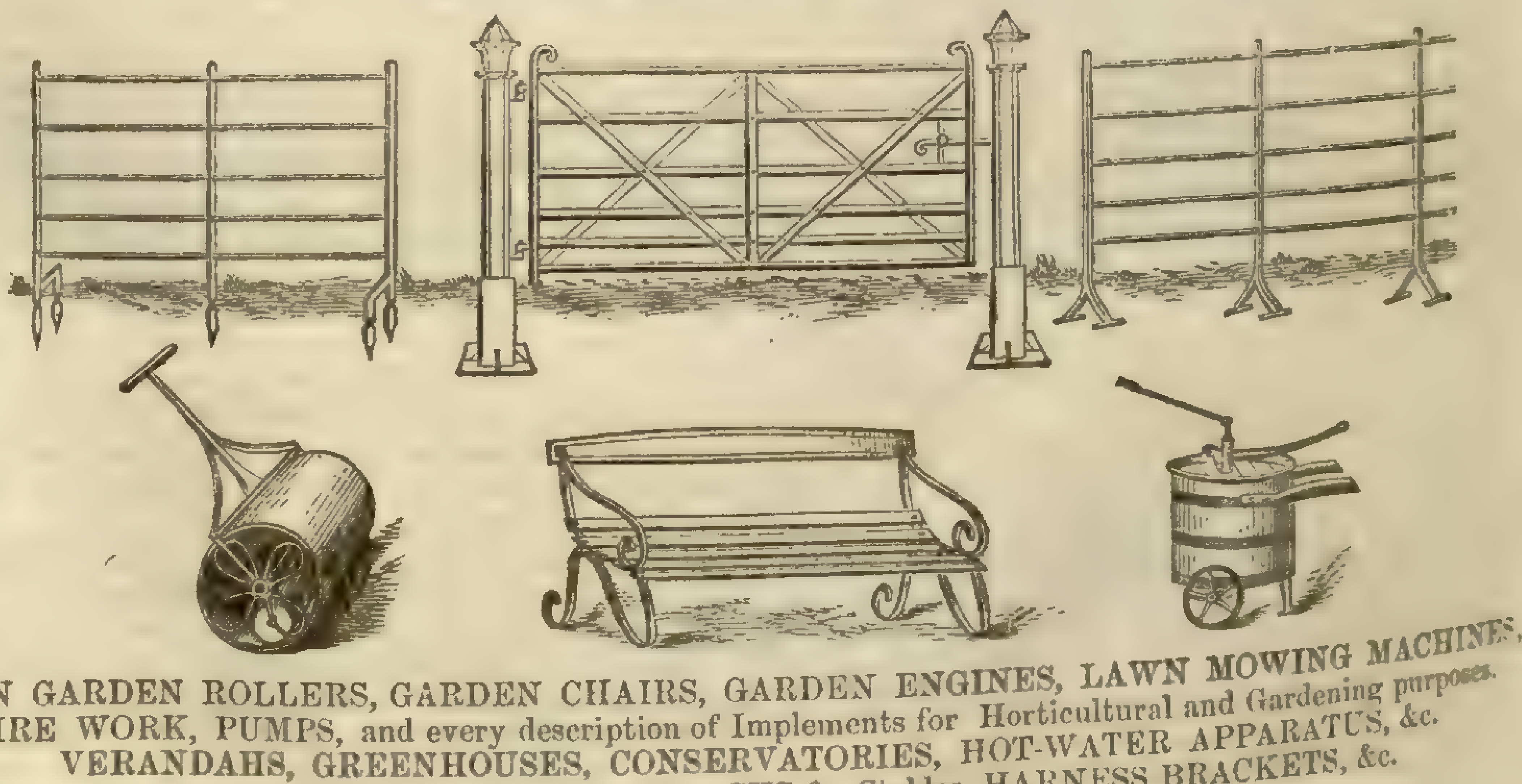
SMITH'S PATENT COMBINED MACHINE.— This Machine is admirably adapted for cultivating Land Wheat, Barley and Oat Stubbles, and Drilling in Turnips. Fifteen acres may be Cultivated and Drilled in a day; for Cultivating Light and Heavy Land ... Stubbles, and Drilling in Wheat; and for cultivating ... Land Wheat Stubbles, and Drilling in Vetches. One ... will be enough for each crop, especially in wet seasons ... warranted to do its work well.
For price and particulars apply to WILLIAM SMITH, W... Bletchley Station, Bucks.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.
RANSOMES & SIMS, ORWELL WORKS, IPSWICH,
Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD,
PATENTEES AND MANUFACTURERS OF
STEAM CULTIVATORS, STEAM PLOUGHS,
CHAMPION PLOUGHS, HARROWS, HORSE RAKES, AND HAYMAKERS.
CATALOGUES, with full particulars, sent free on application.

ADOPTED VERY LARGELY BY HER MAJESTY'S GOVERNMENT.
CROGGON'S PATENT ASPHALTE ROOFING FELT,
Price 1*d.* per square foot.
INODOROUS FELT, for Damp Walls and for Damp Floors under Carpets and Floor Cloths, also for LINING IRON HOUSES to equalise the temperature. Price 1*d.* per square foot.
PATENT FELTED SHEATHING, for Covering Ships' Bottoms, &c.
DRY HAIR FELT, for deadening Sound and covering Steam Boilers, Pipes, &c., preventing the Radiation of Heat, thereby SAVING 25 PER CENT. IN FUEL.
CROGGON & CO.,
ZINC MERCHANTS AND PERFORATORS,
GALVANISED TINNED IRON, and every description of GALVANISED IRON WORK.
CROGGON & CO.'S
NOISELESS ELASTIC KAMPTULICON, or INDIA-RUBBER FLOOR CLOTH,
Impervious to Wet, Indestructible by Damp, Soft to the Tread, and Warm to the Feet, well adapted for Aisles of Churches, Public Offices Rooms, Shops, &c., as well for its comfort as extreme durability.
Samples, Testimonials, and full particulars, free, on application to
2, GOREE PIAZZAS, LIVERPOOL; or 2, DOWGATE HILL LONDON, E.C.

COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,
MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.
PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED,
IN VARIOUS STYLES.

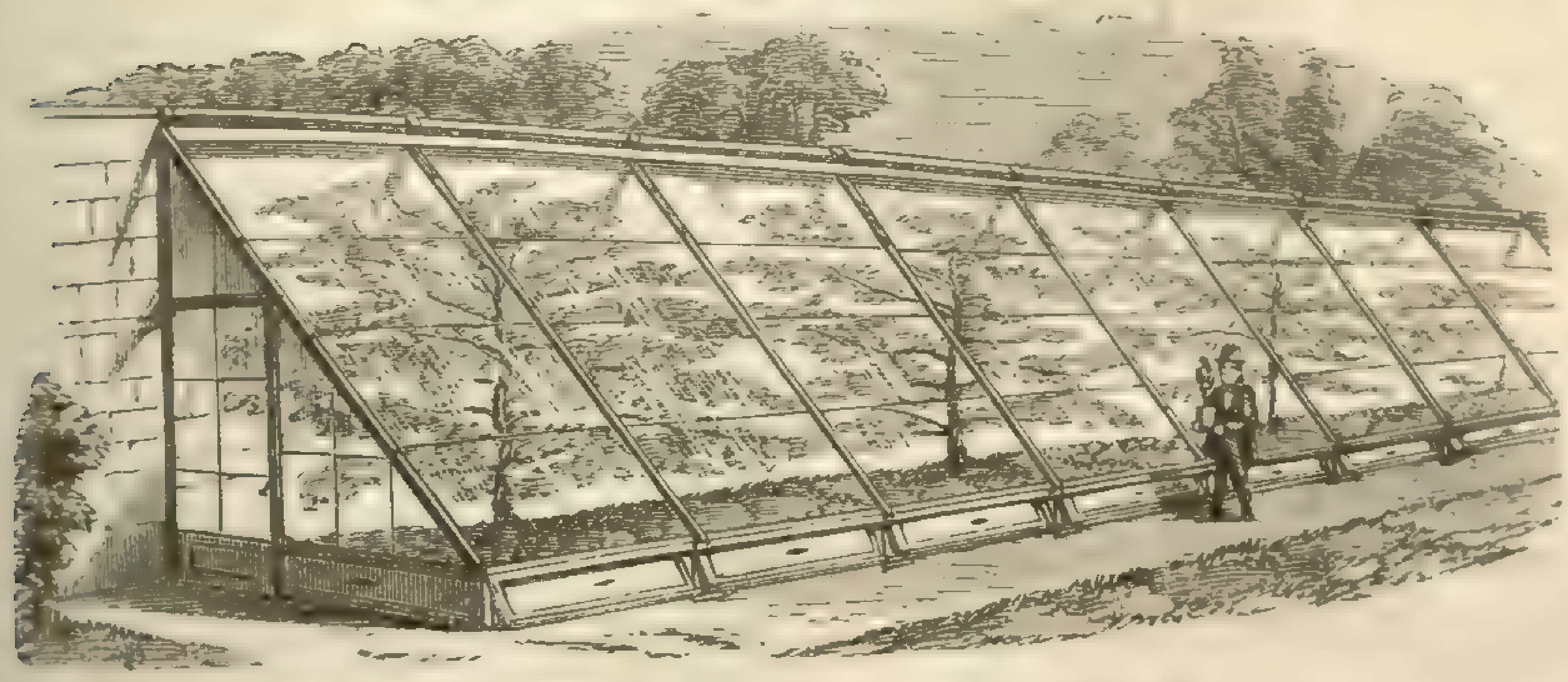


IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.
The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.
Illustrated CATALOGUES and DRAWINGS free on application to
COTTAM & CO., ENGINEERS and IRON FOUNDERS,
2, WINSLEY STREET (OPPOSITE the PANTHEON), OXFORD STREET, LONDON, W.

ST. PANCRAS IRON WORKS COMPANY,

OLD ST. PANCRAS ROAD, LONDON, N.W.

BY ROYAL LETTERS PATENT.



SCOTT'S GLASS WALLS,

Designed to meet the suggestions of JAMES SCOTT, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

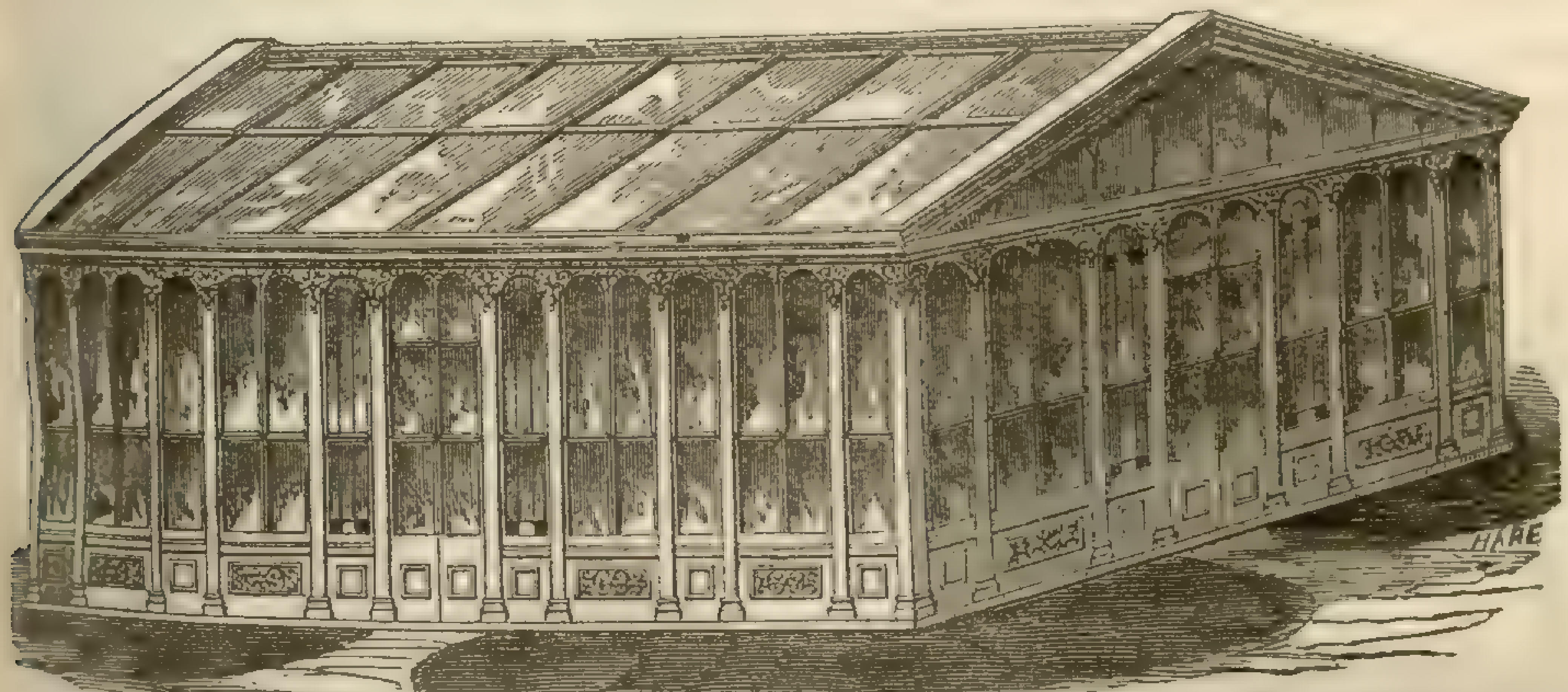
CONSERVATORIES	PINE and MELON PITS	BALCONIES	GATES
GREENHOUSES	VASES	IRON SASHES	TANKS
HOTHOUSES	VERANDAHS	IRON HURDLES	HOT-WATER WORKS.

PATENT WROUGHT-IRON STABLE FITTINGS AND ENAMELLED MANGERS.

Every description of IRONWORK. *Lists Free.*

ST. PANCRAS IRON WORK COMPANY, OLD ST. PANCRAS ROAD LONDON N.W.

INTERNATIONAL EXHIBITION.—Class 9, No. 2119.



JAMES GRAY

Offers for SALE at a reduced price, the CAPITAL CONSERVATORY exhibited by him as above. It has both Sides and Ends in Glass Work, so that it is complete in itself without any walling. It is strongly built and of elegant design, as the above engraving will show. It only requires brickwork level with the ground to stand on, as the part below the Sashes is in Wood.

Applications by letter or personally will meet with prompt attention. No reasonable offer will be refused.

JAMES GRAY,

HORTICULTURAL BUILDER AND HOT-WATER APPARATUS MANUFACTURER,

DANVERS STREET, CHELSEA, LONDON, S.W.

HENRY J. MORTON AND CO.,
2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern
for Cottage Houses, &c., to contain 50 gallons, 26*s.*; 80 gallons, 31*s.* each; and 140 gallons, 37*s.*, and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

Galvanised Iron Pumps
for Liquid Manure or Domestic Use, 3 inches diameter, 30*s.* and 32*s.* 6*d.* each; Tail Pipe for same at from 10*d.* per foot.

Galvanised Iron Swing Water Barrows
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35*s.* 0*d.* each.

Glass.

THOMAS MILLINGTON,
HORTICULTURAL WAREHOUSE,
87, Bishopsgate Street Without, London, E.C.
ESTABLISHED 1750.

NEW REDUCED TARIFF.

SMALL SHEET SQUARES.

Best. 20*s.* 2nds. 16*s.* 3rds. 12*s.* 6*d.* 4ths. 11*s.* } Per 100 feet

6 in. by 4 in.	9½ in. by 7½ in.	14 in. by 10 in.
6½ „ by 4½ „	10 „ by 8 „	15 „ by 10 „
7 „ by 5 „	11 „ by 9 „	12 „ by 11 „
7½ „ by 5½ „	12 „ by 9 „	13 „ by 11 „
8 „ by 6 „	13 „ by 9 „	13½ „ by 11½ „
8½ „ by 6½ „	12 „ by 10 „	
9 „ by 7 „	13 „ by 10 „	

Best. 23*s.* 2nds. 18*s.* 6*d.* 3rds. 14*s.* 6*d.* 4ths. 12*s.* 8*d.* } Per 100 feet

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 „ by 11 „	17 „ by 12 „	22 „ by 15 „
17 „ by 11 „	18 „ by 12 „	24 „ by 15 „
18 „ by 11 „	22 „ by 12 „	20 „ by 16 „
13 „ by 12 „	17 „ by 13 „	20 „ by 17 „
14 „ by 12 „	23 „ by 13 „	20 „ by 18 „
15 „ by 12 „	22 „ by 14 „	

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers & others

	Best.	2nds.	3rds.	4ths.	
16 oz.	22*s.* 0*d.*	18*s.*	15*s.* 0*d.*	12*s.* 6*d.*	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

20 in. by 12 in. | 20 in. by 13 in. | 20 in. by 14 in. | 20 in. by 15 in.

GLASS, cut according to size not on the List.
16 oz. 4ths. 1¾*d.* 2*d.* and 2½*d.* per foot.
„ 3rds. 2¼*d.* 2½*d.* and 3*d.* „
21 oz. 4ths. 2¾*d.* 3*d.* and 3½*d.* „
„ 3rds. 3½*d.* 4*d.* and 4½*d.* „

Various thicknesses of Sheet Glass to the foot.

15 oz. 26 oz.
21 oz. 32 oz.

Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.
Genuine White Lead, 32*s.* p. cwt | Linseed Oil Putty, 8*s.* per cwt.
Anticorrosion Paint, 34*s.* „ | Patent Dryers, 25*s.* to 42*s.* „
CRYSTAL GLASS SHADES. EBONY and GILT STANDS.
HARTLEY'S IMPROVED PATENT ROUGH PLATE.
*** Not accountable for breakage.
SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

Glass for Greenhouses.

JAMES PHILLIPS AND CO.,
beg to submit their prices as follows:—

ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 280 feet, 2¼*d.* and 2½*d.* per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each. Package included.

				3rds.	4ths.
12 by 9,	13 by 9,	14 by 9,	15 by 9	14*s.* 0*d.*	12*s.* 6*d.*
12 „ 10,	13 „ 10,	14 „ 10,	15 „ 10		
13 „ 11,	14 „ 11,	15 „ 11,	16 „ 11	16*s.* 0*d.*	13*s.* 6*d.* per 100 feet.
14 „ 12,	15 „ 12,	16 „ 12,	17 „ 12		
18 „ 12,	19 „ 12,	20 „ 12,	16 „ 13		
17 „ 13,	18 „ 13,	19 „ 13,	20 „ 13		
16 „ 14,	17 „ 14,	18 „ 14,	20 „ 14		

Various other sizes.

GLASS for ORCHARD HOUSES,
As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.			
20 in. by 13 in.	Common	13*s.* 6*d.*	£0 18 0
20 in. by 14 in.	Superior do.	16 0	1 3 0
20 in. by 15 in.	English Glass	18 0	1 9 0

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11*s.* 6*d.*
8 „ 6	8½ „ 6⅜	9 „ 7	9½ „ 7½	
		10 „ 8	10½ „ 8½	12 6

Boxes 2*s.* each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.
16 oz. 4ths, 1½*d.*, 2*d.*, and 2½*d.* 21 oz. 2¾*d.*, 3*d*, and 3½*d.*
„ 3ds, 2*d.*, 2½*d.*, and 3*d.* „ 3*d.*, 3½*d.*, and 4*d.*

London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

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GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

These Machines have carried off every Prize that has been given in all cases of competition, and have been awarded the PRIZE MEDAL at the INTERNATIONAL EXHIBITION of 1862.

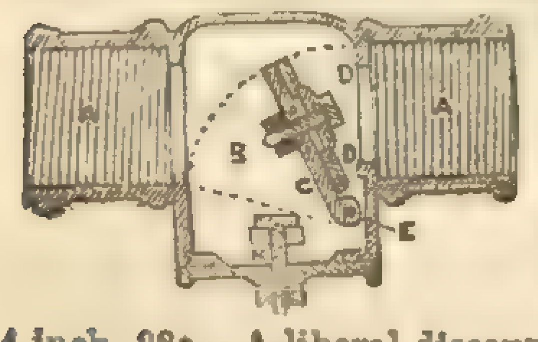
GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.

For Illustrated Price Lists, with full particulars, address

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection; Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, TUBULAR, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 11s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

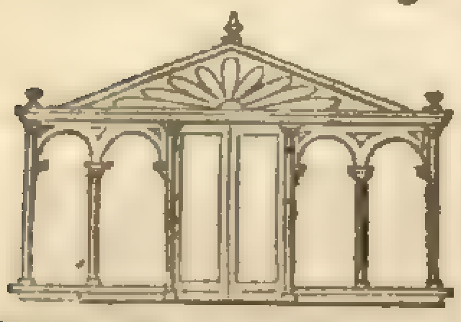
Mr. LYNCH WHITE's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.



T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough, has recently patented a VALVE which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under. Two-inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s. A liberal discount to the Trade.

These Valves can be obtained in London of Mr. J. JONES, 6, Bankside, S.E.

West of England, Ireland, and Wales.



VINCENT SKINNER (*late Partner with* J. WEEKS & Co.), HORTICULTURAL BUILDER and HOT-WATER APPARATUS MANUFACTURER. HEATING on the ONE-BOILER SYSTEM. Plans and Estimates on application.

VINCENT SKINNER, Bridewell Street, Bristol.

Exhibition Prize Medal, 1862.

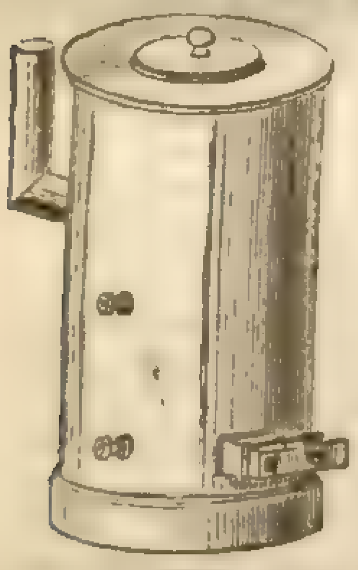
MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of Warming a large Apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.

Particulars and prices post free on application to MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the

Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3l. 10s.

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

DENNIS'S PATENT HORTICULTURAL BUILDINGS are made from the best Wrought Iron, upon

an entirely new principle. The combination of Iron and Glass under this patent is perfect; the possibility of fracture is prevented, and a permanently Water-tight Roof insured.

The leading practical advantages are extreme smallness of Framing, admitting a maximum of light and heat, great strength, durability, and perfect ventilation. They are speedily erected, partake of more desirable outline, and do not exceed the cost of a perishable wooden structure.

For Prospectus, &c., address T. H. P. DENNIS, Horticultural Builder, Hot-Water Engineer, &c., High Street, Chelmsford, Essex; or No. 2105, Open Court, Eastern Annexe, International Exhibition, where a Small Model may be seen and attendance is given on the four last days of the week.

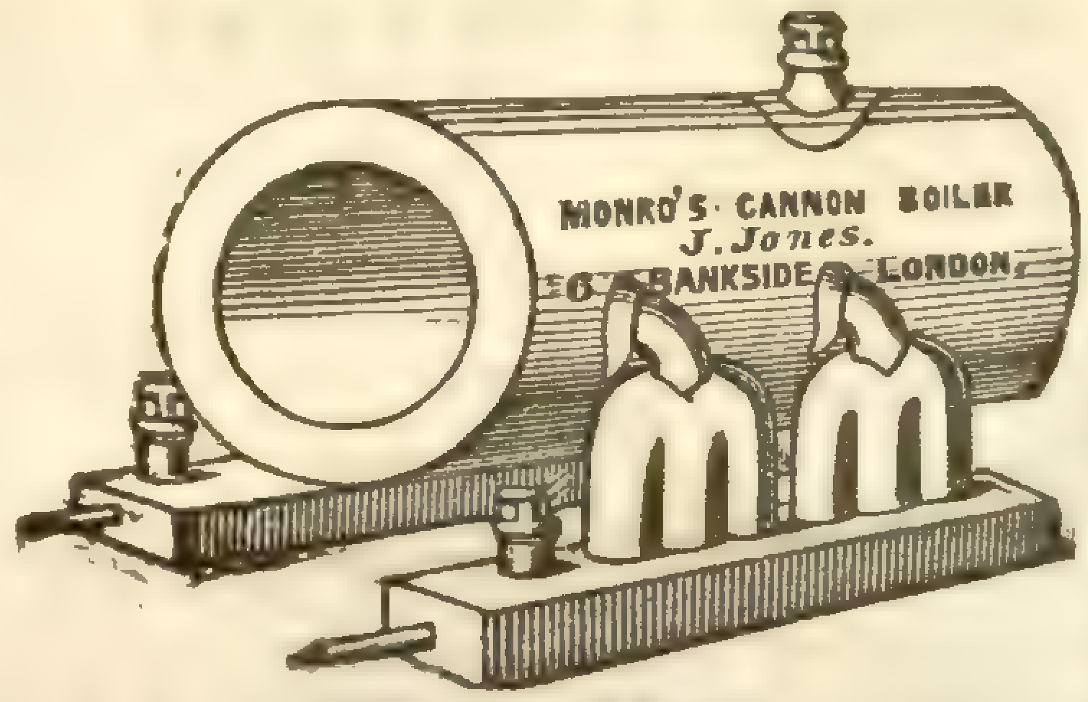
Hothouses for the Million.

INTERNATIONAL EXHIBITION, CLASS 9, OPEN COURT, EASTERN ANNEXE.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to S. HEREMAN, 7, Pall Mall East, London.

HEATING BY HOT WATER.



MONRO'S CANNON BOILER.

J. JONES,

HORTICULTURAL ENGINEER AND IRON MERCHANT,

SUPPLIES OR ERECTS, COMPLETE,

HOT-WATER APPARATUS

OF EVERY DESCRIPTION,

FOR

HEATING GREENHOUSES,

CONSERVATORIES,

FORCING PITS,

CHURCHES, CHAPELS, SCHOOLS,

HALLS,

BILLIARD ROOMS,

COACH HOUSES, HARNESS ROOMS, &c.,

OF THE BEST QUALITY, AND AT MODERATE CHARGES.

PLANS, ESTIMATES, and DESCRIPTIVE CATALOGUES

SENT POST FREE ON APPLICATION TO

J. JONES,

6, BANKSIDE, LONDON, S.E.

The only Stove without a Flue.

JOYCE'S PATENT, for Warming Chapels, Halls, Shops, Conservatories, and all other Places. Price from 12s. 6d. each.

JOYCE'S STOVES are Portable and Economical, and burn 12 hours with one supply of fuel, requiring no attention.

STOVES for GREENHOUSES are made to burn all the Winter. Temperature always the same. Patent Fuel, 2s. 3d. per Bushel.

The PRUSSIAN VERMIN EXTERMINATOR (HOWELL'S) is the only safe and effective remedy for the destruction of Rats, Mice, Beetles, Ants, and Cockroaches. Sold in Stone Jars, 1s. and 2s. 6d. each, with Testimonials, &c. (to be had of all Chemists).

SWAN NASH, Patentee, 253, Oxford Street, and 119, Newgate Street, London, E.C.

Illustrated Catalogues post free.

Greenhouses, Orchard-houses, and Conservatories.

H. FREEMAN'S HORTICULTURAL WORKS, Triangle, Hackney, N.E. Established 20 years.

Good substantially made GREENHOUSES, glazed, ready for fixing, 42 feet by 13 feet, 50l.; 21 feet by 13 feet, 28l.; 12½ feet by 10 feet, 15l. ORCHARD-HOUSES, 10 per cent. cheaper. A handsome CONSERVATORY, 46 feet by 19 feet, for Sale. Estimates given.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.

Apply to JOSEPH MEREDITH, Vine Cottage, Garston, near Liverpool.

N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

W. J. HOLLANDS, IRON MERCHANT, 31, Bankside, London, S.E.

HOT WATER PIPES, from Stock, per yard:—2-inch, 1s. 2d.; 3-inch, 1s. 10d.; and 4-inch, 2s. 4d. BENDS, from stock, 1s. 7d., 2s. 6d., and 3s. 3d. each.

Other Connexions at equally low prices, and all goods of first-class manufacture.

The Improved Conical Boilers,

SOLELY MANUFACTURED BY

BURY AND POLLARD (Successors to JOHN R. PEILL, late STEPHENSON & PEILL), have attained a celebrity far surpassing any other Boilers ever invented. Of the many hundreds which have been fixed in this and foreign countries, not one single Boiler has ever proved defective, or failed to give the most complete satisfaction. They are connected with large ranges of Pipes (in some cases several thousand yards), at many Public Establishments, at the Crystal Palace, the Royal Botanical Gardens at Kew, and at the Regent's Park, as well as at most of the Nobility's Seats throughout the Kingdom.

All particulars may be obtained on application to BURY & POLLARD, Sole Manufacturers, Park Iron Works, New Park Street, Southwark, S.

Price £4 10s. and upwards.

Every description of Material for Heating Buildings, supplied of the best description, with directions for putting up Hot-Water Apparatus.

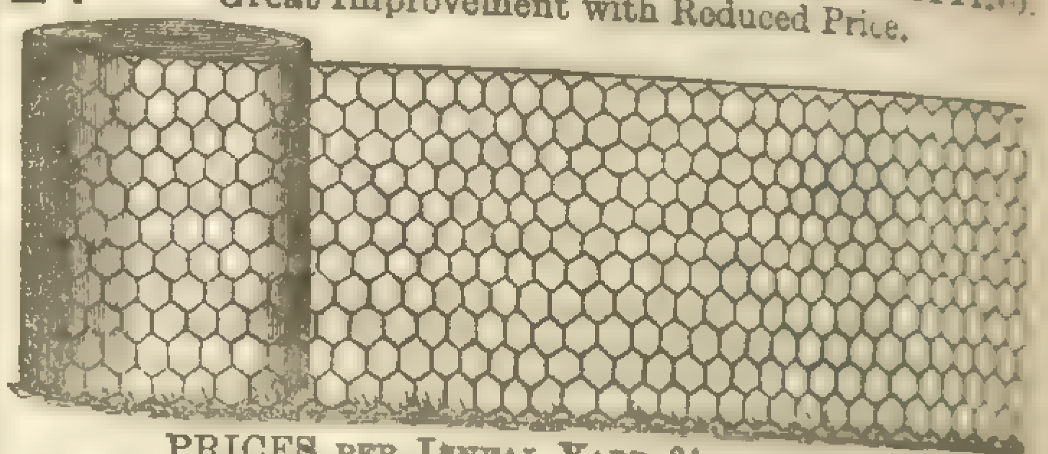
Card.

SAMUEL N. McGERROW, GENERAL HORTICULTURAL BUILDER, Knotty Ash, near Liverpool.

Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

VENTILATING STOVES, cheap, simple, efficient, and durable.—Thousands have been sold and universally approved. They are suitable for Halls, Warehouses, Conservatories, and every situation where a close Stove is required. The large sizes are extensively used in Churches, Chapels, &c. Public Buildings with great effect and economy. Prices 60s., 70s., 90s., and 120s. Prospectus with engravings free and post free. In operation daily. The Trade supplied. DEANE & Co., opening to the Monument, London Bridge, E.

NEW IMPROVED PREMIUM WIRE NETTING, Great Improvement with Reduced Price.



PRICES PER LINEAL YARD 24 INCHES HIGH.

Size of Mesh.	Mostly used for	Light.		Medium.		Strong.		Extra Strong.	
		Jap	Gal.	Jap	Gal.	Jap	Gal	Jap	Gal.
2 in.	Poultry	3½d.	4½d.	4d.	5d.	5d.	6½d.	6½d.	8d.
1⅝ in.	Small Rabbits ..	4d.	4¾d.	4¾d.	6d.	5½d.	7d.	7d.	9d.

The above can be made any width (under 6 feet), at proportionate prices.

Strong GALVANISED POULTRY NETTING, 7½d. per yard, 3 feet wide. GALVANISED SPARROW-PROOF NETTING for PHEASANTRIES, 11d. per yard, 2 feet wide. WIRE NETTING of every mesh from half an inch to 6 inches.

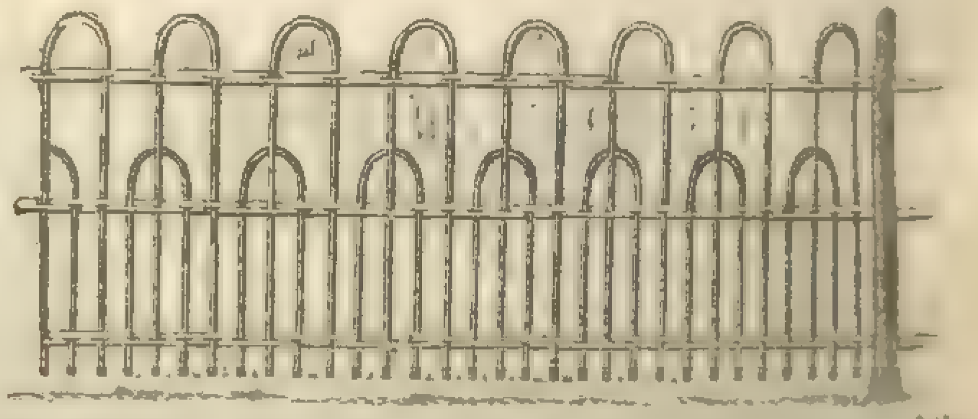
⁎ Every description of Netting warranted to give satisfaction, and if not approved will be exchanged, or may be returned unconditionally.

J. B. BROWN & Co., 18, Cannon Street, City, London, E.C.

W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.

Manufactory: Newport, Salop.

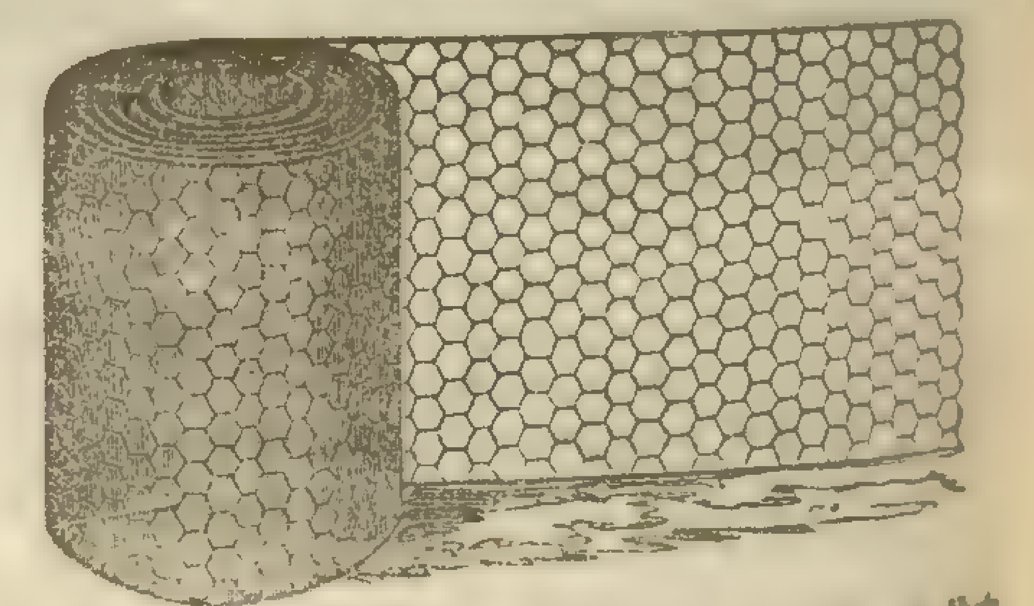
Warranted the strongest and most durable Fence ever offered at corresponding prices. It is easily repaired if broken from accidents; can be rolled up most compactly when not in use, is admirably adapted for exportation, and can be had of any height and mesh required, at prices from 4d. to 1s. 6d. per yard and upwards.



For further particulars apply at the Manufactory, or of the London Agent, Mr. R. WINDER, 18, Abingdon Street, Westminster, S.W.

BARNARD, BISHOP, AND BARNARDS, Norwich.

FURTHER REDUCTION in the PRICE of WIRE NETTING.—APRIL, 1861.

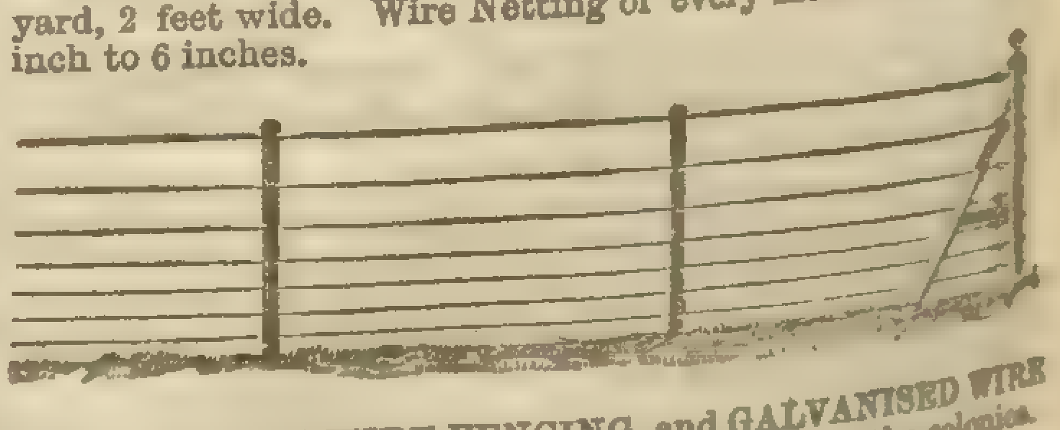


BARNARD, BISHOP, & BARNARDS beg to inform their friends and the public that they have made a further reduction in the prices of Machine-made Wire Netting, and also that their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard.
2-inch mesh, 24 inches wide..	No. 19	.. 4½d	.. 3½d.
2-inch ,, ,, ,, ..	,, 18	.. 5	.. 4
2-inch ,, ,, ,, ..	,, 17	.. 6¼	.. 5
2-inch ,, ,, ,, ..	,, 16	.. 8	.. 6¼
1⅝-inch ,, ,, ,, ..	,, 19	.. 4¾	.. 4
1⅝-inch ,, ,, ,, ..	,, 18	.. 6	.. 4¾
1⅝-inch ,, ,, ,, ..	,, 17	.. 7	.. 5¼
1⅝-inch ,, ,, ,, ..	,, 16	.. 9	.. 7

All the above kinds can be made any width (under 6 feet) at proportionate prices.

Strong Galvanised Poultry Netting, 7½d. per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11d. per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.



Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.

Five wires, 3 feet 6 inches high, pronged Standards, 8 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10d. per yard.

The same with Galvanised Wire Rope, 1s. per yard.

Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.

⁎ Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

Jones' Patent Anti-Frost Water Pipe Protector.

IMPORTANT to all HOUSEHOLDERS, preventing damage, waste, and annual expenses from pipes bursting in frosty weather.
Sole of BURY & POLLARD, Engineers, Sole Manufacturers, Park Iron Works, Southwark, London, S.
... of all Ironmongers. A liberal discount to the Trade.

CONSERVATORY to be SOLD.—The Frames, Sashes, Lights, Iron Columns, with the Glass Lead-... Down Pipes, as now fixed at Oak Lodge, Addison Road, Kensington. It is of modern construction, and only sold in consequence of rebuilding.
Offers to be addressed to Mr. HERING, Architect, 11, Argyll Street, Regent Street, W.

LARGE MARQUEES for SALE, suitable for Horticultural Societies, &c.—Sizes: 140 by 40, 70*l.*; 120 by 40, ...; 100 by 40, 50*l.*; 80 by 40, 40*l.*; also 44 by 20, 20*l.*; ... by 20, 18*l.*; 28 by 16, 8*l.*; and a number of small Tents all complete for use.
B. RICHARDSON, 99, Euston Road, London, N.W.

SECOND-HAND TARPAULINGS for Sale, 200, the size 7 ft. × 4 ft. 6 in., with an eyelet hole in each corner, suitable for garden frames, pits, &c. Price 2*s.* 9*d.* each, or made to any required size, 1*s.* per square yard, a strong article; 2*s.* 8*d.* would be taken for a quantity. WATERPROOF CAPES, lined with blue cloth, 2*s.* 6*d.* and 3*s.* each. Best macintosh DRIVING APRONS, 3*s.* each; large ditto, ... HORSES' LOIN CLOTHS, 7*s.* Waggon and Cart Covers, &c., &c.
... Policemen's Capes, second-hand, at 18*s.* to 30*s.* per doz.
B. RICHARDSON, 99, Euston Road, London, N.W.

Archangel Mats.

JAMES T. ANDERSON begs to announce that he is now open to supply, at a low price, and in any quantity, ARCHANGEL MATS, the finest in London of this season's importation, and solicits an inspection of them by Nurserymen and Seedsmen.
SACKS, SEED BAGS, &c.
4, Sherborne Lane, King William Street, London, E.C.

SHAW'S TIFFANY.
For samples and prices apply to
J. SHAW & Co., 29, Oxford Street, Manchester.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland, Sion House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Mr Joseph Paxton for the Crystal Palace, Royal Botanic Society, late Mrs. Lawrence of Ealing Park, &c.
PROTECTION from the COLD WINDS & MORNING FROST. "FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for horticultural and floricultural purposes, for preserving Fruit and Flowers from the scorching rays of the sun, from the attacks of insects, and from morning frosts. To be had in any required lengths.
Two yards wide .. .. .. 1*s.* 6*d.* per yard run.
Four yards wide .. .. .. 3*s.* per yard.
An improved make, 3 yards wide, 2*s.* 6*d.* per yard run.
"Frigi Domo" Netting, 2 yards wide, 1*s.* 4*d.* per yard run.
... THOMAS ARCHER, Whole and Sole Manufacturer, 7, ... Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

AGRICULTURAL MACHINERY. — Threshing Machines for Steam and Horse Power, Ploughs, Harrows, ..., Carts, Mills for Hand or Power, Turnip Cutters, ... Scarifiers, Chaff Cutters, &c.
... Free per post on application.
... & KEY, 95, Newgate Street, E.C. Works, Brentwood, Essex.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. MAJOLICA and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied ... ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.
They may be had of various patterns at F. & G. R.'s Premises, ... Wharf, Upper Ground Street, Blackfriars, S.; ... Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Wharf, near the Canal Bridge, London, N.E.
Sketches of Patterns sent by post on application. Vases of Artificial Stone, and Ornamental Flower Boxes with coloured designs for Windows and Balconies in stock.

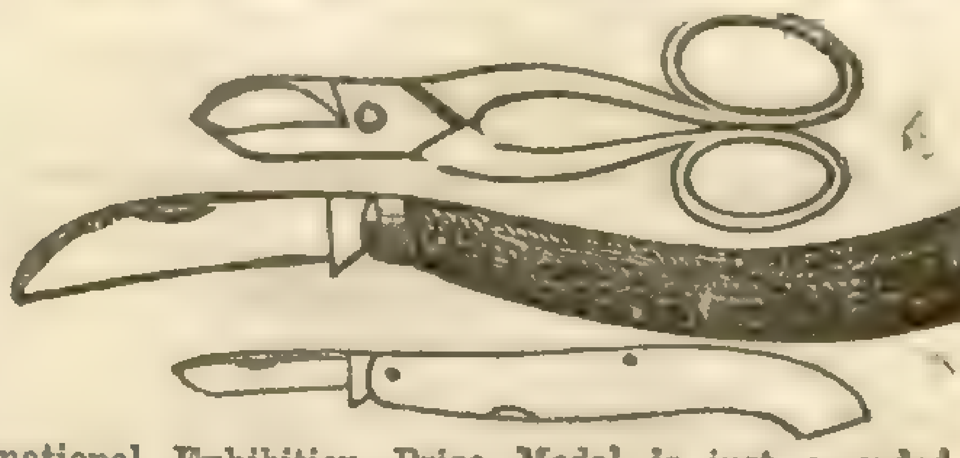
ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and ... Stone, in blue, red, and buff colours, and capable of a variety of designs.
WHITE GLAZED TILES, for Lining Walls of Baths, Larders, Kitchen Ranges, &c. Grooved Terro metallic ... Stable Paving Bricks of great durability, Clinkers, White Wall Copings, Glazed Drain Pipes, &c.
... obtained of F. & G. ROSHER, at their Premises as above.

PATENT GUTTA PERCHA SOLES.—
IMPORTANT TO GARDENERS.—The Gutta Percha Company have pleasure to acknowledge the receipt of the following from G. GLENNY, Esq., the celebrated Florist:—
"Gentlemen,—I have worn Gutta Percha Soles and Heels for ... years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I ... cannot be without them. As a matter of ... I would recommend Gardeners to use them, for they ... the worn part at all times by warming the ... the fire, and pressing it from the thick parts to the ... as easily as if it were so much dough. I think it ... of persons who must occasionally wet their feet to ... material that completely defies damp. Many a ... would escape colds and rheumatism by the use of ... Percha Soles. Your obedient servant, G. GLENNY."
... variety of Gutta Percha articles, such as Mill Bands, ... Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, ..., Flasks, Bottles, Bowls, Chamber Vessels, Toilet ..., Bags, Curtain Rings, Galvanic Batteries, Calbo..., &c., manufactured by the Gutta Percha Company, ... by their wholesale dealers in town or country.
THE GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C.

JOSEPH HAYWOOD AND CO.,
MANUFACTURERS OF
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kind of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield

PROTECTED BY THE CUTLERS' COMPANY. CORPORATE MARK.

Paxton Works, Sheffield, Established 1738.



International Exhibition Prize Medal is just awarded to SAYNOR & COOKE for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR AND COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.
CAUTION.—None are genuine unless marked SAYNOR. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

Notice to Gentlemen and Gardeners.

TO BE SOLD, a Bargain, the remaining Stock of 1, 2, and 3 Light GARDEN FRAMES, PIT LIGHTS, and Two GREENHOUSES, on account of alteration.
Apply to J. SMITH, Greenhouse Builder, near the Creek, King Street, Hammersmith, W.

SAUSAGE and MINCING MACHINE.—The Guinea one of BURGESS & KEY'S is the best; it is simple, easily cleaned, and quicker in operation than any other.
BURGESS & KEY, Makers, 95, Newgate Street, E.C.
Illustrated particulars free on application.

CHUBB & SON.—"For Perfection of Workmanship and Construction of Locks, also for the Manufacture of Iron Safes," Prize Medal awarded at International Exhibition.
CHUBB'S PATENT SAFES, the most secure against Fire and Thieves.
CHUBB'S FIRE PROOF STRONG ROOM DOORS; CHUBB'S PATENT DETECTOR LOCKS and STREET DOOR LATCHES; CHUBB'S CASH and DEED BOXES.
Illustrated Price List gratis and post free.
CHUBB & SON, 57, St. Paul's Churchyard, London, E.C.

SAUCE.—LEA AND PERRINS' WORCESTERSHIRE SAUCE.
Pronounced by Connoisseurs
"THE ONLY GOOD SAUCE."
See Name on Wrapper, Label, Bottle, and Stopper, and to avoid Counterfeits
ASK FOR LEA AND PERRINS' SAUCE.
*** Sold Wholesale and for Export, by the Proprietors, Worcester; Messrs. CROSSE & BLACKWELL; Messrs. BARCLAY & SONS, London, &c.; and by Grocers and Oilmen universally.

Prize Medal 1862

AWARDED BY THE JURORS OF CLASS II. FOR THE
GLENFIELD STARCH, being a confirmation by some of the most eminent scientific men of the age, of the superior qualities of this world-renowned Starch. Sold in Packets at ½*d.*, 1*d.*, 2*d.*, 4*d.*, and 8*d.* each, by all respectable Grocers, Chandlers, Oilmen, &c.
WOTHERSPOON & Co., Glasgow and London.

METCALFE, BINGLEY, AND CO.'S NEW PATTERN TOOTH BRUSHES, Penetrating Unbleached Hair Brushes, Improved Flesh Brushes, genuine Smyrna Sponges, and every description of Brush and Comb and Perfumery for the Toilet. METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box. The FAIRY BOUQUET; the OXFORD and CAMBRIDGE BOUQUET. In bottles, 2*s.*, 3*s.* 6*d.*, and 5*s.* each. 130 B, and 131, Oxford Street, W.

DEANE'S TABLE CUTLERY, celebrated for more than 150 years, remains unrivalled for quality and cheapness. The Stock is most extensive and complete, affording a choice suited to the taste and means of every purchaser. The following are some of the prices for Ivory Handled Knives—each blade being of the best steel, bearing our name, and warranted.

	s. d.	s. d.	s. d.	s. d.	s.	s.	s.
Table Knives, per doz ..	14 0	16 0	19 0	23 0	25	29	33
Dessert ditto ,, ..	12 0	12 0	15 0	18 0	20	23	28
Carvers, Joint, per pair ..	4 6	5 6	6 6	7 6	8	9	11

ELECTRO-PLATED SPOONS and FORKS.—The best manufacture, well finished, strongly plated. Every article stamped with our mark, and guaranteed.

	Fiddle.		Beaded.		King's.		Lily.
	Second quality.	Best.	Second.	Best.	Second.	Best.	Best.
	s. d.	s.	s.	s.	s.	s.	s.
Table Spoons, per doz.	33 0	40	44	58	54	66	58
Table Forks ,,	31 0	38	44	56	54	64	56
Dessert Forks ,,	23 0	29	32	40	37	46	40
Dessert Spoons ,,	24 0	30	32	42	37	48	42
Tea Spoons ,,	14 6	18	22	26	26	32	26

DEANE AND CO.'S NEW ILLUSTRATED CATALOGUE and PRICED FURNISHING LIST may be had on application or post free. This List embraces the leading articles from all the various departments of their Establishment, and is arranged to facilitate purchasers in the selection of goods. It comprises Table Cutlery, Electro-plate, Lamps, Baths, Fenders, Fire-irons, Iron Bedsteads, Bedding, Britannia Metal, Copper, Tin, and Brass Goods, Culinary Utensils, Turnery, Brushes, Mats, &c.
DEANE & Co., London Bridge, E.C.
ESTABLISHED A.D. 1700.

WHITE and SOUND TEETH are indispensable to personal attraction, and to health and longevity, by the proper mastication of food. ROWLANDS' ODONTO, or Pearl Dentifrice, compounded of Oriental ingredients, is of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in giving a delicate fragrance to the Breath. It eradicates Tartar from the Teeth, removes spots of incipient decay, and polishes and preserves the enamel, to which it imparts a pearl-like whiteness. Price 2*s.* 9*d.* per box.
Sold at 20, Hatton Garden, E.C.; and by Chemists and Perfumers. Ask for "ROWLANDS' Odonto."

WANTED, a NURSERY, or about Two Acres of good Land, on Lease, suitable for a Nursery, in a thorough business locality.
Address, pre-paid, stating terms, and all particulars, to B. C., Post Office, Oxford.

To Florists, Gardeners, &c.

KILBURN, MIDDLESEX.
TO BE DISPOSED OF, a well-established NURSERY GROUND, with Plant, &c., held on an advantageous Lease for 21 years.
Particulars and orders to view may be obtained from Mr. T. F. CHORLEY, Solicitor, 48a, Moorgate Street, City, where the Lease may be seen.

South of Devon.

MR. ALEXANDER PONTEY, DECEASED.
To NURSERYMEN, SEEDSMEN, FLORISTS, AND OTHERS.
TO BE SOLD by TENDER, in One Lot, the Well-Established BUSINESS and BUSINESS PREMISES of a NURSERYMAN, SEEDSMAN, and FLORIST. The Business has for many years been extensively and successfully carried on by Mr. ALEXANDER PONTEY, of Plymouth, Devon, and his predecessor, and is now to be disposed of only in consequence of his sudden death. The Plant, which is of the most modern construction, and the Stock, the most varied in the West of England, to be taken in the usual way at a valuation. The Premises can be viewed any day except Sundays.
The respective Leases of the Premises, as also the Policy of Life Assurance, or Copies thereof, may be inspected between the hours of 10 A.M. and 6 P.M. on application to Messrs. PHILLIPS & SON, Solicitors, Frankfort Lane, Plymouth.
The Conditions of Sale and further particulars may be obtained at the Offices of Messrs. SKARDON & SONS, Auctioneers, Bedford Street, Plymouth; or of the said Messrs. PHILLIPS & SON.
Tenders will be received at the Office of the said Messrs. PHILLIPS & SON, on or before Thursday, November 13. All applications must be post paid, and state the Address of the parties. N.B.—The Vendor does not bind herself to accept the highest or any Tender.

Sales by Auction.

Established Orchids.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on FRIDAY, November 14, at half-past 12 o'Clock precisely, a choice Collection of established ORCHIDS, comprising healthy Plants of the following well-known varieties:—

Cypripedium caudatum	Saccolabium violacea
,, villosum	,, guttatum superbum
,, Veitchii	,, Blumei major
Aerides virens superbum	Phalaenopsis amabilis
,, nobile	,, grandiflora
,, Lindleyana	Cattleya lobata
,, Fieldingii	,, Wagnerii
Lælia elegans	,, Warscewiczi
,, autumnalis	Cymbidium eburneum

&c., &c.
Also some Dutch Bulbs, Gladiolus Brenchleyensis, &c.
On view the Morning of Sale, and Catalogues had.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will sell by AUCTION, at the Mart, on FRIDAY, Nov. 14, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 360 very handsome Standard, Half Standard, and Dwarf ROSES, selected AMERICAN PLANTS, well set with Bloom Buds, &c.
On view the Morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nurseries, Leytonstone, N.E.

Consignment from Ghent for Absolute Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, on WEDNESDAY, Nov. 19, at 12 o'Clock, about 200 choice DOUBLE CAMELLIAS, from 18 in. to 2 feet, and 200 fine AZALEA INDICA, from 1 to 2 ft., beautifully set with bloom buds; 600 LILIUM LANCIFOLIUM RUBRUM and ALBUM, GLADIOLUS GANDAVENSIS, &c.; also 200 very handsome STANDARD and DWARF ROSES, choice HARDY AMERICAN PLANTS, &c.
On view Morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nurseries, Leytonstone, N.E.

Stratford, Essex

To NOBLEMEN, GENTLEMEN, NURSERYMEN, AND PUBLIC COMPANIES ENGAGED IN PLANTING.
MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. G. H. Bunney to submit to an unreserved SALE by AUCTION, on the Premises, The Nurseries, Leytonstone Road, N.E., and within five minutes walk of the Stratford Station on the Great Eastern Railway, on TUESDAY, Nov. 25 and following day, at 11 for 12 o'clock precisely, the ground being immediately required for gravel digging, a portion of the valuable NURSERY STOCK, comprising quantities of fine Evergreens, ranging all sizes, and including magnificent and useful specimens for effective purposes seldom submitted to public competition, and which, from the adhesive and peculiarly retentive nature of the soil, will remove safely, consisting of upwards of 1000 handsome green Hollies, from 2 to 10 feet; 6000 Aucubas, very bushy, 1 to 5 feet; 1000 common Laurels, beautiful Sweet Bays, 4 feet; compact Irish Yews, 4 to 5 feet; green and Variegated Box, 1000 Chinese, Siberian, and American Arbor-vitæ; Privet, Berberis, Garrya elliptica, Spruce Firs, &c.; also a choice assortment of American Plants, including Scarlet, Hybrid, and other choice Rhododendrons, hardy Azaleas, sorts; Andromeda floribunda, Magnolias, with some very handsome Standard Roses, including the best Hybrids, Bourbons, Chinas, &c.
May be viewed prior to the Sale. Catalogues may be had on the Premises; the Eagle, Snaresbrook; the principal City Seed Shops; and of the Auctioneers and Valuers, American Nurseries, Leytonstone, Essex, N.E.

THE PRIZE MEDAL FOR GENERAL EXCELLENCE OF SEEDS,

INTERNATIONAL EXHIBITION, 1862.

JAMES CARTER & CO.,

SEED FARMERS AND NURSERYMEN,

237, 238, & 261, HIGH HOLBORN, LONDON, W.C.

Collections of HYACINTHS, CROCUSES, TULIPS, NARCISSUS, IRIS, LILIES, &c., from 10*s.* 6*d.* to £5. Also PURE AGRICULTURAL and GARDEN SEEDS for AUTUMN SOWING.

The Twenty-Seventh Annual Issue of the "GUIDE for AUTUMN GARDENING" forwarded free of charge on application to

JAMES CARTER & CO., 237 & 238, HIGH HOLBORN, LONDON, W.C.

HYACINTHS AND OTHER DUTCH BULBS.

WM. CUTBUSH & SON

Beg to inform their Patrons that the best time for planting the above is during the next three weeks. Their celebrated selections of HYACINTHS can be supplied at 9*s.*, 12*s.*, 15*s.*, and 18*s.* per dozen.

DESCRIPTIVE PRICED CATALOGUE free by post.

The FIRST PRIZES have been awarded to our COLLECTIONS of HYACINTHS, &c., by the Royal Horticultural and Royal Botanic Societies of London in every instance for the last seven years.

HIGHGATE NURSERIES, LONDON, N.

INTERNATIONAL EXHIBITION.

PRIZE MEDALS 1851 AND 1862

AWARDED FOR SUPERIORITY AND GENERAL EXCELLENCE TO

BUTLER & McCULLOCH, SEED MERCHANTS,

COVENT GARDEN MARKET, W.C.

(ESTABLISHED UPWARDS OF A CENTURY.)

A.—Choice Collections of Bulbs for Greenhouse or Conservatory, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

B.—Choice Collections of Bulbs for Flower Garden only, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

C.—Choice Collections of Bulbs for Greenhouse and Flower Garden, 10s. 6d., 21s., £2 2s., £2 12s. 6d., £5 5s.

A Specification of the above Collections is given at pages 50 and 51 of Messrs. BUTLER & McCULLOCH'S CATALOGUE or AMATEUR'S GUIDE,

which may be had free and post paid upon application.

☞ *All Orders amounting to 21s. and upwards sent Carriage Free.*

ROSES, NEW AND OLD.

WILLIAM PAUL

(SON AND SUCCESSOR TO THE LATE A. PAUL),

Can supply all the best ROSES, New and Old, and respectfully solicits early orders to insure good plants.

The following statement will show the number of FIRST and SECOND PRIZES awarded to him at the London Flower Shows during the present year:—

March 19.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
„ 26.	Royal Botanic Society	Cut Roses	FIRST PRIZE
April 2.	Royal Botanic Society	Cut Roses	FIRST PRIZE
„ 9.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
	Royal Horticultural Society	Beauty of Waltham	SPECIAL CERTIFICATE
	(A First Class Certificate having been previously awarded for this Seedling.)		
May 21.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
	Royal Horticultural Society	Pot Roses	SECOND PRIZE
„ 24.	Crystal Palace	Cut Roses	FIRST PRIZE
	Crystal Palace	Pot Roses	SECOND PRIZE
„ 28.	Royal Botanic Society	Collection Ditto	FIRST PRIZE
	Royal Botanic Society	Cut Roses	FIRST PRIZE
	Royal Botanic Society	10 Pot Roses	SECOND PRIZE
June 11.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
	Royal Horticultural Society	12 Pot Roses	SECOND PRIZE
„ 18.	Royal Botanic Society	50 Cut Roses	FIRST PRIZE

PRICED DESCRIPTIVE CATALOGUE free by post.

NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS, N.

New Roses of 1862.

JOHN KEYNES has to offer 1000 very extra strong plants, the finest varieties of the last season, in 6 and 8-inch pots, now ready, price 42*s.* per dozen, with the usual discount to the Trade.

Fine STANDARDS, of the older varieties, 24*s.* & 30*s.* per doz. DWARFS, 12*s.* and 18*s.* per dozen, all of the finest varieties in cultivation. Every attention paid to package, and compensation for carriage.

New CATALOGUES ready.
JOHN KEYNES, Nurseryman, Salisbury.

Standard and Dwarf Roses.

BENJAMIN R. CANT will be happy to forward on application his DESCRIPTIVE CATALOGUE of Roses.

As a guarantee of the value of his collection, B. R. C. begs to state that he has this year obtained 17 First Prizes for Cut Roses at the principal Shows.

Very fine vigorous plants of the choicest sorts will be supplied at the following prices:—

Standard Roses	18*s.*, 24*s.*, and 30*s.* per doz.
Half Standard Do.	18*s.* and 24*s.* per doz.
Dwarf Do.	9*s.* to 18*s.* per doz.

The NEW ROSES of 1862, Dwarf plants, 3*s.* 6*d.* to 5*s.* each; or, if 12 or more varieties are taken, 30*s.* per doz.

St. John's Street Nursery, Colchester.

N.B.—B. R. C.'s Catalogue contains nothing but the best varieties; all indifferent and worthless sorts are excluded.

50,000 Dwarf Roses in Pots on their own Roots.

STANDARD, HALF-STANDARD, AND DWARF BUDDED ROSES, ON THE BRIAR AND MANETTI STOCK, IN ENORMOUS QUANTITIES AND IN THE MOST VIGOROUS HEALTH.

WILLIAM WOOD AND SON have much pleasure in directing especial attention to their very extensive and well-grown stock of ROSES, CATALOGUES of which may be had gratis on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Hybrid Perpetual Roses.

DUCHER, Rue de la Mouche, Guillotière, Lyons, France.

1. PRINCESS ALICE.—Very vigorous growth, fine foliage, almost thornless; flower single, very large and full; colour bright rose, enamelled white, odorous, firm peduncle. Price 20 francs.
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ROSES and HOLLYHOCKS.

	Per doz.—*s.*	*d.*
ROSES, fine Standards, from	18	0
ROSES, Dwarf Standards „	12	0
ROSES, Dwarfs .. „	9	0
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GLADIOLI, new and old.—A fine collection from .. .. 6*s.* to	30	0

The above are very fine.
CATALOGUES post free on application.
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ROSE CATALOGUE | FRUIT CATALOGUE, and
TREE and SHRUB CATALOGUE, &c.,

which may be had on application at the Nurseries, Berkhampstead, Herts. An inspection of their Stock is earnestly requested.

(The finest and largest quantity of ARAUCARIA IMBRICATA in Europe.)

Notice.—American Plants.

WATERER AND GODFREY'S CATALOGUE is now ready, and will be sent on application; it gives a fair price and description of all the Rhododendrons and other American Plants worth growing, as well as a general summary of the most extensive Nursery Stock in Europe.

The Exhibition of American Plants in the Royal Horticultural Society's Garden, South Kensington, were supplied by WATERER & GODFREY, Knap Hill, near Woking.

Superb Double Hollyhocks.

WILLIAM CHATER'S NEW LIST is now ready, and may be had on application by enclosing one postage stamp.

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P.S. A LARGE STOCK of PLANTS also ready.

Superb Double Hollyhocks.

WILLIAM CHATER has an immense stock of PLANTS ready for immediate SALE.

Seedlings unbloomed, 18*s.*, 25*s.*, or 30*s.* per 100.
Large plants, with colours, 25*s.*, 30*s.*, or 40*s.* per 100.
Named varieties, in pots, 12*s.*, 20*s.*, or 40*s.* per dozen, &c.

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GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING 1863, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

Printed by WILLIAM BRADBURY, of 13, Upper Woburn Place, in the Parish of St. Pancras, in the Co. of Middlesex, and FREDERICK MULLETT EVANS, of No. 11, Bouverie Street, in the Precinct of Whitefriars, City of London, Printers, at their Office, Lombard St., Precinct of Whitefriars, City of London, and Published by them at the Office, No. 41, Wellington Street, Parish of St Paul's, Covent Garden, in the said Co.—SATURDAY, November 8, 1862.

THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 46.—1862.] SATURDAY, NOVEMBER 15. { Price Fivepence. STAMPED EDITION. 6*d*.

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☞ *An Edition of the* GARDENERS' CHRONICLE *and* AGRICULTURAL GAZETTE *is published on Monday Afternoon at 4 o'Clock, containing full Reports of the Mark Lane and Cattle Markets, written expressly for the Paper.*

ROYAL HORTICULTURAL SOCIETY.
SHOWS in 1863.
WEDNESDAY, February 25, Hyacinths, &c.
" March 18, Camellias, Rhododendrons, &c.
" April 15, Azaleas, Roses, &c.
" May 27, FIRST GREAT SHOW.
" June 17, SECOND GREAT SHOW.
" July 1, Rose Show.
" July 8, THIRD GREAT SHOW.
" September 9, Autumn Show.

ROYAL BOTANIC SOCIETY,
REGENT'S PARK, N.W.
The days fixed for the EXHIBITIONS of PLANTS, FLOWERS, and FRUIT next Season are WEDNESDAYS, May 27, June 17, and July 8, 1863.
By Order of the Council. J. DE C. SOWERBY, Secretary.

Hyacinths, Tulips, and other Dutch Bulbs.
JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

Collections of Bulbs for the Winter and Spring Garden.
SENT CARRIAGE PAID, SEE LARGE ADVERTISEMENT, p. 1070.
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PANTONIAN COLLECTIONS of BULBS for Spring Gardening, 10*s*. 6*d*. to 5*l*. 5*s*.
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The plant is of dwarf robust habit, producing heavy fruit of the richest flavour
A large Stock of PRICKLY and SMOOTH CAYENNE PINES.

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Dorking Nursery.

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Versailles Nursery, William Street, near Hammersmith Turnpike, W.

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Nurseries, Saffron Walden.

P.S. A LARGE STOCK of PLANTS also ready.

Superb Double Hollyhocks.

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Seedlings unbloomed, 18*s.*, 25*s.*, or 30*s.* per 100.
Large plants, with colours, 25*s.*, 30*s.*, or 40*s.* per 100.
Named varieties, in pots, 12*s.*, 20*s.*, or 40*s.* per dozen, &c.

Nurseries, Saffron Walden.

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Woking Nursery, Surrey.

Hardy Scarlet and other Choice Rhododendrons.

JOHN WATERER'S CATALOGUE of the above popular plants, as exhibited by him at the Royal Botanic Gardens, Regent's Park, is now published, and will be forwarded to all applicants.

It describes faithfully the colours of all the Rhododendrons, thereby rendering every facility for making selections.

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Fine Plants, with branches, 1 to 1½ feet high, 12*s.* each.
ditto ditto and buds, 1½ to 2 ft. high, 20*s.* each.

N.B. A correct drawing has appeared in VERSCHAFFELT'S "Illustration Horticole."

The GENERAL CATALOGUE can be obtained free by writing.

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BRITISH BOTANY.—Fasciculi of British Rubi, about 40 species and varieties; of British Grasses, about 70 species; of British Carices, Junci, and Scirpi, about 70 species; of British Ferns and their allies, about 40 species, at 1*l.* each; also Cryptogamic specimens of British Lichens, Mosses, Fungi, &c., at 10*s.* the hundred.

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Andromeda formosa.

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RHODODENDRONS, ROSES, FRUIT and FOREST TREES, beautiful specimens of CONIFERÆ, and every other description of Nursery Stock, extending over 60 acres, CATALOGUES of which may be had on application.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5*s.* to 7*s.* 6*d.* each;

ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5*s.* each;
OSMUNDA REGALIS CRISTATA, 21*s.* each.

A Select LIST of the most rare kinds will be forwarded Post Free on application.

Dorking Nursery.

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It has been well described in the *Gardeners' Chronicle* of July 5, p. 620, where the writer speaks of it as "a curious and novel form of Variegated Pteris."

It was also reported on in the *Gardeners' Chronicle* of May 24, as follows:—"Among new Ferns, of which several were shown, was one from Mr. Cole, Nurseryman, Manchester, belonging to the Variegated Class, and as regards position, is intermediate between argyraea and tricolor, and is apparently a free grower."

W. COLE has great confidence in recommending it, and in stating that it is really a beautiful Fern, and one which will become exceedingly popular. 10*s.* 6*d.* each.

Price (very liberal terms to the Trade for 12, 50, or 100) on application.

BARR & SUGDEN, 12 KING ST. COVENT GARDEN

(OPPOSITE THE GARRICK CLUB.)

THE PRIZE GOURDS AND MAIZE,

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"There should be Gardens for all the months in the year, in which severally things of beauty may be had in season."

Orders amounting to 21s. sent Carriage paid.

Collections of Bulbs for Conservatory and Out-door Decoration.
"A," £5 5*s.*; "B," £4 4*s.*; "C," £3 3*s.*; "D," £1 1*s.*; "E," 15*s.* 6*d.*; "F," 10*s.* 6*d.*

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The Kensington Garden and Crystal Palace Collections for Winter Gardening.
"M," £5 5*s.*; "N," £3 3*s.*; "O," £2 2*s.*; "P," £1 10*s.*; "Q," £1 1*s.*; "R," 10*s.* 6*d.*

For full particulars of the sorts and quantities contained in the above Collections, see our "ILLUSTRATED FLORAL GUIDE," or the *Gardeners' Chronicle* of September 13th and 20th.

London Agents for TYE'S New REGISTERED SOUVENIR HYACINTH GLASSES, 10*s.* 6*d.* per pair. For further particulars see our "ILLUSTRATED FLORAL GUIDE," or *Gardeners' Chronicle*, Sept. 13th and 20th.

BARR & SUGDEN, SEED MERCHANTS,
12, KING STREET, COVENT GARDEN, W.C. (OPPOSITE the GARRICK CLUB).

ROSES, NEW AND OLD.

WILLIAM PAUL

(SON AND SUCCESSOR TO THE LATE A. PAUL),

Can supply all the best ROSES, New and Old, and respectfully solicits early orders to insure good plants.

The following statement will show the number of FIRST and SECOND PRIZES awarded to him at the London Flower Shows during the present year:—

March 19.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
„ 26.	Royal Botanic Society	Cut Roses	FIRST PRIZE
April 2.	Royal Botanic Society	Cut Roses	FIRST PRIZE
„ 9.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
	Royal Horticultural Society	Beauty of Waltham	SPECIAL CERTIFICATE
	(A First Class Certificate having been previously awarded for this Seedling.)		
May 21.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
	Royal Horticultural Society	Pot Roses	SECOND PRIZE
„ 24.	Crystal Palace	Cut Roses	FIRST PRIZE
	Crystal Palace	Pot Roses	SECOND PRIZE
„ 28.	Royal Botanic Society	Collection Ditto	FIRST PRIZE
	Royal Botanic Society	Cut Roses	FIRST PRIZE
	Royal Botanic Society	10 Pot Roses	SECOND PRIZE
June 11.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
	Royal Horticultural Society	12 Pot Roses	SECOND PRIZE
„ 18.	Royal Botanic Society	50 Cut Roses	FIRST PRIZE

PRICED DESCRIPTIVE CATALOGUE free by post.

NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS, N.

TO HYACINTH GROWERS.

SORTS RECOMMENDED BY SUTTON & SONS.

The undermentioned HYACINTHS are fresh Imported Bulbs, and being all free blooming kinds, will be found suitable either for Forcing or for Exhibition.

Price 9s. per dozen.

RED, of Various Shades.

GENERAL ZEITHEN, light red, dark stripe.
BOUQUET TENDRE, deep red, fine truss.
PANORAMA, red, dark eye, very double.
ACTEUR, deep rose, very double.
GROOT VOORST, fine blush, large truss.
REGINA VICTORIA, salmon rose, large bells, good truss.
L'UNIQUE, purple mauve, very distinct.
L'AMI DU CŒUR, dark red, moderate truss.
NORMA, delicate waxy pink, large bells.

BLUE, of Various Shades.

BRIDE of LAMMERMOOR, bright blue.
DUC DE NORMANDIE, fine dark blue.
LORD WELLINGTON, dark porcelain, good truss.
PRINCE of SAXE-WEIMER, dark purple, large flower.
BLOCKSBERG, light blue, striped, large bells.
MIGNONNE DE DRYFHOUT, large bells, porcelain.
BLEU MORESQUE, purple lilac, compact truss.
CHARLES DICKENS, porcelain blue, shaded with purple, large flower.

BLUE, of Various Shades.

EMICUS, dark blue, with white eye.
GRANDE VEDETTE, clear porcelain, large bells, splendid truss.
NIMROD, fine light porcelain, close truss, dwarf.
PORCELAIN SCEPTRE, bright porcelain, fine truss.

WHITE, of Various Shades.

ANNA MARIA, purple eye, very double and compact.
MISS KITTY, blush white, dark eye.
PASSE VIRGO, rosy eye, large truss.
PENELOPE, large flower with pink eye.
LA TOUR D'AUVERGNE, fine pure white.
GRAND VAINQUEUR, pure white, very fine truss.
VOLTAIRE, creamy white, fine, large truss.

YELLOW, of Various Shades.

BOUQUET D'ORANGE, reddish orange, dwarf habit.
FLEUR D'OR, deep canary yellow, close truss.
HEROINE, bright citron tipped with green.

The NEW GARDEN SEEDS for EARLY SOWING are now ready.

All Goods Carriage Free.

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

Notice to Purchasers of Bulbs.

SUTTON'S BULB LIST, post free, contains all the most desirable sorts in cultivation, and at low prices.
Royal Berkshire Seed Establishment, Reading.

HYACINTHS for EXHIBITION.
FRESH IMPORTED BULBS.
SUTTON'S SELECTION.

	per 100.	Dozen.
Finest sorts by name ..	£4 4s.	12s.
Very fine ditto ..	3 10	9
Good ditto ..	2 10	6

Good Hyacinths for Beds, Ribands, &c. in separate colours (fresh imported), 21s. per 100.
Anemones, Crocuses, Tulips, Gladioli, &c., also very low in prices, as per CATALOGUE, which may be had gratis and post free.
SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

J. C. WHEELER AND SON, SEED GROWERS, Gloucester, have imported in excellent condition a large

COLLECTION of HYACINTHS,

including the extra fine varieties recommended by Dr. LINDLEY.

PRICED LISTS may be had gratis on application to the Importers,

Messrs. J. C. WHEELER & SON,
Gloucester.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON AND CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.
Pine Apple Place, Edgeware Road, London, W.

Excellence and Economy.

H. BROWN has imported a very large Stock of HYACINTHS, CROCUSES, and other BULBS, including the best varieties for exhibition and decoration. Collections at very moderate prices, carriage free.
See PRICED DESCRIPTIVE CATALOGUE, post free.
Seed Warehouse: 4, Commutation Row, Liverpool.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.
Exotic Nursery, Tooting, Surrey, S.

DUTCH BULBS, immense quantity, best quality, at extraordinary low prices; HYACINTHS, best named, 6s. per dozen; ditto mixed, 3s. per dozen, 20s. per 100; large Golden Yellow CROCUS, 1s. 3d. per 100, 10s. per 1000, &c.
British and Foreign FERNS, Foliage Plants, &c.; Fern Cases and Aquariums of every description. Real Sea Water, 4d. per gallon.
R. GREEN, 154, Kingsland Road, N.E., and the Bedford Conservatories, Covent Garden Market, W.C., entrance Central Avenue only.

Gladiolus Brenchleyensis (True).

YOUELL AND CO. beg to offer this season strong Flowering BULBS of the above, unequalled by any other for its brilliancy of colour, at 3s. 6d. per dozen; or 25s. per 100. Trade price on application, and when quantities are ordered a considerable reduction will be made.
The *Gardeners' Chronicle* of August 23, 1862, says:—"The spikes you have sent us are magnificent. We have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."
CATALOGUES of their extensive Collection, for which the First Class Prize was awarded at the Crystal Palace Show, Sept. 3, 1862, and two First Class Prizes at the Royal Horticultural Society's Show, South Kensington, Sept. 10, 1862, will be forwarded on application.
Royal Nurseries, Great Yarmouth.

New Azaleas.

F. AND A. SMITH have much pleasure in offering the undermentioned NEW and fine AZALEAS.
FLAG OF TRUCE.—The finest double white known; has obtained two Certificates and a Silver Medal for its superior merits, being the highest testimonial any Azalea has yet received, 21s. to 31s. 6d. each.
PRINCE OF ORANGE.—Brilliant orange scarlet, of the finest form. A distinct and very superior variety, 21s. to 31s. 6d. each.
CLAPHAM BEAUTY.—Bright rosy pink, slightly suffused with carmine spots of the finest form, distinct and very superior, 21s. to 31s. 6d. each.
LORD CLYDE.—Delicate salmon, with rosy carmine spots and shading of darker rose; fine form and substance, 10s. 6d. to 15s. each.
CRISPIFLORA ROSEA.—Fine bright rose; the flowers are frilled or crisped on the edges, a much finer variety than any in this class, good form and substance, an excellent decorative variety, 10s. 6d. to 15s. each.
PRINCESS ALICE.—A valuable addition to the single white varieties; being pure white, and possessing great substance of petal, of fine form, and free habit of flowering, 10s. 6d. and 15s. each.
Any of the above may be had in grafted plants, or on their own roots.
For full particulars see *Gardeners' Chronicle* of August 16, 1862, p. 758; or in CATALOGUES, which may be had gratis on application.
Dulwich, Surrey, S.

So much Seed being now required, Mr. HALLETT will, in order to bring the cost per acre within a reasonable sum, sell the remainder of his Wheat at ONE GUINEA A BUSHEL, but only on payment accompanying the order.

THROUGHOUT NOVEMBER, ONE BUSHEL PER ACRE DRILLED WILL PRODUCE UNDER ORDINARILY FAVOURABLE CIRCUMSTANCES SIXTY BUSHELS PER ACRE.

NONE IS GENUINE UNLESS THE FOLLOWING TRADE [PEDIGREE.] MARK. IS UPON THE BAG. TO IMITATE THIS IS FORGERY.

HALLETT'S PEDIGREE NURSERY WHEAT.

1861, ACTUAL SIZE AFTER FOUR YEARS' REPEATED SELECTION, STARTING FROM A SINGLE GRAIN IN EACH YEAR.

Price ONE GUINEA A BUSHEL, including bag sewed up and sealed, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order.
Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, ESQ., F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

Prize Medal Seed Wheat.—International Cereal Show.
THE PRIZE MEDAL WAS AWARDED TO

MESSRS. RAYNBIRD, CALDECOTT, AND BAWTREE, for the BEST SAMPLE of RED WHEAT, for their sample of RED NURSERY WHEAT, by a jury consisting of some of the most eminent Corn Factors from Mark Lane and Agriculturists of the day.
This Wheat is remarkable for its fine quality, weight, and hardiness, and is one of the most productive upon poor soils and in exposed situations; it may be sown at any time from October to March.
Bulks of similar fine quality to the Prize sample, for cash only, at 80s. per Quarter.
Address, Basingstoke.

Hallett's Pedigree Wheat.

W. COOPER, FARMER, Fen Drayton, St. Ives, Hunts., begs to inform Agriculturists that he has a quantity of the above, warranted grown from seed supplied by Mr. Hallett. Price 10s. 6d. per bushel. Also some GIANT RED, at 9s. per bushel.
Delivered on the Great Northern and Great Eastern Railways. New Sacks charged 1s. 6d. each.

GENUINE ITALIAN RYE-GRASS, from second-cut Foreign.
MANGEL WURZEL and KOHL RABI SEED, in varieties.
"GOLDEN DROP" RED WHEAT, the best variety for late sowing, combining strength, quantity, and quality.
HALLETT'S PEDIGREE, 10s. per bushel. New Sacks, 1s. 6d. each.
"DAINTREE'S EARLIEST" SEEDLING POTATO, which is proved by numerous reports to be the most prolific and earliest round Potato in cultivation.
Apply to the Grower, Mr. S. A. DAINTREE, Fendrayton, St. Ives, Hunts.

WANTED, about 50 Heads of PAMPAS GRASS, with stems 3 to 6 feet long. State price.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

To the Seed Trade.

THE STUDENT PARSNIP.
See *Gardeners' Chronicle* of Nov. 1, page 1047.
For wholesale terms apply to SUTTON & SONS, Reading.
The List of Agents will be repeatedly advertised, with the additional names, in the order they are received.

Milltrack Mushroom Spawn.

WM. CUTBUSH AND SON have a few Bushels of the above celebrated SPAWN to spare. Cash price, 7s. 6d. per Bushel. No discount to the Trade.
Highgate Nurseries, London, N.

New Celery, Williams's Matchless Red.

B. S. WILLIAMS, Paradise Nursery, Holloway, N., has much pleasure in offering the above superior solid RED CELERY, feeling confident it will give satisfaction. It is perfectly hardy, a strong grower, very solid and crisp, and of a most delicious flavour. It has been taken up for use quite the end of April without having the least tendency for running to seed. From the testimonials received it is unquestionably the best Red Celery in cultivation. In sealed packets, 2s. each.

Extra Strong Seakale for Forcing or Planting.

GEORGE CLARKE has to offer some very fine clean SEAKALE, quite equal to that which he sent out last season, and which gave such great satisfaction. The diameter of the roots is 2 to 3 inches, and for forcing it cannot be surpassed. Prices forwarded on application.
Samples can be seen at his Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill, S.

Myatt's Early Prolific Ash-leaved Kidney Potatoes.

H. AND F. SHARPE are now taking orders for the above, which has this season proved itself to be the earliest and most prolific Potato in cultivation, and as fine in quality as any of the Early Kidney varieties. Having a good stock they can offer them at a low price to the Trade.
Also JACKSON'S ASH-LEAVED KIDNEY, WALNUT-LEAVED KIDNEY, and all the early Round varieties at equally low prices, which may be had on application.
Seed Growing Establishment, Wisbech.

REIGATE SILVER SAND.—Best quality, 12s. per Ton, or 1s. 3d. per Bushel, at Swan Place; delivered 5 miles, or to any London Wharf or Railway, 16s. per Ton, or 1s. 6d. per Bushel (Sacks at cost price). Kentish and Hampshire Peats, Yellow Loam, Leaf Mould, and Cocoa Fibre Refuse; also Cocoa Fibre for Orchids.
J. KENNARD, Swan Place, Old Kent Road, London, S.E.

Fine Camellias and Azaleas.

F. AND A. SMITH have an immense stock of AZALEAS and CAMELLIAS well set with flower buds, of fine growth and in healthy condition, now offering at moderate prices, which may be had on application.
Dulwich, Surrey, S.

Cineraria and Calceolaria Seed.

F. AND A. SMITH are now sending out Seed of their fine Selection of the above. Care has been taken to select the finest for colour, form, size and habit; numerous testimonials have been received of its excellence. In packets, 1s., 1s. 6d., and 2s. 6d., free by post.
Dulwich, Surrey, S.

CHOICE HARDY CONIFERS.

ARAUCARIA IMBRICATA, 1 year, strong, p. doz.		6s.	0d.
CUPRESSUS LAWSONIANA, 1 year, strong	,,	3	0
,, MACROCARPA, 6 inches ..	,,	8	0
PICEA NORDMANNIANA, 1 year	,,	12	0
PINUS DON PEDRI, 1 foot	,,	9	0
,, INSIGNIS, 6 inches	,,	3	0
,, PONDEROSA, 6 inches	,,	6	0
THUJA ELEGANS or LOBBII, 1 foot ..	,,	6	0
WELLINGTONIA GIGANTEA, 1 year, strong	,,	12	0
,, ,, in 48 pots, 8 ins.	,,	24	0
,, ,, in 32 pots, 1 ft., fine	,,	42	0

The above are all healthy seedling plants in pots, ready for immediate planting out.
J. HENCHMAN, Edmonton, London, N.E.

Early Spring Flowers.

WEBB'S GIANT POLYANTHUS; ditto COWSLIP; Florist's Flower, POLYANTHUS, Roots or Seed; also SCARLET PRIMROSE—Double Crimson, Double Purple, Double White, Double Yellow, and Double Lilac ditto. COWSLIP from the Himalayas; DOUBLE POLYANTHUS; and other varieties, all of which may be had on application to
RICHARD WEBB, Calcot Gardens, Reading.

Standard and Dwarf Roses.

BENJAMIN R. CANT will be happy to forward on application his DESCRIPTIVE CATALOGUE of ROSES. As a guarantee of the value of his collection, B. R. C. begs to state that he has this year obtained 17 First Prizes for Cut Roses at the principal Shows.

Very fine vigorous plants of the choicest sorts will be supplied at the following prices:—

Standard Roses	18s., 24s., and 30s. per doz.
Half Standard Do.	18s. and 24s. per doz.
Dwarf Do.	9s. to 18s. per doz.

The NEW ROSES of 1862, Dwarf plants, 3s. 6d. to 5s. each; or, if 12 or more varieties are taken, 30s. per doz.

St. John's Street Nursery, Colchester.

N.B.—B. R. C.'s Catalogue contains nothing but the best varieties; all indifferent and worthless sorts are excluded.

50,000 Dwarf Roses in Pots on their own Roots.

STANDARD, HALF-STANDARD, AND DWARF BUDDED ROSES, ON THE BRIAR AND MANETTI STOCK, IN ENORMOUS QUANTITIES AND IN THE MOST VIGOROUS HEALTH.

WILLIAM WOOD AND SON have much pleasure in directing especial attention to their very extensive and well-grown stock of ROSES, CATALOGUES of which may be had gratis on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses, &c.

JOHN HARRISON'S CATALOGUE of ROSES is now ready, and may be had free on application, containing Select Lists of all the best varieties in cultivation, upwards of 40,000 Plants in the finest condition, worked upon the Manetti Stock, as well as a large number upon their own sorts, in the open ground, also in pots.

The Catalogue explains Mr. Harrison's method of cultivating the Manetti Stock, which prevents the possibility of its throwing up suckers, the only valid objection hitherto urged against the general adoption of this valuable Stock.

North of England Rose Nursery, Darlington.

New Roses of 1862.

JOHN KEYNES has to offer 1000 very extra strong plants, the finest varieties of the last season, in 6 and 8-inch pots, now ready, price 42s. per dozen, with the usual discount to the Trade.

Fine STANDARDS, of the older varieties, 24s. & 30s. per doz. DWARFS, 12s. and 18s. per dozen, all of the finest varieties in cultivation. Every attention paid to package, and compensation for carriage.

New CATALOGUES ready.

JOHN KEYNES, Nurseryman, Salisbury.

ROSES and HOLLYHOCKS.

	Per dozen.
ROSES, fine Standards, from	18s. to 30s.
ROSES, Half Standards ,, ...	18s. to 30s.
ROSES, Dwarfs .. ,, ...	9s. to 18s.
ROSES, New of 1862 ,, ...	30s. to 42s.
HOLLYHOCKS, old varieties, from ..	12s. to 18s.
HOLLYHOCKS, newer varieties ,, ..	30s. to 42s.
GLADIOLI, new and old.—A fine collection from	6s. to 30s.

The above are very fine.

CATALOGUES post free on application.

PAUL & SON, Old Cheshunt Nurseries, Herts.

IMPROVEMENTS.—Gentlemen wishing to make Alterations or Improvements in PLEASURE GARDEN, KITCHEN GARDEN, LAWN, or PARK, would do well to consult H. LANE & SON'S

ROSE CATALOGUE | FRUIT CATALOGUE, and
TREE and SHRUB CATALOGUE, &c.,

which may be had on application at the Nurseries, Berkhampstead, Herts. An inspection of their Stock is earnestly requested.

(The finest and largest quantity of ARAUCARIA IMBRICATA in Europe.)

Gladiolus Gandavensis and Varieties.

B. S. WILLIAMS'S choice collection of these superb Bulbous Plants, which are beyond doubt the handsomest autumnal ornaments to the garden, is now ready for sending out. Great attention has been bestowed on the selection, amongst which are many novelties, and none but those of the best quality are offered.

Collection of 24 Splendid Varieties, one root of each, 21s.

Collection of Choice Named Varieties, 6s., 8s., and 10s. per doz.

A PRICED and DESCRIPTIVE LIST on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Elymus glaucescens (syn.) sabulosus.

B. S. WILLIAMS begs to call the attention of noblemen and gentlemen to the above ORNAMENTAL GRASS; it is perfectly hardy; having proved it for several years, he can with confidence recommend it as being superior to the Pampas Grass as an under cover for Game, &c.

B. S. W. being convinced of its utility, has provided a large Stock, which he begs to offer at the following low prices:—6s. per dozen; 40s per 100.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

AN AVENUE of WELLINGTONIAS.—Gentlemen wishing to plant an avenue of this GLORY OF THE FOREST would do well to inspect the Stock at the Sunningdale Nursery. They may select from thousands.

RHODODENDRONS of every hue, Scarlet, White, Crimson and Purple.—Gentlemen about to plant would consult their interest by an inspection of the Stock of Rhododendrons at the Sunningdale Nursery. They may select from hundreds of thousands.

COVER PLANTING.—Gentlemen about to plant for Cover would find the following plants worth a trial:—BERBERIS JAPONICA, COTONEASTER MICROPHYLLA, and RHODODENDRONS. A visit to the Sunningdale Nursery would not be uninteresting.

ROSES, Standards and Dwarfs, a very fine selection, in the most vigorous health, may be seen at the Sunningdale Nursery.

ROSES for FORCING, specially prepared, and calculated to give an abundant supply of Flowers during winter. All the finest kinds may be selected at the Sunningdale Nursery.

CONIFERS.—A fine Stock of well grown Plants of all the most interesting and really hardy Conifers, Evergreens, &c., may be seen at the

Sunningdale Nursery, Sunningdale Station, S. W. R.

CHARLES NOBLE.

Strong Grape Vines from Eyes.

R. GLENDINNING begs to announce that his Stock of GRAPE VINES, comprising all the old and new varieties worthy of cultivation, is unusually fine this season. It consists of a number of extra-strong well-ripened Canes, grown for fruiting in pots, and a quantity of fine healthy Vines for planting out.

PRICED LISTS on application.

Chiswick Nursery.—Nov. 15.

New White Grape "Chavoush."

CHARLES TURNER can still supply strong plants of this superior White Grape. For description and particulars see former Advertisement or Catalogue, which may be had on application. Price for strong plants, 21s. A few extra strong plants in large pots, which will bring a crop next year, will be charged 42s.

The Royal Nurseries, Slough.

Foster's Seedling Grape.

MESSRS. JOHN AND CHARLES LEE have to offer Mr. Foster's stock of this fine NEW GRAPE, which can be confidently recommended for general cultivation in cool Vineries. It has borne an abundant crop in the large Conservatory of the Royal Horticultural Society at Chiswick, the bunches being large, with medium sized berries of a pale amber colour. The flavour of Foster's Seedling is most luscious, equalling the richness of its twin sister Lady Downe's, and as far as can be seen, partaking of the same quality of hanging well without shrivelling.

Canes for planting, 7s. 6d. each. A few Fruiting Canes at 21s. each.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Strong Fruiting Vines.

GEORGE CLARKE invites the attention of intending Planters to his very superior stock of the above. They embrace all the leading varieties, have clean and well ripened rods 8 to 10 feet long, and remarkably short jointed. They were stopped to this length as early as June, rendering them equally stout and good the entire length; they are therefore very suitable for planting a house, or for growing in pots, where a crop of fruit could under proper treatment be obtained the first season.

The prices are—1 year old, 10s. 6d. each; 2 year old (extra size), 15s. Smaller plants, also from Eyes, and equally well ripened, which will produce fruit the second year, 3s. 6d. to 5s. each.

Specimens can be seen at the Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill, S.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.

2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

THOMAS JACKSON & SON, Nursery, Kingston, S.W.

Magnificent Dwarf-Trained Fruit Trees.

WM. WOOD AND SON have the greatest satisfaction in referring their friends to their very superior Stock of the above, which are in the finest possible health, and in point of training the trees are perfect pictures of successful cultivation.

The Stock comprises PEARS, PLUMS, CHERRIES, PEACHES, &c., &c.

CATALOGUES free on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Fruit Trees.

RICHARD SMITH has no hesitation in saying, that he possesses by far the largest Stock of FRUIT TREES in the kingdom, consisting of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, in Maiden Trees, Dwarfs, Bushes, Pyramids, Half-Standards, and Standards; Dwarf-trained, Half-Standard, Standard, and Horizontally-trained Trees, of the finest sorts, and in the best possible condition. DESCRIPTIVE PRICED LISTS on application.

RICHARD SMITH, Nurseryman, Worcester.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

Fruit Trees.

JOSHUA LE CORNU has no hesitation in saying that he not only has the most extensive Nurseries in the Island of Jersey, but that he possesses the largest collection of choice FRUIT TREES in that island, already so well known for the growth of fine fruit. His Nurseries being situated on elevated ground, the plants raised in them are of a hardy and vigorous nature, and are almost entirely free from constitutional maladies.

CATALOGUES may be had, post free, on application.

High View Nurseries, top of Queen's Road, Mont-à-l'Abbé, St. Helier's, Island of Jersey.

FRUIT TREES.—One and two years fine clean stuff of APPLES, CHERRIES, PLUMS, PEARS, leading kinds.
Trained PEACHES and NECTARINES, 30s. per dozen.
Trained CHERRIES, PEARS, and PLUMS, 18s. to 24s. The above are excellent well shaped plants.
Stout 2 and 3 years Transplanted QUICK, 12s. to 16s. per 1000.
STANDARD ROSES, 12s. to 18s. per dozen.

Epps' Nursery and Seed Establishment, Maidstone.

ORCHARD-HOUSE TREES in POTS.—Bushes, Pyramids, and Low Standards, full of buds.

APRICOTS.—Moor Park, true Peach, and Royal do.

PEACHES.—Barrington, Noblesse, Galande, Madeline de Courson, Malta, Grosse Mignonne, Reine des Verges, Belle de Douay, Royal George, Violette Hâtive.

PEARS, extra fine.—Vicar of Winkfield, Passe Colmar, Prince Albert, Louise Bonne of Jersey, Josephine de Malines, Easter Beurré, Bergamot d'Esperen, Beurré Superfin, Dr. Trousseau, Beurré d'Aremberg, Duchesse d'Angoulême, &c.

CHERRIES.—Reine Hortense, Belle d'Orleans, Empress Eugenie, &c., full of bloom, 3s. each, or 32s. per dozen.

A. GODWIN & SON, Collycroft Nursery, Ashbourne.

Reference required from unknown correspondents.

Planting.

WM. PAUL (Son and Successor to the late A. PAUL) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.

Entrance from the platform, Waltham Station, Great Eastern Railway.

Nurseries and Seed Warehouse, Waltham Cross, N.

TREES, SHRUBS, &c.—The Subscriber begs to call the attention of intending Planters to his NURSERY GROUNDS this Season, the Stock consisting of all sorts of FOREST TREES, including LARCH, SPRUCE, and NATIVE SCOTCH FIR, OAKS, ELMS, &c., of all Sizes, and all of clean and vigorous growths, with every description of EVERGREEN and DECIDUOUS TREES and SHRUBS, FRUIT TREES, HERBACEOUS PLANTS, &c.

Fine Specimens of the rare and highly ORNAMENTAL CONIFERÆ.

The Stock is large, and in fine condition for removing, being frequently transplanted, thus securing strong, fibrous Roots.

Strong THORNS and BEECH for Hedges.

THOMAS HANDASYDE, Glen Nurseries, Musselburgh, N.B.

SPECIMEN EVERGREEN SHRUBS, including HOLLY, 6 to 8 feet; ARBOR-VITÆ, 5 to 7 feet; LAUREL, 6 feet by 4 feet diam.; LAURUSTINUS, fine, 2 feet by 3 feet diameter; and various others. A few extra [illegible] LIMES. All can be depended upon for safe transplanting.

CHAS. SOUTHBY, Nurseryman, Clapham.

SHRUBS.—A Gentleman having 15 acres of CHOICE SHRUBS, from 6 to 12 years old, has a few hundred for Sale, consisting of Weeping Trees, all kinds, Worked Chestnuts, Double Mays, and Acacias of all sorts, Copper Beech, Rhododendrons, Bays, Laurustinus, Laurels, Portugal Laurels, Boxes, all kinds, Cedars, Lilacs, and an assortment of Specimen Plants seldom seen and unequalled in this country. Sent Carriage Free to any Railway Station in England or Wales.

Apply to Mr. WRIGHT, 22, Ely Place, Holborn, W.C.

20,000 LAURELS, 2 to 3 feet, 10s. and 12s. per 100, 5l. per 1000; bushy, 2½ feet PORTUGAL ditto, 50s. per 100; 10,000 NORWAY SPRUCE, 2½ feet 10,000 LARCH, 2 to 3 feet; 10,000 ditto, 3 to 4 feet, straight leaders and well grown.

A. GODWIN & SON, Collycroft Nursery, Ashbourne, Derbyshire.

References from unknown Correspondents.

3000 DEODARS, 1000 CUPRESSUS LAWSONIANA, 1000 C. MACROCARPA, 500 THUJA LOBBII. The above are offered very cheap. The Deodars are handsome well grown plants, from 2½ to 5 feet, and have been transplanted every autumn for the last five years. The others are fine healthy plants varying from 2 to 5 feet high.

Prices on application to J. SCOTT, Merriott, Crewkerne, Somerset.

Surplus Nursery Stock.

W. CROWDER, NURSERYMAN, Horncastle, has the following to offer cheap, to the Trade, or gentlemen:—
LIMES, strong and well grown, 7 to 12 feet.
LABURNUMS, strong and well grown, 7 to 12 feet.
SILVER FIR, strong and well grown, 4 to 5 feet.
ELM, grafted, strong and well grown, fine, 6 to 10 feet.
PINUS LARICIO, strong and well grown, bushy, 4 to 5 feet.
,, AUSTRIACA, strong and well grown, 2 to 2½ feet.
Also 1,000,000 three years QUICK.

To the Trade.

JAMES GARAWAY AND CO. have large quantities to offer of

ASH | OAK
BEECH | SPRUCE FIR

Prices and Sizes on application.

Durdham Down Nurseries, Bristol.

CHARLES DALY AND SON will SELL 1-year's TRANSPLANTED THORNS, 4s. per 1000; 2-year ditto, 8s. per 1000; COMMON LAUREL, 1 to 1½ feet, 15s. per 1000; PORTUGAL ditto, 1 to 1½ feet, 4s. per 100; SWEET BAYS, 1 to 2 feet, in pots, 6d. each. Irish Yews, Aucuba japonica, Variegated Holly, Evergreen Privet, Forest Trees and Seedling ditto, cheap for Cash.

LIST of PRICES free by Post.

Coleraine, Ireland.

To Noblemen, Gentlemen, and others engaged in Planting.

JOHN PERKINS respectfully invites the attention of the above to his extensive Stock of HARDY ORNAMENTAL TREES, SHRUBS, &c., all of which are in the best possible condition for removal, consisting of upwards of 10,000 Cedrus Deodara, averaging from 1 to 12 feet, and all the intermediate sizes, and as perfect as plants can be; Araucaria imbricata, Picea Pinsapo, Cupressus Lawsoniana, Thujopsis borealis, Wellingtonia gigantea, splendid plants, all from seed; Thuja aurea, English and Irish Yews, Arbor-vitæ; many thousands of Evergreens, averaging from 1 to 4 feet; Portugal and Common Laurels, Box, Berberis aquifolia, Juniperus, Red Cedars, Evergreen Oaks, Aucuba japonica, Laurustinus, Arbutus, Cotoneaster, Double Gorse, Green Holly, &c.

TRANSPLANTED FOREST TREES.

500,000 LARCH FIR, 2½ to 3, 3 to 4, and 4 to 5 feet.
SCOTCH FIR, 1 to 2, and 2 to 3 feet.
SPRUCE FIR, 1 to 2, and 2 to 3 feet.
ALDER, 2 to 3, and 3 to 4 feet.
ASH, 2 to 3, 3 to 4, and 4 to 5 feet.
BIRCH, 2 to 3, and 5 to 6 feet.
BEECH, 2 to 3, and 3 to 4 feet.
CHESNUTS, HORSE, 2 to 3, 3 to 4, and 4 to 5 feet.
Do. SPANISH, 2 to 3, and 3 to 4 feet.
ELMS, GRAFTED ENGLISH, 3 to 4, 5 to 6, and 6 to 8 feet.
,, ,, HUNTINGDON, 3 to 4, 5 to 6, and 6 to 8 ft.
,, ,, CORNISH, 3 to 4, 5 to 6, and 6 to 8 feet.
,, SCOTCH or WYCH, 2 to 3, 3 to 4, and 4 to 5 feet.
HAZEL, 2 to 3 feet.
HORNBEAM, 2 to 3 feet.
LIMES, 3 to 4, 4 to 5, and 5 to 6 feet.
OAKS, ENGLISH, 2 to 3, and 3 to 4 feet.
,, TURKEY, 2 to 3, 3 to 4, and 4 to 5 feet.
POPLARS, ONTARIO, LOMBARDY, and BLACK ITALIAN 3 to 4, and 5 to 6 feet.
SYCAMORE, 2 to 3, and 3 to 4 feet.
STANDARD LIMES, BIRCH, BEECH, ELMS, SYCAMORE, PLANES, HORSE CHESNUTS, &c., fine, 6 to 8, and 8 to 10 ft.
From 2 to 3 Millions of WHITE THORN QUICK, 2 & 3 years.
A large quantity of EVERGREEN PRIVETS and GORSE for Covert.

PRICED CATALOGUE of the above and General NURSERY STOCK on application.

52, Market Square, Northampton.

WELLINGTONIA GIGANTEA.—The undersigned begs to offer a very large and fine stock of healthy one year Seedling Plants established in single pots; also a few of larger sizes. Price per 100 or 1000 on application.
J. HENCHMAN, Edmonton, London, N.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, popular and botanical names, derivations, description, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious index of all their synonymes. Free by post for 2 postage stamps.
RICHARD SMITH, Nurseryman, Worcester.

To the Trade only.

SAMUEL FINNEY AND CO. offer fine furnished Plants of the following. They were all transplanted last autumn, and will remove with safety:—

HOLLY, SILVER-STRIPED, 1 ft.,	5s. per doz.,	35s. per 100	
" "	1 to 1½ ft., 5s. 6d.	" 40s.	"
" "	1½ to 2 ft., 6s.	" 45s.	"
" ROUND-LEAVED GREEN " POINTED-LEAVED GREEN " YELLOW-BERRIED " BROAD-LEAVED AMERICAN	1 ft. 5s. per doz. 1 to 1½ ft. 5s. 6d. " 1½ to 2 ft. 6s. "		

Gateshead Nursery, Newcastle upon Tyne.

Larch, Quicks, &c.

GEORGE CHIVAS, Chester, offers FOUR MILLIONS of TRANSPLANTED LARCH, from 1½ to 4 feet, of very superior quality. FOUR MILLIONS of TRANSPLANTED THORNS of various sizes, a large portion of which are exceedingly strong. Orders for 10,000 of either, delivered free at any Railway Station. A Sample Bale, containing 100 of each, 5 sizes of Larch, 22s. 9d., and of Quicks, 7s., will be forwarded on receipt of a Post-office Order from unknown Correspondents.
A General PRICED LIST on application.

W. VIRGO AND SON have a very large quantity of strong 2 and 3 years Transplanted QUICK; also 1 year Seedling QUICK. Strong Evergreen Privet of various sizes, Standard and Dwarf Roses, Dwarf-trained Cherries of various sorts, English Oak, 3 to 4 feet; Turkey Oak, 6 to 8 feet; Weymouth Pine Fir, 3 to 7 feet; Laburnum, 5 to 7 feet; Mountain Ash, 5 to 7 feet; Berberis aquifolia, 9 inches to a foot, Common Laurel, 2 to 3 feet; Yew, 2 to 3 feet; Box edging in large quantities.
Prices, with samples, can be had on application at the Nursery, Wonersh, near Guildford, Surrey.

SCOTT'S CATALOGUES.

No. 1.—FRUIT CATALOGUE and FRUIT TREE CULTIVATOR'S DIRECTORY describes nearly 800 of the best and most esteemed of our Fruits, with copious Observations and Directions about their Cultivation; the formation of Pyramids, Root Pruning, and other matter interesting to lovers of fine Fruit. Price 7d.
No. 2.—The BULB, WINTER, and SPRING BEDDING-PLANT CATALOGUE, 18 pages.
No. 3.—The DESCRIPTIVE CONIFEROUS CATALOGUE, 32 pages.
No. 4.—The ROSE CATALOGUE, 22 pages.
No. 5.—The SELECT NURSERY STOCK, 15 pages.
In December, the VEGETABLE and FLOWER SEED CATALOGUE.
In April, the SUMMER BEDDING CATALOGUE, 72 pages.
Apply to J. SCOTT, Merriott, Crewkerne, Somerset.

Tritoma Uvaria glauca.

JAMES KITLEY begs to offer fine large blooming plants of the above at the very low price of 6s. per dozen, smaller plants at 4s. per dozen. The Trade supplied. Also NARCISSUS POETICUS, 10s. per 1000.
Lyncombe Vale Nursery, Bath.

To Noblemen, Gentlemen, and Others engaged in Planting.

GEORGE BAKER begs to invite attention to the following superb specimens, which are in the finest condition:—
ARAUCARIA IMBRICATA, 6 feet, 9 feet, 14 feet
ABIES DOUGLASII, 10 feet, 14 feet, 20 feet
ARBOR-VITÆ (Siberian), 6 feet, 8 feet
CEDRUS DEODARA, 6 feet, 8 feet, 10 feet, 12 feet, 20 feet
CUPRESSUS LAWSONIANA, 5 feet
" DISTICHA, 8 feet, 12 feet
CEDRUS LIBANI, 8 feet, 10 feet
CHINESE JUNIPER, 5 feet, 6 feet
IRISH YEWS, 6 feet, 8 feet
JUNIPERUS RECURVA, 8 feet
" BEDFORDIANA, 5 feet, 6 feet
PICEA CEPHALONICA, 11 feet
PINUS CEMBRA, 7 feet, 10 feet
" EXCELSA, 10 feet, 15 feet
TAXODIUM SEMPERVIRENS, 10 feet, 12 feet
THUJA GIGANTEA, 6 feet
WELLINGTONIA GIGANTEA, 5 feet
KALMIA LATIFOLIA, Standards, fine
RHODODENDRONS,
PORTUGAL LAURELS,
G. B. in offering the above perfect specimens feels assured that whoever may favour him with their kind orders, their wishes will be fully realised. Prices on application.
American Nursery Windlesham Bagshot Surrey.

To Gentlemen, Nurserymen, Florists, Market Gardeners, and Others.

BULSTRODE PARK.—EXPIRATION OF LEASE.

TO BE SOLD, in large or small quantities (in consequence of the Duke of Somerset requiring the ground), several thousands of Hook's celebrated SEEDLING and COB-NUT TREES, the former a free and very early bearer, the latter the handsomest Nut grown; an immense number of 3 years old BLACK CURRANT TREES of the very best sorts; a very large quantity of some thousand yards of LILIES of the VALLEY, suitable for Forcing or Planting out; Pheasant-Eye, sweet-scented, and Double NARCISSUS; Velvet-coloured POLYANTHUS (a beautiful variety), FORGET-ME-NOTS, and other Flowering Bulbs and Plants; and a great number of ROSES, Moss and other kinds.
Apply to Mr. WILLIAM HOOK, Bulstrode, Gerrard's Cross; or to Mr. W. T. ATWOOD, Land Agent, Mortlake, S.W.

COCOA-NUT REFUSE, as used for FERNS, BEGONIAS, &c., grown in the International Exhibition, delivered at any Booking Office in the City at 1s. 6d., or within 3 miles of Charing Cross, at 2s. per bag of 3 bushels. Larger quantities on lower terms on application to the PATENT COCOA FIBRE COMPANY, Kingston-on-Thames, S.W.
Also SHORT FIBRE for Orchids and Drainage in pots.
Postage Stamps or Post-office Orders payable to J. BARSHAM & Co.

BARSHAM'S BRUSHES and MATS are the best and most economical of any that are made, and are sold in every town in the kingdom.
CAUTION.—See that every Brush is stamped "J. BARSHAM'S Patent, Kingston-on-Thames."

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11l. 11s. per Ton for cash.
PETER LAWSON & SON, 27, Great George Street, Westminster.

LAWES'S WHEAT MANURE for AUTUMN SOWING.

In consequence of the high price of Peruvian Guano, J. B. LAWES has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of J. B. LAWES, or through any of his appointed Agents. Price 8l. per ton at the Factories, Deptford and Barking Creeks.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

THE LONDON MANURE COMPANY have now ready

PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
BLOOD MANURE for ditto.
SUPERPHOSPHATES of LIME, &c.
All the above being in the finest condition. They also continue to supply
GIBBS'S PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of known value. E. PURSER, Secretary.
116, Fenchurch Street, E.C.

Autumn Sowing.

THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY (LIMITED), consisting of Tenant Farmers occupying upwards of 30,000 Acres of Land.
Chairman.—JONAS WEBB, Babraham, Cambridgeshire.
Managing Director.—JAMES ODAMS.
Secretary.—C. T. MACADAM.
Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex.
This Manure has been in use for upwards of 10 years, and has given great satisfaction to consumers. It is specially prepared for Autumn Sowing, and on most soils proves as effective as the best Peruvian Guano.
Orders may be sent to the Company's Agents throughout the country, or direct to C. T. MACADAM, Secretary.
Price 7l. 10s. per Ton, delivered at any Railway or Wharf in London.
Offices: 109, Fenchurch Street, London, E.C.

40 to 45 per Cent. of Soluble guaranteed.
1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.

Extract of Opinion from Mr. WAY, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. VOELCKER, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.
This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.
Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.
Wholesale by PRICE'S PATENT CANDLE Co., Limited.

WINTER DRESS all FRUIT TREES with GISHURST COMPOUND.

Copy of a Letter from Mr. RIVERS, Nurseries, Sawbridgeworth, Herts, January 9, 1862.
"I think you should prominently mention the great benefit Wall Trees of all kinds derive from a dressing of the Compound applied in January, it is so very beneficial. THOS. RIVERS."
From the Same, October 22, 1861.
"I must tell you what I heard to-day from a very clever gentleman farmer, Anthony Bubb, Esq., of Witcombe Court, Gloucester. He has a Wall to which Peach Trees are trained. Well, last autumn they were in a wretched blighted state. As a desperate remedy he unnailed them all early last February, and gave all but one a thorough painting with GISHURST COMPOUND, 1 lb to the gallon of water; his trees, all but the one, commenced to grow favourably in spring, and are now pictures of health. The tree not painted is in a half-dead blighted state. He used the same dressing to his Apple Trees; it killed the woolly aphis entirely, and has made his Trees clean and vigorous in their growth. He intends to paint his Wall Trees annually, and tells all his friends to do the same. I shall certainly serve all my young Peach Trees against my walls in the same manner. The Compound is, I believe, more efficacious than the usual offensive mixtures of clay, soot, sulphur, &c., and it does not blacken the shoots on the walls." Unless trees are completely at rest, 6 to 8 ounces to the gallon of soft water is the best strength, and sufficiently strong to destroy eggs and insects."
GISHURST COMPOUND is Sold Retail by Nurserymen and Seedsmen, in Boxes, 1s., 3s., and 10s. 6d. each; Wholesale by PRICE'S Patent Candle Company Limited,
Belmont, Vauxhall, London.

EXTRA STRONG TOBACCO PAPER, at a low price to the Trade.
Apply to H. BROWN, Seedsman, Liverpool.

Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of GEO. GLENNY, Esq., in his Works on Gardening, &c.
NEAL'S PLANT SOAP,
1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.
Both may be obtained of all principal Seedsmen.
Patentee: J. NEAL, Edward Street, Birmingham.

CHARLES APPELIUS, of Erfurt, begs respectfully to inform Nurserymen and Seedsmen that he has WITHDRAWN his AGENCY from Mr. E. LEIBIUS, of 132, Upper Thames Street, and transferred it to Mr. WM. SCHULTZ, of 4, Laurence Pountney Place, Cannon Street, E.C., where all orders will be punctually attended to.
Erfurt, Prussia.—Nov. 1.

Notice.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), HORTICULTURAL VALUER, begs to inform his friends and the public that he has REMOVED from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

J. T. WILLMER, HORTICULTURAL AGENT, AUCTIONEER and VALUER, Springfield Nursery, Sunbury, Middlesex, S.W.

ESTATES, DRAINAGE, GARDEN, VENTILATION, and WARMING IMPROVEMENTS carried out. Plans with details prepared for gentlemen, &c., by Mr. NEWTON, 30, Eastbourne Terrace, Paddington, W.

THE GARDEN and the COLD.—As few operations of consequence can be carried on either in the Garden, the Farm, or the Dairy without reliable information as to the Temperature and the Weather, please send for CASELLA'S Illustrated and Descriptive List free by post, of THERMOMETERS, &c., for these purposes. Reliable Thermometer for Registering Cold, 4s. 6d.; Cottage Barometer, 12s. 6d.
L. CASELLA, Maker to the Admiralty, Medallist for the Patent Mercurial Minimum Thermometer, &c., 23, Hatton Garden, E.C.

THE FARMER'S BAROMETER, a new instrument by NEGRETTI & ZAMBRA, price 50s., will correctly indicate whether the Barometer falls for Rain or Wind, the most valuable instrument ever constructed for the use of Farmers. Full particulars by enclosing a stamp.
1, Hatton Garden, E.C.; 59, Cornhill, E.C.; and 122, Regent Street, W.

HOW COLD IT HAS BEEN.—NEGRETTI & ZAMBRA'S celebrated THERMOMETERS will correctly register the lowest Temperature, 3s. 6d.
1, Hatton Garden, E.C.; 59, Cornhill, E.C.; and 122, Regent Street, W. Agents Wanted.—Apply at 1, Hatton Garden, E.C.

DUNN'S GARDENER'S PENCILS, Price 1s., will refill for 6d.
DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest linen. Say for which purpose required.
Retail at all Seedsmen, Stationers, &c., by Post for 13 Penny stamps to the Manufactory, 1, Dalston Terrace East, London.
These pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.
N.B.—A liberal allowance to the Trade.

W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.
Manufactory: Newport, Salop.
Warranted the strongest and most durable Fence ever offered at corresponding prices. It is easily repaired if broken from accidents; can be rolled up most compactly when not in use, is admirably adapted for exportation, and can be had of any height and mesh required, at prices from 4d. to 1s. 6d. per yard and upwards.
For further particulars apply at the Manufactory, or of the London Agent, Mr. R. WINDER, 18, Abingdon Street, Westminster, S.W.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, his Grace the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.
PROTECTION from the COLD WINDS & MORNING FROST.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.
Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.
ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—
"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."
Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.
THE GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C.

ROYAL HORTICULTURAL SOCIETY.

MANY of the FELLOWS, HOLDERS of FIVE GUINEA TICKETS, and VISITORS to the GARDEN during the past year having expressed a wish to

SUBSCRIBE FOR THE PURCHASE OF ONE OF THE FOUNTAINS,

AND SOME OF THE

STATUES EXHIBITED IN THE GARDEN AND IN THE INTERNATIONAL BUILDING,

THE COUNCIL HAVE OPENED A SUBSCRIPTION LIST AT

MESSRS. CALL, MARTEN, AND CO., BANKERS, 25, OLD BOND STREET.

The amount required is considerable, and a decision must be come to in a short time. Those intending to subscribe are therefore requested to do so at an early date.

FIRST LIST OF SUBSCRIPTIONS :—

	£	s.	d.
Miss H. M. Edmonds	1	1	0
Miss C. Ward Edmonds	1	1	0
Miss L. Edmonds	0	10	0
W. Atkinson	1	1	0
Countess of Harrington	1	0	0
G. F. Hedger, Esq.	1	1	0
James Kindon	5	5	0
Joseph Dent	5	0	0
Sir C. W. Dilke, Bart.	10	0	0
C. W. Dilke	1	0	0
A. W. Dilke	1	0	0
William Dilke	1	1	0
Mrs. Chatfield	2	0	0
J. B. Brown	2	0	0
Mr. and Mrs. James Booth	5	0	0
G. T. Saul	2	2	0
Miss M. Pym	1	0	0
Mrs. E. P. Drake	1	0	0
R. Lang	1	1	0
H. Johnson	11	11	0
R. J. Todd	1	1	0
W. Aldam	1	0	0
Hon. P. Dawnay	2	0	0
Mr. and Mrs. J. H Browne	3	3	0
J. B. Redman	2	2	0
Mrs. Harrington	3	3	0
W. T. Dovey	5	0	0
T. Hesketh	5	5	0
Miss M. Plincke	1	1	0
Mrs. J. Somes	5	5	0
John Clutton	5	5	0
Wm. J. Clutton	1	1	0
R. G. Clutton	1	1	0
Miss E. M. Clutton	1	1	0
James Veitch, Jun.	2	0	0
John Lee	2	0	0
W. Wilson Saunders	5	0	0
G. J. Penny	2	2	0
Septimus Scott	2	0	0
S. H. Godson	5	0	0
R. Cooper	2	0	0
J. Du Pré	5	0	0
W. Rea	1	1	0
Thomas Forster	2	2	0
Miss Clendinning	2	0	0
John Barriff	1	1	0
Mrs. R. Cope	1	1	0
Col. Hyde	2	0	0
A. Bird	1	1	0
H. Ross	5	0	0
Wm. Cooper	2	2	0
Andrew Murray	0	10	0
R. Cope	1	1	0
T. H. Massey	1	1	0
General Rawdon	1	1	0
Joseph Joel	1	1	0
Mrs. Barnard	1	1	0
George Batley	1	1	0
M. B. Baldock	1	1	0
T. H. Dutton	1	1	0
T. Oliver	1	1	0
T. Goode	1	1	0
G. Fursdon	1	1	0
J. H. W. Hibbert	1	1	0
F. Adamson	1	1	0
Edward Thornton	1	1	0
C. J. Crowley	1	1	0
Alderman R. Besley	1	1	0
Mrs. Dorington	1	1	0
A. S. Pidgeon	1	1	0
F. Chatfield	1	1	0
Samuel Andrews	1	1	0
John Fleming	1	1	0
G. Glendinning	1	1	0
Earl of Wicklow	1	1	0
Earl of Shelburne	1	1	0
W. H Skynner	1	1	0
D. Lambert	1	1	0
Q. Vivian	1	1	0
S. Alexander	1	1	0
W. H. Jacob	1	1	0
J. W. Lay	1	1	0
O. Maurigy	1	1	0
H. Norman	1	1	0
R. Carter	1	1	0
N. H. Nugent	1	1	0
Thomas Dent	1	1	0
William Cotton	1	1	0
Miss E. C. Moore	1	1	0
G. Atkinson	1	1	0
V. Stevens	1	1	0
C. B. Warner	1	1	0
C. J. Herries	1	1	0
J. J. Blandy	1	1	0
Earl of Sefton	1	1	0
M. Flower	1	1	0
R. Davis	1	1	0
W. T. Dyer	1	1	0
W. Henderson	1	1	0
A. Hewitt	1	1	0
D. Martineau	2	2	0
Samuel Scrivens	1	1	0
C. Goding	1	1	0
C. Walton	1	1	0
Thomas Hancock	1	1	0
R. Jefferson	1	1	0
W. D. Paine	1	1	0
James R. Macleay	1	1	0
John C. Davies	1	1	0
P. Candy	1	1	0
J. W. Lucas	1	1	0
Charles Druce	1	1	0
J. A. Henderson	1	1	0
W. Brown	1	1	0
A. Haines	1	1	0
James Mackintosh	2	2	0
W. D. Fane	1	1	0
Woronzow Greig	1	1	0
Shirley Hibberd	1	1	0
Francis Capel	1	1	0
W. F. Gostling	1	1	0
B. Morden	1	1	0
George S. Hand	1	1	0
William Jones	1	1	0
John S. Robinson	1	1	0
Mrs. Helen Ramsay	1	1	0
Mrs. Hakes	1	1	0
D. A. Blane	1	1	0
John Allnutt	1	1	0
James Paul	1	1	0
B. Lancaster	1	1	0
Marquis of Bristol	1	1	0
Thomas Williams	1	1	0
William Mercer	1	1	0
M. W. Bass, M.P.	1	1	0
Edgar Disney	1	1	0
G. R. Jarvis	1	1	0
William Mason	1	1	0
C. J. Maclean	1	1	0
Lord Llanover	1	1	0
James Garaway	1	1	0
J. B. Brown-Westhead, M.P.	1	1	0
John Elger	1	1	0
J. G. Seymour	1	1	0
W. H. Salt	1	1	0
George Wilson	1	1	0
G. F. Wilson	1	1	0
Mrs. G. F. Wilson	1	1	0
Mrs. F. Harrison	1	1	0
"Gishurst Compound"	1	1	0
James W. Safe	1	1	0
John C. Whiteman	1	1	0
M. A. Westbrook	1	1	0
C. Haynes	1	1	0
W. Nichols	1	1	0
G. Nelthropp	1	1	0
G. W. B. Middleton	1	1	0
Mrs. Rusbridger	1	1	0
Walter A. Bethune	1	1	0
L. Rosenthal	1	1	0
C. S. Dickens	1	1	0
J. S. Robinson	1	1	0
Sir M. Blackiston, Bart.	1	1	0
Charles Ratcliffe	1	1	0
Thomas Grissell	1	1	0
A. Klockman	1	1	0
C. J. Daniell	1	1	0
E. Moses	1	1	0
Mrs. Hadley	1	1	0
Sir Cresswell Cresswell	1	1	0
Edward St. John Mildmay	1	1	0
Judge Des Barres	1	1	0
A. Birch	1	1	0
Alderman Copeland, M.P.	1	1	0
A. Glendinning	1	1	0
W. B. Waterlow	1	1	0
Mrs. W. B. Waterlow	1	1	0
Mrs. Gladstone	1	1	0
C. T. Taylor	1	1	0
General Gonam	1	1	0
Mrs. Gomm	1	1	0
J. R. McClean	1	1	0
General Ramsay	1	1	0
General G. B. Michell	1	1	0
Henry East	1	1	0
Mrs. Woodgate	1	1	0
Mrs. Aytoun	1	1	0
James Brown	1	1	0
Charles Bath	2	2	0
G. Heathcote	1	1	0
A. Druce	1	1	0
E. H. Palmer	1	1	0
George Haines	1	1	0
A. Denison	1	1	0
E. S. Russell	1	1	0
E. S. Wolfe	1	1	0
Lord Darnley	1	1	0
Francis Barber	1	1	0
Mrs. Pollock	1	1	0
T. W. Pollock	1	1	0
C. Burgoyne	1	1	0
Jane Morris	10	10	0
G. Thomas Davy	1	1	0
Mrs. Flannick	1	1	0
Charles L. Davy	1	1	0
Miss J. J. Davy	1	1	0
William Kay	1	1	0
Samuel Gurney	1	1	0
His Excellency Musurus Bay	1	1	0
George Cookes	1	1	0
Richard Aplin	1	1	0
J. S. W. S. Erle Drax, M.P	1	1	0
T. Banks Stanhope	1	1	0
Francis Beresford Wright	1	1	0
H. J. Waddington	1	1	0
Thomas F. Gibson	1	1	0
Herbert Langham	1	1	0
T. A. Keily	1	1	0
Frederick Pollock	1	1	0
Mrs. Blamire	1	1	0
W. B. Thomas	1	1	0
Bishop of Winchester	1	1	0
Thomas G. Sambrooke	1	1	0
A. de Arroyave	1	1	0
Mrs. Wykeham Martin	1	1	0
Mrs. Goding	1	1	0
General Gold	1	1	0
Charles Pelford	1	1	0
George B. Davy	1	1	0
E. Balli	1	1	0
James Dolman	1	1	0
Henry Bollen	1	1	0
James Brunless	1	1	0
Lord Farnham	1	1	0
Col. Right Hon. W. F. Tighe	1	1	0
Robert Gosling	1	1	0
Admiral Pasley	1	1	0
W. J. Dunell	1	1	0
John Peter	1	1	0
James Watts	1	1	0
Duke of Buccleuch	1	1	0
Mrs. Hawkshaw	1	1	0
D. de' Castro	1	1	0
Mrs. de' Castro	1	1	0
John Sidney Smith	1	1	0
Conrad Wetter	2	2	0
J. Emmett Norton	1	1	0
Lionel Ames	1	1	0
W. O. Bartlett	1	1	0
James Thorne	1	1	0
Col. F. Vernon Harcourt	1	1	0
Mrs. Fleming	1	1	0
T. Travers Taylor	1	1	0
James Scott	1	1	0
John A. Chowne	1	1	0
John A. Oakley	1	1	0
John Bowman	1	1	0
Owen Wallis	1	1	0
Colonel Pease	1	1	0
A. B. Davy	1	1	0
Stephen Busk	1	1	0
C. J. Milward	1	1	0
Alderman William Cubitt	1	1	0
David Lyon	1	1	0
Richard Frederick	1	1	0
Thomas Wood	1	1	0
Henry Westcar	1	1	0
W. G. Prescott	1	1	0
A. Grant	1	1	0
T. B. Chester	1	1	0
John Toussaint	1	1	0
T. R. Neame	1	1	0
Sir Humphrey de Trafford, Bart.	1	1	0
R. Wight	1	1	0
F. W. Tomlinson	1	1	0
Colonel Higgins	1	1	0
W. H. Hine	1	1	0
James Priaulx	1	1	0
Colonel Gordon	1	1	0
Ellen Brodrick	1	1	0
Lord Boston	1	1	0
W. H. Hawkins	1	1	0
H. J. Keppel	1	1	0
Thomas Ingram	1	1	0
Thomas W. H. Dickson	1	1	0
Thomas Castle	1	1	0
Benjamin Edgington	1	1	0
J. E. Robson	1	1	0
James Herepath	1	1	0
Wynn Ellis	1	1	0
Mrs. Betts	1	1	0
Charles Barber	1	1	0
William Pinney	1	1	0
William Phillips	1	1	0
Earl of Verulam	1	1	0
Jno. P. Loveland	1	1	0
C. H. Bagot	1	1	0
D. Beaton	1	1	0
A. P. Lettey	1	1	0
H. M. Parker	1	1	0
S. Dickinson	1	1	0
Mrs. Lamb	1	1	0
Joseph Durham	1	1	0
Jno. Field	1	1	0
Joshua Blackburn	1	1	0
J. L. Naper	1	1	0
Edward Rosher	1	1	0
T. De la Rue	1	1	0
Mrs. Westmore	1	1	0
S. R. Solly	1	1	0
J. Clark	1	1	0
Edward Browne	1	1	0
Thomas C. Higgins	1	1	0
W. Throckmorton	1	1	0
Henry Pownall	1	1	0
Sir F. Shuckburgh, Bart.	1	1	0
G. S. Smith	1	1	0
William Robinson	1	1	0
Thomas Gardinor	5	5	0
T. H. Turner	1	1	0
George F. White	1	1	0
George Godwin	1	1	0
Mrs. Reid	1	1	0
R. R. Penson	1	1	0
Sidney J. Jones	1	1	0
J. Cathcart	1	1	0
F. Wright	1	1	0
Colonel Howard Vyse	1	1	0
Edward Lee	1	1	0
S. Howard Vyse	1	1	0
Titus Salt, M.P.	1	1	0
J. W. Cubitt	1	1	0
Mrs. Salt	1	1	0
Baroness Anna Farnham	1	1	0
Lady Caroline Neeld	1	1	0
George Ferguson	1	1	0
Rev. Charles E. Ruck Keene	1	1	0
Samuel H. Twining	1	1	0
Wellwood H. Maxwell	1	1	0
A. F. Paxton	1	1	0
W. H. Rudston Read	1	1	0
J. Watts Russell	1	1	0
E. T. Smart	1	1	0
William Gott	1	1	0
R. B. Oakley	1	1	0
Francis Martin	1	1	0
Sydney Smirke, R.A.	1	1	0
Mrs. Dixon	1	1	0
Viscountess Doneraile	1	1	0
Charles Hillhouse	1	1	0
R. F. Gower	1	1	0
George Sandars	1	1	0
Hon. and Rev. Frederic Curzon	1	1	0
Mrs. Hae	1	1	0
Fred. W. Collingwood	1	1	0
A. J. Baker Cresswell	1	1	0
W. H. Molyneux	1	1	0
Richard Oliverson	1	1	0
Thomas B. Potter	1	1	0
Thomas Chamberlayne	1	1	0
F. W. Copley	1	1	0
Mrs. Macnaghten	1	1	0
William Darley	1	1	0
Lady Shaftesbury	1	1	0
John James	1	1	0
Mrs. J. M. Gardiner	1	1	0
George Morant	1	1	0
Samuel W. Gardiner	1	1	0
J. W. Miles	1	1	0
Sir Thomas M. Wilson, Bart.	1	1	0
David Henry	1	1	0
H. G. Poole	1	1	0
A. P. Pickering	1	1	0
Mrs. Stiebel	1	1	0
Gustavus Kœnig	1	1	0
Edmund S. Yates	10	10	0
Miss Burdett Coutts	1	1	0
Edward Alder	1	1	0
Edward Banks	1	1	0
John Nunn	1	1	0
John W. Larking	1	1	0
Rev. George Cheere	1	1	0
F. T. Hay	1	1	0
Miss Fanny E. Pratt Barlow	1	1	0
Mrs. Coffin	1	1	0
B. F. Watson	1	1	0
John Noble	1	1	0
Rev. George Kemp	1	1	0
William Bartlett	1	1	0
Peter Graham	1	1	0
William Longman	1	1	0
R. Andrews	1	1	0
Thomas W. Franklyn	1	1	0
Charles C. Coote	1	1	0
T. B. Potter	1	1	0
Marquis of Kildare	1	1	0
Duke of Leinster	1	1	0
Sir T. Dyke Acland, Bart.	1	1	0
Lady A. Manners	1	1	0
Duchess Dowager of Norfolk	1	1	0
Thomas E. Harrison	1	1	0
E. W. Garland	1	1	0
W. Wells	1	1	0
Edward Bligh	1	1	0
Lord Ebury	1	1	0
Colonel Raban	1	1	0
W. H. Ripley	1	1	0
Mrs. Ridge	1	1	0
Mrs. Hibbert	1	1	0
George Bonnor	1	1	0
J. W. Duckworth	1	1	0
Lord Sondes	1	1	0
Robert Ker Dick	1	1	0
Edmund James Smith	1	1	0
W. Bowman	1	1	0
Simeon Warner	1	1	0
J. Greatorex	1	1	0
J. P. Bull	1	1	0
Edward Hibbert	1	1	0
Joseph Hall	1	1	0
A. Leveau	1	1	0
R. Plumbe	1	1	0
E. Bilke			
J. Bilke			

A SECOND LIST WILL BE PUBLISHED NEXT WEEK.

ROYAL HORTICULTURAL SOCIETY.

FLORAL COMMITTEE.

LIST OF AWARDS, November 11, 1862.

FIRST CLASS CERTIFICATE.

... sp. Japan, from Mr. Standish, Bagshot
... Jaburan fol. var., from Mr. W. Bull, Chelsea
...anthemum (Pompon) Mrs. Hutt, from Mr. D. Hutt, Hackney Road

SECOND CLASS CERTIFICATE.

...gramma peruviana laciniata, from Mr. Parsons, Welwyn
...ysanthemum laciniatum, from Mr. Standish
" Princess Louis of Hesse, from Mr. Salter, Hammersmith
" Princess Alexandra, from Mr. Salter
" Abbé Passaglia, from Mr. Salter
" Duchess of Buckingham, from Mr. Salter

SPECIAL CERTIFICATE.

Messrs. Veitch & Son, for a group of Autumn-flowering Orchids
Mr. Bird, Stoke Newington, for a group of cut blooms of Chrysanthemums

Chrysanthemum Prizes.

6 PLANTS, LARGE-FLOWERED.

1st Prize, Mr. C. Ward, Gr. to G. W. Fowler, Esq., Tottenham
2d, Mr. J. Glover, Gr. to R. C. Lepage, Esq., Tulse Hill
Extra, Mr. C. Turner, Slough

3 PLANTS, LARGE-FLOWERED.

1st Prizes, Mr. C. Ward and Mr. J. Glover

6 PLANTS, POMPONS.

1st Prize, Mr. D. Hutt, Hackney Road
2d, Mr J. Weston, Gr. to D. Martineau, Esq., Clapham Park
Extra, Mr. C. Ward and Mr. C. Turner

3 PLANTS, POMPONS.

1st Prizes, Mr. C. Ward and Mr. D. Hutt

12 CUT BLOOMS.

1st Prize, Mr. T. B. Robinson, Islington
2d, Mr J. Cattell, Westerham

MISCELLANEOUS CUT BLOOMS.

1st Prize, Mr. Cattell

THOMAS MOORE, Secretary to the Committee.

HANDSWORTH HORTICULTURAL SOCIETY. —The GREAT CHRYSANTHEMUM, CAMELLIA, FRUIT, and GOURD SHOW will be held in the Town Hall, Birmingham, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4.

The Classes for Chrysanthemums, Camellias, and Primulas are open to Members only. The Classes for Fruits and Gourds are open to all the World, without Entrance Fees.

Notice of Entries and the space required must be given by all Competitors in the Open Classes on or before November 20.

Lists of Prizes may be obtained from either of the Secretaries on application.

CHAS. JAS. PERRY, Castle Bromwich, } Hon.
GEORGE P. TYE, Handsworth, Birmingham, } Secs.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 15, 1862.

THE great variety and excellence of the fruits, vegetables, roots, nuts, cereals, and other products on exhibition at the Royal Horticultural Gardens at South Kensington, afford a suitable opportunity to make further comments upon the climates of Canada. From meteorological records kept at Hamilton by Dr. CRAIGIE, of that city, we give a table showing the mean temperatures at 9 A.M. and 9 P.M. for every month of the year. The elevation above the level of the sea at Hamilton is about 330 feet, and the latitude 43°15′, the latitude of northern Italy. From other records kept by the same gentleman since 1842, we find the mean temperature of the three summer months at the hours stated to have been about 70°.5; and from other meteorological observations furnished us by Dr. HURLBURT, one of the commissioners and jurors from Canada, we learn the mean temperatures of other localities in Canada. That of Toronto (lat. 43° 39′, altitude 341 feet) is 64°.8 in summer, and 24°.5 in winter; Montreal (lat. 45° 31′, altitude 60 feet), 69° 73 in summer, and 17°.1 in winter, and Ancaster, near Hamilton (lat. 43° 15′, altitude 650 feet), 65°.1 in summer, and 25°.29 in winter. But it is the summer temperatures which we have chiefly to consider, winter temperatures having little to do with such productions as we are now alluding to. By comparing these temperatures with those with which Europeans are more familiar, we shall at once see the peculiarity of the Canadian climate in its higher yet not excessive or oppressive summer heats. The summer temperature of London is 61°; that of Liverpool (lat. 51°), 57°; of Edinburgh (lat. 45° 57′), 57°; of Glasgow, 56°; of Berlin and the vicinity (lat. 52°), 64°. The summer temperature of the capital of Prussia is the same as that of Toronto—a former capital of Canada. Mean temperatures of the year give little indication of the agricultural and horticultural products of a country. The mean of the year for London is 49°.7; for Liverpool, 48°.4; for Glasgow, 49°; and for the British Islands nearly 50°; that of Quebec is 41°; Montreal, 43°; Toronto, 47°.3; Hamilton, 47°; yet throughout Canada Maize and the wild Grape readily ripen in the open air, and in many places the Peach. To mature the Maize or Indian Corn requires a summer temperature as high as 65°, with one month at 67°; this we do not get in Britain. In Canada Maize ripens over nearly every part of her territory, in Nova Scotia, in New Brunswick, and as high as latitude 54° in Hudson's Bay. We allude to the Maize here for the purpose of pointing out the extensive areas in Canada over which the Grape can be cultivated. In Europe most localities in which Indian Corn will mature, are adapted also to the Grape. JOHNSON assigns to the Grape a latitude 2° higher than to the Maize, and KAEMTZ places the Vine and Maize nearly on the same parallels. Here are two important facts showing the vast extent of country in Canada over which the Vine may be successfully cultivated. First, that to which allusion has just been made, making the cultivation of the Maize the guide as to the localities in which the Grape would mature; and secondly, the fact that the wild Vine is found growing and maturing its fruit over nearly the whole of that country. Wherever the wild Vine has fixed itself, it may be inferred that the climate is propitious to its culture; and in the Canadian exhibition we find annual kinds of native American Grapes, which have been successfully cultivated and improved.

The summer temperatures of some of the best

MEAN TEMPERATURES AT HAMILTON FOR 1858, 1859, 1860, 1861.

	1858.		1859.		1860.		1861.	
	9 A.M.	9 P.M.	9 A.M.	9 P.M.	9 A.M.	9 P.M.	9 A.M.	9 P.M.
January	32°.54	32°.22	26°.45	27°.9	25°.90	27°.90	20°.64	22°.61
February	19.32	20.64	27.7	29.5	23.93	25.52	28.00	29.10
March	31.93	34.41	37.09	38.53	36.20	37.40	29.12	29.90
April	44.78	44.58	41.11	40.8	42.30	42.20	43.66	44.06
May	51.74	50.62	58.77	57.13	58.50	57.50	53.00	51.63
June	71.93	69.76	64.33	61.73	67.93	66.46	68.53	66.63
July	72.42	70.80	72.51	70.65	69.38	68.67	72.25	71.06
August	72.00	70.84	70.00	68.06	68.61	69.10	70.25	69.90
September	63.53	62.86	58.36	58.72	58.80	58.93	62.53	62.63
October	53.03	52.61	45.58	46.29	49.03	50.67	50.51	55.61
November	36.30	37.2	39.53	41.60	39.60	40.53	38.43	39.00
December	30.61	31.22	21.36	22.26	25.51	26.10	21.90	[illegible]

wine countries of Europe are 67° and 68°.5. BOUSSINGAULT gives some interesting facts relating to Vine culture in Flanders. The lowest summer temperature was 63°.1, with 311 gallons per acre; the next 66°, and 184 gallons; the highest 70°, and 544 gallons; the mean for the summer of 67° gave 625 gallons, the highest recorded. A similar summer temperature, 67° to 68°, gives also the highest yield of Indian Corn. Having this summer temperature, there are at least half a million of square miles in the valley of the St. Lawrence and regions beyond, where, if the above facts are a guide, the Grape may be grown, and over most of which the wild Vine was found. We do not by any means express an opinion that the Vine will ever be cultivated over such an extensive area, because we believe the tillers of the soil in that land of such varied products, will find other and especially the cereal and its kindred crops, the most remunerative; but we make this an occasion for indicating the positions of Canada and the climate favourable for the Vine, and thus assist in dispelling the false notions as to its climate.

DR. BRANDIS, the energetic Government Inspector of TEAK FORESTS in Burma, points out an error in a statement made by us in the *Gardeners' Chronicle* of June 21st last. It was then reported, upon the authority of official documents, that the supply of Teak wood was almost exhausted (see p. 571). Upon this our learned friend remarks as follows:—"The misprints, and in many instances miscopies—the original copies having probably been recopied before sent to the printer in Calcutta—are most deplorable, and disfigure names and figures frequently so as to render them quite worthless. I wish to correct a misconception, which is apparent from the Leader in the Number quoted. You speak of the growing scarcity of East Indian Teak, and say of one of the reports that not a log was in store at the time it was drawn up. This might lead to misconception. I think if you ask Mr. H. GREEN, of Walthamstow, or one of the agents of the Admiralty, they will tell you that the ports of Moulmein and Rangoon have for the last three years exported more timber than ever before. Certainly the figures are small when compared with the enormous exports from Canada, which from the Number of the 14th June I see must be about as follows:—

Rough Timber, 600,000 tons at 50 cubic feet.
Sawn Timber, 66,000 tons at 50 cubic feet.

"But then Teak is, I imagine, a more valuable material than most Canadian woods, and possibly even superior to the Tasmanian Eucalyptus. Our figures are as follows:—

"A. *Imports*, or timber brought down to the ports from the forests of British Burmah and the foreign territory:—

	Rangoon.	Moulmein.
1860–61 ...	18,200 tons.	65,000 tons.
1861–62 ...	30,000 tons	105,000 tons.

The ton at 50 cubic feet.

"B. *Exports.*—The exports have not quite reached these figures, but then large quantities are in store. For instance, we have at the Government Depot now upwards of 7000 tons on hand; this is only from a small portion of the forests which Government wisely directed should not be leased out to timber merchants.

"Our difficulty is at present to get more markets for the Teak produced in this quarter. I have for some time been trying to induce the Railway Company in Bengal to use Teak for sleepers, which I believe would obviate an exchange for 20 years. But the difficulty is the high freight from here to Calcutta."

We are very glad indeed to hear that the alarm about supplies of Teak was groundless.

—— THOUGH somewhat wanting in brilliancy, especially when brought into close contact with high coloured flowers, the family of PENTSTEMONS yields a hardy race of ornamental border flowers, which are very useful in the late summer and autumn months, and which are now undergoing at the hands of cultivators a gradual but marked improvement. The origin of the race of garden Pentstemons was the species Hartwegii, a plant which was for some time grown under the false name of gentianoides. This has been seeded freely, and its progeny has been freely intercrossed, as well as crossed with other of the many species in our gardens, but especially with the true gentianoides, a taller and less free-blooming plant than itself, but which has served to impart variety both of form and colour, until a considerable number of distinct named sorts have been obtained. In fact collections of new Pentstemons are amongst the announcements one looks for every season. In a trade catalogue now before us, 50 "new Pentstemons for 1862," varying in price from 2*s*. 6*d*. to 7*s*. 6*d*., are offered.

It will be remembered that in the original P. Hartwegii, of which one or two varieties, especially a "scarlet" one, appeared soon after its introduction, the flower consists of a straight and rather long tube, which gradually widens from the base to the apex, where it is divided into a limb of five very slightly spreading segments. In gentianoides, on the other hand, the tube is very narrow at the base, and suddenly bulges out to a diameter nearly or quite equal to that at the throat, the limb being rather more spreading. The latter is on the whole the less elegant form, but it has some points which have influenced for the better the new race of cross-bred varieties, such, for instance, as the spreading of the limb, which is a very great improvement in the appearance of the flower. From materials such as these, crossed and intercrossed as they have progressed, the garden Pentstemon has become a very desirable border flower, if not as yet an exhibition plant; and though amongst the varieties which are annually sent forth, the two predominant types here and there distinctly appear, yet their features are for the most part obviously blended. The result is that a race has been produced in which the size of the flowers has been increased, the tube has been enlarged, the limb has been thrown back and extended, and the colours have been greatly varied. With these manifest improvements, we cannot wonder that Pentstemons are getting to be favourite garden flowers, amongst which, however, they would certainly take a higher place, were it not for the peculiar dulness (yet not want of depth), which still hangs about their colouring.

In illustration of the advances which the flower has made, we may refer to a series of varieties which have been sent out this year by Mr. BULL of Chelsea, and which we have had an opportunity of observing. They

are remarkable for the advance in quality they show beyond the varieties hitherto grown. Indeed one of them called Euclide, a large long-tubed sort, is so far improved in the most important qualities of smoothness and substance, that it gives one altogether fresh notions as to what Pentstemons may hereafter become; it is by far the best in quality of any we have fallen in with, and is besides a very pretty sort, remarkable for the distinct colours shown by the tube, the throat, and the face of the limb. The outer surface of the tube is of a deep claret red; the pale throat is striped with violet, and the face of the limb is scarlet, while the thick firm segments of the latter are rounded in their contour, and stand out so as to display their brighter-coloured surface. Another fine sort is Charles Klein, the large bold-looking blossoms of which have a bright carmine-red tube, a pinkish-rose limb, and a white throat finely streaked with crimson. Lord Clyde is another advanced and showy sort, dwarfish and free in habit, and having a finely spreading limb, the colour being one of those intense light crimson reds, called "Scarlets" in this family, such as occurs in Scarlet Gem, to which however Lord Clyde is we think much superior. Adrianne Boppe again is quite to our taste, a creamy-white tube, tipped with bright rose on the outside, which is the surface most visible from the drooping of the flowers; its chief fault is the creamy tint of its ground colour. Amazon is another fine thing, dark claret, with bold blotches of maroon in the throat, the blotches being very evident, and giving a distinctly-marked character to this variety. Finally Laurent Lowerque (written Lavergne in some lists) adds to a dwarfish habit, large erect flowers of a purplish rose, deeper in the tube, with a slightly striped throat. The half dozen we have mentioned would be acquisitions in any garden. Messrs. Downie, Laird & Laing have also sent out some fine novelties, such as Dr. Hogg, but we have not had an opportunity of examining them during the blooming season.

Among the gradations of form which are met with, it has become necessary to settle which is the most desirable for effectiveness, because if we are to go on bedding Pentstemons, as doubtless we shall, we may as well have them moulded to the most perfect model. We will set down our notions of what should be aimed at, and we offer them as a basis on which more exactly defined series of properties may be founded as the flower itself improves. First, of the plant, as our forefathers used to write:—the plant should be dwarfish and well branched, with a succession of blooming shoots, so that it may appear thoroughly furnished. If taller, this well-furnished character is all the more essential. There is no objection to a moderate height of above 3 feet, but two-thirds of the height, whatever it be, should consist of the branched inflorescence. The foliage should be broad rather than narrow, and of a glossy green, investing the lower portions of the stem. Second, of the flowers:—The flowers should have the tube straight, nearly equally tapering from the throat to the base, and not suddenly contracted; the throat itself broad and open, in diameter about three-fourths of the length of the tube; the limbs should spread out on all sides from the mouth of the tube, so that when the tube is held endways towards the eye, the limb-face may be entirely exposed to view, and its segments should be smoothly rounded in outline, and (within the limits they are ever likely to reach) the larger they are the better. The substance should be stout (as in Euclide, or still more so), the surface smooth, free from all asperity, and fine in texture. The colour should be bright and distinct in tone; when the throat is white it should be pure; when striped or pencilled the markings should be well-defined. The flowers should be set on stiff foot-stalks, so as not to hang languidly on the stem, and the nearer they approach to a horizontal position the better.

We may notice by way of supplement that samples of a useful dwarf race of Pentstemons, adapted for flower-garden beds, made their appearance at the recent meeting at South Kensington. One called compactus, was particularly remarkable for its sturdy compact growth, its abundant blossoms, and its deep crimson colour, which had more of richness in the hue than commonly occurs amongst these plants. These dwarf varieties were raised by Mr. G. Wemyss, of Kelso, who states that he has been devoting attention for some years to the acquisition of kinds suitable by their habit for bedding purposes. In this he appears to have succeeded, the dwarf kinds being quite likely to be useful in the northern parts of the country, as well as generally, in seasons like the present, when more tender subjects prove more or less a failure. The flowers in this variety compactus, though broad, are short-tubed and comparatively small, and bear no comparison with the others to which we have before referred, in respect to quality, but this very characteristic is likely to render them all the better adapted for bedding plants, as in the case of Calceolarias for flower-garden use, of which the small close-lipped varieties are infinitely superior to the larger and at first sight more attractive kinds with the larger pouches of the herbaceous race.

—— The Royal Society of Agriculture and Horticulture of Tournay have issued the schedule of their first show next year. It will be held on the 29th, 30th, and 31st of March. The 29th is a Sunday. Forty medals are offered.

—— We have to record the loss of Mr. Robert Glendinning, Nurseryman, Turnham Green, who died on Sunday last in the 58th year of his age, after a long and most painful illness. Mr. Glendinning was an excellent practical Gardener, as was shown long since by his work on the Pine Apple, and a skilful forester, as the plantations at Bicton, for many years under his care, abundantly testify; that he was no mean Landscape Gardener is seen by the grounds laid out by him in many parts of the country. He leaves a well-stocked Nursery and two sons to manage it.

IMAGINARY FLOWERS.

It is characteristic of the literature and moral feeling of the two countries that the French abandon themselves to the vagaries of their imagination with much greater freedom than the English. This is well seen in the liberties which the French romancers take in describing natural objects. It is not often that an English writer makes any very gross blunder in such matters, and at any rate if he does, it is usually made, not in consequence of neglect, but in spite of attention. Now and then no doubt a muscular Christian may take the hounds out in the month of June, or a fresh water sailor make confusion between ropes and spars, but such deviations from ordinary procedure are rare. The restraint of truth weighs upon them even when they are avowedly narrating a fable. No such modesty affects a Frenchman. He rather seems to revel in wandering at will over unknown ground, and, abandoning himself to the fascination of the moment, invents not only the action of the piece, but also the scene and decorations. That pleasant writer M. Alphonse Karr banters his fellow novelists very happily on their feats in this way in the botanical line, and it may amuse some of our readers who have not met with the passages to which we refer if we translate a page or two for their information:—

"To these precious plants which adorn our garden during winter, a celebrated writer, M. Eugene Sue, has just added an inestimable conquest; he speaks in a new romance, "La Bonne Aventure," of a Cactus which flowers in the open air in the winter time, at the same time as the Odoriferous Tussilago, the Heliotrope of winter. This Cactus is entirely new and is wholly unknown to me. The Cacti which were previously known came from the warmest countries of America and Africa, and require here the shelter of the best conservatories. If this Cactus is not named I propose to give it the name of its inventor. This is not the only plant which we owe to the writers of these times. I have established already a long time ago the garden of the romancers, all planted with flowers and vegetables due to their fertile imagination. We owe to Madame Sand a Chrysanthemum with blue flowers. To M. Rolle, the Camellia with an intoxicating perfume. To M. Janin, the Blue Carnation. To M. Victor Hugo, the Rose of Bengal, without thorns and without fragrance. In a verse of which I am quite ashamed only to recollect the meaning—I know so many of his which are a charming ornament for the memory—he says of the Rose of Bengal—

'As she bears no spine, so she has no odour.'

The Roses of Bengal which have been hitherto known to us not only exhale a very sweet and very marked odour, but moreover the Rose tree of Bengal has of all the Roses the largest and most powerful thorns. To M. Paul Feval we owe a variety of Larch which is not deciduous. To Balzac, that great writer who died in all the strength of his genius, and whose last work is perhaps his finest, the gardens owe the climbing Azalea. Those who read know what curious attractive dramatic and spiritual recitals are due to the fertile imagination of M. Dumas. This imagination, whose power has at yet shown no limits, had created nothing hitherto in the empire of flowers; it has, however, been unable to content itself with the riches already acquired; it has given us new riches. M. Alexandre Dumas has found a Black Tulip. In a romance lately published by him under this title, 'La Tulipe noire,' M. Dumas shows us two amateurs of Tulips exerting themselves by every means to obtain a Black Tulip, for which the Tulip Society of Haarlem proposed, according to M. Dumas, in the year 1672, a prize of a hundred thousand florins. The account of the efforts of the two gardeners contains circumstances which cannot fail to prove of interest to other cultivators. Thus Van Baërle sets himself to love Tulips. A year afterwards he had found five new 'species' of Tulips. Probably the author meant to say five new Tulips. It is provoking that M. A. Dumas does not give the details of the procedure of Van Baërle; for in the manner of cultivation known up to our days the sowing of a Tulip does not produce flowers until the end of four or five years. These flowers after that do not quite fix their colours and variegations until after a space of time, which varies from two to 15 years. It is then six years at least which are required by every other amateur, except the said Van Baërle, to enable them to class a Tulip—we may reckon 10 years as a moderate average. It is thus an immense progress which is due to M. Dumas, and which will doubtless induce many people to sow Tulips who have been hitherto discouraged by the slowness of the results. A little further on, Van Baërle gives his Tulip beds a suitable heat. We scarcely know any Tulip except the small red Tulip, called the Tulip Duc Van Thol, which other gardeners heat to have them in the winter. No person but Van Baërle plants his common Tulips upon a hot-bed. No doubt he obtains good results from it, but the author neglects to acquaint us with them, as well as the advantages of raising Tulips in pots, a singular fantasy which he attributes to his hero. Encouraged, as we may well believe, by these marvellous results, five new Tulips in one year, Van Baërle continues his efforts, and in two years he covers his beds with new objects so marvellous, that never any person after God created so much but Shakespeare and Rubens. But here is another thing. Van Baërle has obtained a bulb, this bulb has not flowered, but notwithstanding this it has off-sets. The bulbs that we know only have off-sets after having flowered; but what is still more extraordinary, the bulb which has not flowered is divided by Van Baërle into three off-sets and the bulb is gone; these off sets are to flower next year. It is possible, although it is seldom that off-sets flower so soon; but in any case, according to ancient prejudices, the bulb would have flowered more surely and more speedily than the off-sets. The bulb has come from the seed of a coffee-coloured Tulip. There are a thousand chances to one that its flower will be of a coffee colour more or less deep. Nevertheless Van Baërle knows that one of the three offsets will produce the black Tulip. 'They have that melancholy air which promises the blackness of ebony.' See how one learns. Hitherto it has been held incontestable that every offset bears a flower identically the same as that from which it draws its origin. But it was time to change that old routine in which the retrograde offsets were sleeping. Another modification introduced by M. A. Dumas in the cultivation of Tulips is that he does not plant them until the month of April, while according to the old method it is from the 10th to the 25th November that they are entrusted to the earth. In the midst of so many interesting revelations, doubtless the fruit of long and conscientious studies upon a plant so much loved, it is to be regretted that some errors have slipped in. Van Baërle was mistaken in believing that in 1672 Tulips of a bistre colour did not exist in nature. Those who sow them know that only too many brown plants come up. It is equally singular that the Tulip Society of Haarlem should have proposed a prize for a self-coloured Tulip. From all time the great merit of Tulips in the eyes of amateurs has been their variegation. The self-coloured Tulips are called *baquettes*, and we wait for them to show variegation. If they do not they are thrown out, and this was the case then as well as now. I have before me a catalogue of Dutch Tulips of the date of 1667, which is not far from 1672. Very few of these have only two colours. The catalogue does not cite one which has only one colour. In return for all these fine things which we have learned in the last romance of M. Dumas, we can show our gratitude by relieving him from a care. 'Tulips,' says he, 'delicate as true daughters of the East, cannot be cultivated in the open ground in winter; they require the inside of the house, and the soft caresses of the pan.' M. Alexandre Dumas will be delighted to learn that Tulips are much more robust than he fancied. He has only to plant them in his little garden in the Avenue Frochot in the month of November, and he will see them come out of the earth and flower in the following spring. The most precious Tulips pass the winter in the open garden, and no one has ever seen them even chilled. As regards the 'caresses of the pan,' M. Dumas has confounded here the bulb of the Tulips with the bulb of the Allium Cepa, commonly called Onion, which indeed is brought in relation with the pan, but for the purpose of metamorphosing it into the soup known as 'Soupe à l'ognon' or the gravy known as 'purée à la Soubise.' The result however is, that Van Baërle obtains a Black Tulip, and touches the hundred thousand florins. The author does not tell us how the said Tulip has perished, for it has never been heard of either before or since, which does not prevent M. Dumas from being a charming and lively narrator, one of the most fertile and wittiest spirits of the time, whom I love much, and to whom I am very grateful for the visit he was kind enough to make this summer to my hut on the sea shore. The same Alexandre Dumas in Balsamo has discovered a new variety of Sunflower. It is a Sunflower which 'opens at the first rays of the sun, and consequently shuts at night.' M. Elie Berthet has enriched the gardens with a Peach tree which flourishes in the month of May. He knows a nightingale too which sings in the sun." *Les Fleurs: by Alphonse Karr.*

CINCHONAS.

Some of your readers may be interested in learning that the *Cinchona Uritusinga* of Pavon is now flowering in my conservatories; for the first time, probably, that this has happened out of its native country. The plant is one of several which I raised from seed contained in capsules, sent, together with flowering branches, from the mountain of Uritusinga; for which I am indebted to the good offices of Don T. F. Riofrio of Loxa. It is about 6 feet in height, and bears at present an abundance of buds, of which several have already developed themselves into perfect flowers

These, though small, are of beautiful appearance, and considerably resemble those of the Calisaya var. Josephiana which flowered several years since at Chiswick. The general habit of the C. Uritusinga accords much better with the coloured sketch preserved amongst the manuscripts of M. de Jussieu in the Museum of the Jardin des Plantes, at Paris, than do the figures in the engraved plates in the Plantes Equinoctiales, which appear to refer to other distinct species. Woodville, in his Medical Botany, has copied and improved upon the sketch of Jussieu, and in this way presents a very characteristic plate of the species now in my possession. I am satisfied that Humboldt and Bonpland in their attempt to describe all the Loxa Cinchonæ under the one name of Condaminea, fell into the error of confounding several species under one common title. I therefore preferred retaining, in my work, the name bestowed by Pavon on that which was certainly the Loxa bark tree of La Condamine, but which has since become scarce, and is now to a considerable extent replaced by another sort, the Cinchona crispa of Tafalla, which furnishes the fine Loxa bark of modern commerce. I had a confirmation of this difference a day or two since in a visit which Dr. Berthold Seemann paid to my plant, which he at once recognised as differing from the sort that was shown to him at Loxa, and which he gathered as producing the fine Loxa bark of modern commerce. This he thinks Mr. Fitch has succeeded in reproducing with much exactness of both form and colouring in the plate of Cinchona crispa in my work. The name was bestowed by Tafalla on account of the crisp nature of the bark, which Dr. Seemann informs me is at Loxa, as it is in this market, a test of its supposed good quality. It is still called Crespilla, and was gathered under this name by Cross in the neighbourhood of Loxa in the course of last year. Mr. Markham has kindly permitted me to share the specimens of bark and leaves which Cross sent over of this as well as of other sorts, confirming me in the views expressed above.

Your remark that, in my work, "one long published and well known plant now appears under an unpublished name of Pavon," refers probably to one of the Loxa species, which were all fused together by Humboldt as C. Condaminea. It must be my justification that I cannot honestly subscribe to the correctness of this classification, and that I have given the facts as I found them as well as lay in my power. Moreover, I may add that there is considerable difference in the therapeutic efficacy of these different forms of the Loxa bark. This distinction is veiled and lost if they are all classed together as one species.

You express surprise that any one should be able to discriminate between the different sorts of bark as they occur in trade, but probably a little examination would convince you that there is no greater difficulty than in distinguishing between the different sorts of Wheat as shown in the Exhibition of the present year, or between the different sorts of Apples, which a little practice enables most people to discriminate. It is said that shepherd's will know each sheep in their flocks, whilst to a stranger they may all appear alike. My practice has been to select from each species portions of the bark of the trunk, and of the larger and smaller branches, attaching these to cardboards according to each species, thus placing under the eye the varied aspect which the bark presents on the same tree.

Both the propositions which appear to you to be contradictory are, I believe, borne out by facts, viz., 1st, that there is a normal product of alkaloid (varying within certain limits) for each species. 2d. That every species varies more or less according to the influence of climate, &c., under which they are grown. It is of course an anxious question for the Indian cultivators, but I shall be greatly surprised if, under any circumstances, their Calisaya plants refuse to produce quinine, and equally so if by any chance the Cinchona Pahudiana should prove fruitful in this article of commerce. I subjoin an extract from a letter just received from Mr. Markham, which shows the present state of Cinchona cultivation in India, from which you will perceive that a very short time will enable our botanists to perceive the correctness or otherwise of the definitions of several of the species which I have given forth on the authority of Pavon. The colouring may also be rectified where needful, but I am quite aware that no tints could do justice to the delicacy of the inflorescence of these plants, which would form quite an addition, notwithstanding the small size of the florets, to the plants now cultivated under glass in this country. One species, amongst four or five in my possession, the Cinchona peruviana, has been pointed out to me as worth cultivation for ornamental purposes from the delicacy and beauty of the leaves alone.

Surely, if botany (as concerns the Cinchona) is to emerge from the category of a dead science, and to fulfil its requisitions by giving us a distinct name for each plant which is the source of a distinct bark found in commerce, it must be by causing our preconceived notions to bend to facts rather than by altering or suppressing these for the sake of arbitrary definitions, which too frequently present rather what the framers of such definitions think ought to be, than what really is. *J. E. Howard.*

EXTRACT OF LETTER FROM C. R. MARKHAM, ESQ., UNDER DATE OCTOBER 25, 1862.

"I congratulate you on the C. Uritusinga plant being in flower, and hope soon to be able to find an opportunity of coming to see it. Your account of the examination of the small piece of bark is very satisfactory; but I will send you a larger quantity in a short time.

"You will be glad to hear that Mr. McIvor has already got 41 plants from your C. Uritusinga.

"The number of Cinchona plants on the Neilgherry hills, on September 1, 1862, was as follows:—

C. succirubra	30,150	
C. Calisaya..	1,050	
C. Uritusinga	41	from Mr. Howard's plants.
C. Chahuarguera (seedlings) ..	20 030	from Cross's seeds.
C. crispa	236	
C. lancifolia	1	from Java.
C. nitida	8 500	
C. micrantha	7,400	
C. Peruviana	2,295	
Species without name	2,440	
Total number of plants ..	72,143	

"13,700 plants are permanently placed out in the plantations, 18,076 in the nurseries and hardening off frames, and 40,367 under glass, including those used for the production of wood for propagation.

"At Neddiwuttum three plantations are being cleared, two containing 210 acres, called the Denison plantations, and another, called the Markham plantation, of 200 acres. Another at Pycarrah called the Wood plantation of 250 acres, on a splendid piece of land, well watered and sheltered from the west winds. Altogether 660 acres of Cinchona plantations, besides the plantation on a much higher elevation at Dodabetta. A Cinchona plantation has also now been formed at Darjeeling, in the Himalayas, and they are getting on very well in Ceylon.

"CLEMENTS R. MARKHAM."

Indoor Gardening.

I THINK a great many people this year are really beginning window gardening with a set of bulbs, and judging by the difficulties I hear of now and then, it seems that some are in trouble about these said bulbs still. I will therefore put together a few of the griefs thus prevalent.

Some people's bulbs have risen up out of the sand, and come to be in consequence much higher than their neighbours. Others have made roots more quickly than was expected, and now being an inch long, are they to go to the window? A little blue mould has come on the side of some Hyacinth roots; some Snowdrops instead of growing have become rather squashy; and several Crocuses, planted some time ago, have poked up long thin white spikes to the great grief of their proprietors.

The up-standing Hyacinths are a real great plague to every one. When planted in sand especially it is so difficult to prevent it, as the sand will run together in a hard mass below them. I generally start my own now, for such dishes, in sets according to colour, in plates or such like, and afterwards transplant them with the aid of much water—and this has answered with me, though every one might not like to be at the trouble of it. Heaping sand on the bulb will do very well, only sometimes the arrangement of the dishes hardly admits of it. I fear the only serviceable plan when the uprising does happen is that of taking the bulb in one hand, and with careful avoidance of any jerk or twist, gently drawing it out, while water has soaked the sand. You take out then beneath it a spoonful or two of sand, and wind the roots in again gently—pouring dry sand in, so as to keep them down. You wind the bulb in first a little, then pour on some sand—then another wind and then some more sand. The direction of the roots does not matter so that you do not break any, and though it is tiresome still the longer the roots the better.

People, however, are still planting bulbs, and they may as well guard against this difficulty. I have often heaped sand over mine in planting them so as to keep them quite in place; only the point ought then to be left out. Then there is a new bulb dish which seems to be intended for a model window garden—quite free from any "mess." I mean the "Rustic Robin" bulb dish, brought out by Barr & Sugden. It has a cover fitted on, which effectually keeps the bulbs in their proper places, while the little spikes come peeping up through the holes in the wood. The outside appearance is an excellent imitation in earthenware of a Moss-grown tree trunk. These hold a good many bulbs, and might be arranged to blossom a long time.

Then the quick-rooted bulbs. At this time of year all of them do seem to root on the first chance. But they had better still enjoy their three weeks darkness at least. Mine often wind round and round their glasses before they come to the light.

The blue mould is not much damage I think; it can be wiped off gently with a piece of silk, and some sulphur could be dusted on, only that I think it does not look much nicer than the mould. In a light dry room the mould will soon disappear.

The squashy Snowdrops will occur now and then, and when they do, the sooner they are pulled out the better for their neighbours.

And then the spiky Crocuses, which I do think are very tiresome—the spikes are so very ugly. However, they are not wrong, they are only filmy envelopes, which break asunder soon and let out the flower. If one grows long and thin—more than 2 inches long, that is, and very thin and not tapering—as a matter of taste I should break it off, but the spikes in general have to be endured. Their ugliness, however, is a great thing in favour of growing Crocuses alone, or mixed with Tulips only. For the Hyacinths and Scillas and Snowdrops look pretty all along, especially if scraps of Lycopodium are planted all over the sand. *E. A. M.*

THE ORANGE TREE IN VICTORIA.

THE Orange, said Mr. Wm. Ferguson, gr. to J. H. Brooke, Esq., Mount Eagle, in a paper read before the Victorian Horticultural Improvement Society, has generally been found to succeed in countries most favourable to the Vine, though it requires a very different soil, and a lower latitude would also seem congenial to it. It is a native of China, and some parts of India, and is supposed to have been introduced into Italy in the 14th century. In England the tree has been cultivated since 1629. In the Orangery at Versailles, in France, are trees at the present day that were planted in the 14th century, so that we have proof that with careful cultivation the Orange is one of the longest lived of fruit trees that is known to exist on the globe. It was first introduced into New South Wales from the Brazils, in 1780, and into Victoria from Sydney about 1839 or 1840.

My desire, in bringing this valuable tree under notice, is to direct attention to its cultivation, and to prove that it can be as profitably grown in Victoria as in the sister colonies of New South Wales and South Australia, in both of which colonies it is largely grown, and extensively exported. The statistics of New South Wales show the value of the Oranges exported in 1860 to be nearly 100,000*l*. As far as I can observe, the Orange is (with very few exceptions), cultivated in Victoria with but little care or judgment, yet such are the natural capabilities of this colony for its growth, that with care and proper cultivation the Oranges of Victoria will be unsurpassed in quality. Of this we have abundant proof in the fine specimens exhibited last season at some of the Horticultural Society's exhibitions, by Mr. Carson, Mr. Langmuir, Mr. D. C. Macarthur, and some fine specimens exhibited before this Society, grown by myself on trees only four years old, from the garden of Mr. Brooke.

The varieties of the Orange tribe are numerous, particularly of the Seville or bitter Orange, Citrus vulgaris, which is principally used for making that delicate conserve, Orange marmalade. The Lemon, Citrus limonum, ripens its fruit abundantly, and is largely used for domestic purposes. Citrus acida is also valuable as an anti-scorbutic, and produces fruit in abundance in this colony. The Citron and Shaddock also bear abundantly, and come to maturity as well. The Mandarin Orange produces fine fruit in this colony, also the Siletta or Selatta, a variety of the Brazils, much esteemed by Mr. Carson for cultivation in this colony. I myself can also recommend the Bahia or Navel Orange as one of the best for cultivation in Victoria, being very hardy, a good cropper, of large size and fine quality. About Sydney and other places where this variety has been cultivated, the grower obtains a much higher price than for any other, and of late years a great demand has sprung up for it in the English market, and large quantities have been lately exported from the Brazils. The St. Michael's is highly esteemed amongst growers, and the "Kumquat," Citrus japonica, is indispensable for dessert.

The Orange tree seems to have been greatly overlooked by the early settlers in Victoria, for I find that where any were planted they generally were left to nature; but in instances where some little care has been bestowed upon them, they are becoming a source of steady income. In France and the southern part of Europe the Orange is not only cultivated for its fruit but also for its flowers, which are extensively used for making Orange-flower water, as they give out their flavour by infusion; it is highly prized in France, and on the continent of Europe. The foliage also secretes a valuable essential oil in large quantities, and this, together with the water distilled from the flowers, might form valuable articles of commerce in this country. The cultivation of what I would call the hardy sorts of the Citrus genus is much the same. They all require a sheltered situation and a rather dry, strong soil, inclining to clay; and, as far as my experience goes, an east, or east by north aspect, so that they may get the full influence of the morning sun. Although moisture is not disagreeable to the Orange, yet a wet or damp piece of ground is not suitable for producing good fruit, or preserving the health of the trees. Instances of this may be seen on the Yarra, near Heidelberg, in gardens that have been established 18 or 20 years. The soil for the Orange should be rich on the surface, with a deep tenacious subsoil into which the strong deep holding roots can penetrate, so as to support the tree in hot and dry seasons, and above all, should be thoroughly drained. This is a matter of the utmost importance in this colony, and especially in strong soils suitable for the Orange. I have seen it thrive and bear abundantly on light sandy soils that had been well trenched and a little of the clay brought to the surface and thoroughly pulverised, but the greatest caution must be used not to bring more than 3 inches of this near the surface, and when this has been thoroughly worked and well drained, the Orange will be found to grow well and bear abundantly.

I have found bone dust an excellent fertiliser for Orange trees, and especially for young trees, and for land intended for an Orangery nothing can be better than the offal and bones from a slaughter-yard or boiling-down place. The Orange being a very gross feeding plant, the cultivator need never fear making his land too rich. I find frequent applications of liquid manure highly beneficial. In most places where I have seen Oranges planted in Victoria, a great mistake has been made in planting too closely, and this error can seldom afterwards be remedied without an immense sacrifice of capital and labour. This therefore ought to be carefully avoided. The distance trees should stand permanently apart depends entirely on the habit of the variety. Strong growers, such as the Bahia, Seville, St. Michael's, Tahiti, and most of the Lemons, require from 20 to 24 feet apart, while the China Oranges and a few others may be grown at from 12 to 15 feet apart; and some of the smaller China varieties at even less.

In making a plantation of Orange trees I would prefer those trees that have been worked on the bitter Orange, as from its hardiness it is best adapted for a climate so variable as that of Victoria. I have also found it the best stock for the several varieties of the Lemon. When grafted or budded trees of two years old can be obtained with fine fibrous roots, I prefer them to trees of a greater age, especially if they have been nursed in pots. When large numbers are required of course it will be necessary to plant stocks for budding, and as I consider a budded tree, of whatever species or variety, to be much longer lived than grafted trees, I would recommend those trees that had been budded to be permanently planted. The Orange tree generally begins to bear about the third or fourth year from the bud, but growers should not permit the fruit to come to maturity until the fourth year, and then only sparingly; from this until the trees attain the age of 60 or 70 years, the Orange with good cultivation may be reckoned in perfection. As it increases in age so the fruit improves in quality, the younger trees bearing fruit with a thicker rind, and abundance of seeds; as the tree becomes older the skin becomes thinner, the fruit more juicy, and the seeds diminish in number. The thinness of the rind of the St. Michael's Orange, and its freedom from seeds, depends entirely on the age of trees.

In Victoria the Orange begins to ripen in July and August, but the fruit is at that time very acid, and it is not till from September to December that it may be said to be in perfection. I find that if it is allowed to remain upon the trees, and only gathered as required, it lasts nearly all the year round; but Oranges left too long upon the tree in quantity, are liable to injure the fruit of next season.

It has been considered by some that the Orange has no

season of rest in Australia; yet I observe, when there have been two productive seasons in succession, the third is their season of rest. It is an admitted fact, according to the laws of nature, that a season of rest is absolutely necessary for the production of the finest fruits, as well as flowers; therefore, it must be erroneous to say that the Orange, or any other fruit, bearing tree, has no season of rest. I am free to admit that many of us too often overburden our trees by allowing heavy crops to come to maturity. As far as my experience goes in this colony, sufficient attention has never been directed to thinning fruit in its early stage. This remark I beg to apply not only to the fruit under notice, but to almost every variety of fruit-bearing tree in Victoria. I consider it not only indispensable to thin fruit, but also the flowers. I have no doubt I shall be met with the response that such a course will never pay, but one of the greatest authorities on this subject, Professor Lindley, observes that "the abstraction of fruits and flowers augments the vigor of the branches or of the parts connected with those, and that the removal of any part which takes up a portion o fthe food employed in the support of the flower or fruit increases their luxuriance." The knife should be as sparingly applied to the Orange tree as possible, and where trees have been properly managed while young, they require but very little cutting; for it is well known that the Orange is very sensible of injury, which it does not soon overcome: and instead of being pruned up with long naked stems, it should have its branches near the ground, so as to shade its roots. It is very desirable, also, that the heads of the trees should stand clear of each other, and that each tree should be considered a specimen, whose form and symmetry it should be of the utmost importance to keep perfect, and this can readily be done when no injury befals the trees by overcrowding. When the summer shoots have made some progress, they should be gone over, and all the strong ones pinched back to encourage the weaker ones; and at this time a few of the shoots will require thinning out. This operation should be frequently performed during the season of growth, and when the wood is soft. This practice assists the tree in two ways—it increases the size of the leaves left, and permits the wood to ripen much better than it otherwise would. In fact, it is impossible to enumerate all the advantages which would follow a more frequent system of thumb and finger pruning, not only to Orange trees, but to many other of our commoner fruits. Having paid considerable attention to this system, in Europe as well as in this colony, I am convinced that, if properly carried out, with the assistance of climate, it assuredly possesses advantage very superior to the indiscriminate and barbarous use of the knife so frequently observed in gardens and orchards, and to which much of the canker, gumming, and blight is mainly attributable.

The Orange, like most other fruit trees, is subject to the attacks of some enemy in the shape of insects. The odour of the flowers attracts an innumerable host of Lepidopterous insects, and the foliage affords food for caterpillars of the same genus, which, when metamorphosed into gaily painted butterflies, may appear pleasing enough to the entomologist, but not so to the horticulturist. The green aphis is very destructive to the Orange in dry seasons. The Coccus hesperidum, a native of America and Africa, and the Coccus adonidum, a native of Senegal, have already found their way to these shores, and are making havoc upon the Orange and Peach. The Coccus oleæ, a native of Italy, is also here, and commits the greatest ravages upon the Olive, and when it does attack the Orange is the most destructive of all. A disease, called "morfee" by the Italians, and "fumagine" in France, consists of a black crust which sometimes covers the trunks and branches of Orange trees, which if not soon removed causes the trees to become languid and barren. My experience goes to prove that this is not a special malady, but merely the results of attacks of coccidæ. Rich moist localities are most favourable to the development of these insects, and I observe that it is in these that they commit the greatest ravages. There is also an insect that feeds upon the Orange tree, resembling the "Tettigonia," or locust of the colony, but different from it in generic characters; it is the Cystosoma Saundersii of Curtis and Westwood, and is known in New South Wales by the name of the "Orange Locust." This insect is a native of the interior, and was first discovered by Sir Thomas Mitchell; since then it has become very numerous around Sydney, and no doubt will soon be too well known in Victoria. The larvæ of this insect live underground upon the roots of trees and shrubs, and in their habits and transformation resemble the common "Tettigonia," or locust of the colony. The perfect specimen appears in October, and is to be found some seasons until March.

Gishurst Compound has, however, done much to keep these pests in check. Some months since I had occasion to visit the garden of J. Carson, Esq., Kew. This gentleman very obligingly informed me of his method of operating, which was simply syringing, and occasionally dipping his trees in a solution of the "Gishurst," and I must say that I have very seldom met with cleaner and more healthy trees, and I believe Gishurst's Compound to be one of the most valuable discoveries to the gardener. I would especially call attention to this remedy, as I am sorry to see the coccus and aphis making such ravages in gardens where Orange trees are now coming into bearing, and also that the spread of those insects may be arrested before it is too late; for there are instances on record of hundreds of acres of Orange trees being totally destroyed in a single season. In 1843 so complete was the destruction by those insects, that at the island of Fayal (one of the Azores), the entire produce was lost from this cause alone. The usual exportation from Fayal was 12,000 chests annually, but in that year not a single chest was exported.

In my opinion, next to the Vine in importance is the Orange, and I have no hesitation in saying, that wherever the Vine is found to flourish in Victoria, so will Oranges. *Victorian Farmers' Journal and Gardeners' Chronicle.*

HUE AND CRY.

HAPPENING to look into some recent Catalogues of M. V. Houtte, I find that he offers Rubus japonicus at half a franc. This is probably the plant which your correspondent under this heading is so anxious to repossess.

Permit me at the same time to ask whether Erythrolæna conspicua is now in this country? Carter, some 10 years ago, told me that he feared it was lost, but Mr. Henderson had it on his Herbaceous List not more than three years since. *O. P.*

Home Correspondence.

Fruit Trees at The Hasells.—One would be almost inclined to think that the long and glowing article upon fruit tree culture, old and new, in your last impression, was written by, and intended to be the advertisement of, some person growing fruit trees for sale. Certainly the description of what was seen at The Hasells is most enchanting, and there can be but little doubt, after such an able article, that many will be induced to throw away an old and worthless system and adopt the new and profitable one. I do not say the account is exaggerated, or over coloured, nor am I of opinion that 17 large Pears is a prodigious crop, even for a small tree, but I should like, in justice to Mr. Dean's predecessor, to ask "T. R." if the fruit produced in the summer of 1862 was the production of fruit buds brought in the pocket of Mr. Dean in the autumn of 1861, and also if the splendid foliage, &c., so beautifully described, came out of the bones at the bottom of the pots; and if it did, had Mr. Dean's predecessor anything to do with placing them there, or must our faith be removed from the bones, and will Mr. Dean attribute the success to the two dressings of sheep manure. I do not think the manner of training or growing Gooseberries in pots is new, though the success attending their cultivation at The Hasells may have something of the marvellous about it. I do not intend to cast any reflections upon "T. R.," nor yet to rob Mr. Dean of his fame, and will only ask—is it quite fair to say so much against one man who has the management of fine bearing trees fresh from a nursery or elsewhere in the autumn of 1860, and so much in praise of one taking badly managed and sickly trees in the autumn of 1861; though perhaps after all the praise is not ill bestowed, for a man producing such prodigious results deserves at least to be highly commended. I am not attempting to justify the treatment or plead the cause of the old system or of the old man against the new; I know nothing of the men and only a little of the system; all I say is what Mr. Barron, in effect at least, said a week ago—let us live and let live. *Leek.*

Strawberries.—Mr. Gloede (see p. 1053) has sent you a very able article, but I hope another time when he refers to what I say, he will quote my words. I did not use the expression "all in all." The words in the 17th section of the article at the heading are, "the great English Strawberry." Then follows what will explain my meaning. "Were I asked, so far as my locality is concerned, which is the most accomplished Strawberry, combining with invariable good flavour all the talents, I should say at once, Rivers' Eliza. It is not quite equal to the Queen and some of her race; but it borders near the Queen in flavour; and, as to general attributes, it will beat her and her whole race put together. Such fragarians as Dr. Roden, of Kidderminster, and Messrs. May, Hector, and Ingram, of Blandford, my three kind neighbours, will grow the Queen with almost unerring success, their soils being suitable to her; but they are the only persons that I know who can year after year grow her Majesty. Mr. May never fails." By general attributes I mean hardy constitution, suitable to all localities, a heavy cropper, and certain; of excellent flavour, whether the character of the summer is wet and cold, or dry and torrid; of quick establishment, and an early and strong runner. I have had it in two torrid summers, two wet summers, and cold, too; and two Hyperborean winters, and I have never found it at fault. Moreover, it will begin to afford fruit as soon as it is eatable out of doors here, and will last as long as Strawberries are eatable without sugar. For these attributes, which will be found to be true, I called it "the great English Strawberry." Your fragarian readers cannot universally predicate all this of any Strawberry yet known. I cannot call any Strawberry the "great English Strawberry," which 95 people out of 100 cannot successfully grow year after year. *W. F. Radclyffe, Rushton.*

Muscat de Sarbelle Grape.—The description of the Sarbelle Muscadine Grape, copied from Dr. Hogg's useful "Manual," is one of the very few errors to be found in it. I account for it in this way. Several years since I received from Monsieur Vibert a Muscat Grape under the name of Muscat de Sarbelle. I was so much pleased with its high flavour and hardiness that I ordered from him 20 Vines. One of these I sent to the Chiswick Garden. I afterwards discovered that among them were two or three kinds; one of them a White Grape. A plant of this sort was, as I suppose, sent to Chiswick under the name of Muscat de Sarbelle. This bore fruit, and was seen and described by Dr. Hogg as a Muscadine Grape, he thinking that its name of Muscat was a mistake. *T. Rivers, Sawbridgeworth.*

Alstrœmerias.—"Experience," says Mr. Van Houtte in his Catalogue No. 94, "has proved to us that by planting these, viz., A. chilensis, aurantiaca, psittacina, &c., at a depth of 1 foot, they are perfectly hardy, and that they then flower better without any protection from cold than when sheltered in frames, &c." What a piece of good news for the future of our gardens! *N. B.* [Especially since it is true. *Ed. G. C.*]

The Black Muscat of Alexandria Grape.—This sort has for many years been a myth, for although mentioned in the Catalogue of the Horticultural Society, 1831, and described in the second edition of Dr. Hogg's Manual, it could never be met with. The mystery was solved by Sir Joseph Paxton at the International Show at Kensington, for he publicly, and when surrounded by a bevy of open-eared pomologists, declared that the Muscat Hamburgh was the true Black Muscat of Alexandria, which he well remembered being grown at Welbeck, 40 years or so since. He described it as being apt to grow small irregular bunches, and a Grape in those days rather difficult to manage, thus accounting for its going out of cultivation. We have therefore for some time past been welcoming an old friend with a new name; as shown at the International and at other exhibitions lately it must be considered a very fine Grape; it is a pity that its true and expressive name was not attached to it when it was raised from its state of oblivion. *Looker-on.*

Chasselas Vibert Grape.—Let me advise an "Old Subscriber" not to be too hasty in forming his opinion as to the Chasselas Vibert; it is a most excellent Grape, and quite worthy to be reckoned one of the best of our white varieties. I also was recommended by Mr. Rivers to plant it in my Hamburgh House. For the first three years I could do nothing with it, some of the berries being very small and some very large; the fourth year (1860), I carried off the first prize for White Grapes at the Crystal Palace with the Chasselas Vibert; in 1861 I carried off the second prize at the Crystal Palace with it. A gentleman living near me saw the bunches in my house and planted the same sort in his own; he bears the same testimony to its superior qualities. Last year I expected to have done wonders with it, but unfortunately dressed with the "bad brew" of Gishurst, when it was almost killed. I have another Vine of the same sort in another house, planted about three years since; the berries were some large, and some small as on the first Vine, that has made a cane from three feet to the end of the roof, and I have no doubt, now that it is well established, I shall have fine bunches next season. *A Constant Reader.*

Orchard House Ventilation.—As the season has arrived for orchard houses to be thought about, I beg to record my experience of the past year. My trees are grown in pots, in which they have been about five years, and they are looking remarkably healthy; but unfortunately when they were in flower in spring, rain and fog set in, and lasted until some of the Apricots had almost done flowering. The damp became so great that many of the blossoms got quite mouldy. Air was given on all favourable occasions, but to little purpose as far as getting rid of the damp was concerned, when suddenly the weather became clear, calm, and hot. Then a day or two of clear sunny windy weather would occur, making the ventilation, which I may remark is the same as recommended lately by "T. R." in your Paper, quite useless on the windward side and door at the end of the house, thus leaving the whole of the ventilation to be supplied by the four loop-holes at the back. Under these circumstances there was but little chance of getting rid of the intense heat within; the result was that the bloom came off like leaves after a sharp white autumn frost; in vain did I water, give air, and anxiously watch the few remaining flowers, hoping to see young fruit. A few unexpectedly swelled on some of the trees; in fact I may say that I had a full crop on a few of the trees, but the majority only bore about half a crop. The remainder, including the Apricot and Plum, had not a single fruit on them. I would therefore strongly recommend orchard houses to be heated with hot water, and to have movable lights on the roof; then damp might be got rid of, and the house kept at a proper temperature. *W. A. S.*

Alocasia and Caladium.—I should deem it a favour if you would tell me the Botanical distinction between these two genera. I have seen Alocasia metallica, Caladium Veitchii and C. Lowii, all good plants, the latter particularly so; both C. Veitchii and C. Lowii have that metallic appearance which seems to be characteristic of the Alocasia, and they are the only two Caladiums I know that have a bronzy aspect. I may add that I am not the only person in the dark on this subject, and I am sure that the information will be acceptable to many besides myself. *B. A.* [They differ thus: Alocasia has the spadix extended beyond the flowers into a blunt appendage; in Caladium the spadix is entirely covered with flowers.]

Zostera marina.—Besides the value of this in an economic point of view, I may mention that it is one of our most useful plants for aquariums, and one in which the circulation of the sap or vital fluid may be seen, as in Vallisnera spiralis and the Caras. I was induced to place the Zostera under a microscope, when the circulation in question became quite apparent. Allow me therefore to introduce it as a useful plant for microscopic illustration of the movement of sap. *W. Greenshields, Culzean Castle, Ayrshire.*

Societies.

ROYAL HORTICULTURAL: *Nov. 11 (Floral Committee).*—The chief feature of this meeting was Chrysanthemums, of which there was a good display. Of large-flowered sorts in pots, the best came from Mr. Ward, gr. to G. W. Fowler, Esq., Tottenham, and from Mr. Glover, gr. to R. C. Lepage, Esq., Brixton. The former furnished beautiful specimens of Annie Salter, Alma, Vesta, General Havelock, and Golden Christine; the latter contributed Trilby, Golden Christine, Alma, Vesta, Dr. Maclean, and Chevalier Domage. Mr. Turner, Royal Nursery, Slough, had Alma, Chevalier Domage, Hermione, Christine and its Golden variety, and Golden Trilby. From Mr. Salter of Hammersmith, came an interesting group, principally new kinds, to four of which Certificates were awarded.

In the class of three plants the best came from Mr. Ward, gr. to W. Fowler, Esq., who showed Defiance, Beauté du Nord, and Chevalier Domage. Scarcely inferior to these were Bouquet des Fleurs, Lucidum and Prince Albert, from Mr. Glover.

Of Pompones in pots the best by far were exhibited by Mr. Hutt, Halfway House, Hackney Fields, who sent immense flat bushes of Golden Cedo Nulli, a charm-

yellow kind with deep brown centre; Duruflet, Cedo Nulli, General Canrobert, Salomon, and a rosy coloured Seedling of great promise, to which a Certificate of Merit was awarded. Mr. Weston, gr. to G. W. D. Moreau, Esq., Clapham Park, furnished Duruflet, Andromeda, Miss Julia, General Canrobert, Cedo Nulli, and Attila. Mr. Turner sent Duruflet, Jessie, Cedo Nulli and its Golden variety, Salomon and Bob. From Mr. Ward came Miss Julia, Andromeda, Duruflet, Bob, General Canrobert, and Helena.

In the class of three plants in pots of Pompones the best came from Mr. Ward, who contributed Cedo Nulli and its Golden variety, and Requiqui. Mr. Hutt sent Cedo Nulli, Salomon, and Duruflet. The last-named exhibitor also showed some well-flowered specimens grown in the form of pyramids.

Among Cut Blooms nothing approached the size and beauty of Jardin des Plantes, a brilliant yellow kind in Mr. Bird's collection. The same excellent cultivator also sent Nil Desperandum, Dupont de l'Eure, Queen, Little Pet, and others, all remarkable for fine growth. Mr. T. B. Robinson, Islington, sent Queen of England, Plutus, Nonpareil, Lady Harding, Novelty, Boadicea, Jardin des Plantes, Beauty, Marshal Duroc, Dupont de l'Eure, General Harding, and Cassandra. Mr. Cattell, Nurseryman, Westerham, contributed Lord Elgin, Nonpareil, Cherub, Orange Perfection, Princess Mathilde, Sylphide, Jardin des Plantes, Queen of England, Duchess of Wellington, Aimée Ferrière, Favourite, and Yellow Perfection.

In the Miscellaneous Class, Mr. Cattell furnished Plutus, Miss Slade, Penelope, Duchess of Wellington, Rosette, Lady Margaret, Golden Hermione, Juno, Captain Boubays, Louis Bonamy, Ambrosa, Jardin des Plantes, Alarm, Lady Harding, Lady St. Clair, Bacchus, Emily, Glory, Beauty, Nonpareil, Aimée Ferrière, Pandora, Orange Perfection, The Globe, Lord Elgin, Princess Mathilde, Pio Nono, Cherub, Favourite, Grandpapa, Black Rifleman, King of Anemones, Novelty, Chevalier Domage, Trilby, Prince Albert, Elizabeth, Mrs. W. Holborn, Alma, Eclipse, Prince Consort, Queen of England, and Yellow Perfection. The same exhibitor also contributed various kinds of Pompones.

Mr. Standish showed some singular sorts, the produce of Mr. Fortune's visit to Japan. Among them were a white fringed variety, which will furnish admirable blossoms for bouquets; a large buff sort, and a red and white striped variety, which will doubtless prove the parent of quite a new race of Chrysanthemums. To some of these Certificates were awarded, which they well deserved.

Among other subjects was an interesting collection of Orchids from Messrs. Veitch, in which were the blue Vanda, the red and yellow-eyed varieties of Calanthe vestita, the rose-coloured C. Veitchi, and a charming plant of Cattleya labiata. From Mr. Bull, King's Road, Chelsea, came a variegated-leaved variety of Ophiopogon Jaburan; from Mr. Parsons a variety of Gymnogramma peruviana; and from Mr. Standish, a Tricyrtis, with white blossoms covered all over with minute violet spots.

Nov. 11 (*Fruit Committee*).—Of Apples and Pears a good many collections were contributed. Among Pears the best came from Mr. Bousie, gr. to Lord Taunton, Stoke Park, Slough, who sent Marie Louise, Knight's Monarch, and Glou Morceau. From Mr. Whiting, gr. to H. T. Hope, Esq., The Deepdene, near Dorking, came Winter Nelis, Marie Louise, and Duchesse d'Agoulême. Mr. Pottle, gr. to B. D. Colvin, Esq., sent good fruit of Glou Morceau, Duchess d'Angoulême, and Winter Nelis, and we also noticed some good dishes from Mr. Hill, Keele Hall, and other growers.

Of Apples the best were furnished by Mr. Whiting, who sent Braddick's Nonpareil, Eldon Pippin, and Cox's Orange Pippin. Mr. Bousie, who was next in point of merit, showed Braddick's Nonpareil, Golden Russet, and Cockle Pippin. Very good specimens also came from Mr. Newton, Enfield Chase, the Yorkshire local Committee of the Society, and others.

From Mr. Batger came a Seedling Pine Apple, which was stated to be good in quality. It weighed 3 lbs. 13 ozs.

Among Grapes was a novelty of considerable promise from Mr. Sanders, gr. to Sir H. Meux, Bart. It is stated to be a cross between the Syrian and Muscat of Alexandria; the form of the bunch is handsome and the berries fair sized, with a fine glossy appearance, but though excellent possessing no trace of Muscat flavour; it was named Royal Vineyard Muscat, and was awarded a First class Certificate. Messrs. Lane showed three bunches of Barbarossa ripened without the aid of fire-heat, as were also examples of Cranford Muscat Muscadine, exhibited by Mr. Graham. Mr. Pottle showed the Hubshee, a reddish-coloured variety, in shape not unlike the Black Manukka.

Nov. 11 (*Exhibition of Canadian Fruit, &c.*)—The most remarkable feature of this meeting was the wonderfully fine collection of Apples, &c., now on view in the Society's new Conservatory, from Canada, to which allusion is made in another column. These came from the neighbourhood of Lake Ontario, and are grown by the Hamilton Society of Practical Gardeners at the solicitation of Dr. Hurlburt, one of the Canadian Commissioners at the International Exhibition. Well may our transatlantic friends be proud of their Apples, which equal, and in some instances surpass even the very best English produce of that description. Magnificent as was the collection of Apples shown the other day from Nova Scotia, it is fully equalled by that under notice. True, we want the external beauty of the carnation-striped Chebucto, and one or two others; but on the other hand, no such Ribston Pippins have been shown in this or any other year, that we can remember, as those from Canada. They measure individually a foot in circumference, and are of a rich golden yellow hue, beautifully painted and streaked with red. Scarcely less astonishing, as regards size and general appearance, are the examples of Gloria Mundi and Fall Pippin, which the collection contains; the latter is not unlike the former in shape, but it is more yellow in colour, and has a tinge of red on the sunny side; the Gloria Mundi, on the contrary, is of a pale green colour, and covered all over with minute white specks, an appearance which it seldom or ever presents in this country. Of Catshead there are some fine fruit, as well as of Pumpkin Sweet, a large orange yellow kind mottled with red; Americaner, a conical yellow variety, red on one side; and Pound Pippin, a sort not unlike Nonesuch. Auchmar, a round small-eyed variety, greenish yellow streaked and mottled with red, measured a foot in circumference; what is called Hoary Morning appears to be Fearn's Pippin, but there is a beauty and delicacy of colouring about it which with us it never possesses; Bowrassa, which was stated to be a native of Canada, looks not unlike Royal Russet; it is, however beautifully covered with red on the sunny side. Swaar is a medium-sized green fruit; Vandevere a nice looking medium sized kind with a small eye and firmer, but otherwise something like Fearn's Pippin; concerning Golden Russeting, a small round Apple, it is stated that it will keep till July, and that it never rots; on the contrary it "welts" up, a character which its appearance fully bears out. Craigie's Graft is a conical firm variety and a reported good keeper. Esopus Spitzenberg is a high coloured conical middle-sized fruit, but in this instance scarcely up to the mark as regards brilliancy; Westfield Seek no Farther is a pale green round sort below the middle size, and dark red on one side; Fall Genetin, an irregular shaped Apple, is the variety hitherto known in this country as Fall Pippin; but in reality it is very different, and not nearly so handsome as the sort shown in the collection under that name. What is called Snow Apple appears to be the same as the sort named La Fameuse, a small glossy red kind with snow white flesh. Northern Spy is a conical green kind, slightly streaked with red. Colvert, pale green and round, specked and streaked with red; Sallman Sweet is a middle-sized, nearly white kind; Red Detroit is a dark red glossy Apple, of attractive appearance; as is also Jonathan, another glossy red conical variety; 20 ounce Pippin and 20 ounce Branch are different sorts; the one is pale green streaked with red, while the other is smaller, more conical, and darker in colour. Of the Baldwin there are large sized specimens, as well as of a sort called Carjuga, which measured 13 inches in circumference. The last is a red streaked, firm, good-looking Apple. A kind called Menagerie somewhat resembles Gloria Mundi, both as regards shape and size. Maiden Blush is a flat yellow sort, red next the sun. Of Blue Pearmain, the collection contains fine specimens; they are, however, a trifle smaller than fruit of that variety shown from Nova Scotia. Canada Reinette is a medium sized kind, streaked with red; and of Emperor Alexander and Blenheim Orange, more handsome fruit could not possibly be produced than those in the collection now under notice. Waggoner is a middle-sized pale green kind, red on one side; and of Lady Apple and English Golden Pippin there are some small fruit; the last, which appears to be the true old Golden Pippin, is not, however, so fine as it is now and then found in this country. The whole of the Apples just noticed have arrived in excellent condition, without speck or blemish. We however found all that we tasted much sweeter than the same sorts in this country, the hot summers of N. America being unfavourable to the formation of the acidity which renders our English Apples so delicious.

Pears do not seem to have fared so well; for some which are shown are greatly decayed. Among them are Louise Bonne of Jersey, Forelle or Trout Pear, the last beautifully coloured and speckled with red; Winter Nelis, Vicar of Winkfield, Beurré Bosc, White and Grey Doyenné, Swan's Orange, Easter Beurré, Beurré Diel, and Soldat Laboureur, the last the same as the B. d'Aremberg. These are all paler in the skin, and in most instances smaller than the same kinds grown in this country.

Of Grapes there are several dishes of fair size for out-door fruit; but all of them have the wretched foxy taste peculiar to most sorts of American Grapes. The sorts called Dalhousie and Ontario somewhat resemble Black Hamburgh, from which they appear to be crosses; the Isabella has a grizzly appearance; others consisted of Diana, Delaware, Hamilton Black, Sweetwater, Concord, Lincoln, and Rebecca, the last a white sort with egg-shaped berries, and better in flavour than some of the others.

Other subjects consisted of fruit of the Black Walnut, American Chesnut (Castanea americana), Haws of large size, Siberian Crabs, White Hickory Nuts, Quinces, and Capsicums.

Various examples of Cereals, Potatoes, Onions and Carrots, are also included in this magnificent exhibition of Canadian produce.

Notices of Books.

New Holland in Europe. A Lecture delivered in the Winter of 1861 by Dr. F. Unger, Professor in the High School of Vienna.*

New Holland is so totally different from Europe as regards situation, climate, animal and vegetable productions, &c., that the first impression on reading the title of Dr. Unger's lecture must be: *Que seut il en cette galère?*—what has New Holland to do with Europe? The wildest visions of the stoutest acclimatist can never contemplate under existing conditions of temperature and climate a large naturalisation of either plants or animals, though here and there a plant or two does manage to struggle through our more ordinary winters or even to lead a miserable existence when the cold is more severe. But the truth is Dr. Unger contemplates nothing of the kind. His lecture is directed to distant times, when vegetation wore a far different face from what it does at present.

He is not thinking indeed of the age of gigantic Club-mosses or Equiseta, when the Ferns or pseudo-Ferns predominated over every other vegetable form, but of the comparatively recent periods when the tertiary formations were deposited, and more especially to that epoch known as the Eocene or Aurora, the dayspring of more modern vegetation, when Phænogams in general began to wear somewhat of the same form as they assume at present, though the species and genera were very differently distributed in various portions of the globe.

Though several European species occur in New Holland, which, apparently, were not introduced by the agency of men, like some of those weeds, the Sheep Sorrel for example, which bid fair to usurp the place of many an indigenous species, the general character of vegetation in New Holland is quite distinct from that of Europe, and it can scarcely be said conversely that New Holland forms occur in Europe, as European undoubtedly do in New Holland.

The predominance of Eucalypti and Epacrideæ, the varied and peculiar forms assumed by Acacia and indeed by other Leguminous plants, the great variety of Proteaceæ, quite different from those of the Cape, the various Podocarpi and Casuarinæ, are all striking characteristics, while several other natural orders, as Atherospermeæ, have their maximum in New Holland.

Now a marked feature of the Eocene vegetation is the predominance of New Holland types accompanied by forms from other Antarctic islands. "Not only," says the Professor, "do we meet in point of fact with remains of various Myrtaceæ, but the genus Eucalyptus occurs amongst the fossils. Not only the remarkable leaves of many species are found, but their fruit also. The same is the case with the Epacrideæ, though only a single leaf bears witness to the existence in those ages of this widely spread family of plants. The Proteaceæ however are far more characteristic than the Myrtles or Epacrideæ of the Eocenic age. Not only leaves, but capsules and seeds occur, so that we are in a condition to recognise such genera as Banksia, Dryandra, Hakea, Embothrium, Grevillea, Lomatia, as also Persoonia and Petrophyllum. As the Proteaceæ bear a principal part at the present day in the peculiar shrubs of New Holland, so did they also in Europe, in the early tertiary period.

"There is however another circumstance of very great importance as giving a character to the vegetation of New Holland and the Southern Hemisphere, namely the presence of forms of Santalaceæ, of Anthoboli, and of the Monimiaceæ related to them. I allude here above all to the genus Leptomeria, of which two certain species occur at Häring in the Tyrol, and in the shale of the coal of the Lower Rhine. The Australian Cherry (Exocarpus) is nearly related to these leafless shrubs, which are almost miraculously preserved in the plant-impressions of Radoboj. Finally very characteristic fragments of Laurelia occur, a genus which belongs to New Zealand and the mountains of Southern Chili. All these, though sparing relics of the Antediluvian world, make it evident that the Flora of the Eocene had the stamp of Australian vegetation.

"What shall I now say of the Coniferæ, Cupuliferæ, Casuarinæ, Araliaceæ, and Leguminosæ, &c. Amongst the most frequent petrifactions of Sotzka and Häring are branches of Coniferæ, which most nearly resemble Araucaria. This genus, however, expressly belongs to the Southern Hemisphere, and three species are peculiar to New Holland and Norfolk Island. Podocarpus, Libocedrus, and Callitris, may also be regarded as examples of Southern forms, and specimens of these occur in all Eocene localities. Casuarinæ also seem to have had their representatives, though this is not quite certain. Moreover it is a remarkable circumstance that amongst the numerous fossil Oaks of the Eocene, one appears of the type which is peculiar to the Oaks of Java, while the evergreen Beeches of Tierra del Fuego, of Chili and Tasmania, probably existed also at the same period."

The Professor has given a complete list of the Eocene Phænogams so far as they have at present been satisfactorily referred to their genera, and these are for the

* Neu Holland in Europa. Ein Vortrag, gehalten im Ständehause im Winter des Jahres 1861, von Dr. F. Unger, Professor an der Hochschule in Wien. 1861. pp. 72. Woodcuts 19. Nature prints 41.

most part strictly analogous to species at present existent in New Holland or the isles of the Southern Hemisphere.

The question of course arises—what is the cause of this similarity? Is it to be attributed simply to a similarity of climate at the time when Europe possessed such a vegetation, or to the disappearance of intermediate land connecting New Holland with the continents of Europe, Asia, and Africa, and in the latter case have the plants migrated southward or northward?

In the present state of our knowledge of the Fossil Flora of intermediate countries, or in the absence of data which render such a disappearance probable, it is impossible to come to any very satisfactory conclusion; and it would be out of place to state at large the grounds on which Dr. Unger concludes in favour of the second hypothesis. He believes, however, that there are really indications of a subsidence in the existing land, and that New Holland shows indications of being an old country which has long since arrived at its present condition. Its geological peculiarities prove this. "In no part of Europe do such wide spread later formations cover the primitive strata, which are for the most part horizontal and undistorted. It has been subject to no dislocations since the time when it rose from the ocean, and in consequence its plains look like the bottom of the sea." In support of this view he quotes a passage from Sturt's two expeditions into the interior of Southern Australia. "The central space forms a large basin, in which there are stunted Pines and Eucalyptus scrub, amid huge fragments of rocks. It rises like an island from the midst of the ocean, and as I looked upon it from the plains below, I could without any great stretch of the imagination, picture to myself that it really was such. Bold and precipitous, it only wanted the sea to lave its base; and I cannot but think that such must at no very remote period have been the case, and that the immense flat we had been traversing is of comparatively recent formation."

He appeals also to the analogous agreement of the plants of the Eocene with those of North America, and to the tradition that there was once an intermediate country, Atlantis, which might in early days have been a medium of communication. Asia also seems to have contributed its quota, and thus the Eocene Flora appears to have been the result of vegetation travelling at once from three different quarters. The agency of the sea in transporting any large proportion of vegetation is very limited, as appears from the experiments instituted by Darwin and others with a view to show how long seeds could retain their powers of vegetation when immersed continuously in salt water. A small proportion only survived the trial, and these were principally seeds which had hard shells not easily penetrable by fluids.

The lecture is on the whole very interesting, and less transcendental than might be expected, though in parts sufficiently German. It is accompanied by nicely executed woodcuts of the leaves and seeds of fossil plants, and some admirable nature prints, such as scarcely any press save that of Vienna can produce, of similar organs for comparison from living plants or from herbarium specimens.

Garden Memoranda.

IMPERIAL PALACE AT LAXENBURG.—The Palace of Laxenburg was the favourite summer residence of Maria Theresa, Empress of Austria. It is about 12 or 14 English miles from Vienna, and is reached by the Southern Railway to Trieste in about three-quarters of an hour. The gardens cannot be much less than 200 acres in extent; they are quite flat, and are laid out in the English style; that is they contain long serpentine walks and numerous belts of trees and shrubs. On entering the gardens through the court-yard a very large area is covered with gravel; it is at least 200 feet wide, extending along the west wing of the Palace, a portion of which is filled with green-house plants, light being only admitted to them through ordinary windows. At the south-west corner is a fine Araucaria excelsa, planted in the open ground, and surrounded by Chesnuts, Elms, and Scotch Firs. It appears to be in very good health, and is just being covered up for the winter. A large framework made of balks fully 9 inches square at the bottom and about 7 inches at the top, is placed around the tree. Then an inner framework of lighter material, leaving an opening between the two of about 3 or 4 feet wide, this is filled up with leaves, after which the top is secured, and with this protection the Araucaria bears the winter in Austria, although much colder than that in England. In the south point and opposite the dining room and theatre a number of Chesnut trees are planted in a group for giving shade in summer; from this front the lawn stretches away to a considerable distance, bounded on the east side by high trees, bordered with low shrubs and flowers. A central mass of trees bordered with shrubs and flowers coming to a point near the house, and gradually increasing in breadth as it recedes, and a border of high shrubs on the west side, make up the leading features of this portion of the ground.

The flower beds are few but very large; near the Palace is a bed of Roses, 30 feet in diameter, consisting of summer blooming varieties; the centre of the group is about 12 feet high, dwarfing down to the edge, and around the outside is a border of common flowers; this doubtless has a fine effect when in flower. A large mass of Erythrina Crista-galli also blooms freely; between these two beds is a group of five Lombardy Poplars, all fine old trees. Great numbers of Roses in pots are plunged in a border close to the Palace in the south-east corner, and from this point starts a walk of considerable length leading to the plant houses and Rose garden.

The houses have dark roofs, and are upon a very limited scale. The principal range is about 115 feet long, and is divided into three compartments, the two outsides ones being each about 50 feet in length, and a central part or lobby is about 15 feet. One of these divisions is filled with greenhouse plants, principally New Holland kinds, and the other contains Camellias and Azaleas, placed as thickly together as the pots can stand. Three span-roofed houses, with glass roof for stove plants, each about 40 feet long and 20 feet wide, and two other houses for propagating, about 20 feet long, 15 feet wide, make up the sum total of the glass employed in these gardens. Associated with these is a Rose garden about a quarter of an acre in extent, laid out in borders on a geometrical plan. From this the visitor passes by means of a narrow walk to the top of the lawn in the south front of the Palace, which is separated from the adjoining fields by a narrow stream of water.

In this part of the grounds are numerous groups of trees and deciduous shrubs, together with here and there a small aviary of doves and other birds; in short, the whole features of the place bear considerable resemblance to those of an English park. On the south-west side of the garden is a fine lake of irregular outline, containing numerous islands planted with Poplar and Willow trees. On the side nearest the Palace is a large boat house, and a good back-ground of lofty trees, broken at intervals by a pretty bridge or some bald rocks on the other side, renders this a delightful retreat. On the lake is a large number of pleasure boats, and as this garden is at all times open to the public, it is the Sunday resort of the pleasure seekers of Vienna. On one of the islands is the Knight's Castle or Franzensburg, a picturesque building, and seen from all parts of the lake; it is built n the form of a feudal fortress of the middle ages, and is approached by means of a flying bridge. It contains quite a museum of antiquities, collected from old castles and suppressed convents in different parts of the empire.

On the borders of the lake are some very large Poplar trees, al-o fine specimens of Junipers and Arborvitæ; at the lower end, some distance beyond the Castle, the lake assumes the form of a canal, which takes away the overflow, and on the headland is placed an ornamental temple backed by trees, thus forming an agreeable object in the landscape. On the lake is a great number of swans and other water fowl.

From the top of the Donjon tower of the Castle a fine view is obtained of the lake with its numerous islands, and of the park with its fine old trees, bridges, summer houses, &c., also of the range of mountains not far distant that divides Austria from Hungary.

Passing out on the south of the old Castle a walk leads to the nursery or school for trees, as it is called in Austria. This is a long narrow garden, containing a large assortment of hardy trees and shrubs reared for supplying the Imperial domains; near this is a restaurant for supplying visitors with refreshments, and at a short distance away in the direction of the Palace a bridge crosses the canal that supplies the lake, on the right side of which is a nice cascade, whose waters fall down some 8 or 10 feet. In this portion of the garden are many groups of old Spruce trees, but they do not attain to a very large size. Beds of Deutzia scabra are of frequent occurrence at the corner of the walks.

A singular place here is called the Turnierplatz, a locality where tournaments are held by the young nobles and members of the Imperial family, and in a kind of corridor there are effigies of knights in full armour.

This garden must have a very barren appearance in winter, as must also have all the gardens of Austria, compared with those of England, on account of their want of evergreens, very few of our common kinds being hardy enough to bear the severity of the Austrian winter. This place was laid out by the Empress Maria Theresa, and has undergone but little alteration since. It is under the care of Mr. Francis Rauch. *E.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—At this season every effort should be employed to keep up a good display of bloom, for this house will now be used much more than when the weather is favourable for out-door exercise; its inmates, if attractive, will therefore be much more valued now than they would be at any other period. Azaleas which set their buds early will readily push into flower, if placed in a warm moist temperature, and some of the early-blooming Rhododendrons require very little forcing to bring them into blossom at any time after this season; therefore where there is a good stock of these, and Ghent and other hardy Azaleas, well set for bloom, a portion of the plants should be placed in heat at intervals of about three weeks, and as they are very showy and last long in beauty they will be invaluable. These, together with Camellias, Heaths, Epacrises, Acacias, Daphnes, Gesneras, Cyclamens, Cytisuses, Chinese Primulas, Cinerarias, Mignonette, Tree Violets, and other things which bloom naturally in winter, will afford a good display. Monochætum ensiferum is also an invaluable plant for winter decoration, but it requires a temperature of from 45° to 50°.

FORCING DEPARTMENT.

PINERIES.—The supply of ripe fruit from May until August being usually obtained from plants that start without making growth in sping, a fair proportion of the stock, as has previously been recommended, should therefore be in a well matured state by or shortly after this season, and any sudden changes of temperature which might induce too many of them to show fruit at once should be carefully avoided. Portions of the stock expected to furnish the autumn supply should not be too much checked at present, indeed these may be kept growing slowly all the winter, which is perhaps the most certain method of preventing their starting too early in spring. Where the plants likely to fruit without making farther growth are considered insufficient to meet the demand until August, the stronger plants of those for autumn fruiting should be encouraged to make growth as early as can be done without weakening the foliage, with the view of preparing them for starting in April.

FLOWER GARDEN AND SHRUBBERIES.

Valuable plants, as Variegated Hollies, some of the higher coloured finer varieties of Rhododendron, &c., if not growing as freely as it is desirable that they should do, would be benefited by a liberal allowance of well-decayed leaf-mould being applied as a top-dressing, covering it with a little fine soil and working it into the ground around the ball towards the extremities of the roots. Rose borders should be well dressed with manure, which should be forked in lightly so as not to injure the roots. Keep Grass free from dead spray from trees, well rolled, neat, and trim.

HARDY FRUIT AND KITCHEN GARDEN.

Apples, we find, are fast decaying everywhere this season; stores of them should therefore be often examined, picking out all that show symptoms of rotting. Any of the more choice varieties of Pears that do not ripen properly should be removed to a warm dry room for a few days, which will be found to greatly improve them. Keep all fruit as cool and dry as possible. If frost is excluded from the house it can scarcely be too cool, where the object is to preserve fruit plump and sound as long as possible.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.

For the Week ending Nov. 12, 1862, as observed at the Horticultural Gardens

November.	Moon's Age.	Barometer. Max.	Barometer. Min	Temperature of the Air. Max.	Temperature of the Air. Min.	Temperature of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind	Rain.
Thurs. 6		30.071	30.006	48	33	40.5	51	51	N.E.	[illegible]
Friday 7		30.238	30.138	44	30	37.0	51½	50½	N	[illegible]
Satur 8		30.277	30.267	50	40	45.0	50	50	S.W	[illegible]
Sunday 9		29.709	29.512	53	37	45.0	50	50	S.W	[illegible]
Mon. 10		29.352	29.331	49	28	38.5	50	50	S.W	[illegible]
Tues. 11		29.619	29.402	48	20	34.0	48	49½	N.W	[illegible]
Wed. 12		30.020	29.861	47	19	33.0	47½	49½	N	[illegible]
Average.		29.898	29.795	48.4	29.6	39.0	49.5	50.1	—	[illegible]

Nov. 6—Foggy; dense fog; rain at night.
— 7—Foggy; hazy; clearing; foggy; slight frost.
— 8—Foggy; hazy; overcast; fine; slight rain.
— 9—Uniformly overcast; heavy rain; fine; sudden fall of barometer.
— 10—Fine throughout; frosty at night.
— 11—Frosty; fine; clear; sharp frost at night.
— 12—Frosty; clear and fine; foggy; sharp frost.
Mean temperature of the week 4½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK

During the last 36 years, for the ensuing Week, ending Nov. 22, 1862.

November.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 16	48.4	32.7	40.6	13	0.34 in.	6	3	4	3	5	[illegible]	3	[illegible]
Mon. 17	47.4	33.9	40.7	17	0.38	8	5	3	1	[illegible]	[illegible]	[illegible]	1
Tues. 18	47.6	33.3	40.4	19	0.56	3	6	3	2	3	11	3	5
Wed. 19	48.5	33.8	41.1	16	0.87	1	4	4	4	3	12	2	[illegible]
Thurs. 20	48.7	35.0	41.9	13	0.35	1	7	2	—	6	[illegible]	6	[illegible]
Friday 21	49.3	36.8	43.0	22	0.41	3	5	4	3	4	11	4	[illegible]
Satur. 22	48.9	34.5	41.7	20	0.80	3	4	6	3	4	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 16th, 1840—therm. 62 deg.; and the lowest on the 22d, 1838—therm. 12 deg.

Notices to Correspondents.

BONES: *Mona.* A double handful of coarsely broken bones, mixed among the mould just over the drainage crocks.

GAS STOVES: *Hy B.* If gas is burnt outside a conservatory and is only employed to heat hot-water pipes inside the conservatory it does no harm. But if burnt inside a conservatory in the form of a common gas stove it is fatal to vegetation.

INSECTS: *E C.* The long Crustaceans from Hong Kong seem identical with our *Caprella atomos*, Leach (*acutifrons*, Desm.) The two Amphipods appear to be a new species of Podocerus. —*M J B.* The little beetle out of an old ham is Necrobia violacea, an insect which feeds on animal matter. *W.*

NAMES OF PLANTS: *Mona.* Strobilanthes Sabiniana.—*Anon.* Dr. Lindley has received a plant of Otacanthus cœruleus, and flowers of five very pretty varieties of Vanda tricolor. He would be glad to learn for what purpose these have been sent, and by what correspondent—no advice having accompanied them.

WAGES: *Sub.* A month's notice either way is sufficient.

MISC.: *A H.* The number is out of print, but you can have a copy of the coloured plan.

MESSRS. WAY AND EVANS, ANALYTICAL CHEMISTS, have REMOVED their LABORATORY from ... Street, Cavendish Square, to 106, Leadenhall Street, E.C., where all Letters and Samples for Analysis should be addressed.—Nov. 15.

AGRICULTURAL and CHEMICAL COLLEGE, 37 and 38, Lower Kennington Lane, London, S. ASSAYS and ANALYSES promptly attended to by J. C. NESBIT, LANSDELL & Co.

AGRICULTURAL and CHEMICAL COLLEGE, KENNINGTON.—Manufacturers and others engaged in ... Artificial Manures may obtain every necessary instruction ... their economical and efficient preparation by applying to J. C. NESBIT, LANSDELL & Co., 37 and 38, Lower Kennington Lane, London, S.

Analyses of Soils, Guanos, Superphosphates of Lime, ... and Assays of Gold, Silver, and other ... &c., are executed with accuracy and despatch.

... Gentlemen, Farmers, or others, desirous of practical knowledge ... Chemical Analysis, or Assaying, may receive instruction at the College, where the extensive Laboratories give ... facility for pursuing their studies, and there is accommodation for a limited number of Resident Students.

... particulars of terms will be forwarded on application.

EXHIBITION of DOGS.—The THIRD GREAT ANNUAL EXHIBITION of SPORTING and other DOGS will be held in Paradise Street, (near Bingley Hall,) BIRMINGHAM, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4.—the Week of the CATTLE and POULTRY SHOW in Bingley Hall. For special Railway arrangements see the advertisements and bills of the several Companies.

Sixty-fourth Show of the Smithfield Club.

THE SMITHFIELD CLUB, CATTLE, and IMPLEMENT SHOW for 1862 (removed from Baker Street Bazaar), will be held at the NEW AGRICULTURAL HALL, near the Angel, Islington, on the following days:—

MONDAY, December 8, Opening Day, Admission 5s.
TUESDAY, December 9, 1s. | THURSDAY, December 11, 1s.
WEDNESDAY „ 10, 1s. | FRIDAY „ 12, 1s.

Open from 8 o'Clock A.M. to 9 P.M.

Western Entrance (by King's Cross and Pentonville Hill), Liverpool Road. By this direct road Carriages avoid the Toll ... Eastern Entrance, Islington Green.

The Cab Fares from the Railway Stations are as follows:—From Great Northern and from the Highbury Station on the North London, 6d.; from the London and North Western, or Great Eastern, or Fenchurch Street or London Bridge Stations, ... South Western, 1s. 6d.; from the Great Western, 2s. ... Omnibuses from London Bridge and the City, Kennington and Blackfriars, Westminster, Chelsea, Brompton, Paddington, ... journeys up to 9 P.M., either past the Angel or past the ...

Tickets for Admission the Opening Day, Monday, December 8, price 5s., with a Map of the Route to the Hall, to be had of Mr. MITCHELL, 33, Old Bond Street, W.; Mr. SAMS, 1, St. James's Street, S.W.

The Agricultural Gazette.

SATURDAY, NOVEMBER 15, 1862.

A PIECE of land has been cropped year after year with corn, or with grain crops and Potatoes. The produce has been annually sold off, and no sufficient manuring in its place has been applied; by and by the straw and haulm grow less luxuriantly, a stinted yield of every kind ensues, and at length the land is pronounced exhausted—neither Wheat nor tubers worth the harvest work required to house them being forthcoming from the seeds or sets that are annually planted.

This is a common enough experience; most districts give examples of cross-cropped worn out land. Baron LIEBIG says all England is an example illustrative of the process. It yields an annual produce which, along with much imported food, is consumed within our towns. The manure derivable from this consumption, instead of being returned to the land whence its raw material was obtained, is sent to waste. And this is more and more the case, as Sanitary Commissions and town drainage complete the work of clearance, leaving nothing for the scavenger or dung-cart to collect. He says the process of exhaustion thus effected would have had as obvious results upon the great scale as it has in many a special instance, had there not been as regards England generally a compensating process in operation. Were it not that bones are collected from both hemispheres for an enormous manufacture of artificial manure, and that guano to the extent of millions annually is imported from the ends of the earth to supply the wants of her soil, Great Britain generally would exhibit obviously enough the very same decadence of fertility which is shown on many an individual farm as the result of wasteful carelessness of its home manures.

At present no such sign of any exhaustion of her soil is apparent, but that is because, as her friend the German philosopher declares, she is fattening "as a Vampire" on the life blood of other countries.

Now it is plain that the process thus complained of is the result of the natural law of exchange which necessarily rules. When the bones which Baron LIEBIG declares to be the life-blood of the countries which export them are found by the exporter to be more valuable than the money or our goods which our merchants offer for them, the traffic which he condemns will cease. And when, owing to an increasing difficulty of obtaining bones and guano, the prices of manure have risen high enough, then speculators will be found bold enough to try the expensive experiment of applying London sewage to agricultural uses. It is, in the meantime, fortunate for the next body who may attempt to deal with the question, that it is being sent to waste as a mere nuisance—that in the most unphilosophical manner possible it is being treated not merely as worthless but mischievous. There may be a possibility under such circumstances of this expensive experiment being made. And we hope that Baron LIEBIG's protest against England's folly and England's robbery of the nations to make up for her own reckless waste may help to quicken some of the schemes for saving town sewage which have hitherto proved abortive.

WHAT are the duties of a farm bailiff? Mr. FINNEY, in his clever "Hints to Landlords and Tenants,"* tells him that he must always "think before he acts"—that he must never say "don't know," "can't do it," "never saw it done," &c.—that he must set out the work of every man the previous night, and enter time and labour daily in the labour book—that he must see daily to the condition of implements, and of the live stock both of the stable and feeding houses—above all, that he must see carefully to the observance of all the rules and regulations which his master has laid down. Let us add to all this that he must not only record how the time and money in his trust are spent, but he must see to the full value being obtained for them. He must not only record that SMITH and BROWN have six days' wages coming to them on pay night, but he must see from hour to hour that they have fairly earned the same by industry and labour—not only record sales and purchases, but take care that both are guided by good judgment and by sole regard for the master's interests.

A bailiff has a trust, of varying extent to discharge—sometimes he is, in point of fact, himself the master, having to present his valuations and accounts but once a year; in other cases he is a mere head man whom the master chooses to state his orders to the others merely to avoid the trouble of giving them to each man separately himself. And between these two extremes there is every stage upon the scale of varying independence and responsibility. In the very lowest rank of the class, however, there is opportunity of doing great service or great injury by the temper in which the duties of the position are discharged. And as we rise in the scale, this moral quality of the man—his temper, resolution, honesty—retains its paramount importance. The main end of the business, no doubt, is so much profit per annum, but as it is found in the great battle of life, that remuneration is in proportion rather to a man's ability and address in his dealing with his fellow men than to his knowledge or skill in dealing with mere matter, so it is in farming. Profit is made by the power of securing the willing work of labourers quite as much as by the power of directing it. In addition to the mere knowledge of cause and effect as cultivators observe them in the field and homestead—in addition to knowing how they must be directed in order to the desired end, there must be that power of kindly command which secures the services of willing labour in the required direction. Besides, in short, an acquaintance by experience with all the details of farm practice, there must be a power of enlisting the goodwill and directing the labour of willing men.

Of course there must be also skill and honesty and goodwill in the market-place, as well as in the field. When you have all this—good-temper, honesty, industry, and promptitude, the power of command, and all the knowledge and good judgment which the nature of the business needs—then you have a man thoroughly equipped for the direction of any business whatever, and for any stage whatever of independent direction in that business. Among other offices which he could perfectly well fill, is that of a farm bailiff.

And he would deserve the highest remuneration which the extent of his operations, the quantity of money and of labour which he has to superintend, will justify. A bailiff on a small glebe farm, and a bailiff over the home farm of an amateur and noble agriculturist, may need qualities and abilities of the same order, but the one may be well paid by a guinea a-week, while the other may perhaps reasonably look for 200*l.* to 250*l.* a-year. Now it so happens that we have an excellent and well paid bailiff's place to fill. We doubt not this announcement will bring in many applications. To save the labour of answering inquiries individually, we do so once for all in this place. And to save both labour on our own part and disappointment elsewhere, we may as well say that if any correspondent on the subject does not within a week receive a reply to his communication, he must understand that an agreement has been already made with another man.

The property is upwards of 700 acres in extent. There is more than the ordinary routine of farming carried on, and there are thus several independent departments of labour superintended each by its own foreman. Here is one of the leading difficulties of the position. These men may help one another and the whole concern materially by being helpful and on good terms, or they may damage one another and the concern among them by disputes.

Perhaps as a leading difficulty it should be also added of the farm bailiff who is wanted, that while by his power of directing the labour of the farm he would virtually be the leading man of the whole establishment, yet this would only be by his power of thus helping those other departments which are essentially independent of himself. Add to this that the head of the establishment is by force of circumstances unable to give so much personal superintendence and control (except by the last resort of dismissal) as so large a business demands—and it will appear that a person of somewhat unusual acquirements is needed for the place. He must be young enough for the activity and vigour which his arduous duties will require, and old enough to be guided by experience and good judgment. He must have the genial temper and strength of character which both his position among his colleagues, and the direction of quite an uncommon number of labourers, will require. He must have experience and ability as a marketman, as a stock farmer, as a cultivator, and as an accountant.

Of course he must have that industry, promptitude, and honesty without which all his other qualifications would be valueless. If any one wishes for the place he had better write to the Editor of the *Agricultural Gazette*, 41, Wellington Street, Strand, W.C., writing the word "Bailiff" on the envelope, stating what testimonials he can give to his qualifications or experience in the different particulars we have named, and saying what remuneration he expects.

* Ward & Lock, Fleet Street.

THE EXHAUSTION OF THE SOIL.

JUSTUS LIEBIG, the celebrated professor of natural philosophy, is now publishing in the *Bavarian Gazette* a new introduction to his "Agricultural Chemistry," which is just on the point of making its appearance in the seventh edition. I extract the following ominous predictions respecting the agricultural future of Europe, and England more especially, which, I should think, cannot have too wide a circulation, in order to be examined by the largest number of minds, and have its probabilities tested to the utmost by the practical good sense of the English professional public:—

"Exhaustive agriculture (Raub-Bau), which renders the country a desert, and makes it unfit for human habitation, may be described in a very few words. On a virgin soil, and during the first period of its subjection to the plough, the farmer sows his corn year after year in the same ground. When a deterioration of the crop becomes visible, he passes on to another field. As population increases, this extension becomes more and more limited, and the farmer is confined to one and the same plot, different portions of which are successively left to lie fallow for a time. The yield goes on decreasing year after year, and the original fertility is now sought to be restored by the artificial resource of manures. The meadows are gradually absorbed in the process, and the three-field system introduced. But as these resources do not hold out for ever, the production of manure by the cultivation of fodder becomes a necessity. The lower depths of the soil are used for the rearing of plants originally confined to the meadows, until at length these, too, are exhausted. Peas are first employed for this purpose; Shamrock (Clover), Turnips (Rübe), and Potatoes then follow in disastrous succession. At length cultivation becomes impossible; the soil being no longer able to produce crops. This is a process that may extend over many hundreds of years, and in some cases even up to a thousand. At length the exhaustive effects of his labour reach a point when they become too clearly visible; expedients are then resorted to one after the other, each of which recognises the deterioration of the soil.

"English agriculture will best exemplify the disturbance of nature's economy on the part of a highly civilised nation. In the last quarter of the 18th century was commenced the importation of bones into England, which continues uninterruptedly to this very day. The importation of guano began in 1841; in 1857, 286,000 tons were brought to England, while the

average importation of bones had risen to from 60,000 to 70,000 tons a year. One pound of bones produces in three seasons 10 lbs. of corn, while 1 lb. of guano in a course of five years makes 5 lbs. of corn. It may be supposed, without danger of falling into a mistake, that in the 50 years between 1810 and 1860 4,000,000 tons of phosphates have been imported into England in the form of bones, Linseed cakes, Rapeseed, &c. These, in the same time, have produced 40,000,000 tons of corn, sufficient for the sustenance of 110,000,000 of people. Supposing that, from 1845 to 1860—that is, in 15 years—the English fields have received an addition of 15,000,000 tons of guano; the corn produced by this artificial manure must be estimated at 7,500,000 tons, sufficient to feed 20,000,000 of people. Again, it is self-evident, that, if the phosphates imported since 1810, and the guano fowarded to England since 1845, had not exhausted part of their productive power by employment upon the fields, these fields would have possessed in 1861 the essential conditions for the production of food for 130,000,000 of people. But with this calculation must be contrasted the astounding fact that Great Britain is not even able to produce the amount of food required for its 29,000,000 of inhabitants. The introduction of closets into most parts of England results in losing annually the material capable of producing food for 3,500,000 people, the greater part of the enormous quantity of manure annually imported by England being regularly conveyed to the sea by its rivers, and the crops grown not sufficing to feed the ordinary increase in the number of its inhabitants.

"Although not in the same proportions as in England, the same process of self-destruction is going on in every European country. In all the greater towns of the Continent large sums are annually expended by the authorities in order to make the material requisite for the improvement of the fields unattainable to the farmer. In Bavaria, for instance, one of the richest and most fertile countries of Germany, the average crops of the Danubian districts, although proverbially abundant, have been found to decrease year after year, and are already inferior to those in the Palatinate. To form a correct notion of what is shortly in store for Bavarian agriculture, it may be sufficient to mention in this place that a single factory at Heufeld, in the course of last year only, exported 750 tons of bone powder to Saxony, where its value is, no doubt, better understood than here. For 25 years past the exportation of phosphates from Bavaria has steadily increased, and the figures just given for the Heufeld factory are only a small fraction of the entire amount. In Munich alone 1250 tons of bones are annually procured, which for the greater part are exported as fast as they can be obtained; and I believe I am right in estimating the sum total of bones exported from Bavaria at something like 6000 thalers a year. Large as this quantity may appear, it is yet no more than what is imported every two years into the one district of Bautzen, in the kingdom of Saxony. With each cwt. of bone powder, however, the essential conditions for the reproduction of 2600 lbs. of Wheat are withdrawn from the Bavarian fields, thus running up the annual loss of corn to 150,000 tons. Still the loss in this particular is only a small fraction of the agricultural requisites wasted in the towns by the supineness of the authorities and the indifference of the inhabitants. For centuries past considerable wealth has accumulated in Bavaria from the exportation of corn—the country, in accordance with a law of nature, losing in the value of its soil what it gains in silver and gold. It is asserted that even now the annual crops of Bavaria exceed 34,500,000 cwt., which is the amount required for the sustenance of its population; but I believe that if the statistical data collected were more exact than they are, the boast would appear to be founded upon an error. At all events, it is impossible for the surplus production to continue for any length of time, the diminution beginning directly upon the attainment of the extreme limits. The preservation of prosperity in a country essentially depends upon keeping open its sources, and Bavaria, as an agricultural country, is, more than any other of the German provinces, interested in maintaining its fields at the due standard of fertility, which, as I have said, is very much the reverse of what is actually the case. The greatest danger in all these things is to ascribe any value to the opinions of the farmers themselves, many thousands of whom are neither able to judge the qualities of their soil nor to account, correctly and scientifically, for the results of their cultivation.

"There is nobody knows the sum total of nutritive element in the soil, and it is but thoughtless to suppose it to be inexhaustible. What the soil really includes, I repeat, nobody knows; though what it yields every one may easily ascertain for himself. The great object in view is not to extort the greatest possible quantity out of the soil, but to learn to economise our resources. A boy may calculate the amount of productive power left in a field after 100 years, even though only one-half per cent. of its original value should be annually taken out of it; but the addition of this half per cent. a year, if he would learn to provide for it, would make it yield the same crop for another hundred years, and, in fact, for an unlimited time. Supposing only one-fourth of the essential conditions for the reproduction of corn to be annually lost in Bavaria, the sum total of this deficit in a hundred years amounts to no less than 860,000,000 cwt. No land is rich enough to make up for its waste after a certain time; and even though it were sufficiently wealthy to purchase all the manure required for the purpose, there would be no market at which it might be obtained. It is all the more difficult to employ the right medicine against the chronic malady eating away the heart of the European populations, inasmuch as the patient does not believe in the existence of the disease. The populations of Europe resemble a man suffering from consumption, whose looking-glass offers him the deceitful image of health, and he only complains of a feeling of fatigue in his limbs. The agriculturist of the day equally complains of some little fatigue in his fields; but for the rest, considers them sound in wind and limb. The consumptive patient thinks that a little wine would restore him to his former condition; but, if he takes it, the progress of his malady is only accelerated. The agriculturist of the day being equally of opinion that a little guano would do his fields good, in most cases only brings them nearer the day of utter exhaustion. Years pass by before an insolvent husbandman may be actually obliged to declare bankruptcy; and it is not before he has impoverished all his friends and relatives, and carried his last silver spoon to the pawnbroker, that he abandons the deceptive hope of a change for the better. The gradual reduction of the peoples of Europe to a condition of impoverishment and depopulation is also a slow process, going on for centuries, and requiring centuries for its ultimate consummation; yet, the day is marked down when, in all European countries, the children will experience that they have to suffer for the sins of their fathers. No nation has contrived to continue its existence, unless it knew how to preserve the conditions physically essential to its sustenance; and all those countries of the globe, where the fields had not had restored to them by the hand of man the elements necessary for the return of the crops, we may follow in their downward course from a period of the densest population to the ultimate condition of barrenness and desolation. It is vain to hope that a field in Greece, in Ireland, Spain, or Italy, which is known to have once yielded abundant harvests, will ever return anything like them, even though subjected to the highest cultivation. Emigration from Ireland must continue for a century longer, and never will it be possible for the population of Spain or Greece to exceed a certain and very limited number. Great Britain deprives all countries of the conditions of their fertility. It has raked up the battle-fields of Leipsic, Waterloo, and the Crimea; it has consumed the bones of many generations accumulated in the catacombs of Sicily; and now annually destroys the food for a future generation of three millions and a half of people. Like a vampire it hangs upon the breast of Europe, and even the world, sucking its life-blood without any real necessity or permanent gain for itself. It is impossible to imagine that such a sinful disturbance of the divine order of things should be allowed to go on for ever with impunity; and the time will probably arrive for England, earlier even than for the rest of Europe, when, with all its wealth in gold, iron, and coal, it will not be able to re-purchase the thousandth part of those essential conditions of life so frivolously wasted for centuries past. I am fully conscious that nearly all practical agriculturists insist upon the implicit correctness of their methods, and that they are all filled with a belief in the permanent fertility of their estates. This circumstance it is which makes people so indifferent to the future, so far as it depends upon the produce of agriculture; and thus it has probably been with all nations who have brought about their extinction by their omissions and commissions. No political wisdom will be able to protect the States of Europe against a similar fate, unless both peoples and Governments should be at length prevailed upon to pay a due amount of attention to the growing symptoms of an impoverished soil, to the solemn warnings of history and science." *Daily Telegraph.*

STEAM CULTIVATION.

Highway Farm, near Maidenhead.—On this and an adjoining farm, occupied respectively by Mr. Gillett and his son, and extending in all over 570 acres arable, Howard's steam cultivating apparatus has been at work for a year.

The land is a good and fertile loam, in some places adhesive, and elsewhere more gravelly and flinty, everywhere overlying chalk, and thus having the best possible natural drainage. It is cultivated at the will of the tenant, and is almost exclusively a corn farm, everything being grown for sale—and large quantities of manure being purchased. The usual rotation is of five years:—1, Wheat; 2, Barley or Oats; 3, Clover and seeds; 4, Barley or Oats; 5, Turnips, Mangel Wurzel, or Rape. A heavy dressing of dung is put upon the Clover, and upon the land which has borne roots, (if they have been sold off it); a dressing of guano or nitrate of soda is laid upon the second corn crop after the Wheat, and the green crop is grown with superphosphate. There is, in the fallow crops, and in the extra autumn tillage needed when one corn crop succeeds another, a good deal of tillage work to do upon the farm. Accordingly 12 horses used to be employed on the Highway Farm, which contains 270 acres of arable land: the number now is 7. The number of horses formerly kept upon the adjoining farm, of 300 acres arable, was 13: the number is now 9. There is thus a saving of the cost of nine horses on the whole by the use of Messrs. Barrett & Exall's 10 horse-power engine and Mr. Howard's steam cultivating apparatus. It consumes 10 cwt. of coals a-day, and the weekly wages of the attendants are costly—the engineer at 14*s*., one windlass-man at 13*s*., and 5 other men at 12*s*., viz., two anchormen, two attending to the rope porters, and one ploughman. In all the wages amount to 4*l*. 7*s*. a-week, and the coals to about 1[illegible]*s*. per day. To this add water carting, horse, and boy, 4*s*. or 5*s*. per day, making about 9*l*. 10*s*. a week, or 32*s*. a day. Of deep and thorough cultivation no more than 4 acres a day may be done. When I saw it at work three weeks ago the cultivator had been set with its three teeth as wide apart as possible to grub a corn stubble, the field being as hard as drought could make it. The three teeth thus each dug its own small trench, and the field was scored over in this way at intervals of about 15 inches. The work was crossed with the same implement; and 19 acres had been cultivated in the day. This was done very rapidly at the rate of at least 14 to 20 acres a day, less than 1*s*. an acre for coals and about 1*s*. an acre for wages for one-way work. This was of course very imperfect work—but however imperfect it is infinitely cheaper than anything of the kind could be done by horses or by hand.

The engine has been at work on the two farms for rather more than a year. Mr. Gillett's farm lies open and level, with few hedgerows and no timber in the fields. A good coach road divides it. And a capital farm-house and homestead stands in the middle of it. Capital young Clover, clean stubble where not already broken up, and good root crops, indicate the good management of the land. Mr. Gillett is satisfied with his experience in steam cultivation, and is able from it to recommend its adoption on all large open arable lands, which by their heavy clayey character involve excessive horse labour.

So long ago as November, 1861, he could say in a letter to Mr. Howard about his apparatus:—

"Having worked it constantly through perhaps one of the most favourable autumns that it is probable I may ever experience, and performed an amount of cultivating I was scarcely justified in expecting, I am now in a position to inform you the result. I obtained your apparatus early in August, and set to work cultivating the first piece of Wheat stubble immediately after it was clear of the crop. I commenced working without the assistance of any of your staff, depending upon my own experience from what I gleaned when with you, and the performances I had witnessed elsewhere. I have gone on and effectually cultivated 84 acres an average depth of 8 inches as the first process of breaking up. A portion of it has been cultivated a second time, this I call 52 acres, and 8 acres a third time, making a total of 144 acres on the Highway Farm. I have a son farming near here on a farm called Lane Farm. I sent the apparatus there immediately I could spare it for his use, and he informed me he has cultivated 72 acres the first time, and 28 the second, making a total of 100 acres, and this without any breakages. I consider my commencement a great success; I am so satisfied now I have experienced its advantages that I would not be without the apparatus if the cost was double the amount.

"I have endeavoured to ascertain the exact cost per acre, and I find it to be 6*s*. 6*d*.—this includes per centage on capital, wear and tear estimated at 25 per cent., and cost of manual labour, coal, water, and oil. On this basis I find the daily cost of working it to be as near as possible 45*s*. a day, and the average of work performed is from 7 to 8 acres. This estimate I am satisfied will cover all expenses."

I fully agree with you that land should never be found in such a state as to impede the progress of any steam-drawn implement, or that the word "choke" should ever be found in the vocabulary of the farmer. Yet, if we look around, on all sides we may see acres upon acres of stiff clay soil (and some of the lighter ones also) in such a deplorable condition from Couch and other noxious Grasses, that it would appear to have been the object to have grown as large a crop of weeds as was consistent and possible with an equally small amount of corn.

It is a humiliating, but none the less remarkable, fact, that in spite of our great agricultural improvements, to use the fashionable phrase, we find ourselves with probably a deficient Wheat crop, and the land generally in so foul a state, that I think I may venture to assert the like has not been known for many years past. I am willing to admit that owing to the humid and low temperature of the past three years, the cleaning process has been difficult, tedious, and expensive, and after all very imperfectly performed, and that the seasons will ever exercise a preponderating amount of influence on the crops; but that such an imperfect state of tillage cannot fairly be ascribed to the unkindly nature of the same, may be inferred from the fact of many farms standing out in bright relief from such a dreary state of cultivation. The average yield has not suffered in the like proportion, neither has the land

become so foul as to render the toilsome, laborious and costly fallow once more a matter of necessity.

Such, then, being the condition of a vast extent of land at the present time, let us suppose that a new power has been brought to bear upon our unmanageable clay soils, and the owners and occupiers are indeed "to be congratulated."*

When the attempt was first made to apply steam power as a means of locomotion, it was supposed that the motive power as applied to the driving-wheel would propel the vehicle, or carriage, or engine, at a sufficient rate of speed to attain the desired object on common roads. The resistance of the soil, however, was found to be so great, and the wear and tear caused by the excessive friction so expensive, that the attempt in that way was abandoned, and given up when it was ascertained that sufficient resistance power existed between the metal iron rail and the wheel to prevent the skidding of the latter. This being in conformity with the laws and rules of steam power, the solution was at once made easy. In like manner, after the lapse of many years, numerous and oft-repeated attempts have been made to yoke on this power for the purposes of tillage, all worthy of attention, though accomplishing but little towards the end in view; until we have arrived at the present day with the rival systems of the Messrs. Fowler, Smith, and Howard, in full force for our study and investigation. As all our attempts at cultivation have but one end in view, viz., the creation of a perfect seed bed, let us take a plain and common sense view of the subject; and as some one said the other day we were still at the first letters of the agricultural alphabet, for the sake of conformity take this humble view of our past experience, and learn a simple lesson from Nature's powerful but expressive teaching. What more beautiful specimen of perfect tilth can be found than in the stubborn clod reduced by the action of the elements. What can it possibly signify in what way this soil be exposed to the pulverising action of the frost, or the combined and fertilising influences of atmospheric agencies; we have only to take time by the forelock, and be in advance of the seasons, instead of being nearly always behind, and the work is done. But no, this is contrary to the system of our forefathers, and the long established custom of horse culture, and we must harness our new implement with all the trappings incident to such a state of culture, and so long as this is done and the old form of the plough kept steadily in view, with its accompaniments of clod crushers, rollers, drags, harrows, &c., attached as a "drag" for steam, no very great progress will be made, or any very profitable result be derived from the application of this modern but still efficient power.

I am conscious that I am but advocating the principles so strongly laid down and brought to full maturity by the successful practice of the founder of the "Woolston" system, and the great secret of whose success will be found to have arisen not only in having hit upon an effective implement, but simultaneous with such discovery, cut out the process for the subjugation of our heavy clays, on what may justly be styled the model system. I wonder when we shall cease to look at the neat and well turned furrow slice, and give prizes for well cultivated farms. In what respects do I already begin to reap the benefit from becoming a convert to the system. The Wheat seed time, hitherto always backward, and frequently left over unfinished till spring, now promises to be in a month earlier than usual, and the young plant is showing, a fact of immense importance in a cold and plastic working soil; and according to annual custom it would have been necessary to have additional horse strength to replace those that are aged and wearing out, but the carters and ploughmen hear for the first time and to their astonishment that instead of doing any such thing I intend to dispense with some, and yet have taken additional land. They cannot see how it is to be done of course—and what matters it? I am content, and can well afford to dispense with all argument on the subject, and begin to feel, whilst bearing the full burden and expense, more like the master of a farm.

The steam-cultivator having levelled the long-established system of ridges and furrows for the purpose of taking the water off the land as it is termed, and shattering to some extent the subsoil, I certainly shall not attempt to re-open them with the plough, as I believe the water will soon percolate through the soil and to the drains, as was intended, although, as in all new customs and processes in farming matters, a failure is inevitably predicted. Having thus dispensed with the plough, the field is sown prior to the recent rains, upon a fine, firm, and well granulated seed bed, but it has not been "turned over." *W. S., Guildford.*

HISTORY OF AUSTRALIAN WOOL.

THE following is a copy of a letter from Sir Joseph Banks to Captain Waterhouse, R.N., relating to the introduction of Spanish sheep into New South Wales:—

"Soho Square, July 8, 1806.

"DEAR SIR,—I much wish to procure accurate information respecting the introduction of the Spanish breed of sheep at Port Jackson, from which so much is expected, and some good will I have no doubt be in time realised.

"From Captain Kent I have heard that there were 26 in all at the Cape, the produce of four ewes and two rams imported from Spain by Gordon, that you and he joined in the purchase of them, giving 4*l.* a piece, and each took 13 on board your respective vessels; that you were successful, and brought the most of yours to Sydney, but that the most of his died on the passage; that he sold one ram to Captain Macarthur for 16*l.*, and that the Captain bought two more of Lieut. Brathwaite.

"Will you be so good to me as to recollect, as well as you can, whether Captain Kent's memory is correct, and also inform me in what manner you disposed of the sheep you brought with you, which were, I understood, more numerous than those of Captain Kent's.

"I shall be thankful to you for any particulars or anecdotes respecting Spanish or half-bred sheep in the colony; chiefly respecting the persons into whose hands they fell, and in whose hands they, or any others, are likely to be at present.

"I am, Sir,
"Your obedient and faithful servant,
"JOS. BANKS."

"Addressed to Captain Waterhouse,
Great Hermitage, Rochester."

Copy of the Draft reply endorsed on the above in the handwriting of Captain Waterhouse.

"SIR,—Having hurt my hand in my way down here, is the reason I have not answered yours sooner respecting the Spanish sheep. In 1797 I arrived at the Cape of Good Hope, together with the Supply, Captain Kent, and Britannia Transport. On board the Reliance was the Commissary for the purpose of purchasing cattle for the Colony, and on board the Britannia Governor King and Colonel Paterson, on their way to England, both which gentlemen had been acquainted with Colonel Gordon, who had lately lost his life. Colonel G. had imported a few Spanish sheep into the Cape, which had increased to 32. Mrs. Gordon was then going to Europe, and for some reasons did not choose to leave anything that had belonged to her late husband at the Cape. She gave three Spanish sheep to Governor King, and three to Colonel Paterson; the remainder, I understood, were offered to the Commissary, but he declined to purchase them on the part of Government; they were then offered to me. As I could not afford to purchase the whole, Captain Kent, that they might not be lost to the colony, offered to take half; we each received 13, and I took Governor King's on board the Reliance. Colonel Paterson took his to England, I understood, as a present to Sir John Sinclair. We paid Mrs. G. 4*l.* or 4 guineas a-piece for them; the expenses on delivery was about 1*l.* a-head more; the expense of food, &c., for the passage was very considerable. Unfortunately Governor King's three had been brought to the Cape before ours and put with some others, by which they became diseased and communicated it to ours; those three died soon after they came on board. I do not recollect the number I had alive on my arrival, but think more than half. Captain K., who had shared, I understood, his with Lieutenant Brathwaite, I believe lost all his, from the circumstance of his applying to me for one immediately on my arrival. I do not recollect if Lieutenant Brathwaite had one or two alive. I offered all mine to the Governor, but I suppose he was satisfied that they were in the colony, as he declined purchasing them. Captain Macarthur then offered me 15 guineas a-head if I would let him have the whole; this I declined, wishing to distribute them. I supplied Captain Kent, Captain Macarthur, Mr. Marsden, and Mr. Laycock, as the Spanish ewes had lambs (none but Spanish rams running among them); I supplied Mr. Williamson, Captain Rowley, Mr. Moore Goverm, and in fact any person who wished to have them. I never had any other than Spanish rams with my flock; and, on my quitting the colony, sold the flock to Mr. Cox, the paymaster, with the exception of a few to Captain Macarthur. Most persons who had Spanish sheep were particular about them, and I can assert that several of the Spanish sheep I originally brought from the Cape, together with their produce, were in the flock I left behind. I apprehend that the real Spanish breed is in the hands of most of those who turned their minds to raising sheep. I am not a judge of wool, but understand from some who pretended to understand it that a Cape or Irish ewe, crossed by the Spanish ram, and their produce again crossed by the Spanish ram, the wool is very little inferior to the Spanish; but I forgot you have received the different fleeces of the cross-breeds. Major Johnston carried out a Spanish ram from England, presented to him by the Duke of Northumberland."

* Leading Article, *Agricultural Gazette*, Nov., 1861.

BEER IN A HAYMAKING FIELD.

BEFORE leaving the first part of the subject, one further improvement, of comparatively recent, and, perhaps, limited adoption—which affects alike the interests of employer and employed, the cost of labour, and the harmony and order of the farm—demands more than a passing notice. The custom, especially prevalent in the Midland, Southern, and Western counties, of paying for haymaking partly in money and partly in beer or cider, is one of which every farmer has found the annoyance. Does an accident occur? "It was the beer that did it." Are there quarrels in the field, loud words, and summary dismissals? "The men had a drop too much." Does the work lag? Do the hands run to the pump the first thing in the morning? The cracked lips and furred tongue tell the same tale. "The great point on which most of us err is in mistaking stimulation for strength, a pint of ale produces a temporary effect, which, however, terminates in reaction, and the man is no further on than he was before. Nothing but substantial and nutritious food can effectively repair the waste of the system." Mr. C. Howard, whose letter we have already quoted, adds further:—"I hope you will show us how hay can be made without the use of so much beer. Endeavour to strike a blow at the system which has caused so many misunderstandings between masters and men, and so much misery to families. Beer, beer, beer, is all the cry here, in haytime and harvest. I hope, however, to live to see the day when money payments will be entirely substituted." These remarks need no comment. From the same county, J. Tucker, Esq., Pavenham (late High Sheriff), favours us with the following:—"For the past eight years I have annually mown and made into hay from 40 to 50 acres of Grass and Clover, and I believe during the whole of that time not a drop of beer has been brought into the field. We supply both mowers and haymakers with coffee before dinner, and tea in the afternoon, milked and sugared, as a substitute for beer, with which they are well satisfied. With a little system, and small expense for apparatus, a large number of hands can be readily supplied.

"If the hands are at work late—which they often are, in carrying and stacking—we give them bread and butter, with an extra supply of tea, and with this they will work for any reasonable time. As a question of cost, I do not believe (as I do it) that there is any saving; but even if more costly, I consider it a good investment, if only to teach the uselessness of strong drinks to working men."

From Somersetshire (Mr. Jarvis of Kilmington, near Frome), we have similar testimony:—"I have now conducted my business eight years on strictly total abstinence principles, and find it much better every way than the drinking system. It is not customary to give beer in part of wages in this locality from September to May. But in May it is usual to give men two pints of table-beer per day (until haymaking commences), instead of which I pay them 1*s.* per week in cash, maintaining that cash is the only proper payment for labour. When we begin haymaking I pay 3*s.* per week, instead of beer, for 14 weeks, which generally finishes up the harvest. The labourers provide themselves with a can of tea or coffee, which when necessary they warm in the back kitchen. When I first adopted the plan, I was told I should not find men to do my work without drink; but my experience is quite the reverse, as I never lacked men, although I strictly prohibit any alcoholic liquors, or smoking on the premises."

Coming farther North we have been favoured by Mr. Wilson (Newlands, near Mansfield, Nottinghamshire), with the following account, which, though it has more special reference to the corn harvest, still points to results substantially the same:—At the commencement of the season a stock of tea, coffee, and sugar is laid in, made up by the dealer in parcels suitable for use. The proportions are one ounce of tea, and seven ounces of sugar (cheap lump) to a gallon of water, with half a pint of milk. The apparatus required is simply a coffee boiler, holding from 20 to 30 gallons, and a few tin or earthen vessels of any kind, holding two or three gallons each. The foreman's wife has charge of the whole, and makes the quantity required three times a day; or in the case of carting late at night, another lot is made in the evening. A boy takes it round the fields to the various parties engaged in cutting, &c. If the quantity is not above five or six gallons he can manage it with two milk cans and a pair of yokes on his shoulders; but usually he has a donkey with two large vessels slung to his sides, holding, when required, 14 gallons each. The usual staff on the farm is about 20 men and 16 boys, besides two or three men whose work prevents their taking a full share of harvest duties. The hay does not require much extra help; but in corn harvest we get from 20 to 30, or even more, extra hands. It is positively prohibited to bring any kind of intoxicating liquor into the field, and yet these extra men (from Derbyshire, Lancashire, Ireland, as well as our own neighbourhood) have never objected to the rule, or even made the slightest complaint. When I have put the question to them, they have, in many cases, at once stated that they felt the better for their abstinence, while none ever hinted that it interfered with his working ability. Neither has any man, or party of men, on this rule being explained to them, ever hesitated to engage themselves. The work is always let by the acre, for money only, and then an account is kept of the quantity of drink consumed by each party. This is charged to them at the rate of 4*d.* per gallon for tea, and 5*d.* for coffee, which is less than cost price, the object being to regulate the quantity according to each man's capacity or inclination. Some men will drink 6 quarts a day, while the average consumption is from 3 to 4 quarts a day. The weather will sometimes cause a variation of 25 or even 50 per cent. in the daily requirements. The men employed at carting and stacking the crop, which is paid for by the day, have their tea or coffee, as much as required, without any stoppage. We are quite convinced that the men have more regular appetites for nutritious food, that they enjoy better sleep at night, are more fresh and vigorous in the morning, do more work, and do it better than on the old system. Of course the saving to the men is considerable. Their drink only costs them 4*d.* per day, while the ale and beer consumed in the neighbourhood is seldom much under and often over a shilling per man per day; besides which, by doing more work, they earn more money. The insinuation has sometimes been made that they obtain the prohibited ale and beer 'on the sly.' This is probably true in some odd cases, but with close scrutiny I never detected but one such case in seven years, and I believe that there is very little deception practised even among the 'black sheep,' who may creep in at a busy time among the other men."

Mr. Wilson's testimony is all the more valuable, since he has probably done more than any other man to elucidate this particular subject. Reader and writer must alike thank him for the above practical and practicable information.—*From Prize Essay, by Mr. T. Bowick, in the Journal of the Royal Agricultural Society of England.*—1862.

Home Correspondence.

Barley, &c.—I have been thinking over the very interesting account in the *Agricultural Gazette* of 23d August last, on the selection of Barley. I have for some time been anxious to obtain a really pure lot of Chevalier Barley for seed; my Barley is much the same

as some described Mr. Blizard; it is a mixture of all sorts. I shall be obliged if you can tell me where I can procure a really true sample of Chevalier Barley. I attribute the mixture of our seed corn to the travelling threshing machines, and if we would keep our seed corn pure to sort, we must thresh out with the flail for seed. Our Wheat crops in this locality are yielding more than we estimated them at harvest time. I have threshed out a couple of fields, and have 6 quarters per acre of Fenton White Wheat, the seed of which I have direct from Mr. Hope, of Fenton Barns. Drem Swedes are a good crop. Mangels a complete failure from the Mangel-fly or grub. Potatoes, at least three-fourths of them diseased, the Flukes worst of all the varieties. We are just about finishing sowing Wheat, and all has gone in very well. *Charles Doncaster, Southwell.* [This letter will probably obtain for our Correspondent the information he desires.]

Statistics of Diseases in Sheep.—I am anxious to collect reliable statistics as to losses annually sustained by flockmasters from diseases of all kinds. The diseases of sheep must be more carefully studied in future, and I trust many of your readers will aid me with the information I seek. It would serve my purpose to learn from a number of sources the following particulars:—Number of sheep kept, number of lambs born, total number of animals lost, proportion of losses amongst lambs and older sheep, principal causes of the mortality. The reports should extend over the year commencing 1st July, 1861, and ending 1st July, 1862. Any one assisting in this inquiry will confer a great favour on myself personally, as you will by introducing this note in your columns. *John Gamgee, New Veterinary College, Edinburgh, November 11.*

Societies.

Berkeley and Thornbury: *Cheese-making.*—The first discussion meeting for the season of this Association was held on Monday at Berkeley, when Dr. Voelcker, of Cirencester Agricultural College, delivered a lecture on Cheese-making. The Professor explained the composition of milk, gave some valuable hints as to the construction of the dairy, and manipulative details of cheese-making, explained the chief differences in the various kinds of cheese, and also the best modes to be adopted for ripening and storing the cheese. The lecture was listened to with much interest by a large number of members, several of whom brought their wives and daughters with them. An interesting discussion followed, in which it was shown that several important points in the construction of dairies could only be carried out by landlords going to the expense of reconstructing the old dairies, in which it is impossible to make first class cheese. The lecture will be published by the Association.

Cannock: *Agricultural Education.*—At the late annual meeting of this Society, the Chairman, Mr. R. C. Chawner, said—He found in his own career that he did not sufficiently consider, when he entered on the occupation of land, what the qualifications and what were the conditions under which he ought to undertake the responsibility. These qualifications had increased since he began farming, some 32 years ago, because it was now necessary that a man should receive a sound commercial education. No man would like to find that in this respect he was inferior to his own labourers; but yet he might possibly do so, unless he seriously addressed himself to that requirement in the first instance. When he said commercial education, he did not mean a classical and scientific education. He acknowledged with gratitude the benefits farmers had derived from chemistry, geology, and other kindred sciences; but he would never advise any man who wished to get his bread by the cultivation of the soil to become a mere dabbler in science. There were men who had devoted their time to the investigation and pursuit of those separate sciences, and who were always willing to give the result of their labour to those who applied for it; and he would therefore advise those young men who were anxious to obtain a knowledge of the composition of the soil, &c., to apply to those gentlemen, who were really the only persons who could give them sound information on the subject.

To a man educated as he had described, the first question to suggest itself would be "What shall I occupy?" And in answering that, it would be necessary to consider what capital he had. On that point he wished to correct a great misapprehension as to the amount necessary. It had been said very commonly that a man should have 10*l.* per acre. He knew one of the best authorities on this subject, Mr. Pusey, a large landholder and a practical farmer, a gentleman who for some time connected the Journal of the Royal Agricultural Society—and he said that he never could get that amount of capital into the land, and considering the question from his own point of view as a tenant farmer, he thought 6*l.* or at most 8*l.*, amply sufficient for an ordinary farm. He, however, made a great distinction between the capital which should be employed by the landlord and the tenant. If they were going to take a farm and build upon it, drain it, grub up the fences, and make a different arrangement of the whole farm, then he could not tell them what amount they would require. But if they were going to expend their money fairly as a tenant, they would want to furnish their houses, to provide a sufficiency of stock, horses, and implements, be able to pay their rent and taxes, and have such a capital as would not drive them into the market immediately after harvest at a great sacrifice. They should be able to go into the market to buy stock when they wanted it, and when it was within their reach at a fair price. That was the proper use of the tenant's capital, and he believed with Mr. Pusey on that subject that from 6*l.* to 8*l.* per acre would enable them to do so, and at the same time do justice to themselves and to their landlords. When they knew what capital they possessed, they might readily calculate the acreage they could manage. There was another point on entering upon a farm which was not much considered—the locality; whether there were good roads and easy access to market, so that they might readily take their produce, and bring back manure. That was a point which should be remembered in considering the great question of rent. He also thought the tenant farmer who had ample capital had as much right to consider who was to be his landlord as the latter had to inquire as to the character and capital of the tenant. The tenant should also consider what would be his position under such and such a landlord, ere he entered upon a farm, and gave up his time, skill, and capital, having, at the same time, to bear the responsibilities which attached to him as the father of a family.

The next point was—How should he hold his land? Should it be by lease, by written agreement, or by annual tenancy without an agreement?

He preferred to hold it by lease. If a man had a lease for 21 years, he could lay out his capital freely and look for a yield hereafter to reproduce his capital and pay interest. He was not at all alarmed at talking on this subject, though he had been told that he came once a year to preach sedition to the Cannock farmers. The subject had, however, been alluded to at recent meetings by the Earl of Shrewsbury and the Earl of Lichfield; and he would assert that in what he was advancing, so far from wishing to create an ill-feeling, he was taking the only course which would cement a good feeling between the tenant and landlord. He believed if the subject were freely discussed it would give rise to a better understanding between both parties; the landlord would feel secure that his property would be improved, and would arrive at the conviction that if a tenant laid out his capital lavishly, he ought to be assured that he would in the end be fairly remunerated if not repaid. Supposing the agreement to be an annual one—for he had been told by landlords that tenants were averse to leases in Staffordshire—he would press upon them to have the terms in writing. He knew it could be done very readily, and that the conditions could be put in a single sheet of foolscap. Without entering into the question of the prize offered by Lord Lichfield for the best form of agreement—for which he intended to compete—he would tell them one clause that they should have in all their agreements. Whatever clauses they might have in regard to general cultivation, selling off straw, &c., they should have a general clause that in the last half-year of the occupation a valuer should be appointed who should consider the questions of unexhausted improvements and dilapidation, and if there were any difference strike a balance between them. If they had such a clause in their agreements they might do their duty by the land, to themselves, and their landlords. He would not attempt to offer any remarks as to how they should farm, for there was so much difference in the nature of the land and climate, that a man must consider and judge for himself. He, however, would say, as a general rule, that any man who thought he could come upon land and poach that land, taking out the previous tenant's capital, was not a good farmer, and was not a good man. They should withhold their sympathy from such a man, and reserve it for the men who had done their duty, and who in thousands of cases were turned out of their occupations. The position which the tenant farmers hold ought to be strengthened. They ought to feel not only in a secure position by the possession of an agreement, but in a higher degree by the discouragement of temptation, and to support each other only when they did that which was their duty, not only to themselves and their families, but to their landlords and their country, in making the earth yield forth its fruits.

As to the details of farming there were two rules:—

The one was, that if good crops would not pay, none else ever would; and the other was, that they made too little reference as to the mode in which they farmed, as compared with the farming of other countries with which they were in competition. They were in competition with the whole world. But what were their peculiar advantages and disadvantages? In this country they could not produce a bulk of corn so fine as other countries. The English climate was a moist climate, and was well understood by the word "drip." The drip was ever coming on the land, and though it was good for Grass and for root crops, it was not good for corn. That fact appeared to point out to them what ought to be their foundation of farming. Stock farming must be the foundation of agriculture in this country. If they looked at the imports of corn and stock they would find that, whilst England could scarcely compete with other countries in the production of corn, no other country could compete with England in the production of what they familiarly called butchers' meat; and when they added seeds they had the real foundation of farming within itself. They all knew that corn must follow in its place."

Hertford.—At the annual meeting here the other day, the Hon. A. L. Melville said he was glad to attend an agricultural meeting here, because he had for 30 years been settled in what was usually considered the leading agricultural county, Lincolnshire. He remarked that Franklin once made an acute observation about a landlord who farmed his own land, and farmed it badly. He said he had no excuse, for he had only to look over the hedge and see what his neighbour was doing, and he couldn't do wrong. Now, gentlemen (continued Mr. Melville), you can look over the hedge, although some of your hedges are thicker and higher than we like to see them in Lincolnshire. You have an opportunity of seeing what is going on, and this meeting is an excellent thing for bringing farmers together. If one makes a speech, it is listened to by those present, and read hereafter by those absent, and these meetings tend to the improvement of agriculture and the benefit of farmers. If I take a comprehensive view of the county, and compare what I see now with what I did see years ago, I find improvements in many ways. I find drainage to an extent I scarcely hoped to see, and the Hertfordshire farmers now begin to put some of their corn into stacks, and not use barns for all the corn they grow. We in Lincolnshire are not fond of barns. Your Turnips are better than any I have ever seen here; it is a favourable year for Turnips; but yours are better than I have ever seen before. The cleaning of the land is also much improved. Now, if you will allow me, I will tell you a little about our farming in Lincolnshire. We pride ourselves on our cultivation; we keep the land clean; we can't bear to see weeds. We keep our boys employed in weeding; and by keeping the weeds down we increase the crops. I am sure that good farming is a thing that pays; and if all farmers were to invest their money liberally in the land they might all make a profit of farming. Three years ago I was in France and happened to sit next to an American. He said he had been to Liverpool, and London, and Rome; and he said, "When I came to England I wanted to see one thing—I wanted to see one man putting his money into another man's land." I said, "You've hit on the right man to show you. I live near Lincoln, and there is no district where that is carried on to the same extent." Well, he came to see me, and I took him to our principal seller of oilcake and agricultural manures, and asked him to let us look at his books. He turned over the ledger to one farmer's account, it was 500*l.* and odd; another, 700*l.*; another, 1000*l.*, and so on. "Well," he said, "they are landlords who pay all this."—"No," said the merchant, "I don't get much out of the landlords; they are tenant-farmers who pay me all this money." "But," said the gentleman, "still you haven't shown me one man putting his money into another man's land." So I took him home with me, and on the way we saw the drill going; and I said, "There, now you see it going into the land." He was astonished; and I asked him, "How do you manage in America?" "Why," he said, "if a man saves 500*l.* he buys land with half, and cultivates it with the other half." "But," I said, "when he gets the land he desires, does he cultivate it as well as our tenant-farmers?" "No," he said, "the land is not so clean; he never cultivates it as you do, and he never can do." So you see our tenant-farmers do put their money into other men's land, and that is the secret of our fine farming. It is that which begets confidence on the part of the landlords. If he sees the land well managed and well farmed, he has naturally a kindly feeling for his tenant; and so it is that we seldom hear of any one leaving his farm in Lincolnshire; and there is scarcely ever an instance of a farmer breaking down. Let me say a word about your straw. I can't look along your roads without seeing loads of straw going up to London. Now, I do not say this is all wrong; for I say, get the best and the most valuable market you can for your produce. But I do say that the straw should belong to the landlord. I say the straw belongs to the landlord, because it belongs to the land; you cannot deny that; and if it is taken off the land, you have a right to put an equivalent into the land in some other shape. Now, we come to Hertfordshire to get Lawes' manure, and we use it largely. The farmers' bills that were shown to the American gentleman were shown by Mr. Lawes' agent. And let me say that the more stuff you put into the land, the more justice you do to the land, the landlord, and to yourselves. And if a tenant-farmer does what he ought to do, he will do justice to all three. I hear something about a lease. Now, leases are unknown in Lincolnshire. There is good feeling and good understanding between landlord and tenant, and the tenants remain longer on their farms than they would do under a system of leases—longer than in Scotland where they have leases. Briefly, let me add that the more you attend to agricultural improvement the better you will do your farms, and the better will be your balance-sheet at the end of the year. One word about cottages. I happen to live in an open parish, where a good deal of land belongs to little people. They find it worth their while to build cottages for agricultural labourers, and the usual rent is 4*l.* a-year: and the occupiers would rather pay 4*l.* a year for a good cottage than 3*l.* for an inferior one. I feel for those labourers who work in close parishes; where a man has to walk four or five miles before he begins to do a day's work; and I can't understand, if little people can afford to build cottages and get 4*l.* rent, why landlords cannot build cottages and get 4*l.* rent also, adding a rood of land, which would be a great thing for every labourer.

Wigton.—At the agricultural meeting here the other day Mr. Brisco, the Chairman, said:—If any one could rise from the grave of 30 years ago and look out now, he could not believe he was in the district of Wigton. From what was that change derived? Why, from the great progress they were making in England. Man was now raised up from the common hewer of wood and drawer of water; he was placed in his right position: and they had now machinery of wood and iron doing what man used to do. He was no longer the hard drudge. They wished to see his powers brought to bear upon greater powers than himself, and they had introduced the steam-engine and all the more improved implements of agriculture instead of the little old hoe that used to do the work. Talking of implements, that was a question that had puzzled agriculturists for a long time. It happened that the practical man in agriculture was rarely a mechanic. In recent years the great Agricultural Society of England, which had been the most valuable assistant that ever any interest possessed, had brought together the greatest talents in agriculture; and those men closeted and considered what was wanted, and how they thought these results might be brought about. They went to the mechanist, and said if he would only give them that which would accomplish their object there was a large remunerative prize. Take the reaping machine, that had lain dormant for he

did not know how many years since Bell's time. It had been left till it rotted, until the model was carried away to America by emigrants, who used it and brought it to perfection when we were at home sleeping, and never dreaming of such a thing being in existence. There was a machine which he had taken a great deal of interest in—M'Cormick's: but it was a defective machine. When he examined it, he found that the progression was faster than the cut, and all that was wanting was the driving-wheel to be changed from one of 54 inches to one of [illegible] inches; and at this moment that machine was working on the farm of a friend of his as perfect an implement as ever went across the land. He had also remarked this year how wonderfully a certain district which he should not point out—how wonderfully two or three farmers got their hay in. How green and perfect in every respect! They would ask how much more it cost them than that of any other farmer. It was immeasurably cheaper: it was as 3s. is to 10s. How was that brought about? There was not only the quality of it, but the rapidity of getting it in, and every operation was performed by a perfect set of machines. There was the mowing machine, the tedding machine, and the horse-rake. They must not be thoughtlessly wedded to old customs. There was no doubt that old customs were a very safe guide up to a certain point, and the man was next to crazed who would throw the whole experience of his progenitors away. They might try as cautiously as they liked, but let there be a resolution to progress. Let them try to pick out the good implements, and remedy those that were not so good that were in use by their neighbours. These were points for them to consider; and such was the heavy demand made by consumers in this country, that they must either do their utmost to provide that farming must progress at a more rapid speed than hitherto, or else give up the battle that was now going on.

Farmers' Clubs.

BLOFIELD: *The Highway Act*.—At this meeting Mr. C.S. READ said:—A tenant-farmer never opens his mouth without putting his foot in it the moment he begins to talk of anything but pigs and bullocks. If he does make a speech, and he happens to say things which it is not usual to say, he is made a butt to be shot at, to be laughed at, to be written at, to be talked at, at every quarter sessions and by every newspaper. We, the tenant-farmers, were requested at North Walsham to speak out, and in their behalf I did speak out, candidly and frankly, but I hope not disrespectfully or rudely. I have been accused of being a swaggering, bumptious young fellow. They generally say that the sting of an accusation is in its tail; but I only wish I could plead guilty to the impeachment of youthfulness. As to the charge of rudeness to the landlords of Norfolk and the county generally, I may be allowed to say that I am one of those who entertain the greatest personal respect for the gentry of our own district, and the greatest confidence in, and respect for, the landed aristocracy of England. However, it does not matter how I have been misrepresented or abused; I shall continue to speak out. I know that truth will always prevail, and that I speak the sentiments and the feelings of hundreds of thousands of tenant-farmers who either cannot or dare not speak for themselves. I remember that when I was at school our drill-sergeant said to me one day, "You fancy that you are a pretty good hand at the sword exercise; take my sword and I will take the stick, and we will see who is the master." Well, in about two or three minutes he beat me black and blue. Now, because he handled that stick so well, that does not prove that the stick is a better weapon than the sword, and because Mr. Howes has handled his argument so well, that does not prove that what he has said is quite right, and that what I am about to say is quite wrong. I deeply regret being in any way opposed to Mr. Howes, not only because I have to contend with so powerful an adversary, but because, as you all know, in politics proper I have always given my humble and earnest support to that great cause which Mr. Howes represents; and I am sure that we, the tenant-farmers of Norfolk, must all be grateful to a gentleman who is so well qualified to be our representative by his birth, talents, and attainments, and general knowledge. I have great pleasure in publicly thanking Mr. Howes for the many acts of kindness and courtesy I have received at his hands, and he was perfectly right when he said he did not believe I had any personal motive in what I said at North Walsham.

Well, now about the Highway Bill. At North Walsham Mr. Howes looked straight down among us ratepayers and tenant farmers, and said, "It remains with you to adopt that measure or not, and when you like." Now, if the option did remain with us, and we had any voice or choice in the matter, I should not have the slightest objection to the Bill; but unfortunately the whole matter rests with the magistrates of the district. I speak with the greatest possible respect for the magistrates; but what I complain of is that this Act does not recognise the existence of the tenant farmers or ratepayers at all, but it constitutes the magistrates prosecutors, judges, and jury, and even the court of appeal too. Mr. Howes said that the Act was not required in Norfolk; but no sooner was it passed than we had a notice in the papers that no less than 63 parishes in the hundred of Mitford and Launditch were to be formed into a highway district. Now I myself believe that if the ratepayers of that district were polled, at least three fourths of them would decidedly object to the adoption of the Act. One would think that the roads are very badly managed and almost impassable. It is a very good maxim to let well enough alone, and I think nothing but great neglect in the management of the roads can justify so great a change in the present system. Why, one gentleman who made a speech in support of this measure, stated that the roads were kept in very good repair in his own parish for a rate of a penny in the pound, and all the fault he could possibly find with the present system was that in some localities the cost of maintaining the roads was 14*l.* a mile, while in others it was not as many shillings. Another remark made was that the surveyors did not see to the men going to their work on the roads early in the morning. Now at present there are two surveyors to every parish, which would give more than 100 surveyors for the Mitford and Launditch hundred. Under the new system there would be only one to two. Is it likely that the superintendence of the labourers employed on the roads would be more efficient under those two surveyors than under the 100? We all know that there are causes independent of traffic which make a difference in the cost of maintaining roads in different localities; for instance, there is the quantity and the quality and situation of the material; then there is the nature of the subsoil of the roads, the drainage of the district, the hedges and the fences; all these circumstances affect the cost of keeping roads in good repair. In South Wales, where I resided for some time, the whole of that portion of the principality is under district surveyors, and there, where roads are very hilly, and where the material is very soft, and the climate very moist, road-making is certainly a very different operation to what it is in this part of the world; and from the experience I had there I am almost sure that you will find that if you have a good staff of officers, and if they are properly paid, they would cost about a penny in the pound on the whole district. But I don't think that would be the chief source of objection to parishes; where they would feel it most would be in not being allowed to select what labourers they pleased for the roads. There are always in a parish a certain number of aged and partially infirm labourers, who during the summer time get jobs of hoeing and weeding, and at Michaelmas they are to be found at the door of the surveyor asking for a job on the road. I contend that these men are just as efficient in mending roads as the strong labourers whom a district surveyor would be likely to employ; and as these poor old fellows can find no other employment in winter, they must be maintained out of the poors' rates. Now, if you will allow me to talk of a special hardship instead of a general grievance, there is a gentleman on my left who last May purchased half the hamlet of Dillington. In making a valuation of that property, I found that the roads were kept in very good repair at 2*d.* in the pound. I see that the hamlet is to be annexed to the parish of Dereham, where the rate is 6*d.* in the pound. Now, I say it is rather an arbitrary measure that this gentleman should have to pay from 5*l.* to 7*l.* a-year more, and also to have all control in the management of the roads taken from him. We are told, however, that we shall not lose the management of the roads, but that the district boards of way-wardens will be like the boards of guardians. Then I say that individual parishes will lose all hold over the expenditure. I am a guardian and vice-chairman of a board, and I know that if I were the most stingy man on earth, or the most liberal, neither my stinginess nor my liberality would make a difference of a penny in the pound in my rates. There are so many common charges which fall equally on all the parishes, that I believe no guardian can materially affect the amount of the rates of his own parish. Mr. Gurdon spoke about the magistrates managing the roads. Although I am so "young" a man—I have had something to do with the maintenance and repairs of roads for something like 20 years, and I never knew the magistrates interfere; all they ever said when I went up to pass my accounts was, "Your roads are in very good order," or some complimentary speech like that—just the same as the auditors of the Poor-law Board. You must remember that the magistrates have the power of getting a board made, and then they will be members of the board. Moreover, they will still be the power to which you must appeal in case of any disagreement, and they will still have the power, also, of granting indictments. The tendency of all modern legislation seems to be to take the control away from individual parishes and ratepayers, and vest it either in the magistrates or in some great board; and the result will be that when our church rates are abolished, we shall find that the parochial system of Government of which we talk so much will be obsolete.

There is one other subject which has been alluded to—the police game-preserving bill.

Mr. Howes says it is not applicable to Norfolk. I understood him to say at North Walsham that the Act would not cost this county a single sixpence extra. Now, gentlemen, all I can say is that if these extra duties can be put upon the police, it only proves to me that the police have hitherto not been fully employed, and that when I pay my seven-sixteenths of a penny in the pound for the police, I am paying more than I ought to pay. I must say that some people are wilfully perverse or remarkably stupid when they will have it that because the tenant farmers of this county object to the police being employed in the preservation and the protection of game, therefore they are the friends of poachers and sympathise with them. Now, sir, speaking in the name of the tenant farmers here present, I undertake to say that there is not one of them but who looks upon the poacher as an enemy, for we all know that the professed poacher is a marauding blackguard, and that the sooner his career is stopped the better. But if my landlord were to come and say to me "Feed a flock of sheep for me, and I will have a shepherd who will watch over them," and supposing sheep-stealing became prevalent, and he said to me "Your shepherd that you pay to look after your sheep must come and help mine to watch my flock at night, and apprehend these depredators," I should say, "No, sir, my shepherd has business of his own to attend to, and if you want another man, the best way is for you to hire another man." Do you think that because I should say that, I should be the friend of sheep stealers and sympathise with them? I am, unfortunately, as fond of my gun as if I had been born and bred a squire, and I am also in my little way a game preserver; but I should never think of asking the police to assist in preserving that game. I am proud to live in a county where there are so many partridges. I consider them the best birds that fly; they are easily preserved, they afford no end of sport, and in my humble opinion they do the tenant farmers more good than harm, for although they may now and then terrify our late sown Wheats and early Peas, they live for so many months exclusively on insects that I believe they really do more good than harm. Then, gentlemen, the pheasant is a very beautiful bird, and like a great many other beautiful things it is very often dearly paid for, but he is an unthrifty, stupid sort of bird, and requires as much looking after as a baby. Then as to rabbits, I contend that they are nothing more nor less than vermin—and I contend also that when hares are preserved in very great numbers they are entirely destructive to the tenant's crop; and not only do an immense amount of mischief to the occupier, but, as a necessary consequence, they are in the end injurious to the landlord and the labourer, too. Game-preserving landlords sometimes tell us this: "When I let my farm, I let it with game upon it, and you knew it, and you gave me so much less for it." Now, this is not always true, for we know some cases where a lease is granted and there is no game, but before the lease is ended there is so much game that the crops are nearly all eaten up; and it is quite possible that there may be no hares and rabbits one year, and that there may be plenty the next year. Assuming, however, that a farm of the value of 500*l.* a-year without game is let for 450*l.* with game on it, then, in the first place, Government loses that 50*l.* a-year under schedules A and B; but that is no business of ours; Government is sharp enough to look out for itself. The farmer, however, pays all his local rates on the full value of the farm—county rates, church rates, poor's rates, and highway rates; and the game-preserver pays nothing, though he is in reality a 50*l.* occupier on that farm. Now, this is the real ground of the tenant farmers' objection to the present game-laws. It is not that they object to a reasonable amount of game being preserved, but they do not like to pay for the protection of that which is in a great many instances a nuisance and an injury to them. It has been put to me as a crushing and an unanswerable question: "Do your cocks and hens pay county rates?" Why, most unquestionably they do. Poultry is farm produce, just as much as sheep and oxen, and as long as land is rated at its agricultural value, as a matter of course the poultry on it is rated, as well as everything else which is a source of profit to the occupier. Then comes the question, "How are we to remedy this grievance?" Why, we have assessment committees, and they are told that it is their duty to rate all property at what it would fairly let for per annum. I can see no reason myself why the right of sporting, which commands a certain rent over a certain farm, should not be rated at a uniform sum all over the county. But if that should be found impracticable, you might simplify it by making all those gentlemen who employ the police in the apprehension of poachers pay all the expenses attendant on the prosecution and conviction of such offenders. I am sure that if some arrangement of that kind were made, or if, as Mr. Howes says, game were made property, and subject to the law of trespass, and assessed to the county rate, you would hear no more from me or any other farmer in England against the Poaching Act. Mr. Read resumed his seat amid loud and protracted cheering.

Mr. HOWES, M.P., next said: Let me clear up one or two differences of opinion that exist, simply as to the premises from which each of us starts:—

He referred to my saying that the Highway Act was an optional one—that is to say, that it may be adopted in any county, in whole or in part, in any number of parishes, or in a few. It has been proposed to be adopted in a certain number of parishes in the west of Norfolk. It may or may not be properly applicable to that district; but it ought to be known that the order made at the last Quarter Sessions was simply a provisional order, and it must be confirmed at another Quarter Sessions before it became law; and if any objections be entertained to it by the ratepayers of the district, they can oppose its confirmation. I have been Chairman of the Quarter Sessions for the last 14 years; and I think I may say that the magistrates consider themselves trustees for all the ratepayers, and I firmly believe that they have never abused that trust, which they regard as a sacred one. I have no doubt that, though an individual ratepayer has no immediate voice in voting whether the Act shall be adopted or not, he has the right of opposing its adoption by memorial to the Quarter Sessions: and I am quite sure that, if there was anything like a general opposition to the adoption of the Act, the magistrates would respect such an expression of opinion on the part of the majority of the ratepayers of the district. I am sure, also, that if the particular circumstances to which Mr. Read has alluded, of the hamlet of Dillington, be brought forward, they will be fully considered; and if it appears that the proposed arrangement would be unjust to the occupiers and owners of that hamlet, they would receive redress from the magistrates. That appears to me to answer every objection which Mr. Read made to this Act. It is not intended to take the administration of local matters out of the hands of the ratepayers. Without raising any question as to politics, I may be allowed to remind Mr. Read that the principle of local administration is one of the principles of the Conservative party, and one, therefore, which I should consider it a sacred duty to maintain. Now, as to the Poaching Act, let me ask what is the objection on the part of the tenant-farmer or yeoman, or any ratepayer, to that law? I have already pledged myself to the fact that it will not add to the burthens of the ratepayers. Can the objection be to the employment of police? You are all aware that poaching is forbidden by law. Is it not, then, a matter of criminal jurisprudence? If so, how is it that the police have not been previously employed in preventing and detecting poaching, just as they are in preventing and detecting all offences against the law of the land? Heretofore, if a policeman met a cart full of game on the highways, the poacher might snap his fingers in the face of the policeman, and even tell him the game was poached, and drive on in defiance. I ask, is that a thing which should be suffered in a civilised country? I ask for an answer. Is it right that a person who has in his possession property unlawfully obtained should be able to laugh in the face of the policeman and say, "Touch me if you dare?" I say the answer can only be—"Enforce the law, or else abolish the law entirely." It might be better to adopt a new principle altogether—to make game property, and so as to put it under the same protection as a person's hens and chickens and sheep. Well, I have said that that is a proper subject for discussion, and that it will possibly be discussed in parliament; but I must confess that I entertain grave doubts myself as to the serious inconveniences which might arise from a new law of trespass to persons who might be innocent. My object in supporting the bill was certainly not to increase the burthens of the ratepayers, and my firm belief is that in this county, where I know the law would be administered judiciously and discreetly, it would have no such effect. Mr. Read has said that the time which the policeman will spend in the protection of game must have been hitherto wasted; but one could hardly expect such a remark to be made by any one who is at all acquainted with the duties of a policeman. The policeman's time could not be occupied in watching the game. We know, however, that it is often occupied in watching a man's poultry, and that after two or three nights spent on a farmer's premises, the policeman's vigilance and constancy are sometimes rewarded by detecting an offender who has stolen a hen or a chicken. But that would not be the case with respect to game. The police would not be employed in the preservation or watching the game. There is a certain force employed in watching the neighbourhood round Norwich and Yarmouth, and every town in the county, to intercept any stolen property that may be conveyed from the rural districts to be disposed of in the towns; and no additional police would be required through this Act, which merely enables them to stop persons with cart-loads of game, just as they have always been able to stop persons with any description of property supposed to have been unlawfully obtained. It is well known that the impunity with which persons have been able to carry game in carts without being liable to be challenged by a policeman has afforded them a screen for conveying stolen property; and thus the new powers given to the police will assist them in the detection of other offences, which, it is notorious, have hitherto escaped detection, through the shelter of the indulgence shown to poachers.

Farm Memoranda.

NORTHUMBERLAND FARM.—The weather during October has been chiefly of a favourable character,

though the middle of the month was marked by violent gales, which have done a considerable amount of damage in timbered districts; and though blowing from the west, was yet considerably felt on the east coast, where many stacks were blown over and other damage done. During the past week also we have had a couple of nights white frost, which, however, soon gave way to fine open growing weather.

Crops.—The Beans which in our last report we mentioned were being cut, have now also been carted to the stackyard, and in bulk have fully realised our expectations. Harvest being over, we have been employing all our force in Wheat sowing, and seldom do we remember a finer season for this operation. The bare fallow, which has been sown to the extent of 40 acres, was lying in a nice dry ploughed state; it was crossed with Bentall's broadshare, and then harrowed, the drill following and depositing from 1 to $1\frac{1}{4}$ bushel per acre, 9 inches apart, in as fine a seed-bed as could be desired. Other fields as they are cleared of Potatoes and Turnips will be hereafter sown. The kind of Wheat sown is a mixture of Creeping Red and a Brown Wheat, which we find to answer an excellent purpose here. A few acres of Giant St. Quentin, which we grew for the first time last year with most satisfactory results, have also been sown at the rate of $1\frac{1}{2}$ bushel per acre—the quantity being increased in proportion to the size of the grain. Some of this Wheat has been lately threshed, and was found to yield 2 bushels per stook of 12 sheaves, and weigh 62 lb.; this we consider an excellent yield for this season, and especially after receiving a considerable shake by the winds in August. Considerable controversy has lately been carried on in the pages of the *Agricultural Gazette*, on the much vexed question of "Thick and Thin Seeding," in which a reverend amateur, in attempting to act the part of champion of the latter system, in a style of writing peculiar to himself, and certainly not in that most likely to convince practical men of the theory which he wishes to convey—attempts to throw ridicule on individuals whose circumstances do not permit a similar treatment to his own, and endeavours to prove to the world the fallacy of their practice. In this way he notices the system pursued by an eminent Professor of Agriculture and the valued Institution with which he is associated, but in doing so he unfortunately exhibits his utter ignorance in the practice of agriculture, in imagining that corn could be deposited by a "drag," which, as every one professing the slightest knowledge of farming knows is synonymous to a heavy harrow, the use of which, also, I am willing to believe he is less acquainted with than the garden rake. Although he may have grown Wheat for more than 40 years, I would suggest that he might with benefit spend a session at the Royal Agricultural College, where Professor Coleman would teach him more practical farming than he ever knew, and where he would have an opportunity of expanding his ideas, and consequently quenching his sarcastic spirit.

Every one is perfectly aware of the advantage of sowing Wheat thin where circumstances, such as climate, early sowing, deep and highly cultivated land, will permit; but how seldom do we find those essentials all present in the same case. I myself am a thin seeder, and from my own experience I can assert that one of the best crops ever grown here was from $2\frac{1}{2}$ pecks per acre. If the reverend gentleman were placed on the shaly soil of the Cotteswolds, 3 or 4 inches deep, he would soon find it necessary to alter his system and confess to his hearers "that they must do as he says, and not as he does."

It is truly absurd to lay down any fixed quantity for seeding, like a panacea to all diseases; farmers must be guided by circumstances alone known to themselves. So not quite so fast, Reverend Sir! Mr. Hardy, of Maldon, and others, carry greater weight in their advocacy for the same principle in plain matter of fact language; and if the reverend gentleman would wish to further it by the aid of his pen, I should recommend him not to address his brother farmers—though they may not entirely agree with him—as if he were preaching to so many heathens from Taboo or Timbuctoo. But enough of this. Turnips are growing well, and will far exceed the early anticipations of the crop. Grass is also plentiful, but young Clovers in many instances are extremely shy. Potatoes have all been taken up, and in quantity are sadly deficient, though the disease is not appreciable.

Stock.—The remainder of our fat bullocks have been sold, and others in a half fat condition are receiving Turnips on the old pastures, and come into yards at night; we find this system of transition from Grass to Turnips better than boxing them up at once on an entire change of food. These bullocks will come into the boxes in the first week in November, and the younger cattle into the yards when cold weather sets in. More cattle for grazing next summer have been purchased at Newcastle fair, which was one of the dearest for yearlings ever known. The ewes have by this time all received the ram, and are on Clover-lea. The hoggets are distributed over old pastures, but have not yet received any Turnips. The draught horses have now been housed at night, and are being well fed, in preparation for deep ploughing. *J. W.*

South Hants Farm.—The late rains having put a stop to all tillage work for future crops, we have now turned our attention seriously towards preparing the land for the Wheat crop; and although on some flat heavy soils the land is now too wet, yet upon most dry lands the rains have been so far beneficial as to bring the furrow into an excellent state to receive the seed, and we never saw the Clover lea ground in better order for sowing. The root crops have all received immense good from the late wet weather, for it has been extremely mild and forcing; all late sown roots are likely to prove an unusually good crop, unless we get an early winter; even the Mangel crop has been much improved lately, but being generally sown late this year, the produce will not exceed an average. This is now under proof by the taking up and storing the roots, which work we are forwarding as much as possible by setting on all the women, men, and boys that we can spare, and we stack or heap the roots in the field, casting together (first cutting off the greens) into heaps, which clear a space of about ten yards each way. Some persons object to sowing Mangel to any extent by the reason of its making so much work at the Wheat-sowing period, but we do not sow Wheat after Mangel, and do not cart the roots off the land at the time of taking up, therefore the horse labour is not required at that time; it being therefore a question of hand-labour only, it is easily met, and the process of heaping the roots in the field is quickly done. We approve the plan of storing in the field, for whether the roots are required to be used on the land either as a whole, or in part, they are well placed, being covered with a little straw and earthed over, and may be removed to the cattle yards or any part of the farm when convenient, and in suitable weather without damaging the land by carting away in a wet time. When the roots are put together, about three or four cart loads in a heap, they never heat or damage as they sometimes do when stacked away in large quantities together. The greens or tops of the Mangels are carted away daily and given to store beasts, pigs, and sheep; we however approve of ploughing them in when Wheat follows, as they afford considerable manure for the grain crop.

With the last day of the month we have finished pulling and clearing the Turnip crop which was growing on the Potato land, and the crop has proved very valuable, having afforded food daily for 26 head of cattle of different ages during the past five weeks, besides which large quantities have been stored away in excellent condition for future use. In stacking or storing any variety of Turnip, we do not like to cut the tops or greens down too bare; we find that by leaving the heart of the green entire, they grow out a little in heap and this preserves them, for we have often found that in case the roots cannot vegetate at all, they are apt to rot in the heap; we estimate our crop grown on the Potato land at about 14 tons per acre. The price of sheep stock is still very high; we have attended the late fairs to purchase Down ewes from Somerset and Dorsetshire to lamb in December, and have found this kind of stock not only dear but scarce; it is only a few flocks, and those mostly grazed in Somersetshire, that will produce lambs in December, the soil, climate, and breed will only insure an early lamb (speaking of Down stock) in dry sweet pastures, and warm climate like many parts of Somersetshire. The ewes will bring their lambs in December, and particularly where their origin can be traced to the horned sheep. Our stock of horned ewes are now lambing fast, but they do not produce so many twins as last year, and this is generally the case we find in most flocks. The weather being mild the lambs grow fast and look remarkably sleek and kind, and to keep them in this kindly state they will require our utmost attention, the feeding of the ewes being of primary importance until the lambs attain to one month old. Our ewes which have lambed are feeding on good Clover seeds and Grasses on different parts of the farm, but they get in addition once a day Turnips cut and cakemeal mixed in troughs, and this is essential, although they have plenty of Grass, as it gets them used to eat trough food, for we have seen them rather severely checked in condition by removing them suddenly from good Grass into Turnips cut for trough feeding, the change and mode of feeding is too diverse, and it is sometimes a week or 10 days before they become accustomed to trough food; in the meantime many suffer in health and condition. The mode of feeding and treating the lambs will afford matter for our next month's report, about which time they will begin to eat freely. As the sowing and preparing of seed Wheat is now going on, it is important that the steep for the seed should be effectual to prevent smut, &c., in the produce next harvest; we had been accustomed to use vitriol for many years and with good effect, but we have also found Down's "Farmers' Friend" answer well, and it is a very convenient preparation. *J. B.*

Reviews.

Grasses and Forage Plants. A Practical Treatise, &c. By C. L. Flint, Secretary of Massachusetts Board of Agriculture, &c., Boston. Trübner & Co., Paternoster Row.

We have here in a portly octavo, descriptions of all the Grasses known to the agriculture of the United States, which include a good many unknown to the English farmer. All of those however in which he is interested are on the list, and their characters and cultivation, together with a good many other useful topics, are discussed.

Take for example a passage on the advantages of machinery in haymaking.

"In a case within my knowledge, a machine with a cutter-bar 5 feet in length, and with horses weighing in harness 1968 pounds, driven at a moderate speed, only equal to 20 rods a minute, or $3\frac{3}{4}$ miles an hour, a half-acre, 20 rods by 4, with a burden of 2400 pounds of hay to the acre, was cut in 14 swaths, an average of $4\frac{71}{100}$ feet, in 18 minutes, including the turnings. This would be $2\frac{91}{100}$ miles the hour, including the turnings. At this rate, 1210 square feet of Grass were cut in a minute. At the same a good mower cut a swath 168 feet long and 7 feet wide, making 1176 square feet, in $3\frac{1}{2}$ minutes; or, at the rate of 336 square feet in a minute, allowing no time for rest or to sharpen the scythe. Now, allowing the machine no time for rest or turning, it cut a swath $4\frac{71}{100}$ feet wide and 20 rods long, equal to $1554\frac{3}{10}$ square feet in a minute, or $4\frac{62}{100}$ times more than a good mower with a scythe in the same time. It is natural to suppose that a man mowing with such a competition and a large number of spectators would exert himself to his utmost, and that he could not mow half a day at the same rate; and it is certain that he was far better as a mower than the average of farm labourers, while at the same time it is evident, from the above-named speed, that the team, with the machine, could work pretty steadily.

"It is, therefore, fair to state the comparative quantity cut by the machine, in this experiment, as five times greater than that cut by the mower. That is to say, one man, a pair of horses, and a machine, would cut as much in a half-day as five men, or a pair of horses and a machine equal to four men. Now, as to the work performed, it was admitted by all that the machine cut much the best; and when it is considered that with the mowers one man is required to every five to do the spreading, we have to credit the machine with another man's labour in spreading, or a machine and horses equal to five men instead of four. or, including the driver, machine, and horses, equal to six men. This supposes, we will say, a half-day's work.

"The cost of the six men for the half-day, in haying, would be at least 4 dollars and a half under ordinary circumstances. The cost of a driver would, at the same rate, be 75 cents for the half-day. The keep of the horses, at 75 cents per day, would be equal to 37 and one-half cents, and, allowing for the use of the machine a dollar a day, which is, perhaps, a fair charge, we have, for the cost of machine labour, one dollar and sixty-two and one-half cents, instead of four dollars and a half, or, adding a dollar more for the interest on cost of horses, and we have two dollars and sixty-two and one-half cents to compare with four dollars and fifty cents, the cost of men.

"In another instance, where a 4 feet 8 inch cutter-bar was used, instead of 5 feet, the horses weighing 1820 lbs. instead of 1968, the trial was made on a piece similar to the last, 4 rods by 20, having a burden equal to 2700 pounds of hay to the acre; the machine made 17 swaths, averaging $3\frac{88}{100}$ feet to each, mowing the half-acre in 19 minutes, at a speed, including turnings, of $3\frac{35}{100}$ miles an hour, cutting $1146\frac{31}{100}$ square feet of Grass a minute, including the turnings. A good mower on the same field, cut a swath 20 rods or 330 feet long and $6\frac{1}{2}$ feet wide, or 2145 square feet, in $7\frac{1}{2}$ minutes, or 286 square feet in a minute, allowing no time for rest or sharpening the scythe. Here the machine cut $4\frac{2}{100}$ times as much as the man; or, allowing the machine no time for rest or turning, it cut $1270\frac{4}{10}$ square feet a minute, or $4\frac{44}{100}$ times more than the man in the same time. In the first instance, $4\frac{65}{100}$ times, with the 5 feet cutter-bar.

"Many similar experiments in different parts of the country have come within my knowledge, where the results were so nearly alike as to lead to the conclusion that the above is a fair calculation for lots similarly situated.

"'The gain in cutting the Grass,' says an experienced practical farmer, 'must be apparent to all who have land smooth enough to work a machine on; and in this connection it may be best to speak of the horse-rake with the mower, as one naturally follows the other. Our way of getting hay when the weather is good, is this: To cut and rake it into the windrow the first day. The next, open and turn it if necessary, then rake it and cart it.

"'Now, one man with a machine and horses, in the forenoon, and one horse and rake three hours after dinner, can put 5 or 6 acres of Grass into the windrow every day if he chooses, which is as much as ordinary farmers in this vicinity wish to do, as our hay has to be carted from 1 to 2 miles, and that takes time. How many men will it take to do the same work? Any one can answer this to his own satisfaction; and, as labour differs in price in almost every section of the country, the actual cost would vary somewhat. But here it would take from five to 10 men to do the same work, varying as the burden of Grass does per acre; for in lodged Grass 10 would hardly do.

"'Then the advantage of having it done in good weather, and cutting the Grass when he chooses, whether in blossom or after it is fully ripe, I think can be safely put down at 10 per cent., and some call it as high as 20 per cent.'

"From what has already been said, and from the testimony of many practical farmers, it appears that

the estimate which has been made, requiring five men to do the work of one man, machine, and team, or six men including the spreading, is a very reasonable one, as in the cases stated, no allowance is made for the endurance of the men at the rate at which they worked in the experiments named.

Other considerations give further credit to the machine, since the Grass was mown better than the average of good mowers, while it is easy to see that it was spread better by the machine, thus making a saving in the quality of the hay cured.

The cost of a man, machine, and horses, for a day, according to what has been said, would be not far from four dollars and fifty cents, while the cost of their equivalent in men would be not far from nine dollars. This calculation is based on the cost of keeping the team and price of labour on small farms, and it seems to shew the economy of machine labour there. How much more valuable may it not be on the large farms of the Middle and Western States?"

Notwithstanding that a good deal of what is written in these pages is adapted only for the circumstances of the New England farmer, yet from the greater part of it the English reader will receive much useful instruction.

Illustrations of Fungi causing the Diseases in Corn. By J. Bedingfield, F.L.S. Taylor & Francis, Red Lion Court, Fleet Street.

This is a sheet, 20 inches by 14, containing coloured coarsely drawn figures of the Fungi producing mildew, rust, smut, &c. There are also drawings of ears of Wheat and Grass suffering from the attacks of the Fungi. The colours are not perfectly accurate; and everything is shown on an enlarged scale.

There is some useful information given in the accompanying letterpress. The whole is a useful broadsheet, which may be hung up in the farmer's study with advantage.

The following is a passage on mildew and "pickling" Wheat, which, however, is curiously illustrative of the author's ignorance of farming matters:—

"It should be borne in mind, that as some of these Fungi attack the grain, and some are found on the stem and leaves only, the same remedy, if used in all cases, may not prove successful. First let the species or variety that is prevalent on any farm or locality be ascertained, and then apply that remedy which has been tried with most success against that particular disease. In all cases of 'steeping seed corn,' I would suggest the propriety of having it 'washed clean;' and in order to be assured of the sufficient cleansing of the whole of the seed corn, no better plan could be taken than to place under the microscope a few grains from various parts of the heap. This precaution would prevent much disappointment; for it not unfrequently happens that the 'steeping' has been so imperfectly done, that after that process the seeds of the Fungi may be detected adhering closely to the grain.

"Of late years great improvements have taken place in farming, and none are of more importance for the prevention of mildew than the following:—A greater circulation of air, by removing hedges and cutting down useless hedgerow trees; enlarging the fields and tile draining (much of the straw used in common draining is covered with Fungi); and by allowing no Reeds or Tall Grasses to grow up in the ditches and on the sides of the fields."

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Nov. 12, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.*	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	6	30.15	36	36	S.	1	9	47	34	50	32	0.05	50½	51½
Friday ..	7	30.28	38	38	N.	1	2	43	34	46	31	0.13	49½	51
Saturday ..	8	30.36	38	37	N.	1	5	44	25	59	22	..	48	51
Sunday ..	9	29.73	50	48	S.W.	3	7	50	37	65	36	0.04	47½	50
Monday ..	10	29.40	44	41	W.	2	5	54	38	59	34	0.11	48	49½
Tuesday ..	11	29.51	33	32	S.	1	1	46	27	74	23	..	46½	49½
Wednesday	12	29.97	35	33	W.	2	1	45	23	75	20	..	45	49

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Miscellaneous.

Prudence.—There is a seed called Discretion, if a husbandman have of that seede and mingle it amongst his other corne, they will growe doubtless much the better, for that seede will tell him how many casts of corn a land ought to have. And if a young husband, as it may so fortune, a man that by possibility might have gray-headed experience, hath not sufficient of that seede, yet he that lacketh, it is lawfull for him to borrow of his neighbours that have, and his neighbours be unkind if they will not lende this young husband part of their seed, for this seede of discretion hathe a wondrous virtue, for the more it is eyther taken of or lent the more it is.—*Boke of Husbandrye, quoted by C. W. Johnson, Esq., Quarterly Journal of Agriculture.*

Calendar of Operations.

NOVEMBER.

MID-LOTHIAN FARM: *Nov.* 3.—Sadly kept back with heavy rains, kept up with a constancy unusual in October. Labour is far behind. No Wheat has been as yet sown, and only now is ploughing up the Potato land being performed to receive the Wheat seed. Harvest operations were only concluded in the last week of October; Beans and Tares being then all carted and the last of the Potato crop taken up. The cold wet sunless summer has left us with poor Wheat, a worse crop of Barley than there has been for many years; a light yield of Potatoes and only middling Turnips, while where Mangel is grown it has become so spoiled by shooting that it is very inferior. Oats here are good, and with the fine hay crop and full return from pasture form the favourable side of the account. Seed Wheat is very difficult to procure; sowing old grain is very unsafe at this late period. Few, indeed, run the risk, as it is so apt to come thin, and thin Wheat is one of the worst paying crops; thoroughly dry new grain is much to be preferred. Cattle are now all in their winter quarters, in the boxes, courtings, or stalls, and were put so on the 17th October, when the weather broke, getting Turnips in the fields previously, and these in advanced condition; also Linseed cake. Lean stock have sold at high rates, and fat sheep and cattle are scarce and in demand. The less abundant Turnip crop will make larger demands on the corn crop to supplement the deficiency, and much of that crop will be only fit for using as cattle food. *J. M.*

NORTH LINCOLNSHIRE: *Nov.* 11.—A recent severe domestic affliction has prevented me sending you my usual report as soon as I would. Since you heard from me many important operations have been gone through, harvest work all got done, and seems upon the whole well secured in this part of the country. Every description of grain of good quality. Wheat not bulky, but will yield well to the bulk. After all our fears I think we shall have about an average crop; the quality being good makes it yield better than was anticipated. Wheat seeding is mostly concluded, except where sown after Turnips, which have to be consumed with sheep. This operation has been performed very satisfactorily; the early sown is now appearing above ground and looks vigorous. The steam cultivator has been in full work since harvest. We have gone through the whole of our fallow breadth twice over, with the exception of a small field we do not intend doing, about 140 acres. Got started on Sept. 11, finished Oct. 28; in the meantime going once through 40 acres that had been cultivated in summer for Wheat. We broke up 80 acres of seed land in July and August with the cultivator, which has facilitated Wheat seeding very much and made a much better seed bed than the plough and harrows possibly could have done upon heavy land. We have increased our steam power from 8 to 10-horse, having a favourable opportunity of exchanging our old 7-horse for 10-horse. We have been enabled to go the desired depth with greater ease. Our average daily quantity done from beginning this autumn, including wet days and all shiftings, is 9 acres 3 roods, with No. 4 Implement, and 7 acres 3 roods with No. 3; our men are at piece-work. The tackle now laid up for the winter. Fat sheep and hogs are now upon Turnips, and doing well; the former lambing in October and the latter the end of September. Turnips a good crop and bear a good deal of eating. Cattle are in the yards getting a small quantity of roots with straw, and from 2 to 3 lbs. of oil-cake according to age and size. Beef and mutton each making a good price. *S.*

Notices to Correspondents.

DAIRY MANAGEMENT: *J. Deal.* Mr. Horsfall's paper has not been published separately. You will find it in Vol. 17 of the Agricultural Society's Journal. The substance of it is given in a lately published American book on milch cows and dairy farming, which we shall shortly review. Morton's Handbook of Dairy Husbandry, price 1*s.* 6*d.*, published by Longmans, also alludes to it.

GAME: *H H.* We are not learned in the law. Our correspondent must consult his solicitor. We believe that damage by rabbits to crops can be recovered, if it can be proved. If you have a *written* permission from your landlord to destroy rabbits you may safely act on it.

ILL-GROWN SWEDES: *Swaithling.* We have received from Mr Rubie specimens apparently of Rape-like Swedish Turnips—or Swede-like Rape—but there is no communication with them.

LEATHER: *S R A.* We can find no information on the composition of leather clippings. But it is doubtless rich in nitrogenous matter. In the conversion of skin into leather there is, however, such an insolubility and fixity of character conferred upon it that it is rendered useless as manure, except after such a tedious process of rotting and disintegration as will practically render it valueless.

MESSRS. ANDREWS AND STEEL: *Correspondent.* We shall call attention to the subject next week.

OILCAKE: *J Gore.* Cows will benefit by a couple of lbs. of oil-cake daily in their food. But you had better try the effect of it on their milk and on their consumption of other food besides. We have known cases in which the unaccustomed addition went merely to form flesh, and did not enrich or increase the milk in any way.

Land Drainage, and other Agricultural Improvements.

MR. BAILEY DENTON, C.E., maintains a large staff for the execution of Land Improvements by a commission of 5*s.* per acre for Under Drainage, and a fixed charge for Outfall and other works.

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DRAINAGE of LANDS (by Contract, or laid out and superintended at 5*s.* per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. HUMBERT, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by Loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

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3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
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Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

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Manufactory: Stoke-upon-Trent.

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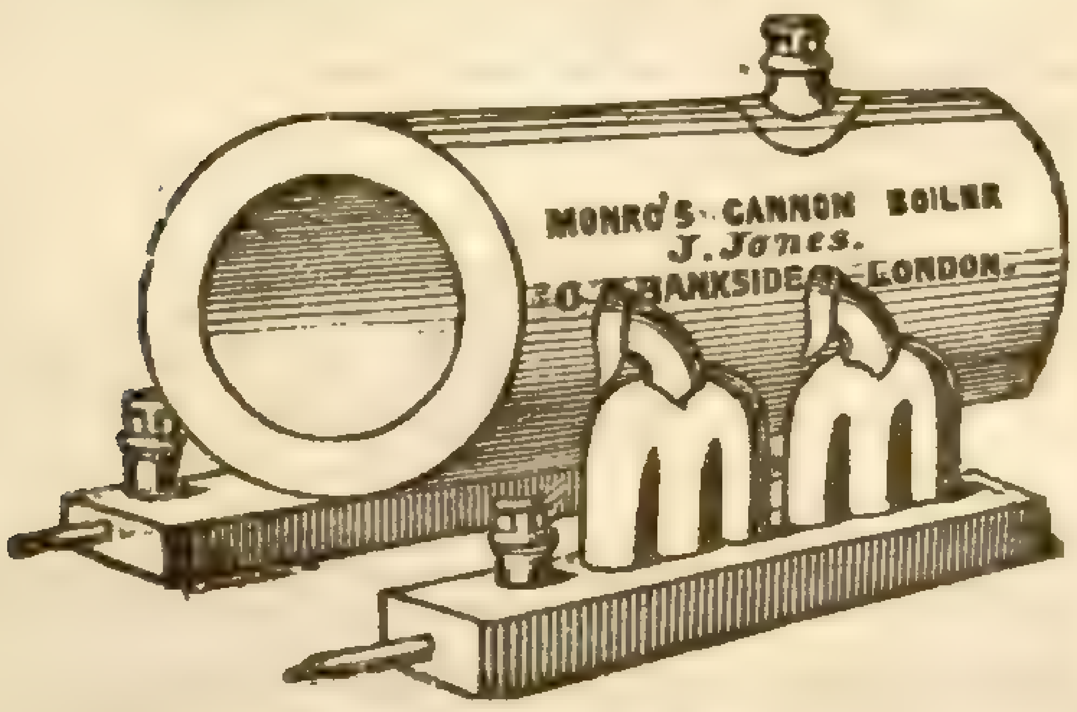

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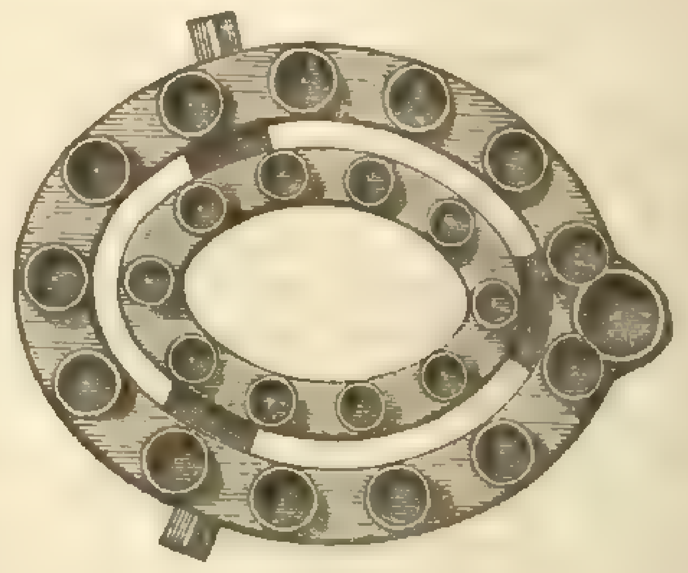

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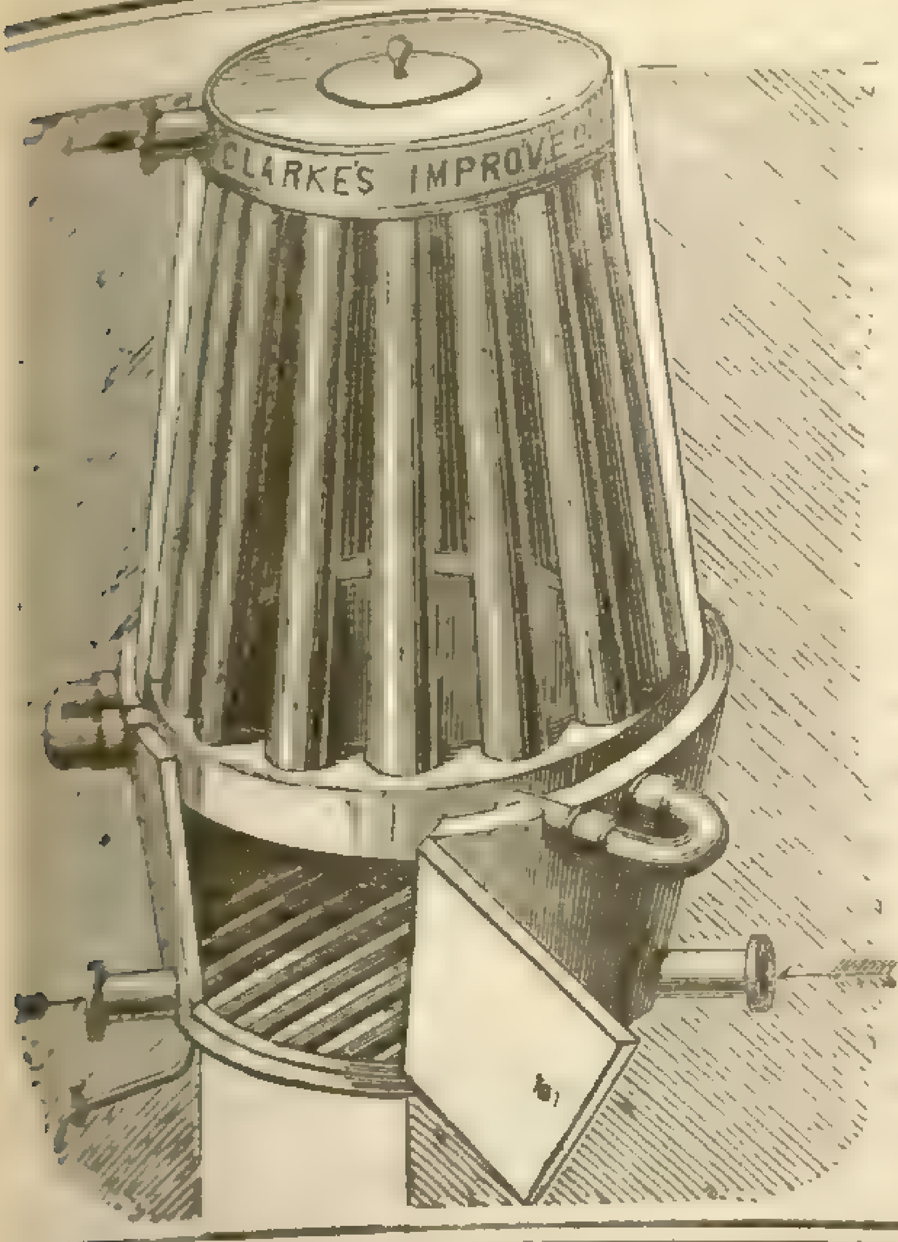

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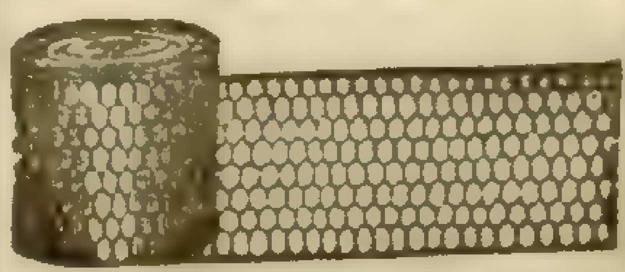

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ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 280 feet, 2¼d. and 2½d. per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each. Package included.

				3rds.	4ths.
12 by 9,	13 by 9,	14 by 9,	15 by 9	14s. 0d.	12s. 6d.
12 ,, 10,	13 ,, 10,	14 ,, 10,	15 ,, 10		
13 ,, 11,	14 ,, 11,	15 ,, 11,	16 ,, 11	16s. 0d.	13s. 6d. per 100 feet.
14 ,, 12,	15 ,, 12,	16 ,, 12,	17 ,, 12		
18 ,, 12,	19 ,, 12,	20 ,, 12,	16 ,, 13		
17 ,, 13,	18 ,, 13,	19 ,, 13,	20 ,, 13		
16 ,, 14,	17 ,, 14,	18 ,, 14,	20 ,, 14		

Various other sizes.

GLASS for ORCHARD HOUSES, As supplied by us to Mr. Rivers.

Sizes		16 oz.	21 oz.
20 in. by 12 in.	Common	13s. 6d.	£0 18 0
20 in. by 13 in.	Superior do.	16 0	1 3 0
20 in. by 14 in.	English Glass	18 0	1 9 0
20 in. by 15 in.			

The above prices include the Boxes.

SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11s. 6d.
8 ,, 6	8½ ,, 6¾	9 ,, 7	9½ ,, 7½	
		10 ,, 8	10½ ,, 8½	12 6

Boxes 2s. each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.

16 oz. 4ths, 1¾d., 2d., and 2½d. 21 oz. 2¾d., 3d, and 3½d.
,, 3ds, 2d., 2½d., and 3d. ,, 3d., 3½d, and 4d.

London Agents for Hartley's Improved Patent Rough Plate.

Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

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THOMAS MILLINGTON, 87, Bishopsgate Street Without, E.C.

HORTICULTURAL GOODS.

PROPAGATING GLASSES.

3 inches	..	0s. 4½d. each.	12 inches	..	1s. 9d. each.
4 ,,	..	0 5½ ,,	13 ,,	..	2 0 ,,
5 ,,	..	0 6½ ,,	14 ,,	..	2 6 ,,
6 ,,	..	0 8 ,,	15 ,,	..	3 0 ,,
7 ,,	..	0 10 ,,	16 ,,	..	3 6 ,,
8 ,,	..	1 0 ,,	17 ,,	..	4 0 ,,
9 ,,	..	1 2 ,,	18 ,,	..	5 0 ,,
10 ,,	..	1 4 ,,	19 ,,	..	6 0 ,,
11 ,,	..	1 6 ,,	20 ,,	..	7 0 ,,

HAND GLASSES.

12 inches	..	6s. 0d. each	18 inches	..	9s. 0d. each
14 ,,	..	7 0 ,,	20 ,,	..	10 0 ,,
16 ,,	..	8 0 ,,	24 ,,	..	12 0 ,,

If open top, 1s. extra.

CUCUMBER GLASSES. From 12 inches long and upwards, 1d. per running inch.

ROLLING PINS. From 12 inches long, 1½d. per running inch.

Improved ANTI-CORROSION and other PAINTS.
GAS and LAMP GLASSES, GLOBES, &c.
CHIMNIES of every description.
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New Park Street, Southwark, London,
Where a Wind Engine, in full work, may be inspected.

Paxton Works, Sheffield, Established 1738.

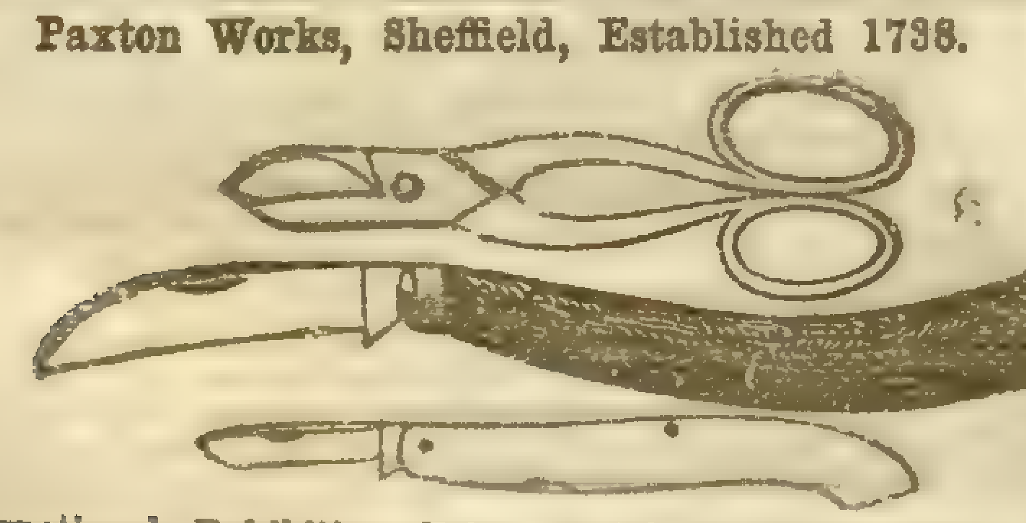

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Table Knives, per doz ..	14 0	16 0	18 0	23 0	25	29	33
Dessert ditto ,, ..	12 0	12 0	15 0	18 0	20	23	28
Carvers, Joint, per pair ..	4 6	5 6	6 6	7 6	8	9	11

DISH COVERS and HOT-WATER DISHES.—DEANE & Co. invite particular attention to their varied and excellent assortment of these goods, to which they are continually adding all modern approved patterns in Electro-Plate, Britannia Metal, and Tin.

	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
Britannia Metal, set of 5 ..	3 0	3 6	3 10	4 6	5 10	5 15
Britannia Metal, set of 6 ..	4 5	4 13	5 0	5 8	7 7	7 17
Block Tin, set of 6	0 18	1 10	2 0	2 2	2 8	2 17
Block Tin, set of 7	1 4	2 0	2 13	2 17	3 4	3 10
Electro Plate, set of 4 ..	12 8	12 12	14 0	15 0	15 15	26 4

ELECTRO-PLATED SPOONS and FORKS.—The best manufacture, well finished, strongly plated. Every article stamped with our mark, and guaranteed.

	Fiddle.		Beaded		King's.		Lily.
	Second quality.	Best.	Second.	Best.	Second.	Best.	Best.
	s. d.	s.	s.	s.	s.	s.	s.
Table Spoons, per doz.	33 0	40	44	58	54	66	58
Table Forks ,,	31 0	38	44	56	54	64	56
Dessert Forks ,,	23 0	29	32	54	37	46	40
Dessert Spoons ,,	24 0	30	32	42	37	48	42
Tea Spoons ,,	14 6	18	22	26	26	32	26

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ESTABLISHED A.D. 1700.

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(All other kinds at the same rate.)

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AWARDED BY THE JURORS OF CLASS II. FOR THE

GLENFIELD STARCH, being a confirmation by some of the most eminent scientific men of the age, of the superior qualities of this world-renowned Starch. Sold in Packets at ½d., 1d., 2d., 4d., and 8d. each, by all respectable Grocers, Chandlers, Oilmen, &c.

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Pronounced by Connoisseurs
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ASK FOR LEA AND PERRINS' SAUCE.

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HAIR RESTORED, preserved, and beautified, by the use of ROWLAND'S MACASSAR OIL.—It prevents hair from falling off or turning grey, strengthens weak hair, cleanses it from scurf and dandriff, and makes it beautifully soft, pliable, and glossy. For children it is especially recommended, as forming the basis of a beautiful head of hair. Price 3s. 6d., 7s., 10s. 6d. (equal to four small), and 21s. per bottle.

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T. W. Walton, Derby
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Phenyline is the best known remedy for Foot Rot, Mange, &c.

OZONIZED COD LIVER OIL is the nearest approach to a specific for Consumption yet discovered. The "London Medical Review," of August, 1861, states that "The merits of the remedy are genuine and intrinsic, nor must it be classed among the vaunted and ephemeral specifics which are daily thrust upon us by self-interested vendors."

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Twenty-third Year of Publication.

New ready, price 1s. sewed, or 2s. bound and interleaved.

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WITH A COLOURED ILLUSTRATION BY JOHN LEECH,

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Spotted Eagle	Merlin	Snowy Owl	Cole Tit
Osprey	Kestrel	Tawny Owl	Crested Tit
Buzzard	Goshawk	White Owl	Blue Tit
Rough-legged Buzzard	Sparrow Hawk	Little Owl	Marsh Tit
Honey Buzzard	Marsh Harrier	Tengmalm's Owl	Long tailed Tit
Kite	Hen Harrier	Mottled Owl	Bearded Tit
Swallow-tailed Kite	Montagu's Harrier	Hawk Owl	

LONDON: GROOMBRIDGE AND SONS, 5, PATERNOSTER ROW, E.C.

Notice.—Bentham's Illustrated British Flora.

On January 1, 1863, will be Published, Price 2s. 6d., Part I. of the

ILLUSTRATED BRITISH FLORA. By G. BENTHAM, F.R.S., President of the Linnean Society, with a fine Wood Engraving of each Species, and its Dissections, from original Drawings by W. FITCH.

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See "Notices of Books" in *Gardeners' Chronicle*, Sept. 13, 1862.

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TO BE DISPOSED OF, a genuine first-class NURSERY and SEED BUSINESS in West Norfolk, established upwards of 50 years, and is chiefly amongst the Nobility and Gentry. To a person of industrious and business habits, the present is an opportunity rarely to be met with. The Stock a carefully selected one, to be taken by valuation, for part of which accommodation will be afforded if required.

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May be viewed the Morning of Sale. Catalogues may be had at the Mart; and of Mr. ARTHUR PLEWS, Auctioneer, 50, Chancery Lane, W.C., and New Malden, Surrey.

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MR. ARTHUR PLEWS is favoured with instructions from Mr. Joseph May, of Wellington Street, Strand (who is about to relinquish the Nursery Branch of his Business), to SELL by AUCTION, at his Nursery, Acacia Grove, New Malden, Surrey, on WEDNESDAY, November 26, at 12 o'Clock precisely, the whole of the excellent GROWING STOCK, further particulars of which will be shortly announced.

May be viewed the day prior and Morning of Sale. Catalogues may shortly be had on the Premises; of Mr. JOSEPH MAY, Seedsman, Wellington Street, Strand; and of Mr. ARTHUR PLEWS, Auctioneer, Surveyor and Valuer, Land, Estate, and Horticultural Agent, 50, Chancery Lane, W.C., and New Malden, Surrey.

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MR. ARTHUR PLEWS will SELL by AUCTION, at the Auction Mart, Bartholomew Lane, London, on the THIRD TUESDAY in every MONTH throughout the SEASON, a Choice Collection of every description of HORTICULTURAL PRODUCE.

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MR. J. S. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on TUESDAY, November 18, at 12 o'Clock precisely, a Choice assortment of POULTRY and PIGEONS, from Mrs. Stow, Mrs Fookes, and other well-known breeders, comprising Cochins, Dorkings, Spanish, Game, Polands, Hamburghs, Rabbits, &c. Also the entire stud of the late Mr. Bult's Pigeons, amongst which are some of the finest Birds in the kingdom; also some Choice Birds from Messrs. Wicking, Esquilant, and Tegetmeier.

On view the Morning of Sale, and Catalogues had.

Consignment of Plants from Antwerp.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, November 22, at half-past 12 o'Clock precisely, a CHOICE COLLECTION of Camellias, Rhododendrons, Hollies, Laurustinus, Conifers, Magnolias, Roses, Gladiolus, Lilium lancifolium speciosum, Asclepias tuberosa, Azaleas, Pear and Peach Trees, Yuccas, Agaves, Rose Trees, Kalmias, Guelder Roses, Arborvitæ, Iris, Jasmines, &c.

On view the Morning of Sale and Catalogues had.

Dutch and Cape Bulbs, Fruit Trees, Roses, Conifers, &c.

MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, November 25, at half-past 12 o'clock precisely, a large importation of DUTCH BULBS, comprising 13,500 double and single Anemones, 5200 Gladioli, 8400 Crocuses, 200 Ferraria, Tigridia, &c., 100,000 QUICK, 2 yrs old, fine young stuff; some choice CONIFERS, ROSES, FRUIT TREES, HOLLIES, THORNS, &c.

On view the Morning of Sale, and Catalogues had.

Consignment of Plants from Ghent.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on MONDAY, December 1, at half-past 12 o'clock precisely, a fine assortment of PLANTS, comprising 200 Indian Azaleas, 150 Double Camellias, 300 hardy Rhododendrons, 500 Lilium lancifolium rubrum, 100 ditto album, 200 Blue Tigridia, 100 fine Standard and Perpetual Roses, &c.

On view the Morning of Sale and Catalogues had.

Roses, Fruit Trees, Vines, Laburnums, Tree Box, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, December 3, at half-past 12 o'clock precisely, 300 Standard and Half-Standard Roses, 300 Seedling Hollyhocks, 1200 Red Currant Trees, 400 White ditto, 1600 Gooseberries ditto, 24 Virginian Creepers, 260 Laburnums, 150 Jasmins, 150 Acacias, 25 Clematis, 160 Ivies, 200 Tree Box, 500 Raspberry Canes, 60 Vines, 450 Dwarf-trained Apricots, Peach, Nectarines, Pears, Plums, Cherry Trees, &c.

On view the Morning of Sale, and Catalogues had.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, on FRIDAY, Nov. 21, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 300 very handsome Standard, Half Standard, and Dwarf ROSES, selected AMERICAN PLANTS, well set with Bloom Buds, &c.

On view the Morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nurseries, Leytonstone, N.E.

Consignment from Ghent for Absolute Sale.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, on WEDNESDAY, Nov. 19, at 12 o'Clock, about 200 choice DOUBLE CAMELLIAS, from 18 in. to 2 feet, and 200 fine AZALEA INDICA, from 1 to 2 ft., beautifully set with bloom buds; 600 LILIUM LANCIFOLIUM RUBRUM and ALBUM, GLADIOLUS GANDAVENSIS, &c.; also 200 very handsome STANDARD and DWARF ROSES, choice HARDY AMERICAN PLANTS, &c.

On view the Morning of Sale. Catalogues had at the Mart, and of the Auctioneers, American Nurseries, Leytonstone, N.E.

Stratford, Essex

TO NOBLEMEN, GENTLEMEN, NURSERYMEN, AND PUBLIC COMPANIES ENGAGED IN PLANTING.

MESSRS. PROTHEROE AND MORRIS have received instructions from Mr. G. H. Bunney to submit to an unreserved SALE by AUCTION, on the Premises, The Nurseries, Leytonstone Road, N.E., and within five minutes walk of the Stratford Station on the Great Eastern Railway, on TUESDAY, Nov. 25 and following day, at 11 for 12 o'clock precisely, the ground being immediately required for gravel digging, a portion of the valuable NURSERY STOCK, comprising quantities of fine Evergreens, ranging all sizes, and including magnificent and useful specimens for effective purposes seldom submitted to public competition, and which, from the adhesive and peculiarly retentive nature of the soil, will remove safely, consisting of upwards of 1000 handsome Green Hollies, from 2 to 10 feet; 6000 Aucubas, very bushy, 1 to 5 feet; 1000 common Laurels, beautiful Sweet Bays, 4 feet; compact Irish Yews, 4 to 5 feet; Green and Variegated Box, 1000 Chinese, Siberian, and American Arbor-vitæ; Privet, Berberis, Garrya elliptica, Spruce Firs, &c.; also a choice assortment of American Plants, including Scarlet, Hybrid, and other choice Rhododendrons, hardy Azaleas, sorts; Andromeda floribunda, Magnolias, with some very handsome Standard Roses, including the best Hybrids, Bourbons, Chinas, &c.

May be viewed prior to the Sale. Catalogues may be had on the Premises; the Eagle, Snaresbrook; the principal City Seed Shops; and of the Auctioneers and Valuers, American Nurseries, Leytonstone, Essex, N.E.

Kilburn.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. J. WILLMER begs most respectfully to announce that he has received instructions from the Proprietor to SELL by AUCTION, on the Premises, Carlton Nursery, Carlton Road, Kilburn, N.W., (in consequence of the lease expiring at Christmas next), on WEDNESDAY, November 26, at 11 o'Clock, the whole of the NURSERY STOCK, which comprises Evergreens and Shrubs of various sizes, Fruit Trees, Roses, &c., among which are Aucuba japonica, 1 foot to 2 feet; Portugal Laurels, 2 feet to 4 feet; Green and Striped Box, 2 feet to 3 feet; Lignum Vitæ, 6 feet to 7 feet; Yews, 6 feet; Irish Yews, 6 feet; Cedrus Deodara, 3 feet; Rhododendron ponticum, 2 feet to 4 feet; Phillyrea, 3 feet to 4 feet; Striped Hollies, Green Hollies, Bays, Laurels, 3 feet to 4 feet; Evergreen Privet, White and Yellow Broom, Laurustinus, Standard, Dwarf, and Pillar Roses, Standard Mulberries, &c.; a Lean-to Greenhouse, 24 feet by 12 feet; the Erection of Shed, 12 feet by 12 feet; a quantity of Boards, and a variety of useful Items.

May be viewed two days prior to the Sale, and Catalogues had on the Premises, and of the Auctioneer, Springfield Nursery, Sunbury, Middlesex, S.W.

ADOPTED VERY LARGELY BY HER MAJESTY'S GOVERNMENT.

CROGGON'S PATENT ASPHALTE ROOFING FELT,

Price 1*d.* per square foot.

INODOROUS FELT, for Damp Walls and for Damp Floors under Carpets and Floor Cloths, also for LINING IRON HOUSES to equalise the temperature. Price 1*d.* per square foot.

PATENT FELTED SHEATHING, for Covering Ships' Bottoms, &c.

DRY HAIR FELT, for deadening Sound and covering Steam Boilers, Pipes, &c., preventing the Radiation of Heat, thereby SAVING 25 PER CENT. IN FUEL.

CROGGON & CO.,

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GALVANISED TINNED IRON, and every description of GALVANISED IRON WORK.

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NOISELESS ELASTIC KAMPTULICON, or INDIA-RUBBER FLOOR CLOTH,

Impervious to Wet, Indestructible by Damp, Soft to the Tread, and Warm to the Feet, well adapted for Aisles of Churches, Public Offices, Rooms, Shops, &c., as well for its comfort as extreme durability.

Samples, Testimonials, and full particulars, free, on application to

2, GOREE PIAZZAS, LIVERPOOL; or 2, DOWGATE HILL, LONDON, E.C.

Jones' Patent Anti-Frost Water Pipe Protector.

IMPORTANT to all HOUSEHOLDERS, preventing damage, waste, and annual expenses from pipes [illegible] in frosty weather.

Wholesale of BURY & POLLARD, Engineers, Sole Manufacturers, Park Iron Works, Southwark, London, S.

Retail of all Ironmongers. A liberal discount to the Trade.

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HOT WATER PIPES, from Stock, per yard:—2-inch, 1*s.* 2*d.*; 3-inch, 1*s.* 10*d.*; and 4-inch, 2*s.* 4*d.* BENDS, from stock, 1*s.* 7*d.*, 2*s.* 6*d.*, and 3*s.* 3*d.* each.

Other Connexions at equally low prices, and all goods of first-class manufacture.

LARGE MARQUEES for SALE, suitable for Horticultural Societies, &c.—Sizes: 140 by 40, 70*l.*; 120 by 40, 60*l.*; 100 by 40, 50*l.*; 80 by 40, 40*l.*; also 44 by 20, 20*l.*; 40 by 20, 18*l.*; 28 by 16, 8*l.*; and a number of small Tents, all complete for use.

R. RICHARDSON, 99, Euston Road, London, N.W.

SECOND-HAND TARPAULINGS for Sale, 200, the size 7 ft. × 4 ft. 6 in., with an eyelet hole in each corner, suitable for garden frames, pits, &c. Price 2*s.* 9*d.* each, or made up to any required size, 1*s.* per square yard, a strong good article; 2*s.* 8*d.* would be taken for a quantity. WATERPROOF CAPES, lined with blue cloth, 2*s.* 6*d.*, and [illegible] Small Macintosh DRIVING APRONS, 3*s.* each; large do., [illegible] HORSES' LOIN CLOTHS, 7*s.* Waggon and Cart Covers, &c. N.B. 1000 Policemen's Capes, second-hand, at 18*s.* to 36*s.* per doz.

R. RICHARDSON, 99, Euston Road, London, N.W.

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LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

These Machines have carried off every Prize that has been given in all cases of competition, and have been awarded the PRIZE MEDAL at the INTERNATIONAL EXHIBITION of 1862.

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For Illustrated Price Lists, with full particulars, address

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

HIS HIGHNESS THE VICEROY OF EGYPT.

JOHN WEEKS & COMPANY

HAVE GREAT PLEASURE IN ANNOUNCING THE HONOUR OF BEING ENTRUSTED WITH THE COMMANDS OF HIS HIGHNESS TO

CONSTRUCT A MAGNIFICENT CONSERVATORY,

of chaste design and elaborate finish, 320 feet long by 130 feet wide. Its temporary erection will take place in the early part of next year at their

STEAM-POWER WORKS, CHELSEA,

when the Nobility and Gentry will have an excellent opportunity of witnessing

WEEKS'S IMPROVED METHOD OF VENTILATION

IN FULLEST OPERATION.

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HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS ENGINEERS,

KING'S ROAD, CHELSEA, S.W.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 47.—1862.] SATURDAY, NOVEMBER 22. {Price Fivepence. STAMPED EDITION, 6d.

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An Edition of the GARDENERS' CHRONICLE *and* AGRICULTURAL GAZETTE *is published on Monday Afternoon at 4 o'Clock, containing full Reports of the Mark Lane and Cattle Markets, written expressly for the Paper.*

ROYAL HORTICULTURAL SOCIETY.
SHOWS in 1863.
[illegible]DAY, February 25, Hyacinths, &c.
" March 18, Camellias, Rhododendrons, &c.
" April 15, Azaleas, Roses, &c.
" May 27, FIRST GREAT SHOW.
" June 17, SECOND GREAT SHOW.
" July 1, Rose Show.
" July 8, THIRD GREAT SHOW.
" September 9, Autumn Show.

Royal Horticultural Society.
MR. JAMES CUTBUSH, F.R.H.S., begs to announce that he offers at the SPRING SHOW, Feb. 23, 1863, to AMATEURS a FIRST PRIZE of TWO GUINEAS, and a SECOND of ONE GUINEA, for 12 HYACINTHS, DISTINCT [illegible], grown in Pots.
N.B. The Society has fixed this date in lieu of the 18th [illegible] previously announced.
Highgate Nurseries, London, N.

Agricultural Seeds.
GEORGE GIBBS AND CO.,
SEEDSMEN,
26, Down Street, Piccadilly, London, W.

Agricultural and Garden Seeds.
H. AND F. SHARPE,
SEED GROWERS and MERCHANTS, Wisbech.
Special PRICED LIST of NEW SEEDS on application.

Genuine Garden and Agricultural Seeds.
JAMES CARTER AND CO.,
SEED FARMERS and NURSERYMEN,
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Agricultural Seeds for Autumn Sowing.
DELIVERED FREE AT NEAREST RAILWAY STATION.
PETER LAWSON AND SON,
THE QUEEN'S SEEDSMEN,
27, Great George Street, Westminster, S.W.

New and Genuine Garden and Agricultural Seeds.
SPECIAL PRICES ON APPLICATION TO
JAMES FAIRHEAD AND SON,
SEED GROWERS and MERCHANTS,
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Garden and Agricultural Seeds, Carriage Free.
WILLIAM WOOD AND SON
NURSERYMEN and SEED MERCHANTS,
Maresfield, near Uckfield, Sussex.

Choice Agricultural and Garden Seeds now Harvested.
THE PLYMOUTH SEED COMPANY,
Union Road, Plymouth, Devon.

Good Seeds, Carriage Free, at Market Prices.
SUTTON AND SONS,
SEED GROWERS and MERCHANTS,
Royal Berkshire Seed Establishment, Reading.

ANDRÉ LEROY'S NURSERIES, at Angers, the largest and richest in France.
CATALOGUES sent on application.

KNIGHT'S TALL MARROW PEAS.—A Quantity [illegible] for Sale. Sample and Price to be obtained of [illegible], Nurseryman and Seedsman, Stroud, Glouces-

WANTED, a quantity of SWEET PEAS, mixed. [illegible] lowest Cash price to "O'D." *Gardeners' Chronicle* [illegible] Wellington Street, Covent Garden, W.C.

To Seedsmen, Gardeners, and Others.
TO BE DISPOSED OF, about 30 qrs. of EMPEROR PEAS (true), harvested in good condition. The Advertiser [illegible] an offer for the whole or part of them. A [illegible] would be liberally dealt with.
Apply to Mr. WM. WOOD, Cattal, near York.

WEBB'S IMPERIAL KIDNEY POTATOES.—[illegible] Potato like it for quantity, quality, beauty and size, [illegible] per Bushel, on application to
RICHARD WEBB, Calcot Gardens, Reading.

Milltrack Mushroom Spawn.
WM. CUTBUSH AND SON have a few Bushels of the above celebrated SPAWN to spare. Cash price [illegible] per Bushel No discount to the Trade.
Highgate Nurseries, London, N.

Rose Catalogue, 1862-63.
WM. PAUL'S ROSE CATALOGUE is now ready for circulation. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

Dwarf Tea Roses.
EDWIN HOLLAMBY begs to announce that he has a large and healthy Stock of the above, comprising some of the finest Yellows, and other leading varieties, in the best possible condition.
Price on application.
Nurseries and Seed Warehouse, Tunbridge Wells, Kent.

New Rose Catalogue for 1862-63.
WM. WOOD and SON'S NEW CATALOGUES of ROSES, BULBS, and NURSERY STOCK are now ready for distribution, and will be sent free on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Standard Roses.
WILLIAM EPPS, JUN., can supply fine STANDARD ROSES, at 5*l.* per 100; 15*s.* per doz.
The Nurseries, Ashford, Kent.

EDWARD PARKE FRANCIS'S New DESCRIPTIVE CATALOGUE of ROSES on the Manetti Stock, of which he has the finest and largest stock in cultivation, will be forwarded gratis upon application.
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Rose Catalogue, 1862 and 1863.
JOHN CRANSTON begs to announce that his new ROSE CATALOGUE is now ready for distribution, and will be forwarded free on application. It contains full and faithful descriptions of nearly all the NEW ROSES of 1861, as well as the older kinds.
Nurseries, King's Acre, near Hereford.

RICHARD SMITH'S Stock of STANDARD, HALF STANDARD, and DWARF ROSES, combines superior quality with a larger selection than any other Nursery.
DESCRIPTIVE PRICED LISTS on application.
RICHARD SMITH, Nurseryman, Worcester.

Rose and Bulb Catalogues for 1862-3.
EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded gratis and post-paid on application.
Seed and Nursery Establishment, Tunbridge Wells, Kent.

DESCARTES ROSE STOCKS.—These fine Dwarf Stocks now selling at 50*s.* per 1000; 28*s.* per 500; 6*s.* per 100; 2*s.* per dozen. Also fine Dwarf-trained PLUMS and APPLES, EVERGREENS, &c.
J. J. FOSTER, Anmer Nursery, Edgeware, N.W.

S. PONSFORD'S CATALOGUES of GENERAL NURSERY STOCK and ROSES may be had gratis, on application to Loughborough Park Nurseries, Brixton, London, S.
N.B. STANDARD MULBERRIES, LIMES, and MOUNTAIN ASH, fine.

Collections of Bulbs for the Winter and Spring Garden.
SENT CARRIAGE PAID, SEE LARGE ADVERTISEMENT, p. 1070.
BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.
PAXTONIAN COLLECTIONS of BULBS for Spring Gardening, 10*s.* 6*d.* to 5*l.* 5*s.*
KENSINGTON GARDEN and CRYSTAL PALACE COLLECTIONS of BULBS for Winter Gardening, 10*s.* 6*d.* to 5*l.* 5*s.*
London Agents for TYE'S New SOUVENIR HYACINTH GLASSES.

Hyacinths, Tulips, Crocuses, &c.
BUTLER AND McCULLOCH'S DESCRIPTIVE CATALOGUE of BULBS, or AMATEUR'S GUIDE, may be had free and post paid upon application.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

Hyacinths, Tulips, and other Dutch Bulbs.
JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

TO THE TRADE.—A quantity of named HYACINTHS and other DUTCH BULBS, to be Sold Cheap. Sorts and price upon application to
THOS. SHERMAN, Seedsman, &c., Newington Butts, S.

DUTCH FLOWER ROOTS, for present planting, cheap and good. For 10*s.* 6*d.*, 12 choice Hyacinths, 12 Narcissus, 20 single and 20 double Tulips, 12 Jonquils, 20 Iris, 12 Anemones, 100 mixed Crocus, 12 Gladiolus, 50 Snowdrops, 50 Ranunculus, 25 Aconites, of
WM. DENYER, Florist, 82, Gracechurch Street, E.C.

CHRYSANTHEMUM FLOWERS in SPRAYS for decorative purposes, wanted on the 16th December. Address, stating price, &c., to BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

CHRYSANTHEMUMS.—A quantity of well-grown plants, principally POMPONES, leading kinds, in 5 and 6-inch pots, full of bloom and covered with foliage to the base, at 6*s.* to 9*s.* per dozen.
WOOD & INGRAM, Huntingdon.

Chrysanthemums.
WILLIAM HOLMES begs to offer this year's Varieties of the above at 5*s.* per dozen, including Carissima, Duchess of Wellington, General Slade, Lady St. Clair, Lord Ranelagh, Orange Perfection, Lady Russell, Nil Desperandum, &c.
Frampton Park Nursery, Hackney.

Grape Vines.
J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.
WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Vines: Black Hamburgh and Muscat of Alexandria.
ROBERT PARKER begs to offer extra strong Plants of the above (for planting), in large or small quantities, at 3*s.* 6*d.* each. The usual discount to the Trade.
Exotic Nursery, Tooting, Surrey, S.

Grape Vines.
B. S. WILLIAMS begs to intimate that he has a fine and healthy stock of the above from Eyes, including all the best varieties for Fruiting in Pots and Planting Out. Prices on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Queen Pine Suckers.
THE GARDENER, Cyfarthfa Castle, Merthyr Tydvil, has to dispose of from 1000 to 1500 good strong QUEEN SUCKERS (surplus stock) warranted clean. Picked Suckers, 1*s.* each; mixed, 6*d.* each. Purchasers of large quantities and the Trade will be liberally dealt with.

WILLIAM EPPS, JUN., begs to offer extra fine Dwarf-trained PLUMS, CHERRIES, PEACHES, APRICOTS, and NECTARINES.
Price on application.
The Nurseries, Ashford, Kent.

RASPBERRIES, Trade price:—Cornwell's Seedling, 14*s.*; Carter's Prolific, 12*s.*; Filbasket, 10*s.*; Autumn fruited, 8*s.*; and Yellow Antwerp, 8*s.* per 100, or 2*s.* per dozen. GOOSEBERRIES: Crown Bob, Warrington, Whitesmith, fine strong bearing plants, suitable for Market Growers.
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TRUE KENTISH and WEBB'S COB FILBERT TREES, handsome formed Trees, 4*s.*, 6*s.*, and 9*s.* per doz.
EPPS' Nursery and Seed Establishment, Maidstone.

WEBB'S PRIZE COB FILBERTS, and other COB NUTS as exhibited at the INTERNATIONAL FRUIT and FLOWER SHOW, Kensington. Trees of these splendid varieties of Filberts may be had by application to
RICHARD WEBB, Calcot Gardens, Reading.

Vines, Fruit and Ornamental Trees and Shrubs.
PAUL AND SON would invite attention to their unequalled stock of VINES, trained PEACHES, NECTARINES, APRICOTS, and other Fruit Trees, Ornamental Trees, Shrubs, and Evergreens, and General Nursery Stock.
Old Cheshunt Nurseries, Herts.

Large Shrubs, Fruit Trees, Roses, &c.
WM. CUTBUSH AND SON have a fine stock of the above. Amongst them will be found many VERY LARGE EVERGREENS, suitable for producing an immediate effect, at unusually low prices.
Highgate Nurseries, London, N.

Choice Fruit Trees in Pots.
B. S. WILLIAMS begs to intimate that he has an extra fine Stock of the above for fruiting in Pots, from 4 to 6 feet high, full of flower buds—consisting of Peaches, Plums, Nectarines, and Cherries. Prices on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Large Fruit Trees Wanted.
MR. JAMES VEITCH, JUN., Royal Exotic Nursery, Chelsea, S.W., is in immediate want of a few extra-sized DWARF-TRAINED PEACH and NECTARINE TREES, for planting in a Peach House, and any gentleman having surplus trees on his walls, or any Nurseryman having any to offer, will oblige Mr. VEITCH by giving him particulars of them.

TO BE SOLD, Cheap, about 30 large ORANGE TREES in Tubs, from 7 to 10 feet.
Apply to PROTHEROE & MORRIS, Auctioneers and Valuers, American Nurseries, Leytonstone, Essex, N.E.

FOR SALE, a magnificent YEW TREE.—Height about 12 feet, covers 10 feet. Safe for removal. Will be Sold a bargain. Suitable for any nobleman or gentleman requiring such a handsome and ornamental Evergreen.
J. B., 4, Belle Terre Villas, Albion Road, Hammersmith, W.

LARCH and SCOTCH.—50,000 fine transplanted LARCH, 3 to 4 feet; 50,000 well grown SPRUCE, 2 feet, very full and fine.
Please apply to JOHN KEYNES, Nurseryman, Salisbury.

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CAREY TYSO'S NEW CATALOGUE of ANEMONES, RANUNCULUSES, TULIPS, ROSES, CARNATIONS, PICOTEES, &c., will be sent free to applicants enclosing a postage stamp. Treatise on Culture of RANUNCULUS, for seven stamps; Ditto of ANEMONE, four stamps.
Wallingford, Berks.

Royal Nursery, Great Yarmouth.
YOUELL AND CO.'S New CATALOGUE of GREENHOUSE PLANTS, Rare and Hardy CONIFERÆ, SHRUBS, GLADIOLI, &c., is ready, and will be forwarded on application.

Standard and Dwarf Roses.

BENJAMIN R. CANT will be happy to forward on application his DESCRIPTIVE CATALOGUE of ROSES.

As a guarantee of the value of his collection, B. R. C. begs to state that he has this year obtained 17 First Prizes for Cut Roses at the principal Shows.

Very fine vigorous plants of the choicest sorts will be supplied at the following prices :—

Standard Roses	18s., 24s., and 30s. per doz.
Half Standard Do.	18s. and 24s. per doz.
Dwarf Do.	9s. to 18s. per doz.

The NEW ROSES of 1862, Dwarf plants, 3s. 6d. to 5s. each ; or, if 12 or more varieties are taken, 30s. per doz.

St. John's Street Nursery, Colchester.

N.B.—B. R. C.'s Catalogue contains nothing but the best varieties ; all indifferent and worthless sorts are excluded.

50,000 Dwarf Roses in Pots on their own Roots.

STANDARD, HALF STANDARD, AND DWARF BUDDED ROSES, ON THE BRIAR AND MANETTI STOCK, IN ENORMOUS QUANTITIES AND IN THE MOST VIGOROUS HEALTH.

WILLIAM WOOD AND SON have much pleasure in directing especial attention to their very extensive and well-grown stock of ROSES, CATALOGUES of which may be had gratis on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses of 1862.

JOHN KEYNES has to offer 1000 very extra strong plants, the finest varieties of the last season, in 6 and 8-inch pots, now ready, price 42s. per dozen, with the usual discount to the Trade.

Fine STANDARDS, of the older varieties, 24s. & 30s. per doz.

DWARFS, 12s. and 18s. per dozen, all of the finest varieties in cultivation. Every attention paid to package, and compensation for carriage.

New CATALOGUES ready.

JOHN KEYNES, Nurseryman, Salisbury.

ROSES and HOLLYHOCKS.

	Per dozen.
ROSES, fine Standards, from	18s. to 30s.
ROSES, Half Standards ,, ...	18s. to 30s.
ROSES, Dwarfs ,, ...	9s. to 18s.
ROSES, New of 1862 ,, ...	30s. to 42s.
HOLLYHOCKS, old varieties, from ..	12s. to 18s.
HOLLYHOCKS, newer varieties ,, ..	30s. to 42s.
GLADIOLI, new and old.—A fine collection from	6s. to 30s.

The above are very fine.

CATALOGUES post free on application.

PAUL & SON, Old Cheshunt Nurseries, Herts.

New Hybrid Perpetual Roses.

DUCHER, Rue de la Mouche, Guillotière, Lyons, France

1. PRINCESS ALICE.—Very vigorous growth, fine foliage, almost thornless ; flower single, very large and full ; colour bright rose, enamelled white, odorous, firm peduncle. Price 20 francs.
2. BELLE DES MASSIFS.—Very free and vigorous grower ; buds in clusters opening successively ; flower middling size, Anemone-shaped ; colour bright rose, reverse of petals lighter ; odorous. Excellent Rose for bedding. It flowers from spring to the frosts, and its branches do not exceed 15 inches in height. Price 15 francs.
3. DEUIL AU PRINCE ALBERT (GONOD).—Growth very vigorous, ample red foliage with brownish stains; flowers large and full, perfect imbrication ; colour very dark crimson to black, with centre of flower flame coloured ; this is the darkest perpetual hitherto produced. Price 25 francs.
4. ROBERT FORTUNE (1861).—Growth vigorous ; thorny ; flower very large, cup shaped ; colour, bright red, stands well on peduncle, sweet smelling ; flowers abundantly. One of the best varieties known. Price, per dozen, 36 francs.

IMPROVEMENTS.—Gentlemen wishing to make Alterations or Improvements in PLEASURE GARDEN, KITCHEN GARDEN, LAWN, or PARK, would do well to consult H. LANE & SON'S

ROSE CATALOGUE | FRUIT CATALOGUE, and
TREE and SHRUB CATALOGUE, &c.,

which may be had on application at the Nurseries, Berkhampstead, Herts. An inspection of their Stock is earnestly requested.

(The finest and largest quantity of ARAUCARIA IMBRICATA in Europe.)

Andromeda formosa.

W. H. ROGERS, Red Lodge Nursery, Southampton, holds a fine Stock of the above very beautiful hardy Shrub, which produces immense corymbs of blossom like Lilies of the Valley, and evergreen foliage like Arbutus, and is admirably adapted for Lawns, Shrubberies, and American Grounds. Strong bushy plants, 1 foot, 1s. 6d. ; 2 feet, 2s. 6d. ; and 3 feet, 5s. each ; or 15s., 24s., and 42s. per dozen.

RHODODENDRONS, ROSES, FRUIT and FOREST TREES, beautiful specimens of CONIFERÆ, and every other description of Nursery Stock, extending over 60 acres, CATALOGUES of which may be had on application.

Choice Fancy Pansy Seed.

WILLIAM DEAN, Bradford Nursery, Shipley, Yorkshire, is offering Seed saved from his splendid Collection of FANCY PANSIES, which he warrants to be far superior in point of beauty to three-fourths of the New Annuals sent out.

W. D. cautions the Trade against sending out Foreign Seed, which produces utterly worthless varieties compared with those forming his collection, which is the finest in the world, and from which the seed has been saved. In sealed packets, 2s. 6d. each.

DEAN'S AURICULA-EYED SWEET WILLIAM.—These are very fine and distinct, and more showy than Hunt's ; are very rich in colour, stout, and circular, and have large attractive white centres. Sealed packets, 1s. each.

The following Nurserymen and Seedsmen can also supply them :—

Messrs. Peter Lawson & Son, Edinburgh and London
,, Hurst & Son, 6, Leadenhall Street, London
,, Messrs. Beck, Henderson, & Child, Adelphi Terrace, London
Mr. James Veitch, Jun., Royal Exotic Nurseries, Chelsea
Messrs. E. G. Henderson & Son, Wellington Nursery, St. John's Wood
,, Sutton & Sons, Reading, Berks
,, Garaway & Co., Bristol
,, Fisher, Holmes, & Co., Sheffield
,, James Dickson & Sons, 32, South Hanover Street, Edinburgh
Mr. Thomas Methven, Leith Walk, Edinburgh
,, Charles Alexander, West Register Street, Edinburgh
Messrs. Austin & M'Aslan, Glasgow
Mr. Robert Thyne, Glasgow
Messrs. Stuart & Mein, Kelso, N.B.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON AND CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

J. C. WHEELER AND SON, SEED GROWERS, Gloucester, have imported in excellent condition a large

COLLECTION of HYACINTHS,

including the extra fine varieties recommended by Dr. LINDLEY.

PRICED LISTS may be had gratis on application to the Importers,

Messrs. J. C. WHEELER & SON, Gloucester.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

Excellence and Economy.

H. BROWN has imported a [illegible] of HYACINTHS, CROCUSES, [illegible] including the best varieties [illegible] Collections at very [illegible]

See PRICED DESCRIPTIVE CATA[illegible]

Seed Ware[illegible]

DUTCH BULBS, HYACINTHS [illegible] 6s. per dozen, [illegible] large Golden Yellow CROCUS, [illegible] &c., and all other Bulbs [illegible]

British and Foreign FERNS, [illegible] and Aquariums of every description. [illegible] gallon.

R. GREEN, 154, Kingsland Road, N.E. [illegible] Conservatories, Covent Garden Market, [illegible] Avenue only.

New Hardy British Ferns.

J. IVERY AND SON can supply [illegible] ATHYRIUM FILIX FŒMINA [illegible] 7s. 6d. each ;

ATHYRIUM FILIX FŒMINA FRIZELLIÆ [illegible]
OSMUNDA REGALIS CRISTATA [illegible]

A Select LIST of the most rare kinds will be forwarded [illegible] Free on application.

Dorking Nursery.

New Fern, Pteris nemoralis variegata.

WILLIAM COLE, Fog Lane Nursery, W[illegible] Manchester, the raiser of this be[illegible] NEW FERN, is now ready to supply [illegible] orders will be executed in rotation.

It has been well described in the G[illegible] July 5, p. 620, where the writer speaks [illegible] novel form of Variegated Pteris."

It was also reported on in the *Gardeners'* [illegible] May 24, as follows :—"Among new Ferns, of [illegible] were shown, was one from Mr. Cole, Nurseryman, [illegible] belonging to the Variegated Class, [illegible] intermediate between argyraea and [illegible] a free grower."

W. COLE has great confidence in [illegible] stating that it is really a beautiful Fern, and [illegible] become exceedingly popular. 10s. 6d. [illegible]

Price (very liberal terms to the Trade for [illegible] application.

ROSES, NEW AND OLD.

WILLIAM PAUL

(SON AND SUCCESSOR TO THE LATE A. PAUL),

Can supply all the best ROSES, New and Old, and respectfully solicits early orders to insure good [illegible]

The following statement will show the number of FIRST and SECOND PRIZES awarded to [illegible] London Flower Shows during the present year :—

March 19.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
,, 26.	Royal Botanic Society	Cut Roses	FIRST PRIZE
April 2.	Royal Botanic Society	Cut Roses	FIRST PRIZE
,, 9.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
	Royal Horticultural Society	Beauty of Waltham	SPECIAL C[illegible]
	(A First Class Certificate having been previously awarded for this Seedling.)		
May 21.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
	Royal Horticultural Society	Pot Roses	SECOND PRIZE
,, 24.	Crystal Palace	Cut Roses	FIRST PRIZE
	Crystal Palace	Pot Roses	SECOND PRIZE
,, 28.	Royal Botanic Society	Collection Ditto	FIRST PRIZE
	Royal Botanic Society	Cut Roses	FIRST PRIZE
	Royal Botanic Society	10 Pot Roses	SECOND PRIZE
June 11.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
	Royal Horticultural Society	12 Pot Roses	SECOND PRIZE
,, 18.	Royal Botanic Society	50 Cut Roses	FIRST PRIZE

PRICED DESCRIPTIVE CATALOGUE free by post.

NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS, N.

TO HYACINTH GROWERS.

SORTS RECOMMENDED BY SUTTON & SONS.

The undermentioned HYACINTHS are fresh Imported Bulbs, and being all free blooming kinds, will be [illegible] suitable either for Forcing or for Exhibition.

Price 9s. per dozen.

RED, of Various Shades.

GENERAL ZEITHEN, light red, dark stripe.
BOUQUET TENDRE, deep red, fine truss.
PANORAMA, red, dark eye, very double.
ACTEUR, deep rose, very double.
GROOT VOORST, fine blush, large truss.
REGINA VICTORIA, salmon rose, large bells, good truss.
L'UNIQUE, purple mauve, very distinct.
L'AMI DU CŒUR, dark red, moderate truss.
NORMA, delicate waxy pink, large bells.

BLUE, of Various Shades.

BRIDE of LAMMERMOOR, bright blue.
DUC DE NORMANDIE, fine dark blue.
LORD WELLINGTON, dark porcelain, good truss.
PRINCE of SAXE-WEIMER, dark purple, large flower.
BLOCKSBERG, light blue, striped, large bells.
MIGNONNE DE DRYFHOUT, large bells, porcelain.
BLEU MORESQUE, purple lilac, compact truss.
CHARLES DICKENS, porcelain blue, shaded with purple, large flower.

BLUE, of Various Shades.

EMICUS, dark blue, with white eye.
GRANDE VEDETTE, clear porcelain, large bells, [illegible] truss.
NIMROD, fine light porcelain, [illegible]
PORCELAIN SCEPTRE, bright porcelain, [illegible]

WHITE, of Various Shades.

ANNA MARIA, purple eye, very double [illegible]
MISS KITTY, blush white, dark eye.
PASSE VIRGO, rosy eye, large truss.
PENELOPE, large flower with pink eye.
LA TOUR D'AUVERGNE, fine pure white.
GRAND VAINQUEUR, pure white, very [illegible]
VOLTAIRE, creamy white, fine, large truss.

YELLOW, of Various Shades.

BOUQUET D'ORANGE, reddish orange, [illegible]
FLEUR D'OR, deep canary yellow, [illegible] truss.
HEROINE, bright citron tipped with green.

The NEW GARDEN SEEDS for EARLY SOWING are now ready.

All Goods Carriage Free.

SUTTON & SONS, ROYAL BERKSHIRE SEED-ESTABLISHMENT, READING.

Gladiolus Gandavensis and Varieties.

B. S. WILLIAMS'S choice collection of these superb Bulbous Plants, which are beyond doubt the most autumnal ornaments to the garden, is now ready [illegible] out. Great attention has been bestowed on the [illegible] amongst which are many novelties, and none but [illegible] best quality are offered.

Collection of 24 Splendid Varieties, one root of each, 21s.
Collection of Choice Named Varieties, 6s., 8s., and 10s. per doz.
[illegible] DESCRIPTIVE LIST on application.
[illegible] Seven Sisters and Hornsey Roads, [illegible] N.

Elymus glaucescens (syn.) sabulosus.

B. S. WILLIAMS begs to call the attention of noblemen and gentlemen to the above ORNAMENTAL [illegible] it is perfectly hardy; having proved it for several [illegible] recommend it as being superior [illegible] Grass as an under cover for Game, &c.
[illegible] convinced of its utility, has provided a large [illegible] be begs to offer at the following low prices:— [illegible] 6s. per 100.
[illegible] Seven Sisters and Hornsey Roads, [illegible] N.

To the Seed Trade.—Rhodanthe maculata.

[illegible] BANKSIAN MEDAL.
[illegible] FIRST-CLASS CERTIFICATES.

W. THOMPSON, SEEDSMAN, Tavern Road, [illegible] respectfully announces that he has appointed [illegible] & Co., Plant and Seed Merchants, Pine [illegible] Road, W., his Wholesale Agents for the [illegible] first class novelty, of whom a scale of [illegible] prepaid application, and to whom [illegible] addressed. A Coloured Print may be had [illegible] allowed to purchasers.
[illegible] reduced to a few ounces, early applica[illegible] to secure a supply.

Early Scarlet and other Choice Rhododendrons.

J. WATERER'S CATALOGUE of the above [illegible] plants, as exhibited by him at the Royal Botanic [illegible] Park, is now published, and will be for[illegible]
[illegible] the colours of all the Rhododendrons, [illegible] every facility for making selections.
[illegible] an abridged List of really Hardy [illegible] heights and prices.
[illegible] Nursery, Bagshot, Surrey.

RHODODENDRON VERSCHAFFELTII.—All the [illegible] summer saw this splendid hardy [illegible] are of the same opinion—that it is the [illegible] way. Colour very delicate rose-violet, [illegible] and numerous black spots; an [illegible] foliage, very free and late bloomer, [illegible] hardy.
[illegible] branches, 1 to 1½ feet high, 12s. each.
[illegible] and buds, 1½ to 2 ft. high, 20s. each.
[illegible] drawing has appeared in VERSCHAFFELT'S [illegible]
[illegible] CATALOGUE can be obtained free by [illegible]
[illegible], Nurseryman, Ghent, Belgium.

Early Spring Flowers.

W[illegible] GIANT POLYANTHUS; ditto COW[illegible] [illegible]ist's Flower, POLYANTHUS, Roots or Seed; [illegible] PRIMROSE—Double Crimson, Double Purple, [illegible] Double Yellow, and Double Lilac ditto. COW[illegible] Himalayas; DOUBLE POLYANTHUS; and [illegible] which may be had on application to
[illegible], Caleot Gardens, Reading.

Gladiolus Brenchleyensis (True).

[illegible] AND CO. beg to offer this season strong [illegible] of the above, unequalled by any other [illegible] at 3s. 6d. per dozen; or 25s. per 100. [illegible], and when quantities are ordered [illegible] will be made.
[illegible] of August 23, 1862, says:—"The [illegible] are magnificent. We have as yet seen [illegible] so handsome near London. It is un[illegible] showy of the whole race of Gladioli."
[illegible] their extensive Collection, for which the [illegible] was awarded at the Crystal Palace Show, [illegible] First Class Prizes at the Royal Horticul[illegible] Show, South Kensington, Sept. 10, 1862, will [illegible]
[illegible] Nurseries, Great Yarmouth.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING [illegible] Trees of all the leading kinds, new and [illegible] varieties of American Plants, Choice and [illegible] Evergreen and Deciduous Trees and Shrubs, [illegible] Transplanted Forest Trees, &c., can be had [illegible]
[illegible] Nursery, Surrey.

MESSRS. BROWN AND CO. offer the following [illegible] PLANTS, which they will forward [illegible]:—

	s.	d.
[illegible] new hardy Belgian varieties, one of a [illegible] own roots, by name	20	0
[illegible] hardy American varieties, do. do...	15	0
[illegible] RHODODENDRONS, one of a sort, including [illegible], and Rose colour	12	0
[illegible], LEDUMS, and KALMIAS, per doz.	6	0
[illegible], Standards and Half Standards, per dozen, 12s. to	15	0
[illegible] of best sorts .. per dozen	6	0
[illegible] new sorts .. .. „	9	0
[illegible] or forcing, including [illegible] and Perpetuals, per dozen ..	12	0
[illegible] PINUS and other CONIFERÆ. Cheap.		
[illegible], fine varieties, per doz., 10s. to	15	0
[illegible] double varieties, per dozen ..	28	0
[illegible] winter flowering, per dozen	12	0

[illegible] FRUIT TREES.
[illegible] Dwarf-trained Peaches, Nectarines, [illegible] Apples, Plums, and Pears, 2s. 6d. each, or [illegible]
[illegible] of the above kinds, grown especially for [illegible] Houses, &c., 18s. per dozen.
[illegible] Gooseberries, Currants, and Raspberries, p. doz., 3s.
[illegible], Crocuses, and other Dutch Bulbs cheap [illegible] &c.
American Nurseries, near Farnham, Surrey.

NONE IS GENUINE UNLESS THE FOLLOWING TRADE PEDIGREE. MARK, IS UPON THE BAG, TO IMITATE THIS IS FORGERY.

THROUGHOUT NOVEMBER, ONE BUSHEL PER ACRE DRILLED WILL PRODUCE UNDER ORDINARILY FAVOURABLE CIRCUMSTANCES SIXTY BUSHELS PER ACRE.

HALLETT'S PEDIGREE NURSERY WHEAT.

1861, ACTUAL SIZE AFTER FOUR YEARS' REPEATED SELECTION, STARTING FROM A SINGLE GRAIN IN EACH YEAR.

Price ONE GUINEA A BUSHEL, including bag sewed up and sealed, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order.
Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, ESQ., F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

Prize Medal Seed Wheat.—International Cereal Show.
THE PRIZE [illegible]

MESSRS. [illegible] AND HAWTREE, for the BEST SAMPLE of RED WHEAT, for their sample of RED NURSERY WHEAT, by a jury consisting of some of the most eminent Corn Factors from Mark Lane and Agriculturists of the day.
This Wheat is remarkable for its fine quality, weight, and hardiness, and is one of the most productive upon poor soils and in exposed situations; it may be sown at any time from October to March.
Bulks of similar fine quality to the Prize sample, for cash only, at 68s. per Quarter.
Address, Basingstoke.

GENUINE ITALIAN RYE-GRASS, from second-cut Foreign.
MANGEL WURZEL and KOHL RABI SEED, in varieties.
"GOLDEN DROP" RED WHEAT, the best variety for late sowing, combining strength, quantity, and quality.
HALLETT'S PEDIGREE, 10s. per bushel. New Sacks, 1s 6d. each.
"DAINTREE'S EARLIEST" SEEDLING POTATO, which is [illegible] reports to be the most prolific and [illegible] in [illegible].
Apply to the Grower, Mr. S. A. DAINTREE, Fendrayton, St. Ives, Hunts.

PRIZE GOURDS and MAIZE.—Removed from the Horticultural Society's Garden and now on Exhibition [illegible] visitors may have the opportunity [illegible] beautiful, and varied Collection of [illegible] GOURDS ever seen in this country. See Large Advertisement, p. 1076.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

New Celery, Williams's Matchless Red.

B. S. WILLIAMS, Paradise Nursery, Holloway, N., has much pleasure in offering the above superior solid RED CELERY, feeling confident it will give satisfaction. It is perfectly hardy, a strong grower, very solid and crisp, and of a most delicious flavour. It has been taken up for use quite the end of April without having the least tendency for running to seed. From the testimonials received it is unquestionably the best Red Celery in cultivation. In sealed packets, 2s. each.

Myatt's Early Prolific Ash-leaved Kidney Potatoes.

H. AND F. SHARPE [illegible] earliest and most prolific Potato in cultivation [illegible] quality as any of the Early [illegible]. Having a good stock they can offer them at a low price to the Trade.
Also JACKSON'S ASH LEAVED KIDNEY, WALNUT LEAVED KIDNEY, and all the early Round varieties at equally low prices, which may be had on application.
Seed Growing Establishment, Wisbech.

Extra Strong Seakale for Forcing or Planting.

GEORGE CLARKE has to offer some very fine clean SEAKALE, quite equal to that which he sent out last season, and which gave such great satisfaction. The diameter of the roots is 2 to 3 inches, and for forcing it cannot be surpassed. Prices forwarded on application.
Samples can be seen at his Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill, S.

To the Seed Trade.

"THE STUDENT" PARSNIP.—The FIRST PRIZE for PARSNIPS at the INTERNATIONAL SHOW of the Royal Horticultural Society, South Kensington, [illegible] "The Student," [illegible] SUTTON & SONS, Reading.
The flavour of this Parsnip is far more agreeable than that of other kinds.
The specimens to which the First Prize was awarded were very large and finely formed.
[illegible]
and with a clean yellowish skin, without trace of canker.
SUTTON & SONS are now prepared to offer New Seed of this [illegible] in packets, 6d., 1s., 2s. 6d. each. Also to the Trade in larger quantities on liberal terms.
The undermentioned Seed Merchants have engaged a supply of Seed from Messrs. SUTTON & SONS:—
Beck, Henderson, & Child, Adelphi Terrace, Strand, London
Barr & Sugden, 12, King Street, Covent Garden, London, W.C.
[illegible], James & Son, York
[illegible], London
Carter & Co., High Holborn, London
[illegible], Tavistock Row, Covent Garden, London
[illegible], Westerham
[illegible] & Brown, Corporation Street, Manchester
Dickson & Sons, 1?2, Eastgate Street, Chester
Dickson, Hogg, & Robertson, 2?, Mary Street, Dublin
Dickson, Francis & Arthur & Sons, 1?6, Eastgate St., Chester
Dixon, R. J., & Son, [illegible] Queen Street, [illegible]
Drummond & [illegible]
Ernst & Von S[illegible], Hamburg
Gibbs, Thomas, & Co., Corner of Half Moon Street, Piccadilly
Garaway & Co., Durdham Down, Bristol
Hurst & Son, 6, Leadenhall Street, London
Perkins, John, 52, Market [illegible]
Pope, Henry, Great Heath [illegible], near Birmingham
Smith, R[illegible], Worcester
Toole & Co., We[illegible], Dublin
[illegible]
[illegible]
Wood & Son, Maresfield, near Uckfield
Early orders are requested, and will have the preference if the [illegible] to meet the demand.
Address, SUTTON & SONS, Royal Berkshire Seed Establishment, Reading.

COCOA-NUT REFUSE, as used for FERNS, [illegible] Exhibition, [illegible] Larger [illegible] FIBRE COMPANY, Kingston-on-Thames, S.W.
Also [illegible] FIBRE for [illegible] and Drainage in pots.
Postage Stamps or Post-office Orders payable to J. BAMSHAW & Co.
BAMSHAW'S BRUSHES and MATS are the best and most economical of any that are made, and are sold in every town in the kingdom.
CAUTION.—See that every Brush is stamped "J. BAMSHAW'S Patent, Kingston-on-Thames."

To the Trade.

JAMES GARAWAY AND CO. have large quantities to offer of

ASH | OAK
BEECH | SPRUCE FIR

Prices and Sizes on application.
Durdham Down Nurseries, Bristol.

Larch, Quicks, &c.

GEORGE CHIVAS, Chester, offers FOUR MILLIONS of TRANSPLANTED LARCH, from 1½ to 4½ feet, of very superior quality. FOUR MILLIONS of TRANSPLANTED THORNS of various sizes, a large portion of which are exceedingly strong. Orders for 10,000 of either, delivered free at any Railway Station. A Sample Bale, containing 100 of each, 5 sizes of Larch, 22s. 9d., and of Quicks, 15s., will be forwarded on receipt of a Post-office Order from unknown Correspondents.
A General PRICED LIST on application.

TREES, SHRUBS, &c.—The Subscriber begs to call the attention of intending Planters to his NURSERY GROUNDS this Season, the Stock consisting of all sorts of FOREST TREES, including LARCH, SPRUCE, and NATIVE SCOTCH FIR, OAKS, ELMS, &c., of all Sizes, and all of clean and vigorous growths, with every description of EVERGREEN and DECIDUOUS TREES and SHRUBS, FRUIT TREES, HERBACEOUS PLANTS, &c.
Fine Specimens of the rare and highly ORNAMENTAL CONIFERÆ.
The Stock is large, and in fine condition for removing, being frequently transplanted, thus securing strong, fibrous Roots.
Strong THORNS and BEECH for Hedges.
THOMAS HANDASYDE, Glen Nurseries, Musselburgh, N.B.

3000 DEODARS, 1000 CUPRESSUS LAWSONIANA, 1000 C. MACROCARPA, 500 THUJA LOBBII. The above are offered very cheap. The Deodars are handsome well grown plants, from 2½ to 5 feet, and have been transplanted every autumn for the last five years. The others are fine healthy plants varying from 2 to 5 feet high.
Prices on application to J. SCOTT, Merriott, Crewkerne, Somerset.

To Noblemen, Gentlemen, and Others engaged in Planting.

GEORGE BAKER begs to invite attention to the following superb specimens, which are in the finest condition :—
ARAUCARIA IMBRICATA, 6 feet, 9 feet, 14 feet
ABIES DOUGLASII, 10 feet, 14 feet, 20 feet
ARBOR-VITÆ (Siberian), 6 feet, 8 feet
CEDRUS DEODARA, 6 feet, 8 feet, 10 feet, 12 feet, 20 feet
CUPRESSUS LAWSONIANA, 5 feet
" DISTICHA, 8 feet, 12 feet
CEDRUS LIBANI, 8 feet, 10 feet
CHINESE JUNIPER, 5 feet, 6 feet
IRISH YEWS, 6 feet, 8 feet
JUNIPERUS RECURVA, 8 feet
" BEDFORDIANA, 5 feet, 6 feet
PICEA CEPHALONICA, 11 feet
PINUS CEMBRA, 7 feet, 10 feet
" EXCELSA, 10 feet, 15 feet
TAXODIUM SEMPERVIRENS, 10 feet, 12 feet
THUJA GIGANTEA, 6 feet
WELLINGTONIA GIGANTEA, 5 feet
KALMIA LATIFOLIA, Standards, fine
RHODODENDRONS,
PORTUGAL LAURELS,
G. B. in offering the above perfect specimens feels assured that whoever may favour him with their kind orders, their hopes will be fully realised. Prices on application.
American Nursery, Windlesham, Bagshot, Surrey.

To Noblemen, Gentlemen, and others engaged in Planting.

JOHN PERKINS respectfully invites the attention of the above to his extensive Stock of HARDY ORNAMENTAL TREES, SHRUBS, &c., all of which are in the best possible condition for removal, consisting of upwards of 10,000 Cedrus Deodara, averaging from 1 to 12 feet, and all the intermediate sizes, and as perfect as plants can be; Araucaria imbricata, Picea Pinsapo, Cupressus Lawsoniana, Thujopsis borealis, Wellingtonia gigantea, splendid plants, all from seed; Thuja aurea, English and Irish Yews, Arbor-vitæ; many thousands of Evergreens, averaging from 1 to 4 feet; Portugal and Common Laurels, Box, Berberis aquifolia, Juniperus, Red Cedars, Evergreen Oaks, Aucuba japonica, Laurustinus, Arbutus, Cotoneaster, Double Gorse, Green Holly, &c.

TRANSPLANTED FOREST TREES.
500,000 LARCH FIR, 2½ to 3, 3 to 4, and 4 to 5 feet.
SCOTCH FIR, 1 to 2, and 2 to 3 feet.
SPRUCE FIR, 1 to 2, and 2 to 3 feet.
ALDER, 2 to 3, and 3 to 4 feet.
ASH, 2 to 3, 3 to 4, and 4 to 5 feet.
BIRCH, 2 to 3, and 5 to 6 feet.
BEECH, 2 to 3, and 3 to 4 feet.
CHESNUTS, HORSE, 2 to 3, 3 to 4, and 4 to 5 feet.
Do. SPANISH, 2 to 3, and 3 to 4 feet.
ELMS, GRAFTED ENGLISH, 3 to 4, 5 to 6, and 6 to 8 feet.
" " HUNTINGDON, 3 to 4, 5 to 6, and 6 to 8 ft.
" " CORNISH, 3 to 4, 5 to 6, and 6 to 8 feet.
" SCOTCH or WYCH, 2 to 3, 3 to 4, and 4 to 5 feet.
HAZEL, 2 to 3 feet.
HORNBEAM, 2 to 3 feet.
LIMES, 3 to 4, 4 to 5, and 5 to 6 feet.
OAKS, ENGLISH, 2 to 3, and 3 to 4 feet.
" TURKEY, 2 to 3, 3 to 4, and 4 to 5 feet.
POPLARS, ONTARIO, LOMBARDY, and BLACK ITALIAN 3 to 4, and 5 to 6 feet.
SYCAMORE, 2 to 3, and 3 to 4 feet.
STANDARD LIMES, BIRCH, BEECH, ELMS, SYCAMORE, PLANES, HORSE CHESNUTS, &c., fine, 6 to 8, and 8 to 10 ft.
From 2 to 3 Millions of WHITE THORN QUICK, 2 & 3 years.
A large quantity of EVERGREEN PRIVETS and GORSE for Covert.
PRICED CATALOGUE of the above and General NURSERY STOCK on application.
52, Market Square, Northampton.

To Gentlemen, Nurserymen, Florists, Market Gardeners, and Others.

BULSTRODE PARK.—EXPIRATION OF LEASE.

TO BE SOLD, in large or small quantities (in consequence of the Duke of Somerset requiring the ground), several thousands of Hook's celebrated SEEDLING and COB NUT TREES, the former a free and very early bearer, the latter the handsomest Nut grown; an immense number of 2-years' old BLACK CURRANT TREES of the very best sorts; a very large quantity of some thousand yards of LILIES of the VALLEY, suitable for Forcing or Planting out; Pheasant-Eye, Sweet-scented, and Double NARCISSUS; Velvet-coloured POLYANTHUS (a beautiful variety), FORGET-ME-NOTS, and other Flowering Bulbs and Plants; and a great number of ROSES, Moss and other kinds.
Apply to Mr. WILLIAM HOOK, Bulstrode, Gerrard's Cross; or to Mr. W. T. ATWOOD, Land Agent, Mortlake, S.W.

TO NOBLEMEN, GENTLEMEN, AND OTHERS
ENGAGED IN PLANTING.

JOHN WATERER

Respectfully invites the attention of Gentlemen engaged in Planting to the under-named SELECTIONS of PLANTS, which he has no hesitation in saying are not to be surpassed by any Establishment in the Trade. They are all handsome, symmetrical Plants; have never been injured by pot-culture, and from frequency of removal are in an excellent state for transplanting without any risk of failure. J. WATERER being in possession of such an immense Stock is determined to treat on the most liberal terms, and is fully convinced that Purchasers, by paying a visit and selecting their own specimens, would find themselves amply repaid by the journey, which is easily accomplished by the South-Western Railway (Reading Branch) to Sunningdale Station, which is near the Nursery.

RHODODENDRONS, STANDARDS, of all the leading choice Scarlet, Crimson, Rose, and other varieties, handsomely grown, straight stems, 3 to 4 and 5 feet, consisting of such kinds as Concessum, Congestum roseum, Lady Eleanor Cathcart, Blandyanum, John Waterer, Alfrida Lefevreanum, and such others as are annually displayed by us at the Exhibition of Rhododendrons in the Royal Botanic Gardens, 'Regent's Park. Price 31s. 6d. to 63s. and 105s. each.

RHODODENDRONS, HALF STANDARD, of the most approved kinds, 2 to 3½ feet in stems, and symmetrical heads, 21s. to 42s. each.

RHODODENDRONS.—Hardy Scarlet, Crimson, Rose, White, and other choice kinds for superior clumps or borders, fine well grown plants, 1½ to 2 feet, 42s. to 60s. per dozen; larger at a corresponding advance in price.

RHODODENDRONS.—Immense quantities of fine Seedling varieties, in large bushy plants, 1½ to 2 or 3 feet, 30s. to 42s. per dozen. These varieties would be found very serviceable if introduced into clumps of the more choice kinds. They are of all colours, from bright rose to pink and white, and carry handsome hardy foliage.

RHODODENDRONS, Dwarf-growing kinds.—We cultivate about eight varieties, some of which are delightfully scented in their foliage and flowers. From their close-growing habits they make very excellent clumps for the decoration of winter beds or as edging to masses of the stronger growing kinds. Strong plants, 1 to 1½ foot, 18s. per dozen, or 6l. 6s. per 100.

RHODODENDRON PONTICUM.—A large quantity, 1 to 1½ foot, 25s. to 30s. per 100; 1½ to 2 feet, 42s. to 63s. per 100. This kind is recommended to the attention of planters of game covers, as it will thrive in any soil or situation, and is never injured in the most severe weather by hares or rabbits.

HARDY AZALEAS, for extensive planting, 50s. to 75s. per 100. Colours Scarlet, Orange, Pink, Yellow, &c.

HARDY AZALEAS, of the most superior Belgian and other varieties, 24s. per dozen, or 7l. 10s. per 100.

KALMIA LATIFOLIA.—Fine bushy plants, 1½ to 2 feet, 7l. 10s. per 100

PINUS NORDMANNIANA.—Of this justly admired Fir we hold by far the largest stock of really handsome Seedling plants to be found in the Trade, and can offer them strong and well shaped, as follows :—
1 foot, 7s. 6d. each; 72s. per dozen; 30l. per 100.
1 to 1½ ft., 10s. 6d. to 21s. each | 3 to 3½ feet, 84s. each
1½ to 2 feet, 42s. each | 3½ to 4 feet, 105s. each
2 to 3 feet, 63s. each | 4 to 5 feet, 6l. 6s. each
These last two sizes are nearly as wide through as high.

PINUS NOBILIS, all Seedlings—
About 1 foot, 10s. 6d. each; 84s. per dozen
1 to 1½ feet, 21s. each | 1½ to 2 ft, 31s. 6d. to 42s. each
2 to 3 feet, 63s. to 84s. each
The plants of the last mentioned size are considered to be of the largest size that can be purchased as Seedlings in the Trade. None of our stock are grafted, or even from cuttings, which are imposed so often upon purchasers. We would strongly recommend gentlemen to plant nothing but Seedlings.

PINUS BENTHAMIANA—
Strong fine plants, 4 to 5 and 6 feet, 7s. 6d. to 10s. 6d. each

PINUS LASIOCARPA (Seedlings)—
1 to 1½ feet, 10s 6d. to 21s. each | 2 to 3 feet, 63s. each
1½ to 2 feet, 42s. each | 3 to 3½ feet, 105s. each

PINUS GRANDIS (of Douglas)—
1 to 1½ feet, 10s. 6d. each | 1½ to 2 feet, 21s. to 42s. each

PINUS INSIGNIS—
2 to 3 feet, 10l. per 100
3 to 4 feet, 3s. 6d. each, 30s. per dozen
4 to 5 feet, 5s. each, 42s. per dozen
5 to 7 feet, 7s. 6d. to 10s. 6d. each

PINUS LAMBERTIANA—
2 to 3 feet, 5s. each, 42s. per dozen
3 to 4 feet, 7s. 6d. each, 60s. per dozen
4 to 5 and 6 feet, 10s. 6d. to 21s. each

PINUS MENZIESIA—
3 to 4 and 5 feet, 30s. per dozen, or 10l. per 100

PINUS TAURICA—
3 to 4 feet, 2s. 6d. each | 4 to 5 feet, 3s. 6d. each
Beautifully grown specimens.

PINUS CEMBRA—
2 to 2 feet, 2s. 6d. each, 24s. per dozen
3 to 4 and 5 to 6 feet, 3s. 6d. to 7s. 6d. each

PINUS PINSAPO—
2 to 3 feet, 5s. to 10s. 6d. each
3 to 4, 6 and 7 feet, 21s. to 105s. each

PINUS EXCELSA—
3 to 4 feet, 30s. per dozen | 4 to 5 feet, 3s. 6d. each

PINUS ORIENTALIS—
2 to 3 feet, 5s. to 10s. 6d. each | 3 to 4 feet, 10s. 6d. to 21s. each

ARAUCARIA IMBRICATA—
2 to 3 feet, 5s. to 7s. 6d. each | 4 to 5 feet, 31s. 6d. to 42s. each
3 to 4 feet, 10s. 6d. to 21s. each | 5 to 6 to 10 feet, 63s. to 210s.

THUJOPSIS BOREALIS—
1½ to 2 feet, 2s. 6d. each, 10l. per 100
2 to 3 feet, 3s. 6d. each, 12l. 10s. per 100
3 to 4 feet, 5s. each, 15l. per 100
Of this most hardy and desirable plant we possess a stock far greater than can be met with elsewhere, and not a grafted plant amongst them.

THUJA AUREA—
2 feet, 5s. each, 42s. per dozen, or 15l. per 100
2 to 3 feet, 7s. 6d. each, 60s. per dozen, 20l. per 100
3 to 4 and 5 feet, 10s. 6d. to 21s. to 63s. each

THUJA GIGANTEA—
2 to 3 feet, 5s. each, 42s. per dozen, 15l. per 100
3 to 4 feet, 7s. 6d. each, 70s. per dozen
4 to 5 feet, 10s. 6d. to 21s. each
5 to 6 feet, 31s. 6d. to 42s. each
This is a plant to which we beg to direct especial attention, and from its extreme hardiness and bright green foliage must ultimately become very generally planted. It is admirably adapted to form Avenues. Intending planters would find our stock of this fine plant exceeding by far that of any establishment in England. None are grafted.

THUJA OCCIDENTALIS—
3 to 4 and 5 feet, 30s. to 50s. per 100
This forms a highly ornamental hedge, far preferable to Yew, from its faster growth. The hedges in grounds 8 to 10 feet high and 2 feet thick are formed of it.

CUPRESSUS THYOIDES VARIEGATA—
2½ to 3 feet, 42s. per dozen, 15l. per 100
3 to 4 feet, 5s. to 7s. 6d. each

CUPRESSUS LAWSONIANA—
3 to 4 feet, 3s. 6d. each | 4 to 5 feet, 5s. each

CUPRESSUS LAWSONIANA VARIEGATA, 21s. each
A beautifully variegated form of Lawsoniana, of which we hold the entire stock of saleable plants.

CEDRUS DEODARA—
3 to 4 feet, 3s. 6d. each, 15l. per 100
4 to 5 and 6 to 7 feet, 5s. to 10s. 6d., to 21s. each
We hold a large stock of this Cedar, and would recommend such 4 to 5 and 6 feet as the most preferable size to plant. Large handsome specimens could also be furnished from 10 to 15 feet, and which would be sold at a very cheap rate.

CEDARS of LEBANON—
4 to 5 feet, 5s. each, 42s. per dozen

CEDRUS AFRICANA—
4 to 5 feet, 5s. each, 42s. per dozen

JUNIPERUS HIBERNICA—
3 to 4 feet, 21s. per dozen, 8l. 8s. per 100
4 to 5 feet, 30s. per dozen, 10l. per 100
5 to 6 feet, 3s. 6d. to 7s. 6d. each
6 to 10 feet, 10s. 6d. to 42s. each.

WELLINGTONIA GIGANTEA—
1 to 1½ feet, 18s. to 30s. per dozen
1½ to 2 feet, 3s. 6d. to 5s. each, 50s. per dozen
2 to 3 feet, 7s. 6d. to 21s. each
3 to 4 feet, 21s. to 42s. each
4 to 5 feet, 63s. to 105s. each

IRISH YEW—
4 to 5 feet, 3s. 6d. each | 5 to 6 feet, 5s. to 7s. 6d. each
6 to 7 and 8 to 10 feet, 10s. 6d. to 42s. each
Our stock of this Yew have all been trimmed to one single leader, and are very close in their form.

GOLD and SILVER YEWS, grafted on the stems of the Yews, about 4 feet from the ground, the variegated portion being from 1 to 1½ feet in length, 10s. 6d. to 21s. to 42s. each

STANDARD PORTUGAL LAURELS, 3 to 4 and 5 feet stems, very straight stems and handsome close-grown heads, 10s. 6d. to 21s. each

STANDARD WEEPING HOLLIES, 6 to 8 and 10 feet stems, 21s. to 105s. each

HOLLIES, GREEN, 1½ to 2 and 3 to 4 feet, 30s. to 50s. per 100; 3 to 4 and 5 to 6 feet, large quantities in fine condition, 5s. each

HOLLIES, GOLD and SILVER, in all the approved varieties, by the hundred or thousand, 2 to 3 and 4 to 5 and 6 feet

We have likewise immense quantities of the leading kinds of EVERGREENS of all sizes, such as Yews, Box, Bays, Aucubas, Arbutus, Phillyreas, Common and Portugal Laurels, &c. &c.

CATALOGUES describing the colours of all the RHODODENDRONS worthy of cultivation, with a list of CONIFEROUS PLANTS, with heights and prices, forwarded to all applicants.

THE AMERICAN NURSERY, BAGSHOT, SURREY,

Near Sunningdale Station, South-Western Railway, and Blackwater Station, South-Eastern Railway,

where excellent Conveyances await all Trains.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, popular and botanical names, derivations, description, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious Index of all their synonymes. Free by post for two postage stamps.
RICHARD SMITH, Nurseryman, Worcester.

WELLINGTONIA GIGANTEA.—The undersigned has to offer a very large and fine stock of healthy one year Seedling Plants established in single pots; also a few plants of larger sizes. Price per 100 or 1000 on application.
J. HENCHMAN, Edmonton, London, N.

WANTED, Large and Handsome SPECIMEN CONSERVATORY PLANTS.—Gentlemen having such, which have grown too large for their conservatory or greenhouse, may exchange them for New and Rare Plants by applying to
WILLIAM BULL, Establishment for New and Rare Plants, King's Road, Chelsea, S.W.

W. VIRGO AND SON have a very large quantity of strong 2 and 3 years Transplanted QUICK; also 1 year Seedling QUICK. Strong Evergreen Privet of various sizes, Standard and Dwarf Roses, Dwarf-trained Cherries of various sorts, English Oak, 3 to 4 feet; Turkey Oak, 6 to 8 feet; Weymouth Pine Fir, 3 to 7 feet; Laburnum, 5 to 7 feet; Mountain Ash, 5 to 7 feet; Berberis aquifolia, 9 inches to a foot; Common Laurel, 2 to 3 feet; Yew, 2 to 3 feet; Box Edging in large quantities.
Prices, with samples, can be had on application at the Nursery, Wonersh, near Guildford, Surrey.

AN AVENUE of WELLINGTONIAS.—Gentlemen wishing to plant an avenue of this GLORY OF THE FOREST would do well to inspect the Stock at the Sunningdale Nursery. They may select from thousands.

RHODODENDRONS of every hue, Scarlet, White, Crimson and Purple.—Gentlemen about to plant would consult their interest by an inspection of the Stock of Rhododendrons at the Sunningdale Nursery. They may select from hundreds of thousands.

COVER PLANTING.—Gentlemen about to plant for Cover would find the following plants worth a trial:—BERBERIS JAPONICA, COTONEASTER MICROPHYLLA, and RHODODENDRONS. A visit to the Sunningdale Nursery would not be uninteresting.

ROSES, Standards and Dwarfs, a very fine selection, in the most vigorous health, may be seen at the Sunningdale Nursery.

ROSES for FORCING, specially prepared, and calculated to give an abundant supply of Flowers during winter. All the finest kinds may be selected at the Sunningdale Nursery.

CONIFERS.—A fine Stock of well grown Plants of all the most interesting and really hardy Conifers, Evergreens, &c., may be seen at the Sunningdale Nursery, Sunningdale Station, S. W. R.
CHARLES NOBLE.

SCOTT'S CATALOGUES.
No. 1.—FRUIT CATALOGUE and FRUIT TREE CULTIVATOR'S DIRECTORY describes nearly 800 of the best and most esteemed of our Fruits, with copious Observations and Directions about their Cultivation; the formation of Pyramids, Root Pruning, and other matter interesting to lovers of fine Fruit. Price 7d.
No. 2.—The BULB, WINTER, and SPRING BEDDING-PLANT CATALOGUE, 18 pages.
No. 3.—The DESCRIPTIVE CONIFEROUS CATALOGUE, 16 pages.
No. 4.—The ROSE CATALOGUE, 22 pages.
No. 5.—The SELECT NURSERY STOCK, 15 pages.
In December, the VEGETABLE and FLOWER SEED CATALOGUE.
In April, the SUMMER BEDDING CATALOGUE, 72 pages.
Apply to J. SCOTT, Merriott, Crewkerne, Somerset.

Superb Double Hollyhocks.
WILLIAM CHATER'S NEW LIST is now ready, and may be had on application by enclosing one postage stamp.
Nurseries, Saffron Walden.
P.S. A LARGE STOCK of PLANTS also ready.

Superb Double Hollyhocks.
WILLIAM CHATER has an immense stock of PLANTS ready for immediate SALE.
Seedlings unbloomed, 18s., 25s., or 30s. per 100.
Large plants, with colours, 25s., 30s., or 40s. per 100.
Named varieties, in pots, 12s., 20s., or 40s. per dozen, &c.
Nurseries, Saffron Walden.

FANCY PANSIES.—The finest collection in cultivation, 9s., 12s., 18s., and 21s. per dozen. See DESCRIPTIVE CATALOGUE, post free on application.
N.B. Three of W. DEAN'S Seedlings will be figured in the Florist and Pomologist for December.
WILLIAM DEAN, Bradford Nursery, Shipley, Yorkshire.

To the Trade.
WANTED, a Quantity of PLATANUS OCCIDENTALIS, for an Avenue, about 7 ft. high; price per 100.
THOMAS JONES, Green Lane Nursery, Heaton Norris, near Manchester.

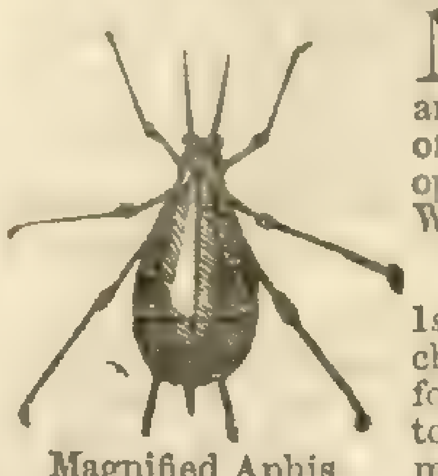
Tritoma Uvaria glauca.
JAMES KITLEY begs to offer fine large blooming plants of the above at the very low price of 6s. per dozen, and the plants at 4s. per dozen. The Trade supplied. Also NARCISSUS POETICUS, 10s. per 1000.
Lyncombe Vale Nursery, Bath.

Landscape Gardening and Planting.
WM. SHORT begs to draw the attention of Gentlemen who are making improvements to their Estates to the great facilities which he possesses for the Economical EXECUTION of ORNAMENTAL GROUND WORKS and PLANTING.
Plans prepared, Estimates given, Contracts taken.
Reigate Heath, Surrey.

Notice.
MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), HORTICULTURAL VALUER, begs to inform his friends and the public that he has REMOVED from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

EXTRA STRONG TOBACCO PAPER, at a low price to the Trade.
Apply to H. BROWN, Seedsman, Liverpool.

H. APPLEBY'S GENUINE TOBACCO PAPER is sold in 4 lb. packets, 1s. 3d. per lb. Carriage paid to London.
N.B. Post-office orders payable at Dorking, Surrey.


Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of GEO. GLENNY, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP,
1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.
Both may be obtained of all principal Seedsmen.
Patentee: J. NEAL, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.
This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.
Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.
Wholesale by
PRICE'S PATENT CANDLE CO., Limited.

WINTER DRESS all FRUIT TREES with GISHURST COMPOUND.
Copy of a Letter from MR. RIVERS, Nurseries, Sawbridgeworth, Herts, January 9, 1862.
"I think you should prominently mention the great benefit Wall Trees of all kinds derive from a dressing of the Compound applied in January, it is so very beneficial. THOS. RIVERS."
From the Same, October 22, 1861.
"I must tell you what I heard to-day from a very clever gentleman farmer, Anthony Bubb, Esq., of Witcombe Court, Gloucester. He has a Wall to which Peach Trees are trained. Well, last autumn they were in a wretched blighted state. As a desperate remedy he unnailed them all early last February, and gave all but one a thorough painting with GISHURST COMPOUND, 1 lb to the gallon of water; his trees, all but the one, commenced to grow favourably in spring, and are now pictures of health. The tree not painted is in a half-dead blighted state. He used the same dressing to his Apple Trees; it killed the woolly aphis entirely, and has made his Trees clean and vigorous in their growth. He intends to paint his Wall Trees annually, and tells all his friends to do the same. I shall certainly serve all my young Peach Trees against my walls in the same manner. The Compound is, I believe, more efficacious than the usual offensive mixtures of clay, soot, sulphur, &c., and it does not blacken the shoots on the walls." Unless trees are completely at rest, 6 to 8 ounces to the gallon of soft water is the best strength, and sufficiently strong to destroy eggs and insects."
GISHURST COMPOUND is Sold Retail by Nurserymen and Seedsmen, in Boxes, 1s., 3s., and 10s. 6d. each; Wholesale by PRICE'S Patent Candle Company Limited,
Belmont, Vauxhall London.

Archangel Mats.
JAMES T. ANDERSON begs to announce that he is now open to supply, at a low price, and in any quantity, ARCHANGEL MATS, the finest in London of this season's importation, and solicits an inspection of them by Nurserymen and Seedsmen.
SACKS, SEED BAGS, &c.
15, Sherborne Lane, King William Street, London, E.C.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.
PROTECTION from the COLD WINDS & MORNING FROST.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.
Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.
ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—
"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."
Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.
THE GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London, E.C.

Glass.
THOMAS MILLINGTON,
HORTICULTURAL WAREHOUSE,
87, Bishopsgate Street Without, London, E.C.
ESTABLISHED 1750.
NEW REDUCED TARIFF.
SMALL SHEET SQUARES
Best. 20s. 2nds. 16s. 3rds 12s. 6d. 4ths 11s. } Per 100 feet

6 in. by 4 in.	9½ in. by 7½ in.	14 in. by 10 in.
6½ „ by 4½ „	10 „ by 8 „	15 „ by 10 „
7 „ by 5 „	11 „ by 9 „	12 „ by 11 „
7½ „ by 5½ „	12 „ by 9 „	13 „ by 11 „
8 „ by 6 „	13 „ by 9 „	13½ „ by 11½ „
8½ „ by 6½ „	12 „ by 10 „	
9 „ by 7 „	13 „ by 10 „	

Best. 23s. 2nds. 18s. 6d. 3rds. 14s. 6d. 4ths. 12s. 8d. } Per 100 feet

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 „ by 11 „	17 „ by 12 „	22 „ by 15 „
17 „ by 11 „	18 „ by 12 „	24 „ by 15 „
18 „ by 11 „	22 „ by 12 „	20 „ by 16 „
13 „ by 12 „	17 „ by 13 „	20 „ by 17 „
14 „ by 12 „	23 „ by 13 „	20 „ by 18 „
15 „ by 12 „	22 „ by 14 „	

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers & others.

	Best.	2nds.	3rds.	4ths.	
16 oz.	22s. 0d.	18s.	15s. 0d.	12s. 6d.	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

20 in. by 12 in. | 20 in. by 13 in. | 20 in. by 14 in. | 20 in. by 15 in.
GLASS, cut according to size not on the List.
16 oz. 4ths. 1½d. 2d. and 2½d. per foot.
„ 3rds. 2¼d. 2½d. and 3d. „
21 oz. 4ths. 2¾d. 3d. and 3½d. „
„ 3rds. 3½d. 4d. and 4½d. „
Various thicknesses of Sheet Glass to the foot.
15 oz. 26 oz.
21 oz. 32 oz.
Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.
Genuine White Lead, 32s. p. cwt | Linseed Oil Putty, 8s. per cwt.
Anticorrosion Paint, 34s. „ | Patent Dryers, 28s. to 42s. „
CRYSTAL GLASS SHADES. EBONY and GILT STANDS.
HARTLEY'S IMPROVED PATENT ROUGH PLATE.
*** Not accountable for breakage.
SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

Glass for Greenhouses.
JAMES PHILLIPS AND CO., beg to submit their prices as follows:—
ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 280 feet, 2¼d. and 2½d. per foot.
SHEET GLASS, 16 ounces, packed in boxes of 100 feet each. Package included.

				3rds.	4ths.
12 by 9,	13 by 9,	14 by 9,	15 by 9	14s. 0d.	12s. 6d.
12 „ 10,	13 „ 10,	14 „ 10,	15 „ 10		
13 „ 11,	14 „ 11,	15 „ 11,	16 „ 11		
14 „ 12,	15 „ 12,	16 „ 12,	17 „ 12	16s. 0d.	13s. 6d.
18 „ 12,	19 „ 12,	20 „ 12,	16 „ 13	per 100 feet.	
17 „ 13,	18 „ 13,	19 „ 13,	20 „ 13		
16 „ 14,	17 „ 14,	18 „ 14,	20 „ 14		

Various other sizes.

GLASS for ORCHARD HOUSES,
As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.			
20 in. by 13 in.	Common	13s. 6d. ..	£0 18 0
20 in. by 14 in.	Superior do.	16 0 ..	1 3 0
20 in. by 15 in.	English Glass	18 0 ..	1 9 0

The above prices include the Boxes.
SMALL SHEET SQUARES, IN 100 FEET BOXES.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11s. 6d.
8 „ 6	8½ „ 6½	9 „ 7	9½ „ 7½	
		10 „ 8	10½ „ 8½	12 6 .

Boxes 2s. each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.
16 oz. 4ths, 1¾d., 2d., and 2½d. 21 oz. 2¾d., 3d, and 3½d.
„ 3ds, 2d., 2½d., and 3d. „ 3d., 3½d, and 4d.
London Agents for Hartley's Improved Patent Rough Plate.
Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.
Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.
JAMES PHILLIPS & Co., 180, Bishopsgate Street Without, London, E.C.

The handsome and only
FOUNTAIN in TERRA COTTA at play at the Exhibition, is now to be Sold at the reduced price of 40l., packed.
Illustrated in "Art Journal" and among the Stereoscopic Gems of the Exhibition.
A Photograph of it, or other designs, sent for inspection for 12 stamps, by JAS. PULHAM, Broxbourne, Herts.
Awarded Prize Medal of 1862 and 1851 for Garden Decorations.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street.
ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.

Garden Border Edging Tiles.
F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied Stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.
They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.
N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.
Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro-metallic and other Stable Paving Bricks of great durability. Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.
To be obtained of F. & G. ROSHER, at their Premises as above.

Foster's Seedling Grape.

MESSRS. JOHN AND CHARLES LEE have to offer Mr. Foster's stock of this fine NEW GRAPE, which can be confidently recommended for general cultivation in cool Vineries. It has borne an abundant crop in the large Conservatory of the Royal Horticultural Society at Chiswick, the bunches being large, with medium sized berries of a pale amber colour. The flavour of Foster's Seedling is most luscious, equalling the richness of its twin sister Lady Downe's, and as far as can be seen, partaking of the same quality of hanging well without shrivelling.

Canes for planting, 7s. 6d. each. A few Fruiting Canes at 21s. each.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Strong Grape Vines from Eyes.

R. GLENDINNING begs to announce that his Stock of GRAPE VINES, comprising all the old and new varieties worthy of cultivation, is unusually fine this season. It consists of a number of extra-strong well-ripened Canes, grown for fruiting in pots, and a quantity of fine healthy Vines for planting out.

PRICED LISTS on application.

Chiswick Nursery.—Nov. 22.

THE GREAT VINE at HAMPTON COURT.—The Subscribers being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42s. and 60s. p. doz.
„ „ fruiting plants in 12-inch pots, 10s. 6d. each.

If purchased in large numbers a considerable reduction will be made in price.

Jackson & Son, Nurseries, Kingston, S.W.

Strong Fruiting Vines.

GEORGE CLARKE invites the attention of intending Planters to his very superior stock of the above. They embrace all the leading varieties, have clean and well ripened rods 8 to 10 feet long, and remarkably short jointed. They were stopped to this length as early as June, rendering them equally stout and good the entire length; they are therefore very suitable for planting a house, or for growing in pots, where a crop of fruit could under proper treatment be obtained the first season.

The prices are—1 year old, 10s. 6d. each; 2 year old (extra size), 15s. Smaller plants, also from Eyes, and equally well ripened, which will produce fruit the second year, 3s. 6d. to 5s. each.

Specimens can be seen at the Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill, S.

Hurst House Seedling Pine.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer good plants of this choice Pine Apple, 10s. 6d., 15s., 21s. each.

The plant is of dwarf robust habit, producing heavy fruit of the richest flavour.

A large Stock of PRICKLY and SMOOTH CAYENNE PINES.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.
2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

Thomas Jackson & Son, Nursery, Kingston, S.W.

Stirling Castle Peach.

OSBORN AND SONS, of Fulham, S.W., having been favoured with the sole privilege of distributing Plants of this valuable Fruit, have the pleasure to inform their Patrons and the Public that they will be prepared to do so the ensuing season at the following prices:—

One year old Maiden Trees, 21s. each.
„ Trained „ 31s. 6d. each.

N.B. The Stock being limited, early orders are requested.

To those who are unacquainted with its merits, the following quotations will enable them to form an estimate of its value:—

From Mr. Solomon, Fruiterer, Covent Garden.

"This Stirling Castle Peach is certainly the finest specimen I have ever seen, and you may depend there will be nothing to beat it."

Mr. David Thomson, *of Archerfield, N.B., in the Gardeners' Chronicle, August 11, 1860, writes—*

"The fruit is large, high-coloured, and brisk in flavour. I feel convinced we are not in possession of a variety that in all respects is so fine as the Stirling Castle, and that it is destined to take the same place among Peaches that the Black Hambro' has so long occupied among black Grapes."

Extract from the Report of the Fruit Committee of the Royal Horticultural Society, May 6, 1862.

"The fruit were of good size and very well coloured, and the flavour for forced fruit so early in the season was remarkably good. The Committee unanimously awarded the First Prize to this exhibition. In a communication received from Mr. Carmichael, Dunmore Gardens, N.B. (the Exhibitor), he says—'As a proof of its value for early forcing, I may state that, in 1859, the fruit was ripe on the 20th of May; in 1861, on the 6th of May; and this season on the 23d of April. I know of no other sort that sets so freely. I begin to force about the 1st of November, and the tree is generally in full flower about the middle of December.'"

Fulham Nursery, London, S.W.—November, 1862.

M. A. LAKE invites attention to an immense Stock of strong 3 and 4-year old LANCASHIRE SHOW GOOSEBERRIES and CURRANTS, Dwarf-trained Apples and Pears, Standard Apples, Double Blossom Pink and Scarlet Thorns, Laurels, 2 to 3 feet; Spruce Fir, 1½ to 2 feet; Arborvitæs, Weeping Ash, Hollies, and Evergreen Privet and Thorns. The above being surplus stock, will be sold very cheap.

The Nurseries, Bridgwater.

Magnificent Dwarf-Trained Fruit Trees.

WM. WOOD AND SON have the greatest satisfaction in referring their friends to their very superior Stock of the above, which are in the finest possible health, and in point of training the trees are perfect pictures of successful cultivation.

The Stock comprises PEARS, PLUMS, CHERRIES, PEACHES, &c., &c.

CATALOGUES free on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

Fruit Trees.

RICHARD SMITH has no hesitation in saying that he possesses by far the largest Stock of FRUIT TREES in the kingdom, consisting of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, in Maiden Trees, Dwarfs, Bushes, Pyramids, Half-Standards, and Standards; Dwarf-trained, Half-Standard, Standard, and Horizontally-trained Trees, of the finest sorts, and in the best possible condition. DESCRIPTIVE PRICED LISTS on application.

Richard Smith, Nurseryman, Worcester.

FRUIT TREES.—One and two years fine clean stuff of APPLES, CHERRIES, PLUMS, PEARS, leading sorts. Trained PEACHES and NECTARINES, 30s. per dozen. Trained CHERRIES, PEARS, and PLUMS, 18s. to 24s. The above are excellent well shaped plants.

Stout 2 and 3 years Transplanted QUICK, 12s. to 16s. per 1000.
STANDARD ROSES, 12s. to 18s. per dozen.

Epps' Nursery and Seed Establishment, Maidstone.

Fruit Trees.

JOSHUA LE CORNU has no hesitation in saying that he not only has the most extensive Nurseries in the Island of Jersey, but that he possesses the largest collection of choice FRUIT TREES in that island, already so well known for the growth of fine fruit. His Nurseries being situated on elevated ground, the plants raised in them are of a hardy and vigorous nature, and are almost entirely free from constitutional maladies.

CATALOGUES may be had, post free, on application.

High View Nurseries, top of Queen's Road, Mont à l'Abbé, St. Helier's, Island of Jersey.

Large Mulberry Trees.

W. DENNIS, Florist, &c., of the King's Road, Chelsea, S.W., has still left a few very fine fruit-bearing MULBERRY TREES, with clean stems, 6 to 8 feet, with large fruit-bearing heads. Likewise a quantity of smaller trees from 15s. to 50s. per dozen.

Also, as the ground must be cleared for immediate building, a large quantity of GERANIUMS and other Greenhouse Plants, in fine condition for flowering next spring, 12s, 15s., to 20s. or 50s. per 100. Fine LILACS of different sorts, from to 6 feet.

SPECIMEN EVERGREEN SHRUBS, including HOLLY, 6 to 8 feet; ARBOR-VITÆ, 5 to 7 feet; LAUREL, 6 feet by 4 feet diam.; LAURUSTINUS, fine, 2 feet high by 3 feet diameter; and various others. A few extra large LIMES. All can be depended upon for safe transplanting.

Chas. Southby, Nurseryman, Clapham.

Planting Season.

WM. URQUHART AND SONS, Dundee, beg to announce that their PRICED LIST of FOREST TREES, ORNAMENTAL TREES, SHRUBS, BORDER FLOWERS, ROSES, FERNS, and AURICULAS, may now be had on application.

Dundee, Nov. 22.

Planting.

WM. PAUL (Son and Successor to the late A. Paul) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.

Entrance from the platform, Waltham Station, Great Eastern Railway.

Nurseries and Seed Warehouse, Waltham Cross, N.

ROYAL HORTICULTURAL SOCIETY.

LIST OF SUBSCRIPTIONS FOR THE PURCHASE OF WORKS OF ART.

(Continued from page 1074.)

	£	s.	d.
Samuel Long	£1	1	0
Mrs. Harden	1	1	0
F. E. Stewart	1	1	0
W. D. Davis	1	1	0
J. Goolden	1	1	0
George Macartney	1	1	0
Daniel Nash	1	1	0
William H. Hall	1	1	0
Major Clifford	1	1	0
Sir R. Jarvis	1	1	0
E. M. Lodwick	1	1	0
William Salt	1	1	0
Mrs. Salt	1	1	0
William Bull	1	1	0
H. O. Nethercote	1	1	0
Mark Richardson	1	1	0
George R. G. Ricketts	1	1	0
William Perry Herrick	1	1	0
James Bateman	1	1	0
William Lyon	1	1	0
C. L. Webb	1	1	0
Mrs. Burkingyoung	1	1	0
C. W. Binns	1	1	0
Thomas Evans	1	1	0
W. Jennings	1	1	0
T. L. Bland	1	1	0
Mrs. D. Nicholl	1	1	0
Rev. F. W. Gray	1	1	0
Mrs. De la Motte	1	1	0
Hon. M. C. Maxwell	1	1	0
J. H. Winch	1	1	0
Y. M. Thomson	1	1	0
J. H. Lane	1	1	0
Benjamin Head	1	1	0
Earl of Lucan	1	1	0
Mrs. Koch	1	1	0
W. H. Belli	1	1	0
T. G. Skipwith	1	1	0
J. E. C. Koch	1	1	0
F. Woodburn	2	2	0
W. Pixley	1	1	0
R. E. Pixley	1	1	0
Mrs. Senior	1	1	0
Henry Grisewood	1	1	0
Robert Clutton	1	1	0
Henry Wilson	1	1	0
William Snell	1	1	0
Basil T. Woodd, M.P.	1	1	0
Sir Hector Greig	1	1	0
William Smith	1	1	0
A. Spottiswoode	£1	1	0
J. N. Fazakerley	1	1	0
Geo. Smith	1	1	0
G. U. Skinner	1	1	0
Mark Philips	1	1	0
Thomas Brassey	1	1	0
Major-General Sir J. Yorke Scarlett	1	1	0
James Vere	1	1	0
Robert Garrard	1	1	0
Mrs. Archer	1	1	0
Henry J. Scott	1	1	0
John Thomson	1	1	0
Mrs. G. W. Adams	1	1	0
Duke of Manchester	1	1	0
Miss Gee	1	1	0
Miss C. Legrew	1	1	0
Henry Kingsford	1	1	0
William Christie	1	1	0
Charles E. K. Butler	1	1	0
William Jones Loyd	1	1	0
Thomas H. Usborne	1	1	0
James Heather	1	1	0
Rev. Frederick Beadon	1	1	0
John Cole	1	1	0
T. F. Blois	1	1	0
Henry Churchill	1	1	0
T. Farmer Bailey	1	1	0
Lord Faversham	1	1	0
J. S. Pigeon	1	1	0
T. R. Harman	2	2	0
G. B. Woolley	1	1	0
Mrs. Perry	1	1	0
Lieutenant-General Perry	1	1	0
Colonel Watson	1	1	0
George Tonge	1	1	0
Mrs. Cubitt	1	1	0
Wortley De la More	1	1	0
Countess de Flahault	1	1	0
John Bowes	1	1	0
John Stephens	1	1	0
H. B. Alexander	1	1	0
Mrs. Hall	1	1	0
M. A. Barlow	1	1	0
Park Nelson	1	1	0
J. S. Leigh	1	1	0
Rev. William Watson Smyth	1	1	0
Lady Rolle	1	1	0
M. Mitchell	1	1	0
Miss L. Hall	1	1	0
George Whiting	1	1	0
R. S. Holford, M.P.	1	1	0
Rev. J. A. Wedgwood	1	1	0
A. Swanston	1	1	0
James J. Chalk	£1	1	0
Thomas Eyre	1	1	0
Lady Willoughby de Eresby	1	1	0
Mrs. Scovell	1	1	0
Mrs. Leech	1	1	0
George Prevost	1	1	0
Viscount Dillon	1	1	0
Miss Huke	1	1	0
John Scott	1	1	0
W. Johnson	1	1	0
Thomas Lucas	1	1	0
C. Lucas	1	1	0
Sir R. N. C. Hamilton, Bart.	1	1	0
Geo. Adams, C.B.	1	1	0
Sir M. Blakiston	1	1	0
Henry Laiason	1	1	0
H. L. Antrobus	1	1	0
Herbert C. Saunders	1	1	0
A. Duncombe	1	1	0
Colonel Learmonth	1	1	0
Mrs. W. Mount	1	1	0
Mrs. Porter	1	1	0
Dr. Collier	1	1	0
Mrs. Lewis	1	1	0
Mrs. Seal	1	1	0
Lord Willoughby de Eresby	1	1	0
Lady Elizabeth Stucley	1	1	0
Earl of Shannon	1	1	0
Mrs. Aldridge	1	1	0
Miss Courtoy, Miss E. Courtoy	5	0	0
Roger Mostyn	1	1	0
W. Wells	1	1	0
T. M. Nunn	1	1	0
Thomas Bourne	1	1	0
Colonel Paget	1	1	0
J. Dewar	1	1	0
Charles Lee	1	1	0
John Lee	1	1	0
W. A. Shaw	1	1	0
Marquis of Westminster	1	1	0
Dowager Lady Filmer	1	1	0
Mrs. Inwood Jones	1	1	0
Mrs. Clement	1	1	0
Miss M. R. Clement	1	1	0
Henry Hill	1	1	0
Charles Clement	1	1	0
James Mangles	1	1	0
George R. Cox	1	1	0
William Windley	1	1	0
G. Knightley	1	1	0
R. Taylor	1	1	0
C. Ramsden	1	1	0
Lady A. Cotton Sheppard	£1	1	[illegible]
F. O. Mayne	1	1	[illegible]
William White	1	1	0
John Cock, Jun.	1	1	[illegible]
Lord Fitzhardinge	1	1	0
W. Hervey	1	1	0
John Little	1	1	[illegible]
John A. Cathcart	1	1	[illegible]
John Luscombe	1	1	[illegible]
J. Moses	1	1	[illegible]
J. L. Elliot	1	1	[illegible]
Henry Smith	1	1	0
James H. Wilson	1	1	[illegible]
George Robarts	1	1	[illegible]
J. H. Sinclair	1	1	[illegible]
Miss Marianne Simpson	1	1	[illegible]
Col. F. Paget	1	1	[illegible]
W. Wardell	1	1	0
Rev. S. R. Holo	1	1	[illegible]
H. G. Murray Stewart	1	1	0
William Hine	1	1	[illegible]
William Dunn	1	1	0
William Preston	1	1	[illegible]
Samuel Petrie, C.B.	1	1	[illegible]
S. Rucker	1	1	[illegible]
G. E. Jarvis	1	1	0
Earl of Zetland	1	1	[illegible]
J. Loveday	1	1	0
Rev. P. H. Douglas	1	1	[illegible]
C. Longman	1	1	[illegible]
J. N. Macleod	1	1	[illegible]
J. B. Philp	1	1	[illegible]
Charles Turner	1	1	[illegible]
J. G. Howes	1	1	0
George Clowes	1	1	[illegible]
J. W. P. Watlington, M.P.	1	[illegible]	[illegible]
R. Errington	1	[illegible]	[illegible]
Thomas Kibble	1	1	[illegible]
J. Thornycroft	1	1	0
Col. T. H. Sale	1	1	[illegible]
J. H. Machu	1	1	[illegible]
J. Neal	1	1	0
A. Bell	1	1	[illegible]
Lord Dynevor	1	1	[illegible]
S. Morley	1	1	[illegible]
A. W. Mac Tier	1	1	[illegible]
H. De Burgh	1	[illegible]	[illegible]
Hon. C. L. Butler	[illegible]	[illegible]	[illegible]
J. Holmes	1	1	[illegible]
Mrs. General Swiney	1	1	0
S. Bird	1	1	0
Colonel Glegg	1	[illegible]	[illegible]
J. Thompson	[illegible]	[illegible]	[illegible]

New Seeds, Growth of 1862.

Royal Berkshire Seed Establishment.

SUTTON AND SONS are now prepared to execute orders for all kinds of FARM and GARDEN SEEDS. The prices are lower and the quality finer than usual, owing to the very favourable harvest.
Royal Berkshire Seed Establishment, Reading.

Notice.—American Plants.

WATERER AND GODFREY'S CATALOGUE is now ready, and will be sent on application; it gives a price and description of all the Rhododendrons and other American Plants worth growing, as well as a general summary of the most extensive Nursery Stock in Europe.
The Exhibition of American Plants in the Royal Horticultural Society's Garden, South Kensington, were supplied by WATERER & GODFREY, Knap Hill, near Woking.

Royal Horticultural Gardens, South Kensington.

JOHN SALTER has the pleasure to announce that his magnificent COLLECTION of CHRYSANTHEMUMS is NOW on VIEW at the above Gardens, in the space occupied by the Rhododendrons last spring, and will continue in perfection during the month of November.
The plants in the Winter Garden of the Nursery are also in bloom.
Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Exhibition of Chrysanthemums.

JOHN SALTER, F.R.H.S., invites the Public to visit his unrivalled COLLECTION of these beautiful FLOWERS, which are NOW in FULL BLOOM. The Winter Garden alone contains several thousands of Plants, and presents a coup d'œil unique in this or any other country. The Gardens are open every day except Sunday. Admission free.
Versailles Nursery, William Street, near Hammersmith Turnpike, W.

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 22, 1862.

It is curious that in passing through the Indian collection of FIBRES at the International, so few seem to have noticed especially the very beautiful glossy substance exhibited there under the name of silk-cotton, together with the fabrics in the production of which it is employed in India as a substitute, either wholly or partially, for Cotton. It is yielded partly by different species of Bombax and Cynanchum; but the best is the production of two or three species of Calotropis, a genus belonging to the natural order of Asclepiads, and celebrated no less for the beautiful fibre yielded by the stems and the alkaline substance Mudarine, which is used with considerable effect in the treatment of certain cutaneous affections, as well as some other disorders. This active principle has the peculiar property of coagulating by heat and becoming fluid again on exposure to cold, and is produced principally from *C. gigantea*, though the fibre and silk-cotton are procured, not only from that species, but from *C. procera* and *C. Hamiltonii*. The Hemp is of excellent quality, being very strong and silky, and is used for weaving a kind of cambric of which handkerchiefs are made, a specimen of which had a conspicuous place in the collection, and at once called to mind those made of the Manilla Hemp.

The silk-cotton itself is the produce of the capsules, resembling somewhat in its origin true cotton. Under the microscope, however, the threads instead of being flattened are perfectly cylindrical and very even, so that they readily slip over each other, and are in consequence difficult to work, insomuch that the substance has been hitherto used principally for stuffing pillows. When, however, it is mixed with cotton, even in the proportion of four to one, it spins more readily, producing a tolerable yarn which may be manufactured into a coarse cloth resembling somewhat the unbleached calico which is so extensively used in this country by the poor for sheeting, as also for many other purposes. In the same collection there is also cloth made of equal parts of Cotton and Mûdar floss thread, another specimen made entirely of Mûdar floss, and a rug made altogether of the same material.

Calotropis gigantea (Mûdar) and C. Hamiltonii (Ak) are the species which produce the best silk-cotton, and as these occur in a wild state in dry sandy tracts where nothing else will flourish, a vast quantity might easily be procured for the mere labour of gathering. The expense is stated in the admirable account by Dr. J. FORBES WATSON of the products of India in the International Exhibition, just printed for her Majesty's Commissioners, to be about 3*s*. the maund of 82 lbs. The down ought to be collected in May and June, and its collection is spread over at least two months. Unfortunately "attempts in this country to work the material have hitherto failed. At the suggestion, however, of Mr. STUART CLARK, Inspector-General of Prisons in the North-Western provinces, a considerable quantity of it was lately forwarded to the department of the Reporter on the products of India at the Indian Museum, Whitehall Yard, by Dr. WALKER, of the Agra Jail, and a portion having been submitted to Messrs. THRESHER & GLENNY (who have for a long time been devoting attention to the subject), these gentlemen are at length enabled to report their ability to turn it to account if obtainable here in a clean good condition at 30*l*. per ton." We believe that any manufacturers inclined to make experiments can obtain a supply on application. What we have had for microscopical examination is extremely clear and beautiful, and very promising.

Before closing our remarks on fibres, it may be well to advert to that produced by *Posidonia*, a genus closely allied to *Zostera*. We have not been able to procure good specimens of *P. oceanica*, what we have consisting only of the rhizoma from Algeria, which shows a stiff white brush of fibres at the base of each leaf; but in *P. australis*, of which we have a specimen from the shores of Tasmania by the kindness of Dr. HOOKER, there is a considerable mass of tow attached to the rhizoma, separated from the leaves by a process of natural "retting," which might certainly be available for paper making, though it could never form a good hemp, much less a substitute for cotton. The leaves are extremely tough, and the fibre which they contain is much more consolidated than in Zostera. It is very probable that a good deal of the material used in Italy for paper-making is derived from Posidonia, though it passes under the common name of *Alva marina*. The fibre of the latter as a substitute for Cotton seems already to have passed into oblivion. The assertion that it could be supplied at from 8*d*. to 10*d*. a pound as stated at Cambridge is simply preposterous.

The notion of alleviating the distress of our cotton labourers by the increased production of Flax can only end in disappointment. All the machinery must be altered, and an entirely new trade learned before it could be of any avail. The energies of our cotton lords ought clearly to be directed towards increasing the supply of cotton itself from other districts than North America, and to make the English market if possible independent of American supply, which may fail again at any moment should peace be restored as it has failed now. *M. J. B.*

AMONG the numberless objects of commercial importance that have attracted attention in the late INTERNATIONAL EXHIBITION, nothing has been of more general interest than the prodigious variety of beautiful or valuable woods contributed by the British Colonies. The superb Fir wood of Vancouver and British Columbia, gigantic among giants, the numberless Gum trees of Australia, strong among the strongest, the invaluable ornamental and naval woods of the West Indies and British Guiana, hard among the hardest, the elegant furniture wood of Ceylon, beautiful among the most beauteous—all examples of the natural wealth of the Colonies of Great Britain—were at once the pride of ourselves and the envy of foreigners. But, in too many cases, the value of this grand assemblage of foreign timber was seriously impaired by the absence of certainty as to the scientific names of the trees that produced it. The loose way in which colonial or vernacular names are applied renders them so uncertain as to be valueless if not deceptive. They vary from Colony to Colony, and even from district to district—the Cedar of one country is not the Cedar of another, Mahogany is not Mahogany, Oak is not Oak—so that when a merchant has convinced himself of the value of a Colonial wood, and has ordered it from his correspondent, it is at least doubtful whether he will be supplied with that on which his judgment is formed. The names of science on the contrary are fixed and unchangeable, and in every case they should accompany a specimen exhibited. Of this truth the late Exhibition furnished a striking example.

Upon testing the woods sent from Jamaica to the Paris Exhibition, a certain "Iron Wood" (in the Jamaica Catalogue of the period described as "No. 140, Iron Wood or Red Wood, Erythroxylon areolatum, a small tree 16 or 18 feet high, and 5 or 6 inches in diameter,") was found to bear the prodigious breaking weight of about 7 tons! Monstrous strength for a specimen only 2 inches square by 12 inches long, still to be seen in the Kensington Museum. (See Captain FOWKE's experiments on Woods in the Report on the Paris Exhibition).

While conducting new experiments on the strength of timber for the present Exhibition (1862), Captain FOWKE was anxious to find a fresh specimen from Jamaica of this Iron Wood, in order to verify the former results. In the present Jamaica Catalogue, 1862, there are no fewer than nine specimens which *appear* to be "Iron Wood." "No. 164-5, Blood Wood or Iron Wood, Laplacea hæmatoxylon; 169, Red Wood, Erythroxylon areolatum; 305, Horseflesh Iron Wood, &c.; 326, Red Wood, Erythroxylon areolatum; 341, Iron Wood (?Laplacea hæmatoxylon); 354, Red Wood, Erythroxylon areolatum; 376, 384, Blood red Wood, Black Mahogany."

The whole of these have been tested, and under the supervision of Mr. CHITTY, the able Commissioner for Jamaica, the whole of the magnificent collection from that island has been examined in order to find a specimen like that "Iron Wood" tested at the Paris Exhibition, but in vain. None of those in the present Exhibition approach the strength or even appearance of the specimen of 1855.*

Here is a pretty mess! The strongest known West Indian wood, and probably the most valuable, can no longer be found, simply because it was sent to Europe by a name having no precise application. Surely it concerns Colonial Governments to find the means of preventing such a commercial embroglio. In Jamaica there is already a Botanic Garden, the proper place in which to settle points like the one before us. That it is in charge of a most industrious as well as well-informed man is manifest upon examining the admirable collection of Jamaica textile materials which he has sent home. This intelligent person is Mr. NATHANIEL WILSON, existing, we understand, as "Island Botanist," and working hard upon some miserable pittance of 300*l*. a year. He has the requisite knowledge for dealing with every point relating to the commercial value of Jamaica produce, provided its Government would salary him decently and furnish the means of travelling with a sufficient staff. Surely it would *pay* to do this, even if no higher motive could be found, and we presume to press upon the Jamaica Government the wisdom of doing so.

ON a recent occasion, when remarking the principal novelties amongst Dahlias which had come under our notice during the season just closing, we threw out a suggestion that the present group of "FANCY" DAHLIAS should be altogether abolished, in order that some more intelligible mode of classification might be introduced amongst the very dissimilar varieties now in cultivation. We suggested this change because the "fancy" class has become an undefined and unmeaning group, and because in our opinion it would be a boon to the floral community to sweep away as a class, at one and the same stroke, from both the prize lists and the sale catalogues of the future, the group to which this term is applied. On the occasion referred to we intimated our intention to throw out some hints as to a mode of classification which appeared to us to have at least the advantage of being more intelligible than that which it was offered to supersede; and we shall now endeavour to carry out this intimation.

Formerly the varieties of the Dahlia consisted only of those which were distinguished as being "self-coloured" and "tipped," the former having the florets uniformly coloured, whether that colour were light or dark; and the latter having light-ground florets marked at the tip more or less heavily by some darker colour. These two groups were seldom separated in catalogues, and never we believe at exhibitions, where stands of Dahlia "blooms" have always been desirably varied by the intermixture of the two. At length, however, there appeared a race in which the florets were dark coloured, and tipped by some paler hue, generally white; and from the varieties of this race as they became numerous the class of "fancy" Dahlias was formed. Then striped sorts came as novelties on the field, and these were at once thrown in with the aforesaid tipped sorts to swell the ranks of the "fancy" division, which has latterly been fully recognised both in catalogues and in prize schedules. This incongruous mixture of "tipped" and "striped" sorts constitutes, in fact, the group to which the name of Fancy Dahlias is applied, but how or by what rule those varieties in which the florets have a dark ground colour and light tips, can be separated from the selfs under the name of 'fancies,' while those with light grounds and dark tips are still classed with them, and excluded from the 'fancies,' we are utterly at a loss to imagine. We can only repeat that the groups themselves in this way become indefinite and unmeaning.

For a time, doubtless, there was a sufficient reason why these so-called "fancies" should appear at exhibitions as a separate class. They were not so far advanced in technical merit as the older varieties, and

* The strongest wood in the Exhibition of 1862 is in the New South Wales Court, under the name of Grey Iron Bark (Eucalyptus sp.), 5 tons 4 cwt. being its breaking weight. Even of that the proper botanic name is uncertain.

of course could not compete with them on the points involved therein. At the same time their singular colouring rendered them very desirable objects in an exhibition for the sake of the relief they afforded by contrast with the more familiar selfs and the old-fashioned tips, and so they were very properly admitted to separate competition. Now, however, they have made such advances in respect to the points of technical excellence, that they may be considered on an equality with what are called, for distinction's sake, "show" flowers, and the only reason for ever separating them falls to the ground. Against the maintenance of the group, as it now stands, we are moreover entitled to urge the fact already mentioned at p. 1050, namely, that one of the new flowers of the present season, named Countess of Shelburne, has been pronounced admissible in either of the two classes. Besides this, it is well known that several of the "fancies" which are grown and shown as such, not unfrequently produce self-coloured "blooms" which are allowed to be staged unchallenged in the opposite group.

These considerations lead us to urge upon Dahlia growers the abandonment of both the name and the group of "fancy Dahlias" altogether; and this not merely as regards their sale and cultivation, but especially as regards their exhibition. As a substitute, we propose the formation of the following classes, which appear to be sufficient for all practical purposes, namely:—

SELF-COLOURED, including all those in which the florets are of a uniform colour or nearly so.

LACED, including those varieties in which the ground colour is pale (either white or yellow), and the florets are margined at the ends with some deeper colour, analogous to, but not often so well defined as, the lacing in Pinks.

TIPPED, including those varieties in which the ground colour is the darker of the two, with a distinct tip of some light colour, which is generally white or blush: excluding all the light-ground flowers to which the term "tipped" has been heretofore applied.

STRIPED, including all those varieties which have flakes or bars of any one or more colours, whether light or dark, distinctly marked on a different ground colour. By and by, when this group is more advanced, it may be desirable to subdivide it into two parts, analogous to the "flakes" and "bizarres" amongst Carnations, but this seems hardly necessary at present.

We submit that such an arrangement as the foregoing is at once definite, simple, and intelligible, and carries with it, moreover, precise information as to the leading character of each variety; while the classification into "show varieties" and "fancy varieties," now generally in use, carries with it no information whatever, and is, in fact, self-contradictory, "Lady Popham" and "Charles Turner" being as much "fancy" articles as "Jupiter" or any of his compeers.

We have said that the fancy class should be given up at the exhibitions, but we do not thereby intend that the number of Dahlia prizes should be diminished. In respect to this matter it appears to us that there are two courses open. In all exhibitions which are strictly confined to florists' flowers it would be quite legitimate, and we imagine would be an advantage to florists, as well as tend to the production of improved novelties, to offer separate prizes in each class, at least in those cases where the disposable funds would admit of such a course being adopted. In all general exhibitions, on the other hand, where the minor details of floriculture could not have prominence assigned to them, it would be preferable, as productive of a more varied display, to admit all the classes to equal competition, compensating for the loss of the prizes in the "fancy" class, by increasing the number of prizes in the several groups adopted, or by increasing the number of groups so as the better to suit the convenience of all classes of cultivators. Thus, for example, instead of three prizes each for groups of 48, 24, 18, and 12 kinds, there might be, say five or six prizes in each group; or, if it were thought preferable, groups of 36 and of 6 kinds with appropriate prizes could be introduced. Of course, as now, florists and amateurs would compete separately.

We cannot but think that the result of such a change as that we have indicated, would be to improve the appearance of our Dahlia shows, where at present we see a majority of self-coloured sorts occupying a large portion of the tables, and a series of the odd-coloured but more attractive "fancy" sorts all huddled together on another portion. Let these more telling materials as to colour be dispersed throughout the whole of the stands, and the improvement effected in the appearance of the whole, would, we feel sure, be marvellous. And if any very remarkable oddity not fit to take its place amongst the "upper ten thousand," should happen to be ushered into the floral world, the loss of the "fancy" class need be no bar to its exhibition, as it could always find standing ground on the common field of miscellanea.

In cases where the proposed classes are adopted as the basis of separate competition, we think they ought to be rigidly interpreted, and insisted on. We refer particularly to the rather sportive groups we have proposed to call "tipped" and "striped." Sported flowers borne by the varieties of these groups, in which the tips or the stripes respectively have disappeared, should be recognised as being what in reality they are, run flowers, and should be treated accordingly. In the case of Carnations or Tulips such flowers would be at once cast aside, or, if shown, they would be instantly condemned, and the run flowers of Dahlias should meet with a similar fate. Of course when bloomed as selfs, they could not be shown in the classes of tipped or striped flowers, but we mean more than this: they ought not to be admissible at all, and any such run flower introduced amongst the genuine selfs, which it would simulate, should be regarded as a disqualification. So at least it appears to us.

We shall be glad to find that our suggestions have been made in time for adoption in the florists' catalogues of the forthcoming season, and also in the prize lists of 1863, some of which, under the auspices of our leading societies, may soon be expected to make their appearance.

—— In our remarks on PENTSTEMONS at p. 1076, the statement: "there is no objection to a moderate height, of above 3 feet," should have been printed "about 3 feet." The plants should indeed, in a general way, be rather under than over the limit there named.

—— We have great pleasure in informing our readers that Mr. CHARLES LAWSON, the senior partner in the well known firm of Messrs. PETER LAWSON & SON, Nursery and Seedsmen of Edinburgh and London, has been elected to the High Office of Lord Provost of Edinburgh. This honour is to be the more appreciated as he has only been a member of the Town Council for a brief period, and was unanimously elected to this important office, and the selection has evidently been ratified by the citizens, as the committee appointed to promote his election comprised a very large number of names representing all political and religious sects. We sincerely congratulate Mr. LAWSON on attaining this distinguished honour, which extends over a period of three years.

ROCKY MOUNTAIN CONIFERS.

ABIES GRANDIS, *Lindl.*—Not common in this region, resembling much the Eastern A. balsamea. Fendler's N. Mex. No. 828, is the same.

ABIES DOUGLASII, *Lindl.*—"Abundant through the eastern mountain district, except on the higher elevations. A very sightly tree, of the average height of 80 feet, with a graceful oval outline; the spreading branches curving upwards at the extremities. Wood of slow growth, but very indifferent, inclined to warp and crack, turning reddish-brown in drying." This species, as well as the nearly allied A. canadensis, is well distinguished from all our other Pines by the distinctly petioled leaves. Fendler's N. Mex. No. 829.

ABIES MENZIESII, *Lindl.*—"A finely shaped tree, though of rather stiff outline, of rapid growth; wood very compact, but rather coarse grained and pitchy; the logs taper too rapidly to saw up to advantage." Cones pendulous from the end of the branches. Leaves stouter than in any other allied species, stiff and very acute, almost spinescent.

ABIES NIGRA, *Poir.*—Probably the same as the north-eastern tree (characterized by the slender and very acute leaves, ovate cones with thin and crenate margin of the scales), a pale leaved form of which is usually named A. alba, but which Prof. Gray has demonstrated to belong to A. nigra. The true A. alba (leaves somewhat stouter and obtusish, cylindrical cones with thickened entire margin of the scales) seems to extend from Canada to the northern Rocky Mountains, where it has been gathered by Bourgeau; but it has not fallen under Dr. Parry's or Dr. Hayden's observation, on the head-waters of the Kettle, Colorado, Missouri and Columbia Rivers, where Abies nigra seems to be abundant, extending down to Santa Fe (Fendler, N. Mex. No. 833). Dr. Parry found it "composing almost the entire forest growth of the mountain slopes of Middle Park about the head of Grand River: a magnificent tree, 80 to 100 feet high, with an even, columnar trunk, below, 2—2½ feet in diameter, tapering upwards; of rapid growth; bark scaly, smooth and quite thin, of a purplish-brown colour, full of tannin, and quite different from the rough brown bark of A. nigra of Wisconsin; wood remarkably white and soft, free of knots and scarcely resinous, preferred for inside work." Could this be Abies rubra, *Loud.*, and specifically distinct from A. nigra?

PINUS ARISTATA, *Engelm.*, in St. Louis Transact., vol. 2, tab. 5 and 6.—Dr. Parry had the good luck to discover this very peculiar and exclusively alpine species "which does not descend lower than 9000 or 10,000 feet," on the higher mountains of Clear Creek. As a full description and a figure has been given in the Transactions of the St. Louis Academy, I confine myself here to the statement that it is our only representative of Endlicher's section Pseudostrobus, which comprises numerous Mexican, a few Central American, and a single West Indian species; it is characterized by quinate entire leaves and horizontal ovate cones, with thin apophyses on the long-mucronate or aristate scales, and small winged seeds. In sheltered situations it forms a tree 40 or 50 feet high and 1 or 2 feet in diameter, but on the higher bleak mountains it is a stunted bush, often thickly covered with fruit. Its growth, at least in the latter localities, is exceedingly slow, as a stick of scarcely more than one inch in diameter, brought back by Dr. Parry, shows nearly 50 annual rings, some of them $\frac{1}{30}$ of a line, and none more than ⅕ of a line wide.

PINUS FLEXILIS, *James.*—This species, discovered in the same regions by Dr. James, has to some extent remained doubtful, as his description in the account of Long's Expedition, and Torrey's diagnosis in the Annals of the New York Lyceum (vol. ii., p. 249) are based on notes only, no specimens having been collected. By later writers it has been ignored, until Mr. Fendler in 1847 collected it on the mountains above Santa Fe (Coll. N. Mex., No. 832), when a short notice was published by the writer in the appendix to Wislizenus' Memoir of a Tour to New Mexico, &c., 1848. Endlicher in his Synopsis Coniferarum, 1847, does not enumerate it, and Carrière in his Traité des Conifères, 1855, credits it to Wislizenus, translating only my short remarks. Nuttall, however, had already (in 1849) given a somewhat extended account of it, with a poor figure, in the continuation of Michaux's Sylva (vol. 3, p. 107, pl. 112), without clearing up the doubts which Dr. Parry in his present expedition, 1862, is expected finally to settle. My brother, H. Engelmann, collected it on the head waters of the Platte, and Dr. Hayden on the mountains about the head waters of the Yellowstone, Missouri and Columbia rivers. Dr. Parry notes that the cones grow several together, "semipendulous" at the extremity of the horizontal branchlets; while James gave his plant "erect" cones. Near Santa Fe it grows at the elevation of 8000 or 10,000 feet, and in favourable situations becomes 60 or 80 feet high and bears "pendulous" cones, according to Fendler's note. Pinus flexilis is certainly intermediate between the sections Cembra and Strobus of Endlicher, and unites the two, as does P. cembroides, Newberry, Pacif. R. Rep., vol. vi. Bot. p. 44, not Zucc., if, indeed, this is not a mere form of P. flexilis, approaching by its short cones close to P. Cembra. The large seeds of P. flexilis are, as Dr. James already stated and as Dr. Haydon confirmed, eaten by the Indians. They are distinguished from those of any other of our Pines by a persistent, sharp, keeled margin, representing the wing. Zuccarini's plant of that name is one of the curious little group of American Nut Pines, including the following four species: Pinus monophyllos, Torrey and Fremont, with single (not connate, as Endlicher would have it) leaves; P. edulis, Engelm., with two leaves; P. cembroides, Zucc. (including P. Llaveana, Schiede, not Torr., and P. osteosperma, Engelm.) with 3 leaves; and P. Parryana, Engelm. (P. Llaveana, Torr. Bot. Mex. Bound., p. 208, t. 53) with 3—5, mostly four leaves. Other characters, taken principally from the bracts of the young shoots, strengthen the specific distinctions. This very natural little group is characterised by the small, almost globose cones, the scales bearing large pyramidal apophyses and large edible seeds, the wings of which remain attached to the scale, which, I suspect, is the case in all "wingless" seeds of Pines; in P. Pinea, however, the wing is very distinct and detaches itself clearly from the scale, and at the same time also from the seed itself, which is likewise the case in the closely allied, though five-leaved, Calfornian P. Torreyana, Parry, where the wing, besides, is very thick, and of a corky substance. The great variability in the number of leaves in the Nut Pines proves that sectional characters taken from them are without value.

PINUS PONDEROSA, *Dougl.*, is "common through all the lower valleys and less elevated districts of the mountains, associated with A. Douglasii and A. Menziesii; a most valuable timber tree." Fendler's N. Mex. No. 831. Male aments cylindrical, several inches long.

PINUS CONTORTA, *Dougl.*, "is quite abundant on the crest and slopes of dry subalpine ridges, forming the principal part of the forest there, and extending to near the snow line; a symmetrical tree of rapid growth, 30 or 40 feet high, with slim and tapering trunk a foot in diameter, a smoothish, greyish-brown bark, detached in thin scales, and tough but coarse wood, which is liable to warp, and rarely cut into boards." *Engelmann in A. Gray's Supplement [to the Enumeration of Parry's Rocky Mountain Plants, in Am. Jour. Sc. Nov.* 1862.

ON THE CULTURE OF LATAKIA TOBACCO.

BY M. CHARLES EDWARD GUYS.

In the month of January, the seed is sown in a situation that has some degree of shelter. The soil has been previously so well worked that a stick can be easily thrust into it, and by this simple means they make small holes of about 4 or 5 inches deep, and from 10 to 12 seeds are put into each hole. As soon as they begin to shoot the ground is covered with mats, which are removed only when the sun appears. Women and children are then employed to keep off poultry and other birds, whose attacks would be very prejudicial to the young crops. At a more advanced stage the weaker stalks are pruned off, while at the same time all parasitical plants are carefully removed, and great care must be taken to perform this operation properly, in order to ensure a good crop.

During the month of February, before the hot season (which is very early in Syria) commences, the process of transplantation takes place. The plants are removed to fresh soil, surrounded with earth and well watched. As they become larger, all buds and yellow leaves are pruned off, and this refuse is placed round the roots of the plant, to which it serves as excellent manure. In March they must be well watered, a supply of which is procured from the drains, and caused to flow through all the rows in which the plants are placed. The water is cut off as soon as the

supply is sufficient. The leaves now begin to make their appearance in great numbers.

In April the plant is ready for manufacture. The leaves are removed and dried, either in the sun or before an open fire. This is the favourite Tobacco of the Fel'ahs, and is called "new Tobacco; it is said to be stronger than that which has been kept some little time. But as far as my own experience goes, Tobacco, like wine, needs age to bring out all its qualities, and certainly the taste of the much vaunted "new Tobacco" was, in my opinion, not very agreeable.

From April to August the quantity of water required for the sustenance of the plant varies according to temperature. Those leaves that begin to get yellow are removed, and in the month of May they also cut the tops of the stalks. Finally, only about 15 or 16 leaves are left on, these are the greenest and the nearest to the summit of the stalks.

All the leaves have turned yellow by the end of August. The harvest commences in July, in the south in September; when the stalks are cut just above the root and the leaves removed, great care being taken that the leaves are not bruised or injured in any way. They are then made up into bundles, having been tied together at the lower part of the side and placed on mats, which are removed into the cabins, the principal drying places in that country. These bundles are turned from time to time, in order that the Tobacco may be equally dried on both sides. In November it has become perfectly dried, and the bundles are made up into packages, or else folded up in a great number of layers.

The Tobacco is now transported into the town in sacks of horsehair, and placed in the hands of merchants. In their storehouses it undergoes a new preparation; the first step being that of drying it again, it evidently being the interest of the peasants to sell it when wet, in consequence of the increase thus gained in weight. It is next divided according to the soil from which it has been obtained. The different qualities are thus produced, and again subdivided according to the colour and flavour of the leaf. All the Tobacco that comes from the plain of Latakia is denominated Dgidar, and we class it among the Nicotiana rustica. *Technologist.*

Indoor Gardening.

At this time of year it is not very easy to keep up gay plant-stands. Fashion is, in consequence, more convenient than usual, for it is quite a rage in Paris to have "des plantes vertes" in rooms. These said green things include a most hardy and healthy set. Little Palm trees, I hear, are especially in vogue, and these, when well arranged, give a sort of tropical effect that is peculiarly appropriate amidst the bright-coloured hangings and gay and graceful ornaments of the Parisian drawing-rooms. Then, the India-rubber plant is always very popular. This is a splendid room plant. Uninjured by dryness or dust, or change of temperature, it lives on contentedly, drinking water largely, and revelling in good spongings. A plant of this sort does well to grow up tall in a window—making a leafy ornament, and an inside edging of green to the window-frame.

This is one of the very best and hardiest London room plants, and for making up masses of effective foliage, its large dark leathery leaves are specially well adapted.

The Aspidistra variegata is another capital indoor plant. I hear of it, in Paris, living in a room for two years together, and its spotted leaves, of the shape somewhat of those of the Lily of the Valley, are very effective. My own inclination rather clings to the Palms: they give to a group at once such an uncommon look, and they are at the same time, so strangely familiar to us. These, however, are chiefly for groups of green; I do not myself like the plan of mixing up things so different as Heaths and Palms together. But what a delightful stand one might have filled solely with tall green things, and with a few Begonias or such like, filling up underneath. The dark brown rustic flower-stands in Paris are much used now, and they are very far better than china things to put plants in.

Where flowers however are to be used just now, the exquisite little Heaths leave nothing to be desired. They are said by some people to go off too quickly, but this seems unintelligible, considering how mine do. I have at this moment a plant of Erica hiemalis, nothing like half in blossom; it stands in a plant case, and has air at the top all day, and no heat given. I have watered it just twice in the last three weeks, and during all that time it has been looking charming. It will last, I suppose, very nearly till Christmas. Three or four Heaths of different colours would make the most exquisite stand where flowers are wanted, and if people will only let them stand on a 2-inch bed of cocoa-nut fibre (that any plant tray may hold so very easily), I think I may promise them very little trouble in keeping their Heaths well.

Vases and brackets, and boxes of dark carved oak, or of its imitations, seem to suit with everything. With Palms they look very beautiful, and they are exquisite with Begonias; of the latter Leopoldi is one that answers capitally, and the well-known Rex is another.

All these things seem to me to be upon the whole more easy to keep in health in winter than in the summer. Of course in rooms the keen cold will scarcely penetrate much, and perhaps in summer the watering or the great dryness of the air may be more in fault. In winter the rule seems so easy never to water anything till the leaves begin to be limpish; you can trust your eye to observe this before they flag, or till the soil begins to be a little dry; then we may give a fair watering, to run through the pot, only being guarded that it does not pour over and not through, and that it does not stream quietly down through some convenient chink while omitting to soak the ball.

The water should not stand at all in the saucers, but if pots are fully filled up with soil we may have to return two or three times to the same, giving only a little each time.

Few things are nicer amongst the old green things than Myrtles to have in rooms, and I often wonder greatly that Orange trees are not more popular. Perhaps one thing is the peculiar knack their leaves have of becoming dirty. A piece of spongo fastened firmly into a sort of holder, like a dabber for postage stamps, does very well to wash them with, and one can always hold the leaf that has to be washed with a cloth or glove. When these trees are washed properly, leaves and stems and all, they are remarkably easy to manage in a house, not over tenacious of light, and always green and pleasant looking. *E. A. M.*

Home Correspondence.

Cannon Hall Muscat Grape.—I remember the time when the fine old Cannon Hall Muscat had a few friends; but judging from the reports of the late great International Fruit Show at South Kensington, it had not one solitary representative there—although with the exception of a few not yet "let out," most varieties of Grapes worthy of cultivation were present. Surely there must be something wonderfully difficult in the successful cultivation of the Cannon Hall, even something unsurmountable, otherwise such a noble Grape would not be thrown aside by nearly all the best practical gardeners of the day. *J. E.*

Botanical Distinctions.—I am extremely obliged to you for your answer to my question relating to the botanical distinction between Alocasia and Caladium. Inflorescence in many plants is very sportive, particularly that of Caladium, and on that account I scarcely think the distinction reliable. I very much doubt whether Caladium Lowii and C. Veitchii are Caladiums at all. I am told that the former has not yet flowered in this country; when it does I have a strong impression that it and C. Veitchii likewise will prove to be Alocasias; they both retain their leaves during winter, Caladiums as a rule do not. I have been greatly puzzled of late to find out the difference between a number of named varieties of Blechnum Spicant; if a frond comes deformed, a new name is at once given, and we have at the present time upwards of 30 named varieties of this plant, and we are told that they are "grand things." Blechnum Spicant is a very beautiful plant, but I must protest against these deformities being palmed off as something new, for after all they are "cripples" that may ultimately assume the normal type. *B. A.*

Muscat Hamburgh Grape.—I beg to contradict Sir Joseph Paxton's statement, together with that of a 'Looker-On" at the International Fruit Show, South Kensington, respecting this Grape being the old Black Muscat of Alexandria grown at Welbeck 40 years ago. I can prove the Muscat Hamburgh to be a seedling raised at Hurlingham House, Fulham; it was a hybrid between the Muscat of Alexandria and the Black Hamburgh, from which it was raised—the pollen was taken from the Muscat. The Grape in question was sent to the Royal Horticultural Society's Office, 21, Regent Street, for opinion, which was as follows:—"Berries large, oval; flesh of the consistence of that of the Black Hamburgh, with a rich, decidedly Muscat flavour. Appears highly deserving of further trial." *S. Snow, Wrest Park, Silsoe.* [Yes, but this does not show that the Grape was different from the Old Black Muscat of Alexandria.]

Fruit Culture at The Hasells.—My attention has been directed to an article by "T. R." on recent improvements at The Hasells. Whatever merits these possess cannot possibly belong to the indefatigable Mr. Dean, with the exception of his care of them for barely 12 months, the houses being erected and the trees potted and planted with bones, &c, 12 months before he knew of such a place as The Hasells being in existence. Several experienced gardeners visited The Hasells in the autumn of last year, and pronounced the trees in pots, &c., to be in perfect health and in the most promising condition for bearing the marvellous crop they carried this season. The practical portion of your readers will therefore understand to what Mr. Dean's claim amounts. *A. MacGregor, late Gardener at The Hasells, Nov. 17.*

Strawberries.—I read with some surprise the remarks upon Strawberries by the Rev. F. W. Radclyffe, in your Paper of last Saturday (see p. 1078.) It is something quite novel to talk of the "accomplishments" and "talents" of a Strawberry, but if Mr. Radclyffe means to state that the seedling raised by my friend Mr. Rivers from Myatt's Eliza, is, taking everything into consideration, the nearest approach to perfection of any variety grown in England, I beg leave to say that I cannot agree with him. It is a good, hardy, useful Strawberry, but it will not bear comparison with such varieties as La Constante, La Chalonnaise, Empress Eugenie, &c., which are quite as hardy and equally productive. A very small amount of skill is requisite to ensure a good crop of Strawberries annually from nearly every variety. Mr. Rivers can testify to the abundance and excellence of the crops here; I never allow any manure to be put upon the beds in the autumn, from a conviction that it causes the plants to throw up a large quantity of foliage and prevents the formation of blossom buds; a good coating of rotten dung spread over the beds in the early part of March is decidedly beneficial. Many persons do not succeed in growing the Filbert Pine well. I believe this arises principally from the plants not being sufficiently watered in dry weather. This variety requires more water than any other with which I am acquainted, and if the plants once suffer from drought they will do little or no good afterwards. La Constante is a very free-growing Strawberry here, and produces a great number of runners early in the season. Those which were planted out early in July are now very large plants. The present autumn has been remarkably favourable to the growth of young Strawberry plants; all my kinds are unusually fine and healthy. *Henry Doubleday, Epping.* ——My experience of Rivers's Eliza does not coincide with that of Mr. Radclyffe. Treated in precisely the same way, and grown in the same garden and soil as British Queen, Filbert Pine, and Carolina Superba, it is inferior to all three in cropping and flavour. It is inferior to Wonderful, Eleanor, and Elton Pine in cropping, and in fact I do not find it a first class Strawberry in any respect. Crimson Queen I find to be a splendid cropper, but it is with me far from a good grower, whilst, singular to say, Sir Charles Napier, usually considered a rather tender variety, was not in the least affected by the severe winter of 1860-61, though wholly unprotected, as I never top-dress until March. The plants, however, had a good crown of leaves, which probably saved them from damage. *R. H., Postans, Brentwood.*

Golden Hamburgh Grape.—Permit me to say one word about the Golden Hamburgh. I grow for amusement about 20 varieties of Grapes in pots. I find this kind a good pot-Grape, coming into bearing much sooner than Buckland Sweetwater. One little cane, not much larger than a quill, grown from an eye struck in February, 1861, produced this year seven fair-sized bunches. *R. H. Postans, Brentwood.*

The Great Vine at Hampton Court.—To an Englishman's heart there is an inexpressible charm about everything that is of a national character, and more so when identified with Royal palaces. In our boyhood we were charmed with the legend of that once majestic Oak, associated with the name of "Herne the Hunter," in Windsor Park. But how many hundreds of thousands feel interested in the once magnificent Vine at Hampton Court? Will not your readers hear with astonishment and regret that this once glorious ornament of the Royal gardens has by unskilful treatment been brought to the verge of decay. Time was when from 1 lb. to 1½ lb. of fruit could be found on an average in each bunch, but now it is difficult to find more than 30 berries in a bunch (and these of very inferior quality). We are therefore led to inquire the cause of this deterioration. It is simple and self-evident. Practical growers well acquainted with the Vine in question know well that until lately a mound of earth covered with turf protected the roots of this noble tree; in this the roots luxuriated and received warmth and nourishment. This invigorating food has, however, been taken away by rude hands, for the purpose of making a parterre in which are planted a few insignificant flowers. Methinks if the eye of the late superintendent could behold it now, the heart would sigh, and the tear of pity would flow. Let me then entreat that those in power will at once, ere it be too late, look to the matter, and save one of the greatest beauties of royal and public property from falling into ruinous decay. *A Constant Reader, Ramsgate.*

Galvanised Iron Wire.—In reference to a remark in your "Notices to Correspondents" last week, I beg to say that I know from experience that galvanised iron wire, or netting, does injure Peach trees, and I would advise "J. P. M." not to use it, but have the wire netting merely painted. *A Subscriber, Birmingham.* [We hesitate to believe this to be any thing more than a prejudice.]

Black Alicante Grape.—In your report of the Royal Hort. Society's Show held on October 8 an account is given of Kempsey's Alicante Grapes from Mr. Meredith and Mr. Cox, both of whose productions appear to have attracted considerable notice. Now, it is well known that the cultivation of the common Alicante Grape is attended with very uncertain results, owing to the difficulty of getting it to set. Perhaps, therefore, Mr. Meredith, Mr. Cox, or some of your other correspondents will have the kindness to state whether they experience this difficulty in growing the Kempsey Alicante, and if so, what means they put in operation in order to overcome this drawback to the cultivation of what would otherwise be a decided acquisition amongst hot-house Grapes. We have for many years attempted the cultivation of what I presume to be the common Alicante with very varied success; and during that time we have frequently endeavoured to assist fecundation

by artificial means, but I must own without arriving at any certainty as to the beneficial results of such an operation. I understand the sort we grow to be the same as that cultivated by the late Mr. Williams, of Pitmaston. *Wm. Lauri, Gardener, The Burn, Brechin.*

Trade Advertisements.—As a weather-beaten voyager, I have a dislike to "trade" winds, especially when they blow from a quarter likely to be destructive to life and public property. When men are warned of danger and still persist in putting out in a storm, if they get a rocking they need only blame themselves. In the "trade" gale now blowing, I rejoice to see that my friend Mr. Waterer has taken in a reef; but as an honest man, I must say he carries more sail now than is safe. He hopes the correction in his trade advertisement will be satisfactory. How can it, so long as the objectionable portions remain unaltered. In your columns of Nov. 8 it reads thus of Picea nobilis:—"For we believe except these (and those sent from here) all the plants above 2 feet high in the trade are grafted, and comparatively worthless." In other words, they believe no one has a plant above 2 feet worth buying, unless it has come, or will come, from Knap Hill. Hence if buyers of P. nobilis believe this, the sooner all my friends in the trade burn their plants, the better. Men should rise a step above self interest, when they become public teachers; they then incur grave responsibilities, and the public have a right to deal with their teaching as it deserves. First then, our Knap Hill friends give us their opinion, viz., all the plants in the trade above 2 feet are grafted. I have just had one measured in my own Nursery (in the trade). It grows on its own roots, and is 22 feet high and 12 feet wide, and has grown in two years 4 feet 3 inches; one fact will overthrow twenty opinions. Next, we have an assertion that "grafted plants are comparatively worthless." Have not grafted plants at Knap Hill made more money than seedlings? Where had many of their seedlings and cuttings come from? Some of the finest plants in England are grafted; I have sold them from 15*l.* to 30*l.* each. I have myself paid over 20 guineas each for some; they are now magnificent plants and have produced many fine seedlings. I have ordered one to be measured, and I find it 16 feet high, 15 feet wide, and has grown in two years 4 feet 4 inches; these are growing in my nursery. A friend of mine has a plant finer than anything I have seen in Surrey; he is in the trade, and has refused 50*l.* for it. These plants grow in the Midland counties and Mr. Waterer has pronounced them "comparatively worthless." Not one of them has ever been within a hundred miles of Knap Hill, but if they were, then perhaps the case would be altered. I could add to this, but enough. Nevertheless, lest my motive should be impugned, I beg leave to say that I have done more with Picea nobilis than any man in Europe, both in producing seedlings and fine specimens, and although I have been selling plants of this tree for 10 years, I have never yet offered for sale a single plant which has been grafted by me or any of my men. I do not need to write for myself, but I like to see every worthy tradesman have fair play. I simply remind my good-natured friend, Mr. Waterer, that there is plenty of sea-room for him; only let him steer clear of breakers and small craft—he cannot be a gainer by running them down. I dare say he is glad that I have tried to pilot the public and himself out of their November fogs. *William Barron, Elvaston Castle.*

Foster's Seedling Grape.—Can Mr. Eyles furnish any information respecting Foster's White Seedling Grape that is in the large conservatory of the Royal Horticultural Society's Garden at Chiswick? *J. R. S., Roehampton.*

Societies.

ROYAL HORTICULTURAL: *Nov. 7.*—J. J. Blandy, Esq., V.P., in the chair. The following candidates were elected, viz.:—

Mr. C. J. Barker, Captain C. Eustace, Rev. H. Harper, Mrs. Sydney Kennedy, D. R. Scratton, Esq., and A. C. Wheeler, Esq., Ordinary Members; and the Rev. Dr. Forrester, President of the Board of Agriculture, Truro, Nova Scotia; Rev. D. Honeyman, Antigonishe, Nova Scotia; M. Kegeljahn, Secretary of the Horticultural Society, Namur; Mr. J. McGibbon, Botanic Garden, Cape Town; Professor H. H. Miles, M.A., Lennoxville, Canada East; and M. E. Morren, Esq., Professor of Botany at the University of Liège, Foreign Corresponding Members.

Notices of Books.

Cragstone Cottage; or, Life in the Country. 12mo. Seeley & Co.

A very nice children's book, treating in the best gossiping style of all sorts of little matters that country children like to read about, but especially of children's gardens. Mrs. Sidney, a widow, takes up her abode with four children in a cottage near Tadcaster, and there they set about gardening. How they got on is described in all sorts of ways, of which the following is a specimen. A country garden labourer, their only adviser, having broken down in explaining the mystery of Cucumber growing, the story thus proceeds:—

"'Then he did not give you any advice for your beloved Cucumbers!'

"'No,' said George, 'he could not; and I am sure I don't know how to get the seed up.'

"'Well, I'll tell you what—I once, when I was a girl, raised some tender seeds in a way of my own in the window; and now, if you like to sow these seeds in a pan of soil, I will try what I can do in your behalf. It is but one panful, and you are sadly set on it!'

"Mrs. Sidney's plan would, certainly, not go far; but having got a pan filled half with these aforesaid Cucumbers, and half with Balsams and red and white Ipomœas (on behalf of Mary), Mrs. Sidney mounted the pan on a sort of hot-water dish, in which she kept some warm water, and she covered the whole affair with a large piece of glass, which, for the first few days, was kept, however, quite darkened.

"There were some difficulties in not burning up the seeds, as well as in giving them a slight sort of steady heat; in fact, Mrs. Sidney soon began to think that a box of moist sand, with two hot stone bottles in it, answered the purpose better; and before a week had elapsed, her sons had become possessed of four fire-bricks, two of which henceforth were heated night and morning, and deposited in the sand, on the top of which the pan rested. They had, of course, two old deal boxes of sand, and the sand-pan was moved from one to other regularly.

"After a few days had thus passed, they had just done dinner one day when little Rose, who was looking curiously in the box, cried out, in great dismay, that something was the matter. The soil looked all rough and cracked, and Rosie was afraid that all the seeds must have been upset.

"'Hallo,' said George, 'I declare they are coming up!' And then came a general crowding to look at the little plants.

"'Oh, but we can't see any!' said Rose and Mary. 'Are they really all right?' And Mrs. Sidney at last took a knitting-needle and set Rose's mind at rest by showing her a queer, long-tailed thing, with a sort of two-winged appearance attached to one end of it.

"The seeds were really coming up triumphantly!

"The little Balsams were tiresome though; they *would* burst up out of the soil; and Mrs. Sidney had more than once to 'earth them up' a little with her crochet-needle.

"And then came the watering carefully with warm water. They made a little gutter across the pan, and filled it; and then came the air-giving, over which they all grew anxious.

"The seedlings, however, were with great success 'pricked out' into small pots, and kept very light, and sufficiently moist (not wet), till the middle of May, when we shall hear again of them."

And thus they went on till Christmas time, when Christmas Eve was passed in singing and harmless amusement.

"'Ah,' said Mrs. Sidney, 'I do so wish I had the tune of The Shepherds for you! I can't bear teaching it to you just from memory. I do wish, though, that I could get it correctly.'

"However, as she could not, why, there was no more to say; and at last the piano was shut up, and, after prayers, the children went to bed.

"But what did Mrs. Sidney do when they were all gone?

"She drew out from under her work-table a great brown paper parcel, that looked as if it was 'no shape;' and another small parcel, that looked very much like books!

"There was a book for Mary all about plants and flowers; and there was one for George of most delightful travels. Rose had a volume of marvellous fairy tales; and though I did not see the name of Willie's, yet, guessing by the colour, it must have been very charming.

"These books had come down from London, from good-natured Uncle John. And the other parcel contained a real horn for Willie; and for Mary a paint-box; and for George a capital plane, which he wanted dreadfully. And there was for Rose a tiny set of work-things—scissors, and thimble, and needle-book, with a bodkin, all in a pretty case, and quite a large assortment of pink and blue satin ribbon and of white book-muslin, for dressing her dear Miss Fanny, 'if she were well enough to get up!'

"All these precious gifts had now to be stowed away beside sleeping children's pillows. Willie's things and Rose's were put underneath their pillows. They slept like little tops, and were warranted not to waken for any amount of disturbance.

"Mary's were put on the top of her chest of drawers, and George's on his dressing-table. And then Mrs. Sidney crept quietly away.

"It seemed to her that she had only just gone to sleep when she began to hear the sound of delightful music. She half awoke, and fancied she was in her old home again, and yet the voices seemed as if they were familiar, and she soon knew that it was her children singing the 'Shepherds' Song!' They had found out a friend who knew it, and had learnt it all unknown to her, for a surprise that day. The pleasantest Christmas greeting she said she had ever had. And singing up and down the little corridor, the children's voices went while their mother lay listening to them.

"And then the singers clustered, whispering, round the door, and their mother called to them, and they all came in and kissed her. And that was the way that Christmas began at Cragstone."

1. *Synopsis Filicum Africæ australis.* By Dr. Pappe and the Hon. Rawson W. Rawson, Esq.—2. *Flora Capensis Medicæ Prodromus;* By Dr. Pappe. 2d Edition.—3. *Sylva Capensis;* by Dr. Pappe. Ward & Co.

These three pamphlets are most useful contributions to our knowledge of the plants of the Cape of Good Hope. The first treats of the Ferns, the second of the Medicinal Plants, and the last of the Trees and Shrubs used for technical and œconomical purposes in our South African Colony. We reprint Dr. Pappe's preface.

"Anticipating that the Cape of Good Hope would, like other British colonies, be represented at the great London International Show of 1862, and wishing to contribute my share towards it, I at an early date repaired to the Eastern Province and British Caffraria, with the intention of making myself personally acquainted with the many natural resources which these fine and fertile regions afford. Among them the extensive and hitherto but little appreciated primeval forests, with which that part of the country abounds, attracted my particular attention. I therefore visited many of them, and by procuring specimens from each, succeeded in bringing together the most complete collection of South African woods ever yet made. This collection, the specimens of which are handsomely prepared and scientifically named, comprises a series of about 70 species, and many of these are serviceable either as timber, or as yielding suitable material for ornamental and common furniture, veneering, the construction of bridges and mills, railway purposes, turnery, waggon making, the manufacture of rural utensils, tools, musical instruments, carving, wood-engraving, &c. *The Cape Colony having unhappily remained unrepresented at the present occasion, this collection will now, by his Excellency the Governor's decision, be presented to the Museum of Economic Botany of the Royal Gardens of Kew, and its description forms the contents of the following pages.*"

South Africa having the discreditable distinction of being the only British foreign possession that refused to take part in the late admirable Colonial Exhibition, our readers will receive with pleasure the announcement which we have here printed in italics.

Will the learned author permit us to suggest that an index of vernacular and vulgar names would be an immense service to European readers.

Routledge's Illustrated Natural History. Part XLV. is entirely occupied by the history of Crabs, Lobsters, Shrimps, &c. Many of the figures are admirable specimens of art, and the descriptions are full of interest. As for example, the GREEN CRAB, "so familiar to every one who has passed even an hour on the coast between the time of high and low water. Although one of the commonest of our native crustaceans, it is at the same time one of the most interesting, and, owing to its diurnal habits, its fearless nature, and its love for the shallow waters, it is very easily observed. I have spent many a pleasant hour in watching the habits of this little creature, and could hardly have imagined the activity, the piercing sight, and the cleverness with which this crab is endowed. It is a fierce and even voracious animal, chasing and fairly running down living prey, and actually leaping upon its victim with a spring like that of the hunting spider. I have seen the Green Crabs run after and catch even the active sandhoppers, calculating with nice precision the spot on which they alighted, and pouncing on them before they could get themselves into position for a second leap. If the prey should be of a tolerable size, the crab does not leap at it, but darts out one of its claws with a stroke so sharp and quick, that the eye can scarcely follow it, and as true of aim as the serpent's dart, draws back the victim, seizes it immediately with the other claw, and begins to pull it to pieces before it can recover from the shock. Any living thing that can be caught becomes prey to the Green Crab. I have seen it actively pursuing the flies that settle in great numbers on the decaying Sea-weed, and once observed it to leap at, seize, and eat a burrowing wasp which had settled on a stone. When catching a small and active creature like a sandhopper or a fly, the crab moves quickly towards the spot, leaps at its victim, flinging its body over it, and enclosing it within a kind of cage formed by its legs. It then pokes one claw into the living cage, picks out the enclosed victim, pulls it to pieces, and tucks the morsels into its mouth. As for flies, they are eaten at once without being pulled to pieces, but the sandhoppers and larger creatures always undergo that preliminary process. It is a cruel cannibal, feeding on its own kind without the least hesitation, and displaying equal ingenuity in chasing a Green Crab that is smaller than itself, or escaping from one that is larger. An amusing instance of its fox-like craft is related by M. de Quatrefages:—'One day I threw a large arenicola (*i.e.* lug-worm) into a pool of several feet in extent. A troop of little shrimps, who were sea[illegible] enjoying themselves in the clear element, dispersed in alarm, startled by the noise made by the fall of the strange body, but, recovering themselves in a moment, they rallied, and while the annelid was endeavouring to bury itself in the sand, one of the youngest, and consequently the most venturesome of the party, seized the creature by the middle of its body. Emboldened by this example, the others lost no time in imitat[illegible]

it, and the poor arenicola was pulled about in all directions, until a full-grown shrimp, darting from behind a tuft of corallines, dispersed his feebler comrades, and appropriated the booty to himself. I soon saw, however, that he would be compelled to divide the spoil, for at that very instant there poured forth from the moving sand some scores of small turbos and buccinums, who, conscious that a victim was at hand, wished to participate in the feast. Without any sign of uncertainty or hesitation, they moved straight forward towards the arenicola, whose body was covered in the twinkling of an eye with those voracious molluscs. I thought his fate definitively settled, when a small shore-crab issued from beneath a stone, put to flight the shrimp, and by dragging off the arenicola, very nearly upset all the turbos, who forthwith hurried back to their sandy haunts. Then, however, a large edible crab appeared upon the scene, and the poor little Mænas was obliged in his turn to beat a retreat, in order to escape out of reach of the formidable pincers of his stronger kinsman. But he still kept a watchful eye over the dainty morsel which he had tasted, and taking advantage of a moment when the larger crab was withdrawing from the field from some temporary emotion of alarm, he rapidly seized the long-disputed arenicola, and carried it for safety to some distance from the water's edge, where he might devour it at his ease on dry land.' No one who has not seen these animals while searching after food can have any idea of the energy and fiery activity which they display. My own observations are slightly opposed to those which have just been quoted, for, instead of finding the young crabs to be the most venturesome, I have always noticed that they are the most timorous, as indeed they have good reason to be, scuttling off in all haste as soon as a larger relative makes his appearance, and hiding themselves in the first convenient cranny. Once I saw a very exciting race between a large and a small Green Crab, the latter succeeding in making good its escape by the simple plan of getting behind some Sea-weed, and then darting under a dry stalk that was lying on the sand. The large crabs are the most audacious, I suppose because they have so long been accustomed to rule, that they cannot conceive themselves in an inferior position. No sooner does a foe present himself than the crab turns defiantly on him, elevates itself on its tail, and holds its claws threateningly in the air, like a boxer in pugilistic attitude. Nor does the creature put forward any groundless menace, for it will bite with terrible severity, and if a hand be placed near it, will strike with astonishing fury. To capture such a crab with the bare hand is no easy matter, and requires some little address."

Another specimen is that of the Italian Mud Crab, the Grancio of the Italians. This species "is very common around Rome, and is largely captured for sale in the markets, as its flesh is very delicate, and in great request on the fast days of the Church. It is dug out of the mud and kept alive for sale, as it can endure removal from the water for a very long time, sometimes living a month upon dry land, the only precaution needful being that it should be kept in a damp spot, such as a cellar. It is a most useful species, as it can be eaten throughout the entire year, but is thought to be in best condition during and immediately after the moult. There are many ways of dressing this delicacy, some persons killing it by long immersion in milk, and others asserting that its flesh has more flavour if eaten raw, like that of the oyster. In the market these crabs are tied to strings, but always at such lengths that they cannot reach each other, or if they should do so they would of a certainty attack and maim their nearest neighbours. The Lake of Albano is a very favourite resort of these crabs, which absolutely swarm in its soft muddy bed. On the first view, the Mud-crab looks very like the common green crab of the sea-shore, but can be distinguished by its colour, which is of a whitish or livid hue. It runs about with great speed, and when it fears the approach of an enemy, hurries into the water, burrows under the mud, or hides itself beneath a friendly stone. Should, however, its retreat be cut off, it proves that it can fight as well as run, and grips with such force, that it makes the blood flow before it can be shaken off. During the winter it dives deeply into the mud, and there remains hidden, until the warmth of spring induces it to leave its retreat."

A third example we take from the description of the Common Eatable Prawn, *Palæmon serratus.*

"No one who has only seen Prawns on the table, red, opaque, and with their tails folded under them, can form the least conception of their wonderful beauty while living. As they swim gracefully through the water, the light passes through their translucent bodies and their beautifully streaked integuments, rich with transparent browns, pinks, and greys of various depths. Their delicate and slender limbs are ringed with orange and purple, and stained with pale blue.

"At night, when a lamp is brought into the room, the effect produced by the Prawn is really surprising. The large globular eyes glow as if illuminated by some powerful light within; and as the creature comes out of the darkness its eyes alone are visible, as they shine like two globes of living fire.

"It is very interesting to watch the habits of this beautiful creature. It is extremely voracious, and seems always to be ready for food. I used to feed my own Prawns with the bodies of shrimps, hermit-crabs, and other marine crustacea that had died in the aquaria. All that was needful was to drop the dead animal into the water so that it should pass the spot where the Prawn had made its home. As soon as it approached, the Prawn used to dart out like a tiger from its den, its long antennæ waving in great excitement, and its forceps open and extended so as to be in readiness. The claws appear to be very feeble, but they are stronger than they seem, and are perfectly adequate to the task which they are called upon to perform. The creature would quickly grasp its prey with one claw, carry it off to its home, and there leisurely pick it to pieces, displaying considerable discrimination in choosing the most delicate morsels, and abandoning the remainder to its smaller companions who still lived in the same tank, and preserved their lives by hiding themselves in little nooks and crevices, wherein they were safe from their giant kinsman. The air of utter contempt with which the Prawn would twist off and fling aside the legs and antennæ of a shrimp or a hermit-crab was very amusing. Its greatest dainty, for which it would leave almost every other kind of food, was the soft abdomen of the hermit-crab.

"The forceps employed for this purpose are those at the extremity of the second pair of feet, those of the first pair being used for a different purpose. Mr. Gosse has given the following account of those limbs and their use. After mentioning that they are covered with hairs set at right angles to the limb, like the bristles of a bottle brush, he proceeds as follows:—'These are the prawn's washing-brushes, especially applied to the cleansing of the under surface of the thorax and abdomen. When engaged in this operation the animal commonly throws in the tail under the body, in that manner which we see assumed in the finest specimens that are brought to table, which is not, however, the ordinary position of life, the body being nearly straight. Then he brings his fore-feet to bear on the belly, thrusting the bottle-brushes to and fro into every angle and hollow with zealous industry, withdrawing them now and then, and clearing them of dirt by passing them between the foot-jaws.

"'The reason of the inbending of the tail is manifest. The brushes could not else reach the hinder joints of the body, and still less the swimming-plates, but by this means every part is brought within easy reach. Sometimes the brushes are inserted between the edge of the carapace and the body, and are thrust to and fro, penetrating to an astonishing distance, as may be distinctly seen through the transparent integument. Ever and anon the tiny forceps of the hand are employed to seize and pull off any fragment of extraneous matter which clings to the skin too firmly to be removed by brushing; it is plucked off and thrown away clear of the body and limbs. The long antennæ and all the other limbs are cleaned by means of the foot-jaws principally.'"

The next description of these strange creatures we commend to the attention of our readers who want amusement on the coast. In this case they have no formidable claws to dread, but have to deal with an innocent little creature called the Chamæleon Shrimp. "This species is abundant on our coasts, and derives its popular name from the extreme variability of its colouring. It seems to alter according to the locality in which it resides. Those, for example, which live upon a sandy coast are of a grey hue, those which are found among the large dark Sea-weeds are brown, and those that prefer the ulva and zostera beds are green, like the vegetation among which they live. These creatures are sometimes called Opossum-shrimps, from a curious modification of their structure. The last two feet are furnished with an appendage that forms a sort of pouch. In the male this pouch is small, but in the female it is large, and capable of containing a large number of eggs, which are carried about by the crustacean just as the opossum carries its young. In the Northern seas these opossum-shrimps exist in vast multitudes, and form much of the food on which the great whale of those seas depends for its subsistence. Several species are thus eaten, and one of them, Mysis flexuosus, is largely eaten by the enormous shoals of salmon that visit these regions in the months of July and August, thereby aiding in giving to the fish that fineness of condition and fulness of flesh which ought to be possessed by a well-nurtured salmon. These creatures are fond of congregating at the mouths of rivers, probably because they find plenty of food in such localities, and during the winter haunt the whole line of coast. Many species of opossum-shrimps are found upon our shores, and can be captured by the simple plan of hauling up masses of Sea-weed, and seizing the little crustacea before they can escape."

Garden Memoranda.

Imperial Gardens of the Belvedere, Vienna.—These favourite gardens are situated in the Renning, and lie between the upper and lower palaces of the Belvedere, near the Southern Railway Station. The palaces just mentioned were built by Prince Eugene of Savoy, in the 17th century, and he resided in them during the latter years of his life. The upper one is now used as an Imperial picture gallery, and the lower one is employed principally as an armoury.

The gardens are in the form of a parallelogram, and laid out in three formal divisions.

In the first and second divisions there is a considerable slope to the south, the third and last being quite flat. A broad terrace walk at the top of the garden, and in front of the palace, commands one of the prettiest views of Vienna. The first compartment, of which this terrace forms the top, is divided into four equal parts; broad walks run down the centre and sides, and a cross walk through the middle, where there are two large circular basins, one on each side, with figures and jets. Between the Grass and the outside walk there is a dwarf Yew hedge, cut square, and about 4 ft. high.

At the intersection of the walks, and on each side, large sphinxes are placed on low pedestals, just high enough to lift the figures off the Grass; they are composed of a kind of cement, common about Vienna.

The second garden is laid out similar to the first, but with fountains square at the corners, with semicircles in the centre. At the bottom is a fine fountain with waterfalls, figures, and jets, and from the arrangement of the upper basins there is little doubt that the overflow of water from them is conducted to the larger fountain to form cascades. On the east side of the garden is a row of high Elm trees, which overhang and give shade to the walk, but these are the only trees in the upper divisions of the gardens.

The lower compartment is reached by a long flight of stone steps. Figures are placed on the walls on either side, at the top, middle, and bottom. This garden cannot be less than 15 or 18 feet below the preceding one, and it is for the greater part planted with trees and shrubs in geometrical figures, forming a number of shady walks, and in the interior is a large square of Grass, where the people congregate together for recreation and enjoyment.

In the middle of the garden there is an oblong square, with a broad walk on all sides, planted with Chesnut trees, which completely shade it. In the centre is a sunk garden with a large circular flower bed in the middle, and smaller flower beds around the sides; these beds are filled with Geraniums, Calceolarias, and other ordinary bedding plants, forming a charming spot in this otherwise wooded garden. On each side of the central walk is a narrow strip of flowers, bordered with a Grass verge. Niches are cut at intervals in the hedges that border the walks, and statues are placed in them, through the centre and at the bottom facing the lower palace; there is also a small flower garden here, with two groups of statuary placed in the central compartments.

The finest object in these gardens is doubtless the fountain above alluded to, placed at the bottom of the second division, and facing the lower palace. Standing in front of the latter it is seen to great advantage through the long avenue of trees which leads up to it, forming a grand termination to the walk. The fountain basin is in the form of a semi-oval; the water falls down the cascade at the top, and is conducted through a huge Dolphin's head into a basin supported by four female figures with fishes' tails; this overflows again into a large basin below; in addition to this a number of smaller jets are arranged in the walls on both sides, composed of winged boys, grotesque faces, and small tazzas, the whole making a fine architectural feature.

There is a small reserve garden on the east side, shut out by a high wall, where plants are raised for summer decoration. This garden, up to a very recent period, has been under the direction of Mr. Francis Rauch.

Mr. Cuthill's, Denmark Hill, Camberwell.—In addition to Strawberries and Cucumbers, Mr. Cuthill also grows Mushrooms with great success, and as his system of procedure is somewhat different from that usually followed, some account of it may not be uninteresting.

In making up beds during these last two winters he has abandoned the plan of letting the heat decline before spawning. He now spawns as soon as the temperature of the bed reaches 100°, which it does in a few days after being made up. After being spawned it is moulded over at once and beaten down smooth and firm, as directed in his useful little pamphlet on the growth of the Mushroom.

When spawning is delayed, he states, until the warmth has begun to decline, the temperature in the bed soon falls too low to be of service; care must, however, be taken not to cover too heavily, or to allow the heat to rise above the point just indicated, as in that case the crop might be ruined. When the temperature of the bed gets below 60°, more covering material can be added, and thus the beds can be kept more uniform in temperature and longer in bearing than when the ordinary course is pursued, and overspent dung employed. The plan sometimes resorted to of forming holes to allow the warmth in the bed to escape is never followed by Mr. Cuthill, whose great aim is to keep his bed as long in a proper state as to heat as possible. With this end in view he sometimes even makes up the lower portion with dung in a somewhat rank state, and on the top of that puts 3 or 4 inches of "sweet" manure for the spawn to run in; beds made in this way, if carefully managed, last long in bearing, provided the spawn is good, and produce wonderfully fine Mushrooms, as any one visiting

Mr. Cuthill's place at the present moment can see and judge for himself. They come up as thickly as they can stand together, and some of them, though measuring 10 inches and more in circumference, are of as fine a pink colour in the gills as specimens of half that size. In short, Mr. Cuthill is never without Mushrooms of excellent quality the whole year round.

Mr. Macintosh's Nursery, Hammersmith.—The show house is now full of Chrysanthemums, of which there is a good display. Among dark red kinds, the best are Progne, Prince Albert, and Julie Lagravère; among yellows, nothing beats Jardin des Plantes; and Vesta and Compactum rank among the most useful white sorts. Of dark red Pompones, Bob is still one of the most attractive, and there are few better purples than Salomon, or yellows than General Canrobert or Mr. Anstie; the last an Anemone-flowered variety. Of seedlings, Mr. Macintosh has a pale Magenta coloured sort, which promises to be an acquisition. Its flowers, which are well formed and of fair size, are produced in great abundance, and the colour is somewhat new among Chrysanthemums.

Veronicas, which are excellent plants for blooming about this time of the year, are grown here largely for autumn and winter decoration. Among the sorts are Andersoni, violet purple; Meldensis, red; and Lindleyana, white—of these there are some beautiful bushes. We also observed a variegated variety of V. Andersoni and of Hydrangea, which, independent of blossoms, have a pretty effect intermixed with green-leaved plants, such as scented-leaved Geraniums, of which Mr. Macintosh has a large collection, consisting of ten or twelve different varieties. Acacias, Winter Heaths, Cinerarias, and Chinese Primulas, with which this house is also furnished, serve to keep up a considerable amount of gaiety at this time of the year, when few things are in bloom.

Of fruit-bearing plants, there is a fair admixture in the house now under notice, and their more liberal introduction into greenhouses generally would in most cases be found to be an improvement. First among such plants stand the little Otaheite Orange, miniature trees of which, not more than a foot in height, are beautifully furnished with ripe fruit. Then come Solanum pseudo-capsicum and S. capsicastrum, the last one of the handsomest half-hardy fruit-bearing plants, in cultivation, its round polished brilliant orange scarlet berries having a charming appearance at this dull season of the year. Even the Pyracantha and Skimmia japonica, though hardy, grown in pots, and covered with fruit, look very pretty when skilfully associated with flowering plants. Among other fruit-bearing plants were Calycarpus purpureus, beautifully furnished with violet purple berries; Ardisia crenulata and Rivina humilis, the last a plant which would mix with Ferns in Wardian cases with good effect. The way in which Mr. Macintosh treats Solanum capsicastrum has been given in former Numbers, but a recapitulation of it may not be out of place; it is as follows:—If good sized specimens are wanted in a comparatively short time, let the young plants be introduced into the warmth of an intermediate house early in spring, and as soon as they have started freely into growth shift them into larger sized pots; at the same time examine the roots, and if they are found to be cramped, or the soil in bad condition, partly reduce the size of the ball so as to set the little rootlets at liberty. When potted place them again in heat, giving little water for a time; but syringe overhead occasionally in order to keep the atmosphere moist. This should be continued for a week or two until the roots have fairly taken hold of the fresh soil. After that water with water of the same temperature as that of the house in which they are growing. They will now succeed perfectly well under the kind of treatment usually given to plants in a growing state, paying attention to stopping all straggling shoots so as to induce a compact pyramidal habit. The pieces removed strike freely, and may therefore be employed to increase the stock. For ordinary purposes 6-inch pots are large enough for them; but if good-sized specimens are required they may easily be obtained with little trouble and of almost any shape that may be desired. About the end of June they should be placed out of doors in as hot and sunny a situation as possible, when they will keep flowering and set fruit better than they would indoors. In September let them be moved under glass, where, when covered with brilliant orange-scarlet berries, they are extremely ornamental. Indeed few plants can be compared with this for winter decoration, and what is important the berries are so permanent that the bushes bearing them retain their vivid colouring for several months at a time. The soil most suitable for this Solanum is a light fibry loam intermixed with a little peat and sand.

Miscellaneous.

Trickery in Rare Exotics.—The Tribunal of Correctional Police, the other day, tried two brothers, named Balme, for several acts of swindling, which consisted in selling worthless plants at high prices, under the pretence that they were rare exotics. It appeared from the evidence that the two accused, who are florists, residing at Venose, near Grenoble, last winter opened a shop on the Boulevard des Capucines, for the sale of exotic shrubs and plants, which they warranted to produce beautiful flowers, highly finished drawings of which were shown to intending purchasers. To these pretended rarities they give the most high-sounding names, as Pelpedium elephantissimum, Paconia variegata nova superba, Andromeda variegata, &c. Attracted by these fine names and the beautiful drawings of the flowers, the gardener of the Princess Mathilde made purchases to the amount of 800f.; M. Molinet, a gentleman residing at Fontainebleau, for 2400f.; and many other persons for smaller sums, but all were bitterly disappointed, for the plants proved to be utterly worthless. Complaints were accordingly made to the police, and an investigation was instituted, which resulted in the discovery that the two accused had practised the same fraud two years before at Cadiz, and that their campaign in Paris last winter resulted in profits amounting to above 20,000f. The offences having been fully proved by several witnesses, the Tribunal declared the accused guilty, and sentenced each of them to a year's imprisonment and 50f. fine. *Standard, Nov.* 12. [These are the men who have been cheating our credulous countrymen so successfully.]

The First Canary-Birds.—Even the favourite cage-songster of our homes—the canary-finch—did not visit England until the 16th century, and its first introduction into Europe was remarkable. A vessel, with a few of the birds on board, was wrecked on the Italian coast, opposite the island of Elba, where some of them having escaped found a refuge, and, the climate proving favourable, their number increased. From that parent stock it is believed that all our domesticated warblers have sprung, and they have been long considered members of our families. *Dickens's "All the Year Round."*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—Take advantage of mild days to give air freely and keep the plants sparingly supplied with water at the roots. Look frequently over anything subject to the attacks of mildew, and apply sulphur the moment that pest makes its appearance; see also that everything is perfectly free from insects. If there is any prospect of a scarcity of bloom next spring, a portion of Achimenes and Gloxinias should be repotted about this season and placed in gentle heat, choosing such as have been the longest at rest; and a few Allamandas, a plant or two of Dipladenia crassinoda, may also soon be started; but unless plants of these are at command with well-ripened wood, and that have been some time at rest, there will be nothing gained by attempting to start them into growth for some time yet, for in most cases it is difficult to maintain a sufficiently warm temperature to secure anything like free growth, unless the plants have been well prepared for an early start. A gentle bottom-heat of about 80° or 85° will be of service to such things in inducing a healthy root action, and if this can be secured there will be little difficulty about obtaining vigour. Let Ixoras and all other hard-wooded plants that have made sufficient growth be kept rather dry at the root in order to check growth, and induce a tendency to form bloom buds; but do not let the soil in the pots get so dry as to affect the foliage.

FORCING DEPARTMENT.

Pineries.—That portion of the stock expected to furnish the spring supply of fruit should not be too much checked at present, indeed the plants may be kept growing slowly all the winter, which is perhaps the most certain method of preventing their fruiting too early in spring. Where the stock of plants likely to push without making farther growth is considered insufficient to meet the demand until August, the stronger plants of those for autumn fruiting should be encouraged to make growth as early as can be done without weakening the foliage, with the view of preparing them for showing fruit in April. Examine the soil occasionally about young plants growing in the open bed, and do not allow it to become unhealthily dry, for this would probably result in a great portion of the stock showing fruit prematurely, and it is also a work of some difficulty properly to moisten the bed if it is once allowed to get too much dried up. Use no more fire-heat for the present than will suffice to maintain the requisite temperature, which, for the general stock, need not be high.

Vineries.—Where early forcing is carried on, as soon as the buds are fairly started the temperature should be increased to 60° at night and 65° by day, allowing it to rise 10° on bright days. Take every opportunity of admitting a little fresh air, but recollect that the foliage will not bear exposure to cold winds, therefore air should be admitted in contact with the heating apparatus. Where the border cannot be warmed, see that it is well protected from wet, &c., by a thick covering of dry litter.

Peaches and Nectarines.—Prune and otherwise prepare the trees in the earlier houses for forcing, which, however, except under particular circumstances, should not be commenced for several weeks yet; but let it be remembered that these fruits will not admit of rapid forcing in the early stages of the process, therefore fire heat should be applied with caution, so that the night temperature does not exceed 50°, otherwise the blossoms will be weak and liable to drop; during the day the temperature may rise to 60°, with plenty of air on every favourable opportunity. Cover the outside border with leaves or litter, for the purpose of excluding frost and heavy rains. Tie in the trees in the later houses, and get all ready for starting when required.

FLOWER GARDEN AND SHRUBBERIES.

Dahlias temporarily placed heels upwards under cover to dry, should now be carefully stored away for the winter. See that coarse growing plants which may be encroaching upon their weaker neighbours are reduced so as to occupy their proper places. Gladioli may still be planted, but most kinds of bulbs are better now to be in the ground than out of it. For Gladioli choose a warm thoroughly-drained situation, work the soil well by deep digging, and add plenty of rotted manure, elevate the bed or patch a few inches above the general level, plant the bulbs 5 or 6 inches deep, and 6 inches apart, surrounding them with 1 inch of sand before covering with mould; protect during the winter against excessive wet and frost, with a thick layer of sawdust, old tan, dry litter, and old carpet, thatched frame, or tarpaulin; the three latter coverings must be removed during favourable weather, and the former coverings entirely cleared off when the plants appear. Ranunculuses may also still be planted. The situation of the beds should be cool and somewhat moist; at the same time there should be good drainage. The most suitable soil is a hazelly loam. If therefore the natural soil be unsuitable, remove it to the depth of about 2 feet, and 4 feet in width, replacing it with rich loam from an old pasture; this ought to be rather firmly trodden in, and should form the foundation and principal portion of the bed. On this should be laid a liberal dressing of well decayed manure, mixing it a little with the under soil; and over this, for the top of the bed, should be laid a layer of soil 6 inches deep for planting the tubers in; this latter should be stiffish fibry loam, mixed with well-decayed cow-dung and leaf-soil. Draw drills, 6 inches apart and 2 inches deep, with a small hoe, and plant the roots 4 inches apart, with the claws downwards, gently pressing them into the soil; the crown of the tubers should be at least 1½ inch under the surface of the bed.

HARDY FRUIT AND KITCHEN GARDEN.

Do not let Pears get over-ripe before being used; also look over the whole stock as often as time can be spared, removing any fruit that exhibit symptoms of decay, and put them aside for immediate use. Any of the choicer varieties of Pears that do not ripen properly in the fruit room should be removed to a warm dry room for a few days, which will be found to greatly improve them. Keep all fruit as cool and dry as possible, as has been previously stated; if frost is excluded from the house, it can scarcely be too cool where the object is to preserve fruit plump and sound as long as possible. Get manure wheeled upon vacant ground when the weather is suitable, and this can be done without injuring the walks, and get all spare ground turned up, so as to expose it to the action of the weather.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Nov. 19, 1862, as observed at the Horticultural Gardens.

November.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind	Rain.
Thurs. 13	20	30.096	29.916	40	23	31.5	47	49	S	[illegible]
Friday 14	21	29.898	29.873	47	31	39.0	45	46	N W	[illegible]
Satur. 15	☾	30.048	30.004	45	37	41.0	45	46	N	[illegible]
Sunday 16	23	30.165	30.066	50	34	42.0	46	46	W	[illegible]
Mon. 17	24	30.342	30.260	49	30	39.5	46	46	N.	[illegible]
Tues. 18	25	30.306	30.196	46	35	40.5	45½	45½	N E.	[illegible]
Wed. 19	26	30.113	30.092	43	30	36.5	45½	45½	N.E.	[illegible]
Average.		30.138	30.058	45.7	31.4	38.5	45 7	46 3		

Nov. 13—Frosty and foggy; bright sun; foggy; dense fog, frosty.
— 14—Foggy, densely overcast; fine; slight frost.
— 15—Overcast; densely clouded; boisterous.
— 16—Partially overcast; fine; overcast.
— 17—Clear and cold, very clear; fine; slight frost at night.
— 18—Fine; very fine; cloudy; slight rain.
— 19—Fine; overcast; clear, slight frost at night.
Mean temperature of the week 2½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Nov. 29, 1862.

November.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 23..	47.1	34 4	40 8	15	0.36 in	1	6	3	2	[illegible]	[illegible]	[illegible]	[illegible]
Mon. 24..	47.2	32.1	39.4	11	0 61	5	7	3	2	[illegible]	[illegible]	[illegible]	[illegible]
Tues. 25..	46.0	33.5	39 8	19	0.34	3	3	6	3	[illegible]	[illegible]	[illegible]	[illegible]
Wed. 26..	47.1	33.2	40.1	19	0.70	1	6	6	1	[illegible]	[illegible]	[illegible]	[illegible]
Thurs. 27..	46.7	34.5	40.6	17	0.88	1	5	5	1	6	[illegible]	[illegible]	[illegible]
Friday 28..	47.9	35.2	41.6	18	1.21	2	4	3	2	7	7	[illegible]	[illegible]
Satur. 29..	47.8	34.9	41.4	19	0.56	4	1	6	3	5	11	4	[illegible]

The highest temperature during the above period occurred on the 28th, 1828—therm. 60 deg.; and the lowest on the 23d, 1858—therm. 9 deg.

Notices to Correspondents.

Fibres: *R W.* Whether or not they can be made available for paper-making or otherwise is a question that can only be answered by manufacturers.

Motion of Sap: *Morland.* Excuse us for observing that what is called common sense is very often non—sense.

Names of Fruits: *P.* 1, Wyken Pippin; 2, Blenheim Pippin. Bedfordshire Foundling.—*X X X.* Unknown. *William H.* Bedfordshire Foundling. ... all of them appear to be wildings, some of them bad; ... half so good as many kinds that are known to be good in quality and to bear abundantly. With such you might profitably graft the trees that have borne the specimens ... sent. ||

Names of Plants: *W C.* The enclosed leaf and seed, "which were gathered in Egypt from a plant the fruit of which ... appearance is a light lemon colour, and in shape and ... resembles the Egg-plant; the tree was 20 feet high, ... have been originally imported from India; in Egypt it is called the Lotus tree, and the fruit is very delicious ... eating"—is Diospyros Kaki.

Tobacco: *Aphis.* We believe that all laws as to the quantity of Tobacco that may be grown *bonâ fide* for your own purposes have fallen into desuetude.

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11*l.* 11*s.* per Ton for cash.
PETER LAWSON & SON, 27, Great George Street, Westminster.

LAWES'S WHEAT MANURE for AUTUMN SOWING.

In consequence of the high price of Peruvian Guano, J. B. LAWES has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of J. B. LAWES, or through any of his appointed Agents. Price 8*l.* per ton at the Factories, Deptford and Barking Creeks.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

American and other Cakes at market prices.

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THE LONDON MANURE COMPANY have now ready

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WHEAT MANURE for AUTUMN SOWING.
BLOOD MANURE for ditto.
SUPERPHOSPHATES of LIME, &c.

All the above being in the finest condition. They also continue to supply

GIBBS'S PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of known value. E. PURSER, Secretary.

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Autumn Sowing.

BLOOD MANURE, for Wheat, Barley, &c., 7*l.* 5*s.* per Ton; ANIMAL MANURE, for Wheat, Barley, &c., 7*l.* per Ton, Cash, in Bags. PREPARED BONE MANURE, for Grass, &c.; NITRO and SUPERPHOSPHATES, &c.

All the above, being in fine condition, will be sent to any of the Railway Stations between Hul and London, Carriage paid.
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N.B. The Blood and Animal Manures are specially recommended to Florists and Horticulturists for Vegetables, Standard and other Fruit and Flower Trees, &c., being the best Manures known for those purposes.

Autumn Sowing.

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Managing Director.—JAMES ODAMS.
Secretary.—C. T. MACADAM.

Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex.

This Manure has been in use for upwards of 10 years, and has given great satisfaction to consumers. It is specially prepared for Autumn Sowing, and on most soils proves as effective as the best Peruvian Guano.

Orders may be sent to the Company's Agents throughout the country, or direct to C. T. MACADAM, Secretary.

Price 7*l.* 10*s.* per Ton, delivered at any Railway or Wharf in London.

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40 to 45 per Cent. of Soluble guaranteed.
1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.

Extract of Opinion from Mr. WAY, *January* 23, 1862.

"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."

Extract of Opinion from Dr. VOELCKER, *January* 1862.

"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a percentage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."

The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.

Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & CO., Plymouth.

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1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
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For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

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WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.

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Applications to be made to WILLIAM CLIFFORD, the Secretary at the Offices of the Company, 52, Parliament Street, S.W.

EXHIBITION of DOGS.—The THIRD GREAT ANNUAL EXHIBITION of SPORTING and other DOGS will be held in Paradise Street, (near Bingley Hall,) BIRMINGHAM, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4—the Week of the CATTLE and POULTRY SHOW in Bingley Hall.

For special Railway Arrangements see the Advertisements and Bills of the several Companies.

BINGLEY HALL, BIRMINGHAM.—The FOURTEENTH GREAT ANNUAL EXHIBITION of FAT CATTLE, SHEEP, PIGS, ROOTS, IMPLEMENTS, and DOMESTIC POULTRY, will be held on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4.

For Special Railway Arrangements see the Advertisements and Bills of the several Companies.

Sixty-fourth Show of the Smithfield Club.

THE SMITHFIELD CLUB, CATTLE, and IMPLEMENT SHOW for 1862 (removed from Baker Street Bazaar), will be held at the NEW AGRICULTURAL HALL, near the Angel, Islington, on the following days:—

MONDAY, December 8, Opening Day, Admission 5*s.*

TUESDAY, December 9, 1*s.*	THURSDAY, December 11, 1*s.*
WEDNESDAY „ 10, 1*s.*	FRIDAY „ 12, 1*s.*

Open from 8 o'Clock A.M. to 9 P.M.

Western Entrance (by King's Cross and Pentonville Hill), Liverpool Road. By this direct road Carriages avoid the Toll Gate. Eastern Entrance, Islington Green.

The Cab Fares from the Railway Stations are as follows:—From Great Northern and from the Highbury Station on the North London, 6*d.*; from the London and North Western, or Great Eastern, or Fenchurch Street or London Bridge Stations, or the South Western, 1*s.* 6*d.*; from the Great Western, 2*s.* Omnibuses from London Bridge and the City, Kennington and Blackfriars, Westminster, Chelsea, Brompton, Paddington, 1600 journeys up to 9 P.M., either past the Angel or past the Hall.

Tickets for Admission the Opening Day, Monday, December 8, price 5*s.*, with a Map of the Route to the Hall, to be had of Mr. MITCHELL, 33, Old Bond Street, W.; Mr. SAMS, 1, St. James's Street, S.W.

The Agricultural Gazette.

SATURDAY, NOVEMBER 22, 1862.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY, Dec. 1		
TUESDAY, — 2	Show of the Midland Counties Association at Bingley Hall, Birmingham.	
WEDNESDAY, — 3		
THURSDAY, — 4		
MONDAY, Dec. 8		
TUESDAY, — 9		
WEDNESDAY, — 9	Show of the Smithfield Club in the Agricultural Hall, Islington.	
THURSDAY, — 10		
FRIDAY, — 11		

IT was not without reason, we sincerely regret to say, that five months ago we had to announce the establishment at THE ROYAL AGRICULTURAL COLLEGE to be on the eve of breaking up. We read after this interval of time the remarks on this subject, which will be found in our Number for June 28, and notwithstanding the condemnation passed upon them subsequently by men for whom, as no doubt having the interests of the College sincerely at heart, we entertain the highest respect, yet we are bound to say that there really does not seem to be one of them that was not justified at the time—not one of them which might not be properly repeated now.

Dr. VOELCKER has, indeed, withdrawn his resignation—all he asked for was at once conceded, and there no longer remained any reason why he should leave the post he had so long, so usefully, and so honourably filled. His colleagues have, however all resigned—one of them indeed has been dismissed. Professor BUCKMAN, after 14 or 15 years' connection with the Institution, finds himself obliged to abandon his position. Mr. COLEMAN, the practical and intelligent farm manager and lecturer on agriculture—the one man in a thousand fit for such a place—has sent in his resignation. Mr. BROWN, the able veterinary professor, and one of the best lecturers of the day on his class of subjects, has received "a cheque in advance in lieu of notice," with an intimation that "his future attendance at the College is inadmissible."

Surely the agricultural public have a right to inquire who is to blame for a state of disorganisation so manifest. They are interested, we are all interested, in the prosperity of this Institution. It is the only educational establishment of the kind that we have; and however easy it might be to replace its mere framework, it is not too much to say that the living agencies which have been there incorporated, which have indeed cordially co-operated for a dozen years or more, as if the body were actuated by one spirit and one will, cannot be replaced at all.

Here is the one establishment of its kind in all England. Its mere skeleton—the farm, the College buildings, the Royal charter, the constitution enabling and directing corporate action and self government—may survive at Cirencester, or may be copied anywhere; but how shall we recreate or obtain elsewhere that which hitherto has been giving their life and power and usefulness to these, which are the mere mechanism of the Institution? It will need another 15 years of united labour before another staff of men, like-minded with those thus lost, shall have at length educated themselves and one another into similar fitness for their duties.

It is, we imagine, unquestionable that the agricultural public, which have a right at any time to information on the condition of their great educational establishment, have especial claim to information now. It is right that the blame, which certainly must lie heavy somewhere, should be laid upon the proper shoulders.

What are the leading facts of which an explanation is required?—Here in 1858, before the death of the late Principal, was a united staff of able agricultural teachers, cordially co-operating in the work of agricultural education—a machine unique and perfect for its purpose, in good working order, and, moreover, industriously at work. Here again in 1862 is this same machine in a state of entire disruption, out of gear, almost at a dead lock—this company of fellow workers on the eve of dispersion—this admirable apparatus in danger of destruction.

What is the cause of such a disastrous contrast? —that is the question. One thing is certain—the whole change has arisen since the appointment of the Rev. J. CONSTABLE as Mr. HAYGARTH'S successor. Another thing is equally unquestionable—the new Principal was welcomed by his colleagues with the utmost cordiality, inducted by them into his Presidency with all the advantages of ready and welcome access to the information and the guidance which so many years of prosperous co-operation enabled them to offer. He has incurred the great responsibility of converting a united welcome into unanimous hostility—or he has suffered the lamentable and undeserved misfortune of the loss of confidence of all his colleagues. He has been either the unfortunate but blameless occasion, or the culpable because reckless cause, of the present state of things.

We are bound to add, that while Professor BROWN, dismissed, has a claim in justice for a public explanation from the authorities who have declared in so abrupt a manner his future attendance at the College inadmissible, no one has greater need of such an explanation than Mr. CONSTABLE, though he be retained. We have heard the conclusion declared, reached though it be by some perfectly unintelligible process of reasoning, that the unanimity of the Professors is by much the most serious aspect of the question *against* them! The natural inference from such a circumstance seems to us to lie all the other way.

Let us not hide, however from our readers, that the chairman of the Council of the Royal Agricultural College retains his confidence in the Principal, and we presume is therefore most properly and manfully prepared for all eventualities rather than abandon him. This does but aggravate, however, the need of some public explanation being offered of the relations to his colleagues in which they are now placed, and in which he is maintained.

We must not conclude either without giving expression to what we are persuaded is in the mind of professors, students, and the public. A great institution like the Royal Agricultural College cannot be destroyed; and however, therefore, its power for good may for a while be

weakened by temporary intestine difference and commotion, the mischief is not aggravated by a frank confession of its existence. It is not in the struggle for their rights of honest men that any real danger lies. The more resolute and outspoken may be such a contest, the better is the proof it gives of that energy and vitality in all departments of the Institution on which our hopes of its utility and permanence can alone be built. The real danger lies in hiding mischief, in smothering discontent, in accepting the mere form, smooth surface, affectation and pretence of unanimity and discipline in place of genuine worth and genuine good-will.

We sincerely hope that the facts of the case, in full detail, may be laid before the public, that a frank discussion of the differences which have arisen may ensue, and that the only verdict which is likely to be satisfactory or final, may then be unmistakably declared on one side or the other.

—— A CORRESPONDENCE has been placed in our hands between an advertiser of Pedigree Wheat in our columns and a would-be purchaser, who writes from near Patricroft, Manchester. The former has been wary enough to require a remittance from an unknown correspondent, of whom accordingly nothing more was heard.

Let any one receiving similar "orders" by RIDGWAY, ANDREWS, STEELE, &c., from that neighbourhood copy the example of our correspondent, or make application to the Manchester Trade Protection Society regarding them.

WE have lost during the past twelvemonths the first of English agriculturists.

We have had to lament the first in station, to whom all looked, not merely as their President for the year, and not merely as the leader of our agricultural progress, but as the foremost always in all departments of social benevolence. And now we have to grieve the loss of the first of those whom thus the late PRINCE CONSORT led. The PRINCE who indicated everywhere, so honourably to English agriculturists, the high respect in which our class is held at home, and now the tenant farmer who represented everywhere the intelligence, ability, and worth to which the class had actually attained—both are gone.

Than JONAS WEBB no one was better known as the representative of the English Farmer, either at home or abroad. His ability, good-nature, and success, his stalwart form and pleasant face, have done good service to his country, as truly representing our English countrymen at many an agricultural contest on the Continent. Amongst ourselves it may suffice to say that during an agricultural career of 40 years his extraordinary ability as a breeder of Southdowns has given additional value to the produce of whole provinces: for the influence of his skill has penetrated whereever black-faced sheep are cultivated. And of late years this influence has been exerted, one may say, in every civilised country of the world; for latterly the representatives of all countries were present at the annual Babraham sale, and sheep of his breeding have left their mark in North and South America, in Australia, and in almost every European country. At length the celebrated flock was dispersed—the two sales of sheep off a farm of about 1000 acres realizing the unprecedented amount of 16,000*l.* Mr. WEBB's great work as an agriculturist was completed; but we all looked forward to a long period of prosperity, and of growing success and distinction for him as a breeder of Short-horns. He had indeed already attained both distinction and success as the exhibitor of extraordinary animals at the Battersea meeting.

Not only by his immediately professional engagements, but by public spirited exertions, he was doing good service to English agriculturists. It is his influence which has in great measure secured the success of the Agricultural Hall Company, by which a Crystal Palace of our own is provided for all future metropolitan agricultural shows. Like the PRINCE whom we have ventured to name along with him in these remarks, he has not lived to see the completion of the great public work in which during the last year of his life he was engaged. Despondent, owing to Mrs. WEBB's continued ill-health, he was attacked, when on a visit to his brother-at-law at Cambridge, with a low nervous fever, and prostrated by the anguish of her loss, he died on Monday, Nov. 3, on the evening of her funeral—on the day which had been set apart for the marriage of a younger son—on the 66th birthday of his life.

ON THE PROBABLE WORKING OF THE NEW HIGHWAY ACT.

[The following paper was read last week before the Kingscote (Gloucestershire) Farmers' Club, by J. T. HARRISON, Esq., Frocester Court, near Stonehouse, Gloucestershire.]

To enable us to obtain a clear view of this subject it may not perhaps be unnecessarily occupying your time if I draw your attention to the circumstances which step by step have led to the formation of the Queen's highways as existing in this kingdom.

It is an interesting but much disputed question whether any roads were formed previous to the occupation of this island by the Romans. Cæsar, indeed, describes the war chariots of the Britons as striking terror into his legions; and the use of wheeled carriages seems to indicate the prior formation of highways. We know that there were highways in the East many centuries prior to the occupation of Britain by the Romans, and that war chariots, apparently very similar to those of the Britons, were in use in the East. The Phœnicians traded with Britain at a very early period, and it is more than probable that they introduced, as we do now into countries with which we trade, many of the useful arts and conveniences of life, and along with them possibly highways, and war chariots as a means of defence. The old Chroniclers record that King Dunwalla began the four highways of Britain, which were finished and perfected by Belinus, his son. Robert of Gloucester says—

"Faire weyes many on ther ben in Englonde,
But four most of all ther ben I understonde
That thurgh an old kynge were made ere this,
As men shall in this boke after here tell I wis,
From the South into the North taketh Erming Streete,
From the East into the West goeth Ikenield Strete,
From the South East to the North West, that is some
del grite
From Dover into Chester goeth Watlyng Strete,
The ferth of these is most of all that tilleth from Tateneys
From the South West to North East into Englondes End,
Fosse men calleth thilke way that by mony town doth
wind.
These four weyes on this londe Belin the wise
Made and ordained him with gret franchise."

This Belin is the Belinus mentioned above, and we may fairly assume that the ancient Britons had highways, and that King Belinus was sufficiently enlightened to make and ordain them with great freedom. Hence possibly we have the proverb "Free as the King's Highway;" whether his ordaining as well as making them free meant that he maintained them is a question. Three out of these four ways mentioned by Robert of Gloucester pass through this county. The Ikenield way entering from Oxfordshire, at Eastleach, falls into the Fosse way near Cirencester. The Ermin way, coming out of Wales, passes through Gloucester, Cirencester, and Crickdale. The Fosse way, entering from the North passes through Northleach and Cirencester, and quits the county about 5 miles from that town. Wherever the Romans conquered they made good roads, as essential to the permanence of their occupation. They may have, and probably did adopt the roads they found existing, improving them, and adding others which they found necessary. Some of these roads they paved, and so excellent was the workmanship that they remain in some places in good preservation to the present day. A recent American traveller mentions one of Sidon's antiquities by the roadside, and says sarcastically, "Those mighty emperors, Septimus, Severus, and Pertinax Arabicus, sought to immortalise their august names by graving into this granite column the important fact that they mended this road."

Had we derived our common law from the Romans, this might be useful to show that the repairs of the road were not always thrown on the parish.

These ancient roads are remarkable for their width and straightness. The effect of some of them is very striking, as on attaining the summit of hill after hill, the road is seen stretching away in a direct line to the summit of the next rising ridge. These roads were undoubtedly the foundation of the present highway system of England, and it will, I think, interest you to show how, within very modern times, under almost precisely similar circumstances, a road system has been established in the northern part of our island.

In consequence of the Scotch rebellions of 1715 and '45 our Government found it was absolutely necessary to make military roads in the Highlands of Scotland. These roads were formed to the extent of about 280 miles. It was not, however, till the beginning of this century that steps were taken to provide highways for the Highlands of Scotland, when in the course of 20 years some 900 miles of road were made by Mr. Telford, so that in 1820 there were 1200 miles formed and repaired by Government by parliamentary grants in aid of tolls. Here we have very recently the north of our island brought into the condition in which the southern part was left by the Romans.

It is interesting to note the results of the formation of these roads. At the beginning of this century the mails were carried on the backs of runners. In 1820 a gentleman could rejoice that now he could obtain the London Sunday's newspaper regularly every Thursday morning, "a circumstance," it is added, "which must appear to a stranger almost incredible, and which of course is wholly attributable to the roads made under the authority of the Parliamentary Commissioners." What would the stranger say to the dispatch with the aid of railways and the electric telegraph in 1862.

In Mr. Mitchell's (Mr. Telford's assistant) report we see how the byways as it were crystallized about these Parliamentary roads. He says—

"Not less remarkable, though more indirect, has been the impulse given to agricultural improvement throughout the highlands, the construction of the Parliamentary roads having in the first instance opened the means of access through the district generally and also the intercourse with the low countries, a desire was naturally excited among the proprietors and tenantry more or less remotely situated to connect themselves immediately with the general lines of communication, and thus avail themselves of the facilities which they afforded for improvement in agriculture. Hence numerous lines of district roads have been constructed during the progress, and since the completion of the parliamentary works in every part of the highlands by means of statute labour, and the rapid and important increase in the extent of cultivation, which has uniformly been the consequence, proves in a striking degree the favourable effects resulting from the works of the Commissioners. Their roads being executed without reference to any individual interest, they were made in lines most calculated for the general good, and necessarily pointed out the proper direction of those subsidiary branches which were required to be made by statute labour, and out of private funds.

"The public aid afforded for the Parliamentary works kept the local funds in great measure entire for such separate purposes."

The report continues—

"One immediate result of making these roads has been the substitution of carts instead of ponies for the commercial intercourse of the country; and the saving in point of time, labour, and expense in this respect, is beyond all calculation, giving a new impulse to the improvement of the country. The people are extending their smaller roads in all directions for their carts to bring seaweed from the shore, or fuel from the peat mosses, and activity, energy, and industry have taken place of their former indolence, sloth, and idleness," &c.

I will only trouble you further with extracts to show the effects of these improvements on the value of land in the course of 20 or 30 years.

"Lands of Murkinch rented 25 years before at 70*l.* or 80*l.* a year, brought a yearly rental of 600*l.* In 1790, the property of Redcastle was sold for 25,000*l.*, and in 1824, was again sold for 135,000*l.*

"The estates of Chisholm rose from 700*l.* a year, in 1785, to 5000*l.* a year.

"When Dr. M'Donald of Glengarry died in 1788, his yearly income did not exceed 800*l.*; the same lands in 1826 yielded 6000*l.* or 7000*l.* a year." I have detained you thus long with these details, as they appeared to me to exhibit very clearly the manner in which the network of highways probably spread throughout the kingdom, and further how probably the common law respecting the repairs of highways, came into operation.

They show how greatly the land of the country is benefited by the formation of good roads, and why the land so evidently increased in value should bear the expense of keeping them in repair.

We know that a farm well accommodated with roads is more eagerly sought after, and brings a higher rental than one the access to and from which is difficult and costly.

It seems just that the onus of repairing the highways under such circumstances should be borne by the land. And although the tenant pays directly, no doubt the landlord pays the tax indirectly, for when a farmer counts the cost of a farm the highway rate comes in as one of the items, and as it is high so the rent must be lower.

Note, however, at the same time the fair division of the cost, the Government making and maintaining the main, and those locally interested the branch roads.

In the south as well as in the north, as the intercourse between town and town increased, better means of communication were required, and the Legislature granted Acts of Parliament for the construction of turnpike roads, and still more lately of railways, upon which enormous sums of money have been expended.

I find that the first Turnpike Road Act was granted in 1653, but the system was not extensively adopted during the succeeding century. In the latter half of the last century, however, turnpike roads multiplied rapidly, and superior principles of construction also made progress, whilst during the first quarter of this century road making was brought to great perfection, and the attention of Government was repeatedly directed to the importance of this class of public works.

There were in England and Wales in 1839, 22,000 miles of turnpike road, the average annual cost of which was for five years	£989,545
And the management	129,124
	£1,118,669

The cost per mile was—

For repairs ..	£36 per mile.
Improvement ..	9 "
Management ..	6 "
Total ..	£51

There were 1116 trusts, averaging about 20 miles each.
7800 toll-gates.
1300 surveyors, or one to 17 miles.

I come now to the question more immediately under discussion, viz., the probable working of the Highway Act, and we may fairly pause to consider the object of this Act.

It appears that it has been in the power of parishes, if they thought proper, to form districts and manage their roads in the manner now proposed since 1835. As they have not adopted the system the evidence is tolerably strong that they did not consider it was to their advantage.

The object of the present Act, then, must be to oblige the parishes to mend their ways. It comes certainly in the mild form of a permission act, but somewhat like the voluntary theological examination at the Universities, which becomes very compulsory when the graduate falls into the hands of the bishop, it will no doubt, if not in the hands of the magistrates, at any rate after, acting as a feeler for a few years, before long become a compulsory system throughout the land.

There is no doubt that better highways would frequently be a great advantage to the public, but the question more immediately concerning us is—will the new Act be beneficial or otherwise to the ratepayer.

After considering this I propose to discuss the question of the turnpike roads.

In 1839 there were in England and Wales 104,770 miles of highway, which cost annually 11*l.* 3*s.* per mile for repairs, or in all 1,168,235*l.* No insignificant item of it figured in the Chancellor of the Exchequer's Budget.

This annual cost of 11*l.* 3*s.* per mile, however, requires probably some modification. The returns were made under the Act of 1836; highways under it are classed as—

1. A carriage or cartway.
2. A driftway.
3. A bridle road.
4. A causeway.
5. A foot way.
6. A navigable river.
7. A public bridge.
8. A turnpike road.
9. A railway.

It is the duty of the surveyor to send in a return each year of the extent of the different highways the parish is liable to repair, also what part thereof has been repaired. Now, taking the parish of Frocester, I find that the former query has always been answered as 3½ miles. Taking the turnpike roads, this is probably correct, but the length of highway actually repaired is about 2½ miles:—

	Per ann.	At 3½ miles.	At 2½ miles
6 years, from 1837 to 1842, cost, on an average ..	£76	£21	£30 per mile.
13 years, from 1843 to 1855, cost, on an average ..	49	15	20 "
7 years, from 1856 to 1862, cost, on an average ..	80	23	32 "

This is not at all improbably the case in other parishes, and

that 11*l*. per mile is below the average cost of the highways actually repaired.

Circumstances modify this cost immensely, such as the nature of the subsoil, the quality of the road material, and the facilities for obtaining it.

A firm, well-drained subsoil will support the road much better than a soft has clay, and a ton of mountain limestone or Breedon pebbles will go much further than a ton of oolite.

The question is frequently a very nice one between the use of these materials, the ragstone from the field by the road side, or oolite from the hill occasionally carrying the day, when the more costly blue stone, even with several miles of carriage, might prove eventually the cheaper.

The amount of traffic also modifies the cost.

A comparison of the cost per mile of the highways in the Whitminster and Tetbury districts will exemplify this: In the former, a vale district, we have generally a bad foundation for a road, and the materials are either indifferent or expensive, whilst the traffic is considerable. In the latter, a hill district, the materials are inexpensive and frequently close at hand, and the traffic light. I think I may fairly add that a traveller along the former district would not be so eager for the Highway Act as when he visited the latter.

Whitminster District in 1857-8:—

No. of Parishes.	No. of Miles.	Average Cost per Mile.
1	1½	£2 0
2	2¾	8 0
5	14	10 10
6	13	16 10
6	30	22 0
4	9	27 0
1	2	30 10
25 Parishes, with	72 Miles, cost	£19 0 per Mile on an average.

Tetbury District, average of 3 years, ending March 25, 1862.

No. of Parishes.	No. of Miles.	Average Cost per Mile.
5	27	£1 2
4	15	4 10
4	10	8 5
1 (Tetbury)	3	23 0
14 Parishes, with	55 Miles, cost	£3 10 per Mile on on average.

A comparison of the cost per mile of the highways in these two districts probably exhibits in an extreme degree the advantage of the Act to two very different interests. The former to the rate-payer of the district, that the cost of the highways may be diminished; the latter to the public, that the roads may be improved.

It is evident that we cannot come to any trustworthy estimate of what the cost per mile of repairing the highroads should be, and the whole question rather turns upon the management, the cost of it, and the superiority of the proposed over the present system.

It will no doubt be argued on behalf of the existing system that it leaves the repairs of the highways in the hands of the parishioners who have to pay for them; in practice however it is left in the hands of the surveyor for the year, who may or may not have an interest in keeping expenses down, and ability and energy to properly direct the repairs. The system also encourages the employment of inefficient labourers, and it not unfrequently happens that a considerable part of the labour item would more fairly be paid through the poors' rate. The cost per mile of the highways of Frocester Parish, from 1837 to 1862 inclusive, taking the length at 2¼ miles, will show clearly how it varies under different circumstances.

Year ending.	Cost per mile.	
1837	35 0	Repaired chiefly with white stone
1838	38 10	
1839	32 0	
1840	31 0	
1841	22 0	
1842	28 0	
1843	21 10	
1844	33 10	Railway opened
1845	17 0	Blue stone used after this
1846	13 0	
1847	20 0	
1848	16 0	
1849	28 0	
1850	30 0	
1851	9 10	
1852	11 0	
1853	17 0	
1854	25 0	
1855	16 0	
1856	27 0	New Church Road formed
1857	42 0	
1858	36 0	
1859	35 0	
1860	21 0	
1861	20 0	
1862	41 0	

The manual and team labour items seem to be those upon which economy or extravagance are most apparent.

Were the roads under a surveyor, the advantage gained would not consist simply in it being his business and in his bringing his experience to bear, but in having able-bodied and intelligent men to do the work in gangs, with an active working man over them. The work done for a certain sum would thus be superior in quantity as well as quality. The materials would be obtained at the cheapest rate from the best quarter, and instead of the present expensive system of hiring teams, a few horses and carts would probably be kept in each district always at command, and pretty constantly and steadily employed.

There is an innate dislike in human nature to be put out of the ordinary course, and we are consequently sometimes unwilling to accept with a good grace a proposition that may turn out to be decidedly advantageous.

Take for instance the new Poor-Law systems, the local management of which is very like the proposed highway system.

The rates applied to the relief of the poor in the County of Gloucester before the new law came into operation were ..	£176,840
For the year ending Michaelmas 1862 ..	108,500
Showing the decrease of	£68,340

May not a like result follow the new Highway Act?

But it will be objected that the charges for management will so mount up that any benefit derived from bringing experience and system to bear on the repairs will be swallowed up by them. Let us examine into this.

The claim upon the surveyor's time under the present system is overlooked, and the cost of management put down at *nil*; but this is not a fair way of viewing the matter. If a surveyor does his duty, I know that the demand upon his time is considerable, and a serious tax. The following table shows the cost of management in several cases.

Cost of Management (Clerk and Surveyor).

Highland Roads under Telford, 1200 miles, 2*l*. per mile, 200 miles under each inspector.

Turnpike roads in England and Wales in 1839, 22,000 miles, 6*l*. per mile, 17 miles under each inspector.

Turnpike roads in England and Wales in 1862. Probably 3*l*. per mile, 50 miles under each inspector.

Parish roads not less than 1*l*. to 2*l*. per mile, 3 to 4 miles under each inspector.

I should think 100 miles might be managed by one surveyor having intelligent working foremen under him with each gang of men, and that the salaries of the clerk and surveyor, with incidental expenses, would be covered by 150*l*. a year or 30*s*. per mile. Were the districts greater or less than 100 miles, the surveyor and clerk should be paid accordingly, taking of course the demands on their time into account.

Grounding my opinion upon the certainty of the highways generally being kept in a better order and at a less cost per mile, and on the supposition of the management expenses not exceeding 30*s*. per mile, I propose the following as a resolution for your adoption:—

"That it is the opinion of this Association that the New Highway Act will probably prove beneficial both to the public and the ratepayers.

"That it is desirable the highway districts should correspond with those of the union, as these already form divisions of the county for the purpose of local expenditure on the representative system, possessing a central place for meeting, with a board room, and as under the New Union Assessment Committee Act a uniform valuation of the parishes in each union will be obtained."

I anticipate opposition to the adoption of these resolutions, and am aware that we have some ugly resolutions upon our minutes which appear directly opposed to them. Some of the objections were, however, to clauses in a Bill proposed two years ago which the new Act meets; others were founded chiefly on the data so accurately collected by Mr. E. Drew as affecting the Tetbury district, which the Tables I bring before you show are insufficient for founding a sweeping denunciation against the measure; others I have endeavoured to meet by argument in this paper.

But I think it is not out of place to discuss the general question of the maintenance of the turnpike roads as well as the highways.

We have heard the cry raised lately at the Quarter Sessions—"The county of Norfolk has no turnpikes; let us follow the lead and do away with ours." And I am inclined to think that the new Act is only a step indicating the desire to do away with turnpikes throughout the kingdom; undoubtedly a very desirable object if it can be attained with fairness to all parties interested. The obstacles in the way are the debts, and the difficulty of levying rates for the repairs in an equitable manner.

The Clerk of the Peace for the county of Norfolk informs me that Mr. Harford "must have been extraordinarily misinformed, as at the Easter Quarter Sessions he laid before the Court statements of the income and expenditure of 12 turnpike roads, and there were at least two other trusts from whose clerks statements were not received by him."

Differing materially in character from the highways, the turnpike roads have been constructed with a view to accommodate the general traffic of the country, extending more or less directly from town to town.

The rival railways have considerably upset the economy of the old system, robbing the main lines of road, and throwing the traffic on to the cross roads, which are not unfrequently merely parish highways. So completely has this been the case sometimes that the tolls have no longer sufficed for the payment of the mortgages and repairs of the roads, and the turnpikes have in consequence been thrown on the parishes to repair. This is the case with the Kingswood turnpike roads in our own neighbourhood, and the extent of road thus thrown on the parishes will very probably increase. By the common law of England there is no question as to the liability of the parishes to repair, if there are not funds for the purpose. In the Acts of Parliament for some roads, the money collected is first to be applied to the repairs, afterwards to the payment of interest, &c. In others, the interest of the mortgage comes first, and if there is not sufficient left for repairs the parish must make good the deficiency.

Here seems to be a source of great hardship and injustice. And I think the fourth and fifth resolutions you passed on a former occasion bear strikingly on this point: they were—"That if the parish roads were put in much better repair than they are at present, it would have the effect of turning the traffic off the turnpike roads on to the parish roads, and cause many of the toll gates not to pay the expense of keeping"—and the 5th. "That it would be unjust towards the parishes to throw the expense of maintaining the turnpike roads upon them." In a case of the kind the attempt was made to apply the tolls, not merely to the payment of the interest for the year, but of that which had not been paid in former years, and the strong language of the judge in giving his decision, might almost with equal propriety be used in cases where the parishes are obliged to repair, and the tolls are applied to the payment of the yearly mortgage interest. The judge said, "Were the claim of the trustees allowed, this monstrous injustice would follow—that the present inhabitants of the parish, who daily pay tolls for the use of the roads, would see their tolls applied to wipe off a debt which might have accrued long before they came into the parish, and they would find themselves taxed to repair the road as if it were a parish road, which they were entitled to use without paying any toll whatever."

But the railways have not only stolen the traffic from the turnpike roads—they not unfrequently encourage it along the byeways, and the parishes in such cases are obliged to keep their road frequently in as good repair as a turnpike road—for it is no answer to say it is as good as ever it was, it must be kept in sufficient repair for the present use of it.

Take, as an instance, the communication between Dursley and Stonehouse, *en route* for London. The first two miles are turnpike road, and toll is of course looked after; but the remaining five or six miles are parish road, on which no toll can be levied, and which, in consequence of the increased traffic, are very costly to repair.

To meet the difficulties of the debt and repairs, Sir G. Cornwall Lewis and Sir G. Grey introduced a bill in 1849, providing amongst other things for clearing off the mortgage debt by the counties, by means of an annual payment of 7 per cent. upon the debt until the whole was cleared off. I understand the debt was found to be so enormous, that the plan was given up.

It seems very desirable that this debt should be cleared off if possible, and if that in our county does not exceed 100,000*l*., say 1000 miles with 100*l*. per mile owing, a penny rate per annum would clear it off in 30 years, and levying it as a land tax to be deducted from the rent, would not fall heavily upon the landowners.

As regards the repairs of the turnpike roads, which is a much more serious item on many trusts, I take it it would be a monstrous injustice to burden either the county generally or the parishes individually, and it is against this that we should be on our guard rather than against the new district system. The present turnpike roads have either been formed for, or selected and improved as the principal traffic routes of the country, and are therefore much more generally useful in character than the highways which are rather fitted for the convenience of the parishes.

The system of taxing those who use these roads for the purpose of repairing them seems to be much the fairest way of meeting the requirements of the case. If the roads are freed from debt by the rateable property of the country, and the tolls levied are merely sufficient to repair the roads, it seems most equitable that those who do the damage should pay for the reparation.

If we travel or send farm produce by the railways, a large portion of what we pay is required for the maintenance of the lines, and those who frequent the turnpike roads instead may fairly be called upon to contribute to their repairs.

Let us suppose it proposed to saddle the burden on the county, and see how we should like it. Taking the number of miles of turnpike road in this county at 1000 miles, and the cost on an average at 32*l*. per mile, which is 10*l*. per mile less than the average of 1839, and probably not far from the actual cost, we should have an annual tax on the county of 32,000*l*., or nearly as much as the county rates. It is needless to remark how burdensome such an impost would be felt, or what an outcry there would fairly be against such injustice. Very many of those who now pay largely would escape almost scot free, being but slightly rateable—take for instance the millers, brewers, timber merchants, carriers, commercial travellers, the dealers, and the quiet retired gentleman renting his 40*l*. or 50*l*. a year and keeping his carriage. Let any one note the vehicles that he meets upon the road, and see if the majority of them do not fall under these heads.

If the injustice of throwing the turnpike roads on the county would thus be great, how much more intolerable would it be to throw them on the parishes through which they passed. Some getting off without paying a penny, others with several miles of costly road to keep in repair. Is this wrong the less at present, because it is by degrees consummated on a part instead of the whole body of rate-payers? and is it not a rightful demand that some more equitable provision than exists at present should be made for the contingency of declining turnpike roads.

This is more a landlord's than a tenant's question, and I believe calls for attention, seeing that trustees on application for renewals of their Acts are now told that it is the last time.

Viewing the subject in this light, I beg to propose the following resolutions, in addition to the former:—

"That it is highly desirable the mortgage debts upon the turnpike roads should be liquidated, if possible, either by the Government or by a county tax payable by the landlord, spread over a series of years.

"That these roads should be placed under the same management as the highways, and supported out of a common fund

either raised on the turnpike system, as at present, at the lowest possible rate, which is the most equitable system, or supplied by the Government out of the revenue of the country, which should be taxed to meet this demand.

'That the new tax would be most justly levied on that description of horse, cart, or carriage, which is most used on the roads.

"That if the turnpike system were continued, power should be given to the magistrates to order the transfer of highways to the turnpike class, when from the increase of traffic the repairs fell unduly heavy on the parish."

The following amendment was proposed by Mr. F. Bennett and carried with but two dissentients:—

"That this meeting is of opinion that the carrying out of the Highway Act would increase the local rates, without the least compensation to the ratepayers, and also deprive them of the power they now have of expending such rates, and put the power into the hands of those whose interests may be the opposite to the interest of the rate-payers."

It was also resolved:—

"That it is highly desirable the mortgage debt upon the turnpike roads should be liquidated if possible by the Government, and that funds for the repairs of the turnpike roads should be raised either on the turnpike system as at present at the lowest possible rate, which is the most equitable system, or supplied by the Government out of the revenue of the country, which should be taxed to meet this demand."

HOW TO MAKE GOOD BUTTER.

To make the best of butter, requires many prerequisites; but for all practical purposes, two main points cover the whole ground, viz., 1st, Neatness; 2d, Skill. If any dairywoman expects to make nice butter without the most scrupulous neatness, she will find herself greatly disappointed. From the moment when the rich and luscious fluid is first drawn from the cow's udder, to the time when the butter is ready for the table of the connoisseur, the least dirt, the least must or unpleasant flavour in the atmosphere of the room, and the least speck of foreign matter of any kind, must be absolutely and perfectly kept from it during all its stages of manufacture. In fact, neatness is the *sine quâ non* of the butter-maker's art. As well may we suppose that any of the laws that regulate the physical world will be reversed, as to suppose that good butter can be made without the most scrupulous neatness in every particular.

The second indispensable qualification of the perfect butter-maker is skill—a word of quite extensive signification when applied to this subject. To acquire that skill requires a clear and discriminating judgment, a well educated and experienced mind, and a minute and accurate observance of the physical laws which regulate the various conditions of the milk and the cream, while undergoing the transformation into butter. To be a successful butter-maker, therefore, requires no inconsiderable degree of education, intellect, and ingenuity. Let us, then, analyse this skill of the butter manufacture, and see what are its most important elements.

To begin, then, we must first have good milk, and to have good milk, we must have good cows, and to have good cows, requires a selection of the best breeds and of the best milkers from the best breeds, for that purpose. But that carries us into another department of agriculture, which we have no time here to discuss.

Assuming, then, that we have good milk, the next thing is to place it in shallow pans, (tin is usually preferred,) and in a degree of temperature neither very warm nor very cold. About 62° of Fahrenheit is supposed to be the state of the air in which cream will rise most perfectly. And here let us remark, that every housewife who aims to make the best of butter, should have a thermometer constantly at hand, and should be a frequent observer of its condition.

If milk is kept in a temperature much below 62°, the cream will not rise so rapidly and so perfectly. If kept in a state of the air much above 62°, the milk will become acidulated too quickly, and the quality of the cream will thus be injured. Equalisation of temperature and a free circulation of pure air are among the important elements of the butter-maker's skill. The time requisite for cream to rise naturally and perfectly, varies with the temperature, from 24 to 40 hours. As soon as the cream has all risen to the surface, it should be separated from the milk, and with much care; for the less milk that is taken up with the cream, the better will be the butter.

Churning is the next operation, and it is one that determines in no small degree the quality of the butter. If cream is put into the churn in a state much colder than 62° of the thermometer, it will require much more time and labour to convert it into butter, and the butter will never be of as good quality. Let the cream then be brought to an even temperature of 62°, and the often laborious operation of churning, especially in the winter, will become comparatively easy. If the cream is much warmer than 62°, the butter will be too soft, too white, and in most particulars, quite poor.

As soon as there is a perfect separation of the particles of the cream which make the butter, from the more watery parts of the milk, let the butter be taken from the churn, and then comes the quite difficult and delicate operation of working over and salting it, both of which require great accuracy and judgment. For if the milk is left and mixed in with the butter, one thing is sure—the butter will never have that compact and smooth appearance that is one of the sure indications of good butter; and what is yet more important, butter left in that condition will not keep long without becoming musty or frowy. Every one then that aims at making the best of butter, must separate entirely the particles of the milk from the butter, immediately after churning. Washing the butter with cold water is practised by some, but the most skilful butter-makers complete the separation of the solid from the fluid portions by manipular labour alone.

The form in which butter is prepared for the table or for market, is one indication of the skill of the maker. Butter put up in small cakes of oval form, and stamped with a device of flowers, leaves or diamond figures, is the most beautiful, and seemingly adds to the good flavour of the article. In order to sell for the highest price, it should always be put up in that form, or in oblong pieces of about a pound each.

Such are the main requisites of the skilful manufacture of good butter, without which we venture to assert with great confidence, that the best of butter cannot be made.

Does any good housewife, when she has read this report, say "I knew all that before?" If she does, then we ask her with no small degree of assurance, Madam, do you practise all these rules for making good butter? If you do, why is it that so large a proportion of the butter that is sent to our markets is so very poor? *Report to Franklin Co. (Massachusetts) Agricultural Society.*

STEAM CULTIVATION.

[The following letter relating to the Highway Farm, Maidenhead, described last week in the *Agricultural Gazette*, had just then, so Mr. Gillett informed us, been sent to Messrs. Howard.

LAST year after I had finished cultivating I sent you an account of the number of acres, with my opinion of the quality of the work performed. I have now finished this season's tillages, and have much pleasure in forwarding you a second report; but first will record my ideas relative to the requirements and preparations it is absolutely necessary should be effected previously to its introduction in order to insure a fair prospect of success. Experience, our best instructor, tells us unmistakeably steam cultivation will prove beneficial or abortive according to the circumstances under which it is applied. Introduce it upon a farm of 300 or 400 acres of strong well drained heavy land, lying compact, free from hedge rows and field timber, or field plantations, and well watered. With judicious superintendence you succeed. Picture its reverse, and you discard it in disgust. What then is the sequel—that the system is bad, or that the preparations have been lost sight of and neglected? —I leave the public to conclude. But allow me to tell you it appears to me you are intimately interested in ascertaining that due preparation be made, for I hold no lasting advantage can be expected by manufacturers in supplying that which must eventually disappoint. You will now have perceived I can have no objection to recommend its introduction to both landlords and tenants, with due preparation of the farm, and under such covenants as the altered circumstances may require. Both landlords and tenants have had opportunities of seeing its working, its effects, and of obtaining all necessary information. Hence it appears superfluous to proceed further with this part of the subject. With every respect for the feelings of those landlords who possess fields containing favourite hedge-rows and field trees, and who have up to this time adopted restrictive covenants, I feel confident I shall not plead this cause unsuccessfully, if I submit to them the necessity of relaxing their covenants and adapting them to the requirements and altered circumstances of the times; because, when we witness their anxiety to make themselves acquainted with its workings and effects, their anxiety to secure skilful, energetic business men with sufficient capital, we have a right to conclude they are prepared to meet the requirements liberally, to induce tenants to incur the outlay necessary to obtain steam cultivating appliances. The Highway Farm consists of 270 acres of retentive arable land overlying a chalk subsoil; it lies open, comparatively free from hedge-rows, no field timber, good roads, and fairly watered; it is also tolerably level and compact. I held under a lease which expired last year, and obtained a new one before I gave you my order, my landlord being aware I intended employing steam-power cultivating it. The covenants were altered to the requirements. I manage pretty much as I choose, and sell hay, straw, and roots. It is but little calculated for sheep stock, consequently nearly dependent on corn. London stable dung is obtainable by Great Western Railway, and a siding opened close to a part of the land. I adopt a 5-field system of cropping; immediately after the Wheat is harvested the stubble is cultivated, and again in the following spring as early as the season will admit; thoroughly cleaned of filth, drilled with Oats and 20 lbs. Trefoil per acre for sheep feed Next year it is ploughed once, and planted with Turnips or other green crop. Or a portion of the Oat quarter, if not thoroughly cleaned, is drilled without Trefoil and left for Rye, Vetches, or other green crop after being thoroughly cleaned the following autumn. The following inventory will show the cultivations, seeding, and results of the steam cultivated 84 acres I reported having effected on the Highway Farm up to November 7, 1862. *Vide* last year's letter.

INVENTORY OF CROPPING, &c., ON THE FOREGOING 84 ACRES.

22 acres after Wheat.	Steam Cultivated twice in autumn of 1861 Following spring dragged, harrowed, and thoroughly cleaned; drilled with Oats, and 20 lbs. Trefoil per acre.—Note. No plough or manure used. Oats heavy crop; Trefoil plant very thick.
20 acres part of same Field as above.	Acts of husbandry and seeding same as the 22 acres, with one plough for seeding and no difference in either Oats or Trefoil.—Note. The ploughing was experimental.
14 acres after Oats.	Steam cultivated, once very deep, laid up rough, sown with winter Vetches, the heaviest crop I ever saw. Sheep fed, used Beans 1 qr. and cake 2 cwt. per acre. One plough, drilled Green Globe Turnips with 1 cwt. guano, 3 cwt. superphosphate, and 20 bushels of ashes.—Note. The footpath to Maidenhead crossed the piece at right angles, consequently the result was open to public view. The crop was the wonder of the neighbourhood. Some of the bulbs at the end of Sept. weighed 14 lbs. each, and were exhibited at the East Berks Agricultural Society's Meeting. Mr. James Howard was there and saw them. This furlong upon all previous occasions had proved very unkind for root crops, and I am at a loss to account for this success except by deep cultivation and the avoiding compression by horse treading.
8 acres after Oats.	Steam Cultivated twice in autumn, and once in the spring, dragged, harrowed, and well cleaned, dunged, and cultivated full 12 ins. deep, covering the dung as effectually as a plough; drilled Swedes with 1 cwt. guano, 2 cwt. superphosphate, and 20 bushels of ashes. Good full crop.
2 acres, part of above piece.	Acts of husbandry and seeding same as 8 acres, except the last deep cultivation.—Note. This was left for experiment; the result was extraordinary, for although the 2 acres were drilled first, the plants were 10 days later to hoe than the 8 acres, and the crop proves much less. No plough used on either.
18 acres after Oats.	Trefoil lea; cultivated three times, dragged, harrowed, and well cleaned, dunged and sown part with Rape and part Mustard. Good crops. No plough used.

I have no hesitation in saying—as ridges and furrows are reduced, the attendants accustomed to their several duties, and we have to re-cultivate, the acreable estimate of expense may be considerably reduced, at any rate it would not exceed that of last year—*vide* last year's letter. The first cultivation breaking through the pan that has been solidified by horse treading offers the greatest resistance when cultivating. Another farm in a very foul state has been lately taken by my son adjoining his Lane Farm, consequently the steam has been in great request. The tillages have been various, and on entry (the middle of July) the Turnip fallows lay uncultivated in wretchedly foul state. The cultivator was immediately put to work them, favoured with a fortnight's fine weather. A thorough cleaning was effected, and with the use of artificial manure a good green crop has been secured: thanks to the steam power. Your apparatus was put to work last spring; since then it has cultivated 540 acres and ploughed 36 acres. A foul Clover lea cultivated on the New Farm was very tough heavy work, but it was effected without breakage. On an average the cultivator has performed about 1¼ acre per hour, but this must always depend on resistance, length of furlong, &c. As a proof contrast the extra time occupied in turning on two pieces of 10 and 20 acres and as many chains long; suppose the implement 1 yard wide and there will be found 220 extra turnings; change the turnings into minutes, and it gives 3 hours 40 minutes lost time. I had a piece 24 chains long, containing 20 acres; had determined, if possible, cultivating it in the day; previously bargained with the men to pay for 1½ day's work each, except engine and windlass man; relay men worked their two meal times. They cultivated 19 acres, and would have finished it, but unfortunately the rope broke. It was anxiously watched by many neighbours during the day. It would be advisable when you supply new apparatus to caution your customers against setting down to very heavy work when commencing. Without any guiding hand I determined on selecting a piece of clean light working stubble, and ordered the staff of men to begin exactly as they would colt-breaking. The men became gradually accustomed to their duties; breakage, delay, and the consequent annoyance and expense were thereby avoided. *Joseph Gillett, Highway Farm, Maidenhead.*

FROM the "Steam Plough Works" at Leeds, the "Britannia Ironworks" at Bedford, and from the various Woolston agents' manufactories, steam tillage machinery is being supplied at a rapid rate to the farmers of clay land and medium soil; while, occasionally, "a set of tackle" makes its way on to large light-land farms, with an after reported career of success. But there are large districts of England in which the steam plough, even if introduced, has provoked but little "over hedge imitation," the occupiers not yet being convinced of the desirability of a heavy venture, when they perceive but little promise of good profit. One district may be a sample of several others; so we will take the broad marsh lands border-

the "the Wash" estuaries in south Lincolnshire, giving the particulars of the case of steam culture as put pro and con. by the farmers there.

An excellent and very intelligent agriculturist in these parts, expresses his opinion as follows:—"Before engaging in an undertaking of such magnitude as the adoption of steam husbandry, involving an entire revolution of system, we should exercise the most cautious sagacity; and, first of all, consider whether the present exigencies of our position demand such a costly and powerful agency, and will the advantage repay the cost? For myself, I do not think we need it on such a soil as ours, much of it quite easily ploughed four 6 inches deep by two horses, at the rate of 1 acre per day, a soil not materially injured by trampling, and the lighter portions positively benefited by the consolidation. The deep tillage, which forms one of the main features of steam-ploughing, and which is so valuable for the clays, would, I think, be injurious to our light thin-soil land, a considerable proportion of which lies upon raw sea-silt on most of the farms in this locality. I have found Wheat stubble, ploughed deep and subsoiled (on under-drained land), not so dry or easy to manage at spring as land ploughed later and to a moderate depth; the deeper the bed saturated with winter rains, the longer time it requires at spring to dry. In my own occupation—growing a large proportion of roots and Potatoes, 100 acres out of 300 acres "arable" being under these crops every year, all these vigorously horse-hoed, and the Potato land thoroughly stirred at taking-up time, and sown in spring with Oats—I do not need very much autumn culture, which is another of the great points in steam-power husbandry.

If you grow a large proportionate breadth of root crops, scarcely any or no Pulse crop, and less Clover and seeds than is common at present, you will not have so much reason to complain of the cost of horse-power cultivation, or of eradicating our old tenacious enemy "Couch." Where roots and Potatoes are grown in large proportion, and the Wheat-seeding is consequently late, a large horse force can hardly be superseded. To meet this demand, I breed and always have a supernumerary force growing, and working occasionally. If I were situated on a cold tenacious clay, where every horse-footing did harm, and autumn sun and air do an incalculable deal of good, I should not hesitate to adopt steam. I do not wonder at your tiring of ploughmen scamping their work. But moral will do more than steam-power to cure that. As to getting orders satisfactorily carried out, I often think of old Sir Charles Napier's remark, "It is not the word of command or instruction, however explicit, but eyes and limbs that do the business; 14 hours a day in the saddle, seeing personally to the execution of the minutest detail, win the campaign." In spite of clear and masterly calculations and reports of the economy and advantage of steam tillage, I am not yet released from old-fashioned prejudices, as regards its adoption on our particular class of land; and I am still haunted with an alarming apprehension lest, once subjected to the fangs of the monster, he should clutch a larger share of our meagre profits than we could afford; and, once swallowed, no power of ours could make him disgorge."

Here we have a very able and intelligent farmer concluding from mere general considerations that he does not need steam culture, though his profits are confessedly "meagre." He takes for granted that a costly steam plough would be so much extra expense, taking up a larger share of present profit than he could afford; and again, assumes that with a steam plough he must necessarily prepare for "an entire revolution of system." These objections to the adoption of steam culture are, doubtless, very commonly entertained; and it may be a service to the cause generally if we can show by reasonable calculations that, in the circumstances of the district under consideration, a steam plough may be started with only a small investment of actual money capital, and that it would yield a handsome profit with the present system of cropping, &c., left unaltered.

First, as to the prime outlay. The farms in that locality are not very large; so that we will suppose two farmers holding 300 acres each to unite in the purchase of a steam plough—say a 10-horse power plough and cultivator at 600*l.*—(as suited to large level fields of land comparatively easily worked). The force of horses usual on those farms is about 16 to 300 acres. How many horses can each farmer sell off at once without diminishing the total tillage force upon the farm? Sixteen horses plough 8 acres per day (excepting in deep work, and in very hard Clover lea). If six horses be sold, the remaining 10 horses will be able to plough 5 acres per day, and the engine which replaced them will plough say 7 acres per day besides, or 12 acres together. Thus, the farmer with one-third less horseflesh is in a position to do one-third more work per day when any pressing reason requires it. If it be wheat seeding that is being done, the 16 horses (some ploughing, some harvesting and drilling part of the day) would probably get in 5 acres per day. With the steam-plough at work, and 10 horses harrowing and drilling, 7 acres will be ploughed and sown per day. Or more than this; for owing to the superior shattering of the furrow slice by the steam implement less harrowing is required, and probably 8 acres or even more would thus be sown per day. Should the farmer fear that with six horses sold off, his cartage of roots, manure, &c., will be at fault, we have to remind him that he is thinking of the impossibility of expeditious carting with only 10 horses, while in his present circumstances, having all tillage to do beside. In harvest, when those soft stoneless marsh roads are sound and good, single-horse carts are preferable to 2-horse carts or waggons; and, in this way, three pitchers and three stackers can be kept going in catching seasons when "two sets" are not deemed sufficient. That is, you may work three "sets" of three 1-horse carts each; or if you had them, you might keep two "sets" going with 10 1-horse carts. What is better for the longer distances, and moreover what is the custom of that part of the country and has vehicles already prepared for it, is the plan of two "sets" working three 2-horse waggons and four 1-horse carts.

In taking-up Mangels, six carts may be worked by eight horses, leaving the other two (out of the 10) to plough up the beds.

In manure-carting, six 2-horse carts, worked by 10 horses, will generally answer every demand of long distance and bad roads; but, as the greatest press of this business is in summer, when roads are sound and firm, seven or eight 1-horse carts might be used instead. For taking produce to the shipping wharf or railway station a force of 10 horses provides two good 4-horse teams, and leaves a pair of horses at home for getting straw into the yards in winter, driving the chaff-cutter, carting Turnips from the fields to the feeding-hovel, carrying Mangels or Swedes from the store or heap out to the sheep on pastures, or, indeed, for any work required to be done.

But let not the farmer overlook an important consideration here. As with 10 horses and a steam plough he will do one-third more work per day than with 16 horses alone, his tillage-work will be accomplished in one-third less time than at present, leaving more time for carriage labour of all sorts. On farms in the district spoken of, the horse labour (after allowing for wet and unavoidably idle days) is not very far from being equally divided between tillage and carrying. Hence if the 10 horses (owing to the auxiliary efforts of the steam engine) save one week out of every three weeks hitherto devoted to tillage, they are able, on the other hand, to devote something like three weeks for every two previously employed in different sorts of carting. So that the capability for carriage-work with the reduced force of horseflesh comes to this; you will be able either to engage all the 10 horses in carting,—doing as much work per day as you ever do under present circumstances (in which 10 horses may be carting, and the remaining 6 at tillage); or in jobs where no roots are apprehending a snow-blast, or corn trembling at the rising rain-clouds (jobs like leading out yard-manure to the stubble-field or close-grazed lea), you may let 7 horses do in three weeks what the 10 horses would have managed in two weeks. And you will thus have 3 horses besides to help all the time in forwarding the tillage.

The matter may be put in another light. The carrying labour on 300 acres arable (in the district in question) very slightly exceeding the tillage labour—both together occupying 16 horses the whole working year; the carrying represents the continued labour of about $8\frac{1}{2}$ horses on an average. So that the steam-ploughing farmer, with 10 horses, has $1\frac{1}{2}$ over and above the average number required for the total amount of carting of all sorts. We have thus established (if our data are correct) three principal points:—1st, 10 horses are $1\frac{1}{2}$ above the average number needed for the carriage-work of the 300 acre farm; 2d, when all engaged in carting, they will do as much work per day as the farmer ever chooses to accomplish when 16 horses are at his command; and 3d, if all the 10 horses are engaged, as well as the steam-engine, in tillage, the rate of work will be one-third more per day than the force of 16 horses could perform. But we have now to consider whether the force of $1\frac{1}{2}$ horses (on an average) over and above the $8\frac{1}{2}$ (on an average) necessary for the carriage-labour of the farm, will suffice for performing those lighter operations of tillage which the engine will leave undone? Not, of course, that only a single pair of horses will be available at one time; for sometimes all the 10 horses may be engaged in carting, and sometimes all in tillage. If we take the available working days in a year at 285, the labour of $1\frac{1}{2}$ horses (on an average) throughout the year, will be equivalent to about 428 days' work of one horse. Will this be sufficient for effecting the said light tillage operations of the farm not executed by the steam plough? On the kind of farm referred to, the 3-horse harrowing, pair-horse harrowing, rolling, drilling, ridging-in manure, horse-hoeing, horse-raking, and ploughing up Potatoes and Mangels (in a year of extreme work), occupy time equivalent to 916 days' work of one horse, or about 3 horses per day, on an average, throughout the 285 working days of a year. It will appear, then, that the farmer with only $1\frac{1}{2}$ horses (on an average) for doing the work requiring 3 horses (on an average) will be at a disadvantage of $1\frac{1}{2}$ horse so few. But before we grant him permission to keep 11 or 12 horses (instead of 10) out of his original 16 horses, let us remember that one of the very points of steam ploughing is its so shattering the furrow slices as to need very much less of "mastication by the tooth of the harrow" than is now found needful upon the tough, solid, slowly-turned furrow of the horse-plough. Further, let us also bear in mind that the steam plough works admirably with a heavy harrow yoked by its side; so that, altogether, far fewer horses will be wanted for harrowing a seed-bed for Corn, in which process so many teams are occupied under the present horse-power *regime*. And as for fallowing, we are taught by steam experiences in all other localities, that less Couch and other vegetable filth will remain to be combed out by drag harrowing, rolling, harrowing, rolling, harrowing again, and all the long series of crushings and scratchings that now make horses' coats wet, and men's bones (and hearts!) ache. Hence, we may pretty safely conclude that the average 2 horses will do instead of the average 4; and that the 300-acre marsh farmer, with 10 horses and a steam-plough, will be under no disadvantage whatever as regards either the carrying or the light tillage operations which must of necessity be entrusted to the active stepping of cart horses.

Concerning the proportionate number of horses assumed above as needful for tillage, carrying and light tillage respectively, we shall offer an elucidation and statistical testimony hereafter. Meanwhile we beg the trustful reader's attention to the point we have arrived at. Namely, that if two farmers (each of 300 acres arable) join at a 600*l.* steam plough, each can without detriment to the tillage or carting force of his farm, sell off 6 horses out of 16, say at 25*l.* per horse, at once realising 150*l.*, or half his share in the purchase. And the finding of the other 150*l.* in cash will be all the additional "investment of capital" that is required of him. If, for greater expedition in work, and provision against unusual emergencies, the farmer determines to keep 11 horses, a little more cash must be forthcoming; but this, of course, will depend upon the price made for the sold-off "workers."

Perhaps more than two farmers might not agree very well; at any rate, with three combining to work a steam-plough, each for say one week at a time as their turn comes about, the work in pressing weather would be rather further behind-hand. But still three neighbours might settle points of dispute by votes of two to one, and 900 acres is by no means an excessive area for experiencing every advantage of the machine. The larger the area, the less the acreage cost for wear and tear and interest; the personal risk to each of the three farmers would of course be less; and the purchase money wanted from each would be only 50*l.*, instead of 150*l.* *I. A. C.*

[The following report, relating to Mr. Smith's steam-driven combined drill and cultivator, did not reach us till this week.]

On Thursday last we paid a visit to Woolston, induced by an announcement in the public prints that the new combined cultivator and drill, invented and patented by Mr. Smith, would there that day be at work.

On arriving at our destination we found that the field in which the operations were going on was the No. 2 field, breaking up a Bean-stubble and drilling the Wheat at the same time. The soil in that field, as is well known, is a stiff and tenacious clay, and in consequence of the late showery weather was in by no means a nice condition for working.

This, however, seemed rather than otherwise to please Mr. Smith, doubtless from a feeling of confidence in the capability of the implement, inasmuch as it must be apparent to the most superficial observer, that if it could make good work under such difficulties it could not fail to do so when circumstances were favourable.

That it did make good work we can vouch, the land was well moved, the seed deposited as it ought to be, and what few surface weeds there were and there were not many, lay exposed on the top, and to all whom it may concern we would recommend to pay a visit just previous to the next harvest, and we will venture to predict a splendid crop of Wheat, while for cleanliness of culture we do not think it can be equalled—in fact few gardens can in this respect be compared to it.

We have now had several opportunities of seeing the implements at work when in ordinary use, and not when intended for public exhibition, and have never failed in seeing it make good work. We have also seen the crops produced after it, and watched them in their progress with much interest, and certainly nothing could be more satisfactory. A piece of Barley which we last spring saw put in with it after Turnips fed off by sheep, and apparently under not very encouraging circumstances, resulted in a splendid crop. In an adjoining field belonging to a neighbour was another piece of Barley, which was put in according to the old fashioned notions, and we are almost afraid to say our own, which the majority of practical farmers would say was the right style of doing the thing, but from first to last the steam-cultivated want ahead, and we have not the least doubt in our own minds but the yield was at least double. These facts are patent in the neighbourhood, and it speaks well of steam cultivation generally, that many who were scoffers but a short while ago, are, now that they see what is being done by their neighbours, adopting the system. We know personally of many instances.

Of the machine which we saw used on the present occasion, it is perhaps unnecessary that we should say much. It was exhibited publicly at Farningham, under circumstances however totally unsuitable, but

doubtless those who feel a sufficient interest on the subject, will avail themselves of an opportunity of seeing it at work at a proper season, and on land in a proper condition.

We opine that on all large holdings where steam cultivation is practised, it will not be very long before it will be thought a valuable acquisition to the list of steam-propelled implements, and as such we recommend it to notice. *B. L.*

NOTES ON WEEDS.

By PROFESSOR BUCKMAN.

THE plants to be now commented upon under this head may be arranged as follows:—

LINNEÆ.—*Linum*: 1, catharticum; 2, perenne; 3, angustifolium.

MALVACEÆ.—*Malva*.—4, sylvestris; 5, rotundifolia.

1. The small Linseed so well known in our poor clay pastures under the name of "Purging Flax" is too common to need description. Its name, however, and the fact that so many of the pastures in which it occurs have the reputation of causing scouring, or the "scours," diarrhœa, purging, to the sheep and cattle which feed upon them, have caused this plant to be held in a great deal of undeserved dread by the farmer. That it has purgative effects may be gathered from the following notes in Lindley's "Flora Medica," as thus:—"This plant is bitter and powerfully, but, as it seems, not dangerously, cathartic. Dr. Withering found 2 drachms or more in a dose of the dried herb useful in obstinate rheumatisms. *Smith*.—A drachm of the dried plant is a convenient purgative, or we may employ an infusion of a handful of the recent plant. *Pereira*."

Still, even in those meadows in which we have seen it to abound, it would take some time to procure a handful of this small but graceful plant, but when we mention that such Grasses as the following are its usual companions, the evil effects in "scouring," or, as they call them in Somersetshire "tart lands," may be attributed as much, if not more, to general want of condition, poverty, and wet, than to the presence of the Purging Flax. The following is a list of Grasses which we have usually found associated with the Purging Flax in some of the poor uplands in Gloucestershire and Wilts.

GRASSES IN A TART MEADOW WITH PURGING FLAX.

Brachypodium pinnatum: Heath False Brome Grass.
Bromus erectus: Upright Brome Grass.
Briza media: Quaking Grass.
Cynosurus cristatus: Crested Dogstail Grass.

Again, on visiting the tart lands of Somersetshire we were struck with the fact that the Purging Flax was almost entirely absent. A "tart meadow" in the neighbourhood of Ilchester on the Lias yielded the following plants, Grasses and others, and as near as we could make out in the proportions we have affixed to the different names. The meadow was undrained, and might be called a wet cold hungry clay.

GRASSES, &c., IN A TART MEADOW WITHOUT PURGING FLAX.

	Proportionals.
Aira cæspitosa: Hassock Hair Grass	10
Cynosurus cristatus: Crested Dogstail	6
Holcus lanatus: Woolly Soft Grass	4
Hordeum pratense: Meadow Barley	3
Bromus commutatus: Drooping Lop Grass	3
Festuca pratensis: Meadow Fescue .. .. .. }	4
„ loliacea: Darnel Fescue .. .. .. }	
Poa trivialis: Rough Meadow Grass	6
„ pratensis: Smooth Meadow Grass	3
Briza media: Snake Grass	2
Lolium perenne: Rye-grass	3
Anthoxanthum odoratum: Sweet Vernal ..	2
Carices: Sedges var.	5
Ranunculus acris: Smooth Buttercup	20
Potentilla anserina: Silver Weed	10

The prevalence of bad species and the paucity of better is here sufficient to account for the scouring properties in this, as in the former case, without attributing the matter to the Purging Flax; still, however, it is a curious fact that whatever tends to the amelioration of the pasture in which this plant occurs will in time kill it, and these are—Draining, Rolling, Harrowing, and Top-dressing.

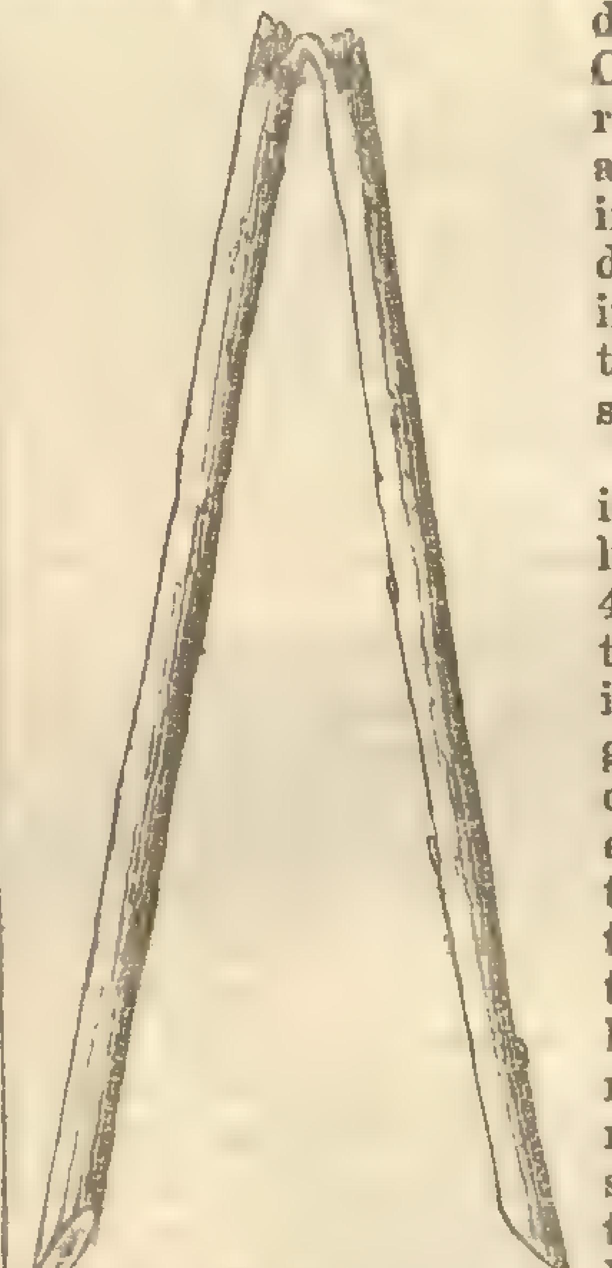
2. The perennial Flax is common in Sussex. We have met with it about Hastings in sufficient abundance to make it a weed, its moss being much greater in some of the pastures than that of the Purging Flax.

3. The narrow-leaved pale Flax is abundant in Cornwall; we have met with it about Hayle, forming dense tufts in pastures near the sea. The specific differences of these two may perhaps be doubted on reading the account of the following experiment:—

"In 1854 I sowed one of my plots with seed of the L. angustifolium gathered at Hele in Cornwall. It came up very well, and in 1855 might have been seen its plants in rows with branches a few inches long trailing along the ground, some with light, others with dark-blue coloured flowers somewhat small when compared with the L. usitatissimum or L. perenne; in this state it presented little to recommend it as a cultivated plant. In the past year it had advanced to a strong and vigorous *upright* plant somewhat more than 2 feet in height, with handsome dark-blue flowers, indeed rivalling the L. usitatissimum in size and beauty. As regards its fibre I have as yet had no opportunity to make experiments; but if in this respect it should equal the annual Flax, I cannot help thinking that we shall have in the Linum perenne a plant of great economic value. As regards the specific distinction of the L. angustifolium and L. perenne, I must after these experiments express great doubts; nay, I am almost inclined to think that L. usitatissimum is but an annual form of L. perenne, so that this year I shall collect the seeds of my perennial patch with a view of commencing an annual cultivation. At all events, should I fail in proving this point, we may fairly expect other changes of great interest, seeing that so much has already been done in bringing a little straggling Linseed from its wild habitat, and cultivating in a different soil and climate, not by imitating wild conditions, but by making for it a new soil, and planting in rows so that one row has the effect of inducing the upright growth to its neighbour,—a fact readily seen in examining the growth of my plant as its shoots first start in a trailing method —a circumstance which shows that in order to test the capabilities of some plants for a crop, we can only do so not by growing single specimen examples, but by planting a quantity side by side.

"As subjects for experiment, it fortunately happens that the Linseeds are readily affected by cultivative processes, so that we possess in them subjects capable of affording much information as the result of carefully conducted experiments, which leads me to remark that, as there are some tribes of plants which we cannot so easily act upon, permanency of our appointed species must not be concluded from the failure of our limited experiments though, on the other hand, species must give way in those cases where as the result of properly conducted experiment the seed of one plant can be made to produce what has been considered as a distinctly specific form." —*Report to the British Association for 1857, by the Author.*

The L. perenne form is an exceedingly showy plant, and worthy a position in the advance of shrubs, or by the sides of carriage drives, walks, &c. Our specimens, derived from the trailing Cornish plant, grow upright when in moss, with a straight stem near a yard in height. These stems die annually, leaving a living root-stock to carry on the plant for the next season.



New Peg for Verbenas, &c., from stems of Linum perenne.

We have been particular in mentioning these facts here because for the last 4 years we have found these stems to be exceedingly useful in our flower garden, for if cut in lengths of somewhere about 6 ins. each, and bent in the middle, the fibre holds the two bits together with sufficient tenacity to enable these to be employed as pegs for nearly all the flowers that require this operation, and so quickly are they cut that a few thousands may be made in about an hour, and they are as lasting, and keep in position better, than any device we have yet employed. In pastures these are objectionable plants in quantity, as they take up much space and belong to an active family; still these Linseeds can after all only be considered as local.

4 & 5. The two Mallows are easily distinguished by their size, the round-leaved form being the smaller; they are seldom found together, but in some places one prevails almost to the exclusion of the other. They are both weeds of way sides, waste places, and hedge rows. The homestead, home meadow, or orchard, are very commonly made untidy with them, and as their leaves are large these plants are a great pest where they abound. They are easily got rid of by early pulling or mowing, care being taken to prevent growth and seeding. They are perennial, and so seldom occur in arable crops, except in corners under walls and about old hedges, from whence as they can do no good, but must do harm, the careful farmer will remove them by hook or by crook, for they live grossly, and so take up the food and room that might be occupied by better things.

Home Correspondence.

Small-pox in Sheep.—I am grateful to find that you have considered my very simple communication in reference to the small pox in sheep worthy of insertion in your Journal. I will add that the proportions for tar and salt are—Norway tar, 6 oz., Bay salt, ½ oz., Water, 1 quart. As you have omitted to mention the other remedy, a pill at night composed of blue pill, sulphur (or sulphuric acid) and quinine, I will mention the proportions: Blue-pill, 1 gr.; Sulphur, 2 gr.; Quinine, 3 gr. This I recommend for the consideration of your practical chemists; as, if beneficial for sheep, the same remedy may be found useful for the disease in human beings, which so often fatally occurs, in spite of infant vaccination.—I take occasion at the same time to observe upon the discovery of the statue of George II. in Leicester Square. Why should not the ground revert to its original purpose—the garden of the square? These Square gardens in London are the especial admiration of foreigners, and if supplied with fountains would be more attractive still. It is gratifying to think of the dynasty of the Georges, whose calm light is almost overwhelmed in the dazzling splendour of these later days, rerising into view, with the memory of that good king whose hearty wish was that every cottager should have a Bible on his shelf and a fat pig in his stye. *R.*

Butter-making.—Having read your account of a new way of making butter, I venture to call your attention to an old method which was pursued with success in a small dairy in Hampshire many years ago, and which would be worth trying again, as the process is so perfectly correct in theory that it ought not to fail. Luckily it requires no apparatus and costs nothing (except the loss of the buttermilk), so perhaps some amateur farmers may be induced to try the experiment, as it can be tried as easily with a quart of cream as with a gallon, and let you know the result. The method is this: Tie the cream in a coarse cloth like a pudding, and over this tie another coarser cloth. Bury these overnight in a hole, and lightly cover them up with the soil dug out. After being in the ground about 12 hours, the butter will be found perfect, only requiring the usual salting, &c. I tried the experiment with perfect success, but it is so many years ago that I may have forgotten some minute details, which any ordinary dairy manager will be able to supply. *L. A., Nov. 10.*

Steam Cultivation.—By your empty "Home Correspondence" this week, it would appear that there is not a farmer in England, however he may carp at my system, or stick to the old turn over plough, who dare venture a 50*l.* and costs to enable me to test my new machine against old fashioned practice. Yet there is a fulness in another part of your paper, where W. S., Guildford gives a thoroughly sound practical lesson on steam cultivation. His short simple lesson from Nature is so much in place and so well put, that I must have space to repeat it, viz.:—

"What more beautiful specimen of perfect tilth can be found than in the stubborn clod reduced by the action of the elements. What can it possibly signify in which way the soil be exposed to the pulverising action of the frost, or the combined and fertilising influences of atmospheric agencies. We have only to take time by the forelock and be in advance of the seasons, instead of being nearly always behind, and the work is done. But no; this is contrary to the system of our forefathers, and the long established custom of horse culture, and we must harness our new implements with all the trappings incident to such a state of culture, and so long as this is done and the old form of the plough kept steadily in view, with its accompaniments of clod crushers, rollers, drags, harrows, &c., attached as a 'drag' for steam, no very great progress will be made, or any very profitable result be derived from the application of this modern but still efficient power."

The last seven years' practice on my farm of 110 acres of ploughed land well supports this. Every operation in every field has been recorded, so that there is but little trouble in getting at quantities. One operation by steam per crop has been the general practice; during the whole period there are only three exceptions to obtain practice and evidence; 558 acres is the total gone over once by steam in the seven years, yet light as this may appear to be, and foul as my land was at starting, my farm is now clean even after three bad summers for cleaning land, and no dead fallow throughout the seven years. If your readers will kindly compare this with the operations by Mr. Morgan, of Sidley, near Battle, reported in your Paper of October 18th ult., when you show that during the first nine months of this year he passed an implement of some kind or other over about 1000 acres on only a trifle over 200 acres of ploughed land, they will quite understand why W. S., Guildford, may well say, that "no very great progress will be made, or any very profitable results be derived," while that modern and efficient power, steam, is compelled to work upon the long established custom of our forefathers, dragging a multiplicity of harrows, rollers, &c., over the land. Here is a piece of cheap farming, 6 acres of Oat stubble, just gone through a six-course cropping, and comes in for roots next spring; 10 tons of manure per acre were spread over it a month or so ago; the three last crops have been one of Barley and two of Oats, only one operation for each crop has been required, yet it is now so beautifully clean, and in such a beautiful state of tilth, that I have been able to put it up with well-pulverised ridges at one operation at a cost of 4*s.* per acre ready for planting roots in the spring. Surely this will do a little to induce that very learned class of farmers (our best light land farmers), who think they know so much that they can't learn any more, to rub open their eyes lest they let the cold clay farmers run by them. As a matter of course they will be very angry with me for speaking thus plainly. What care I for that? England wants bread, and I call upon them to help to produce it the cheapest they possibly can. Should they ever be induced to adopt steam agriculture, I must not expect after this that they will buy my tackle, good as it may be, even if they get tackle that's good for nothing. Never mind that, time will set them right. *William Smith, Woolston, Bletchey Station, Bucks, Nov. 16.*

Farmers' Clubs.

BERKELEY: *Nov. 3.—On Cheese-making.*—Dr. Voelcker gave a lecture on this subject, at the first meeting of the Berkeley and Thornbury Club. We give a very abridged report from the columns of the *Gloucester Journal*. Dr. Voelcker said:—But the mainspring in the dairy is the dairy-maid. During the last 18 months I have been travelling through the country visiting the most celebrated dairy districts of Cheshire, Somersetshire, Derbyshire, Leicestershire, our own county of Gloucestershire, and Wiltshire; and I have universally found this to be the case: that wherever the lady of the house presided over the cheese-tub—not that she always dipped her fingers into the tub, or that you saw the cheese passing through her hand,—but wherever she presided over the dairy, good cheese was produced. This shows then the importance of the dairy woman in the dairy as regards the production of good cheese.

In the first place with respect to the milk. This fluid is not of a uniform character. Its butter is enclosed in little shells, consisting of the very same material that makes the

[illegible] which is contained in the clear, or skimmed milk [illegible] solution. We have besides, however, a peculiar [illegible], which is not quite so sweet as ordinary sugar, [illegible] this remarkable property: that in solution, that [illegible] in which it is contained in the milk, it is very [illegible], and become converted into an acid, the acid [illegible] we chemists call lactic acid. This acid is of the [illegible] as milk sugar, without the addition or loss of [illegible]. When this milk sugar turns acid, the acid so formed [illegible] the milk. Now, at some times of [illegible] takes place more rapidly than at others. [illegible] properties much lactic acid has a tendency to [illegible] hard, and hence the care which good dairy- [illegible] preventing an excess of acid. This diagram will [illegible] of the variations that we find in the com- [illegible] milk.

[illegible] of New Milk.	No. 1. Milk analysed, Oct. 21, 1860.	No. 2. Milk analysed, Nov. 29, 1860.	No. 3. Milk analysed Sept. 18, 1860.	No. 4. Milk analysed Aug. 7, 1860.	No. 5. Milk analysed, Sept. 6, 1860. Morning's milk.	No. 6. Milk analysed Sept. 6, 1860. Evening's milk.
[illegible]	83.90	85.20	18.65	87.40	89.95	90.70
[illegible]	7.62	4.96	3.99	3.43	1.99	1.79
[illegible]	3.31	3.66	3.47	3.12	2.94	2.81
[illegible] sugar	4.46	5.05	5.11	5.12	4.48	4.04
[illegible] matter [illegible]	.71	1.13	.78	.93	.64	.66
	100.00	100.00	100.00	100.00	100.00	100.00
[illegible]tage of dry matters	16.10	14.80	13.35	12.60	10.05	9.30

[illegible] milk differs very much according to the food given to [illegible], and also according to the time of the year. Having [illegible] number of analyses of milk, I have come to this con- [illegible] that the time that elapses before the milk is taken, [illegible] more affects the richness of the milk than the fact [illegible] in the morning or the evening. How an in- [illegible] quantity of food impoverishes the milk is seen in the [illegible] sample given in the diagram, which I took in September, [illegible] In this milk there are little above nine parts of solid [illegible] in every hundred of milk. The quantity of butter [illegible] by sample No. 1, which came from Mr. Harrison, in [illegible] 1860, is very large—7½ per cent, every 100 lb. yielding [illegible] of butter, whereas in the poor sample there are scarcely [illegible] lb. The cows yielding the poor sample were fed on [illegible] scanty pasture; they had not enough to live on, and the [illegible] was consequently very poor. Such milk I need not say [illegible] make but little cheese, and less butter. We may learn [illegible] the practical lesson that it is very bad policy to keep [illegible] than we have food for. It is better to keep half a [illegible] well fed, than nine in a half starved condition, on [illegible] there is no profit whatever. We cannot expect [illegible] butter or cheese if we do not feed our cows with a [illegible] quantity of food. I dare say the richness of the other [illegible] chiefly due to the good pasture which abounds in the [illegible]hood, more especially the neighbourhood of Frocester [illegible], which has very excellent pasture.

In the next place let me offer you a few remarks on [illegible] arrangements of the dairy.

No very general rule can be laid down as to the best practical [illegible]. But yet there are some points which admit [illegible] philosophical explanation. For instance, the aspect [illegible] dairy should be north, if possible, for this reason, that a [illegible] aspect will bring dry and cold air into the dairy, and [illegible]. But it is not merely the low temperature which [illegible] that looks towards the north has, that is so beneficial [illegible] keeping of butter and the making of cheese, but also [illegible] such dairies are generally drier. And this is a very [illegible] consideration; for, after all, it is not so much the [illegible] temperature of the dairy that spoils the cheese, and [illegible] it to become sour and hard, as the condition of the atmo- [illegible] as regards dryness or dampness. In a damp or wet [illegible] you generally find a disagreeable smell all through the [illegible] and in such a dairy it is next to impossible to make [illegible] cheese. Whereas dairies that are celebrated amongst [illegible] for their high qualities of cheese, are generally dry; [illegible] whether it be cool or moderately warm, it is the [illegible] that spoils the cheese more than anything else. [illegible] going through Cheshire, in visiting the celebrated [illegible] which produced the prize cheese at the time of the Royal [illegible] Society's meeting at Chester, at Riddeley Hall, a [illegible] which is presided over in the most admirable manner [illegible] I was much struck in finding a perfectly dry [illegible] the utmost care used to prevent any damp in any [illegible] into the dairy. She would not allow any one to [illegible] milk in. The servants, by a very simple arrange- [illegible] the milk through a sort of funnel, connected with [illegible] the outside, into the cheese vat. They were not [illegible] to enter with their wet, and perhaps dirty boots, but [illegible] the milk outside the door. Then all the servants were [illegible] wear pattens,—a very excellent plan. You ought [illegible] any one go in with a damp pair of boots on. If by [illegible] milk was spilt, there was not a pail of water [illegible] it to wash it off, but a dry cloth was used. She [illegible] me that she had never done any scrubbing, except [illegible] made no cheese, and then she would not make any [illegible] a week or so, until she was perfectly sure the ground [illegible] again.

[illegible] meat can be produced in a damp cellar, even in cold [illegible] in a short time, whereas when meat is hung up even [illegible] temperature in a current of air, it keeps in good [illegible] a long time. This shows the influence of damp [illegible] cheese. We are then, by all means, to avoid a damp [illegible] Sometimes people are afraid that by building their dairies [illegible] they get them too warm. But it is clear that it [illegible] have a warmish place than a damp one. If a damp [illegible] be put up with, I would recommend an increase of [illegible], thus keeping it as dry as possible by artificial [illegible]

[illegible] practical men are by no means agreed as to [illegible] the proper temperature at which the cheese [illegible] be run.

[illegible] the third particular of our subject, the operation [illegible], I would mention a few points upon which [illegible] diversity of opinion exists. Some, in their [illegible] cheese-making, from which I regret to say [illegible] information is to be got, recommend a temperature [illegible], whilst others recommend a much lower tem- [illegible] ranging from 68° to 70°. In experimenting on this [illegible] I find that here, as in so many other matters of [illegible] we cannot lay down general rules, but we must be [illegible] what we intend to produce. In making thin cheese [illegible] the Cheddar system of running the milk at a [illegible] as high as from 85° to 88°, which is generally the [illegible] followed in the Cheddar district. In making [illegible] it is well to make it rather cool. And the [illegible] this—that by so doing you preserve that [illegible] rich flavour, which we all admire so [illegible] Berkeley cheese. In point of flavour, [illegible] is not a better cheese made than that made in [illegible] Gloucester. Our thin cheese, to my taste, is the [illegible] description of cheese you can possibly desire, for you have in it the natural flavour of the pasture on which the cow fed unchanged. When you are obliged to give your cattle roots oil cakes, and artificial food, and still wish to make cheese, by all means adopt the Cheddar fashion, and run your milk at a high temperature. Just like boiling up the milk expels some of those peculiar smelling matters that give a peculiar taste to milk from cows fed upon Turnips, so the flavour of cheese is decidedly improved when the milk is run at a high tempe- rature which comes from cows fed upon artificial food. But when we have fine pasture it seems a pity to destroy the natural fine flavour which only milk possesses that is produced from natural pasture. And allow me to observe in this place likewise that the poorer the pasture, generally speaking, the finer the flavour of the cheese; the more abundant the pasture, the more difficult it is to make the cheese. There is a great deal of truth in the remark that by high manuring and sheep feeding you spoil your cheese, or do not get it of such good quality as where the land is poorer. It is quite true that cheese which is made from pasture that has been well dunged, especially from pasture that has been sheep-fed, is apt to heave, or bulge out. When, then, we wish to produce a very fine quality of cheese, it is desirable not to run it at too high a temperature. Perhaps 75° is a good temperature. For thick cheese the temperature may be a little more. For thin cheese it may be reduced even to 72° without injury to the quality of the cheese.

Some direct experiments which I made, with the view of studying the quality of the curd, have given me, among others, the following results, which, I trust, will be interesting to you. I find a temperature of 60° is too cold to run or coagulate the milk, that is, it takes too long, for it takes three hours, and the curd remains tender; so at this temperature you must use a great excess of rennet. At 65° it takes two hours, and the curd remains tender. At 70° to 72° it takes from three quarters of an hour to an hour: you then get a curd which is neither too tender to be handled, nor too hard to injure the cheese that is made from it. At 80° to 84° the curd becomes firmer, and well adapted for making the thick cheese, but not for making thin. At 90° I find that rennet curdled milk in 20 minutes; at 100° in about a quarter of an hour. At that temperature the curd becomes hard; and at a somewhat higher temperature, between 120° and 130°, the curd again becomes soft, and runs like toasted cheese; but on cooling it becomes so hard that you can almost grind it into powder, or rub it into small grains like sand. This shows the influence of temperature on the quality of the curd.

The rennet has likewise a great deal to do with the quality of the cheese.

Now it matters not so much what receipt we follow—each dairy-maid has a preference for a particular kind of receipt; but there is not so much depending upon the exact way in which the rennet is made as upon the proper selection of the vells. The vells ought to be perfectly fresh. That is the great secret of making good rennet. Whether you take half a lemon for making a certain quantity of rennet or a whole one—whether you spike it over with cloves or not—whether you boil it up before you add the salt, or add the salt afterwards—does not matter so much: but it matters a great deal whether you put into your liquid a vell which is a little tainted. It ought to be perfectly fresh: and it is not always easy to get perfectly fresh salted vells. In Cheshire they use skins, or dried vells, and these make very good rennet indeed. However, I hardly can say which is the best plan to make rennet, from dry, or salted vells. I have had some rennet in my possession for two years, which I tried the other day, and it was as fresh as anything you can desire, and it curdles the milk just as if it were made yesterday. It shows that when once rennet is well made it may be kept for a length of time. I mention this because some people give themselves a great deal of unnecessary trouble by making their rennet every day fresh. It is a better plan, which I believe is generally adopted throughout Gloucestershire, to make a supply of rennet to last the greater part of the season; for when you once have ascertained the strength of your rennet you have always a good guide as to what you ought always to add, and are able to make the curd without adding too much or too little,—for if you add too little, the curd remains tender.

With respect to colouring, I would say, the least used the better.

But since people like coloured cheese, and the dairy farmer is dependent upon the demands of the consumer, he cannot fight the battle against what may very properly be called a prejudice in favour of coloured cheese. If people desire to have their cheese coloured, the farmer must make it; but it would be best if they would all like to eat uncoloured cheese, for there is no good got by adding the annatto; but what is the farmer to do? If he can get a better price by adding it, let him add a little by all means, but not an excessive quantity. Annatto at the best does no good to the cheese; but at the same time the danger of spoiling the cheese by adding it has been exaggerated. Good liquid annatto, which is always preferable to annatto cake, requires to be added in very small quantity, and then it does not materially injure the quality of the cheese.

Another point on which I believe particular attention is not sufficiently paid even by otherwise good dairy-maids, is the separation of the whey.

Many dairymaids spoil their cheese by being in too great haste. There are great allowances to be made for them in a locality where cheese is made twice a day. It would be well if we could make it but once a-day, and it would save a vast deal of trouble. It seems to me the work is never done by the twice a-day process. The drudgery of a dairymaid is such that I do not wonder that some ladies lecture their husbands, and even raise a regular storm, and throw up their commission, and decline to make the cheese. I believe it might be done even in summer once a-day with very great propriety, if we would not be in such a hurry to get cheese into the vat. We should thereby run far less risk of getting the cheese to heave than when we are in too great a hurry to get it into the vat, as we necessarily must be when we make it twice a-day. In making it twice a-day we must be very expeditious to get everything ready again for the afternoon's milk. Now, it is impossible properly to separate the whey by pressure; it separates much better by careful breaking, when the curd is broken, especially at the first, by hand, very gently, and then some time is allowed to elapse before it is touched; then it is cut across, and broken again; first very slowly with a knife, and then with a wire-breaker, which ought not to have its wires too close together, but rather far apart, and the whey is allowed to settle for a considerable time before it is drawn off; when afterwards the curd is collected again, sliced, heaped up on one side, broken again, and heaped up on the other side, then but moderately pressed; then cut again, instead of being at once put into the vat. I am certain that this mode would much better separate the whey than by pressing it too soon, for by pressing you close the pores of the curd, and no amount of pressure will afterwards squeeze out the whey efficiently. In some measure the salting removes part of the whey from the cheese, but I believe it would be much better achieved by allowing sufficient time for the whey to drain from the broken curd, than to salt the cheese after it has been in the press. The whey that remains in the cheese is the principal cause of all the mischief that it plays with some dairies. In most cases where cheese heaves it is due to the whey that remains in it; for the milk sugar that is left in the whey (a glance at the diagram gives the composition of whey) and a considerable quantity remains in it, and produces all the mischief, for after a time it begins to ferment, and during the fermentation we get the same gas that escapes when we draw the cork of a bottle of ginger beer or soda water—carbonic acid gas, which is the product of the fermentation, and this of course tries to escape, and heaves up the cheese, and bulges it out. Now we know what effect fermentation has in changing the taste of substances which are subject to this process. Thus it alters the character of the cheese. It produces in cheese what we commonly call a strong taste. This taste is produced then by the milk sugar that is left in the whey. We must get rid of the whey, and with it the milk sugar as much as possible. We cannot get rid of it entirely, but in a great measure we can, not so much by pressing as by careful breaking up of the curd. Careful breaking up of the curd has the other advantage, that it leaves the butter in the cheese, and makes the curd consequently richer. It is the butter that determines chiefly the commercial value of the cheese, as I shall have presently an opportunity of pointing out more in detail. Now, in carefully broken up curd you get far less butter into the whey than in curd which is badly broken up. This diagram shows the composition of whey.

Composition of Whey.	No. 1.	No. 2.	No. 3.	No. 4.	No. 5.
Water ..	92.95	92.65	92.66	92.7[illegible]	92.950
Butter (pure fatty matters)	.65	.68	.5[illegible]	.39	.490
*Nitrogenous substances (casein and albumen)	1.20	.81	.96	.87	1.425
†Milk sugar and lactic acid	4.55	5.28	5.08	5.1[illegible]	4.491
Mineral matters (ash) ..	.65	.58	.81	.86	.644
	100.00	100.00	100.00	100.00	100.000
*Containing nitrogen ..	.19	.13	.15	.14	.228
†Containing free lactic acid	.48	.41	.36	.41	.120

In the fourth column the whey possessed the merest trifle of butter, whereas in the first column there is rather more than half a pound in every 100 lbs. of whey. A considerable quantity of butter is passed into the whey in this instance. Now without a good deal of butter it is impossible to make a rich cheese; hence it is to the advantage of the cheese-maker to keep all the butter in the curd that he possibly can. At any rate he gets the butter perfectly amalgamated with the curd, and gets it in a uniform condition. Carefully broken curd has the effect likewise of leaving the butter in a great measure encased in its original shell. If it is carelessly handled the butter leaves the shell, and we do not get such uniform combination of the remainder of the curd with the butter as would otherwise be the case. Indeed, curd is a very delicate matter, that requires the delicate fingers of a careful dairy-maid. I am convinced of this: that however good the cheese may be when made by men when they follow the Cheddar plan, they won't make first-rate thin Gloucester or Wiltshire cheese. It requires the delicacy of touch and manipulation, which we in vain expect of men. But where you are obliged to employ dairy-men instead of dairy-women, I would not make the thin or fine flavoured cheese, but would adopt a more manufacturing process—I would adopt the Cheddar system. By following this system you can employ men; and I am not sure whether men do not make better Cheddar cheese than even the women do generally; because when you adopt a manufacturing process, you are necessarily supposed to deal with large quantities, and the lifting up of large quantities of milk, and the handling of large implements, requires manual strength, which is better supplied in a pair of men's arms than in a woman's.

Respecting the salting, I have already noticed that I believe it to be a better plan to salt the curd before it is vatted, than to salt the cheese after it comes from the press.

However, so much does not depend upon this when you make thin cheese as when you make thick, for in making thin cheese, by rubbing the salt carefully in, it penetrates the whole of the cheese; and by turning it properly, and salting it repeatedly, the salt creeps in, and some of the whey passes out. That, then, is a good plan; and therefore I am not so certain in speaking of thin cheese, whether the practice of salting the curd can be unconditionally recommended. But in making thick cheese, Cheddar cheese, or even thick Gloucestershire, especially extra thick cheeses, the curd ought to be salted immediately, and the sooner it comes from the curd-mill the better. Sometimes a great deal of mischief is done to the quality of the cheese by delay in salting it, or by insufficiently salting it. A very curious case has been lately brought under my notice, of cheese which has acquired poisonous properties simply on account of its having been improperly salted. It is like meat which you intend to keep, and neglecting to salt it for three or four days or longer, it is apt to get spoiled; and when incipient decay has begun, the salting may check it, but it will never completely overcome the mischief. So it is with cheese, the salting of which has been imperfect or delayed, and such cheese may become rank poison. There was a case of cheese which had nearly poisoned some two or three dozen people. On inquiry I learnt that my supposition that probably the curd had not been salted sufficiently early, was perfectly correct. I was told that the cheese was made in a small dairy which had not sufficient produce in one day to make good thick cheese, and the curd of two, and sometimes three days was collected in a vat before it was salted.

A very few remarks must suffice in pointing out the different kinds of cheese. This diagram shows the relative richness of the various kinds:—

Composition of Cheese.	Water.	Butter.	Casein.	Extractive matters, lactic acid, &c.	Ash.	Salt in Ash.
Stilton	20.27	43.98	33.55	..	2.20	.29
	32.18	37.36	24.31	2.22	3.93	.89
Cotherstone .. (Yorkshire)	38.28	30.89	23.93	3.70	3.20	.79
Cheshire ..	32.59	32.51	26.06	4.53	4.31	1.59
	36.96	29.34	24.08	5.17	4.45	1.91
Cheddar ..	30.32	35.53	28.18	1.66	4.31	1.55
	36.17	31.83	24.93	3.21	3.86	1.18
Double Gloucester	33.41	32.69	27.75	2.23	3.92	1.01
	38.14	24.16	26.56	6.40	4.74	1.28
Single Gloucester ..	31.96	31.37	29.37	2.85	4.45	1.35
	37.91	22.70	31.25	3.30	4.84	1.23
Gloucester Skim ..	43.87	15.89	28.93	6.47	4.84	1.66
	45.39	9.27	33.12	6.89	5.13	1.51
Wiltshire	34.44	28.71	29.09	3.60	4.25	1.03
	39.23	19.26	34.22	2.28	5.02	.60
Leicestershire ..	32.89	29.28	29.06	4.42	4.35	1.21
	35.21	27.28	27.93	5.54	4.04	1.03
Warwickshire ..	31.97	29.08	27.43	7.16	4.36	.72
	33.53	30.89	28.19	2.84	4.55	1.12
American	27.29	35.41	25.87	6.11	5.22	1.97
	33.24	26.05	26.81	3.64	5.26	1.94

Stilton is the richest cheese in the market, as it contains more butter than any other, having been made of the richest description of milk, or rather milk to which a portion of cream has been added. Cotherstone, or Yorkshire cheese, which is sometimes called Yorkshire Stilton, is a celebrated cheese, which does not, however, contain so large a proportion of butter as its condition would seem to imply. It is a cheese which has a strong taste, and which does not find favour with all people. It is admired by the Yorkshire people, but I am sure it would not sell in our district. This cheese looks richer than it in reality is, as a comparison of its composition with good Single Gloucester will show, the latter having more butter in it than the former. We have also as much in good Cheddar cheese. Now Cheddar cheese looks very much richer than it sometimes is; and this rich mellow appearance is mainly due to the way in which it is treated afterwards in ripening. It is kept at a high temperature, when it undergoes a kind of fermentation which makes it mellow and soft. But we cannot expose our thin cheese to such a temperature; they would dry up. Hence we cannot adopt this system, however good it may be in making thick cheese. The principal differences in the quality of cheese are mainly noticed in the proportions of butter. The better the cheese, generally speaking, the more butter it contains. But the amount of butter does not alone regulate the quality of the cheese. There is many a cheese sold which looks and tastes richer than it is in reality. The great secret of cheese-making, according to my notion, is to make the richest tasting cheese from comparatively speaking poor milk. The perfection of the dairy-maid's operations is for her to make butter, and yet produce good cheese. Now I have become acquainted with many of them, and it is due to them that I have picked up a good deal of useful knowledge. I know several of them who can take from their milk a good deal of cream, and yet make a better cheese than another who would take no cream from her milk, but who would make a cheese not to be compared with the other.

The rich appearance of cheese depends on the way in which it is treated in the store-rooms, and in the ripening rooms.

This leads me in the next place to the fifth division of our subject,—to the construction of store rooms, and especially to the ripening-rooms.

When cheese is put into the rooms where it is intended to be ripened, we ought at first to keep it warm, treat it tenderly, keep it almost like a baby, preserve it from draft, and at a uniform heat. Now a ripening-room that possesses these natural advantages is one that, other circumstances being equal, will produce a better cheese than another room which does not possess these advantages. The ripening-room should be uniform in temperature; warm, dry, free from drafts, and well-ventilated. The latter particular ought especially to be borne in mind. The temperature of the cheese increases in keeping; becomes naturally warmer, and it also loses considerably in weight. During this cooking, or ripening process, as we call it, peculiar aromatic substances are developed. Some of the very flavours we admire so much in Jargonelle, we smell in ripening cheese. These flavours are due to certain aromatic fatty acids which are produced from butter. They are developed at a somewhat high temperature; and the more steadily the fermentation is carried on, the more finely is the flavour developed. Now, anything in the shape of a draft checks this fermentition; but if we do not allow a free escape for the vapours that arise from the cheese, we soon get the air so saturated with damp that the cheese becomes covered with mould, and its flavour becomes musty. This we ought to avoid by all means, and it can only be avoided by careful ventilation. What I should like to see in every dairy is a grating along the top of the room, just above the cheese shelves, so that you do not get a direct current of air, but you get the air as it were filtered through this grating, and uniformly distributed all over the room. If you had this you would not feel a draft, and you would not feel oppressed by the heat, while you would have perfect ventilation, for the same apertures would allow the cold air to pass in which allowed the heated air to pass out. By having such a grating in our store-rooms we allow the vapours to escape, and prevent the production of that peculiar musty smell that is developed in damp close store-rooms. We cannot keep a store-room too dry and too well ventilated. The ripening room especially should be at first warm, and carefully provided with an ample supply of air. When the cheese has been kept in the ripening room for four or five weeks, it is desirable, if you can, to put it into a cooler room, for if we keep it too long in a warm room it dries up, and loses in weight. The loss of weight in cheese is very considerable. I find in the course of four months you lose from 15 to 18 per cent. in weight, so that the sooner you get the cheese into the factor's hands the better. But the factors are very reluctant to get it into their hands too quickly, and prefer waiting; but I would rather take a somewhat lower price and get rid of it at once. It is bad policy to keep cheese four or five months, if you can get rid of it in three or four weeks. I have lately made some experiments on this subject, because it is one which affects your pockets. I find that in six weeks ordinarily well-made Single Gloucester cheese loses about 8 per cent.; in four months it loses from 15 to 18 per cent; therefore you save something like 10 per cent. by getting rid of it soon, which is a great consideration.

Now it is impossible to make cheese in a cold room in six weeks, especially when the season is cold; it pays, therefore, very well indeed artificially to raise the temperature, either by a stove, or better still, by hot-water pipes. An equal temperature, so desirable to the production of good cheese, we can secure more certainly by hot water pipes than by a stove; but a stove is better than nothing; and it hastens the ripening of the cheese. I need not say when you can find a store-room over the kitchen that that is a better place than any other, because it is dry and warm. If you have the choice of a place for a store-room, select it over the kitchen, as it will get your cheese ready early, and make it of better quality. But when it is ripened you ought to remove it to a cool room.

On the last subject of dairy utensils I am afraid to make many remarks, having probably tired your patience:—

I would, however, make one remark, and that is, that good cheese can be made without any particular kind of apparatus. You need not have any peculiarly constructed cheese tubs. Some of the very best cheese I have seen made in wooden tubs. You can spoil your cheese as much with a Keevil as with a wooden tub. It is the judgment, the practical skill of the dairy-woman, her business habits, sense of order and dexterity, that make good cheese, not the machine. I have seen some of the most wretched cheese made with Keevil's apparatus, as well as some of the best. Keevil's machine saves labour certainly, when you are accustomed to work it. It does not do so at first; but when you have to dispose of large quantities of cheese it certainly saves labour. But there is a somewhat better machine even than Keevil's that I have seen in Derbyshire. It is a kind of improved Keevil, for it saves the trouble of lifting up the screw that presses down the flat piece of tin upon the curd, and the tin can be swung on one side without removing it each time. It is a handy machine, and very much liked by the dairy farmers of Derbyshire.

With respect to other dairy utensils, the construction of tubs and wire breakers, I need not make any remarks; for, in reality, not so much depends upon the implements, as the judgment of the operator.

These, Mr. Chairman, are the remarks I would offer on this important subject of cheese-making. I have thrown them out by way of hint, in order to give those present an opportunity to ask me any questions, which I shall be most happy to answer.

In the course of the subsequent conversation the CHAIRMAN said a question had been put by a lady—"Was it right to use water so profusely as it was used to swill out the dairy?" And the Professor said it was wrong; that water ought not to be used, as it made the place damp.

A LADY: But we must do that when we have so much dirt, sir.

Professor VOELCKER: The best plan is not to bring the dirt in.

An explanation was asked from the Professor as to what he meant by not taking any dirt into the dairy?

A LADY: You must do as I have just said, you must first give the landlords and stewards a lecture.

Reviews.

Journal of the Bath and West of England Society for the Encouragement of Agriculture, &c. Vol. X. Part 2. J. Ridgway, 169, Piccadilly.

Towards the close of 1862 we receive with its usual punctuality the Second Part of the volume for 1862. In this respect it differs praiseworthily from the corresponding volume of the English Agricultural Society, whose First Part for each year appears in October of that year, and whose Second Part appears in February of the following year!

We have here for 4*s.* the best 4*s.* worth of agricultural reading that can anywhere be purchased. It is not necessary indeed to let price influence our judgment in comparing it with the Part just issued of the volume of the English Agricultural Society. The two stand well together, notwithstanding that one costs 10*s.* and the other only 4*s.*

In the Number just issued there is a report by Mr. Scott Burn on the Machinery Department of the International Exhibition, so that here we have another illustration of the promptitude with which current topics are taken up in these pages as compared with those of its rival. We have a useful report by Professor Buckman on Clover, a capital collection of facts by Mr. Burnett under the heading Agricultural Statistics; a report by Professor Brown on the Disease of Sheep known as "Gid" or "Sturdy;" a paper on Salmon Fisheries; reports of the Wells Meeting, and one of those admirable reports of local farming which are characteristic of this Journal, and which ought to be characteristic of all agricultural journals. Mr. Wallace Fyfe has here collected a number of most instructive examples illustrative of the cultivation of the western counties, and especially illustrative of the use made there of improved agricultural machines. We shall hereafter bring some of these instances under the notice of our readers.

The volume closes with a collection of shorter papers and well selected extracts from other journals.

Farm Memoranda.

COLLEGE FARM: *Cirencester.*—Wheat sowing commenced October 8th, 30 acres of Giant Wheat, a white chaff red variety, was drilled on rather thin soil, which however went in well owing to a stale furrow and plenty of cultivation; the land was ploughed early in August and rolled down. A short time before being sown it was dragged down and cultivated with Coleman's cultivator with broad knives going 2 inches deep and cutting off the Grass &c., that had in places grown through. The common harrows were then used to level the surface. The result was a firm even seed bed, so important on our lighter soils. The remainder of our lea ground was not ploughed until this month, on account of the abundant keep it produces. The last portion, about 24 acres, was steam ploughed. The surface was left too rough and open, and not having any skim coulters, much Grass remained unburied. It was also in places deeper than we generally plough for Wheat. Nominally 4 inches, it was in places nearer 6 inches. With skims and driving the plough rather slowly very fair work might be made. The work of the teams has been drilling Wheat and Vetches, ploughing Clover lea, carting out manure and storing Mangels, Carrots, and Potatoes. We were fortunate in securing the Mangels before the frost, 11 acres. The plan of working was to let the pulling, placing in double rows and loading into carts to a company of men. The Mangels being carefully laid in double rows of four drills each, were topped by women immediately in advance of the carts and none left out at night; a considerable amount of dirt is thus carted with roots; but this is of no moment, compared to the risk of leaving the roots out. The cost of the operation was as follows:—

Pulling and loading, 3 acres, at 6*s.*	£0	18	0
Topping do.	0	3	0
Four carts and 2 boys	0	12	0
Six hands at heap	0	10	0
Thatching, &c., 3 acres at 2*s.* 6*d.*	0	7	6
	£2	10	6

2*l.* 10*s.* 6*d.* for 3 acres = 16*s.* 10*d.* an acre.

or about 1*s.* a ton, as the crop averages about 16 tons. As fast as the heap was made a light covering of straw is put on, through which any heat that may result escapes, and after awhile the whole is thatched down or covered with mould. A series of experiments with salt, applied at the rate of from 1 to 8 cwt. per acre, failed to produce any very decided results, the character of the season being too moist for the effects of salt to be apparent. Carrots and Potatoes have been secured without injury. The former a good crop, 15 tons per acre; the latter moderate yield, but much diseased. The Mangel and Carrot tops were spread over the ground, and after being exposed for a few days were consumed by the ewes, eating a little straw. The sheep did very well on this food, which we have always found quite worth feeding off. There is much difference of opinion as to the value of such food. Many affirm that they are worse than useless, believing that they cause diarrhœa; if used in too fresh a state this is doubtless true, but if exposed for a few days, as suggested, and dry food given, the sheep will be benefited by this food. Our cows have been clearing up the pastures and seed grounds, and will shortly be placed on Turnips with straw. The fatting sheep have been at cut Turnips, Grey Hop "stones," with a small quantity of extra food, viz., ¼ lb. of Old Beans, ½ lb. Nutmeal daily to each sheep, with a little hay chaff.

Cattle have been brought in at nights, and will soon be housed altogether. We do not feed much, having nearly enough home-bred stock to consume the small portion of roots we draw from the fields.

Our first year of steam ploughing terminated Oct. 1. From the diary kept it appears that we have worked 140 days, and ploughed and smashed 579 acres, much of it very stiff. Of this only 180 acres were on our own farm, the remainder being done on hire at prices varying from 10*s.* to 18*s.* an acre, according to soil, &c. The cost of working will be seen by the following items:—

Repairs of various kinds	£50	0	0
" by blacksmith, and iron	20	0	0
Coals	85	13	0
Labour	104	6	11
Carriage of goods	13	16	0
Oil and waste	5	0	0
Interest on 800*l.*, and depreciation	120	0	0
	£398	16	11

From this sum we may fairly deduct the annual cost of two horses dispensed with, and the wages of carter, 76*l.*, reducing the total cost to 322*l.* 16*s.* 11*d.*, or 11*s.* 2*d.* an acre nearly.

This comparatively high cost is due to several causes, some of which are not likely to occur again. In-experience of the workpeople, and being very unfortunate in our engineers—our present man, who is doing very well, being the fourth we have had; some defects in the machinery now rectified. We, therefore, look forward hopefully to the future; since harvest our work has been rapid and satisfactory. We do not expect any great saving in the actual cost of operations, but the quality of the work is so superior, that even were it to cost more than horse labour, we should still consider it cheap work.

We have lately been smashing up stiff land, 8 inches deep, in great rough masses, through which the weather must penetrate. Our experience as to the consumption of coal by a 10-horse engine is widely different from that given by Mr. Pocock; we find that, taking one day with another, our engine burns from 14 to 15 cwt. of coal, or from 2½ to 3 cwt. per acre, according to soil, time of year, &c. We should be very glad to learn the secret of being able to plough 6 acres of land with 8 cwt. of coal. *John Coleman, Royal Agricultural College.*

Miscellaneous.

Presentation to Mr. A. C. Wheeler, of Gloucester.—On Monday of last week a handsome testimonial was presented to Mr. A. C. Wheeler, of this city, in commemoration and acknowledgment of the laborious efforts made by him last summer to ensure a good meeting of the county society at the county town. On that occasion 20,000 people visited the show-yards; and the success of the meeting was a good deal attributed to Mr. Wheeler's laborious exertions. A handsome [illegible] silver claret jug, and salver, had been purchased with funds provided by a very general subscription amongst the members of the Society and their friends; and they were presented last week to Mr. Wheeler at a dinner to him attended by 40 or 50 gentlemen.

Earth Sewage: Mr. O. W. Farrer's Charge at the Wareham Annual Sessions.—Last year he drew the attention to a discovery, for he might well call it a discovery, by a gentleman of this county, the Rev. H. Moule, with reference to earth as an absorbent of sewage, it being proved that fresh night-soil placed in dry earth disappeared in two or three hours. Now when they talked of sanitary improvements, it was his opinion that this was the greatest sanitary discovery made in the present generation. As was well known, by carrying away night soil and refuse in water, they it removed what was offensive from their own doors; the obnoxious gases and nuisance were conveyed to some one else. The effect of Mr. Moule's discovery was this, that they had no occasion to remove it at all. By the use of earth, if immediately applied, everything offensive was removed in the space of a couple of hours, and instead of the night-soil being a nuisance it was turned into a most valuable manure. To cottagers and others he considered it to be a most wonderful boon, and he was perfectly convinced that those who lived 5 years would hail Mr. Moule as the discoverer. [illegible]

...r, of a most important thing. It sounded like a ... thing, but it was one of the most important ...eries in a sanitary point of view in the present ... Both the Poor Law Board of England and ... had taken it up; in large unions it was being ...plied, and in this county, not only in noblemen's ...ses, but also in the cottages of the poor, removing ...isances, and enabling them to turn those nuisances into good manure, which was good money. It seemed a ... matter to discuss this publicly, but it was really ...eat importance, and he believed the more public ... was made the more benefit would be effected. [Mr. ..., of Fordington, has this year substituted for ...ed bones, earth which had passed seven times through the earth closets, and had subsequently lain ... months in the shed. He applied 1 cwt. an acre ... 4 acres of Turnips. Both Mr. Hayne and Mr. R. ..., of Dorchester, admit the crop to have been ...nt, and the manure to have answered so far as well as bones. We understand that White & Co., 45, High East Street, Dorchester, have made very essential improvements in the earth closets.]

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Nov. 19, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	13	30.16	24	22	N.W.	1	9	45	21	72*	20	..	43½	48
Friday ..	14	29.94	35	34	W.	1	9	36	23	71	19	0.02	42	47
Saturday ..	15	30.12	39	38	N.	1	3	40	34	45	32	0.01	42	46
Sunday ..	16	30.24	36	34	N.	1	2	44	30	54	24	..	42½	46
Monday ..	17	30.45	33	32	N.W.	1	1	48	29	76	24	..	42	45½
Tuesday ..	18	30.40	33	30	N.	1	1	46	27	75	22	..	41½	45½
Wednesday	19	30.23	39	38	N.E.	1	7	41	32	61	29	0.01	41½	45

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Notices to Correspondents.

...Field: *Agricola Secundus.* If not poisoned you should be able to fertilise it by adding vegetable and mineral manures, and probably the best plan will be to try Buckwheat and plough it in. If you can get a compost made of lime and any vegetable refuse as a dressing, apply it liberally. We don't suppose the land will be fit for Saintfoin for a year or two.

...: *A X.* The papers on drainage and on Farm buildings, in Morton's Cyclopedia of Agriculture (Blackie), are by the late J. Girdwood and the present Borough Engineer of Liverpool, Mr. Newlands, respectively—two experienced and able men.

Grasses: *H. W.* For permanent Pasture on heavy soils, to be sown without a crop, put in about 50 lbs. of seeds per acre, including 2 or 3 lbs. of each of the usual Fescues except F. rubra, a large quantity of F. loliacea, 3 lbs. each of Timothy, Cocksfoot and Foxtail grass, 5 lbs. each of Perennial and Italian Ryegrass, 3 lbs. each of Poa trivialis and P. nemoralis, and 5 lbs. each of red and white Clover. ... them without a crop. Read Mr. Thompson in the Journal of the English Agricultural Society on their further ...ment.

New Method of Making Butter. Mrs. Whitehead, whose process is described at p. 1034, tells us that her method is ... accurately given in the following words:—A piece of ...n calico is spread upon a perforated apparatus, which ... of sufficient depth to take the quantity of cream that ...ired to be filtered—so many quarts to a given surface. ... is thus doubled over the cream, excluding the air ... and forming a double capillary action. In this ... the watery particles of the cream become separated ... the fatty ones in the course of a few hours, and the ...uum left upon the cloth consists of a concentrated mass, resembling cream cheese which is quite ready for the ...ning operation. The churn is described accurately at p. 1034.

...d Ashes: *T Barrow.* They are remarkable for their per...tage of lime and magnesia. They contain less Potash than any other kind of ash. Two or three cwt. per acre ...ed with loam, would be a good dressing for a mossy, ... coarse and luxuriant pasture. We should not attach more value to them than to good wood ashes.

ST. PANCRAS IRON WORKS COMPANY,

OLD ST. PANCRAS ROAD, LONDON, N.W.

BY ROYAL LETTERS PATENT.

SCOTT'S GLASS WALLS,

Designed to meet the suggestions of James Scott, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

CONSERVATORIES | PINE and MELON PITS | BALCONIES | GATES
GREENHOUSES | VASES | IRON SASHES | TANKS
HOTHOUSES | VERANDAHS | IRON HURDLES | HOT-WATER WORKS.

PATENT WROUGHT-IRON STABLE FITTINGS AND ENAMELLED MANGERS.

Every description of IRONWORK. • *Lists Free.*

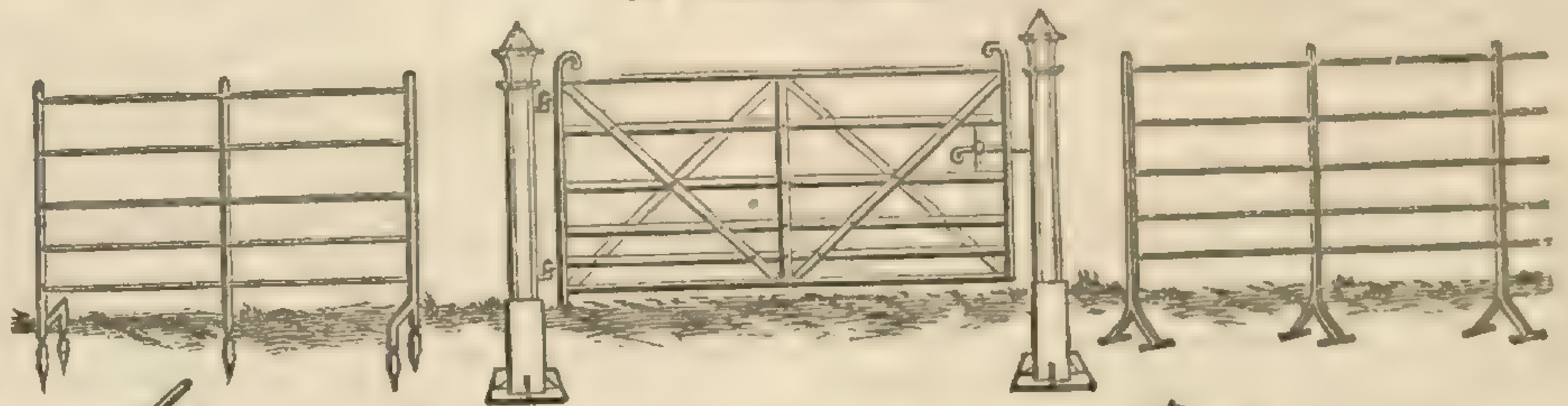
ST. PANCRAS IRON WORK COMPANY, OLD ST. PANCRAS ROAD LONDON, N.W.

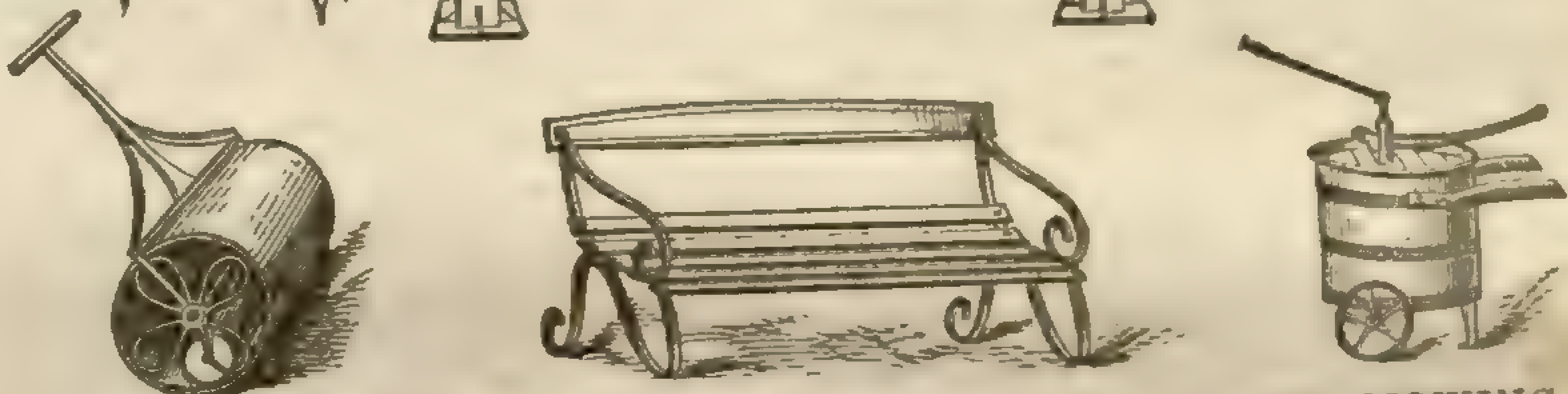
COTTAM'S

CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.





IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c. The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to

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2, WINSLEY STREET (Opposite the Pantheon), OXFORD STREET, LONDON, W.

ADOPTED VERY LARGELY BY HER MAJESTY'S GOVERNMENT.

CROGGON'S PATENT ASPHALTE ROOFING FELT,

Price 1*d.* per square foot.

INODOROUS FELT, for Damp Walls and for Damp Floors under Carpets and Floor Cloths, also for Lining Iron Houses to equalise the temperature. Price 1*d.* per square foot.

PATENT FELTED SHEATHING, for Covering Ships' Bottoms, &c.

DRY HAIR FELT, for deadening Sound and covering Steam Boilers, Pipes, &c., preventing the Radiation of Heat, thereby saving 25 per cent. in Fuel.

CROGGON & CO.,

ZINC MERCHANTS AND PERFORATORS,

GALVANISED TINNED IRON, and every description of GALVANISED IRON WORK.

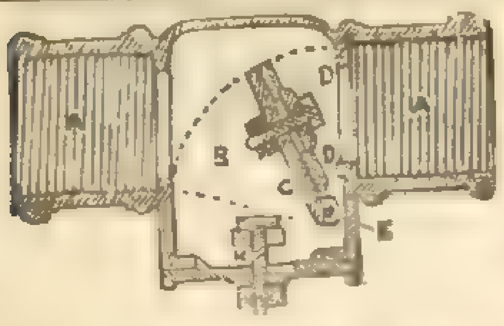
CROGGON & CO.'S

NOISELESS ELASTIC KAMPTULICON, or INDIA-RUBBER FLOOR CLOTH,

Impervious to Wet, Indestructible by Damp, Soft to the Tread, and Warm to the Feet, well adapted for Aisles of Churches, Public Offices, Rooms, Shops, &c., as well for its comfort as extreme durability.

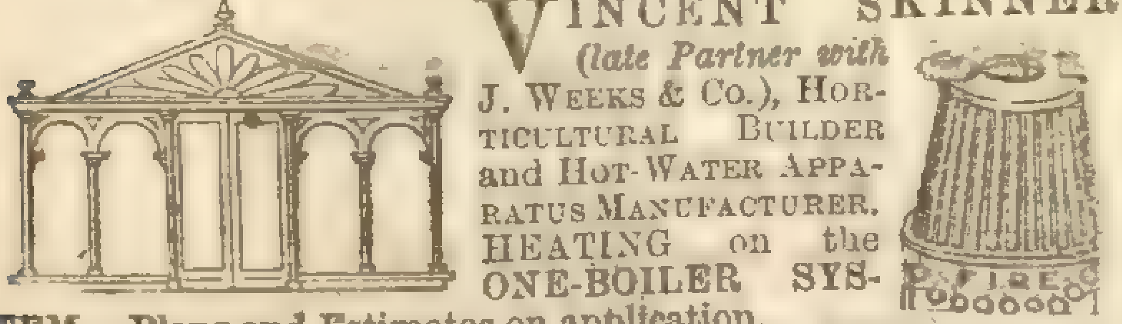
Samples, Testimonials, and full particulars, free, on application to

2, GOREE PIAZZAS, LIVERPOOL; or 2, DOWGATE HILL, LONDON, E.C.



T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough, has recently patented a VALVE which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under. Two-inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s. A liberal discount to the Trade.
These Valves can be obtained in London of Mr. J. JONES, 6, Bankside, S.E.

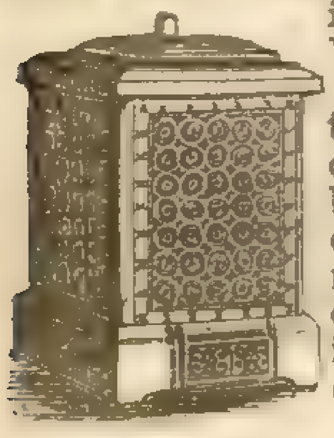
West of England, Ireland, and Wales.



VINCENT SKINNER (late Partner with J. WEEKS & Co.), HORTICULTURAL BUILDER and HOT-WATER APPARATUS MANUFACTURER. HEATING on the ONE-BOILER SYSTEM. Plans and Estimates on application.
VINCENT SKINNER, Bridewell Street, Bristol.

Exhibition Prize Medal, 1862.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

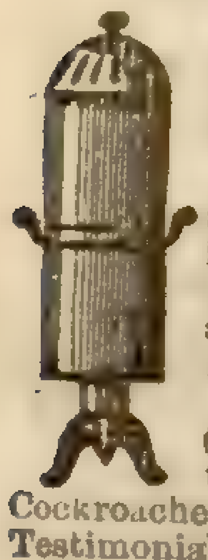


It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of Warming a large Apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.
It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.
Particulars and prices post free on application to MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

DENNIS'S PATENT HORTICULTURAL BUILDINGS are made from the best Wrought Iron, upon

an entirely new principle. The combination of Iron and Glass under this patent is perfect; the possibility of fracture is prevented, and a permanently Water-tight Roof insured.
The leading practical advantages are extreme smallness of Framing, admitting a maximum of light and heat, great strength, durability, and perfect ventilation. They are speedily erected, partake of more desirable outline, and do not exceed the cost of a perishable wooden structure.
For Prospectus, &c., address T H. P. DENNIS, Horticultural Builder, Hot-Water Engineer, &c., High St., Chelmsford, Essex.

The only Stove without a Flue.



JOYCE'S PATENT, for Warming Chapels, Halls, Shops, Conservatories, and all other Places. Price from 12s. 6d. each.
JOYCE'S STOVES are Portable and Economical, and burn 12 hours with one supply of fuel, requiring no attention.
STOVES for GREENHOUSES are made to burn all the Winter. Temperature always the same. Patent Fuel, 2s. 3d. per Bushel.
The PRUSSIAN VERMIN EXTERMINATOR (HOWELL'S) is the only safe and effective remedy for the destruction of Rats, Mice, Beetles, Ants, and Cockroaches. Sold in Stone Jars, 1s. and 2s. 6d. each, with Testimonials, &c (to be had of all Chemists).
SWAN NASH, Patentee, 253, Oxford Street, and 119, Newgate Street, London, E.C.
Illustrated Catalogues post free.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection; Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, TUBULAR, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 11s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at
Mr. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

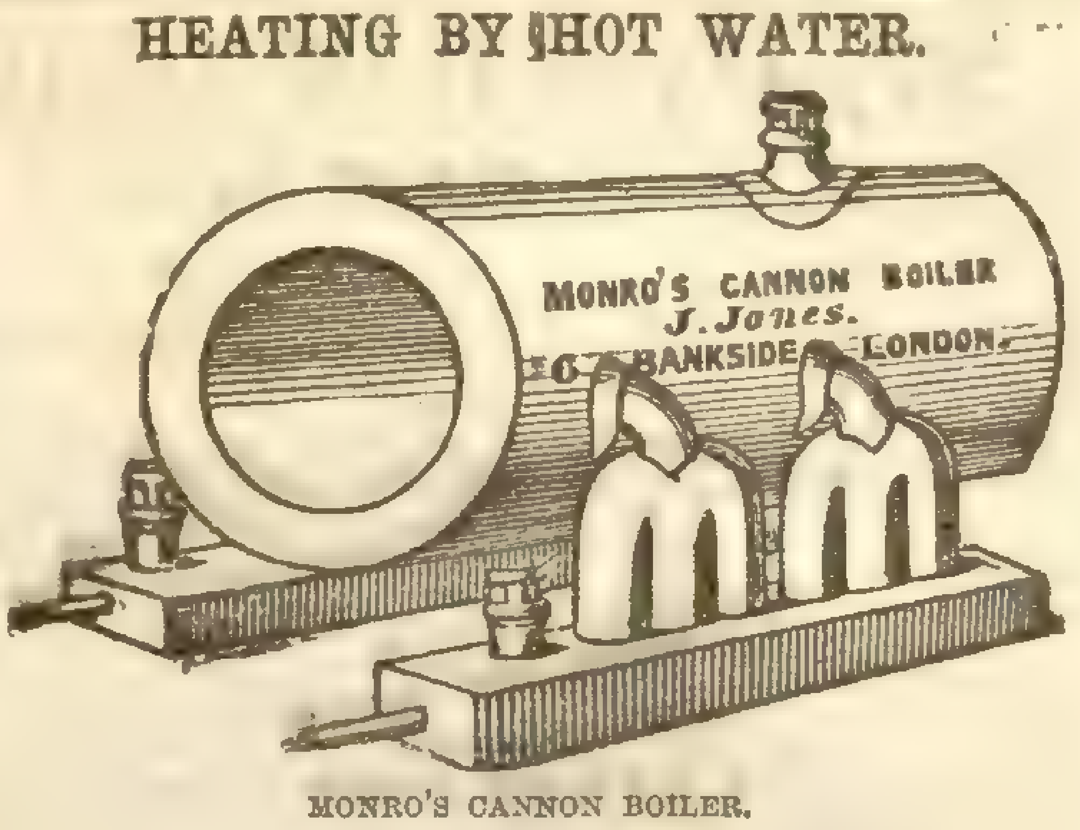
VENTILATING STOVES, cheap, simple, efficient, and durable.—Thousands have been sold and universally approved. They are suitable for Halls, Warehouses, Conservatories, and every situation where a close Stove is required. The large sizes are extensively used in Churches, Chapels, and Public Buildings with great effect and economy. Prices 50s., 60s., 70s., 90s., and 120s. Prospectus with engravings gratis and post free. In operation daily. The Trade supplied.
DEANE & Co., opening to the Monument, London Bridge, E.

The Improved Conical Boilers,
SOLELY MANUFACTURED BY

BURY AND POLLARD (Successors to JOHN R. PEILL, late STEPHENSON & PEILL), have attained a celebrity far surpassing any other Boilers ever invented. Of the many hundreds which have been fixed in this and foreign countries, not one single Boiler has ever proved defective, or failed to give the most complete satisfaction. They are connected with large ranges of Pipes (in some cases several thousand yards), at many Public Establishments, at the Crystal Palace, the Royal Botanical Gardens at Kew, and at the Regent's Park, as well as at most of the Nobility's Seats throughout the Kingdom.
All particulars may be obtained on application to BURY & POLLARD, Sole Manufacturers, Park Iron Works, New Park Street, Southwark, S.
Price £4 10s. and upwards.
Every description of Material for Heating Buildings, supplied of the best description, with directions for putting up Hot-Water Apparatus.

SECOND-HAND TARPAULINGS for Sale, 200, the size 7 ft. ×4 ft. 6 in., with an eyelet hole in each corner, suitable for garden frames, pits, &c. Price 2s. 9d. each, or made up to any required size, 1s. per square yard, a strong good article; 2s. 8d. would be taken for a quantity. WATERPROOF CAPES, lined with blue cloth, 2s. 6d. and 3s. each. Small Macintosh DRIVING APRONS, 3s. each; large do., 6s. HORSES' LOIN CLOTHS, 7s. Waggon and Cart Covers, &c. N.B. 1000 Policemen's Capes, second-hand, at 18s. to 30s. per doz.
R. RICHARDSON, 99, Euston Road, London, N.W.

HEATING BY HOT WATER.



MONRO'S CANNON BOILER.

J. JONES,
HORTICULTURAL ENGINEER AND IRON MERCHANT,
SUPPLIES OR ERECTS, COMPLETE,
HOT-WATER APPARATUS
OF EVERY DESCRIPTION,
FOR
HEATING GREENHOUSES,
CONSERVATORIES,
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CHURCHES, CHAPELS, SCHOOLS,
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BILLIARD ROOMS,
COACH HOUSES, HARNESS ROOMS, &c.,
OF THE BEST QUALITY, AND AT MODERATE CHARGES.

PLANS, ESTIMATES, and DESCRIPTIVE CATALOGUES
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SAMUEL N. McGERROW, GENERAL HORTICULTURAL BUILDER, Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

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HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.
Apply to JOSEPH MEREDITH, Vine Cottage, Garston, near Liverpool.
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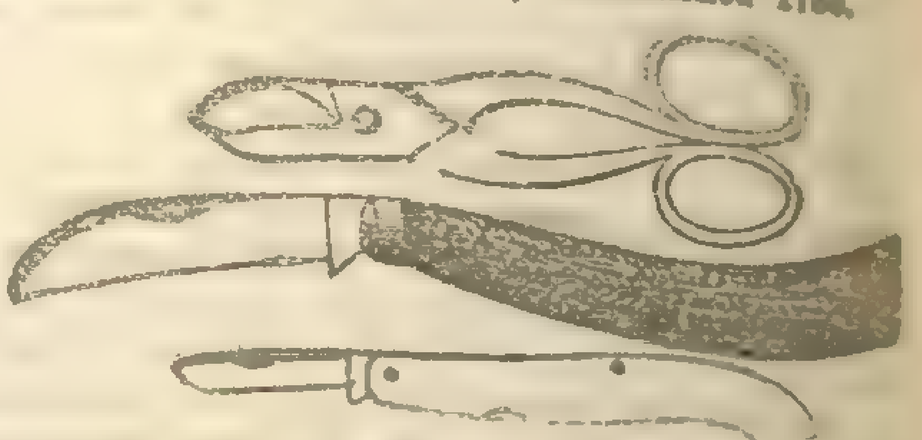
Hothouses for the Million.
AWARDED A PRIZE MEDAL AT THE INTERNATIONAL EXHIBITION, 1862.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.
Illustrated Circulars, with Lists of Prices, can be had on prepaid application to S. HEREMAN, 7, Pall Mall East, London.

W. J. HOLLANDS, IRON MERCHANT, 31, Bankside, London, S.E.
HOT WATER PIPES, from Stock, per yard:—2-inch, 1s. 2d.; 3-inch, 1s. 10d.; and 4-inch, 2s. 4d. BENDS, from stock, 1s. 7d., 2s. 6d., and 3s. 3d. each.
Other Connexions at equally low prices, and all goods of first-class manufacture.

TO BE SOLD, Cheap, Five THREE-LIGHT BOXES, and NEW CART, on Springs.
Apply to Mr. BELL, Love Lane, South Lambeth, S.

Paxton Works, Sheffield, Established 1788.



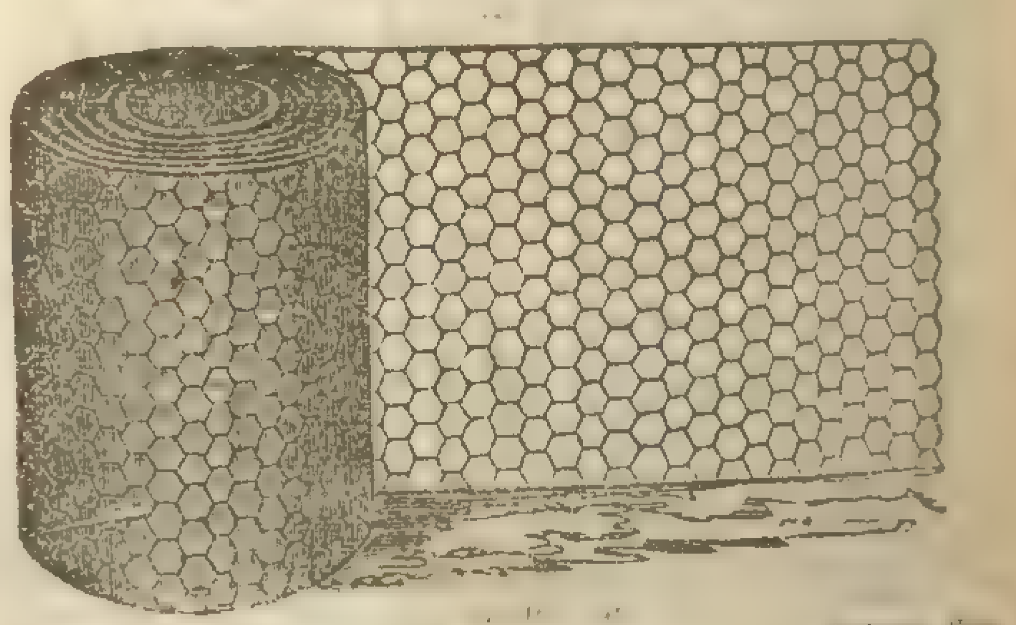
International Exhibition Prize Medal is just awarded to SAYNOR & COOKE for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR AND COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.
CAUTION.—None are genuine unless marked SAYNOR. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.
Manufactory: Newport, Salop.
Warranted the strongest and most durable Fence ever offered at corresponding prices. It is easily repaired if broken from accidents; can be rolled up most compactly when not in use, is admirably adapted for exportation, and can be had any height and mesh required, at prices from 4d. to 1s. 6d. per yard and upwards.

For further particulars apply at the Manufactory, or of the London Agent, Mr. R. WINDER, 18, Abingdon Street, Westminster, S.W.

BARNARD, BISHOP, AND BARNARDS, Norwich.
FURTHER REDUCTION in the PRICE of WIRE NETTING.—APRIL, 1861.



BARNARD, BISHOP, & BARNARDS beg to inform their friends and the public that they have made a further reduction in the prices of Machine-made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard
2-inch mesh, 24 inches wide..	No. 19	.. 4¼d	.. 3½d.
2-inch ,, ,, ,, ..	,, 18	.. 5	.. 4
2-inch ,, ,, ,, ..	,, 17	.. 6½	.. 5
2-inch ,, ,, ,, ..	,, 16	.. 8	.. 6½
1⅝-inch ,, ,, ,, ..	,, 19	.. 4¾	.. 4
1⅝-inch ,, ,, ,, ..	,, 18	.. 6	.. 4¾
1⅝-inch ,, ,, ,, ..	,, 17	.. 7	.. 5½
1⅝-inch ,, ,, ,, ..	,, 16	.. 9	.. 7

All the above kinds can be made any width (under 6 feet), at proportionate prices.
Strong Galvanised Poultry Netting, 7½d. per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11d. per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.

Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.
Five wires, 3 feet 6 inches high, pronged Standards, 3 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10d. per yard.
The same with Galvanised Wire Rope, 1s. per yard.
Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.
⁎ Wire Fencing and Netting delivered Carriage Free at the principal Railway Stations.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, ORWELL WORKS, IPSWICH,
Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

HENRY J. MORTON AND CO.,
2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern
for Cottage Houses, &c., to contain 50 gallons, 26s.; 80 gallons, ... ; and 140 gallons, 37s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. ... of all sizes.

Galvanised Iron Pumps
for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and ... 6d. each; Tail Pipe for same at from 10d. per foot.

Galvanised Iron Swing Water Barrows
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35s. 0d. each.

AGRICULTURAL MACHINERY. — Threshing Machines for Steam and Horse Power, Ploughs, Harrows, ... Carts, Mills for Hand or Power, Turnip Cutters, ... Breakers, Chaff Cutters, &c.
Price List Free per post on application.
... & Key, 95, Newgate Street, E.C. Works, Brentwood, Essex.

FOWLER'S PATENT STEAM PLOUGH and CULTIVATOR may be seen at Work in every Agricultural County in England. Addresses of Farms (which are open to inspection), given on application, where the Machine ... at Work for three or four years.
The New Application of the ORDINARY PORTABLE ENGINE may also be seen at Work at any time.
Price, with Self-moving Anchor, Three-furrow Plough, and ...-tined Grubber, 285l.
For particulars apply to John Fowler, 28, Cornhill, London, E.C.; and Steam Plough Works, Leeds.

TO J. AND F. HANCOCK,
PULVERISER PLOUGH WORKS,
Dudley Port, Tipton.

Compton Castle, Castle Cary, Sept. 15.
Sir,—In reply to yours of some day in August I beg leave to acknowledge the receipt of your Butter-making Machine, which came only ten days ago. My dairymaid is delighted with it, which is more than I could have expected, as you know how seldom servants are pleased with a new invention. It answers admirably. I beg to enclose a cheque for it, according to your account, and am, Sir, &c., S. W. Sandford.

Chatton Vicarage, Sept. 24.
Sir,—I have the pleasure of enclosing you a post-office order for 2l. 1s. 6d. for the Butter Machine, which quite answers the purpose which your agent in London described to me; and now that I have seen it in operation, think that it does its work very effectively.—Yours truly, Matt. Burrell.
I can recommend the machine to all my friends.

Delamont, Downpatrick, Oct. 1, 1862.
Mrs. Gordon considers the Prize Butter Machine of Messrs. Hancock, the most perfectly satisfactory machine for the purpose she has ever seen, and encloses a post-office order for the same.

Foston, Derby, Sept. 8, 1862.
Sir,—I am happy to say that we find your Machine for Purifying Butter answers extremely well. We have not yet tried it for Salting Butter, but doubt not that it will succeed in that process also. A post-office order was sent to you last Friday from Derby.—I am, &c., John Broadhurst.
To Mr Hancock.

PRICES of BUTTER MACHINES.—No. 1, for private use, ... No. 2, for dairy use, £2 12s. 6d., sent on receipt of post-office order, payable to J. & F. Hancock, Tipton, where illustrated sheets may be had of their celebrated Pulveriser ...

To be seen at the SMITHFIELD CLUB SHOW.
The BUTTER MACHINE in actual operation.

Steam Cultivation.

The following valuable Testimony has just been received from the Purchaser of the Set of Apparatus worked by J. & F. Howard at the last Meeting of the Royal Agricultural Society of England:—

Warwickshire.
Morton Hall, Warwick, Nov. 12, 1862.
Gentlemen,—I cannot refrain from adding my testimony to ... many others to the efficiency of the very beautiful ... Steam Cultivating Apparatus with which you ... supplied me.
I had for some time been desirous of employing steam in the ... of my farm, but could not ascertain which was the ... system. Feeling anxious in the matter, I was at some ... and trouble in examining for myself the merits and ... of the three acknowledged systems of the present day ... Fowler's, Smith's, and Howard's.
With Fowler's I was anything but satisfied. I did not like ... of so ponderous an Engine and Tackle, nor ... expense of it; and when I saw so much of the out... the field left uncultivated, and the damage done to the ... from the transit of the engine, I unhesitatingly and ... gave up all idea of adopting this system.
With Smith's I was more pleased, but his whole Apparatus ... in such a rough and unfinished manner that very ... surprised me. That surprise was, however, much ... when I was told that each purchaser of his Apparatus ... required to take out a license of Twenty Guineas before ... use it. These reasons forced me to the conclusion ... not be a customer of Mr. Smith's.
... paid a visit to Battersea and Farningham, and at the ... saw all three systems in full operation. I saw your ... and Cultivator at work, and was at once struck ... beautiful simplicity. I examined each part of it, ... I watched the latter as it passed through the soil so ... and evenly, leaving it in such a state that surprised and ... everybody. I was perfectly satisfied, and at once ... that identical Apparatus. To this day I am satisfied ... think your patent windlass and double snatch-blocks ... perfect things I have seen. The former is so simple ... managed, and the latter effectually keeps the rope ... I am also very much pleased with my porters ... never seen anything to equal them.
... of Clayton & Shuttleworth's 8-horse double ... Engines, and besides doing with it a large amount of ... I have cultivated and cross-cultivated 112 acres this ... though the season has been so unpropitious for my ... and all this without one single accident or break... My farm, which has but lately come into my ... consists of 576 acres, of which 370 are arable, and ... strong soil, requiring four horses to plough it. ... never been less than 20 horses employed in the cul... this farm, and frequently more. I have, however, ... number to 12, and hope as the land becomes in a ... from drainage and cultivation, to make a still ...
... close this letter without saying in public, what I ... often said in private, that I feel myself under a personal ... to you for your untiring perseverance, your ... genius as displayed in the production of this very ... Apparatus, and for the uniform courtesy I have at all ... received from you.
... wishing you that signal success which you so ... deserve and enjoy—I remain, gentlemen, yours ...,
John Ford.
Messrs. J. & F. Howard, Bedford.

Jones' Patent Anti-Frost Water Pipe Protector.
IMPORTANT to all HOUSEHOLDERS, preventing damage, waste, and annual expenses from pipes bursting in frosty weather.
Wholesale of Bury & Pollard, Engineers, Sole Manufacturers, Park Iron Works, Southwark, London, S.
Retail of all Ironmongers. A liberal discount to the Trade.

HOW COLD IT HAS BEEN. — Negretti & Zambra's celebrated THERMOMETERS will correctly register the lowest Temperature, 3s. 6d.
1, Hatton Garden, E.C.; 59, Cornhill, E.C.; and 122, Regent Street, W. Agents Wanted.—Apply at 1, Hatton Garden, E.C.

THE FARMER'S BAROMETER, a new instrument by Negretti & Zambra, price 50s., will correctly indicate whether the Barometer falls for Rain or Wind, the most valuable instrument ever constructed for the use of Farmers. Full particulars by enclosing a stamp.
1, Hatton Garden, E.C.; 59, Cornhill, E.C.; and 122, Regent Street, W.

JOSEPH HAYWOOD AND CO.,
Manufacturers of
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kind of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield.

Short-horn Bulls.
FOR SALE, by PRIVATE CONTRACT, Five young BULLS, aged 9 to 12 months, good colours, fine size and quality, and excellent blood, that of Bates predominating, being chiefly descended from the celebrated original Tortworth Herd. Also for Sale, Four HEIFERS, about 2 years old, of similar blood.
For pedigrees, &c., apply to the Breeder, Mr. Stiles Rich, Didmarton, Chippenham, Gloucestershire.

WANTED, to take a moderate sized NURSERY and SEED BUSINESS, in a good neighbourhood.
Direct to C. D, Post Office, Ollerton, Notts, stating terms and particulars.

To Florists, Gardeners, &c.
Kilburn, Middlesex.
TO BE DISPOSED OF, a well-established NURSERY GROUND, with Plant, &c., held on an advantageous Lease for 21 years.
Particulars and orders to view may be obtained from Mr. T. F. Chorley, Solicitor, 48a, Moorgate Street, City, where the Lease may be seen.

To Gentlemen engaged in Planting.
TO BE DISPOSED OF, a large quantity of ORNAMENTAL TREES, DECIDUOUS FLOWERING SHRUBS, and EVERGREENS, &c. The standard ornamental trees comprise fine Scarlet and other Horse Chesnuts, 8 to 12 feet high; Limes, 8 to 12 feet; Ash Leaf, Scarlet, and other Maples, 8 to 12 feet; New Single and Double Scarlet, and other Thorns, Deciduous Cypress, Laburnums, Caraganas, Elms of sorts, Birch, Beech, Sycamore, Tulip Trees, Pyrus spectabilis, Siberian Crabs, Pinus excelsa, Ailanthus, Almonds, Double flowering Cherry, &c. The flowering Deciduous Shrubs consist of Ribes, Lilacs of sorts, Syringas, Spiraeas, Guelder rose, Wiegela, Pyrus japonica, Sumach, &c. Most of them are from 3 to 6 feet high, and as wide in proportion. Among the Evergreens will be found very handsome English Yews, Box, Arbor vitaes, Evergreen Oaks, Hollies, Junipers, Cedars, &c, varying in height from 3 to 7 feet. All these Plants may be seen growing in the Plantations at Ashwicke, Marshfield, near Chippenham. All expenses connected with the removal of the Plants, to be paid by the purchasers.
Prices and Particulars may be obtained on the spot, and the Plants seen on application to the Gardener.

Sales by Auction.

Deptford, Kent.
Near the Deptford Station of the Greenwich Railway.
To Market Gardeners, Nurserymen, and Farmers.
MR. W. T. ATWOOD has received instructions to SELL by AUCTION on the Premises, on TUESDAY, December 2, at 12 o'Clock, the LIVE and DEAD STOCK, comprising 2 Cart Horses, 2 Market Waggons, Dung and other Carts, a capital light-made Spring Van, Tools, Implements, large partitioned water-tank, quantity of Myatt's Prolific Kidney Potato sets, materials of large Cart Shed to be cleared away, also Coach House. and three-stall Stables, a quantity of binding and other rods and sundries.
Catalogues may be had at the Wheatsheaf, Borough Market; Way's Coffee House, Covent Garden; and of Mr. W. T. Atwood, Auctioneer, Mortlake, Surrey.

Fulham Road,
Adjoining Walnut Tree Walk, West Brompton.
MR. W. T. ATWOOD will SELL by AUCTION, on the Premises, by direction of Mr. John Poupart, who is quitting the Land, on THURSDAY, December 4, at 12 o'Clock, the LIVE and DEAD STOCK and CROPS, comprising several Lots of Excellent Sea Kale Roots, Rose Bushes, and other Crops, 2 useful Cart Horses, capital Spring Market Van, Market, Dung, and other Carts, Tools, Baskets, Barrows, &c.
75 3-light Boxes and Lights, 600 Hand Glasses, large quantity of excellent rotten Dung, a large heap of Ballast, and numerous sundry articles.
May be viewed day before and Morning of Sale. Catalogues had on the Premises, the Inns in Covent Garden Market, and of the Auctioneer, Mortlake, Surrey.

Consignment of Plants from Antwerp.
MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on SATURDAY, November 22, at half-past 12 o'Clock precisely, a CHOICE COLLECTION of Camellias, Rhododendrons, Hollies, Laurustinus, Conifers, Magnolias, Roses, Gladiolus, Lilium lancifolium speciosum, Asclepias tuberosa, Azaleas, Pear and Peach Trees, Yuccas, Agaves, Rose Trees, Kalmias, Guelder Roses, Arborvitæ, Iris, Jasmines, &c.
On view the Morning of Sale and Catalogues had.

Roses, Fruit Trees, Vines, Laburnums, Tree Box, &c.
MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, December [illegible], at half-past 12 o'clock precisely, [illegible] Standard and Half-Standard Roses, [illegible] Seedling Hollyhocks, [illegible] Red Currant Trees, [illegible] White ditto, [illegible] Gooseberries ditto, 24 Virginian Creepers, [illegible] Laburnums, 150 Jasmins, 150 Acacias, [illegible] Clematis, [illegible] Ivies, [illegible] Tree Box, 500 Raspberry Canes, 60 Vines, [illegible] Dwarf-trained Apricots, Peach, Nectarines, Pears, Plums, Cherry Trees, &c.
On view the Morning of Sale, and Catalogues had.

Dutch and Cape Bulbs, Fruit Trees, Roses, Conifers, &c.
MR. J. C. STEVENS will Sell by Auction, at his Great Room, 38, King Street, Covent Garden, on TUESDAY, November 25, at half-past 12 o'clock precisely, a large importation of DUTCH BULBS, comprising 15,500 double and single Anemones, 5200 Gladioli, 8400 Crocuses, 200 Ferraria Tigridia, &c, 100,000 QUICK, 2 yrs. old, fine young stuff; some choice CONIFERS, ROSES, FRUIT TREES, HOLLIES, THORNS, &c.
On view the Morning of Sale, and Catalogues had.

To Gentlemen, Florists, and Others.
MESSRS. PROTHEROE and MORRIS will SELL by AUCTION, at the Mart, on FRIDAY, Nov. 28, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of 300 very handsome Standard, Half Standard, and Dwarf ROSES, selected AMERICAN PLANTS, well set with Bloom Buds, &c.
On view the Morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nurseries, Leytonstone, N.E.

Stratford, Essex.
To Noblemen, Gentlemen, Nurserymen, and Public Companies engaged in Planting.
MESSRS. PROTHEROE and MORRIS have received instructions from Mr. G. H. Bunney to submit to an unreserved SALE by AUCTION, on the Premises, The Nurseries, Leytonstone Road, N.E., and within five minutes walk of the Stratford Station on the Great Eastern Railway, on TUESDAY, Nov. 25 and following day, at 11 for 12 o'clock precisely, the ground being immediately required for gravel digging, a portion of the valuable NURSERY STOCK, comprising quantities of fine Evergreens, ranging all sizes, and including magnificent and useful specimens for effective purposes seldom submitted to public competition, and which, from the adhesive and peculiarly retentive nature of the soil, will remove safely, consisting of upwards of 1000 handsome Green Hollies, from 2 to 10 feet; 6000 Aucubas, very bushy, 1 to 5 feet; 1000 common Laurels, beautiful Sweet Bays, 4 feet; compact Irish Yews, 4 to 5 feet; Green and Variegated Box, 1000 Chinese, Siberian, and American Arbor-vitæ; Privet, Berberis, Garrya elliptica, Spruce Firs, &c; also a choice assortment of American Plants, including Scarlet, Hybrid, and other choice Rhododendrons, hardy Azaleas, sorts; Andromeda floribunda, Magnolias, with some very handsome Standard Roses, including the best Hybrids, Bourbons, Chinas, &c.
May be viewed prior to the Sale. Catalogues may be had on the Premises; the Eagle, Snaresbrook; the principal City Seed Shops; and of the Auctioneers and Valuers, American Nurseries, Leytonstone, Essex, N.E.

May's Nursery Ground, New Malden, Surrey.
MR. ARTHUR PLEWS is favoured with instructions from Mr. Joseph May, of Wellington Street, Strand (who is about to relinquish the Nursery Branch of his Business), to SELL by AUCTION, at his Nursery, Acacia Grove, New Malden, Surrey, on WEDNESDAY next, November 26, at 12 o'Clock precisely, the whole of the valuable GROWING STOCK, comprising STANDARD and other ROSES, ORNAMENTAL SHRUBS of the choicest varieties, FRUIT TREES, and Horticultural Produce of almost every description.
May be viewed the day prior to the Sale. Catalogues may be had of Mr. Joseph May, Seedsman, Wellington Street, Strand; and of Mr. Arthur Plews, Auctioneer and Valuer, 50, Chancery Lane, London, W.C., and New Malden, Surrey.

Monthly Sales of Horticultural Produce.
MR. ARTHUR PLEWS will SELL by AUCTION, at the Auction Mart, Bartholomew Lane, London, on the THIRD TUESDAY in every MONTH throughout the SEASON, a Choice Collection of every description of HORTICULTURAL PRODUCE.
Gentlemen wishing to include Property in these Sales can obtain every information from the Auctioneer, at his Offices, 50, Chancery Lane, W.C., and New Malden, Surrey.

Kilburn.
To Gentlemen, Nurserymen, and Others.
MR. J. WILLMER begs most respectfully to announce that he has received instructions from the Proprietor to SELL by AUCTION, on the Premises, Carlton Nursery, Carlton Road, Kilburn, N.W., (in consequence of the lease expiring at Christmas next), on WEDNESDAY, November 26, at 11 o'Clock, the whole of the NURSERY STOCK, which comprises Evergreens and Shrubs of various sizes, Fruit Trees, Roses, &c., among which are Aucuba japonica, 1 foot to 2 feet; Portugal Laurels, 2 feet to 4 feet; Green and Striped Box, 2 feet to 3 feet; Lignum Vitæ, 6 feet to 7 feet; Yews, 6 feet; Irish Yews, 6 feet; Cedrus Deodara, 3 feet; Rhododendron ponticum, 2 feet to 4 feet; Phillyrea, 3 feet to 4 feet; Striped Hollies, Green Hollies, Bays, Laurels, 3 feet to 4 feet; Evergreen Privet, White and Yellow Broom, Laurustinus, Standard, Dwarf, and Pillar Roses, Standard Mulberries, &c.; a Lean-to Greenhouse, 24 feet by 12 feet; the Erection of Shed, 12 feet by 12 feet; a quantity of Boards, and a variety of useful items.
May be viewed two days prior to the Sale, and Catalogues had on the Premises, and of the Auctioneer, Springfield Nursery, Sunbury, Middlesex, S.W.

Hounslow, Middlesex.
To Gentlemen, Nurserymen, and Others.
MR. J. WILLMER begs to announce that he will submit to PUBLIC AUCTION, on the Premises, the Nursery, Wellington Road, Hounslow Heath, on WEDNESDAY, December 3, at 11 o'Clock, by direction of the Executrix of the late Mr. G. Patching, a portion of the NURSERY STOCK, which comprises Common Laurels, 1 foot to 4 feet; Portugal Laurels, 1 foot to 6 feet; Berberis aquifolia, 1 foot to 2 feet; Evergreen Privet, 1 foot to 3 feet; Chinese Privet, 1 foot to 3 feet; Green Box, 1 foot to 3 feet; Chinese Arbor-vitæ, 1 foot; Green Hollies, 7 feet; Snowberry, 3 feet to 4 feet; Guelder Rose, 3 feet; Aucuba, 1 foot; Acacia, 6 feet; Lilac, 3 feet to 5 feet; Standard and Dwarf Roses, China and Climbing Roses, Sweet Briars, Honeysuckle, Ribes sanguinea, Sumac, Strong Quick, Rhododendron ponticum, Rosemary, Irish Ivy in pots, Gooseberries, Currants, Raspberries, Asparagus Plants, Sweet William, Polyanthus. 400 2 and 3 years' Worked Apples, comprising the leading market sorts; 1000 2 and 3 years Worked Plums, &c.
May be viewed two days prior to the Sale, and Catalogues had on the Premises; and of Mr. J. Willmer, Auctioneer, Surveyor, and Valuer, Springfield Nursery, Sunbury, S.W.

JAMES & FREDERICK HOWARD,

BRITANNIA IRON WORKS, BEDFORD,

PATENTEES AND MANUFACTURERS OF

STEAM CULTIVATORS, STEAM PLOUGHS,

CHAMPION PLOUGHS, HARROWS, HORSE RAKES, AND HAYMAKERS.

CATALOGUES, with full particulars, sent free on application.

SHAW'S TIFFANY.
For samples and prices apply to
J. SHAW & Co., 29, Oxford Street, Manchester.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

These Machines have carried off every Prize that has been given in all cases of competition, and have been awarded the PRIZE MEDAL at the INTERNATIONAL EXHIBITION of 1862.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.

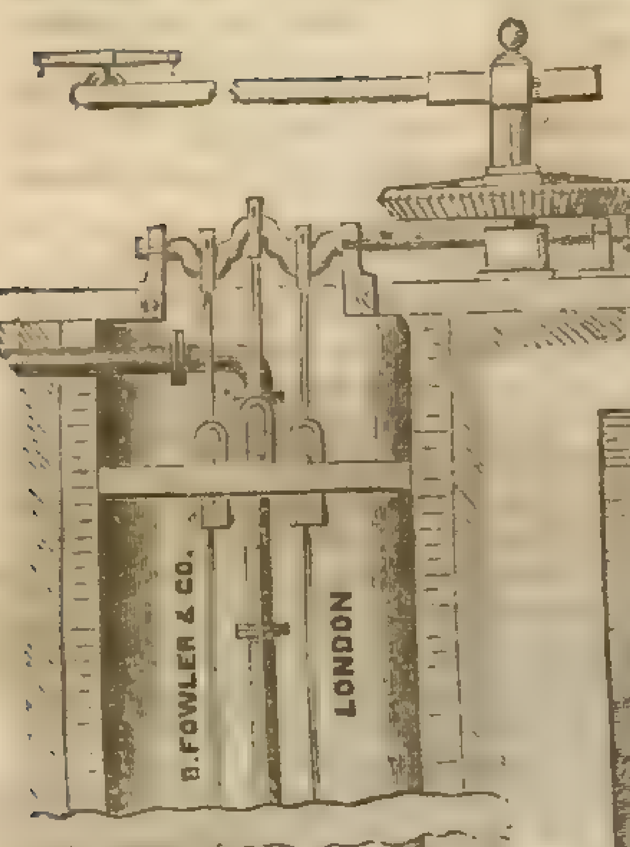
For Illustrated Price Lists, with full particulars, address

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

BENJAMIN FOWLER & CO.,

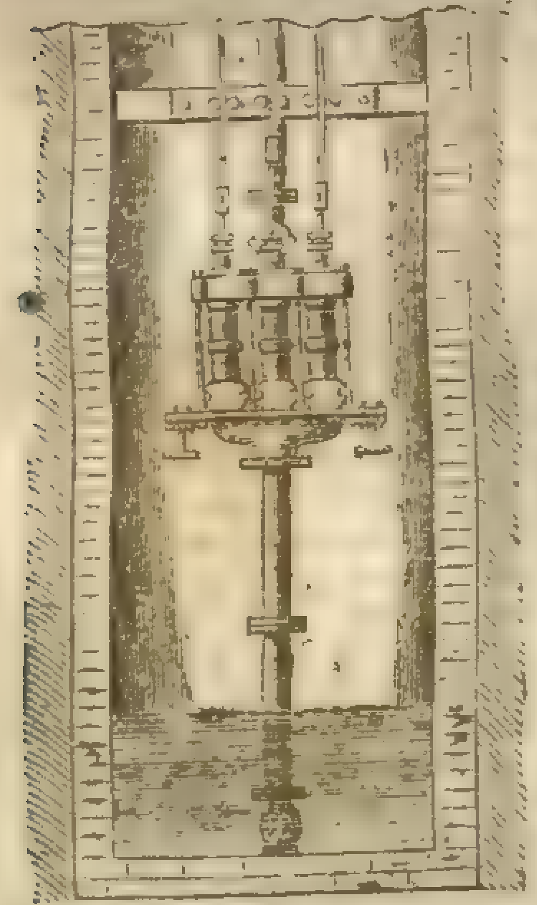
MANUFACTURERS OF PUMPS AND HYDRAULIC MACHINERY,

WHITEFRIARS STREET, FLEET STREET, LONDON, E.C.



THE accompanying Sketches show some useful forms of apparatus in general demand for Raising and Forcing Water or Liquid Manure. The Landscape Sketch shows the adaptation of Fowler's Improved Hydraulic Rams for the supply of Mansions, Farms, &c. A large number of these simple Self-acting Machines are in use, giving great satisfaction. Their adoption is not confined to positions as shown below, as they are suited to any situation where a few feet fall can be obtained from a spring, brook, or stream; they will force to an elevation equal to ten or more times the number of feet of fall, and to any distance.

No. 4.



No. 37.

No. 37. FOWLER'S Improved Simple HORSE GEAR for raising water from deep wells with double or treble pump. B. F. & Co. also make and fix Deep Well Pumps of all descriptions for hand power.

No. 4. FOWLER'S CAST IRON BORED PUMPS of all sizes, with improved brass valves for Garden and Farm use, from 1l. 5s. each.

No. 38. FOWLER'S Galvanized Portable LIQUID MANURE PUMPS, with flexible suction hose. Price, with 10 feet of pipe and strainer, 4l. 5s.

No. 138. FOWLER'S Improved DOUBLE ACTION FORCE PUMP in frame. These excellent pumps are largely used and much approved.

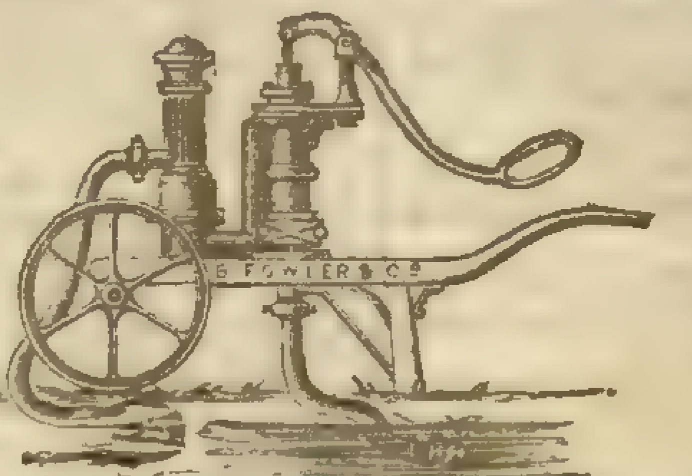
No. 46a. FOWLER'S Superior DOUBLE-ACTION PORTABLE FORCE PUMPS and simple FIRE ENGINES for Water or Liquid Manure. Prices, 5l. 15s., and 7l. 10s.

No. 50. FOWLER'S Improved (Holman's Patent) DOUBLE-BARREL PUMPS, FARM FIRE ENGINES, and IRRIGATING PUMPS. Prices, from 12l. 10s.

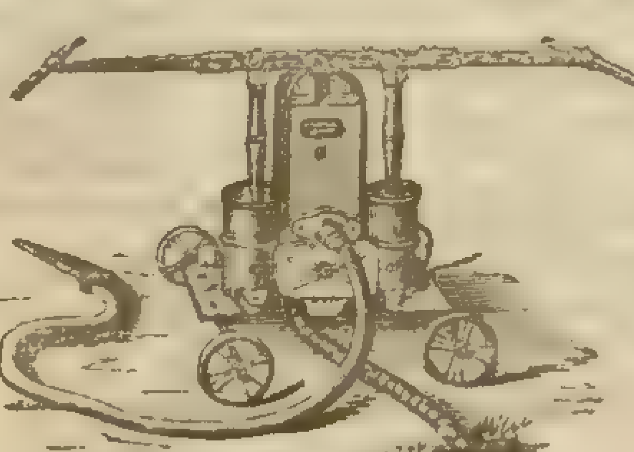
No. 49. FOWLER'S Improved GARDEN ENGINES of all sizes, in Oak and Galvanized Iron Tanks, from 50s. each.

No. 49A. FOWLER'S Improved SWING WATER CARRIERS, holding 24 and 35 gallons. Prices, 42s. 6d., and 50s.

No. 49.



No. 46a.



No. 50.

No. 49 A.

No. 138.

FURTHER PARTICULARS, ESTIMATES, AND ILLUSTRATED PRICE LISTS ON APPLICATION.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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[illegible] Monarchy. Schleswig was formerly in a position [illegible] us. Unconnected with the German Confederation, it was yet connected with Holstein, which formed part of the Confederation. Later arrangements have dissolved [illegible] tie, and Schleswig is at present only connected with Holstein by non-political relations affecting the two [illegible]. There are, however, relations between Germany and Denmark in respect to Schleswig which have given rise to constant controversy. The obligations of honour [illegible] Denmark towards Schleswig, and imparted to [illegible] as such by the King of Denmark in [illegible] regard two points. The first of these is that Schleswig shall not be incorporated with [illegible]; the second is in substance an engagement that the [illegible] Schleswig shall be treated on an equal footing [illegible] Danish or any other nationality. The grievances [illegible] Germany complains as violations of these promises [illegible] up in the recent Prussian note of the 22d of [illegible]:—'The systematic destruction of national and neighbourly relations between Schleswig and Holstein, the dis[illegible] determinations concerning the University of Kiel, [illegible] of the Duchy of Schleswig with Danish officials [illegible] administration, with Danish clergy in church and [illegible] as the whole spirit of the Administration in this [illegible], the violation of all actual and practical relations, the maintenance of the Language Edict, are matters of [illegible] notoriously public, and of which the evidence [illegible] of every one.' For all practical purposes it [illegible] to attempt a 'constant supervision' by [illegible] the nomination to civil offices of Danish officials [illegible], or the administration in church and school by ministers of religion. Such superintendence would [illegible] constant renewal of quarrels and a perpetuity of ill-[illegible]. The best mode, therefore, of remedying these evils for [illegible], and of preventing complaints for the future, is to [illegible] complete autonomy to Schleswig; allow the Diet of [illegible] fully to treat and independently to decide upon [illegible] affecting their university, their churches, and [illegible] language to be used where the Danish population [illegible], where the German preponderates, and where the [illegible] mixed. I come lastly to the question of the Constitution, the most entangled and the most embarrassing [illegible] all those in discussion. Treaties, protocols, [illegible] despatches afford us little light upon this subject, [illegible] glimmering rays which they do afford tend rather to lead us astray than to guide us right. For what [illegible] more destructive of all union, all efficiency, [illegible] strength, and, indeed, of all independence, than to lay [illegible] an absolute rule that no law should be passed and [illegible] sanctioned unless the four States of the Monarchy [illegible] concurred? What would Austria say if she were asked to [illegible] a Constitution which should paralyse the action of the [illegible] at Vienna till separate Diets in Hungary, in [illegible] and in Venetia should have adopted the same law or [illegible] the same Budget? How would Prussia herself bear an absolute veto on the proceedings of her Parliament given to the Diet of Posen? If such a Constitution must lead to an early and decisive rupture, let us consider whether each portion might not have its due independent movement without clogging the wheels of the whole machine. For instance, if the sum required for the navy were represented by 90, of which Denmark were to furnish 60 and the other States 30, Denmark might vote and apply her contingent of 60 independently of the vote of the other three portions. There is only one objection to be made to this suggestion which deserves consideration. If the 1,600,000 people of Denmark were taxed to pay [illegible] army and navy, and the 50,000 of Lauenburg were to refuse [illegible] for those purposes, a hardship would be suffered by [illegible] inhabitants of the kingdom when compared with the [illegible] of the King-Duke's subjects in Lauenburg. The [illegible] for this inequality is to be found in a proposal for a [illegible] Budget, to be laid before the Rigsraad, and before the [illegible] of Holstein Lauenburg, and Schleswig for their consent. [illegible] us that the Government of an independent kingdom [illegible] Denmark must, for the maintenance of that independence, [illegible] certain amount of expenditure for the Civil List of [illegible] Sovereign, for the diplomatic service, for the army and [illegible] the State. Let this be reckoned as economically as [illegible]—for the least amount of Royal dignity, for the [illegible] establishment of profound peace. Obtain that sum [illegible] the four representative bodies. Confide its distribution [illegible] Council of State formed two-thirds of Danes and [illegible] of Germans. Let the votes of this council be taken [illegible] and accounts of the expenditure published yearly. [illegible] Budget to be voted in gross for 10 years. [illegible] or expenditure to be voted yearly. Extra[illegible] expenses beyond the normal Budget to be voted [illegible] the Kingdom and the three Duchies separately. The [illegible] I have made may be summed up in a few words. [illegible] and Lauenburg to have all that the German Con[illegible] ask for them. 2. Schleswig to have the power of [illegible], and not to be represented in the Rigsraad. [illegible] Budget to be agreed upon by Denmark, Holstein, [illegible], and Schleswig. 4. Any extraordinary expenses to [illegible] to the Rigsraad, and to the separate Diets of [illegible], Lauenburg, and Schleswig. You will give a copy of [illegible] despatch to M. Hall, and invite his serious attention to its [illegible]."

The reply of the Danish Government to this despatch [illegible] published on Wednesday. It says:—

"The maintenance of the common constitution in Schleswig [illegible] vital question for Denmark. The Danish Government will [illegible] firmly adhere to the line of conduct prescribed by [illegible]. The acceptance of the propositions made by [illegible] Russell would lead to the destruction of Constitutional [illegible] Denmark, and would soon even imperil the existence of [illegible] itself."

Wurtemburg.—The King left Stuttgardt on the [illegible] inst. for Nice, where he will pass the winter. [illegible], the patriot poet, the Béranger of Germany, [illegible] at Tubingen a few days since, in his 76th year.

Electoral Hesse.—The Chamber of Deputies, last [illegible], demanded explanations respecting the budget, [illegible] the Government refused to give, and the sittings [illegible] the Chambers were suspended for several days. On Thursday, the members of the Diet were convoked for [illegible] extraordinary sitting, when the Government Commissioner, Herr Schüler, read an ordinance of the Elector adjourning the Diet for an indefinite period.

Italy.—The Italian Parliament was opened on Tuesday for the session. In the Chamber of Deputies the Minister for Foreign Affairs laid upon the table the [illegible] diplomatic documents relating to the Roman question:—General Durando's circular of the 10th September; a note, dated October 8th, addressed by General Durando to the Chevalier di Nigra; and the note of M. Drouyn de Lhuys, in reply to the circular of General Durando. Signor Buoncompagni asked for an explanation of the policy adopted by the Ministry. Signor Ratazzi declared himself ready to afford an explanation of his conduct as a Minister, and the debate was appointed by the Chamber to take place on Thursday. The Senate also appointed the sitting of Thursday for explanations to be requested by Senator Siotto Pintor on the political situation, but on Wednesday Signor Pintor stated that he would postpone his request for explanations, as statements of a similar nature were to be made on Thursday in the Chamber of Deputies. On that day, in the Chamber of Deputies, Signor Buoncompagni asked for the promised explanations on the home and foreign policy of the Cabinet, stating that he did not believe the Ministers to possess the necessary moral authority to govern the country. Signor Mordini complained of the arrest, at Naples, of himself and the Deputies Calvio and Fabrizi, vehemently attacking the Cabinet upon the Constitutional question. During the sitting a question arose with reference to the election of a deputy in an electoral college of Sicily, as to the validity of elections made during the state of siege in that island. After a short discussion, the Chamber decided that all such elections should be considered null and void. The official *Gazette* of Monday contained a Royal decree abolishing the state of siege in the Neapolitan provinces and Sicily. The Prefects of Naples and Palermo retain the power of making some exceptions. Several important Bourbon partisans have been arrested at Naples. Serious damage has been caused by inundations in the Romagna; the King has forwarded a large sum of money from his private purse for the relief of the sufferers. It is asserted that the conferences upon the question of the Bishopric of Tessino are to be resumed on the 21st inst. The Swiss Federal Council has given fresh instructions upon the subject to its representative at Turin. Signor Boschi, formerly of the Ministry, and Secretary General of Public Works, has been tried at the Turin Assize Court on the charge of having abused his official functions. Among the witnesses were Signori Peruzzi, Bastoggi, Arese, formerly in the Ministry, with several senators, members of Parliament, and high functionaries. The jury returned a verdict of acquittal. Part of the brigands composing the band of Cataniello, in the province of Avellino, have delivered themselves up to the authorities. The remainder having been taken prisoners, the band is entirely broken up. The brigand chief Cavalcanti has been arrested at Naples upon the point of embarking for Marseilles. The Turin journals of Sunday publish a despatch, signed by M. Nicotera, denying in the name of Garibaldi the truth of the rumour lately circulated that a Dictatorship of Italy had been proposed by him to the King, and stating that no such arrangement, or anything approximate to it, had ever been entertained by Garibaldi. The Pope received the Prince of Wales and the Crown Prince of Prussia in private audience on Tuesday.

Prussia.—It is stated that the replies of the Prussian Government to the last notes of Bavaria and Wurtemburg upon the question of the French commercial treaty have been despatched. The Government is reported to have stated that Prussia fully adhered to the position she has already taken up, and will regard the definitive rejection of the treaty by Bavaria and Wurtemburg as notice upon their part to leave the Zollverein. It is said that Prussia, in accordance with former agreement, will comply with the invitation of Bavaria to attend the General Conference of the States belonging to the Zollverein at Munich, but will not enter upon the discussion of any other subjects than those mentioned in Article 34 of the Zollverein Treaty, as being reserved for these conferences. The *Neue Preussische Kreuz Zeitung* of Thursday publishes the reply of the King to an address expressing attachment from several districts of Prussian Saxony. His Majesty says:—

"I shall continue to maintain the reorganisation of the military force. I have been misrepresented in many quarters, and my words have been misunderstood. I have sworn to uphold the Constitution received from my brother, his late Majesty, and I shall conscientiously keep my oath in the sense expressed in my programme of November, 1858. But it is also requisite to govern constitutionally, so as to promote the welfare of the country. The Sovereign alone can do this in Prussia. The representatives of the people should assist him by constitutional co-operation in legislation, and not further obstruct his government."

Russia.—The *Journal de St. Pétersbourg* of Saturday contains the reply of Prince Gortschakoff to the note of M. Drouyn de Lhuys. The Prince, after recalling the constant efforts of Russia in favour of conciliation in America, says:—

"It is requisite above all to avoid the appearance of any pressure whatever capable of chilling public opinion in America, or of exciting the susceptibility of the nation. We believe that a combined measure of the Powers, however conciliatory, if presented in an official or officious character, would risk arriving at a result opposed to pacification. If, however, France should persist in her intention, and England should acquiesce, instructions shall be despatched to Baron Stockel, at Washington, to lend to both his colleagues, if not official aid, at least moral support."

A report of the Minister of Finance to the Emperor was published on Tuesday, showing the beneficial results during the last half-year of the system of calling in bank notes. The export of precious metals has been reduced to the extent of 19½ millions, and the rate of exchange has improved. Baron de Budberg has been appointed Russian Ambassador to France, and M. d'Oubril has been appointed Minister Plenipotentiary to Prussia.

Hungary.—The Emperor has amnestied all political offenders condemned by courts-martial as well as such refugees as have already returned to Hungary. His Majesty has also ordered the total cessation of judicial proceedings at present pending for offences of a political character.

Greece.—The decree calling together the National Assembly ordains that Greeks residing abroad shall be competent to elect delegates to that body in the ratio of one deputy to 1000 votes, of two deputies to 10,000, or of three deputies above 10,000. The electoral lists are ready, and the elections are expected about the 6th of December. With the exception of some disturbances at Patras, the country continues quiet. The telegraphic communication between Syra and Cinto has been re-established. The cases of insubordination which occurred among the soldiers in the provinces have been repressed. The National Guard is being organised and armed. M. Panos Colocotronis has been named Prefect of Police. Demonstrations in favour of Prince Alfred of England are preparing all over the country. The principal inhabitants of Syra and the Piræus have given a banquet to the officers of the English fleet. The health of Prince Alfred was proposed by the Greeks. The toast of "The Independence of Greece" was drunk by the English. The English vessels hoisted the Greek flag and saluted it with 21 guns.

Turkey.—The rumours which have lately been circulated that the Sultan has been attacked by mental disease have been officially contradicted.

India.—By the Bombay mail we have news from that presidency to the 27th Oct. The Viceroy's camp will be formed in the first week of February next at Agra or its neighbourhood, and will march thence through Muttra, Delhi, Meerut, Roorkhee, Umballa, and Kalka to Simlah. The country round Nursinghur, in Central India, has been entirely freed from rebels, and all the British forces have consequently been withdrawn. A slight political disturbance has occurred in Rajpootana. Some of the Rajpoots object to the decision of Government in respect to the succession to the throne of Oodeypore, and one chief has raised the standard of rebellion. A small European force has been ordered to take the field against him. Dost Mahomed was still investing Herat. The British authorities had recalled their representative in the Ameer's camp. The expulsion of Colonel Priestley from the United Service Club, and the interference of the Commander-in-Chief, are still the subject of discussion in military circles. The Byculla Club has passed a resolution approving of the expulsion, and the officers of the 42d Highlanders have addressed Sir Hugh Rose on the awkwardness of their position in relation to their colonel, and the commander-in-chief has held a council on the subject, the result of which has not transpired. Liberal subscriptions in aid of the distressed operatives in Lancashire, were being raised in all the provinces; the sum subscribed in Bombay has reached 25,000*l*., that in Calcutta, 9000*l*., and that in Madras, 1500*l*. A strong feeling prevails in Calcutta, that the sum of 80,000*l*. now lying idle in the hands of the Indian Government, as the surplus of the money subscribed in England for the sufferers by the Indian famine, ought at once to be sent back for the relief of the distress in Lancashire.

Australia.—The Great Britain from Melbourne for Liverpool, passed Kinsale on Wednesday evening.

China.—A despatch from Canton of October 14th, states that nothing definite has yet been ascertained respecting the cause or extent of the recently discovered conspiracy in that city. Shanghai was tranquil on the 9th October. An engagement had taken place between the rebels and Colonels Ward's contingent, near Ningpo. Colonel Ward was afterwards killed while attacking Reece (?) city. The rebels have appeared in great force before Ningpo, determined to take the city.

Japan.—Advices from Japan announce the perpetration of a dreadful political murder. A lady and three gentlemen, while riding on the high road, were attacked by a Damio with a retinue of 300 men. Mr. Charles Lennox Richardson, of Shanghai, one of the party, was murdered in cold blood. The rest escaped. The vengeance of the foreign Powers for this act had been averted by the British Minister, whose interference had incurred the indignation of the European residents.

United States.—General M'Clellan has been relieved of the command of the army of the Potomac. General Burnside has been appointed his successor. General M'Clellan has virtually retired from active service. A correspondence between General Halleck and the Secretary of War has been published, in which the former states that he issued, peremptory orders to General M'Clellan on the 6th of October to cross the Potomac and give battle to the enemy, or drive him south. General M'Clellan failed to obey this order, on the ground that he was short of supplies. General Halleck, however, states that General M'Clellan's requisitions were properly supplied, and there was nothing to prevent him from advancing. General M'Clellan's removal has caused considerable excitement in the army, and among the people generally. All the republican journals endorse the President's action. The *New York World*, however, thinks that Jefferson Davis could have no better aid than General M'Clellan's removal. The *New York Herald* thinks that the removal will be received with doubts and apprehensions by the Conservatives. General Burnside has issued an address to the army, in which he says he accepts the command with diffidence, but with confidence in the patriotism of the army. General Halleck has ordered all officers of the Potomac army to join their

regiments within 24 hours, under penalty of dismissal. Previous to his removal General M'Clellan had occupied Ashby's Gap, and had cautiously advanced along the Blue Ridge Mountains, taking possession of the gaps or mountain passes into the Shenandoah Valley as he went, his movements being marked with great interest and curiosity. No Confederates could be seen from the heights commanding the Shenandoah Valley. Another portion of General M'Clellan's army, after a successful skirmish with General Stuart's cavalry, had occupied Barbours, near the mouth of Chester Gap, where General Stonewall Jackson had taken up a position. All the approaches to Manasses on the left of the Blue Ridge are now in possession of the Federals, who also occupy Warrenton. General Lee's army had evaded the Federals to avoid fighting in the Shenandoah Valley, and is supposed to be at Gordonsville; while General Longstreet's forces are at Culpepper to prevent the Federal army from getting between the main body of the Confederate army and Richmond. A snowstorm, unprecedented for its violence within the last 20 years, commenced on the 6th inst. and continued for 24 hours. It extended from Maine to Virginia and Kentucky, and must have impeded the movements of both armies. It is reported from Louisville that the Confederates, under Breckenridge, 28,000 strong, have attacked Nashville, but the report is said to be untrue, the alleged attack having been a mere skirmish. The Democrats have carried the elections for the State of New York by large majorities, Mr. Seymour aving been elected Governor by a majority exceeding 30,000 in New York City, and 10,000 in Brooklyn, and by a majority in the whole State of nearly 10,000 over Mr. Wadsworth, the Republican candidate, while out of the 18 Congress men elected, 15 are Democrats; and of the 20 members of Assembly elected 10 are Democrats. In Massachusetts all the officials elected are Republicans. Of 10 Congressmen elected all but one are Republicans. New Jersey has chosen a Democratic governor by a very large majority. Delaware, Michigan, Kansas, and Missouri have elected Republican representatives. The Democrats have carried the elections in Illinois by a majority of 15,000. In Wisconsin both sides claim a victory. At the Union Democratic Association meeting Mr. John Van Buren announced that he would support the nomination of General M'Clellan as the Democratic candidate for the next Presidency. The proposed nomination was seconded with loud cheers. The draft was ordered to commence in New York and Brooklyn on the 10th inst., but has since been indefinitely postponed. There will be no draft in Boston. It is reported that General Hunter will replace General Mitchell in South Carolina. An expedition, consisting of 12,000 men and several gunboats, which left Newbern for Williamstown, North Carolina, is said by the Southern journals to have been defeated. The *Philadelphia Inquirer* contains a letter, stating that 3000 Confederates had surrendered unconditionally to General Foster's expedition at Plymouth, North Corolina, but no confirmation of this report has been received. The French Government is said to have demanded the liberation, with indemnity, of M. Heidsick, wine merchant and grower, of Rheims, who has been illegally imprisoned for three months in Fort Jackson by authority of General Butler, at New Orleans. The semi-official organs contradict this statement. The foreign relations of the Federal Government are generally believed to be in a delicate, if not unsatisfactory, condition. Rumours of a change in the Administration have been current ever since the election of Mr. Seymour. The depredations of the Confederate steamer Alabama upon American trading vessels continue to excite alarm. Among the vessels seized is one belonging, both ship and cargo, to British owners, who have notified the fact to Mr. Archibald, the British consul at this port. Mr. Archibald has telegraphed to Admiral Milne on the West India station. The owners of the cargo of the bark Laureata, which was burnt by the Alabama, have also protested before the British and Portuguese consuls on the ground that their British and Portuguese nationality was certified by the Consuls' certificates, which were shown to Captain Semmes. The New York Chamber of Commerce has appointed a committee to take measures for capturing the Alabama, and for examining and reporting on the defences of New York harbour. During the discussion on this subject Mr. Prosper Wetmore said that the Liverpool Chamber of Commerce lately held a meeting, at which every encouragement was given to the fitting out of other piratical vessels in England. A letter from Mr. Seward was read, acknowledging the receipt of the resolutions of the Chamber of Commerce concerning the destruction of American vessels by pirates, who, he says, are sent from the shores of a friendly nation, in violation of the restrictions of municipal and international laws. Mr. Seward further says that he has directed the attention of the American Minister in London to this subject, and has communicated the views of the Chamber to all American Ministers and Consuls in maritime countries. A letter from the captain of the Federal steamer Huntsville has been published, stating that the Blanche was burnt by her own crew, when run ashore near Havannah. It is officially announced that Canadian duties on American goods will be calculated according to the depreciation of American paper currency as compared with gold on the date of the invoice of the goods. Several suggestions have been put forward to send from New York voluntary contributions in cargoes of grain for the relief of the distress in Lancashire. The *Richmond Whig* says that the order of the Confederate Secretary of War to enrol conscripts between 18 and 45 years of age, is unpopular, if not odious, among a large class of the Southern people.

NEW ZEALAND.—The following address, signed by 21 of the New Zealand chiefs, has been forwarded by Governor Sir George Grey to the Duke of Newcastle for transmission to her Majesty:—

"Oh Victoria, our Mother!—We greet you! You, who are all that now remains to recall to our recollection Albert, the Prince Consort, who can never again be gazed upon by the people. We, your Maori children, are now sighing in sorrow together with you, even with a sorrow like to yours. All we can now do is to weep together with you. Oh, our good mother, who hast nourished us, your ignorant children of this island, even to this day! We have just heard the crash of the huge-headed forest tree which has untimely fallen, ere it had attained its full growth of greatness. Oh, good lady, pray look with favour on our love. Although we may have been perverse children, we have ever loved you. This is our lament. Great is the pain which preys on me for the loss of my beloved. Ah, you will now lie buried among the other departed Kings! They will leave you with the other departed heroes of the land. With the dead of the tribes of the multitude of 'Ti Mani. Go fearless then, O Pango, my beloved, in the path of death; for no evil slanders can follow you. Oh my very heart! Thou didst shelter me from the sorrows and ills of life. Oh my pet bird, whose sweet voice welcomed my glad guests! Oh my noble pet bird, caught in the forests of Rapaura! Let, then, the body of my beloved be covered with Royal purple robes! Let it be covered with all rare robes! The great Rewa, my beloved, shall himself bind these round thee. And my ear-ring of precious jasper shall be hung in thy ear. For, oh! my most precious jewel, thou art now lost to me. Yes, thou, the pillar that didst support my palace, hast been borne to the skies. Oh, my beloved! you used to stand in the very prow of the war canoe, inciting all others to noble deeds. Yes, in thy lifetime thou wast great. And now thou hast departed to the place where even all the mighty must at last go. Where, oh physicians, was the power of your remedies? What, oh priests, availed your prayers! For I have lost my love; no more can he revisit this world."

Public Addresses.

LORD RAVENSWORTH presided last week at a public dinner at Tynemouth, and spoke as follows on the politics of the day:—

"He regretted that her Majesty's Government had not adopted the policy of the Emperor Napoleon with respect to America, and eulogised the Emperor's honesty of purpose, for which he declared himself ready to vouch. He dissented from Mr. Cobden's views touching belligerent rights at sea, and reverting again to the American war, he said—I think that when it has been admitted by one of the most distinguished members of her Majesty's Government—Mr. Gladstone—that the Southern States have already created for themselves an army, a navy, and a people, I do not think that the time can be very far distant when the existence of such a people shall be recognised. Now, what is the advantage of pursuing our present do-nothing policy? True we may keep ourselves free for a time from the dangers of war; but I must ask you if a worse spirit, a worse animus, can exist towards this country than has been shown and is shown almost daily by the Northern States of America. Why, the outrage upon the Trent has just been topped up, as I may say, by a still greater outrage upon a British barque, a neutral vessel in neutral waters, where she was burnt to the water's edge, within sight of a Spanish fort. I am happy to say that explanations upon this point have been demanded by the Spanish ambassador to the American Government, and that the American Government have disavowed the conduct of their own officers; but I regret to say that, happen what may between us and the Southern States, it is hardly possible that we can stand in worse odour than, to judge by all from which we can draw a judgment, from the language of the Government, the people, and the press—it is hardly possible, I say, to stand in worse odour than we now do with the Northern States; whereas, by a timely exercise of the discretion and moral influence which this country may exert in favour of the seceding States, an immense influence may be obtained with those States, which will redound greatly to the future honour and advantage of this country. Now, I have said the political horizon is not free from clouds in other quarters of the world besides the continent of America. He solemnly warned the King of Prussia not to violate the constitution, and concluded by briefly glancing at the revival of energy of the Turkish Empire.'

SIR JOHN TRELAWNY, M.P., at a meeting of his constituents at Tavistock, last week, spoke as follows on church matters:—

"Ecclesiastical affairs were very singular indeed at the present time. They were aware that he brought in the Church Rate Bill again, and that he had a larger number of supporters than before. He had 286. But the other side put forth their utmost strength, and the consequence was that he was defeated by one vote. But still that was not an inglorious defeat. He thought it was better to fight thus and be defeated than let the session pass without bringing the subject on. He found himself defeated, and a very singular division it was. And, talking of Lord Palmerston, he could not help recollecting standing at the table with 600 or 700 people, watching eagerly to see the result. He noted that Lord Palmerston had got his pencil and a bit of paper, watching with the utmost eagerness to take down the result, although he must have known it would be immediately telegraphed all over the kingdom. Yet such was the interest he had that he must know what the exact numbers were and take them down. He supposed that he took them home to show some person who was interested in the great party struggle. He thought that upon the subject of Church-rates the consciences of Conservatives were not easy or happy. If they looked at the state of the Church, they might depend upon it that Churchmen were not satisfied with it. Extraordinary things were talked of the enemies outside of the Church. Why, the fact was, the Church was pulling itself to pieces. They were tearing each other's eyes out, and yet were complaining that the enemies of the Church were outside, while, in fact, they were to be found in her own body. The 'enemies' outside wished to take away a rock of offence; but it was almost like insanity for the Church people to get such ideas into their heads as they did respecting the 'outside enemies' They saw that Mr. Disraeli stated that the clergy of the Church of England were underpaid, but if he had said that they were unequally paid, he might have been nearer the mark. When they got 5,000,000*l*. a-year, and the Dissenters only a nominal sum, in one or two exceptional cases, such as the Catholic [illegible] Montreal, he thought the Church might be pretty w[illegible] with what it had got, and the best thing was [illegible] about it. An archbishop had recently died w[illegible] have received in his time no less than 700,[illegible] bishop! With regard to the position of the C[illegible] it that the clergy allowed such a bill as the C[illegible] be rejected! When a clergyman happened [illegible] opinions, and to enter into another profess[illegible] could enter was to become a recusant. He [illegible] a barrister. There was scarcely any pr[illegible] to him. He was excluded altogether from [illegible] he knew of getting his living, except as a day [illegible] But there was no profession he fancied open to him except that of a Catholic priest. People asked that he should be put in the situation of the layman, so far as the right of entering upon another profession went. But when Mr. Bouverie brought in an opposition, coming from those who spoke in the name of the Church, and they were found supporting the other side, they were open to all sorts of blame. But when he saw the remark—attributed to, he thought, the Bishop of Winchester—that it was a serious thing that young men did not like to enter the Church because if they happened to change their opinion about the rigid formalities of the Church they would be excluded from getting a living, he thought that it would come to this pass, that in the course of time the Church would contain only hypocrites or blockheads. That was a very unsatisfactory state of things. P[illegible] had any speculative views, say like Bishop Colenso, [illegible] all changed their views, they were liable to certain disadvantages. He saw that the effect of this must be that t[illegible] foreseeing the evil which might occur if they entered the Church, would avoid the Church, for that reason; and [illegible] the Church would be placed in a situation ex[illegible] rationalistic philosopher on the one side, or to a [illegible] want of energy on the other, and between the two [illegible] would be very likely to fall to the ground. He, of c[illegible] cated the abolition of church-rates. He thought the [illegible] enemies of the Church were those who retained those [illegible] in her midst. These injustices and disadvantages to the [illegible] were their greatest enemies, and not those who pr[illegible] abolish church-rates and other abuses. Such was the p[illegible] of Church affairs. He thought, as at present advised, the b[illegible] thing they could do was to remand the question to the constituencies. They had gone on year after year; he had [illegible] on the question six or seven times with ill success, and [illegible] the House of Commons passed it, the House of Lords would not. But this Parliament would not last for ever [illegible] he thought that they must ask the constituencies what [illegible] thought of the course of those who either represented or misrepresented them. He certainly did not think that the plan proposed by Mr. Estcourt, or those who acted with him, would do. He did not think that even Mr. Estcourt now thought that the measure which he proposed in lieu of church-rates last year would do now, even if he could carry it. He [illegible] one measure after another proposed, but he thought all to no purpose. The only true remedy was total abolition."

City Intelligence.

MONEY MARKET, FRIDAY.—BRITISH FUNDS: Consols closed for Money at 93⅝ to ¾; and for Acct. (Dec. 4) 92¼ to ⅛; Reduced and New Three per Cents., 91⅞ to 92⅛; India Five per Cent. Stock, 109¾ to ⅛; Ditto Four per Cent. Debentures, 1863, 100¼.—FOREIGN: Dutch Two and a Half per Cents., 66; Greek, 1[illegible]; Italian, 71¼ to ⅜; New Granada Two per Cents., 2[illegible]; Ditto Land Warrants, 5½ to ¼; Ditto ex over[illegible] Coupons and Hectares, 12¼; Portuguese, 1862, 47 to [illegible]; Russian Three per Cents., 1859, 60¼ to ½, ex div.; D[illegible] Five per Cents., 1862, ¼ dis., ex div.; Ditto pai[illegible] 93⅜, ex div.; Spanish New Deferred, for Acct., [illegible]; Ditto Passive, 22⅞ to 23; Turkish, 1854, for Acct., 83¾; Ditto 1858, for Acct., 70½ to ¼; Ditto 1862, paid-up Scrip, 69¼ to ½; Ditto Guaranteed Four per Cents., 102¾; Venezuela Three per Cents., for Acct., 25 to 2[illegible], ex all; Ditto Six per Cents., 1862, scrip, 1½ dis., ex div.

Bank of England.

ISSUE DEPARTMENT.

Notes issued	£28,908,040	Government Debt	£11,[illegible]
		Other Securities	3,6[illegible]
		Gold Coin and Bullion ..	14,2[illegible]
		Silver Bullion	—
	£28,908,040		£28,[illegible]

BANKING DEPARTMENT.

Proprietors' Capital ..	£14,553,000	Government Securities (including Dead Weight Annuity) ..	£11,[illegible]
Rest	3,098,827	Other Securities	1[illegible]
Public Deposits (including Exchequer, Savings Banks, Commissioners of Nat. Debt, and Dividend Accts.)	7,354,390	Notes	[illegible]
Other Deposits	14,004,015	Gold and Silver Coin ..	[illegible]
Seven days and other bills	767,852		
	£39,778,084		£[illegible]

Nov. 20, 1862. M. MARSHALL, Chief [illegible]

Gazette of the Week.

FRIDAY: Nov. 14.—BANKRUPTS.—T. ADAMS, Stoke upon T[illegible] Earthenware Manufacturer—H. D. ALDER, Cheltenham, Hatter—[illegible] ANTHONY, Milbank Row, Westminster, Artist—W. BIRT, Liverpool, [illegible] Maker—D. BURGESS, Somersham, Huntingdonshire, Chemist—R. B[illegible] Bow Lane, City, Mantle and Skirt Manufacturer—J. BARL[illegible] cum-Twambrooks, Cheshire, Licensed Victualler—B. BARKER, [illegible] Yorkshire, Spirit Merchant—J. BROOK and W. F. CROSLAND, [illegible] Cotton Spinners—W. BOOTH, Blackley, Lancashire, Bricklayer—[illegible] Altrincham, Cheshire, Cotton Factor—G. BOSS[illegible], Upper [illegible] BURN, Altrincham, Cheshire, Cotton Factor—R. BARLOW, [illegible] Road, Old Ford Road, Bow, Master Mariner—R. BARL[illegible] Road, Old Ford Road, Bow, Master Mariner—T. CROWTHER, [illegible] Beerseller—T. CARROLL, Liverpool, Innkeeper—T. CORSBIE, Church [illegible] Street, Shoreditch, Saddler—T. CORSBIE, Church Passage, Commercial Road, [illegible] Licensed Victualler—C. CRAMPHORN, Lucas Place, Commercial [illegible] Cabinet Maker—F. CLARKE, jun., Black Horse Bridge, [illegible] Refiner—J. COOK, Coleman Street, Camberwell, Licensed V[illegible] COTTERELL, Wednesbury, Staffordshire, Cab Proprietor—A. I. [illegible] Liverpool, Teacher of French—G. L. DAWSON, jun., Middleham, [illegible] Trainer of Race Horses—G. DEE, Alverstoke, Hampshire, Market [illegible] —JOSEPH HENRY DARLING, Lion Mews, Newland Street, K[illegible] J. FINTER, Charlton Place, West Ham, Essex, Builder—T. [illegible] Grosvenor Row, Pimlico, Butcher—W. FLETCHER, jun., Dan[illegible] shire, Charter Master—J. FARMER, New Street, Lambeth, Corn C[illegible] T. G. GOODSON, Nelson Street, Bermondsey, Chandler [illegible] W. GARNETT, Bowling Green St., Kennington Oval, Hat Maker—[illegible] GRACE, Barnstaple, Devonshire, Gentleman—P. GENT, C[illegible] Hair Dresser—T. HARTLEY, Pendleton, Lancashire, Iron Roller—J. [illegible] Albert Place, Commercial Road, Peckham, Butcher—P. H[illegible] Bolton, Lancashire, Contractor—B. HORT, Harmood Street, Camden [illegible] Boot Maker—W. HOLMES, Camberwell Lane, Brixton, Grocer—W. [illegible] Tipton, Staffordshire, Butcher—S. H. HODGKINSON, Hulme [illegible] Book Keeper—J. HOLROYD, Hillhouse, Yorkshire, German Yeast M[illegible] —S. HULME, Stoke upon-Trent, Staffordshire, Potter—W. H[illegible] Isels, Pembrokeshire, Blacksmith—A. IRWIN, Liverpool, [illegible] IRVINE, Hampton, Middlesex, Gentleman—M. KENYON, [illegible] Street, Boarding House Keeper—E. KING, St. John's [illegible] Painter—DAVID TOMS KERRIDGE, Framlingham, Suffolk, [illegible] T. LOFTUS, C. THORP, and J. PARKINSON, Knaresborough, Yorkshire, [illegible] Manufacturers—W. LATHAM, Martinhoe, Devonshire, Butcher—E. L[illegible] PORTE, Upper Stamford Street, Lodging Rooms Keeper—J. LAYTON, [illegible]

The Gardeners' Chronicle Newspaper.

SATURDAY, NOVEMBER 22, 1862.

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See "Notices of Books" in *Gardeners' Chronicle*, Sept. 13, 1862.

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News of the Week.

THE *Journal de St. Pétersbourg* of Saturday published Prince GORTSCHAKOFF's reply to the note of M. DROUYN DE LHUYS, from which we learn that the Russian Government, like that of England, declines to enter on the proposed measure, on the ground that if presented in an official character there would be a risk of arriving at a result opposed to pacification. Prince GORTSCHAKOFF promises, however, that if France and England should agree in a combined action, the Russian Government will lend, if not official aid, at least its moral support in favour of their efforts. The *Moniteur* of Sunday says that the replies of the Cabinets of London and St. Petersburg, while rendering full justice to the sentiments of the Imperial Government, are not a refusal, but an adjournment based on the internal position of America, and expresses its belief that the hesitation of the two Cabinets is soon likely to reach its limit, as there exists a strong feeling in favour of peace in the North as well as in the South.

The *Moniteur* also publishes the despatch of M. DROUYN DE LHUYS to the Italian Government in reply to the note of General DURANDO on the Roman question. This despatch dispels the impression that the EMPEROR has any intention of withdrawing from Rome, or of allowing the Italian Government to make it the capital of the new kingdom. It states that the French army will remain at Rome as long as Italy remains unreconciled to the POPE, and that the permanent and traditional interests of France, not less than the actual exigencies of her policy, interdict her from entertaining the claim of Italy to Rome. The Italian Parliament was opened for the session on Tuesday, when the Minister for Foreign Affairs laid upon the table the diplomatic documents relating to the Roman question, and Signor RATTAZZI declared his readiness to give a full explanation of the policy of his Government. The debate commenced on Thursday in the Chamber of Deputies, when Signor BUONCOMPAGNI requested explanations of the home and foreign policy of the Cabinet, expressing his belief that they did not possess the necessary moral authority to govern the country. Signor MORDINI complained of the arrest of himself and two other deputies at Naples, and vehemently attacked the Cabinet on the constitutional question. The debate was adjourned.

Earl RUSSELL on the 24th ult. addressed a despatch to the Danish Government on the affairs of the Duchies, in which he suggested that Holstein and Lauenburg should have all that the German Confederation ask for them; that Schleswig should have the power of self-government, and not be represented in the Rigsraad; that a normal Budget should be agreed upon by Denmark, Holstein, Lauenburg, and Schleswig; and that any extraordinary expenses should be submitted to the Rigsraad, and to the separate Diets of Holstein, Lauenburg, and Schleswig. The Danish Government on Wednesday published a reply to this despatch, stating that "the acceptance of the propositions made by Earl RUSSELL would lead to the destruction of constitutional life in Denmark, and would soon even imperil the existence of the monarchy itself."

From the United States we have the important news that General M'CLELLAN has been removed from the command of the army of the Potomac, on the ground that he did not obey a peremptory order issued by General HALLECK on the 6th October, to cross the Potomac and give battle to the Confederates, or drive them south. Gen. M'CLELLAN failed to obey this order on the ground that he was short of supplies, but General HALLECK asserts that his requisitions were promptly supplied, and that there was nothing to prevent his advance. General BURNSIDE has been appointed to the command of the army, and General M'CLELLAN has virtually retired from active service. Previous to his dismissal he had occupied without opposition Warrenton, Ashby's Gap, and all the approaches to Manassas on the left of the Blue Ridge Mountains; while another portion of his army, after a

successful skirmish with General STUART's cavalry, had occupied Barboun, near the mouth of Chester Gap, where General STONEWALL JACKSON has taken up a position. General LEE's army has evaded the Federals to avoid fighting in the Shenandoah Valley, and is supposed to be at Gordonsville, while General LONGSTREET's force is at Culpepper, to prevent the Federals from getting between the main body of the Confederate army and Richmond. The Democrats have carried the elections in the State of New York by large majorities, Mr. SEYMOUR, their candidate for the Governorship, having been elected by a majority of more than 30,000 in the city, and 10,000 in the State. In New Jersey, Pennsylvania, and Ohio, the Democrats have also carried the elections, while the Republicans have carried Massachusetts, Texas, and Michigan. The foreign relations of the Government are generally believed to be in a delicate, if not unsatisfactory, condition. It is reported that the French Minister at Washington has protested against several acts of General BUTLER towards Frenchmen at New Orleans, and has demanded the release and indemnification for Mr. HEIDSICK, now confined in Fort Jackson. At a meeting of the New York Chamber of Commerce convened to take measures for capturing the Alabama, a letter from Mr. SEWARD was read, stating that "pirates" are sent from the shores of a friendly nation in violation of the restrictions of municipal and international laws, and that he has directed the attention of the American Minister in London to the subject.

Telegraphic despatches from China and Japan announce that the Chinese rebels had advanced in great force on Ningpo, and that an engagement had taken place near the city between them and General WARD, who was afterwards killed in an attack on a neighbouring city. All was quiet at Shanghae on the 7th October. Another dreadful murder had been perpetrated at Japan. While a lady and three gentlemen were riding on the high road, they were attacked by a Daimio, with a retinue of 300 men. Mr. CHARLES LENNOX RICHARDSON was murdered in cold blood, the rest fortunately escaping. The British Minister is said to have interfered to prevent the summary vengeance of the foreign Powers, and for so doing has incurred the indignation of the European residents.

Home News.

THE COURT.—The Queen and Royal family continue at Windsor Castle. On Saturday morning the Queen, accompanied by the Princess Alexandra, Princess Louis of Hesse, and Princess Helena, walked and drove in the Home Park. Prince Louis of Hesse rode on horseback. On Sunday morning the Queen with the Princess Alexandra, Prince and Princess Louis of Hesse, Princess Helena, Princess Louisa, and Prince Leopold, attended Divine service in the Private Chapel. The Dean of Windsor officiated. On Monday the Queen, accompanied by the Princess Alexandra, Prince and Princess Louis of Hesse, and Princess Helena, drove out in a carriage and four. On Tuesday the Prince and Princess Louis of Hesse came to London, and returned to Windsor in the afternoon. Mr. Durham had the honour of submitting to her Majesty his model for the statue of the Prince Consort intended to surmount the memorial of the Exhibition of 1851 now erecting in the Horticultural Gardens at South Kensington. On Wednesday morning the Queen, accompanied by the Princess Louis of Hesse, walked and drove in the grounds. In the afternoon her Majesty, with the Princess Alexandra and Princess Louisa, drove out in a carriage and four. General and Madame d'Oxholm arrived on a visit. Lord Palmerston arrived and after having had an audience of her Majesty, returned to London. On Thursday the Princess Alexandra, Prince and Princess Louis of Hesse, and Princess Helena went to Claremont, and returned in the afternoon. The Judge Advocate-General had an audience of the Queen. General and Madame d'Oxholm returned to London.

THE PRINCE OF WALES is expected to leave Rome this week on his return to England. His Royal Highness will proceed by sea from Civita Vecchia to Marseilles, and is expected to arrive at Windsor Castle about the 25th inst. On Tuesday his Royal Highness and the Crown Prince of Prussia were received by the Pope in private audience.

THE PRINCE AND PRINCESS LOUIS OF HESSE are expected to stay in England for about two months. Prince Louis recently bought the Botanical Gardens at Darmstadt for the purpose of building a grand palace on the site. The palace will be immediately commenced, and finished towards the end of next year.

THE CABINET.—A Cabinet Council was held on Monday at the official residence of the First Lord of the Treasury in Downing Street. Another Council was held on Wednesday, and another on Thursday. At the conclusion of the Council on Wednesday, Lord Palmerston went to Windsor, and had an audience of her Majesty.

PARLIAMENTARY MOVEMENTS.—Mr. George Thompson has retired from the contest for Southampton. The only candidates now in the field are Captain Mangles and the Lord Mayor; the former in the Liberal, the latter in the Conservative interest.

THE ARMY.—The Colonelcy of the 50th Foot, vacant by the death of General Eden, has been conferred on Major-General Slade; the Colonelcy of the 76th Foot, vacant by the death of General Jervois, has been conferred on Major-General Clarke; Major-General Sir Robert J. Hussey Vivian, of the Madras Army, has been appointed Colonel of the 102d Foot; Lieut.-General A. B. Dyce, of the Madras Army, has been appointed Colonel of the 105th Foot; and Major-General Sir George C. Whitlock, of the Madras Army, has been appointed Colonel of the 108th Foot.

Foreign.

FRANCE.—The *Moniteur* of Sunday published the following article on the refusal of England to join in the proposed intervention in America:—

"The *London Gazette* publishes the text of the despatch addressed by Lord Russell to Her Majesty's Ambassador at Paris in reply to the despatch of M. Drouyn de Lhuys on American affairs. The correspondence from St. Petersburg also gives us the substance of the reply of Prince Gortschakoff. The English despatch renders full homage to the sentiments which dictated the step taken by the Emperor's Government. It shows, on the part of the English Government, a lively desire to act in concert with France. While declining at present the co-operation offered to it, it is exclusively occupied with the chances, more or less favourable, which the proposal of the French Government might meet with in the United States. It is not a refusal; it is an adjournment. A similar judgment may be passed upon the Russian despatch. It renders full justice to the idea of conciliation and of humanity which has inspired the Government of the Emperor, and, if necessary, promises the moral support of Russia to any measure attempted at Washington. At St. Petersburg, as at London, it is the internal condition of the United States which postpones any resolution in the sense of the French proposition. In fact, the manner in which an offer of good services may be taken into account in America deserves great consideration; but, if our information is correct, the hesitation of the Cabinets of London and of St. Petersburg has very nearly reached its limit. A feeling in favour of peace prevails in America, in the North as well as in the South, and that feeling gains ground daily. The elections now taking place in the Northern States are a proof of the progress of that feeling, the supporters of which are obtaining great advantage, and will probably have a majority in the next Congress."

The other Paris papers do not treat the decision of the English Government with the same indulgence, but attribute to this country no very creditable motives for declining to interfere in the quarrel. The *Débats* say: "It is impossible to descend lower in the depths of what may be called deliberate Machiavelism, for there is always a little perfidy in Albion," and proceeds to ask whether any one "desires with more ardour, and for such excellent reasons, the final defeat and the irrevocable dismemberment of the United States." *La France* asserts that "the desire of England is the ruin of two maritime States, and on their ruin to raise the prosperity of India;" while another thinks that the English Government "prefers destroying millions by famine to exposing the great merchants who speculate on the scarcity of cotton to lose their money."—The *Moniteur* publishes the text of the despatch of M. Drouyn de Lhuys in answer to General Durando's circular. It describes in detail the policy of France during the 14 years which have elapsed since the Government of the Republic intervened to restore the Pope, and shows its consistency with the policy which the Emperor has since pursued. It frankly avows that great as has been the influence upon the Emperor's policy of his strong sympathies with Italy, the interests of France have been his chief consideration; and it reminds the Italian Government that when the Emperor acknowledged the Kingdom of Italy, he distinctly announced to King Victor Emmanuel, that he should "leave his troops at Rome as long as Italy should remain unreconciled to the Pope, or as long as the States which yet remained in the possession of the Holy Father should be menaced with invasion by any armed force, regular or irregular." Since that time the Emperor has laboured to reconcile the contending interests of the Church and Italy; but has found on the side of the Church a passive but obstinate resistance, and on that of the State an unreflecting impatience. The despatch then proceeds to say:—

"If we have to regret on one side the persistence with which the Court of Rome has refused to seek with us for bases on which to effect an acceptable transaction, important events, which I cannot pass over in silence, have happened on the other side to confirm its resistance, and, by authorising its doubts, place the Government of the Emperor in new difficulties. General Garibaldi, substituting his individual initiative for the regular action of the public powers, organised an expedition notoriously directed against us, and claiming with arms in his hands the possession of Rome, placed under the safeguard of our flag. The Government of the King, I hasten to acknowledge it, with a resolution and energy to which it is only just to do honour, and which demonstrated his loyalty, happily suppressed that attempt. Its conception alone, and the commencement of its execution which followed, revealed, however, in Italy a situation troubled by the fermentation of anarchical passions. At the same time, in a great neighbouring country, tumultuous manifestations were organised, of which the avowed object was to affect the resolutions of the Government of the Emperor. If it appears to me superfluous to recall the fact that the flag of France never retires before any menace, I believe I have no need either to claim for the policy of my country the most entire independence from all exterior pressure. Nevertheless, Sir, [illegible] which I cannot pass over in absolute silence, [illegible] stopped the Government of the Emperor in [illegible] efforts to arrive at the conciliation of the two great [illegible] Italy, which are the objects of his constant [illegible] the official communication which was made [illegible] circular of General Durando, of the 10th [illegible] and the publication which that document [illegible] not, for the moment, destroyed the hope [illegible] to found on the disposition of the Italian [illegible] effect the transaction which we wished to bring [illegible] effect, after having referred to the suppression [illegible] Garibaldi, General Durando appropriates it [illegible] and, asserting the right of Italy over Rome, claims [illegible] of his Government the delivery of that [illegible] possessing of the Holy Father. In presence [illegible] assertion and this peremptory revindication, [illegible] appears to me useless, and all attempts at an [illegible] illusory. I state it with sincere regret, the [illegible] ment, by its absolute declarations, which I have [illegible] to mind, is placed on ground on which the [illegible] traditional interests of France, not less than [illegible] exigencies of her policy, interdict us from following [illegible] justice to the friendly and moderate form of the [illegible] cation which has been made to me in the [illegible] the Minister of Italy, but I in vain search [illegible] elements of a negotiation to which we [illegible] According to our view, this negotiation can [illegible] object to conciliate two interests which recommend [illegible] to our solicitude by different titles, both equally [illegible] for us, and we should not know how to sacrifice the one to the other. The Italian Government knows, besides, that it will always find us disposed to examine with deference and sympathy all the combinations which it may suggest to us, and which would appear of a nature to accomplish the object which wisdom, we would hope, will at last aid us to attain."

The *Moniteur* announces that the Emperor will inaugurate the Boulevard Prince Eugène on the 7th December. Baron Gros has been appointed Ambassador of France to the Court of St. James's, in the room of Count de Flahault, who has resigned on account of ill health and his advanced age. The *Siècle* has received a first warning for having published an article on the number of the members of the Corps Législatif to be increased according to the number of the inhabitants. The motives for the issue of the warnings are, as stated by the *Moniteur*, "that the *Siècle*, by persevering, in despite of official rectifications, in attacks devoid of foundation, is acting in opposition to the constitution and the laws."—The Duke de Grammont Caderousse, who killed Mr. Dillon in the late duel, together with the four seconds, were tried at Versailles on Tuesday, on a charge of manslaughter. The evidence showed that the challenge came from the deceased, and that he appeared determined to bring about a hostile meeting with the Duke de Grammont. It was proved that Mr. Dillon had never handled a sword before, and that M. de Grammont, who had had two duels previously, and had been wounded each time, had only received three lessons in fencing. The jury returned a verdict acquitting all the prisoners.

DENMARK.—The English Ambassador was received on Friday by the King, and officially announced to his Majesty the approaching marriage of the Princess Alexandra to the Prince of Wales. The Government on Friday published the despatches sent to Vienna and Berlin on the 6th inst., in reply to the Austrian and Prussian notes. These despatches, which are accompanied by documentary evidence, energetically reject the Austrian and Prussian demands of the 26th of August with reference to Schleswig and Holstein, and explain what the Danish Government considers to be the real bearing of the conventions of 1851 and 1852. The Danish Government requests that the negociations should be confined to the affairs of Holstein, and renews the offer to grant autonomy to Holstein. The official *Gazette* also publishes a Royal patent, dated Nov. 12, by which the organisation of the local Government of Holstein, already announced in former messages, is officially confirmed. Count Moltke, the chief of the local Government, will enter upon his functions on the 1st of December. The seat of the Government in question will be afterwards determined on. The following is the text of a despatch addressed on the 24th ult. by Lord John Russell to the English Minister at Copenhagen on the subject of the Duchies:—

"It appears, from the accounts received from various quarters, that the correspondence between Austria, Prussia, and Denmark, which it asserted would lead to a settlement of the dispute so long subsisting between Germany and Denmark in regard to the obligations of Denmark in the affairs of Holstein, Lauenburg, Schleswig, and the common constitution of the Danish monarchy, has grown more and more bitter. The longer the lapse of time and the further the negotiation is carried the wider is the space which separates the two parties, and the stronger the language which they use towards each other. [illegible] Upon considering with pain and regret this [illegible] aspect of the affair, and contemplating the unfavourable [illegible] which may be expected from further direct communication between Powers so adverse in their opinions, her Majesty has directed that you should be furnished with instructions [illegible] may, it is hoped, tend to the long desired settlement. In framing these instructions, it is advisable to throw out of the calculation in the first place those matters upon which controversy may be said to be exhausted. The first of these matters relate to the question whether any taxes can be imposed or any laws enacted in Holstein or Lauenburg without the express consent of the representatives of those Duchies. This question has been resolved in the negative by the German Confederation, of which the Duchies of Holstein and Lauenburg are members. Another question which need not be further discussed is the Constitution of 1855. It is clear [illegible] whether a representation according to numbers of the Kingdom as well as the Duchies be a good or a bad Constitution [illegible] not having been accepted by the Duchies, the Constitution of 1855 has no force in Holstein, Lauenburg, or Schleswig. Neither is it necessary to discuss the rights of Denmark [illegible] reference to her Rigsraad. It is quite clear that Denmark [illegible] legislate for herself, and impose taxes to be levied upon her own people without the consent of Holstein, Lauenburg or Schleswig. Two questions of great importance remain. The first regards the duchy of Schleswig, the second the common Constitution

[adjourn]ed for the third time on the 12th inst. It appeared from the evidence that Dr. Fenwick, at whose [surgery] the medicine was obtained, is in large practice [in] Shields and Newcastle. He makes up, according to [one of his] dispensers, 100 bottles of medicine per day in [all, or] according to the other, 70. A large proportion of this medicine is prescribed to persons who [call] at the surgery, and it is made up by his assistants, [and sold] by them over the counter to the patients at [so much the] bottle. The jury, after above an hour's consultation, returned a verdict "That Jane Gillespie had [come] to her death from taking strychnia received at [the] surgery of Dr. Fenwick, but that there was not [sufficient] evidence as to the person who had given it." [They] were also of opinion that Dr. Fenwick's surgery [should] be managed more carefully, to prevent mistakes [in] future.

Ireland.

UNIVERSITY OF DUBLIN.—The Earl of Rosse on the [14th] inst. was unanimously elected Chancellor of the [University] of Dublin, in the room of the late Lord [Primate]. The Lord Justice of Appeal, who had been [proposed], declined to become a candidate in opposition [to] Lord Rosse.

THE O'CONNELL MONUMENT.—Dr. M'Hale's letter [to] the Ultramontane journals, repudiating the erection [of a] statue to Daniel O'Connell on the principles of [civil] and religious liberty," and demanding that it [should] be a Repeal statue, has thrown the O'Connellite [party] into complete confusion. So serious was the [schism] that, at one moment, an entire break-up of the [movement] was probable. The chief organ of the [Ultramo]ntane party, however, "suggests a compromise [by] the erection of the statue to 'O'Connell, the father [of] his country.'" The St. Patrick's Brotherhood, however, decline to accept this proposal, and advise the establishment of an "O'Connell Institute," to receive [and] relieve evicted tenants, and to constitute a continual [pro]test against "landlords' oppression."

Scotland.

THE LORD RECTORSHIP OF GLASGOW.—The election [of] Lord Rector of Glasgow University took place on [Sat]urday, when the Liberals nominated Lord Palmerston, [an]d the Conservatives Lord Glencorse, the Lord Justice-Clerk. The result of the voting was 556 for Lord Palmerston, and 474 for the Lord Justice-Clerk. Lord Palmerston was then declared duly elected by a majority of 82, and has since signified his acceptance of the office.

THE LORD RECTORSHIP OF EDINBURGH.—Mr. Gladstone, the Chancellor of the Exchequer, was on Saturday re-elected Lord Rector of the University of Edinburgh by a large majority.

Railways.

FATAL ACCIDENT ON THE CALEDONIAN.—On Saturday evening, as the mail train from Glasgow to London [was] running down the Beatock incline, between Glasgow and Carlisle, the tire of one of the wheels of the [engine] broke, and while the engine, tender, and break [kept] the rails to the right, some carriages, including the [post-o]ffice, broke the coupling chains, swerved to the [left], and fell over the embankment. Captain Bridie, [the] master of a merchant ship, who was on his way to [a ship] in the London Docks, was killed on the spot, [while] his wife and child, who were by his side, were not [dan]gerously hurt. An American gentleman, called Per[...], received a severe scalp wound, and a young man [named] Morrison, a draper's assistant, who was on his [way] to London to fill a situation, was much shaken, [though] there was no appearance of any external [injury]. Several of the other passengers were more or [less] contused, and the engine-driver and fireman were [so] much injured that they were removed to the infirmary. The engine and carriages were much damaged.

ACCIDENT ON THE NORTH-EASTERN.—On Saturday [evening], as the train from Newcastle to Shields was [standing] at the Felling station taking in and discharging passengers, a goods train which was passing through [the] station on the other pair of rails was suddenly [thrown] off the line by the breaking of the tire of one of [the] trucks. The waggons fell against the carriages of [the] passenger train and broke several of them into [splin]ters, but strange to say, all the passengers escaped [without] injury. It took three hours before one of the [lines] of rails could be cleared for traffic, and, as it was [market]-day at Newcastle, the block up of trains caused [great] confusion and anxiety.

THE LATE EXPLOSION AT PADDINGTON STATION.—[The] inquest on the bodies of the three men who were [killed] by the recent explosion of the locomotive in the [engine] shed of the Great Western was brought to a [close] on Thursday, when the jury returned a verdict of [Accid]ental Death, with a recommendation to railway [compan]ies to make a periodical examination of the [boilers] of their locomotives at intervals not exceeding [three] years.

THE METROPOLITAN.—The requirements of the [Railway] Department of the Board of Trade respecting [the wor]king of the signals, have caused a delay in the [opening] of this line, to the great disappointment of the [share]holders and all persons connected with it. In anticipation of the opening, a number of large three-horse omnibuses have commenced running between the Farringdon Street Station and the Elephant and Castle Station of the London, Chatham, and Dover, at fares of *2d.*, thus affording a direct communication over Blackfriars Bridge, between the railway systems north and south of the Thames.

Obituary.

THE PRINCE OF HAWAII, the godson of Queen Victoria, and the youthful heir of Kamehameha, King of the Sandwich Islands, died on the 27th August. The King his father had recently sent to England for a bishop and a staff of clergymen of the Church of England, for the purpose of propagating the apostolic faith among his people, and in the beginning of this year a bishop of Honolulu was appointed. The first duty of Bishop Staley on his arrival at Honolulu was to baptise into the Anglican faith the heir to the Crown, and to be tutor to the Prince for a few years, after which time he was to send him to England to complete his education at Eton. From accounts received in England it is known that this Prince was the pride and hope of the Hawaiian people, and the highest expectations were formed of him by the friends of the mission. The Bishop had received a large silver vase for the Prince from Queen Victoria, who was to be his godmother; the Prince of Wales being one of the godfathers. The young Prince was taken ill of brain fever on the 19th August, and on the 24th it was deemed expedient not to delay the performance of the ceremony of baptism. In the absence of a clergyman, a Dissenting minister, Mr. E. W. Clarke, performed the rite, using strictly the Church's baptismal service. Mr. Commissioner Synge and Mrs. Synge represented the Queen and Prince of Wales, and the other sponsor was Prince Kamehameha; the names given being "Albert Edward Kanikeanli Leiopupa a Kamehameha." On the following Wednesday, the 27th, the prince died. Minute guns were fired, flags were displayed half mast high by the shipping, public business in the town was suspended, and the streets were quite deserted. The next day the prince was laid in state, and from 9 A.M. till noon a throng of people passed through the reception room. On small tables stood vases filled with most beautiful flowers, and at the head stood the gift of Queen Victoria. On Sunday, Sept 7, the funeral took place, the service being read by the Rev. S. C. Damon, chaplain of H M.S. Termagant, assisted by Mr. Clarke, and in the evening the coffin was deposited in a tomb built in the palace grounds.

GENERAL MORTON EDEN, Colonel of the 5th Regiment, died rather suddenly, at Berne, on the 11th inst.

THE REV. CHANCELLOR BIRD, M.A., F.L S., Chancellor and Canon of Lincoln Cathedral, died at the Chancery in that city a few days since, after an illness of three days, in his 68th year. He graduated at Cambridge as third wrangler and second chancellor's medallist in 1820, and was elected fellow of Trinity. He early engaged in parochial work, and after being successively for many years curate at Sulhamstead and Burghfeld, near Reading, was presented by the late Bishop Kaye to the vicarage of Gainsborough in 1843, and subsequently to a canonry of the cathedral. In 1859 Bishop Jackson gave him the chancellorship of the cathedral, upon which he resigned his living.

MR. WHATELEY, Q.C., died on the 15th inst at 6, Park Street, Westminster, in his 68th year. He was called to the bar by the Inner Temple in 1820, and went the Oxford Circuit. He was made a Queen's Counsel in 1841, and was one of the leaders of his circuit for many years, occasionally acting as deputy judge of the Middlesex sessions. In July 1847 he contested South Shields in the Conservative interest with Mr. J. T. Wawn, but without success. In private life he rendered great services to the Church, though he never took any active part in Church controversies, and was an active promoter of the Church-building, Curates Aid, and other societies, to some of which he was treasurer. He married in 1834, the widow of the Rev. Lord George Henry Spencer (uncle of the Duke of Marlborough and of Lord Alfred Churchill, M.P.) and daughter of the Rev. Dr. Nares, son of Mr. Justice Nares.

BIRTHS.—On the 19th inst, at 33, Belgrave Square, the Countess of STRADBROKE, of a son and heir—At Castle Forbes, the Countess of GRANARD, of a daughter, who only survived a few hours—14th inst, at the Prussian Embassy, the wife of Count BERNSTORFF, of a son—14th inst, at Cumberland Lodge, the Lady MARY HOOD, of a son—17th inst, at Laverstoke House, Hants the Lady CHARLOTTE PORTAL, of a daughter—15th inst, at Glenstal, Limerick, Lady BARRINGTON, wife of Sir William H. Barrington, Bart., of a daughter—19th inst, in Eaton Place South, the Hon. Mrs. CHARLES SPRING RICE of a daughter.

MARRIAGES.—On the 18th inst, at St. George's, Hanover Square, Lieut-Colonel the Hon EDWARD GAGE, second son of Viscount Gage, to ELLA HENRIETTA, daughter of JAMES MAXSE, Esq., and Lady Caroline Maxse—18th inst, at St George's, Hanover Square, KENNEDY ERSKINE, Esq, of Dun, only son of Lady Augustus Gordon Hallyburton, and grandson of the late Marquis of Ailsa, to CATHERINE, only surviving child of the late Mr. JONES, of Henllys, Carmarthenshire—11th inst, at the British Embassy, Frankfort-on-the-Maine, Captain Ross, Gentleman Usher to Her Majesty, to MARY, daughter of the late EDWARD SWINBURNE, Esq., of Calgarth, Windermere, and sister of Sir John Swinburne, Bart., of Capheaton, Northumberland—15th inst, at Harrington Church, Northamptonshire, Colonel THOMAS EDWARD TAYLOR, M P., of Ardgillan Castle, county Dublin, eldest son of the late Hon. and Rev. Edward Taylor, to LOUISA HARRINGTON, second daughter of the Hon. and Rev. HUGH FRANCIS TOLLEMACHE, rector of Harrington—18th inst, at the parish church of Delgany, county Wicklow, Commander EDWIN J. POLLARD, R.N., to RENIRA, youngest and only surviving daughter of Sir ST. VINCENT HAWKINS WHITSHED, Bart, and the Hon Lady Hawkins Whitshed—18th inst, at St. James's, Piccadilly, Sir WILLIAM FORBES, of Craigievar, in the county of Aberdeen, Bart., to FRANCES EMILY, youngest daughter of the late Sir ROBERT ABERCROMBY, of Birkenbog and Forglen, in the county of Banff, Bart—12th inst, at St. Michael's Church, Chester Square, EDWARD LONG JACOB, B.A., eldest son of the Rev. G. A. Jacob, D.D., Head Master of Christ's Hospital, to JANE GORDON, eldest daughter of the Rev. G. F. MORTIMER, D.D., Head Master of the City of London School.

DEATHS.—In September, at Maryborough, in Queensland, the Hon. ROBERT S. B FORBES, fourth son of the Right Hon. Lord Forbes, aged 28—10th inst, at 11, Belmont Street, Aberdeen, SOPHIA, eldest surviving daughter of the late Sir ARCHIBALD GRANT, of Monymusk, Bart.—15th inst, at Meriden Hall, near Coventry, LOUISA, daughter of the late Admiral Sir HERBERT SAWYER, K.C B., of Old Dalby Hall, near Melton Mowbray—1st ult, at Alleppey, Madras, on his way to the Neilgherries after a few days' illness, Lieut.-General WILLIAM CULLEN, Madras Artillery, late Resident at Travancore—At her residence, 17, Sussex Square, W., SOPHIA, the wife of Admiral BERTIE CATOR, aged 75—13th inst, at 34, Albany Street, Regent's Park, Colonel THOMAS DOBBIN, late of the 3d Dragoon Guards, aged 74—11th inst, at Comragh, county Waterford, WRAY PALLISER, Esq., of Comragh, Lieutenant-Colonel of the Waterford Artillery, aged 74—15th ult, at sea, on board the R.M.S. Seine, on his voyage to Antigua, BERTIE ENTWISTLE JARVIS, Esq., Senior Member of her Majesty's Council of that island, aged 69—14th inst, at 50, Grosvenor Place, SAMSON RICARDO, Esq., aged 69—14th inst, EDWARD WRIGHT, Esq., of Mapperley Hall, near Nottingham, aged 25—14th inst, at Blackheath, JAMES WOOD POLAND, Esq., M.R.C.S., third son of Sir W. H. Poland, aged 38—13th inst, at Chastleton, Oxon, the Rev HORATIO WESTMACOTT, rector of Chastleton, and third son of the late Sir Richard Westmacott—15th inst, at the Rectory, W[...], Gloucestershire, the Rev WILLIAM BIRKETT ALLEN, D.C.L., Hon. Canon of Bristol Cathedral, and late Fellow of St. John's College, Oxford—15th inst, at Hampreston, Dorset, the Rev. CHARLES BRODIE COOPER, rector of that parish, aged 47.

Markets.

COVENT GARDEN, Nov. 22.

Notwithstanding the cold weather we are now experiencing, vegetables and other produce in season still continue plentiful. Importations of foreign fruit are also well kept up; Grapes and Pine Apples are plentiful. Pears consist of Marie Louise, Winter Nelis, Beurré Diel, Glout Morceau, and Chaumontel. New Oranges have arrived from Gibraltar and Madeira, and some good samples of St. Michael's have also just made their appearance at from 35s to 37s 6d. per box. Cucumbers are sufficient for the demand. Cut flowers chiefly consist of Orchids, Pelargoniums, Violets, Mignonette, and Roses.

FRUIT.

Pine Apples, per lb., 5s to 7s	Apples, per doz., 9d to 1s 6d
Grapes, per lb., 2s to 5s	— per ½ sieve, 4s to 6s
Melons, each, 1s to 4s	Lemons, per 100, 6s to 16s
Pears, per doz., 1s to 6s	Walnuts, per 100, 1s to 2s
— per ½ sieve, 6s to 12s	Kent Cobs, p 100lbs, 120s to 125s

VEGETABLES.

Cabbages, p doz., 1s3d to 1s6d	Beet, per doz., 1s 6d
Potatoes, York Regents, p. ton, 120s to 140s	Celery, p. bundle, 1s 6d to 2s
„ Flukes, do., 120s to 140s	Shalots, per lb., 6d to 8d
„ Rocks, do., 80s to 100s	Garlic, per lb., 6d to 8d
„ Cups, do., 80s. to 90s	Lettuces, each, 1d
„ new, per lb., 2d	Endive, per score, 1s
Turnips, p. bunch, 3d to 4d	Horse Radish, p. bun., 1s 6d to 4s
Carrots, do., 5d to 6d	Vegetable Marrows, each, 2d
Spinach, p. sieve, 6d to 1s	Mushrooms, p. pottle, 2s 6d to 3s
Cucumbers, each, 3d to 6d	Parsley, p 12 bunches, 3s to 4s
Artichokes, each, 4d to 6d	Herbs, per bunch 2d to 4d

NEWGATE.—Nov. 21.

Best Fresh Butter	.. ..	15s per dozen lbs.
Second do. do.	.. ..	12s. „ „

Pork, *3s. 4d.* to *4s. 4d.* per 8 lbs.

BRITISH WOOLS.—LONDON, Nov 21.

We have no alteration to report on in our trade during the past week. Both supply and demand are limited—supply by the very small quantity of wool in hand, and demand by the season of the year.

	s. d.		s. d.		s. d.		s. d.
South-down Hogges	1 8	to	..	Leicest. Wethers	1 7	to	..
Half-bred ditto ..	1 9	—	..	Ditto Hoggs ..	1 8	—	1 8½
Down Ewes ..	1 7	—	1 7½	Combing Skins	1 2	—	1 3
Kent Fleeces ..	1 8½	—	.	Flannel Wool ..	1 3	—	1 4
				Blanket ditto ..	0 7	—	0 8

COLONIAL WOOL SALES.—These sales commenced on Friday, the 14th, instead of the Thursday before, and are proceeding with spirit at an advance of 1d. to 1½d. on the preceding series. Cape Wool, of which there is so large a proportion, realises fully 1½d., as do all first-class descriptions, but inferior and bad managed clips sell at very little advance over previous rates, as consumers both for the home and Continental markets become more and more disinclined to purchase bad got up and faulty parcels. The attendance of buyers is good, and the Continent is well represented, both in numbers and purchasers.

COAL MARKET.—Nov. 19.

Byass's Bebside West Hartley, 16s. 6d.; Wylam, 17s.; Davison's West Hartley, 16s. 6d.; North Pelton Gas, 15s.; Walls End Hedley, 18s. 6d.; Walls End Kelloe, 19s. 3d.; Walls End Heugh Hall, 18s. 6d.; Eden Main, 18s. 6d.; Walls End Braddyll's Hetton, 19s. 9d.; Walls End Hetton, 19s. 9d.; Walls End Stewarts, 19s. 3d.; Walls End Tunstall, 18s. 6d.; Walls End South Hartlepool, 19s.; Walls End Thorpe, 17s. 9d.; Walls End Hartlepool, 19s. 6d.; Walls End South Hetton, 19s. 9d.; Walls End Trimdon Hartlepool, 18s. 6d.; Carway and Duffryn Anthracite, 21s. 6d.; Carway and Duffryn Malting, 23s. 6d.—123 ships at market.

POTATOES, SOUTHWARK, Monday, Nov. 17.

During the past week the arrivals both coastwise and by rail have been moderate, and the demand has improved for best sorts. The following are this day's quotations:—Yorkshire Flukes, per ton, 120s. to 140s.; do. Regents, 90s. to 110s.; do. Rocks, 90s. to 95s.; Kent and Essex Regents, 100s to 120s.; Perth, Forfar, and Fife do., 95s. to 100s.; French Whites, 65s. to 75s.; Belgian do, 65s. to 70s.

METROPOLITAN CATTLE MARKET.

MONDAY, Nov. 17.

The number of Beasts is rather larger than on Monday last. The favourable weather causes a cheerful trade, and last week's quotations are well supported. Good Sheep are scarce and are readily disposed of, but trade is slow for inferior qualities. Prices on the average are about the same as on Monday last. There is no alteration in the Calf trade. From Germany and Holland there are 1918 Beasts, 5280 Sheep, and 160 Calves; from Spain, 100 Beasts; from Ireland, 930; and 2980 Beasts from the Northern and Midland Counties.

	s d		s d		s d		s d
Best Scots, Herefords, &c. ..	4 8	to	5 0	Best Long-wools	5 2	to	5 4
Best Short-horns	4 6	—	4 10	Do. Shorn	.. ..	—	..
2d quality Beasts	3 4	—	4 0	Ewes & 2d quality	4 6	—	4 8
Best Downs and Half-breds ..	5 6	to	5 8	Do. Shorn	.. ..	—	..
Do. Shorn ..		to	..	Lambs ..	.. ..	—	..
				Calves ..	4 0	—	5 0
				Pigs ..	3 8	—	4 8

Beasts, 6160; Sheep & Lambs, 19,550; Calves, 181; Pigs, 410.

THURSDAY, Nov. 20.

The number [of B]easts is rather smaller than on Thursday last, but the demand has also decreased; consequently it is difficult to maintain Monday's quotations. There are but few Sheep on offer; but, as is usual at this season of the year, there is a very slack attendance of buyers. Prices on the average are not quite so good as on Monday, but there is scarcely a quotable difference. Calves are lower. Our foreign supply consists of 190 Beasts, 740 Sheep, and 222 Calves. The number of Milch Cows is 85.

	s d		s d		s d		s d
Best Scots, Herefords, &c.	4 8	to	4 10	Best Long-wools.	5 0	—	5 4
Best Short-horns	4 6	—	4 8	Do. Shorn	.. ..	—	..
2d quality Beasts	3 4	—	3 10	Ewes & 2d quality	4 4	—	4 8
Best Downs and Half breds ..	5 6	—	5 8	Do. Shorn	.. ..	to	..
Do. Shorn	..	—	..	Lambs ..	.. ..	—	.
				Calves ..	3 8	—	4 8
				Pigs ..	3 8	—	4 8

Beasts, 1105; Sheep & Lambs, 3130; Calves, 290; Pigs, 130.

HAY.—Per Load of 36 Trusses.

SMITHFIELD, THURSDAY, Nov. 20.

Prime Meadow Hay	70s to	75s	Clover, old	90s to	110s
Superior do. ..	80	85	New Clover	—	—
Inferior do. ..	40	60	Do. second cut ..	80	100
New do.	—	—	Straw	32	36
Rowen	36	60			

HARVEY & EASTON.

WHITECHAPEL, THURSDAY, Nov. 20

Fine Meadow Hay	80s to	84s	Prime Clover ..	105s to	115s
Inferior do.	60	75	Inferior do.	90	100
Prime New Hay ..	—	—	Prime 2d cut ..	90	100
Inferior	—	—	Inferior do.	—	—
Straw	33	36	New 2d cut ..	—	—

HOPS.—BOROUGH MARKET, FRIDAY, Nov. 21.

Messrs. Pattenden and Smith report that fine and well-managed samples are scarce, and command fully late prices, low and inferior descriptions move off slowly.

MARK LANE.—MONDAY, Nov. 17.

The supply of Wheat from Essex and Kent to this morning's market was small, and met a slow sale at a decline of 2s. per qr. upon the prices of this day se'unight. Owing to the large arrival of foreign, millers held off from purchasing, and on the few sales effected a reduction of 1s. to 2s. per qr was submitted to. Barley was 1s. to 2s. per qr. cheaper. White Peas bring an advance of 1s. to 2s. per qr., Grey and Beans were unaltered in value. In Oats there has been a fair amount of business transacted at a decline of 1s. per qr. upon fine qualities, and 2s. per qr. upon inferior and out-of-conditioned parcels. Flour is very dull sale, and rather lower.

PER IMPERIAL QUARTER.	s. s.		s. s.
WHEAT, Essex, Kent, & Suffolk..White	43—56	Red	44—50
— — fine selected runs..ditto	18—60	Red	45—54
— — Talavera	48—62		
— Norfolk	—	Red	—
— Foreign	34—67		
BARLEY, grind. & dist., 23s to 30s..Chev.	35—38	Malting .	32—34
— Foreign..grinding and distilling	25—30	Malting .	32—35
OATS, Essex and Suffolk	21—24		
— Scotch and Lincolnshire—Potato	22—26	Feed ..	22—23
— Irish ....Potato	—	Feed ..	—
— Foreign........Poland and Brew	20—25	Feed ..	17—23
RYE	35—37	Foreign .	—
RYE-MEAL, foreign............	—		
BEANS, Mazagan....30s to 31s....Tick	31—32	Harrow .	31—32
— Pigeon ......34s —38s..Winds.	—	Longpod	—
— Foreign ....Small	40—46	Egyptian	32—34
PEAS, white, Essex and Kent..Boilers	39—41	Suffolk .	40—44
— Maple ....42s to 43s ...... Grey	36—37	Foreign .	30—40
MAIZE............White	—	Yellow ..	—
FLOUR, best marks delivered..per sack	46—51		
— 2d do ....ditto	40—46	Country	40—46
— Foreign ....per barrel	23—48	Per sack	34—40

FRIDAY, Nov. 21.

From the 16th to the 18th the weather was fine and frosty, with N.W. wind; it has since been N.E., with a thick damp atmosphere, and slight frost. During the above interval the importations of foreign Wheat have continued excessive, and a further decline of 1s. to 2s. per qr. has been general throughout the kingdom. Warehouses at the chief ports are becoming full, but the reduction in prices is bringing forward a few buyers on speculation. Barley, particularly malting descriptions, and Oats, have declined in value 1s. per qr. Beans and Peas are also purchaseable on easier terms. Flour meets a slow sale at declining prices. Since Friday last 31 vessels have been reported off the coast. The floating trade has remained quiet; Wheat declined about 1s. per qr.; other descriptions of grain remain unaltered In Paris (Nov. 20), the market has been dull. Flour remained unaltered in value, Wheat declined about 9d. per 480 lbs. The six marks for delivery this month are quoted equal to 39s. per 480 lbs. The present stock of Flour is estimated at 6850 cwt. The arrivals of English grain and foreign Flour this week have been moderate, of foreign Wheat and Oats considerable, and good of Barley. The attendance at this morning's market was very small, and but little business was transacted either in English or foreign Wheat, partly owing to the impossibility of obtaining men and lighters for working it; prices may be considered the same as on Monday. Spring Corn of all descriptions was dull. Barley and Oats were rather cheaper.

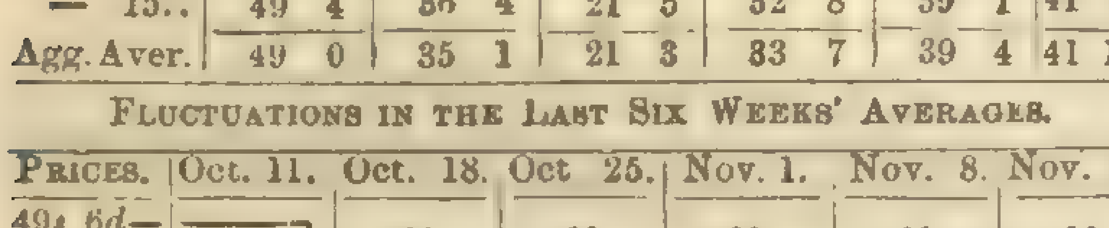
ARRIVALS FROM Nov. 17 to Nov. 21.

	Wheat.	Barley.	Oats.	Flour.
English ..	2320 qrs.	1870 qrs.	1340 qrs.	1850 sks.
Irish	—	170	2900 „	— „
Foreign ..	51,710 „	4780 „	50,230 „	1760 „ 6700 brls

LIVERPOOL, Tuesday, Nov. 18.—At our market to-day there was a good attendance, and an extensive business done in Wheat, at a decline of 1d. per cental on the week. Oats, Barley, Beans, and Peas all at last prices. Indian Corn in good request at last Friday's prices. Now Oatmeal, 6d. per load easier.

AVERAGES	Wheat.	Barley.	Oats.	Rye.	Beans.	Peas.
Oct. 11..	49s 6d	34s 8d	21s 5d	33s 4d	39s 5d	42s 3d
— 18..	48 11	34 5	21 7	34 8	39 1	42 5
— 25..	48 4	34 5	21 3	34 5	39 5	41 7
Nov. 1..	48 7	35 1	20 10	31 6	39 7	42 3
— 8..	49 2	35 9	21 1	34 9	40 0	41 4
— 15..	49 4	36 4	21 5	32 8	39 1	41 9
Agg. Aver.	49 0	35 1	21 3	33 7	39 4	41 11

FLUCTUATIONS IN THE LAST SIX WEEKS' AVERAGES.



PUPIL.—The Agent to a Nobleman in a Southern County, with whom may be acquired a practical knowledge of Estate Work, has a VACANCY for a PUPIL. Unexceptionable references required.—K., Romsey, Hants.

SEA.—WANTED, MIDSHIPMEN and APPRENTICES for first-class Ships proceeding to India, the Colonies, and elsewhere. Premiums moderate. THIRD OFFICERS wanted.—Apply to WALKER & Co., 93, Great Tower Street, City.

WANTED, a YOUNG MAN used to the Counter; one just completed his apprenticeship preferred.—Apply, stating age and references, to R. P. KER, 4, Basnett Street, Liverpool.

WANT PLACES.—Letters to be Post Paid.

GARDENER (HEAD).—A Young Man is now at liberty; has a thorough knowledge of his profession in all its branches. Unexceptionable references.—J. W. BEETON, Market Hill, Chatteris, Cambs.

GARDENER (HEAD), to any lady or gentleman requiring the services of a thoroughly practical and energetic Gardener. Can be highly recommended by present and previous employers. No single-handed place accepted.—F. H., The Gardens, Tring Park, Herts.

GARDENER (HEAD).—Age 30, married; thoroughly understands the Forcing of Pines, Grapes, Peaches, Flowers, and Vegetables; Stove and Greenhouse Plants; also the Management of Kitchen and Flower Gardens. Good character.—C.B.T., Blenheim Palace Gardens, Woodstock, Oxon

GARDENER (HEAD).—SAMUEL AMBLER, age 28 Gardener to R. Hutton, Esq., Putney Park, S.W., is open to an engagement with any gentleman requiring the services of a thorough practical man. The Advertiser has permission to use his employer's name, and he also kindly consents to answer inquiries.

GARDENER (HEAD).—Age 33, married, no incumbrance; understands the Management of Vines Cucumbers, Melons, Stove and Greenhouse Plants, Early and Late Forcing of Fruits, Vegetables, and Flowers, Flower, Fruit and Kitchen Gardens, Cows or Land. Wife could take charge of Dairy or Poultry if required. Six and eight years characters. —A. B., 3, Draycott Place, Chelsea, S.W.

GARDENER (HEAD, or GOOD SINGLE).—Married, no incumbrance; perfectly understands the Early Forcing of Grapes, Peaches, &c., Stove and Greenhouse Plants. No objection to a Lodge, or Wife could manage a Dairy. Three years' good character.—W. B., Hawkley Place, Petersfield, Hants.

GARDENER (HEAD, WORKING).—Single, age 24; has had 12 years' experience in all branches. Can have a good character from his last employer.—A. OSBORNE, 15, Westgate Road, Bury St. Edmund's, Suffolk.

GARDENER.—A gentleman is desirous of recommending a Gardener (age about 36), married, with incumbrance; trustworthy, and clever in Flowers and Hothouses, as well as Vegetables.—Address, 14, Norfolk Terrace, Bayswater.

GARDENER.—Age 33, married, no incumbrance; understands Flower, Fruit, and Kitchen Gardens, Forcing, &c.; also the Management of Land and Stock. Wife to take charge of Poultry or Dairy. Upwards of three years' good character.—S. O., Hatton House, Hounslow, W.

GARDENER (SECOND or good SINGLE-HANDED).—Age 30, single; understands Flower, Fruit, and Kitchen Gardens; also Early and Late Forcing, Greenhouse Plants, &c. Character unexceptionable.—A. B., Woollards, Coal Merchant, Lewisham, Kent, S.E.

GARDENER (UNDER).—Age 22, single; wishes for an engagement in any nobleman's or gentleman's Garden. Seven years' good character from a London Nursery.—W. H., 9, South End, Kensington, London, W.

GARDENER (UNDER), to any nobleman's or gentleman's Gardener, where he could improve himself in Vine, Pine, and Plant Growing, &c. Will give a Premium. —R. W., Mrs. Letts, Shewell Grange, Rugby.

GARDENER (UNDER), or IMPROVER, in a nobleman's or gentleman's garden.—Age 20; has been at M. Webb's, Esq., Trowbridge, seven years, and has now left. Wishes to get in a good place for further improvement. Willing to pay a premium. Can be well recommended.—J. HUNT, British Row, Trowbridge, Wilts.

GARDENER and STEWARD.—ARTHUR HENDERSON, of Pine Apple Nursery, Edgware Road, W., wishes to recommend a first-rate Gardener, aged 41. He is a good Grower of Hothouse and Greenhouse Plants, Grapes, and other Choice Fruits; a good Kitchen Gardener, has had considerable experience in Improving and Laying out Pleasure Grounds, the Erecting and Heating of Hothouses; is a good Forester, &c. Nine years' good character. A. H. will be happy to answer any inquiries; direct reference may be made to him.—A. Z., as above.

GARDENER, or GARDENER and FARMER.—Age 42, married; will shortly be disengaged; has a thorough knowledge of his profession, including Forcing of the choicest Fruit, Flowers, and Vegetables. He has also a good knowledge of Agriculture and Stock, and is well acquainted with the Management of Manures on a new and improved principle. Highest testimonials.—DICKSON & BROWN, Seed Merchants, Corporation Street, Manchester.

LAND STEWARD or BAILIFF.—Age 45; practically acquainted with all the details of modern Agricultural improvements on Arable and Pasture Land, Irrigation, Drainage, Steam Cultivation, &c. Has been farming for 25 years under two landlords, both of whom can be referred to. —B., Mr. Reed, 5, Great Portland Street, London, W.

FARM BAILIFF.—Understands the Breeding and Rearing of first-class Short-horned Cattle, Down and Leicester Sheep, the Management of Light and Strong Land. Wife a good Dairy Woman.—Eight years' character from gentlemen and farmers in Yorkshire.—A. B., Mr. Humbert, Land Agent, Watford, Herts.

To the Seed Trade.

ASSISTANT (SECOND).—Age 20, in a Shop and Office. Two years' experience. Satisfactory references. —A. B., Post Office, Lifton, Devon.

TRAVELLER.—C. W., who has represented Mr. W. BULL over the United Kingdom during the past two seasons, and who consequently is conversant with all classes of buyers, begs to offer his services to the Trade, as his engagement will shortly terminate.—C. W., *Gardeners' Chronicle* Office, W.C.

Seed Trade.

SHOPMAN.—Age 27; 11 years' experience with Agricultural, Vegetable and Flower Seeds. First-class references.—A. B. C., R. Pain, Seedsman & Florist, Uxbridge.

METCALFE, BINGLEY, AND CO.'S NEW PATTERN TOOTH BRUSHES, Penetrating Unbleached Hair Brushes. Improved Flesh Brushes, genuine Smyrna Sponges, and every description of Brush and Comb and Perfumery for the Toilet. METCALFE'S celebrated Alkaline Tooth Powder, 2s. per box. The FAIRY BOUQUET; the OXFORD and CAMBRIDGE BOUQUET. In bottles, 2s., 3s. 6d., and 5s. each. 130 B, and 131, Oxford Street, W.

DINNEFORD'S PURE FLUID MAGNESIA has been during 25 years emphatically sanctioned by the medical profession, and universally accepted by the public, as the best remedy for acidity of the stomach, heartburn, headache, gout, and indigestion, and as a mild aperient for delicate constitutions, more especially for ladies and children.—It is prepared in a state of perfect purity and uniform strength only by DINNEFORD & Co., 172, New Bond Street, London, and sold by all respectable Chemists throughout the world.

LARGE MARQUEES for SALE, suitable for Horticultural Societies, &c.—Sizes: 140 by 40, 70l.; 120 by 40, 60l.; 100 by 40, 50l.; 80 by 40, 40l.; also 44 by 24, [illegible] 40 by 20, 18l.; 28 by 16, 8l.; and a number of small Tents, [illegible] complete for use.

R. RICHARDSON, 99, Euston Road, London, N.W.

SAUSAGE and MINCING MACHINE.—The Guinea one of BURGESS & KEY'S is the best; it is simple, easily cleaned, and quicker in operation than any other.

BURGESS & KEY, Makers, 95, Newgate Street, E.C.

Illustrated particulars free on application.

CHUBB & SON.—"For Perfection of Workmanship and Construction of Locks, also for the Manufacture of Iron Safes," Prize Medal awarded at International Exhibition.

CHUBB'S PATENT SAFES, the most secure against Fire and Thieves.

CHUBB'S FIRE PROOF STRONG ROOM DOORS; CHUBB'S PATENT DETECTOR LOCKS and STREET DOOR LATCHES; CHUBB'S CASH and DEED BOXES.

Illustrated Price List gratis and post free.

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PRIZE MEDAL to THRESHER AND GLENNY for very fine and superior FLANNEL SHIRTS, India Tweed Suits, and India Gauze Waistcoats. Lists of Prices on application to THRESHER & GLENNY, General Outfitters, next door to Somerset House, Strand, W.C.

Prize Medal 1862

AWARDED BY THE JURORS OF CLASS II. FOR THE

GLENFIELD STARCH, being a confirmation by some of the most eminent scientific men of the age, of the superior qualities of this world-renowned Starch. Sold in Packets at ½d., 1d., 2d., 4d., and 8d. each, by all respectable Grocers, Chandlers, Oilmen, &c.

WOTHERSPOON & Co., Glasgow and London.

HEAL AND SON'S EIDER DOWN QUILTS, from 24s. to Ten Guineas. Also GOOSE DOWN QUILTS from 10s. to 32s. Lists of prices and sizes sent free by post.

HEAL & SON'S Illustrated Catalogue of Bedsteads and Priced List of Bedding also sent post free on application to 196, Tottenham Court Road, W.

BEDSTEADS, BATHS, and LAMPS.—WILLIAM S. BURTON has SIX LARGE SHOW-ROOMS devoted exclusively to the SEPARATE DISPLAY of LAMPS, BATHS, and METALLIC BEDSTEADS. The stock of each is at once the largest, newest, and most varied ever submitted to the public, and marked at prices proportionate with those that have tended to make his establishment the most distinguished in this country.

Bedsteads, from ..	.. 12s. 6d. to £20 0 0	each.
Shower Baths, from ..	.. 8 0 — 6 0 0	each.
Lamps (Moderateur) from	.. 6 0 — 8 10 0	each.

(All other kinds at the same rate.)

Pure Colza Oil .. .. 4s. 9d. per gallon.

FENDERS, STOVES, FIRE-IRONS, and CHIMNEY PIECES.—Buyers of the above are requested, before finally deciding, to visit WILLIAM S. BURTON'S SHOW-ROOMS. They contain such an assortment of FENDERS, STOVES, RANGES, CHIMNEY-PIECES, FIRE-IRONS, and GENERAL IRONMONGERY as cannot be approached elsewhere, either for variety, novelty, beauty of design, or exquisiteness of workmanship. Bright Stoves, with ormolu ornaments, 3l. 15s. to 33l. 10s.; Bronzed Fenders, with standards, 7s. to 5l. 12s.; Steel Fenders, 3l. 3s. to 11l.; ditto, with rich ormolu ornaments, from 3l. 3s. to 18l.; Chimney-pieces, from 1l. 8s. to 100l.; Fire Irons, from 2s. 3d. the set to 4l. 4s. The BURTON and all other PATENT STOVES, with radiating hearth-plates.

GASELIERS in GLASS or METAL.—The increased and increasing use of Gas in private houses has induced WILLIAM S. BURTON to collect from the various manufacturers in metal and glass all that is new and choice in Brackets, Pendants, and Chandeliers, adapted to Offices, Passages, and Dwelling-rooms, as well as to have some designed expressly for him; these are ON SHOW over his TWENTY LARGE ROOMS, and present, for novelty, variety, and purity of taste, an unequalled assortment. They are marked in plain figures at prices proportionate with those which have tended to make his Establishment the largest and most remarkable in the kingdom, viz., from 12s. 6d. (2 lights) to 16l. 16s.

WILLIAM S. BURTON'S GENERAL FURNISHING IRONMONGERY CATALOGUE may be had gratis, and free by post. It contains upwards of 500 Illustrations of his illimited Stock of Sterling Silver and Electro Plate, Nickel Silver, and Britannia Metal Goods, Dish Covers, Hot Water Dishes, Stoves, Fenders, Marble Chimneypieces, Kitchen Ranges, Lamps, Gaseliers, Tea Trays, Urns, and Kettles, Clocks, Table Cutlery, Baths, Toilet Ware, Turnery, Iron and Brass Bedsteads, Bedding, Bed Room Cabinet Furniture, &c., with Lists of Prices, and Plans of the 20 large Show Rooms, at 39, Oxford Street, W.; 1, 1A, 2, 3, and 4, Newman Street; 4, 5, and 6, Perry's Place; and 1, Newman's Mews, London, W.C.

Be Careful what you Eat.

BORWICK'S is the BAKING POWDER recommended by Dr. HASSALL, Analyst to the Lancet Sanitary Commission, Author of "Adulterations Detected," &c., for making pure and wholesome Bread, instead of Yeast.

Sold by all Chemists and Grocers.

SAUCE.—LEA AND PERRINS' WORCESTERSHIRE SAUCE.

Pronounced by Connoisseurs

"THE ONLY GOOD SAUCE."

See Name on Wrapper, Label, Bottle, and Stopper, and to avoid Counterfeits

ASK FOR LEA AND PERRINS' SAUCE

*** Sold Wholesale and for Export, by the Proprietors, Worcester; Messrs. CROSSE & BLACKWELL; Messrs. BARCLAY & SONS, London, &c.; and by Grocers and Oilmen universally.

WHITE and SOUND TEETH are indispensable to personal attraction, and to health and longevity, by the proper mastication of food. ROWLANDS' ODONTO, or Pearl Dentifrice, compounded of Oriental ingredients, is of inestimable value in preserving and beautifying the Teeth, strengthening the Gums, and in giving a delicate fragrance to the Breath. It eradicates Tartar from the Teeth, removes spots of incipient decay, and polishes and preserves the enamel, to which it imparts a pearl-like whiteness. Price 2s. 9d. per box.

Sold at 20, Hatton Garden, E.C.; and by Chemists and Perfumers. Ask for "ROWLANDS' Odonto."

OLDRIDGE'S BALM of COLUMBIA, established upwards of 30 years, is the best and only certain remedy ever discovered for preserving, strengthening, beautifying, or restoring the Hair, Whiskers, or Moustaches, and preventing them turning gray.

Sold in bottles, 3s. 6d., 6s., and 11s., by C. and A. OLDRIDGE, 22, Wellington Street, Strand, London, W.C.; and all Chemists and Perfumers. For Children and Ladies' Hair it is most efficacious and unrivalled.

[illegible] Greengrocer—C. H. Minchin, Manchester, Insurance Agent [illegible] Glamorganshire, Bootmaker—C. Martin, Derby, [illegible] Bradford, Commission Agent—M. Moon, Eccleston, [illegible] Matthew, Lindsey, Suffolk, Merchant's Clerk—[illegible] Grafton Street, Fitzroy Square, Licensed Victualler—W. [illegible] Dealer in Carriage Trimmings—J. Oliver, Notting-[illegible] Perkins, jun., Southrepps, Norfolk, Watchmaker—[illegible] Fiskerton, Nottinghamshire, Butcher—J. Pendrigh, [illegible] T. H. Phillips, Skinner Street, Snow Hill, Manager to a [illegible] Torquay, Baker—T. S. Ralph, Everton, [illegible] Dealers' Traveller—H. S. Runnalls, Redruth, Cornwall, [illegible] M'Pherson Roy, Brunswick Terrace, Rotherhithe—S. [illegible] Street, Bedford Square, Corndealer's Assistant—Thomas [illegible] Scarborough, Yorkshire, Innkeeper—J. Smith, Southampton, [illegible] Sims, Lupus Street, Pimlico, Church Verger—T. Snelson, [illegible] Saddler—C. Salter and J. Salter, Kidderminster, Wheel [illegible] jun., Coalville, Leicestershire, Grocer—H. Samuel, [illegible] Watchmaker—G. Slaney, Bishopsgate Street With-[illegible] Keeper—W. Thorp, Princes Risborough, Buckingham-[illegible] Chemist—G. Thornton, Brighton, Licensed Victualler—R. Upton, [illegible] Tailor—J. Williams, Tallachddu, Brecon, Farmer—[illegible] Worsfold, Ifield, Sussex, and W. Worsfield, Crawley, Sussex, Black-[illegible] Williams, Swansea, Glamorganshire, Bookseller—T. Weeden, [illegible] Westbourne Park, Cab Driver—J. Wilson, Sunderland, [illegible] Willcock, Lincoln, Cottager—S. Woodward, Ramsgate, [illegible] Wynne, Lyndhurst Square, Peckham, Clerk in her [illegible] Office for Fisheries—J. W. Woolmington, Long Acre.

[illegible] Scotch Sequestrations.—J. Bell & Son, Edinburgh, Bell [illegible] Hewerson, Penpont, Dumfriesshire, Brewer—G. Hunter, [illegible] W. Smith, Holytown, Lanarkshire, Innkeeper.

[illegible] Nov. 18.—Bankrupts.—J. Andrew, Manchester, [illegible] Abbott, Middle Scarle's Place, Strand, Licensed Victualler [illegible] Leeds, Innkeeper—J. A. Brown, Westbourne Terrace, [illegible] Agent—T. Betteley, Pendleton, Lancashire, Carver [illegible] Belton, Walkeringham, Nottinghamshire, Farmer—[illegible] Blake, Ripponden, Yorkshire—T. T. Blake, Dymchurch, Kent, [illegible] Boden, Birmingham, Licensed Victualler—R. Butler, [illegible] Edgware Road, Smith—R. Banks, Sheffield, Joiners' Tool [illegible] Gracechurch Street, Shipping Agent—T. Clarkson, [illegible] Yorkshire, Storekeeper—G. Coplestone, Ide, Devonshire, [illegible] J. Dutton, Aston, near Birmingham—J. Davies, Bury, Lanca [illegible] Earthenware Dealer—A. L. Dupont, Liverpool, Teacher of French—[illegible] Southampton, Innkeeper—W. Fencott, Rushall, Herefordshire, [illegible] Flynn, Liverpool, Provision Dealer—W. Groves, Leeds, [illegible] Contractor—R. Grimley, Ibstock, Leicestershire, Commission [illegible] Eastfield, Gloucestershire—J. Harper, Wolverhamp-[illegible] —W. Hunter, Rhos-y-medre, Denbighshire, Baker—J. [illegible] Sheenhamland, Berkshire, Architect—Robert Hutchinson, [illegible]—Rachael Jarratt, Kingston upon-Hull, Milliner—[illegible] Dowlais, Glamorganshire, Saddler—W. Jackson, Kingston-[illegible] Beerhouse Keeper—T. C. Jackson, Liverpool, Contractor—[illegible] Keynsham, Somersetshire, Beer and Porter Dealer—H. J. [illegible] Road, Southwark, Linendraper—G. G. Kemp, Kingston-[illegible] Merchant—L. Levinson, Bury Street, St. Mary Axe, Dealer in [illegible] Albion Place, Stoke Newington Road, Bricklayer—[illegible] Lenton, Nottinghamshire, Lace Manufacturer—C. Lawton, [illegible] Licensed Victualler—W. Monk, Accrington, Lancashire, Stone-[illegible] W. Mellor, Liverpool, Draper—J. Muckleston, Welsey Terrace, [illegible] Town, Draper—G. Maybank, Plumstead, Kent, Boot and Shoe-[illegible] J. I. Marrcrow, Kingston-upon-Hull, Fish Merchant—C. G. [illegible] Street, Clerkenwell—A. Nankivell, Plymouth, Master [illegible] Nicklin, Northwood, Staffordshire, Bailiff's Assistant—R. [illegible] Bedlington, Northumberland, Marine Store Dealer—J. T. Pascoe, [illegible] Yard, Whitecross Street, Dairyman—F. N. Pickersgill, [illegible] Lincolnshire, Butcher—T. Pulbrook, Victoria Road, [illegible] Grocer—W. Pole, Bristol, Carpenter—J. J. Pearl, Friendly [illegible] Old Kent Road, Harness Maker—W. Price, Leominster, Hereford-[illegible] Bristol, Brewer—J. Parker, Pulteney Street, [illegible] Road, Oil and Colourman—J. Robinson, Durham, Publican—[illegible] Leeds, Warehouseman—R. Roberts, Manchester, Dealer in [illegible] Rafford, Sheffield—E. Roberts, Manchester, Baker—[illegible] Calthorpe Place, Gray's Inn Road, Dairyman—W. Scott, [illegible] Rutherford, Liverpool, Joiners—H. Songhurst, Buckland, [illegible] Carpenter—S. Spriggs, Stoke Albany, Northamptonshire, Tailor [illegible] Rhymney, Monmouthshire, Innkeeper—W. Simpson, Leeds, [illegible] Agent—W. Scott, Halifax, Joiner—T. Salmon, Buckhurst Hill, [illegible] Licensed Victualler—W. Tyler, sen., Wednesbury, Staffordshire, [illegible] Keeper—S. Taylor, Manchester, Bleachers' Stamp Maker—[illegible] Taylor, Pontblyddyn, Flintshire, Waggon Builder—G. Tilke, [illegible] Devonshire, Butcher—R. Thwaites, Layburn, Yorkshire, Pig [illegible]—J. Tresidder, Penryn, Cornwall—J. Tamplin, Cardiff, Glamor [illegible] Licensed Pilot—H. Woolhouse, Sheffield, Grocer—R. Whittle, [illegible] Bolton, Lancashire, Beerseller—M. Wood, Coventry Street, [illegible] Market, Refreshment House Keeper.

[illegible] Sequestrations.—S. Alison, Airdrie, Lanarkshire, Iron-[illegible] J. Kelso, West Kilbride, Ayrshire, Grocer—W. Kirk, Maryhill, [illegible], Joiner—G. Stephen, Tillywater, Aberdeenshire.

Metropolis and its Vicinity.

International Exhibition.—On Saturday the building was opened to the public for the last time, when there was the unusually large attendance of 13,000, making a total number of admissions since the opening of 6,207,450, or 177,000 more than the numbers of 1851, which were 6,030,135. At 3 o'clock the building closed without any formality whatever. The work of dismantling the interior has since commenced, and is proceeding with a vigour which bids fair to leave nothing but the empty walls in the course of another fortnight.

The Ward of Langbourn.—Alderman Cubitt, the late Lord Mayor, has announced his intention of resigning his gown as Alderman of this ward. Several candidates for the vacant office have been mentioned, but the contest will lie, it is said, between Mr. Lusk, the ex-Sheriff and Common Councilman for Aldgate, and Mr. Sidney H. Waterlow, the stationer of London Wall.

The Thames Bridges and Embankment.—Parliamentary notices have been given for next Session, for Private Bills for new bridges to be built at Horsleydown, opposite the Tower, opposite St Paul's, opposite the Temple steamboat pier, opposite Cheyne Walk, Chelsea, and at Wandsworth, Hampton, Walton, and Shepperton. The Metropolitan Board of Works have given a notice for continuing the embankment on the north side of the river to Queenhithe, on the western side of Southwark Bridge, and for a new street from that point to the Mansion House, and also for an embankment on the Surrey side from the foot of Chelsea Suspension-bridge to near London Bridge.

Lancashire Relief Fund.—At the meeting of the Mansion House Committee on Friday, the report stated that the whole amount of subscriptions received up to the previous evening was 138,615*l.*, of which 20,431*l.* had been received within the week. Mr. S. Morley attended and read a letter from Mr. Cobden, urging the committee to expend their large balance in the purchase of bedding and winter clothing, as a wiser investment than having to expend the money hereafter in hospitals to receive the fever-stricken victims of cold and want. He expressed his belief that by spending the money instead of hoarding it, the committee would be fulfilling the wishes of the subscribers, who sent their money for the present and not the future necessities of the distressed. Mr. S. Morley pressed on the committee the course recommended by Mr. Cobden, and suggested that a larger committee was wanted, including more representative men of particular interests, retaining the present one as an executive committee. The Lord Mayor and Mr. W. Morley defended the course pursued by the committee, and said that they had been carefully adapting their grants to the public necessities, as they had from time to time been developed. Mr. C. Barber, one of the committee, expressed his opinion that by a more liberal apportionment of the money at their disposal, instead of 20,000*l.* coming into the Mansion House fund, which was the sum in round numbers subscribed last week, the weekly amount would be doubled. After some further conversation Mr. S. Morley handed in a check for 1000*l.* towards the fund to mark his sense of the public good the committee were doing, though he still held to the opinion that their number ought to be augmented. The following grants, amounting to 21,600*l.* were voted for distribution by the local relief bodies:—Preston, 2500*l.*; Oldham, 2000*l.*; Blackburn, 1500*l.*; Stockport, 1500*l.*; Wigan, 1500*l.*; Dukinfield, 1250*l.*, including 250*l.* for sewing class; Hulme, 1000*l.*; Burnley, 1000*l.*; Staleybridge, 1000*l.*; Ashton-under-Lyne (Borough Committee), 1000*l.*; Ashton-under-Lyne (General Committee), 500*l.*; Hyde, 1000*l.*; Tonge, 100*l.*; Darwen, near Blackburn, 250*l.*; Blue Pits, 100*l.*; Clitheroe, 250*l.*; Harwood, 100*l.*; Blackburn (overlookers), 150*l.*; Ripponden, 200*l.*; Lowton, 250*l.*, St. George's Charleston, Pendleton, 50*l.*; Harwich, 100*l.*; Heaton Mersey, 100*l.*; Littleborough, 150*l.*; Hurst (General Committee), 200*l.*; Mottram, 100*l.*; Tintwistle, 350*l.*; St. Barnabas, 150*l.*; St. Thomas Red Bank, 100*l.*; Heywood, 100*l.*: St. Jude, Ancoats, 350*l.*; Lees, 500*l.*; Norden, 100*l.*; Embsay, 150*l.*; Ramsbottom, 200*l.*; Woodhill and Burns, 50*l.*; Shawforth, 200*l.*; Stacksteads, 300*l.*; Chorley, 500*l.*; Royton, 200*l.*; and Glossop, 500*l.* These grants make the whole amount remitted to Lancashire, Cheshire, and places in Yorkshire by the Mansion House Committee, 89,908*l.*

Parochial Meetings in Aid of Lancashire Distress.—A meeting of the parishioners of St. Martin's-in-the-Fields was held on Monday, a meeting of the parishioners of St. Paul, Covent Garden, was held on Tuesday, a meeting of the parishioners of St. Margaret's, Westminster, on Wednesday, and a meeting of the parishioners of Marylebone on Thursday, to consider and determine on the best means of collecting subscriptions throughout the parishes for the relief of the Lancashire distress. At the St. Martin's meeting the Chancellor of the Exchequer attended to move the first resolution, on the double ground of his being a parishioner and a Lancashire landowner. In the course of his speech he made the following remarks on the conduct of the manufacturers:—

"It was useless to disguise the fact that there had prevailed in the country to a considerable extent an idea that either all or some classes connected with Lancashire had not fully discharged their obligations. It was in England the practice, when they had anything on their minds affecting the public interest, not to shut it up and allow it to rankle there, but to bring it into the free air and make it a matter of public discussion, and honestly compare their thoughts. He thought that great mischief had been done by those who had attempted to argue that there was no special obligation on those persons, who, as neighbours or as employers of labour, have been interested in the factory population of Lancashire. It appeared to him that it ought to be strongly and definitely asserted on behalf of the whole country that there were special obligations attaching to the various classes composing the community of Lancashire. He would look to those first who were not locally interested in the factory population. There were a number of persons who, in Liverpool, had been agents—and he did not say it as a reproach to them—in a beneficial process, but they were a class who were not immediately connected with the factory population, who habitually conducted the usual trade regulating the supply of cotton in the market, to whom this cotton-famine had not only been no calamity, but to whom it had been a source of rapid fortune and advancement in the world. No one would deny that an agent of that class ought to minister liberally to those on whom the famine operated with so different and crushing an effect. Take, then, the landowners of Lancashire; it was impossible to deny that their property in most instances, without any activity on their own part, had been rising rapidly in value, and had placed some of them among the princes and potentates of the land, owing to the labours carried on for a long series of years in Lancashire. Let them then look to the millowners. Now, it was hardly possible in a case of this kind, when they spoke generally, to be just; they were obliged to speak generally, as the nature of every Englishman revolted against attempts at minute investigation into the conduct of this man, or of that man—therefore the entire class must be responsible for the lukewarmness or selfishness of individuals. But neither the landowners nor the millowners must be judged by the public subscription, and indeed the proper place for the millowners was not the subscription list. They had kept open their mills in many instances at a loss to themselves, and when that could be done it was a most munificent and efficacious means of relief. There were others who had not kept open their mills, who had sold the cotton they had in their stock, but yet had done their duty nobly by their work-people. At the same time this meeting was justified in firmly asserting that the relations of the Lancashire owners of property, and especially the Lancashire employers of labour, were not such that their obligations had terminated when the wages were paid and the mills shut up. But there was a moral, sacred, and Christian duty incumbent on these gentlemen, which, although they escaped the performance of to the eye of man, they could not escape the eye or the tribunal of the Almighty. The right hon. gentleman then argued that whatever shortcomings there might be on the part of others, that was no ground why the distressed people should be left starving, for it would be a shame and a scandal on the community if they did not, irrespective of all such arguments, come forward and do what they could in support of their fellow-creatures."

A discussion ensued, in which a gentleman said that on three-fourths of the whole surface of Lancashire and Cheshire the rate was absolutely less than in the parish of Chelsea; and that while the manufacturers of Lancashire were appealing for help, he had seen the quay of Boulogne crowded with bales of cotton exported there from Lancashire. Resolutions of sympathy were ultimately adopted, and a committee was appointed to collect subscriptions from house to house throughout the parish.

The Catholic Clergy and Lancashire Distress.—On Tuesday a synod of the Roman Catholic clergy of London was held at the pro-cathedral of St. Mary, Moorfields, presided over by Cardinal Wiseman. After high mass the council was convoked, and one of the resolutions passed was to the effect that a public collection be made in all the Roman Catholic chapels in London on the first Sunday in Advent for the relief of the distress in Lancashire. The Roman Catholic Bishop of Melbourne was present at the council.

St. Thomas's Hospital.—A Quarterly Court of the governors of this hospital was held on Tuesday, Sir J. Musgrove, the President, in the chair, when Mr. Tite, M.P., moved that the minutes of the special general court of the 28th October, when the resolution was passed granting powers to the grand committee to select a site for the new hospital, be confirmed. Alderman Finnis seconded the motion. Deputy Elliott moved as an amendment that the resolution be rescinded, on the ground that no notice of it had been given in the summons. Alderman Lawrence seconded the amendment. A long discussion ensued, in which Aldermen Challis, Dakin, Copeland, Wilson, and Gabriel, the Rev. Newman Hall, Mr. Baggallay, and other gentlemen took part. On a division the amendment for rescinding the resolution of October 28 was carried by a majority of 47 to 28. The minutes of the grand committee were then confirmed, with the exception of that portion which referred to the resolution just rescinded. At the close of the meeting the President assured the governors that nothing would be done without the question of site being again brought before them, and a full opportunity afforded for a consideration of all points connected with the subject.—The physicians and surgeons of the hospital have issued a strong and unanimous protest against the project of building the new hospital any further from the centre of the population than its present temporary situation at Walworth. They say that country air would benefit nobody but convalescents, whose interests may be consulted in another form; and that the removal would render it useless to all cases of acute diseases and to the accidents which are constantly occurring in a dense and busy population, whilst it would destroy its usefulness as a great medical and surgical school. They also declare their inability to conceive what the managers want with 40 acres of ground for the purposes of a hospital. A combined movement against the removal of the hospital to the country is also making in the parishes south of the Thames. A meeting of the vestry of St. George the Martyr, Southwark, was held on Monday, at which the report of a committee was read strongly deprecating its removal beyond its present temporary position on the site of the Surrey Gardens. Resolutions endorsing the report and calling on the neighbouring parishes to join them were unanimously adopted. The parish of St. Giles, Camberwell, has also issued a strong protest against the removal of the hospital.

Experiments at Shoeburyness.—Some important trials of the shell invented by Mr. Whitworth were made on the 18th at Shoeburyness, in the presence of the Duke of Somerset, Earl De Grey, Sir John Hay, Admiral Sartorius, and a large assemblage of civil engineers and builders of iron-plated ships, including Sir William Armstrong, Mr. Scott Russell, Mr. Samuda, Mr. Rendell, Mr. Watts, Mr. Bidder, jun.; Mr. Loyd, Mr. Anderson, of the Royal Foundry; and Mr. Whitworth himself. The experiments were regarded with the greatest interest, as it was intended to test the results obtained about a month ago with this shell, by firing it at a much longer range, and at a target much stronger than the Warrior target. The shell on that occasion pierced 4½-inch plates of iron, with 18 inches of timber, at 200 yards. A much larger shell was now used at 800 yards, against a target made of greater strength than any yet experimented upon, the two lower plates being full 5 inches thick, and the upper one 4½ thick. These were bolted to the usual 18 inches of timber, backed up with the skin of ⅝ iron, and then with immensely strong ribs of iron. There was a space of 2 feet 6 inches between this and another very strong work cased with iron, supported by iron ribs upon huge baulks of timber. The first experiment was made with the large gun forged at Woolwich on the coil hoop plan, rifled with a hexagonal bore, the diameter of which is 7 inches. It is called a 120-pounder, but the shells fired were 150 lbs., the charge being 27 lbs. of powder, and the bursting charge of the shell being 5 lbs. The shell was flat-headed, and similar in form to that which was tried with such remarkable results before. The first shot fired was at the full range of 800 yards, a distance contracted from the original one, which was intended by Mr. Whitworth to have been 1000 yards, but this range brought the gun nearer to some gentlemen's residences than was agreeable, and it was consequently reduced. The shell struck the thickest plate (5 ins.), pierced it, completely bursting in the passage through, then smashing the wood, and, tearing through the iron skin, scattered 27 fragments of the shell, pieces of the skin, and of the plate in every direction. Several bolts were started, and large bits of wood were hurled some distance behind or through the deck of the target. The appearance of the hole in the ship's side,

as seen from the inside, was as if the skin, as it was burst through, had been stuffed with thatch, so completely shredded was the strong oak. The opposite side of the ship, so to speak, bore severe marks of the destruction inside, and showed several deep grazes, so that there could be no doubt as to the awful slaughter that such a weapon would commit throughout the ship by the pieces flying about. The next shell was then fired. It struck the thinner plate, 4½ inches, pierced it, smashed the timber, bulged the skin, and broke one of the ribs. To compare the effects, a cast-iron shot, round-headed, was then fired. It did not pierce, though it indented the plate, and so shook the whole fabric that no less than seven bolts were broken and their heads knocked off inside. Every one of these would be a destructive missile in action. The velocity of this shot was ascertained by the electric wire apparatus to be 1260 feet per second, being greater than that of the shells by 50 feet per second. A shell of 130 lbs. was now tried with the same charge of powder, and 3½ lbs. bursting charge. This was the most successful of all—it went through the 5-inch plate with the most perfect ease, causing a greater amount of destruction inside than the heavier shell, which was due, no doubt, to the increased velocity given to a lighter projectile by a full charge of powder. The velocity of this shot was found to be 1280 feet per second. Some practice was afterwards made, at the request of Sir J. D. Hay, with the 70 lb. shell at 600 yards, with a charge of 13 lbs. of powder. Out of three shots one only pierced the plate, the others merely damaging it; but it was stated by Mr. Whitworth that he did not expect the shell to penetrate at this range plates of that thickness.

THE GREAT FORGERIES ON THE BANK OF ENGLAND. —On Friday the six prisoners—Buncher, Cummings, Burnett, Brewer, Griffiths, and Williams—were again brought up at the Mansion House. A great number of witnesses were examined, and several fresh features of interest in the details were disclosed, every step in the case showing the adroitness of the thieves and the sagacity with which their trail was followed up by the detectives. After a long sitting the prisoners were again remanded to Thursday, when the principal witness was the woman who was apprehended as Burnett's wife, and who was released on the supposition that she acted under her husband's influence. It now appeared that though she had lived with him for several years she was not married to him, and mainly, it appeared, at his suggestion she has turned Queen's evidence. Her statements implicated Burnett, Buncher, and Cummings. The prisoners were again remanded for a week.

GREAT FIRE NEAR BLACKFRIARS BRIDGE.—On Thursday evening the extensive warehouses of Messrs. Charles Price and Company, oil refiners, at the north-western corner of Blackfriars Bridge, between Chatham Place and the City Company's Gasworks, were burnt to the ground. The fire broke out in the oil warehouse, and spread with extraordinary rapidity to the other warehouses, which contained a vast amount of highly inflammable material. Numerous fire-engines were speedily on the spot, including six of Mr. Shand's land steam fire-engines, the floating engine, and Messrs. Merryweather's new steam fire-engine called the Deluge, just taken out of the Great Exhibition. The powerful jet discharged by this engine was the means of keeping the flames from reaching the gasometers in the neighbouring gas works, which were fully charged. If they had exploded there must have been a fearful destruction of property and loss of life, owing to the immense concourse of persons assembled on the bridges and the wharves. By the efficiency of the steam-engines the fire was confined to Messrs. Price's premises, but the flames from the burning oil ran down the banks of the wharf into the river and ignited four or five barges, some laden with oil and others with coals; and some of the houses in Chatham Place were much scorched or damaged by water. The fire had nearly exhausted itself at 8 o'clock, but it was not till between 1 and 2 o'clock yesterday morning that the flames were finally extinguished. The same premises were destroyed by fire during the summer of 1845, when one life was lost—that of a helper, who was killed by the bursting of a cask of turpentine. It is understood that Messrs. Price are fully insured.

EXECUTION AT NEWGATE.—The execution of Robert Cooper for the murder of Anne Barnham, at Isleworth, took place on Monday morning. He had been in a miserable state of despondency ever since his conviction, and appeared prostrated by the terror of his fate; but as the time of the execution drew near he recovered a firmer state of mind, expressed deep penitence for his crime, and fully admitted the justice of his sentence. He is said to have died hard, his struggles appearing to continue for some seconds. The crowd was not nearly so large as usual, and was more orderly in its behaviour.

RESPITE OF SAMUEL GARDNER.—On Saturday morning the Governor of Newgate received a communication from the Home Office respiting, during her Majesty's pleasure, the sweep, Samuel Gardner, who was to have suffered the last penalty of the law on Monday morning for the murder of his wife. The announcement was quite sudden and unexpected. It is understood that the resolution was adopted by Sir George Grey after a full consideration of all the circumstances of the trial, and consultation with the Lord Chief Baron, who tried the case.

THE PUBLIC HEALTH.—The Registrar-General's Weekly Return states that the number of deaths registered in London in the week that ended Saturday, November 15, were 1429. The average number in the corresponding weeks of the 10 years, 1852-61, corrected for increase of population, was 1323. The present return is therefore 106 above the average. During the week the births of 928 boys and 976 girls, in all 1904 children, were registered in London. In the 10 corresponding weeks of the years 1852-61 the average number was 1806.

Provincial.

BILSTON.—A shocking murder has been committed at Coseley, a populous place adjoining this town. It appears that on Tuesday week, during Sedgley wakes, Henry Swinnerton, a puddler, residing at Deepfield, was drinking at a public-house, at Ladymoor, with a number of other men and two women. He left about 11 at night, and was going home through the Blue Button Leasow, when he was attacked by two of the men and the women who had been drinking with him. They tried to strangle him, and so awfully battered his head and kicked him that he was left senseless on the ground. A person coming up in the distance shouted to the men, who ran away, having robbed deceased of 12s. Swinnerton died from the injuries he received; and two men, named Watts and Henshaw, and two women of loose character, were taken into custody. The jury at the inquest returned a verdict of Manslaughter against the two men, and the magistrates on Tuesday committed both the men and women for trial at the assizes on the charge of wilful murder. It was shown that the two male prisoners, and one of the women, had attacked the deceased, one of the men using a life-preserver, and garrotting him, occasioning a broken jaw, and producing concussion of the brain and lungs. The deceased identified the men before his death.

CAMBRIDGE.—The Rev. Dr. Edward Atkinson, Master of Clare Hall, has been elected Vice-Chancellor of this University for the ensuing year.

DERBY.—A burglary was committed a few nights ago at the house of Mr. Norman, of Howich End, Whaley Bridge, in this county. The entrance was effected through the house shutters, which were opened with a "jemmy," and three men, armed and masked, obtained unmolested entrance to the dining-room. At half-past 3 Mrs. Norman was disturbed by a strange noise, and having listened for a few seconds determined to leave her bed, and discover the cause. She therefore, without disturbing her husband who was an invalid, partially dressed herself, and armed with a revolver went down stairs, and on reaching the front room found a man using a lighted candle and wearing a mask. Mrs. Norman maintained her composure with wonderful nerve, and taking a good aim fired and hit the burglar in the breast. The shot served as an alarm, and instantly the wounded burglar was dragged through the window, bleeding and groaning, by his alarmed companions, who were on the watch. The effect of the shot was such that the wounded man was observed by Mrs. Norman to fall against the wall of the room, and it is suspected by the police that the wound may have proved fatal. The chief constable in person undertook the chase of the burglars, and on Sunday night arrested two men, who have been remanded for further inquiry. It is expected that the wounded man will also be soon in custody.

KIDDERMINSTER.—The ceremony of receiving a nun took place at the Roman Catholic chapel in this town, on Saturday. The novice was a young lady named Mary Augusta Ann Theresa Tyran, from the county of Meath, in Ireland, where her friends are persons of position and wealth. The name by which she will be known among the sisterhood at Kidderminster, however, will be Sister Mary Theresa. At the close of an address from Dr. Ullathorne, the novice advanced from her seat and knelt before the Bishop, who asked her if she was thoroughly aware of the obligations she was going to take. She responded, in a subdued voice, that she was. Having prostrated herself on her face before the Bishop, prayer was offered. The black veil having been placed over her head, the Bishop said that the habit she now wore was the livery of Jesus Christ, and it should remind her that she had for ever forsaken the world and was in future to serve God alone. Another prayer followed, the nun again prostrating herself as before. The Bishop asked if it was with willing heart she renounced the world and all similar pretensions. She answered in the affirmative. The Bishop then gave her a crucifix, which he told her to receive as a token of the fidelity which she owed to her spiritual spouse The Bishop: "The hour of your sacrifice is come. Do you cheerfully, without reserve, give yourself to God?" The nun answered that she did. Mass was then performed with the usual ceremonies, during which the nun made a recantation of the world, and devoted herself to a religious life. The Bishop upon this declared that he admitted her into the institute of the Blessed Virgin, and he promised her, if she kept her vows, everlasting life.

LIVERPOOL.—The African mail steamer Armenian has brought to this port a fine male specimen of the gorilla. He appears quite docile, and amuses himself in dancing round the room at Mr. Newby's, the naturalist, and attempting to sew pieces of blankets together. His skin is of an olive colour, and, as he is yet very young, only slightly covered with hair. He is remarkably fond of good living, and appears to have an especial relish for beefsteak and mutton chops, and fruit. He is about 3½ feet in height, very broad and thick across the chest, while his arms and legs are long and sinewy, displaying great strength. He has a great habit of putting his feet into any stray boots and shoes which may be lying about, and when he is disturbed in his freaks he invariably runs for protection to any lady who may be present. His face, unlike the generally entertained opinion, is not fierce or repulsive-looking, although the jaws are broad and heavy. This is said to be the only live specimen of the gorilla ever brought to this country.

MAIDSTONE.—On Monday Mr. Major Murton, farmer, was brought before the magistrates of this town, charged with ill-treating his wife, who subsequently died. The principal witnesses were a married daughter of the accused, and a servant, from whose evidence it appeared that on the night of October 23, prisoner took home two women of bad character, and ordered his wife and married daughter to entertain them. One of the women was herself shocked with this proceeding, and wished to leave, on which the farmer became infuriated, rushed at his wife, dashed her on the brick floor of his kitchen, and so ill-used her that she took refuge at a neighbouring farmer's, where she died a week afterwards. The prisoner having turned his own family out of doors, retained the two women, and when he was taken into custody gave one of them his money and installed both in possession of his house. The magistrates committed him for trial on the charge of Manslaughter.

MANCHESTER.—At the meeting of the Central Executive Committee on Monday, the Earl of Derby in the chair, the report stated that 19,300*l.* had been received during the week, and that the balance in the bank was 76,565*l.* During the week 2,000*l.* had been received from Edinburgh; 5,000*l.* from the Wesleyan Methodist Committee; and 1000*l.* from Melbourne, making in all 10,550*l.* 15*s.* 11*d.* from that city; and a further remittance of 3,760*l.* from New South Wales, to be applied to special objects. Colonel Patten, M.P., stated that he had been authorised by the Cotton Districts Relief Fund to increase their contributions to 12,000*l.* per month for three months. Mr. Farnall, the Assistant Poor Law Commissioner, reported that in the 27 unions of the cotton district in the week ending on the 8th inst, the total number of persons relieved by the guardians, and by the 41 local committees, was 330,664, and the total amount of relief given to these 330,664 persons by the guardians and local committees was 22,516*l.* 7*s.*, or 1*s.* 4*d.* per head. Of this large number more than 100,000 have deliberately refused parochial relief, and have been saved from starvation only by the subscriptions of the public distributed through the local committees. A letter was read from the Earl of Sefton, in answer to the request of the committee that he would call a county meeting, announcing his intention to convene the meeting for the 2d December. In answer to a question respecting the local rates, Mr. Farnall said that only a few unions at Michaelmas last had availed themselves of the Rate-in-Aid Bill, but he believed that by Christmas the Bill would come into more general operation. The following grants were made:—Bamber Bridge, 100*l.*; Farrington, 125*l.*; Staleybridge, 2000*l.*; Chadderton, 200*l.*; Hurst, 250*l.*; Hazelgrove, 150*l.*; Tottington, 60*l.*; Colne, 200*l.*; Tottington (higher end), 250*l.*; Castleton, 50*l.*; Pendleforest, 50*l.*; Barrowford, 250*l.*; Stockport, 3500*l.*; Bury, 750*l.*; Dukinfield, 1000*l.*; Gorton, 100*l.*; Hyde, 1000*l.*; Glossop, 1000*l.*; Ramsbottom, 125*l.*; Lowton, 80*l.*—A meeting of the citizens of Manchester was held on Wednesday at the Town Hall, to institute further and more systematic means for the relief of the existing distress. Mr. Bayley, M. P., moved a resolution affirming the necessity of greater and more systematic efforts. Mr. Malcolm Ross seconded the resolution, which was carried unanimously. Mr. Robert Gladstone moved a resolution calling upon the inhabitants of Manchester and Salford for a further contribution according to their means, preparatory to a general appeal to the whole country. Mr. Hugh Birley seconded the motion which was agreed to. Resolutions were then passed authorising the Committee to take such steps as they may see fit for effecting a thorough canvass of the inhabitants, and requesting the Aldermen and Councillors of the two towns to organise ward committees for the collection of clothing and other useful articles to be distributed among the unemployed. Mr. M'Clure, the hon. secretary of the central relief committee, in the course of the proceedings stated that the subscriptions received from Manchester and Salford by the central committee up to Saturday, Oct. 8, was 27,000*l.* During the last week the result of a partial canvass had been the collection of 33,000*l.*, making a total of 60,000*l.* In addition to this amount 30,000*l.* had been obtained up to this time by various local committees for distribution in Manchester and Salford. This sum did not include the large amounts given by mill-owners and private charity.

OXFORD.—The Rev. Dr. Lightfoot, Rector of Exeter College, has been elected Vice Chancellor of the University for the ensuing year in the room of Dr. Jeune.

SHIELDS.—The adjourned inquest on Mrs. Jane Gillespie, who was recently poisoned by strychnine, was

THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

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☞ *An Edition of the* GARDENERS' CHRONICLE and AGRICULTURAL GAZETTE *is published on Monday Afternoon at 4 o'Clock, containing full Reports of the Mark Lane and Cattle Markets, written expressly for the Paper.*

ROYAL HORTICULTURAL SOCIETY. FRUIT COMMITTEE.
A MEETING of the Fruit Committee will be held at the Rooms, South Kensington, W., on TUESDAY, December 9, for the Examination of such FRUITS and VEGETABLES as may then be submitted for judgment, and when, besides Certificates of Merit for SEEDLINGS, the following Prizes will be awarded:

CLASS A.—For the best three dishes of DESSERT APPLES, distinct kinds	20*s.*	10*s.*
„ B.—Ditto ditto PEARS	20*s.*	10*s.*
„ C.—Ditto dish of WHITE GRAPES	20*s.*	10*s.*
„ D.—Ditto ditto BLACK	20*s.*	10*s.*

** All Packages and Communications must be received at the Rooms by 11 o'Clock on the day of Meeting, and addressed to ROBERT HOGG, LL.D., Secretary of the Committee.

ROYAL BOTANIC SOCIETY, REGENT'S PARK, N.W.
The CORRECTED ARRANGEMENTS for this Society's EXHIBITIONS in 1863 are the following:—
THREE of SPRING FLOWERS.
SATURDAYS—March 28, April 11 and 25.
GENERAL EXHIBITIONS of PLANTS, FLOWERS, and FRUIT.
WEDNESDAYS—May 13, June 3 and 24.
By Order of the Council, J. DE C. SOWERBY, Secretary.

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Rose and Bulb Catalogues for 1862-3.
EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded gratis and post-paid on application.
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JOHN CRANSTON begs to announce that his new ROSE CATALOGUE is now ready for distribution, and will be forwarded free on application. It contains full and faithful descriptions of nearly all the NEW ROSES of 1861, as well as the older kinds.
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RICHARD SMITH'S Stock of STANDARD, HALF STANDARD, and DWARF ROSES, combines superior quality with a larger selection than any other Nursery.
DESCRIPTIVE PRICED LISTS on application.
RICHARD SMITH, Nurseryman, Worcester.

Rose Catalogue, 1862-63.
WM. PAUL'S ROSE CATALOGUE is now ready for circulation. Free by post on application.
Nurseries and Seed Warehouse, Waltham Cross, N.

DESCARTES ROSE STOCKS.—These fine Dwarf Stocks now selling at 50*s.* per 1000; 28*s.* per 500; 6*s.* per 100; 2*s.* per dozen. Also fine Dwarf-trained PLUMS and APPLES, EVERGREENS, &c.
J. J. FOSTER, Anmer Nursery, Edgeware, N.W.

S. PONSFORD'S CATALOGUES of GENERAL NURSERY STOCK and ROSES may be had gratis, on application to Loughborough Park Nurseries, Brixton, London, S.
N.B. STANDARD MULBERRIES, LIMES, and MOUNTAIN ASH, fine.

MESSRS. PLATZ AND SON, NURSERYMEN and SEED GROWERS to his Majesty the King of Prussia, Erfurt, Prussia, beg to inform the Nobility, Gentry, and Public in general that their SEED CATALOGUE for this year is now ready, and can be had post-free on application.

60,000 Ivies.
J. REEVES begs to say that he has a Large Stock of the true IRISH IVY, in pots from 3 to 6 feet high. Price on application to J. REEVES, Ladbroke Nursery, Notting Hill, W.

LARCH and SCOTCH. — 50,000 fine transplanted LARCH, 3 to 4 feet; 50,000 well-grown SPRUCE, 2 feet, very full and fine.
Please apply to JOHN KEYNES, Nurseryman, Salisbury.

Quick.
HUME AND COUSENS are prepared to offer of the best quality, strong three-year-old QUICK (transplanted), as they are compelled to remove it this season. The price will be moderate, which may be had with samples on application.
Exotic Nursery, Gloucester.

To Nurserymen.
FOR SALE, large Quantities of Various Sizes of SPRUCE, THORNS, PRIVET, COMMON and PORTUGAL LAURELS.
Prices and Samples on application to WM. TRESEDER, Nurseryman and Seedsman, Cardiff.

WANTED, Large and Handsome SPECIMEN CONSERVATORY PLANTS.—Gentlemen having such, which have grown too large for their conservatory or greenhouse, may exchange them for New and Rare Plants by applying to
WILLIAM BULL, Establishment for New and Rare Plants, King's Road, Chelsea, S.W.

WELLINGTONIA GIGANTEA.—The undersigned has to offer a very large and fine stock of healthy one year Seedling Plants established in single pots; also a few plants of larger sizes. Price per 100 or 1000 on application.
J. HENCHMAN, Edmonton, London, N.

SURPLUS STOCK of DUTCH CROCUS.—Blue, Striped, and Yellow, fine roots, 10*s.* 6*d.* per 1000. Also a fine lot of Lilium speciosum and album, fine flowering roots. Price on application to
EDWARD TAYLOR, The Nurseries, Malton, Yorkshire.

Hyacinths, Tulips, Crocuses, &c.
BUTLER AND McCULLOCH'S DESCRIPTIVE CATALOGUE of BULBS, or AMATEUR'S GUIDE, may be had free and post paid upon application.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

Hyacinths, Tulips, and other Dutch Bulbs.
JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

Collections of Bulbs for the Winter and Spring Garden.
SENT CARRIAGE PAID, SEE LARGE ADVERTISEMENT, p. 1070
BARR AND SUGDEN, SEED MERCHANTS, 12, King Street, Covent Garden, W.C.
PAXTONIAN COLLECTIONS of BULBS for Spring Gardening, 10*s.* 6*d.* to 5*l.* 5*s.*
KENSINGTON GARDEN and CRYSTAL PALACE COLLECTIONS of BULBS for Winter Gardening, 10*s.* 6*d.* to 5*l.* 5*s.*
London Agents for TYE'S New SOUVENIR HYACINTH GLASSES.

Grape Vines.
WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Vines: Black Hamburgh and Muscat of Alexandria.
ROBERT PARKER begs to offer extra strong Plants of the above (for planting), in large or small quantities, at 3*s.* 6*d.* each. The usual discount to the Trade.
Exotic Nursery, Tooting, Surrey, S.

Grape Vines.
B. S. WILLIAMS begs to intimate that he has a fine and healthy stock of the above from Eyes, including all the best varieties for Fruiting in Pots and Planting Out. Prices on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Grape Vines.
J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.
JAMES CRAWFORD has a large stock of all the best sorts, fine Plants, fit for Forcing in Pots; and others for Planting-out. Price low, and the Trade well used.
High Beech, Essex, N.E.

Queen Pine Suckers.
THE GARDENER, Cyfarthfa Castle, Merthyr Tydvil, has to dispose of from 1000 to 1500 good strong QUEEN SUCKERS (surplus stock) warranted clean. Picked Suckers, 1*s.* each; mixed, 6*d.* each. Purchasers of large quantities and the Trade will be liberally dealt with.

WILLIAM EPPS, JUN., begs to offer extra fine Dwarf-trained PLUMS, CHERRIES, PEACHES, APRICOTS, and NECTARINES.
Price on application.
The Nurseries, Ashford, Kent.

RASPBERRIES, Trade price:—Cornwell's Seedling, 3*s.* per dozen; Fillbasket, 10*s.*; Red Prolific, Autumn-fruited, and Yellow Antwerp, 8*s.* per 100.
GOOSEBERRIES: Crown Bob, Warrington, Whitesmith, strong bearing plants, suitable for Market Growers.
GEO. CORNWELL, Seedsman, &c., Barnet, Herts, N.

WANTED, a Quantity of STRAWBERRY PLANTS (Keens' Seedlings), well established in pots for forcing.
Address, stating price per 100, to Mr. EDWARD NASH, Minster, near Ramsgate.

TRUE KENTISH and WEBB'S COB FILBERT TREES, handsome formed Trees, 4*s.*, 6*s.*, and 9*s.* per doz.
Epps' Nursery and Seed Establishment, Maidstone.

WEBB'S PRIZE COB FILBERTS, and other COB NUTS as exhibited at the INTERNATIONAL FRUIT and FLOWER SHOW, Kensington. Trees of these splendid varieties of Filberts may be had by application to
RICHARD WEBB, Calcot Gardens, Reading.

Vines, Fruit and Ornamental Trees and Shrubs.
PAUL AND SON would invite attention to their unequalled stock of VINES, trained PEACHES, NECTARINES, APRICOTS, and other Fruit Trees, Ornamental Trees, Shrubs, and Evergreens, and General Nursery Stock.
Old Cheshunt Nurseries, Herts.

Large Shrubs, Fruit Trees, Roses, &c.
WM. CUTBUSH AND SON have a fine stock of the above. Amongst them will be found many VERY LARGE EVERGREENS, suitable for producing an immediate effect, at unusually low prices.
Highgate Nurseries, London, N.

Tritoma Uvaria glauca.
JAMES KITLEY begs to offer fine large blooming plants of the above at the very low price of 6*s.* per dozen, and fine plants at 4*s.* per dozen. The Trade supplied. Also, NARCISSUS POETICUS, 10*s.* per 1000.
Lyncombe Vale Nursery, Bath.

Hendon Park Nurseries, N.W.
PANSIES, all the best, from one of the largest collections in England. 6*s.* per doz. Selection left to EDWARD SHENTON.
Also New Bedding Pansy, BOY IN BLUE, for winter. Good plants for immediate blooming, 6*s.* per doz.

Early Spring Flowers.

WEBB'S GIANT POLYANTHUS; ditto COWSLIP; Florist's Flower, POLYANTHUS, Roots or Seed; also SCARLET PRIMROSE—Double Crimson, Double Purple, Double White, Double Yellow, and Double Lilac ditto. COWSLIP from the Himalayas; DOUBLE POLYANTHUS; and other varieties, all of which may be had on application to RICHARD WEBB, Calcot Gardens, Reading.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING 1863, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.
Woking Nursery, Surrey.

New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to 7s. 6d. each;
ATHYRIUM FILIX FŒMINA FRIZELLIÆ, 5s. each;
OSMUNDA REGALIS CRISTATA, 21s. each.
A Select LIST of the most rare kinds will be forwarded Post Free on application.
Dorking Nursery.

New Fern, Pteris nemoralis variegata.

WILLIAM COLE, Fog Lane Nursery, Withington, Manchester, the raiser of this beautiful and distinct NEW FERN, is now ready to supply good plants, and all orders will be executed in rotation.

It has been well described in the *Gardeners' Chronicle* of July 5, p. 620, where the writer speaks of it as "a curious and novel form of Variegated Pteris."

It was also reported on in the *Gardeners' Chronicle* of May 24, as follows:—"Among new Ferns, of which several were shown, was one from Mr. Cole, Nurseryman, Manchester, belonging to the Variegated Class, and as regards position, is intermediate between argyrea and tricolor, and is apparently a free grower."

W. COLE has great confidence in recommending it, and in stating that it is really a beautiful Fern, and one which will become exceedingly popular. 10s. 6d. each.

Price (very liberal terms to the Trade for 12, 50, or 100) on application.

PRIZE GOURDS and MAIZE.—Removed from the Horticultural Society's Garden and now on Exhibition at our Establishment, that visitors may have the opportunity of inspecting the most valuable, beautiful, and varied Collection of Ornamental and Edible GOURDS ever seen in this country. See Large Advertisement, p. 1070.
BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

New Celery, Williams's Matchless Red.

B. S. WILLIAMS, Paradise Nursery, Holloway, N., has much pleasure in offering the above superior solid RED CELERY, feeling confident it will give satisfaction. It is perfectly hardy, a strong grower, very solid and crisp, and of a most delicious flavour. It has been taken up for use quite the end of April without having the least tendency for running to seed. From the testimonials received it is unquestionably the best Red Celery in cultivation. In sealed packets, 2s. each.

Prize Medal Seed Wheat.—International Cereal Show.

THE PRIZE MEDAL WAS AWARDED TO

MESSRS. RAYNBIRD, CALDECOTT, AND BAWTREE, for the BEST SAMPLE of RED WHEAT, for their sample of RED NURSERY WHEAT, by a jury consisting of some of the most eminent Corn Factors from Mark Lane and Agriculturists of the day.

This Wheat is remarkable for its fine quality, weight, and hardiness, and is one of the most productive upon poor soils and in exposed situations; it may be sown at any time from October to March.

Bulks of similar fine quality to the Prize sample, for cash only, at 80s. per Quarter.
Address, Basingstoke.

To Seedsmen, Gardeners, and Others.

TO BE DISPOSED OF, about 30 qrs. of EMPEROR PEAS (true), harvested in good condition. The Advertiser would be glad of an offer for the whole or part of them. A purchaser of the whole would be liberally dealt with.
Apply to Mr. WM. WOOD, Cattal, near York.

Myatt's Early Prolific Ash-leaved Kidney Potatoes.

H. AND F. SHARPE are now taking orders for the above, which has this season proved itself to be the earliest and most prolific Potato in cultivation, and as fine in quality as any of the Early Kidney varieties. Having a good stock they can offer them at a low price to the Trade.

Also JACKSON'S ASH-LEAVED KIDNEY, WALNUT-LEAVED KIDNEY, and all the early Round varieties at equally low prices, which may be had on application.
Seed Growing Establishment, Wisbech.

Extra Strong Seakale for Forcing or Planting.

GEORGE CLARKE has to offer some very fine clean SEAKALE, quite equal to that which he sent out last season, and which gave such great satisfaction. The diameter of the roots is 2 to 3 inches, and for forcing it cannot be surpassed. Prices forwarded on application.

Samples can be seen at his Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill, S.

40 to 45 per Cent. of Soluble guaranteed.
1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.

Extract of Opinion from Mr. WAY, *January* 23, 1862.

"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."

Extract of Opinion from Dr. VOELCKER, *January* 1862.

"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."

The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.

Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

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THE PEDIGREE WHEAT IS THE BEST KNOWN FOR LATE AUTUMN AND SPRING SOWING.

SEE STAND No. 60, SMITHFIELD CLUB SHOW.

HALLETT'S PEDIGREE NURSERY WHEAT.

1861, ACTUAL SIZE AFTER FOUR YEARS' REPEATED SELECTION, STARTING FROM A SINGLE GRAIN IN EACH YEAR.

Price ONE GUINEA A BUSHEL, including bag sewed up and sealed, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order.
Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

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PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11l. 11s. per Ton for cash.
PETER LAWSON & SON, 27, Great George Street, Westminster.

THE LONDON MANURE COMPANY have now ready
PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
BLOOD MANURE for ditto.
SUPERPHOSPHATES of LIME, &c.
All the above being in the finest condition. They also continue to supply
GIBBS'S PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of known value.
E. PURSER, Secretary.
116, Fenchurch Street, E.C.

LAWES'S WHEAT MANURE for AUTUMN SOWING.

In consequence of the high price of Peruvian Guano, J. B. LAWES has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of J. B. LAWES, or through any of his appointed Agents. Price 8l. per ton at the Factories, Deptford and Barking Creeks.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures. American and other Cakes at market prices.

Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

Autumn Sowing.

THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY (LIMITED), consisting of Tenant Farmers occupying upwards of 30,000 Acres of Land.

Managing Director.—JAMES ODAMS.
Secretary.—C. T. MACADAM.

Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex.

This Manure has been in use for upwards of 10 years, and has given great satisfaction to consumers. It is specially prepared for Autumn Sowing, and on most soils proves as effective as the best Peruvian Guano.

Orders may be sent to the Company's Agents throughout the country, or direct to C. T. MACADAM, Secretary.

Price 7l. 10s. per Ton, delivered at any Railway or Wharf in London.

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REIGATE SILVER SAND.—Best quality, 12s. per Ton, or 1s. 3d. per Bushel, at Swan Place; delivered 5 miles, or to any London Wharf or Railway, 16s. per Ton, or 1s. 6d. per Bushel (Sacks at cost price). Kentish and Hampshire Peats, Yellow Loam, Leaf Mould, and Cocoa Fibre Refuse; also Cocoa Fibre for Orchids.
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EXTRA STRONG TOBACCO PAPER, at a low price to the Trade.
Apply to H. BROWN, Seedsman, Liverpool.

Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of GEO. GLENNY, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP.

1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. NEAL, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved in hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by PRICE'S PATENT CANDLE Co., Limited.

WINTER DRESS all FRUIT TREES with GISHURST COMPOUND.

Copy of a Letter from Mr. RIVERS, *Nurseries, Sawbridgeworth, Herts, January* 9, 1862.

"I think you should prominently mention the great benefit Wall Trees of all kinds derive from a dressing of the Compound applied in January, it is so very beneficial. THOS. RIVERS."

From the Same, October 22, 1861.

"I must tell you what I heard to-day from a very clever gentleman farmer, Anthony Bubb, Esq., of Witcombe, near Gloucester. He has a Wall to which Peach Trees are trained. Well, last autumn they were in a wretched blighted state. As a desperate remedy he unnailed them all early last February and gave all but one a thorough painting with GISHURST COMPOUND, 1 lb. to the gallon of water; his trees, all but one, commenced to grow favourably in spring, and are now pictures of health. The tree not painted is in a blighted state. He used the same dressing to his Apple Trees; it killed the woolly aphis entirely, and has made his Trees clean and vigorous in their growth. He intends to paint all his Wall Trees annually, and tells all his friends to do the same. I shall certainly serve all my young Peach Trees against my walls in the same manner. The Compound is, I believe, more efficacious than the usual offensive mixtures of clay, soot, sulphur, &c., and it does not blacken the shoots on the walls. Unless trees are completely at rest, 6 to 8 ounces to the gallon of soft water is the best strength, and sufficiently strong to destroy eggs and insects."

GISHURST COMPOUND is Sold Retail by Nurserymen and Seedsmen, in Boxes, 1s., 3s., and 10s. 6d. each; Wholesale by PRICE'S Patent Candle Company Limited, Belmont, Vauxhall London.

COCOA-NUT REFUSE, as used for FERNS, BEGONIAS, &c., grown in the International Exhibition, ... at any Booking Office in the City at 1s. 6d., or within ... Charing Cross, at 2s. per bag of 3 bushels. Larger ... lower terms on application to the PATENT COCOA ... Kingston-on-Thames, S.W.
SHORT FIBRE for Orchids and Drainage in pots.
... Stamps or Post-office Orders payable to J. BARSHAM

BARSHAM'S BRUSHES and MATS are the best and most economical of any that are made, and are sold in every town in the kingdom.
N.B.—See that every Brush is stamped "J. BARSHAM'S ... Kingston-on-Thames."

DUNN'S GARDENER'S PENCILS,
Price 1s., will refill for 6d.
DUNN'S MARKING INK PENCILS will permanently mark everything, from plant labels of wood, zinc, &c., to the finest ... for which purpose required.
... at all Seedsmen, Stationers, &c., by Post for 13 Penny ... to the Manufactory, 1, Dalston Terrace East, London. ... pencils may be procured at the Office of the *Journal of Horticulture*, 162, Fleet Street, E.C.
N.B.—A liberal allowance to the Trade.

SHAW'S TIFFANY.
For samples and prices apply to
J. SHAW & Co., 29, Oxford Street, Manchester.

SECOND-HAND TARPAULINGS for Sale, 200, the size 7 ft. × 4 ft. 6 in., with an eyelet hole in each corner, suitable for garden frames, pits, &c. Price 2s. 9d. each, or made up to any required size, 1s. per square yard, a strong ... article; 2s. 8d. would be taken for a quantity. WATERPROOF CAPES, lined with blue cloth, 2s. 6d. and 3s. each. ... Macintosh DRIVING APRONS, 3s. each; large do., 6s. HORSES' LOIN CLOTHS, 7s. Waggon and Cart Covers, &c.
N.B. 1000 Policemen's Capes, second-hand, at 18s. to 30s. per doz.
R. RICHARDSON, 90, Euston Road, London, N.W.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.

Garden Border Edging Tiles.

F. AND G. ROSHER, CEMENT, BRICK, and TILE MERCHANTS, beg to invite attention to their varied stock of Ornamental GARDEN BORDER-EDGING TILES in Terra Cotta, Terro-Metallic ware, and Red ware. They present advantages over Box or Grass-edging in that they afford no harbour for slugs, &c., take up less room, and once laid require no further attention.
They may be had of various patterns at F. & G. R.'s Premises, Ward's Wharf, Upper Ground Street, Blackfriars, S.; ... Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.
N.B. Sketches of Patterns sent by post on application. Garden Vases of Artificial Stone, and Ornamental Flower Boxes in various coloured designs for Windows and Balconies in stock.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.
Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.
To be obtained of F. & G. ROSHER, at their Premises as above.

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CROGGON'S PATENT ASPHALTE ROOFING FELT,
Price 1d. per square foot.
INODOROUS FELT, for Damp Walls and for Damp Floors under Carpets and Floor Cloths, also for LINING IRON HOUSES to equalise the temperature. Price 1d. per square foot.
PATENT FELTED SHEATHING, for Covering Ships' Bottoms, &c.
DRY HAIR FELT, for deadening Sound and covering Steam Boilers, Pipes, &c., preventing the Radiation of Heat, thereby SAVING 25 PER CENT. IN FUEL.

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GALVANISED TINNED IRON, and every description of GALVANISED IRON WORK.

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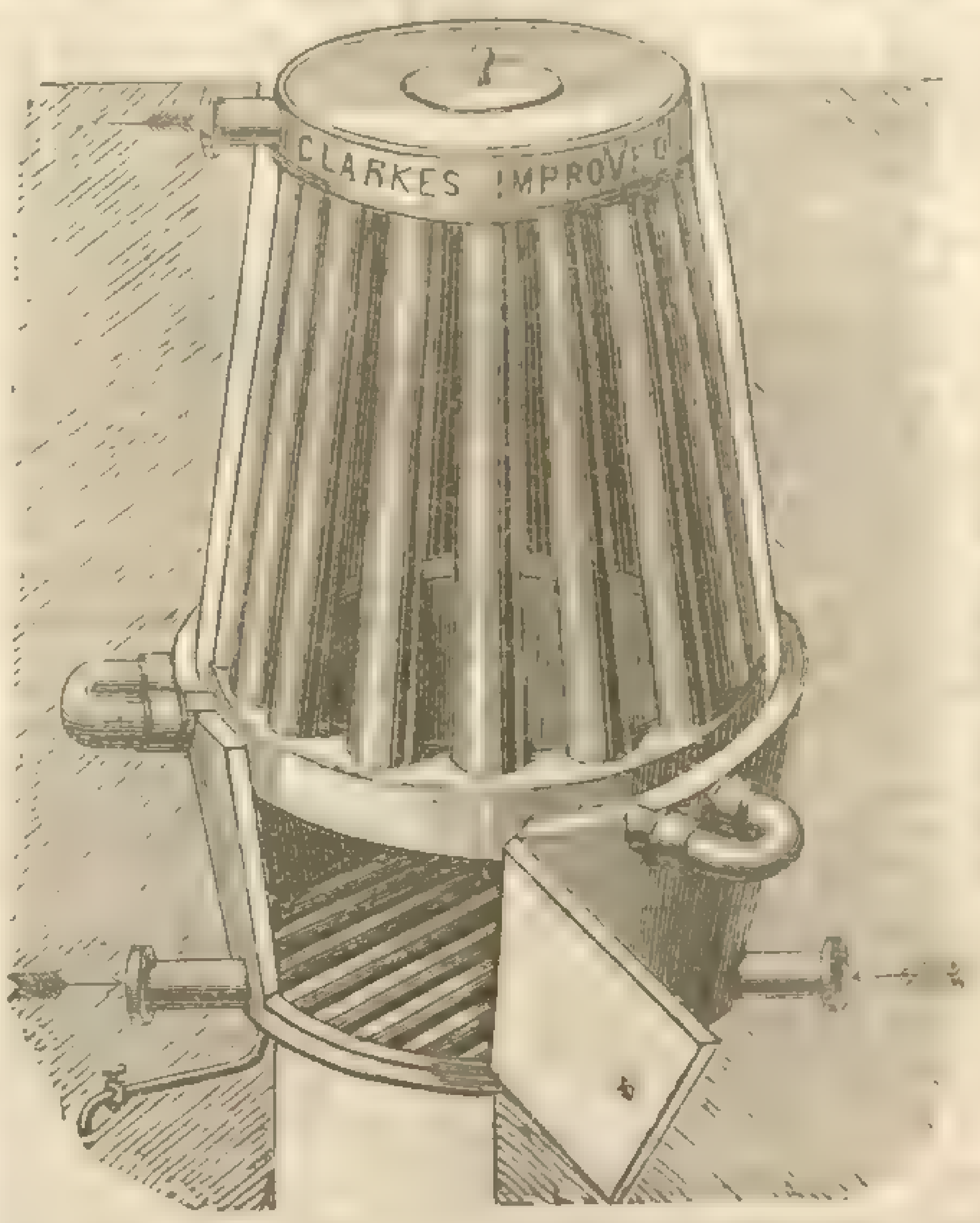
NOISELESS ELASTIC KAMPTULICON, or INDIA-RUBBER FLOOR CLOTH,
Impervious to Wet, Indestructible by Damp, Soft to the Tread, and Warm to the Feet, well adapted for Aisles of Churches, Public Offices, Rooms, Shops, &c., as well for its comfort as extreme durability.

Samples, Testimonials, and full particulars, free, on application to
2, GOREE PIAZZAS, LIVERPOOL; or 2, DOWGATE HILL, LONDON, E.C.



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WATER-JACKET CYLINDRICAL FURNACE
HOT-WATER APPARATUS
is now pronounced by Noblemen and their Gardeners to be the most powerful and economical BOILERS in the world. The Metal in these Boilers is half-inch thick, and without doubt will last many years. They are made of various sizes to Heat from 100 to 5000 feet. References sent upon application to Gentlemen who have them in use.
Illustrated Catalogues and Estimates for Fixing Boiler and Piping complete sent upon the shortest notice. Plans and sections, with printed instructions, are always sent out with the Boilers.

HOT-WATER APPARATUS MANUFACTORY,
EAGLE IRONFOUNDRY,
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T. C. CLARKE, PROPRIETOR (late HASWELL).

HIS HIGHNESS THE VICEROY OF EGYPT.

JOHN WEEKS & COMPANY
HAVE GREAT PLEASURE IN ANNOUNCING THE HONOUR OF BEING ENTRUSTED WITH THE COMMANDS OF HIS HIGHNESS TO
CONSTRUCT A MAGNIFICENT CONSERVATORY,
of chaste design and elaborate finish, 320 feet long by 130 feet wide. Its temporary erection will take place in the early part of next year at their
STEAM-POWER WORKS, CHELSEA,
when the Nobility and Gentry will have an excellent opportunity of witnessing
WEEKS'S IMPROVED METHOD OF VENTILATION
IN FULLEST OPERATION.

JOHN WEEKS AND COMPANY,
HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS ENGINEERS,
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GREEN'S
LATEST IMPROVEMENTS IN
LAWN MOWING, ROLLING, and COLLECTING MACHINES,
FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

These Machines have carried off every Prize that has been given in all cases of competition, and have been awarded the PRIZE MEDAL at the INTERNATIONAL EXHIBITION of 1862.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.

For Illustrated Price Lists, with full particulars, address
T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

Grape Vines from Eyes, in Pots.

LUCOMBE, PINCE AND Co. have a fine healthy Stock of strong VINES, from 6 to 10 feet long, of all the choicest sorts, fit for immediate planting, propagated from Eyes taken from their own experimental Vinery, which enables them to warrant each kind true to name.

LISTS of SORTS and prices may be had on application.

Exeter Nursery, Exeter.

Strong Fruiting Vines.

GEORGE CLARKE invites the attention of intending Planters to his very superior stock of the above. They embrace all the leading varieties, have clean and well ripened rods 8 to 10 feet long, and remarkably short jointed. They were stopped to this length as early as June, rendering them equally stout and good the entire length; they are therefore very suitable for planting a house, or for growing in pots, where a crop of fruit could under proper treatment be obtained the first season.

The prices are—1 year old, 10*s.* 6*d.* each; 2 year old (extra size), 15*s.* Smaller plants, also from Eyes, and equally well ripened, which will produce fruit the second year, 3*s.* 6*d.* to 5*s.* each.

Specimens can be seen at the Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill, S.

THE GREAT VINE at HAMPTON COURT.—The Subscribers being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42*s.* and 60*s.* p. doz.
" " fruiting plants in 12-inch pots, 10*s.* 6*d.* each.

If purchased in large numbers a considerable reduction will be made in price.

JACKSON & SON, Nurseries, Kingston, S.W.

TO ALL about to PLANT or FORCE the VINE.—A large Grape Grower, who has long been astonished at the prices charged for Vines, has raised from Eyes this year, and grown in pots No. 24, 1000 Young Vines of the following varieties, most of which he has proved. It will be observed that several New sorts are included.

Black Hamburgh	Black Prince
Champion do.	Royal Muscadine
Golden do.	Prolific Sweetwater
Muscat do.	Buckland do.
Muscat of Alexandria	Trentham Black
Bowood Muscat	West's St. Peter

Well established Plants, 3*s.*; Fruiting do., 5*s.* each.

Address Mr. GEORGE OWEN, Teddington, S.W.

Hurst House Seedling Pine.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer good plants of this choice Pine Apple, 10*s.* 6*d.*, 15*s.*, 21*s.* each.

The plant is of dwarf robust habit, producing heavy fruit of the richest flavour.

A large Stock of PRICKLY and SMOOTH CAYENNE PINES.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10*s.* 6*d.*, and 15*s.*
2-year old Successions, 21*s.* each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

THOMAS JACKSON & SON, Nursery, Kingston, S.W.

Foster's Seedling Grape.

MESSRS. JOHN AND CHARLES LEE have to offer Mr. Foster's stock of this fine NEW GRAPE, which can be confidently recommended for general cultivation in cool Vineries. It has borne an abundant crop in the large Conservatory of the Royal Horticultural Society at Chiswick, the bunches being large, with medium sized berries of a pale amber colour. The flavour of Foster's Seedling is most luscious, equalling the richness of its twin sister Lady Downe's, and as far as can be seen, partaking of the same quality of hanging well without shrivelling.

Canes for planting, 7*s.* 6*d.* each. A few Fruiting Canes at 21*s.* each.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

Fruit Trees.

RICHARD SMITH has no hesitation in saying, that he possesses by far the largest Stock of FRUIT TREES in the kingdom, consisting of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, in Maiden Trees, Dwarfs, Bushes, Pyramids, Half-Standards, and Standards; Dwarf-trained, Half-Standard, Standard, and Horizontally-trained Trees, of the finest sorts, and in the best possible condition. DESCRIPTIVE PRICED LISTS on application.

RICHARD SMITH, Nurseryman, Worcester.

Fruit Trees.

JOSHUA LE CORNU has no hesitation in saying that he not only has the most extensive Nurseries in the Island of Jersey, but that he possesses the largest collection of choice FRUIT TREES in that island, already so well known for the growth of fine fruit. His Nurseries being situated on elevated ground, the plants raised in them are of a hardy and vigorous nature, and are almost entirely free from constitutional maladies.

CATALOGUES may be had, post free, on application.

High View Nurseries, top of Queen's Road, Mont à-l'Abbé, St. Helier's, Island of Jersey.

To Gentlemen, Nurserymen, Florists, Market Gardeners, and Others.

BULSTRODE PARK.—EXPIRATION OF LEASE.

TO BE SOLD, in large or small quantities (in consequence of the Duke of Somerset requiring the ground), several thousands of Hook's celebrated SEEDLING and COB NUT TREES, the former a free and very early bearer, the latter the handsomest Nut grown; an immense number of 2-years' old BLACK CURRANT TREES of the very best sorts; a very large quantity of some thousand yards of LILIES of the VALLEY, suitable for Forcing or Planting out; Pheasant-Eye, Sweet-scented, and Double NARCISSUS; Velvet-coloured POLYANTHUS (a beautiful variety), FORGET-ME-NOTS, and other Flowering Bulbs and Plants; and a great number of ROSES, Moss and other kinds.

Apply to Mr. WILLIAM HOOK, Bulstrode, Gerrard's Cross; or to Mr. W. T. ATWOOD, Land Agent, Mortlake, S.W.

Planting.

WM. PAUL (Son and Successor to the late A. PAUL) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.

Entrance from the platform, Waltham Station, Great Eastern Railway.

Nurseries and Seed Warehouse, Waltham Cross, N.

SCOTT'S CATALOGUES.

No. 1.—FRUIT CATALOGUE and FRUIT TREE CULTIVATOR'S DIRECTORY describes nearly 800 of the best and most esteemed of our Fruits, with copious Observations and Directions about their Cultivation; the formation of Pyramids, Root Pruning, and other matter interesting to lovers of fine Fruit. Price 7*d.*

No. 2.—The BULB, WINTER, and SPRING BEDDING-PLANT CATALOGUE, 18 pages.

No. 3.—The DESCRIPTIVE CONIFEROUS CATALOGUE, 25 pages.

No. 4.—The ROSE CATALOGUE, 22 pages.

No. 5.—The SELECT NURSERY STOCK, 15 pages.

In December, the VEGETABLE and FLOWER SEED CATALOGUE.

In April, the SUMMER BEDDING CATALOGUE, 72 pages.

Apply to J. SCOTT, Merriott, Crewkerne, Somerset.

To Noblemen, Gentlemen, and Others engaged in Planting.

GEORGE BAKER begs to invite attention to the following superb specimens, which are in the finest condition:—

ARAUCARIA IMBRICATA, 6 feet, 9 feet, 14 feet
ABIES DOUGLASII, 10 feet, 14 feet, 20 feet
ARBOR-VITÆ (Siberian), 6 feet, 8 feet
CEDRUS DEODARA, 6 feet, 8 feet, 10 feet, 12 feet, 20 feet
CUPRESSUS LAWSONIANA, 5 feet
" DISTICHA, 8 feet, 12 feet
CEDRUS LIBANI, 8 feet, 10 feet
CHINESE JUNIPER, 5 feet, 6 feet
IRISH YEWS, 6 feet, 8 feet
JUNIPERUS RECURVA, 8 feet
" BEDFORDIANA, 5 feet, 6 feet
PICEA CEPHALONICA, 11 feet
PINUS CEMBRA, 7 feet, 10 feet
" EXCELSA, 10 feet, 15 feet
TAXODIUM SEMPERVIRENS, 10 feet, 12 feet
THUJA GIGANTEA, 6 feet
WELLINGTONIA GIGANTEA, 5 feet
KALMIA LATIFOLIA, Standards, fine
RHODODENDRONS,
PORTUGAL LAURELS,

G. B. in offering the above perfect specimens feels assured that whoever may favour him with their kind orders, their hopes will be fully realised. Prices on application.

American Nursery, Windlesham, Bagshot, Surrey.

AN AVENUE of WELLINGTONIAS.—Gentlemen wishing to plant an avenue of this GLORY OF THE FOREST would do well to inspect the Stock at the Sunningdale Nursery. They may select from thousands.

RHODODENDRONS of every hue, Scarlet, White, Crimson and Purple.—Gentlemen about to plant would consult their interest by an inspection of the Stock of Rhododendrons at the Sunningdale Nursery. They may select from hundreds of thousands.

COVER PLANTING.—Gentlemen about to plant for Cover would find the following plants worth a trial:—BERBERIS JAPONICA, COTONEASTER MICROPHYLLA, and RHODODENDRONS. A visit to the Sunningdale Nursery would not be uninteresting.

ROSES, Standards and Dwarfs, a very fine selection, in the most vigorous health, may be seen at the Sunningdale Nursery.

ROSES for FORCING, specially prepared, and calculated to give an abundant supply of Flowers during winter. All the finest kinds may be selected at the Sunningdale Nursery.

CONIFERS.—A fine Stock of well grown Plants of all the most interesting and really hardy Conifers, Evergreens, &c., may be seen at the Sunningdale Nursery, Sunningdale Station, S. W. R.

CHARLES NOBLE.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious Index of all their synonymes. Free by post for 12 postage stamps.

RICHARD SMITH, Nurseryman, Worcester.

To the Trade.

JAMES GARAWAY AND CO. have large quantities to offer of

ASH	OAK
BEECH	SPRUCE FIR

Prices and Sizes on application.

Durdham Down Nurseries, Bristol.

3000 DEODARS, 1000 CUPRESSUS LAWSONIANA, 1000 C. MACROCARPA, 500 THUJA LOBBII. The above are offered very cheap. The Deodars are handsome well grown plants, from 2½ to 5 feet, and have been transplanted every autumn for the last five years. The others are fine healthy plants varying from 2 to 5 feet high.

Prices on application to J. SCOTT, Merriott, Crewkerne, Somerset.

Larch, Quicks, &c.

GEORGE CHIVAS, Chester, offers FOUR MILLIONS of TRANSPLANTED LARCH, from 1½ to 4½ feet, of very superior quality. FOUR MILLIONS of TRANSPLANTED THORNS of various sizes, a large portion of which are exceedingly strong. Orders for 10,000 of either, delivered free at any Railway Station. A Sample Bale, containing 100 of each, 5 sizes of Larch, 22*s.* 9*d.*, and of Quicks, 15*s.*, will be forwarded on receipt of a Post-office Order from unknown Correspondents.

A General PRICED LIST on application.

W. VIRGO AND SON have a very large quantity of strong 2 and 3 years Transplanted QUICK; also 3 years Seedling QUICK. Strong Evergreen Privet of various sizes, Standard and Dwarf Roses, Dwarf-trained Cherries of various sorts, English Oak, 3 to 4 feet; Turkey Oak, 6 to 8 feet; Weymouth Pine Fir, 3 to 7 feet; Laburnum, 5 to 7 feet; Mountain Ash, 5 to 7 feet; Berberis aquifolia, 9 inches to a foot; Common Laurel, 2 to 3 feet; Yew, 2 to 3 feet; Box edging in large quantities.

Prices, with samples, can be had on application at the Nursery, Wonersh, near Guildford, Surrey.

To Gentlemen intending Planting Elm.

W. MILLER begs to offer at reasonable prices, from 3000 to 4000 ENGLISH and HUNTINGDON ELM, well grown and will move well. Height, 5 to 6, 7 to 10, 10 to 15 feet.

Prices on application at the Nursery, Bridge Street, Andover, Hants.

Chrysanthemums.

WILLIAM HOLMES begs to offer this year's Varieties of the above at 5*s.* per dozen, including Carissima, Duchess of Wellington, General Slade, Lady St. Clair, Lord Ranelagh, Orange Perfection, Lady Russell, Nil Desperandum, &c.

Frampton Park Nursery, Hackney.

Exhibition of Chrysanthemums.

JOHN SALTER, F.R.H.S., invites the Public to visit his unrivalled COLLECTION of these beautiful FLOWERS, which are NOW in FULL BLOOM. The Winter Garden alone contains several thousands of Plants, and presents a *coup d'œil* unique in this or any other country. The Gardens are open every day except Sunday. Admission free.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Royal Horticultural Gardens, South Kensington.

JOHN SALTER has the pleasure to announce that his magnificent COLLECTION of CHRYSANTHEMUMS is NOW on VIEW at the above Gardens, in the space occupied by the Rhododendrons last spring, and will continue in perfection during the month of November.

The plants in the Winter Garden of the Nursery are also in BLOOM.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

CUCUMBERS. — EARLY PRINCE ALBERT, first-rate, 12 Seeds, 1*s.* 6*d.*; BLACK SPINE, 15 Seeds, 1*s.* Trade supplied.

Best MUSHROOM SPAWN, 5*s.* per bushel.

MUSHROOM PAMPHLET, 1*s.* 1*d.*

JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

ROSES, NEW AND OLD.

WILLIAM PAUL

(SON AND SUCCESSOR TO THE LATE A. PAUL),

Can supply all the best ROSES, New and Old, and respectfully solicits early orders to insure good plants.

The following statement will show the number of FIRST and SECOND PRIZES awarded to him at the London Flower Shows during the present year:—

March	19.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
"	26.	Royal Botanic Society	Cut Roses	FIRST PRIZE
April	2.	Royal Botanic Society	Cut Roses	FIRST PRIZE
"	9.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
		Royal Horticultural Society	Beauty of Waltham	SPECIAL CERTIFICATE
		(A First Class Certificate having been previously awarded for this Seedling.)		
May	21.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
		Royal Horticultural Society	Pot Roses	SECOND PRIZE
"	24.	Crystal Palace	Cut Roses	FIRST PRIZE
		Crystal Palace	Pot Roses	SECOND PRIZE
"	28.	Royal Botanic Society	Collection Ditto	FIRST PRIZE
		Royal Botanic Society	Cut Roses	FIRST PRIZE
		Royal Botanic Society	10 Pot Roses	SECOND PRIZE
June	11.	Royal Horticultural Society	Cut Roses	FIRST PRIZE
		Royal Horticultural Society	12 Pot Roses	SECOND PRIZE
"	18.	Royal Botanic Society	50 Cut Roses	FIRST PRIZE

PRICED DESCRIPTIVE CATALOGUE free by post.

NURSERIES AND SEED WAREHOUSE, WALTHAM CROSS, N.

Standard and Dwarf Roses.

BENJAMIN R. CANT will be happy to forward on application his DESCRIPTIVE CATALOGUE of ROSES. As a guarantee of the value of his collection, B. R. C. begs to state that he has this year obtained 17 First Prizes for Cut Roses at the principal Shows.

Very fine vigorous plants of the choicest sorts will be supplied at the following prices:—

Standard Roses	18s., 24s., and 30s. per doz.
Half Standard Do.	18s. and 24s. per doz.
Dwarf Do.	9s. to 18s. per doz.

The NEW ROSES of 1862, Dwarf plants, 3s. 6d. to 5s. each; where more varieties are taken, 30s. per doz.

St. John's Street Nursery, Colchester.

N.B.—B. R. C.'s Catalogue contains nothing but the best varieties, all indifferent and worthless sorts are excluded.

50,000 Dwarf Roses in Pots on their own Roots.

STANDARD, HALF-STANDARD, AND DWARF BUDDED ROSES, ON THE BRIAR AND MANETTI STOCK, IN ENORMOUS QUANTITIES AND IN THE MOST VIGOROUS HEALTH.

WILLIAM WOOD AND SON have much pleasure in directing especial attention to their very extensive and well-grown stock of ROSES, CATALOGUES of which may be had gratis on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses of 1862.

JOHN KEYNES has to offer 1000 very extra strong plants, the finest varieties of the last season, in 6 and 8-inch pots, now ready, price 42s. per dozen, with the usual discount to the Trade.

Fine STANDARDS, of the older varieties, 24s. & 30s. per doz. DWARFS, 12s. and 18s. per dozen, all of the finest varieties in cultivation. Every attention paid to package, and compensation for carriage.

New CATALOGUES ready.

JOHN KEYNES, Nurseryman, Salisbury.

ROSES and HOLLYHOCKS.

	Per dozen.
ROSES, fine Standards, from	18s. to 30s.
ROSES, Half Standards ,, ...	18s. to 30s.
ROSES, Dwarfs .. ,, ...	9s. to 18s.
ROSES, New of 1862 ,, ...	30s. to 42s.
HOLLYHOCKS, old varieties, from ..	12s. to 18s.
HOLLYHOCKS, newer varieties ,, ..	30s. to 42s.
GLADIOLI, new and old.—A fine collection from	6s. to 30s.

The above are very fine.

CATALOGUES post free on application.

PAUL & SON, Old Cheshunt Nurseries, Herts.

Notice.—American Plants.

WATERER AND GODFREY'S CATALOGUE is now ready, and will be sent on application; it gives a fair price and description of all the Rhododendrons and other American Plants worth growing, as well as a general summary of the most extensive Nursery Stock in Europe.

The Exhibition of American Plants in the Royal Horticultural Society's Garden, South Kensington, were supplied by WATERER & GODFREY, Knap Hill, near Woking.

Hardy Scarlet and other Choice Rhododendrons.

JOHN WATERER'S CATALOGUE of the above popular plants, as exhibited by him at the Royal Botanic Gardens, Regent's Park, is now published, and will be forwarded to all applicants.

It describes faithfully the colours of all the Rhododendrons, thereby rendering every facility for making selections.

It likewise contains an abridged List of really Hardy Conifers, with their heights and prices.

The American Nursery, Bagshot, Surrey.

Andromeda formosa.

W. H. ROGERS, Red Lodge Nursery, Southampton, holds a fine Stock of the above very beautiful hardy Shrub, which produces immense corymbs of blossom like Lilies of the Valley, and evergreen foliage like Arbutus, and is admirably adapted for Lawns, Shrubberies, and American Grounds. Strong bushy plants, 1 foot, 1s. 6d.; 2 feet, 2s. 6d.; and 3 feet, 5s. each; or 15s., 24s., and 42s. per dozen.

RHODODENDRONS, ROSES, FRUIT and FOREST TREES, beautiful specimens of CONIFERÆ, and every other description of Nursery Stock, extending over 60 acres, CATALOGUES of which may be had on application.

German Seeds.

FREDERICK ADOLPHUS HAAGE, Jun., NURSERYMAN and SEED GROWER, of Erfurt, Prussia, has the pleasure to inform the Trade that his new WHOLESALE PRICE LIST for 1862 and 1863 is now ready, and may be had on application to his Agents,

Messrs. BETHAM & BLACKITH, Cox's Quay, Lower Thames Street.

To the Seed Trade.—Continental Flower Seeds, &c.

F. W. WENDEL, SEEDSMAN, &c., Erfurt, Prussia, begs respectfully to announce that his WHOLESALE CATALOGUE of the above is now ready, containing extensive collections of Stocks, Asters, and other Choice Seeds.

Free by Post on application to GEO. MACINTOSH, Seedsman, Bath Road, Hammersmith, London, W.

RHODODENDRON VERSCHAFFELTII.—All the amateurs who last summer saw this splendid hardy variety in my nursery are of the same opinion—that it is the best variety in that way. Colour very delicate rose-violet, with extraordinary large and numerous black spots; an excellent form; beautiful foliage, very free and late bloomer, and particularly quite hardy.

Fine Plants, with branches, 1 to 1½ feet high, 12s. each.
ditto ditto and buds, 1½ to 2 ft. high, 20s. each

N.B. A correct drawing has appeared in VERSCHAFFELT'S "Illustration Horticole."

The GENERAL CATALOGUE can be obtained free by writing.

AMBROISE VERSCHAFFELT, Nurseryman, Ghent, Belgium.

CHARLES B. SAUNDERS, Cæsarean Nurseries, Island of Jersey, Established 1816.

Strong well ripened rooted VINES, best sorts, 6 to 8 feet rods, grown in the open air without nursing, 2s. 6d. each.

Dwarf Standard, Dwarf-trained PEAR TREES on Quince stocks, well rooted, set with fruit spurs, in fine condition, 1s. 6d. and 2s. 6d. each.

Maiden and Dwarf-trained PEACH and NECTARINE TREES, 1s. 6d., 2s. 6d., and 3s. 6d. each.

Maiden and Dwarf trained MOORPARK and KAISHA APRICOT TREES, 1s. 6d. and 2s. 6d. each.

An immense Stock of EVERGREEN OAKS, grown in Pots and frequently transplanted, from 50s. to 200s. per 100, 2 to 6 feet high.

Large quantities of the above can be supplied. LISTS of GENERAL NURSERY STOCK on application, and inspection respectful solicited by

CHARLES B. SAUNDERS, Nurseryman, &c., Jersey.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

Excellence and Economy.

H. BROWN has imported a very large Stock of HYACINTHS, CROCUSES, and other BULBS, including the best varieties for exhibition and decoration. Collections at very moderate prices, carriage free.

See PRICED DESCRIPTIVE CATALOGUE, post free.

Seed Warehouse: 4, Commutation Row, Liverpool.

DUTCH BULBS, HYACINTHS, finest named, 6s. per dozen; ditto mixed, 3s. per dozen, 20s. per 100; large Golden Yellow CROCUS, 1s. 3d. per 100, 10s. per 1000, &c., and all other Bulbs equally cheap.

British and Foreign FERNS, immense variety; Fern Cases and Aquariums of every description. Real Sea Water, 6d. per gallon.

R. GREEN, 154, Kingsland Road, N.E., and the Bedford Conservatories, Covent Garden Market, W.C., entrance Central Avenue only.

J. C. WHEELER AND SON, SEED GROWERS, Gloucester, have imported in excellent condition a large

COLLECTION of HYACINTHS,

including the extra fine varieties recommended by Dr. LINDLEY.

PRICED LISTS may be had gratis on application to the Importers,

Messrs. J. C. WHEELER & SON, Gloucester.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON AND CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

New Seeds, Growth of 1862.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS are now prepared to execute orders for all kinds of FARM and GARDEN SEEDS. The prices are lower and the quality finer than usual, owing to the very favourable harvest.

Royal Berkshire Seed Establishment, Reading.

North Warnborough Nursery, Odiham, Hants.

STEPHEN SHILLING has been induced to have nearly the whole of his NURSERY STOCK offered for SALE by PUBLIC AUCTION, in consequence of being overstocked with many different sorts of Plants. The Stock has all been recently removed, therefore will transplant with safety.

S. SHILLING takes this opportunity of tendering his grateful thanks to his numerous customers and patrons, and to announce that he intends to continue on his trade of Nurseryman, Florist, and Seedsman, as heretofore, at North Warnborough and Hartley Row.

All communications and orders are respectfully requested to be addressed to him, North Warnborough Nursery, near Odiham, Hants, when they will meet with prompt attention.

Elymus glaucescens (syn.) sabulosus.

B. S. WILLIAMS begs to call the attention of noblemen and gentlemen to the above ORNAMENTAL GRASS; it is perfectly hardy; having proved it for several years, he can with confidence recommend it as being superior to the Pampas Grass as an under cover for Game, &c.

B. S. W. being convinced of its utility, has provided a large Stock, which he begs to offer at the following low prices:—6s. per dozen; 40s per 100.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Gladiolus Gandavensis and Varieties.

B. S. WILLIAMS'S choice collection of these superb Bulbous Plants, which are beyond doubt the handsomest autumnal ornaments to the garden, is now ready for sending out. Great attention has been bestowed on the selection, amongst which are many novelties, and none but those of the best quality are offered.

Collection of 24 Splendid Varieties, one root of each, 21s.
Collection of Choice Named Varieties, 6s., 8s., and 10s. per doz.

A PRICED and DESCRIPTIVE LIST on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Gladiolus Brenchleyensis (True).

YOUELL AND CO. beg to offer this season strong Flowering BULBS of the above, unequalled by any other for its brilliancy of colour, at 3s. 6d. per dozen; or 25s. per 100. Trade price on application, and when quantities are ordered a considerable reduction will be made.

The *Gardeners' Chronicle* of August 23, 1862, says:—"The spikes you have sent us are magnificent. We have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."

CATALOGUES of their extensive Collection, for which the First Class Prize was awarded at the Crystal Palace Show, Sept. 3, 1862, and two First Class Prizes at the Royal Horticultural Society's Show, South Kensington, Sept. 10, 1862, will be forwarded on application.

Royal Nurseries, Great Yarmouth.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.

	£	s.	d.
50 in 25 extra choice varieties	£2	2s.	0d.
25 in 25 ,, ,, ...	1	5	0
12 in 12 ,, ,, ..	0	12	0
50 in 50 choice varieties	1	12	6
50 in 25 ,, ,, ...	1	5	6
25 in 25 ,, ,, ...	0	13	6
12 in 12 ,, ,, ...	0	5	0

Extra fine mixed, 2s. 6d. per doz., 17s. 6d. per 100.

BUTLER & MCCULLOCH, Seed Merchants, Covent Garden Market, W.C.

To Rose Amateurs, Nurserymen, and the Charitable in general.

AN APPEAL is trustingly made on behalf of HENRY SHAILER, of Battersea Fields, Nurseryman, the raiser of the Scarlet and Pompone Moss Roses, and whose Father raised the unique White Moss, and was the first Trade Cultivator of the old Red Moss Rose in England.

He is 80 years of age, and has for upwards of 12 months been quite incapable of attending to his little trade, having lost the use of his lower extremities; added to which he is now compelled to leave his Cottage and ground which he has occupied 23 years, the greater part of his small stock being destroyed by the progress of buildings erecting on it. The Union Workhouse is therefore the melancholy prospect immediately before him.

It is in the hope of averting from his few remaining days so painful an end, that a Subscription is hoped to be raised to enable his Wife to open a Small Shop, and thus save from becoming a pauper, a man to whom it is asserted Floriculture is somewhat indebted.

The facts are generally corroborated by

Rev. BURMAN CASSIN, M.A., St. George's, Battersea.
FREDERICK JOHN LILLEY, Esq., Surgeon and M.D., Wandsworth Road.
GEORGE ALDER, Esq., Chairman to the Board of Guardians, Wandsworth.
Messrs. PROTHEROE & MORRIS, Nurserymen and Auctioneers, Leytonstone.

The latter gentlemen have kindly consented to receive and appropriate all Subscriptions, a List of which, when closed, will be advertised in the *Gardeners' Chronicle*.

SUBSCRIPTIONS RECEIVED for Mr. SHAILER.

Mr. —, Chelsea ..	£1 0 0	Messrs. Lee	£0 10 0
Rev. B. Cassin, St. John's, Battersea	0 10 0	Alex. Protheroe ..	0 10 0
Mr. Alder	0 5 0	West	0 1 0

Received by H. S.

THE BRITISH COLUMBIA BOTANICAL ASSOCIATION, for sending a Botanist to collect and transmit Seeds of CONIFEROUS and other TREES, SHRUBS and PLANTS from British Columbia, Vancouver's Island, and adjacent countries—

Sir WILLIAM GIBSON CRAIG, Bart., of Riccarton, *Chairman;*
ISAAC ANDERSON HENRY, Esq., of Wood End, Hay Lodge, Trinity, Edinburgh, *Secretary*, and
JAMES M'NAB, Esq., Curator, Royal Botanic Gardens, Edinburgh, *Treasurer;*

Beg to intimate that as the greater portion of the SHARES are already taken up, those intending to join the Association will require to make immediate application to the SECRETARY or TREASURER, who will, if required, send full printed particulars

The Gardeners' Chronicle.

SATURDAY, NOVEMBER 29, 1862.

OUR flower-gardens have just been laid bare by the ruthless hand of Frost the Destroyer. They have, moreover, at their best been but an indifferent success this year, owing to the coyness of Sol, the Vivifier. These axioms will serve as a text for our present homily.

As to the first point, bare our modern flower-gardens must be at this season from the very nature of things, unless some special provision is made to the contrary; whilst from the want of such provision, bare they must remain for some months to come, in by far too many instances. As to the second point, the question arises whether we do well, considering the vicissitudes of the seasons, to devote the whole, or so large a part of our flower-gardens to the summer plants, the half-hardy subjects which are so extensively, indeed almost exclusively, used in these modern times—subjects which not unfrequently fail piecemeal, even in good seasons, and generally fail wholly to a greater or less extent in bad ones, while in every season, good or bad, they shrink before the first breath of Winter. We propose to look a little further into this second question first—an arrangement which, we believe, is permissible in a homily, of whatever kind.

And here let us observe that our object is not by any means to condemn the parterre style of flower gardening, which has led to this state of things. It has its beauties and its merits, which we would be amongst the first and the last to acknowledge. But there are a few points connected with the present development of the style, upon which we have some misgivings. One of these is whether all or the most part of a modern flower garden or pleasure ground ought to be, as it commonly is, everywhere be-spangled parterre-fashion: whether it is wise and well to scatter masses of bedding plants pell-mell over the whole surface of a lawn; or whether, rather, we should not refuse to permit any beds or series of beds of flowers of the kind in question, to appear on the open turf of a pleasure ground. Examples of be-spangled and be-flowered

lawns are common enough everywhere, so that we need not lack illustrations, but this does not prove that they are in good taste: nor indeed do we think they are so. An open surface of Grass, such as a well-kept lawn, blends harmoniously with trees and shrubs, because it is natural, but an open surface of Grass does not blend so harmoniously with a fanciful mass of brilliant flowers, for that is artificial. The transition is too sudden to be agreeable; the broad masses of colour want toning down. In fact, they are out of place. Doubtless the introduction of margins of foliage in parterre-beds is a very great improvement, but even when the style is thus modified, an open lawn is not, as we think, the place for a fancy parterre; and the introduction of a series of beds of nameless form, either at certain prominent points or unmeaningly skirting the pathways, are practices which we venture to condemn *in toto*. Let a lawn or a pleasure-ground consist of well kept turf and well selected shrubs and trees, and it cannot fail to be always agreeable, but let it be stuffed or even garnished with flower-beds, and ten to one its fitness and repose will vanish. A parterre, wherever introduced, should be limited by some definite and unmistakeable boundary. It may be small, which is probably best, because then the eye can more readily appreciate and understand its design, or it may be large without losing its effectiveness, if well designed; but whether large or small it should be compact, and made up of well-fitting parts, so as to look like cleverly designed embroidery, not scattered about as if its parts were dislocated; indeed, compactness and neatness of design, when combined with fitness, are the greatest merits it can possess. But to be what it ought, it must be defined, bounded, limited. It must form a whole, not part of a whole. The boundery may be a terrace wall, a kerb-stone, a bank of shrubs, a hedge, or an even slope—anything definite, and the surface may range with the general level, or be raised, or sunk; but the parterre should be something which is entire and complete in itself. So much of digression. Let us now return to our proper subject, which was to inquire whether we do well to give up, so nearly, in our gardens, everything else for beds of summer flowers.

One of the strongest objections to the present wide-spread adoption of the summer bedding system is, that its demands upon the gardener, whether the scale be great or small, are so onerous, that it excludes for the most part all chance of a hearty, if it does not debar even a halting, adoption of any other style. Thus it tends to banish from cultivation many of our most beautiful flowers, and to narrow the range of flower-garden materials until gardens themselves become tediously monotonous. So much time is taken up in autumn by propagation, and in spring by arranging and planting out, and so much accommodation is demanded in winter for the preservation of the necessary stock (all this increasing in ratio with the size and pretensions of the garden, but equally pressing on the garden staff, whether few or many in number), that very few persons now-a-days find time to learn the mysteries of a mixed flower border. The bedding-out man moreover necessarily has his thoughts directed into a channel entirely different from that of the man whose aim is to cultivate what in common parlance are called garden flowers; he is and must be always thinking of, and always on the look out for, some new thing in the shape of a novel variety which will afford him a shade lighter or deeper of this or that colour in his compositions. Such ideas (necessarily, if he has heart in his work) so entirely engross his sympathies, that to him Nature's most lovely flowers become mere worthless weeds, because they will not "bed-out." The border-flower man—if indeed the species be not quite extinct—will, on the other hand, be found to be constantly experimentalising, and will be deeply embued with a love of flowers for their own sakes, from the interest which an insight into their variety and often curious structure has excited in his breast; he will now be trying how he can master the obstinacies of "those beautiful Gentians," anon, how to render more tractable or to bloom more profusely "those remarkable Slipperworts"; and he will be found wondering how so much time can be wasted—so at least he would put it—in fussing about with never-ending Verbenas and Pelargoniums, arranging and rearranging them with so much solicitude, for the sake of producing what—merely pretty piebald masses of colour, which, beautiful as they are, he comes to think, might, like the many colours of the polychromist's earths and gravels, be more easily produced on canvas, and thus come more obviously within the domain of "high art."

And so, bedding-out run wild being the fashion, our flower-gardens everywhere become filled with mere variations in colour of some half-dozen or dozen species of helplessly tender plants, to the banishment in a general way of almost every beautiful hardy flower. In large establishments, the preparatory work is generally done at home; but those who have no accommodation either to propagate or store the necessary materials have no difficulty in finding them prepared to their hand at the cost of a few pence per dozen. The temptation to follow in the train of fashion thus becomes too strong even for those suburban amateurs who have not space enough for a proper parterre, but who are willing to give up the perennial interest of a well-stored mixed garden, small though it may be, for the *ignis fatuus* of a feeble burst of summer flowers.

If the parterre system were confined within its proper limits, this would not be. It is merely because "everybody" gardens on the bedding-out system, that everybody else must bed-out too. Now there is no question that every garden of any pretensions should have its parterre (distinctly bounded we must however maintain), and if one be not enough, it may very well have its two or three, according as space and situation may determine; but the rest of the garden should be kept free from beds of summer plants. Instead thereof there should be introduced here a velvet lawn, there a rocky glade, here shrubs or trees, or both combined, there old-fashioned border flowers, not omitting the new-faced improved varieties of some of them which modern times have produced; and, all these features being modified to suit individual cases, there would be secured a garden of never-failing interest: a garden, moreover, from which even the suburban amateur might gain a lesson in arrangement, for might he not terrace his little parterre, and surround his open lawn by an irregular border of old-fashioned flowers? and would not that be preferable to mixing up the geometrical and the natural in one inharmonious and incongruous whole? No sort of arrangement could suit mixed flowers of the class referred to, better than the irregularities of a natural garden.

But another strong objection may be urged against *so much* exclusive parterre gardening as now prevails, namely, that it tends to limit the period of garden enjoyment, all its interest and all its beauties being crowded into the few fine weeks of summer, while for the rest of the year such a garden is too commonly either wholly or partially uninteresting. On the other hand a mixed garden has its constant succession of beauties, from the earliest peering blossoms of the Christmas Rose, the Primrose, and the Snowdrop, till the last florets of the Chrysanthemums have been nipped by frost. There is a wondrous interest in this constant change, which the parterre system utterly fails to impart. There we plan out a certain effect, we plant for it, and we wait expectantly till it is realized—if the weather gods are propitious; we admire the picture for the little while it lasts; and then all is blank again till another year. Not so the mixed flower garden. In that we have in the earliest days of the infant year, our Snowdrops and Crocuses; here there soon appears a Scilla or a Dog's-tooth Violet; there come Wallflowers, and Alyssums, and Saxifrages, with a host of Narcissi and other bulbs; later appear the great Rosaceous family in a variety of forms; and then by-and-by Larkspurs, Phloxes, and Pentstemons, beauteous Lilies and Gladioli here and there intervening, as well as an endless galaxy of beauties too numerous to particularise; until at length Hollyhocks, Dahlias, and Chrysanthemums bring up the rear. Every season, every month, nay almost every week, is marked out by some newly expanding flower, distinct in character, and teeming with interest and beauty.

Summing up these considerations we arrive at the conclusion, that our gardens should NOT be sprinkled everywhere with beds of Pelargoniums, Verbenas, Calceolarias, Petunias, and some half dozen or half score other flowers to the exclusion of all besides. Let us have indeed our parterres by all means, but let them be compressed within some appropriate and well-defined boundary, not drawled out in unmeaning succession over the whole garden. Let them be designed and filled according to the highest principles of art, and then we shall be able to look upon them as gems in the rich setting of an English pleasure garden, not as incongruous disfigurements. But let us have besides, our mixed gardens as in days of yore, in which all sorts of beauteous flowers may appear in succession throughout the year. Such flowers do well enough in formal beds or borders, if that is the most convenient way of growing them, and when bulbs and other plants are judiciously alternated, there will be little unsightliness from temporary gaps. The appearance of such miscellaneous collections will, however, be all the more attractive if they are disposed over an irregular surface representing the natural scenery of a rocky bank and dell.

We must defer until a future day the other part of our subject, which was to refer to the mode of making provision against bareness in the parterre, during winter.

IN reference to CINCHONAS (p. 934), Mr. HOWARD appears to misunderstand the tenor of the critical remarks appended to the cordial praise we awarded to his magnificent "Quinologia." Let us explain. Firstly, we objected to the elimination of the classical specific term of *C. Condaminea* from the genus, and we do so still. The fact of Mr. HOWARD's finding that HUMBOLDT's plant includes several species (or varieties, as the case may be), is no justification; in this case two alternatives were open to him; he might have retained the name for the Loxa bark tree of La Condamine, or failing its identification, he might have given it to that which represents best the group he includes under HUMBOLDT's plant. That these forms differ in their therapeutic properties is no sound argument in favour of their specific distinction, nor, were it so, would it be necessarily the case that "their distinctions are veiled or lost by their being all classed as one species;" as well may it be said that all the varieties of Apple and Pear, or still better that the sweet and bitter Almond should have different specific names, but for which their distinctions would be lost! Their virtues would be as conspicuous under subspecific names, or those of varieties, as of species. Mr. HOWARD goes on to say: "You express surprise that any one should be able to discriminate between the different sorts of Bark as they occur in the trade,"—if he re-reads what we said, he will find no such surprise expressed. What we do feel surprise at is, that these Barks, as they occur in trade, should be confidently referred to fragmentary specimens of *species* of a genus which is every whit as variable as our own Rosa and Rubus, and whose specific limits are botanically in an utterly unsatisfactory state. Botanists will gladly avail themselves of Mr. HOWARD's admirable skill and knowledge in his own department, and will attach as much value to this means of discrimination as they will to those afforded by flower and fruit, and foliage, but no more—unless he can show that his means are the least variable of any; and before any attempt at reconciliation can be made, we want vastly better materials, pharmaceutical and botanical, than European herbaria possess.

Again Mr. HOWARD says: "Both the propositions which appear to you to be contradictory are, I believe, borne out by facts, viz. 1st, that there is a normal product of alkaloid (varying within certain limits) for each species; 2d, That every species varies more or less, according to the influence of climate, &c." Now we affirm that we have nowhere said that these propositions are contradictory, nor are they so. What does appear contradictory to us is, that Mr. HOWARD should propound the first dogma without any modification, and proceed to state, on the undisputed authority of KARSTEN, that "the *same tree* will produce very differently according to the exposure. Three specimens, he says, were taken, from the forest of Tablon, from one and the same mountain ridge, but different declivities, of which one gave only Cinchonine, but one and a half per cent. of this; the second no alkaloid, and the third a very little Quinine." What, may we ask, is the "normal product of alkaloid" in this species—what the limits within which it varies *more or less*? Furthermore it does not occur to Mr. HOWARD that he is reasoning in a circle, and that the circle is his own means of investigation as a Pharmaceutist. His proposition assumes that the character of the barks as found in commerce infallibly indicates a species. We do not deny that it may be so, but we dispute the sufficiency of the premises for so bold an induction, and we do know that in no other genus of the vegetable kingdom does one character or quality enable us to discriminate its species.

With regard to the plates having been coloured from dried specimens, we still think this a defect, and are at a loss to reconcile it with Mr. HOWARD's precise and rigorous method of dealing with every other attribute of the subject—scientific, literary,

and pictorial. It is no justification of this procedure that the colours may prove accurate, or still less that at some future time the colouring may be rectified where needful. In the case of *macrocalyx*, *micrantha*, and others, the description and plate do not coincide.

Then, too, we must express our surprise at Mr. HOWARD's concluding paragraph, wherein he says:—"Surely if botany (as concerns Cinchonas) is to emerge from the category of a dead science and to fulfil its requisitions by giving us a distinct name for each plant which is the source of a distinct bark found in commerce, it must be by causing our preconceived notions to bend to facts, rather than by altering or suppressing these for the sake of arbitrary definitions, which too frequently present what the framers of such definitions think ought to be, than what really is." A moment's consideration will convince Mr. HOWARD that this is no less presumptuous than pretentious; in other words, the end and aim of botany is, forsooth, to help the druggist to his wares, and but for that it ranks as a dead science! And if we do not fall in with a pharmaceutical view of species, we are assumed to alter or suppress facts for the sake of arbitrary definitions! This is not complimentary, to say the least of it; the *tu quoque* does not seem to occur to Mr. HOWARD; he has made up his mind as to what must form a species, where the best botanists in Europe have failed. We shall not retort, but would simply again call his attention to the facts —that *Digitalis purpurea*, as it has been cultivated in India, is inert; that the wild Celery in Europe is poisonous, in South Chili a capital esculent; that the root of *Aconitum Napellus* in frigid climates is innocuous; and that, though we could multiply these instances *ad infinitum*, we will add but one—that according to HOWARD's "Nueva Quinologia," p. 15, one species sometimes yields Cinchonine, sometimes Quinine, and sometimes neither.

In conclusion, we retract nothing from the hearty praise we gave to Mr. HOWARD's work, whose descriptions and plates and comments are, as a whole, alike creditable to author and artist, alike valuable to the botanist and pharmacist; but indiscriminate laudation is not our function: Mr. HOWARD has impeached our character as reviewers, and we must in justice to our readers defend ourselves.

STRAWBERRIES.

I HAVE a boy in my parish, once very idle, but now a very good boy. His grandfather, who is blind, always took his part. Alas! the boy, on one dark night, took to upsetting his grandfather's beepots. He successfully kicked over the first, he toppled the second, and his leg was well up for the third, when the swarm of the first pot seized him. Loud were the cries, his neighbours rushed out—he was now detected; his neighbours said: "Ah! it was you who let loose my pig, it was you who broke Sally's windows, it was you who 'lancrocked' my door on Shrove Tuesday." The boy howled loud, his neighbours rubbed off the bees, and his grandfather, the usual counsel for the defendant, "threw up the case."

Now, I am afraid that I am that naughty idle boy. I have toppled the beepots, and I must take the consequences. Let me hope that the public will get a little honey. I will take the bees in order.

Mr. Gloede proposes four excellent Strawberries, which are to match Eliza in all lands, in all lands, and in all seasons, wet or dry, sun or no sun. The first he mentions is *Magnum Bonum*. This is the Queen all over, a trifle easier to grow; but here the plants turned yellow and sickly after cropping, and I discarded it.

2. *Carolina superba.*—This is all that he says of it, but alas! it will not succeed everywhere, though hardier as a plant than the Queen. I see in Mr. Nicholson's Catalogue that it is marked "tender." Underneath is Mr. Gloede's comment, "a good pot sort" (qy.) Mr. Taylor, of Fencote, Yorkshire, who says his land is A 1 for Strawberries, describes it as unhealthy." I did not find it so here, but I discarded it because it was a sparse bloomer.

3. *Hendrie's Seedling.*—This is a very good Strawberry, like in leaf and flavour to the Queen; but it is of slow establishment, and runs late and weak, entailing winter care and a year's run before you could crop it. For this reason I discarded this and Myatt's Pine Apple, an excellent Strawberry. I gave them both a year's establishment, and they both cropped well and were excellent: yet they are not good Strawberries for the general public.

4. *La Châlonnaise.* This is another form of the Queen, very like her in flavour, and excellent; but it will not succeed everywhere. Mr. Gloede sent it to me, and sent this character with it:—"La Châlonnaise, six plants, raised by an amateur, Dr. Nicaise, of Chalons, in France—a first-rate sort when it finds a suitable soil." I tried two sets from France, 3 feet in advance of my south wall, where Eliza in the zenith of her strength now stands, and both sets signally failed. They turned yellow and freckled, and ended with a fit of canker. I tasted a berry or two, which made me regret its failure. The Queen and her race, though the best of all, cannot be recommended for all soils and localities. Moreover, they require a powerful sun to ripen them. In wet seasons they are not so good as some of the second class Strawberries. I have a north-east garden, very severe aspect in winter, where the Queen revels and where nothing but boiling water can estop her. I gave Mr. Gloede this year about 170 as fine plants as you could wish to put your eyes upon. I was obliged to cut off the tops, to pack them in a snugger compass. This I did at his request.

I thank Mr. Doubleday for his correction. I will use the word "properties" in future. He proposes La Constante, La Châlonnaise, and Empress Eugenie, three most excellent Strawberries. Mr. Doubleday says they are quite as hardy as Eliza. The hardiness of a Strawberry much depends on suitability of soil. The Queen is perfectly hardy in the Blandford land. C. superba and Filbert Pine (two years ago Mr. Gloede told me Dr. Roden's plants of it measured 2 feet over) are hardy in suitable soils; but as all soils are not suitable, they could not be recommended for all localities. The first and last of these appear to be the hardiest. Let us, however, take them in order. I have referred to the second.

5. *La Constante.*—This is a dwarf, stout, healthy, but slow-growing variety here. La Grosse Sucrée appears, as a plant, to be its antitype, but it runs more freely. Admitting the berry, I told Mr. Gloede that I regretted its slow, late, and sparse running; to which he replied, that it was so, and "therefore the more valuable, because it would not be too common." I am not sure that it would suit all localities or all seasons. Last year it failed to produce a crop; and this season I have only disfruited runners from France, which are healthy; but they do not keep pace in growth with other foreign and English sorts. I am open to the furious assaults of the S. W. wind, the valley is hoar frosty for weeks after spring quickening (put the world on a dead man and he will not feel it, but if he be quickened a straw in his eye will agonise him—winter is nature's death, and the spring is its resurrection), and I have no direct sun till it is overhead or going down. Hence the place is so good for the trial of Roses and Strawberries for the public at large. Anything that succeeds here must have a good constitution.

This is the character that I received from Mr. Gloede, of La Constante, when he sent me the plants. "Belgian, a first-rate novelty, which deserves a first place in a garden. It is very scarce and will be eagerly sought when generally known. Take good care of this." Finding it to be a delicious berry, the most level of any I ever saw, and highly to be praised, I named it in the "Florist" before the public knew anything about it. Were it as quick and robust of growth as Eliza, I should prefer it.

6. *Empress Eugenie* is a noble production, more juicy and vinous than any other. The season has been adverse for such a large Strawberry, the best of all the large sorts. My plants of it failed to set their berries, owing to the tremendous hoar frosts, and I got no fruit at all. Mr. Hector, of Blandford, kindly sent me a noble dish of them, but owing to the rain and want of sun, they were "blobs of vinegar and water." This is the most trustworthy of the seven recommended by Mr. Gloede and Mr. Doubleday. I believe it would be the most suitable of them for all soils and localities.

The four best Strawberries that I have ever had sent to me are Eliza (Rivers'), Wonderful, La Constante, and Empress Eugenie. I have mentioned them in my article, together with Trollope's Victoria, which Mr. May at Blandford says is "a first-class Strawberry" (I do not), as my mainstay here; but the only Strawberries here that cropped heavily and were eatable at all times were Eliza (in four ages), Wonderful, like Sir W. Scott and of the line of La Reine, and Bicton Pine. Trollope's Victoria cropped but moderately, but it was always eatable. At the end of my article, 17th section, I thought that I did ample justice to Eliza, Wonderful, and La Constante, by saying they were the best (*i. e.*, most growable) substitutes for the Queen. As regards Queen, Carolina Superba, and Filbert Pine (the three best Strawberries that I ever yet ate, when properly ripened), with the reserve words of good, "where they may be grown," I have placed them at the head of a general collection in the 16th section. But alas! here is another bee.

If Mr. Postans can grow successfully, year after year, the Queen, Carolina Superba, and Filbert Pine, and finds them to ripen in all weathers, he has no need of Eliza and Wonderful, which are the two most to be depended upon by us, who are not so fortunately circumstanced. Not five out of 100 persons will grow the three or any one of them successfully, in all soils and in all seasons. He says Eliza is inferior to Wonderful. I am not prepared to deny this, but it will not come to perfection, though very good in wet seasons, as easily as Eliza will do. It is a firmer Strawberry, and requires more sun. I took Eliza, Wonderful, Trollope's Victoria, and Bicton White Pine, four large baskets, to Mr. H. Ford, brother of Mr. John Ford, whose article lately appeared in the agricultural department of your Paper. He won my brother's annual silver cup for the best fox hound pup. A dinner was given, and my brother and boys were invited. My brother came to me and lugged me into it. Some splendid Grapes, and some fine but uneatable Strawberries, "blobs of vinegar and water," came from Lord Shaftesbury's. What Strawberry did they all say was the best and most delicious? Eliza, and next, Wonderful. The Bicton Pine they liked, and called it a "White Bear." Heaven defend us all from "bears!"

I am glad to find that at length Mr. Rivers has given, in his last catalogue, Eliza due, and no more than her due. He has placed her amongst select Strawberries, and described her as "one of the best varieties known." I must say of Mr. Rivers, who does so humble a fragarian a great honour to correspond with him, that in all his letters he displays the two leading features of a great man, viz., total disinterestedness and a cautious jealousy of the public interests." He speaks of his friend, Mr. Doubleday, as the first Strawberry grower in the world: and it is for that reason that some Strawberries, which will work wonders in his able hands, will not be found suitable for the less able and less fortunately situated growers of this most delicious fruit. *W. F. Radclyffe, Rushton, Nov.* 24.

GARDENS OF CHILI AND PERU.

IN the last Number of the "Proceedings of the Royal Horticultural Society" the following letter from the British Consul at Islay, in Peru, is quoted, in reply to the Society's invitation to contribute to their Great International Fruit Show:—

"In reply to your letter, permit me to observe that it supposes a much more advanced state of horticulture than at present exists in Peru. Horticulture indeed can scarcely be said to exist at all here, at least only of a very limited kind. There is a little rude cultivation of fruit-trees and garden vegetables, but such a person as a nurseryman I believe is not known.

"Very few fruit-growers of this country could be made to comprehend the intelligent views and purposes of the Royal Horticultural Society, and most difficult indeed it would be to induce any one of them to become an exhibitor at his own expense."

The statement here made is quite borne out by M. Devoté, the Belgian Consul-General for the Western Coast of South America, in an interesting paper lately published in the Bulletin of the Federation of the Horticultural Societies of Belgium for the year 1861, upon the gardens and plants of Chili and Peru.

We shall not follow M. Devoté through his systematic horticultural examination of the whole country, but the following items of information gleaned from it may not be without use:—

Nothing can be more melancholy and deserted than the greater part of the country; starting with Lima the aspect of the whole coast is depressing. In vain will he seek in the environs of the capital of Peru for fine sites, or little thickets, or agreeable promenades. Until the last three years, when Government acquired a piece of land destined to become a public garden, nothing of this sort was known in it. In 1851—1855 there were only two gardens, properly so called, in all Lima—that of Porta, which no longer exists, and that of the Consul of Brazil, where various shrubs and decorative plants are cultivated at great expense. Vegetables at Lima are excessively dear, and few or none are to be had in the other towns where gardening is unknown. What partially remunerated the person called Porter, who had brought gardeners from Europe, was the sale of bouquets. Small bouquets were commonly sold at 4 piastres (20 francs), and he sold a great many at a much higher price. In this country, which we are accustomed to figure to ourselves as resplendent with flowers and fruits, a common flower of our gardens, viz., the Metrosideros, was sold at several piastres, and a bunch of Grapes cost in 1851, during the season, about 2 reals, that is more than a franc, and what seems to have shocked M. Devoté more than all the rest, "both the fruits and the vegetables are sold by hideous beings of a disgusting filthiness."

There are no means of passing by land from one part to another of Peru. There are no roads, and the inhabited places are separated from each other by arid deserts without water. All communication therefore takes place by sea.

"At some points only, as at Pisco, there is water and Vines, but at the other ports, Islay, Arica, Iquique, Cobija, the sands reappear, and at Cobija they only drink distilled water and wines coming from Chili and Europe.

"At Chuquisaca, there is very little cultivation and no gardens."—"The traveller scarcely finds anything to eat at Oruro."—"There are neither gardens nor crops in any of the countries of Atacama, where they are occupied in working mines of silver and copper, and nitrate of lime."

"In the province of Aconcagua (Chili) where also there are copper mines, there are oases of fruit trees where Peaches are collected and dried in abundance. There are also many vineyards and plains where they sow seeds, and vast pasturages where trees are rare. It is the nature of the Chilian to destroy trees, but he

does not plant them, and when in the second rate villages plantations are met with, they are due to strangers."

The city of Valparaiso, entirely devoted to commerce, rests on dry hills. There is neither river nor valley in the neighbourhood, but narrow ravines, where cultivation would be impossible. Two strangers, Mr. Bridges, the well-known English collector (now in California), and M. Abadie, a French gardener, have made gardens at great expense in the suburb of the Almendral; and more recently M. Washington has formed one a little farther off, alongside the highway to Santiago. Since his departure, Mr. Bridges' garden has ceased to exist, and M. Abadie draws returns from his by selling bouquets. The name of gardens can hardly be given to small squares of soil brought together, where some rich men of business cause a few shrubs and some plants to be reared by watering them every day by the hand.

At two or three leagues from Valparaiso, at Sora and Vina del Mar, some strangers have taken advantage of small streamlets in very circumscribed spaces to plant fruit trees and cultivate vegetables. It is not until we reach the plain of Quillota, 10 leagues from Valparaiso, that we again find oases of verdure, land very fertile in crops, and gardens of fruit trees, where Peach trees, Fig trees, Almonds, Pear trees, Orange trees, Citron trees, Walnut trees, Cherry trees, Cherimoyas and Lucumas flourish. Even at Santiago, where many rich proprietors enjoy considerable revenues, there are only 10 or 12 gardens tolerably well kept, and all have been formed by strangers. One cannot point to a single Chilian who knows anything of botany or has a real taste for horticulture and ornamental gardening.* Some of these gardens are now cultivated by Chilian workmen, who have only a little practical experience without any real knowledge, and the proprietors have so little taste for gardens, that good foreign gardeners have at this time great difficulty in obtaining a place or finding employment.

The School of Agriculture (Quinta Normal) has formed a competition with the gardeners which has been almost ruinous to them, by giving at a low price the species most sought after. Each year there is published in the official Journal a list of the shrubs for sale at the Model Farm, and here are the prices at which some of the shrubs and fruit and ornamental trees were offered in 1860:—17 varieties of Almond trees at 2½ fr. each; Cherry trees, 3 fr. (15 varieties); Pear trees (numerous varieties), 2½ fr.; Plum trees, 3 fr.; Acer pseudo platanus, 25 cent.; Ailantus glandulosa, 2 or 3 yards in height, 50 cent.; Bignonia catalpa, 25 cent.; Fraxinus orientalis, 2 fr.; Juglans nigra, 50 cent.; Mimosa julibrisin, 2½ fr.; Sophora japonica, 1½ fr.; Cratægus Aria, 2½ fr.; Cratægus corallina, 10 fr.; Maclura aurantiaca, 10 fr.; Weigela rosea, 2½ fr.; Araucaria imbricata, 25 cent.; Cratægus glabra, 2½ fr.; Euonymus americana, 2 fr.; Banisteria alata, 5 fr.; Lonicera sinensis, 5 fr.; Tacsonia n. s., 5 fr.; Wistaria sinensis, 7½ fr.

The principal revenue of the gardeners of Santiago and Valparaiso consists in the sale of bouquets. They sell few plants in pots. The smallest little bouquet costs a piastre, and a great many are sold at higher prices. Camellias sell well, the price of each bud being a piastre. It is the custom at Chili to send bouquets to the ladies on their fête days. The ladies also carry large bouquets to the balls, concerts, theatre, &c., and sometimes they cast them in profusion on the stage to the artistes with whom they are satisfied. There is thus almost daily occasion for the sale of bouquets.

Of the individuals who continue to pay attention to their gardens there are almost none who care to augment their collections or who give orders in Europe. The gardeners have already many sorts, and it is from them that they purchase.

The gardeners still give orders, but it is more for seeds than plants. At Lima, as in Chili, plants have been received at various times from this country, which have been for the most part dried up in their passage, and the gardeners, whose resources are very limited, are not often tempted to repeat the experiment, the more so that the sale of plants and pots of flowers has fallen instead of increased of late years.

Chili and Peru and still less Bolivia will not be for a long time outlets of any importance for the gardener of Europe, and it is to be expected also that if they ever become good markets, a portion of their orders will be addressed to the horticulturists of the United States and Sidney. *A. M.*

* An amusing illustration of this turn of mind fell under our own notice. Some years ago a Chilian gentleman of the upper ranks, who was on a visit to this country, presented to us a letter of introduction. We asked him to dinner, and thinking this a good opportunity of establishing natural history relations and correspondence with Chili, we invited a botanical friend to help us in the attack we had planned upon the Chilian. As dinner progressed all the various branches of natural history were with much art quietly introduced into the conversation; the natural products of Chili, its entomology, its conchology, its ornithology, its botany and horticulture, were all touched upon either by ourselves or our friend, but without eliciting the smallest responsive sign. We explained and expatiated on our hobbies, but it was obviously all caviare to the Chilian. At last in despair, all ambages having failed, we put the question direct. "Every man has a hobby," said we; "these are our hobbies, pray what is yours?" At this our guest brightened up at once. "My hobby is the danze" No defeat was ever more signal. However, we accommodated ourselves to the situation, got such information as he had to give on the subject of dancing, saw the Chilian "Zambo Quaeca" or "clocking hen dance" performed by our guest to his own accompaniment, and are quite prepared to accept M. Devoté's statement without qualification.

Indoor Gardening.

LAST week I mentioned a quantity of the French "plantes vertes" for stands; to-day I want to write of Azaleas and Camellias. Plenty of people know somewhat of the latter. I know myself what it is to get a charming plant with all the buds well set, and to see three days after the floor all strewed with green knobs! In this calamity two things seem concerned: there has been most likely a great change of atmosphere, not so much of temperature as of humidity; and in the drier sitting-room the buds have dried and fallen. To prevent this I believe that syringing the buds gently is as good a plan as any; but keeping them out of the dry air of sitting-rooms is a method better than cure. If they do blossom, too, the flowers spot so soon, and so soon get flabby and fall; they are sad risky things at all times in a drawing-room if they have no shelter.

But in plant cases, on the contrary, I know no flowers like them. The most beautiful Camellias and Azaleas that I have ever seen have been flowered in them. They do not here get spotted or dusty, or begin for ages to turn back or look limp; they last, on the contrary, for weeks and weeks, as freshly as the first day.

Last winter I was rather pulled up in talking about Camellias, because I had not at that time, it happened, gone all round the year with the same plants in-doors. I had either got some after their growth was made, or had sent them away from my window to be in other places. This season, however, I have had a fair experiment. The white Camellia, a plant of alba fimbriata plena, of which I boasted so much last winter, because it was so long-lasting, blossoming in my plant-case, was placed, about a month after flowering, in a south sunny window. There it has stayed all the summer, being washed occasionally, watered regularly, but not much, and the window a little open. The pot stood in another much larger pot, and some Cocoa fibre was laid upon the soil, preventing evaporation.

For the last 10 days the tree has filled its old post in my plant case, and it has five beautiful buds coming out as fast as they can. It is watered just often enough never to get dry, and the case is kept shut all night, and for the dusting time in the morning. Housemaids know very well that the night is the time when dust settles!

This fact is important as concerns Azaleas. They are almost, of the two, more charming than Camellias to grow in these sort of cases. I never knew one fail in them, and instead of getting dim or torn as they *will* in hothouses, they look shining, and fresh, and perfect to the very last day of their lives. The little double Azalea amœna is very nice to grow thus; the worst is that if much forced it sometimes seems to me not to have leaves enough. The large-flowered white Azaleas, and those that are red or rose colour, are however the loveliest. Three plants such as these will fill the case with blossom, or one Camellia, one rose Azalea, and one white one, make a quite lovely group. Ferns look delightful with them, and though I am quite sure that the low-spreading flowers are most telling in such cases, green leaves stretch overhead gracefully, and bind the group together. My Lycaste Skinneri, for example, stretches out its leaves nearly to all sides, and the beautiful Cissus antarcticus has grown nearly all along.

The Azaleas don't want heat *for themselves*, though at the same time one is forced to use heat as a means of circulating the air and preventing damp for them. I find that two or three folds of thick felt or drugget cut like a mat, larger a little than the bottom of the pot and laid upon the top of the hot-water case, effectually serves to isolate the pot placed on it, so that we may go on quite happily forcing the Lilies of the Valley, Tulips, and so on, without doing any harm to the Azaleas blossoming. Heaths do as well as Azaleas, only they do not look so dazzling.

The Rivina humilis has been a trouble to me—it looks so very pretty with its spikes of red berries amidst Ferns, that I cannot resign myself to seeing its leaves turn yellow. They do however, and I cannot find out why. I am afraid it is that it wants a great deal of light, resembling in that Geraniums, which I find I can only manage when the light is very strong.

This autumn I have had a beautiful pot of Crocuses, that lasted several weeks—the leafless autumnal sort, sent me most kindly by a Correspondent of the *Gardeners' Chronicle*. They blossomed with great profusion, a beautiful bluish lilac, not so blue however as the Bleu Celeste, which is the favourite winter sort. Another was like a small Iris with backward folding leaves. But all these are like the Rivina, so very tenacious of light that they are better for a window than for a plant case. In the depth of winter I think the greater cold enables the flowers to escape being drawn up by want of light. *E. A. M.*

HUE AND CRY.

PERMIT me to ask your numerous Correspondents if they know where Primula pusilla is to be found, or if it is lost to this country. Forty-three years ago I had a plant of it from Mr. James Smith, Nurseryman at Ayr. Since then I have been rambling over the world and have now commenced collecting Primroses again; I have searched all the nurseries in Edinburgh and a number of the London establishments without obtaining my little gem. I find Primula longiflora of our catalogues to be a myth; I have never seen the plant, nor have I found any person who has seen it. *John G. Robertson, Bavenald, Lanark.*

Perhaps some of your readers can inform me where the following old varieties of Grapes are to be met with: viz., Lombardy or Flame Tokay, Speechly, No. 23, Lindley, No. 28; Red Muscadel, Speechly, No. 9; Red Syracuse, Speechly, No. 5, Lindley, No. 34; Red Muscat of Alexandria, synonym Black Muscat, Miller, No. 28, Lindley, No. 37; Hort. Society's Catalogue, No. 65 (but not the Black Muscat of Sir J. Paxton). *Wm. Cooper, Penrhyn Castle Gardens, Bangor.*

Where can I obtain the Gaillon Strawberry, mentioned in an article in the *Gardeners' Chronicle* of Nov. 8. I have made application here at several nurseries, but it is not known. *An Old Subscriber, Leeds.*

Home Correspondence.

Sarracenia and Small Pox.—Have the virtues of Sarracenia purpurea been tested in this country in the treatment of small pox? It is stated in the *American Times*, and quoted in the *Mark Lane Express*, that it will cure small pox in all its forms within 12 hours after the decoction has been taken; that very seldom is a scar left to tell the story of the disease, while the remedy is of so mild a nature that it may be taken largely in tea or coffee, without its presence being perceived. If true, the foregoing statement cannot be too widely made known. Notwithstanding what has been said to the contrary, S. purpurea is of easy growth. I had it for some years, but owing to the little care it required, lost it from mere over neglect. Perhaps, however, its virtues would not be developed in our climate, to say nothing of the *primâ facie* probability that the specific for small pox would be furnished rather by S. variolaris, a term indebted for its origin to medical rather than botanic licence. *O. P.*

Araucarias.—I have an Araucaria some 20 feet in height that has a vigorous top, but the lateral branches, with the exception of four, are all gone, having been destroyed by the frost of 1860. These I wish to remove, but I am afraid of the tree bleeding, or rather exuding so much gum that it would be killed. Can you recommend me anything to stop this discharge? I have been told that collodion will stop the sap from exuding. *A Constant Reader.* [If you cut off the dead limbs when the plant is in full growth there will be no bleeding.]

Dahlias.—Allow me to offer a few remarks in answer to your proposal to do away with the class for Fancy Dahlias. I beg to suggest that it be still retained for dark ground sorts with light tips or edges. These, with a few exceptions, being of inferior form to the other varieties, require a class to themselves, as the superiority of the others would prevent them from being shown at all in a good stand. These, therefore, would be a loss to an exhibition, where their brilliant colours always make a good display if shown by themselves, as they were at St. James's Hall a few years ago. At present they are mostly turned out by the striped and spotted kinds, which are of better shape, and should therefore at once take their place with the self and light ground varieties. *Geo. Rawlings, Globe Road, N.E.*

Great Vine at Hampton Court.—In reference to the article in your last week's Paper respecting this Vine, in which your Correspondent has made a serious charge against me by publishing an error as to the condition of the Vine, and implying that I have been the cause of such a state of matters, I beg to say that in the first place the Vine is not in a state of decay, and will answer for itself in that respect, more forcibly than I can for it. I am pleased to say that it has made better wood this season than it has done for years past, and last year (the first of my charge of it) I cut more fruit from it than has been taken in one season for these last 6 years, and 200 lbs. more than the previous season. Does this indicate decay? Facts are stubborn things. The Vine has not borne bunches of the weight of 1 or 1½ lb. (as represented) for years, except here and there one upon the very strongest wood, nor could such weights reasonably be expected from a Vine 96 years of age, with the great number of bunches usually borne by it. Owing to the seasons varying so considerably, the annual produce is materially affected, as every gardener knows who has the care of late Vines. With respect to the mound referred to by "A Constant Reader," and removed by me, the facts are as follows:—The late Superintendent, Mr. Turrell, for some incomprehensible reason had a mound formed over the principal part of the roots to the depth of about 3 feet; the consequence (as might have been expected) was that the roots perished; not a root was found in the mound, nor did I expect to find any. Every gardener knows or ought to know that the roots of Vines delight to travel near the surface. Again, it appeared strange to me that the Vine in question should have had no manure in any shape applied to it, although feeding in the same soil and space during a period of 96 years, and that space circumscribed to a great extent by walls. Why should

such a state of things as this exist? I took the earliest opportunity therefore after removing the unsightly and ill-placed mound to give a dressing of manure, for the want of which the Vine had been starving, and the result up to the present time is that I have no cause to regret the application. I shall give it another dressing of manure this season, and still hope for further improvement. Allow me to conclude by advising your correspondent never again to publish a statement that cannot be borne out by facts. *J. Knight, Royal Private Gardens, Hampton Court.* [We shall return to this matter next week.]

Black Alicante Grape.—In reply to Mr. Lauri's inquiry, I beg to say that I think his Black Alicante must be different from the one exhibited by Mr. Meredith at the late Great International Fruit Show. Mr. Meredith, I believe, obtained his plant from a Vine which I have in this place. With me it is a very free setter, and an excellent long-keeping Grape—equal, if not superior, to West's St. Peter, Lady Downes, or Barbarossa. In fact, I have cut the Alicante perfectly sound when the others have begun to shrivel. Its good looks will recommend it to all Grape growers. I find that red spider or thrips do not trouble it—the foliage being very strong and covered with a woolly substance, similar to that of the little Strawberry Grape. When the bunches just show themselves they look like a pink spot set in fine cotton wool. The Vine is planted in an early house with Hamburghs, Sweetwater, &c., and in a late one with Lady Downes, Barbarossa, Muscats, &c. In both places it is without exception the freest setter of all of them. One is planted over bottom heat, the other not. *J. R. Petch, Ringwood, near Chesterfield.*

Fruit Culture at The Hasells.—I regret that your Correspondent has compelled me to resume this subject. In my article, p. 1050, I said truthfully, and described faithfully, all that I thought and saw, without bringing his name forward. Mr. Dean is an entire stranger to me, and came into Mr. De la Rue's service I believe through an advertisement in your columns. In a note recently received from Mr. De la Rue, he says, "You have made a mistake as to the date in which Mr. Dean came to The Hasells. He came on June 3, 1861, and acted for a time nominally as second gardener, but he in fact took at once the management of the gardens under his sole control, seeing how little the chief understood his business." When I wrote the article adverted to by your Correspondent I did not say quite all that I had seen, but I repeat I am now compelled to do so. I paid my first visit to The Hasells in the summer of 1860. I saw old cankered espalier trees with a stout stem and a large head running up from the centre of each tree, so as to draw all the sap from the horizontal branches. I saw Vines in the Vineries with unhealthy leaves and poor wretched fruit. I saw some fine Peach trees in pots much too small, with no top-dressing, and the surface soil hard as a pavement. These I learnt from Mr. De la Rue had been forced, and had given a fine crop—of flowers only. In the autumn of 1860 the lean-to orchard houses were built and stocked with bearing trees of an extra size. I visited The Hasells in the summer of 1861; these trees were nearly all fruitless. I was informed by Mrs. De la Rue (Mr. De la Rue being then dangerously ill), that they have had literally no fruit; the Vines in the Vineries were in a sad condition, the Grapes few and poor. In 1862, under Mr. Dean's care, I saw the reverse of this picture, and I, without mentioning the name of the former gardener, paid what I think only a proper tribute to the energy and skill of Mr. Dean. I may mention that Mr. De la Rue is, as is well known, full of energy and invention, and reading all the gardening works, new and old, he tries every experiment he thinks sound and good. To him is owing the foundation of inch bones at the bottom of the pots of his fine fruit trees, and I confess that I at once felt I had learned something of value when he told me what he had done, or at least had ordered his gardener to do. *T. R.*——Without entering into the merits or demerits of my former gardener, I can with confidence assert that all that has been written by "T. R." in your columns relative to the fruit culture here is perfectly correct. *T. D. L. R., The Hasells, Sandy, Beds.*

Tangierine Oranges at Stedham Hall, Midhurst.—The trees here are producing an abundance of magnificent fruit, much larger than those imported. *J. S.*

Galvanised Iron Wire.—If my experience of the use of this for training plants upon is of any service to your correspondents they are welcome to it. We have had trellises of it in one of the houses here for 13 years. The first five years the house was used as an ordinary greenhouse, but during these last eight years it has been a stove and Palm house. Therefore the temperature has varied, according to the season, from 35° to 100°. The following plants have been trained on the trellises, and many of them are on them now, viz., Aristolochia gigas, Torenia asiatica, Clerodendron splendens, Hexacentris mysorensis, Cantua dependens, Manettia bicolor, Passion flowers, Tropæolums, together with Stigmaphyllum ciliatum, Cissus discolor, Hoya carnosa, Ipomœa Learii, Horsfalliæ, and grandiflora; Jasminum gracile, Bignonia picta, venusta, and Chamberlaynii, Combretum purpureum, Stephanotis floribunda, and Dipladenia splendens and crassinoda. I could name more, but these will I think answer the purpose; we have never found one case of injury which we could fairly or even remotely attribute to the action of the galvanism. I may also add that for eight years we have trained Peach, Nectarine, and Plum trees, together with Tomatoes, to copper wire trellises, without any injurious effects. *W. Bradley, Somerleyton Hall Gardens, Suffolk.*——Your Birmingham subscriber must surely be mistaken about galvanised iron wire being injurious to fruit trees. I have 10 fruit houses, Peaches, Nectarines, and Grapes, with the trees trained to it, and three that are trained to iron wire painted. I have not yet observed any injury to arise from the use of the galvanised wire. Some of my trees have been planted nine years. *J. R. P.* [No doubt the dislike to galvanised iron wire belongs to the class of prejudices.]

Hyacinths Rooting in Pots.—I have tried to carry out your instructions respecting the growth of Hyacinths in pots, and took my first peep below the cinders to-day. The bulbs have been planted five weeks, rather more (October 16); the roots are piercing through the outside of the ball, and some are a good way towards the bottom of the pot, but I should not say the pots were yet full of roots. Should I exercise patience a little longer? I shut my prisoner up again, intending to let him wait in durance vile with his companions another fortnight. *P. C.* [They will be all the better for another fortnight's confinement.]

Foreign Correspondence.

CANNES: *November*, 1862.—Last spring I sent you a few observations on the gardens and climate of Cannes, accompanied by a paper which appeared to me interesting, from Mr. Taylor, Mr. Woolfield's head gardener, stating what were the flowers then in bloom; but though the spring is here beautiful, in England also we know what is beautiful in spring, and have our own charming flowers, and the same may be said of fine summers and fine autumns. But the rare season of the South of France is the late autumn of November and the beginning of winter in December. Of this, beyond a walk in some grand conservatory or in one of Mr. Rivers' well-heated orchard houses, no notion can be formed. I was amused a few days ago to see one of the Garibaldian visitors at Spezzia reporting to the *Times*, for want of something better to say, I suppose, his surprise that people did not go to Spezzia, which was so much more beautifully situated than Cannes, Nice, &c., and asking why the English did not build villas there instead of at Cannes, where they were scorched up by the summer sun. Now I do not pretend to say it is not hot here in the summer, but I suspect it is not hotter if so hot as at Spezzia, and beautiful as I admit Spezzia is, I think the bay here and the environs would afford as much beauty and variety as Spezzia, and moreover, is only half the distance from Paris, with the advantage of a railway. It was only this day that I saw, notwithstanding the merits of Spezzia, Mr. Partridge the surgeon has advised the removal of his patient to Pisa, as Spezzia is at this time damp and muggy! Now I do not say that we have here eternal sunshine, nor that the mistral, though checked in a great measure by the range of the Esterelle, and the backing of the maritime Alps, does not now and then reach us; neither is the bise unknown; but according to the best inquiries I can make, I suspect on the whole that Cannes and its environs enjoys one of the best climates to be found in the south of France. Hyères and Mentone are perhaps more sheltered, and may for the confirmed invalid be better in the season of the spring winds, but there is not the variety of scenery and walks and excursions to be found here, and the proof is that the merits of Cannes are fully discovered, and every hotel and every lodging and boarding house is full. But I began my letter with reference to flowers, and must stop any further eulogy as to our climate, though its merit may be explained when I mention, that this morning on going into my little terraced garden I found three of my neighbour's children with nets, chasing and catching the swarms of butterflies which were sunning themselves on the flowers in company with several magnificent species of bees. It was whilst walking in Mr. Woolfield's garden (Villa Victoria), which is open to all visitors, the sun streaming down on me, the sea like blue glass, and the bay, with its little fleet of sailing and row boats, that I made a note of what I saw in flower. To this I have added a few from the garden of the Château St. George (M. Grandval's, who also kindly permits visitors in his gardens)—Bignonia sinensis, Tecoma jasminoides, Solanum ditto, Plumbago capensis, Roses, all the best sorts in splendid flower; several species of Habrothamnus, Cestrum roseum and aurantiacum, Abutilon venosum, giganteum and Duke of Malakoff; Cassia tomentosa, ditto lævigata, just out of bloom; Corræa Cardinalis (a beautiful variety), and others; Chorozema ilicifolia, Lotus jacobœa, Bouvardias, Gaillardias, and Petunias; Solanum amazonium, Veronica Andersonii, variegata, and several others; Vinca rosea and alba; five beautiful kinds of Polygala; Asclepias curassavica, Salvias without end, red, purple, &c.; but the charm of the place is Salvia eriocalyx, of which in my own small garden I have plants with nearer a 100 than 50 spikes; Daturas, Linum tigrinum, Heliotropes. Geraniums, Balsams, Zinnias, Fuchsias, Japan Medlars, Sparmannia africana, Ligustrum indicum, Acacias without number, either in bloom or just preparing to put forth their flowers. Two or three year old Palma Christi plants of the purple brown sort, are large trees, splendid in the sunlight. The garden wall covered with Convolvulus Learii, Tacsonia ignea, and four or five of the best varieties of Passion-flower. The dry summer has made many of the Orange trees put forth their bloom before the spring, and the Orange plantation was crowded with women gathering the blossoms in large wicker baskets. In the fields where flowers for perfumes are cultivated there still remain Tuberoses, Acacia Farnesiana, Catalonian Jasmine, and Neapolitan Violets in sufficient quantities to make the air redolent of their rich and varied scents, although their season should be over by now. But I have told you enough to give a notion of what are the floral beauties of November and December in Cannes. The gardens I have named are always open to visitors.

There is an Italian Duke here who owns the castle formerly belonging to the Marquis of Cunningham, but I can give you no account of his garden, which I am told is well laid out and well stocked; but, as was not the case with the former proprietor, all strangers are now rigidly excluded. I hope shortly to be able to send you some few remarks on the difficulties of gardening under a Cannes sun, with some observations on the growing and training the Oranges. Whilst, however, exhausting myself in praise of the climate and the flowers, I read in the last *Gardeners' Chronicle* Mr. Rivers's account of Mr. de la Rue's orchard-houses. Alas! though overwhelmed with flowers, we have scarcely any fruit; and, indeed, none to be obtained at this season, except a few bad Apples and Medlars; now and then a few middling Pears are found in the market. With October the Grape season ends, though a few half dried Raisins may be bought. In July Peaches are to be obtained, but all visitors are then away. In June, Apricots and Cherries of a middling quality, and up to October Figs are abundant and excellent. The Oranges, when the blossoms are left on so as to produce fruit, are scarcely eatable. I often recollect with regret the merits of those in the London barrows, as compared with the best produce of Cannes.

However, let us hope that amongst the coming improvements to follow the railway to open to this place at Christmas, we shall have a better system of horticulture introduced. *Dodman.*

Societies.

LINNEAN: *Nov.* 6.—G. Bentham, Esq., President, in the chair. Dr. Bowerbank, on the part of the Linnean Club, presented a marble bust by Slater, of Thomas Bell, Esq., late President of the Society, for which donation special thanks were voted. The Rev. S. Lucas exhibited a dried specimen of Carum verticillatum, found near Egloskerry, Launceston, Cornwall, where it is very abundant. David Lyall, M.D. was elected a Fellow. The following papers were read:—1. "On Splachnotrophus, an undescribed genus of Crustaceæ parasitic on Nudibranchiate Mollusca," by Albany Hancock, Esq., and the Rev. A. M. Norman, M.A. 2. "On the species of Pyramidellinæ found in Japan," by A. Adams, Esq. The President announced that the third and concluding part of vol. xxiii. of the Society's Transactions was ready for distribution.

Nov. 20.—G. Bentham, Esq., President, in the chair. John Anderson, M.D., was elected a Fellow. The following communication was read:—"On the Development of Orthopterous Insects," by Andrew Murray, Esq. Mr. Murray had formerly arrived at the conclusion that in certain orthopterous insects, both the larval and chrysalid states were passed in the egg, and that what has been called the homomorphous larvæ or the active pupa both by Westwood and Owen, was merely a phase of the perfect insect. Subsequent observations have led him to doubt whether he was right in the former of these views, but of the latter his conviction remained as firm as ever. The paper was explanatory of the more recent observations which gave rise to these modifications of opinion.

SCOTTISH ARBORICULTURAL.—The Ninth Annual General Meeting of this Society was held at 5, St. Andrew Square, Edinburgh, on Nov. 5. Mr. J. M'LAREN, V.P., Forester to the Earl of Hopetoun, in the chair. On this occasion four new members were admitted, viz.:—Mr. W. Drummond, Nurseryman, Stirling; Mr. J. Morrison, Coney Park, Stirling; Mr. W. Duncan, Forester, Airthry Castle; Mr. J. Dawson, Alloa; Mr. J. Sadler, Assistant to Professor of Botany in the University of Edinburgh.

The Secretary stated that there had been two Essays sent in competition, and that a third was promised in the course of a few days. The Meeting instructed the Secretary to forward the Essays to the Judges without delay, and, if found worthy of prizes, to have them printed in the forthcoming part of the Society's Transactions, and circulated among the members. A statement was read from Mr. Campbell, Forester, Wemyss Castle, regarding the rate of wages and time of the Assistant Foresters in the county of Fife, which was recommended by the Meeting to be printed in the Transactions. It was agreed that Prizes of 5*l.* each should be offered for the best and approved Essays or Reports on any of the following four subjects:—

I. Introduction and Cultivation of the newer Coniferæ and other Forest Trees, with special reference to the climate of Great Britain and Ireland.

II. On the Successful Raising of Two Crops of Scotch Fir in succession on Moorland. The crop reported on to be not less than 10 years old.

III. The Best Method of Rearing and Maintaining Live Fences; with an account of the Plants best fitted for filling up gaps in old hedges.

IV. The Species of Timber Trees suitable to the various Soils, Elevations, and Exposures, and the Effects produced on the different Varieties.

V. A Silver Medal will be given for the best and approved

Essay or Report on any other subject connected with Arboriculture.

VI. A Silver Medal will be given for any marked advantageous improvement on any of the Instruments used in Forestry (to be accompanied by a Report).

It is expected that the Essays and Reports be founded on the experience of the Competitors, and their remarks confined to the subjects of which they treat.

All Essays, Reports, and Instruments intended for Competition must be given in to the Secretary not later than 1st October 1863—each bearing a motto, and being accompanied by a separate sealed letter bearing the same motto, and containing the name and address of the author.

Mr. Balden, Lennoxlove; Mr. Campbell, Wemyss Castle; and Mr. M'Laren, Hopetoun House, were appointed Judges of the Essays, &c., for 1863.

Mr. Methven, Stanwell Lodge; Mr. Robertson, Trinity; Mr. Lamont, Inverleith Nurseries; Mr. Cowan, Arniston; and Mr. Gorrie, Dalkeith, were appointed a Committee on Transactions.

The Treasurer submitted to the Meeting a Statement of the Society's Financial Affairs, which proved highly satisfactory showing a balance in favour of the Society of 77*l.* 18*s.* 8*d.*

The following gentlemen were elected Office-Bearers for 1862-63:—

President.—The Right Hon. the Earl of Airlie, Cortachy Castle, Forfarshire.

Vice-Presidents.—H. R. Sandbach, Esq., Hafodunos, Llanrwst, Denbighshire; J. Wilson, Esq., Professor of Agriculture in the University of Edinburgh; Mr. J. M'Laren, Hopetoun House; Mr. J. Balden, Lennoxlove; Mr. W. M'Corquodale, Forester, Scone Palace.

Secretary.—Mr. Sadler, University, Edinburgh.

Treasurer.—Mr. J. Anderson, of the firm of Messrs. Dickson & Turnbull, Nurserymen, Perth.

Auditor.—Mr. T. Methven, Nurseryman, Stanwell Lodge, Edinburgh.

Notices of Books.

The Tree, or Observations on the Structure and Vital Phænomena of the Higher Plants. By Dr. Hermann Schacht.*

The title of this volume will at once remind many of our readers of Schleiden's Plant, whether acquainted with it in the original German or in its English dress as set forth by the late Professor Henfrey. It is, however, less popular in form, though so profusely illustrated, that there can be little difficulty in following the author, by any one who is acquainted with the ordinary terms of botany. The figures, moreover, are excellent of their kind, whether as woodcuts or lithographs, and we are not inclined to quarrel with the author if some of them have served their turn on former occasions, as they tend to the elucidation of the text without any increase of expense to the reader.

The author is well known from his various contributions to the minute anatomy of plants, and in the present volume his purpose is to give an outline of the anatomy and physiology of the higher plants, but more especially of those which constitute the forests of Germany, so that it may at once be useful to the general student, and to those who are occupied with the extensive woods which form so important an item in the natural resources of that country.

Since the appearance of the first edition, which is little known in this country, he has made frequent visits to the forests, and has acquired much additional knowledge in those of Madeira and Teneriffe, besides availing himself of information received from other quarters.

After a short introduction in which he considers vegetable organs in their simple and compound condition, touching first on the plants of primæval ages, and then on trees of modern times, including those of the tropics, he treats in twelve chapters of plants in every stage of growth.

His first chapter is devoted to the consideration of the intimate structure and vital phænomena of plants. The different forms and modifications as well as the structure of cells is passed under review, not only in phænogamic but in cryptogamic plants, in which latter their different stages of growth and origin are often most easily traced. This naturally leads to the individualising of especial cells for the purpose of reproduction and the sexual phænomena which occur in various inferior Cryptogams, by which this transformation takes place, with some particulars also as to the complicated appearances which are exhibited in some of the more perfect Cryptogams.

The second treats of the germination of seeds, and the condition of young plants after germination, including analogous phænomena in Cryptogams. In a third chapter these lessons are followed by observations on buds, whether on the root or stem, both in an active and dormant state. We have then in five successive chapters dissertations on the stem and branches, the leaves, the roots, the wood and bark, and finally the blossom and fruit, running not only through the matter which usually appears in an elementary work on Botany, but including comparative descriptions of the structure of the wood and bark in the more usual trees of our forests.

With the ninth chapter commences the more popular matter, which the title would lead us to expect, and which is of most importance to the general reader. This and the two following chapters treat first of trees in general, and the circumstances which encourage or depress vitality, including a short account of some of the more prominent diseases to which they are subject. Then follow considerations on forests in general, according to the trees of which they are composed, whether leaf-bearing or cone-bearing, and of their inhabitants, with some thoughts on tropical and subtropical forests, while a third speaks of their influence on the atmosphere, on streams, and on cultivation, their decay and renovation, or the planting of new forests. A final chapter speaks of the laws which regulate the vegetable kingdom, in the formation of cells, sexual and asexual multiplication, nourishment, increase of the stem and roots in length and diameter; the production of blossom, and their morphology.

A few supplementary pages follow, the most important of which contain a key to the microscopical distinction of certain kinds of wood and bark.

Of the illustrations in general we can speak with great praise, especially of those illustrative of the natural habits of trees, or of the usual appearance of their stem, many of which are of no ordinary excellence. Amongst them the most striking perhaps are those of the Scotch Fir, Spruce, and Larch, in figs. 87, 88, 89; the hollow stem of an old Lime tree, fig. 96; the stem of an ancient Oak, fig. 139; of an Alder, 143; and of the root of an old Willow, fig. 153.

As regards the more practical matter, we imagine that the author has spoken sometimes from information derived from others, rather than from personal observation. Our own experience, at least, as to the age at which Conifers bear perfect fruit does not tally with his account. In this country they are far more precocious, and even amongst exotic Conifers, as an example of extreme precocity, we may observe that we have seen female fruit on Wellingtonia on plants only three years from seed, though they were not, of course, fertilised, as there were no male flowers in the neighbourhood.

We are surprised again that, as it should seem from the following passage, the Professor is not acquainted with the origin of the Cuba Bast, which has been for some years ascertained in this country, and is known to be the produce of a species of the Malvaceous genus Paritium. The following is a translation of his observations on this matter.

"The bast with which cigars are tied is the bast of the Lime tree, which is sent from Russia to America. It shows very clearly even to the naked eye the proportion of the bast bundles to the medullary rays; the mesh-like apertures in these layers of bast show the spots where the medullary rays have pierced the bark. This bast, like Flax, is purified under water, by which the concentric bast layers separate in the form of ribands. Linden bast is used for many purposes, as for example, in gardening for the binding of grafts and buds, as also for the manufacture of mats, shoes, coverlets, and cords."

We will not indeed assert that cigars are never tied with Linden-bast, but, if so, it is certainly the exception and not the rule.

We do not think it necessary to advert especially to the more elementary parts of the work. Two or three extracts from the more popular portions will be more interesting to most of our readers. We will however first give a single example of his manner of discriminating between the wood of different trees as indicated by their structure.

"The Brazilian Pine (Araucaria Braziliensis), and probably all the other species of Araucaria, is the only Conifer whose wood is known which has no annual rings, and is easily distinguished from all by this peculiarity. The wood of the stem has very narrow wood cells, with a single row of dots; the wood of the root, whose cells are four or five times as thick, has on the contrary from two to four rows. The single-rowed medullary rays are short, and only very slightly thickened. The absence of annual rings and resin cysts, as well as the nature of the medullary rays, characterise the wood of Araucaria. The occurrence of broader wood-cells with several rows of dots is, on the contrary, proper to the root-wood of all Conifers, as for example the Larch. The stem-wood is very firm and heavy, the root-wood proportionally light. The crowded dots, as observed by Göppert, are scarcely characteristic of Araucaria."

Our second extract relates to the formation of wood, and is valuable as affording some hints for estimating the relative periods of growth in the same tree in different climates, and as applicable to the probable origin of drift wood of known species when carried to considerable distances. If, for example, we find the hard wood predominate, we may be sure that it came from a country in which the growth of the shoots was soon arrested; and all the influence of long days, and a comparatively high temperature, was exercised in the development of thick-walled cells.

"In our climate the formation of wood is influenced by the time of year, and therefore indirectly by that of the season of the development of new shoots. So long as these increase in length, and their leaves are still not completely formed, the tree requires a great part of its nourishment for their completion; the spring wood is therefore always softer than that which arises at a later period, with strong thick cells, which is called autumn wood. A tree whose branches continue to grow for a long period, and whose terminal buds cease to grow at a late time of year, as Lime, Alder, Birch, Hazel, &c., form autumn wood late; those, on the contrary, which soon close their buds, form it so much the earlier. But in the root, which completes its longitudinal growth later than the stem, the formation of spring wood lasts very long, as in the Oak, Beech, Fir, Pine, &c. The spring wood has wide, weakly thickened wood-rings; the autumn, on the contrary, narrow, strongly-thickened cells. The annual rings of the light woods, consisting chiefly of spring wood, are much broader than those of heavy woods, where the autumn cells prevail. All trees which increase rapidly in height and thickness have a light wood, while that of slow growing trees is heavy. All tropical trees which close their buds form a wood with rings, as Adansonia, Bombax, &c., while those which grow without intermission have no annual rings. In all cases they can be distinguished only by a boundary line between the autumn and spring wood round the whole stem. In plants of the same family, as for example in the evergreen Laurels of Madeira, one species (as Laurus canariensis) has rings, while others (as Persea indica and Phœbe barbusana) have none, or there are slight indications only, as in Oreodaphne fœtens.

We conclude with a rather long extract of a more general nature, which will afford an excellent example of the author's mode of reasoning. Like most German authors he is much too wordy, but we think it better to give the passage without abridgment.

"Forests are closely connected with the welfare of man, for on them depends in great measure the climate with the protection of particular districts from the effects of winds, as well as the moisture and fertility of the soil. In nature every part is mutually dependent. Plants derive from the air carbonic acid and other gaseous or vaporous products, which are exhaled by animals or are set free by decomposition, while they in turn exhale oxygen into the atmosphere, which supports the life of animals. At one time the tree with its green leaves and branches requires the air for a large inhaling and exhaling surface. It fixes the carbon of the carbonic acid to make of it wood, starch, &c. Forests withdraw from the air more of the above mentioned gas than meadows or cornfields, on account of their much larger absorbent surface, and give back proportionally more oxygen. Their influence upon the chemical composition of the surrounding atmosphere is of greater importance. Leafy plants cast off their leaves every year, and Conifers lose them after a time. These, however, return to the soil a portion of the mineral constituents which have been sucked up by the roots; the organic constituents of the leaves are a rich source of humus to the ground, and the shade of the leaves preserves its moisture, so that decomposition proceeds further, and increases the soil from year to year.

"Water is the indispensible necessity of life in all plants and animals. Without water there can be no Diosmose, and without this no life. Forests abstract from the atmosphere much water, but they also exhale a great quantity. Wooded districts possess in general a moist atmosphere; they have rain and fertilising dew. As conductors attract the thunder-cloud, so woods attract the rain-cloud, which not only enlivens them but also the neighbouring fields. Dew is a deposit from the moist air, in consequence of the cooling of the surface of the earth. Where it takes place, the air must be first saturated with water. The dry sand, the naked rock, can give out little or no water, therefore no dew can refresh it. Woods, on the contrary, possessing a considerable evaporating surface, contribute to the soil and the neighbouring land a large quantity of the most refreshing dew. On the soil of thick woods there is indeed less dew than on the surrounding meadows, which in the day are more warmed by the rays of the sun, and in the night more cooled by radiation. The heavy strata of air loaded with moisture above the woods sink on a still cold evening as clouds into the valley, and the dew appears as pearls upon the meadows and the plants of the ploughed lands. As on the coast the evaporation from the sea, so in the interior that from the woods, contributes to watering the soil, and in consequence to its fertility.

"The greater number of rivers rise notoriously in woody mountains, and the woods preserve by their means to the place a portion of their watery constituents, providing for the rivers by nourishing their sources, which, without the aid of woods, would be dried up. The enormous streams of North America pass through aboriginal forests, and owe their abundant supply of water to this source. Whether they would remain if the woods were to vanish is more than questionable."

A little of the above is of local application, and the philosophy perhaps would scarcely pass a very critical examination. The book however is never without interest. Our limits, which have been more than usually exceeded, forbid any further extracts.

Garden Memoranda.

BUSBRIDGE HALL, NEAR GODALMING, THE SEAT OF MRS. GOSLING.—Among the many charming residences in this part of Surrey, few possess greater natural advantages than this, or have within the last few years been more improved by art, and had it not been for the untimely death of Mr. Gosling early in life, before he had even well established himself in the home of his future operations, Busbridge would have occupied a

* Der Baum. Studien über Bau und Leben der höheren Gewächse, von Dr. Hermann Schacht. Ordentlichem Professor der Botanik an der Universitat zu Bonn. Zweite umgearbeite und vermehrte Auflage. Mit 575 Abbildungen auf 4 lithographirten Tafeln und 227 in den Text eingedruckten Holzschnitten. Berlin, 1860, pp. viii. & 378.

...ment place in the horticultural world. As ... a new kitchen garden has been formed ... which, as will be seen ... the accompanying ... is a series of glass erections, different in aspect and arrangement from what are usually to be met with, even ... places of greater pretensions than that now under notice.

It is only three years since what is now the kitchen garden was a ... field; the old garden laid low in a valley, in which, on account of damp and hoar frosts, early fruits were cut off in their infancy; the selection for the new place was, therefore, on the neighbouring rising ground, with a slight inclination to the south, a site on which a thermometer stands at all times 3° higher than in the valley below. The drainage being naturally good the first operations were to trench the whole of the ground 2 feet deep and to level it. After that was done walks were made, walls erected, and houses built by Mr. Gray, of Danvers Street, Chelsea, on a plan provided by Mr. Kitson. It consists of three curvilinear roofed plant houses or corridors, connected together in front by ranges of lean-to Vineries, and in the rear by means of Pineries, Cucumber and Melon houses, orchard and plant houses, and span-roofed pits or hibernatories, for the accommodation of half-hardy plants for the decoration of the flower garden in summer, the whole forming a connected, glass-covered promenade of considerable extent. It was intended that the surrounding walls should be faced with glass; but this has not yet been done, and the two end circular-roofed terminations have not yet been built. The walls are faced with Portland cement, over which are strained galvanised wires, to which the trees are trained.

Nothing in its way could possibly be more unique or convenient than the manner in which the forcing and other houses just described are placed, and they are all efficiently ventilated and heated by hot water. Even the Vine borders are warmed both outside and in, the benefits arising from which are observable not only in the growth, but in the firmness and ripeness of the wood, which is strong, short-jointed, and fruitful. The earliest Vinery has just been shut up for forcing, and in the late one well preserved Grapes are hanging now. The sort is Lady Downes' Seedling, the bunches of which are large, and the berries well swelled and covered with a beautiful bloom. This is a favourite kind here as well as elsewhere for late work. Good crops of Grapes have also been obtained from Vines in pots.

Cucumbers and Melons are grown largely, especially the former, which are "in cut" the whole year round. The sort mostly employed is Syon House and Carter's Champion, the last an excellent winter sort. They are trained on trellises, as are also the Melons, which succeed well managed in that way. The only point requiring special attention is to take care that the fruit is supported by means of a ribbon or two of bast when it becomes too heavy for the stems to carry it without breaking. Pine Apples are not planted out in a bed of soil, but are kept in pots, and nothing in their way could possibly look cleaner or more healthy. They are chiefly Queens, which ripen beautifully in summer, and a few Jamaicas and Montserrats are grown for winter use.

The heating may be said to be on the one-boiler system, inasmuch as one boiler can be made to do the whole work; two are, however, employed; but in the event of any thing going wrong with one, by means of stops the water can be cut off the disabled boiler, and the other made to do the work. By this arrangement no risk is incurred, and both boilers when in good order work well together.

The quarters of this new garden produce excellent crops of vegetables, but the soil being light and sandy is not quite so well suited for Strawberries; some soil of a stiffer character is therefore being worked into borders, on which they are grown. Fruit trees succeed well, and pyramids which are planted round the breaks produce satisfactorily.

The only walls at present about the place are those seen in the plan. The rest of the garden is enclosed by a Yew hedge, which has a better appearance seen from the surrounding pleasure grounds than a hard stone or brick wall. Broad slips or borders on the east and west sides of the glass houses furnish abundance of vegetables. Even Peas have been gathered every day since May until within a fortnight or so ago. The sort used for the last crop is Sangster's No. 1, an early Pea, but for late purposes better than any other kind.

The mansion, a plain square white building with slate roof, stands at a little distance from the kitchen garden in the bottom of a beautiful valley, the sides of which are clothed with timber trees and shrubs; and half way up the hill, along the south aspect, is a walk sheltered from the north winds, from which a charming view of the surrounding scenery can be obtained. Right and left of the house are pieces of ornamental water, one rectangular in form, the other more natural in outline and of greater extent, terminating in the distance in a series of rustic arches, which have the appearance of a bridge. In close proximity to the mansion is a small conservatory, in which are some fine basketfuls of Ferns suspended from the roof, and other plants in pots in beds bordered with Toothed Lycopod. The whole is surrounded by a well kept lawn, which on the high ground behind the house assumes the form of an arboretum, in which are some good specimens of Conifers. These, indeed, grow here with unusual vigour; in the valley examples of Silver Fir and Larch may be found, measuring 100 and 130 feet in height, with few branches, and stems straight as scaffold poles. A Silver Fir cut down a short time ago is stated to have contained 303 cubic feet of timber.

The hill sides in the neighbourhood of the lawn are interspersed with walks and flights of rustic steps, formed chiefly under the direction of Mr. Kitson, Mrs. Gosling's gardener, to whom much credit is due for the

satisfactory way in which the manifold improvements intrusted to his care have been carried out. In short until within the last year or two the place was somewhat over wooded; now vistas have been opened up so as to bring into view objects of particular interest. old approaches have been altered, and new ones made, and for its extent the whole place is now one of surpassing beauty, owing to the finely varied character of the scenery of which it consists. In the north side of the valley are some deep and cool ravines, overhung with Ivy, in which hardy Ferns find a suitable home; and on the south bank is a singular sinuous vault, once, we believe, a tomb; but now used by Mr. Kitson as a storehouse for roots, which keep plump and sound in it for an unusual length of time.

A new mansion was to have been built on rising ground overlooking the valley; but for the present its erection has been abandoned.

We find we have omitted to mention, that behind the first range of Vineries are the boiler-houses, potting-sheds, young men's residences, fruit-room, and Mushroom-house. The last is double roofed, the under one being an arch constructed of tiles laid in cement. By this means an equable temperature is maintained, and the beds produce abundance of Mushrooms. Regarding treatment, perhaps the only point requiring special mention is, that until the crop appears fairly above ground, Mr. Kitson covers with Tiffany instead of hay. The latter has a littery appearance, while the former is light and clean, and easily removed when its presence is not required.

Miscellaneous.

Cinchonas in Ceylon.—The Cinchona experiment is carried on chiefly at Hakgalle (Jaw Mountain), close to Newera Ellia, under the immediate care of Mr. Mac Nicoll. From observations taken by Mr. Mac Nicoll during the 12 months extending from March 1861 to February 1862, the following results as to temperature are deduced:—

Mean temperature of the year—64.6°.

Highest temperature 83° observed on May 9th and 13th at 12 p.m.

Lowest temperature 48° observed on December 29th at 6 a.m.

Greatest difference of temperature during the day, 20° on 17th April, 1862.

The lowest temperature being 48° shows that Hakgalle is entirely out of the influence of the Newera Ellia frosts. On the plain we believe the mercury has gone down to 28° on a sharp winter night. From the following extract it will be seen that the progress hitherto has been satisfactory, although as yet the very best variety, C. calisaya, cannot be said to be fairly introduced. The experiment in the cultivation of some of the Quinine-producing Cinchonas is proceeding most favourably, and the progress made may be considered extremely satisfactory, taking into consideration the limited supply of seeds we received to commence with. Mr. Mac Nicoll has been very successful in the management of the plants under his care at Hakgalle. Several of the larger ones have been planted in the forests and are flourishing vigorously, and preparations are now being made for many more being put out. Open spaces of a moderate area are being cleared in the forest, in order that the plants may have plenty of light, and yet be sufficiently protected by the surrounding trees from too much wind, which the Cinchona plants are not able to bear without injury, owing to the large size and not very firm texture of their leaves. Much care is required in these arrangements: for the Cinchona plants become drawn up and weak when in dense shade; whilst, if exposed to plenty of light, with direct sun-light upon them for a few hours during the day, they assume a most healthy and robust appearance, with stems of a deep red colour, and leaves of a much firmer texture. A certain number of the plants, placed in very favourable situations for shelter from the wind, are being allowed to grow up to their full height, with the view of their producing flowers and seed; but as it will probably be only after the expiration of some few years that this will occur, and as it is desirable, in order to be prepared for an early distribution, to increase the number of our plants as rapidly as possible, Mr. Mac Nicoll is effecting the latter object by striking cuttings from a considerable number of plants, which he has reserved for the purpose. Large cuttings of C. succirubra would appear to strike readily in the open ground; but of cuttings we can of course get only a few at present, owing to our plants being all young. Smaller cuttings are struck in a hotbed, and roots are produced upon them in a fortnight or three weeks. After as many cuttings have been taken from the reserved plants as these will at one time yield, some interval must necessarily elapse before other shoots are produced of suitable size for removal for the next lot of cuttings. Mr. Mac Nicoll will have, before many days, nearly 600 plants of C. succirubra struck from, and he anticipates that this number will be very considerably added to in a few weeks. Many of these plants will probably be sufficiently established in growth to bear removal in three or four months should it be deemed desirable by Government to commence their distribution so soon: on a small scale, of course, at first. It may be thought advisable to allow applicants to have, at a price to be determined upon, a few—say four or five—plants to enable them to ascertain the suitableness or otherwise of localities they may have selected for the cultivation of this valuable plant. Some plants of of C. succirubra, received from the Establishment at Kew during the past year, and which arrived in not very strong condition, I have deemed it desirable to keep at Peradenia for propagation from by cuttings. Of 150 which were despatched from Kew 100 survived, and are now well here. From these, and from a plant we raised from seed, Mr. Cameron has, by means of a hotbed he has constructed here, succeeded in striking a good many cuttings, which will be useful by and by for distribution in districts contiguous to this. Although the climate of Peradenia is not so favourable for C. succirubra as is that of Hakgalle, some plants of it growing in the open ground here are, nevertheless, doing very well; and we find that, even at this low elevation, they thrive best when well exposed to the light, with the sun upon them for an hour or two during the day. Exposure to the sun for the whole of the day is more than they can bear without injury. Of Cinchona Condaminea a small supply of most excellent seeds were received a few months ago from Mr. Clements R. Markham. From these a number of young plants have been raised by Mr. Mac Nicoll and are in a thriving condition at Hakgalle. The climate of Peradenia is much too hot for this valuable species. C. Calisaya has not succeeded so well with us as have the other kinds we have under cultivation, owing, I believe, to the plants, which were all received from Kew, having been injuriously affected by the long voyage from England. I am expecting a number of plants of this desirable kind from Java, Mr. Van Spall, of the Civil Service of that island, who visited Ceylon a short time ago, having kindly interested himself in the matter, and obtained the sanction of the Javan Government for the transmission of some plants of C. Calisaya to this Establishment. While on this subject we may attract attention to the paragraph in our supplement, extracted from the *Madras Times*, showing that the Cinchona plants are succeeding on the sub-Himalayan ranges. There can be little doubt now that in the course of another generation the great febrifuge will be growing plentifully on the elevated lands of India from Newera Ellia in the South to Darjeeling in the North. *Colombo Overland Observer.*

Another Substitute for Cotton.—At an ordinary meeting of the members of the Society of Arts, held the other evening at John Street, Adelphi, the Secretary stated that he had received from Mr. W. T. Keates, the chemist, of Chatham Place, Blackfriars, a communication regarding a new substitute for Cotton. It stated that in September last a Mr. Ghislin, of the Cape Colony, had presented to Mr. Keates specimens of South African bulbs which, on being treated, he found to be full of fibre, and well adapted for textile and paper purposes. More recently he had received from Mr. Ghislin other plants of the same family, which yielded a much superior fibre, similar to a soft elastic silk—not spiral, but twisted like a bell-pull. He was informed by Mr. Ghislin that these plants were indigenous to the wastes of South Africa, and that they could be so easily cultivated that any quantity could be produced. A glass jar containing half stuff for paper-making, and a variety of prepared specimens, plain and dyed, were laid on the table. These specimens were minutely examined by the members present, and excited the utmost interest. The introducer of these bulbs won the prize medal for the display of South African manufactured Algæ at the International Exhibition. *Daily Paper.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—The conservatory being now gay with Chrysanthemums and other plants in bloom, care must be taken in the very first place that all drip from the roof is avoided. To accomplish this, very little water must be applied in any shape, excepting what is absolutely necessary at the root. However, under these circumstances, a very moderate amount of atmospheric heat must be allowed; for, wherever heat is allowed there must be atmospheric moisture, or the plants will soon show marks of debility; therefore the proper conservatory management from the end of November until the early part of February, is to keep as low a temperature as possible, consistently with the main object in view, viz., enabling plants with duly organised buds to develope their blossoms in a proper way. This is the principal object; their continuance in bloom, and the preservation of their tints, follow in close connection. A still atmosphere must be maintained. The ventilation must be moderate; about 45° or 55° by day, and 40° or 45° by night, will be quite sufficient for the present. Orchids and stove plants must be kept quiet for the present. Maintain a similar atmosphere to that recommended for the conservatory, but about 10° higher. A little more atmospheric moisture must, however, be allowed. If the forcing pit for supplying the Conservatory is heated merely by means of fermenting matter, a very free ventilation must occasionally be allowed, or the moisture will be overpowering. A bottom-heat of 75° ought to be secured; this is indispensible. The pots should be about half plunged in the old tan. Keep the atmospheric heat very low at first, about 55° to 60° in the day, with as much air as can be managed, and 50° to 55° by night, still leaving air more or less.

FORCING DEPARTMENT.

Pinery.—Late-swelling fruiters, which have had no water for weeks, may receive a little more tepid manure-water. There is, however, room for doubts as to whether it is absolutely necessary after this period. Of plants managed in the old style (in houses or pits with flues), there is no doubt that such would require it. By modern plans, however, a much greater amount of atmospheric moisture is indulged in; and this should be duly considered. When sunshine occurs, instead of giving air, let the thermometer rise to 80° or even 90°, after which give air.

Vineries.—If former directions have been attended to, little can yet be added. As before observed, commence gradually. If there is fermenting matter within the house, let it be turned or stirred once a week, in order to promote fermentation; taking care to keep it moist.

Cucumbers.—Those who have winter plants in pits or frames must be sure to keep the glass perfectly clean. So much depends on the mode of heating that it is almost impossible to offer advice which may prove serviceable. One or two points, however, apply to all. If much atmospheric moisture be applied, so as to lodge on the leaves in a general way, ventilate, or by other means dry the dew off the leaves for an hour or two every day. Secure a day heat of 70°, allowing 80° during sunshine, and from 60° to 65° by night.

Mushroom House.—Keep the floor constantly wet. Be moderate in the use of fire-heat—55° to 60° will be sufficient.

FLOWER GARDEN AND SHRUBBERIES.

Now that leaves are off the trees, let shrubberies have a thorough cleaning. Rose stocks should be procured forthwith and planted on rich soil for budding purposes. Examine pillar and trellis Roses, and see if the soil wants renewing or the kinds changing. Roomy holes should be made for choice kinds, capable of containing three or four barrows of soil. Turfy loam of a sound character is the chief thing; to this add a portion of rich rotten manure and, if at hand, a little sandy peat or leaf soil.

HARDY FRUIT AND KITCHEN GARDEN.

The proper preservation of salads is a point of much importance, and great difference exists in practice on this head. For ordinary purposes, the best way is to grow a considerable breadth of Lettuce from the August sowings; that of the first week is eligible. This being tied and blanched betimes in October, may be taken up and heeled close together and covered with straw mats or otherwise. The same may be said of Endive. Two points are however necessary, viz., to promote the circulation of dry air or winds through them at all times, and to keep out frost. Proceed with pruning, nailing &c., without delay, whenever the weather will permit such operations to be performed with advantage.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Nov. 26, 1862, as observed at the Horticultural Gardens.

November.	Moon's Age.	Barometer.		Temperature.					Wind	Rain
				Of the Air.			Of the Earth			
		Max.	Min.	Max.	Min.	Mean	1 foot deep.	2 feet deep		
Thurs. 20	28	30.147	30.096	41	33	37.0	45	45	E.	[illegible]
Friday 21	●	30.136	30.047	45	25	35.0	45	45	N.	[illegible]
Satur 22	1	29.897	29.796	43	18	30.5	45	44	N.	[illegible]
Sunday 23	2	29.720	29.640	44	20	32.0	44½	43½	N.W.	[illegible]
Mon. 24	3	29.710	29.673	44	29	36.5	43	43½	N.E.	[illegible]
Tues. 25	4	29.661	29.564	40	30	35.0	43	43½	N.	[illegible]
Wed. 26	5	29.514	29.475	42	25	33.5	43	43½	W.	[illegible]
Average.		29.841	29.753	42.7	25.7	34.2	44.1	44.0		[illegible]

Nov. 20—Light clouds; overcast; fine at night.
— 21—Overcast; densely overcast; fine; frosty.
— 22—Hazy; fine; sharp frost at night.
— 23—Frosty; fine throughout; frosty.
— 24—Frosty; light clouds; fine; cold wind; clear.
— 25—Partially overcast; brisk cold wind; lightly overcast.
— 26—Densely and uniformly overcast; cloudy; overcast; frosty rain.

Mean temperature of the week 6 8-10th deg. below the average.

RECORD OF THE WEATHER AT CHISWICK
During the last 36 years, for the ensuing Week, ending Dec. 6, 1862.

November and December.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 30 ..	48.0	35.1	41.6	19	0.30 in.	4	3	3	3	[illegible]	[illegible]	[illegible]	[illegible]
Mon. 1..	48.4	35.2	41.8	17	0.25	2	2	2	4	[illegible]	[illegible]	[illegible]	[illegible]
Tues. 2..	47.3	34.0	40.7	16	0.51	2	4	3	1	[illegible]	[illegible]	[illegible]	[illegible]
Wed. 3..	46.9	35.1	41.0	19	0.26	1	6	4	2	[illegible]	[illegible]	[illegible]	[illegible]
Thurs. 4..	47.5	35.6	41.6	16	0.39	4	2	2	3	[illegible]	[illegible]	[illegible]	[illegible]
Friday 5..	48.2	34.2	41.2	21	0.25	—	3	2	1	[illegible]	[illegible]	[illegible]	[illegible]
Satur. 6..	47.4	35.9	42.2	21	0.46	1	2	1	1	[illegible]	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 30th, 1856, and 5th ... 1st, 1857—therm. 62 deg.; and the lowest on the 30th, 1856, and 5th and 6th, 1844—therm. 14 deg.

Notices to Correspondents.

Books: *A. J. D.* We are unable to inform you. Doubtless the subject has to be traced through many books in many languages. Probably Mr. Chambers, of Edinburgh, may be able to help you.

Crickets: *P P.* Trap them by means of wide mouthed pickle bottles, baited with a little treacle and water; the bottles being so sunk or placed that the crickets can get into them with ... Penny's paste has also been used for destroying them with complete success, see page 154 of our volume for 1856.

Names of Fruits: *A B C.* 1, Gloria Mundi; 2, Hoary Morning; 3, Alexander; 4, Court of Wick; 5, 9, Dumelow's Seedling; 6, Downton; 10, Hawthornden; 1, Beurré de Capiaumont; 2, Autumn Colmar; 3, Bon Chrétien Fondante; 4, Passe Colmar; 5, Bishop's Thumb; 6, Ne Plus Meuris; 9, Beurré Bosc; 11, Beurré de Capiaumont.‖

Names of Plants: *Wm. B.* Cattleya guttata. The Horticultural Society's Fruit Catalogue can now and then be had of second-hand booksellers. Don't buy the first edition.

Rhubarb: *M J C.* Myatt's Victoria may possibly answer your purpose.‡

Agricultural Chemistry—£50 Prize Essay.

THE SALT CHAMBER of COMMERCE offer the above Prize for the best Essay upon the Use of Salt for Agricultural Purposes The Essay must give plain directions ... based on authoritative precedent; it must show its ... Value as a Food for Plants and Animals, and define ... as a Manure.

The right of publication is reserved by the Chamber. Essays ... be lodged before March 1, 1863, with the Secretary,

JOHN MOORE, Northwich, Cheshire.

AGRICULTURAL and CHEMICAL COLLEGE
37 and 38, Lower Kennington Lane, London, S.
ASSAYS and ANALYSES promptly attended to by J. C. NESBIT, LANSDELL & Co.

AGRICULTURAL and CHEMICAL COLLEGE, KENNINGTON.—Manufacturers and others engaged in making Artificial Manures may obtain every necessary instruction for their economical and efficient preparation by applying to J. C. NESBIT, LANSDELL & Co., 37 and 38, Lower Kennington Lane, London, S.

Analyses of Soils, Guanos, Superphosphates of Lime, ... &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.

Gentlemen, Farmers, or others, desirous of practical knowledge in Chemical Analysis, or Assaying, may receive instruction at the College, where the extensive Laboratories give ample facility for pursuing their studies, and there is accommodation for a limited number of Resident Students.

Full particulars of terms will be forwarded on application.

Land Drainage, and other Agricultural Improvements.

MR. BAILEY DENTON, C.E., maintains a large staff for the execution of Land Improvements by a commission of 5s. per acre for Under Drainage, and a fixed charge for Outfall and other works.

For particulars apply to him, at 52, Parliament Street, Westminster, S.W.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. HUMBERT, Land Agent and Surveyor, Watford, Herts, and ... Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

THE LANDS IMPROVEMENT COMPANY.—
Incorporated by Special Act of Parliament in 1853.
2, Old Palace Yard, Westminster, S.W.

TO LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &C. IN ENGLAND AND WALES AND IN SCOTLAND.

The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm Houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

Smithfield Club Cattle Show 1862, Stand 23.

RANSOMES AND SIMS,
Orwell Works, Ipswich,
Will exhibit at the above Show a choice COLLECTION of their celebrated AGRICULTURAL MACHINERY, to which they respectfully invite attention.

Every information, with descriptive CATALOGUES (gratis), will be furnished upon application to the Attendants at their STAND 23.

Cattle Show.—Stand 105.

CATTLE INSTRUMENTS, PROBANGS, &c.

READ'S PATENT VETERINARY INJECTING SYRINGES, Improved BALLING IRONS for HORSES, &c. Improved HOLLOW PROBANGS, for Relieving Hoven or Choked Bullocks, Calves, Sheep, &c. READ'S New Patent GARDEN WATERING ENGINES, MACHINES, and SYRINGES, with all the latest Improvements.

Manufactured only by the Patentee, RICHARD READ, Instrument Maker by Appointment to her Majesty, and her Majesty's Hon. Council of India.

35, Regent Circus, Piccadilly, London, W.
*** Descriptions, with Drawings, post-free.

Smithfield Club Show, Stand No. 95—Galleries.

WILLIAM SKIRVING begs to announce to his Friends and the Public that he will ATTEND, as usual, at the LONDON CATTLE SHOW (Agricultural Hall, Islington), to Exhibit ROOTS and Take Orders for AGRICULTURAL SEEDS of the most approved kinds.

The variety of SWEDE which W. S. will exhibit this Show has, in his experiments for three years past, proved to be superior to all other Swedes now in cultivation, in every respect, for weight of crop, quality of the bulb, and for long keeping. The Seed of this year's growth he can strongly recommend, being all grown on his own Farm under his particular care, and as having entirely escaped the blight that has injured the greater part of the Swede Seed grown in the Southern Counties.—Liverpool, Nov. 29.

Smithfield Club Cattle Show.

PRIZE ROOTS.—No. 93 STAND, in GALLERY.
JAMES CARTER & Co., 237 and 238, High Holborn, W.C.

Smithfield Club Cattle Show.

MESSRS. SUTTON AND SONS respectfully invite their customers and the public to inspect their SPECIMENS of ROOTS, and other Agricultural Produce, on their STAND, No. 98, in the Gallery of the New Agricultural Hall, Islington, during the ensuing Show.

Great Central Root Show, Bingley Hall, Birmingham.

SUTTON AND SONS, SEED GROWERS, Reading, respectfully invite inspection of their Collection of ROOTS and other AGRICULTURAL SPECIMENS, on their STAND in the GALLERY, opposite the main entrance, in the Bingley Hall, Birmingham, on the 1st, 2d, 3d, and 4th of December, when they will be prepared to receive orders for Seeds of the numerous choice stocks of Swedes and other Turnips, Mangels, Grasses, Clovers, &c.

Royal Berkshire Seed Establishment, Reading.

EXHIBITION of DOGS.—The THIRD GREAT ANNUAL EXHIBITION of SPORTING and other DOGS will be held in Paradise Street, (near Bingley Hall,) BIRMINGHAM, on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4—the Week of the CATTLE and POULTRY SHOW in Bingley Hall.

For special Railway Arrangements see the Advertisements and Bills of the several Companies.

BINGLEY HALL, BIRMINGHAM.—The FOURTEENTH GREAT ANNUAL EXHIBITION of FAT CATTLE, SHEEP, PIGS, ROOTS, IMPLEMENTS, and DOMESTIC POULTRY, will be held on MONDAY, TUESDAY, WEDNESDAY, and THURSDAY, December 1, 2, 3, and 4.

For Special Railway Arrangements see the Advertisements and Bills of the several Companies.

Sixty-fourth Show of the Smithfield Club.

THE SMITHFIELD CLUB, CATTLE, and IMPLEMENT SHOW for 1862 (removed from Baker Street Bazaar), will be held at the NEW AGRICULTURAL HALL, near the Angel, Islington, on the following days:—

MONDAY, December 8, Opening Day, Admission 5s.

TUESDAY, December 9, 1s.	THURSDAY, December 11, 1s.
WEDNESDAY „ 10, 1s.	FRIDAY „ 12, 1s.

Open from 8 o'Clock A.M. to 9 P.M.

Western Entrance (by King's Cross and Pentonville Hill), Liverpool Road. By this direct road Carriages avoid the Toll Gate. Eastern Entrance, Islington Green.

The Cab Fares from the Railway Stations are as follows:—From Great Northern and from the Highbury Station on the North London, 6d.; from the London and North Western, or Great Eastern, or Fenchurch Street or London Bridge Stations, or the South Western, 1s. 6d.; from the Great Western, 2s. Omnibuses from London Bridge and the City, Kennington and Blackfriars, Westminster, Chelsea, Brompton, Paddington, 1600 journeys up to 9 P.M., either past the Angel or past the Hall.

Tickets for Admission the Opening Day, Monday, December 8, price 5s., with a Map of the Route to the Hall, to be had of Mr. MITCHELL, 33, Old Bond Street, W.; Mr. SAMS, 1, St. James's Street, S.W.

The Agricultural Gazette.

SATURDAY, NOVEMBER 29, 1862.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	Dec.	1	Show of the Midland Counties Association at Bingley Hall, Birmingham.
TUESDAY,	—	2	
WEDNESDAY,	—	3	
THURSDAY,	—	4	
MONDAY,	Dec.	8	Show of the Smithfield Club in the Agricultural Hall, Islington.
TUESDAY,	—	9	
WEDNESDAY,	—	10	
THURSDAY,	—	11	
FRIDAY,	—	12	

OUR readers are directed to the important letter in another column from Mr. HOLLAND, M.P., the Chairman of the Council of the ROYAL AGRICULTURAL COLLEGE. Though dated Nov. 25, it has reached the Editor of the *Agricultural Gazette* only on the eve of going to press, and any further comments on the state of the Institution to which it refers must therefore be postponed for a week. Meanwhile it must be pointed out that the statement of the article which is criticised was not that the "College" is on the eve of breaking up, but that the "establishment" at the College—a perfectly well-understood term—was in that condition.

WE have received from Professor GEORGE BROWN, V.S. of Cirencester, the following valuable report upon Carbolic acid as a medicament, for which purpose it has been proposed by Dr. CRACE CALVERT of Manchester:—

"Carbolic acid, as employed by Dr. CRACE CALVERT, occurs in various states of purity according to the amount of care devoted to its preparation. My experiments have been conducted with the very impure form, a black liquid having the appearance and general characters of tar; with a purer form, a light brown fluid more resembling creosote; with a still purer variety, colourless and transparent, having an odour of tar and sulphuretted hydrogen, and termed by Dr. CALVERT "Terebane;" and lastly the purest carbolic acid or "Phenyline," a substance that remains solid at the ordinary temperature of the air, but dissolves readily when the bottle containing it is placed in hot-water, becoming again solid shortly after its removal from the heated medium; its appearance is somewhat like spermaceti, with a faint odour of tar. The two last named forms of Carbolic acid should be employed to the exclusion of the less pure varieties, whose activity is probably subject to variation."

Phenyline and terebane possess several important medicinal properties: 1st, they are active as caustics; when employed undiluted, their effect, although very decided, is confined to the immediate part. The cuticle is quickly elevated, apparently as the result of a direct combination of the acid with the tissue, as I do not find that any effusion takes place as in ordinary vesication. On the contrary the elevated part is dry, quite opaque, somewhat tough, and tears like a thin sheet of gutta percha. This peculiar effect was developed to a remarkable extent in one instance. A horse suffering from very obstinate eruptive disease of skin attended with constant itching, was selected for treatment by terebane; the fluid was diluted with two parts of glycerine, in which it dissolves in all proportions, and applied by means of a small brush. In a few minutes the cuticle was raised in large patches; the horse gave meanwhile no evidence of pain, and according to the testimony of the man who applied the liniment and spilled some of it upon his hands, only a slight burning sensation was experienced, although the cuticle of his fingers was blanched and raised. After a few days the horse presented a very singular appearance; over every part where the acid had been applied large white bladders were apparent; these on being torn were found to cover the hair, which was left quite uninjured beneath.

In another case the same solution was applied to the skin of a dog that was affected with eruption and loss of hair from confinement and coarse feeding. The disease resembled mange, but the most careful examination failed to discover any acari. During the application of the compound the animal did not evince any suffering, but immediately afterwards he fell, as though poisoned by prussic acid, and seemed on the point of expiring. Warm water and soap were instantly in requisition. The whole body was thoroughly washed, and a cold douche was immediately given, but without apparent effect; the dog still lay convulsed and unconscious. He was left under the impression that death would shortly take place. In the course of a couple of hours he was found to have recovered, and gave indeed no indication of the previously severe effect of the treatment, save that the integument was generally swollen and moist, and the animal suffered from tremors, which continued during two days. The skin disease was however radically cured, and no loss of hair followed the application of the caustic.

In justice to Dr. CALVERT and myself I am bound to remark that these two experiments were instituted under an erroneous impression. I should not intentionally have covered an animal's body with a powerful caustic, but I understood Dr. CALVERT to say that he would send me the terebane in the proper state for application to the skin, and it was not until I had applied it in these two cases that I became aware of the necessity of extensive dilution; one part of terebane to 50 parts of water being the strongest form of solution for the treatment of mange and allied affections. It is not, however, with me a matter of regret that I acted under a misapprehension; as in consequence I have ascertained the extreme effect of the agents when applied over the whole surface, and I find it to possess the very valuable characteristic of a comparatively painless action. As a caustic, terebane (which being fluid is more convenient than phenyline) takes the place of the mineral acids and their compounds; with a small bottle in my pocket, I am prepared for all ill-conditioned ulcers, fistulas, wounds, poll evil, foot-rot, &c. A piece of stick plucked from a broom or a hedge, with a small portion of tow or wool twisted round one end, furnishes a convenient brush, which is cast away after use, and a new one constructed when required. The fluid is freely used without fear of deep-seated injury, and with the certainty of a nearly painless destruction of the diseased surface. Not an hour since I applied it to the head of a horse suffering from so-called poll evil, the patient standing tranquilly during the contact of the agent, manifesting no objection to its repeated use. 2d. As a disinfectant or antiseptic, carbolic acid seems to be unrivalled. At Dr. CALVERT'S suggestion I have employed the saturated solution (one part in 50 of hot water, frequently shaken, and allowed to stand for a day or two) in cases of discharge from "grease" with most beneficial effect.

In mange and various forms of surfeit, in all cases of fœtid secretions, or exhalation, indeed as a general disinfectant, this solution may be employed with advantage.

To the anatomist and physiologist the solution of terebane or phenyline is a great boon; its preventive effects are most remarkable, but what constitutes its particular value is the fact that it does not impair the mechanical properties of flexibility and transparency of textures. I do not scruple to cast into the jar of the filtered solution the most delicate membranes, and find them, after days as flexible, as easily dissected, and as perfect for the microscope as though they were just removed from the subject.

3rd. Internally its action is styptic and astringent. It has not however occurred to me to exhibit it in cases of chronic diarrhœa; I understand its use has been found beneficial.

In veterinary practice there is no doubt it will prove of infinite value as an external application in the various cases alluded to, in fact in every instance where an unhealthy discharge has to be rectified. Starting from the undiluted preparations, whose action is powerfully caustic, we may proceed through every possible grade of dilution in glycerine or acetic acid, down to the solution in water of one part of acid to

50 of the diluent, and even to a still higher degree of attenuation by adding to this saturated solution as much more water as may be desired. *G. T. Brown, Professor of Veterinary Surgery, Royal Agricultural College.*

The diagrams on this page represent the daily yield of milk at Frocester Court Farm, near Stonehouse, Gloucestershire; (1), from three individual cows during the current year; and (2), from the whole herd in several successive years.

As to the first diagram, it will be seen that the first cow had calved early in the year, though the measure of its milk was not begun to be taken till the middle of April. The two other cows, much better milkers, calved in April, reaching their maximum yield rather before the first, in the beginning of June. All three then suffered a diminution of milk during the haymaking time, when old pastures are getting scanty, suffering again a rise in July and August, when the aftermath was added to the general available extent of pasturage. They then successively took the distemper (foot and mouth disease), and the failure of the milk and its gradual coming again upon recovering health is very significantly indicated by the drop in the curve. Finally, during September

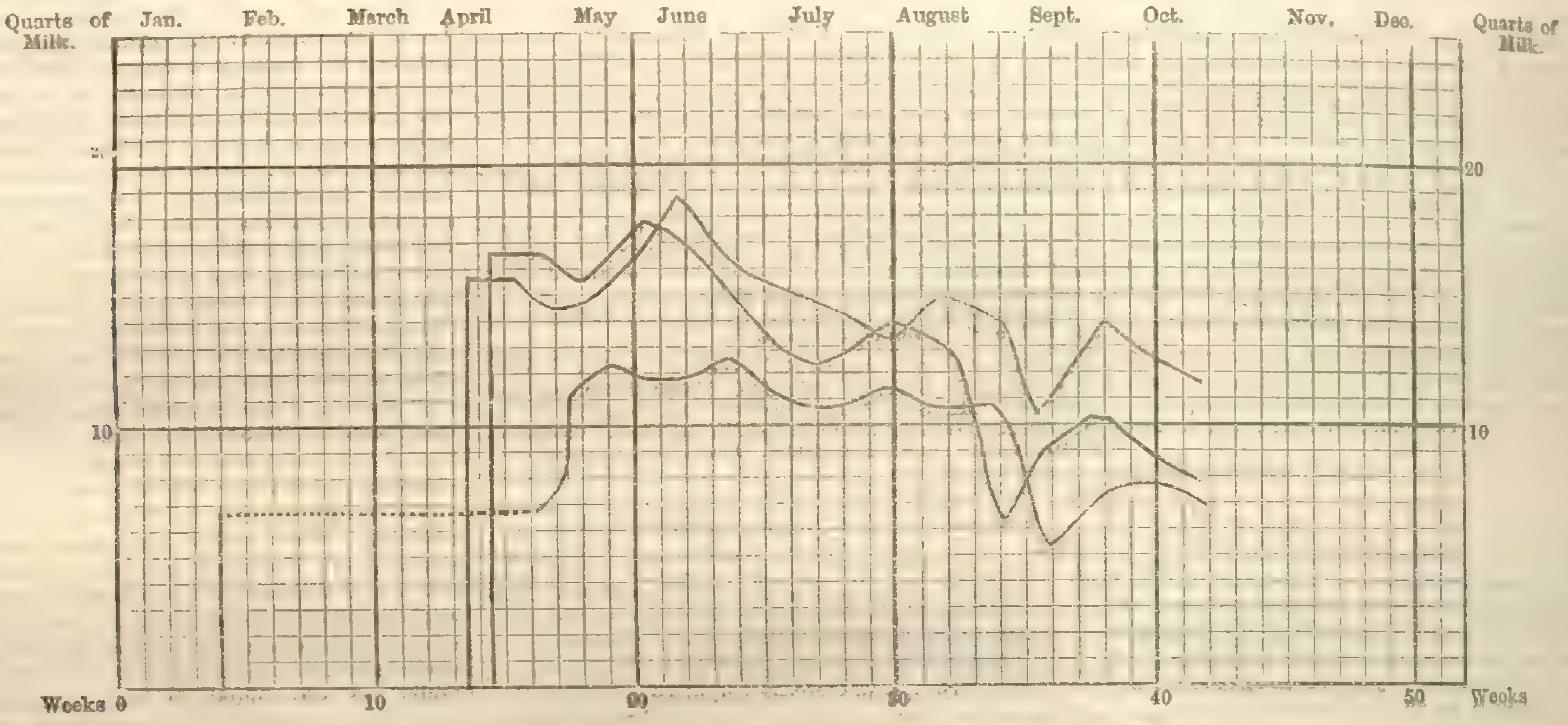

DIAGRAM SHOWING DAILY YIELD OF MILK FROM INDIVIDUAL COWS.

and October the yield gradually fell:—the page was torn out of the book in the end of October, and the curves remain unfinished.

Mr. Harrison has devised this extremely instructive way of recording the milking properties of his cows. Every cow has its page, although we have drawn the curves of three of them on one page here. And every Saturday their milk is measured, poured into a bucket with a scale attached to it, and the number of quarts recorded as the daily yield of the week then ending. And being then marked upon the tabular form, the line is

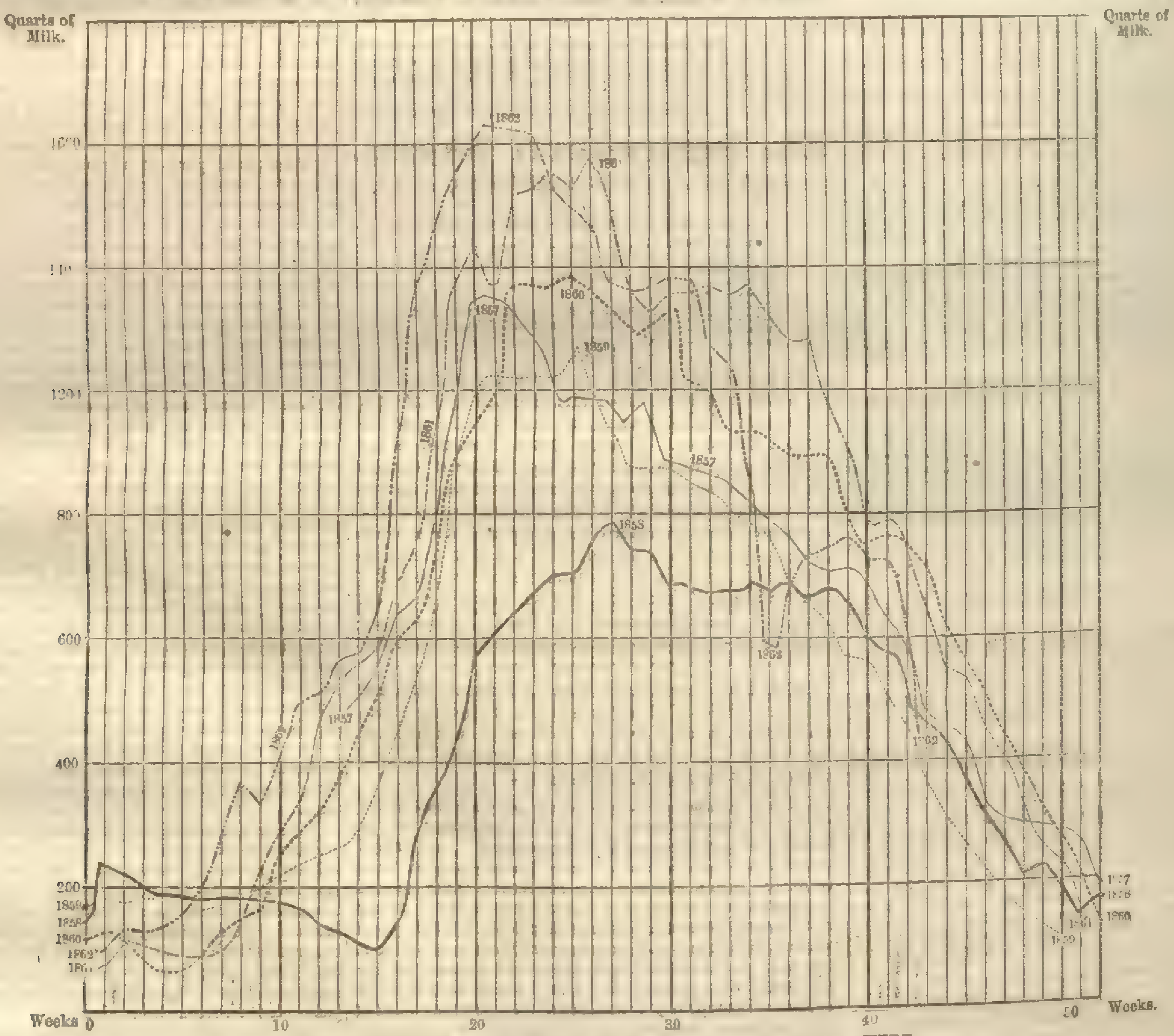

DIAGRAM SHOWING DAILY YIELD OF MILK FROM THE WHOLE HERD.

drawn so as to pass through the points thus placed, and we have the very instructive record of the year's produce, and the character of the cow declared as plainly as possible for future guidance.

The curves upon the larger diagram illustrate in like manner the daily yield of the whole herd, the line for 1862 finishing off in the 43d week, when Mr. Harrison was good enough to give it to us. In this year the effects of the distemper from the 34th to the 38th week are again very apparent, the daily yield of milk falling in three weeks from 1400 quarts down to about 580, rising however to near 800 on the recovery of the animals before the effect of the season began to tell in its natural way upon the cows. It will be noticed moreover that the yield is falling more rapidly this autumn than it had done in previous years, owing no doubt to the more rapid effect of the season upon cows weakened by so severe an attack of illness. The lessons which these curves teach us must be given in greater detail next week. Meanwhile they are presented to our readers as an extremely interesting attempt to present pictorially the annual operations of a dairy farm.

ROYAL AGRICULTURAL COLLEGE.

DUMBLETON, NEAR EVESHAM, *Nov.* 25.

Sir,—I thank you for your courtesy in sending me a copy of the College article in last Saturday's *Agricultural Gazette.* The remark I have to make upon the article is that its statement is not correct; for the College has not been either five months ago, or at any time since, on the eve of breaking up. It is not, and has not been disorganised; it is flourishing and is well managed, both as regards its discipline and its system of instruction.

The present session may be reckoned as one amongst our most successful. The letters from parents and guardians of students are very gratifying, our numbers are kept up, and, judging from the applications received for entries, there is no reason to suppose that they will fall off. It is true that circumstances have occurred with reference to the internal discipline of the College which could only be satisfactorily disposed of by a meeting of the Council in person, and by inquiry and examination on the spot however, the illness of three out of four members of the Council has hitherto prevented this. In the meantime the one party to the existing differences has taken very active means with the aid of the press in creating a prejudgment by the public, whilst silence has been enjoined by the Council on the other. I am, Sir, obediently yours,

E. HOLLAND.

P.S.—Since I commenced my letter I have heard from the Principal that three more pupils have entered at the College.

THE MIDLAND COUNTIES CATTLE SHOW.

THE 14th annual Cattle and Poultry Show will open on Monday next, and it promises to be one of the most interesting of these useful and popular meetings. The show of stock will be one of the largest that has been brought together in Bingley Hall; and while few, if any, of the well-known and oldest supporters will be absent on this occasion, the Council may congratulate themselves on the appearance of some new names in their catalogue—a proof that the influence of these exhibitions is still further extending, and that the principles upon which they have been conducted meet with general approval. Of cattle, the number entered this year is 131, against 104 in 1861; of sheep, 110, against 66; while the entries of pigs this year are 70, against 72 at the last exhibition; the total of the three classes of stock being this year 311 entries, against 242 in 1861. The well-arranged and liberal prize list of the Society, issued early in the year, has no doubt had considerable effect in producing the satisfactory results to which we are referring, the handsome special premiums being also most acceptable and valuable additions. Notwithstanding that the present season has generally been found very unfavourable for the growth of Roots, the entries this year are about 120, and in this division also the special premiums which have been offered will produce a strong competition. Coming from so many parts of the kingdom, and grown on so many different kinds of soils, and under widely different treatment, the root show in Bingley Hall is always one of the most instructive portions of the whole exhibition; and the modes of cultivation being given, the catalogue becomes an interesting record. There are 15 entries of Barley for the silver cup offered by Mr. Robert Tommas of this town. The entries of Poultry were only about six or eight pens from last year, so that the Poultry bay will be fully occupied; and, judging by the reports from various quarters, there is every reason to believe that a magnificent collection will again be brought together. The erection of a gallery along a portion of the west end of the building, in which it is intended to arrange the roots, will give additional space for the exhibition of implements, &c., the entire bay being this year available for the purpose; and this, as well as other parts of the building not required for stock, has all been secured for the display of articles connected with agriculture or some other branches of rural economy. *Midland Counties Herald.*

THE NEW AGRICULTURAL HALL AT ISLINGTON.

To the above notice of the forthcoming Midland Counties Show we add some particulars of the building in which the Smithfield Club are in the following week to hold their annual exhibition.

It occupies nearly 3 acres in extent, is entered from the Liverpool Road, less than a mile from the Great Northern Railway terminus, and close by a great omnibus route. The space enclosed is 384 feet by 217 feet; it is surrounded by galleries 36 feet wide, and it is lighted by a glass roof 76 feet in height. There is besides an inner minor hall about 100 feet square. The materials used in its construction are iron, glass, and brick.

"One thousand tons of iron have been used in the construction of the building, and the roofing contains three miles of iron sash-bar, upwards of one acre of glass, and two acres of slating, whilst the space afforded by the galleries is considerably above an acre. There is, therefore, no lack of light during the day, whilst at night the area will be illuminated by 14 central chandeliers of 48 lights each, and 60 smaller ones of 24 lights each.

"With regard to the facilities for the public to reach the show from all parts of London, it is stated that omnibuses going to and from every district of the metropolis and the Agricultural Hall, make no less than 1600 journeys daily. It is also understood that arrangements have been made to put on special omnibuses to and from various parts of London and the Hall during the show. In addition to this, the Agricultural Hall is within a mile of the Great Northern terminus at King's Cross, a mile and a half from the North-Western Railway, and within an eighteen-penny cab fare from any one of the metropolitan railway termini, except the Great Western Railway; and by means of a very excellent map, executed under the able superintendence of the Secretary, which will be on the back of all the tickets and documents issued with regard to the Show, the route is pointed out for reaching the grand entrance in the Liverpool Road, thus avoiding the toll, which is still in existence on the road between the Angel and Islington Green.

"With regard to the general arrangements for this anniversary of the Smithfield Cattle Show, the Club have made very considerable alterations. Instead of the awards of prizes by the judges and private view taking place on Monday, as formerly, they will take place on Saturday, the 6th of December, and an experiment is about to be tried of making Monday, the 8th, a 5*s.* day, and still continuing to give four other days at the ordinary charge of 1*s.*"

ON LEASES.

IN your Paper of October 25 you have an article on the subject of leases. I have heard nearly the same argument used for these 30 years; I have frequently given my own opinions in opposition to them, and I have never got any better reply than "Oh, but leases must be the best because everybody says so." Permit me to try again whether I can get some reasons to show that your system is better than mine.

I readily grant that if a tenant is to lay out a large sum in the permanent improvement of his land, he ought on no account to do so without good security. But the question is, cannot a better means of effecting permanent improvement be found than by the tenant doing it. I look at the matter simply in a commercial view; I suppose that neither party has reason to trust or distrust the other, but that both are anxious to make themselves secure from loss. I take it for granted that every man's desire in laying out his money is to get the highest interest that he can obtain, combined with the highest degree of security. Both cannot be obtained together, the one falls as the other rises, but the highest combination of the two is the object to be desired. Now, Sir, I maintain that a far higher rate of interest in proportion to its security will be attained by the landlord making the permanent improvements, and leaving the tenant to spend his whole capital on the cultivation.

A tenant, whatever his capital may be, will usually wish to take a farm, which will employ the whole of that capital in the simple cultivation, and unless his capital be very much larger than his skill, I believe it to be wise for him to do so. I take it for granted, that on a fair reckoning a farmer ought to get 10 per cent. on the capital he invests in cultivation—less than this would not pay him for his skill, his risk, and his labour. Now, what is to be done with that portion of his capital which he invests in permanent improvements? You do not explain precisely what you mean by a long lease, but I suppose it to be 21 years. The tenant would not be able immediately to decide on the whole of his improvements; still less would he be able to carry them all out in the first year. Every year that he delays them necessitates a higher interest to repay him before the expiration of his lease; but even suppose he is able to do it all in the first year and that it begins to pay him immediately. Let us suppose that he has laid out 2000*l.* in stock, and that he has 1000*l.* more ready to put down in draining, building, &c. Of course we suppose his farm to require everything—to be as much in want of draining, building, &c., as is possible. Now, how stands it? He has taken a farm requiring 2000*l.* capital, when he might have taken one requiring 3000*l.* His 2000*l.* brings him in 200*l.* a year—how stands it with the other 1000*l.*? If he is not to be a loser by the transaction he must have interest for his 1000*l.* He has 10 per cent. interest on the other, but we will suppose him to be very moderate and to ask only 5 per cent. upon the latter 1000*l.* But he must also have the capital back in his pocket by the time his lease is over. In order to do this he must put by at least 40*l.* per annum to make it up in the 20 years. If then his outlay of 1000*l.* makes his farm produce him 90*l.* more than it would have otherwise done, he will be just saved from loss. If it produce him 140*l.* a year more than he would have made by his farm had he not laid out the 1000*l.*, he will be only just as well off as if he had taken a farm requiring 3000*l.* for ordinary farming capital and had made 10 per cent. of it.

Now, sir, suppose he takes the latter course, and lays out all his 3000*l.* on the cultivation of his farm, agreeing that his landlord shall make all the permanent improvements, such as draining, building, clearing hedgerows and the like, on his paying 7 per cent. for the outlay. If the improvements be not worth 7 per cent. he, had he made them, would have lost 2 per cent. If, as is more likely, they produce 14 or 20 per cent., he gains 7 or 13 per cent. by the bargain without his own outlay, and without risk. You seem to suppose that in many cases the outlay would bring an enormous interest, otherwise tenants would not grow so rich on their leases as you describe their doing; but whatever the interest be, inasmuch as the landlord has the longer security on the land, he can afford to do it at a lower rate of interest than the tenant. If the annual improvement be 9 per cent. on the outlay, a tenant will only get 5 per cent. interest, as the other four merely goes to replace capital. But if the landlord makes the outlay at 7 per cent., the tenant pockets the 2 per cent. without risk. If the improvement amounts to 20 per cent. he pays his landlord 7 per cent., and pockets 13 per cent. without risk. In every way that you look at it, so far as the yearly profit goes, he must get very far more, if his landlord makes the outlay and charges 7 per cent., than he could do, if he were to lay out his own money on a 20 years' lease. There is, however another view in which to take it; namely, as you say, the wishing for a permanent home, the certainty of not being at any time cast adrift unexpectedly to seek a new station. There is much in this to be said on both sides: he is so far secure for 20 years, but is not at all secure beyond that, and he may be turned out just at the most inconvenient time for him. He may fall ill, or misfortune may lessen his capital, or times may grow much worse, and he might be very glad to give up his land; however, this is not the point to which I so much wish to draw your attention. But if you can show me any possible calculation by which a tenant can make so good a money bargain by laying out his own capital on permanent improvements, as he would make by his landlord laying out the same capital and receiving 7 per cent. interest, you will much oblige your obedient servant. *B.* [We have in the meantime to inform our correspondent that his communication only reached us on Wednesday, Nov. 19—hence a delay which has no doubt puzzled him.]

TURNIP CULTIVATION.

[The Annual Root Show and gathering of the Hadleigh Farmers' Club took place the other day, and the successful competitors thus detailed their mode of cultivation.]

Mr. JOSEPH RAND had spared no pains to produce the best crop he possibly could. In order to do this, as they had often heard him say before, he resorted to a kind of land of which there was very little in that neighbourhood, and which required a different cultivation from that usually pursued. The first thing he did was to fold his sheep on the two acres of land; this was pretty well all the extra cultivation he gave them. The land was in Oats last year. He had merely folded his fattening sheep at night. After he thought they had given it just as much as it required, he let the land lie, pretty much the same as they trod it down, nearly all the winter; within about two months of sowing he put on 12 chaldrons of farmyard manure, well made from cattle, and ploughed this in. As a matter of course he afterwards planted, and this he did with Judge Gurdon's invention of the wheel, which he still adopted, and with which he was much pleased, for it deposited the seed just in the place where it ought to be, so that no judgment or skill was required to set out the plant by the handhoe. The only artificial manure he used was two or three cwt. of salt. With regard to the White Turnips they were from an old cultivated land, and a fine piece they were. As he had said on former occasions, he attributed much of their success to the stock. They were the "bell decanter." The weight was unusual, and this he attributed more to the stock than the cultivation, for, like the Mangels, the Turnips were only manured with farmyard manure, well made, and from highly-fed cattle. The beginning of seeding must be the seed itself, and if any person chose to be a competitor at these shows with any certainty at all of gaining prizes. he must grow his own seed. This remark would apply to all kinds of roots, and especially to White Turnips. The bell decanter Turnip was a very bad bearer for seed, and the reason why he could not expect to buy of the market gardeners proper and purely selected seed was that they did not go to half as much cost to supply the seed as he did. His system was to select from a field all the best roots—he meant not the largest roots, but those which were pure roots of the kind. He selected roots from about 1 lb. to 2 lbs. weight; if they could get that weight they could generally see what the quality of the root was, and whether it was a perfect sort; but a market gardener, when he planted, planted for profit; he merely sowed his Turnips broadcast and singled them out with a narrow hoe; and perhaps they all grew together. When this was practised from time to time, it was impossible to keep a pure stock.

Mr. GURDON: At what width was your Mangel?

Mr. RAND: 24 inches by 15. He only gave his Mangel land one earth, because it was the kind of land which did not require more, but this, of course, would not do for common cultivation.

Mr. GURDON: At what width are your Turnips?

Mr. RAND replied that his Turnips were on the four-yards' stetch, and eight rows in a stetch; and the distance, he should say (but he could not speak to a certainty), was about 12 to 13 inches in a row. They were sown about the first or second week in June. He had been frequently applied to for this Turnip

seed; and, when he had any application, he had, when he had been able to do so, given a friend a pint of it for the sake of his getting the stock; but he could not afford to sell the seed, for the reason he had mentioned. If any one were to ask him to grow a lot of this seed for 9*d*. a pint, he did not believe he could make a profit at that price, which was nearly double what the market-gardeners would charge; therefore, it was plain that the farmers could not expect, if they went to market-gardeners for the seed, to have it pure at the common market price.

Mr. GRIMWADE read the following results of the competition for Mangels, for which there were eight entries:

	Roots per rod.	Weight of roots per acre.			Weight of tops per acre.		
		tons	cwt.	lbs.	tons	cwt.	lbs.
Messrs. Rand! ..	89	35	17	16	11	1	48
Mr. J. Cook .	85	35	5	80	10	15	80
Mr. W. Gurdon ..	97	33	14	34	5	10	0
Mr. E. Parsons ..	84	28	2	96	8	3	4
Mr. J. F. Robinson	104	25	18	60	5	10	0
Mr. B. Mason ..	73	20	17	6	3	5	0
M. S. O. Kersey ..	80	20	7	16	6	0	0

The Judges did not consider Sir Charles Rowley's of sufficient merit to be weighed.

The weights per acre of the competitors for the prize for the best 2 acres of Swede Turnip (with tops), and the sweepstakes for this kind of root, were:

	Tons	cwt.	lbs.
Mr. T. Hawkins (167 roots)	23	5	0
Mr, E. Parsons (158 roots)	23	1	48
Mr. W. Gurdon	19	5	80
Mr. B. Mason (178 roots)..	19	0	0
Mr. T. Strutt (159 roots)..	17	17	16
Mr. W. Grimwade (200 roots)	18	17	16
Mr. J. G. Stow (roots not numbered).. ..	17	14	32
Mr. R. Partridge (143 roots)	17	5	80
Sir C. Rowley (roots innumerable)	15	14	22

Mr. Hawkins's roots being the highest weight, therefore took the prize offered by the Club, the sweepstakes for two acres, and also the sweepstakes for ten acres.

The weights of the "other kinds of Turnips" were:—

WHITE TURNIPS.	Tons	cwt.	lbs.
Mr. R. Rand (176 roots)	36	14	22
Mr. T. Hawkins (173 roots)	27	12	96
Mr. W. Strutt (106 roots)	26	2	96
Mr. J. Stow (146 roots)	25	15	80
Mr. W. Grimwade (147 roots)	19	4	32

Mr. Rand therefore took both the prize and the sweepstakes.

Mr. COOK said: As to the manner in which his roots were grown, he would state that he gave them a liberal dressing of manure—he was not going to say he did not. He had determined to do nothing else; but walking over a friend's field of Mangel where the roots appeared to have the advantage of his own—and no doubt he would have stood pretty well had the weather been favourable—that friend had told him what he had done, and that he should give a cwt. of guano per acre as a top dressing. He (Mr. Cook) wanted to know the why and the wherefore, which he gave him, and then he determined to try the same, and he gave one cwt. of guano to one acre, and a cwt. of Chapman's manure to the other. He thought, however, that neither did so much good as a little salt, which he introduced with every kind of manure, and to which he attributed much of the success of his crop.

Mr. GURDON said he thought Mr. Partridge would remember the first year when he (Mr. Gurdon) had the honour of beating Mr. Rand, on which occasion he topped him solely by having a larger number of roots. On referring to his note-book he found that Mr. Rand then came very near to him in weight; Mr. Partridge (one of the judges) stated that he took two separate rods of Mr. Rand's, and each contained 74 roots, while his (Mr. Gurdon's) had 96 and 105 respectively. Just those roots gave him the prize; and it was so near a thing that Mr. Partridge gave him a little advice, and whereas he had grown them at 30 inches from row to row, and 13 inches from root to root, he recommended him to narrow his distances between the rows, and increase them between plants, and in all probability he would do better another time. He took this advice the following year; he had the wheel used, and it was set at 27 inches, and he put the plants at 15 inches apart. Though in some years Mr. Partridge's would have been good advice, there were so many years when, from one cause or another, the roots failed in size, and did not attain full growth, that he was much inclined to think that, on more than one account, the better way was to secure a larger number of roots. He believed it would be admitted that smaller roots were more nutritious than larger ones; therefore, if they got the same weight of smaller roots, they would get more nourishment and more food than they would have in the same weight of larger roots. Large roots were not by any means so worthy of cultivation: they were frequently hollow, and, no doubt, where they were so, a good deal of goodness had gone out of them. He should, therefore, try for a larger number of roots next year, if he lived, and should put them at 27 inches and 14; this would give 16,001 roots to the acre—throw off the 1, and it was a nice easy calculation of 100 roots to the rod. In respect of what was on the field where his roots came heaviest, he would state that there were 14 loads to the acre of home farm manure, 2 cwt., of guano, 2 cwt. of superphosphate, and 4 cwt. of salt: he did not go above that. On a third field, which he had thought little about, for three years out of four Mangels had been grown. Mr. Rand had spoken about taking a leaf out of his (Mr. Gurdon's) book, and now and then he himself was glad to take one out of Mr. Rand's. He folded his sheep; he did more than that—he left them there at night; he left half the crop last year of Mangels on the land; he fed his sheep on the land, and with cake; and, besides, he gave it 2 cwt. of superphosphate; there was no farmyard manure, because it was a long way from the farmstead. By feeding the Mangels on the land there was a saving of all the carting; he grew them on the land, he had them on the land, they were eaten on the land, and they produced the muck for the crop for the next year, with the addition of 2 cwt. of superphosphate.

Mr. T. HAWKINS said: There was no doubt that the cultivation of roots required a great deal of forethought and system, and so on, to carry it out successfully. The root crop required a deep and well pulverised soil, and at the same time it must be a clean one; if the land were full of Twitch, and so forth, they must resort to autumn cultivation to get it into a good state at first. Where land was—as it ought to be—perfectly clean, autumn cultivation was not of material consequence to a root crop; if they ploughed up before the land got wet and poachy it had all the effect of what was understood by "autumn cultivation." There was no doubt that one thing was of great advantage to a root crop—it was, to drill a small portion of artificial manure with the seed, but not too much, for, where they forced a root crop too much at the commencement of the growth, and got too much blade at first, the roots were apt to over-top themselves, particularly if there was a large quantity to the rod, and afterwards they would not make the progress they otherwise would in the autumn. By drilling the least quantity they could of artificial manure with the seed, to bring, in unkindly places of the field, the plants up to hoe, he thought they would do better than by putting artificial manure on the land and ploughing it in. Such had been his practice; he found that to drill a small portion of artificial manure was better than drilling too much with the seed. No doubt much depended on season, but the farmer who had to pull his land about in May or June, to get rid of Twitch and weeds, when he ought only to plough it to cultivate roots, could not expect, unless the season were a favourable one, to get much of a crop. Where the land had been pulled about too much in wet weather, the result would be that the crops would serve them as they had this year—the leaves would curl up and die off. He (Mr. Hawkins) had certainly hoped to compete a little with his friend Mr. Rand in the Mangels; but unfortunately his land, which he had sown with long Yellow Globes, was near a wood where there were a great many rabbits, and when the plants got up about the size of his thumb these gentlemen came and thinned them so much that he could not go in for the sweepstakes. He had had a great mind at one time to send for the police, as it was clearly a case of night-poaching, but the Act was not in force then. His Swedes had 9 loads of farmyard manure, 2 cwt. of guano, 3 cwt. of salt, and 2 cwt. of superphosphate. Each of his fields was cultivated alike, and the judge would say that he had about 50 acres as good as ever he had the honour of winning a prize with.

MR. GURDON: What is your distance?

MR. HAWKINS: Twenty inches from row to row, and 12 from plant to plant. He always kept his own Turnip hoes by him; if he hired eight or nine men, they brought hoes set at different lengths—one man would set his at 9 inches, another at 8, and there could then be no regularity in the plants. It was his plan, too, when he could manage to get a prize, to carry it home and distribute it amongst the hoers; he always found this a great incentive to them to hoe well another time. The white Turnips he had shown were sown after Tares mown for the cart horses. That field was not intended for inspection, but unfortunately the one he had intended for the judges to go over went off with "fingers and toes." He had intended to chalk it, but before he sowed the Turnips the season passed on, and it was too late, and he could not get a single acre without patches which had gone completely off; he, therefore, was obliged, at the spur of the moment, to show the Turnips cultivated for his flock: they were all after crops of Rye or Tares, and perhaps would show better in a month or six weeks hence. Each acre had about 10 or 11 loads of farmyard manure, except where the Rye was fed off and the Tares mown off. He put no artificial manure on, because shepherds thought, when ewes were put with lambs where there had been any artificial manure, the root crop was injurious to the sheep, making them cast their lambs.

Mr. PARSONS said Mr. Hawkins was well known to be an excellent root-grower, but no man went to a greater expense about his Turnips. His (Mr. Parsons') 10 acres were manured with farm-yard manure from beasts fed with oilcake; but his friend Hawkins was inclined to do a little more, giving three dressings of artificial and one of farm-yard manure; therefore he contended he (Mr. Parsons) had not been at above half the expense, while he got within 6 lbs. weight of roots; so he was not so much out of pocket by not winning the prize.

Mr. HAWKINS asked Mr. Parsons how much farm-yard manure per acre he put on?

Mr. PARSONS said he gave it a pretty good dressing—about 15 tons.

Mr. HAWKINS said he gave nine, which was six loads difference—and he supposed it worth 6s. or 7s. a load to set off against the artificial manure, viz., 1½ cwt. of guano, about 21*s*.; 3 cwt. of salt, 6s.; and 2 cwt. superphosphate, 12*s*.—it was coprolite that he sowed. This brought them upon a par as far as manure went. Then Mr. Parsons had a very great advantage: he had been living on a farm well cultivated ever since he could recollect, and farmed very highly, while he believed himself living on one exactly the reverse; therefore Mr. Parsons had got the start, and unless he had put on artificial manure he should have been nowhere. Wherever he had skipped artificial manure this year his Mangel and Turnip crops had been inferior—perhaps less by one-third.

THICK AND THIN SEEDING.

MR. EDITOR, and my respected readers, the subject we are discussing, that is, how the earth should be cultivated so as to make it produce a sufficiency of food for the support of mankind and of domesticated animals, has in all ages of the world, and in all civilised nations, occupied the thoughts of the wisest, most learned, and philosophically-minded of the sons of men; and it claims from all, and especially from all Englishmen, all the attention that can be bestowed upon it. In England at the present day, however, it is generally believed that this art is in such a high state of perfection that it is in vain, lost labour, and almost sinful, to attempt to carry it higher. But what are the facts? In one single year it took 44 millions of money to purchase a sufficiency of food from other countries to keep the people of this country from perishing with hunger; and such is the state of the agriculture of this country generally, that we learn from the best authorities that on an average it takes eight bushels of seed Wheat to produce eight quarters of crop; and even at the Royal Agricultural College of England, where we should expect the most improved land cultivation would be found, the learned Professor there informs us in an elaborately drawn-up report that on the College farm, of which he is the manager, it takes him three bushels of seed Barley for each acre of his land—more than three times more seed, as may be easily shown, than it is possible to grow on such a quantity of land. And what was the state of his growing crop from his three bushels of seed? What! look again at his reports, and you will find it to have been exactly what every intelligent farmer knew it would be, *i. e.*, "yellow"—yes, yellow—a certain indication that the land was in bad condition, and over-seeded, and that the yield would be scanty, and the grain thin and light. Then, again, why did the Royal Agricultural Professor sow Barley so late as the 5th of May, as he informs us he did, when intelligent and industrious farmers were nearly preparing for harvest? And I might go on in this way through a dozen sheets of paper, or more; but I forbear, or for the present.

But Mr. Editor, and my attentive readers, Mr. Coleman compares me to a quack doctor, and I thank him for doing so, as it enables me, and without egotism, I hope, to compare the farming doings of one whom he calls a quack doctor with those of a Royal Agricultural Professor. He broadly hints also that my doings are confined to the dimensions of a kitchen garden. Now I acknowledge that my farming is within a small compass, but I add also that I think it would be better for the Royal Professor's employer and the country at large if the College Farm were no larger than mine is, for from the Professor's own showing it is out of all proportion larger than he is able to manage, or he would be putting in his seed Wheat "in mid-winter and February," and his Barley in the middle of May, nor would he require his 10 pecks of seed Wheat and 12 of Barley to produce, as he reports, his "yellow," sickly growing crops.

But come, Mr. Editor, and my readers, let us look at the doing of the quack doctor, which Mr. Coleman writes want success. Some years ago, sir, your intelligent and worthy father paid me a visit, a little before harvest. I had then a field of Wheat and a field of Barley, both drilled at two pecks of seed per acre. I was assisted in the drilling by a Mr. Barber, a parishioner, and one of his men. The same Mr. Barber threshed my crops of Wheat for me at harvest in the fields, where it was also measured in the sight of many people, and the result was that I had just under [illegible] quarters an acre. The Barley was threshed in mid-winter, on the result of which I had a wager of this kind; namely, I was to give a neighbouring farmer a sovereign if I had not 16 coombs or 64 bushels an acre, or 128-fold for my seed, and he was to give to my parish school a sovereign if I had. Now I lost my wager, but it was only by one single bushel, and consequently my opponent gave his sovereign to my school.

Now, Mr. Editor, your worthy father, as I have said, just before harvest inspected those crops, and so did many other intelligent men. I just add that both the Wheat and Barley sold at the highest price of the market; but these doings put Mr. Coleman, the renowned Professor, he writes, in mind of a quack doctor, and if so, then, for the first time in my life I

vociferously shout out, all hail to quackery, all hail, all hail to the quack doctor. But suppose I had a kitchen garden only, as Mr. Coleman hints—what then? The Greek philosopher, Xenophon, who was also a farmer, and grew much more corn from given quantities of seed, and off given quantities of land, than ever Mr. Coleman has or will, informed his wise pupil, Socrates, that a man might learn the art and practice of farming, or certainly the art, by closely observing the operations of farmers at work on their own farms. Now, last year, on the east side of my glebe, and near my house, was a large Wheat field; on the west side were fields after fields of Wheat; on the south side was a Wheat field; and on the north, only a short distance from my garden, was also a Wheat field, and I live in the centre of a parish that has [illegible] acres of it under the plough; suppose, then, I had not a single rood of land in my own occupation, must I remain ignorant of all that was doing around me? Mr. Coleman might, and I conclude would; but none who know the parson of Wix—and he is pretty well known—could be made to believe that he could spend such an unobservant and dronish life; but he has his parochial duties to perform; he has, but has time also to combine the study of the works of the Creator with those of his Word, as the Saviour, and the Prophets, and all the inspired servants of God did before him, and set him the noble examples.

But Mr. Coleman accuses me of having "misrepresented the actual facts," and of deviating from or of not having a "love of truth." These are very grave charges; but I assure Mr. Coleman that, with my notions of what farming ought to be, if I had racked my brains until they were nearly splitting my head, I could not have produced a more woful picture of the Royal Agricultural farming operations than he, the learned professer himself has drawn—more hideous and deformed! why, the Taboo, or Timbuctoo gorilla, that pre-Adamite gentleman we have lately heard so much of, was fifty times more like a real descendant of father Adam, than the College farming is reported to be like what farming elsewhere is, and even there ought to be. "Misrepresented actual facts!" how could that have been done, unless by the making of them better? and deviating from the truth! who would incur the guilt of inventing falsehoods to make worse such descriptive reports as these—"Wheat sowing in midwinter and February, 10 pecks an acre;" Barley sowing at nearly midsummer "3 bushels an acre, well worked in with the drags," that is, with the pre-Adamite drags, preserved, as I will show in my next letter, to our present time, in those renowned agricultural regions in mid Africa, known by the euphonious names of Taboo, Timbuctoo, Wady, &c.

But the last precious morsel is this, and with it I will close my present letter, but resume the subject another time, for I have very much more behind, which I trust will amuse if not instruct my readers, but I think both. But the precious morsel is this: "dibbling 1 or 2 pecks an acre ... ... utterly fails here." But has Mr. Coleman ever tried it? I put the question again, and very seriously, and I add in which year and in which of his fields did Mr. Coleman dibble so little as 1 or 2 pecks an acre? And I expect such an answer as will satisfy any reasonable inquirer, or let us hear no more charges against me of not having "a love of truth."

But, again, "from 1 or 2 pecks" only, "we have great growth of straw." Then, Mr. Coleman, the seed of 1 or 2 pecks an acre must be amply sufficient for great growths of straw, never can be grown unless an ample sufficiency of seed be sown to produce "the great growth of straw." Straw never grows without seed, unless at the renowned College farm; and wherever there is "a great growth" of it, there must of necessity have been a sufficiency of seed to produce it: and, hence, on his farm, Mr. Coleman, the Professor, proves as clearly as a mathematician can prove his problems, that 1 or 2 pecks of seed are amply sufficient for an acre of land, though he keeps on sowing and sowing his 10 and 12 pecks, and has moreover the —what I shall call the hardihood—to write reports to the world of all he does, and to put in his seed, or "well work it in," to use his own words, "with the drag"—the drag exhibited at our great National Exhibition of 1851 by a swarthy Arab under his tent, preserved, if not for millions certainly for thousands of years in the centre of Africa, where, the learned Frenchman informs us, the philosophical inhabitants have not yet rubbed off their long tails, nor gotten rid of their rough hairy skins, but according to the modern philosophers, are still genuine pre-Adamites, and use the pre-Adamite drag. *George Wilkins, Parsonage, Wix.* [It is necessary to explain to our correspondent that this communication, written several weeks ago, did not reach us till Wednesday of last week.]

Home Correspondence.

Curriers' Waste.—I have observed that several persons have been making inquiry in your Paper as to the value of curriers' shavings of skin. When I farmed my property of Beechwood, previous to letting it, I used from 30 to 40 loads yearly, which I got from the Arbroath tan works. I had the refuse analysed by Professors Johnston and Anderson, and shall give you a copy of the analysis by Johnston, with his remarks. Skin: the refuse parings from the tan-yards, and from curriers' shops, when used as manure, are of great advantage, and may be ploughed in or mixed with compost. Skin differs considerably in its constitution from flesh-blood. It has when burned only 1 per cent. of ash. The combustible or organic part consists of—

Carbon	50.99
Hydrogen	7.07
Nitrogen	18.72
Oxygen	23.22
	100.00

It contains, therefore, 3½ per cent. more nitrogen than flesh or blood. This analysis was of the parings of the fresh skin from the tan-yard, before being tanned. I had the parings of skin (after being tanned) from the currier's shop analysed by Dr. Anderson, who found that it contained only 8.41 per cent. of nitrogen, equal to 10.21 per cent. of ammonia, or 230 lbs. in a ton. The currier's skin was very dry, and I suspect some of the nitrogen had been lost in tanning the leather, which is the only way I can account for the difference betwixt the two analyses. The currier's parings would remain in the ground for years if not fermented previous to using. I was in the practice of mixing them with fish heads, the tanner's fresh refuse, soot, &c., and in the course of six months I could reduce the refuse to a powder to sow with the hand. The parings of skin cost me from 4*s.* to 6*s.* per load, but the price rose afterwards. *Thos. Scott, Fairfield, Arbroath.*

The Fallen Horse.—Permit me to enlist the interest and sympathy of your numerous readers in favour of ameliorating the unfortunate condition of the "Fallen Horse," who at this time of the season can scarcely keep his footing on the road, much less rise without assistance when prostrated by a fall. This is occurring almost hourly, much to its deterioration, and painful to ourselves, as we see it struggle without effect, and hear the heavy "thuds" upon its poor ribs. Archimedes said, "Give me the wherewith whereon to place a fulcrum, and I will shift the earth from its centre." Ours is near at hand; we have but to will it and put our shoulder to the wheel, and it is done. I propose that our friends who have horses liable to fall should rig up a pair of wheels (not at present in use) with a lever made from a pole resting upon the axle as a fulcrum raised to a suitable height, on the short end attach a chain and hook, on the other a piece of rope for a few men to put their weight on; these will not only raise a heavy horse, but also the load with ease. Such an implement might either be kept near a toll-house, or if at a farm I am quite sure that every house on the road would be but too happy to hang up a card of its whereabouts, and those who use it pay for the loan of its transit. *Henry Grafton, C. E., Kensington Gate, W., Nov. 14.*

Farmers' Clubs.

Faringdon Agricultural Library: *Annual Meeting* —At the annual meeting of this institution the other day Mr. Benyon said: We must teach our labourer to value the benefits which are thus conferred upon him. He must learn to appreciate the value of cleanliness, of ventilation, and of separation of the sexes. A few years ago a friend of mine visited his Irish estate, and he was so horrified to see the hovels in which the labourers dwelt in that country, that he at once resolved to change the state of things so far as his own estate was concerned, and built a number of cottages on the most approved English pattern, but with what result? The Irishman as soon as he entered his new dwelling put a wisp of straw up the chimney and lighted a fire in the middle of the floor, and rejoiced greatly in the smoke in which he was soon enveloped, and in which he had been brought up all his life, and which he said kept him warm. This was because he did not know the value of cleanliness or ventilation. And then with regard to the third bedroom, how often is it that we see it occupied by lodgers, and in the other two the same system continued, which we all so much deplore, and which we all wish to correct. It is very true the landlord may interfere, but the labourer ought to be educated in such a manner that he himself should wish to avoid such practice, and avoid them from higher motives than from the fear of giving offence to his landlord.

Mr. Tucker.—Two years ago I read to the friends of the Faringdon Agricultural Library some statistical information relative to the cottages of the agricultural labourers. Those statistics subsequently appeared in the *Times*, accompanied by an article of great power, and followed by two other articles, which were so touching and telling as to have created a sensation on the public mind—judging from the subject being taken up by the press generally, and from the numerous letters addressed to me from persons in various stations of life, and from different parts of Great Britain. The Prime Minister introduced the subject in a speech delivered at Romsey; and in the following Session Sir Lawrence Palk introduced a Bill to empower tenants in-tail to erect suitable cottages, and to charge the cost of erection on the estate; the Bill passed the Commons, was thrown out in the Lords, on what just grounds I am at a loss to conceive, for whilst we have an Act which empowers tenants to spend large sums in draining, and the erection of farm building, charging the outlay on entailed property, it is difficult to understand why their lordships should refuse the same facility to improve the dwellings (and consequently the moral condition) of their fellow creatures, which they grant for the improvement of buildings for housing the produce, and the beasts of the field. Perhaps the most singular feature of this question is, that many highly intelligent and influential persons, question, absolutely, the very existence of this cancer, which is eating out the heart of all modesty and morality in the styes of our agricultural poor. At an agricultural meeting in Oxfordshire, lately held, Mr. Henley is reported to have said that the old cottages, without any upstairs, have now disappeared, and been replaced by others, with suitable sleeping rooms, and that a horse may be ridden to death before you would meet with any of these old cottages without an upstairs. I presume this refers to Mr. Henley's immediate neighbourhood, or it may apply to the whole of Oxfordshire. I rejoice to hear that such a state of things exists, even to a limited extent, in any part of the kingdom, but I can assure Mr. Henley that within a very easy ride of my residence, in Berkshire, I can show him many cottages without any upstairs. I have lately purchased one such in my own parish, in order to convert it into a decent habitation. Another such exists in my parish, the living room floor of which is covered with a damp flag stone, the sleeping room is a wretched place on the same floor; a man, his wife, and two children have occupied this, but the woman has just died of consumption: the cottage was originally built for a shed. And just on the borders of the county in Wiltshire there is no lack of cottages without any upstairs. Some idea may be formed of those which have an upstairs, when I state that seven such cottages were lately sold to me with three-quarters of an acre of land, freehold, by public auction, for 135*l.*, that is less than 20*l.* each, to say nothing of the land. At a meeting at Aylesbury last month, Mr. Disraeli is reported to have said "that in nothing has greater improvement taken place in connection with the population than in cottages, but the residences of the poor are not to be improved merely by incentives on the part of landlords to compel the construction of better dwellings. If you wish to improve the dwellings of the labouring classes, you must create in them a spirit which appreciates the propriety of home." Now this appears to me to be putting the "cart before the horse," for how can you create a spirit of love of decency, much less which "appreciaties the proprieties of home," in a family where young men and women sleep in the same room, if not in the same wretched bed, with their father and mother! How could the poor woman who lately died in my parish, learn, in her den, the proprieties of home! If we want to rear pigs for a show, we take them out of the filthy puddles in which they delight to wallow, and put them in decent styes, and give them clean litter and good food, and we must adopt a similar process with human beings, or they will never learn, much less appreciate, the proprieties of home. We are aware that many objections may be raised, and difficulties started, to deter those who would apply an effectual remedy, but if we undertake nothing but that which offers no difficulty, and to which no objections can be made, we shall probably find at the end of our course, that we have achieved little that was worth undertaking.

Mr. Moore then read the following awards of the Judges for roots, &c.:—

"Mangel Wurzel.—Mr. Gillett's crop grew on a black gravelly loam, broken up from Grass seven years ago. The previous crop was Barley, the stubble manured with about 10 tons per acre of farmyard manure, once ploughed in the winter; in the spring skimmed, harrowed, &c., and the seed (Yellow Globe) put in by the water drill in the first week of May, with about 3 cwt. of superphosphate per acre, horse-hoed once, and hand-hoed, at a cost of 12*s.* per acre. Considering the unfavourable season, and that the land had been several times flooded, the crop was a very creditable one. The land was clean and well cultivated. The other root crops clean and a regular plant.—2. Mr. Gerring's crop grew on a very level alluvial soil, of a heavy character. The previous crop was Wheat, 12 loads of manure to the acre were ploughed in during the autumn. In the spring the land was ploughed again, scarified twice, with sundry draggings and harrowings. The seed (Yellow Globe), 5 lb. per acre, drilled in with 3 cwt. of superphosphate, mixed with a few ashes, horse-hoed twice, hand-hoed three times, at a cost of 13*s.* per acre. The crop was a very good one for the season. The quality of the roots was very good, and the plant regular. Mr. Gerring states that his land was flooded three times since February, which, no doubt, greatly retarded the growth of the crop, and in some measure accounts for the land not being so clean as is desirable. A small piece of Turnips adjoining was very good.—3. The Buscot Estate:—The best piece was on the Step Farm, on strong clay land, newly broken up from a very poor rough pasture. Previous crop, Oats, ploughed 10½ inches deep in autumn; in spring dragged, harrowed, &c., 5 cwt. of guano and 4 cwt. of salt were sown broadcast, and covered by ridging the land. The seed (Yellow Globe) was then drilled on the ridge, with 5 cwt. of superphosphate per acre. The crop was horse-hoed twice, and hand-hoed twice, at a cost of 8*s.* The crop was very heavy for the season, clean and good. The other Mangels on the estate were very fair crops, and perfectly clean.—4. Mr. Moore reports the soil on which

his best crop grew as a dark loam on clay subsoil; he states that as the water rises in the river it flows up the drains, and twice since the seed was sown had risen over the surface. The previous crop was Wheat; the land was ploughed before Christmas and again in spring to cover the dung, which was applied at the rate of about 15 tons per acre, scarified, dragged, harrowed, &c.; 5 lbs. per acre of seed (Yellow Globe) were drilled in May, horse-hoed three times, and hand hoed twice, at a cost of 10*s.* per acre. This was a very fair crop; the plant was the most regular of any that came under our notice, and the land was perfectly clean. The other Mangels on the farm were lighter, but well cultivated. 5. The Stainswick Mangels grew on a dark loam, broken up about ten years since. The previous crops were Oats in 1860; Wheat, 1861. The land was ploughed and scarified in the autumn, and a width of two yards on each side the furrows only was dunged in the winter. In April skimmed, and the seed (Yellow Globe) drilled with 2 cwt. of superphosphate per acre. The crop was good, although the plants were left rather too wide for so cold and wet a season. The land was perfectly clean. In accordance with the conditions under which the prizes are given, the first prize of 10*l.* is due to Mr. Campbell for his very fine crops. For although his outlay in manure, nearly 5*l.* 10*s.* per acre, seems to be enormous, yet the roots were grown at a less expense per ton than in the generality of lots competing, and the generous manuring must, of course, add to the future productiveness of the farm. The second prize of 5*l.* to Mrs. Ferris, No. 5, whose crop was grown at the least expense per ton, and whose land, although it had been very strongly cropped with corn, is in the finest possible state of cultivation. Mr. Moore is the only competitor who has not used artificial manure. We consider that his crop would have paid for a little; nevertheless, as his crop was very clean and regular, we consider it worthy of commendation. All the Mangels we inspected had suffered severely from their new enemy—caterpillar in the leaf. We consider the loss of weight from this cause alone to be in many cases 20 per cent."

"SWEDES.—There were four competitors, viz.:—Mr. Moore, for the Earl of Radnor; Mr. Moscrop, for R. Campbell, Esq.; Mr. Pinnegar, of Coleshill; Mrs. Ferris, of Stainswick. 1. Mr. Campbell's Swedes grew on a piece of land, formerly a fox-cover, which was broken up in 1859, planted with Oats in 1860, and again with Oats in 1861. Steam-ploughed in autumn, steam-dragged in spring, harrowed, and the following mixture sown broadcast before throwing up the ridges: 1½ cwt. Peruvian guano, 2½ ditto superphosphate, 1 cwt. ground bones. Seed sown with dry drill; twice hand-hoed, at a cost of 8*s.* 6*d.*; thrice horse-hoed. The roots on this piece were of good size and fine shape; there were but few vacant places, and the land was free from weeds. The root crops on the farm were generally good. 2. Mr. Moore's Swedes grew on the farm of the Earl of Radnor:—Barley in 1861; ploughed and planted with Vetches in autumn; fed off in spring; ploughed, dragged, and scarified, with the usual harrowings, &c.; manured with 15 one-horse cart-loads of yard-dung—the weather so wet that it could not be ploughed in; seed drilled July 9th; hoed twice, at a cost of 10*s.* per acre; hand-picked afterwards; horse-hoed three times. As before stated, these Swedes were grown on land that had produced a crop of Vetches in the spring of the present year—the plant was regular, the hoeing well done, and care and attention had evidently been given to the crop generally; but on this piece we had proof that it is difficult to produce on land in the Faringdon district, two green crops in one season, and at the same time to keep the land perfectly clean.—3. Mr. Pinnegar's statement of cultivation:—Previous crop, Wheat; ploughed three times, dragged, harrowed, and rolled as required. These Swedes were a thicker plant, but of smaller size than any other roots we examined. We consider that the land would have been in a better state if the modern system of "Autumn cultivation" had been adopted.—4. The Swedes entered for competition by Mrs. Ferris were on land that was broken up 10 years ago. The crop of 1860 was Oats, and in 1861 Wheat. In the autumn the land was ploughed, and a width of 2 yards on each side of the furrows was dunged; the whole was then scarified and planted with Winter Beans. These blighted in the summer of the present year: they were then mown and carried away, and the land was immediately scarified, harrowed, and Swedes drilled with a mixture of 30 bushels of ashes and 3½ cwt. of phosphate per acre. The land was clean; the roots of good size, in a fine growing state, and of good quality." The prizes were awarded to Mr. Campbell and Mrs. Ferris.

Reviews.

A Prize Essay on the Farming of the District within 10 miles of Faringdon. By Mr. W. J. Moscrop, Steward to R. Campbell, Esq., Buscot Park, Herts. With a Geological Map. C. Luker, Faringdon.

This is one of the best published specimens of the best kind of agricultural publication that we have. It is a report of actual practice and experience by an intelligent man, and concludes with useful criticism and suggestion. We have given in another page a long passage descriptive of the estate on which the writer is himself engaged. The farming of other localities within the district specified is not discussed in so much detail, but still with sufficient fulness. The pamphlet will no doubt be of much service to the Society for which it has been written, and we hope that a large circulation outside its district will make it useful elsewhere.

The Rugby Sewage Experiments.—Report to Parliament by the Sewage Commission.

The following are the conclusions at which Mr. Lawes arrives from one year's (1861) experience here—

"1. By the application of large quantities of dilute town sewage to permanent meadow land during the spring and summer months, there was obtained an average increase of about 4 tons of green Grass (which, owing to the lower proportion of dry substance in the sewaged Grass, was equal to only about three-fourths of a ton of hay) for each 1000 tons of sewage applied, until the amount of the latter approached the rate of about 9000 tons per acre per annum. The largest produce obtained was about 33 tons of green Grass per acre. The period of the year over which an abundance of green food was available was, with the largest amounts of sewage, between five and six months.

"2. Oxen tied up under cover, and fed on cut green Grass alone, whether sewaged or unsewaged, gave a far lower rate of increase than the average attained by animals fed on ordinary good fattening food; but when for a few weeks oilcake was given in addition to the Grass, they yielded a good average rate of increase.

"3. Cows tied up under cover, and fed on cut green Grass alone, after previously receiving oilcake, fell off considerably in their yield of milk, and about equally whether the Grass were sewaged or unsewaged. The cows on unsewaged Grass consumed more food and gave more milk, in relation to their weight, than those on sewaged Grass; but the amount of milk yielded for a given amount of fresh food consumed was almost identical in the two cases; though, in proportion to the dry or solid matter which the food contained, the sewaged Grass yielded considerably more milk than the unsewaged. Milk to the gross value of 32*l.* per acre was obtained where the largest quantity of sewage was applied. The gross value of the milk from the increased produce of each 1000 tons of sewage was between 5*l.* and 6*l.*

"4. The composition of the Rugby sewage-water varied very much during the course of the season, being much more concentrated during the drier months. On the average, over about seven months, 1000 tons of sewage contained about 21½ cwt., or little more than one ton of solid matter; about 212 lbs. of ammonia, or about as much as is contained in 11 cwt. of Peruvian guano; and probably represented the excrements of 21 or 22 individuals of a mixed population of both sexes and all ages for a year. This average composition agrees very closely with that which published analyses indicate for the sewage of London.

"5. On the average the sewaged Grass contained, as cut, a considerably lower proportion of dry or solid substance than the unsewaged; but the dry substance of the sewaged Grass generally contained a higher proportion of nitrogenous compounds.

"6. Analysis shows very little difference in the quality of the milk yielded respectively from sewaged and unsewaged Grass. The difference in composition, such as it is, is slightly in favour of the milk from the unsewaged Grass when Grass was given alone, and slightly in favour of the sewaged Grass when oilcake was given in addition.

"Although the results of the experiments of the past year are highly satisfactory in many points of view, indeed much more so than could have been expected in a first year's trial, there have been many difficulties and irregularities to contend with in the prosecution of the experiments themselves, and it is thought that they should be considered rather as initiative, and as affording the experience necessary for the better conduct of a second series, than as supplying, without confirmation, adequate data for important practical deductions. Accordingly, a second season's course has been undertaken. Owing, however, to some difficulty in obtaining a sufficient supply of sewage in the 10-acre field, and also to the conviction that to make heavy succulent crops of sewaged Grass into hay is not likely to prove to be, in practice, the best mode of dealing with them, the experiments on one half of the field have been abandoned, at any rate for the present season. The other half of the 10-acre field, and the 5-acre field are, respectively, divided and operated upon in the same manner as last year; that is to say in each, one plot is left without sewage, a second receives sewage at somewhere about the rate of 3000 tons per acre per annum, a third about twice as much, and a fourth about three times as much.

"As before, the produce of the 5-acre field is allotted to fattening oxen, and that of the half of the 10-acre field to milking cows. Ten oxen and 15 cows are already under experiment; two of the former and three of the latter receiving unsewaged Grass, and the remainder of each receiving sewaged Grass. Both oxen and cows are, however, this season, having a fair allowance of oilcake in addition to the Grass.

"Arrangements are also made this year for a more satisfactory mode of collection, and preservation for analysis, of samples of the Grass; and samples of the drainage as well as of the sewage-water are being collected for analysis. *John Bennet Lawes.*"

Farm Memoranda.

BUSCOT PARK FARM, NEAR LECHLADE.—In this division of the district the peculiarities of management are few, and on the whole perhaps not very striking, always excepting the estate and farms, the energetic improvement and peculiar management of which are before referred to, which are the property of R. Campbell, Esq., of Buscot Park. As is well known in the locality, a considerable proportion of the surface soil of the Buscot Estate is a formation of the Oxford Clay proper, and nearly its whole area when purchased by Mr. Campbell required draining, and within 2½ years from the date of its purchase about 3000 acres were drained, and some of that re-drained.

The distance between the drains varies from 9 feet to 30 feet, and in a few instances near the river, where the gravel overlies the clay, they are put in considerably wider. The depth of the drains has been nearly uniform, viz.:—4 feet, the wisdom of which in the stiff clays has by some persons been much questioned. Any one who will take the trouble to inspect the land, either during or after a fall of rain, can easily satisfy himself as to the efficiency of the drainage; but the question remains to be answered—would not a cheaper mode at a depth of 3 feet have equally as well answered the purpose? Many practical men are to be found who hold a decided opinion that it would, but on the other hand there are good scientific reasons for believing that it would not. There cannot be any doubt but that 3 feet drains placed close enough would remove the surface water by drainage, but would they remove it sufficiently low to raise the temperature of the agricultural soil to the same height as deeper drainage? To do so they must necessarily be placed closer, and then what about the expense? Yet, on the whole, the question of depth in uniform tenacious clays may yet be regarded as debateable, and many able unprejudiced men are to be found arguing on both sides, and if the writer were to express an opinion formed from the results of the drainage of some thousands of acres with which he has been connected, it would be, that though 3 feet is good, yet 4 feet drainage is much better.

Another line of argument is adopted by some who are opposed to the deep drainage at Buscot, and that is that on those impervious soils the water does not get down to the drains; an argument quite as silly and absurd as to reason that a tap placed in the lower part of a barrel of liquor would not discharge it as freely as another placed near the top.

During Mr. Campbell's first draining season the drains were placed in the line of the most direct fall irrespective of surface configurations, and consequently sometimes ran at angles to the furrows, which everywhere in this clay were of considerable depth, and when a fall of rain occurred the water of course sought the lowest level in the furrows, and as the filtering capabilities of the soil were not equal to discharge in a given time through the furrows an amount of water which but for the surface irregularity would have been spread over a much larger filtering area, so that for some days after any heavy fall of rain the water stood in the furrows, a considerable quantity finding its way into the drains, as was evident from the outfall discharge, but sufficient remaining to be prejudicial to vegetation, and affording proof that however correct in theory or in highly porous soils, or land where no surface inequalities exist, yet that on impervious soils if the drains are not placed in the furrows, or lowest places, the chances of failure are imminent.

The faults have since been corrected by running drains up the furrows, but at the expense of nearly double drainage. Over the remainder of the estate, the furrows, where at all compatible with the fall, have been adhered to as the lines of drainage, and with the most marked and satisfactory success. High-level submain drains have been put in where the run of the minors were of any considerable length, and wells placed at the junction of two or more main drains. The outfalls are built up with bricks, and at the end of the drain a cast-iron pipe is put in and securely trapped to prevent the ingress of vermin. Few pipes of less diameter than two inches have been used, and on some of the closest clays thorns cut and placed above the pipes, forming a thorn drain above the pipe drain. In short, no expense has been spared to secure a thorough and effective drainage, that being considered as the foundation of all other improvements on this retentive soil. The pipes which have been used in this extensive drainage are above seven millions, and the length of drains actually cut nearly 1500 miles. Nor has Mr. Campbell's attention been entirely absorbed with the drainage, vast as it has been. Road-making and hedge-grubbing, of the latter above 23 miles in length and occupying quite 30 acres of ground, has been done.

One hundred and fifteen acres of land, which was in gorse, scrub, brushwood, and rough pasture, has been grubbed, and wholly by manual labour dug over, drained, and 90 acres of it limed at the rate of 25 qrs. of lime per acre. Altogether, the cost of reclaiming and getting this in thorough condition probably borders close on 15*l.* per acre. Its value, unimproved, was scarce 5*s.* per acre per annum, and at this present time I dare say, Mr. Campbell would be sorry to let it at

... per acre; so that besides improving the aspect and character of the property, it has proved a good investment of capital.

He has also tried his hand at the doubtful experiment of breaking up Grass land, with the idea of improving and again laying it down. But, perhaps, his greatest triumph has been in the reclamation and improvement of the miserable poverty-stricken Grass ... with which some portions of the estate abounded. The modus operandi may be briefly described:—First, ... drainage; next, the digging up and carting to ... and mixing into a compost with lime the many thousands of ant-hills with which the Grass land in many places was thickly studded; after decomposition, the compost was spread over the land, together with the following top-dressing of artificial manures—3 cwt. of bone-dust, 2 cwt. of superphosphate, 1½ cwt. of guano, and 1 cwt. salt per acre, over 1000 acres.

Over other 500 acres were sown 4 cwt. bone-dust, 3 cwt. superphosphate, 1 cwt. nitrate soda, and 1 cwt. salt per acre.

The next operation was sowing the following quantities per acre of renovating Grass seeds over 1000 acres:

[illegible] Meadow Foxtail	1 lb. Rough Stalked Meadow Grass
[illegible] Hard Fescue	½ lb. Trefoil
[illegible] Italian Rye-grass	1½ lb. Cow-grass
[illegible] lb. Evergreen Meadow Grass	2 lbs. Cocks Foot-grass
[illegible] lb. Bird's Foot Trefoil.	1½ lbs. Meadow Fescue
[illegible] lb. Red Clover	½ lb. Wood Meadow Grass
[illegible] lb. Sweet Vernal	1 lb. Timothy Grass
[illegible] lb. Tall Fescue	1 lb. Alsike Clover
[illegible] lbs. Perennial Rye-grass	2 lbs. White Clover.

Over the 500 acres were sown per acre 4 lbs. White Clover, 2 pecks perennial, and 1 peck Italian Rye-grass seed. The whole was rolled and brushed in with brush and chain harrows, and has since been thickly stocked, principally with sheep, eating cotton and Linseed-cake.

The improvement of the Grass by this treatment is very great. A radical change of herbage has taken place, in quantity greater, and quality far superior to the Hassock, Carnation, and other coarse and innutritious Grasses with which so much of the land was overrun.

Considerable attention is paid to spudding and keeping down the Thistles. The best plan to weaken, and finally eradicate them, is to keep the spuds at work the summer round, and a regular staff of spudders, old men and boys, have been continuously at work for the last three seasons, and apparently with very favourable effect.

The extent of the land Mr. Campbell has at present in hand is over 2000 acres, of which 1400 acres are in Grass, which is grazed principally with sheep of the Lincoln breed. A breeding flock of 2000 ewes is kept, the produce of which is fattened on the Grass at 2½ years old, weighing on average at that time 30 lbs. per quarter, and giving at the two clippings, from 20 lbs. to 26 lbs.* of wool per sheep.

During the first winter the lambs are kept on Turnips usually bought for them, on the gravel and stonebrash soils, and in the following summer thickly stocked on the poorer portions of the Grass land, at the rate of six and seven to an acre, and in winter have the run of a portion of the Grass; towards spring getting a little cake or a few Swedes, and during the third summer fattened out on the Grass with cake. The sheep are given no hay in winter, nor are they ever penned on the ground with hurdles. When on roots, in large flocks of about 200, they are given a fold or break sufficient to accommodate the whole flock, but are never penned up in small numbers with hurdles, as is customary in the district. The weak point of this system is the accommodation in winter, as no amount of drainage will make the arable a healthy sheep lair, consequently the roots have to be carted to the Grass for consumption, and this entails considerable expense.

The arable land has not as yet been cropped on any regular rotation, consequent from it being when taken in hand in many small fields and under different crops, rendering a certain amount of cross-cropping a necessity where four or five fields were thrown into one. A steam-plough has been used during Mr. C.'s occupancy, and from the recent drainage, high-ridged lands with no roads, and a wet season, its first essay was not a remarkable success. But since the enlargement of the fields, making of roads, and getting the ridges comparatively levelled, it has made some excellent work, in quality far better, and certainly much cheaper than could be done with horses.

From the large proportion of the farms there is in Grass, the chief feature of the farming is the sheep, and the cropping of the arable is regulated and made subservient to their requirements, and from the large quantity of roots required, a four-course rotation will be adopted, so as to have one-fourth in roots annually. To secure a root crop the soil requires to be very judiciously manipulated, its composition being of too clayey and tenacious a character to come under the category of "Turnip soils;" nevertheless as a proof that its cultivation has not been altogether unsuccessful, we may mention that for the last two years, two first prizes for roots grown in the district has been awarded to crops at Buscot. For roots, all the dung that is available is spread on the land in autumn, after its being scarified and raked, or picked, and then steam-ploughed deeply. In spring the scarifier only is used, excepting when the land is very foul. For the Mangels and Swedes the land is ridged and sown with the water or dry drill, depositing with the seed a manuring of home-made superphosphate; guano and bones, the latter ground very fine by a mill on the estate, being broadcasted previous to the ridging. A mixture of phosphatic and ammoniacal manures is invariably used for roots. For Swedes the former forms the largest share of the mixture, and for Mangel, the latter. Salt also, is used largely as a Mangel manure. Wheat is sown after Clover, and Oats after roots; not many Beans are grown, although it is essentially a Bean soil; Clover or roots takes the place of the Bean crop, they being required for the sheep.

During the summer of the present season stifle or soil burning has been commenced on this estate, and as this practice is not common in the neighbourhood a short account of the mode and object may be interesting. The soil selected for the operation is the foulest and stiffest of the fallows for the year, which after being reduced to a fine tilth, the soil, and of course weeds and all, is shovelled up to form small heaps containing about 10 or 12 cubic feet when burnt. They are lighted with fire and small coal, care being taken to adjust the quantity of the soil to the strength of the fire; not at once adding too much to endanger its being put out, and at the same time as much as will prevent the escape of any large volume of smoke. When all the soil that belongs to a heap is put on it is allowed to burn until the fire appears to blacken the top, when the edges and sides are trimmed off, and the top of the heap spread out, a small sprinkling of dust coal added, and the unburnt soil trimmed from the sides is placed above the coals again, forming a small conical heap, and when the fire again makes its appearance outside the whole heap is found to be well burnt, and giving ashes of a black and orange colour; the quantity burnt varying from 150 to 200 yards. As soon as possible after the heaps are burnt they should be spread over the land, as the ashes when hot destroy weeds and their seeds, and also any grub or wire-worm which may be at the surface of the soil. The coal used is the small or dust, which in colliery districts may almost be had for the labour of carting away, but delivered per boat at Buscot it costs 11*s.* per ton. The quantity of coal used is 1 ton per 50 cubic yards of ashes, or between 3 or 4 tons per acre, and the cost of burning and spreading varies from 2*l.* to 3*l.*,* making a total cost of about 5*l.* per acre.

The object is, first, to get rid of the Couch and other weeds by burning; second, it is believed that the manurial results from a dressing of 150 or 200 yards of ashes per acre will be very great; but the greatest benefit is expected from the alteration it will effect in the texture and friability of the soil. So long ago as 1851 we find the late Mr. Pusey stating that no less than 10 different papers had appeared in the pages of the Royal Agricultural Society's Journal deposing to the efficacy of the practice, and he quotes several instances of immense results arising from it; among others, the farmers at a Bedfordshire meeting declaring "that they could not cultivate to any profit their strongest and worst clay lands without burning;" another, from Leicestershire, says "a field dressed in this way seven years ago has ploughed easier by a horse draught and has been like different land ever since."

A short time ago the writer visited the farm of Mr. Randall near Evesham in Worcestershire, who during the last 20 years has burned several hundred acres of his present farm, and who at that time (a month ago,) was still burning. The cleanly condition of his farm, and excellence of his crops on some land of natural inferior quality on the Lias Clay, conveyed to the mind striking proofs of the utility of the practice, on his farm at least. From experiments already made and on record, it is known that on the Oxford clay burning is attended with good effects, yet it does not necessarily follow that it would be alike beneficial on all clay formations, and therefore on those where the results of burning are not known, experiment should precede extensive practice.

Although there can be no doubt of the improvement of the tenacious clay of Buscot by the drainage and other alterations made there, yet what is probably of as much importance—will the outlay prove a good investment of cash? It is the opinion of the writer of these pages that a paying and profitable improvement of the land will be the result. Some successful farmers of this district hold the same opinion, but on the other hand there are others of equal standing who consider success uncertain, pecuniary loss sure. They quote the saying, "Gold may be bought too dear." Time alone can prove the matter. One point is certain, that for many years the Buscot estate remained a much neglected spot of English soil, giving little to the proprietor who owned it, little to the farmer who occupied it, and less to the sturdy labourers who resided near. Certainly, now the picture wears a different aspect, far richer crops are grown, the hundreds of working-men who toil there receive the hire of which they are worthy, and we therefore trust and hope that amidst all these changes the present spirited proprietor will not stand alone without an ample reward, after the large amount of capital he must have expended to make this part of the district better and more productive than when he first became its possessor. *Mr. Moscrop's Essay on the Farming of West Berks.*

* This will be understood as referring only to the one and two-shear wethers; the ewes clip less, but the average of the whole flock this year is 6½ lbs. of wool per sheep, over a flock of 4000, of which 2000 are ewes.

* This price is greater than what is paid in Worcestershire, but the operation commencing with men, practised burners, brought especially from that county and close on the eve of harvest, it was considered good policy to give a liberal price to get the operation fairly set a-going. What will also materially reduce the price is the hope of being able to burn on the stubble after harvest without coal.

Miscellaneous.

The late Mr. Jonas Webb.—The following, written by Mr. Webb himself, describes his career as a breeder up to the year 1844:—"As you were kind enough to request me to give you 'any facts relative to my career of sheep breeding,' I will endeavour to do so; but, as I think you will agree with me, that 'on their own merit modest men should be dumb,' I am sure you will not expect much from me, especially as I fear I can lay claim to only a small share of it. I commenced breeding Southdown sheep as soon as I began business for myself, about 22 years since, from a conviction, through many experiments made when at home with my father with many different breeds of sheep, that more mutton and wool of the best quality could be made per acre from Southdown sheep than from any other breed, upon nine-tenths of the arable land in this country, where sheep are regularly folded, especially where the land is poor and the animals have far to walk to fold. I commenced by purchasing the best bred sheep which could be obtained from the principal breeders in the county of Sussex, regardless of expense, and have never made a cross from any other breed on any occasion since. You are aware that at the meeting of the Royal Agricultural Society of England, held at Cambridge in July, 1840, I won the first prize for the stock ewes and lambs of the Southdown, or any other short-woolled breed of sheep, and also the first prize for the shearling stock ewes at the same meeting; since which time I have never shown for any prize but for rams, being convinced of the ruin inevitably brought upon all breeding stock by over feeding. I believe I only raised two or three lambs from the nine shearling ewes which I had fed to exhibit at Cambridge; and I lost, I think, four of them also. My brother Samuel, who also resides in the same parish of Babraham, has shown for the shearling ewes' prize for the years 1841, 1842, and 1843, and has obtained the first prize every year from my blood of sheep, he having purchased the ewes of me, and always hires my rams to put to them; he has been equally unsuccessful with those which he has over-fed. You are also aware that I won three out of four of the prizes offered by the Royal Agricultural Society of England, at the meeting at Liverpool, in 1841, for Southdown or any other short-woolled breed of sheep; and at Bristol, by the same Society in July, 1842, I won two out of four of the rams' prizes; and also at Derby, in 1843, at the meeting of the same Society, I won three out of four of the prizes for any kind of short-woolled sheep; but in feeding sheep for that occasion I over-fed two of my best, and killed them before the show took place; they were both 2-year old sheep, and were each highly commended by the judges as yearlings at the Bristol meeting. I had refused 180 guineas for the hire of the two sheep for the season. I also quite destroyed the usefulness of two other of my aged sheep by overfeeding them last year. They never either of them propagated throughout the season, and I have had each of them killed in consequence, which has so completely tired me of over-feeding that I never intend exhibiting another aged ram, unless I greatly alter my mind, or can find out some method of feeding them which will not destroy the animals, and which I have hitherto failed to accomplish. What I intend exhibiting in future will be shearlings only, as I believe they are not so easily injured by extra feeding as aged sheep; partly by being more active, and partly through having more time to put on their extra condition, by which their constitutions are not likely to be so much impaired. I wish particularly to let the public know that in future I do not intend exhibiting aged rams, through the reasons which I have stated. You can, if you please, also notice my repeated success at the Smithfield Club, and that I also obtained the first prize at the Highland Society's show at Dundee in 1843, the only time I ever exhibited stock in Scotland, for the best shearling Southdown ram, the only prize I showed for; and, contrary to the rules of the Society, the committee decided to have my sheep's likenesses taken for the Society's Museum at Edinburgh. One of the rules of the Society is that no animal shall be taken as a specimen for that purpose unless it is full grown. My sheep was considered in every respect more finished and complete than any old sheep which had been exhibited. I also won the two first prizes last year at the Royal Irish Society's meeting at Belfast, and the Society's medal for the best ram of any breed exhibited at the meeting, never having previously shown my stock in Ireland. I do not know what you will be able to make out of these observations, but you are quite at liberty to do as you please with them." Mr. Webb adds, in a postscript:—"I omitted to state that, at the Saffron Walden Agricultural Society, which is open to any person in the United Kingdom who chooses to subscribe to it, I obtained all the first prizes in all the classes of Southdown sheep, with the exception of two, during the whole period I continued to show in it, and I also won the first prize every year for the best pen of shearling wethers of any breed, which I believe brought the Southdown sheep more into repute in this and the adjoining counties than

all the other prizes which I obtained, as there was at one time a strong prejudice against them. I believe I btained 24 silver cups, varying in price from three to five guineas each, independent of about a dozen silver medals." *Farmers' Magazine of* 1844.

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Nov. 26, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.										Inches.		
Thursday	20	30.24	34°	29°	E.	1	2	43°	27°	56°*	21°	..	42°	45°
Friday	21	30.22	37	36	N.E.	1	8	42	32	65	28	..	41½	45
Saturday	22	29.99	36	35	N.	1	7	41	30	48	27	0.01	42	44½
Sunday	23	29.80	25	22	N.	1	1	41	19	58	17	..	41	44½
Monday	24	29.82	29	26	N.E.	1	2	39	28	57	19	..	40	44
Tuesday	25	29.70	30	28	N.	1	8	40	25	69	20	..	39	43½
Wednesday	26	29.61	35	34	N.E.	1	7	40	30	54	24	..	38½	43½

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Calendar of Operations.

NOVEMBER.

Berwickshire Merse Farm; *November* 17.—In our last we noted the need of a month of open weather, for the improvement of root crops up to an average. The hope of such a result is at least deferred by the keen and settled frosts of the last fortnight. Stubble ploughing was stopped on the 13th and 14th, and will be to-morrow. Turnip Tops are gradually diminishing; and it was only their exceeding vigour that enabled them to keep up appearances till now. Indeed, it was with difficulty that people could believe that so small a Turnip could carry so strong a shaw. Swedes are checked, but of course can grow again when the weather suits. We stored a few before the frost, and found the roots to amount to nearly two-thirds of last year's crop, land and treatment being similar. The shaws were enormous, and were carted to the ewe flock on Grass fields. The tupping season is all but over, and the ewes will get no more greens just now, unless winter be on us. The weather is famously dry for folded sheep, yet one or two hoggs are dying, and several "pining" thoughout the country. Cattle for feeding are monstrously dear, or monstrously lean, or both. It is doubtful if there will be any pay for roots consumed; and for cake, the "plunder" will be all the wrong way. Folks have been loth to pull half grown Turnips beyond present need. If the Potato crop is all lifted, (and little lifting it took!) the weed crop cannot be gathered till spring. Thus there will be no winter Wheat (to speak of), excepting that already growing on the fallows of the clay district. As threshing goes on, it only confirms our expectations. Winter Wheat and Barley are very poor, and Oats a good crop, both in quantity and quality. We expect spring Wheat to turn out pretty well. At the present low prices, Oats are surely cheaper than cake for feeding sheep; and certainly the sheep prefer Oats to anything else. Of late there have been several notices in your Paper of "Rapelike Swedes;" and from them we get an explanation of a remarkable "experience" here last year. "Far birds have fair feathers," So we wrote to a firm in the far south for some of their famed seed, which was charged at double the price of the best to be had here. But in the resulting crop of Swedes we were puzzled with a regular sprinkling of trees, hitherto quite unknown among plain Scotch seeds; and it was a frequent question, whether they were most like Swede, Rape, or Kohl Rabi—opinions leaning sometimes one way, and sometimes another. At all events it cost us some ploughing to get them uprooted. *J. T.*

Notices to Correspondents.

Books: *Cor.* We have not received a copy of the second edition on Guano of which you speak.

Manure: *T L J.* Ammoniacal manures are of great service to Grasses, but not to Sainfoin or Clover. The bones and superphosphates will do them good. For the Narbonne Vetch you must apply to one of our leading seedsmen.

Roughing Horse Shoes: A correspondent says: "Can any one be so good as to inform me where to get the studs used for screwing into horse shoes, to render them rough for slippery roads? Some time ago these studs were advertised by their maker; he also sold with the studs a drill to make the holes for the studs.

Salt: *G H P.* 4 cwt. per acre will not kill weeds on light land. You must get the weeds up by scarifying, harrowing, gathering, and burning. Earlier in the year you might have done a good deal to it by mere sunshine.

How Cold It Has Been.—Negretti & Zambra's celebrated THERMOMETERS will correctly register the lowest Temperature, 3s. 6d.
1, Hatton Garden, E.C.; 59, Cornhill, E.C.; and 122, Regent Street, W. Agents Wanted.—Apply at 1, Hatton Garden, E.C.

THE FARMER'S BAROMETER, a new instrument by Negretti & Zambra, price 50s., will correctly indicate whether the Barometer falls for Rain or Wind, the most valuable instrument ever constructed for the use of Farmers. Full particulars by enclosing a stamp.
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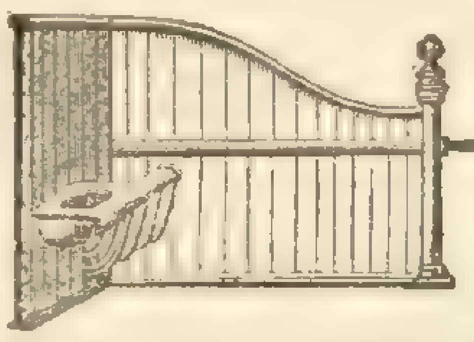
Exhibition Prize Medal 1862.
MUSGRAVE'S PATENT STABLE FITTINGS and HARMLESS LOOSE BOXES, PATENT IRON COW HOUSE FITTINGS, and IRON PIGGERIES.



These inventions are recommended as possessing numerous advantages not to be found in anything hitherto made. At the late Meeting of the Royal Agricultural Society at Leeds, Musgrave Brothers received a Silver Medal, and two Awards of "Highly Commended," being the only Prizes conferred on any competitor in this class.
Particulars sent on application to the Inventors and Makers, Musgrave Brothers, Ann Street Iron Works, Belfast.

Anti-Frost Water Pipe Protector
[Jones' Patent.]
IMPORTANT to all HOUSEHOLDERS, preventing damage, waste, and annual expenses from pipes bursting in frosty weather.
Wholesale of Bury & Pollard, Engineers, Sole Manufacturers, Park Iron Works, Southwark, London, S.
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Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

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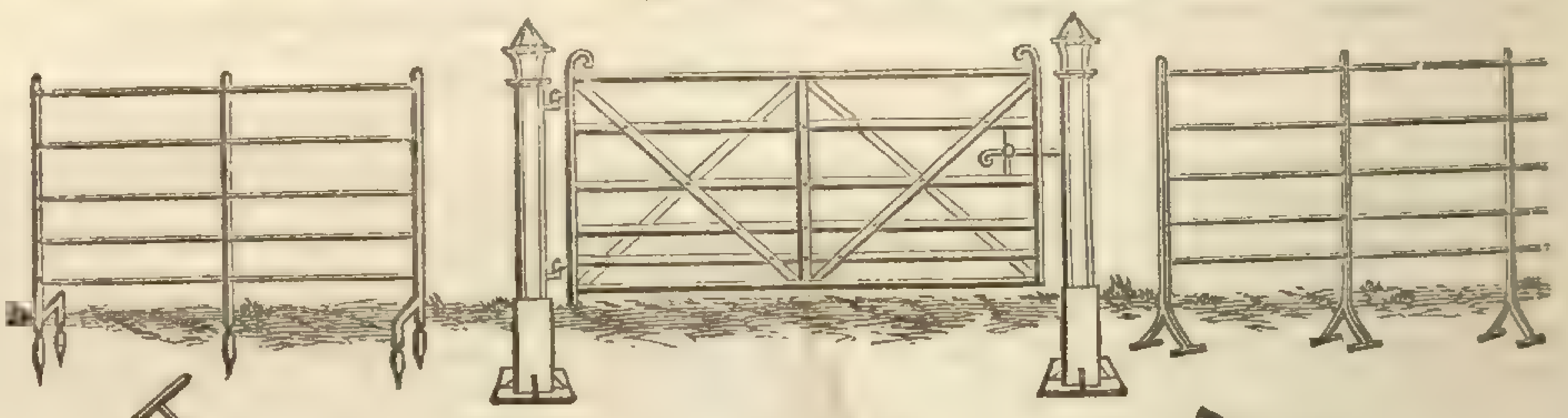

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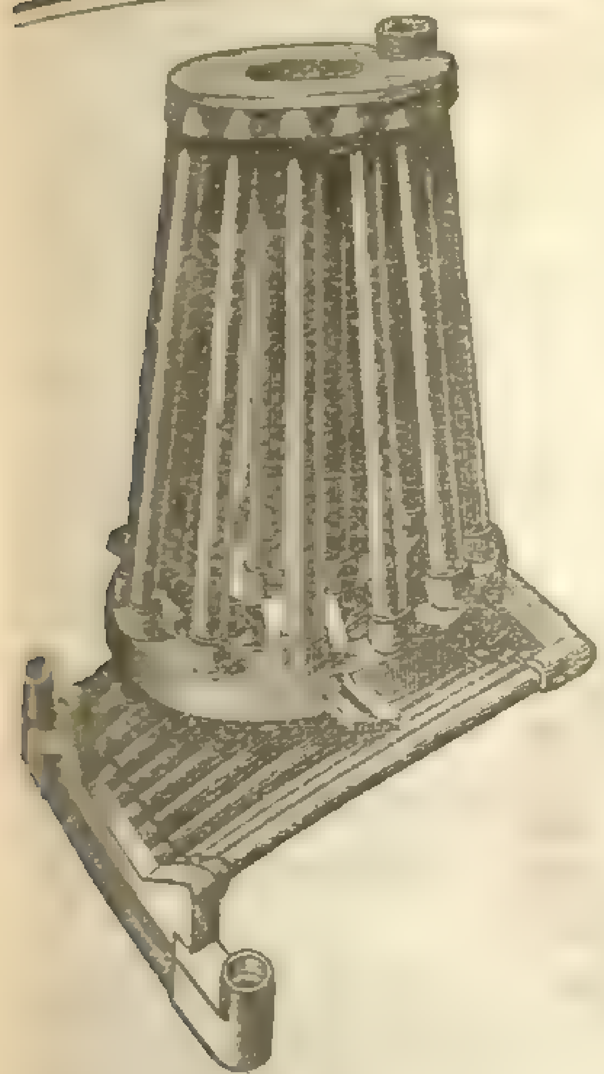

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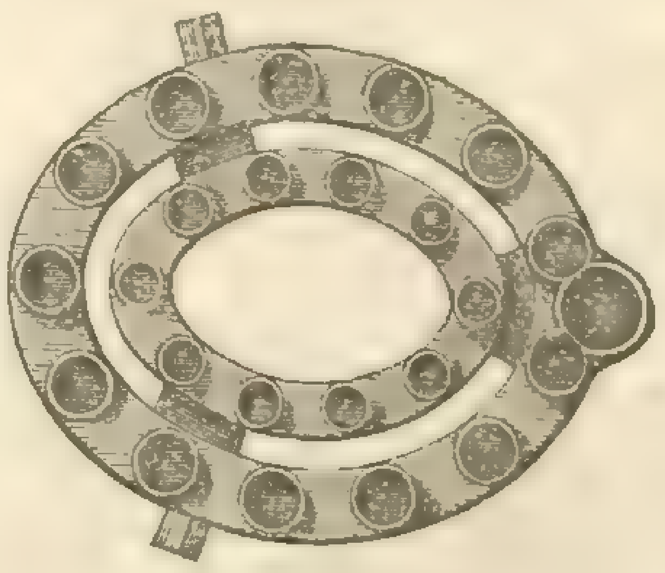

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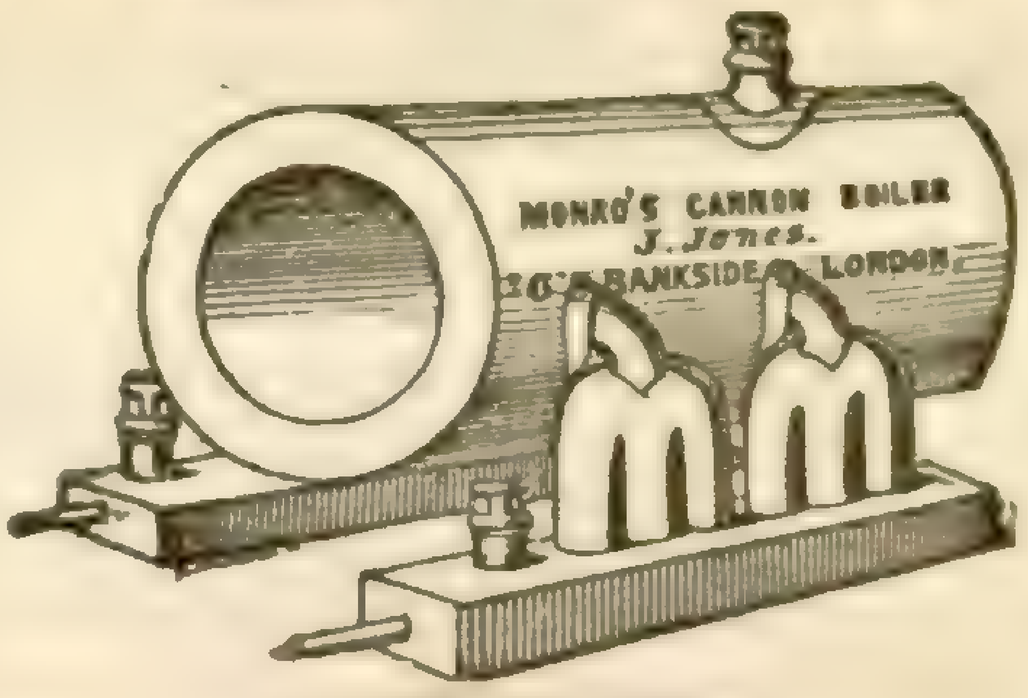

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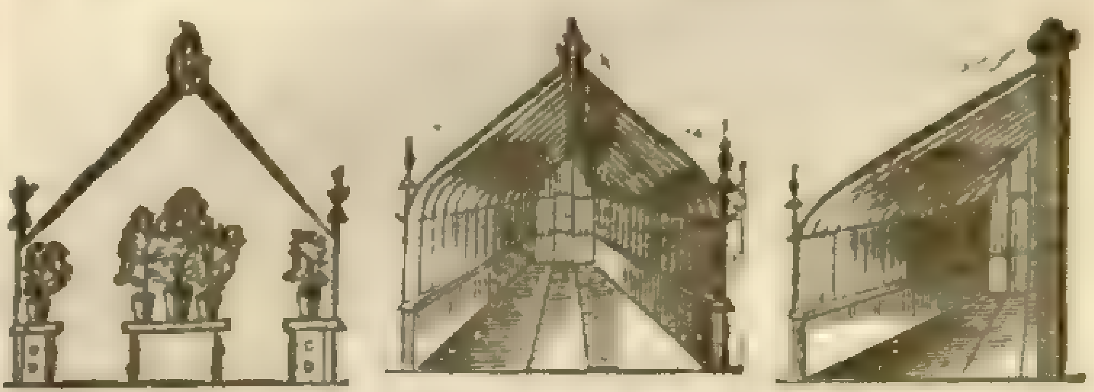

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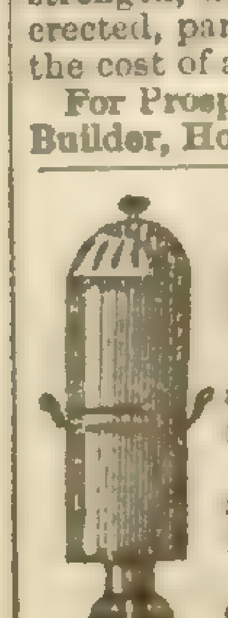

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Steam Cultivation.

The following valuable Testimony has just been received from the Purchaser of the Set of Apparatus worked by J. & F. Howard at the last Meeting of the Royal Agricultural Society of England :—

Warwickshire.

Morton Hall, Warwick, Nov. 12, 1862.

Gentlemen,—I cannot refrain from adding my testimony to that of so many others to the efficiency of the very beautiful and compact Steam Cultivating Apparatus with which you lately supplied me.

I had for some time been desirous of employing steam in the cultivation of my farm, but could not ascertain which was the best system. Feeling anxious in the matter, I was at some expense and trouble in examining for myself the merits and demerits of the three acknowledged systems of the present day —Fowler's, Smith's, and Howard's.

With Fowler's I was anything but satisfied. I did not like the looks of so ponderous an Engine and Tackle, nor the heavy expense of it; and when I saw so much of the outsides of the field left uncultivated, and the damage done to the strong soil from the transit of the engine, I unhesitatingly and at once gave up all idea of adopting this system.

With Smith's I was more pleased, but his whole Apparatus was got up in such a rough and unfinished manner that very much surprised me. That surprise was, however, much increased when I was told that each purchaser of his Apparatus was required to take out a license of Twenty Guineas before he could use it. These reasons forced me to the conclusion that I could not be a customer of Mr. Smith.

I then paid a visit to Battersea and Farningham, and at the latter place saw all three systems in full operation. I saw your new Windlass and Cultivator at work, and was at once struck with their beautiful simplicity. I examined each part of it, and I watched the latter as it passed through the soil so nicely and evenly, leaving it in such a state that surprised and delighted everybody. I was perfectly satisfied, and at once purchased that identical Apparatus. To this day I am satisfied too. I do think your patent windlass and double snatch-blocks the most perfect things I have seen. The former is so simple and easily managed, and the latter effectually keeps the rope off the ground. I am also very much pleased with my porters and have never seen anything to equal them.

I use one of Clayton & Shuttleworth's 8-horse double cylinder Engines, and besides doing with it a large amount of thrashing, I have cultivated and cross-cultivated 112 acres this autumn—though the season has been so unpropitious for my strong soil,—and all this without one single accident or breakage of any kind. My farm, which has but lately come into my possession, consists of 576 acres, of which 370 are arable, and the major part strong soil, requiring four horses to plough it. There has never been less than 20 horses employed in the cultivation of this farm, and frequently more. I have, however, reduced the number to 12, and hope as the land becomes in a better state from drainage and cultivation, to make a still further reduction.

I cannot close this letter without saying in public, what I have so often said in private, that I feel myself under a personal obligation to you for your untiring perseverance, your mechanical genius as displayed in the production of this very perfect Apparatus, and for the uniform courtesy I have at all times received from you.

Heartily wishing you that signal success which you so eminently deserve and enjoy—I remain, gentlemen, yours faithfully, John Ford.

Messrs. J. & F. Howard, Bedford.

Glass for Greenhouses.

JAMES PHILLIPS and CO., beg to submit their prices as follows :—

ENGLISH GLASS, 16 ounces to the foot, in Sheets averaging 40 by 30, packed in Cases containing about 280 feet, 2¼d. and 2½d. per foot.

SHEET GLASS, 16 ounces, packed in boxes of 100 feet each. Package included.

				3rds.	4ths.
12 by 9	13 by 9	14 by 9	15 by 9	14s. 0d.	12s. 6d.
12 ,, 10	13 ,, 10	14 ,, 10	15 ,, 10	16s. 0d.	13s. 6d. per 100 feet.
13 ,, 11	14 ,, 11	15 ,, 11	16 ,, 11		
14 ,, 12	15 ,, 12	16 ,, 12	17 ,, 12		
18 ,, 12	19 ,, 12	20 ,, 12	16 ,, 13		
17 ,, 13	18 ,, 13	19 ,, 13	20 ,, 13		
16 ,, 14	17 ,, 14	18 ,, 14	20 ,, 14		

Various other sizes.

GLASS for ORCHARD HOUSES, As supplied by us to Mr. Rivers.

		16 oz.	21 oz.
20 in. by 12 in.	Common	13s. 6d.	£0 13 0
20 in. by 13 in.	Superior do.	16 0	1 3 0
20 in. by 14 in.	English Glass	18 0	1 9 0
20 in. by 15 in.			

The above prices include the Boxes.

SMALL SHEET SQUARES, in 100 feet Boxes.

6 by 4	6½ by 4½	7 by 5	7½ by 5½	11s. 6d.
8 ,, 6	8¼ ,, 6⅜	9 ,, 7	9¾ ,, 7½	
		10 ,, 8	10¼ ,, 8½	12 6

Boxes 2s. each, returnable at full price.

SQUARES CUT TO SPECIAL SIZES.

16 oz. 4ths, 1¾d., 2d., and 2½d. 21 oz. 2¾d., 3d, and 3¼d.
,, 3ds, 2d., 2½d., and 3d. ,, 3d., 3½d., and 4d.

London Agents for Hartley's Improved Patent Rough Plate.

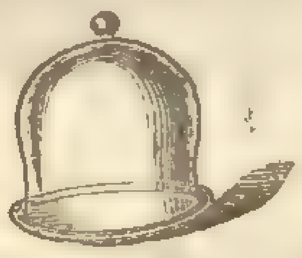
Linseed Oil, Genuine White Lead, Carson's Paints, Paints of various colours ground ready for use.

Milk Pans, Propagating Glasses, and every description of Glass for Horticultural purposes.

James Phillips & Co., 180, Bishopsgate Street Without, London, E.C.

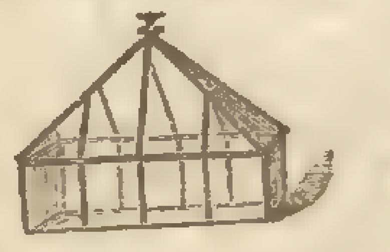
THOMAS MILLINGTON, 87, Bishopsgate Street Without, E.C.

HORTICULTURAL GOODS.



PROPAGATING GLASSES.

3 inches	0s. 4½d. each.	12 inches	1s. 9d. each.
4 ,,	0 5½ ,,	13 ,,	2 0 ,,
5 ,,	0 6½ ,,	14 ,,	2 6 ,,
6 ,,	0 8 ,,	15 ,,	3 0 ,,
7 ,,	0 10 ,,	16 ,,	3 6 ,,
8 ,,	1 0 ,,	17 ,,	4 0 ,,
9 ,,	1 2 ,,	18 ,,	5 0 ,,
10 ,,	1 4 ,,	19 ,,	6 0 ,,
11 ,,	1 6 ,,	20 ,,	7 0 ,,

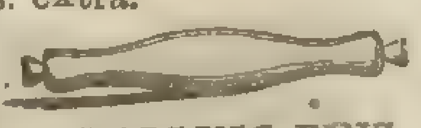


HAND GLASSES.

12 inches	6s. 0d. each	18 inches	9s. 0d. each
14 ,,	7 0 ,,	20 ,,	10 0 ,,
16 ,,	8 0 ,,	24 ,,	12 0 ,,

If open top, 1s. extra.

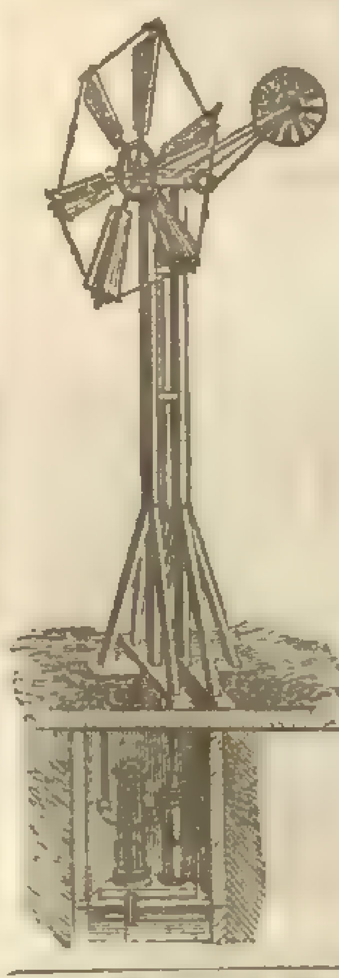
CUCUMBER GLASSES. From 12 inches long and upwards, 1d. per running inch.



ROLLING PINS. From 12 inches long, 1½d. per running inch.

Improved ANTI-CORROSION and other PAINTS. GAS and LAMP GLASSES, GLOBES, &c. CHIMNIES of every description.

Not accountable for Breakage.



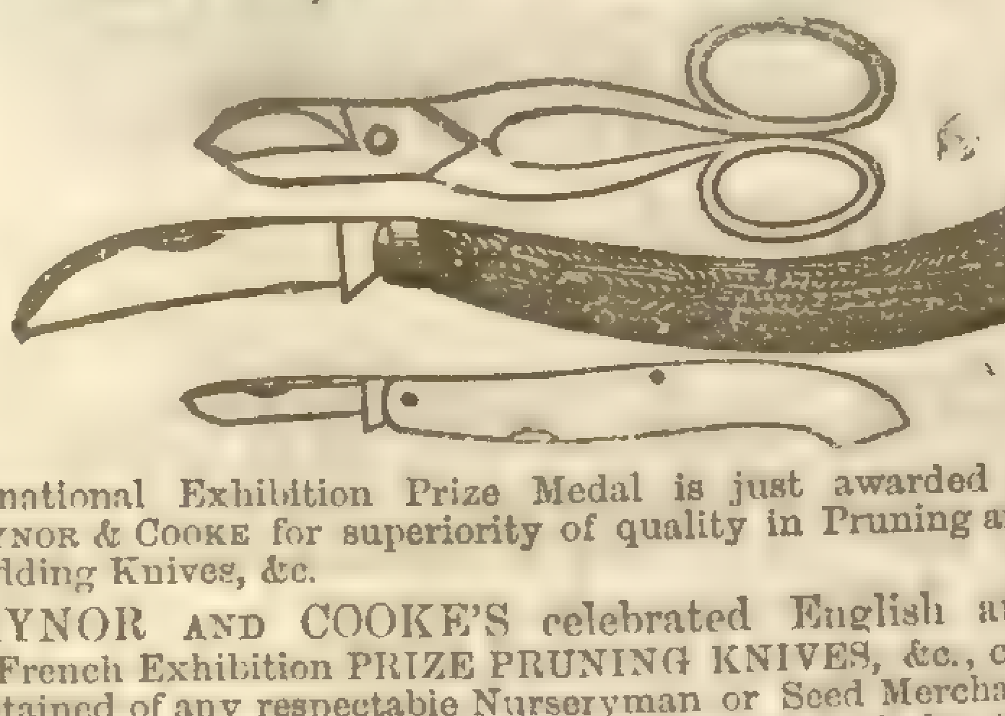
WIND ENGINE. Patent Self-Regulating.

For Pumping, Oat Crushing, Grinding. Chaff Cutting, Sawing, or Driving other Machines.

Costs nothing to work.
Works day and night.
Requires no watching,
Not easily injured.
Erection simple and cheap.

Apply to BURY and POLLARD, Sole Manufacturers, Park Iron Works, New Park Street, Southwark, London, Where a Wind Engine, in full work, may be inspected.

Paxton Works, Sheffield, Established 1738.



International Exhibition Prize Medal is just awarded to Saynor & Cooke for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR and COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.

Caution.—None are genuine unless marked Saynor. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

Archangel Mats.

JAMES T. ANDERSON begs to announce that [illegible] is now open to supply, at a low price, [illegible] quantity, ARCHANGEL MATS, the finest in London of the season's importation, and solicits an inspection of them by Nurserymen and Seedsmen.

SACKS, SEED BAGS, &c.

15, Sherborne Lane, King William Street, London, E.C.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of [illegible] Chiswick Gardens, Professor Lindley for the [illegible] Society, Sir Joseph Paxton for the Crystal Palace, [illegible] Zoological Society, late Mrs. Lawrence of Ealing Park, &c. PROTECTION from the COLD WINDS & MORNING [illegible]

"FRIGI DOMO," a Canvas made of patent [illegible] and Wool, a perfect non-conductor of Heat and Cold, [illegible] wherever it is applied, a fixed temperature. It is adapted [illegible] all horticultural and floricultural purposes, for [illegible] Fruits and Flowers from the scorching rays of the sun, [illegible] wind, from attacks of insects, and from morning frosts [illegible] had in any required lengths.

Two yards wide .. .. .. 1s. 6d. per yard [illegible]
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard [illegible]

Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard [illegible]

Elisha Thomas Archer, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

AGRICULTURAL MACHINERY. — Threshing Machines for Steam and Horse Power, Ploughs, Harrows, Waggons, Carts, Mills for Hand or Power, Turnip Cutters, Cake Breakers, Chaff Cutters, &c.

Price List Free per post on application.

Burgess & Key, 95, Newgate Street, E.C. Works, Brentwood, Essex.

W. S. UNDERHILL'S NEW PATENT IRON FENCE for GARDENS, LAWNS, &c.

Manufactory: Newport, Salop.

Warranted the strongest and most durable Fence ever offered at corresponding prices. It is easily repaired if [illegible] from accidents; can be rolled up most compactly when not in use, is admirably adapted for exportation, and can be [illegible] any height and mesh required, at prices from 4d to [illegible] yard and upwards.

For further particulars apply at the Manufactory, or of the London Agent, Mr. R. Winder, 18, Abingdon Street, Westminster, S.W.

Prices Reduced.

H. J. MORTON and CO., Galvanised Iron Works, 2, Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use: also Spouting at 10½d. per yard.

WIRE STRAND CABLE FENCING

(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing [illegible] over. Price, with five lines of the Galvanised Strand, iron [illegible] posts, and pronged Standards, from 1s. per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of [illegible] bars. Will not rust nor corrode. Upwards of 1200 miles [illegible] this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING

Galvanised, 24 ins. [illegible] 2-inch mesh, 4d, [illegible] and 6¾d. per yard.

Galvanised, 24 ins [illegible] 3-inch mesh, 2¾d., 3¾d., [illegible] 5½d. per yard. The [illegible] made any width, and [illegible] openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.

Strong CATTLE HURDLES from 2s. per yard.

PATENT IMPROVED GAS WORKS of all sizes, for the use of Private Houses, Mansions, [illegible] Stations, Mills, Collieries, Mines, Villages, &c. Works [illegible] 10 to 500 lights estimated for. The works can be entrusted [illegible] an ordinary labourer.—Apply to

Henry J. Morton & Co., 2, Basinghall Buildings, Leeds.

FOWLER'S PATENT STEAM PLOUGH [illegible] CULTIVATOR may be seen at Work in every Agricultural County in England. Addresses of Farms (which [illegible] open to inspection), given on application, where the [illegible] has been at Work for three or four years.

The New Application of the ORDINARY PORTABLE ENGINE may also be seen at Work at any time.

Price, with Self-moving Anchor, Three-furrow Plough, and Five tined Grubber, 285l.

For particulars apply to John Fowler, 28, Cornhill, London, E.C.; and Steam Plough Works, Leeds.

PATENT GUTTA PERCHA SOLES.—Important to Gardeners.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. Glenny, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and [illegible] these two years, and being so much in a garden as I [illegible] sarily am in all weathers, and with the ground in all [illegible] would on no account be without them. As a matter [illegible] economy I would recommend Gardeners to use them, for [illegible] may repair the worn part at all times by warming [illegible] material at the fire, and pressing it from the thick parts [illegible] worn parts, as easily as if it were so much dough. I [illegible] the duty of all persons who must occasionally wet their [illegible] adopt a material that completely defies damp. [illegible] gardener would escape colds and rheumatism by the [illegible] Gutta Percha Soles. Your obedient servant, G. Glenny."

Every variety of Gutta Percha articles, such as Mill [illegible] Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, [illegible] Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, [illegible] Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, [illegible] type trays, &c., manufactured by the Gutta Percha Company and sold by their wholesale dealers in town or country.

The Gutta Percha Company, Patentees, 18, Wharf Road, City Road, London, E.C.

J. T. WILLMER, HORTICULTURAL AGENT, AUCTIONEER and VALUER, Springfield Nursery, Sunbury, Middlesex, S.W.

Notice.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), HORTICULTURAL VALUER, begs to inform his friends and the public that he has REMOVED from [illegible] Road, Wandsworth Road, to No. 1, Devonshire [illegible], Fulham Road, S.W.

SAUSAGE and MINCING MACHINE.—The Guinea one of BURGESS & KEY'S is the best; it is simple, easily [illegible] and quicker in operation than any other.

BURGESS & KEY, Makers, 95, Newgate Street, E.C.
Illustrated particulars free on application.

TESTIMONIALS of CUPISS'S CONSTITUTION BALLS, for HORSES and NEAT CATTLE.

From J. HARRIES, Esq., *Llandovery.*

December 12, 1861.

[illegible]—I have with much pleasure to recommend your Balls; [illegible] exceedingly efficacious to a pony of mine, far [illegible] every other remedy that was tried—one packet [illegible] a complete cure.—Yours respectfully,

JAMES HARRIES.

[illegible]

Nantmole, November 2, 1860.

[illegible]—I have a Mare that was troubled very much with sore [illegible] were much swollen, and at last she could not see at [illegible] of them. I tried many things externally, but to [illegible]. I then gave your Balls a trial, and in less than a [illegible] she was completely cured.—I remain, yours respectfully,

JOHN HOWELL.

From Mr. H. HUMPHREY, *Bulkeley Arms Inn, Menai Bridge, North Wales.*

"I have been in the habit of using your Constitution Balls [illegible] last 16 years, and have invariably found them the best [illegible] for Cough, Influenza, and many other diseases to [illegible] horse is liable. I have also tried them with young [illegible], and have found them exceedingly beneficial in getting [illegible] condition. Those horses I have not given them to, [illegible] getting the same food, were quite the reverse."

From Mr. D. JAMES, *Cilshew, near Narberth, S. Wales.*

"Thanks for your early reply to my last note. I am happy [illegible] you that I have found (as you expected) the Horse [illegible] good condition, through the use of your Constitution [illegible]."

The Balls are prepared by FRANCIS CUPISS, Diss, Norfolk, [illegible] of the Prize Essay on the Diseases of the Liver of the [illegible]. And may be had of all Patent Medicine Vendors in [illegible] of 3 Balls, 1*s.* 9*d.*; and 6 Balls, 3*s.* 6*d.*; or 7 small [illegible] for 10*s.* 6*d.*; or 7 large Packets for 21*s.* with full [illegible].

[illegible] using the Balls may consult the Proprietor gratuitously [illegible] enclosing a stamp in a prepaid letter.

METCALFE, BINGLEY, AND CO.'S NEW PATTERN TOOTH BRUSHES, Penetrating Unbleached [illegible] Brushes. Improved Flesh Brushes, genuine Smyrna [illegible], and every description of Brush and Comb and Perfumery for the Toilet. METCALFE'S celebrated Alkaline Tooth Powder, 2*s.* per box. The FAIRY BOUQUET; the OXFORD and CAMBRIDGE BOUQUET. In bottles, 2*s.*, 3*s.* 6*d.*, and 5*s.* [illegible] 130 B, and 131, Oxford Street, W.

PRIZE MEDAL to THRESHER AND GLENNY for very fine and superior FLANNEL SHIRTS, India Tweed Suits, and India Gauze Waistcoats. Lists of Prices on application to THRESHER & GLENNY, General Outfitters, next door to Somerset House, Strand, W.C.

Prize Medal 1862

AWARDED BY THE JURORS OF CLASS II. FOR THE

GLENFIELD STARCH, being a confirmation by some of the most eminent scientific men of the age, of the superior qualities of this world-renowned Starch. Sold in Packets at ½*d.*, 1*d.*, 2*d.*, 4*d.*, and 8*d.* each, by all respectable Grocers, Chandlers, Oilmen, &c.

WOTHERSPOON & Co., Glasgow and London.

DEANE'S TABLE CUTLERY, celebrated for more than 150 years, remains unrivalled for quality and cheapness. The Stock is most extensive and complete, affording a choice suited to the taste and means of every purchaser. The following are some of the prices for Ivory Handled Knives—each blade being of the best steel, bearing our name, and warranted.

	s. d.	s. d.	s. d.	s. d.	s.	s.	s.
Table Knives, per doz. ..	14 0	16 0	18 0	23 0	25	29	33
Dessert ditto ,, ..	12 0	12 0	15 0	18 0	20	[illegible]	28
Carvers, Joint, per pair..	4 6	5 6	6 6	7 6	8	9	11

DISH COVERS and HOT-WATER DISHES.—DEANE & Co. invite particular attention to their varied and excellent assortment of these goods, to which they are continually adding all modern approved patterns in Electro-Plate, Britannia Metal, and Tin.

	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
Britannia Metal, set of 5 ..	3 0	3 6	3 10	4 6	5 10	5 15
Britannia Metal, set of 6 ..	4 5	4 13	5 0	5 8	7 7	7 17
Block Tin, set of 6	0 15	1 10	2 0	2 2	2 8	2 17
Block Tin, set of 7	1 4	2 0	2 13	2 17	3 4	3 16
Electro Plate, set of 4 ..	12 8	12 12	14 0	15 0	15 15	26 4

ELECTRO-PLATED SPOONS and FORKS.—The best manufacture, well finished, strongly plated. Every article stamped with our mark, and guaranteed.

	FIDDLE.		BEADED.		KING'S.		LILY.
	Second quality.	Best.	Second.	Best.	Second.	Best.	Best.
	s. d.	s.	s.	s.	s.	s.	s.
Table Spoons, per doz.	33 0	40	44	58	54	66	58
Table Forks ,,	31 0	38	44	56	54	64	56
Dessert Forks ,,	23 0	29	32	54	37	46	40
Dessert Spoons ,,	24 0	30	32	42	37	48	42
Tea Spoons ,,	14 6	18	22	26	26	32	26

DEANE & Co.'s New Illustrated Catalogue and Priced Furnishing List may be had on application or post free.

ESTABLISHED A.D. 1700.

DEANE & Co. (Opening to the Monument), London Bridge, E.C.

SAUCE.—LEA AND PERRINS' WORCESTERSHIRE SAUCE.
Pronounced by Connoisseurs
"THE ONLY GOOD SAUCE."
See Name on Wrapper, Label, Bottle, and Stopper, and to avoid Counterfeits
ASK FOR LEA AND PERRINS' SAUCE.

*** Sold Wholesale and for Export, by the Proprietors, Worcester; Messrs. CROSSE & BLACKWELL; Messrs. BARCLAY & SONS, London, &c.; and by Grocers and Oilmen universally.

Pure-Bred Berkshire Pigs.

MR. JOSEPH SMITH, of Henley-in-Arden, will not be an Exhibitor of Pigs at Birmingham this year, but he has a few BRAWNS and SOWS for SALE, five months old, bred from the same stock as the Pigs which have taken prizes for the last seven years in Bingley Hall, at the Warwick meeting of the Royal Agricultural Society of England, and at the local shows in the neighbourhood.

For price, &c., apply to Mr. SMITH, as above, or at Bingley Hall, Birmingham, on the 1st, 2d, 3d, and 4th of December.

WANTED, a SHOP and COUNTING-HOUSE.
Apply, stating particulars.
WM. MAULE & SONS, Nurseries, Bristol.

Sales by Auction.

Consignment of Plants from Ghent.

MR. J. C. STEVENS will SELL by AUCTION, at his Great Room, 38, King Street, Covent Garden, W.C., on MONDAY, December [illegible], at half past 12 o'Clock precisely, a fine assortment of PLANTS, comprising [illegible] Indian Azaleas, 150 Double Camellias, 300 hardy Rhododendrons, [illegible] Lilium lancifolium rubrum, 100 ditto album, [illegible] fine Tritoma, 100 fine Standard and Perpetual Roses, &c.

On view the Morning of Sale, and Catalogues had.

Roses, Fruit Trees, Vines, Laburnums, Tree Box, &c.

MR. J. C. STEVENS will SELL by AUCTION at his Great Room, 38, King Street, Covent Garden, W.C., on WEDNESDAY, December [illegible], at half past 12 o'Clock precisely, [illegible] Standard and Half Standard Roses, [illegible] Seedling Hollyhocks, 1200 Red Currant Trees, 400 White ditto, 1600 Gooseberries ditto, 24 Virginian Creepers, [illegible] Laburnums, 150 Jasmins, 150 Acacias, 25 Clematis, 160 Ivies, 200 Tree Box, 500 Raspberry Canes, 60 Vines, 450 Dwarf-trained Apricots, Peach, Nectarines, Pears, Plums, Cherry Trees, &c.

On view the Morning of Sale, and Catalogues had.

To Gentlemen, Florists, and Others.

MESSRS. PROTHEROE AND MORRIS will SELL by AUCTION, at the Mart, on FRIDAY, Dec. 5, at 12 o'Clock, a first-class collection of DUTCH BULBS, consisting of the finest Double and Single Hyacinths, Narcissus, Jonquils, Anemones, Crocus, Tulips, Ranunculus, Gladiolus, Snowdrops, &c.; also a fine assortment of [illegible] very handsome Standard, Half Standard, and Dwarf ROSES, selected AMERICAN PLANTS, well set with Bloom Buds, &c.

On view the Morning of Sale. Catalogues may be had at the Mart; and of the Auctioneers, American Nurseries, Leytonstone, N.E.

Deptford, Kent

Near the Deptford Station of the Greenwich Railway.

TO MARKET GARDENERS, NURSERYMEN, AND FARMERS.

MR. W. T. ATWOOD has received instructions to SELL by AUCTION on the Premises, on TUESDAY, December 2, at 12 o'Clock, the LIVE and DEAD STOCK, comprising 2 Cart Horses, [illegible] Market Waggons, Dung and other Carts, a capital light made Spring Van, Tools, Implements, large partitioned Water-tank, quantity of Myatt's Prolific Kidney Potato sets, materials of large Cart Shed to be cleared away, also Coach House and three-stall Stables, a quantity of binding and other rods and sundries.

Catalogues may be had at the Wheatsheaf, Borough Market; WAY'S Coffee House, Covent Garden; and of MR. W. T. ATWOOD, Auctioneer, Mortlake, Surrey.

Fulham Road,

ADJOINING WALNUT TREE WALK, WEST BROMPTON.

MR. W. T. ATWOOD will SELL by AUCTION, on the Premises, by direction of Mr. John Poupart, who is quitting the Land, on THURSDAY, December 4, at 11 o'Clock, the LIVE and DEAD STOCK and CROPS, comprising several Lots of excellent Sea Kale Roots, Rose Bushes, and other Crops, 2 useful Cart Horses, capital Spring Market Van, Market, Dung, and other Carts, Tools, Baskets, Barrows, &c.

75 3-light Boxes and Lights, 600 Hand Glasses, large quantity of excellent rotten Dung, a large heap of Ballast, and numerous sundry articles.

May be viewed day before and Morning of Sale. Catalogues had on the Premises; the Inns in Covent Garden Market; and of the Auctioneer, Mortlake, Surrey.

Hounslow, Middlesex.

TO GENTLEMEN, NURSERYMEN, AND OTHERS.

MR. J. WILLMER begs to announce that he will submit to PUBLIC AUCTION, on the Premises, the Nursery, Wellington Road, Hounslow Heath, on WEDNESDAY, December [illegible], at 11 o'Clock, by direction of the Executrix of the late Mr. G. Patching, a portion of the NURSERY STOCK, which comprises Common Laurels, 1 foot to 4 feet; Portugal Laurels, 1 foot to 6 feet; Berberis aquifolia, 1 foot to 2 feet; Evergreen Privet, 1 foot to 3 feet; Chinese Privet, 1 foot to 3 feet; Green Box, 1 foot to 3 feet; Chinese Arbor-vitæ, 1 foot; Green Hollies, 7 feet; Snowberry, 3 feet to 4 feet; Guelder Rose, 8 feet; Aucuba, 1 foot; Acacia, 6 feet; Lilac, 3 feet to 6 feet; Standard and Dwarf Roses, China and Climbing Roses, Sweet Briars, Honeysuckle, Ribes sanguinea, Sumac, Strong Quick, Rhododendron ponticum, Rosemary, Irish Ivy in pots, Gooseberries, Currants, Raspberries, Asparagus Plants, Sweet William, Polyanthus. 4000 2 and 3 years' Worked Apples, comprising the leading market sorts; 1000 2 and 3 years Worked Plums, &c.

May be viewed two days prior to the Sale, and Catalogues had on the Premises; and of Mr. J. WILLMER, Auctioneer, Surveyor, and Valuer, Springfield Nursery, Sunbury, S.W.

Notice.—Surplus Stock.

North Warnborough and Hartley Row Nurseries, near Odiham and Winchfield, Hants.

TO GENTLEMEN, NURSERYMEN, AND OTHERS ENGAGED IN PLANTING.

MR. ALFRED WHITE has received instructions from Mr. Stephen Shilling, to offer for positive and unreserved SALE by AUCTION, the greater portion of his NURSERY STOCK on the above named Grounds, consisting of large Evergreens of sorts, Deciduous Shrubs and Trees, American Plants, Standard and Dwarf Roses, Quick and Fruit Trees, the whole of which will be described in Catalogues, to be had 10 days previous to the Sale, which will commence on MONDAY, the 1st of December next, and the two following days, at North Warnborough Nursery.

On TUESDAY, December 9, will commence the Sale of Stock at the Hartley Row Nursery, and will continue the following day; by this arrangement it is hoped persons engaged in planting will have the opportunity of attending both Sales.

Further and all particulars may be had of Mr. STEPHEN SHILLING, at the Nursery, North Warnborough, and of Mr ALFRED WHITE, Auctioneer, Basingstoke and Odiham, Hants.

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Now ready, price One Shilling,

THE GARDENERS' YEAR BOOK,

ALMANACK, AND DIRECTORY FOR 1863.

BY ROBERT HOGG, LL.D., F.L.S.

Secretary to the Fruit Committee of the Royal Horticultural Society, and Co-Editor of *The Journal of Horticulture.*

This issue of the "Gardeners' Year Book" will be the most copious work of the kind that has hitherto appeared, and will contain, besides the matter usually found in Almanacks, a large amount of information on Gardening and Rural subjects useful to those engaged in such pursuits; Notices of all Horticultural, Floricultural, and Pomological Novelties; Select Lists of Plants, Flowers, Fruits, and Vegetables, and a Complete Directory of all the Nurserymen, Seedsmen, and Florists in Great Britain, Ireland, the Continent, and America.

London: JOURNAL of HORTICULTURE and COTTAGE GARDENER OFFICE, 162, FLEET STREET.

ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

NEW PARSNIP OF IMPROVED FLAVOUR,

"THE STUDENT."

"Ennobled" by Professor Buckman, and the Stock consigned to Messrs. SUTTON & SONS, who have now succeeded in raising sufficient Seed to offer it to the Public.

☞ In Packets at 2s. 6d., 1s., and 6d. each.

The Trade will be supplied on liberal terms, but to insure a supply early orders are requested.

N.B. The First Prize was awarded at the Royal Horticultural Society's International Show to some fine specimens of this Parsnip, raised from Messrs. SUTTON'S Seed, and exhibited by Mr. Choyce.

This was originated, or rather "ennobled," by Professor Buckman of the Royal Agricultural College, Cirencester, from the Wild Parsnip, a native of Britain.

Among his numerous experiments in the Botanical Gardens of the College, Professor Buckman has for successive years carried on the process of "ennobling" some of our native plants, from which he has gradually produced several valuable culinary vegetables of very superior flavour to the varieties in general cultivation.

The Student Parsnip is one of these, and will be found a great acquisition to the public when it is brought into general cultivation.

Having been favoured with the original stock of seed of this valuable plant two years since, and having had sufficient opportunities of testing its "fixedness" of character, as well as its superior flavour, we have this season raised a sufficient crop of seed to enable us to offer it in limited quantities to the public.

Extracts from the *Report of the Experimental Plots in the Botanical Garden of the Royal Agricultural College, at Cirencester.* By James Buckman, F.L.S., F.A.S., F.G.S., &c.

(As read before the British Association for the Advancement of Science at their Meeting in 1859.)

Page 29. Plot A[1] Parsnips in Seed.—This is a plot of my "ennobled" Wild Parsnips, experiments connected with which were reported upon in 1856. The last year's experimental plot was so fine that the whole of it was left for seed; while

Plot A[2] is a large piece of Parsnips in the kitchen garden from my seed of 1856. Here the new Parsnips promise to be very large and clean in the skin, the College gardener now preferring it to any other kind, as this new offspring of the insignificant wild root is much richer in flavour than the older varieties, which are wearing out in this respect. My roots now offer examples both of "Long Horn" and "Short Horn" varieties, so that another year I shall be enabled to save seed of two distinct and newly induced varieties.

From the *Annual Report for* 1860.

Page 37. Pastinaca sativa, Parsnip. — Our "ennobled" examples of these were considered so perfect, that it was thought advisable to consign the whole of the seed of 1859 to the Messrs. SUTTON of Reading, as new varieties of any cultivated crop plants are always desirable, and more especially when, as in the present case, the new form has been directly derived, not from a variety, but from the original wild stock. In reference to the continued success of this experiment, Mr. SUTTON reports in a letter of October 17 of this year as follows:—

"The 'Student' Parsnip in our trial ground is the finest shape of any, more free from fibres, and as large as the 'hollow crown,' which is a good medium size. The flavour seems to be very nice."

This is the more important, as of late this useful garden esculent has much fallen into disuse, its want of flavour being the assigned cause.

From the *Cheltenham Examiner*, Oct. 30, 1862.

"THE 'STUDENT' PARSNIP. — From the fact that this variety of Parsnip took the First Prize at the International Root and Fruit Show the first time it has been exhibited, a few notes upon its production may be interesting to our readers. In 1847 was collected some Wild Parsnip seed, growing among some bushes on the top of the Cotteswolds, where this is one of the most frequent of weeds. The seed, after having been carefully kept through the winter, was sown in a prepared bed in the spring of 1848, in drills about 18 inches apart. As the plants grew, they were duly thinned, leaving for the crop, as far as could be done, such specimens as had the broadest and smoothest leaves.

"The wild root is long, woody, and forked. The first crop from the wild seed presented great diversities in shape, being for the most part even more forked than the originals, but still with a decided tendency to fleshiness. Of these the best shaped were reserved for seeding, and having been kept the greater part of the winter in sand, some six of the best were planted in another plot for seed. The seed then of 1849 was sown in the spring of 1850 in a freshly prepared bed, the plants being treated as before; and so, following out the same plan one generation after another, a perfect root of a new shape, more delicate skin, freedom from disease, and a much better flavour, has been added to our list of garden esculents.

"The seed of this new variety is in the possession of the Messrs. SUTTON, of Reading, it having been consigned to them, not only to insure a healthful condition from change of air and soil, but in order to its distribution over the country."

The "Student" Parsnip was so named by the Professor himself.

SUTTON & SONS, Seed Growers, Reading, have the honour of introducing to the Horticultural Public, which they can do with the greatest confidence, this delicious and highly nutritive Vegetable, which will be cultivated more extensively not only in the gardens of the wealthy but also in those of the humble cottager. For this latter purpose we shall be glad to supply packets of seeds at reduced price to Clergymen and others who may wish to distribute them gratuitously.

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Cooper & Bolton, 152, Fleet Street, London
Carter & Co., High Holborn, London
Charlwood & Cummins, Tavistock Row, Covent Garden, London
Cattell, John, Westerham
Dicksons & Brown, Corporation Street, Manchester
Dickson & Sons, 102, Eastgate Street, Chester
Dickson, Hogg, & Robertson, 22, Mary Street, Dublin
Dickson, Francis & Arthur & Sons, 106, Eastgate Street, Chester
Dixon, E. P. & Son, 57, Queen Street, Hull
Drummond & Sons, 58, Dawson Street, Dublin
Ernst & Von Spreckelsen, Hamburg
Gibbs, Thomas, & Co., Corner of Half Moon St., Piccadilly
Garaway & Co., Durdham Down, Bristol
Hurst & Son, 6, Leadenhall Street, London
Nutting & Son, 10, Barbican, London, E.C.
Perkins, John, 52, Market Square, Northampton
Pope, Henry, Great Heath Nursery, near Birmingham
Smith, Richard, Worcester
Toole & Co., Westmoreland Street, Dublin
Turner, Charles, The Royal Nurseries, Slough
Veitch, James, jun., King's Road, Chelsea
Van Houtte, Louis, Ghent, Belgium
Wrench, Jacob, & Son, London Bridge
Wheeler, J. C. & Son, Gloucester
Wood & Son, Maresfield, near Uckfield

SUTTON & SONS, ROYAL BERKSHIRE SEED ESTABLISHMENT, READING.

Editorial Communications should be addressed to "The Editor;" Advertisements and Business Letters to "The Publisher," at the Office, 41, Wellington Street, Covent Garden, London, W.C.
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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 49.—1862.] SATURDAY, DECEMBER 6. {Price Fivepence. STAMPED EDITION, 6*d*.

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☞ *An Edition of the* GARDENERS' CHRONICLE *and* AGRICULTURAL GAZETTE *is published on Monday Afternoon at 4 o'Clock, containing full Reports of the Mark Lane and Cattle Markets, written expressly for the Paper.*

ROYAL HORTICULTURAL SOCIETY.
FLORAL COMMITTEE.
A MEETING of this Committee will take place on TUESDAY, December 9, at 12 o'clock. The subjects for Examination must be at South Kensington, for entry, by 11 A.M.
THOS. MOORE, Secretary to the Committee.

ROYAL HORTICULTURAL SOCIETY.
FRUIT COMMITTEE.
A MEETING of the Fruit Committee will be held at the Rooms, South Kensington, W., on TUESDAY, December 9, for the Examination of such FRUITS and VEGETABLES as may then be submitted for judgment, and when, besides Certificates of Merit for SEEDLINGS, the following Prizes will be awarded:—
CLASS A.—For the best three dishes of DESSERT APPLES, distinct kinds .. .. 20*s*. 10*s*.
" B.—Ditto ditto PEARS .. .. 20*s*. 10*s*.
" C.—Ditto dish of WHITE GRAPES .. .. 20*s*. 10*s*.
" D.—Ditto ditto BLACK .. .. 20*s*. 10*s*.
* All Packages and Communications must be received at the Rooms by 11 o'Clock on the day of Meeting, and addressed to ROBERT HOGG, LL.D., Secretary of the Committee.

Rose Catalogue.
PAUL AND SON'S CATALOGUE of ROSES for 1862 and 1863 is now ready. Post free on application.
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WILLIAM EPPS, JUN., can supply fine STANDARD ROSES, at 5*l*. per 100; 15*s*. per doz.
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Rose Catalogue, 1862-63.
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Rose and Bulb Catalogues for 1862-3.
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The *Gardeners' Chronicle* of August 23, 1862, says:—"The spikes you have sent us are magnificent. We have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."

CATALOGUES of their extensive Collection, for which the First Class Prize was awarded at the Crystal Palace Show, Sept. 3, 1862, and two First Class Prizes at the Royal Horticultural Society's Show, South Kensington, Sept. 10, 1862, will be forwarded on application.

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25 in 25 extra choice kinds	1	5	0
25 in 12 ,,	1	0	0
12 in 12 ,,	0	10	0

Newer varieties at proportionately low prices.—See List.
Fine mixed GLADIOLI, per 100, 17s. 6d.; per doz., 2s. 6d.
Carriage paid on orders over 10s.
LISTS free on application.

Woodlands Nursery and Seed Warehouse, Maresfield, Uckfield, Sussex.

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OSMUNDA REGALIS CRISTATA, 21s. each.

A Select LIST of the most rare kinds will be forwarded Post Free on application.

Dorking Nursery.

New Fern, Pteris nemoralis variegata.

WILLIAM COLE, Fog Lane Nursery, Withington, Manchester, the raiser of this beautiful and distinct NEW FERN, is now ready to supply good plants, and all orders will be executed in rotation.

It has been well described in the *Gardeners' Chronicle* of July 5, p. 620, where the writer speaks of it as "a curious and novel form of Variegated Pteris."

It was also reported on in the *Gardeners' Chronicle* of May 24, as follows:—"Among new Ferns, of which several were shown, was one from Mr. Cole, Nurseryman, Manchester, belonging to the Variegated Class, and as regards position, is intermediate between argyræa and tricolor, and is apparently a free grower."

W. COLE has great confidence in recommending it, and in stating that it is really a beautiful Fern, and one which will become exceedingly popular. 10s. 6d. each.

Price (very liberal terms to the Trade for 12, 50, or 100) on application.

DOBSON'S for NEW PELARGONIUMS.
DOBSON'S for SHOW PELARGONIUMS.
DOBSON'S for FANCY PELARGONIUMS.
DOBSON'S for SPOTTED PELARGONIUMS.
DOBSON'S for NEW CINERARIAS.
DOBSON'S for PRIZE CINERARIAS.
DOBSON'S for PANSIES.
CATALOGUES Free.

J. DOBSON & SONS, Woodlands Nursery, Isleworth.

RHODODENDRON VERSCHAFFELTII.—All the amateurs who last summer saw this splendid hardy variety in my nursery are of the same opinion—that it is the best variety in that way. Colour very delicate roso-violet, with extraordinary large and numerous black spots; an excellent form; beautiful foliage, very free and late bloomer, and particularly quite hardy.

Fine Plants, with branches, 1 to 1½ feet high, 12s. each.
ditto ditto and buds, 1½ to 2 ft. high, 20s. each

N.B. A correct drawing has appeared in VERSCHAFFELT'S "Illustration Horticole."

The GENERAL CATALOGUE can be obtained free by writing.

AMBROISE VERSCHAFFELT, Nurseryman, Ghent, Belgium.

NONE IS GENUINE UNLESS THE FOLLOWING TRADE | PEDIGREE | MARK. IS UPON THE BAG. TO IMITATE THIS IS FORGERY.

THE PEDIGREE WHEAT IS THE BEST KNOWN FOR LATE AUTUMN AND SPRING SOWING.

SEE STAND No. 60, SMITHFIELD CLUB SHOW.

HALLETT'S PEDIGREE NURSERY WHEAT.

1861, ACTUAL SIZE AFTER FOUR YEARS' REPEATED SELECTION, STARTING FROM A SINGLE GRAIN IN EACH YEAR.

Price **ONE GUINEA A BUSHEL**, including bag sewed up and sealed, delivered at the Brighton Railway Station, with Printed Directions for Planting, on receipt of Cheque or Post Office Order, which must in all cases accompany the Order.

Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

APPLY TO FREDERIC F. HALLETT, ESQ., F.L.S., THE MANOR HOUSE, BRIGHTON, SUSSEX.

Prize Medal Seed Wheat.—International Cereal Show.

THE PRIZE MEDAL WAS AWARDED TO

MESSRS. RAYNBIRD, CALDECOTT, AND BAWTREE, for the BEST SAMPLE of RED WHEAT, for their sample of RED NURSERY WHEAT, by a jury consisting of some of the most eminent Corn Factors from Mark Lane and Agriculturists of the day.

This Wheat is remarkable for its fine quality, weight, and hardiness, and is one of the most productive upon poor soils and in exposed situations; it may be sown at any time from October to March.

Bulks of similar fine quality to the Prize sample, for cash only, at 80s. per Quarter.

Address, Basingstoke.

PRIZE GOURDS and MAIZE.—Removed from the Horticultural Society's Garden and now on Exhibition at our Establishment, that visitors may have the opportunity of inspecting the most valuable, beautiful, and varied Collection of Ornamental and Edible GOURDS ever seen in this country. See Large Advertisement, p. 1070.

BARR & SUGDEN, Seed Merchants, 12, King Street, Covent Garden, W.C.

NUTTING'S selected DWARF-RED BEET, recommended by the Horticultural Society as the best in Cultivation. (The original Stock.) Price to the Trade on application.

NUTTING & SONS, Seed Warehouses, 60, Barbican, London, E.C.

New Celery, Williams's Matchless Red.

B. S. WILLIAMS, Paradise Nursery, Holloway, N., has much pleasure in offering the above superior solid RED CELERY, feeling confident it will give satisfaction. It is perfectly hardy, a strong grower, very solid and crisp, and a most delicious flavour. It has been taken up for use quite the end of April without having the least tendency for running to seed. From the testimonials received it is unquestionably the best Red Celery in cultivation. In sealed packets, 2s. each.

Extra Strong Seakale for Forcing or Planting.

GEORGE CLARKE has to offer some very fine clean SEAKALE, quite equal to that which he sent out last season, and which gave such great satisfaction. The diameter of the roots is 2 to 3 inches, and for forcing it cannot be surpassed. Prices forwarded on application.

Samples can be seen at his Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill, S.

Myatt's Early Prolific Ash-leaved Kidney Potatoes.

H. AND F. SHARPE are now taking orders for the above, which has this season proved itself to be the earliest and most prolific Potato in cultivation, and as fine a quality as any of the Early Kidney varieties. Having a good stock they can offer them at a low price to the Trade.

Also JACKSON'S ASH-LEAVED KIDNEY, WALNUT LEAVED KIDNEY, and all the early Round varieties at equally low prices, which may be had on application.

Seed Growing Establishment, Wisbech.

DAINTREE'S EARLIEST SEEDLING POTATO.—The earliest and most prolific round variety in cultivation, verified by reports in the various papers, and by private reports from all parts of the country, numbers of which will be forwarded on application. Present price, 8s. per Bushel, or 12l. per Ton; sacks 1s. 6d. each.—Apply to Mr. SIMON A. DAINTREE, Fendrayton, St. Ives, Hunts.

N.B.—Genuine Italian Rye grass, and all the Agricultural Seeds of home growth, supplied as usual.

TO GROWERS, MERCHANTS, and SHIPPERS of POTATOES.—It having been reported that I had retired from the BUSINESS of a POTATO SALESMAN, I beg publicly to say that I have not retired therefrom, nor even ever contemplated doing so, but still carry on and intend to carry on my said Business at No. 17, Duke Street, London Bridge, Southwark, S.E., and elsewhere, as I have heretofore done for the last 30 years past, and I respectfully solicit a continuance of those favours which have been so liberally and kindly bestowed upon me during the above period; and I beg to assure those who may entrust their Potatoes to me for Sale that they may depend upon my continued personal attention and exertions in their interests. Thanking my friends for past favours.

I remain, Gentlemen, yours respectfully,
ALEX TOD,
17, Duke Street, London Bridge, S.E., Late GREGORY & TOD.
Nov. 28.

SCOTT'S CATALOGUES.

No. 1.—FRUIT CATALOGUE and FRUIT TREE CULTIVATOR'S DIRECTORY describes nearly 800 of the best and most esteemed of our Fruits, with copious Observations and Directions about their Cultivation; the formation of Pyramids, Root Pruning, and other matter interesting to lovers of fine Fruit. Price 7d.
No. 2.—The BULB, WINTER, and SPRING BEDDING PLANT CATALOGUE, 18 pages.
No. 3.—The DESCRIPTIVE CONIFEROUS CATALOGUE, 25 pages.
No. 4.—The ROSE CATALOGUE, 22 pages.
No. 5.—The SELECT NURSERY STOCK, 15 pages.
In December, the VEGETABLE and FLOWER SEED CATALOGUE.
In April, the SUMMER BEDDING CATALOGUE, 72 pages.

Apply to J. SCOTT, Merriott, Crewkerne, Somerset.

AN AVENUE of WELLINGTONIAS.—Gentlemen wishing to plant an avenue of this GLORY OF THE FOREST would do well to inspect the Stock at the Sunningdale Nursery. They may select from thousands.

RHODODENDRONS of every hue, Scarlet, White, Crimson and Purple.—Gentlemen about to plant would consult their interest by an inspection of the Stock of Rhododendrons at the Sunningdale Nursery. They may select from hundreds of thousands.

COVER PLANTING.—Gentlemen about to plant for Cover would find the following plants worth a trial:—BERBERIS JAPONICA, COTONEASTER MICROPHYLLA, and RHODODENDRONS. A visit to the Sunningdale Nursery would not be uninteresting.

ROSES, Standards and Dwarfs, a very fine selection, in the most vigorous health, may be seen at the Sunningdale Nursery.

ROSES for FORCING, specially prepared, and calculated to give an abundant supply of Flowers during winter. All the finest kinds may be selected at the Sunningdale Nursery.

CONIFERS.—A fine Stock of well grown Plants of all the most interesting and really hardy Conifers, Evergreens, &c., may be seen at the Sunningdale Nursery, Sunningdale Station, S. W.

CHARLES NOBLE.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, popular and botanical names, derivations, description, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious Index of all their synonymes. Free by post for postage stamps.
RICHARD SMITH, Nurseryman, Worcester.

N. LAWRENCE'S NEW DESCRIPTIVE CATALOGUE, including Seedling and Transplanted Forest Trees, Ornamental Trees and Shrubs, Evergreens, Roses, Fruit Trees, &c., is now ready, and will be sent on application.
Nurseries, Chatteris.

FOR SALE, very cheap, Two Handsome VARIEGATED HOLLIES.
Apply to Mr. HUNT, 2, Langford Place, Abbey Road, St. John's Wood, N.W.

To the Trade.

JAMES GARAWAY AND CO. have large quantities to offer of

ASH | OAK
BEECH | SPRUCE FIR

Prices and Sizes on application.
Durdham Down Nurseries, Bristol.

3000 DEODARS, 1000 CUPRESSUS LAWSONIANA, 1000 C. MACROCARPA, 500 THUJA LOBBII. The above are offered very cheap. The Deodars are handsome well grown plants, from 2½ to 5 feet, and have been transplanted every autumn for the last five years. The others are fine healthy plants, varying from 2 to 5 feet high.
Prices on application to J. SCOTT, Merriott, Crewkerne, Somerset.

Larch, Quicks, &c.

GEORGE CHIVAS, Chester, offers FOUR MILLIONS of TRANSPLANTED LARCH, from 1½ to 3 feet, of very superior quality. FOUR MILLIONS of TRANSPLANTED THORNS of various sizes, a large portion of which are exceedingly strong. Orders for 10,000 of either, delivered free at any Railway Station. A Sample Bale, containing 100 of each, 5 sizes of Larch, 22s 9d., and of Quicks, will be forwarded on receipt of a Post-office Order from unknown Correspondents.
A General PRICED LIST on application.

W. VIRGO AND SON have a very large quantity of strong 2 and 3 years Transplanted QUICK; also 1 year Seedling QUICK. Strong Evergreen Privet of various sizes, Standard and Dwarf Roses, Dwarf-trained Cherries of various sorts, English Oak, 3 to 4 feet; Turkey Oak, 6 to 8 feet; Weymouth Pine Fir, 3 to 7 feet; Laburnum, 5 to 7 feet; Mountain Ash, 5 to 7 feet; Berberis aquifolia, 9 inches to a foot; Common Laurel, 2 to 3 feet; Yew, 2 to 3 feet; Box Edging in large quantities.
Prices, with samples, can be had on application at the Nursery, Wonersh, near Guildford, Surrey.

To Nurserymen and Others.
TRANSPLANTED FOREST TREES.

ALEXANDER LAING, NURSERYMAN, Beverley, begs to offer the undermentioned TREES, which are well grown, and lift with fibrous roots. A. L. offers them at such prices as he thinks will effect a speedy clearance, having grown upon grounds that must be cleared this winter. A remittance must accompany the order to unknown Correspondents:—

	per 100.—s. d.			per 100.—s. d.
SPRUCE FIR (fine), 1 foot	10 0	OAK,	1 to 1½ ft. ..	9 0
" 1 to 1½ ft. ..	16 0	"	1½ to 2 ft. ..	18 0
" 1½ to 2 ft. ..	25 0	"	2½ to 3 ft. ..	25 0
		"	3 to 4 ft. ..	35 0

THORNS or QUICK, 3 years, 2 to 3 feet, 18s.
LARCH FIR, 2 to 2½ feet, 17s.
Nurseries, Beverley.—Dec. 6.

To Noblemen, Gentlemen, and Others engaged in Planting.

GEORGE BAKER begs to invite attention to the following superb specimens, which are in the finest condition:—

ARAUCARIA IMBRICATA, 6 feet, 9 feet, 14 feet
ABIES DOUGLASII, 10 feet, 14 feet, 20 feet
ARBOR-VITÆ (Siberian), 6 feet, 8 feet
CEDRUS DEODARA, 6 feet, 8 feet, 10 feet, 12 feet, 20 feet
CUPRESSUS LAWSONIANA, 5 feet
" DISTICHA, 8 feet, 12 feet
CEDRUS LIBANI, 8 feet, 10 feet
CHINESE JUNIPER, 5 feet, 6 feet
IRISH YEWS, 6 feet, 8 feet
JUNIPERUS RECURVA, 8 feet
" BEDFORDIANA, 5 feet, 6 feet
PICEA CEPHALONICA, 11 feet
PINUS CEMBRA, 7 feet, 10 feet
" EXCELSA, 10 feet, 15 feet
TAXODIUM SEMPERVIRENS, 10 feet, 12 feet
THUJA GIGANTEA, 6 feet
WELLINGTONIA GIGANTEA, 5 feet
KALMIA LATIFOLIA, Standards, fine
RHODODENDRONS,
PORTUGAL LAURELS,

G. B. in offering the above perfect specimens feels assured that whoever may favour him with their kind orders, their hopes will be fully realised. Prices on application.
American Nursery, Windlesham, Bagshot, Surrey.

COCOA-NUT REFUSE, as used for FERNS, BEGONIAS, &c., grown in the International Exhibition, delivered at any Booking Office in the City at 1s. 6d., or within 5 miles of Charing Cross, at 2s. per bag of 3 bushels. Larger quantities on lower terms on application to the PATENT COCOA FIBRE COMPANY, Kingston-on-Thames, S.W.
Also SHORT FIBRE for Orchids and Drainage in pots.
Postage Stamps or Post-office Orders payable to J. BARSHAM & Co.

BARSHAM'S BRUSHES and MATS are the best and most economical of any that are made, and are sold in every town in the Kingdom.
CAUTION.—See that every Brush is stamped "J. BARSHAM'S Patent, Kingston-on-Thames."

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.
Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.
To be obtained of F. & G. ROSHER, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11l. 11s. per Ton for cash.
PETER LAWSON & SON, 28, King Street, Cheapside; and 15, Lawrence Lane, E.C.

THE LONDON MANURE COMPANY have now ready
PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
BLOOD MANURE for ditto.
SUPERPHOSPHATES of LIME, &c.
All the above being in the finest condition. They also continue to supply
GIBBS'S PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of known value. E. PURSER, Secretary.
116, Fenchurch Street, E.C.

Autumn Sowing.

THE PATENT NITRO-PHOSPHATE or BLOOD MANURE COMPANY (LIMITED), consisting of Tenant Farmers occupying upwards of 30,000 Acres of Land.

Managing Director.—JAMES ODAMS.
Secretary.—C. T. MACADAM.

Offices: 109, Fenchurch Street, London, E.C.
Manufactory: Plaistow Marshes, Essex.

This Manure has been in use for upwards of 10 years, and has given great satisfaction to consumers. It is specially prepared for Autumn Sowing, and on most soils proves as effective as the best Peruvian Guano.
Orders may be sent to the Company's Agents throughout the country, or direct to C. T. MACADAM, Secretary.
Price 7l. 10s. per Ton, delivered at any Railway or Wharf in London.
Offices: 109, Fenchurch Street, London, E.C.

Autumn Sowing.

BLOOD MANURE, for Wheat, Barley, &c., 7l. 5s. per Ton; ANIMAL MANURE, for Wheat, Barley, &c., 7l. per Ton, Cash, in Bags. PREPARED BONE MANURE, for Grass, &c.; NITRO and SUPERPHOSPHATES, &c.
All the above, being in fine condition, will be sent to any of the Railway Stations between Hul and London, Carriage paid. RICHARD STEPHENSON, Sculcoates Blood Manure Works, Hull.
N.B. The Blood and Animal Manures are specially recommended to Florists and Horticulturists for Vegetables, Standard and other Fruit and Flower Trees, &c., being the best Manures known for those purposes.

LAWES'S WHEAT MANURE for AUTUMN SOWING.
In consequence of the high price of Peruvian Guano, J. B. LAWES has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of J. B. LAWES, or through any of his appointed Agents. Price 8l. per ton at the Factories, Deptford and Barking Creeks.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.

Extract of Opinion from MR. WAY, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."

Extract of Opinion from DR. VOELCKER, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."

The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

H. APPLEBY'S GENUINE TOBACCO PAPER is sold in 4 lb. packets, 1s. 3d. per lb. Carriage paid to London.
N.B. Post-office orders payable at Dorking, Surrey.

Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of GEO. GLENNY, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP,
1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.
Both may be obtained of all principal Seedsmen.
Patentee: J. NEAL, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.
This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.
Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.
Wholesale by
PRICE'S PATENT CANDLE CO., Limited.

WINTER DRESS all FRUIT TREES with GISHURST COMPOUND.

Copy of a Letter from Mr. RIVERS, Nurseries, Sawbridgeworth, Herts, January 9, 1862.
"I think you should prominently mention the great benefit Wall Trees of all kinds derive from a dressing of the Compound applied in January, it is so very beneficial. THOS. RIVERS."

From the Same, October 22, 1861.
"I must tell you what I heard to-day from a very clever gentleman farmer, Anthony Bubb, Esq., of Witcombe Court, Gloucester. He has a Wall to which Peach Trees are trained. Well, last autumn they were in a wretched blighted state. As a desperate remedy he unnailed them all early last February, and gave all but one a thorough painting with GISHURST COMPOUND, 1 lb to the gallon of water; his trees, all but the one, commenced to grow favourably in spring and are now pictures of health. The tree not painted is in a half dead blighted state. He used the same dressing to his Apple Trees; it killed the woolly aphis entirely, and has made his Trees clean and vigorous in their growth. He intends to paint his Wall Trees annually, and tells all his friends to do the same. I shall certainly serve all my young Peach Trees against my walls in the same manner. The Compound is, I believe, more efficacious than the usual offensive mixtures of clay, soot, sulphur, &c., and it does not blacken the shoots on the walls. Unless trees are completely at rest, 6 to 8 ounces to the gallon of soft water is the best strength, and sufficiently strong to destroy eggs and insects."
GISHURST COMPOUND is Sold Retail by Nurserymen and Seedsmen, in Boxes, 1s., 3s., and 10s. 6d. each; Wholesale by PRICE'S Patent Candle Company Limited,
Belmont, Vauxhall, London.

Notice.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), HORTICULTURAL VALUER, begs to inform his friends and the public that he has REMOVED from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

Landscape and Ornamental Gardening.

MR. J. W. CHAPMAN undertakes the Laying-out and Alteration of Gardens and Pleasure Grounds, Forming and Thinning Plantations, and the general Improvement of Estates.
Plans and Drawings for all these purposes are furnished.
Hermitage Road, Richmond, Surrey, S.W.

Glass for Garden Purposes.

JAMES PHILLIPS AND CO. beg to submit their prices as follows:—

PROPAGATING GLASSES.

	Each—s. d.		Each—s. d.
2 inches diameter ..	0 3½	12 inches diameter ..	1 9
3 " " ..	0 4½	13 " " ..	2 0
4 " " ..	0 5½	14 " " ..	2 6
5 " " ..	0 6½	15 " " ..	3 0
6 " " ..	0 8	16 " " ..	3 6
7 " " ..	0 10	17 " " ..	4 0
8 " " ..	1 0	18 " " ..	5 0
9 " " ..	1 2	19 " " ..	6 0
10 " " ..	1 4	20 " " ..	7 0
11 " " ..	1 6		

HYACINTH and FLOWER DISHES.
6 ins. diameter, 1s. each; 9 ins. diameter, 1s. 6d. each.
12 ins. diameter, 2s. 6d. each.

Hyacinth Dishes are a new article, intended to contain a number of roots bedded in sand and covered with moss, instead of the common Hyacinth Glass.

HYACINTH GLASSES.
Improved shape .. 4s. 6d. | Common ditto .. 3s. 6d.
Patent ditto .. .. 6s. 6d. per dozen.

CROCUS GLASSES .. 2s. 0d. per dozen.

HAND GLASSES.

	Each—s. d.		Each—s. d.
12 inches ..	6 0	18 inches ..	9 0
14 " ..	7 0	20 " ..	10 0
16 " ..	8 0	24 " ..	12 0

Painted and Glazed with 16 oz. Sheet Glass.
If Open at Top, 1s. extra.
180, Bishopsgate Street Without, London, E.C.

Glass.

THOMAS MILLINGTON
HORTICULTURAL WAREHOUSE,
87, Bishopsgate Street Without, London, E.C.
ESTABLISHED 1750.
NEW REDUCED TARIFF.

SMALL SHEET SQUARES.

Best. 2nds. 3rds. 4ths. } Per 100 feet
20s. 16s. 12s. 6d. 11s.

6 in. by 4 in.	9½ in. by 7½ in.	14 in. by 10 in.
6½ " by 4½ "	10 " by 8 "	15 " by 10 "
7 " by 5 "	11 " by 9 "	12 " by 11 "
7½ " by 5½ "	12 " by 9 "	13 " by 11 "
8 " by 6 "	13 " by 9 "	13½ " by 11½ "
8½ " by 6½ "	12 " by 10 "	
9 " by 7 "	13 " by 10 "	

Best. 2nds. 3rds. 4ths. } Per 100 feet
23s. 18s. 6d. 14s. 6d. 12s. 8d.

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 " by 11 "	17 " by 12 "	22 " by 15 "
17 " by 11 "	18 " by 12 "	24 " by 15 "
18 " by 11 "	22 " by 12 "	20 " by 16 "
13 " by 12 "	17 " by 13 "	20 " by 17 "
14 " by 12 "	23 " by 13 "	20 " by 18 "
15 " by 12 "	22 " by 14 "	

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers & others

	Best.	2nds.	3rds.	4ths.	
16 oz.	22s. 0d.	18s.	15s. 0d.	12s. 6d.	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

20 in. by 12 in. | 20 in. by 13 in. | 20 in. by 14 in. | 20 in. by 15 in.

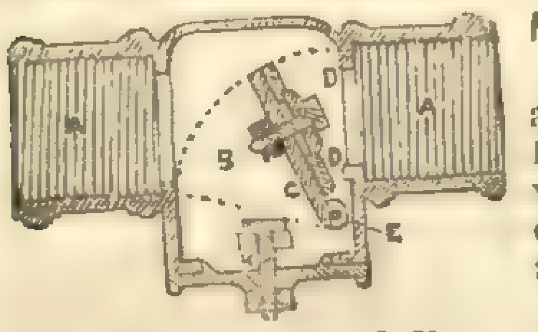
GLASS, cut according to size not on the List.
16 oz. 4ths. 1¾d. 2d. and 2½d. per foot.
" 3rds. 2¼d. 2½d. and 3d. "
21 oz. 4ths. 2¾d. 3d. and 3½d. "
" 3rds. 3½d. 4d. and 4½d. "
Various thicknesses of Sheet Glass to the foot.

15 oz. 26 oz.
21 oz. 32 oz.

Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.
Genuine White Lead, 22s. p. cwt | Linseed Oil Putty, 8s. per cwt.
Anticorrosion Paint, 34s. .. | Patent Dryers, 28s. to 42s. "
CRYSTAL GLASS SHADES. EBONY and GILT STANDS.
HARTLEY'S IMPROVED PATENT ROUGH PLATE.
*** Not accountable for breakage.
SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

Card.

SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool.
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.



T. G. MESSENGER, Horticultural Builder and Engineer, Loughborough, has recently patented a VALVE which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under. Two-inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s. A liberal discount to the Trade.
These Valves can be obtained in London of Mr. J. Jones, 6, Bankside, S.E.

West of England, Ireland, and Wales.

VINCENT SKINNER (late Partner with J. Weeks & Co.), Horticultural Builder and Hot-Water Apparatus Manufacturer. HEATING on the ONE-BOILER SYSTEM. Plans and Estimates on application.
Vincent Skinner, Bridewell Street, Bristol.

MANUFACTORY at Nos. 369 to 375, EUSTON ROAD, N.W. (near the Regent's Park).

The Present Stock Comprises—

246 different kinds of VASES.
94 STATUES and FIGURES of CHILDREN.
70 FIGURES of ANIMALS and BIRDS.
About 200 FOUNTAINS, at prices from £10 to £400.
15 BASKETS, from 1 to 10 feet diameter.
17 FLOWER BASKETS, for Windows, &c.
6 GARDEN SEATS, of Architectural Design.
22 SUN-DIAL PEDESTALS.
22 ORNAMENTS for GATE PIERS.

And a great variety of BALUSTRADING and PEDESTALS.

GREEN'S

LATEST IMPROVEMENTS IN

LAWN MOWING, ROLLING, and COLLECTING MACHINES,

FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

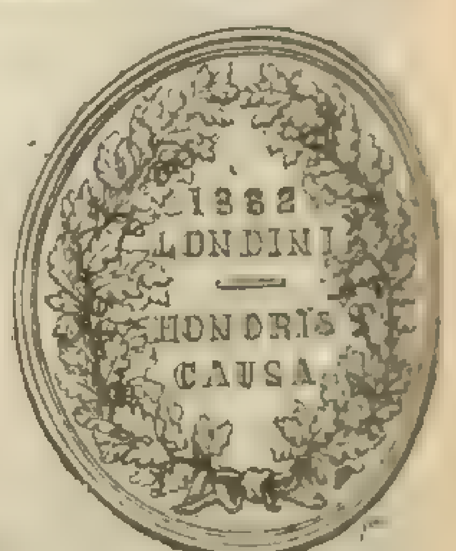
These Machines have carried off every Prize that has been given in all cases of competition, and have been awarded the PRIZE MEDAL at the INTERNATIONAL EXHIBITION of 1862.

GREEN'S IMPROVED NEW PATENT GARDEN ROLLERS.

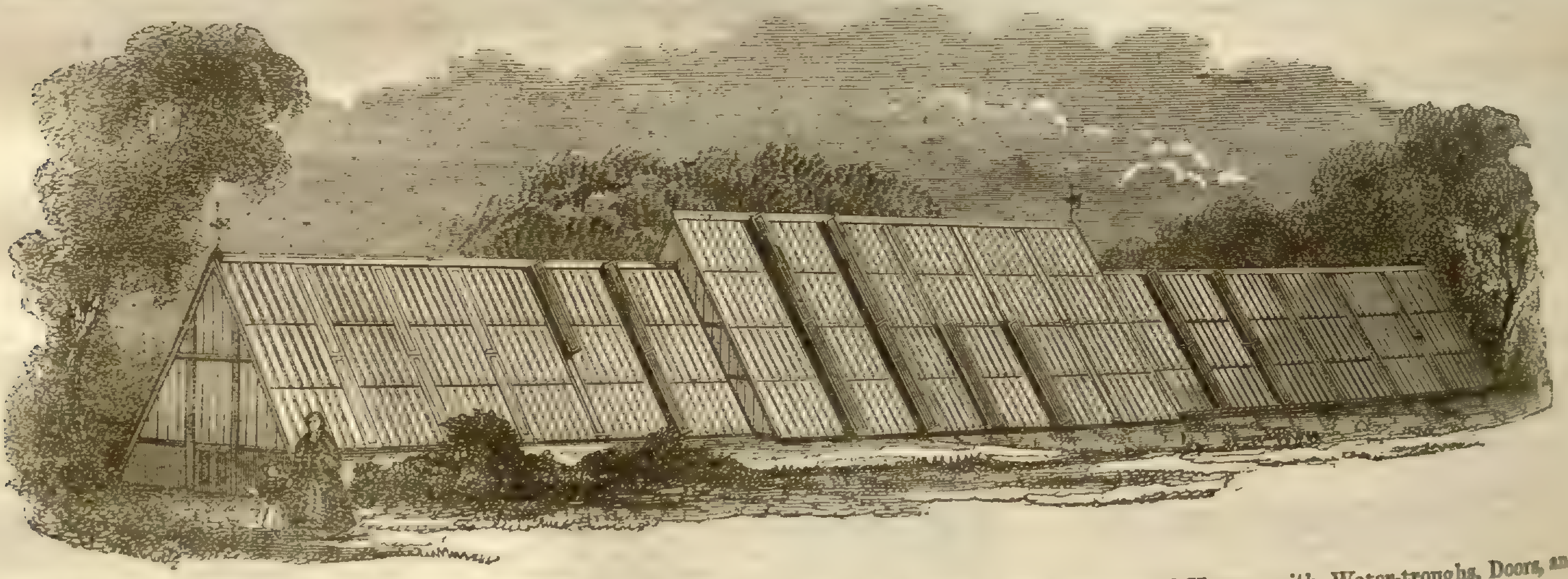
For Illustrated Price Lists, with full particulars, address

T. GREEN, SMITHFIELD IRON WORKS, LEEDS; and 2, VICTORIA STREET, HOLBORN HILL, E.C.

HOTHOUSES FOR THE MILLION.



AT THE INTERNATIONAL EXHIBITION, 1862,
AWARDED A PRIZE MEDAL.
ON THE PRINCIPLE INVENTED AND PATENTED BY
SIR JOSEPH PAXTON, M.P.
COMBINING SIMPLICITY, CHEAPNESS, EXCELLENCE, AND DURABILITY,
BEING CAPABLE OF FULFILLING IN THE MOST PERFECT MANNER ALL THE REQUIREMENTS OF HORTICULTURE.



The Cash Prices of Lean-to Houses, with Water-troughs, Doors and Ends complete, are as follows:—

Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£12 0 0	£16 0 0	£21 0 0	£28 10 0	£34 5 0
31 3 in length	16 10 0	21 2 6	26 10 0	37 12 0	45 16 0
41 11 in length	20 18 0	26 18 6	33 7 6	46 14 0	57 7 0
52 7 in length	25 12 6	32 15 0	40 5 0	55 16 0	68 18 0
63 3 in length	30 6 0	38 10 0	47 2 6	64 18 0	80 10 0
73 11 in length	34 12 6	43 15 0	53 7 6	74 0 0	92 0 0
84 7 in length	39 6 0	49 11 6	60 5 0	83 2 0	103 11 0
95 3 in length	43 19 0	55 10 0	67 2 6	92 5 0	115 2 0
105 11 in length	48 17 6	60 12 6	73 10 0	101 10 0	126 13 0

The Cash Prices of the Span-roofed Houses, with Water-troughs, Doors, and Ends complete, are as follows:—

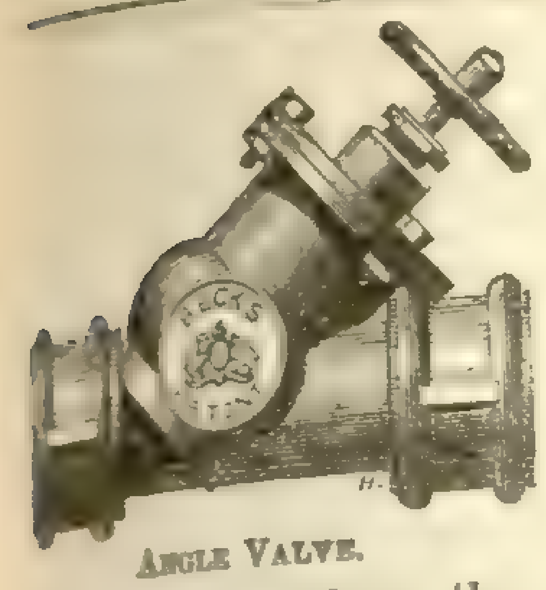
Ft. In.	8 ft. Lights	10ft. Lights	12ft. Lights	14ft. Lights	16ft. Lights
20 7 in length	£24 0 0	£32 0 0	£42 0 0	£57 0 0	£68 12 [illegible]
31 3 in length	33 0 0	42 5 0	53 0 0	75 4 0	91 10 [illegible]
41 11 in length	41 16 0	53 17 0	66 15 0	93 8 0	114 14 [illegible]
52 7 in length	51 5 0	65 10 0	80 10 0	111 12 0	137 10 [illegible]
63 3 in length	60 12 0	77 0 0	94 5 0	129 16 0	161 0 [illegible]
73 11 in length	69 5 0	87 10 0	106 15 0	148 0 0	184 0 [illegible]
84 7 in length	78 12 0	99 3 0	120 10 0	166 4 0	207 2 [illegible]
95 3 in length	87 18 0	111 0 0	134 5 0	184 10 0	230 4 [illegible]
105 11 in length	97 15 0	121 5 0	147 0 0	203 0 0	253 6 [illegible]

If only one end is required a corresponding deduction will be made. The 14 and 16 feet lights are made stronger than those of less dimensions.

Circulars with Lists of Prices and Cards to view houses in operation in the neighbourhood of London, also Estimates for Heating and Erection complete, can be had on application to

SAMUEL HEREMAN, 7, PALL MALL EAST, LONDON, S.W.

A HANDBOOK of VINE and FRUIT TREE CULTIVATION, as adapted to the above Patent Hothouses, may be had of Mr. Hereman, price 1s.; post free, 1s. 1d.



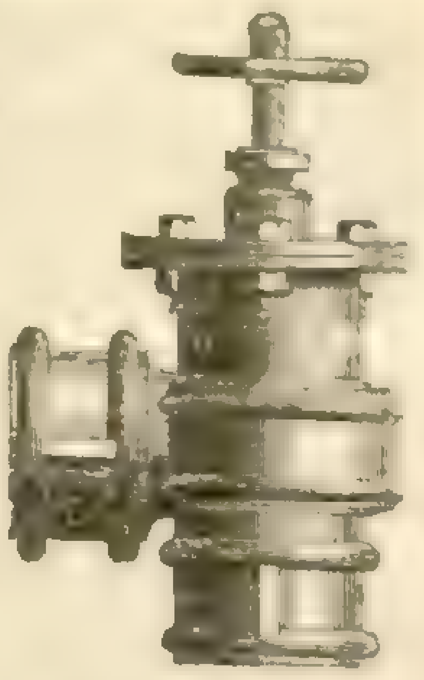
ANGLE VALVE.

INTERNATIONAL EXHIBITION, 1862.
CLASS VIII., No. 1796.—Honourable Mention for "Valves and Cocks."—Jurors' Awards.

BECK'S IMPROVED PATENT HOT-WATER VALVES

Upwards of 3000 in use.

The above fact shows the decided superiority of BECK'S VALVES over every other description at present in use.



HORIZONTAL PASSAGE.

BECK'S IMPROVED THROTTLE VALVES.

☞ *A liberal Discount to the Trade.*

JOHN BECK,

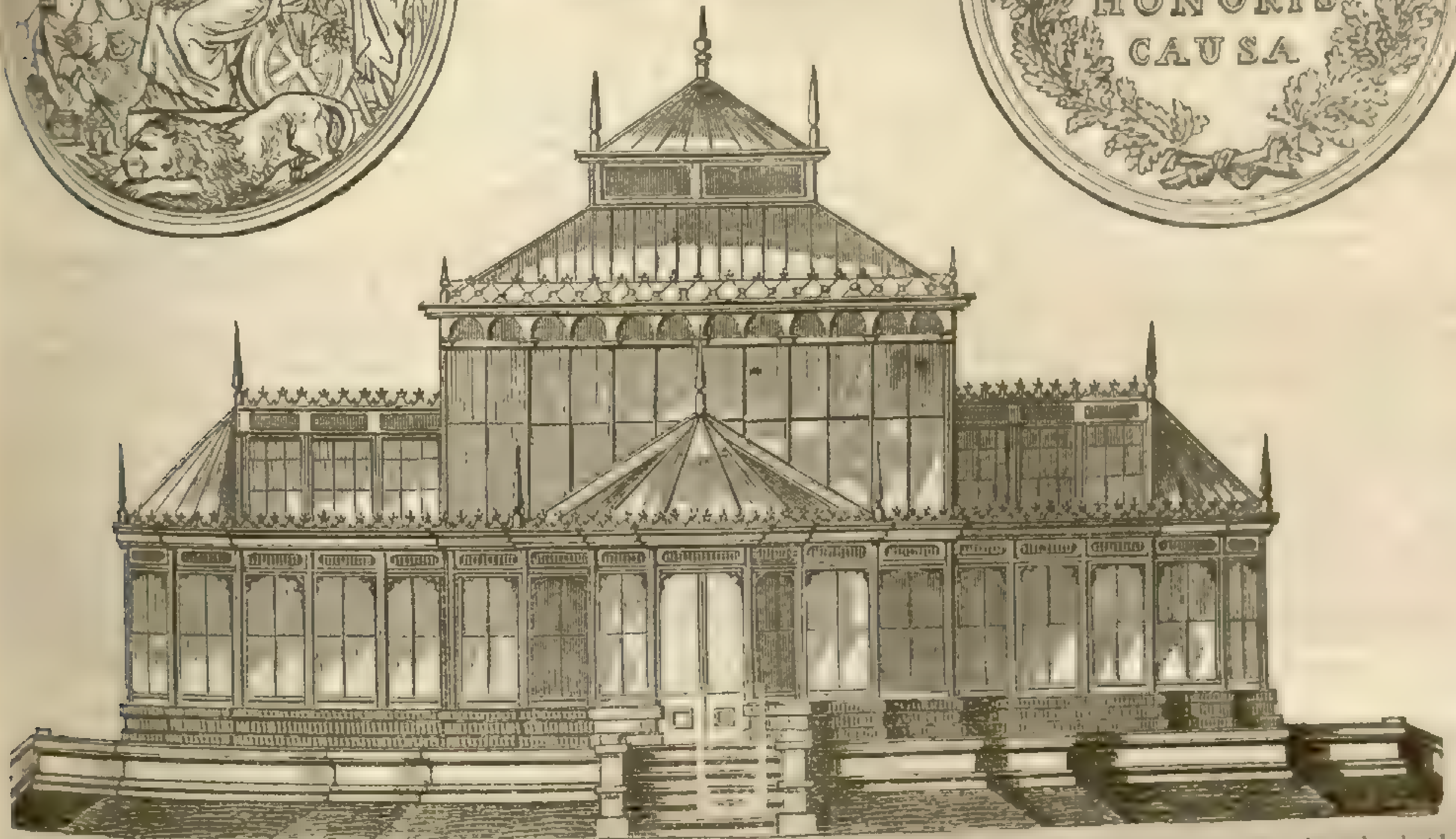
PATENTEE and MANUFACTURER of HYDRAULIC, GAS, and STEAM VALVES, WATER CLOSETS, PUMPS, BATHS, LAVATORIES, URINALS, &c.,

133, GREAT SUFFOLK STREET, BOROUGH, LONDON, S.E.

⁂ Specimens may be seen at the Architectural Exhibition, 9, Conduit Street, Regent Street, W.

JOHN TAYLOR & SONS,
HORTICULTURAL BUILDERS AND ENGINEERS,
HARROW ROAD, LONDON, W.

INTERNATIONAL EXHIBITION,
CLASS IX., 2191.
PRIZE MEDAL
For CONSERVATORY,
DOUBLE CHAMBER CORRUGATED
and HORIZONTAL
TUBULAR BOILERS.



J. TAYLOR AND SONS call the attention of the Nobility and Gentry to the very superior manner in which they erect CONSERVATORIES, VINERIES, FORCING, FRUIT, and PLANT HOUSES of every description, combining the most modern improvements with elegance of design and durability of materials and workmanship.

Our VENTILATING APPARATUS for the Roofs and Fronts of Horticultural Buildings, &c., supersedes any now in use, as being the most simple and effective in its action.

Our system of HEATING APPARATUS for Churches, Public Buildings, Mansions, Schools, Offices, Baths, Horticultural Buildings, &c., is particularly worthy of notice, we having for many years devoted especial attention to this branch. The great variety of work which has passed through our hands has gained us such experience in the mechanical details as to insure success and entire satisfaction in any undertaking entrusted to our care.

The superiority of our DOUBLE-CHAMBER CORRUGATED and HORIZONTAL TUBULAR BOILERS has caused them to be acknowledged as the best now in use, being both powerful and rapid in action.

See CONSERVATORY, BOILERS, &c., exhibited at the International Exhibition, Class 9 (2191), Open Court, Eastern Annexe.

ADOPTED VERY LARGELY BY HER MAJESTY'S GOVERNMENT.

CROGGON'S PATENT ASPHALTE ROOFING FELT,

Price 1*d.* per square foot.

INODOROUS FELT, for Damp Walls and for Damp Floors under Carpets and Floor Cloths, also for LINING IRON HOUSES to equalise the temperature. Price 1*d.* per square foot.

PATENT FELTED SHEATHING, for Covering Ships' Bottoms, &c.

DRY HAIR FELT, for deadening Sound and covering Steam Boilers, Pipes, &c., preventing the Radiation of Heat, thereby SAVING 25 PER CENT. IN FUEL.

CROGGON & CO.,
ZINC MERCHANTS AND PERFORATORS,
GALVANISED TINNED IRON, and every description of GALVANISED IRON WORK.

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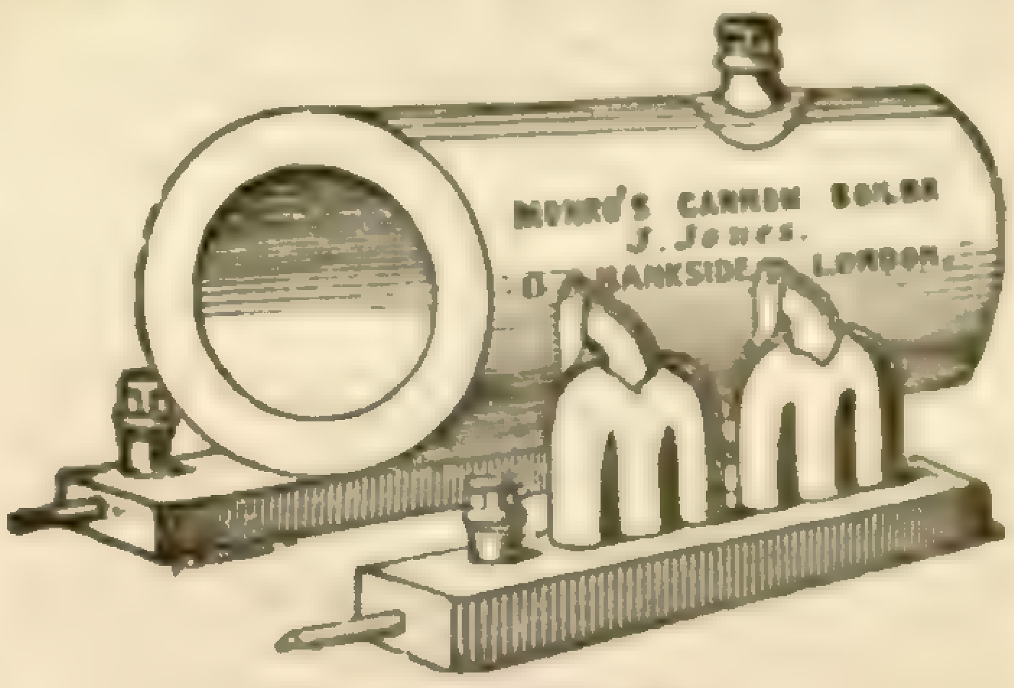
NOISELESS ELASTIC KAMPTULICON, or INDIA-RUBBER FLOOR CLOTH, Impervious to Wet, Indestructible by Damp, Soft to the Tread, and Warm to the Feet, well adapted for Aisles of Churches, Public Offices, Rooms, Shops, &c., as well for its comfort as extreme durability.

Samples, Testimonials, and full particulars, free, on application to

2, GOREE PIAZZAS, LIVERPOOL; or 2, DOWGATE HILL, LONDON, E.C.

HEATING BY HOT WATER.



MONRO'S CANNON BOILER.

J. JONES,

HORTICULTURAL ENGINEER AND IRON MERCHANT,

SUPPLIES OR ERECTS, COMPLETE,

HOT-WATER APPARATUS

OF EVERY DESCRIPTION,

FOR

HEATING GREENHOUSES,
CONSERVATORIES,
FORCING PITS,
CHURCHES, CHAPELS, SCHOOLS,
HALLS,
BILLIARD ROOMS,
COACH HOUSES, HARNESS ROOMS, &c.,

OF THE BEST QUALITY, AND AT MODERATE CHARGES.

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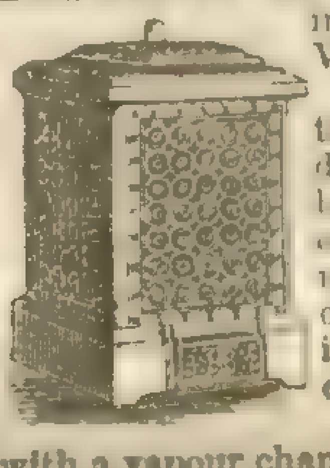
Exhibition Prize Medal, 1862.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.



It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of Warming a large Apartment for 24 hours, at a cost of 3*d.*; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.

Particulars and prices post free on application to MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

DENNIS'S PATENT HORTICULTURAL BUILDINGS are made from the best Wrought Iron, upon

an entirely new principle. The combination of Iron and Glass under this patent is perfect; the possibility of fracture is prevented, and a permanently Water-tight Roof insured.

The leading practical advantages are extreme smallness of Framing, admitting a maximum of light and heat, great strength, durability, and perfect ventilation. They are speedily erected, partake of more desirable outline, and do not exceed the cost of a perishable wooden structure.

For Prospectus, &c., address T. H. P. DENNIS, Horticultural Builder, Hot-Water Engineer, &c., High St., Chelmsford, Essex.

The only Stove without a Flue.

JOYCE'S PATENT, for Warming Chapels, Halls, Shops, Conservatories, and all other Places. Price from 12*s.* 6*d.* each.

JOYCE'S STOVES are Portable and Economical, and burn 12 hours with one supply of fuel, requiring no attention.

STOVES for GREENHOUSES are made to burn all the Winter. Temperature always the same. Patent Fuel, 2*s.* 3*d.* per Bushel.

The PRUSSIAN VERMIN EXTERMINATOR (HOWELL'S) is the only safe and effective remedy for the destruction of Rats, Mice, Beetles, Ants, and Cockroaches. Sold in Stone Jars, 1*s.* and 2*s.* 6*d.* each, with Testimonials, &c. (to be had of all Chemists).

SWAN NASH, Patentee, 253, Oxford Street, and 119, Newgate Street, London, E.C.

Illustrated Catalogues post free.

Hurst House Seedling Pine.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer good plants of this choice Pine Apple, 10s. 6d., 15s., 21s. each.

The plant is of dwarf robust habit, producing heavy fruit of the richest flavour.

A large Stock of PRICKLY and SMOOTH CAYENNE PINES.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10s. 6d., and 15s.
2-year old Successions, 21s. each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

Thomas Jackson & Son, Nursery, Kingston, S.W.

THE GREAT VINE at HAMPTON COURT.—The Subscribers being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42s. and 60s. p. doz.
" " fruiting plants in 12-inch pots, 10s. 6d. each.

If purchased in large numbers a considerable reduction will be made in price.

Jackson & Son, Nurseries, Kingston, S.W.

Strong Fruiting Vines.

GEORGE CLARKE invites the attention of intending Planters to his very superior stock of the above. They embrace all the leading varieties, have clean and well ripened rods 8 to 10 feet long, and remarkably short jointed. They were stopped to this length as early as June, rendering them equally stout and good the entire length; they are therefore very suitable for planting a house, or for growing in pots, where a crop of fruit could under proper treatment be obtained the first season.

The prices are—1 year old, 10s. 6d. each; 2 year old (extra size), 15s. Smaller plants, also from Eyes, and equally well ripened, which will produce fruit the second year, 3s. 6d. to 5s. each.

Specimens can be seen at the Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill, S.

CHARLES B. SAUNDERS, Cæsarean Nurseries, Island of Jersey, Established 1816.

Strong well ripened rooted VINES, best sorts, 6 to 8 ft. rods, grown in the open air without nursing, 2s. 6d. each; Dwarf Standard, Dwarf-trained PEAR TREES on Quince stocks, well rooted, set with fruit spurs, in fine condition, 1s. 8d. and 2s 6d. each; Maiden and Dwarf-trained PEACH and NECTARINE TREES, 1s. 6d., 2s. 6d., and 3s. 6d. each; Maiden and Dwarf-trained MOORPARK and KAISHA APRICOT TREES, 1s. 6d. and 2s. 6d. each. An immense Stock of EVERGREEN OAKS, grown in Pots and frequently transplanted, from 50s. to 200s. per 100, 2 to 6 feet high.

Large quantities of the above can be supplied.

LISTS of GENERAL NURSERY STOCK on application.

AMBROISE VERSCHAFFELT, Nurseryman, Ghent, Belgium, has the pleasure to offer now for the first time his two new excellent Fruits—

APPLE CALVILLE GARIBALDI .. 8s.
PEAR BÉURRÉ DE GHÉLIN .. .. 5s.

This excellent Pear obtained the First Prize at the great Pomological Show at Tournay, Belgium.

N.B. These two new Fruits are figured in Verschaffelt's "Illustration Horticole."

PEACH TREES in POTS for FORCING.—The Undersigned offer the following varieties of PEACHES for Forcing, strong Trees, full of blossom buds. Prices from 5s. to 7s. 6d each, Carriage paid to London.

NOBLESSE	ROYAL GEORGE	GROSSE MIGNONNE
GALANDE	BARRINGTON	VIOLETTE HATIVE
	EARLY YORK.	

Thos. Rivers & Son, Nurseries, Sawbridgeworth, Herts.

Stirling Castle Peach.

OSBORN and SONS, of Fulham, S.W., having been favoured with the sole privilege of distributing Plants of this valuable Fruit, have the pleasure to inform their Patrons and the Public that they will be prepared to do so the ensuing season at the following prices:—

One year old Maiden Trees, 21s. each.
" Trained " 31s. 6d. each.

N.B. The Stock being limited, early orders are requested.

To those who are unacquainted with its merits, the following quotations will enable them to form an estimate of its value:—

From Mr. Solomon, Fruiterer, Covent Garden.

"This Stirling Castle Peach is certainly the finest specimen I have ever seen, and you may depend there will be nothing to beat it."

Mr. David Thomson, of Archerfield, N.B., in the Gardeners' Chronicle, August 11, 1860, writes—

"The fruit is large, high-coloured, and brisk in flavour. I feel convinced we are not in possession of a variety that in all respects is so fine as the Stirling Castle, and that it is destined to take the same place among Peaches that the Black Hambro' has so long occupied among black Grapes."

Extract from the Report of the Fruit Committee of the Royal Horticultural Society, May 6, 1862.

"The fruit were of good size and very well coloured, and the flavour for forced fruit so early in the season was remarkably good. The Committee unanimously awarded the First Prize to this exhibition. In a communication received from Mr. Carmichael, Dunmore Gardens, N.B. (the Exhibitor), he says—'As a proof of its value for early forcing, I may state that, in 1859, the fruit was ripe on the 20th of May; in 1861, on the 6th of May; and this season on the 23d of April. I know of no other sort that sets so freely. I begin to force about the 1st of November, and the tree is generally in full flower about the middle of December.'"

Fulham Nursery, London, S.W.—December, 1862.

Fruit Trees.

JOSHUA LE CORNU has no hesitation in saying that he not only has the most extensive Nurseries in the Island of Jersey, but that he possesses the largest collection of choice FRUIT TREES in that island, already so well known for the growth of fine fruit. His Nurseries being situated on elevated ground, the plants raised in them are of a hardy and vigorous nature, and are almost entirely free from constitutional maladies.

CATALOGUES may be had, post free, on application.

High View Nurseries, top of Queen's Road, Mont-à-l'Abbé, St. Helier's, Island of Jersey.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

Fruit Trees.

RICHARD SMITH has no hesitation in saying, that he possesses by far the largest Stock of FRUIT TREES in the kingdom, consisting of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, in Maiden Trees, Dwarfs, Bushes, Pyramids, Half-Standards, and Standards; Dwarf-trained, Half-Standard, Standard, and Horizontally-trained Trees, of the finest sorts, and in the best possible condition. DESCRIPTIVE PRICED LISTS on application.

Richard Smith, Nurseryman, Worcester.

Planting.

WM. PAUL (Son and Successor to the late A. Paul) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.

Entrance from the platform, Waltham Station, Great Eastern Railway.

Nurseries and Seed Warehouse, Waltham Cross, N.

50,000 Dwarf Roses in Pots on their own Roots.

Standard, Half-Standard, and Dwarf Budded Roses, on the Briar and Manetti Stock, in enormous quantities and in the most vigorous health.

WILLIAM WOOD and SON have much pleasure in directing especial attention to their very extensive and well-grown stock of ROSES, CATALOGUES of which may be had gratis on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses of 1862.

JOHN KEYNES has to offer 1000 very extra strong plants, the finest varieties of the last season, in 6 and 8-inch pots, now ready, price 42s. per dozen, with the usual discount to the Trade.

Fine STANDARDS, of the older varieties, 24s. & 30s. per doz. DWARFS, 12s. and 18s. per dozen, all of the finest varieties in cultivation. Every attention paid to package, and compensation for carriage.

New CATALOGUES ready.

John Keynes, Nurseryman, Salisbury.

Standard and Dwarf Roses.

BENJAMIN R. CANT will be happy to forward on application his DESCRIPTIVE CATALOGUE of ROSES.

As a guarantee of the value of his collection, B. R. C. begs to state that he has this year obtained 17 First Prizes for Cut Roses at the principal Shows.

Very fine vigorous plants of the choicest sorts will be supplied at the following prices:—

Standard Roses	18s., 24s., and 30s. per doz.
Half Standard Do.	18s. and 24s. per doz.
Dwarf Do.	9s. to 18s. per doz.

The NEW ROSES of 1862, Dwarf plants, 3s. 6d. to 5s. each; or, if 12 or more varieties are taken, 30s. per doz.

St. John's Street Nursery, Colchester.

N.B.—B. R. C.'s Catalogue contains nothing but the best varieties; all indifferent and worthless sorts are excluded.

DWARF ROSES (Hybrid Perpetual), on the MANETTI STOCK, for forming large Groups.

The Undersigned offer the following varieties of ROSES. The plants are healthy and vigorous, mostly from 3 to 4 feet in height, and all budded close to the roots of the stock. Prices given for the score, the hundred, or the thousand on application, Carriage paid to London.

Admiral Nelson	Madame Van Geert
Agatoide	" Campbell d'Islay
Alice Leroy	" Betsy Haiman
Anna Alexieff	" Van Houtte
Anna de Diesbach	" Ducher
Auguste Mie	" Grunnoiseau
Baronne Hallez	" Heraud
Beauté de Royghem	" Louise Carique
Comtesse d'Orleans	" Laffay
Cardinal Patrizzi	" Philip
Comte de Nanteuil	" Place
Comtesse Cecile de Chabrillant	" Rivers
Darzens	Mathurin Regnier
Desgaches	Monsieur de Montigny
Duchess of Norfolk	Oriflamme de St. Louis
Duchesse de Cambacérès	Parmentier
" d'Orleans	Rosine Parron
Dr. Bretonneau	Reine des Violettes
Empereur de Maroc	Robert de Brie
Géant des Batailles	Souvenir de Leveson Gower
General Jacqueminot	" de la Reine d'Angleterre
" Washington	Triomphe de l'Exposition
" Simpson	" d'Alençon
Giuletta	" des Beaux Arts
Jules Margottin	" d'Amiens
L'Etoile du Nord	Vainqueur de Solferino
Louis Gulino	Victor Verdier
Madame Boll	William Griffiths

Thos. Rivers & Son, Nurseries, Sawbridgeworth, Herts.

Notice of Removal.

PETER LAWSON and SON, The Queen's Seedsmen, Edinburgh and London, respectfully beg to intimate that with a view to facilitate their business transactions they have REMOVED from 27, Great George Street, Westminster, to 28, King Street, Cheapside, and 15, Lawrence Lane, E.C.—Dec. 6.

New Seeds.

PETER LAWSON and SON, The Queen's Seedsmen, of Edinburgh and London, are prepared to send out FARM and GARDEN SEEDS of every kind, and of the finest quality. Orders for exportation executed with prompt and careful attention.

28, King Street, Cheapside, and 15, Lawrence Lane, E.C.

Tritoma Uvaria glauca.

JAMES KITLEY begs to offer fine large blooming plants of the above at the very low price of 6s. per doz. and fine plants at 4s. per dozen. The Trade supplied. Also NARCISSUS POETICUS, 10s. per 1000.

Lyncombe Vale Nursery, Bath.

WELLINGTONIA GIGANTEA.—The undersigned has to offer a very large and fine stock of healthy one year Seedling Plants established in single pots; also a few plants of larger sizes. Price per 100 or 1000 on application.

J. Henchman, Edmonton, London, N.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.

	£	s.	d.
50 in 25 extra choice varieties	2	2	6
25 in 25 " "	1	5	0
12 in 12 " "	0	12	0
50 in 50 choice varieties	2	12	6
50 in 25 " "	1	5	6
25 in 25 " "	0	18	6
12 in 12 " "	0	5	0

Extra fine mixed, 2s. 6d. per doz., 17s. 6d. per 100.

Butler & McCulloch, Seed Merchants, Covent Garden Market, W.C.

Catalogue of Bulbs for the Autumn of 1862.

ARTHUR HENDERSON and CO. beg to announce that their NEW DESCRIPTIVE CATALOGUE, containing the choicest Hyacinths, Tulips for Forcing and Bedding, Gladioli, and other Miscellaneous Bulbs, is now published, and can be had Gratis on application.

Pine Apple Place, Edgeware Road, London, W.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

J. C. WHEELER and SON, Seed Growers, Gloucester, have imported in excellent condition a large

COLLECTION of HYACINTHS,

including the extra fine varieties recommended by Dr. Lindley.

PRICED LISTS may be had gratis on application to the Importers,

Messrs. J. C. Wheeler & Son, Gloucester.

DUTCH BULBS.—Hyacinths, finest named, 6s. per doz.; Mixed, 3s. per doz.,; 20s. per 100; and all other Bulbs equally cheap. British and Foreign FERNS, immense variety. Fern Cases and Aquariums of every description. Real Sea Water, 6d. per gallon.

R. Green, 154, Kingsland Road, N.E.; and the Bedford Conservatories, Covent Garden Market, W.C. Entrance centre avenue only.

Wholesale Catalogue.

GEORGE JACKMAN and SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING 1863, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

Hardy Scarlet and other Choice Rhododendrons.

JOHN WATERER'S CATALOGUE of the above popular plants, as exhibited by him at the Royal Botanic Gardens, Regent's Park, is now published, and will be forwarded to all applicants.

It describes faithfully the colours of all the Rhododendrons, thereby rendering every facility for making selections.

It likewise contains an abridged List of really Hardy Conifers, with their heights and prices.

The American Nursery, Bagshot, Surrey.

FOSTER'S SEEDLING GRAPE.

MESSRS. JOHN & CHARLES LEE

have to offer Mr. Foster's stock of this fine NEW GRAPE, which can be confidently recommended for general cultivation in cool Vineries. It has borne an abundant crop in the large Conservatory of the Royal Horticultural Society at Chiswick, the bunches being large, with medium sized berries of a pale amber colour. The flavour of Foster's Seedling is most luscious, equalling the richness of its twin sister Lady Downe's, and as far as can be seen, partaking of the same quality of hanging well without shrivelling.

Canes for planting, 7s. 6d. each. A few Fruiting Canes at 21s. each.

ROYAL VINEYARD NURSERY AND SEED ESTABLISHMENT, HAMMERSMITH, LONDON, W.

Exhibition of Chrysanthemums.

JOHN SALTER, F.R.H.S., invites the Public to visit his unrivalled COLLECTION of these beautiful FLOWERS, which are still in BLOOM. The Winter ... contains several thousands of Plants, and presents a ... unique in this or any other country. The Gardens ... open every day except Sunday. Admission free.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Chrysanthemums.

WILLIAM HOLMES begs to offer this year's Varieties of the above at 5*s.* per dozen, including Carinatum, Duchess of Wellington, General Slade, Lady St. Clair, Lord Ranelagh, Orange Perfection, Lady Russell, Nil Desperandum, &c.

Frampton Park Nursery, Hackney.

Notice.—American Plants.

WATERER AND GODFREY'S CATALOGUE is now ready, and will be sent on application; it gives a ... price and description of all the Rhododendrons and other American Plants worth growing, as well as a general summary ... the most extensive Nursery Stock in Europe.

The Exhibition of American Plants in the Royal Horticultural Society's Garden, South Kensington, were supplied by WATERER & GODFREY, Knap Hill, near Woking.

New Seeds, Growth of 1862.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS are now prepared to execute orders for all kinds of FARM and GARDEN SEEDS. The prices are lower and the quality finer than usual, owing to the very favourable harvest.

Royal Berkshire Seed Establishment, Reading.

THE BRITISH COLUMBIA BOTANICAL ASSOCIATION, for sending a Botanist to collect and transmit Seeds of CONIFEROUS and other TREES, SHRUBS and PLANTS from British Columbia, Vancouver's Island, and adjacent countries—

Sir WILLIAM GIBSON CRAIG, Bart., of Riccarton, *Chairman*;
ISAAC ANDERSON HENRY, Esq., of Wood End, Hay Lodge, Trinity, Edinburgh, *Secretary*, and
JAMES M'NAB, Esq., Curator, Royal Botanic Gardens, Edinburgh, *Treasurer*;

Beg to intimate that as the greater portion of the SHARES are already taken up, those intending to join the Association will require to make immediate application to the SECRETARY or TREASURER, who will, if required, send full printed particulars.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 6, 1862.

MEETINGS FOR THE ENSUING WEEK.

TUESDAY, Dec. 9 { Royal Horticultural (Fruit and Floral Committees) at S. Kensington Noon

WE have never been able to understand why the GARDENERS' BENEVOLENT INSTITUTION, one of the most useful and best managed of our charitable associations, should be so feebly supported. It offers to aged and infirm Gardeners the advantage of a Pension in old age, and to their widows a succession to it; its affairs are administered with skill and œconomy, the only paid agent being the Secretary; and we are able to say from our personal knowledge that the most perfect honesty of purpose actuates every one of the Committee in whom is vested the management of the funds. Nevertheless, out of some 10,000 parishes in England alone, in each of which there must be, one with another, some head gardener, the whole number of subscribers is only 294, of whom the immediate neighbourhood of London furnishes 67. We have no small experience of gardeners and their ways, and it is only just to say that upon the whole they are a kind and generous race; which makes their unwillingness to join the Gardeners' Benevolent Institution the more inexplicable.

To us it seems that the Committee push their distribution of money to the very verge of prudence, but without overstepping it. They have but 1000*l.* a year, and out of this pitiful sum nearly 750*l.* go in pensions.

The Institution was founded in 1838. From that time to the present it has relieved about 130 pensioners, and has expended in such relief 9032*l.*, and in the same period has accumulated stock to the extent of 5200*l.* which stands in the 3 per Cent. Consols in the names of the trustees, Messrs. John Andrew Henderson, John Lee, and James Veitch, jun. At the present time there are on the books 53 pensioners, 28 males and 25 females; the males have 16*l.* per annum, the females 12*l.* per annum. Out of the present list of pensioners 6 had been subscribers upwards of 15 years, and 4 had husbands who had been subscribers the same time. These 10 were placed on the list without any election, in accordance with Rule No. 6, and there are 5 others whose husbands had been pensioners who have succeeded them to a pension also without an election, under the provisions of Rule No. 7. Of the remaining 38, 21 had been subscribers for a few years, varying from 2 to 14. Two pensioners to be elected in January will increase the liabilities of the Society to 780*l.* annually.

By Rule 6, one of those above alluded to, gardeners who have subscribed 15 years to the Charity are entitled to be placed on the list of pensioners without an election if they are proper objects for the Charity, and there are vacancies for them. At this moment there are five applicants who have subscribed for 18 and 20 years each to the Institution, and whose claims to be put on the pension list the Committee have examined and allowed, and who are therefore entitled to the pension without an election; but as there are only two vacancies there must consequently be an election amongst these five to the exclusion of all other candidates, and there can be no election for *them* until these five are placed on the pension list. There are no fewer than 11 candidates remaining over from last election, many of whom have been at much expense in canvassing for votes, and whose claims must now be suspended for a long period; so that these poor creatures realise that "hope deferred which maketh the heart sick." Surely this is scarcely creditable to the profession, and besides, a matter so much of personal interest that every gardener should subscribe and make himself secure in the event of his requiring the pension, for no one can tell what may betide him, and what losses may overtake him, melancholy examples of which were the cases of MEARNS, formerly gardener at Welbeck; JAMES FAIRBAIRN, nurseryman, of Clapham, formerly in a large way of business; and now of Mr. SANGSTER, the seedsman, of the house of HAY, ANDERSON, and SANGSTER. None of these parties ever anticipated being placed on the pension list. Let the humane, as well as gardeners themselves, just consider the cases of the present candidates, all of whom have subscribed 15 years and upwards. They are:—

ROBERT DOWDELL, of Bridge End, Lostwithiel, Cornwall. Is 73 years of age. Has been a gardener all his life in the neighbourhood where he resides. Has been a subscriber of 1*l.* 1*s.* per annum to the Society for the last 18 years; is afflicted with sciatica, and unable to do hardly anything. Has a wife 45 years of age.

JOHN LUCAS, of Bridge of Allan, N.B. Is 63 years of age. Has been a gardener all his life, and for the last 13 years with the Duke of Manchester at Kimbolton Castle. Is unable to work from nearly total blindness. Has been a subscriber 18 years of 1*l.* 1*s.* per annum.

SARAH PHELPS, of Winchester. Is 76 years of age. The widow of the late James Phelps, gardener for many years to H. Bright, Esq., of Winchester. James Phelps was a subscriber of 1*l.* 1*s.* for 21 years to the Society. From her great age she is unable to do much work.

JAMES ROBINSON, of Chislehurst, Kent. Is 62 years of age. Has been a gardener all his life; is so severely afflicted with rheumatic gout as to be entirely prevented from doing anything for himself. Has a wife 67 years of age. Has been a subscriber 19 years of 1*l.* 1*s.* per annum.

JOHN SANGSTER, of Plumstead Road, Norwich, is 67 years of age. Has been a seedsman and nurseryman all his life. Was a partner in the late firm of HAY, ANDERSON, & SANGSTER, of Newington, and in the year 1841 subscribed 10*l.* 10*s.*, and was a member of the Committee, and one of the auditors for many years. Is in distress in consequence of heavy losses in business. He is unable to work from being severely afflicted with rheumatism. Has a wife 62 years of age suffering from cancer.

It is full time that such a state of things should be promptly improved. The next annual dinner takes place about midsummer, when we understand that the Earl of DUCIE has consented to preside. Let there then be "a long pull, a strong pull, with a pull altogether," and the Charity may at once stand firmly on its legs. For his own part the writer of this undertakes to send 20 guineas as his own small contribution.

SINCE our leader on Silk Cotton was written, public attention has been called to a similar substance, the produce of a species of Asclepias, indigenous to the Rocky Mountains, which it is believed will flourish in Canada, where it can be cultivated to any extent, should the substance prove as valuable as is anticipated. An experienced Cotton grower has hazarded an opinion that it can be used as a substitute for Cotton, and it is reported that a large quantity will soon be in the market from Ottawa. If so, we fear that there will be some disappointment. The quality will probably be almost identical with the silk cotton of the Ak and Mudar, the threads being smooth and cylindrical, and therefore incapable of being profitably worked except as a mixture with ordinary Cotton.

We take this opportunity of calling attention to a matter of history illustrative of the present distress, of which we have not met with any notice. The extract is from an old number of the Westminster and Foreign Quarterly.

"The year 1337 was a memorable one in the history of Flanders. Count LOUIS OF FLANDERS deeming the welfare of the Flemish people a very subordinate object to that of pleasing his ally PHILIP OF VALOIS, had thought proper to send some armed vessels to cruise on the English coast. King EDWARD III. had retaliated by prohibiting the exportation to Flanders of the English wool, by which almost totally the Flemish looms were kept in activity. The consequence was the total stagnation of this her great branch of industry, and the starvation of thousands of workmen, and ultimately the death of JAMES VON ARTEVELDE in a popular insurrection." *M. J. B.*

"THE modern flower garden must be bare at this season of the year, unless some provision is made to the contrary." This second branch of the subject, opened at p. 1121, we now resume.

One naturally inquires at the outset what provision *can* be made against the bareness referred to, resulting from the ruthless destruction by frost of the whole crop of summer flowers? Clearly the beds must be filled with something else: that something else must be hardy, so as to keep a good face all through the winter; and as there are no flowers to be had, at least not permanently, plants with persistent foliage, selected so as to afford contrasts of form and colour in the leaf, must furnish the materials to be used. The beds, in fact, must be filled with dwarf shrubs. This at least is the best remedy for baldness we have to suggest, and it is one which is more or less, but still only partially and not half frequently enough, practised.

And now crops out another requirement in a well-designed parterre, besides those adverted to in our former remarks. It is imperative to make proper provision for a display of spring flowers, and they can't be satisfactorily mixed up with the shrubs, on which the main reliance must be placed for winter furnishing. How is this difficulty to be got over? Thus: Every parterre should be of a pattern, which will form a design within a design. That is to say, while the beds as a whole should form a perfect pattern, they should be so arranged that a proportion of them, larger or smaller as the case may be, can be as it were separated, so as to form some other perfect pattern to which the remainder shall serve as a ground work. In a general way, this inner or contained design might conveniently embrace about a third part of the beds contained in the whole parterre.

Now, if we imagine the beds which are thus separated, to form a figure which shall be balanced in its parts, and to be set apart for spring bulbs and other early flowers, while the rest are devoted to shrubs, we shall have the whole parterre furnished, and that not only as a winter garden but as a spring garden also. If a pleasing figure comes out from the arrangements of the beds of different-coloured, and different-formed leaves, that figure covering something like two-thirds of the surface, the eye will not be displeased with the earth-colour of the remainder, which we suppose to be devoted to spring bulbs, decorated moreover as the latter might be with margins at least of some of the evergreen spring-flowering perennials, such as Saxifrages and Alyssums; while as spring advanced and something more cheery in concord with the season was expected, the light greens of the bulb-foliage first, and the bright and gaily tinted bulb-flowers afterwards, would supply just what would be looked for and desired. The 'flower' beds being by this arrangement more limited in number, than if the whole design had been occupied by flowers, could be all the better and more carefully filled and tended; while the relief and contrast from the shrubs would enhance the beauty of the early flowers; and dwarf though they might be, these shrubs would shelter the more tender flowering plants from the piercing winds which in spring time sweep along the surface of the ground, and would thus contribute in no small degree towards their successful development. Everything in fact, both as to appearance and fitness, is to be gained by this duplicate method of planting for separate effects in winter and spring: whilst, viewing the matter from the point of convenience, the shrubs could be removed at any period to make way for the earliest summer plants, and the bulbs could be removed at a later period to make way again for flowers just coming into season.

Many kinds of shrubs could be prepared and cultivated for this mode of gardening without any

other trouble than transferring them in autumn to the flower-garden and in spring back again to a reserve garden, in which they should remain, with such care as might be required to ensure a healthy development of foliage during the summer months. The frequent removals would tend to secure that dwarfness and compactness of habit which would be desirable. All that would be necessary would be to mould them into proper forms by means of the knife, and to keep up vigour enough in the roots to secure a healthy crop of foliage.

We should, however, very much prefer having the plants in pots under something like the treatment which is given to orchard house trees. They would then more safely remove at any time, and could be all the more easily stimulated or checked in their growth, as might be requisite, according to their respective habits. An annual or biennial root-pruning and repotting into fresh good soil, would also admit of their being kept for a longer time in good health without material increase of size, and, after all, this would be an important point to secure, for large plants would become inappropriate, and a very frequent renewal of them would become too costly, at least in many cases, and though large plants might be in a general way exchangeable for smaller ones, yet the latter would need some preparation before being quite effective, while some of the more desirable might be difficult to replace in any form. Hence we should prefer to keep them as long as possible.

In selecting materials for this winter decoration of the parterre, we should give prominence, if not precedence, to many of the well-marked varieties of the common Holly, the large, the small, the smooth, the rough, the entire, the saw-edged, the gold-blotched, the silver-blotched, the gold-edged and the silver-edged forms of which alone would furnish materials for the winter decoration of a moderate-sized garden, and afford almost as much variety as one sees in many an ordinary parterre in the height of summer, where it is Pelargoniums, Verbenas, and Verbenas, Pelargoniums repeated *ad nauseam*. Such varieties of Ilex aquifolium as Cheshuntensis, nobilis, ferox, serratifolia, crassifolia, marginata, albo-marginata, aureo-marginata, albo-picta, and aureo-picta are well suited and characteristic plants. So is the Chinese Ilex cornuta, as well as other species of the family. Euonymus japonicus, and its variegated variety, are also suitable; and so are the different forms of the genus Aucuba, whether green or variegated. Skimmia japonica with its beautiful coral berries would form a charming border to something rather taller in growth; and nothing could be more bold and telling than some of the pinnated Japanese Berberries. Cotoneaster rotundifolia or buxifolia would come in for small beds; and most of the Ivies, of which there is now a beautiful series of variegated forms, would be available. The great Ericaceous order alone affords a great variety of forms, some of which, as the hardy Rhododendrons, would fulfil the conditions both of winter and spring decorators. Then there are Phillyreas and Alaternuses, Bays, and some species of Daphne, any of which might be pressed into service, as affording choice and variety in respect to foliage and general habit. Several of the Yuccas amongst endogenous plants might be advantageously used, but they would be most effective as the centres of groups, made up of some distinct contrasting forms. And finally there are the Conifers and Yews, from amongst which might be obtained several appropriate kinds, either for groups or for the centres of groups: such, for example, as the Golden Yew or Thuja aurea, in the shape of small plants for beds, or young Araucarias, and some of the Junipers and Cypresses for centres. Out of such a variety of habit and foliage as is afforded by the plants we have named (and the list might be much extended), materials might be selected which, cleverly arranged, would yield a picture fully as interesting and beautiful in its way, if not quite so dazzling, as that obtained from the most specious amongst summer flowers.

We are not surprised to hear a note of alarm blown in aid of our grand old friend the Vine at Hampton Court. It was time that the cry "to the Rescue" should be raised. She has been well nigh garotted, or if not garotted, suffocated by her ignorant keeper. Out of that famous cornucopiæ of hers less and less has been flowing for years past, and when we last saw her bunches they were dwindling away to the size of Currants. The courteous penny scraping janitor of that day denied indeed that the ancient dame ailed any thing; he vowed that her puny children were as big as ever, and with a high and mighty air expressed an opinion that Cockneys did not know what a bunch of Grapes should be. We took the reproof with our customary meekness, and waited patiently for the event.

It now turns out that a new gardener has been set to nurse the sickly dame, the old custodian having removed to another country, or another world, we know not which. Her new protector states that she has been buried, or at least her roots have, under a thing called a mound, which killed her feeders and left her to starvation—a pretty state of things for so distinguished a member of the Royal family of England. But he says it was not he that did it; it was the other man. As for himself he triumphantly announces that Her Vinous Majesty is getting better, that she is growing again, and he expects, after another dose, to be administered forthwith, to find her once more jolly and fruitful. Let us hope he will succeed.

He must, however, excuse us for remarking that if this happy end is to be accomplished, it will not be brought about by setting up his bristles, if he has any, when lookers on criticise his work. His royal mistress will not mend by having the ground over her roots cropped with flowers as thick as they can stand, nor by having the borders dug after the sap is fairly started in the spring. Neither will she bear to be left for months at a time, and at all seasons of the year, to the care of a few ignorant labourers, as was done in the days of his predecessor. She requires skilful and assiduous treatment, and must neither have earth heaped stupidly over her roots, nor the true sources of her remaining vigour left uninvestigated. There is a notion among gardeners that the roots of the old thing are in a sewer somewhere, or under the foundations of the Palace, and not now where the famous, or infamous, mound was placed. That question should be examined; its solution will do the present gardener more credit than giving himself the airs of an Echinoderm.

—— Alphonse Karr. In a late Number we quoted one or two lively passages from a recent novel of M. Karr. Our readers may wish to know something of his present whereabouts and occupations. These we learn from the account of a visit paid to him by M. Silbermann, President of the Horticultural Society of the Bas Rhine, published last year in the Journal of that Society.

"I was desirous of visiting," says M. Silbermann, "during my passage through Nice, the garden of M. Alphonse Karr, who enjoys a great reputation there, but I was told that access to him had become very difficult on account of the numerous 'bores' who inundated him. However, as I had a slight acquaintance with M. Karr I risked the adventure.

"His garden is situated at about ten minutes' drive from the town; to reach it one passes through narrow lanes between the enclosures of other gardens.

"Our coachman stopped suddenly, and exclaimed, 'This is it, but I doubt whether you will be admitted.' The gate stood open—I said to myself '*Patet amicis*,' and pushed on till I reached the dwelling house. A woman was engaged upon some work—I gave her my card, begging her to hand it to M. Karr. In a few moments she returned, and gave me the following note written upon green paper:—

"'Do you remain at Nice for some days, or for the season? If the latter, I may see you at another time; if not I shall be down in a moment. You will understand why—the printers wait.'

"It was evident that M. Karr was engaged in his study; that we should disturb him by persevering, and yet it was impossible to return. So I said to the woman: 'Have the kindness to acquaint M. Karr that I leave to morrow.' In a few minutes he was beside us, dressed like a country labourer, welcomed us with charming courtesy, and did the honours of his garden.

"The principal plantations in this piece of ground, which occupies nearly 6 acres, consist of Orange trees with very dark green leaves, Lemon trees, Peach trees, Apricot trees, &c. Vegetables also take up much space, and constitute one of the principal branches of cultivation. In two beds they had just finished sowing Kidney Beans and Green Peas for a January crop. After fruits and vegetables it is flowers which M. Karr chiefly cultivates. He carries on a great trade in them with Grasse for perfumery, and with Paris for bouquets. I admired enormous standard Heliotropes a yard and a half in height*, forming a close hedge covered with flowers. M. Karr collected a large bouquet of them, to which he added some Tea Roses, and offered them to Madame Silbermann.

"The dwelling-house is small, and concealed entirely by Rose trees, which cover its façade, and extend even over the roof; they also form a thick shady bower in front of the house. They are all Banksian and China Roses planted five years ago, at which time M. Karr took the garden on lease.

"Other curious plants, more especially interesting as growing in the open air, still enliven the parterres. But it is sometimes necessary to seek for them under the thickets of weeds. I may particularly mention Acacia longissima (linearis), Datura arborea, Poinciana Gilliesii, Plumbago azurea, Eriobotrya japonica (the Japanese Medlar), bearing fruit like yellow Plums. In a small basin Thalia dealbata and a fine Caladium were growing.

M. Karr has made himself in reality a gardener, without however altogether renouncing his literary labours. He has at Nice on the Messina Quay a shop where he sells in retail. Above the shop door is inscribed in large characters the following sign—'Alphonse Karr, Gardener.' I wished to visit it, but it was undergoing extensive repairs previous to the season about to commence. M. Karr assured me that he procured workmen with great difficulty.

"'In this country,' said he to me, 'the day labourers are very sober, but also very lazy; they content themselves with three Tomatoes a day and three heads of Garlic, which they steal in the fields. Why should they work?'

"We were told that during the previous year M. Karr furnished fruits and vegetables for the table of the Dowager Empress of Russia; that at the end of the first month they asked him for his bill, which amounted to 40 francs a day. The Empress considered this dear. M. Karr replied, 'Let that be no bar. I will furnish vegetables gratis to her Majesty.' We could not learn whether the Empress accepted the offer.

* Might it not be worthy the attention of our cultivators to endeavour to imitate this in our greenhouses. We have tree Mignonettes, why not tree Heliotropes?

ANGRÆCUMS.

In many collections of Orchids only summer flowering species are grown, while such as blossom during winter are wholly neglected, and without flowers Orchids are not plants of the most attractive description. Among them are however many beautiful and most valuable species, which when properly selected furnish a succession of bloom, and on that account continue to keep up undiminished interest even throughout the whole winter months.

Of winter flowering plants the genus Angræcum contributes some of the most useful, not only on account of the noble appearance of some of them, but also because they are so easily grown that the merest tyro in the art of plant management could scarcely fail in their cultivation.

Angræcums are without exception found on trees in the hottest and dampest climates in the world, such as the pestilential forests of Madagascar, Sierra Leone, and the Gold Coast. Having no pseudobulbs they require almost continual excitement, such as would be most injurious to many Indian and Mexican Orchids; in short they like plenty of heat, shade, and moisture. With the exception of A. eburneum and A. virens they are for the most part compact growers and require no rest beyond what the dulness of our winter season, and the corresponding fall in the temperature of the house in which they are grown, afford. I always endeavour to prevent the thermometer from falling lower than 60°, excepting during very severe weather, when a few degrees lower with a dry atmosphere will be found rather an advantage than otherwise. During the summer months the temperature will naturally rise, but at no time need the thermometer be higher than 75° at night, or 90° by day; and no tropical Orchids are injured by any degree of heat to which they are likely to be subjected in our houses during summer, provided it is tempered by an abundant ventilation; draughts, however, and the direct rays of the sun must be excluded, and ample evaporation must be maintained by keeping all parts of the house damp, and syringing the plants at least once a day, which must be gradually discontinued as the influence of the sun becomes diminished.

Angræcums like plenty of pot room, as their roots are large and fleshy. I fill the pots about half full of potsherds and broken charcoal, putting the smallest pieces at top, and for soil I use rough fibrous peat mixed with broken charcoal and Cocoa-nut fibre refuse, topped up with green chopped Sphagnum; as Angræcums should never be allowed to get dry at the root, a very porous material is necessary.

I am of opinion that Cocoa nut fibre refuse will be a most useful auxiliary to the Orchid grower. One half of the plants under my care has been grown in it this season mixed with peat, and the roots appear to revel in it. Most Angræcums, even the smallest flowered sorts, are interesting, the latter on account of the frosted appearance of the flowers, but the following are the best, viz.:—

A. sesquipedale.—This is one of the finest and most valuable Orchids in cultivation; it has very large flowers, and a spur of extraordinary length.

A. caudatum has also a long tail-like spur, which gives the spike a singular appearance; sepals and petals greenish brown, lip white.

A. eburneum.—This is a rather large growing plant, with sepals and petals of a greenish white colour, and the lip ivory white; it lasts several months in beauty.

A. virens resembles the last, but has darker foliage, and more green in the flowers.

A. bilobum is a pretty little plant with pendent spikes of white flowers; it will succeed in a basket in moss, and under such circumstances it shows its flowers to excellent advantage.

A. pellucidum resembles a Phalænopsis in habit, and requires the same kind of treatment; it has very long pendent spikes of semitransparent frosted looking flowers.

A. pertusum.—This curious species bears numerous small flowers, arranged so closely together on the spike that they give it the appearance of the vertebræ of a fish. There is also another called superbum, which I have not yet seen in cultivation; it may probably be a good variety of eburneum, from which it differs in having a much broader and rounder lip.

All the Angræcums are as free flowering as they are free growing, and have a compact healthy green appearance. I have never seen them attacked by scale, and they will repay any trouble and care that may be bestowed upon them. *L. W. J.*

HUE AND CRY.

Something like half a century ago there settled in Mexico a Spaniard of the name of Lexarza. He was a good botanist, and, as we are told by his friend La Llave, "*Orchideis pro viribus datum,*" and certainly, even in our own Orchid-loving age, that beautiful family has never found a more enthusiastic devotee! He sank, alas, into an early grave, but not until he had compiled what he modestly styled his "*Orchidianum Opusculum,*" (published at Mexico after his demise) in which are described no fewer than 50 species, all gathered by himself in the neighbourhood of Valladolid, where he appears to have resided. Of these several have from time to time found their way into English collections, (*e. g.* Lælia autumnalis, Cattleya citrina, Oncidium tigrinum, Odontoglossum Cervantesii, Arpophyllum spicatum, &c.,) all of which as they flowered bore testimony to the accuracy of his judgment and the singular fidelity of his descriptions. But this circumstance could only tend to increase our regret that some of the most remarkable plants on his list should have remained unintroduced to the present day. Such however being the case, I may perhaps be allowed to mention a few of the more striking species, in the hope that the publication of their names, with full particulars of their habitats, &c., in the "Hue and Cry" may possibly lead to their capture and introduction at the hands of some enterprising traveller. The first to which I would call attention is

Alamania punicea (La Llave and Lexarza).—This appears to be a small plant growing among lichens upon trees on a high mountain called "Quinzeo," in the neighbourhood of Valladolid, where it flowers in April. It is thus described:—"Pseudo-bulbs very small, oblong, clustered together, each bearing two or three thick oval brown leaves. The scape which proceeds from the top of the bulbs is 2 inches long, and bears several most beautiful ('*pulcherrimi*') crimson flowers, an inch across, with much the appearance of Lilies (*liliacearum habitu*)."

This plant would be a worthy rival to the lovely Sophronitis grandiflora, and supposing it to be sold in this country at the same rate (a calculation probably much below the mark), a man might readily carry as many tufts of it in a bundle on his arm as would pay his expenses to Mexico and back, and leave him a handsome surplus besides! The next is still more remarkable, viz.:—

Cuitlauzina pendula.—This, like the preceding, is described as "pulcherrima." It has "flattened wrinkled p-bulbs, 3 inches long, surmounted by two ample spreading leaves. Scape from the base of the bulbs, hanging down, bearing several large and very sweet flowers. Of these the sepals and petals are white with a violet tint, and fancifully spotted with purple. The lip is large, in colour somewhat resembling the petals, but dotted with scarlet and with a yellow base." (N.B. I have purposely omitted all but the popular characters in this description, which is intended rather for those who are not botanists than for those who are). This fine plant grows upon trees at "Jesus del Monte," near Valladolid, flowering in June and July. Associated with it is another remarkable Orchid, which is probably a Lycaste, but which our author calls

Psittacoglossum atratum.—"It has crowded, flattened, oblong p-bulbs, each carrying one shining oblong-lanceolate leaf. The short scape, issuing from the base of the bulbs, is entirely covered with bracts, and bears a large solitary dark purple flower. The lip, which is almost black, resembles the tongue of a parrot; and hence the generic name. Flowering season, the spring."

Surely some one will be stirred up to go and fetch us all these fine things! *J. B.*

Home Correspondence.

Trade Advertisements.—Mr. Barron has recently most seasonably touched upon this subject, and all that he has said should be read by advertisers. The growing evil in the advertisements of nearly all descriptions of tradesmen is a species of bombast, which they think attractive, but which on the contrary is most repulsive. The gardening world should set a pattern of truthfulness and moderation in their advertisements. A. does not benefit his reputation by saying he has no hesitation in asserting that he has more Oak trees than all the world besides; nor B., when he says that his Roses on the Manetti stock are more in number than the sands of the sea, and tall as Palm trees; nor C. when he advertises the most magnificent Elm trees in the universe. What would these gentlemen say if they saw an advertisement in your columns, headed as follows:—"Cucumbers, Cucumbers, Cucumbers. Messrs. Boaster & Sham offer seeds of a Cucumber that grows 6 feet long, and bears all the year round in the open air, even during frost and snow." Now, in a mild way, all strong advertisements remind the reader of such a firm as Boaster & Sham. Truthful and modest advertisements are at the present day most beneficial to the gardening world, for there are many corners of the country where some peculiar plant or tree may be cultivated with great facility, and offered at a reasonable price. A short time since I required a large number of forest trees, and seeing in your columns what I thought to be a truthful advertisement—there was no allurement of very low prices, for good trees require expensive cultivation—I wrote my order, and have reason to be perfectly satisfied. As I do not live near any forest tree nursery, this was a great accommodation. Advertisers ought to abjure grand appellations. Our old English seedsman is now a "seed merchant;" his shop an "establishment," his seed garden "a farm." Forty years ago the London seedsmen were really merchants, for they supplied in large bulks the country trade, but they called themselves seedsmen, and although some of them did not keep a retail shop and sell 3*d.* packets of seed, they did not take to themselves the name of merchant. *Constant Reader.*

Sweet Bays.—Will you permit me to inquire whether the female of the Sweet Bay, Laurus nobilis, has been found to be hardier, and to attain a greater height and size, than the male? We have many remarkably fine trees of it in this part of Somerset, and they seem to be all females. I would also beg to inquire whether there are known to be any in England proper, exclusive of Wales and Ireland, larger than two at Milverton, in the grounds of Mr. James Randolph. These measure, as far as can be ascertained by setting up a ladder beside them, 30 feet in height. The one rises from the ground with four distinct trunks, which respectively measure in girth:—

At 1 foot.	At 4 feet.
1. 3 feet	2 feet 4 inches.
2. 2 feet 6 inches	2 feet 2 inches.
3. 3 feet 1 inch	2 feet 6 inches.
4. 1 foot 7 inches	1 foot 4 inches.

The other rises with three main trunks, and a cluster of smaller ones around them, and measures below, at the base, before the main trunks separate, 5 feet in girth, and these severally—

At 4 feet.
1. 2 feet 4 inches.
2. 1 foot 9 inches.
3. 2 feet 2 inches.

There may be larger even in this neighbourhood; but the one at Nettlecombe, which Loudon describes in his Arboretum, was cut down by the late rector about 10 years ago, and I have not chanced to meet with any larger than Mr. Randolph's, in behalf of which the old gardener challenges all England. *P., Halse House, Somerset.* [There is no female Sweet Bay. The plant is hermaphrodite.]

Black Alicante Grape, alias Great Mogul, Kempsey Alicante or Liverpool.—This Grape is known by any of these names, but according to the statement of Mr. Petch in your last week's Number, there is more than one variety of it—one being a free setter, the other very shy in that respect. Although the description he gives both of bunch and foliage agrees with that of the ordinary kind, yet I feel convinced, as I have just said, that there are two distinct sorts, for in the case of the shy setter, unless artificial means are used to assist fertilisation, it would be a mere chance if one berry would arrive at perfection. I have seen large bunches with not more than one, two, and three full sized berries on them, while the remaining portion would swell to the size of a Pea, without stoning, and colour beautifully. As Mr. Cox has not replied to Mr. Lauri's remarks, I beg to offer the following observations upon the variety undoubtedly grown by your correspondent, Mr. Lauri:—During the seven years I was gardener to the late Sir Offley Wakeman, Bart., Perdiswell, Worcester, I was very intimate with Mr. Cox, then of Kempsey, and had ample opportunity of witnessing his Grape and fruit culture, in which he was most successful, and as a local exhibitor few surpassed him; but what I would state is, that when living at Perdiswell I had nearly one whole house devoted to the above-mentioned Grape, under the name of the Liverpool—so called, my foreman told me, in consequence of its first coming from that neighbourhood. Not being satisfied, however, with the name, I forwarded some berries to Professor Lindley, who informed me that the sort was the Black Alicante, certainly one of the best keeping Grapes known. I was scarcely ever without this Grape until April, and I well remember during two seasons, that I did not cut the last bunches off the Vines until the 15th and 17th of March. I believe this variety, and the one grown by Mr. Cox, to be the same, viz., the shy setter, and if I am not mistaken, the word Kempsey got added to it some few years since, when Mr. C. exhibited it at one of the spring meetings of the Fruit Committee of the Royal Horticultural Society in London; certainly Mr. Cox grows this Grape in great perfection, as the bunches exhibited in London bore witness, for with the exception of a little deficiency in colour, his Grapes were all that could be wished. The method I used to adopt in setting this variety, was as follows:—I had in use two camel hair brushes and a sheet of paper; the first brush was employed in collecting all the moisture from the bunches (a difficult task), in order to get them dry enough to receive the pollen gathered from other varieties and distributed by the use of the second brush; and then, in order to be more certain, I used to gently shake into a sheet of paper the pollen from other bunches, and then distribute it by holding the paper under the bunches that required setting, giving it a slight tap with my thumb. This process was performed twice a day in dull weather, and once only during a bright sunny day. The temperature used to be raised, and the house kept tolerably close. By this method I succeeded perfectly in producing well-set bunches, but I always deferred thinning this variety until I could ascertain which berries were sure to swell off properly. *Edward Bennett, Gr. to G. S. Foljambe, Esq., Osberton Hall, Worksop, Notts.*

Water Weeds.—The enclosed weed has entirely overspread a large sheet of ornamental water. In the summer of 1861 the mud was taken out to the bottom of the bog; previously there was not any of the weed. Its first appearance was in May, this spring, and since then it has overrun the whole of the water, making it look one complete green mass. I should be glad to know what the weed is, and the best method of eradicating it. Is it not the same pest as that which abounds in the Trent, and in various canals? We have not a particle of it in any other water about the estate, neither is there any running water where it has made its appearance. *John Royle, Gardener to Lord Stanley of Alderley, Alderley Park, Congleton.* [It is one of the common green Confervæ.]

Law relating to Tulip Planting.—Possibly you may be able to resolve me on a point on which I have failed to obtain a professional solution. The Incumbent of A. plants a Tulip bed of expensive bulbs, some of which are not his own, in the vicarage garden in November, and at the end of the year vacates the living. Such bulbs are invariably taken up in June and are not therefore in the same category as trees, but more resemble Wheat in which there is an outgoing tenant right. Does the planter lose his property in these bulbs? Of course if he does, it is a legal prohibition against clergymen having tulip beds. The case is my own, except that I do not expect to vacate the living at Christmas. *G. J.* [The general rule is *quidquid plantatur solo, solo cedit.* To this there are a few exceptions, but we know of none in your favour.]

Galvanised Iron Wire.—If your Birmingham subscriber would be so kind as to inform me in what way his Peach trees are likely to be or have been affected by being trained on galvanised wire, he will much oblige me. Perhaps the damage to the trees may not be fairly chargeable to the galvanised wire. If by careful observation he has established that a bad state of the trees and the use of the galvanised wire stand in the relation to each other of effect and cause, I have no doubt that the information would be interesting to many others as well as to me. *J. P. M.*——I beg to say that I have used galvanised iron wire as crooks for training young shoots of Pelargoniums, and I have found that it causes them to turn brown wherever it comes in contact with them. I have also used it for pegging out the branches and leaves of Cinerarias, on which it has the same injurious effect. I now employ it for small Heaths and other hard-wooded plants, letting the wire touch only the wood that is hard and well ripened, on which it appears to have no ill effect, but I find that the young and tender shoots of all plants on which I have tried it are injured by it. I would therefore not use galvanised iron wire as a trellis for Peach trees. *J. W.*

Foreign Correspondence.

Which is the Best Variety of Strawberry?—In the *Florist* for November, and in the *Gardeners' Chronicle* of the 8th ult., I saw two articles in which the authors endeavour to establish the pre-eminence of certain varieties of Strawberries; the first article says Rivers's Eliza is the best, the second gives the supremacy to Carolina Superba.

It is rash, I think, for the authors of these articles to venture to pronounce judgment in so absolute a manner without making known to their readers the grounds upon which their opinions are based. At the present day we are only expected to yield to the evidence of facts well observed, perfectly exact, and with respect to which the correctness can be proven. Such facts are the results of experiments and observations carried on for several years, not only in a garden, but in the open ground, and in different situations; not merely in one part of the country, but in widely different parts.

A variety which possesses, in a normal or proper situation for Strawberries, the requisite properties in the present age of progress, has a chance of exhibiting them in other similar or but slightly different situations. In our climate, if a variety of Strawberry does not bear

in an open situation the vicissitudes of the winter; if in the spring the fruit is partly abortive; if during the summer, at the time or after a scanty production, the leaves are unable to withstand the sun's rays, and consequently become scorched—such a variety does not merit general cultivation, even although the quality of the fruit may be good. A variety of this kind may be preserved for exceptional situations, but these do not enter into the question now under consideration.

If the fruit is not of fine form, and has not firm flesh, these are serious defects. Unproductiveness, too many runners before or when the fruit is full-grown; a simultaneous production of fruit, without succession; difficult to suit as regards soil and situation; uncertain in growth, bearing, and the quality of the fruit—a variety, I say, having such drawbacks, cannot certainly be raised to the highest pinnacle without risk of seeing it fall to the ground. These are the opinions I have formed on reading the two articles just referred to.

In your columns of the 15th ult. I observed that the author of the first article endeavours to establish the character of his favourite Strawberry, but his estimation of its goodness appears tinged with exaggeration. A cultivator at Epping is also not of his opinion, as well as another from Brentwood. It is also certain that many other cultivators look at the matter in the same light, without stating so in writing. However, it will be easy to remove all doubt, if such exists. Indeed there is no fruit-bearing plant of which the qualities can be sooner ascertained than the Strawberry.

Now that we know the preferable sorts, let 10 or 15 amateurs plant these varieties next spring beside each other, in three, four, or five patches of three plants each, at 3½ feet apart, and, after two years' cultivation, decide the question which is the one that carries the palm. But when acquired, how long will it be associated with the variety to which it shall be adjudged? The answer is simple: until the period when another improvement shall produce that which will eclipse its predecessor. Thus it is in every branch of horticulture. *J. De Jonghe, 9, Chaussée de Neeuwmolen, Saint-Gilles lez Bruxelles.*

Notices of Books.

The Young Gardener's Educator, being a series of lessons in the conversational style, on the subjects generally considered necessary for the young gardener to understand. With a Glossary of a few of the technical terms. By William Keane. Groombridge & Sons.

This little volume is stated to have been prepared with the view of carrying out some of the suggestions which writers on the education of gardeners have made, respecting the subjects that are considered to be most deserving of their attention and careful study. The way by which our author hopes to effect the object "so devoutly to be wished, is by means of a series of dialogues on the subjects so generally recommended. He has therefore chosen the conversational style as being in his opinion the best suited for exciting interest, and selected as speakers Mr. B. the head gardener, his son, and the journeyman."

As the book is specially designed for the instruction of young gardeners, a most important purpose, we have felt it our duty on their behalf to examine, at greater length than usual, its contents, which consist of numerous short essays or lectures on English Grammar, Geology, Botany, Vegetable Physiology, Physical Geography, Entomology, and several other branches of useful knowledge with which gardeners are now expected to be acquainted. Mr. B. is of course the "Educator," and by means of extracts from the writings of those who are considered authorities on such matters, he endeavours to direct attention to them, and in a pleasing manner to point out their great utility and importance. As the books from which the information on the different subjects has been gleaned, are not within the reach of every young gardener, we have no doubt the quotations from them will be valued by those who have neither the means nor opportunity to get more. They must remember what was long ago remarked by Dr. Johnson, that "particles of science are often widely scattered, and although he that collects them exerts no great abilities in the work, yet he facilitates the progress of others, and by making that easy of attainment which is already written, may give some mind more vigorous or more adventurous than his own, leisure for new thoughts and original designs." Whether the little work now before us shall lead to such results we will not pretend to say, but at all events we believe it has been prepared with the best intentions. While admitting this, however, we must candidly own that it does not meet our expectations. In the first place, we think it a serious fault in a work of this kind, to be so deficient of order in the arrangement of its subjects. Whatever may be the intellectual faculties of the author, it is very evident *order* is not largely developed; or else he would have made the essays on each subject follow one another, instead of being scattered as they are at present over the whole of the volume.

Another glaring fault in this work is the number of typographical errors that meet the eye in almost every page. It would really appear as if the sheets had passed through the press without having been read—in proof of this we will adduce a few instances, such as "proposition" for preposition, "cornus" for cormus, "dycotyledonous" for dicotyledonous, "gelatenous" for gelatinous, "Tædia" for Tæda, "Caleoptera" for Coleoptera, "Malocactus" for Melo-cactus, "Demestes" for Dermestes, "Pyranees" for Pyrenees, "Umbillical" for umbilical, "Eriscaulon" for Eriocaulon, with many errors of the like description, which ought not to be found in any publication, and more especially in one with such pretensions as the Young Gardener's Educator.

The first subject touched upon is English Grammar, on which we have four lessons, that we think may be studied with advantage, as although Lindley Murray is a standard school book, the numerous rules sometimes puzzle the youthful mind, and seldom receive the attention they deserve.

On Geology we have five lessons, compiled from the works of Dr. Buckland, Professor Johnston, Dr. Mantell, and others. We subjoin the following as an example of the manner in which the subject is introduced.

"Dr. Buckland tells us that next to the study of those distant worlds which engage the contemplation of the astronomer, the largest and most sublime subject of physical inquiry which can occupy the mind of man, and by far the most interesting from the personal concern we have in it, is the history of the formation and structure of the planet on which we dwell, of the many and wonderful revolutions through which it is has passed, of the vast and various changes in organic life that have followed one another upon its surface, and of its multifarious adaptations to the support of its present inhabitants, and to the physical and moral conditions of the human race.

"These, and kindred branches of inquiry, co-extensive with the very matter of the globe itself, duly form the proper subject of geology, and cautiously pursued as a legitimate branch of inductive science. The history of the mineral kingdom is exclusively its own; and of the other two great departments of nature which form the vegetable and animal kingdoms, the foundations were laid in ages whose records are entombed in the interior of the earth, and are recovered only by the labours of the geologist, who, in the petrified organic remains of former conditions of our planet, deciphers documents of the wisdom in which the world was created. A knowledge of geology also enables the gardener to understand the great diversity of soils which the surface of the earth presents—the fertility of some, the barrenness of others, and the means which Nature places at his disposal for their improvement."

In the fourth geological lesson we are told: "The operations of the atmospheric agents and influences, such as the gases of the air, heat and cold, dryness and moisture, rains and winds, light and electricity, assisted by the laws of gravity, form a wide spread system of disintegration and destruction, which may be traced on the whole surface of the earth, from the pinnacles of the highest mountains down to the level of the sea. The effect produced by such agents is to induce a tendency to decomposition and destruction, which reduces the surface of almost all strata to a comminuted state of soil or mould, the fertility of which is usually in proportion to the compound nature of its ingredients.

"The three principal materials of all strata are the earths of flint, clay, and lime; each of these, taken singly and in a state of purity, is comparatively barren. The admixture of a small proportion of clay gives tenacity and fertility, and the further addition of calcareous earth produces a soil highly valuable to the horticulturist and agriculturist; and where the natural proportions are not adjusted in the most beneficial manner, the facilities afforded by the frequent juxtaposition of lime, or marl, or gypsum, for the artificial improvement of those soils which are defective in these ingredients, add materially to the earth's capability of adaptation to the important office of producing food."

On Botany we have four lessons. It is introduced as a subject which should be studied by every gardener who aspires to acquire a knowledge of Nature, as she appears in the useful and interesting productions under his care. The science of Botany, we are told, is divided into four grand divisions: 1st, Descriptive Botany, from which we learn the art of describing plants with accuracy, so that their characters may be recognised with certainty; 2d, Systematic Botany, which explains the principles upon which are determined the mutual relations that combine the seemingly discordant members of the vegetable kingdom into one harmonious whole. Now the two following divisions contain the uncertain points of opinion to be settled by further investigation before our perception of them can be complete and satisfactory, viz., Structural Botany, which comprehends whatever relates to the laws of vegetable structure, whether external or internal, independently of the presence of a vital principle; and Physiological Botany, to which belongs all that concerns the history of vegetable life, from the moment that the vital principle is imparted to the seed, and the plant first breaks its shell, to the period of death, explaining the functions which the various organs are destined to perform, the changes they undergo in health and sickness, and under the influences exercised by climate, seasons, accidents, or the act of man.

In the second lesson the definition or short description of a plant is given to distinguish it from an animal or mineral, and then the various parts of which a plant is composed, are pointed out and briefly explained.

The third lesson notices the real distinctions between the root and stem, and the peculiar form which the roots of certain plants assume. The stem and its internal modifications are next examined, and the difference in its structure shown to be of the greatest importance in the classification of plants. A rapid glance is then taken of the characters by which Exogens and Endogens are distinguished, and of the peculiar mode of growth of the plants belonging to each of those great divisions of the vegetable kingdom.

The fourth lesson is devoted to the leaf and its venation,—the flower, and the several parts of which it is composed,—the fruit and its different forms, and concludes with noticing the various parts contained in the seed.

On Vegetable Physiology we have four lessons. The subject is introduced as a science full of interest and of great practical utility. The study of it tends to rivet the attention, to interest the human mind, and to lead man with admiring wonder to the contemplation of the beneficent Being who formed the objects which it embraces, causing them to stand as the connecting link between the animal and the mineral creation; receiving from the one what is indispensible to the well-being and enjoyment of the other.

An analogy is drawn between animals and plants. Of the vital energy in both we know nothing, nor of the way in which it acts, but we see its results. So long as the vital principle remains in a plant, various chemical processes are at work within it, elaborating and secreting numerous juices to nourish its various parts and increase its bulk. During its life, carbon, oxygen, nitrogen, hydrogen, and some other bodies which form the bases of vegetable element, are received within it, and these assume tangible form and substance, increasing its size, and producing the secretions so carefully lodged within its cells. But no sooner is it forsaken by the vital principle than all its functions cease to act; decomposition commences, and ere long the whole process of putrefaction has had its course.

At page 23 an extract is given from the "Theory of Horticulture," in which it is stated "that plants, besides their periodical rest of winter and summer, have also their diurnal repose; night and its accompanying refreshment are as necessary to them as to animals," and that during night plants "instead of decomposing carbonic acid by the extrication of oxygen, part with carbonic acid, and rob the air of its oxygen, thus deteriorating the air at night, although not to the same amount as they purify it during the day." Hence, our author observes, "by sunshine and in day-light plants make the air of the room more pleasant; they make it more buoyant by diminishing the carbonic acid, and increasing the amount of life-stirring oxygen; but as the opposite process takes place at night, therefore it is not wholesome to keep plants in our sitting or sleeping rooms at night." Now, as this is an inference which modern physiologists have shown to be incorrect, we think we cannot do better than subjoin the following extract on this subject from the second edition of the "Theory of Horticulture," p. 61. "If there is one absurdity among popular prejudices greater than another, or leading more to privation of comfort when most wanted, it is that of fancying that growing plants vitiate the air of an apartment by the carbonic acid they emit. . . . It may be true that plants destroy oxygen gas, and form carbonic acid; but if everything that produces that effect was also to be expelled, the patient herself must be separated from herself, for a human being consumes more oxygen, and gives off more carbonic acid, in five minutes, than all the plants in a sitting-room in 24 hours. It is wonderful that this notorious fact should not have removed the prejudice about plants deteriorating the air of sitting-rooms. It is still more surprising that the idea should be retained at the present day, at least when it is so well known that plants, in fact, purify instead of vitiating the atmosphere.

"One thing, however, is to be observed regarding plants. Although it is false that they contaminate the air of a sitting room in the way that is supposed, or in any other way, in the majority of cases, yet it is certain that unpleasant effects are produced upon peculiar constitutions by their *odour*. . . . But this class of effects does not in any way justify the exclusion of all plants from sitting-rooms; it only shows the necessity of avoiding the presence of such as have powerful or oppressive odours."

Another popular fallacy which our author continues to propagate is, that it is a general property of plants, and one of their most important vital actions, to throw off excretions by their roots, so as to deteriorate the soil. This is the reason, he says, why plants cannot grow year after year in the same soil, if it and their roots are disturbed. Dahlias, for example, do not like the soil in which Dahlias were grown the previous year. Hence the necessity and advantage of a rotation of crops both in farming and gardening. Without subscribing to this doctrine, Professor Johnston and others consider the success in the rotation of crops to be mainly due to the fact that every plant selects the food best suited to bring it to maturity, and consequently extracts from the soil as much of its constituents as it may require. And with regard to roots being the organs by which plants rid themselves of the secreted matter which is either superfluous or deleterious to them, Dr. Lindley observes, "It has been thought that if roots are so circumstanced that they cannot constantly advance into fresh soil, they will by degrees be surrounded by their own excrementitious

excretions. More correct experiments have, however, shown that such results are only obtained when roots are lacerated, and that they have no greater power of excreting matter than other parts of the surface of a plant. The theory of root excretions was sustained by Liebig, who regarded excretion as the necessary result of nutrition. It is now abandoned." ("Theory of Horticulture," 2d Ed. p. 30.)

We notice another mistake of our author, in stating that "the Hon. and Rev. Wm. Herbert proved by experiments in crossing certain Lilies that the crossed plants or offspring resembled the mother plant in their leaves and stem, while they resembled the father plant in all their productive organs. Many other hybridizers consider this principle to be very general."

"Now, in many experiments made by Mr. Knight with a view to ascertaining the comparative influence of the male and female on their offspring, he had observed in fruits, with few exceptions, a strong prevalence of the constitution and habits of the female parent. This, however, is the reverse of the result at which Dean Herbert had arrived in the very great number of experiments performed by himself on that subject, he believing that the male parent generally influences the character of the foliage, and the female that of the flowers ("Amaryllidaceæ," p. 348, 377). At a later period of his experiments he even ventured to say—'As far as I have observed, the prevailing disposition of cross-bred vegetables seems to assimilate more to the male than to the female parent, though the appearance may possibly be sometimes the reverse, and often strictly intermediate.'" Upon these statements Dr. Lindley remarks that, "in the majority of cases, Dean Herbert's opinion is the more correct of the two, yet I fear there is too little certainty in the results of hybridizing to justify the establishment of any axiom upon the subject." ("Theory of Horticulture," 2d ed., p. 495).

The second lesson is devoted to a brief notice of the principal elementary organs of plants, the circulation of the sap, and formation of wood, &c.

The third lesson consists of remarks on light, heat, and water as the external agents which, acting on the vital principle, set all the machinery of vegetation in motion.

The fourth lesson contains additional remarks on the circulation of the sap, and on the formation of various secretions, such as starch, gum, resin, &c., which are often peculiar to particular species of plants. The phenomena attendant upon the flowering and fruiting of plants are next discussed. After which we have remarks on the germination of the seed, and some observations on vegetable colours from Hay's work on that subject.

Upon Physical Geography we have six essays, chiefly compiled from Heale's Manual of Geography, and the works of Humboldt, Professor Moseley, Daniell, Wells, and others. They embrace remarks on the constitution of the atmosphere, its elasticity, weight, and temperature. The annual and diurnal motions of the globe are explained, as well as the variations of the seasons, and the difference in the length of the days and nights in those seasons. The formation of aërial currents and of clouds is also considered, along with the various atmospherical changes they tend to produce—such as rain, dew, radiation, &c. We are then introduced to the geographical distribution of plants in the following manner:—"As we ascend above the level of the sea, vegetation undergoes modifications analogous to those attending its progress to either pole, with this difference, however, that in the one case the phenomena succeed each other by imperceptible gradations, whereas in the ascent of a mountain they follow in rapid succession. Thus, on the mountains of equinoctial America, the grades of vegetation are displayed to the view of the observer, as on the gradually rising steps of a vast amphitheatre, the base of which is the level of the sea, whilst the summit reaches to the limits of perpetual snow; and the northern and southern hemispheres have not inaptly been compared to two such mountains placed base to base, the countries under the equator representing the foot, and the north and south polar regions representing the summits enveloped in perpetual snow. In the valleys of the Andes, for instance, are growing Palm trees, the Banana, the Coffee tree, the Sugar-cane, and the Cow tree, whose trunk pierced yields a vegetable milk—the majestic forests, the juicy fruits, the gorgeous flowers of the tropics. You ascend from 4000 to 5000 feet, and you find yourself in the temperate zone; fields of European grain wave around you, and there are forests of Oak and Pine. Climb these lofty mountains yet higher, and beyond the limit of 11,000 feet, you are in a region where grow none but the Arctic Lichens. In like manner on the sides of the Alps, the forms of vegetation may be traced from the temperate zone to the region of perpetual snow, in the succession of forests of Chestnuts, Birches, Oaks, and Pines, gradually becoming more stunted and more scattered, until they disappear on the borders of the line of perpetual congelation."

After this a rapid view is given of the influence caused by latitude on vegetation, and the subject concludes with remarks on the Flora of Britain, and the peculiar localities where certain plants are only to be found; and a notice of the trees and fruits which are considered to be indigenous to this country.

Entomology is introduced as one of the principal branches of the study of natural history, and though neglected or despised by the generality of mankind as a pursuit of too trifling a character to engage the attention of a rational mind, yet, as has been wisely said of it, "the Creator, the more to illustrate his wisdom, power, and skill, has decreed that the minuter animals shall be more complex in all respects than the mighty monarchs of the forest or the flood."

Six essays are given upon this subject. In the first we have brief descriptions of the orders into which insects are placed by entomologists, with the names of the several parts by which they are characterised and described.

We are next furnished with a few particulars relative to the habits and manner of life of some of the more common insects that the gardener considers among his enemies, such for instance as the cockchafer, the coccinella or lady-birds, the earwig, and many others that are known to be destructive and require to be sharply looked after. The following account is given of the Aphrophora spumaria, or froghopper, which our author calls Cicada. "You have often observed something like froth on the leaves of plants; this is no other than the covering in which the larva of the Cicada spumaria, or cuckoo spittle, hides itself from danger, serving the double purpose of a shelter from enemies and the heat of the sun. The froth exudes from the body of the larva, which is provided with a trunk or sucker that enables it to extract the juices of plants which are its food. There is scarcely any difference between the larva and the pupa. Both are of a pale green, but the perfect insect, popularly called froghopper, is brown, with whitish bands across the upper wings."

We think it a pity that representations were not given of a few insects in order to exhibit the transformations they undergo. This part of the work would then have been far more useful and interesting than it ever will be by the scientific names and meagre descriptions of the several insects that have been selected as worthy of notice.

Under the head of Land Surveying we have a description of Gunter's chain—the cross, staff, and other requisites used by surveyors, with directions how they ought to be employed in the measurement of land. We have also various problems and rules on mensuration of surfaces, such as are usually found in school books, with examples showing the manner in which the contents of a rectangular field and other pieces of ground are ascertained. These, although useful as exemplifying the mode of proceeding in certain cases where the fields are supposed to be bounded by straight lines, fail to give us any idea how to measure one or more fields whose boundaries are crooked, or to show how the same may be mapped, and laid down to a scale by reading from the field book the notes that have been taken of the different measurements. We have, therefore, only a slight sketch of the theory of Land Surveying, and are left without any information on some of the practical points with which it is so necessary that every young gardener should be acquainted.

Besides the measurement of land, examples are given how to ascertain the solid contents of a piece of timber, either square or round; and the cubic contents of beds or borders required to be excavated, or filled with fresh soil.

On Architectural Drawing we have a lesson, in which its great utility to gardeners is pointed out as enabling them to give plans and details of any horticultural buildings that their employers may wish to have erected. After noticing the different articles required in drawing, we are furnished with descriptions of various lines and figures, which are no other than a few of the definitions in geometry we find in one of our old school books—such as an acute angle, an obtuse angle, a circle, &c. The radius of a circle we have always understood to be a line drawn from the centre to the circumference; but here we are told, it is "a straight line drawn *through* the centre to the circumference!"

A plan, or map of a building, is defined to be a *horizontal section*, supposed to be taken on the level of the floor through the walls, columns, &c., so as to show their various thicknesses and situations, the dimensions of the several spaces or divisions, the positions of the doors and other particulars. The elevation is said to be the *upright plan*—while the section is a *vertical plan*—such as it would appear upon cutting through it. After this we have explanations of a few terms used by builders, followed by a dissertation on the sector and its uses, and concluding with data for determining the angles of glass roofs.

From the above the reader may judge how far the subjects treated of can properly be considered as applicable to architectural drawing!

Horticultural chemistry is stated to be "a science by the aid of which we can solve the most difficult problems which nature presents. We can understand the elementary particles of every compound body of which this earth is composed, and the atmosphere around it, and understand the reason of its adaptation to the support of animal and vegetable life." By chemistry we are taught a knowledge of the matters contained in plants, the various sources from whence a supply of nourishment can advantageously be obtained, and the preparation and preservation of manures. We have next some remarks on the organic and inorganic ingredients found in plants, and the manner in which they become serviceable to then. Then follows a description of Mr. C. Johnson's method of ascertaining the capability of any soil to take up and retain moisture, after which we have some observations from the works of Sprengel, Sir Humphry Davy and others, on the different substances which enter into the composition of soils, and in conclusion a short summary is given of the different points on this subject which it may be useful for the young gardener to remember.

Besides the subjects we have noticed, there are others on Penmanship and Letter-writing, with a short Glossary explaining some of the technical terms made use of in certain parts of the work, and the whole is terminated by a good Index.

As the author leaves his book to be judged by its merits, we can only say it contains a great deal of entertaining matter, but as already observed it is so badly arranged, and so full of typographical errors, as to render it both unsuited for its intended purpose, and undeserving the name of "The Young Gardener's Educator;" and we would advise the publishers to withdraw it from circulation.

The *Botanical Magazine* for the month of November figures the following subjects:—*Berberidopsis corallina*, a new Chilian genus of Berberidaceæ, with an inflorescence reminding one of Begonia fuchsioides. It is a very beautiful shrub, and stated to be quite hardy. It is scandent and evergreen, the leaves leathery oblong-cordate, and spiny edged, while the drooping coral-red flowers form terminal racemes continued downwards by the production of flowers in the axils of some of the upper leaves.

"It so completely unites the two orders Berberideæ and Lardizabaleæ, as fully to justify the union of these as tribes of one order, a step already taken previous to its discovery, in the Genera Plantarum of Bentham and Hooker fil."

Ritchiea polypetala, a Capparidaceous stove shrub, from Tropical W. Africa. It has compound leaves of from 3—5 oblong-lanceolate leaflets, and short terminal corymbs of large whitish flowers, with about 14 narrow petals, and numerous spreading stamens. *Aristolochia Gibertii*, a tropical climbing shrub, with large round-reniform leaves, great leafy roundish heart-shaped stipules, and auxillary flowers, comparatively small, the perianth very much inflated at the base, then suddenly contracted and terminating in a gaping two-lipped limb, the upper lip truncate with a dorsal horn, transversely barred with purple at the edge, and the lower one tongue-shaped and hairy all over. It comes from Assumption in Paraguay. *Higginsia "refulgens,"* said to be the Campylobotrys refulgens of gardens, but in its elongated stems and hairy leaves much more like C. pyrophylla. It is an ornamental stove herb, both in respect to its reddish olive, red-haired, and somewhat lustrous leaves, and its numerous starry red blossoms in short one-sided cymes, which stand out on long red stalks from the upper leaf axils. *Panætia Lessoni*, a graceful little Australian composite annual, with the habit of Rhodanthe, but with compact hemispherical flower heads consisting of yellow disk florets without ray, surrounded by a closely imbricated yellowish-green membranous involucre. *Ophiopogon "spicatus,"* a beautiful half-hardy herbaceous plant with broad grassy leaves, and long close spikes of deep purple flowers, very different, and much superior to the long-cultivated O. spicatus, and evidently the plant called O. Jaburan in gardens.

The plates of the *Florist and Pomologist* are devoted to a very handsome hybrid Rhododendron raised by Messrs. Veitch & Son, and named *R. Princess Alice*, and to the *Lady Downe's Grape*. The Rhododendron is said to be the result of a cross between R. Edgeworthii and R. ciliatum, and has a fine habit and large deliciously-scented white flowers. Lady Downe's Grape is now known to be one of the most valuable of the late-hanging black varieties. In the literary department there are some interesting notes on Strawberries by Mr. Radclyffe; a note condemnatory of the Golden Hamburgh Grape, as being "an inferior variety, to be eventually superseded by such varieties as the Buckland Sweetwater;" and a detailed account of Cucumber growing in winter.

Garden Memoranda.

Botanic Garden, Vienna.—This establishment is situated close to the Belvidere gardens in the Rennweg Gasse. The plant houses, which are on the left on entering, form three sides of a square. A fine avenue of trees is planted through the garden, at the top of which is the herbarium, a large and substantial building. The trees of the avenue just named are large, and are evidently meant to form part of the collection of hardy trees; they consist of Salisburia, Ailantus, Robinias, Gleditschia, Elms, Poplars, Walnuts, Ash, Limes, Oaks, Pinus sylvestris, and a variety of other genera. On the right of this avenue the garden appears to be devoted to pleasure ground, planted with flowering deciduous shrubs and intersected by a number of circular, serpentine, and straight walks. Fenced in on the left hand side is the Botanic Garden properly so called: a large portion of it is laid out in small beds, in which are represented the different orders of plants. Several large trees of Gleditschia and Ailantus were when we saw them covered with seed-pods. A continuation of the avenue above alluded to is carried around the top and down the left side of this garden, but the trees of which this part consists must have been

planted at a much later period than those of the first portion, as they are comparatively small. The ground enclosed by this avenue is laid out in beds of various sizes, and planted with named deciduous trees and shrubs in generic groups. A small greenhouse here is filled with New Holland plants; in front is a garden for herbaceous plants, in the centre of which is a circular basin for aquatics; the herbaceous plants are arranged according to genera. There is also a large collection of tender plants. The houses, which have dark roofs, are high and narrow. The first is filled principally with New Holland shrubs, together with a few New Zealand Dacrydiums; the pots are placed quite close together, so that a large number are put in a small space. This house is about 50 ft. long. The next is filled with greenhouse plants, remarkable for the beauty of their leaves, such as the more hardy Palms, Cycads, Figs, Ferns, &c.; the third contains Solanums, Neriums &c.; a fourth Conifers, all of which are hardy in England. There is also an Orchid house well filled, chiefly with Stanhopeas, Catasetums, Pleurothallis, Oncids, &c.; no Aerides or Vandas are to be found in the collection; intermixed with the Orchids are also numbers of small Pandanus of various kinds and some Ferns. The pots are placed on posts driven into the ground and not on stages. Beyond this is a stove house about 60 ft. long, containing a large number of plants arranged according to their natural orders; amongst them are many good specimens of Palms, and some plants of economic interest such as Coffee, Tea, Cocoa, Pepper, and plants of a similar description.

Miscellaneous.

Large Yew Trees in Kent.—In your paper of Nov. 1 you mention the size and estimated age of certain Yew trees in churchyards at various places. I beg to inform you that in the graveyard at Loose (two miles from Maidstone) there is a noble tree of this kind, which by appearances is not unlikely to survive a thousand years yet; the top being large, and as healthy as any specimen I know of; not a dead tip to be seen, and yet the trunk is a mere shell, hollow, and with several openings, none of these, however, exceeding 2 feet at the widest part. The thickness of the shell being from 8 inches to a foot or in places less, the outer bark is making its way through the openings, and in some places returning in the inside. Several of the largest limbs are also hollow, and the bark in like manner is endeavouring to surround the diseased part. The length of the trunk is about 10 or 11 feet, and the girth at the smallest part between the root claws and the breaking of the limbs was a few years ago, when I took it, 32 feet 10 inches. The tree is now fenced round to prevent intruders injuring it; but its dimensions may be clearly seen; and I question much if a tree of its size and vigorous health can be found anywhere in the kingdom. The situation is near the base of a hill of Kentish rag or limestone. Some other large Yew trees are to be found in the neighbourhood: one in Ulcomb churchyard measured upwards of 27 feet in circumference about 4 feet from the ground, and it seemed tolerably sound: certainly there were no apparent cavities. The formation of the tree was singular, for at the part measured there was a swelling or enlargement, so that the girth at the collar and above the height given was much less, perhaps 20 feet; and that is a good size. A similar tree to the last named is in Leeds churchyard, about 6 miles from Maidstone; the same barrel-shaped trunk giving a large girth at 5 feet up. Both trees, especially the one at Ulcomb, were in excellent health. The shell, or part shell, of a dead Yew, is also in Boughton churchyard, which seems to have been as large as the one at Loose: it was said to have been injured and killed by fire some years ago, but the stump bears no trace of that. It, however, maintains its reputation as a durable timber; the many years it has been dead making little apparent difference in its soundness. Of the estimated ages of any of these trees I have no data whatever; but their size conjures up ideas of bygone times of which it would be difficult to form any opinion. I hope, however, some of your country readers will favour you with reports of other remarkable trees in their different localities, whether they be Yew trees or of other kinds. *J. R., in the Builder.*

Calendar of Operations.

(For the ensuing week.)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Camellias will soon be making a fine display. They should therefore receive careful attention as to watering with tepid weak liquid manure. Let them not, however, receive a drop until they are really in want of it, and then give it liberally. If in the case of over dryness air bubbles arise, continue to fill up with water until they cease. Let not a drop be spilled on the conservatory floor at this period, and keep a very little back air all night, in order to let atmospheric humidity pass off. Be cautious in the use of fire-heat; the less the better, provided frost is effectually kept out. See that early flowering Cinerarias have the lightest place in the house, close to the glass; crowding is very prejudicial to this plant. Let plants of Eranthemum pulchellum coming into blossom have abundance of water and a warm situation. Take care that pots in the conservatory forcing pit are not plunged deep, if there is a lively bottom-heat; in the neighbourhood of the roots by no means exceed 75°. Indeed, if atmospheric heat of 60° or 65° can be secured by other means, a bottom-heat of 70° would suffice.

FORCING DEPARTMENT.

PINERY.—Atmospheric moisture must not be withheld from Pines in a swelling state, although we have arrived at the dark days. Nothing has a greater tendency to premature ripening. Give little or no air at this season, except under the pipes. There should, however, be a slight communication of this kind all day, and sometimes all night if the weather is mild.

EARLY VINERY.—Where the roots are inside, either wholly or partially, they should be thoroughly watered, if rather dry, with liquid manure, at a temperature of 75° or 80°; this will impart nutrition and warmth. An ounce of best guano to a gallon of warm water (allowed to settle), to equal parts of clear and strong soot-water, with the addition of a small quantity of the drainings of the cow-house, will be found excellent. If the soil is exceedingly dry, the application of clear water should precede that of the liquid manure, or the latter will be wasted by running off in the fissures. As before observed, proceed moderately; the first three weeks in such matters should hardly be considered forcing—merely softening the shell of the bud.

MUSHROOM HOUSE.—Be moderate in the use of fire-heat. If the beds have been made in due time, and on substantial principles, little fire-heat will be wanted. When much fire-heat is required it is a sure sign that the beds are weak; the introduction of Seakale roots, Chicory, Rhubarb, &c., in succession, should be duly attended to. The old mode of forcing these under pots out of doors should be abandoned; let justice only be done to the new method as a system, and we will engage that nobody will return to the out-door plan, provided they have a house or pit.

FLOWER GARDEN AND SHRUBBERIES.

Once more look over tender stock, and add any protection necessary according to principles heretofore laid down. Remember that fresh sawdust, ashes, or cocoa-nut fibre refuse are excellent protectors to the crown and collar of tender plants. It will be advisable to keep all Carnations or Pinks which may have been potted during the past month from the action of frost, as they are unable to withstand it so well as those which have established themselves by being potted earlier in the season; they should not, however, be shut down when damp, for though extremely hardy, no flower suffers so much from a want of a free circulation as the Carnation. Examine the plants after the frost goes, and fasten the soil carefully round the stems. They want very little water at this season of the year. Tulips beds as a matter of course have been covered. It is a good plan to lay young shoots of Gorse between the rows of Pinks where rabbits are apt to come, and it will prevent cats from taking liberties with the beds, independent of protecting the plants from the cutting winds of the winter months. Look well to the turning of compost heaps, &c. Modes of storing half hardy plants away differ in different situations; some can afford pits, some even can spare house-room, and some are driven to the cellar. Whatever mode be adopted, let it be borne in mind, that confined damp is nearly as prejudicial as frost. A lean-to shed is a very good place; and plants with a ball of earth dried on them, will keep very well here plunged in coal ashes, with the addition of an old mat and a little straw over the shed during severe weather.

HARDY FRUIT AND KITCHEN GARDEN.

Winter has at last commenced, and it behoves every one possessing a garden to cast their eyes once more round, in order to see whether its rigours can be farther softened with regard to anything tender. The best policy with Lettuces intended for the supply next spring, is, it is said, to allow them to freeze tolerably firm before covering them up. A very light screen of straw should be shaken over them at first, and when this is frozen, add a little more; the object being to keep them frozen as long as possible. Above all, do not uncover them when a thaw arrives; let them remain until completely thawed. An opportunity will now occur of covering the roots of Asparagus with a good coat of the best rotten manure. Hard frosts frequently do serious injury to this root, for want of such a procedure. Celery ground will answer well for a new plantation; it should be ridged to mellow as the roots are taken up. At this period, those who are desirous of laying the foundation for a good garden in the ensuing year should closely review the routine of cropping for the past summer, and even cast their eye back on the preceding year. Various are the schemes or rotations practised by different gardeners, many of them being based on no better foundation than the convenience of the present hour; when, however, the kitchen garden is sufficiently extensive, and where much produce is required, the rotation of crops should be carefully studied. The great difficulty is to procure fresh ground for the Brassica tribes, so numerous are the kinds, as well as successions in cultivation. Broken up plantations of Strawberries, Raspberries, bush-fruit, with Celery ground, should at all times, as a leading principle, be set apart for some of the Brassica family. The ground from which Celery has been taken, especially in the Scotch or bed fashion, is also ready made ground for new Asparagus beds. Potatoes prepare well for almost any crop. Deep or tap-rooted crops should be succeeded by shallow or fibrous ones. Carrots and Onions, in rich kitchen gardens, will be found a much safer crop if grown on high raised beds without a particle of manure. When the course of cropping has been decided on for the ensuing year, and duly entered with numbers in the garden book, the usual practice is to set up laths opposite to the space appropriated to each crop, with a number corresponding with the book, and the name of the crop on one side and on the other the manure (if any), of what kind, where from, and the quantity, with the mode of cultivation, digging or trenching. This done, a labourer who can read the label can set out or proceed with the work at any spare time. This, therefore, is a matter which should receive attention.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Dec. 3, 1862, as observed at the Horticultural Gardens

Nov. and Dec.	Moon's Age.	Barometer. Max.	Barometer. Min.	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth. 1 foot deep.	Of the Earth. 2 feet deep	Wind	Rain.
Thurs. 27	6	29.590	29.434	51	26	38.5	43	43½	W.	[illegible]
Friday 28	☽	29.724	29.694	52	38	45.0	43	43½	S.	[illegible]
Satur 29	8	29.631	29.586	46	27	36.5	44	43½	E.	[illegible]
Sunday 30	9	29.737	29.692	48	31	39.5	44½	43½	N.E.	[illegible]
Mon. 1	10	29.637	29.511	46	34	40.0	44½	44½	E.	[illegible]
Tues. 2	11	29.531	29.518	51	39	45.0	44½	44½	E.	[illegible]
Wed. 3	12	29.680	29.600	50	43	46.5	44½	44½	E.	[illegible]
Average.		29.647	29.576	49.1	34.0	41.5	44.0	43.9		[illegible]

Nov. 27—Rain; hazy; very clear and fine; quite cloudless.
— 28—Dense fog; fine; cloudy; overcast.
— 29—Foggy; overcast; foggy at night; slight frost.
— 30—Foggy; fine; foggy; rain at night.
Dec. 1—Hazy; fine at night.
— 2—Slight fog, exceedingly fine with bright sun in forenoon; fine.
— 3—Fine; partially overcast; rain at night.

Mean temperature of the week ½ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 36 years, for the ensuing Week, ending Dec. 13, 1862.

December.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 7..	47.8	35.9	41.9	19	0.52 in.	4	2	3	3	7	8	6	1
Mon. 8..	46.5	34.0	40.2	21	0.36	2	5	3	2	3	12	9	1
Tues. 9..	46.3	35.7	41.0	15	0.31	3	7	4	1	4	11	5	1
Wed. 10..	46.4	33.5	39.9	12	0.33	2	4	4	1	8	9	5	2
Thurs. 11..	45.4	32.5	38.9	9	0.62	2	3	3	4	6	13	5	2
Friday 12..	45.6	33.8	39.7	16	0.44	3	2	2	1	8	13	5	2
Satur. 13..	46.4	32.7	39.6	12	0.16	2	3	4	1	9	12	3	2

The highest temperature during the above period occurred on the 13th, 1842—therm. 61 deg.; and the lowest on the 13th, 1846—therm. 11 deg.

Notices to Correspondents.

☞ CORRESPONDENTS are most earnestly requested to write on one side only of their paper; for their compliance with which petition we shall be ever grateful.

BULBS: *M C S.* The man must be mad to give you such advice. We regret to say we do not recognize the Apple by the sketch. Why not send the Apple itself?

DIPLOMAS: *Institution.* We have seen nothing in the way of Diplomas, Certificates, or similar testimonials, to be compared for beauty with those produced by the patent process of Bradbury, Wilkinson & Co., 12, Fetter Lane, London. You should apply to them for particulars.

GOOSEBERRY CATERPILLAR: *M H.* Powdered Hellebore, if fresh and good, dusted over the trees is reported to kill this pest; but the most effectual of all remedies is in January to carefully pare the surface soil clean off all round the bushes to the depth of 3 inches or so, and to collect it into a heap and burn it. For other remedies to get rid of this Caterpillar, see former volumes.‡

GUANO WATER FOR ORCHIDS: *Birmingham.* Some experiments with this were tried several years since, and ended in total failure. Clear guano water, of various degrees of strength, was tried for watering Orchids; and in all cases it either caused the death of the plants or injured them, and in no instance did it produce any beneficial effect. It seemed for the first few days after application to make the foliage plump; but afterwards the leaves dropped clean off, as in a plant shedding its leaves in autumn, although still perfectly plump, green, and apparently in good health. It also stopped the young growth however weak the solution, and one watering produced the same effect as if repeated frequently. It was found to take from 10 to 15 days before much effect was produced, but when the plant once began to sicken it never after recovered.

MEALY BUG: *Axminster.* Clarke's preparation for the destruction of bug answers the purpose well if applied and used according to the printed directions that accompany the mixture. It must however be applied three or four times before the plants are entirely clean. The following are or were Mr. Clarke's directions, but we have not heard of the preparation lately. Empty the bottle into a pail, or other vessel sufficiently large to admit the heads of the plants, then add three quarts of soft water, into which dip each plant singly, taking care not to let it remain immersed. When the plants are too large for dipping, lay them in a trough (to prevent any waste of mixture) and syringe them; when too large for this, apply it with a brush or sponge. Two or three dressings on succeeding days will prove effectual—and in many cases one application will be sufficient. Where plants are much infested, especially old woody ones, it will be necessary to apply the mixture from time to time, until the plants have made new bark. Put into a bottle and cork it down after each time using. It should be often stirred while dipping. When the plants are young and tender, the mixture should be made weaker accordingly. The plants should be kept from the sun during the application, and while they remain wet. The address of Mr. Clarke is or was, Percy Cross Nursery, Walham Green, Fulham.

NAMES OF PLANTS: *H B.* Variegated Euonymus japonicus.

ORCHARDS: *C A B* asks whether there is any good book on Apples, the management of Orchards, and the making of Cider.

SARRACENIA PURPUREA (see p. 1124.) *O P.* We know nothing, and can learn nothing about this supposed remedy for small pox. We neither believe nor disbelieve. The plant is not named in any American medical work that we have seen. As to the word *variolaris* applied to another species, the term has no reference to medicinal qualities, but to the resemblance of certain spots on the leaf to small pox pustules.

SUBSCRIPTIONS: *J W.* We cannot undertake any such office—if, indeed, we understand what it is that you refer to.

TRANSPLANTING EVERGREENS: *H W.* Move your Hollies in September, and with balls of earth.

VINES: *C B F.* It needs a dissertation to reply to your enquiries. We would advise you to purchase "Thomson on the Vine," a good book on the subject. If you find difficulty in applying the instructions, then favour us with further enquiry.

Smithfield Club Cattle Show.

MESSRS. SUTTON AND SONS respectfully invite their customers and the public to inspect their SPECIMENS of ROOTS, and other Agricultural Produce, on their STAND, No. 98, in the Gallery of the New Agricultural Hall, during the ensuing Show.

Smithfield Club Cattle Show.

PRIZE ROOTS.—No. 93 STAND, in GALLERY.
James Carter & Co., 237 and 238, High Holborn, W.C.

Smithfield Club Show, Stand No. 95—Galleries.

WILLIAM SKIRVING begs to announce to his Friends and the Public that he will ATTEND, as usual, at the LONDON CATTLE SHOW (Agricultural Hall, Islington), to Exhibit ROOTS and Take Orders for AGRICULTURAL SEEDS of the most approved kinds.

The variety of SWEDE which W. S. will exhibit this Show has, in his experiments for three years past, proved to be superior to all other Swedes now in cultivation, in every respect, for weight of crop, quality of the bulb, and for long keeping. The Seed of this year's growth he can strongly recommend, being all grown on his own Farm under his particular care, and as having entirely escaped the blight that has injured the greater part of the Swede Seed grown in the Southern Counties.—Liverpool, Dec. 6.

Smithfield Club Cattle Show 1862, Stand 23.

RANSOMES AND SIMS, Orwell Works, Ipswich, will exhibit at the above Show a choice COLLECTION of their celebrated AGRICULTURAL MACHINERY, to which they respectfully invite attention.

Every information, with descriptive CATALOGUES (gratis), will be furnished upon application to the Attendants at their STAND 23.

Cattle Show.—Stand 105.

CATTLE INSTRUMENTS, PROBANGS, &c.

READ'S PATENT VETERINARY INJECTING SYRINGES, Improved BALLING IRONS for HORSES, &c. Improved HOLLOW PROBANGS, for Relieving Hoven or Choked Bullocks, Calves, Sheep, &c. READ'S New Patent GARDEN WATERING ENGINES, MACHINES, and SYRINGES, with all the latest Improvements.

Manufactured only by the Patentee, RICHARD READ, Instrument Maker by Appointment to her Majesty, and her Majesty's Hon. Council of India.

35, Regent Circus, Piccadilly, London, W.

, Descriptions, with Drawings, post-free.

Sixty-fourth Show of the Smithfield Club.

THE SMITHFIELD CLUB, CATTLE, and IMPLEMENT SHOW for 1862 (removed from Baker Street Bazaar), will be held at the NEW AGRICULTURAL HALL, near the Angel, Islington, on the following days:—

MONDAY, December 8, Opening Day, Admission 5*s.*

TUESDAY, December 9, 1*s.*	THURSDAY, December 11, 1*s.*
WEDNESDAY ,, 10, 1*s.*	FRIDAY ,, 12, 1*s.*

Open from 8 o'Clock A.M. to 9 P.M.

Western Entrance (by King's Cross and Pentonville Hill), Liverpool Road. By this direct road Carriages avoid the Toll Gate. Eastern Entrance, Islington Green.

The Cab Fares from the Railway Stations are as follows:—From Great Northern and from the Highbury Station on the North London, 6*d.*; from the London and North Western, or Great Eastern, or Fenchurch Street or London Bridge Stations, or the South Western, 1*s.* 6*d.*; from the Great Western, 2*s.* Omnibuses from London Bridge and the City, Kennington and Blackfriars, Westminster, Chelsea, Brompton, Paddington, &c. journeys up to 9 P.M., either past the Angel or past the Hall.

Tickets for Admission the Opening Day, Monday, December 8, Price 5*s.*, with a Map of the Route to the Hall, to be had of Mr. MITCHELL, 33, Old Bond Street, W.; Mr. SAMS, 1, St. James's Street, S.W.

ROYAL AGRICULTURAL SOCIETY of ENGLAND.

The GENERAL MEETING of Members will be held at the Society's House, No. 12, Hanover Square, London, on THURSDAY, December 11, at 11 o'Clock.

By order of the Council,
London, Dec. 3. H. HALL DARE, Secretray.

The Agricultural Gazette.

SATURDAY, DECEMBER 6, 1862.

MEETINGS FOR THE TWO FOLLOWING WEEKS.

MONDAY,	Dec.	8	Central Farmers' Club .. .. 6 P.M. (Mr. R. Smith on Stock v. Corn.)
MONDAY,	—	8	Show of the Smithfield Club in the Agricultural Hall, Islington.
TUESDAY,	—	9	
WEDNESDAY,	—	10	
THURSDAY,	—	11	
FRIDAY,	—	12	
THURSDAY,	—	11	Agri. Society of England .. 11 A.M. (General Meeting.)
TUESDAY,	—	9	Poultry Show at the Crystal Palace.
WEDNESDAY,	—	10	
THURSDAY,	—	11	
FRIDAY,	—	12	

THERE are few persons to whom English agriculture is more indebted than it is to Mr. HOLLAND, M.P., Chairman of the Council of THE ROYAL AGRICULTURAL COLLEGE. Many years ago, having occasion to criticise an estimate of some of our public men which had been published in America, we had to point out the real though unobtrusive services rendered by others whose names were not so frequently in the columns of our newspapers; and Mr. HOLLAND's services of this kind were then declared, as ever since they might have been, to stand in the very highest rank.

We doubt not that in years to come, when the long and useful career of the Cirencester College is looked back upon, due credit will be given to the man to whom its very existence hitherto has been owing. Let us not forget, in any discussion of its present condition, or of what may be due to individual Professors, that at a time when the Institution was on the eve of abandonment and failure, the present Chairman of its Council resolved to take the whole of its responsibilities upon himself—"to find the funds requisite to pay off liabilities, complete the buildings, and carry on the Institution in all its departments on the plan authorised by its charter."

Our remarks on Mr. HOLLAND's letter of last week must be prefaced by an acknowledgment of this kind, for we would not have our readers forget what right, in reality, as well as merely from official position, the writer of that letter has to the guidance of the Institution whose welfare at present seems in danger. The burden of many thousand pounds, which was then in so public-spirited a manner assumed, was indeed undertaken only on the understanding that the whole control and management of the College was to be transferred until the debt should be repaid. The responsibility of the burden, as well as of the management, was afterwards divided with Mr. HOLLAND by four other gentlemen—Earls BATHURST and DUCIE, and Messrs. LANGSTON, M.P., and SOTHERON ESTCOURT, M.P., and these or their survivors are the present Council.

That they are in effect the proprietors of the Institution—that large advances have been most nobly and disinterestedly made by them on its account—does not however, we imagine, spoil the public character of the Agricultural College, or destroy the right and the corresponding duty of public criticism connected with it when circumstances require it. And do not circumstances demand it now?—Mr. HOLLAND's letter seems to indicate that they do not. "The College," he says, "has not been, either five months ago or at any time since, on the eve of breaking up. It is not and has not been disorganised; it is flourishing and is well managed, both as regards its discipline and its system of instruction. The present session may be reckoned as one amongst its most successful," &c. Admitting all this, it must be pointed out that criticism will be comparatively useless when the less flourishing reports of future sessions come to be presented. It is only useful when it warns beforehand of the disaster that is coming—and that is its only object in the present case. Whether or not we have read aright those indications of the future which have been named, time will prove. Mr. HOLLAND has indeed curtly pronounced our statement incorrect; but the "College" may not be disorganised, it may even in a certain sense be "flourishing," and yet what is said on page 1105 may have declared the truth.

Is it not the case that "the establishment" at the College is on the eve of breaking up? Have not two of the Professors resigned—has not a third been dismissed—and does not the fourth remain, simply because all he claimed on tendering his resignation has been conceded?—Has not the unanimous welcome of the new Principal by the Professors been changed into unanimous hostility?—This then is "the manifest state of disorganisation" to which we referred—this it is, which presents such a contrast to the harmonious working of the whole machine four years ago.

Thus much must be said in justification of an accuracy which has been denied. No doubt, the classes continue to be taught and the lectures to be delivered; Professors BUCKMAN and COLEMAN do not the less perform their duties by their pupils because they leave next midsummer; and doubtless the best possible arrangements have been made, though of this we know nothing, to fill the position vacated by Professor BROWN. The object of our remarks is not to alarm the friends of pupils, or to dissuade any from becoming students at the best Institution which exists for their instruction. Nor, let us add, is it in the least our wish to draw Mr. HOLLAND personally into any public discussion of this subject, or into any proceeding in short connected with it, which his own good judgment, when sufficiently informed, will not dictate. Our object is to retard, to hinder altogether, not to hasten the mischief which seems growing, and we do not therefore care to inquire particularly into the extent to which the recent management of the College has already borne its inevitable fruit.

It seems from Mr. HOLLAND's letter, that the investigation of "the circumstances which have occurred in reference to the internal discipline" of the College has hitherto been hindered by the inability of the Council to meet in person for examination and inquiry on the spot. We sincerely hope both for the cause which, we regret to learn, has hitherto prevented this meeting, and for the interests which are contingent upon it, that it may soon take place.

Meanwhile it is plain from the course of events that the Council, however disabled it may be, is competent to enjoin, to dismiss, and to act in every other way necessary to the official discharge of its duties. A fear may however be expressed that the disability which is thus confessed may have been real though not official—diminishing administrative ability and competency, though it has not diminished executive power or activity—so that the conduct of affairs may have hitherto proceeded on insufficient grounds. Certainly, when once the whole case has been thoroughly sifted before the Council, no one will doubt the good faith of the decision that may be arrived at. The unfortunate thing is that meanwhile the course of events is hurrying matters to a decision of their own which we believe to be most prejudicial to the Institution.

One word more:—It is complained that one party to the existing difference has taken very active means, with the aid of the press, in creating a prejudgment by the public, while silence has been enjoined by the Council on the other. Professor BROWN's letter appeared in our columns a month ago, and Mr. HOLLAND's letter appeared last week; but beyond these nothing has been written or even prompted here by either of the differing parties. That silence should have been enjoined by the Council on either of them is to be lamented. More will be done, we are persuaded, towards the settlement of these differences by a thorough discussion of the grounds out of which they have arisen, than in any other way. That the public should form a prejudgment of the subject, is due not to the active means taken by either party to induce it, but to the very nature of the case. The whole change of affairs has taken place within the last four years, and it is naturally attributed to the new element which, during that period, has been introduced.

The work of explanation and if possible of justification thus certainly rests upon the Principal. And besides all this, the public feel that they are indebted to the Professors who are being ousted. Twelve or 14 years of useful labour are being thus brought abruptly to a conclusion; and we want to know whom we have to thank for that. We commenced by referring to the personal obligation under which the agricultural public lie to Mr. HOLLAND; let us conclude with a corresponding reference to the obligation under which we lie to the Professors of the Agricultural College, for they too when it was in difficulties proposed a most disinterested sacrifice, offering, rather than give up the Institution to discharge the duties of their offices unpaid until it should again be prosperous. We are naturally unwilling to believe that these tried servants of the public have all at once become unworthy of the public confidence.

WE reproduce the larger of the two dairy diagrams which were published last week, partly because of an error that was committed in describing it, and partly that some of the further lessons which it indicates may be pointed out. The height of the curve above the base line indicates the *weekly* produce of milk in *gallons*—not the daily yield of the herd in quarts. The nature of the curve represents the varying quantity of milk for weekly disposal in the dairy. Where the herd is well managed, an annual curve of this kind ought to correspond exactly to the natural produce of food. No doubt it is contingent upon the natural produce of food. If Grass fail the curve will drop, and if it be particularly abundant in any month, the curve in that month must rise; but it is contingent on other things as well. The remarkable drop which took place in the curve between the 33d and the 35th week of this year, was not owing to any sudden failure of food—it was owing to a sudden failure in health. The distemper attacked the herd, and produced the result which is so strikingly represented here. Again, the very late ascent of the curve—not till the 15th week of the year in the curve for 1858, was not owing to lack of food, it was owing to the cows not coming to the pail early enough in the season. And this points out a fault, whether unavoidable or the result of mismanagement, which is no doubt of very serious consequence. The cows ought to be in milk when a full bite of Grass comes. And a curve which like that of 1862 rises continuously and almost abruptly during the 16th, 17th, and 18th weeks of the year, shows that the cows are in the condition in which they are able to make the full use of these opportunities.

These curves are to be compared only as regards their relative form—not as regards their actual height—for the number of the cows in this dairy has been increasing year by year. There were 55 cows in 1857, 52 cows in 1858, 60 cows in 1859, 66 in 1860, 71 in 1861, 71 in 1862, and now for

1863 if all go well over 90 will be in milk. Of these 3 will come to the pail in January, 27 in February, 14 in March, 27 in April, 7 in May, and 8 in June.

They will thus probably make a less even curve than that of 1862 in the first few months of 1863, which may have to record the varying quantity of milk ready week by week as due not more to the quantity of food naturally provided than to the number of cows which week by week are giving milk.

Even the details of these curves are worth

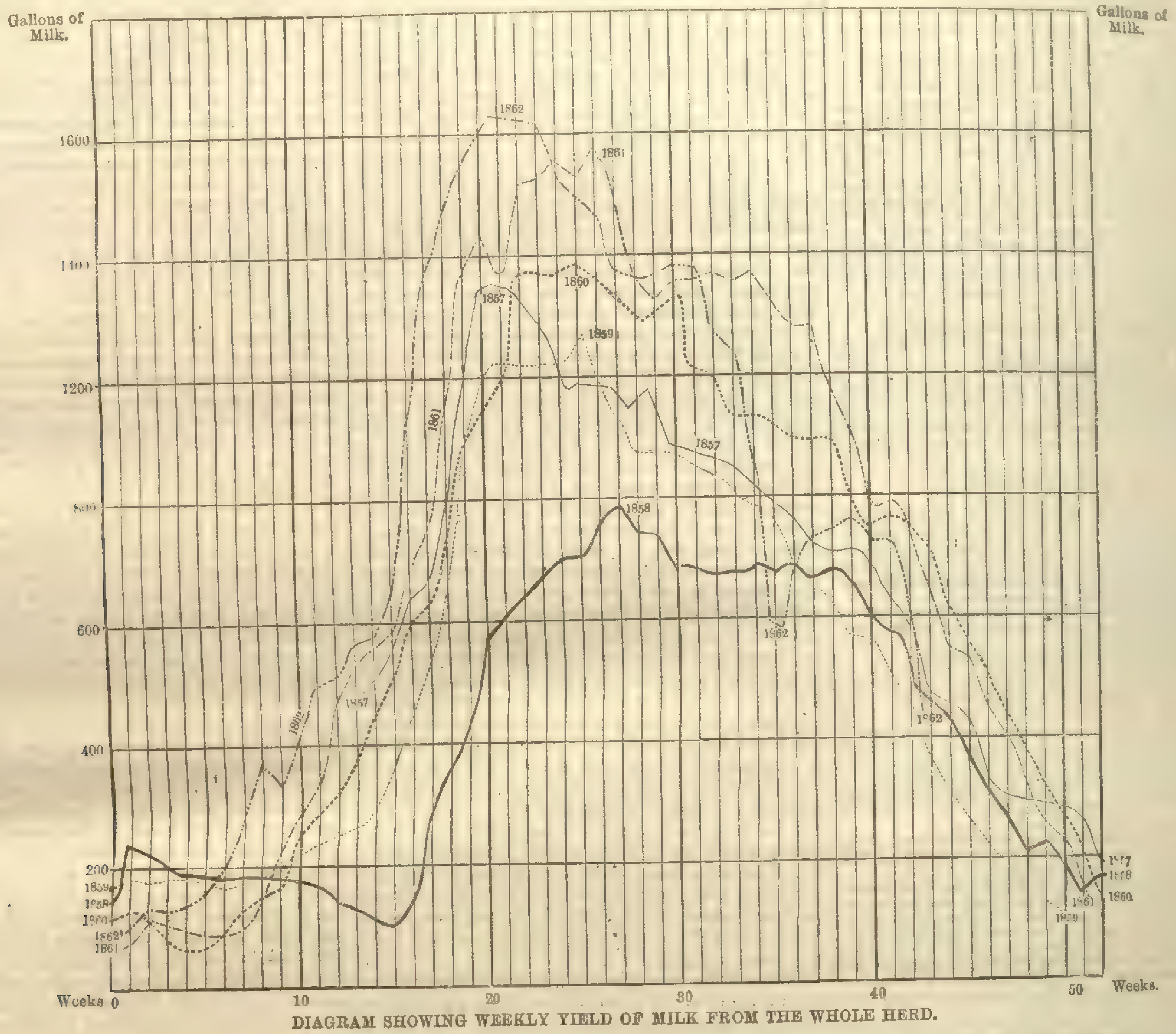


DIAGRAM SHOWING WEEKLY YIELD OF MILK FROM THE WHOLE HERD.

studying. Thus the sudden drop between the 8th and 10th week of 1862, tallies exactly with Mr. Glaisher's record, in his meteorological reports—"from the 24th of February to the 5th of March there was a daily deficiency of temperature to the extent of 5½°."

These lines will bear study and comparison in this way with meterological records—and we are sure that Mr. Harrison, of Frocester Court, has done a good thing by the method which he has thus pointed out for pictorially representing the proceedings of a dairy.

BOTANY AT THE ROYAL AGRICULTURAL COLLEGE.

I have in past years frequently had the opportunity of paying a visit to the Agricultural College at Cirencester; and being fond of natural history studies, and more especially botany, and taking much interest in the changes effected in wild plants from cultivation, I used to find much pleasure and instruction in examining the College Botanic Garden. In those pleasant days of old, when I enjoyed the hospitality of the late lamented kind-hearted and judicious Principal, the Rev. J. S. Haygarth, the botanical department and experimental garden were under the charge of Professor Buckman, whose merits are so well known by all those interested in the culture of Grasses and the improvement of our pastures. His numerous and interesting papers have indeed given him a commanding position in all matters relative to cereals and cultivated plants, and his connection with the College has I believe been of no small advantage to the students. His remarks on the various plots in the Botanic Garden were always enlightening, and from their peculiar pungency pleasant to hear.

Various circumstances, including an absence on the Continent, have precluded my visiting Gloucestershire as I formerly did frequently for several years, and I only lately heard with regret of my friend Mr. Haygarth's death, and the appointment of a gentleman in his room, who was understood to be very anxious to act upon a system different to his predecessor—in fact to change everything according to his own particular ideas, whatever the result might be to those who had worked so harmoniously with the late Principal. I only mention this as a report that had reached me consequent upon inquiries made by friends to me as to sending pupils to the Royal College.

A short time since, as a particular matter led me into Gloucestershire, I determined to have a look at my old haunts about the Cirencester College, and revive my botanical knowledge by a study of the old garden plots. So one fine morning I took my accustomed course by Lord Bathurst's park wall; I should have gone through the beautiful park as I had often done before, but was told that the door in the park wall opposite to the College, which in Mr. Haygarth's time had been always kindly allowed to the use of students, was now locked up. I might here perhaps moralise on the changes of courtesies and manners that time brings about, but as Goldsmith says—"Let similes drop."

On reaching the entrance to the College grounds, I found a new lodge in the process of building, though to my mind not in the best possible taste, but I understood it was intended as a residence for the gardener; and as an expensive item in the annual accounts, it seems to suggest a large balance in hand at the bankers to the credit of the College. Judicious improvements with surplus money, are no doubt right enough.

As I passed on towards the College, I perceived that the pasture on the left hand that I remembered open, had been taken in and enclosed with a border of Yew trees, and beyond a space that was crowded with short and narrow beds, suggesting the idea of graves, was a double line of Irish Yews, looking very lugubrious, so that with the College chapel in view, it appeared as if a cemetery had been formed, which I felt no disposition to examine. I was about to hasten on to the old remembered ground I was once so familiar with, when I was informed that the Yew-bordered, cemetery-like declivity before me was the New Botanic Garden, and that the old one was now only devoted to kitchen purposes.

This new garden, formed out of the limited pasture appertaining to the College Farm, is situated on one side of the Principal's house, to which it seems an appendage rather than to the College, and is divided into two parts by the double line of Irish Yews before mentioned. One division is devoted to the cereals, and the other to plants in general. On examining the beds containing the Grasses, I was surprised to find that a considerable number of labels were obviously wrong, and that names had been placed by some ignorant person at random, so that I could hardly believe it possible that the Botanical Professor had now any control over the garden. At any rate great blundering or astonishing carelessness was perceptible on all sides, to such a degree as to render the garden in its present state useless for practical instruction. This, I think, must be acknowledged when I say that I found Lolium italicum labelled as Ammophila arundinacea, and Briza maxima was named Briza media. In the bed named for Festuca gigantea nothing but Arrhenatherum avenaceum could be detected, and Avena strigosa, as well as several other plots, were honoured with the presence of this common "Oat-grass" instead of what they were declared to have.

Upon the whole, the result of careful examination of the Grass plots showed the almost incredible result of 42 Grasses with wrong labels, and only 25 right. Seventeen of the beds were empty. Now, supposing any transposition or misnaming of seeds to have possibly occurred in some instances, such an excuse can scarcely be admitted for 40 cases, and any wrong appropriation would have been noticed and corrected by a competent botanical observer. The conclusion, then, is inevitable that the present director of the Botanic Garden (if there be one) is not master of the knowledge necessary to his position. Even in the flower garden I noticed several careless if not ignorant misappropriations, necessarily inducing confusion in the mind of any examining student, and one was ludicrous enough—the well-known Senecio squalidus being ticketed S. vulgaris!

I scarcely need say that I found on inquiry that changes of designation in the College had proceeded beyond the garden, and that by some transformation of affairs, Professor Buckman no longer filled that Botanical chair with which he had been so long connected, and to which he had so zealously devoted himself; but that some young gentleman from Edinburgh, probably more familiar with *Materia Medica* than British Botany, had been sent for to enlighten the students with his northern acquirements, and that too in the middle of a session, when a course of botanical lectures by the late professor of that science were brought to an abrupt conclusion.

The vexatious interference of the present Principal with the old professors who worked so harmoniously with Mr. Haygarth, has unhappily become notorious from recent events at the College. This I have no

...re to enter upon, nor is it my object to do so. But I have a right to observe and inquire as to what affects the welfare and instruction of the students in the particular department I have alluded to and am familiar with. Here I find a well-known and honoured name, familiar to all botanists and cultivators of the plants of ... nature, elbowed from the Botanical chair, contrary, I believe, to his own expressed wishes, while a person altogether unknown to the world as familiar with plants, whether wild or cultivated—whatever may be his acquirements in the Edinburgh Materia Medica—is placed in a position which time alone can render him familiar with. The result is visible in the changed Botanic Garden, which in its present state is useless for instruction, if not indeed detrimental to any one trusting to it. I am, sir, yours, &c. *An Old Observer*, Nov. 28.

STEAM CULTIVATION.

"How to buy a Steam Plough for a trifle," might well have been the heading to our article in No. 47; in which the following points were sought to be established. A farmer of 300 acres arable, of comparatively light soil (such as the Lincolnshire "marsh" with much of it easily ploughed 5 or 6 inches deep by two horses—may procure all the advantages of steam cultivation, by joining with a neighbour in the purchase of a machine. Assuming that a 10-horse power apparatus at 600*l.* will answer the purpose, each farmer (having 300*l.* to raise) might dispose of six horses out of his present (large but usual) force of 16, without lessening the capability of his teams for expeditiously performing all the carrying work of the farm, and without lessening the total tillage-force at his command; and, if the six horses sold realise 150*l.*, he will have but 150*l.* to find in hard cash. Indeed, in some cases, three farmers might combine in the proprietorship of a steam plough, each raising 150*l.* by sale of horses, and having therefore to add only 50*l.* to the capital already invested in his business. Thus the adoption of steam culture does not necessarily involve a heavy outlay of additional capital on the part of the occupier of a moderate-sized farm.

The marsh land district of Lincolnshire has hardly been broken into by the steam plough, yet its level surface and its large rectangular fields fit it for the new power; and if once its farmers feel persuaded (as one or two already do) of adequate advantage upon such light or medium soil, of very moderate depth of staple, they will be sure to apply it on a very extended scale. As other districts may be very similarly situated and hesitating from like considerations, we propose to inquire what would be the position of a marsh farmer with a steam plough? incidentally showing, during our calculations, the general correctness of our previous statement as to the relative proportion of tillage and carting on the sort of farm under consideration.

First, take the item of EXPENSE. That the cost of horse-power varies very much under different managers and different systems of management, is well known. We cannot estimate the cost of a farmer's teams more fairly than by striking an average of the 21 cases tabulated in Mr. J. C. Morton's paper "On the Cost of Horse-power" (Journal of the R. A. S. E., vol. xix). The average of "feed" and "extras" (including blacksmith's, saddler's, farrier's bills, and the maintenance of the team undepreciated in value) is 28*l.* 10*s.* per horse per annum. To this must be added the annual wear and tear of the implements worked by the horse, and the wages of the man (or lad occasionally) that drives the horse; this, in the same set of tables, averages 17*l.* 10*s.* per annum; making the total annual cost of horse-power to be 46*l.* per horse. At this rate the 16 horses on 300 acres arable (the proportion kept in the district, where roots and Potatoes are very largely, and Clover and seeds but scantily grown), cost the farmer no less than 736*l.* a year. Having sold off 6 horses, the cost of the remaining 10 will be 460*l.* a year. The farmer, then, is in this position: he has (as we endeavoured to show in our former article) enough horses left to accomplish all his carrying and all the lighter tillage, and such operations as the steam-engine would not be expected to perform (at any rate, just at first), and he has, besides, 276*l.* a year (of saved expenditure in horse-keep, team men, &c.) towards defraying the cost of the ploughing and cultivating which will be done by the steam-engine. Let us see whether this will suffice; or rather, whether the farmer will be in or out of pocket at the year's end.

Here, of course, the question turns upon the quantity of work which has to be done. Now we might easily reckon from the rotation of cropping pursued, what number of acres of ploughing, of scarifying, &c., ought to be due to a year's tillage; but unfortunately, the seasons won't always allow you to do just the proper number of ploughings, &c., and all within the year; while differences in weather make one year's tillage very unlike that of another. Sometimes you are obliged to do more than a year's work within 12 months; you may have to crowd some of last November's and December's work into this January and February, and you may be able to bring forward some of next January's and February's work into this November and December. Consequently your tillage force must be able to do more work in a year than is, on an average, due to that year. We are happily able to present the details of tillage-work actually done on a marsh farm in the year 1861, when an extra amount of the heaviest work (that is, 3-horse ploughing for fallows, 10 inches deep) was done. A steam-engine on that farm would never have more of the heavy work to do in a year; but, on an average, less, and sometimes considerably less. For, besides that much of the deep-ploughing, which should have been done in the back end of 1860, had to be postponed to the spring of 1861 (the year in question), and that the deep ploughing for the fallows and Potatoes of 1862 was got well forward into the winter months of 1861, there is another reason why the heavy work was extreme in that year. The land which, in due course, came in for roots and Potatoes that year, has a sufficiently deep staple to admit of deep ploughing; whereas the fallow "break" in some years includes a large proportion of soil with a thin staple lying upon raw tidal silt and sand that cannot be wisely intermingled with the upper soil, except very gradually in a course of years. So that in some years 50 acres of that farm are ready for 10 and 12 inches deep ploughing; in other years 30 acres only will bear this searching work, while 40 acres more must have only 8-inch deep ploughing. It happened in the year 1861 that, owing to peculiar circumstances of land and seasons, no less than 100 acres were ploughed (some part of it by "cross-cutting") 9 and 10 inches deep. So unpropitious, too, had been the two previous years, that land extra foul had to be cleansed in 1861, involving much more than the average amount of heavy harrowing. And still further, the autumn was unfavourable to an extensive employment of the scarifier, which saves so much labour on spring corn and other stubble in dry hot weather. The steam-engine ought to be capable of performing as much heavy work as fell to the horses' lot during 1861, though the work to be done, on an average of years, would be very considerably less. Of 10-inch deep ploughing were done 100 acres; of pair-horse ploughing, 5 or 6 inches deep (exclusive of ridging-in manure and ploughing up roots and Potatoes, which we suppose to be still left for horses to do), 354 acres; of scarifying, grubbing, and heavy 5 and 4-horse drag harrowing, about 203 acres. All this is labour, for which the steam-engine is expressly fitted—at what cost would it be performed?

Without coming to niceties, we believe that a fair (and by means an over) estimate for the performances of a 10-horse steam-plough on such land as that in question, is—5 acres per day of the deep ploughing; 7 acres per day of the 5 or 6 inch ploughing (rather more when turning over ground previously worked, and less when breaking up Clover lea); and of the other work (two-thirds of which was heavy drag harrowing, and only one-eighth part breaking-up of unmoved stubble), 12 acres per day, on an average. This amounts altogether to (20 days for deep ploughing + 51 days for common ploughing + 17 days for the dragging, &c.=) 88 days. Judging by the many reported cases of steam-ploughing experience, we estimate the cost of work as follows. It is not necessary in the present article to commend one inventor's apparatus more than another; so without giving more particular intimations as to the form of steam-plough we should prefer, we state the cost of manual labour at 11*s.* per day, water carting 4*s.* 6*d.* per day, and removal by horses every three days (on farms of large fields), averaging 3*s.* 6*d.* per day. Coal and oil, &c., we put at 10*s.* a day; amounting altogether to 29*s.* per day for actual working expenses. As there are no stones whatever, not even the smallest pebble, in the marsh soil to grind the rope (when being laid out, &c., or when the "slack rope tightening apparatus" may not be carefully worked); and as the ground is not so stiff as to subject the machinery to great strains, or choked with hedge-row timber, to do damage by roots—the wear and tear and breakage will be of comparatively small amount. It will not be below the mark to set down 15 per cent. per annum, on 600*l.*, for the permanent maintenance of the machine, and for interest of capital sunk; and this has to be divided between two farms, employing the engine 88 days each, that is, 176 days altogether—the sum being 10*s.* 8½*d.* per day. Let us call the total daily expense 2*l.* The farmer of 300 acres arable, then, will pay (88 × 2*l.* =) 176*l.* a year for steam cultivation; and, as we have seen, he has 276*l.* a year of saved expenditure in horse-flesh to defray the amount with; or, in other words, he clears 100*l.* a year by the substitution of steam for team labour.

Let it be remembered, however, that this is when doing the identical number of operations by steam that horses did in a year of extreme tillage work. In actual average practice, it would be found that a less acreage of the deepest ploughing, and a much smaller extent of the heavy drag-harrowing, are necessary (particularly after steam tillage had made the land somewhat cleaner from "filth"); so that less than 88 days' work would accomplish all the steam tillage, and the farmer thus have less than 176*l.* to pay for steam culture; consequently he would be more than 100*l.* into pocket by its adoption. The promised statistics of actual tillage done on a farm, must be delayed another week. *I. A. C.*

Home Correspondence.

Experiment in Sheep Feeding by the Parlington Tenants' Club.—The members of this club having brought to a close their second experiment in summer grazing the following different breeds of shearling sheep, for the purpose of ascertaining with an equal or given quantity of food the class most profitably adapted to their locality, comply with the wishes of their friends in again publishing the result. It may be remembered by parties interested in the relative values of the different breeds of sheep, that the members of this club commenced an experiment in 1861 in the neighbourhood of Garforth with the cross from the Teeswater, the cross from the Cheviot or Bandshire, called North Sheep, the improved Lincoln, Southdown, Shropshire Down, Leicester, and the Cotswold. To this experiment one very forcible objection had been urged, viz., that the sheep were not brought to the test in equal condition. The members admitted that their experiment was open to criticism, and that first trials were rarely satisfactory; in fact they had considerable difficulty in procuring sheep representing fairly the several classes, but the trial had been so far satisfactory to show that the Cotswold was not the sheep adapted to this county, the cross from the Teeswater a too limited class, and the Southdown, though good thrivers, perhaps did not afford sufficient wool, to again induce the members to include these classes. In order to acclimatise and bring the sheep to an equal condition, Mr. W. G. Preece, of Shrewsbury, was commissioned, without limit of cost, to buy Shropshire Down lambs; Messrs. Smart & Furness, the Leicester; Messrs. Kirkham & Macendar, the improved Lincoln; and the cross from the Cheviot or North sheep were from the tups purchased at Saint Boswell's fair. The lambs were wintered together and alike until the 20th May, clipped and brought to pasture, 12 of each class, and upon about 2 acres 1 rood of seeds equally alike and without cake. It is to be observed that the North sheep and the Lincolns were the greatest consumers, *i.e.*, they were the soonest at the top of their food, the Leicesters being the less eaters, but they fairly finished up their pasture. Reference to the following tabular statement will show when the large consumers became short of a full supply of food—and monthly comparisons may be made to suit the theory of different parties. It is to be borne in mind that this experiment has not been made with a view to ascertain what sheep may be brought to, but the acreable produce. Should reference be made to our tables published in the *Mark Lane Express*, *Bell's Weekly Messenger*, or *Saunder's Daily News* in Ireland, in October, 1861, it will appear that the second experiment verifies the first, in showing the leading propensity of the Shropshire Down to gain weight, and then the Leicester, but reverses the Lincoln and North in 1861; but there the first experiment failed. The Lincolns upon that occasion came to test having been pampered to the highest extent to take the lead at Lincoln fair, whilst the North were in a going state. We may state that the information now gained is satisfactory to ourselves, and prepared us when to dispose of the stock to our advantage. The great question of wool must be proved in the winter feeding by weighing the food, which we again resume.

Parlington, Nov. 1862. THOS. J. FOX.

Class of Sheep.	Weight of wool clipt, May, 1862.	Weight of 12 sheep, May 20, 1862, when brought to test.	Increase or Decrease. June 20.	July 20.	August 20.	Sept. 20.	October 20.	Total increase.	Total Weight, October 20, 1862.
	lb.	st. lb.	st. lb.	st. lb.	st. lb.	st. lb.	st. lb.	st. lb.	st. lb.
Shrop Downs ..	66	108 2	28 4	9 12	5 9	4 3	1 9	49 9	157 11
Leicesters ..	100	99 10	21 12	8 10	6 9	4 9	0 11 dec.	42 3	141 13
Lincolns ..	147	119 6	24 2	8 13	5 0	3 1	2 dec. 6	38 10	158 2
North Sheep ..	96	109 9	21 3	6 13	4 11	1 13	0 4	34 6	144 3

Foreign Correspondence.

ON THE PAMPAS OF THE RIVER PLATE, NEAR BUENOS AYRES: *Estancia de Los Cerros, San Juan, Banda Oriental, September 22nd*, 1862.—On Wednesday (17th inst.) I went to Colonia for the purpose of meeting there a Mr. Ramsay, who is manager of an Estancia some seven leagues from Colonia, on the road to

Montevideo, to see if he could do anything for me. The result of the interview was a promise on his part to ask a relative of his, shortly expected from Buenos Ayres, to let me have a flock of sheep "on thirds." Mr. Ramsay himself could not then do anything for me, but he further promised to keep me in mind should he be in company with other Estancieros. Before leaving this Estancia on that Wednesday, Don Guillermo, our manager here, said to me, "If you can get employment giving you an ounce (say 3*l.* 5*s.* English) per month, stay, but if not, come back, for I now think I can also give you some money." I said "Very well," and have accordingly returned, but what I shall get I don't know yet. When in Colonia I made the acquaintance of three Englishmen, who returned with me next day to San Juan, to look at some of our sheep. These three reside close to each other, some five leagues up the country, north of this Estancia. One, a Mr. Grierson, purchased 18 ewes and 13 rams, which I on the following day had to take over to his Estancia, having a peon to assist me. The peon and myself started about 6 A.M., before sunrise, a cold and raw morning, and arrived at the Estancia about 2 P.M., having had neither bit, bite, nor sup all the time. But we did ample justice, I assure you, to the plenteous rich dinner which awaited us. I took the animals over in splendid condition, a very tedious work at the same time, and so all of us were pleased with each other—"harmony" reigned profound." Although the peon had to return the same night, not before however, our worthy Scot had put a good looking paper glove in his hand, I had to stop and spend a few days with him. On the next day (Saturday) I had a look over Mr. Grierson's sheep; he has some 4000 or 5000, but his land is rented, and, as the lease expires at the end of this year, he has purchased land in Entre Rios, whither he intends to go and live, pursuing the same line of life—sheep raising. At present Mr. G.'s sheep are mestizos, but from the rams he has here bought he intends to make a cross, and is in hopes of making a good speculation in his new country. All around this locality of Mr. G. are English Estancieros, possessing more or less sheep, and a happy spot it seems to be, all working in harmony, all assisting each other. On this morning I went with mine host to a neighbour (Englishman) to help him mark his lambs, &c.

October 6.—In a former letter, I believe, I gave the different average weight of the fleeces of different kinds of sheep on our Estancia. However, as I know more about the sheep now than I then did, I think I can now give you a more correct account. On our Estancia we have, first in order, the Saxon sheep or "Nigratti." When the King of Saxony (in Germany) first took sheep from Spain, the greatest care possible was given to them, in order to produce an excellent quality of wool, which should contain both fineness and weight, the carcase forming a secondary consideration. In course of time it was found that as these imported Spanish sheep improved, so that their wool was the finest and heaviest to be had, they lost too much in substance and bone; hence arose the idea of making a "cross," that is putting these fine sheep with rams of a different breed, and fine rams with sheep of a different quality. The result was, as can well be supposed, sheep (by "sheep" I include both sexes) possessing greater bone and less finer wool than the original superior stock. The former are termed "Electorals" and the latter "Nigratti." When Mr. Pranger (a native of Bremer), the former and original owner of this Estancia, first brought the "Nigratti" from Germany to this Estancia, the first ever seen in South America, they were highly prized, and on one occasion he sold to an English Estancia a ram Nigratti for which he received as much as 500*l.* (English); now they average at 30*l.* and 35*l.* (English), and are imported by many Estancieros. From 18 to 22 lbs. of wool are obtained from each.

At the proper season of the year we put a certain number of these rams in our various flocks—"Nigratti, Merino, and Mestizo"—and when they are no longer required for use in the flock, they are brought back to the Estancia, where they all live together, enjoying their hard headed fights and battles, and living as well as possible. We have now about 180 Nigratti rams; every year some go off, either out of the world altogether or to another Estancia, and are succeeded by their descendants, for a new race is continually coming forth. We have about 350 Saxon sheep, in round numbers, for I can't say exactly how many.

The sheep next in worth are the "Merinos," which yield each about 12 or 13lbs. of wool. The prices of these Merinos vary; I have seen Merino rams go at 5*l.* each and some at 10*l.*, but I have not heard of a higher rate. It is possible a higher price is obtained.

Then come the "Mestizas," giving each from 5 to 7 lbs. wool; we generally reckon four Mestizas give an arroba (25 lbs.) of wool. If a person sold a flock of Mestizas (1000) at 4 patacones (say each pt. = 4*s.* each), he would be said to have done "very well."

There is another kind of sheep, called the "Rambouillet," or French sheep, which we have not got, which gives as much sometimes as an arroba (25 lbs.) Mr. Grierson, whom I mentioned, has one Rambouillet ram, and I saw its wool, which I should say was 4 inches deep over the shoulders, or even more.

The sheep of the country is called the "Criolla," which also we have not got.

I think what I have given you now is pretty correct, but as this week, possibly, we begin to shear, I shall then better know and see for myself, the average weight of the various fleeces. If possible, in purchasing a flock of 1000, a good proportion is to have 800 sheep, 200 capones (wethers), and 10 rams in addition. 10 rams are enough for such a flock, and, in a good year, 800 or even 900 lambs can be obtained from them.

Many thanks for all you have so considerately said of sheep, &c., at home. It appears a fleece from the Southdown is about the same as a fleece from the Mestiza, and from the long-woolled sheep about the same as a Merino.

As regards sheep dogs:—If I had a flock of sheep, nothing to me would be more acceptable than a pair of good English sheep-dogs. These dogs may be in El Campo de Buenos Ayres, but I have never seen one since the five calendar months I have been here. A good sheep-dog is a valuable article, and, I fancy, a profitable one too. Only two or three weeks ago an Englishman who has sheep up the country asked me if we had any good sheep-dogs here, pups, and if so he was willing to pay for one if he could obtain it. But I could not get one for him, notwithstanding I rode to a puestero I know who has five little pups (not sheep-dogs), all of which were already bespoken! As George will not leave England, I feel sure, till he is so advised to do by Leonard and myself, I shall wait till then to recommend his bringing a dog and slut out. The fact is, it is no good his coming out as I have done, but much better to wait a little longer until there is a settled place for him to go to in the country. I have not heard from Mr. —— yet, but if I could get a flock on reasonable terms then it would be better. One thing is pretty certain, I never will take a flock without a share of the profits, for minding sheep and nothing more is not to my taste.

Last week we did a little ploughing! Uncle Charles will at once think of the fine stout horses, in broad leather harness, possibly adorned with bells or tassels, with a little boy 3 ft. high, with a long whip over his shoulder at their side, and the steady old sun-burnt man guiding the plough as straight as a line, and fancy it is the same here. But could you only peep at us for a quarter of an hour, and then see the contrast! A greater could not possibly be, to speak a little beyond the mark.

A good or fairish plough we certainly have, but see the other *materiel*. Instead of the steady, fat and strong cart-horses of old England, we have horses such as would be only used for a light gig, or riding at home, their only really intention, about 13 hands high, and never before in front of a plough, so that they are half wild at first, rearing and plunging from side to side, one tied to the other, for we have two in the plough at a time. My duty in the ploughing was to lead these untrained horses by the head and prevent any damage being done, and no joke I assure you at the beginning, when they came fresh from the field, but, at the end of a couple of hours they became tamer and reconciled to their fate. A second man goes behind them with a whip to keep them up to the mark if they fall back or rear, &c., and when it is applied No. 1 has to look out. A third man guides the plough as well as he can, and if we only have three or four great circles at the beginning we say it is "all right," and soon will be better. After an hour possibly No. 2 with the whip can be dispensed with. Now we have the difficulty with the horses, training a few in case we have a gig, and then they will draw all right, but a few lessons make a wonderful difference, after which they do tolerably well. *J. P.*

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

MONTHLY COUNCIL: *Wednesday, December* 3.—Present: Viscount Eversley, President, in the chair; Lord Leigh, Lord Portman, Lord Walsingham, The Hon. W. Cavendish, M.P.; The Hon. General Hood, The Hon. A. Vernon, Sir Watkin Wynn, Bart., M.P.; Mr. Arkwright, Mr. Raymond Barker, Mr. Barnett, Mr. Barthropp, Mr. Bramston, M.P.; Mr. Cantrell, Colonel Challoner, Mr. Druce, Mr. Exall, Mr. Brandreth Gibbs, Mr. Hamond, Mr. Fisher Hobbs, Mr. Holland, M.P.; Mr. Wren Hoskyns, Mr. Milward, Mr. Randell, Mr. Rigden, Mr. Shuttleworth, Mr. Thompson, Mr. Torr, Mr. Wells, Lord Northwick, Mr. Frere, Professor Simonds, and Dr. Voelcker.

The following New Members were elected:—

Bate, Richard Stokes, Badger, Shiffnal
Berger, William Thos, Saint Hill, East Grinstead
Brown, Professor Geo. Thos, Cirencester
Corbett, James, Croome Dabitop, Severn Stoke, Worcester
Farmer, James, Stretford Bury, Leominster
Fisher, Henry, Michaelchurch, Ross
Grant, Effingham, Bucharest, Wallachia
Hodgson, Arthur, Drayton Hall, West Drayton, Middlesex
Jackson, Geo. Frederick, Alcester Lodge, Bromsgrove
Joyce, Charles, Bishopsgate House, Egham
Lynn, John, Church Farm, Stroxton, Grantham
Marshall, Frederick Charles, Riseholme, Lincoln
Parkinson, Wilfred, Ann's Hill, Cockermouth
Pope, William, Biggleswade
Rouse-Boughton, Sir Charles, Bart., Downton Hall, Ludlow
Rowlandson, Charles, The College, Durham
Rowlandson, Samuel, The College, Durham
Smithson, Geo., 101, Bristol Road, Birmingham
Terry, Edward, Jun., Walton, Aylesbury
Tyler, Sir James, Bart., Pine House, Holloway, N.
Walker, Richard Janion, Padeswood, Mold, Flints
Williams, William Propert, Trehowell, Fishguard, South Wales

FINANCES.—The Hon. General Hood, Chairman, presented the Report, from which it appeared that the Secretary's receipts during the past month had been examined by the Committee, and by Messrs. Q[illegible] Ball & Co., the Society's accountants, and were found correct. The balance in the hands of the bankers on the 30th Nov., was 1217*l.* 5*s.* 6*d.*

JOURNAL.—Mr. Thompson, M.P., Chairman, reported that the Committee, in accordance with instructions received from the Council, had issued a double Number of the Journal in September last. This Number constitutes the volume for 1862, so that the arrears in the production and issue of the Journal, which had arisen in the earlier years of the Society's existence, had been at length overtaken, and in future members of the Society will receive in each year the two Numbers of the Journal belonging to the year, instead of, as hitherto, one Number belonging to the current, and one to the preceding year. This advantage has been secured at a cost to the Society of about 400*l.* Taking the ordinary Number issued in February last as the standard of comparison, the exact excess would be 419*l.* 4*s.* 3*d.* Of this sum two-thirds, or 280*l.*, has been expended in paper, printing, stitching, &c., and 70*l.* in extra postage and delivery, whilst the increased cost of the literary matter has been only 69*l.* The report was adopted.

CHEMICAL.—The Report was presented by Mr. Wren Hoskyns, who had received a report from Professor Voelcker, the consulting chemist to the Society, on the seeds of noxious weeds found in adulterated Linseed and other cake. The sowing of these seeds to ascertain what they were, had been partially successful; those which had germinated were Lolium temulentum (Darnel), Spergula arvensis, Linum catharticum (Purging Flax), Cockle and others, mostly of an injurious kind. It was suggested that a paper should be read on this subject, viz.:—The adulterations of different cakes used for cattle food. The experiments on Wheat top-dressings this year at the Agricultural College, confirm fully the beneficial effects of small applications of nitrate of soda and salt. In one singular case, salt alone, at the rate of 3 cwt. per acre, applied in the middle of April, gave a considerable increase on the portion of land top-dressed with nitrate of soda (see Report). Further experiments with salt alone seemed desirable. In visiting the dairies in the Vale of Gloucester, Professor Voelcker had been struck with the bad construction and want of ventilation of the dairies. It was thought that a paper on the most suitable construction of dairies and ripening rooms would be very desirable. The investigations that are now in hand are:—

1. On the action of superphosphates of lime on different soils of known compositions.
2. The means of making guano applications more efficacious.

The first of these will furnish the subject of a paper in the next Number of the Journal.

The investigations proposed for the coming year, are—

1. The continuation of Wheat experiments at the College.
2. Experiments with salt on different crops.
3. The solubility of phosphatic combinations.
4. The causes of sterility and exhaustion in soils.

The number of analyses made for members of manures, oilcakes, guano, soils, and the laboratory work generally, has been about equal to the average of past years. A return of these in detail, specifying each kind, will be given by Professor Voelcker, at the next meeting in March.

Two or three of the analyses were of a rather unusual character (see Report.)

The papers in the Journal of the year which have appeared, are on—

1. Cheese experiments (poisonous cheese)
2. Wheat experiments.
3. Commercial value of artificial manures.
4. Lectures on milk.
5. Lectures on town sewage.

REPORT.

Wheat Experiments.—The field experiments in 1862 comprise experiments with various kinds of top-dressings applied to the Wheat crop, and experiments upon Mangel Wurzel. [illegible] the Wheat crop, [illegible] accordance with the experience of former years, both nitrate of soda and guano produced highly beneficial effects, when applied early in spring as a top dressing upon Wheat. Thus 1 cwt. of nitrate of soda per acre, costing 1*l.* 10*s.*, gave a net increase [illegible] over the unmanured plot, giving [illegible] 15½ bushels of corn over the unmanured portion amounting to a money return over the unmanured portion [illegible] 3*l.* 3*s.* 6*d.* In these experiments, a detailed account of which will appear in a future volume of the Journal, [illegible] alone produced a very good effect upon Wheat. 3 cwt. of [illegible] per acre in one experiment gave nearly 10 bushels more Wheat per acre than the unmanured portion of the field. [illegible] remarkable effect produced by salt alone upon Wheat [illegible] further experiments with this cheap fertiliser most desirable.

Mangel Wurzel Experiments. — In the field trials [illegible] Mangels it appeared that in the wet and cold season [illegible] salt applied in small and moderate doses had no [illegible] beneficial effect upon the Mangel crop, and an injurious [illegible] when applied in larger quantities than at the rate of [illegible] per acre. In the past season I made further experiments [illegible] determining the character of the foreign seeds which occur [illegible] so frequently and in so large proportions in many samples [illegible] Linseed cake. A good many different seeds, separated [illegible] so-called genuine Linseed, were sown in the botanical garden attached to the Royal Agricultural College, Cirencester, and [illegible] many cases plants were raised which left not any doubt [illegible] the true character of the seeds which occur in [illegible] samples of Linseed cakes. Special attention may be directed to the occurrence of Lolium temulentum (Darnel), [illegible] cockle (Agrostemma githago), and Purging Flax (Linum catharticum), which occur in some samples of Linseed in large proportion. These seeds are all more or less injurious to animals, [illegible] their occurrence in inferior oilcakes accounts for the prejudicial effects which have been noticed when cattle and sheep [illegible] fed with inferior oilcakes. The whole subject of the adulteration of oilcakes deserves to be carefully investigated.

Dairy Investigations.—In further pursuing the dairy investiga-

...m two years ago, I was struck with the bad arrangement of the dairies in many places, and specially with the neglect of proper ventilation of the store and ripening rooms, and general want of proper arrangements for securing a first-class description of cheese. Much good would result from a well written article by a thoroughly competent practical man on the best construction of dairies and cheese rooms. As a matter of curiosity I made an analysis of a description of ... cheese much in favour in Norway. This cheese, ... gamelost, is kept for two years and longer, and is not ... before it is thoroughly rotten, and thus becomes ..., and in this cheese I found a considerable quantity of free ammonia. The results of other chemical investigations are incorporated in the following papers, published in the last volume of the Journal:—1. On Cheese Experiments; ... Poisonous Cheese; 3 On Experiments on Top-dressings upon Wheat; 4. On the Commercial Value of Artificial Manures. The last volume of the Journal also contains full reports on the two lectures on Milk and Town Sewage, delivered by me before the members of the Society last spring. The investigations now in progress are:—1. On the Action of superphosphate on different Soils of known Composition; a paper on this subject will appear in the next Journal. 2. On the best means of increasing the Fertilising Properties of Peruvian Guano.

In connection with the inquiry by Prof. Simonds on Splenic Apoplexy, a series of detailed analyses of various kinds of water from the districts where the disorder prevailed, was undertaken by me, and a report on the subject drawn up, which is appended to Prof. Simonds' paper on this subject.

GENERAL WORCESTER COMMITTEE.—Lord Portman, Chairman, reported that the Committee recommended the week commencing Monday, July 20, for the period of the County Meeting next year at Worcester. Sites for the various departments of the Show-yard had been determined on, and the Schedule of prices for detailed portions of the works had been furnished by the contractor. This report was adopted.

Mr. Holland, M.P., having moved that in all cases the Secretary be instructed to inform each Member of Council of any vacancy occurring; stating also the date of the meeting at which notice of nomination is to be given, preparatory to an election taking place, the motion was seconded by General Hood, and carried unanimously.

The Annual Reports of all the Standing Committees were presented by the respective Chairman.

The Standing Committees for 1863, viz., Finance Committee, Journal Committee, Chemical Committee, House Committee, Implement Committee, Veterinary Committee, Stock Prizes Committee, were appointed.

The Council having fixed the General Meeting of the Society for 11 o'clock on Thursday next, Dec. 11, adjourned to a Special Meeting on Wednesday next at 12.

MIDLAND COUNTIES ASSOCIATION.

GREAT SHOW OF FAT STOCK, POULTRY, ROOTS, AND IMPLEMENTS AT BINGLEY HALL, BIRMINGHAM.—An exhibition which includes among its maxima an ox carrying a ton of beef, a cabbage 60 lbs. in weight, a pen of three white geese, averaging more than 25 lbs. a-piece, cannot be pronounced any other than successful. And the averages in most of the Classes are in correspondence with these enormous weights. The Devon Classes among cattle, one at least of the breeder Classes of pigs, perhaps the Spanish Class in the Poultry show, the Kohl Rabi, and occasional specimens in all the other divisions of the root show, are hardly up to the usual mark. On the other hand the Hereford Classes, especially the older oxen; the Short-horn Class, especially the cows; the whole of the Sheep Classes, and most of the Pig Classes are fully as good as ever. And the Implement show is now a large and important exhibition. It might indeed be more strictly agricultural than it is. There are stands which cannot be considered in keeping with the agricultural character which the Hall professes to maintain during the annual show week, and the only effects of which are to shut out better things from exhibition, and to raise the present enormous rent which is paid by agricultural exhibitors.

The HEREFORD OXEN included eight very good beasts, five of which were distinguished by either prizes or commendations; three of these were exhibited by Mr. Hatcher, of Marlwood, Thornbury. One, a very large, deep, straight, and well fed animal, girthing 9 feet 4 inches, and 5 feet 6 or 7 inches long, taking the first prize, another the 3d, and the last a commendation. The second prize animal in this Class, of smaller size but of finer quality, is exhibited by Mr. J. Shaw, of Northampton.

The Class of Steers included 10 animals, of which three received prizes, two commendations, and another a high commendation. Mr. Pitt, of Chadnor Court, Leominster, the exhibitor of the 1st prize ox, received also the President's prize for the best ox in the yard, bred as well as fed by the exhibitor. It came into competition under these terms only with a Short horn oxen obviously inferior in ripeness and condition. Major-Gen. the Hon. A. N. Hood exhibited two nice beasts from the Prince Consort's farm. One of excellent quality, rather small, took the 3d prize; while a larger one, hardly so ripe, which might possibly be advantageously kept over for another class next year, received a commendation. The Cow class of the Hereford breed was remarkably good. Mr. Wigmore's 5-year old cow was a wonderful specimen of the breed, of enormous breadth of loin, and extraordinary all round her girth in that part, but altogether excessively fat. She received the extra prize as the best animal in the Hereford class.

The SHORT-HORNED OXEN included several very capital specimens. The 1st prize ox, belonging to Mr. Swinnerton, of Nuneaton, is the animal which took the 1st prize in the younger class last year, and carried away the Gold Medal at the Smithfield Show immediately after. He is now wonderfully, evenly, *cylindrically* covered with fat and flesh, though rather defective in his round of beef, and not quite of first-rate quality of flesh. The competition between him and an enormous ox shown by Mr. Stewart, of Aberdeen, in the cross-bred class, for the Gold Medal as the best ox in the yard, was one of the most interesting trials of strength in the yard. It was awarded to Mr. Stewart's ox, which, with perhaps inferior evenness of symmetry, is superior in weight and in the quality of its flesh. In the younger class of oxen, Lord Aylesford's beautiful steer gained the 1st prize, and Mr. Stratton and the Duke of Beaufort took the other two prizes.

The Class of Short-horn Cows contained a number of admirable animals. Mr. Eastwood's celebrated "*Rosette*," a winner in one of the breeding classes at York last August, is here a successful competitor as a fat cow. She takes the Gold Medal as the best cow in the yard; 20*l.* as the best Short-horn, and the 1st prize in her Class. She may perhaps after all go home and breed a calf. Mr. Stratton takes the 2d prize, and Sir T. Whichcote the 3d, and there are two or three commendations.

In the Heifer Class, Mr. Tennant's prize animal is wonderfully good forward, perfect until about two-thirds of her length, though rather inferior behind. Mr. Coxon's heifer (Dale End, Birmingham) was manifestly inferior to her Class, and should not have been shown.

The DEVON CLASSES are somewhat weakly filled. No 1st prize is awarded to fat cows. Mr. Smith's 1st prize ox is of good size, and wonderfully good over loin, and flank, and thigh. Mr. Frampton and Major-General Hood's 1st and 2d prize steers are of good quality.

The three Devon heifers shown by Mr. Farquharson, Mr. Walter, and Mr. Tucker, respectively received the 1st, 2d, and 3d prize.

In the Class of FAT OXEN, CROSS-BRED, Mr. Stewart, of Aberdeen, shows a cross of the Short-horn and Aberdeenshire polled breeds, girthing about 9 ft. 10 in. and 5 feet 10 inches long—probably carrying a ton weight of beef—receiving the Gold Medal as the best ox in the yard, and the Inkeepers' prize of 25 guineas as the best beast in the yard, carrying the former prize over Mr. Swinnerton's Short-horn, and Mr. Hatcher's Hereford ox, and the latter over Mr. Eastwood's cow.

Among the Scotch cattle shown, Mr. Stewart's brindled Aberdeenshire polled ox took the 1st prize, Mr. M'Combie's black Aberdeenshire ox, which had we understand been a successful competitor at Poissy, receiving the 2d prize. Major Wollaston's polled black cow, a rather small but well made beast, having remarkably good fore-quarters, took the prize in its class.

The SHEEP CLASSES are unusually full, and remarkably well filled. Mr. Foljambe takes nearly all the Leicester prizes, and Lord Walsingham with a wonderfully fine lot of wethers takes nearly all the Southdown prizes. The Shropshire sheep are present in great force—the cross-bred sheep are less numerous than usual. The prize list will show how the prizes were rewarded.

Of the PIG SHOW it may be said that all were good, except the Class of five breeding pigs of one litter, between three and six months old, not of the Berkshire kind. The Berks were very well represented, the fat Classes too were all remarkably good, Mr. Wainman's big white hog, 2 years and 6 months old, being a wonderful specimen, as completely loaded with flesh and fat arranged symmetrically over a skeleton ill able to bear its weight as it is possible to conceive. The competition among the fattened porkers has become so close that the award hinges on a crease or wrinkle too little or too much where ordinary inspection can detect no difference. The prizes are enumerated below:—

FAT CATTLE.

HEREFORDS.

Class I. HEREFORD OXEN.—1st, 15*l.*, and Mr. Joel's Silver Cup, as the best Hereford ox or steer, Mr. John Hatcher, Marlwood Grange, near Bristol; 2d, 10*l.*, Mr. J. Shaw, Hunsbury Hill, near Northampton; 3d, 5*l.*, Mr. J. Hatcher. Commended: Mr. J. Hatcher; Mr. J. Phillips, Ardington, Berkshire.

Class II. HEREFORD STEERS.—1st, 15*l.*, Silver Medal as breeder, and President's Silver Cup as the best ox or steer, Mr. G. Pitt, Dilwyn, Leominster; 2d, 10*l.*, Mr. J. Phillips, Ardington, Berks; 3d, 5*l.*, Major-General the Hon. A. N. Hood, Cumberland Lodge, Windsor (breeder, his late Royal Highness the Prince Consort). Highly Commended: Mr. J. Williams, Kingsland, Leominster. Commended: Major-General the Hon. A. N. Hood: Mr. H. Bettridge, Wantage.

Class III. HEREFORD COWS.—1st, 15*l*, and extra prize of 20*l.* as best Hereford, Mr. J. Wigmore, Ross, Herefordshire; 2d, 10*l.*, Mr. P. Turner, The Leen, Pembridge: 3d, 5*l.*, J. Pritchard, Esq., M.P., Astley Abbots. Highly Commended: Mr. J. Wigmore. Commended: Mr. J. Williams, St. Mary's

Class IV. HEREFORD HEIFERS.—1st, 15*l.*, and Silver Medal as breeder, Mr. E. Urwick, Felton, near Ludlow; 2d, 10*l.*, Mr. J. Wigmore, Ross; 3d, 5*l.*, Mr. H. Higgins, Lydney, Gloucestershire. Highly Commended, Mr. J. Baldwin, Luddington, Stratford-on-Avon.

SHORT-HORNS.

Class V. SHORT-HORN OXEN.—1st, 15*l.*, Mr. R. Swinnerton, Weddington, Nuneaton; 2d, 10*l.*, Earl Howe, Gopsall Hall; 3d, Earl Spencer.

Class VI. SHORT-HORN STEERS.—1st, 15*l.*, and Silver Medal as breeder, Earl of Aylesford, Packington Hall: 2d, 10*l*, His Grace the Duke of Beaufort; 3d, 5*l.*, Mr. R. Stratton, Stapleton.

Class VII SHORT-HORN COWS.—1st, 15*l*, extra prize of 20*l.* as best Short horn, and Gold Medal, as best cow or heifer, Mr. R. Eastwood, Swinshawe House, Burnley. 2d, 10*l*, Mr R Stratton; 3d, 5*l*, Sir T. Whichcote, Bart., Aswarby Park, near Falkingham. Commended: J. H. Langston, Esq., M.P. Sarsden House; Mr. J. Phillips, Ardington.

Class VIII. SHORT-HORN HEIFERS.—1st, 15*l.*, and Silver Medal as breeder, R. Tennant, Esq., Scarcroft Lodge, Shadwell, near Leeds; 2d, 10*l.*, Mr. R. Stratton; 3d, 5*l.*, Mr. J. Pain, The Manor Farm, Crayford, Kent. Highly Commended: Mr. W. Smith, Newark-on-Trent. Commended: R. Sneyd, Esq., Keele Hall, Newcastle; Mr. J. James, Coventry.

DEVONS.

Class IX. DEVON OXEN OR STEERS—1st, 15*l.*, and Extra Prize of 20*l.* as best Devon, Mr. W. Smith, 63, Southernhay, Exeter; 2d, 10*l.*, Mr. J. Tucker, Pomeroy House, Staplegrove, Taunton; 3d, 5*l.*, Mr. W. Aldworth, Frilford, near Abingdon. Commended: J. Walter, Esq., M.P., Bearwood, Wokingham.

Class X. DEVON STEERS.—1st, 15*l.*, Mr H. Frampton, Blandford; 2d, 10*l*, Major General the Hon A. N Hood (breeder, His late Royal Highness the Prince Consort). 3d, 5*l*, Mr. H. Frampton. Commended: J. Walter, Esq, M.P.

Class XI DEVON COWS.—No 1st prize awarded on account of insufficient merit; 2d. 10*l*, Mr W. Halse, Molland; 3d, 5*l*, Mr J. Tucker, Pomeroy House

Class XII. DEVON HEIFERS.—1st, 15*l.*, and Silver Medal as breeder, J. J. Farquharson, Esq., Blandford; 2d, 10*l*, J. Walter, Esq., M.P.; 3d, 5*l.*, Mr. J. Tucker.

LONG-HORNS.

Class XIII. LONG-HORN OXEN.—1st, 5*l.*, Mr. R. H. Chapman, Upton, near Nuneaton

Class XIV. LONG-HORN COWS.—1st, 10*l.*, and Silver Medal as breeder, Mr. J. H. Burbery, The Chase, Kenilworth; 2d, 5*l.*, Mr. R. Hawkes, Hunscote, Charlecote

OTHER PURE BREEDS AND CROSS-BRED ANIMALS.

Class XV. FAT OXEN.—1st, 10*l.*, and Gold Medal as best ox or steer, and Innkeepers' Silver Cup, Mr. J. Stewart, New Market, Aberdeen; 2d, 5*l*, Mr. A Longmore, Rettie, Banff. Commended Mr. A. Pike, Mitton, near Tewkesbury

Class XVI. FAT COWS.—1st, 10*l.*, and Silver Medal as breeder, Mr. Aaron Pike, Tewkesbury, Gloucestershire; 2d, 5*l.*, Mr. John Faulkner, Bretby Farm, Burton-on-Trent.

Class XVII. FAT HEIFERS.—1st, 10*l.*, Mr John Hunter, Dipple, Fochabers; 2d, 5*l.*, Mr James Stewart, Aberdeen. Commended: Mr. James Slatter, Paxford, Moreton-in-Marsh.

SCOTCH BREEDS.

Class XVIII. SCOTCH OXEN.—1st, 15*l.*, and Extra Prize of 20*l.*, as best Scotch, Mr. James Stewart, Aberdeen; 2d, 10*l.*, Mr. William M'Combie, Tillyfour; 3d, 5*l.*, Mr. James Longmore, Hilton. Highly Commended: Mr. W. M'Combie, Tillyfour. Commended: His Grace the Duke of Sutherland.

Class XIX. SCOTCH COWS.—10*l.*, Major Wollaston, Shenton Hall, Nuneaton.

WELSH BREEDS.

Class XX. WELSH OXEN.—1st, 10*l.*, and Silver Medal as breeder, Mr. R. Doig, Lillingstone Hall, Buckingham; 2d, 5*l.*, B. E. Bennett, Esq., Morston Trussell Hall, Theddingworth, Rugby.

Class XXIII. COWS.—5*l.* His Grace the Duke of Sutherland. Highly Commended: Mr. Richard Boddington, Luddington. Commended: The Rev. C. W. Holbech, Farnborough, near Banbury; Mr. William Breedon, Ingarsby, Leicester.

SHEEP.

LEICESTERS.

Class XXIV. FAT WETHERS, UNDER 22 MONTHS OLD.—1st, 15*l.*, and Silver Medal as breeder, G. S. Foljambe, Esq., Osberton Hall, Worksop; 2d, 10*l.*, G. S. Foljambe, Esq.; 3d, 5*l.*, Mr. William Lovel, Driffield.

LONG-WOOLLED SHEEP, NOT BEING LEICESTERS

Class XXV. FAT WETHERS UNDER 22 MONTHS OLD.—1st, 15*l*, and Silver Medal as breeder, Mr J. F. Mills, Burford; 2d, 10*l.*; Mr. T. West, Bletchington; 3d, 5*l.*, Mr. T. West. Highly Commended: J. H. Elwes, Esq., Colesborne Park, Cheltenham. The whole Class commended,

SOUTH AND OTHER DOWN SHEEP.

Class XXVI. FAT WETHERS UNDER 22 MONTHS OLD.—1st, 15*l.*, and Silver Medal as breeder, Lord Walsingham, Merton Hall; 2d, 10*l.*, Lord Walsingham; 3d, 5*l.*, G. S. Foljambe, Esq.

Class XXVII. FAT WETHERS OVER 22 MONTHS OLD.—1st, 10*l*, and Silver Medal as breeder, Lord Walsingham; 2d, 5*l.*, Lord Walsingham. Highly Commended: Mr. J Overman, Burnham Sutton. Commended: Duke of Beaufort, Earl of Radnor, Coleshill House.

SHROPSHIRE SHEEP.

Class XXVIII. FAT WETHERS, UNDER 22 MONTHS OLD.—1st, 15*l.*, and Silver Medal as Breeder, Lord Wenlock, Bourton Cottage, Much Wenlock; 2d, 10*l*. Mr. T Mansell, Adcott, Shrewsbury; 3d, 5*l*, and the Earl of Dartmouth's Silver Cup (for untrimmed Sheep), Mr. G. A. May, Elford Park, Tamworth. Highly Commended, E. Holland, Esq, M.P., Dumbleton Hall, Evesham; Lord Wenlock. The whole class commended.

Class XXIX. FAT WETHERS OVER 22 MONTHS OLD.—1st, 10*l.*, and Silver Medal as breeder, and C. N. Newdegate, Esq. M.P.'s Silver Cup, W O. Foster, Esq., M.P. Kinver Hill Farm; 2d, 5*l.*, Mr. J. Coxon, Freeford Farm, Lichfield. The whole class commended.

Class XXX. SINGLE SHROPSHIRE WETHER, OF ANY AGE.—Silver Cup, given by Messrs. Mapplebeck & Low, W. O. Foster, Esq., M.P.; Highly Commended, Mr. E. Bowen, Ensdon House, Shrewsbury.

CROSS-BRED SHEEP.

Class XXXI. FAT WETHERS, UNDER 22 MONTHS OLD.—1st, 10*l.*, and Silver Medal as breeder, Mr J. Overman, Burnham, Sutton; 2d, 5*l.*, Mr. J. Overman. Highly Commended: the late Mr. S. Treadwell, Upper Winchendon, Aylesbury; Mr. W. Hemming, Coldicott, near Moreton-in-the-Marsh.

CLASSES FOR EWES.

LEICESTER EWES.

Class XXXII. FAT EWES.—1st, 5*l.*, and Silver Medal as breeder, G. S. Foljambe, Esq; 2d, 3*l.*, G. S. Foljambe, Esq.

LONG-WOOLLED EWES, NOT LEICESTERS.

Class XXXIII. FAT EWES.—1st, 5*l.*, and Silver Medal as Breeder, Mr. W. Smith, Bibury near Fairford; 2d, 3*l.*, Mr. T. Porter, Baunton, near Cirencester; Highly Commended, Mr. T. Porter; and again, Mr. T. Porter. The whole class commended.

SOUTH AND OTHER DOWN EWES.

Class XXXIV. FAT EWES.—1st, 5*l.*, and Silver Medal as breeder, Lord Walsingham; 2d, 3*l.*, the late Mr. S. Treadwell.

SHROPSHIRE EWES.

Class XXXV. FAT EWES.—1st, 5*l.*, and Silver Medal as breeder, Mr. P. W Bowen, Shrawardine Castle; 2d, 3*l*, Mr. E. Bowen, Ensdon House. Highly Commended: Mr. T. Horley, jun., The Fosse, near Leamington.

FAT PIGS.

Class XXXVI. THREE FAT PIGS OF ONE LITTER, UNDER 10 MONTHS OLD.—1st, 10*l*, the Silver Medal as Breeder, and Society's Cup, the Countess of Chesterfield, Bretby Hall, Burton-on-Trent. 2d, 5*l.*, Major-General the Hon. A. N. Hood; 3d, 3*l.*, the Countess of Chesterfield.

Class XXXVII. THREE FAT PIGS OF ONE LITTER, UNDER 15

Months old.—1st, 10*l.*, Major-General the Hon. A. N. Hood (breeder, his late Royal Highness the Prince Consort); 2d, 5*l.*, G. B. Moreland, Esq., Chilton Farm, Steventon; 3d, 3*l.*, the Rev. W. Gover, Saltley College, near Birmingham.

Class XXXVIII. Fat Pigs over 15 Months old.—1st, 6*l.*, and Silver Medal as breeder, W. B. Wainman, Esq., Carhead; 2d, 3*l.*, Mr. T. Crisp, Butley Abbey; 3d, 2*l.*, Mr. J. K. Tombs, Langford Lechdale. Highly Commended: Mr. J. Sammons, Ashby Magna, Lutterworth; Mr. J. Darling, Beaudesert Farm, Rugeley. Commended: Mr. W. Jackson, Garton, near Driffield.

BREEDING PIGS.

Berkshires.

Class XXXIX. Five Pigs of One Litter, from 3 to 6 Months Old.—1st, 10*l.*, Silver Medal as breeder, and the Society's Cup, Mr. W. J. B. Scott, Queen's Hotel, Birmingham; 2d, 5*l.*, Mr. J. K. Tombs, Langford; 3d, 3*l.*, The Rev. E. Roberts, Harborne, Birmingham; Silver Medal, J. Hitchman, Esq., M.D., Mickleover, near Derby; Silver Medal, Mr. D. Long, Whaddon, near Gloucester. Commended: Mr. H. P. Jones, Portway House, Warminster.

Pigs of other Large Breeds.

Class XL. Five Pigs of One Litter, from 3 to 6 Months Old.—1st, 10*l.*, and Silver Medal as breeder, Mr. A. Guy, Eaton, Leicestershire; 2d, 5*l.*, Mr. A. Guy, Eaton; 3d, 3*l.*, Mr. J. Clewes, Sutton Coldfield.

Pigs of a Small Breed.

Class XLI. Five Pigs of a Litter from 3 to 6 Months Old.—1st, 10*l.*, and Silver Medal as breeder, and the Society's Cup, Mr. T. Crisp, Butley Abbey; 2d, 5*l.*, Major-General the Hon. A. N. Hood; 3d, 3*l.*, Mr. G. Mangles, Givendale, Ripon; Silver Medal, Mr. George Mangles. Commended: Mr. S. G. Stearn, Brandeston, Wickham Market, Suffolk.

ROOTS.

Class I. A Silver Cup of the value of Ten Guineas, by Sir John Ratcliff, for the best Collection of Long Mangel Wurzel, Globe Mangel Wurzel, Swedes and Carrots, Six Roots of each to be shown, to J. Moore, Esq., Warwick.

Class II. A Silver Cup of the value of Ten Guineas, by Messrs. Griffin, Morris, and Griffin, of Wolverhampton, for the best Collection of Long Mangel Wurzel, Globe Mangel Wurzel, Swedes, and Carrots, Six Roots of each kind to be shown, to Sir W. Heathcote, Bart., M.P., Hursley Park, Winchester.

Class III. A Silver Cup, of the value of Five Guineas, by Messrs. Proctor & Ryland, for the best Six Specimens of Swedes, to Sir W. Heathcote, Bart., M.P., Hursley Park, Winchester.

Class IV. A Silver Cup, of the value of Five Guineas, by Messrs. Proctor & Ryland, for the best Six Specimens of Yellow Globe Mangel Wurzel, to Colonel North, M.P., Wroxton Abbey, Banbury.

Class V. Kohl Rabi.—1st, 2*l.* 2*s.*, Mr. F. Lythall, Spittal Farm, Banbury; 2d, 1*l.* 1*s.*, Mr. J. Perkins, 52, Market Square Northampton.

Class VI. Long Mangel Wurzel.—1st, 2*l.* 2*s.*, Sir W. Heathcote, Bart., M.P.; 2d, 1*l.* 1*s.*, Mr. D. Long, Whaddon, near Gloucester. Commended: Mr. D. Long.

Class VII. Globe Mangel Wurzel.—1st, 2*l.* 2*s.*, Colonel North, M.P.; 2d, 1*l.* 1*s.*, J. Moore, Esq., Warwick. Highly Commended: Colonel North, M.P. Commended: His Grace the Duke of Marlborough. Commended: Rev. T. Stevens, Bradfield, Reading.

Class VIII. Swedes of any Variety.—1st, 2*l.* 2*s.*, Sir. W. Heathcote, Bart., M.P.; 2d, 1*l.* 1*s.*, Mr. W. Fletcher, Radmanthwaite, Mansfield. Commended: Messrs. F. & A. Dickson & Sons; Mr. J. Lathbury, Wetmoor, Burton-on-Trent; Mr. J. Thompson, Measham. Atherstone.

Class IX. Common Turnips.—1st, 2*l.* 2*s.*, The Rev. T. Stevens, St. Andrew's College, Bradfield; 2d, 1*l.* 1*s.*, The Rev. T. Stevens. Commended: The Rev. T. Stevens; The Rev. T. Stevens.

Class X. Carrots of any Variety.—1st, 2*l.* 2*s.*, G. S. Foljambe, Esq., Osberton Hall, Worksop; 2d, 1*l.* 1*s.*, G. S. Foljambe, Esq. Commended: G. S. Foljambe, Esq.

Class XI. Ox Cabbage.—1st, 2*l.* 2*s.*, Mr. S. Robinson, Shaw House, Melbourne, Derbyshire; 2d., 1*l.* 1*s.*, Mr. Samuel Robinson.

Class XII. Potatoes.—1st, 2*l.* 2*s.*, Mr. J. Choyce, Harris Bridge, Atherstone; 2d, 1*l.* 1*s.*, The Rev. T. Stevens, St. Andrew's College. Highly Commended: Mr. J. Shackel, Blenheim House, Small Heath, near Birmingham; Mr. J. K. Fowler, Prebendal Farm, Aylesbury. Commended: Mr. S. Robinson, Shaw House, Melbourne, Derbyshire; Mr. J. Shackel.

BARLEY.

A Silver Cup, of the value of 10 guineas, by Mr. Robert Tommas, of Birmingham, for the best sample of not less than 4 bushels of Barley, to be taken from a bulk of not less than 100 quarters, to Messrs. Raynbird, Caldecott, and Bawtree, Basingtoke, Hampshire.

POULTRY.

We know not whether our annual task becomes easier or more difficult from the excellence of this exhibition, and the high class of the competing pens. We are saved from the conviction of undeniable monotony by the fact that new names and new birds appear every year, disputing the palm of merit and bringing at least the charm of fresh names. The new breeds prove the pursuit does not flag. New countries are resorted to by those who have exhausted the resources of our own; numerous French breeds are becoming familiar to us, and Japan has already contributed to the Birmingham and Crystal Palace poultry shows.

The increase in the weight of geese, ducks, and turkeys deserves especial notice, because it is no longer confined to one or two prize pens, but it is the characteristic of the Classes. The nine successful Aylesbury ducks weighed 75 lbs. The nine heaviest Rouen ducks weighed 67 lbs.; 18 white geese, 362 lbs.; 18 grey geese, 372 lbs.; 18 turkeys, 313 lbs. These weights are startling facts; they have never been equalled, and whether viewed as the results of successful amateurship, or as increased production of valuable and delicious food, they show an important result. While on this part of the question, we may as well observe that this increase is due more to the aptitude of the peculiar breeds for putting on flesh than to an inordinate fatness resulting from extra or over-feeding. The great marvel in these classes was a pen of white geese, shown by Mrs. Seamons of Aylesbury, and which weighed 76½ lbs., and the greatest exploit was that of Lord Kinnaird, who sent two pens of the same breed, weighing 115 lbs., from Scotland, and most deservedly took prizes with both.

The increase of weight in poultry attained by knowledge rather than profitless expenditure is a principal feature in the utility of these shows. Thanks to it, the occasional use of poultry is now met with among classes who never thought of it years ago. Goose clubs at Christmas distribute hundreds of thousands of geese in London, weighing on an average from 10 to 14 lbs. If the same number had been wanted before that which was miscalled the poultry mania, they would have been from 3 lbs. to 4 lbs. lighter. As the great show of which we write inaugurated the movement, every working man's family that ever tastes poultry may thank it for the quantity and quality of the meal. It is the knowledge acquired of the different breeds by those who originated and still support the pursuit, and these meetings, that has succeeded in increasing the quantity of food by size in those destined for the table, and fecundity in those that are layers. Perfect knowledge of anything is generally acquired by different minds being bent on the same point by men of different means. This has been the case with poultry. That which one has conceived, another has carried out, hence the success in every class that has resulted in the universal excellence which is the characteristic of this Show. The pen that ran away with the prize from its unique excellence 14 years ago, would now only present a moderate type of the class to which it belongs, and the man who had to try experiments to ascertain the breed that would suit his new dwelling and its soil, or the nearest market some years ago, would now be told at once what he wanted.

Among the most remarkable fowls, must be quoted Mr. Copple's Cup pen of Dorkings, Messrs. Statten and Cargey's Silver Grey birds of the same breed, Lord Hill's beautiful birds, the remarkable bird shown in the single Cock class by Lady Holmesdale, and the perfect hens shown by Mr. Wakefield.

The Spanish was the only class that showed a falling off. The Cochin Chinas were as good as were ever seen; our space will not permit us to mention every pen that deserves notice. Messrs. Kelleway, Cartwright, Stretch, and Chase must be noted even among the excellent. Brahma Poutras were perfect, adding to the laurels of Messrs. Teebay and Fowler. At the risk of being monotonous we must add that the Malays, Hambros and Polish were eqully good. The success of Mr. Dixon of Bradford in many of these classes was remarkable and deserved. The Game classes were in themselves an exhibition, and added of course to the reputation of Mr. Archer of Malvern, who stood in the proud position of showing the best game cock in England. An idea may be formed of the extent of these Classes, when we say 88 pens were named in the prize list. It was a matter of surprise to all how so many good, we may say perfect birds, could be shown in the single cock classes. The Bantams of every kind were perhaps the best ever seen, and afforded a most remarkable triumph to one of the best exhibitors. Mr. H. D. Bayley took nine prizes. This was the lion's share. There were plenty of good and beautiful birds that had to be content with commendations. The various classes of fowls were remarkable for the variety, and we may add the good taste that ruled the selection of the competitors. There was an excellent show of Black Hambros, another of Crevecœurs, and of Cuckoo Dorkings. Hundreds of pounds were realised within a few hours of opening the sale office for poultry. Visitors came in their usual thousands. We can never conclude our notice of this remarkable Show without a mention of the efficient and hard working knot of gentlemen who undertake the active duties of its management, and who contribute to its success by their gratuitous and valuable services. They are constantly at their several posts, and all who are interested in these pursuits owe a debt of gratitude to Messrs. Shackel, Matthews, Luckcock, Wright, Lowe, Mapplebeck, Adkins, and many others.

The Judges were Rev. R. Pulleine, G. J. Andrews, Esq., Messrs. Bailey, Challoner, and Foulds.

We must not omit reference to the exhibition both of roots, Barley, &c., for prizes, and of samples by seedsmen in the galleries. Messrs. Sutton exhibited a magnificent display, which caught the eye most effectively on entering the Hall. It included 70 sorts of dried Grasses, many kinds of Mangel Wurzel, Turnips, Carrots, &c., some of them of extraordinary size, certainly surpassing those shown in competition for the liberal prize list. The awards in this division of the Show will be found in our prize list, and it must suffice here to say that the prizes were generally won in competition with considerable numbers of entries. The judge gave his award in general for quality and truth of sort, rather than for mere weight—giving perhaps occasionally, as in the case of the prizes offered for half-a-dozen Swedes, too much influence to quality in place of quantity. As a general rule the show of Mangels, Swedes, and common Turnips was good; though certainly some very poor specimens of all kinds were shown. The Kohl Rabi was inferior; there was but little competition in Carrots. The Cabbages exhibited by Mr. Robinson, of Shaw House, Melbourne, Derbyshire, were enormous; one of them weighed 60¾ lbs., and was 6 feet round; six of them weighed 320 lbs.!

A very good show of Potatoes were exhibited. Some 13 or 14 sacks of capital Barley were shown for a cup worth 10*l.* 10*s.*, offered by Mr. Thomas, of Birmingham. The prize was awarded to Messrs. Raynbird, Caldecott & Co., who had also an admirable stand as seedsmen in the gallery, containing a capital suite of samples in the straw and grain of various kinds of Wheat and Barley. Nothing could be more satisfactory than the way in which the character of the varieties exhibited was thus displayed.

The Implement Show included stands by most of our principal makers—Ransomes, Garrett, Hornsby, Howard, Ashby, Richmond & Chandler, &c. Steam-engines, threshing-machines, ploughs, harrows, chaff-cutters, horse-rakes, haytedders, &c., occupied the ground. Messrs. Ransome exhibited their patent jointed harrows, which fit and follow the irregularities of the ground. Messrs. Swinnerton, of Park Lane, Birmingham, exhibited a cheap combination of wrought and cast-iron pieces, forming a chain harrow, which promises to be very efficient for surface work.

Among the other varieties may be named a chaff-cutter in which the intermittent thrust of the fodder to be cut is ingeniously effected by the peculiar form of the teeth by which the rotatory motion of the knife is combined with that of the feed roller. The invention goes by the name of Gregory's patent, and seems a simple and efficient contrivance.

Farm Memoranda.

South Hants Farm.—The weather having taken a favourable turn, and inclined for dry and frost, the season for Wheat may now be considered good, and on the 5th of the month we commenced sowing after Clover lea, the land being well dressed with good box manure before ploughing; the land, too, being remarkably clean, having been looked over before ploughing, and forking out some bunches of Couch Grass, which, had it been allowed to remain, might not have been sufficient to injure the Wheat crop; but after the harvest the land would not have been clean enough for our close rotation of cropping. We, therefore, at all opportunities prefer to fork out Couch-grass previous to the sowing of any crop, believing that the first expense is always the least, and particularly when a little hand-labour saves the cost of horse labour. The sort of Wheat we have sown, is the Essex Rough-chaff, this variety grows very short and stiff in the straw, even on the best soils and under the highest cultivation, and the land we have just now seeded is the best land we have, and in first-rate condition. About 2½ bushels of seed per acre was the quantity sown, which is none too much for lea ground in the November mouth. Since the lea ground was finished, we have continued to plough and sow daily on land from which the Potato crop had been removed; the Potatoes having been manured with guano, we think it right to apply a dressing of box manure for the Wheat. It is our usual practice after the 1st of November to plough and sow the same day, for in case of waiting to sow a whole field, before it is ready, rain or frost is pretty certain to intervene, either of which prevents the ground being seeded in so good a state as when sown after the plough. On the Potato land we sow Morton's Red Strawed White, also some Bedford White, which is a new variety in this district, and has very much the appearance of the Fenton or Scotch Wheat, either of which we have found to do well on our land. The district of South Hants is on all the dry soils essentially a White Wheat district, owing in a great measure to the climate being warm and early for the harvest. We are still proceeding with the taking up and storing the root crops. Our Mangels are now finished and earthed over, being pitted in the field without horse-labour. Taking up the white Belgian Carrots is now the work on hand; they are good for a second crop, being raised after a crop of Trifolium and drilled on the 25th of May after one ploughing; this may be considered late for Carrots, but our crop may be estimated at 16 tons per acre of large fine roots, which is an important and valuable second crop. The roots are taken from the field and stored away for Lamb feeding further on in the season. The sheep stock are not doing well, owing to the lameness, for although the complaint yields to the remedy, yet there are so many fresh cases daily, that until it has gone through and attacked the whole flock there is no chance of getting rid of it, and in some instances it breaks out twice or thrice; when the weather is wet is a great drawback, particularly to the in-lamb ewes, and it often causes abortion. We have this season many cases of premature birth of lambs. The cattle of different ages under cover in boxes are being fed chiefly with the yellow Bullock Turnips and Mangel, mixed, receiving also cake and Bean meal, with sweet Oat straw, as much as they can eat. In the ordinary, we prefer to give the straw without cutting into chaff, particularly when it is so well harvested as it has been this season. A low-priced article like straw will not pay the expenses of cutting into chaff, unless for the purpose of mixing with other feeding materials. Our forwardest bullocks get 4 lbs. of cake meal and 1 lb. of Bean meal per day strewed over the cut roots, which are cut by Gardner's cutter. Our object in mixing Mangel and Turnips together is to accustom the animals to the Mangel before they have to depend entirely upon them, as

... must do after the store of Turnips are exhausted. We recommend the practice of ... any kind of roots in this way, rather ... change suddenly, whether the change of food ... be from Turnips to Swedes or Swedes to Mangel. ... the same manner in feeding sheep, whenever the ... leaves a field which contained Turnips to another ... contains Mangels, we always remove a few cart... of the produce of each field into the other; by ... means the health of the sheep will be maintained, ... sudden changes in stock-feeding are dangerous. ... calves of the present season, now about 7 or 8 ... old, still get some greens daily; the Mangel ... are consumed, but we are now using the Carrot ... which prove a valuable food for them; at the ... time we cannot apply the greens to a better pur... for other kinds of stock. We have still a good ... of the Drumhead Cabbages, which we continue ... give to the milch cows, and I never saw them look ... better, or give more milk at this time of the year, or ... butter of better quality. *J. B.*

Miscellaneous.

Tenant Right.—Court of Queen's Bench, Nov. 24: ... v. Mount.—This case was one of some interest ... agriculturists. It was an action by an outgoing ... against an incoming tenant for the value of ... right fixtures, and a quantity of straw and ... wheelbarrows, farm utensils, and other farming ... of the plaintiff, which the defendant had in fact ... to under a valuation. Each had appointed a ... the valuers had met, and agreed, wth the land... to appoint an umpire. The umpire was so ... appointed and called in to act, and the valuation was ... except two items, when he went away, and so ... valuation fell to the ground. The defendant, the ... tenant, however, entered and took to the ...; but at the trial before Mr. Justice Willes, at Derby, ... the Summer Assizes, 1861, when it came out that ... valuation had failed, the learned Judge directed a ... on the ground that the original liability would ... the landlord (as the tenant outgoing was bound ... the tenant-right by contract with him), and ... as the contract with the tenant failed through ... of the valuation, the only remedy was against ... landlord. Mr. Serjeant Hayes had obtained a rule ... this nonsuit aside and enter a verdict for the ... on the ground that the defendant's acceptance of ... stock and tenant-right, under the circumstances, im... a contract to pay the plaintiff, the outgoing tenant. ... Field and Mr. Cave showed cause on the part of ... defendant, arguing that, though there might be ... circumstances under which the incoming tenant might ... liable to the outgoing-tenant, the mere taking to the ...-right and stock under a valuation to which the ... was a party did not imply such a liability. ... learned counsel urged that there ought to have ... evidence of a new contract between the outgoing ... and the incoming tenant, but that as the award ... not been produced, and no custom shown of a ... in such a case to the outgoing tenant, there ... no evidence of such a contract. Mr. Serjeant Hayes and Mr. Merewether appeared for the plaintiff, to support the rule to enter the verdict for him, on the ground that, as the defendant had consumed the crops and stock, they could not now be valued; that, therefore, he was liable, at all events, for the effects not on the soil. The Lord Chief Justice asked of the learned counsel if they would consent to take their verdict for the moveable chattels only. Mr. Serjeant Hayes did not assent to that, and insisted that the outgoing tenant was entitled to the whole, as it did not appear that the landlord had intervened or set up any right to recover. The Court thought the case must go down to a new trial, unless, as they recommended, the parties would agree to refer the matter back to the valuer, the dilapidations being valued in by way of deduction.

Spurious Manure.—A meeting of the committee appointed by a previous public meeting was recently held at Oughterard, W. Muns, Esq., in the chair. The following letter and analysis of manure was read:—

"Sir,—The committee named by the meeting of the 18th ult., the report of which you were good enough to publish, have forwarded to Professor Divers, of Queen's College, Galway, three samples of the so-called manure, the analysis of which I beg to annex. We venture to express a hope that you will lay the case before the public, as, from information received, the importers have sold a large quantity of this stuff to the farmers in Scotland. As it has been sold in isolated cases, its failure will doubtless be attributed to other causes than the true one; but this, of course, we leave to your discretion, feeling convinced that you will show the men who could sell such trash at 10*l.* per ton no mercy.—I am, &c.,

"PATRICK O'FLAHERTY.

"P.S.—I enclose the analysis delivered to each purchaser of the manure by the agent here."

ANALYSIS of MANURE, styled "SUPERPHOSPHATE," received by me in three specimens, which I have identified, October 3, 1862:—

Water ..	25.73
Organic matter ..	4.36
Soluble phosphate of lime	00.00
Insoluble ditto	11 78
Sulphate of lime ..	21.06
Alkaline salts ..	12 57
Sand, iron pyrites, and traces of carbonate of lime .	24 50
Ammonia .. .. 0.07 per cent.	

EDWARD DIVERS, M.D., F.C.S.

ANALYSIS forwarded by the Manufacturers to the Agent at Oughterard for circulation, which shows a marked difference from that taken by Dr. Divers:—

Organic matter, nitrogenous ..	2.10
Phosphate of lime ..	16.25
Potash ..	.86
Soda ..	6 56
Lime ..	3.82
Sulphuric acid ..	18.25
Common salt ..	4.53
Oxide of iron ..	1.30
Silica ..	19.15
Water ..	27.18
	100.00

Ammonia .. .. 20 per cent.

In a letter which accompanied the analysis, Dr. Divers says that it is not a superphosphate at all, which shows the value the poor people were to get for their money. There was also a letter read from a Dublin solicitor, advising immediate steps to be taken against the manufacturers, as they were clearly liable, and he had no doubt of the result. It was resolved, however, to delay proceedings for a short time until a sufficient sum is collected. *Dublin Farmers' Gazette.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. SPEARING, Moulsford, near Wallingford, Berks, during the week ending Dec. 3, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0-6	Amount of Cloud 0-10.	Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday	27	29.52	39	38	W.	2	4	40	29	44*	24	0.18	38½	43
Friday ..	28	29.76	40	39	S.W.	1	4	48	33	74	26	0.01	39	42
Saturday ..	29	29.68	40	39	N.E.	1	7	48	37	58	24	0.02	40	42
Sunday	30	29.86	34	34	S.E.	1	8	44	32	50	29	..	44½	42½
Monday...	1	29.68	42	41	S E.	2	6	43	33	48	20	..	41	43
Tuesday ..	2	29.57	39	38	S E.	1	3	48	36	55	31	..	42	43
Wednesday	3	29.70	45	44	S.E.	2	3	48	38	59	36	0.02	42	42½

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Notices to Correspondents.

...ERSHIRE STEAM PLOUGH COMPANY, LIMITED: *Glo'ster.* The following are their charges for steam ploughing, the employer finding fuel and water:—For 7 inches deep in ... fields of not less than 15 acres, 15*s.* per acre; ... lighter soils of the same depth, where four ploughs ... be fairly kept at work, 12*s.* per acre. In general ... ploughs not to be expected to go into any fresh locality, ... plough on any fresh hiring for a less sum than 9*l.* For ... depths without extra difficulties—8 inches, 18*s.* per ... 9 inches, 22*s.* per acre; 10 inches, 30*s.* per acre. The ... to have the discretion of increasing these charges ... cases of peculiar difficulties not contemplated in the ... regulations, and also of making some reduction where ... are great and the quantity of land ploughed ... The manager is J. T. Harrison, Esq., Frocester Court.

... WHITEHEAD'S BUTTER MAKING: *An Engineer* says:—"I ... met with two or three Notices in your Paper of a new ..., invented by Mrs. Whitehead, but no information is ... as to sizes, price, &c., or where they may be seen. ... may be exhibited at the Agricultural Hall during the ... Show week?"

... DAISY: *A Salopian Subscriber* asks if the Ox-eye Daisy (...santhemum leucanthemum) is prejudicial in pasture ... dairy cows? We reply—Scarcely can the plant itself be injurious, seeing that in as far as we know, though it is slightly aromatic and stimulating, it possesses no poisonous property, and besides cattle nearly, if not always, refuse it in pastures. The poor soil, however, in which this plant usually grows when in quantity, may perhaps with safety be put down as incapable of producing either the amount or quality of Grass or hay to entitle it to praise. The Ox-eye Daisy we look upon as injurious for taking up space in a pasture—*ergo*, a weed, displacing better herbage for depasturing and diluting the hay crop, which even without it would be poor enough on a poor soil. We have seen many acres of this plant in the poorer tracks of the United States, and Beck in his "United States' Botany," speaks of it as—"Introduced, and everywhere naturalised. A very troublesome weed." *J. B.*

ROYAL AGRICULTURAL COLLEGE: *X.* Let it be understood once for all that no anonymous letter will be printed. Every communication must be accompanied with the name and address of the writer, not necessarily for publication, but as a guarantee of good faith. Meanwhile, no one need fear that the business of instruction is not still efficiently carried on. The tuition and supervision of students will remain, we doubt not, as efficient as ever; and the intestine differences to which we have referred are no indication of laxity in either.

MESSRS. WAY AND EVANS, ANALYTICAL CHEMISTS, have REMOVED their LABORATORY from 15, Welbeck Street, Cavendish Square, to 106, Leadenhall Street, E.C., where all Letters and Samples for Analysis should in future be addressed.—Dec. 6.

AGRICULTURAL and CHEMICAL COLLEGE, 27 and 28, Lower Kennington Lane, London, S. ASSAYS and ANALYSES promptly attended to by J. C. NESBIT, LANSDELL & Co.

AGRICULTURAL and CHEMICAL COLLEGE, KENNINGTON.—Manufacturers and others engaged in making Artificial Manures may obtain every necessary instruction for their economical and efficient preparation by applying to J. C. NESBIT, LANSDELL & Co., 27 and 28, Lower Kennington Lane, London, S.

Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.

Gentlemen, Farmers, or others, desirous of practical knowledge in Chemical Analysis, or Assaying, may receive instruction at the College, where the extensive Laboratories give ample facility for pursuing their studies, and there is accommodation for a limited number of Resident Students.

Full particulars of terms will be forwarded on application.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. HUMBERT, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

Land Drainage.

WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.

Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate per cent of annual charge to the circumstances of the tenants.

No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.

Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.

Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.

Applications to be made to WILLIAM CLIFFORD, the Secretary at the Offices of the Company, 52, Parliament Street, S.W.

THE LANDS IMPROVEMENT COMPANY.—Incorporated by Special Act of Parliament in 1853. 2, Old Palace Yard, Westminster, S.W.

TO LANDOWNERS, THE CLERGY, ESTATE AGENTS, SURVEYORS, &c. IN ENGLAND AND WALES AND IN SCOTLAND.

The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
2. Farm Roads, Tramways and Railroads for agricultural or farming purposes.
3. Jetties or Landing places on the sea coast or on the banks of navigable rivers or lakes.
4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm Houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable WILLIAM NAPIER, Managing Director, 2, Old Palace Yard, Westminster, S.W.

TESTIMONIAL to W. FISHER HOBBS, Esq.—The following noblemen and gentlemen have consented to act as a Committee for the purpose of collecting Subscriptions towards presenting Mr. W. FISHER HOBBS with a Testimonial, for his distinguished services to the cause of British Agriculture:—

Major General The Hon. A. NELSON HOOD, *Chairman.*

Earl Powis	Mr. James Howard
Earl Cathcart	Mr J G King
Lord Feversham	Mr. G Little
Lord Tredegar	Mr. Alderman Mechi
The Hon. W. Cavendish, M.P.	Mr. T. Owen
The Hon. A. H Vernon	Mr. J. W. Paull
Sir Watkin W. Wynn, Bt., M.P.	Mr Pawlett
Sir J. V. B. Johnstone, Bt., M.P.	Mr. C. Randell
Sir A. K. Macdonald, Bart.	Mr. M. Reynolds
Sir E. C. Kerrison, Bart., M.P.	Mr W Rigden
Mr. C. Barnett	Mr. Sanday
Mr. Barthropp	Mr. Shearer
Mr. R. Bond	Mr. J. Shuttleworth
Mr. Beamston, M.P.	Mr. Robert Smith
Mr. Charles Cantrell	Mr. J. B. Spearing
Mr. W. Cheffins	Mr. Stokes
Mr. G. Cobb	Mr. H. Thurnall
Mr. L. A. Coussmaker	Colonel Towneley
Mr J Cressingham	Mr. H. Trethewy
Mr. Dent, M.P.	Mr. Tréhonnais
Mr. Druce	Mr. Tuxford
Mr. W. Gray	Mr. Owen Wallis
Mr. Holland, M.P.	Mr. W. Wells
Mr. Wren Hoskyns	Mr. Burch Western
Mr. Charles Howard	Mr. H. Wilson

B. T. BRANDRETH GIBBS, 47, Half-Moon Street, W. }
H. HALL DARE, 12, Hanover Square, W. } Hon. Secs.
H. CORBET, Farmers' Club House, Bridge Street, E.C. }

Subscriptions will be received by any Members of the Committee, or by the Hon. Secretaries as above.

CATTLE SHOW.—Visitors before returning to the country should inspect the EXHIBITION PRIZE SADDLERY at S. BLACKWELL'S, 259, Oxford Street, W. (near the Marble Arch). Gutta Percha Jockeys, 56s. to 60s.; hire, 2s. a week. Safety Springs, Driving and Riding Reins, 8s. to 12s.; Anti Crib-biters, 18s.; Springs for Straps, Rollers, 2s.; Fetlock, Speedy, Leg, Knee Boots.

THE FARMER'S BAROMETER, a new instrument by NEGRETTI & ZAMBRA, price 50s., will correctly indicate whether the Barometer falls for Rain or Wind, the most valuable instrument ever constructed for the use of Farmers. Full particulars by enclosing a stamp.
1, Hatton Garden, E.C.; 59, Cornhill, E.C.; and 122, Regent Street, W.

HOW COLD IT HAS BEEN. — NEGRETTI & ZAMBRA'S celebrated THERMOMETERS will correctly register the lowest Temperature, 3s. 6d.
1, Hatton Garden, E.C.; 59, Cornhill, E.C.; and 122, Regent Street, W. Agents Wanted.—Apply at 1, Hatton Garden, E.C.

SHAW'S TIFFANY.
For samples and prices apply to
J. SHAW & Co., 29, Oxford Street, Manchester.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.
Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.
Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

HENRY J. MORTON AND CO.,
2, Basinghall Buildings, Leeds.

Galvanised Iron Water Cistern
for Cottage Houses, &c., to contain 50 gallons, 26s.; 80 gallons, 31s. each; and 140 gallons, 37s., and fitted with tap, keeping the water perfectly sweet and clean; will not rust or corrode. Cisterns of all sizes.

Galvanised Iron Pumps
for Liquid Manure or Domestic Use, 3 inches diameter, 30s. and 32s. 6d. each; Tail Pipe for same at from 10d. per foot.

Galvanised Iron Swing Water Barrows
for Garden or Farm use, containing about 20 gallons, entirely formed of iron, 35s. 0d. each.

AGRICULTURAL MACHINERY. — Threshing Machines for Steam and Horse Power, Ploughs, Harrows, Waggons, Carts, Mills for Hand or Power, Turnip Cutters, Cake Breakers, Chaff Cutters, &c.
Price List Free per post on application.
BURGESS & KEY, 95, Newgate Street, E.C. Works, Brentwood, Essex.

ADVERTISEMENT.

To the Editor of the Agricultural Gazette.

Sir,—My heavy land Wheat after Beans, cultivated and drilled at one operation at a cost of 6s. per acre, without any previous or after operation of any kind, is now up, and although the quantity of seed used was only 1 bushel per acre, it is now clear that had I have planted more the addition would have been wasted, if indeed it would not have damaged the crop. I never saw a seed bed to equal it, or a plant come up so thick, strong, and well, in proportion to the quantity of seed sown. It is open to the inspection of all.
I am, Sir, your obedient servant,
WILLIAM SMITH.
Woolston, Bletchley Station, Bucks.

Steam Cultivation.

The following valuable Testimony has just been received from the Purchaser of the Set of Apparatus worked by J. & F. HOWARD at the last Meeting of the Royal Agricultural Society of England:—

WARWICKSHIRE.
Morton Hall, Warwick, Nov. 12, 1862.

Gentlemen,—I cannot refrain from adding my testimony to that of so many others to the efficiency of the very beautiful and compact Steam Cultivating Apparatus with which you lately supplied me.

I had for some time been desirous of employing steam in the cultivation of my farm, but could not ascertain which was the best system. Feeling anxious in the matter, I was at some expense and trouble in examining for myself the merits and demerits of the three acknowledged systems of the present day —Fowler's, Smith's, and HOWARD'S.

With Fowler's I was anything but satisfied. I did not like the looks of so ponderous an Engine and Tackle, nor the heavy expense of it; and when I saw so much of the outsides of the field left uncultivated, and the damage done to the strong soil from the transit of the engine, I unhesitatingly and at once gave up all idea of adopting this system.

With Smith's I was more pleased, but his whole Apparatus was got up in such a rough and unfinished manner that very much surprised me. That surprise was, however, much increased when I was told that each purchaser of his Apparatus was required to take out a license of Twenty Guineas before he could use it. These reasons forced me to the conclusion that I could not be a customer of Mr. Smith.

I then paid a visit to Battersea and Farningham, and at the latter place saw all three systems in full operation. I saw your new Windlass and Cultivator at work, and was at once struck with their beautiful simplicity. I examined each part of it, and I watched the latter as it passed through the soil so nicely and evenly, leaving it in such a state that surprised and delighted everybody. I was perfectly satisfied, and at once purchased that identical Apparatus. To this day I am satisfied too. I do think your patent windlass and double snatch-blocks the most perfect things I have seen. The former is so simple and easily managed, and the latter effectually keeps the rope off the ground. I am also very much pleased with my porters and have never seen anything to equal them.

I use one of Clayton & Shuttleworth's 8-horse double cylinder Engines, and besides doing with it a large amount of thrashing, I have cultivated and cross-cultivated 112 acres this autumn—though the season has been so unpropitious for my strong soil,—and all this without one single accident or breakage of any kind. My farm, which has but lately come into my possession, consists of 576 acres, of which 370 are arable, and the major part strong soil, requiring four horses to plough it. There has never been less than 20 horses employed in the cultivation of this farm, and frequently more. I have, however, reduced the number to 12, and hope as the land becomes in a better state from drainage and cultivation, to make a still further reduction.

I cannot close this letter without saying in public, what I have so often said in private, that I feel myself under a personal obligation to you for your untiring perseverance, your mechanical genius as displayed in the production of this very perfect Apparatus, and for the uniform courtesy I have at all times received from you.

Heartily wishing you that signal success which you so eminently deserve and enjoy—I remain, gentlemen, yours faithfully,
JOHN FORD.
Messrs. J. & F. HOWARD, Bedford.

Anti-Frost Water Pipe Protector.
[Jones' Patent.]

IMPORTANT to all HOUSEHOLDERS, preventing damage, waste, and annual expenses from pipes bursting in frosty weather.
Wholesale of BURY & POLLARD, Engineers, Sole Manufacturers, Park Iron Works, Southwark, London, S.
Retail of all Ironmongers. A liberal discount to the Trade.

W. J. HOLLANDS, IRON MERCHANT, 31, Bankside, London, S.E.
HOT WATER PIPES, from Stock, per yard:—2-inch, 1s. 2d.; 3-inch, 1s. 10d.; and 4-inch, 2s. 4d. BENDS, from stock, 1s. 7d., 2s. 6d., and 3s. 3d. each.
Other Connexions at equally low prices, and all goods of first-class manufacture.

JOSEPH SMITH, HORTICULTURAL BUILDER. New Road, Hammersmith, W., has for Sale GREENHOUSES, warranted of good materials, and properly and substantially constructed, viz.:—

	£	s.
Span Roof, 27 ft. by 16 ft. 6 in.	46	10
Lean-to, 23 ft. 6 in., by 12 ft. 6in.	33	0
Glazed with 21 oz. Glass.		
Lean-to, 15 ft. by 50 ft.	65	0
Ditto, 16 ft. by 45 ft.	47	0
Ditto, 14 ft. by 50 ft.	60	0
Ditto, 13 ft. by 24 ft.	36	0
Ditto, 11 ft. by 24 ft.	28	0
Second-hand ditto, with Shelves, &c., no Brickwork required	15	0

Houses made to order from 1s. per foot. A large assortment of PIT-LIGHTS, well painted, at 8d. per foot, now ready.
Estimates given for effectually Heating by Hot Water.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection; Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, TUBULAR, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 11s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at
MR. LYNCH WHITE'S Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

The Improved Conical Boilers,
SOLELY MANUFACTURED BY

BURY AND POLLARD (Successors to JOHN R. PEILL, late STEPHENSON & PEILL), have attained a celebrity for surpassing any other Boilers ever invented. Of the many hundreds which have been fixed in this and foreign countries, not one single Boiler has ever proved defective, or failed to give the most complete satisfaction. They are connected with large ranges of Pipes (in some cases several thousand yards), at many Public Establishments, at the Crystal Palace, the Royal Botanical Gardens at Kew, and at the Regent's Park, as well as at most of the Nobility's Seats throughout the Kingdom.
All particulars may be obtained on application to BURY & POLLARD, Sole Manufacturers, Park Iron Works, New Park Street, Southwark, S.
Price £4 10s. and upwards.
Every description of Material for Heating Buildings, supplied of the best description, with directions for putting up Hot-Water Apparatus.

JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD,
PATENTEES AND MANUFACTURERS OF
STEAM CULTIVATORS, STEAM PLOUGHS,
CHAMPION PLOUGHS, HARROWS, HORSE RAKES, AND HAYMAKERS.

CATALOGUES, with full particulars, sent free on application.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.
RANSOMES & SIMS, ORWELL WORKS, IPSWICH,
Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

FOWLER'S
PATENT STEAM PLOUGH AND CULTIVATOR.

SMITHFIELD SHOW, DECEMBER 8 to 12, 1862.—STAND No. 10.

DURING THE PERIOD OF ABOVE SHOW, A COMPLETE SET OF
FOWLER'S STEAM PLOUGHING AND CULTIVATING APPARATUS
CAN BE SEEN IN OPERATION NEAR
LEA BRIDGE STATION of the GREAT EASTERN RAILWAY.
Trains leave the Shoreditch Station for Lea Bridge at short intervals during the day.

REPORTS from nearly 100 STEAM CULTIVATED FARMS can be furnished, on application being made to
JOHN FOWLER, 28, CORNHILL, LONDON, E.C., and
STEAM PLOUGH WORKS, LEEDS.

AT THE SMITHFIELD CLUB CATTLE SHOW, STAND No. 137
SAMUELSON & CO.'S
NEW PATENT SIXTEEN-GUINEA "ECLIPSE" REAPER
(with Dray's Patent Tilting Platform);
ALSO THEIR
GREAT YORKSHIRE SOCIETY'S 1862 PRIZE COMBINED REAPER and MOWER,
AND THEIR
NEW PATENT SELF-ACTING SHEAF-DELIVERY REAPER
(R. C. Ransomes and B. Samuelson's Combined Patents),
Together with all their well-known Implements.

SAMUELSON AND CO., 76, CANNON STREET WEST, LONDON, and
BRITANNIA WORKS, BANBURY

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hot-houses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.

Apply to JOSEPH MEREDITH, Vine Cottage, Garston, near Liverpool.

N.B. References to Noblemen and Gentlemen and their Gardeners sent on application.

VENTILATING STOVES, cheap, simple, efficient, and durable.—Thousands have been sold and universally approved. They are suitable for Halls, Warehouses, Conservatories, and every situation where a close Stove is required. The large sizes are extensively used in Churches, Chapels, and Public Buildings with great effect and economy. Prices 50s., [illegible], 70s., 90s., and 120s. Prospectus with engravings gratis and post free. In operation daily. The Trade supplied.
DEANE & Co., opening to the Monument, London Bridge, E.C.

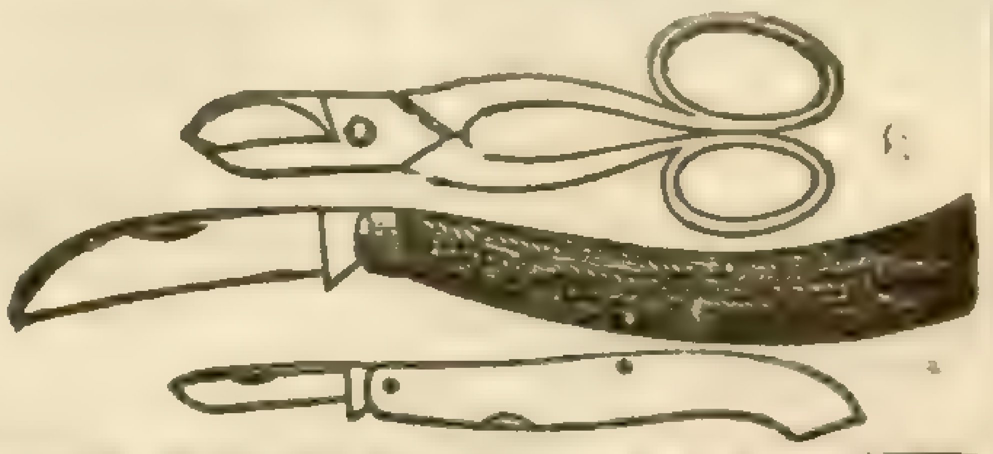
RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.

Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3*d.* per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the
Patentee's Warehouse, 155, Cheapside, London, E.C.
Price complete from 3*l.* 10*s.*
Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

Archangel Mats.

JAMES T. ANDERSON begs to announce that he is now open to supply, at a low price, and in any quantity, ARCHANGEL MATS, the finest in London of this season's importation, and solicits an inspection of them by Nurserymen and Seedsmen.
SACKS, SEED BAGS, &c.
15, Sherborne Lane, King William Street, London, E.C.

Paxton Works, Sheffield, Established 1738.



International Exhibition Prize Medal is just awarded to SAYNOR & COOKE for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR AND COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.

CAUTION.—None are genuine unless marked SAYNOR. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers

PROTECTED BY THE CUTLERS COMPANY — CORPORATE MARK.

JOSEPH HAYWOOD AND CO.,
MANUFACTURERS OF
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kind of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

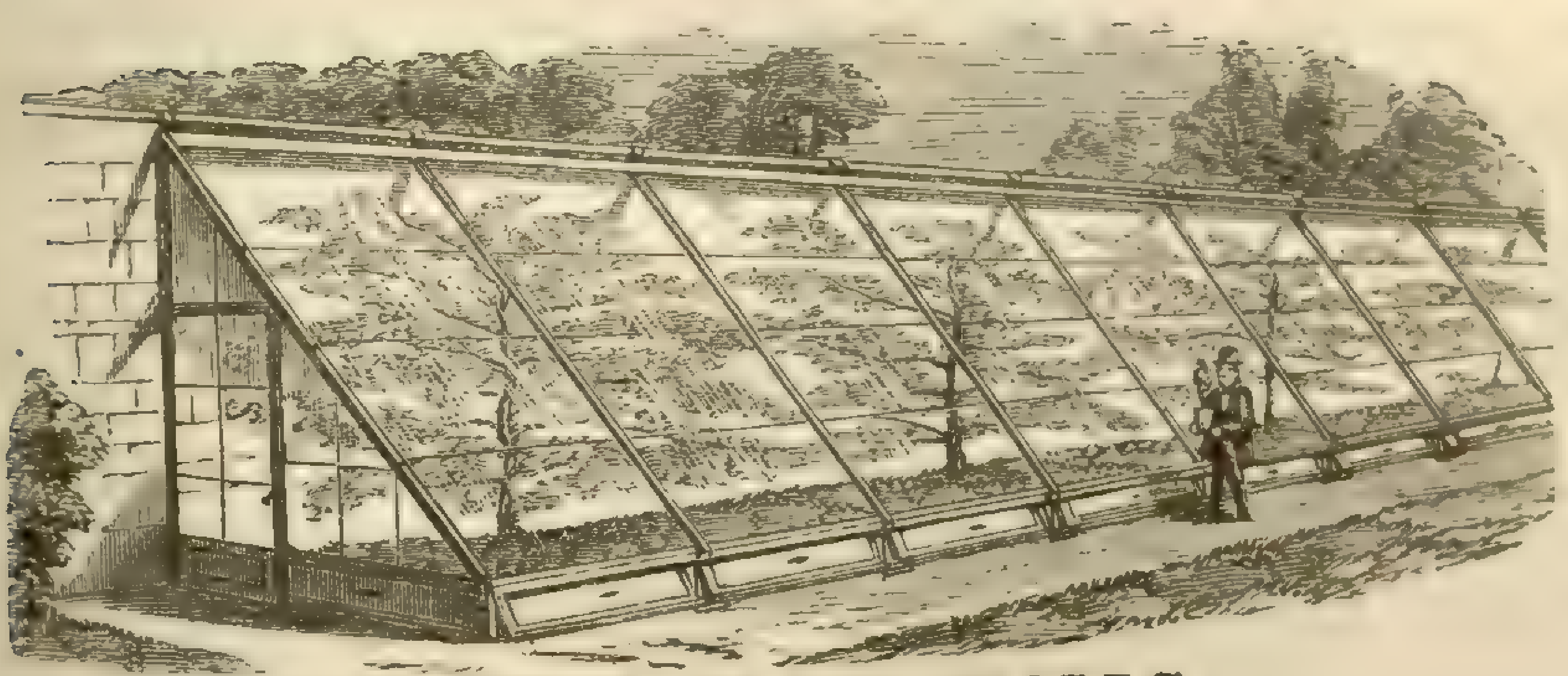
Glamorgan Works, Sheffield.

Liquid Manure Distributor.

THE JUDGES of the Liverpool, Manchester, and Staffordshire Agricultural Shows, 1861, have each awarded the First Prize to I. JAMES, Tivoli Works, Cheltenham, for his LIQUID MANURE DISTRIBUTOR, making a total of 17 Prizes. It is also well adapted for Watering Streets, supplying the Steam Plough, Irrigating, or for a Fire Engine. Also his last great improvement in WASHING MACHINES, which have been awarded several First Prizes, and will wash 20 Shirts in 20 minutes.

ST. PANCRAS IRON WORKS COMPANY,
OLD ST. PANCRAS ROAD, LONDON, N.W.

BY ROYAL LETTERS PATENT.



SCOTT'S GLASS WALLS,

Designed to meet the suggestions of JAMES SCOTT, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

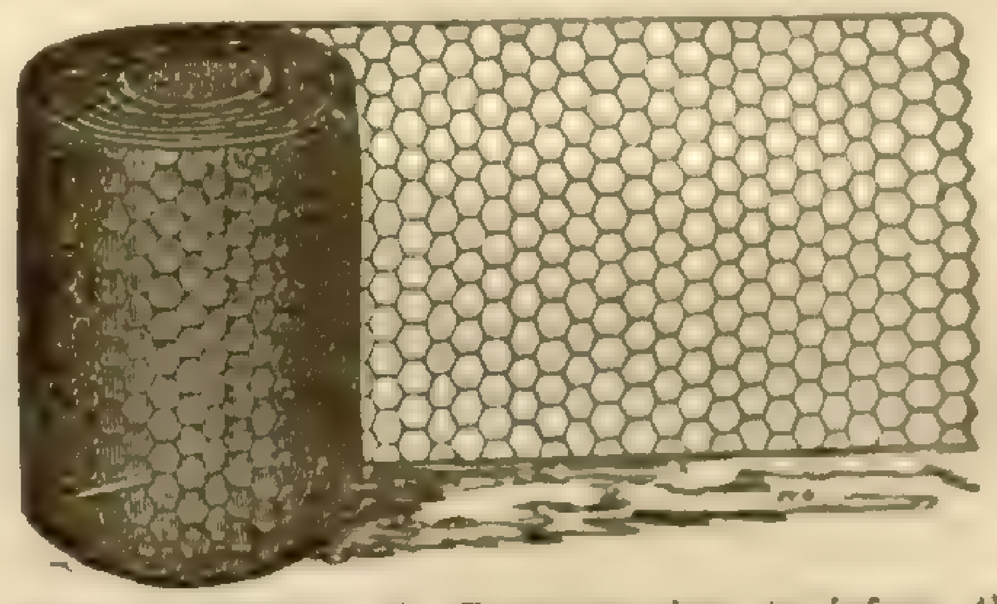
CONSERVATORIES, GREENHOUSES, HOTHOUSES | PINE and MELON PITS, VASES, VERANDAHS | BALCONIES, IRON SASHES, IRON HURDLES | GATES, TANKS, HOT-WATER WORKS.

PATENT WROUGHT-IRON STABLE FITTINGS AND ENAMELLED MANGERS.

Every description of IRONWORK. *Lists Free.*

ST. PANCRAS IRON WORK COMPANY, OLD ST. PANCRAS ROAD LONDON, N.W

BARNARD, BISHOP, AND BARNARDS,
Norwich.
FURTHER REDUCTION in the PRICE of WIRE NETTING.—APRIL, 1861.



BARNARD, BISHOP, & BARNARDS beg to inform their friends and the public that they have made a further reduction in the prices of Machine made Wire Netting, and also that all their Nettings are now Galvanised after being made, which adds much to their appearance, strength, and durability.

	Gauge.	Galvanised. per yard.	Japanned Iron. per yard
2-inch mesh, 24 inches wide..	No. 19	.. 4½*d*	.. 3½*d.*
2-inch " " " ..	" 18	.. 5	.. 4
2-inch " " " ..	" 17	.. 6¼	.. 5
2-inch " " " ..	" 16	.. 8	.. 6½
1⅝-inch " " " ..	" 19	.. 4¾	.. 4
1⅝-inch " " " ..	" 18	.. 6	.. 4¾
1⅝-inch " " " ..	" 17	.. 7	.. 5½
1⅝-inch " " " ..	" 16	.. 9	.. 7

All the above kinds can be made any width (under 6 feet), at proportionate prices.

Strong Galvanised Poultry Netting, 7½*d.* per yard, 3 feet wide. Galvanised Sparrow-proof Netting for Pheasantries, 11*d.* per yard, 2 feet wide. Wire Netting of every mesh from half an inch to 6 inches.

Reduced Price of WIRE FENCING, and GALVANISED WIRE ROPE FENCING, suitable for the home trade or the colonies.

Five wires, 3 feet 6 inches high, pronged Standards, 8 feet apart, one wrought iron straining post and straining screws to each 100 yards of Fencing, 10*d.* per yard.

The same with Galvanised Wire Rope, 1*s.* per yard.

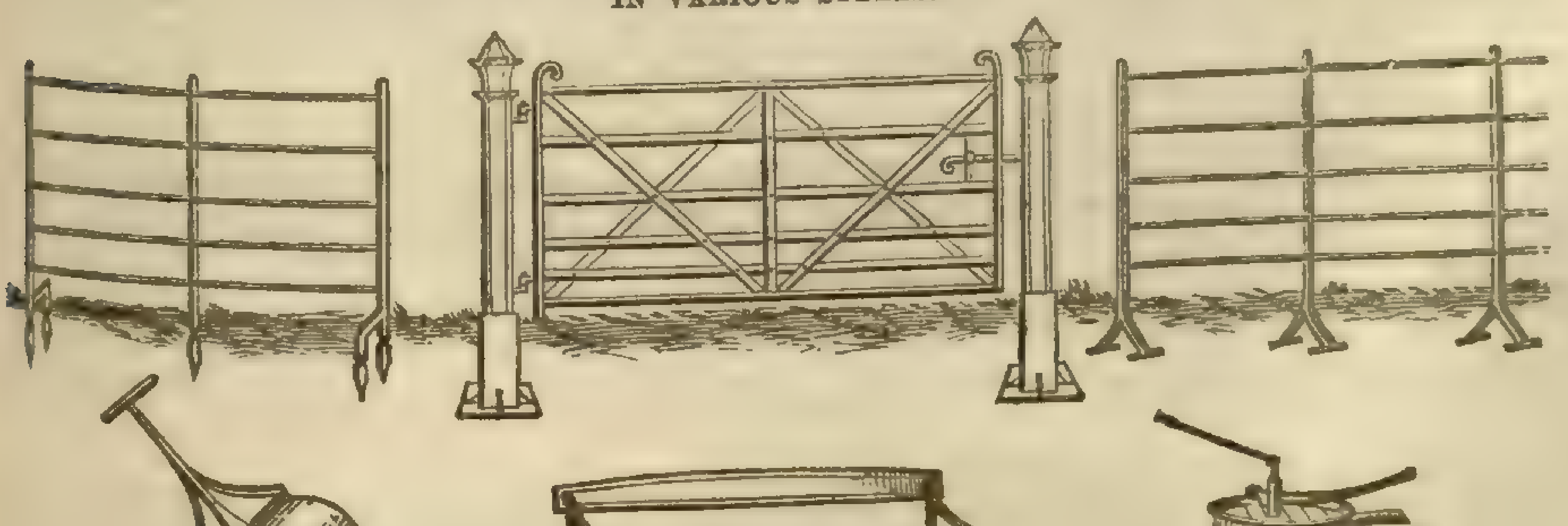
Illustrated Catalogues, with prices of every variety of Wire Fencing and Wire Netting, forwarded free on application.

⁎ Wire Fencing and Netting delivered Carriage Free at all the principal Railway Stations.

SMITHFIELD CLUB SHOW, STAND 107.

COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.
PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED,
IN VARIOUS STYLES.



IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.
The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to
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CHIO MASTICA RAKI ... 6s. per Bottle.

HUNGARIAN WINES.

Per dozen, Bottles included

*VISONTAERE ... 20s.
*ADLERBERGER OFNER ... 24s.
*ERLAURE ... 28s.
BADACSONYER ... 24s.
SOMLAUER AUSLESE ... 28s.

Per dozen, Bottles included.

DIOSZEGHER BAKSTON AUSLESE ... 32s.
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TOKAY-IMPERIAL ... 72s. } Tokay Bottles
" " (DU KRONE) ... 96s.

Pints, 4s. per two dozen extra.

The Red Hungarian Wines in particular are justly celebrated, being for the most part superior to the French Red Wines, possessing more body and flavour, with less acidity. We are led to make these remarks in consequence of having received from Mr. DENMAN, of Fenchurch Street, some samples of Hungarian and Greek Wines. Of the Red Hungarian Wines, the Ofner, at 24s. per dozen, is a good Wine; but the Erlaure, at 28s., is decidedly a fine Wine, both as respects strength and flavour. Of the White Wines, those which pleased us most were the Badacsonyer, at 24s. per dozen, a Wine of full and delicate bouquet and flavour, and the Dioszegher, at 32s. per dozen.—*Lancet*, August 16, 1862.

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" 1847.—Rich, with great body	38s.	12 12 0	23 19 0

CRUSTED PORTS from 36s. per dozen.

SHERRY.

	Per dozen.	Octave, 14 galls., equal to 7 dozen.	Qr. Cask, 23 galls., equal to 14 dozen.
SHERRY ...	18s.	£5 12 0	£10 14 [illegible]
" ...	22s.	7 0 0	13 7 [illegible]
EXCELLENT ...	24s.	7 14 0	14 14 [illegible]
" ...	30s.	9 16 0	18 14 [illegible]
" ...	34s.	11 6 0	21 6 [illegible]
" ...	38s.	12 12 0	23 19 [illegible]
AMONTILLADO ...	40s.	13 5 0	25 5 [illegible]

For other qualities, see Priced List.

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AND SOLE CONSIGNEE TO THE SOCIÉTÉ VINICOLE DE L'ILE DE SANTORIN, GREECE,

65, FENCHURCH STREET, E.C., LONDON.

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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 50.—1862.] SATURDAY, DECEMBER 13. {Price Fivepence. Stamped Edition, 6d.

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1862.

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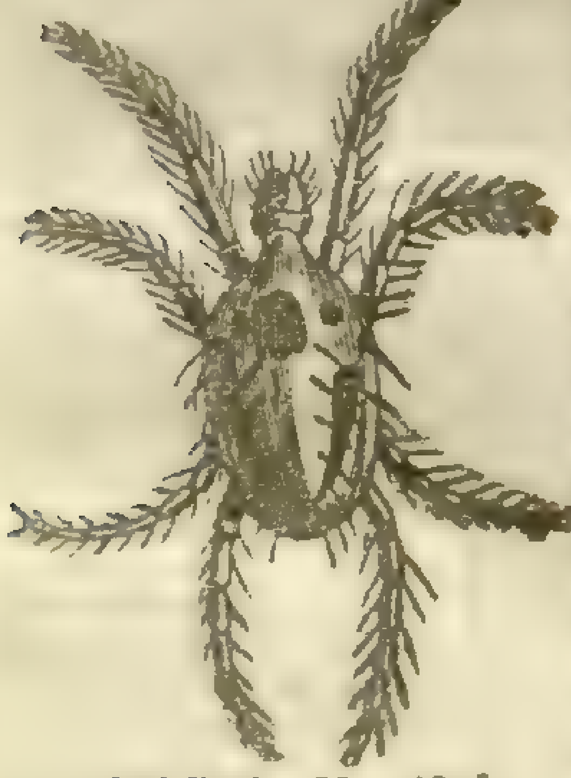
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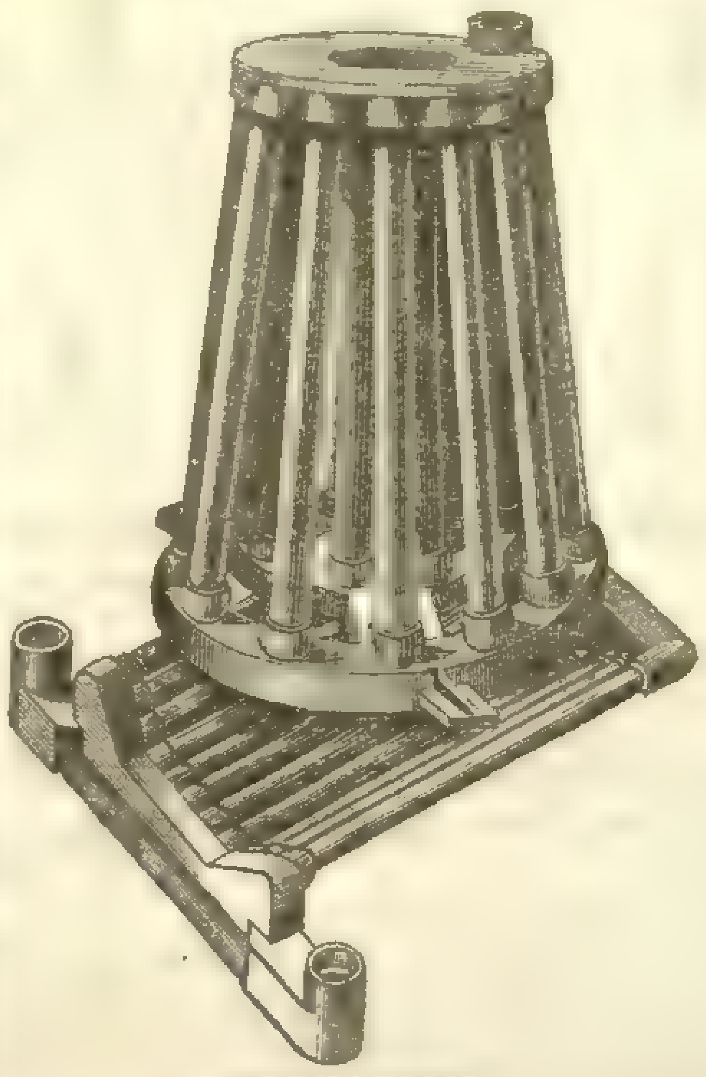
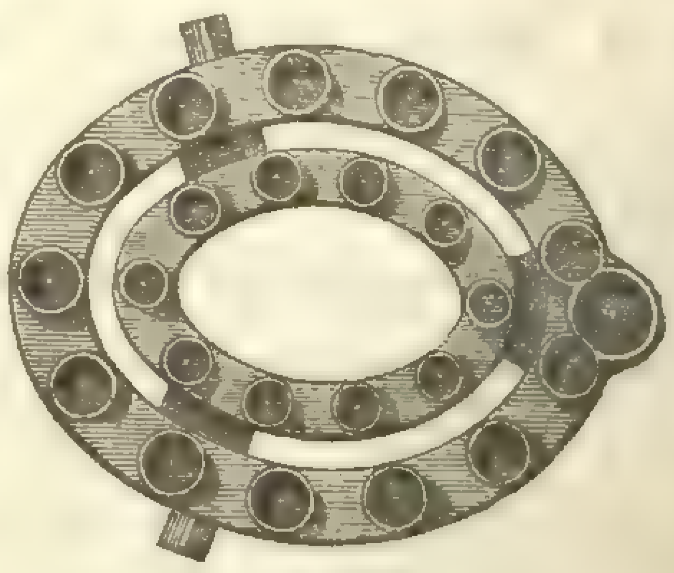
INTERNATIONAL EXHIBITION,
Class IX., No. 2119.


ELEVATION.


PLAN.

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Extract from Report in Gardeners' Chronicle *of International Exhibition, May* 24, *page* 476.

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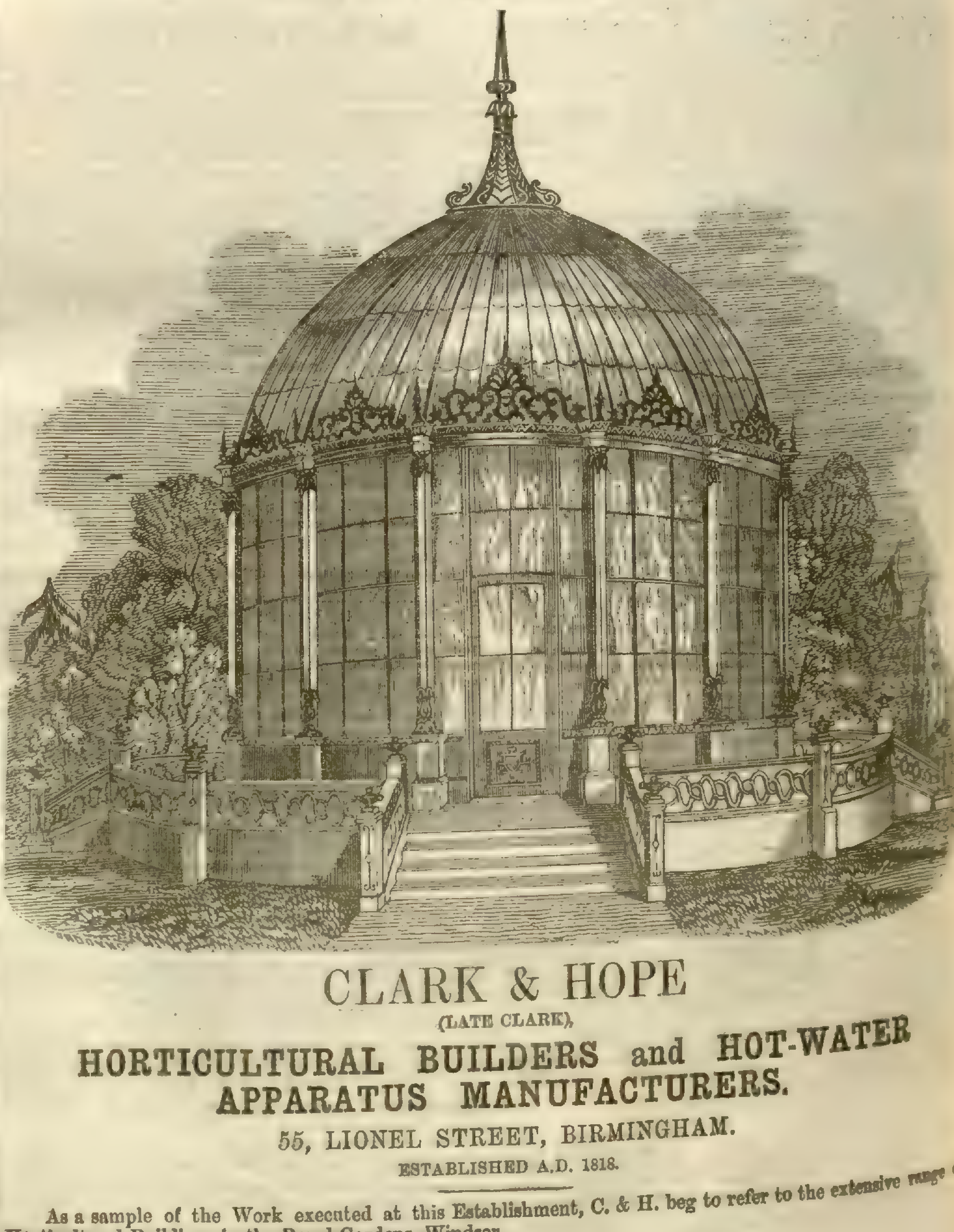
DANVERS STREET, PAULTON'S SQUARE, KING'S ROAD, CHELSEA, S.W.

UNDER THE PATRONAGE OF HER MAJESTY.



CLARK & HOPE
(LATE CLARK),
HORTICULTURAL BUILDERS and HOT-WATER APPARATUS MANUFACTURERS.
55, LIONEL STREET, BIRMINGHAM.
ESTABLISHED A.D. 1818.

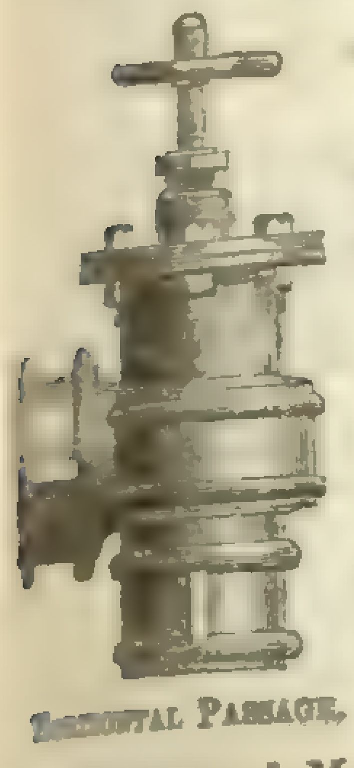
As a sample of the Work executed at this Establishment, C. & H. beg to refer to the extensive range of Horticultural Buildings in the Royal Gardens, Windsor.

INTERNATIONAL EXHIBITION, 1862.—Class VIII., No. 1796.

"Honourable Mention for Valves and Cocks."—*Jurors' Award.*

BECK'S IMPROVED PATENT HOT-WATER VALVES.

UPWARDS of 3000 in USE.



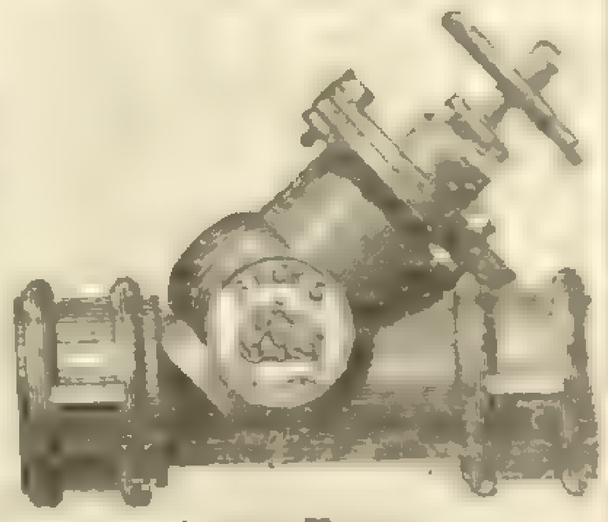
Horizontal Passage.

The above fact shows the decided superiority of **BECK'S PATENT VALVES** over every other description at present in use.

BECK'S IMPROVED THROTTLE VALVES.

☞ *A liberal Discount to the Trade.*

*** Specimens may be seen at the Architectural Exhibition, 9, Conduit Street, Regent Street, W.

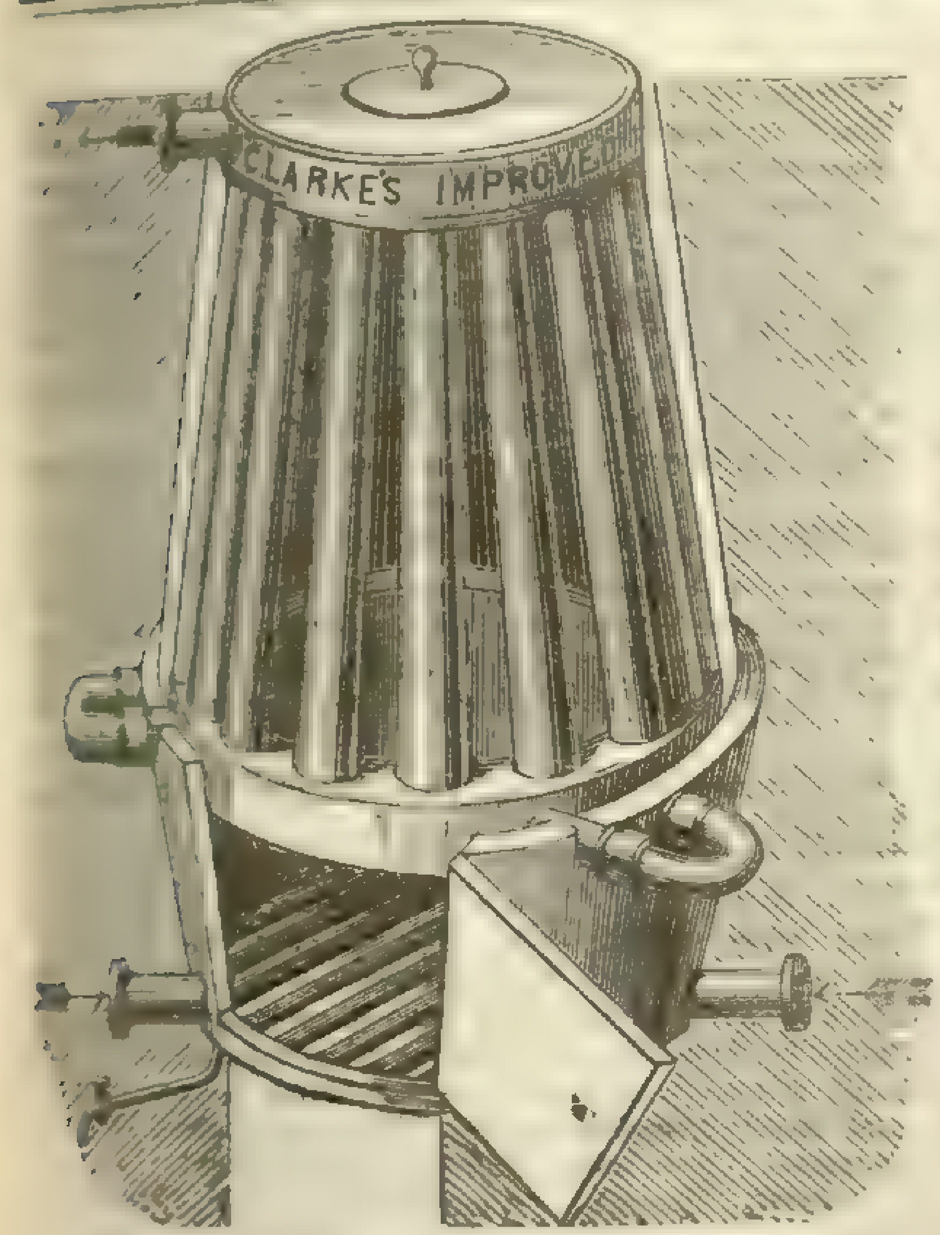


Angle Valve.

JOHN BECK,

PATENTEE and MANUFACTURER of HYDRAULIC, GAS, and STEAM VALVES, WATER CLOSETS, PUMPS, BATHS, LAVATORIES, URINALS, &c.,

133, GREAT SUFFOLK STREET, BOROUGH, LONDON, S.E.



BY HER MAJESTY'S ROYAL LETTERS PATENT.

CLARKE'S NEW PATENT

WATER-JACKET CYLINDRICAL FURNACE

HOT-WATER APPARATUS

is now pronounced by Noblemen and their Gardeners to be the most powerful and economical BOILERS in the world. The Metal in these Boilers is half-inch thick, and without doubt will last many years. They are made of various sizes to Heat from 100 to 5000 feet. References sent upon application to Gentlemen who have them in use.

Illustrated Catalogues and Estimates for Fixing Boiler and Piping complete sent upon the shortest notice. Plans and sections, with printed instructions, are always sent out with the Boilers.

HOT-WATER APPARATUS MANUFACTORY,
EAGLE IRONFOUNDRY,
25, SEEL STREET, LIVERPOOL.

T. C. CLARKE, Proprietor (late Haswell).

FOWLER'S

STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, Orwell Works, Ipswich,

Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

COTTAM'S

CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.

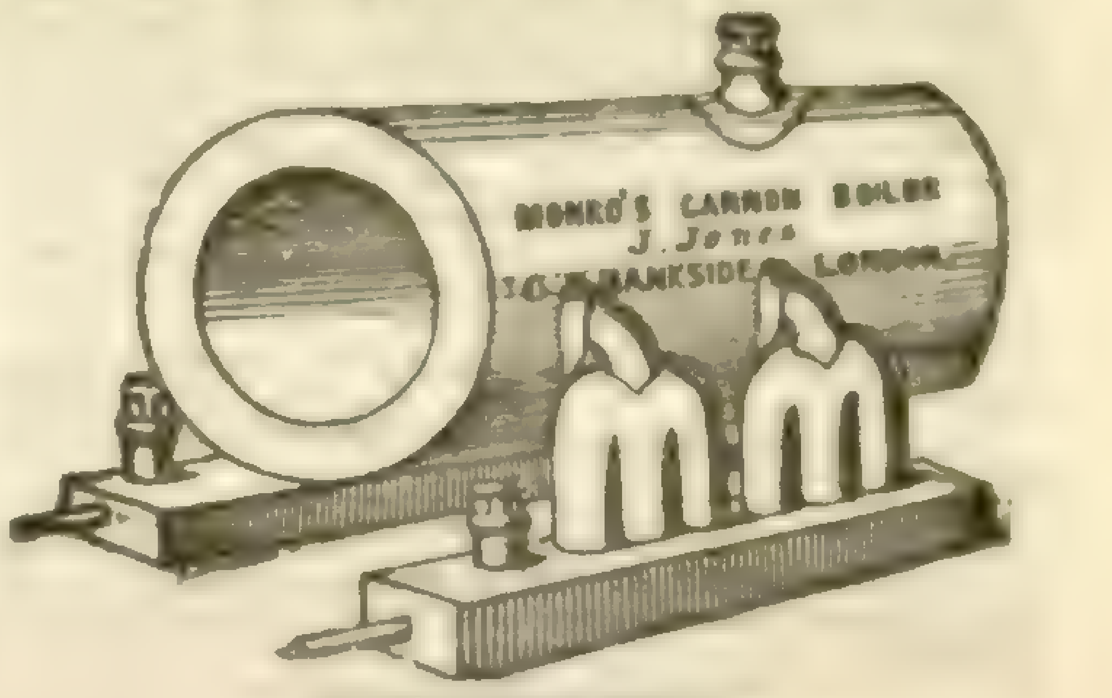
IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c. The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to

COTTAM & CO., ENGINEERS and IRON FOUNDERS,

2, WINSLEY STREET (Opposite the Pantheon), OXFORD STREET, LONDON, W.

HEATING BY HOT WATER.



Monro's Cannon Boiler.

J. JONES,

HORTICULTURAL ENGINEER AND IRON MERCHANT,

SUPPLIES OR ERECTS, COMPLETE,

HOT-WATER APPARATUS

OF EVERY DESCRIPTION,

FOR

HEATING GREENHOUSES,

CONSERVATORIES,

FORCING PITS,

CHURCHES, CHAPELS, SCHOOLS,

HALLS,

BILLIARD ROOMS,

COACH HOUSES, HARNESS ROOMS, &c.,

OF THE BEST QUALITY, AND AT MODERATE CHARGES.

PLANS, ESTIMATES, and DESCRIPTIVE CATALOGUES

SENT POST FREE ON APPLICATION TO

J. JONES,

6, BANKSIDE, LONDON, S.E.

Card.

SAMUEL N. McGERROW, General Horticultural Builder, Knotty Ash, near Liverpool.

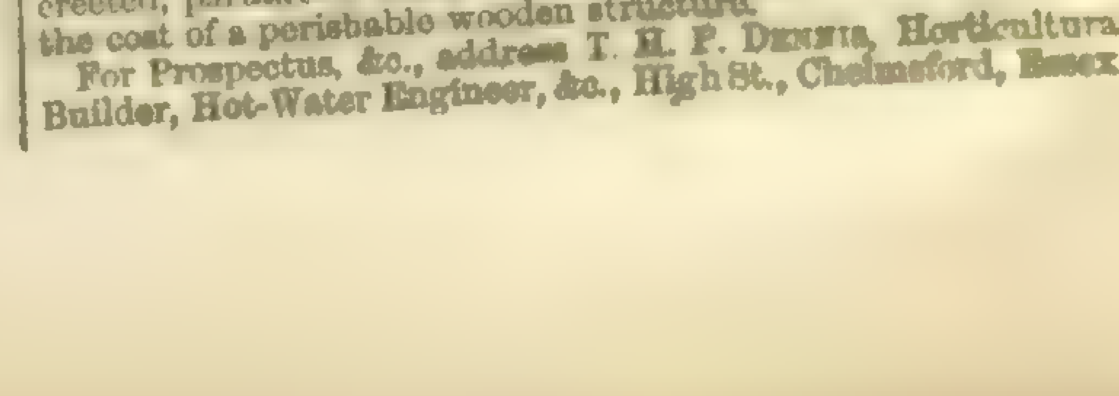
Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.

Hothouses for the Million.—Awarded a Prize Medal at the International Exhibition, 1862.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17*l.* SPAN ROOFS, 30 feet in length, for 33*l.*; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to S. Hereman, 7, Pall Mall East, London.

DENNIS'S PATENT HORTICULTURAL BUILDINGS are made from the best Wrought Iron, upon



an entirely new principle. The combination of Iron and Glass under this patent is perfect; the possibility of fracture is prevented, and a permanently Water-tight Roof insured.

The leading practical advantages are extreme smallness of Framing, admitting a maximum of light and heat, great strength, durability, and perfect ventilation. They are speedily erected, partake of more desirable outline, and do not exceed the cost of a perishable wooden structure.

For Prospectus, &c., address T. H. P. Dennis, Horticultural Builder, Hot-Water Engineer, &c., High St., Chelmsford, Essex.

Foster's Seedling Grape.

MESSRS. JOHN AND CHARLES LEE have to offer Mr. Foster's stock of this fine NEW GRAPE, which can be confidently recommended for general cultivation in cool Vineries. It has borne an abundant crop in the large Conservatory of the Royal Horticultural Society at Chiswick, the bunches being large, with medium sized berries of a pale amber colour. The flavour of Foster's Seedling is most luscious, equalling the richness of its twin sister Lady Downe's, and as far as can be seen, partaking of the same quality of hanging well without shrivelling.

Canes for planting, 7*s.* 6*d.* each. A few Fruiting Canes at 21*s.* each.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

HURST HOUSE SEEDLING or FAIRIE'S QUEEN PINE APPLE produces as heavy a fruit while the plant itself does not grow to more than half the size of the Old Queen.

Good plants, 10*s.* 6*d.*, and 15*s.*
2-year old Successions, 21*s.* each.

A. Fairie, Esq., having presented us with his extra Stock of this valuable Pine Apple, we warrant our plants true.

THOMAS JACKSON & SON, Nursery, Kingston, S.W.

THE GREAT VINE at HAMPTON COURT.—The Subscribers being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42*s.* and 60*s.* p. doz.
" " fruiting plants in 12-inch pots, 10*s.* 6*d* each.

If purchased in large numbers a considerable reduction will be made in price.

JACKSON & SON, Nurseries, Kingston, S.W.

Strong Fruiting Vines.

GEORGE CLARKE invites the attention of intending Planters to his very superior stock of the above. They embrace all the leading varieties, have clean and well ripened rods 8 to 10 feet long, and remarkably short jointed. They were stopped to this length as early as June, rendering them equally stout and good the entire length; they are therefore very suitable for planting a house, or for growing in pots, where a crop of fruit could under proper treatment be obtained the first season.

The prices are—1 year old, 10*s.* 6*d.* each; 2 year old (extra size), 15*s.* Smaller plants, also from Eyes, and equally well ripened, which will produce fruit the second year, 3*s.* 6*d.* to 5*s.* each.

Specimens can be seen at the Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill, S.

VINES for FRUITING in POTS, leading varieties, from Eyes; Strong from 7*s.* 6*d.*; Extra Strong from 12*s.* 6*d.*
VINES for Planting Out, stout well-ripened rods, from 3*s.* 6*d.*
CAMELLIAS, with Flower Buds, including the best new varieties, fine Plants, from 30*s.* per doz., Extra Size from 60*s.* per doz.

Winter Blooming HEATHS, EPACRIS, CINERARIAS, and JASMINUM GRANDIFLORUM (grafted), in excellent condition.

ROSES, Finest Varieties, Standards, Half Standards, Dwarfs on own Roots and Extra Strong, in 7 and 8-inch pots for Forcing.

HUMEA ELEGANS, stout and free, in 6-inch pots, 18*s.* per dozen.

DESCRIPTIVE PRICED CATALOGUES on application to JAMES DICKSON & SONS, The "Newton" Nurseries, Chester.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, has the pleasure to offer now for the first time his two new excellent Fruits—

APPLE CALVILLE GARIBALDI .. 8*s.*
PEAR BEURRÉ DE GHÉLIN .. .. 5*s.*

This excellent Pear obtained the First Prize at the great Pomological Show at Tournay, Belgium.

N.B. These two new Fruits are figured in VERSCHAFFELT'S "Illustration Horticole."

PEACH TREES in POTS for FORCING.—The Undersigned offer the following varieties of PEACHES for Forcing, strong Trees, full of blossom buds. Prices from 5*s.* to 7*s.* 6*d.* each, Carriage paid to London.

NOBLESSE	ROYAL GEORGE	GROSSE MIGNONNE
GALANDE	BARRINGTON	VIOLETTE HATIVE

EARLY YORK.

THOS. RIVERS & SON, Nurseries, Sawbridgeworth, Herts.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

Planting.

WM. PAUL (Son and Successor to the late A. PAUL) invites an early inspection of his Stock of ROSES, ORNAMENTAL TREES, EVERGREENS, FLOWERING SHRUBS, FRUIT TREES, &c., which are now in the finest possible condition. The whole having been transplanted within two years, will transplant again with a certainty of success. Orders by post punctually attended to.

Entrance from the platform, Waltham Station, Great Eastern Railway.

Nurseries and Seed Warehouse, Waltham Cross, N.

Larch, Quicks, &c.

GEORGE CHIVAS, Chester, offers FOUR MILLIONS of TRANSPLANTED LARCH, from 1½ to 4½ feet, of very superior quality. FOUR MILLIONS of TRANSPLANTED THORNS of various sizes, a large portion of which are exceedingly strong. Orders for 10,000 of either, delivered free at any Railway Station. A Sample Bale, containing 100 of each, 5 sizes of Larch, 22*s.* 9*d.*, and of Quicks, 15*s.*, will be forwarded on receipt of a Post-office Order from unknown Correspondents.

A General PRICED LIST on application.

W. VIRGO AND SON have a very large quantity of strong 2 and 3 years Transplanted QUICK; also 3 years Seedling QUICK. Strong Evergreen Privet of various sizes, Standard and Dwarf Roses, Dwarf-trained Cherries of various sorts, English Oak, 3 to 4 feet; Turkey Oak, 6 to 8 feet; Weymouth Pine Fir, 3 to 7 feet; Laburnum, 5 to 7 feet; Mountain Ash, 5 to 7 feet; Berberis aquifolia, 9 inches to a foot; Common Laurel, 2 to 3 feet; Yew, 2 to 3 feet; Box edging in large quantities.

Prices, with samples, can be had on application at the Nursery, Wonersh, near Guildford, Surrey.

3000 DEODARS, 1000 CUPRESSUS LAWSONIANA, 1000 C. MACROCARPA, 500 THUJA LOBBII. The above are offered very cheap. The Deodars are handsome well grown plants, from 2½ to 5 feet, and have been transplanted every autumn for the last five years. The others are fine healthy plants, varying from 2 to 5 feet high.

Prices on application to J. SCOTT, Merriott, Crewkerne, Somerset.

CHARLES B. SAUNDERS, Cæsarean Nurseries, Island of Jersey, Established 1816.

Strong well ripened rooted VINES, best sorts, 6 to 8 ft. rods, grown in the open air without nursing, 2*s.* 6*d.* each; Dwarf Standard, Dwarf-trained PEAR TREES on Quince stocks, well rooted, set with fruit spurs, in fine condition, 1*s.* 8*d.* and 2*s.* 6*d.* each; Maiden and Dwarf-trained PEACH and NECTARINE TREES, 1*s.* 6*d.*, 2*s.* 6*d.*, and 3*s.* 6*d.* each; Maiden and Dwarf-trained MOORPARK and KAISHA APRICOT TREES, 1*s.* 6*d.* and 2*s.* 6*d.* each. An immense Stock of EVERGREEN OAKS, grown in Pots and frequently transplanted, from 50*s.* to 200*s.* per 100, 2 to 6 feet high.

Large quantities of the above can be supplied.
LISTS of GENERAL NURSERY STOCK on application.

AN AVENUE of WELLINGTONIAS.—Gentlemen wishing to plant an avenue of this GLORY OF THE FOREST would do well to inspect the Stock at the Sunningdale Nursery. They may select from thousands.

RHODODENDRONS of every hue, Scarlet, White, Crimson and Purple.—Gentlemen about to plant would consult their interest by an inspection of the Stock of Rhododendrons at the Sunningdale Nursery. They may select from hundreds of thousands.

COVER PLANTING.—Gentlemen about to plant for Cover would find the following plants worth a trial:—BERBERIS JAPONICA, COTONEASTER MICROPHYLLA, and RHODODENDRONS. A visit to the Sunningdale Nursery would not be uninteresting.

ROSES, Standards and Dwarfs, a very fine selection, in the most vigorous health, may be seen at the Sunningdale Nursery.

ROSES for FORCING, specially prepared, and calculated to give an abundant supply of Flowers during winter. All the finest kinds may be selected at the

Sunningdale Nursery

CONIFERS.—A fine Stock of well grown Plants of all the most interesting and really hardy Conifers, Evergreens, &c., may be seen at the

Sunningdale Nursery, Sunningdale Station, S. W.

CHARLES NOBLE.

To Noblemen, Gentlemen, and Others engaged in Planting.

GEORGE BAKER begs to invite attention to the following superb specimens, which are in the finest condition:—

ARAUCARIA IMBRICATA, 6 feet, 9 feet, 14 feet
ABIES DOUGLASII, 10 feet, 14 feet, 20 feet
ARBOR-VITÆ (Siberian), 6 feet, 8 feet
CEDRUS DEODARA, 6 feet, 8 feet, 10 feet, 12 feet, 20 feet
CUPRESSUS LAWSONIANA, 5 feet
" DISTICHA, 8 feet, 12 feet
CEDRUS LIBANI, 8 feet, 10 feet
CHINESE JUNIPER, 5 feet, 6 feet
IRISH YEWS, 6 feet, 8 feet
JUNIPERUS RECURVA, 8 feet
BEDFORDIANA, 5 feet, 6 feet
PICEA CEPHALONICA, 11 feet
PINUS CEMBRA, 7 feet, 10 feet
" EXCELSA, 10 feet, 15 feet
TAXODIUM SEMPERVIRENS, 10 feet, 12 feet
THUJA GIGANTEA, 6 feet
WELLINGTONIA GIGANTEA, 5 feet
KALMIA LATIFOLIA, Standards, fine
RHODODENDRONS,
PORTUGAL LAURELS,

G. B. in offering the above perfect specimens feels assured that whoever may favour him with their kind orders, their hopes will be fully realised. Prices on application.

American Nursery, Windlesham, Bagshot, Surrey.

SEEDLINGS, SEEDLINGS.
TO THE TRADE.

10,000,000	1 year Larch	50,000	1 year C. Laurel
6,000,000	2 year Spruce Fir	4,000	1 year Laurustinus
1,000,000	3 year do.	400,000	2 year Larch
1,000,000	Standard do., 9 to 12 inches	500,000	2 year Scotch Fir
300,000	2 year White do.	600,000	2 yr. Pinus austriaca
800,000	2 year Silver Fir	100,000	1 year Standard do. maritima
2,000,000	1 year Ash	200,000	1 year do. Holly
30,000	3 year do.	100,000	1 yr. do. Arbor-vitæ
200,000	1 year Oaks	10,000	1 year Chinese do.
500,000	2 year Beech	5,000	2 year do. do.
200,000	2 year Alder	100,000	4 yr. Rhododendrons
1,000,000	3 year Thorn Quick	100,000	4 year transplanted, 2 to 3 inches
50,000	2 year Crab Stock		

The above will be sold on reasonable terms for cash, and delivered Free at Dublin. Prices, &c., on application to

MICHAEL BURKE, Drumlargan Nurseries, Summerhill, County Meath, Ireland, 16 miles from Dublin.

W. BAHLSEN'S New LIST of GERMAN FLOWER SEEDS and Novelties now ready, also a special Catalogue of Plants, Trees, and Agricultural Seeds. Every article warranted FRESH, GENUINE, and TRUE TO DESCRIPTION at the lowest possible prices. Our celebrated AMATEUR COLLECTION, containing 34 packets of the leading Flower Seeds, is particularly recommended.

☞ All Flower Seeds delivered in London eight days after Order, Carriage Paid, by means of our Weekly Post. Parcels from Prussia. No other foreign house offers such facilities.

ROBERT LINDEN & Co., Sole Agents, 3, Barnsbury Grove, London, N.

New Celery, Williams's Matchless Red.

B. S. WILLIAMS, Paradise Nursery, Holloway, N., has much pleasure in offering the above superior solid RED CELERY, feeling confident it will give satisfaction. It is perfectly hardy, a strong grower, very solid and crisp, and of a most delicious flavour. It has been taken up for use quite the end of April without having the least tendency for running to seed. From the testimonials received it is unquestionably the best Red Celery in cultivation. In sealed packets, 2*s.* each.

TRADE

HALLETT'S PEDIGREE NURSERY WHEAT

MARK.

has produced, 1862, 62 bushels per acre, weighing 64 lbs. a bush.

Price ONE GUINEA A BUSHEL, including bag sewed up and sealed, delivered at the Brighton Railway Station, with Printed Directions for Planting, on Receipt of Cheque or Post-office Order, which must in all cases accompany the Order. Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

Apply to FREDERIC F. HALLETT, Esq., F.L.S., The Manor House, Brighton, Sussex.

Prize Medal Seed Wheat.—International Cereal Show.

THE PRIZE MEDAL WAS AWARDED TO

MESSRS. RAYNBIRD, CALDECOTT, AND BAWTREE, for the BEST SAMPLE of RED WHEAT, for their sample of RED NURSERY WHEAT, by a jury consisting of some of the most eminent Corn Factors from Mark Lane and Agriculturists of the day.

This Wheat is remarkable for its fine quality, weight, and hardiness, and is one of the most productive upon poor soils and in exposed situations; it may be sown at any time from October to March.

Bulks of similar fine quality to the Prize sample, for cash only, at 80*s.* per Quarter.

Address, Basingstoke.

May's Prolific Pea.

JOSEPH MAY, in offering the above NEW PEA, begs to assure his customers and the Public generally, that it is the largest and most productive Pea known. Growth 5 to 6 feet, a large Wrinkled Marrow, can be sown from February till June, 3 inches apart in the row. Price 2*s.* 6*d.* per quart. The Trade supplied on application, from 8 quarts and upwards.

15, Wellington Street, Strand, Waterloo Bridge.

DAINTREE'S EARLIEST SEEDLING POTATO.—The earliest and most prolific round variety in cultivation, verified by reports in the various papers, and by private reports from all parts of the country, numbers of which will be forwarded on application. Present price, 8*s.* per Bushel, or 12*l.* per Ton; sacks 1*s.* 6*d.* each.—Apply to Mr. SIMON A. DAINTREE, Fendrayton, St. Ives, Hunts.

N.B.—Genuine Italian Rye-grass, and all the Agricultural Seeds of home growth, supplied as usual.

Fluke Kidney Potato Sets

FROM LAND WHICH HAS NOT BEEN BROKEN UP IN THE MEMORY OF MAN.

DICKSONS AND BROWN, SEEDSMEN, 43 and 45, Corporation Street, Manchester, have a few hundred bushels of the above valuable Potato, grown upon fresh land a very short distance from the place where the "FLUKE KIDNEY" was originally raised. They are picked expressly for sets.

By stating quantity required, the price will be forwarded on application to the Advertisers.

HOW'S EARLY FLUKES.—These POTATOES have been raised from the apple of the Fluke, and selected from upwards of 40 different sorts produced. They have taken the prize at the two last local shows, are ready to dig a fortnight after the Ash-leaf, and a much greater bearer than the old Fluke; they are of excellent shape, beautifully white, and good keepers. Price 10*s.* per bushel of 56 lbs., including bags. Cash must accompany all orders.

W. A. HOW, Farmer, Piedmarley, near Newent, old Gloucester.

Myatt's Early Prolific Ash-leaved Kidney Potatoes.

H. AND F. SHARPE are now taking orders for the above, which has this season proved itself to be the earliest and most prolific Potato in cultivation, and as fine a quality as any of the Early Kidney varieties. Having a good stock they can offer them at a low price to the Trade.

Also JACKSON'S ASH-LEAVED KIDNEY, WALNUT-LEAVED KIDNEY, and all the early Round varieties at equally low prices, which may be had on application.

Seed Growing Establishment, Wisbech.

REIGATE SILVER SAND.—Best quality, 12*s.* per Ton, or 1*s.* 3*d.* per Bushel, at Swan Place; delivered 5 miles, or to any London Wharf or Railway, 16*s.* per Ton, or 1*s.* 6*d.* per Bushel (Sacks at cost price). Kentish and Hampshire Peats, Yellow Loam, Leaf Mould, and Cocoa Fibre Refuse; also Cocoa Fibre for Orchids.

J. KENNARD, Swan Place, Old Kent Road, London, S.E.

COCOA-NUT REFUSE, as used for FERNS, BEGONIAS, &c., grown in the International Exhibition, delivered at any Booking Office in the City at 1*s.* 6*d.*, or within 2½ miles of Charing Cross, at 2*s.* per bag of 3 bushels. Larger quantities on lower terms on application to the PATENT COCOA FIBRE COMPANY, Kingston-on-Thames, S.W.

Also SHORT FIBRE for Orchids and Drainage in pots. Postage Stamps or Post-office Orders payable to J. BARSHAM & Co.

BARSHAM'S BRUSHES and MATS are the best and most economical of any that are made, and are sold in every town in the kingdom.

CAUTION.—See that every Brush is stamped "J. BARSHAM'S Patent, Kingston-on-Thames"

WINTER DRESS all FRUIT TREES with GISHURST COMPOUND.

Copy of a Letter from Mr. RIVERS, Nurseries, Sawbridgeworth, Herts, January 9, 1862.

"I think you should prominently mention the great benefit Wall Trees of all kinds derive from a dressing of the Compound applied in January, it is so very beneficial. THOS. RIVERS."

From the Same, October 22, 1861.

"I must tell you what I heard to-day from a very clever gentleman farmer, Anthony Bubb, Esq., of Witcombe Court, Gloucester. He has a Wall to which Peach Trees are trained. Well, last autumn they were in a wretched blighted state. As a desperate remedy he unnailed them all early last February, and gave all but one a thorough painting with GISHURST COMPOUND, 1 lb. to the gallon of water; his trees, all but the one, commenced to grow favourably in spring and are now pictures of health. The tree not painted is in a half-dead blighted state. He used the same dressing to his Apple Trees; it killed the woolly aphis entirely, and has made his Trees clean and vigorous in their growth. He intends to paint his Wall Trees annually, and tells all his friends to do the same. I shall certainly serve all my young Peach Trees against my walls in the same manner. The Compound is, I believe, more efficacious than the usual offensive mixtures of clay, soot, sulphur, &c., and it does not blacken the shoots on the walls. Unless trees are completely at rest, 6 to 8 ounces to the gallon of soft water is the best strength, and sufficiently strong to destroy eggs and insects."

GISHURST COMPOUND is Sold Retail by Nurserymen and Seedsmen, in Boxes, 1*s.*, 3*s.*, and 10*s.* 6*d.* each; Wholesale by PRICE'S Patent Candle Company Limited,

Belmont, Vauxhall, London.

20,000 Dwarf Roses in Pots on their own Roots.

STANDARD, HALF-STANDARD, AND DWARF BUDDED ROSES, ON THE BRIAR AND MANETTI STOCK, IN ENORMOUS QUANTITIES AND IN THE MOST VIGOROUS HEALTH.

WILLIAM WOOD AND SON have much pleasure in directing especial attention to their very extensive and well-grown stock of ROSES, CATALOGUES of which may be had gratis on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses of 1862.

JOHN KEYNES has to offer 1000 very extra strong plants, the finest varieties of the last season, in 6 and 8-inch pots, now ready, price 42s. per dozen, with the usual discount to the Trade.

Fine STANDARDS, of the older varieties, 24s. & 30s. per doz. DWARFS, 12s. and 18s. per dozen, all of the finest varieties in cultivation. Every attention paid to package, and compensation for carriage.

New CATALOGUES ready.

JOHN KEYNES, Nurseryman, Salisbury.

Standard and Dwarf Roses.

BENJAMIN R. CANT will be happy to forward on application his DESCRIPTIVE CATALOGUE of ROSES. As a guarantee of the value of his collection, B. R. C. begs to state that he has this year obtained 17 First Prizes for Cut Roses at the principal Shows.

Very fine vigorous plants of the choicest sorts will be supplied at the following prices:—

Standard Roses	18s., 24s., and 30s. per doz.
Half Standard Do.	18s. and 24s. per doz.
Dwarf Do.	9s. to 18s. per doz.

The NEW ROSES of 1862, Dwarf plants, 3s. 6d. to 5s. each; or, if 12 or more varieties are taken, 30s. per doz.

St. John's Street Nursery, Colchester.

N.B.—B. R. C.'s Catalogue contains nothing but the best varieties; all indifferent and worthless sorts are excluded.

Elymus glaucescens (syn.) sabulosus.

B. S. WILLIAMS begs to call the attention of noblemen and gentlemen to the above ORNAMENTAL GRASS; it is perfectly hardy; having proved it for several years, he can with confidence recommend it as being superior to the Pampas Grass as an under cover for Game, &c.

B. S. W. being convinced of its utility, has provided a large Stock, which he begs to offer at the following low prices:—6s. per dozen; 40s per 100.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Gladiolus Gandavensis and Varieties.

B. S. WILLIAMS'S choice collection of these superb Bulbous Plants, which are beyond doubt the handsomest autumnal ornaments to the garden, is now ready for sending out. Great attention has been bestowed on the selection, amongst which are many novelties, and none but those of the best quality are offered.

Collection of 24 Splendid Varieties, one root of each, 21s.

Collection of Choice Named Varieties, 6s., 8s., and 10s. per doz.

A PRICED and DESCRIPTIVE LIST on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Large Importation of Gladioli.

WM. WOOD AND SON beg to announce the arrival of a choice and carefully selected assortment of the above in excellent condition, consisting of the best and most popular hybrid varieties, from which they will be happy to make selections at the following very moderate prices, viz,

HYBRIDS OF GANDAVENSIS.

	£	s.	d.
100 in 50 choice kinds	£4	0	0
50 in 50 "	2	10	0
60 in 25 "	2	0	0
25 in 25 extra choice kinds	1	5	0
25 in 12 "	1	0	0
12 in 12 "	0	10	0

Newer varieties at proportionately low prices.—See List.

Fine mixed GLADIOLI, per 100, 17s. 6d.; per doz., 2s. 6d.

Carriage paid on orders over 10s.

LISTS free on application.

Woodlands Nursery and Seed Warehouse, Maresfield, Uckfield, Sussex.

Gladiolus Brenchleyensis (True).

YOUELL AND CO. beg to offer this season strong Flowering BULBS of the above, unequalled by any other for its brilliancy of colour, at 3s. 6d. per dozen; or 25s. per 100. Trade price on application, and when quantities are ordered a considerable reduction will be made.

The *Gardeners' Chronicle* of August 23, 1862, says:—"The spikes you have sent us are magnificent. We have as yet seen nothing of the kind so handsome near London. It is undoubtedly the most showy of the whole race of Gladioli."

CATALOGUES of their extensive Collection, for which the First Class Prize was awarded at the Crystal Palace Show, Sept. 3, 1862, and two First Class Prizes at the Royal Horticultural Society's Show, South Kensington, Sept. 10, 1862, will be forwarded on application.

Royal Nurseries, Great Yarmouth.

To the Seed Trade.—Rhodanthe maculata.

SILVER BANKSIAN MEDAL.

TWO FIRST-CLASS CERTIFICATES.

W. THOMPSON, SEEDSMAN, Tavern Road, Ipswich, respectfully announces that he has appointed Messrs. A. HENDERSON & Co., Plant and Seed Merchants, Pine-Apple Place Edgware Road, W., his Wholesale Agents for the distribution of the above first-class novelty, of whom a scale of prices may be obtained on prepaid application, and to whom all orders must be addressed. A Coloured Print may be had for Six Stamps, which will be allowed to purchasers.

The Stock being now reduced to a few ounces, early applications are indispensable to secure a supply.

New Dahlia, Bellona.

JOHN HARRISON begs to inform his friends in the Trade that he intends to dispose of this splendid DAHLIA in roots. In doing so he has the greatest confidence, and will guarantee it to give satisfaction to every grower. Colour, ruby red: A large constant Dahlia. Always to be depended upon; requires little cutting out. From 10 to 20 blooms may be grown on a plant at one time, fit for exhibition. It throws its blooms well above the foliage, on strong stiff stems; requires but little shading, as the thrips seldom or ever attack it. It has been shown in every winning stand J. H. has exhibited for this last two seasons, and has obtained the First Prize in its class at five different Exhibitions; it was awarded a Certificate at the Royal Horticultural Society, Kensington Gore, 10th Sept. last.

Large ground roots, 4l.; smaller do., 3l.; pot roots, 2l. each. Strong plants in April, 7s. 6d. each. No discount under 12 plants.

Darlington Nursery, December 13.

Notice of Removal.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, Edinburgh and London, respectfully beg to intimate that with a view to facilitate their business transactions they have REMOVED from

27, Great George Street, Westminster,

to

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New Seeds.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, of Edinburgh and London, are prepared to send out

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of every kind, and of the finest quality.

Orders for exportation executed with prompt and careful attention.

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COLLECTION of HYACINTHS,

including the extra fine varieties recommended by Dr. LINDLEY.

PRICED LISTS may be had gratis on application to the Importers,

Messrs. J. C. WHEELER & SON,

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Early Spring Flowers.

WEBB'S GIANT POLYANTHUS; ditto COWSLIP; Florist's Flower, POLYANTHUS, Roots or Seed; also SCARLET PRIMROSE—Double Crimson, Double Purple, Double White, Double Yellow, and Double Lilac ditto. COWSLIP from the Himalayas; DOUBLE POLYANTHUS; and other varieties, all of which may be had on application to

RICHARD WEBB, Calcot Gardens, Reading.

SCOTT'S CATALOGUES.

No. 1.—FRUIT CATALOGUE and FRUIT TREE CULTIVATOR'S DIRECTORY describes nearly 800 of the best and most esteemed of our Fruits, with copious Observations and Directions about their Cultivation; the formation of Pyramids, Root Pruning, and other matter interesting to lovers of fine Fruit. Price 7d.

No. 2.—The BULB, WINTER, and SPRING BEDDING PLANT CATALOGUE, 18 pages.

No. 3.—The DESCRIPTIVE CONIFEROUS CATALOGUE, 25 pages.

No. 4.—The ROSE CATALOGUE, 22 pages.

No. 5.—The SELECT NURSERY STOCK, 15 pages.

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In April, the SUMMER BEDDING CATALOGUE, 72 pages.

Apply to J. SCOTT, Merriott, Crewkerne, Somerset.

RHODODENDRON VERSCHAFFELTII.—All the amateurs who last summer saw this splendid hardy variety in my nursery are of the same opinion—that it is the best variety in that way. Colour very delicate rose-violet, with extraordinary large and numerous black spots; an excellent form; beautiful foliage, very free and late bloomer, and particularly quite hardy.

Fine Plants, with branches, 1 to 1½ feet high, 12s. each.
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N.B. A correct drawing has appeared in VERSCHAFFELT'S "Illustration Horticole."

The GENERAL CATALOGUE can be obtained free by writing.

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New Hardy British Ferns.

J. IVERY AND SON can supply Strong Plants of ATHYRIUM FILIX FŒMINA FIELDIÆ at 5s. to 7s. 6d. each;

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OSMUNDA REGALIS CRISTATA. 21s. each.

A Select LIST of the most rare kinds will be forwarded Post Free on application.

Dorking Nursery.

New Fern, Pteris nemoralis variegata.

WILLIAM COLE, Fog Lane Nursery, Withington, Manchester, the raiser of this beautiful and distinct NEW FERN, is now ready to supply good plants, and all orders will be executed in rotation.

It has been well described in the *Gardeners' Chronicle* of July 5, p. 620, where the writer speaks of it as "a curious and novel form of Variegated Pteris."

It was also reported on in the *Gardeners' Chronicle* of May 24, as follows:—"Among new Ferns, of which several were shown, was one from Mr. Cole, Nurseryman, Manchester, belonging to the Variegated Class, and as regards position, is intermediate between argyræa and tricolor, and is apparently a free grower."

W. COLE has great confidence in recommending it, and in stating that it is really a beautiful Fern, and one which will become exceedingly popular. 10s. 6d. each.

Price (very liberal terms to the Trade for 12, 50, or 100) on application.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.

	£	s.	d.
50 in 25 extra choice varieties	£2	2s	0d
25 in 25 " " ..	1	5	0
12 in 12 " " ..	0	12	0
50 in 50 choice varieties	[illegible]	12	6
50 in 25 " " ..	1	5	6
25 in 25 " "	0	15	[illegible]
12 in 12 " "	0	5	0

Extra fine mixed, 2s. 6d. per doz. 17s. 6d. per 100.

BUTLER & MCCULLOCH, Seed Merchants, Covent Garden Market, W.C.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING 1863, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

Hardy Scarlet and other Choice Rhododendrons.

JOHN WATERER'S CATALOGUE of the above popular plants, as exhibited by him at the Royal Botanic Gardens, Regent's Park, is now published, and will be forwarded to all applicants

It describes faithfully the colours of all the Rhododendrons, thereby rendering every facility for making selections.

It likewise contains an abridged List of really Hardy Conifers, with their heights and prices.

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Notice.—American Plants.

WATERER AND GODFREY'S CATALOGUE is now ready, and will be sent on application; it gives a fair price and description of all the Rhododendrons and other American Plants worth growing, as well as a general summary of the most extensive Nursery Stock in Europe.

The Exhibition of American Plants in the Royal Horticultural Society's Garden, South Kensington, were supplied by WATERER & GODFREY, Knap Hill, near Woking.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.

Exotic Nursery, Tooting, Surrey, S.

Exhibition of Chrysanthemums.

JOHN SALTER, F.R.H.S., invites the Public to visit his unrivalled COLLECTION of these beautiful FLOWERS, which are still in BLOOM. The Winter Garden contains several thousands of Plants, and presents a *coup d'œil* unique in this or any other country. The Gardens are open every day except Sunday. Admission free.

Versailles Nursery, William Street, near Hammersmith Turnpike, W.

Chrysanthemums.

WILLIAM HOLMES begs to offer this year's Varieties of the above at 5s. per dozen, including Carissima, Duchess of Wellington, General Slade, Lady St. Clair, Lord Ranelagh, Orange Perfection, Lady Russell, Nil Desperandum, &c.

Frampton Park Nursery, Hackney.

THE BRITISH COLUMBIA BOTANICAL ASSOCIATION, for sending a Botanist to collect and transmit Seeds of CONIFEROUS and other TREES, SHRUBS and PLANTS from British Columbia, Vancouver's Island, and adjacent countries—

Sir WILLIAM GIBSON CRAIG, Bart., of Riccarton, *Chairman*;
ISAAC ANDERSON HENRY, Esq., of Wood End, Hay Lodge, Trinity, Edinburgh, *Secretary*, and
JAMES M'NAB, Esq., Curator, Royal Botanic Gardens, Edinburgh, *Treasurer*;

Beg to intimate that as the greater portion of the SHARES are already taken up, those intending to join the Association will require to make immediate application to the SECRETARY or TREASURER, who will, if required, send full printed particulars.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 13, 1862.

WE beg to draw particular attention to the following statement concerning the LAW OF FIXTURES IN GARDENS.

It has recently been decided by the Court of Chancery that an ordinary tenant, holding under a lease containing no special stipulations concerning fixtures, cannot at the end of his tenancy remove conservatories, forcing-pits, and the like which he himself erected. The case in which this important question was decided is *Jenkins* v. *Gething*, which will be found in the 2d volume of Johnson and Hemming's Chancery Reports, page 520. The facts of the case were substantially as follows. A landlord filed a bill to prevent the removal of certain erections built by his tenant and thus described:—

"1. A greenhouse and hothouse forming one building, together with a forcing-house attached to the back wall of the greenhouse. The building stood upon foundation walls built into the ground, to which the upper framework was attached in the usual way by a course of mortar. There was also a dividing wall of brickwork between the greenhouse and hothouse. The outer brick walls were about 5 feet high at the back, and from 2 to 3 in front.

"2. A greenhouse or Vinery of similar construction, the brickwork being 9 feet high at the back, and having a propagating house of brick and stone

attached to it in the rear. There were Vines growing in the Vinery.

"3. Various pits formed of wooden framework affixed by mortar to low brick foundations, in the same manner as the greenhouses.

"4. A boiler built into the floor of the greenhouse, with a system of heating pipes connected with it by screws."

The case was heard before the Vice-Chancellor, Sir W. Page Wood, who gave judgment as follows:—"The question in this case is, whether the defendants, who represent the interest of a former occupier of a house and garden at Pontnewydd, are entitled to remove certain structures claimed as fixtures by the owners of the freehold. They consist, for the most part, of erections in the garden which are not attached to the house. There is a greenhouse, a vinery, a brick and stone building called a propagating house, and a Melon pit, and other similar pits.

"It has surprised me to find how meagre the authorities are upon the subject, possibly for the reason that the law is considered to be settled. The cases chiefly relied on were *Martin* v. *Roe*, 7 E. & B. 237, on the one side, and *Buckland* v. *Butterfield*, 2 Brod. & Bing. 54, on the other. The buildings which were the subject of this last decision, were, in most respects, substantially of the same kind as those in dispute in the present case. We have here a greenhouse standing on brickwork 5 feet high at the back, and 2 or 3 feet high in front; and it has not been attempted to say that such a building has been treated otherwise than as a fixture, though it has been argued that it is a fixture removable by a tenant. Then there is a Vinery 9 feet high at the back, with Vines growing in it, which the occupier, not being a gardener, is clearly not entitled to remove. There are some other buildings of a more doubtful character, being pits at a small elevation from the ground, also what is called a propagating house built of brick or stone. In *Buckland* v. *Butterfield* the conservatory, which was held to be a fixture and irremovable, stood upon a brick foundation 15 inches high. *Primâ facie* this case appears to be rather stronger in favour of treating the buildings as fixtures than that of the conservatory in *Buckland* v. *Butterfield*, as there might be a question there as to whether the conservatory was not an ornamental adjunct of the house, whereas these buildings are affixed not to the house, but to the garden.

"It is true that the law, originally derived from old authorities founded on the notion that the freehold was not to be touched, has been much relaxed as between landlord and tenant, and also in other cases in favour of trade; but this principle is quite different from that which formed the ground of decision in *Martin* v. *Roe*. If the state of the law permitted it, it would seem no doubt much more satisfactory to apply the rule laid down in that case to questions arising between landlord and tenant; but this authority has really no bearing on the present case. The decision was, that it was waste on the part of an incumbent to erect buildings which he was not bound to erect, as by so doing he might subject his successor to liability for dilapidations; and consequently the incumbent and his executors were considered entitled, if not bound, to remove such erections. It would be a very sensible rule in all cases to hold that every occupier is entitled, and bound if required, to remove everything which he has built, and to restore the property to the condition in which he found it; but whatever may be the case with regard to an incumbent, that is not the law applicable to an ordinary tenancy. *Martin* v. *Roe* therefore appears to have no application; while there is nothing to distinguish the case from *Buckland* v. *Butterfield*. I am therefore bound to hold that all these erections, which are undoubtedly fixed to the ground, are what the law calls fixtures and are not removable.

"With respect to the boiler, that seems, according to the authorities, to be a fixture. It is not like a pump, easily removable. The question as to the hot-water pipes is more doubtful. Although they are used as the means of circulating the water from the boiler, still they are connected merely by screws, and might very naturally and easily be altered from time to time, like gas fittings, and can hardly be treated as mere adjuncts of the boiler. It is a matter of comparatively small importance, but I think upon the whole that I must hold the pipes to be removable by the occupier. With this exception there will be a perpetual injunction against the removal of the erections claimed by the plaintiffs."

This decision of the Vice-Chancellor is, we believe, perfectly in accordance with what all well informed persons supposed the law to be, except perhaps as regards the pipes. We should have thought them as accessory to the boiler as a key is to a lock, and although easily removable in fact not removable by law. However this is a matter of comparatively trifling importance. It is now decided by a judge of the highest eminence that tenants cannot remove conservatories, vineries, forcing pits, &c., if constructed in the ordinary way, but it will be observed that the learned judge was not dealing with the case of a nurseryman erecting houses, &c., for the purposes of his business. Such erections for such purposes would be considered as trade fixtures and be removable by the tenant accordingly. Our readers will remember that a Scotch case of this kind was noticed in our columns in the autumn of last year.

"Gardener," said a Norfolk gentleman last Christmas to his new manager, "we have no Grapes, nor any Vinery to grow them in. How soon can I have some if I have a house built directly?"—"You may have plenty by next Christmas, if you please, sir."—"What! can I build a Vinery and have a crop of Grapes in twelve months?"—"Certainly, sir."—"Then we will set about it directly, and when we are among the bricks and mortar, we may as well build a few more houses." No sooner said than done. An enclosed rectangle was taken for the purpose; fifteen forcing houses and pits were run up. Weeks was set to work to heat the lot, and well he did it. In April two Vineries were planted, one facing the south with Muscats, another facing the north with Black Hamburghs.

The Vines for this purpose, furnished by James Dickson & Sons, of Chester, were cut back to 3 feet from the ground. Away went the Muscats and reached the top of the house in no time, as strong and healthy as Vines can be; some of the canes indeed measured nearly an inch in diameter. They were then stopped, all the laterals were cut out, and the principal eyes were started. All went perfectly, and at last about 9 bunches on an average were left to ripen on each Vine. Ripened they have most satisfactorily, as some berries now before us testify, and Mr. ——'s Christmas table will be as well supplied as if he had had a Muscat house for 20 years.

As for the Black Hamburghs, planted facing the north, they too have done their duty, reaching the top of the house, ripening their wood beautifully, and each bearing a few good bunches on the lower part of the rods.

How many men are there, let us ask, who could have performed such a feat? or, at least, who would have liked to undertake it, with all the accidents and delays from bricklayers, painters, glaziers, and hot-water men standing in their path. Let then honour be given to whom honour is due! The performer on this occasion was Mr. James Hardie, recently engaged as gardener to the Viceroy of Egypt; the scene of his operations was a country gentleman's residence not a hundred miles from Wells, in Norfolk.

The question of Judging Fruit at Horticultural Exhibitions is one of some importance, not only as regards the exhibitors personally, but still more in relation to its effect upon fruit growing. It is a question which just now we find cultivators are pretty freely discussing; and if we may judge from the opinions we have heard expressed, we may conclude that there is a difference of opinion as to whether flavour or appearance should carry off the prize, and also in some quarters as to what value should be attached respectively to these two qualities, some going wholly for flavour, some holding up for appearance, and some maintaining that we ought to have both.

There is no doubt that something may be said on each side of this question, as of most others. Taking Melons as an illustration, it requires no great stretch of imagination to perceive that if flavour alone is to gain, the winner may after all prove to be some despicable little scrub, which a cultivator of any spirit would be almost ashamed to acknowledge he had borne any share in producing; and this is by no means confined to Melons, but may be taken as an illustration of a series of cases, which if scarcely of general occurrence must be held to be at least very frequent. Another sample shown in competition with the diminutive runt may have almost equal merit in respect to flavour, in fact the decision against it may have rested upon one of those nice points which not unfrequently arise to disturb the equanimity of fruit judges, whilst it may on the other hand be a well-favoured instance of good cultivation. Is it fair to place the scrubby exhibition—the runt, with its shadow of superior flavour, before the well grown fruit scarcely inferior in flavour and greatly superior in point of culture? That is one form of the question now being agitated, and which resolves itself into the more general proposition whether flavour or appearance, or any combination of the two, should form the standard in judging fruits. It is a question, as we have observed, of no small importance, one which it is most desirable should be decided fairly, and upon which any honest decision, come to with due deliberation, should be well considered if not acted on; for fruit judging is a matter in which uniformity of practice is especially desirable both in the interests of exhibitors, and also in the interests of fruit culture.

One's first impulse in deliberating on the answer to be returned, is to inquire *per contra* for what purpose fruits are cultivated. Are they grown to be looked at, or to be eaten? If only or mainly to be looked at, why then it seems to follow that appearance should carry the day; but if to be eaten it does not appear to be easy to avoid the conclusion that the real test of merit lies in their flavour. This indeed seems so obvious that many persons no doubt will at once urge that flavour alone would form the standard of judgment, because, they will say, fruit is grown to be eaten, and for no other purpose; and as this view is in great measure true, such persons will be ready to maintain, in opposition to any contrary opinion, that we should pay no heed whatever to the "look of the thing." But, if we go back to the very earliest period of the history of our race, we shall find that there was then a charm surrounding the circumstance that the fruit was *seen* to be "good for food," as well as "pleasant to the eye;" and we know from experience that this charm, which we may presume has existed through all intervening ages, has lost none of its force in our own time. We, in these wiser days, grow choice fruits no doubt to satisfy and gratify the palate, but we expect that they shall also be "pleasant to the eye." It appears to us, therefore, that in judging fruits, we cannot do otherwise, at least we ought not to do otherwise, than take both quality and appearance into account, even as we wish and expect that our fruits shall not only taste well but also look well.

But when it has been decided to admit that both quality and appearance are to carry weight in our decisions upon the merits of exhibited fruits, a more difficult question still remains, namely, what relative value should attach to either. On this, which is a question of detail, it is to be expected that a great variety of opinions will be found to exist; and if this be so there will be little hope of any uniform practice finding general acceptance, so as to secure something like uniformity of decisions, unless each one is prepared to forego in some measure his own particular views, for some generally unobjectionable proposition which shall at least be based upon the broad principle that quality and appearance are both to carry weight. We offer our own views as to what the rule should be, as a contribution to the common fund. Should they prove generally acceptable, well: let them be adopted. Should any better be suggested, let these better propositions be agreed to in their stead. But let some decision be come to; let the leading societies announce their intention to be guided by this decision; and then it will only remain for provincial and local societies to follow the same course in order to secure the great desideratum of uniformity of action amongst the judges of fruits in all parts of the country.

Undoubtedly, whatever details may be decided on, the plan should be to go by points or marks. One mode would be to fix on the prominent characters which go to make up merit in a fruit, such as ripeness, flavour, colour, size, &c., and to attach a certain maximum number of points to high excellence in these several features, this number in judging being diminished in accordance with any degree of inferiority in respect of these features, observable in the different exhibitions. This is in fact the rule, however rudely applied in many cases, adopted in judging flowers and plants, and it suffices for those cases wherein appearance only has to be dealt with. But it requires a good deal of experience and tact to apply such a rule quite fairly, and the plan appears to us too complicated for the general acceptance we are hoping for, in the case of any plan which may be determined on for judging fruits. What we have to suggest—and we willingly give up something of

depth and exactness of detail for the sake of simplicity—is this:—Let quality (which means flavour) and appearance be taken as of equal total value. Let, say, 6 points indicate perfection, namely 3 for flavour, and 3 for appearance. In apportioning these points in respect to flavour, let 3 points indicate excellent, 2 points middling, and 1 point inferior, 0 being set down against those which are really bad. As regards appearance, let 1 point indicate high excellence in respect to size, 1 point the same in respect to colouring, and 1 point the same in respect to the condition in which the subject is exhibited, including under the head such matters as soundness, ripeness, bloom, &c. If the fruit is below the mark in respect to any one of these features of size, colour, or condition, let it have only ½ a point in respect thereof, and if quite inferior nothing. These matters form easy comparisons all through. The plan suggested may be formulated thus:—

I. Flavour .. .. .. (3 points in all)		3 points, if excellent, 2 points, if second-rate. 1 point, if inferior. 0 point, if bad.
II. Appearance .. (3 points in all)	Size, Colour, Condition	1 point each, if of high excellence. ½ point each, if inferior or partial. 0 point, if bad.

In applying this, let us say to Grapes, we may suppose A to be an exhibition of fruit of which the flavour was excellent (= 3), the size large, both bunch and berry (= 1), the colour perfect (= 1), and the condition perfectly ripe, sound, and well bloomed (= 1); this gives a total of 6 points. Suppose, again, B to be also excellent in flavour (= 3), large in size of berry, but small in bunch (= ½), well coloured (= 1), ripe and sound but without bloom, or well-bloomed and sound, but not ripe (= ½); this would give a total of 5 points. A comes out, therefore, clearly superior to B. There would be no difficulty in applying the principle in the same way to other fruits, except the manual one of testing every fact. Probably, for individual fruits, a greater number of points, and other features introduced, might give somewhat more exact results, but our aim is to get out the simplest possible formula, which may be adopted in a general way for all fruits at all exhibitions; and it seems to us that 6 points gives margin enough to do this, while it admits of exact division into two equal parts, thus giving equal importance to "taste" and "look," while it affords scope for the only important comparisons in respect to flavour.

It remains to notice one or two possible objections. One of them is, that judges would have more work. No doubt they would, and where necessary they must have more assistance to enable them to get through it. It would when completed be at least more satisfactory than it often now is; and after all such a scheme would not, we think, be found to entail very serious additional labour. Another objection might be that the fruit must be cut and tasted. Undoubtedly it must. All dessert fruit ought to be tasted for judgment: no judgment can be perfect without. At present it happens that for the most part Melons only are cut, but there is no more reason for tasting Melons than Pears or Apples; it is only usage, and we should say at once let this usage be broken through, and let everything be tasted, except perhaps Pine Apples, which ought to be excepted, as they could not be cut without spoiling them. There need be no material disfigurement of other fruits if it is made an understanding that the samples are not to be disfigured. A Grape or two cut off the lower side of a bunch will be no detriment, and the prize cluster may still figure at the dessert table. One selected fruit of a dish of Pears, Apples, Plums, or such like fruits, would suffice if it were understood that it was to suffice. It is not indeed to be supposed for a moment that a jury of two or three gentlemen who are seriously working to determine the merits of the several exhibitions would turn pigs and eat up or damage all before them.

THE CULTIVATION OF TOBACCO.

In the first place, I propose to show that Tobacco was originally grown in this country for the use of the inhabitants; secondly, that a duty was levied upon its importation from abroad, and the whole trade monopolised by Charles I., whose impolitic conduct led to the establishment of the Commonwealth, and the prohibition of the growth of Tobacco, in order more easily to collect the duty upon it. Prohibitions had, indeed, been issued before this, but they were rather to annihilate the use of Tobacco than to prevent its growth, consequently they failed to produce any effect; and although it is worthy of remark, that the very necessities which still press so very unfairly and inconsistently upon the industry of the country, had their rise in civil warfare, yet the principal point here is to notice that the excuse for the prohibition had no higher motive than to facilitate the collection of money, and this excuse is all that can be advanced in favour of the enactment at the present day. I shall next solicit attention to the fact that the money thus squeezed, at second-hand, from the toil and torture of negro slavery, amounts to something like 5 millions sterling per annum. I will then demonstrate that Tobacco has been, and can be, well and profitably cultivated in this country and in Ireland. Moreover I will show that its cultivation in Ireland as a rotation crop for the Potato, is exactly the remedy required to exterminate the peculiar disease to which that esculent is liable. And, lastly, having in mind the fact that, for a long series of years, duties have been collected upon Hops and malt, I will ask, what unusual difficulty could arise in collecting a duty upon home-grown Tobacco. In conclusion, I will add a few remarks upon the use of Tobacco and other sedatives in regard to their sanitary bearing, for although I make no use of Tobacco in any shape, yet, as a medical man, I am well acquainted with its therapeutic qualities.

At pages 465 and 466 of Dr. Thomson's London Dispensatory for the year 1833, will be found a considerable amount of interesting information upon the subject of Tobacco, from which it appears that this plant "was first cultivated in England in 1570," and, moreover, that "Tobacco was, at one period, raised to a considerable extent in Yorkshire, but the cultivation of it for the purposes of trade has been long prohibited."

Again, with respect to its home growth, and particularly in Ireland, I refer my readers to Dr. M'Culloch's Dictionary of Commerce for the year 1834, pages 1161 and 1162. After describing the first introduction of smoking by Raleigh, and alluding to the futile attempts of James I. to restrain the custom, M'Culloch thus continues: "During the early part of the reign of Charles I., the trade in Tobacco was monopolised by the Crown. The monopoly was not however of long continuance, and totally ceased at the breaking out of the Civil War. Tobacco plants had been early introduced into England, and were found to answer remarkably well. Their cultivation was, indeed, prohibited by James, and afterwards by Charles, but apparently without effect. At length, however, the growing consumption of Tobacco having excited the attention of the Government financiers, it was seen that, by imposing a duty on its importation, a considerable revenue might be raised; but that, were it allowed to be freely cultivated at home, it would be very difficult to collect a duty upon it. In 1643, the Lords and Commons imposed a moderate duty for the sake of revenue on plantation Tobacco; but instead of directly prohibiting the use of native Tobacco, they burdened it with such a duty as it was supposed would occasion its culture to be abandoned. The facility, however, with which the duty was evaded, soon satisfied the republican leaders that more vigorous measures were required to stop its cultivation, and consequently to render its importation a source of revenue. Hence, in 1652, an Act was passed prohibiting the growth of Tobacco in England, and appointing commissioners to see its provisions carried into effect. This Act was confirmed by Charles II." * * * "This Act did not, however, extend to Ireland, and, of late years, the cultivation of Tobacco made considerable progress in that country. Had this been allowed to continue, there can be no question that, in a few years, the revenue, amounting to about three millions a year, would have been materially diminished, for it would be quite visionary to suppose that any plan could have been devised for collecting a duty even of 100*l.* per cent. upon Tobacco, supposing it to have been generally cultivated in Ireland. No one, therefore, can question the wisdom of the late Act, prohibiting its growth in that country, and of rigorously enforcing its provisions. Any advantage Ireland might have gained by its cultivation would have been but a poor compensation for the sacrifice of revenue it must have occasioned."

This quotation speaks for itself, and as it is from the pen of an admirer of prohibitive industry, may be fairly supposed to have given us the best points on that side of the argument. It conclusively proves that Tobacco of good quality can be grown in Ireland, otherwise no prohibition would have been needed; and when I have shown, as I shall do, not only that the finest kinds of Tobacco have been grown there, but that, by this very process, the soil is cleared of its super-abundant constituents, so as to enable it to grow Potatoes free from disease, I believe I shall be able to present a far more reliable estimate of what Dr. M'Culloch calls "a poor compensation" than that prohibitive advocate; even though he had not himself furnished both facts and arguments showing the fallacy of the system he eulogises. For instance, in speaking of the Navigation Laws, and their effect upon the commerce of the Dutch, he says:—"Excessive taxation, and not our navigation law, was the principal cause of the fall of profits and of the decline of manufactures, commerce, and navigation in Holland." He then gives a long quotation from the author of the "Commerce de la Hollande," showing the injurious action of taxes, which increase the value of labour in any country, and render it unequal and unable to compete commercially with others; and thus he terminates by telling us that it is to "the excess of taxation that the decline of the commercial greatness and maritime power of Holland was really owing"—as if a tax of five millions sterling upon an article principally used by our labouring classes would have no such effect in England!

But, to waste no more words upon theoretical arguments, I will refer to positive knowledge, either verified or discovered by myself, and for the accuracy of which I have, therefore, no hesitation in accepting a full responsibility. This positive knowledge embraces the actual growth of Tobacco in various parts of the south of Ireland—from Dublin, on the east to Cork on the south, and round to Galway on the west; also, the expressed opinion of Tobacco merchants in London and Liverpool, with respect to the value and quality of the Tobacco crop; also, an analyses of the ash or saline and earthy matters taken from the soil by this Tobacco; also, a report of the quality of Potatoes grown upon the same soil as the Tobacco, both before and after the Tobacco crops; also, an analysis of the ash of the Potatoes and the ash of the Potato plant, so as to show exactly what is removed by the Tobacco from the soil, what by the Potato, and what is removed but again returned by the Potato plant, so as to regurgitate, as it were, upon the vegetation power of the soil, and create in the Potato a disease of the kind brought on in animals by over feeding; for the Potato plant is not taken from the ground, but suffered to decay upon it, and thus continually casts back the saline and earthy constituents, the accumulation of which brings on that unhealthy stimulus in the Potato, ending in disease, to which the term over feeding may be very correctly applied.

Now, what I wish particularly to point out here, is the fact, that the Tobacco plant and the Potato plant remove from the soil almost exactly the same substances, so that the very ashes which, from the Potato plant accumulate in the soil, to the disadvantage of the Potato or tuber, would be taken up and carried away in the succeeding crop of Tobacco. Therefore we have, by the cultivation of Tobacco in Ireland, all the advantages of an economical and practical system of rotative cropping. I must, moreover, call attention to the fact that the cultivation of Tobacco gives employment to an immense amount of what is called "unskilled labour," or, in other words, that it would furnish work for a very large number of children and women during almost the whole of the year. To prove all this, I ask the reader to accompany me through the following details; merely premising that the experiments, to which I am about to allude, have been made systematically and regularly during the last 10 years, and are chiefly indebted for their value to the generosity, perseverance, and talent of a small number of gentlemen, without whom it would have been impossible for me to carry out the agricultural portion of this inquiry. The fact that such experiments are prohibited, and therefore illegal, alone prevents me from awarding "honour where honour is due"—but a brighter day may come.

In the year 1851, three patches of ground were tilled, and planted with Potatoes in the usual manner; one of these was a little to the south of Dublin, another to the north-east of Cork, and a third between Limerick and Ennis. From all these, the Potatoes produced were more or less diseased, and many of the larger ones were hollow. I made analyses of these different Potatoes, and also of the Potato plants, taken from the soil at the period of seeding, or, in other words, when they afforded "Potato Apples" (and here let me step aside to say, that altogether I have made 277 separate and distinct analyses in this inquiry). During the following winter, the same patches were tilled, and prepared for the growth of Tobacco. The seed was sown in the latter part of the month of March, upon a small part of the ground, and when the plants had grown sufficiently, they were transplanted, and placed upon the other part of the ground, at a distance of about a yard from each other, the interspace being trenched or dug up in both directions, so that each plant stood upon a little square pyramid of its own: this was done in the beginning of June. The plants grew well, but required much attention in watering, and removing from them any decaying leaves or insects; and it was found necessary, at times, to trench up the soil and favour the circulation of air through the plants; the whole of which work, as well as the transplantation, was performed by women and young boys and girls. Towards the middle of July the plants were "topped," at the height of about a yard; that is to say, the top of the plant was cut off at this height, so as to throw the whole energy of the plant into the leaves, of which from 8 to 14 were left upon each plant, the two lowest leaves being removed at the same time. Towards the end of August, it was seen that several of the leaves were turning yellow, and these were therefore removed, until about the middle of September, when the plants were pulled up, and all the leaves picked off, and added to those previously collected. They were allowed to dry under cover, in an open shed, being repeatedly turned over and spread about, so as to prevent heating, and facillitate the process of drying. This process was continued for a week, after which they were removed to a temporarily constructed oven, something like a hop-kiln, in which

they were kept for three days, at a very gentle heat. After this, they were packed away in boxes of about a yard square, from which, however, they were turned out and sorted every week, so as to get rid of any decaying leaves, calculated to injure the flavour of the Tobacco—an operation which it was found necessary to continue during the whole of the succeeding autumn.

In February, 1853, samples of this Tobacco were shown to proper persons in London and Liverpool, who declared it to be excellent, and as fit for the manufacture of snuff as the "best Virginia;" in which a Dutch merchant also agreed, by emphatically expressing his opinion, that "it would be a sin to waste it in smoke." Anxious not to weary my readers, I will merely say, that I made analyses of the Tobacco plants in question, taken towards the end of August, and that these experiments and analyses have been carried out, not only with regard to the three localities mentioned, but also as regards 15 other places in the south of Ireland, from all of which results have been obtained of a most uniform and satisfactory character, which results I will condense into a short table, after I have sufficiently secured the attention of my readers to the following fact.

The patches of ground from whence the Tobacco had been taken, were next tilled and planted with Potatoes, of the very same kind as those which had previously given a diseased product. Now, mark the result! The plants were smaller, greener, and without black spots on the leaves; the tubers or Potatoes were smaller, denser, of a higher specific gravity, and free from disease and hollow centres: moreover, the same effects have followed upon the same treatment in other parts of Ireland, and also in Wales. Of course, the extermination of the disease may be referred to other causes than the direct influence of the Tobacco crop; the preparation, or, I might say, the subdivision of the soil, the care in destroying the grubs or insects, the periodical irrigation, the cleansing, and the removal of the dead roots of the plants, are all more or less favourable to the succeeding Potato crop; but I think no impartial person can run his eye down the following table of analytical results, without being struck with the fact, that the Tobacco plant removes or absorbs from the soil exactly the very same things which the Potato plant casts back into it, so as to produce after a time, a superabundance of those agents which in moderate quantity give a healthy stimulus to the soil, but when in excess create unnatural and diseased vegetable products. Of the tuber or Potato I have little to say, although I have analysed the ashes from every variety; in fact, there is so small a quantity of ash in this esculent, that it seems to take almost nothing from the soil; it is a purely atmospheric production; and, if the inhabitants of Ireland are volatile, changeable, and turbulent, they only agree with the peculiarities of the aërial magazine from whence they derive the staple article of their food.

But now for the analyses. Of the Potato plant covered with seed or apples, but free from tubers, 112 lbs. were dried in the sun and air for three days, after which they were placed in a shallow vessel, and subjected to a temperature of 212° Fahrenheit until they ceased to lose weight; they then weighed 19 lbs. 4 oz., which is at the rate of 17.18 per cent. The dried plant was then thoroughly incinerated in a muffle, at a low red heat, until it became quite white; it then weighed 12¼ oz., which upon the dried plant is at the rate of nearly 4 per cent. In precisely the same manner 112 lbs. of the Tobacco plant were treated—not the leaves only, but the whole plant, taken up at the end of August. This gave 27 lbs. of dried product, or at the rate of 24.1 per cent. These 27 lbs. after incineration, yielded 5¼ lbs. of ashes, or at the astonishing rate of nearly 20 per cent. No sensible difference has been found, although the above experiments have been repeated more than 50 times during the last 10 years, and, therefore, I consider the results worthy of the greatest confidence, as regards Ireland. The composition of the ashes was as under, and I have added to these the composition of the ashes from a sample of flax, grown in the county of Armagh, and which afforded 5 per cent. of ashes:—

	Potato Plant.	Tobacco Plant.	Flax, by Sir R. Kane.
Potash	5.5	8.7	6.332
Soda	2.8	1.2	6.350
Lime	28.2	32 2	22.699
Magnesia	.7	2.8	4.053
Alumina	1.1	1.6	—
Oxide of Iron	.6	.7	13.520
,, Manganese	.2	—	1.092
Sulphuric Acid	2.3	4 1	8 929
Phosphoric Acid	3.4	6.1	7.002
Carbonic Acid	22.7	27.5	4.107
Chloride of Sodium	2.1	3.8	.904
Silica	30.2	11.2	24.978
Loss	.2	.1	.034
	100.0	100.0	100 000

The reason why I have quoted Sir R. Kane's analysis of the ashes of Flax is, because Lord John Manners lately pointed out, at a Farmers' Club meeting, the adaptibility of Ireland for the growth of Flax, as a substitute for the slave-grown Cotton of America. The project has evidently something solid in it, for, with the exception of the oxide of iron, there is a marked similarity in the matters which are, as I may say, congested into the soil by the Potato plant, and absorbed and carried from it by the Flax. Thus far, then, I hail his Lordship's project with approval, and shall be glad to see it practically tried, as an antidote to both the Potato disease and cotton famine. Still, however, the superiority of the Tobacco plant is no less clear and patent in regard to the ashes, than in respect to the vast amount of unskilled labour which it will call into use in the very country where such labour is superabundant.

I will not allow the attention of my readers to be distracted by any great quantity of arguments in opposition to the palpably false objection, that "a tax could not be collected upon Tobacco grown in Ireland;" I have before said, the collection of the Hop tax, so recently abandoned, is alone a sufficient answer. But there is something still more decisive—still more demonstrative. In France, Tobacco is grown to the value of nearly a third of a million sterling, thus giving constant employment to 7000 workmen, and (mark the words!) returning annually to the exchequer of the empire nearly 3½ millions sterling! This relates to the year 1854, but at the present time the return is approaching 5 millions; however, I am content to quote the fact as it stands recorded in the fourth volume of the "*Traité de Chimie Generale*," by Messrs. Pelouze & Fremy; at page 418 of this volume, the following passage may be found:—"Le tabac constitue, pour six départements de la France, un produit de 10 millions de kilogrammes, valant 8 millions de francs; sa fabrication occupe sept mille ouvriers, et rapporte à l'Etat 86 millions."

I do not think it necessary, nor even advisable, to add anything more to the facts here developed; for the subject will, in all probability, be brought before the House of Commons in a few weeks, when the history of this glaring instance of political mismanagement must resolve itself into a question, at once ridiculous and lamentable. The so-called "Liberal Government" will be asked "to place the people of Great Britain and Ireland on a level with the slave-owners and negroes of the Southern States of America," in fact, to unfetter our hands, and set the industry and capital of the country at liberty, that they may fairly compete with, and combat, slavery. Of course there will be a violent opposition from the excise drones of society—the creatures who live upon the imperfections of humanity, as Fungi grow upon rotten wood. It will, no doubt, be pointed out that, according to my own showing, the Tobacco plant takes up five times as much earthy and saline matter as is given off by the Potato plant—and this is true; but it is also true, that the Tobacco plant occupies five or six times the space required for the cultivation of the Potato plant; so that the equilibrium is not disturbed as regards the ashes. Again, it will be contended that the Potato disease is not confined to Ireland; as if supersaturation of soil by stimulants might not and does not occur in other countries, and as if the effects of lime and ashes in the soil upon the Potato disease, had not been fully and practically examined by one of the best chemists in France (M. Boussingault). For all this, and much more, there will be no difficulty in providing a sufficient answer; but even if it were otherwise, what has this to do with the merits of the question at issue? That question stands as before—"Are the white slaves of Great Britain and Ireland not to be put upon an equal footing with the black slaves of Virginia, because it would give the Chancellor of the Exchequer a little extra trouble to collect the revenue?"

This is the culminating point at which the inquiry ends, and now I will say a few words about the sanitary nature of Tobacco. When we examine into the recorded characteristics of the human race, we find that, in proportion as these characteristics rose above the instincts of mere animals, so a desire manifested itself for a means of diverting the mind, and turning it away from the painful realities of life, to the fantastic enjoyments of imagination. This end can be attained by various means; but whatever the means, the end is still the same, and must be regarded as an indispensable adjunct to civilisation. Music, dancing, poetry, wine, alcohol, opium, tobacco, even religion, are all agents which blunt the sharp edge of worldly care, and realise the motto, "Non semper arcum tendit Apollo." Many of these produce their calming or sedative effect by acting, in the first instance, as stimulants, consequently they are liable to great abuse, and require at all times to be employed with discretion; with this class I have now nothing to do, because the only sedative in question—that is to say Tobacco—has no such defect; it is altogether and entirely a direct sedative—it has no stimulating qualities whatever. It calms, it soothes the human mind, and creates a kind of mental cloud, upon which the bright sun of imagination reflects the most gorgeous tints. It carries within itself the elements of its own happiness, and seeks for no company, no assistance from without. Need we wonder, then, that the use of such a sedative has spread like oil over the troubled surface of civilization? No. But we may wonder that so cheap and unobjectionable a solace has been made into a vehicle for exorbitant taxation. Still more we may wonder, why the industrial energy of this great nation permits itself to be chained hand and foot, that slavery may flourish, and facilitate fiscal rapacity.

Therapeutically considered, the moderate use of Tobacco is harmless in most cases, useful in many, and injurious in but a few exceptional instances. *Lewis Thompson, M.R.C.S., in Newton's London Journal of Arts.*

OAKS OF DENMARK AND SWEDEN.

Having obtained measurements of the annual layers of wood formed by trees, as exhibited in specimens from these countries in the International Exhibition, we have drawn up the following tables, showing the thickness of every 10 layers; and at the corresponding ages of the tree, the diameter, and the area of the section. From these the rate of growth in the different periods will be seen, and can be compared with that of timber grown in this country. Probably on the regularity or irregularity of the growths depends to some considerable extent the quality of timber; in similar tables the respective growths could be exhibited, and trials made accordingly; and at the same time the strength of timber formed by thick, compared with that with thin layers, could be determined:—

Quercus Robur (No 1). Denmark.				Quercus Robur (No. 2) Denmark.			
Years.	Thickness of 10 layers.	Diameter of Tree.	Area of Section.	Years.	Thickness of 10 Layers.	Diameter of Tree.	Area of Section.
	Inches.	Inches.	Sq. Ins.		Inches.	Inches.	Sq. Ins.
10	1.17	2.34	4.3	10	1.06	2.12	3.5
20	2.30	4.60	37.8	20	1.19	4.50	14.6
30	2.06	11.06	96.0	30	1.27	7.04	33.0
40	2 00	15.06	178.1	40	3.84	14.72	170.2
50	1.73	18.52	269.4	50	3.15	21.02	347.0
60	1.25	21.02	347.0	60	2.25	25.72	519.6
70	0.80	22.92	412.[illegible]	70	2.61	30.94	751.3
80	0.81	24.54	473.0	80	2.02	34.98	961.
90	0.82	26.18	538.3	90	2.40	39.78	1243.
100	1.15	28.48	637 0	100	1.68	43.14	1462.
110	0.88	30.24	718.0	110	1.95	47.04	1738.
120	1.00	32.24	816.3	120	1.75	50 54	2006.
130	1.17	34.58	939.2	130	1.52	52.58	2171.
140	1.23	37.04	1077.0	140	1.62	55.82	2447.
150	1.17	39.38	1218.0	150	1.21	58 24	2664.
				160	1.04	60.32	2858.
				170	1.22	62.76	3093.
				180	1.08	64.92	3310.
				190	1.16	67.24	3551.
				194		67.58	3618.

From the above it appears that in No. 1 the greatest thickness of layers was made between the 10th and 20th year; and that there was a considerable falling off in this respect between the 60th and 90th year of the age of the tree. Perhaps during that period of 30 years it may have had to battle with adjoining competitors. However, in the decade which ended with its 100th year, it had rallied very much; and in the last 30 years of its existence its formation of wood was very extensive. We can see from the respective thicknesses of layers whether the growth has been uniform, and the more it is so, most probably the better the timber.

But the column in which the sectional areas are exhibited affords the best criterion of the bulk of timber formed in any period. For example, between the 50th and 60th year the thickness of the 10 layers formed in that period was 1¼ inch, the area of their portion of the horizontal section being 78 square inches. Between the 130th and 140th year, the thickness of the 10 layers was nearly 1¼ inch; but the sectional area which they formed was 138 square inches, or nearly double of that which the tree formed when 80 years younger.

Quercus Robur, No. 2, Denmark.—This made comparatively slow progress during the first 30 years. It made more in the next 10 than in all these. The thickest layers were formed between the 30th and 40th years; the thinnest between 160—170. It formed more bulk of timber between its 180th and 190th years, than it did in the first 40 or 45 years of its existence. Its age as indicated by the number of concentric layers was 194 years; its diameter at that period was about 3 feet 8 inches.

Quercus Robur (No. 3). Denmark.				Oak. Sweden.			
Years.	Thickness of 10 Layers.	Diameter of Tree.	Area of Section.	Years.	Thickness of 10 Layers.	Diameter of Tree.	Area of Section.
	Inches.	Inches.	Sq. in.		Inches	Inches	Sq. in.
10	.55	1.10	.95	10	0.70	1 40	1.5
20	2.43	4.86	18.5	20	0.57	2.54	5.0
30	2.00	8.86	61.7	30	0.41.	3.36	8.9
40	3.26	15.38	185.8	40	0.86	4.96	19.3
50	3.91	23.20	422.7	50	0.83	6.72	35.4
60	3.45	30.10	711.6	60	0.72	8.16	52.1
70	3.40	36.90	1069.	70	0.82	9.80	75.4
80	2.12	41.14	1329.	80	0.88	11.56	105.0
90	2.28	45.70	1640.	90	0.82	13.20	136.8
100	1.18	48.06	1814.	100	0.88	14.96	175.7
110	1.70	51.46	2080.	110	0.80	16.56	215.4
120	2.03	55.52	2421.	120	1.27	19.10	256.5
130	1.36	58 24	2668.	130	0 90	20.90	343.0
140	1.18	60.60	2884.	140	1.03	22.96	414.0
150	1.13	62.86	3125.	150	0.85	24.66	477.6
160	0.83	64.52	3269.	160	0.56	25.78	521.9
170	0.76	66.04	3426.	170	0.83	27.44	591.3
180	0.75	67.54	3583.	180	0.82	29.10	665.0
190	0.77	69.08	3748.	190	0.74	30.58	734.4
193		69 70	3815.	192		31.02	755.7

The Quercus Robur (No. 3) from Denmark, at 193 years was upwards of 5 feet 9 inches in diameter;

whilst the Oak from Sweden in 192 years was only 2 feet [illegible] inches diameter. The layers in the former were thickest about its 50th year, but the greatest bulk of timber was formed in the period between 110 and 120 years. The Swedish Oak, it will be observed, never made layers exceeding an inch in thickness in 10 years, except in two instances, one of which occurred about the [illegible]th year. The layers were tolerably regular, and very compact as compared with those of the Denmark oak of about the same age. It would be very desirable to know the difference in the strength of the oak with thick layers, and that with thin ones.

Indoor Gardening.

I have had a good many inquiries lately as to the management of indoor plant cases, and as many people are using them I think I may as well go on detailing what has been my experience of them.

Several persons have asked whether the hot-water in the tank is supposed to supply in any way the water that the plants require. It certainly does not afford any extra moisture to the roots. On the contrary it is always requisite to water them more frequently when the case is thus heated. I will not say more frequently, however, quite to every one. Some parties have been already too active with the watering-can. The watering ought only to be rather more frequent when heat is used, than it ought to be when the case is kept quite cold. When warmed the sand on which the plants stand should not be allowed to get dry; when not warmed the plants should not be suffered to flag.

I find it always a good guide as to the watering, to ascertain if the sand on the top of the tank is dry. If dry, it is powdery, and then we at least may moisten it, even if the soil in the pots does not seem to require watering.

By attending to this, watering the plants is lessened, because they absorb from the moist sand some of the moisture they want. There is, however, no sort of supply from the tank, so no one ought ever to trust for a moment to that for supplying the water required. The only way in which the moisture is affected by this is that the air is kept damper, and from the condensation, such as takes place, of the vapour, now and then there may be a little return of water trickling down. This does not prevent the tendency to dryness just on the top of the tank, where moisture is most required; and I often have taken out one or two central pots, and finding the sand quite dry, have poured water into the holes to supply the lowest stratum, without affecting the already wet strata above. The tendency of water to collect in the lower part requires a little care now, especially on the part of those who may contemplate fine Camellias. The surplus water runs down here off the tank, and a cold water bath will be anything but beneficial to things like Camellias, that require a considerable amount of drainage. I advise plant-case keepers, taking warning by my own past troubles—to pull out every month or two one of the largest pots on the cool side of the case; if, by rapid degrees, that hole becomes like a well, it will be advisable to lessen the watering afterwards: to be very careful not to waste water between pots and over the rims; and if thewetness is great to remove a little wet sand, replacing it with drier.

As far as concerns the atmosphere, the heat-giving causes more vapour, and thus entirely obviates the necessity for leaf-washing, except the leaves become dirty.

The heat-giving also makes less air required; the circulation, which seems the great thing, goes on all the same with a very small chink open, and thus with the glasses all in, one may pin up the top a little, and keep in the warmth and moisture, and keep out the dry hot air. *E. A. M.*

HUE AND CRY.

What has become of all those Scitaminean plants, on which Roscoe loved to dwell? Once they were the glory of gardens. Now we see them nowhere. Are they concealed in the shades of Kew, or have they perished from neglect and ill treatment? It is a pity, now that gardeners really *can* grow such things, that they should make no sign. *Flaxfield.*——In Hogg's "Gardener's Almanack" for 1861 there is described an early Pea called "Little Gem," said to be as early as any Pea grown. The raiser is a Mr. Maclean. Would any of your readers be kind enough to say if they have grown this Pea, and what is their experience of it. Hitherto the writer of this has been unable to procure or hear anything of it, farther than the description in the above named work. *Lincoln.*

PERUVIAN BARKS.

To the Editor of the "Gardeners' Chronicle."

Sir,—Your impartiality in inserting my letter and thus allowing your readers to judge for themselves, will more than countervail any damage that your editorial reputation can be supposed to have suffered from any remarks of mine. Relying on a continuance of this courtesy, I submit some further observations which may tend to elucidate the subject. In the first place the specific term C. Condaminea is now applied by Markham, and in the East Indian plantations, to a sort collected by Cross, and believed to be the C. Chahuarguera of Pavon. The former name will doubtless thus be retained, and the memory of M. la Condamine associated with one of the species of Loja bark, but not the original one of his description. I did not see my way to propose this, but think it now perhaps the best arrangement. Next, you will allow me to observe, that you do not appear to me to appreciate the means at our command for identifying the barks found in commerce with the plants that produce them. We are fortunately not dependent on mere "fragmentary specimens," though even these, when studied carefully, will often afford much information, as may be seen by examining the admirably executed plates of barks given by Dr. Weddell. We have also the observations of scientific travellers such as Humboldt, Poeppig, Karsten, Weddell, Spruce, and many others, and the study of the collections brought back by these on the part of all the quinologists of Europe. Moreover, we have now the awakened attention of the dealers in bark themselves, and also of those who are occupied in extracting the alkaloids. Amongst the former of these classes I may refer to Don T. F. Riossio, who is himself a most intelligent observer, born in the heart of the bark region (at Loja) and conversant with all Peru, and with the bark trade in which he has himself been engaged. To him (as also to others) I have furnished specimens and information, and received like returns as also of barks sent over, together with leaves and flowers of the trees from which they are taken. Amongst the latter class I will mention Delondre, who was himself a companion of Weddell, and whose "Quinologie" contains much important information. This work is before me, with 23 plates of barks used by himself in the preparation of quinine, and so well executed that (having been more than 30 years engaged in the like pursuit) I could not find the slightest difficulty in recognising almost all the sorts, and writing down (as I have done) the comparative result obtained in my experience. It should be understood that these plates represent the barks of 17 or 18 species, besides several not so well known to me. I could greatly enlarge on the sources of testimony, but I think I have said enough on this head. The fact is that the barks are quite as easily discriminated and referred to their several sources as mahogany, teak, rosewood, or any of our imported woods, and in a commerce employing a very large capital and counting its gains or losses by thousands, it would, indeed, be singular (and most fortunate for some) if all were in the state of confusion you seem to describe. I think you have misunderstood me in your remark which next follows, seeming to imply that I advocate the establishment of species on the characteristics of the barks alone. I never intended this, nor should I assign any place to these in botanical diagnosis but that which is accorded by botanists, such as Weddell, who says for instance (p. 40), in speaking of the C. Condaminea—"I would especially wish to see the bark of the variety α, if its epiderm is deficient in the suberous micaceous plates which I have observed in the variety δ; it would then, I think, only be justice to restore to these plants the rank of which I have provisionally deprived them." The real difference between us seems to be that you regard the variations of bark as accidental, such as might be supposed to arise in our own Quercus, whilst I cannot but look on them as specific, and as indicating some definite botanical divergence capable of being ascertained by the usual means. To take one instance, I suspected that this must be the case in reference to the Grey barks of Cocheros and of Huanuco (as I mentioned under the head C. micrantha, to which both were at that time referred), and furnished Mr. Pritchett with specimens of each, and with information where to find these and other sorts. On his return I had the satisfaction of receiving abundant specimens confirming the apprehended difference, and leading me to publish the Cocheros sort as the C. peruviana. I have information and materials which would enable me to do the same with several yet unpublished sorts. I use the words specific and species provisionally in the sense which I have stated in my introduction, but am ready to concur in the suggestion of a most eminent botanist in a letter just received. He says, "in the present state of the subject I should be inclined to abandon the word species altogether till we know the limits of the kinds better, and talk of all as kinds simply. I think much of the confusion arises from the word species having different values in different uses; whereas kind expresses difference, and that is the important point." You will see that I have not "made up my mind as to what must form a species where the best botanists in Europe have failed." This is so far from being the case that whereas I used to suppose the Cinchonæ might be described under the heads of the species and varieties admitted by Weddell, I confess that I now no longer believe in the existence of species at all, at least in this genus of plants. In commencing my "Nueva Quinologia" I hoped to have found the kinds form themselves into natural groups, and on this account decided not to arrange the paging till I could see how they fell into order, and judge better of their specific differences or relationships. More profound study leads me to see the most specific characteristics so blended and interchanged that the idea of species has disappeared from my mind, and all I can do is to distinguish this and that by different names. As Dr Pereira once remarked to me on the subject, "call them Dick, Tom, and Harry, only let us have some names to distinguish them by." Will you allow me to explain further on this very interesting subject of thought. I will commence with the *Quina primitiva*, the one from which all the characteristic features, not only of the species but of the genus, were taken. The leaves are scrobiculate, not hirsute, not ovate, not cordate, and it produces good febrifuge alkaloids. There are other cognate plants called spurious, which were accounted useless in medicine, and were distinguished (in so far) by leaves unscrobiculate, hirsute, ovate, or cordate. It was therefore a tempting basis on which to rest a theory, that the Quina primitiva type is that of all good and useful barks, and, conjoined with this, to set on foot that most unfortunate classification of species according to the form of the leaves, ovate, cordate, oblong, &c., which has led to endless confusion, and the attempt to force all new kinds, in defiance of facts, into one or other of these stereotyped moulds, certainly none of Nature's making. Hence the attempt of Mutis to find the Quina primitiva reproduced in New Granada, and the sanction given by Humboldt to this manifest botanical fallacy; whilst the designation of species by the form of the leaves led to the substitution of the C. oblongifolia (Mutis), the worthless Quina nova (pl. 23, Delondre), for the valuable but similarly leaved Red Bark (pl. 7, Delondre), and the lamentation of our physicians over the changed character either of this medicine or of the diseases which could no longer be cured by the "Red Bark," which, as seen in the later specimens in the museum of Guy's Hospital, is now well known to be no better than Oak bark. Had not Dr. Saunders some reason to complain of botany as a dead science, even though this were represented by the illustrious Humboldt, who countenanced this substitution? The C. cordifolia of Mutis, though not so fatal as regards the unfortunate public, has led to endless confusion in our Pharmacopœias, and the C. ovata not less so, as I could easily show, even in our best botanical systems. When the true Red Bark, the C. succirubra, comes to be studied, it is found to overturn all these cherished theories, since it has, as regards the leaves, all the characteristics of the spurious barks, and might indeed be classed as a variety of C. ovata, or equally of C. cordifolia or of C. pubescens. It is quite devoid of the scrobicules, which Humboldt dwells upon as the special characteristic for the diagnosis of the Quina primitiva. On the other hand the C. scrobiculata (so named *par eminence*), is so far from being an eminently good sort, that M. Delondre could, I believe, give you most satisfactory proof of his most full and unsatisfactory cognizance of a bark which he might well have wished to have known only in "fragmentary specimens." For brevity's sake, but not as unimportant, I omit now all reference to other parts, such as the flower, fruit, &c., and sum up my review by saying that I see everywhere a blending of characteristics, and nowhere that which realises the logical conception of a distinct species. Is it possible then that the Cinchonæ may be after all variations of one species spreading from one centre? I have thought much of this, but find it impossible to realise the conception. The differences are not mere divergences, but typically contradictory, and destructive of all homogeneity. If we take the Quina primitiva, for instance, as the typical centre, what are we to make of the C. cordifolia, so opposite in almost every specific feature. Is it a Cinchona at all? I know not, for it is much more like a "spurious" Ladenbergia, and could much more easily be conceived to have wandered from this latter family into the former. But if we exclude the C. cordifolia (with its capsules varying in their mode of dehiscence), as an unworthy member from the family of Cinchona, what shall we say to the C. succirubra, which stands so near to the C. cordifolia that a person must be gifted with uncommon power of discrimination to find any difference at all between the specimens of C. cordifolia var. rotundifolia, Wedd., and some of those of C. succirubra? Yet is the latter the most Cinchonaceous of all the Cinchonæ, if regard be paid to the richness of its characteristic products (the alkaloids and cincho-tannic acid). Again the Cinchona Tucujensis (which is the source of a bark (see Pl. 18, Delondre) called "Maracaibo bark," by no means destitute of therapeutic powers), seems not at all disposed to blush for its existence, as with its pomp of magnificent leaves, 18 inches in length by 11 in width, it stands up before me (the gift of Dr. Karsten), a veritable Ladenbergia, which no one would easily believe to belong to the same genus as the Quina primitiva, by which it is placed. Yet if I trust Karsten's description and the specimens of flower, fruit, and bark which he has given me, it appears really to belong to the family of the Cinchona. I think you have well said that "the specific limit of the genus Cinchona are in an utterly unsatisfactory state," but from whence does this arise, unless from the natural blending of the allied genera together? I must close, omitting much that I could say in reference to the exceptional statement of Karsten, and to the important remarks you have made in reference to the influence of change of climate on the products of plants. I subscribe myself, yours faithfully, *John Eliot Howard.*

Home Correspondence.

Recent Innovations upon Floriculture, and more particularly the Laying out of Gardens "parterre fashion," have received a wholesome rebuke in the very able editorial article published in the *Gardeners' Chronicle* of November 29. The almost exclusive advance of this style, and its adoption in every public garden, has led to its generalisation; so that in every nook where there is room for a few yards of turf and a walk, the same style of geometric beds—the same isolation of sorts and colours, and the same repetition of walks tinted in the most fantastic or glittering hues, have totally displaced all that we were wont to treasure, and foreigners to admire and designate as the English garden. Our good old horticulturists will consider it just what was wanted to authorise the retention of some of our old favourite flower borders, and to prevent the extinction of those numerous indigenous and acclimatised flowers which used to deck our inclosures, and which flourish conspicuously in our gardens. The monotonous and formal aspect of a large space laid out wholly on the geometric system, with alleys of divers hues—blue, yellow, green, black, and grey by turns, may most certainly look gay; but when carried to excess it becomes tawdry, and would remind one more of the patterns cunningly wrought upon a Cashmere shawl or Turkey carpet, than of that diversity of colour, which ought to assimilate in some degree to Nature's freedom in the rich sportiveness of vernal bloom. In a well arranged lawn, plantation skirts the boundaries, and groups or single trees, with shrubs, diversify its expanse; restrict such a field to formal rectilinear, or even to oval and circular beds, and you violate all good taste. When the bloom of the transplanted nurslings is expended, then the warm colours of walks, even although artistically tesselated, will make but poor recompense for those beautiful groups of shrubs and trees which are now so ruthlessly excluded. But however fascinating the recent style may be for its novelty, the old luxuriant standard garden flowers and shrubs must ever retain their value in the estimation of the landscape gardener. In places which afford room for the introduction of beds cut out of the lawn in free and graceful pattern, the separate assortment of species, and even the bordering or linear arrangement of seedling plants, may be used with great advantage; if monotonous, its very formality will create a diversity where all other details are free, but scattered pell mell throughout the expanse there must be a discord, for they never can harmonise thoroughly with a well kept and judiciously planned lawn. Diversity is the chief beauty as it is the glory of the garden; whether the space be small or large, this is the preliminary essential—as Nature abhors a vacuum, so the gardener does a dead level; he graduates, slopes, embanks, and sinks his grounds in their varied parts—his walks are trim, smooth, and clean, but they are devious; perhaps in sweeps, or winds, or circuits, seldom rectilinear. He knows the use and proper application of bedding plants, but he also knows the value of our gorgeous native flowers; he is cunning in disposing them, so that as to height of growth they will chime in with neighbouring rivals; and above all, so that when the transitory bloom of the nurslings has passed away, their beauty may sustain the animation and the odour of his sembling wild array. Thus it is that he finds a place for everything according to its size and form of colour, and maintains in undiminished perfection all the old favourites, while he welcomes with the kindest accord, the immigrant beauties from Japan, from New

Caledonia, China, Queensland, or other portions of our teeming world. It cannot be denied but that the introduction of coloured walks, and of formal flower beds, is a valuable acquisition in some places, when used judiciously and not in excess. Still the gaud of artifice detracts from, and often destroys the object chiefly sought in horticulture—a pleasing and tranquillising feeling in the aspect of floral beauties. The too flagrant intermixture of colours, whether in the bloom, or in walks, does violence to the eye, and is inconsistent with Nature's laws, and are wholly unsuited to horticultural display, for the dazzling glow of vitreous walks which outshine the Lily, kills its power and effect. As to the formation of walks in glowing and varied colours, whatever be the description of garden, its bloom must be neutralised in the contrast; in a knot of Persian pattern, fancy red, blue, yellow alleys winding symmetrically through beds of the choicest assortments in full bloom! the glare of colour ill accords with the russet tint which Nature furnishes as the background and mould of their growth. The gardener's first object is to produce a fine bloom of healthy flowers in his beds or knots; trim and well contrasted borders are next his care, much being due to the graceful form of the compartments; but he ought to avoid that style of parterre, which would seem to aim rather at mathematical precision in fashioning fine volutes, and all this only to produce a pattern that might better suit a Persian shawl than an English garden. *J. Newton, F.R.H.S., 30, Eastbourne Terrace.*

The Latest Discovery in Advertising.—There is an article or passage in a contemporary so suggestive of a new medium of publicity that you would do wrong to withhold it from your advertising friends. It is exposed by mistake, but is not the worse for that. It will be found in a wrathful attack by some Correspondent upon the management of the Royal Horticultural Society. The Editor, who seems to be a bit of a wag, has apparently thought the morsel too good to be lost, and has therefore, while deprecating any attack upon the Horticultural or its officials, put it in. The story picked out from the expletives is this. An "eminent" nurseryman (as he styles himself in the article, which has been obviously written by himself, for it contains a quotation from a letter addressed to himself)—"an eminent nurseryman" casting about for the means of notoriety, appears to have bethought him of the Council of the Royal Horticultural Society as a soft lot on whom he might practise with success. Thought he to himself, thought he, as the old novel had it, I will offer a prize for my special flower. It will be advertised in the schedules of the Society, will appear in the public announcements, will flourish on the fly-leaf of the Journal for months, and will attract all eyes at the show as "Mr. So and So's prize" in large letters. It will reappear in the awards, perhaps be even noticed in the report upon the show in the daily prints, and all this for 3*l.* No advertisement half so good and none half so cheap! So said, so done. The Council, good easy gentlemen, walk into the trap, accept in good faith the "eminent nurseryman's" prize, and all goes merry as a marriage bell. But alas the "plots of men and mice gang aft agee." "The plot was a good plot as ever was laid, an excellent plot and full of expectation." But nevertheless it came to grief. The prize is not advertised by the Council, is not flourishing on the fly-leaf of the Journal, and not only that, but the very day on which the prize is to be competed for, has been—without the consent too of the "eminent nurseryman"—altered, so that the flowers must now be forced instead of unforced, though what this can matter to him, unless he has been making preparations to win his own prize, does not appear. In right of his co-partnery with the Council, purchased with his promised three pounds, he takes them to task. But, alack, they refuse to admit the partnership; they insist upon managing their own affairs in their own way, and of being the sole judges of where, when, and how their shows shall be held, and their advertisements appear. This cannot be borne by the "eminent nurseryman," who is soon to show that he is not to be thus trifled with. He rushes to the arms of your contemporary, who, as we have said, maliciously gives his "eminence" every facility for making a fool of himself. He complains that somebody else's special prizes have been advertised on the fly-leaf of the Journal, and not his—that the donation of some gold fish by a boy has been acknowledged in large type—(I remember the circumstance; the Council, like gentlemen, gave the same acknowledgment and the same type to the schoolboy's mite that they did to the Duke of Wellington or Baron Rothschild's costly donations) and not his prize. It does not matter to his "eminence" that there is no relation nor similarity between the two—a prize is not a donation, but that is nothing to him—his prize has not been advertised, and why?—"because he is a nurseryman." If it had been so, I venture to think the reason was sufficient. It is the part of the Council to be cautious of giving undue preferences, and had they purposely refrained from lending themselves to the scheme of our clever and "eminent" friend, would have done no more than their duty—but from the letter quoted I gather that the prize was to be duly advertised in the Schedules when they appeared, and that the present storm in a puddle is merely because it has not been separately and independently announced before the other prizes. It is a pity for the success of this new scheme that the "eminent nurseryman" has allowed his wrath to overcome his discretion. The plan is now blown and tainted, and it is not likely that the Council of the Horticultural will again fall into the same trap. His "eminence," however, has some other griefs in store which he promises your contemporary to unfold, and I may from them be able to pick out something to compensate for this abortion. Your contemporary's love of fun (and mischief) will be sure to give it a place. *Another Eminent Nurseryman.*

Black Alicante Grape.—Your readers will be pleased that Mr. Bennett has tried to set them right about the true Black Alicante. I think, however, that he might have mentioned that the fine Alicantes, under the name of "Kempseys," which took the second prize for Black Grapes at the Great International Show in October last, were exhibited by Mr. Meredith, of Garston, and not by Mr. Cox. I have grown the Black Alicante for the last 25 years, and have generally found that its late keeping quality was its best recommendation. When well grown it forms a heavy compact bunch, with large oval berries; the flavour is only, however, second-rate; but, if well ripened, it never shrivels till the last, and can be kept till the end of March. I have had it under the synonyms of Black Spanish, Black Valencia, Portugal, Black Lisbon, Alicante Branca, Alicante Prieto, and Black Teneriffe. Its bad setting character proceeds from a viscid moisture, which appears on the stigma as soon as the anthers burst, and unless rubbed off, the pollen seldom takes effect, the berries being small and seedless. I have found drawing the hand when dry over the bunches effectual in discharging the moisture and dispersing the pollen; and if this is done once or twice a day at the sunniest time during the flowering process I find the berries to generally set well. As the late keeping varieties of Grapes cannot be too much cultivated in large collections, the Black Alicante, like the Barbarossa, will be found a great acquisition for giving showy bunches for the dessert in March and April. *W. T.*——In answer to Mr. Lauri's inquiries respecting this valuable late Grape, I have to inform him that I have grown it for many years, and that I do not find any difficulty whatever in getting it to set freely. I think that if Mr. Lauri or any other person who may wish to grow it will adopt the plan I follow, they will find little or no difficulty about it, provided the roots are in a healthy state. The right way is to keep a dry warm atmosphere, with a free circulation of air, while setting is going on, and to gently shake the Vines, or, what is still better, to draw the hand lightly down the bunches two or three times a day, during the time they are in bloom. By these means I have grown yearly, heavy crops of well-formed and thickly set bunches of this truly useful Grape. And as some proof of its early fruiting qualities, I must tell your Correspondent that the three bunches exhibited by me at South Kensington on the 8th of October, together with three other bunches of equal weight and form, were grown on the same Vine; and the eye that produced that Vine was only planted in March, 1859, just three years ago last March. *John Cox, Gardener to A. H. Royels, Esq., Crowneast Court, Worcestershire.*

Galvanised Iron Wire.—I beg to inform your Birmingham subscriber and others that the garden walls here were furnished with galvanised iron wire 15 years ago, and that fruit trees of all kinds have been and are now trained to it, and I have never yet seen any injurious effects from its application. We have it also on terrace walls, where various kinds of flowering shrubs are fastened to it, with the most satisfactory results. I think it right to say that we use for tying soft metallic or lead wire, which I think preferable to either Cuba or common bast for such purposes. *George Lumb, Osmaston Manor, Derby.*

Gardeners' Royal Benevolent Institution.—I have read your able and sympathetic appeal on behalf of this Institution; and having done so, I feel so thoroughly ashamed, having been connected with Horticulture all my life, and not having subscribed to so worthy an Institution, that I now endeavour to make the "amende honorable," by sending a cheque for 11 guineas: 10 of it as a life subscription, and one as an annual subscription. If once a year you were to allow your columns to be the medium of appeal on behalf of the Gardeners' Benevolent Institution, undertaking to receive subscriptions and hand them over to the treasurer; I think it would lend the helping hand that is most required, especially if the appeal was of that earnest nature which is the characteristic of the one in last week's Paper, which is all the more telling by being backed with such a liberal and handsome donation. No one can suppose horticulturists to be wanting in sympathy or generosity; has it not rather been for the want of greater publicity that the Gardeners' Benevolent has lacked that universal support so necessary for such an institution? Greater publicity, or something of that sort, appears necessary, for how can those living at a distance know the good such an Institution is doing unless it is brought immediately under their notice? Few people inquire or think seriously on all subjects, and hence the desirability of particular ones being sometimes brought before them. Now that we have read those cases detailed in your leader do let us make an effort; let it not be said that those who love flowers and the beauties of nature are callous to the wants of their fellow men. Knowing the character of gardeners as well as I do, I feel sure that as a body they will not refuse the required assistance. Now that the subject is before us let the effort be made, for the next election takes place in January; and meantime, if subscriptions are not forthcoming, only two of the cases referred to can be relieved. No other election takes place until January, 1864, and the hope so long deferred may make the heart so sick that any assistance may then be of little avail. Will you therefore at once open a subscription list? I am sure the noble lord who has consented to preside at the next anniversary will be only too glad to hear what has been done, and the more cheerfully on that account associate himself with such charity: and the writer of last week's article will feel glad that the benefit he intended, and for which he pleaded, has through his instrumentality been realised sooner than he anticipated. Most of those connected with gardening know that there is such an institution as the Gardeners' Benevolent, and all horticulturalists about London are aware that the secretary invites all he can to its anniversary dinner, well knowing that most of those who attend will become subscribers; but this is not sufficient, some do not care about going to public dinners, and those who live far in the country cannot. It is the universal appeal that is wanted, and then, who that reads of men who have reached the allotted span, and are disabled by those afflictions which old age engenders—men who have laboured all their lives to gratify and please—who, I say, that has experienced the pleasures of a garden, or the enjoyment to be derived from the cultivation of flowers, will withhold a trifle from these infirm and disabled sufferers? At this season the press opens its columns to receive and announce subscriptions for the poor and needy, and if your paper will annually do the same thing, seeing how many are interested in horticulture, and the annual subscription only a Guinea, when the appeal is universally made the Gardeners' Benevolent Institution will not lack supporters. *W. B.*——I have read your remarks on the Gardeners' Benevolent Institution, and you may rely upon it, that while the rules stand as at present, you will never prevail upon working gardeners to become subscribers. A working man wants something more certain than what the Institution in question holds out for him; after having subscribed for years, and infirmities are upon him, he does not want to submit to a dubious election on several successive occasions and be kept years before he can get a pension; while in the meantime destitution and death stare him in the face. Much more might be said, but these though unpalatable are nevertheless truthful remarks. *A Working Gardener.*——I agree with you, that it is time gardeners should pull together in order that this Charity may have means to place all candidates upon the pension list who have subscribed 15 years and upwards. I am however not in a position to do as the writer kindly offers to do at the next annual dinner; but although a subscriber of 1*l.* 1*s.* per annum, I will willingly pay 10 guineas if 99 other gardeners will do the same. *George Thomson, gr. to Mrs. Dixon, Stansted Park, Sussex.*

Trade Advertisements.—I had no wish to refer to this matter again; it is, however, judging from the remarks in your last week's Paper, "too good a thing to be dropped." Now, with respect to our advertisement of Picea nobilis, let us see how it stands affected by the side of truth. Mr. Barron is a man of facts, and claiming "to have done more with this particular plant than any other man in Europe." Plants with me will go farther than words—will he therefore kindly tell us how many he has at this moment in his nursery, either from cuttings or seed, two feet high and upwards? Could he execute an order for a score of such? Will he also tell me, taking the saleable plants throughout the trade in consideration, whether or not I am far wrong in stating that they are, with very few exceptions, grafted plants—of course I refer to plants two feet high and upwards. If I am materially wrong, I shall be very glad and willing to admit it. As to the comparative value of grafted plants or those from cuttings or seed, I am foolish enough to suppose that I am not far out in my estimate of these either. It is surely nothing new to hear that some of the finest trees in the kingdom are grafted; if it were not so, they would be utterly not comparatively worthless. I know of but few plants, certainly no Conifer, that has been grafted to the same extent that this has been; it has been worked by hundreds of thousands, but the per centage of such as I should care to buy or sell would be very small indeed. Mr. Barron has no doubt bought and sold grafted plants at twenty and thirty guineas each, and as long as he can find customers he will continue to do so. As far as I have seen, and as a rule, grafted Firs are abominations, the exceptions are few, and to these Mr. Barron is welcome. *Anthony Waterer, Knap Hill Nursery.*

Gishurst Compound.—On Saturday, while giving my trees their annual wash with Gishurst, 8 ounces to the gallon of water, I found many of the Cherry buds showing green; this proves the trees to be earlier than usual. Will you allow me, therefore, to suggest to your readers whose orchard houses are, like mine, in southern or sheltered situations, and who, following Mr. Rivers' directions in the "Orchard House," use Gishurst as a winter wash, that December will be a better time for its application than later. Strong applications of Gishurst, though most beneficial to trees at rest, have,

when not followed by water washing, been found in several places to injure buds when applied after they had swelled. *George Wilson, Gishurst Cottage, Weybridge Heath.*

Societies.

Royal Horticultural: *Dec.* 9 (*Floral Committee*).—Various Chrysanthemums sent home from Japan by Mr. Fortune were shown by Mr. Standish, of Bagshot. They were found in gardens near Yeddo, and promise to furnish materials from which something quite new in the useful class of plants to which they belong may be obtained. One, a large yellow sort, bright and beautiful in colour, called grandiflorum, was awarded a Second-class Certificate. To another named laciniatum, a small white kind, with the petals divided at the ends into thread-like terminations, after the manner of the Dragon-flowered sorts noticed in our last year's volume, a First-class Certificate was awarded. On a third, called striatum, pink, striped with white, a similar mark of distinction was conferred on account of novelty of colour; and, lastly, there was a small brown and yellow sort, whose flowers, consisting as they did of narrow petals twisted and frizzled up into compact heads, had a singular yet highly interesting appearance. This last was named C. japonicum. Several plants of a bright-coloured variety of Plumbago rosea called coccinea, were shown by Messrs. Veitch; flowers of a fringed Chinese Primrose came from Mr. Treen, a White Cineraria from Mr. Early, gr. to F. Prior, Esq., Digswell, near Welwyn, and a handsome variety of Cypripedium insigne, called Maulii, from Messrs. Maule & Son, of Bristol.

Dec. 9 (*Fruit Committee*).—Three remarkably fine bunches of Trebbiana Grapes beautifully ripened, and weighing together $10\frac{1}{2}$ lbs., came from Mr. Hill, gr. to R. Sneyd, Esq., of Keele Hall, Staffordshire. Than these nothing in their way could possibly be finer, and they served to show what a useful variety the Trebbiana is for winter use. Cabral, another white Grape, but comparatively small both in bunch and berry, came from the Society's Garden at Chiswick. Among Pine Apples was a fruit of Smooth-leaved Cayenne from Lieut.-General Rawdon; an example of Oates' Seedling Pine, from the garden of Lord Donerail; and a specimen in a pot of Hurst House Seedling, said to be a useful Pine, came from Mr. Jackson, of Kingston. Of Pears, the best three dishes were contributed by Mr. M'Laren, Cardington, near Bedford. The sorts were Winter Nelis (the best flavoured of all the kinds shown on this occasion), Beurré Diel, and Glou Morceau. Mr. Simpson, Stoke Farm, near Slough, was second with beautiful fruit of Easter Beurré, Josephine de Malines, and Glou Morceau. Other sorts, among which were Passe Colmar, Ne Plus Meuris, Beurré Rance, and Chaumontel, were shown by Mr. Cunningham and Mr. Early. Of Apples the best dishes came from Mr. Simpson, who furnished handsome fruit of Rosemary Russet, Cockle Pippin, King of the Pippins, Cox's Orange Pippin, Cornish Gilliflower, and Keddleston Pippin. From Mr. Hall, gr. to Capt. Tyrrell, Fordhook, Ealing, came King of the Pippins, Blenheim Orange, and Court Pendu Plat, the last large and handsomely coloured. Collections of Apples likewise came from Mr. Boon, of Chilham, and from the Hon. E. Wrottesley, of Putney. Two Shaddocks were furnished by Mr. Woodward, of Kensington, and a collection of vegetables by Mr. Early. Among the latter were remarkably fine specimens of Salsafy, single sticks of which could not measure less than $1\frac{1}{2}$ inch in diameter at top, and from 10 inches to 1 foot in length; associated with these were also some excellent Brussels Sprouts, Seakale, Parsnips, autumn sown Turnips, Beet, Jerusalem Artichokes, Variegated Kale, Snow's Winter Broccoli, and Endive. The same exhibitor also showed a dish of retarded Red and White Currants still in good condition.

Notices of Books.

The Mechanics of the Heavens. By James Reddie. R. Hardwicke.

This pamphlet was intended by its author to be read before the British Association at the recent meeting at Cambridge; but the committee of Section A. having declined to receive it, Mr. Reddie has published it, hoping thereby to gain that hearing for his heterodox doctrines which was denied him at the scientific congress. The subject which he discusses is perhaps scarcely one in which the readers of this paper may be supposed to be proficients; yet since he expressly states that he has endeavoured to "render it interesting to a general audience," we will endeavour, as far as is in our power, to give a sketch of his theory; and this we will do in his own words, to avoid misconception.

He first, then, states that "In endeavouring to understand the laws of physical astronomy as generally taught, I happened to entertain some doubt whether gravitating bodies could revolve, and having afterwards imbibed some vague idea that the laws of the universe were chemical and physical rather than mechanical, and somehow connected with electricity and magnetism as opposing and correlative forces—most probably suggested to my mind, as to many others, by the transcendent discoveries made in electro-magnetism by Prof. Faraday—my former doubts about gravitation were revived, and I was led very naturally to try and discover with certainty whether a gravitating body really could revolve; and I became convinced it could not, before I had ever presumed to look into the demonstrations of the 'Principia.'" Further on, he says, "there is no mathematical demonstration in the 'Principia' (and I believe I may add, or elsewhere, in which the course of a gravitating body is rigidly traced step by step, to show that it could revolve round a centre of attraction either in a perfect circle or an ellipse. . . . The nearest approach to a mathematical demonstration that a gravitating body could move in a perfect circle, so far as I have been able to discover, is to be found in Playfair's article on astronomy, in the 'Encyclopædia Britannica,' where the curve the body is made to describe, by the method of Newton's first proposition, is the arc of a circle. But there is this fatal objection to that demonstration, that the 'tangential force' employed, if I may use the expression, is not the direction of the tangent—that is, not perpendicular to the radius vector—an objection which also lies against the demonstration of the first proposition of the 'Principia' itself, only there the curve exhibited as the path of the body is neither part of a circle nor of an ellipse."

His second objection is to the illustration of Sir Isaac Newton, of the motion of a stone whirled in a sling being similar to that of all revolving bodies. "Now, it appears to me, that what is here said of the tendency of revolving bodies to recede from their centres, and fly off in right lines, is essentially true. I also admit, therefore, that as they revolve, they must be restrained from thus flying off, and detained in their orbits by some other force. The question is, can such a restraining force be properly called a 'centripetal force,' if by that is meant 'a force by which bodies are drawn or impelled, or any way tend towards a point as to a centre,' according to Sir Isaac Newton's definition? Or, to go beyond words to things, does the string, in the case supposed, 'draw back' the stone towards the hand, or merely restrain, or hold it, at a certain distance from the centre? And, could a force like gravity act as the string does? I maintain that to draw back is one thing, and to restrain is another and different thing; and that the string does not draw back the stone, but only holds or restrains it: also, that a positive force, like gravity, could not act as the string does."

A third argument is also given, which is too abstruse and lengthy to be transferred to our columns; such of our readers as are interested in the subject must refer to the pamphlet itself. Whether Mr. Reddie's theories be right or wrong we cannot pretend to say; of this mathematicians and physicists must judge. If he be right let them acknowledge it; if wrong, let them point out his errors. A few words from those best capable of judging will not be misplaced if they guide the unlearned to a right conclusion; and men of science, like theologians, require sometimes to be reminded that Truth cannot suffer from discussion; the more she is sifted and purged, the clearer she must shine at last, and the simpler and easier of comprehension she will be found by the unlettered and ignorant.

Garden Memoranda.

Royal Garden at Munich.—The Royal Garden (or Hofgarten, as it is called in Germany), is situated on the north side of the Palace, and consists of a square enclosure planted entirely with trees; a kind of temple stands in the centre from which the walks radiate in all directions, and there is also a wide walk in front of the Palace and a narrower one on the other sides. The trees are not large, but they furnish a dense shade in summer. The garden is bounded on the south and west sides by an open arcade, and on the east by the barracks. A small portion of ground is attached to the Palace, and separated from the square by a bold iron fence. This is laid down in Grass, in the centre of which are two large masses of shrubs, the lawn being divided by the walk leading to the Palace. A square of Grass in an interior courtyard, with a very grotesque fountain, completes the whole of the outdoor gardens attached to the Royal residence. With the exception of the two last-named portions, the whole place is open to the public, and is well supplied with cafés and similar places for refreshments.

There is, also, a large winter garden or conservatory attached to the Palace; this is placed on the top of one of the wings at an elevation on the north side of 80 feet from the ground: on the south side it is somewhat less. It is borne upon massive iron columns, to which are attached strong girders, and on these are brick arches to carry the soil for planting the trees in. The spandrils of the arches are 8 ft. deep, and the crown 3 ft.; 2 ft. of the deep portion are filled with rough material for drainage, and the superabundant water is conducted down the supporting columns; the remainder is filled with soil, 3 ft. deep on the crown of the arches, and 6 ft. in the deep portion or spandrils.

The conservatory is 165 ft. long, 85 ft. wide, and about 30 ft. high. The roof consists of three spans, the centre one being about 40 ft. wide, and the two side ones 22 ft. 6 in. each. It is constructed of iron and glass and heated by hot-water upon a plan much resembling that of Perkins, whose system consists in using a great number of small pipes, and in this case it is said to answer well. There is also a very expensive apparatus on the roof made of laths for shading in summer and keeping out cold in winter.

Arrangements in the interior are of a simple character but effective. At the west end nearest the entrance to the Palace, is a border about 12 ft. wide for plants, amongst which is a large specimen of the Hand Plant (Cheirostemon platanoides) and which has produced its singular flowers for several years in succession. A side walk in this border leads to an aviary, well covered with foliage, and in front of this is a large square of gravel where the Royal family often dine when at home. Along the north side about 4 feet from the back wall is a walk, on either side of which are dense masses of shrubs, some of which cannot be less than 20 feet high. The walk in question takes a bend towards the east side, and turns down to a theatre, the wall of which forms the east end of the conservatory. In front of this is a fountain whose basin is of an oblong shape with a semicircle in the centre, and furnished with a small figure and jet. The fountain basin is of marble, and well backed up with trees, the walk is carried along the front of this basin, and up the south side in a serpentine form. A heart-shaped bed is placed about half way up the south side, and the walk, which is here divided, passes on either side and terminates in a large square of gravel at the west end. This heart-shaped bed is filled with plants of a fine tropical appearance, such as Chamærops elegans, Dracæna australis, Cycas revoluta and Pandanus odoratissimus, Ficus elastica, Abutilons, &c. The front border against the glass is planted principally with plants of lower growth, and several creepers, consisting of variegated Cobæa scandens, and Algerine Ivy, are trained up the front and over the roof, hanging down in festoons from the rafters.

The centre border is large, and of a pyriform shape, the large end lying east in front of the fountain, and the tapering part towards the west. With the exception of the planting on the north side, which is bold and picturesque, the whole of this part is Grass lawn, with specimen-plants placed here and there similar to a villa garden, the middle being quite clear; therefore the fountain is seen to advantage.

The specimens on the lawn consist of Wellingtonia gigantea, Araucaria excelsa, different species of Palm, and a fine tuft of Pampas Grass. Toothed Lycopod covers all the dark edgings, where it is difficult to get the Grass to grow. The large plants in the groups come principally from New Holland and other temperate climes. They are planted in the ground, and for the most part are growing well, especially Acacias; there are also a great many Orange trees, but these look sickly, a circumstance to be accounted for, in the fact that the house is continually warmed in winter. All kinds of Evergreens, Cupressus, and plants of that kind are used to fill up every portion of the ground in certain parts, giving to these groups the appearance of a compact green mass. Numbers of birds of beautiful plumage fly about the conservatory, and their charming notes give life and interest to the place; the ventilating apertures are wired to prevent their escape.

About half a mile distant is a large reserve garden for bringing things into flower; it is nearly covered with houses and pits for growing and forcing plants; large stocks of Azaleas, Camellias, Rhododendrons, and numbers of commoner plants used for conservatory decoration are kept here, and are removed to the conservatory in winter by means of a large van, which is heated by a stove constructed for the purpose, the smoke flue passing all round the interior, so that in this way plants may be moved even during the most severe weather. This van is taken into a large hall underneath the conservatory, and the plants are drawn to the top by means of a windlass; 10,000 plants are used annually for this purpose, and fully one-third of them are useless after removal. The floor of the conservatory is reached from the north side by means of a spiral staircase, consisting of 150 steps. Viewed as a whole, therefore, this winter garden is a most interesting place, and does much credit to Mr. Loervel, the chief gardener. When filled with blooming plants in spring it must be a worthy adjunct to a Royal Palace. *E.*

Miscellaneous.

Artificial Flowers and Fruit.—Various are the materials which have been used for the purpose. Those used for making imitations of fruit have been principally wax, plaster of Paris, gypsum, papier maché, gutta percha, and similar materials. Specimens in all these were exhibited at the recent International Fruit Show, and although all were good, wax and gypsum seemed on the whole to bear away the palm. Nothing came up to some specimens of Apples, Pears, &c., executed in gypsum, presented to the Society in 1857 by His Royal Highness the Prince Consort. Flowers are imitated in paper, cloth, papier maché, wax, shells, glass, feathers, and a variety of other materials. In the Great Exhibition there was a collection in which they were imitated by insects' wings. As artificial flowers

are largely used for ladies' head-dresses, they have long been an established branch of commerce, and consequently greater ingenuity has been exercised in perfecting them; but unfortunately, from the same cause, greater attention has been paid to their effect than to their fidelity to nature. At the Chrysanthemum Show were exhibited artificial flowers prepared by Mrs. J. Nash, of Jamaica, from the outer cuticle of the leaf of the Yucca aloifolia, called in Jamaica "the Spanish Dagger." To a similar set of flowers (not the same, but not superior) exhibited by Mrs. Nash in the Exhibition building, the Jurors awarded a Medal "for an ingenious and very tasteful application of the epidermis of the Yucca aloifolia in the manufacture of artificial flowers." This material has a delicacy and beauty which would give it an advantage over others, were it not that its manufacture or execution is attended with greater difficulty. A supply of the material was intrusted to artificial flower-makers both in London and Paris, but they failed to produce samples equal in execution to those exhibited by Mrs. Nash; and although we are too practical to recognise merit in merely conquering a difficulty for the conquest's sake, we see both merit and importance in such a conquest, where the beauty of the material furnishes a reason for attempting to overcome the difficulties attendant on its manufacture. *A. Murray, in Proceedings of Royal Horticultural Society.*

Eider Down.—This down, the eider-duck plucks from its breast to line its nest; it and the eggs are taken away. Again the nest is lined, and again robbed. The third time, the drake repairs it, supplying the down; and if this be also taken away, the nest is altogether deserted by the ill-used pair. One nest yields about 2½ ozs. of the finest clean down, or about ⅙ a pound in all if removed three times. What is plucked from the dead bird, it is said, possesses none of that wonderful elasticity which constitutes the value of the other. We should think, however, that this would depend on the state of the plumage at the time. Many thousand pounds weight of it are annually exported for quilts, pillows, cushions, &c. It sells in Iceland at from 10*s.* 6*d.* to 17*s.* 6*d.* per lb. From 3 to 4 lbs. are sufficient for a coverlet, which, to be enjoyed in perfection, ought to be used unquilted and loose like a feather bed. Quilting is only useful where a small quantity of down is required to go a long way; but, with 3 or 4 lbs. at command, there is no comparison in point of comfort between loose and quilted—we have tried both. The eider coverlet combines lightness and warmth in a degree which cannot be otherwise obtained. With a single sheet and blanket, it is sufficient for the coldest wintry night. Its elasticity is proverbial; hence the Icelandic conundrum we had propounded to us by our good friend Mr. Jacobson, "What is it that is higher when the head is taken off it?" Answer—"An eider-down pillow!"—*Pen and Pencil Sketches of Faroe and Iceland.*

African Productions.—The very interesting objects contained in the Liberian Court of the Exhibition have been transferred to the offices of the West Africa Company, at 41, Gresham House, with the sanction of the Liberian Government. These productions have attracted considerable public notice, especially the samples of cotton, sugar, palm-oil, and the very beautiful specimens of Mahogany and other hard timber. We understand that it is the intention of the West Africa Company to use these as the nucleus of an Africa Museum, and as an illustration of the articles the Company will import. It is satisfactory to know that one of the agents of the Company has expressed his belief that he will be able to ship 500,000 bales of Cotton from the Niger next year, and that a gentleman has offered to invest 50,000*l.* in Cotton culture in Liberia, upon an undertaking from the Company, that he shall be guaranteed by the Company for his cleaned Cotton (Middling Orleans quality) three pence per pound at the port of shipment.

The "Builder's" Fire.—At this time of the year we wish again to draw attention to the method some time since described of laying the materials for a fire in the grate, and lighting the coals on the top. There is one part of the process which is applicable to the old form of lighting a fire; namely, covering the bottom of any grate with a plate of sheet iron. This alone will save more than one-fourth the coal, and preserve a better fire. At a cost not exceeding 1*s.* the experiment may be tried. The saving will be more than half this in each week. The Builder's fire is made regularly by thousands in all parts of Great Britain: we again draw attention to it that both coal and smoke may be saved. *Builder.*

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—If the weather should set in frosty this structure will require great nicety of management. Atmospheric humidity cannot by any means be entirely dispensed with, yet this if unskilfully applied will produce drip, which we need scarcely say is most prejudicial to the delicate texture of Camellia blooms and other gay plants. The best plan is to keep as low a temperature as can possibly be allowed, say from 40° to 45° at night, and to leave a little back and front air all night if the weather is at all favourable. The front must be very moderate, or the atmospheric moisture, instead of passing quietly away by the back apertures, will be condensed as it arises. With a good roof covering in the case of small conservatories 40° would be sufficient, and then there would be atmospheric moisture enough at all times, without the special application of water. See that young stock in mixed greenhouses such as Heliotropes, scarlet Pelargoniums, Cyclamens, and other flowers, grown especially for winter, have nice light situations, and regular attention as regards watering. Let Cape Heaths have close attention as to watering; if they stand unfortunately near flues or pipes, they may become suddenly very dry. Keep up a quiet ventilation day and night if possible; let the air steal in moderately, and dispense with strong fires. Do not water Pelargoniums until they are tolerably dry, and take care to fumigate frequently and slightly. This is a good time to introduce into the conservatory forcing pit the following things, provided they have received the necessary treatment through the summer, viz., Rhododendrons, Azaleas, Persian Lilacs, Sweet Briars, Moss and Provins Roses, crimson Perpetual Roses, Ledums, Kalmias, Anne Boleyn Pinks, Wall-flowers, Sweet Williams, and Dutch Bulbs. Unless, however, they are in proper trim, it will be labour in vain, and no mode of forcing, nor form of pit, can compensate for this; the great secret, if the heat wholly consists of fermenting materials, is to keep down accumulating damp and mouldiness, by an almost constant ventilation; increasing the linings in order to raise the necessary temperature: those who possess properly heated houses or pits, will however as a matter of course pursue a somewhat different process.

FORCING DEPARTMENT.

Pinery.—Winter watering of Pines in pots is rather a doubtful proceeding; a better way with general stock is to cover over the pots with Cocoa-nut refuse or some such material 2 or 3 inches thick, provided the bottom-heat is in proper condition.

Early Vines, Peaches, &c.—If any portion of the stem of the Vines now in forcing is near the influence of the flues or pipes, such should be bound with Moss, old mat, or any other material, to ward off the dry heat. Keep the temperature at present down to 60° in the case of sunshine in the day time, sinking to 50° at night. Do not give air unless to depress the thermometer, or to avoid a superabundance of rank steam from fermenting matter. Let the syringe be applied two or three times a day, suffering the wood to become dry between the applications.

Strawberries.—Where these must be obtained as early as possible, say by the end of February, a lot should now be introduced under cover. Unless, however, their buds are perfect through early cultivation, thorough ripening, and protection of their roots from frosts, it is 10 to one they prove an abortion. Any house or pit will do for the first three weeks, provided a temperature of from 45° to 50° can be maintained, with a moist atmosphere. Let them by all means have as light a situation as possible at all times.

Vines, Peaches, &c., in Pots.—Pursue similar principles to those recommended for the Vinery and Peach-house, except that a bottom heat of from 70° to 75° will be greatly in their favour.

FLOWER GARDEN AND SHRUBBERIES.

We have hitherto said nothing special about the protection of tender Roses, believing that they should be made to endure a little frost at the early part of the winter. No time should now however be lost in affording them protection. The tops of standards, worked on ordinary stocks, may be protected by wisps of straw, bound amongst and over their branches, or by tight canopies firmly fixed. Beds or masses of Hybrid Perpetuals, Teas, or other tender kinds, should have some porous material strewed amongst them, to protect the collar. Cocoa nut refuse, exhausted tan from the Pine pits, clean riddled—using the coarse particles—are very good; even a coating of half-decayed leaves will answer the purpose. Four or five inches of such materials may keep them safe in the event of a severe winter. If it is desirable to protect the tops altogether, mats thrown lightly on them will suffice, taking care, on the breaking up of frost, to expose cautiously, and not until after they have become thawed.

ORCHARD AND KITCHEN GARDEN.

Continue to trench, dig, and ridge every spare inch of ground when frost permits; this is particularly to be observed in gardens inclining to a clayey texture. If frost continues let the manure necessary be wheeled out for the whole of the spring cropping, laying it in heaps, either on the spot, or as near as possible to it. That portion not required for immediate digging in should be piled in small mounds, and soiled over, to prevent loss by evaporation. The principal operations in the fruit department relate to pruning. Planting ought to be completed; if not, unless the weather is very mild, it will be better to defer it until spring. The directions previously given with regard to pruning bush fruits are still applicable. If dressings with hot lime and soot when the trees are wet were more attended to, we should not hear so much of the ravages of birds upon the buds, and we would recommend their application also to standard Plum trees wherever practicable, as they not only keep them free from Moss and Lichen, but assist in the extirpation of those insects, in the search for which birds commit such ravages. Dressing with fresh-slacked lime is still more imperative on Apple trees which are situated in damp localities, where Mosses and Lichens spread with great rapidity, and if not checked are very injurious to the well being of the trees, besides affording a secure harbour for numberless insects to lay up during winter. The effectual remedy however for all such evils is thorough drainage. Continue the pruning and training of wall fruit trees in open weather, also prune and dress pyramid and espalier Apples, and Pears; after which apply top dressings of compost, and prick it in slightly so as not to interfere with the roots. This operation is a very necessary one where a regular system of root pruning is persevered in, because one object in root pruning ought to be to keep the roots near the surface, and these will require to be often encouraged by the addition of fresh compost, otherwise there will always be a tendency to push away their long feeders out of bounds in search of food. Do not forget former remarks on top dressing of orchard trees, which are also all the better for such attentions.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Dec. 10, 1862, as observed at the Horticultural Garden.

Dec.	Moon's Age.	Barometer. Max.	Barometer. Min	Temperature of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep.	Wind	Rain.
Thurs. 4	13	29.879	29.720	51	38	44.5	44½	44	S.E.	.01
Friday 5	14	29.978	29.907	53	49	51.0	46½	45	S.	.16
Satur 6	○	29.976	29.832	56	45	50.5	48	45½	S.	.17
Sunday 7	16	29.971	29.917	59	39	49.0	49	46	S.W.	.16
Mon. 8	17	30.065	29.925	48	37	42.5	49½	47½	N.W.	.10
Tues. 9	18	30.073	29.847	52	37	44.5	49	46	N.W.	.34
Wed. 10	19	29.835	29.520	56	27	41.5	48½	46½	W.	.09
Average.		29.968	29.809	53.5	38.8	46.2	47.8	45.8		.73

Dec. 4—Drizzly and foggy; dull and overcast; fine.
— 5—Hazy and mild, cloudy; fine; rain at night.
— 6—Densely overcast; cloudy; brisk south wind; rain.
— 7—Fine; very fine, and mild for the season; rain at night.
— 8—Clear; very fine; overcast; cloudy; overcast.
— 9—Fine; cloudy; overcast; rain; heavy rain at night.
— 10—Densely clouded; very fine; clear at night; slight frost.
Mean temperature of the week 5 deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 36 years, for the ensuing Week, ending Dec. 20, 1862.

December.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 14..	45.7	34.0	39.8	13	0.32 in.	3	4	2	2	8	10	6	1
Mon. 15..	46.3	34.7	40.5	21	0.50	3	5	1	3	9	9	5	1
Tues. 16..	45.7	34.2	39.9	16	0.68	3	3	2	2	5	8	6	7
Wed. 17..	45.8	33.8	39.8	17	0.37	6	2	1	3	3	8	5	6
Thurs. 18..	44.8	32.7	38.7	19	0.62	4	8	—	2	6	9	5	2
Friday 19..	44.5	33.5	39.0	17	0.38	3	5	4	3	6	10	4	1
Satur. 20..	44.0	33.7	38.9	13	0.76	3	9	1	2	5	12	2	1

The highest temperature during the above period occurred on the 16th, 1849—therm. 58 deg.; and the lowest on the 16th, 1853, and 19th, 1859—therm. 7 deg.

Notices to Correspondents.

Evergreens: *G L E.* You will not find any evergreen flowering creeper that will cover the north-east front satisfactorily. We advise you to plant the round-leaved Ivy (Hedera Rögneriana), mixing with it Pyracantha and Glycine sinensis. By a proper amount of attention and pruning these may be made to grow sociably, and thus you will have lilac flowers in summer, scarlet berries in winter, and a noble green screen always.

Fuel: *A W.* If you have draught enough there is nothing like Anthracite coal, but few hothouse fires will burn it. Coke you will find the best practically. As to the trees you name, all are suited to orchard-house cultivation except the Mulberry and the Almond, which is not a fruit tree at all. How long they may be before they bear depends upon the amount of skill you bring to their cultivation.

International Exhibition: *A Reader.* All the best of the fine woods are gone to Kew; other specimens to other museums, Edinburgh especially. All are now dispersed, or will be before you see this.

Names of Fruits: *H C L.* 1, Dutch Mignonne; 2, Margil; 3, Like Wyken Pippin, but specimen rather imperfect; 4, Redding Nonpariel.—*J P.* Beauty of Kent.—*J J.* Probably Milot de Nancy; at all events it is not suited for your climate, therefore better dispense with it at once to make room for trial of others.

Names of Plants: *Inquirer.*—Probably Argyreia splendens.

Oak Tree: *H. W.* Break up the soil, and apply a very strong brine to the young roots next March. That will kill the tree.

Pear-trees: *Wilfordiensis.* There is no objection to a Quince stock—quite the contrary.

Plane-wood: *E S.* This is what Loudon says:—"Very little use is made of the wood in the west of Europe, but in the Levant and in Asia it is said to be used in carpentry, joinery, and cabinet-making; and, according to Riccioli, who wrote in 1651, it was then employed in ship-building by the Turks. It is said to make beautiful furniture on account of the smoothness of its grain, and its susceptibility of taking a high polish. Olivier says that its wood is not inferior for cabinet work to any wood of Europe, and that the Persians employ no other for their furniture, their doors, and their windows. The Greeks of Mount Athos, according to Belon, formed boats out of the trunks of large trees of this species, similar to those which are used in modern times on the Somme and on the Seine, in France. Sometimes, also, boats were made of two trunks hollowed out and joined together so as to fit and be water-tight. The wood of the Oriental Plane, according to the experiments of M. Hassenfratz, weighs, when dry, 49 lbs. 3 ozs. per cubic foot; it is of a yellowish white till the tree attains considerable age, after which it becomes brown, mixed with jasper-like veins, and wood of this kind being rubbed with oil, and then highly polished, resembles the wood of the Walnut. In Britain the wood of the Oriental Plane has scarcely been applied to any purpose either useful or ornamental; though for both it may be classed, as Marshall suggests, with that of the Acer pseudo-platanus, or according to some French authors, with that of the Beech or the Hornbeam.

Vines: *A B.* Experienced gardeners *may* lift the roots of Vines at any time. The inexperienced should only attempt the operation when the Vines are at rest.

Water: *Anon.* No doubt the lime is the cause of your pipes becoming encrusted. Try the effect of putting sal ammoniac into the cistern—say ½ lb. at a time.

Erratum.—In Mr. Laing's Advertisement, Nursery, Beverley, Yorkshire, p. 1143, December 6, read per "1000" instead of "100."

MESSRS. WAY AND EVANS, Analytical Chemists, have REMOVED their LABORATORY from Welbeck Street, Cavendish Square, to 106, Leadenhall Street, E.C., where all Letters and Samples for Analysis should in future be addressed.—Dec. 13.

AGRICULTURAL and CHEMICAL COLLEGE, 37 and 38, Lower Kennington Lane, London, S. ASSAYS and ANALYSES promptly attended to by J. C. Nesbit, Lansdell & Co.

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Full particulars of terms will be forwarded on application.

Land Drainage, and other Agricultural Improvements.

MR. BAILEY DENTON, C.E., maintains a large staff for the execution of Land Improvements by a commission of 5s. per acre for Under Drainage, and a fixed charge for Outfall and other works.

For particulars apply to him, at 52, Parliament Street, Westminster S.W.

TESTIMONIAL to W. FISHER HOBBS, Esq.—The following noblemen and gentlemen have consented to act as a Committee for the purpose of collecting Subscriptions towards presenting Mr. W. Fisher Hobbs with a Testimonial, for his distinguished services to the cause of British Agriculture:—

Major-General The Hon. A. Nelson Hood, *Chairman.*

Earl Powis	Mr. James Howard
Earl Cathcart	Mr. J. G. King
Lord Feversham	Mr. G. Little
Lord Tredegar	Mr. Alderman Mechi
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Mr. Druce	Mr. Tuxford
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Mr. Wren Hoskyns	Mr. Burch Western
Mr. Charles Howard	Mr. H. Wilson

B. T. Brandreth Gibbs, 47, Half-Moon Street, W.
H. Hall Dare, 12, Hanover Square, W.
H. Corbet, Farmers' Club House, Bridge Street, E.C. } Hon. Secs.

Subscriptions will be received by any Members of the Committee, or by the Hon. Secretaries as above.

The Agricultural Gazette.

SATURDAY, DECEMBER 13, 1862.

—— The exhibition of the Smithfield Club at the new Agricultural Hall at Islington has been an extraordinary success. About 1600 paid the 5s. admission fee on Monday. No fewer than 27,300 were present on Tuesday; upwards of 45,000 visited the show on Wednesday, and 36,921 paid for admission on Thursday. The fears that the London public would not find their way to the new locality have proved entirely unfounded. And the Agricultural Hall Company—Mr. Clayden their Chairman, and Mr. Sidney their indefatigable Secretary—may be congratlated on their very great success.

—— At the General Meeting of the English Agricultural Society on Thursday, it was intimated that the expense of the Battersea show had been about 15,800*l.*, while the receipts had been 12,140*l.* The difference, 3660*l.*, to the loss of the Society was, however, more than met by the profits of the Leeds meeting, the expenses of which had been less than its receipts by 4450*l.*

—— By the death of Mr. Mules, one of the Enclosure Commissioners, we have lost one of the best public servants ever entrusted with the administration of Acts of Parliament. In the appointment of a successor it is to be hoped that the importance of sufficient practical knowledge of the duties of the office will be borne in mind. In electing to the office of Coroner it is a matter of doubt whether the legal knowledge of one candidate or the medical knowledge of another is the more essential: but there could be no doubt if the office were placed in commission that a lawyer and a medical man would discharge the duties of the office more efficiently than either two lawyers or two doctors.

It is a somewhat parallel case that arises in the appointment of the new Enclosure Commissioner. There are already, we understand, two barristers on the commission, and we hope therefore that their new colleague will be either a practical agriculturist or an agricultural engineer. One of the chief duties of the Commissioners is the control of the drainage of Great Britain, and it seems plain enough that the engineering ability which such duties need should be found among them.

—— A correspondent has sent us a letter, which will be found in another column, recommending the well-known plant of our fields and downs, *Anthyllis vulneraria*, commonly called "Lady's Fingers," as a new forage plant for cultivation.

We would first notice that the plant referred to is reported to yield a large crop of hay and green food, possessing "extra good qualities," upon exceedingly poor soils, namely, "sandy chalk," and "without any manure." Now, we have always some doubt about the good qualities in a feeding point of view of plants that can be grown upon next to nothing, as such produce is usually found to be what the farmers term without "proof," a most expressive word, meaning a low feeding value. The soil accompanying the specimens sent to us was light and sandy in the extreme; still it must be conceded that the *Anthyllis vulneraria*, Lady's Fingers, belongs to the same great natural order as the Clovers and Sainfoin, though, unlike them, its tap root has by no means the same long penetrating character. It is then just possible that manure may much improve its qualities, and probably its yield, but it will be by producing a new variety (as the result of cultivative processes) that will be able to bear better with riches than with poverty.

In saying thus much, we speak of it wholly as a green food plant, as we are convinced that the hay (a portion of which is sent), from the extraordinary hairiness of the enlarged calyces would form but a poor choking diet for any kind of animal: the same objection holding in this as in hairy Grasses—it is a sign of want of flavour and quality no less than being a mechanical impediment to what quality there may be being made the most of by the creature that may be doomed to feed upon it. It is, however, just possible that cultivation would in a great measure remedy this defect, as we have remarked that plants quite hairy in the wild state lose that condition on cultivation; as examples we may give Parsnips, and even the broad-leaved Clovers. In these, and in other plants which might be adduced, the advance of smoothness and succulency is concurrent with improvement in produce as well as in feeding value.

That was a suggestive remark of a speaker at last Monday's meeting of the London Farmers' Club, that one reason why we beat all competition in our meat manufacture, but are beaten by it in our grain produce, is to be found in the immense improvement of late years witnessed in our animals as compared with our plants. There has been a pen of pigs at the Agricultural Hall this week, sold to weigh 15 stone apiece, which are only 13 weeks of age! It is the extraordinary precocity of our well bred pigs, and sheep, and cattle, which has made our meat manufacture cheaper than that of all the world beside.

If some similar improvement could be effected in our plants, there cannot be a doubt that the advantage to us would be even greater, for in our meat manufacture the natural agencies do not directly aid us, they are indeed destructive, whereas in the growth of plants they help the process. Every portion of the flesh and bones of an animal has been bought or grown at a great expense, and with much besides, wasted or burned up in the process, they are given to the animal by the feeder: but it is far otherwise with a plant. As Dr. Anderson told the Highland Society the other day, it may be that not one fiftieth of a plant is mineral, 49 fiftieths being organic matter, while not one fiftieth of the soil may be organic matter, 49 fiftieths being mineral: the great bulk of a plant is provided for it not by the soil or artificial means, but by the air. And if we could only confer upon it the character, tendency, habit, or whatever the necessary quality be by which it shall, with artificial aid to the small extent required, make the full use of the enormous natural resources at its command—then it is plain that in a very economical manner indeed we shall obtain a great increase of produce.

What we want, in short, is that the 3 cwt. of guano, or 10 tons of farm-yard dung, which we add to the 2000 or 3000 tons of soil which underlie each acre of the surface to which it is applied, shall go to the production of large ears of corn instead of small—to the production of useful plants instead of worthless ones.

The question then arises, how is the tendency or habit of plants to be obtained by which this result may be achieved. Every species of plant admits of certain variety, the result of the circumstances in which it has been grown. Some of these varieties possess a certain degree of permanence of character, and what we want is a good sort, and one with a large share of this permanence of character, whose good qualities are likely therefore to reappear in its produce.

How are we to obtain what we thus want Some people simply say, "Keep a sharp look out and when you see in any natural sport or variety the qualities you want, take care of the plant, and multiply it by every means in your power."

Others say, "Select the best sort already known, and cultivate it in the best artificial circumstances you can provide for a number of years, taking every care that nothing on your part shall be wanting to develop to the utmost the good qualities it possesses. You will find their excellence increasing year by year, and year by year it will be more and more acquiring that fixity of character which you desire—for there is such a thing as inherited character and habit of growth in plants as well as animals." This is what Professor Buckman has for many years illustrated and taught; and the term "ennobling" has been applied to the process by which wild plants are in this way made to yield what cultivators want It has been by a process of this kind that most flowers and many culinary vegetables of the garden have been derived from their natural originals. It is in this way that the Turnips, Parsnips, Carrots, Mangel Wurzels of our fields have in like manner been produced: and though we have no actual history of the process on record, yet it is not at all a forced analogy by which we are led to suppose that even the grain crops which we cultivate may have originated in some similar way. At any rate there is history enough on one side, and analogy enough on the other, to enable us to anticipate with confidence the improvement of varieties of the grain crops which we culivate, by the adoption of similar means.

It is out of an idea and a history of this kind that Mr. Hallett justifies the use of the word "Pedigree," by which he designates the kind of Wheat which he has so industriously advertised of late; and it is the same idea which lies at the bottom of most of the efforts after plant-improvement which are at present making.

Certainly we shall do nothing either to throw discredit on the soundness of it, in which indeed we confidently believe, or to discourage the energetic efforts which have of late years been made in this most useful direction. We have before us samples of a great many varieties of Wheat and Oats, the result of labour of this kind, which would certainly belie any such attempt, even if we made it. A Correspondent, "J. H.," sends us a sample of Oats, the result he declares of a series of annual experiments and constant attention on Mr. Hallett's plan. They are very heavy; 46½ lbs. per bushel.*

A Correspondent signing himself "Triticum," whose report of his experiments with Hallett's, Shirreff's, Pringle's, and Australian Wheats, will be found in our Paper of some weeks ago, then sent us a number of ears and samples, which strikingly illustrate what circumstances will do for sorts. Of Pringle's Bearded Wheat we have ears containing 14 spikelets on each side of the rachis. Shirreff's Bearded Red Wheat presents ears rather less thickly clothed with florets, but very long and productive. Shirreff's Bearded White Wheat exhibits in the specimens before us a very wide ear, very long and strong, thickly set with most productive florets, and the grain is of excellent quality.

The Victoria and Australian Wheats are both beardless varieties of good quality, growing in long well set ears. Hallett's Pedigree is a coarse Red Wheat in a white chaffed ear, of first-rate form, length, and productiveness.

Another sort exhibited at the Horticultural Society's Show by Messrs. Wrench, deserves notice for the history of patient labour and perseverance which belongs to it.

It was selected by Mr. Bland of Fordham, Cambridgeshire, about 4 years ago, from a plant which one day he perceived standing high above the others in his Wheat field. From these few ears of that plant he raised the present variety. The ears and straw as shown at Kensington were very large and stand full 6 feet high if not more,

* Judging from the sample, we may say in answer to his enquiry that they resemble Canadian Oats.

and in 1861 the yield Mr. BLAND had from it was upwards of eight quarters per acre.

And a great many other instances might be named in which attention to this subject, whether by multiplying a selected variety or creating a variety by cultivation, is gradually, we hope, doing that for our produce in the fields which flockmasters and the breeders of our live stock generally have done for us in the fold, and yard, and stall.

A CAPITAL paper, entitled "STOCK *versus* CORN," was read last Monday by Mr. R. SMITH, of Emmett Grange, South Molton, before the London Farmers' Club.

It urged upon the attention of farmers the special fitness of our climate for the growth of green crops, Grass and roots, for the food of sheep and cattle, and its relative unfitness for grain crops when compared with those countries with which the farmer has to compete in the growth of Wheat. It urged the propriety of laying down inferior arable lands, especially on the western side of the island, to Grass; and it recommended an altered rotation of crops in order to the growth of a greater extent of green crops. It also collected a large number of testimonies from different counties, all of them declaring that the profit was in the sheepfold, not at the barn-door. It will be found reported at length elsewhere. It was read to a very large audience; and was followed by a very lively and instructive discussion.

Mr. Alderman MECHI regretted that among all the testimonies Mr. SMITH had collected, none had come from the well drained clays of Essex. He did not perfectly agree with the title of the paper, inasmuch as there was no necessary incompatibility between stock growing and corn producing; the former did indeed facilitate and increase the latter. He could grow on his dried clays, with some degree of certainty, five quarters of Beans per acre. The straw, given after being cut and moistened with hot water along with Cotton seed cake and Mangel Wurzel, proved capital fattening food. He had this year grown 27 tons of clean roots of Mangels per acre, and with well grown Bean straw, and purchased cake, he was certain to produce a most valuable lot of manure for next year's Wheat crop. Mr. MECHI declared that Bean straw well grown and thus treated, was worth two-thirds as much as good hay—a proposition which was vehemently denied by the most of his audience.

No doubt the manure produced by the feeding of live stock was the great security for a produce of corn. There are supposed to be 30,000,000 of sheep in the Island—what would be the loss of our corn-producing power, were their manure systematically lost and wasted? Now there are close on 30,000,000 of another stock, equal in manure-producing power, whose manure is wasted—what then may be the degree of increased fertility to be expected when the sewage of our towns shall be turned to its proper use?

Our Essex climate is defective for luxuriant green growth, because only 16 to 20 inches of rain fall annually, but we can improve it by the supply of water artificially. On 6 acres of Grass irrigated thus by hose and jet Mr. Mechi feeds, week by week, in summer time 80 head of stock "of all ages," and six horses. This is a proof at once of the natural fault of our eastern climate, and of the efficiency of its artificial correction.

Mr. MECHI did not agree with Mr. SMITH in recommending the final laying down of clay lands to pasture. Their fertility depends a good deal on occasional breaking up and exposure to the air. Let us till our land deeply and thoroughly, grow Clovers, and fold them, allowing ample growth above, thus ensuring corresponding growth below, and we shall have good Wheat crops. Beans and Mangel Wurzel, Clover and Wheat, are the crops for our clay soils, that will increase at once both their corn and their meat-producing powers. "Grow plenty of Mangel Wurzel, plenty Beans, plenty of Clover, and eat it all, *eat it all*, under cover, with plenty of cake." And so, with this good maxim, which, after a somewhat stormy reception of the earlier portion of his speech, was taken in very good part by his audience, the worthy Alderman sat down.

To him succeeded Mr. FRERE, the Editor of the Journal, pointing out that the imports showed no difficulty in supplying England with her Wheat from abroad, but imported Barleys could not be trusted by the maltster. Nevertheless he did not agree with Mr. SMITH in declaring that England generally was not naturally fitted for the growth of Wheat. The eastern counties are as good for the growth of Wheat as any part of Germany or the Northern States of America, which exported their corn to us not so much for their fertility as for their poverty. There are however many districts in England whose circumstances, markets, &c., unfit them for alternate husbandry, and where Grass necessarily becomes the only growth, and dairying or grazing the only management. In the light soils specially of the Eastern counties, the true policy was to depend on the flock.

Mr. WELLS, of Yorkshire, contributed to the discussion a fact which he had thoroughly ascertained in the course of his own experience—that to keep "seeds" down a second year, as had been recommended, was unprofitable. A good many impressions and prejudices on these subjects would disappear were farmers generally to keep an exact record as he had done of the expenses and returns of any particular kind of management.

Mr. THOMAS, late of Woburn, pointed out that apart from all question of management or experience, whether in Mr. WELLS' circumstances or any other, the great fact remained that since the adoption of free trade our imports of grain had enormously increased, while those of live stock had hardly increased at all. This was the great and leading guide to point out the direction in which our practice must inevitably tend. He concluded by urging as one certain way of ensuring a larger produce both of meat and corn, that young farmers should be careful not to take more land than they were able to stock thoroughly.

Mr. WILSON, of Essex, defended Mr. MECHI from the charge of unduly praising Bean-straw as fodder—he also said that Mr. MECHI'S Mangel Wurzel crop, at 27 tons per acre, was this year most creditable to him, and in no degree proved that his land had deteriorated in quality, which had been suggested by a previous speaker. He pointed out very truthfully that one great reason why foreigners could not compete with us in live stock, while they could in corn, was to be found not in our climate but in the precocity and improved character which we had conferred upon our live stock.

Mr. BRADSHAW, of Guildford, contributed some statistical information on our imports of corn during late years, pointing out in particular that our grain and meal imported from the United States in 1859 had been worth only 109,000*l.*; while in the first nine months of the current year the imports from that country had been worth 10,000,000*l.*

This was a proof of the power of other countries to supply us with grain, and a proof of the need of turning our attention especially to those departments of farming in which they could not compete with us.

Mr. CONGREVE, a grazier, declared that the great want of the country was a more plentiful supply of lean stock! If the inferior clays of the country could be laid down and turned to account in that way, it would be of the greatest advantage, and that was the particular kind of advantage which he hoped would arise from the present discussion.

Mr. EDMONDS, of Rugby, pointed out in explanation of the failure of the 2d and 3d years seeds, which had been recommended by some speakers and declared a failure by others, that seeds must be sown especially to meet the wish that they should last longer than usual. If annual or biennial seeds are sown they will not last the time desired. Our seedsmen must supply us with the mixtures which are needed for the purpose.

Mr. COUSSMAKER, of Aldershot, agreed with Mr. MECHI on the value of Bean-straw as fodder—recommended all the feeding process on clay lands to be carried on in the summer months, and declared that it was no such easy matter to lay soils down with any success to produce fair pasture. Some that he knew laid down 20 years before was still of an inferior quality.

Mr. COLEMAN, of Woburn, also defended Bean straw as useful and nourishing fodder, and pointed out how entirely the position of the breeder and the grazier had latterly been changed. Years ago 2 and 3-year old beasts could be bought for 8*l.* and 10*l.* a-piece—now they are so dear that the profits of grazing had been materially reduced.

Mr. WALTON, of Hampshire, energetically declared that the true way to increase both corn and meat was to have the tenant's capital secured to him by lease and tenant right.

Mr. HOWARD, the excellent Chairman of the London Farmers' Club, who has this week concluded his year of office, summed up the discussion, congratulating the very large meeting before him on its instructive character.

BOTANY AT THE ROYAL AGRICULTURAL COLLEGE.

I HAVE to report the formation of a botanical garden here, and in so doing place on record the first attempt in this country to form a systematic collection of agricultural and native plants. It is a creation of the present year. On the 8th of March the first denizen was introduced, and at that time three-fourths of the ground work was not commenced. At the close of the flowering season it contained specimens of 521 species and varieties. Of these, 183 were collected, growing wild, in this neighbourhood. The remainder were raised from seed or due to the kindness of friends, and for a large portion of them we are indebted to the generosity of the Curator of the University Garden at Oxford.

The majority of the flowering plants were reduced to order before the end of the season. Specimens of Senecio squalidus and S. vulgaris stood in one of the beds appropriated to Compositæ during the whole of the summer, distant a few inches from each other, and it is possible that at a subsequent period a seedling may have grown for a short time, overlooked by the gardener, nearer the companion standard than its own.

The agricultural department (exclusive of Grasses) was still more successful, and proved very useful as a means of instruction. It furnished, for example, specimens of 25 species of cultivated Leguminosæ; and rows of 17 varieties of Turnip, white and Swede, were grown side by side for purposes of comparison. The weights and specific gravities of the roots are now being taken.

The portion allotted to the Grasses was the latest to be prepared. It was already Midsummer when the beds were formed, but it was thought best to do all that could be done in the way of preparation for next year. Separate plots were assigned in order to the various species, labels attached to each indicating the plants they were destined to receive, and seeds sown from a set of samples presented by Messrs. Sutton. In 36 instances the Grasses have made their appearance above ground and out of these 17 have hitherto flowered. The remaining beds are empty: for in some cases, as Avena strigosa, we had no seed; in others, as Ammophila arundinacea, the seed failed to germinate, on account of the adverse circumstances in which it was placed. Our most abundant weeds are Rye-grass (a constituent of the pasture from which the garden was formed), and the easily diffusible Oat-grass. Individuals from these sources occasionally intruded into the empty beds or into those whose proper occupant had not yet become established. The gardener has kept the beds much cleaner than could be expected, considering the more important calls of a garden still in process of formation, and he executed the task of sowing and transplanting so carefully, that there have not been more than three accidental transpositions.

When I accepted my present post, 14 months ago, there was an enclosed portion of ground partially occupied by large beds, unnamed, of a few common plants. For experimental purposes that garden is still available, and a part of it has been so employed during the present year. It was, however, much too small to be converted into a botanic garden. Specimens of the species which could be found in it were transferred to the new locality: they were 13 in number.

The character of an anonymous communication in the *Agricultural Gazette* of the 6th inst. can be inferred by any one who will compare it with the above statement. Reference is made to it merely as an excuse, perhaps insufficient, for having burdened this notice with some insignificant horticultural details.

An experience of several years as a lecturer on botany has convinced me of the great importance—if any real knowledge of the science is to be imparted—of supplying the student with examples of the structures under consideration, and with fresh specimens of the plants described. But it is to the cheerful co-operation and untiring energy of the Principal that the existence and growth of our garden is mainly due. Should its future progress correspond in any degree to the advance already made, it may in a few years not only claim to have supplied a desideratum at home, but be without a rival in its own sphere in Europe.

A large botanical museum to be opened next session shall be noticed at a future opportunity.

It will give me pleasure if my remarks induce any visitor taking an interest in such matters, to favour with a personal inspection the appliances for teaching botany, theoretical and agricultural, now concentrating at the College. *John Bayldon, B.Sc. Lond., M.B. Lond., Professor of Botany at the Royal Agricultural College, Cirencester, Dec. 9.*

THE SMITHFIELD CLUB.

GREAT SHOW OF FAT STOCK, IMPLEMENTS, &c., IN THE NEW AGRICULTURAL HALL, Dec. 12.—The fourth or fifth migration which the Smithfield Club has experienced since its foundation in 1798, has been this week effected into the magnificent quarters provided for it by the Agricultural Hall Company. Housed successively in livery stables in Smithfield, the Barbican, and Goswell Street, and at the Bazaar in Baker Street, it has at length found fitting accommodation for its Annual Show of stock under the glass roof at Islington.

In a hall about 80,000 square feet, nearly 2 acres in

extent—in galleries 36 feet wide all round it—and in a second hall 100 feet square, the usual annual collection of fat cattle, sheep, and pigs have been shown this week; and a magnificent display of agricultural machinery has been exhibited. The contrast which these quarters present to those in which for years live stock, implements and spectators have been crowded, is perfect. An arched roof with a span of 130 feet, and a height of 75 feet, covers in the central portion of the principal hall, providing light, and space, and air. The ground is marked out by railings, so as to provide ample room for the inspection of the animals, both behind and before them. Underneath the galleries the heavier implements are collected, and in the galleries the lighter articles, and the stands of seedsmen, &c.

On Saturday the show was visited by their Royal Highnesses the Duchess of Cambridge, the Duke of Cambridge, and Princess Mary, and at a somewhat later hour H.R.H. the Prince of Wales, the Prince of Hesse, the young Princes Arthur and Leopold with General Hood and General Knollys, were received by Lord Feversham, the President of the Smithfield Club, Mr. Brandreth Gibbs, the Honorary Secretary, and Mr. S. Sidney, the Secretary of the Agricultural Hall Company, and conducted round the show. The new building, which owed its erection in great measure to the public spirit of the late Jonas Webb, has thus been most worthily inaugurated, and it remains to describe its contents.

The show is not so good as it has been known in previous years. The Short-horn classes in particular are not so good as they have been. Some of the classes of Herefords too are not well represented. The Devon classes are perhaps as good as usual. The Sussex bred too is fairly represented. The Norfolk and the Welsh classes are very imperfectly filled. The cross-bred classes are unusually good.

The show of Sheep is barely up to the mark—that of Pigs, though not numerous, is very uniformly good.

The Implement show was never anything like so good as it is this year. It is in fact a combination of the International Exhibition and the Battersea meeting; and there is a much better show of agricultural produce by the seedsmen than was exhibited at Kensington.

In going round the different Classes, we can see that the Birmingham awards have been in many cases disturbed. This has arisen from two causes, one of which no doubt is that another set of judges have acted, but the other is that additional animals have come into competition. In no Class is this so marked as in the first on which we come.

Devons.—These classes, which were present in small numbers at Bingley Hall, are very largely represented here—no fewer than 33 animals being shown. The animals fatted by the Earl of Leicester were unfortunately entered too late, and are thus absent from the show. The first prize is in almost every case taken by Mr. Heath, of Ludham Hall, Norwich, who has for years been successful at the Smithfield Club, and who did not this year exhibit at Birmingham. The young Class of Devon oxen contained two Birmingham entries, one by Major-Gen. Hood, which was 3d here and 2d at Birmingham, and one by Mr. Walter, M.P., which was commended at both shows. Mr. Heath, of Norwich, and Mr. Neale, of Chichester, take the 1st and 2d prizes. It is a good Class, though they contrast unfavourably when compared with the massive and magnificent Herefords close by.

The older Devon oxen, like the steers, are headed by Mr. Heath; the second prize going to Mr. Smith's 1st prize Bingley Hall ox, there described as of good size compared with its class, and wonderfully fine on loin and flank and thigh. The 3d prize goes to Mr. Neale's ox. Mr. Tucker's, which took the 2d prize at Birmingham, is here only commended.

The honours in the Devon Heifer Class are taken by Mr. Farthing, of North Petherton; Mr. Paull, of Dorchester; and Mr. Walter, M.P. And here the decision of the Birmingham judges has not been affirmed—Mr. Walter's ox having taken the 2d prize at Birmingham, while Mr. Farquharson, here unnoticed, was placed 1st. Both the female classes of Devons are greatly better here than at Bingley Hall. The class of Devon cows numbers seven animals. The prizes go in succession to Mr. Heath, Mr. Neale, and Mr. W. Farthing.

Herefords.—Here we have classes hardly so well filled as at Bingley Hall, where they are nearer home. The prize oxen include 6 animals, 4 of which were at Birmingham. The decisions of the judges have upset those of Bingley Hall. Major General Hood's ox, bred by H.R.H. the Prince Consort, is first here, though only third at Birmingham, while Mr. Phillips' (of Wantage) placed above it on the other show, is placed below it here. The older oxen, a very fine class, include several of the Birmingham cattle. Mr. Hatcher's massive ox, first at Birmingham, is placed third here, a decision which has been generally condemned. Mr. Shaw's ox is second, as formerly, and the 1st prize goes to an animal exhibited by Mr. Aldworth, of Abingdon.

In the Heifer Class a similar difference of judgment has existed. Mr. Urwick's beautiful heifer is indeed first of her class at both shows; but Mr. Baldwin's heifer, only commended at Bingley Hall, is placed second here. In the older class of cows, the 1st prize cow, shown by Mr. Wigmore at Bingley Hall, had been withdrawn, and Mr. Turner's 2d prize cow was accordingly here placed first.

Short-horns.—A short entry of younger oxen, and a very full entry of older oxen, made up together only an ordinary show. The prize ox of Mr. Swinnerton was absent, and the 1st prize in the older class thus went to Lord Howe's 2d prize one of Bingley Hall, bred by Mr. Langston, M.P. Lord Spencer took the 3d prize with the animal that took the 2d prize at Bingley Hall. On the whole the Short-horn classes are below the average; and we understand that when the cup for the best Ox in the yard had to be awarded not a single animal was drawn out for competition from either of the Short-horn classes, a circumstance which has probably never occurred at any previous show. The heifer and cow classes are both very fully represented; Mr. Eastwood's *Rosette* again taking the first prize in her class, and Mr. Tennant's *Rosa* taking the first prize as she did at Bingley Hall, in the heifer class. The Bingley Hall award of the cup to the best animal in all the cow classes was however here reversed—*Rosa* being preferred to *Rosette*. They were both described last week.

If the Short-horn breed has not been so thoroughly represented in its own classes, its influence in the cross bred class is the most remarkable feature in the exhibition. We have cross-bred Short-horns with Black Polled, Herefords, Aberdeen, Alderney, Long-horned, West Highland, Ayrshire, and Devons; and a magnificent set of butchers' beasts they are. As an illustration of the effect of a first cross, we might take Mr. Gibbs' (of Dunster) cross of the Short-horn and Alderney for an example. Although it receives no prize, it is a first rate, thickly fleshed, well made fat beast, as unlike the thin and scraggy Alderney, as its sire was unlike its dam.

The cross between the Devon and Short-horn again contains the best points of both. Mr. Overman's ox, firm to the hand, of great evenness and symmetry, carries the day over Mr. Stewart's enormous ox which carried everything before it at Birmingham, and takes not only the 1st prize in its class, but the Silver Cup for the best ox in the yard. Mr. Stewart's ox is 16 months older; and though wonderfully fine almost everywhere, certainly extraordinary in width of bosom and thickness of flesh forward and on the back, is not so good as he was in Birmingham either to appearance or to handle.

Of the other Cattle Classes it must suffice to say that the Sussex were the only other breed present in anything like adequate numbers. They made a very good show—not however of such sterling excellence as last year. In the Scotch polled breed, Mr. McCombie's black ox is placed first; Mr. Stewart's brindled ox, which was above it at Birmingham, being placed below it here.

The cattle show may in the main be characterised as good in its Devon Classes, excellent in most of the Hereford Classes, inferior in its Short-horn Classes, very good in its cross-bred Classes, and inferior elsewhere. Last year we remember the Hereford Classes were unusually weak, and the explanation lay in the death of several well-known patrons of the breed—and the consequent absence of Lord Berwick's name, and those of other distinguished men from the list of entries.

We have, however, this year hardly any but tenant farmers in the list, and yet these classes are unusually good, while the Short-horn classes, though several noble lords are exhibitors and prize takers, are undoubtedly this year below par.

The best bred animals of the race, however, fortunately do not compete in fat shows. We do not have animals from the herds of Colonel Towneley, Captain Gunter, or Mr. Booth; and perhaps the classes of fat oxen may owe some of their superiority to *too many* bulls being bred.

The original object of the Smithfield Club was to encourage the supply of the cattle market of Smithfield and other places with the cheapest and best meat. And it is, we believe, entirely consistent with that object that the prize for the best ox in the yard was this year given to a cross-bred animal. There is, we believe, no better plan of cheapening meat and providing it of good quality than employing a well bred Short-horn bull upon well selected cows of the common country breeds.

During the last 17 years the Cups for the best ox and cow in the yard have been given irrespective of breed. But 22 times it has been awarded to Short-horns, eight times to Herefords, twice to Devons, once to a polled Scot, and now for the third time only to a cross-bred animal.

It is probable that if the terms in which the object of the Club is declared had more stringently guided the awards, the cross-breds would have more frequently carried the day.

The Sheep Show is of fair average quality. The Leicester classes are well filled. Mr. Foljambe, of Osberton, takes many of the prizes, and among them the Silver Cup for the best pen in the long-woolled classes. Mr. Jordan competes in both the Leicester and Lincoln classes, somewhat to the dissatisfaction of his competitors in the latter. The Cotswolds are a short class. The Lincolns are but scantily represented. The Kentish sheep, which showed so well last year, are not represented at all.

The Southdowns are, as usual, a magnificent show. There is nothing, whether for its surface or its substance, whether for the beauty of symmetry or the quality of mutton, that can approach a Southdown. Lord Walsingham, who carried everything before him at Birmingham, and has never shown more beautiful specimens of the breed before, is here beaten by Mr. Rigden, who carries off the Cup for the best pen of short-woolled sheep. The Duke of Richmond, too, is successful in the older class.

The Wiltshire Downs, the Oxfordshire Downs, and the Shropshire sheep are not so well represented as they have been. The cross-bred sheep are a tolerably numerous and well filled class. The award of prizes will be found below.

The Pigs are less numerous than they have been—black and white compete with one another in the same classes, which are marked out by age alone. The black, somewhat coarse "Improved Hampshires," as exhibited by Mr. Baker, of Christchurch, have carried the day in some of the classes; and we have the improved Kent, Middlesex, Hampshire, Essex, Sussex, Suffolk, Berkshire, Leicester, and Oxford kinds, all represented. In no animal is there earlier precocity exhibited, or cheaper, better food provided for the markets of Smithfield and of other places.

The following is the Award of Prizes:—

CATTLE.

Class I. Devon Steers.—1st, 30l., W. Heath, of Ludham Hall, Norwich; Silver Medal to the breeder, J. Quartly, South Molton; 2d, 20l., F. Neale, of Pagham, Chichester; 3d, 10l., Major General The Hon. A. N. Hood, of Cumberland Lodge. Commended: J. Walter, M.P., and J. J. Farquharson, of Blandford.

Class II. Devon Oxen.—1st, 30l., W. Heath, of Ludham Hall; Silver Medal to the breeder, John Quartly; 2d, 20l., W. Smith, of 85, Southernhay, Exeter; 3d, 10l., F. Neale, of Pagham. Highly Commended: J. Buller, of Crediton. Commended: R. Gills, of Dunster; J. Tucker, of Taunton; and Class generally.

Class III. Devon Heifers.—1st, 25l., R. Farthing, North Petherton; Silver Medal to the breeder, S. Kidner, Taunton; 2d, 15l., W. Paull, of Piddletown, Dorchester, Dorset; 3d, 10l., J. Walter, M.P., of Bearwood, Wokingham.

Class IV. Devon Cows.—1st, 25l., W. Heath; Silver Medal to the breeder, G. Burden, Swimbridge, Barnstaple; 2d, 15l., F. Neale, of Pagham; 3d, 10l., W. Farthing, of Stowey Court, Bridgewater.

Class V. Hereford Steers.—1st, 30l., Major General the Hon. A. N. Hood; Silver Medal to the breeder, H.R.H. the Prince Consort; 2d, 20l., J. Phillips, of Ardington, Wantage; 3d, 10l., H. Betteridge, of East Hannay, Wantage.

Class VI. Hereford Oxen.—1st, 30l., W. Aldworth, of Frilford, Abingdon; Silver Medal to the breeder, M. Ockey, of Thruxton, Hereford; 2d, 20l., J. Shaw, of Hunsbury Hill, Northampton; 3d, 10l., J. Hatcher, of Marlwood Grange, Bristol. Highly Commended: J. Phillips, Wantage. Class highly commended.

Class VII. Hereford Heifers.—1st, 25l., E. Urwick, of Felton, Ludlow; Silver Medal to the breeder, E. Urwick; 2d, 15l., J. Baldwin, of Luddington, Stratford-on-Avon; 3d, 10l., withheld.

Class VIII. Hereford Cows.—1st, 25l., P. Turner, of The Leen, Pembridge, Leominster; Silver Medal to the breeder, P. Turner; 2d, 15l., J. Coate, of Hammoon, Blandford, Dorset; 3d, 10l., withheld.

Class IX. Short-horned Steers.—1st, 30l., the Duke of Beaufort, of Badminton; Silver Medal to the breeder, W. Butler, of Badminton; 2d, 20l., R. Craddock, of Petwick Farm, Farringdon; 3d, 10l., E. Frost, of West Wratting Hall, Linton, Cambridge.

Class X. Short-horned Oxen.—1st, 30l., The Earl Howe, of Copsall Hall, Atherstone; Silver Medal to the breeder, J. H. Langston, Chipping Norton, Oxford; 2d, 20l., R. Wortley, of Suffield, Aylsham, Norfolk; 3d, 10l., The Earl Spencer, of Althorp. Commended: Earl Radnor, C. Duffield, of Abingdon, J. Hurradine, of Ampthill.

Class XI. Short-horned Heifers.—1st, 25l., and Silver Cup for best cow in the yard, R. Tennant, of Scarcroft Lodge, Leeds; Silver Medal to the breeder, R. Tennant; 2d, 15l., J. Pain, of the Manor Farm, Crayford, Erith; 3d, 10l., R. Stratton, of Stapleton. Highly Commended: R. Sneyd, Newcastle. Commended: W. W. Champion, of Reading, and W. Smith, of Exeter.

Class XII. Short-horned Cows.—1st, 25l., R. Eastwood, of Swinshaw, Burnley; Silver Medal to the breeder, W. Wetherell, of Aldborough; 2d, 15l., R. Stratton, of Stapleton; 3d, 10l., Sir T. Whichcote, Bart., Aswarby, Lincoln.

Class XIII. Sussex Oxen.—1st, 25l., T. Child, of Slinfold, Horsham; Silver Medal to the breeder, T. Child; 2d, 15l., J. & A. Heasman, of Arundel; 3d, 10l., W. Hitting, of Westmeston Place, Hurstperpoint, Sussex. Commended: W. Aird and G. Jenner.

Class XIV. Sussex Heifers or Cows.—1st, 20l., E. Cane, of Berwick Court, Lewes; Silver Medal to the breeder, E. Cane; 2d, 15l., G. C. Coote, of Tortington, Arundel; 3d, 10l., J. Napper, of Lee Farm, Horsham.

Class XV. Norfolk Polled Steers.—1st, 15l., E. Beare, of Paston, North Walsham; Silver Medal to the breeder, E. Beare; 2d, 10l., M. Biddell, of Playford, near Ipswich.

Class XVI. Norfolk Cows.—No entry.

Class XVII. Long-horned Oxen.—1st, 10l., R. H. Chapman, of Upton, Nuneaton; Silver Medal to the breeder, R. H. Chapman.

Class XVIII. Long-horned Cows.—1st, 10l., J. H. Burbery, of The Chase, Kenilworth; Silver Medal to the Breeder, J. H. Burbery.

Class XIX. Scotch Horned Oxen.—1st, 20l., The Duke of Beaufort, Wales; 2d, 15l., W. Bedborn, of Prospect Hill Farm, Reading. Commended: C. Morrison, of [illegible] Farm.

Class XX. Scotch Horned Cows.—No entry.

Class XXI. Scotch Polled Oxen. 1st, 25l.—W. M'Combie, of Tillyfour; Silver Medal to the breeder, J. Collie; 2d, 15l., J. Stewart, of Aberdeen. Highly Commended: J. Longman, of Banff, and W. Heath, of Ludham Hall, Norwich.

Class XXII. Scotch Polled Cows.—1st, 15l., F. Wollaston, of Shenton Hall, Nuneaton; 2d, 10l., Charles Lyall, of Old Montrose, Forfar.

Class XXIII. Irish Oxen.—No entry.

Class XXIV. Irish Cows.—1st, 10l., Lord Berners, of Keythorpe Hall, Leicester.

Class XXV. Welsh Runts.—1st, 20l., B. E. Bennett, of Marston Trussell Hall, Rugby; Silver Medal to the breeder, O. Owens, of Braint, Menai Bridge; 2d, 10l., J. Francis, Manor Farm, Lamport, Northampton.

Class XXVI. Welsh Cows.—1st, 10l., withheld; A Prize of 5l., T. C. Daws, of Hurst Green, Sussex.

Class XXVII. Cross-bred Steers.—1st, 20l., S. Druce, of Eynsham, Oxford; Silver Medal to the breeder, the late S.

Druce, of Eynsham; 2d, 15*l*., R. Craddock, of Petwick Farm, Farringdon; 3d, 10*l*., J. Stewart, Aberdeen.

Class XXVIII. Cross Bred Oxen.—1st, 20*l*., and Silver Cup for best ox in the yard, J. Overman, of Burnham Sutton, Burnham Market, Norfolk; Silver Medal to the breeder, J. Overman; 2d, 15*l*., J. Stewart, Aberdeen; 3d, 10*l*., F. Neale, of Pagham, Chichester.

Class XXIX Cross-bred Heifers.—1st, 15*l*., J. Hunter, of Dipple, Fochabers; Silver Medal to the breeder, G. Milne, of Huddo, Aberdeen; 2d, 10*l*., J. Stewart, Aberdeen.

SHEEP.

Class XXX. Leicester Fat Wether, under 22 months.—1st, 20*l*., and Silver Cup for best Long-woolled sheep in the yard, G. S. Foljambe, of Osberton Hall, Worksop; Silver Medal to the breeder, G. S. Foljambe; 2d, 15*s*., G. Walmsley, of Rudston, Bridlington, York; 3d, 5*l*., F. Jordan, of Eastburn, Driffield, York. Highly Commended: Hon. Col. Lowther.

Class XXXI. Fat Wether under 22 months, not to exceed 220 lbs. live weight.—1st, 20*l*., the Hon. Col. Lowther, of Barleythorpe, Oakham; Silver Medal to breeder, the Hon. Col. Lowther; 2d, 15*l*., F. Jordan, of Eastburn, Driffield; 3d, 5*l*., C. J. Bradshaw, of Alstoe House, Burleigh-on-the-Hill, Oakham. Highly Commended: Lord Berners and L. Willmore. Commended: G. S. Foljambe.

Class XXXII. Cotswold Fat Wether, under 22 months.—1st, 20*l*., J. F. Mills, of Hill House, Burford; Silver Medal to the breeder, J. F. Mills; 2d, 15*l*., T. West, of Greenhill Farm, Bletchington; 3d, 5*l*., J. H. Elwes, of Colesborne Park, Cheltenham. Highly Commended: C. Kearsey.

Class XXXIII. Lincoln Fat Wether, under 22 months.—1st, 20*l*., F. Jordan, of Eastburn, Driffield; Silver Medal to the breeder, F. Jordan; 2d, 15*l*., withheld.

Class XXXIV. Romney Marsh or other Long-woolled breed, under 22 months.—No entry.

Class XXXV. Southdown Fat Wether, under 22 months.—1st, 20*l*., and Silver Cup for pen of best Short-woolled sheep in the yard, W. Rigden, of Hove, Brighton; Silver Medal to the breeder, W. Rigden; 2d, 10*l*., Lord Walsingham, of Merton Hall, Thetford; 3d, 5*l*., the Duke of Richmond, of Goodwood, Chichester. Highly Commended: late Sir R. G. Throckmorton. Commended: Messrs. Heasman, H. Penfold, and Earl Radnor.

Class XXXVI. Fat Wether, under 22 months, to exceed 200 lbs. live weight.—1st, 15*l*., W. Rigden, of Hove; Silver Medal to the breeder, W. Rigden; 2d, 10*l*., the Duke of Richmond; 3d, 5*l*., J. Kent, of Goodwood, Chichester. Highly Commended: Lord Walsingham and Sir R. G. Throckmorton. Commended: Sir T. B. Lennard.

Class XXXVII. Fat Wether, above 22 and under 34 months.—1st, 20*l*., the Duke of Richmond; Silver Medal to the breeder, the Duke of Richmond; 2d, 10*l*., Lord Walsingham; 3d, 5*l*., J. Overman, of Burnham Sutton. Highly Commended: J. Kent and Sir J. Throckmorton. Commended: Sir T. B. Lennard.

Hampshire Downs.

Class XXXVIII. Fat Wether, under 22 months.—1st, 20*l*, W. B. Canning, of Elston Hill, Devizes; Silver Medal to the breeder, W. B. Canning; 2d, 15*l*., W. King, of New Hayward, Hungerford; 3d, 5*l*., S. King, of Old Hayward Farm, Hungerford. Highly Commended: Messrs. T. Dodd, J. Russell. Commended: L. Lloyd.

Shropshires.

Class XXXIX. Fat Wether, under 22 months.—1st, 15*l*., E. Holland, M.P., of Dumbleton Hall, Evesham; Silver Medal to the breeder, E. Holland, M.P.; 2d, 5*l*. Lord Wenlock, of Burton Cottage, Much Wenlock. Highly Commended: Earl of Aylesford. Commended: G. A. May, of Tamworth.

Class XL. Fat Wether, above 22 and under 34 months.—1st, 15*l*., J. Coxon, of Freeford Farm, Lichfield; Silver Medal to the breeder, J. Coxon; 2d, 5*l*., the Earl of Dartmouth, of Patshull, Albrighton, Wolverhampton. Highly Commended: H. Smith.

Other Short-woolled.

Class XLI. Fat Wether, under 22 months.—1st, 20*l*., W. King, of New Hayward, Hungerford; Silver Medal to the breeder, W. King; 2d, 10*l*., J. P. King, of North Stoke, Wallingford.

Oxfordshire Downs.

Class XLII. Fat Wether, under 22 months.—1st, 15*l*., C. Howard, of Biddenham, Bedford; Silver Medal to the breeder, C. Howard; 2d, 10*l*., S. Druce, of Eynsham, Oxford; 3d, 5*l*., Z. W. Stilgoe, of Adderbury Grounds, Banbury, Oxford.

White-faced Mountain Breed.

Class XLIII. Fat Wether of any Age.—1st, 15*l*., J. Quartly, of Molland House, South Molton; Silver Medal to the breeder, J. Quartly; 2d, 10*l*., W. Smith, Exeter. Highly Commended: J. Tapp.

Black-faced Mountain Breed.

Class XLIV. Fat Wether of any Age.—1st, 15*l*., J. Peel, of Knowlmere Manor, Clitheroe; Silver Medal to the breeder, J. Garside, of Woodhead, Hadfield, Derbyshire.

Cross Breeds.

Class XLV. Long and Short-woolled Fat Wether, under 22 months.—1st, 20*l*., and Silver Cup, Z. W. Stilgoe, of Adderbury Grounds, Banbury; Silver Medal to the breeder, Z. W. Stilgoe; 2nd, 10*l*, J. Overman, of Burnham Sutton, Burnham Market; 3d, 5*l*., T. James, of Octagon House, Cople; Highly commended: G. Hine, of Oakley.

Class XLVI. Long and Short-woolled Fat Wether, under 22 months, not to exceed 220 lbs. live weight.—1st, 10*l*., J. Overman, of Burnham Sutton, Burnham Market; Silver Medal to the breeder, J. Overman; 2d, 5*l*., G. Hine, Junr., of Oakley.

PIGS.

Class XLVII. Pigs not exceeding 4 months old.—1st, 15*l*., J. Lynn, of Church Farm, Stroxton, Grantham; Silver Medal to the breeder, J. Lynn; 2d, 10*l*., W. A. Barber, Jun., of Sunninghill Wells, Sunninghill; 3d, 5*l*., T. De La Rue, The Hazels, Sandy, Beds; Highly Commended: M. Mills, G. B. Morland. Commended: J. Stuart.

Class XLVIII. Pigs above 4 and not exceeding 8 months old.—1st, 15*l*., W. M. Barber, of Sunninghill, Wells; Silver Medal to the breeder, W. M. Barber; 2d, 10*l*., J. Coate, of Hammoon, Blandford; 3d, 5*l*., G. B. Morland, of Chilton Farm, Steventon. Highly Commended: Sir T. B. Lennard. Commended: T. Crisp.

Class XLIX. Pigs above 8 and not exceeding 12 months old.—1st, 15*l*., C. Cattle, of Inkerson, Thorney; Silver Medal to the breeder, C. Cattle; 2d, 10*l*., Major-General the Hon. A. N. Hood; 3d, 5*l*., C. A. Barnes, of Charleywood House, Watford. Commended: Earl Spencer.

Class L. Pigs above 12 and under 18 months old.—1st, 15*l*., and Gold Medal for best Pigs in the yard, W. Baker, of Purewell House, Christchurch; Silver Medal to the breeder, W. Baker; 2d, 10*l*., Major-General the Hon. A. N. Hood; 3d, 5*l*., S. Druce, of Eynsham.

EXTRA STOCK.

Silver Medal and 5*l*. prize for the best Steer or Ox in Extra Stock, H. Frampton, Blandford.

Silver Medal and 5*l*. prize for the best Heifer or Cow in Extra Stock, W. Fletcher, Mansfield.

Silver Medal for the best Long-woolled Wether in Extra Stock, G. S. Foljambe. Highly Commended: G. Walmsley. Commended: F. Jordan.

Silver Medal for the best Long-woolled Ewe in Extra Stock, C. J. Bradshaw, Oakham. Highly Commended: G. S. Foljambe. Commended: J. Wigmore.

Silver Medal for the best Long-woolled Sheep (not Leicester) in Extra Stock, T. West, Bletchington. Highly Commended: C. Kearsey. Commended: M. Hart.

Silver Medal for the best Short-woolled Wether Sheep in Extra Stock, G. S. Foljambe. Highly Commended: Duke of Richmond. Commended: W. Rigden.

Silver Medal for the best Short-woolled Ewe in Extra Stock, Lord Walsingham. Commended: Earl of Radnor.

Silver Medal for the best Short-woolled Sheep (not Southdown) in Extra Stock, W. King. Highly Commended: S. Druce. Commended: S. King.

Silver Medal for the best Cross-bred Sheep in Extra Stock, J. White. Highly Commended: G. Hine. Commended: S. Treadwell.

Silver Medal for the best Pig in Extra Stock, T. Crisp. Highly Commended: W. Baker and S. G. Stearn. Commended: W. M. Barber.

JUDGES.

Cattle.—Charles Vevers, Captain J. T. Davy, Wm. Sanday.

Long-woolled Sheep and Pigs.—Robert Cresswell, Thomas Potter, Samuel Field.

Short woolled and Cross-bred Sheep.—George Harding, John Clayden, Wm. Humfrey.

The Implement Show.—Although no prize list attracts them, there is an extraordinary collection of first-rate agricultural machinery; and it is a great advantage to the spectator that a catalogue of them has been this year prepared and published.

Messrs. Tuxford, of Boston, show their well-known moveable steam engines.—The Busby Agricultural Implement Co. show ploughs, carts, horse-hoes, and chain-harrows.—Messrs. Smith, of Thrapstone, show steam-engines, haymakers, drills, chaff-cutters, and various crushing mills.—Messrs. Garrett show a large and extensive assortment of machines, steam-engines (moveable and fixed), threshing and dressing machines, corn-dressing machines, mill-stones, their well-known horse-hoes, Chambers's broadcast manure-distributor, drills, reapers and mowers, steam-cultivator and windlass, &c.

Messrs. Ferrabee, of Stroud, show steam engines, chaff cutters, and lawn mowers.—Messrs. Hornsby, of Grantham, show engines, drills, ploughs, Turnip cutters and pulpers, and washing machine.—Messrs. Tasker, of Andover, show threshing machines, steam cultivating apparatus, &c.—Mr. Foster, of Lincoln, shows steam engines and threshing machines.—Messrs. Burgess & Key show M'Cormick's sheaf-delivery reaper, their own swathe-delivery reaper, mowing machines, carts, and tools.—Mr. Fowler, of Leeds, shows his well-known steam ploughs and cultivators, and steam engines to work them.—Messrs. A. & E. Crosskill, of Beverley, show clod-crusher, carts, waggons, root washer, &c.—Messrs. Brown & Co., of 18, Cannon Street, show engines, lawn mowers, specimens of hurdles, netting, &c.—Mr. W. Ball, of Kettering, shows carts and ploughs, scarifiers and drags.—Messrs. Clayton & Shuttleworth, of Lincoln, show a great many steam engines, portable and fixed, threshing machines, &c.—Mr. Underhill, of Newport, Salop, shows threshing machine with patent corn elevator, and a variety of tools and models.—Messrs. Howard, of Bedford, show sets of steam-cultivating apparatus, ploughs, harrows, hay tedders, and horse rakes.—Messrs. Nalder, of Wantage, show threshing machines, noteworthy for its use of wooden elastic joints in place of movable ones in all cases of oscillating movement, and also for the simplicity and cheapness of its revolving corn screens. — Messrs. Aveling & Porter, of Rochester, show their well-known locomotive engines.—Messrs. Coleman, of Chelmsford, show steam cultivating engine, cultivator, and Potato diggers.—Messrs. Holmes, of Norwich, show threshing machines, drills, and corn dressers, &c.—The trustees of W. Crosskill, of Beverley, show reaping machines, clod crushers, &c.—Mr. Carter, of Swan Lane, Thames Street, shows carts, reapers, chaff cutters, &c.—Messrs. Ransomes, of Ipswich, have a very large exhibition of steam engines, corn screens, ploughs, horse rakes, reaping machines, steam cultivating apparatus, Turnip cutters, &c.—Mr. Cambridge, of Bristol, shows chain harrows, clod crushers, &c.—Messrs. Turner, of Ipswich, show corn crushers, oil-cake breakers, steam-engines, &c.—Messrs. Woods & Cocksedge, of Stowmarket, show carts, horse powers, pulpers, &c. — Messrs. Ashby, of Stamford, show chaff cutters, steam engines, hay tedders, horse rakes, &c.—Messrs. Brown & May, of Devizes, show steam engine.—Messrs. Barrett & Exall, of Reading, show theshing machines, steam engines, horse rakes, chaff cutters, &c. — Ruston, Proctor & Co., of Lincoln, a portable steam engine.—Mr. James, of Cheltenham, shows water carts, pumps, and washing machines.—Mr. Kirby, of 76, Cannon Street West; Mr. Humphries, of Pershore; Messrs. Robey & Co., of Lincoln; Messrs. Allchin, of Northampton; Gibbons, of Wantage, show steam engines and threshing machines.—Messrs. Hancock, of Tipton, Staffordshiae, show their pulverizer plough and butter machines. — Mr. Coultas, of Grantham, shows his excellent corn drills.

Messrs. Childs & Co., of 481, Oxford Street, show several American inventions; the rotary broadcast seed sower, an atmospheric churn, acting by a plunger, which is easily drawn upwards, but opens up in going down, and carries air down with it, making the whole contents of the box boil again.

Near this stand is one of the few magnificent stands of seeds and roots and corn and Grass in ear.—Messrs. T. Gibbs & Co., of Half Moon Street, Piccadilly, here exhibit a very fine collection.—Elsewhere Messrs. J. Gibbs & Co., 7, Down Street; Messrs. Sutton & Sons, of Reading; Messrs. Page & Toogood, of Southampton; Messrs. Carter & Co., of Holborn; Mr. Skirving, &c., have corresponding stands. Mr. Hallett, of Brighton, has also a stand with a splendid sheaf of his Pedigree Wheat.—Farther on Messrs. Barnard & Bishop, of Norwich, show Alger's digging machine and various other tools, root pulpers, &c.—Messrs. Dray & Co. show reapers, Turnip cutters, &c. — Mr. Boby, of Bury, shows his well known screen.—Mr. Cornes, of Barbridge, shows chaffcutters; Picksley, Sims & Co., of Leigh, show root pulpers and cutters, with open framework, to facilitate the passage of dirt, &c.—Messrs. Wedlake, of Hornchurch, show haymakers, &c.—Messrs. Amies & Barford, of Peterborough, show steaming apparatus, &c.—Mr. Smith, of Kettering, shows his excellent horse hoe.—Mr. Nicholson, of Newark, shows hay tedders, &c. —Mr. Samuelson, of Banbury, shows a great variety of implements, reapers, Turnip cutter, &c. Among them his "Eclipse" reaper, in which simplicity and consequent cheapness are obtained by getting the motion up through a single pair of wheels. Every oscillation of the cutter passes through two sets of the teeth, a half velocity of the cutter is thus as efficient as the full velocity needed in other machines.—Messrs. Priest & Woolnough, of Kingston, show drills, horse hoes, &c.—Messrs. Hunt & Pickering, of Leicester, show ploughs, corn crushers, &c.—Mr. Bentall, of Maldon, shows root-pulpers, chaff-cutters, and cake mills.—Messrs. Wallis & Haslam, of Basingstoke, show threshing-machines.—Carson & Toome, of Warminster, show Moody's Turnip-cutter, horse-hoes, cheese presses &c.—Mr. Spight, of Brigg, shows his well-known horse-hoe.—Messrs. Page & Co., of Bedford, show a great collection of tools, ploughs, harrows, chaff-cutters, &c. —Messrs. Richmond & Chandler, of Salford, show chaff-cutters, mills, &c.—Messrs. Reeves, of Bratton, show liquid manure drill, corn drills, &c. And besides these there is a large number of smaller stands of less important character.

The whole is an extraordinary illustration at once of the energy and skill and capital of our manufacturers, and of the enormous agricultural demand which they have to supply.

Outside the Show, in a livery stable close by, two French exhibitors, Messrs. de Nadat, showed their new horse-clipping machine, an exceedingly ingenious adaptation of the principle of the lawn mower to a new purpose—a small hand "lawn mower," in which the revolving cutter is provided with a projecting comb-like bed on which to cut, is worked by the hand against the hair or across the lie of the hair, and a rapid revolution is given to the cutter by a crank movement and fly wheel, worked by a man at a little distance, and the motion is communicated from the one man to the instrument in the hands of the other by a long and slender iron rod enclosed in a cage of wire, which acts on an elongated scale and throughout its length, much as a universal joint does at an angle. In this way the process of clipping may be most thoroughly and evenly performed over at least nine-tenths of the surface of the horse, leaving the scissors to its work in corners and places which it alone can touch. The work of clipping, which costs from 15*s*. to 25*s*., and is a full day's employment, is thus reduced to three or four hours. It seems an exceedingly efficient and ingenious contrivance.

Home Correspondence.

Irish Climate. Irish Cabins. English Ignorance.—Is it not rather a melancholy thing in this age of enlightenment to witness what we sometimes see in print coming from men who take it upon themselves to be public instructors? Were it not for the respectability of some of the papers in which we see the ridiculous nonsense, such as I now beg leave to call your attention to, together with the importance of the matters to which reference is made, it would be but some little source of amusement to read it. It is not many weeks since I saw in your Paper what not a little surprised me, coming as it did from a meeting composed of so respectable and intelligent a body as the London Farmers' Club, where a Mr. Waterton, in noticing a circular "Address of the Wool Supply Association of Bradford and Halifax," quotes the information given him by "an intelligent farmer resident in Yorkshire." His statement was that a Leicester flock taken by him to Ireland degenerated rapidly; and "in answer to the inquiry whether this might not be attributed to crosses, he assured me that both the ewes and tups of this degenerated flock were pure Leicesters. Emphatically he said their wool became no longer the covering as it were of sheep, but like that of the goat. I use his own language, not forgetting the physiological fact that the goat's covering is hair, whilst that of the sheep is wool." Now I would "emphatically" pronounce the statement in question to be a palpable untruth and a proof of downright ignorance of the soils and climate of Ireland. The informant was guilty of complete neglect in managing his "flock of pure Leicesters" in Ireland, if he ever had such in it, and I now challenge this Yorkshire breeder for his proofs in justification of this libel on the fertile soil and salubrious climate of Ireland.—The next libel to which I wish to advert is one reported as pronounced at the Faringdon Agricultural Library Annual Meeting, where Mr. Benyon said: "A few years ago a friend of mine visited his Irish estates, and he was so horrified to see the hovels in which the labourers dwelt in that country, that he at

resolved to change that state of things, so far as his own estate was concerned, and built a number of cottages on the most approved English pattern—but was the result? The Irishman as soon as he entered his new dwelling put a wisp of straw up the chimney, and lighted a fire in the middle of the floor, and rejoiced greatly in the smoke in which he was enveloped, and in which he had been brought up all his life, and which he said kept him warm." I have no hesitation in pronouncing that to be another libel on the character of my poor countrymen, and defy the party making the statement for proofs. But when saying so let me not be supposed as seeking to defend any man against any just charge that can be brought against him, any more than you would the garotters in the city of London. What the poor Irish are, bad Government and landlord absenteeism made them. But when I say this, let me in justice say that some of the best managed estates in Ireland are the estates of English proprietors. Yes, and managed by honest English land agents. As well might a waggish Connaught labourer when he returns from the harvest work in England be believed when saying that the ladies of Lincolnshire are "web-footed," as those unsuccessful speculators who cannot, because of their ignorance or stupidity, if nothing worse, succeed in Ireland even as sheep breeders or sheep feeders, some of whom I have met with, and in more parts of Ireland than one. Still those unsuccessful Englishmen in Ireland can no more be considered fair specimens of the English intelligent farmer than can the poor Irish labourer in the Fens be considered a faithful representative of Irishmen generally. But more ludicrous still would it be, though equally apposite, to compare a late writer in an English agricultural periodical to Dr. Lindley, or any other intelligent English botanist. The writer I allude to does just what Mr. Anderton does about the Leicester sheep, and what Mr. Benyon does regarding the Irish labourer—he gives a matter of hearsay, that some bumpkin or other sowed Oats and expected it to produce Rye, which it did not produce, but produced what was as little to be expected, Barley. Yet the letter which contained such nonsense, appeared in the organ of English corn growers and corn sellers. *Edward Carroll, Kilgreany, Clonegal.*

On Leases.—Your Correspondent B.'s arguments against leases are based on the hypothesis, that every landlord will lay out a sufficient sum on his farm in permanent improvements. That this is a duty attached to the possession of land few will question, but however much England may expect every man to do his duty, experience teaches us that her expectations are rarely fulfilled. The law of entail was for long the obstacle to the improvement of land, but the Drainage and Enclosure Act has now mitigated its evils, and removed that excuse from the landowners. As a mere investment, landlords could not do better than make these improvements, but either from indolence or short sightedness, they don't avail themselves of the opportunity. The fact is, that on nine farms out of 10 that are let, the landlord does not make the outlay that duty and policy alike demand. Farm agreements must be framed to meet things as they are, not as they might be. In cases where the landlord does all the permanent improvements, and provides a just tenant right to protect the offgoing tenants, he will find few objectors to year to year agreements. These, however, are exceptional cases, and B. should not upon such found arguments for general use. *W.* [In our report of an agricultural meeting at Cannock, Mr. Chawner is stated to have said that the Earl of Lichfield was giving a prize for the best farm agreement. Will he be good enough to say if this is a local prize, or open to all comers? If the latter, when, where, and under what conditions contested for?]

Anthyllis vulneraria.—I send you a sample of seeds, roots, plants, stalks, &c., of "Anthyllis vulneraria," raised by a farmer in this county, who is very sanguine as to its extra good qualities for sheep feed. He saw a small patch growing year after year, and observed the sheep always gathering together on this spot to eat it, which they are very fond of. "It is a very thick growing and productive plant upon sand and chalk; the flower is yellow. It is very productive on bare chalk; in fact, I think it grows more luxuriantly there than elsewhere. In 1861 I carried 3 tons per acre, and left it over for another crop, feeding it until the 2d of June, 1862, when I shut it up and mowed 2½ tons per acre for seed. The first week in September part of it seeded two years in succession without any manure. It is very kind for the Wheat plant afterwards. I sow 16 lbs. per acre with my Barley as you would other small seed." He has saved a quantity of seed. Would you kindly give your experience, or any of your many correspondents, on its qualities as an agricultural plant, and if, as my correspondent says, it does so well on sandy chalks, I see no use in hiding it under a bushel. Your attention will very much oblige *John Stewart.*

Australian Wheats.—"You were so kind as to send two small packages of Wheat which you had obtained from the Editor of the London *Agricultural Gazette.* These were samples of prize Wheat from Australia, and were named 'Victoria' and 'Australian.' I now beg to lay before you the result of the trial made with those seeds on the Munster Cork National School Farm, and also send you samples of grain and straw. The Australian prize Wheat weighed 68¼ lbs., and the Victoria 67 lbs. to the bushel. The number of grains sown of the former was 850, and of the latter 590. The seed was sown in drills 9½ inches asunder on the 22d of November, on a plot of ground which had previously given a heavy crop of Mangel Wurzel. The plot was hoed twice during the season. The Victoria Wheat brairded very thinly, and not more than half the seed vegetated. The Australian came up very evenly and healthy. The Victoria appeared in ear on May 29, an unusually early period here; the straw and leaves were much spotted and mildewed. The Australian at this date was free of any mildew, and did not appear in ear until more than a month later, viz., July 1, at which date red straw, white and Kissingland Wheats were also in ear. The Victoria Wheat at this time (July 1) was nearly destroyed by red rust. Both kinds were cut down on August 18, threshed and cleaned on November 20. The produce from the Victoria was small, and more than half the grain was shrivelled. The Australian gave a fair produce, and very few weak grains. The Wheats had the marked characters of the seed sown. The produce from the Victoria [having been destroyed as described] was at the rate of 1 barrel 3½ stone, or 5½ bushels to the statute acre. The Australian produced 4 barrels 16 stones, or 22 bushels to the statute acre. The weight per bushel was 61 lbs. The straw of the Australian is of good length, stiff and bright; the straw of the Victoria is short and weak. The Victoria Wheat will not, I fear, succeed in this climate, as its habit of coming into ear so early in the season is detrimental to it—the temperature at that time being very low. I have strong hopes of the Australian, as its yield even in this very unfavourable season when compared with hardy Wheats grown on this farm bears a favourable contrast. I have again sown the Australian and the Victoria alongside of Hallett's Pedigree Wheat, accurate details of which experiment I hope to be able to furnish next season. *D. Cunningham, Munster School Farm, Cork, Dec. 1.*" [Dr. Kirkpatrick, of the Albert Institution, Glasnevin, has been kind enough to send us the above.]

Societies.

ROYAL AGRICULTURAL OF ENGLAND.

General Meeting:—At the General Meeting held on Thursday morning under the Presidency of Viscount Eversley, the President of the Society, the following Report of the Council to the members was read:—

REPORT OF THE COUNCIL.

During the last seven months 23 governors and members have died, while 5 governors and 372 members have been elected; so that the list now comprises

80 Life Governors,
94 Annual Governors,
1239 Life Members,
3747 Annual Members,
17 Honorary Members:

making a total of 5177, being an increase of 351 since the last report.

The financies are in a satisfactory condition, as is shown by the balance sheet to 30th June last; since which time the Finance Committee have recommended the sale of 1000*l.* Stock, and have discharged all the claims against the Society submitted to them up to the last meeting. The funded property now stands at 16,488*l.* 17*s*, in the New Three per Cents.

The chemical investigations instituted by the Society are in a state of favourable progress in the Laboratory of Professor Voelcker, the Consulting Chemist to the Society, who is occupied in the experiments as to the most efficacious means of applying guano to the land, and also on the action of superphosphate of lime on different soils of known composition. During the past season he has been engaged in making field experiments on the Wheat and Mangel crops, the results of which will appear in a future volume of the Journal.

During the past summer a threatening disease known as the smallpox in sheep made its appearance in Wiltshire. The origin still remains in some doubt. Professor Simonds, the Veterinary Professor of the Society, proceeded to the spot, and deemed it prudent at once to order the isolation of the infected, and inoculation of the unaffected animals; thus preventing the extension of the disease in its ordinary or natural manner. The disease is now completely exterminated in Wilts, and exists in one flock only in Berkshire. The Professor delivered lectures on the subject at large meetings in Warminster and Salisbury, and attended several fairs in the county, with the view of preventing any diseased sheep being exposed for sale. This precautionary measure appears to have been wholly efficacious.

The Council have taken measures for obtaining a greater number of nominations from which to select the judges for the Country Meetings, and will esteem it a favour if the members of the Society at large will from time to time transmit to the Secretary the names of men, not only disinterested in themselves, but fully qualified by their abilities and experience for the arduous task confided to them.

The Metropolitan Meeting in Battersea Park has proved eminently successful in carrying out the objects of the Society, although the expenses incurred have entailed a heavy charge on its general funds. The interest attached to the exhibition of live stock on that occasion was increased by the numerous specimens of foreign stock sent over at great expense by the Dutch, French, Saxon, and Swiss Governments, as a token of friendly regard to the Society and the international character of the meeting.

The members were honoured by the gracious presence of his Royal Highness the Prince of Wales, with numerous other Royal and distinguished personages, who all expressed themselves highly gratified at the number of the stock, the variety of the breeds, and the high character which so large a proportion of the animals exhibited. The Highland and Agricultural Society of Scotland also held its annual show of stock within this Society's enclosure, and by their numerous entries greatly increased the magnificence of the display.

The attendance of governors and members of both Societies was unusually large, and this proves to the Council that the privilege of free admission to the showyard is highly valued, and though tending to diminish the receipts at the gate, is nevertheless largely conducive to its prosperity in an accession of members. The exhibition of the horses in the ring twice each day proved a most attractive feature, and means will be adopted in future to continue this portion of the show.

The exhibition of steam-cultivators at Farningham proved a source of great attraction, and though an item of considerable expense to the Society, the Council think they could not do otherwise than show to all the foreign nations assembled this year in London the result hitherto attained in the application of steam to the cultivation of the soil.

On the Sunday during which the stock was in the yard, divine service for the servants and men employed was performed by the Lord Bishop of Bath and Wells, assisted by a choir from the Training College at Battersea.

The collection of wool in the International Exhibition at South Kensington has been an object of great interest to all connected with this branch of animal products, and has been the means of making foreigners more intimately acquainted with the various descriptions which our country produces. Seventeen medals and eighteen honourable mentions were awarded to various exhibitors in the Society's stand, and the Council feel they have been justified in incurring the expense of exhibition by the notice and encouragement afforded to the exhibitors.

The implements for which prizes will be given in the ensuing year consist of fixed and portable steam engines, fixed and portable finishing machines, hand-dressing machines, and Barley hummellers; and as a period of five years will have elapsed since the trial of these classes of implements it is to be anticipated that many improvements will be exhibited at Worcester.

The Country Meeting next year will be held in the week commencing Monday, the 20th July, and the authorities of Worcester have already placed the land for the showyard under a due course of preparation by drainage and levelling.

By order of the Council,

H. Hall Dare, Secretary.

The adoption of the Report was moved by Mr. Sewell Read, who spoke with satisfaction of the additional privileges which had this year been granted to members. The Finance Committee gave in their report, which must be postponed till next week. A vote of thanks to the auditors was then moved by Capt. Davy, and seconded by Mr. Moore, and acknowledged by Mr. Corbet.

Mr. Moore then called attention to the Journal of the Society, demanding greater frequency and immediateness of publication. Mr. Davy spoke of the need of publishing with the prize list the list of those exhibitors to whom prizes had been awarded in the cow and heifer classes, who had not been able to take up the prizes owing to the animals not proving to be in calf. Mr. Arkell called attention at some length to the need of at least a quarterly publication of the Journal; and wished it declared in the prize list that no one must compete in any class of breeding stock unless his stock were strictly of the breed required. Mr. Corbet hoped that the General Meeting of the Society would never in future be later than Wednesday in the Smithfield week. Lord Berners moved, and Lord Walsingham seconded, a vote of thanks to the President, which Lord Eversley acknowledged, and the meeting, which had not lasted three quarters of an hour, separated.

Farmers' Clubs.

London: *Jan.* 8.—*Stock* versus *Corn.*—Mr. R. Smith, in proceeding to his lecture, stated that though but three words form the subject of the paper to be discussed this evening—"*Stock* versus *Corn*," what an immensity of interest and diversity of opinion are implied therein, embracing both the manufacture of meat and growth of corn, from a given space of land, upon an island containing about forty million acres, exposed to the varied winds of a northern climate! We have to deal with the subject not simply of Stock *v.* Corn, but of their suitability to the variableness of the climate. Thus, as the atmosphere is the vehicle of climate, so is climate the ruling power of agriculture.

Climate.—We have here a starting point for the discussion of our subject; the natural products of our island, as also those of foreign countries, more especially the Continent, giving an illustration of these truths. We find that the grain-producing plants are natives of a warm climate; Grasses peculiar to moist soils and countries, and Wheat and Barley requiring a high range of summer heat to bring them to perfection; while the Oat plant, of a more Grassy nature, thrives well, even better, at a lower temperature. Further, as the standard of heat is reduced through the summer months, so are the corresponding injurious effects to be seen at harvest time. These results are strictly applicable to English agriculture, but from the humid climate, they fall much more severely upon the corn crops. Again, Wheat is grown best on the hot dry continental plains, a fact substantiated by the heavy samples of grain produced in England when we have a dry hot summer. The mean summer temperature of the British Isles varies from 54 to 64 degrees. In Lombardy and Sicily, great Wheat-growing countries, the average temperature is 73° and 77°. I have spoken of dry soils and a high degree of temperature, as producing good corn. I now turn to the countries with a lower range of temperature—climates suitable to the growth of the common cereals, Grasses, and root crops. For an illustration of this we have only to turn to the products of Ireland. Its mild moist climate gives pasturage to the greenest hue, even all the year round; it is justly styled 'the Emerald Isle.' The physical circumstances which principally affect agriculture, are temperature, light, elevation, moisture, and soil. Hence it is that the plants and animals under the management of the husbandman do not altogether depend on his skill or choice, but on local situation. This influence of climate extends not only to the kinds of plants and animals to be reared, but also to the mode of rearing. Temperature may also be considered the principal regulator of the station of animals; it has likewise a remarkable influence on their clothing, as

also on the size and colour of animals. Nature has here drawn a dictating line, marking the thermometer at the starting point between the production of succulent crops for stock, and the culture of corn; in confirmation of which, we point to the natural products of the English counties.

I am induced to add a quotation from Mr. Whitley's admirable papers "On the Climate of the British Isles:" "The elements which constitute climate appear to be beyond man's control; he is comparatively powerless to mitigate its rigour, or to add to its generous influence." It appears from the preceding statements that England is unfortunately placed for the production of corn, while, on the other hand, she has no rival in the production of stock. Yet, under all the disadvantages, there is no country in the world where farmers are so respectable a class of men, and where such excellent corn, herbage, roots, and hay, either raw or in their manufactured state of bread, ale, and butchers' meat, are brought to the market.

Meat Production.—Formerly the English corn-grower could undersell the foreigner in the home markets, but it now happens that the foreigner can undersell him. Not so with the producer of stock; for in this branch the natural elements are in favour of Great Britain. There are better markets and less competition in this branch; meat is produced and marketed at a much less cost than corn; and there is less risk of capital in its production. Again, while corn is the most costly in transit, stock are ever found useful as vehicles of transit for the delivery of common farm produce, in the shape of meat, to better markets. Observation also shows that while the people of England are being daily supplied with foreign corn, the produce of warmer countries, the foreigner is aptly turning his attention in return to our unrivalled herds and flocks in our humid climate, and has sought them at many a homestead. Thus with this new feature before us—an increased rate of wages in the labour market—coupled with the other high payments that enter into the cost of producing corn under unfavourable elements, is it not time to re-adjust our systems in conformity with the altered state of our commerce, especially in this stock-producing and meat-condemning country?

Stock versus Corn.—We now turn to the practical bearing of our question. Is the production of stock in our variable climate, with a low range of temperature, a more certain pursuit for the employment of capital than the growth of corn? This is a plain practical question, but one which affects both the rural and political economy of the nation. It is the foundation of a commercial transaction—the manufacture of stock and corn from the raw materials upon a certain farm in a certain district. It is a well known fact, that while supply and demand regulate prices, the cost of production regulates profits. In this wise practical agriculture has to deal with statistics, with imports and exports, supply and demand, as also with all parochial and other payments that enter into the cost of producing a bushel of corn, or a stone of meat. There are of course, upon all farms, arable or pasture, certain fixed payments, such as rent, rates, and taxes. Shall we then encounter the manufacture of corn, with all its consequent appliances of horse, manual, and mechanical power, wear and tear, costly buildings, busy direction, and the ever changing elements, as the chief staple article of produce, to meet the fixed and additional outlays, with a view to better marginal profits? or shall we farm upon a less costly plan, adjusting the rotation of cropping, and all other matters upon the farm, so as to have more land under seeds, pasture, and root crops, for the production of stock? There is another important occupation—that of the grazier, whose farming outlay is of the simplest kind, his extras, beyond fixed payments, being few indeed; while he revels in his delightful and pastoral rides amongst his herds and flocks. But even this occupation is not without its losses and crosses; by murrain and other things. Apart from the subject of profit and loss, how different are the toils of the two classes of men? While the grazier with his pastoral pursuits has a delightful time of it, the arable farmer must rise early, enter upon all the toils and uncertainties of a farmer's life, and then leave the chances of profit upon his crops to the ever-changing elements; for as the wind rules the weather, so does the weather rule the harvest. Again, it has been truly said that farming, to be profitable, must be conducted upon commercial principles. "The object of farming," as stated by Gisborne, "is gain. Whether an agriculturist grows bread to strengthen man, wine to gladden his heart, oil to make him a cheerful countenance, or opium to poison him, he has but one concern—does the business pay?" This is the true commercial principle. With this view before us, we may briefly venture upon a few comparisons as to the plans and principles adopted upon different English farms. It is difficult to lay down fixed rules for farming; still a proper division of a farm into Grass and arable, and the latter into the proper rotation of cropping, are the foremost points to be decided upon. This decision may be materially aided by reference to the *fall of rain* peculiar to the district, as by its influence the growth and harvesting of crops will be chiefly governed.

Grass Land Cultivation.—As regards Grass, every-day practice has shown us that pasture and meadow lands are most in demand, and that their relative value bears no comparison to that of arable. The preeminent profits arising from well-managed grazing, supplemented by tillage land, induce the belief that if the more favoured parts of an arable farm were converted into permanent meadow and pasture, and the remaining or tillage part farmed under the alternate course of husbandry, the results would be far more profitable. Grass lands do not reduce the production of food, as some are induced to think; but, in addition to their own produce, they enable the adjoining arable lands to increase their production. The rage which sprang up for the conversion of old pasture land into tillage by tempting offers of additional rent has received a signal check. The low summer temperature of the last three seasons has so lessened the yield of tillage produce, especially corn, that it has even set our best men thinking how they can reduce their heavy barn-door payments. It was long since written. "As much as in you lies make *water meadows*, and save the costly barn-door toil." This is a valuable doctrine in the West—the land of springs and water meadows; but for general adaptation I would suggest that the two words written in italics be changed thus:—"As much as in you lies make *pasture* lands, so as to *reduce* the costly barn-door toil." Mr. Owen Willis's paper, on the improvement of pasture lands for summering stock, gave us these words:—"With a population rapidly increasing in numbers, and happily in material prosperity, the demand for meat has increased to a wonderful extent. It is necessary, therefore, to see in what way, and to what extent, the quantity of meat can be increased. It is, however, by the extension of our artificial Grasses, the improvement of our permanent pastures, and by calling to our aid the use of oil-cake, meal, and other food (to be consumed upon them), in conjunction with the Grasses, that we must look for the chief increase in the supply of meat during the summer months." Thus, if farmers were to deal with Grass as they have dealt and are dealing with corn, the production of stock, both young and old, would soon form a more important item in the returns of a farm.

Farmers even in bad climates not unfrequently adhere to the growth of corn, from the strong impression that the barn door gives a quicker return of capital. Let us briefly touch upon this matter. We will take for our purpose sheep *v.* corn upon the same Grass fields that were ordained to be broken up for Wheat in the autumn. In other words, we pit the produce of a flock of breeding ewes against a field of corn in a humid district. Without going into figures, it will be readily seen that produce arising from the ewes, in the shape of wool and lambs, will have been sold long before the Wheat is cut, and in these days of "lustre wool" mania will have left a certain and good return behind them in a given period, the outlays being about the same. If this be the case, the question as to quick returns is materially softened, if not disposed of, leaving the land improved, and the labour bills already paid. Not so with corn harvests, which linger long. The labourers have to be paid, the field is left in stubbles, and the corn sold when the stacks are dry. Innumerable instances in favour of stock might be adduced; but we must not run riot in this respect, as though all lands were suitable to remain in Grass; because we know full well that in practice such is not the case. With regard to the rotation of crops upon tillage land, these are as varied as the soils they inhabit. In fact, it would seem at first thought, that every district had its own, which to a great extent is true, to suit the local and other difficulties and facilities that surround them. The tillage lands upon a farm are often most varied, according to position and their substratum; still they may, for our purpose, be reduced to three classes, viz., the dry chalk and sandy soils; the clays; and the intermediate loams.

Of these, the dry lands are dependent upon sheep, to pave the way for subsequent corn crops. The clays are open to further improvement for the summer production of stock; and the loams to consideration as to how long they shall remain in artificial Grasses; to which must be added the inquiry as to how far the acreage of pasture and meadow lands can be extended to a profit. These remarks suggest the inquiry—Is it not worthy the serious consideration of farmers how far they can change their present course of husbandry in order to have a larger per centage of their farms under artificial Grasses, pasture, and green crops? Of the certain relief of this to the pocket, the plough, and the land, there seems no doubt; for as much good corn would be grown, the pile of wool and quantity of mutton would be increased, and a few young beasts bred upon the farm and run on for wintering, instead of our having them all to buy. Thousands of cultivators have applied themselves to the growth of corn, a task apparently insignificant, but of immense influence on the human race; but how far they have succeeded in "growing two blades of Grass where only one grew before" is a question not easily determined. My object, in the present instant, being to see how far we can increase the production of stock, especially sheep and young cattle, to a profit, I feel it necessary to allude to a few of the more common courses of cropping as practised at the present day—taking for illustration a farm of, say, 400 acres of arable land. I refrain from going into figures as to profit and loss on either side—stock or corn—as these would not only be tedious at a meeting of this kind, but would not convey data to work upon, beyond the results of a certain farm in a particular district.

ROTATIONS OF CROPS, AS PRACTISED UPON THE DRY AND INTERMEDIATE SOILS, NOT CLAY.

Rotations.	Cropping.	Acreage.		Total Acres.
Four-field course (viz., Turnips, seeds, Barley, and Wheat.)	roots	100	200	
	seeds	100		
	Barley	100	200	400
	Wheat ...	100		
Five-field course (Turnips, Barley, seeds, seeds, Wheat.)	roots	80	240	
	2 yrs. seeds.	160		
	Barley	80	160	400
	Wheat	80		
Six-field course (Turnips, Barley, seeds, seeds, Wheat, Oats.)	roots	$66\frac{2}{3}$	200	
	seeds	$133\frac{1}{3}$		
	Barley	$66\frac{2}{3}$	200	400
	Wheat	$66\frac{2}{3}$		
	Oats	$66\frac{2}{3}$		
Seven-field course (Turnips, Barley, seeds, seeds, seeds, Wheat, Oats.)	roots	$57\frac{1}{7}$	$228\frac{4}{7}$	
	3 yrs. seeds.	$171\frac{3}{7}$		
	Barley	$57\frac{1}{7}$	$171\frac{3}{7}$	400
	Wheat	$57\frac{1}{7}$		
	Oats	$57\frac{1}{7}$		

It will thus be seen that the four and six field rotations give the same amount of green crops and cereals, while the five and seven field courses give corresponding results, viz., about three-fifths in green crops and two-fifths in corn. No mention is here made of Beans or pulse crops, or of alternating them with seeds in every other course, or of cropping certain lands with Vetches, to precede root crops, the object in view being that of comparing the rotations in their simplest form. Still too much weight cannot well be given to the plan of growing green crops upon dry thin soils, to be fed off with sheep, that they may be well trampled and manured in the hurdles throughout the summer, nay throughout the year. In considering these rotations, I at once abandon the four and six-field courses as not being suitable to my views, their object being that of half corn and half green food. The seven-field course is best suited for resting the land and pocket outlays, especially upon poor land; but the third year's seeds are frequently unproductive, and in these cases have a tendency to foul the land. Of this lot, the five-field course is least objectionable; it has no drawbacks; while on the other hand its increased amount of summer food, by laying one year longer in seeds, favours the plough, rests the land, and gives additional scope for the production of stock. There are yet two other rotations, which I now supply together, to show the extreme range of cropping that may be practised in the production of stock or that of corn. At a former meeting of this Club, it will be remembered, a new five-field course of cropping was introduced. This was a rotation applicable to certain soils which had previously been highly farmed upon the four-course system. It ran thus:—

Rotation.	Cropping.	Average.		Total Acres.
Five-field course, for Corn growing (Turnips, Barley, seeds, Wheat, Barley) ..	roots	80	160	
	seeds	80		
	Wheat	80	240	400
	Barley	160		

The following plan I have adopted myself for the production of stock in the proportion of two-thirds in green crops, and one-third corn:

Rotation.	Cropping.	Average.		Total Acres.
Six-field course, for stock farming (Turnips, Rape & seeds without corn, seeds, seeds, Wheat, Oats or Barley)	roots	$66\frac{2}{3}$	$266\frac{2}{3}$	
	Rape and seeds	$66\frac{2}{3}$		
	seeds	$133\frac{1}{3}$		
	seeds			
	Wheat	$66\frac{2}{3}$	$133\frac{1}{3}$	400
	spring corn ..	$66\frac{2}{3}$		

Here, then, we have the two systems—stock versus corn; but note from whence they come: the one from the rich Midlands (Bedfordshire), the other from the West of England (North Devon). The one acts as a reducer of the "fatty matter" contained in highly cultivated lands, the other as a feeder in all that relates to improvement, be it stock, corn, or pocket. While it is admitted that Barley, after roots, with high farming is liable to be lodged, and the quality spoiled, and with it not unfrequently the young seed crop; it is equally worthy of note, that no land can well be too rich for the growth of succulent Grasses. However luxuriant these may be, they can at all times be overtaken by good grazing, and subsequently (when this luxuriant frolic is over) sown with Wheat and a succeeding spring-corn crop; and this to immense advantage, as the land cannot well be too rich for Wheat, and the Barley or Oat crop would be improved both in quantity and quality. In fact, each crop throughout the six-field course would be in itself far better in produce than when farmed in any other way; and such a course of cropping, while it increased the herd and flock, would at the same time reduce the labour bills. As I feel rather strongly in favour of this course of cropping, especially where land requires rest or permanent improvement, I must ask for your indulgence by way of explanation. First, by the plan of sowing the Grass seeds without a corn crop you are enabled to eat the Turnips upon the land during a longer and later period of the dry spring months. The earliest fields that have been fed off will be sown with Rape (Coleseed) and Grass seeds as early as the beginning of April. These will be ready to stock by Midsummer Day, and be succeeded by the after-sowings; so that a supply of rich feeding Grasses will come into use during the scarce hot months of July, and continue their vigour until October, then to be cleared for early eatage in the spring. These Grasses, from being sown upon rich Turnip land without

a corn crop, will remain good for many years, and are found to grow well even upon the dry sandy soils. Again, when subsequently sown with Wheat it is found to produce more money per acre than any other plan; and the Barley that succeeds the Wheat stands up better, and also yields a better return than when sown after a root crop. The two crops of corn are taken at the end of the rotation, instead of one at each end, the acreage being the same.

Cultivation of Clays.—The clay lands of England are most varied—so much so, that I refrain from laying before you any particular plans of cropping. Still they deserve to be mentioned, as amongst them is to be found pretty well the best corn-land in England. It is in the stock department that I am looking. It strikes me that much more feeding of stock might be carried out on the clay lands in summer than is done at present. This ought to be to the occupier of clay soils what the winter-feeding of roots is to the occupier of light soils. In these days dead fallows ought to be rare, and no doubt will, as steam cultivation becomes more general. On one part of the land, say the foulest, that will require a July fallow upon it, Rye-grass and Clover might be sown, and broken up at the latter end of June or early in July; the other part with a succession of Tares, to be followed by Coleseed. It is by no means clear that a great advantage is derived by growing a large breadth of roots upon clay land, the expense of carting them off and the injury done to the land being such heavy items. The object of growing roots is to improve the land; it cannot, therefore, be right to grow a heavy crop of roots, and then draw them all off the land. Would it not be better to turn attention to more summer feeding upon the land, and leave only the more suitable parts of the land for roots where a portion of them might be fed upon the land? There are large clay farms where very little provision is made for summer grazing, corn being all the fashion, and their only dependence being that of the barn-door. This state of things cannot be right. It would be well if such occupiers were to turn their thoughts to the production and feeding of more stock; placing less dependence upon the growth of corn. It is summer food that it is wanted; no farmer can increase his stock without it. The summer process of meat manufacture once commenced, there is a promise of fertility to the soil. The more green crops, the more meat, and the more manure. There is no cheaper way of supplying the soil with this latter material, which is to feed the crops, than by keeping plenty of stock, and feeding them well during the summer season.

My great object being that of laying practical information before you, I have used the occasion for eliciting the opinions of several gentlemen in different parts of the country, and which shall be given as briefly as possible—a sort of supplement to my paper. I commence with the Land's End, the county of CORNWALL:—

"In this county," my correspondent writes, "stock pays better than corn. Men who have farmed grass-lands are comparatively wealthy; while the tillage farmers are poor, and their farms in a like predicament. Where good pasture land has been turned into arable, it is uniformly reduced in value; while the arable land that has been made into pasture has doubled its rental. In the case of poor arable farms, the percentage on the outlay for buildings represents the chief of the rental: if in pasture, this would be mainly saved. Our course of cropping has materially improved the old Cornish system, which ran thus: 'Burn beat, till Wheat, till Barley, till Oats, cut me twice to Clover, let me run to Vuz agen.'"

Another friend, near Bodmin, says:—

"The rental of the arable land in this county (Cornwall) is about one-half that of the pasture. My course of cropping is roots, Barley, seeds, Rape, Wheat. This rotation gives us plenty of stock, especially sheep, our best friends."

DEVONSHIRE.—"This county has two sorts of land and climate—north and south; but in both, pasture land predominates. These are great stock-growing districts, especially Devon cattle; but little return is made from corn. On the best red land soils, corn and stock together pay best for farming. This is the sort of occupation, the rent has but little to do with it, especially where there are good water meadows."

SOMERSET.—"This is chiefly a grazing county; but excellent corn is grown. The rent is mostly made up from stock and dairy produce. The latter pays best, and no mistake. We like plenty of cheese and stock, and labour is too high for corn growing."

WILTS.—"If we did not keep a heavy stock of sheep on our light soils, we could not pay our rent—a man who plants too much corn cuts a bad figure now-a-days. The five-field course is best on the light soils; but the four-field is mostly adopted on stock farms."

NORTH WILTS.—"The arable and pasture lands are about equal. Stock has been considerably increased during the last 10 years. Beans and Wheat are grown on the strong lands. The more stock, the more corn. Breeding everything pays best. Plenty to sell, and nothing to buy."

HAMPSHIRE.—"With our chalk subsoil and light arable lands, there is nothing like wool and mutton; and our county breed has both. Our fat lamb trade in the south brings in an early and profitable return. Barley in the north and Wheat in the south do best. The four-field course on the heavy soils, and five-field on the light, are the usual customs. Our Sainfoin and Water meadows are the things for sheep. They have golden feet."

SUFFOLK.—"Corn chief production, on four-course system. Sheep pay best."

KENT.—"A great deal of corn is grown, especially to the east. A seven-field course of cropping is adopted—Turnips, Barley, Beans or Peas, Wheat, seeds, Wheat, Oats or Barley. A great deal of stock is kept on the marsh lands. The stock farmers have had the best of it lately. The Weald of Kent is in a backward state of farming."

SUSSEX.—"Southdown sheep extend on the Downs for 50 miles from east to west. Sheep pay best. A good many cattle are reared; but, when bought in for feeding, they don't pay for what they eat. A heavy charge is placed upon the manure heap; but we must have good manure. Large quantities of corn are grown. The soil is so various that the cropping is the same."

COTSWOLD HILLS.—"The five-field course is adopted. It is best for sheep, viz., Vetches and roots, Barley, seeds, Wheat. About one-eighth of the arable is in Sainfoin. We like stock and corn; then make each other pay. No man can grow corn without plenty of sheep and green crops. This done, corn will be sure to follow."

LINCOLN HEATH.—"Stock pay best, especially sheep at the present time; but we get on the wrong side in fattening bullocks to make manure; the breeders get all the profit. Lamb hogs, at 14 months old, weighing from 20 to 25 lbs. per quarter, and clipping from 12 to 14 lbs. of 'lustre wool' at 50s. per tod, will take a deal of beating; and the more cake and Peas they eat on the Turnip land the better it pays. Barley at 1s. a stone and Wheat at 45s. per quarter, will be a long way behind the sheep in profits. We farm on the old four-course system; bones for Turnips, and farmyard manure; keep plenty of stock, and feed them well; the rent and outgoings are the same if you farm badly."

NOTTS.—"The light sand lands to the north are well farmed; but they could do nothing without their sheep, and these are good, and make a considerable return in the spring from Turnips. Then follows the usual four-course system. One year's seeds is quite enough on the sands. There is but little Grass land, which is a sad drawback to the farmers. I think a farm should be at least one-third Grass; then a man could breed everything, and have lots to sell. I have no opinion of bought steers for fattening in the winter; they never pay."

VALE OF EVESHAM.—"You ask me what I think of your subject, 'Stock v. Corn:' I would rather write it 'Stock and Corn.' This is an arable county, and corn the mainstay. We seek to combine, therewith, the greatest quantity of sheep we can; by producing wool and mutton we are sure to increase our corn. The course of cropping varies with the soil. On the good clays we take roots, Wheat, Clover, Wheat, Beans, Wheat; in fact, half our land is Wheat; but this could not be carried on without plenty of sheep and cattle. After all, I rely most upon stock for making a certain return, especially sheep; their pile of wool forms a useful item at clip day, and no stock sold!"

HEREFORD.—"A considerable portion of this county around Ross is of the light red sandstone character—capital Turnip and Barley land; at least three-quarters under the plough. Corn pays well, but with it comes also a good return from stock. The neighbourhood of Hereford is about half corn and half pasture land: on the clays there is about two-thirds Grass. Stock pays best. The 6-field course is best for the clays, and the 4-field for the light land."

LEICESTER.—"This is a noted Grass land county; about three-fifths are in pasture. The land being good, a mixture of arable and Grass pays best. A man can then keep a dairy, breed his own cattle and sheep, and get along comfortably. I don't like too much of one thing, especially those dear labourers; they have got up wonderful in price, and we don't get the best men neither, they go somewhere else. I like the dairy and plenty of sheep. Mangels are on the increase; they come in capital about April; we don't mind the late springs so much now."

BEDFORD.—"There is a great difference in the farming of Bedfordshire; some is first-rate, while others are too fond of the plough. So much has this been the case, that a very great deal of Grass land has been broken up, that with decent management might have been turned to a better account. In these times, with free importations, if a man depends too much upon the 'barn door' for everything, he will find farming but a very sorry concern. The great object with the English farmer must be stock: he can beat the world in this particular; and the more stock he keeps, of course the more corn he will grow. I find those men who have made farming a successful occupation have been large breeders of stock."

WORCESTER.—"As a rule I have no hesitation in saying that stock will pay better than corn; but I must except arable lands of the first quality. Inferior clays are ruinous under the plough. These should be got into pasture; to encourage this, I give the tenants the Grass seeds, and one coat of manure, with the understanding that the land is not again to be broken up. The inferior clays do not readily lay down to pasture, but they are naturally adapted for it, and after a time make very good Grass land. Of course I am speaking of land that has been efficiently drained. When I first knew this estate, the proportion of arable land to Grass, upon the clays, was about two-thirds arable and one-third Grass; it is now very nearly reversed. The labour, both horse and manual, is very much reduced, the stock much increased, and I think not much less corn grown, as the best of the arable is still kept under the plough, and being done better, of course produces more. In the case of soils where roots can be fed off upon them, there is no doubt that a much larger return may be made from them than when under pasture. On the clays a five-field course of cropping is adopted—fallow, Wheat, seeds, Beans, Wheat; and on the light lands, the four-course system."

Although I fear I am detaining you at too great a length, I am still desirous of concluding these extracts (from the counties) with a second edition from Cornwall, and the more so, as it is from a substantial man, who migrated from the county of Bedford: "I have been in this neighbourhood (Tavistock) near 11 years. My farm consists of about 600 acres, 270 of which were arable, and the rest good pasture land. It was thought by the Duke of late Bedford that if the up-country system of farming was thoroughly carried out, it would be more productive and also more remunerative. He had erected a first-rate covered homestead for the purpose. I farmed it on the four-course system, and used to feed about 100 fat pigs every year, weighing, upon an average, say 25 stones each; fat 120 beasts in the stalls, and 12 to 14 horses, which were highly fed. All their food was steamed, &c. You may imagine the manure was first-rate. My root crops were excellent. Three-fourths of them were consumed on the land with oilcake or corn. The Clover was generally good, and always grazed with sheep, and in the autumn ploughed down for Wheat; and after the management, you would naturally expect a good crop. A month before harvest it would be laid at 4 to 5 qrs. per acre, but 2½ was about my average. I once grew 4 qrs. and 2 bushels; that was in the dry summer. I went on with this for two courses, and at length came to the conclusion to let Nature have its own course—*i.e.*, to let Grass grow. I have now seeded down the whole of my farm, with the exception of two fields which were formerly common or heath land. Some few of the pastures have been down four or five years, and can scarcely be known from old pasture. But this is costly work. None of the land contains lime; and without it we cannot fatten a beast or sheep. The cost per acre for a good dressing of lime is 5*l*. This will last from seven to ten years. The effect is astonishing. Grazing will pay; but tilling the soil will soon make an empty pocket. This is a breeding and rearing district; it is therefore necessary to grow some roots and straw, even if it is procured at a loss."

The result of my own observation leads me to the conclusion that more attention is due to the influence of climate upon the products of our farms; that more weight should be given to the improvement and extension of meadow and pasture lands; that the growth of artificial Grasses may be extended to advantage; that the summer grazing of stock, especially upon clay soils, may be more efficiently carried out; that more sheep and young cattle may be bred and fed; and, as a consequence resulting from these changes, that a more certain and better return will be made from the amount of capital employed.

Reviews.

Lois-Weedon Husbandry as it is. 3d Edition. J. Ridgway, 169, Piccadilly.

While agriculturists are advised by one party to lay down tillage land to Grass in order to increase their growth of meat, and by another to maintain such a rotation of crops as shall produce an increased quantity of meat, and by consequence of manure, so that thereby an increased yield of grain may be forthcoming, it is worth while to remind them that at Lois-Weedon the sixteenth crop in succession of Wheat has been this autumn harvested off the clayey globe of the Rev. S. Smith.

Here with no help of live stock and with no manure, by tillage merely, and by the consequently increased use of the atmospheric fertilising agencies annually for 16 years, have good crops of Wheat been grown on land which is naturally a calcareous clay, not of superior quality.

The following is Mr. Smith's Preface to his new edition:—

"For the sake of agricultural visitors to Lois Weedon who look for the Rye-Grass and Lucerne and Cabbages and Swedes and Beans of the two former editions, it has been thought better to confine this third edition to Lois Weedon Husbandry, as it is.

"It has been thought better, too, to merge in the present work all that the writer has to say about Wheat. For, such has been the astonishing progress in farming within the last few years, that 'A Word in season; or, How to grow Wheat with profit,' is a title out of date; few farmers now complaining that Wheat is otherwise than a paying crop.

"If it be asked why there is nothing said now of Rye-grass and Lucerne and Cabbages and Swedes and Beans,—the answer is a very simple one,—that the writer has done with them; he does not want them; and that, Wheat excepted, he now grows nothing but a sufficiency of the food best suited for his stock. Wheat he will always grow upon the same acres of clay land, unmanured, with the same tillage, on the same principles,—for the sake of testing those principles to the end.

"The Wheat crop for 1862 was the sixteenth consecutive crop from the same superficial acre of clay land without a grain of manure! and this last crop on the whole was as good as the first; as good nearly in quantity, and in quality better.

"There is no reason, either from theory or practice, to look for any thing but similar success for the time to come. Fulfil the conditions on clay land or heavy loam, or any soil supplied from within (other soils must be supplied from without) with a due amount of mineral food to support the plant, and success is certain; just as failure is certain if you swerve from the practice and evade the terms.

"The writer never knew an instance of failure on clay soil or heavy loam, where the conditions had been strictly fulfilled. One noted instance of failure recorded in the Society's Journal he would gladly forget; but it has been forced on his attention lately in such a manner as to demand a passing observation. A young farmer from a distance, bent on trying the plan, came this summer to see the Wheat crop, and the mode of tillage; and was confirmed in his intention by what he saw. 'I shall try it certainly,' he said: 'Sir, hundreds have been prevented trying it by that paper in the Journal.' And yet in that noted and recorded instance in the Journal not one single condition of the plan was carried out.

"But it may still be asked: 'Granted on certain soils and on certain conditions, success to be certain, what then? The farmer grows Wheat, and he, too, succeeds: why, then, persist in a new plan when it profits as well on the old?' To this it can only be replied, that success is comparative. The farmer who with Wheat at 60s. per quarter nets a profit of 3*l*. per acre, is doubtless doing well. But if by the new plan proposed, with Wheat at only 40s. per quarter, he can net a full profit of 4*l*. per acre, he is clearly doing better. Add to this, the condition in which the stiff clay land is left—if left it be—from 12 to 20 inches deep of friable, mellow tilth, fit, with manure, to bear the very heaviest crops of every description; add, besides, those clean, annual fallow intervals, ready for the seed; and there will no longer be any surprise that the writer accedes to the publisher's call, and sends forth a new edition, corrected and condensed, of 'Lois Weedon Husbandry, as it is at this moment.'"

Farm Memoranda.

COLLEGE FARM: *Cirencester.*—The weather during the month of November was very favourable; the land became comparatively dry and healthy before the

rather severe frost, which, commencing on the 22nd lasted until the 27th. The root crop was therefore not injured, and the land that had lately been smashed up by steam was well frosted. In the early part of the month we had less severe frost, which proved beneficial to the late ploughed Wheat land, enabling us to put in all our lea Wheat in very fair order. We have planted 56 acres this month, which, with 30 acres in October, includes all our Clover Wheat and 12 acres after Peas. When planting late we find it necessary to drill close up to the harrows each day, as if land were worked down and rain came, we might not get it dry enough to drill at all until the spring. Thanks to the frost and dry weather, one turn with the drags and two turns with the heavy harrows prepared the surface sufficiently for the drill; we planted 2 bushels per acre of Biddle's Imperial Wheat in rows, 9 inches apart. On the Pea land the stubble was lightly pared with Howard's broadshare, attached to a common plough, about 2 inches deep, soon after harvest, and left in this state until the beginning of the month. The surface having become rather weedy, and the ridges requiring to be levelled, the Staffordshire harrows were employed at right angles, followed by two ordinary harrows, and the Wheat drilled. The soil being rather light, the advantage of this plan was the very fine seed bed on which the seed was deposited, and into which the roots of the Wheat would penetrate. As Mr. Wilkins in his second letter challenges me to state when and where we tried dibbling, I reply—in 1856, in a field marked No. 6 on the College Map, and in 1859 in a field No. 9. The quantity of seed was about 2 pecks per acre. In both cases the result was a comparative failure, viz., shrivelled, blighted grain, and straw much damaged by mildew. In taking leave of this subject, which I feel should not occupy more of your valuable space, I have one or two remarks to make. Mr. Wilkins began by misquoting what I wrote, and continues to do so. I am fully aware of the importance of sowing Barley early, but on a sheep farm like ours I know it to be practically impossible to clear off all the roots and get all the land ploughed and sown early in the season. My neighbours consider that it is good work if Barley sowing can be finished by May 1st. This year was unusually late, owing to the abundance of roots and the very wet spring, and in many instances crops were unavoidably planted several days later than the one in question.

The Wheat that was planted after roots early in February, at the rate of 2½ bushels per acre, so far from looking yellow and unhealthy, as Mr. Wilkins persists in stating, was one of the best fields on the farm, and yielded 10 sacks (40 bushels) per acre. Lastly, if Mr. Wilkins will pay us a visit at any time, I shall be very pleased to show him the farm; and when he has seen the nature of the land and experienced our climate, I feel assured he will no longer recommend us to dibble 1 or 2 pecks of seed per acre. The steam plough has been at work whenever weather permitted, smashing up the stubble land, which will soon be all finished. Horses have been employed hauling out manure on stubbles and seeds, ploughing headlands of stubble fields, and lately in "raftering" Sainfoin lea, for paring and burning next spring.

Sheep.—During the past month the fatting sheep have been consuming cut Swedes. Hay chaff and a mixture of nut meal and old Beans of 1860 (an inferior sample both as to weight and quality), ¼ lb. of the former and ½ pint of the latter daily. Nut meal is comparatively a new feeding article, the produce of the Palm oil manufacture, and from the large per centage of oil—from 20 to 24 per cent. remaining in the meal—possesses very high feeding properties. We have found it to answer excellently for feeding sheep, either alone or mixed with equal quantities of Beans or Peas, and believe it to be a cheaper food than Linseed cake. We obtain it from Messrs. A. Smith & Co., of Kent Street Oil Mills, Liverpool, who are, we believe, the only makers. The present price is 6*l*. a ton at Liverpool, sold in bags of 2 cwt. each. Last year, being short of hay, we supplied the young ewes with ½ lb. of nut meal daily, and straw and hay chaff, and a very moderate supply of roots. On such food they throve excellently, and we had a fall of very healthy lambs. Later on in the season we shall increase the nut meal to ½ lb. daily. During lambing if ewes were deficient in milk this meal might be used with advantage, as it has a very marked effect upon milk.

Our fatting cattle are thriving well upon 2 lbs. of nut meal and 2 lbs. of Barley meal, 50 lbs. of pulped Swedes and chaff, composed of ¼ hay and ¾ straw, daily. We do not steam the food, but mix it up twice a week in large quantities, and find it keeps perfectly. *John Coleman, Dec.* 8.

Miscellaneous.

Cirencester.—On Saturday last, Dec. 6th, 1862, a dinner was given to Prof. Brown, by a large party of the professors and students of the College, at which there was presented to him a magnificent clock and a purse of gold for the purchase of a microscope, which had been subscribed for 61 students and the professors. The proceedings were marked by expressions of deep reverence for the College, and respect for its professor, all personal matters being carefully avoided. The clock, which was very handsome, bore the following inscription:—

"Presented to Prof. Brown by the Professors and Students of the Royal Agricultural College, a token of their esteem and appreciation of his long and valuable services to the Institution."

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Dec. 10, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	4	29.79	46	45	S.E.	1	7	49	43	64*	40	0.10	43½	44
Friday ..	5	30.02	46	46	S.	1	4	50	44	52	40	0.02	44½	44½
Saturday ..	6	29.98	54	52	S.	3	8	55	45	55	42	0.10	45½	45
Sunday	7	30.05	49	48	S.W.	2	2	56	45	56	41	0.25	47	45½
Monday....	8	30.09	40	38	W.	3	1	56	38	68	35	0. 6	47	46
Tuesday ..	9	30.15	42	40	S.W.	2	6	45	38	68	33	..	46	46½
Wednesday	10	29.74	51	49	W.	3	2	53	41	55	40	0.27	45½	46

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Calendar of Operations.

DECEMBER.

Wester Ross: *December* 1.—Never had we greater need of the assistance of steam power to turn over our unturned ground than we now have. It is yet only a month since the last of our crop was brought to the stackyard, and since then we have been busy sowing some 50 acres of Wheat, which are now completed in excellent condition. But nearly the whole of our green crop lot, somewhere about 90 acres, remains to be ploughed, and this, with the short days and etceteras, will occupy five pairs of horses for about a month of fresh weather. And when may this fresh weather be had? Already we have had a good fall of snow, with frost so intense, that the ploughs were completely arrested for several days, and to-day the soil is again sealed up. True, we have greatly less reason to complain than some of our neighbours, who have not yet cut all their crop, and whose stooks remain almost hopelessly exposed to the deteriorating effects of the weather, and to the ravages of every living creature. Of the outstanding crops there is no prospect of their immediate ingathering, the weather having become so damp and unsettled. Neither are the crops we have secured proving very satisfactory. The best of our Wheat is falling far short of a full crop, whilst the yield of the rusted and mildewed crops is so deficient and so inferior that did we name it we would scarcely be credited; and confident we are that this failure arises neither from the want of good husbandry nor from the lack of regular seeding, as one of your correspondents would have us believe; for strange though it may appear, it has been very much the case that the crops growing on the richest and best cultivated soils, and where the seed was unexceptionably sown, were most affected and useless. It would be no difficult matter to find an acre of well-cultivated land that yielded less than 1 quarter of trash that is not worth the name of Wheat. Barley also is threshing out unsatisfactorily, and the weight is deficient. The yield will be little more than the half of a full crop, and the weight is nearly invariably under 54 lbs. per bushel. Oats, however, thresh out well, and are greatly the more profitable crop. The earlier sown Turnips are of good size, but are partially deteriorated by running to seed; the later sown Turnips have been too early arrested by the severities of winter, and consequently, have fallen far short of their previous promise. Our cattle, generally, have been affected by murrain, which, though not deadly, so affected their mouths and feet that, for some days, they could not well eat nor walk. Otherwise both cattle and sheep are doing well.

Notices to Correspondents.

Cattle Foods: Next week.

Irrigation: *Henry.* Look in the agricultural journals about the time of the Salisbury meeting, July 1857, and you will find a good deal of information. Our own Paper contained reports of lectures by Mr. Squarrey and others about that time on the subject. You may also find what Arthur Young says of the subject in the new Edition of the Farmers' Calendar (Routledge). You may commence irrigation as soon as you like now. Only the meadows are useless as pasture during the intervals of the process.

Strong Loam: *J W.* If you apply to Mr. Cuthill, Denmark Hill, London, S., he can, we believe, supply you with a pamphlet on London Market Gardening which will help you.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. Humbert, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised on loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

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The Company advances money, unlimited in amount, for the following works of Agricultural Improvement, the whole outlay and expenses in all cases being liquidated by a rent charge for 25 years.

1. Drainage, Irrigation and Warping, Embanking, Inclosing, Clearing, Reclamation, Planting, for any beneficial purpose, Engines or Machinery for Drainage or Irrigation.
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4. The erection of Farm Houses, Labourers' Cottages, and other Buildings required for Farm purposes, and the improvement of and additions to Farm Houses and other buildings for farm purposes.

Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.

No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.

For further information, and for forms of application, apply to the Honourable William Napier, Managing Director, 2, Old Palace Yard, Westminster, S.W.

Advertisement.

To the Editor of the "Agricultural Gazette."

Sir,—My heavy land Wheat after Beans, cultivated and drilled at one operation at a cost of 6*s*. per acre, without any previous or after operation of any kind, is now up, and although the quantity of seed used was only 1 bushel per acre, it is now clear that had I have planted more the addition would have been wasted, if indeed it would not have damaged the crop. I never saw a seed bed to equal it, or a plant come up so thick, strong, and well, in proportion to the quantity of seed sown. It is open to the inspection of all.

I am, Sir, your obedient servant,
William Smith.

Woolston, Bletchley Station, Bucks.

Advertisement.

To the Editor of the "Agricultural Gazette."

Sir,—I have this morning (unsolicited and unexpectedly) received the following substantial evidence of the efficiency and durability of my Steam Cultivating Implements and Tackle. Let me remind you that this is "The Lost Sheep," the same Implements and Tackle with which Mr. Pike of Stevington worked his Heavy Clay Farm from May, 1858, to the Spring of 1861.—Your obedient Servant,

William Smith.

Woolston, Bletchley Station, Bucks, Dec. 4, 1862.

Manthorpe Lodge, Grantham, Dec. 3, 1862.

Dear Sir,—I had the pleasure of reporting to you that I, in the year 1861, cultivated 751 Acres in 133 days with your unequalled and most effective Steam Cultivating Apparatus. I now have the additional satisfaction of presenting you with a detailed account of my operations at Danton Lodge, near Biggleswade, with the same Ten-Horse Engine and Apparatus in 1862, which confirms my former report in a remarkable manner, showing that this year 775 Acres have been cultivated in 131½ days. The immense advantages resulting from Steam Cultivation are now universally recognised, consequently I wish to confine myself to the following plain matter-of-fact statement, viz.:—

No.	Quantity.	Times Cultivated.	Total Cultivated.	No. of days employed.	Amount paid for manual labour.
78	11 3 10	Twice	23 2 20	3½	£1 14 6
88	25 0 2	Twice	50 0 4	7½	4 13 1½
87	18 0 30	Twice	36 1 20	6	3 14 6
75	42 3 22	Thrice	128 2 26	24½	15 16 1½
70	24 0 32	Thrice	72 2 16	12	7 9 0
76	45 1 16	Twice	90 2 32	12	7 10 0
86	53 3 1	Thrice	161 1 3	31	19 6 11
67	36 0 3	Twice	72 0 6	10	6 3 2½
66	4 1 9	Twice	8 2 18	1½	0 18 7½
69	16 3 20	Twice	33 3 0	4½	2 15 10
94	43 0 0	Twice	86 0 0	15	7 4 0
106	11 0 0	Once	11 0 0	4	2 9 [illegible]
Acres	332 1 25		774 2 25	131½	£79 15 6

Extra wages in harvest month .. .. £15 [illegible]
Horse and Water Cart, 131½ days at 4*s*. (Attendant's charge allowed).. .. .. 26 6 [illegible]
Horses for moving Engine and Apparatus from Field to Field .. .. 4 10 [illegible]
Coal, 66 tons at 16*s*. 6*d*. on the Farm .. .. .. 54 [illegible]
Oil for 131½ days at 9*d*. .. .. 4 19 [illegible]
Four dozen of Iron Shares .. .. 2 5 [illegible]
Interest on 500*l*. for six months, the value of the Steam Engine and Apparatus, at 5 per cent. .. 12 10 [illegible]
Wear and Tear on do. for six months at 15 per cent. 39 [illegible]

Total .. .. £239 [illegible]

Or 6*s*. 2*d*. per Acre, the whole 775 Acres having been operated upon, at from 7 to 12 inches deep, by a Three-tined Cultivator, except that 24 Acres were cultivated once over by a Seven-tined Implement. If a Five-tined Cultivator had been at command, a much larger Acreage would have been dealt with. The result produced a daily average of 5 Acres, 3 Roods, and 23 Perches, including hedges and ditches and moving from field to field.

My thanks, and far more than the thanks of the entire Agricultural community, are due to you, as the Inventor and practical introducer of what I believe to be the most valuable Agricultural Implement extant.

I remain, dear Sir, yours truly,
Simon Hutchinson.

William Smith, Esq., Woolston, Bletchley Station.

W. J. HOLLANDS, IRON MERCHANT, 31, Bankside, London, S.E.

HOT WATER PIPES, from Stock, per yard :—2-inch, 1s. 2d.; 3-inch, 1s. 10d.; and 4-inch, 2s. 4d. BENDS, from stock, 1s. 7d., 2s. 6d., and 3s. 3d. each.

Other Connexions at equally low prices, and all goods of first-class manufacture.

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	£	s.
Span Roof, 27 ft. by 16 ft. 6 in.	46	10
Lean-to, 23 ft. 6 in., by 12 ft. 6in.	33	0
Glazed with 21 oz. Glass.		
Lean-to, 15 ft. by 50 ft.	65	0
Ditto, 16 ft. by 45 ft.	47	0
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Ditto, 13 ft. by 24 ft.	36	0
Ditto, 11 ft. by 24 ft.	28	0
Second-hand ditto, with Shelves, &c., no Brickwork required	15	0

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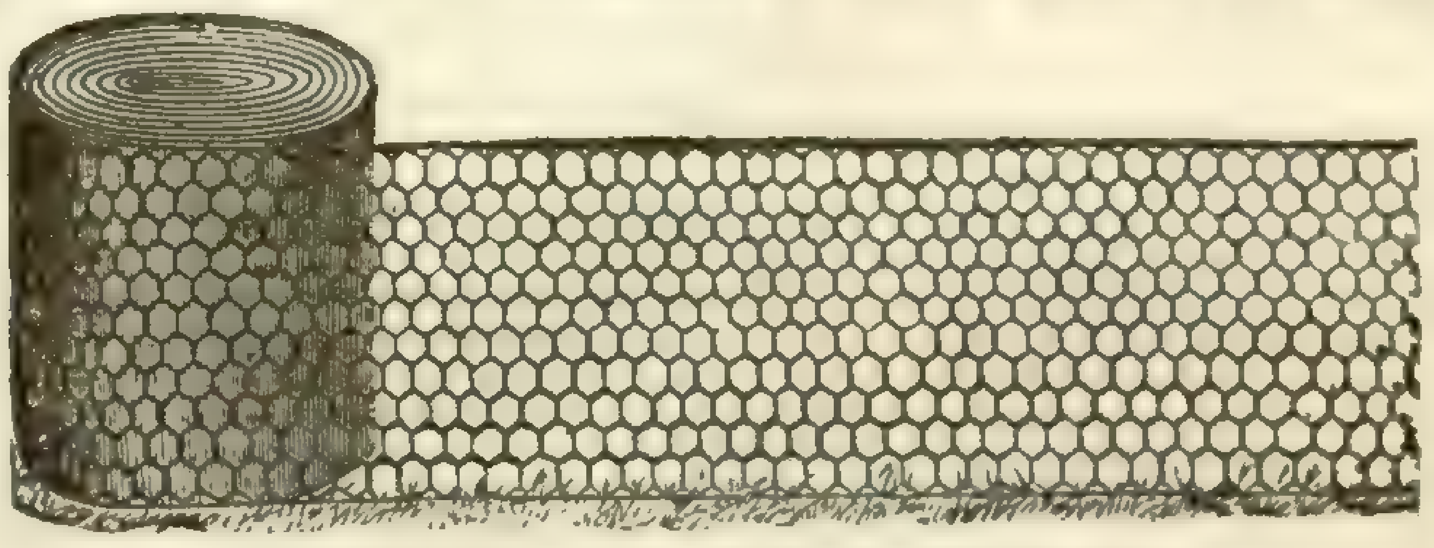

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Size of mesh.	Mostly used for	Light.		Medium.		Strong.		Extra Strong.	
		Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.	Japanned.	Galvanized.
2½ inch	Hares, Dogs, Poultry	3d.	4d.	3¾d.	5d.	4½d.	6d.	5½d.	7d.
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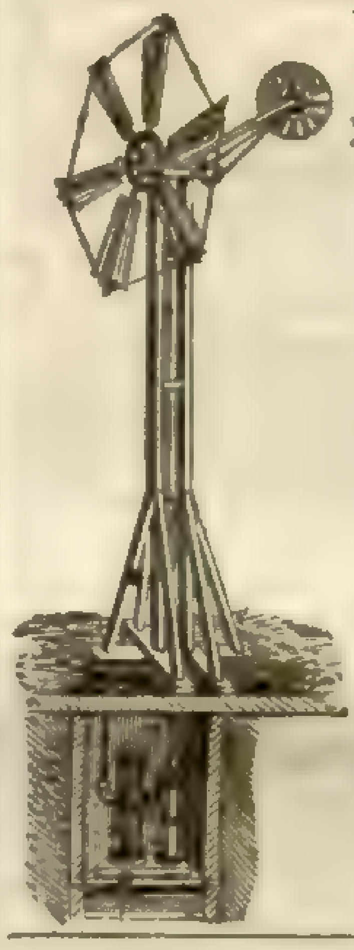

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This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

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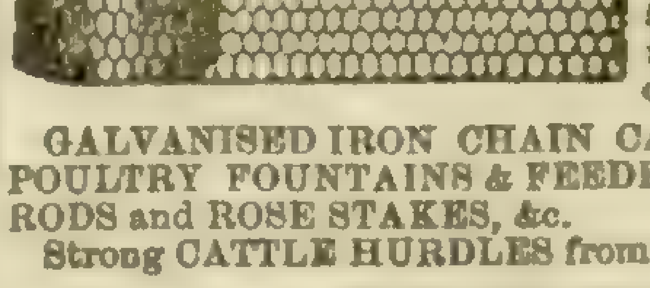

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Anti-Frost Water Pipe Protector.
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3 inches	..	0s. 4½d. each.	12 inches	..	1s. 9d. each.
4 ,,	..	0 5½ ,,	13 ,,	..	2 0 ,,
5 ,,	..	0 6½ ,,	14 ,,	..	2 6 ,,
6 ,,	..	0 8 ,,	15 ,,	..	3 0 ,,
7 ,,	..	0 10 ,,	16 ,,	..	3 6 ,,
8 ,,	..	1 0 ,,	17 ,,	..	4 0 ,,
9 ,,	..	1 2 ,,	18 ,,	..	5 0 ,,
10 ,,	..	1 4 ,,	19 ,,	..	6 6 ,,
11 ,,	..	1 6 ,,	20 ,,	..	7 0 ,,

HAND GLASSES.

12 inches	..	6s. 0d. each	18 inches	..	9s. 0d. each
14 ,,	..	7 0 ,,	20 ,,	..	10 0 ,,
16 ,,	..	8 0 ,,	24 ,,	..	12 0 ,,

If open top, 1s. extra.

CUCUMBER GLASSES.
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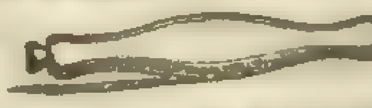

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CHIMNIES of every description.
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		Each—s.	d.			Each—s.	d.
2 inches diameter	..	0	3½	12 inches diameter	..	1	9
3 ,, ,,	..	0	4½	13 ,, ,,	..	2	0
4 ,, ,,	..	0	5½	14 ,, ,,	..	2	6
5 ,, ,,	..	0	6½	15 ,, ,,	..	3	0
6 ,, ,,	..	0	8	16 ,, ,,	..	3	6
7 ,, ,,	..	0	10	17 ,, ,,	..	4	0
8 ,, ,,	..	1	0	18 ,, ,,	..	5	0
9 ,, ,,	..	1	2	19 ,, ,,	..	6	0
10 ,, ,,	..	1	4	20 ,, ,,	..	7	0
11 ,, ,,	..	1	6				

HYACINTH and FLOWER DISHES.
6 ins. diameter, 1s. each; 9 ins. diameter, 1s. 6d. each.
12 ins. diameter, 2s. 6d. each.

Hyacinth Dishes are a new article, intended to contain a number of roots bedded in sand and covered with moss, instead of the common Hyacinth Glass.

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Improved shape .. 4s. 6d. | Common ditto .. 3s. 6d.
Patent ditto .. .. 6s. 6d. per dozen.

CROCUS GLASSES .. 2s. 0d. per dozen.

HAND GLASSES.

		Each—s.	d.			Each—s.	d.
12 inches ..	..	6	0	18 inches ..	..	9	0
14 ,, ..	..	7	0	20 ,, ..	..	10	0
16 ,, ..	..	8	0	24 ,, ..	..	12	0

Painted and Glazed with 16 oz. Sheet Glass.
If Open at Top, 1s. extra.

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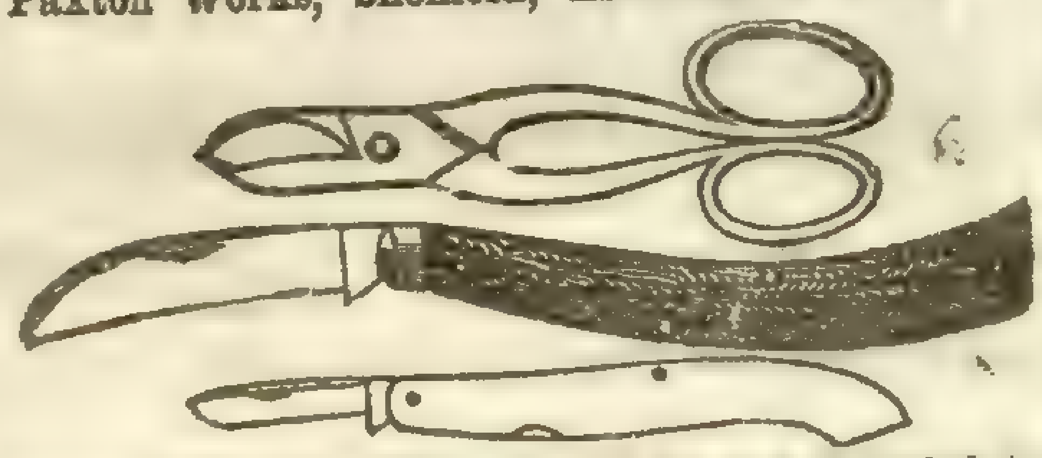

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Dessert ditto ,, ..	12 0	12 0	15 0	18 0	20	[illegible]
Carvers, Joint, per pair ..	4 6	5 6	6 6	7 6	8	[illegible]

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Britannia Metal, set of 5 ..	3 0	3 6	3 10	4 6	5 1[illegible]	[illegible]
Britannia Metal, set of 6 ..	4 5	4 13	5 0	5 8	7 [illegible]	[illegible]
Block Tin, set of 6	0 18	1 10	2 0	2 2	2 [illegible]	[illegible]
Block Tin, set of 7	1 4	2 0	2 13	2 17	3 4	[illegible]
Electro Plate, set of 4 ..	12 8	12 12	14 0	15 0	15 1[illegible]	[illegible]

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	FIDDLE.		BEADED.		KING'S.		Li[illegible]
	Second quality.	Best.	Second.	Best.	Second.	Best.	[illegible]
	s. d.	s.	s.	s.	s.	s.	[illegible]
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Dessert Forks ,,	23 0	29	32	54	37	46	[illegible]
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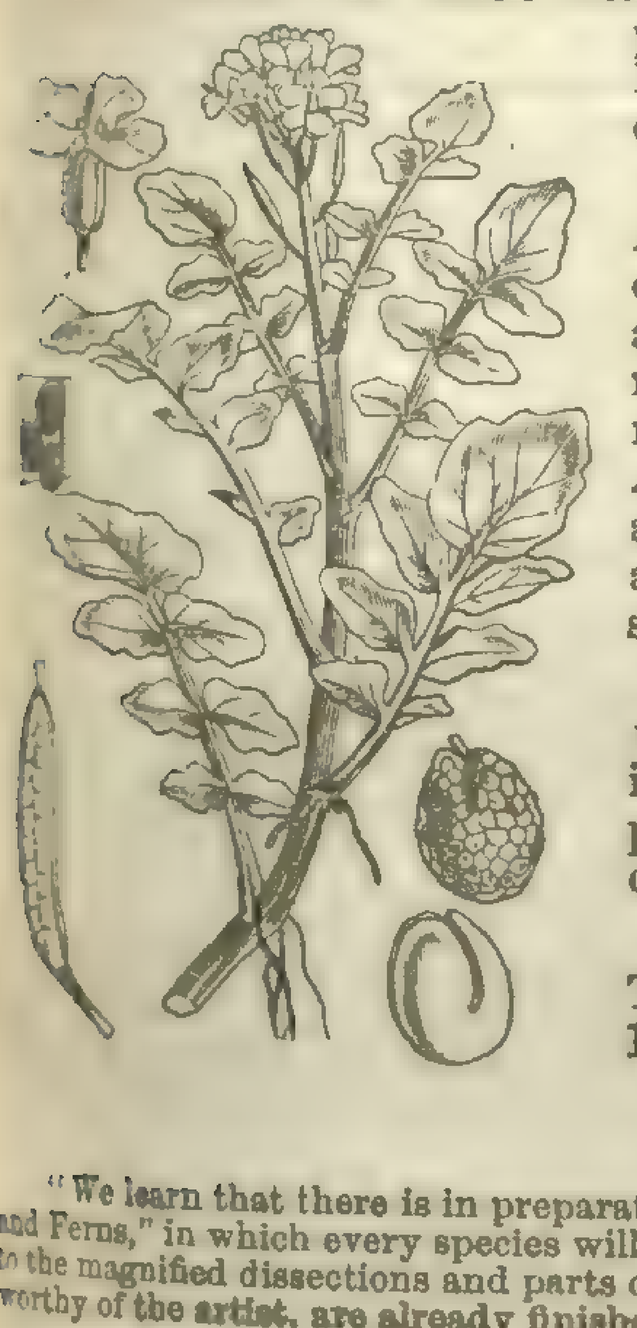

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HIS HIGHNESS THE VICEROY OF EGYPT.

JOHN WEEKS & COMPANY

HAVE GREAT PLEASURE IN ANNOUNCING THE HONOUR OF BEING ENTRUSTED WITH THE COMMANDS OF HIS HIGHNESS TO

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of chaste design and elaborate finish, 320 feet long by 130 feet wide. Its temporary erection will take place in the early part of next year at their

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HORTICULTURAL BUILDERS AND HOT-WATER APPARATUS ENGINEERS,
KING'S ROAD, CHELSEA, S.W.

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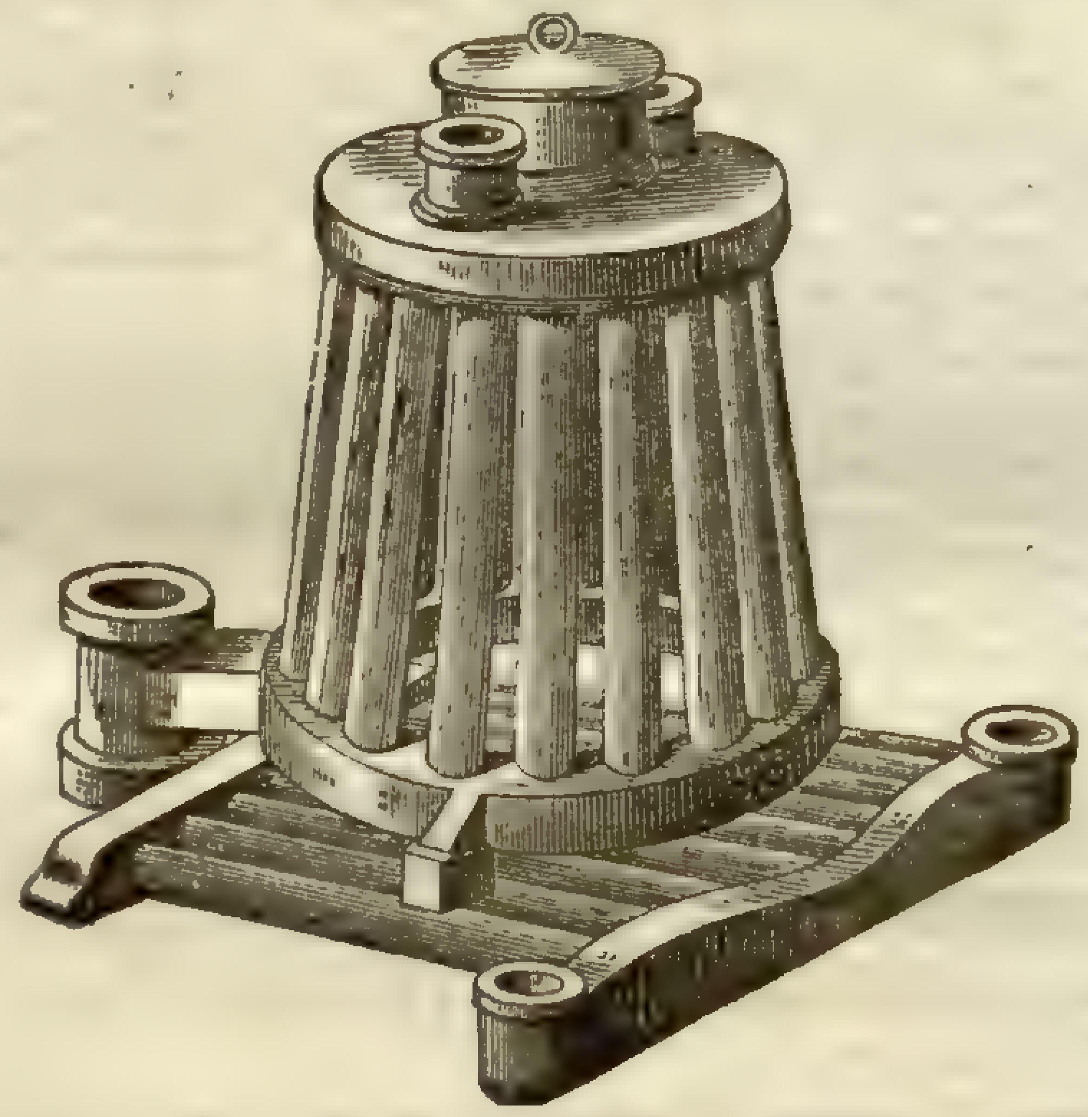

FIRST CLASS PRIZE MEDAL FOR ORMSON'S PATENT JOINTLESS TUBULAR BOILER, At the INTERNATIONAL EXHIBITION.

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PATENT JOINTLESS TUBULAR BOILER

HAS TAKEN MORE AWARDS THIS YEAR THAN ANY OTHER TUBULAR BOILER.

These Awards have been given by Scientific, Practical, and Competent Judges.

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HORTICULTURAL BUILDINGS of every description MANUFACTURED by STEAM-POWER MACHINERY.

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HORTICULTURAL BUILDER TO HER MAJESTY, AND HOT-WATER APPARATUS MANUFACTURER TO THE COMMISSIONERS OF HER MAJESTY'S ROYAL PALACES AND PUBLIC BUILDINGS, AND TO THE ROYAL HORTICULTURAL SOCIETY,

STANLEY BRIDGE, KING'S ROAD, CHELSEA, LONDON, S.W.

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THE GARDENERS' CHRONICLE

AND

AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 51.—1862.] SATURDAY, DECEMBER 20. {Price Fivepence. STAMPED EDITION, 6*d*.

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☞ *An Edition of the* GARDENERS' CHRONICLE and AGRICULTURAL GAZETTE *is published on Monday Afternoon at 4 o'Clock, containing full Reports of the Mark Lane and Cattle Markets, written expressly for the Paper.*

ERRATUM.—In Mr. Laing's Advertisement, Nursery, Beverley, Yorkshire, p. 1143, Dec. 6, read per "1000" instead of "100."

Hyacinths, Tulips, Crocuses, &c.

BUTLER AND McCULLOCH'S DESCRIPTIVE CATALOGUE of BULBS, or AMATEUR'S GUIDE, may be had free and post paid upon application.
BUTLER & M'CULLOCH, Seed Merchants, Covent Garden Market, London, W.C.

Hyacinths, Tulips, and other Dutch Bulbs.

JAMES CARTER AND CO.'S BULB GUIDE forwarded free of charge, and post paid, on application to 237 and 238, High Holborn, London, W.C.

SURPLUS STOCK.—20 beautiful HYACINTHS, 300 CROCUS, 100 Early Tulips, 100 Garden Narcissus, 10 Polyanthus-Narcissus, 20 Scillas, 20 Iris, 12 Ixias, 12 Sparaxis, 12 Babianas, 3 Arums, for 21*s*., half 10*s*. 6*d*.
BARR & SUGDEN, Seed Merchants and Florists, 12, King Street, Covent Garden, W.C.

Grape Vines.

B. S. WILLIAMS begs to intimate that he has a fine and healthy stock of the above from Eyes, including all the best varieties for Fruiting in Pots and Planting Out. Prices on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Grape Vines.

J. IVERY AND SON beg to inform their Patrons that their stock of the above is unusually fine this season. A PRICED LIST now ready.
Dorking Nursery.

Grape Vines.

WM. PAUL (Son and Successor to the late A. PAUL) has a large stock of vigorous, close-jointed plants, including all the most recent additions, now ready for delivery at moderate prices.
Nurseries and Seed Warehouse, Waltham Cross, N.

Grape Vines: Foster's Seedling & Muscat Eschallota.

DOWNIE, LAIRD, AND LAING have much pleasure in offering the above valuable sorts. Planting Canes, 7*s*. 6*d*. each; Fruiting Canes, 15*s*. to 21*s*. each; also a fine stock of LADY DOWNES, and all the leading varieties.
Stanstead Park, Forest Hill, S.E., and Edinburgh.

Vines: Black Hamburgh and Muscat of Alexandria.

ROBERT PARKER begs to offer extra strong Plants of the above (for planting), in large or small quantities, at 3*s*. 6*d*. each. The usual discount to the Trade.
Exotic Nursery, Tooting, Surrey, S.

Hurst House Seedling Pine.

B. S. WILLIAMS, Paradise Nursery, Holloway, London, N., begs to offer good plants of this choice Pine Apple, 10*s*. 6*d*., 15*s*., 21*s*. each.
The plant is of dwarf robust habit, producing heavy fruit of the richest flavour.
A large Stock of PRICKLY and SMOOTH CAYENNE PINES.

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TO BE DISPOSED OF, by a gentleman leaving for town and giving up his House, &c., about 100 good healthy PINE PLANTS, this and last year's growth.
Apply by letter to Mr. F. STEAD, 23, Jarratt Street, Hull.

PEACH TREES in POTS for FORCING.—The Undersigned offer the following varieties of PEACHES for Forcing, strong Trees, full of blossom buds. Prices from 5*s*. to 7*s*. 6*d*. each, Carriage paid to London.

NOBLESSE GALANDE	ROYAL GEORGE BARRINGTON	GROSSE MIGNONNE VIOLETTE HATIVE

EARLY YORK.
THOS. RIVERS & SON, Nurseries, Sawbridgeworth, Herts.

WILLIAM EPPS, JUN., begs to offer extra fine Dwarf-trained PLUMS, CHERRIES, PEACHES, APRICOTS, and NECTARINES.
Price on application.
The Nurseries, Ashford, Kent.

New and Genuine Garden and Agricultural Seeds.

SPECIAL PRICES ON APPLICATION TO
JAMES FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, 7, Borough Market, London, S.E.

Garden and Agricultural Seeds, Carriage Free.

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GEORGE GIBBS AND CO., SEEDSMEN, 26, Down Street, Piccadilly, London, W.

Agricultural and Garden Seeds.

H. AND F. SHARPE, SEED GROWERS and MERCHANTS, Wisbech.
Special PRICED LIST of NEW SEEDS on application.

Agricultural and Garden Seeds.

CHARLES SHARPE AND CO., SEED GROWERS, SEED MERCHANTS, and NURSERYMEN, Sleaford.
SPECIAL PRICED LIST of SEEDS of 1862 growth on application.

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Good Seeds, Carriage Free, at Market Prices.

SUTTON AND SONS, SEED GROWERS and MERCHANTS, Royal Berkshire Seed Establishment, Reading.

PLYMOUTH SEED COMPANY, Union Road, Plymouth.

THE PLYMOUTH SEED COMPANY can now execute orders for KITCHEN GARDEN, FLOWER, and AGRICULTURAL SEEDS of best quality.
Address PLYMOUTH SEED COMPANY, Plymouth.

PLYMOUTH SEED COMPANY, Plymouth.
The GENERAL PRICE CURRENT is now ready.

New and Genuine Seeds.

JOHN DOBSON AND SONS, SEEDSMEN and FLORISTS, Woodlands Nursery, Isleworth and Hounslow.
New CATALOGUES now ready, post free.

ANDRÉ LEROY'S NURSERIES, at Angers, the largest and richest in France.
CATALOGUES sent on application.

Seed Catalogue.

LOUIS VAN HOUTTE'S Wholesale and Retail SEED CATALOGUE, just published, is to be had at Messrs. R. SILBERRAD & SON, his Agents, at 5, Harp Lane, Great Tower Street, London, E.C.
Ghent, Belgium, Dec., 1862.

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JAMES CARTER AND CO. are now prepared to execute orders for the above, saved at their Seed Farms.
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CARTER'S CHAMPION CUCUMBER. An excellent winter sort.—Vide *Gardeners' Chronicle*, page 1127. 1*s*. per packet.
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MUSHROOM SPAWN, 5*s*. per bushel.
Mushroom Pamphlet, 1*s*. 1*d*.; CUTHILL'S Treatise on the Cultivation of the Cucumber will be ready by end of Jan., 1*s*.1*d*.
JAMES CUTHILL, F.R.H.S., Camberwell, London, S.

WANTED, the best FRAME SEEDLING CUCUMBER SEED.
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NUTTING & SONS, Seed Warehouses, 60, Barbican, London, E.C.

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WILLIAM EPPS, JUN., can supply fine STANDARD ROSES, at 5*l*. per 100; 15*s*. per doz.
The Nurseries, Ashford, Kent.

NEW ROSES of 1862, on their own roots.—Good plants, established in pots, 2*s*. 6*d*. each.
A GENERAL DESCRIPTIVE LIST free.
EDWIN COOLING, Mile Ash Nurseries, Derby.

EDWARD PARKE FRANCIS'S New DESCRIPTIVE CATALOGUE of ROSES on the Manetti Stock, of which he has the finest and largest stock in cultivation, will be forwarded gratis upon application.
Rose Nurseries, Hertford.

Rose Catalogue, 1862 and 1863.

JOHN CRANSTON begs to announce that his new ROSE CATALOGUE is now ready for distribution, and will be forwarded free on application. It contains full and faithful descriptions of nearly all the NEW ROSES of 1861, as well as the older kinds.
Nurseries, King's Acre, near Hereford.

Rose and Bulb Catalogues for 1862-3.

EDWIN HOLLAMBY begs to announce that his NEW DESCRIPTIVE PRICED CATALOGUES of the above are now ready, and will be forwarded gratis and post-paid on application.
Seed and Nursery Establishment, Tunbridge Wells, Kent.

Dwarf Tea Roses.

EDWIN HOLLAMBY begs to announce that he has a large and healthy Stock of the above, comprising some of the finest Yellows, and other leading varieties, in the best possible condition. Price on application.
Nurseries and Seed Warehouse, Tunbridge Wells, Kent.

Rose Catalogue.

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"Old" Cheshunt Nursery, Herts.

Roses! Roses!

W. H. DAVIS can supply Standard and Half-standard ROSES of the leading varieties in extra strong and well rooted plants, at 15*s*. and 18*s*. per dozen.
A LIST of Names sent upon application.
Post-office Orders made payable to W. H. DAVIS, Rose Nurseries, Newbury.

Large Shrubs, Fruit Trees, Roses, &c.

WM. CUTBUSH AND SON have a fine stock of the above. Amongst them will be found many VERY LARGE EVERGREENS, suitable for producing an immediate effect, at unusually low prices.
Highgate Nurseries, London, N.

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W. MILLER begs to offer at reasonable prices, from 3000 to 4000 ENGLISH and HUNTINGDON ELM, well grown and will move well. Height, 5 to 6, 7 to 10, 10 to 15 feet.
Prices on application at the Nursery, Bridge Street, Andover, Hants. The usual allowance to the Trade.

NARROW-LEAVED ENGLISH ELM.—A quantity of very fine stuff raised from Seed of the fine old Trees in Hinchinbrook Park, near Huntingdon. Price, 3 to 4 feet, 30*s*.; 4 to 5 feet, 40*s*. per 1000.
WOOD & INGRAM, Huntingdon.

Privets.

FOR SALE, several Thousand strong PRIVETS, 4 to 6 feet, cheap.
Apply to JOHN DAY, Nurseryman, Dartford.

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B. S. WILLIAMS' PRICED and DESCRIPTIVE CATALOGUE of CHOICE FLOWER and VEGETABLE SEEDS for 1863 will be issued early in January and forwarded post free to all customers and applicants.
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RICHARD WEBB, Calcot Gardens, Reading.

Seed Potatoes, Carriage paid.

EARLY HANDSWORTH, 10*s*. per bushel.—"Out of 74 varieties it was by 10 days the earliest."—*Gardeners' Chronicle*.—G. & W. YATES, Market Place, Manchester.

Seed Potatoes, Carriage paid.

G. AND W. YATES offer to the Trade all the best sorts, grown specially for Seed, free from disease and scab. Prices sent on application.—Market Place, Manchester.

Established 36 Years.

HOLBURY ASHLEAF, the Earliest KIDNEY POTATO grown, 10*s*. per bushel, Carriage paid.
G. & W. YATES, Seedsmen, Market Place, Manchester.

FLUKE and other SEED POTATOES off the Lancashire Moss and Sand. Price very moderate on application.
H. BROWN, Seedsman, 4, Commutation Row, Liverpool.

To the Trade.

EGYPTIAN ASH-TOP KIDNEY POTATOES, with price.—We will name those in the Trade who have had them and know our stock. Retail, 12*s*. per bushel. They are considered a very superior variety.
WANTED, strong THORN, BIRCH, and LARCH; Seedling BIRCH and PLANE.
JOSEPH TREMBLE & SONS, Penrith.

THE GREAT VINE at HAMPTON COURT.—The Subscribers being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42s. and 60s. p. doz.
" " fruiting plants in 12-inch pots, 10s. 6d. each.

If purchased in large numbers a considerable reduction will be made in price.

JACKSON & SON, Nurseries, Kingston, S.W.

Strong Fruiting Vines.

GEORGE CLARKE invites the attention of intending Planters to his very superior stock of the above. They embrace all the leading varieties, have clean and well ripened rods 8 to 10 feet long, and remarkably short jointed. They were stopped to this length as early as June, rendering them equally stout and good the entire length; they are therefore very suitable for planting a house, or for growing in pots, where a crop of fruit could under proper treatment be obtained the first season.

The prices are—1 year old, 10s. 6d. each; 2 year old (extra size), 15s. Smaller plants, also from Eyes, and equally well ripened, which will produce fruit the second year, 3s. 6d. to 5s. each.

Specimens can be seen at the Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill, S.

Foster's Seedling Grape.

MESSRS. JOHN AND CHARLES LEE have to offer Mr. Foster's stock of this fine NEW GRAPE, which can be confidently recommended for general cultivation in cool Vineries. It has borne an abundant crop in the large Conservatory of the Royal Horticultural Society at Chiswick, the bunches being large, with medium sized berries of a pale amber colour. The flavour of Foster's Seedling is most luscious, equalling the richness of its twin sister Lady Downe's, and as far as can be seen, partaking of the same quality of hanging well without shrivelling.

Canes for planting, 7s. 6d. each. A few Fruiting Canes at 21s. each.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, has the pleasure to offer now for the first time his two new excellent Fruits—

APPLE CALVILLE GARIBALDI .. 8s.
PEAR BÉURRÉ DE GHÉLIN .. .. 5s.

This excellent Pear obtained the First Prize at the great Pomological Show at Tournay, Belgium.

N.B. These two new Fruits are figured in VERSCHAFFELT'S "Illustration Horticole."

WEBB'S PRIZE COB FILBERTS, and other COB NUTS as exhibited at the INTERNATIONAL FRUIT and FLOWER SHOW, Kensington. Trees of these splendid varieties of Filberts may be had by application to RICHARD WEBB, Calcot Gardens, Reading.

Planting Season.

WM. URQUHART AND SONS, Dundee, beg to announce that their PRICED LIST of FOREST TREES, ORNAMENTAL TREES, SHRUBS, BORDER FLOWERS, ROSES, FERNS, and AURICULAS, may now be had on application.—Dundee, Dec. 20.

New Fern, Pteris nemoralis variegata.

WILLIAM COLE, Fog Lane Nursery, Withington, Manchester, the raiser of this beautiful and distinct NEW FERN, is now ready to supply good plants, and all orders will be executed in rotation.

It has been well described in the *Gardeners' Chronicle* of July 5, p. 620, where the writer speaks of it as "a curious and novel form of Variegated Pteris."

It was also reported on in the *Gardeners' Chronicle* of May 24, as follows:—"Among new Ferns, of which several were shown, was one from Mr. Cole, Nurseryman, Manchester, belonging to the Variegated Class, and as regards position, is intermediate between argyræa and tricolor, and is apparently a free grower."

W. COLE has great confidence in recommending it, and in stating that it is really a beautiful Fern, and one which will become exceedingly popular. 10s. 6d. each.

Price (very liberal terms to the Trade for 12, 50, or 100) on application.

To the Trade.

JAMES GARAWAY AND CO. have large quantities to offer of

ASH | OAK
BEECH | SPRUCE FIR

Prices and Sizes on application.

Durdham Down Nurseries, Bristol.

DEODAR CEDARS.

2½ to 3 feet, 2s. 6d. each, 24s. per dozen, or 9l. per 100.
3 to 4 feet, 3s. each, 30s. per dozen, or 12l. per 100.
4 to 5 feet, 4s. each, 42s. per dozen, or 17l. per 100.

A fine general Collection of CONIFERÆ, a CATALOGUE of which will be sent gratis.

Apply to J. SCOTT, Merriott Nurseries, Crewkerne, Somerset.

LARGE ORNAMENTAL TREES.—The Subscribers beg to offer very fine specimen plants of ARAUCARIA IMBRICATA, from 5 to 9 ft.; CEDRUS LIBANI, 7 to 12 ft.; WELLINGTONIA GIGANTEA, 5 to 9 ft.; PINUS EXCELSA, 7 to 10 ft.; also Spruce, Scotch, and Larch Firs, from 7 to 10 ft., with Limes, Birch, Beech, Elm, Sycamore, and Laburnum, 9 to 11 ft.; likewise Weeping Ash, Lime, and Willow, on fine tall stems. The above will be sold cheap, and if taken in quantity a great reduction will be made in the price.

J. IVERY & SON, Dorking Nursery.

ACORNS WANTED, in quantity.—Any party having such to offer, either in large or small lots, will please to do so, stating where collected, and if from Common or Durmast Oaks, and quote price per bushel for cash on delivery.

To expedite negotiation, any party offering, say 20 or more bushels, may at once forward a quart sample of the bulk they offer from, per rails *viâ* parcels trains to the undersigned,

JOHN E. NELSON, The Nurseries, Rinefield, Brockenhurst, Hants.—Dec. 20.

New Celery, Williams's Matchless Red.

B. S. WILLIAMS, Paradise Nursery, Holloway, N., has much pleasure in offering the above superior solid RED CELERY, feeling confident it will give satisfaction. It is perfectly hardy, a strong grower, very solid and crisp, and of a most delicious flavour. It has been taken up for use quite the end of April without having the least tendency for running to seed. From the testimonials received it is unquestionably the best Red Celery in cultivation. In sealed packets, 2s. each.

HALLETT'S TRADE PEDIGREE. MARK. NURSERY WHEAT has produced, 1862, 62 bushels per acre, weighing 64 lbs. a bush.

Price ONE GUINEA A BUSHEL, including bag sewed up and sealed, delivered at the Brighton Railway Station, with Printed Directions for Planting, on Receipt of Cheque or Post-office Order, which must in all cases accompany the Order. Less than One Bushel will not be supplied. Name of Station and Railway should accompany the Order.

Apply to FREDERIC F. HALLETT, Esq., F.L.S., The Manor House, Brighton, Sussex.

Prize Medal Seed Wheat.—International Cereal Show.

THE PRIZE MEDAL WAS AWARDED TO

MESSRS. RAYNBIRD, CALDECOTT, AND BAWTREE, for the BEST SAMPLE of RED WHEAT, for their sample of RED NURSERY WHEAT, by a jury consisting of some of the most eminent Corn Factors from Mark Lane and Agriculturists of the day.

This Wheat is remarkable for its fine quality, weight, and hardiness, and is one of the most productive upon poor soils and in exposed situations; it may be sown at any time from October to March.

Bulks of similar fine quality to the Prize sample, for cash only, at 80s. per Quarter.

Address, Basingstoke.

SWEDE TURNIP SEED.—The undersigned has a few sacks of SKIRVING'S, also a few of excellent PURPLE TOP SWEDE, all his own growth. Price on application.

STEP. H. DEACON, Church Brampton, Northampton.

REYNOLDS' PERPETUAL BEARING CUCUMBER.—Decidedly the best Cucumber in cultivation, producing an abundant crop all the year round, averaging from 12 to 15 inches in length. For general purposes this variety is a great advance upon all other kinds, and was raised from Kenyon's Free Bearer and Craig's Prolific, partaking of the hardy and strong constitution of the latter variety, regularly producing from each joint from 2 to 3 and 4 Cucumbers, of fine flavour. Can be had in packets containing 5 seeds, 2s. 6d., of

Messrs. HURST & SON, Seedsmen, Leadenhall Street, London, E.C.; or of Mr. GEO. EDWARDS, Nurseryman and Seedsman, York.

Beet—Original and True Stock.

HENDERSON'S Compact-topped PINE-APPL[E] BEET.—Symmetrical shape, and fine dark crim[son] colour, uniform through the solid roots, are points of exc[el]lence rivalled only by its rich and sugary flavour, and i[ts] keeping properties.

This celebrated Beet gained the FIRST PRIZE again[st] OTHER SORTS at the GREAT INTERNATIONAL EXHIBI[TION] of FRUITS and VEGETABLES held at the Horti[cultural] Gardens, South Kensington, October 8, 1862.

Fluke Kidney Potato Sets

FROM LAND WHICH HAS NOT BEEN BROKEN UP IN THE MEM[ORY] OF MAN.

DICKSONS AND BROWN, SEEDSMEN, 43 and 4[5], Corporation Street, Manchester, have a few hundred bushels of the above valuable Potato, grown upon fresh land [a] very short distance from the place where the "FLUKE KIDNEY" was originally raised. They are picked expressly for sets.

By stating quantity required, the price will be forwarded on application to the Advertisers.

HOW'S EARLY FLUKES.—These POTATOES have been raised from the apple of the Fluke, and selected from upwards of 40 different sorts produced. They have taken the prize at the two last local shows, are ready to dig a fortnight after the Ash-leaf, and a much greater bearer than the old Fluke; they are of excellent shape, beautifully white, and good keepers. Price 10s. per bushel of 56 lbs., including bags. Cash must accompany all orders.

W. A. How, Farmer, Piedmarley, near Newent, n[ear] Gloucester.

Myatt's Early Prolific Ash-leaved Kidney Potatoes.

H. AND F. SHARPE are now taking orders for the above, which has this season proved itself to be the earliest and most prolific Potato in cultivation, and as fine [in] quality as any of the Early Kidney varieties. Having a g[ood] stock they can offer them at a low price to the Trade.

Also JACKSON'S ASH-LEAVED KIDNEY, WALNUT-LEAVED KIDNEY, and all the early Round varieties at equally low prices, which may be had on application.

Seed Growing Establishment, Wisbech.

ROYAL EXOTIC NURSERY, CHELSEA, S.W.

JAMES VEITCH, JUN.,

RESPECTFULLY ANNOUNCES THAT HIS

CATALOGUE of KITCHEN GARDEN and FLOWER SEEDS for 1862-63,

WITH A LIST OF IMPLEMENTS AND OTHER GARDEN REQUISITES,

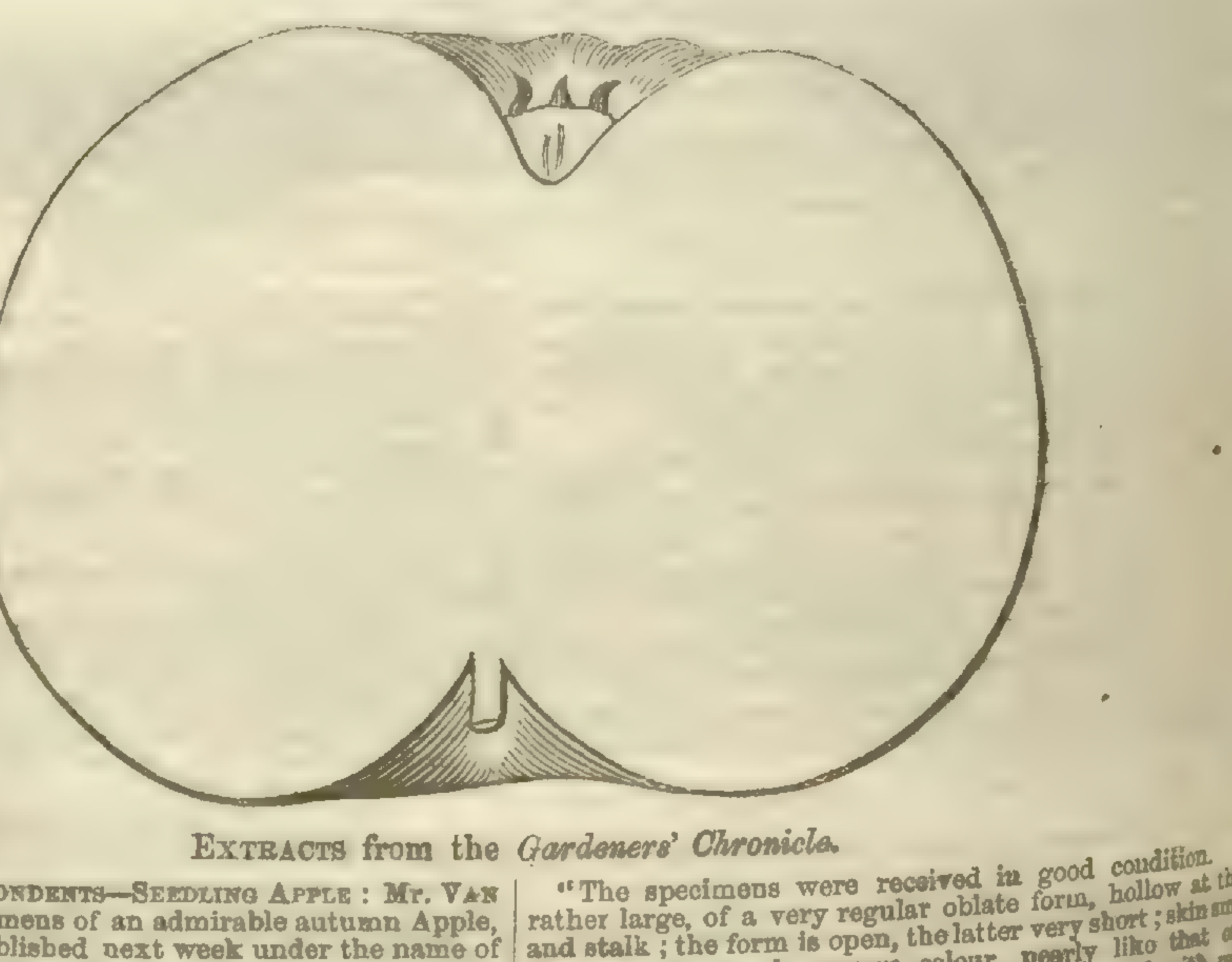
IS NOW PUBLISHED AND WILL BE FORWARDED POST FREE ON APPLICATION.

J. V., JUN., devoting his personal attention to this department of his business, can warrant his SEEDS TRUE TO NAME AND OF THE MOST GENUINE DESCRIPTION.

VAN HOUTTE'S

NEW APPLE, THE EVAGIL PIPPIN (Dr. Lindley).

Dwarfs, 7s. 6d.



EXTRACTS from the *Gardeners' Chronicle.*

"NOTICES TO CORRESPONDENTS—SEEDLING APPLE: MR. VAN HOUTTE has sent us specimens of an admirable autumn Apple, quite new. It will be published next week under the name of the Evagil Pippin."—*Gardeners' Chronicle*, September 13, 1862.

"The EVAGIL, (a new Apple, from Ghent).—We have received the following from M. LOUIS VAN HOUTTE:—

"'Ghent, September 3, 1862.—I herewith transmit you specimens of an Apple which appears to me to possess great merit. M. Bivort, to whom I sent two, writes that he has not found its equal in any work which he has consulted; that it has some resemblance to the Drap d'Or of Duhamel, but its flesh is more firm. It has, he says, a distinctive character, that of the eye or calyx being open instead of closed, as in the generality of Apples.'

"The specimens were received in good condition. Fru[it] rather large, of a very regular oblate form, hollow at the eye and stalk; the form is open, the latter very short; skin smooth, of an uniform pale orange colour, nearly like that of the Golden Noble, but rather deeper, and sprinkled with minute dots. Flesh tender, juicy, with a rich, brisk flavour. Season September and beginning of October. An excellent dessert and probably also a good kitchen Apple. Said to be a seedling raised in the neighbourhood of Ghent.

"There are two Apples known under the name of Drap d'Or, one of which is the same as the Reinette jaune hâtive, quite different in appearance from the above; the other does resemble it in size and colour, but it ripens later, and is comparatively of very inferior quality to the really valuable variety now described."—*Gardeners' Chronicle*, Sept. 20, 1862.

Subscriptions are received at

MESSRS. R. SILBERRAD AND SON'S, 5, HARP LANE, GREAT TOWER STREET, E.C.

Chrysanthemums.

WILLIAM HOLMES begs to offer this year's Varieties of the above at 5s. per dozen, including Grassima, Duchess of Wellington, General Slade, Lady St. Clair, Lord Ranelagh, Orange Perfection, Lady Russell, Nil Desperandum, &c.

Frampton Park Nursery, Hackney.

Cinerarias and Pelargoniums.

WOOD AND INGRAM beg to offer fine Seedling CINERARIAS (from good named flowers), in 5-inch pots at 6s. per dozen.

PELARGONIUMS, a choice collection of Show, Spotted and Fancy varieties, fine bushy plants once cut down, at 9s. per dozen. Summer struck, strong, 5s. per dozen.

Nurseries, Huntingdon.

NEW FANCY PANSIES. — See *Florist and Pomologist* for December, in which are figured "Mrs. Moore," "Leotard," and "Princess Alice," also *Floral Magazine* for Jan., 1862, with a beautiful coloured plate of "Imperatrice Eugenie," "Harlequin," "King of Italy," and "Admiration," all W. DEAN'S Seedlings.

A DESCRIPTIVE CATALOGUE post free on application.

Very fine sorts, 12s., 18s., to 21s. per dozen; very choice seeds, 2s. 6d. per packet; DOUBLE PURPLE PANSY, 1s. 6d. each.

WILLIAM DEAN, Bradford Nursery, Shipley, Yorkshire.

Spruce.

200,000 SPRUCE FIR, twice Transplanted, 2 to 2½ feet; and SCOTCH FIR, 2 to 2½ ft.

Apply to W. H. BLAND, Nurseryman, Fordham, near Newmarket, Cambs.

May's Prolific Pea.

JOSEPH MAY, in offering the above NEW PEA, begs to assure his customers and the Public generally, that it is the largest and most productive Pea known. Growth 5 to 6 feet, a large Wrinkled Marrow, can be sown from February till June, 3 inches apart in the row. Price 2s. 6d. per quart. The Trade supplied on application, from 8 quarts and upwards.

15, Wellington Street, Strand, Waterloo Bridge.

LIST of MESSRS. SUTTON'S AGENTS for the Sale of Seed of the "STUDENT" PARSNIP, introduced by Professor Buckman.

Beck, Henderson, & Child, Adelphi Terrace, Strand, London
Brown, Henry, 4, Commutation Row, Liverpool
Backhouse, James & Son, York
Batt, Rutley, & Silverlock, Strand, London
Cooper & Bolton, 152, Fleet Street, London
Carter & Co., High Holborn, London
Charlwood & Cummins, Tavistock Row, Covent Garden, London
Cattell, John, Westerham
Cooling, C., 18, Iron Gate, Derby
Dicksons & Brown, Corporation Street, Manchester
Dickson & Sons, 102, Eastgate Street, Chester
Dickson, Sons, & Co., 23, Market Place, Manchester
Dickson & Turnbull, 26, George Street, Perth
Dickson, F. & A. & Sons, 106, Eastgate Street, Chester
Dickson, Hogg, & Robertson, 22, Mary Street, Dublin
Dixon, E. P. & Son, 57, Queen Street, Hull
Dillestone & Co., The Nurseries, Sturmer
Downie, Laird, & Laing, 17, South Frederic Street, Edinburgh, and Stanstead Park Nursery, Forest Hill, Kent
Drummond & Sons, 58, Dawson Street, Dublin
Drummond & Sons, Stirling
Ernst & Von Spreckelsen, Hamburg
Edmondson, Brothers, 10, Dame Street, Dublin
Fairhead & Son, 7, Borough Market, London
Fisher, Holmes, & Co., Handsworth Nursery, Sheffield
Finney & Co., Gateshead Nursery, Newcastle-on-Tyne
Gibbs, Thomas, & Co., Corner of Half Moon Street, Piccadilly, London
Garaway & Co., Durdham Down, Bristol
Hurst & Son, 6, Leadenhall Street, London
Henderson, E. G. & Son, Wellington Nursery, St. John's Wood, London
Henderson, A. & Co., Pine Apple Place, Edgeware Road, London
Haycroft, J. & H., Cork
Ivery, James & Son, Dorking, Surrey
Kennedy, Thos. & Co., Dumfries
Krelage, C. F. & Son, Haarlem, Holland
Low, H. & Co., Clapton Nursery, London
Nutting & Son, 60, Barbican, London
Nelson, John, St. Michael's, Bristol
Osborn & Son, Nurserymen, Fulham, London
Perkins, John, 52, Market Square, Northampton
Pope, Henry, Great Heath Nurseries, near Birmingham
Perry, P. J., The Nurseries, Banbury
Smith & Simons, Argyle Arcade, Glasgow
Stuart & Mein, Kelso, N.B.
Toole & Co., Westmoreland Street, Dublin
Turner, Charles, The Royal Nurseries, Slough
Thomas, Wm., Exchange Street, Wolverhampton
Veitch, James, jun., King's Road, Chelsea
Van Houtte, Louis, Ghent, Belgium
Wrench, Jacob, & Son, London Bridge
Wheeler, J. C. & Son, Gloucester
Wood & Son, Maresfield, near Uckfield
Waite, J. G., 181, High Holborn, London
Wood & Ingram, The Nurseries, Huntingdon

Packets of Seed, 6d., 1s., and 2s. 6d. each, can be obtained of any of the above named, and also of Messrs. SUTTON, who can supply it either Wholesale or Retail.

Royal Berkshire Seed Establishment, Reading.

₊ The Trade supplied on liberal terms.

Walcot Cemetery, Bath.—To Nurserymen and Others.

THE WALCOT BURIAL BOARD are prepared to receive TENDERS for the Supply of TREES and SHRUBS for Planting their New Cemetery, to be delivered at the Cemetery Grounds free of expense. All Persons Tendering must be prepared to produce (if required) Specimens of the Plants therein offered.

Particulars may be obtained on application to J. WILLIAMS, Esq., 1, Fountain Buildings, Bath.

COCOA-NUT REFUSE, as used for FERNS, BEGONIAS, &c., grown in the International Exhibition, delivered at any Booking Office in the City at 1s. 6d., or within 2½ miles of Charing Cross, at 2s. per bag of 3 bushels. Larger quantities on lower terms on application to the PATENT COCOA FIBRE COMPANY, Kingston-on-Thames, S.W.

Also SHORT FIBRE for Orchids and Drainage in pots.

Postage Stamps or Post-office Orders payable to J. BARSHAM & Co.

BARSHAM'S BRUSHES and MATS are the best and most economical of any that are made, and are sold in every town in the kingdom.

CAUTION.—See that every Brush is stamped "J. BARSHAM'S Patent, Kingston-on-Thames."

To the Trade.

JAMES FAIRHEAD AND SON, SEED GROWERS and MERCHANTS, 7, Borough Market, London, S.E., beg to inform their Friends and the Trade generally that their WHOLESALE CATALOGUE of AGRICULTURAL, GARDEN, and FLOWER SEEDS is now ready, and may be had on application.

CHEAP PLANTS.—The undermentioned are now ready in strong plants.

per dozen.—	s.	d.	per dozen.—	s.	d.
Hepatica, sorts	3	0	Polyanthus, fine laced ..	3	0
Primroses "	4	0	Pampas Grass	4	0
Auriculas "	3	0	Hollyhock, fine named..	6	0
Violets Double White and Purple and Russian	3	0	Hollyhock Seedlings, from fine named	3	0
Wallflower, Golden Yellow	4	0	Lavender	3	0
Pinks, fine named ..	3	6	Rock Cistus (sorts) ..	3	0
Clove (old Crimson) ..	3	0	Pansies, fine named ..	3	0
Christmas Roses	6	0	" " mixed ..	2	0
Lily of the Valley ..	2	0			

The following in strong Stock Plants for cuttings:—

Per dozen—	s.	d.	Per dozen—	s.	d.
Lobelia speciosa kermesina, true	3	0	Antirrhinums, new, 1862	4	0
Verbenas, all the leading kinds	3	6	Calceolaria canariensis .	6	0
Verbenas, new, 1862 ..	4	0	Dahlias, strong ground roots	6	0
Fuchsias, new, 1862 ..	5	0	100 Hardy Herbaceous Plants in 50 varieties	20	0

Paid to London. Post-office Orders on Castle Hedingham.

WM. DILLISTONE, Munro Nursery, Sible Hedingham, Essex.

To the Seed Trade.—Continental Flower Seeds, &c.

F. W. WENDEL, SEEDSMAN, &c., Erfurt, Prussia, begs respectfully to announce that his WHOLESALE CATALOGUE of the above is now ready, containing extensive collections of Stocks, Asters, and other Choice Seeds.

Free by Post on application to GEO. MACINTOSH, Seedsman, High Road, Hammersmith, London, W.

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11l. 11s. per Ton for cash.

PETER LAWSON & SON, 28, King Street, Cheapside; and 15, Lawrence Lane, E.C.

To Farmers, &c.

CHEAP GYPSUM MANURE.—Parties requiring GYPSUM can be supplied at 10s. per ton, bulk, at the Works at Kennington, S.

Address, X. L., 34, Chapel Street, North Brixton, S.

₊ Delivered on rail, adding for bags and cartage.

THE LONDON MANURE COMPANY have now ready

PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
BLOOD MANURE for ditto.
SUPERPHOSPHATES of LIME, &c.

All the above being in the finest condition. They also continue to supply

GIBBS'S PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of known value. E. PURSER, Secretary.

116, Fenchurch Street, E.C.

LAWES'S WHEAT MANURE for AUTUMN SOWING.

In consequence of the high price of Peruvian Guano, J. B. LAWES has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of J. B. LAWES, or through any of his appointed Agents. Price 8l. per ton at the Factories, Deptford and Barking Creeks.

Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.

American and other Cakes at market prices.

Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed. 1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.

Extract of Opinion from Mr. WAY, *January* 23, 1862.

"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."

Extract of Opinion from Dr. VOELCKER, *January* 1862.

"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a per centage of Soluble Phosphate and proportionate small quantity of Sulphate of Lime as your Concentrated Superphosphate."

The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.

Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

WINTER DRESS all FRUIT TREES with GISHURST COMPOUND.

Copy of a Letter from Mr. RIVERS, Nurseries, Sawbridgeworth, Herts, January 9, 1862.

"I think you should prominently mention the great benefit Wall Trees of all kinds derive from a dressing of the Compound applied in January, it is so very beneficial. THOS. RIVERS."

From the Same, October 22, 1861.

"I must tell you what I heard to-day from a very clever gentleman farmer, Anthony Bubb, Esq., of Witcombe Court, Gloucester. He has a Wall to which Peach Trees are trained. Well, last autumn they were in a wretched blighted state. As a desperate remedy he unnailed them all early last February, and gave all but one a thorough painting with GISHURST COMPOUND, 1 lb. to the gallon of water; his trees, all but the one, commenced to grow favourably in spring, and are now pictures of health. The tree not painted is in a half-dead blighted state. He used the same dressing to his Apple Trees; it killed the woolly aphis entirely, and has made his Trees clean and vigorous in their growth. He intends to paint his Wall Trees annually, and tells all his friends to do the same. I shall certainly serve all my young Peach Trees against my walls in the same manner. The Compound is, I believe, more efficacious than the usual offensive mixtures of clay, soot, sulphur, &c., and it does not blacken the shoots on the walls. Unless trees are completely at rest, 6 to 8 ounces to the gallon of soft water is the best strength, and sufficiently strong to destroy eggs and insects."

GISHURST COMPOUND is Sold Retail by Nurserymen and Seedsmen, in Boxes, 1s., 3s., and 10s. 6d. each; Wholesale by PRICE'S Patent Candle Company Limited,

Belmont, Vauxhall, London.

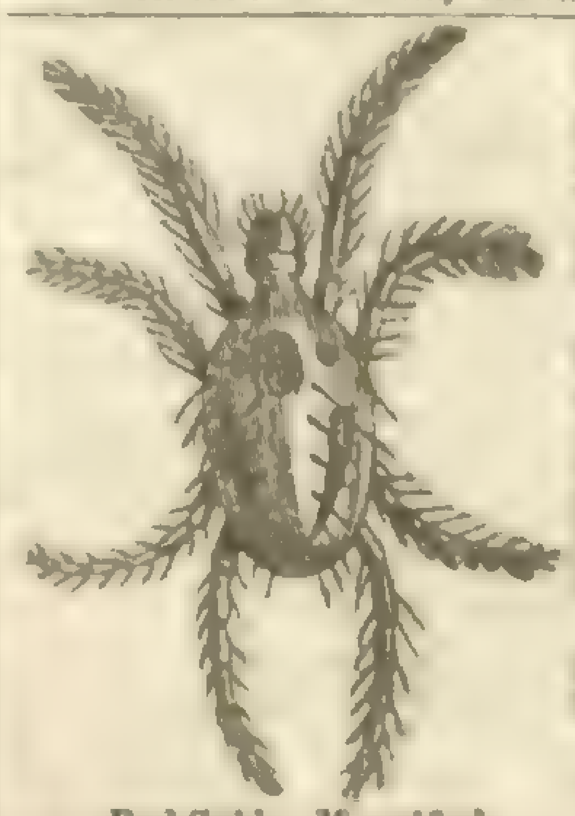
Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of GEO. GLENNY, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. NEAL, Edward Street, Birmingham.



Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by PRICE'S PATENT CANDLE Co., Limited.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street.

ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.

Manufactory: Stoke-upon-Trent.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.

Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro-metallic and other Stable Paving Bricks of great durability, Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.

To be obtained of F. & G. ROSHER, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—

"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."

Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.

The GUTTA PERCHA COMPANY, Patentees, 18, Wharf Road, City Road, London. E.C.

Archangel Mats.

JAMES T. ANDERSON begs to announce that he is now open to supply, at a low price, and in any quantity, ARCHANGEL MATS, the finest in London of this season's importation, and solicits an inspection of them by Nurserymen and Seedsmen.

SACKS, SEED BAGS, &c.

15, Sherborne Lane, King William Street, London, E.C.

400 SECOND-HAND TARPAULINGS, 7 ft. 4 in. × 4 ft. 6 in., 2s. 9d. each, in excellent order, with eyelet holes in corners; a large quantity much larger, made up to any size, at 1s. per square yard for gardens. Large CAPES lined with blue cloth, 3s. each. Excellent second-hand POLICE CAPES, 24s. and 30s. per dozen. HORSES' LOIN CLOTHS, 7s. each. DRIVING APRONS, 7s. 6d. each. RAILROAD and WAGGON TARPAULINGS, 2s. per square yard.

R. RICHARDSON, 99, Euston Road, London, N.W.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.

PROTECTION from the COLD WINDS & MORNING FROST.

"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.

Two yards wide .. .. .. 1s. 6d. per yard run.
Four yards wide .. .. .. 3s. per yard.
An improved make, 3 yards wide, 2s. 6d. per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1s. 4d. per yard run.

ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.

"It is much cheaper than Mats as a covering."

ADVERTISEMENT.

To the Editor of the "AGRICULTURAL GAZETTE."

Sir,—My heavy land Wheat after Beans, cultivated and drilled at one operation at a cost of 6s. per acre, without any previous or after operation of any kind, is now up, and although the quantity of seed used was only 1 bushel per acre, it is now clear that had I have planted more the addition would have been wasted, if indeed it would not have damaged the crop. I never saw a seed bed to equal it, or a plant come up so thick, strong, and well, in proportion to the quantity of seed sown. It is open to the inspection of all.

I am, Sir, your obedient servant,
WILLIAM SMITH.

Woolston, Bletchley Station, Bucks.

Fruit Trees.

RICHARD SMITH has no hesitation in saying, that he possesses by far the largest Stock of FRUIT TREES in the kingdom, consisting of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, in Maiden Trees, Dwarfs, Bushes, Pyramids, Half-Standards, and Standards; Dwarf-trained, Half-Standard, Standard, and Horizontally-trained Trees, of the finest sorts, and in the best possible condition. DESCRIPTIVE PRICED LISTS on application.

RICHARD SMITH, Nurseryman, Worcester.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

RICHARD SMITH'S LIST of all the EVERGREEN FIR TRIBE suitable for Britain, giving size, price, popular and botanical names, derivations, description, form, colour, foliage, growth, timber, use in arts, native country and size there, situation, soil, and other information, with copious Index of all their synonymes. Free by post for 12 postage stamps.

RICHARD SMITH, Nurseryman, Worcester.

Larch, Quicks, &c.

GEORGE CHIVAS, Chester, offers FOUR MILLIONS of TRANSPLANTED LARCH, from 1½ to 4½ feet, of very superior quality. FOUR MILLIONS of TRANSPLANTED THORNS of various sizes, a large portion of which are exceedingly strong. Orders for 10,000 of either, delivered free at any Railway Station. A Sample Bale, containing 100 of each, 5 sizes of Larch, 22s. 9d., and of Quicks, 15s., will be forwarded on receipt of a Post-office Order from unknown Correspondents.

A General PRICED LIST on application.

W. VIRGO AND SON have a very large quantity of strong 2 and 3 years Transplanted QUICK; also 3 years Seedling QUICK. Strong Evergreen Privet of various sizes, Standard and Dwarf Roses, Dwarf-trained Cherries of various sorts, English Oak, 3 to 4 feet; Turkey Oak, 6 to 8 feet; Weymouth Pine Fir, 3 to 7 feet; Laburnum, 5 to 7 feet; Mountain Ash, 5 to 7 feet; Berberis aquifolia, 9 inches to a foot; Common Laurel, 2 to 3 feet; Yew, 2 to 3 feet; Box edging in large quantities.

Prices, with samples, can be had on application at the Nursery, Wonersh, near Guildford, Surrey.

To Noblemen, Gentlemen, and Others engaged in Planting.

GEORGE BAKER begs to invite attention to the following superb specimens, which are in the finest condition:—

ARAUCARIA IMBRICATA, 6 feet, 9 feet, 14 feet
ABIES DOUGLASII, 10 feet, 14 feet, 20 feet
ARBOR-VITÆ (Siberian), 6 feet, 8 feet
CEDRUS DEODARA, 6 feet, 8 feet, 10 feet, 12 feet, 20 feet
CUPRESSUS LAWSONIANA, 5 feet
„ DISTICHA, 8 feet, 12 feet
CEDRUS LIBANI, 8 feet, 10 feet
CHINESE JUNIPER, 5 feet, 6 feet
IRISH YEWS, 6 feet, 8 feet
JUNIPERUS RECURVA, 8 feet
„ BEDFORDIANA, 5 feet, 6 feet
PICEA CEPHALONICA, 11 feet
PINUS CEMBRA, 7 feet, 10 feet
„ EXCELSA, 10 feet, 15 feet
TAXODIUM SEMPERVIRENS, 10 feet, 12 feet
THUJA GIGANTEA, 6 feet
WELLINGTONIA GIGANTEA, 5 feet
KALMIA LATIFOLIA, Standards, fine
RHODODENDRONS,
PORTUGAL LAURELS,

G. B. in offering the above perfect specimens feels assured that whoever may favour him with their kind orders, their hopes will be fully realised. Prices on application.

American Nursery, Windlesham, Bagshot, Surrey.

AN AVENUE of WELLINGTONIAS.—Gentlemen wishing to plant an avenue of this GLORY OF THE FOREST would do well to inspect the Stock at the Sunningdale Nursery. They may select from thousands.

RHODODENDRONS of every hue, Scarlet, White, Crimson and Purple.—Gentlemen about to plant would consult their interest by an inspection of the Stock of Rhododendrons at the Sunningdale Nursery. They may select from hundreds of thousands.

COVER PLANTING.—Gentlemen about to plant for Cover would find the following plants worth a trial:—BERBERIS JAPONICA, COTONEASTER MICROPHYLLA, and RHODODENDRONS. A visit to the Sunningdale Nursery would not be uninteresting.

ROSES, Standards and Dwarfs, a very fine selection, in the most vigorous health, may be seen at the Sunningdale Nursery.

ROSES for FORCING, specially prepared, and calculated to give an abundant supply of Flowers during winter. All the finest kinds may be selected at the Sunningdale Nursery

CONIFERS.—A fine Stock of well grown Plants of all the most interesting and really hardy Conifers, Evergreens, &c., may be seen at the

Sunningdale Nursery, Sunningdale Station, S. W.
CHARLES NOBLE.

SEEDLINGS, SEEDLINGS

TO THE TRADE.

10,000,000 1 year Larch	50,000 1 year C. Laurel
6,000,000 2 year Spruce Fir	4,000 1 year Laurustinus
1,000,000 3 year do.	400,000 2 year Larch
1,000,000 Standard do., 9 to 12 inches	500,000 2 year Scotch Fir
300,000 2 year White do.	600,000 2 yr. Pinus austriaca
800,000 2 year Silver Fir	100,000 1 year Standard do. maritima
2,000,000 1 year Ash	200,000 1 year do. Holly
30,000 3 year do.	100,000 1 yr. do. Arbor-vitæ
200,000 1 year Oaks	10,000 1 year Chinese do.
500,000 2 year Beech	5,000 2 year do. do.
200,000 2 year Alder	100,000 4 yr. Rhododendrons
1,000,000 3 year Thorn Quick	100,000 4 year transplanted, 2 to 3 inches
50,000 2 year Crab Stock	

The above will be sold on reasonable terms for cash, and delivered Free at Dublin. Prices, &c., on application to MICHAEL BURKE, Drumlargan Nurseries, Summerhill, County Meath, Ireland, 16 miles from Dublin.

TO NOBLEMEN, GENTLEMEN, AND OTHERS

ENGAGED IN PLANTING.

JOHN WATERER

Respectfully invites the attention of Gentlemen engaged in Planting to the under-named SELECTIONS of PLANTS, which he has no hesitation in saying are not to be surpassed by any Establishment in the Trade. They are all handsome, symmetrical Plants; have never been injured by pot-culture, and from frequency of removal are in an excellent state for transplanting without any risk of failure. J. WATERER being in possession of such an immense Stock is determined to treat on the most liberal terms, and is fully convinced that Purchasers, by paying a visit and selecting their own specimens, would find themselves amply repaid by the journey, which is easily accomplished by the South-Western Railway (Reading Branch) to Sunningdale Station, which is near the Nursery.

RHODODENDRONS, STANDARDS, of all the leading choice Scarlet, Crimson, Rose, and other varieties, handsomely grown, straight stems, 3 to 4 and 5 feet, consisting of such kinds as Concessum, Congestum roseum, Lady Eleanor Cathcart, Blandyanum, John Waterer, Alfrida Lefevreanum, and such others as are annually displayed by us at the Exhibition of Rhododendrons in the Royal Botanic Gardens, Regent's Park. Price 31s. 6d. to 63s. and 105s. each.

RHODODENDRONS, HALF STANDARD, of the most approved kinds, 2 to 3½ feet in stems, and symmetrical heads, 21s. to 42s. each.

RHODODENDRONS.—Hardy Scarlet, Crimson, Rose, White, and other choice kinds for superior clumps or borders, fine well grown plants, 1½ to 2 feet, 42s. to 60s. per dozen; larger at a corresponding advance in price.

RHODODENDRONS.—Immense quantities of fine Seedling varieties, in large bushy plants, 1½ to 2 or 3 feet, 30s. to 42s. per dozen. These varieties would be found very serviceable if introduced into clumps of the more choice kinds. They are of all colours, from bright rose to pink and white, and carry handsome hardy foliage.

RHODODENDRONS, Dwarf-growing kinds.—We cultivate about eight varieties, some of which are delightfully scented in their foliage and flowers. From their close-growing habits they make very excellent clumps for the decoration of winter beds or as edging to masses of the stronger growing kinds. Strong plants, 1 to 1½ foot, 18s. per dozen, or 6l. 6s. per 100.

RHODODENDRON PONTICUM.—A large quantity, 1 to 1½ foot, 25s. to 30s. per 100; 1½ to 2 feet, 42s. to 63s. per 100. This kind is recommended to the attention of planters of game covers, as it will thrive in any soil or situation, and is never injured in the most severe weather by hares or rabbits.

HARDY AZALEAS, for extensive planting, 50s. to 75s. per 100. Colours Scarlet, Orange, Pink, Yellow, &c.

HARDY AZALEAS, of the most superior Belgian and other varieties, 24s. per dozen, or 7l. 10s. per 100.

KALMIA LATIFOLIA.—Fine bushy plants, 1½ to 2 feet, 7l. 10s. per 100

PINUS NORDMANNIANA.—Of this justly admired Fir we hold by far the largest stock of really handsome Seedling plants to be found in the Trade, and can offer them strong and well shaped, as follows:—

1 foot, 7s. 6d. each; 72s. per dozen; 30l. per 100.

1 to 1½ ft., 10s. 6d. to 21s. each	3 to 3½ feet, 84s. each
1½ to 2 feet, 42s. each	3½ to 4 feet, 105s. each
2 to 3 feet, 63s. each	4 to 5 feet, 6l. 6s. each

These last two sizes are nearly as wide through as high.

PINUS NOBILIS, all Seedlings—
About 1 foot, 10s. 6d. each; 84s. per dozen
1 to 1½ foot, 21s. each | 1½ to 2 ft, 31s. 6d. to 42s. each
2 to 3 feet, 63s. to 84s. each.

The plants of the last mentioned size are considered to be of the largest size that can be purchased as Seedlings in the Trade. None of our stock are grafted, or even from cuttings, which are imposed so often upon purchasers. We would strongly recommend gentlemen to plant nothing but Seedlings.

PINUS BENTHAMIANA—
Strong fine plants, 4 to 5 and 6 feet, 7s. 6d. to 10s. 6d. each

PINUS LASIOCARPA (Seedlings)—
1 to 1½ feet, 10s. 6d. to 21s. each | 2 to 3 feet, 63s. each
1½ to 2 feet, 42s. each | 3 to 3½ feet, 105s. each

PINUS GRANDIS (of Douglas)—
1 to 1½ feet, 10s. 6d. each | 1½ to 2 feet, 21s. to 42s. each

PINUS INSIGNIS—
2 to 3 feet, 10l. per 100
3 to 4 feet, 3s. 6d. each, 30s. per dozen
4 to 5 feet, 5s. each, 42s. per dozen
5 to 7 feet, 7s. 6d. to 10s. 6d. each

PINUS LAMBERTIANA—
2 to 3 feet, 5s. each, 42s. per dozen
3 to 4 feet, 7s. 6d. each, 60s. per dozen
4 to 5 and 6 feet, 10s. 6d. to 21s. each

PINUS MENZIESII—
3 to 4 and 5 feet, 30s. per dozen, or 10l. per 100

PINUS TAURICA—
3 to 4 feet, 2s. 6d. each | 4 to 5 feet, 3s. 6d. each
Beautifully grown specimens.

PINUS CEMBRA—
2 to 2 feet, 2s. 6d. each, 24s. per dozen
3 to 4 and 5 to 6 feet, 3s. 6d. to 7s. 6d. each

PINUS PINSAPO—
2 to 3 feet, 5s. to 10s. 6d. each
3 to 4, 6 and 7 feet, 21s. to 105s. each

PINUS EXCELSA—
3 to 4 feet, 30s. per dozen | 4 to 5 feet, 3s. 6d. each

PINUS ORIENTALIS—
2 to 3 feet, 5s. to 10s. 6d. each | 3 to 4 feet, 10s. 6d. to 21s. each

ARAUCARIA IMBRICATA—
2 to 3 feet, 5s. to 7s. 6d. each | 4 to 5 feet, 31s. 6d. to 42s. each
3 to 4 feet, 10s. 6d. to 21s. each | 5 to 6 to 10 feet, 63s. to 21l.

THUJOPSIS BOREALIS—
1½ to 2 feet, 2s. 6d. each, 10l. per 100
2 to 3 feet, 3s. 6d. each, 12l. 10s. per 100
3 to 4 feet, 5s. each, 15l. per 100

Of this most hardy and desirable plant we possess a stock far greater than can be met with elsewhere, and not a grafted plant amongst them.

THUJA AUREA—
2 feet, 5s. each, 42s. per dozen, or 15l. per 100
2 to 3 feet, 7s. 6d. each, 60s. per dozen, 20l. per 100
3 to 4 and 5 feet, 10s. 6d. to 21s. to 63s. each

THUJA GIGANTEA—
2 to 3 feet, 5s. each, 42s. per dozen, 15l. per 100
3 to 4 feet, 7s. 6d. each, 70s. per dozen
4 to 5 feet, 10s. 6d. to 21s. each
5 to 6 feet, 31s. 6d. to 42s. each

This is a plant to which we beg to direct especial attention, and from its extreme hardiness and bright green foliage must ultimately become very generally planted. It is admirably adapted to form Avenues. Intending planters would find our stock of this fine plant exceeding by far that of any establishment in England. None are grafted.

THUJA OCCIDENTALIS—
3 to 4 and 5 feet, 30s. to 50s. per 100

This forms a highly ornamental hedge, far preferable to Yew, from its faster growth. The hedges in grounds 8 to 10 feet high and 2 feet thick are formed of it.

CUPRESSUS THYOIDES VARIEGATA—
2½ to 3 feet, 42s. per dozen, 15l. per 100
3 to 4 feet, 5s. to 7s. 6d. each

CUPRESSUS LAWSONIANA—
3 to 4 feet, 3s. 6d. each | 4 to 5 feet, 5s. each

CUPRESSUS LAWSONIANA VARIEGATA, 21s. each
A beautifully variegated form of Lawsoniana, of which we hold the entire stock of saleable plants.

CEDRUS DEODARA—
3 to 4 feet, 3s. 6d. each, 15l. per 100
4 to 5 and 6 to 7 feet, 5s. to 10s. 6d., to 21s. each

We hold a large stock of this Cedar, and would recommend such 4 to 5 and 6 feet as the most preferable size to plant. Large handsome specimens could also be furnished from 10 to 15 feet, and which would be sold at a very cheap rate.

CEDARS of LEBANON—
4 to 5 feet, 5s. each, 42s. per dozen

CEDRUS AFRICANA—
4 to 5 feet, 5s. each, 42s. per dozen

JUNIPERUS HIBERNICA—
3 to 4 feet, 21s. per dozen, 8l. 8s. per 100
4 to 5 feet, 30s. per dozen, 10l. per 100
5 to 6 feet, 3s. 6d. to 7s. 6d. each
6 to 10 feet, 10s. 6d. to 42s. each.

WELLINGTONIA GIGANTEA—
1 to 1½ feet, 18s. to 30s. per dozen
1½ to 2 feet, 3s. 6d. to 5s. each, 50s. per dozen
2 to 3 feet, 7s. 6d. to 21s. each
3 to 4 feet, 21s. to 42s. each
4 to 5 feet, 63s. to 105s. each

IRISH YEW—
4 to 5 feet, 3s. 6d. each | 5 to 6 feet, 5s. to 7s. 6d. each
6 to 7 and 8 to 10 feet, 10s. 6d. to 42s. each

Our stock of this Yew have all been trimmed to one single leader, and are very close in their form.

GOLD and SILVER YEWS, grafted on the stems of Irish Yews, about 4 feet from the ground, the variegated portion being from 1 to 1½ feet in length, 10s. 6d. to 21s. to 42s. each

STANDARD PORTUGAL LAURELS, 3 to 4 and 5 feet stems, very straight stems and handsome close-grown heads, 10s. 6d. to 21s. each

STANDARD WEEPING HOLLIES, 6 to 8 and 10 feet stems, 21s. to 105s. each

HOLLIES, GREEN, 1½ to 2 and 3 to 4 feet, 30s. to 50s. per 100; 3 to 4 and 5 to 6 feet, large quantities in fine condition, 9d. to 5s. each

HOLLIES, GOLD and SILVER, in all the approved varieties, by the hundred or thousand, 2 to 3 and 4 to 5 and 6 feet

We have likewise immense quantities of the leading kinds of EVERGREENS of all sizes, such as Yews, Box, Bays, Aucubas, Arbutus, Phillyreas, Common and Portugal Laurels, &c. &c.

CATALOGUES describing the colours of all the RHODODENDRONS worthy of cultivation, with a list of CONIFEROUS PLANTS, with heights and prices, forwarded to all applicants.

THE AMERICAN NURSERY, BAGSHOT, SURREY,

Near Sunningdale Station, South-Western Railway, and Blackwater Station, South-Eastern Railway,

where excellent Conveyances await all Trains.

50,000 Dwarf Roses in Pots on their own Roots.

Standard, Half-Standard, and Dwarf Budded Roses, on the Briar and Manetti Stock, in enormous quantities and in the most vigorous health.

WILLIAM WOOD and SON have much pleasure in directing especial attention to their very extensive and well-grown stock of ROSES, CATALOGUES of which may be had gratis on application.
Woodlands Nursery, Maresfield, near Uckfield, Sussex.

New Roses of 1862.

JOHN KEYNES has to offer 1000 very extra strong plants, the finest varieties of the last season, in 6 and 8-inch pots, now ready, price 42s. per dozen, with the usual discount to the Trade.
Fine STANDARDS, of the older varieties, 24s. & 36s. per doz.
DWARFS, 12s. and 18s. per dozen, all of the finest varieties in cultivation. Every attention paid to package, and compensation for carriage.
New CATALOGUES ready.
John Keynes, Nurseryman, Salisbury.

Standard and Dwarf Roses.

BENJAMIN R. CANT will be happy to forward on application his DESCRIPTIVE CATALOGUE of ROSES. As a guarantee of the value of his collection, B. R. C. begs to state that he has this year obtained 17 First Prizes for Cut Roses at the principal Shows.
Very fine vigorous plants of the choicest sorts will be supplied at the following prices:—

Standard Roses	18s., 24s., and 30s. per doz.
Half Standard Do.	18s. and 24s. per doz.
Dwarf Do.	9s. to 18s. per doz.

The NEW ROSES of 1862, Dwarf plants, 3s. 6d. to 5s. each; or, if 12 or more varieties are taken, 30s. per doz.
St. John's Street Nursery, Colchester.
N.B.—B. R. C.'s Catalogue contains nothing but the best varieties; all indifferent and worthless sorts are excluded.

Early Spring Flowers.

WEBB'S GIANT POLYANTHUS; ditto COWSLIP; Florist's Flower, POLYANTHUS, Roots or Seed; also SCARLET PRIMROSE—Double Crimson, Double Purple, Double White, Double Yellow, and Double Lilac ditto. COWSLIP from the Himalayas; DOUBLE POLYANTHUS; and other varieties, all of which may be had on application to
Richard Webb, Calcot Gardens, Reading.

Gladioli.

WM. PAUL (Son and Successor to the late A. Paul) respectfully announces that his BULB CATALOGUE includes a descriptive list of all the most valuable varieties of GLADIOLI, the roots of which are unusually fine. He would remind intending purchasers that he was awarded prizes at both the Royal Horticultural and Crystal Palace September Shows. Price 4s. to 42s. per dozen.
Nurseries and Seed Warehouse, Waltham Cross, N.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.

		£	s.	d.
50 in 25 extra choice varieties	.. ..	£2	2s.	0d.
25 in 25	,, ,, ...	1	5	0
12 in 12	,, ,, ...	0	12	0
50 in 50 choice varieties	.. .. ..	2	12	6
50 in 25	,, ,, ...	1	5	6
25 in 25	,, ,, ...	0	13	6
12 in 12	,, ,, ...	0	5	0

Extra fine mixed, 2s. 6d. per doz., 17s. 6d. per 100.
Butler & McCulloch, Seed Merchants, Covent Garden Market, W.C.

Gladiolus Gandavensis and Varieties.

B. S. WILLIAMS'S choice collection of these superb Bulbous Plants, which are beyond doubt the handsomest autumnal ornaments to the garden, is now ready for sending out. Great attention has been bestowed on the selection, amongst which are many novelties, and none but those of the best quality are offered.
Collection of 24 Splendid Varieties, one root of each, 21s.
Collection of Choice Named Varieties, 6s., 8s., and 10s. per doz.
A PRICED and DESCRIPTIVE LIST on application.
Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Gladiolus Bowiensis.

R. BOWIE (late H. Groom), has much pleasure in being able to offer a large stock of Flowering Bulbs of this superb GLADIOLUS.
G. Glenny, Esq., remarking on this Gladiolus, says:—"I consider Gladiolus Bowiensis to be one of the most useful of the whole family, for you may plant it when you like, and bloom it half a dozen different seasons; besides which it is capable of bearing as much ill usage as any, and the colour is very striking."
R. B. has also a quantity of POT VINES (for planting), including Barbarossa, Hamburgh, Lady Downes, Golden Hamburgh, &c.
Prices on application to R. Bowie, Clapham Rise Nursery, Clapham, S.
Post Office Orders payable at the Clapham Post Office.

Large Importation of Gladioli.

WM. WOOD and SON beg to announce the arrival of a choice and carefully selected assortment of the above in excellent condition, consisting of the best and most popular hybrid varieties, from which they will be happy to make selections at the following very moderate prices, viz.,

Hybrids of Gandavensis.

		£	s.	d.
100 in 50 choice kinds	.. .. ..	£4	0	0
50 in 50	,, ...	2	10	0
50 in 25	,, ...	2	0	0
25 in 25 extra choice kinds	.. ..	1	5	0
25 in 12	,, ...	1	0	0
12 in 12	,, ...	0	10	0

Newer varieties at proportionately low prices.—See List.
Fine mixed GLADIOLI, per 100, 17s. 6d.; per doz., 2s. 6d.
Carriage paid on orders over 10s.
LISTS free on application.
Woodlands Nursery and Seed Warehouse, Maresfield, Uckfield, Sussex.

New Bedding Annual—Iberis grandiflora alba
(Large-flowered White Candytuft).

MESSRS. E. G. HENDERSON and SON offer this as a remarkably fine variety, and a much more gay and effective plant than any other in its tribe, having numerous large semi-cylindrical trusses, from 2 to 4 inches in length, of snow-white blossoms, continuing in bloom twice as long as the well known common kinds, and making a very beautiful group or bed until the latest autumn months. Its style of growth is much more robust, from 12 to 15 inches in height, and vigorously branched. For decoration in the flower garden, either as a separate bed, or as a ribbon row, it far surpasses any annual or other bedding plant in its colour; its long continued bloom is invaluable for effect with other groups.
Seed packets, 6d. and 1s. each. The Trade supplied; prices on application.
Wellington Nursery, St. John's Wood, London, N.W.

Notice of Removal.

PETER LAWSON and SON, The Queen's Seedsmen, Edinburgh and London, respectfully beg to intimate that with a view to facilitate their business transactions they have REMOVED from
27, Great George Street, Westminster,
to
28, King Street, Cheapside,
and
15, Lawrence Lane, E.C.

New Seeds.

PETER LAWSON and SON, The Queen's Seedsmen, of Edinburgh and London, are prepared to send out
FARM
and
GARDEN SEEDS
of every kind, and of the finest quality.
Orders for exportation executed with prompt and careful attention.
28, King Street, Cheapside, and 15, Lawrence Lane, E.C.

WHEELER'S LITTLE BOOK for 1863.
WHEELER'S TOM THUMB LETTUCE.
WHEELER'S IMPERIAL LETTUCE
The price of the Lettuce is 1s. per packet, post free.
J. C. Wheeler & Son beg to inform the Trade that their "Little Book" is entered at Stationers' Hall, and that they cannot allow it to be copied.
J. C. Wheeler & Son, Seed Growers, Gloucester.

Seed Trade.

JAMES CARTER and CO., Holborn, W.C., have a few lbs. of the following to offer to the Trade:—
MELVILLE'S GARNISHING KAIL,
VARIEGATED BEET, for garnishing,
SNOW'S WINTER BROCCOLI, true,
LITTLE PIXIE CABBAGE,
NEW FEATHER STEM SAVOY,
DANVER'S YELLOW ONION,
TOMATOE DE LAYE.

DOBSON'S for NEW PELARGONIUMS.
DOBSON'S for SHOW PELARGONIUMS.
DOBSON'S for FANCY PELARGONIUMS.
DOBSON'S for SPOTTED PELARGONIUMS.
DOBSON'S for NEW CINERARIAS.
DOBSON'S for PRIZE CINERARIAS.
DOBSON'S for PANSIES.
CATALOGUES Free.
J. Dobson & Sons, Woodlands Nursery, Isleworth.

Notice.—American Plants.

WATERER and GODFREY'S CATALOGUE is now ready, and will be sent on application; it gives a fair price and description of all the Rhododendrons and other American Plants worth growing, as well as a general summary of the most extensive Nursery Stock in Europe.
The Exhibition of American Plants in the Royal Horticultural Society's Garden, South Kensington, were supplied by Waterer & Godfrey, Knap Hill, near Woking.

Wholesale Catalogue.

GEORGE JACKMAN and SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING 1863, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.
Woking Nursery, Surrey.

SCOTT'S CATALOGUES.
No. 1.—FRUIT CATALOGUE and FRUIT TREE CULTIVATOR'S DIRECTORY describes nearly 800 of the best and most esteemed of our Fruits, with copious Observations and Directions about their Cultivation; the formation of Pyramids, Root Pruning, and other matter interesting to lovers of fine Fruit. Price 7d.
No. 2.—The BULB, WINTER, and SPRING BEDDING-PLANT CATALOGUE, 18 pages.
No. 3.—The DESCRIPTIVE CONIFEROUS CATALOGUE, 25 pages.
No. 4.—The ROSE CATALOGUE, 22 pages.
No. 5.—The SELECT NURSERY STOCK, 15 pages.
In December, the VEGETABLE and FLOWER SEED CATALOGUE.
In April, the SUMMER BEDDING CATALOGUE, 72 pages.
Apply to J. Scott, Merriott, Crewkerne, Somerset.

CHARLES B. SAUNDERS, Cæsarean Nurseries, Island of Jersey, Established 1816.
Strong well ripened rooted VINES, best sorts, 6 to 8 ft. rods, grown in the open air without nursing, 2s. 6d each; Dwarf Standard, Dwarf-trained PEAR TREES on Quince stocks, well rooted, set with fruit spurs, in fine condition, 1s. 8d. and 2s 6d. each; Maiden and Dwarf-trained PEACH and NECTARINE TREES, 1s. 6d., 2s. 6d., and 3s 6d. each; Upright GUERNSEY ELMS, 6 and 8 ft. high, 40s. and 60s. per 100. An immense Stock of EVERGREEN OAKS, grown in Pots and frequently transplanted, from 50s. to 200s. per 100. 2 to 6 ft. high.
Large quantities of the above can be supplied.
LISTS of GENERAL NURSERY STOCK on application.

New Seeds, Growth of 1862.

Royal Berkshire Seed Establishment.

SUTTON and SONS are now prepared to execute orders for all kinds of FARM and GARDEN SEEDS.
The prices are lower and the quality finer than usual, owing to the very favourable harvest.
Royal Berkshire Seed Establishment, Reading.

Vegetable and Flower Seeds, Carriage Free.

WM. PAUL (Son and Successor to the late A. Paul) respectfully announces that his SEED CATALOGUE is now ready, free by post. The choicer kinds, which are disposed to vary from seed, are as far as possible home-saved and carefully selected, and all others drawn from the very first sources. The Collection of Vegetables recently commended by the Royal Horticultural Society was grown from Seeds furnished by him.
Nurseries and Seed Warehouse, Waltham Cross, N

Hardy Scarlet and other Choice Rhododendrons.

JOHN WATERER'S CATALOGUE of the above popular plants, as exhibited by him at the Royal Botanic Gardens, Regent's Park, is now published, and will be forwarded to all applicants.
It describes faithfully the colours of all the Rhododendrons, thereby rendering every facility for making selections.
It likewise contains an abridged List of really Hardy Conifers, with their heights and prices.
The American Nursery, Bagshot, Surrey.

New Catalogue of Plants, Dutch Bulbs, &c.

ROBERT PARKER begs to announce that his NEW CATALOGUE, containing Select, Descriptive, and Priced Lists of Exotic Orchids, Variegated and Ornamental-foliaged Plants, Azalea indica, Conifers, Chrysanthemums, Fuchsias, Ferns, Geraniums, Rhododendrons, Roses, Miscellaneous Stove, Greenhouse, and Hardy Plants, Fruit Trees, &c., Hyacinths, Tulips, Gladioli, and other Bulbs, is now published and will be forwarded, post free, to all applicants.
Exotic Nursery, Tooting, Surrey, S.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The Annual General Meeting of the Members of this Institution will be held at the Bedford Hotel, Covent Garden, on THURSDAY, January 15, for the purpose of Electing Officers for the ensuing year and receiving the Accounts of the Society for the past year.
The Chair to be taken at 6 o'Clock in the evening precisely.
An ELECTION of TWO PENSIONERS will afterwards take place from among the following Candidates, who make application under Rule No. 6, and whose cases have been strictly examined into and approved of by the Committee. The Ballot will close at 8 o'Clock precisely.

Candidates.

Robert Dowdell, aged 73	Sarah Phelps, aged 76
John Lucas, aged 63	James Robinson, aged 62

John Sangster, aged 67.

No person will be allowed to Vote whose Subscription for the year 1862 is unpaid on the day of Election.
Subscriptions are due on the 1st January in each year.
New Subscribers paying on or before the day of Ballot will be entitled to Vote, and will receive a Polling Paper on application to Edward Roger Cutler, Sec.
14, Tavistock Row, Covent Garden, W.C.
N.B. The Polling Papers have all been issued; any Subscriber not having received one is requested to notify the same to the Secretary.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 20, 1862.

It has often been remarked, as a strange circumstance, that all the researches which have been made, not merely in warmer regions, but in those more resembling our own country in temperature, have not yielded a single new and generally useful fruit. The Ugni and Psidium Cattleyanum, when well-grown are pretty additions to the dessert, and not despicable in point of flavour, but they are not calculated for ordinary cultivation; and of more hardy plants, such as Berberis dulcis, there is not one which will bear comparison with those fruit bearers which have been tenants of our gardens for centuries.

Little attention moreover of late years has been paid towards improving the wildlings of our woods and hedges, or those of similar climates, with the exception perhaps of the native American Vines, which in their cultivated forms are now yielding excellent fruit, and wine which is rising in importance every day, the supply of which is not likely to fail from the ravages of the Grape mildew, which has hitherto in great measure if not entirely spared the Vines of American origin, some of which are now extensively cultivated in Europe. Our own Blackberry plants, though producing fruit which is agreeable to many palates, and in good seasons affording a large quantity of useful food to the poor, supplying moreover a preserve which, from the large quantity of citrate of potash which it contains, is really useful in kidney affections, have been generally neglected; and though the fruit of many is too vapid to be generally pleasing, the Dewberry (Rubus cæsius) from the large size of its grains, and its sharp agreeable flavour, is not unpromising; on the contrary, when the English troops were at Eupatoria in the Crimea, its seeds were sent home as those of a delicious fruit; but though recommended for experiment some years ago, does not seem to have met with much attention. Some of the American species, however, though neglected here, are cultivated in the United States, especially the varieties

known under the name of the Dorchester and New Rochelle, but even these, though surpassing our own species in size and quality, admit of much improvement. Experiments have accordingly been made in the United States, and we have just had the pleasure of receiving the Number of the "Genesee Farmer" for November, a monthly journal published in New York, which contains some interesting information on the point, together with an illustration of the improved *Rubus canadensis*, which, if not exaggerated, promises something really valuable amongst our hardy fruits. *Rubus villosus* and *cuneifolius* both ripen their fruit at a later period, though both have considerable merit, at least in their own country. The other allied forms seem to be as worthless as our own more inferior varieties.

"It is with much pleasure that we are enabled to lay before our readers some facts in reference to a fruit which promises to be of high value both to the amateur cultivator and the market fruit grower. For some time we have been aware that Dr. MINER, of Honeoye Falls, in this county, was the originator of a seedling Dewberry, but as the Dr. has been desirous to fully prove the success of his undertaking before allowing it to be much known, our attention has been but little attracted to it till the present season.

"The Dr. has succeeded in raising two seedlings of superior merit. These seedlings were originated six or eight years ago from seed of the common wild Dewberry or low Blackberry (Rubus canadensis). Among a great number of plants which were produced and kept in cultivation until they showed their fruit, two only showed signs of merit, which was very decided.

"The slender stems, about a quarter of an inch in diameter, trail along the ground, extending from the root to a distance of 10 or 15 feet—a vigorous plant produces a score or more of these stems each season.

"The stems are furnished with a very few small thorns and trifoliate leaves. The fruit is borne on slender stalks 2 or 3 inches in length, is shining, jet black, fragrant, sweet, and juicy. Most of the fruit in a wild state is imperfect, developing a drupe only here and there over its surface. The seedlings have not this fault of the wild type, but are fully developed in every case—their size is very large, nearly or quite equalling the best specimen of the New Rochelle Blackberry. In quality and flavour they are far superior to any Blackberry known, and are very prolific and hardy.

"The plot of ground which Dr. M. has devoted to these fruits is about one-eighth of an acre. The plants are set about 5 feet apart in squares. Early in the spring a pole or stake is driven down by the side of each plant, standing 5 or 6 feet high, around which the fine long flexible shoots of the previous year's growth are wound, and fastened by a string tying them at the top, thus forming a kind of cylinder or cone. By this mode of training, the fruit hangs outside, clear of the foliage all around, affording the greatest facility for gathering. The new growth is allowed to trail on the ground until the succeeding spring. We judged that the plants produced about 2 quarts of berries each.

"The two varieties are distinct from each other in fruit and foliage, and period of ripening. The early variety is more fragrant and sweeter than the later one, and at the date we saw them (Aug. 5) was nearly gone, while the other was just in perfection. It will be seen, therefore, that both varieties mature earlier than either the Dorchester or New Rochelle Blackberries, which are now (Aug. 20) at the height of their season."

It is cheering to see that the deplorable war in America, though it has apparently put a stop to all botanical works of importance, especially such as had the support of Government, has not entirely put a stop to those of a more practical nature, of which that before us is an excellent example. *M. J. B.*

A DISCOVERY has lately been made by SCHÖNBEIN, which bids fair to be of immense importance in many questions relative to the nutriment of plants. It has been known for some time that they are not capable of appropriating free nitrogen, and yet it was very uncertain how this most necessary element could in many cases be supplied in such a state of combination as might render it available. It appears, however, from the experiments of SCHÖNBEIN, who is so keen an observer of the hidden mysteries of chemical changes, that in every case where water is evaporated the nitrogen of the atmosphere combines with the oxygen and hydrogen of the water (H O), so as to form nitrate of ammonia, the formula of which is $N H_4, N O_5$.

If a piece of perfectly clean linen, or filtering paper, be dipped in water and dried, though perfectly free before from any such substance, it is in every case found to exhibit traces of the nitrite. If again they are dipped in a solution of caustic potash, and exposed to the vapour of water, the nitrite of ammonia generated during the evaporation acts upon the caustic potash, and forms nitrite of potash.

In countries like our own the nitrite of ammonia is soon washed away, but in hot countries, where the earth is alkaline, a deposit is formed upon the soil, and from this source alone nitrate of potash (saltpetre) and nitrite of soda are in all probability derived, apart from any mere action of the atmospheric nitrogen on the alkalis, especially where no nitrogenous matters can be derived from the soil. This is indeed quite contrary to older notions. GREGORY, for example, says—"There is no reason to believe that the nitrogen of the atmosphere is ever oxidised or contributes to nitrification; and the minute trace of nitric acid sometimes observed in the rain of thunder-storms has in all probability been formed from the ammonia of the atmosphere." SCHÖNBEIN's theory, however, points evidently to another source, and at once shows how thunder-storms may be peculiarly fertilising.

It is, moreover, obvious that the very act of evaporation in plants, which takes place to such an enormous extent, would give rise to the production of a combination of nitrogen in the precise form in which it would at once be available for the necessities of the plant. *M. J. B.*

WELWITSCHIA MIRABILIS (see p. 1007, 1861). Dr. HOOKER informs us that a noble specimens of this wonderful plant, in a cask of earth, has been received at Kew in a green and living, but alas! moribund state. The roots seem to have been greatly injured in the removal; and what is more unfortunate, the two great leaves have been shorn off all round, close to the circumference of the crown, and as these leaves are the only ones he plant ever produces, there can be no replacement of them. This specimen, which weighs 26¼ lbs., was sent by Mr. J. MONTEIRO, a very energetic and promising naturalist, who has added much to our knowledge especially of the ornithology of Loando, and who had previously sent to Kew several specimens of the Welwitschia in a dried state, with the cones in spirits. We hope shortly to be able to give in our pages a brief account, with illustrations, of this most wonderful vegetable phenomenon, of which Dr. HOOKER has prepared a final account, which we are given to understand was read before the Linnean Society on the 18th inst., when these specimens were exhibited.

DR. MELLOR's paper, read the other night at a meeting of the Linnean Society, furnishes a hint in respect to the culture of the OUVIRANDRA or LATTICE-LEAF PLANT of Madagascar, and may perhaps account for some of the failures which have occurred in the attempts to grow it under the artificial conditions to which it is subjected in our hothouses. Attached in the capacity of medical attendant to a mission to the authorities of Madagascar, this gentleman had an opportunity in the course of his journey to the capital, of observing the Ouvirandra in its native waters. This was in a river called Ranumafana, flowing near a village of the same name in the interior of the island, and situated at an elevation of 1500 feet above the sea. Here, in the midst of hot springs, the Lattice-leaf was found to be flourishing. That these springs must have a great influence on the temperature of the water is evident from the circumstance that while passing over the stream, which lay across the route, no less than five of them were visible. The springs are described as hot jets rising from the river bed, below 2 feet of rapidly flowing spring water. One of the jets which occurred at a shallow part of the stream, projected the heated water to the surface at a temperature which raised a thermometer to 160° Fahrenheit. The water is described as having a faint smell, a slight alkaline reaction, and an insipid taste.

Ouvirandra then, grows naturally in water which is very considerably heated, and very rapidly changed. These are conditions which are not in a general way very fully met by the arrangements of our hothouse tanks and receptacles for tropical aquatic plants, but they are conditions which it is quite reasonable to infer are necessary to the well-being of this vegetable curiosity. There would seem, indeed, to be no great obstacle to the imitation, at least, of such conditions in an artificial way. Those who have at their command jets of waste heated water might lead them to the bottom of their Ouvirandra tanks, and allow the warmed streamlets to bubble up in sufficient quantity (aided by an additional surface supply, heated or otherwise, as needful to regulate the temperature) to cause a free overflow. And those who have not such a supply at command, might soon produce one by some of the many contrivances which might be adopted to heat (up to 160°) a supply of water below the bottom of their aquariums. This water being introduced at the lowest part of the tank, in few or in many jets as might be found most desirable, according to circumstances, would rise up and diffuse itself through the mass, causing agitation and displacement of the particles; and if enough were let in (either all *heated*, or part of it merely *warmed*, or if need be not warmed at all) the "rapidly flowing stream" Dr. MELLOR describes, would be imitated, to the no small advantage of the plants. Indeed chilliness and stagnation seem to have been the adversaries against which poor Ouvirandra has hitherto had to struggle. The springs rising with such force and volume as they are described to do, and occurring so numerously, *must* produce a very powerful effect on the general temperature of the stream, raising the water to a degree considerably higher than cultivators would deem it prudent to adopt without knowledge of the fact which this information conveys.

New Plants.

249. DENDROBIUM INFUNDIBULUM.

"D. foliis lanceolatis angustis acutis, sepalis lineari oblongis, petalis oblongis obtusis triplo latioribus, mento infundibulari pedicello æquali, labello lobis lateralibus rotundatis integris intermedio subrotundo plano serrulato emarginato.

"Moulmein, at 5000 feet, T. LOBB, in herb. Hooker.

"A very striking plant, intermediate between D. formosum and longicorne, having the large flowers of the former, and the slender habit and narrow leaves of the latter. The lip with large round lateral lobes also distinguishes it from the former, and the large petals with a circular middle lobe to the lip, and short funnel-shaped mentum, from the latter." *Lindley in Linn. Society's Journal*, p. 16, *Aug.* 1858.

The other day while looking through the nursery of Messrs. Low & Son, at Clapton, I was shown living plants and dried specimens of a Dendrobium, which had been recently imported by the firm from Moulmein, and to which they had given provisionally the name of *D. Moulmeinense*, under which designation it is already to be found in several collections.

I thought at first that the plant was undescribed, but on looking over Professor Lindley's "Contributions to the Orchidology of India," (published in the Journal of the Linnean Society for August, 1858), I at once recognised in that able botanist's description of D. infundibulum (transcribed above), the very plant that Messrs. Low had distributed under the name of D. Moulmeinense, and which they have the honour of having been the first to import alive.

It is a species of surpassing beauty, and promises to more than rival its nearest relative D. formosum. A dried flower that is now before me measures, when laid flat, fully 4 inches across, and that such glorious blossoms are produced in the greatest profusion is evidenced by the withered flower-stalks that crowd the tops of the imported stems. The latter, which are covered with black hairs, are only about half the length and half the strength of those of D. formosum, and have apparently an upright habit of growth.

The Rev. W. Parish, from whom Messrs. Low received the plant, found it flowering in February upon the mountains of Moulmein, where it seems also to have been discovered in a former year, at the height of 5000 feet, by Mr. Lobb. Mr. Parish mentions that he had 44 blooms open at one time upon some plants that he kept in a small basket, and adds that they continued a very long time in perfection. *J. B., Biddulph Grange.*

250. VANDA DENSIFLORA.

Hitherto this most noble plant has only been known from bad dried specimens gathered near Prome by one of Wallich's plant collectors. It now lies before us in the form of a beautiful living spike, produced in the garden of the Bishop of Winchester, under the care of Mr. Lawrence, his Lordship's gardener, whose letter relating to it we print *verbatim.*

"The Bishop received it from Burmah about three years ago; it then appeared a noble-looking plant, with thick, broad, leathery, recurved leaves; the whole plant about 3 feet high, with a very Vanda look about it. The old flower-spikes were also curved like the leaves, about a foot long, not so long as the leaves, and thickly scarred with marks where the flowers had been; but there were no bracts remaining. It must be very free flowering, for there was a spike from the axil of every leaf, and the short spike now sent is from a plant only 2 inches high. The imported plants were dead to within a few inches of the top unfortunately, but I managed to save a few of them. I should have mentioned that the flowers were closer together on the old spike than on the one I send. What a lovely thing it would look, 3 feet high, with spikes a foot long, and as large as a man's arm, as it must be in Burmah."

(The spike in a wild specimen on our table is 9 inches long.) The flowers are as sweet as those of *Aerides odoratum*, fleshy, white with a few lilac spots, and a rich purple lip.

SEEDLING FRUITS.

When at Namur last September, at the Pomological Congress, my son had the pleasure of an introduction to M. Gregoire, who in his kind cordial manner not only told him how he raised his seedling Pears, and brought them into bearing by frequent removal, all of which you have told us, but gave him specimens of all his "gains" (seedlings), and promised him scions of such as he approved of. One seedling he tested was a large and particularly beautiful Pear, ripening about the end of September, and keeping till the middle or end of October: this was of the most exquisite flavour.

From all that I have observed I am inclined to think that M. Gregoire's system will not succeed in the climate of England as it does with him. Amateurs in England who may wish to grow a large number of seedlings in a small space will find annual removal beneficial, for it will make the trees compact, and in time fruit buds will make their appearance, but owing, as I presume, to the want of force in our summer climate, 10 years generally elapse before this desirable end is attained. In some few cases, by grafting the young shoot of a seedling Pear in the stem of a Pear tree in bearing on the Quince, I have made it produce fruit a year or two, or three, before the original seedling tree, but if the latter be properly cultivated, they generally march together, and the grafted shoot and the original tree bear fruit simultaneously.

The most satisfactory mode of raising seedling Pears in this country is to sow the seed in pots in December and January, to place the pots in gentle heat in February, and as soon as the plants make their appearance to follow the system of M. Gregoire in pruning their roots, only instead of planting them out they should be placed in 4-inch pots in or on bottom-heat. In April they may be potted into 6-inch pots, and in June into 8 or 14-inch pots; they may then be removed to the orchard-house, or kept on bottom-heat at pleasure. By this simple mode of culture fine trees with a stout healthy stem, 3 feet in height, may be obtained in one season. The following season the trees may be grown in the orchard house till they bear fruit, but they should be confined to 10-inch pots and repotted and root-pruned in the autumn of every season, and kept in the orchard house all the winter. It is the dryness of their roots in winter and the favourable climate they make their growth in in summer that brings on early maturity, so that under this system a Pear tree may be expected to bear fruit in six years, while on the removal system of seedling Pears out of doors, 10 or 12 or more years must pass before seedling Pears (with a very few exceptions) come into bearing. Last year I had one tree out of three or four hundred twelve-year old seedling trees that bore fruit, and that was from the Beurré d'Aremberg, but it was simply a good, but not a remarkable Pear. In raising seedling Pears the origin of each should be written in a permanent label. Without this the interest in the progress of the seedlings is much diminished. I have noticed some interesting characteristics in seedling Pears which under the risk of being tedious I am tempted to mention. There is a sort of family race-like character in them to me remarkably interesting.

If you raise two or three score seedlings, we will say from Passe Colmar, you may observe the adherence to the parent in the habit of the trees, with some slight deviations — in fact a family likeness in leaves, and shoots, and general habit; this, as far as I have yet seen, goes down to the fruit. The Passe Colmar is remarkable for this adherence to its type.

Glou Morceau is equally so, for if you sow some 20 pips taken from two or three fine specimens of this large handsome fruit, and watch the progress of the young trees they produce, you will perceive a strong family resemblance in their habits. Beurré d'Aremberg likewise produces from seed a race with a strong family resemblance. Marie Louise, Knight's Monarch, Beurré Capiaumont, and above all Josephine de Malines, give seedlings that, making some allowance for the thorns which almost invariably are more or less abundant on young seedling Pear trees, show strong marks of the race from which they have sprung.

Among the seedlings showing the marks of race which I have mentioned, there are here and there one that from the first shows a marked difference in habit; these are at once of great interest to the Pear raiser, for from these vagaries of Nature, he may expect something new.

All that I have hitherto said relates to Pears raised from fruit, the blossoms of which have been unfertilised with other sorts. My experience with cross-bred Pear seedlings has not been so extensive, but I may one day tell the results of my seedlings from fertilised flowers. It seems from the experience we have gained, that the scientific mode of raising new Pears by cross-breeding has not done much for us, and that chance has done much more—for to chance we owe Marie Louise, Winter Nelis, Louise Bonne d'Avranches, or de Jersey, as we improperly call it, Josephine de Malines, still the finest late Pear known, and many others. To cross breeding we owe Knight's Monarch, which I think is the only well authenticated case we have of a fine Pear raised from a fertilised flower, and a very noble Pear it is. I had nearly forgotten that Mr. Williams of Pitmaston, raised several cross bred Pears; among the best is the Gansel's Seckel, between the Gansel's Bergamot and Seckel Pear.

I have, I think, sufficiently pointed out the peculiarities of seedling Pears, in adhering to a certain extent to races. I will now mention some other peculiar traits in them. Seedling Pears raised from late sorts will often bear fruit like the parent in form and general appearance, but for the most part they will ripen earlier, as if Nature said, "You must not go beyond my tether; I cannot allow you to have Winter Nelis Pears that will keep till June."

To illustrate this I may mention that some 20 years since I raised a score or two of seedlings from the Ne Plus Meuris Pear — the flowers not fertilised, as I much wished this valuable late Pear pure, but I hoped to improve it in size and beauty. The young trees could scarcely be distinguished from their parent in leaves and shoots; they all bore fruit, but not one was equal to its parent in keeping properties; some were larger; my hopes were very sanguine, but they were all ruthlessly crushed, for my hopeful seedling Ne Plus Meuris Pears all ripened in the autumn, and the trees were destroyed. About the same time I raised one or two seedlings from that small, nice flavoured, late keeping Pear, the Duchesse de Mars; these proved abundant bearers, and of pretty good quality, but they ripened in October, a month in which we are surfeited with Pears. Some years after that period I raised a few seedlings from Beurré d'Aremberg; one of these bore fruit in 1859, and proved like its parent in the shape and size of its fruit, but it ripened the end of August; it had the same icy-cold juice peculiar to B. d'Aremberg, and was particularly delicious in the hot weather of that summer and autumn. It was so highly in flavour with the wasps and flies, that every fruit would have been destroyed if they had not been placed in muslin bags. This tendency in late Pears to produce early varieties is just now illustrated by Mr. Graham's Autumn Nelis, which is equal in excellence to its parent, the Winter Nelis, but ripens in September and October. This may not be an invariable rule, for with Mr. Gregoire, I have reason to believe that late Pears produce late Pears; still, as far as my experience has gone, it is a curious fact.

I have the glimmering of an idea that seedlings from new kinds of Pears vary more than those raised from old varieties, and have not that tendency to a race-like character; thus seedlings raised from seedlings of Marie Louise—say Hughes's Victoria, would vary more than those raised from its parent. This, however, is to be learned by experience. Alas! that pomological experiments eat so into one's life-time. A pomologist ought to live twice the three-score-and-ten years allotted to man.

The raising of new Pears from seed is an interesting employment, but not to be compared with that arising from raising of Peaches and Nectarines. If orchard house culture had done nothing more than facilitating the raising of seedling fruits, it would have deserved some small show of gratitude from the gardening world.

Peaches and Nectarines from stones sown in pots in the autumn and removed to the forcing house in January soon commence to grow rapidly, so that if they are gradually potted into 10 or 12-inch pots and placed on a warm surface, they will make trees in one summer from 5 to 6 feet in height. In South America I have heard that Peach trees the second year from the stone bear fruit. With skilful culture and strong heat I believe it to be possible to accomplish this in England. Mr. Knight, I think, once grew a seedling Peach and made it form blossom-buds at the top of the leading shoot the first season. I have seedlings from my Victoria Nectarine which first broke ground, *i.e.* came up, last March, which are now with only moderate cultivation from 4 to 5 feet high; the pots stood on a warm surface, so essential to healthy growth in our cool climate. I commenced my experiments in raising Peaches and Nectarines from seed soon after the advent of orchard houses, for being struck with the earliness and goodness of some Early York Peaches on a tree trained to a wall—one of the first I imported from America—I sowed the stones and raised some 15 or 20 trees. These have all borne fruit, having a strong likeness to the parent in leaves and flowers. Two have, however, given larger fruit, one of which is larger and earlier the other larger and not quite so early. The first I have thought worthy of the name of the Early Victoria, which in common with its parent has a most grateful delicious flavour. I mention this batch of seedlings with additional interest, because one tree exactly like all the others with its glandless leaves and large flowers bore Nectarines of a large size and with yellowish flesh. Now there was not a Nectarine tree on the wall, nearly 300 feet in length, but some yellow fleshed American Peaches.

My second experiment was with the new White Nectarine. This, as is well known, requires a warm soil and a warm summer to ripen it well, otherwise it is too acid. I raised several seedlings, one of which I at one time thought of naming, as the tree is hardier than its parent, and its skin of a more silvery whiteness, but I found no improvement in size or sweetness, so it has merely taken the place of its parent in the nursery, because it is a better grower and more hardy—perhaps a few days earlier. With one exception, the others raised at the same time proved exactly like the parent, but that exception has proved of great interest, for it is a large Peach with a silvery white skin. The tree has the same leaves and the same large pale flowers as its parent the White Nectarine, leaving no doubt of its origin. I mention this emphatically, as Monsieur Carrière through a friend wrote to me expressing some doubt if a Peach could be raised from a Nectarine, and *vice versâ*. I may add that French pomologists do not allow of our distinction of free-stone Nectarines: they say they are properly Peaches, and that "tous les Brugnons se distinguent des autres Peches par leur peau lisse comme vernissée, et leur chair adhérente au noyau." Who is to decide? My next experiment of interest was with the Stanwick Nectarine (you may perhaps, Mr. Editor, remember sending me some fruit, (four in number) of this very remarkable sort, when it was being propagated here for the Duke of Northumberland. The stones were sown, and in due time four trees made their appearance, and were numbered 1 to 4, all much alike in their habit; they all bore fruit with exactly the flavour of their parent, but differing slightly. No. 3 had more colour, and did not seem inclined to crack like its parent. No. 4 was perfectly green, but its fruit were larger: from No. 3 I at once raised seedlings without fertilising its flowers, and to my great satisfaction I find these have departed from the type, for their leaves and shoots are like those of the Elruge Nectarine; the trees are full of blossom buds, and will I hope give plenty of fruit next season. From my first experiment I thought this most distinct kind would not vary unless its flowers were fertilised, but it seems that it is merely a question of time, and that fruits and flowers when (shall we call it?) domesticated and propagated from seed, now vary to a great extent. I have presumed that the Stanwick Nectarine as grown in Syria would be in a semi-wild state, and that there it would reproduce itself without any material variation.

In narrating my experiments with late Pears, I have mentioned their tendency to produce comparatively early varieties from seed. This I find carried out to a certain extent with Peaches. From Gregory's Late Peach, a very good melting free-stone sort, I have a tree which produces large Pavies or Clingstone Peaches, which ripen fully a month before its parent.

From Pavie de Pomponne, one of the largest and latest of Peaches, I have raised a very fine melting free-stone Peach much like its parent in the beautiful waxy tint of its skin, and in its very large flowers and leaves, but it ripens a month earlier or just before the Late Admirable.

From the Salway Peach, very soon after it was introduced, I raised a seedling of the same bright golden colour as its parent, but it has always ripened from a fortnight to three weeks earlier. I thought it so good in 1858, when the comet was blazing in the autumn of that year, that I named it the Comet Peach; it is really a nice variety, but ripens with the crowd of Peaches. I have in the course of my experiments met with other cases in which the stones of late Peaches have produced comparatively early sorts.

Early Peaches seem to produce their like, for in addition to my seedlings from the Early York Peach mentioned above, I have raised one from a very early Pavie called Grosse Montagne Précoce. I was much struck with the size and earliness of this clingstone Peach, and at once determined to make it the parent of a new race. Only one stone out of several gave a plant, and that proved to be a large oval melting Peach, early, but not so early as the Early York, and so I named it the Early Albert. The tree is remarkable for its hardiness and free-bearing qualities. Its parent gives large flowers; the flowers of the Early Albert Peach are small.

The Royal George Peach reproduces itself from seed with rare exceptions. One among several that bore fruit last season proved to be an exception, for although it gave small flowers and serrated leaves, its fruit were of a bright golden yellow, and its flesh of the same colour; this may be worth naming the Golden Royal George, but caution must be exercised or we shall be overdone with new Peaches as we are with new Pears.

The Noblesse Peach seems almost to possess the quality of a species, for it is very rare to find the least deviation in the fruit that seedlings raised from it give, nor in the leaves and flowers. The Grosse Mignonne possesses the same quality, for out of 20 seedlings it is rare to find much deviation from the parent stock. Last season one tree out of several gave small flowers, instead of those large bright rose-coloured ones peculiar to the sort, but its fruit does not differ. The Walburton Admirable reproduces itself from seed, with some little variation in the size of the fruit.

I have now to notice some remarkable vagaries in seedling Peaches. A seedling from that very dark-coloured Peach which we call the Bellegarde, and the French Noir de Montreuil produced some small very dark-coloured Nectarines, of no particular value, but of interest because of the parentage of the tree. The Bourdin Peach, a well-known late melting sort, which generally reproduces itself from seed with but little variation, has given me a seedling Nectarine of quite an original type, and likely to be the foundation of a new race of late Nectarines. It is large, oval, partially covered with russet, of a dull red on its sunny side, and of a deep crimson next the stone, from which it parts readily. It ripens about the same time as its parent, viz., the first week in October, and if placed under glass in the sun for a few days its flavour is piquant and excellent.

The Pitmaston Orange Nectarine, said to have been raised from the Elruge, but bearing the strongest family likeness in its large bright blossoms and orange-coloured fruit to the Brugnon Violet Musqué of the French, except that it is a freestone, adheres most pertinaciously to its race. Out of 20 or more seedlings raised from an old tree here nearly all proved exactly like the parent, with some exceptions one with different glands, and ripening about a week earlier, the other with large oval and very beautiful fruit, ripening about 10 days later than the parent stock. There was, however, one remarkable exception in this batch of seedlings, viz., a large crimson Peach of a most excellent flavour. I have a second generation of seedlings raised from the two seedlings above mentioned. They have nearly all borne fruit, all of the same colour and quality as the Pitmaston Orange, varying slightly in size. From the Peach tree with its singular origin, now about seven years old, I have raised seedlings coming into bearing. If they produce Nectarines, which I hope for, the experiment will end most interestingly. The Hardwicke Seedling Nectarine has given a seedling with the large flowers and serrated leaves of its parent, but its fruit worthless clingstone Peaches. The Newington, a clingstone Nectarine, has given a seedling producing late melting Peaches, good but not better than the Late Admirable Peach. The Fairchild's Early Nectarine, one of our oldest varieties, and very beautiful as an orchard-house tree when covered with its bright golden fruit, reproduces itself without the least variation either in leaves, fruit, or flowers.

Observing the great tendency to vary in the seedlings raised from Peaches and Nectarines, I did not at first think of fertilising their flowers so as to bring out any new feature; it was not till I saw the defects of the Stanwick Nectarine that I felt a wish to improve it or to impart to some other sort its peculiar and excellent flavour. I therefore fertilised the flowers of the Violette Hâtive Nectarine, hoping to procure a variety partaking of the qualities of both parents. From the flowers thus fertilised I raised several seedlings, only one of which partook in its sickle-like leaves of the habit of the Stanwick.

In its third year, 1861, this interesting tree, which I had watched with a parent's eye, bore some 10 or 12 fruits; these happened to ripen just at the time when a meeting of the Fruit Committee at South Kensington early in September took place—a matter of chance, for owing to the committee meeting only once a fortnight it is often difficult to place perishable fruits before it for an opinion. The Nectarine was highly approved of, and named the Victoria Nectarine. It is a perfect specimen of a cross-bred fruit, having the shape, flavour, and leaves of the Stanwick, the male parent, with the small flowers, redness at stone, and earliness of its female parent, the Violette Hâtive. Another cross-bred Nectarine, between the White Nectarine and the Elruge, the former the male parent, bore fruit for the first time the same season. This is equal in quality to the Victoria, but very different in flavour, and was named the Albert Nectarine. It is one of the largest of Nectarines, and has the vinous piquancy of the White Nectarine with a richer and more saccharine flavour. Its colour is greenish white with the rosy cheek of the Elruge.

It was mentioned in some foreign publication, or told to me by some one of the numerous foreign pomologists who called upon me during Exhibition time last summer, that an experimentalist at Vienna had raised some hybrids between the Apricot and the Nectarine. This is scarcely to be credited, but the *on dit* roused my attention, for I had observed last winter, when my seedling Peaches and Nectarines had shed their leaves, a very remarkable tree, a seedling raised from the Newington Nectarine, with the dark brown shoots of the Apricot, so as to be taken for an Apricot tree at a short distance. This tree has at this moment the same peculiar appearance, but on looking at it closely the silvery blossom buds of the Peach are apparent.

It will be observed that I have in this I fear too lengthy article mentioned the origin of my seedlings. This I have been enabled to do from great exactitude in my operations. During the fruit season pots filled with earth are always at hand, with a blank wooden label stuck in each. Whenever a choice or a fruit from hybridised flowers is eaten, its seed is at once sown, and its name, origin, and time of sowing written on the label. It is so interesting after a few years to see suspended to a seedling tree, we will say, bearing large Peaches—"From Elruge Nectarine, 1857." I have with my own fingers planted the stones and seeds of the many hundreds of seedling fruit trees I possess, and my interest in them never flags.

I have thus far given a portion of my experience in raising seedling fruits; if I have not carried the subject to a satiating length, I will continue a relation of my experiments with seedling Apples, Plums, Cherries, Strawberries, Raspberries, and Currants. *Thos. Rivers.*

DIES ORCHIDIANÆ.—No. I.

Having occasion to be in London about the middle of last November, I could not resist the opportunity of visiting the principal collections of Orchids that are to be found within a moderate radius of Charing Cross, and as it happens that I was similarly occupied in the same month of 1832—just 30 years ago—it has occurred to me that a few desultory reminiscences of my former, as contrasted with my more recent visit, may possibly interest some of your Orchidist readers whose diploma may not date quite so far back as my own.

At the time to which I refer London had not yet become, what now she is, the metropolis of the Orchis world. There might have been half-a-dozen species at Kew, a score at Colville's in the King's Road, 50 at Chiswick, and twice or thrice that number in the collection of the Messrs. Loddiges at Hackney, where a few years later they counted their Orchids not by hundreds but by thousands; but if all these establishments had coalesced they would scarcely have proved a match for the Orchid growers of the north, where Mr. Richard and Mrs. Arnold Harrison (of Aigburth near Liverpool), Lord Fitzwilliam, Mr. Bateman, Mr. Barker, and others, had already established themselves in great force. Nor was the then superiority of the northern powers at all difficult to explain, if it be borne in mind that probably four-fifths of the species at that time in cultivation were natives of Rio Janeiro, or of our West Indian or South American colonies, with all of which Liverpool was in constant communication. But when these ready sources of supply had been exhausted, or at all events had ceased to send over anything new—the northern superiority could no longer be maintained, and the belt which Mr. R. Harrison loved so well, soon passed into the hands of the Messrs. Loddiges, where it remained until it was seized by Mr. Rucker, who has held it now for 20 years, and is worthy to hold it for 20 years more!

But confining our attention for the present to London and its little Orchis-world, what startling changes as affecting both plants, and places, and men—have come to pass since 1832! Of the men—the Orchidists I mean—of that remote epoch, Professor Lindley alone remains. I found him working hard in November 1832; he was working harder still in November 1862; and he must work harder than ever up to November 1892, if he aspire to do half of what the world seems disposed to expect from him—the "*Folia Orchidacea*," first of all. Professor Reichenbach is indeed labouring worthily in the same field, but his contributions to Orchidology are scattered though such a multitude of continental publications, as to be practically inaccessible in this country except to purely scientific men. Meanwhile our Orchideous vocabulary is taking grievous harm day by day.

Among those with whom I was thrown in contact in 1832, and who have since gone to their rest, the name of Mr. Geo. Loddiges necessarily occupies the foremost place. His devotion to Orchids and humming-birds was intense, but though he loved the birds beyond the plants, yet I doubt whether any other man ever loved the plants themselves so well. He was moreover an excellent botanical draughtsman, and I found him on the occasion of my first interview (Nov. 1832), with a plant of Zygopetalum stenochilum* before him, from which he was preparing a drawing for the "Botanical Cabinet," at that time a monthly botanical serial of some repute. From his studio we proceeded to see the Orchids, which as yet were not indulged with a house to themselves, but were arranged in the great Palm-house on a broad shelf facing the north. Here were probably some 30 square yards of Orchids, many of them as yet undetermined; very few were in flower. If I name Cattleya Loddigesii, Zygopetalum crinitum, Cymbidium sinense, Epidendrum cochleatum, and a Pleurothallis or two, I shall have exhausted the slender list! But the preceding summer had brought out some remarkable plants, *e. g.* Stanhopea oculata, Bifrenaria atropurpurea, Maxillaria Warreana (now Warrea tricolor), and Cycnoches Loddigesii. Indeed it was the appearance in rapid succession of new and wonderful forms that in those days kept us all in a state of perpetual excitement. There is nothing like it now—there can never be anything like it again! Multitudes of beauteous new Orchids are doubtless yet awaiting the hour of their introduction, but we cannot hope that any forms so marvellous as those with which we are presented in the genera Coryanthes, Stanhopea, and Cycnoches, still remain to be discovered! At all events the last 30 years that have so vastly swelled our lists of species have failed to yield any new generic types at all approaching in interest to those that I have just named, and unless Mr. Darwin come to the rescue, we must must make up our minds to dispense with startling novelties, and be content with such forms as we already have. It is indeed remarkable—when an importation of Orchids from some new quarter of the world is unpacked—to notice the facility with which a practised eye will refer the strangers to their proper genera. If the package come from the East, a plant is at once pronounced to be a new Aerides, Dendrobium, or Cœlogyne, and, if so, is received with acclamation, but woe betide the luckless intruder suspected of being an Eria or Bolbophyllum in disguise! Again, if the package come from the western world, a new Cattleya, Lælia, or Odontoglossum may be assured of a hearty welcome, while a poor wretch of an Epidendrum will not long be left in doubt as to what a conclave of English Orchidists think of him. Such a rapid diagnosis was not possible in days of yore; indeed I remember the case of a well-known amateur who prided himself on his knowledge of Orchids, and who, happening to have first choice out of one of Cuming's East Indian collections, selected for himself a worthless Sarcochilus, leaving to the Messrs. Rollisson a plant of less promising exterior, but which proved to be the first specimen ever introduced alive into Europe of the lovely Phalænopsis amabilis! It was sold a few months afterwards to the late Duke of Devonshire for a hundred guineas. *Serapias.*

(*To be continued.*)

* I carried off a piece of this Zygopetalum; it was the identical piece that bore the flower-spike from which Mr. Loddiges' drawing was made; but though it bloomed frequently in my stove, its flowers were invariably those of a common form of Z. crinitum; that is, they discarded the narrow lip that constituted the (supposed) specific distinction of Z stenopetalum. No doubt it was a casual freak, not suspected at the time, but such as we now continually meet with among Orchids If any of your readers have, however, seen a Zygopetalum with a narrow contracted (instead of a broad spreading) labellum, they will perhaps kindly furnish intelligence of the fact. Failing this the pseudo-species Z. stenopetalum will have to be cancelled.

CHRISTMAS DECORATIONS.

There is so little indoor gardening going on just now that perhaps a few little hints about making up wreaths and Christmas decorations may be more willingly read, and I am sure that they will be much more easily written.

So much there is that may be done with such everyday materials if we can but manage massing the colours well, and in little villages and in country houses, too, where actual flowers are scarce, a few hints on their substitutes often may come in useful.

Every one knows of course how to form devices and make ornaments of red berries, forming them into close masses or mounting them into small sprays by means of gum or wires; but for the wreaths of green and the festoons of Ivy there is one very practical observation that I must be allowed to make—that winding the string on a shuttle or on a sort of short netting needle saves a world of trouble and numerous entangles.

There are three things especially that I have seen very useful just to bear in mind in performing any such tasks. First, in arranging flowers over some large space—going round an archway—encircling a picture frame—arching some doorway over, it is always more telling to make the flowers in knots than it is to strew them, thickly even, all round. This struck me once very much in seeing a large screen thus decorated. The flowers scattered over it scarcely "showed" at all—half of them put in small knots, sparkled in all directions.

In making up devices, secondly, it is such an especial point to have the shape well indicated underneath the flowers, in something of the same colour. Letters, devices, stars, anything that it may be, remain thus distinct without at the same time lessening the beauty of the flowers. I remember specially seeing once a beautiful star in flowers. The form was traced out in cardboard, each alternate ray being made rather wavy, or the number of rays uneven. This was cut out easily with a sharp penknife, the outer points of each ray being calculated on the circumference, and a detached ray being used to sketch out the shape of each by. The card was covered thickly with cotton wool, and the snow white flowers were laid and tied through upon it, strings passing over the stalks to tie beneath the card.

The Camellias, especially, for any such devices should, if leafless, have a piece of cotton wool prepared to receive each separately. A round piece should be cut out rather smaller than the flower, and the stalk should be passed through a hole in the centre of it. A little gum water is useful in preventing the entire fall of petals should they flag. In arranging colour, too, I think there is a good deal of distinctness that depends on avoiding dabs. Dabs of colour everywhere are like italics in books when they come three or four in a sentence—rather ineffective.

It seems to me that colour should be in everything much as it is in painting, where a very few clear touches tell more than a thousand dimmer ones—but where a thousand bright touches would end in a regular muddle.

Now in design-doing, a point that indicates shape is worth marking brightly, but in a V (for an easy example) what would be two thin lines of red Geranium or of Holly berries? And what would be, on the contrary, two groups of the same collected at each point, and grouping down a little to another small group below? If the latter were large, the three groups would take no more flowers at all than the mere lines would use up, and many will see directly the difference it would make in the general clearness. When red flowers are used, red velvet makes the best frame, and floral devices generally look extremely well framed in with a wreath of evergreen, which may repeat or not the colour of the design.

A thing much overlooked also is the sorting out shades of leaves. People would hardly believe how bright and golden the leaves look of many common variegated shrubs if they are only chosen quite detached from all darker ones. The one dark leaf in a spray makes an unknown difference; it prevents all contrast by being such a connecting link between the dark green and gold of the various tinted foliage.

By making little knots of the very lightest leaves mixed in amidst the darkest, all the effect of colour may be obtained delightfully, and in a most pleasant manner, because the things are so common. *E. A. M.*

HUE AND CRY.

Cuitlauzina pendula and *Alamania punicea*.—I am in receipt of a letter from my friend Professor Reichenbach (fils) in which, commenting on the notice of the above plants published the other day in your Paper, he refers me to an article of his own that appeared in "Bonplandia," August 1, 1855, in which he endeavours, and, as I think, successfully, to identify Cuitlauzina pendula (Lexarza) with Odontoglossum citrosmum (Lindley). The same idea once occurred to my own mind, but I did not go very deep into the question, deeming it improbable that a botanist who had referred three species of Odontoglossum (*i. e.*, O. Cervantesii, O. apterum, O. membranaceum) to their true genus would have committed the mistake of constituting the fourth a new genus; and I am therefore only the more thankful that the learned Professor, taking a less superficial view of the case, should have been led to the true solution of what had been so long a great botanical puzzle. Professor Reichenbach also informs me that he has ascertained that Alamania punicea is merely an Epidendrum. If any one therefore should have been led to entertain the idea of an expedition to Valladolid in search of these two plants, he would do well to reconsider the matter. *J. B., Biddulph Grange.*

Home Correspondence.

Deep Vine Borders.—There is in our neighbourhood a Vinery, in front of which runs a carriage road, 10 feet wide. The Vines are planted 9 feet deep, in 2 feet of earth, covered with 7 feet of rubbish, gravel, &c. This 7 feet of rubbish, &c., is periodically removed, and slaughter house or other manure is mixed in with the 2 feet of soil. This operation is about being performed now. The inside of the house is tiled over. The family resides at this place only occasionally. The Vines are pruned twice a year, and barrow loads of berries and bunches are annually thinned out. During the absence of the family, in spring and summer, the Vinery is at times shut up, without care, for weeks together, and yet the produce, for quality and flavour, is all that can be desired. *H. H., Cork.*

Training Vines.—One of your Correspondents a few weeks ago proposed a question as to the best mode of training Vines up rafters. When erecting a Vinery, some 16 years ago, I determined to try horizontal in preference to vertical training, as being more likely to equalise the flow of sap, and thus keep the lower part of the house as well furnished with fruit as the upper. The result has been perfectly successful, and I would strongly recommend the plan to others. Horizontal training has for many years been adopted at Thomery on the open wall. See the plate in p. 458 of Loudon's "Suburban Horticulturist." It requires very little ingenuity so to arrange the Vines as to cover every inch of glass ro fing. It is obvious however that when this system is adopted, no plant which requires light can be grown in the house. *G. S., Bromley.*

Black Alicante Grape alias Black Morocco, &c.—I certainly differ from your correspondent "W. T." respecting the quality of this Grape, for I consider that when it begins to shrivel it is superior to the Barbarossa, or to any other black Grape with which I am acquainted. I believe that 10 years ago no person ever heard of such a Grape as the Kempsey Alicante; and as your correspondent "W. T." has grown this Grape for 25 years, he of course has had it under some other name. If we are to have the name of every place where this or that Grape may have been well managed added to it every time it is shown, we shall soon have as confused a Grape nomenclature as we have now in regard to Potatoes. I myself witnessed at the late great Potato show at South Kensington in October last one variety of Potato under no fewer than 16 different names. *Edward Bennett, Osberton Hall, Worksop, Notts.*

Geometric Gardening.—I cannot resist giving you a line on an attack on "geometric" gardening (see p. 1092), by a would-be lawgiver, a Mr. Newton, and although he is totally a stranger to me, yet I guess (*à la* Yankee) that whether professional or otherwise he is evidently no disciple of the great men who invented or originated that class of art, viz., Le Notre, Boyceau, Berain-Decker, Le Blond, &c., &c., whose clever designs in the possession of a friend of mine, abundantly prove to be far ahead of those by any modern professors, especially such as uphold the mongrel jardin anglais of the last century (*i.e.* of the Brown school) with its wibble wabble walks, flower beds on Grass, only describable by their resemblance to tarts, tadpoles, stars, and other monstrosities (miserable in winter), with detached shrubs and sculpture, set at random anyhow, these backed by masses of evergreen and deciduous materials in heterogeneous jumble. Luckily there are now plenty of men of taste who feel that as the so-called "natural style" is all bosh, and in character has no relation whatever to Nature, they wisely prefer the conventionalism of their ancestors, which happens to be very difficult to design satisfactorily, and consequently not likely ever to be tolerable from men without artistical education. Indeed it is lamentable that so very few gardeners of the present day can draw at all, however apt in floriculture and the mere mechanical part of gardening, and it is remarkable that the most pretentious are prone to cavil at the revival of an old art because it is beyond their power of appreciation as well as acquisition. Were not our domicile so far apart I might have opportunity for occasional parley on garden art, with a view of showing that "la critique est aisée, mais l'art est difficile." Pray excuse this long yarn, but as Mr. N. does not enlighten us by reference to any grand example illustrative of his devoted principle, the inference is, he has wandered beyond his tether, as would be very easy to elucidate did time, space, and your patience permit. *Miles.*

Royal Horticultural Society and Nurserymen's Prizes.—Your Correspondent who has commented on a letter of mine in a contemporary has found a veritable mare's nest, and in justice to the nurseryman alluded to and to myself (who is that?), I must beg your insertion of this short reply. Had I for a moment thought that any one could put such a construction on my letter (and much as I know of the uncharitableness of human kind, I was not prepared for such a perverse ingenuity) I should have stated two little facts which might have spared your correspondent his effusion, viz., that the donor of the prizes neither wrote the letter nor had anything whatever to say to it (the passage in inverted commas being not a quotation, but the purport of what I had heard the reply was); and also that the donor distinctly stated that he did not care about his name being inserted, so long as the prizes were announced. *Vigilans.*

Galvanised Iron Wire.—I have much pleasure in complying with "J. P. M.'s" request to state my reason for condemning galvanised iron wire for Peach tree training. About seven years ago I erected a Peach house 40 feet long and 20 feet wide, span roof, all glass, in which I planted eight or 10 trees in bearing condition; some of them were trained on plain iron wire painted, and others on galvanised iron wire not painted. The following season I found that the young wood of the latter, wherever it came in close contact with the wire was seriously damaged, the bark perishing more or less, causing the young shoot to have but a lingering existence if not utterly killed, whilst those trained on the plain iron wire received no damage. The second year I placed small strips of lath wood between the galvanised iron wire and the young wood, which I found troublesome, but more or less effective. The following season it occurred to me to paint the wire, which I did, and since that my trees have received no injury, except where the young wood comes in contact with the wire where the paint was rubbed off. Speaking to my gardener on the subject, he informed me that one of my neighbour's trees is now suffering from the same cause. I enclose you a few specimens. With respect to the health of my trees, the only fault I have to find with them is being too vigorous, which occasions me to root prune, and sometimes to lift them, although they bear good crops. This therefore cannot be the cause of the complaint. Galvanised iron wire may differ as to its pernicious effects; on that I am not prepared to offer an opinion; but this I am sure of, that the galvanised iron wire I used did damage my trees. *A Subscriber, Birmingham.* [We have caused special inquiry to be made into this matter, and we find that our correspondent is right in attributing the damage to the galvanised wire. It has been observed that young shoots of the Peach, and other stone fruits, are almost invariably killed where brought in contact with galvanised wire, just like the specimens now sent us. Even in wood two or three years old, gumming is found to be induced where tied to the metal. Indeed iron wire itself is unfit for training against unless kept well painted.]

New Self-protecting Broccoli.—I beg to send you a head of Winter White Broccoli raised by a gentleman's gardener in this neighbourhood from Snow's Winter White, from which it differs in being a true protecting sort, and coming in here 10 to 14 days earlier. I regret that the leaves, which would have shown its protecting character, were cut off when received by us, but specimens sent to us last year had them on, and showed this property fully. The sample I transmit would be cut from a small lot on the 10th or 11th inst. Although the thermometer has been as low as 20° twice or thrice this season, it will be seen that no trace of the cold has been left upon the Broccoli. *Jas. Backhouse, jun., York.* [This was a capital specimen of the sort, although a little browned by the loss of its protecting leaves.]

Grape Growing in Norfolk.—I have read with much interest your notice of the remarkable crop of Grapes produced by the skill of Mr. James Hardie for his employer in Norfolk. I may be permitted to say that there is on the face of the information something almost incredible; but knowing from your authority that the fact is indisputable, I feel sure that a few notes more in detail on the treatment and management of the Vines would be acceptable to the working gardener. For instance, we would like to know how they were planted, whether outside or inside; what amount of border they had, its depth and consistence; what kind of temperature was kept up, and the attention and amount of labour they required; whether, too, any other occupants were permitted in the Vinery. The notice in question, read, as it stands, by gentlemen, without some qualifying instructions, might cause them to be dissatisfied with the labours of their own gardeners, who are prevented from performing such marvellous feats by the multitudinous variety of things that demand their attention. *N. H. Pownall, Radcliffe-on-Trent, near Nottingham.* [Surely no Grape grower can want the information our Correspondent asks for; nor can we give it, as Mr. Hardie is no longer in England.] ——Allow me to ask your Correspondent whether or not he burst all his fruit buds the first season? Will he also inform us how he is to obtain his second year's crop? I think I may venture to assert that he has not a fruit bud or eye within 6 inches of his rods; on what therefore will he depend for his second season's crop? Will he prune close home to his rods? If so, he will have neither fruit bud nor eye in the whole length of his rods. Will he rely on his fruit-bearing wood? If so, I strongly suspect, as I have just stated, that he will find neither eye nor bud within 6 or 8 inches of his rods. I would ask, therefore, is he prepared to prune at that distance from his rods? Even in that case, however, his chances of a crop would be uncertain. As to the appearance of Vines pruned after this fashion just described, I shall not venture an opinion. I may say however that few men would like to own them, or envy the man who had them in charge. *H. G., Buckland Gardens, South Wales.*

Fruit Culture at The Hasells.—My attention has been directed to two or three articles on this subject which have lately appeared in your columns, and as one of the gardeners who called at The Hasells early in the autumn of 1861, I venture to make a few remarks on what I witnessed. That the splendid trees which I saw there bore the fine crops described by "T. R." I was quite prepared to hear. Nothing but the grossest mismanagement could have produced a contrary result, but is it fair to give the whole credit to a subordinate who at the time of my visit had been there only a few short weeks, to the utter condemnation of the modest and very intelligent man who was introduced to me as the head gardener. I admired the arrangement of the young fruit trees and their fine condition in the open ground. Now these had been planted the previous year. "T. R." says that from overwatering, &c., the fruit dropped, and the leaves turned yellow—a statement wholly incompatible with the short jointed robust health and extraordinary foliage borne by every plant in the collection. That credit is due to Mr. Dean for his after-management I fully admit, but why rob the late gardener of all commendation? to which I, as a practical man, emphatically declare he is entitled. The right-thinking portion of your readers must, I am sure, entertain a similar opinion. *A Lover of Fair Play.*

Trade Advertisements.—Your "Constant Reader" has rather provokingly set my worthy friend Mr. Anthony Waterer adrift, as he seems without a compass, (not steering to the point) and calls on me to pilot him; I shall do so, on condition that he keeps faith with the public. He says, "if I am materially wrong, I shall be very glad and willing to admit it." I like the promise. First then, he was "materially wrong" in publishing to the world that "all the plants in the trade of P. nobilis except his own, were grafted, and comparatively worthless." 2nd. He was "materially wrong" after he knew that he had run foul of his mates in the trade, not to strike sail and render the *amende honorable*; all he did was to shirk the main point, hoist his standard 2 feet high, and challenge the trade to produce his equal. The first shot his namesake John Waterer of Bagshot fired at this 2 feet triumph, down it came—the moment he advertised seedlings of Picea nobilis from 2 to 3 feet. It was really too bad, a second marksman threw a shell; and shivered it to pieces. Mr. Veitch of Exeter wrote me a few weeks ago that he has seedlings of Picea nobilis (which came from Elvaston) ranging from 2 feet 3 inches to 2 feet 9 inches high; neither of these long ranges ever reached Knap Hill. Now, with such awkward customers as these, our worthy commodore was "materially wrong" in not hoisting his pennant 4 feet instead of 2—then he would have been out of range. And who can tell that others bent on mischief may not go beyond these? We will not provoke them, seeing that our Knap Hill friend does not advertise seedlings of P. nobilis higher than 15 inches. P. nobilis from cuttings thrive well at Knap Hill above "2 ft. high;" somehow or other grafted plants of the same height do not—although they do remarkably well at Worcester and other places, as my worthy friend can bear testimony; he examined a prime lot there lately, I am told, and expressed his surprise to find they were not "clubbed at the graft." He said he could not understand why they were not, and begged to know "how they managed it." Lastly, he is "materially wrong" in denouncing all grafted Conifers "as abominations" (as he once did cuttings). Now that he prefers being measured by quantity rather than quality, I would simply recommend him never to depreciate his neighbour's goods in order to raise the value of his own. *W. Barron, Elvaston Castle.*

Societies.

Linnean: *Dec. 4.*—J. D. Hooker, M.D., Vice-President, in the chair. Frederic Bird, M.D., was elected a Fellow. The following papers were read:—1. "A letter from Dr. Mellor to Sir W. J. Hooker, dated H.M.S. Gorgon, Port Louis, Mauritius, Sept. 10th, 1862, and giving an account of his visit to Madagascar"; communicated by Sir W. J. Hooker. The writer was attached to the Embassy deputed to carry addresses and presents from our Government to King Radama. The party started from Tamatare, and for the first 60 miles had to follow the line of the coast on a spit of sand separating the sea from a chain of lakes. A dense wood skirted the sea by Tamatare, and in it

occurred an abundance of wild Coffee shrubs. Along the sea-bord was found a Logania, which yields an abundance of fruit, that is (less the seeds) consumed with avidity by the natives. With it, but much less frequent, was a Clusia (?) with edible fruit. The Copal Gum tree was very abundant along the coast; it grows to a large size, one which was measured being "28 feet in circumference, with an enormous spread." The natives incise the bark and fix bamboos to receive the gum. They procure their India-rubber (by incision, allowing the sap to flow into a hole at the root of the tree) from a trailing and climbing plant, not known to the writer, having thick cordate leaves, and Pear-shaped as well as Pear-sized fruit. The Ficus elastica was also met with along the sea-bord. Along this coast journey the Morads, Euphorbias, and Myrtals were well represented. Dense spreading box-like trees were seen, which are held in great respect by some of the tribes of the south, who resort to them and to other shade-affording trees, such as Lecheas and Mangoes, for devotional motives. It is common to find beneath such trees the sticks, rags, and bamboos, which devotees have left after paying their vows to the gods, the bamboos generally containing some native rum to propitiate the deities in favour of the supplicant who has left it. Ferns decorate the trees, living and dead, on this part of the road. Of Orchids, the Angræca sesquipedale and superba were most prominent and numerous; they grow parasitic and terrestrial from Tamatare along the coast line and for 60 miles inland. Three smaller Angræca are also found, one sweet-scented with small white flowers on spikes, 1—1¾ feet long, and one with the flowers alternately yellow and white. In the plains extending from Tamatare 30 miles inland were seen two Daphnes, which grew 12—14 feet high, one pink, one white-flowered, both sweet-scented. By the lakes two kinds of Hibiscus were conspicuous, one yellow-flowered, the other pink, and both affording in their bark material from which fine twine is made. The Tanghinia venenifera, or ordeal poison tree, grows very abundantly along the coast, and is one of the most beautiful trees to be met with. The beach from Tamatare to Andovorant, the point where the road turns westward, was lined with two species of Pandanus or Vacoa. This Vacoa forms a thick strong barrier against sand-drift, and is planted by the natives around villages near the sea with this intent. It forms a more complete barrier than the Hottentot Fig at the Cape. From Andovorant the route was continued by the aid of canoes up a lake, for 8-10 miles, to Maromby, the first village of the ascent. On either side this lake were rising hills, the ravines between which were filled with Bamboo and the Traveller's tree (Ravenala madagascariensis); the latter met with here for the first time, and being thence a companion of the traveller for 130 miles. It has been stated that Mr. Ellis was mistaken in assigning a height of 30 feet to some of these trees, but on the return journey, near Ampapimba, a village about 2000 feet above the sea, Dr. Mellor saw examples which were at least 40 feet high. On the banks of a canal at the end of the lake Astrapæa was met with in flower; also an Erythrina 40-50 ft. high, the trunk 4 ft. in circumference, and with wide spreading branches, clothed with heads of scarlet flowers "like bunches of French-bean flowers;" a Polygala used as medicine by the natives for gastric irritation; a blue-flowered small Solanum, the leaves of which are eaten as a vegetable by the natives, who call it "Bred"—this is found in all the market places, and is sold in bundles; a wild Raspberry, spreading over acres of land near the lakes, and lining the path in all moist parts of the country till the capital, and the dry red clay soil 40 miles south of it was approached; both leaves and fruit of this are used medicinally, bruised and mixed with rice water, as emollients and expectorants. Near Maromby abundance of rice is grown; and here occurred a Heliconia with pink offshoots or sprouts which are eaten. In the canals and pools grew a Lotos with blue flowers, the tubers of which are in request for the preparation of a kind of sago. On the second day's journey from the sea, and at about 1500 feet above its level, the village of Ranumafana is reached, and near it is the river after which it is named. It is in this river that the hot springs are found. Beyond this river, the country reached on the third day became more wooded and foresty. Floating in the less rapid streams were sometimes found the flowering stalks of the Ouvirandra fenestralis, but this was most abundant in the Ranumafana river, near the hot springs. The Arums line the river banks in this part of the country, and a sweet-scented white Crinum was conspicuous. In the forests, from which is obtained some of the timber used for house-building, was found the most prolific vegetation. There was a redundance of Lichens, Mosses and Ferns. In the shady moist part of the woods was a Coleus with bright pink markings along the midrib and veins; a Sonerila with silvery intermarginal markings, another with white spots in rows, and another with pink dottings and lines. The next three days' marching was through a continuation of these woods, near the centre of which was a fine cascade. The Bamboos described by Mr. Ellis festoon this cascade and the rapids; the species which travels along the ground and encircles bushes and trees indiscriminately, being exceedingly graceful. Tree Ferns were more numerous in this district than at any other part of the wood, their average height being about 8 feet. The Calumba was formed by the cascades, and the natives procure from this part some of their medicines, of which sarsaparilla is one. In the rivulets of the woods and marshes and in the moist places of the valleys, Osmunda regalis was seen. Having passed the thickest of the woods, a long stretch of hills follows, the hill sides being covered with Citron trees. On the 7th day from the coast a high table land was reached. Then came more hills to be mounted, and afterwards a fine well watered valley with numerous villages; from hence to the capital the road lay through woods and over rugged hills. The hills close by the capital are perfectly bare, and the writer observed but one conspicuous flower on which the eye can rest, the Sunga Sunga of the natives, Euphorbia fulgens, of which there are two varieties, one of a bright vermilion, the other bright orange; these grow from a thorny [!] little plant, which creeps along the mud walls.—2. "On the Hairs of the Carcinus Manes," and—3, "Notes on the Food and Parasites of the Salmo Salar of the Tay," both by W. C. M'Intosh, M.D., and communicated by Dr. Cobbold.

Notices of Books.

1. *Four Years in British Columbia and Vancouver Island. An account of their Forests, Rivers, Coasts, Goldfields and Resources for Colonisation.* By Commander R. C. Mayne, R.N., F.R.G.S. 8vo. Murray. Pp. 468.
2. *Vancouver Island and British Columbia, where they are, what they are, and what they may become.* By Al. Rattray, M.D. Edin., R.N. 8vo. Smith & Elder. Pp. 182.
3. *Description of Vancouver Island.* By its first colonist, W. Colquhoun Grant, Esq. (A paper read before the Royal Geographical Society, 1857.)
4. *Catalogue of the Vancouver contribution (to the International Exhibition), with a short account of Vancouver Island and British Columbia.* London, June, 1862. (A Pamphlet.)

Among the books and pamphlets here enumerated, the reader will find ample and reliable information concerning those two North Western Colonies on which the world is looking with eager expectation. That they have a glorious destiny cannot be doubted. In the opinion of Dr. Rattray, "the geographical position of Vancouver Island is favourable for her development as a commercial colony. The position which this island holds in the Pacific very much resembles that which Great Britain holds in the Atlantic, and both have a wide field for their commerce; but while the shipping of the latter only shares in the traffic of the Atlantic, that of Vancouver Island may, and probably will, almost monopolise that of the Pacific, which at a future day will probably rival that of the former, and this colony will thus hold a place in the commerce of the west superior to that which England now holds in that of the east." The same author adds that "British Columbia, on the other hand, possesses, in her mineral wealth, in her gold-fields,—probably second to none that have yet been discovered,—in her silver mines, in her stores of plumbago, &c., elements of wealth such as probably do not exist in Vancouver Island, and that fit her for becoming, under judicious management, a most important mineral-yielding colony."

These opinions are amply confirmed by all that is at present certainly known of the capabilities of the two Colonies. Upon those points we have in Capt. Mayne a perfectly trustworthy guide. Having been stationed on the coast of Vancouver in H.M.S. Plumper or Hecate for nearly four years, and having during that time personally examined some of the more important districts of British Columbia, especially the little known North-Western shores, no one could have better means of observation; and having no local interest in either Colony, he must be regarded as wholly unprejudiced. What then are his conclusions?—a few extracts shall speak for themselves.

1. *Climate.*—"It would be useless for general purposes to give a mass of statistics with regard to the climate of British Columbia and Vancouver Island. In a country embracing so many hundred miles of latitude there is of course great difference of temperature. The climate of Vancouver Island may be said generally to be about the same as that of the south of England. During the last winter, 1861-2, it has been unusually severe. In the four winters that I passed at Esquimalt Harbour we had a great deal of rain, very little snow, while the ice on the ponds bore skaters for about a fortnight each year, the thermometer being hardly ever below 25° Fahr. The south part of British Columbia is, perhaps, a little colder. This winter the Lower Fraser has been frozen over so as entirely to impede navigation; but I believe this has never been known before, and it certainly has only occurred once since 1856. Steamers were able to go to Langley every winter I was in the country, and were only prevented ascending to Fort Hope by the shallowness of the stream. It will also be remembered that I ascended the river to Fort Yale in February, 1859, without being seriously impeded by ice."

2. *Personal Safety.*—"In a recent book on British Columbia one of the many objections urged against the country is said to arise from the danger of Indian aggression upon the colonists. I cannot conclude these remarks without giving this assertion an emphatic contradiction. My own experience—as the reader will have gathered—has led me to form an exactly opposite opinion of the temper and disposition of the Indians; and lest it should be thought that my official position gave me when travelling alone among them, a protection which would be wanting to the ordinary colonist, I give the following quotation upon the subject from the letter of a young English clergyman whom I have lately had the pleasure of meeting. I withhold his name only because his letter was not intended for that public use which I venture to make of it. I should add that the writer had never visited an English colony until he went to British Columbia four years ago:—

"'My experience leads me to say, what I find most persons confirm, that, so far as safety is concerned there is far less risk in travelling in British Columbia than in many parts of England. Nothing can exceed the order of the country, and the marked absence of serious crime either on the part of the whites or Indians.'"

3. *Naval Importance.*—"I have more than once spoken of Esquimalt as being admirably adapted for a naval station and dockyard. I wish to add that, important as this is for our squadron in the Pacific, I think it would be still more so for the squadron in the Chinese waters. Our ships there, which are sometimes almost disabled by sickness, could reach the healthy climate of Vancouver in six weeks, and might, if required, be relieved by vessels from the Pacific squadron. In 1859 the 'Tribune' and 'Pylades' were ordered across from China; they arrived at Esquimalt with crews greatly debilitated, and all hands a good deal below par. They remained about a year there, and left, I believe, with the crews of both ships in perfect health. I may also mention that the healthy appearance of our crew was a subject of general remark to all ships arriving on the station."

4. *Capabilities of Soil, &c.*—"In these possessions we have, independently of its mineral wealth, a country of immense extent and natural beauty, of—so far as it has been tested—invariable fertility, and with a climate closely resembling our own. Against these advantages, however, it must be remembered that all that is required to develop and utilise the many natural advantages of the colonies has yet to be done, and that for many years to come stout hearts and strong hands will find abundant occupation in accomplishing this work. He who is not possessed of these requisites of a bush life is as unfit for British Columbia as for any other colony. But the man whose heart does not fail him at the prospect of hard living and harder work will find there welcome and plenty awaiting him."

The evidence upon which these conclusions are founded is to be sought in Captain Mayne's pages, which are filled throughout with matter of the highest interest. He is always entertaining as well as instructive; and his tales and adventures so rivet the reader's attention, that even as a Christmas present the volume must be a universal favourite, especially as it is embellished with many very clever views of people and scenery. Notwithstanding the crowded state of our columns we must find room for one or two examples. A woman named Hu-saw-i had been carried off by hostile Indians, and rescued by the officers of the Plumper.

"Rejoining the 'Plumper' on the 20th, I found the rescued slave Hu-saw-i in full possession of the after cockpit. There is no accounting for tastes, of course; but it was fortunate for Hu-saw-i that her husband esteemed her more than we did, or I fear she would have been left to the tender mercies of her captors. She was one of the ugliest, dirtiest specimens of an old squaw I have ever had the pleasure of meeting; and during the 10 days we had her on board, she excited, I fear, anything but sympathy among us. She was turned over to the charge of the sergeant-major, a dress being made for her of printed calico, which, with sundry other garments, she was desired to wear, besides being told to make herself as decent and clean as her habits would permit. The first thing to be done was to induce her to give up possession of her filthy blanket and to take a bath, to both of which proceedings she expressed decided repugnance. The sergeant, who was a most strict-service man, treated all men and women as stores put under his charge, and for which he was responsible till relieved by his commanding officer. He could not speak a word to Hu-saw-i, and his endeavours—crowned I should add with perfect success—to get her to do what was ordered, were most amusing. First he was told that she was to be cleaned and dressed. Receiving the order just as he would have done one to 'cane a boy,' or put any one in the Black List, he carried it out to the letter, and then came with a military salute and reported 'Old woman cleaned, sir.' As punctiliously he took her food to her or saw that she got it, while he used to visit her like a prisoner three or four times a day to make sure that she was all right. The poor old creature was all this while in a great fright, and I have no doubt in her heart wished herself back among her enemies. All day long she would stand at the fore end of the passage which went round our chart-room, and every time we turned to walk aft along the quarter deck would begin to wave her hand and cry 'Ah! Tyee, Tyee!' (Ah! chief, chief!) in the most piteous voice imaginable, till we were fairly driven off deck. On the 27th, however, much to our delight we

got rid of her, sending her in the 'Shark' (our decked pinnace), to catch the 'Otter' on her way down to Victoria. The sergeant accompanied her to the last, seeing her on board, and reporting with the utmost gravity, 'Old woman's in the boat, sir.'"

As a specimen of what has to be expected in the rough uncleared country adjoining the Frazer River, are the following:—

"The land slips in the mountain crevices are also very dangerous. Several times we had to make an ascent of about 200 feet up a land-slip, at an angle of 35°, in loose sand, and with nothing to check our onward progress if the sand should slip quicker than we could scramble over. The most dangerous of these, which we did not pass till the third day, but which I may as well mention while upon the subject, is called the Jackass Mountain. Several people have lost their lives in crossing this, and on one occasion a mule, which some miners tried to get across it, was, I believe, with his driver, precipitated into the river; which circumstance may, perhaps, account for the name of the mountain.

"This mountain rises abruptly out of the river, and the old trail leads across the face of it. To pass it several land-slips, of 20 or 30 yards wide, and at an angle of about 50°, had to be crossed. To do this the traveller had to make a bolt from the rocky ledge on one side to that on the other; and if he chanced to get dizzy, or the land slipped away with him, he must inevitably be lost. My companion had here a most merciful escape. He got dizzy, and slipped, but had got so far across that he was just able to grasp a root above his head, and thus save his life. I had just crossed, and was watching him, when I saw him turn pale and slip. It was all the work of a second, however, and before I could move he was hanging on to the root.

"The following extract from the Journal of the Bishop of Columbia, when travelling over the same ground, will prove that my description is not exaggerated:—'We continued the ascent for some distance. Impassable, indeed, much of it was for horses and mules, and even for man not without danger. We must have been at the height of 2500 or 3000 feet; our pathway lay along the edge of a perpendicular fall of such a height, sometimes along beds of loose rock, and most warily must the feet step from stone to stone; a slip would either precipitate to the abyss below, or cast you among the rocks, where a limb might easily be broken. At other times in the descent the path was *nil*, the projections for the foot not an inch; it seemed like the crawling of a fly upon the perpendicular wall. This sort of work lasted for hours. It was, however, so absorbing, and required the utmost constant stretch of attention for self-preservation, that the time passed more rapidly than one would have thought. At the time the critical character of this operation was such that, though near together, no one spoke; there was a solemnity, as if we realised hanging between life and death. Frequently we had to crawl upon hands and knees. It was quite wonderful to see the Indians, with their heavy loads, pass along; one of ours did fall, however, once.'"

One anecdote of Governor Douglas, and we must break off.

"Few men, perhaps, have been selected better adapted for dealing with the strange, heterogeneous population of Victoria than Mr. Douglas. Many stories are rife in Victoria of his coolness and readiness when without these valuable qualities dangerous consequences might have ensued. I remember one, which, however, loses much of its point to those who are not familiar with the man, and his slow, deliberate action and utterance. Many years ago, when white men were fewer in these regions, and Indians less cowed than they have now become, Mr. Douglas was in command of one of the Company's trading stations. His subordinate officer was alarmed on one occasion by the Indians, who had for some time past showed symptoms of insubordination, becoming more violent than usual, and forcing their way in large unruly numbers into the Fort square. Rushing to Mr. Douglas in an excited tone and manner, he reported that the Indians were in possession of the Fort, and desired to know whether he should turn the men out and man the bastion, &c. He was not little surprised to hear his senior say in his measured, deliberate fashion of utterance, 'Give them a little bread and treacle, Mr. ——; give them a little bread and treacle.' And indeed the specific completely soothed the excited multitude, which probably no force they could command would have done. Another anecdote of the same kind occurred while we were out there. A blustering Yankee went to the Governor apparently with the notion of bullying him, and began by asking permission for a number of citizens of the United States to settle on some particular spots of land. They would be required, he was informed, to take the oaths of allegiance.

"'Well,' said he, 'but suppose we came there and squatted?'

"'You would be turned off.'

"'But if several hundred came prepared to resist, what would you do?'

"'We should cut them to mince-meat, Mr. ——; we should cut them to mince-meat.'"

We no longer wonder at the influence exercised by the Governor over his intractable subjects.

Flower and Fruit Decoration. By T. C. March. Harrison. 8vo.

To those fortunate or unfortunate individuals "upon whom their parents have settled more taste than money," this little book will be found a treasure: with a pretty exterior and a useful interior what else can be wanted in a treatise on this favourite subject.

The principal part of the book is devoted entirely to table decoration, and many are the useful hints which may be gathered from its pages. The uncoloured woodcuts are excellent, for representing as they do the whole process of dressing the glass epergnes, no mistakes can be made from want of sufficient directions. Mr. March very properly remarks that taste in the arrangement of colour differs as much as it does in many other things, therefore it is impossible to lay down fixed rules; but the great secret of his success is plainly the result of his drawing largely on good common sense, which, when consulted, seldom leads one astray. So he tells us that "fitness and propriety of admixture should never be lost sight of," that incongruous materials should never be mixed; for instance, Fuchsias and Water Lilies will not look well together, because their habit and place of growth are totally dissimilar, whilst Primroses and Violets go well with Trefoil, Ivy, and wild Strawberries. The general idea used to be that whatever flowers could be gathered out of the garden must all be mixed together to make a bouquet. This idea is now gone by, but we must be careful not to run into the opposite extreme. The present rule is to have but one kind of flower relieved by green, or at the most two or three; in many instances this arrangement is satisfactory; but if everybody keeps strictly to the principle our eyes will soon become fatigued with sameness, and long for more variety. Already have these beautiful glass epergnes of Mr. March's become so general that they no longer strike us with the same degree of delight and admiration as they did on their first appearance. If every one could exercise as much originality in the arrangement of flowers as the author of this little book has set them the example of doing, profiting at the same time by his valuable hints on the subject, we should soon have every drawing-room and every dining table presenting as much for admiration or criticism as any other branch of ornamentation.

What every one will appreciate in this book is, that we are not only told what to use, and what to do, but where to buy, and what we have to pay; so instead of having to find out for ourselves, which is not always easy, we can here learn on which side of Covent Garden the Pansies congregate, which the Roses de Meaux, Forget-me-nots, &c. We are sorry to find that Mr. March snubs an old favourite of ours, and classes it amongst the "Rhinoceros order," which sounds very much as if he did not consider it worth looking at: but such is the difference of taste, that we must plead guilty to being great admirers of the despised Berberis, which surely is one of our most useful shrubs for furnishing foliage. What with the durability of the leaves, their glossy appearance and the great variety of their tint, varying from light to dark green, from purple to bright scarlet, there are few other plants which accord so well or better with common garden flowers.

The plant bearing the name of Mauranta is not known where we live, but perhaps it grows in Covent Garden? where unfortunately the writer of this can rarely or never go. In pages 52 and 53, we find a summary of all that has been previously told us, and a little farther on we find a list of all the plants useful for decoration under the season in which they are to be obtained.

The only reference we can find to the use of berries is in a note at page 76, where we are told that "berries are not to be despised, especially the Arbutus, which contrasts well with Variegated Holly, Yew, and winter shrubs." Now berries and leaves are all that some people have with which to decorate for several months of the year; if we live in the country too far to benefit by close proximity to Covent Garden, and perhaps have not the money to indulge in its luxuries, nor yet a greenhouse to supply the want, what can we do without berries? Few things look better than clusters of the beautiful red Cratægus berries mixed with heavy foliage, and lightened by sprays of the common Barberry; then there are the berries of the Mountain Ash, Pyracantha, Holly, and a few others, all precious, from being so durable and so effective.

The latter part of the book is devoted to those sadly neglected ugly pieces of ground which are to be seen when looking down the back of a street, and which Mr. March very aptly remarks are used by the cats as music halls. If anything can be done to render them attractive, a great boon will be conferred on the inhabitants of a town; and here we find suggestions for the management and arrangement of them, as practical and as plain as those previously given for the decoration of the table. Neither are "lead flats and terraces," "verandahs," or "London conservatories" forgotten, each having their share of the author's attention and experience.

The coloured plates at the end of the book may possibly be found useful for reference, but unfortunately the colours with which they are printed are so harsh and unpleasant to the eye, as almost to defeat the object for which they were intended.

Hand Catalogue of Postage Stamps. By Dr. J. E. Gray. 12mo. Hardwicke.

The learned author is of opinion that making collections of postage stamps, whether new or used, at which some people sneer, is rather laudable than otherwise:—

"The fashion has been ridiculed, as all fashions will be; but if postage stamps are properly studied, collected, and arranged, there is no reason why they may not be quite as instructive and entertaining as the collection of birds, butterflies, shells, books, engravings, coins, or other objects."

Of 132 countries the stamps are enumerated and described. To collect them all is, therefore, a rather serious undertaking for young gentlemen.

The *Botanical Magazine* for December contains amongst other portraits a beautiful figure of the very handsome Lady's Slipper, called *Cypripedium Stonii*, shown a month or two since at one of the meetings of the Royal Horticultural Society. This plant, whose flowers are in profile the most slipper-like of the whole family, is somewhat intermediate in aspect between C. caudatum and C. Lowii, with broader sepals and much shorter petals than the first, and with the petals much longer and narrower than the last. The sepals are broad, whitish, stained with purple at the back, and distinctly acuminate; the petals are linear and pendent, 5 inches long, dull greenish yellow spotted with purple; the lip is formed with a lengthened inflexed claw-like base, and a large inflated apex, so as to be exactly of the form of a slipper, and is whitish at the base, and stained as well as veined with rose-colour. It is a Bornean plant, imported by Messrs. Low & Co., and flowered by John Day, Esq., after whose gardener it has been named, in the nursery of Messrs. Low & Co. (not by Sir Wm. Hooker). *Helipterum Sandfordii*, figured in the same number, is a West Australian composite, allied to Helichrysum, a dwarfish plant, clothed with cobwebbed hairs, and having linear-lanceolate leaves, and a corymbosely-branched inflorescence composed of crowded yellow flower-heads. *Phalænopsis Lowii* is also nicely represented. *Dracæna phrynioides* is a dwarf West African stove plant, with succulent suffruticose stems, broadly ovate leaves, which are green dotted with white, and small subsessile terminal heads of white flowers surrounded by purple bracts, and seated amongst the longish leaf stalks; it is a distinct and rather pretty plant in respect to its foliage, but the flowers are fugacious. This and *Acrotrema Walkeri* make up the number; the latter is a dwarf Dilleniaceous herb, with plaited serrated obovate oblong leaves, and small yellow flowers on axillary peduncles; it comes from the mountains of Ceylon.

The current number of *Gossip of the Garden* contains some very good remarks on Judging at Horticultural shows. It is remarked:—"Many judge Grapes without tasting, but we think on no account should Grapes be judged without feeling certain that the best coloured Grapes also possess the best flavour. We think Grapes, Melons, Peaches, Nectarines, Apricots, Plums, Pears, and table Apples ought all to be tasted, but would object to a very small Melon taking the first prize because it was the best flavoured, provided finer fruit were near to it in excellence. We think, in judging fruit, that flavour should be the great consideration combined with size, then form." Schedules should be very explicit, and "dishes" of any kind of fruit should be exactly defined. Vegetables are often judged in a most uncertain way, large samples such as could not be sent to table being in many cases preferred. It is a mistake to encourage these monsters of the vegetable world. Fair-sized compact Cauliflowers, Peas, Potatoes, Cabbages, and Vegetable Marrows, are what a lady or gentleman wishes to see on the table, and when prizes are offered to gentlemen's gardeners it is with the view of getting them to send in the highest state of perfection possible, such things as they are daily sending to their employer's table. "Some judges are better cut out for judging vegetables than others, and the best judges we have ever met with are to be found in Lancashire and Yorkshire; they really can judge vegetables, and yet are not much to look at. We say cut open all Celery, Cabbages, Potatoes, Lettuce, and Turnips, and see what they are inside. We have no faith in always taking for granted the best-looking or heaviest is the best." Plant-judging is more easily done generally. In country shows, more prizes should be offered to bring out novelties; people get tired of the old things over and over again. The greatest pleasure to plant-lovers at these exhibitions is to meet with something *fresh*, and yet schedule-makers don't seem to see this. The cut flower department invariably attracts most. Would that there were more summer shows northwards to bring out more prominently the Rose, Pink, Pansy, Ranunculus, Geranium, and Azalea. What new thing can be brought in? Little beyond the gorgeous Gladiolus, which ought to be at every future show; it and the Rose would form *the* two ladies flowers; the prizes should always, however, be for single spikes as cut, not for bunches, or manufactured spikes. Bouquets are generally hideous objects to those who know what hand bouquets ought to be; strange that so few really tastefully arranged hand bouquets are seen at the shows. Our contemporary recommends those who cannot make a good one, to run up to Covent Garden,

buy a half-guinea one, and see it made, and he promises that the money would be well spent.

The Gardener's Annual for 1863 (Longmans), Edited by the Rev. S. Reynolds Hole, with a coloured Illustration of "Love among the Tea Roses," by John Leech, is a new addition to our garden literature, and one which will doubtless meet with favour, especially among amateurs. Although perhaps not so good a half-crown's worth as it might have been, still as a first attempt it is promising, and the Editor tells us that if success should justify a renewal of his enterprise, improvements in his next issue may be expected. It contains papers on Roses, how to grow and show them; Fragments; Novelties of 1862; the Hollyhock; Cottage Gardening; the Cineraria; Notes on Exhibitions; New Roses; the Pelargonium; New Plants from Japan; the Pansy; Greenhouses by Working Men; select lists of Popular Flowers; and a monthly Calendar of Operations.

Miscellaneous.

Small Pox and Sarracenia (see p. 984).—We have already had occasion to mention the remarkable effects of the Sarracenia purpurea in small-pox, as ascertained by Dr. Morris, of Halifax, during an epidemic in Nova Scotia, when patients were dying in the hospitals at the rate of 12½ per cent., from May to August. We have now been favoured with the following particulars respecting this valuable plant. The Sarracenia purpurea, or Indian Cup, a native plant of Nova Scotia, found in swamps and moss-bogs, has the wonderful reputation amongst the Mec-Mac Indians of curing small-pox; and of being as great a specific in this dire disease as quinine for ague. It is supposed to act by neutralising the virus in the blood, rendering it inert and harmless; and that this is its action may be gathered from the fact, that if either vaccine or variolous matter be washed with the infusion of the Sarracenia it is deprived of its contagious property. Moreover the eruption, even if confluent, on its disappearance leaves no trace behind. The root of the plant is the part employed. The dose when reduced to powder, is about a dessert-spoonful, simmered in a pint of water down to half a pint; this is usually divided into two doses, to be taken during the day. Sugar should not be used with it. *Galignani.*

The Growth at Welbeck, in 1862, *of newly-introduced Conifers.*—The season of 1862 having been favourable for the growth of the newly-introduced hardy Coniferæ, I have been induced to measure the length of the shoots made by each variety in a large collection planted out here. As the only way of getting a correct notion of the length of the shoots made in a season is to take them from young trees growing in the same soil and situation, and of nearly the same age, I have carefully attended to this, and I hope, therefore, the following list may be of interest to intending planters. The measurement of the shoots made is from the most vigorous-growing trees of each variety.

Wellingtonia gigantea	2 feet	5 inches.
Thujopsis borealis	1 ,,	7 ,,
Thuja gigantea	1 ,,	3 ,,
Thuja Lobbii	2 ,,	2 ,,
Larix Kæmpferi	1 ,,	5 ,,
Cupressus macrocarpa	2 ,,	8 ,,
Cupressus Lawsoniana	2 ,,	3 ,,
Cupressus M'Nabiana	2 ,,	1 ,,
Cupressus Cashmeriana	1 ,,	8 ,,
Cupressus Corneyana (?)	1 ,,	4 ,,
Cedrus Deodara	1 ,,	8 ,,
Do. var. robusta	1 ,,	10 ,,
Do. var. Libani	2 ,,	0 ,,
Do. var. argentea	1 ,,	9 ,,
Pinus Lambertiana	1 ,,	6 ,,
Pinus Benthamiana*	2 ,,	2 ,,
Pinus Beardsleyii	1 ,,	6 ,,
Pinus Jeffreyi	1 ,,	4 ,,
Pinus Craigana	1 ,,	2 ,,
Pinus monticola	1 ,,	0 ,,
Pinus macrocarpa	1 ,,	6 ,,
Pinus radiata	1 ,,	2 ,,
Abies Douglasii	2 ,,	2 ,,
Abies Menziesii (small plants) ..	0 ,,	10 ,,
Abies Mertensiana	1 ,,	8 ,,
Picea nobilis	0 ,,	11 ,,
Picea Nordmanniana	0 ,,	13 ,,
Picea amabilis	0 ,,	8 ,,
Picea lasiocarpa	0 ,,	10 ,,
Picea Pinsapo	0 ,,	8 ,,
Picea Cephalonica	0 ,,	10 ,,
Cephalotaxus Fortuni	1 ,,	2 ,,
Cryptomeria Lobbii	1 ,,	8 ,,
Araucaria imbricata	1 ,,	3 ,,

I have measured a few growths of the most rapid growers of the best known of the old hardy varieties of Conifera, and of the same age and size as the above, on purpose for comparison:—

Common Spruce	2 feet	2 inches.
Common Larch	2 ,,	10 ,,
Abies Morinda	1 ,,	2 ,,
Abies orientalis	1 ,,	2 ,,
Pinus Laricio	1 ,,	6 ,,
Pinus pyrenaica	1 ,,	4 ,,
Pinus sylvestris	1 ,,	2 ,,
Pinus Strobus	0 ,,	10 ,,
Pinus austriaca	1 ,,	8 ,,

When the above young trees get older, of course the growths will be stronger and longer in some seasons than others; but enough will be shown by the list given to indicate by comparison the most vigorous growers. It may, perhaps, not be out of place here to record the fresh and good quality of most of the Coniferous seeds sold by Stevens this year at his sales early in spring. With me, Wellingtonia gigantea vegetated plentifully in boxes in the frames; and the same may be said of Lawson's and M'Nab's Cypress, Abies Douglasii, Menziesii and Williamsoni, Pinus Benthamiana, Jeffreyii, and monticola, and Picea amabilis and grandis. Two large lots of Wellingtonia gigantea and Cupressus Lawsoniana were sown in the open borders in May, as I could not find any more room in the frames for such a quantity. This border is about 30 feet long and 12 feet broad, and the seed, although so late in sowing, has vegetated so thickly that it would almost seem fabulous were I to try and state the number of young plants of the two kinds growing at present on it. On purpose to save them from a severe winter, as they are too numerous to pot, I have had temporary frames erected over them. *Tillery in Journal of Royal Horticultural Society.*

* This fine variety promises to be a rapid grower, perfectly hardy, and of the best habit of all the long-leaved Pines. The timber is likewise said to be excellent.

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

Conservatory, &c.—As the introduction of Chrysanthemums must have in one house or other caused a disarrangement of part of the stock, it becomes a matter of importance to get such plants as have been moved, back into their former situations, or so to re-arrange matters, that the whole may have a good effect. Plants must not, however, be set where they will not thrive, and this is a point to which careful attention must be paid. Chrysanthemums, decaying, if not already done, should be cut down, suffered to become somewhat dry, and removed to cold frames. Those who cannot afford frame room, may secure them in some shed or out-house for a few weeks, covering them over head with clean straw whilst frost lasts. If they are slightly frozen it will not signify; only take care that they do not thaw too suddenly. Little can be said with respect to stove plants at present. Use moderation in heat, ventilation, and atmospheric moisture. Beware of exciting the buds of Orchids before their time. Attend to this and keep a somewhat drier atmosphere until the middle of January.

FORCING DEPARTMENT.

Early Vines, Peaches, &c.—Where forcing has commenced, and the roots are outside, every attention should be given to the borders. In the first place, frost must never be allowed to enter. The next thing is to get a fermentation in the covering material of the border of 80° or 90°, if possible. Any kind of covering, such as tarpaulin, to throw off rain and snow, would be invaluable, and would confine the powers of the fermenting matter. If there is room to spare in these structures, now is a good time to pot some Kidney Beans. The Fulmar's Dwarf is a very good early kind. Some early Ash-leaved Kidney Potatoes should be potted, to turn out with balls, in the first week of January, into a pit or frame.

Mushroom House.—This house, when sufficiently roomy, is one of the most useful structures about a garden. Seakale may be forced here in constant succession with as little trouble as raising a crop of small salad. The old plan of raising a bed of fermenting materials, over the crowns out of doors, is an uncertain process compared with this. It is equally well adapted for Rhubarb forcing. Nothing is needed but a long, narrow pit along the bottom of the house, on one or both sides, the top of the pit to be level with the floor. It should be 4 feet deep, and filled in portions as wanted, with any hot, fermenting material, to within half a yard of the top, which would be very perfect if covered with a lid. The Kale and Rhubarb should be placed on the surface of the fermenting matter as thick as it can stand, and then filled in lightly with soil or fine old tan. Chicory roots may be placed in a circle round roomy pots, and set on the flues of this house. Lily of the Valley, too, may be plunged overhead in a fermenting bed of 70° here, until the blossom-spikes appear, when it must be inured to light, but in the most gradual and cautious way imaginable. Early-potted Hyacinths and Narcissi may also be treated precisely the same as the Lilies, taking care not to withdraw them until the pots are nearly full of roots, and many other uses may likewise be found for this house.

FLOWER GARDEN AND SHRUBBERIES.

Have an eye still to the protection of tender things; and in moderate weather like the present, especially if dry, open the canopies or coverings a little for a few hours, once a week or so, in order to dispel damp. If frost sets in, a plan of the masses or beds might be decided on, and the soil renewed according to the character of the flowers to be planted. As regards florists' flowers, little can be done now except in the way of preparation, and should frosty weather set in it will afford every opportunity of having all the compost heaps thoroughly frozen; by repeatedly removing the encrusted surface, and piling it up every morning, many of the insects and their eggs will be destroyed, a point of no small importance to the cultivator. Hard weather is also a good time to cart turf, peat, &c., and to lay in a good stock of soils most suitable for the various plants and flowers, without which it is next to impossible to grow them successfully. If leaden pegs are used for layering Carnations a fresh stock may be cast and the old ones cleaned and straightened. If the florist can mend his own hand-glasses and shades, these ought now to be done, and the metallic wire which has been used for attaching the stems of Carnations or Tulips to their support, should be made ready for use, and stored away in its place till the returning season renders it available. During snowy weather, rabbits will be apt to attack Carnations and Pinks. It would be worth while to try the plan of dipping small square pieces of cloth into brimstone, and tying them to sticks, and inserting the sticks in the ground round the beds.

HARDY FRUIT AND KITCHEN GARDEN.

It may appear somewhat early to offer remarks on spring work, but such is the pressure of business soon after Christmas has passed, that no amount of precaution can be considered too great where general gardening has to be carried out through the ensuing year according to the improved practice of the present day. When things that might be done now are delayed until spring, there is sure to be a sacrifice of some importance. All the pruning, except that of Figs and Apricots, and most of the nailing of wall trees, as well as the training of espaliers, should be finished if possible by new-year's-day; and the same may be said of bush fruit. The making of borders or stations for fruit trees, too, should be autumn business; indeed, where new soil has to be introduced, September or October is the most fitting time, as the best of soils may be seriously injured by moving them in a wet state. No time should be lost, when the weather is bad, in getting on with in-doors work. All matting or bast required for the ensuing year should be cut, sorted, and hung up ready for use. Besoms and baskets should also be prepared. The tool-house should be examined, and put in an efficient state; and, in fact, every thing of this kind done that is possible. Should frost set in, the prime Celery beds should be immediately covered with clean straw 6 inches thick. Let all other vegetables have due attention. Also let all manure be wheeled out whenever the weather is favourable for such operations.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON,
For the Week ending Dec. 17, 1862, as observed at the Horticultural Gardens.

Dec.	Moon's Age.	Barometer.		Temperature. Of the Air.			Of the Earth		Wind.	[illegible]
		Max.	Min	Max.	Min.	Mean	1 foot deep.	2 feet deep.		
Thurs. 11	20	29.929	29.639	50	30	40.0	47	46½	S.	[illegible]
Friday 12	21	30.259	30.150	46	28	37.0	46	45½	W.	[illegible]
Satur 13	22	30.006	29.871	47	25	36.0	45½	45	S.W.	[illegible]
Sunday 14	☾	30.307	30.265	49	26	37.5	45	44½	W.	[illegible]
Mon. 15	24	30.340	30.260	42	27	34.5	44	44	S.	[illegible]
Tues. 16	25	30.277	30.242	44	42	43.0	43½	43½	S.	[illegible]
Wed. 17	26	30.239	30.177	52	28	40.0	45	44	S.W.	[illegible]
Average.		30.194	30.000	47.1	29.4	38.3	45.1	44.7		[illegible]

Dec. 11—Clear; slight frost; densely clouded; rain at night.
— 12—Clear; slight frost; fine; clear and fine.
— 13—Densely clouded; rain with brisk wind; clear, frosty.
— 14—Clear; fine; light misty clouds; clear, aurora borealis; frosty.
— 15—Cloudy; densely overcast; slight frost at night.
— 16—Fine; overcast; fine at night.
— 17—Densely overcast and mild; drizzly rain; overcast. slight frost.

Mean temperature of the week 1½ deg. below the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 36 years, for the ensuing Week, ending Dec 27, 1862.

December.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	[illegible]
Sunday 21 ..	43.5	33.8	41.1	13	0.20 in	1	8	3	2	2	11	[illegible]
Mon. 22 ..	45.0	33.0	39.0	17	0.37	4	7	3	1	2	11	[illegible]
Tues. 23 ..	44.1	31.9	38.0	19	1.13	6	6	2	2	1	11	[illegible]
Wed. 24 ..	43.9	31.1	37.5	15	0.30	4	4	4	2	1	15	[illegible]
Thurs. 25 ..	43.2	28.5	35.9	9	0.45	4	8	3	—	2	11	5
Friday 26 ..	42.5	31.3	36.9	12	0.39	3	6	3	4	4	[illegible]	[illegible]
Satur 27 ..	42.4	29.4	35.9	14	0.40	5	5	1	5	2	[illegible]	[illegible]

The highest temperature during the above period occurred on the 25th, 1827—therm. 58 deg.; and the lowest on the 24th, 1850—therm. 4 deg.

Notices to Correspondents.

Address Wanted. *E James, Leigh*, would be glad to know the address of Henry French, gardener, formerly of Clapham, and latterly of Leigh, near Southend, Essex.

Cucumbers: *H G B.* The specimens were among the worst grown we have seen; and we have not a word to say in favour of the sort.

Fungi: *T Phillpott.* The production in your Mushroom bed is an extremely curious Sclerotium, quite unknown to us. We shall try to get it if possible completely developed, and if we are successful you shall hear more about it. *M J B.*

Gardeners' Benevolent Institution: *R. C. Kingston; Dixon; W D; W. Barnes;* received.

Hampton Court: *J R.* We find that Mr. Knight did not take charge of the Vine till the berries were swelling. What the Vine is doing now we may ascertain personally one of these days.

Heating: *Philander.* Certainly. Stoves consuming their own smoke may be used to heat plant houses "without injury or otherwise." The vegetable called Alisanders or Alexanders is Smyrnium Olusatrum, a cousin of Celery.

Insects: *J S R.* Your Cherry trees are attacked by a minute Coccus, which is laying myriads of eggs. You should treat it as you would mealy bug.

Mulberry: *Morus.* We have no doubt that your tree will take care of itself—unless the roots are too deep. You may give it a coating of litter now, and a good mulching of litter next May.

Names: *J W.* There is no rule. It is Weigela not Weigelia.

Pines: *R S D.* It is generally understood that Pinus Edgariana and P. muricata are two names for the same thing. As to Abies Williamsoni, two plants have received that name, one of which is A. Mertensiana.

Potatoes. Mr. Samuel Owen's letter contains assertions in plenty, the truth of which any Potato grower will dispute. Until we have some evidence as to the value of such of his statements as are intelligible, we disbelieve. How indeed can any faith be placed in a man who talks of "constipation of earth." Such stuff is an affront to common sense.

Stove Plants: *J C.* You act properly. Less than 60° at night will not suit such things. Lower the temperature and they will soon bid you farewell.

The Hazelis: *H P.* This must cease. One man says one thing, another another, and we cannot decide between them.

MESSRS. WAY AND EVANS, ANALYTICAL CHEMISTS, have REMOVED their LABORATORY from Welbeck Street, Cavendish Square, to 106, Leadenhall Street, E.C., where all Letters and Samples for Analysis should in future be addressed.—Dec. 20.

AGRICULTURAL and CHEMICAL COLLEGE, 37 and 38, Lower Kennington Lane, London, S.
ASSAYS and ANALYSES promptly attended to by J. C. NESBIT, LANSDELL & Co.

AGRICULTURAL and CHEMICAL COLLEGE, KENNINGTON.—Manufacturers and others engaged in making Artificial Manures may obtain every necessary instruction for their economical and efficient preparation by applying to J. C. NESBIT, LANSDELL & Co., 37 and 38, Lower Kennington Lane, London, S.
Analyses of Soils, Guanos, Superphosphates of Lime, Coprolites, &c., and Assays of Gold, Silver, and other Minerals, are executed with accuracy and despatch.
Gentlemen, Farmers, or others, desirous of practical knowledge in Chemical Analysis, or Assaying, may receive instruction at the College, where the extensive Laboratories give ample facility for pursuing their studies, and there is accommodation for a limited number of Resident Students.
Full particulars of terms will be forwarded on application.

DRAINAGE of LANDS (by Contract, or laid out and superintended at 5s. per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. HUMBERT, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

Land Drainage.

WORKS of DRAINAGE of any extent are EXECUTED by the GENERAL LAND DRAINAGE and IMPROVEMENT COMPANY on all descriptions of property, whether freehold, entailed, mortgaged, trust, ecclesiastical, corporate, or collegiate.
Repayment may be made by the Landowner as successive portions of the works are completed; or the actual expenditure, with a commission thereon, may be charged on the property improved, by way of rentcharge on the estate created for various terms of years so as to adapt the rate percent. of annual charge to the circumstances of the tenants.
No investigation of title being required, or notices given to Reversioners or Mortgagees, no legal expenses are incurred.
Works of Irrigation, Enclosing, Wood Grubbing, Road Making, and Farm Buildings are executed in a similar manner.
Landowners desirous to execute any of the Improvements by their own Agents, and charge the outlay and expenses on the Estate, may obtain Loans for the purpose.
Applications to be made to WILLIAM CLIFFORD, the Secretary, at the Offices of the Company, 52, Parliament Street, S.W.

The Agricultural Gazette.

SATURDAY, DECEMBER 20, 1862.

WE wish to call attention to the way in which THE AGRICULTURAL LABOURER has latterly been regarded in the Journal of the Royal Agricultural Society of England.

In the volume for 1860 (vol. xxi., p. 422) Mr. FRERE actually spoke of him as "feeling some of the drawbacks as well as advantages of not being a chattel"!—adding that he had "to trust to kindness and discernment, with the poor-law in the background, to save him from destitution." His normal condition was evidently supposed to be that of helplessness and pauperism. And for his sake we were counselled to avoid doing even "all we might do" in the way of economical and energetic farm management, and *that* for a sound economical reason—our primary object being to distribute the labour of both man and horse over the year with as little inequality as possible."

The further references to this subject which the volume of the Journal for the current year contains are evidently the expression of the same mind which spoke in Volume 21. At page 483, we have a foot note, in which an objection to a detail of farm practice on the score of expense, is combatted on the ground that the expense is incurred at a slack time of the year, and it is declared to be "hard to put any price on work, if the necessary alternative would be to send able bodied men to the workhouse." The workhouse again is supposed to be the natural, inevitable and only alternative. Mr. FRERE adds, that "the sight of peasant proprietors in foreign countries making improvements at any cost of labour rather than stand still in winter, brings forcibly under the Englishman's notice the weak side of our national system of agriculture, as conducted by tenants and labourers!"

At page 409, again, we have a suggestion for the better management of our labourers, drawn from the admirable condition of the labouring class in Russia! It is declared to be desirable that they should be required to present pass books in going from one district to another, "*livrets*" containing their character from their last employers.

Now, we want to know if this is the style of thought and practice on the relations of master and servant which the English Agricultural Society is supposed to recommend to English agriculturists. Are the agricultural labourer and his master to be taught that the natural condition of the former, to which, indeed, he tends continually, being restrained only by the kind consideration and thoughtfulness of the latter, is that of pauperism?

Of course, monstrous and horrible, for it is nothing less, as is the proposition suggested in the first of the above extracts, it must be admitted that there is a certain degree of truth in all of them. The advantages even of being a 'chattel'—of being personally owned—are a reality, as may be seen, for instance, in the case of the pet dog of its mistress, as compared with the strayed and ownerless starveling. No one, however, except Mr. FRERE, that we are aware, has ever ventured to refer to them in the case of the English agricultural labourer. No doubt, again, were it not for masters there would be bad times for men; but it is just as well to bear in mind, that were it not for labourers, employers, too, would come to poverty. Lastly, it may even be that as a matter of fact a large body of English labourers are upon the edge of pauperism; but if so, we venture to put it to those who think with Mr. FRERE, that they must be fathered, almost owned, by their employers, whether such doctrines are not, to some extent, responsible for their helpless plight—whether the idea taught to both masters and men by weak humanitarians of the school to which Mr. FRERE apparently belongs, that the latter owe the gratitude due from children, and the former owe the protection due from parents, is not at the bottom of much of that childish helplessness that we lament. They are not parents and children—they are "neighbours." Apart from their relationship as employers and employed, under which services are exchanged for wages, there is nothing due from one to the other which is not mutual. "Thou shalt love thy neighbour as thyself"—a command which sanctions self love by quoting it as the very measure of benevolence, applies to both alike.

As has been already urged in these columns, the Editor of the Journal, instead of hedging, and fearing, and warning, in the presence of inevitable activity and enterprise, ought to take the lead of it. He should recommend agriculturists, agricultural writers, and all who have the interests, whether of landlords, labourers, or farmers at heart, to further these interests by simply doing whatever in them lies to make farm practice profitable. A share in the general prosperity is a more lasting and a better thing than the possession of an exclusive monopoly of advantage. And labouring men will find their best interests served by whatever tends to increase the profits, nerve the energies, widen the intelligence, and quicken the enterprise of their masters.

There are many desirable things which are better attained incidentally than by direct effort for their attainment: and the prosperity of the labourer, so far as the master's efforts for it are concerned, is one of them. He cannot be clothed and fed, and housed and warmed, guided and directed, and watched over by another without much more injury than good. It is not in that way that his prosperity can be insured. No one in fact can insure that but himself. It cannot be made his by direct gift.

We are perfectly sure that the energetic master who, not forgetting his relationship as "neighbour," at the same time pushes every new economy in farm practice to its utmost, is a better friend to the agricultural labourer than Mr. FRERE, with all the kindly meant but weak and ill-judged warnings and suggestions on this subject, to which he has given the influential currency of the English Agricultural Society's Journal.

WE have, during the past few weeks, given diagrams illustrative of the yield of milk from particular cows, and from the whole herd. We are now enabled by Mr. HARRISON, of Frocester Court, to whom the diagrams are due, to give the particulars of his dairy experience during several past years. The figures state the number of the cows, the total yield of milk during the year, the number of gallons yielded per cow, the quantity made into cheese, the number of pounds of cheese and of butter made, and the value of total produce during the year per cow. It will be seen how various is the year's experience, whether as regards the quantity or the quality of the milk. And curiously enough it is by no means the year of greatest quantity which proves the year of poorest quality. When the cows yielded 550 gallons apiece per annum, the milk made .95 lb. of cheese per gallon. When the yield was only 522 gallons, it made only .94 lb. per gallon. The extremely various yield year by year, too, is worthy of note; not more than 329 lbs. of cheese, and 93 lbs. of butter per cow one year, 454 lbs. of cheese, and 34 lbs. of butter another year. The value of the produce, too, varies exceedingly, showing the extremely chequered experience of the dairy farmer. The following is the table:—

Year.	No. of Cows.	Yield of Milk in Gallons.				Yield of Cheese.		Yield of Butter.				Value of Produce.†	
		Total.	Per Cow.	Given to Calves and Pigs.	Made into Cheese.	Total.	Per Cow.	Milk.	Whey.	Total.	Per Cow.	Total.	Per Cow.
						lbs.	lbs.	lbs.	lbs.	lbs.	lbs.	£ s. d.	£ s. d.
1855	30	..	..	..	..	10,864	329	2103	691	2794	93	444 0 0	15 0 0
1856	45	..	..	..	..	19,040	423	2272	647	2914	65	711 0 0	16 0 0
1857	55	31,728	577	..	..	25,424	464	3375	91	3466	63	906 0 0	16 10 0
1858	52	23,247	447	..	..	20,160	388	1687	344	2031	39	638 0 0	12 5 0
1859	60*	32,009	533	3400	28,607	22,736	378	1728	697	2425	40	795 0 0	13 5 0
1860	66	34,470	522	3439	31,031	29,344	444	1757	729	2486	37	1070 0 0	16 4 0
1861	71	38,831	550	4874	33,957	32,262	454	1589	862	2457	34	1068 0 0	15 0 0

* Several had slipped calf. † Including value of butter, and milk and whey used for pigs and calves.

BOTANY AT THE ROYAL AGRICULTURAL COLLEGE.

I SEE some attempt at an answer to my remarks on the Agricultural College Botanic Garden has been made by the individual who now professes to give botanical instruction there, and who makes my letter "an excuse" for puffing himself and boasting what he will do "in the course of a few years." Promises are too often illusory, and in its present admitted state of imperfection, it is simply ridiculous to claim that the garden "shall be without a rival, in its own sphere, in Europe." Only a very inexperienced and untravelled person would venture on such an assertion as this with respect to a garden only formed out of common pasture land last year. But my observations had reference to the actual present state of things, and not to a future, misty or bright as it may be. I had no desire particularly to remark upon the native plants got together this year, and only lately, as it is said, "reduced to order." The collection sent from Oxford appeared to be all correct, and there certainly the gardener had placed the labels properly. I cannot say the same of 183 plants said to have been gathered in the neighbourhood, and I should think that the collector of them and not the gardener is to be held responsible for misnomers here. In any case of mere misplacing of labels, to say the least of it, the eye of a resident director should be as acute as that of a visitor.

But what I pointed out in my former letter was the defective and imperfect appearance of the Agricultural Grasses in the new plots assigned for them, inasmuch that they were useless for practical instruction. It is admitted that many of the beds were empty, and that there were "three accidental transpositions." This does not, however, account for the many instances in which Grasses were wrongly named, and which I assert was the case not accidentally. It is also rather curious that many of the empty beds were those of Grasses common in the vicinity, which might have been easily placed there, as Bromus erectus, Avena pubescens, Milium effusum, Triticum repens, Aira cæspitosa, Cynosurus cristatus, Hordeum pratense, and Brachypodium pinnatum. It certainly must be considered rather curious that there should be a plot for the ubiquitous Couch-grass (Triticum repens), but that no exemplification could be found on the College Farm. I might also say, that in several instances where the beds were vacant as to the designated species, other species had been planted as an illustration of the deficient one. Thus Festuca gigantea had Arrenatherum avenaceum planted to represent it; Cynosurus cristatus put in an appearance for Poa bulbosa; Arrenatherum again appeared for Avena strigosa, while a plot of Bromus asper was labelled Bromus sterilis, but had full-flowered specimens of Brachypodium sylvaticum planted as an example. All this must have been utterly confusing to any inexperienced student anxious to understand the Grasses.

The answer put in to this is, that the ground is new, the plots formed being a creation of the present year,

and that 13 species only were obtainable from the old garden. In what state then was the old garden at the time the new one was commenced! Surely the old experimental plots, all tenanted, and amounting to 200 or more, would or ought to have been allowed to remain for instruction and utility till the new ground was fully prepared. But alas, no!

"Portentous, unexampled, unexplained;" the great majority of the old plots of Grasses and other plants were ruthlessly destroyed before the new ground was laid out, while it will be scarcely believed that in determining the alteration of the old and in forming the new garden, the talented botanical professor connected with the College for 14 years, was never called in as a counsellor. In fact, as I said before, Professor Buckman was by "Principal" pressure elbowed out of this experimental garden as well as the chair of botany that he had long filled advantageously, and at a cost that must amount to something considerable before Mr. Bayldon's grand fancy paintings of the future come to be realized.

I should regret to seem to press unkindly upon a young and unknown man.——***. *An Old Observer.*

We have to regret the unaccountable loss of a portion of our Correspondent's M.S.]

PRODIGIOUS ! !

The following letter, dated Wappenham, near Towcester, Northamptonshire, appears in the last number of the *Berkshire Chronicle* :—

"In answer to your letter dated December 2, it is a positive fact that I grew both Wheat and Barley from Oats. The Wheat I continued to grow up to last year, but in consequence of the crop going off I was obliged to fill it up with spring Wheat. The Wheat I grew from the Dutch Oat was a beautiful quality, small seed, weight 65 lbs. per bushel, light-coloured chaff, fine straw and blade. The Wheat I grew for about 10 years, and sold lots of it to my neighbours for seed. Now I am growing a coarser Wheat that a neighbour of mine grew from the Poland Oat. That is a much stronger straw and larger ear, but is very apt to mildew the last few seasons. The way I adopted was to plant it thin, under a sheltered wall, the middle of June; it then will require to be cut off about 1 inch from the ground before coming into bell three times the first season; the following year it produces the Wheat I speak of. Many people saw it when growing; it was a very thin berry the first year. The difficulty is in keeping the root to stand the winter. At the Towcester Union theirs produce Barley, and mine has the same from a coarse Oat. Black Oats will produce Rye the same way. You are quite at liberty to make use of my name. "From yours truly,

"Mr. Charles Simmons." "William Cowper."

The following letter, dated Addleton near Crumpleford, lies upon our own table, and in its own way confirms the preceding statement. It is much more precise than the relation of the well-known experiment of crossing a pintail duck with a Thames rat, by a distinguished member of the Acclimatization Society.

"In answer to your letter dated December 2, it is a positive fact that I have crossed both ducks and sparrows with pigeons. The ducks I continued to breed from up to last year, but in consequence of the drake being quarrelsome I was obliged at last to give up the experiment. The ducks bred from the sparrow were a beautiful quality, small boned, weight 2 lbs., light-coloured, fine legs and feet. The ducks I bred for about 10 years, and sold lots of them to my neighbours for a stock. Now I am breeding a coarser race that a neighbour of mine got between a carrier pigeon and a peacock. This is a much stronger breed and longer legged, but is very apt to have the pip. The way I adopted was to put them together in a hay-loft, the middle of June. The young ones will require to have their tongues slit, just one inch from the tip, and nicked three times more the first season; the following year no more care is wanted. Many people saw them when growing; the stock don't do so well the first year. The difficulty is in keeping the tongue from swelling and choking them. At the Crabfield Union theirs produce gulls, and mine do the same from a piping bullfinch. Guinea fowls will produce turkeys the same way. You are quite at liberty to make use of my name. "From yours truly,

"Peter Wilkins.

"President of the Crumpleford

"Mr. Timothy Swallow." "Experimental Association."

ON FATTING BULLOCKS AND SHEEP.

It has always appeared to me that farmers in general held opinions upon the question which were vague, and not founded on calculation so as to enable them to form a just estimate of the advantages of keeping sheep stock in preference to bullocks, or the reverse. I therefore ask your indulgence in taking my calculations as an approximation to the truth. I propose only to draw comparisons between fatting bullocks and fatting sheep in the winter months and upon such food as usually forms the diet of these animals on the arable farms of this district. The feeding of bullocks and sheeps of various ages and at different periods of the year would indeed be a large subject, and it is from this circumstance that I wish to confine the discussion chiefly within the limits named on the card, and which I think will be found large enough, and embracing calculations so minute as to require all the attention which can be given to it on this occasion. I, however, must beg to be allowed a few remarks incidental to the subject. I would first observe that I enter upon this subject without any prejudices or interested motives except those common to the whole body of our members, namely—the ascertaining, if possible, the particular kinds of stock best adapted to our soil or climate, and at the same time yielding the most profit, or entailing the least loss in the all-important operation of consuming root and other crops for the purpose of manuring our land. At the commencement of this subject we shall be told that the keeping of stock does not pay in itself, and only as an agricultural operation, whereby we avail ourselves of the advantages of the manure; and it certainly has been demonstrated in that way on a former occasion at this club, when Mr. Squarey introduced the subject of "The Hill Farming of Wilts and Hants;" his calculations were fair upon the subject, and a loss was admitted upon keeping sheep on the breeding and stock farms of the two counties, and I fear that fatting sheep, or ewes or lambs, on the arable farms of this district will show no better account. I will now introduce to your notice and criticism a paper drawn up, in part, at the time of Mr. Squarey's visit to the club by himself, many practical farmers being present and furnishing the items of which it is chiefly composed :—

Sheep Stock Account on an Arable Farm of 200 acres.

Debtor.

September 12th.—To purchased at Wilton Fair 200 Down ewes at 40*s*.		£400 0 0
100 tegs, at 40*s*.		165 0 0
16 acres catch crops, 26*s*.		20 16 0
25 acres Mangel, 60*s*., tillages		75 0 0
25 acres Swedes and Turnips, 60*s*., tillages		75 0 0
50 acres' rent, rates, and taxes, 45*s*.		112 10 0
50 acres Clover, say two-third consumed by sheep, equal to 33 acres; no charge for haymaking; seeds, 33 acres at 10*s*.	£16 10 0	
Rent, rates, and taxes, 45*s*.	74 5 0	
		90 15 0
Corn, &c., for 100 tegs, 10*s*. 4½*d*.	£51 12 0	
Less value of manure ½	25 16 0	
		25 16 0
Corn fed by ewes— 200 ewes 150 days at 1*d*.	£125 0 0	
Less value of manure one-third	41 13 0	
		83 7 0
Cost of lambs' corn— 200 lambs, 5*s*. each	£50 0 0	
Less value of manure, one-third	16 13 0	
		33 7 0
Loss 7 per cent., on 500 ewes	£35 0 0	
" 4 per cent., on 275 tegs	11 0 0	
		46 0 0
Attendance, wear and tear		62 0 0
		£1189 11 0

Creditor.

By 200 ewes, sold at 50*s*. including wool	£500 0 0
" 200 lambs, at 33*s*.	330 0 0
" 100 tegs, at 55*s*.	275 0 0
" Balance, loss	84 11 0
	£1189 11 0

Estimated Cost of Feeding an Ox per Week in Covered Box.

Debtor.

To 4 lbs. of oilcake per day, or 28 lbs. per week, at 12*l*. per ton	£0 3 0
" 60 lbs. of roots per day, or 420 lbs. per week, at 9*s*. per ton	0 1 8
" 20 lbs. of straw fodder per day, 140 lbs. per week, at 30*s*. per ton	0 1 10
" Ditto, ditto, for litter, at 10*s*. per ton	0 0 8
" Carriage of dung to field, spreading, &c.	0 0 3
" Interest on extra capital	0 0 3
" Attendance per week	0 0 8
" Balance, profit	0 3 0
	£0 11 4

Creditor.

By value of manure per week	£0 1 4
" Increased value of bullock per week, 2 stones, at 5*s*. per stone	0 10 0
	£0 11 4

Estimated Cost of Feeding Four Sheep per Week in the Open Field.

Debtor.

To 4 lbs. of oilcake per day/ 28 lbs. per week, at 12*l*. per ton	£0 3 0
" 60 lbs. of roots per day, or 420 lbs. per week, at 7*s*. 6*d*. per ton	0 1 4
" 4 lbs. of hay per day, or 28 lbs. per week, at 4*s*. per cwt.	0 1 0
" Attendance per week	0 0 3
	£0 5 7

Creditor.

By value of manure per week	£0 1 4
" Increased value of four sheep per week, 6 lbs., at 5*s*. 4*d*. per stone	0 4 0
" Balance, loss	0 0 3
	£0 5 7

This account of stock kept on an arable farm of 200 acres of this district, with debtor and creditor statement, shows a considerable loss, although the root crops are sold to the stock at barely what they cost to produce; and this brings me to the consideration of the greatest importance—how is this loss to be avoided, and the manuring of the land provided for? I was told the other day that sheep may be fattened at a profit upon oilcake, hay, and water, and that the land may be kept in a state of fertility by such means, and by the aid of artificial manures; this may be the case, and we may live to see the day when we shall do better than by growing root crops to feed sheep stock at a loss; but we are not yet prepared to meet the question in that way, and for our present purpose we must take the matter as we find it in operation on the farms around us.

It may be asked—Are we to take bullocks for feeding in preference to sheep, or are we to take sheep in preference to bullocks? In reply, I say, I think it likely, after this discussion is concluded, it will be said, take some of both, for it will be found that each kind of stock has advantages, and that light soils, of which there are some in the neighbourhood, really require the tread of the sheep, and consolidation caused thereby; whereas, other heavy land would produce better crops after having the root crop removed to houses for fatting bullocks, and returned to the land again as manure; and here arises one of the most important points in our subject, and one which require the most minute investigation and practical calculation, viz.—can roots be consumed by bullocks in the boxes, having the roots and feeding materials brought to them, and the manure arising therefrom carted back to the field, at a profit, as compared with the usual method of this district, of consuming the roots and other materials on the land by open field feeding of sheep. With the endeavour to show this matter in its true light I put it before you in the form of a debtor and creditor account for the bullocks fed in boxes, and the same for sheep fed in the open field. Taking first the bullock, a 3-years old Devon steer, estimated to make out fat and weigh 40 score after 20 weeks feeding, the bullock to cost on the average of seasons 15*l*. when he enters the box, and selling out at 25*l*. Taking second, the sheep, 2-teeth wethers Hampshire Downs, estimated to come out fat and weigh 10½ stones, or 4 score 4 lbs. each, after 20 weeks' feeding, the sheep to cost on the average of season 35*s*. each when they enter the field, and selling out at 55*s*. each. The foregoing account will require probably some explanation as to how the items are made out.

As to the value of a ton of roots for consumption by bullocks, we will suppose a field sown half to Mangel and half to Swedes, the former producing 24 tons per acre, the latter 16 tons per acre—average crop, 20 tons. The cost of this crop, including tillages, manure, rent, rates, tithes, and taxes, I estimate at 6*l*. 10*s*. per acre; thus the roots will cost 6*s*. 6*d*. per ton. Pulling, storing, and preparing the Mangel, 25*s*. per acre; ditto the Swedes, 15*s*. per acre; average cost of preparing, &c., 20*s*. per acre, or 1*s*. per ton. And here I would observe that the comparison between the roots for bullock consumption and that for sheep must cease; and to proceed, I will estimate the carting the roots to homestead, perhaps a quarter-mile distance will be the average for the generality of farms. Carting home and storing Mangel at per acre, 35*s*.; carting home, &c., the Swedes, 25*s*. per acre; average cost of carting home and storing, 30*s*. per acre, or 1*s*. 6*d*. per ton. The charging the fodder straw at market value in the place 30*s*. per ton is fair, because on many farms straw can be sold off, the equivalent value being returned in purchased manures, which may raise the question as to the policy of selling or consuming by cattle. The litter straw I have charged only 10*s*. per ton, because straw which could not be sold, of an inferior and damaged description, will answer every purpose in the boxes. I estimate the cartage and spreading dung returned to the land (a bullock making a ton of dung per month) at 3*d*. per head per week. I reckon interest on 8*l*. for 20 weeks at 10 per cent, being the amount of extra capital in the purchase of an ox over the four sheep, the former costing 15*l*. and the latter 7*l*. The attendance is estimated at 8*d*. per bullock per week, one man to feed, litter, and attend to 20 bullocks. This item closes the bullock account on the debtor side. On the credit side I have estimated the increased value at 10*s*. per week, being 2 stones, at 5*s*. per stone gain. I have found in my own business during a number of years my bullocks of various ages have increased in value 10*s*. per week during the 20 weeks feeding on roots, &c., in the winter months. I have estimated the value of the manure at 5*s*. 4*d*. per ton, and allowing each bullock to make a ton per month, this gives 1*s*. 4*d*. per week; and this I believe to be near the truth; but whether it is, in fact, more or less, it does not affect our comparative calculations, I having charged the same value of manure in the sheep account.

As regards the sheep stock account, debtor side, the value of the root crop will be the same as for bullocks up to the point where they are pulled, prepared, and stored, which will give the value of 7*s*. 6*d*. per ton. I have charged the sheep with hay because, practically, we cannot make fatting sheep eat straw without cutting it into chaff and mixing with superior food, such as hay, cake, or corn, which will not pay the expenses, and besides which it would lead to waste. It will be observed that I have charged the hay at a market price in the place, which is about the sum it costs to grow and make it, and may therefore be considered an open question. On the creditor side of account I have estimated the manure of the four sheep at the same as the ox, but it must be remembered that some of the manure is lost by exposure and heavy rains, and some of the heavy land does not benefit much by it in a wet time, owing to the tread of the stock. I have reckoned the two-teeth wether sheep to gain 1½ lb. per head per week for 20 weeks' feeding, and in my experience for many years I venture to say it is over the mark rather than under. I must here remark that the inquiry into the merits of the comparison has taken me somewhat by surprise, for although I always entertained the opinion that sheep stock barely paid for the keep, and that after we had charged the roots, &c., at feeding value, we had only the manure for compensation; yet until very lately I had supposed that the bullock feeding was worse than sheep feeding, because of the extra expenses incurred, and so it would prove, no doubt, were it not that the system of feeding exhibited by these comparisons had been adopted. The chief point to which I wish to call particular attention is the diminished quantity of cake used, and the fact of feeding with straw instead of hay—for instance, give 2 lbs. more cake per day and a fair allowance of hay to each bullock, and the item now standing as profit would

be lost without advantage in return; for I contend that 4 lbs. of cake per day is as much as the stomach of the animal can assimilate and turn into meat advantageously, and that hay is too fulsome and clogs the stomach, and I have never known a straw fed bullock refuse either roots or cake, which they often do with hay feeding.

An objection to bullock feeding is often raised that the land requires the whole root crop consumed upon it, but wherever oil-cake or corn is used in feeding (and it is now the common practice in this district) one-third at least of the root crop can be spared for bullock feeding, the remaining two-thirds being fed by sheep on the land with oil cake, or corn and hay. This will leave most of the land quite rich enough to produce a crop of Lent corn, and the roots removed for consumption by bullocks in their boxes will convert large quantities of straw into rich manure to be applied to other parts of the farm. I would here draw a contrast between the effects of sheep manuring and box-made dung. It is well known to most farmers that sheep in the winter months do not dress the land regularly (and that an uneven corn crop succeeds). The sheep for shelter in bad weather often huddle together under hedges or on the lee side of the hurdles, and therefore drop their dung in excess in those parts, whereas other parts get little or no improvement. Not so, however, with the box manure—it can be applied at the discretion of the farmer upon those fields and parts of fields in such proportions as may be required. I beg to remark that my observations do not apply with full force to stall feeding, because there is usually more or less waste of manure, arising from exposure to drought or wet weather; and often by undue and excessive fermentation in the heap, but in box made manure, where it is properly managed, there will be no loss, for when earth is placed in the boxes the liquid manure is absorbed, and the accumulating mass of manure above is always in a fit state for removal and application to the land, and can be allowed to remain in the box until required for use without loss. I must also observe that folding sheep is often attended with serious loss, particularly with ewes and lambs, arising chiefly from exposure in open fields, &c. On the other hand I consider neat cattle, kept under cover, subject to but little loss generally, because we must consider, although pleuro pneumonia has often made great havoc, yet it is an exceptional disease, and I can only say, in my own experience, I have scarcely ever lost any fatting cattle, but have had great losses in sheep stock, and particularly from epidemic lameness. I shall probably be asked how boxes are to be obtained for bullock feeding upon farms in general; the answer is to take the barns as I have done for the purpose, let them be partitioned at a small expense, and they will prove better accommodation than any building I have ever seen erected for the purpose of box feeding. Now steam threshing prevails the corn is better in stacks than in barn, and all the farms of our district have barns; they are therefore provided with the space for box feeding a good number of good bullocks.

I forbear to touch upon the subject of feeding young stock or sheep in the summer months, fearing that it may lead away from the discussion of the main point, and one upon which I set so great value; that is the comparative advantage of fattening bullocks and sheep, as practised in the district of the club. There are, however, some excellent experiments set forth in detail in the Journal of the Royal Agricultural Society, upon the advantage of fatting oxen and sheep under cover, and the results lead to and point out some valuable lessons in a general view of the subject; and we should find them very valuable in determining the question of house feeding of sheep and stock, but the house feeding system rather points in the direction of feeding animals for profits, irrespective of the consumption of root crops. It will no doubt be recollected that about 20 years ago premiums were offered at our cattle market for the best house fed sheep and lambs, but the premiums were not competed for more than two years, after which the plan of house feeding declined, and has not since been taken up in this district. There is, however, ample encouragement offered for house feeding sheep in the Experiments (22d volume) of the Royal Agricultural Journal, by Mr. Lawes; but no account has been given to satisfy the practical farmer that it is advantageous as regards the manure or the general health of the animal. These experiments, also relating to bullocks, show about the same gain or increased value, 16 lbs. of beef being the average increase per week, and yet it includes some animals which were bad doers, their gain being much below the average; and, although this result in amount of increase corresponds nearly with my own bullocks, yet I would not lead you to expect the like results unless the animals were of good breed and quality, and also forward in flesh at the time of purchase. If I were asked how I would proceed with a poor bullock, I would feed it for three months at a cost of not more than 4*s.* per week. I would, however, prefer taking an animal in high condition and pay a price accordingly. There are indeed many of our farming operations which should depend upon this inquiry. The straw of the farm is often greatly neglected, and never made into good manure where sheep only are kept to consume the root crops. Large quantities of straw have been however used for dead folds at lambing time upon some farms, but this practice is fast going out, for it causes the epidemic lameness in many instances. Again, bullocks could not usurp the place of sheep entirely upon the farms where a full quantity of roots were grown, because there would not be straw enough produced to feed and litter them; and the same result would obtain in case of house feeding the whole stock, supposing the food to be divided between bullocks and sheep, each being under cover. Unless some plan be devised, such as advocated by Mr. Mechi and a few others, which, however, before it can be adopted as safe practice for sheep under cover, must have the merit of saving the manure in an available and profitable form, and at the same time securing the health and profitable management of the stock." *Mr. Blandell in the Annual Report of the Botley Farmers' Club.*

ROYAL AGRICULTURAL SOCIETY OF ENGLAND.

Dr. HALF-YEARLY CASH ACCOUNT FROM 1ST JANUARY TO 30TH JUNE, 1862. Cr.

Dr.	£ s. d.	£ s. d.	£ s. d.
To Balance in hand, January 1, 1862:			
Bankers		1827 19 7	
Secretary		6 15 6	
			1834 15 1
To Income, viz.:—			
Dividend on Stock		[illegible] 9 11	
Subscriptions:—			
Governors' Life Composition	50 0 0		
Governors' Annual	430 0 0		
Members' Life Compositions ..	728 0 0		
Members' Annual	3253 9 0		
		4461 9 0	
Journal:— Advertisements		31 1 6	
Establishment:— Sale of Books		41 16 0	
			4789 16 5
To Country Meetings:—			
Leeds		9 2 0	
London Show		1474 8 0	
			1483 10 0
			£8108 1 6

Cr.	£ s. d.	£ s. d.	£ s. d.
By Expenditure:—			
Establishment—			
Official Salaries and Wages	357 6 [illegible]		
House Expenses, Rent, Taxes, &c. ..	[illegible] 0 [illegible]		
		71[illegible] [illegible] [illegible]	
Journal:—			
Printing ..	[illegible] 4 6		
Stitching	[illegible]		
Delivery, Advertising, &c.	1[illegible] 4 6		
Literary Contributions	77 0 0		
Editor's Salary .	[illegible] 0 0		
		862 18 0	
Chemical:—			
Consulting Chemist's Salary ..	1[illegible]0 0 0		
Grant for Investigations, 1862 . ..	200 0 0		
		350 0 0	
Veterinary:—			
Grant to Royal Veterinary College ..	100 0 0		
Illustrations for Paper on Rot in Sheep .	12 9 6		
		112 9 6	
Postage and Carriage .		[illegible] 17 [illegible]	
Advertisements		18 2 6	
Sundries .. .		6 8 7	
Subscriptions returned (paid in error)		[illegible] 0 0	
Memorial to the late Prince Consort .		[illegible]	
Wood at International Exhibition		[illegible] 1 [illegible]	
			[illegible] 3 4
By Country Meetings—			
Leeds		110 9 [illegible]	
London Show		2,8[illegible] 8 11	
			2[illegible] 18 5
Total Payments . ..			517[illegible] 1 9
By Balance in hand:—			
Bankers		2916 19 [illegible]	
Secretary		17 19 11	
			2934 19 9
			£8108 1 6

BALANCE SHEET, 30TH JUNE, 1862.

LIABILITIES.	£ s. d.	£ s. d.
To Capital:—		
Surplus, 31st December, 1861 ..	.. ..	16,081 9 6
Surplus of Income over the Expenditure during the Half-year, viz: Income .. .. 4789 16 5; Expenditure .. 2280 3 4	2509 13 1	
To Leeds Meeting:— Difference between Receipts and Expenditure, the former exceeding the latter by	4449 14 2	
		6959 7 3
		£23,040 16 9

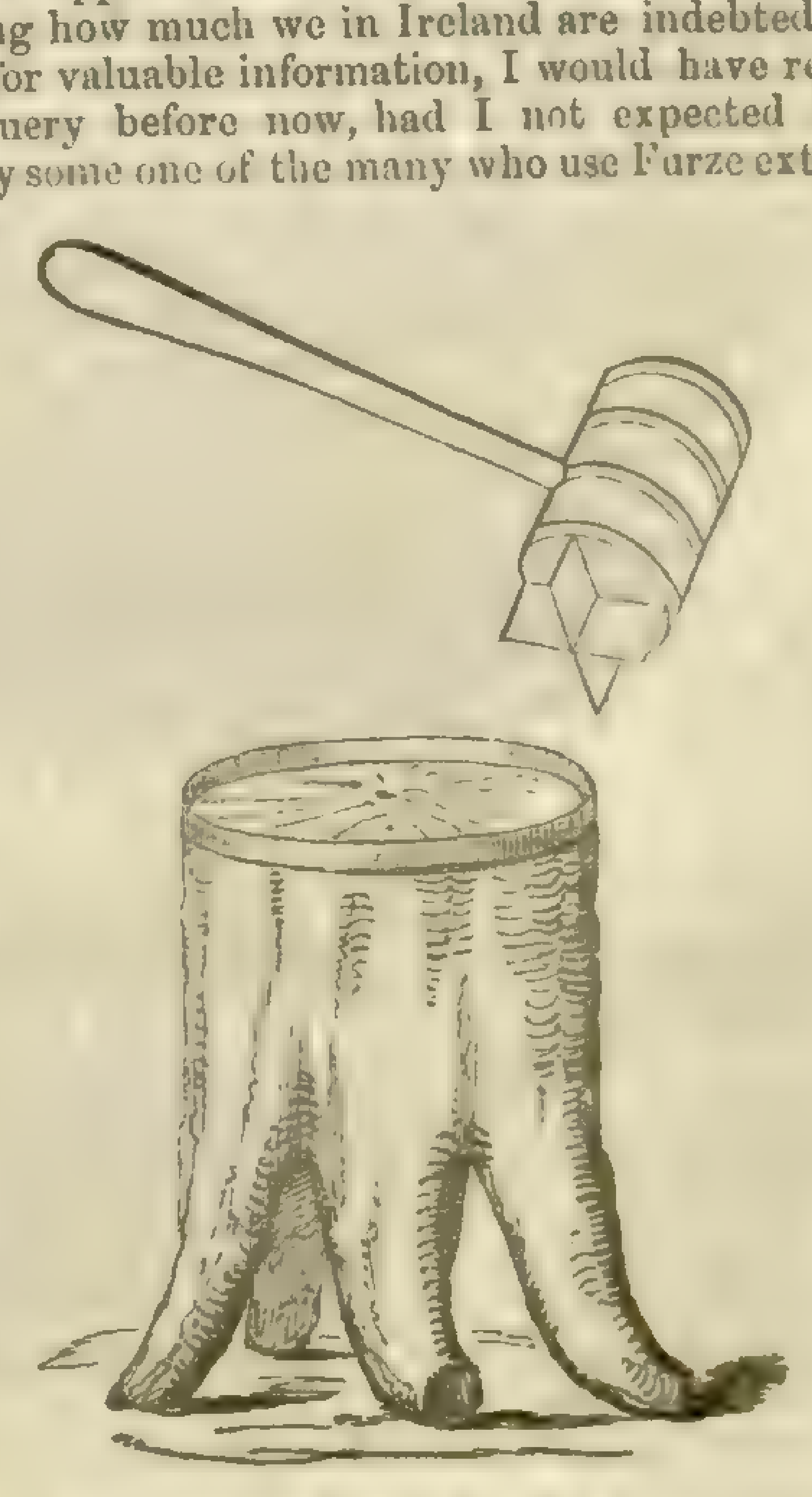
ASSETS.	£ s. d.	£ s. d.
By Cash in hand	.. ..	2934 19 9
By New 3 per cent. Stock 17,488*l.* 17*s.* 10*d.* cost . ..	.. ..	16,797 16 1
By Books and Furniture, Society's House, Hanover Square	.. ..	2000 0 0
By Account at debit of London Show	.. ..	1308 0 11
Mem.—The above Assets are exclusive of the amount recoverable in respect of Subscriptions in arrear June 30, 1862, which at that date amounted to 807*l.*		
		£23,040 16 9

(Signed) A. N. HOOD, Chairman of Finance Committee.
QUILTER, BALL, JAY, & Co., Accountants.

Examined, audited, and found correct, this 5th day of Dec., 1862. (Signed) WILLIAM ASTBURY. HENRY CORBET. WILLIAM COHEN.

Home Correspondence.

Furze.—Some time ago I saw a letter in your Paper, the writer of which desired some information on the use and application of Furze for stock feeding, and knowing how much we in Ireland are indebted to your pages for valuable information, I would have replied to that query before now, had I not expected to see it done by some one of the many who use Furze extensively



for such purposes in Ireland. I am acquainted with the use of Furze for such purposes for at least half a century. When I first saw them so used it was by the small farmers, who could procure but little hay, and their use was looked upon as an indication of poverty—a true one, indeed, in as far as the land that produced them was a criterion. At the time I allude to, the Furze was merely cut from the ditch banks or fences, and prepared in a most primitive way by pounding or bruising them on a stone trough by a heavy wooden mallet, whose ends were hardened or studded over with thick-headed large iron nails. They were also cut as well as bruised by another mallet, on the end of which was placed one or two rude iron blades; when two or more were used they were placed thus (see cut, p. 156, 1844). As the use of improved machinery became general, and the value of Furze for such purposes became better known, chaff-cutters of the various kinds were and are used. That which I used myself, though I never used Furze on a very large scale, was Richmond and Chandler's, which did the business remarkably well with one cutting, or one run through the machine for horses. But when used for cows or sheep I had them run a second time, and in this second run used also hay or newly-threshed Oat-straw to keep the Furze firmly together till carried out to the cutters, and to add to the quantity and improve the quality of the food. When thus cut for cows I had them mixed also with pulped Turnips, and allowed generally to remain thus mixed 10 or 12 hours before being used. In this way I found a great saving of hay, and a considerable increase in the milk and butter of the cows thus fed, as well as an improvement in the condition of the fattening of store stock. The cost of collecting and cutting for horses, as described, I found to be from 1*s.* 9*d.* to 2*s.* 6*d.* weekly for each horse, according to the distance drawn. A man at 1*s.* 3*d.*, and a boy at 6*d.* a day, cut and prepared food for 12 work-horses, when the Furzes were near the homestead. But when any considerable distance from it they had to be drawn by a pony or horse and cart, which increased the cost. They are now much used for cattle as well as

horse feeding in the south of Ireland, where land worth in its natural state but a few shillings an acre, is found to be worth as many pounds when one year properly laid down with Furze. A respectable neighbour of mine here, Mr. B. Webster, an intelligent Scotch farmer, who until he got a bad farm was rather prejudiced against Furze culture, now assures me that he looks upon 1 acre of the poorest of his high upland growing Furze of as much value to him as 3 acres of the parts of it capable of producing a hay crop. The cutter he uses is one of the ordinary and cheaper kinds made by Messrs. Paul & Vincent, Dublin. In addition to the cutting he crushes them by a rolling stone worked in a circular stone trough, into which the Furze are put when cut. This stone and trough are something like those used in preparing Apples for cider making. He formerly used them for crushing bones to make superphosphate. There are other machines rudely constructed in Ireland for crushing and tearing the Furze. Each is formed of a solid wooden cylinder coated over with strong iron spikes that worked between others fastened on a cylindrical trough or box in which the solid cylinder works by one or two handles, such as are placed on a windlass. On the principle of this machine, a Mr. Walsh, of Stedalt, near Balbriggen, county Dublin, has constructed a very simple machine that reduces the Furze to a complete pulp without cutting them. At Mr. Cliffe's, of Bellevue, county Wexford, there is a large machine worked by water power which cuts and bruises the Furze in a most convenient and economical manner for feeding a large stock of both horses and cattle. There is another at Ballyfin, near, Maryborough, Queen's County, the residence of the late Sir Charles Coote, Bart, where Furze is extensively used for such purposes. At Ballyfin the Furze is, I believe, grown on poor mountain land, where no other crop could be so profitably grown; whilst at Bellevue, Mr. Cliffe's fine residence, it is grown on excellent corn and Bean lands, and found to be more profitable than either a cereal or a leguminous crop. Now we have some hundreds of thousands of acres in Ireland all but valueless for any purpose in the world, which with a little draining judiciously executed, and an inexpensive preparatory culture, would produce Furze crops, perennially, worth 4*l.* to 6*l.* per statute acre without future culture or expense, beyond the collection and manufacturing of the produce for stock-feeding. Were it not that I have run this letter to such a length, I might be tempted to describe the simple *modus operandi* of preparing such grounds for, and the primary culture of Furze as well as a simple means of renovating the crop when having been cut and used for many years. You want the beef and butter in England because you can afford to use them. We could use them much more extensively in Ireland than we do, but we want their prices to pay rents and meet our other liabilities, and for which those poor lands alluded to afford us very little aid. However, this is not the fault of the land so much as of the laws that compel its raw material to lie dormant, whilst some of the proprietors of such lands think we have still "a redundant population." *Edward Carroll, Kilgreany, Clonegal, December* 3.

Studs for Horse Shoes.—I observe in your Paper (p. 1136), an inquiry as to roughing horse shoes. Mine have for many years been successfully treated in frost by studs and chisel points screwed into the shoes. I have this month obtained a stock of these from J. Watson, Ironmonger, Belper, Derbyshire, who I suppose can also furnish the drill. *R. Hutton.*

Societies.

Vale of Evesham: *Plan of Tenant-right.* — A meeting of the members of the Evesham Agricultural Association, organized principally by Mr. C. Randell, of Chadbury, to consider the question of tenant-right, with a view to establishing a code which would benefit both landlord and tenant, was held at the Crown Hotel, Evesham, last Thursday. Previous to the discussion of tenant-right the company dined together; Mr. E. Holland, M.P., occupied the chair. Sir J. Pakington and a numerous company were present.

The Chairman said, he trusted that the discussion which was about to take place that evening on the question of tenant-right would have the same good practical results which had followed a previous discussion on leases. The object of the present meeting was to place the landlords of this country in a better position as far as their land was concerned; that they should not be liable to have that land completely exhausted at the end of a tenure; that they might not be put to the expense or the loss of an in-coming tenant requiring them to abate the first half-year's rent of a farm as some remuneration, because he (the tenant) had been compelled to take the land in the wretched condition in which he had found it: that the labourers should not be thrown out of their labour because their master, an out-going tenant, was endeavouring to get all he could out of his land, without going on with its proper cultivation, knowing that he would not have compensation allowed him for exhausted improvement; and that the people of this country should not find a large area of land, which ought to give them luxuriant crops, yielding but half its produce. Those were some of the evils which arose from the present system or "custom," as it was called. He next referred to tenant-right, and, in doing so, said he wished that they could call it by some other name, as the word tenant-right did not properly imply or express what they meant. Had it been called "tenant security," or "tenant compensation," the term would have been more to his taste. By tenant-right, however, they meant that the occupier of the soil, on leaving his tenure, should have such compensation ensured to him as would induce him to farm it remuneratively up to the very last moment of his leaving it, and that when he left it he should have compensation for what he had put into the ground of a remunerative nature, without being at the loss which under the present system he was bound to endure. That if he left his farm in a high state of cultivation and without bargain, he should be allowed to pass the land to the in-coming tenant so that there should be no stoppage of cultivation, no evil arising from the land getting out of condition—and that the whole arrangement should be one beneficial to all parties concerned. There was no difficulty in arranging matters of this kind; and to those who took a deep interest in the question it appeared to be exceedingly simple, but still there were several things which had prevented its adoption in this part of the country. It would however be out of the course of their proceedings that evening if he did not confine himself to tenant-right; but he might say that, in consequence of there being a large number of small proprietors in this part of the country who were not rich men, the evils of the present system were more severely felt than in many other parts of the country; and the way by which this might be rectified would be, not by making a particular custom as to the mere passing of the farm from an out-going to an in-coming tenant, but that an out-going tenant should have what was left on the land, and in the shape of tillage, and that compensation should be based on valuation. The bargain might be made in writing, and the tenant-right system would be applicable to any length, under any agreement, or on any terms. Mr. Holland said he had also been an advocate of leases and of a certain length; and if he was asked to state what he thought would be the fairest bargain for all of them, it would be that the lease should be for a certain duration of years, without any restriction put down in it as to cropping, except as to the last four years of that lease, when it should be stated how the land was to be left by an out-going tenant. During the first year of the last four it should be agreed on that the tenant should either abide or take on a fresh term at the end of them, or else that he should have the advantage of tenant-right. What they had met that evening to discuss was, as to the mode in which, not through legislation, but through private means, a bargain should be struck between landlord and tenant to take into consideration the best mode of doing justice to all parties—not to the tenant alone, because the nature of that bargain should be that the land was not to be out of condition when he left it. If land was once allowed to go out of condition they knew how many years it took to get it right again. Then again, there was another thing: if an in-coming tenant took to land which was out of condition, however great might be the sacrifice made by the landlord in letting that land, there must also be a very great sacrifice on the part of the in-coming tenant; for it was not as if he was to spend his capital in growing, cropping, and manuring, year after year, but it was, as it were, to lock it up in the land, and so that it could not be restored to him till at the end of his tenancy. This was a great evil, and especially to an impoverished man, who might not have otherwise but capital enough to carry on his farm in a proper condition after he had taken to it. If they were to take into consideration the question of time which was lost to the public by land being thrown out of condition, they might say that if the last year or two were employed by an out-going tenant to exhaust the land, it would take double that time for an in-coming tenant to get it into condition again, and therefore in six years that land which ought to be producing a fair average of corn would be only producing about half what it ought to do. Let them consider what a loss such a system entailed upon the nation. If they were to consider all the different points connected with the various bargains made throughout the country they would be amused with their simplicity, for there was nothing in them that could not be adopted by the farmers of the Vale of Evesham to-morrow; and he could not help thinking that, as practical men, they ought after their discussion that evening to appoint a committee to consider in all its details the question of tenant-right, and it would then be found that the practical results arising from their deliberations would be as great and important as those which arose from their former discussion on leases. His friend, Mr. Randell, had well considered the subject, and had taken into consideration the different points connected with it, and he thought that he could not do better than call upon that gentleman to state the conclusions at which he had arrived.

Mr. Randell said, they must bear in mind that they were not seeking to encumber the landlords with any tenant-right that would lessen in any degree the value of their land; their only aim was to define such an arrangement as would benefit all concerned; and they were willing to rely upon the intrinsic fairness of the project to be submitted to ensure its adoption. They were seeking not to give to any tenant more than he had morally a claim to; and if the result of that meeting should be the formation of a committee of practical men to frame a code of tenant-right, their object would be answered, and he trusted it would be such a code as would go far to remedy the evil which existed and to improve which no attempts on the voluntary principle had hitherto been made.

First of all he would ask them to consider the position of the tenant farmer. He was about to leave his farm, and he knew that he could not obtain compensation, except for the labour which he had expended in fallow for the last year of his tenancy. He felt, therefore, that he could do no other than take out of the land all that he possibly could, and so the evil which they sought to remedy had been perpetuated. Under such a system, an in-coming tenant found at first that he was a loser by the transaction—his payments were as heavy as his crops were light; his means were crippled in his endeavours to improve the land that had been exhausted by his predecessor, and he could not farm so well as he ought to do, to enable him to recover from the position in which he had been placed. The labourer, too, under the present system was driven elsewhere to look for employment, and the landlord had the mortification of seeing his farm improvements set aside, and, as there was no remedy, he had silently to submit to the evil. The off-going tenant felt that his predecessor had done the same thing before he entered the farm, and that he might as well follow his example, as he would receive nothing whatever for doing otherwise. They all knew that an out-going tenant in general felt no kindly feeling towards his successor in the farm, and therefore he followed out the system with impunity. That the farmers of the Vale of Evesham might endeavour to effect a change he urged them to well consider the subject, as being both for the credit and interest of the tenant, and to adopt such a system as would lead them to act to the end of their tenure, and to give up the possession of their land in the same condition as they would like to find it if placed in the position of in-coming tenants to the same. It was obvious that the out-going tenant had a right to expect to be paid for any improvements of which his successor might wholly or partially reap the benefit. A system of tenant right had been adopted with great advantage in Lincolnshire and other counties; and in introducing some such system for the Vale of Evesham, they would have to see that the interests of the out-going as well as those of the in-coming tenant were defined, and that they were made to go hand in hand, so as to benefit all parties concerned.

He had drawn up a code of tenant-right from a tenant farmer's point of view, but he assured them there was nothing contained therein but what both an out-going and an in-coming tenant should be willing to adopt, and he hoped that the landlords would raise no question in the way of its being carried into effect. Mr. Randell then read his plan of tenant-right as follows:—

"It is assumed that the tenant, either by agreement or custom, is subject to the usual restrictions as to spending hay, straw, roots, and other food for cattle upon the premises, and to the usual landlord's reservations, but that all covenants as to cropping are abolished, leaving the tenant absolutely free to exercise his own discretion during the term of his tenancy, subject only at its termination to the following:—The month before the expiration of any tenancy, the off going tenant and the landlord (or his in-coming tenant) shall each appoint an arbitrator, who shall meet not later than 10 days before such expiration, and, having first appointed their umpire, shall proceed to determine all claims on either side. They shall consider the terms 'clean' and 'in good condition,' hereinafter used, in a reasonable and practical sense, and shall deduct from the outgoing tenant's claim such sum for non-compliance herewith as they may think proper. The following is the basis for their valuation; and their award, or that of their umpire, shall be final binding upon both parties. If the off-going tenant shall refuse or neglect to appoint an arbitrator, the landlord shall name an umpire, who shall proceed as if he had been appointed by the arbitrator:—One-half of the arable land shall then be fit to plant with Wheat and Barley, clean and in good condition, and having the previous summer been half fallow with green crops, the other half Clover or other mixed Grass seeds, or one-fourth Clover and one-fourth Beans manured; none of the Clover or other mixed Grass seeds shall have been allowed to stand for seed. The in-coming tenant shall pay 50s. per acre for all the land whereon the Clover or other Grasses have been grazed the whole year, if clean, and provided only one crop of corn has been taken from such land since the previous fallow; and also 50s. per acre for all exceeding half of the arable land so fit to plant with Wheat and Barley, being paid at the same rate for all short of that proportion. One-fourth of the arable land shall have been sown in the spring preceding the termination of the tenancy with Clover or other proper mixed Grass seeds upon land fallowed the previous year and clean; such seeds and sowing to be paid for by the incoming tenant provided they have not been stocked after harvest; and if more than one-fourth of the arable land shall have been in like manner sown with Clover or other Grass seeds, the incoming tenant shall pay 50s. per acre for such excess; if less than one-fourth he shall be paid 50s. per acre for the deficiency. Not more than one-fourth of the arable land shall require to be fallowed in the year after the termination of the tenancy, or shall require an outlay of more than 50s. per acre to clean it: if it require less than that sum the incoming tenant shall pay the difference. Tenant on quitting shall be entitled to the sum of 50s. per acre for all fallows, if clean; if not, the cost of making them so must be deducted: and also to the value of all green crops then growing, and of all hay and straw remaining; the arbitrators fixing the times for threshing and delivery of such straw to the incoming tenant. The out-going tenant shall be paid one-half of the cost of all purchased manures applied to green crops in the two last years of the tenancy, such cost not exceeding 40s. per acre; and one-half the cost of all oilcake or Linseed used in the last year, and one-fourth of that in the last year but one, provided it has been given to cattle and sheep, not horses, and does not in either case exceed the average of the previous three years. All draining with pipes at the tenant's expense during the last six years shall be paid for, provided the extent and system have been approved by the landlord, reducing one-sixth part of the cost for every year's use, such cost not including carriage of materials. If the landlord has paid for the pipes, the cost of labour shall be considered as repaid in two years."

Mr. Randell continued by observing that such a code of tenant-right would give a protection to the landlord against any claim that might be made on the part of an in-coming tenant for a farm being left out of condition, and undoubtedly it would be a great boon to the in-coming tenant as well, as it would save him from the cost of bringing his farm into a fair state of cultivation after he had taken possession of it.

Mr. Holland.—Will you state upon what basis you fix the 50s. per acre?

Mr. Randell said that before they went into the matter in

detail he should propose that they appointed a committee. The first thing they had to determine was whether a system of tenant-right should be established amongst them, and the next thing was to appoint a committee to frame that code of tenant right. He had merely made his suggestions as a sort of ground-work upon which the matter might be discussed. With their permission therefore he would propose that a committee be appointed for the purpose he had mentioned.

Mr. PEACHEY seconded the motion.

Mr. HOLLAND said that Mr. Randell was quite right in not going into the matter *in extenso* before a committee had been appointed. Mr. Holland then alluded to the presence of Sir John Pakington at the meeting, and said they must all feel grateful to the right hon. baronet for attending. Sir John's sentiments were well known with regard to the question of tenures in agriculture, and he had expressed himself so liberally on the question at Worcester and elsewhere that it was with peculiar pleasure and satisfaction that he met him on that occasion. He begged to propose "Sir John Pakington's good health," and he asked the company to drink it in bumpers.

SIR JOHN PAKINGTON, in returning thanks for the kind manner in which the company had received the toast, said it was impossible to deny the importance of a question which so deeply involved, and in the most material manner, the future welfare and prosperity of the great landed interest, upon which the welfare and prosperity of this great country so materially depended. On a former occasion he had expressed an opinion, grounded upon a strong belief, that while that beautiful Vale of the Severn, they might call it the Vale of the Avon, had been so eminently blessed by nature as to possess in a great degree all the natural fertility of the soil, yet the skill and science shown in that beautiful vale had not been in proportion to the natural fertility of the district, and he believed this remark would hold good all over England. The greatest degree of skill and science in the cultivation of the land was almost invariably shown in those counties where nature had done the least. He had been struck, as a landed proprietor, with the great inferiority of agriculture in this district comparatively with others that he had seen, and he was more and more impressed with this idea when he went to Scotland, and visited that wonderful district, which was cultivated in a manner that the Worcester farmers probably had no idea of. He had remarked to Mr. Curtler on what he had seen in Scotland, and had expressed an earnest hope to that gentleman that for his information he would make a trip some day to Scotland, and see the style of cultivation which prevailed in the district called the Lothians. He had heard a statement made that 100 years ago that district of the Lothians, which was now a model of skilful farming, was no other than a mass of bog and moor. The farmers at that time did not know the value of their manure. They sent it floating down the streams, and if the streams would not take it they burnt it to get rid of it. This was within the last century. What was Worcestershire 100 years ago? It was a fertile district, yielding crops, but cultivated in a very moderate and by no means to a satisfactory extent. But still capital had been applied to the Scottish district, and now they no longer hesitated what to do with their manure—they no longer allowed the country to remain a bog and a moor, but had brought it into a model of cultivation. He wished the farmers of Worcestershire would visit that district themselves and see the growth of chimneys. There they might count the farms by their chimneys, because there was scarcely a homestead in that district but what had its own steam engine and chimney. He had passed through that county some two or three months ago, and counted eight or ten chimneys lying nearly close together. He inquired of a friend of those were the largest farms they had, and the answer was, "Oh, yes, these are the largest farms—they are obliged to have more than one steam engine to do the work." When paying a visit to a landed proprietor in the Lothians, the other day, he was informed, while looking down from the garden terrace upon three or four farms close together, but averaging about 400 acres each, that the average rent was 72s. per acre, and that those farmers and that high rent were carried on by a body of tenantry, men of large capital, who were content to farm on these terms. What then was the cause of the difficult state of things which existed in Scotland from that which existed in this fertile district of Worcestershire? Did it arise from the fact that in the Lothians the natural fertility was greater than theirs? He (Sir John) could not presume to say that he had investigated the exact quality of the land throughout that district, but he believed it to arise from the system of superior cultivation, and that the main cause to which that superior cultivation was to be attributed was, that instead of doing as they did in this county by a tenure held from year to year, without conditions and without security, they occupied their farms under conditions which gave them perfect security for any outlay they might choose to make on the land. The observations which he made at Worcester, a year ago, founded upon the Scottish system to which he had then adverted, had led to a great deal of remark at the time, and feeling the importance of the subject he wrote to his Scottish friend, who had also a large estate in Lincolnshire, which was the best, if not nearly the best, farmed district in England, and he therefore thought his friend was the best person to give him the information he required. He wrote to him on the question of leases or no leases, or, in other words, in what manner he gave security to the man who was willing to spend his capital in the cultivation of the land. Mr. Nisbet Hamilton, the friend in question, wrote him in answer a long letter, and also forwarded copies of the leases under which his Scottish tenants held their farms, as well as the tenant-right agreements under which his Lincolnshire tenants held them. Mr. Nisbet Hamilton, in his letter, expressed his decided preference for the system of tenant-right adopted in Lincolnshire, and the system of leases in Scotland, and he (Sir John) believed that to be the question which they themselves had met to discuss. It was not whether Mr. Randell had or had not drawn up a proper code of tenant right, but the question was whether they were right in advocating the drawing up of a distinct principle, and to ask their society to form a committee whose inquiries should be directed to that question which touched the interest of them all, namely, whether they could not define some system for the tenure of farms better than the system under which they then lived—a system which was mostly from year to year, and without conditions. His belief was that such a system was the worst they could have, and they would pardon him if he here remarked that he was arguing the subject, not as a tenant's question but as a landlord's. He looked upon it, however, as a question which deeply interested the whole country, and equally affected the interest of the landlord and the tenant. They were both equally interested in agriculture and the produce of the soil, and therefore as men of business, men of sense, they must approach the question which they had met to discuss upon the same broad commercial principles that they would apply to any other trade or to any other business. There could be nothing more short-sighted than the idea which prevailed amongst some landowners, that they did not like a system of the kind because they thought it would interfere with their power over the land. He believed such an idea to be altogether a mistake. He was sure it was to the interest of the landowner to have an intelligent, well-educated, and prosperous tenantry; and he was sure it was to the interest of the man who made the land his trade to be able to cultivate it upon the most advantageous principles. No man ought to venture upon the cultivation of the land who had not money enough in his pocket to cultivate it well. When he embarked in the trade, his money became expended on the land, and therefore he was entitled to some assurance that his capital should not be lost to him. He saw no answer to the principle which he had endeavoured to advocate and lay down; and the question arose, supposing that principle to be a proper and sound one, what was the best mode of carrying it out? His own opinion leaned to the belief that after all the lease was the best plan. There was, he knew, a disinclination amongst the farmers of Worcestershire to leases. He spoke under correction, and was glad to hear it denied, but he thought he might say, from his own experience, that amongst many farmers in this county there was an unwillingness to take them. He believed that unwillingness had arisen very much from the defective system to which he had adverted, and was also to be traced in no small degree to the panic which existed amongst the agriculturists at the time of the repeal of the corn laws. He preferred the lease upon the one simple ground, notwithstanding any system of tenant-right they might adopt, that under a lease a farmer felt greater security and greater certainty in the cultivation of his land. He was talking only to the skilful farmer, the man who had money and knew what to do with it, and who would rather live under a lease than under the protection of any abstract system of tenant-right, however well that tenant-right might be defined. He was convinced they must have one or the other. He was going to say that a lease did not include the question of tenant-right, and he for one saw no reason why they should not combine the two. The true system was to combine tenant-right with the lease, which would do away with the temptation of running a farm out of order during the latter part of a lease, as tenant-right would step in and prevent it. Mr. Randell and Mr. Holland had alluded to a most important point—the right that ought to exist between an in-coming and an out-going tenant. Such was most desirable, but he ventured to assert that it would not be found quite so easy to adopt. He agreed with Mr. Randell as to the adoption of a standard, and fully admitted the worth of that gentleman's judgment in the matter, but he feared it would not be so easy to carry out, and therefore he looked upon that as an additional reason why the appointment of a committee should be proposed.

SIR JOHN PAKINGTON said he believed that in the code of tenant right drawn up by Mr. Randell there was nothing stated as to the proportion of fallow. (Mr. RANDELL: "Fallow with green crops.") Sir John then proceeded to say that in talking of fallow during his visit to Scotland his friend had said they knew of no such thing in that country. (Mr. HOLLAND: "We don't know it here.") He was glad to hear that remark, because there were some parts of this county where it was extremely well known. (Mr. RANDELL: "I've not had an acre of it for 20 years.")

Mr. T. G. CURTLER then addressed the meeting as to the period at which the tenure of a farm should commence, and advocated the Lady-day entrance as being much better, much cheaper, and more convenient to an in-coming tenant than a Michaelmas entrance. At Michaelmas the offgoing tenant had his Turnips, Potatoes, &c., to consume, his cider to made, and his stacks might fairly be said to be ricked and housed at a time when his tenancy was to expire. He was bound to have some stipulation by which such crops were to be consumed on the farm, and that being so, the in-coming tenant who had left his farm might go to his new taking and find convenience for his team, but with not a bit of hay or straw in the loft for consumption by his cattle; and there was not always the best feeling existing between the two tenants while the off going tenant sought to have the means of spending his produce on the farm. (A Voice: "Let it be taken by valuation.") These were some of the difficulties and drawbacks which might be said to exist in a Michaelmas taking. As to a Lady-day taking, Mr. Curtler said that an out-going tenant might fairly be presumed at that time to have spent all his Turnips, to have consumed his straw; and as to the way-going crop of Wheat, there would not be the slightest inconvenience in a tenant taking to it at a valuation to be made immediately before August. There would be a thorough quitting and a thorough entrance without the interference of one with the other. Mr. Curtler next alluded to the remarks which he had made at the agricultural meeting at Worcester with respect to the question of tenant-right which was about to be discussed at Evesham, and said that he certainly felt alarmed when he read the announcement of it in the newspapers, and understood it to be possible that the meeting might be called for establishing some right in the land as opposed to the landlord. He was glad to find that such was not the case, and he might add that he cordially agreed with everything that had been said on the subject by the previous speakers, and that they ought to have a code of regulations for compensating tenants on leaving their farms, and for exhausted improvements and manures. If security were to be carried out on the part of the tenant as well as the landlord it would be made a commercial speculation, and of course the landlord would expect better rents and that the terms would be strictly carried out by the tenant. Admitting, as he did, the great evil which at present existed, it was much to be desired that some system should be adopted by which the losses to an off-going tenant should be obviated, and by which the land of the country should be made to yield the utmost extent which good farming could produce.

Mr. RANDELL explained away many of the objections of Mr. Curtler as to a Lady-day in-coming, which seemed to meet the views of the meeting.

On the motion of Mr. RANDELL, seconded by Mr. G. PEARCE, the following gentlemen, with power to add to their number, were named as the committee:—E. Holland, Esq., M.P., Mr. Randell, Mr. Jas. Webb, Mr. W. Woodward, Mr. G. Pearce, Mr. B. Bomford, and Mr. B. Smithin; Monday, the 15th inst., being the day named for their first meeting.

KINGSCOTE: *Valuation of Land.*—On Tuesday the 2d inst. a lecture was delivered by Professor Buckman on the method of determining the nature and quality of land by means of the Grasses growing upon it.

The Professor commenced his subject by observing that as Grasses form so large a part of the food of animals, no farmer should be without knowing, and the more the better of the natural history of this useful tribe of plants, and that no teacher of botany at agricultural institutions was worthy the name of botanist, unless he was intimately acquainted not only with the different species of native Grasses, but the nature of the combinations which they make in different states and conditions of soil; he himself was led to look more curiously into this matter from having observed in the frequent excursions of the Cotteswold Naturalists' Field Club that while some species are present in one part of the same county, they are absent in others, and these differences are the result of an alteration in stratification and soil. Again, there is another difference, which is the result of cultivation, or, what is more usual with meadows, the want of cultivation.

In order to illustrate his subject the more clearly, the Professor proposed the following subjects for consideration. 1st. The structure of Grasses as influencing their farm value. 2d. The nature of good and bad meadows. 3d. The distribution of Grasses according to soil, both in pasture and arable land. 4th. The nature of the herbage in flooded and irrigated meadows. The anatomy of Grasses was illustrated by means of a profusion of natural specimens, portraits of most of the Grasses, and an expert series of sketches on the black board, showing an intimate knowledge of the structure and expression of the order of plants on the part of the lecturer. The second part of the subject was devoted to an exposition of the nature of good as contrasted with bad herbage, in which was clearly made out the fact that while some meadows are good for grazing they are not so suitable for hay-making. This was illustrated by reference to the state of some meadows belonging to T. B. Ll. Baker, Esq., of Hardwicke Court, as also to some of the river flats of our island.

In explaining the nature of the distribution of Grasses according to soil, the Professor first directed attention to the species which indicate clays, limestones, and sands merely as such; and then pointed out the nature of the Grasses which indicate condition or the reverse on lands having these minerals for their basis. In this part of the subject it was clearly shown that in cultivated meadows there are two sets of Grasses, one called by the farmer "sweet," the other "sour" Grass, and that these are always antagonistic, the sweet being encouraged at the expense of the sour, as the result of cultivation, the sour dispossessing the sweet where the meadow is uncared for.

The difference between wet, flooded or irrigated meadows was most clearly demonstrated, and hints given for estimating their state or condition and value, by observing the presence or absence, the well or ill-doing of certain species of Grasses. Examples were here quoted of the peculiarities of the herbage in what are termed the "scouring" or "tart" lands, as also those that have of late attracted attention as being concerned in the production of that serious mortal evil to cattle called Splenic Apoplexy. In conclusion the lecturer directed attention to the beauty as well as the utility of this remarkable tribe of plants, a tribe to which England is perhaps more indebted than other nations of the earth for her wealth, health, and scenery, and exhorted his agricultural brethren to look well at Grasses, to view them as friends, and then they will want to know more of them, nay to love them as he did, when nothing short of a thorough familiarity with them will satisfy their longings. At the conclusion a vote of thanks on the proposition of — Harrison, Esq., seconded by Colonel Kingscote, was accorded by the acclamation of a large and influential meeting.

BERKELEY AND THORNBURY: *How Farmers Cultivate Weeds.*—At the last Monthly Meeting of this Association, Professor Buckman gave a lecture on the growth of weeds by the farmer in the cultivation of his crops.

Professor BUCKMAN said:—Farmers, often unwittingly, cultivate weeds in one rotation. I shall attempt to point out to you that farmers grow weeds under the four following circumstances:—

1st.—In their general tillage operations.

2d.—From manure heaps.

3d.—They sow weeds with their crop seeds,—this is a very fertile source of weed cultivation.

4th.—They allow weeds to seed in their fields.

As regards the cultivation of weeds in tillage operations I will just draw your attention to the natural history of the common Thistle.

The plant crops under-ground, and in so doing produces long underground stems, which sometimes reach to a very great distance. The plough in going through the soil cuts these stems into pieces, and they are not generally picked up. Every one of these pieces contains one or more buds, each capable of producing a distinct plant. This is the creeping underground Thistle. I have seen in one spot two or three of these centres from which radiate the underground stems, covering a space as large as half the circle of this room; and I have seen these continue to spread underground until the whole field has become covered with Thistles, owing to the stems being cut up into little bits in the ordinary tillage operations; these little pieces not being picked up, the harrows go over them and regularly distribute them all over the field. And exactly the same thing occurs with regard to the Coltsfoot. I have frequently heard farmers say Thistles do not grow from seeds at all, which is a fallacy. In proof of this I have performed some experiments. I obtained some Thistle seed, and planted 10 of them in a place where I could watch them. They all came up; and it became a curious question how farmers ever arrived at the notion that Thistles do not grow from seed. I conceive it is just this: that the Thistle is at first a very little plant, which dies down entirely towards the autumn; but in the meantime it has sent out a couple of buds near the roots, which stretch out, and put out fresh buds, so that in the next year a plant that was so small as scarcely to be seen, will spread and cover a circle of some 6 or 8 feet. The notion that Thistles do not seed, probably arose from the fact that the seed is frequently eaten by a little weevil, the down of the seed being alone left. This was a most fortunate thing for this country, otherwise if every seed were uninjured we should have what they have in Tasmania, namely a plague of Thistles. Our Thistle has been transported to that country with our emigrants, as have been so many other weeds of the mother country to our colonies; but, fortunately we have the weevil here, which destroys large numbers of the seeds, but which has not accompanied the plant to Tasmania, probably

rom the climate not being suitable, and consequently they have a plague of Thistles. For their extermination laws have been instituted, which are rigidly enforced. In many parts of the island it is found impossible to grow crops on account of the extraordinary development of the Thistle.

Let us look again at another case. There is the weed known as the Coltsfoot, which we treat in the same way as the Thistle.

It increases in the same way as the Thistle by sending out lateral buds or shoots, which on being separated from the parent stem, or broken up, will grow into a perfect plant. Thus we may see whole fields covered with Coltsfoot, having spread from centres in this way. Let us look a little more closely at the natural history of the Coltsfoot, and then we shall see how serious are the injuries caused by it. In the early part of the year it has little inconspicuous flowers, and no leaves, and the farmer therefore when he sees them amongst his corn thinks very little of them, and allows them to remain. By and by, when the usual period for Wheat hoeing arrives, the hoe is busily engaged in chopping them. The blossoms have by this time ripened their seeds, and the plant has the underground stems I have referred to in every direction. Every one of the blossoms whose seeds are scattered by the hoe plants 150 new plants, each seed having a parachute by which it flies about, and is planted somewhere or other. So that in the usual farming operations, without knowing it, the hoer takes care that every Coltsfoot seed shall be very nicely and delicately planted. I am quite sure that the more you reflect on this matter, the plainer will you see the truth of what I am stating. But had these flowers been cut down before the seeds ripened, you would have prevented the possibility of the seeds it afterwards contained from being planted.

It is the same with regard to Couch, which is perhaps "cultivated" to a greater extent on the Cotswolds than it is here. On one or more sides of many fields on the hills there is a wall, and under that wall there will be a piece of ground the plough cannot get at. These are the places where weeds grow, and flower better than anywhere else, and the seeds become scattered over the land. The roots of the Couch and other weeds run from these places into the cultivated ground, where they are cut up into little bits by the plough, and extensively propagated. Couch can be picked out of land when there is a single plant or so in it; but it is exceedingly difficult to pick up all these small pieces, and they remain to become centres from which fresh plants are sent out to choke the growing crops.

2. With regard to our second point—the propagation of weeds by manure heaps—it is a very important question how farmers grow weeds from the seeds being scattered in the manure heaps.

Some two or three years ago I was on a farm upon which the farmer had commenced the growth of Flax. In that Flax was a quantity of Black Mustard seed—not the common Charlock (Sinapis arvensis) but that Charlock with the smaller seed and flower, and usually a smaller plant, Sinapis nigra. This is much more general than the other. I saw that there could not be a ready market for this Flax, from the prevalence of the Black Mustard. The seed was threshed out, the Charlock seed was separated, but it was not burnt or destroyed as it should have been, and some of the refuse seed got into the fold yard, and it was mixed up in the manure heap. It is commonly supposed that if weeds are put into a manure heap, they will rot and decay, and so most plants will, but there is a vital principle in the seed that will resist decay (for it is the principle which is to bring about the new plant) longer than any other portion of the plant. The result was that in this case, where the manure containing the seed was carried and spread over the land, the next year it was quite covered with this Charlock, while the other portions of the land were clear. But now what is a very remarkable circumstance respecting that farm is this: that whereas the common Charlock was formerly the rule over that farm, now it was the Black Mustard. And this is easily explained when you remember that the common Charlock will only produce some 4000 seeds, whereas the Black Mustard is so prolific as to produce about 8000 seeds to a plant; thus the greater fecundity of this plant enabled it to gain the entire mastery. If you take almost any crop you have threshed, Barley, for instance, and having separated the Barley, examine the tail Barley that is left, you will find a quantity of seeds of weeds. I got a sample of tail Barley the other day from Wiltshire, and counted in it no less than 20 different species of weeds; some of Black Mustard, some of the common Charlock, some of the climbing Buckwheat, &c. I was brought to ask what became of this refuse. "Well," said the farmer, "there's a quantity of Barley in it, and it don't do to throw it away, so I throw it about the farm yard, and let the fowls pick it up;" and the result of that was that it got after all into the manure heap, and from thence the seeds were regularly and systematically planted over the farm. To give you some notion of the quantity of weeds that may be found on a spot where manure has been placed, I will mention a striking fact. In Berkshire in 1859 I went into the middle of a Grass field, and in a small spot upon which a manure heap had stood, I counted no less than 30 species of weeds which had taken root. Now what would a farmer usually tell me with regard to this? Why, that the weeds were natural to the soil. But the fact was they were taken there with the manure. There were the common Sow Thistle, and the corn Sow Thistle, the Grounsel, Nettles, Poppies, two or three species of Chamomiles,—in fact all the common agrarian plants, and not meadow plants. On another occasion I recollect going into a field that ought to have been Turnips, but I could not see a Turnip at all; the whole field had been taken possession of from one end to the other by the Stinking Chamomile. I was naturally curious to know it got there. It was just this: The manure heap from which those Turnips had been manured was an old one, and on the top of it the Stinking Chamomile had been growing. This plant will grow better on the top of a manure heap than elsewhere: and each one will actually develope from 60,000 to 70,000 seeds. These, shed on the top of the heap in autumn, were regularly scattered and planted over the field. This shows how without care weeds may be scattered over our fields. If we know such facts as these, we have only to avoid such a means of weed cultivation.

3. Let us now consider the third point—the sowing of weeds with crop seeds. I believe until I commenced investigating this matter its value was scarcely understood.

Very frequently with the seeds you buy at market from different seedsmen, you buy quite sufficient weed seeds to become a crop, and cover the ground; you will see that this is a very fertile source of weed cultivation. In one of six samples of Clover I have sown I found 21 seeds of common weeds would be sown in every square yard; in another sample 22 seeds; in some samples of Cow grass Clover I counted 17 seeds in the square yard; in another 32; in another of Dutch white Clover, usually a foreign seed and very dirty, 66; and in another the enormous number of 174. Suppose you parcel out a square yard, and take 174 seeds, or a quarter of them, and dot them about, and when you are told that some one of these will occupy several square yards to itself if it grows well, you can hardly expect a crop to grow, and you see plainly how you must be growing weeds. In order to show you that I do not speak without book I will give you some cases. I have entered very minutely into this matter. I took the trouble of taking pints of various kinds of Clover (and a great deal of trouble it was) and ascertained by counting the number of seeds of weeds they contained, and the results arrived at were somewhat remarkable. Multiplying these pints into bushels gave some surprising figures. Here are six samples of Red Clover. In a bushel of one kind I found 1,085,445 weed seeds; in another 2,524,160. Without troubling you by going through the whole of this table. I may state that a sample of White Dutch Clover contained the highest number of weed seeds I have observed in any sample, and this, too, came from a seedsman labelled as genuine. In a bushel of this I found no less than 7,680,000! Here, then, is the case of this White Dutch Clover. With every square yard that was sown of this seed would be sown 174 weeds, which would of course be quite enough to stock any land for some years to come with weeds, however careful you may have been in weeding in previous years. Let us take Rye-grass, a more fertile source of dirt than almost anything else. I have examined various samples of Rye-grass. In one sample of Italian Rye-grass, for example, I found 261,120 weed seeds in the bushel. These seeds were very much like Rye-grass—Couch-grass very often; and some very inferior species of Grass. As far as I have seen, with regard to Rye-grass, there is not a more fertile source of Couch-grass than imported Rye-grass seed. In a bushel of this seed will be found quite enough Couch seed to stock your land, if it has been cleaned ever so much previously. Then, again, there is the common imported Italian Rye-grass. The example I have here is one of the dirtiest I have ever found, for it contains 450,560 weed seeds to the bushel. The weeds consist, among other plants, of the Creeping Crowfoot, one plant of which will occupy several feet if it grows well, which it is almost sure to do, and if it starts amongst seeds, will grow them out in a very short time. Another of the weeds is the heavy Lop Grass, with no feeding properties whatever, and perfectly useless amongst Rye-grass, or, if not useless, it is a Grass the seed of which it is too bad to call upon the farmer to pay for, as it entails work upon you for years and years to get rid of out of your fields. There cannot, I am sure, be a more fertile source of weed cultivation than is offered in our common seeds. My examinations of Flax seeds also show that you sow weeds very generally when you sow Flax. I got several samples of the seed as ordinarily sold. If used for crushing, its value is reduced as much, or perhaps more, than if sown. In one sample of Tulsit Linseed, in 100 parts I got 40 parts of Flax seed, 44 parts of weed seeds, and 16 parts of dirt. Thus 60 parts were dirt and weeds. In Odessa Linseed I found 66 parts Flax, 20 weeds, and four dirt. In some Black Sea Linseed 80 parts seeds, 19 weeds, and one dirt. In Bombay Linseed 95 seeds, three weeds, and two dirt. So that these show you that, though if you buy cheaply, you may get some kinds very dirty, yet that it is possible to get almost pure Flax seed in the market. If any of these dirty seeds is used, you get as a result a large number of weeds on your farm. Weeds which you never before cultivated or saw will be obtained from those bad foreign Flax seeds. Weeds are thus taken to various parts of the world in carelessly collected seed. Our emigrants in India and North America have thus taken our agrarian weeds with them. At one place in the neighbourhood of Saratoga Springs I counted some 30 species of weeds growing as rampantly as in England, they having been taken to the farm and there cultivated in the same manner; in fact a great part of our ordinary weeds have been brought from foreign countries. I am constantly having new plants brought to me. Some of them spread very rapidly. These new plants have been brought to us in foreign seeds, and they ought to be an evidence to us of the manner in which we sow weeds. Suppose we don't sow this dirty Linseed, but send it to be crushed for oil-cake, and the dirt happens, as is very often the case, to be Mustard-seed or Charlock, both of which are hot and pungent—you will have a cake which is frequently destructive to cattle. The number of cases of cattle being so destroyed is more than you would be inclined to believe. Then again with regard to Vetches, I can assure you it is almost impossible to get a genuine sample. The Corn Cockle is a plant that usually grows with Vetches, and the flower being purple, like the Vetch, it is not noticed. Here are some seeds of it; they are a little darker than Vetches. Vetches are often sold containing more than half of the Cockle. And as the Vetch is a highly nutritious plant, while the Cockle has no feeding properties whatever, when you buy them thus mixed you are paying not only for that which is bad in itself, but which dilutes that which is better. There are very few samples that are entirely devoid of that plant; but farmers still continue to buy Vetch seed containing the Cockle, leading one to suppose that they do not believe there is any mischief in Cockle. I do not want to represent that farmers are not observers, for they are, and are looking so closely into these matters that the keenest students of nature can hardly keep pace with them. But in this case probably the close resemblance of the Cockle seed to the Vetch may cause them to overlook it; and perhaps a little botanical study may be of benefit even to farmers. I will now call your attention to another crop plant, which you do not grow much in the Vale, but which is more grown on the Cotswolds, and that is the Sainfoin. There is a weed that grows with it, much taller than the Sainfoin, but with leaves of much the same character, and that is the Burnet. In the Sainfoin the leaflets are not notched, while in the Burnet they are. I have had to give evidence about this in courts of justice. I have seen crops of Sainfoin gowing 50 per cent. of Burnet. It is a large plant, growing strong woody matter amongst the Sainfoin, and is of no use as a feeding plant. Instead of a crop of Sainfoin lasting six or eight years, it is not found profitable to grow it more than three or four years, on account of this weed. I have specimens of Burnet seed, which is light brown, and of Sainfoin seed, and at first sight you would hardly see any difference. Here is a mixture of about equal parts of Sainfoin and Burnet, and from this you will see the difficulty which some persons would have in observing the difference between them, notwithstanding the difference in the shape of the two seeds. In a county court I have seen the seed examined by farmers, and handed to the judge, and none could see the difference between them but the expert witnesses who were called. Yet a section of the two seeds presented very different forms, one being quadrangular and the other flat, with a broad back, but both being wrinkled and of the same colour, they were liable to pass unnoticed. The evil was thus introduced; and crops of Sainfoin now cultivated in this country are not worth half so much as they were 10 years ago, owing to the extraordinary prevalence of Burnet. The seedsman does not separate it, because Sainfoin seed would be only worth 10s without the Burnet, while it is worth 6s. with the Burnet in it, and, therefore, they do not trouble to separate them, especially as farmers do not see the difference, or as, when they do, they say Burnet grows a bigger plant than the Sainfoin, and therefore they got more for their money.

The next point I want to introduce is, not allowing weeds to seed on the soil.

This is a subject of great importance, and which has not been sufficiently attended to, either by the scientific or the practical man. That "ill weeds grow apace" all of us have known from childhood, but we have hardly perhaps entered into a calculation of the enormous fecundity of weeds, and if we do so, some very curious speculations will arise. The Creeping Crowfoot, or Ranunculus, that you find on the farm, and amongst seeds, has the faculty of sending out a number of shoots from a centre, like the runners of the Strawberry, when each one of these strikes down a root, and then sends out another shoot. This goes on until the plant becomes eight or nine feet across, having perhaps 60 of these shoots or scions from the original parent. If this plant is then cut up with the plough or other implement, each of the pieces will send out shoots, and besides this, it has the faculty of producing [illegible] seeds in a single year if allowed to grow. Take again another common plant, the Poppy. A single average plant of the common red Poppy I have ascertained will produce as many as 50,000 seeds. We need not therefore wonder to find every now and then a piece of land red with Poppies, without supposing that the soil naturally produced them. It is because one or two plants have been allowed to scatter their seed upon the land. Let us take some other plants. The Charlock we have speaking of (Sinapis arvensis) produces about 4000 seeds to each plant; the Black Mustard, 8000, the Mouse-ear Chickweed [illegible], the Sow thistle 19,000, and another kind no less than 25,000. These are taken from a list I published in the *Agricultural Gazette*, after I had made observations upon the reproductive powers of plants. When I was investigating this subject I was prepared for a large number of seeds, but was not prepared for an individual plant to produce enough seeds to stock a field; and when I did find this out, it opened up a wide field for speculation. It explained how sometimes in an incredibly short time thousands of weeds appeared where before only a single plant was seen. Some plants increase enormously because they develope two or three lots of seed in a year. Chickweed is one; and Groundsel (Senecio vulgaris) another. By what I have said you will very clearly see how you may unwittingly "cultivate" weeds; and you will perceive that the best way to avoid growing them is to see how they are grown, and how they are produced in such enormous numbers from a single plant.

Reviews.

Thorley's Illustrated Farmers' Almanack—Johnson & Shaw's Farmers' Almanac—Morton's New Farmers' Almanac.

We understand that the first of these has a very large circulation. It is a pity that such a means of widely distributing useful agricultural information should not be turned to better account. The illustrations for example are utterly useless. None of those that represent our breeds of sheep and cattle are recognisable, unless, indeed, it be those of the Hereford cow and the West Highland ox, and the former is called a Short-horn! The discussion on cattle condiments before the English Agricultural Society is given in full, and every opportunity is taken on the one hand of proving the value of cattle condiments, and on the other of throwing discredit on Mr. Lawes, though in neither case is the attempt successful.

Mr. Johnson's Almanac needs no word of praise from us. A great deal of useful agricultural information is given in it in a very readable way, pleasantly intermingled with genial gossip and well selected snatches of poetry and song.

Mr. Morton's Almanac is more strictly an agricultural history of the previous year, containing, along with Monthly Calendars and the usual information of Almanacks, an account of everything new in the agricultural world which has transpired during the previous twelvemonths. It is this year garnished, among other things, with a number of selected passages and fragments of Mr. Hoskyns' terse and pungent writing. Take the following, for example, on Agricultural Education:—

"*Why* do you think—why does everybody think—that he can farm without having learned how; that agriculture (if you like that word best) is an exception to *every* other human labour or pursuit, a contradiction to all natural law, and will bring a livelihood without study, cost, or apprenticeship: that to be able to gabble over the pet jargon about the "hignorance" of our forefathers—&c., &c."

We may refer to another fragment extracted from the Bath and West of England Society's Journal, for the purpose of pointing out a mistake on p. 118. English produce as calculated by Mr. Burnett—the figures were quoted without any attempt at verification, as was thought quite safe to do from such a work; they are, however, wofully inaccurate, and we fear untrustworthy, even when the errors of miscalculation are corrected.

Eyton's Herd Book of Hereford Cattle.
By T. Duckham.

We call attention to the issue of Vol. V. of this series, containing the list of bulls up to No. 2364, and a long list of cows and their pedigrees, from upwards of 200 herds. The work is growing in estimation, as appears both from the increased number of subscribers and from the increased eagerness of breeders to have their stock recorded in it. And as it is one of those works whose usefulness and value depend upon their popularity and the degree of patronage they receive, we may confidently predict for it a long and prosperous future. The present volume, a very neatly printed octavo, is illustrated with a number of well executed lithographs of well selected specimens of the breed.

Farm Memoranda.

NORTHUMBERLAND FARM.—The month of November has drawn to a close, and it now becomes our duty to record the weather of that period as mild and open at the commencement, but partaking more of a wintry aspect towards the middle and end of the month, the prevailing characteristics being dryness and frost. The rainfall—registering not more than 1 inch—is decidedly below the average for this month, and though the

night-frosts were at different periods somewhat severe, they were never so intense as to entirely stop the plough for more than a couple of days. This is of course due to our close proximity to the sea, for in inland districts during the same period ploughing and such like operations were entirely suspended.

Labour.—Much needful and useful work has been accomplished this month, and in spite of the late harvest our farming operations are quite as forward as in previous years. Oat stubbles for Turnips have been turned over with a good furrow, most of them 10 inches in depth, and are now lying "high and dry" for the action of the frost. Other land for spring crops has also been ploughed, and we are just commencing our lea for Oats. Turnip pulling and subsequent Wheat sowing has been closely looked after, and has progressed to a satisfactory extent, and should the weather hold favourabble, we shall have have over full breadth of Wheat sown by the second week in December. We consider this plan of autumn and winter sowing up to Christmas decidedly preferable to spring sowing, where circumstances permit; and although land be ploughed and left over winter to mellow by the frost, thus producing a finer seed bed, still we never find it to bulk out in ordinary seasons like winter Wheat; besides, during the last year or two, large breadths of spring Wheat were never properly ripened, therefore Barley, though a malting sample cannot be produced, is decidedly a more advantageous crop even on strong land.

Swedes, though a light crop, are very regular, but exhibit a sad falling off from last year, to the extent of from 6 to 8 tons per acre, and never do we remember seeing so many run to seed; they are now being pulled and stored, and the land will be sown with Barley. Yellows are a fair crop, but also sadly inferior to last year; our best of this class are the Hybrid (Border Imperial), an excellent root for cultivation on strong land, possessing important feeding and keeping qualities. Our White Turnips are our best crop this year, being very respectable roots with an excessive amount of top, to which is unquestionably due the safety of the roots during the late frosts; much alarm was felt in some quarters as to the injury done to the Turnips by the frost, but we find that they have grown very considerably in spite of it. On the whole it is evident that throughout England the Turnip crop is below an average, and that the earliest sown are the best. The manure has been carted from the boxes and yards during the frost, and placed in close proximity to the next year's Turnip-break. At this early period of winter we usually cart it on to the heap, thus consolidating the mass and preventing too rapid decomposition. The corn markets are miserably dull at present, with a downward tendency, and consequently there is no encouragement for threshing more than is absolutely necessary to provide fodder for the stock.

Stock.—Fat bullocks are feeding quickly this year, though some of them have had slight attacks of murrain, which has been extremely prevalent in this and the adjoining counties for several months past. They are receiving Yellow Turnips and Oat straw, whilst in addition to this a few of the more forward are having 3 lbs. of cake and 3lbs. of Bean meal as well as a small quantity of hay. Lean bullocks are on straw in the yards with an out-rake daily in an adjoining pasture where they receive Turnip tops and small Turnips; this treatment will continue till winter sets in in earnest. The sheep stock is very healthy, and is thinly distributed over the old pastures, where some Turnip tops are daily carted. Some of the hoggets are getting cake and corn. The fatting pigs are thriving well on boiled Turnips mixed with Bean and Barley meal; they will, however, be finished off on oatmeal. *J. W.*

South Hants Farm: *December* 14.—Wheat sowing is still the daily work of the farm whenever the weather is favourable, and although we have had rain rather often during the past fortnight, yet the quantity of water fallen has not been sufficient to prevent or interrupt the carting of manure to the land, ploughing and sowing Wheat; in case however of delay in the sowing of Wheat from having sown all the land cleared of roots by the sheep, we have the fallow ploughing to fall back upon of land intended for Potatoes, Mangels, &c., next season. We finished sowing Wheat upon the Potato land at the beginning of the month, since which time we have been sowing land which has been recently cleared of the stubble Turnips, and although the Turnips were sown after a crop of Oats, yet they have afforded a good quantity of feed for the ewes and lambs; we, however, feed in addition some Mangels, oil cake, &c., after which a good dressing of rich box cattle-manure is applied, and by these means the land is found to sustain a good crop of Wheat straw, the yield being dependent in a great measure upon the season; for instance, land treated in this manner and sown to Wheat last January, produced the best Wheat and the largest quantity of any portion of our crop, although other portions were well dressed with good manure after Potatoes, Clover lea, &c. We propose again to sow 40 acres to Wheat, out of our 100 acres of arable, between the present time and the 1st February, for although Wheat and all kinds of grain are low in price, yet they are the staple produce of the farm. What is there to sell to pay charges, unless it be the grain crops? Speaking of the question as Corn *v.* Stock, as lately discussed before the Central Farmers' Club in London, did any of the speakers show that green crops could be made a substitute for grain? It was recommended to substitute grass for grain to a greater extent, but no attempt was made to draw a comparison in the money value of the produce, or to show what money could be made from consuming Grass or roots by stock; it must, therefore, be considered that the question rests where it was, and that, properly speaking, the result was only a lecture and observations upon Corn growing and stock feeding, rather than a comparision between the two. We must therefore consider, as we ever have done, that by careful management a profit may be made upon the feeding of stock in some seasons, but as it is generally carried out, it only proves to be a preparation of the land for the growth of cereals, whereby the stock profit will about cancel the cost and charges of producing the roots, grass, &c. We have commenced selling bullocks of different ages at about 5*s.* per stone for the best, which is about the price they made last year at the same period, and they pay very well at the price; our youngest animals make about 20*s.* per month, dating from birth; at that money they answer well; the cost of summer keep on Clover under cover with 2 lbs. of cake per day is a moderate charge, and upon this food they grow into money very fast, only requiring about 10 or 12 weeks upon roots, straw, and 4 lbs. of cake per day to finish them fit for the butcher. Our sheep stock are still doing badly; the lameness continues to break out daily, and although we cure and heal nearly every case as fast as it occurs, yet it is the cause of loss to some extent. Our horned ewes have now finished lambing, the number of lambs being 25 per cent. short of last year. The ewes bring very few twins, and we find upon inquiry this is generally complained of in the different neighbourhoods where these kind of ewes are kept. Our West Country down ewes have now commenced lambing, but we have had some dead lambs, and we hear this also complained of elsewhere; in fact, the losses upon sheep stock have been so continuous, and so heavy for some years past, that it has induced many parties as well as ourselves to keep more bullocks. The storing of our root crops are now completed, and may be considered an average crop, put together in good keeping condition. Our dairy cows are still doing exceedingly well, feeding upon Cabbage; they, however, will not last much longer, as the outer leaves are decaying, which if not removed affects the butter injuriously. This has caused some parties to object to this crop for cows, but it cannot be expected if the animals eat decayed substances that they will give pure butter. The Kohl Rabi will succeed the Cabbage, and may be allowed to remain on the land, as they are very hardy, and cut daily as required for use. They are also very nutritious, but should be cut or sliced when given to cows. The economy of straw is to us most important, where so many animals are kept; our dairy cows and pigs are therefore littered daily in part with straw as it comes from the carthorse stables; a large portion of the straw being only partially tainted by the horses, it serves a good purpose for bedding the pig pens, &c., where it is also made into stronger manure, and likewise preserved well, being trodden into the accumulating mass, for we never remove manure from any of our cattle or pig pens until it becomes inconvenient in depth, and we would here observe that the horse manure is generally taken the least care of, being usually exposed to the weather. *J. B.*

Five-Acre Model Farm at Glasnevin, Dublin.—An opinion having been entertained for some years past that the Albert Model Farm, Glasnevin, and the machinery connected with it, was on too large a scale for the instruction of the small farmer, it became a matter of consideration with the Commissioners whether a small farm should or should not be attached to or cut off from the extensive grounds under the control of the agricultural superintendent, and worked as much as possible by ordinary manual labour, for the instruction of both the agricultural pupils and those under training for the position of national schoolmasters.

This proposition, which was in abeyance for some time, has at length been put to a practical test, through the exertions of Laurence Waldron, Esq., M.P., supported by the rest of the Commissioners of National Education, and early in the present year 5¼ statute acres were appropriated and cultivated as a school farm, and as an example for small farmers generally, which was placed under the immediate and exclusive direction of Mr. Baldwin, who has also been charged with the general and agricultural education of the pupils at Glasnevin, as well as lecturing the teachers in Marlborough House during their course of training. Having several times during the season visited the Model Farm, and being naturally interested in this movement, and anxious to see how things got on, we are now able to say something on this very important subject.

This piece of ground, though under the general rotation of the Model Farm, was rather in an irregular condition when entered on, entailing much trouble in bringing the entire under the four-course shift the first season, and which the director, Mr. Baldwin, has successfully carried out, which, with the importan results as regards the interests of the small farmer, may be gathered from the following brief notes, taken on our last visit to the establishment.

1st, The School Farm contains about 5¼ statute acres, the average rent of which is about 1*l.* per statute acre.

2d, When it came to be managed by Mr. Baldwin, in February last, it was in Grass, the greater portion of it having been an old paddock, a part being rather poor Italian Rye-grass. The ground having been lotted off, was put in preparation for the following four-course rotation, which, though it may not be generally applicable, has been adopted from the several years' experience of the Model Farm, as being the most paying in the vicinity of Dublin. The cropping of the four fields is as follows:—

1. Oats	3. Early Potatoes
2. Turnips and Mangels	4. Italian Rye-grass

In this rotation we have the farm crops most profitable in the neighbourhood of Dublin, and, at the same time, the basis of systematic farming. The only deviation from the ordinary four-course is the substitution of Potatoes for grain in the third year or field.

By liberal top-dressing a fair quantity of soiling has been obtained from the field in Grass, which was fit to cut about the middle of June, when two cows were purchased; another cow has since been added, the Grass being supplemented with artificial food.

The green crops are rather above an average. The portion under Mangels was dug when taken in charge by the director; it has been subsequently dug between with a fork, and is now a heavy crop and remarkably clean. That portion under Turnips was ploughed, cross-ploughed, grubbed, and well pulverised, as hand labour could not be procured at a reasonable price; it now yields an admirable crop of Sutton's Champion Swede, bought of Messrs. Farrell, Capel Street. A portion was sown with Aberdeens, which are also very fine; and there were a few drills of White Turnips which have gone to feed the cows, and thus converted into dairy produce.

The portion under Potatoes has been sown with Italian Rye-grass, which is fast brairding, and which will, no doubt, next year yield an abundant crop, as from old experience we found no better preparation for Italian Rye-grass. Several varieties of Potatoes were tried in this field; both the coloured kinds and Flukes were almost free from disease. The director is now selling Skerry Blues, which are very fine eating Potatoes and remarkably free from disease; the Flukes are also a very fine crop, and, if possible, freer from disease than the Skerry Blues. It is right to say, that every facility is given to students and the public to profit by what is doing, and in the neat byre there is a board on which is written the hours of feeding and the kinds and quantity of the food consumed.

From the accounts we find that up to the date of our visit (11th inst.), the portion of this year's crop already sold amounted to about 55*l.* We find by estimation that there is still on hand about 2 tons of hay; about 36 barrels of Potatoes, some of them admirably fitted for seed; the produce of a statute acre of a good crop of sandy Oats, and the produce of something more than an acre of Turnips and Mangels.

It would be premature to anticipate the balance sheet of this Albert small farm; but we feel that we would not do justice to it if we did not say that the evidence before us left no doubt in our minds that, after charging it with rent, hired labour, including horse labour, seeds, and manures, and making a fair allowance for the free labour of the pupils, there will be a net profit of 6*l.* per statute acre. We by no means wish to convey the notion that every 5 statute acres of ground of the same quality would produce the same money in other districts; nor do we believe that the director, Mr. Baldwin, is of that opinion; but we do believe that this school model farm confirms the opinion so often expressed by us in reference to small farms. For assuredly if every 5 or 10-acre farmer in Ireland would cultivate the land as well as this piece of ground is cultivated, and if the same skill and judgment were exercised in the selection of seed, in applying manure, in the after cultivation, and in the collection and preservation of farm-yard manure, combined with strict economy, none of the produce wasted, and everything turned to the best account, the tenant farmers of Ireland would be in a far different position to what they have been. *Dublin Farmers' Gazette.*

Calendar of Operations.

DECEMBER.

Berwickshire Merse Farm, *Dec.* 13.—November was a singularly severe month throughout. On the 25th the temperature of the air fell below 19° F., and after that we had a couple of inches of snow, which lay two or three days. The ploughs were frozen out quite one half of the month, and many of us had our first experience of curling in November. But all this winter disappeared with the month, and these two weeks the weather has been quite fresh, with occasional rain. Some of our neighbours have been ploughing for Wheat; but where not sown close up to the ploughs every night, they have been caught by a shower, and there they lie. We have stored a part of our Swedes, as they will not grow soon, and delay would be dangerous. They are of splendid quality, but scarce two-thirds of a full crop. White Turnips are stopped for good, but not otherwise damaged; their splendid tops saved them, and half a crop is better than none. Folded Hoggs had a good dry lair last month, and feel the change at present. They get their Turnips laid down in a Grass field during rain. Corn and Potatoes are turning out miserably, and that may be a reason why markets are so dull. *J. B.*

West Sussex: *Dec.* 16.—We are now in a very dull part of the year, and all field operations are at a stand still, and have

been for some time. We have had some slight frosts, which have made the surface very soft, we have hardly ever had the land in a more unfit state for working, but all the Wheat has been got in some time ago, and is looking extremely well; we hear a little about the slugs, but not to any extent, and considering the very favourable time we had for putting it in, and the good order the land was in generally, we may expect to see it do well. Cattle are mostly shut up in the yards, as the meadows are too wet for them. The Mangel crop not being so good as usual, perhaps there will not be so many fatted this winter, andwe are likely to have prices continue high. Lately we have had a poor supply of beef in our market, and anything good has sold at a high rate. Every kind of lean stock is still very high, and we have been obliged to buy old ewes at a price that leaves little chance of much profit from them. None of fair size and quality have been got for less than 40*s.*, to as high as 50*s.* a head for West County Downs; while the horned Somersetshire ewes that are now lambing have cost over 3*l.* each, and from what we hear, they are not doing so well in lambing, and perhaps this is caused by their food being so wet. There are not so many of the horned sheep brought this way now, as we find that good hearty Downs drop their lambs nearly early enough, and if the horned ones are not gone before the Downs come into the market, their value is much lowered and the coarser ones almost unsaleable, so that unless on very good land the Downs are the safest. We have a good supply of Wheat in market and the condition generally good, and the quality fair, but there is no doubt the yield is too low, from 6 to 8 bushels below an average. Barley is a poor sample generally, and even the best does not bring so high a price as we might expect; this perhaps is owing to the distress that prevails to such an extent in some parts, which no doubt stops the consumption of beer, and if that were all the harm it was doing there would not be much to complain of. Labour here is rather too plentiful, and some can hardly find work, and what with efforts to assist the cotton districts, and the dulness at home, the winter is not likely to be so cheerful as usual. *G. S.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Dec. 17, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	11	29.97	41	40	S.W.	2	5	53	24	72*	29	..	45½	46
Friday ..	12	30.27	37	35	W.	2	2	50	32	54	26	0.10	45	46
Saturday ..	13	30.00	46	45	S.W.	4	8	46	33	63	29	0.17	43	45½
Sunday	14	30.39	36	35	S.W.	2	2	50	31	54	26	0.21	43	45
Monday....	15	30.42	39	37	S.W.	2	7	47	34	69	30	..	42	44½
Tuesday ..	16	30.32	40	39	S.	1	6	48	32	46	27	..	42	44
Wednesday	17	30.29	51	49	S.W.	3	8	51	38	51	37	..	43	44

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Notices to Correspondents.

Disease in Swine: *Norfolk Farm.* The disease is doubtless to be attributed to some undiscovered error in feeding the sows. Avoid roots; give boiled milk with half a pound each of Wheat flour, Bean-meal, and Linseed cake meal daily. If this does not succeed add 2 grains of calomel and 4 grains of opium, and give three times with a day's intermission between each dose. *W C S.*

Grass: *J J A.* Your Italian Rye-grass is by no means a clean sample sample, its prevailing weeds are Ranunculus repens, Creeping Buttercup, and Holcus lanatus, Wooly Soft Grass, with a tolerable sprinkling of Bromus mollis, Lop. The small pinch you have sent us contains no less than twelve seeds of the Ranunculus, enough to take possession of many times more land than would the Grass seeds. Upon this plant consult the *Agricultural Gazette* for June 22, 1861.

Grasses: *X Y Z.* For permanent Pasture on heavy soils, to be sown without a crop. put in about 50 lbs. of seeds per acre, including 2 or 3 lbs. of each of the usual Fescues except F. rubra, a large quantity of F. loliacea, 3 lbs. each of Timothy, Cocksfoot, and Foxtail grass, 5 lbs. each of Perennial and Italian Ryegrass, 3 lbs. each of Poa trivialis and P. nemoralis, and 5 lbs. each of red and white Clovers. Sow them without a crop. Read Mr. Thompson in the Journal of the English Agricultural Society on their further management.

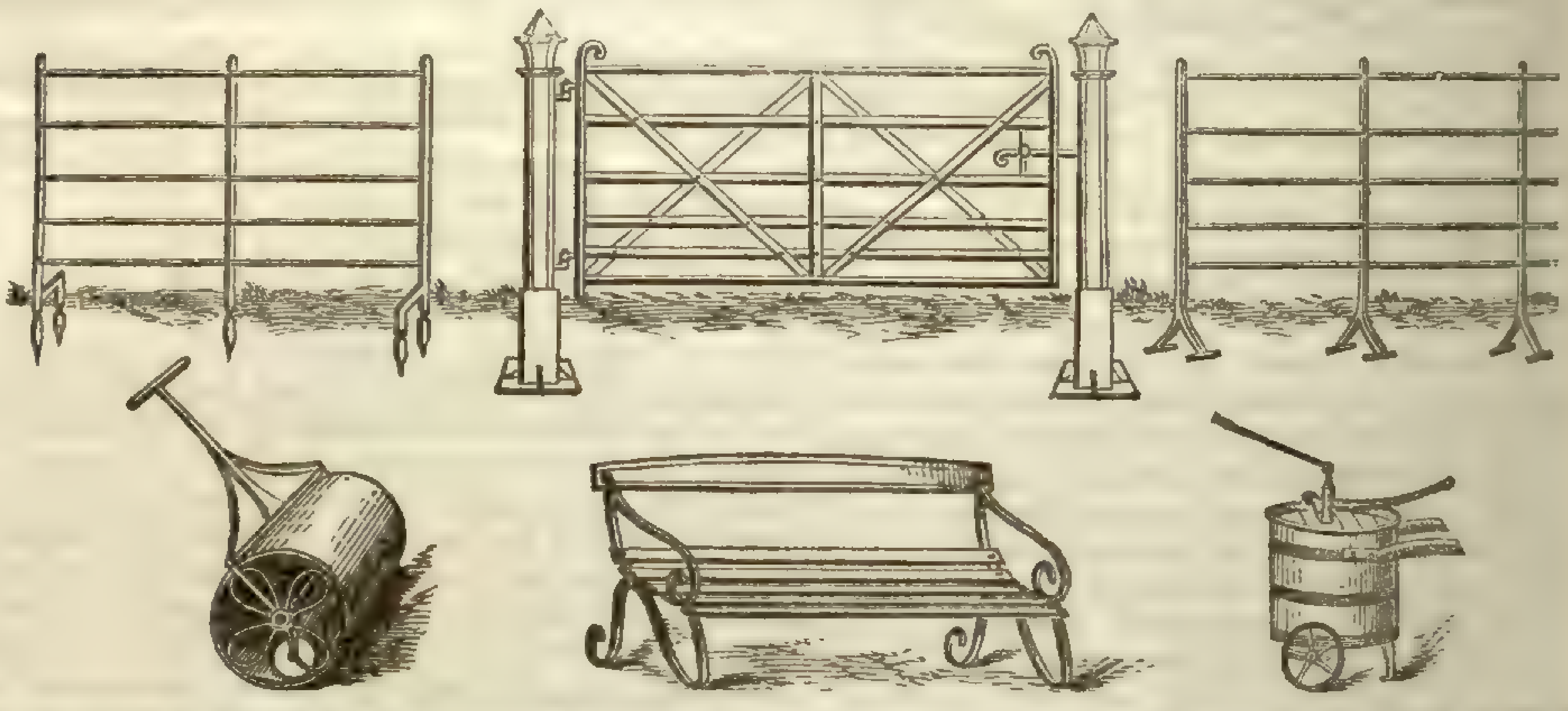
Leather: *Agricola.* We can find no information on the composition of leather clippings. But it is doubtless rich in nitrogenous matter. In the conversion of skin into leather there is however such an insolubility and fixity of character conferred upon it that it is rendered useless as manure, except after such a tedious process of rotting and disintegration as will practically render it valueless.

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

RANSOMES & SIMS, Orwell Works, Ipswich,
Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

JAMES & FREDERICK HOWARD,
BRITANNIA IRON WORKS, BEDFORD,
PATENTEES AND MANUFACTURERS OF
STEAM CULTIVATORS, STEAM PLOUGHS,
CHAMPION PLOUGHS, HARROWS, HORSE RAKES, AND HAYMAKERS.
CATALOGUES, with full particulars, sent free on application.

COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,
MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.
PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.



IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES.
WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes.
VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c.
The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to
COTTAM & CO., ENGINEERS and IRON FOUNDERS,
2, WINSLEY STREET (Opposite the Pantheon), OXFORD STREET, LONDON, W.

ST. PANCRAS IRON WORKS COMPANY,
OLD ST. PANCRAS ROAD, LONDON, N.W.
BY ROYAL LETTERS PATENT.

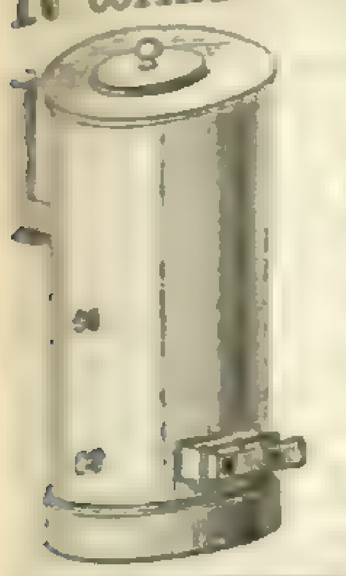
SCOTT'S GLASS WALLS,
Designed to meet the suggestions of James Scott, Esq., of Hornsey, as being the desiderata of such structures. They are devoid of shadow, durable, portable, and a tenant's fixture, with the strength and durability of a permanent structure. Further particulars and prices by post or on application.

CONSERVATORIES GREENHOUSES HOTHOUSES	PINE and MELON PITS VASES VERANDAHS	BALCONIES IRON SASHES IRON HURDLES	GATES TANKS HOT-WATER WORKS.

PATENT WROUGHT-IRON STABLE FITTINGS AND ENAMELLED MANGERS.
Every description of IRONWORK. *Lists Free.*

ST. PANCRAS IRON WORK COMPANY, OLD ST. PANCRAS ROAD LONDON, N.W.

RIDDELL'S PATENT SLOW-COMBUSTION COTTAGE BOILER for HEATING CONSERVATORIES, ENTRANCE HALLS, BATHS, &c., by the Circulation of Hot Water.



Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the Patentee's Warehouse, 155, Cheapside, London, E.C.

Price complete from 3l. 10s.

Illustrated Prospectus free, and Estimates prepared for Erecting Hot-Water Apparatus of any magnitude.

Exhibition Prize Medal, 1862.

MUSGRAVE'S PATENT SLOW COMBUSTION STOVE.—This Stove is the nearest approach to Warming by Hot Water, and an efficient aid in Ventilation.

It will burn in Churches from Saturday till Sunday evening, without attention during the hours of worship. In Halls will burn day and night for weeks, with little care. Capable of Warming a large Apartment for 24 hours, at a cost of 3d.; and deserving of special attention, because of its safety, healthfulness, durability, and extreme simplicity.

It is also made for Small Conservatories, with a vapour chamber, which maintains a moist atmosphere for 12 hours with once filling.

Particulars and prices post free on application to MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

DENNIS'S PATENT HORTICULTURAL BUILDINGS are made from the best Wrought Iron, upon

an entirely new principle. The combination of Iron and Glass under this patent is perfect; the possibility of fracture is prevented, and a permanently Water-tight Roof insured.

The leading practical advantages are extreme smallness of Framing, admitting a maximum of light and heat, great strength, durability, and perfect ventilation. They are speedily erected, partake of more desirable outline, and do not exceed the cost of a perishable wooden structure.

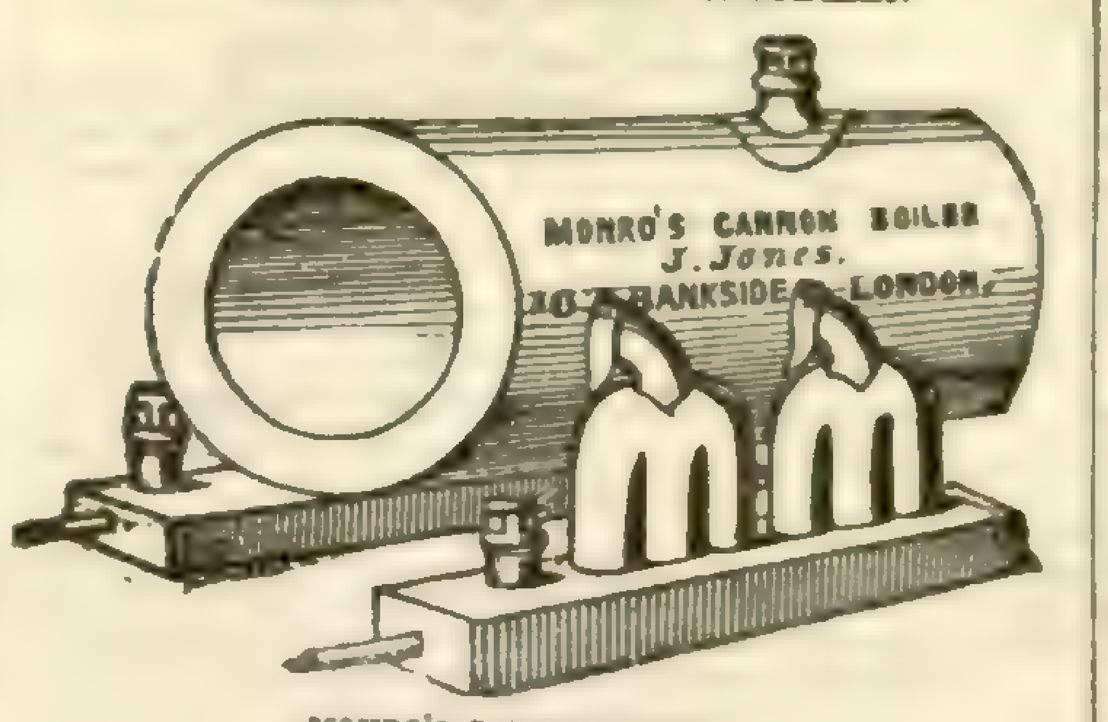
For Prospectus, &c., address T. H. P. DENNIS, Horticultural Builder, Hot-Water Engineer, &c., High St., Chelmsford, Essex.

Hothouses for the Million.—AWARDED A PRIZE MEDAL AT THE INTERNATIONAL EXHIBITION, 1862.

HOTHOUSES for the MILLION.—On the principle invented and patented by Sir Joseph Paxton, M.P., combining simplicity, cheapness, excellence, and durability, being capable of fulfilling, in the most perfect manner, all the requirements of Horticulture. LEAN-TO-HOUSES, 30 feet in length, can be had for less than 17l. SPAN ROOFS, 30 feet in length, for 33l.; and all other dimensions at equally low prices. Delivered free to Railway Stations round London.

Illustrated Circulars, with Lists of Prices, can be had on prepaid application to S. HEREMAN, 7, Pall Mall East, London.

HEATING BY HOT WATER.



MONRO'S CANNON BOILER.

J. JONES,

HORTICULTURAL ENGINEER AND IRON MERCHANT,

SUPPLIES OR ERECTS, COMPLETE,

HOT-WATER APPARATUS

OF EVERY DESCRIPTION,

FOR

HEATING GREENHOUSES,

CONSERVATORIES,

FORCING PITS,

CHURCHES, CHAPELS, SCHOOLS,

HALLS,

BILLIARD ROOMS,

COACH HOUSES, HARNESS ROOMS, &c.,

OF THE BEST QUALITY, AND AT MODERATE CHARGES.

PLANS, ESTIMATES, and DESCRIPTIVE CATALOGUES

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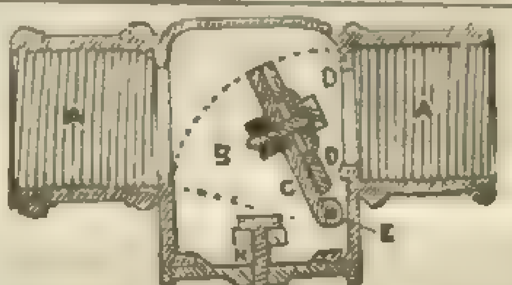
SAMUEL N. McGERROW, GENERAL HORTICULTURAL BUILDER, Knotty Ash, near Liverpool.

Reference permitted to the Nobility and Gentry throughout Great Britain and Ireland.



T. G. MESSENGER, HORTICULTURAL BUILDER and ENGINEER, Loughborough, has recently patented a VALVE which is unequalled for its efficiency, simplicity, durability, and cheapness. Prices as under. Two-inch, 17s. 6d.; 3-inch, 23s.; 4-inch, 28s. A liberal discount to the Trade.

These Valves can be obtained in London of Mr. J. JONES, 6, Bankside, S.E.

West of England, Ireland, and Wales.

VINCENT SKINNER (late Partner with J. WEEKS & Co.), HORTICULTURAL BUILDER and HOT-WATER APPARATUS MANUFACTURER. HEATING on the ONE-BOILER SYSTEM. Plans and Estimates on application.

VINCENT SKINNER, Bridewell Street, Bristol.

Heating.

HEATING APPARATUS fitted in every description of HOTHOUSES. Estimates given for Building Hothouses, and Laying out Kitchen Gardens and Vineries. Advice given in Planting, &c.

Apply to JOSEPH MEREDITH, Vine Cottage, Garston, near Liverpool.

N.B. References to Noblemen and Gentlemen and their gardeners sent on application.

VENTILATING STOVES, cheap, simple, efficient, and durable.—Thousands have been sold and universally approved. They are suitable for Halls, Warehouses, Conservatories, and every situation where a close Stove is required. The large sizes are extensively used in Churches, Chapels, and Public Buildings with great effect and economy. Prices 50s., 60s., 70s., 90s., and 120s. Prospectus with engravings gratis and post free. In operation daily. The Trade supplied.

DEANE & Co., opening to the Monument, London Bridge, E.C.

W. J. HOLLANDS, IRON MERCHANT, 31, Bankside, London, S.E.

HOT WATER PIPES, from Stock, per yard:—2-inch, 1s. 2d.; 3-inch, 1s. 10d.; and 4-inch, 2s. 4d. BENDS, from stock, 1s. 7d., 2s. 6d., and 3s. 3d. each.

Other Connexions at equally low prices, and all goods of first-class manufacture.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection; Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, TUBULAR, and Elliptic, from 24s. each. Improved Boilers and Iron Stands to use without brickwork, 50s. each. Valves from 11s. 6d. each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at

Mr. LYNCH WHITE's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

The Improved Conical Boilers,

SOLELY MANUFACTURED BY

BURY AND POLLARD (Successors to JOHN R. PEILL, late STEPHENSON & PEILL), have attained a celebrity far surpassing any other Boilers ever invented. Of the many hundreds which have been fixed in this and foreign countries, not one single Boiler has ever proved defective, or failed to give the most complete satisfaction. They are connected with large ranges of Pipes (in some cases several thousand yards), at many Public Establishments, at the Crystal Palace, the Royal Botanical Gardens at Kew, and at the Regent's Park, as well as at most of the Nobility's Seats throughout the Kingdom.

All particulars may be obtained on application to BURY & POLLARD, Sole Manufacturers, Park Iron Works, New Park Street, Southwark, S.

Price £4 10s. and upwards.

Every description of Material for Heating Buildings, supplied of the best description, with directions for putting up Hot-Water Apparatus.

JOSEPH SMITH, HORTICULTURAL BUILDER, New Road, Hammersmith, W., has for Sale GREENHOUSES, warranted of good materials, and properly and substantially constructed, viz.:—

	£	s.
Span Roof, 27 ft. by 16 ft. 6 in.	46	10
Lean-to, 23 ft. 6 in., by 12 ft. 6in.	23	0
Glazed with 21 oz. Glass.		
Lean-to, 15 ft. by 50 ft.	65	0
Ditto, 16 ft. by 45 ft.	47	0
Ditto, 14 ft. by 50 ft.	60	0
Ditto, 13 ft. by 24 ft.	36	0
Ditto, 11 ft. by 24 ft.	28	0
Second-hand ditto, with Shelves, &c., no Brickwork required	15	0

Houses made to order from 1s. per foot. A large assortment of PIT-LIGHTS, well painted, at 8d. per foot, now ready.

Estimates given for effectually Heating by Hot Water.

PROTECTED BY THE CUTLERS COMPANY — CORPORATE MARK.

JOSEPH HAYWOOD AND CO.,

MANUFACTURERS OF

PRUNING and BUDDING

KNIVES,

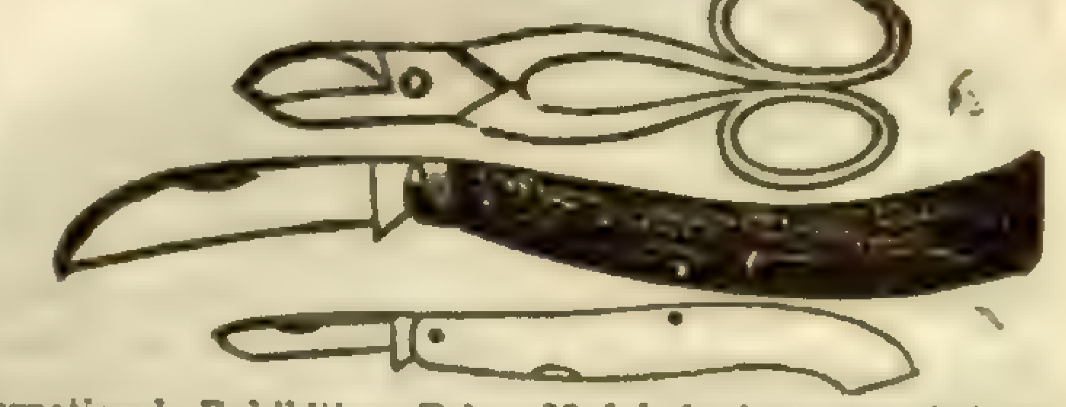
SPORTSMAN'S, and all kind

of POCKET CUTLERY.

Dealers in Gambia Garden Shears, Scissors, Syringes, &c.

Glamorgan Works, Sheffield.

Paxton Works, Sheffield, Established 1738.



International Exhibition Prize Medal is just awarded to SAYNOR & COOKE for superiority of quality in Pruning and Budding Knives, &c.

SAYNOR AND COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.

CAUTION.—None are genuine unless marked SAYNOR. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

Oil Paint no longer Necessary.

HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.

Sold in casks of about 30 gallons each, at 1s. 6d. per gallon, at the Manufactory, or 1s. 8d. per gallon paid to any station in the kingdom.

Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained

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INTERNATIONAL EXHIBITION, 1862.—CLASS VIII., No. 1796.

"HONOURABLE MENTION FOR VALVES AND COCKS."—*Jurors' Award.*

BECK'S IMPROVED PATENT HOT-WATER VALVES.

ANGLE VALVE.

UPWARDS of 3000 in USE.

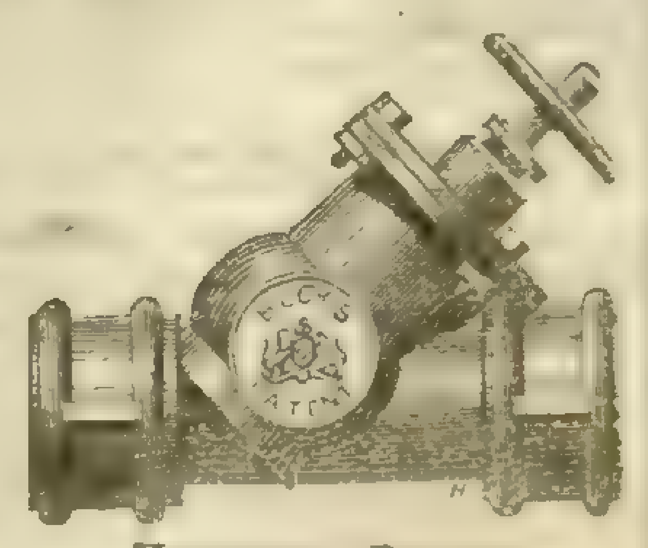
The above fact shows the decided superiority of

BECK'S PATENT VALVES

over every other description at present in use.

BECK'S IMPROVED THROTTLE VALVES.

☞ *A liberal Discount to the Trade.*



HORIZONTAL PASSAGE.

JOHN BECK,

PATENTEE and MANUFACTURER of HYDRAULIC, GAS, and STEAM VALVES, WATER CLOSETS, PUMPS, BATHS, LAVATORIES, URINALS, &c.,

133, GREAT SUFFOLK STREET, BOROUGH, LONDON, S.E.

*** Specimens may be seen at the Architectural Exhibition, 9, Conduit Street, Regent Street, W.

Notice.

MR. A. CHANDLER (of the late Firm of CHANDLER & SONS), HORTICULTURAL VALUER, begs to inform his friends and the public that he has REMOVED from Priory Road, Wandsworth Road, to No. 1, Devonshire Terrace, Fulham Road, S.W.

Glass.

JAMES PHILLIPS AND CO., 180, Bishopsgate Street Without, E.C., beg to offer their prices of GLASS SLATES.

With Drilled Holes.	Sizes.	Rough Plate. ⅛ inch thick.	Rough Plate. 3/16 inch thick.	Rough Plate. ¼ inch thick.	Sheet. 16 oz.	Sheet. 21 oz.	Sheet. 26 oz.	Sheet. 32 oz.
		s. d.	s. d.	s. d.	s. d.	s. d.	s. d.	s. d.
Duchess ..	.. 24 by 12	1 3	1 6	1 9	0 9	1 1	1 4	1 8
Small Imperials ..	20 ,, 14	1 2	1 5	1 8	0 8	1 0	1 3	1 7
Small Duchess ..	22 ,, 12	1 2	1 5	1 8	0 8	1 0	1 3	1 6
Countess ..	.. 20 ,, 10	0 11	1 1	1 3	0 7	0 10	1 0	1 3
Viscountess	.. 18 ,, 10	0 10	1 0	1 1	0 6	0 9	0 11	1 1
Large Ladies	.. 16 ,, 10	0 9	0 11	1 0	0 6	0 8	0 10	1 0
Ladies ..	.. 16 ,, 8	0 8	0 9	0 10	0 5½	0 7	0 8	0 10
Doubles ..	.. 13 ,, 7	0 6	0 7	0 8	0 5	0 6	0 7	0 8

GLASS TILES.

Rough Plate	each—s. d.	Sheet.	each—s. d.
⅛ in. thick	0 10	16 oz.	0 6
3/16 in. ,, ...	0 11	21 oz.	0 8
¼ in. ,, ...	1 0	26 oz.	0 10
⅜ in. ,, ...	1 6	32 oz.	1 0
½ in. ,, ...	2 0		

Made to any dimensions or Pattern.

LACTOMETERS.

For Testing the Quality of Milk.

Four Tubes .. .. 4s. 6d. | Six Tubes .. .. 6s. 6d.

With Stands complete.

Horticultural Glass Warehouse, 180, Bishopsgate Street Without, London, E.C.

Glass.

THOMAS MILLINGTON, HORTICULTURAL WAREHOUSE, 87, Bishopsgate Street Without, London, E.C.

ESTABLISHED 1750.

NEW REDUCED TARIFF.

SMALL SHEET SQUARES.

Best. 2nds. 3rds. 4ths. 20s. 16s. 12s. 6d. 11s. } Per 100 feet

6 in. by 4 in.	9½ in. by 7½ in.	14 in. by 10 in.
6½ ,, by 4½ ,,	10 ,, by 8 ,,	15 ,, by 10 ,,
7 ,, by 5 ,,	11 ,, by 9 ,,	12 ,, by 11 ,,
7½ ,, by 5½ ,,	12 ,, by 9 ,,	13 ,, by 11 ,,
8 ,, by 6 ,,	13 ,, by 9 ,,	13½ ,, by 11½ ,,
8½ ,, by 6½ ,,	12 ,, by 10 ,,	
9 ,, by 7 ,,	13 ,, by 10 ,,	

Best. 2nds. 3rds. 4ths. 23s. 18s. 6d. 14s. 6d. 12s. 8d. } Per 100 feet

15 in. by 11 in.	16 in. by 12 in.	24 in. by 14 in.
16 ,, by 11 ,,	17 ,, by 12 ,,	22 ,, by 15 ,,
17 ,, by 11 ,,	18 ,, by 12 ,,	24 ,, by 15 ,,
18 ,, by 11 ,,	22 ,, by 12 ,,	20 ,, by 16 ,,
13 ,, by 12 ,,	17 ,, by 13 ,,	20 ,, by 17 ,,
14 ,, by 12 ,,	23 ,, by 13 ,,	20 ,, by 18 ,,
15 ,, by 12 ,,	22 ,, by 14 ,,	

ORCHARD-HOUSE SIZES, as supplied to Mr. Rivers & others

	Best.	2nds.	3rds.	4ths.	
16 oz.	22s. 0d.	18s.	15s. 0d.	12s. 6d.	Per 100 feet
21 oz.	33 6	28	21 6	17 0	

20 in. by 12 in. | 20 in. by 13 in. | 20 in. by 14 in. | 20 in. by 15 in

GLASS, cut according to size not on the List.

16 oz. 4ths. 1¾d. 2d. and 2½d. per foot.

,, 3rds. 2¼d. 2½d. and 3d. ,,

21 oz. 4ths. 2¾d. 3d. and 3½d. ,,

,, 3rds. 3½d. 4d. and 4½d. ,,

Various thicknesses of Sheet Glass to the foot.

15 oz. 26 oz.

21 oz. 32 oz.

Paints, Colours, Brushes, &c., Linseed Oil, Boiled Oil, Turpentine.

Genuine White Lead, 32s. p. cwt | Linseed Oil Putty, 8s. per cwt.

Anticorrosion Paint, 34s. ,, | Patent Dryers, 28s. to 42s. ,,

CRYSTAL GLASS SHADES. EBONY and GILT STANDS.

HARTLEY'S IMPROVED PATENT ROUGH PLATE.

*** Not accountable for breakage.

SHEET LEAD, PIPE, &c., at the lowest wholesale prices.

TESTIMONIALS of CUPISS'S CONSTITUTION BALLS, for HORSES and NEAT CATTLE.

From J. HARRIES, Esq., *Llandovery.*

December 12, 1861.

Sir,—I have with much pleasure to recommend your Balls; they proved exceedingly efficacious to a pony of mine, far surpassing every other remedy that was tried—one packet performing a complete cure.—Yours respectfully,

Mr. F. CUPISS. JAMES HARRIES.

Nantmole, November 2, 1860.

Sir,—I have a Mare that was troubled very much with sore eyes; they were much swollen, and at last she could not see at all with one of them. I tried many things externally, but to no purpose. I then gave your Balls a trial, and in less than a week she was completely cured.—I remain, yours respectfully,

JOHN HOWELL.

From Mr. H. HUMPHREY, *Bulkeley Arms Inn, Menai Bridge, North Wales.*

"I have been in the habit of using your Constitution Balls for the last 16 years, and have invariably found them the best remedy for Cough, Influenza, and many other diseases to which the horse is liable. I have also tried them with young horses, and have found them exceedingly beneficial in getting them into condition. Those horses I have not given them to, although getting the same food, were quite the reverse."

From Mr. D. JAMES, *Cilshew, near Narberth, S. Wales.*

"Thanks for your early reply to my last note. I am happy to inform you that I have found (as you expected) the Horse is in very good condition, through the use of your Constitution Balls."

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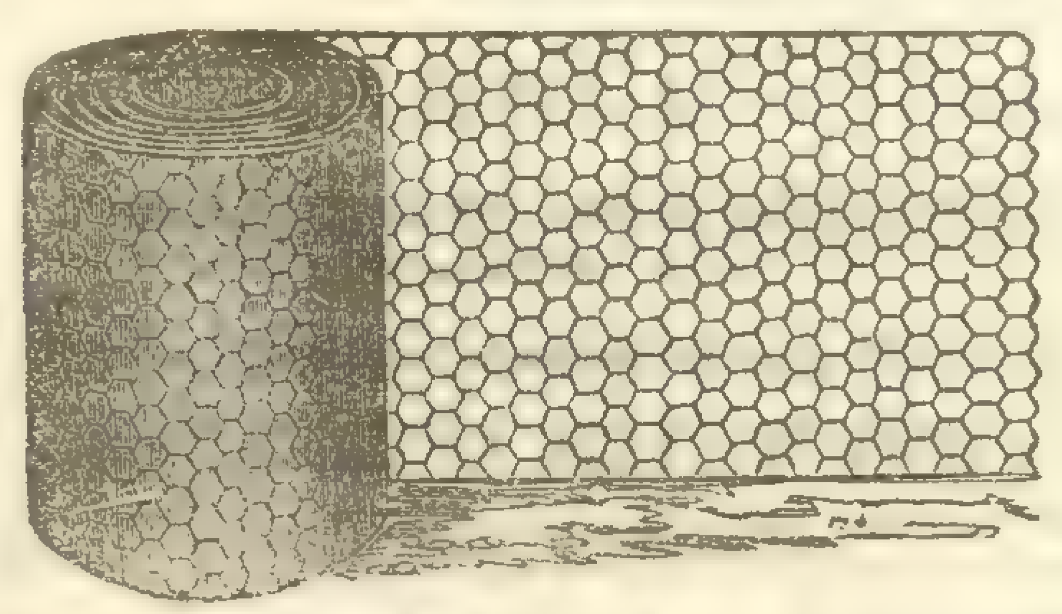

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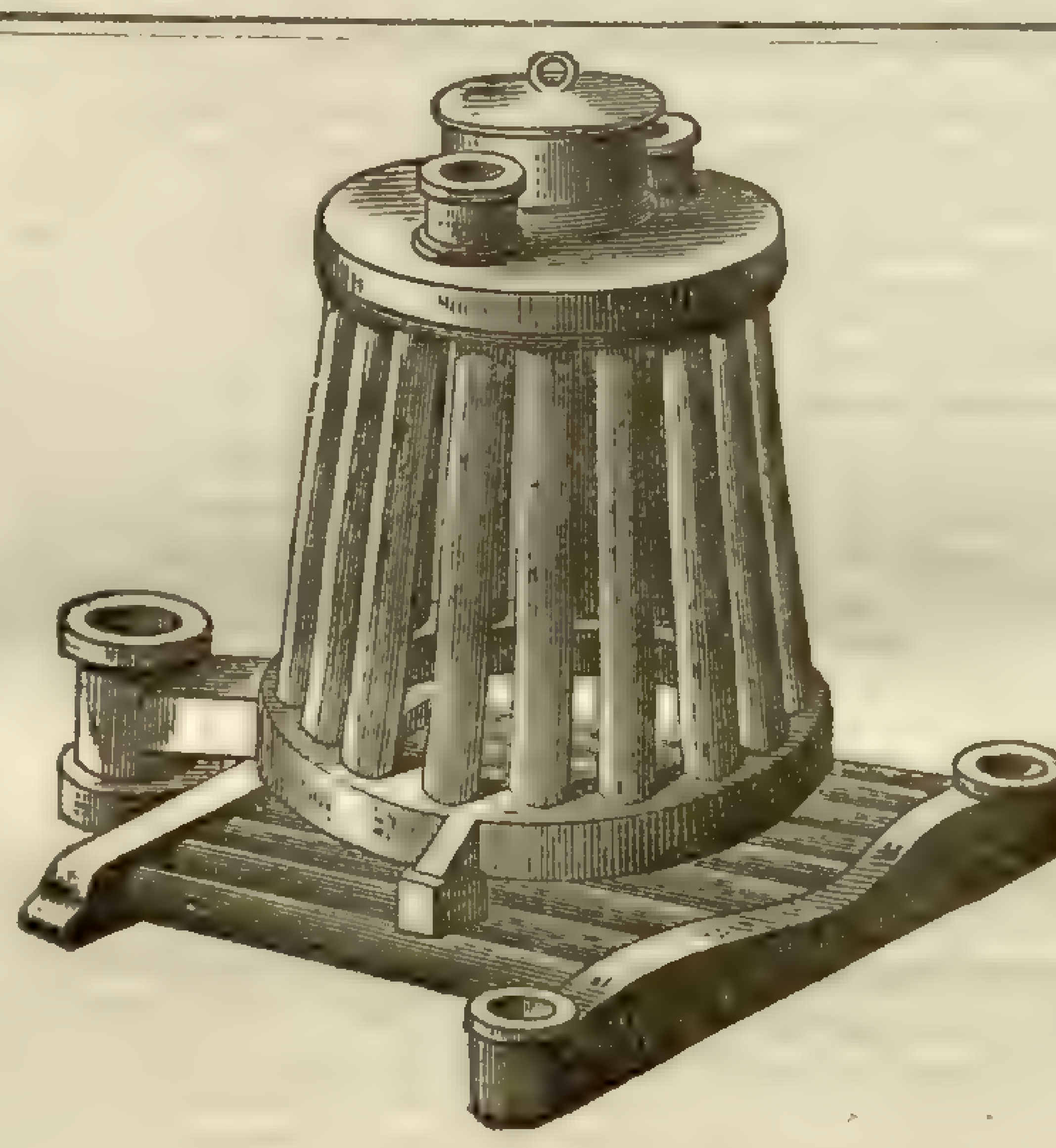

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THE GARDENERS' CHRONICLE
AND
AGRICULTURAL GAZETTE.

A Newspaper of Rural Economy and General News.—The Horticultural Part Edited by Professor Lindley.

No. 52.—1862.] SATURDAY, DECEMBER 27. {Price Fivepence. STAMPED EDITION, 6d.

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☞ *An Edition of the* GARDENERS' CHRONICLE and AGRICULTURAL GAZETTE *is published on Monday Afternoon at 4 o'Clock, containing full Reports of the Mark Lane and Cattle Markets, written expressly for the Paper.*

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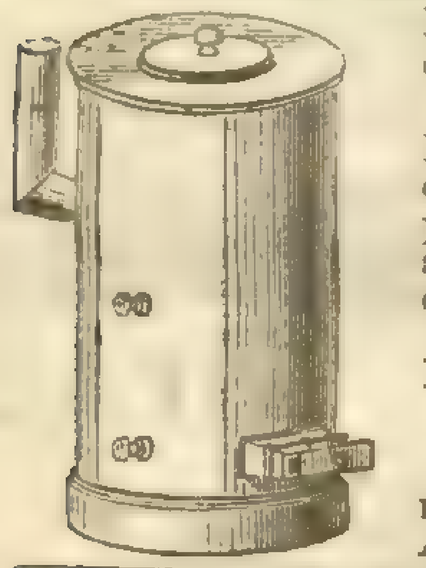

Requires no brickwork setting; will keep in action from 12 to 18 hours without attention, at an expense of about 3d. per day. Is perfectly safe, requires no additional building, and may be seen in operation daily at the
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ILLUSTRATED CATALOGUES of the above, Glazing without Putty, Garden Engines, &c., sent upon application.

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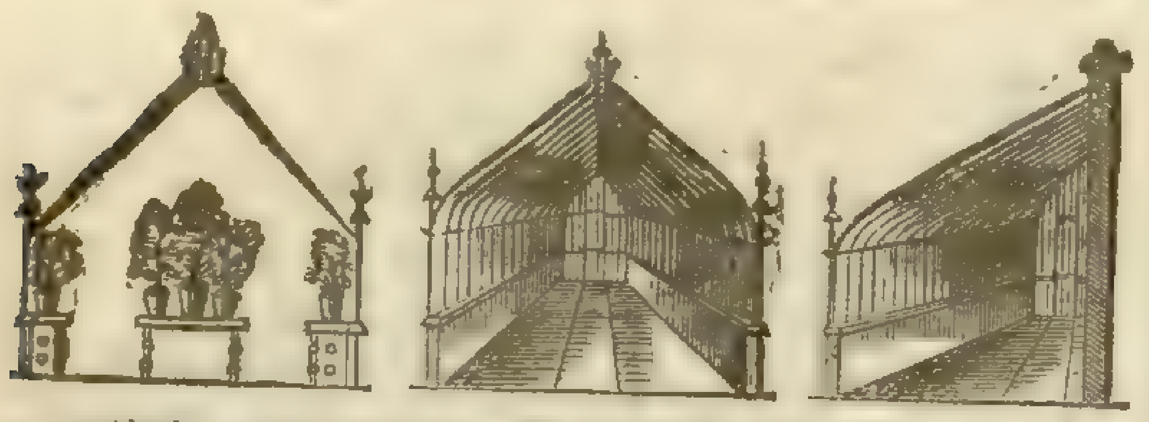

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Lean-to, 23 ft. 6 in., by 12 ft. 6in.	33	0
Glazed with 21 oz. Glass.		
Lean-to, 15 ft. by 50 ft.	65	0
Ditto, 16 ft. by 45 ft.	47	0
Ditto, 14 ft. by 50 ft.	60	0
Ditto, 13 ft. by 24 ft.	36	0
Ditto, 11 ft. by 24 ft.	28	0
Second-hand ditto, with Shelves, &c., no Brickwork required	15	0

Houses made to order from 1s. per foot. A large assortment of PIT-LIGHTS, well painted, at 8d. per foot, now ready.
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INTERNATIONAL EXHIBITION,

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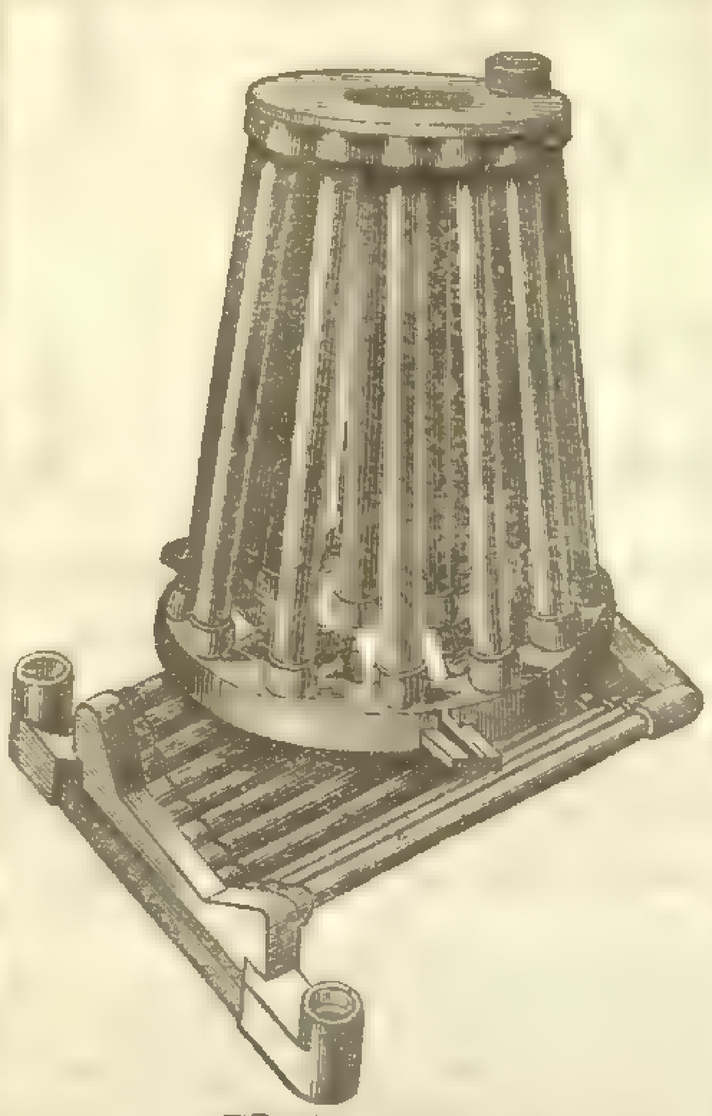

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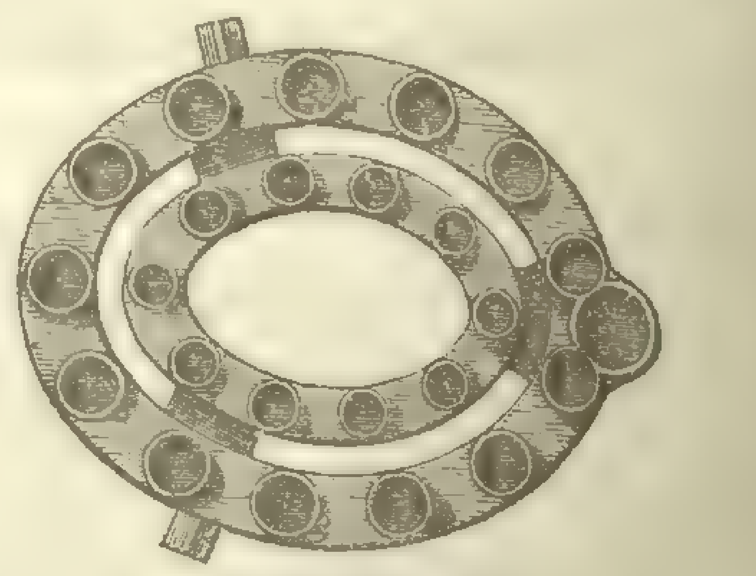

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NEW OVAL TUBULAR BOILER,

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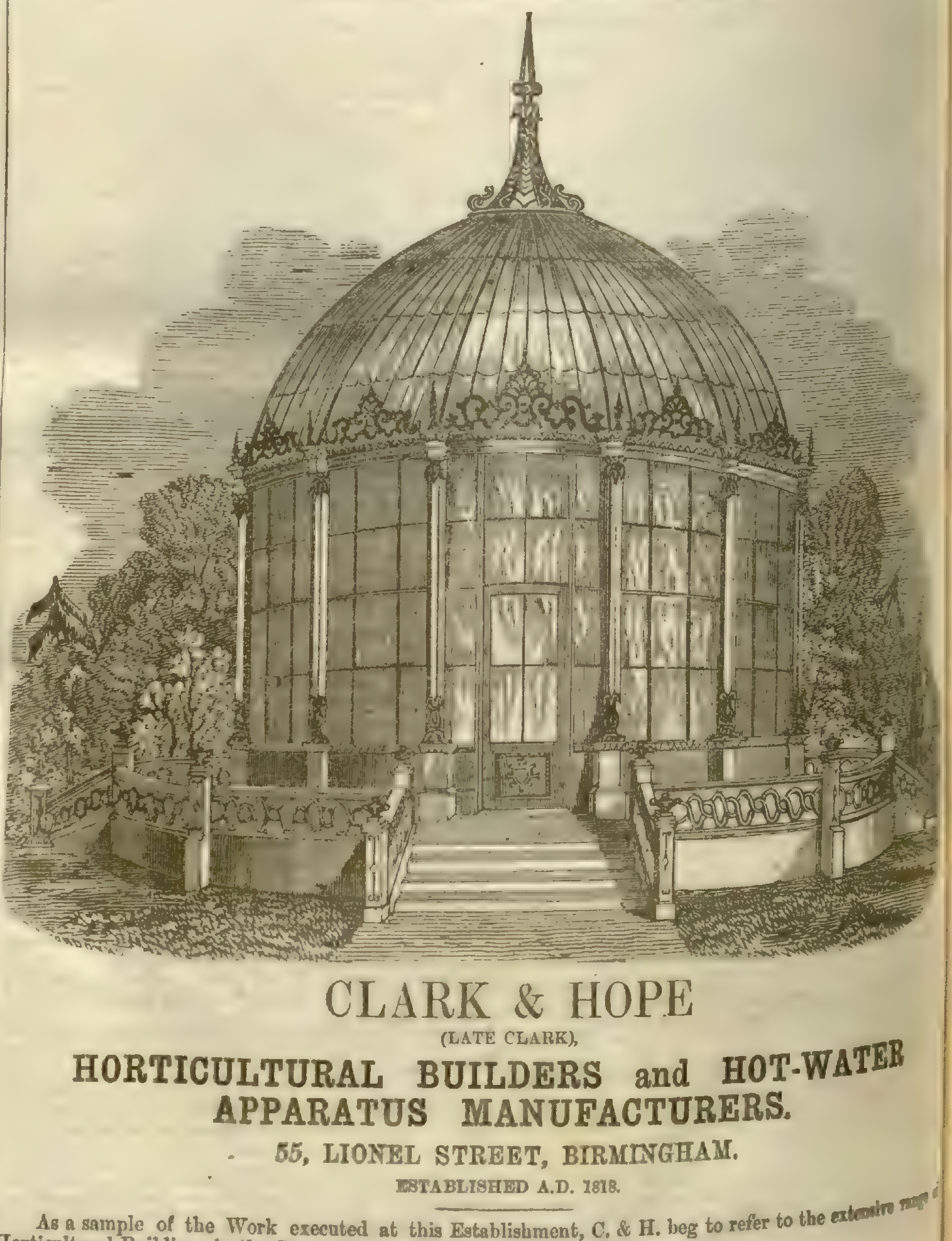

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ESTABLISHED A.D. 1818.

As a sample of the Work executed at this Establishment, C. & H. beg to refer to the extensive range of Horticultural Buildings in the Royal Gardens, Windsor.

INTERNATIONAL EXHIBITION, 1862.—Class VIII., No. 1796.

"Honourable Mention for Valves and Cocks."—*Jurors' Award.*

BECK'S IMPROVED PATENT HOT-WATER VALVES.

UPWARDS of 3000 in USE.

Angle Valve.

The above fact shows the decided superiority of

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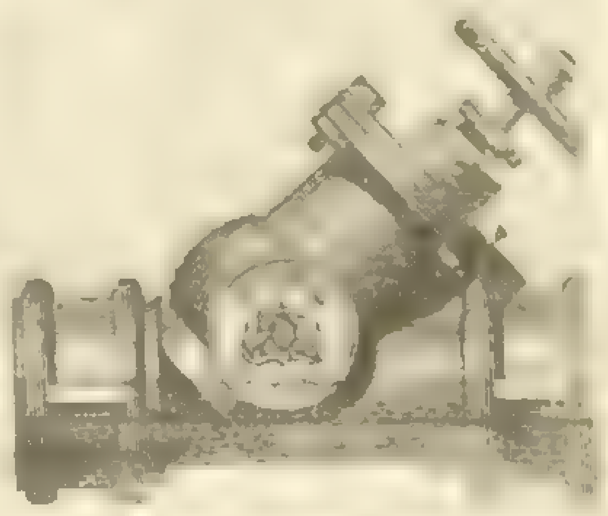


Horizontal Passage.

BECK'S IMPROVED THROTTLE VALVES.

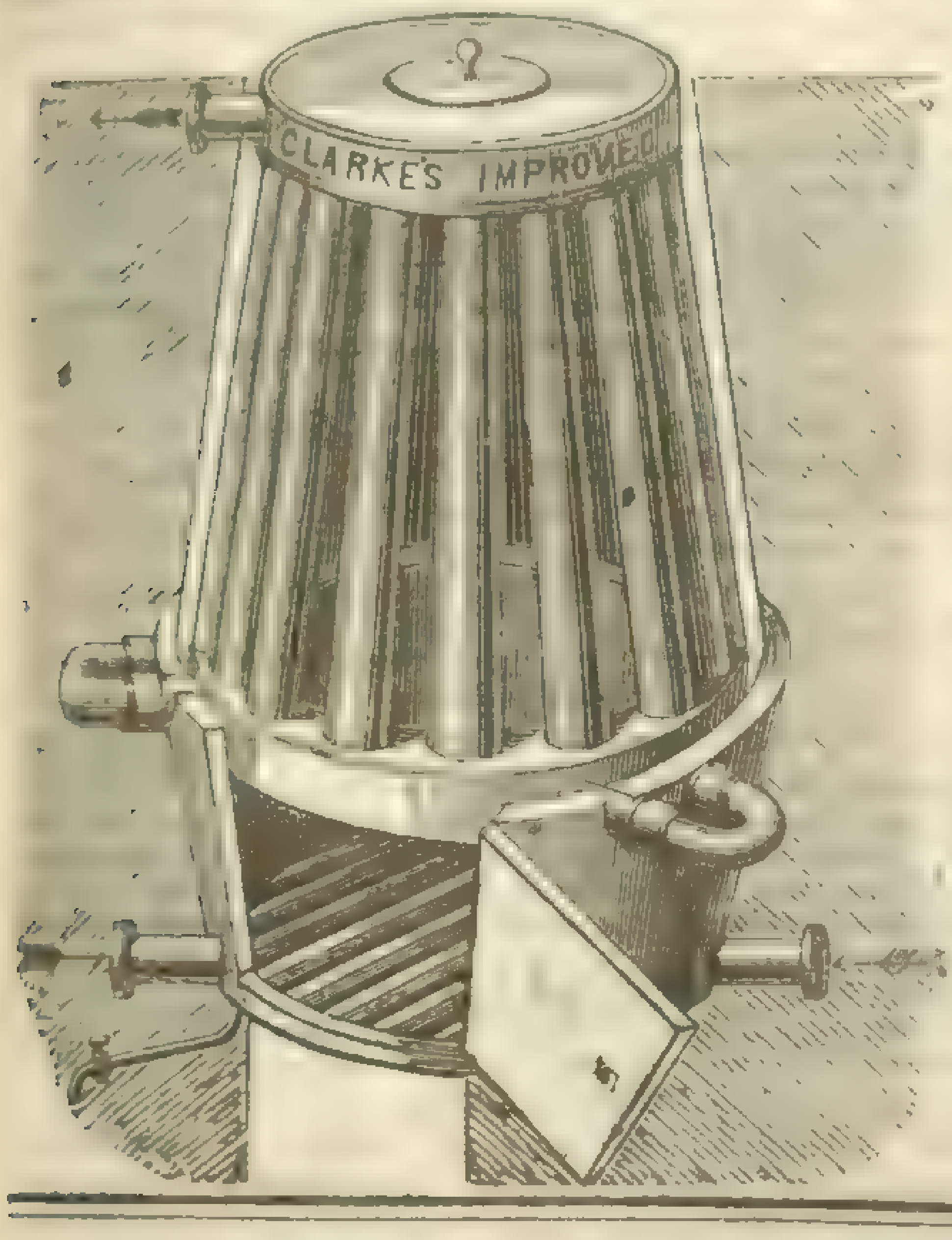
A liberal Discount to the Trade.

JOHN BECK,

PATENTEE and MANUFACTURER of HYDRAULIC, GAS, and STEAM VALVES, WATER CLOSETS, PUMPS, BATHS, LAVATORIES, URINALS, &c.,

133, GREAT SUFFOLK STREET, BOROUGH, LONDON, S.E.

*** Specimens may be seen at the Architectural Exhibition, 9, Conduit Street, Regent Street, W.



BY HER MAJESTY'S ROYAL LETTERS PATENT.

CLARKE'S NEW PATENT

WATER-JACKET CYLINDRICAL FURNACE

HOT-WATER APPARATUS

is now pronounced by Noblemen and their Gardeners to be the most powerful and economical BOILERS in the world. The Metal in these Boilers is half-inch thick, and without doubt will last many years. They are made of various sizes to Heat from 100 to 5000 feet. References sent upon application to Gentlemen who have them in use.

Illustrated Catalogues and Estimates for Fixing Boiler and Piping complete sent upon the shortest notice. Plans and sections, with printed instructions, are always sent out with the Boilers.

HOT-WATER APPARATUS MANUFACTORY,
EAGLE IRONFOUNDRY,
25, SEEL STREET, LIVERPOOL.

T. C. CLARKE, Proprietor (late Haswell).

FOWLER'S
STEAM PLOUGHING AND CULTIVATING PATENTS.

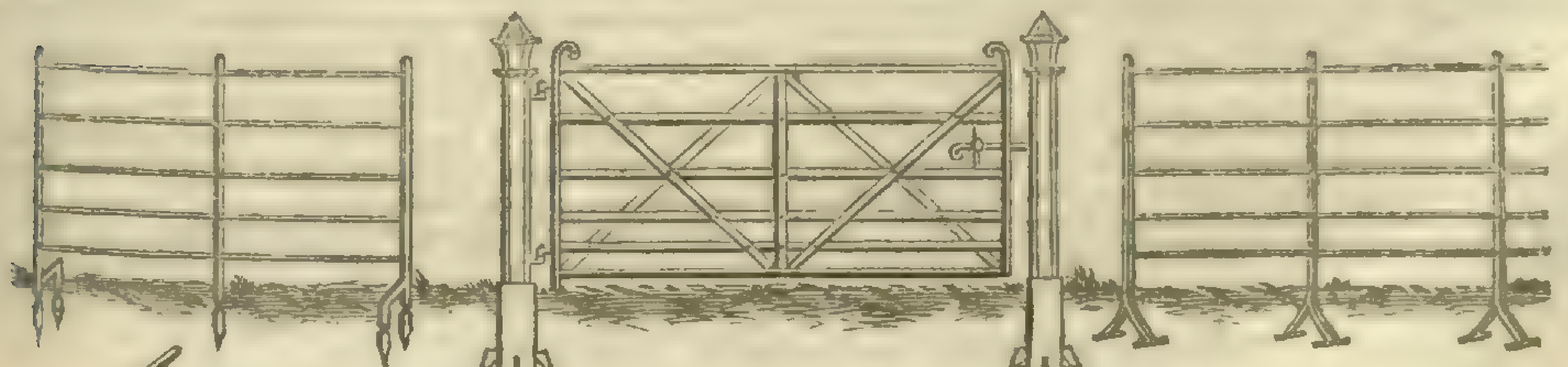
RANSOMES & SIMS, Orwell Works, Ipswich,

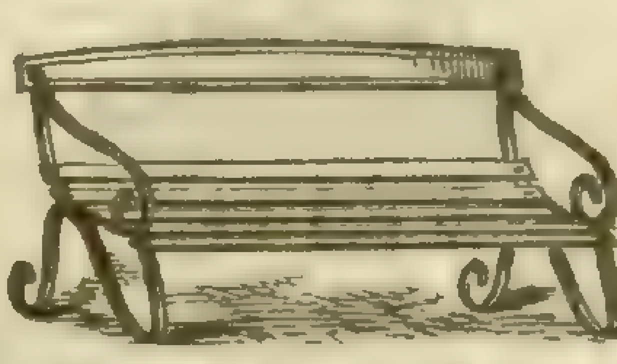
Have the pleasure to announce that they have arranged with JNO. FOWLER for the use of the above PATENTS, and they will answer any inquiries respecting them, and execute any Orders promptly.

COTTAM'S
CONTINUOUS IRON FENCE, HURDLES, and FIELD GATES,

MADE OF SUPERIOR IRON (NO CINDER IRON USED) IN THE BEST MANNER.

PARK ENTRANCE GATES, and RAILING of CAST and WROUGHT IRON COMBINED, IN VARIOUS STYLES.





IRON GARDEN ROLLERS, GARDEN CHAIRS, GARDEN ENGINES, LAWN MOWING MACHINES, WIRE WORK, PUMPS, and every description of Implements for Horticultural and Gardening purposes. VERANDAHS, GREENHOUSES, CONSERVATORIES, HOT-WATER APPARATUS, &c. The Improved IRON MANGERS and RACKS for Stables, HARNESS BRACKETS, &c.

Illustrated CATALOGUES and DRAWINGS free on application to

COTTAM & CO., ENGINEERS and IRON FOUNDERS,

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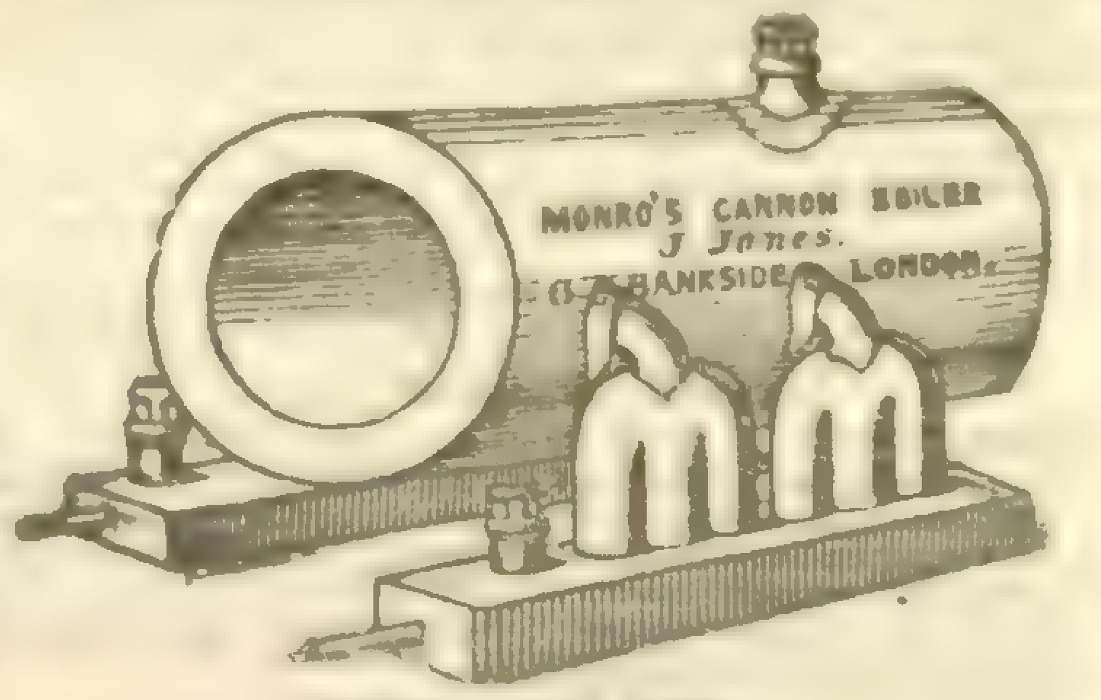

MONRO'S CANNON BOILER.

J. JONES,

HORTICULTURAL ENGINEER AND IRON MERCHANT,

SUPPLIES OR ERECTS, COMPLETE,

HOT-WATER APPARATUS

OF EVERY DESCRIPTION,

FOR

HEATING GREENHOUSES,

CONSERVATORIES,

FORCING PITS,

CHURCHES, CHAPELS, SCHOOLS,

HALLS,

BILLIARD ROOMS,

COACH HOUSES, HARNESS ROOMS, &c.,

OF THE BEST QUALITY, AND AT MODERATE CHARGES.

PLANS, ESTIMATES, and DESCRIPTIVE CATALOGUES

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6, BANKSIDE, LONDON, S.E.

VENTILATING STOVES, cheap, simple, efficient, and durable.—Thousands have been sold and universally approved. They are suitable for Halls, Warehouses, Conservatories, and every situation where a close Stove is required. The large sizes are extensively used in Churches, Chapels, and Public Buildings with great effect and economy. Prices 50*s.*, 60*s.*, 70*s.*, 90*s.*, and 120*s.* Prospectus with engravings gratis and post free. In operation daily. The Trade supplied.
Deane & Co., opening to the Monument, London Bridge, E.C.

HOT-WATER PIPES, at Wholesale Prices, with Elbows, Syphons, Tee Pipes, and every other connection; Wrought and Cast-iron Boilers, Saddle, Conical, Cylinder, Tubular, and Elliptic, from 24*s.* each. Improved Boilers and Iron Stands to use without brickwork, 50*s.* each. Valves from 11*s.* 6*d.* each. Beck's Patent Valves. Furnace Doors, Furnace Bars, Supply Cisterns, and Builders' Castings of every description in stock, at
Mr. Lynch White's Iron Wharf, Upper Ground Street, Blackfriars Bridge, London, S.

Prices Reduced.

H. J. MORTON and CO., Galvanised Iron Works, 2. Basinghall Buildings, Leeds.

GALVANISED IRON ROOFING

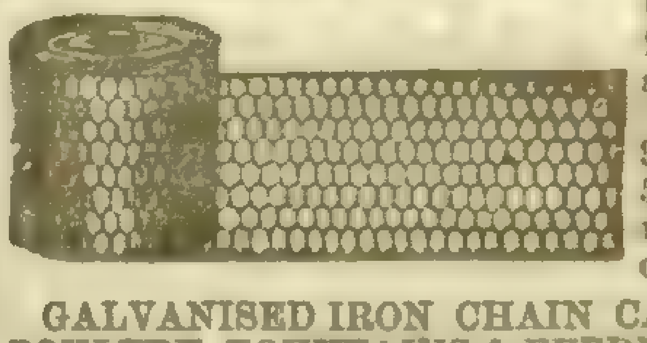
for Farm Buildings and other Roofs; the cheapest, most durable, and neatest Roofing in use; also Spouting at 10½*d.* per yard,

WIRE STRAND CABLE FENCING

(formed of Twisted Wires like a rope or cable), the strongest, cheapest, and neatest fence in use, will resist the largest cattle, and will not bend or get out of form by trespassing upon or over. Price, with five lines of the Galvanised Strand, iron main posts, and pronged Standards, from 1*s.* per yard.

This fence is far cheaper than posts and rails, or any kind of iron fencing; and possesses four times the strength of solid bars. Will not rust nor corrode. Upwards of 1200 miles of this Fencing supplied.

GALVANISED GAME AND POULTRY NETTING.



Galvanised, 24 ins. wide, 2-inch mesh, 4*d.*, 4½*d.*, and 6¾*d.* per yard.

Galvanised, 24 ins. wide, 3-inch mesh, 2¾*d.*, 3¾*d.*, and 5½*d.* per yard. The Netting made any width, and with openings of any size.

GALVANISED IRON CHAIN CAMP STOOLS & CHAIRS, POULTRY FOUNTAINS & FEEDERS, PRONGED DAHLIA RODS and ROSE STAKES, &c.

Strong CATTLE HURDLES from 2*s.* per yard.

PATENT IMPROVED GAS WORKS

of all sizes, for the use of Private Houses, Mansions, Railway Stations, Mills, Collieries, Mines, Villages, &c. Works from 10 to 500 lights estimated for. The works can be entrusted to an ordinary labourer.—Apply to

Henry J. Morton & Co., 2, Basinghall Buildings, Leeds.

New Roses of 1862.

JOHN KEYNES has to offer 1000 very extra strong plants, the finest varieties of the last season, in 6 and 8-inch pots, now ready, price 42*s.* per dozen, with the usual discount to the Trade.

Fine STANDARDS, of the older varieties, 24*s.* & 30*s.* per doz. DWARFS, 12*s.* and 18*s.* per dozen, all of the finest varieties in cultivation. Every attention paid to package, and compensation for carriage.

New CATALOGUES ready.

JOHN KEYNES, Nurseryman, Salisbury.

Standard and Dwarf Roses.

BENJAMIN R. CANT will be happy to forward on application his DESCRIPTIVE CATALOGUE of ROSES. As a guarantee of the value of his collection, B. R. C. begs to state that he has this year obtained 17 First Prizes for Cut Roses at the principal Shows.

Very fine vigorous plants of the choicest sorts will be supplied at the following prices:—

Standard Roses	18*s.*, 24*s.*, and 30*s.* per doz.
Half Standard Do.	18*s.* and 24*s.* per doz.
Dwarf Do.	9*s.* to 18*s.* per doz.

The NEW ROSES of 1862, Dwarf plants, 3*s.* 6*d.* to 5*s.* each; or, if 12 or more varieties are taken, 30*s.* per doz.

St. John's Street Nursery, Colchester.

N.B.—B. R. C.'s Catalogue contains nothing but the best varieties; all indifferent and worthless sorts are excluded.

50,000 Dwarf Roses in Pots on their own Roots.

STANDARD, HALF-STANDARD, AND DWARF BUDDED ROSES, ON THE BRIAR AND MANETTI STOCK, IN ENORMOUS QUANTITIES AND IN THE MOST VIGOROUS HEALTH.

WILLIAM WOOD AND SON have much pleasure in directing especial attention to their very extensive and well-grown stock of ROSES, CATALOGUES of which may be had gratis on application.

Woodlands Nursery, Maresfield, near Uckfield, Sussex

PERPETUAL MOSS ROSE, HORTENSE VERNET.—"Pale blush, deeper centre, very sweet and freely mossed, altogether a promising Rose." See June Journal of Royal Horticultural Society.

The above beautiful novelty, exhibited by them before the Floral Committee, has bloomed here this autumn. Strong dwarf plants, 5*s.* each.

PAUL & SON, "Old" Cheshunt Nursery, Herts.

Gladioli.

WM. PAUL (Son and Successor to the late A. PAUL) respectfully announces that his BULB CATALOGUE includes a descriptive list of all the most valuable varieties of GLADIOLI, the roots of which are unusually fine. He would remind intending purchasers that he was awarded prizes at both the Royal Horticultural and Crystal Palace September Shows. Price 4*s.* to 42*s.* per dozen.

Nurseries and Seed Warehouse, Waltham Cross, N.

GLADIOLUS, SEEDLINGS of GANDAVENSIS.

	£	*s.*	*d.*
50 in 25 extra choice varieties	2	2	0
25 in 25 " "	1	5	0
12 in 12 " "	0	12	0
50 in 50 choice varieties	2	12	6
50 in 25 " "	1	5	6
25 in 25 " "	0	13	6
12 in 12 " "	0	5	0

Extra fine mixed, 2*s.* 6*d.* per doz., 17*s.* 6*d.* per 100.

BUTLER & McCULLOCH, Seed Merchants, Covent Garden Market, W.C.

Gladiolus Gandavensis and Varieties.

B. S. WILLIAMS'S choice collection of these superb Bulbous Plants, which are beyond doubt the handsomest autumnal ornaments to the garden, is now ready for sending out. Great attention has been bestowed on the selection, amongst which are many novelties, and none but those of the best quality are offered.

Collection of 24 Splendid Varieties, one root of each, 21*s.*

Collection of Choice Named Varieties, 6*s.*, 8*s.*, and 10*s.* per doz.

A PRICED and DESCRIPTIVE LIST on application.

Paradise Nursery, Seven Sisters and Hornsey Roads, Holloway, London, N.

Gladiolus Bowiensis.

R. BOWIE (late H. GROOM) has much pleasure in being able to offer a large stock of Flowering Bulbs of this superb GLADIOLUS.

G. GLENNY, Esq., remarking on this Gladiolus, says:—"I consider Gladiolus Bowiensis to be one of the most useful of the whole family, for you may plant it when you like, and bloom it half a dozen different seasons; besides which it is capable of bearing as much ill usage as any, and the colour is very striking."

R. B. has also a quantity of POT VINES (for planting), including Barbarossa, Hamburgh, Lady Downes, Golden Hamburgh, &c.

Prices on application to R. BOWIE, Clapham Rise Nursery, Clapham, S.

Post Office Orders payable at the Clapham Post Office.

New Bedding Annual—Iberis grandiflora alba

(LARGE-FLOWERED WHITE CANDYTUFT).

MESSRS. E. G. HENDERSON AND SON offer this as a remarkably fine variety, and a much more gay and effective plant than any other in its tribe, having numerous large semi-cylindrical trusses, from 2 to 4 inches in length, of snow-white blossoms, continuing in bloom twice as long as the well known common kinds, and making a very beautiful group or bed until the latest autumn months. Its style of growth is much more robust, from 12 to 15 inches in height, and vigorously branched. For decoration in the flower garden, either as a separate bed, or as a ribbon row, it far surpasses any annual or other bedding plant in its colour; its long continued bloom is invaluable for effect with other groups.

Seed packets, 6*d.* and 1*s.* each. The Trade supplied; prices on application.

Wellington Nursery, St. John's Wood, London, N.W.

SCOTT'S CATALOGUES.

No. 1.—FRUIT CATALOGUE and FRUIT TREE CULTIVATOR'S DIRECTORY describes nearly 800 of the best and most esteemed of our Fruits, with copious Observations and Directions about their Cultivation; the formation of Pyramids, Root Pruning, and other matter interesting to lovers of fine Fruit. Price 7*d.*

No. 2.—The BULB, WINTER, and SPRING BEDDING-PLANT CATALOGUE, 18 pages.

No. 3.—The DESCRIPTIVE CONIFEROUS CATALOGUE, 25 pages.

No. 4.—The ROSE CATALOGUE, 22 pages.

No. 5.—The SELECT NURSERY STOCK, 15 pages.

In December, the VEGETABLE and FLOWER SEED CATALOGUE.

In April, the SUMMER BEDDING CATALOGUE, 72 pages.

Apply to J. SCOTT, Merriott, Crewkerne, Somerset.

Notice of Removal.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, Edinburgh and London, respectfully beg to intimate that with a view to facilitate their business transactions they have REMOVED from

27, Great George Street, Westminster,

to

28, King Street, Cheapside,

and

15, Lawrence Lane, E.C.

New Seeds.

PETER LAWSON AND SON, THE QUEEN'S SEEDSMEN, of Edinburgh and London, are prepared to send out

FARM

and

GARDEN SEEDS

of every kind, and of the finest quality.

Orders for exportation executed with prompt and careful attention.

28, King Street, Cheapside, and 15, Lawrence Lane, E.C.

WHEELER'S LITTLE BOOK for 1863.

WHEELER'S TOM THUMB LETTUCE.

WHEELER'S IMPERIAL LETTUCE

The price of the Lettuce is 1*s.* per packet, post free.

J. C. WHEELER & SON beg to inform the Trade that their "Little Book" is entered at Stationers' Hall, and that they cannot allow it to be copied.

J. C. WHEELER & SON, Seed Growers, Gloucester.

Seed Trade.

JAMES CARTER AND CO., Holborn, W.C., have a few lbs. of the following to offer to the Trade:—

MELVILLE'S GARNISHING KAIL,
VARIEGATED BEET, for garnishing,
SNOW'S WINTER BROCCOLI, true,
LITTLE PIXIE CABBAGE,
NEW FEATHER STEM SAVOY,
DANVER'S YELLOW ONION.
TOMATOE DE LAYE.

Notice.—American Plants.

WATERER AND GODFREY'S CATALOGUE is now ready, and will be sent on application; it gives a fair price and description of all the Rhododendrons and other American Plants worth growing, as well as a general summary of the most extensive Nursery Stock in Europe.

The Exhibition of American Plants in the Royal Horticultural Society's Garden, South Kensington, were supplied by WATERER & GODFREY, Knap Hill, near Woking.

Wholesale Catalogue.

GEORGE JACKMAN AND SON'S PRICED and DESCRIPTIVE CATALOGUE for 1862 and SPRING 1863, comprising Fruit Trees of all the leading kinds, new and selected Roses, fine varieties of American Plants, Choice and Rare Conifers, Evergreen and Deciduous Trees and Shrubs, and a fine Stock of Transplanted Forest Trees, &c., can be had free on application.

Woking Nursery, Surrey.

CHARLES B. SAUNDERS, Cæsarean Nurseries, Island of Jersey, Established 1816.

Strong well ripened rooted VINES, best sorts, 6 to 8 ft. rods, grown in the open air without nursing, 2*s.* 6*d.* each; Dwarf Standard, Dwarf-trained PEAR TREES on Quince stocks, well rooted, set with fruit spurs, in fine condition, 1*s.* 8*d.* and 2*s.* 6*d.* each; Maiden and Dwarf-trained PEACH and NECTARINE TREES, 1*s.* 6*d.*, 2*s.* 6*d.*, and 3*s.* 6*d.* each; Upright GUERNSEY ELMS, 6 and 8 ft. high, 40*s.* and 60*s.* per 100. An immense Stock of EVERGREEN OAKS, grown in Pots and frequently transplanted, from 50*s.* to 200*s.* per 100, 2 to 6 ft. high.

Large quantities of the above can be supplied.

LISTS of GENERAL NURSERY STOCK on application.

Strong Fruiting Vines.

GEORGE CLARKE invites the attention of intending Planters to his very superior stock of the above. They embrace all the leading varieties, have clean well ripened rods 8 to 10 feet long, and remarkably short jointed. They were stopped to this length as early as June, rendering them equally stout and good the entire length, and are therefore very suitable for planting a house, or for growing in pots, where a crop of fruit could under proper treatment be obtained the first season.

The prices are—1 year old, 10*s.* 6*d.* each; 2 year old (extra size), 15*s.* Smaller plants, also from Eyes, and equally well ripened, which will produce fruit the second year, 3*s.* 6*d.* to 5*s.* each.

Specimens can be seen at the Seed and Plant Establishment, 2, Windsor Terrace, near the Victoria Railway Station, London, S.W.; and at the Nursery, Streatham Place, Brixton Hill.

Foster's Seedling Grape.

MESSRS. JOHN AND CHARLES LEE have to offer Mr. Foster's stock of this fine NEW GRAPE, which can be confidently recommended for general culture in cool Vineries. It has borne an abundant crop in the Conservatory of the Royal Horticultural Society at Chiswick, the bunches being large, with medium sized berries of a fine amber colour. The flavour of Foster's Seedling is most luscious, equalling the richness of its twin sister Lady Downe's, and, so far as can be seen, partaking of the same quality of hanging without shrivelling.

Canes for planting, 7*s.* 6*d.* each. A few Fruiting Canes at 21*s.* each.

Royal Vineyard Nursery and Seed Establishment, Hammersmith, London, W.

THE GREAT VINE at HAMPTON COURT.—The Subscribers being the holders of the Royal Kitchen Gardens, Hampton Court, are enabled to offer genuine the famous and truly excellent HAMPTON COURT BLACK HAMBURGH GRAPE.

Strong well-ripened plants in 9-inch pots, 42*s.* and 60*s.* per doz.

" " fruiting plants in 12-inch pots, 10*s.* 6*d.* each.

If purchased in large numbers a considerable reduction will be made in price.

JACKSON & SON, Nurseries, Kingston, S.W.

AMBROISE VERSCHAFFELT, NURSERYMAN, Ghent, Belgium, has the pleasure to offer now for the first time his two new excellent Fruits—

APPLE CALVILLE GARIBALDI .. 8*s.*
PEAR BÉURRÉ DE GHÉLIN .. .. 5*s.*

This excellent Pear obtained the First Prize at the great Pomological Show at Tournay, Belgium.

N.B. These two new Fruits are figured in VERSCHAFFELT'S "Illustration Horticole."

Fruit Trees.

RICHARD SMITH has no hesitation in saying that he possesses by far the largest Stock of FRUIT TREES in the kingdom, consisting of Apples, Pears, Plums, Cherries, Peaches, Nectarines, and Apricots, in Maiden Trees, Dwarf Bushes, Pyramids, Half-Standards, and Standards; Dwarf-trained, Half-Standard, Standard, and Horizontally-trained Trees, of the finest sorts, and in the best possible condition. DESCRIPTIVE PRICED LISTS on application.

RICHARD SMITH, Nurseryman, Worcester.

Fruit Trees.

JOHN CRANSTON has to offer a very large assortment of FRUIT TREES. A DESCRIPTIVE CATALOGUE is now ready, and will be sent free on application. The Plants are excellent, and include all the best varieties of Apples, Pears, Plums, Cherries, Peaches, Nectarines, Apricots, Strawberries, &c.; likewise superior Grape Vines from Eyes, with well-ripened canes, 8, 10, to 12 feet in length; also Peaches, Nectarines, and Apricots for Orchard Houses.

Nurseries, King's Acre, near Hereford.

AN AVENUE of WELLINGTONIAS.—Gentlemen wishing to plant an avenue of this GLORY OF THE FOREST would do well to inspect the Stock at the Sunningdale Nursery. They may select from thousands.

RHODODENDRONS of every hue, Scarlet, White, Crimson and Purple.—Gentlemen about to plant would consult their interest by an inspection of the Stock of Rhododendrons at the Sunningdale Nursery. They may select from hundreds of thousands.

COVER PLANTING.—Gentlemen about to plant for Cover would find the following plants worth a trial:—BERBERIS JAPONICA, COTONEASTER MICROPHYLLA, and RHODODENDRONS. A visit to the Sunningdale Nursery would not be uninteresting.

ROSES, Standards and Dwarfs, a very fine selection, in the most vigorous health, may be seen at the Sunningdale Nursery.

ROSES for FORCING, specially prepared, and calculated to give an abundant supply of Flowers during winter. All the finest kinds may be selected at the Sunningdale Nursery

CONIFERS.—A fine Stock of well grown Plants of all the most interesting and really hardy Conifers, Evergreens, &c., may be seen at the

Sunningdale Nursery, Sunningdale Station, S. W.

CHARLES NOBLE.

ROYAL EXOTIC NURSERY, CHELSEA, S.W.

JAMES VEITCH, JUN.,

RESPECTFULLY ANNOUNCES THAT HIS

CATALOGUE of KITCHEN GARDEN and FLOWER SEEDS

for 1862-63,

WITH A LIST OF IMPLEMENTS AND OTHER GARDEN REQUISITES,

IS NOW PUBLISHED AND WILL BE FORWARDED POST FREE ON APPLICATION.

J. V., JUN., devoting his personal attention to this department of his business, can warrant his

SEEDS TRUE TO NAME AND OF THE MOST GENUINE DESCRIPTION.

New Seeds, Growth of 1862.

ROYAL BERKSHIRE SEED ESTABLISHMENT.

SUTTON AND SONS are now prepared to execute orders for all kinds of FARM and GARDEN SEEDS.

The prices are lower and the quality finer than usual, owing to the very favourable harvest.

Royal Berkshire Seed Establishment, Reading.

Established 1787.

THOMAS KENNEDY AND CO., NURSERY AND SEED ESTABLISHMENT, Dumfries, N.B.

*** PRICED CATALOGUES sent free on application. FREE DELIVERY.

FARM and GARDEN SEEDS under certain limitations will be DELIVERED FREE OF CARRIAGE to the chief Railway Stations in Great Britain and the principal Steam Ports in Ireland.

Early Spring Flowers.

WEBB'S GIANT POLYANTHUS; ditto COWSLIP; Florist's Flower, POLYANTHUS, Roots or Seed; also SCARLET PRIMROSE—Double Crimson, Double Purple, Double White, Double Yellow, and Double Lilac ditto. COWSLIP from the Himalayas; DOUBLE POLYANTHUS; and other varieties, all of which may be had on application to

RICHARD WEBB, Calcot Gardens, Reading.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—The ANNUAL GENERAL MEETING of the Members of this Institution will be held at the Bedford Hotel, Covent Garden, on THURSDAY, January 15, for the purpose of Electing Officers for the ensuing year and receiving the Accounts of the Society for the past year.

The Chair to be taken at 6 o'Clock in the evening precisely.

An ELECTION of TWO PENSIONERS will afterwards take place from among the following Candidates, who make application under Rule No. 6, and whose cases have been strictly examined into and approved of by the Committee. The Ballot will close at 8 o'Clock precisely.

CANDIDATES.

ROBERT DOWDELL, aged 73 | SARAH PHELPS, aged 76
JOHN LUCAS, aged 63 | JAMES ROBINSON, aged 62
JOHN SANGSTER, aged 67.

No person will be allowed to Vote whose Subscription for the year 1862 is unpaid on the day of Election.

Subscriptions are due on the 1st January in each year.

New Subscribers paying on or before the day of Ballot will be entitled to Vote, and will receive a Polling Paper on application to EDWARD ROGER CUTLER, Sec.

14, Tavistock Row, Covent Garden, W.C.

N.B. The Polling Papers have all been issued; any Subscriber not having received one is requested to notify the same to the Secretary.

The Gardeners' Chronicle.

SATURDAY, DECEMBER 27, 1862.

THE few remarks we lately made on the GARDENERS' BENEVOLENT INSTITUTION have produced a considerable number of communications; far more, indeed, than we can possibly find room for. Some of these are much to the purpose, and from them we select two or three for publication. Others come from Correspondents who misunderstand the object of this particular CHARITY. Among the latter we are obliged to include a writer whom we shall call "R. C. K.," who proposes—what? To improve the management of the Gardeners' Benevolent? to enlarge its sphere of usefulness by pointing out how its income is to be increased, or its expenses reduced? to find better means for enlisting the sympathy of the general public by which it is now mainly supported? Not at all; none of these ways are the ways of "R. C. K."

He thinks indeed it is "highly praiseworthy of the aristocracy of the profession to subscribe their money in support of this *charitable* institution, to save a few of our needy brethren from starving or the workhouse," but he does not himself incline to imitate such praiseworthy conduct. He does not see what he is to get by it. We never before knew that works of charity are selfish; that when a man pays a guinea a-year, to an hospital for example, he does so on the positive condition that if he falls sick he may be doctored for nothing as long as he lives. Such an expectation may be prudent, or as "R. C. K." puts it, it may be "a duty he owes to himself"; but it is not Charity; and it is on the principles of Christian Charity that the Gardeners' Benevolent is founded. What "R. C. K." wishes to have is a Benefit Club; a very good thing, *if well managed*, but not a Charitable institution. If he can organise such a club let him do so by all means, but let him not apply to a personal speculation the sacred name of Charity.

FEW things are more annoying to the book collector, especially if his taste should lead him to the purchase of those which contain fine engravings, than the brown, black, or white spots which so often deface them, even where especial care has been taken to prevent if possible any damage. A very slight degree of damp however is occasionally enough to upset his calculations, and after all his pains he is subject to the "maculosum nefas," the plague spot or leprosy of book lovers. Of course other pursuits, where paper is much used, are liable to similar mischief; the artist finds his drawing paper or cardboard not merely defaced but useless, the botanist has his collections disfigured, and even our very note paper becomes sometimes so stained as to make its use irksome. Nor are the works of the loom less subject to the evil. A shipment is made of linen or cotton goods to some distant country, excellent to all appearance and perfect when dispatched, but on their arrival every piece is more or less spotted, and what was expected to lead to profit proves only a source of dissatisfaction and annoyance, if not of positive loss.

A piece of cardboard has lately been transmitted to us affected with the spot, with the request that we would make some observations on the subject, and to this we are ready to accede, though we have little or nothing new to say upon the subject.

The mischief is either chemical, or due to the growth of minute Fungi. In the first case the spots are generally of a ferruginous brown, in the latter either blackish or white, though we cannot say that this law is universal.

The most common case, that of the ferruginous spots, is we believe due to that slow decomposition or natural combustion which is known to chemists under the name of eremacausis. It is a slight form of that condition often confounded with true dry rot, in which wood exposed to damp becomes decomposed, the proportion of carbon becoming gradually greater, though the weight is constantly less. The quantity of moisture to which the close shut book leaves are exposed is in general very small, but still sufficient to exercise an influence on the weaker points, in consequence of which discoloured spots appear penetrating generally through the whole substance. How far the sizing of paper may increase or check the action does not appear to have been ascertained, or whether any application can be made which shall check the evil. Prevention here is far better than cure, though it is probably impossible in every case to keep paper so completely free from damp as to prevent the possibility of such an action. Besides the influence of damp, we have seen a case in which it was probable that the spot was due to gas. The use of gas in libraries, especially if very impure, as is often the case with what is supplied by gas companies, is destructive to the leather bindings of books in the upper shelves, which are most subject to its action; but in the case just mentioned it was herbarium paper in a similar situation which was principally affected. As far as we could see, no Fungus was present, or at least none was detected, and we, therefore, imagined the evil to be purely chemical.

The white spots on paper and prints are produced by a little mould belonging to the genus *Sporotrichum*, which is apparently identical with that which is so often found on neglected panes of glass, or even on the lenses of microscopes when not in use. The black or blackish spots vary extremely in form, sometimes presenting a mere cloud, but occasionally forming definite and sometimes radiating or starlike spots with simple or branched rays. An examination with the microscope sometimes shows evident fibres, simple, branched, or necklace-like, but occasionally merely brown granular masses, consisting of the rudiments of common species of *Cladosporium* or *Polyactis*, and sometimes of *Chætomium*. These probably require a greater degree of damp for their production than the rusty chemical spots, and it is very possible that something might be combined with the paper, whether sized or unsized, which might prevent their growth altogether. The most obvious method of dealing with the case would be the use of a solution of corrosive sublimate, but experiment would first be necessary to show that the metallic salt would have no evil effect of its own, which might prove more serious than the attack of the mould. A curious case was some years ago brought to our notice, in which it seemed probable that a peculiar minute stellate spotting on some foolscap paper at a crowded Union House, had been effected in consequence of the bad condition of the air. It is possible that this might have been the case, but we could obtain no further information; and it is exactly one of those cases in which inquiry would be stifled; as happened with a fungous growth the production of a perfect toad-stool of the genus Coprinus, upon the bandages of a fractured thigh some 40 years ago in one of our hospitals, to which our attention was drawn by one of the pupils; nevertheless the occurrence was afterwards denied on inquest.

To return from our short digression, it is very possible that in some cases the evil may be aggravated by the injudicious use of vegetable size, which we have at least reason to believe was the case with some Irish linen formerly submitted to our inspection.

The linen was spotted very much after the fashion of the specimen of cardboard before us, though the spots were of a darker hue. On close inspection, fungous matter appeared in every spot we examined, but the nucleus of each was a minute particle of the cuticle of the seed of Wheat. Whether such particles would occur in well-prepared starch we have not the means of saying, but our impression was that instead of starch the meal of fine Wheat had been used for size, and that the sad discoloration was due to this practice. It is at any rate a very suggestive case, and one which deserves accurate experiment.

In conclusion, we will mention a case, of the cause of which we are ignorant, but we believe that it is chemical. Drawing paper which has been preserved some years, though to the naked eye it may show no symptom of spotting, frequently exhibits when used spots which imbibe colour more readily than the rest of the paper, so that when the first wash is applied, the surface exhibits dark spots, which only become the more intense as additional colour is laid on. This is probably an incipient stage of decomposition, and one which it seems impossible to guard against.

The whole subject is one of considerable interest and importance, and we should be glad to find it made a matter of especial inquiry. *M. J. B.*

THE year which is now closing upon us has witnessed the introduction to public notice of more than the average number of novelties, not only amongst GARDEN SEEDLINGS but also amongst EXOTIC PLANTS. It may, therefore, be useful, in bidding adieu to 1862, to take a connected and summary glance at these acquisitions; and in doing so, we will first run through the lists of new flowers of garden origin, taking them in alphabetical order.

The family of Achimenes has received a notable addition in the variety called Mauve Queen. This is of the longiflora breed, but is a great advance on anything we already possessed in the combined features of size and substance, while the colour, a very pretty mauve purple, is set off by a richly spotted eye. Some yearlings which have been flowered late this autumn lead us to expect some important acquisitions in the high-coloured series, from the same source, another season.

Amongst Amaryllids, seedlings of the Hippeastrum group have been shown. One produced under the name of Unique, and a reputed seedling from Akermanni, has, like its parent, many excellent points, and may safely be regarded as a good example of a neglected family, if not very far removed from the variety just named.

Of Auriculas, a pretty dove-coloured decorative sort called Mrs. Eyles has been brought out. A few other seedlings have appeared, but not in a very perfect state; indeed, with this flower progress seems to be very slow, and real novelties very few and far between.

Of Azaleas of the indica breed, those called Duc d'Aremberg and Souvenir du Prince Albert, both of foreign origin, are the most remarkable; the former for its high qualities from a "floral" point of view; the latter for its improved and well contrasted colours. As a free-flowering sort of vigorous habit, adapted for decoration and exhibition, the Bride of Abydos is the most useful which has appeared amongst the whites, with occasional streaks of red; and there has been a semi-double variety of similar colours, which may be regarded as a highly promising novelty. Another very large salmony-rose sort called Colossus, will be a good plant for show purposes. The hardy Azaleas have received a showy acquisition in a variety called Altaclerensis; this has been considered an improved form of sinensis, to which indeed it is closely allied.

The family of Camellias has been augmented by the addition of some beautiful novelties, especially Comtesse Lavinia Maggi, a charming flower, freely striped with carmine on a white ground, and Reine des Beautés, an equally charming and strikingly perfect variety, but quite different from the former, the symmetrical blossoms being of a lovely flesh colour. They are both gems of the first water.

A good dwarf bedding Calceolaria with yellow flowers and distinct in aspect, has been introduced to notice. It is called Cloth of Gold. Some other very good sorts have appeared, but they have not been considered superior to Victor Emmanuel among the crimsons, and to canariensis among the yellows.

We have fallen in with very few new Carnations. The best we have seen is Samuel Moreton, a rose flake, said to have the advantage of a robust constitution.

Chrysanthemums have been largely recruited, the most remarkable accessions being:—Abbé Passaglia, a coppery tinged golden yellow; Her Majesty, a ligh

flower tinted with rose; and Princess Alexandra another light sort, tinted with lilac towards the outside, and with lemon colour in the centre. A very distinct and desirable fringed white called laciniatum; striatum, a large loose striped and changeable red and white sort; and grandiflorum, a very large showy bright yellow—three Japanese varieties collected by Mr. FORTUNE, though perfectly distinct from our English sorts, may be included here from their close assimilation to them. Finally, a pretty purple-flowered Pompon called Mrs. Hutt has been brought out. In the white fringed Japanese sort, we have a new feature of a very pleasing and ornamental character; and the other varieties from the same source are decided acquisitions as breeders, as well as for decoration, though somewhat wide of our English notions as to perfectness of form.

Among Cinerarias there has been nothing very striking produced, though a goodly number has been shown. Perhaps the variegated leaved sort, called carminata variegata, has the most interest. We are sadly in want of something fresh in this family. The most marked of the novelties we have seen are Lord Elgin, a soft Magenta rose; James Andrews, a peculiar shade of purple; and Cadet, a dwarf crimson.

Of Dahlias the ascendant novelties have been those with the florets yellow laced with red. Among these, Charles Turner and Caractacus have been thoroughly good; while Lord Dundreary and Lord Russell have held a good second rank. Patent is one of the foremost of the striped varieties, the florets salmony buff with purple stripes; and Countess of Shelburne is a welcome addition to the laced group. We use the terms "striped" and "laced" in the sense proposed in our remarks at p. 1100. Charlotte Dorling is a pretty bright-coloured sort in the laced series, but does not reach to the highest level of merit in other respects; and the same may be said of Le Premier, a maroon with white tips. The pretty little race of Pompones has lost none of its interest; the varieties only want dwarfing a little to become everybody's favourites, and in spite of sneers and jeers we must yet have them as pot exhibition plants if the craft is not to confess itself beaten by a corps of Lilliputians.

We cannot say much for the seedling Fuchsias which have made their way to our exhibitions. A light one named Conspicua, a free decorative plant, is one of the whitest perhaps yet obtained. Very few others have appeared in public, and these of no importance, though we observe a good many novelties are promised.

Genista Everestiana, a seedling, and very much improved form of G. canariensis, is a most welcome addition to its family, being free in growth and an abundant bloomer, with flowers of a rich golden yellow, many shades deeper-coloured than in the form usually cultivated, so as to appear quite distinct when placed beside them. It is one of the best greenhouse plants of the year.

A good many Hollyhocks have been publicly submitted for judgment. The best we have seen have been CHATER's Glory of Walden, Gem of Yellows, and Imperator, which are quite first-class varieties. The season has not been a favourable one for these flowers, so that probably some of those from other sources which have been brought out in an inferior condition, may have merits which will show themselves another year.

New Pansies of the "regulation" stamp have not appeared about London, and we have not fallen in with them elsewhere, their head-quarters being in the north. As usual, a goodly number is announced. Of the Fancy Pansies, however, many of which we have seen, there is aurea marginata, and some others. Amongst the latter, Princess Louisa, Leotard, Adelina Patti, Creole, Mrs. Moore, and Prince Louis of Hesse may be mentioned as attractive flowers of advanced character. These Fancy Pansies are making way surely.

The most remarkable accessions of the year in the shape of garden seedlings have, however, doubtless occurred amongst what are called "show" Pelargoniums. Never in one season do we remember to have seen varieties so numerous and so good brought before the public. To name a few of the best in our estimation is all that we can here attempt:—Regina, formosa, Eurydice, Vesuvius, Fidelia, and Canopus; Belle of the Ball, Conflagration, Merrimac, and Royalty; Royal Albert and Lord Palmerston; and Queen of Whites. Fancy Pelargoniums do not appear to have made much advance, and very few of them have been shown. Neither among the Scarlets and related groups has there been any very prominent additions. Waltham Pet, a dwarf scarlet, is promising, but wants more proving.

The Red-zoned variegated sorts however have had some important accessions—Italia Unita amongst the silver-edged, and Lucy Grieve amongst the gold-edged, both novelties of the year, being the most advanced of their respective groups; whilst Mrs. Milford, with golden leaves very broadly zoned with deep brown, furnishes a new style of variegation. These coloured-leaved sorts are very beautiful decorative plants, and have not apparently yet reached their limit.

Amongst Pentstemons the most decided advance in form and texture is shown in a variety called Euclide. A novel flower called Mrs. Steans, with bright rose flowers, and a striped white-ground throat, is also of a very superior stamp in respect of form. The spreading limb segments these flowers have acquired, very much improve their character.

Of Petunias nothing new has been seen amongst the doubles, equal to Eliza Mathieu, but amongst the singles Butterfly, a striped sort, and Venus, Ruby Guido, Emma, and some others, are meritorious acquisitions.

Of Picotees Lady Elcho and Mrs. Reynolds Hole are the best that have come before us, the former taking the higher position.

Pinks have been recruited by the addition of several very fine beautifully-laced sorts, such as Device, Bridesmaid, and Exquisite, which have been our favourites, though Bertram, Marion, and Blondin, are scarcely if at all inferior. A good-looking, bold, well-laced flower, called Mr. F. Coaffe, has been produced, and there is a very useful dwarf blush-ground variety, called Rubens, which will be an acquisition for forcing purposes.

Some very valuable additions have been made to the Double Chinese Primroses. One variety, called delicata, opens white and changes to blush; another, rubra grandiflora, is a deep rose, and both are full double, and reproducible from seeds. A dwarf sport of the former sort, resembling it in all but its dwarfness, has been called The Fairy.

Several very fine hybrid Rhododendrons, chiefly crosses between the Indian Dalhousiæ, ciliatum and Edgworthii, have appeared in the course of the season. The resulting products have been all white-flowered, the flowers slightly tinged with rose or pink, and varying in shape from that of a long narrow funnel, to a broad campanulata form, as in the parents. Prince Leopold and Princess Helena, from Mr. ANDERSON HENRY; Sesterianum and Princess Alice, Countess of Haddington, and Denisonii, all belong to this set. Another of different character called Jasminiflorum superbum, a cross between Jasminiflorum and Lobbianum, is a beautiful thing, a decided improvement on the first named parent in respect to foliage and size of flower, but otherwise resembling it. Of the hardy series the best have been Striatum formosissimum and Standish's Perfection, both very fine things; and Ochroleucum, a pale sort with yellowish-green spots, a very distinct and effective plant for grouping.

The leading new Rose of the year is a very sterling English variety, called John Hopper, which proves in every way first-rate. The same may be said of Beauty of Waltham, which has only been fully proved this summer, and has kept up its high character from the beginning to the end of the season. Lord Clyde, a dark sort, seems likely to be a useful hardy variety, but wants refinement. Of the foreign novelties, Duc de Rohan and Maurice Bernardin, both crimsons, have been shown well; and Souvenir du Comte Cavour, deep crimson, and Louise Darzins, pure white, have been also noticed in a well bloomed condition. Time alone however can thoroughly test the merits of these, and their many continental compeers; but we hear a very high character of one called André Leroy d'Angers, with large cupped flowers of the colour of the old Tuscany Rose.

Two or three choice Verbenas remain to be noticed, namely DOWNIE & Co.'s Lord Craven, a rich deep violet purple; PERKINS's Lord Leigh, a scarlet, superior to Foxhunter; and a red-eyed rosy pink sort called Rugby Hero. These are all acquisitions, and are remarkable for the large size of their flowers.

This completes our rapid summary of the most important novelties amongst garden seedlings which have come under our notice during 1862. A similar glance over the list of New Plants of the year we must reserve for another opportunity.

New Plants.

251. ABIES POLITA.

THIS very fine Japanese Fir has been erroneously thought to be the same as the *Abies Khutrow* or *Pinus Smithiana* of India. The species are no doubt allied; but as distinct as *Abies nigra* and *A. excelsa*. The phyllules of *A. polita* are long, stout, and prominent, something in the way of *A. Menziesii*; those of *A. Khutrow* are small, and not half the length. The leaves of *A. polita* are strong, stiff, and curved; those of *A. Khutrow* are longer, and straighter, and more slender. Moreover the cones are quite as different as the phyllules and leaves.

It is described by Siebold as a superb sort of Spruce found wild, according to his informants, in vast forests on the lofty mountains that extend to the north of Nippon; and also in the Kuriles. He had himself obtained a branch of it from the peninsula of Corea. In the warmer parts of Japan it did not succeed, the climate being too mild. Siebold says nothing about the quality of the timber; Mr. J. G. Veitch brought home seeds from which young plants have been raised in the Exeter Nursery.

252. PRIMULA CORTUSOIDES.

Among the pretty things from Japan brought home by Mr. J. G. Veitch were seeds of a Primrose of striking beauty, with leaves something like those of *P. sinensis* in colour and texture, and with trusses of flowers rivalling in colour the brilliant *Azalea amœna*. Weak plants of it having blossomed it proves to be a glorious form of the old forgotten *Primula cortusoides*, the delight of our boyhood, because not only of its singular beauty, but because it was not miffy like other [illegible] Primroses.

Two forms of it have been raised, viz.,

1. P. c. *amœna*,

with flowers of the richest crimson, and twice as [illegible] as those of the original plant; and

2, P. c. *striata*,

with smaller flowers of a delicate pink colour [illegible] with lines of crimson.

This plant must have a great future; for [illegible] hands of such growers as we now have it is [illegible] certain to break into new colours, and to [illegible] forms and proportions. It is evidently as hardy [illegible] hedge Primrose, for it has been found wild not [illegible] Däuria and Japan, but in many parts of Mantc[illegible] flowering in May and June near the rivers [illegible] Schilka, the most rigorous of climates.

253. TAGETES SIGNATA PUMILA.

Under this name Messrs. Vilmorin & Co., of [illegible] last year let out an annual plant of whose [illegible] opinion could be formed, owing to the damage [illegible] in which the specimens of it reached this [illegible] They have now put into circulation a coloured [illegible] from the faithful pencil of Riocreux, from which [illegible] appears to be a very pretty thing. In form [illegible] hemispherical bush, studded all over with small [illegible] flower-heads, something like those of the well known *Tagetes lucida*, but larger. It seems worthy the attention of growers.

RIBBON BEDS *versus* GARDENS.

YOU have not pronounced upon the ribbon beds [illegible] whit too soon. At the rate things were going [illegible] might else ere long have had to put the "garden" [illegible] into your "Hue and Cry." Some specimens of what [illegible] garden really is, may still survive in the more [illegible] and little known parts of the kingdom, which the encroachments of fashion are slow to reach, but [illegible] neighbourhood of London and the civilised [illegible] affected by its tone, the thing is already nearly gone. If something be not done to arrest their extinction, [illegible] shall soon have to cry *fuit Ilium*—not a garden [illegible] remain.

I remember a popular clergyman who was fond of fine words, talking in his sermon about the "shrubberies of Eden." The "garden of Eden" was not fine enough for him, so he called it the shrubberies of Eden. So it is with our gardeners; they have turned [illegible] gardens into shrubberies and ribbon-beds. It is not [illegible] if they had added these to the old delectamenta of the garden; they have taken away the one to make room for the other. The labour and expense attending [illegible] effective display of ribbon gardening is so great that the one is necessarily sacrificed to the other. To maintain both would require a double staff and a double expense, and this few men are willing or able to afford; and as fashion claims the ribbon beds, the garden [illegible] has gone to the wall.

It is for this reason that I am only half satisfied with your pronunciamento. You would reform it [illegible] ferently well. I want you to reform it altogether. [illegible] is not as a question of the proper distribution of the ribbon beds that I regard it. That would be the case if we could have both—but it is not so—we must either have the ribbon beds and want the garden, or have the garden and want the ribbon beds.

In the nature of things this must be so—it is a physical necessity. To be at all effective the beds must be on a large scale; whether by direct intention or [illegible] I do not know, but it is undoubted that it was in the vast flowering prairies of Mexico and California [illegible] these beds took their origin. It was the Nemophilas, the Coreopsides, the Eschscholtzias of these plains that first formed the glowing beds which suggested to some shawl or carpet designer, the Cockney patterns which now disfigure every lawn. It was seen that their brilliant colours could be massed effectively together, and a perverted taste soon adapted the materials and the idea to the fancies of a [illegible] of design. The skill of our gardeners supplied [illegible] and better materials, and the successful arrangement [illegible] rich colours in harmonious combination, has taken [illegible] fancy captive, and given the ribbon system, in spite of its inherent bad taste, the irremovable footing it now holds. But it is plain that whether we look upon it as an attempt to imitate the mantle of the wilderness or merely to produce an effective result, neither can be done except upon a large scale—and as the large [illegible] unfortunately applies equally to its measurement [illegible] its expense, it brings us to the point I started from, viz., that except in large establishments where [illegible] enormous expense can be borne, we must take [illegible] choice between the beds and the garden, as we cannot have both.

Can we hesitate? I have used hard words above [illegible] speaking of the ribbon beds. But are they not warranted? Does not the gaudy glitter of these beds address itself to the lower elements of our taste? It is the savage who is caught by the gayest colours, and a liking for them and personal ornament is a remnant of primitive barbarism which [illegible] shared by us all, but possessed in smaller and smaller proportions as we ascend the scale of civilisation; we [illegible] pay homage to this original weakness, but the highest bred and most cultivated minds feel it least, and when they do yield to it are the first to discard it, and in the

present case I am happy to see signs that they are beginning to do so. Do not suppose, Mr. Editor, that I arrogate to myself to be one of these choice spirits. If you will promise not to mention it, I shall acknowledge that notwithstanding all I have been saying against them, I cannot restrain my admiration for a well composed ribbon bed, such as we see at Kew and the Horticultural Garden. But then it may be that I am the unconscious possessor of some black blood. I wear a black velvet collar to my coat, said by some to be the last trace of negro vanity which leaves the Octaroon, and my sensitiveness to the charms of scarlet, purple and orange is shared in another sense by any mad bull. But this is between ourselves—*Video meliora proboque deteriora sequor*. It is not that I love the ribbon beds less, but the garden more. At any rate, if I acknowledge my admiration for ribbon beds on a large scale, arranged according to the best combinations of art, I make up for the momentary weakness by the additional sternness of my dislike for the little patches absurdly dropped down higgedly-piggedly on every Grass plot at every villa in every town in England.

Viewed in this light it does not appear that I, who have only moderate means, relinquish much in giving up my ribbon beds. I do not want a diorama or a panorama to hang up on the walls of my sitting-room; there would not be room if I did. A display of prairie splendour on my lawn is as much out of place. How does it stand with my garden? Is it nothing to have lost it? May it be washed in Lethe and forgotten? I trow not. Where be my Primroses, my Narcissuses, my Daffodils, my Pæonies, my Saxifrages, my Hyacinths, my Roses, my Irises, my Pinks, my Picotees? Where be my storied plants (I mean my plants with a story attached to them, to make the way pleasant to my guest as we saunter round the borders)—where is my bit of Saxifraga oppositifolia, brought by Capt. Parry from under a block of ice in Melville Island—where is my Fraxinella to experiment upon—where my Teazle—where my Deadly Nightshade — where my rank Hellebore—where be my emblems of the Highland Clans—where my Bryanthus with its story—where my White Hepatica with its—where is my Hudsonia ericoides with its anecdote—my Musk Hyacinth with its tale—my Woodsia with its adventure? I want to tell. Don't be frightened. I am not going to tell them now. I want to tell about plant after plant gathered by myself in my wanderings abroad—plant after plant contributed by my friends in their travels—almost every plant with its tale, and calling up remembrances of dear or departed friends. Where be all these gone?—sacrificed to the exigencies of ribbon beds. Where too is the old hospitality of the garden? How pleasant was the gratification of being able to offer to your friend something he had not got. How amiable the self-denial with which he would not rob you. "It will not bear dividing—I will wait until it is grown." What a charming bond of union between a whole circle of neighbours to communicate to each other their new acquisitions. How different now! "Where is the life which late I led?" What good to offer to my neighbour a cartload of my 1000 bedding out plants—he has another 1000 bedding-out plants just the same. The hospitality of the garden is extinguished—please God that the feelings which accompanied it have not suffered too.

Another consequence or sequence of this ribbon craze is the doing away with the walls of the garden. Having destroyed the garden, why retain the walls? Perhaps it has not just reached this stage, but it certainly has come to this—that in new places the garden walls are dispensed with, and the garden itself is represented by the shrubbery in front, diversified with ribbon beds. Our neighbours across the Channel speak of this style in terms of high commendation:—"It not only allows the view of the owner to extend to a distance, but also permits the eye of the passer-by to plunge with admiration within." And it is natural they should like it. So much of their life is passed in public, that I do not believe they understand what seclusion or retirement is; or at any rate if they do, they are utterly insensible to their charms. For my part I have been brought up an Englishman, and can neither dine in comfort at a table d'hôte like a Frenchman, nor sleep in peace in a double-bedded room as an American. I like my retirement—at times I *do* feel it good for me to be alone. "I would enjoy my private." Now there is nothing like the walls of the garden for this. There is a sense of snugness and security in a walled garden which is not to be found in any shrubbery, however much closed in. Besides, without walls, how are we to grow the multitude of climbing plants which seem expressly made to grow up a wall. If we give up our walls, how many slightly tender beauties must we abandon, which will do well with the heat and protection of a wall, but will die without them.

But I shall not enlarge upon the subject. A host of pleas in favour of the garden must occur to every one. If gentlemen can only once be brought to see that they must choose between the ribbon beds and the garden, I have no fear of the result. What I fear, is the divided policy which in attempting to hold both would lose, or what is the same spoil both. Let the ribbon beds be confined to their proper places — great public establishments—and let the private gentleman give up the unprofitable competition and fall back on the old English garden of flowering herbaceous plants. *One of the Old School.*

OAKS AND BEECHES OF DENMARK.

The following tables exhibit the rates of growth of an Oak, Quercus Robur, 180 years old, from Denmark, as appeared from the measurement of individual annual layers in the International Exhibition; together with those of another Oak 170 years old, from the same country; and as it may be interesting to compare the growth of the Oak with that of the Beech, Fagus sylvatica, we subjoin the dimensions of two specimens of this wood, exhibited also from Denmark.

Quercus Robur (No 4). Denmark.				Oak, 170 years old. Denmark			
Years.	Thickness of 10 layers.	Diameter of Tree.	Area of Section.	Years.	Thickness of 10 Layers.	Diameter of Tree.	Area of Section.
	Inches.	Inches.	Sq. Ins.		Inches	Inches.	Sq. Ins.
10	1.66	3.32	8.6	10	1.93	3.86	11.7
20	1.50	6.32	31.3	20	1.62	7.10	39.5
30	1.90	10.12	80.4	30	1.76	10.62	88.5
40	1.60	13.32	139.3	40	1.35	13.32	135.7
50	1.38	16.08	203.0	50	1.43	16.18	205.6
60	1.45	18.98	282.9	60	1.30	18.78	270.7
70	1.16	21.30	348.2	70	1.05	20.88	342.4
80	0.91	23.12	419.8	80	1.30	23.48	433.0
90	1.27	25.66	517.1	90	1.10	25.68	517.9
100	.81	27.28	584.5	100	.93	27.54	595.7
110	.75	28.78	650.5	110	1.03	29.60	688.1
120	.85	30.48	729.6	120	.89	31.38	778.3
130	.84	32.16	812.3	130	.70	32.78	844.0
140	.84	33.84	899.4	140	.76	34.29	924.0
150	.81	35.46	987.6	150	.82	35.94	1014.
160	.65	36.76	1061.3	160	.83	37.60	1110.
170	.90	38.56	1167.8	170	.95	39.50	1225.
180	.72	40.00	1256.1				

Fagus sylvatica, Common Beech (No. 18). Denmark.				Fagus sylvatica, Common Beech (No. 21). Denmark.			
10	.33	.66	.5	10	2.14	4.28	14.3
20	.90	2.46	4.7	20	2.16	8.00	58.1
30	1.10	4.66	17.0	30	1.90	12.40	120.7
40	1.21	7.03	39.3	40	2.50	17.40	237.7
50	2.14	11.36	101.3	50	2.83	23.06	417.7
60	2.15	15.66	192.6	60	3.52	30.10	711.6
70	2.58	20.82	332.7	70	2.44	34.98	961.1
80	1.96	24.74	491.9	80	2.08	39.14	1203.
86		25.74	520.4	90	1.05	41.24	1335.

From the above it appears that in the Quercus Robur (No. 4), the thickness of layers formed in the respective decennial periods up to the 90th year of the age of the tree was tolerably uniform, and greater than in the last 90 years. But it must be observed, that although the layers were not so thick, yet as each successive one had a greater circumference, more wood was formed in the last 90 years than in the first 90. At the end of the first 90 years of the age of the tree, the sectional area was 517 square inches. In the next 90 it had increased to 1256 square inches; deducting from this 517, leaves 739. The former of these numbers representing the bulk of timber formed in the first half of the tree's existence; the latter that formed in the second half. According to this, one old Oak tree of 180 is more than as five to seven better than two of 90 years.

The Oak of 170 years had about the same sectional area at 90, as the one just noticed had at the same age; but after this it made a more rapid growth, and in its last 10 years it formed more wood than in any other period. Its diameter was then 3 feet 3½ inches.

The common Beech, Fagus sylvatica, No. 18, made slow growth till 40 years of age. It had then about 100 square inches less area of section than the Oaks of the same age. At 70, however, it nearly equalled them; and at 80 it exceeded them by more than an inch in diameter.

The common Beech, Fagus sylvatica, No. 21, far exceeded the preceding at all periods of its growth. It made a good start at first. At 20 years the area of its section was 58 square inches against scarcely 4¾ inches made by the other Beech. At 90, its diameter was 3 feet 5¼ inches, that of the Oaks of the same age being only about 2 feet 1½ inches; their sectional area was about 517, whilst that of the Beech was 1335. In 90 years this Beech formed more wood than the Oaks did in 180 years. Although Beech wood is not equal in quality to Oak, yet it is very useful for many purposes. It is apt to warp if cut up in certain directions, but not if the cut is made perpendicular to the medullary rays or silver grain, as should be the case with the face of carpenters' planes, for example. At all events the rapid growth of the tree deserves consideration in making plantations. The Beech, moreover, will grow in poor sandy soil, such as would be unsuitable for the Oak; and no kind of timber tree should be planted where another kind would more profitably occupy the ground.

ALMONDS.

In France, Spain, and Italy, the cultivation of Almonds is an object of considerable importance in a commercial point of view; and their production, especially as regards first-rate sorts, forms a great source of income where the climate is favourable. A knowledge of the different kinds, good and indifferent, must therefore be advantageous. The following details respecting the different varieties, by M. de Bec, Director of the Agricultural School of Montaurone, have been approved, and his nomenclature adopted, by the French jury at the International Exhibition, where 50 varieties of Sweet Almonds were exhibited. Almonds are divided into two classes:—Bitter and Sweet.

Bitter Almonds are chiefly obtained from Majorca, Algeria, and Mogador. They are used in the preparation of liqueurs, macaroons, and different medicinal compounds.

Sweet Almonds (Amandes douces).—1. *Tender, or Thin-shelled* (Amandes à Coque tendre).—Shell easily broken between the finger and thumb. Var. Princesse. Flowers in February and beginning of March; eatable in the husk in the end of July, and ripens end of August and beginning of September. It is considered the best variety. It is sold in the shell at an average of 40 francs per hectolitre, or about 8s. 6d. a bushel.

2. *Half-tender Shelled* (Amandes à Coque mi-tendre).—Shell requiring a somewhat stronger pressure to break it than the preceding. Of this there are four varieties:—the Matherone, L'Abbeyrane, La Sans Grace, La Bontière. These flower in the course of March and ripen in September. The Almonds are sold in the shell at about 30 francs the hectolitre, or 6s. 3d. a bushel.

3. *Shell half-hard* (Amandes á coque demi-dure). Var. La Raie (also called La Dame), La Ronde. Flowers end of February and beginning of March, ripens end of August and in September. They are sold at 25 francs the hectolitre, or 5s. 3d. a bushel.

4. *Hard shelled.*—Var. La Grosse à Flot, La Petite à Flot. Flowers through March, ripens in the first half of September. These are esteemed the best of the hard-shelled Almonds, and are sold in the shells at 20 fr. the hectolitre, or 4s. 2d. a bushel.

5. *Late-flowering Hard-shelled Almonds* (Coques dures; Amandiers à Floraison tardive.).—Var. La Grosse Verte flowers end of March; ripe, September; productive. La petite Verte flowers end of March; ripe end of September. Much in demand in commerce. Le Quinze Avril flowers in April, the latest of all varieties. [This should be noticed for ornamental planting as a late flowering sort.] Ripens in September. It is a new variety. La Laty, flowers end of March, ripens in September; tree very productive. La Tournefort, flowers end of March, ripens in September; La Tardive flowers end of March, ripens in September. All these Almonds are sold at about 18 fr. the hectolitre, or 3s. 10d. a bushel.

6. *Common Hard-shelled Almonds.* Good bearers. Var. Madame, Ailland, Pointu, Grosse Cotone, Jaunore, Jumelle Rondette, Guillaume, Noisette, Ventre, Chartan, Aveline, Pistache du Levant, Plate, Lisette, La Boule, La Vignerone Tout-rond, Doublons, La Croix, Robert, St. Esteve, Longuette Naturelle, Lactane, Gournée, Admirable, Davin (shell very hard), Laferce, the hardest shelled, Gravelle, sweet perfumed, La Rouge, do. These are the sorts mostly grown, and, taking one year with another, the produce is abundant. In good seasons, and when the flowers are not injured by frost, the crop is very large. They flower from the end of February to the middle of March. The Almonds are sold by the growers in the shell, and fetch about 3s. 10d. a bushel; but in commerce they are always shelled.

7. *Bitter Almonds.*—Var. Hard-shelled (à Coque dure, chair amère), Très amère, flowers about the medium season; ripe in September. Demi-Amere: similar to the preceding, but less bitter. Both are in common use, and are much employed in cookery, the preparation of liqueurs, and drugs, and in the arts.

It is stated in the "Technologist" that the ordinary varieties of commerce in Provence are the Crombees and other sorts, thin and soft-shelled, called Abeyranes, Matherones, and Bontières, sold ordinarily in the shell; Princess Almonds, consumed in France, Belgium, Holland, Germany, and Russia; Ladies' Almonds (Amandes à Dame), sent chiefly to the United States; and wavy Almonds (Amandes à Flot), employed principally in confectionery, as burnt almonds, and for fine pastry. The last kind is obtained especially from Lower Provence, and the best comes from the territory of Aix, and are all consumed in Paris, where they realise double the price of the ordinary varieties of Almond. They are also those which keep the best.

The imports of Almonds into France were, in 1860, 714,256 kilogrammes [1,965,061 bushels,] and the exports 2,379,839 kilogrammes [6,547,436 bushels]. The imports into England for the same year were 7361 cwt. of Bitter Almonds, and 19,638 cwt. of Sweet Almonds. [These details should be useful to our Colonial friends, especially in Australia.]

Indoor Gardening.

The Roman Hyacinths, of which I wrote some months ago, are certainly very early, if they are not large. Mine, planted in sand and kept generally in a window of an unused fireless room are already in blossom. They were for some time in the dark, then they went to a window, and certainly they owe nothing whatever to forcing of any kind. The flowers come out almost directly after the buds appear; it is in this stage of their growth, therefore, that they gain so much on other kinds. In fact, not three weeks ago, I anathematised the whole set as a regular sell—seeing many leaves, but no sign of flowers. Now they are mostly in blossom (and have been since the 17th), and though the flowers are certainly utterly insignificant and much more like "white Blue Bells" than like nice thick-set

Hyacinths, still their scent is delicious, and if I had to make up any Christmas wreaths or nosegays, I should never wish for prettier little flowers to mix amidst Ferns and Evergreens, and with red spikes of Rivina.

These Hyacinths, however, emphatically are not worth growing as plants. They must rest all their claims on their earliness and their lightness, on their snowy whiteness and on their sweetest scent, which in these is not overpowering as it is in the larger flowers; and it will really be a very pleasant thing for many to be able to flower Hyacinths in the ordinary course before Christmas. Mine, as I said, have had no heat or forcing, or helping on of any kind, and they are even earlier than the Snowdrops I planted with them. My forcing this winter has never, in fact, begun. I wanted to try how things did without any extra heat, and though I have watched closely for any falling off in my tenderer plants, yet till some seems to threaten I like so much doing nothing. My Lilies of the Valley are thus standing hopelessly still, as I am not able this winter to take care of an extra plant-case, by way of a small succession house.

My Lycaste, Cissus, Lygodium scandens (Climbing Fern), Passion-flower, &c., make my case very green, and the only casualty has been the Begonia Leopoldi, whose beautiful red leaves have damped. The Camellia buds go on growing, and the Heath is gone out of blossom, though the red Rivina still stretches out bright red spikes, and as long as its yellowish leaves keep themselves out of sight it does certainly make an excessively pretty object. For people who like to have even a little green in winter I strongly recommend such a set of plants as mine, for they require little care, and look always fresh. I find, too, one does not tire of seeing the same green things. Flowers want constant changing, that they may not become tiresome (when they last, that is, as mine do); but green one can watch for days with constantly fresh pleasure, and if at any time one wants a little variety, a couple of bright flowers give one a perfect change.

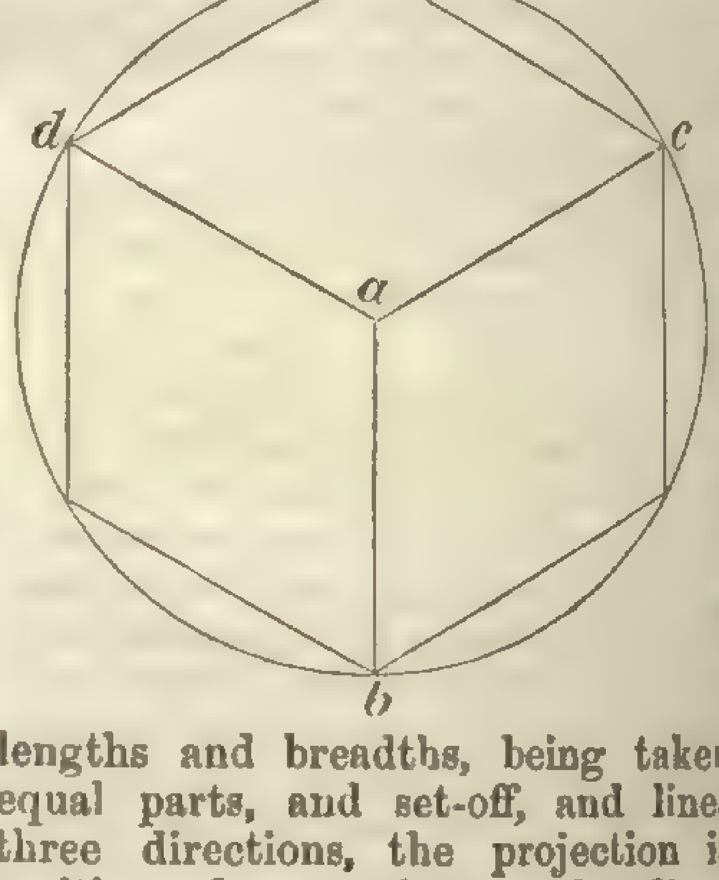
In keeping green things in a plant case (whether with heat or no), it is rather essential to have none sunk in too low. I do not think as a rule that any pot ought to stand with its rim at all below the edge of any box. It may be only fancy, but I often think that plants are very sensitive to any want of fresh air circulating round the collar, where the stem or leaves naturally spring from the earth. We know that covering up this part kills the plant often, and I can't help thinking that this is done as much by want of air as by damp. Whatever the cause may be, I am certain about the effect; and very troublesome, too, it is to have to keep one's plants on a level. Of course for a day or so it is not essential; if it were, indeed, pretty groups would be harder to arrange than they are.

For lifting pots to a level I have sometimes used wooden boxes turned upside down, and as amateur gardeners are rather given to make shifts it may probably be worth while saying that the plan is a failure. The thing is that wood gets so very damp, and the damp fosters mildew, and then the mildew spreads in the leaves and plants around. I think an empty flower pot is the best lift I know at present; it can be turned upside down, or another pot can stand in it, which gives more or less extra height according to the sizes of the two pots concerned, and which ensures good drainage, though watering must be attended to in proportion as the plant is cut off from the standing fund of moisture in the sand or fibre that fills the box; the pot being of earthenware of course does not get mildewy. *E. A. M.*

Home Correspondence.

The Gardeners' Royal Benevolent Institution.—As a very old subscriber, and a member for many years of the committee of the Gardeners' Benevolent Institution, I beg to thank you for your able advocacy of the claims of that Society in your columns of the 6th inst., and I only wish you would repeat it a little oftener. I cannot at all understand what a "Working Gardener" requires; does he think that this is a benefit club, that the rules are to be altered to suit his peculiar whims and fancies; if so he is very much mistaken. I very much fancy that he knows nothing about the Society, and his objections are only a lame excuse for withholding his mite. The rules are very liberally framed; thus by the 6th rule a person paying 1*l*. 1*s*. annually for 15 years, upon his arriving at the age of 60 (or earlier if he be entirely disabled), if he can show to the satisfaction of the Committee that he is a fit and proper object, can claim the pension in preference to any person who has not subscribed so long or not at all—as witness the ensuing election. This is certainly getting a pension on very easy terms, and it could not possibly be carried out even in its present limited manner, were it not for the liberal way in which gentlemen like yourself connected with horticulture, and the leading nurserymen and seedsmen, have subscribed, and formed the nice little nest egg of 5200*l*. 3 per Cent. Consols. I know a great many gardeners, and good fellows many of them are, but a class more blind to their own interests I do not know. There is a Society established especially for their assistance, and they will not subscribe to it, many, very many I believe, from carelessness, but the majority from ideas that they shall never require any aid. How far this is fallacious your able exposition proves. It is true the pension is only 16*l*. a year, but, I say, let the gardeners subscribe liberally, and put the committee in possession of more funds, and then they will be enabled to increase the amount. I have over and over again, until I am tired, drawn gardeners' attention to the paramount necessity of laying by a trifle for their old age and subscribing to this Society, but they will not, under the impression that they will never require it, forgetting the old adage, "that the world helps those that help themselves." Witness the case of Mearns, who when in the height of his prosperity was to my certain knowledge solicited to be a subscriber, and would not condescend so much as to notice the Institution; yet he lived to see the day when he was not above soliciting our votes to place him on the pension list. I do not know what the "Working Gardener" means by a "dubious election;" so far as I have been connected with them they have been conducted honestly and fairly; a paper is sent to every subscriber on which is a short history of each candidate, and every subscriber has the privilege of voting for any candidate he chooses. What can be fairer than that? The time has now arrived, and from what I believe is likely to continue, when none but persons qualified under Rule 6 will be candidates, and this I think will show the working gardeners that their claims are not put on one side. I wish we were able to relieve all the applicants, and if the gardeners were true to themselves the Gardeners' Benevolent Society would be second to none in England, and I think it would be more becoming of the "Working Gardener" were he, instead of cavilling at the rules and finding fault where really none exists, to send his subscription to the secretary, and by his individual assistance strengthen the hands of the committee. If, then, he had reforms to propose, he could come forward boldly and not be ashamed to sign his name. As regards Mr. Thompson's liberal project, a gentleman who for the present shall be nameless has commissioned me to put down his name (although not a gardener) as one of the 99 to follow so good an example. I do hope, and fully believe that great good will result to the Society from your article, but the gardeners themselves, as a body, must put their shoulders to the wheel, and with a "long pull, and a strong pull, and a pull altogether," place the Society in the proud position it ought to stand, and then under the patronage of the noble Earl of Ducie the income of the Society will be this one year most considerably increased. The committee and secretary do their duty, and it only remains for the gardeners to do theirs. *W. Barnes, Camden Nursery, Camberwell, Dec. 17.*——As one of the oldest subscribers to this Society, I rejoice to see its claims so ably advocated through the columns of your journal, and I hope that hundreds who have not yet subscribed will try to do something towards the funds. Many hold back because they hope never to want the Society's aid, but such reasoners should take more enlarged views and subscribe to the aid of others who do want assistance. I have just received my polling paper for the January election, in which for the first time in the Society's existence, the committee have been compelled to set aside the general list of candidates for election because four new candidates who have been subscribers 18, 19, and 21 years respectively, are entitled to gratuitous election to the funds without a contest, but it so happens that the funds will only admit of two being elected, and thus the four are obliged to go to a poll. Cannot an effort be made to place the Committee in a position at once to fix these four old persons on the funds? The youngest of them is 62 years of age, the oldest 76. Let the winter of their age be sweetened by the pension given by the Society, and to enable the Society to do this, a few more yearly subscribers and donations will do it. The country now swarms with Floral Societies, many of which have funds in hand. Let me commend the Gardeners' Royal Benevolent Institution to their charitable consideration, and beg of the respective committees to vote from their surplus funds a small donation to the Society. The sum of one guinea subscription yearly gives the donor the right of voting at the election, so that each society giving such donations would, I apprehend, have the privilege of voting. I hope some provincial society will take the initiative, and I think others will follow. *W. D.*——I am sorry my limited means debar me from following the noble example of the writer of the able leader of December 6. I agree it is high time gardeners had "a long pull, a strong pull, with a pull altogether." I will willingly pay 10 guineas as a life member; also become an annual subscriber of 1*l*. 1*s*. as long as I am in a position to do so. If 97 other gardeners will meet Mr. Thompson's kind offer, and if sufficient money is placed in the hands of the committee, we may then expect better rules, or the present rules altered; but, I repeat, until then we need not. In looking over the Society's account I agree with you that the "committee push their distribution of money to the very verge of prudence, but without overstepping it." I feel sure the committee will have greater pleasure in placing the present five candidates on the pension list than being bored with the so-called "dubious election," which is inevitable if the means are not forthcoming. Nothing will give me greater pleasure than being informed of the 97 gardeners coming forward to do what I consider is the duty of every gardener, for we little know what a day may bring forth. *Isaac Dixon, Gardener to the Right Hon. Earl Vane, Plâs Machynlleth, Montgomeryshire, North Wales.*

Isometrical Drawing.—In your impression of the 29th ult. is a pleasing projection or delineation of the gardens at Busbridge Hall. Having long wished to understand the principles and rules on which this particular kind of delineating horticultural buildings depends, I have frequently examined many elementary treatises on perspective drawing, but could not find the necessary information; I, therefore, take the liberty of seeking your advice on the subject. I should be glad to know what kind of drawing it is, and also if you can refer me to any work or other means whereby I could obtain a knowledge of its principles. It certainly is not tru perspective, neither is it isometrical drawing. *A.* [Our correspondent is evidently unacquainted with isometrical perspective, or else he would have seen at a glance that the representation of the garden and hothouses at Busbridge Hall, p. 1127, is a very excellent example of that mode of drawing, which is by no means so well understood or so generally adopted as it deserves to be. It was brought into notice about 40 years ago by Professor Farish, of Cambridge, and employed by Waistell in his "Designs for Agricultural Buildings," published in 1827, from which we subjoin the following extract:—"Isometrical perspective is a term given to a projection made in rays parallel to the diagonal of a cube upon a plane perpendicular thereto. This is a comprehensive and useful method of exhibiting the different parts of a homestead, and any person moderately acquainted with drawing, if they make the attempt, will find it extremely easy to perform; nothing more being required than to divide a circle into six equal parts, which may be done by the radius; and draw the hexagon and three radii, one radius to every other angle, to represent a cube.



All the vertical or plumb lines in any design are then to be drawn parallel to *a b*; all those in the direction, of north and south parallel to *a c*; and all those at right angles or perpendicular to the last, or in the direction east and west, parallel to *a d*; and the several heights, lengths and breadths, being taken from a scale of equal parts, and set-off, and lines drawn in these three directions, the projection is produced. The position of any point, or the direction of any other line, may be found, by finding where the first would fall upon any plane parallel to either of the three sides of the cube, and where the latter, if produced, would cross any line in the three directions." The above are the principles upon which this mode of drawing is based. As it is admirably adapted for representing plans of gardens so as to show their general effect, and enable one to form some idea of any alteration that may be contemplated, before entering on the work, we would strongly recommend it for the study of every young gardener.]

Grafted Firs.—After selling thousands of grafted Firs for many years past, Mr. Anthony Waterer pronounces them to be "abominations." (See p. 1174.) What can his numerous customers say to this admission? Ought they not to ask him to return the money they have paid him for them? It would seem to be only a matter of justice and fair dealing, and it is to be hoped that he will seriously think of this matter. If it will be too difficult a task for him and other nurserymen to search their books to ascertain from whom they have received the large sums they must have done and return them, it would be only just to make a liberal contribution to some charitable Society, say the Gardeners' Benevolent Institution—nothing could be more appropriate. The contributions might be entitled the "Grafted Fir Fund." Mr. A. Waterer would doubtless head the list with 2000*l*., and the smaller men with sums in proportion to their sale of "abominations." A step like this would I think satisfy the greater portion of those who have bought grafted Firs, quiet the consciences of the sellers so as to make them rest on their pillows in peace, and be a help in time of need to the Charity I have named, which could do so much good to decayed gardeners if the funds were more ample. I am quite aware that I deserve thanks for this hint, and that I should be overpowered with letters from nurserymen to that effect if I published my name. I promise, however, to attend the first meeting called in Surrey to take the matter into consideration, and to form a list of contributors. Till then, I am, *Stone Pine.*

Whale Refuse as Manure.—In Chambers's Journal for October 18 of this year, there is an interesting article upon the "Fisheries of the Pacific," in the course of which the writer describes how in the vicinity of certain islands, which are resorted to by the whale ships for the purpose of boiling down the blubber, the bottom of the sea is absolutely covered with perfect mounds of the discarded carcases and debris of whales. Surely this is hideous waste in these days when so much is said about the possible or probable exhaustion of the soil, and the necessity of discovering a new source o

manure. Ships go to South America to load with bones of cattle, &c., which they have to purchase. I cannot help thinking that it would be a profitable speculation if some vessels were to go out to load with these whale skeletons, that they could have for the mere trouble of raising. *A Hater of Waste.*

Societies.

Entomological: *Dec.* 1.—Frederick Smith, Esq. President, in the chair. Certain alterations in the bye laws of the Society, chiefly with reference to the annual elections of the Curator by the Society at large, were adopted. Mr. S. Stevens exhibited a beautiful series of Coleoptera and Lepidoptera collected at Salwatty, near New Guinea, by Mr. Wallace, containing many new and brilliant species. Mr. F. Moore exhibited specimens of a white saccharine matter collected in the north-west of Australia Felix on the leaves of Eucalypti, called Lerp by the natives, who gather it in considerable quantity. It is an exudation from the larvæ of a species of Psylla, and has been described in detail in the Transactions of the Royal Society of Van Diemen's Land. Mr. Hewitson sent some portions of the stem of a Laurel which had been bored through the length of 4 or 5 feet by some ligniverous larvæ, probably the caterpillar of Zeuzera. Mr. G. R. Waterhouse exhibited and read notes on four minute British species of Coleoptera. Mr. MacLachlan exhibited a species of Muscidæ which had been reared as a parasite by Mr. Parfitt, of Exeter, from the case of one of the Caddice Flies, Limnephilus marmoratus, and for which, being undescribed, the name of Hydrotachina Limnephili was proposed. Major F. Parry read the descriptions of a number of new exotic species of Lucanidæ, and made some severe comments on the Catalogue of that family recently published by Mr. Thomson in the 'Annales' of the French Entomological Society. Professor Westwood also made some observations on the same "Catalogue."

Botanical of Edinburgh: *Nov.* 13.—Prof. Balfour, V.P., in the chair. Various donations to the Museum of Economic Botany at the Royal Botanic Garden were announced. Dr. Balfour apologised for the absence of Mr. Archer, the President, who was engaged with museum matters in London. He then opened the 27th session of the Society by giving an account of its origin and progress, and by giving biographical sketches of the members recently deceased—among whom he noticed H.R.H. the Prince Consort, Professor Blume and Professor de Vriese of Leyden, Mr. Borrer, Dr. J. T. Mackay of Dublin, Professor Traill, Professor Blytt of Christiania, and Dr. Emile Dubuc. The following communications were read:—I. *Notice of Plants collected in the neighbourhood of Silloth, near Carlisle;* by Prof. Balfour.——II. *Letters from Mr. W. Bell, A.B.S. Ed., Saharunpore Botanic Garden;* communicated by Mr. J. Sadler. Mr. Sadler read extracts from two letters which had been received from Mr. Bell, regarding his voyage to India, and the country and vegetation around Saharunpore, N. W. P. He says—"This month (July) the rains have set in, and the weather is a little more cool than it was during the months of May and June. In May, from 90° to 95° in the shade was the general range of the thermometer, and sometimes for a few hours during the heat of the day it reached 100°. We have abundance of moisture, and vegetation goes on with a rapidity and luxuriance which, to a new comer, is quite astonishing. Agave americana and A. cantala are used extensively for making hedges, and when fully grown they form a most impervious fence. The latter species is used here for all the purposes for which bast matting is used at home. The leaves are beaten, and by that means the pulp is separated from the fibre, which, when so prepared, is both strong and white. For ordinary purposes the leaves are simply split up to the required thickness without any previous preparation. When in flower they present a very striking appearance, not so much from the showy character of their flowers as from the peculiar upturned nature of the branches. From the principal axis the primary branches are given off alternately; but the second, third, fourth, and other divisions of those primary branches are all given off in threes in a decussate manner. A large proportion of the plants that flower do not produce seed. In a short time after the flowers fall, each pedicel (in most cases) gives origin to one or sometimes two buds, which grow vigorously. Many of them likewise give off buds from their base. After a time those on the old flower-scape become plants, with leaves sometimes 10 inches in length, and they gradually diminish downwards until they are not so large as full-grown bulblets of Lilium bulbiferum. On one plant I have counted upwards of 4000 of these buds. Why it is that they so seldom bear fruit I cannot say. Both climate and soil appear to suit them well. When in flower I imagine that the anthers mostly discharge their pollen before the pistil is in a proper state for receiving it. I can hardly think, however, that that is the real cause of their not fruiting, for the flowers expand first on the lower branches, and although the stigmas were not ready to receive the pollen, yet the pollen falling from the upper branches might fertilise the flowers of the lower. Loranthus bicolor grows in great profusion here: many of the trees are completely covered with it, and it often kills them altogether. What appears to me most singular is, that it grows with greater vigour on trees having milky juice than on those that have not that characteristic. The following are some of the genera that I have observed it growing upon, which will give you some idea of the great diversity of circumstances under which it can live and thrive:—Ficus macrophylla, F. orbicularis, F. religiosa, Morus indica, and other species; Grewia nudiflora, Ehretia, Orange, different species of Salix, Nyctanthes, Nerium, Tectona, Cedrela, Acer, Flacourtia, Dalbergia, Acacia, different species; Vachellia, Cassia, Kydia, Cordia, Eugenia, Bauhinia, and on several other genera.——III. *Description of two new Species of Lichens from Ireland;* by Dr. Carrington.——IV. *On the Wild Ferns met with in the neighbourhood of Bridge of Earn, Perthshire;* by Mr. Sadler.——V. *Remarks on the Cultivation of Cotton and Tea in India;* by W. Jameson, Esq., Saharunpore; communicated by Prof. Balfour. In a letter to Prof. Balfour, dated July 30, 1862, Mr. Jameson says:—"Much attention is now being paid to Cotton cultivation in this country. I wish the British Cotton lords to send out agents. They might get it not only of good quality but in any quantity. By recent returns furnished to Government by the different district collectors in the North-West Provinces, it has been shown that there are 850,000 acres under cultivation with Cotton, yielding 857,000 cwt., half of which is consumed in the country, and the other half sent to Calcutta for exportation. In addition, large quantities are sent from the independent States of Gwalior, &c., also to Calcutta for exportation. But what is wanted in this country are agents to make advances, and purchase from the native cultivators their Cotton on the spot. By so doing, the Cotton cultivation in the North-West Provinces might easily be tripled. Tea-cultivation in the Kohistan of the North-West Provinces and Punjab has now become a great success, so much as to have induced me to recommend Government to part with their experimental Tea farms. One farm I sold a short time ago for 10,000*l.* The remainder will be put up in three lots, and for them I expect to realise about 60,000*l.* They will form an excellent nucleus for companies, of which there are now many already established. Dr. Cleghorn has been visiting some of my Tea plantations, and from him I dareay you have received accounts regarding their flourishing condition.——VI. *Letter from Dr. Anderson, Superintendent of the Botanic Garden, Calcutta, on the Introduction of Cinchona Plants into India.* Communicated by Prof. Balfour. Dr. Anderson, writing from Darjeeling of date 13th August, 1862, says:—"I am here superintending the introduction of Cinchona into the Sikkim Himalayas since the 1st of June, when I had 211 plants. The experiment has been so successful that on the 1st August the nursery contained 1611 plants and seedlings. I have seven species under cultivation. Among these are Cinchona succirubra, C. Calisaya, C. nitida, and C. micrantha. It promises to be a most successful experiment on these moist hills." In the same letter he says—"I have told my gardener to send you a small Wardian case containing plants of Wallich's gigantic Bamboo from Burmah. The largest plant in the Calcutta Botanic Garden flowered last year after 40 years' cultivation. The plant ought to grow well in your big Palm-house."——A note was read from Dr. Alex. J. Smith, in which he stated that Asplenium septentrionale had recently been collected by Mr. Halliday, of Moffat, on one of the Moffatdale hills called Whitecoom.——Nature-printed specimens of Alpine Hieracia from Mr. Baker were exhibited.

Notices of Books.

The Parlour Gardener: a Practical Treatise on the House Cultivation of Ornamental Plants. London: Sampson Low, Son & Co., 1863.

This is an admirable little work on the cultivation of ornamental plants in dwelling-houses, and bears evidence of being the production of one who is well acquainted with the subject. The directions that are given for the treatment of the various plants recommended as worthy of a place in the "parlour garden" are full and explicit, and if properly followed by the amateur, and those who have a desire to employ some of their leisure time in this sort of gardening, we think in most cases their labour will be attended with success. A more delightful recreation can scarcely be imagined than that of watering and watching the daily progress of the flowers we may have planted; and if this is a source of pleasure to persons in health, how much more interesting does it become to the invalid, who would gladly cultivate a few plants for amusement were it not for the popular fallacy which still prevails, that plants are injurious to health and unfit to be grown in a sick room. The folly of believing this erroneous idea is pointed out at page 5 of this book by an extract from Miss Nightingale's "Notes on Nursing;" and until the prejudice is entirely removed the fact cannot too often be repeated, that instead of plants vitiating the air they do a great deal of good by producing a large quantity of vital air, and destroying a large quantity of fixed air, and thus play a most important part in the economy of Nature by purifying and rendering wholesome the deleterious air breathed by animals. The principal objection against having plants in a sitting room can only apply to those which have strong scented flowers, such as the night smelling Stock, the Tuberose, the Narcissus, and even the deliciously fragrant Hyacinth, if a large number of them are crowded together in a small apartment. When all this is rightly understood, there is every probability that, with the increasing taste for flowers, parlour gardening will become a far more popular and fashionable amusement than it is at present. For the encouragement of beginners we are told: "There are now in England flowers for all seasons, for all tastes, for all temperatures, and by ordinary care and at small expense any one desirous of adding to the enjoyments of home, the tranquillity, vivacity, and brilliancy of a garden, has it in his power to do so." And we will only add that in the little book which is the subject of this notice he will find useful lists of the various sorts of bulbous and other plants that are most desirable to be grown, with excellent instructions for their management. Among succulents however we are surprised to see Stapelias included, as the flowers, although highly curious, are remarkable for their detestable odour, that renders them totally unfit for the parlour garden.

The designs and engravings with which the book is illustrated are stated to be taken from the Bulb Catalogue of Messrs. Barr and Sugden, and represent a Fern case, a pretty form of hanging basket, another basket for spring flowers, a stump vase for Hyacinths, and some elegant forms of glasses for cut flowers.

We conclude our remarks with the following extract respecting the buying of bulbs. "Buy early, choose sound, well-shaped bulbs, not vegetated too much; those of a middle-size are more to be depended on than the tempting large ones. Choose rather to buy of some respectable and well-known dealer, who has a reputation to lose, than to buy cheap. Cheap bulbs are too often dear. Unless you consider yourself to be a competent judge, never buy at an auction. Unfortunately, our neighbours the Dutch have found out we are apt to snatch at a bargain, and therefore consign their surplus stock (after selling at home the superior portion) to the auctioneer here, who generally succeeds in disposing of these inferior bulbs at the same price you might obtain the best from the seedsman."

Our readers, we trust, will not suppose that we endorse the latter portion of the above advice; on the contrary, we are disposed to consider it as the very reverse of the fact, and to say the statement is both unjust and ungenerous to the Dutch bulb growers, and unfair as it regards other parties.

The Miniature Fruit Garden; or, the Culture of Pyramidal and Bush Fruit Trees, with Instructions for Root Pruning, &c., &c. By Thomas Rivers. (Eleventh Edition.) Longman & Co. 1862.

The fact of this little work having reached the eleventh edition is of itself a convincing proof of the favour with which it has been received by the public. In the introduction we are told: "It is not designed for the gardens and gardeners of the wealthy and great, but for those who take a personal interest in fruit tree culture, and who look on their garden as a never-failing source of amusement." It may therefore without impropriety be called a book for the million, in which are given the details of a course of treatment to render fruitful the different kinds of fruit trees that are considered best adapted for cultivating in gardens of limited extent.

The author is well known as one of our first pomologists, and is also celebrated as an ardent and skilful cultivator of hardy fruit trees, especially of those which have been trained as pyramids or bushes, and root-pruned in the manner so fully described in his book. The practice of root-pruning is an old expedient for checking the luxuriance of fruit trees. It is mentioned by Switzer in his "Practical Fruit Gardener," published in 1724, but seems to have been overlooked by subsequent writers until 1811, when it was revived at Scone in Scotland on a somewhat extensive scale, the successful result of which will be found recorded in Vol. I. of the Memoirs of the Caledonian Horticultural Society. Notwithstanding this, it is to Mr. Rivers that we are indebted for exemplifying the beneficial effects of root pruning, and for the rules to guide us when and how it should be performed. The trees to which this mode of culture is applicable are the Pear, the Apple, the Cherry, the Plum, and occasionally to Peach and Apricot trees against a wall.

Mr. Rivers is a great advocate for the culture of pyramidal Pear trees, and certainly no one who has seen the beautiful specimens in the Jardin des Plantes at Paris, but will agree with him in opinion that they are admirably adapted for small gardens, and occupy much less room than standard or half standard unpruned trees. In the garden of the Royal Horticultural Society at Chiswick, there is a large collection of pyramid Pear trees, which will give some idea of this mode of training. The Quince stock is preferred for Pears intended to be grown as pyramids, and summer pinching the shoots is an important operation in their culture, for which figures and instructions are given to show how it should be carried out. On this point, therefore, we subjoin the following extract:—

"If pyramidal fruit trees, either of Pears, Apples, Plums, or Cherries are annually or biennially removed, or even thoroughly root pruned without actually

removing them, summer pinching becomes the most simple of all operations. The cultivator has only to look over his trees twice a week during June, July, and August (penknife in hand), and cut or pinch in every shoot on the lateral or side branches that has made four leaves or more, down to three full sized leaves. It is just possible that the three buds belonging to these three leaves will put forth three young shoots. As soon as they have made their four or five leaves, they must be shortened to two, and so on with every young shoot made during the summer, shortening the leading shoot, as before said, in August."

The directions for root pruning are deserving of great attention. To make trees fit for small gardens we are told they must be kept "perfectly under control; and this can best be done by annual, or at least biennial attention to their roots; for if a tree be suffered to grow three or more years, and then be root-pruned, it will receive a check if the spring be dry, and the crop of fruit for one season be jeopardised. Therefore, those who are disinclined to the annual operation, and prefer root-pruning once in two years, should only operate upon half of their trees in one season; they will thus have the remaining half in an unchecked bearing state."

This is the plan which we have seen carried out for years, and invariably found it to be followed with the happiest result.

Besides the pyramidal form of training the Pear, other modes are illustrated and described, but for all that relates to these we must refer the reader to the book itself. We will only remark in passing that, while orchard-houses can be so cheaply erected, very few, we think, will incur the expense of constructing such trellis as represented at page 31.

Apples on the Paradise Stock are grown as pyramids, and said to be "objects of great beauty and utility." Grafted on the Doucin stock, Apples are more vigorous than on the Paradise, and less so than when grafted on the Crab. Root pruning and "pinching the shoots of pyramidal Apple trees, and indeed exactly the same method of managing the trees as given for pyramidal Pears on the Quince stock, may be followed with a certainty of success."

Although the larger portion of the book is devoted to the Apple and Pear, yet it contains some excellent directions for the treatment of the Plum and the Cherry, which may both be grown as pyramids or bushes, and rendered productive by means of biennial root pruning. With respect to the Plum, we are told "no stock has yet been found to cramp the energies of this fruit tree, but it is easily dwarfed and kept in order when grafted on the Plum stock by biennial removal."

For Cherries, Mr. Rivers prefers the Cerasus Mahaleb, or perfumed Cherry, as the best stock. "Its great recommendation is that Cherries grafted on it will flourish in soils unfavourable to them on the Cherry stock." "The most charming of all pyramids are the varieties of the Duke and Morello Cherries on the Mahaleb. These, by summer pinching, as practised for pyramidal Pears, become in two or three years most delightful fruit trees; in spring they are perfect nosegays of flowers, and in summer clusters of fruit."

Should another edition of this little work be called for, the puzzling reference at page 82, in allusion to the trees at Quendon Hall, will require correction. It ought to be page 48 instead of 45. We think the index might also be improved with advantage. The Plum is altogether omitted. Upon the whole, however, we cordially recommend the book to every one who has a garden, and takes an interest in the culture and management of fruit trees.

The Book of Garden Management: Comprising Information on Laying-out and Planting Gardens—Fruit, Flower, and Kitchen Garden Management, &c. Illustrated by many wood engravings. S. O. Beeton, London. 8vo. Pp. 760.

The author of this very useful addition to our garden literature modestly states in his preface, that for the larger portion of the work, "he claims no more merit than belongs to a fairly balanced compilation, drawn from widely spread but sound sources of information." For the excellent manner in which he has performed his task, we think he deserves great praise, and we feel sure it will be accorded to him by every one who has a garden, and resorts to a book for directions how to manage it. It is in fact a sort of encyclopedia containing a mass of scientific and useful information on all subjects connected with gardening, such as the natural formation and mechanical preparation of soils—the laying out, planting, and management of gardens, the erection of garden structures, the formation of fountains, fish ponds, and ornamental waters, the construction and management of orchard houses, with a monthly calendar in which full directions are given for the propagation and treatment of the most esteemed sorts of fruits, flowers, and vegetables that are now cultivated, together with instructions for performing at the proper season the various operations that are required in the garden throughout the year.

The work commences with a short historical sketch of gardening from a very early period to the present time. From this we glean, that among the Romans, according to Pliny, the garden was said to constitute the poor man's field. In those days (A.D. 80), women were the chief cultivators of the kitchen garden, and its appearance was the test of a good or careless housewife. All historians agree that for the first rudiments of the art of gardening we are indebted to the Romans, who introduced the Vine and various other fruits, and there are indications that Vineyards planted in the third century under the Emperor Probus (not Proteus, as stated by our author) existed in the eighth century. For a long period after the Romans withdrew from this country, gardening appears to have been almost neglected; but in the reign of Henry VII. the art was fresh introduced from the Netherlands, and in the succeeding reign of Henry VIII., the royal gardens of Nonsuch were laid out for this monarch with the greatest magnificence. During Elizabeth's reign mazes and labyrinths were introduced, with their accompaniments of "images cut out of Juniper and other garden stuff," which a few generations later were sacrificed in accordance with the taste for improvement which then prevailed. A great impulse was given to gardening in the reign of Charles II. Hampton Court, Chatsworth, and some of the finest gardens in England were laid out, and garden structures began to be erected. Clipped Yew trees, and other Dutch tendencies, became the rage in the reign of William and Mary, "terraced walks, hedges of evergreens, shorn shrubs in boxes, Orange and Myrtle trees in tubs, being the chief excellences." As the taste for gardening improved, the stiff formality of the French and Dutch styles became the subject of ridicule and led in the early part of the 18th century to the formation of a new school of art, which in course of time came to be recognized as the English style. Unfortunately the opponents of the old style rushed to the opposite extreme—fine old gardens were recklessly pulled to pieces; and, in the words of Sir Walter Scott, "down went many a trophy of old magnificence,—courtyard, ornamental enclosure, fosse, avenue, barbican, and every extensive monument of battled wall and flanking tower." The writings of Sir Uvedale Price, in 1794, led to a consideration of the principles on which the new style was based. Although he went a certain length with the prevailing mania, the moment he discovered his error he wrote strongly in favour of preserving the remains of ancient magnificence. It was this writer who first pointed out the three-fold division of the domain, and the peculiar style by which each should be distinguished. "For the architectural terrace and flower garden in the direction of the house, he admits the formal style; for the shrubbery or pleasure ground, a transition between flowers and trees, he hands over to the improver; and for the park, which belongs to the picturesque, he gives full scope to the most picturesque disposition provided it is not frittered away by trifling details." It is by keeping these three essential points in view that our great landscape gardeners of the present day have been able to produce the harmonious and beautiful effects that charm the artist, and excite the admiration of all who are capable of appreciating them.

While the higher order of gardening was settling down, the popular taste for flowers continued to progress, and gradually led to the formation of floral and horticultural societies in every district throughout the kingdom. By their means new varieties of fruit and vegetables have been brought into cultivation and disseminated, until even the garden of the cottager has now become one of our national distinctions, and gardening pursuits the favourite employment of the cottager; so that it may truly be said, horticulture has received more encouragement, and been cultivated with greater success, during the last 30 years, than at any former period.

The history of the formation of soils is chiefly compiled from the works of Sir Charles Lyell and other celebrated geologists. It is well drawn up, and possesses much interest. After noticing the framework of the globe we inhabit, we are furnished with a description of the several groups of rocks comprised in what has been denominated by geologists the secondary formation. "These rocks are distinguished by their colour, and by their structure, but above all by their fossiliferous remains; by means of which the naturalist has been able to trace the history of creation through a lapse of ages." Then follows a brief sketch of the geological condition of the British isles at the beginning of the tertiary formation, respecting which it is remarked:—

"The tertiary formation, which forms another great chapter in the history of creation, is the flesh which covers the bony skeleton, and belongs more properly to our subject, namely, the formation of soils. The lower strata compressed by pressure into solid rock; the upper portions, the loose soil thrown on the surface, consist of loosely arranged beds of marine and freshwater origin, having none of the grand characteristics which distinguish all the previous formations; but in their place we have the softened horizon, the rich plains, and smiling hills of a more civilising landscape. To the earlier geologists the tertiary formation was a mere chaos of superficial deposits, which seemed to have no connection with any distant epoch; but the researches of Sir Charles Lyell and the recent geologists have caused light to shine on this darkness. Before them, to borrow Addison's beautiful allegory, geology was a bridge, spanning the waters of eternity—of which a thick cloud covered the first and last arch. In our day the cloud is torn asunder, and the great secret of ancient nature revealed by the study of shells—medals struck as records of the temperature of the globe. Sir Charles Lyell has deciphered this chapter of an obscure history, dividing it into 1, Lower Tertiaries, or Eocene; 2, The Middle Tertiaries, or Miocene; and 3, Recent Tertiaries, or Pliocene; each distinguished by its [illegible] deposits."

The chemical constitution of soils, and the [illegible] analysing them, are minutely detailed; after which it is observed—"Soils are due to the disintegration of the solid rock which has been going on for thousands of years; in the course of which time the country has thus been covered by a coating of disintegrated rock, varying in depth and in character with the [illegible] nature of the neighbourhood. Sandstone has produced a light, porous, sandy soil; slaty shale has yielded a stiff, cold, impervious clay; from the crumbling limestone a calcareous soil has been formed; and the rock of the primitive formation has yielded a fertile and generally reddish loam. Basalt rock, which prevails over great part of Scotland and the [illegible] Ireland, and here and there in England, gives a [illegible] fertile soil, also of a reddish grey; while the soils [illegible] on the chalk formation generally partake of a loose, friable character, congenial to many of the [illegible] useful forms of vegetation. While useful to the gardener, an intimate knowledge of the character of these soils is essential to the farmer. To a [illegible] extent the gardener, operating on a limited scale, [illegible] prepare his soils, and ameliorate their nature by [illegible] thumb admixture, and by the use of humus or vegetable mould, which performs the most important part in the direct food for the nutrition of plants."

The remarks on the proper site for a garden, [illegible] various points which ought to be well considered [illegible] selection, will be read with advantage by those [illegible] may contemplate the improvement of an old garden [illegible] the formation of a new one. On this subject it is [illegible] observed—"Men rarely build a house or form a garden more than once in a lifetime, and an unfavourable choice will not only cause disappointment but [illegible] petty misery." Although it is therefore very [illegible] to give special directions that shall be applicable [illegible] cases, still there are several characteristics by which a desirable site should be distinguished. Of these [illegible] most important are soil, situation, exposure, [illegible] convenience, and a plentiful supply of water. [illegible] the places to be avoided are those "of too great elevation, and low marshy valleys; the first [illegible] much exposed for either fruit, vegetables, or flowers to grow and ripen; in the other the damp fogs common to such localities render the fruit vapid [illegible] flavourless."

Under the head of Mechanical Preparation of Soils we are made acquainted with the value of draining and the principles on which it should be performed. Drainage has a powerful influence in improving the texture of soils, and by removing the superfluous water it improves the general climate of a whole district. [illegible] is also of great benefit to soils, by allowing the [illegible] which falls to pass more freely through them for the nourishment of plants. "Solid manures of the richest quality are comparatively useless on wet land; [illegible] while a certain amount of moisture is essential to the decomposition of manures, an excess arrests the [illegible] and all the most soluble portions are washed out before it is sufficiently decomposed to enter into the composition of plants. Judicious draining, therefore, [illegible] the soil in its proper hygrometrical condition for performing its important functions."

Sketches are given of the different modes of constructing drains, and an outline of a large area to show the manner in which it should be drained, but the latter, we think, is on too small a scale to be intelligible to those unacquainted with the subject.

In this part of the work a statement is given, which we consider to be erroneous, of the average fall of rain round London during certain months in the year, [illegible] which the total amount is made to be as much as 26.75 inches—while it is generally believed not to exceed 24 inches per annum. The average of 40 years, as given by Loudon on the authority of Dalton, is [illegible] 20.68 inches, but the result of observations made at the Chiswick garden for a period of 21 years to the close of 1861, makes the annual average depth of rain in the climate of London to be 22.50 inches.

Besides drainage, other modes of operating on soils for the purpose of improving their texture are noticed, and directions given for executing them.

In a short dissertation "on gardening and gardens' styles," it is justly observed that "contiguity to the mansion will have much influence upon the character of the garden. Certain styles of architecture require corresponding styles of gardening as their proper accompaniments. An imposing and highly finished façade seems to demand formal terraces and geometric gardens. Hence we have Gothic, Italian, French, and Dutch styles of gardening, which are all branches of the formal or geometric style—by far the most neat and effective for a flower-garden." The remarks on this subject will be found interesting, as well as those on the arrangement of the glass structures, which in all cases should be so placed as to combine ornament and utility with convenience. An attempt is made to embody the principles laid down for our guidance by a design for a range of gardens and pleasure-grounds, but it is in our opinion a failure, and shows that the

author is more at home with the pen than he is with the pencil.

As an example of the laying out of a garden we are furnished with a plan, on a small scale, of the new garden of the Royal Horticultural Society at South Kensington, which is very fully described, and several views given of the arcades that surround it and the steps leading to the upper terrace. The general effect of the whole, it is observed, "cannot fail to exercise a beneficial influence on the art of laying out ornamental flower gardens." At page 63 the reference to the plan is wrong, instead of page 81 it should be page 57.

Fences, walls, and expedients for shelter are fully considered, and ample details given respecting the construction of all that are usually erected, whether for separating the park from the garden, or for inclosing the garden itself. We have also instructions for the formation of fountains and fish ponds, and for operating with water in various ways where it can be made ornamental or useful in a garden.

On the principles of vegetation and modes of propagation we have numerous interesting particulars, accompanied with sketches illustrative of the germinating of the seed, the manner in which plants are increased by layers, and by different methods of grafting and budding. These processes are of the greatest importance, and a general knowledge of their principles indispensable to an acquaintance with the art of gardening.

In a short chapter on the pests of the garden we have remarks on some of the more common insects with which our Roses, Pear trees, Gooseberry bushes, and plants in general are liable to be infested during the spring and summer, and various recipes are given for the purpose of entrapping or destroying them.

After all the points relating to the choice of a garden and its requirements have been noticed and explained, we come to the practical part of gardening, respecting which the fullest details will be found in the monthly calendar which occupies the larger portion of the work, and is so arranged as to embrace the following, viz. 1. The aspects and general character of the month; 2. The flower garden and shrubbery; 3. The mixed kitchen and flower garden; 4. The kitchen garden; 5. The fruit garden; 6. The culture of flowers under glass; 7. Fruit culture under glass; 8. Hotbed and frame cultivation; 9. Window gardening; 10. Cottage gardens and allotments. Under each of those heads directions are given for the proper management of the various fruits, flowers, and vegetables that belong to them, with select lists of all the most popular and esteemed sorts of each that are now in cultivation. This is the part of the work that will be most frequently consulted by those who require instruction on gardening matters, and here we promise them a rich store of entertaining information. The lover of hardy fruits, by means of the brief descriptions appended to the lists of each, will be able to make a selection of some of the finest kinds of Pears, Plums, Apples, and Cherries, &c. Those who are interested in the culture of the Vine or the Pine Apple and other exotic fruits, will in like manner obtain all particulars respecting them by consulting the pages to which they are referred in the index, which is very perfect, and has evidently been prepared with great care. The lists of shrubs and herbaceous plants suitable for the flower garden and shrubbery are very select, as are also the lists of Roses, Pinks, Carnations, and numerous other kinds of flowers that are especial favourites of the florist, and for all of which excellent directions are given for their treatment and culture. The kitchen garden and its products likewise come in for their share of attention, and the most approved methods of cultivating the different sorts of vegetables are fully described. Besides all this, we are furnished at the end of each month with a separate article on some particular subject appertaining to gardening. The first, on "Planting, Pruning, and Training Fruit Trees," possesses great interest, and is illustrated with several clever sketches to show the mode of pruning and training the Pear so as to form pyramids, as recommended by Mr. Rivers.

The second, on "Glazed Horticultural Buildings," contains a deal of information relative to the construction of the stove, greenhouse, and conservatory, and the best means of heating and ventilating them. Sketches are given of the patented system of hot-houses invented by Sir Joseph Paxton, and the various purposes to which they may be applied are also fully described. The simplicity of their structure, and the ease and rapidity with which they can be put up, will always recommend them, as "they require no masonry or brickwork beyond the piers necessary to support the wall-plate, which is so contrived as to form at once the gutter and groove in which the sashes rest."

Orchard-houses, which were first introduced by Mr. Rivers, and now form a distinctive feature in modern gardening, are also made the subject of a separate article, for which the excellent little work of Mr. Rivers has been laid under heavy contribution. The gardener, as well as the amateur, will find the directions for managing the trees in an orchard-house well deserving their attention.

On "old gardens and their renewal" there are some pleasing remarks. We are told, "there is something of reverence in the very idea of an 'old garden.' To the imaginative it suggests recollections of old baronial fortalices of the York and Lancaster wars, whose walls and battlements were levelled under the firmer policy and more peaceful times of the Tudors. * * * There is another recollection of an "old garden" which haunts many way-worn travellers on the path of life—the garden of early youth and childhood, where they were permitted to taste the first Peach of the season, or to partake of the earliest and sweetest of Gooseberries and Strawberries, or feast on the earliest of mellow Pears. Memory carries one back to such days, and to a grim Cerberus of a gardener, who kept the keys of such a garden inclosed in walls too lofty to be scaled. But then the sweetness of those Pears, and Gooseberries, and Strawberries, when by good luck or favour they were obtained—no fruits of these days have a flavour like them. And what a glow of colour did that broad flower-border present in the glorious summer sun; for even the sun has lost the brilliancy it had while the century was yet in its teens."

To those who contemplate the renovation of their "old garden" we recommend for their perusal the directions that are given here for repairing the old walls, reviving the exhausted wall trees, renewing the turf and lawns, and for replanting the shrubbery with some of the trees and shrubs selected from the choice list that has been prepared of such kinds as are well adapted for the purpose.

We think enough has been said to show the nature of this excellent work, and the high opinion we entertain of it. We cannot, however, conclude without also directing attention to the following articles, in which a great deal of interesting information will be found, viz, on the Gathering and Storing of Fruit—on Bees and Bee-keeping—on Roses and the Rose-garden, with lists of the finest varieties and directions for their treatment—and though last, not the least important, is the one on Grouping and Harmonising the Colours in furnishing Flower-beds. On this subject it is observed—"To have a well-formed and nicely-filled garden is not enough—it must also be nicely arranged. Nay, the latter is even of much more importance than the former. It is of the first importance that the outline of the beds, and their relation to each other, should be good; but it is of much greater importance that the colours with which they are filled should either harmonise or contrast with each other. * * Colours are separated into cool and warm colours. The former should prevail in gardens laid out on gravel, which is itself generally a warm colour; the latter in those laid out on Grass, which is invariably a cold colour. For instance, in gardens on gravel, grey, lilac, yellow, white, blue, green, &c., should predominate; in those on Grass, purple, pink, scarlet, and orange, should prevail. White, however, is equally suitable for gardens of both descriptions; and unless where the gravel is very light, is always striking and effective; and nothing can be more chaste or beautiful than beds, broad margins, or lines of white contiguous to Grass—it is equally striking in juxta-position to bright red gravel. As a practical rule, the most intense colours should be placed in the centre of beds, and the less decided tints used for contrasting rings, or edgings. Generally, too, the smaller the beds, the more liberally may the intense colours, as scarlet, be introduced, and *vice versa*."

We recommend the preceding remarks to the consideration of those gardeners who may now be arranging in their mind's eye how they shall fill their flower beds next summer; and will merely add that not only on this subject, but on almost every other relating to gardening, much useful information will be found by all who may choose to consult this book. It is upon the whole very correctly printed, and is furnished with a capital index.

Flora Capensis: being a systematic description of the Plants of the Cape Colony, Caffraria, and Port Natal. By W. H. Harvey & O. W. Sonder. Vol. 2. 8vo. (Leguminosæ to Loranthaceæ.) Hodges & Co., Dublin.

We regret to say that this most important work has laid for some time upon our table without notice. If possible it is even more interesting than the first, a supplement to which, consisting of many species previously unobserved, it also includes. Leguminous plants, which form so very large a proportion of the whole South African Flora, fall into no fewer than 82 genera, occupying 284 pages, and have been the special subject of Dr. Harvey's study. Of the strange Rosaceous genus Cliffortia, we have from him 59 species, some of which are new; and it is also by the same skilful hand that the beautiful succulent Crassulaceæ have been worked up, once the glory of dry stove gardeners, though now most undeservedly neglected and forgotten. There is by Dr. Sonder a very complete account of the Mesembryanths, consisting of 293 species arranged in 65 sections. Since the author has here had the advantage of consulting the MSS. of the late Prince of Salm Dyck, the limits of the sections may probably be now accepted as fixed in science. These are followed by Cucurbits, also put together by Sonder, who seems, like every body else, to have no information concerning the curious and uncultivable Narras of Capt. Alexander, *a spiny shrub like a Furze bush* (!), which we have seen growing, and which appears, notwithstanding its habit, to be a genuine Cucurbit, if its seeds can be believed. We observe with great satisfaction that contributions from the little known Damaraland are arriving from Miss Elliott; perhaps the Narras may grow as far north, in which case we commend it to the especial attention of this estimable lady. The third volume, which is understood to be in a state of forwardness, will we suppose contain the difficult race of Cape bulbs.

Under the name of the *Shilling Entertaining Library*, Messrs. Longmans are bringing out a set of readable books for children, the two first of which are *Robinson Crusoe* and *Gulliver's Travels*, very neatly got up with illustrations, and forming charming children's books, some necessary omissions and alterations having been made in the original text. Mr. Laurie, the Editor, undertakes moreover to simplify difficult sentences, and to exchange hard words for easy ones. We fail to perceive how this good intention is or can be fulfilled in a third volume called Christmas Tales, which contains such ballads as Gilderoy, or King Edward and the Tanner of Tamworth, and others which surely are incurably unintelligible to children left to themselves.

Air and Water, their Impurities and Purification (Davies), is a pamphlet on an important subject, by Mr. H. B. Condy, who tells us that as "his products have been almost entirely passed over by the Press in their notices of the Classes of Industry represented at South Kensington," this explanation has become necessary, especially since he prefers to the not very attractive names of "Manganates and Permanganates," those of "Condy's Patent Disinfecting Fluid," "Ozonized Water," &c.

The forty-sixth or December Number of *Routledge's Illustrated Natural History* is occupied by some miscellaneous Crustaceans and by Spiders, the account of which is by far the best we have seen in a readable form.

St. Winifreds, or the World of School (Black) is another of the volumes which the success of Tom Brown's School Days has produced. In style and arrangement it more resembles Farrer's Eric, and, like it, is a description of the doings in a public school called St. Winifreds. It will doubtless be acceptable to school boys at this Christmas time, and it will do them good to read it in spite of the Greek quotations which we in the south think very like the pedantry of a pedant.

A second edition of *Thomson on the Grape Vine* (noticed at p. 715) has appeared, with some additions, and a new chapter on the open-air cultivation of the Vine.

Gray's Handbook of Postage Stamps (see p. 1199).—We find the following in the *Athenæum*. Hampstead, December 17, 1862.—"In the last number of the *Athenæum* you give an extract from 'A Hand Catalogue of Postage Stamps,' by Dr. Gray, of the British Museum, which nearly concerns me. I have procured the book itself, and I find that the statements therein, though not very clear, appear to amount substantially to this, viz., that the conception of the scheme of Penny Postage, so far at least as its main features of a small and uniform rate of postage to be prepaid by stamps are concerned, originated with Dr. Gray, and that owing to his being occupied at the Museum, while, for reasons which he assigns, I had plenty of leisure, he communicated the plan to me, in order that I might bring it before the public. If this strange story is not intended for a joke, it amounts to one of the most extraordinary hallucinations on record. But however this may be, most assuredly the statement has not the slightest foundation in fact. A few weeks ago my attention was accidentally drawn to a similar story in a communication from Dr. Gray in a periodical called *Young England*; but as the communication in question had then been published several months without attracting attention, and as I have little time and still less inclination for controversy, I let the statement pass unnoticed. Its re-appearance, however, in a journal so widely circulated as the *Athenæum* is a circumstance which leaves me no alternative but to contradict it." *Rowland Hill.* [In our notice of this trifle we did not advert to the passage of which Sir Rowland Hill complains, because we did not believe the statement.]

Garden Memoranda.

Royal Gardens at Nymphenbourg.—The Royal Palace of Nymphenbourg was built at the latter end of the 17th century. It is situated about three miles west of Munich, and the approach to it consists of a good road, well shaded by an avenue of Lime trees. The site is almost flat, and for many miles round consists of one vast plain, bounded on the east by the Tyrolese mountains. Towards the city the Palace presents a semicircular façade, broken at intervals by a number of small pavilions. A straight canal is carried along the front of this semicircle, and the water, which is beautifully clear, is made to fall in an interesting manner over a series of steps. A broad walk is led through the centre to the Palace and round the outsides next the façade, and numbers of walks of minor importance radiate from the centre one to the different parts of the Palace. The intervening portion is filled up with Grass.

The garden is entered under a large arch in the

centre of the Palace, and although flat it has many attractive features about it; numbers of fine trees line the sides and bottom, leaving in the middle a vista which looks into the open country; from the Palace through the centre is a broad walk, which terminates in a large piece of ornamental water some 700 yards distant. On either side of the walk are borders of mixed shrubs; in front of these are flower borders well filled with summer blooming and decorative plants. Statuary, which is introduced here and there, greatly improves the general effect. The walk is continued round the lake, and has an ornamental border of shrubs and flowers on the outer side. A jet in the centre is said to throw water 85 feet high. The supply is brought from the lake of Staremberg, and the jet is worked by means of a hydraulic machine.

These Gardens are open to the public, and are much frequented during the summer months.

The Plant Houses are placed on the north side; they are extensive but in bad condition, and all of them have plaster roofs. They are arranged in a straight line, and consist of three divisions, each about 150 feet in length, each compartment having a garden in front, surrounded on three sides with high hedges of Siberian Arbor-vitæ, Hornbeam, &c.; under the protection of these hedges plants from the houses are arranged in summer. In addition to the hedges, which are not less than 20 feet high, framework and canvas are also used in sunny situations for shading the plants. In the centre of these gardens are small basins and fountains for supplying water to the plants, and they are also ornamented by borders of Cannas, Castor-oil plants, Marvel of Peru, and similar things.

The first range of houses consists of two greenhouses and one stove. The greenhouse plants are large and evidently very old; there is a quantity of Heaths and Azaleas, and a goodly number of common evergreens. In the stove is a large collections of ordinary plants, which are mostly plunged in a bark bed. The floors of these houses are kept very clean, and are paved with square red tiles. The heating is effected by means of large iron stoves placed at the back of the houses, and fed with fuel from the outside. Air is admitted through the front lights, which open like French casements. In the second range is one Camellia house and two stoves. The Camellias are in tolerable health, and amongst them are some large specimens. In potting these one crock only is placed at the bottom of the pot for drainage, and this is covered with a little white sand. In the stoves are many species of Palms of different sizes, some of which must be 15 or 16 feet high, and a number of large stove plants, all looking green and healthy; but no attempt is made to grow handsome specimens, for which the houses are ill-constructed.

In the third range is a large stove with bark bed, and in addition to the iron stoves used for heating, a flue is carried along the back and brought back again to the centre in the form of a compressed angle. In this house is a number of large plants of Pandanus, Palms, Cycads, Ficus, Pothos, Pipers, &c., and all looking healthy and green, but they bend towards the light. The walls and roofs are kept whitewashed so as to give as much light as possible.

The next and last house is devoted to Australian plants, and contains a large collection, and many fine specimens of such plants as Acacias, Leptospermums, Eucalypti, &c. At the back of the house are numbers of cold pits, some made of wood and others of turf for wintering half-hardy plants in. The accommodation thus afforded is large, but everything is in bad repair.

The Royal Deer Park is a small enclosure close to the Palace. It is well stocked with deer, which are so tame as to take food from the hands of the visitors. They are very numerous and appear to be well cared for. The park is well furnished with trees, which principally consist of Oak, Chesnut, and Scotch Fir, but no fine specimens such as are seen in English parks are to be met with among them.

The Botanic Garden of Munich is situated near the Royal Palace in the Elisen Strasse. It is small and is now undergoing complete revision. A fine Conservatory of glass and iron is in course of construction in it. This house is constructed and heated upon modern principles, and is much in advance of anything else to be seen in South Germany. It is a square with two wings; the square portion forming the centre is built of double glass up to the spring of the arched roof. A gallery is carried around the interior full 20 feet from the floor; the house is filled with fine specimens of Palms and other stove plants, which look remarkably well. The two wings are also well stocked with plants of a mere botanical character. The houses which are disappearing represent the old style of German hothouses. The garden, as has already been stated, is also undergoing a thorough alteration, and from the appearance of the portion still untouched, not before it needed it.

The Park, or English Garden, as it is called in Munich, is near the Hofgarten; it is 3 or 4 miles long by ½ mile broad. This is laid out in numerous walks and borders, and contains many places for refreshments and pleasure. Several branches of the Iser run through it, forming a large lake at its extremity. It contains walks for carriages as well as for pedestrians, and is in fact the peoples' park, and forms at all times their favourite resort. *E.*

Miscellaneous.

An Indian Febrifuge.—The Société d'Acclimatation has just received a letter from India, accompanied with a box containing a quantity of seeds of the Cæsalpinia Bonducella, a plant which, according to Mr. Hayes, the writer of the letter, is much used there as a specific for intermittent fevers. The Bengalee for this plant is Natha; it is a small creeper, producing a nut, the kernel of which is exceedingly bitter, and possesses the quality of Jesuits' bark in an eminent degree, with this exception, that it is aperient rather than the contrary, a valuable property in a tropical climate where the bilious system is so generally affected. One of these seeds reduced to a paste, with three or four Peppercorns, and taken three, four, or five times a day with the adjunction of Cherettah Tea (Gentiana cherayita), is generally found so infallible in its effects that many European physicians in India have adopted it, and will probably in a few years, abandon bark entirely. Cherettah is a kind of Gentian which grows on the mountains skirting the course of the Ganges, and may be got at all the bazaars of Bengal; it is a stronger febrifuge than the Gentiana lutea of Europe. Native physicians employ Natha also as a powerful tonic; they administer it in powder mixed with spices and castor oil; externally the seed is applied in cases of hydrocele. At Amboyna it is administered as a vermifuge; the roots are used as a tonic in dyspepsia. In Cochin China the plant is considered deobstruent, and the oil extracted from the leaves is found useful in paralysis. In Egypt the women make necklaces and amulets with the seeds. The latter are often carried to great distances by the sea, as, for instance, to the coast of Scotland, where they are known as Molucca Beans. It is singular that the remarkable virtues of this plant should have remained so long unnoticed, offering as it does a cheap and powerful substitute for Jesuit's bark, which, as every one knows, commands a high price. As this plant thrives in Egypt, Mr. Hayes thinks that it must prosper in Algeria, and even in the south of France. *Times.* [This is the common Nicker seed, the Guilandina Bonduc of Linnæus, the properties of which have been known for a century and more.]

Calendar of Operations.

(*For the ensuing week.*)

PLANT DEPARTMENT.

CONSERVATORY, &c.—Where early Camellias are in bloom, take care to keep as low a temperature as possible, in order to prolong their season. All drip must also be avoided. Early Hyacinths will also soon be in flower, and, with care, a succession of them may be kept up till spring. For late flowering, the bulbs, if not already planted, should now be put in. The best pots are 5-inch (forty-eights) for one bulb, and 6 or 7-inch (thirty-twos and twenty-fours) for three bulbs; and, where fine display is sought for, three roots grown together, in one pot, secure that object much better than single bulbs. For potting, the soil should be as rich as possible; such as one-half fresh loam, cut from a pasture, with the turf decayed in it, and well-decomposed cow or horse manure, and a small quantity of clean sand well intermixed. If, however, this kind of compost cannot be obtained, then the lightest and richest at command must be employed instead. Drain efficiently, and, after filling the pots lightly with the soil, place the bulbs upon the surface, slightly pressing them into the soil. After watering liberally, set the pots thus planted out of doors, on a dry bottom, and cover them with about a foot of old tan, ashes, saw-dust, leaf-soil, Cocoa-nut refuse, or any other light material. After remaining thus for a month, the bulbs will be sufficiently rooted to render it safe to remove them to a gentle bottom heat of about 55°, introducing the pots in numbers proportionate to the demand, at intervals of about a fortnight; in this manner, a succession of flowers will be secured, until those in the open air come into bloom. In forcing, endeavour to prevent the roots from penetrating the fermenting material.

FORCING DEPARTMENT.

EARLY VINERY.—Where the buds are beginning to swell, or are starting a little, increase of temperature must be allowed—say 60° by day and 55° by night. Take care that plenty of atmospheric moisture is maintained by syringing or otherwise. Do not, however, keep them constantly wet. Allow the stems to become comparatively dry at intervals. The oftener the fermenting materials are turned the better. Let newly introduced Vines be bent down where practicable, to equalise the sap. As soon as the Grapes are all cut in late Vineries, let the Vines be pruned immediately. Whether taken out to rest or not depends, of course, on other arrangements. If they are taken out, be sure to cover them well with old mats and litter.

PEACH-HOUSE.—Increase the heat gradually here also. If in blossom, withhold water in every shape and be moderate in the increase of heat in proportion to the absence of atmospheric moisture. Give air at every opportunity, leaving a circulation day and night, if possible.

FLOWER GARDEN AND SHRUBBERIES.

In most gardens leaves can be collected, and when properly managed they form perhaps the most useful source of bottom heat with which we are acquainted, except, of course, hot water. If not already done, all the leaves necessary for carrying on the business of the ensuing year should therefore be collected as early as possible, and laid close together to heat. After fermenting for three weeks or a month, they will be in excellent order for use; in this state they will both heat with more certainty and tread more closely. In order to be ready to make up propagating beds of all kinds, or to form linings, it is necessary to have a mixture at hand, composed of hot dung and leaves. In the course of next month, therefore, a quantity of hot dung should be drawn from the stable yard to the leaf yard, and immediately thrown together, and well watered, in order to dispel the fiery heat. When fermented thus for a week or so, it may be mixed with leaves. About four parts of the leaves to one of hot-manure will make an enduring mixture. This provided, a good frame or pit can be made up at any time; for if the dung has had one heating previous to its mixture with the leaves, little danger need be apprehended from impure vapours, provided the most ordinary precautions are observed. As regards other matters, take the first opportunity of carefully looking over Carnation layers that are in frames; it is possible that dirt may have settled in the axils of the leaves, as this retains moisture in a very inconvenient degree, it is highly necessary for the health of the plants that it should be removed.

HARDY FRUIT AND KITCHEN GARDEN.

Proceed with pruning and nailing. Should the weather set in frosty, wheel out manure to all vacant plots of ground, where heaps may be made, and covered with soil till wanted. In many cases, however, it may be trenched in at once, especially where Carrots, Parsnips, Beet, or Onions are to be grown. All these require to have the soil turned up some months previous to sowing time. Great attention must be paid to Cauliflowers in frames, and under handlights; stir the surface round them in mild weather, and give frequent dressings of dry soot, lime, and ashes, taking care also to give air whenever practicable. Continue to store up any of the late tied Endive and Lettuces, and see that those formerly stored have as free a circulation of air as the weather will permit. All late Cabbages and Winter Greens should be earthed up if not already done, and if dry leaves are plentiful they may be laid very thickly between rows of choice Broccoli, and confined there by sticking Birch boughs round the outside of the beds. Snow's Winter Broccoli, which comes in at this season, if the weather is mild, should be taken up and protected whenever the heads are large enough for use. Sow small salading under cover, and protect Turnip Radishes in frames.

STATE OF THE WEATHER AT CHISWICK, NEAR LONDON.
For the Week ending Dec. 24, 1862, as observed at the Horticultural Gardens.

Dec.	Moon's Age.	Barometer. Max.	Barometer. Min	Temperature. Of the Air. Max.	Of the Air. Min.	Of the Air. Mean	Of the Earth 1 foot deep.	Of the Earth 2 feet deep	Wind.
Thurs. 18	27	30.286	29.853	52	41	46.5	45	44	S.W.
Friday 19	28	29.721	29.692	48	36	42.0	46	44½	W.
Satur 20	29	29.578	29.477	43	34	38.5	45½	44½	W.
Sunday 21	●	29.928	29.804	42	33	37.5	44½	44½	N.W.
Mon. 22	1	30.100	29.928	41	34	37.5	44	44	N.
Tues. 23	2	30.083	29.988	47	36	41.5	44	44	W.
Wed. 24	3	30.194	30.153	48	42	45.0	44	44	W.
Average.		29.984	29.842	45.8	36.6	41.2	44.7	44.2	

Dec. 18—Lightly overcast; rainbow; densely clouded; boisterous.
— 19—Boisterous, clear; overcast, hazy.
— 20—Clear; cloudy and windy; rather boisterous.
— 21—Clear, cold and windy; boisterous,
— 22—Fine; partially overcast; drizzly at night.
— 23—Foggy and drizzly; hazy; slight fog.
— 24—Foggy, hazy and calm, fine at night.

Mean temperature of the week 2¼ deg. above the average.

RECORD OF THE WEATHER AT CHISWICK,
During the last 37 years, for the ensuing Week, ending Jan. 3, 1863.

December and January.	Average Highest Temp.	Average Lowest Temp.	Mean Temp.	No. of Years in which it Rained.	Greatest Quantity of Rain.	Prevailing Winds. N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.
Sunday 28..	41.6	28.1	34.8	11	0.21 in.	4	4	1	3	3	[illegible]	[illegible]	[illegible]
Mon. 29..	42.8	33.3	38.0	16	0.62	2	5	1	4	4	[illegible]	[illegible]	[illegible]
Tues. 30..	44.5	32.8	38.6	14	0.18	1	6	2	2	4	[illegible]	[illegible]	[illegible]
Wed. 31..	44.1	33.5	38.8	11	0.44	–	8	1	2	6	[illegible]	[illegible]	[illegible]
Thurs. 1..	43.7	31.3	37.5	12	0.70	5	5	2	3	4	[illegible]	[illegible]	[illegible]
Friday 2..	42.5	30.8	36.6	14	0.31	3	3	2	2	4	[illegible]	[illegible]	[illegible]
Satur. 3..	42.9	31.2	37.0	18	0.56	1	3	6	1	[illegible]	[illegible]	[illegible]	[illegible]

The highest temperature during the above period occurred on the 28th, 1855—therm. 58 deg.; and the lowest on the 28th, 1860—therm. 1 deg. below zero.

On an average of 36 years, the night of the 28th of December is the coldest in the year.

Notices to Correspondents.

BEECH TREES: *G W.* Your Beech tree is attacked by Psilonia nivea, Fries. It is, however, no Fungus, as we believe, but the work of an Acarus. It will undoubtedly do no good to your tree. The best application is perhaps the mixture of tar and lard commonly used for horses feet, rubbed in with the finger. This is an excellent application for American blight. *M J B.*

MUSHROOM SPAWN: *J W.* It seems good enough, and ought to produce Mushrooms with proper management.

NAMES OF PLANTS, &c.: *W D.* The fibrous pod is the interior of the fruit of a Cucurbit called Luffa fœtida. It is largely used in hot countries as a flesh-brush.—*C. P.* It is probably Juniperus sinensis and not a Cupressus. Carrière's work was published by the author in Paris, but may be had of the foreign booksellers. The head gardener at Biddulph Grange is we believe the experienced proprietor himself, who is a most skilful Horticulturist. The Synonymy of Conifers is, as you say, in a great mess, and it requires some one very different from the ignorant author of the Pinetum to put it into scientific order.

MISC.: *Correspondence.* The letters before us are so numerous that, at Christmas time, it is impossible to deal with them. Most are therefore deferred. Next week we shall clear the score.

Autumn Wheat Sowing.

PHOSPHO GUANO, delivered at Ship or Rail, in London or Liverpool, at 11*l.* 11*s* per Ton for cash. PETER LAWSON & SON, 28, King Street, Cheapside; and Lawrence Lane, E.C.

To Farmers, &c.

CHEAP GYPSUM MANURE.—Parties requiring GYPSUM can be supplied at 10*s.* per Ton, bulk, at the Works at Kennington, S.
Address X. L., 34, Chapel Street, North Brixton, S.
∴ Delivered on rail, adding for bags and cartage.

THE LONDON MANURE COMPANY have now ready
PREPARED BONE MANURE for present use on PASTURES.
WHEAT MANURE for AUTUMN SOWING.
BLOOD MANURE for ditto.
SUPERPHOSPHATES of LIME, &c.
All the above being in the finest condition. They also continue to supply
GIBBS'S PERUVIAN GUANO, NITRATE of SODA, SULPHATE of AMMONIA, and every Artificial Manure of known value. E. PURSER, Secretary.
116, Fenchurch Street, E.C.

LAWES'S WHEAT MANURE for AUTUMN SOWING.
In consequence of the high price of Peruvian Guano, J. B. LAWES has manufactured a WHEAT MANURE for the present season, which will be found very suitable for that crop. A supply is now ready for delivery, and it can be obtained of J. B. LAWES, or through any of his appointed Agents. Price per ton at the Factories, Deptford and Barking Creeks.
Genuine Peruvian Guano direct from Messrs. Gibbs; Nitrate of Soda, Sulphate of Ammonia, and other Chemical Manures.
American and other Cakes at market prices.
Address JOHN BENNET LAWES, 1, Adelaide Place, London Bridge, E.C.; and 22, Eden Quay, Dublin.

40 to 45 per Cent. of Soluble guaranteed.
1862.

BURNARD, LACK AND CO.'S PATENT CONCENTRATED SUPERPHOSPHATES of LIME.
Extract of Opinion from Mr. WAY, *January* 23, 1862.
"This material contains in round numbers 44 per cent. (44 p.c) of Soluble Phosphate of Lime, and is the richest in this important fertilising agent that I can remember to have met with in my experience of the composition of Artificial Manures."
Extract of Opinion from Dr. VOELCKER, *January* 1862.
"Your firm, I believe, first introduced this Manure to the notice of the Agriculturist, and the composition, dry and finely powdered condition of this year's make, plainly show that you are resolved fully to maintain its superior character. I am not acquainted with any Manure which contains so large a percentage of Soluble Phosphate and proportionate small quantity of sulphate of Lime as your Concentrated Superphosphate."
The great advantage of Concentration to the consumer lies in the fact, that he can weaken down with dry earth or ashes, at a much less cost than the manufacturer; nor is he called upon to pay for unnecessary packages, or for the hauling of useless and waste materials.
Analyses, with opinions by the late and present Chemists to the Royal Agricultural Society, with Field trials, Prices, &c., furnished on application to BURNARD, LACK & Co., Plymouth.

CAUTION to BUYERS of GUANO.—Having been informed that Guano has been imported into Liverpool, and offered for sale as "BAKER'S ISLAND GUANO," I hereby give Notice that I control the Deposit of "Baker's Island," and that the Genuine GUANO can only be procured through my Agents, Messrs. GUION & Co., of Liverpool.
Burling Slip, New York, Dec. 9. WILLIAM H. WEBB.

MINTON AND CO. have REMOVED from Albion Place, Blackfriars, to 50, Conduit Street, Regent Street. ENCAUSTIC and other PAVEMENTS, EARTHENWARE and PLAIN TILES. Designs and Estimates prepared.
Manufactory: Stoke-upon-Trent.

ORNAMENTAL PAVING TILES for Conservatories, Halls, Corridors, Balconies, &c., as cheap and durable as Stone, in blue, red, and buff colours, and capable of forming a variety of designs.
Also WHITE GLAZED TILES, for Lining Walls of Baths, Dairies, Larders, Kitchen Ranges, &c. Grooved Terro metallic and other Stable Paving Bricks of great durability. Clinkers, Red and White Wall Copings, Glazed Drain Pipes, &c.
To be obtained of F. & G. ROSHER, Ward's Wharf, Upper Ground Street, Blackfriars, S.; Old Swan Wharf, Queen's Road, Chelsea, S.W.; and Kingsland Road Wharf, near the Canal Bridge, London, N.E.

PATENT GUTTA PERCHA SOLES.—IMPORTANT TO GARDENERS.—The Gutta Percha Company have the pleasure to acknowledge the receipt of the following letter from G. GLENNY, Esq., the celebrated Florist:—
"Gentlemen,—I have worn Gutta Percha Soles and Heels these two years, and being so much in a garden as I necessarily am in all weathers, and with the ground in all states, I would on no account be without them. As a matter of economy I would recommend Gardeners to use them, for they may repair the worn part at all times by warming the material at the fire, and pressing it from the thick parts to the worn parts, as easily as if it were so much dough. I think it the duty of all persons who must occasionally wet their feet to adopt a material that completely defies damp. Many a gardener would escape colds and rheumatism by the use of Gutta Percha Soles. Your obedient servant, G. GLENNY."
Every variety of Gutta Percha articles, such as Mill Bands, Tubing, Soles, Sheet, Pump Buckets, Fire Buckets, Bosses, Union Joints, Flasks, Bottles, Bowls, Chamber Vessels, Toilet Trays, Sponge Bags, Curtain Rings, Galvanic Batteries, Calbotype trays, &c., manufactured by the Gutta Percha Company, and sold by their wholesale dealers in town or country.
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HILL AND SMITH'S PATENT BLACK VARNISH for preserving Iron Work, Wood, or Stone. This Varnish is an excellent substitute for oil paint on all out-door work, and is fully two-thirds cheaper. It may be applied by an ordinary labourer, requires no mixing or thinning, and is used cold. It is used in the grounds at Windsor Castle, Kew Gardens, and at the seats of many hundreds of the nobility and gentry, from whom the most flattering testimonials have been received, which HILL & SMITH will forward on application.
Sold in casks of about 30 gallons each, at 1*s.* 6*d.* per gallon, at the Manufactory, or 1*s.* 8*d.* per gallon paid to any station in the kingdom.
Apply to HILL & SMITH, Brierley Hill Iron Works, near Dudley, and 76, Cannon Street, E.C., from whom only it can be obtained.

E. T. ARCHER'S "FRIGI DOMO."—Patronised by her Majesty the Queen, the Duke of Northumberland for Syon House, his Grace the Duke of Devonshire for Chiswick Gardens, Professor Lindley for the Horticultural Society, Sir Joseph Paxton for the Crystal Palace, Royal Zoological Society, late Mrs. Lawrence of Ealing Park, &c.
PROTECTION from the COLD WINDS & MORNING FROST.
"FRIGI DOMO," a Canvas made of patent prepared Hair and Wool, a perfect non-conductor of Heat and Cold, keeping, wherever it is applied, a fixed temperature. It is adapted for all horticultural and floricultural purposes, for preserving Fruits and Flowers from the scorching rays of the sun, from wind, from attacks of insects, and from morning frosts. To be had in any required lengths.
Two yards wide .. .. .. 1*s.* 6*d.* per yard run.
Four yards wide .. .. .. 3*s.* per yard.
An improved make, 3 yards wide, 2*s.* 6*d.* per yard run.
Also "Frigi Domo" Netting, 2 yards wide, 1*s.* 4*d.* per yard run.
ELISHA THOMAS ARCHER, Whole and Sole Manufacturer, 7, Trinity Lane, Cannon St., City, E.C., and of all Nurserymen and Seedsmen throughout the kingdom.
"It is much cheaper than Mats as a covering."

MESSRS. WAY AND EVANS, ANALYTICAL CHEMISTS, have REMOVED their LABORATORY from 15, Welbeck Street, Cavendish Square, to 106, Leadenhall Street, E.C., where all Letters and Samples for Analysis should in future be addressed.—Dec. 27.

AGRICULTURAL and CHEMICAL COLLEGE, 37 and 38, Lower Kennington Lane, London, S.
ASSAYS and ANALYSES promptly attended to by J. C. NESBIT, LANSDELL & Co.

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Landowners assessed under the provisions of any Act of Parliament, Royal Charter, or Commission, in respect of any public or general works of drainage or other improvements, may borrow their proportionate share of the cost, and charge the same with the expenses on the lands improved.
No investigation of title is required, and the Company being of a strictly financial character do not interfere with the plans and execution of the Works, which are controlled only by the Government Enclosure Commissioners.
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MR. BAILEY DENTON, C.E., maintains a large staff for the execution of Land Improvements by a commission of 5*s.* per acre for Under Drainage, and a fixed charge for Outfall and other works.
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DRAINAGE of LANDS (by Contract, or laid out and superintended at 5*s.* per acre) and the ERECTION of AGRICULTURAL BUILDINGS and all other permanent Improvements to Landed Estates, are undertaken by Mr. HUMBERT, Land Agent and Surveyor, Watford, Herts, and such Works can, if desired, be entirely executed under powers conferred by special Acts of Parliament, by Money raised by loan, and paid off (both principal and interest) by small annual payments spread over a number of years in the form of a rent charge, without immediate payment by the Land Owner.

The Agricultural Gazette.

SATURDAY, DECEMBER 27, 1862.

THE employment of the County Constabulary in the collection of agricultural statistics has been generally condemned by such boards and meetings as have had the question submitted for their opinion. There has, however, just been published* one very interesting piece of statistical information for which we are indebted to the Constabulary of East Lothian, and ascertained by them we believe without the least interference with the due performance of their usual duties.

Thanks to the personal inquiries of the Haddingtonshire Police, acting under the instructions of Mr. LIST, we learn that there are 326 reaping-machines in that county, 310 of which were employed during last harvest in cutting down 15,728 acres of grain. The average, 50 acres apiece, appear to have been so small, owing to the unusual influx of Irish reapers, so that several farmers never used their machines at all, harvest wages being unusually low, and hands unusually abundant. The following is the list:—

Makers of Machines.	Number.	Acres Cut. Wheat.	Barley.	Oats.	Beans.	Total.
Lindsay & Gardiner ..	130	2689½	1992¼	1938	40½	6660½
Bamlett	58	732½	891¼	1008¾	0	2633
Halliday	45	666	981	805½	4	2456½
Wallace ..	23	222¼	327½	350	10½	911¼
Nicholson, Kemp, & Murray	22	445¼	442	376½	10	1274¼
Bell	16	69¼	180	259½	0	508¾
Burgess & Key .	6	79	56	104	0	239
Jack & Son	5	168½	77	114¾	0	360¼
Dray & Hussey ..	5	41	28¼	60¼	0	129½
Wood	3	94	17	65	0	176
Samuelson	3	20	43	37	0	100
Bickerton & Brigham	3	0	8	36	0	44
Cuthbert ..	2	7	0	0	0	7
Brown & Young .	1	35	16	21	0	72
Wight	1	31	18	20	0	69
McCormack	1	20	0	25	0	45
Hassier	1	7	3	26	0	36
Goodlet	1	0	6	0	0	6
Total	326	5326½	5087	5250¼	65	15,728½

It is proper to add in explanation of the low average performance of some of the machines that 16 of them were not used, viz., six of BELL'S, four of GARDINER & LINDSAY'S, two of BAMLETT'S, one of WALLACE'S, one of CUTHBERT'S, one of BRIGHAM & BICKERTON'S, and one of SAMUELSON'S.

* In the Haddington *Courier*.

AT this season of the year the Potato grower is anxious for information concerning that valuable crop. With the view of inducing others to give similar information, we will state a few facts elicited from our own experiments this year. We had about an acre and a rood (statute) under several favourite varieties of the Potato. The gross produce was at the rate of a fraction over 8 tons per statute acre; and of this 1 ton and 2 cwt. were diseased or unfit for sale. The soil had been a rather indifferent piece of pasture for some years previously. It was ploughed early in February, and planted on the Irish "lazy" bed system some time after. This mode of cultivation was adopted for reasons which it is not necessary to state; and so also was the time of planting. The manure was a moderate dressing of dung of average quality, together with half a ton of gas lime spread upon the lea before the plough. This stuff had been collected for some time previously, and it was not permitted to come in contact with the dung.

The chief fact which we wish to record as the result of this treatment is the per-centage of the different varieties of Potatoes that was diseased. This was as follows:—

	Per cent. diseased.
Kemps ..	.. 21.4
Frames ..	.. 12.5 (Only a small quantity grown.)
Dalmahoys ..	.. 11.7
White Rocks	.. 10.7
Oxfords ..	.. 7.9 Grown in small quantity.
Flukes ..	.. 6.8
Skerry Blues ..	.. 0.8

We give prominence to these facts, because we know that it is by a careful comparison of the effects of different treatment in the different varieties of the crop under different circumstances that we can ever hope to establish satisfactory means for mitigating the effects of the Potato disease as long as it lasts. We may add a note of the quality of the crop. The Dalmahoys, a fine sample, round and palatable. The Frame and Oxfords (which were only grown in limited quantities), have not done so well. The Flukes have the best flavour of any Potato we have used since 1846; the crop was very productive. The White Rocks are of average quality. The Skerry Blues are very mealy and excellent. *B.*

—— THAT was an extraordinary conversation which was reported in our news columns last week between Mr. GANLEY, cattle salesman of Dublin, and Professor GAMGEE of Edinburgh. The former declared that unless some compensation were given to the Irish farmer for diseased cattle, it was impossible to prevent him from selling them, or to hinder the butcher from killing and selling. Unless some society were formed to have diseased meat paid for, it would be killed and eaten. There was no use in mincing the matter, he said; every one of the salesmen sold diseased cattle. The farmer could not otherwise pay his rent. The disease is so prevalent that he could not live were he to submit his cattle to destruction. Professor GAMGEE is reported to have said that he would have gone 1500 miles to hear this confession, and that he agreed with Mr. GANLEY that some plan

should be adopted for paying the farmer for diseased cattle.

Now we imagine that a Professor of Veterinary Surgery altogether abdicates his proper position when in place of advising how to cure diseased cattle he acquiesces in the monstrous proposition, that the owners of diseased meat are to be paid for it by some society the price of wholesome meat, in order that it may be thus destroyed without loss to them.

Mr. GANLEY was no doubt quite right to call attention to the great evil which he confesses. The publication of it will help the cure of it, in the interests of both the producers and the consumers; for it will quicken the efforts of all whose business it is to fight with it. Among these the veterinary surgeon unquestionably stands first. The only Society which is likely to help the unfortunate men who are suffering by the liability of their live stock to disease is a Mutual Insurance Company for bearing one another's burden. But let us not forget the wholesome natural effect of the very sharpness of any evil; it quickens the search for a remedy; and any expedient for compensating a mischief without removing it is in itself most mischievous. Moreover, besides the veterinary surgeon, whose business it is to remove the mischief, it is well to remember that there is such a thing as law and penalty in the way of the other term of Mr. GANLEY's threatened alternative.

—— Among the events of the Smithfield week we gladly place on record here in order that any of our readers who may be so disposed may have an opportunity of seconding it, the resolution to erect a monument to the late JONAS WEBB in the Agricultural Hall—placed so that, like that of STEPHENSON in the Great Hall of the London and North Western Railway Terminus, it may look down on the scene of the great triumphs of his life. Messrs. FULLER, BANBURY & Co. are treasurers to the fund; and subscriptions are limited to five guineas each.

—— A pen of pigs disqualified at the Bingley Hall Show, Birmingham, on the ground of their not being of the same litter, had been sent from Colonel PENNANT's farm. Several examples of the doubtfulness of the tests on this and the corresponding subject of age in the case of pigs have of late years occurred; and it is fortunate that an instance has now happened which is certain to be thoroughly investigated.

Colonel PENNANT writes as follows:—

"Feeling that it was due to the character of my farm bailiff (Mr. SMITH), that I should afford him the fullest opportunity of vindicating himself from the charge of dishonesty or inaccuracy, which is implied in the decision of Professor GAMGEE, I immediately ordered the sale of the pigs in question to be stopped, and that they should be sent back to this place—my bailiff writing at the same time to the Secretary of the Birmingham Society, requesting that some one connected with the Society should have the pigs marked. I have called for the highest available professional opinion on the pigs, which opinion will be made public; and I have ordered that the pigs should eventually be killed at my own farm, and the jaws carefully preserved, in order that they may remain permanent evidence of the accuracy or the inaccuracy of the opinion pronounced at Birmingham. The declarations of my bailiff, and of the man in charge of the pigs, will be made public."

—— Mr. SWINNERTON's fat ox, so distinguished by its success at the fat stock shows last year, both at Bingley Hall and Baker Street, has again received first prizes at Bingley Hall and Liverpool. During the past twelvemonth it has been fed of course as richly as possible; but a correspondent from Warwickshire has protested against the account which had appeared of the excessive cost which had been thus incurred. He says:—

"The remark that his owner wanted to enter him for Poissy is simply incorrect, Mr. SWINNERTON not having been the purchaser of the animal till after that gathering was ended, about the 28th or 29th of April. Therefore, instead of keeping him a year (at '2*l.* per week'!) the most I can make of it is only 30 weeks, and his cost certainly did not exceed 1*l.* per week throughout that period. Every practical man will at once see the absurdity of the statement about a consumption of 20lb. of meal daily. A poor lean 6-year old working ox might get through such an allowance; but half this quantity was never exceeded by the ox in question. And as to its being Wheat meal, this, also, is incorrect, Bean and Pea flour being the chief of his consumption. Now, what has the ox done in the 30 weeks of Mr. Swinnerton's ownership? From his commencement with the Sparkenhoe meeting at Leicester till his finish at Liverpool a few days since, he has gained his owner 139*l.* 5*s.* in prizes, and he was sold in Liverpool for 80*l.*—a sum, probably, fully equal to what he cost. This proves that the beast has not been a very bad one in himself, nor yet a very bad investment for his owner."

NOTES ON WEEDS.

BY JAMES BUCKMAN, F.L.S., &c., PROFESSOR OF BOTANY AND GEOLOGY.

CRANESBILLS, &c.—The Cranesbills, and their allies the Storksbills, received their common name from their peculiarly beaked seeds; they belong to the Natural Order Geraniaceæ, our native species of which consist of some showy-flowered thicket or hedgerow plants neither so common or so abundant as to be properly classed as weeds; such are the following:—

Geranium sanguineum, Bloody Cranesbill, flowers with purple veins; sylvaticum, Wood Cranesbill, flowers purple; pratense, Meadow Cranesbill, flowers bright blue; pyrenaicum, Mountain Cranesbill, flowers smaller, purple. Some of these are very handsome, and the leaves of these, as indeed of most of the species, occasionally take on such rich hues as when contrasted with the bright flowers make them favourites with the lover of nature. The plants, however, which we would more particularly dwell upon, though interesting for their structure, are yet considered by the farmer to deserve a scarcely more dignified name than that of weed; these will be found in the following list:—

1. *Geranium lucidum.*—Shining Cranesbill; leaves rounded, smooth, and bright.
2. *G. molle.*—Soft Cranesbill; leaves rounded, hairy.
3. *G. dissectum.*—Jagged Cranesbill; leaves tripartite, and cut.
4. *G. columbinum.*—Long-stalked Cranesbill; leaves tripartite, with very acute segments.
5. *G. Robertianum.*—Stinking Cranesbill or Herb Robert; leaves pinnatifid.
6. *G.* (*Erodium*) *cicutarium.*—Hemlock Storksbill; leaves winged and cut.

1. *The Shining Cranesbill* is a common denizen of elevated districts, where it often forms a troublesome weed about old walls, the margins of gardens, hedgebanks, and sometimes completely covering old thatch. Its choking propensities to the hedgerow, where it sometimes grows highly rampantly, are such as to cause it to be inserted in the present category. Wherever it occurs it should be weeded out, as its spread is so rapid as to choke young hedges, and especially those put on mounds or banks, so that unless cleaned of it, the Quicks are very slow of growth.

2. *The Soft Cranesbill* is a species which has so spread in "seeds" with arable cultivation, as to be only exceptional in other positions; in fact its general spread as an agrarian plant can only be due to cultivation. Thus it occurs over Europe in the most diversified climates, so also everywhere in Great Britain, whatever the soil, so that cultivation has reached there. In "seeds," that is artificial pastures of Clover or Grasses, it occurs in such large thick bunches growing close to the ground, that the true plant has but little chance in its vicinity, and as it has no quality in itself, it is highly objectionable. Our floras put it down as an annual, but more properly it is a biennial, for being sown with the seeds in the Barley crop, it is, like the Clover, small and imperfect that year, but becomes far larger the following summer; in this state we have counted as many as 750 seeds on a single plant, most of which when Clover is seeded would find its way in the sample. We deem it important that such plants should be hoed the first year; they are easily detected even in the stubble, and the little expense of thus dealing with them would be amply compensated for.

3. *The Jagged Cranesbill* is even larger and more mischievous as a weed than the preceding. It is a much branched erect species. Its position as an arable plant is much the same as that of G. molle, but it also occurs more frequently by road sides, and in the hedge rows. Its range throughout Europe and greater part of Asia, and its introduction to America, has been for the most part from following the track of cultivation. Its seeds will be found with the preceding in most examples of uncleaned Clover seed, especially if foreign. The two, however, are easily distinguished, as although nearly of the same small oval shape and size, in the G. molle they are smooth, but in the G. dissectum beautifully reticulated or wrinkled. This plant is even easier to reduce than the former, and from the amount of ground a small specimen may cover in the 2d year (for it, too, is biennial as an arable weed) make it particularly desirable to attend to its eradication.

4. *The Long-stalked Cranesbill* is more particularly confined to calcareous soils, and seldom found out of the arable fields. It is a more delicate, but also a more spreading plant than the two preceding species. It is well distinguished by the long footstalks, which mostly bear two flowers. Its seeds are dotted, and may sometimes serve as a guide to detect the soil whence a sample of Clover seed has been derived. It is however neither so abundant nor so large as lead to anxiety, though it should not be omitted in a list of seedling Geraniums.

5. *The Herb Robert* or *Stinking Cranesbill* is for the most part a hedgerow weed—growing too in masses over old stones and broken walls, and even in young thickets in woods. Occasionally it finds its way into the arable field, but not to any great extent. Its range is wider than that of any other species, Europe, Asia (central and Russian), and North America, claiming it as a too abundant native, for although a pretty plant its fetid smell and rampant mode of growth renders it no favourite. It is reported by Professor Lindley to be "a popular remedy in Wales for nephritic complaints," but probably for no better reason than that it grows amongst stones and in rocky places. As a hedge-row weed it is most destructive, and especially in young Quicks, where if it be allowed [illegible] unchecked it will in two years throw the hedge [illegible] for 10 in proper development; it should then [illegible] allowed to make way in such positions, [illegible] should be rooted out early in spring and never allowed to seed. Attention to this matter when [illegible] commences may be the means of saving much expence and vexation, as no hedge can possibly grow well in which undisputed possession by the Herb Robert is allowed.

6. *The Storksbill* is usually put into a new genus, Erodium; its differences however are too minute to render that necessary here. It is usually a sand [illegible] and as such occurs near the sea-shore, often in [illegible] isolated weed patches, but not seldom dotting the arable field, in which as it has a thick spreading habit is very mischievous. Its characters, however, as far as the farmer is concerned, are much those of G. molle, and should be so treated where it occurs in seeds, and it is especially liable to overrun Dutch Clover on light sandy soils in the same manner.

PRIZES FOR IMPLEMENTS.

[The following is the report (somewhat abridged) of a committee appointed to consider this subject by the Highland and Agricultural Society.]

FOR some years there has been a growing feeling on the part of exhibitors, against the system under which premiums for implements and machinery have been offered at the Society's shows, and the entire abandonment of trials and awards has been advocated.

In consequence of representations to this effect made to the Secretary when at the Battersea meeting, he addressed a letter to the principal makers, who have been in the habit of exhibiting at the Society's shows, requesting them to state whether trials and prizes should be adhered to or not, together with the grounds of their opinions.

Answers have been received from 23 parties. Four concur in considering that the tests afforded by a trial during the currency of a show are insufficient and unsatisfactory, but at the same time they question the expediency of abolishing premiums, on the ground that some means should be retained for encouraging those whose comparative obscurity might fail in obtaining, for their inventions, that publicity which the old-established and great manufacturers can command.

On the other hand, nine English and 10 Scottish firms are of opinion that trials and premiums should be discontinued, a few of their number suggesting the possibility of some notice or reward proceeding on a thoroughly practical trial at a proper season.

The reason assigned in favour of the proposed change are principally—

1st. That there is no longer that necessity for premiums which existed when machinery and implements were in their infancy, and when their improvement required a stimulus, [illegible] supplied, in a higher degree, by the competition between makers, and by the attention which the public devotes to the subject.

2d. That in most instances, and more especially in the field implements, no sufficient test of merit can be obtained by means of a trial conducted during the currency of a show.

3d. That were the competitive system abandoned, the classification of implements according to sections would cease to be incumbent; that each exhibitor might be permitted to [illegible] his articles in one stand; and that the exhibition would consequently be more popular and extensive.

The Joint Committees on General Shows and Machinery, to whom this question was remitted by the Directors on November 5, have endeavoured to bestow upon it that consideration which its importance merits, and they now beg to report that, in their opinion, there is much force in what is advanced by the majority of the manufacturers consulted, as regards both the diminished necessity for premiums, and the insufficiency of trials at a show. It is undeniable that the causes alluded to—viz., the interest of the public and the rivalry among makers—supply inducements to exertion on the part of the latter, far more potent than premiums can now command, however useful—and necessary—these may have been in producing the existing state of matters. Their object originally was twofold—to stimulate improvement and to distinguish it. The first of these has been superseded by [illegible] influences; the latter only remains, the main purpose of premiums being now to select from the mass and to indicate to the public the article ascertained by the Society to be the best of its kind. This, however, assumes the existence and practicability of unquestionable trials, for unless the test applied be sufficient, the decision is of little value, and may be the means of injuring exhibitors, and of misleading the public. The majority of the manufacturers take their stand here; they maintain that trials at a show are insufficient and unsatisfactory, and that they cannot be otherwise. The joint committees are not prepared to controvert this. Their experience compels them to admit that the bustle and business of a show do not afford the best opportunities for carefully ascertaining the merits of a machine; that the period available for the purpose is frequently too short, and the time of the year unsuitable; and that, under the best arrangements, it is impossible properly to try many of the field implements

They believe that the only mode of fully and fairly testing an implement or machine is to send it to a farm at that season of the year when it naturally comes into operation, and there to put it through its full rotation of work.

With these views the joint committees are inclined to concur with the majority of the manufacturers, in so far as regards a departure from the present system of conducting trials and awarding premiums, but they cannot agree with those who advocate the entire abandonment of both. There is much force in the remarks which have fallen from some members of the minority with reference to new inventions. The committees consider it to be an imperative duty on the part of the Society to maintain ample and effective means for encouraging and bringing forward machinists of ingenuity and genius who may heretofore have been unknown. This can only be done by affording them opportunities for trying their implements, by rewarding the merits of the invention by a premium, and by publishing the award to the world. It is therefore thought that, in whatever respects the present practice may be changed, the system of trials and premiums must, in some shape and to some extent, be retained; and it appears to the joint committees that it is possible to give effect to this, and, at the same time, to meet the wishes of the implement exhibitors. They would accordingly beg to suggest the following plan:—

1st. Discontinue the offer of premiums to be competed for and awarded at a show.

2d. Discontinue competitive trials at a show.

3d. Discontinue the practice of arranging implements according to sections, and permit each exhibitor to group everything at one stand.

4th. When a machine embraces a new invention or a radical improvement, require exhibitors to define the character or extent of this, in their notices of entry, that the information may be inserted in the catalogue.

5th. Appoint a committee of selection, composed of the same class as that from which the judges of implements are now drawn. Instruct this committee to examine in the show yard the different articles indicated in the catalogue as new inventions or important improvements, and to select such of them as, in their opinion, are worthy of a trial.

6th. Let the directors, on a report by this committee, arrange for thoroughly working in the manner alluded to, and at the most suitable places and fittest seasons, the articles so selected, under the supervision of a small committee of qualified members residing near the places where the trials may be conducted, whose reports shall pass through the hands of the Society's consulting engineer and other professional advisers.

7th. Award to the inventor or improver such amount of premium as the report may warrant in the opinion of the directors, and publish the report and the award in the Transactions.

The joint committees conceive that by this process the Society would meet the wishes of the implement-makers, and at the same time retain the means of stimulating, rewarding, and promulgating meritorious improvements. In addition to the proposed machinery in connection with the shows, there would be the general announcement in the premium book that the Society is always prepared to entertain and reward inventions and improvements, whether brought out at a show or not: while the directors would, of course, still retain the power of offering special premiums, and instituting special trials, such as, on former occasions, took place with reference to the reaping-machine and the steam-plough.

Two objections may possibly be started—1st, That the labours of the committee of selection would be too onerous; 2d, That the number of trials would be excessive; but no practical difficulty is apprehended on either point. Under the present system of competition, every article has to be examined by the judges not only with reference to its own claims, but to its merits in comparison with all those of the same kind in the yard. By the proposed plan the committee would be relieved from the difficulties attaching to competition—their object would be merely selection for trial—and their inspection would be restricted to articles marked in the catalogue as new inventions or radical improvements. No doubt, the entries under the latter head would be numerous, but a qualified committee could quickly weed out the greater bulk of articles either devoid of merit or unimportant in the character of their improvement, and all who are cognisant of the trifling proportion, which novelties in a showyard bear to articles long familiar to the judges, must be satisfied that the ultimate selection would not necessitate an overwhelming number of trials.

The joint committees are of opinion that ample facilities should be afforded to exhibitors for working machinery within the yard—that is to say, that fuel, grain, straw, roots, &c., should be supplied by the Society at the lowest possible prices. It is conceived, however, that all attempts at field work should be discontinued. The exhibitors themselves represent these field trials to be useless as tests of merit. They would no longer be required to guide the decisions of judges; and, if a field were provided for a general display before the public, the whole organisation of the show would be upset. Such trials, or rather working exhibitions, could no longer be held, as formerly, antecedent to the show, but would be demanded when the attendance of the public is at the greatest, and all who have seen the dissatisfaction to which judges are exposed by a selection for trial, generally so liberal as to include scores of articles frequently tried before, must be aware that the exhibitor of every field implement would insist on having it transferred from the yard to the working field.

FARMING IN WALES.

[The following is a portion of a paper read by Mr Buckley, before a recent meeting of the Carmarthenshire Farmers' Club.]

I BEG of you to suppose that some eight years ago I took to and entered upon a farm in Wales, say here, in the vale of Towy, if you please, upon the Silurian formation. It was a farm say of the average quality, and of about 230 acres extent, reaching from near the river to the top of the hill. About 60 acres of it in the bottom was most of it very wet, and some 20 acres was boggy: about 140 acres lay on the side of the hill, and was tolerably clean land, but most of it wanted draining: and the remaining 30 acres was still higher up, very precipitous, and nearly covered with Furze and Thorns. The 30 and the 60 acres of meadow were the only parts that the former tenant had not had under corn. The 140 acres had been all periodically broken up and exhausted, and was what we usually term "worn out." The rent at which I took this farm was 200*l.* a year. It had never before been let for more than 170*l.*; but in consideration of my landlord granting me a lease for 14 years, and extending the outbuildings a little for the accommodation of more stock, I paid the additional rent. I had, of course, well looked over the farm before I agreed for it, examined its soil and the capabilities for drainage and other improvements, and felt quite satisfied from experience that it would answer my purpose. I had a capital of 1600*l.*, which I considered would, with management and economy, help me through. I ought to have had 2000*l.* for the undertaking, so that my progress at first was somewhat slow.

I borrow the framework of fiction to introduce what, for the most part, are the results of my own experience. I entered upon my farm at Michaelmas, found upon it a rick of rough hay and a moderate sized heap of dung in the farmyard, that the former tenant intended for his Wheat land, and for these I paid him. My first business, after having got my drainers fairly to work, was to select several fields of the driest and most suitable land to plough up and lay through the winter, which the following spring were appropriated as follows:—12 acres of Mangels and Swedes, on which I expended the whole heap of dung, besides a good quantity of superphosphate; 12 acres to Barley, and 12 to Oats, and a little field of 3 acres to Wheat (that I might not have to buy bread), all of which I dressed with artificial manures, chiefly guano, my great object being to procure as good a supply of roots and straw as I possibly could for stock the winter following. As to the winter upon which I was just entering, I had very little stock indeed, and did not commence buying any until the new Grass afforded a bite in the spring. I also shut up my meadows, and a couple of fields my predecessor called Clover, with the like object of a good supply of food for the following winter. Through the spring and summer as I bought in stock, chiefly two-year-old steers and heifers, and some young cows, to set my dairy going. These I selected with great care, preferring to pay a good price for what was likely to thrive than to buy what was low priced and inferior. They were all of the native black breed, which I considered would answer my purpose better than any other. Time will not allow me to go much into detail, and it must suffice for the present to say that by the end of the fourth year I had brought the farm into a fair course of cultivation, and on the highway to a much better state of things. Having ploughed deep, broken the pan, and fetched up soil that the roots of the plants had not penetrated before, the land proved not to be exhausted, the crops being much better than I had calculated upon.

My means of supporting and adding to my stock increased year by year, and with it my power of extended manuring, making me gradually to discontinue the large use of artificial manure, to which I was at first obliged to resort. My dairy produce and sales of stock had also increased in like proportion. Fifty acres I had broken up to be continued as arable land under a regular course of alternate cropping, as stated. The remaining (of the 140 acres) was in Grass, and had become far more luxuriant and fine in quality under the treatment named. I must now run over a little more in detail my mode of cultivation. The whole of my ploughing is done in the autumn and early winter, and I plough my land but once, and that deeply, laying it up dry and loose to atmospheric influence during the winter, and do not again touch it until seed time, when by the use of Coleman's cultivator, a roller and harrow, a fine deep tilth is produced. With roots (crop No. 1) I manure heavily—say with 15 good cartloads of dung, 4 cwt. of superphosphate, and 1 cwt. of common salt, and this crop, which is usually a heavy one, is carted off the land early in November and stored for winter use. The green tops being left behind and ploughed in, the land remains as before through the winter. In the month of March by the use again of the cultivator, roller, and harrow, the Barley seed (crop No. 2) finds a congenial bed in a deep and rich soil, into which it is drilled at the rate of not exceeding 2 bushels per acre, the seed, Clover, and Italian Rye-grass, &c., being harrowed in over it. I always look for a produce of not less than 40 bushels per acre and of fine quality. After the Barley I usually have a good plant of Clover, &c., and the latter end of the following May or beginning of June I cut a heavy crop of Clover hay of near 2 tons an acre (crop No. 3), and then feed off the after growth; but I sometimes manure and cut a second crop as heavy as the first. I lime my Clover lea early in November, but only with a light dressing of three or four loads per acre, and immediately plough for the Wheat or Oats. If for autumn-sown Wheat, I turn the furrow-slice over and drill or dibble in the seed on the back: it should be pressed (crop No. 4), but I usually prefer sowing April Wheat in light land (as I get a more certain crop and larger produce) in which case I work the land fine as for Barley, and drill in about 1¾ to 2 bushels per acre. I sometimes continue my Clover lea a second year, and graze it, thus extending to a fifth crop or shift. In this case if light ground being more firm I should put in Autumn Wheat. Thus by the circulation of the course every field comes into the same crop every fourth or fifth year. A heavy manuring is given with the first, or root crop, and a light dressing of lime with the fourth or Wheat crop, thus appropriating to that crop what organic matter still remains, also ameliorating the soil, and rectifying any acidity there may be in it. The course is then commenced again with heavy manuring, and goes the same or some other alternative course. The land never requires rest under such management as this, but increases in fertility. I can point out a field, for example, that has been going this round of cropping for about twenty years, that I last year cut two crops of Clover off, valued at near two tons per acre each crop, and followed this year by about the largest crop of Wheat I ever reaped.

My draining operations were carried on with my other work. I at first got on swimmingly by having fortunately hit upon the source of the water or springs in several instances, which I tapped, and led off the water, sometimes by a single drain; and by that means laid dry a considerable area of land at little expense, but other parts of the 140 acres I could not thoroughly dry without cutting parallel drains throughout; and the work became laborious and expensive. The water from all the drains, above a certain level, I conveyed down to a pond I had formed just outside the farmyard, which was not only very welcome to my geese and ducks, but the quantity of water was such, during the winter months that the overflow pipe not only served to turn my daily-at-work chaffcutter and root mincer, but would work my 3 horse-power machine when required, until about April or May, by which time I had usually threshed out. At the close of my sixth year all my farm was fairly drained, excepting about 40 acres of of the boggy meadows, and to attempt that was quite too formidable and expensive an undertaking for the unexpired eight years of my lease. This I stated candidly to my landlord, and did what I could to persuade him to take it in hand, offering him 6 per cent. on the outlay in the shape of additional rent. I urged, too, that he could not but see how admirably the draining I had done answered, and what an improvement it would be to his estate to accomplish the whole. He replied that he had not the least idea when he let me the farm that it was so good a one, and that with such a valuable stock and crop and productive dairy I must be making my fortune, and ought to drain it myself. I pointed out to him some of the neighbouring farms in wretched poverty-stricken condition, and assured him that they were naturally quite as good as mine, and equally capable of improvement. He thought me rather sanguine, too, as to being able to effect the drainage of the boggy meadows, and said he did not feel at all disposed to invest his money in that way. It was at length arranged between us that I must drain the meadows at my sole expense, and that he would add seven years to my lease, and extend the accommodation for my stock in the way of additional sheds, for I had been put to all kinds of temporary contrivances for their winter protection. He gave me at the same time a significant hint that he should expect a considerably increased rent at the expiration of my term. I quite agreed with him on that point, and intimated that I or my son might probably offer him 50*l.* a year more, which would be 250*l.* He replied, you mean 270*l.*, and then I shall have 100*l.* a year more than my old rent; however, he added, no one shall have the farm at any thing near what you or your family shall have the offer of it at; and an applicant without ample means should not have it at any amount of rent, however great, for it is quite plain he must work out and deteriorate the farm to make capital and pay me, and the end would probably be that it would be thrown on my hands in such a state that I must again let it at a reduced rent. Thus we parted with a good understanding as to the future. Nothing then, it appears to me, can be more plain than two conclusions. The first is, that it would have been very unwise in me, had I done all that I have, without the security of a lease. And the second is, that it would have been equally unwise in my landlord had he granted a lease to a tenant without adequate capital and knowledge of his business, as it would have been a bar to the improvement of his property, and the advantage, if any, would have been all on one side. The legitimate deductions to be drawn are—that men of capital and requisite agricultural information are the great desiderata for Welsh farms, as they are indeed the grand panacea for poor farming every where; and that such men should be attracted to the soil by proper security and tenure, for without that they cannot be

expected to invest their money, and will not do it. *Abridged from the Welshman.*

FARM IMPLEMENTS.

[The following is extracted from Mr. Wallace Fyfe's excellent paper in the last Number of the Bath and West of England Society's Journal; which has since been published in a separate form.]

A.—Farm near Yeovil.

1. The soil of this farm is chiefly a sandy loam, with some stone-brash * and clay: it is mostly light land, and easily broken with two horses. Generally well drained, it possesses a tillage depth of from 4 to 6 inches. The subsoil is various, comprising gravel, clay, and stone brimsand (brash?), &c. It is all enclosed, and is cropped as follows: 1st year, corn; then roots or other green crops; then corn again, in simple alternation. Scarcely any of the pasture has been broken up, being too valuable as pasture.

2. The classes of implements embrace various kinds of ploughs, chiefly indeed Howard's and Hornsby's, but also some others, the working power being horses generally; but the steam-plough (that of Fowler) has also here been at work. The cultivators are principally Bentall's and Coleman's, already discussed by anticipation. The drills, sowing-machines, and rollers are respectively Garrett's, Roberts's, and Cambridge's. Of these it need merely be observed that Cambridge's double-action press-wheel roller and clod-crusher, which is the implement here in use, is composed of a number of this maker's old patent plain wheels, with a serrated or matchless wheel of peculiar construction placed betwixt each of the plain wheels, so as to combine in one the effect of the roller and clod-crusher. The mowers, reapers, threshing, and dressing machines comprise respectively those of Messrs. Burgess & Key, Clayton & Shuttleworth, and Hornsby —the merits of all which are too well known to require observation. The owner of these magnificent implements volunteers, however, an observation in reference to mowers in general, which I feel bound to say is re-echoed in several other quarters: "Our implements are very numerous and efficient, all but the mowers, which are not quite perfection, nor do I think they will ever be any profit to the farmer." At the same time it is but justice to say, in reference to the particular mower which has proved most successful in competitive trials, that last year 700 of Wood's mowers were disposed of by Mr. Cranston, and that orders to the full extent that can be undertaken for the present year are almost all placed. As manure-implements, drill and broadcast liquid manure-machines are both employed on this Somerset farm, together with an endless variety of miscellaneous tools; and with respect to waggons, carts, &c., it is proper to mention that there are those of Read, Fowler, Fry, and various local makers of great celebrity. Frys (of Bristol) more particularly make an improved one-horse farm cart, with portable wing-boards, and head and tail pieces also portable, fitted with iron tail pieces of great strength and durability; but the most remarkable of their productions is the harvest-cart of Mr. Hannam, of Barcott Park, a long wide cart, 12 feet by 6 feet 6 in the body, balanced upon its axle and kept as near the ground as possible by the use of bent shafts. The sides exhibit a gracefully curved form of open rails, and aid in preventing displacement of the load in ascending or descending an incline—the cart being thus rendered useful for the more distant delivery of produce, and for carting hurdles and green food as well as for harvesting. The original cost of the waggons used on the farm at present referred to was from 20*l.* to 30*l.*; that of carts from 10*l.* to 12*l.* As regards care and paint, points upon which the durability and efficiency of a farm plant depend to a far greater extent than careless farmers and their *employés* would appear to admit, the implements in use on this farm are generally well housed when out of use, and the owner has them painted over every three years. The paint-brush, in fact, cannot be kept going too vigorously amongst machines when out of use, if corrosion is sought to be checked or prevented. In this instance, and by the use of the precautions stated, the tear and wear is not considered to exceed 10 per cent. per annum; yet even that implies the sinking of all the capital represented by this description of plant within 10 years' time—a serious consideration undoubtedly, taking into view the heavy aggregate of cost involved in this department of a well-appointed farm.

3. As regards the mode of culture, the land is here mostly ploughed, and scarcely any spade-husbandry is to any extent adopted. In the treatment of stubbles and fallows, the stubbles are generally cleaned in the autumn with Bentall's cultivator, and the manure is laid on for spring crops: the land is then ploughed and left till spring. There are not many fallows made in this district. With respect to manipulations attending the reception of crops, &c., the ground is usually harrowed with chain and other harrows. Stirring is sometimes attempted with Bentall, when the weather is dry, but never in wet or damp weather; and cleaning of the soil always takes place in autumn. It is accomplished by hand, by women or boys. The distribution of manure is effected by means of carts, in heaps, after which it is spread by men on the land by forks or shovels in the customary way. The cost per acre of operations, including carting and the value of the manure, is stated at 3*l.* or 4*l.* Portable and not fixed machines are used, and threshing takes place chiefly in the field, there being scarcely any in the barn.

* "In almost every country," says Sir Charles Lyell, "the alluvium consists—in its upper part—of transported materials, but it often passes downwards into a mass of broken and angular fragments derived from the adjacent rocks. To this mass the provincial name of 'rubble,' or 'brash' is given in many parts of England. It may be referred to the weathering or disintegration of stone on the spot—the effects of air and water, sun and frost, and chemical decomposition."

B.—Farm near Wimborne.

1. The soil is a mixture of poor clay, gravel, and thin loam. The farm extends over 320 acres, of which one half is heavy land, the other light. It is all dry, but rather stubborn in mechanical texture, requiring care in cultivating. The depth of tillage is from 5 to 6 inches. The subsoil is chalk. About 260 acres have been inclosed for centuries, and about 60 for 20 years, but not drained. It is cropped 3-7ths with corn, and 4-7ths with roots and Clover. Thirty acres of old pasture remain not broken up. The rotations followed are these:—Wheat, Swedes, Turnips, Wheat, Barley, hay, old ley. In more detail, the cropping is returned as under:—

Number of Acres arable.		Divided as follows:—
400	90	40 of two years old ley comes to Wheat.
		20 of one year's Clover to ditto.
		30 of Rape and common Turnip to ditto.
	40	20 of Mangel to Barley.
		20 of Turnips to ditto.
	30	10 of one year's ley to Oats.
		20 of Turnips to ditto.
	100	60 of Turnips after the ley Wheat.
		10 of Turnips after the ley Oats.
		30 of Rape and common Turnips after Swedes.
	20	10 of Mangel after Wheat.
		10 of Mangel after one year's Clover.
	80	20 of Clover after Wheat.
		40 of Clover after Barley.
		20 of Clover after Oats.
	40	40 of Clover leys two years.

2. The classes of implements are various. Thus the ploughs comprise 6 of Pearce's (of Poole) iron ploughs, with two wheels and steel turn-furrows, the working power 12 cart-horses and 2 nags; the cultivators are Coleman's; the harrows Howard's patent already described; and there are used besides, horse-hoes and tormentors, corn and Turnip drills, broadcast corn-distributors, seed-machines, and plain and ring wheel iron rollers. A manure-drill is employed for Turnips. Amongst the miscellaneous appliances are a Barley-hummeller, chaff-cutter, Turnip-slicer, corn and cake-bruisers, horse-rakes, &c. There are 5 two-horse waggons and carts and 1 one-horse cart. The farming capital, 2150*l.*, is thus invested: in implements, 700*l.*; horses, 400*l.*; sheep, 550*l.*; and extra capital 500*l.* The tear and wear is estimated as a whole at 10 per cent. upon the capital employed, or 200*l.*

3. The modes of culture vary according to the seasons and circumstances, the endeavour being made to farm on the most improved system, chiefly in a five-course shift. The stubbles are raftered, scarified, harrowed, and carted off immediately after harvest, if possible, and about half sown down with Tares, Rape, &c. The fallows not thus sown with sheep-food are ploughed deeply to receive the frost; and scarifying and grubbing are considered to supersede cross-ploughing. In preparation for the reception of crops, it is the rule upon this farm that all land should be stirred sufficiently to enable the drill to deposit the seed easily at about 2 inches below the surface, except Turnip-seed, which requires only to be half an inch under; that all light land for Wheat should be prepared before harvest, and stubble land intended for Barley before Christmas. The land is cleaned by scarifying and harrowing, weather permitting, immediately on the removal of the previous crop from the ground, or otherwise as convenient; but during the progress of vegetation the horse-hoe is kept going as long as it is possible to drive between the rows without doing mischief, and everything is once hand-hoed if possible. Artificial manures are applied with the drill for roots; and for Wheat, farmyard manure is spread upon the land. The average cost of cultivation upon this farm amounts to 3*l.* per acre. A moveable engine and thresher are employed; but the bruisers for corn, &c., are fixed, and should the buildings be central, a fixed engine also would be preferred. House-threshing is adopted in the winter, field-threshing in the summer. Finally, as suggestive of implements not generally used, which, however, would form a desirable accession, it is remarked in this quarter that "our present steam-engines might be made to scarify as well as thresh." Although it is just the problem of the day how such a thing is to be done—no one doubts the possibility of it. Burgess & Key's reaper is recommended, and a simple improvement attached to the common plough in the shape of a subsoiler, patented by Mr. Bowles of Little Canford, near Wimborne, and made by Pearce of Poole, is favourably thought of.

C.—Farm in the Parish of Netherbury.

The parish of Netherbury is justly celebrated as one of the largest and best landward parishes in the kingdom; and the following example of a farm in that neighbourhood, from an able and respected agriculturist, presents a fair average of the style of farming in the vicinity. The depth of tillage will be found somewhat remarkable; 15 inches is quite common.

1. The soil is generally light sand resting [illegible] mould." On this particular farm 196 acres [illegible] land and 84 heavy; the latter being partially [illegible] the 196 acres dry. It is friable, and easily worked [illegible] the depth of from 9 to 18 inches. The [illegible] light brown sand with very little rock. The [illegible] all inclosed and the portion of 84 acres drained [illegible] cropped as near to the four-field system as the [illegible] stance of growing Flax, Trifolium, Peas, &c., [illegible] The pastures comprise 100 acres with 51 of [illegible] The 128 acres of arable admit of 40 acres of W[illegible] 20 of Barley, 20 of Turnips, 10 of Rape, [illegible] Grasses and Clover.

2. The classes of implements embrace [illegible] iron beam ploughs, and all the descriptions of [illegible] cultivators, tormentors, harrows, and rollers in [illegible] use. No oxen are employed, and only two horses [illegible] plough. The mowing is accomplished by [illegible] scythes and reaping-hooks; and the corn is [illegible] and dressed by machines; drills are used for [illegible] The ordinary tools, as spades, shovels, &c., are [illegible] Manure carts and waggons are employed as [illegible] may require. The original cost of implements [illegible] set down at the moderate figure of 190*l.* The [illegible] ments are painted and kept dry as much as [illegible] The annual tear and wear is estimated at 20*l.*

3. The modes of culture present these features [illegible] 1. Wheat, Trifolium, or Vetches; 2. Turnips [illegible] Barley or Oats; 4. Grass and Clover. Flax is [illegible] after Grass or Wheat occasionally, but there [illegible] uniform mode of culture. The stubbles are ploughed early in the autumn and the land prepared for [illegible] or Peas for the ensuing spring, these crops being [illegible] in January or February. Cross ploughing is [illegible] remarkable instance practised as soon as the weather will permit in the month of February. The [illegible] Grass and weeds are removed either by picking [illegible] or digging; and, before Mangel Wurzel is sown, [illegible] 3 to 5 cwt. of salt are applied per acre. The [illegible] stirred in February and March. The Wheat is [illegible] sown in November—Barley in the beginning of [illegible] Cleaning is effected by the cultivator, horse [illegible] tormentor, drag, and harrows—much being [illegible] hand and by the use of small rakes; but the [illegible] harrow is also in requisition. The distribution of manure is accomplished by drills, shovels, &c., and the cost of operations is estimated at from 3*l.* to 3*l.* 1[illegible] per acre. The threshing is effected by horse thresh[illegible] machines (fixed) and by hand, occasionally with the flail, but if in the field by steam threshing machinery. Mowing machinery, steam and water power, for cracking corn, cutting chaff, &c., are mentioned as desiderata.

D.—Small Somersetshire Farm.

1. The soil is a heavy clay, of about 80 acres [illegible] extent altogether: 50 acres dry, and the rest [illegible] drained, with from 5 to 8 inches' depth of tillage. The subsoil is a red clay, and the farm is enclosed [illegible] partly drained. The style of cropping is good—[illegible] Beans, Wheat, Vetches, Turnips, Barley, young Grass, but would be unexceptionable were the Wheat [illegible] Barley made to change places in the rotation, as [illegible] evident that the rich land left by the Turnips [illegible] cause the Barley to become too rank in growth [illegible] knee over—a very common error; but it is on [illegible] whole wonderful to note, throughout all the returns [illegible] have been able to obtain, how few remain of the bar[illegible] barisms that impoverished the farms of our fathers such as taking two or more white crops in succession and also exhaustive crops of Turnip seed, &c. [illegible] these agricultural solecisms I have not before met [illegible] single example, and it speaks volumes for the [illegible] ence in which the correct theory of farming is [illegible] even on the smallest farms, in these counties. About half, or 40 acres, of this ground is in pasture, the rest in tillage.

2. This little farm has Howard's iron ploughs [illegible] works them by horses "principally" (it is not [illegible] how else, but it cannot be by steam). It has [illegible] kill's cultivator and Norwegian harrow, and Coleman's scarifier, the drill of Fowler and Fry of Bristol [illegible] Cambridge's roller—a wonderful selection of [illegible] implements indeed for so small a spot, but [illegible] characteristic of Somerset practice. The mowing [illegible] done by manual labour; but the steam-engine [illegible] the threshing, Boby's machine the dressing, [illegible] Turner's of Ipswich is used for corn-crushing.—[illegible] latter, as everybody knows, being implements [illegible] senting the latest and most beautiful mechanical improvements. The inventor of Boby's corn-dressing machine, screen, and separator, is, I believe, Mr. T. Bridgman, of Bury St. Edmund's. The combin[illegible] implement is peculiarly adapted for cleaning [illegible] making a marketable sample of ordinary Barley, Wheat, or Sainfoin, by blowing off the chaff, [illegible] tually separating the small foul seeds and dust [illegible] the corn, and not only these, but all the thin kernels and large substances too, rendering the sample [illegible] Wheat and Barley even and weighty. Turner's [illegible] crusher, it may be remembered, is a roller-[illegible] adapted alike for crushing Linseed, Oats, Malt, [illegible] Barley, for it consists of a large and small [illegible] working in contact, a principle which Messrs. Turner of St. Peter's Works, Ipswich, claim the merit [illegible]

having originated. In addition to the above, Fowler and Fry's manure implement, all kinds of miscellaneous hand tools, three waggons, two of Busby's Yorkshire carts, and others have still to be noticed. Mr. Busby, a Yorkshire gentleman, is the inventor of Busby's cart. It is made of planks, laid on the axle so as the body is capable of being tipped. The naves of the wheels are of wood, and not of iron, wood being found more durable, and the shafts are placed on the sides of the body in the proper line of draught, a plan which, from this circumstance alone, imparts greater strength of materials than by the old method of construction. As may readily be supposed, this excellent assortment of implements receives every degree of care, and paint when required. The tear and wear is nevertheless returned as 'very heavy;' we must only suppose that they are therefore put to the utmost use. The aggregate number of agricultural implements employed on this small farm is 31. The most highly-approved of the number are stated to be the Norwegian harrow and pulveriser.

Cultivation is generally maintained by the use of artificial manures. The stubbles are pared and burned, and ploughed deep in dry weather; but although deep ploughing is practised, cross ploughing is not; and of other manipulations for reception of crops, spade husbandry is suggested as perhaps the best. Stirring is done early in February if there be dry weather; and the land is cleaned by dragging, harrowing, and pulverising it well if the weather be favourable. The work is accomplished both by hand and horse power; and drills and manual labour are both employed in the distribution of the manure. With all these exertions to make the most of a limited extent of cultivation, we may well be prepared for the confession in regard to the cost per acre: "This would vary very considerably; mine would be very expensive for a good root crop." It remains only to be added, that the engines are principally portable, that the threshing is done by the steam-engine, and that the great desiderata are stated to be "mowing and reaping machines, if brought to perfection."

Home Correspondence.

Losses by Sheep Owners.—Your Correspondent, Mr. Gamgee, seeks information as to losses sustained by sheep owners. My breeding flock is not large, 200 ewes. Our lambing season last year was very unfavourable. Out of 200 live lambs dropped from 193 ewes we had living on the 1st July only 135, thus losing about one-third, and in addition 14 of the ewes. We could not account very satisfactorily for this great loss. The season was cold and wet, and the ewes had been much exposed to these unfriendly influences, and having a good crop of Swedes they got rather more than usual I think. Our other sheep stock (the lambs of 1861), 220 in number, were uniformly healthy and went on well. A neighbour—a generally successful man and a good manager—fared, I believe, very little better, his ewes, like mine, getting a full allowance of Swedes. I purpose this year to give them more dry food, and to endeavour to avoid a lengthened exposure to the injurious elements of wet and cold, by taking them off their Turnip layer, for a time, whenever it gets very miry. I will just add a few words on a diseased vegetable product, which I have often thought may be an unsuspected cause of disease among sheep, cows, and possibly other stock. I refer to the Ergot of Rye, which in some seasons is largely formed on the common Rye-grass as well as on the Rye. Its special action on the pregnant uterus in the human subject is well known, and its poisonous character when consumed by males, which it is liable to be where Rye bread is eaten, is, I believe, well established. Three years ago 14 of my ewes cast their lambs (dead) six weeks before their time, and that year we found the Rye-grass on my farm much ergoted. I connected these together as cause and effect. But though there is no doubt of the action of the Ergot in the human subject, is it necessarily so in herbivorous and ruminating animals? It must, this year, I think, be abundant in some places, for my bailiff brought me as much as $\frac{3}{4}$ oz. taken out of about 2 pecks of Rye, purchased at market of a neighbouring corn dealer. *H. Camps, Salterby Grange, near Cheltenham.*

Farm Leases.—The many advantages which are to be derived from a more general adoption of farm leases, shown in many instances by able advocates in your Paper, would hardly seem to require so much repetition, were it not for the well-known fact that so many are to be found content to remain in the unsafe and easy-going position of yearly tenants. How frequently do we hear of some practical man having entered upon a farm, probably not in very good condition, and consequently upon somewhat easy terms, and he goes to work with a persevering and determined attempt at improvement, invests his capital somewhat freely, and soon begins not only to alter the general appearance of the farm, but, what is far better, the crops begin to tell in his favour, and he begins to reap to some extent the reward of his exertions. Now up to this point all has gone on very well and pleasant, but a change takes place, and he is in a most unexpected and startling manner brought to grief. The untimely death of the proprietor of the estate, a change of ownership, some petty malevolence of a favourite steward, the spite of an offended gamekeeper, have been the means ere now of changing the entire aspect of affairs, and if not ending in a notice to quit, what is more probable an increase of rent is demanded, and in most cases refused; and we hear the oft repeated tale, how cruelly and shamefully such a man has been treated, and from that day it rankles as a sore spot in his memory, and he writes down the landlords as an illiberal and grasping set of men, who are blessed with land for no other purpose than to embrace the first favourable opportunity to take advantage of the improvements effected by the skill and capital of their respective tenants. I would ask in all such cases who has been to blame?—if such a term may be applied to a contingency that is liable to happen at any moment. If the farmer wilfully and knowingly neglect to insure his stock in trade, and a fire takes place and it is destroyed—how can he excuse himself for his stupidity and want of foresight? And how does the farm lease operate but as an insurance and for a security upon capital invested? How very plainly then does it appear that it is the first duty of the tenant to ask for a lease with covenants framed in accordance with the progressive spirit of the age, and having obtained the same, it is equally his duty to abide by the terms of such lease, and to use and not abuse them. *W. S., Guildford, Dec.* 15.

Soluble Phosphate of Lime.—By the exhibition of those fine specimens of fattening at the Smithfield Show, we are now especially brought to consider the resources for their production. We believe there is with the agriculturists a tendency to have too much soluble phosphates in their manures. It may not be inopportune at this season of the year to draw attention to this subject. Highly important as it is that a certain proportion of soluble should be present, it is not desirable that it should be chiefly in this form that phosphates should be employed. Of soluble phosphate, though valuable, we may yet, as of other good things, have too much. Its rapid action gives it a higher agricultural value, which leads to its being sought after too much; and care is not taken that it should be accompanied by a proper amount of phosphate in a form less readily available for nutrition. By all means let not the plant be destitute of a sufficiency of so important an element as the phosphates; but we would add let not, either this fertiliser be so rapidly active that its influence is confined to the early growth of the plant, which would thus find itself stimulated to an abnormal extent in its first stage without a continuance of this necessary food to sustain its after-growth. For years we have insisted on this point, and in confirmation of the validity of this consideration, instances of the evil of its disregard have not been wanting. It is not weight only we require in the produce of the land, but quality too; and over-stimulated roots, consisting of water and vegetable fibre, to the nearly total absence of starch and the other nutritive principles to which these roots owe their value, can prove but a sorry substitute for a smaller quantity of a more matured and better-constituted article. We have met with innumerable instances of such over-stimulated roots, which have exhausted their vital energy in the enlargement of their structure, to the detriment of storing that structure with elements of nutrition. The large cells of these plants are strikingly void of their usual contents, and these empty garners are of course similarly wanting in their feeding properties. We therefore press it upon our agricultural friends not to attach an all-importance to a high percentage of soluble, but let that be accompanied by a due proportion of insoluble phosphate, taking care that such insoluble phosphate be of a nature to be easily acted on when in the soil, and thus provide for the sustenance of the plant through its entire growth. If the farmer has any fear lest the manure he buys may contain its insoluble phosphate in any of those less easily attackable forms which would render this after-supply in too slender a proportion, there are ample means in the hands of the qualified chemist to protect him in this particular, and there are plenty of respectable manufacturers honest enough and sufficiently alive to his interests and to their own, of whom he may buy. From our experience we would recommend that the soluble and insoluble be in about equal quantity. *J. C. Nesbit, Lansdell, and Co., College of Chemistry and Agriculture, Kennington, London, Dec.* 13, 1862.

Societies.

ROYAL DUBLIN SOCIETY.—At the annual show of this Society last week, a comparatively meagre display of fat stock were exhibited. We quote from the *Irish Agricultural Review* the following report of the roots shown by seedmen and growers.

The show of roots and of other specimens of farm produce of the present year's growth, was one of the most attractive features in the Agricultural Hall. The collection exhibited by the Earl of Charlemont, and grown under the superintendence of that veteran agriculturist, Mr. James Brady, deservedly attracted the particular attention of the visitors. He bore away the Silver Cup given by Messrs. Dickson, Hogg, and Robertson, of Mary Street, for the best collection of root crops. The Commissioners of National Education showed a very extensive collection, grown at their various agricultural schools, and well illustrating the beneficial influence which these schools must exercise on the practice of the small farmers throughout the country. A lady, Mrs. Simson, of Cloona Castle, Hollymount, won the Lawes' Prize Cup, value 50 sovereigns, for the best 10 acres of Turnips.

Of roots some specimens appear to have been grown to a very large size at the expense of quality. We were glad to see that a commencement has been made by the judges to pay more attention to quality than has been paid hitherto, as we found many commended cards on roots, and on reference to the report of the judges, find that these have been granted on account of the form and quality of the roots. It is absurd to send in roots for exhibition with necks almost as thick as the body of the roots, having several stems growing out of the crown. Six roots comprised the specimens in the classes for Turnips and Mangels, which weighed as follows:—The first prize Long Red Mangel weighed 102½ lbs., and were grown on 40 tons of farm-yard manure, per Irish acre. The second prize roots weighed 68 lbs., and were grown on 30 tons farm-yard manure, 1 ton salt, and 4 cwt. Peruvian guano per acre.

In Long Yellow Mangels the first prize roots weighed 93 lbs., and were grown on 40 tons compost, 6 cwt. salt, and 4 cwt. phospho guano. Second prize weighed 72 lbs., grown on 40 tons of farmyard manure per acre.

Of Red Globe Mangels the first prize roots weighed 96 lbs., grown on 40 tons farmyard manure. Second prize, 72 lbs., grown on 30 tons of farmyard manure, 1 ton of salt, and 4 cwt. Peruvian guano, per acre.

Of Yellow Globe Mangels the first prize roots weighed 102 lbs., grown on 40 tons farmyard manure. The second prize roots weighed 91 lbs., grown on 35 tons farmyard manure, 1 ton of salt, and 4 cwt. of Peruvian guano, per acre.

In Swedish Turnips the first prize was awarded to six roots of the crop, which won Lawes' Challenge Cup. Six roots weighed 118 lbs., seemed very well grown, sound as a bell, the manure used being 40 cube yards of dung, 4½ cwt. Peruvian guano, and 1 cwt. Lawes' superphosphate, per acre. The second prize roots weighed 79 lbs.; grown on 70 bushels of ground bones, 5 cwt. Peruvian guano, 160 ordinary cartloads of farmyard manure, and 10 cwt. salt per acre.

In the section for "Aberdeen, or other kinds of Turnips," the first prize was awarded to six Turnips which weighed 100 lbs., and were grown on 8 cwt. of Norrington's superphosphate, per acre. The second prize was awarded to six roots of "Dale's Hybrid," which weighed 99 lbs.; grown on 20 tons farmyard manure, 3 cwt. of Peruvian guano, and 20 bushels of bones, per acre.

The cereal division was pretty well filled. The quality and colour of the grain was generally good, but the weight per bushel was nothing extraordinary.

BANFFSHIRE: *The Use of Lime.*—At the late annual meeting of this Society, an interesting paper on this subject was read by Mr. Leadington, which we abridge from the *Banffshire Journal.*

He said:—We find a plain farmer of Hertfordshire, about 120 years ago, chronicling his own experience and practice of hs neighbours thus:—

"The calcination of the stones makes this dry burning lime not only absorb and consume the wets and moisture of grounds that are often fatal in the winter and spring to the Wheat, Rye, and Grass, but also kills, wounds, and drives away worms, snails, grubs, and caterpillars; lime, therefore, is used many ways in farming, and he goes on firstly, secondly, thirdly, fourthly, thus:—On a Clover lea 40 bushels may be harrowed in while it is hot, and let lain a week or fortnight, then harrow in the Wheat; this will deliver the grain from the destructive worm and other insects that often here destroy the Wheat, and will also cause it to gather thicker, and maintain itself in the cold wet times of the winter and spring, when others sicken or die; and therefore (says he) I am surprised to find a late author say that lime is most natural for light, sandy, hot, gravelly grounds, and bad for wet, cold gravels, but worst of all for cold clays, and in support of his theory says of the clayey lands of Aylesbury Vale, some of these farmers will also lime and dung their land the same year, which, being a double dressing, generally returns them prodigious crops of Wheat and Lent grain."

James Anderson, farmer, Monkshill, writing about 90 years ago on the merits of quicklime and effete lime says:—

It is common to hear those who have had little experience of lime as a manure recommend very great caution, lest too great a quantity be employed, for fear of burning the soil, as they express it. After combating this notion as untenable, he says—"I myself have had the experience of lime in all proportions, from 100 to above 700 bushels to the acre upon a great variety of soils, and have always found that its effect in promoting the fertility of the soil has been in proportion to the quantity employed, other circumstances being alike. And accidental circumstances clearly show that, if it were applied in much larger quantities, the effect would only be to promote the luxuriance of the crop in a higher degree, so that there is less danger in giving too much lime than in applying too little, except in those cases where an over luxuriance is dreaded. Is it not well known that, in all the richest and best improved parts of the country lime has been long employed as a manure? Yet, so far are these soils from being rendered sterile by it, that it is doubtful if any art, without the assistance of lime, or some calcareous matter, could ever have brought these fields to their present degree of fertility. Those therefore who complain of the hurtful effects of lime as a manure, proclaim what they ought to conceal, that they have had in their possession a treasure which might have enriched their posterity, but which they have idly squandered away in their lifetime."

Before deciding on the expenditure of lime and money, for which a profitable return is likely to be obtained, it is necessary to know the nature of the soil, its locality, its stiffness, the state of drainage, the proportion of vegetable matter and of oxide of iron it contains. However, it may not be out of place here to

notice the various practices on different soils of different counties of England and Wales as well as Scotland, and thus so far by way of practical reply to the first question. In Derbyshire, for example, it is long since the farmers found that, by spreading lime in considerable quantities upon the surface of their heathy moors, after a few years the Heath disappears, and the whole surface becomes covered with a fine pile of Grass, White Clover, &c.

In the neighbouring county of Nottingham, 120 to 150 bushels of Yorkshire lime per acre are applied to the land at a dressing, and even more is found to answer well; but of Derbyshire lime, which is highly impregnated with carbonate of magnesia, they cannot use more than 60 to 70 bushels without positive injury.

In Mr. Watson's (of Kendal) prize essay on the reclamation of Heath land, he recommends 150 to 250 bushels of lime per acre, and apprehends no ultimate harm from a liberal use of it. He says also that observation has convinced him that in some instances it will continue to operate for fifteen or twenty years. He observes of a plot of land in his neighbourhood, containing 166 acres, which formerly grew little but Heath, a good dressing of lime was applied on the top of the sward, which has more than doubled its value. This was done about fifteen years ago, and totally eradicated the Heath. The lime appears to be in full action to this day, as testified by the richness and sweetness of the herbage, and the deep green hue and luxuriant appearance of this land in spring and autumn, contrasting with the adjoining still unimproved lands. This soil is a thin moorish loam, in a high climate, resting on the greywacke formation.

In Cheshire, lime is used to a considerable extent in many parts of the county, and is generally applied at the rate of four tons per acre, sometimes to Grass lands previous to breaking-up for Oats, and also on land bearing a Wheat crop, for the destruction of slugs on the young Clovers.

Thomas Dyke Acland, in his prize Report on the Farming of Somersetshire, acknowledges to repeating a 50 year old report as having all its force to the present day, to the following effect:—Wherever marl, lime, or chalk can be had within reasonable distance, neglect not a liberal use thereof.

In the Vale of Clwyd, in Denbighshire, where the soil on the levels is a reddish loam, chiefly resting on the red sandstone, farther up the slopes it partakes more of the nature and colour of the clayslate or greywacke, and notwithstanding large erratic blocks of grey limestone scattered here and there, and beds of red hæmatite cropping out between the clayslate and red sandstone, yet they lime largely and indiscriminately to all soils, and with apparent good effect; so far as I could learn, the more the better crops.

In South Wales, Carmarthenshire, so convinced are they of the beneficial effects of lime in quantities, that it is positively included in some proprietors' forms of agreement that the tenant must, in each year of his tenancy, carry and spread in a husband-like manner, upon each and every acre of Clover or Grass land, at least, so many teals of well-burned lime and a proper quantity of manure, before such lands be ploughed or broken up. Walter Davies, who wrote a report in 1814, mentions several cases in the Vale of Glamorganshire which averaged, for 60 years, 100 bushels per acre every year.

In Northumberland, lime is applied to the Turnip break at the rate of from 160 to 240 bushels per acre every 10 or 15 years; but, unfortunately, it is found in such small quantities throughout the whole district that it is impossible for the farmer to obtain sufficient of it to produce the full benefit of its chemical and mechanical action on the retentive clays of the middle of the county. It is frequently carted a distance of 40 miles, and found to repay this great expense.

In Devonshire, lime is applied previous to manuring for Turnips, at the rate of 6 to 8 hogsheads to an acre. The county is well supplied with it, and the practice was begun previous to 1640, and in the South Hams the use of lime with paring and burning are the principal means upon which they rely for maintaining the fertility of their arable land.

In the North Riding of Yorkshire, lime is applied at the rate of from 4 to 6 tons to the acre; and so great is the alteration in the degree of productiveness, that land valued in a state of nature at 2*s.* 6*d.* per acre, and the same drained only 5*s.* per acre, whilst drained and limed at 20*s.* per acre, and limestone containing 98 to 99 per cent. of carbonate of lime can be obtained at from 3*s.* 6*d.* to 4*s.* per ton of lime shells at the kiln.

In Lancashire, lime is used through the county almost universally, and mixed with salt for moss cultivation.

In Cornwall, some of the conditions of management are expressed thus:—On every breach of tillage to take only two corn crops, the last to be Barley or Oats, and laid down with Grass seeds, and to dress with so many loads of mixings; or 80 bushels of well-burned lime, mixed with a proper quantity of earth; or not to lime oftener than once in nine years as a substitute for other manures.

In Northamptonshire, the operation of lime is considered most successful on woodland and peaty soils.

In Cumberland, lime is a common product from one end of the county to the other; and when the numerous commons were enclosed, large crops of grain were commonly obtained after liming the virgin soil at the rate of about 250 bushels per acre without discrimination, and, when they began to diminish, a fresh application of lime was expected to be as efficacious as the first. On dry, well-drained soils, this did no harm, and, if not applied too soon after the first, it was beneficial; but, on wet clays, and weak sandy soils, and light peat earths, much injury followed this second or third application. Robert Smith, in his prize essay on the management of Grass land, says Moss is exceedingly troublesome on some soils, and recommends for such, after harrowing freely and frequently, 20 bushels of salt to 40 bushels of lime, intimately mixed by turning at least three times at intervals of 10 days, is sufficient for an acre, and may be applied either early in the spring or at the close of the year.

Previous to the time when Dr. Keith wrote his report of Aberdeenshire early in this century, lime was used in great quantities, and in all proportions from 5 or 6 to 25 or 30 bolls to the acre, as a top-dressing on land that had been repeatedly limed, and sometimes take eight or 10 successive crops without any manure save the first liming, perhaps a crop of Peas intervening every third or fourth year.

Previous to the introduction of bones, it seems to have been considered all but necessary to put so much lime on the land previous to laying down Turnips.

Having endeavoured to ascertain from general practice what soils are benefited by the application of lime, I will now only add one other quotation from John Haxton's prize essay on light land farming, who says of the light land on the granite formation of Scotland — the whole of the granite soils are deficient in lime, and the first step toward their improvement, after being drained, is to apply this substance in a hot or caustic state. And of the trap soils—Although all trap soils have been proved to contain lime in some form or another, still they are greatly benefited by small doses of burned lime, especially whenever they have been subjected to a lengthened continuance in pasture, and are newly broken up, and also whenever the land has got into a foul condition from the prevalence of Couch Grass. Of light land of the mountain limestone, although mixed with small stones of solid carbonate of lime, an application of hot lime is necessary in order to bring out the fertility of the soil. In peaty soils, a dose of lime is also recommended, to bring it into fertility. In fact, the rule with him is, apply lime—hot lime—and, where effected with finger-and-toe in the Turnips, he would lime every second rotation, except on peaty soils, where no subsequent limings should be given for a very long period.

I am afraid I shall occupy too much of your time if I do but touch on the second question—viz., how long the effects of lime may be perceived on the soil.

Mr. Anderson, a writer before alluded to, affirms permanency of effect, under favourable circumstances.

But, where it is common to have compensation clauses in the leases, the usual length of time allowed for exhausting lime is from seven to ten years. Johnston quotes the opinion of an old East Lothian farmer, who says:—"For a large dose of lime I would allow, after three years, one-half; after six years, one-third; after eight years, one-fourth or less."

Morton states, that in the neighbourhood of Taunton, in Somersetshire, and over all the soil of the new red sandstone, the farmers lime their land every time it comes in course to fallow for Turnips, and this produces excellent crops, even without dung.

I got my first lessons on the practice of agriculture in North Wales, in a court of law, where it was proved to be the acknowledged practice in a district of the Vale of Clwyd, the soil and subsoil of which I have already described, to lime the Clover lea for Wheat; then dung for Barley, to be sown out with Clover seed; then pasture the following spring until May, then seed the Clover, then again lime and Wheat—thus a three years' course, varied, perhaps, once in the seven years with an intermediate crop of Turnips.

The conclusion which these seem to lead to is that lime is beneficial on all soils, provided they do not already contain much over one-fifth of their bulk of lime in the shape of chalk or marl, and provided always the soil is thoroughly drained and subsoiled, and observing always that the lime used is the product of a very pure limestone, especially free from magnesia and manganese.

Farmers' Clubs.

FRAMLINGHAM: *The Cultivation of Flax.*—Last week Mr. R. F. North, formerly manager of the Grey Friars' Flax Works, Ipswich, read a paper on the subject before the Framlingham Farmers' Club. He said that of the three fibres which were yet recognised as to any extent practical substitutes for Cotton, viz.—silk, wool, and flax, the last was by far the most valuable and important, inasmuch as it could with economy and advantage supply those articles of clothing which were of the most urgent necessity for health and comfort. It was moreover a material which our own country was capable of supplying to an extent which, if properly recognised, would cause the gradual conversion of many of our present cotton factories into flax mills, and provide us with a truly national staple, the whole profit of which would centre and circulate at home. Five per cent. of one half of the land within a radius of 10 miles from the spot on which he now stood would supply 8,799 tons of Flax straw, and thus the county of Suffolk could supply 36,137 tons, and the whole kingdom 1,706,250 tons, representing, when converted into Flax, a monetary value of upwards of 17 millions sterling. He wished it to be understood distinctly that the question of Flax cultivation and manufacture did not owe its importance to the present cotton crisis; the want of it was an acknowledged fact of long standing, and the statements which he proposed to lay before them as to the cost and remuneration of production and manufacture were not the result of the excited state of the market, but were based on the average rates of a number of years past. Our climate was singularly suited to the growth of Flax, and it was particularly worthy of notice that the past season, confessedly too wet for the grain crops, proved peculiarly favourable to Flax. This was no slight recommendation to a crop in a climate so moist as ours, and it commended itself to agriculturists as compensating them for a failing crop of Wheat or Barley by a remunerative crop of Flax. Mr. North then pointed out the advantage of the crop on account of the short time it occupied the land during the season. He spoke of the care required in its cultivation, which was an advantage rather than a disadvantage, as it resulted in the permanent benefit of the land. He then enlarged upon the value to the farmer of the Flax seed for feeding purposes, and went on to show that the crop was not exhaustive, as had been alleged, and that if cultivated only at the rate of 5 per cent. of the entire land of a farm under tillage, the getting of it in would not interfere with harvest, as had also been urged against its cultivation. He recommended Riga seed, and deprecated the use of Dutch seed for Flax growing. The best land for it was good mixed soil, or heavy land with a substratum of clay. Any land which, in growing Wheat gave a good yield of straw, was suitable for Flax. From 9 to 10 pecks of Riga seed per acre should be sown. It was said to do well on a Grass or Clover lea, followed by Wheat; while others recommended it after Wheat, Barley, or Oats. In this county it did well after Wheat, followed by Barley, but it should not come after root crops, Peas, or Beans. Flax did not like the too pungent qualities of manure, and therefore it was deemed best to manure well before the previous crop and not before the Flax. The best rule of preparing the land was to do the same as when preparing Wheat [illegible] for Barley, taking care to leave the surface as [illegible] smooth as possible. Although broadcast sowing was somewhat better for the crop than drilling, the [illegible] method would be found most suitable under [illegible] circumstances in this country, as it required less labour and care, but the drills should not be more than from 4½ to 6 inches apart. It was of the utmost importance to keep the crop free from weeds. It might be sown late —sometimes as late as May. The entire cost of production per acre, including preparation of the land, seed, &c., was 5*l.* 9*s.*; the cost of harvesting, threshing, &c., was 4*l.* 1*s.*; making a total of 9*l.* 10*s.* [illegible] The produce, including the Flax, seed, and chaff was [illegible] 14*l.* 10*s.*, leaving a net profit per acre of 4*l.* [illegible] This calculation was based on figures showing a lower profit than many experienced men said could be made, and a much larger produce than he had set down (two tons of threshed straw per acre), had been obtained in Suffolk, Yorkshire, Lincolnshire, &c. Flax had been the most remunerative crop of the past season.

Mr. R. SYMONDS (Kenton) said that he found it a very remunerative crop. It was so much more profitable than the Bean crop that while the Beans yielded him only from 7*l.* to [illegible] per acre, the Flax yielded from 14*l.* to 15*l.*, and he manured for Beans, and used little or no manure for Flax. Of course every one knew that the land must be kept clean for it, and it required care. He was quite sure if they got a Rettery they should have plenty of Flax grown, and as for himself he would continue to grow it whether they got a Rettery or not. The seed of it was worth very nearly as much as Beans, and he grew Flax instead of Beans. He found his crops after Flax grew better than after Clover, and often better than after Peas and Beans.

Mr. GOODWYN.—Then you don't consider it an exhaustive crop?

Mr. SYMONDS.—No, except on sandy soil, where it should not be grown, nor on chalk soil, but there is not much of that in Suffolk. I grew it upon poor soil this year, and got nearly two tons per acre, and I am realising from 14*l.* to 15*l.* per acre for it. I get it quite as well on poor land as on good land, but I don't get quite so much seed as on the good land. I do not think there is one Flax grower in ten who does not make 15*l.* per acre, and I have known 20*l.* per acre to be realised. I have made 17*l.* 10*s.* per acre, and I never make less than 1[illegible] per acre.

Mr. GARRARD (Brundish), who was called upon to make some observations on the subject, said he believed Mr. North had understated the profit to be derived from Flax cultivation. Mr. North spoke of the Flax realising 4*l.* per ton, but he sold his last week for 4*l.* 15*s.* and if there were more competition he believed he could get more. He considered that nine times out of ten the chaff from Flax was worth as much as the straw from Beans; it was capital stuff for horses, sheep, or anything. He had grown Flax for 10 years, and did not consider it exhaustive. He had grown both Wheat and Barley after it, and never found any deficiency. His worst crop of Flax was in 1861, and, he did not know how it was, that was the only year he ever manured for it. He believed it grew best after Wheat. It left the land a great deal cleaner than Beans or Peas.

Mr. GOODWYN.—Have you repeated it on the same land?

Mr. GARRARD.—This year I have grown it where I did [illegible] years ago; then I got 2¾ tons per acre, this year I got [illegible] two. I manure the land for the Wheat before Flax, and [illegible] the Barley after the Flax without manure. Once after Flax I got 10 coombs of Barley per acre, when I got only 5 off land on which Flax had not been grown. As to the seed, I do not think there need be any fears about it; if a rettory be established, those gentlemen who have the management of it will find it to their advantage to see that the farmers have genuine seed.

Mr. GOODWYN said Mr. North had stated that the landlords said it was not a landlord's question; but he thought there would be no indisposition on the part of the landlords to encourage the cultivation of Flax if it did not injure the permanent quality of the soil; and if, by means of the seed, it afforded them additional facilities for keeping stock on their farms it would be a decided advantage to the land; for in the present day those who depended on their barn doors for a living must go behind. Of course the straw and seed must not both go off the land, but if the seed were consumed on the land it would be well. He thought the cultivation of Flax was a thing well worth turning their attention to for more reasons than one. If it promoted clean cultivation they ought to hail it with satisfaction. He thought the general feeling of the Club would be in favour of the cultivation of Flax, but he thought they would say that the seed ought to be consumed on the farm; and although that might lessen the apparent returns from the Flax crop, of course they would have the benefit of the seed in their stock as well as indirectly on their land.

Mr. GARRARD said as for the seed it would not matter if the farmer sold 20*l.* worth of seed, and spent 20*l.* in cake. For his own part he liked cake best for his stock; they could not give the seed without some other corn.

Mr. SYMONDS said they had one large landed proprietor in Suffolk (Sir Edward Kerrison), who invited his tenants to grow Flax; and some of them had grown it to a great extent.

Mr. NORTH said the only point Sir E. Kerrison urged was that his tenants should not grow the Flax on the same land more than once in seven or eight years.

The CHAIRMAN said Mr. North had alluded to the landlords being backward in the matter on the ground of its being a tenant's question. He agreed with that: he thought it would not be wise for the landlords to urge upon their tenants the cultivation of a particular crop.

Mr. SYMONDS said he was sorry to say that the landlords did dictate to the tenants in this county a great deal more than they ought: they forced the four course system upon their tenants. He hoped the time would come when the tenant could grow what he liked.

The CHAIRMAN was fully of opinion that the tenant knew better than the landlord what course of cultivation was best.

Mr. D. SMITH, sen., said he thought it was not a matter of very serious consequence to the landlord what the course of cropping was, if the land was kept clean.

Mr. SYMONDS said if heavy land were kept dry and clean, the landlord needed not trouble himself about what the tenant grew.

The CHAIRMAN said he considered the principle of "non-intervention" between the landlord and the tenant was a very sound one.

NEWCASTLE: *The Occupancy of Land.*—At the usual meeting of this Club, held on Saturday last,

[MR.] THOMAS LAWSON, of Longhurst Grange, read a paper on this subject. He said:—All feudal grants [recognised] as paramount the duties and services due [to] the tenure of the manor, and these included not [only] such as were written and defined, but many other [duties] so generally known as not to require record. Its [primary] object in creating a fixity of tenure appears to [have] been to make good citizens, and to secure the [products] of the soil to those whose industry they were [raised]. Fixity of tenure in land is the life-spring of [civilisation], the bulwark of freedom and independence, [the] fountain of local and national government, and the [greater] the number that shares in its genial security [the] higher will be the moral standard of the nation and [the] happiness and contentment of its population. [Many] of the duties and services due under the feudal [tenure] have been commuted by Parliament into money [payments] to the State; but many owners still scrupulously recognise the sacred trust under which their [estate] was first created, and let portions of their manor [in strict] accordance with such duties, and on such [estates] leases are as unknown as unnecessary; landlord [and] tenant each performs his respective part, the [former] providing the necessary permanent requirements, and the latter as scrupulously performing such [works] as are temporary. New modes of culture become [amalgamated] with prior systems, and all the developments of science are adopted, with that due regard to [the] capabilities of the soil, subsoil, climate, and other [surroundings] which long experience warrants.

There is nothing in the feudal tenure injurious to agriculture, and no other tenure has been equally efficacious in securing a continuous occupancy, and in developing the permanent capabilities of the soil; no lease in it retards the adoption of any new discovery, the toe of one improvement freely treads on the heels of another, and the paralysis of stagnation is unknown. All the noblest qualities of human nature are invoked in such a tenure, good faith and mutual regard are its covenants, the security that is enjoyed by the tenant pervades his engagements with his labourers; in his security they feel a guarantee for their own; they dare to take root; they struggle to cultivate kindly feelings around them; a high moral standard [exercises] a healthy control in the village; and a generous [sympathy] unites all classes in a common weal; and had the [principles] of the feudal tenure been continued, with only such [modifications] as were in accordance with the spirit and pro[gress] of the age, a discussion on the best terms of a lease [between] landlord and tenant would never have arisen.

Where the tenure of land is not fettered by law with any obligation as to the terms on which it may be leased, and where no other than mere commercial ties exist, or where new tenants are necessary, it may be assumed that the terms on which a tenancy shall be based are a fair and legitimate matter of bargain. The expenses of agriculture cannot be replaced within a year, and the manure and management applied to one crop is often a mere preparation for succeeding crops, which may be styled a rotation of crops, and be comprised within a certain number of years. In the occupation of land a security of tenure that would extend over at least one rotation of crops is requisite to secure their benefits to the occupier, who furnishes the labour and other necessary appliances; a gradual and steady increase in the fertility of the soil is the certain result of sound management, and where security of tenure exists the interests of owner and occupier become identified. Progress is best attained by experience derived from actual experiments, and these require to be oft repeated ere a safe conclusion can be arrived at, and continuous occupation is an essential element in making experiments, the value of which is often only local, and were the occupant to be removed such knowledge would be valueless to him, and could scarcely be transmitted to his [successor]; a change of occupancy by destruction of experience implies a certain amount of individual and national waste. It therefore follows that the paramount requirements of a lease are security of tenure and continuous occupancy. A lease has always been held to be a mere chattel interest, and is the creation of a tenure, the extent of which must be defined in its terms; an owner is governed by the general laws and custom of the realm, but an occupier is governed by the terms of his agreement only. In England the ownership of land secures the owner from any other person giving him notice to quit, [and] the land can be taken from him for public purposes, he [being] awarded reasonable compensation. The entire annual [value] or rental can be alienated from the owner for the main[tenance] of the poor; and other less important assessments likewise take precedence of rent. By a lease an owner deputes a part of his ownership, creating a joint tenantcy, wherein he binds himself to respect the rights he creates, and the tenant becomes bound to respect the rights reserved, each enters into personal as well as financial obligations, and the sort of [partnership] created between them should prove an honourable [bond] of mutual respect, for many duties and courtesies are [implied] between a landlord and tenant that could not be set [out] in a lease, and yet could not be ignored without ignoring [the] laws of honour. When a lease is entered into for nine, 21, [or any] definite number of years, it contemplates or rather [creates] a termination, which in practice exercises a strong [influence] on the mode of treatment to the land, from the com[mencement] of the lease to its termination, its tendency being [to stimulate] a hectic fertility to the soil at the commencement, [and a studied] abstraction of the powers of production towards [the end] of the lease; and this is generally sought to be in some [degree] counteracted on the part of the owner by the insertion [of clauses], deemed capable of preventing excessive deterio[ration] of the soil towards the end of such lease. The very fact [of such] clauses is evidence that a sort of antagonism to the [natural] progress of the science of agriculture exists in such [leases]. All leases for a definite number of years fail to keep [agriculture] in that even and undisturbed progress essential to a high state of fertility, by the very fact of their termination. [Draw] them for as long a period as you may, they eventually [dwindle] down to the position of a "tenancy for a year," with [a positive] notice to quit, that has exercised a baneful influence [on] a sliding scale of years. A high-minded occupier [may] deplore the cause that induces the adoption of any [change] in the usual routine of appliances; but interest [[illegible]] counsels the prudence of such a course. A [[illegible]] fertility becomes a fact, and from that position, [[illegible]] by such evidence of inferred mistrust, a new lease [[illegible]] discussed. A tenant-right clause might be contrived to [[illegible]], in a considerable degree, such deterioration, by [[illegible]] compensation; but no tenant-right clause could [make] any award for the personal injury a tenant would suffer [by] removal from his local position. His experience, his [business] connection, and the friendly circle and feelings which [have] been the growth of years, and are the natural surround[ings of] a correct discharge of the duties of his position, become [rudely] severed, and he is forced into an injurious emigration. [A lease] that, by its tenure, brings the relation of landlord and [tenant] to the brink of such an abrupt termination is neither in accordance with the interests of good citizenship nor favourable to the best development of the capabilities of the soil. Experience proves that in practice tenancies from year to year are more favourable to a continuous occupation than any lease for a certain number of years; and although land let on lease often attains a higher maximum of fertility at the period of such lease, yet a tenancy from year to year generally maintains an equal [[illegible]] progress, by its continuous occupancy. These [facts] indicate that the highest cultivation would be produced by a tenure that afforded the security of a lease to a continuous occupation. Such a position would be easily attained by the creation of a tenancy terminable by either party giving "[[illegible]] years' notice to quit." Such a tenure would not place the land for an unreasonable time out of the direct control of its owner, [nor] would it extinguish his indirect influence [[illegible]] alterations or requirements in [[illegible]]. The [[illegible]] would enjoy security of tenure for an ordinary rotation, and freedom from any sudden termination of his tenancy. The relative positions of landlord and tenant would be tempered by the existence of a tenure affording [[illegible]] security, with a power of termination never so far removed as to be [[illegible]] of sight. The subject for discussion this day, which I have had the honour to introduce, might be extended to [[illegible]] to tenant right, to game and other reservations, and even to the agents entrusted with the management of estates, and on these details I am prepared to enter, but I submit that we will best attain a useful result by directing our attention exclusively to one of these subjects at a time; and I may explain that leases for the reclamation of land, or any lease where an owner or occupier intends to take more than the ordinary duties of their position, appear to me to be special cases that could not properly be included in a general discussion.

Mr. WILSON inquired whether the question of tenant-right would be allowed at the end of seven years; if not, a man knowing he might have to leave his farm in seven years, might very possibly so exhaust the resources of the soil that the incoming tenant must enter at a great disadvantage to himself.

The CHAIRMAN said that in the South of England it was understood that a great deal of litigation had arisen on this tenant-right question.

Mr. LAWSON said that was a matter of detail with which, as he had said towards the end of his paper, he was prepared to deal. He might say, however, that the question of tenant right should form a portion—and did form a portion—of every lease in the United Kingdom. He thought it was very desirable that it should be so, because at the end of each seven years the owner and the occupier would naturally discuss the terms of the quittance, and come to some arrangement equally beneficial to them both.

Mr. CHRISP said there was one subject which Mr. Lawson had overlooked, namely, the rent of the land. He should think that, if Mr. Lawson's system were fairly carried out, which was almost impossible to be done in the present condition of England, and it would come to this: that they would farm at the same rent continuously, if the occupiers were to be continued on the farm. To look forward seven years for the value of the money rent was such an improbable—he might almost say impossible—thing, that it would create such a fixidity of tenure as would make the occupiers of property in the land equal to the landowners, if not superior to it.

Mr. SAMPLE said he had introduced limited tenant right into agreements which he had entered into on behalf of his employer during the last few years. He had not gone perhaps so far as he would have liked to have done, but he had seen great benefits arise even from what he had introduced. He knew almost every farm in Lincolnshire, Nottinghamshire, and the Yorkshire Wolds, and he assured the meeting that throughout these districts, to the best of his knowledge, not one lease existed; but a tenant right. The farmers there were prosperous and wealthy men, and everything seemed to go on in a very satisfactory way. With regard to the subject of leases, he had scarcely made up his mind about it; but he was almost inclined to think that a yearly tenancy, with a liberal guarantee to the farmer for any improvements he might make upon his landlord's farm, was best. Then, as to giving the tenant unlimited power with respect to the land, he should be certainly inclined to condemn that.

Reviews.

The History and Properties of the different Varieties of Natural Guanos. By J. C. Nesbit, F.G.S., F.C.S., &c. A new edition. Rogerson & Tuxford.

This is a useful tract to purchasers of all artificial manures, as well as of guanos; containing instructions both on the composition and valuation of the various purchased fertilizers. There are also instructions given for the use of these manures. They are classed under three heads, those which have lost none, little, and most of their ammonia respectively. Of the first class, it is said:

"If we take the per-centage of nitrogen as a correct indication of manuring value, we shall find that 1 ton of ordinary Peruvian guano is equal to

33¼ tons of farm-yard dung	22¼ tons of pig dung, and
21 tons of horse dung	14½ tons of mixed human excrements
38¼ tons of cow dung	

"Let those who farm in hilly countries, and other places where carriage is expensive, ponder well the above facts.

"Though a good farmer will produce as much manure as he conveniently can, yet even farm-yard dung may be bought too dear; and it is certain that on numbers of farms the cartage of dung is so expensive an item of management, that the introduction of guano, for those parts at the greatest distance from the homestead, would be productive of the same fertility, at a considerable saving of expense.

"At the present price of Peruvian guano, it is more than questionable whether the ordinary plan of increasing the available manure on a farm by the importation of oilcake and the feeding of stock is at all economical. If the oil-cake owes its fertilising properties to the nitrogen and phosphate of lime it contains, it is certain, from the analyses of various chemists, that Peruvian guano is a much cheaper source of these substances. In a lecture delivered by the author before the farmers of Dorchester, this subject was alluded to as follows:—

"'It may here be necessary to notice another question of great importance, viz.:—Is the use of artificial food (such as oilcake), for stock the cheapest mode of introducing bone-earth and ammonia into the land? Many farmers are content if their fat stock produce as much money as will pay for the oilcake used, together with the price of the lean animals bought; thus sinking altogether the Turnips, Mangel, and hay, likewise consumed by the stock. It appears to be clear that, unless the oilcake affords a profit by the beef or mutton, a more expensive system of manuring could not well be pursued. The following table, comparing the manuring values of oil and Rape-cake with guano, may be of some service in determining the practice of the intelligent farmer:—

TABLES OF THE MANURING VALUES OF OILCAKE AND RAPE CAKE, COMPARED WITH PERUVIAN GUANO, FROM ANALYSES MADE IN THE LABORATORY OF THE AGRICULTURAL AND CHEMICAL COLLEGE, KENNINGTON.

	Oilcake from Liverpool.	Oilcake from London.	Oilcake from Marseilles	Rape-cake.	Peruvian guano.
	lbs.	lbs.	lbs.	lbs.	lbs.
Moisture	268.8	300.7	274.4	195.8	268.8
Organic matter	1739.6	1699.3	1716.3	1654.2	892.2
Nitrogen	109.1	118.5	118.2	115.4	295.0
Ammonia	(130.6)	(143.8)	(143.4)	(140.6)	(358.4)
Inorganic matter	122.5	121.5	129.1	274.6	784.0
Containing:—					
Phosphoric acid	(47.1)	(50.9)	(39.4)	(43.7)	(224.0)
Potash	(29.1)	(19.1)	(22.7)	(27.1)	(67.2)
	2240.0	2240.0	2240.0	2240.0	2240.0

"'From the foregoing table, it appears that 1 ton, or 2240 lbs. of Peruvian guano, containing 16 per cent. of ammonia, would introduce into the farm six times the phosphate of lime, two-and-a-quarter times the potash, and more than two and-a-half times the ammonia, than would be furnished by 1 ton of the best oil or Rape cake. To pass oilcake through the bodies of animals without some attendant benefit, is both expensive and wasteful; and unless you can find your profit in the increase of the beef and mutton, it is an improper expenditure of money.'

"These observations are amply supported by the opinion of the members of one of the most intelligent Farmers' Clubs in England. The Botley Farmers' Club have unanimously resolved, 'That where there is not sufficient dung for the Wheat crop, it is more profitable to apply concentrated manures than to purchase dung; and that an equal amount of money expended in the purchase of concentrated manures will raise more Wheat than the same amount expended in the purchase of oilcake or corn, and converted into dung by feeding cattle.' And the Rev. L. Vernon Harcourt, speaking of the decision of the Club, says, 'All my experiments tend to corroborate the view taken by the Botley Club on this subject.'

"Leaving these facts and opinions for the consideration of those farmers who seek to combine good farming with economy of manuring, we shall now offer some suggestions as to the best mode, and the proper time, of applying Guano to different varieties of crops.

"*Mode of Applying First-Class Guanos to Various Crops: Preparation of Guano for Sowing or Drilling.*—For drilling, it must first be mixed with four to six times its weight of the ashes* of wood, turf, or coal, or with the same quantity of well-sifted mould. Charcoal, in powder, either from peat or wood, is also a most excellent article to be mixed with the guano, in the proportions indicated. Its great porosity allows it to retain the volatile ammonia, and dry weather to absorb considerable moisture from the air. This is of material benefit to plants in their early growth.

"Before mixing, the guano must be finely pulverised, which may easily be done with a common garden roller upon the floor of a barn or shed, or even by beating it with a common shovel. A layer of ashes, &c., is then spread evenly upon the floor, and a quantity of fine guano sifted over it. This is followed by another layer of mould or ashes, and another of guano, until the requisite quantity of both is used. The whole must then be repeatedly turned with the shovel until thoroughly mixed. If time will permit, it is now preferable to leave the mixture for 8 or 10 days. It must then be again sifted, when it will be ready for use.

"In using guano with the drill, care must be taken that the mixture falls below the seed, and that an inch or so of soil intervenes between them, otherwise the strength of the guano will kill the seed. Garrett's, Hornsby's, and other modern drills, are well adapted for depositing guano and other concentrated manures.

"The above mixture is generally sufficiently damp to fall exactly where the hand directs it. When this is not the case, a small quantity of water should be added; the field must be sown with the mixture in the ordinary manner, and the manure harrowed in; the seed is then drilled as usual.

"Perhaps the preferable mode would be to broadcast two-thirds of the guano applied, and to drill one-third with the seed. The young plants would then have

* Some varieties of wood-ashes, which contain a considerable amount of free alkali, are not suitable for mixing with guano, as they liberate the ammonia. This may easily be shown by mixing a shovel-full of the ashes with the same quantity of guano. If a strong ammoniacal odour be immediately perceived, the ashes are not fit to be mixed with guano. The mode of preparation here described should be used, with slight variations, according to circumstances, for all varieties of crops.

enough manure under the drills to serve the early stages of growth, while the Guano sown broadcast would supply the wants of the plants in a more mature state, when the roots would have spread in every direction in the soil."

Then follow instructions for the application of the manure to our different crops, which may be quoted hereafter.

Of the second class guanos, it is said:—

"Guanos of this class have lost a considerable amount of their ammonia, and in consequence require to be applied in much larger quantities than guanos of the first class.

"The mode described for using first-class guanos will also apply to those of the second class; but in general, the amount per acre ought to be nearly doubled. For ordinary root crops many of these guanos, used in proper quantities, have proved to be serviceable manures.

"In purchasing these guanos the prudent farmer will always require not only a guaranteed analysis before he buys, but before using the manure he will have the bulk also analysed. If he has bought a spurious article, he will, by taking these precautions, prevent the loss of his year's rent, tillage, and crop."

And of the 3d class guanos which have lost nearly all their ammonia, and contain little more than earthy phosphates:

"If used alone, six or eight hundredweight may be applied per acre.—The best guanos of this class are suitable for some species of root crops, and then only when unmixed with much sand, and containing a good amount of phosphates really derived from the rain-washed deposits of birds and other animals.

"In many guanos of this class, however, the phosphates are too insoluble by ordinary atmospheric action to answer by themselves. Even the best of them are most useful when dissolved by sulphuric acid, and made into superphosphate of lime."

Transactions of the New York Agricultural Society. Vol. XX. 1860. Albany.

This annual volume contains, without much attempt at condensation or editorship, Addresses on the occasion of annual and other Meetings—Reports of Dairy Farms, some of which we have marked for extract—Essays on agricultural subjects—and passages from English journals. Among the last are the papers of Mr. Lawes, of Mr. Harrison, of Frocester Court, and of F.R.S. in the *Mark Lane Express*.

Occasional descriptions are given of new machines, and we may mention among them an Osier peeler, which would be serviceable here. It is a screw cylinder, revolving as a radius on the surface of a revolving horizontal disc. The Osier is drawn in by a thread of the screw, and, forced along by the rotation of the disc, is skinned by the lateral rubbing which it receives on its passage from the centre to the circumference. Such at least is our understanding of the following passage, in which it is described:—

"G G is a screw cylinder, the screw having an increase according to the taper of the Willow, thus accommodating Willows of all lengths, from 6 inches to 16 feet or more. This cylinder, by the help of a bevel at the end, catches the Willow by the tip, gives it a horizontal motion while the disk gives it a side motion, thus producing a combination of the two motions, which effectually wrings the bark from the Willows as they pass through, with the greatest possible rapidity. If they are in good peeling condition, the machine is capable of peeling 100 lbs. of good Willows per hour."

Farm Memoranda.

AN AMERICAN CHEESE FARM.—1. My farm consists of 356 acres, lying on both sides of Deer River, of which about 30 acres is woodland pasture, about 18 acres of waste, consisting of river and road, and about 308 acres of improved land. 2. About 205 acres is a clay loam with a clay subsoil, with no rock or stone of any description; the remainder is a sandy loam with a gravelly subsoil, about 20 acres of which is underlaid with lime rock. 8. I apply not less than 20 loads of manure per acre; the manure is thrown out of the stable window, is not covered, and is drawn out in winter or early spring. 9. I get from my stables and yards about 640 loads of manure annually, and apply the same; litter the yards liberally with the straw raised on the farm, which, with the droppings of the stock, furnishes the manure used on the farm. 10. Stable manure is always applied in a green state on corn and Barley ground, ploughed in; the manure from the yards is heaped in the spring and drawn out after harvest, and applied to Grass ground.

Tillage Crops.—13. Till the past season 70¼ acres, of which 30 acres was in Peas, 11 acres in spring Wheat, 14 acres in Barley, 12 acres in Oats, 1½ acre in corn, 1 acre in Potatoes, ¾ acre in Carrots. 14. Sow per acre 1½ bushel Wheat, 3 bushels Barley, 3 bushels Peas, and 2 bushels Oats. Sow spring Wheat about the 25th of May, and Barley, Peas and Oats as early as the season will admit. Plant corn early in May; put my land in prime order by the use of the plough and cultivator before sowing; harvest in the usual method; plough stubble land from one to three times in the fall, commencing as soon after harvest as possible; also plough in the spring for spring crops; depend mainly upon the fall to subdue my land; plough sod land in the fall for Peas and Oats; do not summer fallow, except when necessary to cleanse and subdue the soil. The past season the yield has been for spring Wheat, per acre, 23 bushels, Barley 49 bushels per acre, Peas 22½ bushels per acre, corn 75 bushels per acre, Oats 77 bushels per acre, Potatoes 212 bushels per acre, Carrots 1200 bushels per acre. 15. Apply manure (as before stated) to corn and Barley; prefer fresh manure ploughed in in the spring, at the rate of from 20 to 30 loads per acre. 16. Plough in the manure from 8 to 10 inches deep; do not apply to the surface. 17. Potatoes not affected the past year; have been in former years by the rot; know of no cause, or remedy for it.

Grass Lands.—18. Use Timothy and Red-top; sow about 12 lbs. of seed per acre; seed with Wheat, Barley and Oats before the last dragging and roll; Timothy and Red-top are best for dairy purposes. My Grass land is natural to Clover, and it comes in as much as desired by the use of plaster. 19. Mow 98 acres; average product 2½ tons per acre. Cut Grass in the second blow, as near as possible, with a machine; generally let it stand in the cock over night, and get in the next day. 20. All my meadow land can be and has been ploughed. 21. Have not practised irrigation. 22. Have reclaimed low bog land by ditching; sowed Oats and seeded with Timothy and Red-top as soon as in condition, with good success. 23. Have not eradicated all the weeds; the most troublesome are quack Grass and Charlock.

Domestic Animals.—24. Keep five horses, two colts, 57 cows, eleven head of young cattle; three of the cows are Shorthorn Durhams, eight a cross with the Shorthorned Durham, and the remainder natives. Find it necessary to keep my full-blood Durhams by themselves, as they require double the time in feeding that my natives do. 25. No experiments as to the relative value of different breeds of cattle. 26. Have good warm stables for all my cattle; feed good hay, with Barley meal, to cows in milk (and plenty of water). Consider shelter and good feeding decidedly the cheapest. To stock not giving milk, a portion of the time feed straw once a day. 27. Milked the past season 57 cows, of which three were farrow; three did not come in until after the 20th of June, and four were turned off for beef the first of October. Of the whole number, seven were two years old, ten were three years old, and the remainder were four years old and upwards. Making allowance for heifers, farrow cows, cows coming in late, and those turned early for beef, consider that 50 cows would be a fair estimate of the number milked through the season.

Made from them the last season, 19,559 lbs. cheese, sold for 10¾ cts. per lb.	$ 2102 59
Also 1693 lbs. butter, sold for	301 44
Milk sold and used, amounting to	125 10
Amount received for pork and hogs sold, which were fed on whey and milk, less the first cost and the value of grain fed	225 46
Deacon skins and calves sold	46 25
Total	$2800 84

Average product per cow, calling the number 57, 49.13\frac{3}{57}$.
Average product per cow, calling the number 50, 56.01\frac{34}{100}$.

28. Kept the past season four sheep, common breed; average yield 4 lbs.; wool used in the family; two had lambs, one each; lambs sell to butchers for 2 dols., sheep for 5 dols. 29. No experience on farm as to expense of keeping sheep. 30. Keep nine swine, Suffolk breed; feed with whey and corn, and Barley meal; kill at about 1½ year old; average weight, dressed, 300 lbs.; raised 41 pigs from the above hogs. 31. No experiments as to relative value of Potatoes and other root crops, as compared with Indian Corn.

Cheese.—1. Do not warm the milk in very warm weather, as it is not necessary; do at other seasons. 2. Add rennet at about 80°, because from our experience we get more cheese from milk at that temperature, than at any other. 3. In cold weather raise above that temperature, because unless done it will not retain the heat long enough to obtain the fullest return from the milk. 4. Use calves' runnet salted and dried, soaked in whey when used; judge of the proper time to break the curd by the hardness; if broken too soon, much of the curd is lost in the whey. 5. Break the curd with a curd knife, to separate the whey. 6. The time occupied in breaking the curd varies from one to two hours; when the curd comes soft, it requires a longer time to work it off than when it comes harder. 7. In about 20 minutes from the time of first breaking the curd, begin to raise the heat for scalding; occupy from one hour to an hour and a half in scalding; do so because I think I get the most and best flavoured cheese by this process. 8. Apply heat in scalding by the use of warm water around the vat; raise the temperature to from 100° to 110°. 9. Do not scald as hard in cold weather as in warm; cheese well scalded requires less care in warm weather than when scalded lightly. 10. Judge the curd scalded sufficiently by the color, its snow-white appearance being gone; and also by compressing it in the hand or between the teeth, it will give a peculiar, squeaking sound, both which will be determined by observation and experience. 11. Separate the curd and whey by dipping from the tin vat into what is called a salting vat, made of wood with a rack in the bottom, over which is thrown a cloth strainer, the whey being conducted by troughs to the hog pen; the curd is salted at about 80°. 12. Use Ashton salt; 3 lbs. of salt to 100 lbs. of curd worked in by hand. 13. Press when the curd is about 60°; if it is much below that temperature, it does not adhere well; if much above, the flavour is less pleasant, and will stick to the pressing cloth. 14. Cannot tell the power; use one of Taylor's presses, manufactured at Little Falls; press about eight hours, turn the cheese and put on the bandage, and also a cloth of the size of the cheese upon the top and bottom of the cheese, press about twelve hours longer and remove to the table, when each cheese is weighed and marked; let the cheese stand about 12 days and remove the cloths from the top and bottom, and grease and colour with annatto. 15. The curd put into the press too warm will cause the pressing cloth to adhere to the cheese; in very warm weather pour on to the curd before salting, about two quarts of cold water to the 100 lbs. of curd, and it will not adhere. 16. Give colour to the cheese by the use of annatto outside. 17. Produce a rind impervious to flies, by washing soon after removing from the press, with whey as hot as can be applied by the hand, and repeated every other day for 30 days. 18. Use whey butter, applied upon removing the cloths as stated in answer to question 14. 19. Think the cause of cheese swelling is the curd not being entirely sweet when put to press. 20. Use the thermometer to test the degree of heat. 21. Cows mostly native, three are Short-horned Durhams, eight a cross with the Durham. 22. Cannot say which breed is the most valuable for dairy purposes. *Leonard Standring, Lewis County, New York.—Transactions of New York Agricultural Society.*

Miscellaneous.

Co-operative Farms.—The following interesting letter appeared in the *Times* of Monday last:—About 30 years ago, upon a small farm in Suffolk becoming vacant, I called together 20 labourers and offered to lend them capital without interest if they would undertake to farm it subject to my rules and regulations. They gladly availed themselves of my offer. In the course of 1[illegible] years they paid me back my capital, so that I was induced to let another farm of 150 acres to 30 men upon the same terms. These have also nearly paid back the capital lent to them, and, instead of eating dry bread, as I regret to say many of the agricultural labourers are now doing, each man has his bacon, and numberless comforts that he never possessed before; thus the rates are reduced, as these 50 families are no longer burdensome. The farmers are sure to meet with honest men, as conviction of crime would debar them of their share, and the men themselves have become much more intelligent, and present happy, cheerful countenance. If every country gentleman would follow my example, distress among the agricultural poor would not be known. I merely add that I have no land so well farmed. I shall be happy to send you my plan, rules, and regulations, if required. *John Gurdon, Assington Hall, Suffolk, Dec.* 19.

Licenses for London Cow-houses.—At the present time Courts of Petty Session are holden in various parts of London for the purpose of licensing cow-houses. The Sanitary Committee of the Vestry of St. George, Hanover Square, laid before the magistrates the following conditions, on which alone such licenses should be granted; these were signed by every applicant. Considering that the number of the cows is now under control, and the removal of refuse likewise, there ought to be no further complaints, if the officers of the vestries do their duty. "1st. With regard to new applications for buildings not heretofore used for the purpose, they recommend the justices (by whom the license is granted)—that no shed containing two rows of cows shall be less than 25 feet in width. That no cow-shed shall have any dwellings or workshops over it, but that it shall be open to the roof, which shall be covered with tiles, loosely set. That the stalls for two cows shall not be less than 7 feet 4 inches in width, and 8 feet in depth; that each shall have a raised platform, with a gutter or channel properly sloped, on each side and behind. That the shed shall be drained by pipe drains, with inlets not more than 15 feet apart in the principal gutter, and properly trapped. That the mangers shall be of stone, and capable of being flushed out. That sufficient light be provided. That ventilation be provided by louvre openings in the roof and other means, to the satisfaction of the vestry. That the water supply be abundant. That the pavement of the cow-sheds and yards be of stone or hard brick, with proper slopes, and be kept in good repair. 2d. With regard to all cow-sheds, they recommend that the following undertaking be agreed to by each applicant:— That the said sheds and yards shall be properly lime washed at least four times a year, within 14 days of the four usual quarter days. That the grains shall be kept in pits, with the bottom paved with flag-stones, and drained. That the dung shall be kept in an open yard, in a receptacle not sunken, but with a bottom raised above the surface of the ground, and enclosed by a dwarf wall, from 2 to 2½ feet high; the bottom to be paved with flags, with a fall to one end, where there shall be a trapped drain. That where there is no space in the yard, the dung may be kept in a similar receptacle within the shed; but that in either case a cover shall be provided

if required by the vestry. That the dung shall be removed daily before 9 A.M.; that it shall be removed entirely, and the receptacle be washed out with water, to which the carbonic acid, or some other disinfectant shall be added if required by the vestry. That the yards and sheds shall be similarly washed twice every day, at the least. That no greengrocer, fishmonger, poulterer, or other tradesman, be allowed to bring offal or rubbish, and deposit it in the receptacles for dung attached to any cow-shed. That the number of cows in any given shed shall not exceed that which is fixed by the officers of the vestry, subject to the decision of a magistrate." *Medical Times.*

METEOROLOGICAL OBSERVATIONS—BERKSHIRE.

By Mr. J. B. Spearing, Moulsford, near Wallingford, Berks, during the week ending Dec. 24, 1862.

Day of Week.	Day of Month.	At 9 A.M., Railway Time. Reading of Barometer corrected to Freezing Point at Mean Sea Level.	Dry Bulb Thermometer.	Wet Bulb Thermometer.	Wind. Direction.	Wind. Force, 0–6	Amount of Cloud 0–10.	Reading of Self-Registering Thermometers. Max. in Air.	Min. in Air.	Max. in Rays of Sun.	Min. on Grass.	Rain Fallen in previous 24 hours on the Ground.	Temperature of the Earth. 1 foot deep.	2 feet deep.
		Inches.	°	°				°	°	°	°	Inches.	°	°
Thursday ..	18	30.35	43	42	S.W.	2	7	52	34	52*	29	0.06	43½	44
Friday ..	19	29.81	47	42	W.	4	3	52	42	50	40	..	44	45
Saturday ..	20	29.61	38	35	W.	5	1	50	35	72	32	0.01	44	45
Sunday	21	29.97	36	32	N.W.	4	2	43	34	55	30	..	43	44½
Monday	22	30.23	34	32	N.W.	1	6	41	30	54	27	..	41½	44½
Tuesday ..	23	30.07	44	43	N.W.	2	8	45	32	44	30	0.17	41	44
Wednesday	24	30.28	44	43	N.W.	1	7	47	40	47	37	0.01	42	43½

* These readings are taken from a Vacuum Solar Radiation Thermometer, which registers from 20° to 30° higher than an exposed blackened bulb.

Notices to Correspondents.

Compost: *Original Sub.* To a compost of two-thirds peat moss and one-third dung of Neat cattle, we would advise as an addition 2 cwt. of superphosphate of lime, and 1 cwt. of nitrate of soda per acre as a top dressing for "a light thin loam, on a dry gravelly subsoil, long depastured with cattle, and limed about 10 or 12 years ago."

Condiment for a Horse or Ox: *A H.* Fenugreek powder, 4 ounces; Pimento do., 1 ounce; Carraway seeds do., 1 do.; Anise seed do., 2 drachms; Linseed cake meal, 1 lb. If a mineral tonic is wanted, add sulphate of iron, 4 drachms. The above to be well mixed and divided in 10 parts for daily mixture with the ordinary food. *W. C. S.*

Furze: *A B C.* hopes that in an early Number of the *Agricultural Gazette*, Mr. Carroll will give an account of the cultivation of this crop, which he promised in a recent Number of the *Agricultural Gazette.*

Grass Lands: *Everington.* Feed bare in autumn, lay on compost, and spread during winter: well harrow in March, and roll down. If you sow any seeds over the Grass, you had better, instead of bush-harrowing, turn it well with light harrows, and rake all the moss and waste off. Then sow your supplementary seeds, and roll down. But it is to be remembered that however you sow seeds, if the land has no better treatment, it will soon relapse to its old state.

Lambs of 1861 that had Suffered for Months from the Attacks of Filaria in the Air Tubes: *A H.* We replied at the time through the usual channel that we did not consider there would be any harm in breeding from the lambs in question. *W. C. S.*

Potato Culture: *H. Y.* We would apply about 3 cwt. of guano per acre broadcast over the land just before you rib it for Potatoes; then plant the Potatoes and cover them in the usual way. You should not send the plough by the young plants when the young tubers are beginning to be formed; but it may be safely done as soon as the first shoots appear above the surface. The practice is copied from the drill cultivation of Turnips, and in both cases a deep and thorough stirring of the soil when it is dry, as late as you can safely do it, is a good thing.

Soot: *Cambridge.* If it be compared with guano on the score of ammonia only—the guano is worth only about 12 to 16 times the weight of soot. If guano costs 13s. a cwt., then soot may be worth 1s. a cwt. It generally sells for more. Sometimes however in place of containing only 1½ per cent. of ammonia, it contains as much as 4 per cent.; and its greater price than guano in average samples would give it is then perfectly justifiable. Dr. Voelcker has said that an average sample of soot contains about 1000 lbs. of organic matter, 20 lbs. of sal-ammoniac, 80 lbs. of sulphate of ammonia, 247 lbs. of gypsum, besides other mineral matter, and 237 lbs. of moisture in every ton. Soot weighs as much as 40 lbs. a bushel,

Magnified Aphis.

NEAL'S PATENT APHIS PASTILS, 1s. and 2s. per packet, are the only cheap and effectual way of Fumigating a Greenhouse. See opinion of Geo. Glenny, Esq., in his Works on Gardening, &c.

NEAL'S PLANT SOAP, 1s. per packet of four cakes, is the cheapest preparation hitherto invented for washing plants. It will be found to destroy all Insects. Each cake makes one Gallon of Wash.

Both may be obtained of all principal Seedsmen.

Patentee: J. Neal, Edward Street, Birmingham.

Red Spider Magnified.

GISHURST COMPOUND, whether used against Insects and Mildew, on Growing Plants, or as Winter Dressing on Trees at rest, should be dissolved 48 hours before use.

This gets rid of smell, and if the solution be decanted, prevents any staining of foliage. A strength of from 1 to 2 oz. to the gallon of water is recommended for growing Plants; one from 8 to 16 oz. for Trees at rest.

Sold Retail by Nurserymen and Seedsmen in boxes, 1s., 3s., and 10s. 6d. each.

Wholesale by Price's Patent Candle Co., Limited.

NEW and IMPORTANT DISCOVERY.—To the Nobility, Gentry, Farmers, and Market Gardeners.—A sure and certain Remedy against the Fly on Turnips, Swedes, Cabbages, and all other plants subject to it.

It is well known that whole crops of Turnips and Swedes have been destroyed by these pests, and farmers have been compelled to sow twice and even three times to insure a crop. The Advertiser has succeeded in finding out a remedy, which he has fully proved this season, and can therefore with the greatest confidence offer it to the public. If, therefore, the instructions which will be given are carried out at the time of sowing, the expense of which will not be more than 4d. per acre—let the season be ever so bad for the fly—not one will appear on the Turnips.

This is no Puff or Humbug; the recipe will be forwarded, with full instructions for using, by forwarding 10s. 6d. in postage stamps, or a post-office order payable on the Post Office Taunton, Somerset, to

William Corner, Shuttern, Taunton.—December 27.

WINTER DRESS all FRUIT TREES with GISHURST COMPOUND.

Copy of a Letter from Mr. Rivers, Nurseries, Sawbridgeworth, Herts, January 9, 1862.

"I think you should prominently mention the great benefit Wall Trees of all kinds derive from a dressing of the Compound applied in January, it is so very beneficial. Thos. Rivers."

From the Same, October 22, 1861.

"I must tell you what I heard to-day from a very clever gentleman farmer, Anthony Bubb, Esq., of Witcombe Court, Gloucester. He has a Wall to which Peach Trees are trained. Well, last autumn they were in a wretched blighted state. As a desperate remedy he unnailed them all early last February, and gave all but one a thorough painting with Gishurst Compound, 1 lb. to the gallon of water; his trees, all but the one, commenced to grow favourably in spring, and are now pictures of health. The tree not painted is in a half-dead blighted state. He used the same dressing to his Apple Trees; it killed the woolly aphis entirely, and has made his Trees clean and vigorous in their growth. He intends to paint his Wall Trees annually, and tells all his friends to do the same. I shall certainly serve all my young Peach Trees against my walls in the same manner. The Compound is, I believe, more efficacious than the usual offensive mixtures of clay, soot, sulphur, &c., and it does not blacken the shoots on the walls. Unless trees are completely at rest, 6 to 8 ounces to the gallon of soft water is the best strength, and sufficiently strong to destroy eggs and insects."

Gishurst Compound is Sold Retail by Nurserymen and Seedsmen, in Boxes, 1s., 3s., and 10s. 6d. each; Wholesale by Price's Patent Candle Company Limited, Belmont, Vauxhall, London.

WIND ENGINE, Patent Self-Regulating.

For Pumping, Oat Crushing, Grinding, Chaff Cutting, Sawing, or Driving other Machines.

Costs nothing to work.
Works day and night.
Requires no watching.
Not easily injured.
Erection simple and cheap.

Apply to
BURY and POLLARD,
Sole Manufacturers,
Park Iron Works,
New Park Street, Southwark, London,
Where a Wind Engine, in full work, may be inspected.

ADOPTED VERY LARGELY BY HER MAJESTY'S GOVERNMENT.

CROGGON'S PATENT ASPHALTE ROOFING FELT,

Price 1*d.* per square foot.

INODOROUS FELT, for Damp Walls and for Damp Floors under Carpets and Floor Cloths, also for Lining Iron Houses to equalise the temperature. Price 1*d.* per square foot.

PATENT FELTED SHEATHING, for Covering Ships' Bottoms, &c.

DRY HAIR FELT, for deadening Sound and covering Steam Boilers, Pipes, &c., preventing the Radiation of Heat, thereby saving 25 per cent. in Fuel.

CROGGON & CO.,

ZINC MERCHANTS AND PERFORATORS,

GALVANISED TINNED IRON, and every description of GALVANISED IRON WORK.

CROGGON & CO.'S

NOISELESS ELASTIC KAMPTULICON, or INDIA-RUBBER FLOOR CLOTH,

Impervious to Wet, Indestructible by Damp, Soft to the Tread, and Warm to the Feet, well adapted for Aisles of Churches, Public Offices, Rooms, Shops, &c., as well for its comfort as extreme durability.

Samples, Testimonials, and full particulars, free, on application to

2, GOREE PIAZZAS, LIVERPOOL; or 2, DOWGATE HILL, LONDON, E.C.

ST. PANCRAS IRON WORKS,

OLD ST. PANCRAS ROAD, N.W.

IRON HURDLES, FENCING, and GATES.

The PROPRIETORS of the ST. PANCRAS IRON WORKS, OLD ST. PANCRAS ROAD, LONDON, were awarded the

SILVER MEDAL of the ROYAL AGRICULTURAL SOCIETY for their IRON HURDLES and GATES, which, by their peculiar construction, are more than twice as strong and durable as those in ordinary use.

Lists per post on application. Gates from 30*s.* to 500*l.*

The Hurdles can be seen in process of Manufacture at the Works.

GAME WIRE NETTING.

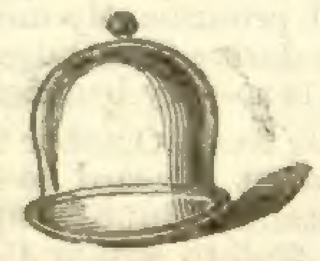
PROFESSOR VARNELL'S ENAMELLED and WROUGHT-IRON STABLE FITTINGS.

These Patent Mangers and Stable Fittings obtained the Commendation and the Silver Medal of the Royal Agricultural Society of England and the Royal Agricultural Society of Ireland, are adopted by the Royal Veterinary College, and Professor Spooner of that Institution states that they should be used by all who value the health and comfort of their Horses. They can be had Plain, Galvanised, or Enamelled.

A Show Room is devoted entirely to every description of Stable Furniture, and full-sized Stalls and Loose Boxes are erected for inspection at St. Pancras Iron Works.

Address—THE MANAGERS, ST. PANCRAS IRON WORKS,
OLD ST. PANCRAS ROAD, LONDON, N.W., Opposite Old St. Pancras Church.

THOMAS MILLINGTON,
87, Bishopsgate Street Without, E.C.
HORTICULTURAL GOODS.



PROPAGATING GLASSES.

3 inches ..	0s. 4½d. each.	12 inches ..	1s. 9d. each.
4 " ..	0 5½ "	13 " ..	2 0 "
5 " ..	0 6½ "	14 " ..	2 6 "
6 " ..	0 8 "	15 " ..	3 0 "
7 " ..	0 10 "	16 " ..	3 6 "
8 " ..	1 0 "	17 " ..	4 0 "
9 " ..	1 2 "	18 " ..	5 0 "
10 " ..	1 4 "	19 " ..	6 0 "
11 " ..	1 6 "	20 " ..	7 0 "

HAND GLASSES.

12 inches ..	6s. 0d. each	18 inches ..	9s. 0d. each
14 " ..	7 0 "	20 " ..	10 0 "
16 " ..	8 0 "	24 " ..	12 0 "

If open top, 1s. extra.

CUCUMBER GLASSES.
From 12 inches long and upwards, 1d. per running inch.

ROLLING PINS.
From 12 inches long, 1½d. per running inch.

Improved ANTI-CORROSION and other PAINTS.
GAS and LAMP GLASSES, GLOBES, &c.
CHIMNIES of every description.
Not accountable for Breakage.

Glass.

JAMES PHILLIPS AND CO., 180, Bishopsgate Street Without, E.C., beg to offer their prices of

GLASS SLATES.

WITH DRILLED HOLES.		Rough Plate. ⅛ inch thick.	Rough Plate. 3/16 inch thick.	Rough Plate. ¼ inch thick.	Sheet. 16 oz.	Sheet. 21 oz.	Sheet. 26 oz.	Sheet. 32 oz.
	Sizes.	s. d.	s. d.	s. d.	s.	s. d.	s. d.	s. d.
Duchess ..	.. 24 by 12	1 8	1 6	1 9	0 9	1 1	1 4	1 8
Small Imperials ..	20 " 14	1 2	1 5	1 8	0 8	1 0	1 3	1 7
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Countess ..	.. 20 " 10	0 11	1 1	1 3	0 7	0 10	1 0	1 3
Viscountess ..	18 " 10	0 10	1 0	1 1	0 6	0 9	0 11	1 1
Large Ladies ..	16 " 10	0 9	0 11	1 0	0 6	0 8	0 10	1 0
Ladies ..	.. 16 " 8	0 8	0 9	0 10	0 5½	0 7	0 8	0 10
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GLASS TILES.

Rough Plate	each—s. d.	Sheet.	each—s. d.
⅛ in. thick	0 10	16 oz.	0 6
3/16 in. "	0 11	21 oz.	0 8
¼ in. "	1 0	26 oz.	0 10
⅜ in. "	1 6	32 oz.	1 0
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Made to any dimensions or Pattern.

LACTOMETERS.
For Testing the Quality of Milk.
Four Tubes .. .. 4s. 6d. | Six Tubes .. .. 6s. 6d.
With Stands complete.

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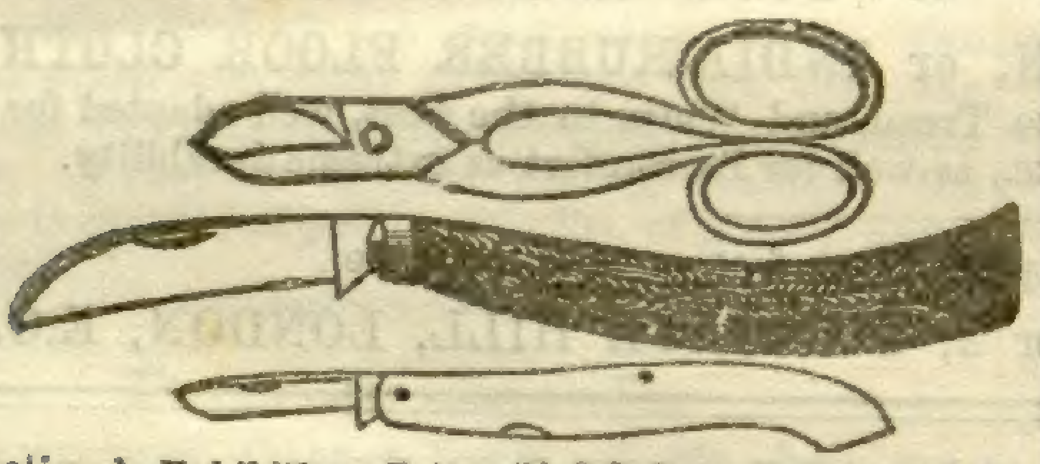

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SAYNOR AND COOKE'S celebrated English and French Exhibition PRIZE PRUNING KNIVES, &c., can be obtained of any respectable Nurseryman or Seed Merchant in the three kingdoms, all Knives warranted both by the Seller and Maker.

CAUTION.—None are genuine unless marked SAYNOR. Other marks would cause disappointment, as these Knives are tempered by an improved process known only to the Makers.

TRANSPLANTING LARGE TREES. — Five different sizes of Mr. BARRON'S MACHINES, with efficient men to work them, can be hired by parties applying to him. His Machines, built under his superintendence, can also be supplied.
Elvaston Castle, Dec. 27.

SHAW'S TIFFANY.
For samples and prices apply to
J. SHAW & Co., 29, Oxford Street, Manchester.

Archangel Mats.

JAMES T. ANDERSON begs to announce that he is now open to supply, at a low price, and in any quantity, ARCHANGEL MATS, the finest in London of this season's importation, and solicits an inspection of them by Nurserymen and Seedsmen.
SACKS, SEED BAGS, &c.
15, Sherborne Lane, King William Street, London, E.C.

THE FARMER'S BAROMETER, a new instrument by NEGRETTI & ZAMBRA, price 50s., will correctly indicate whether the Barometer falls for Rain or Wind, the most valuable instrument ever constructed for the use of Farmers. Full particulars by enclosing a stamp.
1, Hatton Garden, E.C.; 59, Cornhill, E.C.; and 122, Regent Street, W.

HOW COLD IT HAS BEEN. — NEGRETTI & ZAMBRA'S celebrated THERMOMETERS will correctly register the lowest Temperature, 3s. 6d.
1, Hatton Garden, E.C.; 59, Cornhill, E.C.; and 122, Regent Street, W. Agents Wanted.—Apply at 1, Hatton Garden, E.C.

Anti-Frost Water Pipe Protector.
[Jones' Patent.]

IMPORTANT to all HOUSEHOLDERS, preventing damage, waste, and annual expenses from pipes bursting in frosty weather.
Wholesale of BURY & POLLARD, Engineers, Sole Manufacturers, Park Iron Works, Southwark, London, S.
Retail of all Ironmongers. A liberal discount to the Trade.

THE HISTORY of the SET of SMITH'S STEAM CULTIVATING APPARATUS, supplied to Mr. Pike, of Stevington, Beds, in 1858, showing its practice from that period there and at Dunton Lodge, with other evidence upon the question, proving the efficiency and durability of the Woolston tackle, as well as the efficiency of the Woolston system, will be sent, post free, to any gentleman who may apply to Mr. WILLIAM SMITH, Woolston, Bletchley Station, Bucks, for it.

FOR SALE, 200 feet length of 10-feet LIGHTS, new and portable, for covering Peach or other wall, with Plates, Gutter, Doors and Ends complete.
For particulars apply to Messrs. CUTBUSH, Nurseries, Highgate, London.

400 SECOND-HAND TARPAULINGS, 7 ft. 4 in. × 4 ft. 6 in., 2s. 9d. each, in excellent order, with eyelet holes in corners; a large quantity much larger, made up to any size, at 1s. per square yard for gardens. Large CAPES lined with blue cloth, 8s. each. Excellent second-hand POLICE CAPES, 24s. and 30s. per dozen. HORSES' LOIN CLOTHS, 7s. each. DRIVING APRONS, 7s. 6d. each. RAILROAD and WAGGON TARPAULINGS, 2s. per square yard.
R. RICHARDSON, 99, Euston Road, London, N.W.

JOSEPH HAYWOOD AND CO.,
MANUFACTURERS OF
PRUNING and BUDDING KNIVES,
SPORTSMAN'S, and all kind of POCKET CUTLERY.
Dealers in Gambia Garden Shears, Scissors, Syringes, &c.
Glamorgan Works, Sheffield.

Exhibition Prize Medal 1862.

MUSGRAVE'S PATENT STABLE FITTINGS and HARMLESS LOOSE BOXES, PATENT IRON COW HOUSE FITTINGS, and IRON PIGGERIES.

These inventions are recommended as possessing numerous advantages not to be found in anything hitherto made. At the late Meeting of the Royal Agricultural Society at Leeds, MUSGRAVE BROTHERS received a Silver Medal, and two Awards of "Highly Commended," being the only Prizes conferred on any competitor in this class.
Particulars sent on application to the Inventors and Makers, MUSGRAVE BROTHERS, Ann Street Iron Works, Belfast.

SAUSAGE and MINCING MACHINE.—The Guinea one of BURGESS & KEY'S is the best; it is simple, easily cleaned, and quicker in operation than any other.
BURGESS & KEY, Makers, 95, Newgate Street, E.C.
Illustrated particulars free on application.

PRIZE MEDAL to THRESHER AND GLENNY for very fine and superior FLANNEL SHIRTS, India Tweed Suits, and India Gauze Waistcoats. Lists of Prices on application to THRESHER & GLENNY, General Outfitters, next door to Somerset House, Strand, W.C.

HEAL AND SON'S EIDER DOWN QUILTS, from 24s. to Ten Guineas. Also GOOSE DOWN QUILTS, from 10s. to 32s. Lists of prices and sizes sent free by post.
HEAL & SON'S Illustrated Catalogue of Bedsteads and Priced List of Bedding also sent post free on application to 196, Tottenham Court Road, W.

DEANE'S TABLE CUTLERY, celebrated for more than 150 years, remains unrivalled for quality and cheapness. The Stock is most extensive and complete, affording a choice suited to the taste and means of every purchaser. The following are some of the prices for Ivory Handled Knives—each blade being of the best steel, bearing our name, and warranted.

	s. d.	s. d.	s. d.	s. d.	s.	s.	s.
Table Knives, per doz ..	14 0	16 0	18 0	23 0	25	29	[illegible]
Dessert ditto " ..	12 0	12 0	15 0	18 0	20	23	[illegible]
Carvers, Joint, per pair ..	4 6	5 6	6 6	7 6	8	9	11

DISH COVERS and HOT-WATER DISHES.—DEANE & Co. invite particular attention to their varied and excellent assortment of these goods, to which they are continually adding all modern approved patterns in Electro-Plate, Britannia Metal, and Tin.

	£ s.	£ s.	£ s.	£ s.	£ s.	£ s.
Britannia Metal, set of 5 ..	3 0	3 6	3 10	4 6	5 10	[illegible]
Britannia Metal, set of 6 ..	4 5	4 13	5 0	5 8	7 7	[illegible]
Block Tin, set of 6	0 18	1 10	2 0	2 2	2 6	[illegible]
Block Tin, set of 7	1 4	2 0	2 13	2 17	3 4	[illegible]
Electro Plate, set of 4 ..	12 8	12 12	14 0	15 0	15 13	[illegible]

ELECTRO-PLATED SPOONS and FORKS.—The best manufacture, well finished, strongly plated. Every article stamped with our mark, and guaranteed.

	Fiddle. Second quality.	Fiddle. Best.	Beaded. Second.	Beaded. Best.	King's. Second.	King's. Best.	Lily. Best.
	s. d.	s.	s.	s.	s.	s.	s.
Table Spoons, per doz.	33 0	40	44	58	54	66	[illegible]
Table Forks "	31 0	38	44	56	54	64	[illegible]
Dessert Forks "	23 0	29	32	54	37	46	[illegible]
Dessert Spoons "	24 0	30	32	42	37	48	[illegible]
Tea Spoons "	14 6	18	22	26	26	33	[illegible]

DEANE & Co.'s New Illustrated Catalogue and Priced Furnishing List may be had on application or post free.
ESTABLISHED A.D. 1700.
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Prize Medal 1862
AWARDED BY THE JURORS OF CLASS II. FOR THE
GLENFIELD STARCH, being a confirmation by some of the most eminent scientific men of the age, of the superior qualities of this world-renowned Starch. Sold in Packets at ½d., 1d., 2d., 4d., and 8d. each, by all respectable Grocers, Chandlers, Oilmen, &c.
WOTHERSPOON & Co., Glasgow and London.

CHRISTMAS PRESENTS for the Promotion of PERSONAL ATTRACTION.—ROWLANDS' MACASSAR OIL creates and sustains a luxuriant head of hair. ROWLANDS' KALYDOR renders the skin soft, fair, and blooming, and eradicates all defects. ROWLANDS' ODONTO, or Pearl Dentifrice, imparts a pearl-like whiteness to the teeth, and a pleasing fragrance to the breath.
Sold at 20, Hatton Garden, and by Chemists and Perfumers.
*** Ask for "ROWLANDS'" Articles.

OZONIZED COD LIVER OIL is the nearest approach to a specific for Consumption yet discovered. The "London Medical Review," of August, 1861, states that "The merits of the remedy are genuine and intrinsic, nor must it be classed among the vaunted and ephemeral specifics which are daily thrust upon us by self-interested vendors."
Sold by Druggists in 2s. 6d., 4s. 6d., and 9s. bottles, or of GEORGE BORWICK, Sole Manufacturer, 21, Little Moorfields, E.C.

DINNEFORD'S PURE FLUID MAGNESIA has been during 25 years emphatically sanctioned by the medical profession, and universally accepted by the public, as the best remedy for acidity of the stomach, heartburn, headache, gout, and indigestion, and as a mild aperient for delicate constitutions, more especially for ladies and children.—It is prepared in a state of perfect purity and uniform strength only by DINNEFORD & Co., 172, New Bond Street, London, and sold by all respectable Chemists throughout the world.

GREEN'S
LATEST IMPROVEMENTS IN
LAWN MOWING, ROLLING, and COLLECTING MACHINES,
FOR WHICH HER MAJESTY'S ROYAL LETTERS PATENT HAVE BEEN OBTAINED.

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